City of Malibu

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March 31, 2014

Sent via Email to sunger@waterboards.ca.gov

Mr. Sam Unger, Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

RE: Memorandum of Understanding (MOU) Quarterly Progress Report
Malibu Civic Center Wastewater Treatment Plan

Dear Sam:

The following is the quarterly progress report for the Malibu Civic Center Wastewater Treatment Plan, which covers work activities performed on this project during the period between January 1, 2014 and March 31, 2014. To date, the City continues to make progress on all MOU Milestone requirements.

Below is a list of the work performed during the last quarter:

- Continued groundwater modeling work using the MODFLOW hydraulic modeling program.
- Continued work for development of a Salt and Nutrient Management Plan (SNMP) and a Groundwater Management Plan (GWMP). These plans are necessary for recycled water use, management of the groundwater basin, and funding purposes.
- Continued mapping of slope stabilities in project area for use in the Coastal Development Permit (CDP) application.
- Prepare the required documents and continue to work with the California Coastal Commission staff regarding the amendment to the City's Local Coastal Program (LCP).
- The design consultants submitted the Administrative Draft EIR to the City for review.
- Conducted the fourth Civic Center Wastewater Treatment Facility Technical Advisory Committee (TAC) Meeting on February 20, 2014. Committee members, which included independent experts and regional board staff, were updated on the treatment plant design and processes.

- Continued preparatory work necessary for the creation of an Assessment District (AD) such as benefits analysis which includes defining loads and flows from each parcel, capital cost estimates, operation and maintenance cost estimates, and initial modeling of alternative cost allocation methodologies. The Assessment Engineering Consultant presented a preliminary assessment analysis at the November/December Stakeholders Meeting and will present an updated assessment analysis at the next Stakeholders Meeting on April 3, 2014.

- Conducted regular monthly coordination meetings with RWQCB staff to discuss project progress, areas of regulatory concern, and basis of permitting the project.

- Continue with work to refine the wastewater flow projections by RWQCB phase.

- Continue with development of site plans, flow schematics, and hydraulic profiles for designing the wastewater treatment plant at Winter Canyon location.

- Continue refinement of flow routing and alignments, hydraulic and pipe size analysis, and developed design plans and profile diagrams to identify utility conflicts for the wastewater collection system.

- Continue analysis of commercial and residential tie-in locations and hookup points along the wastewater collection system.

- Continue hydraulic analysis and developed pipeline alignments and routes and hookup points for the project's reclaimed water system.

- Continue site analysis and sizing for collection system pumping stations.

- Continue preforming independent expert review of the project's design concept, treatment processes, sizing, and site configuration of the wastewater treatment plant facility to ensure plant design and processes are effective and efficient.

- The design consultant submitted 95% design plans to the City for review and comments. The submittal included detailed designs of the treatment plant, the wastewater collection system, and the recycled water distribution system.

- Continue to work with Los Angeles County Water District 29 to seek possible recycled water demand opportunities further west of the Civic Center Area of Malibu.

Currently, the design of the wastewater treatment plant, the wastewater collection system, and the recycled water system is about 95% complete (Attachment 1). The City's continued approach of performing tasks simultaneously, and on parallel tracks, has kept this project moving forward.

Since our last quarterly report, our design consultants continued performing hydraulic calibration work for the groundwater model and commenced groundwater scenarios using the results from the groundwater injection testing program. Results from this groundwater modeling work has now shown that the direction of flow of the injected waters do not flow to the Malibu Creek or Lagoon

for the full range of flows expected through phase 3 build-out conditions. Furthermore, the modeling scenarios showing groundwater levels before and after project implementation indicate that the project will actually lower groundwater levels throughout the study area. In general, the extremely detailed and voluminous modeling work performed by our design consultants confirms the engineering feasibility of the project. The positive results from this modeling work has now allowed our design consultants to confidently begin the final design work of the injection wells and allowed the overall engineering design work of the project to nearly reach the 95% completion level. Pursuant to the request of Dr. Wu regarding this positive information, the City presented a progress report of the project to the Regional Board at its meeting on March 6, 2014 (Attachment 2). Although we are very excited for this accomplishment, we have not reduced our efforts in seeking different ways to recapture additional time in order to reduce the overall critical path schedule for the completion of this project.

Our design consultant and City staff continue to meet on a monthly basis with Dr. Eric Wu and Dr. T. Don Tsai of the Board's Groundwater & Permitting Unit (Attachment 3) to discuss the status and details of the project including the groundwater well injection and testing program, status of the City's regulatory requirements (CDP, CEQA, EIR), WDR permit limits and requirements, water balance and recycled water use, groundwater basin, Malibu Creek Nutrient TMDL, and local Agency Management Plan. Dr. Wu has also found time to attend our Wastewater Technical Advisory Committee (TAC) Meeting (Attachment 4). Dr. Wu and his staff continues to be very helpful to our staff and has provided our team with clarity and guidance where we continue to look forward to his and the Board's continued support throughout this project.

As mentioned above, our Assessment Engineering Consultant, David Taussig & Associates, has been performing the required work necessary for the formation of the Civic Center Wastewater Treatment Facility Assessment District. They presented their preliminary assessment analysis at the November/December Malibu Civic Center Stakeholders Meeting and will present a second update of the assessment analysis at the next Stakeholders Meeting on April 3, 2014. As you are aware, commercial property owners approved establishment of a Community Facilities District (CFD) to fund the project's remaining field, design, and permitting work. Formation of an Assessment District (AD) will provide the funding necessary to construct and operate the wastewater treatment facility. City staff has also sought other possible sources of funding for this project such as through the State Revolving Fund.

Finally, the City continues to have monthly meetings with stakeholders about the CCWTF (Attachments 5). For several years, the City has met on a monthly basis with stakeholder groups comprised of commercial property owners, residential homeowners' association (HOA) representatives and other interested community members. The City also makes presentations to HOA organizations within the prohibition boundary area when requested. There appears to be continued support from the commercial property owners for the wastewater treatment plan moving forward. There is however much greater concern from residential property owners with regards to cost and overall impacts.

As you can see, the City is committed to working with the community and the Board in a diligent effort towards the design and completion of the wastewater treatment facility for the Civic Center area. The Board and MOU have set out a very aggressive schedule that allowed for virtually no

delays at all. Therefore, with the delay caused by funding and formation of the CFD, the City will diligently pursue trying to comply with the deadlines. However, please realize that the MOU allows very little room for time to be recouped and the City will need cooperation from the Board if additional time is needed to complete the project.

If you have any questions, or require additional clarification, please do not hesitate to contact me at (310) 456-2489, extension 226, or jthorsen@malibucity.org.

Sincerely,

Bob Brager for:
Jim Thorsen

City Manager

Attachments:

1. 95% Design Plans for the MCCWTF – Phase 1 Project.
2. Power Point Presentation to Regional Board on March 6, 2014.
3. Meeting Minutes for monthly meetings held with the RWQCB staff for the MCCWTF Project.
4. Agenda/Power Point Presentation for the MCCWTF Project TAC Meeting on February 20, 2014.
5. Power Point Presentation to the Malibu Civic Center Stakeholders at the January 30, 2014 and February 27, 2014 Meetings.

cc: Mayor Skylar Peak and Honorable Members of the Malibu City Council
Vic Peterson, Environmental Sustainability Director
Bob Brager, Public Works Director/City Engineer
Joyce Parker-Bozylinski, Planning Director
Craig George, Environmental Sustainability Manager / Deputy Building Official
Eric Wu, Ph.D., P.E., RWQCB
T. Don Tsai, Ph.D., RWQCB

Recycled Paper

City of Malibu
Public Works Department

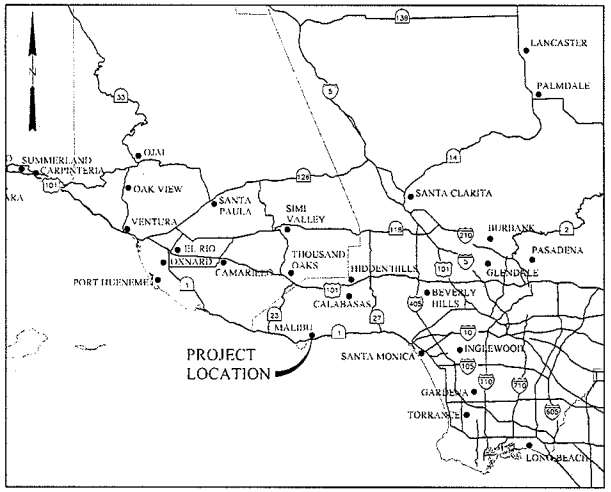
CONTRACT DRAWINGS

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

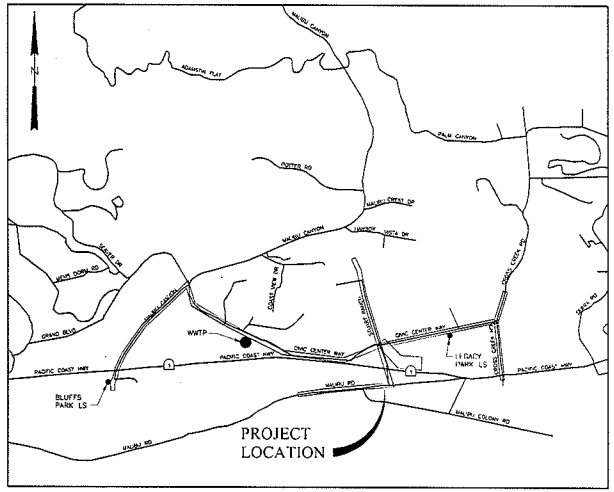
City Project No. 2036

95% DESIGN SUBMITTAL
NOT FOR CONSTRUCTION

March 2014



VICINITY MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

TITLE SHEET

DESIGNED BY: M. Hoeft	DATE	SCALE	APPROVED BY:	DATE	
DRAWN BY: M.Royle	DATE	NONE			XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT GRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014		
Plan No. G-1			Sheet ____ of XXX Sheets		

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

Last Saved By: mRoyle Jul-14 10:30am

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DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN TO EXCAVATE 2 WORKING DAYS PRIOR TO EXCAVATING — SERVING SAN BERNARDINO COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INDEX OF DRAWINGS

DESIGNED BY:	DATE	SCALE
M. Hoeft		
DRAWN BY:	DATE	NONE
M.Foyle		
CHECKED BY:	DATE	PROJECT NUMBER
M.Nakamoto		2036

APPROVED BY: DATE

XX-XX-14

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. G-2

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Last Saved By: mfoyle 3-31-14 9:10:15am

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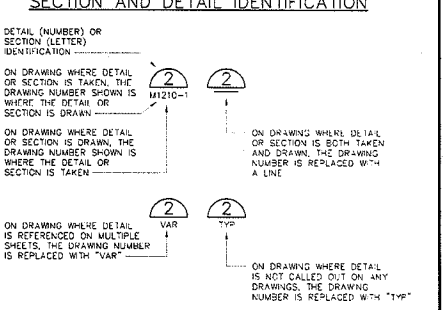
ABBREVIATIONS

@	AT
AA	AERATION AIR
AB	ANCHOR BOLT, AGGREGATE BASE
ABC	AGGREGATE BASE COURSE (CALTRANS CLASS 2 AGGREGATE BASE)
ABS	ACRYLONITRILE-BUTADIENE- STYRENE
AC	ASBESTOS CEMENT, ASPHALTIC CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
ADH AB	ADHESIVE ANCHOR BOLT
ADJ	ADJACENT, ADJUSTABLE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL	ALUMINUM
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ARCH.	ARCHITECTURAL
ARV	AIR RELEASE VALVE
AUX	AUXILIARY
AWG	AMERICAN WIRE GAGE
AWT	ADVANCED WASTE TREATMENT
BC	BOLT CIRCLE, BEGIN CURVE
BD	BOARD
BF	BLIND FLANGE, BOTTOM FLAT
BFV	BUTTERFLY VALVE
BGS	BELOW GROUND SURFACE
BLDG	BUILDING
BM	BENCH MARK, BEAM
BO	BLOWOFF
BOT	BOTTOM
BRG	BEARING
BS	BUTT STRAP
BV	BALL VALVE
BVC	BEGINNING OF VERTICAL CURVE
C	CHANNEL (BEAM)
CAV	COMBINATION AIR AND VACUUM VALVE
CB	CATCH BASIN
CDF	CONTROLLED DENSITY FILL
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEM.	CHEMICAL
CIP	CAST IRON PIPE
CIRC	CIRCUMFERENTIAL
CJ	CONSTRUCTION JOINT
CLR	CLEAR
CLS	CHLORINE SOLUTION HYPOCHLORITE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMP	COMPRESSOR(S)
CONC	CONCRETE, CONCENTRIC
COND	CONDUIT
CONN	CONNECTION
CONT	CONTINUOUS
COORD	COORDINATE
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CT	CERAMIC TILE
CTD	CENTERED
CTJ	CONTROL JOINT
CTR	CENTER
CTS	CORROSION TEST STATION
C TO C	CENTER TO CENTER
CU	CUBIC
CU FT	CUBIC FOOT
CU IN.	CUBIC INCH
CU YD	CUBIC YARD
CV	CHECK VALVE
°C	DEGREE CELSIUS
d	PENNY (NAIL SIZE)
D	DRAIN
DBL	DOUBLE
DET	DETAIL
DFT	DRY FILM THICKNESS
DI	DROP INLET, DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGONAL
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DN	DOWN
DWG	DRAWING
E	EAST
EA	EACH
EC	END CURVE
ECC	ECCENTRIC
EF	EACH FACE, EXHAUST FAN
EL, ELEV	ELEVATION
ELEC	ELECTRIC, ELECTRICAL
ELL	ELBOW
ENGR	ENGINEER
EO	EMERGENCY OVERFLOW
EP	EDGE OF PAVEMENT
EQ	EQUAL
EQPT	EQUIPMENT
EQ SP	EQUALLY SPACED, EQUAL SPACES
ESMT	EASEMENT
EVC	END OF VERTICAL CURVE
EW	EACH WAY
EWF	EACH WAY, EACH FACE
EXC	EXCAVATE
EXH	EXHAUST
EXP	EXPOSED
EXP JT	EXPANSION JOINT
EXST	EXISTING
FA	FOUL AIR
FAB	FABRICATION
FC	FLEXIBLE COUPLING
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDS	FINAL DIGESTED SLUDGE
FDN	FOUNDATION
FE	FLANGED END, FINAL EFFLUENT
FEXT	FIRE EXTINGUISHER
FF	FINISH FLOOR
FG	FINISH GRADE
FHY	FIRE HYDRANT
FIG.	FIGURE
FL	FLOOR
FL	FLOW LINE
FLG	FLANGE
FLH	FLAT HEAD
FLTR	FILTER
FM	FORCE MAIN
FO	FIBER OPTIC
FOC	FACE OF CONCRETE, FIBER OPTIC CABLE
FOCC	FIBER OPTIC CABLE CONDUIT
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FOOT OR FEET
FTG	FOOTING
FUT	FUTURE
FWD	FORWARD
°F	DEGREE FAHRENHEIT
GA	GAGE
GAL	GALLON
GALV	GALVANIZED
GC	GROOVED COUPLING
GCO	GRADE CLEAN OUT
GE	GROOVED END
GL	GLASS
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GVL	GRAVEL
HD	HUB DRAIN
HDG	HOT DIP GALVANIZED
HDPE	HIGH DENSITY POLYETHYLENE, HDPE PIPE
HDR	HEADER
HDW	HARDWARE
HGT	HEIGHT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSEPOWER
HR	HOSE RACK, HANDRAIL, HOUR
HV	HOSE VALVE
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
H2E	HOOK TWO ENDS
ID	INSIDE DIAMETER
IF	INSIDE FACE
IJTS	INSULATING JOINT TEST STATION
IN.	INCH
INFL	INFLUENT
INSTM	INSTRUMENTATION
INSUL	INSULATE
INVT	INVERT
IRR, IRRIG	IRRIGATION
IE	INVERT ELEVATION
JT	JOINT
KIP	THOUSAND POUNDS
KW	KILOWATT
L	ANGLE, LENGTH
LAB	LABORATORY
LAV	LAVATORY
LB	POUNDS
LB/CU FT	POUNDS PER CUBIC FOOT
LF	LINEAR FEET
LONG.	LONGITUDINAL
LP	LOW PRESSURE
LR	LONG RADIUS
LT	LEFT
MAG	MAGNETIC
MATL	MATERIAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
ML	MIXED LIQUOR
MLCSP	MORTAR LINED AND COATED STEEL PIPE
MSNRY	MASONRY
MO	MASONRY OPENING
MT	MITER
MTR	METER
MTS	MILL TYPE STEEL PIPE
MWS	MAXIMUM WATER SURFACE
N	NORTH
NIC	NOT IN CONTRACT
NO.	NUMBER
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE, OVERFLOW
OSD	OPEN SITE DRAIN
OPNG	OPENING
OZ	OUNCE
PC	POINT OF CURVE
PCC	PORTLAND CEMENT CONCRETE, POINT OF COMPOUND CURVATURE
PCO	PRESSURE CLEANOUT
PD	PUMPED DRAIN
PE	PLAIN END
PH	POTHOLE
PI	POINT OF INTERSECTION
PL	PLASTIC, PROPERTY LINE, PLATE
℄	PLATE (STEEL)
PLYWD	PLYWOOD
PRC	POINT OF REVERSE CURVE
PREFAB	PREFABRICATED
PRESS.	PRESSURE
PRI	PRIMARY
PROP	PROPERTY
PSF	POUNDS PER SQUARE FOOT
PS	PUMP STATION
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PT	POINT, POINT OF TANGENCY
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE PLASTIC, PVC PIPE
PVMT	PAVEMENT
R	RADIUS
RAS	RETURN ACTIVATED SLUDGE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN, ROAD
RDCR	REDUCER
RDW	REDWOOD
RECIRC	RECIRCULATION
REF	REFER OR REFERENCE
REINF	REINFORCED, REINFORCING, REINFORCE
REQD	REQUIRED
RM	ROOM
RO	ROUGH OPENING
RPVC	REINFORCED POLYVINYL CHLORIDE
RSFM	RAW SEWAGE FORCE MAIN
RSU	RETURN SUPERNATANT
RT	RIGHT
RTN	RETURN
RV	ROOF VENT
RW	RECYCLED WATER
R/W	RIGHT-OF-WAY
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	STORM DRAIN, SOAP DISPENSER
SE	SECONDARY EFFLUENT
SEC	SECONDARY
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SL, SLP	SLOPE
SOLN	SOLUTION
SP	SPACE OR SPACES
SPEC	SPECIFICATIONS
SPLY	SUPPLY
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SS	SANITARY SEWER
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL, STEEL PIPE
STR	STRAIGHT
STRL	STRUCTURAL
STRUCT	STRUCTURE
SUSP	SUSPEND
SWD	STORM WATER DRAIN
SYMM	SYMMETRICAL
T	TANGENT LENGTH
TAN.	TANGENT
TBG	TUBING
TBM	TEMPORARY BENCH MARK
T&B	TOP AND BOTTOM
TC	TOP OF CURB
TDH	TOTAL DYNAMIC HEAD
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPERATURE
TF	TOP FACE, TOP FLAT
T&G	TONGUE AND GROOVE
THD	THREAD
THK	THICK
THRU	THROUGH
TOS	TOP OF SLOPE, TOP OF STEEL
TP	TURNING POINT
TRANSF	TRANSFORMER
TRANSV	TRANSVERSE
TW	TOP OF WALL
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UD	UNDERDRAIN
UNO	UNLESS NOTED OTHERWISE
USA	UNDERGROUND SERVICES ALERT
V	VENT, VOLT, VALVE
VAC	VACUUM
VAR	VARIOUS
VC	VERTICAL CURVE
VERT	VERTICAL
VPI	VERTICAL POINT OF INTERSECTION
VTR	VENT THRU ROOF
W	WIDE FLANGE (BEAM), WEST, WATER
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WC	WATER CLOSET
WH	WATER HEATER
WM	WATER METER
WP	WORK POINT
WS	WATER SURFACE, WATER STOP
W SH ST	WEATHERING SHEET STEEL
WSP	WELDED STEEL PIPE
WT	WEIGHT
WTR	WATER
WW	WASHWATER
WWF	WELDED WIRE FABRIC
YD	YARD

NOTES:

1. THIS IS A STANDARD ABBREVIATION SHEET. SOME ABBREVIATIONS THAT APPEAR ON THIS SHEET ARE NOT USED ON THIS PROJECT.

SECTION AND DETAIL IDENTIFICATION



STANDARD DETAIL IDENTIFICATION

DISCIPLINES:

A	ARCHITECTURAL
C	CIVIL
CP	CATHODIC PROTECTION
D	DEMOLITION
E	ELECTRICAL
G	GENERAL
I	INSTRUMENTATION AND CONTROL
LS	LIFT STATION
M	MECHANICAL
PP	PIPELINE PLAN AND PROFILE
S	STRUCTURAL

NOTE:

STANDARD DETAIL IDENTIFICATIONS ARE SHOWN ON THE PLANS AND ON THE STANDARD DETAIL DRAWINGS. THERE IS NO SPECIFIC CROSS REFERENCING OF DRAWINGS. STANDARD DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO ALL SIMILAR SITUATIONS OCCURRING ON THIS PROJECT, WHETHER OR NOT THEY ARE REFERENCED TO IN EACH APPLICABLE LOCATION. CONSULT THE ENGINEER FOR REVIEW OF THE USE OF STANDARD DETAILS PRIOR TO BIDDING.

FACILITY AREA IDENTIFICATION

1XXX	INFLUENT PUMP STATION
2XXX	HEADWORKS
3XXX	BIOLOGICAL REACTORS
4XXX	MEMBRANE FILTRATION/BLOWER ROOM/ELECTRICAL ROOM
5XXX	UV FILTRATION
6XXX	RECYCLED WATER/UTILITY WATER/EFFLUENT PUMPING STATION
7XXX	SOLIDS HANDLING
8XXX	CHEMICAL AREAS
9XXX	OPERATIONS BUILDING

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — PLAN FIRST, SAFE BEFORE YOU DIG — SHARING FOR SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ABBREVIATIONS AND SYMBOLS

DESIGNED BY: M. Hoefs	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	NONE		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRADER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. G-3 — Sheet ____ of XXX Sheets

Last Saved By: mfoyle 2-27-14 9:19:22am

PROCESS FLUID PIPE SCHEDULE

FLUID ABBREV	PROCESS FLUID	PIPE TYPE: BURIED	PIPE TYPE: EXPOSED	PIPE TESTING: PRESSURE (PSI)	PIPE TESTING: FLUID	NOTES
PW	NO. 1 WATER (POTABLE)	11,41,91,96	11,21,41	150	WATER	
AA	AERATION AIR	45	21,45,47	50	AIR	ACOUSTICAL WRAPPING OF EXPOSED
BP	BYPASS	SAME AS MAIN PROCESS FLUID				
CA	CITRIC ACID	96	91,96	100	WATER	
D	DRAIN	93,97	11,21	20	WATER	
DFM	DRAIN FORCE MAIN	96	11,21,47	150	WATER	USE SST WITHIN WATER RETAINING BASI
EFF	EFFLUENT	91,92,96	91	100	WATER	
FA	FOUL AIR	61,96 (OR17) 97	61	15	AIR	USE SYSTEM 93 IN ODOR BED
FM	FORCEMAIN	96	NA	150	WATER	
GR	GRIT	12,26	12,26	NA	WATER	
IRR	IRRIGATION	91	91	100	WATER	
MC	MICROC	98	91,98	150	WATER	
MGH	MAGNESIUM HYDROXIDE	98	91	100	WATER	
MLR	MIXED LIQUIOR RECYCLE	NA	47	50	WATER	USE SST WITHIN WATER RETAINING BASI
MLT	MIXED LIQUIOR TRANSFER	11,25,92,96	21,47	50	WATER	USE SST WITHIN WATER RETAINING BASI
OF	OVERFLOW	11,25,92	21,47	20	WATER	SAME AS MAIN PROCESS FLUID
PACL	POLYALUMINUM CHLORIDE	91	91	100	WATER	
PRM	PERMEATE	93,97	21	50	WATER	
RAS	RECYCLED ACTIVATED SLUDGE	11,25,92,96	21,47	50	WATER	USE SST WITHIN WATER RETAINING BASI
RW	RECYCLED WATER	11,96	21	150	WATER	
SC	SCREENINGS	11,25	21,47	20	WATER	
SCWW	SCREENED WW	93	21,47	20	WATER	USE SST WITHIN WATER RETAINING BASI
SCUM	SCUM	12,26	12,26	20	WATER	
SD	STORM DRAIN	93,97	NA	20	WATER	
SH	SODIUM HYPOCHLORITE	98	91,98	100	WATER	
SM	SAMPLE	91	91	20	WATER	
SN	SUPERNATANT	11,93	NA	20	WATER	
SS	SANITARY SEWER	93,97	NA	20	WATER	
TS	THICKENED SLUDGE	45	45	20	WATER	
UVE	UV EFFLUENT	93,97	21	50	WATER	
UVI	UV INFLUENT	93,97	21	50	WATER	
UW	PLANT UTILITY WATER	11,25,91,92,96	21,47,47	150	WATER	USE SST WITHIN WATER RETAINING BASI
V	VENT	NA	21	20	AIR	
WW	WASTEWATER	93,96	11,21	20	WATER	
WWFM	WASTEWATER FORCEMAIN	11,25,92,96	21,47	50	WATER	USE SST WITHIN WATER RETAINING BASI
WAS	WASTE ACTIVATED SLUDGE	11,25,92,96	21	50	WATER	

JOINT TYPES

BF	BUTT FUSION
BLO	BUTT LAMINATED OVERLAY
BSG	BELL SPIGOT GASKET
BSW	BELL SPIGOT WELD
BW	BUTT WELD
CJ	COMPRESSION JOINTS
CW	SOCKET WELDED
F	FLANGED
FJ	FLARED JOINTS
GC	GROOVED COUPLING
GTG	GROUTED TONGUE AND GROOVE
MJ	MECHANICAL JOINT
SC	SLEEVE COUPLING
SE	SCREWED ENDS
SJ	SOLDERED JOINTS
SW	SOLVENT WELDED
THD	THREADED

NOTES:

(1) A PIPE MATERIAL SPECIFICALLY DESIGNATED ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER OPTIONAL MATERIALS SHOWN IN THE TABLE. THIS SYMBOL ▲— INDICATES A PIPE MATERIAL CHANGE.

(2) REFER TO SPECIFICATION SECTION 02640 – PIPELINE TESTING AND DISINFECTION FOR HYDRAULIC TESTING REQUIREMENTS AND LEAKAGE ALLOWANCES.

(3) INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE PLUMBING CODE.

(4) INSTALL ALL EXPOSED OUTDOOR PIPES 2" AND SMALLER CARRYING WATER IN ACCORDANCE WITH SPECIFICATION SECTION 15080.

PIPE MATERIAL SCHEDULE

Pipe Mtl Number	PIPE MATERIAL	Specification Section	Type/ Rating	Joint Type (a): Buried	Joint Type (a): Exposed	SPECIAL THRUST RESTRAINT REQUIREMENTS	CORROSION PROTECTION REQUIREMENTS
	DUCTILE IRON PIPE						
11	DIP, C-151, CML	02565	250	BSG	BSG,F	MECH. RESTRAINTS OR ANCHOR BLOCKS AT BENDS	SEE PIPE SPEC
12	DIP, C-151, GLASS LINED	02565, 15000	250	BSG	BSG,F	MECH. RESTRAINTS OR ANCHOR BLOCKS AT BENDS	SEE PIPE SPEC
	STEEL PIPE						
21	STEEL, ASTM A53 (>3 INCH)	15025	SCH 40	SC,BW,CW	SC,F,BW,CW		SEE PIPE SPEC
	STEEL, ASTM A53 (3 - 12 INCH)	15025	SCH 40	GC,SC	F,GC,SC		SEE PIPE SPEC
	STEEL, ASTM A53 (> 12 INCH)	15025	1/4" Wall	GC,SC	F,GC,SC		SEE PIPE SPEC
23	GALV STEEL, ASTM A106	15025	SCH 40	GC,SC	GC,SC		
23	STEEL, ASTM A106	15025	SCH 80	CW	CW		
25	STEEL, AWWA C200, CML&C	02570	1/4" Wall	BSW	BSW,F		SEE PIPE SPEC
28	STEEL, ASTM A106, GLASS LINED	15025, 15000	SCH 80	CW	CW		
	ALLOY PIPE						
41	COPPER	15035	Type 'K'	SJ,FJ,CJ,SE	SJ,FJ,CJ,SE		
42	BRASS						
45	STAINLESS STEEL - 316		SCH 10	BW,SC,F	BW,SC,F		
46	STAINLESS STEEL - 316 (UP TO 2.5 INCH	15030	SCH 40	SE	SE		
	STAINLESS STEEL - 316 (>3 INCH)	15030	SCH 40	BW,CW	BW,CW,F		
47	STAINLESS STEEL - 304		SCH 10				
48	STAINLESS STEEL TUBING	15030					
	FRP						
61	FRP DUCTING	02510		BLO	BLO		
	PLASTIC						
81	PVC (1)	15060	SCH 80	SW	SW		
82	PVC C-900,905	02597	DR-18	BSG	BSG	MECH. RESTRAINTS OR ANCHOR BLOCKS AT BENDS	SEE PIPE SPEC
83	PVC GRAVITY SEWER PIPE	02598	SDR-35	BSG	BSG		SEE PIPE SPEC
86	HDPE, SOLID WALL, C-906 (6)	02580	DR-11	BF	BF,F		SEE PIPE SPEC
87	HDPE, PROFILE WALL	02591	RSC-83	BSW	BSW		SEE PIPE SPEC
88	PVC TUBING IN PVC CONTAINMENT PIPE	15061	100	SW	SW		

NOTES:

(1) SCH 80 PVC MAY ONLY BE USED FOR PIPE DIAMETERS 4 INCHES AND SMALLER.

(2) THIS SCHEDULE IDENTIFIES CERTAIN THRUST RESTRAINT AND CORROSION PROTECTION REQUIREMENTS FOR CLARITY, NOT ALL REQUIREMENTS ARE IDENTIFIED. CONTRACTOR SHALL FULLY COMPLY WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.

(3) MECHANICAL RESTRAINTS PER PIPE SPECIFICATIONS, ANCHOR BLOCKS PER DETAIL C252.

(4) SEE SPECIFICATIONS FOR CORROSION PROTECTION REQUIREMENTS. INSULATED FLANGES SHALL BE PROVIDED ON METALLIC PIPES PER THE REQUIREMENTS OF THE CONTRACT DOCUMENTS (SEE DETAIL 4 ON DRAWING C200-4).

(5) UNLESS OTHERWISE NOTED HDPE PIPE SIZES SHOWN ON THE DRAWINGS ARE NOMINAL IRON PIPE SIZE (IPS). SEE SPECIFICATIONS.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN TO SAFE EXCAVATE YOUR SITE — REFERENCE NUMBER MUST BE GIVEN PRIOR TO EXCAVATING — STANDARD SIGNS AND SYMBOLS COVERED

— 1" VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWINGS. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLAN AND PROFILE PIPING LEGEND

- 24" FM — FORCEMAIN
- BO — BLOWOFF (PLAN)
- AIR RELEASE VALVE
- 12" SD — STORM DRAIN MAIN
- 8" SS — SANITARY SEWER MAIN
- 8" W — WATER MAIN
- E — ELEC CONDUIT (UNDERGROUND)
- E (O/H) — ELEC CABLES (OVERHEAD)
- T — TELECOM (POSSIBLY FIBRE OPTIC) CONDUIT
- FO — TELECOM/FIBRE OPTIC CONDUIT
- 8" GAS — GAS PIPELINE
- 18" SD?? — EXISTENCE OR SIZE OF UTILITY NOT CONFIRMED (??)
- STORM DRAIN INLET
- MANHOLE
- WATER METER
- FIRE HYDRANT
- WATER VALVE

YARD PIPING LEGEND

- NEW PIPE
- FUTURE PIPE
- TEMPORARY PIPE
- DUCT BANK

VALVES

- GATE
- KNIFE GATE
- BALL
- GLOBE
- BUTTERFLY
- VEE BALL
- ECCENTRIC PLUG
- NEEDLE
- PLUG OR COCK
- BALL CHECK
- SWING OR SILENT CHECK
- DOUBLE DOOR CHECK
- PINCH
- DIAPHRAGM
- HOSE VALVE
- PRESSURE RELIEF
- REGULATED SIDE
- PRESSURE CONTROL
- AIR RELIEF VALVE
- AIR AND VACUUM RELIEF VALVE

MISCELLANEOUS PIPING COMPONENTS

- FLEXIBLE (ELASTOMER) PIPE CONNECTION
- WYE-STRAINER
- BASKET STRAINER
- QUICK DISCONNECT COUPLING
- HOSE RACK
- SAFETY SHOWER/EYEWASH
- CO — CLEANOUT
- HD — HUB DRAIN
- FD — FLOOR DRAIN
- FLUSHING CONNECTION

MECHANICAL PIPING LEGEND

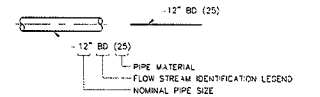
DOUBLE LINE	SINGLE LINE	
		EXISTING PIPE (FUTURE PIPE IF DESIGNATED AS FUTURE)
		NEW PIPE
		EXISTING PIPE TO BE ABANDONED
		EXISTING PIPE TO BE REMOVED
		BUTT WELDED JOINT
		FLANGED JOINT
		GROOVED END JOINT
		HUB & SPIGOT JOINT
		FLEXIBLE COUPLING
		FLANGED COUPLING ADAPTER
		MECHANICAL JOINT
		ELASTOMER BELLOWS EXP JOINT
		ELBOW DOWN
		ELBOW UP
		TEE DOWN
		TEE UP
		LATERAL DOWN
		LATERAL UP
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		CAP (BUTT WELDED)
		CAP (SCREWED OR SOCKET WELDED)
		ELBOW, 90 DEGREE
		CROSS
		TEE
		ELBOW, 45 DEGREE
		LATERAL
		CHANGE IN PIPE MATERIAL
		BLIND FLANGE

COUPLING MAY VARY

GENERAL PIPING NOTES

1. SYMBOLS SHOWN HERE FOR SINGLE LINE FITTINGS ARE SHOWN WITH SOCKET TYPE ENDS. END CONNECTIONS SHALL BE PER SPECIFICATIONS.
2. THIS IS A STANDARD LEGEND SHEET. NOT ALL ITEMS SHOWN ARE USED ON THIS PROJECT.
3. SOME SYMBOLS MAY BE SHOWN DIFFERENTLY ON DRAWINGS AND LABELED ACCORDINGLY.
4. NOT ALL PIPING AND VALVES ARE SHOWN ON THE MECHANICAL DRAWINGS. SEE INSTRUMENTATION AND CONTROL DRAWINGS FOR ADDITIONAL PIPING AND VALVES.

PIPING DESIGNATION



NOTE:
FLOW STREAM IDENTIFICATION LEGEND SHALL BE USED FOR PIPING SCHEDULE SELECTION. ADDITIONAL DESCRIPTION IS USED ONLY TO DESCRIBE THE PROCESS FUNCTION OF THE PIPE. ADDITIONAL DESCRIPTIONS ARE FROM THE STANDARD ABBREVIATIONS DRAWING.

PLANS PREPARED BY: RMC water and environment

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NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

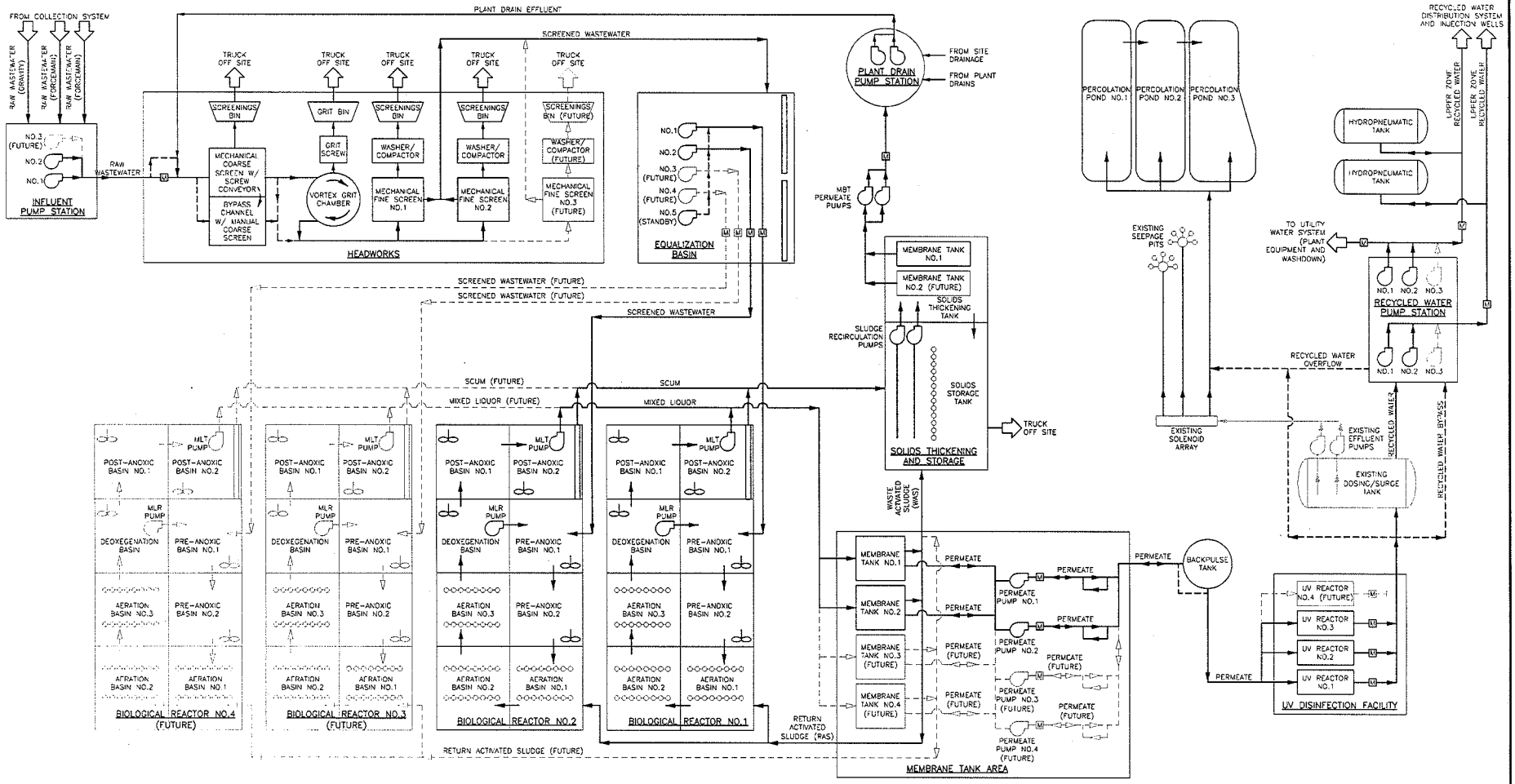
PIPE SCHEDULE AND LEGENDS

DESIGNED BY: M. Hoeft	DATE	SCALE: NONE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE: XX-XX-14
DRAWN BY: M.Foyle	DATE		
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER: 2036	

Plan No. G-4

Sheet _____ of XXX Sheets

REFERENCE: 2012/2036/GRAPHICS/STANDARD DRAWINGS/STANDARD DRAWINGS.DWG
Last Saved By: mfoyle 2/24/14 6:06pm



CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

WWTP PROCESS FLOW DIAGRAM

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: M.Foyle	DATE	AS SHOWN	DATE XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	

Plan No. G-5 Sheet ____ of XXX Sheets

Last Saved By: mfoyle 2-27-14 9:09pm

FLOWS & LOADS

FLOWS & LOADS	UNITS	PHASE 1A	PHASE 1	PHASE 2	PHASE 3
AVERAGE ANNUAL FLOW	GPD	96,000	190,500	387,000	595,500
MAX DAY FLOW	GPD	140,000	270,000	534,000	794,000
PEAK HOUR	GPD	332,000	644,000	1,247,000	1,788,000
PLANT RECYCLE FLOW(ADD TO DESIGN FLOWS)	GPD				
AVERAGE BOD LOADING	LBS/DAY	308	585	1150	1373
MAX DAY BOD LOADING	LBS/DAY	461	865	1291	1495
AVERAGE TSS LOADING	LBS/DAY	210	405	784	1035
MAX DAY TSS LOADING	LBS/DAY	314	629	1011	1286
AVERAGE TKN LOADING	LBS/DAY	51	98	190	251
MAX DAY TKN LOADING	LBS/DAY	76	111	214	251
AVERAGE AMMONIA LOADING	LBS/DAY	42	82	159	181
MAX DAY AMMONIA LOADING	LBS/DAY	64	93	179	199
AVERAGE PHOSPHOROUS LOADING	LBS/DAY	19	35	39	51
MAX DAY PHOSPHOROUS LOADING	LBS/DAY	15	33	46	55

EQUIPMENT

EQUIPMENT	VALUE	UNITS
INFLUENT PUMP STATION		
TYPE	NON-CLOG SUBMERSIBLE	
NUMBER	1 DUTY & 1 STANDBY	
CAPACITY (EACH)	620	GPM
TDH	20	FT
MOTOR SIZE	15	HP
EQUALIZATION BASIN		
WIDTH X LENGTH	30 x 40 FT X FT	
OPERATING WATER RANGE	11	FT
EQUALIZATION VOLUME	66,000	GALS
HEADWORKS FLOW METER		
TYPE	MAGNETIC	
SIZE	8-INCH	
COARSE SCREEN		
TYPE	SPIRAL SCREEN	
NUMBER	1 DUTY WITH BYPASS	
OPENING SIZE	6	MM
WASH WATER FLOW	8	GPM
WASH WATER PRESSURE	40	PSI
WASH WATER RUNTIME	15	MINS/HOUR
CAPACITY (EACH)	2.0	MGD
CONVEYOR TYPE	SHAFTLESS SCREW	
COMPACTOR TYPE	SCREW COMPACTOR	
MOTOR SIZE	2	HP
GRIT REMOVAL		
TYPE	MECHANICAL VORTEX	
NUMBER	1 DUTY WITH BYPASS	
DIAMETER	7	FT
CAPACITY (EACH)	2.0	MGD
PADDLE MOTOR SIZE	0.5	HP
CONVEYOR TYPE	SCREW PRESS	
MOTOR SIZE	1	HP
FINE SCREENS		
TYPE	INTERNALLY-FED ROTARY DRUM	
NUMBER	1 DUTY & 1 STANDBY	
OPENING SIZE	2	MM
INTERNAL WASH WATER FLOW (PEAK)	26	GPM
INTERNAL WASH WATER PRESSURE	80	PSI
INTERNAL WASH WATER RUNTIME	5.5	MINS/HOUR
EXTERNAL WASH WATER FLOW (PEAK)	26	GPM
EXTERNAL WASH WATER PRESSURE	80	PSI
EXTERNAL WASH WATER RUNTIME	22	MINS/HOUR
CAPACITY (EACH)	1.5	MGD
CONVEYOR TYPE	LAUNDER	
MOTOR SIZE	0.5	HP
SCREENING WASHER/COMPACTOR		
TYPE		
NUMBER	1 DUTY & 1 STANDBY	
WASH WATER FLOW	8	GPM
WASH WATER PRESSURE	80	PSI
WASH WATER RUNTIME	20	MINS/HOUR
CAPACITY (EACH)	35	CF/HR
CONVEYOR TYPE	SCREW PRESS	
MOTOR SIZE	2	HP

EQUIPMENT (CONT.)

EQUIPMENT (CONT.)	VALUE	UNITS
INTERMEDIATE PUMP STATION		
TYPE	SUBMERSIBLE	
NUMBER	2 DUTY & 1 STANDBY	
CAPACITY (EACH)	130	GPM
TDH	50	FT
MOTOR SIZE	4	HP
BIOREACTORS		
MLSS	8000	MG/L
MCRT AT AVERAGE FLOW	22.3	DAYS
HRT AT AVERAGE FLOW	35.8	HRS
AERATION TYPE	FINE BUBBLE	
MIXING TYPE	SUBMERSIBLE	
NUMBER OF TRAINS	2	
NUMBER OF PRE-ANOXIC BASINS (PER TRAIN)	2	
VOLUME, TOTAL	24,500	GALS
WIDTH x LENGTH	10 x 10 FT X FT	
BASIN #1 WATER DEPTH	16.8	FT
BASIN #2 WATER DEPTH	16.25	FT
NUMBER OF AERATION BASINS (PER TRAIN)	3	
VOLUME, TOTAL	65,000	GALS
WIDTH	10	FT
BASIN #1 LENGTH	23.0	FT
BASIN #2 LENGTH	16.5	FT
BASIN #3 LENGTH	16.5	FT
BASIN #1 WATER DEPTH	15.75	FT
BASIN #2 WATER DEPTH	15.5	FT
BASIN #3 WATER DEPTH	15.25	FT
NUMBER OF DE-OXYGENATION BASINS (PER TRAIN)	1	
VOLUME, EACH BASIN	11,000	GALS
WIDTH x LENGTH	10 x 10 FT X FT	
BASIN WATER DEPTH	14.75	FT
NUMBER OF POST-ANOXIC BASINS (PER TRAIN)	2	
VOLUME, TOTAL	21,100	GALS
WIDTH x LENGTH	10 x 10 FT X FT	
BASIN #1 WATER DEPTH	14.25	FT
BASIN #2 WATER DEPTH	14	FT
AERATION BLOWERS		
TYPE	PD BLOWER	
NUMBER	1 DUTY + 1 STANDBY	
SCFM (EACH)	570	
ACFM (EACH)	815	
TDH	7.5	PSI
MOTOR SIZE	30	HP
MIXERS		
TYPE	SUBMERSIBLE	
NUMBER	10 DUTY + 1 SHELF SPARE	
MOTOR SIZE	2.5	HP
CARBON SOURCE (MICRO C)		
TYPE	MICROC	
NUMBER OF TOTES	1	
TANK VOLUME	250	GAL
AVERAGE USE	300	GAL/MONTH
TYPE OF PUMP	PERISTALTIC	
NUMBER OF PUMPS	2 DUTY + 1 SHELF SPARE	
CAPACITY	0.5	GAL/HR
MINIMUM TURNDOWN RATIO	20:01	
MINIMUM PRESSURE RATING	20	PSI
MOTOR SIZE	0.5	HP
MIXED LIQUOR RECYCLE PUMPS		
TYPE	NON-CLOG PROPELLER PUMP	
NUMBER	2 DUTY + 1 SHELF SPARE	
CAPACITY (EACH)	833	GPM
TDH	3.5	FT
MOTOR SIZE	5	HP
MIXED LIQUOR TRANSFER PUMPS		
TYPE	NON-CLOG SUBMERSIBLE	
NUMBER	2 DUTY + 1 SHELF SPARE	
CAPACITY (EACH)	700	GPM
TDH	10	FT
MOTOR SIZE	5	HP
MEMBRANE REACTOR		
MLSS	8000	MG/L
AERATION TYPE	COARSE BUBBLE	
MEMBRANE TYPE	HOLLOW FIBER	
MANUFACTURERS	GE, KOCH, OR APPROVED EQUAL	
MODEL	5000	
MODULES PER CASSETTE	46	
CASETTES PER TRAIN	1	
DESIGN FLUX AT AVERAGE FLOW (PHASE 1A)	7.2	
DESIGN FLUX AT MAX DAY FLOW (PHASE 1A)	14.1	
DESIGN FLUX AT MAX DAY FLOW WITH 1 UNIT CUT OF SERVICE (PHASE 1A)	14.1	
DESIGN FLUX AT AVERAGE FLOW (PHASE 1)	8.5	
DESIGN FLUX AT MAX DAY FLOW (PHASE 1)	9.7	
DESIGN FLUX AT MAX DAY FLOW WITH 1 UNIT CUT OF SERVICE (PHASE 1)	14.5	
DESIGN FLUX AT AVERAGE FLOW (BUILDOUT)	9.4	
DESIGN FLUX AT MAX DAY FLOW (BUILDOUT)	11.7	
DESIGN FLUX AT MAX DAY FLOW WITH 1 UNIT CUT OF SERVICE (BUILDOUT)	15.6	

EQUIPMENT (CONT.)

EQUIPMENT (CONT.)	VALUE	UNITS
MEMBRANE PERMEATE PUMPS		
TYPE	ROTARY LOBE	
NUMBER	2 DUTY	
CAPACITY (EACH)	420	GPM
TDH	45	FT
MOTOR SIZE	10	HP
MEMBRANE BLOWERS		
TYPE	POSITIVE DISPLACEMENT BLOWER	
NUMBER	1 DUTY + 1 STANDBY	
SCFM (EACH)	320	SCFM
ACFM (EACH)	350	ACFM
TDH	4	PSI
MOTOR SIZE	20	HP
CITRIC ACID FEED SYETEM		
TYPE	CITRIC ACID	
NUMBER OF TOTES	1	
TANK VOLUME	250	GAL
AVERAGE USE	20	GAL/MONTH
TYPE OF PUMP	PERISTALTIC	
NUMBER OF PUMPS	1	
CAPACITY	20	GAL/HR
MINIMUM TURNDOWN RATIO	20:1	
MINIMUM PRESSURE RATING	50	PSI
MOTOR SIZE	0.5	HP
POLYALUMINUM CHLORIDE FEED SYSTEM		
TYPE	8.4% ALUM	
NUMBER OF TANKS	1	
TANK VOLUME	4000	GAL
AVERAGE USE	32	GAL/DAY
TYPE OF PUMP	PERISTALTIC	
NUMBER OF PUMPS	1	
CAPACITY	1	GAL/HR
MINIMUM TURNDOWN RATIO	20:1	
MINIMUM PRESSURE RATING	100	PSI
MOTOR SIZE	0.5	HP
UV DISINFECTION		
TYPE	CLOSED CONDUIT	
LAMP TYPE	LOW PRESSURE HIGH OUTPUT	
NUMBER OF TRAINS	2 DUTY + 1 STANDBY	
NUMBER OF REACTORS PER TRAIN	1	
LAMPS PER REACTOR	8	MIN
CAPACITY (EACH REACTOR)	0.1	MGD
RECYCLED WATER PUMP STATION - LOWER ZONE		
TYPE	VERTICAL TURBINE PUMP	
NUMBER	1 DUTY + 1 STANDBY	
CAPACITY (EACH)	300	GPM
TDH	200	FT
MOTOR SIZE	25	HP
RECYCLED WATER PUMP STATION - UPPER ZONE		
TYPE	VERTICAL TURBINE PUMPS	
NUMBER	1 DUTY + 1 STANDBY	
CAPACITY (EACH)	120	GPM
TDH	525	FT
MOTOR SIZE	15	HP
EXISTING RECYCLED WATER STORAGE TANK		
TYPE	BURIED FRP TANK	
NUMBER	1	
VOLUME	50,000	GALS
RECYCLED WATER HYDROPNEUMATIC TANK - LOWER ZONE		
TYPE	PNEUMATIC STEEL PRESSURE TANK	
WORKING VOLUME	300	GAL
WORKING PRESSURE RANGE	80-60	PSI
COMPRESSOR TYPE	ROTARY SCREW	
COMPRESSOR MOTOR SIZE	5	HP
RECYCLED WATER HYDROPNEUMATIC TANK - UPPER ZONE		
TYPE	PNEUMATIC STEEL PRESSURE TANK	
WORKING VOLUME	345	GAL
WORKING PRESSURE RANGE	150-110	PSI
COMPRESSOR TYPE	ROTARY SCREW	
COMPRESSOR MOTOR SIZE	7.5	HP
SODIUM HYPOCHLORITE (MEMBRANE CLEANING, RECYCLED WATER)		
TYPE	12.5% SODIUM HYPOCHLORITE	
NUMBER OF TOTES	2	
TANK VOLUME	250	GAL
AVERAGE USE	4.2	GAL/DAY
TYPE OF PUMP	PERISTALTIC	
NUMBER OF PUMPS	4	
PUMP #1 & 2 CAPACITY	0.3	GAL/HOUR
PUMP #3 CAPACITY	2	GAL/HOUR
PUMP #4 CAPACITY	20	GAL/HOUR
MINIMUM TURNDOWN CAPACITY	20:01	
MINIMUM PRESSURE RATING	20	PSI
MOTOR SIZE	0.5	HP

EQUIPMENT (CONT.)

EQUIPMENT (CONT.)	VALUE	UNITS
MAGNESIUM HYDROXIDE		
TYPE	MAGNESIUM HYDROXIDE	
NUMBER OF TOTES	1	
TANK VOLUME	250	GAL
AVERAGE USE	5.8	GAL/DAY
TYPE OF PUMP	PERISTALTIC	
NUMBER OF PUMPS	1 DUTY + 1 STANDBY	
CAPACITY	0.5	GAL/HOUR
MINIMUM TURNDOWN RATIO	20:01	
MINIMUM PRESSURE RATING	10	PSI
MOTOR SIZE	0.5	HP
SOLIDS STORAGE TANK		
TOTAL VOLUME	32,900	GALS
DAYS OF STORAGE @ 8,000 MG/L	3.5	DAYS
DAYS OF STORAGE @ 27,000 MG/L	11.8	DAYS
WIDTH	11	FEET
LENGTH	25	FEET
TOTAL DEPTH	15	FEET
AERATION TYPE	COARSE BUBBLE	
BLOWER TYPE	POSITIVE DISPLACEMENT	
NUMBER	1	
CAPACITY	105	SCFM
MOTOR SIZE	15	HP
MEMBRANE THICKENING TRANSFER PUMP		
TYPE	AIRLIFT	
NUMBER	2	
CAPACITY (EACH)	11	GPM
TDH	4	FT
AIR FLOW RATE	15	SCFM
MEMBRANE SOLIDS THICKENING		
MLSS INFLUENT	8,000	MG/L
THICKENED WAS	27,000	MG/L
MEMBRANE TANK VOLUME	10,530	GAL
MEMBRANE TANK WIDTH	11	FT
MEMBRANE TANK LENGTH	8	FT
MEMBRANE TANK TOTAL DEPTH	16	FT
AERATION TYPE	COARSE BUBBLE	
AGITATION AIR FLOW RATE	110	SCFM
MEMBRANE TYPE	FLAT PLATE	
MANUFACTURERS	OVIVO (NO KNOWN EQUAL)	
NUMBER OF CASSETTES	1	
DESIGN FLUX AT AVERAGE FLOW	2.4	GFD
ODOR CONTROL FANS - LOWER AREA		
TYPE	BACKWARD CURVED CENTRIFUGAL	
NUMBER	1 DUTY + 1 STANDBY	
BODY MATERIAL	FIBERGLASS	
SCFM (EACH)	2310	
TDH	12	INCHES WATER
MOTOR SIZE	10	HP
ODOR CONTROL FANS - UPPER AREA		
TYPE	BACKWARD CURVED CENTRIFUGAL	
BODY MATERIAL	FIBERGLASS	
NUMBER	1 DUTY + 1 STANDBY	
SCFM (EACH)	2700	
TDH	14	INCHES WATER
MOTOR SIZE	10	HP

CALL BEFORE YOU DIG 1-800-227-2600 DIGALERT — PLAN AHEAD, DIG SAFE, SAVE STORE YOU DIG — ATTACHMENT TWO CONTRACTORS PRIDE IN EXCAVATING — SERVING NEW SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

WWTP DESIGN CRITERIA

DESIGNED BY: M. Hoeft	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: M.Foyle	DATE	NONE	XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. G-6 Sheet ____ of XXX Sheets

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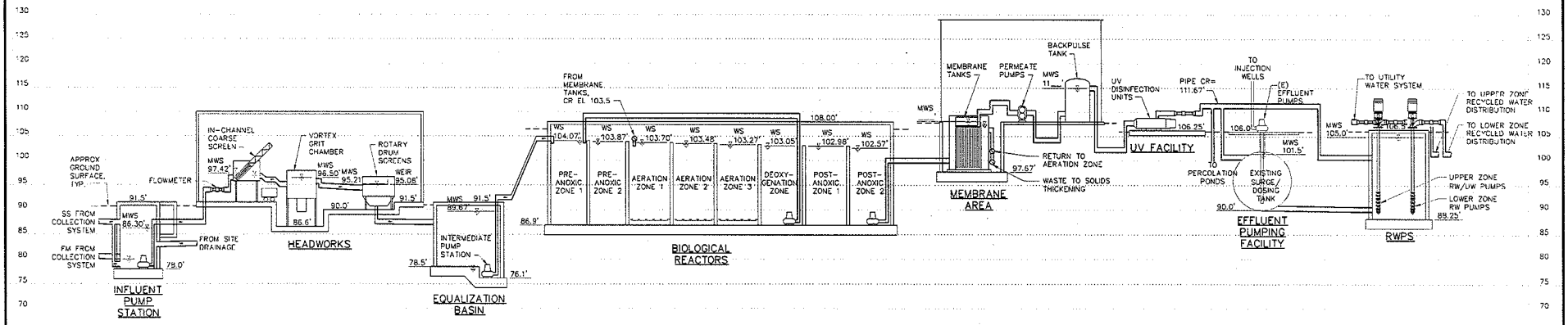

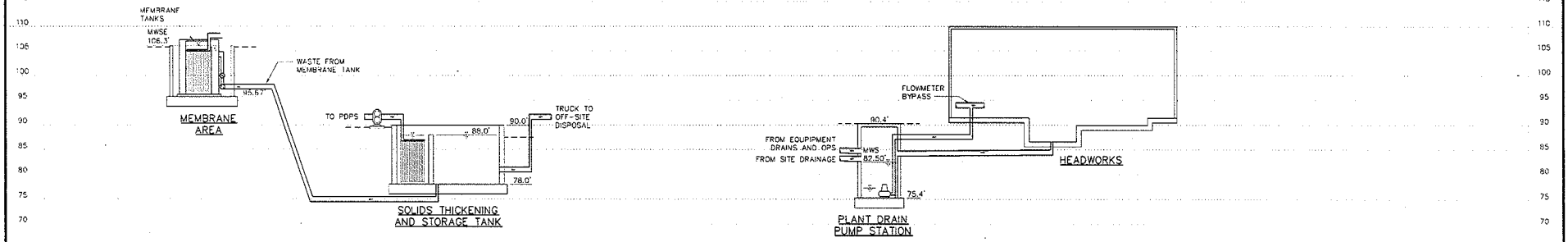

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

WWTP HYDRAULIC PROFILE

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

"VERIFY SCALES" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. Hoefle
DRAWN BY: M. Foyle
CHECKED BY: M.Nakonoto
SCALE: NONE
PROJECT NUMBER: 2036
APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DATE: XX-XX-14

Plan No. G-7

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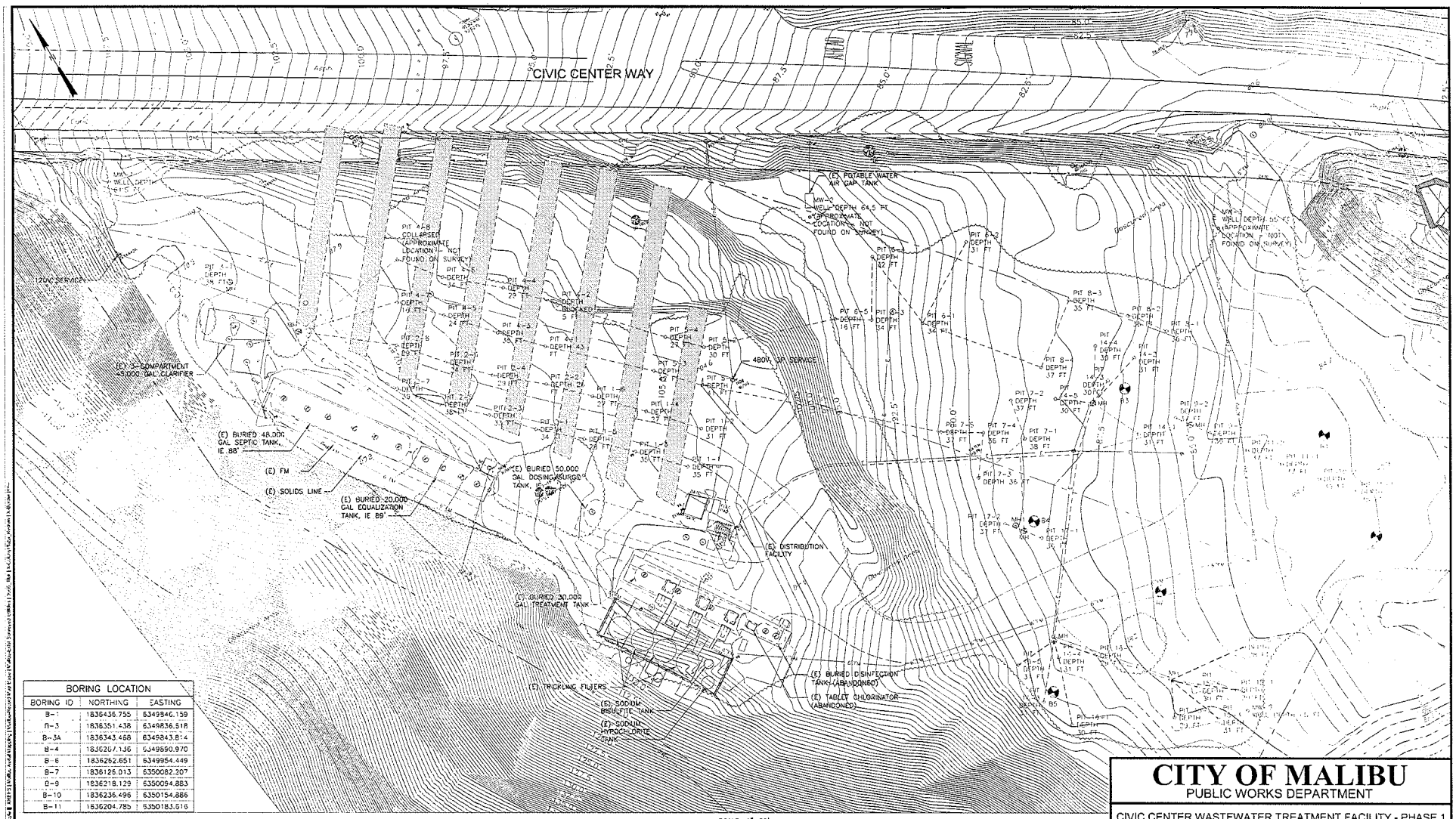

BORING LOCATION		
BORING ID	NORTHING	EASTING
B-1	1836436.755	6349846.159
B-3	1836351.438	6349836.518
B-3A	1836343.468	6349843.814
B-4	1836267.136	6349890.970
B-6	1836262.651	6349954.449
B-7	1836126.013	6350082.307
B-9	1836218.129	6350094.883
B-10	1836236.496	6350154.886
B-11	1836204.785	6350183.016

NOTES:

1. EXACT LOCATION OF BURIED UTILITIES ARE UNKNOWN. CONTRACTOR SHALL FIELD VERIFY LOCATION AND RELOCATE LINES AS NECESSARY FOR CONTINUED OPERATION OF EXISTING FACILITY PRIOR TO CONSTRUCTION OF NEW FACILITIES.

SCALE: 1"=20'

0 20 40 60

SCALE IN FEET

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NEW SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

OVERALL SITE PLAN AND EXISTING CONDITIONS

DESIGNED BY:	DATE	SCALE
M. Hoeft		
DRAWN BY:	DATE	AS SHOWN
M. Foyle		
CHECKED BY:	DATE	PROJECT NUMBER
M.Nakamoto		2036

APPROVED BY: DATE

XX-XX-14

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. G-8

Sheet ____ of XXX Sheets

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LEGEND

- PROPERTY LINE
- 105 CONTOUR LINE
- + 101.3 SPOT ELEVATION
- X FENCE X
- FLOW LINE
- ABANDONED
- TO BE REMOVED
- DEMOLITION
- VEGETATION
- (1) PHOTO POINT WITH DIRECTION (NUMBER CORRESPONDS TO PHOTO NUMBER LOCATED ON FOLLOWING DRAWINGS)

NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS, DIMENSIONS AND PIPE AND EQUIPMENT LOCATIONS.
2. DEMOLITION SHALL BE IN ACCORDANCE WITH SECTION 02050 RECONSTRUCTION AND SEQUENCING AND CONSTRAINTS IN SECTION 01010.
3. FOR PIPELINES TO BE CUT AND CAP, CONTACTOR SHALL INSTALL THRUST RESTRAINT AS NECESSARY TO PREVENT CAPPED PIPELINES FROM DISCONNECTION AND LEAKAGE DURING OPERATION.
4. ALL MATERIALS/ITEMS IDENTIFIED "TO BE REMOVED" AND/OR "REMOVE" SHALL BE DISPOSED OF OFFSITE BY THE CONTRACTOR IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ALL MATERIALS/ITEMS IDENTIFIED TO BE "SALVAGED" AND/OR "SALVAGE" SHALL BE REMOVED AND STORED FOR OWNER TO PICK UP IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
5. TRENCHES FOR DEMOLITION SHALL BE BACKFILLED, COMPACTED AND FINISHED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

DIAL BEFORE YOU DIG 1-800-422-4133
DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NORTHERN AND SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC WATER AND ENVIRONMENT

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

DEMOLITION LEGEND AND NOTES

DESIGNED BY:	DATE	SCALE
M.Hoeft		AS SHOWN
DRAWN BY:	DATE	
M.Foyle		
CHECKED BY:	DATE	PROJECT NUMBER
M.Nakamoto		2036

APPROVED BY: DATE

XX-XX-14

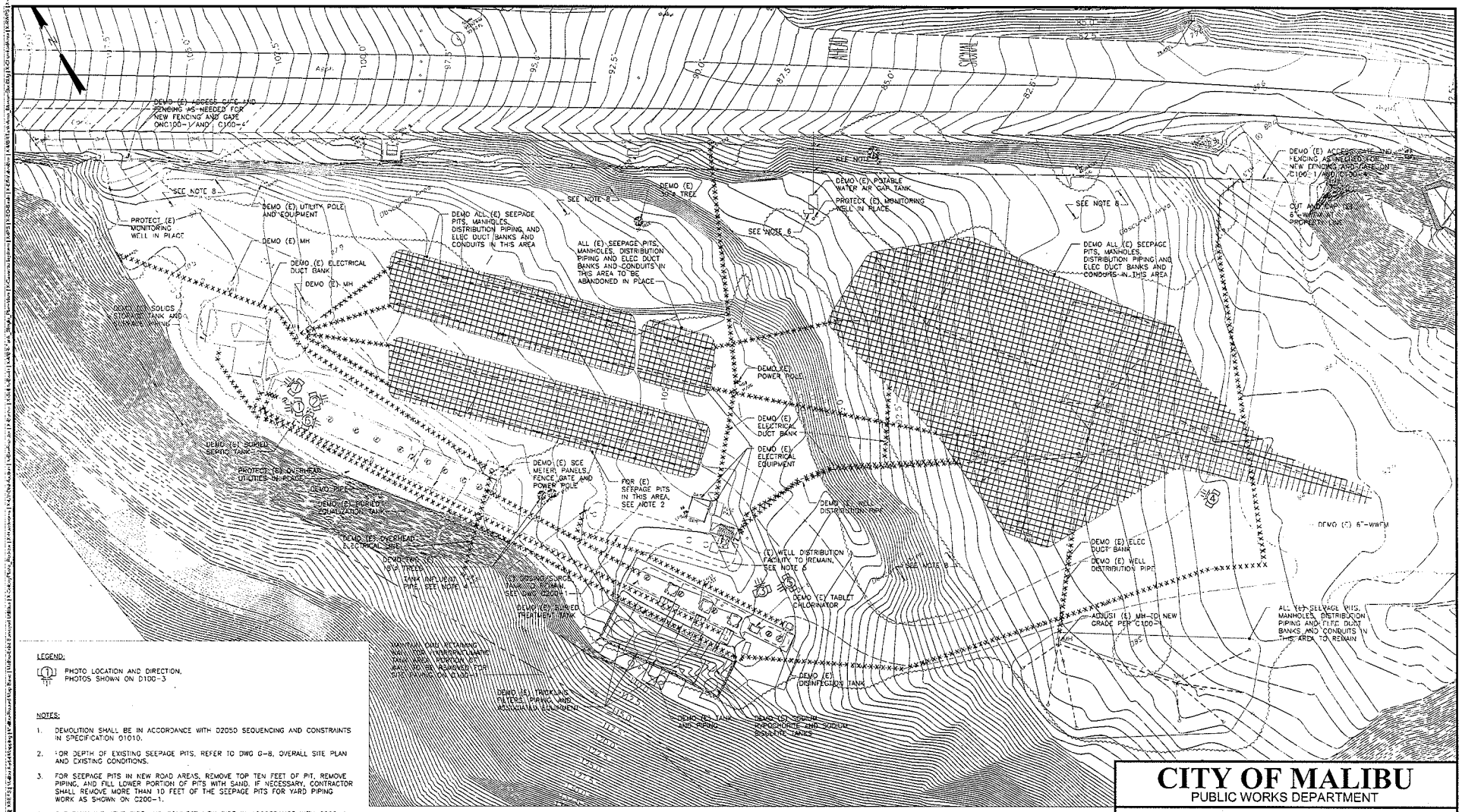
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. D-1

Sheet _____ of XXX Sheets

FILENAME: 2012/2036301 3-31-14 1102am mfoyle B PRC-SEA Architect

Last Saved By: mfoyle 2-28-14 10:21am



PLAN
1" = 20'-0"

SCALE: 1"=20'
0 20 40 60
SCALE IN FEET

LEGEND:

(1) PHOTO LOCATION AND DIRECTION, PHOTOS SHOWN ON D100-3

NOTES:

1. DEMOLITION SHALL BE IN ACCORDANCE WITH D2050 SEQUENCING AND CONSTRAINTS IN SPECIFICATION 01010.
2. FOR DEPTH OF EXISTING SEEPAGE PITS, REFER TO DWG G-8, OVERALL SITE PLAN AND EXISTING CONDITIONS.
3. FOR SEEPAGE PITS IN NEW ROAD AREAS, REMOVE TOP TEN FEET OF PIT, REMOVE PIPING, AND FILL LOWER PORTION OF PITS WITH SAND. IF NECESSARY, CONTRACTOR SHALL REMOVE MORE THAN 10 FEET OF THE SEEPAGE PITS FOR YARD PIPING WORK AS SHOWN ON C200-1.
4. CUT TANK INFLUENT PIPE AND CONNECT NEW PIPE IN ACCORDANCE WITH C200-1.
5. LINES THAT ARE DISCONNECTED FROM SEEPAGE PITS SHALL BE CUT AND CAPPED AT THE SOLENOID VALVE.
6. LOCATION AND EXTENT OF POTABLE WATER LINE ON THE SITE IS UNKNOWN. CONTRACTOR SHALL LOCATE WATER LINES AND PROVIDE DETAILS TO ENGINEER.
7. CUT AND CAP (E) WATER LINE AT PROPERTY LINE IN ACCORDANCE WITH LAWD DISTRICT 29 STANDARDS.
8. EXISTING VEGETATION SHALL BE REMOVED FROM THE SLOPE TO THE FENCELINE AND BETWEEN THE TWO ACCESS GATES.

DIAL BEFORE YOU DIG
DIGALERT
PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NORTHERN AND CENTRAL ORANGE COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

DEMOLITION SITE PLAN

DESIGNED BY:	DATE	SCALE
M. Hoeft		
DRAWN BY:	DATE	AS SHOWN
M.Foyle		
CHECKED BY:	DATE	PROJECT NUMBER
M.Nakamoto		2036

APPROVED BY: DATE
XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. D100-1

Sheet ____ of XXX Sheets

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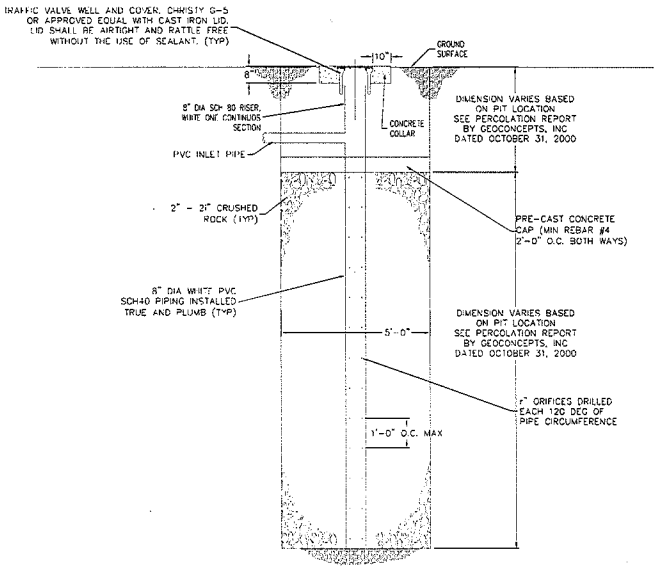
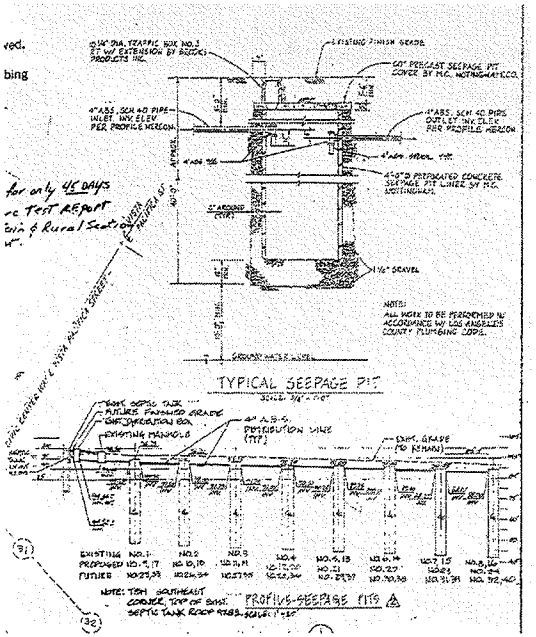


SEEPAGE PIT CONSTRUCTION DETAIL FOR PITS 6-X, 7-X, 8-X, 9-X, 14-X, 15-X, 16-X, AND 17-X SHOWN ON G-8. PORTION OF REFERENCE DRAWING "MALIBU BAY COMPANY, MALIBU COLONY PLAZA, EQUIPMENT DETAILS 4" DATED AUGUST 2003.

DETAIL 1



SEEPAGE PIT CONSTRUCTION DETAIL FOR PITS 1-X, 2-X, 4-X, AND 5-X SHOWN ON G-8. PORTION OF REFERENCE DRAWING "SEPTIC TANKS AND SEEPAGE PIT PLAN AND PROFILE" DATED 9-2-87.

DETAIL 2

NOTES:

1. EXISTING SEEPAGE PIT REFERENCE DRAWINGS. SEE DRAWINGS G-8 AND D100-1.

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

EXISTING WWTP DEMOLITION DETAILS

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. D100-2

Sheet _____ of XXX Sheets

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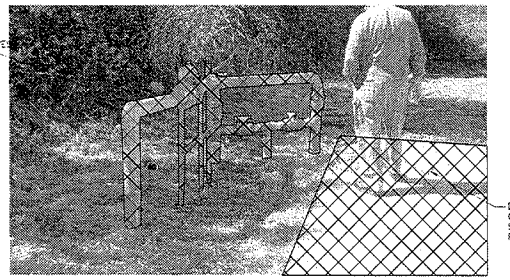

PHOTO 1 D100-1

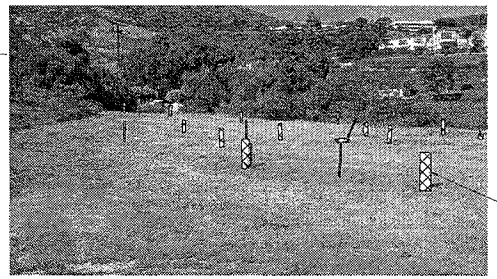

PHOTO 4 D100-1

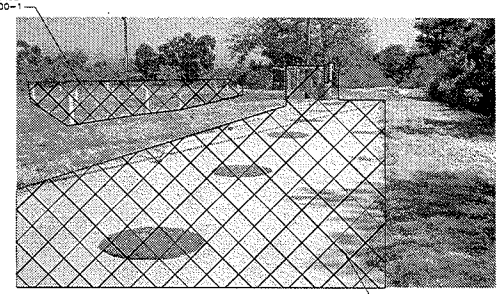

PHOTO 6 D100-1

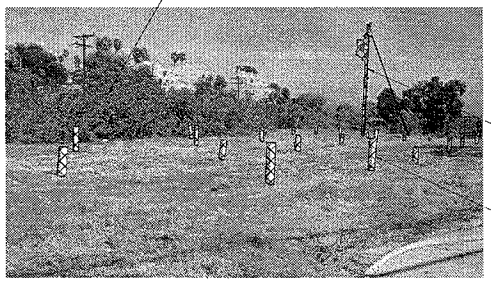

PHOTO 2 D100-1

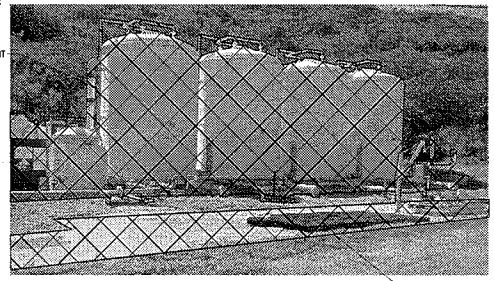

PHOTO 5 D100-1

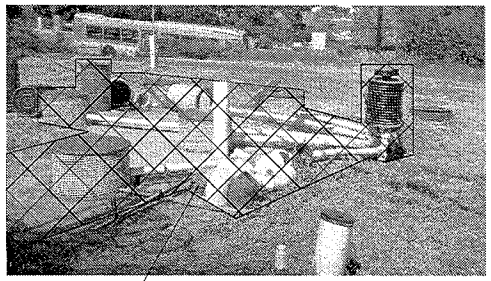

PHOTO 7 D100-1

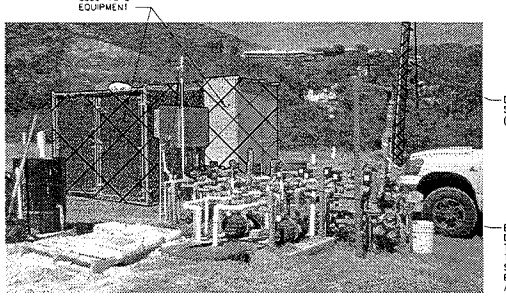

PHOTO 3 D100-1

NOTES:

1. EXISTING SITE VEGETATION MAY VARY FROM PHOTOS AT TIME OF CONSTRUCTION. VARIATIONS IN VEGETATION FROM THAT SHOWN IN PHOTOS SHALL BE REMOVED AT NO ADDITIONAL COST TO OWNER.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

EXISTING WWTP DEMOLITION
DEMOLITION PHOTOS

DESIGNED BY: M.Hoeft	DATE	SCALE: AS SHOWN
DRAWN BY: M.Foxle	DATE	
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER: 2036

APPROVED BY: DATE XX-XX-14

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. D100-3

Sheet ____ of XXX Sheets

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CIVIL LEGEND

B-11	SOIL BORING
103	BENCHMARK/CONTROL POINT
PH10	POTHOLE
	RIGHT OF WAY LINE
105	CONTOUR LINE
	STREET LIGHT (SINGLE ARM)
	STREET LIGHT (DOUBLE ARM)
	STREET SIGN
+ 101.3	SPOT ELEVATION
	SLOPE DIRECTION
X X	FENCE
	FLOW LINE
	EXISTING ABANDONED
	ABANDONED
XXXXX	TO BE REMOVED
	STAGING AREA
	ELECTRICAL AND CONTROL DUCT BANKS
	GRAVEL
	GRAVEL (SECTION)
	CALTRANS CLASS 2 AGGREGATE BASE
	CONCRETE PAVING (PLAN)
	NATIVE FILL OR GROUT IN STRUCTURES
	GRASS OR LANDSCAPING AREA (TOP SOIL)
	EARTH
	AC PAVEMENT
	CATCH BASIN
E C	ELECTRICAL OR CONTROL DUCT BANK, JUNCTION BOX
MH	MANHOLE (MH)
	REMOVAL GUARD POST C142
	100-FT ESHA BUFFER

GENERAL GRADING NOTES:

GC1 ALL SPOT ELEVATIONS, SLOPES AND CONTOURS SHOWN ARE APPROXIMATE LOCATION AND CAN BE SCALED FROM THE DRAWING LOCATIONS. SPOT ELEVATIONS SHOWN JUST OUTSIDE BUILDINGS ARE TO BE LOCATED AT THE EXTERIOR ABOVE GROUND FACE OF WALL. SPOT ELEVATION SLOPES AND CONTOURS LOCATED BY DIMENSIONS, STATIONING OR IN PROFILE ARE TO BE ESTABLISHED AS SHOWN.

GC2 TRANSITIONS BETWEEN SLOPES SHALL BE SMOOTH AND UTILIZE VERTICAL CURVES UNLESS NOTED OTHERWISE.

GC3 FINISHED GRADING SHALL DRAIN TO CATCH BASINS. NO PONDING OR STANDING WATER SHALL BE ALLOWED.

GC4 GRADING AND PAVING DRAWINGS SHOW RIM ELEVATIONS FOR CATCH BASINS AND AREA DRAINS. FOR DRAIN PIPE SIZES AND INVERTS SEE YARD PIPING DRAWINGS.

GC5 RIM ELEVATIONS FOR CATCH BASINS ARE ALONG THE FLOWLINE OF GUTTER.

GC6 TESTS SHALL BE PERFORMED PRIOR TO POURING FOOTING AND SLABS TO EVALUATED THE WEIGHTED PLASTICITY AND THE EXPANSION INDEX OF THE SUPPORTING SOILS, AND FOUNDATION AND SLAB PLANS SHOULD BE REVIEWED BY THE CIVIL OR STRUCTURAL ENGINEER AND REVISED, IF NECESSARY, ACCORDINGLY.

GC7 EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 300 OF THE MOST RECENT APPROVED EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND REGIONAL SUPPLEMENT AMENDMENTS. IN GENERAL, ALL FILLS AND BACKFILLS SHOULD BE COMPACTED TO MINIMUM RELATIVE COMPACTION OF 90 PERCENT WHEN TESTED IN ACCORDANCE WITH ASTM D1557; MOISTURE CONTENTS DURING PLACEMENT SHOULD BE PLACED BETWEEN OPTIMUM MOISTURE CONTENT AND OPTIMUM MOISTURE CONTENT PLUS 4%. FILL SOILS SHOULD BE PLACED IN LOOSE LIFTS NOT THICKER THAN 12 INCHES.

GC8 FILL MATERIAL USED FOR THE PROJECT SHALL BE SELECT FILL AND HAVE A MAXIMUM PARTICLE SIZE OF 3 INCHES AND AN EXPANSION INDEX OF LESS THAN 30. SELECT FILL SHOULD NOT HAVE ANY PERISHABLE, SPONGY, DELETERIOUS, OR OTHERWISE UNSUITABLE MATERIAL.

GC9 ALL TEMPORARY SLOPES EXCAVATED DURING CONSTRUCTION, INCLUDING TRENCHES FOR BURIED PIPES AND OTHER UTILITIES, SHALL COMPLY WITH LOCAL AND CAL-OSHA AND ALL OTHER APPLICABLE SAFETY ORDINANCES.

GC10 EXCAVATION SHORING SHOULD COMPLY WITH OSHA STANDARDS. SHORING DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR. THE TOP OF ALL EXCAVATIONS SHALL BE GRADED TO PREVENT RUNOFF FROM ENTERING THE EXCAVATION.

GC11 THE EXISTING CIVIC CENTER WASTEWATER TREATMENT PLANT SITE INCLUDES HISTORICAL LEACH FIELDS AND EXISTING LEACH PITS (SHOWN ON G-8) THAT SHALL BE PROPERLY ABANDONED BEFORE CONSTRUCTION OF THE NEW FACILITIES. THE ABANDONMENT OPTIONS FOR THE LEACH PITS INCLUDE: 1) REMOVAL OF EXISTING CASING, OVER-DRILLING TO FULL DEPTH, AND BACKFILLING WITH CONTROLLED LOW STRENGTH MATERIAL, ALSO REFERRED TO AS FLOWABLE FILL DELIVERED BY TREMIE TO THE BOTTOM OF THE HOLE, AND/OR 2) GROUTING OF THE EXISTING LEACH PITS OVER THEIR ENTIRE LENGTH. HISTORIC LEACH FIELDS SHALL BE ABANDONED BY REMOVING COMPONENTS (PIPES, TANKS, ETC.), EXCAVATING TO NATIVE MATERIAL, AND BACKFILLING WITH SOIL COMPACTED TO GREATER THAN 90% MODIFIED PROCTOR DENSITY IN GENERAL, AND GREATER THAN 95% MODIFIED PROCTOR DENSITY WITHIN THE FOOTPRINT OF A PLANNED STRUCTURE (E.G. ABOVE-GROUND TANKS, SLAB ON GRADE FOUNDATIONS, ETC.).

GENERAL PAVING NOTES:

GP1 FOR PAVING LOCATIONS SEE GRADING AND PAVING DRAWINGS. FOR ADDITIONAL PAVING SEE ELECTRICAL, MECHANICAL, AND YARD PIPING DRAWINGS FOR UTILITY TRENCHING.

GP2 ALL PAVED AREA SHALL DRAIN TO EXISTING OR NEW CATCH BASIN UNLESS NOTED OTHERWISE.

GP3 WHERE AREAS ARE TO BE REPAVED UTILITY BOXES AND VAULTS SHALL BE PROTECTED IN PLACE. PAVED AREAS SHALL BE GRADED TO DRAIN TO CATCH BASINS UNLESS OTHERWISE NOTED.

GP4 STRIPING SHALL BE IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATION SECTION 84.

GENERAL YARD PIPING NOTES:

GYP1 ALL YARD PIPING SHALL BE AS IDENTIFIED ON YARD PIPING AND MECHANICAL DRAWINGS AND SPECIFICATION SECTION 02500 – PIPE INSTALATION AND 15000 – PIPING GENERAL.

GYP2 NEW ELECTRICAL MANHOLES SHOWN ON ELECTRICAL YARD DRAWINGS ARE SHOWN ON THE YARD PIPING DRAWINGS. THE YARD PIPING AND YARD ELECTRICAL UTILITIES SHALL BE COORDINATED AND SEQUENCED TO MINIMIZE INTERFERENCE DURING CONSTRUCTION. WHERE UTILITIES MUST CROSS UNDER EXISTING OR NEW CONCRETE DUCT BANKS, CONCRETE PIPE, OR OTHER RIGID UTILITIES, UTILITY SUPPORT DETAIL (C248) SHALL BE USED TO FACILITATE INSTALLATION.

GYP3 YARD PIPING SHALL BE INSTALLED WITH MINIMUM 3 FT COVER UNLESS OTHERWISE NOTED.

GYP4 DRAINS, STORM DRAINS, AND ALL GRAVITY LINES SHALL BE INSTALLED WITH MINIMUM OF 0.1% SLOPE TO DRAIN IN THE DIRECTION OF FLOW UNLESS OTHERWISE REQUIRED BY DRAWINGS. WHEN INVERT ELEVATIONS OR CENTERLINE ELEVATIONS ARE SHOWN PIPING SHALL BE INSTALLED AT A EVEN SLOPE BETWEEN THE TWO POINTS.

GYP5 PIPING SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS SHOWN ON THE GC-DRAWINGS. MULTIPLE PIPELINE INSTALLATION IN AN COMMON TRENCH SHALL BE IN ACCORDANCE WITH C244.

STRUCTURE LOCATIONS:

POINT NUMBER	NORTHING	EASTING	LOCATION
51	N 1836472	E 6349826	CIVIC CENTER WAY RETAINING WALL
52	N 1836604	E 6349841	CIVIC CENTER WAY RETAINING WALL
53	N 1836313	E 6350050	CIVIC CENTER WAY RETAINING WALL
54	N 1836445	E 6349842	GENERATOR PAD
55	N 1836431	E 6349865	GENERATOR PAD
56	N 1836391	E 6349848	TRANSFORMER PAD
57	N 1836424	E 6349882	TRANSFORMER PAD
58	N 1836420	E 6349837	CHEMICAL AREA
59	N 1836391	E 6349848	CHEMICAL AREA
510	N 1836391	E 6349848	UPPER AREA ODOR CONTROL BED
511	N 1836366	E 6349805	UPPER AREA ODOR CONTROL BED
512	N 1836357	E 6349865	MEMBRANE REACTORS
513	N 1836337	E 6349899	MEMBRANE REACTORS
514	N 1836331	E 6349913	PHASE 2 BIOREACTORS
515	N 1836250	E 6349890	PHASE 1 BIOREACTORS
516	N 1836286	E 6349860	OPERATIONS BLDG
517	N 1836250	E 6349890	OPERATIONS BLDG
518	N 1836257	E 6349913	UV FACILITY
519	N 1836234	E 6349935	UV FACILITY
520	N 1836237	E 6349895	RECYCLED WATER PS
521	N 1836219	E 6349902	RECYCLED WATER PS
522	N 1836201	E 6349887	HYDROPNEUMATIC TANKS
523	N 1836188	E 6349900	HYDROPNEUMATIC TANKS
524	N 1836142	E 6350075	SOLIDS HANDLING FACILITY
525	N 1836125	E 6350108	SOLIDS HANDLING FACILITY
526	N 1836118	E 6350111	SOLIDS BLOWER
527	N 1836107	E 6350131	SOLIDS BLOWER
528	N 1836133	E 6350084	ACCESS RD RETAINING WALL
529	N 1836140	E 6350074	ACCESS RD RETAINING WALL
530	N 1836159	E 6350060	ACCESS RD RETAINING WALL
531	N 1836198	E 6349938	ACCESS RD RETAINING WALL
532	N 1836219	E 6350007	ACCESS RD RETAINING WALL
533	N 1836234	E 6350030	ACCESS RD RETAINING WALL
534	N 1836192	E 6350009	EQUALIZATION BASIN
535	N 1836176	E 6350038	EQUALIZATION BASIN
536	N 1836237	E 6350038	HEADWORKS
537	N 1836223	E 6350064	HEADWORKS
538	N 1836258	E 6350104	PLANT DRAIN PS
539	N 1836266	E 6350104	PLANT DRAIN PS
540	N 1836262	E 6350111	PLANT DRAIN PS
541	N 1836277	E 6350104	INFLUENT PS
542	N 1836271	E 6350116	INFLUENT PS
543	N 1836302	E 6350095	MH1
544	N 1836359	E 6350015	MH2
545	N 1836359	E 6350015	UPPER AREA ODOR CONTROL FANS
546	N 1836337	E 6349816	UPPER AREA ODOR CONTROL FANS

GENERAL SURVEY NOTES:

CONTROL POINT LIST SEE DRAWINGS G-7, G-8, G-9

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION

BASIS OF COORDINATES

NAD 83 (1991.35 EPOCH)

NGS CONTROL
MALIBU EW9594
N 1835201.779'
E 6349016.800'

STAINLESS STEEL ROD IN MONUMENT WELL 59.0 FEET SOUTHWESTERLY OF THE SOUTHWEST CORNER OF THE MAINTENANCE BUILDING AND 56.0 FEET SOUTHEASTERLY OF THE SOUTHEASTERN ANGLE POINT OF THE BASEBALL FIELD FENCE IN MALIBU BLUFFS STATE BEACH, STAMPED "MALIBU 1992 LS 6172", STAMP IS ON UNDERSIDE OF MONUMENT WELL LID.

NGS CONTROL
P 99 RESET EW4014
N 1837107.330'
E 6385054.838'

BENCHMARK DISK SET IN THIC TOP AND 1.9 FOOT WEST OF THE EAST END OF THE SOUTH CONCRETE RETAINING WALL FOR THE EAST ABUTMENT OF BRIDGE 53-35 OVER TOPANGA CREEK, 35 FEET SOUTH OF THE CENTERLINE OF THE SOUTH LANES OF PACIFIC COAST HIGHWAY, STAMPED "P 99 1933".

BENCHMARK

BM 5395
ELEV 58.645'
COUNTY OF LOS ANGELES DATUM

IN CENTER ISLAND OF PACIFIC COAST HIGHWAY
1,246.71 FEET WEST OF WEBB WAY AND 52.49 FEET SOUTHWEST OF LIGHT STANDARD #2081389E.
MARKED "LAS FLORES A-8 1950".

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT FAST, DIG LATER OR YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING THE SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC WATER AND ENVIRONMENT

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIL LEGENDS, ABBREVIATIONS, AND NOTES

DESIGNED BY: M.Hoeft	DATE	SCALE	AS SHOWN
DRAWN BY: M.Foyle	DATE		
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER	2036

APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. GC-1 Sheet ____ of XXX Sheets

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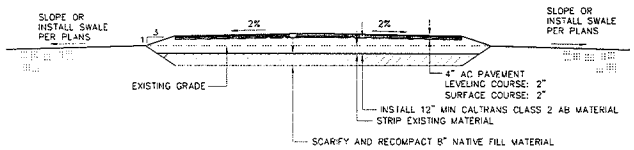
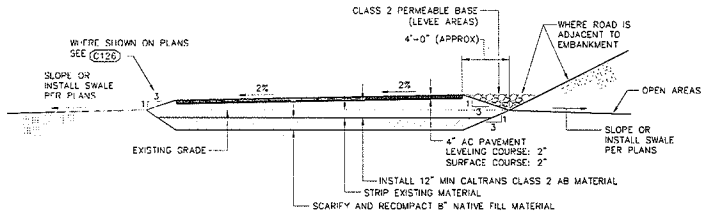


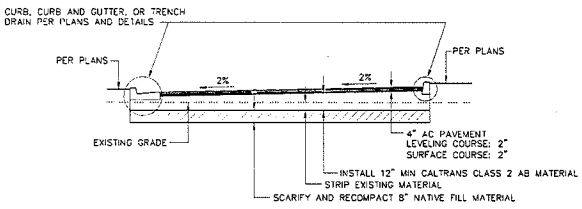
TYPICAL ROAD SECTION – CROWNED – NO CURBS (C102)

NTS



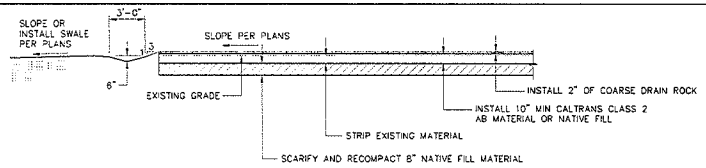
TYPICAL ROAD SECTION – UNIFORM SLOPE – NO CURBS (C103)

NTS



TYPICAL ROAD SECTION – UNIFORM SLOPE – CURBED (C104)

NTS

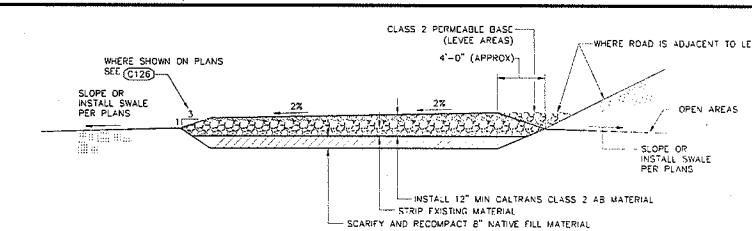


NOTES:

1. FOR CONSTRUCTION STAGING, INSTALL FIRST 8" OF CLASS 2 AB OR NATIVE FILL TOPPED WITH 2" GRAVEL. AFTER CONSTRUCTION TRAILERS, EQUIPMENT AND MATERIALS ARE DEMOBILIZED FROM THIS AREA, REPAIR ALL DAMAGE, THEN SCARIFY AND RECOMPACT TOP 4" OF MATERIAL AND TOP WITH 2" OF ADDITIONAL COARSE DRAIN ROCK. SLOPE PER PLANS.

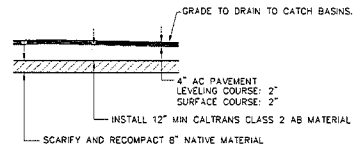
GRAVEL AREA (C105)

NTS



TYPICAL GRAVEL ROAD SECTION (C106)

NTS

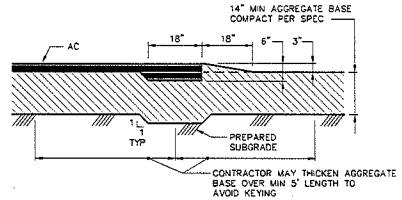


NOTES:

1. EXISTING GRADES SHALL BE CUT OR FILLED AS REQUIRED.
2. EXISTING PAVED AREAS SHALL BE SAW CUT AND PAVEMENT AND UNSUITABLE MATERIAL SHALL BE REMOVED.

TYPICAL PAVED AREA (C107)

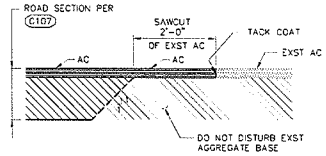
NTS



ELEVATION

AC ROAD/GRAVEL ROAD TRANSITION (C108)

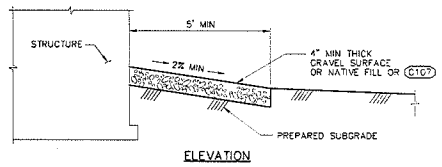
NTS



ELEVATION

NEW/ EXST AC ROAD TRANSITION (C109)

NTS



ELEVATION

NOTES:

1. SUBGRADE BENEATH GRAVEL SHALL BE SLOPED SAME AS SURFACE.

TYPICAL GRADING AT STRUCTURES (C110)

NTS

DIAL BEFORE YOU DIG 800.422.4133 DIGALERT — PLANT SAFE. DIG BEFORE YOU DIG. AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING. SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC WATER AND ENVIRONMENT

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

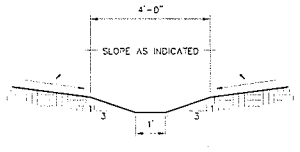
CIVIL STANDARD DETAILS - 1

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:
DRAWN BY: M.Foyle	DATE	AS SHOWN	DATE XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. GC-2

Sheet _____ of XXX Sheets

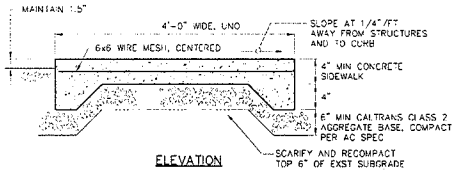
Last Saved By: mfoyle 3-27-14 06:01pm



TYPICAL SWALE SECTION

TYPICAL SWALE ELEVATIONS (C114)

NTS



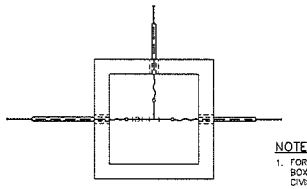
ELEVATION

NOTES:

1. PROVIDE CONTROL JOINTS AT 4' MAX CENTERS.
2. PROVIDE PREMOLDED EXPANSION JOINTS AT 20'-0" MAX ON OC AND AT ALL CORNERS.

SIDEWALK (C122)

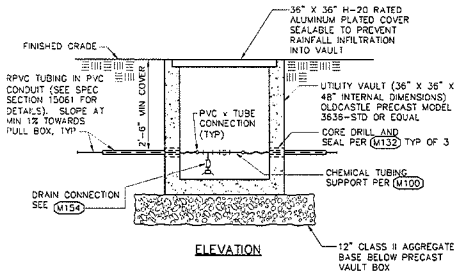
NTS



PLAN

NOTES:

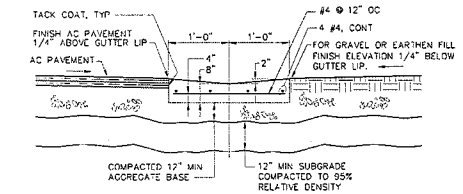
1. FOR ORIENTATION OF BOX AND PIPING SEE CIVIL DRAWINGS.



ELEVATION

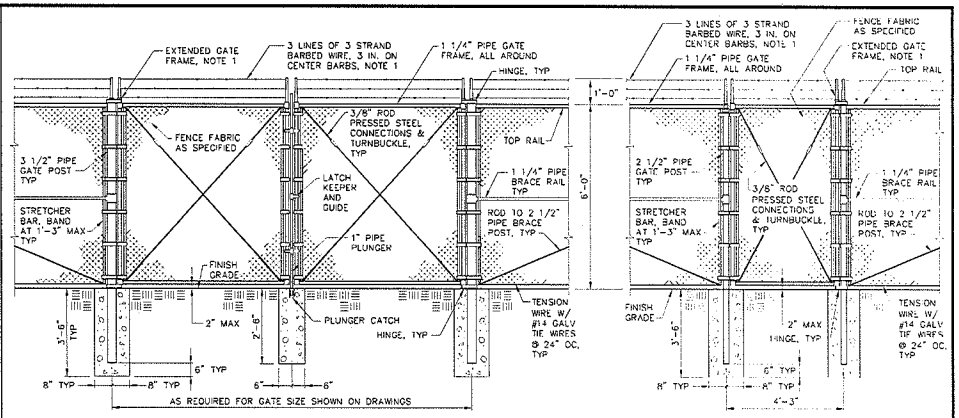
CHEMICAL TUBING PULL BOX (C128)

NTS



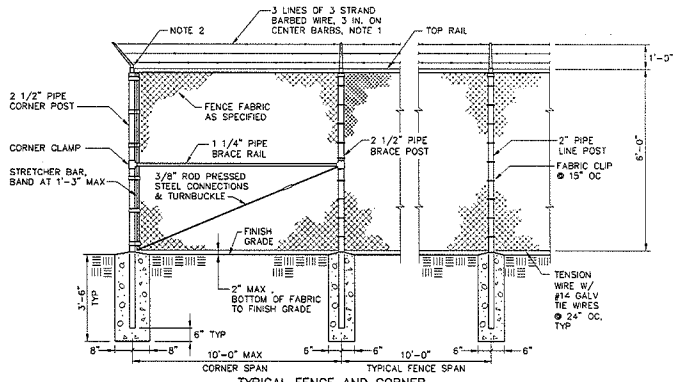
CONCRETE VALLEY GUTTER (C126)

NTS

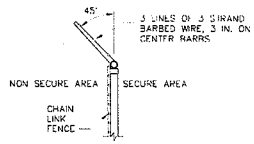


DOUBLE SWING SECURITY GATE

PERSONNEL GATE



TYPICAL FENCE AND CORNER



BARB WIRE ARM

NOTES:

1. PROVIDE EXTENSION ARMS AND EXTENDED GATE FRAME WHEN BARBED WIRE TOP SECTION IS REQUIRED. IF BARBED WIRE IS NOT REQUIRED, PROVIDE POST CAPS.

CHAIN LINK FENCE AND GATES (C140)

NTS

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

"VERIFY SCALES" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIL STANDARD DETAILS - 2

DESIGNED BY: M.Hoeft	DATE	SCALE
DRAWN BY: M.Foyle	DATE	AS SHOWN
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036

APPROVED BY: DATE XX-XX-14

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. GC-3

Sheet _____ of XXX Sheets

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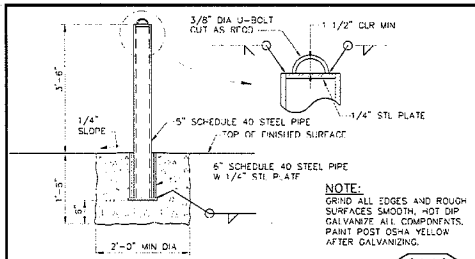
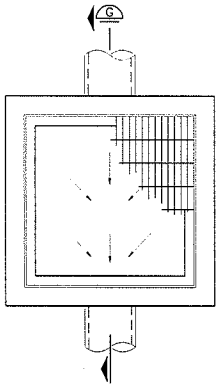


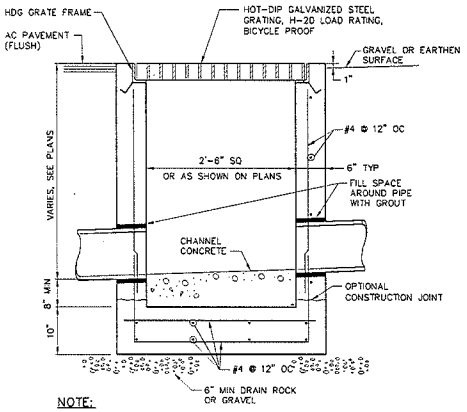
NOTE:
GRIND ALL EDGES AND ROUGH SURFACES SMOOTH, HOT DIP GALVANIZE ALL COMPONENTS. PAINT POST OSHA YELLOW AFTER GALVANIZING.

REMOVABLE GUARD POST (C142)
NTS

CONCRETE CURB OPENING (C143)
NTS



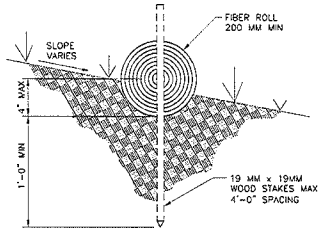
PLAN



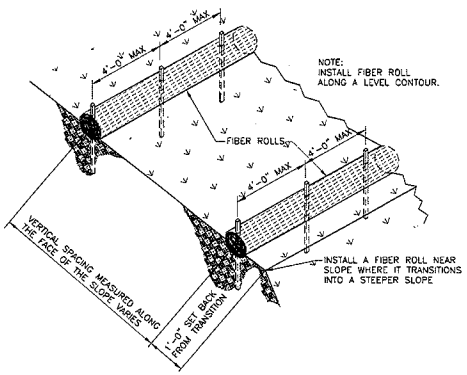
NOTE:
1. PRECAST CATCH BASIN IS ACCEPTABLE ALTERNATIVE WITH ENGINEER APPROVAL. DIMENSION MAY BE MODIFIED FOR STANDARD PRECAST PRODUCTS.
2. PRECAST CATCH BASIN SHALL BE H-20 LOAD.
3. APPLY DETAIL (C184) FOR CATCH BASINS CONNECTED TO SS MANHOLES.

SECTION G
NTS

TYPICAL CATCH BASIN (C182)
NTS



ENTRENCHMENT DETAIL
N.T.S.



TYPICAL FIBER ROLL INSTALLATION
N.T.S.

TYPICAL FIBER ROLL INSTALLATION (C183)
NTS

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PLANS PREPARED BY: RMC water and environment

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CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIL STANDARD DETAILS - 3

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN	XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. GC-4

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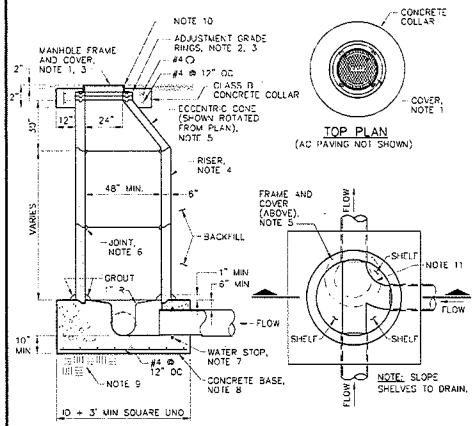
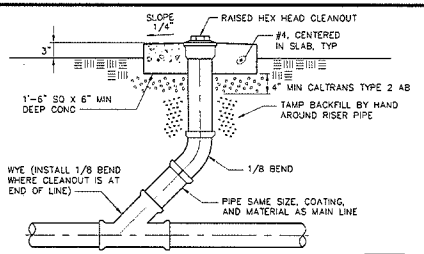


NOTES:

1. MANHOLE FRAME AND COVER SHALL HAVE 30" MIN CLEAR OPENING AND SEALED BLIND PICK HOLE. COVER SHALL BE LABELED "SEWER" AND SHALL BE RATTLE FREE WITHOUT USE OF SEALANT.
2. TOP OF CONE TO TOP OF FRAME SHALL NOT EXCEED 15". ADJUSTMENT GRADE RINGS SHALL BE 3" OR 6" DEEP.
3. GRADE RINGS AND MANHOLE FRAME SHALL BE SEALED AT EACH JOINT WITH BUTYL RUBBER (CONSEAL CS-102 OR EQUAL) AND GROUTED ON THE INSIDE.
4. UNLESS OTHERWISE NOTED, MANHOLE RISERS SHALL BE 48" MIN. INSIDE DIAMETER, PRECAST CONCRETE CONFORMING TO ASTM C478-94 FOR PRECAST REINFORCED MANHOLE SECTIONS.
5. ECCENTRIC CONE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478-94 FOR PRECAST REINFORCED MANHOLE SECTIONS. STRAIGHT SIDE OF CONE SHALL BE POSITIONED OVER MANHOLE OUTLET. CONCENTRIC CONES MAY ONLY BE USED IN SPECIAL CASES WITH WRITTEN CONSENT OF ENGINEER.
6. JOINTS SHALL BE SET WITH PREFORMED MASTIC SEALANT (HENRY COMPANY RAM-NEK, KENT SEAL, OR EQUAL). INSIDE OF JOINTS SHALL BE GROUTED WITH NON-SHRINK GROUT.
7. PROVIDE WATER STOPS FOR ENCASED PIPE.
8. CONCRETE POUR SHALL NOT FALL OVER 6 FEET UNLESS AN "ELEPHANT'S TRUNK" OR AN "ADJUSTABLE PIPE" IS USED. CONCRETE WORK IN FLOW CHANNEL SHALL BE STEEL TROWEL FINISHED. SHELVES SHALL BE BROOM FINISHED. BASE SHALL BE MONOLITHICALLY PLACED. A STEEL IMPRESSION RING SHALL BE USED TO FORM GROOVE FOR FIRST RISER SECTION.
9. WHEN IN GROUNDWATER, PROVIDE 6" DEEP CRUSHED ROCK WRAPPED IN GEOTEXTILE BENEATH MANHOLE BASE. OTHERWISE, SCARIFY AND RECOMPACT NATIVE MATERIAL TO 90%.
10. PROVIDE 1/4" LIP AT NEW PAVEMENT AND NO LIP FOR EXISTING PAVEMENT.
11. ALL DIRECTION CHANGES TO BE SMOOTH WIDE SWEEPS.

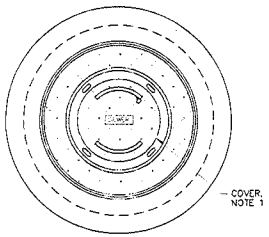
STANDARD SEWER MANHOLE (C200)

NTS

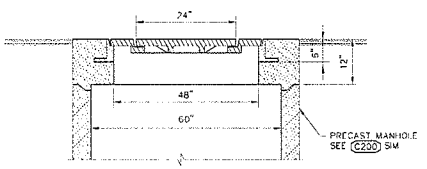


NON-TRAFFIC AREA CLEANOUT (C216)

NTS



TOP PLAN
(AC PAVING NOT SHOWN)



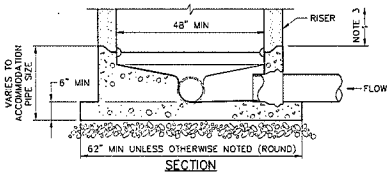
ELEVATION

NOTES:

1. MANHOLE FRAME AND COVER SHALL HAVE 48" MIN CLEAR OPENING AND SEALED BLIND PICK HOLE. COVER SHALL BE LABELED "SEWER" AND SHALL BE RATTLE FREE WITHOUT USE OF SEALANT.

PRECAST MANHOLE SLAB TOP (C201)

NTS



SECTION

NOTES:

1. MANHOLE BASE SHALL BE PLACED ON A MINIMUM 8" CLEAN SAND OR GRAVEL OVER NATIVE MATERIAL THAT IS UNDISTURBED OR COMPACTED TO 95%.
2. SEE DETAIL (C200) FOR DETAILS AND NOTES OF CONSTRUCTION ABOVE PRECAST BASE.

PRECAST SEWER MANHOLE BASE (C202)

NTS

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIL STANDARD DETAILS - 4

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — MARK SHAL DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NW & SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

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NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft	DATE
DRAWN BY: M.Foyle	DATE
CHECKED BY: M.Nakamoto	DATE
SCALE: AS SHOWN	
PROJECT NUMBER: 2036	
Plan No. GC-5	

APPROVED BY: DATE XX-XX-14

ROBERT BRACER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

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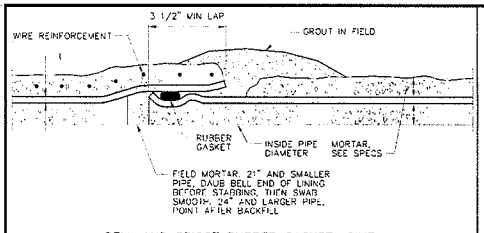
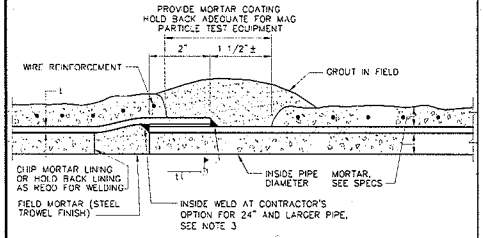
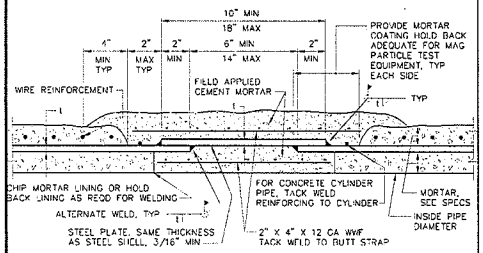


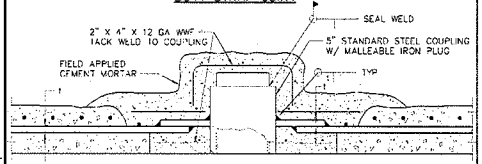
BELL AND SPIGOT RUBBER GASKET JOINT



LAP WELDED SLIP JOINT



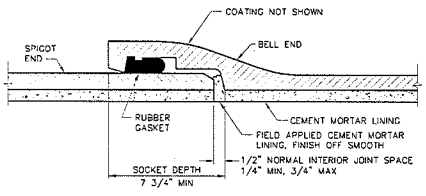
BUTT STRAP JOINT



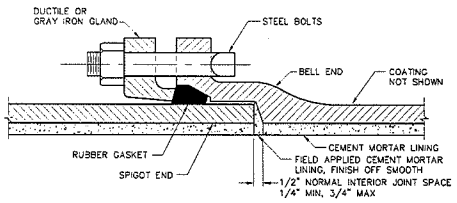
TYPICAL HANDHOLE FOR BUTT STRAP JOINT

NOTES:
1. HANDHOLE REQUIRED ON PIPE SMALLER THAN 24" DIAMETER.
2. PROVIDE ADEQUATE HOLDBACK OF CEMENT MORTAR LINING AND COATING FOR WELDING AND TESTING OF WELDS.
3. WHERE DOUBLE LAP WELD IS SHOWN ON THE DRAWINGS, WELD INSIDE AND OUTSIDE.
4. FIELD WELDS SHALL NOT BE MORTARED UNTIL APPROVED BY OWNER

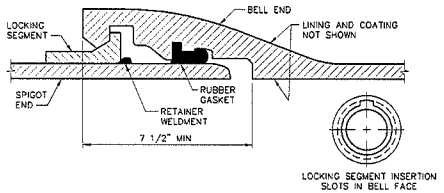
MORTAR LINED & COATED STEEL PIPE (C220)
NTS



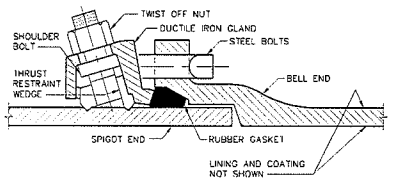
PUSH-ON JOINT



MECHANICAL JOINT



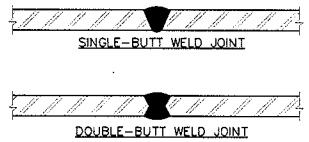
PUSH-ON JOINT W/ THRUST RESTRAINT



MECHANICAL JT W/ THRUST RESTRAINT

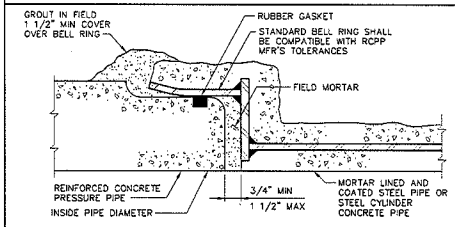
NOTES:
1. FIELD APPLIED COATING AND LINING AT JOINTS SHALL BE APPLIED ONLY AFTER EACH JOINT IS ASSEMBLED AND INSPECTED.

CEMENT MORTAR LINED – POLYETHYLENE ENCAPSULATED DUCTILE IRON PIPE (C221)
NTS



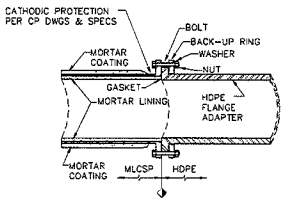
NOTE: BUTT WELDS SHALL BE FULL PENETRATION, TYP.

WELDED STEEL PIPE BUTT WELDS (C222)
NTS



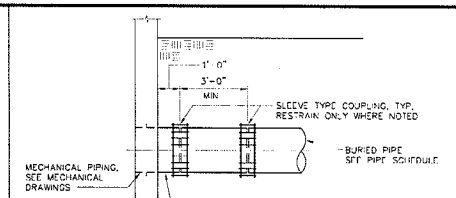
NOTE: SEE (C228) FOR ADAPTER REINFORCED CONCRETE PRESSURE PIPE TO STEEL PIPE.

ADAPTER STEEL PIPE TO RCPP (C224)
NTS

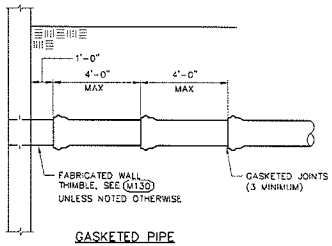


NOTES:
1. CONTRACTOR SHALL ENSURE FLANGE BOLT HOLE PATTERN FOR HDPE AND MLCSP MATCH UP.
2. SEE HDPE SPEC FOR MORE INFORMATION.

STEEL PIPE TO HDPE TRANSITION (C231)
NTS



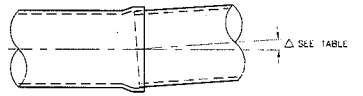
WELDED OR FUSED PIPE



GASKETED PIPE

BURIED PIPE AT STRUCTURE (C234)
NTS

PIPE SIZE (INCHES)	MAXIMUM PULLED ANGLE (DEGREES–MINUTES)	
	PUSH-ON JOINT	MECHANICAL JOINT
6	5–00	7–07
8–12	5–00	5–21
14–16	3–00	3–35
18–20	3–00	3–00
24	3–00	2–23
30	3–00	2–23



PULLED JOINT FOR DUCTILE IRON PIPE (C235)
NTS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — MARK SITE, DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NOR. & SO. CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIL STANDARD DETAILS - 5

DESIGNED BY: M.Hoeft — DATE
DRAWN BY: M.Foyle — DATE
CHECKED BY: M.Nakamoto — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036
APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 — DATE XX-XX-14 — EXP. 12/31/2014

Plan No. GC-6

Sheet ____ of XXX Sheets

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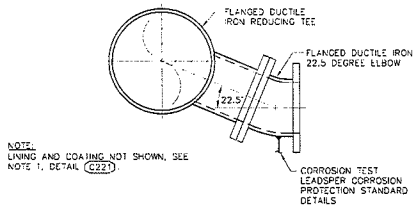
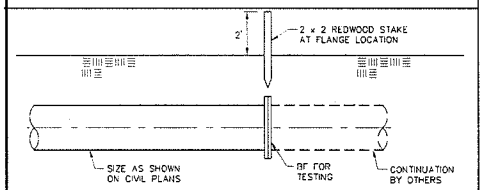


ALTERNATIVE TO TANGENT NOZZLE

DUCTILE IRON BLOWOFF TEE C236

NTS

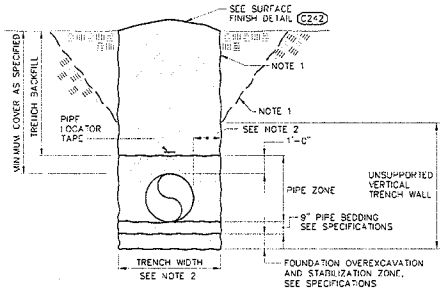


NOTES:

1. CONTRACTOR SHALL PROVIDE SUFFICIENT TEMPORARY THRUST RESTRAINT FOR TESTING.

TYPICAL PIPE END OF CONTRACT DETAIL C238

NTS

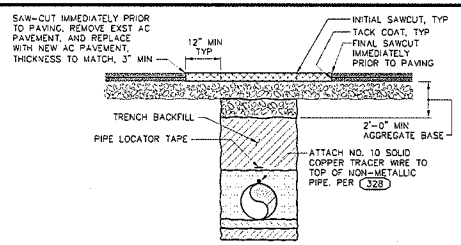


NOTES:

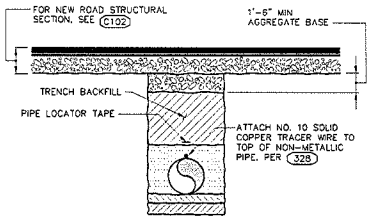
1. ALTERNATE TRENCH SECTIONS SHOWN ARE FOR USE WHERE COMPACT, STABLE SOIL CONDITIONS EXIST. WHERE LARGE ROCKS OR STRUCTURES ARE ENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER AND WIDER THAN THOSE SHOWN. COMBINATION OF SLOPING AND VERTICAL TRENCH WALLS:
   a. TRENCH DEPTHS NOT EXCEEDING 5'-0" SHALL HAVE VERTICAL WALLS IN PIPE ZONE UNLESS NOTED OTHERWISE.
   b. FOR TRENCH DEPTHS EXCEEDING 5'-0" SEE SPECIFICATION 2200.
2. TRENCH WIDTH SHALL BE A MINIMUM OF THE PIPE OD PLUS 24". THE MAXIMUM SHALL BE THE PIPE OD PLUS 36".
3. WHERE WET AND UNSTABLE SOIL IS ENCOUNTERED, SOLID SHEATHING IS REQUIRED FOR ALL VERTICAL TRENCH WALLS.
4. SEE SPECIFICATION 02200 FOR BACKFILL REQUIREMENTS.

PIPE TRENCH SECTION C240

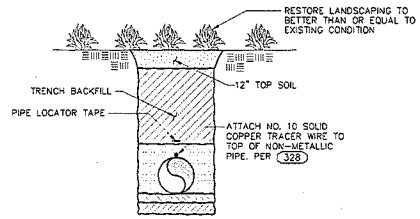
NTS



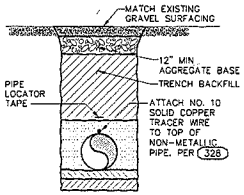
EXISTING AC PAVEMENT



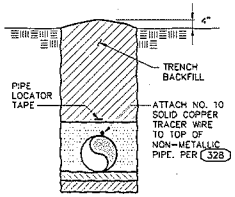
NEW AC PAVEMENT



LANDSCAPED AREAS



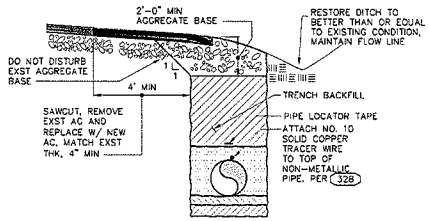
GRAVELLED AREAS



UNSURFACED AREAS

NOTES:

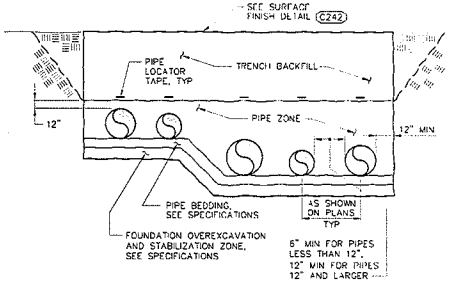
1. VERTICAL WALL TRENCH IS SHOWN. COMBINED SLOPING AND VERTICAL WALL TRENCH IS SIMILAR. ADJUST SURFACE WIDTHS AND SAW-CUT LINES FROM EDGE OF SLOPING WALLS.
2. SEE SPECIFICATIONS FOR BACKFILL MATERIAL AND COMPACTION REQUIREMENTS.
3. PIPE LOCATOR TAPE AND/OR TRACING WIRE SHALL BE BROUGHT TO SURFACE AT STRUCTURE CONNECTIONS. PRECAST CONCRETE HANDHOLE SHALL BE PROVIDED TO TERMINATE LOCATOR TAPE AND/OR TRACING WIRE, PER C328.



EXISTING ADJACENT ROADWAY

TRENCH SURFACE FINISH C242

NTS



NOTES:

1. PIPES LOCATED WITHIN MULTIPLE PIPE TRENCHES SHALL BE DESIGNED FOR POSITIVE PROJECTING EMBANKMENT CONDITION, SEE SPECS.
2. DESIGN OF PIPE SHALL BE CARRIED OUT FOR EACH INSTANCE OF MULTIPLE PIPE TRENCHES, ACCOUNTING FOR THE GEOMETRY OF THE PIPE TRENCH.

MULTIPLE PIPE TRENCH SECTION C244

NTS

DIAL BEFORE YOU DIG 1-800-227-2600 — DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIL STANDARD DETAILS - 6

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E. J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. GC-7 Sheet ____ of XXX Sheets

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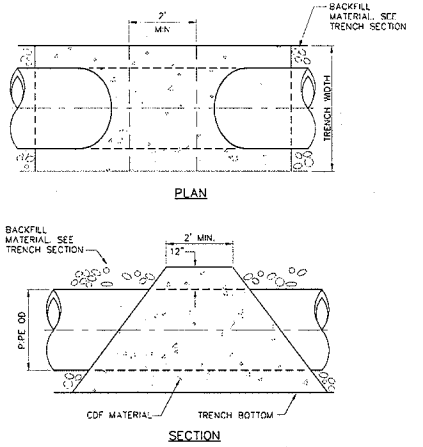
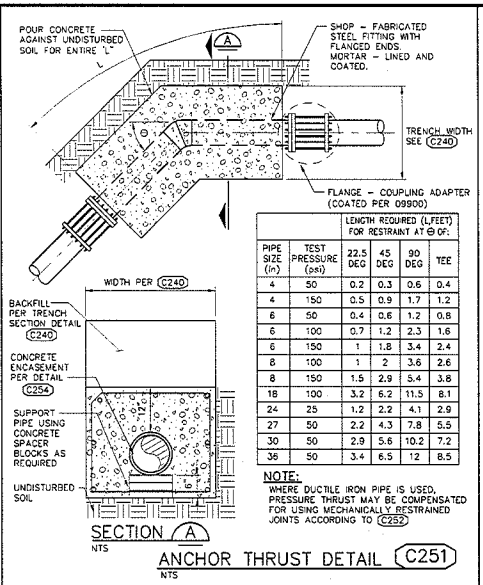


TRENCH PLUG (C246)

NTS

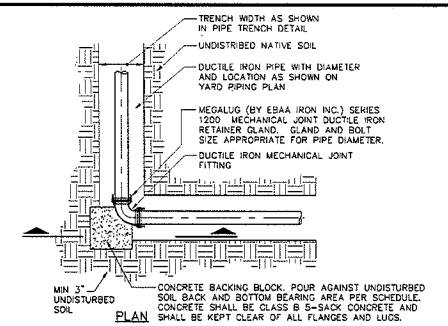


PIPE SIZE (in)	TEST PRESSURE (psi)	LENGTH REQUIRED (L,FEET) FOR RESTRAINT AT ⊖ OF: 22.5 DEG	45 DEG	90 DEG	TEE
4	50	0.2	0.3	0.6	0.4
4	150	0.5	0.9	1.7	1.2
6	50	0.4	0.6	1.2	0.8
6	100	0.7	1.2	2.3	1.6
6	150	1	1.8	3.4	2.4
8	100	1	2	3.6	2.6
8	150	1.5	2.9	5.4	3.8
18	100	3.2	6.2	11.5	8.1
24	25	1.2	2.2	4.1	2.9
27	50	2.2	4.3	7.8	5.5
30	50	2.9	5.6	10.2	7.2
36	50	3.4	6.5	12	8.5

NOTE:
WHERE DUCTILE IRON PIPE IS USED, PRESSURE THRUST MAY BE COMPENSATED FOR USING MECHANICALLY RESTRAINED JOINTS ACCORDING TO (C252)

ANCHOR THRUST DETAIL (C251)

NTS

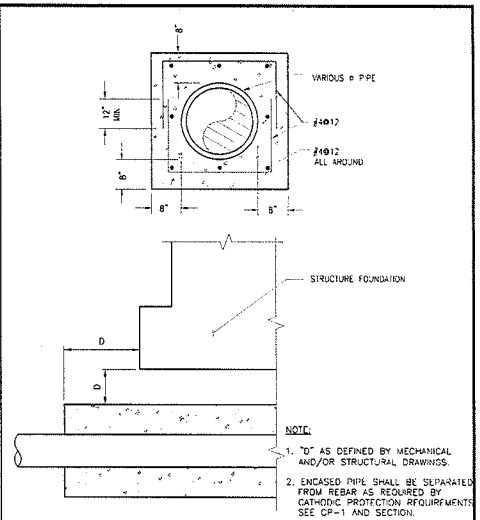


PIPE SIZE	REQUIRED BEARING AREA (SF) TEE	90	45
6	5	8	4
8	8	11	7
10	11	15	10
12	17	24	16
14	22	31	23
16	30	42	30
18	39	54	35

NOTES:
1. BEARING AREA IS BASED ON PRESSURE OF 150 PSI WITH A SOIL BEARING CAPACITY OF 1000 PSF. OTHER CONDITIONS SHALL BE MODIFIED TO HANDLE THE ASSOCIATED THRUST AND SUBMITTED TO THE ENGINEER FOR APPROVAL.

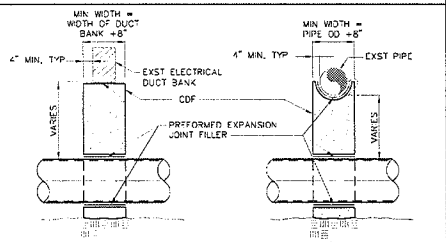
ALTERNATIVE DUCTILE IRON PIPE THRUST RESTRAINT (C252)

NTS



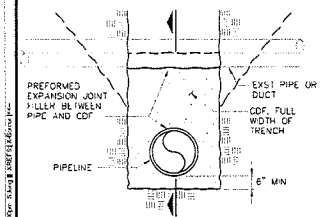
CONCRETE ENCASEMENT (C254)

NTS



SECTION OF DUCT BANK CROSSING

SECTION OF PIPE CROSSING



UTILITY CROSSING ELEVATION

NOTES:
1. SUBMIT SHOP DRAWING ON EXPANSION JOINT FILLER MATERIAL.
2. BACKFILL TO BE BROUGHT UP UNIFORMLY ON BOTH SIDES OF UTILITY SUPPORT.
3. EXISTING PIPE OR DUCT SHALL BE FIRMLY SUPPORTED DURING INSTALLATION OF NEW PIPE AND UTILITY SUPPORT.
4. FORM THE SIDES OF UTILITY SUPPORT WHICH CROSS TRENCH.

UNDERGROUND UTILITY SUPPORT DETAILS (C248)

NTS

DIAL BEFORE YOU DIG (UNDERGROUND) — DIG ALERT — TOLL FREE NUMBER TO CALL AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING THE SOUTHERN CALIFORNIA COUNTIES

0" — VERIFY SCALES — 1" — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIL STANDARD DETAILS - 7

DESIGNED BY: M.Haeft	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. — DATE XX-XX-14
DRAWN BY: M.Foyle	DATE	AS SHOWN	PUBLIC WORKS DIRECTOR/CITY ENGINEER
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	RCE NO. 52102 EXP. 12/31/2014

Plan No. GC-8

Sheet _____ of XXX Sheets

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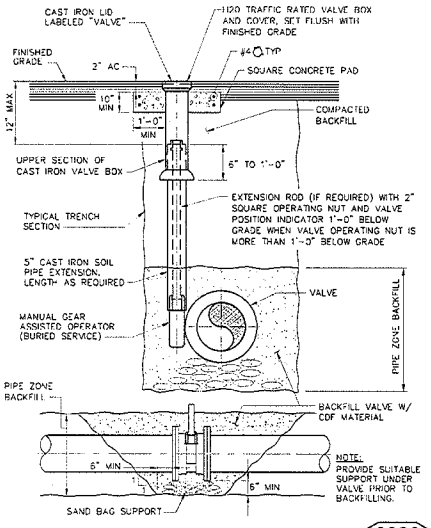
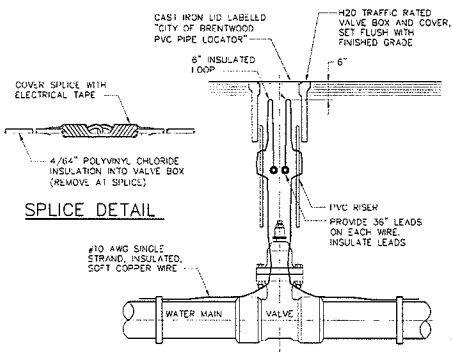


BURIED BUTTERFLY OR PLUG VALVE BOX (C282)
NTS



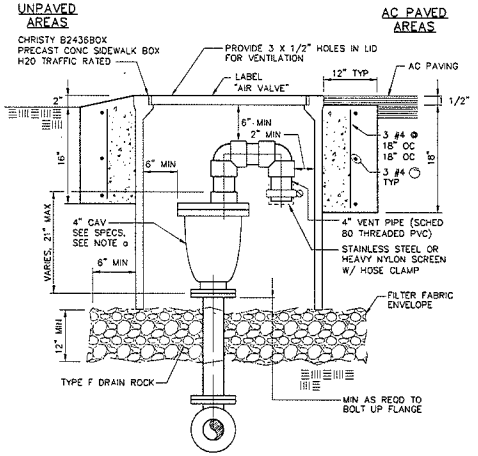
SPLICE DETAIL

NOTES:
1. WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES. UNLESS APPROVED OTHERWISE BY OWNER, A WESTERN UNION SPLICE CONNECTION SHALL BE CONSTRUCTED, PER SPLICE DETAIL.
2. WIRE SHALL BE PLACED ON TOP OF THE WATER MAIN, AND SECURED WITH TAPE WRAPPED COMPLETELY AROUND THE MAIN AT 48" O.C.
3. LOCATING WIRE NOT REQUIRED FOR FIRE HYDRANTS.

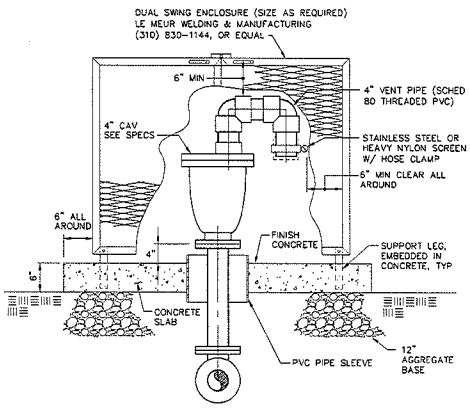
LOCATING WIRE FOR PLASTIC MAINS (C286)
NTS

UNPAVED AREAS

AC PAVED AREAS



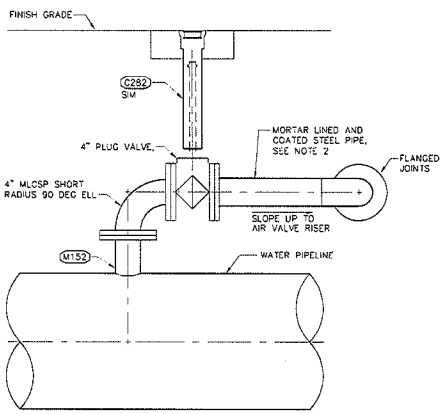
SECTION (BELOW GROUND CAV)



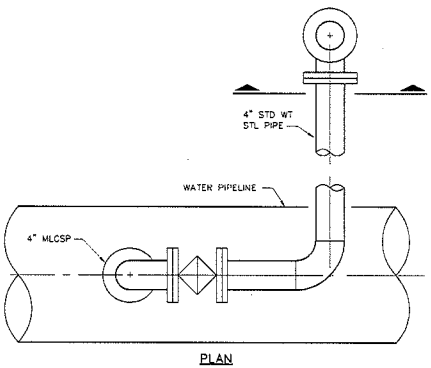
SECTION (ABOVE GROUND CAV)

NOTES:
1. PROVIDE BONDING CABLE ACROSS ALL NON-WELDED JOINTS. CABLE SHALL BE TYPE CP, HMWPE INSULATED PER ASTM D1248, TYPE 1, CLASS C, GRADE 5 AND ICEA NEMA S 61 402.
2. FIELD MORTAR COAT BURIED VALVE AND PIPING TO MATCH MORTAR-COATED MAINLINE PIPE.

CAV NOTES:
a. FIELD COAT CAV W/ 12 MILS DFT AMINE CURED EPOXY, AMERCOAT 395 OR EQUAL. COLOR: PURPLE PANTONE 512. SEE SPECS.

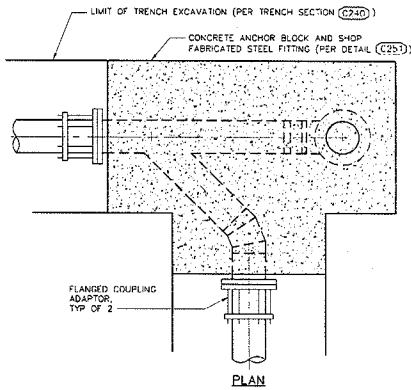


ELEVATION

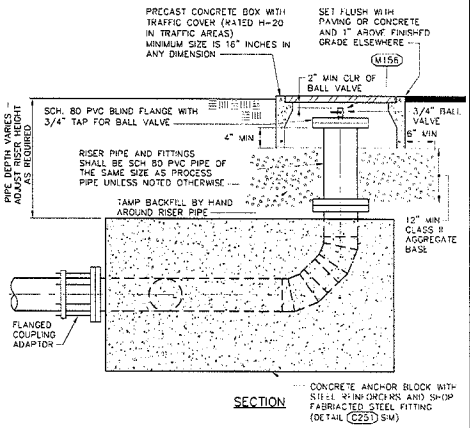


PLAN

COMBINATION AIR VALVE (C300)
NTS



PLAN



SECTION

SLUDGE PIPE AIR RELEASE/CLEANOUT (C301)
NTS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIL STANDARD DETAILS - 8

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT — PLANT DATE: CALL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Haeft — DATE — SCALE: AS SHOWN
DRAWN BY: M.Foyle — DATE — XX-XX-14
CHECKED BY: M.Nakamoto — DATE — PROJECT NUMBER: 2036

APPROVED BY: — DATE
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. GC-9

Sheet ____ of XXX Sheets

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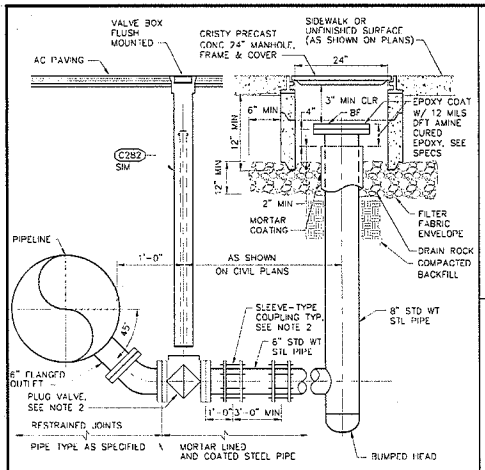
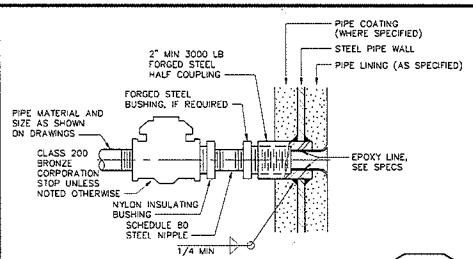


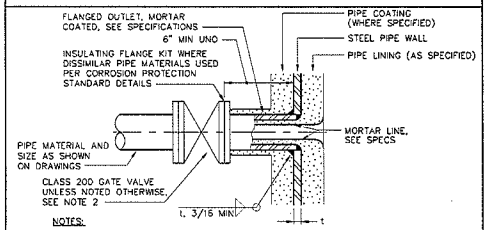
NOTES:

1. PROVIDE BONDING CABLE ACROSS ALL NON-WELDED JOINTS. CABLE SHALL BE TYPE CP, HMWPE INSULATED PER ASTM D1248, TYPE 1, CLASS C, GRADE 5 AND ICEA NEMA S 61 402.
2. FIELD COAT BURIED VALVE AND COUPLINGS TO MATCH COATING ON MAINLINE PIPE.

BLOWOFF DETAIL (C304)
NTS



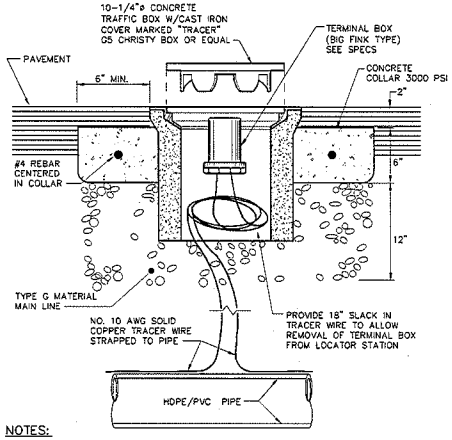
2" AND SMALLER PIPE CONNECTION (C314)
NTS



NOTES:

1. PROVIDE OUTLET REINFORCEMENT AS REQD. SEE SPECS.
2. WHERE BLIND FLG CALLED FOR, COAT PER SPEC SECTION 09800.

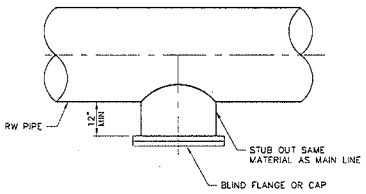
3" AND LARGER PIPE CONNECTION (C316)
NTS



NOTES:

1. FLUSH MOUNTED LOCATOR STATION SHALL BE AT 500' MAXIMUM INTERVALS.

FLUSH MOUNTED LOCATOR STATION CONCRETE BOX (C328)
NTS



STUB OUT FOR FUTURE CONNECTION (C327)
NTS

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT PLAN TO DIG? CALL BEFORE YOU DIG! AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC WATER AND ENVIRONMENT

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

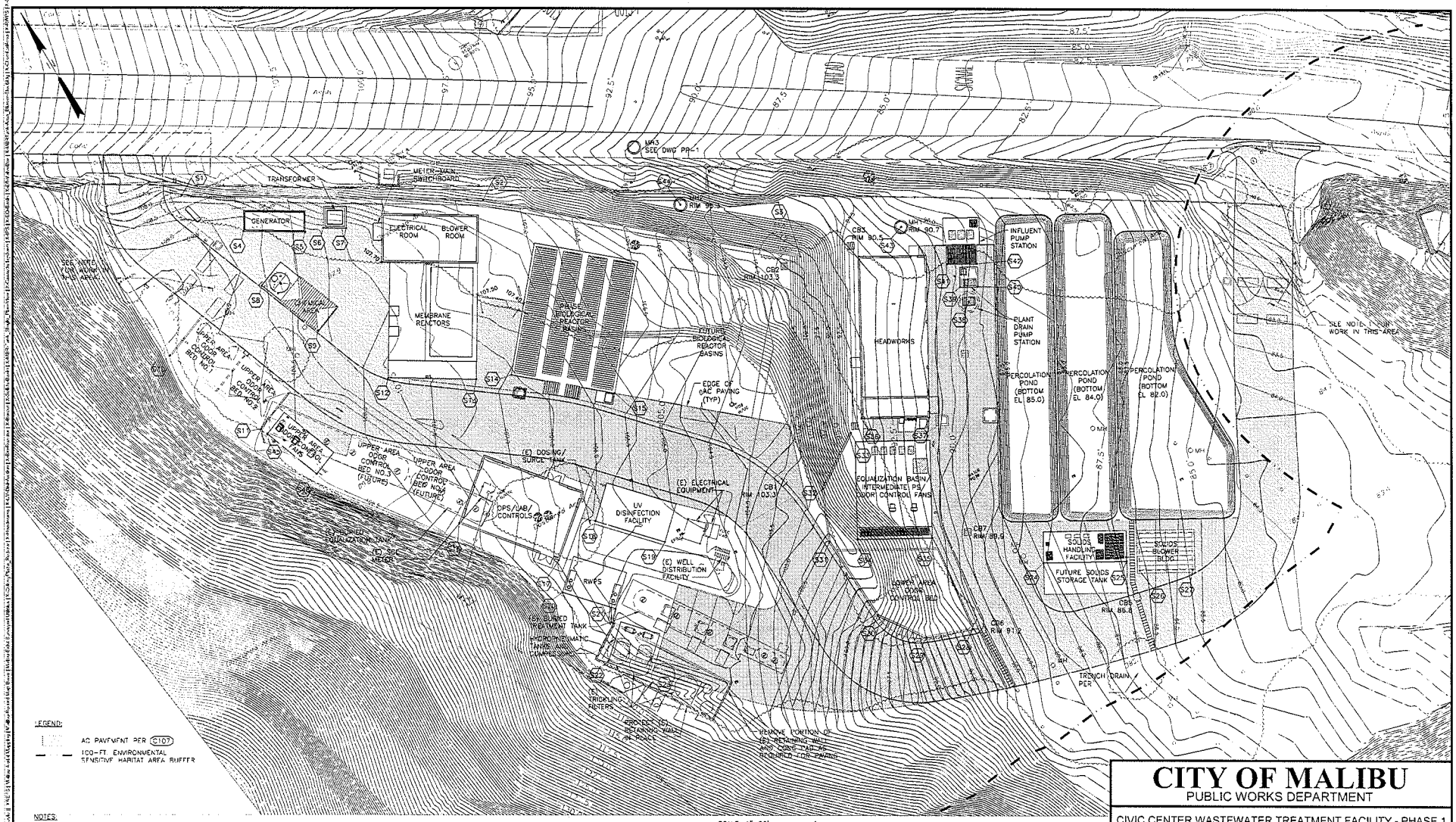
CIVIL STANDARD DETAILS - 9

DESIGNED BY: M.Haeft	DATE	SCALE	APPROVED BY:
DRAWN BY: M.Foyle	DATE	AS SHOWN	DATE XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. GC-10

Sheet _____ of XXX Sheets

Last Saved By: mfoyle 3-27-14 09:01pm



NOTES:

1. CONTRACTOR SHALL PROVIDE GATE CONTROL STATIONS AND GATE ACTUATORS AS SHOWN ON C100-1. CONTRACTOR SHALL MODIFY ARRANGEMENT AS NEED FOR FINISHED SITE CONDITIONS.

PLAN
1" = 20'-0"

SCALE: 1"=20'
0 20 40 60
SCALE IN FEET

DIAL BEFORE YOU DIG
1-800-422-4133
DIG ALERT
811
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SHADED AREAS SHOW APPROXIMATE LOCATIONS

1" _____ 1"
VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

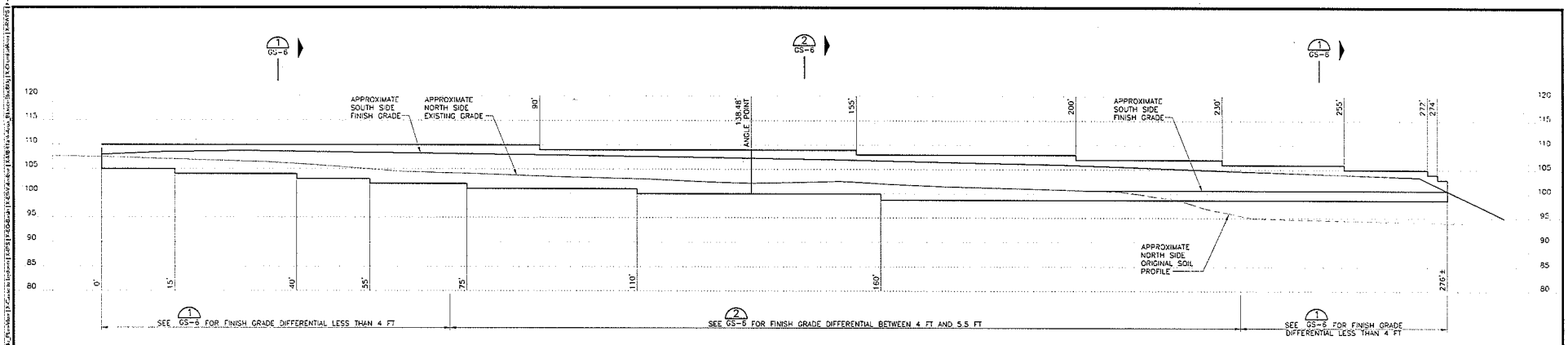
PAVING AND GRADING PLAN

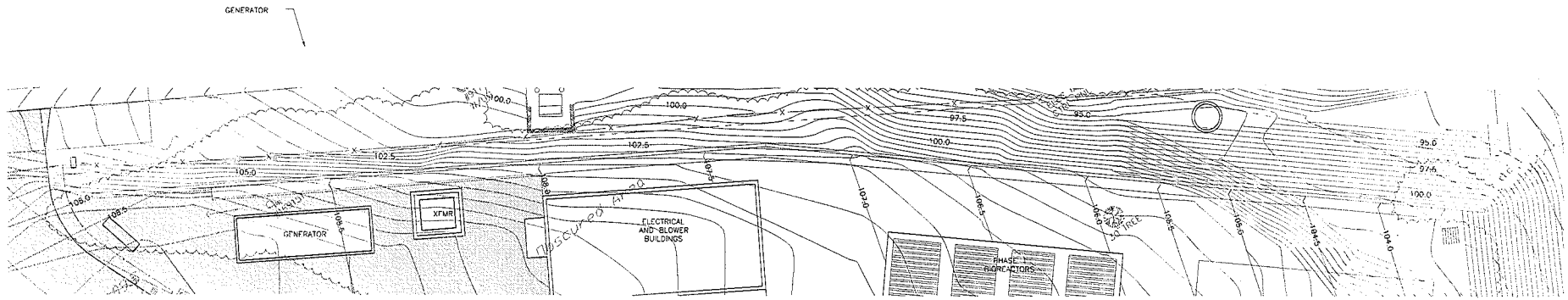
DESIGNED BY:	DATE	SCALE	APPROVED BY:	DATE
M. Hoeft				
DRAWN BY:	DATE	AS SHOWN		XX-XX-14
M.Foyle			ROBERT BRAGER, P.E., J.D.	
CHECKED BY:	DATE	PROJECT NUMBER	PUBLIC WORKS DIRECTOR/CITY ENGINEER	
M.Nakamoto		2036	RCE NO. 52102 EXP. 12/31/2014	

Plan No. C100-1

Sheet _____ of XXX Sheets

Last Saved by: mfoyle 3/31/14 10:08am





PLAN
1" = 10'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

RETAINING WALLS
CIVIC CENTER WAY RETAINING WALL

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

0" — VERIFY SCALES — 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

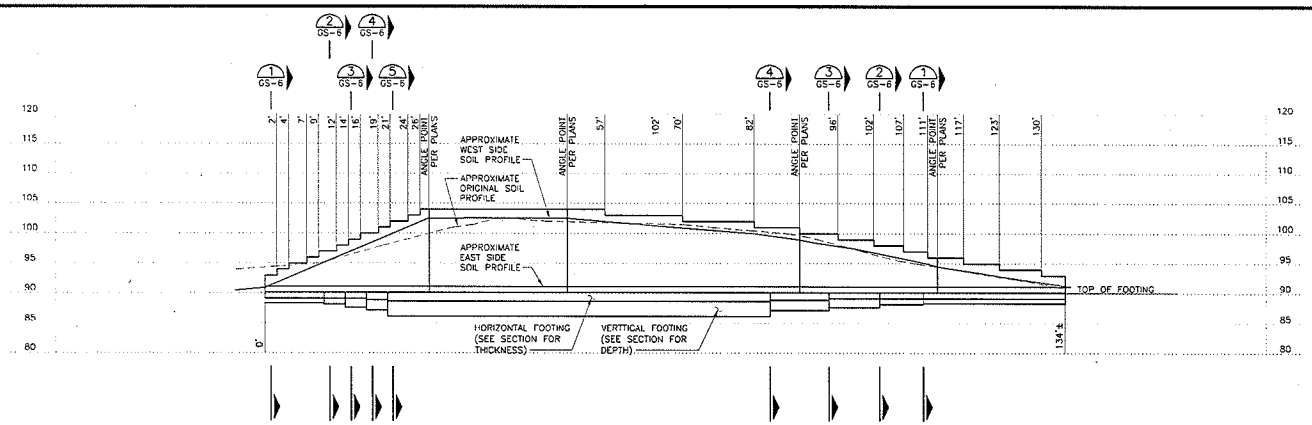
NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

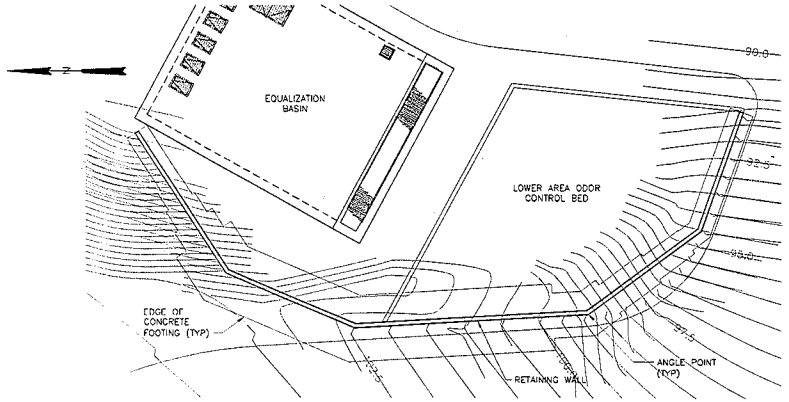
Plan No. C100-2

Sheet _____ of XXX Sheets

Last Saved By: mfoyle 3-31-14 12:01pm



ELEVATION
1" = 10'-0"



PLAN
1" = 10'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

RETAINING WALLS
ACCESS ROAD INCLINE RETAINING WALL

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

"VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY"

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	DATE XX-XX-14
DRAWN BY: M.Foyle	DATE	AS SHOWN		
CHECKED BY: M.Nakamoto	DATE	PROJECT MANAGER 2036		

Plan No. C100-3

Sheet _____ of XXX Sheets

F:\RDWARE 7\STORMCAD\C100-3.SCN 1/31/14 12:39pm mfoyle
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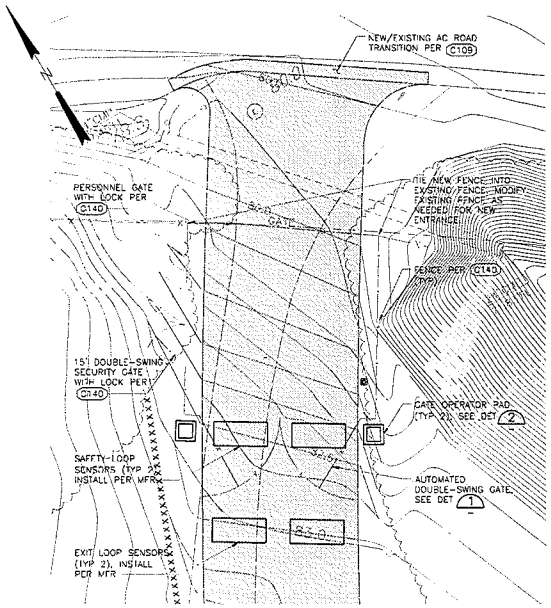
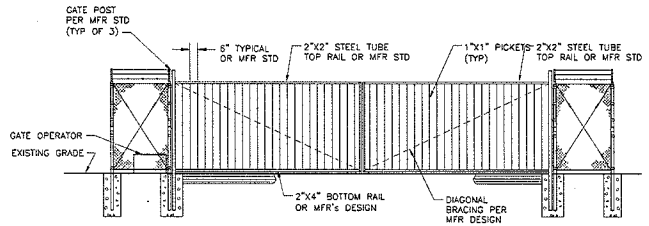


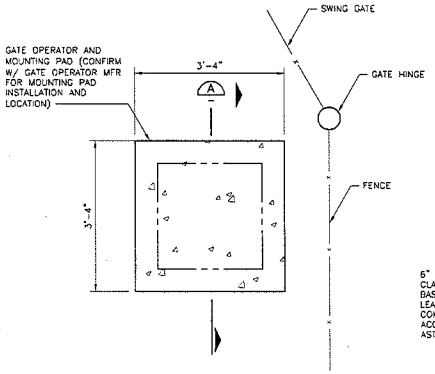
NOTES:

1. THE GATE ARRANGEMENT SHALL ALSO BE APPLIED AT THE OTHER ENTRANCE GATE.

GATE AND FENCE AREA PLAN
1" = 10'-0"



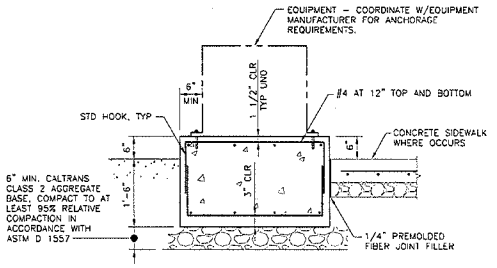
AUTOMATED GATE DETAIL 1
NOT TO SCALE



GATE OPERATOR PAD DETAIL 2
3/4"=1'-0"

NOTES:

1. THE EXISTING GATE SHALL BE MAINTAINED FOR SECURITY DURING EXTRANCE/EXIT AREA CONSTRUCTION. CONTRACTOR SHALL ERECT TEMPORARY 6 FT HIGH FENCING WITH TEMPORARY ENTRANCE/EXIT GATE THAT CAN BE LOCKED AS NEEDED TO SECURE THE PLANT SITE DURING CONSTRUCTION OF THE NEW ENTRANCE/EXIT GATE.



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

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING

"VERIFY SCALES" — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

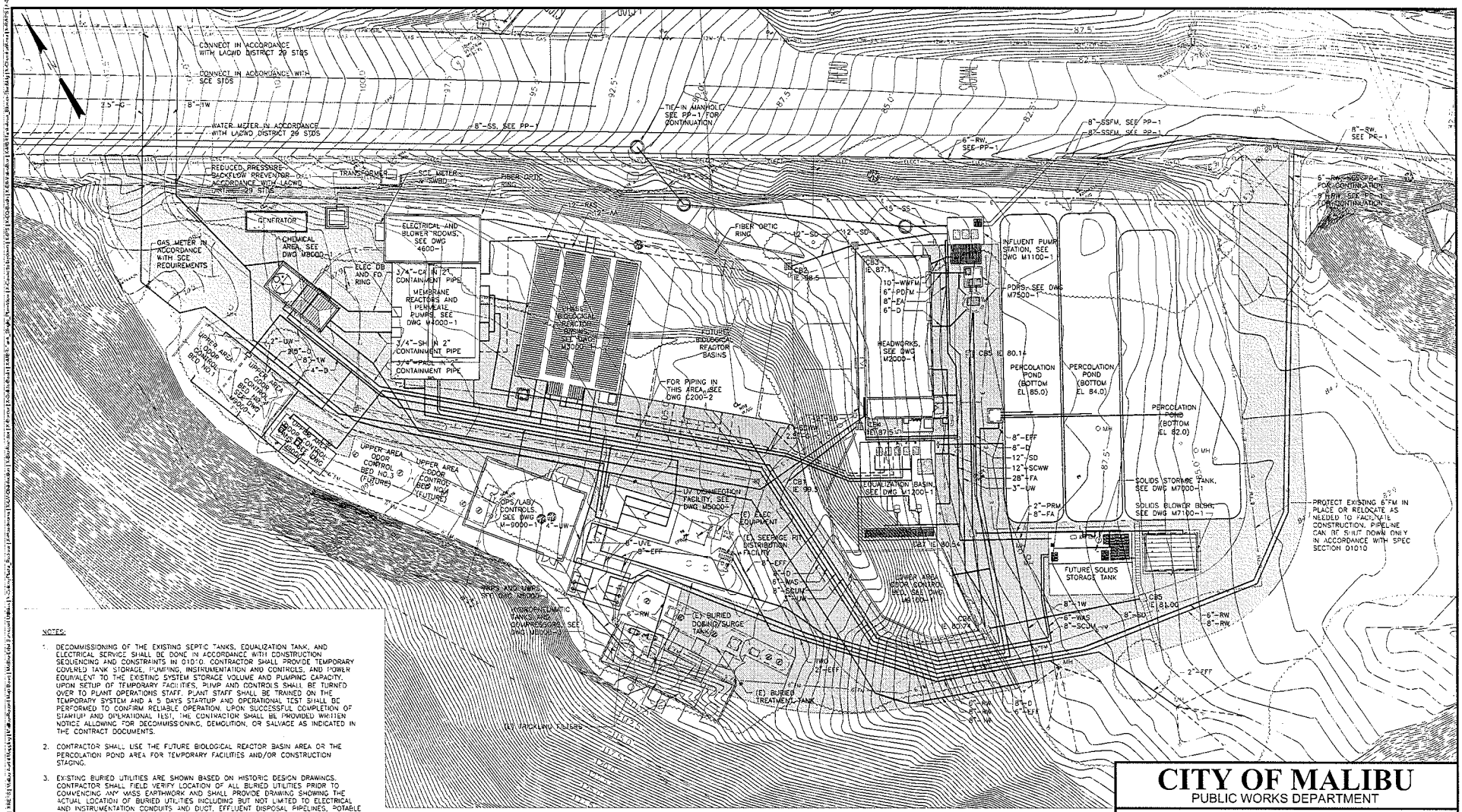
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SITE DETAILS

DESIGNED BY: M. Hoeft	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN	XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT MANAGER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. C100-4 Sheet ____ of XXX Sheets

Last Saved By: mfoyle 3-31-14 10:27am



PLAN
1" = 20'-0"

SCALE: 1"=20'
0 20 40 60
SCALE IN FEET

NOTES:

1. DECOMMISSIONING OF THE EXISTING SEPTIC TANKS, EQUALIZATION TANK, AND ELECTRICAL SERVICE SHALL BE DONE IN ACCORDANCE WITH CONSTRUCTION SEQUENCING AND CONSTRAINTS IN 01010. CONTRACTOR SHALL PROVIDE TEMPORARY COVERED TANK STORAGE, PUMPING, INSTRUMENTATION AND CONTROLS, AND POWER EQUIVALENT TO THE EXISTING SYSTEM STORAGE VOLUME AND PUMPING CAPACITY. UPON SETUP OF TEMPORARY FACILITIES, PUMP AND CONTROLS SHALL BE TURNED OVER TO PLANT OPERATIONS STAFF. PLANT STAFF SHALL BE TRAINED ON THE TEMPORARY SYSTEM AND A 5 DAYS STARTUP AND OPERATIONAL TEST SHALL BE PERFORMED TO CONFIRM RELIABLE OPERATION. UPON SUCCESSFUL COMPLETION OF STARTUP AND OPERATIONAL TEST, THE CONTRACTOR SHALL BE PROVIDED WRITTEN NOTICE ALLOWING FOR DECOMMISSIONING, DEMOLITION, OR SALVAGE AS INDICATED IN THE CONTRACT DOCUMENTS.
2. CONTRACTOR SHALL USE THE FUTURE BIOLOGICAL REACTOR BASIN AREA OR THE PERCOLATION POND AREA FOR TEMPORARY FACILITIES AND/OR CONSTRUCTION STAGING.
3. EXISTING BURIED UTILITIES ARE SHOWN BASED ON HISTORIC DESIGN DRAWINGS. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL BURIED UTILITIES PRIOR TO COMMENCING ANY MASS EARTHWORK AND SHALL PROVIDE DRAWING SHOWING THE ACTUAL LOCATION OF BURIED UTILITIES INCLUDING BUT NOT LIMITED TO ELECTRICAL AND INSTRUMENTATION CONDUITS AND DUCT, EFFLUENT DISPOSAL PIPELINES, POTABLE WATER LINES, TELECOMMUNICATIONS, ETC.
4. 1W PIPING AND FIRE HYDRANTS SHALL BE IN ACCORDANCE WITH LACWD DISTRICT 29 STANDARDS. CONTRACTOR SHALL COORDINATE WITH DISTRICT 29 ON NEW SERVICE CONNECTION.

DIAL BEFORE YOU DIG
UNDERGROUND SERVICE ALERT
DIGALERT
IN WRITING, CALL BEFORE YOU DIG
ALL EXCAVATORS MUST NOTIFY DIGALERT BEFORE EXCAVATING
SAN DIEGO AND SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

YARD PIPING PLAN

DESIGNED BY:	DATE	SCALE
M. Hoeft		
DRAWN BY:	DATE	AS SHOWN
M.Foyle		
CHECKED BY:	DATE	PROJECT NUMBER
M.Nakamoto		2036

APPROVED BY: DATE

XX-XX-14

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. C200-1

Sheet _____ of XXX Sheets

FILENAME: N:\ENGR\C200-1 YARD PIPING PLAN.dwg
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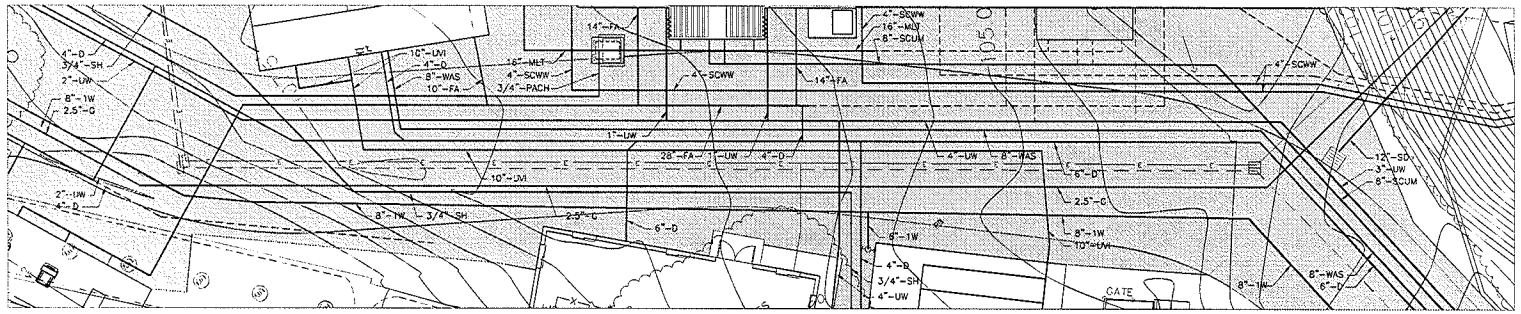


PLAN
1" = 10'-0"

SCALE: 1"=10'
0 10 20 30
SCALE IN FEET

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

YARD PIPING PARTIAL PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE! CALL BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NEW SOUTHWEST CALIFORNIA COUNTIES

1" _____ 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

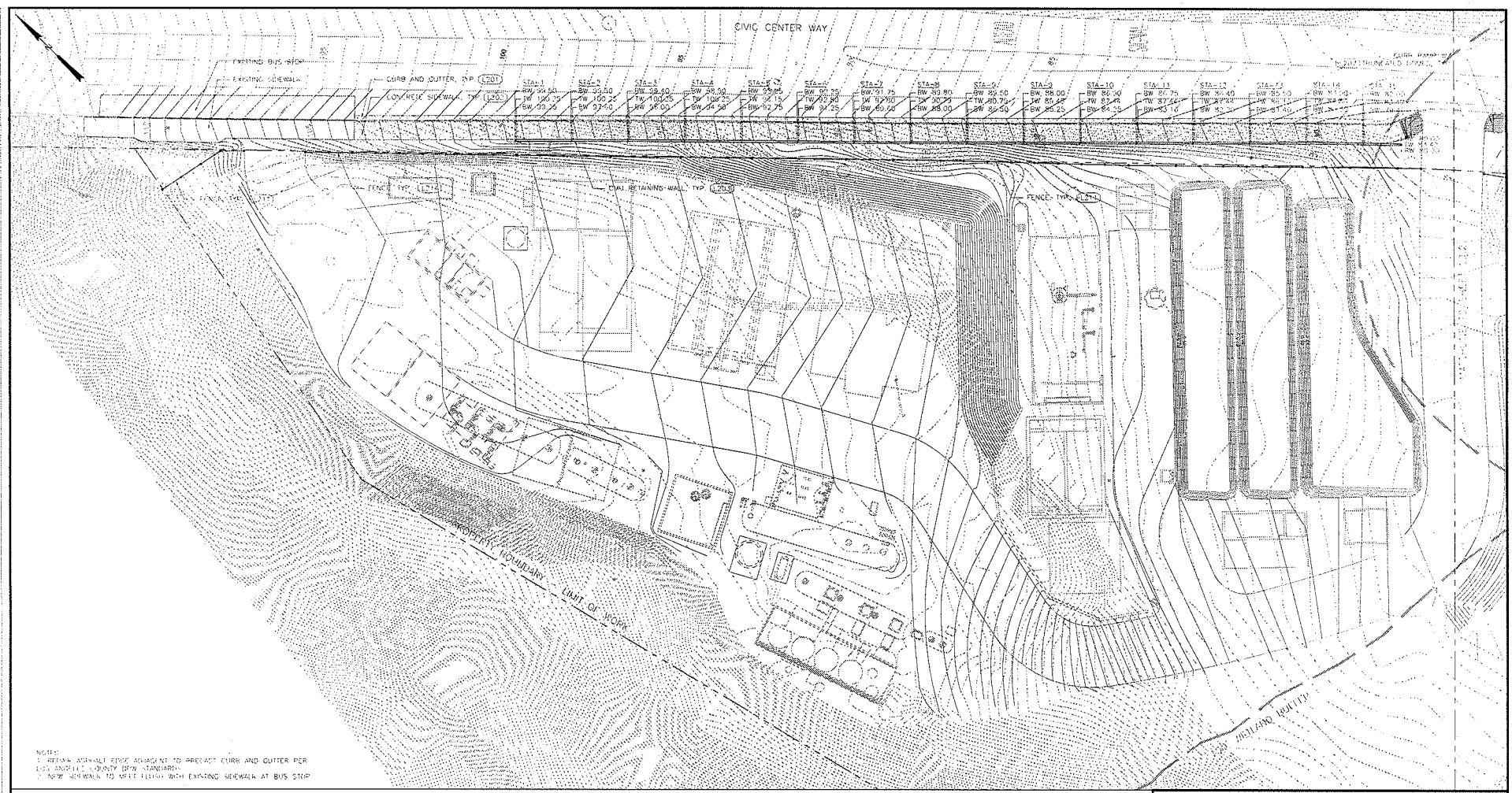
NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. C200-2

Sheet _____ of XXX Sheets

Last Saved By: mfoyle 3-31-14 10:26am



SCALE: 1"=20'

0 20 40 60

SCALE IN FEET

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LANDSCAPE PAVING AND GRADING PLAN - 1 OF 2

DIAL BEFORE YOU DIG
1-800-227-2600
DIGALERT

— VERIFY SCALES —
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC Water and Environment
Rhaa

95% Submittal Not for Construction

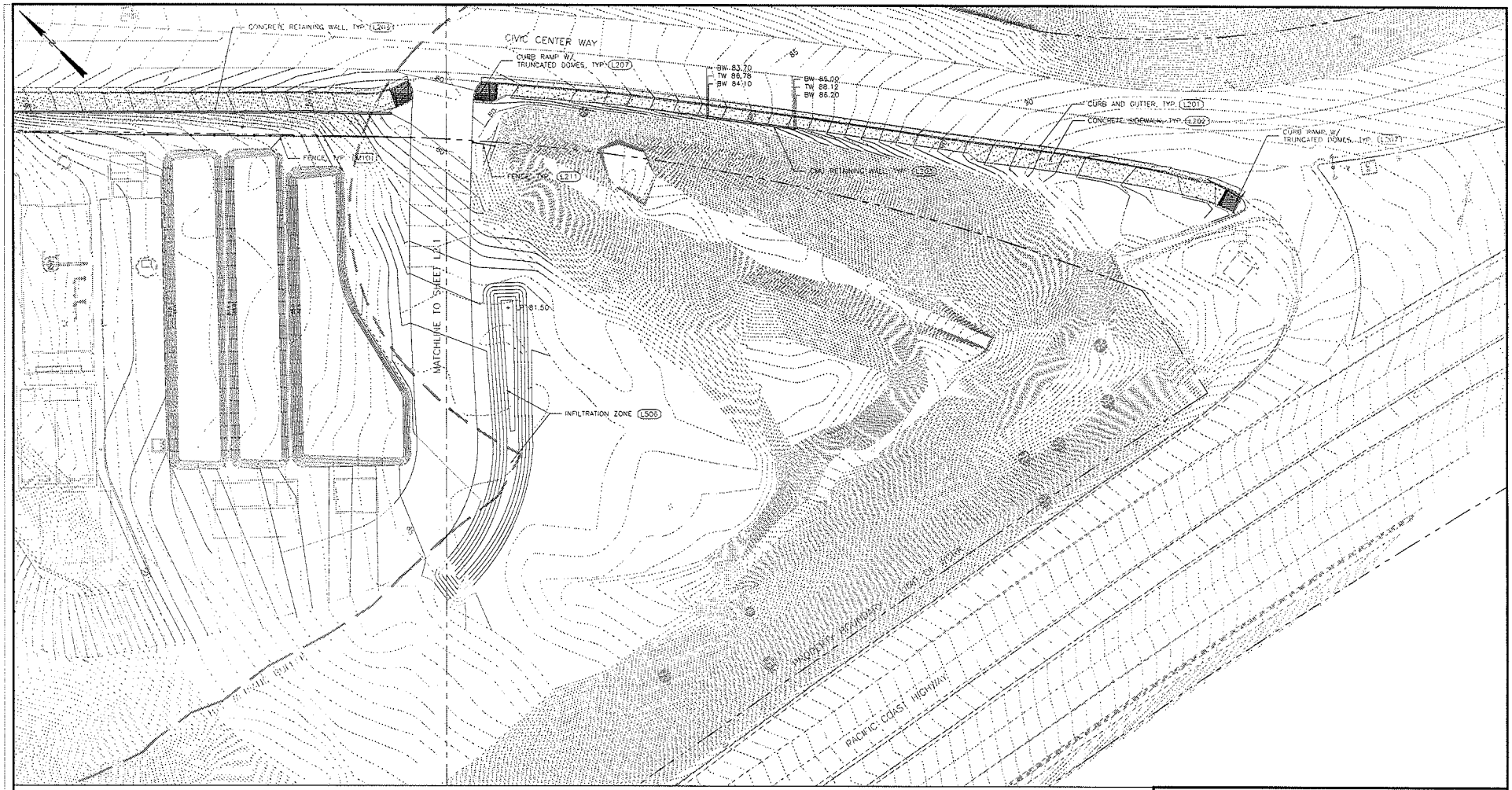
NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: BL	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: BD	DATE	AS SHOWN		XX-XX-14
CHECKED BY: BL	DATE	PROJECT NUMBER 2036		

Plan No. L200-1

Sheet _____ of XXX Sheets

Last Saved By: Brett 3-27-14 10:31am



SCALE: 1"=20'

0 20 40 60

SCALE IN FEET

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LANDSCAPE PAVING AND GRADING PLAN - 2 OF 2

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

IF THIS SCALE BAR IS ONE INCH LONG ON FULL SIZE DRAWING, IT IS NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment; rhaa

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: BL DATE

DRAWN BY: BD DATE

CHECKED BY: BL DATE

SCALE: AS SHOWN

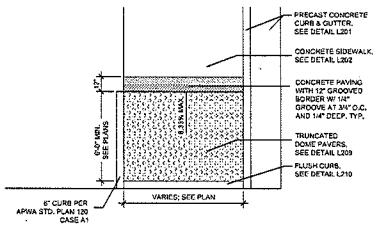
PROJECT NUMBER: 2036

APPROVED BY: DATE XX-XX-16

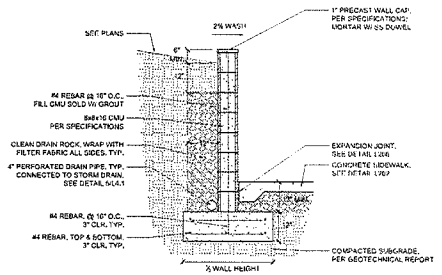
Plan No. L200-2

Sheet _____ of XXX Sheets

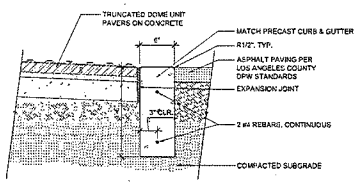
Last Saved By: Brett 3-26-14 12:04pm



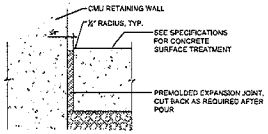
L207 CURB RAMP W/ TRUNCATED DOMES
1/4" = 1'-0"



L203 CMU RETAINING WALL
1/2" = 1'-0"

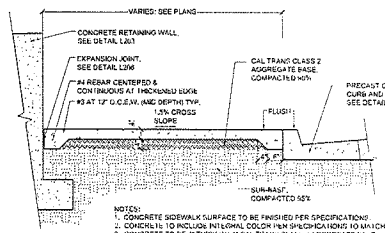


L210 FLUSH CURB
1" = 1'-0"



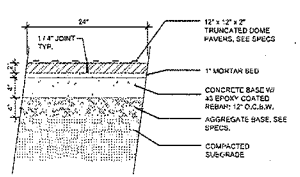
NOTES:
1. EXPANSION JOINT MATERIAL TO BE PLACED W/ TOP EDGE ¼" BELOW FINISHED SURFACE.
2. SEE PLANS FOR CONCRETE CONDITIONS.

L206 SIDEWALK EXPANSION JOINT AT WALL
NTS

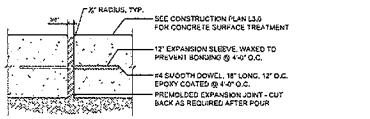


NOTES:
1. CONCRETE SIDEWALK SURFACE TO BE FINISHED PER SPECIFICATIONS.
2. CONCRETE TO INCLUDE INTEGRAL COLOR PER SPECIFICATIONS TO MATCH BASE MIX.
3. CONCRETE TO BE 4" THICK ON 4" CAL TRANS CLASS 2 AGGREGATE BASE.
4. INSTALL EXPANSION JOINT WHEN ADJACENT TO WALLS.
5. MAINTAIN 1.5% CROSS SLOPE.

L202 CONCRETE SIDEWALK
1/2" = 1'-0"

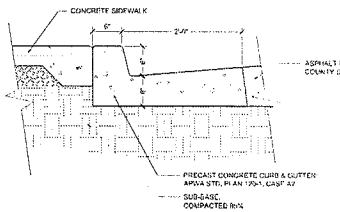


L209 TRUNCATED DOME UNIT PAVERS
1" = 1'-0"



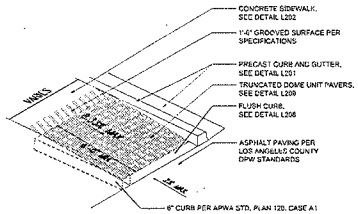
NOTES:
1. PROVIDE (6) 18" O.C. OR CLOSER BOTH DIRECTIONS OR OTHERWISE NOTED.
2. EXPANSION JOINT MATERIAL TO BE PLACED WITH TOP EDGE ¼" BELOW FINISHED SURFACE.
3. DOWELS TO BE PLACED AT RIGHT ANGELS TO JOINT.
4. PROVIDE EJ'S AT ALL CURBS, WALLS & SIMILAR VERTICAL STRUCTURES.
5. SEE PLANS FOR CONCRETE CONDITIONS.
6. DOWEL IS TYPICAL AT ALL EJ'S, EXCEPT AGAINST CURBS, WALLS OR SIMILAR STRUCTURES UNLESS OTHERWISE NOTED ON DRAWINGS.

L205 SIDEWALK EXPANSION JOINT
NTS

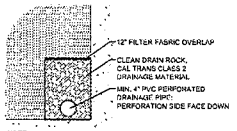


NOTES:
1. CURB AND GUTTER TO BE PCC APWA STD. PLAN 120-1, CASE A2.
2. ALL EXPOSED CORNERS ON PCC CURB AND GUTTER SHALL BE ROUNDED WITH A ½" RADIUS.

L201 PRECAST CONCRETE CURB & GUTTER
1" = 1'-0"



L208 CURB RAMP ISOMETRIC
NTS



NOTE:
1. REFER TO GEOTECHNICAL REPORT FOR COMPLETE DRAINAGE REQUIREMENTS.

L204 PERFORATED PIPE
NTS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LANDSCAPE PAVING & WALL DETAILS

DIAL BEFORE YOU DIG
811 USA
DIGALERT
PLAN IT SAFE, DIAL BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING SAN DIEGO AND ORANGE COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

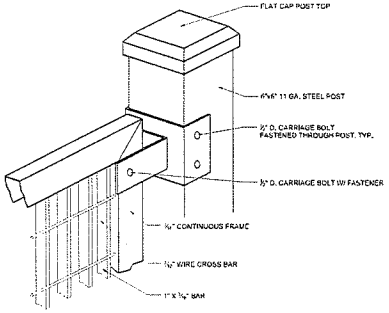
PLANS PREPARED BY:
RMC Water and Environment
rhaa

95% Submittal Not for Construction

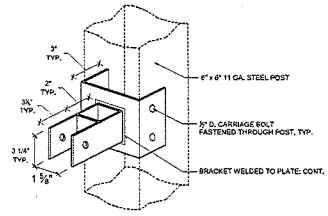
NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: BL	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: BD	DATE		XX-XX-14
CHECKED BY: BL	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
Plan No. L200-3			Sheet ____ of XXX Sheets

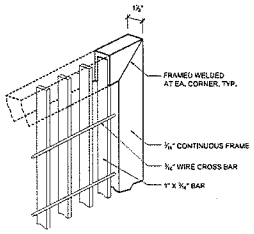
Last Saved By: Brett 3-26-14 11:54am



L217 FENCE ASSEMBLY ISOMETRIC
NOT TO SCALE



L215 FENCE BRACKET ISOMETRIC
NOT TO SCALE



L214 FENCE PANEL ISOMETRIC
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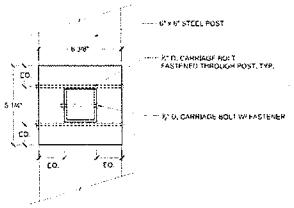
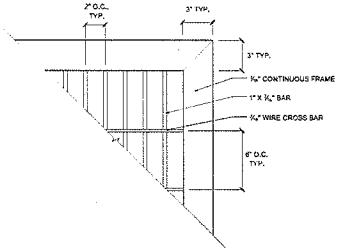
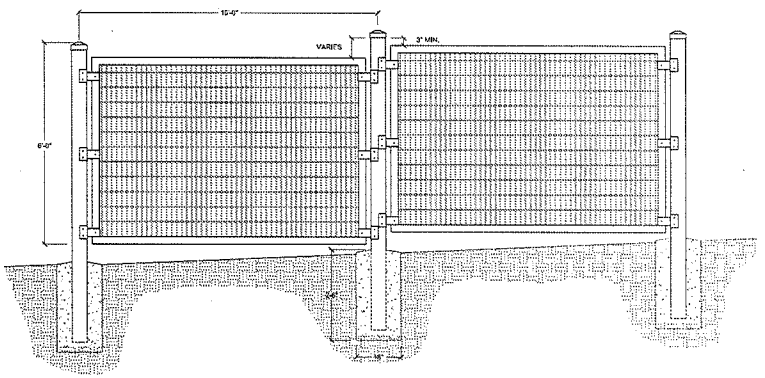


L216 FENCE BRACKET ATTACHMENT
NOT TO SCALE

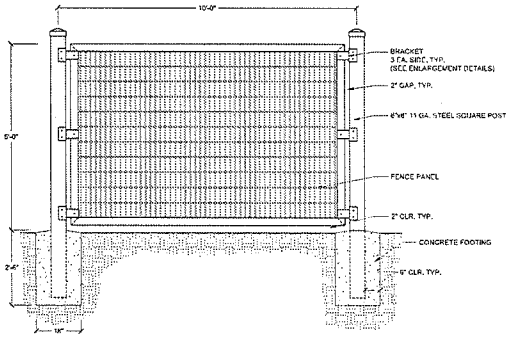


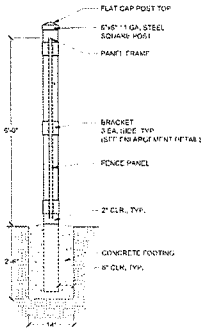
L213 FENCE PANEL FRAME
NOT TO SCALE



NOTES:
1. REFER TO FENCE TYPICAL CONDITION NOTES.

L212 FENCE – SLOPED CONDITION
NOT TO SCALE





SIDE VIEW

NOTES:
1. CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR ACCEPTANCE PRIOR TO CONSTRUCTION
2. STEEL SHALL BE HOT-DIPPED GALVANIZED PER ASTM A653/ASTM653M W/ COATING DESIGNATION G-60.
3. STEEL WIRE MESH FENCE PANELS SHALL BE WELDED BY RESISTANCE WELDING PER ASTM A185 USING ¾" FREE-GALVANIZED STEEL WIRE, WELDED AT EACH CROSS TO FORM RECTANGLES.
4. VERTICAL 1"x¾" BARS SHALL BE SPACED AT 2" O.C.; HORIZONTAL ¾", WIRES SHALL BE SPACED AT 6".
5. THE COLD ROLLED WIRE SHALL HAVE A TENSILE STRENGTH OF AT LEAST 75,000 PSI NO 74,000 YIELD SHEAR STRENGTH.
6. WIRE STRAND SHALL BE GALVANIZED BEFORE WELDED (GBW), 0.65OZ. PER SQUARE FOOT ZINC COATING CONFORMING TO ASTM A641.
7. FENCE POST, BARS & WIRE TO BE POWDER COATED. COLOR TO BE SELECTED BY OWNER'S REPRESENTATIVE.
8. ALL POST FASTENERS TO BE LOCATED ON INTERNAL SIDE OF FENCE.

L211 FENCE – TYPICAL CONDITION
NOT TO SCALE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LANDSCAPE FENCE DETAILS

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment; Rhaa

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: BL DATE
DRAWN BY: BD DATE
CHECKED BY: BL DATE
PROJECT NUMBER: 2036
SCALE

APPROVED BY: DATE
XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52907 EXP. 11/30/2014

Plan No. L200-4
Sheet ____ of XXX Sheets

Last Saved By: Brett 3-24-14 11:12am

PLANTING NOTES:

1. PROVIDE A MINIMUM OF 12" DEPTH OF NON-COMPACTED SOIL FOR WATER ABSORPTION AND ROOT GROWTH IN ALL PLANTED AREAS, SEE SPECIFICATION SECTION 32 90 00 FOR COMPLETE INFORMATION REGARDING SOIL PREPARATION AND AMENDMENT.

2. INCORPORATE COMPOST FERTILIZER INTO THE SOIL TO A MIN. DEPTH OF 8" AT A MIN. RATE OF 6 CUBIC YARDS PER 1000 SQUARE FEET PER SPECIFICATIONS

3. ALL EXPOSED SOIL SURFACES EXCEPT IN THE INFILTRATION PLANTING ZONE SHALL RECEIVE A MINIMUM OF A 3" LAYER OF BARK MULCH. INFILTRATION PLANTING ZONE SHALL RECEIVE STONE MULCH. SEE SPECIFICATION SECTION 32 90 00 FOR COMPLETE INFORMATION REGARDING MULCHES.

4. NOTIFY OWNER'S REPRESENTATIVE PROMPTLY IF FIELD CONDITIONS ENCOUNTERED VARY FROM THOSE SHOWN ON PLAN.

	ABBREVIATION	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	NOTES
TREES	JUG CAL	Juglans californica	California Walnut	5 Gal.	As Shown	Multi
	PLA RAC	Platanus racemosa	California Sycamore	15 Gal.	As Shown	Multi
	POP FRE	Populus fremontii	Fremont Poplar	5 Gal.	As Shown	Multi
	QUE AGR	Quercus agrifolia	Coast Live Oak	24" Box	As Shown	Standard
	SAM MEX	Sambucus mexicana	Mexican Elderberry	5 Gal.	As Shown	Multi
SHRUBS	BAC PIL	Baccharis pilularis	Coyote Bush	5 Gal.	60" O.C.	
	CEA SPI	Ceanothus spinosus	Greenbark Ceanothus	5 Gal.	60" O.C.	
	DEN RIG	Dendromecon harfordii	Island Bush Poppy	5 Gal.	48" O.C.	
	HET ARB	Heteromeles arbutifolia	Toyon	5 Gal.	48" O.C.	
	PRU ILI	Prunus ilicifolia	Hollyleaf Cherry	1 Gal.	60" O.C.	
	RIB SPE	Ribes speciosum	Gooseberry	5 Gal.	48" O.C.	
PERENNIALS	ACH MIL	Achillea millefoliumcalifornica	California Yarrow	1 Gal.	24" O.C.	
	HOR CAL	Hordeum californicum	California Barley	1 Gal.	24" O.C.	
	JUN PAT	Juncus patens	California Gray Rush	1 Gal.	24" O.C.	
	MUH RIG	Muhlenbergia rigens	Deer Grass	1 Gal.	42" O.C.	
	PEN HET	Penstemon heterophyllus	Foothills Penstemon	1 Gal.	30" O.C.	
VINES	VIT ROG	Vitis 'Roger's Red'	California Grape	1 Gal.	10' O.C.	

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN! SAFE, EXCAVATE YOU SAFE — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — LIVING AND SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — 0" 1" — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment; rhaa

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NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LANDSCAPE NOTES AND LEGENDS

DESIGNED BY: BL — DATE — SCALE
DRAWN BY: BD — DATE
CHECKED BY: BL — DATE — PROJECT NUMBER 2036
Plan No. L500-0

APPROVED BY: — DATE XX-XX-14
ROBERT PRAGER, P.E., I.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Sheet ____ of XXX Sheets

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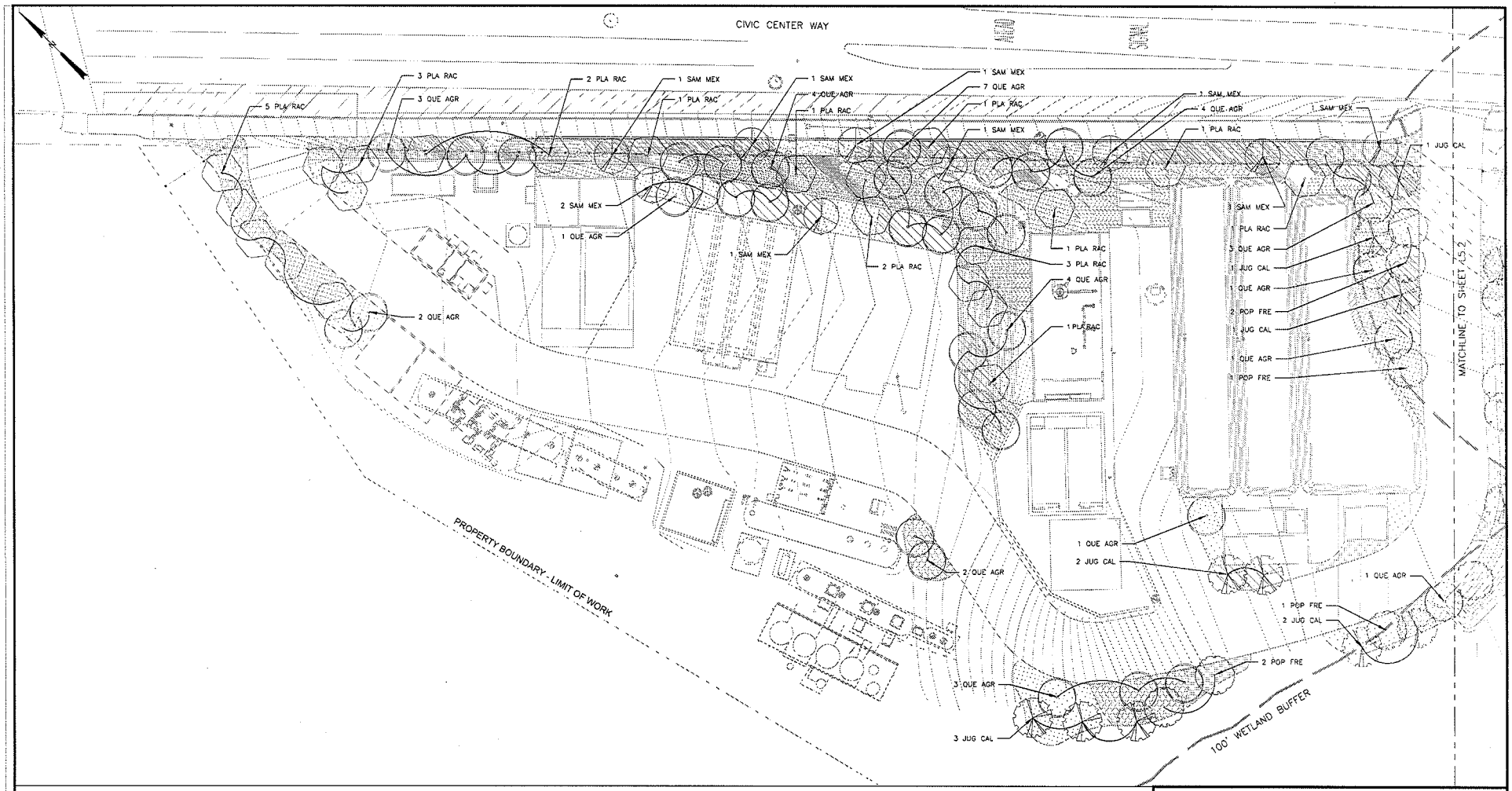

SCALE: 1"=20'

0 20 40 80

SCALE IN FEET

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LANDSCAPE TREE PLANTING PLAN - 1 OF 2

DIAL BEFORE YOU DIG 1800-422-4133 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment / Rhaa

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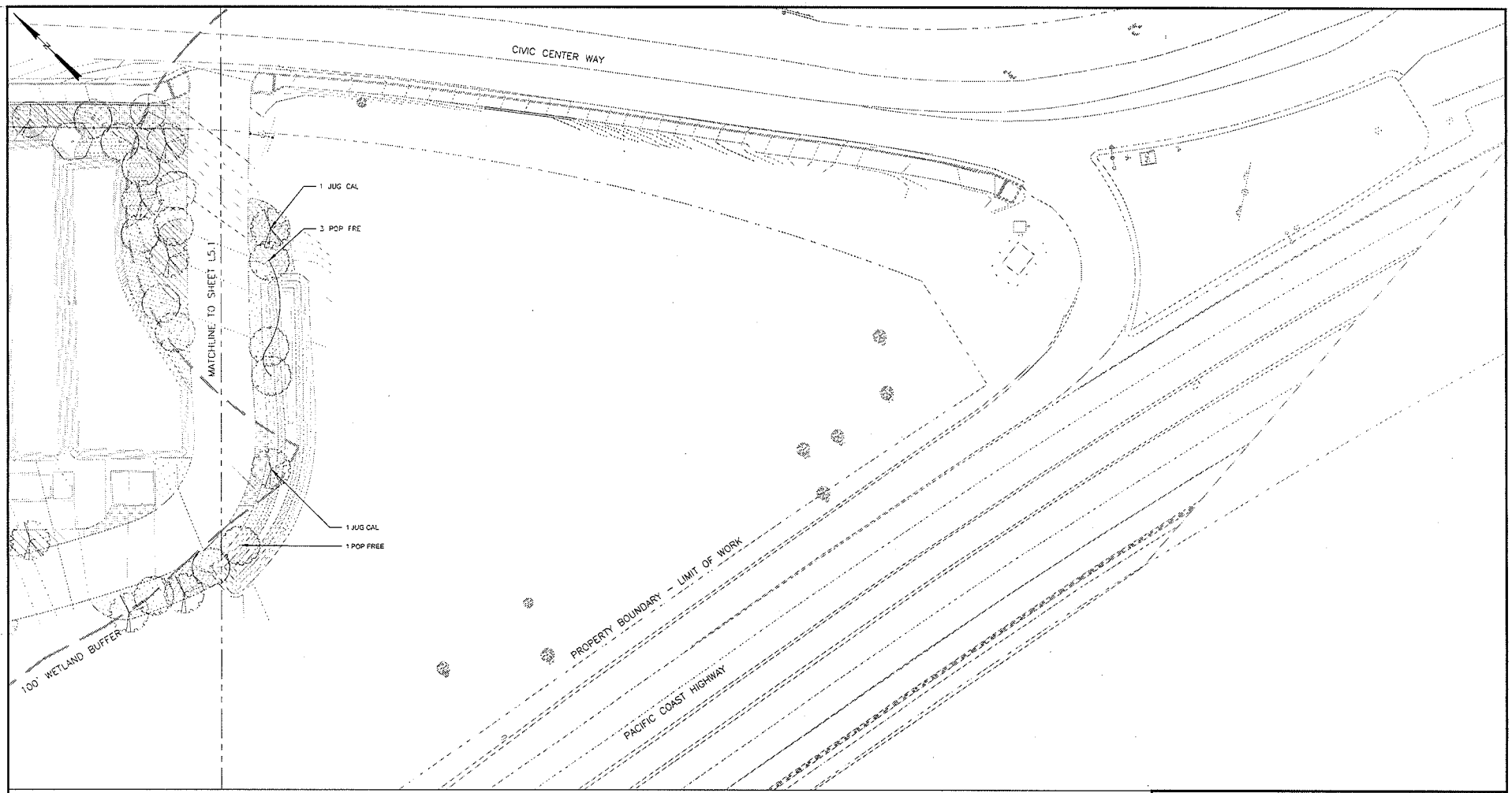
DESIGNED BY: BL	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: BD	DATE	AS SHOWN		XX-XX-14
CHECKED BY: BL	DATE	PROJECT NUMBER 2056	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 57102 EXP. 12/31/2014	

Plan No. L500-1

Sheet _____ of XXX Sheets

Last Saved By: Brett 3-24-14 12:01pm



SCALE: 1"=20'

0 20 40 60

SCALE IN FEET

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LANDSCAPE TREE PLANTING PLAN - 2 OF 2

DIAL BEFORE YOU DIG

VERIFY SCALES. BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment; Rhaa

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: BL | DATE | SCALE: AS SHOWN

DRAWN BY: BD | DATE

CHECKED BY: BL | DATE | PROJECT NUMBER: 2036

APPROVED BY: | DATE: XX-XX-14

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. L500-2

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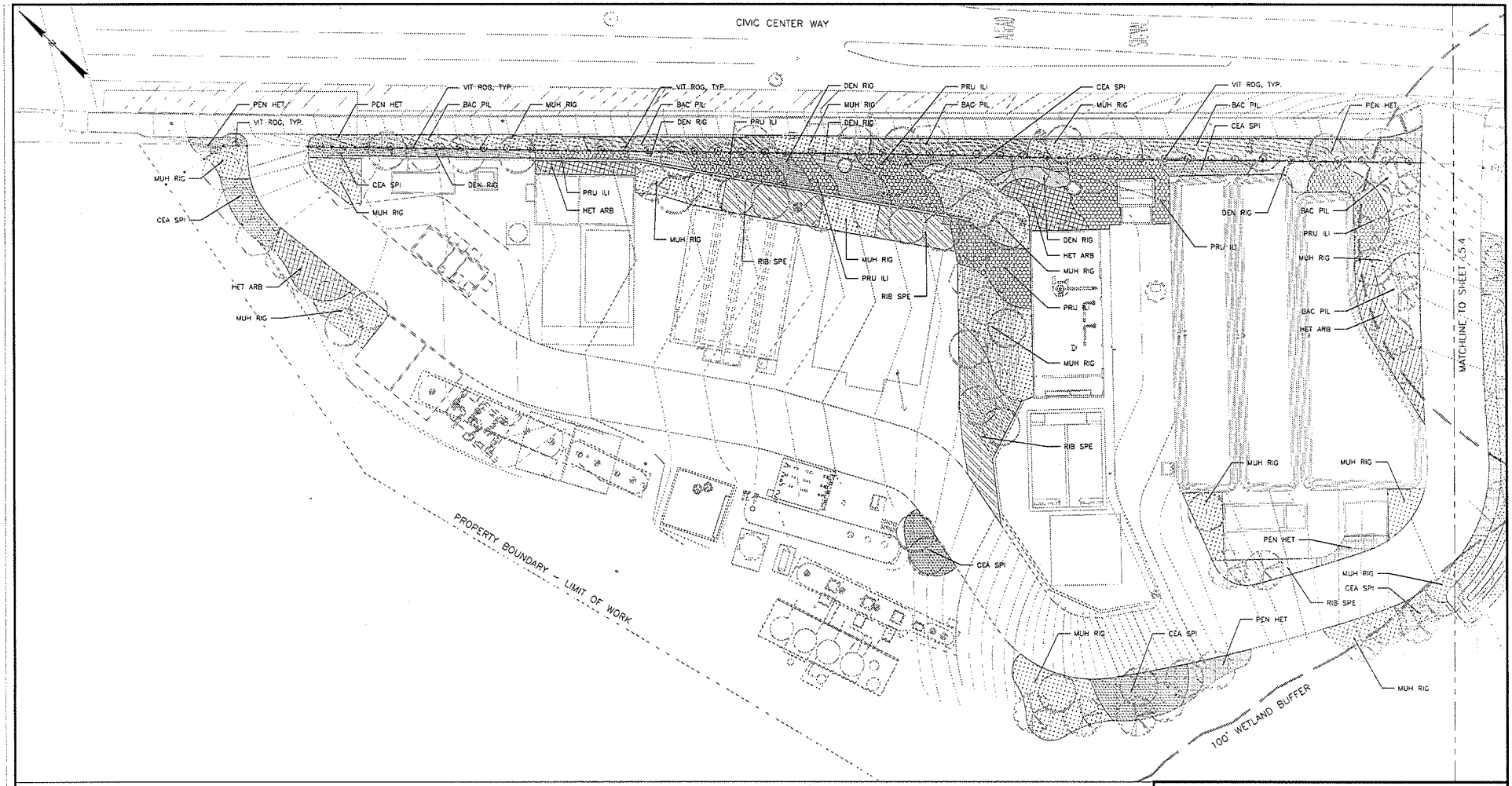

SCALE: 1"=20'

0 20 40 60

SCALE IN FEET

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LANDSCAPE SURFACE PLANTING PLAN - 1 OF 2

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

PLEASE CALL DIG ALERT BEFORE YOU DIG

AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING

SERVING NINE SOUTHERN CALIFORNIA COUNTIES

6" VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:

RMC Water and Environment

rhaa

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DRAWN BY: BD DATE

CHECKED BY: BL DATE

SCALE: AS SHOWN

PROJECT NUMBER: 2036

Plan No. L500-3

APPROVED BY: DATE XX-XX-14

ROBERT BRADER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
R.C.E. NO. 52102 EXP. 12/31/2014

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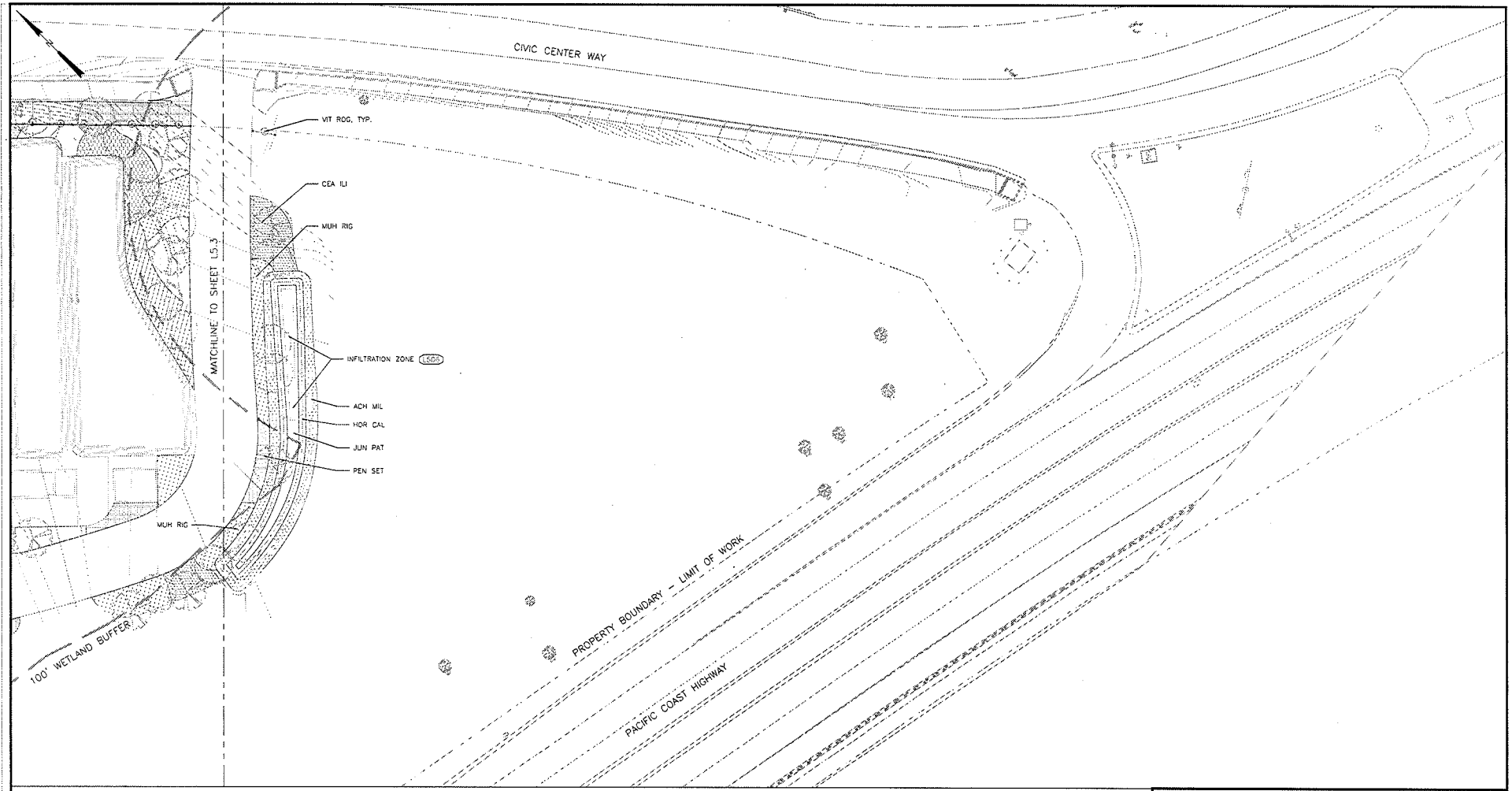

SCALE: 1"=20'

0 20 40 60

SCALE IN FEET

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LANDSCAPE SURFACE PLANTING PLAN - 2 OF 2

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

1" VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment / rhaa

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NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: BL	DATE	SCALE
DRAWN BY: BD	DATE	AS SHOWN
CHECKED BY: BL	DATE	PROJECT NUMBER 2036

APPROVED BY: DATE XX-XX-14

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. L500-4

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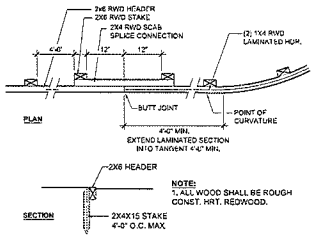
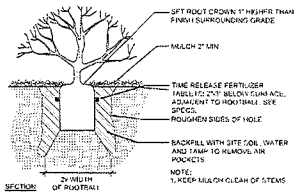
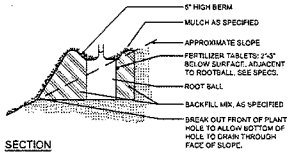


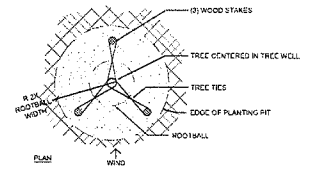
L505 WOOD HEADER
NOT TO SCALE

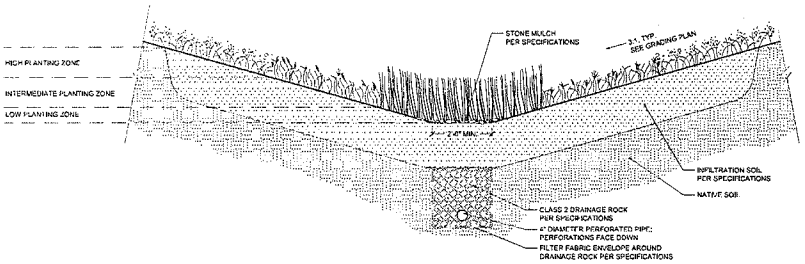


L502 SHRUB PLANTING
NOT TO SCALE

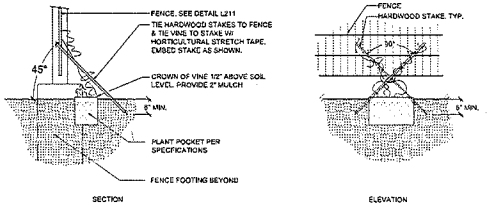


L504 PLANTING ON SLOPE
NOT TO SCALE

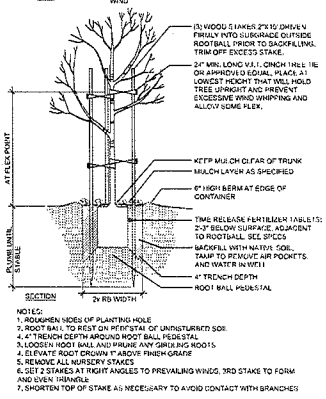




L506 INFILTRATION PLANTING ZONE
NOT TO SCALE



L503 VINE PLANTING & STAKING
NOT TO SCALE



L501 TREE PLANTING & STAKING
NOT TO SCALE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LANDSCAPE PLANTING DETAILS

DIAL BEFORE YOU DIG
UNDERGROUND SERVICE ALERT
DIG RIGHT
PLAN AND MARK TOLERANCE
ATTEND TWO WORKING DAYS PRIOR TO EXCAVATION
USA MARKING GUIDELINES PRINTED FROM THIS SITE

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC Water and Environment
rhaa

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: BL DATE
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CHECKED BY: BL DATE
SCALE
PROJECT NUMBER 2036
Plan No. L500-5

APPROVED BY: DATE
XX-XX-14
ROBERT WARD, P.E., C.E.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 57801 EXP. 12/31/2014
Sheet ____ of XXX Sheets

Last Saved By: Brett 3-26-14 11:57am

Abbreviations

&	AND
∠	ANGLE
@	AT
℄	CENTERLINE
ø	DIAMETER OR ROUND
#	POUND OR NUMBER
ACOUS.	ACOUSTICAL
A.D.	AREA DRAIN
ADJ.	ADJUSTABLE
AGGR.	AGGREGATE
ALUM.	ALUMINUM
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
ASPH.	ASPHALT
BD.	BOARD
BITUM.	BITUMINOUS
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
BM.	BEAM
BOT.	BOTTOM
CAB.	CABINET
C.B.	CATCH BASIN
CEM.	CEMENT
CER.	CERAMIC
C.I.	CAST-IRON
CJ	CONTROL JOINT
CLG.	CEILING
CLKG.	CAULKING
CLO.	CLOSET
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS
CORR.	CORRIDOR
CTSK.	COUNTERSUNK
C.T.	CERAMIC TILE
DBL.	DOUBLE
DET	DETAIL
DIA.	DIAMETER
DIM.	DIMENSION
DISP.	DISPENSER
DN.	DOWN
DWR.	DRAWER
DS.	DOWNSPOUT
D.S.P.	DRY STANDPIPE
DWG.	DRAWING
E.	EAST
EA.	EACH
E.J.	EXPANSION JOINT
ELE.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EMER.	EMERGENCY
ENCL.	ENCLOSURE
EQ.	EQUAL
EQPT.	EQUIPMENT
EXST.	EXISTING
EXPO.	EXPOSED
EXP.	EXPANSION
EXT	EXTERIOR
F.A.	FIRE ALARM
F.D.	FLOOR DRAIN
FDN	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.H.C.	FIRE HOSE CABINET
FIN.	FINISH
FL	FLOOR
FLASH.	FLASHING
FLUOR.	FLUORESCENT
F.O.B.	FACE OF BLOCK
F.O.C.	FACE OF CONCRETE
F.O.F.	FACE OF FINISH
F.O.S.	FACE OF STUDS
F.S.	FULL SIZE
FT	FOOT OR FEET
FTG.	FOOTING
FURR.	FURRING
F.F.E.	FINISHED FLOOR ELEVATION
GA.	GAUGE
GALV.	GALVANIZED
G.B.	GRAB BAR
GLASS	GLASS
GR	GRADE
GYP.	GYPSUM
H.B.	HOSE BIB
H.C.	HOLLOW CORE
HDWD.	HARDWOOD
HDW.	HARDWARE
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
HGT.	HEIGHT
I.D.	INSIDE DIAMETER
INSUL.	INSULATION
INT.	INTERIOR
IRRIG.	IRRIGATION
JT.	JOINT
LAM.	LAMINATED
LAV.	LAVATORY
MAX.	MAXIMUM
M.C.	MEDICINE CABINET
MECH.	MECHANICAL
MET.	METAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC	MISCELLANEOUS
M.O.	MASONRY OPENING
MTD.	MOUNTED
NO.	NORTH
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.A.	OVERALL
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OPNG.	OPENING
OPP.	OPPOSITE
PC.	PRE-CAST
PL.	PLATE
P.LAM.	PLASTIC LAMINATE
PLAS.	PLASTER
PLYWD	PLYWOOD
PR.	PAIR
PT.	POINT
P.T.DISP.	PAPER TOWEL DISPENSER
RECP.	RECEPTACLE
RAD.	RADIUS
R.D.	ROOF DRAIN
REF.	REFERENCE
REFR.	REFRIGERATOR
REINF.	REINFORCED
REQ.	REQUIRED
RM.	ROOM
R.O.	ROUGH OPENING
RS.	RE-SAWN
RWD.	REDWOOD
R.W.L.	RAIN WATER LEADER
SO.	SOUTH
S.C.	SOLID CORE
S.C.DISP.	SEAT COVER DISPENSER
SCHD.	SCHEDULE
S.DISP.	SOAP DISPENSER
SECT.	SECTION
SH.	SHELF OR SHEET
SHR.	SHOWER
SIM.	SIMILAR
SPEC.	SPECIFICATION
SQ.	SQUARE
ST.STL.	STAINLESS STEEL
STA.	STATION
STD.	STANDARD
STL.	STEEL
STOR.	STORAGE
STRUC.	STRUCTURAL
SUSP.	SUSPENDED
SYM.	SYMMETRICAL
S.M.	SHEET METAL
T.C.	TOP OF CURB
TEL.	TELEPHONE
TER.	TERRAZZO
TG	TEMPERED GLASS
T&G	TONGUE AND GROOVE
THK.	THICK
T.P.	TOP OF PAVEMENT
T.P.DISP.	TOILET PAPER DISPENSER
T.V.	TELEVISION
T.W.	TOP OF WALL
TYP.	TYPICAL
T.O.	TOP OF
T.O.P.	TOP OF PLATE
U.O.N.	UNLESS OTHERWISE NOTED
UR	URINAL
VERT.	VERTICAL
VEST.	VESTIBULE
V.T.H.	PLUMBING VENT THRU ROOF
W	WEST
W	WITH
W.C.	WATER CLOSET
WD.	WOOD
W/O	WITHOUT
WP.	WATERPROOF
W.P.J	WEAKENED PLANE JOINT
WSCT	WAINSCOT
WT.	WEIGHT

General Notes

1. DIMENSIONS SHOWN ON THE FLOOR PLANS, SECTIONS AND DETAILS ARE TO FACE OF STUDS, COLUMN GRID LINES AND FACE OF CONCRETE AND BLOCK WALLS, UNLESS OTHERWISE NOTED OR SHOWN.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE PROCEEDING WITH CONSTRUCTION.
3. ALL ITEMS ARE BASE BID UNLESS OTHERWISE NOTED OR SPECIFIED.
4. ALL DRAIN LINES WITHIN WALLS ARE TO BE WRAPPED IN SOUND INSULATION BATTS.
5. EVERY EXIT DOOR SHALL BE OPERABLE FROM THE INSIDE WITHOUT USE OF A KEY OR ANY SPECIAL KNOWLEDGE.
6. CONTRACTOR SHALL PROVIDE ACCESS PANELS REQUIRED BY THE PLUMBING, AIR CONDITIONING AND OTHER INSTALLERS, AS REQUIRED BY CODE. ANY ACCESS PANEL IN A FIRE RATED WALL OR CEILING SHALL HAVE THE SAME FIRE RATING AS THE WALL OR CEILING IN WHICH THEY OCCUR.
7. STRUCTURAL AND FIRE RESISTIVE INTEGRITY SHALL BE MAINTAINED AT PENETRATIONS FOR MECHANICAL, PLUMBING, ELECTRICAL, AND COMMUNICATIONS PIPE, DUCT AND CONDUIT AS INDICATED.
8. PROVIDE FIRE BLOCKING AT FLOOR, CEILING AND MID HEIGHT OF WALLS OVER 10'-0".
9. STUCCO, PLASTER AND GYPSUM BOARD SHALL TERMINATE WITH A "J" MOLDING WHERE THE EDGE IS EXPOSED UNLESS NOTED OR SPECIFIED OTHERWISE.
10. A FLOOR OR LANDING NOT MORE THE 1/4" BELOW THE THRESHOLD IS REQUIRED AT EACH SIDE OF AN EXIT DOOR.
11. BRAND OR TRADE NAME, SUBSTITUTIONS OF "EQUALS": REQUESTS FOR SUBSTITUTIONS OF AN ITEM AS AN "EQUAL" TO ANY ITEM INDICATED OR SPECIFIED MUST BE INCLUDED AS A PART OF THE CONTRACTOR'S BID PROPOSAL, AS SPECIFIED IN THE GENERAL CONDITIONS.
12. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER GRAPHIC SCALE. DO NOT SCALE DRAWINGS.
13. IT SHOULD BE NOTED THAT WHILE EXISTING UTILITY DRAWINGS ARE AVAILABLE, THERE IS NO ASSURANCE THAT ALL UTILITIES ARE SHOWN. THE CONTRACTOR SHALL PROCEED WITH CAUTION TO INSURE THAT ALL UTILITIES ENCOUNTERED, WHETHER OR NOT OF RECORD, SHALL BE PROTECTED FROM DAMAGE. THE CONTRACTOR SHALL ALSO TAKE PRECAUTIONS NECESSARY TO PROTECT HIMSELF AND ALL EMPLOYEES FROM INJURY WHICH MAY BE CAUSED BY CONTACT WITH UTILITY SERVICES.
14. GYPSUM BOARD FOR FIRE RATED ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH CBC CHAPTER 7.
15. DOOR HARDWARE SHALL BE LEVER TYPE.
16. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS FOR EXTERIOR DOORS AND 5 POUNDS FOR INTERIOR DOORS.
17. FIRE DAMPER ASSEMBLIES, INCLUDING SLEEVES AND INSTALLATION PROCEDURES SHALL BE APPROVED BY THE BUILDING INSPECTOR PRIOR TO INSTALLATION.
18. INTERIOR FINISHES SHALL COMPLY WITH THE PROVISIONS OF CBC CHAPTER 8.
19. ALL DECORATIVE MATERIALS SHALL BE MAINTAINED IN A FLAME-RETARDANT CONDITION.
20. ALL REQUIRED PERMITS MUST BE OBTAINED FROM FIRE PLAN CHECK BEFORE BUILDING IS OCCUPIED.
21. BUILDING NUMBERS SHALL BE EASILY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY.
22. THE CONSTRUCTION, REMODEL, OR DEMOLITION OF A BUILDING SHALL COMPLY WITH THE REQUIREMENTS OF THE COUNTY OF SAN DIEGO.
23. THESE PLANS AND ALL WORK SHALL COMPLY WITH THE CALIFORNIA BUILDING STANDARDS CODE FOUND IN THE STATE OF CALIFORNIA TITLE 24 CCR, AS AMENDED AND ADOPTED BY THE COUNTY OF SAN DIEGO.
24. CONTRACTOR SHALL THOROUGHLY COORDINATE ALL TRADES AS REQUIRED TO COMPLETE ALL WORK INDICATED AND NECESSARY FOR THE PROJECT.
25. CONTRACTOR SHALL PROTECT EXISTING SITE FEATURES AND SHALL REPAIR OR REPLACE ALL ITEMS DAMAGED DURING CONSTRUCTION.
26. EXIT SIGNS MUST BE INTERNALLY ILLUMINATED (UFC SEC. 1212.4 & CBC SEC.1006).
27. TWO SEPARATE POWER SUPPLIES SHALL BE PROVIDED FOR EXIT SIGNS PER(CBC SEC. 1006).
28. THE CONTRACTOR SHALL ENFORCE ALL SAFETY MEASURES. THE CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATION.
29. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
30. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND / OR BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEY OR OR REGISTERED CIVIL ENGINEER AS REQUIRED BY THE LAND SURVEYOR'S ACT.
31. CONTRACTOR SHALL REPLACE IN KIND ANY TRAFFIC SENSORS DAMAGED DURING CONSTRUCTION.
32. PENETRATION OF FIRE RESISTIVE WALLS, FLOOR - CEILING ASSEMBLIES AND ROOF - CEILINGS SHALL BE PROTECTED AS REQUIRED IN CBC SECTION 712 AND 713.
33. NO HAZARDOUS MATERIALS WILL BE USED OR STORED WITHIN THE BUILDING WHICH EXCEED THE QUANTITIES SHOWN ON UBC TABLE 307.
34. WHEN SERVING MORE THAN 100 SPRINKLER HEADS, AUTOMATIC SPRINKLER SYSTEMS SHALL BE SUPERVISED BY AN APPROVED CENTRAL PROGRAM OR REMOTE STATION SERVICE OR SHALL BE PROVIDED WITH A LOCAL ALARM WHICH WILL GIVE AN AUDIBLE SIGNAL AT A CONSTANTLY ATTENDED LOCATION.

Fire Notes

1. AT LEAST ONE PORTABLE FIRE EXTINGUISHER WITH A MINIMUM RATING OF 2A10BC SHALL BE PROVIDED WITHIN 75' MAXIMUM TRAVEL DISTANCE FOR EACH 6,000 SQUARE FEET OR PORTION THEREOF ON EACH FLOOR (CFC 1002, UFC STANDARD 10-1, TITLE 19, SECT. 3.29). SEE PLANS FOR LOCATIONS.
2. AT LEAST ONE FIRE EXTINGUISHER WITH A MINIMUM RATING OF 4A20BC SHALL BE PROVIDED OUTSIDE OF EACH MECHANICAL, ELECTRICAL OR BOILER ROOM. (CFC 1002, UFC STANDARD 10-1, TITLE 19, SECT. 3.29). SEE PLANS FOR LOCATIONS.
3. COMPLETE PLANS AND SPECIFICATIONS FOR FIRE-EXTINGUISHING SYSTEMS, INCLUDING AUTOMATIC SPRINKLERS AND WET AND DRY STANDPIPES, HALON SYSTEMS AND OTHER SPECIAL TYPES OF AUTOMATIC FIRE-EXTINGUISHING SYSTEMS, BASEMENT PIPE INLETS, AND OTHER FIRE-PROTECTION SYSTEMS AND APPURTENANCES THERETO SHALL BE SUBMITTED BY THE CONTRACTOR TO FIRE AND LIFE SAFETY FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. (CFC 1001.3)
4. FIRE-EXTINGUISHING SYSTEMS SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH CBC 904.
5. ALL VALVES CONTROLLING THE WATER SUPPLY FOR AUTOMATIC SPRINKLER SYSTEMS AND WATER-FLOW SWITCHES ON ALL SPRINKLER SYSTEMS SHALL BE ELECTRICALLY MONITORED WHERE THE NUMBER OF SPRINKLERS IS 100 OR MORE. (CBC 904.3.1, CFC 1003.3.1)
6. COMPLETE PLANS AND SPECIFICATIONS FOR FIRE ALARM SYSTEMS INCLUDING AUTOMATIC SPRINKLERS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE FIRE MARSHAL FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. (CFC 1001.3)
7. INSTALLATION OF FIRE ALARM SYSTEMS SHALL BE IN ACCORDANCE WITH CFC 1007.
8. AN APPROVED AUDIBLE SPRINKLER FLOW ALARM SHALL BE PROVIDED ON THE EXTERIOR OF THE BUILDING IN AN APPROVED LOCATION. AN APPROVED AUDIBLE SPRINKLER FLOW ALARM TO ALERT THE OCCUPANTS SHALL BE PROVIDED IN THE INTERIOR OF THE BUILDING IN A NORMALLY OCCUPIED LOCATION.
9. ANY TIME A BUILDING IS OCCUPIED THE MEANS OF EGRESS SHALL BE ILLUMINATED AT AN INTENSITY OF NOT LESS THEN 1 FOOT-CANDLE AT THE FLOOR LEVEL.
10. EGRESS ILLUMINATION REQUIRES A SOURCE OF EMERGENCY POWER WHEN THE OCCUPANT LOAD IS 100 OR MORE.

Symbols

GRID

DETAIL

BUILDING SECTION

INTERIOR ELEVATION

WALL TYPE - SEE GA4-2

WINDOW TYPE

DOOR NUMBER

ROOM NUMBER

DATUM POINT

CG — CORNER GUARD

FE — FIRE EXTINGUISHER

CONTINUOUS, UNOBSTRUCTED AND UNDIMINISHED PATH OF TRAVEL

ROOM NAME

BUNK
123 — ROOM NUMBER

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VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment — jeffkatz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

TITLE SHEET

DESIGNED BY: JK	DATE: XX/2014	SCALE	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: KH	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. GA-1 — SHEET ____ of 100 SHEETS

CLEAR FLOOR SPACE FOR WHEELCHAIRS

1. MINIMUM CLEAR FLOOR OR GROUND SPACE REQUIRED TO ACCOMMODATE A SINGLE STATIONARY WHEELCHAIR AND OCCUPANT IS 30 INCHES X 48 INCHES, MINIMUM CLEAR FLOOR OR GROUND SPACE FOR WHEELCHAIRS MAY BE POSITIONED FOR FORWARD OR PARALLEL APPROACH TO AN OBJECT. FLOOR OR GROUND SPACE FOR WHEELCHAIRS MAY BE PART OF THE KNEE SPACE REQUIRED UNDER SINK OBJECTS.
2. PROVIDE AN ADDITIONAL 12 INCHES WIDTH ON ONE SIDE FOR ALCOVES GREATER THAN 15 INCHES DEEP AND 29 SQ.INCH FOR SIDE APPROACH.
3. PROVIDE AN ADDITIONAL 6 INCHES WIDTH ON ONE SIDE FOR ALCOVES GREATER THAN 24 INCHES DEEP AND DESIGNED FOR FRONT APPROACH.

HAZARDS AND PROTRUDING OBJECTS

1. OBJECTS PROJECTING FROM WALLS WITH THEIR LEADING EDGES BETWEEN 27 INCHES AND 80 INCHES ABOVE THE FINISHED FLOOR SHALL PROTRUDE NO MORE THAN 4 INCHES INTO WALKS, HALLS, CORRIDORS, PASSAGEWAYS, OR AISLES.
2. OBJECTS MOUNTED WITH THEIR LEADING EDGES AT OR BELOW 27 INCHES ABOVE THE FINISHED FLOOR MAY PROTRUDE ANY AMOUNT.
3. FREE-STANDING OBJECTS MOUNTED ON POSTS / PYLONS MAY OVERHANG 12 INCHES MAXIMUM FROM 27 INCHES TO 80 INCHES ABOVE THE GROUND OR FINISHED FLOOR.
4. PROTRUDING OBJECTS SHALL NOT REDUCE THE REQUIRED CLEAR WIDTH OF AN ACCESSIBLE ROUTE OR MANEUVERING SPACE.
5. ANY OBSTRUCTION OVERHANGING A PEDESTRIAN WAY SHALL BE A MINIMUM OF 80 INCHES ABOVE THE WALKING SURFACE AS MEASURED TO THE BOTTOM OF THE OBSTRUCTION.

PARKING

1. ACCESSIBLE PARKING SPACES SHALL BE LOCATED ON THE SHORTEST POSSIBLE ACCESS ROUTE TO AN ACCESSIBLE BUILDING.
2. SURFACE SLOPES OF PARKING SPACES FOR THE PHYSICALLY DISABLED SHALL NOT EXCEED 1/4 INCH PER FOOT (2% GRADIENT) IN ANY DIRECTION.
3. DISABLED PARKING SPACES SHALL BE LOCATED SO AS NOT TO REQUIRE USERS TO WHEEL OR WALK BEHIND ANY OTHER NON-DISABLED OR DISABLED PARKING SPACE.
4. IN EACH PARKING AREA, A BUMPER OR CURB SHALL BE PROVIDED AND LOCATED TO PREVENT ENCROACHMENT OF CARS OVER THE REQUIRED WIDTH OF WALKWAYS.
5. PARKING SPACES RESERVED FOR PERSONS WITH PHYSICAL DISABILITIES SHALL BE IDENTIFIED BY A REFLECTORIZED SIGN PERMANENTLY POSTED IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL OR SPACE, CONSISTING OF A PROFILE VIEW OF A WHEELCHAIR WITH OCCUPANT, IN WHITE ON DARK BLUE BACKGROUND. THE SIGN SHALL NOT BE SMALLER THAN 70 INCHES IN AREA AND, WHEN IN THE PATH OF TRAVEL, SHALL BE POSTED AT A MINIMUM HEIGHT OF 80 INCHES FROM THE BOTTOM OF THE SIGN TO THE PARKING SPACE FINISHED GRADE. SIGNS MAY ALSO BE CENTERED ON THE WALL AT THE INTERIOR END OF THE PARKING SPACE AT A MINIMUM HEIGHT OF 60 INCHES FROM THE PARKING SPACE FINISHED GRADE, OR SIDEWALK.
6. $250 MIN. WARNING TEXT IMPRINTED AT ALL ISAS AT ALL ACCESSIBLE PARKING SPACES.
7. VAN ACCESSIBLE SPACES SHOULD BE IDENTIFIED WITH THE ADDITIONAL WORDS "VAN ACCESSIBLE" ON THE SPACE IDENTIFICATION SIGN. ONE IN EVERY SIX ACCESSIBLE SPACES, BUT NEVER LESS THAN ONE, MUST BE VAN ACCESSIBLE.

WALKS AND SIDEWALKS

1. WALKS AND SIDEWALKS SHALL HAVE A CONTINUOUS COMMON SURFACE NOT INTERRUPTED BY STEPS OR BY ABRUPT CHANGES IN LEVEL WHICH EXCEED 1/2 INCH, AND SHALL BE A MINIMUM OF 48 INCHES IN WIDTH.
2. SURFACE CROSS SLOPES SHALL NOT EXCEED 2%
3. WALKS, SIDEWALKS, AND PEDESTRIAN WAYS SHALL BE FREE OF GRATING WHENEVER POSSIBLE. GRID OPENINGS WITHIN GRATINGS LOCATED IN THE SURFACE OF ANY OF THESE AREAS SHALL BE LIMITED TO 1/2 INCH IN THE DIRECTION OF THE TRAFFIC FLOW.
4. WHEN THE SLOPE IN THE DIRECTION OF TRAVEL OF ANY WALK EXCEEDS 1 VERTICAL TO 20 HORIZONTAL, IT SHALL COMPLY WITH THE PROVISIONS OF PEDESTRIANS RAMPS.
5. WHEN ABRUPT CHANGES IN LEVEL NOT EXCEEDING 1/2" OCCUR, THEY SHALL BE BEVELED WITH A SLOPE NO GREATER THE 1 UNIT VERTICAL TO 2 UNITS HORIZONTAL (50%) EXCEPT THAT LEVEL CHANGES NOT EXCEEDING 1/4" MAY BE VERTICAL.
6. ABRUPT CHANGES IN LEVEL ALONG ANY ACCESSIBLE ROUTE EXCEEDING 1/2" SHALL COMPLY WITH THE REQUIREMENTS FOR CURB RAMPS.
7. WALKS SHALL BE PROVIDED WITH A LEVEL AREA NOT LESS THAN 60" x 60" AT A DOOR OR GATE THAT SWINGS TOWARD THE WALK AND NOT LESS THAN 48" x 48" DEEP AT A DOOR OR GATE THAT SWINGS AWAY FROM THE WALK.
8. WALKS SHALL EXTEND A MINIMUM OF 24" TO THE SIDE OF THE STRIKE EDGE OF A DOOR OR GATE THAT SWINGS TOWARD THE WALK.
9. WALK AND SIDEWALK SURFACES WITH A SLOPE OF LESS THAN 5% GRADIENT SHALL BE AT LEAST AS SLIP-RESISTANT AS THAT DESCRIBED AS A MEDIUM SALTED FINISH.
10. WALK AND SIDEWALK SURFACES WITH A SLOPE OF 5% OR MORE GRADIENT SHALL BE SLIP-RESISTANT.
11. ABRUPT CHANGES IN LEVEL 4" OR MORE EXCEPT BETWEEN A WALK OR A SIDEWALK AND ADJACENT STREETS OR DRIVEWAYS SHALL BE IDENTIFIED BY A 6" HIGH CURB ABOVE WALK SURFACE OR GUARDRAIL W/ 2"-4" CENTERED HIGH GUIDE RAIL

ENTRANCES AND DOORS

1. ALL PRIMARY ENTRANCES AND EXTERIOR GROUND FLOOR EXIT DOORS TO BUILDINGS AND FACILITIES SHALL BE MADE ACCESSIBLE TO THE PHYSICALLY DISABLED.
2. ALL ACCESSIBLE ENTRANCES SHALL BE IDENTIFIED WITH AT LEAST ONE STANDARD INTERNATIONAL SYMBOL OF ACCESSIBILITY SIGN AND WITH ADDITIONAL DIRECTIONAL SIGNS, AS REQUIRED, VISIBLE FROM APPROACHING PEDESTRIAN WAYS.
3. EVERY REQUIRED ENTRANCE OR PASSAGE DOORWAY SHALL BE OF A SIZE AS TO PERMIT THE INSTALLATION OF A DOOR NOT LESS THAN 36 INCHES IN WIDTH. AND NOT LESS THAN 80 INCHES IN HEIGHT. DOORS SHALL BE CAPABLE OF OPENING TO A WIDTH OF 32 INCHES AND SHALL BE MOUNTED SO THAT THE CLEAR WIDTH OF THE DOORWAY IS NOT LESS THAN 32 INCHES.
4. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND WHICH ARE IN A PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS, PUSH-PULL ACTIVATING BARS, OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE.
5. LEVER HAND ACTIVATED DOOR OPENING HARDWARE SHALL BE CENTERED BETWEEN 34 INCHES AND 44 INCHES MAXIMUM ABOVE THE FLOOR AND NOT REQUIRE MORE THAN 5 POUNDS OF FORCE TO OPERATE.
6. THE FLOOR OR LANDING LENGTH ON EACH SIDE OF AN ENTRANCE OR A PASSAGE DOOR SHALL BE LEVEL AND CLEAR AT LEAST 60 INCHES IN THE DIRECTION OF THE DOOR SWING AND AT LEAST 48 INCHES OPPOSITE THE DIRECTION OF THE DOOR SWING AS MEASURED AT RIGHT ANGLES TO THE FACE OF THE DOOR IN THE CLOSED POSITION. THE WIDTH OF THE LEVEL AND CLEAR AREA ON THE SIDE WHICH THE DOOR SWINGS SHALL EXTEND A MINIMUM OF 24 INCHES PAST THE STRIKE EDGE OF THE DOOR FOR DOORS WITH LATCH SIDE APPROACH AND 36 INCHES FOR DOORS IN DURING HINGE SIDE APPROACH, REFER TO DETAIL D3 ON THIS DRAWING FOR ADDITIONAL CLEARANCE REQUIREMENTS.
7. THE FLOOR OR LANDING SHALL NOT BE MORE THAN 1/2 INCH LOWER THAN THE THRESHOLD OF THE DOORWAY. CHANGES IN LEVEL BETWEEN 1/4 INCH AND 1/2 INCH SHALL BE LEVELED WITH A SLOPE NO GREATER THAN 1:2.
8. THE BOTTOM 10 INCHES OF ALL DOORS (EXCEPT AUTOMATIC AND SLIDING) SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION WHERE NARROW FRAME DOORS ARE USED, A 10 INCH HIGH SMOOTH PANEL SHALL BE INSTALLED ON THE PUSH SIDE OF THE DOOR, WHICH WILL ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST. SURFACES ALONG THIS AREA MUST BE WITHIN 1/16" OF THE SAME PLANE AS THE OTHER. CAVITIES CREATED BY KICK PLATES MUST BE CAPPED.
9. THE MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 LBS. FOR EXTERIOR DOORS AND 5 LBS. FOR INTERIOR DOORS. SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHERE FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY NOT EXCEED 15 LBS.
10. DOOR CLOSERS REQUIRE AT LEAST 5 SECONDS TO CLOSE FROM AN OPEN POSITION OF 90 DEGREES TO 12 DEGREES FROM THE LATCH
11. EACH GRADE-LEVEL EXTERIOR EXIT DOOR SHALL BE IDENTIFIED BY A TACTILE SIGN WITH THE WORD "EXIT". EACH EXIT DOOR THAT LEADS DIRECTLY TO GRADE-LEVEL EXTERIOR EXIT BY MEANS OF STAIRWAY OR RAMP IS IDENTIFIED BY A TACTILE SIGN THAT STATES "EXIT STAIR DOWN", "EXIT RAMP DOWN," "EXIT STAIR UP," OR "EXIT RAMP UP" AS APPROPRIATE. EACH EXIT DOOR THAT LEADS DIRECTLY TO GRADE-LEVEL EXTERIOR EXIT BY MEANS OF AN EXIT ENCLOSURE OR EXIT PASSAGEWAY IS IDENTIFIED BY A TACTILE EXIT SIGN WITH THE WORDS "EXIT ROUTE". EACH ACCESS DOOR FROM AN INTERIOR ROOM OR AREA TO A CORRIDOR OR HALLWAY THAT IS REQUIRED TO HAVE A VISUAL EXIT SIGN IS IDENTIFIED BY A TACTILE EXIT SIGN WITH THE WORDS "EXIT ROUTE". EACH DOOR THROUGH AN HORIZONTAL EXIT IS IDENTIFIED BY A TACTILE EXIT SIGN WITH THE WORDS "TO EXIT".
12. VISION LIGHTS MUST HAVE BOTTOM OF AT LEAST ONE GLAZED PANEL LOCATED WITHIN 43" MAX. ABOVE FLOOR FINISH.

STAIRS AND STAIRWAYS

1. STAIRWAYS SHALL HAVE HANDRAILS ON EACH SIDE. EVERY STAIRWAY REQUIRED TO BE MORE THAN 88 INCHES IN WIDTH SHALL BE PROVIDED WITH NOT LESS THAN ONE INTERMEDIATE HANDRAIL FOR EACH 88 INCHES OF REQUIRED WIDTH. INTERMEDIATE HANDRAILS SHALL BE SPACED APPROXIMATELY EQUALLY WITHIN THE ENTIRE WIDTH OF THE STAIRWAY.
2. THE UPPER APPROACH AND THE LOWER TREAD OF EACH INTERIOR STAIR SHALL BE MARKED BY A STRIP OF CLEARLY CONTRASTING COLOR AT LEAST 2 INCHES WIDE AND PLACED PARALLEL TO, AND NOT MORE THAN 1 INCH FROM THE NOSE OF THE STEP OR LANDING TO ALERT THE VISUALLY IMPAIRED. THE STRIPE SHALL BE OF A MATERIAL THAT IS AT LEAST AS SLIP RESISTANT AS THE TREADS OF THE STAIR.
3. WHERE STAIRS OCCUR OUTSIDE OF A BUILDING, THE UPPER APPROACH AND ALL TREADS SHALL BE MARKED BY A STRIP OF CLEARLY CONTRASTING COLOR AT LEAST 2 INCHES WIDE AND PLACED PARALLEL TO, AND NOT MORE THAN 1 INCH FROM THE NOSE OF THE STEP OF LANDING TO ALERT THE VISUALLY IMPAIRED. THE STRIP SHALL BE OF A MATERIAL THAT IS AT LEAST AS SLIP-RESISTANT AS THE TREADS OF THE STAIR, A PAINTED STRIPE SHALL BE ACCEPTABLE.
4. ALL STAIR TREAD SURFACES SHALL BE SLIP-RESISTANT.

HANDRAILS ON STAIRS

1. HANDRAILS AT STAIRWAYS SHALL BE 34" TO 38" ABOVE THE NOSING OF THE TREADS.
2. HANDRAILS AT THE TOP OF STAIRWAYS SHALL EXTEND A MINIMUM OF 12 INCHES OF LEVEL DISTANCE BEYOND THE TOP NOSING. HANDRAILS AT THE BOTTOM OF STAIRWAYS SHALL EXTEND A MINIMUM OF TREAD WIDTH PLUS 12 INCHES BEYOND THE BOTTOM NOSING BEFORE THEY ARE RETURNED, AT THE BOTTOM, THE HANDRAIL SHALL CONTINUE TO SLOPE FOR A DISTANCE OF THE WIDTH OF ONE TREAD FROM THE BOTTOM RISER. THE REMAINDER OF THE EXTENSION IS HORIZONTAL (LEVEL).
3. WHERE THE EXTENSION OF THE HANDRAIL IN THE DIRECTION OF THE STAIR RUN WOULD CREATE A HAZARD, THE EXTENSION SHALL BE MADE AT RIGHT ANGLES ON THE FACE OF A RETURNING WALL WHERE THE STAIRS ARE CONTINUOUS THE HANDRAIL SHALL BE CONTINUOUS AND NEED NOT EXTEND OUT INTO THE LANDING.
4. HANDRAILS SHALL NOT REDUCE THE REQUIRED WIDTH OF STAIR. WHERE HANDRAIL EXTENSIONS PROTRUDE MORE THAN 4" INTO AN ADJACENT ROUTE OF TRAVEL, PROVIDE CANE-DETECTABLE RAIL AT 27" ABOVE LANDING.

RAMPS

1. ALL RAMPS USED AS EXITS AND ANY PATH OF TRAVEL HAVING A SLOPE GREATER THAN 1:20 SHALL COMPLY WITH THE REQUIREMENTS OF THIS SECTION. RAMPS SHALL HAVE THE LEAST POSSIBLE SLOPE.
2. PEDESTRIAN RAMPS SERVING PRIMARY ENTRANCES TO A BUILDING SHALL HAVE A MINIMUM WIDTH OF 48 INCHES. RAMPS SERVING AN OCCUPANCY LOAD GREATER THAN 300 SHALL HAVE A MINIMUM WIDTH OF 60 INCHES.
3. ALL RAMPS IN AREAS ACCESSIBLE TO PERSONS WITH DISABILITIES ON A PATH OF TRAVEL OR SERVING EXITS SHALL HAVE A 1:12 MAXIMUM SLOPE WITH CROSS SLOPES NO GREATER THAN 1:50. LANDINGS NOT TO EXCEED 1:50 IN ANY DIRECTION.
4. INTERMEDIATE LANDINGS OCCURRING AT NO DIRECTION CHANGE TO BE 60" LONG. RAMPS W/ INTERMEDIATE LANDING AT AN EQUAL TO 30 DEGREES SHALL BE OF 60" LENGTH AND 60" WIDTH. INTERMEDIATE LANDINGS OCCURRING AT > EQUAL TO 30 DEGREES SHALL BE OF 72" LENGTH AND 60" WIDTH.
5. THE LEVEL LANDING WIDTH OF ANY RAMP SHALL EXTEND 24" PAST THE STRIKE EDGE OF ANY EXTERIOR DOOR OR GATE.
6. DOORS STANDING IN ANY POSITION SHALL NOT REDUCE THE MINIMUM DIMENSION OF THE RAMP TO LESS THAN 42 INCHES OR THE REQUIRED WIDTH BY MORE THAN 3 INCHES.
7. HANDRAILS ARE REQUIRED ON RAMPS WHEN THE SLOPE EXCEEDS 1:20 (5%). HANDRAILS AT RAMPS SHALL RUN ALONG BOTH SIDES OF A RAMP. BE CONTINUOUS THE FULL LENGTH, AND EXTEND BEYOND THE TOP AND BOTTOM OF THE RAMP SHALL BE 12" MIN.
8. THE HANDRAIL GRIP SURFACE AT RAMPS SHALL BE MOUNTED BETWEEN 34 INCHES AND 38 INCHES ABOVE THE RAMP SURFACE.
9. ALL HANDRAIL ENDS SHALL BE RETURNED OR SHALL TERMINATE IN NEWEL POSTS OR SAFETY TERMINALS.
10. ALL HANDRAILS PROJECTED FROM A WALL SHALL HAVE AN ABSOLUTE CLEARANCE OF 1-1/2 INCHES BETWEEN THE WALL AND THE HANDRAIL.
11. THE HAND GRIP PORTION OF HANDRAILS SHALL BE NOT LESS THAN 1-1/4 INCH NOR MORE THAN 1 1/2" INCH IN CROSS-SECTIONAL DIMENSION OR SHAPE AND SHALL PROVIDE AN EQUIVALENT SMOOTH GRIPPING SURFACE WITH NO SHARP CORNERS.
12. HANDRAILS CANNOT PROJECT INTO THE REQUIRED CLEAR WIDTH OF THE RAMP MORE THAN 3 1/2" FROM EACH SIDE OF THE RAMP AT THE HANDRAIL HEIGHT.

SANITARY FACILITIES (GENERAL)

1. ALL DOORWAYS LEADING TO SANITARY FACILITIES SHALL HAVE 32 INCH CLEAR, UNOBSTRUCTED OPENINGS.
2. ALL SINKS, FAUCET CONTROLS, AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBS. LEVER-OPERATED, PUSH TYPE, AND ELECTRONICALLY CONTROLLED MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS. SELF-CLOSING VALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS.
3. LAVATORIES SHALL BE MOUNTED WITH A MINIMUM DISTANCE OF 18 INCHES FROM A WALL OR PARTITION TO THE CENTER OF THE FIXTURE. ACCESSIBLE LAVATORIES SHALL BE MOUNTED WITH THE RIM AND/OR COUNTER SURFACE NO HIGHER THAN 34 INCHES ABOVE THE FLOOR.

TOILET ROOM FIXTURES AND ACCESSORIES

1. THE HEIGHT OF ACCESSIBLE WATER CLOSETS SHALL BE A MINIMUM OF 17 INCHES AND A MAXIMUM OF 19 INCHES MEASURED TO THE TOP OF THE TOILET SEAT.
2. PROVIDE 18" FROM THE CENTERLINE OF THE WATER CLOSET TO THE ADJACENT WALL.
3. TOILET AND URINAL FLUSH CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. CONTROLS FOR THE FLUSH VALVES SHALL BE MOUNTED ON THE OPEN (WIDE) SIDE OF THE TOILET STALL, NO MORE THAN 44 INCHES ABOVE THE FLOOR. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBS.
4. WHERE URINALS ARE PROVIDED, AT LEAST ONE SHALL HAVE A CLEAR SPACE 30 INCHES WIDE BY 48 INCHES LONG IN FRONT OF THE URINAL. AT LEAST ONE URINAL WITH 14" MIN. TO 17 INCHES MAX. RIM PROJECTION FROM THE WALL AND A MAXIMUM OF 17 INCHES ABOVE THE FLOOR SHALL BE INSTALLED.
5. AMBULATORY STALLS ARE REQUIRED WHERE 6 OR MORE STALLS ARE PROVIDED WITHIN A MULTIPLE ACCOMMODATION TOILET ROOM. AMBULATORY ACCESSIBLE COMPARTMENTS SHALL BE 60 INCHES DEEP MIN. AND 36 INCHES WIDE. COMPARTMENT DOORS SHALL NOT SWING INTO THE MINIMUM REQUIRED COMPARTMENT AREA.
6. A CLEAR FLOOR SPACE 30 INCHES WIDE BY 48 INCHES LONG SHALL BE PROVIDED IN FRONT OF A LAVATORY TO ALLOW FORWARD APPROACH. SUCH CLEAR SPACE SHALL ADJOIN OR OVERLAP AN ACCESSIBLE ROUTE AND SHALL EXTEND INTO KNEE AND TOE SPACE UNDERNEATH LAVATORY.
7. LAVATORIES SHALL BE MOUNTED WITH A CLEARANCE OF AT LEAST 29 INCHES FROM THE FLOOR TO THE BOTTOM OF THE APRON WITH 27" MINIMUM KNEE CLEARANCE UNDER THE FRONT LIP EXTENDING A MINIMUM OF 30 INCHES IN WIDTH WITH 8 INCHES MINIMUM DEPTH AT THE TOP. TOE CLEARANCE SHALL BE SAME WIDTH AND A MINIMUM OF 9 INCHES HIGH FROM THE FLOOR AND A MINIMUM OF 17 INCHES DEEP AT THE BOTTOM OF THE LAVATORY.
8. HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
9. MIRRORS LOCATED ABOVE LAVATORIES OR COUNTERTOPS SHALL HAVE BOTTOM OF REFLECTIVE SURFACE 40" MAX. ABOVE FINISHED FLOOR. MIRRORS MOUNTED ELSEWHERE SHALL HAVE BOTTOM EDGE OF REFLECTIVE SURFACE 35" MAX. ABOVE FINISHED FLOOR. TOP EDGE OF MIRRORS SHOULD BE 74" MINIMUM HIGH TO BE USEABLE BY AMBULATORY PEOPLE.
10. LOCATE PAPER TOWEL DISPENSERS, SANITARY NAPKIN DISPENSERS, AND WASTE RECEPTACLES WITH ALL OPERABLE PARTS NOT MORE THAN 40 INCHES FROM THE FLOOR.
11. LOCATE TOILET TISSUE DISPENSERS ON THE WALL 7-9 INCHES FROM THE FRONT OF THE WATER CLOSET TO THE CENTERLINE OF THE DISPENSER, AND 36" MAX FROM REAR WALL TO FURTHEST EDGE.
12. DOORS CANNOT SWING INTO THE REQUIRED CLEAR FLOOR SPACE AT ANY FIXTURE.
13. CLEARANCE AROUND WATER CLOSET SHALL BE 60 INCHES WIDE x 56 INCHES DEEP, NO OTHER FIXTURES CAN BE LOCATED WITHIN THIS AREA.

MULTIPLE ACCOMMODATION TOILET ROOMS

1. A CLEAR SPACE, MEASURED FROM THE FLOOR TO A HEIGHT OF 27 INCHES ABOVE THE FLOOR, WITHIN THE SANITARY FACILITY ROOM, OF SUFFICIENT SIZE TO INSCRIBE A CIRCLE OF A DIAMETER NOT LESS THAN 60 INCHES, OR A CLEAR SPACE NOT LESS THAN 56 INCHES X 63 INCHES IN SIZE SHALL BE PROVIDED.
2. AN ACCESSIBLE INDIVIDUAL TOILET STALL SHALL PROVIDE AT LEAST 28 INCHES CLEAR SPACE FROM A FIXTURE OR 32 INCHES CLEAR SPACE FROM A WALL AT ONE SIDE OF THE WATER CLOSET. A 48 INCH LONG CLEAR SPACE IN FRONT OF WATER CLOSET SHALL BE PROVIDED IF THE COMPARTMENT HAS AN END OPENING DOOR (FACING THE WATER CLOSET). A 60 INCH LONG CLEAR SPACE SHALL BE PROVIDED IN COMPARTMENT WHEN DOOR IS LOCATED AT THE SIDE. GRAB BARS SHALL NOT PROJECT MORE THAN 3 INCHES INTO CLEAR SPACE SPECIFIED ABOVE.
3. WATER CLOSET COMPARTMENT SHALL BE EQUIPPED WITH DOOR THAT HAS AN AUTOMATIC CLOSING DEVICE AND A CLEAR UNOBSTRUCTED OPENING WIDTH OF 32 INCHES WHEN LOCATED AT THE END, AND 36 INCHES WHEN LOCATED AT SIDE, WHEN THE DOOR IS POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION.
4. EXCEPT FOR DOOR OPENINGS, A CLEAR UNOBSTRUCTED ACCESS NOT LESS THAN 44 INCHES SHALL BE PROVIDED TO ALL WATER CLOSET COMPARTMENTS DESIGNED FOR USE BY THE DISABLED. THE SPACE IMMEDIATELY IN FRONT OF A WATER CLOSET COMPARTMENT SHALL BE NOT LESS THAN 48 INCHES AS MEASURED AT RIGHT ANGLES TO THE COMPARTMENT DOOR IN ITS CLOSED POSITION.
5. THE WATER CLOSET AND DOOR MANEUVERING CLEARANCE CANNOT OVERLAP IN THE ACCESSIBLE STALL.
6. STALL DOORS TO BE HINGED 4" MAXIMUM OPPOSITE THE WATER CLOSET FOR FRONT OR SIDE OPENING DOORS.
7. STALL DOORS CANNOT SWING INTO THE REQUIRED CLEAR AREA AT THE WATER CLOSET.
8. TOILET STALL DOORS SHALL BE SELF-CLOSING.
9. A DOOR PULL SHALL BE PLACED ON BOTH SIDES OF THE DOOR BELOW THE HATCH.

GRAB BARS

1. GRAB BARS SHALL BE LOCATED ON ONE SIDE AND THE BACK OF THE PHYSICALLY DISABLED TOILET STALL OR COMPARTMENT AND SHALL BE SECURELY ATTACHED 33 INCHES ABOVE AND PARALLEL TO THE FLOOR TO CENTERLINE.
2. GRAB BARS AT THE SIDE SHALL BE AT LEAST 42 INCHES LONG WITH THE FRONT END POSITIONED 54 INCHES FROM THE BACK OF THE STALL. GRAB BARS AT THE BACK SHALL NOT BE LESS THAN 36 INCHES LONG.
3. THE DIAMETER OR WIDTH OF THE GRIPPING SURFACES OF A GRAB BAR SHALL BE 1-1/4 INCHES MIN. AND 1 1/2 INCHES MAX. OR THE SHAPE SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE. IF THE GRAB BARS ARE MOUNTED ADJACENT TO A WALL, THE SPACE BETWEEN THE WALL AND THE GRAB BARS SHALL BE 1-1/2 INCHES.
4. GRAB BARS, AND ANY WALL OR OTHER SURFACE ADJACENT TO IT, SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS. GRAB BAR EDGES SHALL HAVE A MIN. RADIUS OF 1/8 INCH.
5. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.
6. GRAB BARS SHALL BE DESIGNED TO SUPPORT A 250 POUND FORCE.
7. NO OBJECT TO BE MOUNTED WITHIN 1 1/2" BELOW OR 12" ABOVE ANY GRAB BAR.

SIGNAGE

1. TACTILE ROOM IDENTIFICATION SIGNS TO BE MOUNTED 60 INCHES ABOVE FINISHED FLOOR TO CENTERLINE.
2. BASELINE OF THE HIGHEST CHARACTER TO BE 60 INCHES MAXIMUM AND BASELINE OF THE LOWEST CHARACTER TO BE 48 INCHES MINIMUM ABOVE FINISHED FLOOR.
3. TACTILE ROOM IDENTIFICATION SIGNS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18" MIN. X 18" MIN. CENTERED ON SIGN IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING.

TELEPHONES

1. PROVIDE A 30 INCH X 48 INCH CLEAR SPACE AT TELEPHONE, THE CLEAR SPACE MAY INCLUDE KNEE SPACE UNDER THE TELEPHONE.
2. THE HIGHEST OPERABLE PART OF THE TELEPHONE SHALL BE 48 INCHES MAX.
3. TELEPHONES MOUNTED IN A CORNER THAT REQUIRE WHEELCHAIR USERS TO REACH DIAGONALLY SHALL HAVE THE HIGHEST OPERABLE PART NO HIGHER THAN 54 INCHES AFF.
4. THE CORD FROM THE TELEPHONE TO THE HANDSET SHALL BE AT LEAST 29 INCHES LONG.
5. IF BANKS OF PUBLIC TELEPHONES ARE PROVIDED, EACH ACCESSIBLE TELEPHONE MUST BE EQUIPPED W/ VOLUME CONTROL. IN ADDITION 25% OF ALL OTHER PUBLIC TELEPHONES SHOULD HAVE VOLUME CONTROL AND BE IDENTIFIED WITH APPROPRIATE SIGNAGE
6. TELEPHONES SHALL HAVE PUSH-BUTTON CONTROLS WHERE SERVICE FOR SUCH EQUIPMENT IS AVAILABLE.

ADDITIONAL REQUIREMENTS

1. THE HIGHEST OPERABLE PART OF RECEPTACLE OUTLETS SHALL BE NOT LESS THAN 15 INCHES ABOVE THE FLOOR OR WORKING PLATFORM.
2. THE TOP OF THE BOX OF THE OPERATING HANDLE OF SWITCHES INTENDED TO BE USED BY OCCUPANTS OF A ROOM OR AREA TO CONTROL LIGHTING AND RECEPTACLE OUTLETS, APPLIANCES, OR COOLING, HEATING AND VENTILATING EQUIPMENT, SHALL BE 48 INCHES MAXIMUM ABOVE THE FLOOR OR WORKING PLATFORM.
3. HIGHEST OPPERABLE PART OF FIRE ALARM INITIATING DEVICES (BOXES) SHALL BE LOCATED 48 INCHES ABOVE THE LEVEL OF THE ADJACENT FLOOR, WORKING PLATFORM, GROUND SURFACE, OR SIDEWALK.
4. INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE THE STANDARD USED TO IDENTIFY FACILITIES THAT ARE ACCESSIBLE TO AND USABLE BY PHYSICALLY DISABLED PERSONS. THE SYMBOL, DESCRIBED ABOVE SHALL CONSIST OF A WHITE FIGURE ON BLUE BACKGROUND. THE BLUE SHALL BE EQUAL TO COLOR NO. 15090 IN FEDERAL STANDARD 595A.
5. ALL CONTROLS TO BE 15" MIN. TO 48" MAX., REGARDLESS OF APPROACH.
6. ACCESSIBLE PORTIONS OF SERVICE COUNTERS TO BE 28"-34" HIGH, 36" MIN. WIDE AND MUST EXTEND THE SAME DEPTH AS THE ADJACENT COUNTERSPACE.
7. WHERE LOCKERS ARE PROVIDED FOR THE PUBLIC, CLIENTS, EMPLOYEES, MEMBERS OR PARTICIPANTS, AT LEAST ONE AND NOT LESS THAN 1% OF ALL LOCKERS ARE ACCESSIBLE. A PATH OF TRAVEL NOT LESS THAN 36" IN CLEAR WIDTH IS PROVIDED TO THESE LOCKERS.

D1 DISABLED ACCESS REQUIREMENTS
GA-2 SHEET NOTES

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO DIGGING — SERVING NORTHERN AND SOUTHERN CALIFORNIA COUNTIES

0" 1" VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, AMOUNT SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

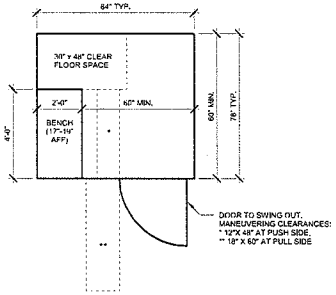
NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

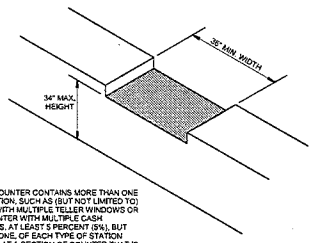
CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

ACCESSIBILITY DETAILS

DESIGNED BY JK	DATE XX/2014	SCALE	APPROVED BY: DATE
DRAWN BY MK	DATE XX/2014		XX-XX-14
CHECKED BY AD	DATE XX/2014	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. GA-2			SHEET __ of 100 SHEETS



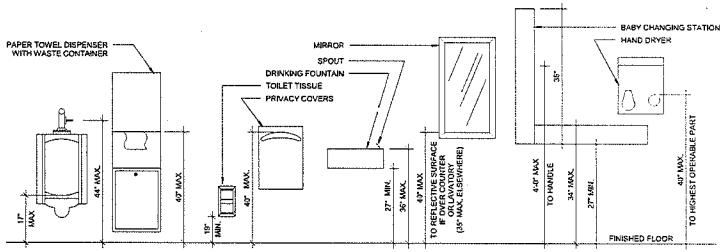
A1 DRESSING ROOM DETAIL
GA-3



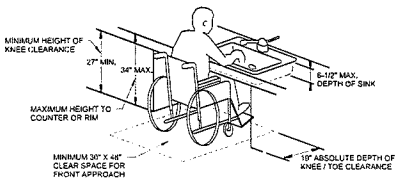
WHERE A SINGLE COUNTER CONTAINS MORE THAN ONE TRANSACTION STATION, SUCH AS (BUT NOT LIMITED TO) A BANK COUNTER WITH MULTIPLE TELLER WINDOWS OR RETAIL SALES COUNTER WITH MULTIPLE CASH REGISTER STATIONS, AT LEAST 5 PERCENT (5%), BUT NEVER LESS THAN ONE, OF EACH TYPE OF STATION SHALL BE LOCATED AT A SECTION OF COUNTER THAT IS AT LEAST 36" LONG AND NO MORE THAN 26"-34" HIGH

*NOTE: THE ACCESSIBLE COUNTERS SHALL BE THE SAME DEPTH AS STANDARD COUNTERS

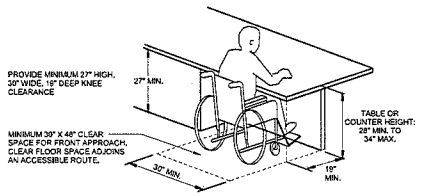
A2 ACCESSIBLE SALES COUNTER AT MULTIPLE TRANSACTION STATIONS
GA-3 SCALE: N.T.S.



A3 MOUNTING HEIGHT REQUIREMENTS
GA-3 SCALE: 3/4" = 1'-0"

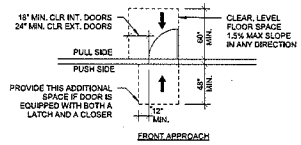


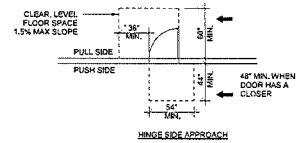
B1 ACCESSIBLE SINK
GA-3 SCALE: N.T.S.

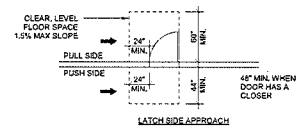


NOTES:
1. WHERE FOOD OR DRINK IS SERVED AT COUNTERS EXCEEDING 34" IN HEIGHT FOR CONSUMPTION BY CUSTOMERS SEATED OR STANDING AT THE COUNTER, A PORTION OF THE MAIN COUNTER WHICH IS 60" MINIMUM IN LENTGH SHALL BE PROVIDED.
2. KNEE CLEARANCE IS NOT REQUIRED AT CHECKOUT COUNTERS OR SERVICE COUNTERS WITH MULTIPLE TRANSACTION STATIONS. SEE A2 GA-3

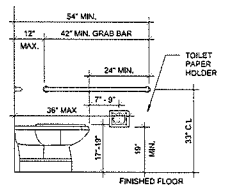
B2 ACCESSIBLE TABLE OR COUNTER WITH FORWARD APPROACH
GA-3 SCALE: N.T.S.





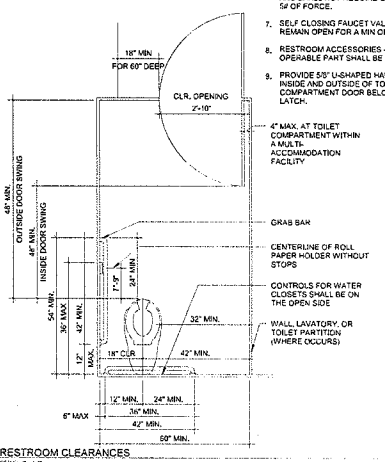


C3 REQUIRED CLEARANCES
GA-3 SCALE: 1/2" = 1'-0"

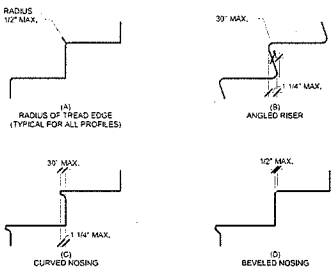


NOTES

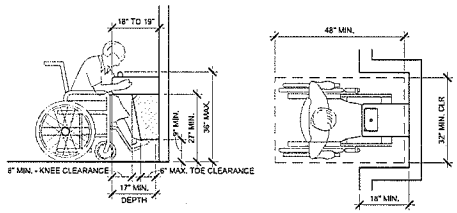
1. MOUNT TOILET PAPER DISPENSER WITHIN 7-9" OF SEAT FRONT AND 19" MIN AFF. ALLOW AT LEAST 1 1/2" CLEAR BELOW GRAB BAR, 36" MAX. FROM THE REAR WALL TO THE FURTHEST EDGE.
2. PROVIDE FLUSH CONTROLS ON WIDE SIDE OF TOILET.
3. FLUSH CONTROLS SHALL NOT OBSTRUCT GRAB BARS WITHIN 1 1/2" BELOW OR 12" ABOVE.
4. FLUSH CONTROLS SHALL NOT REQUIRE GRASPING OR PINCHING TO OPERATE AND SHALL NOT REQUIRE GREATER THAN 5# OF FORCE.
5. FLUSH CONTROLS SHALL BE OPERABLE WITH ONE HAND.
6. FAUCET CONTROLS SHALL NOT REQUIRE GRASPING OR PINCHING TO OPERATE AND SHALL NOT REQUIRE GREATER THAN 5# OF FORCE.
7. SELF CLOSING FAUCET VALVES SHALL REMAIN OPEN FOR A MIN OF 10 SECONDS.
8. RESTROOM ACCESSORIES - HIGHEST OPERABLE PART SHALL BE 40" MAX. AFF.
9. PROVIDE 5/8" U-SHAPED HANDLE ON INSIDE AND OUTSIDE OF TOILET COMPARTMENT DOOR BELOW THE LATCH.



C4 RESTROOM CLEARANCES
GA-3 SCALE: 1" = 1'-0"



C1 STAIR NOSINGS
GA-3 SCALE: N.T.S.



C2 DRINKING FOUNTAIN
GA-3 SCALE: 1/2" = 1'-0"

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — SERVING NWC SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES BAR IS ONE INCH LONG ON FULL-SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment — jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

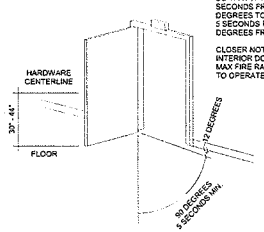
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

ACCESSIBILITY DETAILS

DESIGNED BY: JK	DATE: XX/2014	SCALE: VARIES	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

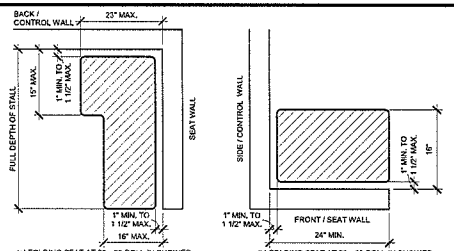
PLAN NO. GA-3 — SHEET ____ of 100 SHEETS



NOTE:
DOOR CLOSERS, IF PRESENT, MUST BE SET SO THAT IT TAKES THE DOOR AT LEAST 3 SECONDS FROM AN OPEN POSITION OF 70 DEGREES TO WITHIN 3" OF THE LATCH AND 5 SECONDS FROM FROM 90 DEGREES TO 12 DEGREES FROM THE LATCH

CLOSER NOTE:
INTERIOR DOOR / EXTERIOR DOOR 5 LBS.
MAX FIRE RATED DOOR 15 LBS. MAX FORCE TO OPERATE

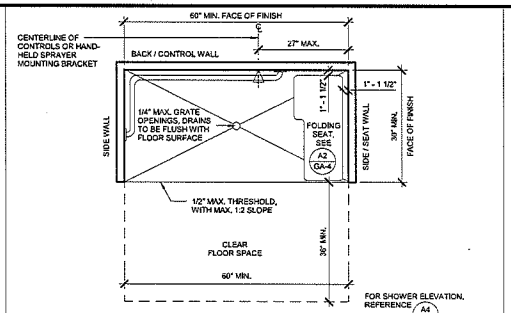
A1 GA-4 ACCESSIBLE HARDWARE REQUIREMENTS



(a) FOLDING SEAT AT 30 x 60 ROLL-IN SHOWER (b) FOLDING SEAT AT 36 x 60 ROLL-IN SHOWER

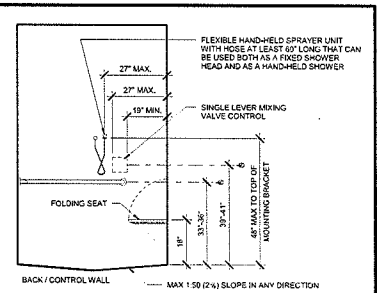
NOTES:
1. WHEN FOLDED, THE SHOWER SEAT DOES NOT EXTEND MORE THAN 5" FROM THE MOUNTING WALL.
2. SHOWER SEAT PROVIDES MINIMUM STRUCTURAL STRENGTH TO SUPPORT A 250 LB. POINT LOAD.
3. GRAB BARS ARE LOCATED ON WALLS ADJACENT TO AND OPPOSITE THE SEAT.
4. CONTINUOUS L-SHAPED GRAB BAR IS PROVIDED ALONG THE WALLS OPPOSITE FROM AND ADJACENT TO THE SEAT (BUT NOT TO EXTEND TO INCLUDED THAT PORTION OF WALL OVER THE SEAT.

A2 GA-4 SHOWER SEAT

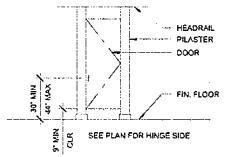


FOR SHOWER ELEVATION, REFERENCE A4 GA-4

A3 GA-4 ACCESSIBLE 30 X 60 ROLL-IN SHOWER

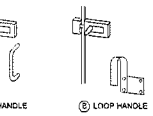


A4 GA-4 ACCESSIBLE 30 X 60 ROLL-IN SHOWER - ELEVATION



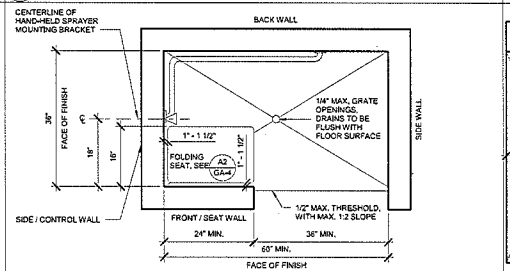
NOTES:
1. DOORS TO THE ACCESSIBLE WATER, CLOSET COMPARTMENTS SHALL BE EQUIPPED WITH A SELF CLOSING DEVICE.
2. IF STANDARD COMPARTMENTS ARE USED, PROVIDE SELF CLOSING DEVICES. IF NON-STANDARD COMPARTMENT DOORS ARE USED, PROVIDE CLEARANCE AT THE STRIKE EDGE.
3. REQUIRED CLEAR OPENINGS FOR ACCESSIBLE STALL DOORS ARE AS FOLLOWS - SIDE ENTRY 34" CLEAR MIN. - END ENTRY 32" CLEAR MIN.
4. PROVIDE 18MM DOOR MANEUVERING CLEARANCE ON OUTSWINGING STALL DOORS.
5. U-SHAPED HARDWARE TO BE PROVIDED ON BOTH SIDES OF THE DOOR BELOW THE LATCH.
6. STALL DOOR CANNOT SWING INTO THE REQUIRED CLEAR FLOOR SPACE AT THE WATER CLOSET.

B1 GA-4 TOILET STALL DOOR



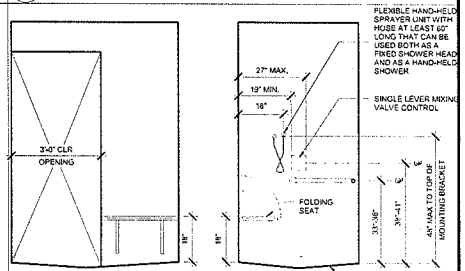
NOTE:
THE INSIDE AND OUTSIDE OF THE COMPARTMENT DOORS TO BE DISABLED ACCESSIBLE STALLS MUST BE EQUIPPED WITH A LOOP OR U-SHAPED HANDLE IMMEDIATELY BELOW THE LATCH, THE LATCH MUST BE FLIP-OVER STYLE, SLIDING OR OTHER HARDWARE OPERABLE W/ONE HAND AND NOT REQUIRING TIGHT GRASPING OR TWISTING TO OPERATE

B2 GA-4 TOILET DOOR STALL HARDWARE

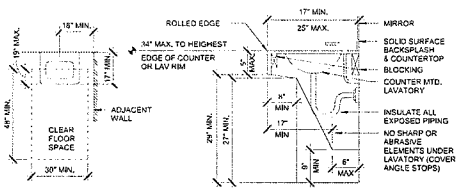


FOR SHOWER ELEVATIONS, REFERENCE B4 GA-4

B3 GA-4 ACCESSIBLE 36 X 60 ROLL-IN SHOWER

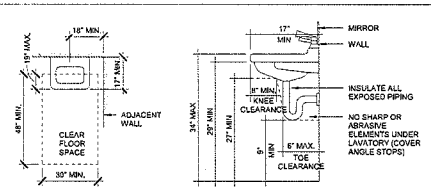


B4 GA-4 ACCESSIBLE 36 X 60 ROLL-IN SHOWER - ELEVATIONS



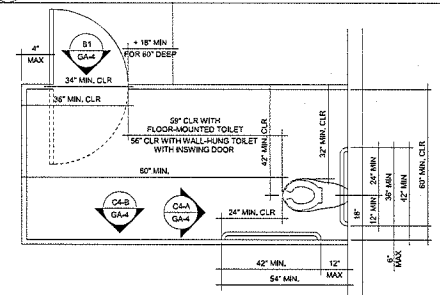
NOTE:
1. THE ACCESSIBLE LAVATORIES SHALL COMPLY WITH THE FOLLOWING:
A. THE FAUCETS CONTROLS, AND OPERATING MECHANISM ARE:
1. THE TYPE WHICH DOES NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST & BE OPERABLE W/ONE HAND.
2. HAS AN OPERATING FORCE OF LESS THAN OR EQUAL TO 5 LBS.
B. IF SELF-CLOSING VALVES ARE USED, THEY SHALL REMAIN OPEN FOR GREATER THAN 10 SECONDS.
C. CLEAR FLOOR SPACE NOT TO EXTEND MORE THAN 19" UNDER LAVATORY.

C1 GA-4 COUNTER MOUNTED LAVATORY

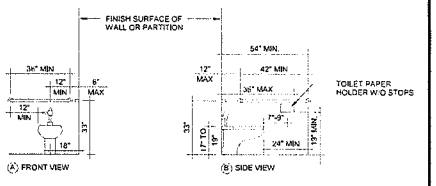


NOTE:
1. THE ACCESSIBLE LAVATORIES SHALL COMPLY WITH THE FOLLOWING:
A. THE FAUCETS CONTROLS, AND OPERATING MECHANISM ARE:
1. THE TYPE WHICH DOES NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST.
2. HAS AN OPERATING FORCE OF LESS THAN OR EQUAL TO 5 LBS.
3. BE OPERABLE WITH ONE HAND
B. IF SELF-CLOSING VALVES ARE USED, THEY SHALL REMAIN OPEN FOR GREATER THAN 10 SECONDS

C2 GA-4 WALL MOUNTED LAVATORY



C3 GA-4 TOILET STALL - SIDE OPENING



NOTES:
1. THE CONTROLS FOR THE FLUSH VALVE SHALL BE
A. OPERABLE WITH ONE HAND,
B. NOT REQUIRE TIGHT GRASPING, PINCHING OR TWIST OF THE WRIST.
C. BE MOUNTED ON THE WIDE SIDE OF THE TOILET.
D. BE MOUNTED AT 44" A.F.F.
E. ACTIVATED WITH A FORCE OF LESS THAN OR EQUAL TO 5 LBS.
F. ALLOW 1 1/2" CLEAR BELOW THE GRAB BAR TOPPING AND 12" CLEAR ABOVE GRAB BAR.

C4 GA-4 WATER CLOSET REQUIREMENTS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN AHEAD, CALL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment — jeffkatz ARCHITECTURE

NOT FOR CONSTRUCTION — AS BUILT PLANS — STATE OF CALIFORNIA

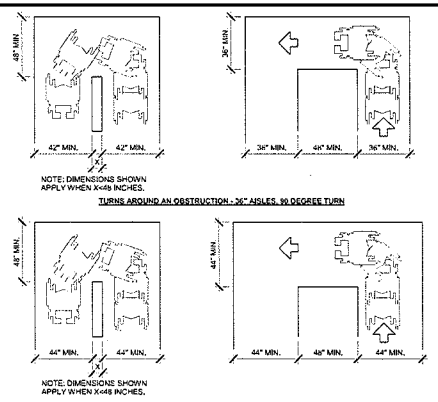
NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

ACCESSIBILITY DETAILS

DESIGNED BY: JK	DATE: XX/2014	SCALE: VARIES	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE: XX-XX-14
DRAWN BY: MK	DATE: XX/2014		
CHECKED BY: AD	DATE: XX/2014	PROJECT MANAGER: 2036	
PLAN NO. GA-4			SHEET ____ of 100 SHEETS



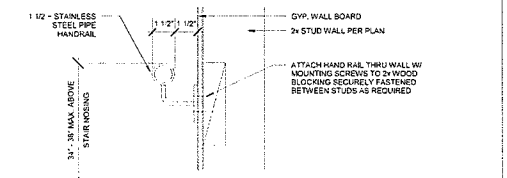
NOTE; DIMENSIONS SHOWN APPLY WHEN X<48 INCHES.

TURNS AROUND AN OBSTRUCTION - 36" AISLES, 90 DEGREE TURN

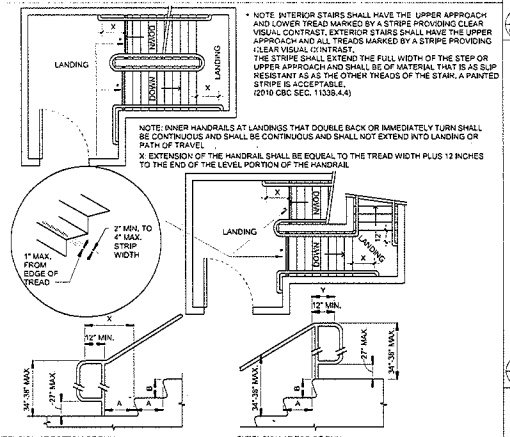
NOTE; DIMENSIONS SHOWN APPLY WHEN X<48 INCHES.

TURNS AROUND AN OBSTRUCTION - 44" AISLES, 90 DEGREE TURN

A1 GA-5 TURNS AROUND AN OBSTRUCTION



B1 GA-5 STAIR HANDRAIL



* NOTE: INTERIOR STAIRS SHALL HAVE THE UPPER APPROACH AND LOWER TREAD MARKED BY A STRIPE PROVIDING CLEAR VISUAL CONTRAST. EXTERIOR STAIRS SHALL HAVE THE UPPER APPROACH AND ALL TREADS MARKED BY A STRIPE PROVIDING CLEAR VISUAL CONTRAST.
THE STRIPE SHALL EXTEND THE FULL WIDTH OF THE STEP OR UPPER APPROACH AND SHALL BE OF MATERIAL THAT IS AS SLIP RESISTANT AS AS THE OTHER TREADS OF THE STAIR. A PAINTED STRIPE IS ACCEPTABLE.
(2010 CBC SEC. 11338.4.4)

NOTE: INNER HANDRAILS AT LANDINGS THAT DOUBLE BACK OR IMMEDIATELY TURN SHALL BE CONTINUOUS AND SHALL BE CONTINUOUS AND SHALL NOT EXTEND INTO LANDING OR PATH OF TRAVEL

X: EXTENSION OF THE HANDRAIL SHALL BE EQUEAL TO THE TREAD WIDTH PLUS 12 INCHES TO THE END OF THE LEVEL PORTION OF THE HANDRAIL

EXTENSION AT BOTTOM OF RUN

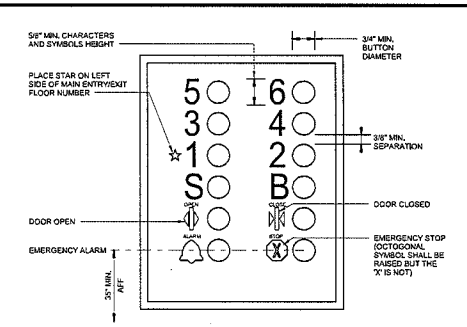
EXTENSION AT TOP OF RUN

A - TREAD WIDTH (11" MIN.)
B - RISER HEIGHT (4" MIN., 7" MAX.)
X - THE MINIMUM HANDRAIL EXTENSION OF 12 INCHES PLUS THE WIDTH OF TREAD REQUIRED AT EACH BOTTOM RISER

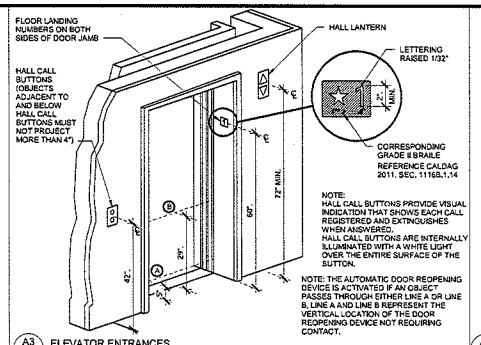
A - TREAD WIDTH (11" MIN.)
B - RISER HEIGHT (4" MIN., 7" MAX.)
Y - THE MINIMUM HANDRAIL EXTENSION REQUIRED AT EACH TOP RISER

NOTES:
HANDRAILS TO BE PROVIDED AT EACH SIDE OF STAIRWAY FLIGHT. HANDRAILS SHALL RETURN SMOOTHLY TO FLOOR, WALL OR POST.
ALL STEPS ON A FLIGHT OF STAIRS SHALL HAVE UNIFORM RISER HEIGHTS AND UNIFORM TREAD DEPTHS.
ALL TREAD SURFACES AND STRIPING MATERIAL SHALL BE SLIP-RESISTANT.
OPEN RISERS ARE NOT PERMITTED.

D1 GA-5 STAIRWAY TREADS, RISERS AND HANDRAIL EXTENSIONS



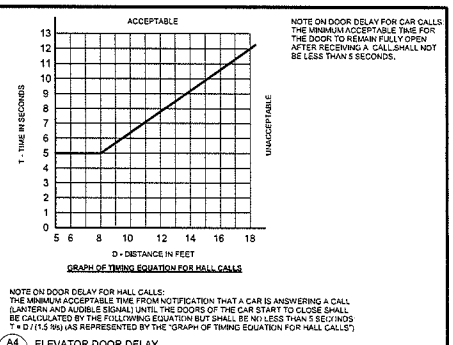
A2 GA-5 ELEVATOR CONTROL PANEL



NOTE:
HALL CALL BUTTONS PROVIDE VISUAL INDICATION THAT SHOWS EACH CALL REGISTERED AND EXTINGUISHES WHEN ANSWERED.
HALL CALL BUTTONS ARE INTERNALLY ILLUMINATED WITH A WHITE LIGHT OVER THE ENTIRE SURFACE OF THE BUTTON.

NOTE: THE AUTOMATIC DOOR REOPENING DEVICE IS ACTIVATED IF AN OBJECT PASSES THROUGH EITHER LINE A OR LINE B. LINE A AND LINE B REPRESENT THE VERTICAL LOCATION OF THE DOOR REOPENING DEVICE NOT REQUIRING CONTACT.

A3 GA-5 ELEVATOR ENTRANCES

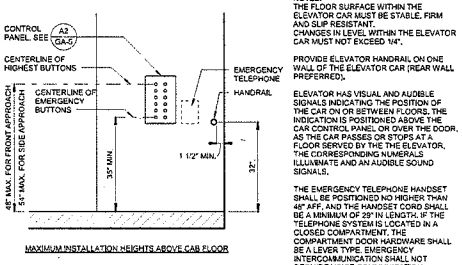


GRAPH OF TIMING EQUATION FOR HALL CALLS

NOTE ON DOOR DELAY FOR CAR CALLS:
THE MINIMUM ACCEPTABLE TIME FOR THE DOOR TO REMAIN FULLY OPEN AFTER RECEIVING A CALL SHALL NOT BE LESS THAN 5 SECONDS.

NOTE ON DOOR DELAY FOR HALL CALLS:
THE MINIMUM ACCEPTABLE TIME FROM NOTIFICATION THAT A CAR IS ANSWERING A CALL (LANTERN AND AUDIBLE SIGNAL) UNTIL THE DOORS OF THE CAR START TO CLOSE SHALL BE CALCULATED BY THE FOLLOWING EQUATION BUT SHALL BE NO LESS THAN 5 SECONDS:
T = D / (1.5 fps) (AS REPRESENTED BY THE "GRAPH OF TIMING EQUATION FOR HALL CALLS")

A4 GA-5 ELEVATOR DOOR DELAY



MAXIMUM INSTALLATION HEIGHTS ABOVE CAB FLOOR

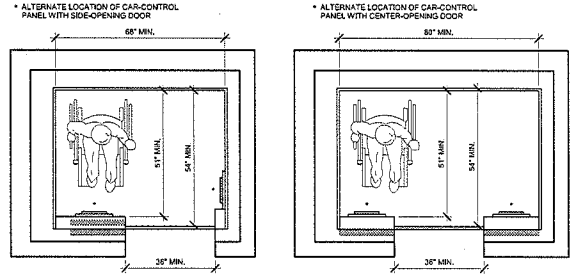
NOTES:
THE FLOOR SURFACE WITHIN THE ELEVATOR CAR MUST BE STABLE, FIRM AND SLIP RESISTANT.
CHANGES IN LEVEL WITHIN THE ELEVATOR CAR MUST NOT EXCEED 1/4".

PROVIDE ELEVATOR HANDRAIL ON ONE WALL OF THE ELEVATOR CAR (REAR WALL PREFERRED).

ELEVATOR HAS VISUAL AND AUDIBLE SIGNALS INDICATING THE POSITION OF THE CAR ON OR BETWEEN FLOORS. THE INDICATION IS POSITIONED ABOVE THE CAR CONTROL PANEL OR OVER THE DOOR, AS THE CAR PASSES OR STOPS AT A FLOOR SERVED BY THE THE ELEVATOR, THE CORRESPONDING NUMERALS ILLUMINATE AND AN AUDIBLE SOUND SIGNALS.

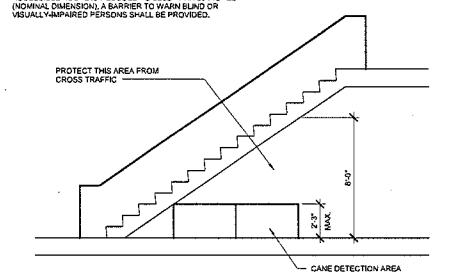
THE EMERGENCY TELEPHONE HANDSET SHALL BE POSITIONED NO HIGHER THAN 48" AFF, AND THE HANDSET CORD SHALL BE A MINIMUM OF 29" IN LENGTH. IF THE TELEPHONE SYSTEM IS LOCATED IN A CLOSED COMPARTMENT, THE COMPARTMENT DOOR HARDWARE SHALL BE A LEVER TYPE. EMERGENCY INTERCOMMUNICATION SHALL NOT REQUIRE VOICE COMMUNICATION.

B2 GA-5 ELEVATOR - CONTROL PANEL AND HANDRAIL INSTALLATION HEIGHTS

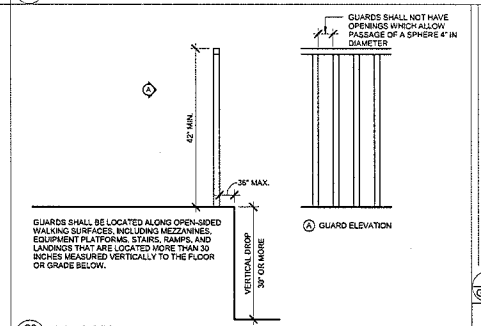


ELEVATOR NOTES:
1. PASSENGER ELEVATORS SHALL BE ON AN ACCESSIBLE ROUTE, LOCATED NEAR A MAJOR PATH OF TRAVEL, AND PROVISIONS SHALL BE MADE TO ENSURE THAT THEY REMAIN ACCESSIBLE AND USABLE AT ALL TIMES THE BUILDING IS OCCUPIED.
2. DOORS ARE SIDE-BY-SIDE TYPE (POWER-OPERATED HORIZONTALLY SLIDING CAR AND HOISTWAY DOORS).
3. OPERATION OF DOORS (OPENING AND CLOSING) IS AUTOMATIC.
4. THE CLEARANCE BETWEEN THE CAR PLATFORM SILL AND THE EDGE OF ANY HOISTWAY LANDING SHALL BE 1 1/4 INCH MAXIMUM.
5. EACH CAR SHALL BE EQUIPPED WITH A SELF-LEVELING FEATURE THAT WILL AUTOMATICALLY BRING AND MAINTAIN THE CAR AT FLOOR LANDINGS WITHIN A TOLERANCE OF 1/2 INCH UNDEP RATED LOADING TO ZERO LOADING CONDITIONS.
6. THE LEVEL OF ILLUMINATION AT THE CAR CONTROLS, PLATFORM, CAR THRESHOLD AND CAR LANDING SILL SHALL BE 5 FOOT CANDLES MINIMUM.
7. A TWO-WAY COMMUNICATION SYSTEM SHALL BE PROVIDED AT THE ELEVATOR LANDING ON EACH ACCESSIBLE FLOOR THAT IS ONE OR MORE STORIES ABOVE OR BELOW THE STORY OF EXIT DISCHARGE.
EXCEPTIONS:
1. TWO-WAY COMMUNICATION SYSTEMS ARE NOT REQUIRED AT THE ELEVATOR LANDING WHERE THE TWO-WAY COMMUNICATION SYSTEM IS PROVIDED WITHIN *AREAS OF REFUGE*.
2. TWO-WAY COMMUNICATION SYSTEMS ARE NOT REQUIRED ON FLOORS PROVIDED WITH *EXIT RAMPS*.
(PER 2010 CBC SEC. 1007.8)
8. DIRECTIONAL SIGNAGE INDICATING THE LOCATION OF OTHER *MEANS OF EGRESS* AND WHICH ARE *ACCESSIBLE MEANS OF EGRESS* SHALL BE PROVIDED AT ELEVATOR LANDINGS. SEE C2 GA-5 FOR DIRECTIONAL AND INFORMATIONAL SIGNAGE REQUIREMENTS.

B3 GA-5 ELEVATOR CAR - DIMENSIONS, DOORS, OPERATION AND LEVELING

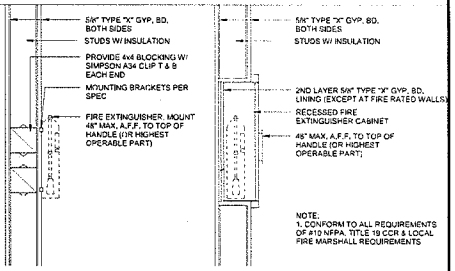


C2 GA-5 CANE DETECTION AT OVERHEAD HAZARD



GUARDS SHALL BE LOCATED ALONG OPEN-SIDED WALKING SURFACES, INCLUDING MEZZANINES, EQUIPMENT PLATFORMS, STAIRS, RAMPS, AND LANDINGS THAT ARE LOCATED MORE THAN 30 INCHES MEASURED VERTICALLY TO THE FLOOR OR GRADE BELOW.

C3 GA-5 GUARD DETAIL



NOTE:
1. CONFORM TO ALL REQUIREMENTS OF #10 NFPA, TITLE 19 CCR & LOCAL FIRE MARSHALL REQUIREMENTS

C4 GA-5 FIRE EXTINGUISHER CABINET

DIAL BEFORE YOU DIG 1-800-422-4133
DIGALERT
PLAN SAFE, DIG BEFORE YOU DIG!
SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

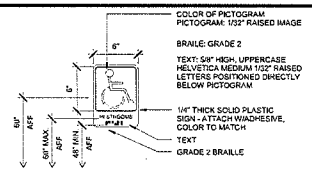
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

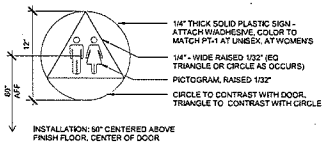
ACCESSIBILITY DETAILS

DESIGNED BY: JK	DATE: XX/2014	SCALE: VARIES	APPROVED BY: DATE: XX-XX-14
DRAWN BY: MK	DATE: XX/2014		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	

PLAN NO. GA-5 SHEET ____ of 100 SHEETS



INSTALLATION: 60" CENTERED ABOVE FINISH FLOOR 2" CLEAR OF METAL DOOR FRAME

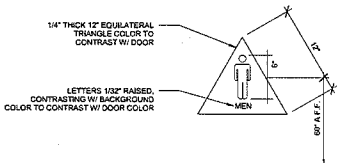


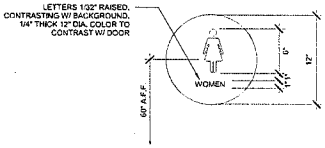
INSTALLATION: 60" CENTERED ABOVE FINISH FLOOR, CENTER OF DOOR

NOTES:

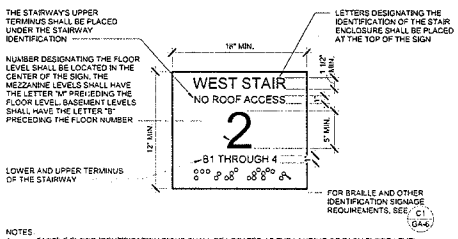
1. PICTOGRAM AND TEXT SHOWN IS FOR UNISEX RESTROOM, AT MEN'S AND WOMEN'S RESTROOM ADJUST PICTOGRAM AND TEXT TO MATCH, SEE A3/GA-4

A1 / GA-6 RESTROOM SIGNAGE





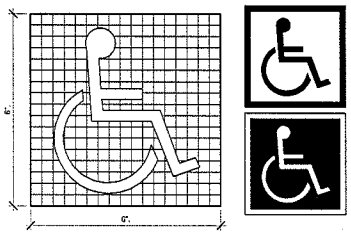
A3 / GA-6 DOOR MOUNTED TOILET ROOM SIGNAGE



NOTES

1. TACTILE FLOOR IDENTIFICATION SIGNS SHALL BE LOCATED AT THE LANDING OF EACH FLOOR LEVEL, PLACED ADJACENT TO THE DOOR ON THE LATCH SIDE. IN ALL ENCLOSED STAIRWAYS IN BUILDINGS TWO OR MORE STORIES IN HEIGHT TO IDENTIFY THE FLOOR LEVEL.
2. AT THE EXIT DISCHARGE LEVEL, THE SIGN SHALL INCLUDE A RAISED FIVE POINTED STAR LOCATED TO THE LEFT OF THE IDENTIFYING FLOOR LEVEL.
3. FOR OTHER SIGNAGE REQUIREMENTS REFERENCE 2010 CBC SEC. 1022.8.1

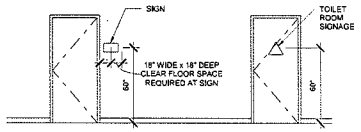
B1 / GA-6 FLOOR IDENTIFICATION SIGNAGE



(a) SYMBOL PROPORTIONS (b) DISPLAY CONDITIONS

NOTE: PROVIDE ACCESSIBILITY SIGN AT ALL ACCESSIBLE ENTRANCE DOORS

B2 / GA-6 INTERNATIONAL SYMBOL OF ACCESSIBILTY SIGNAGE



(A) WALL MOUNTED SIGNS (B) DOOR MOUNTED SIGNS

NOTES:

1. ALL SIGNAGE SHALL CONFORM TO CBC
2. SEE DOOR SCHEDULE FOR LOCATIONS AND TEXT.
3. SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH OUTSIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING AT DOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT. MOUNTING LOCATION SHALL BE DETERMINED SO THAT A PERSON MAY APPROACH WITHIN 3 INCHES OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF A DOOR

B3 / GA-6 SIGNAGE DETAIL

WHEN SIGNS IDENTIFY PERMANENT ROOMS AND SPACES OF A BUILDING, THEY SHALL COMPLY WITH THE FOLLOWING:

1. ***FINISH AND CONTRAST.*** CHARACTERS, SYMBOLS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND.
2. ***PROPORTIONS.*** CHARACTERS ON SIGNS SHALL BE SELECTED FROM FONTS THAT HAVE A WIDTH-TO-HEIGHT RATIO OF BETWEEN 3:5 (60 PERCENT) AND 1:1 (100 PERCENT) MEASURED BY THE WIDTH OF THE UPPERCASE LETTER "O" AND HEIGHT OF THE UPPERCASE LETTER "I". AND A STROKE WIDTH-TO-HEIGHT RATIO OF BETWEEN 1:5 (20 PERCENT) AND 1:10 (10 PERCENT) MEASURED BY THE WIDTH AND HEIGHT OF THE UPPERCASE LETTER "I".
3. ***RAISED CHARACTERS AND PICTORIAL SYMBOL SIGNS.*** WHEN RAISED CHARACTERS ARE REQUIRED OR WHEN PICTORIAL SYMBOLS (PICTOGRAMS) ARE USED ON SUCH SIGNS, THEY SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
   A. ***CHARACTER TYPE.*** CHARACTERS ON SIGNS SHALL BE RAISED 1/32 INCH MINIMUM AND SHALL BE SANS SERIF UPPERCASE CHARACTERS ACCOMPANIED BY CONTRACTED BRAILLE.
   B. ***CHARACTER SIZE.*** RAISED CHARACTERS SHALL BE A MINIMUM OF 5/8 INCH AND A MAXIMUM OF 2 INCHES HIGH.
   C. ***PICTORIAL SYMBOLS.*** PICTORIAL SYMBOL SIGNS (PICTOGRAMS) SHALL BE ACCOMPANIED BY THE VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE OUTSIDE DIMENSION OF THE PICTOGRAM SHALL BE A MINIMUM OF 5 INCHES IN HEIGHT.
   D. ***CHARACTER PLACEMENT.*** CHARACTERS AND BRAILLE SHALL BE IN A HORIZONTAL FORMAT. BRAILLE SHALL BE PLACED A MINIMUM OF 3/8 INCH AND A MAXIMUM OF 1/2 INCH DIRECTLY BELOW THE TACTILE CHARACTERS; FLUSH LEFT OR CENTERED. WHEN TACTILE TEXT IS MULTILINED, ALL BRAILLE SHALL BE PLACED TOGETHER BELOW ALL LINES OF TACTILE TEXT.
4. ***BRAILLE.*** CONTRACTED GRADE 2 BRAILLE SHALL BE PLACED A MINIMUM OF 3/8" AND A MAXIMUM OF 1/2" DIRECTLY BELOW THE TACTILE CHARACTERS, FLUSH LEFT OR CENTERED. WHEN TACTILE TEXT IS MULTILINED, ALL BRAILLE IS PLACED BELOW ALL LINES OF TACTILE TEXT. DOTS SHALL BE 1/10 INCH ON CENTER IN EACH CELL WITH 2/10 INCH SPACE BETWEEN CELLS. DOTS SHALL BE RAISED A MINIMUM OF 1/40 INCH ABOVE THE BACKGROUND. BRAILLE DOTS SHALL BE DOMED OR ROUNDED.
5. ***MOUNTING LOCATION AND HEIGHT.*** SIGNS TO BE MOUNTED ON WALL ADJACENT TO THE LATCH SIDE OF THE DOOR, MOUNTING HEIGHT TO BE 60 INCHES AFF TO THE CENTERLINE OF THE SIGN. SIGNS TO BE MOUNTED SO AS TO AVOID THE SWING OF A DOOR OR PROTRUDING OBJECT.

C1 / GA-6 IDENTIFICATION SIGNS

WHEN SIGNS DIRECT TO OR GIVE INFORMATION ABOUT PERMANENT ROOMS AND FUNCTIONAL SPACES OF A BUILDING OR SITE, THEY SHALL COMPLY WITH THE FOLLOWING:

1. ***FINISH AND CONTRAST.*** CHARACTERS, SYMBOLS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND.
2. ***PROPORTIONS.*** CHARACTERS ON SIGNS SHALL BE SELECTED FROM FONTS THAT HAVE A WIDTH-TO-HEIGHT RATIO OF BETWEEN 3:5 (60 PERCENT) AND 1:1 (100 PERCENT) MEASURED BY THE WIDTH OF THE UPPERCASE LETTER "O" AND HEIGHT OF THE UPPERCASE LETTER "I". AND A STROKE WIDTH-TO-HEIGHT RATIO OF BETWEEN 1:5 (20 PERCENT) AND 1:10 (10 PERCENT) MEASURED BY THE WIDTH AND HEIGHT OF THE UPPERCASE LETTER "I".
3. ***CHARACTER HEIGHT.*** CHARACTERS AND NUMBERS ON SIGNS ARE A MINIMUM OF 3 INCHES IN HEIGHT (WHEN SUSPENDED OR PROJECTED OVERHEAD 80 INCHES OR MORE ALONG A PATH OF TRAVEL). APPROPRIATELY SIZED CHARACTERS ON SIGNS REQUIRED TO BE ACCESSIBLE SHALL BE SIZED ACCORDING TO THE "VISUAL CHARACTER HEIGHT TABLE" LOCATED ON C4 GA-6

C2 / GA-6 DIRECTIONAL AND INFORMATIONAL SIGNS

WHEN SIGNS IDENTIFY, DIRECT TO, OR GIVE INFORMATION ABOUT ACCESSIBLE ELEMENTS AND FEATURES OF A BUILDING OR SITE, THEY SHALL INCLUDE THE APPROPRIATE SYMBOL OF ACCESSIBILITY AND SHALL COMPLY WITH THE FOLLOWING:

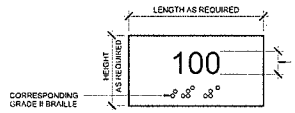
1. ***FINISH AND CONTRAST.*** CHARACTERS, SYMBOLS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH, CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND, EITHER LIGHT ON A DARK BACKGROUND OR DARK ON A LIGHT BACKGROUND.
2. ***SYMBOLS OF ACCESSIBILITY.*** THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE THE STANDARD USED TO IDENTIFY FACILITIES THAT ARE ACCESSIBLE TO AND USABLE BY PHYSICALLY DISABLED PERSONS. (2010 CBC SEC. 11178.5.8), SEE SYMBOL ON B2 GA-6

C3 / GA-6 ACCESSIBILITY SIGNS

HEIGHT TO FINISH FLOOR OR GROUND FROM BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HEIGHT
40 INCHES TO LESS THAN OR EQUAL TO 70 INCHES	LESS THAN 72 INCHES	5/8 INCH
	72 INCHES AND GREATER	5/8 INCH PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 72 INCHES
GREATER THAN 70 INCHES TO LESS THAN OR EQUAL TO 120 INCHES	LESS THAN 180 INCHES	2 INCHES
	180 INCHES AND GREATER	2 INCHES PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 180 INCHES
GREATER THAN 120 INCHES	LESS THAN 21 FEET	3 INCHES
	21 FEET AND GREATER	3 INCHES PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 21 FEET

NOTE: THE MINIMUM HEIGHT IS MEASURED USING AN UPPERCASE LETTER "I". LOWER CASE CHARACTERS ARE PERMITTED. VIEWING DISTANCE SHALL BE MEASURED AS THE HORIZONTAL DISTANCE BETWEEN THE CHARACTER AND AN OBSTRUCTION PREVENTING FURTHER APPROACH TOWARDS THE SIGN.

C4 / GA-6 VISUAL CHARACTER HEIGHT TABLE

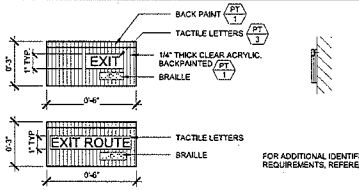


FOR OTHER IDENTIFICATION SIGNAGE REQUIREMENTS, SEE C1 GA-6

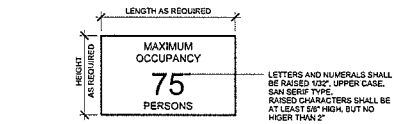
NOTES:

1. REFER TO DOOR SCHEDULE FOR SIGN LOCATION AND VERBAGE. VERIFY ALL TEXT WITH ARCHITECT PRIOR TO FABRICATION.
2. REFER TO SIGNAGE DETAIL ON ARCHITECTURAL SHEETS FOR SPECIFIC SIGN DESIGN, COLORS AND FINISHES.

D1 / GA-6 ROOM IDENTIFICATION SIGNAGE



FOR ADDITIONAL IDENTIFICATION SIGNAGE REQUIREMENTS, REFERENCE C1 GA-6



FOR OTHER INFORMATIONAL SIGNAGE REQUIREMENTS, SEE C2 GA-6

NOTES:

1. SIGN TO BE MOUNTED ON WALL ADJACENT TO THE LATCH SIDE OF THE DOOR, MOUNTING HEIGHT TO BE 60 INCHES AFF TO THE CENTERLINE OF THE SIGN. SIGN TO BE MOUNTED SO AS TO AVOID THE SWING OF A DOOR OR PROTRUDING OBJECT.
2. PROVIDE ACRYLIC PANEL SIGNS, U.O.N.

D2 / GA-6 MAXIMUM OCCUPANCY SIGNAGE

TACTIL EXIT SIGNS SHALL BE REQUIRED AT THE FOLLOWING LOCATIONS:
1. EACH GRADE-LEVEL EXTERIOR EXIT DOOR SHALL BE IDENTIFIED BY A TACTILE EXIT SIGN WITH THE WORD, "EXIT".
2. EACH EXIT DOOR THAT LEADS DIRECTLY TO A GRADE-LEVEL EXTERIOR EXIT BY MEANS OF A STAIRWAY OR RAMP SHALL BE IDENTIFIED BY A TACTILE EXIT SIGN WITH THE FOLLOWING WORDS AS APPROPRIATE.
   A. "EXIT STAIR DOWN"
   B. "EXIT RAMP DOWN"
   C. "EXIT STAIR UP"
   D. "EXIT RAMP UP"
3. EACH EXIT DOOR THAT LEADS DIRECTLY TO A GRADE-LEVEL EXTERIOR EXIT BY MEANS OF AN EXIT ENCLOSURE OR AN EXIT PASSAGEWAY SHALL BE IDENTIFIED BY A TACTILE EXIT SIGN WITH THE WORDS, "EXIT ROUTE".
4. EACH EXIT ACCESS DOOR FROM AND INTERIOR ROOM OR AREA TO A CORRIDOR OR HALLWAY THAT IS REQUIRED TO HAVE A VISUAL EXIT SIGN, SHALL BE IDENTIFIED BY A TACTILE EXIT SIGN WITH THE WORDS, "EXIT ROUTE".
5. EACH EXIT DOOR THROUGH A HORIZONTAL EXIT SHALL BE IDENTIFIED BY A SIGN WITH THE WORDS, "TO EXIT".

D3 / GA-6 TACTILE EXIT SIGNS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO YOU DIG — SERVING NOR. SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

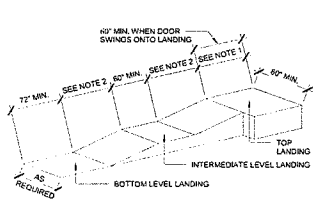
CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

SIGNAGE ACCESSIBILITY DETAILS

DESIGNED BY: JK	DATE: XX/2014	SCALE: VARIES	APPROVED BY: _____ DATE: XX-XX-14
DRAWN BY: MK	DATE: XX/2014		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	RCE NO. 52102 EXP. 12/31/2014

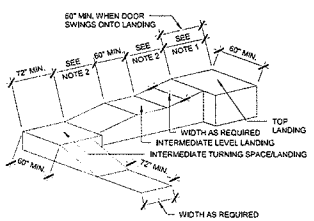
PLAN NO. GA-6 SHEET _____ of 100 SHEETS

NOTE 1: WHEN DOOR SWINGS ONTO LANDING - 42" MIN, PLUS DOOR WIDTH
NOTE 2: MAXIMUM HORIZONTAL DISTANCE OF EACH RAMP AND RUN VARY



STRAIGHT RAMP RUN

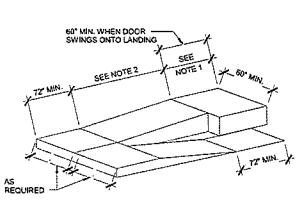
NOTE 1: WHEN DOOR SWINGS ONTO LANDING - 42" MIN, PLUS DOOR WIDTH
NOTE 2: MAXIMUM HORIZONTAL DISTANCE OF EACH RAMP AND RUN VARY



NOTE: WHEN THE DIRECTION OF A RAMP CHANGES 30 DEGREES OR MORE AT LANDING, THEN THE LANDING MUST BE A MINIMUM OF 72" IN LENGTH AND INCLUDE A MINIMUM 60" x 60" TURNING SPACE/LANDING

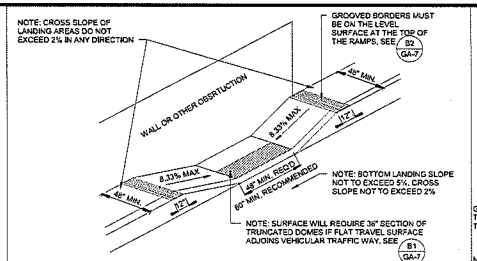
RAMP WITH TURNING PLATFORM
(WHEN DIRECTION OF RAMP CHANGES 30 DEGREES OR MORE)

NOTE 1: WHEN DOOR SWINGS ONTO LANDING - 42" MIN, PLUS DOOR WIDTH
NOTE 2: MAXIMUM HORIZONTAL DISTANCE OF EACH RAMP AND RUN VARY



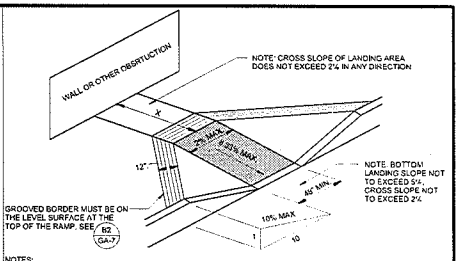
RAMP WITH INTERMEDIATE SWITCH-BACK PLATFORM

A1 GA-7 RAMP DETAILS
SCALE: NTS



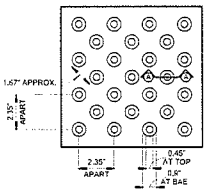
NOTES:
1. FINISHED SURFACE OF RAMP CONTRASTS FROM ADJACENT SIDEWALK, AND IS STABLE, FIRM, AND SLIP RESISTANT.
2. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.

A3 GA-7 STANDARD IN-LINE CURB RAMP
SCALE: N.T.S.



NOTES:
1. IF X IS LESS THAN 48" THEN THE SLOPE OF THE FANNED OR FLARED SIDE MAY NOT EXCEED 1:12 (8.33%)
2. FINISHED SURFACE OF RAMP CONTRASTS FROM ADJACENT SIDEWALK, AND IS STABLE, FIRM, AND SLIP RESISTANT
3. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
4. DETECTABLE WARNING SURFACE IS REQUIRED ON SHADED PORTION OF THE RAMP, SEE B1 GA-7

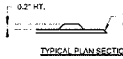
A4 GA-7 STANDARD CURB-CUT RAMP
SCALE: N.T.S.



TYPICAL PLAN

1. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9" AT THE BASE TAPERING TO 0.45" AT THE TOP, A HEIGHT OF NOMINAL 0.2" AND A CENTER TO CENTER SPACING OF NOMINAL 2.35".

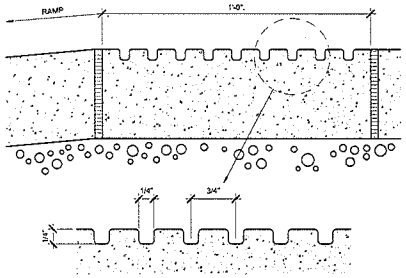
2. THE DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, WHETHER LIGHT ON DARK OR DARK ON LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.



TYPICAL PLAN SECTION A-A

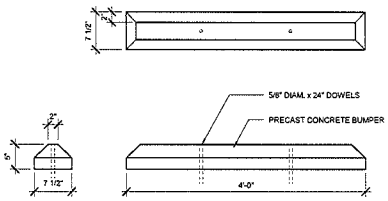
NOTE: IF A WALK CROSSES OR ADJOINS A VEHICULAR WAY, AND THE WALKING SURFACES ARE NOT SEPARATED BY CURBS, RAILINGS OR OTHER ELEMENTS BETWEEN THE PEDESTRIAN AREAS AND THE VEHICULAR AREAS, THE BOUNDARY BETWEEN THE AREAS SHALL BE DEFINED BY A CONTINUOUS DETECTABLE WARNING WHICH IS 36" WIDE.

B1 GA-7 DETECTABLE WARNING DETAIL
SCALE: NONE

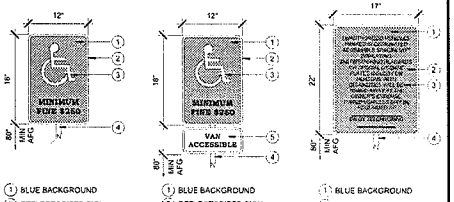


NOTE: GROOVED BORDER MUST BE ON THE LEVEL SURFACE AT THE TOP OF THE RAMP.

B2 GA-7 GROOVED BORDER DETAIL
SCALE: 1" = 1'-0"



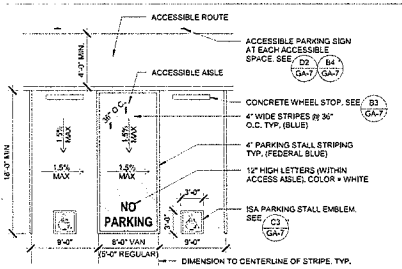
B3 GA-7 WHEEL STOP
SCALE: 1" = 1'-0"



1. BLUE BACKGROUND
2. REFLECTORIZED SIGN CONSTRUCTED OR PORCELAIN STEEL
3. WHITE SYMBOL
4. 2" DIAMETER GALVANIZED PIPE
5. INDICATES STALL IS VAN ACCESSIBLE

1. BLUE BACKGROUND
2. REFLECTORIZED SIGN CONSTRUCTED OR PORCELAIN STEEL
3. WHITE SYMBOL
4. 2" DIAMETER GALVANIZED PIPE
5. WHITE LETTERING AND SYMBOL
6. TOW AWAY INFORMATION TO BE FILLED IN PERMANENTLY AS PART OF SIGN PRIOR TO INSTALLATION

B4 GA-7 ACCESSIBLE PARKING SIGN
SCALE: 1" = 1'-0"



C1 GA-7 ACCESSIBLE PARKING SPACE - DOUBLE
SCALE: 1/8" = 1'-0"

TYPICAL ACCESSIBLE PARKING SIGNAGE

SIGN SHALL NOT BE SMALLER THAN 70 SQUARE INCHES IN AREA, AND SHALL BE MOUNTED ON A POST SET IN CONCRETE, 80 INCHES FROM THE BOTTOM OF THE SIGN TO FINISHED GRADE. SIGN SHALL BE REFLECTORIZED WITH A PROFILE VIEW OF A WHEELCHAIR WITH OCCUPANT IN WHITE ON A DARK BLUE BACKGROUND, SEE B4 GA-7

TYPICAL VAN ACCESSIBLE PARKING SIGNAGE

SIGN SHALL BE SAME AS ABOVE, WITH ADDITIONAL SIGN "VAN ACCESSIBLE" MOUNTED BELOW THE SYMBOL OF ACCESSIBILITY. SEE B4 GA-7

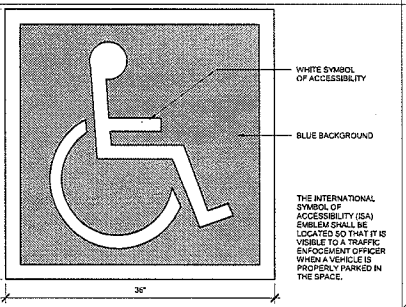
PARKING LOT ACCESSIBILITY SIGNAGE

AN ADDITIONAL SIGN SHALL BE POSTED IN A CONSPICUOUS PLACE AT EACH ENTRANCE TO OFF-STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH ACCESSIBLE STALL OR SPACE. THE SIGN SHALL NOT BE LESS THAN 17 INCHES BY 22 INCHES IN SIZE WITH LETTERING NOT LESS THAN ONE INCH IN HEIGHT, AND SHALL CLEARLY AND CONSPICUOUSLY STATE THE FOLLOWING.

"UNAUTHORIZED VEHICLES PARKED IN DESIGNATED ACCESSIBLE SPACES NOT DISPLAYING DISTINGUISHING PLACARDS OR SPECIAL LICENSE PLATES ISSUED FOR PERSONS WITH DISABILITIES WILL BE TOWED AWAY AT THE OWNER'S EXPENSE. TOWED VEHICLES MAY BE RECLAIMED AT _____ OR BY TELEPHONING _____."

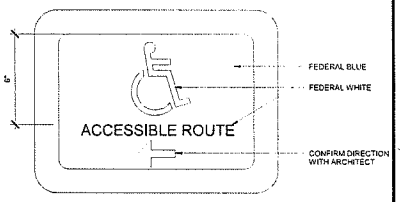
BLANK SPACES ARE TO BE FILLED IN WITH APPROPRIATE INFORMATION AS A PERMANENT PART OF THE SIGN.

D2 GA-7 PARKING SIGNAGE
SCALE: 3" = 1'-0"



THE INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) EMBLEM SHALL BE LOCATED SO THAT IT IS VISIBLE TO A TRAFFIC ENFOCEMENT OFFICER WHEN A VEHICLE IS PROPERLY PARKED IN THE SPACE.

C3 GA-7 INTERNATIONAL SYMBOL OF ACCESSIBILTY PARKING STALL EMBLEM
SCALE: 1 1/2" = 1'-0"

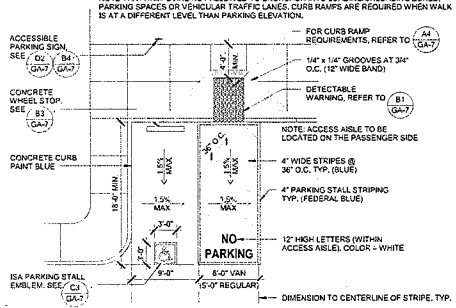


SIGN TO BE REFLECTIVE

REFERENCE C3 GA-6 FOR ADDITIONAL IDENTIFICATION SIGNAGE REQUIREMENTS.

C4 GA-7 ACCESSIBLE ROUTE SIGN
SCALE: 3" = 1'-0"

NOTE THAT RAMPS ARE NOT ALLOWED TO ENCROACH INTO LOADING/UNLOADING ZONES, PARKING SPACES OR VEHICULAR TRAFFIC LANES. CURB RAMPS ARE REQUIRED WHEN WALK IS AT A DIFFERENT LEVEL THAN PARKING ELEVATION.



D1 GA-7 ACCESSIBLE PARKING SPACE - SINGLE
SCALE: 1/8" = 1'-0"

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IT SAFE. DIAL BEFORE YOU DIG.
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NINE SOUTHERN GOLDEN STATE COUNTIES

1" — VERIFY SCALES — 1"
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

SITE ACCESSIBILITY DETAILS

DESIGNED BY: JK	DATE: XX/2014	SCALE VARIES	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. GA-7			SHEET ____ of 100 SHEETS

CalGreen Mandatory Measures Compliance Checklist			
Number	Description	Compliance	Reference
5.1 Planning and Design			
5.106.1	SWPPP required	Yes	
5.106.4.1	Short-term bicycle parking	Yes	
5.106.4	Bicycle parking and changing rooms	Yes	
5.106.4.2	Long-term bicycle parking	Yes	
5.106.5.2.1	Parking stall marking (Clean Air Vehicle)	Yes	
5.106.8	Light Pollution Reduction	Yes	
5.106.10	Grading and paving (surface water away from building)	Yes	
5.2 Energy Efficiency			
5.201.1	Reduce energy usage by 15%	Yes	
5.3 Water Efficiency + Conservation			
5.303	Separate meters or metering devices	Yes	
5.303.1.1	Building in excess of 50,000 sf.	Yes	
5.303.1.2	Excess consumption	Yes	
5.303.2	20% Savings	Yes	
5.303.2.1	Multiple showerheads serving one shower	Yes	
5.303.4	Wastewater reduction by 20%	Yes	
5.304.1	Water Budget	Yes	
5.304.2	Outdoor potable water use	Yes	
5.304.3	Irrigation design	Yes	
5.304.3.1	Irrigation Controllers	Yes	
5.303.6	Plumbing fixtures and fittings	Yes	
5.4 Material Conservation + Resource Efficiency			
5.407.1	Weather protection	Yes	
5.407.2	Moisture control	Yes	
5.408.1	Construction waste diversion	Yes	
5.408.2	Construction waste management plan	Yes	
5.408.2.1	Documentation of compliance	Yes	
5.408.3	Construction waste reduction of at least 50%	Yes	
5.410.1	Recycling by occupants	Yes	
5.410.2	Commissioning for buildings over 10,000 sf.	Yes	
5.410.2.1	Owner's requirements	Yes	
5.410.2.2	Basis of Design	Yes	
5.408.4	Excavated soil +land clearing debris	Yes	
5.410.2.3	Commissioning Plan	Yes	
5.410.2.4	Functional performance testing	Yes	
5.410.2.5	Documentation + training, ops manual, comm. Report	Yes	
5.410.4	Testing + adjusting for buildings under 10,000 sf	Yes	
5.5 Environmental Quality			
5.504.3	Covering of duct openings + protection	Yes	
5.504.4	Finish materials in compliance with VOC limits	Yes	
5.504.4.3	Paints + coatings	Yes	
5.504.4.3.2	Verification of compliance (manuf. Spec, onsite product containment)	Yes	
5.503.1	Fire places - direct vent	Yes	
5.504.4.4.1	Carpet cushion meets C+R Inst. Green Label program	Yes	
5.504.4.4.2	Carpet adhesive meets table 5.504.4.1	Yes	
5.504.4.4.5	Composite wood products meet formaldehyde limits per table 5.504.4.5	Yes	
5.504.5.2	Documentation required	Yes	
5.504.4.4	Carpet systems must comply	Yes	
5.504.4.6	Resilient floor systems - 50% of floor in compliance with VOC limits	Yes	
5.504.5.3	Filters have min. MERV value of 8	Yes	
5.504.7	Smoking prohibited within 25' of building entries, air intakes, windows	Yes	
5.505.1	Indoor moisture control	Yes	
5.507.4	Acoustical control	Yes	
5.507.4.1	Exterior noise transmission	Yes	
5.507.4.2	Interior sound	Yes	
5.508.1	Ozone depletion + GHG reductions	Yes	
5.506.2	Carbon dioxide monitoring	Yes	
7 Installer + Special Inspector Quals			
702.2	Special Inspections as required	Yes	
703.1	Documentation + verification	Yes	
702.1	HVAC system installers are trained + certified	Yes	

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — IF BAR IS ONE INCH LONG ON FULL SIZE DRAWING, IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

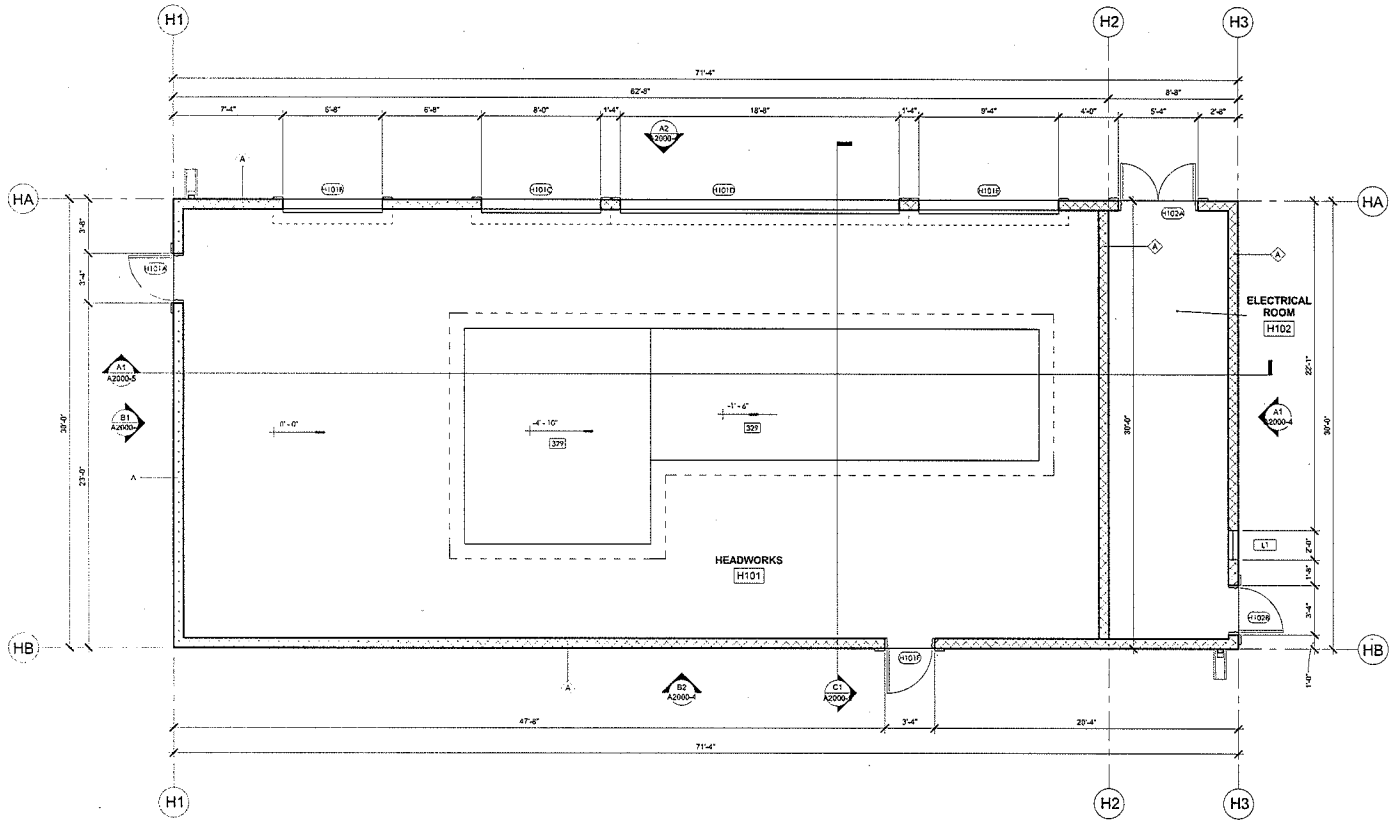
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

CALGREEN COMPLIANCE

DESIGNED BY: JK	DATE: XX/2014	SCALE: N.T.S.	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE: XX-XX-14
DRAWN BY: MK	DATE: XX/2014		
CHECKED BY: AB	DATE: XX/2014	PROJECT NUMBER: 2036	

PLAN NO. GA-8 SHEET ____ of 100 SHEETS



C2 HEADWORKS FLOOR PLAN
A2000-1 SCALE: 1/4" = 1'-0"

CONSTRUCTION NOTES

329 EQUIPMENT SUBLEVEL. REFERENCE STRUCTURAL DRAWINGS

Wall Legend

- 2x4 STUD WALL
- 2x6 STUD WALL
- CMU 8" WALL
- CMU 8" WALL W/ FURING & GYP
- CONCRETE WALL

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

HEADWORKS BUILDING FIRST FLOOR PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN TO EXCAVATE AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NHC SOUTHERN CALIFORNIA COUNTIES

1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

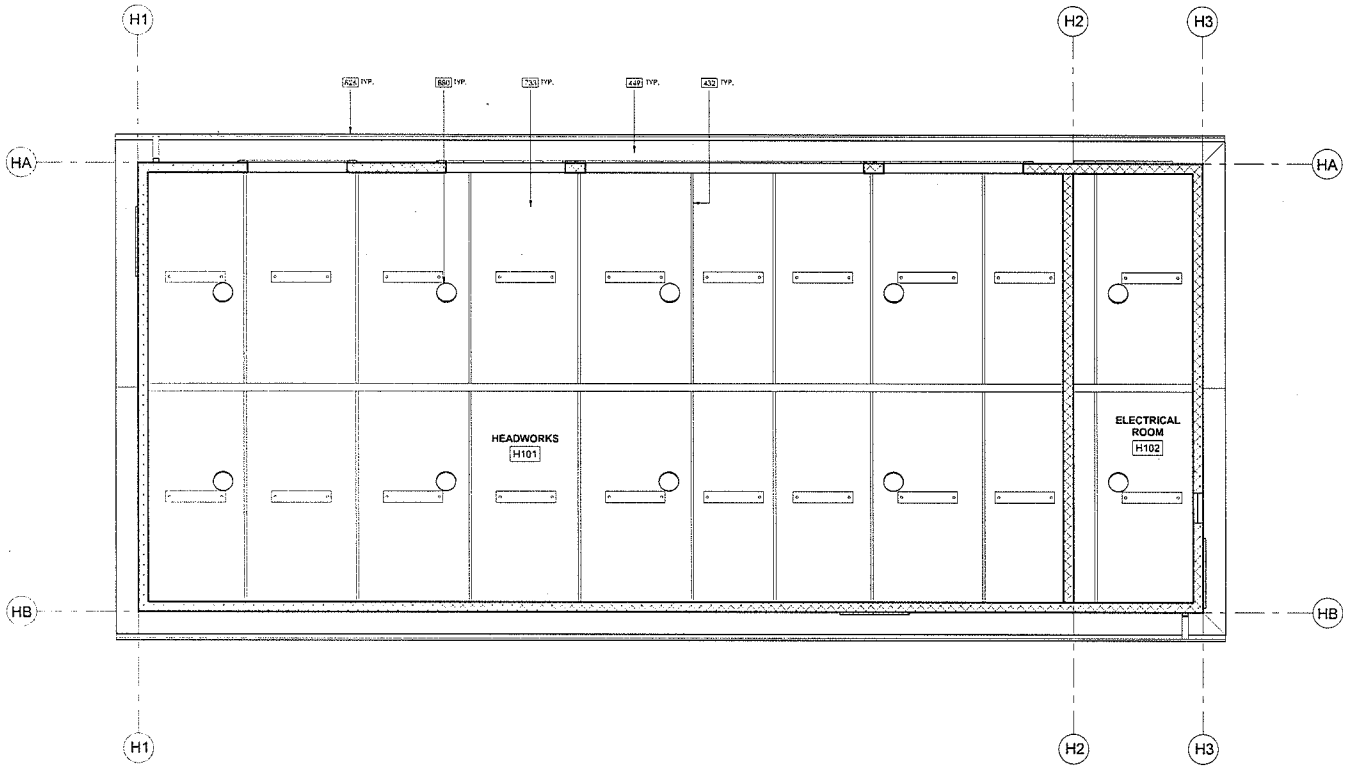
PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/4" = 1'-0"	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. A2000-1 SHEET ____ of 100 SHEETS



C2 HEADWORKS BUILDING RCP
A2000-2 SCALE: 1/4"=1'-0"

CONSTRUCTION NOTES

432	STRUCTURAL STEEL, REFERENCE STUCTURAL DRAWINGS
449	METAL SCHNL PAINT ID MATCH FASCIA
733	PAINT EXPOSED SPRINKLER PIPING, EXHAUST DUCT WORK AND UNDERSIDE OF EXPOSED STRUCTURE
826	GUTTER
880	TUBEULAR SKYLIGHT

RCP LEGEND

- GYP BD CEILING
- 2x4 ACT
- 2x4 FIXTURE, SEE ELECTRICAL DRAWINGS
- 2x2 FIXTURE, SEE ELECTRICAL DRAWINGS
- LINEAR PENDANT, SEE ELECTRICAL DRAWINGS
- RETURN DIFFUSER, SEE MECHANICAL DRAWINGS
- SUPPLY DIFFUSER, SEE MECHANICAL DRAWINGS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

HEADWORKS BUILDING FIRST FLOOR RCP

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; jeff katz ARCHITECTURE

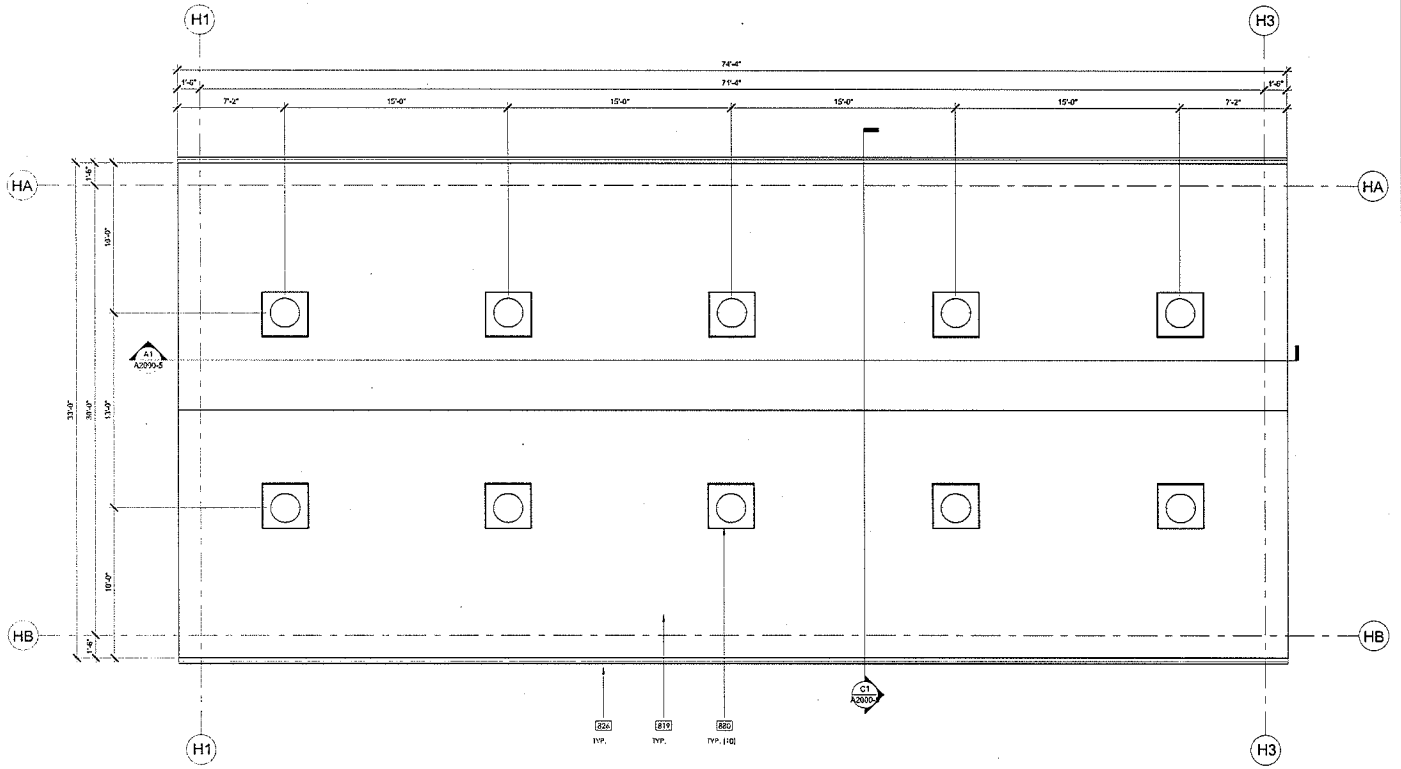
NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/4" = 1'-0"	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE: XX-XX-14
DRAWN BY: MK	DATE: XX/2014		
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	
PLAN NO. A2000-2			SHEET ____ of 100 SHEETS

CONSTRUCTION NOTES

819 CONCRETE TILE ROOFING, TYP.
R24 GUTTER
880 TUBULAR SKYLIGHT



C1 HEADWORKS BUILDING ROOF PLAN
A2000-3

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

HEADWORKS BUILDING ROOF PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

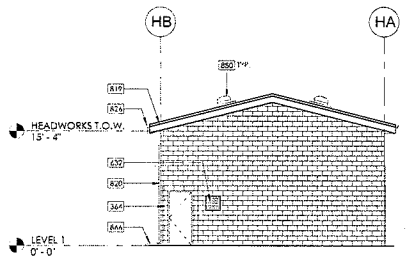
VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; jeff katz ARCHITECTURE

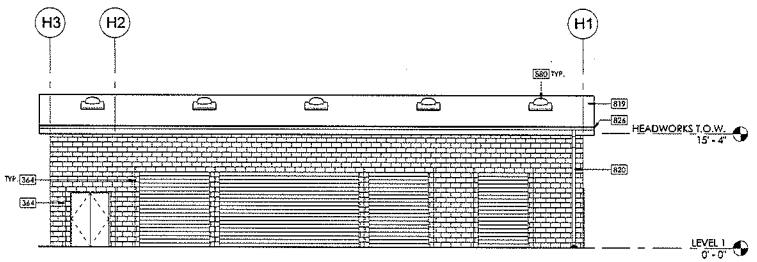
NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

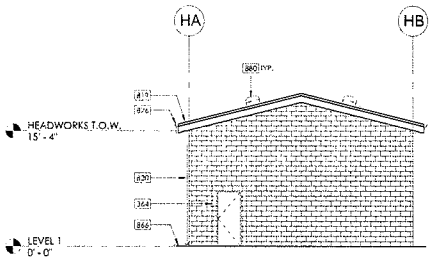
DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/4" = 1'-0"	APPROVED BY: / DATE: XX-XX-14
DRAWN BY: MK	DATE: XX/2014		ROBERT BRAGER, P.E., J.D.
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	PUBLIC WORKS DIRECTOR / CITY ENGINEER
PLAN NO. A2000-3		SHEET ____ of 100 SHEETS	RCE NO. 52102 EXP. 12/31/2014



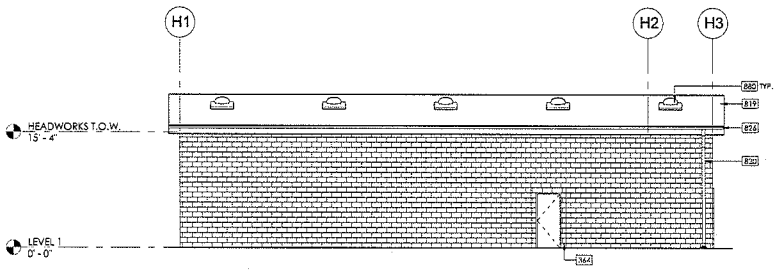
A1 SOUTH HEADWORKS ELEVATION
A2000-4 SCALE: 1/8" = 1'-0"



A2 EAST HEADWORKS ELEVATION
A2000-4 SCALE: 1/8" = 1'-0"



B1 NORTH HEADWORKS ELEVATION
A2000-4 SCALE: 1/8" = 1'-0"



B2 WEST HEADWORKS ELEVATION
A2000-4 SCALE: 1/8" = 1'-0"

CONSTRUCTION NOTES

364 CMU DOOR/WINDOW TRIM
832 METAL LOUVER. REFERENCE WINDOW SCHEDULE & MECHANICAL DRAWINGS
819 CONCRETE TILE ROOFING. TYP.
820 DOWNSPOUT
826 GUTTER
866 SPLASH BLOCK. SEE
860 TUBE/SOLAR SKYLIGHT

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

HEADWORKS BUILDING EXTERIOR ELEVATIONS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE. DIG BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

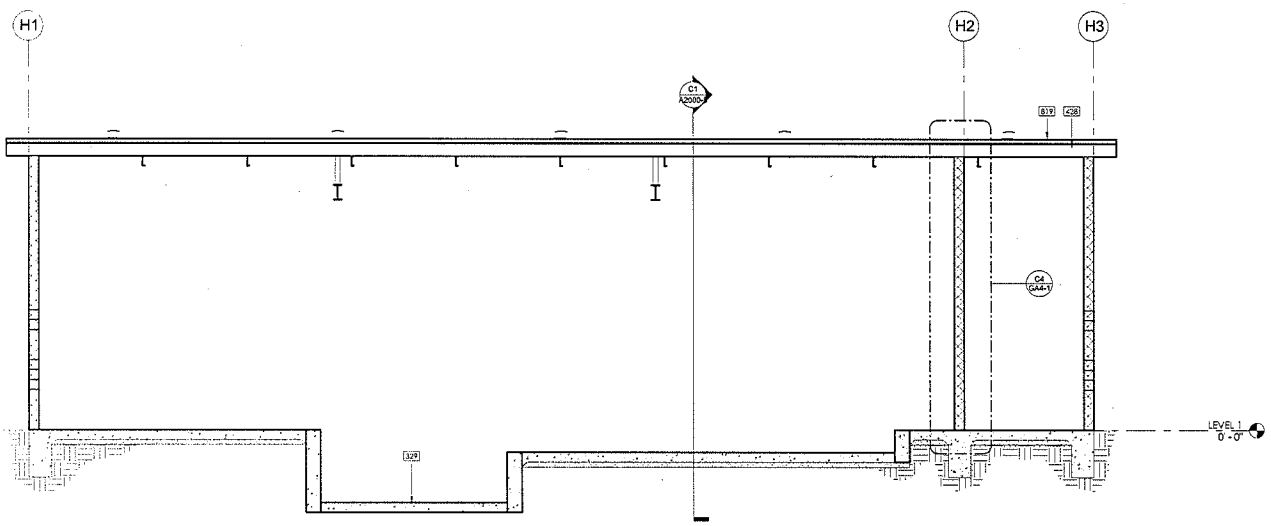
0" VERIFY SCALES 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment — jeff katz ARCHITECTURE

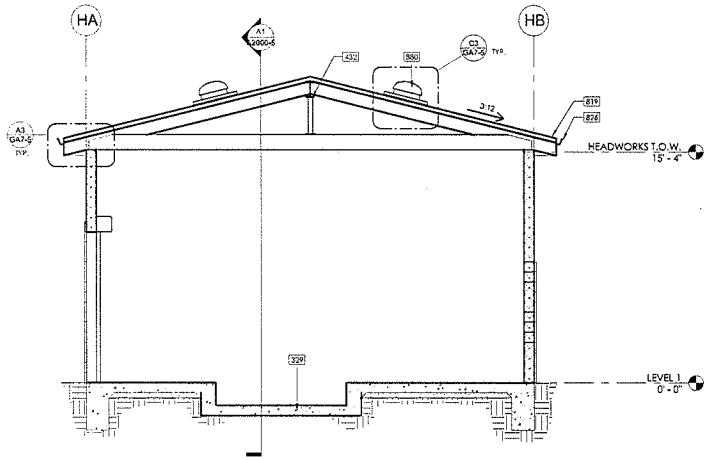
NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/8" = 1'-0"	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. A2000-4			SHEET ___ of 100 SHEETS



A1 A2000-5 HEADWORKS BUILDING SECTION 1



C1 A2000-5 HEADWORKS BUILDING SECTION 2

CONSTRUCTION NOTES

329 EQUIPMENT SUBLEVEL. REFERENCE STRUCTURAL DRAWINGS
428 STEEL BEAM. REFERENCE STRUCTURAL DRAWINGS
432 STRUCTURAL STEEL. REFERENCE STUCTURAL DRAWINGS
819 CONCRETE TILE ROOFING, TYP.
826 GUTTER
880 TUBULAR SKYLIGHT

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

HEADWORKS BUILDING SECTIONS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE. EMAIL BEFORE YOU DIG. — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING MOST SOUTHERN CALIFORNIA COUNTIES

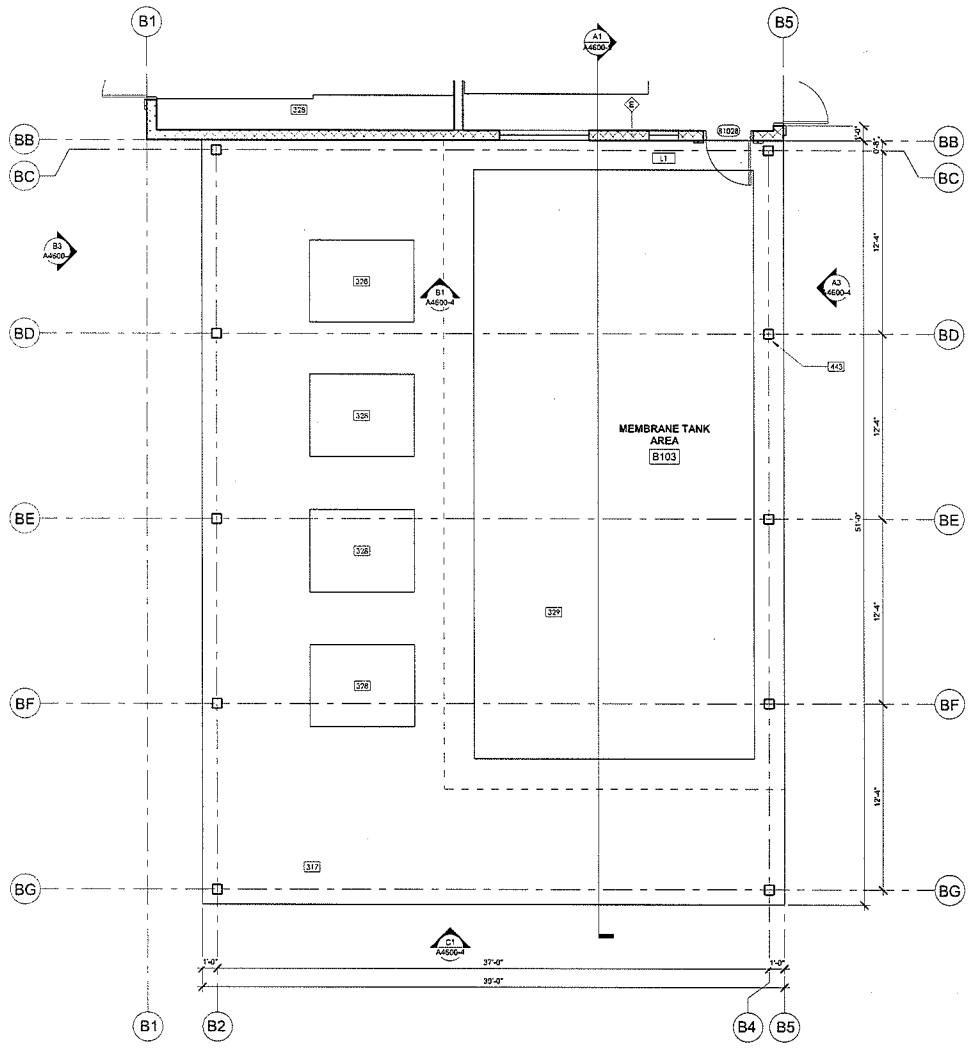
VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/4" = 1'-0"	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: MK	DATE: XX/2014		DATE: XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	
PLAN NO. A2000-5		SHEET ____ of 100 SHEETS	



C1 MEMBRANE TANK FLOOR PLAN
A4000-1

CONSTRUCTION NOTES

317 CONCRETE SLAB - REFERENCE STRUCTURAL DRAWINGS
378 CONCRETE EQUIPMENT PAD, REFERENCE STRUCTURAL DRAWINGS
329 EQUIPMENT SUBLEVEL, REFERENCE STRUCTURAL DRAWINGS
443 HOLLOW STRUCTURAL STEEL COLUMN, REFERENCE STRUCTURAL DRAWINGS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA FLOOR PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

0" 1" VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

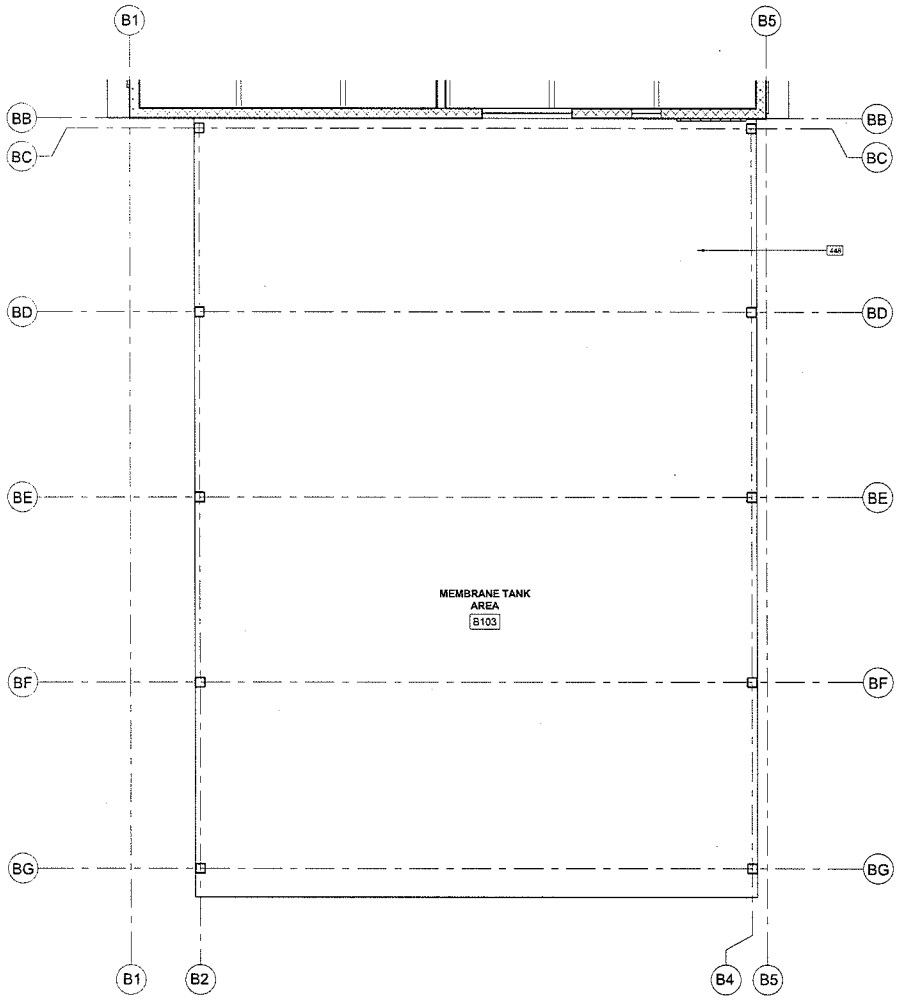
PLANS PREPARED BY: RMC water and environment; jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JX	DATE XX/2014	SCALE 1/4" = 1'-0"	APPROVED BY: DATE
DRAWN BY: MK	DATE XX/2014		XX-XX-14
CHECKED BY: AB	DATE XX/2014	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. A4000-1 SHEET _____ of 100 SHEETS



C1 MEMBRANE TANK AREA RCP
A4000-2

CONSTRUCTION NOTES

448 PREMANUFACTURED METAL CANOPY

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA RCP

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN AHEAD. DIAL BEFORE YOU DIG.
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NHC SOUTHERN CALIFORNIA COUNTIES

0" 1"
VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

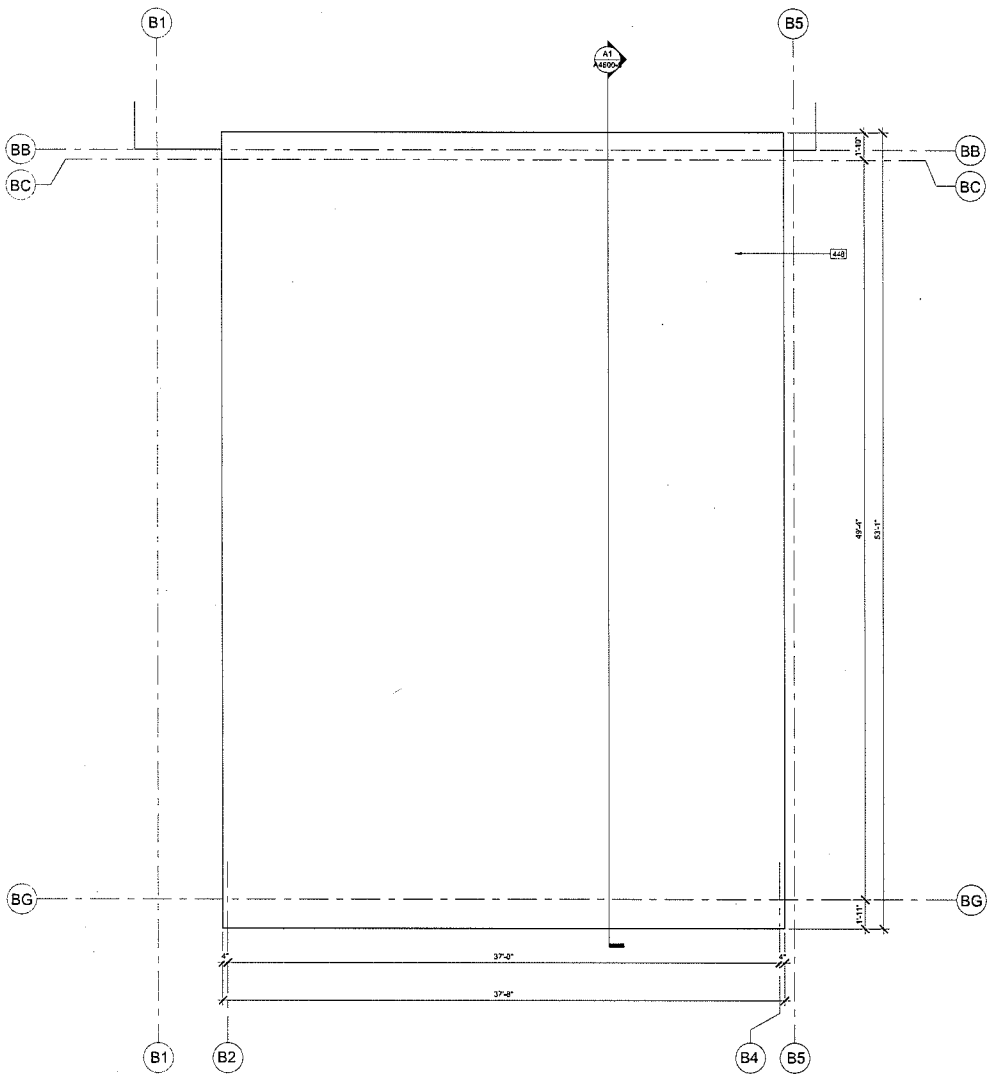
NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK DATE: XX/2014
DRAWN BY: MK DATE: XX/2014
CHECKED BY: AD DATE: XX/2014
SCALE: 1/4" = 1'-0"
PROJECT NUMBER: 2036

APPROVED BY: DATE
XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR / CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

PLAN NO. A4000-2
SHEET ____ of 100 SHEETS



C1 A4000-3 MEMBRANE TANK ROOF PLAN

CONSTRUCTION NOTES

448 PREMANUFACTURED METAL CANOPY

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA ROOF PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

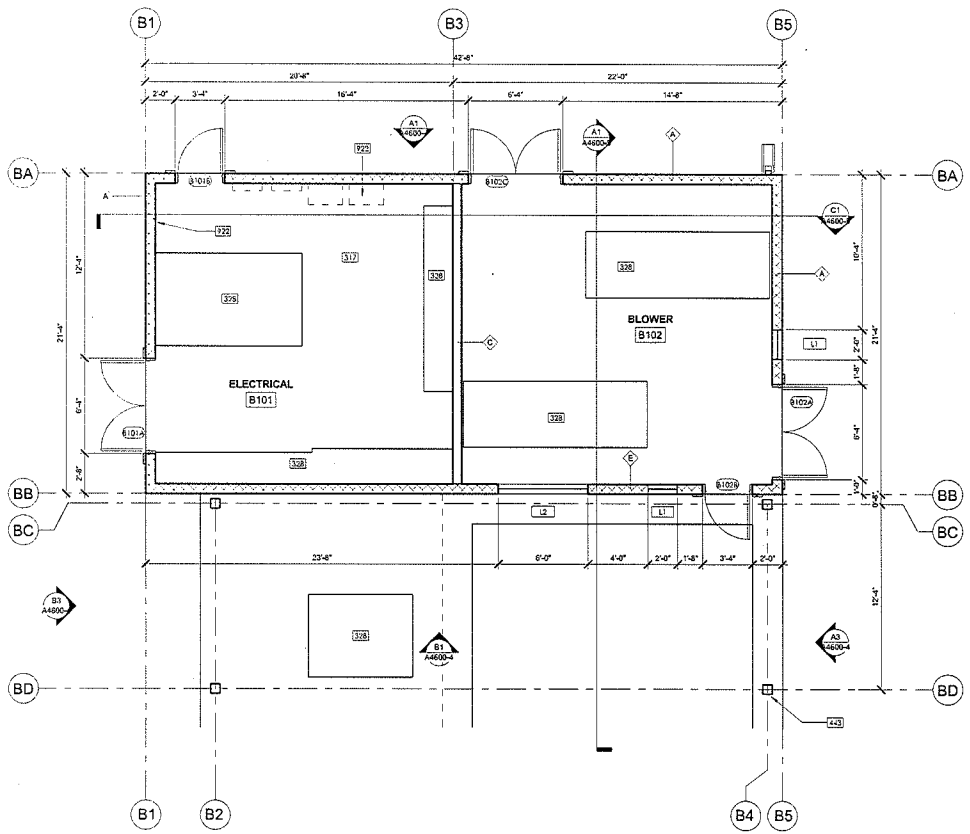
VERIFY SCALES — 0" 1" — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY JK	DATE XX/2014	SCALE 1/4" = 1'-0"	APPROVED BY: DATE XX-XX-14
DRAWN BY MK	DATE XX/2014		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
CHECKED BY AD	DATE XX/2014	PROJECT NUMBER 2036	
PLAN NO. A4000-3		SHEET ... of 100 SHEETS	



C1 BLOWER FLOOR PLAN
A4600-1

CONSTRUCTION NOTES

317 CONCRETE SLAB - REFERENCE STRUCTURAL DRAWINGS
328 CONCRETE EQUIPMENT PAD, REFERENCE STRUCTURAL DRAWINGS
443 HOLLOW STRUCTURAL STEEL COLUMN, REFER TO STRUCTURAL DRAWINGS
922 ELECTRICAL PANELS AND EQUIPMENT - REFERENCE ELECTRICAL DRAWINGS

Wall Legend

- 2x4 STUD WALL
- 2x6 STUD WALL
- CMU 8" WALL
- CMU 8" WALL W/ FURING & GYP
- CONCRETE WALL

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

BLOWER & ELECTRICAL BUILDING FIRST FLOOR PLAN

DIAL BEFORE YOU DIG — DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

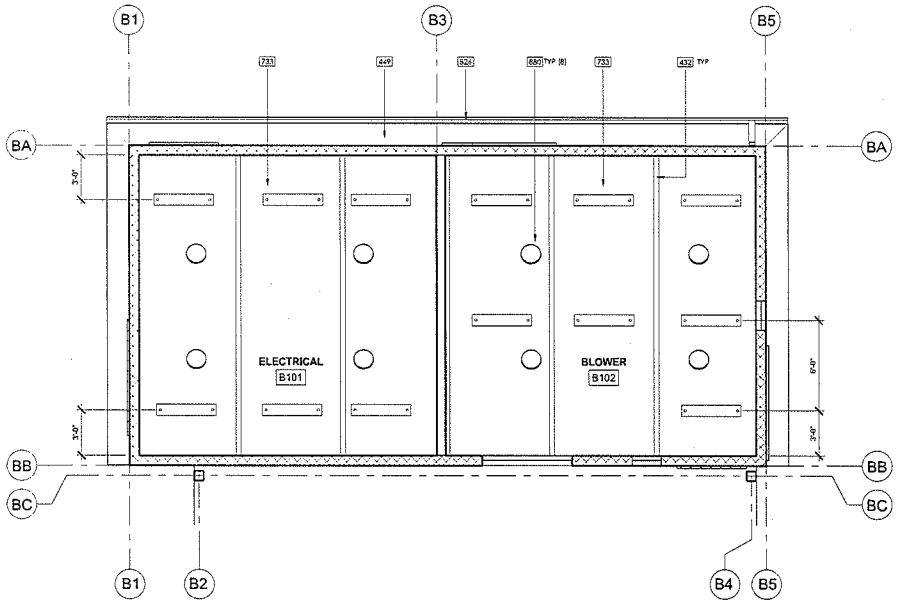
PLANS PREPARED BY: RMC water and environment; jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/4" = 1'-0"	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52192 EXP. 12/31/2014

PLAN NO. A4600-1 SHEET ____ of 100 SHEETS



CONSTRUCTION NOTES

432	STRUCTURAL STEEL, REFERENCE STRUCTURAL DRAWINGS
449	METAL SOFFIT, PAINT TO MATCH FASCIA
733	PAINT EXPOSED SPRINKLER PIPING, EXHAUST DUCT WORK AND UNDERSIDE OF EXPOSED STRUCTURE
876	GUTTER
880	TUBULAR SKYLIGHT

RCP LEGEND

- GYP BD CEILING
- 2x4 ACT
- 2x4 FIXTURE, SEE ELECTRICAL DRAWINGS
- 2x2 FIXTURE, SEE ELECTRICAL DRAWINGS
- LINEAR PENDANT, SEE ELECTRICAL DRAWINGS
- RETURN DIFFUSER, SEE MECHANICAL DRAWINGS
- SUPPLY DIFFUSER, SEE MECHANICAL DRAWINGS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

BLOWER & ELECTRICAL BUILDING FIRST FLOOR RCP

C2 BLOWER & ELECTRICAL BUILDING RCP
A4600-2

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

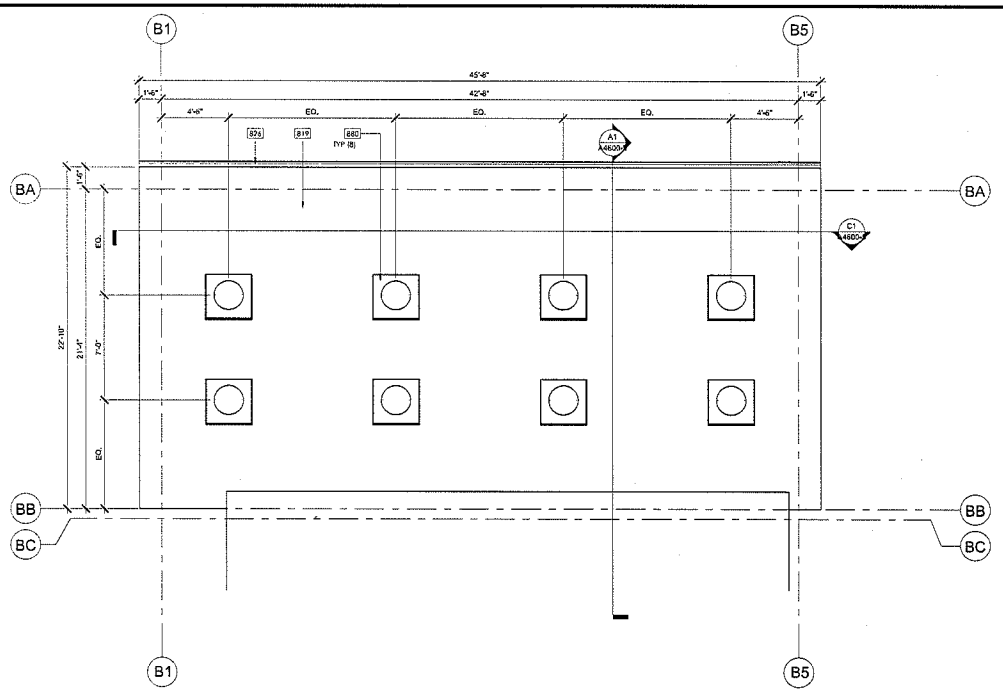
PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/4" = 1'-0"	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. A4600-2 SHEET ____ of 100 SHEETS



CONSTRUCTION NOTES

B1b CONCRETE TILE ROOFING, TYP.
B2A GUTTER
B8C TURF UP AT SKYLIGHT

C1 BLOWER & ELECTRICAL BUILDING ROOF PLAN
A4600-3

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

BLOWER & ELECTRICAL BUILDING ROOF PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

0" 1" VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY JK	DATE XX/2014	SCALE 1/4" = 1'-0"	APPROVED BY: DATE
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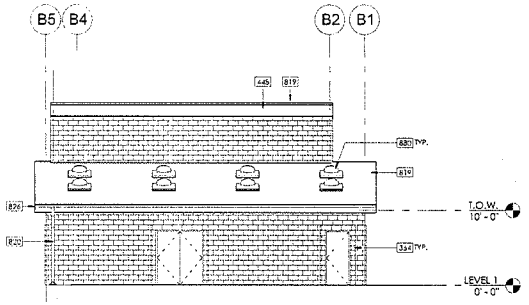
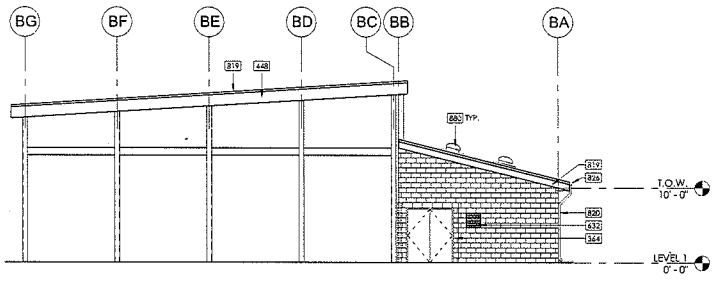
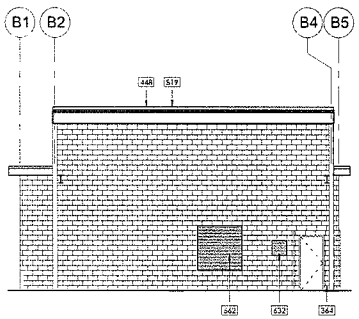
CHECKED BY AD	DATE XX/2014	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. A4600-3			SHEET of 100 SHEETS



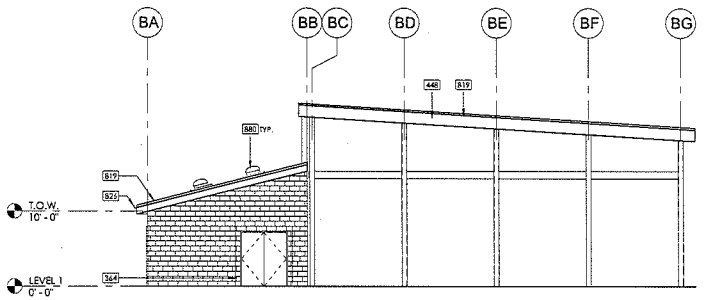
A1 NORTH BLOWER ELEVATION
A4600-4



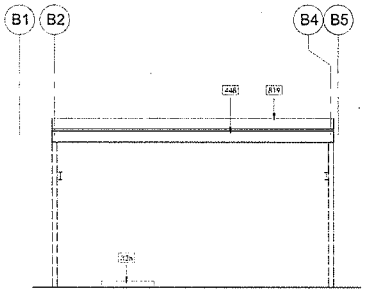
A3 EAST BLOWER ELEVATION
A4600-4



B1 SOUTH BLOWER ELEVATION
A4600-4



B3 WEST BLOWER ELEVATION
A4600-4



C1 SOUTH CANOPY ELEVATION
A4600-4

CONSTRUCTION NOTES

328 CONCRETE EQUIPMENT PAD, REFERENCE STRUCTURAL DRAWINGS
364 CMU DOOR/WINDOW TRIM
448 PREMANUFACTURED METAL CANOPY
632 METAL LOUVER, REFERENCE WINDOW SCHEDULE & MECHANICAL DRAWINGS
842 WALL LOUVER, REFERENCE WINDOW SCHEDULE & MECHANICAL DRAWINGS
819 CONCRETE TILE ROOFING, TYP.
820 DOWNSPOUT
824 GUTTER
850 TUBULAR SKYLIGHT

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

BLOWER & ELECTRICAL BLDG. EXTERIOR ELEVATIONS

DIAL BEFORE YOU DIG
DIGALERT

VERIFY SCALE
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

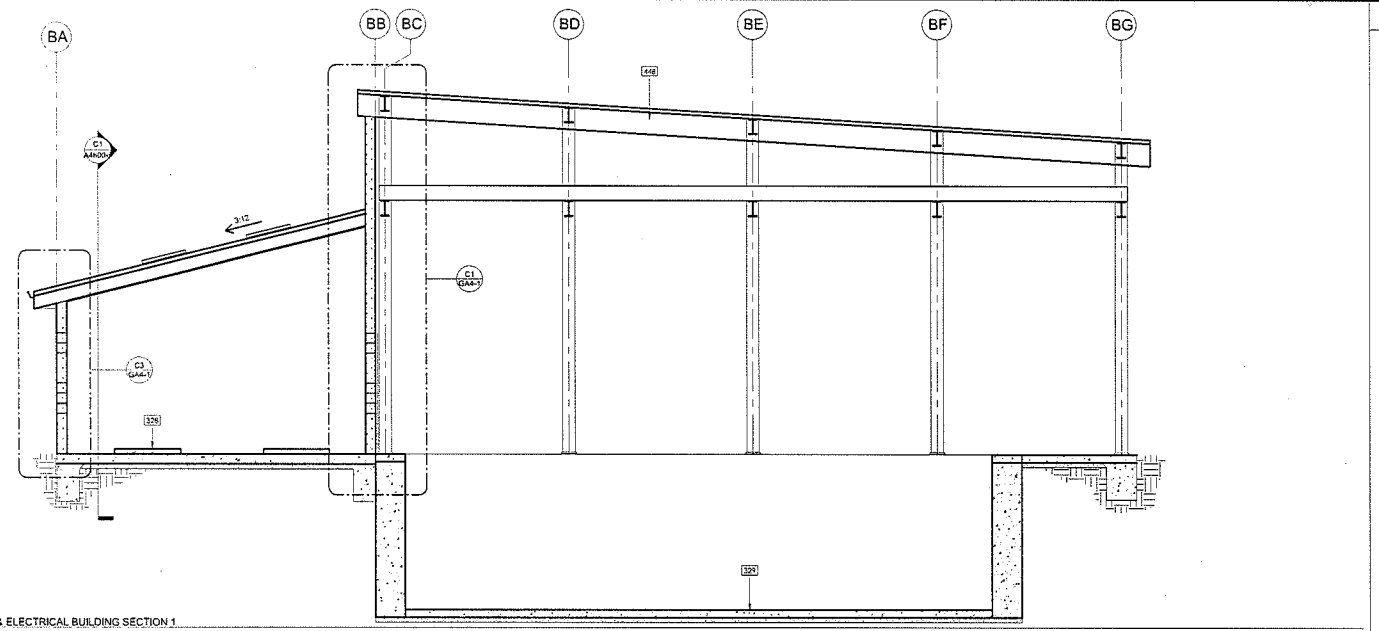
PLANS PREPARED BY:
RMC water and environment
jeffkatz ARCHITECTURE

NOT FOR CONSTRUCTION

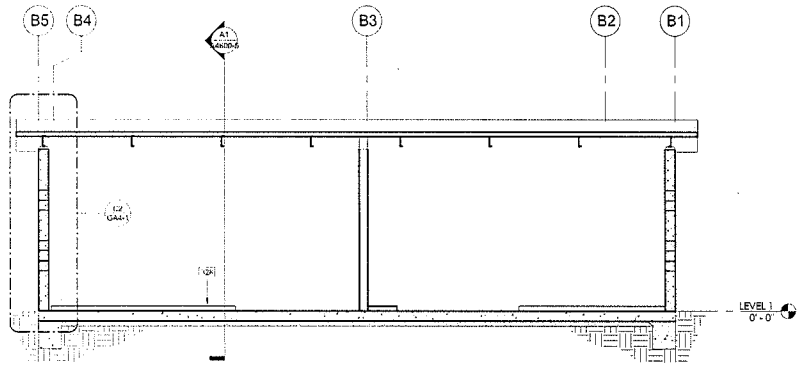
NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/8" = 1'-0"	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. A4600-4 SHEET ____ of 100 SHEETS



A1 A4600-5 BLOWER & ELECTRICAL BUILDING SECTION 1



C1 A4600-5 BLOWER & ELECTRICAL BUILDING SECTION 2

CONSTRUCTION NOTES

208	CONCRETE EQUIPMENT PAD. REFERENCE STRUCTURAL DRAWINGS
329	EQUIPMENT SUBLEVEL W/ REFERENCE STRUCTURAL DRAWINGS
448	PREMANUFACTURED METAL CANOPY

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

BLOWER & ELECTRICAL BUILDING SECTIONS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

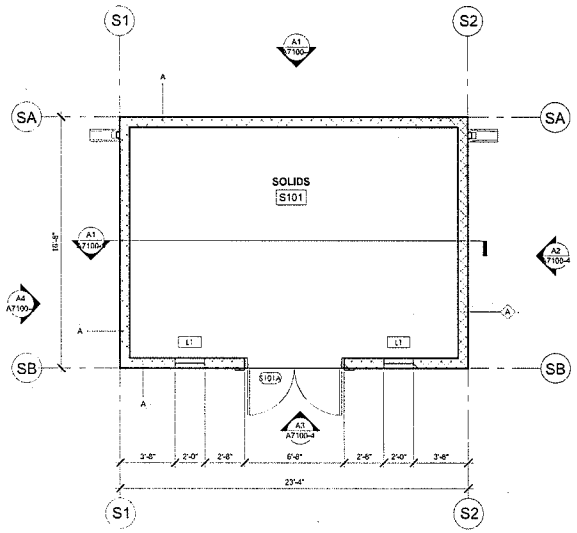
PLANS PREPARED BY: RMC water and environment — jeffkatz ARCHITECTURE

NOT FOR CONSTRUCTION

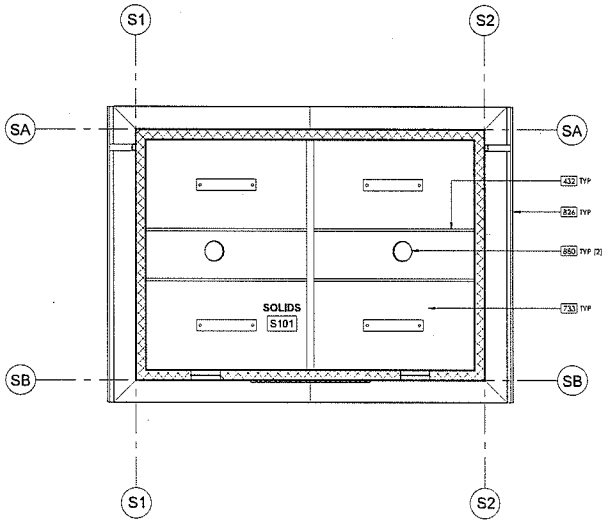
NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY JK	DATE XX/2014	SCALE 1/4" = 1'-0"	APPROVED BY: DATE
DRAWN BY MK	DATE XX/2014		XX-XX-14
CHECKED BY AD	DATE XX/2014	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. A4600-5 SHEET ___ of 100 SHEETS



C1 SOLIDS FLOOR PLAN
A7100-1 SCALE 1/4" = 1'-0"



C2 SOLIDS BUILDING RCP
A7100-1 SCALE 1/4" = 1'-0"

CONSTRUCTION NOTES

432 STRUCTURAL STEEL, REFFRENCE STUCTURAL DRAWINGS
733 PAINT EXPOSED SPRINKLER PIPING, EXHAUST DUCT WORK AND UNDERSIDE OF EXPOSED STRUCTURE
824 GUTTER
880 TUBULAR SKYLIGHT

Wall Legend

- 2x4 STUD WALL
- 2x6 STUD WALL
- CMU 8" WALL
- CMU 8" WALL W/ FURING & GYP
- CONCRETE WALL

RCP LEGEND

- GYP BD CEILING
- 2x4 ACT
- 2x4 FIXTURE, SEE ELECTRICAL DRAWINGS
- 2x2 FIXTURE, SEE ELECTRICAL DRAWINGS
- LINEAR PENDANT, SEE ELECTRICAL DRAWINGS
- RETURN DIFFUSER, SEE MECHANICAL DRAWINGS
- SUPPLY DIFFUSER, SEE MECHANICAL DRAWINGS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

SOLIDS BUILDING FIRST FLOOR PLAN & RCP

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

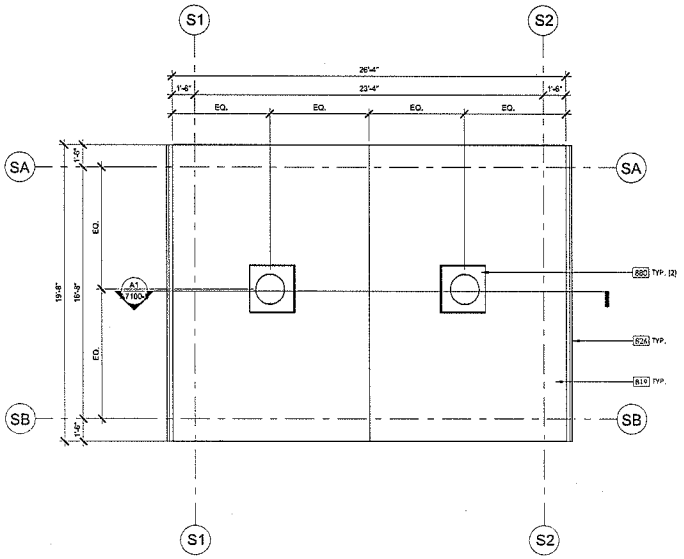
PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/4" = 1'-0"	APPROVED BY: DATE: XX-XX-14
DRAWN BY: MK	DATE: XX/2014		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	

PLAN NO. A7100-1 SHEET ____ of 100 SHEETS



C2 SOLIDS BUILDING ROOF PLAN
A7100-2 SCALE: 1/4" = 1'-0"

CONSTRUCTION NOTES

819 CONCRETE TILE ROOFING, TYP.
824 GUTTER
880 TUBULAR SKYLIGHT

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

SOLIDS BUILDING ROOF PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

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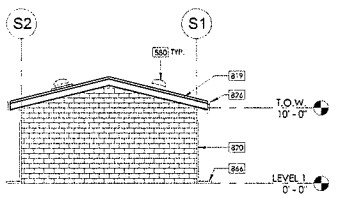
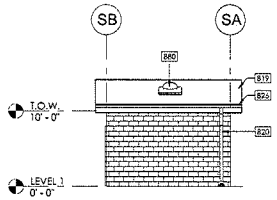
CHECKED BY: KD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

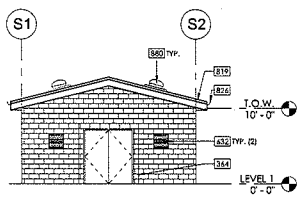
PLAN NO. A7100-2 SHEET ____ of 100 SHEETS



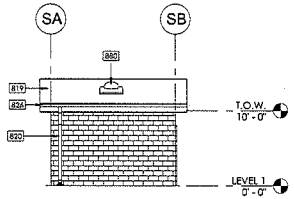
A1 NORTH SOLIDS ELEVATION
A7100-4



A2 EAST SOLIDS ELEVATION
A7100-4



A3 SOUTH SOLIDS ELEVATION
A7100-4



A4 WEST SOLIDS ELEVATION
A7100-4

CONSTRUCTION NOTES

364 CMU DOOR/WINDOW TRIM
432 METAL LOUVER, REFERENCE WINDOW SCHEDULE & MECHANICAL DRAWINGS
819 CONCRETE TILE ROOFING, TYP.
820 DOWNSPOUT
826 GUTTER
866 SPLASH BLOCK, SEE
880 TUBULAR SKYLIGHT

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

SOLIDS BUILDING EXTERIOR ELEVATIONS

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IT SAFE. DIG EFFORT. YOU DIG!
SERVING NHC SOUTHERN CALIFORNIA COUNTIES

0" 1" VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/8" = 1'-0"	APPROVED BY: DATE
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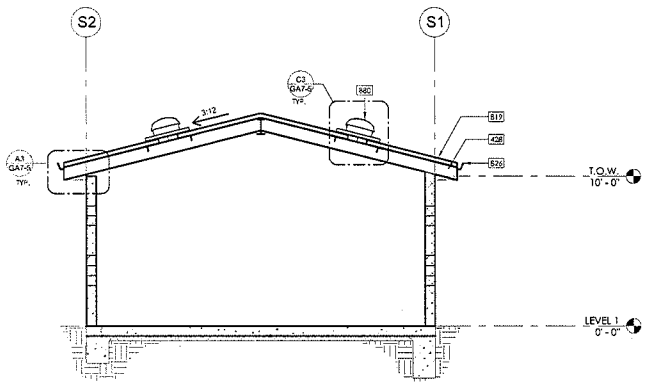
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. A7100-4			SHEET ____ of 100 SHEETS



A1 SOLIDS BUILDING SECTION 1
A7100-5 SCALE: 1/4" = 1'-0"

CONSTRUCTION NOTES

408 STEEL BEAM, REFERENCE STRUCTURAL DRAWINGS
819 CONCRETE TILE ROOFING, TYP.
826 GUTTER
880 TUBULAR SKYLIGHT

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

SOLIDS BUILDING SECTIONS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN AT LEAST TWO WORKING DAYS BEFORE YOU DIG! — REFER TO PLANS TO EXCAVATE — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

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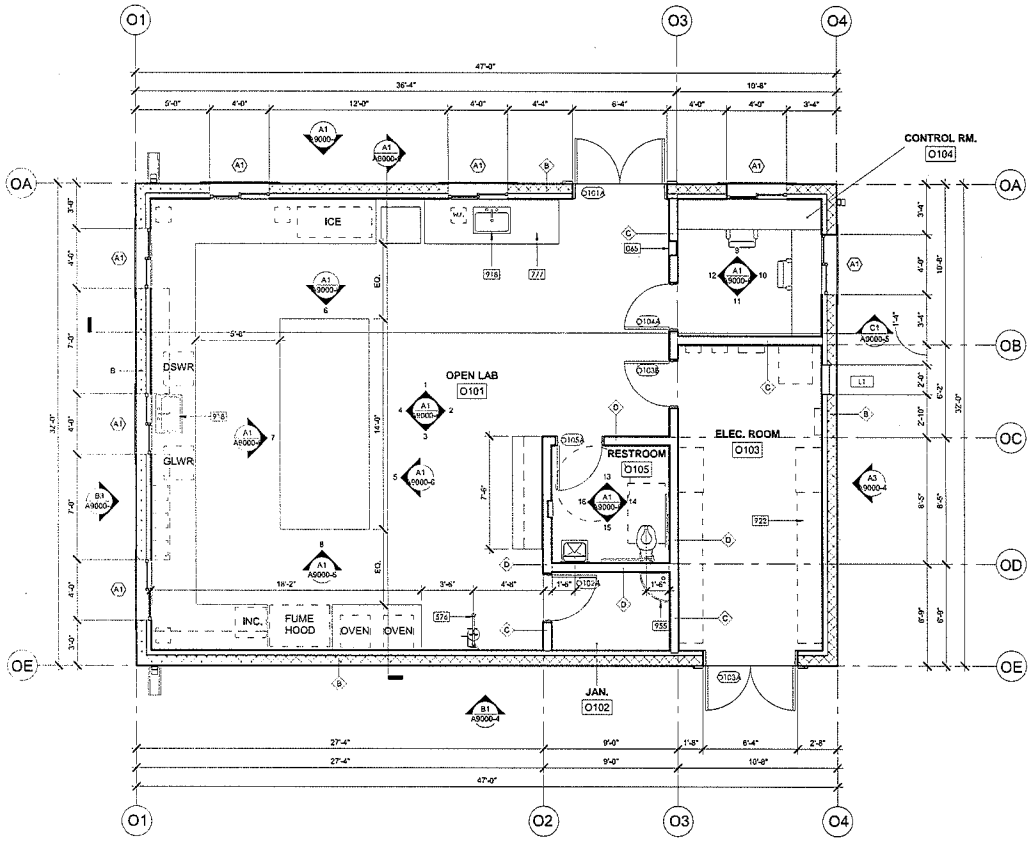
DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/4" = 1'-0"	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. A7100-5			SHEET ____ of 100 SHEETS



C1 A9000-1 OPS FLOOR PLAN

CONSTRUCTION NOTES

065 RECESSED FIRE EXTINGUISHER AND CABINET
576 EMERGENCY SHOWER & EYEWASH, REFERENCE PLUMBING DRAWINGS
777 FOR CASEWORK ELEVATIONS, SEE INTERIOR ELEVATIONS
918 DEEP SINK WITH HYKEN P-TRAP, REFERENCE PLUMBING DRAWINGS
922 ELECTRICAL PANELS AND EQUIPMENT - REFERENCE ELECTRICAL DRAWINGS
955 MOP SINK, REFERENCE PLUMBING DRAWINGS

Wall Legend

- 2x4 STUD WALL
- 2x6 STUD WALL
- CMU 8" WALL
- CMU 8" WALL W/ FURING & GYP
- CONCRETE WALL

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

OPS BUILDING FIRST FLOOR PLAN

DIAL BEFORE YOU DIG — DIGALERT

VERIFY SCALES: BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC WATER AND ENVIRONMENT; jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

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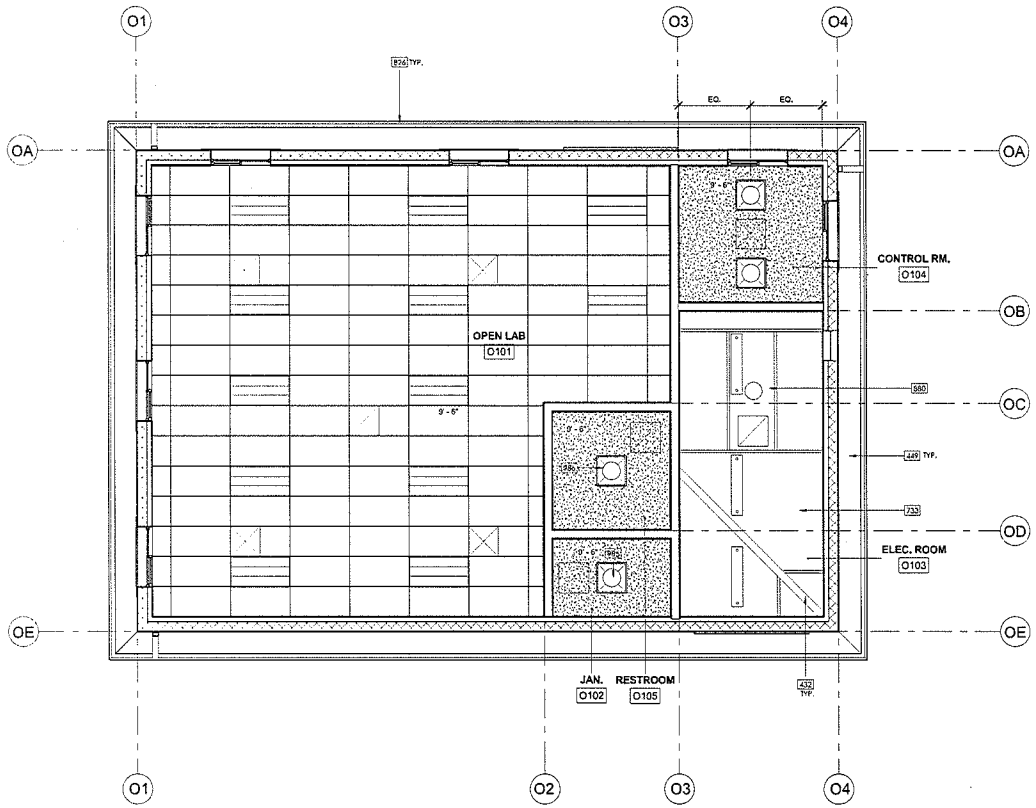
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. A9000-1 SHEET ___ of 100 SHEETS



CONSTRUCTION NOTES

432	STRUCTURAL STEEL, REFERENCE STRUCTURAL DRAWINGS
449	METAL SOFFIT, PAINT TO MATCH FASCIA
733	PAINT EXPOSED SPRINKLER PIPING, EXHAUST DUCT WORK AND UNDERSIDE OF EXPOSED STRUCTURE
876	GUTTER
880	TUBULAR SKYLIGHT
985	CENTER LIGHT FIXTURE IN ROOM

RCP LEGEND

- GYP BD CEILING
- 2x4 ACT
- 2x4 FIXTURE, SEE ELECTRICAL DRAWINGS
- 2x2 FIXTURE, SEE ELECTRICAL DRAWINGS
- LINEAR PENDANT, SEE ELECTRICAL DRAWINGS
- RETURN DIFFUSER, SEE MECHANICAL DRAWINGS
- SUPPLY DIFFUSER, SEE MECHANICAL DRAWINGS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

OPS BUILDING FIRST FLOOR RCP

C1 OPS BUILDING RCP
A9000-2

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

1" VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

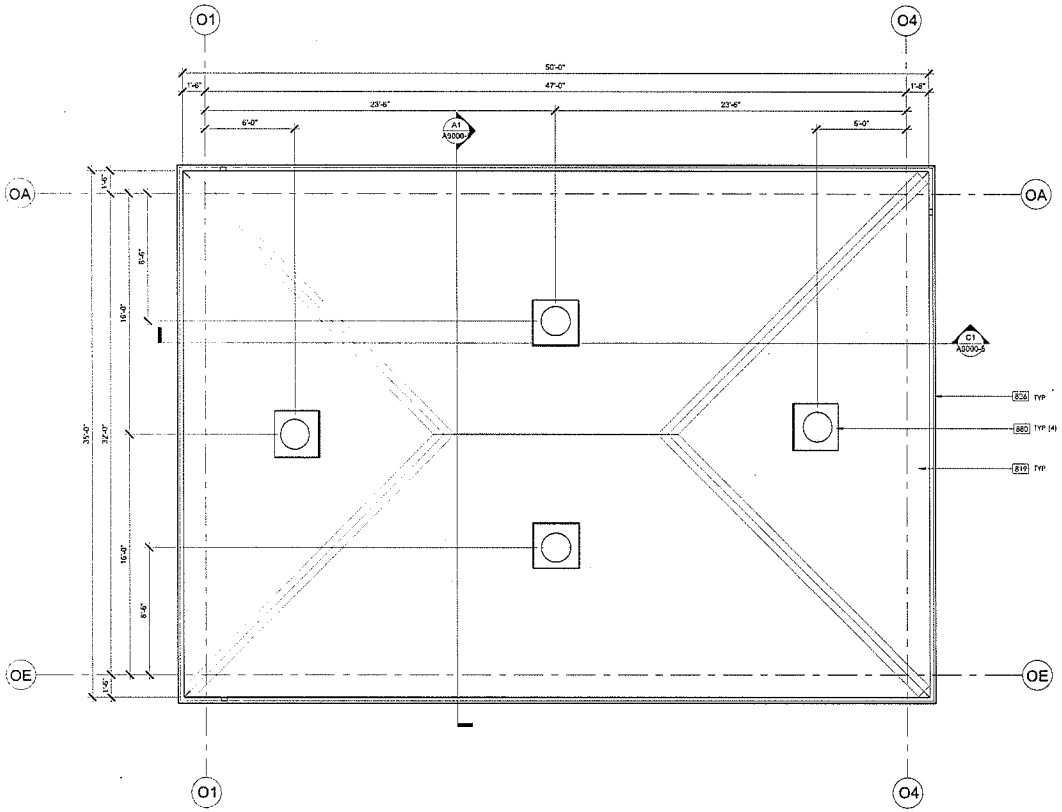
PLANS PREPARED BY:
RMC water and environment
jeffkatz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/4" = 1'-0"	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE: XX-XX-14
DRAWN BY: MK	DATE: XX/2014		
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	

PLAN NO. A9000-2 SHEET ____ of 100 SHEETS



C1 OPS BUILDING ROOF PLAN
A9000-3

CONSTRUCTION NOTES

819 CONCRETE TILE ROOFING, TYP.
876 GUTTER
880 TUBULAR SKYLIGHT

DIAL BEFORE YOU DIG
DIGALERT

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

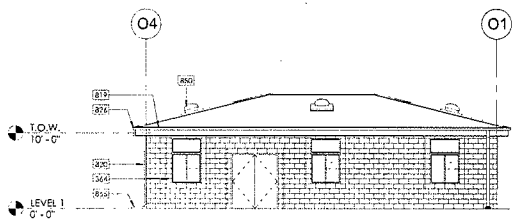
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

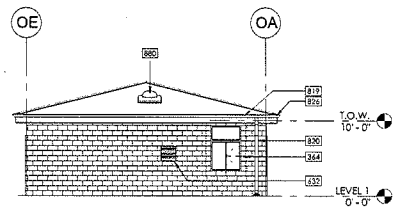
OPS BUILDING ROOF PLAN

DESIGNED BY: JK	DATE: XX/2014	SCALE	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., I.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

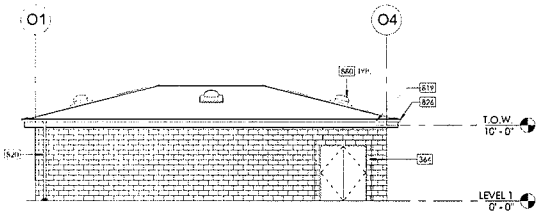
PLAN NO. A9000-3 SHEET ___ of 100 SHEETS



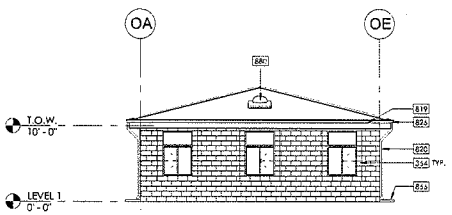
A1 NORTH OPS ELEVATION
A9000-4 SCALE: 1/8"=1'-0"



A3 EAST OPS ELEVATION
A9000-4 SCALE: 1/8"=1'-0"



B1 SOUTH OPS ELEVATION
A9000-4 SCALE: 1/8"=1'-0"



B3 WEST OPS ELEVATION
A9000-4 SCALE: 1/8"=1'-0"

CONSTRUCTION NOTES

364	CMU DOOR/WINDOW TRIM
432	METAL LOUVER, REFERENCE WINDOW SCHEDULE & MECHANICAL DRAWINGS
819	CONCRETE TILE ROOFING, TYP.
820	DOWNSPOUT
826	GUTTER
866	SPLASH BLOCK, SEE
880	TUBULAR SKYLIGHT

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

OPS BUILDING EXTERIOR ELEVATIONS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN SAFE. DIG BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING MOST SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

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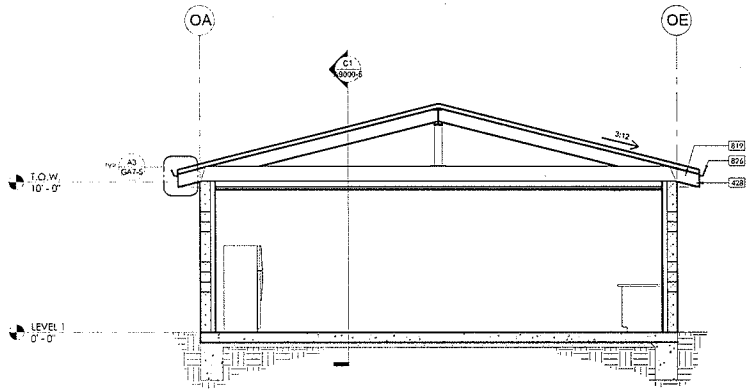
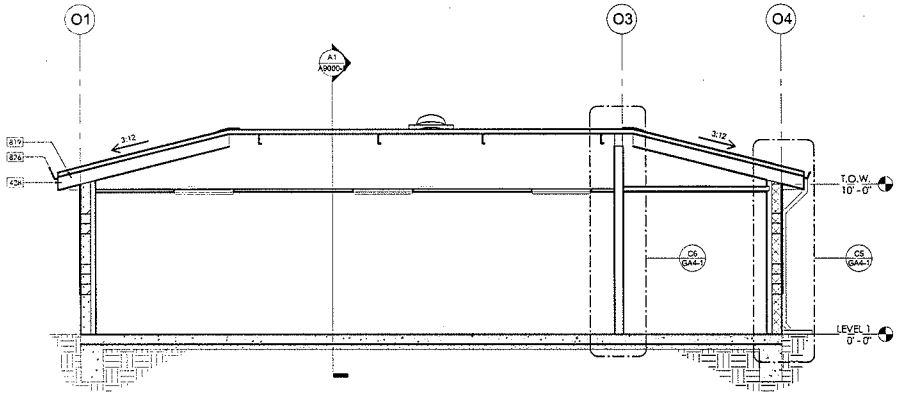
DESIGNED BY: JK	DATE: XX/2014	SCALE: 1/8" = 1'-0"	APPROVED BY: DATE XX-XX-14
DRAWN BY: MK	DATE: XX/2014		ROBERT BRAGER, P.E., J.D.
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	PUBLIC WORKS DIRECTOR / CITY ENGINEER
PLAN NO. A9000-4		SHEET ___ of 100 SHEETS	RCE NO. 52102 EXP. 12/31/2014



A1 / A9000-5 OPS BUILDING SECTION 1



C1 / A9000-5 OPS BUILDING SECTION 2

CONSTRUCTION NOTES

428 STEEL BEAM, REFERENCE STRUCTURAL DRAWINGS
819 CONCRETE TILE ROOFING, TYP.
826 GUTTER

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

OPS BUILDING SECTIONS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — PLAN SAFE DIG BEFORE YOU DIG — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment — jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

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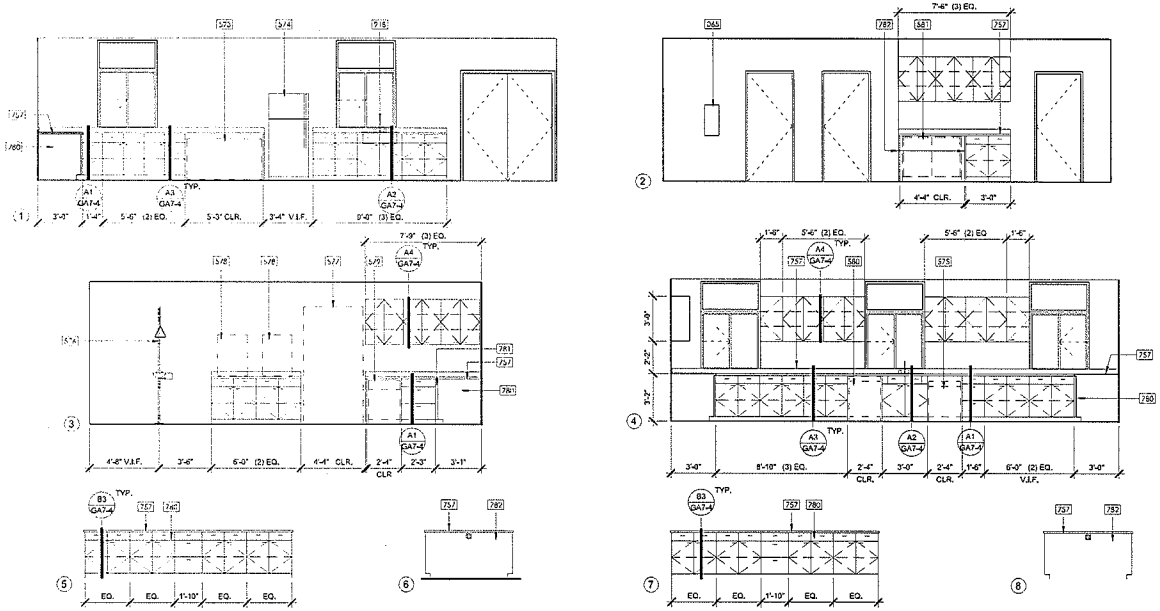
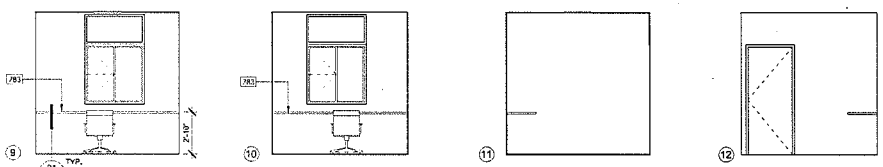
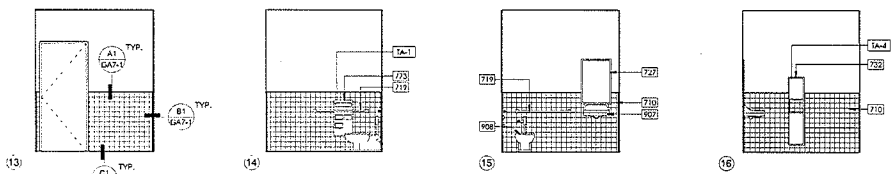
PLAN NO. A9000-5			SHEET ____ of 100 SHEETS



A1 A-05.1 OPS LAB INTERIOR ELEVATIONS



B1 A-05.1 CONTROL ROOM INTERIOR ELEVATIONS



C1 A-05.1 RESTROOM INTERIOR ELEVATIONS

CONSTRUCTION NOTES

- 045 RECESSED FIRE EXTINGUISHER AND CABINET
- 573 ICE MACHINE
- 574 O.F.C.I. REFRIGERATOR
- 575 O.F.C.I. DISHWASHER, PROVIDE PLASTIC LABEL HELD IN PLACE AS NEEDED.
- 576 EMERGENCY SHOWER & EYEWASH, REFERENCE PLUMBING DRAWINGS
- 577 O.F.C.I. FUME HOOD
- 578 O.F.C.I. LAB OVEN
- 579 O.F.C.I. INCUBATOR
- 580 O.F.C.I. LAB GLASSWARE WASHER
- 581 O.F.C.I. METAL LANDFAIRY CHEMICAL WORKSH CABINET 36 GALLON
- 710 CERAMIC TILE WAINSCOT WHERE OCCURS
- 719 GRAB BAR, REFERENCE 'T' SHEETS, TOILET ACCESSORY SCHEDULE AND DETAIL A2/A7.1
- 727 MIRROR, REFERENCE 'T' SHEETS AND TOILET ACCESSORY SCHEDULE
- 730 PAPER TOWEL DISPENSER / TRASH RECEPTACLE, REFERENCE 'T' SHEETS AND TOILET ACCESSORY SCHEDULE
- 757 EPOXY COUNTERTOP & BACKSPLASH (WHERE OCCURS)
- 772 TOILET PAPER/SEAT COVER DISPENSER COMBO, REFERENCE 'T' SHEETS AND TOILET ACCESSORY SCHEDULE
- 780 CHEMICAL RESISTANT CASEWORK
- 781 PLYWOOD BACK PANEL AS NECESSARY
- 782 PROVIDE CHEMICAL RESISTANT END PANELS
- 783 CORIAN COUNTERTOP & BACKSPLASH
- 907 ACCESSIBLE SINK, REFER TO PLUMBING DRAWINGS AND 'T' SHEETS
- 908 ACCESSIBLE WHEELCHAIR, REFERENCE PLUMBING DRAWINGS AND 'T' SHEETS.
- 918 DEEP SINK WITH PEGBOARD BACK, REFERENCE PLUMBING DRAWINGS

TOILET ACCESSORIES SCHEDULE

Type Mark	Manufacturer	Model	Description	Count	Comments
TA-1				1	
TA-4				1	

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

OPS BUILDING INTERIOR ELEVATIONS

DESIGNED BY: JK DATE: XX/2014
DRAWN BY: MK DATE: XX/2014
CHECKED BY: AD DATE: XX/2014
SCALE: 1/4" = 1'-0"
PROJECT NUMBER: 2036
APPROVED BY: DATE
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR / CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014
XX-XX-14

PLAN NO. A9000-6 SHEET ___ of 100 SHEETS

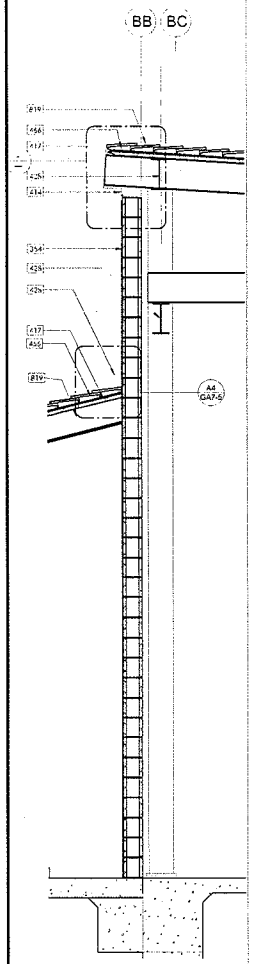
DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

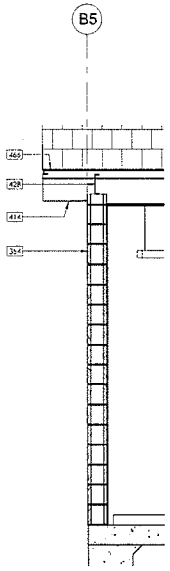
PLANS PREPARED BY: RMC water and environment; jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

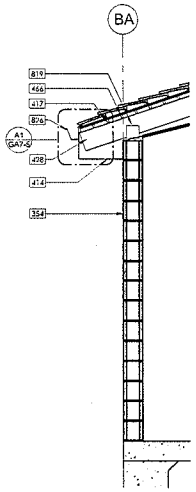
NO.	REVISION	BY	CHKD.	DATE



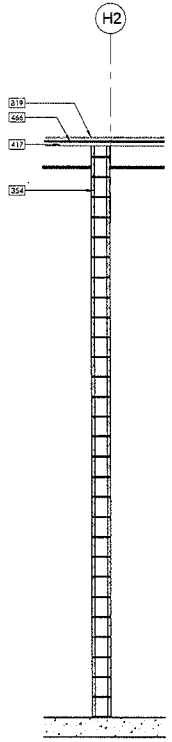
C1 WALL SECTION
GA4-1



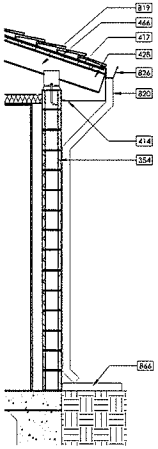
C2 WALL SECTION
GA4-1



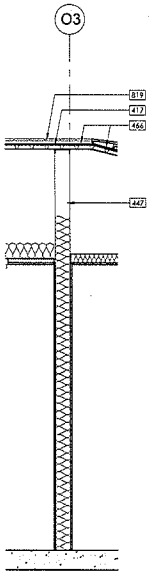
C3 WALL SECTION
GA4-1



C4 WALL SECTION
GA4-1



C5 WALL SECTION
GA4-1



C6 WALL SECTION
GA4-1

CONSTRUCTION NOTES

354	CMU BLOCK WALL, REFERENCE PLAN FOR SIZE
414	METAL SOFFIT
417	METAL ROOF DECK, REFERENCE STRUCTURAL DRAWINGS
426	STEEL BEAM, REFERENCE STRUCTURAL DRAWINGS
447	METAL STUD, SEE STRUCTURAL DRAWINGS
466	PLYWOOD ROOF SHEATHING, REFERENCE STRUCTURAL DRAWINGS.
819	CONCRETE TILE ROOFING, TYP.
820	DOWNSPOUT
826	GUTTER
866	SPLASH BLOCK, SEE

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DIGALERT
PLAN IT SAFE. DIG WITH CARE. YOU DIG!
SERVING NWC SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jerr katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

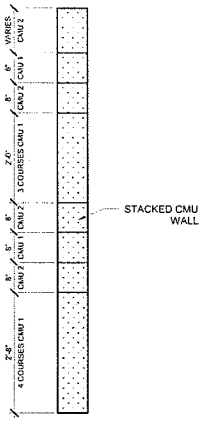
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

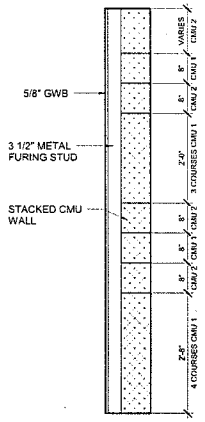
WALL SECTIONS

DESIGNED BY JK	DATE XX/2014	SCALE 1/2" = 1'-0"	APPROVED BY: DATE
DRAWN BY MK	DATE XX/2014		XX-XX-14
CHECKED BY AD	DATE XX/2014	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

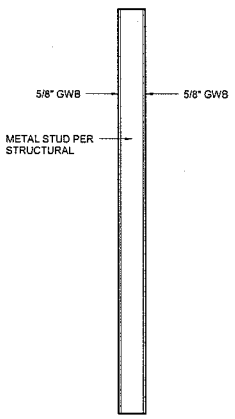
PLAN NO. GA4-1 SHEET ____ of 100 SHEETS



A



B



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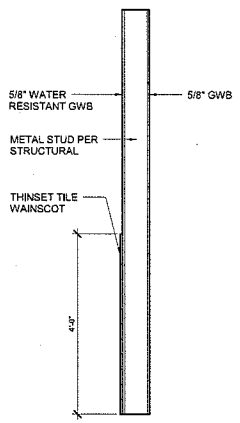
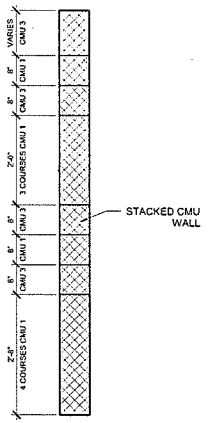


D



E

CMU LEGEND

CMU-1: RCP BLOCK	SPLITFACE BLOCK	COLOR: LA PAZ
CMU-2: RCP BLOCK	PRECISION BLOCK	COLOR: LITE BROWN
CMU-3: RCP BLOCK	PRECISION BLOCK	COLOR: LA PAZ

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

WALL TYPES

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VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment — JEFF KATZ ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: 3/4" = 1'-0"	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. GA4-2 — SHEET ____ of 100 SHEETS

ROOM FINISH SCHEDULE BLOWER & ELECTRICAL BUILDING

ROOMS		FLOOR		BASE		WAINSCOT		WALLS								CEILING			CASEWORK				
								NORTH		EAST		SOUTH		WEST									
NUMBER	DESCRIPTION	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	HEIGHT	COUNTERTOP	COLOR	CABINET	COLOR	REMARKS
B101	ELECTRICAL	CNC	-	-	-	-	-	CMU		CMU		CMU		CMU		EXP	PT-2	17' - 0"	-	-	-	-	3, 6, 7
B102	BLOWER	CNC	-	-	-	-	-	CMU		CMU		CMU		CMU		EXP	PT-2	17' - 0"	-	-	-	-	3, 6, 7
B103	MEMBRANE TANK AREA	CNC	-	-	-	-	-	-	-	-	-	-	-	-	-	EXP	-	24' - 0"	-	-	-	-	

ROOM FINISH SCHEDULE HEADWORKS BUILDING

ROOMS		FLOOR		BASE		WAINSCOT		WALLS								CEILING			CASEWORK				
								NORTH		EAST		SOUTH		WEST									
NUMBER	DESCRIPTION	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	HEIGHT	COUNTERTOP	COLOR	CABINET	COLOR	REMARKS
H101	HEADWORKS	CNC	-	-	-	-	-	CMU		CMU		CMU		CMU		EXP	PT-2	19' - 1"	-	-	-	-	3, 6, 7
H102	ELECTRICAL ROOM	CNC	-	-	-	-	-	CMU		CMU		CMU		CMU		EXP	PT-2	19' - 1"	-	-	-	-	3, 6, 7

ROOM FINISH SCHEDULE OPS BUILDING

ROOMS		FLOOR		BASE		WAINSCOT		WALLS								CEILING			CASEWORK				
								NORTH		EAST		SOUTH		WEST									
NUMBER	DESCRIPTION	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	HEIGHT	COUNTERTOP	COLOR	CABINET	COLOR	REMARKS
O101	OPEN LAB	CNC		RB		RB-1	-	-	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	AC		10' - 0"	EP	BLACK	CRPL	CRPL-1	2
O102	JAN.	CNC		-		-	-	-	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	10' - 0"	-	-	-	-	2
O103	ELEC. ROOM	CNC	-	-		-	-	-	GWB	PT-1	CMU	PT-1	CMU	PT-1	GWB	PT-1	EXP	PT-2	13' - 9"	-	-	-	-	1, 2, 4, 7
O104	CONTROL RM.	CNC		RB		RB-1	-	-	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	10' - 0"	COR	COR-1	-	-	1
O105	RESTROOM	CT		CT-1		CT	CT	CT-1	GWBWR	PT-1	GWBWR	PT-1	GWBWR	PT-1	GWBWR	PT-1	GWB	PT-1	10' - 0"	-	-	-	-	2

ROOM FINISH SCHEDULE SOLIDS BUILDING

ROOMS		FLOOR		BASE		WAINSCOT		WALLS								CEILING			CASEWORK				
								NORTH		EAST		SOUTH		WEST									
NUMBER	DESCRIPTION	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	MATERIAL	COLOR	HEIGHT	COUNTERTOP	COLOR	CABINET	COLOR	REMARKS
S101	SOLIDS	CNC	-	-	-	-	-	CMU		CMU		CMU		CMU		EXP	PT-2	12' - 3"	-	-	-	-	3, 6, 7

COLOR SELECTIONS

MARK	COLOR	COLOR#	MANUFACTURER	REMARKS
CT-1	BISCUIT	K175	DAL TILE	
COR-1	CANVAS	-	DUPONT	
CRPL-1	STUDIO TEAK	7960	WILSONART	CHEMSURF TYPE 390
PT-1	SWISS COFFEE	487	FRAZEE	
PT-2	SUPERNATURAL	CLC12770	FRAZEE	
RB-1	CAMEL	181	ROPPE	

Finish Notes

1. PAINT FINISH: EGG SHELL
2. PAINT FINISH: SEMI-GLOSS
3. PAINT EXPOSED ROOF STRUCTURE, SPRINKLER PIPING AND EXHAUST DUCTWORK WHERE OCCURS
4. PROVIDE HIGH-DENSITY CONCRETE FLOOR FINISH
5. REFER TO ENLARGED ELEVATIONS FOR ADDITIONAL INFORMATION
6. REFER TO WALL TYPES FOR CMU COLORS
7. PAINT ALL EXPOSED CONDUIT TO MATCH CMU WALL

Materials Legend

MATERIAL LEGEND	
ABBR	DESCRIPTION
AC	SUSPENDED ACOUSTIC CEILING PANELS
CNC	CONCRETE (SEALED)
COR	CORIAN
CPT	CARPET
CMU	CONCRETE MASONRY UNIT
CRPL	CHEMICAL RESISTANT PLASTIC LAMINATE
CT	CERAMIC TILE
EXP	EXPOSED STRUCTURE
EL	ELASTOMETRIC DECK COATING
EP	EPOXY RESIN COUNTERTOP
GWB	GYPSUM WALL BOARD 5/8" UON
GWB-2	GYPSUM WALL BOARD, SOUND ABSORBENT
GWBFR	GYPSUM WALL BOARD, FIRE RESISTANT (5/8") TYPE-X
GWBWR	GYPSUM WALL BOARD, WATER RESISTANT (5/8")
PL	PLASTIC LAMINATE
PT	PAINT
PLYWD	1/2" PLYWOOD, PAINTED
RB	RUBBER BASE
RM	RUBBER MAT
RS	RUBBER STRINGER
SM	SHEET METAL
SS	STAINLESS STEEL
S	STUCCO - PORTLAND CEMENT PLASTER
VCT	VINYL COMPOSITION TILE
WD	WOOD

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

ROOM FINISH SCHEDULES

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VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment — jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK — DATE: XX/2014
DRAWN BY: MK — DATE: XX/2014
CHECKED BY: AD — DATE: XX/2014
SCALE: N.T.S.
PROJECT NUMBER: 2036
PLAN NO. GA6-1

APPROVED BY: _____ DATE: XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR / CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

SHEET ____ of 100 SHEETS

Door Schedule Blower & Electrical Building

MARK	TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR ELEV	DOOR DEPTH	DOOR MATERIAL	DOOR COLOR INT/EXT	DOOR FINISH	DOOR LOUVER SIZE	DOOR HOUR	FRAME MATERIAL	FRAME FINISH	FRAME COLOR INT/EXT	DETAIL HEAD	DETAIL JAMB	DETAIL JAMB	DETAIL THRESHOLD	HARDWARE GROUP	REMARKS
B101A	PAIR	6' - 0"	7' - 0"	B	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A1/GA7-2	A1/GA7-2	A1/GA7-2	C1/GA7-2		
B101B	SINGLE	3' - 0"	7' - 0"	A	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A1/GA7-2	A1/GA7-2	A1/GA7-2	C1/GA7-2		
B102A	PAIR	6' - 0"	7' - 0"	B	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A1/GA7-2	A1/GA7-2	A1/GA7-2	C1/GA7-2		
B102B	SINGLE	3' - 0"	7' - 0"	A	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A1/GA7-2	A1/GA7-2	A1/GA7-2	C1/GA7-2		
B109C	PAIR	6' - 0"	7' - 0"	B	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A1/GA7-2	A1/GA7-2	A1/GA7-2	C1/GA7-2		

Door Schedule Headworks Building

MARK	TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR ELEV	DOOR DEPTH	DOOR MATERIAL	DOOR COLOR INT/EXT	DOOR FINISH	DOOR LOUVER SIZE	DOOR HOUR	FRAME MATERIAL	FRAME FINISH	FRAME COLOR INT/EXT	DETAIL HEAD	DETAIL JAMB	DETAIL JAMB	DETAIL THRESHOLD	HARDWARE GROUP	REMARKS
H101A	SINGLE	3' - 0"	7' - 0"	A	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A1/GA7-2	A1/GA7-2	A1/GA7-2	C1/GA7-2		
H101B	COILING	6' - 8"	10' - 0"	C	0' - 2"	STL		FF	-	-	STL	FF		B3/GA7-2	C3/GA7-2	C3/GA7-2	B3/GA7-2		
H101C	COILING	8' - 0"	10' - 0"	C	0' - 2"	STL		FF	-	-	STL	FF		B3/GA7-2	C3/GA7-2	C3/GA7-2	B3/GA7-2		
H101D	COILING	18' - 8"	10' - 0"	C	0' - 2"	STL		FF	-	-	STL	FF		B3/GA7-2	C3/GA7-2	C3/GA7-2	B3/GA7-2		
H101E	COILING	9' - 4"	10' - 0"	C	0' - 2"	STL		FF	-	-	STL	FF		B3/GA7-2	C3/GA7-2	C3/GA7-2	B3/GA7-2		
H101F	SINGLE	3' - 0"	7' - 0"	A	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A1/GA7-2	A1/GA7-2	A1/GA7-2	C1/GA7-2		
H102A	PAIR	5' - 0"	7' - 0"	B	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A1/GA7-2	A1/GA7-2	A1/GA7-2	C1/GA7-2		
H102B	SINGLE	3' - 0"	7' - 0"	A	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A1/GA7-2	A1/GA7-2	A1/GA7-2	C1/GA7-2		

Door Schedule Ops Building

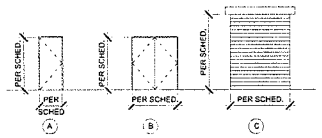
MARK	TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR ELEV	DOOR DEPTH	DOOR MATERIAL	DOOR COLOR INT/EXT	DOOR FINISH	DOOR LOUVER SIZE	DOOR HOUR	FRAME MATERIAL	FRAME FINISH	FRAME COLOR INT/EXT	DETAIL HEAD	DETAIL JAMB	DETAIL JAMB	DETAIL THRESHOLD	HARDWARE GROUP	REMARKS
O101A	PAIR	6' - 0"	7' - 2"	B	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	B1/GA7-2	B1/GA7-2	B1/GA7-2	C1/GA7-2		
O102A	SINGLE	3' - 0"	7' - 0 1/2"	A	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A2/GA7-2	A2/GA7-2	A2/GA7-2	C2/GA7-2		7
O103A	PAIR	6' - 0"	7' - 2"	B	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	B1/GA7-2	B1/GA7-2	B1/GA7-2	C1/GA7-2		
O103B	SINGLE	3' - 0"	7' - 2 1/2"	A	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A2/GA7-2	A2/GA7-2	A2/GA7-2	C2/GA7-2		
O104A	SINGLE	3' - 0"	7' - 0 1/2"	A	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A2/GA7-2	A2/GA7-2	A2/GA7-2	C2/GA7-2		
O105A	SINGLE	3' - 0"	7' - 0 1/2"	A	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A2/GA7-2	A2/GA7-2	A2/GA7-2	C2/GA7-2		1, 7

Door Schedule Solids Building

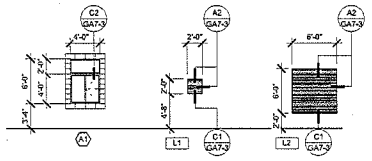
MARK	TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR ELEV	DOOR DEPTH	DOOR MATERIAL	DOOR COLOR INT/EXT	DOOR FINISH	DOOR LOUVER SIZE	DOOR HOUR	FRAME MATERIAL	FRAME FINISH	FRAME COLOR INT/EXT	DETAIL HEAD	DETAIL JAMB	DETAIL JAMB	DETAIL THRESHOLD	HARDWARE GROUP	REMARKS
S101A	PAIR	6' - 4"	7' - 2"	B	0' - 1 3/4"	HM	PT-2/PT-2	PT	-	-	HM	PT	PT-2/ PT-2	A1/GA7-2	A1/GA7-2	A1/GA7-2	C1/GA7-2		

WINDOW SCHEDULE

Type Mark	WINDOW WIDTH	WINDOW HEIGHT	WINDOW TYPE	WINDOW GLAZING	FRAME MATERIAL	FRAME FINISH	FRAME COLOR	DETAILS HEAD	DETAILS JAMB	DETAILS JAMB	DETAILS SILL	GLAZING MIN SHGC	GLAZING MIN U-VALUE	REMARKS
A1	4' - 0"	6' - 0"	DUAL PANE	LOW-E				A1/GA7-3	B1/GA7-3	B1/GA7-3	C1/GA7-3	.4	.5	



DOOR TYPES



WINDOW ELEVATIONS

Door Notes

DOOR NOTES:

1. TOILET ROOM ID SIGNAGE AND TEXT ON WALL ADJACENT TO DOOR, SEE
2. PROVIDE ISA SYMBOL ON DOOR
3. 60 MINUTE RATED DOOR AND FRAME
4. PROVIDE SMOKE SEALS
5. PROVIDE TINTED 1/2" DUAL GLAZING
6. PROVIDE ROOM IDENTIFICATION SIGNAGE, VERIFY TEXT WITH OWNER, SEE
7. PROVIDE KICKPLATE PER A4/GA7-2
8. DESCRIPTION
9. DESCRIPTION
10. DESCRIPTION
11. DESCRIPTION

Window Notes

WINDOW NOTES:

1. PROVIDE BLACKOUT WINDOW BLINDS
2. MUNTIN DETAIL
3. WATERPROOFING AROUND WINDOW, SEE
4. VERTICAL BLIND
5. PROVIDE MIN 20" NET CLEAR OPENING
6. PROVIDE TEMPERED GLASS AT ROOM

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

DOOR AND WINDOW SCHEDULES

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

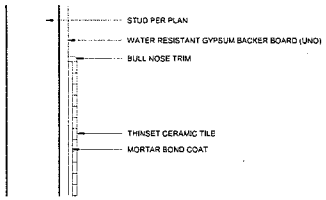
PLANS PREPARED BY: RMC water and environment; jaffe katz ARCHITECTURE

NOT FOR CONSTRUCTION

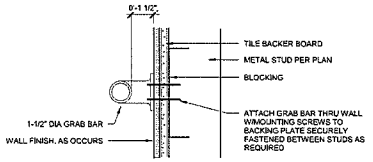
NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE XX/2014	SCALE N.T.S.	APPROVED BY: DATE XX-XX-14
DRAWN BY: MK	DATE XX/2014		ROBERT BRAGER, P.E., J.D.
CHECKED BY: AD	DATE XX/2014	PROJECT NUMBER 2036	PUBLIC WORKS DIRECTOR / CITY ENGINEER
			RCE NO. 52102 EXP. 12/31/2014

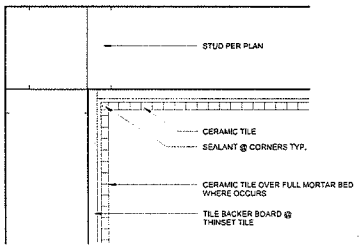
PLAN NO. GA6-2 SHEET ____ of 100 SHEETS



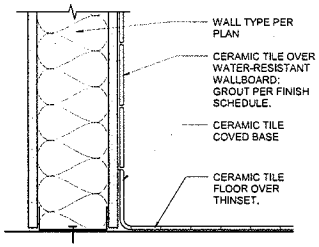
A1 GA7-1 THIN SET TILE



A2 GA7-1 GRAB BAR MOUNTING DETAIL



B1 GA7-1 THIN SET WALL TO WALL



C1 GA7-1 COVE BASE AT TILE WALL

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

TILE DETAILS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIG WITH YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" VERIFY SCALES 1" — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

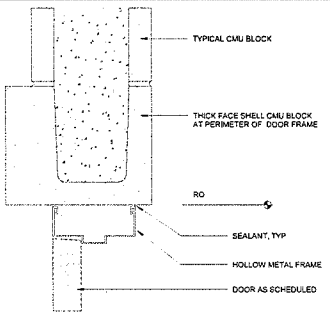
PLANS PREPARED BY: RMC water and environment — jeff katz ARCHITECTURE

REGISTERED ARCHITECT — JEFFREY A. KATZ — NOT FOR CONSTRUCTION — STATE OF CALIFORNIA

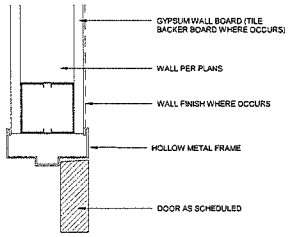
NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: VARIES	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

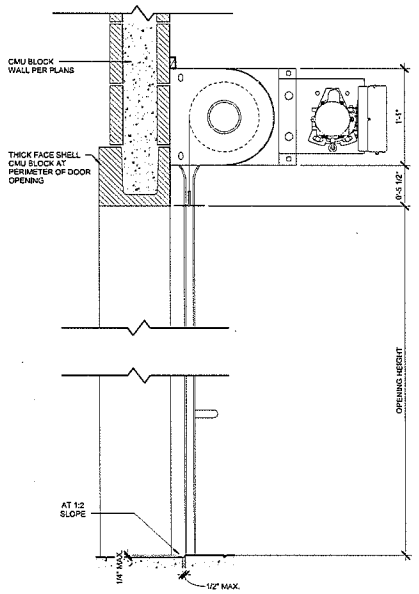
PLAN NO. GA7-1 — SHEET ____ of 100 SHEETS

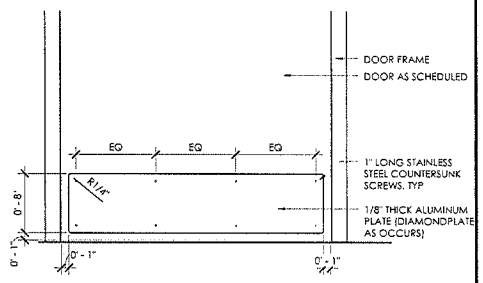


A1 EXTERIOR DOOR- CMU HEAD (JAMB SIM)
GA7-2

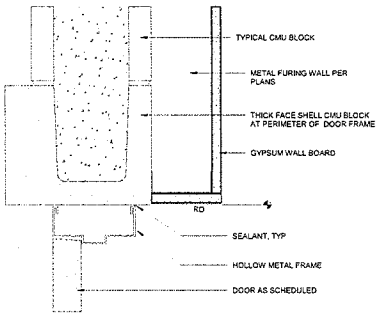


A2 INTERIOR DOOR - GYP HEAD (JAMB SIM)
GA7-2



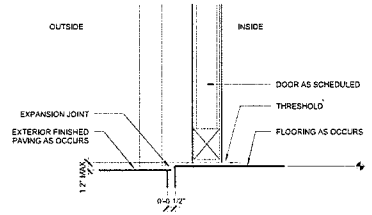


A4 DOOR - KICK PLATE
GA7-2

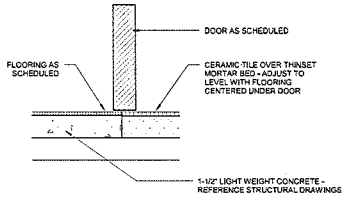


B1 EXTERIOR DOOR- CMU/GYP HEAD (JAMB SIM)
GA7-2

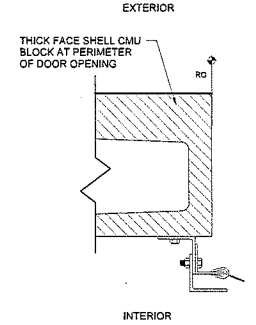
B3 ROLLUP DOOR HEAD / SILL
GA7-2



C1 EXTERIOR THRESHOLD
GA7-2



C2 FLOOR TRANSITION
GA7-2



C3 ROLLUP DOOR JAMB
GA7-2

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IS GATE BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment — jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

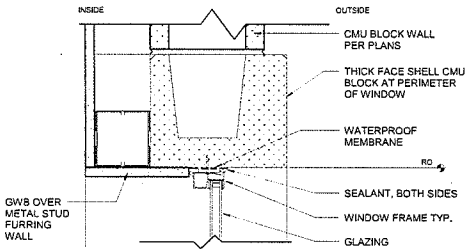
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

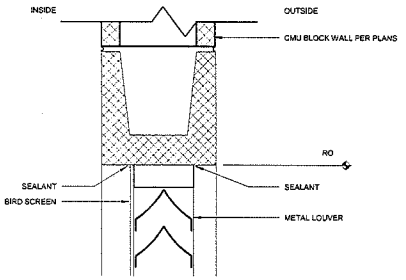
DOOR DETAILS

DESIGNED BY: JK	DATE: XX/2014	SCALE: VARIES	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

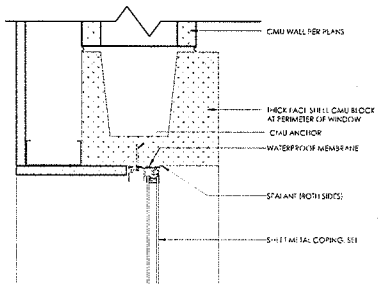
PLAN NO. GA7-2 — SHEET ____ of 100 SHEETS



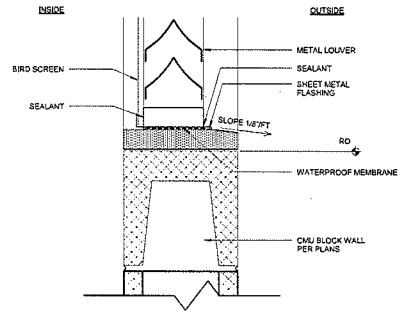
A1 GA7-3 EXTERIOR WINDOW HEAD - FIXED AT CMU-FURR WALL



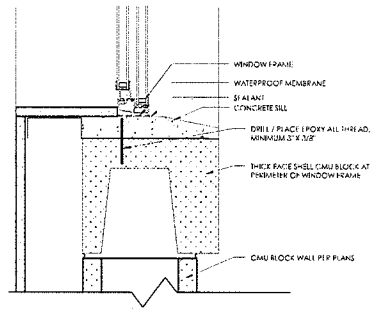
A2 GA7-3 LOUVER HEAD (JAMB SIM)



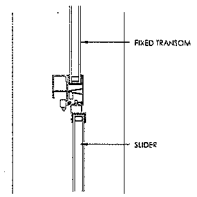
B1 GA7-3 WINDOW JAMB - SLIDER AT MASONRY-FURRED WALL



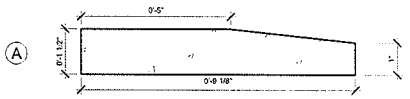
B2 GA7-3 LOUVER SILL AT SIDING



C1 GA7-3 WINDOW SILL - SLIDER AT MASONRY-FURRED WALL



C2 GA7-3 WINDOW HEAD - SLIDER AT TRANSOM



C4 GA7-3 EXTERIOR WINDOW SILL - PROFILE DETAILS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE DIAL BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NHC SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment — jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

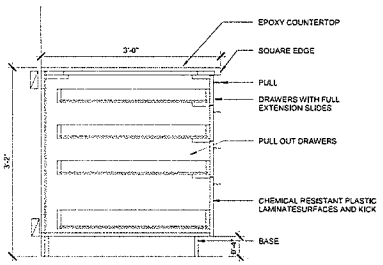
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

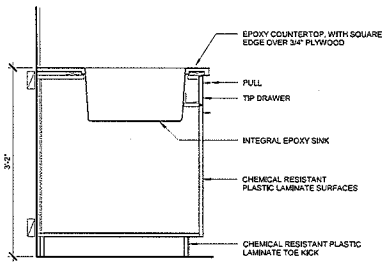
WINDOW DETAILS

DESIGNED BY: JK	DATE: XX/2014	SCALE: VARIES	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE: XX-XX-14
DRAWN BY: MK	DATE: XX/2014		
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	

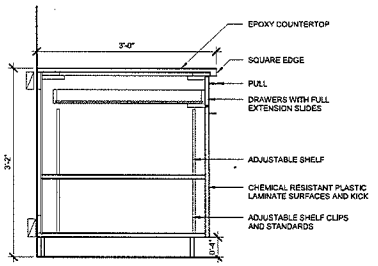
PLAN NO. GA7-3 — SHEET ____ of 100 SHEETS



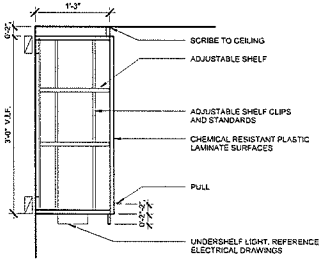
A1 CABINET WITH DRAWERS
GA7-4 SCALE: 1" = 1'-0"



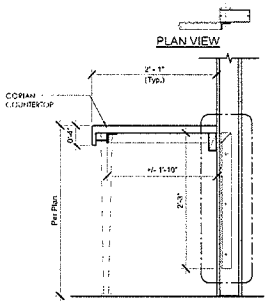
A2 CABINET WITH SINK
GA7-4 SCALE: 1" = 1'-0"



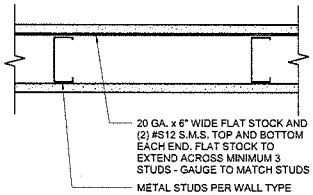
A3 CABINET DETAIL
GA7-4 SCALE: 1" = 1'-0"



A4 CABINET UPPER
GA7-4 SCALE: 1" = 1'-0"

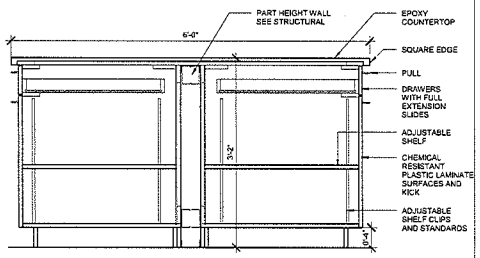


B1 COUNTERTOP SUPPORT
GA7-4 SCALE: 1" = 1'-0"



NOTE:
1. APPLY BACKING AT CASEWORK, GUARD RAILS, GRAB BARS, MIRRORS, DOOR STOPS, AND OTHERS. TYPICAL LOCATIONS OF WALL MOUNTED EQUIPMENT.

B2 TYPICAL WALL BACKING PLATE
GA7-4 SCALE: 3" = 1'-0"



B3 ISLAND CABINET DETAIL
GA7-4 SCALE: 1" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

CASEWORK DETAILS

DESIGNED BY: JK DATE: XX/2014
DRAWN BY: MK DATE: XX/2014
CHECKED BY: AD DATE: XX/2014
SCALE: VARIES
PROJECT NUMBER: 2036
APPROVED BY: DATE: XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR / CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014
PLAN NO. GA7-4
SHEET ____ of 100 SHEETS

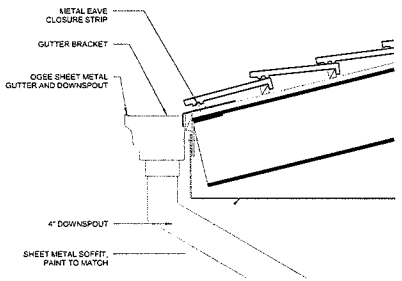
DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT
PLAN IF SAFE DIG BEFORE YOU DIG!
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING MAC SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

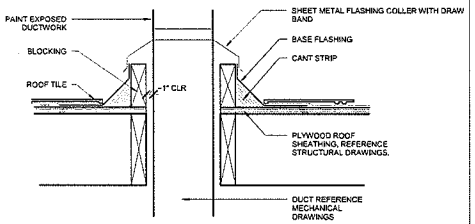
PLANS PREPARED BY:
RMC water and environment
jetkatz ARCHITECTURE

REGISTERED PROFESSIONAL ENGINEER — CHARLES A. PAYNE — NOT FOR CONSTRUCTION — STATE OF CALIFORNIA

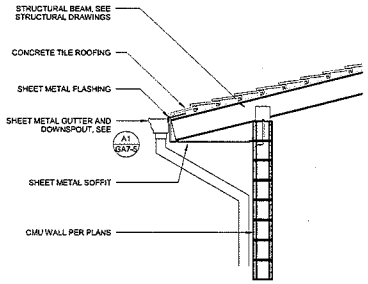
NO.	REVISION	BY	CHKD.	DATE



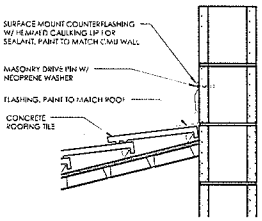
A1 GA7-5 GUTTER DETAIL



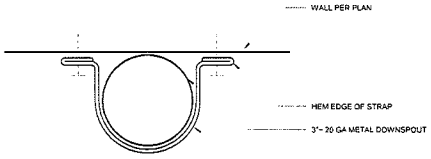
A2 GA7-5 DUCT PENETRATION



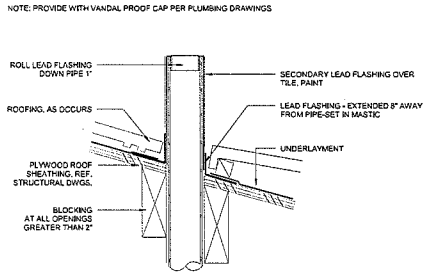
A3 GA7-5 ROOF SOFFIT DETAIL



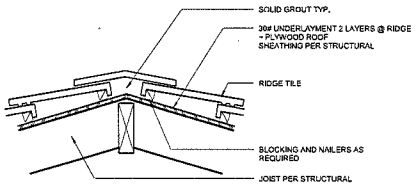
A4 GA7-5 ROOF TO CMU WALL CONNECTION



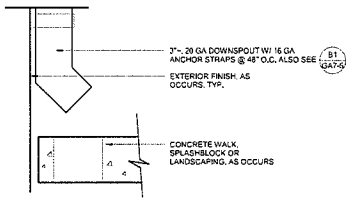
B1 GA7-5 DOWNSPOUT STRAP



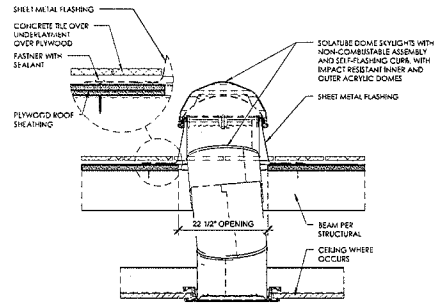
B2 GA7-5 VENT THOUGH ROOF



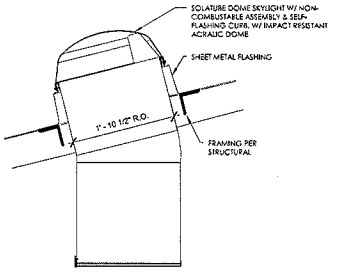
B3 GA7-5 CONCRETE TILE RIDGE



C1 GA7-5 DOWNSPOUT



C2 GA7-5 SOLATUBE TYPICAL DETAIL - 21"



C3 GA7-5 SOLATUBE DETAIL1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

ROOFING DETAILS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE Get Info Before You Dig — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

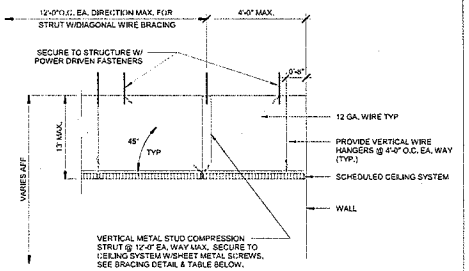
PLANS PREPARED BY: RMC water and environment — jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

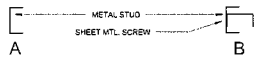
NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: VARIES	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP.: 12/31/2014

PLAN NO. GA7-5 — SHEET ____ of 100 SHEETS



COMPRESSION STRUT TABLE



LENGTH OF STRUT	TYPE	DESCRIPTION
0' TO 8'-0"	A	1 - 3 5/8" x 25 GA. MTL. STUD
8'-1" TO 10'-0"	B	2 - 1 5/8" x 25 GA. MTL STUDS W/ SHEET MTL. SCREWS @ 12" O.C.
10'-1" TO 15'-0"	B	2 - 2 1/2" x 25 GA. MTL. STUDS W/ SHEET MTL. SCREWS @ 12" O.C.
15'-1" TO 20'-0"	B	2 - 3 5/8" x 25 GA. MTL STUDS W/ SHEET MTL. SCREWS @ 12" O.C.

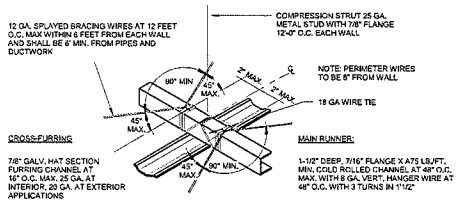
NOTES: 1. SUSPENDED CEILINGS SHALL COMPLY WITH ASCE 7 13.5.6.2.2.
2. PERIMETER SUPPORT ON MINIMUM 2" CLOSURE ANGLES. 2 ADJACENT ENDS OF CEILING GRID SHALL BE ATTACHED TO CLOSURE ANGLES WHILE OTHER ENDS SHALL HAVE 3/4" CLEARANCE FROM WALLS AND REST UPON AND BE FREE TO SLIDE ON CLOSURE ANGLES.

B1 SUSPENDED CEILING DETAIL
GA7-6 SCALE: 1/2" = 1'-0"

MECHANICAL AND LIGHT FIXTURES SHALL BE CONNECTED TO (1) VERTICAL 12 GA. WIRE ATTACHED TO OPPOSING CORNERS ALONG FIXTURES DIAGONAL.

FOR STRUTS 4' TO 8' IN LENGTH, A MINIMUM 25 GA. METAL STUD WITH 1-5/8" FLANGE AND 1/2" LIP MAY BE USED. PROVIDE CALS FOR STRUTS GREATER THAN 8' IN LENGTH

LATERAL FORCE BRACING MEMBERS SHALL BE A MINIMUM OF 6" FROM ALL HORIZONTAL PIPING OR DUCT WORK NOT PROVIDED WITH BRACING RESTRAINTS FOR HORIZONTAL FORCES



A2 SUSPENDED CEILING DETAIL 2
GA7-6 SCALE: 3" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

CEILING DETAILS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIG AFTER YOU DIG — RELEASE FOR MEASUREMENTS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

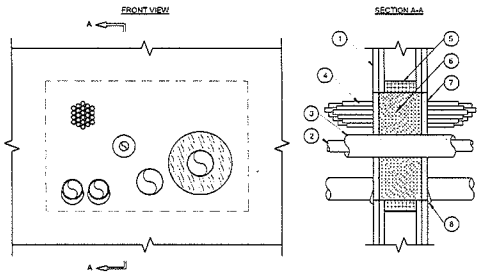
VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment — jeff katz ARCHITECTURE

REGISTERED PROFESSIONAL ENGINEER — NOT FOR CONSTRUCTION — STATE OF CALIFORNIA

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: JK	DATE: XX/2014	SCALE: VARIES	APPROVED BY: DATE
DRAWN BY: MK	DATE: XX/2014		XX-XX-14
CHECKED BY: AD	DATE: XX/2014	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. GA7-6			SHEET ... of 100 ... SHEETS

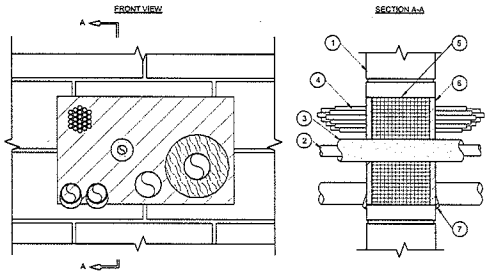


USING HILTI FIRESTOP SYSTEMS GUIDE FOR SPECIFIERS, 2011 EDITION.
FIRESTOP FOR MULTIPLE PENETRATING ITEMS THROUGH GYPSUM WALL ASSEMBLY,
UL SYSTEM NO. W-L-8079

1. 1-HOUR OR 2-HOUR GYPSUM WALL ASSEMBLY TO INCLUDE:
   A. 2X4 STUD LUMBER AT 16" O.C.,
   OR
   B. 3-1/2" WIDE MIN. STEEL STUDS, SPACED MAX. 24" O.C.
   AND
   C. NOMINAL 5/8" THICK GYPSUM WALLBOARD, TYPE, NUMBER OF LAYERS, AND SHEET ORIENTATION AS SPECIFIED IN THE INDIVIDUAL UL DESIGN.
2. ONE OR MORE OF THE FOLLOWING PIPES, IN ANY COMBINATION MAY BE INSTALLED WITHIN THE OPENING:
   A. MAX. 4" NOMINAL DIA. STEEL PIPE
   B. MAX. 4" NOMINAL DIA. CAST OR DUCTILE IRON PIPE
   C. MAX. 3" NOMINAL DIA. COPPER PIPE OR TUBING
   D. MAX. 3" NOMINAL DIA. STEEL CONDUIT OR EMT
   E. MAX. 2" NOMINAL DIA. PVC PLASTIC PIPE
   F. MAX. 2" NOMINAL DIA. CPVC PLASTIC PIPE
3. [OPTIONAL] ONE OR MORE METALLIC PIPES MAY BE INSULATED WITH THE FOLLOWING TYPES OF PIPE INSULATION:
   A. MIN. 1" TO MAX. 2" THICK GLASS-FIBER PIPE INSULATION
   B. MIN. 1/2" TO MAX. 3/4" THICK AB/PVC PIPE INSULATION
4. ONE MAX. 3" DIA. CABLE BUNDLE.
5. MIN. 1-1/4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED AS A BACKER AROUND THE PERIMETER OF THE OPENING.
6. MIN. 3-1/2" OR 4-3/4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED FOR 1-HOUR OR 2-HOUR FIRE-RATING-RESPECTIVELY.
7. MINIMUM 5/8" DEPTH INTUMESCENT FIRESTOP SEALANT.
8. MINIMUM 1/2" BEAD INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES:
1. WITH STEEL STUDS, MAX. AREA OF SQUARE, RECTANGULAR, OR CIRCULAR OPENING IS 240 SQ. IN. WITH A MAX. DIMENSION OF 20".
2. WITH WOOD STUDS, MAX. AREA OF SQUARE, RECTANGULAR, OR CIRCULAR OPENING IS 210 SQ. IN. WITH A MAX. DIMENSION OF 14-1/2".
2. ANNULAR SPACE BETWEEN PENETRANTS AND PERIPHERY OF OPENING = MIN. 0", MAX. 22".
3. ANNULAR SPACE BETWEEN PENETRANTS = MIN. 1", MAX. 22".

A1 GA7-7 FIRESTOPPING - AT 1-HOUR OR 2-HOUR GYPSUM WALL ASSEMBLY

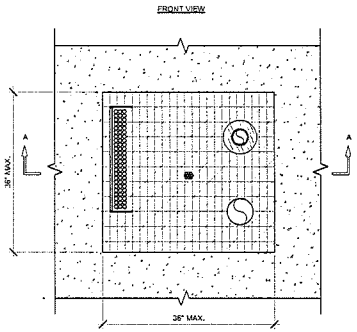


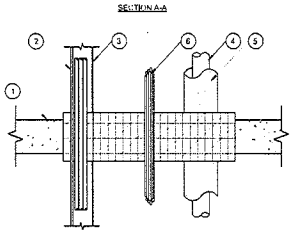
USING HILTI FIRESTOP SYSTEMS GUIDE FOR SPECIFIERS, 2011 EDITION,
FIRESTOP FOR MULTIPLE PENETRATING ITEMS THROUGH CONCRETE OR BLOCK WALL ASSEMBLY,
UL SYSTEM NO. W-J-8043

1. CONCRETE WALL ASSEMBLY (2-HOUR FIRE-RATING).
   A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 6" THICK)
   OR
   B. ANY UL CLASSIFIED CONCRETE BLOCK WALL
2. ONE OR MORE OF THE FOLLOWING PIPES, IN ANY COMBINATION MAY BE INSTALLED WITHIN THE OPENING:
   A. MAX. 4" NOMINAL DIA. STEEL PIPE
   B. MAX. 4" NOMINAL DIA. CAST OR DUCTILE IRON PIPE
   C. MAX. 3" NOMINAL DIA. COPPER PIPE OR TUBING
   D. MAX. 3" NOMINAL DIA. STEEL CONDUIT OR EMT
   E. MAX. 2" NOMINAL DIA. PVC PLASTIC PIPE
   F. MAX. 2" NOMINAL DIA. CPVC PLASTIC PIPE
3. [OPTIONAL] ONE OR MORE METALLIC PIPES MAY BE INSULATED WITH THE FOLLOWING TYPES OF PIPE INSULATION:
   A. MIN. 1" TO MAX. 2" THICK GLASS-FIBER PIPE INSULATION
   B. MIN. 1/2" TO MAX. 3/4" THICK AB/PVC PIPE INSULATION
4. ONE MAX. 3" DIA. CABLE BUNDLE
5. MIN. 4-3/4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED.
6. MINIMUM 5/8" DEPTH INTUMESCENT FIRESTOP SEALANT.
8. MINIMUM 1/2" BEAD INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES:
1. MAX. AREA OF SQUARE, RECTANGULAR, OR CIRCULAR OPENING IS 240 SQ. IN. WITH A MAX. DIMENSION OF 20"
2. ANNULAR SPACE BETWEEN PENETRANTS AND PERIPHERY OF OPENING = MIN. 0", MAX. 22".
3. ANNULAR SPACE BETWEEN PENETRANTS = MIN. 1", MAX. 22".

A3 GA7-7 FIRESTOPPING - AT 2-HOUR CONCRETE OR BLOCK WALL ASSEMBLY





1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HOUR FIRE-RATING):
   A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 4-1/2" THICK)
   OR
   B. ANY UL/CUL CLASSIFIED CONCRETE BLOCK WALL
2. MAXIMUM 18" x 6" ALUMINUM OR STEEL OPEN LADDER CABLE TRAY.
3. ANY COMBINATION OF THE FOLLOWING CABLES MAY BE USED WITHIN THE CABLE TRAY (SEE NOTE NO. 4 BELOW):
   A. 7/C NO. 12 AWG COPPER CONDUCTOR CABLE
   B. MAX. 500 KCMIL SINGLE CONDUCTOR CABLE
   C. MAX. 300 PAIR NO. 24 AWG TELEPHONE CABLE
   D. 24 FIBER-OPTIC CABLE (MAX. 1/2" DIA.)
4. PENETRATING ITEMS MAY BE ANY OF THE FOLLOWING: MAX. 6" NOMINAL DIA. STEEL PIPE OR STEEL CONDUIT, MAX. 8" NOMINAL DIA. CAST IRON PIPE, OR MAX. 4" NOMINAL DIA. COPPER PIPE OR EMT.
5. MAX. 1-1/2" THICK GLASS-FIBER PIPE INSULATION.
6. MAX. 2" DIA. CABLE BUNDLE.
7. FIRE BLOCK (2" THICK x 5" WIDE x 8" DEEP, REF. TOP VIEW)

NOTES:
1. MAX. AREA OF OPENING = 1296 SQ. IN. WITH A MAX. DIMENSION OF 36 INCHES.
2. ANNULAR SPACE FOR CABLE TRAY = MIN. 1-1/2", MAX. 4-1/2".
3. ANNULAR SPACE FOR PIPE AND CABLE PENETRATIONS = MIN. 1", MAX. 4-1/2".
4. MAX. AREA OF CABLES EQUALS 35% OF CROSS-SECTIONAL AREA OF CABLE TRAY.
5. APPLY INTUMESCENT FIRESTOP SEALANT INTO INTERSTICES OF CABLES, BETWEEN CABLES AND CABLE TRAY, AND ANY VOIDS TO MAXIMUM EXTENT POSSIBLE.
6. WIRE MESH (NOT SHOWN), WHEN THE ANNULAR SPACE EXCEEDS 4-1/2", A NOMINAL 2 IN. SQ., NO. 16 SWG WIRE MESH SHALL BE USED TO KEEP THE FIREBLOCKS IN PLACE.

USING HILTI FIRESTOP SYSTEMS GUIDE FOR SPECIFIERS, 2011 EDITION.
FIRESTOP FOR MULTIPLE PENETRATING ITEMS THROUGH CONCRETE
FLOOR/WALL OR BLOCK WALL,
UL SYSTEM NO. C-AJ-8056

C1 GA7-7 FIRESTOPPING - AT 3-HOUR CONCRETE FLOOR/WALL OR BLOCK WALL

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

FIRESTOPPING DETAILS

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PLANS PREPARED BY: RMC water and environment; jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY JK	DATE XX/2014	SCALE VARIES	APPROVED BY. DATE
DRAWN BY MK	DATE XX/2014		XX-XX-14
CHECKED BY AD	DATE XX/2014	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. GA7-7			SHEET of 100 SHEETS

PLUMBING FIXTURE / EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	PIPE SIZES (INCHES)								REMARKS
		CW	HW	W	V	TRAP	AW	D.I.	GAS	
FS-1	FLOOR SINK	-	-	4	3	4	-	-	-	ZURN: MODEL Z1900, 12"x12"x6" DEEP ACID RESISTANT ENAMELED CAST-IRON WITH PARTIAL GRATE FOR DISCHARGE & PIPING

PLUMBING LEGEND & ABBREVIATIONS

SYMBOL	ABBREV.	DESCRIPTION
	POC	POINT OF CONNECTION
	S OR W	SOIL OR WASTE BELOW SLAB
AW	AW	ACID WASTE BELOW SLAB
SD	SD	STORM DRAIN PIPING
OSD	OSD	OVERFLOW STORM DRAIN PIPING
CD	CD	CONDENSATE DRAIN PIPING
V	V	SANITARY VENT PIPING
CW	CW	COLD WATER PIPING
HW	HW	HOT WATER PIPING (120°)
TP	TP	TRAP PRIMER LINE
G	G	GAS PIPING
MPG	MPG	MEDIUM PRESSURE GAS PIPING
RO/DI	RO/DI	REVERSE OSMOSIS / DE-IONIZED WATER PIPING
	RPBP	REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTER [DIAGRAMMATIC]
	SOV	SHUT-OFF-VALVE (BALL VALVE) [DIAGRAMMATIC]
	SOV	SHUT-OFF-VALVE (GATE VALVE) [DIAGRAMMATIC]
	CV	CHECK VALVE [DIAGRAMMATIC]
	PRV	PRESSURE REDUCING VALVE [DIAGRAMMATIC]
	RV	TEMPERATURE & PRESSURE RELIEF VALVE [DIAGRAMMATIC]
	COG	CLEAN-OUT TO GRADE [DIAGRAMMATIC]
	FCO	FLOOR CLEAN OUT [DIAGRAMMATIC]
	WCO	WALL CLEAN-OUT [DIAGRAMMATIC]
	CL	CAPPED LINE [DIAGRAMMATIC]
	DN	DOWN OR DROP [DIAGRAMMATIC]
	UP	RISE OR RISER [DIAGRAMMATIC]
	WHB	WALL HOSE BIBB [DIAGRAMMATIC]
	HB	HOSE BIBB [DIAGRAMMATIC]
	U	UNION (DIELECTRIC) [DIAGRAMMATIC]
	WHA( )	WATER HAMMER ARRESTOR (P.D.I. SIZE) [DIAGRAMMATIC]
	FS	FLOOR SINK
	FD	FLOOR DRAIN
	A/C	ABOVE CEILING
	AFF	ABOVE FINISHED FLOOR
	ADA	AMERICANS WITH DISABILITIES ACT
	BTUH	BRITISH THERMAL UNITS PER HOUR
	B/F	BELOW FLOOR
	BLDG	BUILDING
	B/G	BELOW GRADE
	CBC	CALIFORNIA BUILDING CODE
	CPC	CALIFORNIA PLUMBING CODE
	CFM	CUBIC FEET PER MINUTE
	CFH	CUBIC FEET PER HOUR
	EA	EACH
	(E)	EXISTING
	FT	FEET/FOOT
	FT/SEC	FEET PER SECOND
	FU	FIXTURE UNIT
	GPM	GALLONS PER MINUTE
	GPH	GALLONS PER HOUR
	GAL	GALLON
	HVAC	HEATING, VENTILATING, & AIR CONDITIONING
	HP	HORSE POWER
	IN	INCH
	INT	INTEGRAL
	LBS	POUNDS
	MIN	MINIMUM
	MAX	MAXIMUM
	MFR'S	MANUFACTURER'S
	OPER	OPERATING
	QTY	QUANTITY
	SF	SQUARE FEET
	TYP	TYPICAL
	UPC	UNIFORM PLUMBING CODE
	VTR	VENT THRU ROOF
	WHA-'A'	WATER HAMMER ARRESTOR TYPE 'A'

GENERAL NOTES

1. CONTRACTOR SHALL CAREFULLY REVIEW THESE PLANS AND SPECIFICATIONS PRIOR TO BID. CONTRACTOR SHALL ALSO REVIEW PLANS AND SPECIFICATIONS OF OTHER RELATED TRADES (INCLUDING ARCHITECTURAL, MECHANICAL, STRUCTURAL, CIVIL AND ELECTRICAL) PRIOR TO BID TO INSURE AN ACCURATE UNDERSTANDING OF EXACT SCOPE OF WORK.
2. EQUIPMENT INDICATED ON THESE DRAWINGS ARE SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS INCLUDING EQUIPMENT LOCATIONS, STRUCTURAL MEMBERS, P.O.C.'S, INVERT ELEVATIONS AND AVAILABILITY OF ALL EXISTING UTILITIES PRIOR TO INSTALLATION. NOTIFY THE CONSTRUCTION COORDINATOR OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO COMMENCING ANY WORK. DO NOT PROCEED WITHOUT CONSTRUCTION COORDINATOR APPROVAL FOR ANY CHANGES IF REQUIRED.
3. PLUMBING EQUIPMENT, MATERIAL AND CONNECTIONS SHALL BE INSTALLED COMPLETE PER MANUFACTURER'S INSTRUCTIONS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL SYSTEM.
4. WORK SHALL CONFORM TO CODE. IN CASE OF CONFLICTS WITH CODE, DRAWINGS, OR SPECIFICATIONS, THE MORE STRINGENT SHALL PREVAIL.
5. PLUMBING SHALL BE INSTALLED TO AVOID INTERFERENCE WITH ELECTRICAL AND MECHANICAL EQUIPMENT AND STRUCTURAL FRAMING. COORDINATE WITH ALL OTHER TRADES, STRUCTURAL CONDITIONS AND BUILDING CONSTRUCTION, PRIOR TO START OF INSTALLATION.
6. EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS.
7. COORDINATE LOCATION OF CONDENSATE DRAIN CONNECTIONS TO MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
8. PLUMBING LINES SHALL BE CONCEALED WITHIN THE BUILDING STRUCTURE TO AS GREAT EXTENT AS POSSIBLE.
9. PIPING SYSTEMS SHALL BE SEISMICALLY BRACED PER CALIFORNIA BUILDING CODE.
10. SOIL, SEWER, WASTE AND STORM DRAIN PIPING SHALL SLOPE AT 1/4" PER FOOT MINIMUM UNLESS INDICATED OTHERWISE.
11. VALVES SHALL BE READILY ACCESSIBLE. WHERE VALVES ARE INSTALLED WITHIN OR BEHIND WALLS, AN ACCESS PANEL SHALL BE INSTALLED.
12. OUTLETS FOR FUTURE CONNECTIONS SHALL BE INSTALLED TO PERMIT EASY CONNECTION. COORDINATE WITH DUCTWORK, STRUCTURAL CONDITIONS AND ARCHITECTURAL LAYOUT.
13. BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY WITH SECTIONS701.0 AND 903.0 OF THE CALIFORNIA PLUMBING CODE.
14. ALL SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
15. ALL INTERIOR CONDENSATE DRAIN PIPING SHALL BE INSULATED.
16. PROVIDE VACUUM BREAKERS AT ALL HOSE BIBS.
17. FAUCETS SHALL HAVE A FLOW RESTRICTION DEVICE NOT TO EXCEED 2.5 GPM. LAVATORIES IN PUBLIC AREAS SERVING THE TRANSIENT PUBLIC SHALL HAVE SELF CLOSING FAUCETS, PER CPC SECTION 402.4.
18. WATER CLOSETS SHALL BE ULTRA LOW FLUSH TOILETS. 1.6 GPF MAXIMUM, PER CPC SECTION 402.2.
19. WATER HEATER/BOILER WILL COMPLY WITH CPC SECTION 608.3 FOR THERMAL EXPANSION REQUIREMENTS.
20. WATER HEATERS SHALL BE LISTED IN THE CALIFORNIA ENERGY COMMISSION LIST OF APPROVED WATER HEATERS.
21. INSULATING MATERIALS INSTALLED SHALL BE CERTIFIED BY CALIFORNIA ENERGY COMMISSION TO MEET C.E.C. ENERGY EFFICIENCY STANDARDS (E.E.S) SECTION 118, 123, 124.
22. PLUMBING EQUIPMENT SHALL BE CERTIFIED BY AND COMPLY WITH THE STATE OF CALIFORNIA ENERGY CONSERVATION STANDARDS (E.E.S.) SECTION 113. COMPLIANCE CERTIFICATES SHALL BE PROVIDED WITH EQUIPMENT SUBMITTALS.
23. PILOT-LESS IGNITION OF GAS APPLIANCES SHALL COMPLY WITH BUILDING ENERGY EFFICIENCY STANDARDS (E.E.S.) SECTION 115.
24. WATER HEATERS FOR DOMESTIC HOT WATER SHALL COMPLY WITH THE STATE OF CALIFORNIA ENERGY EFFICIENCY STANDARDS (E.E.S.) SECTION 113, AND 114.
25. DO NOT ROUTE PIPING OVER ELECTRICAL ROOMS, MDF ROOMS, IDF ROOMS, COMPUTER ROOMS OR ELEVATOR EQUIPMENT ROOMS. EXCEPTION: PIPES REQUIRED TO SERVE THE ROOM.
26. FLOOR DRAINS OR SIMILAR TRAPS DIRECTLY CONNECTED TO THE DRAINAGE SYSTEM AND SUBJECT TO INFREQUENT USE SHALL BE PROVIDED WITH AN APPROVED AUTOMATIC MEANS OF MAINTAINING THEIR WATER SEALS.
27. CROSS CONNECTION PROTECTION SHALL BE PROVIDED AT ALL POTABLE WATER SUPPLIED APPLIANCES AND EQUIPMENT (OTHER THAN THOSE LISTED IN INFORMATION BULLETIN 103 OF THE SAN DIEGO MUNICIPAL CODE.
28. WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION, PER CPC SECTION 508.2.
29. EACH WATER HEATER (WH-1) IS A LISTED, NON-STORAGE, INSTANTANEOUS HEATER, HAVING AN INSIDE DIAMETER OF NOT MORE THAN 3 INCHES.

McPARLANE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERING
9930 VIEWRIDGE AVE.
SAN DIEGO, CA 92123
PH: 858-277-9721 FAX: 858-277-9782

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

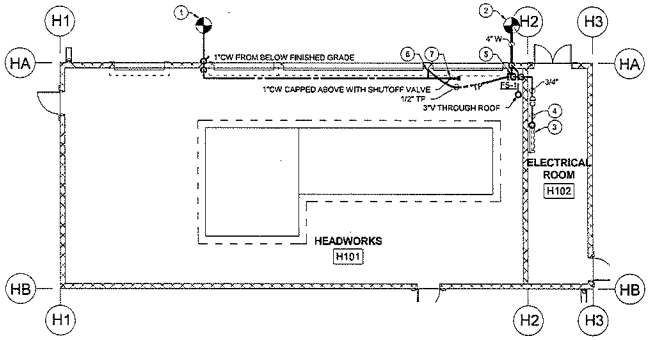
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING HEADWORKS NOTES, LEGEND, AND SCHEDULES

DESIGNED BY Appenvr XX/2014	DATE	SCALE	APPROVED BY / DATE
DRAWN BY Author XX/2014	DATE		XX-XX-14
CHECKED BY Checkr XX/2014	DATE	PROJECT MANAGER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. P2000-1 SHEET ____ of 100 SHEETS



1 P2000-2 PLUMBING HEADWORKS FIRST FLOOR PLAN

KEY NOTES.

1. 1"CW BELOW FINISHED GRADE.
2. 4"W BELOW FINISHED GRADE.
3. MECHANICAL FAN COIL UNIT ON WALL. REFER TO MECHANICAL PLANS FOR EXACT SIZE AND LOCATION.
4. ROUTE 3/4"CD ALONG WALL WITH 1% SLOPE.
5. TERMINATE 3/4"CD AT + 1" ABOVE FLOOR LEVEL RIM OF FLOOR SINK.
6. 1/2"CW DOWN TO MECHANICAL TRAP PRIMER. ROUTE 1/2" TP DOWN TO BELOW FINISHED FLOOR AND CONNECT TO TAILPIECE OF FLOOR SINK.
7. CAP 1"CW ABOVE AND PROVIDE WITH SHUT-OFF VALVE.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING HEADWORKS FLOOR PLAN

McPARLANE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERS
4590 VIERIDGE AVE.
SAN DIEGO, CA 92123
PH: 858-277-9721 FAX: 858-277-9750

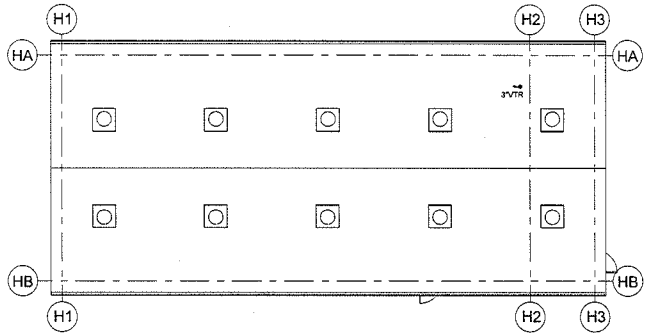
DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

PLANS PREPARED BY: RMC WATER AND ENVIRONMENT; Hartranft ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY Applicant	DATE XX/2014	SCALE	APPROVED BY / DATE
DRAWN BY Author	DATE XX/2014		XX-XX-14
CHECKED BY Checker	DATE XX/2014	PROJECT NUMBER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. P2000-2		SHEET ... of 199 SHEETS	



1 PLUMBING HEADWORKS ROOF PLAN
P2000-3

MCPARLANE & ASSOCIATES
4630 VIEWRIDGE AVE.
SAN DIEGO, CA 92123
PH: 858-277-9721 FAX: 858-277-9759

DIAL BEFORE YOU DIG
DIGALERT

PLANS PREPARED BY:
RMC water and environment
ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING HEADWORKS ROOF PLAN

DESIGNED BY Approver XX/2014	DATE	SCALE	APPROVED BY / DATE
DRAWN BY Author XX/2014	DATE		XX-XX-14
CHECKED BY Checker XX/2014	DATE	PROJECT NUMBER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. P2000-3		SHEET of 109 SHEETS	

PLUMBING FIXTURE / EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	PIPE SIZES (INCHES)								REMARKS
		CW	HW	W	V	TRAP	AW	D.I.	GAS	
FS-1	FLOOR SINK	-	-	4	3	4	-	-	-	ZURN MODEL Z1080, 12"x12"x6" DEEP ACID RESISTANT ENAMELED CAST-IRON WITH PARTIAL GRATE FOR DISCHARGE & PIPING

PLUMBING LEGEND & ABBREVIATIONS

SYMBOL	ABBREV.	DESCRIPTION
	POC	POINT OF CONNECTION
S OR W	S OR W	SOIL OR WASTE BELOW SLAB
AW	AW	ACID WASTE BELOW SLAB
SD	SD	STORM DRAIN PIPING
OSD	OSD	OVERFLOW STORM DRAIN PIPING
CD	CD	CONDENSATE DRAIN PIPING
V	V	SANITARY VENT PIPING
CW	CW	COLD WATER PIPING
HW	HW	HOT WATER PIPING (120°)
TP	TP	TRAP PRIMER LINE
G	G	GAS PIPING
MPG	MPG	MEDIUM PRESSURE GAS PIPING
RO/DI	RO/DI	REVERSE OSMOSIS / DE-IONIZED WATER PIPING
RPBP	RPBP	REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTER [DIAGRAMMATIC]
SOV	SOV	SHUT-OFF-VALVE (BALL VALVE) [DIAGRAMMATIC]
SOV	SOV	SHUT-OFF-VALVE (GATE VALVE) [DIAGRAMMATIC]
CV	CV	CHECK VALVE [DIAGRAMMATIC]
PRV	PRV	PRESSURE REDUCING VALVE [DIAGRAMMATIC]
RV	RV	TEMPERATURE & PRESSURE RELIEF VALVE [DIAGRAMMATIC]
CDG	CDG	CLEAN-OUT TO GRADE [DIAGRAMMATIC]
FCO	FCO	FLOOR CLEAN OUT [DIAGRAMMATIC]
WCO	WCO	WALL CLEAN-OUT [DIAGRAMMATIC]
CL	CL	CAPPED LINE [DIAGRAMMATIC]
DN	DN	DOWN OR DROP [DIAGRAMMATIC]
UP	UP	RISE OR RISER [DIAGRAMMATIC]
WHB	WHB	WALL HOSE BIBB [DIAGRAMMATIC]
HB	HB	HOSE BIBB [DIAGRAMMATIC]
U	U	UNION (DIELECTRIC) [DIAGRAMMATIC]
WHA( )	WHA( )	WATER HAMMER ARRESTOR (P.D.I. SIZE) [DIAGRAMMATIC]
FS	FS	FLOOR SINK
FD	FD	FLOOR DRAIN
	A/C	ABOVE CEILING
	AFF	ABOVE FINISHED FLOOR
	ADA	AMERICANS WITH DISABILITIES ACT
	BTUH	BRITISH THERMAL UNITS PER HOUR
	B/F	BELOW FLOOR
	BLDG	BUILDING
	B-G	BELOW GRADE
	CBC	CALIFORNIA BUILDING CODE
	CPC	CALIFORNIA PLUMBING CODE
	CFM	CUBIC FEET PER MINUTE
	CFH	CUBIC FEET PER HOUR
	EA	EACH
	(E)	EXISTING
	FT	FEET/FOOT
	FT/SEC	FEET PER SECOND
	FU	FIXTURE UNIT
	GPM	GALLONS PER MINUTE
	GPH	GALLONS PER HOUR
	GAL	GALLON
	HVAC	HEATING, VENTILATING, & AIR CONDITIONING
	HP	HORSE POWER
	IN	INCH
	INT	INTEGRAL
	LBS	POUNDS
	MIN	MINIMUM
	MAX	MAXIMUM
	MFR'S	MANUFACTURER'S
	OPER	OPERATING
	QTY	QUANTITY
	SF	SQUARE FEET
	TYP	TYPICAL
	UPC	UNIFORM PLUMBING CODE
	VTR	VENT THRU ROOF
	WHA-'A'	WATER HAMMER ARRESTOR TYPE 'A'

GENERAL NOTES

1. CONTRACTOR SHALL CAREFULLY REVIEW THESE PLANS AND SPECIFICATIONS PRIOR TO BID. CONTRACTOR SHALL ALSO REVIEW PLANS AND SPECIFICATIONS OF OTHER RELATED TRADES (INCLUDING ARCHITECTURAL, MECHANICAL, STRUCTURAL, CIVIL AND ELECTRICAL) PRIOR TO BID TO INSURE AN ACCURATE UNDERSTANDING OF EXACT SCOPE OF WORK.
2. EQUIPMENT INDICATED ON THESE DRAWINGS ARE SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS INCLUDING EQUIPMENT LOCATIONS, STRUCTURAL MEMBERS, P.O.C.'S, INVERT ELEVATIONS AND AVAILABILITY OF ALL EXISTING UTILITIES PRIOR TO INSTALLATION. NOTIFY THE CONSTRUCTION COORDINATOR OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO COMMENCING ANY WORK. DO NOT PROCEED WITHOUT CONSTRUCTION COORDINATOR APPROVAL FOR ANY CHANGES IF REQUIRED.
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4. WORK SHALL CONFORM TO CODE. IN CASE OF CONFLICTS WITH CODE, DRAWINGS, OR SPECIFICATIONS, THE MORE STRINGENT SHALL PREVAIL.
5. PLUMBING SHALL BE INSTALLED TO AVOID INTERFERENCE WITH ELECTRICAL AND MECHANICAL EQUIPMENT AND STRUCTURAL FRAMING. COORDINATE WITH ALL OTHER TRADES, STRUCTURAL CONDITIONS AND BUILDING CONSTRUCTION, PRIOR TO START OF INSTALLATION.
6. EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS.
7. COORDINATE LOCATION OF CONDENSATE DRAIN CONNECTIONS TO MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
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9. PIPING SYSTEMS SHALL BE SEISMICALLY BRACED PER CALIFORNIA BUILDING CODE.
10. SOIL, SEWER, WASTE AND STORM DRAIN PIPING SHALL SLOPE AT 1/4" PER FOOT MINIMUM UNLESS INDICATED OTHERWISE.
11. VALVES SHALL BE READILY ACCESSIBLE. WHERE VALVES ARE INSTALLED WITHIN OR BEHIND WALLS, AN ACCESS PANEL SHALL BE INSTALLED.
12. OUTLETS FOR FUTURE CONNECTIONS SHALL BE INSTALLED TO PERMIT EASY CONNECTION. COORDINATE WITH DUCTWORK, STRUCTURAL CONDITIONS AND ARCHITECTURAL LAYOUT.
13. BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY WITH SECTIONS701.0 AND 903.0 OF THE CALIFORNIA PLUMBING CODE.
14. ALL SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
15. ALL INTERIOR CONDENSATE DRAIN PIPING SHALL BE INSULATED.
16. PROVIDE VACUUM BREAKERS AT ALL HOSE BIBS.
17. FAUCETS SHALL HAVE A FLOW RESTRICTION DEVICE NOT TO EXCEED 2.5 GPM. LAVATORIES IN PUBLIC AREAS SERVING THE TRANSIENT PUBLIC SHALL HAVE SELF CLOSING FAUCETS. PER CPC SECTION 402.4.
18. WATER CLOSETS SHALL BE ULTRA LOW FLUSH TOILETS. 1.6 GPF MAXIMUM. PER CPC SECTION 402.2.
19. WATER HEATER/BOILER WILL COMPLY WITH CPC SECTION 608.3 FOR THERMAL EXPANSION REQUIREMENTS.
20. WATER HEATERS SHALL BE LISTED IN THE CALIFORNIA ENERGY COMMISSION LIST OF APPROVED WATER HEATERS.
21. INSULATING MATERIALS INSTALLED SHALL BE CERTIFIED BY CALIFORNIA ENERGY COMMISSION TO MEET C.E.C. ENERGY EFFICIENCY STANDARDS (E.E.S) SECTION 118, 123, 124.
22. PLUMBING EQUIPMENT SHALL BE CERTIFIED BY AND COMPLY WITH THE STATE OF CALIFORNIA ENERGY CONSERVATION STANDARDS (E.E.S.) SECTION 113. COMPLIANCE CERTIFICATES SHALL BE PROVIDED WITH EQUIPMENT SUBMITTALS.
23. PILOT-LESS IGNITION OF GAS APPLIANCES SHALL COMPLY WITH BUILDING ENERGY EFFICIENCY STANDARDS (E.E.S.) SECTION 115.
24. WATER HEATERS FOR DOMESTIC HOT WATER SHALL COMPLY WITH THE STATE OF CALIFORNIA ENERGY EFFICIENCY STANDARDS (E.E.S.) SECTION 113, AND 114.
25. DO NOT ROUTE PIPING OVER ELECTRICAL ROOMS, MDF ROOMS, IDF ROOMS, COMPUTER ROOMS OR ELEVATOR EQUIPMENT ROOMS. EXCEPTION: PIPES REQUIRED TO SERVE THE ROOM.
26. FLOOR DRAINS OR SIMILAR TRAPS DIRECTLY CONNECTED TO THE DRAINAGE SYSTEM AND SUBJECT TO INFREQUENT USE SHALL BE PROVIDED WITH AN APPROVED AUTOMATIC MEANS OF MAINTAINING THEIR WATER SEALS.
27. CROSS CONNECTION PROTECTION SHALL BE PROVIDED AT ALL POTABLE WATER SUPPLIED APPLIANCES AND EQUIPMENT (OTHER THAN THOSE LISTED IN INFORMATION BULLETIN 103 OF THE SAN DIEGO MUNICIPAL CODE.
28. WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION. PER CPC SECTION 508.2.
29. EACH WATER HEATER (WH-1) IS A LISTED, NONSTORAGE, INSTANTANEOUS HEATER, HAVING AN INSIDE DIAMETER OF NOT MORE THAN 3 INCHES.

McPARLANE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERS
4830 VIEWRIDGE AVE.
SAN DIEGO, CA 92123
PH: 858-277-9721 FAX: 858-277-9760

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
IT'S LAW!!! TWO WORKING DAYS PRIOR TO EXCAVATING
REFERENCE SOUTH REGULAR DRAWING NUMBER 1

"A" SIZE DRAWINGS
VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING BLOWER NOTES, LEGEND, AND SCHEDULES

DESIGNED BY: Approved XX/2014	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: Author XX/2014	DATE		XX-XX-14
CHECKED BY: Checker XX/2014	DATE	PROJECT NUMBER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. P4600-1		SHEET of 100 SHEETS	

KEY NOTES:

1. 1"CW BELOW FINISHED GRADE.
2. 4"W BELOW FINISHED GRADE.
3. MECHANICAL FAN COIL UNIT ON WALL. REFER TO MECHANICAL PLANS FOR EXACT SIZE AND LOCATION.
4. ROUTE 3/4"CD ALONG WALL WITH 1% SLOPE.
5. TERMINATE 3/4"CD AT + 1" ABOVE FLOOR LEVEL RIM OF FLOOR SINK.
6. 1/2"CW DOWN TO MECHANICAL TRAP PRIMER. ROUTE 1/2" TP DOWN TO BELOW FINISHED FLOOR AND CONNECT TO TAILPIECE OF FLOOR SINK.
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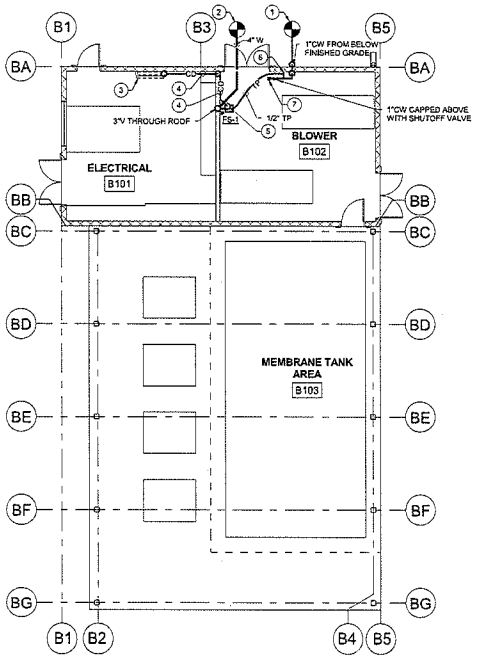


1 PLUMBING BLOWER FLOOR PLAN
P4600-2

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING BLOWER FLOOR PLAN

MPA McPARLANE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERS
4590 MACARTHUR AVE.
SAN DIEGO, CA 92123
PH: 858-277-6721 FAX: 858-277-6760

DIAL BEFORE YOU DIG
1-800-227-2600
DIGALERT
PLANS MAY NOT BE FOR HOUSE
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
MEMBER OF SOUTHERN CALIFORNIA DIGALERT SERVICE

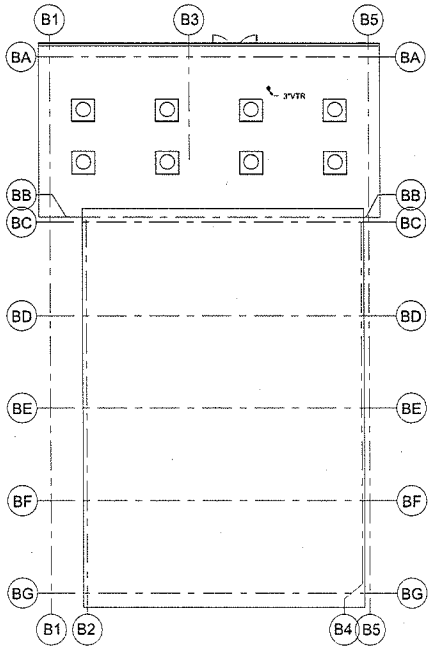
0" VERIFY SCALES
BAR IS 3/4" IN LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY Approved XX/2014	DATE	SCALE	APPROVED BY DATE
DRAWN BY Author XX/2014	DATE		XX-XX-13
CHECKED BY Checked XX/2014	DATE	PROJECT NUMBER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. P4600-2			SHEET of 109 SHEETS



1 PLUMBING ROOF PLAN
P4600-3

McPARLANE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERS
4630 MISSION AVE.
SAN DIEGO, CA 92123
PH. 858-277-9721 FAX. 858-277-9760

DIAL BEFORE YOU DIG
DIGALERT
PLEASE CALL AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
MEMBERS OF SOUTHERN CALIFORNIA COUNTIES

0" 1" VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT LOT THIS DRAWING ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
JEFF KATZ ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING BLOWER ROOF PLAN

DESIGNED BY: Approver XX/2014	DATE	SCALE	APPROVED BY: DATE
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CHECKED BY: Checker XX/2014	DATE	PROJECT NUMBER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. P4600-3 SHEET ___ of 109 SHEETS

PIPE SIZING SCHEDULE

SIZE	GPM	FT/SEC	FIXTURE UNITS	
			FLUSH TANK	FLUSH VALVE
1/2"	4	4	5	0
3/4"	9	5	13	2
1"	17	6	24	4
1 1/4"	34	7	65	19
1 1/2"	50	8	127	47
2"	80	8	280	150

PLUMBING LEGEND & ABBREVIATIONS

SYMBOL	ABBREV.	DESCRIPTION
	POC	POINT OF CONNECTION
	S OR W	SOIL OR WASTE BELOW SLAB
AW	AW	ACID WASTE BELOW SLAB
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OSD	OSD	OVERFLOW STORM DRAIN PIPING
CD	CD	CONDENSATE DRAIN PIPING
V	V	SANITARY VENT PIPING
CW	CW	COLD WATER PIPING
HW	HW	HOT WATER PIPING (120°)
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23. PILOT-LESS IGNITION OF GAS APPLIANCES SHALL COMPLY WITH BUILDING ENERGY EFFICIENCY STANDARDS (E.E.S.) SECTION 115.
24. WATER HEATERS FOR DOMESTIC HOT WATER SHALL COMPLY WITH THE STATE OF CALIFORNIA ENERGY EFFICIENCY STANDARDS (E.E.S.) SECTION 113, AND 114.
25. DO NOT ROUTE PIPING OVER ELECTRICAL ROOMS, MDF ROOMS, IDF ROOMS, COMPUTER ROOMS OR ELEVATOR EQUIPMENT ROOMS. EXCEPTION: PIPES REQUIRED TO SERVE THE ROOM.
26. FLOOR DRAINS OR SIMILAR TRAPS DIRECTLY CONNECTED TO THE DRAINAGE SYSTEM AND SUBJECT TO INFREQUENT USE SHALL BE PROVIDED WITH AN APPROVED AUTOMATIC MEANS OF MAINTAINING THEIR WATER SEALS.
27. CROSS CONNECTION PROTECTION SHALL BE PROVIDED AT ALL POTABLE WATER SUPPLIED APPLIANCES AND EQUIPMENT (OTHER THAN THOSE LISTED IN INFORMATION BULLETIN 183 OF THE SAN DIEGO MUNICIPAL CODE.
28. WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION. PER CPC SECTION 508.2.
20. EACH WATER HEATER WITH 11.15 A LISTED, NON-STORAGE, INSTANTANEOUS HEATER, HAVING AN INSIDE DIAMETER OF NOT MORE THAN 3 INCHES.

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0" VERIFY SCALES 1"
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING OPS / LAB NOTES, LEGEND, AND SCHEDULES

DESIGNED BY: Approver XX/2014 DATE
DRAWN BY: Author XX/2014 DATE
CHECKED BY: Checker XX/2014 DATE
SCALE
APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR / CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014
PROJECT NUMBER: #2036

PLAN NO. P9000-1
SHEET ____ of 100 SHEETS

PLUMBING FIXTURE / EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	PIPE SIZES (INCHES)								REMARKS
		CW	HW	W	V	TRAP	AW	D.I.	GAS	
WC-1	WATER CLOSET (ADA)	1/2	–	3	2	INT	-	-	-	ZURN: MODEL Z5572, DUAL FLUSH 1.6 GPF / 1.0 GPF, ELONGATED BOWL WITH OPEN FRONT AND COVER, VITREOUS CHINA, WHITE
L-1	LAVATORY (ADA)	1/2	1/2	2	1 1/2	1 1/4	-	-	-	ZURN: MODEL Z5350, WALL HUNG, LAVATORY WITH SINGLE HOLE, VITREOUS CHINA, WHITE, FAUCET: SYMMONS S-83-CH, SINLE LEVER, SELF CLOSING METERING FAUCET WITH 0.5 GPM FLOW RESTRICTOR AND GRID STRAINER. PROVIDE SYMMONS MAXLINE 7 SERIES TEMPERATURE LIMITING VALVE, 17 GA C.P. TRUEBRO P-TRAP SUPPLY COVERS.
MS-1	MOP SINK	3/4	3/4	3	2	3	-	-	-	FIAT: 32"x32"x12" DEEP CORNER MOUNT TERRAZZED MOP SINK WITH STAINLESS STEEL CAPS & 3"DRAIN, FAUCET-CHICAGO MODEL 814-V8XKCP, WALL MOUNT WITH WALL BRACKET, VACUUM BUCKET HOOD AND THREADED END.
FD-1	FLOOR DRAIN	-	-	2	1 1/2	2	-	-	-	ZURN: MODEL Z5572, DUAL FLUSH 1.6 GPF / 1.0 GPF, ENLONGATED BOWL WITH OPEN FRONT EAT AND COVER. VITREOUS CHINA, WHITE.
S-1	EPOXY SINK WITH INTEGRAL COUNTER	-	-	-	1 1/2	1 1/2	1 1/2	-	1 1/2	–
S-2	PVC GOOSENECK FAUCET WITH SERRATED END	-	-	-	1 1/2	1 1/2	1 1/2	-	1 1/2	–
GO-1	GAS OUTLET SINGLE	-	-	-	-	-	-	1/2	-	CHICAGO: MODEL 997-WSV997CHAGVCP WALL FLANGE, FULL FLOW NEEDLE VALVE WITH CROSS HANDLE, SINGLE OUTLET, CHROME PLATED.
GO-2	GAS OUTLET DOUBLE	-	-	-	-	-	-	1/2	-	CHICAGO: MODEL 981-WS997CHAGVCP TURRET WITH TWO OUTLETS @ 180° NEEDLE VALVE, FULL FLOW NOZZLE WITH CROSS HANDLE, CHROME PLATED
EPW / SH	EMERGENCY EYEWASH / SHOWER	3/4	3/4	-	-	-	-	-	-	GUARDIAN: MODEL GBF1909, ADA COMPLIANT SAFETY STATION WITH EYE/FACE WASH AND PLASTIC SHOWERHEAD, STAY-OPEN VALVE WITH PULL ROD, EYE/FACE WASH WITH STAY-OPEN VALVE AND FLAG HANDLE
TP-1	TRAP PRIMER	1/2	-	-	-	-	-	-	-	MIFAB: MODEL M-500, PRESSURE DROP ACTIVATED TRAP SEAL PRIMER WITH REMOVABLE FILTER SCREEN. PROVIDE MIFAB MI-DV DISTRIBUTION UNIT. MOUNT TRAP PRIMER UNIT AT MINIMUM 1FT ABOVE FINISHED FLOOR FOR EVERY 20FT OF TRAP PRIMER LINE. MOUNT AND INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
WH-1	TANKLESS WATER HEATER	-	-	-	-	-	-	2	-	RHEEM: MODEL RTG-84DVN, 180,000 BTUH, 1ST HOUR DELIVERY 223 GALLON
NT-1	NEUTRALIZATION TANK	-	-	2	3	-	-	-	-	ZURN: MODEL Z8A-4NT 5 GALLON POLYETHYLENE TANK, 2" INLET / 2" OUTLET / 3" VENT. MOUNT BELOW COUNTER
-	-	-	-	-	-	-	-	-	-	–
-	-	-	-	-	-	-	-	-	-	–

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PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

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NO.	REVISION	BY	CHKD.	DATE

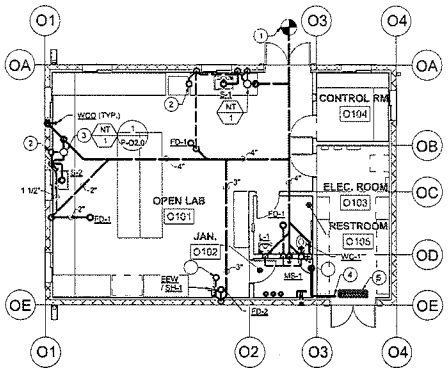
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING OPS / LAB SCHEDULES

DESIGNED BY: Approver XX/2014 DATE
DRAWN BY: Author XX/2014 DATE
CHECKED BY: Checker XX/2014 DATE
SCALE
PROJECT NUMBER #2036
APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR / CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

PLAN NO. P9000-2
SHEET of 109 SHEETS



1 PLUMBING OPS / LAB WASTE AND VENT FLOOR PLAN
P9000-3 SCALE: 1/8" = 1'-0"

KEY NOTES:

1. 4" S. BELOW FINISHED GRADE
2. 2" VENT UP THROUGH ROOF
3. NEUTRALIZATION TANK BELOW COUNTER
4. ROUTE 3/4" CD FROM MECHANICAL UNIT AND TERMINATE AT MOP SINK
5. MECHANICAL UNIT AT WALL. SEE MECHANICAL PLANS FOR EXACT SIZE AND LOCATION

CITY OF MALIBU
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CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING OPS / LAB WASTE AND VENT FLOOR PLAN

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REPRESENTING SOUTHERN CALIFORNIA GAS COMPANY

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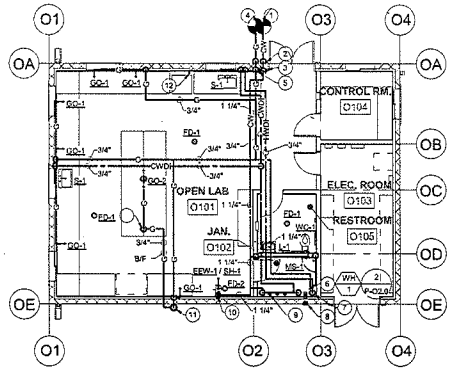
DESIGNED BY: Approver XX/2014	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	DATE XX-XX-14
DRAWN BY: Author XX/2014	DATE			
CHECKED BY: Checker XX/2014	DATE	PROJECT NUMBER #2036		
PLAN NO. P9000-3		SHEET ____ of 100 SHEETS		



1 PLUMBING OPS / LAB WATER AND GAS FLOOR PLAN
P9000-4 SCALE: 1/8" = 1'-0"

KEY NOTES:

1. POC 1 1/4"CW BELOW FINISHED GRADE.
2. 1 1/4"CW FROM BELOW FINISHED GRADE WITH MAIN SHUT-OFF VALVE AND INTO BUILDING.
3. 1 1/4"CW UP TO ABOVE CEILING.
4. POC 1-1/4"G BELOW FINISHED GRADE.
5. 1-1/4"G FROM BELOW FINISHED GRADE AND UP IN WALL TO ABOVE CEILING.
6. 3/4"DI DOWN TO WATER HEATER AND 3/4"DI FROM WATER HEATER.
7. WALL MOUNTED, GAS-FIRED TANKLESS WATER HEATER.
8. GAS FLUE TO EXTERIOR OF BUILDING
9. DEIONIZED WATER SYSTEM.
10. 1 1/4"CW DOWN TO EMERGENCY EYEWASH / SHOWER.
11. 3/4"G DOWN TO BELOW FINISHED GRADE, DROP PIPE IN PIPE SLEEVE AND ROUTE TO BELOW FINISHED FLOOR OF BUILDING.
12. 3/4" HOT DEIONIZED WATER TO OWNER FURNISHED GLASSWARE WASHER.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING OPS / LAB WATER AND GAS FLOOR PLAN

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SERVING THE SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

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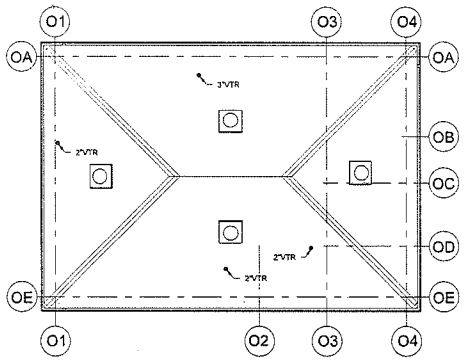
CHECKED BY: Checker XX/2014 DATE
SCALE
PROJECT NUMBER #2036
PLAN NO. P9000-4

APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR / CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

SHEET ____ of 109 SHEETS



1 PLUMBING OPS / LAB ROOF PLAN
P9000-5 SCALE: 1/8" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING OPS / LAB ROOF PLAN

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PROJECT NUMBER: #2036
PLAN NO. P9000-5

APPROVED BY: DATE
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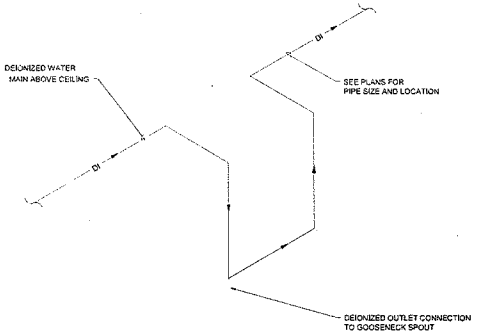
PUBLIC WORKS DIRECTOR / CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

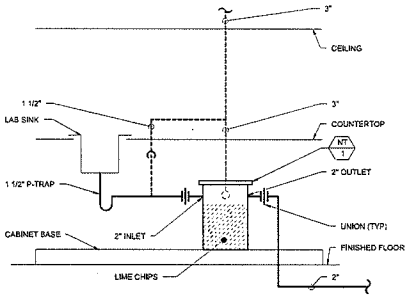
SHEET ____ of 199 SHEETS



DEIONIZED WATER AT OUTLET

NO SCALE

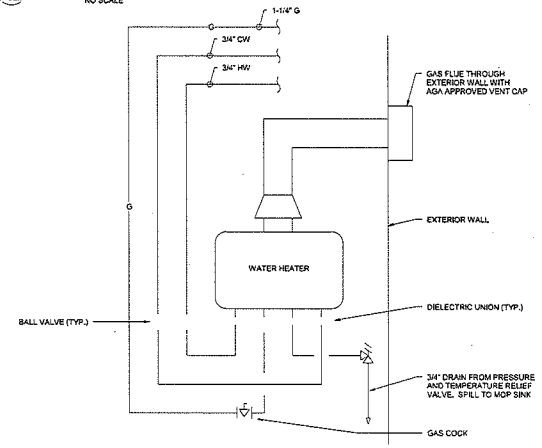
3 P-02.0



NEUTRALIZATION TANK

NO SCALE

1 P-02.0



TANKLESS GAS WATER HEATER

NO SCALE

2 P-02.0

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DRIVING THE SOUTHERN CALIFORNIA CONTRACTOR

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CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

PLUMBING DETAILS

DESIGNED BY: Approver	DATE: XX/2014	SCALE	APPROVED BY: DATE: XX-XX-14
DRAWN BY: Author	DATE: XX/2014		ROBERT BRAGER, P.E., J.D.
CHECKED BY: Checker	DATE: XX/2014	PROJECT NUMBER: #2036	PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. P9000-6 SHEET ___ of 109 SHEETS

GENERAL NOTES:

1. VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER STRUCTURAL NOTES.
3. JOINTS IN STRUCTURES SHALL BE LOCATED WHERE INDICATED ON THE DRAWINGS. CONSTRUCTION JOINTS NOT INDICATED ON THE DRAWINGS, BUT REQUIRED FOR CONSTRUCTION SHALL BE KEYED, DOWELLED, AND WATERSTOPPED. WATERSTOPS SHALL BE PLACED AT CONSTRUCTION AND EXPANSION JOINTS AS SHOWN.
4. PROVIDE 1" CHAMFER AT ALL EXPOSED CONCRETE EDGES AND CORNERS.
5. STANDARD DETAILING DIMENSIONS TO BE IN ACCORDANCE WITH ACI DETAILS AND DETAILING OF CONCRETE REINFORCEMENT 315.
6. PROTECT IN-PLACE ALL EXISTING STRUCTURES, PIPING, AND EQUIPMENT THAT ARE NOT REMOVED OR RELOCATED BY THESE DRAWINGS.
7. ALL REINFORCING STEEL, SNAP TIES, AND OTHER METALLIC COMPONENTS SHALL MAINTAIN A MINIMUM CLEARANCE OF 2" FROM THE PIPE.
8. ALL ANCHORS AND HARDWARE SHALL BE TYPE 316SS, UNLESS OTHERWISE NOTED.
9. ALL EQUIPMENT ANCHORAGE NOT SPECIFIED ON THE PLAN SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

REINFORCING NOTES:

1. ALL REINFORCING STEEL SHALL BE PLACED IN CONFORMANCE WITH THE I.B.C., AND THE "MANUAL OF STANDARD PRACTICE" BY THE C.R.S.I. OR AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
2. REINFORCING BARS SHALL CONFORM TO A.S.T.M. A-615, DEFORMED GRADE 60, EXCEPT #3 BARS MAY BE GRADE 40. REINFORCING BARS THAT ARE TO BE WELDED SHALL CONFORM TO A.S.T.M. A-706, DEFORMED GRADE 60.
3. WELDING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH A.S.T.M. A-706 WITH LOW HYDROGEN ELECTRODES AND SHALL CONFORM TO I.B.C. STANDARD 19-1 AND STRUCTURAL WELDING CODE REINFORCING STEEL BY A.N.S.I. / A.W.S. D1.4. MINIMUM TENSILE STRENGTH OF WELD METAL SHALL BE 90 K.S.I. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS.
4. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
5. WELDED WIRE FABRIC SHALL CONFORM TO A.S.T.M. A-185, AND SHALL BE LAPPED 1 SPACES AND 12" MINIMUM.
6. REINFORCING SPLICES SHALL BE MADE AS INDICATED ON THE DRAWINGS.
7. SLAB ON GRADE REINFORCING SHALL BE POSITION AT MID-DEPTH, UNLESS NOTED OTHERWISE.
8. PROVIDE #3 SPACER TIES AT 2'-6" ON CENTER IN ALL BEAMS AND FOOTINGS TO SECURE REINFORCING BARS IN PLACE, U.O.N.
9. ALL REBAR SIZES ON THESE DRAWINGS ARE IN POUND - INCH UNITS. SEE TABLE FOR METRIC EQUIVALENT.
10. PIPING AND CONDUIT SHALL BE SO FABRICATED AND INSTALLED THAT CUTTING, BENDING, OR DISPLACEMENT OF REINFORCEMENT FROM ITS PROPER LOCATION WILL NOT BE REQUIRED. A.C.I. §6.3.12
11. START AND END REINFORCING BARS IN WALLS, ROOFS, AND FLOORS AT 6" MAXIMUM.
12. PROVIDE 1/4" SPACER BARS OR TIES AT 24 INCHES ON CENTER IN SLABS, BEAMS, GIRDERS, AND FOOTINGS TO KEEP MAIN REINFORCING IN PLACE.
13. BARS SPECIFIED AS "CONTINUOUS" SHALL EXTEND THE FULL LENGTH OF THE MEMBER CONTAINING THEM.
14. CLEARANCE BETWEEN STEEL REINFORCING BARS AND HATCHWAY FRAME SHALL BE 1 1/2"±.

POUND - INCH BAR SIZE DESIGNATION	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18
METRIC BAR SIZE DESIGNATION	M10	M13	M16	M19	M22	M25	M29	M32	M36	M43	M57

CONCRETE:

1. CONCRETE SHALL BE CLASS A, F'c = 4,500 PSI @ 28 DAYS AND PER SPECIFICATIONS.
2. AGGREGATES FOR CONCRETE SHALL CONFORM TO A.S.T.M. C-33.
3. CEMENT FOR CONCRETE SHALL BE TYPE V PORTLAND CEMENT CONFORMING TO A.S.T.M. C-150. MAX. WATER/CEMENT RATIO = 0.45 (BY WEIGHT)
4. CLEAR CONCRETE COVER: (UNLESS NOTED OTHERWISE.)

ALL WALL & ROOF	2 INCHES
BOTTOM LAYER @ FLOOR	3 INCHES
BARS PARALLEL TO C.J.	2 INCHES
BARS @ WATERSTOP	2 INCHES

5. CONCRETE FINISHING PER SPECIFICATIONS AND THE FOLLOWING:

U-4	TOP OF FLOOR AND ROOF
F-1	EXTERIOR WALL SURFACES
F-2	INTERIOR WALL SURFACES
F-3	UNDERSIDE OF ROOF

6. DRYPACK SHALL BE 1 PART CEMENT AND 3 PARTS SAND (BY VOLUME)
7. NO PIPES OR DUCTS SHALL BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED. SEE MECHANICAL AND/OR ELECTRICAL DRAWINGS FOR LOCATION PIPES AND CONDUITS THROUGH WALL AND FLOORS.
8. SLOPE SLABS AS SHOWN ON DRAWINGS OR TO DRAIN.
9. THE LOCATION OF ALL CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED BY ENGINEER.
10. SEE SPECIFICATIONS FOR PREPARING EXISTING CONCRETE SURFACES THAT ARE TO COME IN CONTACT WITH NEW CONCRETE. APPLY EPOXY BONDING COMPOUND PER SPECIFICATIONS.
11. EXCEPT AS OTHERWISE REQUIRED, EXPOSED CONCRETE CORNERS AND EDGES SHALL HAVE 3/4" CHAMFERS.

STEEL:

1. FABRICATION AND ERECTION TO CONFORM TO A.I.S.C. LATEST EDITION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS" AND "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" EXCEPT AS OTHERWISE SHOWN OR SPECIFIED.
2. QUALIFIED AND CERTIFIED WELDERS SHALL BE USED FOR ALL WELDING. WELDING TO BE PERFORMED IN THE SHOP OF A STATE LICENSED FABRICATOR. ALL WELDING TO CONFORM TO THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE A.W.S. D1.1.
3. MATERIALS:

STRUCTURAL STEEL SHAPES	A.S.T.M. A992 or A-572 (Fy = 50 K.S.I.)
STRUCTURAL STEEL CHANNEL & ANGLES	A.S.T.M. A-36
STRUCTURAL STEEL PLATES	A.S.T.M. A-36
STRUCTURAL STEEL PIPES	A.S.T.M. A53 TYPE E OR S, GRADE B
WELDING ELECTRODES	A.W.S. A-5.1 OR A-5.5.
ANCHOR BOLTS	A.S.T.M. A-307
TYPICAL STEEL CONNECTION BOLTS	A.S.T.M. A-307
MISCELLANEOUS BOLTS	A.S.T.M. A-307
GALVANIZING	A.S.T.M. A-123
RUST-INHIBITING PRIMER	TT-P-645 A.S.T.M.
HSS-STEEL TUBING	A.S.T.M. A-500, GRADE B (Fy = 46 K.S.I.)

4. HOT-DIPPED GALVANIZE AFTER FABRICATION ALL STRUCTURAL STEEL AND CONNECTORS EXPOSED TO WEATHER. TOUCH UP DAMAGED GALVANIZING WITH GALVALLOY AFTER ERECTION IS COMPLETE.
5. CONNECTED MEMBERS SHALL BEAR ONLY UPON UNTHREADED PORTIONS OF BOLTS.
6. BURNING OF HOLES IS NOT ALLOWED.
7. INSPECTION OF WELDING SHALL CONFORM TO C.B.C. REQUIREMENTS (CHAPTER 17A).
8. THE STRUCTURAL STEEL FABRICATOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
9. BOLT HOLES SHALL BE 1/16" LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED, UNLESS NOTED OTHERWISE.
10. ALL STRUCTURAL STEEL SURFACES TO RECEIVE SPRAY-APPLIED FIREPROOFING OR TO BE ENCASED IN CONCRETE OR MASONRY SHALL BE LEFT UNPAINTED.
11. STRUCTURAL STEEL SHALL BE DELIVERED TO THE JOB SITE FREE OF EXCESSIVE RUST, MILL SCALE, GREASE, ETC.
12. OPENING SHALL NOT BE PLACED IN STEEL MEMBERS UNLESS SPECIFICALLY DETAILED.

STAIRS AND LADDERS:

1. STAIRS AND LADDERS SHALL BE DESIGNED BY THE CONTRACTOR BASED ON STAIR AND LADDER LAYOUTS SHOWN ON THE PLANS. SUBMIT ALL DESIGNS TO ENGINEER FOR APPROVAL.
2. STAIR AND LADDER DESIGNS SHALL BE SIGNED BY A CALIFORNIA REGISTERED ENGINEER.
3. STAIR TREADS AND LANDINGS SHALL HAVE AN ALUMINUM GRATING WALKING SURFACE. TREADS TO BE TYPE A ALUMINUM STAIR TREADS BY McNICHOLS OR APPROVED EQUAL. BEARING BARS SHALL HAVE A MINIMUM DEPTH OF 1-3/4" INCH.
4. STAIR STRINGERS, LANDING FRAMING AND LADDERS SHALL BE A36 STEEL. PAINT PER SPECIFICATION 0900.
5. THE TOPS OF STAIR HANDRAILS SHALL BE A MINIMUM OF 42" ABOVE LANDINGS.
6. STAIRS SHALL BE DESIGNED FOR A LIVE LOAD OF 100 PSF AND A CONCENTRATED LOAD OF 400 LBS. HANDRAILS SHALL CONFORM WITH THE REQUIREMENTS OF SECTION 1607.7.1 OF THE CALIFORNIA BUILDING CODE.
7. CONTRACTOR TO VERIFY ELEVATIONS SHOWN ON PLANS.
8. LADDERS SHALL BE BY HALLIDAY PRODUCTS OR APPROVED EQUAL.
9. ALL DISSIMILAR METAL ISOLATIONS SHALL BE PROVIDED BY CONTRACTOR.
10. ALL STAIRS AND LADDERS SHALL CONFORM, AT A MINIMUM, TO ALL OSHA REQUIREMENTS.

NOTE:
REFER TO MECH. DRAWINGS FOR STRUCTURAL ELEVATIONS

SOILS CLASSIFICATION:

THE SOILS INVESTIGATION FOR THE SITE WAS PREPARED BY: GEOSYNTEC CONSULTANTS, DATED NOVEMBER 7, 2013, PROJECT NUMBER HL1411.

CHARACTER OF FOUNDATION SOILS: ALLUVIAL GRAVEL, SAND, SILT, CLAY AND FINE-TO-MEDIUM GRAINED SAND.

1. FOOTINGS SHOULD BE EMBEDDED A MINIMUM OF 18 INCHES BELOW THE BUILDING SUPPORT PAD OR LOWEST ADJACENT FINAL GRADE, WHICHEVER IS DEEPER.
2. CONTINUOUS FOOTINGS SHOULD HAVE A MINIMUM WIDTH OF 12 INCHES AND SPREAD FOOTINGS SHOULD HAVE A MINIMUM LENGTH AND WIDTH OF 24 INCHES X 24 INCHES.
3. THE SOILS SHALL BE REMOVED AND RE-COMPACTED IN ACCORDANCE WITH GEOTECHNICAL REPORT RECOMMENDATIONS
4. FOR COMPACTED NATIVE SOILS, AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF.
5. SIDE BEARING CAPACITY OF 100 PSF PER FOOT BELOW GRADE LESS THAN OR EQUAL TO 1,500 PSF. PSF
6. SEE CIVIL DRAWINGS FOR ALL SITE SOIL PREPARATION REQUIREMENTS.
7. SITE PREPARATION AND BUILDING SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH GEOTECHNICAL REPORT RECOMMENDATIONS AND SPECIFICATION SECTION 02200.

REQUIRED SPECIAL INSPECTIONS

IN ADDITION TO THE REGULAR INSPECTIONS, THE FOLLOWING CHECKED ITEMS WILL ALSO REQUIRE SPECIAL INSPECTION IN ACCORDANCE WITH CHAPTER 17 OF THE CALIFORNIA BUILDING CODE. SPECIAL INSPECTION INDEPENDENT OF CONTRACTOR, ARCHITECT, OR ENGINEER OF RECORD SHALL BE PROVIDED BY OWNER ACCORDING TO THE CALIFORNIA BUILDING CODE CHAPTER 17 (TABLE 1704.3-STEEL, TABLE 1704.4-CONCRETE, TABLE 1704.5.1 OR 1704.5.3-MASONRY). THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK FOR CONFORMANCE W/ THE CONTRACT DOCUMENTS, NOT THE SHOP DRAWINGS.

ITEM:	TYPE:	REMARKS:
CONCRETE CBC TABLE 1705.3	PERIODIC	VERIFYING USE OF REQUIRED DESIGN MIX
	CONTINUOUS	SAMPLING FRESH CONCRETE AND PERFORMING SLUMP AND AIR CONTENT TESTS AND DETERMINING THE TEMPERATURE OF FRESH CONCRETE AT THE TIME OF MAKING SPECIMENS FOR STRENGTH TESTS PER ACI 318
	PERIODIC	INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES
WELDING CBC 1705.2	CONTINUOUS	PER CBC TABLE 1704.3 CONTINUOUS INSPECTION OF WELDING. REFERENCE STANDARD WELDS AWS D1.1. CBC REFERENCE WELDING 1704.3.1
MASONRY	PERIODIC AND CONTINUOUS	OCCUPANCY CATEGORY I, II, OR III: PER SPECIAL INSPECTION IN CBC TABLE 1704.5.1 OCCUPANCY CATEGORY IV: PER SPECIAL INSPECTION IN CBC TABLE 1704.5.3
POST INSTALLED WEDGE ANCHORS CBC TABLE 1705.3	PERIODIC	SPECIAL INSPECTOR MUST MAKE PERIODIC INSPECTIONS TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS CONCRETE TYPE, CONCRETE THICKNESS, ANCHOR EMBEDMENT, AND ADHERENCE TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
EPOXY ANCHORS CBC TABLE 1705.3	PERIODIC	PERIODIC IN ACCORDANCE WITH ICC REPORT 2508 OR 3187. VERIFY PROPER ANCHOR TYPE, DIMENSIONS, CONCRETE TYPE AND COMPRESSIVE STRENGTH, HOLE DIMENSIONS, HOLE CLEANING PROCEDURES, ANCHOR SPACING, EDGE DISTANCE, CONCRETE THICKNESS, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE.
SOIL CBC TABLE 1705.6	PERIODIC	VERIFY SOIL MATERIALS ARE ADEQUATE TO ACHIEVE BEARING CAPACITY, VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND PERFORM CLASSIFICATION & TESTING OF COMPACTED FILL MATERIALS,
	CONTINUOUS	VERIFY MATERIAL LIFT THICKNESS DURING RE-COMPACTION

MASONRY:

1. MASONRY UNITS SHALL BE MEDIUM WEIGHT, SPLIT-FACE BLOCK IN ACCORDANCE WITH A.S.T.M. SPECIFICATION C-90. F'm = 2,000 P.S.I., USE OPEN END UNITS AT VERTICAL REINFORCING.
2. ALL VERTICAL CELLS SHALL BE GROUTED SOLID. LIFT HEIGHT SHALL BE IN ACCORDANCE WITH CBC SECTION 2104A.6.1.1 FOR HIGH LIFT GROUTING, LIFT NOT TO EXCEED 4'-0".
3. VERTICAL BARS IN MASONRY UNITS SHALL BE TIED OR OTHERWISE FIXED IN POSITION AT INTERVALS OF NOT LESS THAN 4'-0" AND AT TOP AND BOTTOM.
4. PROVIDE INSPECTION AND CLEANOUT HOLES AT BOTTOM COURSE OF MASONRY WHEN THE GROUT POURS EXCEED 5'-0" IN HEIGHT.
5. WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE POUR OF GROUT 1 1/2" BELOW THE TOP OF THE UPPERMOST MASONRY UNITS.
6. MORTAR SHALL BE TYPE S PER CALIFORNIA BUILDING CODE TABLE 2103.8 WITH A 28 DAYS COMPRESSIVE STRENGTH OF 2,800 P.S.I. MINIMUM.
7. REINFORCEMENT WELDING SHALL COMPLY WITH A.W.S. D1.4 (LATEST EDITION). NO FIELD WELDING OF REINFORCING BARS, U.N.O.
8. ALL HEAD JOINTS SHALL BE FULL BUTTERED OR OPEN END MASONRY UNITS SHALL BE USED.
9. GROUT SHALL CONFORM TO TABLE 2103.12. A MIXTURE OF CEMENT, SAND, PEA GRAVEL AND WATER WHICH WILL COMPLETELY FILL ALL VOIDS IN THE WALL AND DEVELOP A 28 DAY COMPRESSIVE STRENGTH OF 2,500 P.S.I.
10. REINFORCING STEEL A.S.T.M. A-615, GRADE 60. SPLICE IN REINFORCEMENT SHALL BE LAPPED 48 DIAMETERS MIN.
11. ALL VERTICAL WALL REINFORCEMENT SHALL BE DOWELED TO THE FOUNDATION WITH THE SAME SIZE AND NUMBER OF BARS AS SHOWN IN THE WALLS.
12. PROVIDE ONE INCH MINIMUM GROUT COVER ON ALL BOLTS AND PLATES.
13. HORIZONTAL REINFORCING SHALL BE PLACED IN BOND BEAM UNITS.
14. NO PIPES OR DUCTS SHALL BE PLACED IN MASONRY WALLS UNLESS SPECIFICALLY NOTED OR DETAILED.
15. IF NO REINFORCING IS SHOWN IN DETAILS FOR CMU WALLS, THEN USE A MINIMUM OF #4 @ 32" O.C. HORIZONTAL AND #5 @ 24" O.C. VERTICAL REINFORCING BARS.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE-INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; One' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

STRUCTURAL ABBREVIATIONS, LEGEND AND NOTES

DESIGNED BY: J. Orie	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: CADD	DATE	AS SHOWN	XX-XX-14
CHECKED BY: D. Orie	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. GS-1 Sheet ____ of XXX Sheets

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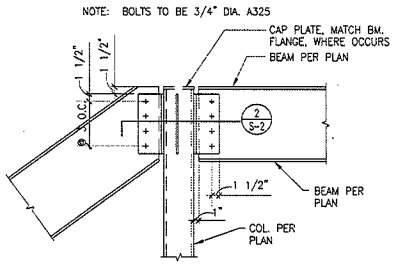
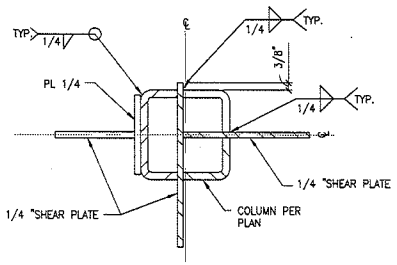


TYP. BM.–TO–COL. CONN. DETAIL 1 N.T.S.



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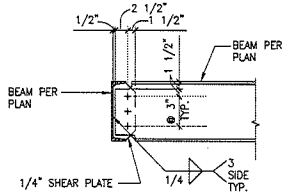
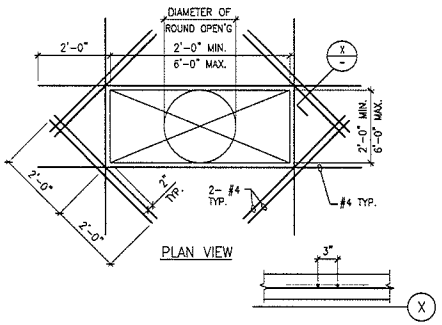
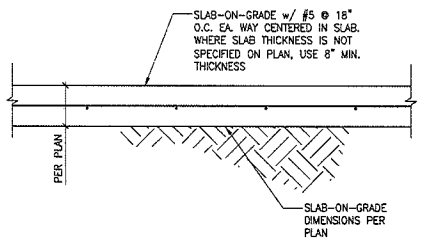


TYP. CHNL.–TO–CHNL CONN. DETAIL 3 1" = 1'-0"

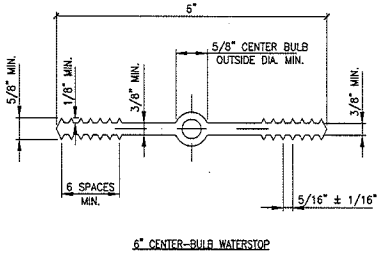
NOT USED 4 N.T.S.

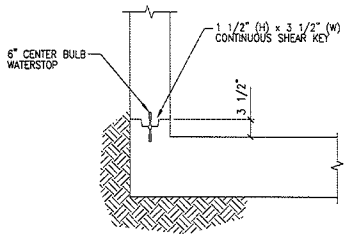


TYP. REINF. AT CONC. WALL/SLAB OPENINGS 5 N.T.S.



TYP. SLAB–ON–GRADE DETAIL 6 1" = 1'-0"



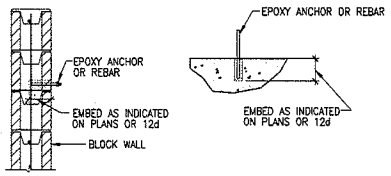


TYPICAL CONCRETE WALL/JOINT/WATERSTOP DETAIL 7 N.T.S.

EPOXY ANCHORS

1. ADHESIVE ANCHORS SHALL CONSIST OF "ALL THREAD" OR DEFORMED REBAR WITH NUT, WASHER AND ADHESIVE.
2. THREADED ANCHOR RODS SHALL BE MANUFACTURED FROM: SAE 1018 MEETING THE MECHANICAL REQUIREMENTS OF ASTM A307, GRADE A APPLICATION
3. REBAR SHALL BE GRADE 60 OR OTHER APPROVED MATERIAL. REBAR SHALL BE DEFORMED AND CAN BE COATED OR UNCOATED.
4. ANCHORING ADHESIVE SHALL BE A TWO–COMPONENT 100% SOLIDS EPOXY BASED SYSTEM SUPPLIED IN MANUFACTURER'S STANDARD CARTRIDGE AND DISPENSED THROUGH A STATIC–MIXING NOZZLE SUPPLIED BY THE MANUFACTURER. ADHESIVE SHALL BE SET–XP™ EPOXY–TIE ADHESIVE FROM SIMPSON STRONG–TIE, PLEASANTON, CA. ANCHORS SHALL BE INSTALLED PER SIMPSON STRONG–TIE'S INSTRUCTIONS FOR SET–XP EPOXY–TIE. (ICC–ESR–2508)

INSTALLATION:
ADHESIVE ANCHORS SHALL BE INSTALLED IN HOLES DRILLED WITH CARBIDE BITS CONFORMING TO ANSI B94.12–1977. ANCHORS SHALL BE INSTALLED PER SPECIFICATIONS AND THE MANUFACTURERS PROCEDURES.



TYP. EPOXY REBAR/BOLT DETAIL 8 N.T.S.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING ALL SOUTHERN CALIFORNIA COUNTIES

" VERIFY SCALES " BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Civil Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

STRUCTURAL STANDARD DETAILS - 2

DESIGNED BY J. Orie	DATE	SCALE	APPROVED BY: DATE
DRAWN BY CADD	DATE	AS SHOWN	XX-XX-14
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. GS-2 Sheet ____ of XXX Sheets

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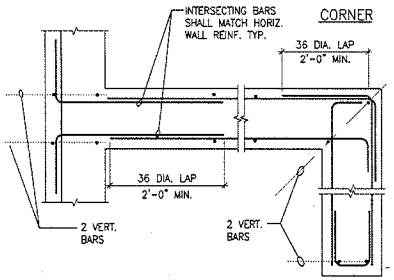
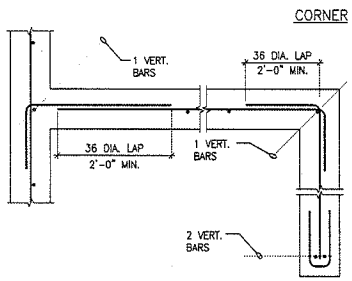
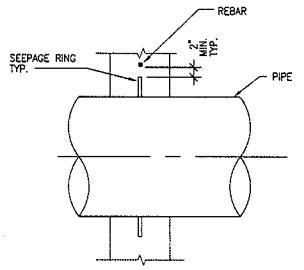




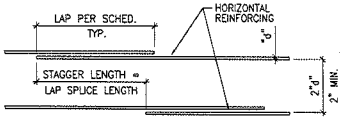
TYP. REINFORCING AT INTERSECTIONS OF WALLS OR FOOTINGS DETAIL 1

N.T.S.



TYP. REBAR CLEARANCE TO PIPES DETAIL 2

1" = 1'-0"



CONC. F'c P.S.I.	BAR SIZE								
	#3	#4	#5	#6	#7	#8	#9	#10	
	TENSION LAP SPLICES, INCHES								
4,000	24	24	30	36	42	51	64	81	

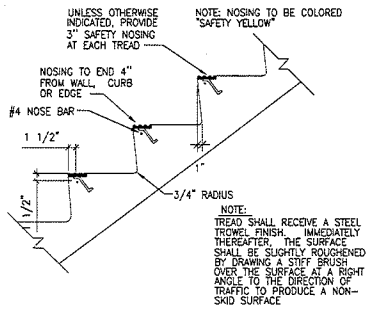
HARDROCK CONCRETE
F'y = 60,000 P.S.I. (CLASS "B")

NOTES:

1. SPLICE LENGTH SHALL BE DETERMINED FROM THE SIZE OF THE SMALLER BAR SPLICED.
2. DIVDE BY 1.3 FOR NON-TOP BAR (LESS THAN 12" OF CONCRETE CAST BELOW)
3. CONCRETE MASONRY UNITS LAP 48d MIN. HORIZ & VERT. REINF.

TYP. HORIZONTAL REBAR LAP SPLICE DETAIL 3

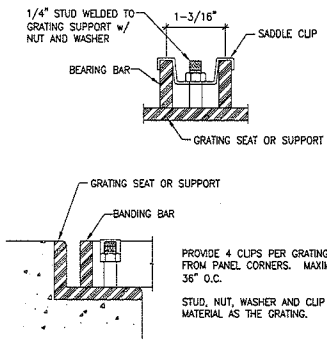
N.T.S.



NOTE:
TREAD SHALL RECEIVE A STEEL TROWEL FINISH. IMMEDIATELY THEREAFTER, THE SURFACE SHALL BE SLIGHTLY ROUGHENED BY DRAWING A STIFF BRUSH OVER THE SURFACE AT A RIGHT ANGLE TO THE DIRECTION OF TRAFFIC TO PRODUCE A NON-SKID SURFACE

TYP. STAIR NOSINIG DETAIL 4

N.T.S.

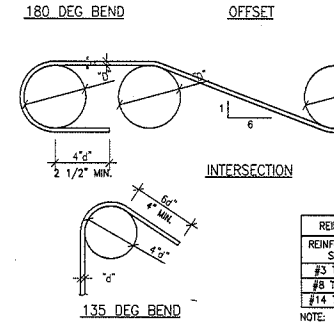


PROVIDE 4 CLIPS PER GRATING PANEL, APPROX. 4" FROM PANEL CORNERS. MAXIMUM CLIP SPACING AT 36" O.C.

STUD, NUT, WASHER AND CLIP TO BE THE SAME MATERIAL AS THE GRATING.

TYP. GRATING ANCHOR DETAIL 5

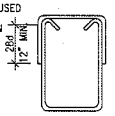
1" = 1'-0"



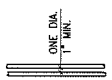
REINFORCING BAR BEND	
REINFORCING SIZE	BAR BEND DIAMETER ("D")
#3 TO #8	6d
#9 TO #11	8d
#14 TO #18	10d

NOTE: ALL BENDS SHALL BE MADE COLD

NOTE:
CAP STIRRUPS MAY BE USED WHENEVER 135° CLOSED STIRRUPS ARE SHOWN IN GRADE BEAM ONLY



CAP STIRRUP



BAR CLEARANCE

TYPICAL REINFORCING BAR BENDS DETAIL 6

N.T.S.

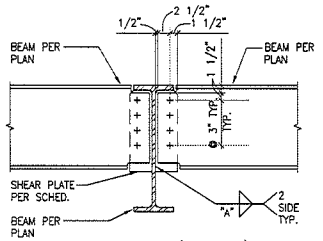
STEEL BEAM CONNECTION SCHEDULE						
STEEL BEAM DEPTH	SHEAR PLATE THICKNESS	BOLTS			WELD "A"	REMARKS
		NUMBER	DIAMETER	TYPE		
C 8x	1/4"	2	5/8"	A325N	3/16"	
W 8x	1/4"	2	3/4"	A325N	3/16"	
W 10x	1/4"	2	3/4"	A325N	1/4"	
W 12x	1/4"	3	7/8"	A325N	1/4"	
W 14x	3/8"	3	7/8"	A325N	1/4"	
W 16x	3/8"	4	7/8"	A325N	1/4"	
W 18x	3/8"	5	7/8"	A325N	5/16"	
W 21x	3/8"	6	7/8"	A325N	5/16"	
W 24x	3/8"	7	7/8"	A325N	5/16"	

NOTES:

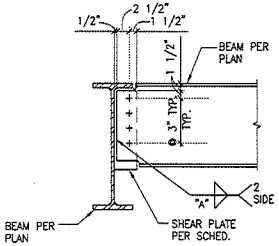
1. FOR SPECIAL STEEL CONNECTIONS NOT NOTED, SEE FRAME ELEVATIONS, SECTIONS, AND DETAILS.
2. SLOTTED HOLES ARE NOT PERMITTED, UNLESS OTHERWISE NOTED. AND DETAILS.

TYP. BEAM-TO-BEAM CONN. SCHEDULE 7

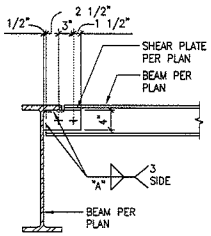
N.T.S.



BEAM TO BEAM (TWO SIDE) FULL HEIGHT



BEAM TO BEAM (ONE SIDE) FULL HEIGHT



BEAM TO BEAM W6x OR SMALLER

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Oris Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

STRUCTURAL STANDARD DETAILS - 3

DESIGNED BY:	DATE	SCALE
J. Orlo		AS SHOWN
DRAWN BY:	DATE	
CADD		
CHECKED BY:	DATE	PROJECT NUMBER
D. Orlo		2036

APPROVED BY: DATE XX-XX-14

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. GS-3

Sheet _____ of XXX Sheets

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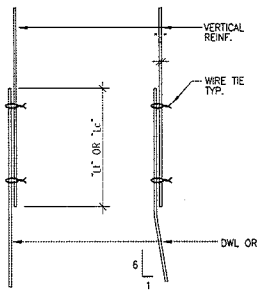


BAR SIZE	LAP LENGTH F'c=4,000 P.S.I.
#3	24
#4	24
#5	24
#6	28
#7	32
#8	39
#9	49
#10	63
#11	77

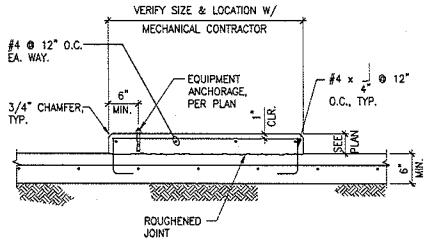
F'y = 60 K.S.I.

NOTES:

1. ALL VERTICAL REINFORCING FOR COLUMN, PIERS AND WALLS SHALL BE DOWELED AS SHOWN, UNLESS NOTED OTHERWISE.
2. DOWELS SHALL BE THE SAME GRADE, SIZE, QUANTITY AND/OR SPACING AS VERTICAL REINFORCING.
3. WHEN "Lc" OR "Lt" IS NOT SPECIFIED ON DRAWING, USE TENSION LAP "Lt"

TYP. TENSION REINFORCING – LAP SPLICE DETAIL (1)

N.T.S.

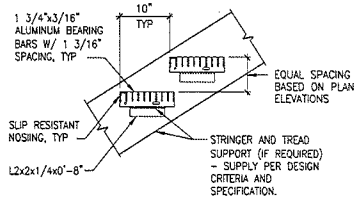


NOTES:

1. CONTRACTOR SHALL POUR PADS SEPARATELY FROM FLOOR SLAB AT PADS ON STRUCTURAL FLOOR.
2. EQUIPMENT ANCHORAGE EMBEDIMENTS ARE UNIQUE TO EACH PIECE OF EQUIPMENT, AND ARE NOT SHOWN IN DETAIL ABOVE.
3. AT (E) SLAB USE #4 EPOXY DOWELS @ 12" O.C. PER DETAIL 4/S-2 IN LIEU OF ⌡ BARS

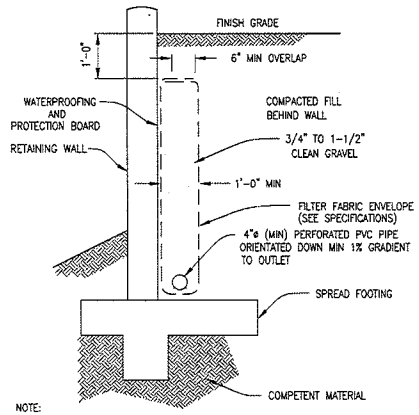
TYP. CONC. EQUIP. PAD ON GRADE DETAIL (2)

1" = 1'-0"



TYP. STAIR TREAD DETAIL (3)

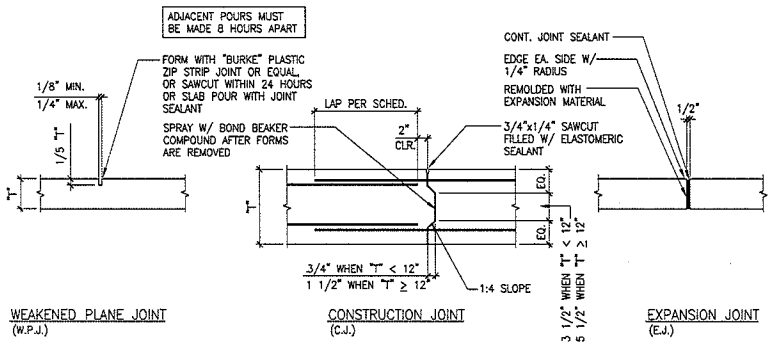
N.T.S.



NOTE:
WALL DRAINAGE SHALL BE PER GEOTECHNICAL RECOMMENDATIONS OR AS A MINIMUM, AS SHOWN.

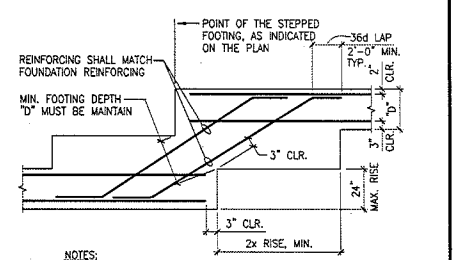
TYP. RETAINING WALL DRAINAGE (6)

N.T.S.



TYPICAL SLAB JOINTS DETAIL (4)

N.T.S.



NOTES:

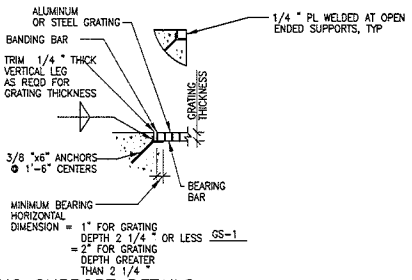
1. STEP FOOTING WHERE SHOWN ON PLANS, AND AS REQUIRED TO MAINTAIN MINIMUM FOOTING DEPTH BELOW GRADE, AND AS REQUIRED TO ACCOMODATE PIPES PER TYP. PIPE TRENCH DETAILS
2. REINFORCING TO MATCH SIZE AND SPACING OF FOOTING REINFORCING.

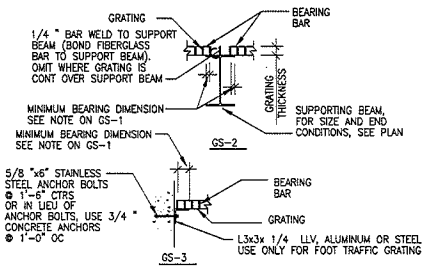
TYPICAL STEP FOOTING DETAIL (5)

N.T.S.

GRATING NOTES

1. EXTEND GRATING CONTINUOUSLY OVER GATE GUIDES AND GATES.
2. NOTCH GRATING SUPPORTS AT GATES AS REQUIRED.
3. GRATING SPAN ←→ SEE PLAN.
4. WIDTH OF GRATING SECTIONS SHALL NOT EXCEED 3'-0".
5. SHOP DRAWINGS BASED ON FIELD DIMENSIONS SHALL BE SUBMITTED TO THE CONSTRUCTION MANAGER PRIOR TO FABRICATION.
6. MATERIAL FOR SUPPORTS OF STEEL AND ALUMINUM GRATING TO BE SAME AS GRATING. EXCEPT METAL SUPPORTS THAT ARE TO BE EMBEDDED IN CONCRETE SHALL BE TYPE 316 STAINLESS STEEL.
7. UNLESS NOTED OTHERWISE ON PLANS, GRATING THICKNESS SHALL BE AS "TABULATED IN GRATING THICKNESS TABLE" FOR APPLICABLE TRAFFIC.
8. BEARING BAR THICKNESS FOR GRATING TO BE 3/16 " MINIMUM.
9. BAND ALL EDGES WITH 3/16 x DEPTH OF BEARING BAR.
10. PROVIDE MISCELLANEOUS GRATING FASTENERS AS REQUIRED.
11. TYPE OF MATERIAL USED SHALL BE AS SHOWN ON PLANS OR AS SPECIFIED. THIS STANDARD DETAIL INCLUDES 3 TYPES. ALTHOUGH ALL 3 MAY NOT BE INCLUDED IN PROJECT.
12. THE HORIZONTAL CLEARANCE BETWEEN THE GRATING AND GRAING SUPPORTS SHALL NOT BE LESS THAN 1/4 " NOR GREATER THAN 1/2 " AND AS SPECIFIED.
13. ALL GRATING SECTIONS, WHEN IN PLACE,SHALL ALWAYS BE FIRMLY ANCHORED TO THEIR SUPPORTS AS SPECIFIED AND AS IN DETAIL 5/GS-3





GRATING SUPPORT DETAILS (7)

N.T.S.

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— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Oriol Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

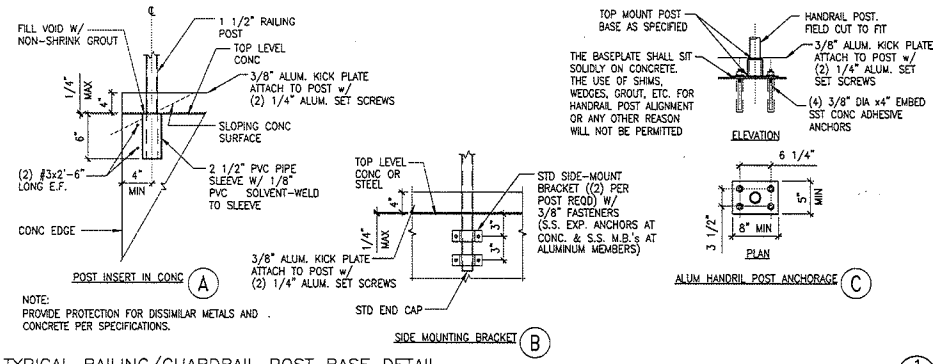
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

STRUCTURAL STANDARD DETAILS - 4

DESIGNED BY J. Orie	DATE	SCALE	APPROVED BY: DATE
DRAWN BY CADD	DATE	AS SHOWN	XX-XX-14
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	ROBERT BRADER, P.E., LD. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

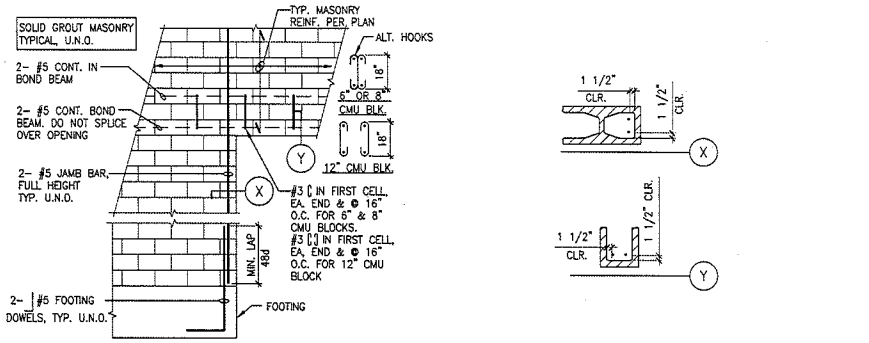
Plan No. GS-4 Sheet ____ of XXX Sheets

Last Saved By: James 3-25-14 04:22pm



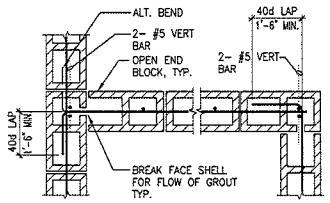
TYPICAL RAILING/GUARDRAIL POST BASE DETAIL 1

1"=1'-0"



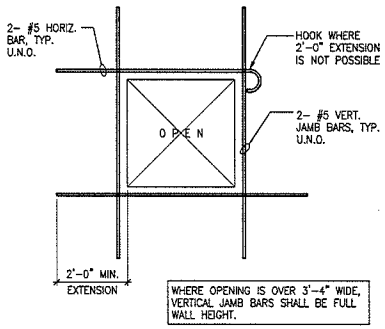
TYP. MASONRY LINTEL 2

N.T.S.



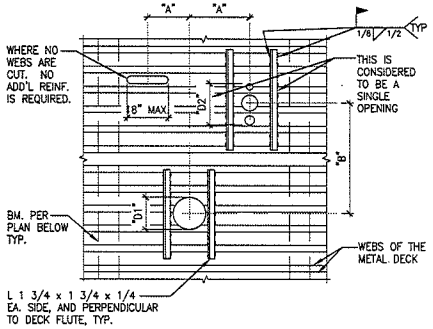
TYP. MASONRY REBAR - PLAN VIEW 3

N.T.S.



TYP. MASONRY JAMB @ OPENING 4

N.T.S.

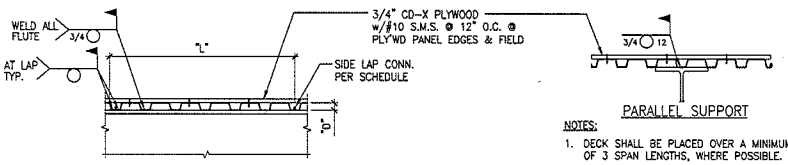


NOTES:

1. PLACE ANGLES OR TUBES ON TOP OF DECK.
2. HOLES CUTTING - NO MORE THAN 3 ADJACENT WEBS FOR "HSB" TYPE DECK.
3. ANGLES MUST EXTEND 3 WEBS PAST THE OPENING.
4. WHERE DIMENSION "A" IS GREATER THAN 4"D1", 4"D2", OR 32" WHICHEVER IS LARGER, THEN THERE IS NO RESTRICTION ON DIMENSION "B".
5. WHERE DIMENSION "B" IS GREATER THE 4"D1", 4"D2", OR 32" WHICHEVER IS LARGER, THEN THERE IS NO RESTRICTION OF DIMENSION "A".
6. WHERE DIMENSIONS "A" AND "B" ARE LESS THAN 4"D1", 4"D2", OR 32" WHICHEVER IS LARGER, THE OPENING GROUP WILL BE CONSIDERED AS A SINGLE HOLE, AND MUST BE REINFORCED AS REQUIRED FOR THE LARGER OPENING.

TYP. OPENING IN ROOF DECK (LESS THAN 24" DIA./SQ.) 5

N.T.S.



DECK PROPERTIES								
DEPTH "D"	LENGHT "L"	GAUGE	WEIGHT (P.S.F.)	I (IN^4)/FT.	+S (IN^3)/FT.	-S (IN^3)/FT.	SIDE LAP CONNECTION	REMARKS
1 1/2"	36"	20	2.2	0.216	0.235	0.248	T.S.W. @ 18" O.C.	HSB-36

NOTES:

1. DECK SHALL BE PLACED OVER A MINIMUM OF 3 SPAN LENGTHS, WHERE POSSIBLE.
2. TOP SEAM WELD - CLINCH FIRST TO GET CONTACT OF LIPS BEFORE WELDING. 1 1/2" LONG WELD MUST ENGAGE TOP OF INNER LEG.
4. ALL PERPENDICULAR DECK PENETRATIONS GREATER THAN 8" SHALL BE REINFORCED PER 5/GS-5

TYP. ROOF DECK PROPERTIES AND WELDING 6

N.T.S.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

PLANS PREPARED BY RMC water and environment Orion Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

STRUCTURAL STANDARD DETAILS - 5

DESIGNED BY / DATE	SCALE	APPROVED BY: / DATE
J. Orie	AS SHOWN	XX-XX-14
DRAWN BY / DATE: CADD		ROBERT BRAGER, P.E. J.D.
CHECKED BY / DATE: D. Orie	PROJECT NUMBER: 2036	PUBLIC WORKS DIRECTOR/CITY ENGINEER
		RCE NO. 52102 EXP. 12/31/2014

Plan No. GS-5 Sheet ____ of XXX Sheets

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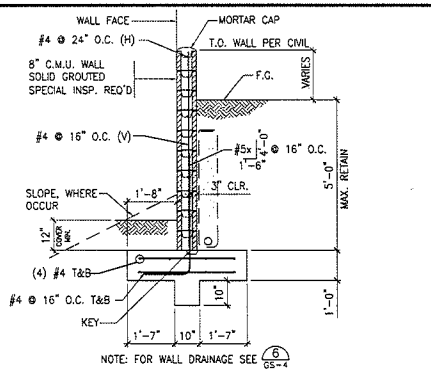
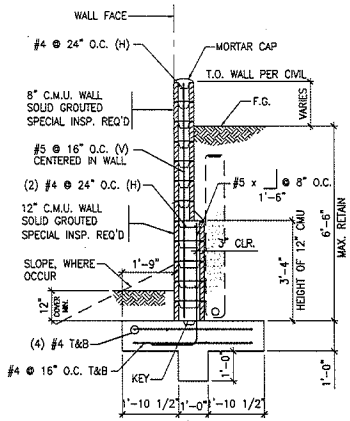


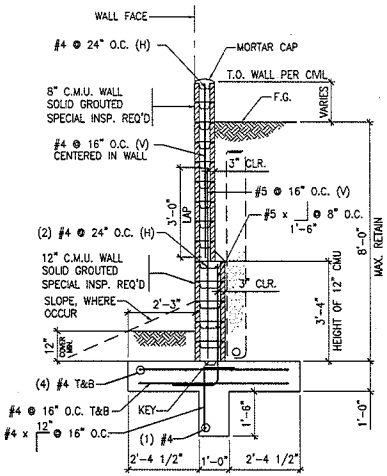
SITE RETAINING WALL (H=5'-0" MAX.) 1

1/2"=1'-0"



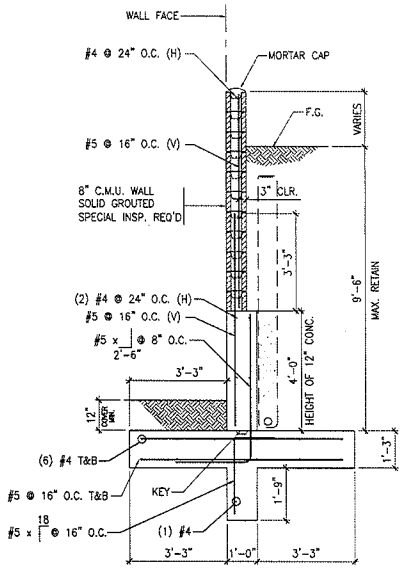
SITE RETAINING WALL (H=6'-6" MAX.) 2

1/2"=1'-0"



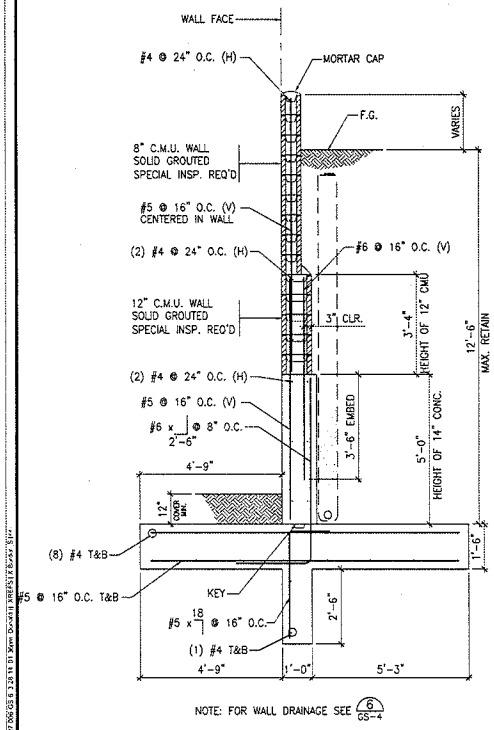
SITE RETAINING WALL (H=8'-0" MAX.) 3

1/2"=1'-0"



SITE RETAINING WALL (H=9'-6" MAX.) 4

1/2"=1'-0"



SITE RETAINING WALL (H=12'-6" MAX.) 5

1/2"=1'-0"

DESIGN CRITERIA

MASONRY WALLS:

MASONRY: f'm = 1,500 psi
SPECIAL INSPECTION IS REQUIRED

CONCRETE: f'c = 4,000 psi
Fc = 1,400 psi

MORTAR: TYPE M OR TYPE S (2,000 psi)

GROUT: 2,500 psi

REINFORCING: fy = 60,000 psi (GRADE 60 OR BETTER)
fs = 24,000 psi

ALL WALLS:

SOIL: UNIT WEIGHT = 110 PSF
EFP = 40 psf (LEVEL BACKFILL)
ALLOWABLE BEARING = 1,500 psf
ALLOWABLE PASSIVE = 461 psf (LEVEL)
FRICTION COEFFICIENT= 0.35

MASONRY RETAINING WALL NOTES:

1. SEE CIVIL PLANS FOR WALL LAYOUT.
2. TO INSURE PROPER BONDING BETWEEN THE FOOTING AND THE FIRST COURSE OF BLOCK, A MORTAR KEY SHALL BE FORMED BY EMBEDDING A FLAT 2 X 4 FLUSH WITH AND AT THE TOP OF THE FRESHLY POURED FOOTING. THE 2 X 4 SHOULD BE REMOVED AFTER THE CONCRETE HAS STARTED TO HARDEN (APPROXIMATELY 1 HOUR). A MORTAR KEY MAY BE OMITTED IF THE FIRST COURSE OF BLOCK IS SET INTO THE FRESH CONCRETE WHEN THE FOOTING IS POURED, AND A GOOD BOND IS OBTAINED.

RETAINING WALL NOTES 6

N.T.S.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Oriz' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

STRUCTURAL STANDARD DETAILS - 6

DESIGNED BY J. Orie	DATE	SCALE	AS SHOWN
DRAWN BY CADD	DATE		XX-XX-14
CHECKED BY D. Orie	DATE	PROJECT NUMBER	2036

Plan No. GS-6

APPROVED BY: DATE

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Sheet ____ of XXX Sheets

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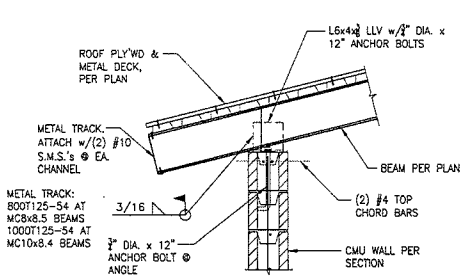
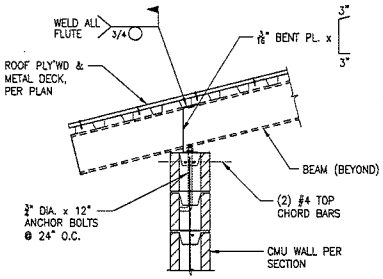
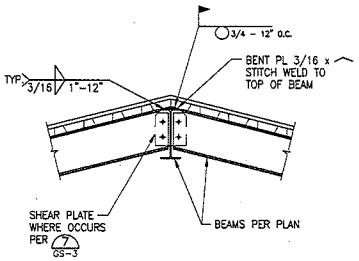


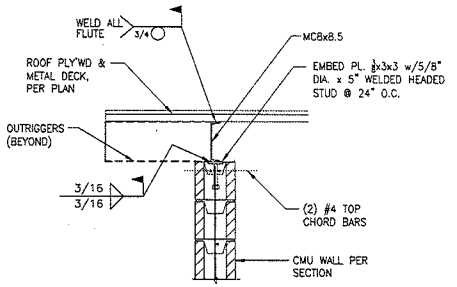
ROOF FRAMING DETAIL 1 — 1"=1'-0"



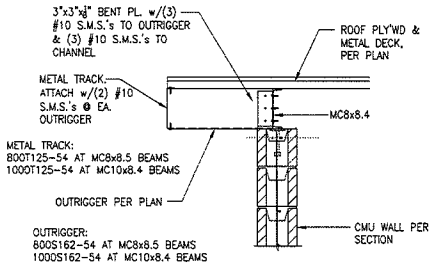
ROOF FRAMING DETAIL 2 — 1"=1'-0"



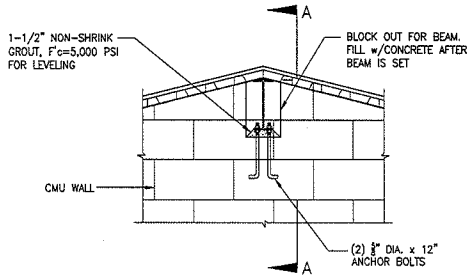
ROOF FRAMING DETAIL 3 — 1"=1'-0"



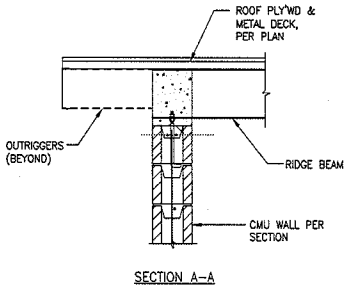
ROOF FRAMING DETAIL 4 — 1"=1'-0"



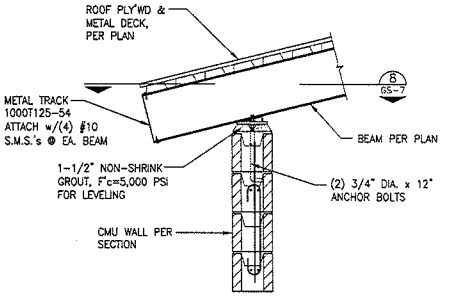
ROOF FRAMING DETAIL 5 — 1"=1'-0"



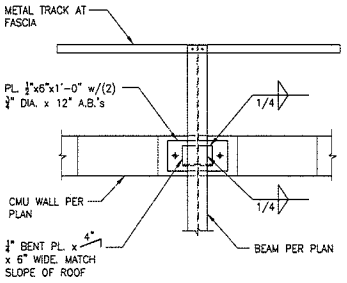
ROOF FRAMING DETAIL 6 — 1"=1'-0"



SECTION A-A



ROOF FRAMING DETAIL 7 — 1"=1'-0"



ROOF FRAMING DETAIL 8 — 1"=1'-0"

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIAL BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

1" VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Oriel Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

STRUCTURAL DETAILS

DESIGNED BY J. Orie	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-14
DRAWN BY CADD	DATE		
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	

Plan No. GS-7

Sheet _____ of XXX Sheets

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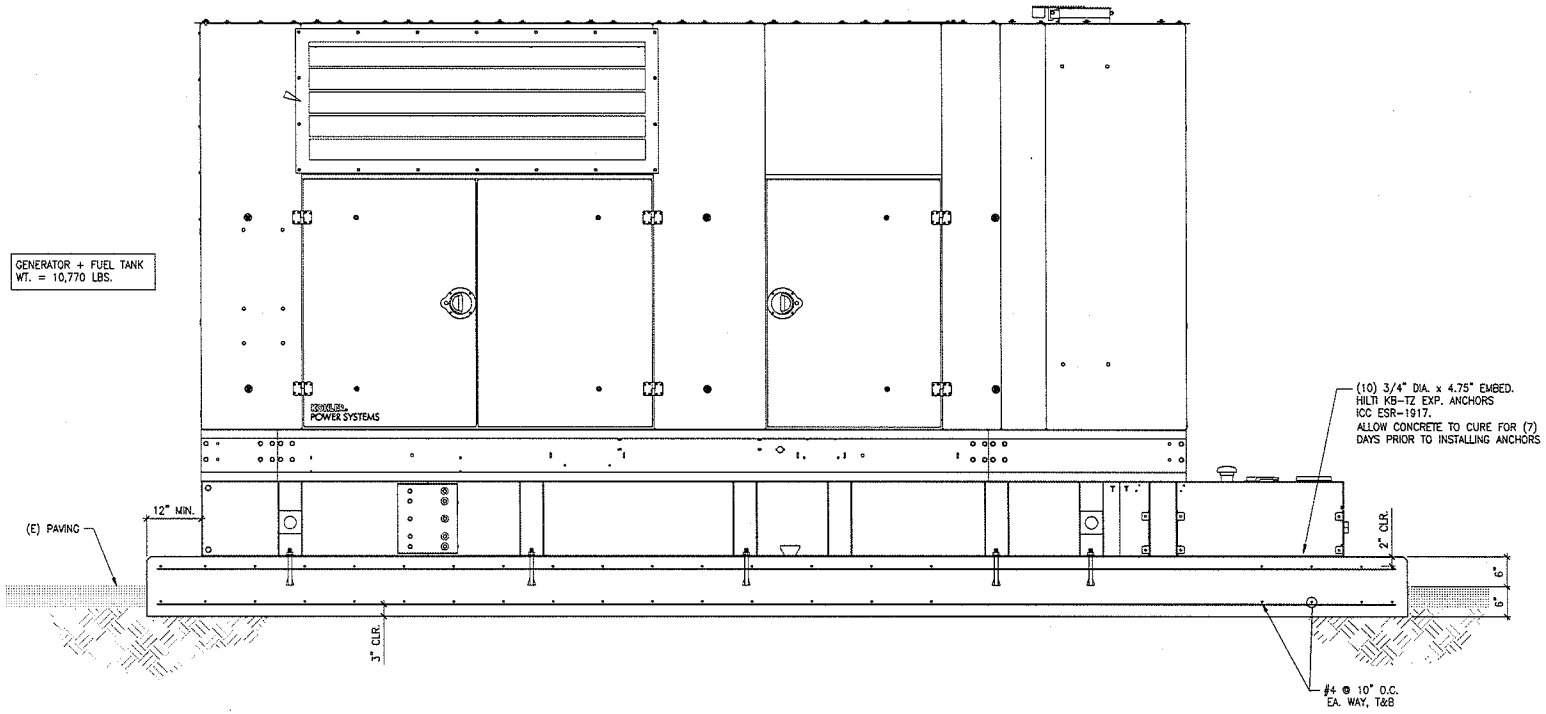

GENERATOR FOUNDATION DETAIL 1

1" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

STRUCTURAL DETAILS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIG LESS OR YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Orie' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: J. Orie	DATE	SCALE: AS SHOWN
DRAWN BY: CADD	DATE	
CHECKED BY: D. Orie	DATE	PROJECT NUMBER: 2036

Plan No. GS-8

APPROVED BY: DATE XX-XX-14

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Sheet ____ of XXX Sheets

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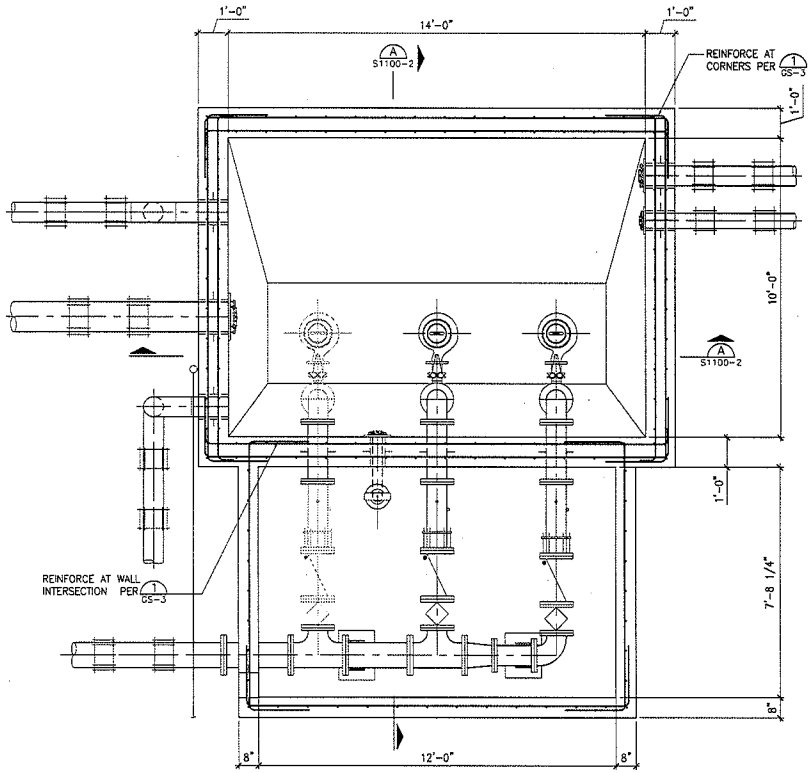
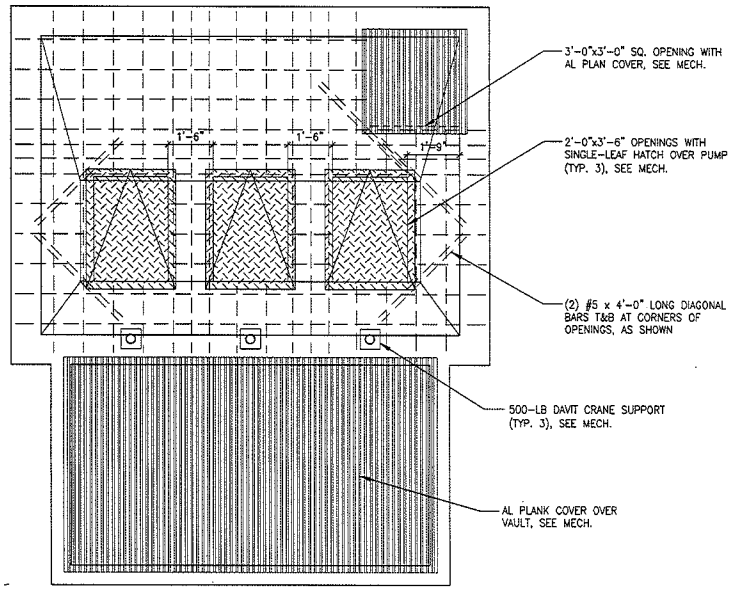


BOTTOM PLAN
1/2" = 1'-0"



TOP PLAN
1/2" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INFLUENT PS
BOTTOM AND TOP PLANS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

"VERIFY SCALES" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Orie' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY CADD	DATE		
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	

Plan No. S1100-1

Sheet _____ of XXX Sheets

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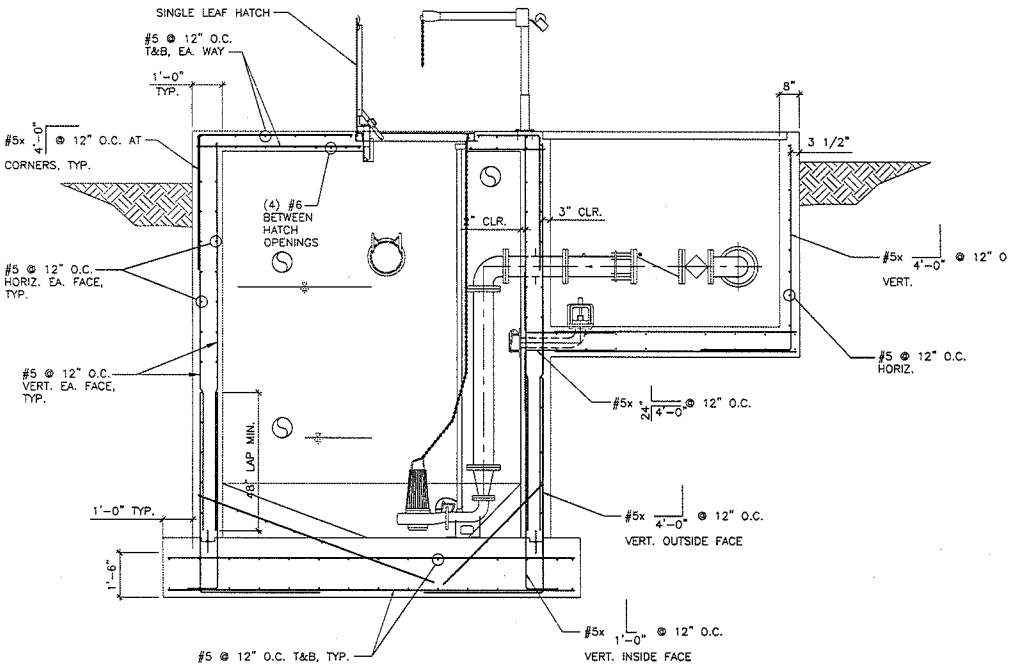
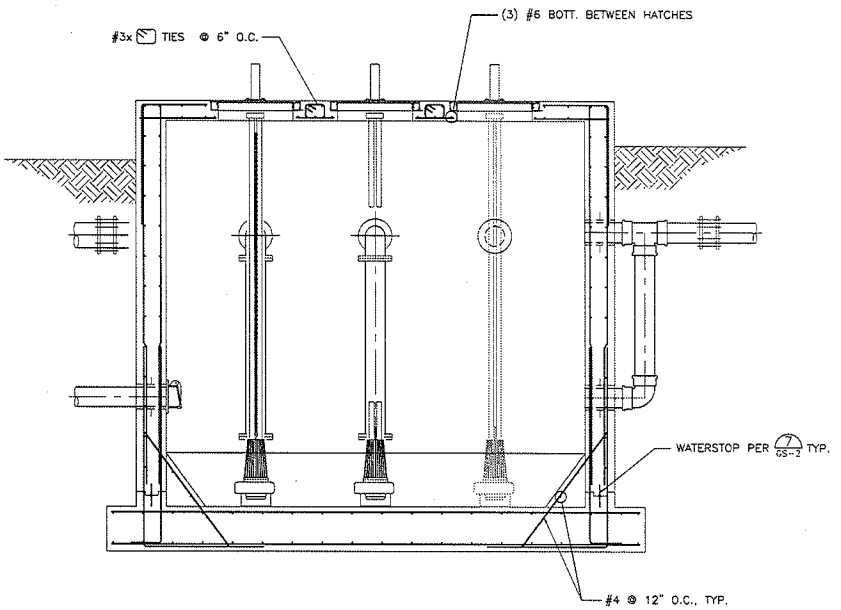


SECTION A
1/2" = 1'-0" S1100-1



SECTION B
1/2" = 1'-0" S1100-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INFLUENT PS
STRUCTURAL SECTIONS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Ono' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE	APPROVED BY:
DRAWN BY CADD	DATE	AS SHOWN	DATE XX-XX-14
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 Exp. 12/31/2014

Plan No. S1100-1

Sheet _____ of XXX Sheets

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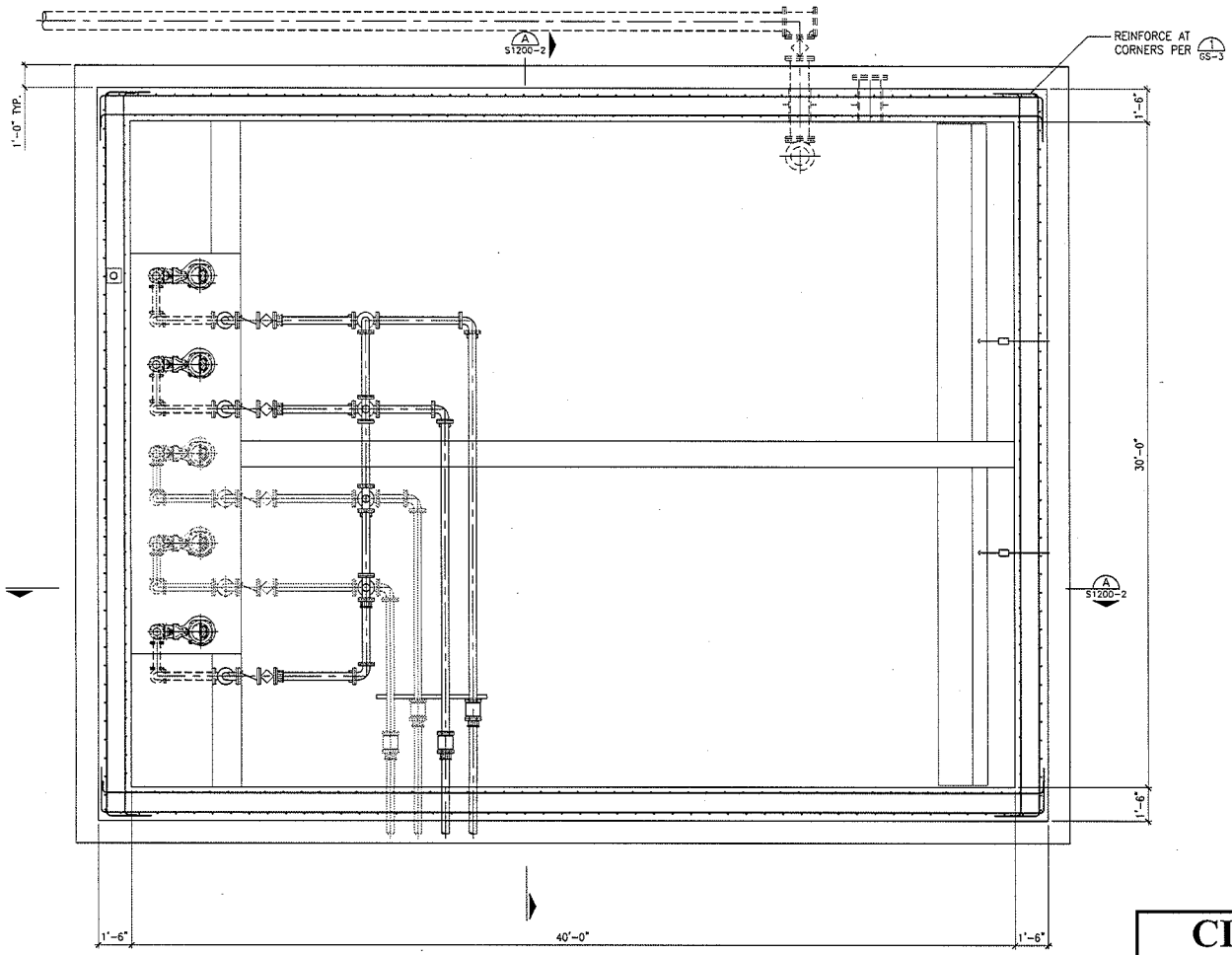

EQUALIZATION BASIN
FOUNDATION PLAN
3/8" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

EQUALIZATION BASIN
FOUNDATION PLAN

DESIGNED BY J. Orie — DATE
DRAWN BY CADD — DATE
CHECKED BY D. Orie — DATE — PROJECT NUMBER 2036
SCALE: AS SHOWN

APPROVED BY: — DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S1200-1 — Sheet ____ of XXX Sheets

DIAL BEFORE YOU DIG
1-800-227-2600
DIGALERT

1" VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment
Orie' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

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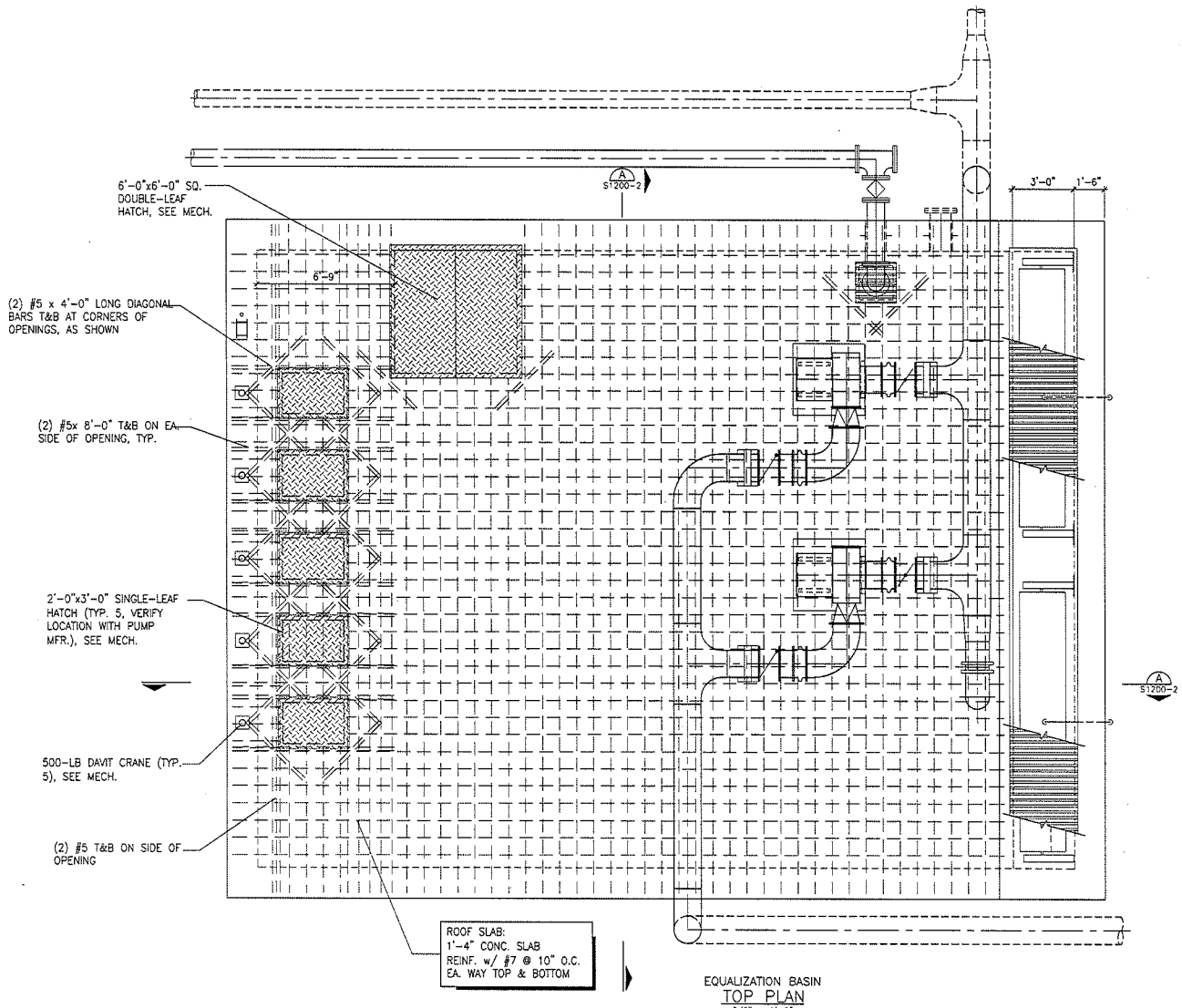

EQUALIZATION BASIN
TOP PLAN
3/8" = 1'-0"

DIAL BEFORE YOU DIG
DIGALERT

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment
Orio Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

EQUALIZATON BASIN
TOP PLAN

DESIGNED BY J. Orie	DATE	SCALE	AS SHOWN
DRAWN BY CADD	DATE		
CHECKED BY D. Orie	DATE	PROJECT NUMBER	2036

APPROVED BY: DATE
XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S1200-2

Sheet _____ of XXX Sheets

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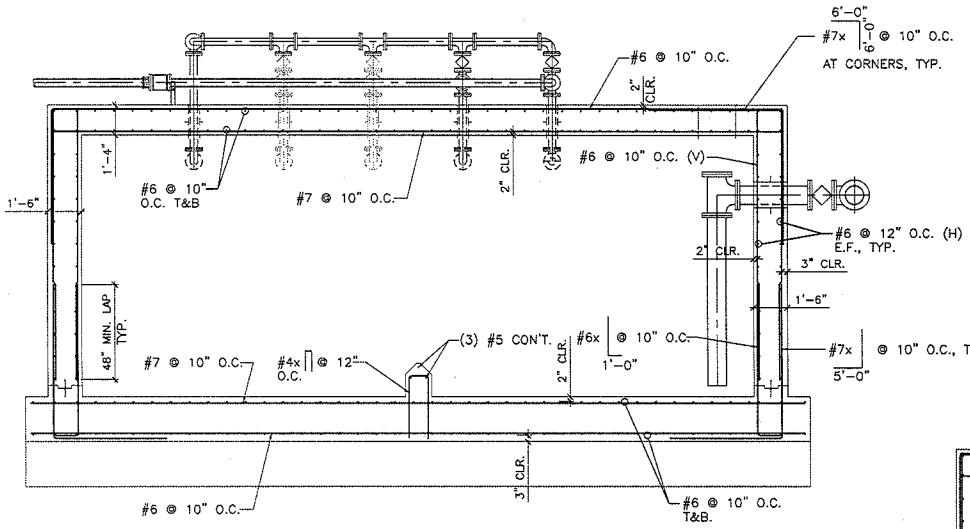

SECTION A
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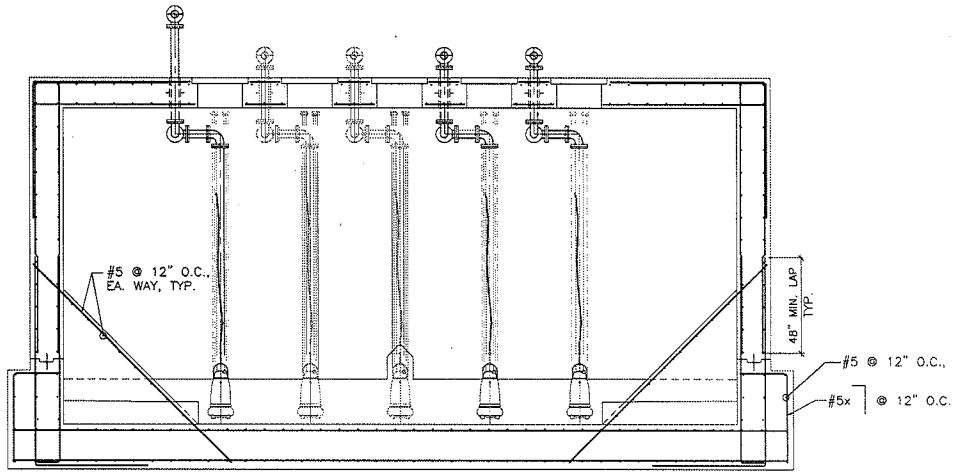

SECTION B
3/8" = 1'-0" S1200-1,2

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

EQUALIZATION BASIN
STRUCTRUAL SECTIONS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

PLANS PREPARED BY: RMC water and environment; Orie' Engineering

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NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie | DATE | SCALE AS SHOWN
DRAWN BY CADD | DATE | XX-XX-14
CHECKED BY D. Orie | DATE | PROJECT NUMBER 2036

Plan No. S1200-3

APPROVED BY: | DATE

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Sheet _____ of XXX Sheets

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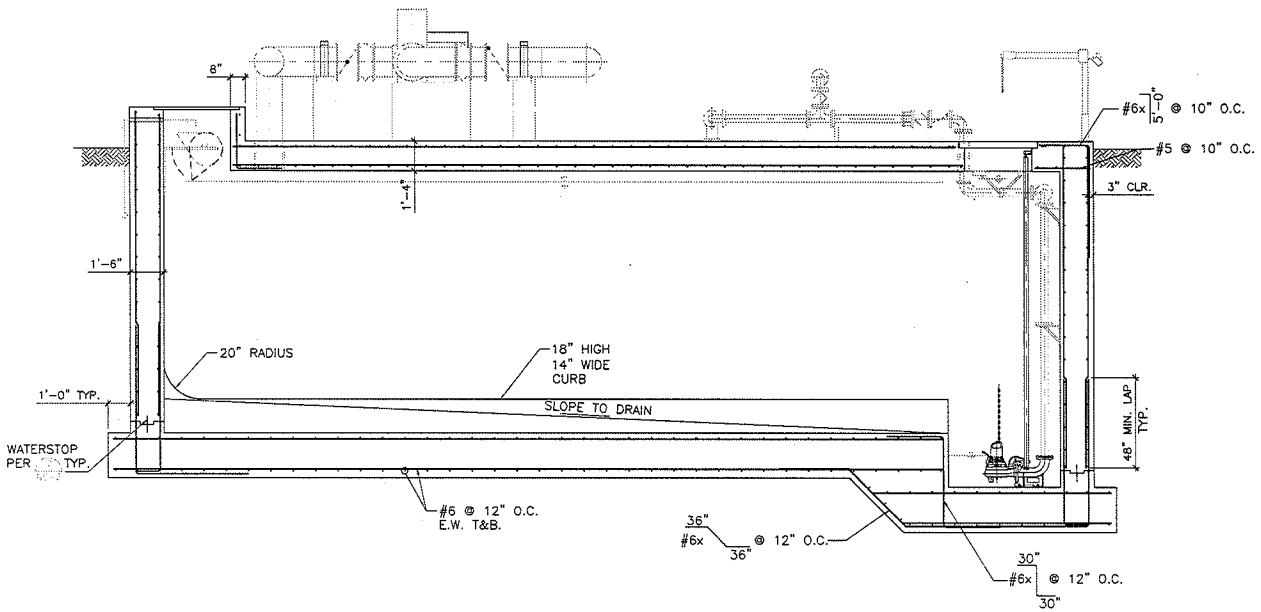

SECTION C
3/8" = 1'-0" S1200-1,2

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

EQUALIZATION BASIN
STRUCTRUAL SECTIONS

DESIGNED BY: J. Orie — DATE
DRAWN BY: CADD — DATE
CHECKED BY: D. Orie — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036
APPROVED BY: — DATE
XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE. NO. 52102 EXP. 12/31/2014

Plan No. S1200-4

Sheet ____ of XXX Sheets

NO.	REVISION	BY	CHKD.	DATE

95% Submittal Not for Construction

PLANS PREPARED BY: RMC water and environment; Orie' Engineering

DIAL BEFORE YOU DIG — DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

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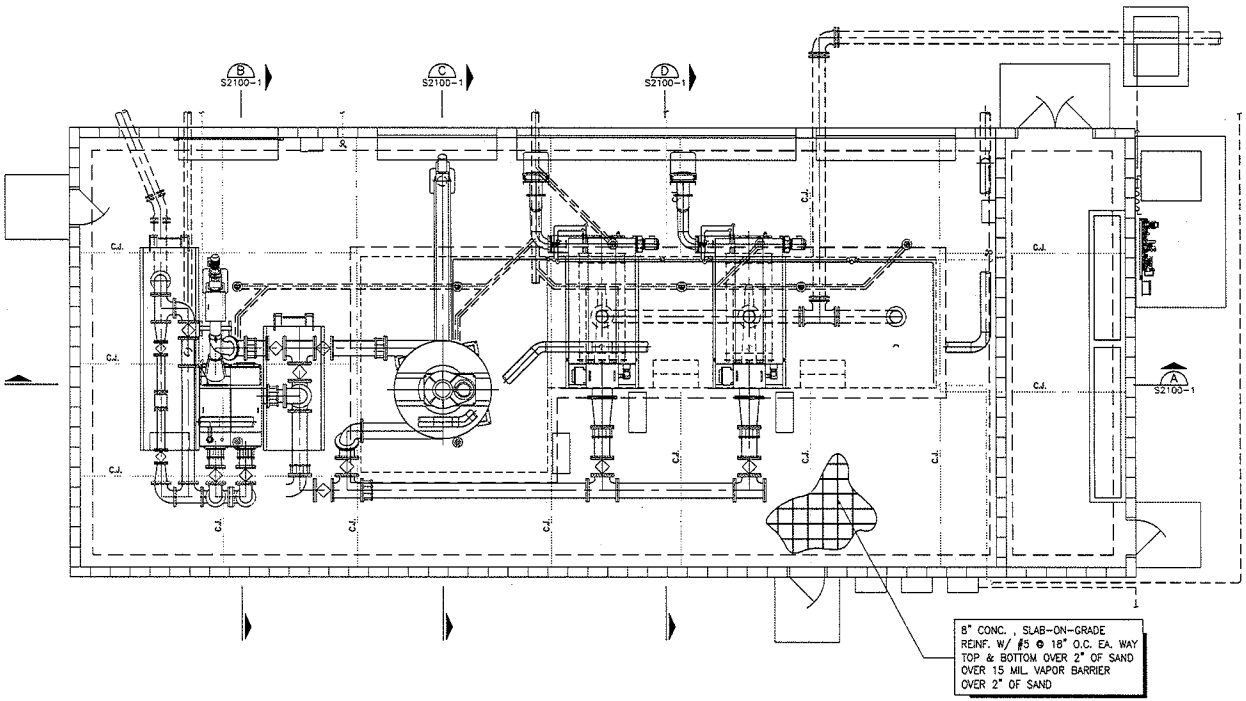

HEADWORKS
FOUNDATION PLAN
1/4" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HEADWORKS
FOUNDATION PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; One! Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E. J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE. NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY CADD	DATE		
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	
Plan No. S2000-1			Sheet _____ of XXX Sheets

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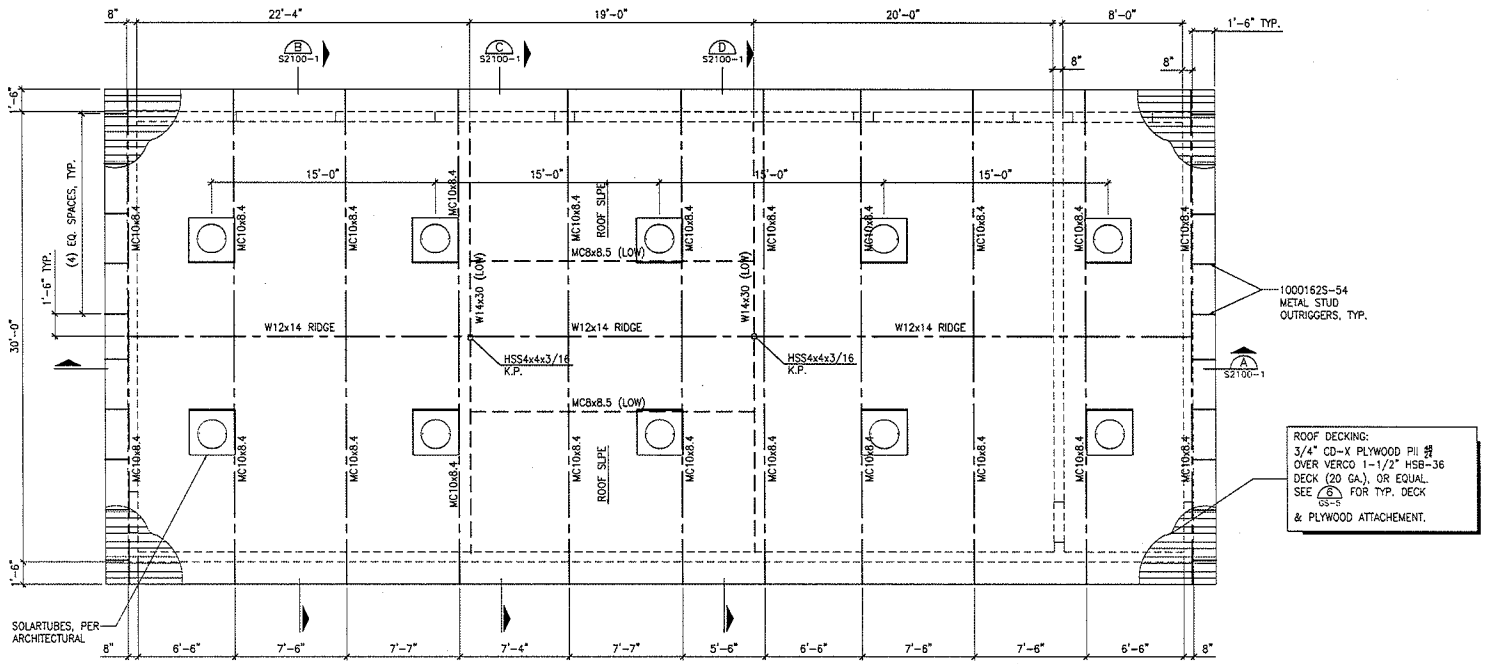

HEADWORKS
ROOF FRAMING PLAN
1/4" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HEADWORKS
ROOF FRAMING PLAN

DESIGNED BY: J. Orie	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE
DRAWN BY: CADD	DATE	AS SHOWN	XX-XX-14
CHECKED BY: D. Orie	DATE	PROJECT NUMBER 2036	

Plan No. S2000-2

Sheet _____ of XXX Sheets

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN EARLY, DIG RIGHT, YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING THE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; One' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

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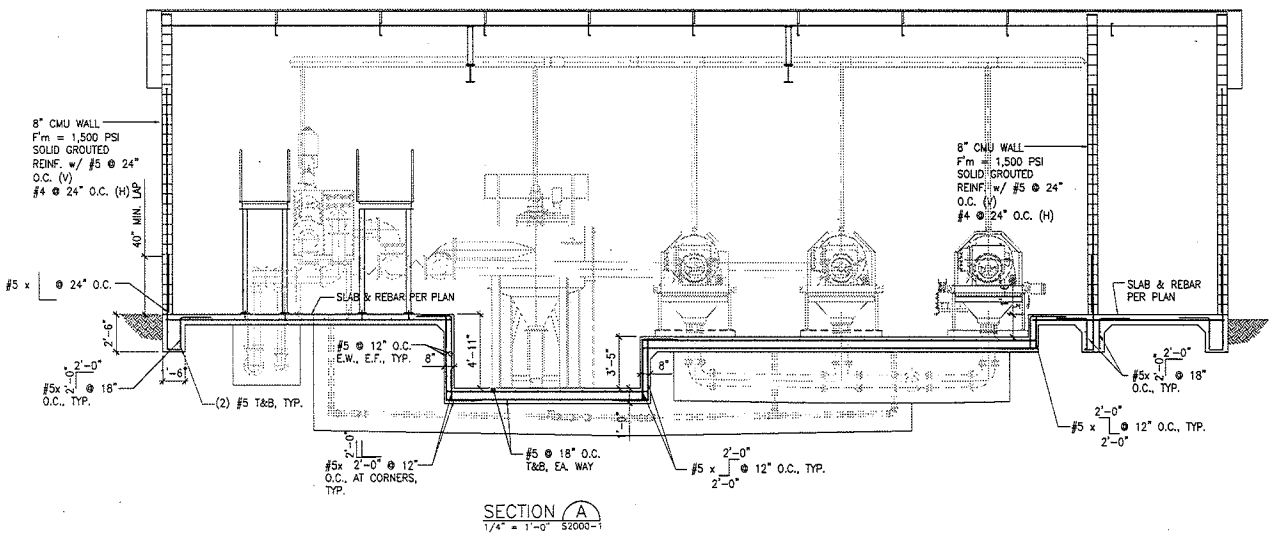
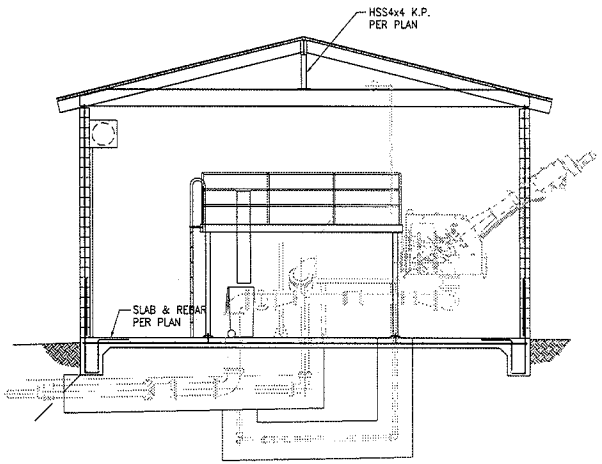
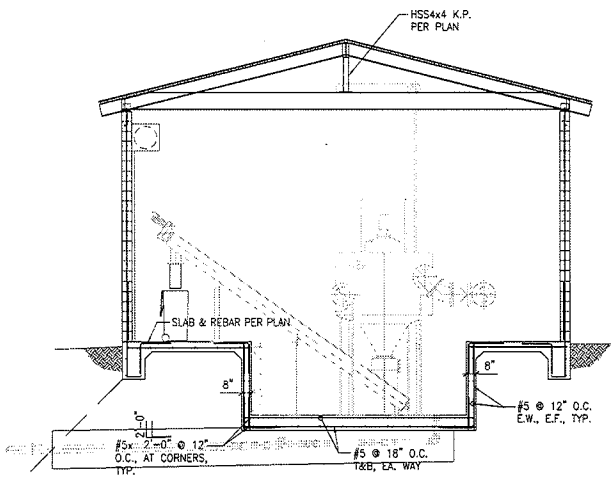


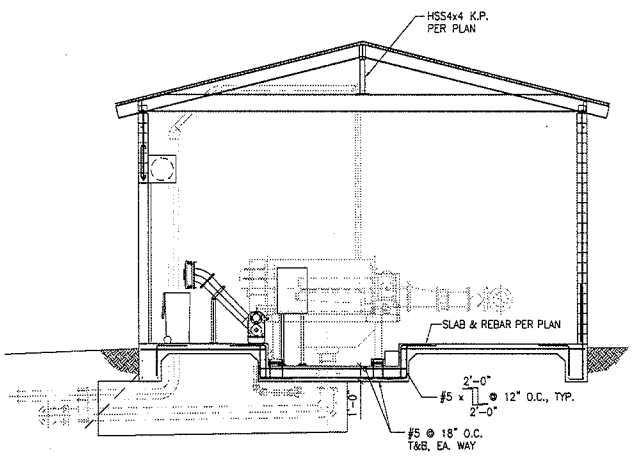
SECTION A
1/4" = 1'-0" S2000-1



SECTION B
1/4" = 1'-0" S2000-1



SECTION C
1/4" = 1'-0" S2000-1



SECTION D
1/4" = 1'-0" S2000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HEADWORKS
STRUCTURAL SECTIONS

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN AHEAD, ONLY ONE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING.
IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
Orin' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE	APPROVED BY: DATE
DRAWN BY CADD	DATE	AS SHOWN	XX-XX-14
CHECKED BY: D. Orie	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. S2000-3

Sheet _____ of XXX Sheets

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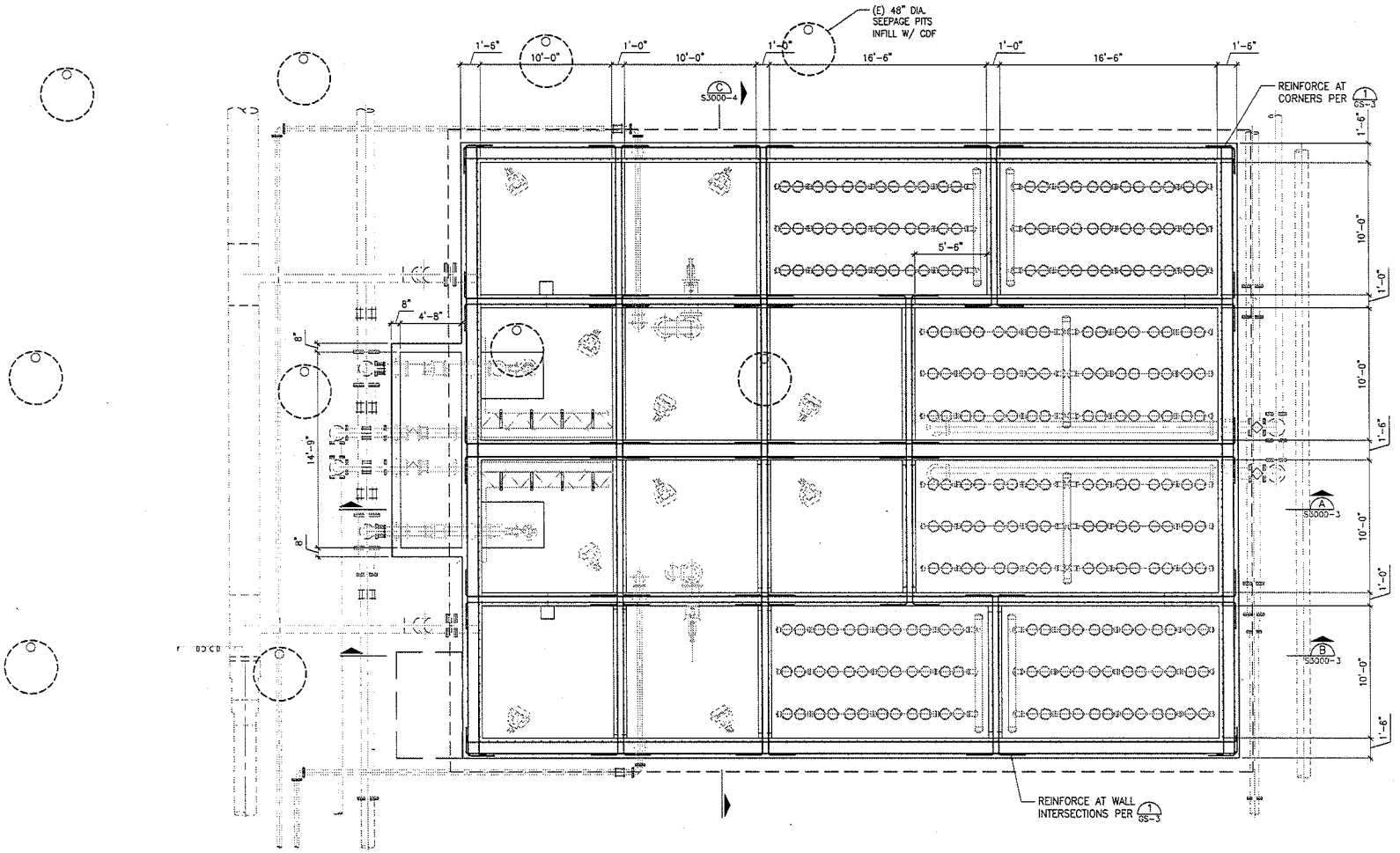

BIOLOGICAL REACTOR NO. 1
FOUNDATION PLAN
1/4" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BIOLOGICAL REACTOR NO. 1
FOUNDATION PLAN

DESIGNED BY: J. Orie — DATE
DRAWN BY: CADD — DATE
CHECKED BY: D. Orie — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036
APPROVED BY: — DATE: XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S3000-1
Sheet ____ of XXX Sheets

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN SAFE, DIG SAFE, YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Orie' Engineering

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NO.	REVISION	BY	CHKD.	DATE

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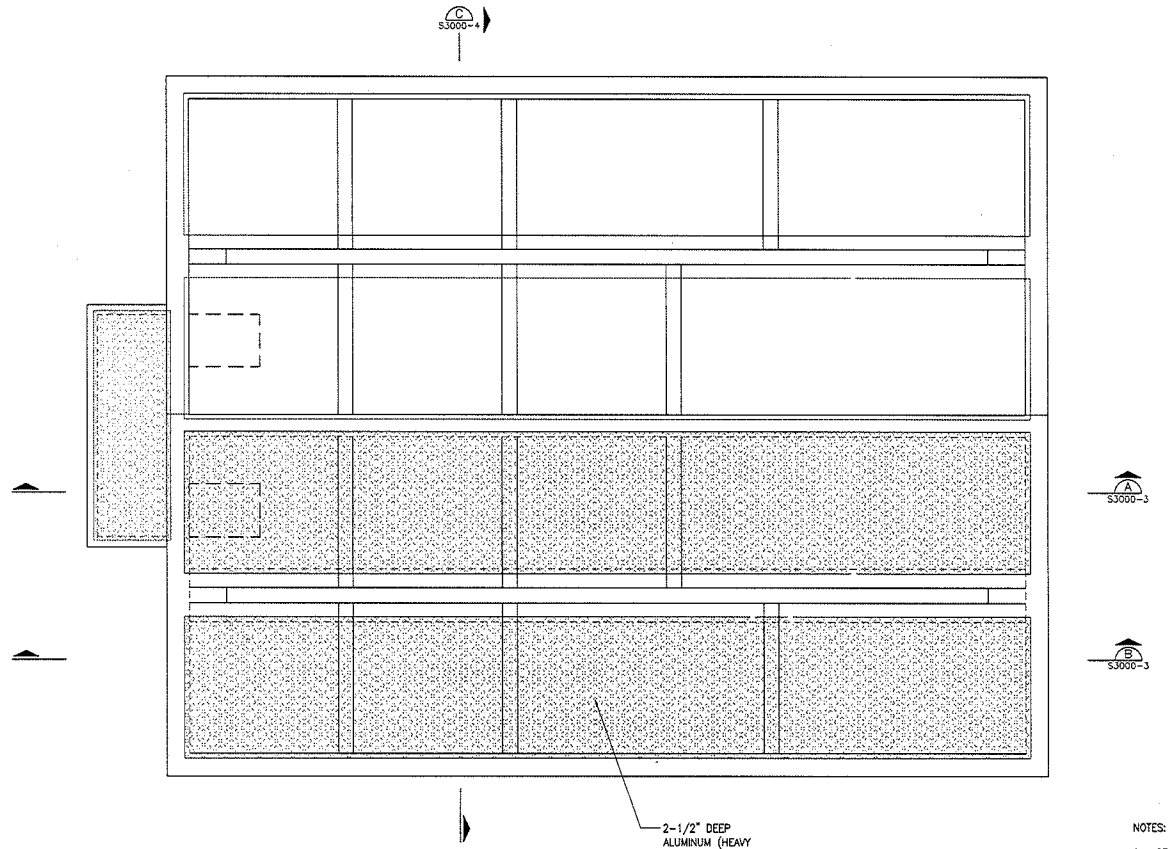

BIOLOGICAL REACTOR NO. 1
TOP PLAN
1/4" = 1'-0"

NOTES:

1. GRATING SHALL HAVE TWO HANDLES FOR EACH REMOVABLE SECTION. EACH REMOVABLE SECTION SHALL BE A MAXIMUM OF 80 LBS.

DIAL BEFORE YOU DIG
1-800-227-2600
DIGALERT

1" VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment
Orio Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BIOLOGICAL REACTOR NO. 1
TOP PLAN

DESIGNED BY	DATE	SCALE
J. Orie		
DRAWN BY	DATE	AS SHOWN
CADD		
CHECKED BY	DATE	PROJECT NUMBER
D. Orie		2036

APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S3000-2

Sheet _____ of XXX Sheets

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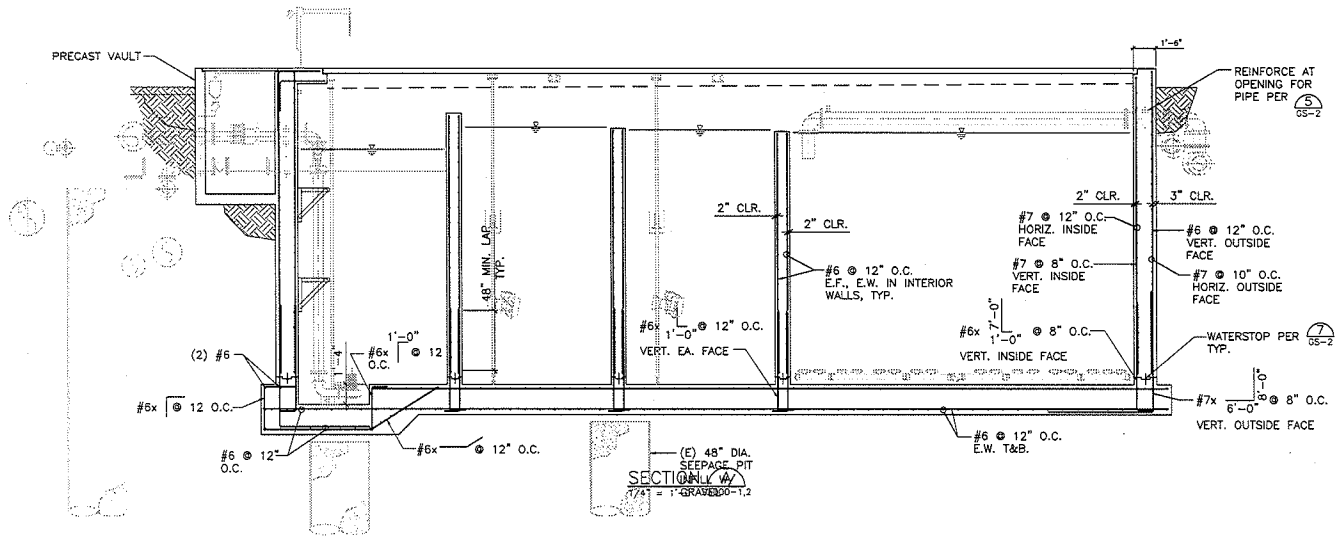

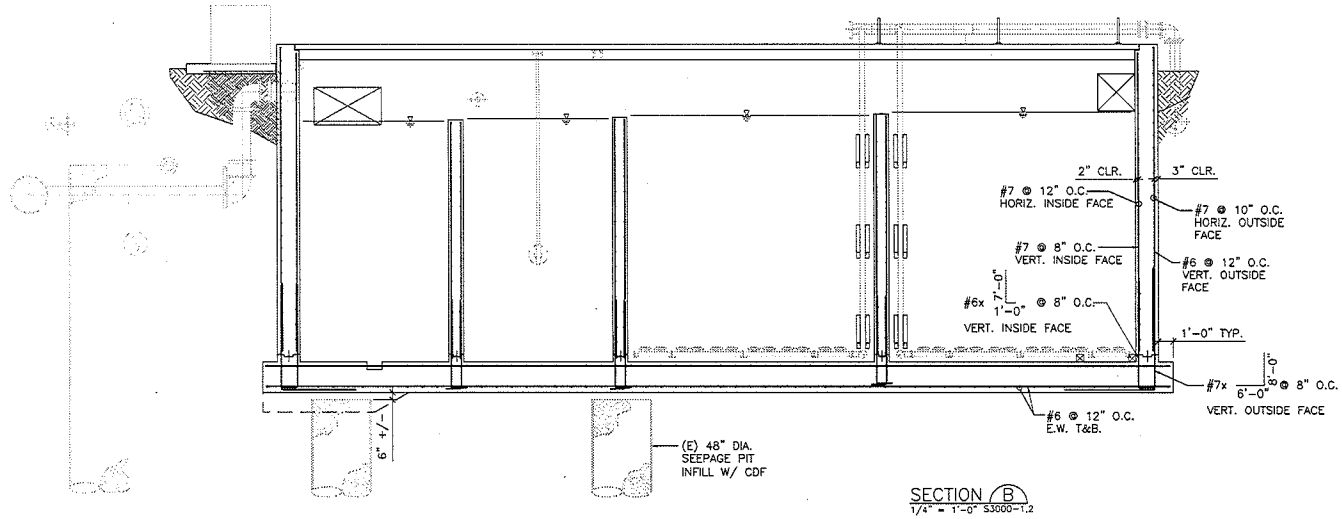

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BIOLOGICAL REACTOR NO. 1
SECTIONS-1

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Orie' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: J. Orie | DATE | SCALE: AS SHOWN
DRAWN BY: CADD | DATE
CHECKED BY: D. Orie | DATE | PROJECT NUMBER: 2036

APPROVED BY: | DATE: XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S3000-3

Sheet _____ of XXX Sheets

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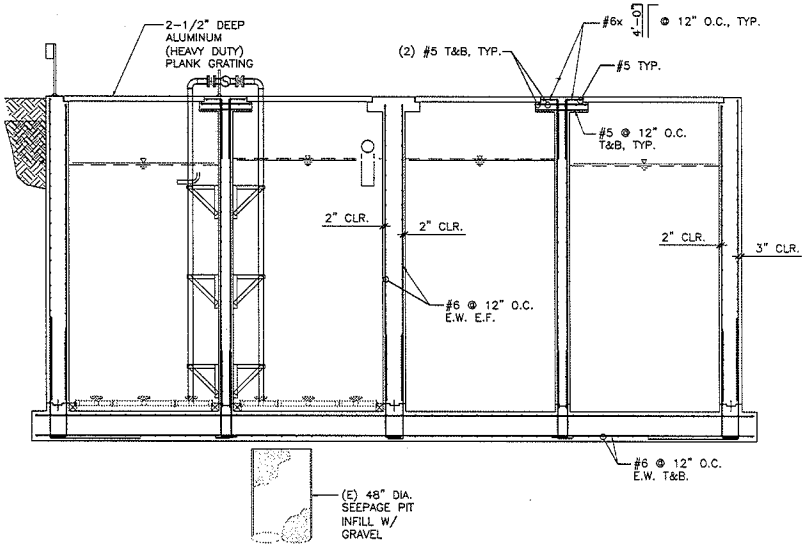

SECTION C
1/4" = 1'-0" S3000-1,2

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BIOLOGICAL REACTOR NO. 1
SECTIONS-2

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE. DIG RIGHT. YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NW & SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Onx' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE. NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY CADD	DATE		
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	

Plan No. S3000-4

Sheet _____ of XXX Sheets

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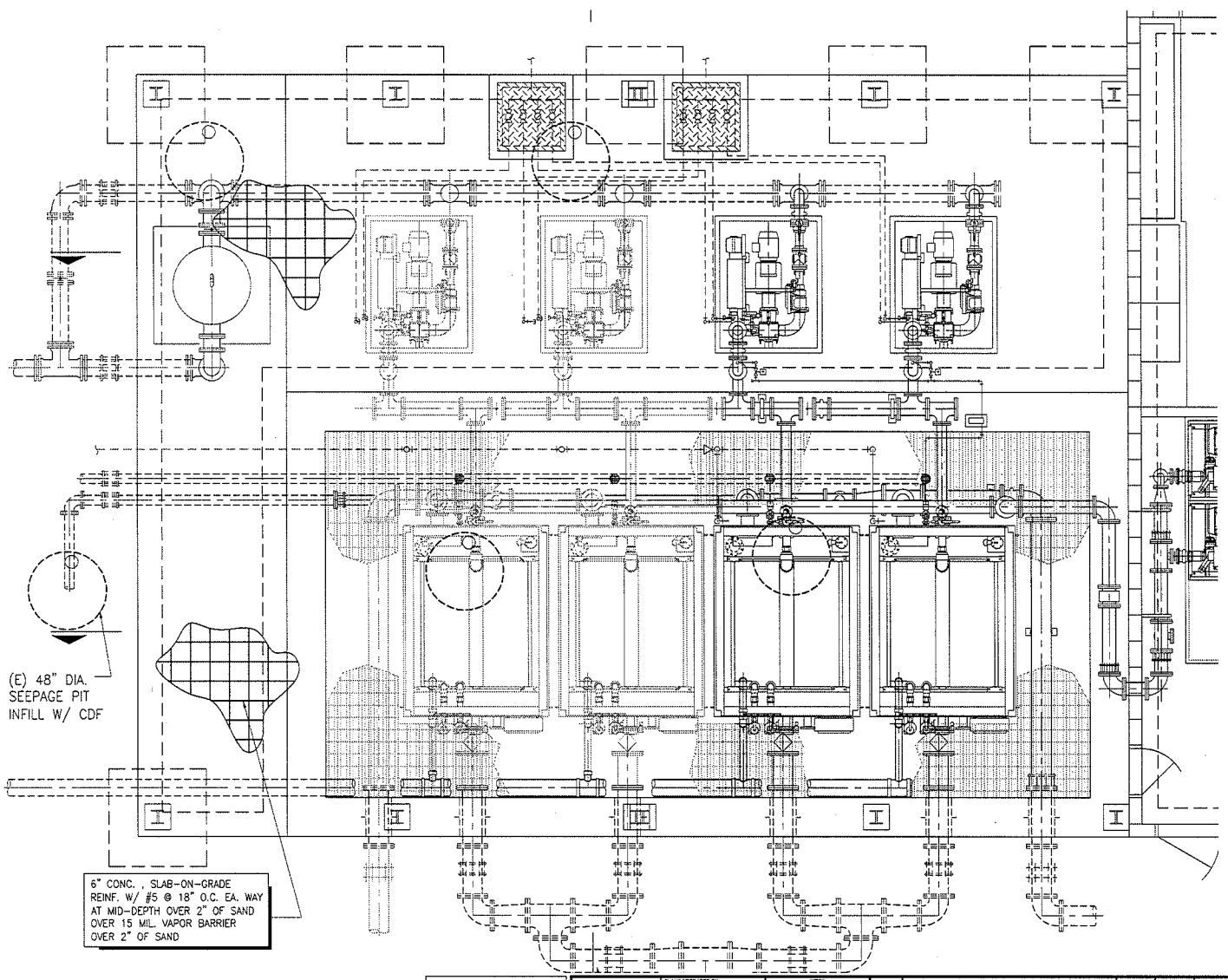

MEMBRANE TANK AREA
FOUNDATION PLAN
3/8" = 1'-0"

DIAL BEFORE YOU DIG
DIGALERT

— 1" VERIFY SCALES —
BAR IS ONE INCH
LONG ON FULL
SIZE DRAWING.
IF NOT ONE INCH
LONG ON THIS
DRAWING, ADJUST
SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment
Crie' Engineering

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CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA
FOUNDATION PLAN

DESIGNED BY J. Orie	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE. NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY CADD	DATE		
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	

Plan No. S4000-1

Sheet ____ of XXX Sheets

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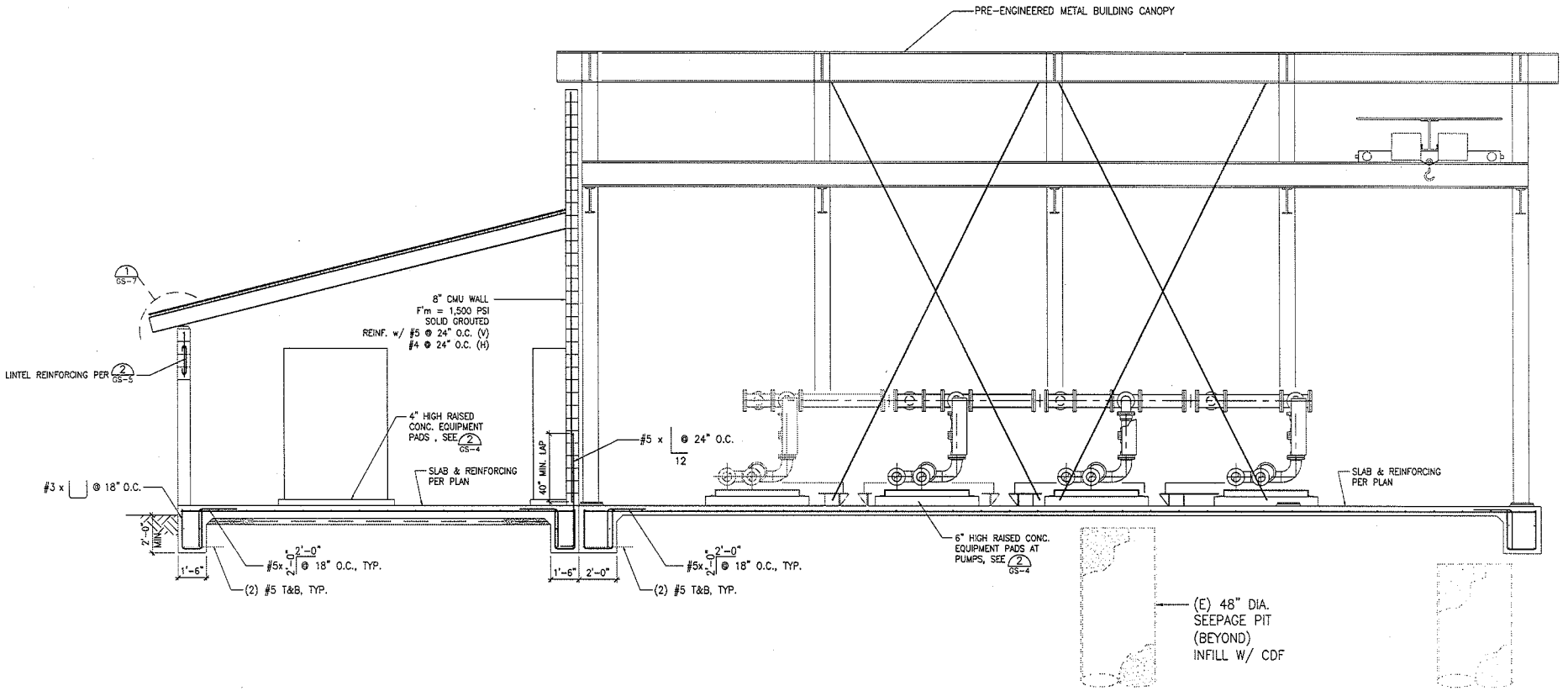


SECTION A
3/8" = 1'-0" S4000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE AREA & BLOWER AND ELECTRICAL STRUCTRUAL SECTIONS

DESIGNED BY J. Orie | DATE | SCALE AS SHOWN
DRAWN BY CADD | DATE
CHECKED BY D. Orie | DATE | PROJECT NUMBER 2036

APPROVED BY: | DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S4000-2 | Sheet ____ of XXX Sheets

NO.	REVISION	BY	CHKD.	DATE

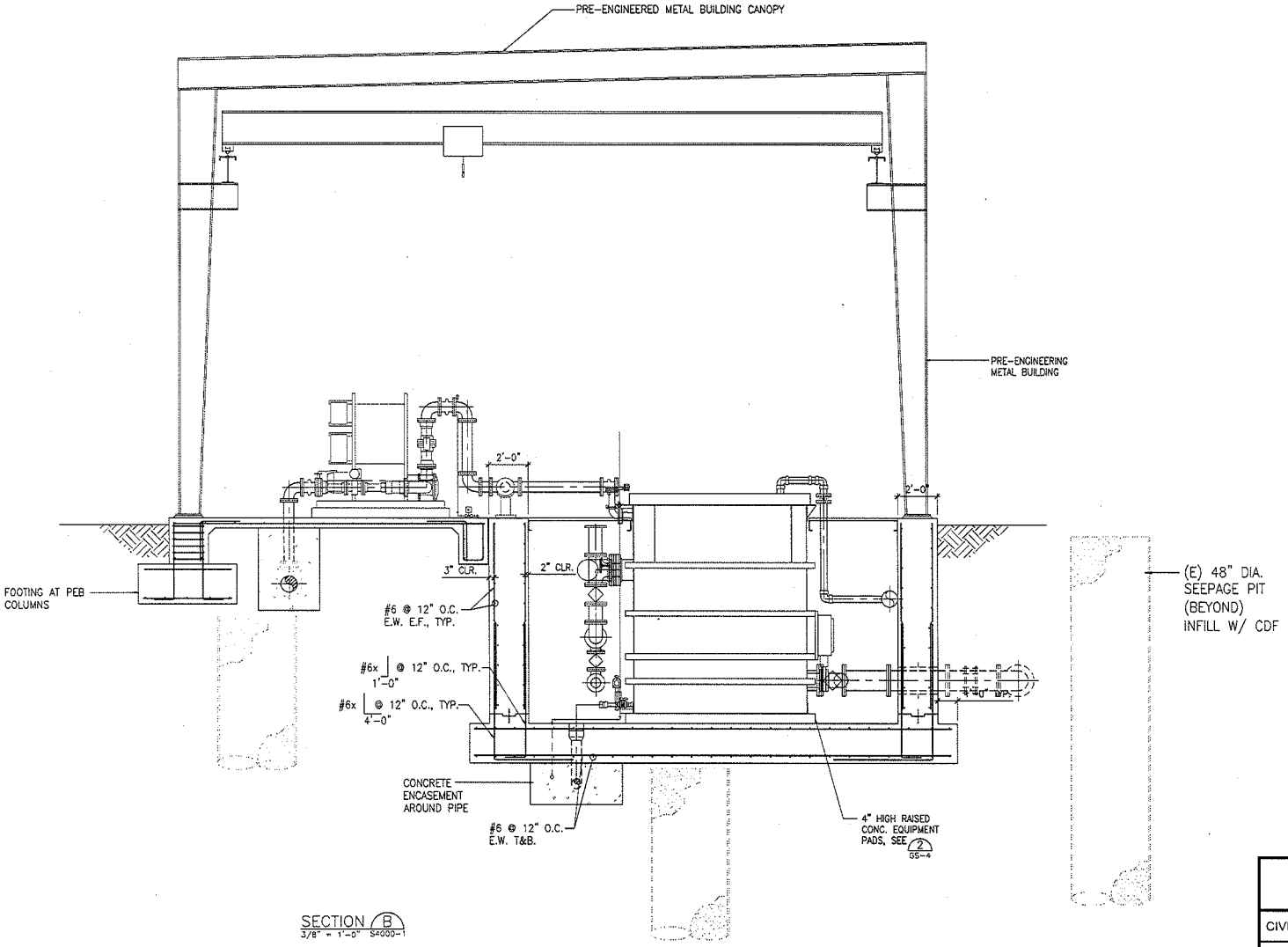
DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

"VERIFY SCALES" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY RMC water and environment; Orie' Engineering

95% Submittal Not for Construction

Last Saved By: Donald 3-26-14 03:49pm



SECTION B
3/8" = 1'-0" S4000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE AREA
STRUCTURAL SECTIONS

DESIGNED BY J. Orie | DATE | SCALE AS SHOWN
DRAWN BY CADD | DATE | XX-XX-14
CHECKED BY D. Orie | DATE | PROJECT NUMBER 2036

APPROVED BY: | DATE
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S4000-3

Sheet _____ of XXX Sheets

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Orie' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

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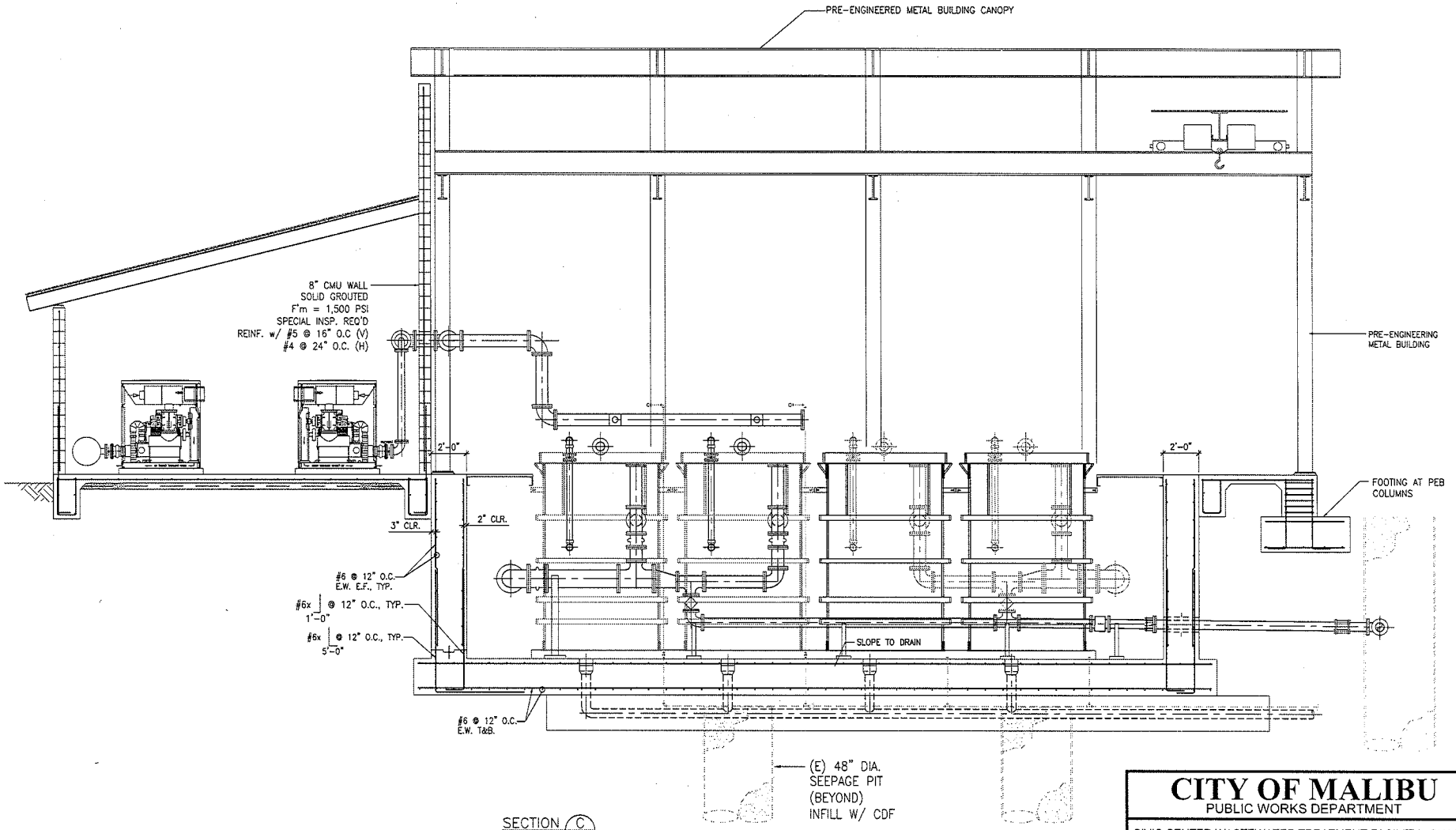

SECTION C
3/8" = 1'-0" S4000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE AREA
STRUCTURAL SECTIONS

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
MAY BE SAFE, ONLY IF YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING THE SOUTHERN CALIFORNIA COUNTIES

IF THIS BAR IS NOT ONE INCH LONG ON FULL SIZE DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
Orla' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orla	DATE	SCALE	APPROVED BY:
DRAWN BY CADD	DATE	AS SHOWN	DATE XX-XX-14
CHECKED BY D. Orla	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. S4000-4 | Sheet ____ of XXX Sheets

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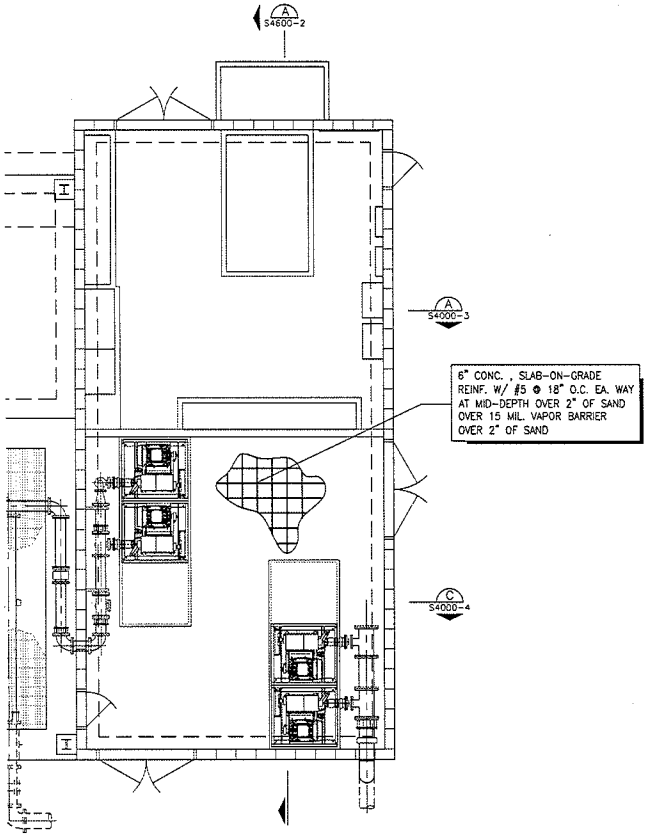
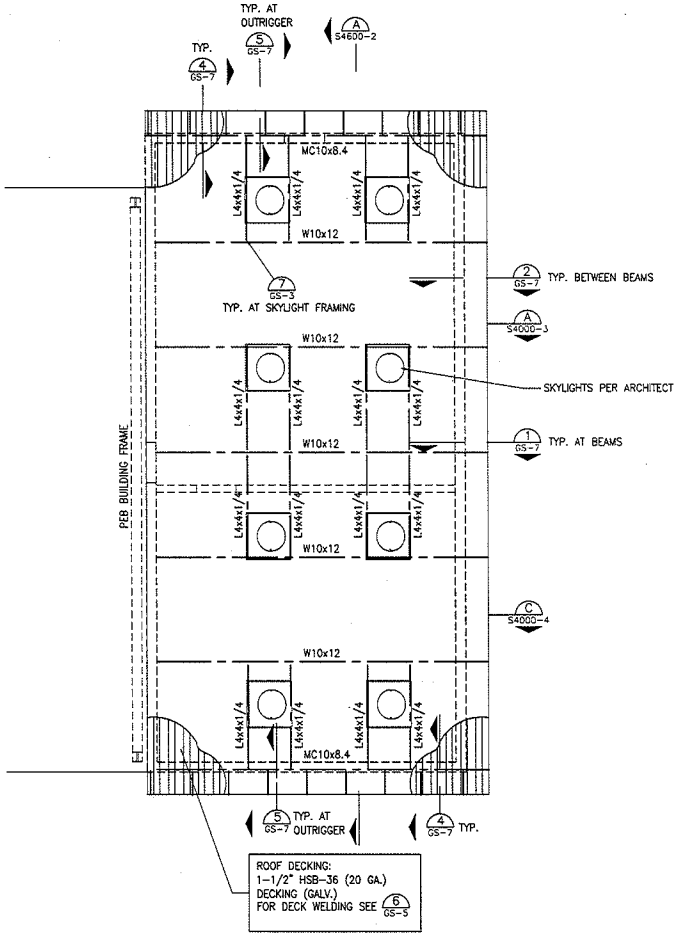


ELECTRICAL AND BLOWER BUILDING
FOUNDATION PLAN
1/4" = 1'-0"



ELECTRICAL AND BLOWER BUILDING
ROOF FRAMING PLAN
1/4" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BLOWER AND ELECTRICAL BUILDING
FOUNDATION AND ROOF FRAMING PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Onel Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie DATE
DRAWN BY CADD DATE
CHECKED BY D. One DATE
SCALE AS SHOWN
PROJECT NUMBER 2036
APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE. NO. 52102 EXP. 12/31/2014

Plan No. S4600-1

Sheet _____ of XXX Sheets

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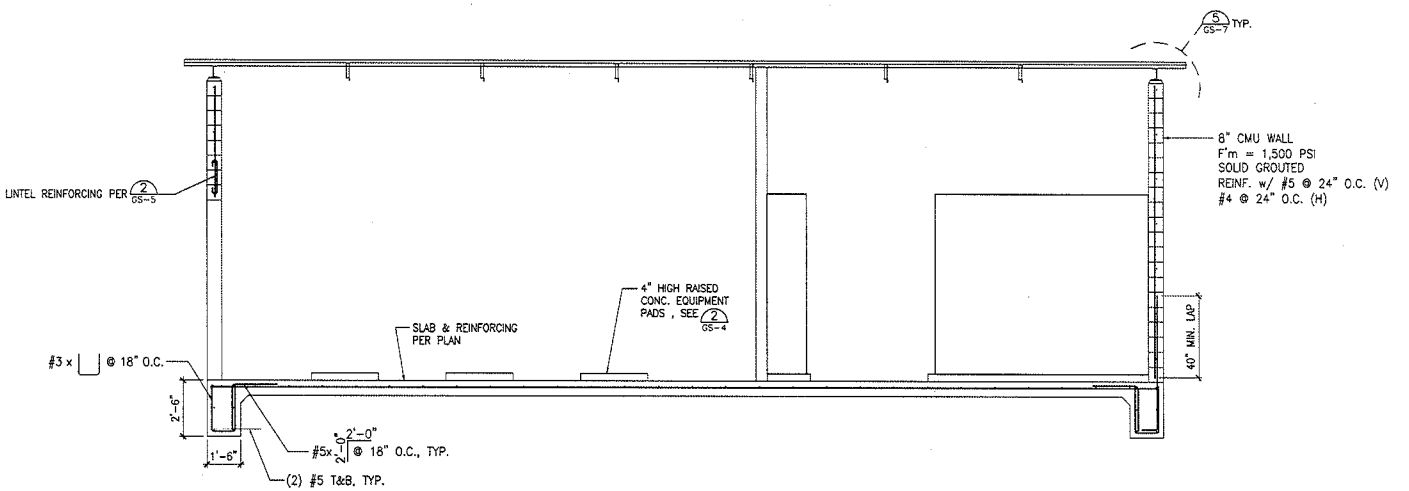

SECTION A
3/8" = 1'-0" M1000-1,2

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BLOWER AND ELECTRICAL BUILDING
STRUCTURAL SECTIONS

DIAL BEFORE YOU DIG
DIGALERT

VERIFY SCALES
BAR IS ONE INCH
LONG ON FULL
SIZE DRAWING.
IF NOT ONE INCH
LONG ON THIS
DRAWING, ADJUST
SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
Orie' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE
DRAWN BY CADD	DATE	AS SHOWN
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036

APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S4600-2

Sheet _____ of XXX Sheets

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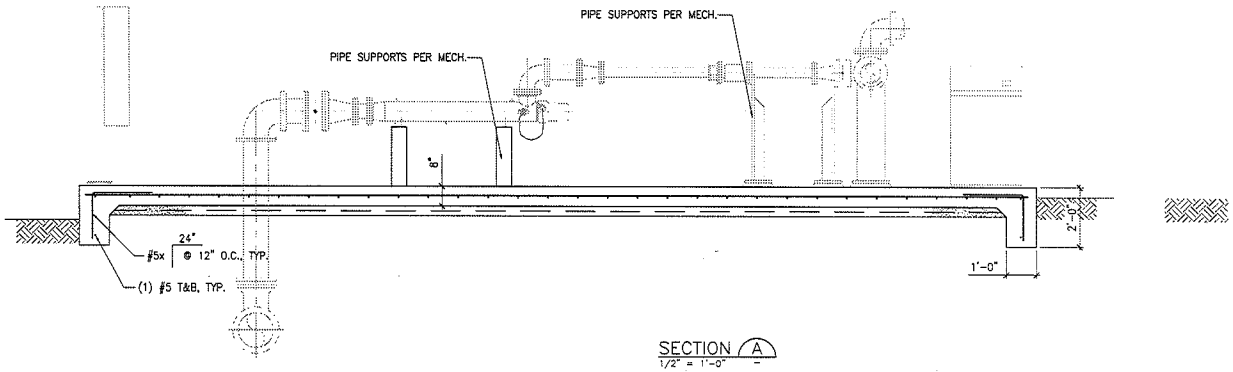
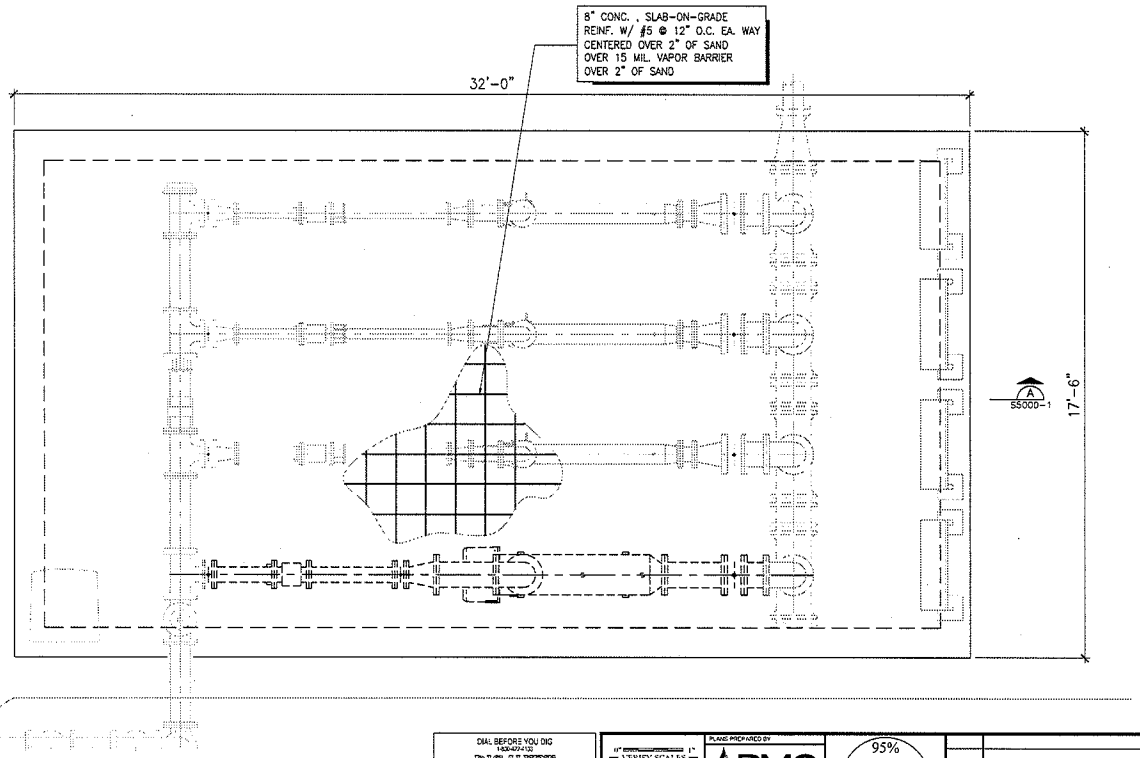


SECTION A
1/2" = 1'-0"



UV DISINFECTION AREA
FOUNDATION PLAN
1/2" = 1'-0"

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT

"VERIFY SCALES" — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment
Orc Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

UV DISINFECTION AREA
FOUNDATION PLAN AND STRUCTURAL SECTION

DESIGNED BY J. Orie	DATE	SCALE	APPROVED BY: DATE
DRAWN BY CADD	DATE	AS SHOWN	XX-XX-14
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. S5000-1

Sheet _____ of XXX Sheets

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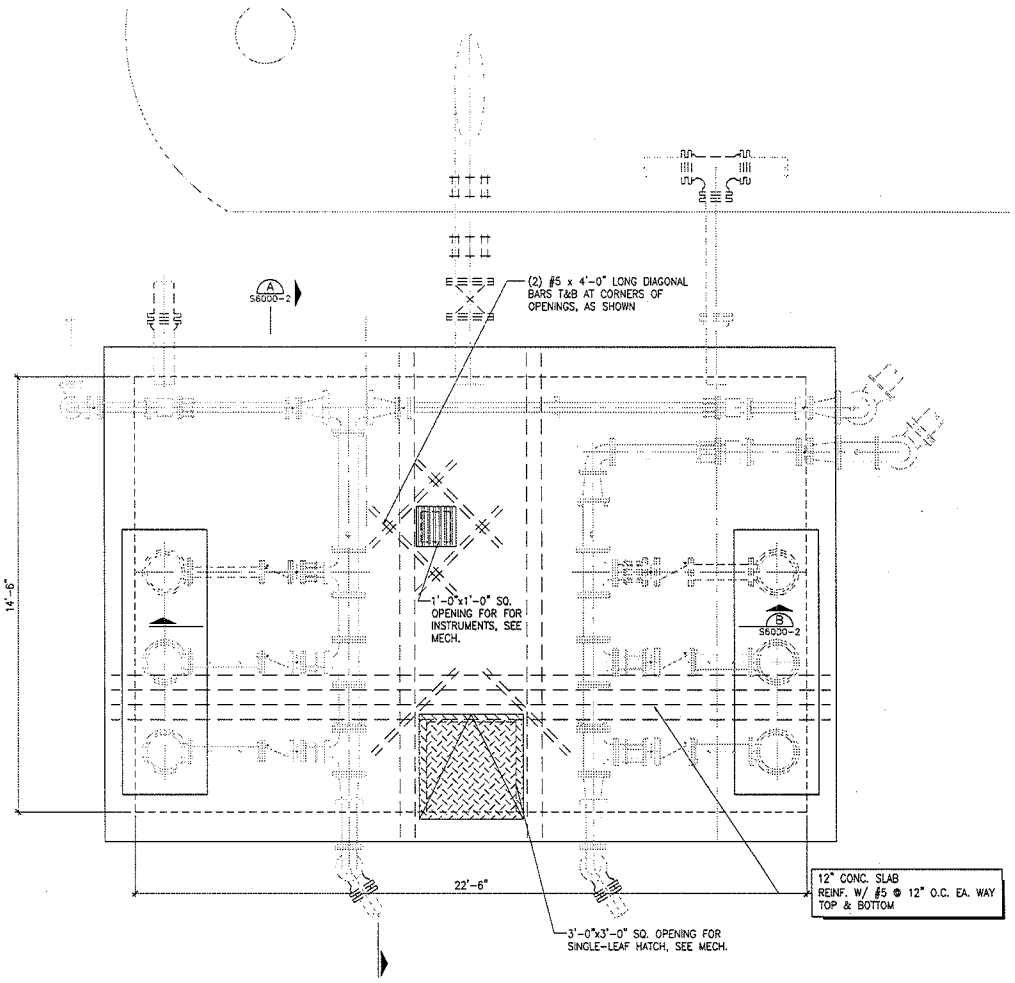
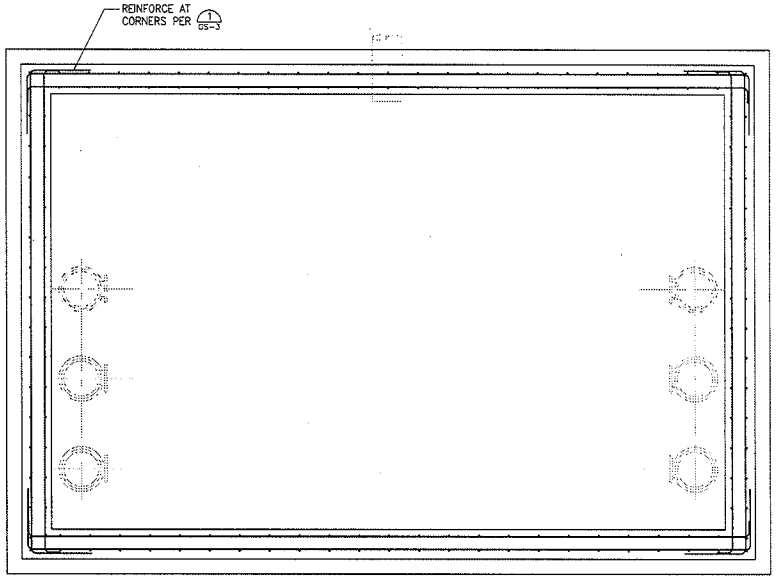


TOP PLAN
1/2" = 1'-0"



BOTTOM PLAN
1/2" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

RECYCLED WATER/UTILITY WATER/EFFLUENT PS
TOP & FOUDATION PLAN

DIAL BEFORE YOU DIG
DIGALERT

95% Submittal Not for Construction

PLANS PREPARED BY
RMC water and environment
Onel Engineering

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY CADD	DATE	AS SHOWN	DATE XX-XX-14
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	

Plan No. S6000-1

Sheet _____ of XXX Sheets

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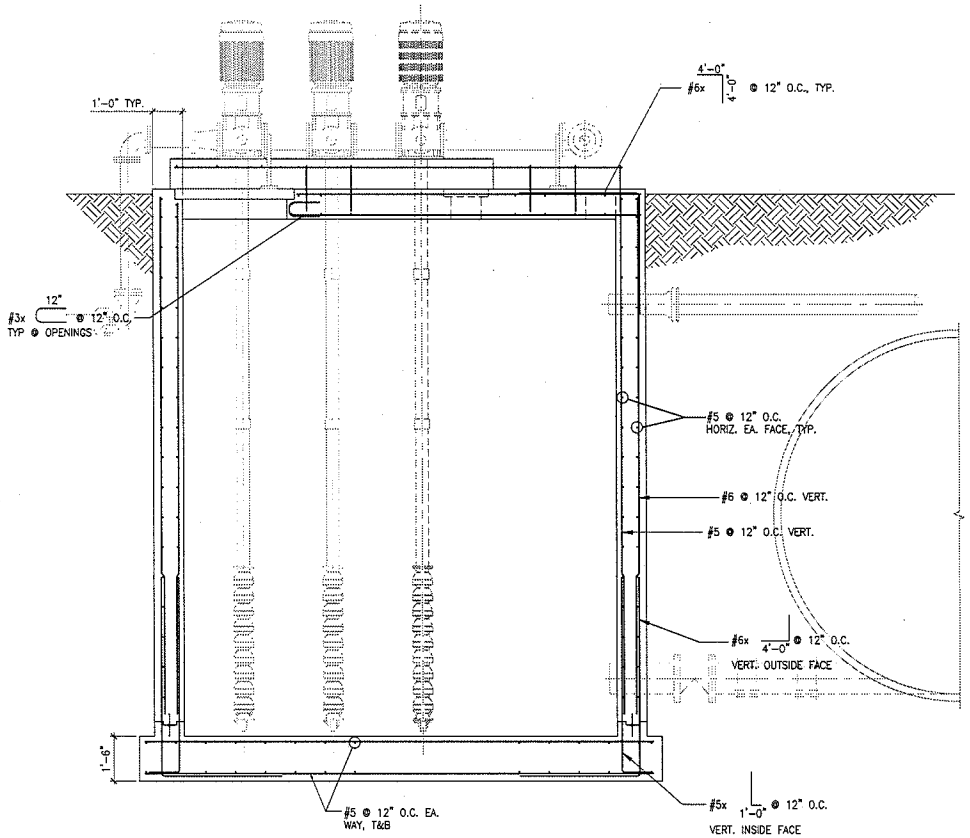

SECTION A
1/2" = 1'-0" S6000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

RECYCLED WATER/UTILITY WATER/EFFLUENT PS
STRUCTURAL SECTIONS

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT

VERIFY SCALES
BAR IS ONE INCH
LONG ON FULL
SIZE DRAWING.
IF NOT ONE INCH
LONG ON THIS
DRAWING, ADJUST
SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment
Orie' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE	APPROVED BY: DATE
DRAWN BY CADD	DATE	AS SHOWN	XX-XX-14
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. S6000-2

Sheet _____ of XXX Sheets

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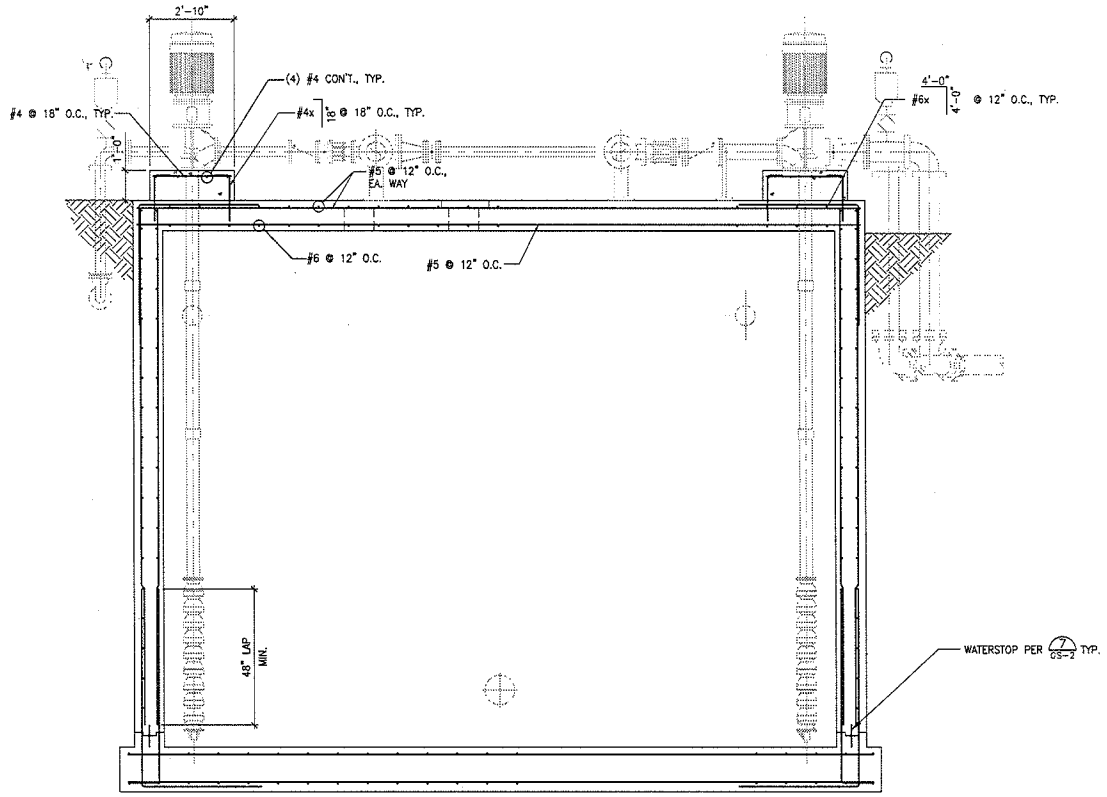

SECTION B
1/2" = 1'-0" S6000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

RECYCLED WATER/UTILITY WATER/EFFLUENT PS
STRUCTURAL SECTIONS

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

0" VERIFY SCALES 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment
Ore' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY CADD	DATE		DATE XX-XX-14
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	

Plan No. S6000-3

Sheet _____ of XXX Sheets

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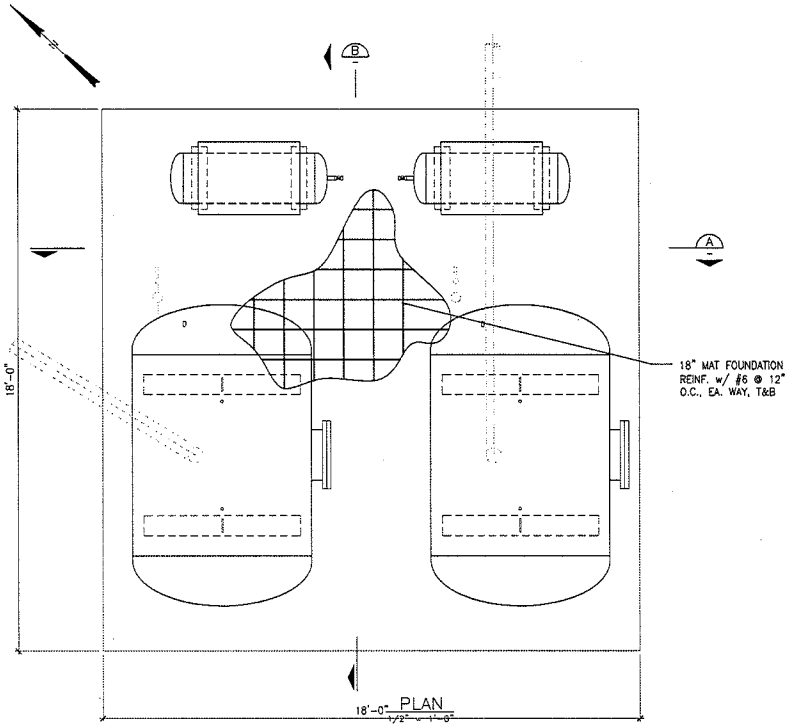
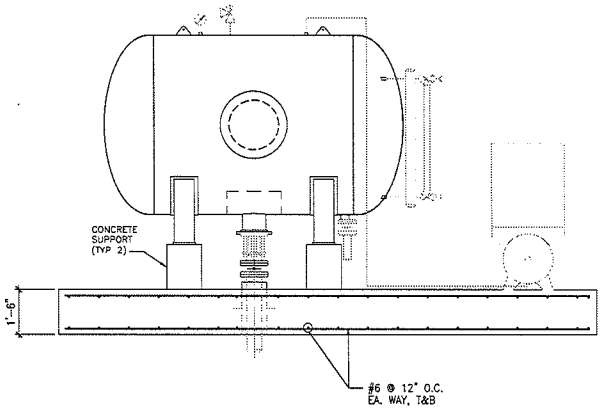
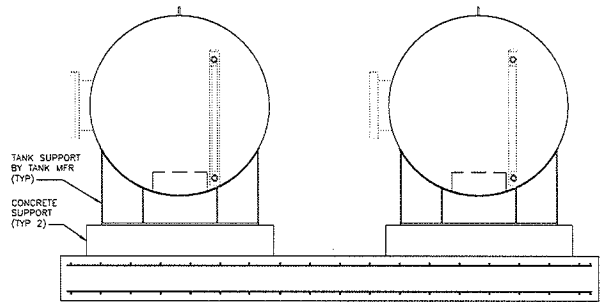




SECTION A
1/2" = 1'-0"



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

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HYDROPNEAUMATIC TANKS
STRUCTURAL PLAN AND SECTIONS

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT

VERIFY SCALES
BAR IS ONE INCH
LONG ON FULL
SIZE DRAWING.
IF NOT ONE INCH
LONG ON THIS
DRAWING, ADJUST
SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
One' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE. NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY CADD	DATE		
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	

Plan No. S6000-3 Sheet _____ of XXX Sheets

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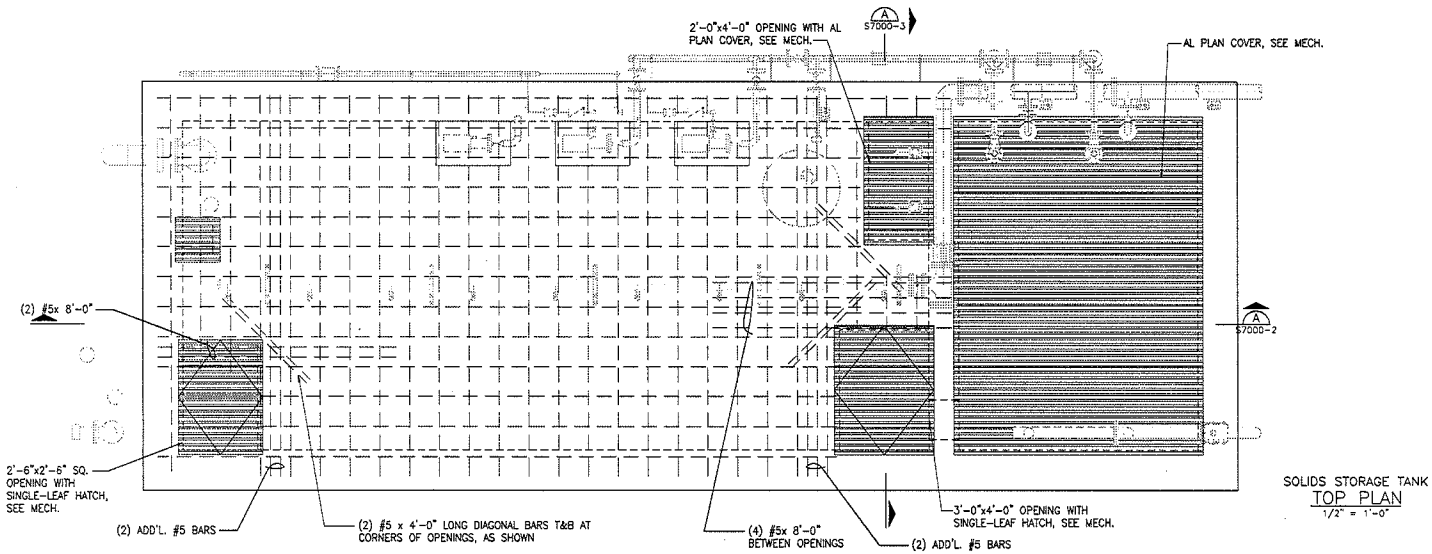
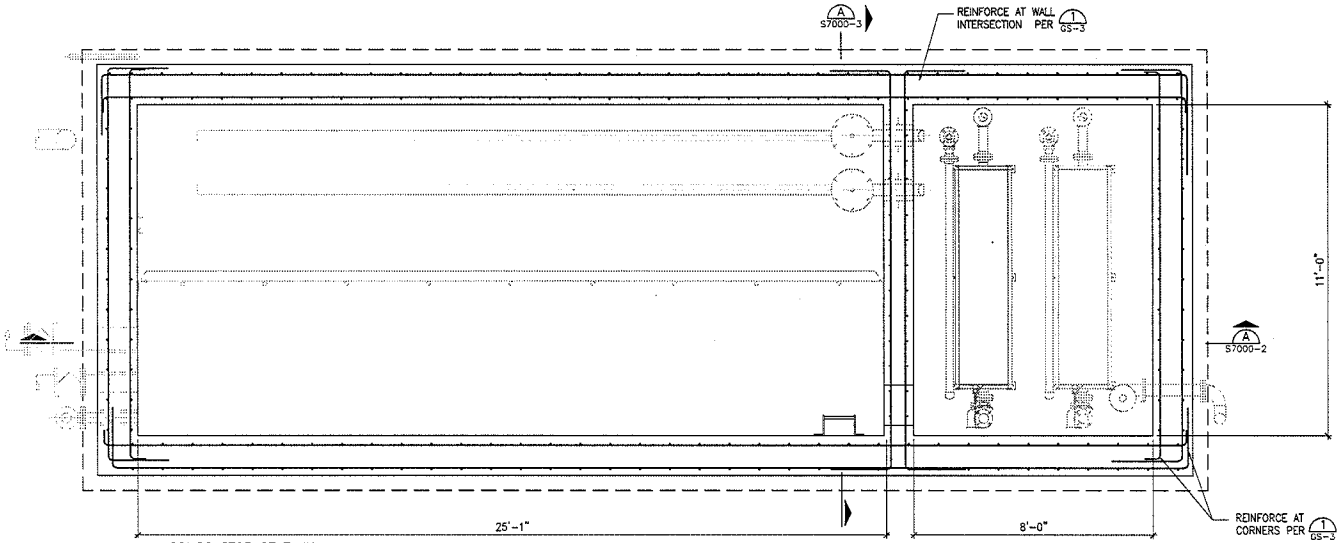


SOLIDS STORAGE TANK
TOP PLAN
1/2" = 1'-0"



SOLIDS STORAGE TANK
FOUNDATION PLAN
1/2" = 1'-0"

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment
Orie' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS STORAGE TANK
FOUNDATION & TOP PLAN

DESIGNED BY J. Orie	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE
DRAWN BY CADD	DATE		XX-XX-14
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	

Plan No. S7000-1

Sheet _____ of XXX Sheets

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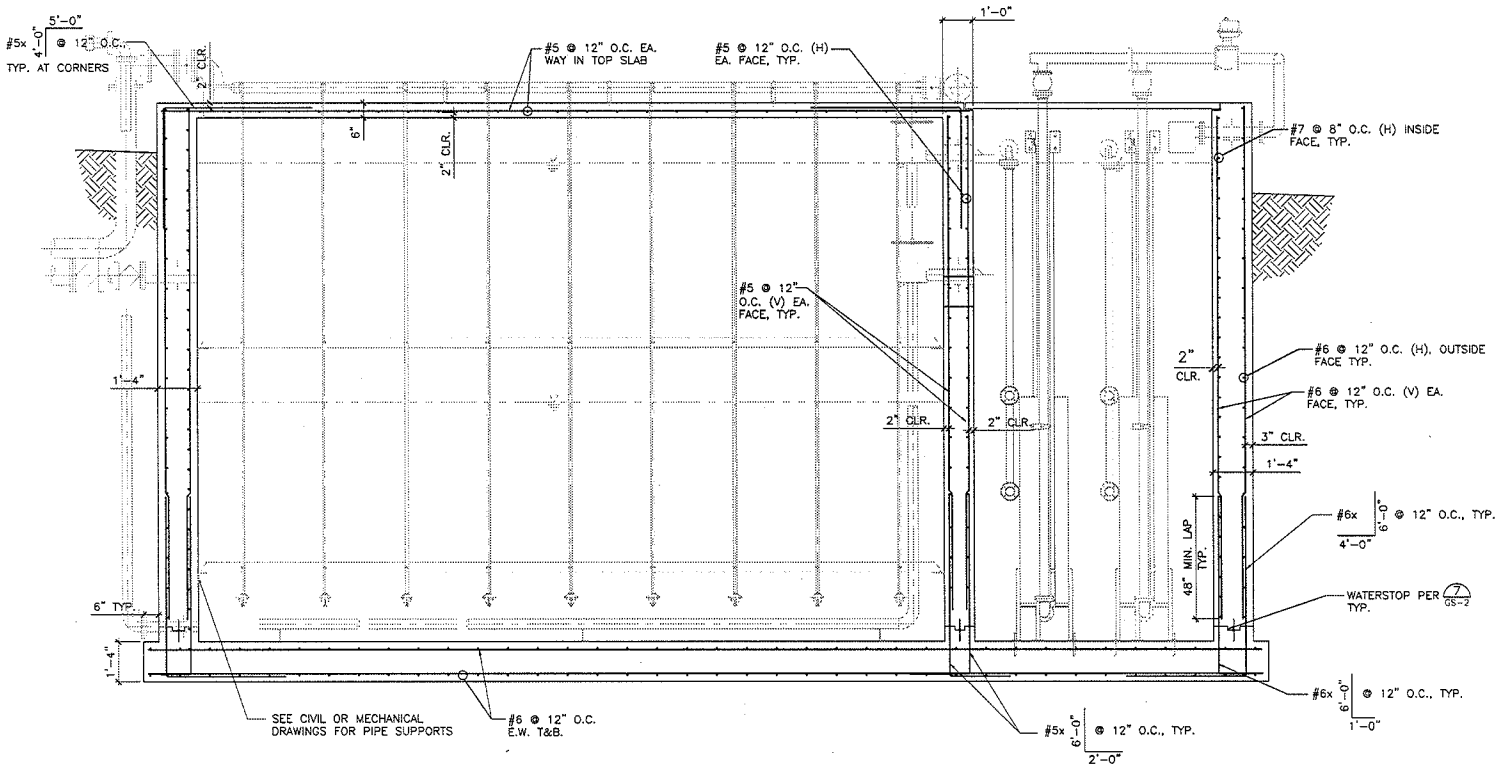

SECTION A
1/2" = 1'-0" S7000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS STORAGE TANK
STRUCTURAL SECTIONS

DIAL BEFORE YOU DIG 800-422-4133 — DIGALERT — MARK EXACT LOCATION OF YOUR PROPOSED EXCAVATION — ATTACH TWO WORKING DAYS PRIOR TO DIGGING — SERVING SOUTHERN CALIFORNIA

" VERIFY SCALES " 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Onil' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE AS SHOWN	APPROVED BY:	DATE
DRAWN BY CADD	DATE			XX-XX-14
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE. NO. 52102 EXP. 12/31/2014	

Plan No. S7000-2 — Sheet _____ of XXX Sheets

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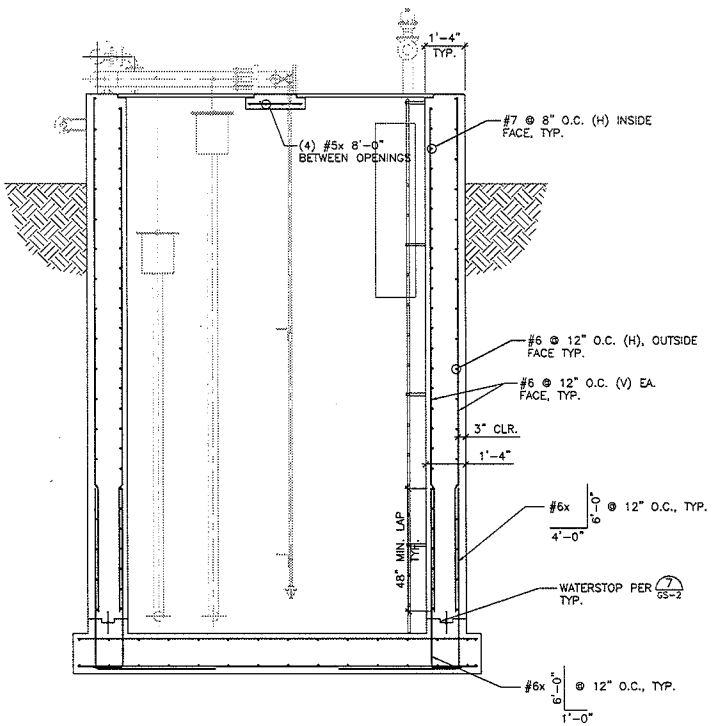

SECTION B
1/2" = 1'-0" S7000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS STORAGE TANK
STRUCTURAL SECTIONS

DIAL BEFORE YOU DIG
DIG ALERT

— VERIFY SCALES —
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
Orio' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-14
DRAWN BY: CADD	DATE		
CHECKED BY D. Orie	DATE	PROJECT NUMBER 2036	

Plan No. S7000-3

Sheet _____ of XXX Sheets

[File:K:\Civil 3D\07 006 S7000 3 7 26 14 01 Plans Donald_WIP\S's\S Bryce_S's\S Solids Bryce Sections S.prt]
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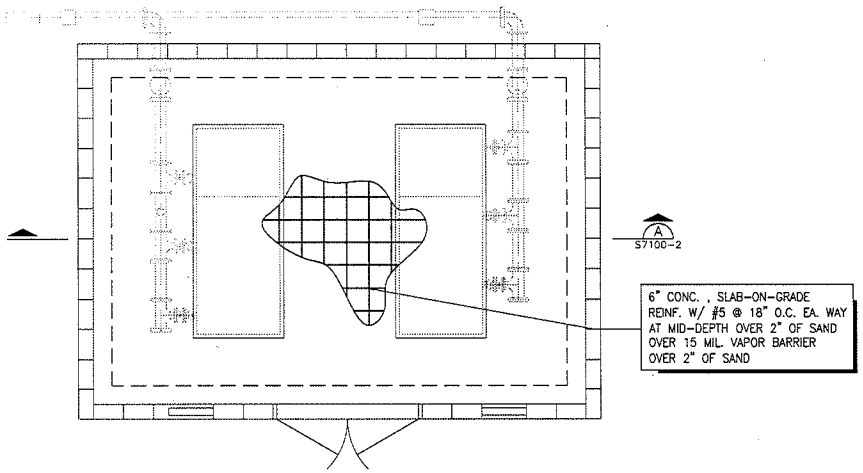
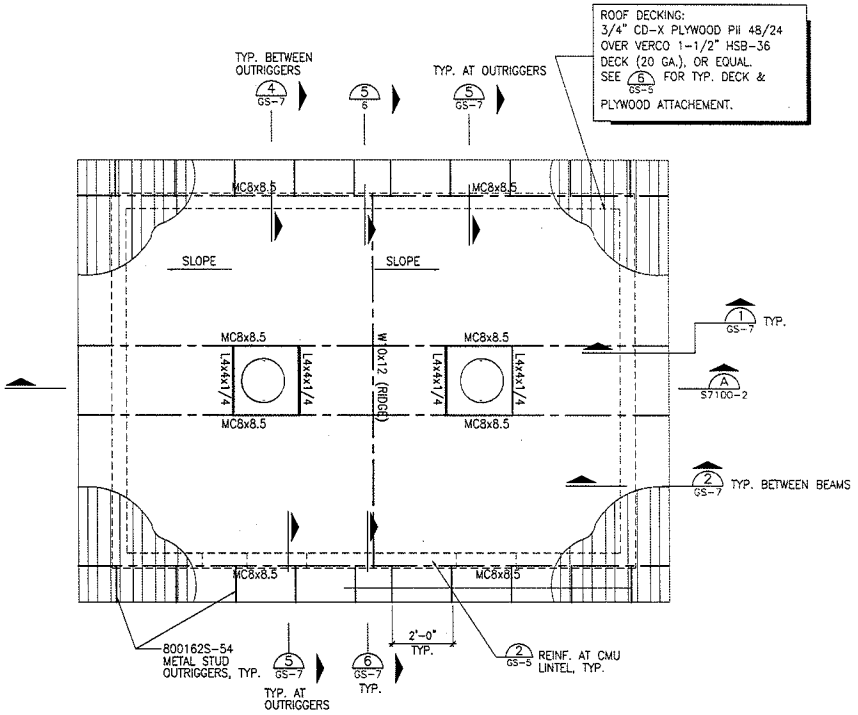


SOLIDS BUILDING
FOUNDATION PLAN
3/8" = 1'-0"



SOLIDS BUILDING
ROOF FRAMING PLAN
3/8" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS BUILDING
FOUNDATION & ROOF FRAMING PLANS

DIAL BEFORE YOU DIG 800-422-4133 DIGALERT

PLANS PREPARED BY: RMC water and environment; One' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orie DATE
DRAWN BY CADD DATE
CHECKED BY D. Orie DATE
SCALE AS SHOWN
PROJECT NUMBER 2036
APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E. I.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S7100-1

Sheet _____ of XXX Sheets

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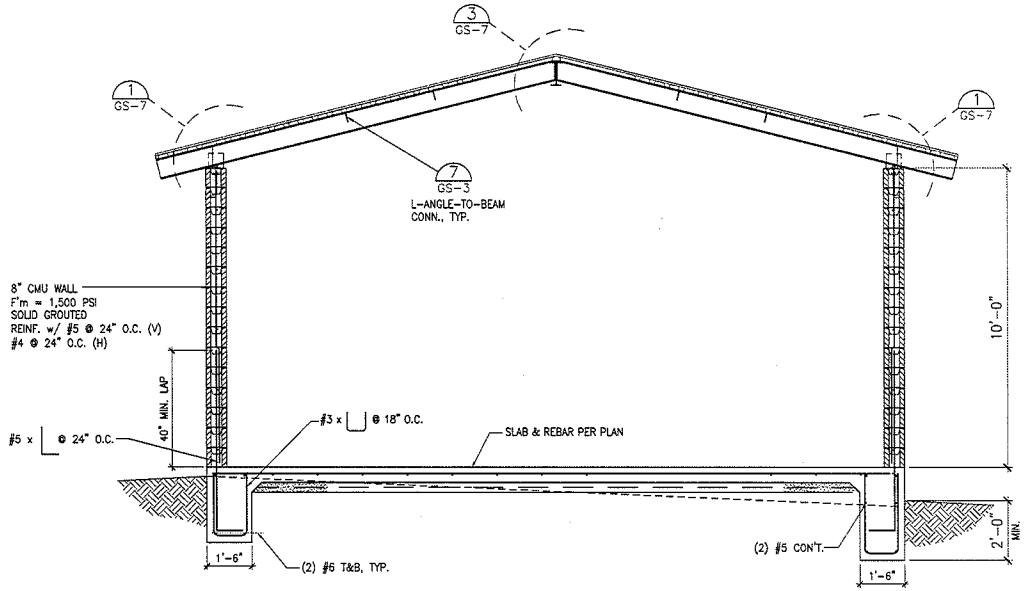

SECTION A
1/2" = 1'-0" S7100-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS BUILDING
STRUCTURAL SECTIONS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Orie' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: J. Orie — DATE
DRAWN BY: CADD — DATE
CHECKED BY: D. Orie — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036

Plan No. S7100-2

APPROVED BY: — DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Sheet _____ of XXX Sheets

S:\FILE\VAULT\27-006 S7100 2-28-14 01:56pm Donald B 30X42(1) X Wide 51 X 34in=Bond B 30X42(1) X Wide 51 X 34in=Bond.dwg 51 X

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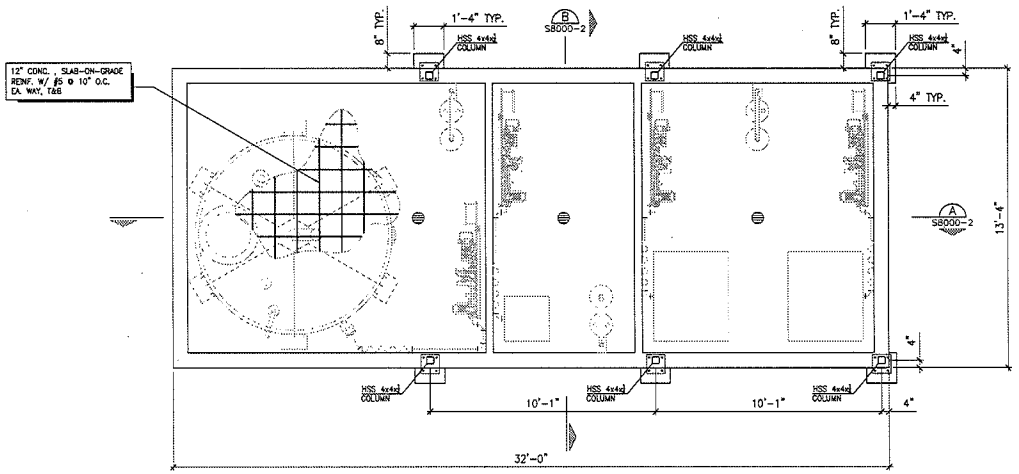
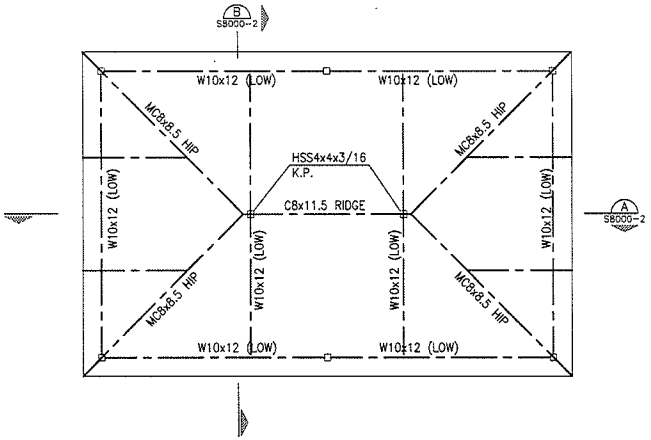


CHEMICAL AREA
FOUNDATION PLAN
3/8" = 1'-0"



CHEMICAL AREA
ROOF FRAMING PLAN
3/8" = 1'-0"

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IT SAFE. DIAL BEFORE YOU DIG!
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment
Orio' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CHEMCIAL AREA
FOUNDATION AND ROOF FRAMING PLANS

DESIGNED BY J. Orio	DATE	SCALE	APPROVED BY: DATE
DRAWN BY CADD	DATE	AS SHOWN	XX-XX-14
CHECKED BY D. Orio	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., I.D. PUBLIC WORKS DIRECTOR /CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. S8000-1 Sheet _____ of XXX Sheets

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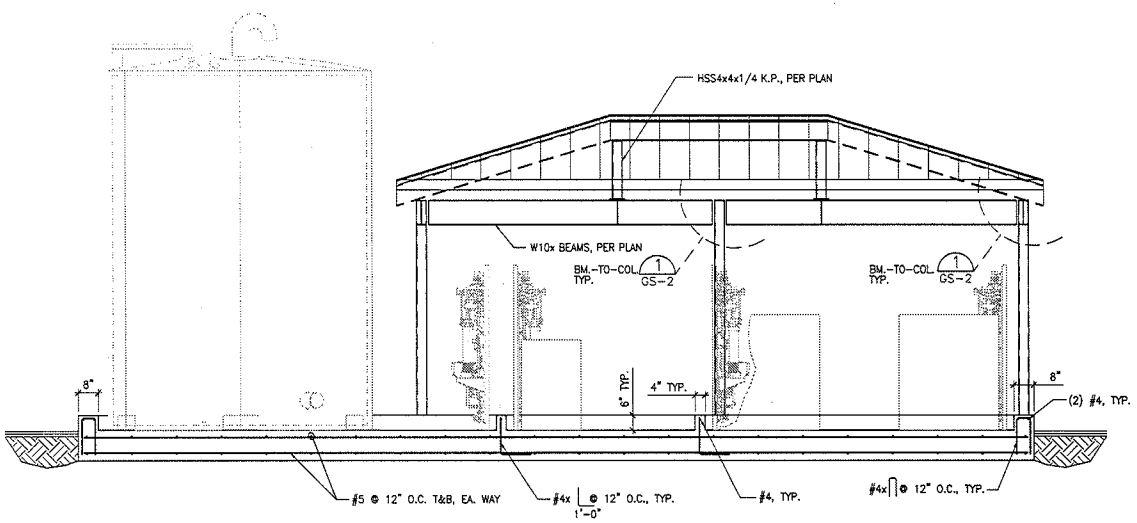
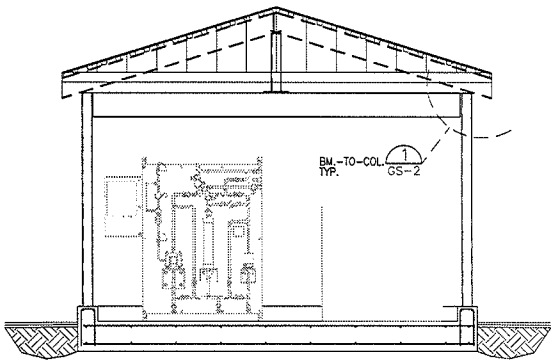


SECTION A
1/2" = 1'-0" S8000-1



SECTION B
1/2" = 1'-0" S8000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CHEMCIAL AREA
STRUCTURAL SECTIONS

DESIGNED BY J. Orie | DATE
DRAWN BY CADD | DATE
CHECKED BY D. Orie | DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036
APPROVED BY: | DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S8000-2
Sheet ____ of XXX Sheets

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

"VERIFY SCALES" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment
Orio' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

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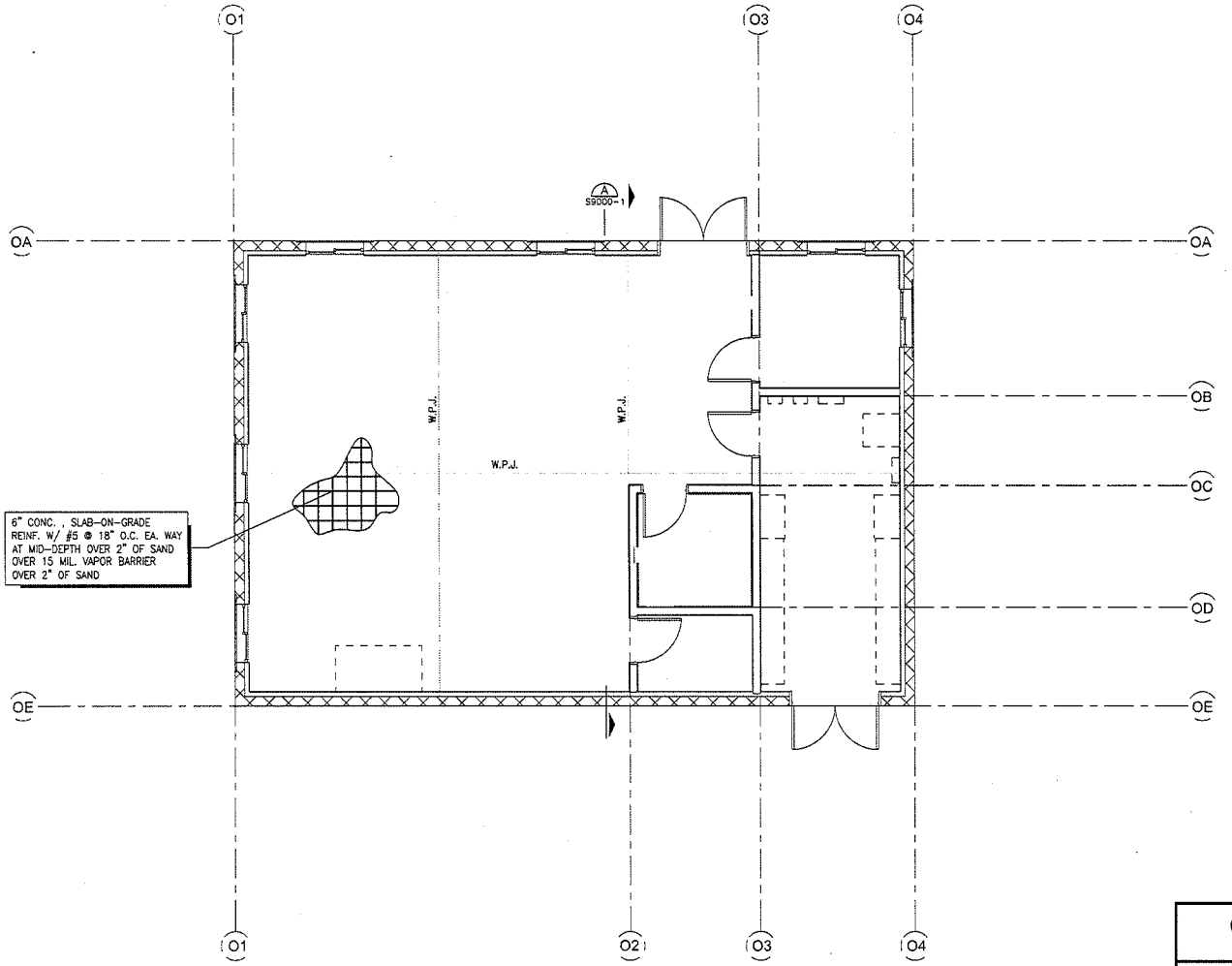


OPERATIONS BUILDING
FOUNDATION PLAN
1/4" = 1'-0"

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
Olin' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

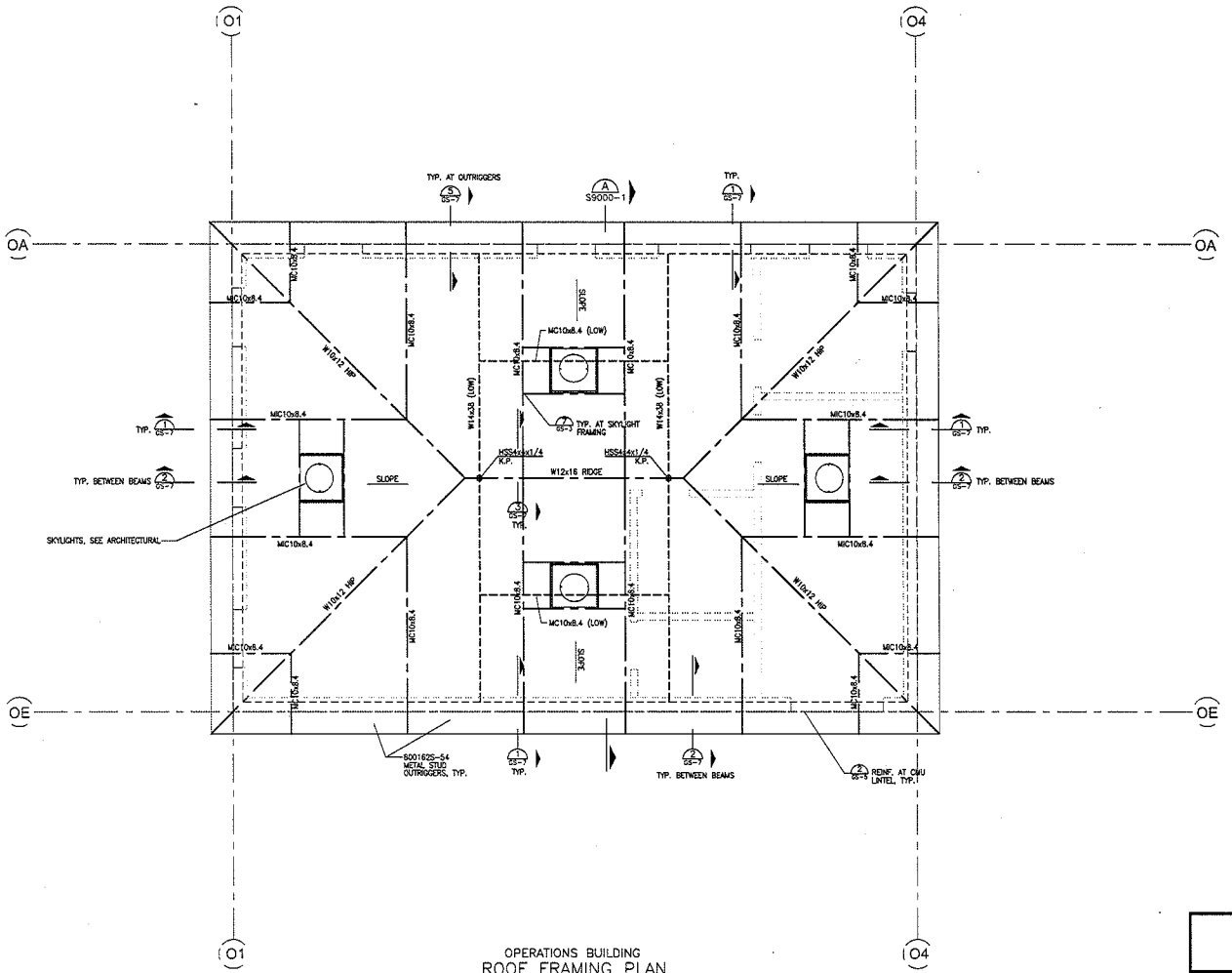
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

OPERATIONS BUILDING
FOUNDATION PLAN

DESIGNED BY: J. Orle	DATE	SCALE: AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: CADD	DATE		DATE: XX-XX-14
CHECKED BY: D. Orle	DATE	PROJECT NUMBER: 2036	

Plan No. S9000-1

Sheet _____ of XXX Sheets



OPERATIONS BUILDING
ROOF FRAMING PLAN
1/4" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

OPERATIONS BUILDING
ROOF FRAMING PLAN

DIAL BEFORE YOU DIG — DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Ole' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: J. Orie	DATE	SCALE: AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-14
DRAWN BY: CADD	DATE		
CHECKED BY: D. Orie	DATE	PROJECT NUMBER: 2036	

Plan No. S9000-2

Sheet ____ of XXX Sheets

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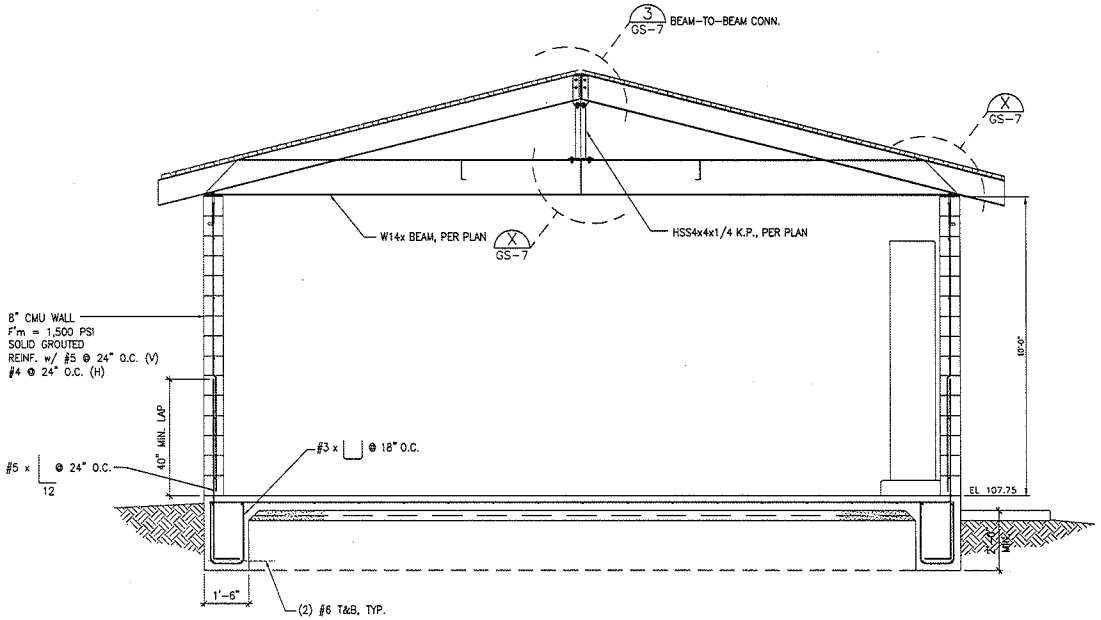


SECTION A
1/2" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

OPERATIONS BUILDING
STRUCTURAL SECTION

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment; Orio' Engineering

95% Submittal Not for Construction

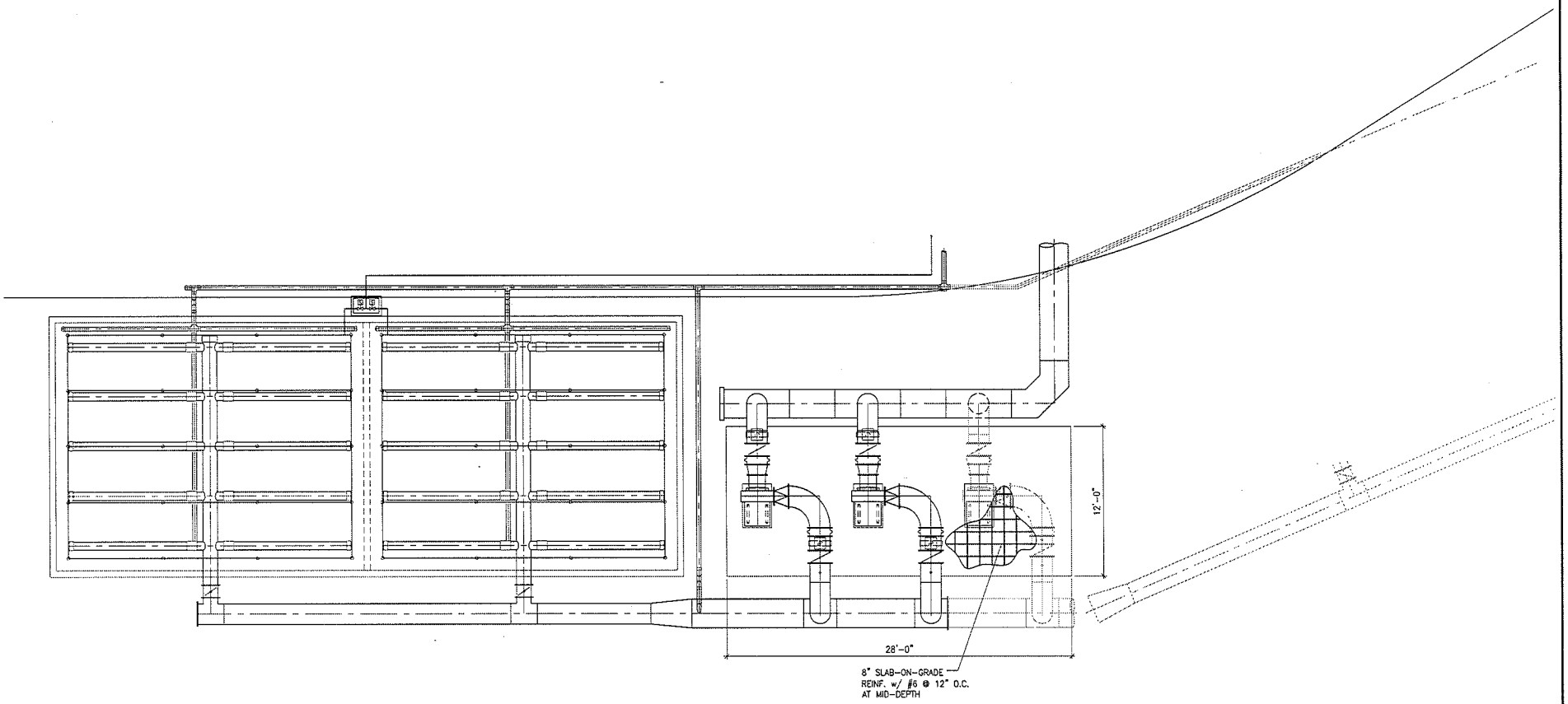
NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY J. Orio	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-14
DRAWN BY CADD	DATE	AS SHOWN	
CHECKED BY D. Orio	DATE	PROJECT NUMBER 2036	

Plan No. S9000-3 — Sheet ____ of XXX Sheets

F:\USERS\ME 0172\Doc\S9000-3 SB W 10-15pm Donuts\ 2036\FIG 3 Section A.dwg, 3/13/2014 10:57:57 AM, Donuts, 3:1 X Dimension Only, 3:1 X Dimension Only section B.pc

Last Saved By: Donuts 3-03-14 12:57pm



UPPER AREA ODOR BEDS AND FANS
FOUNDATION PLAN
1/4" = 1'-0"

DIAL BEFORE YOU DIG
DIGALERT
SERVING THE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
Orie' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

UPPER AREA ODOR BEDS & FANS
FOUNDATION PLAN

DESIGNED BY: J. Orie	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-14
DRAWN BY: CADD	DATE	AS SHOWN	
CHECKED BY: D. Orie	DATE	PROJECT NUMBER 2036	

Plan No. S9100-1

Sheet _____ of XXX Sheets

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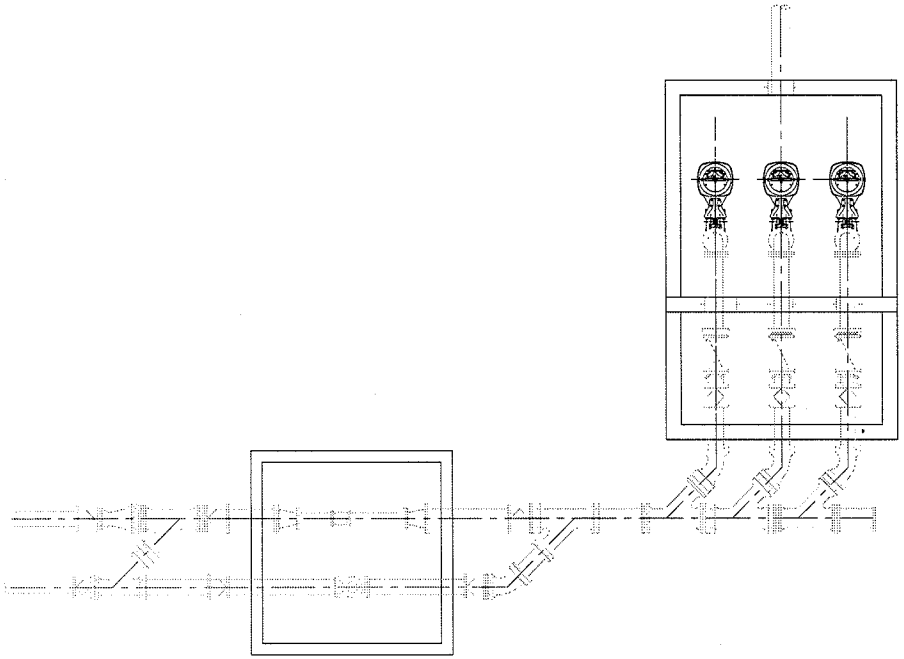
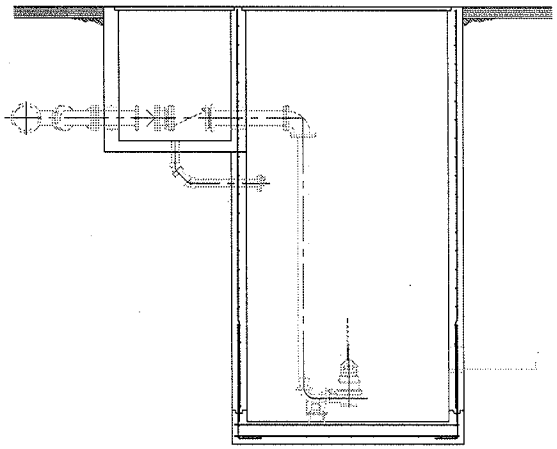
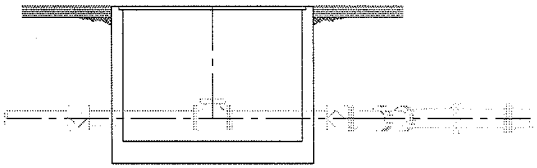


CIVIC CENTER WAY LIFT STATION
FOUNDATION PLAN
3/8" = 1'-0"



SECTION A
3/8" = 1'-0" S9200-1



SECTION B
3/8" = 1'-0" S9200-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIC CENTER WAY LIFT STATION
FOUNDATION PLAN & SECTIONS

DIAL BEFORE YOU DIG
DIGALERT

VERIFY SCALES
BAR IS ONE INCH
LONG ON FULL
SIZE DRAWING.
IF NOT ONE INCH
LONG ON THIS
DRAWING, ADJUST
SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
Orle' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: J. Orle — DATE
DRAWN BY: CADD — DATE
CHECKED BY: D. Orle — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036

APPROVED BY: — DATE
XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S9200-1

Sheet _____ of XXX Sheets

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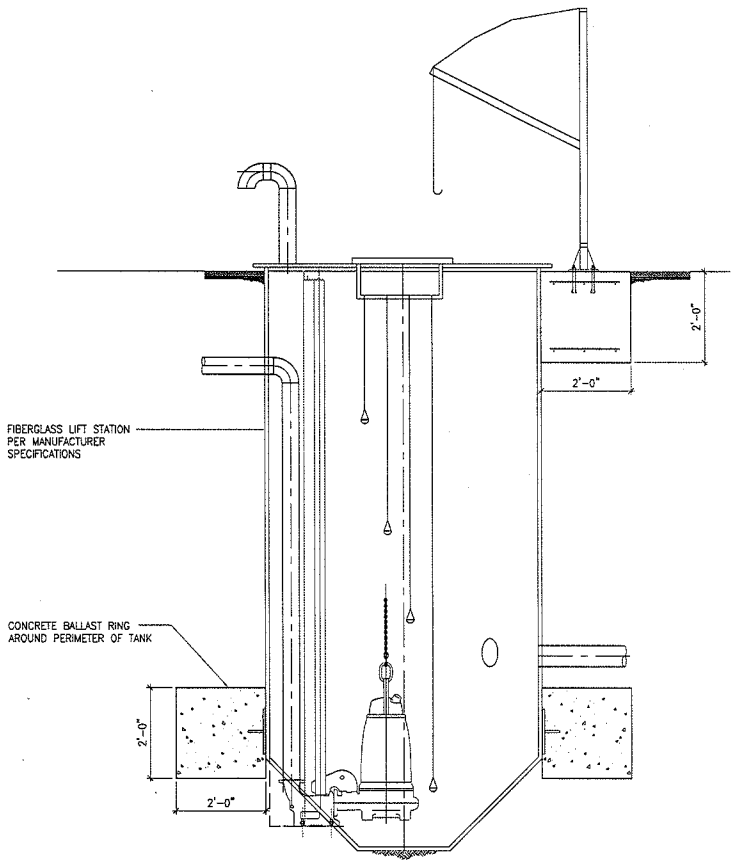


SECTION A
3/4" = 1'-0" S9300-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BLUFF PARK LIFT STATION
STRUCTURAL SECTION

DIAL BEFORE YOU DIG
DIGALERT

VERIFY SCALES
BAR IS ONE INCH
LONG ON FULL
SIZE DRAWING.
IF NOT ONE INCH
LONG ON THIS
DRAWING, ADJUST
SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
Orlo' Engineering

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: J. Orlo — DATE
DRAWN BY: CADD — DATE
CHECKED BY: D. Orlo — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036

APPROVED BY: — DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. S9300-1

Sheet _____ of XXX Sheets

Last Saved By: Orlando 3-07-14 03:30pm

MECHANICAL EQUIPMENT ABBREVIATIONS

P	PUMP
CP	CENTRIFUGAL PUMP
TP	TURBINE PUMP
PP	PROGRESSIVE CAVITY PUMP
SP	SAMPLE PUMP
V	VALVE
CV	CHECK VALVE
BV	BUTTERFLY VALVE
GV	GATE VALVE
PV	PLUG VALVE
DV	DIAPHRAM VALVE
SV	SOLENOID VALVE
MX	MIXER
ME	PROCESS EQUIPMENT
FE	FLOW ELEMENT (METER)
LE	LEVEL ELEMENT
G	GATE
T	TANK
B	BLOWER
SC	SCREEN
H	HOIST/CRANE
AH	AIR HANDLER
AC	AIR CONDITIONER
EF	EXHAUST FAN
SF	SUPPLY FAN
LCP	LOCAL CONTROL PANEL
MCC	MOTOR CONTOL CENTER
LP	LIGHTING PANEL
UV	ULTRA VIOLET EQUIPMENT

SEE G-4 FOR ADDITIONAL LEGEND

EQUIPMENT NUMBERING CONVENTION

P-1201 EQUIPMENT NUMBER TAG

FLOW STREAM IDENTIFICATION

SEE DWG G-4 FOR PROCESS FLOWS

PIPING SCHEDULE

SEE PIPING SCHEDULE ON DWG G-4.

VALVE SCHEDULE

SEE SPEC SECTION 15200 FOR VALVE SCHEDULE.

PUMP SCHEDULE

SEE SPEC SECTION 11100 FOR PUMP SCHEDULE.

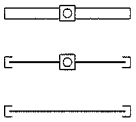
GATE SCHEDULE

SEE SPEC SECTION 15250 FOR GATE SCHEDULE.

TANK SCHEDULE

SEE SPEC SECTION 13675 FOR TANK SCHEDULE.

GATE SYMBOLS



DIAL BEFORE YOU DIG 800.422.4133 — DIGALERT — PLAN IT SAFE, DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MECHANICAL LEGENDS, ABBREVIATIONS, AND NOTES

DESIGNED BY: M.Haeft — DATE
DRAWN BY: M.Foyle — DATE
CHECKED BY: M.Nakamoto — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036

APPROVED BY: — DATE
XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. GM-1

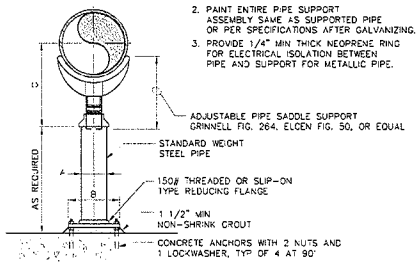
Sheet _____ of XXX Sheets

Last Saved By: mloyle 3-10-14 12:28pm

ADJUSTABLE PIPE SUPPORT (M100)

NTS

NOTES:
1. HOT-DIP GALVANIZE ALL PARTS AFTER FABRICATION.
2. PAINT ENTIRE PIPE SUPPORT ASSEMBLY SAME AS SUPPORTED PIPE OR PER SPECIFICATIONS AFTER GALVANIZING.
3. PROVIDE 1/4" MIN THICK NEOPRENE RING FOR ELECTRICAL ISOLATION BETWEEN PIPE AND SUPPORT FOR METALLIC PIPE.

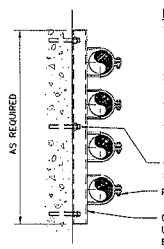


DIMENSIONS IN INCHES				
PIPE SIZE	A	B	C MIN	C MAX
2 1/2	2 7/8	9	8	13
3	2 7/8	9	8 1/4	13 1/4
3 1/2	2 7/8	9	8 1/2	13 1/2
4	3 1/2	9	9 1/4	14
5	3 1/2	9	10	14 3/4
6	3 1/2	9	10 1/2	15 1/4
8	3 1/2	9	11 3/4	16 1/2
10	3 1/2	9	13 1/2	18 1/4
12	3 1/2	9	15	19 3/4
14	4 1/2	11	16 1/4	20 3/4
16	4 1/2	11	17 3/4	22 1/4

WALL TYPE PIPE SUPPORT (M104)

NTS

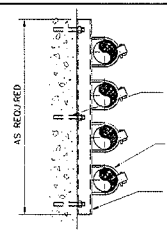
NOTES:
1. PROVIDE GRINNELL POWER STRUT PS 1400, UNISTRUT, OR EQUAL PIPE CLAMP WITH THERMOPLASTIC RUBBER CUSHION ON COPPER AND PVC PIPES.
2. THIS DETAIL MAY BE USED FOR SINGLE PIPES. PROVIDE A MINIMUM OF 2 CONCRETE ANCHORS.
3. HOT-DIP GALVANIZE ALL PARTS AFTER FABRICATION.
4. PROVIDE 1/4" MIN THICK NEOPRENE RING FOR ELECTRICAL ISOLATION BETWEEN PIPE AND SUPPORT FOR METALLIC PIPE.



CORROSION RESISTANT WALL TYPE PIPE SUPPORT (M106)

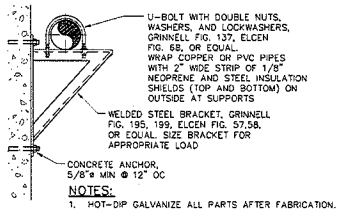
NTS

NOTE:
PROVIDE 1/4" MIN THICK NEOPRENE RING FOR ELECTRICAL ISOLATION BETWEEN PIPE AND SUPPORT FOR METALLIC PIPE.



PIPE BRACKET (M110)

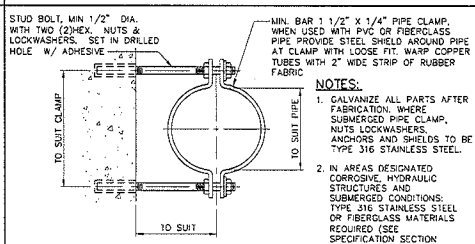
NTS



NOTES:
1. HOT-DIP GALVANIZE ALL PARTS AFTER FABRICATION.
2. PROVIDE 1/4" MIN THICK NEOPRENE RING FOR ELECTRICAL ISOLATION BETWEEN PIPE AND SUPPORT FOR METALLIC PIPE.

PIPE CLAMP DETAIL (M111)

NTS

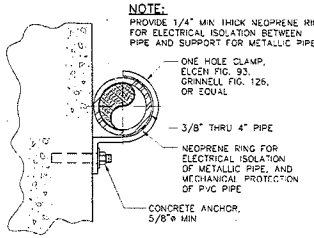


NOTES:
1. GALVANIZE ALL PARTS AFTER FABRICATION. WHERE SUBMERGED PIPE CLAMP, NUTS LOCKWASHERS, ANCHORS AND SHIELDS TO BE TYPE 316 STAINLESS STEEL.
2. IN AREAS DESIGNATED CORROSIVE, HYDRAULIC STRUCTURES AND SUBMERGED CONDITIONS: TYPE 316 STAINLESS STEEL OR FIBERGLASS MATERIALS REQUIRED (SEE SPECIFICATION SECTION 15020).

PIPE SUPPORT (M114)

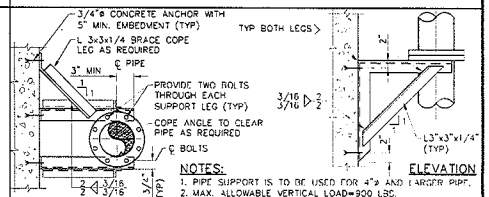
NTS

NOTE:
PROVIDE 1/4" MIN THICK NEOPRENE RING FOR ELECTRICAL ISOLATION BETWEEN PIPE AND SUPPORT FOR METALLIC PIPE.



PIPE SUPPORT (M115)

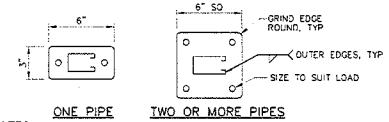
NTS



NOTES:
1. PIPE SUPPORT IS TO BE USED FOR 4"ø AND LARGER PIPE.
2. MAX. ALLOWABLE VERTICAL LOAD=900 LBS.
3. ALL MATL SHALL BE STAINLESS STEEL IF SUPPORT IS SUBMERGED OR LOCATED BELOW THE TOP OF WALL IN A WATER BEARING STRUCTURE. IN ALL OTHER AREAS, THE MATL SHALL BE HOT-DIP GAL. STEEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
4. FIELD PAINT GALVANIZED STEEL PER THE SPECIFICATIONS.

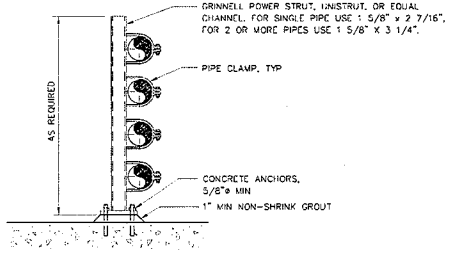
PIPE STANCHION (M102)

NTS



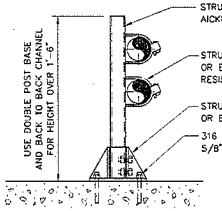
ONE PIPE TWO OR MORE PIPES

NOTES:
1. PROVIDE GRINNELL POWER STRUT PS 1400, UNISTRUT, OR EQUAL PIPE CLAMP WITH THERMOPLASTIC RUBBER CUSHION ON COPPER AND PVC PIPES.
2. MAXIMUM PIPE SIZE IS 4".
3. HOT-DIP GALVANIZE ALL PARTS AFTER FABRICATION.
4. PROVIDE 1/4" MIN THICK NEOPRENE RING FOR ELECTRICAL ISOLATION BETWEEN PIPE AND SUPPORT FOR METALLIC PIPE.



CORROSION RESISTANT PIPE STANCHION (M108)

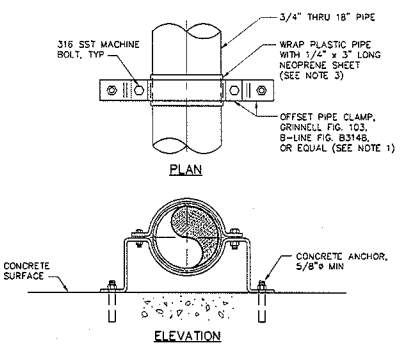
NTS



NOTE:
PROVIDE 1/4" MIN THICK NEOPRENE RING FOR ELECTRICAL ISOLATION BETWEEN PIPE AND SUPPORT FOR METALLIC PIPE.

PIPE SUPPORT (M112)

NTS



NOTES:
1. HOT-DIP GALVANIZE ALL PARTS AFTER FABRICATION. WHERE PIPE SUPPORT IS SUBMERGED, LOCATED BELOW THE TOP OF WALL IN A WATER BEARING STRUCTURE. PIPE CLAMP SHALL BE 316 STAINLESS STEEL.
2. PROVIDE 1/4" MIN THICK NEOPRENE RING FOR ELECTRICAL ISOLATION BETWEEN PIPE AND SUPPORT FOR METALLIC PIPE.
3. PROVIDE 1/4" MIN THICK NEOPRENE RING FOR ELECTRICAL ISOLATION BETWEEN PIPE AND SUPPORT FOR METALLIC PIPE.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN AHEAD, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" — 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MECHANICAL STANDARD DETAILS - 1

DESIGNED BY: M.Hoeft	DATE	SCALE	AS SHOWN
DRAWN BY: M.Foyle	DATE		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER	2036

APPROVED BY: DATE

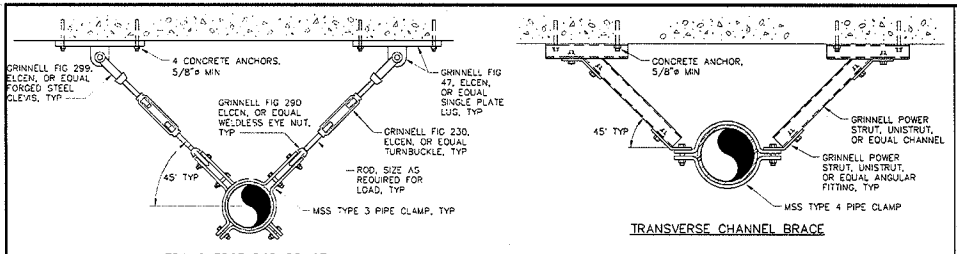
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP: 12/31/2014

Plan No. GM-2

Sheet ____ of XXX Sheets

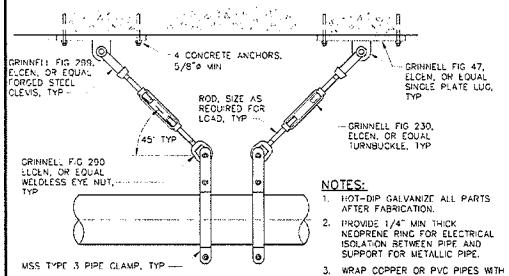
TELEBASE 2130\KKAAXX 3.5x11 1:1\Sym1 Sym2 B SHEETS\Det1.dwg

Last Saved By: mfoyle 3-10-14 12:26pm



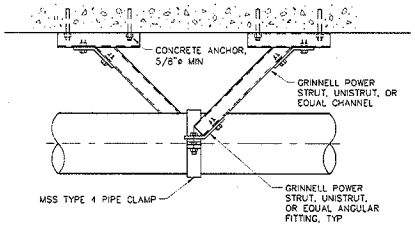
TRANSVERSE ROD BRACE

TRANSVERSE CHANNEL BRACE



LONGITUDINAL ROD BRACE

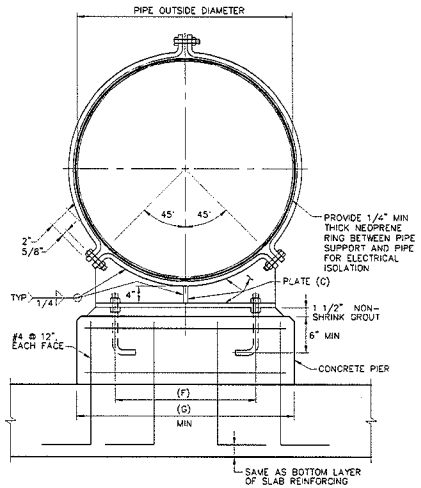
NOTES:
1. HOT-DIP GALVANIZE ALL PARTS AFTER FABRICATION.
2. PROVIDE 1/4" MIN THICK NEOPRENE RING FOR ELECTRICAL ISOLATION BETWEEN PIPE AND SUPPORT FOR METALLIC PIPE.
3. WRAP COPPER OR PVC PIPES WITH 2" WIDE STRIP OF 1/8" NEOPRENE.

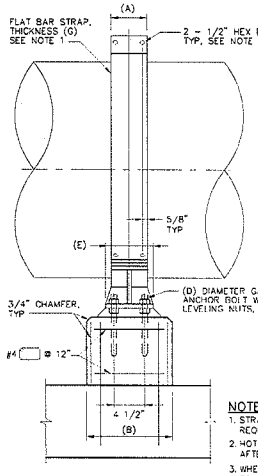


LONGITUDINAL CHANNEL BRACE

SEISMIC BRACING (ELEVATIONS) M116

NTS





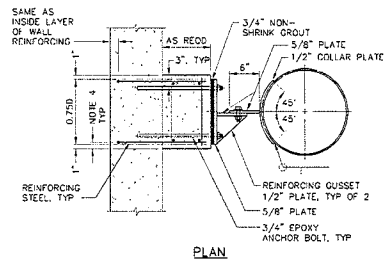
PIPE SUPPORT SCHEDULE

DIMENSIONS IN INCHES							
PIPE SIZE (NOM.)	(A)	(B)	(C)	(D)	(E)	(F)	(G)
14	4	12	3/8	5/8	6	8	18
16	4	12	3/8	5/8	6	9	21
18	4	12	3/8	5/8	6	10	22
20	5	12	3/8	5/8	6	10	24
22	5	12	3/8	5/8	6	12	24
24	5	12	3/8	5/8	6	13	26
26	5	12	3/8	3/4	6	14	28
30	5	12	3/8	3/4	6	16	30
34	5	15	3/8	3/4	6	18	33
36	6	15	3/8	3/4	6	19	34

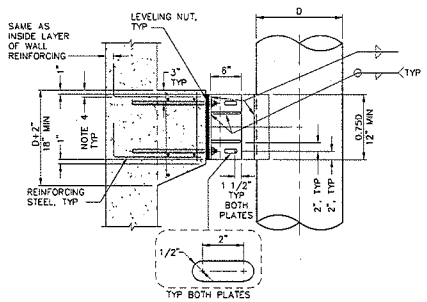
NOTES:
1. STRAP AND RELATED NUTS AND BOLTS ARE REQUIRED EXCEPT WHERE NOTED ON THE DRAWINGS.
2. HOT-DIP GALVANIZE STEEL COMPONENTS AFTER FABRICATION.
3. WHEN ATTACHING TO EXISTING CONCRETE, PROVIDE EQUIVALENT SIZE ADHESIVE ANCHORS.
4. VERIFY PIPE OD PRIOR TO FABRICATION.

PIPE SUPPORT M118

NTS



PLAN

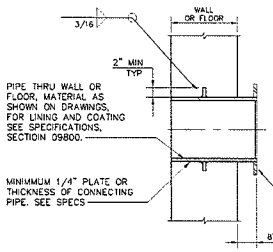


ELEVATION

NOTES:
1. ADJUST THICKNESS OF CONRETE BASE ACCORDINGLY TO MAINTAIN SIZE OF STEEL PLATE PIECES AND SPACING FROM WALL AS SHOWN ON PLANS.
2. ALL BOLTS SHALL BE 0.75" DIAMETER.
3. ALL REINFORCING SHALL BE #4 BARS.
4. ALL REINFORCING SHALL HAVE 2" OF CONCRETE COVER.
5. VERIFY PIPE OD PRIOR TO FABRICATION.
6. HOT DIP GALVANIZE STEEL COMPONENTS AFTER FABRICATION.

VERTICAL PIPE SUPPORT M117

NTS



PIPE SIZE	WALL FLANGE STEEL PLATE THICKNESS
30" AND SMALLER	1/4"
31" THROUGH 60"	5/16"
61" AND LARGER	3/8"

NOTE:
FOR THIMBLE INSTALLATION IN EXISTING WALLS, SIZE CORE DRILL OPENING AND INSTALL GROUT PER SPECIFICATIONS.

FABRICATED PIPE THIMBLE M119

NTS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN AHEAD, DIG BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING! — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" ——— 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MECHANICAL STANDARD DETAILS - 2

DESIGNED BY: M.Hoeft	DATE	SCALE
DRAWN BY: M.Fovie	DATE	AS SHOWN
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036

APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. GM-3

Sheet ____ of XXX Sheets

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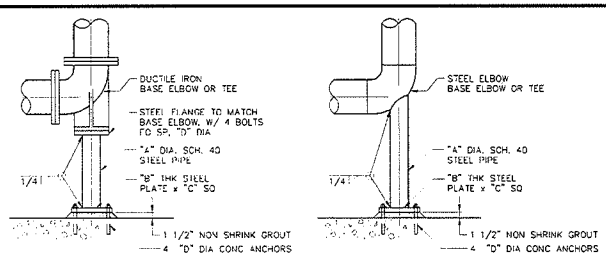


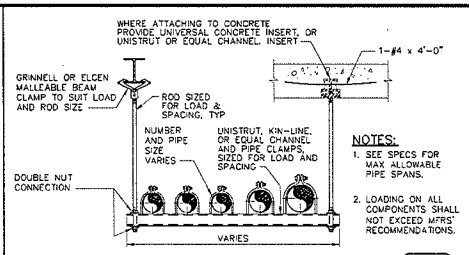
CAST IRON ELBOW

STEEL ELBOW

ELBOW/TEE SIZE (IN)	DIMENSIONS IN INCHES "A"	"B"	"C"	"D"
4	2	3/8	6	5/8
6	2 1/2	3/8	7	5/8
8	4	1/2	9	5/8
10	4	1/2	9	5/8
12	6	1/2	11	3/4
14	6	1/2	11	3/4
16	6	1/2	11	3/4
18	8	1/2	13 1/2	3/4
20	8	1/2	13 1/2	3/4
24	8	1/2	13 1/2	3/4
30	10	3/4	16	7/8
36	12	3/4	19	7/8
42	16	3/4	23 1/2	1
48	18	3/4	25	1 1/16

BASE ELBOW SUPPORT (M120)

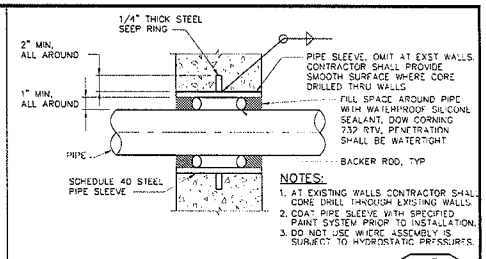
NTS



NOTES:
1. SEE SPECS FOR MAX ALLOWABLE PIPE SPANS.
2. LOADING ON ALL COMPONENTS SHALL NOT EXCEED MFR'S RECOMMENDATIONS.

TRAPEZE SUPPORT (M128)

NTS

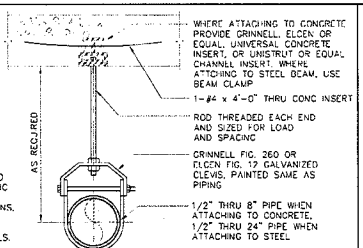


NOTES:
1. AT EXISTING WALLS CONTRACTOR SHALL CORE DRILL THROUGH EXISTING WALLS.
2. COAT PIPE SLEEVE WITH SPECIFIED PAINT SYSTEM PRIOR TO INSTALLATION.
3. DO NOT USE WHERE ASSEMBLY IS SUBJECT TO HYDROSTATIC PRESSURES.

PIPE SLEEVE (M134)

NTS

NOTES:
1. FOR INSULATED PIPES, USE GRINNELL FIG. 167 OR ELCEN FIG. 219 INSULATION PROTECTION SHIELD. SIZE CLEVIS FOR SHIELD DIAMETER.
2. TOTAL LOADING ON EACH COMPONENT SHALL NOT EXCEED MFR'S RECOMMENDATIONS.
3. IN AREAS DESIGNATED CORROSIVE, HYDRAULIC STRUCTURES AND SUBMERGED CONDITIONS, PROVIDE TYPE 316 STAINLESS STEEL OR FIBERGLASS MATERIALS.



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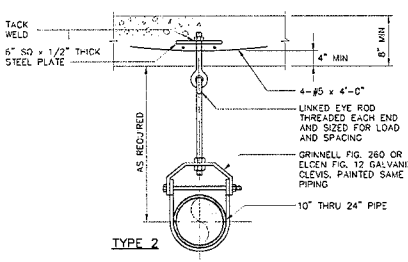

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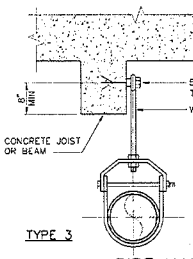
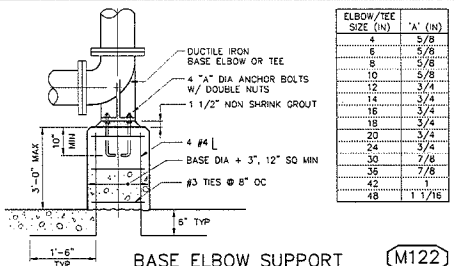


TYPE 3

PIPE HANGER (M125)

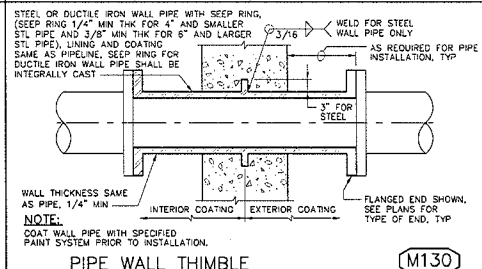
NTS



ELBOW/TEE SIZE (IN)	'A' (IN)
4	5/8
6	5/8
8	5/8
10	5/8
12	3/4
14	3/4
16	3/4
18	3/4
20	3/4
24	3/4
30	7/8
36	7/8
42	1
48	1 1/16

BASE ELBOW SUPPORT (M122)

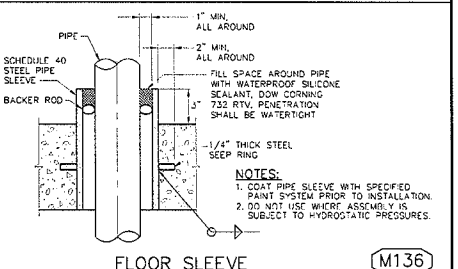
NTS



NOTE:
COAT WALL PIPE WITH SPECIFIED PAINT SYSTEM PRIOR TO INSTALLATION.

PIPE WALL THIMBLE (M130)

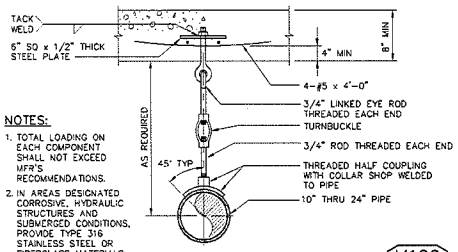
NTS



NOTES:
1. COAT PIPE SLEEVE WITH SPECIFIED PAINT SYSTEM PRIOR TO INSTALLATION.
2. DO NOT USE WHERE ASSEMBLY IS SUBJECT TO HYDROSTATIC PRESSURES.

FLOOR SLEEVE (M136)

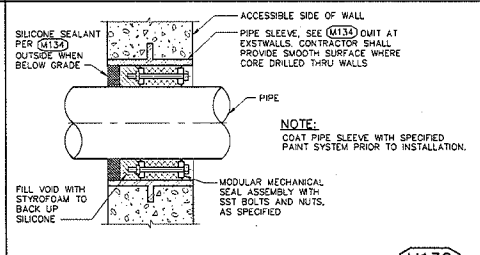
NTS



NOTES:
1. TOTAL LOADING ON EACH COMPONENT SHALL NOT EXCEED MFR'S RECOMMENDATIONS.
2. IN AREAS DESIGNATED CORROSIVE, HYDRAULIC STRUCTURES AND SUBMERGED CONDITIONS, PROVIDE TYPE 316 STAINLESS STEEL OR FIBERGLASS MATERIALS.

PIPE HANGER (M126)

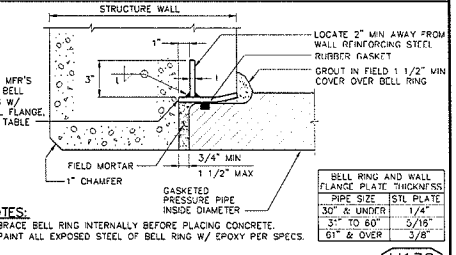
NTS



NOTE:
COAT PIPE SLEEVE WITH SPECIFIED PAINT SYSTEM PRIOR TO INSTALLATION.

MODULAR MECHANICAL SEAL (M132)

NTS

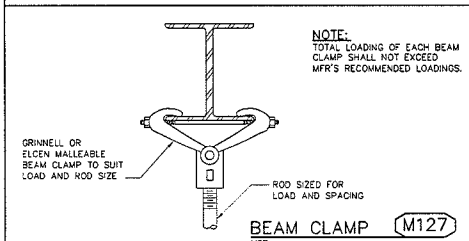


BELL RING AND WALL FLANGE PLATE THICKNESS	
PIPE SIZE	STL PLATE
30" & UNDER	1/4"
31" TO 60"	5/16"
61" & OVER	3/8"

NOTES:
1. BRACE BELL RING INTERNALLY BEFORE PLACING CONCRETE.
2. PAINT ALL EXPOSED STEEL OF BELL RING W/ EPOXY PER SPECS.

GASKET PIPE TERMINATION AT STRUCTURE (M138)

NTS



NOTE:
TOTAL LOADING OF EACH BEAM CLAMP SHALL NOT EXCEED MFR'S RECOMMENDED LOADINGS.

BEAM CLAMP (M127)

NTS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MECHANICAL STANDARD DETAILS - 3

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — TEAR IT SAVE, DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING KERN, SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC WATER AND ENVIRONMENT

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. GM-4

Sheet ____ of XXX Sheets

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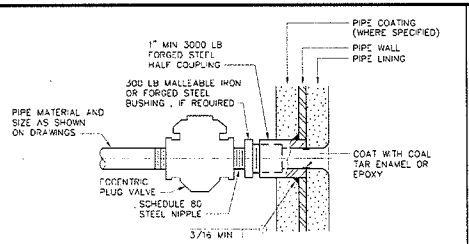
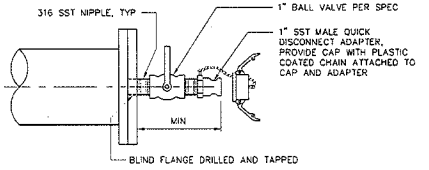


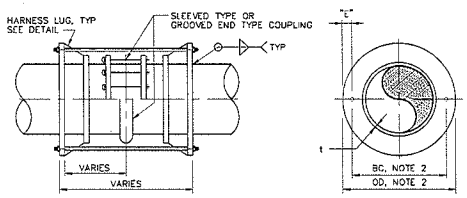
2" AND SMALLER PIPE CONNECTION (M150)

NTS



FLUSHING CONNECTION (M156)

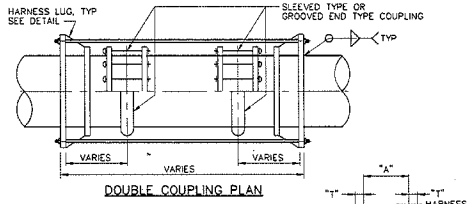
NTS



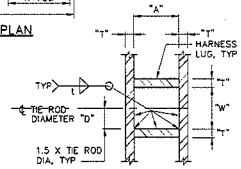
SINGLE COUPLING PLAN

ELEVATION

STEEL PIPE HARNESS SET SCHEDULE										
			DIMENSIONS IN INCHES							
PIPE DESCRIPTION	MAX TEST PRESSURE (PSIG)	PIPE CYLINDER OD (SEE NOTE 6)	T	A	W	E	D	BACK PLATE OD	FRONT PLATE OD	NO. TIE RODS
< 12"	160	–	0.38	5.00	1.38	3.00	0.63	–	–	4
12-18"	35	–	0.38	5.00	1.38	3.00	0.63	–	–	2
24"	25	35.13	0.38	5.00	1.50	3.13	0.63			4
30"	35	31.13	0.38	5.00	1.38	3.00	0.63	–	–	4
36"	10	37.13	0.38	5.00	1.38	3.00	0.63	–	–	4
42"	10	–	0.38	5.00	1.38	3.00	0.63			4
48"	10	–	0.38	5.00	1.38	3.00	0.63	–	–	4
48"	35	–	0.38	5.00	1.38	3.00	0.63	–	–	4



DOUBLE COUPLING PLAN

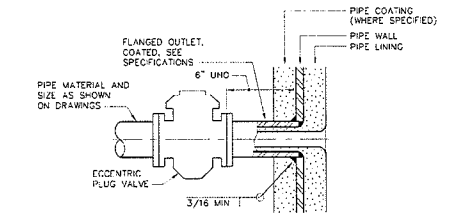


NOTES:

1. WELD SIZE SHALL BE MINIMUM REQUIRED BY AMERICAN WELDING SOCIETY, MINIMUM TO MATCH PIPE WALL.
2. BOLT CIRCLE AND OD SHALL BE SIZED TO ENSURE 1/2" MIN AND 1" MAX CLEARANCE TO COUPLING.
3. SMALLER STIFFENER PLATE SHALL BE 2" HIGH EXCEPT WHEN BOLT DIAMETER EXCEEDS 1", THEN PLATE SHALL BE 2 1/2" HIGH.
4. USE THIS DETAIL FOR ONE END OF TIE RODS WHERE THE OPPOSITE END OF TIE RODS IS ATTACHED TO A FLANGE OR A RESTRAINED FLANGE COUPLING ADAPTER.
5. PROVIDE INSULATING SLEEVE AND WASHERS WHERE ELECTRICAL ISOLATION IS REQUIRED. REFER TO CATHODIC PROTECTION, YARD PIPING, AND MECHANICAL DRAWINGS.
6. CONTRACTOR SHALL VERIFY PIPE OD PRIOR TO HARNESS FABRICATION.
7. HARNESS SHALL SPAN PAIRS OF MECHANICAL SLEEVE COUPLINGS WHERE INDICATED.
8. FOR PIPE MATERIAL OTHER THAN STEEL, CONTRACTOR SHALL PROVIDE EQUIVALENT HARNESSING ACCEPTABLE TO THE ENGINEER.
9. WHERE 4 TIE RODS ARE REQUIRED, STRADDLE HORIZONTAL AND VERTICAL CENTERLINES UNLESS OTHERWISE REQUIRED.

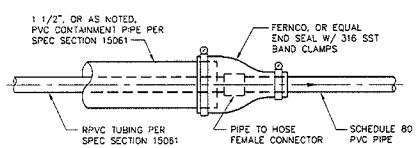
THRUST RESTRAINT HARNESS (M160)

NTS



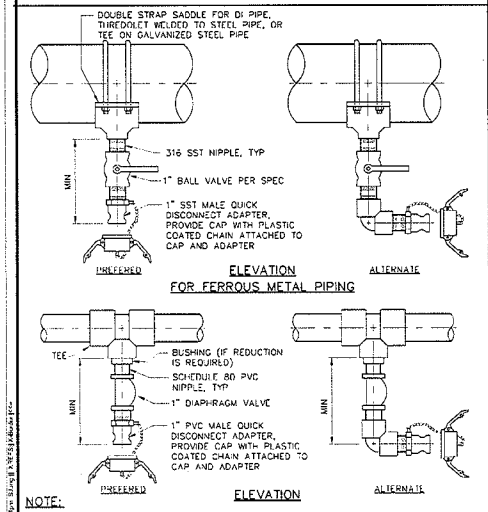
3" AND LARGER PIPE CONNECTION (M152)

NTS



DOUBLE/SINGLE WALL PIPE TRANSITION (M158)

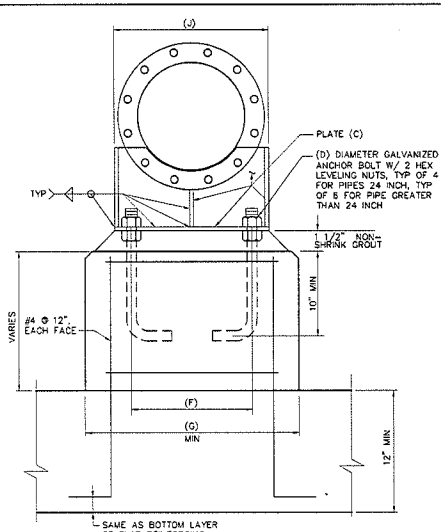
NTS

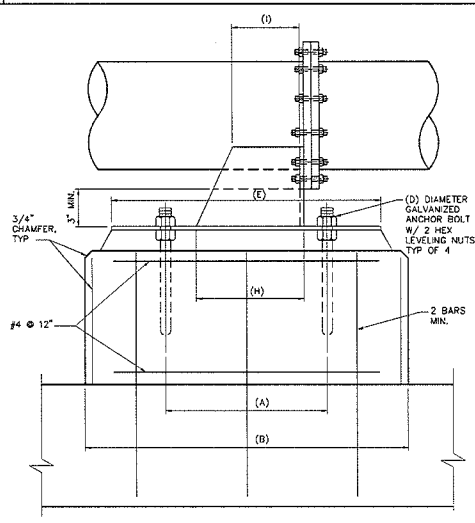


NOTE:
FOR LINE SIZES SMALLER THAN 1", VALVE AND ADAPTER SIZES SHALL MATCH LINE SIZE.

FLUSHING/DRAIN CONNECTION (M154)

NTS





PIPE SUPPORT SCHEDULE										
	DIMENSIONS IN INCHES									
PIPE SIZE (NOM.)	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
8	12	24	1/2	3/4	20	9	16	8	5	12
16	16	24	1/2	3/4	20	21	25	12	4	21
18	18	30	1/2	3/4	26	23	26	15	5	22
30	24	40	3/4	1 1/4	36	36	40	20	8	36

NOTES:

1. HOT-DIP GALVANIZE STEEL COMPONENTS AFTER FABRICATION.
2. WHEN ATTACHING TO EXISTING CONCRETE, PROVIDE EQUIVALENT SIZE ADHESIVE ANCHORS.
3. VERIFY PIPE OD PRIOR TO FABRICATION.

EXPOSED PIPE THRUST RESTRAINT (M161)

NTS

DIAL BEFORE YOU DIG
DIGALERT
95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MECHANICAL STANDARD DETAILS - 4

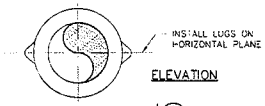
DESIGNED BY: M.Hoeft	DATE	SCALE: AS SHOWN	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE			XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER: 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. GM-5 | Sheet _____ of XXX Sheets

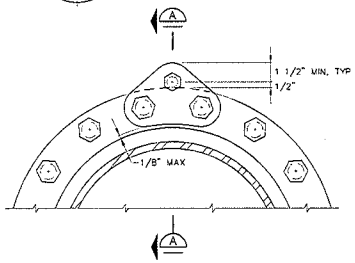
Last Saved By: SJiang 3-10-14 12:26pm

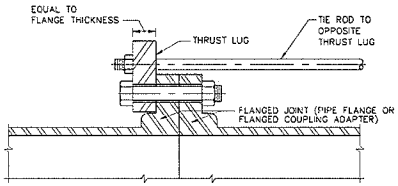
TIE ROD SCHEDULE

PIPE SIZE (NOM IN)	MINIMUM STEEL PIPE WALL THICKNESS (IN) (NOTE 5)	MAXIMUM TEST PRESSURE					
		25 PSIG		50 PSIG		100 PSIG	
		NUMBER REQUIRED	DIAMETER (IN)	NUMBER REQUIRED	DIAMETER (IN)	NUMBER REQUIRED	DIAMETER (IN)
6	3/16	2	5/8	2	5/8	2	5/8
8	3/16	2	5/8	2	5/8	2	5/8
10	3/16	2	5/8	2	5/8	2	5/8
12	3/16	2	5/8	2	5/8	2	5/8
14	3/16	2	5/8	2	5/8	2	3/4
16	3/16	2	5/8	2	5/8	2	3/4
18	1/4	2	5/8	2	5/8	2	7/8
20	1/4	2	5/8	2	3/4	2	7/8



ELEVATION





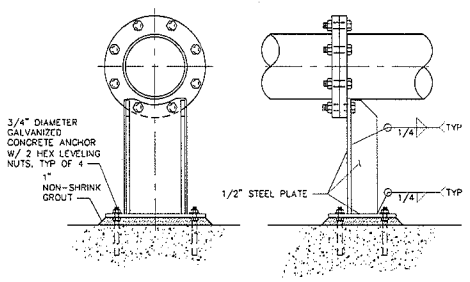
SECTION A
NTS

NOTES:

1. PLATE: ASTM A283 GRADE D.
2. TIE RODS: ASTM A193 GRADE B7.
3. NUTS: ASTM A194 GRADE 2H.
4. INSTALL TIE RODS IN HORIZONTAL PLANE.
5. INCREASE STEEL PIPE WALL THICKNESS TO TIE ROD SCHEDULE MINIMUM THICKNESS IF SPECIFIED PIPE WALL THICKNESS IS LESS. IF INCREASING IS REQUIRED, INCREASE FROM FLANGE TO 2'-0" MINIMUM FROM FLANGE.
6. THIS DETAIL SHALL BE USED WHERE FCA IS ADJACENT TO OTHER FCA OR FLANGES. CONNECT TIE RODS FROM LUGS AT FCA TO LUGS AT ADJACENT FCA OR FLANGES. WHERE ADJACENT FCA OR FLANGE IS NOT PRESENT, INSTALL THRUST HARNESS PER DETAIL (M160).
7. TIGHTEN TIE ROD NUTS ALTERNATELY AND EQUALLY TO ALIGN EVENLY AND TO PROVIDE EQUAL STRESS ON ALL TIE RODS WHEN SUBJECT TO OPERATING PRESSURES. NUTS SHALL BE TIGHTENED SNUG. THREADS SHALL PROTRUDE 1/2" MINIMUM FROM NUTS AFTER TIGHTENING. PEEN THREADS AFTER TIGHTENING TO LOCK NUTS IN PLACE.

THRUST RESTRAINT FOR FLEXIBLE COUPLING OR FLANGE COUPLING ADAPTER (M162)

NTS

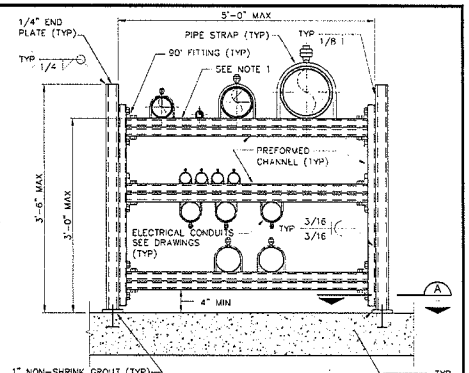


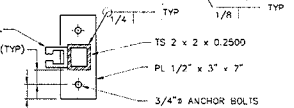
NOTES:

1. HOT-DIP GALVANIZE STEEL COMPONENTS AFTER FABRICATION.
2. WHEN ATTACHING TO EXISTING CONCRETE, PROVIDE EQUIVALENT SIZE ADHESIVE ANCHORS.
3. VERIFY PIPE OD PRIOR TO FABRICATION.

PIPE SUPPORT 4" THRU 8" (M163)

NTS





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.

SECTION A
NTS

PIPE RACK (M164)

NTS

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MECHANICAL STANDARD DETAILS - 5

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT — MARK'EM ALL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" _____ 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft — DATE
DRAWN BY: M.Foyle — DATE
CHECKED BY: M.Nakamoto — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036

APPROVED BY: _____ DATE XX-XX-14
ROBERT GRACER, P.E., J.D.
PUBLIC WORKS DIRECTOR /CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. GM-6

Sheet _____ of XXX Sheets

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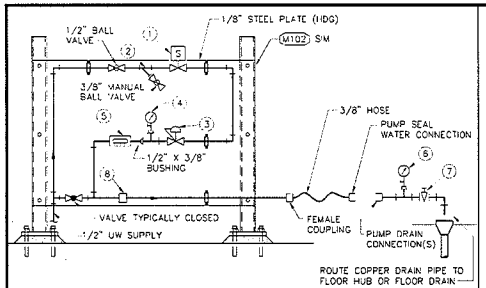
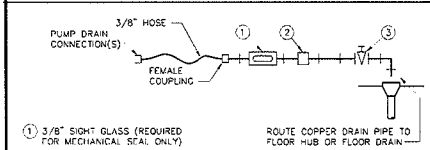


1. SOLENOID VALVE, SEE P&ID
2. WYE STRAINER
3. 1/2" PRESSURE REGULATOR SET OUTLET PRESSURE AS RECOMMENDED BY PUMP MFR.
4. PRESSURE GAUGE, RANGE AS REQUIRED BY PUMP MFR (REQUIRED ONLY FOR SINGLE MECHANICAL SEAL AND PACKING TYPE PUMP SEALS)
5. 3/8" SIGHT GLASS (REQUIRED FOR MECHANICAL SEAL ONLY)
6. PRESSURE GAUGE, RANGE AS REQUIRED BY PUMP MFR (REQUIRED FOR DOUBLE MECHANICAL PUMP SEALS ONLY)
7. 1/2" NEEDLE VALVE (REQUIRED FOR DOUBLE MECHANICAL PUMP SEALS ONLY)
8. FLOW SWITCH (FSL)

NOTES:
1. PIPING CONFIGURATION IS SHOWN SCHEMATICALLY. CONTRACTOR SHALL CONFIGURE AS REQUIRED.
2. ALTERNATE CONFIGURATION: ASSEMBLY SHALL BE WALL MOUNTED, IF SPECIFIED.

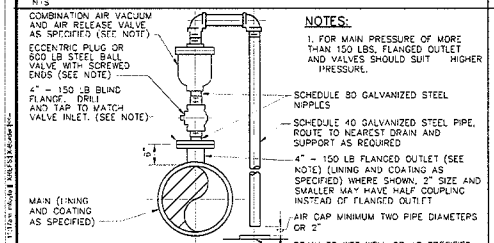
SEAL WATER ASSEMBLY (M170)
NTS



1. 3/8" SIGHT GLASS (REQUIRED FOR MECHANICAL SEAL ONLY)
2. FLOW SWITCH (FSL)
3. 1/2" NEEDLE VALVE

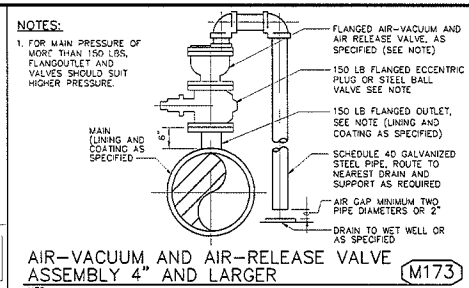
NOTES:
1. PIPING CONFIGURATION IS SHOWN SCHEMATICALLY. CONTRACTOR SHALL CONFIGURE AS REQUIRED.
2. FOR PRODUCT WATER SEAL APPLICATIONS.

SEAL WATER PRODUCT LUBRICATED (M171)
NTS



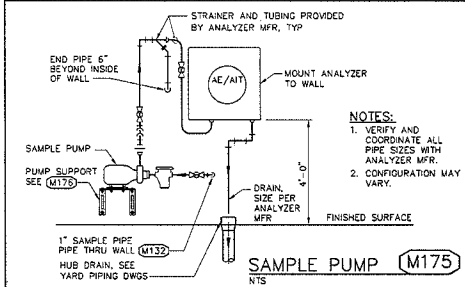
NOTES:
1. FOR MAIN PRESSURE OF MORE THAN 150 LBS, FLANGED OUTLET AND VALVES SHOULD SUIT HIGHER PRESSURE.

AIR-VACUUM AND AIR-RELEASE VALVE ASSEMBLY 3" AND SMALLER (M172)
NTS



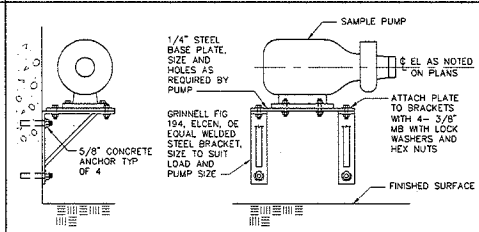
NOTES:
1. FOR MAIN PRESSURE OF MORE THAN 150 LBS, FLANGOUTLET AND VALVES SHOULD SUIT HIGHER PRESSURE.

AIR-VACUUM AND AIR-RELEASE VALVE ASSEMBLY 4" AND LARGER (M173)
NTS



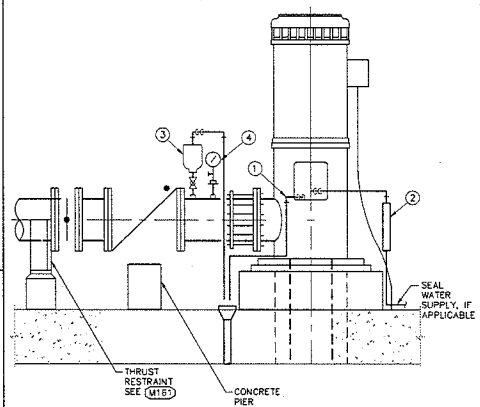
NOTES:
1. VERIFY AND COORDINATE ALL PIPE SIZES WITH ANALYZER MFR.
2. CONFIGURATION MAY VARY.

SAMPLE PUMP (M175)
NTS



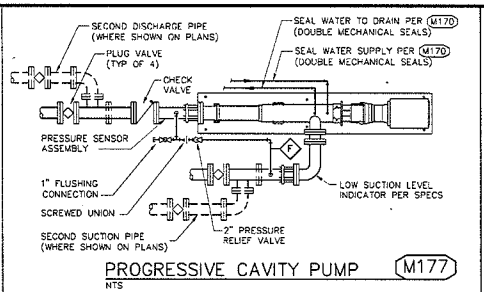
NOTE: HOT-DIP GALVANIZE BRACKETS AND PLATE AFTER FABRICATION.

SAMPLE PUMP SUPPORT (M176)
NTS

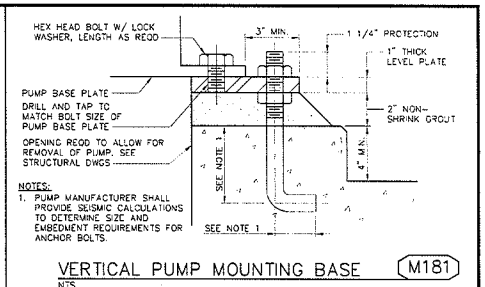


1. SEAL WATER DRAIN, SEE P&ID AND DETAIL M170 OR M171.
2. SEAL WATER APPURTENANCES, SEE P&ID AND DETAIL M170 IF APPLICABLE.
3. ARV, SEE P&ID OR DETAIL M172 AND M173.
4. PRESSURE GAUGE, SEE DETAIL M218.

GENERAL VERTICAL TURBINE PUMP APPURTENANCES (M179)
NTS

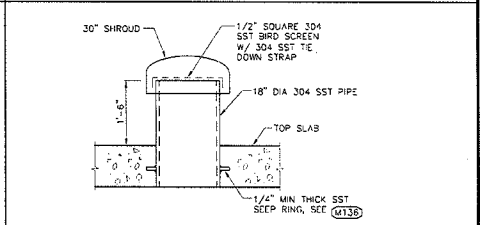


PROGRESSIVE CAVITY PUMP (M177)
NTS



NOTES:
1. PUMP MANUFACTURER SHALL PROVIDE SEISMIC CALCULATIONS TO DETERMINE SIZE AND EMBEDMENT REQUIREMENTS FOR ANCHOR BOLTS.

VERTICAL PUMP MOUNTING BASE (M181)
NTS



AIR VENT DETAIL (M182)
NTS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG — ATTEMPT TO NOTIFY NON-REGULATED, PRIVATE OR UNDERGROUND FACILITIES — SERVING NORTHERN AND SOUTHERN CALIFORNIA COUNTIES

IF THIS BAR IS NOT ONE INCH LONG ON FULL SIZED DRAWING, IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY — VERIFY SCALES

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MECHANICAL STANDARD DETAILS - 6

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN	XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	

Plan No. GM-7

Sheet ____ of ___XXX___ Sheets

TIEBACK DISCLAIMER: SAVED IN 11"x17" PAPER SPACE | XREFS/FILENAME.DWG

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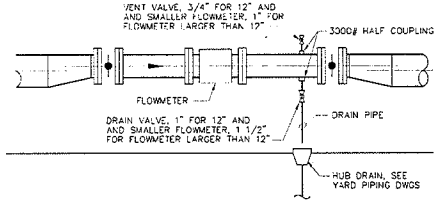
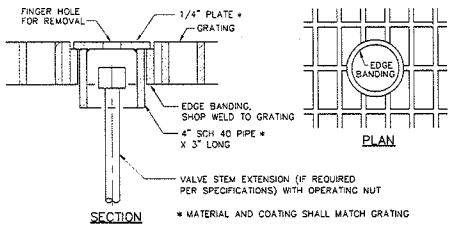
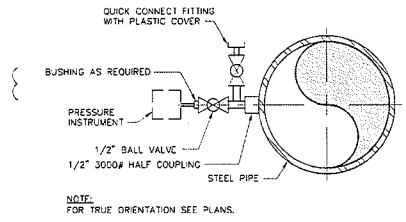


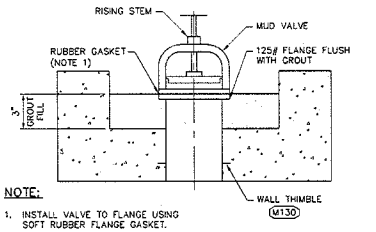
FLOWMETER VENT/DRAIN (M214)
NTS



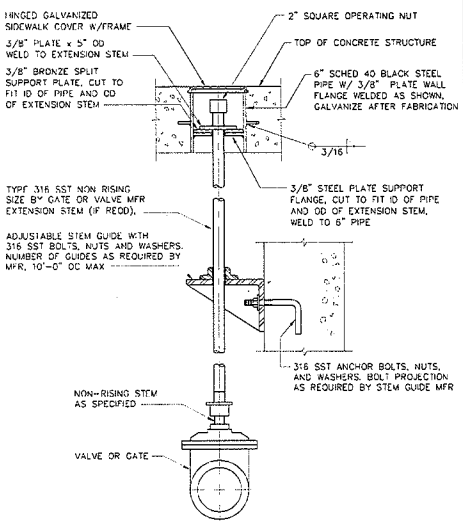
OPERATING NUT ACCESS OPENING (M232)
NTS



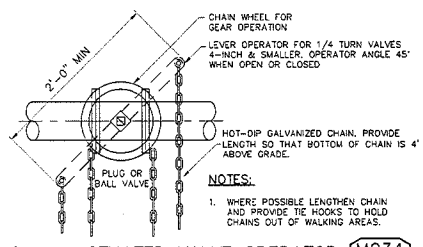
PRESSURE INSTRUMENT CONNECTION (M218)
NTS



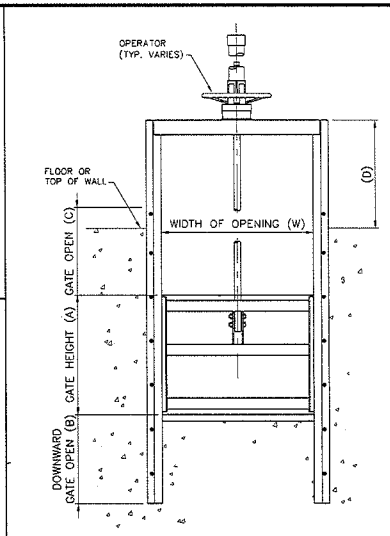
MUD VALVE (M233)
NTS

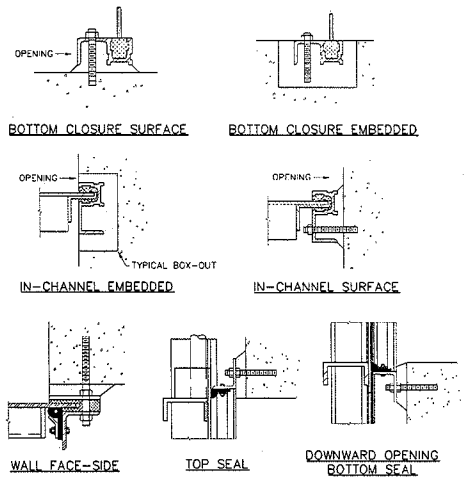


FLOOR BOX OPERATOR (M230)
NTS

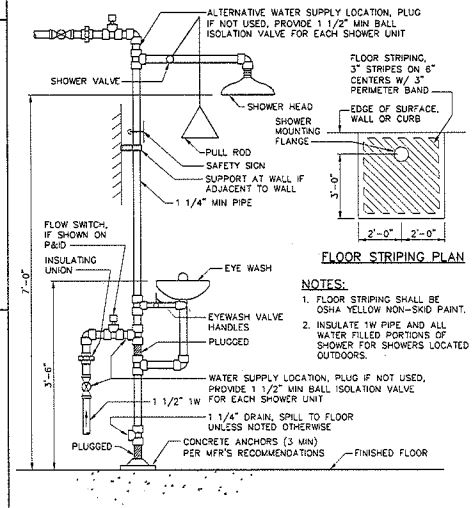


CHAIN ACTUATED VALVE OPERATOR (M234)
NTS





SLIDE GATE (M254)
NTS



DRENCH SHOWER AND EYEWASH (M259)
NTS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLEASE WAIT, CALL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NEW SOUTHERN CALIFORNIA COUNTIES

0" ——— 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MECHANICAL STANDARD DETAILS - 7

DESIGNED BY: M.Hoeft	DATE	SCALE
DRAWN BY: M.Foyle	DATE	AS SHOWN
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036

APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. GM-8

Sheet _____ of XXX Sheets

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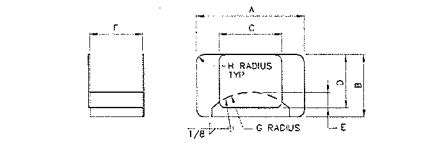
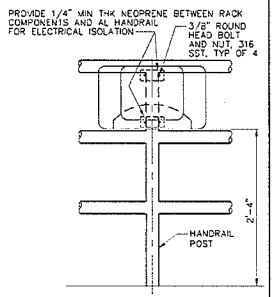
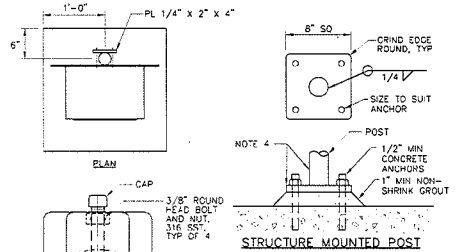


RACK TYPE	DIMENSIONS IN INCHES							
	A	B	C	D	E	F	G	H
TYPE 1 (3/4" & 1" HOSE)	18	11	10	9 1/2	3	7 1/2	9	1 1/4
TYPE 2 (1 1/2" HOSE)	24	14	14	12	3 1/2	10	12 1/2	1 1/2

HOSE RACK



WALL MOUNTED HANDRAIL MOUNTED

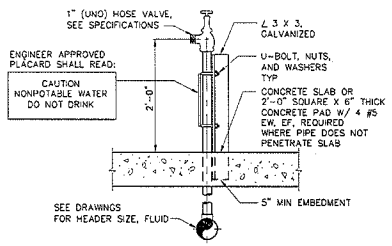


POST MOUNTED STRUCTURE MOUNTED POST

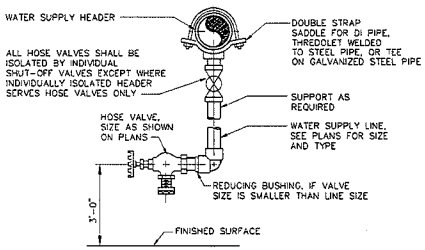
NOTES:

1. CONSTRUCT HOSE RACK FROM 1/8" MIN A-36 STEEL PLATE. HOT DIP GALVANIZE HOSE RACK AFTER FABRICATION.
2. ATTACH A WARNING SIGN TO EACH HOSE RACK OR ADJACENT HOSE VALVE. SIGN SHALL READ: CAUTION NONPOTABLE WATER DO NOT DRINK
3. PROVIDE MINIMUM 75 FT OF HOSE AT EACH HOSE RACK. SIZE SHALL MATCH HOSE VALVE.
4. CONSTRUCT BASEPLATE FOR STRUCTURE MOUNTED POST FROM 1/2" MIN A-36 STEEL PLATE. HOT DIP GALVANIZE BASE AND POST AFTER FABRICATION.

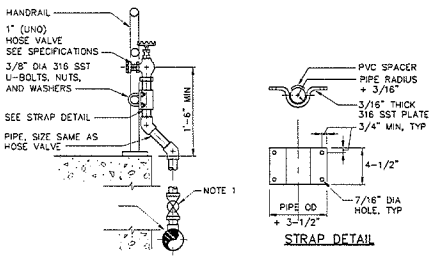
HOSE RACK M270
NTS



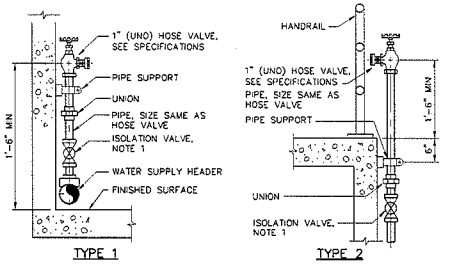
EXTERIOR HOSE VALVE TYPE 1

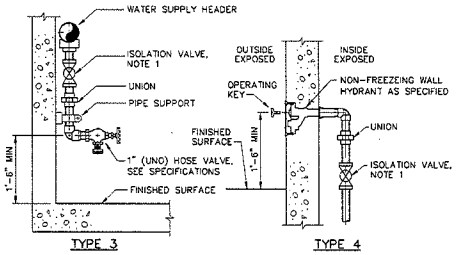


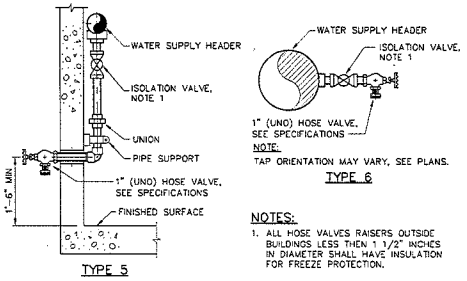
EXTERIOR HOSE VALVE TYPE 2



EXTERIOR HOSE VALVE TYPE 3







NOTES:

1. ALL HOSE VALVES RAISERS OUTSIDE BUILDINGS LESS THEN 1 1/2" INCHES IN DIAMETER SHALL HAVE INSULATION FOR FREEZE PROTECTION.

HOSE VALVES M275
NTS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE, DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MECHANICAL STANDARD DETAILS - 8

DESIGNED BY: M.Haeft	DATE	SCALE
DRAWN BY: M.Foyle	DATE	AS SHOWN
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036

APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. GM-9

Sheet ____ of XXX Sheets

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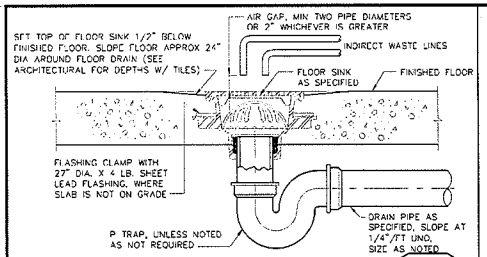
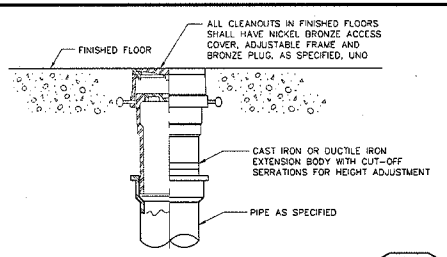


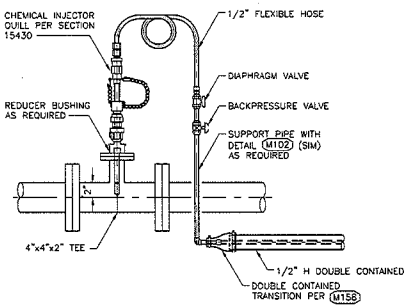
FLOOR SINK (M280)

NTS



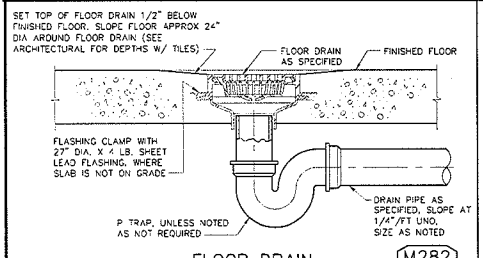
CLEANOUT IN FINISHED FLOOR (M286)

NTS



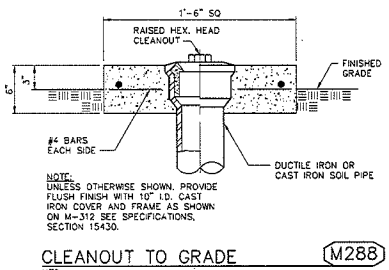
INJECTOR DETAIL (M309)

NTS



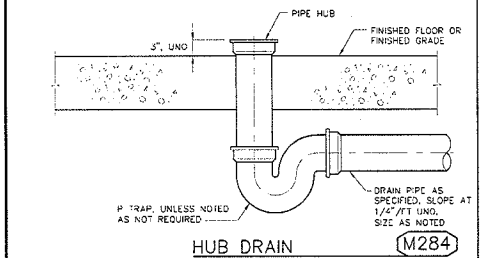
FLOOR DRAIN (M282)

NTS



CLEANOUT TO GRADE (M288)

NTS



HUB DRAIN (M284)

NTS

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MECHANICAL STANDARD DETAILS - 9

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN TO DIG, CALL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING ALL SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoefl	DATE:	SCALE: AS SHOWN	APPROVED BY:	DATE: XX-XX-14
DRAWN BY: M.Foyle	DATE:		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	
CHECKED BY: M.Nakamoto	DATE:	PROJECT NUMBER: 2036		

Plan No. GM-10

Sheet _____ of XXX Sheets

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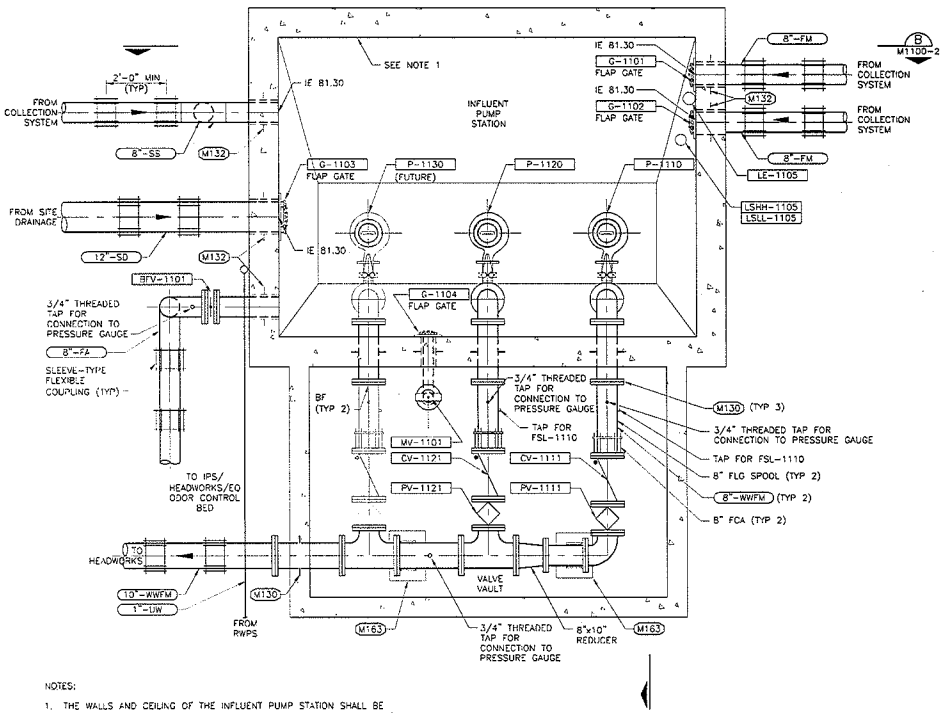
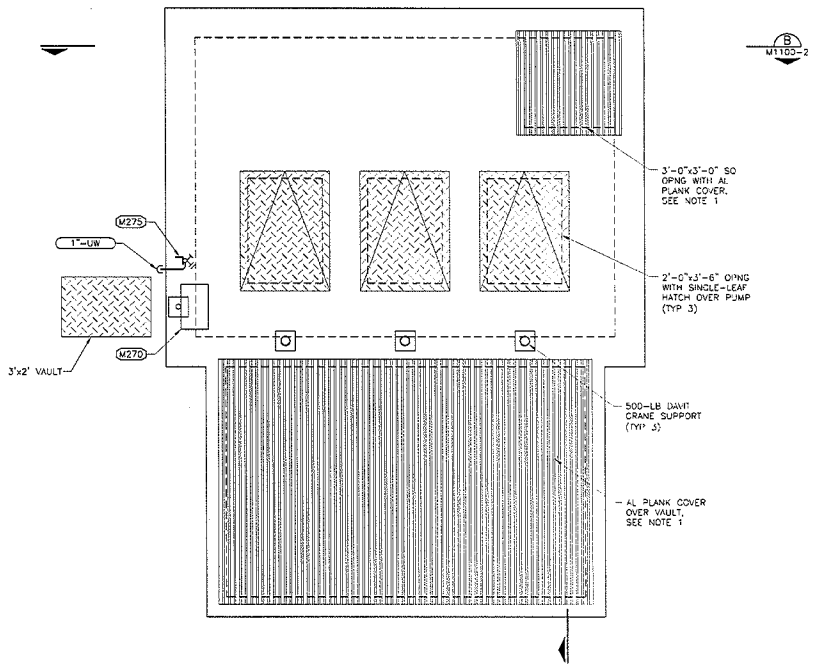


NOTES:

1. THE WALLS AND CEILING OF THE INFLUENT PUMP STATION SHALL BE LINED WITH T-LOCK PVC LINING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

BOTTOM PLAN
1/2" = 1'-0"



NOTES:

1. MAXIMUM WEIGHT OF EACH PLANK SECTION SHALL BE 80 LBS.

TOP PLAN
1/2" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INFLUENT PUMP STATION AND EQUALIZATION BASIN BOTTOM PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE. DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SHADED AREA SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M1100-1

Sheet _____ of XXX Sheets

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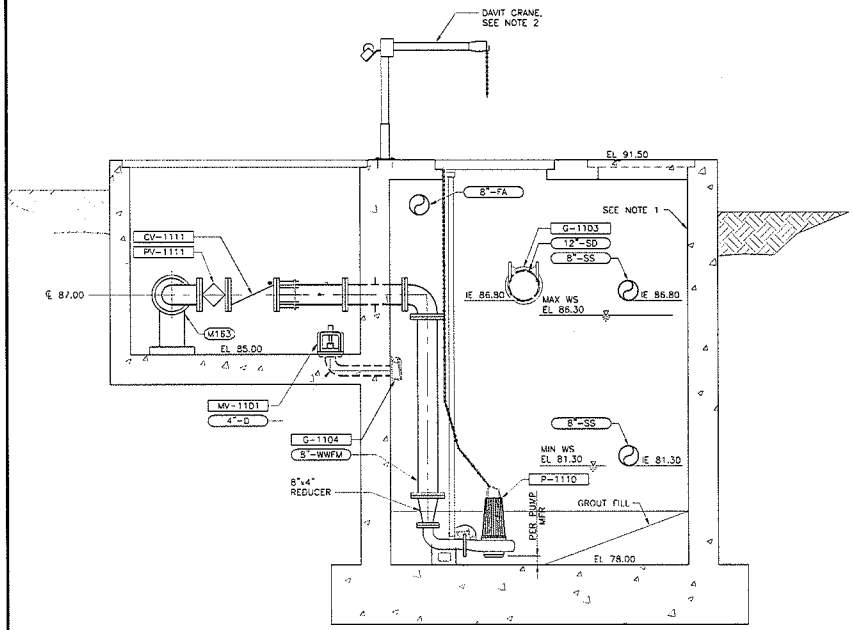
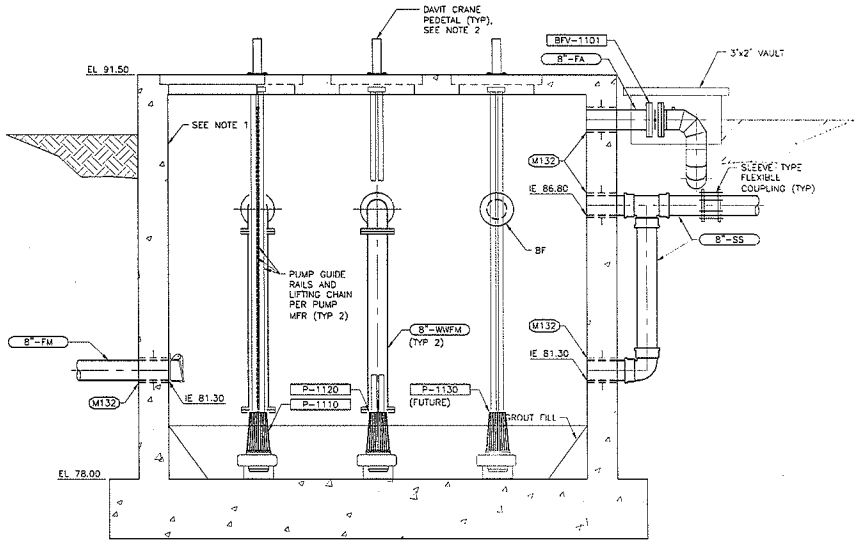


NOTES:

1. THE WALLS AND CEILING OF THE INFLUENT PUMP STATION SHALL BE LINED WITH T-LOCK PVC LINING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. CONTRACTOR TO PROVIDE ONE DAVIT CRANE AND THREE PEDESTALS FOR THE INFLUENT PUMP STATION.

SECTION A
1/2"=1'-0" M1100-1,2



NOTES:

1. THE WALLS AND CEILING OF THE INFLUENT PUMP STATION SHALL BE LINED WITH T-LOCK PVC LINING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. CONTRACTOR TO PROVIDE ONE DAVIT CRANE AND THREE PEDESTALS FOR THE INFLUENT PUMP STATION.

SECTION B
1/2"=1'-0" M1100-1,2

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INFLUENT PUMP STATION AND EQUALIZATION BASIN SECTIONS - I

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE, DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NORTHERN AND SOUTHERN CALIFORNIA COUNTIES

0" 1/2" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft — DATE
DRAWN BY: M.Foyle — DATE
CHECKED BY: M.Nakamoto — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036
Plan No. M1100-2

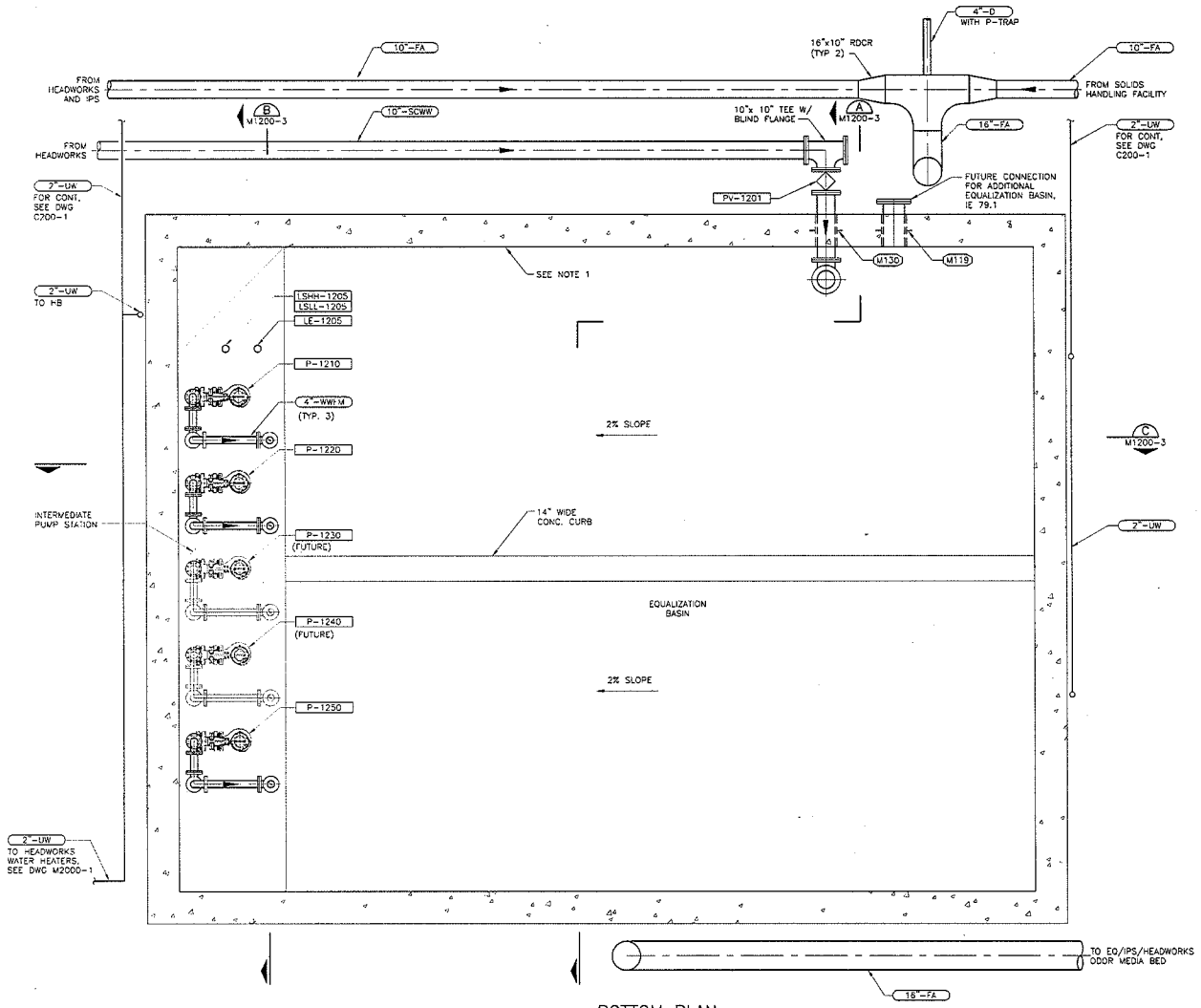
APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Sheet _____ of XXX Sheets

Last Saved By: sJung 3-26-14 01:39pm

NOTES:

1. THE WALLS AND CEILING OF THE INTERMEDIATE PUMP STATION SHALL BE LINED WITH T-LOCK PVC LINING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.



BOTTOM PLAN
3/8" = 1'-0"

DIAL BEFORE YOU DIG
DIGALERT

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INTERMEDIATE PUMP STATION AND EQUALIZATION BASIN BOTTOM PLAN

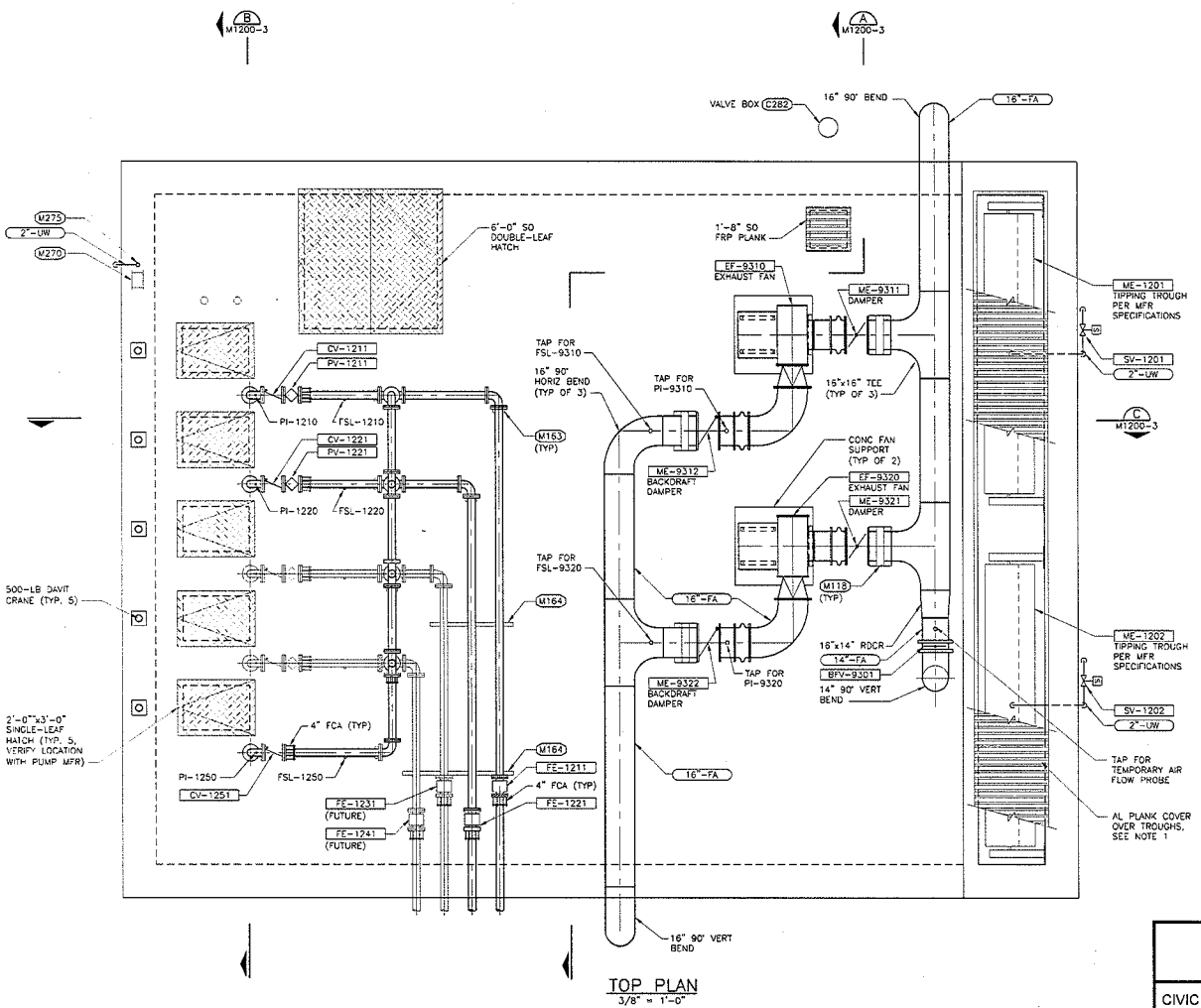
DESIGNED BY: E. Roy	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE
DRAWN BY: R. Martinez	DATE	AS SHOWN	XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	

Plan No. M1200-1 Sheet _____ of XXX Sheets

Last Saved By: xjung 3-26-14 02:51pm

NOTES:

1. MAXIMUM WEIGHT OF EACH PLANK SECTION SHALL BE 80 LBS.



TOP PLAN
3/8" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INFLUENT PUMP STATION AND EQUALIZATION BASIN TOP PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: E. Roy	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: R. Martinez	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M1200-2 — Sheet _____ of XXX Sheets

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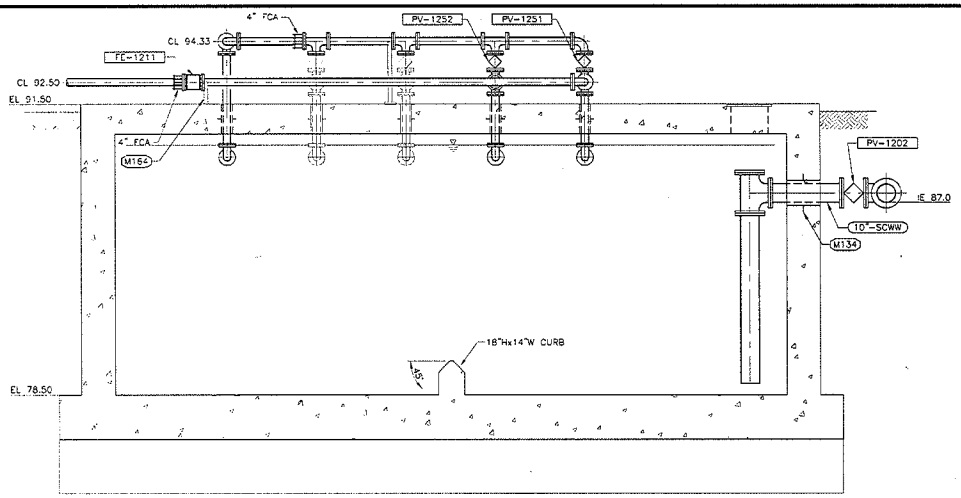
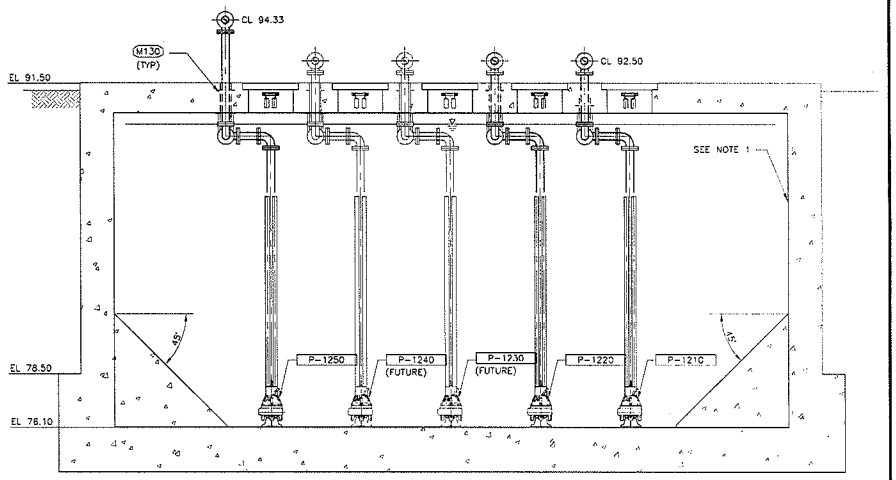
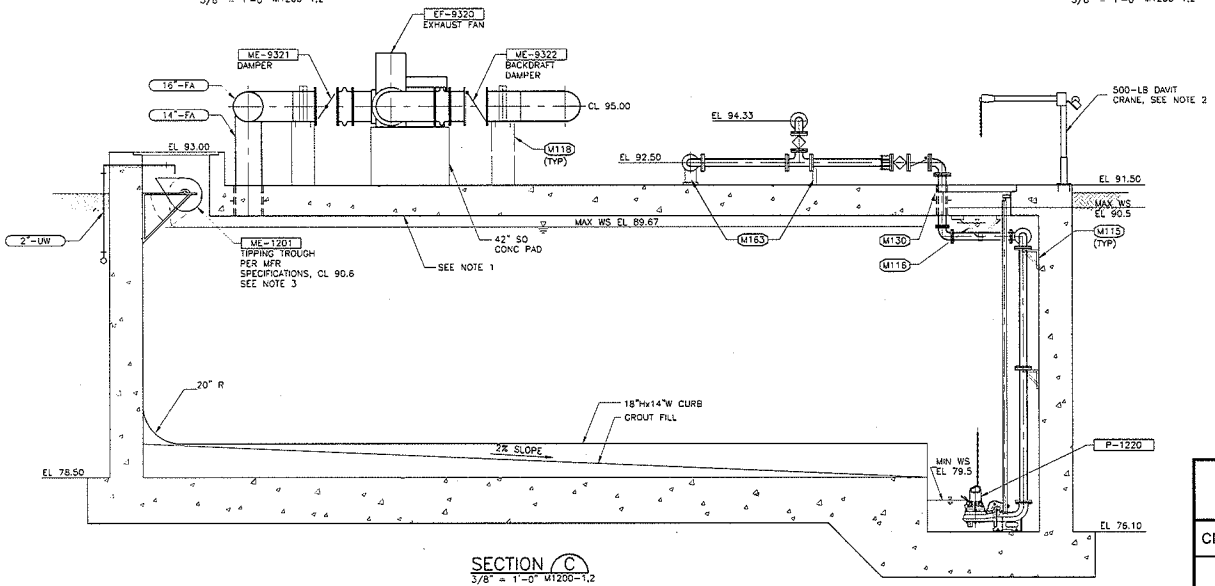


SECTION A
3/8" = 1'-0" M1200-1,2



SECTION B
3/8" = 1'-0" M1200-1,2



SECTION C
3/8" = 1'-0" M1200-1,2

NOTES:

1. THE WALLS AND CEILING OF THE INTERMEDIATE PUMP STATION SHALL BE LINED WITH T-LOCK PVC LINING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. CONTRACTOR TO PROVIDE ONE DAVIT CRANE AND FIVE PEDESTALS FOR THE INTERMEDIATE PUMP STATION.
3. TIPPING TROUGH ARRANGEMENT IS BASED ON JOHN MEUNIER HYDROVEX SEDIMENT FLUSHING TANK. USE OF ANOTHER MANUFACTURER MAY REQUIRE REARRANGEMENT OF EQUIPMENT, PIPING OR STRUCTURE AND IS SUBJECT TO APPROVAL BY ENGINEER.

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN SAFE, DIG SAFE, YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NEW SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES —
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INFLUENT PUMP STATION AND EQUALIZATION BASIN SECTIONS - 1

DESIGNED BY: E. Roy	DATE	SCALE: AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: R. Martinez	DATE: XX-XX-14		
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER: 2036	DATE

Plan No. M1200-3

Sheet _____ of XXX Sheets

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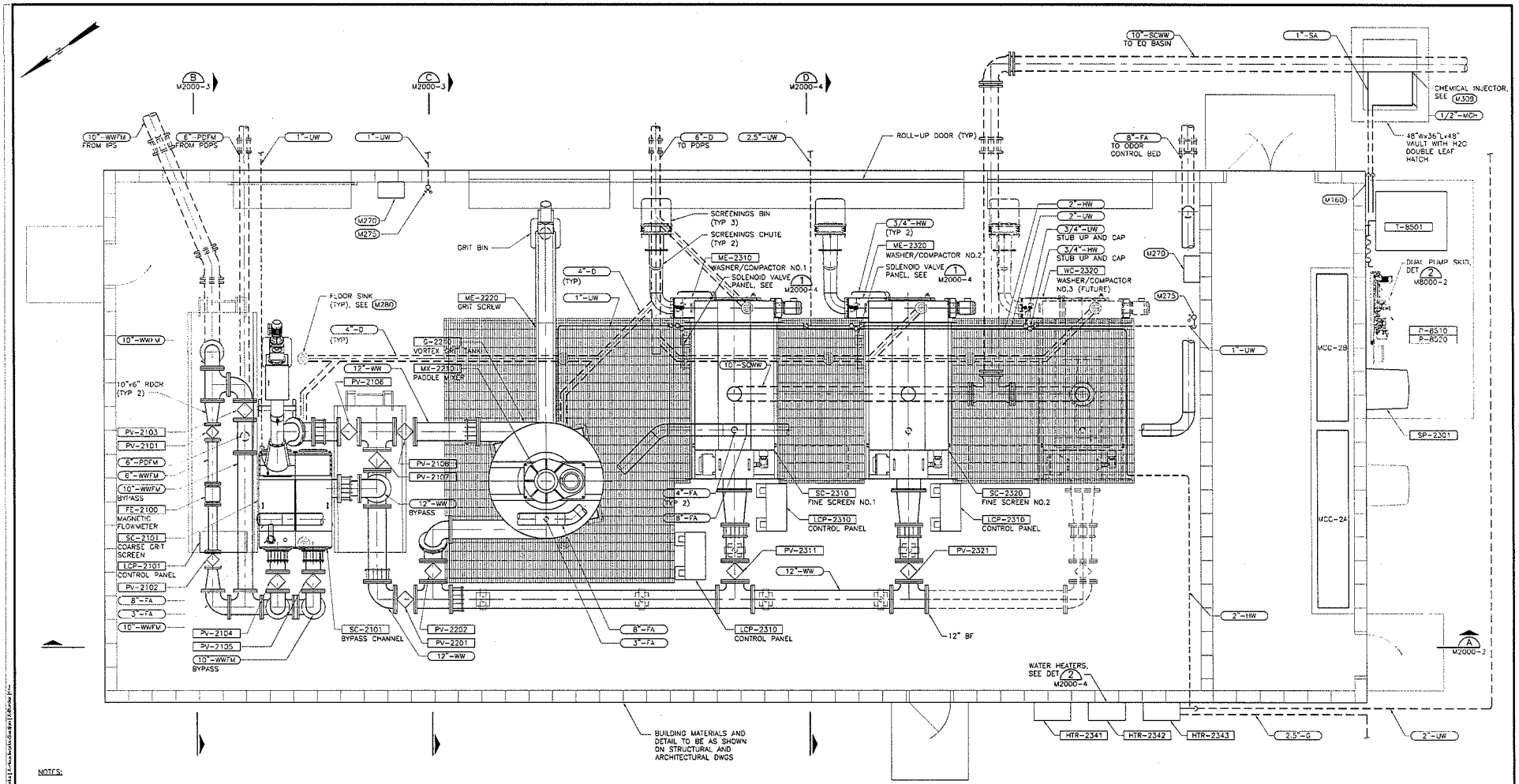

PLAN
3/8" = 1'-0"

NOTES:

1. CONTRACTOR SHALL ADJUST HEADWORK EQUIPMENT CONNECTING PIPING, FOUL AIR DUCTS, DRAINS AND OTHER PIPING AS NEEDED FOR SELECTED MANUFACTURE EQUIPMENT REQUIREMENTS AT NO ADDITIONAL COST TO OWNER. CLEARANCES AROUND PIPING AND EQUIPMENT SHALL BE MAINTAINED TO THE EXTENT POSSIBLE.
2. CONTRACTOR SHALL ADJUST UW AND HW PIPING AS NEEDED FOR SELECTED MANUFACTURER EQUIPMENT AND SPRAY WATER LOCATIONS. MINIMUM UW AND HW PIPELINE SIZES ARE SHOWN. CONTRACTOR SHALL PROVIDE NECESSARY PIPELINE MODIFICATIONS AT NO ADDITIONAL COST TO OWNER.
3. ROLL-UP DOORS IN FRONT OF HEADWORKS EQUIPMENT SHALL BE SIZED TO ALLOW INSTALLATION OF EQUIPMENT. MINIMUM DOOR SIZES ARE SHOWN. CONTRACTOR SHALL UPSIZE ROLLUP DOORS AS NEEDED TO ACCOMODATE EQUIPMENT REMOVAL AND INSTALLATION AT NO ADDITIONAL COST TO OWNER.
4. CONTRACTOR SHALL PROVIDE PLANK GRATING SUPPORTS AS NEEDED AROUND THE GRIT TANK TO SUPPORT PLANK GRATING.
5. CONTRACTOR SHALL INSTALL PLANK GRATING AND REQUIRED PLANK GRATING SUPPORTS OVER THE FUTURE FINE SCREEN NO. 3 AREA.

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HEADWORKS PLAN

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M2000-1

Sheet _____ of XXX Sheets

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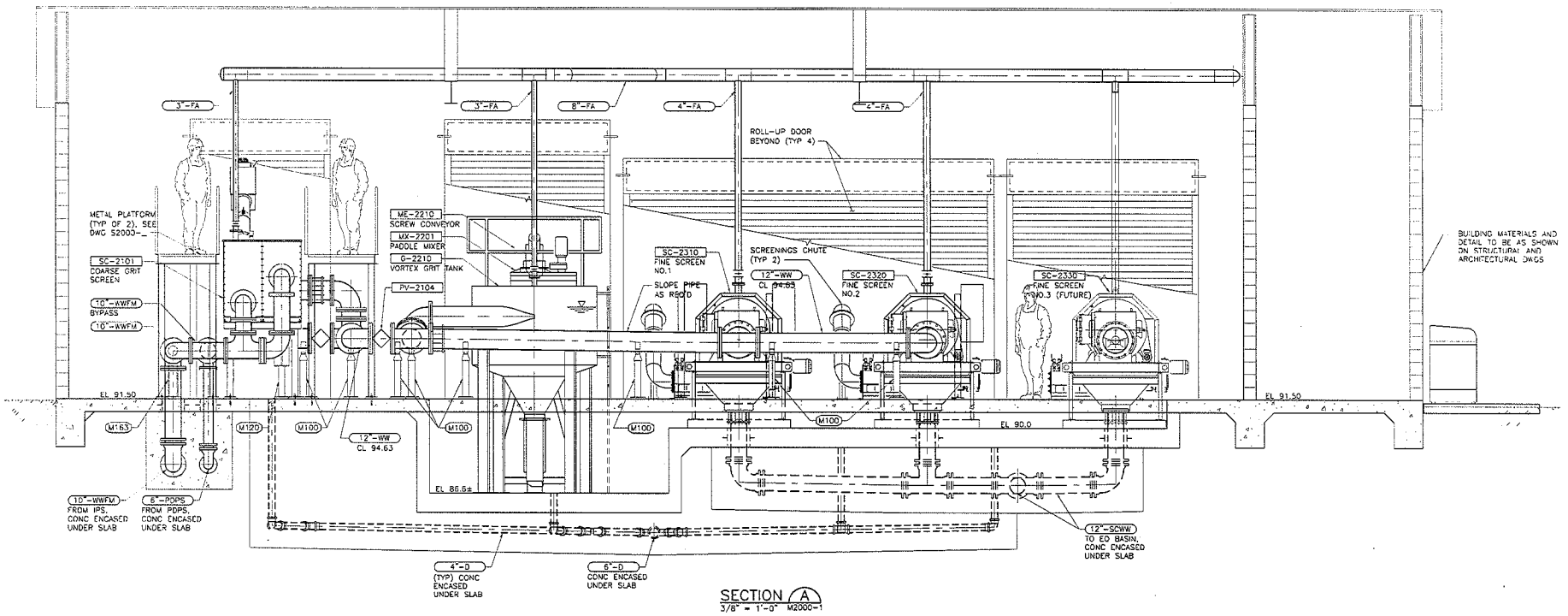


SECTION A
3/8" = 1'-0" M2000-1

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IT SAFE, DIAL BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" 1"
— VERIFY SCALES —
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HEADWORKS
SECTIONS - 1

DESIGNED BY: M.Hoeft — DATE
DRAWN BY: M.Foyle — DATE
CHECKED BY: M.Nakamoto — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036

APPROVED BY: DATE
XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

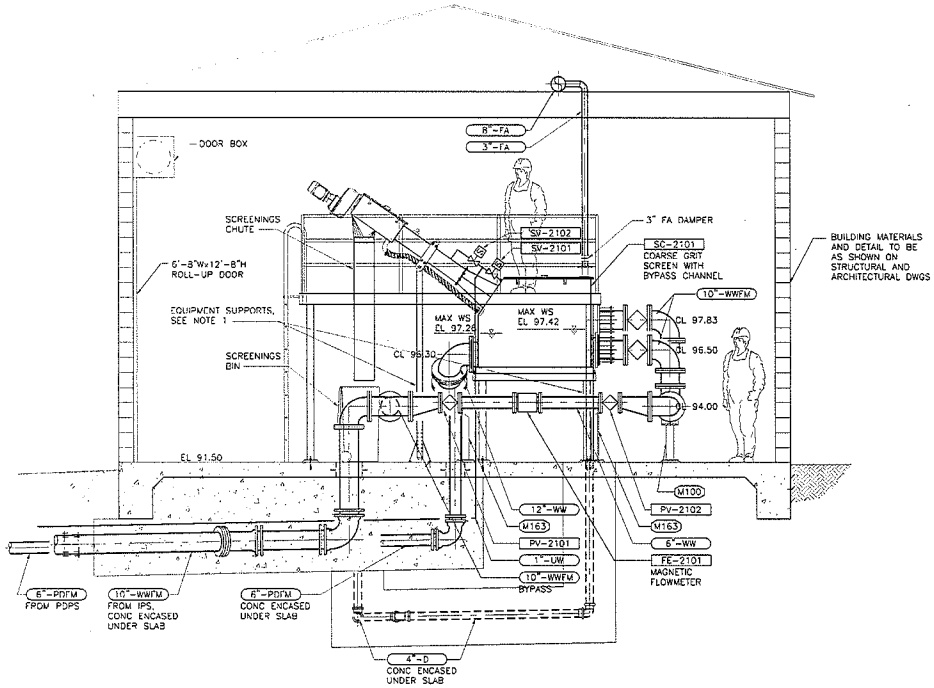
Plan No. M2000-2

Sheet ____ of XXX Sheets

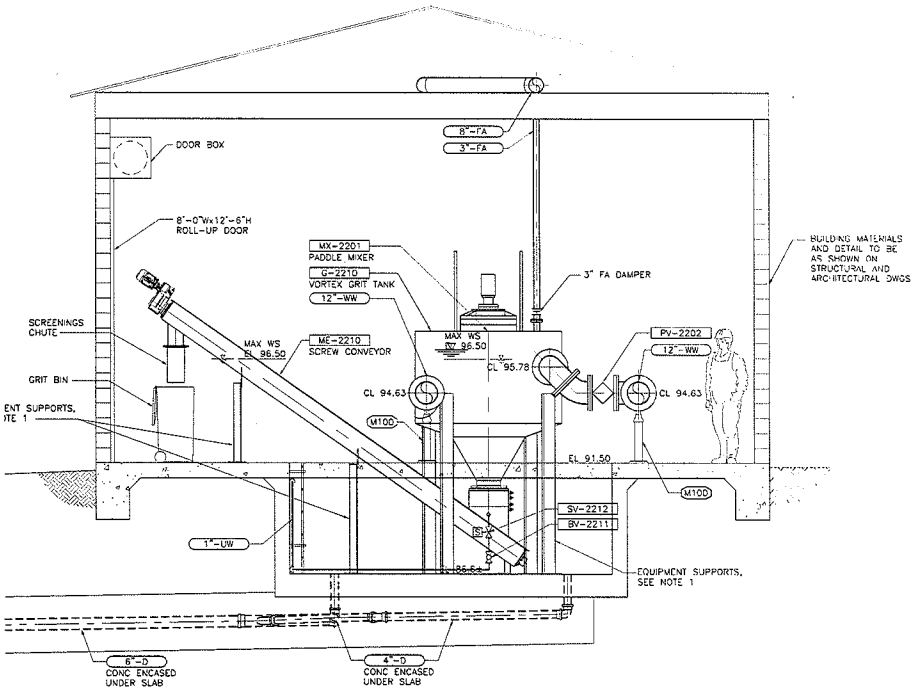
Last Saved By: slung 3-27-14 11:16am

NOTES:

1. ALL SUPPORTS AND ANCHORAGE FOR COARSE SCREENS, GRIT TANK, SCREW CONVEYORS, AND ASSOCIATED EQUIPMENT SHALL BE DESIGNED BY EQUIPMENT MANUFACTURERS AND SUBMITTED FOR REVIEW TO ENGINEER.



SECTION B
3/8" = 1'-0" M2000-1



SECTION C
3/8" = 1'-0" M2000-1

DIAL BEFORE YOU DIG
DIGALERT
(NAVY DAY, DIAL BEFORE YOU DIG)
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NW & SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HEADWORKS
SECTIONS - 2

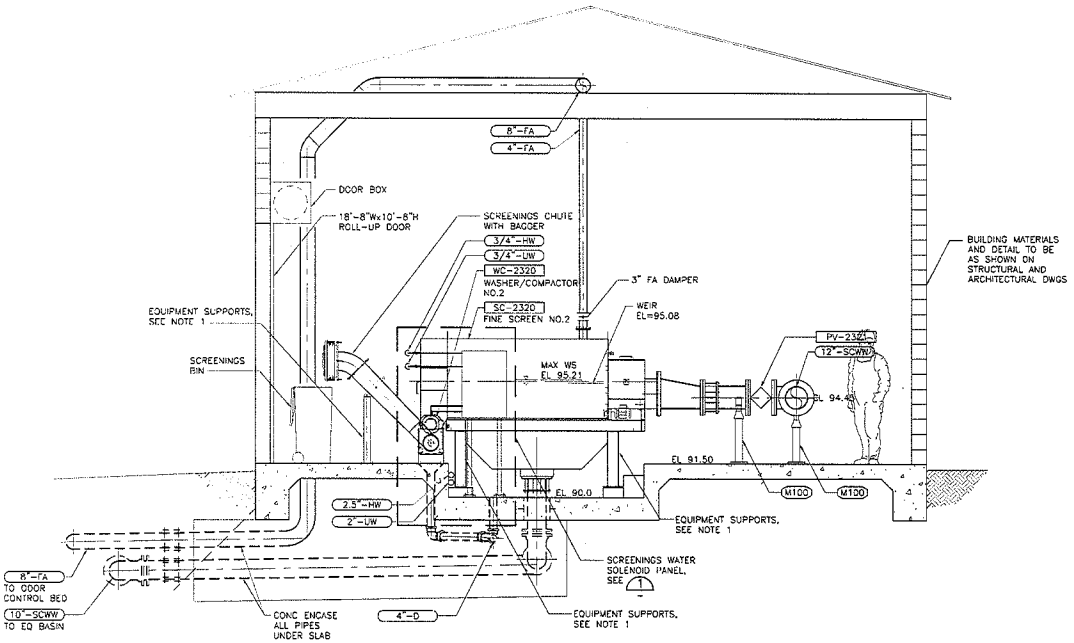
DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-14
DRAWN BY: M.Foyle	DATE	AS SHOWN	
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	

Plan No. M2000-3 — Sheet ____ of XXX Sheets

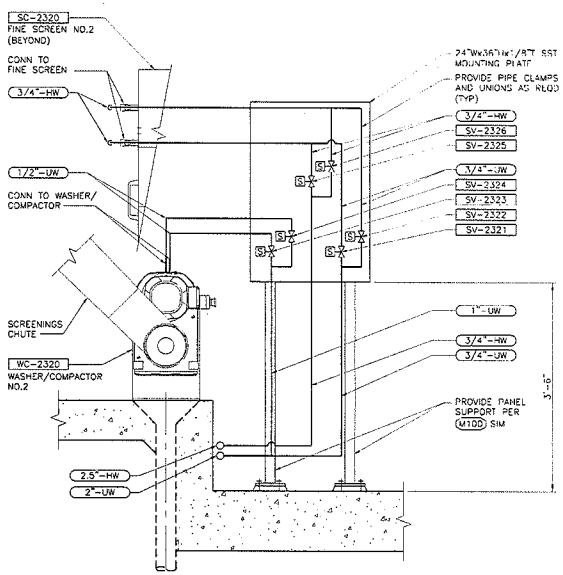
Last Saved By: kjang 3/27/14 1" Idem

NOTES:

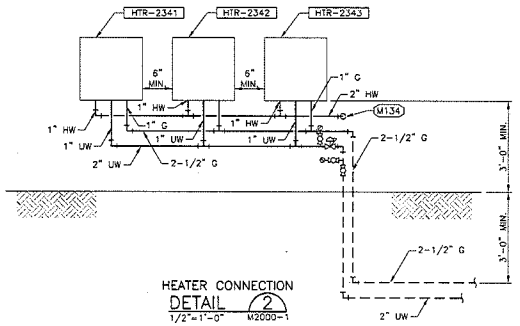
1. ALL SUPPORTS AND ANCHORAGE FOR COARSE SCREENS, GRIT TANK, SCREW CONVEYORS, AND ASSOCIATED EQUIPMENT SHALL BE DESIGNED BY EQUIPMENT MANUFACTURERS AND SUBMITTED FOR REVIEW TO ENGINEER.



SECTION D
3/8" = 1'-0" M2000-1



SCREENINGS WATER SOLENOID PANEL
DETAIL 1
1"=1'-0"



HEATER CONNECTION
DETAIL 2
1/2"=1'-0" M2000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HEADWORKS
SECTIONS - 3

DIAL BEFORE YOU DIG
DIGALERT

"VERIFY SCALES" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

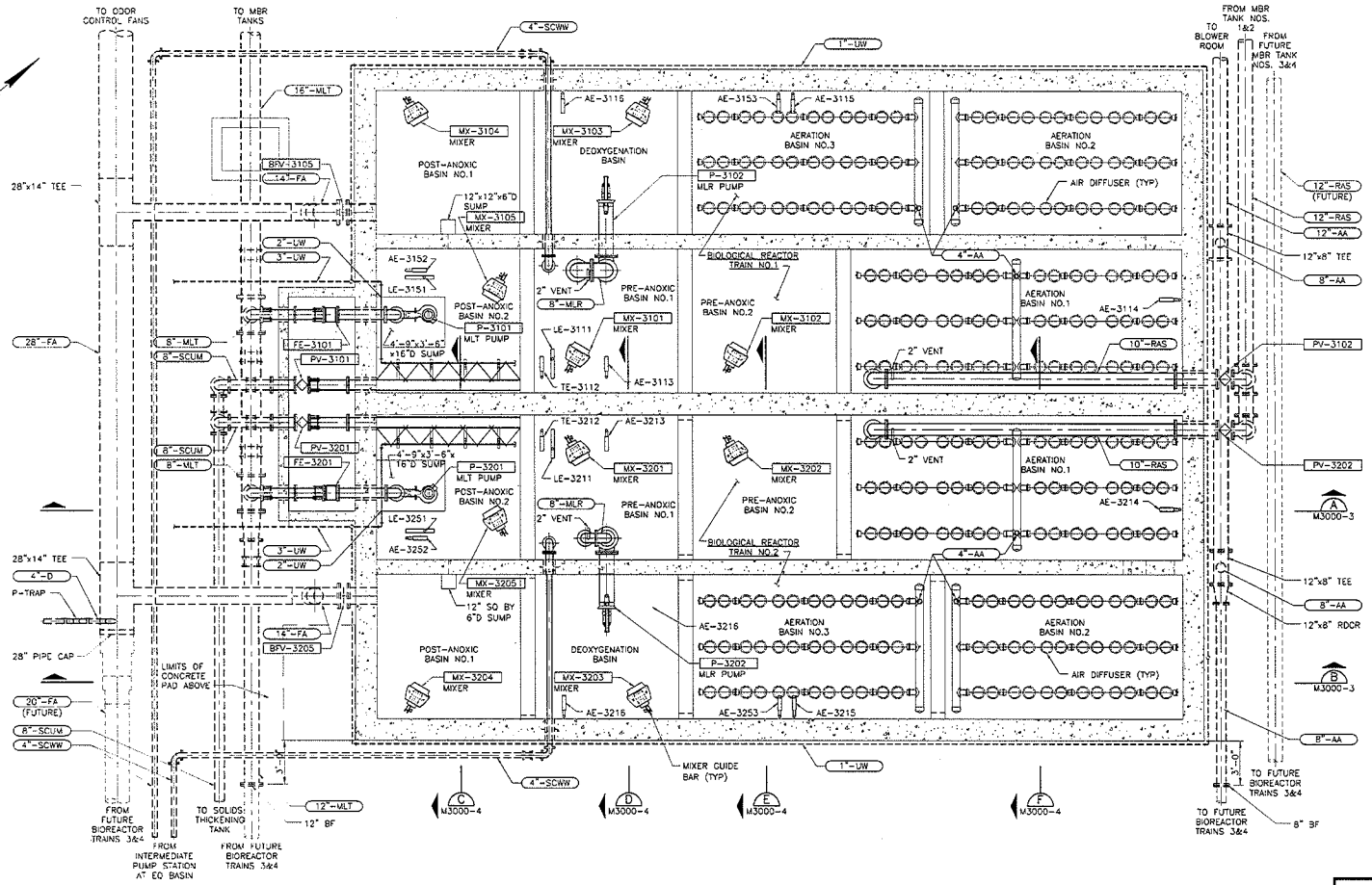
95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoett	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M2000-4 Sheet _____ of XXX Sheets

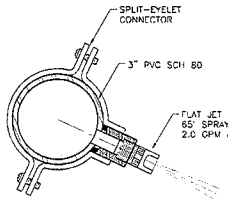
Last Saved By: SJung 2-26-14 6:23pm



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

NOTES:

1. THE AERATION SYSTEM SHOWN IS SCHEMATIC AND THE AERATOR EQUIPMENT MANUFACTURER SHALL DESIGN DROP PIPE, AIR HEADER PIPE, AIR LATERALS AND AERATOR PATTERN AND COVERAGE TO FACILITATE EVEN AERATION AND MIXING IN THE THREE AERATION BASINS FOR EACH BIOREACTOR. EACH AERATION SYSTEM SHALL BE CAPABLE OF 430 ACFM DISCHARGE.
2. THE MIXER LOCATION, ARRANGEMENT, ANGLE AND ORIENTATION SHALL BE ADJUSTED BY THE MIXER MANUFACTURER TO ACHIEVE A COMPLETELY MIXED BASIN.



NOTE: NOZZLES TO BE 24" ON CENTER.

FLAT JET (303SS) NOZZLE
DETAIL 1
NTS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BIOLOGICAL REACTOR TRAIN NOS.1 & 2
BOTTOM PLAN

DESIGNED BY: M.Hoelt
DRAWN BY: M.Foyle
CHECKED BY: M.Nakamoto
DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036

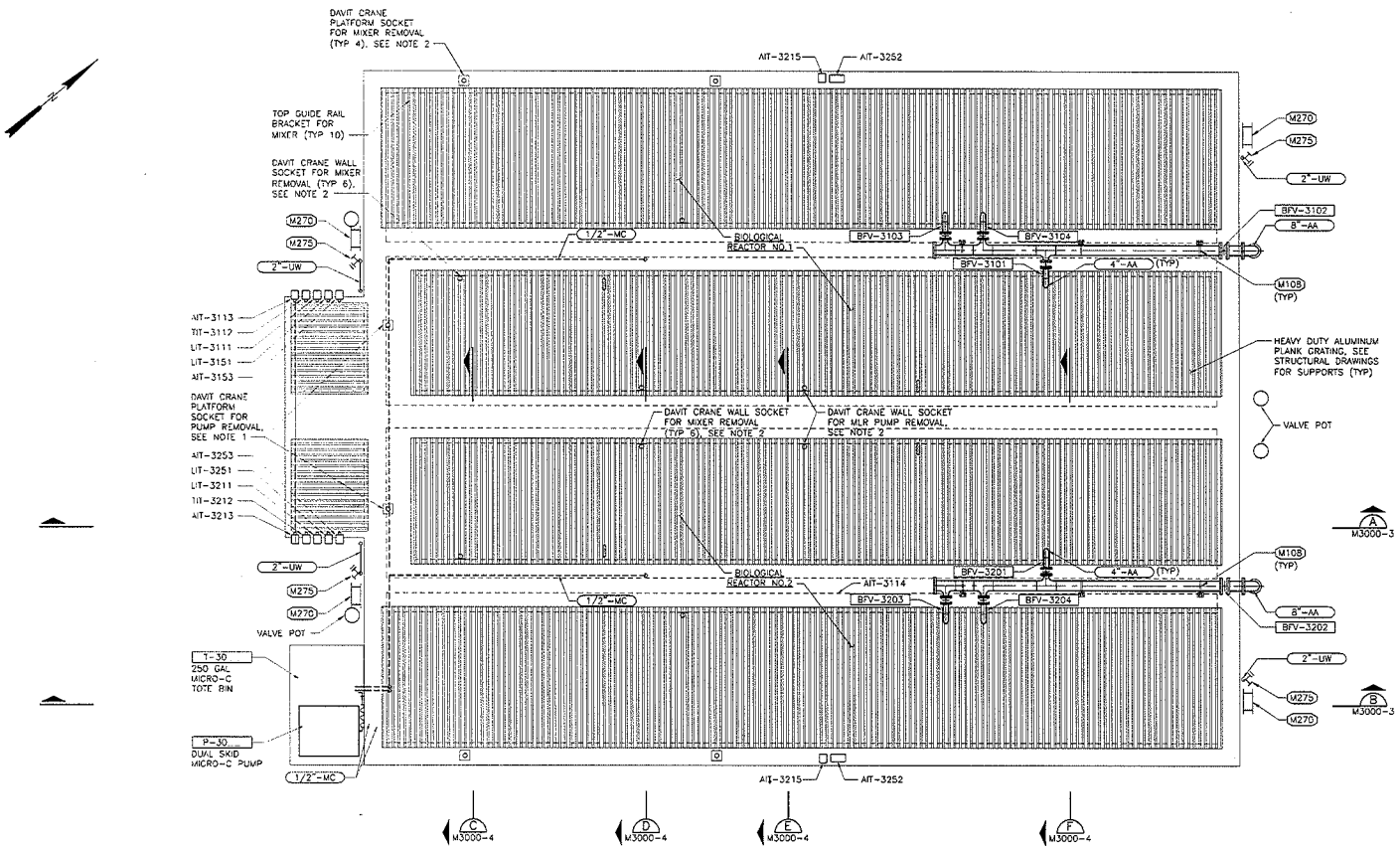
APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. M3000-1
Sheet ____ of XXX Sheets

Last Saved By: S.Jung 3-20-14 19:57pm

NOTES:

1. CONTRACTOR TO PROVIDE ONE 500-LB DAVIT CRANE AND TWO PLATFORM SOCKETS FOR REMOVAL OF MLR PUMPS. SOCKETS SHALL BE LOCATED PER PUMP MFR RECOMMENDATIONS.
2. CONTRACTOR TO PROVIDE ONE 250-LB DAVIT CRANE FOR REMOVAL OF MIXERS AND MLR PUMPS. PROVIDE FOUR PLATFORM SOCKETS AND SIX WALL SOCKETS FOR REMOVAL OF MIXERS AND TWO WALL SOCKETS FOR REMOVAL OF MLR PUMPS. SOCKETS SHALL BE LOCATED PER MIXER AND PUMP MFR RECOMMENDATIONS.



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

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BIOLOGICAL REACTOR TRAIN NOS.1 & 2
TOP PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Haeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M3000-2

Sheet _____ of XXX Sheets

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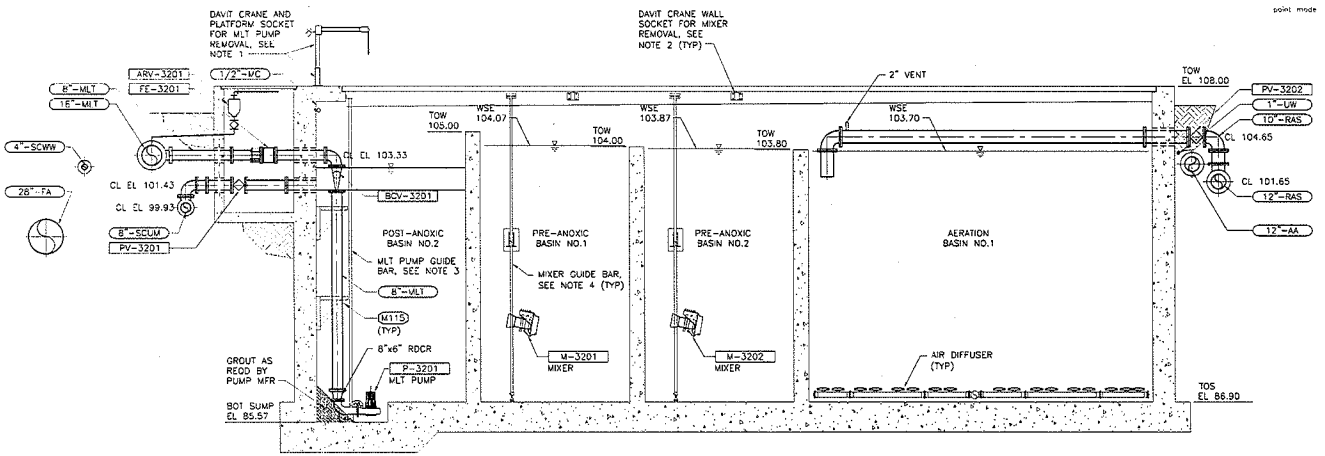
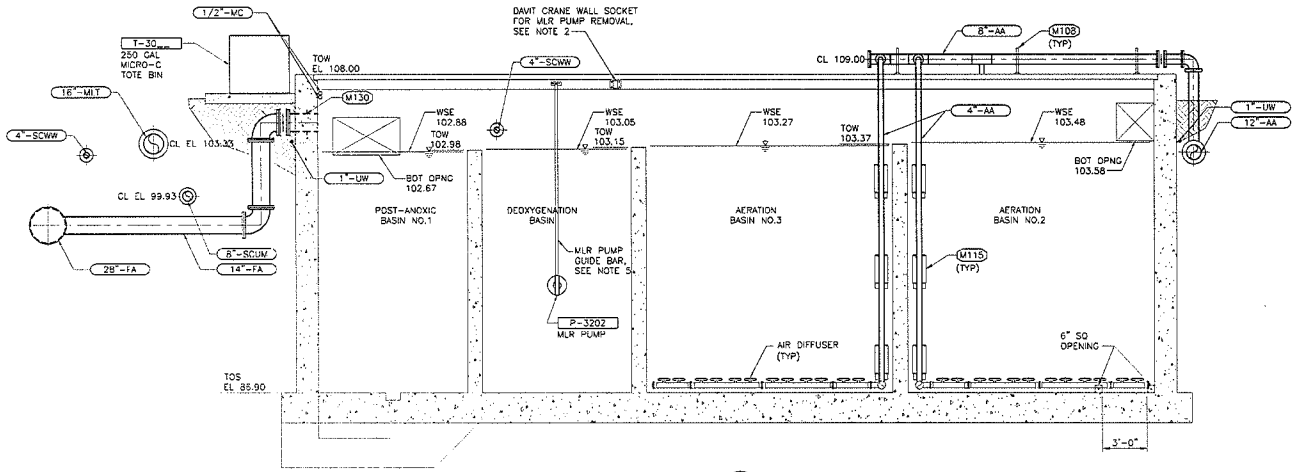


SECTION A
1/4" = 1'-0" M3200-1



SECTION B
1/4" = 1'-0" M3000-1

NOTES:

1. CONTRACTOR TO PROVIDE ONE 500-LB DAVIT CRANE AND TWO PLATFORM SOCKETS FOR REMOVAL OF MLT PUMPS. SOCKETS SHALL BE LOCATED PER PUMP MFR RECOMMENDATIONS.
2. CONTRACTOR TO PROVIDE ONE 250-LB DAVIT CRANE FOR REMOVAL OF MIXERS AND MLR PUMPS. PROVIDE FOUR PLATFORM SOCKETS AND SIX WALL SOCKETS FOR REMOVAL OF MIXERS AND TWO WALL SOCKETS FOR REMOVAL OF MLR PUMPS. SOCKETS SHALL BE LOCATED PER MIXER AND PUMP MFR RECOMMENDATIONS.
3. CONTRACTOR TO PROVIDE GUIDE RAIL MOUNTING SYSTEM FOR EACH MLT PUMP PER PUMP MFR TO FACILITATE PUMP REMOVAL. MOUNTING SYSTEM SHALL INCLUDE TOP MOUNTING BRACKET AND INTERMEDIATE RAIL SUPPORTS SPACED PER MFR. TOP MOUNTING BRACKET SHALL NOT INTERFERE WITH PLANK GRATING OR PLANK GRATING SUPPORTS.
4. CONTRACTOR TO PROVIDE GUIDE BAR MOUNTING SYSTEM FOR EACH MIXER PER MIXER MFR TO FACILITATE MIXER REMOVAL AND ORIENTATION. MOUNTING SYSTEM SHALL INCLUDE INTERMEDIATE RAIL SUPPORTS SPACED PER MFR, FLOOR MOUNTING BRACKET WHERE REQUIRED, AND TOP MOUNTING BRACKET PER MIXER MFR. TOP MOUNTING BRACKET SHALL NOT INTERFERE WITH PLANK GRATING OR PLANK GRATING SUPPORTS. CONTRACTOR SHALL SUPPLY ADDITIONAL SUPPORTS AS REQUIRED FOR WALL MOUNTED GUIDE BRACKETS.
5. CONTRACTOR TO PROVIDE GUIDE RAIL MOUNTING SYSTEM FOR THE MLR PUMP PER PUMP MFR TO FACILITATE PUMP REMOVAL. MOUNTING SYSTEM SHALL INCLUDE TOP MOUNTING BRACKET AND INTERMEDIATE RAIL SUPPORTS SPACED PER MFR. TOP MOUNTING BRACKET SHALL NOT INTERFERE WITH PLANK GRATING OR PLANK GRATING SUPPORTS.
6. THE MIXER LOCATION, ARRANGEMENT, ANGLE AND ORIENTATION SHALL BE ADJUSTED BY THE MIXER MANUFACTURER TO ACHIEVE A COMPLETELY MIXED BASIN.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BIOLOGICAL REACTOR TRAIN NOS.1 & 2
SECTIONS - 1

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M3000-3 Sheet ____ of XXX Sheets

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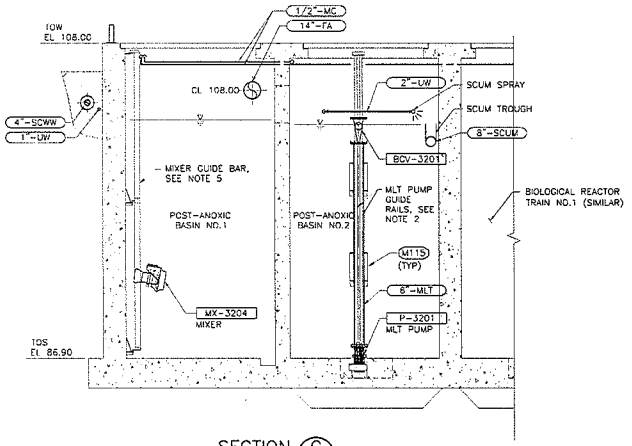
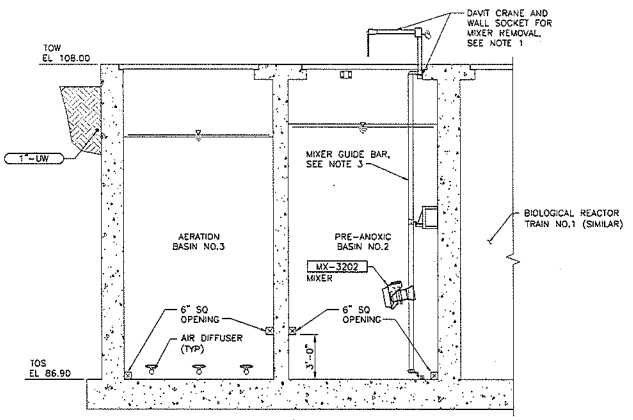
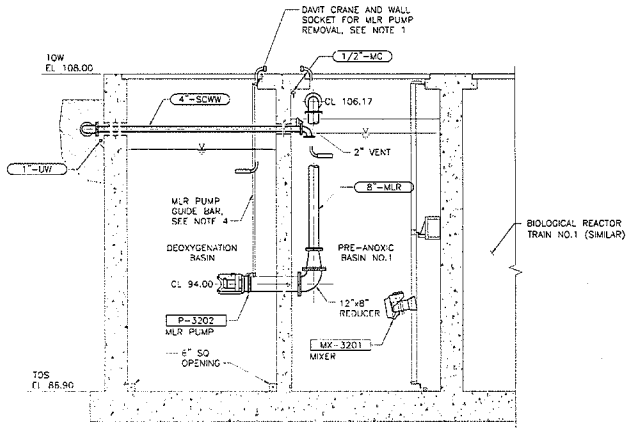


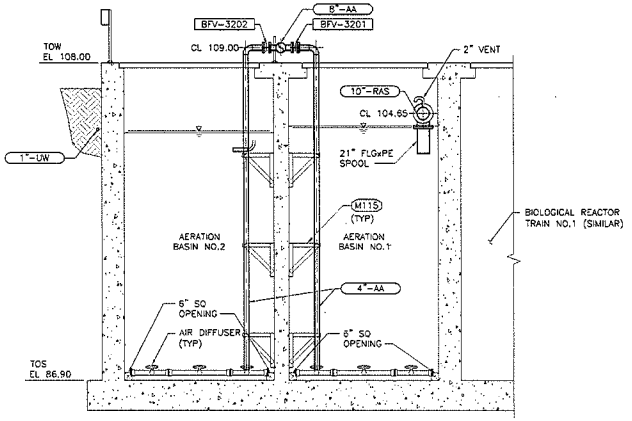
SECTION C
1/4" = 1'-0" M3000-1



SECTION E
1/4" = 1'-0" M3000-1



SECTION D
1/4" = 1'-0" M3000-1



SECTION F
1/4" = 1'-0" M3000-1

NOTES:

1. CONTRACTOR TO PROVIDE ONE 250-LB DAVIT CRANE FOR REMOVAL OF MIXERS AND MLR PUMPS. PROVIDE FOUR PLATFORM SOCKETS AND SIX WALL SOCKETS FOR REMOVAL OF MIXERS AND TWO WALL SOCKETS FOR REMOVAL OF MLR PUMPS. SOCKETS SHALL BE LOCATED PER MIXER AND PUMP MFR RECOMMENDATIONS.
2. CONTRACTOR TO PROVIDE GUIDE RAIL MOUNTING SYSTEM FOR EACH MLT PUMP PER PUMP MFR TO FACILITATE PUMP REMOVAL. MOUNTING SYSTEM SHALL INCLUDE TOP MOUNTING BRACKET AND INTERMEDIATE RAIL SUPPORTS SPACED PER MFR. TOP MOUNTING BRACKET SHALL NOT INTERFERE WITH PLANK GRATING OR PLANK GRATING SUPPORTS.
3. CONTRACTOR TO PROVIDE GUIDE BAR MOUNTING SYSTEM FOR EACH MIXER PER MIXER MFR TO FACILITATE MIXER REMOVAL AND ORIENTATION. MOUNTING SYSTEM SHALL INCLUDE INTERMEDIATE RAIL SUPPORTS SPACED PER MFR, FLOOR MOUNTING BRACKET WHERE REQUIRED, AND TOP MOUNTING BRACKET PER MIXER MFR. TOP MOUNTING BRACKET SHALL NOT INTERFERE WITH PLANK GRATING OR PLANK GRATING SUPPORTS. CONTRACTOR SHALL SUPPLY ADDITIONAL SUPPORTS AS REQUIRED FOR WALL MOUNTED GUIDE BRACKETS.
4. CONTRACTOR TO PROVIDE GUIDE RAIL MOUNTING SYSTEM FOR THE MLR PUMP PER PUMP MFR TO FACILITATE PUMP REMOVAL. MOUNTING SYSTEM SHALL INCLUDE TOP MOUNTING BRACKET AND INTERMEDIATE RAIL SUPPORTS SPACED PER MFR. TOP MOUNTING BRACKET SHALL NOT INTERFERE WITH PLANK GRATING OR PLANK GRATING SUPPORTS.
5. THE MIXER LOCATION, ARRANGEMENT, ANGLE AND ORIENTATION SHALL BE ADJUSTED BY THE MIXER MANUFACTURER TO ACHIEVE A COMPLETELY MIXED BASIN.

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN TO EXCAVATE? DIAL BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NW & SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BIOLOGICAL REACTOR TRAIN NOS.1 & 2
SECTIONS - 2

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN	XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT MANAGER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. M3000-4 Sheet ____ of XXX Sheets

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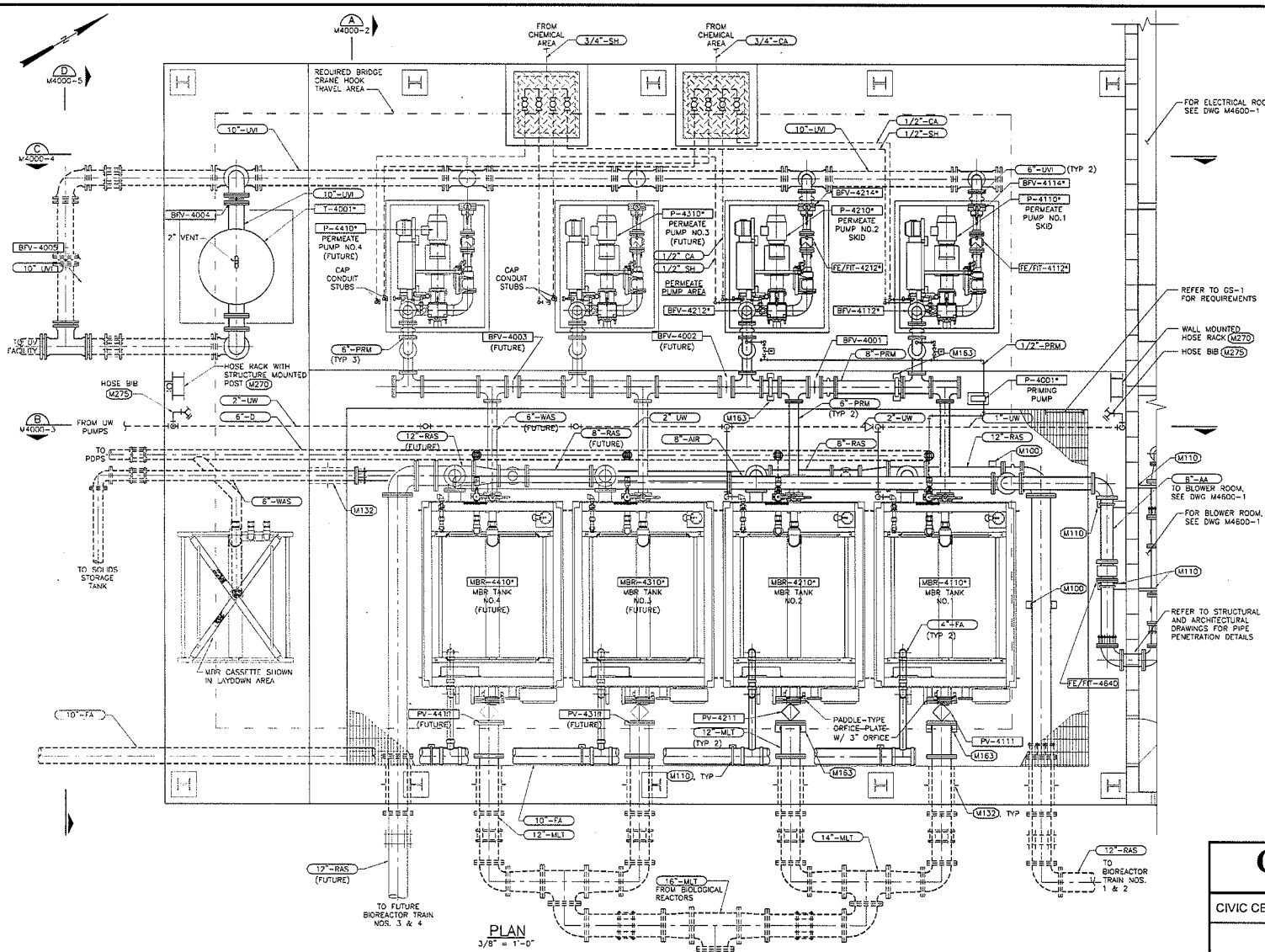


PLAN
3/8" = 1'-0"

NOTES:
1. "*" INDICATES EQUIPMENT TO BE FURNISHED BY MEMBRANE EQUIPMENT SUPPLIER. MEMBRANE EQUIPMENT SHALL BE INSTALLED BY CONTRACTOR.
2. AERATION AIR (AA) PIPING OUTSIDE OF BLOWER ROOM SHALL BE STAINLESS STEEL, EXPOSED AA PIPING SHALL BE INSULATED UP TO THE CONNECTION TO MEMBRANE TANKS.
3. THE MEMBRANE TANK AND PERMEATE PUMP SKID LAYOUT HAVE BEEN DESIGN AROUND THE GE ZENON LEAP SYSTEM. IF AN ALTERNATIVE MEMBRANE SYSTEM IS USED, THE CONTRACTOR SHALL PROVIDE NECESSARY MODIFICATION TO PROVIDE A WORKING SYSTEM AT NO ADDITIONAL COST TO OWNER.
4. CONTRACTOR SHALL COORDINATE WITH MEMBRANE TANK SUPPLIER ON TANK SUPPORT FOR PLANK GRATING TO BE PROVIDED BY CONTRACTOR.
5. CONTRACTOR SHALL INSTALL PLANK GRATING AND REQUIRED PLANK GRATING SUPPORTS OVER THE FUTURE MBR TANK NO. 3 AND 4 AREA.
6. CONNECTION SIZES AND LOCATION TO THE MEMBRANE TANK AND PERMEATE PUMP MAY VARY SLIGHTLY BASE ON MANUFACTURER DESIGN. CONTRACTOR SHALL ADJUST CONNECTION SIZES AS NEEDED AND PROVIDE REQUIRED FITTINGS LIKE REDUCERS AS NEEDED AT NO ADDITIONAL COST TO OWNER.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IS SAFE, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

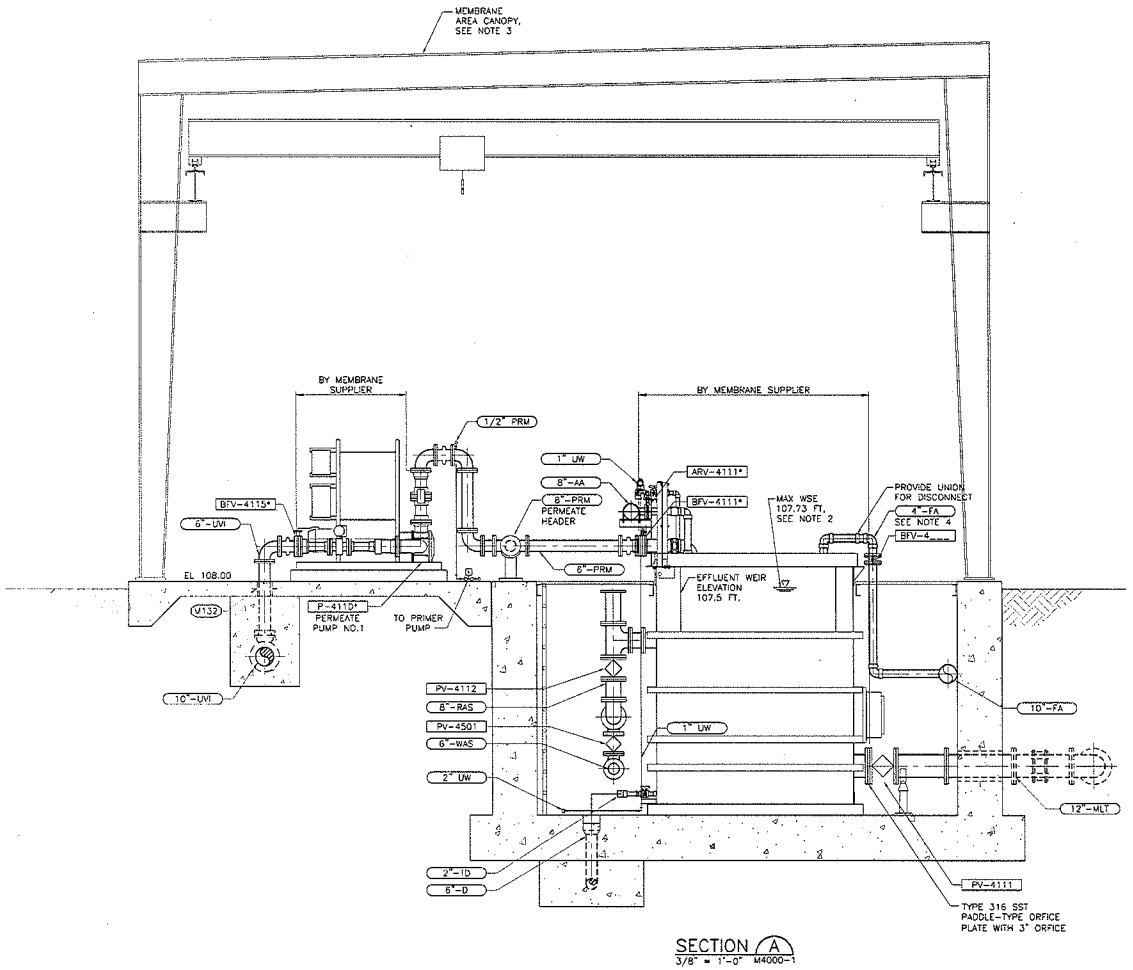
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA
PLAN

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN	XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.C., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. M4000-1 — Sheet ____ of XXX Sheets

Last Saved By: kLong 3/27/14 03:23pm



SECTION A
3/8" = 1'-0" M4000-1

NOTES:

1. "*" INDICATES EQUIPMENT TO BE FURNISHED BY MEMBRANE EQUIPMENT SUPPLIER. MEMBRANE EQUIPMENT SHALL BE INSTALLED BY CONTRACTOR.
2. SYSTEM HYDRAULICS ARE BASED ON A WEIR ELEVATION OF 107.50 FT IN THE MEMBRANE TANK. CONTRACTOR SHALL COORDINATE THE MEMBRANE TANK PIT TOP OF SLAB ELEVATION FOR SELECTED MEMBRANE SYSTEM SUPPLIER TANK DETAILS. CONTRACTOR SHALL ADJUST ELEVATION OF MEMBRANE TANK CONCRETE PIT UP TO 2.0 FT AS NECESSARY AT NO ADDITIONAL COST TO OWNER.
3. CONTRACTOR SHALL COORDINATE MEMBRANE AREA CANOPY, BRIDGE CRANE, AND MEMBRANE SYSTEM TANK DETAILS TO FACILITATE PROPER REMOVAL OF MEMBRANE CASSETTES FROM TANK. BRIDGE CRANE SHALL FACILITATE A MEMBRANE CASSETTE LIFT OF 6 INCHES OF CLEARANCE FROM BOTTOM OF MEMBRANE CASSETTE TO ANY OBSTRUCTION ALONG THE PATH TO THE MEMBRANE CASSETTE LAYDOWN AREA. ADJUSTMENTS TO HEIGHT OF BRIDGE CRANE AND CANOPY SHALL BE PROVIDED AT NO ADDITIONAL COST TO OWNER. MAXIMUM HEIGHT TO TOP OF CANOPY SHALL BE LESS THAN 25 FT FROM ADJACENT FINISH GRADE.
4. MEMBRANE TANKS SHALL BE EQUIPPED WITH A 4" CONNECTION OUT OF THE TOP FOR FOUL AIR (FA) CONNECTION.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE: DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" — VERIFY SCALES — 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA
SECTIONS - 1

DESIGNED BY: M.Hoeft	DATE	SCALE: AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE: XX-XX-14
DRAWN BY: M.Foyle	DATE		
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER: 2036	

Plan No. M4000-2 — Sheet ____ of XXX Sheets

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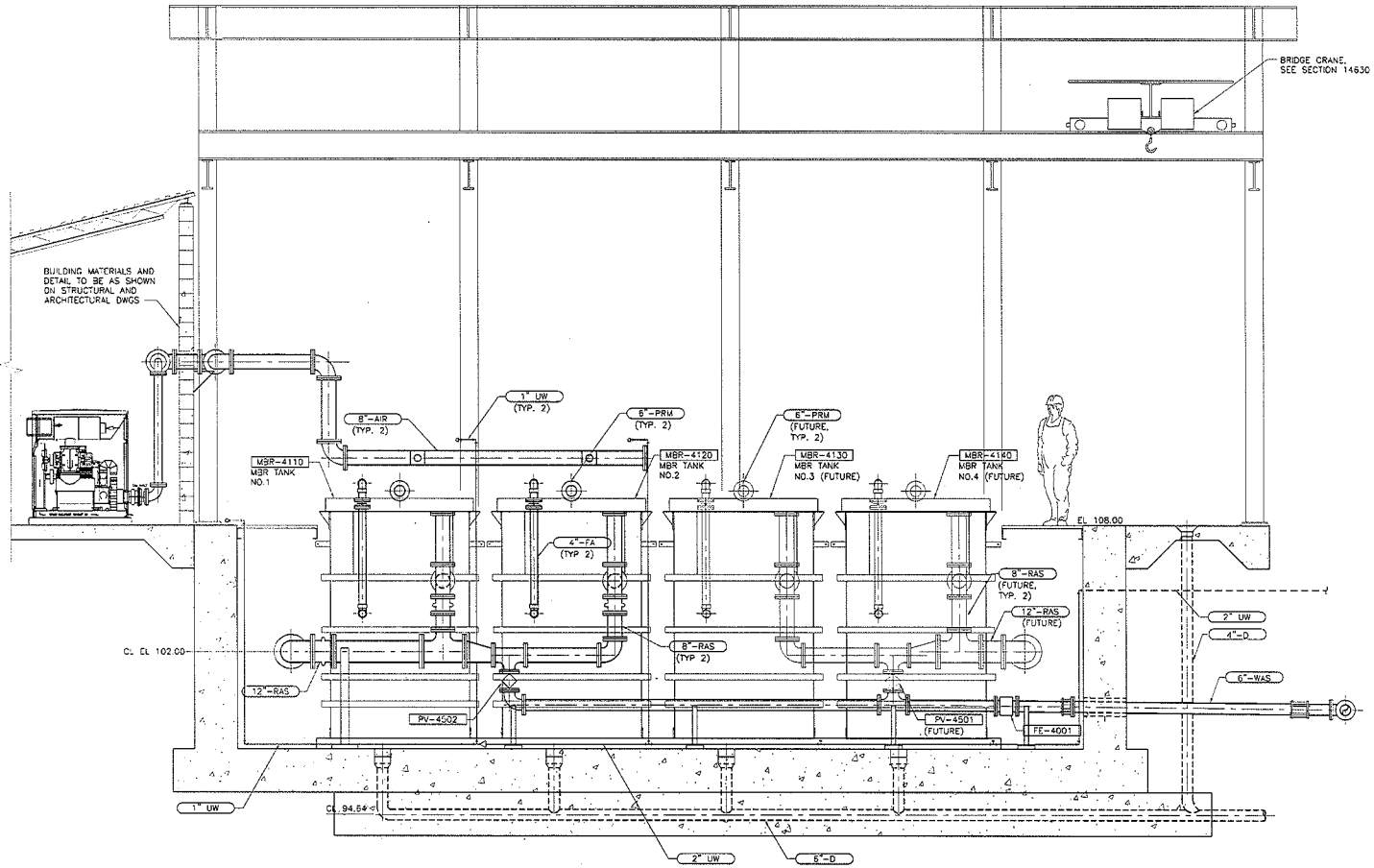

SECTION B
3/8" = 1'-0" M4000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA
SECTIONS - 2

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT — PLAN'T BARE, DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC WATER AND ENVIRONMENT

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT GRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M4000-3 Sheet _____ of XXX Sheets

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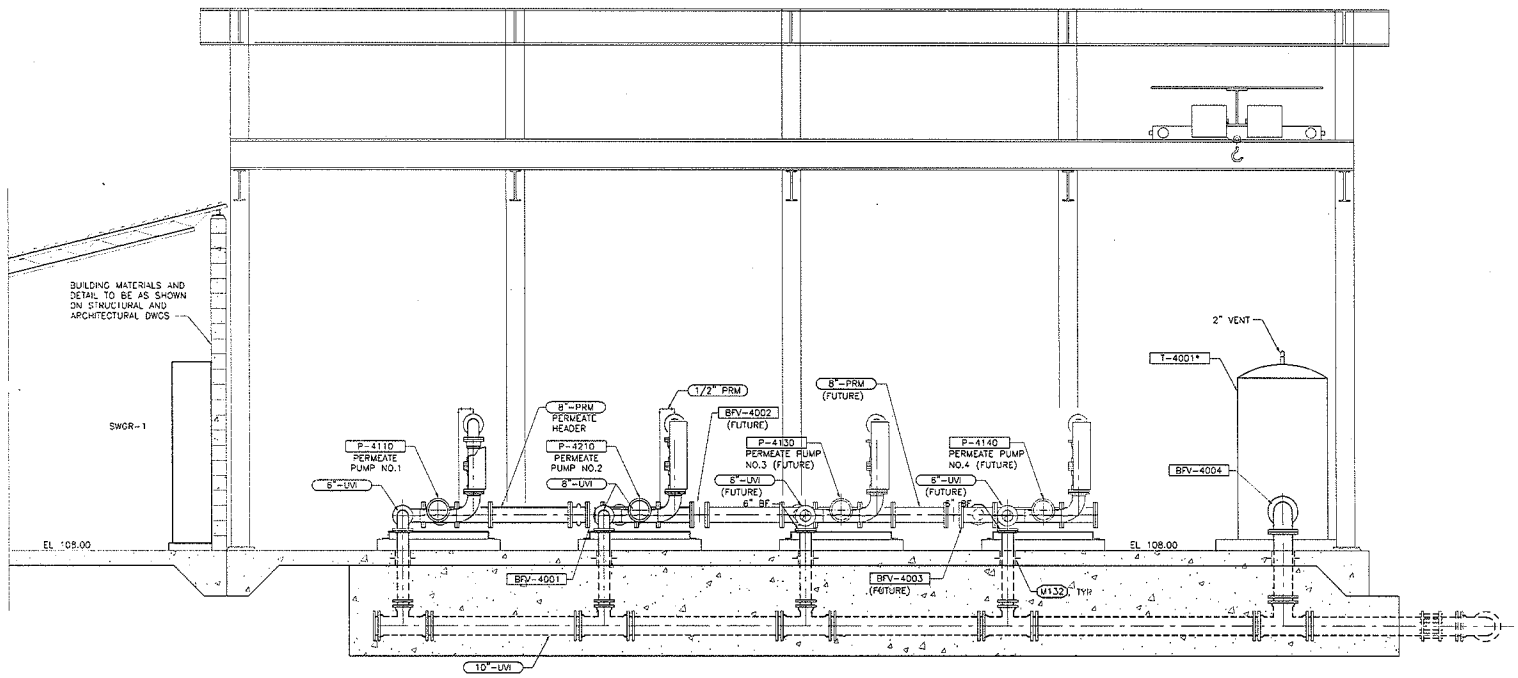


SECTION C
3/8" = 1'-0" M4000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA
SECTIONS - 3

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft — DATE
DRAWN BY: M.Foyle — DATE
CHECKED BY: M.Nakamoto — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036

APPROVED BY: DATE
XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

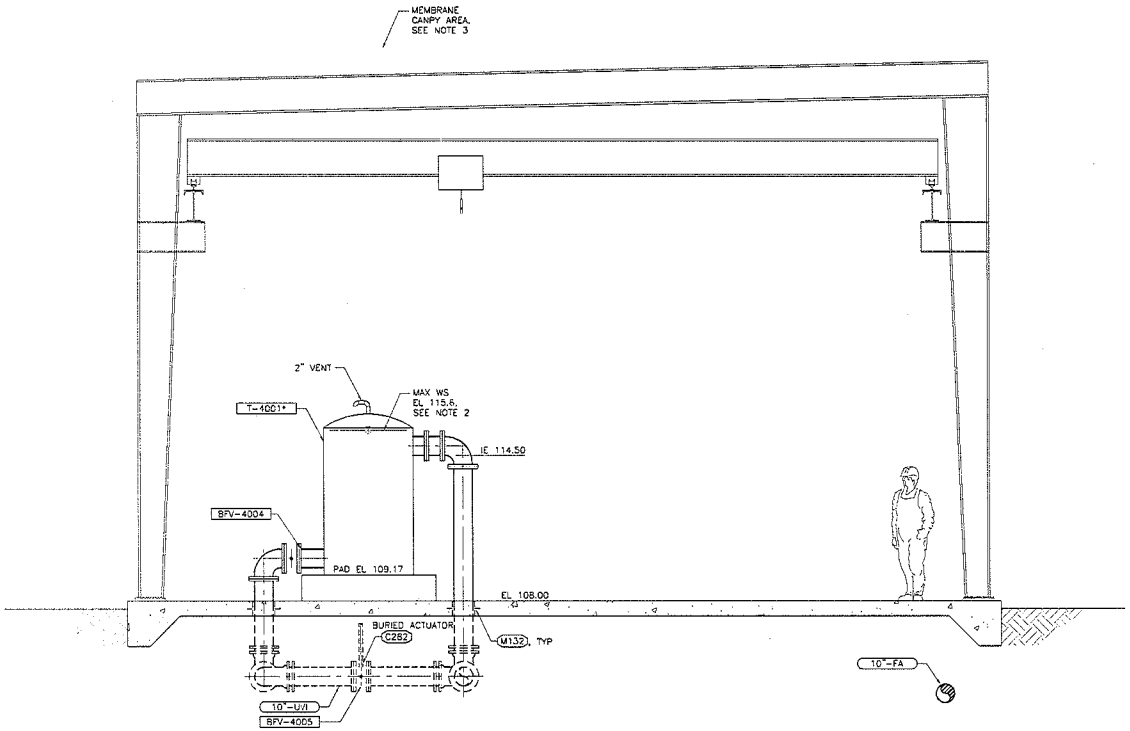
Plan No. M4000-4

Sheet _____ of XXX Sheets

Last Saved By: sjung 3-26-14 07:02am

NOTES:

1. "*" INDICATES EQUIPMENT TO BE FURNISHED BY MEMBRANE EQUIPMENT SUPPLIER. MEMBRANE EQUIPMENT SHALL BE INSTALLED BY CONTRACTOR.
2. SEE TANK SCHEDULE IN SPEC SECTION 13675.
3. TANK SELECTED FOR INSTALLATION MUST BE CAPABLE OF ACCOMMODATING THE MAXIMUM WSE WITHOUT OVERFLOWING.



SECTION D
3/8" = 1'-0" M4000-1

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIAL BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING MOST SOUTHERN CALIFORNIA COUNTIES

— 0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC WATER AND ENVIRONMENT

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA
SECTIONS - 3

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN	XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	

Plan No. M4000-5 — Sheet _____ of XXX Sheets

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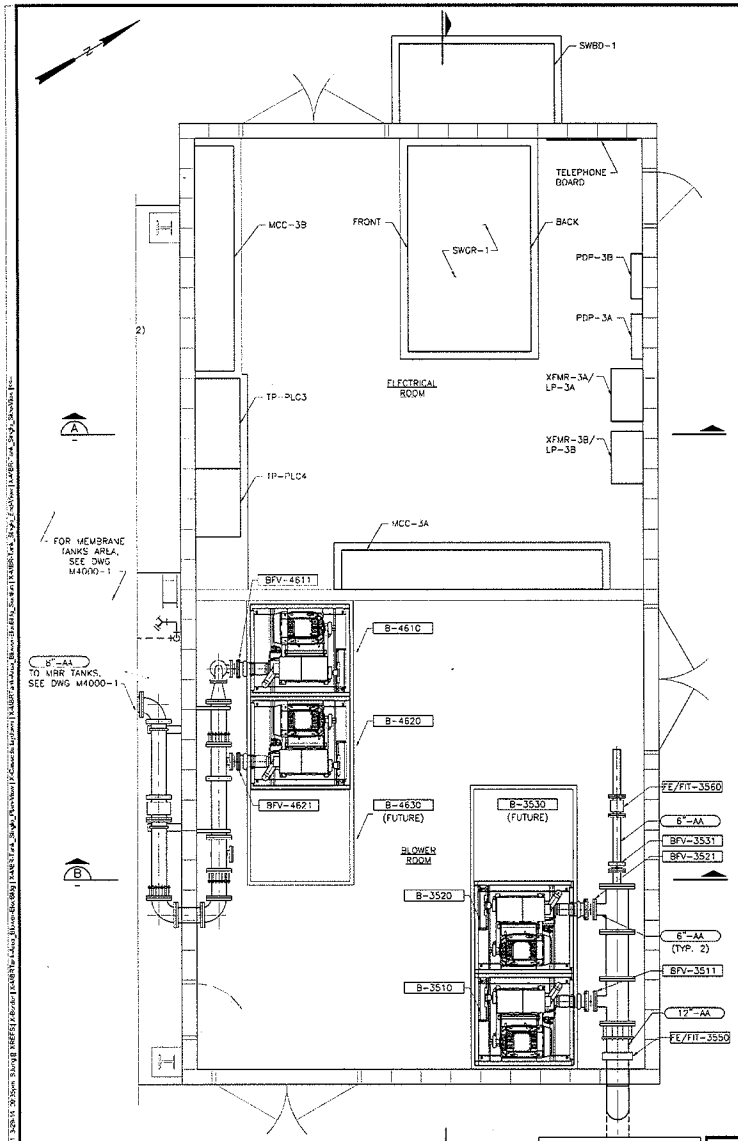
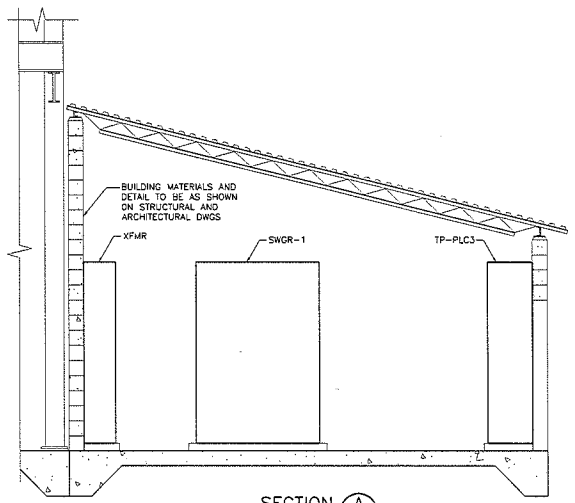
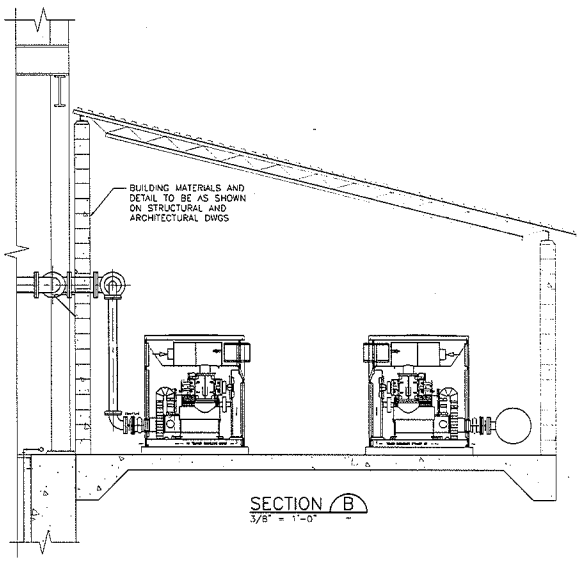


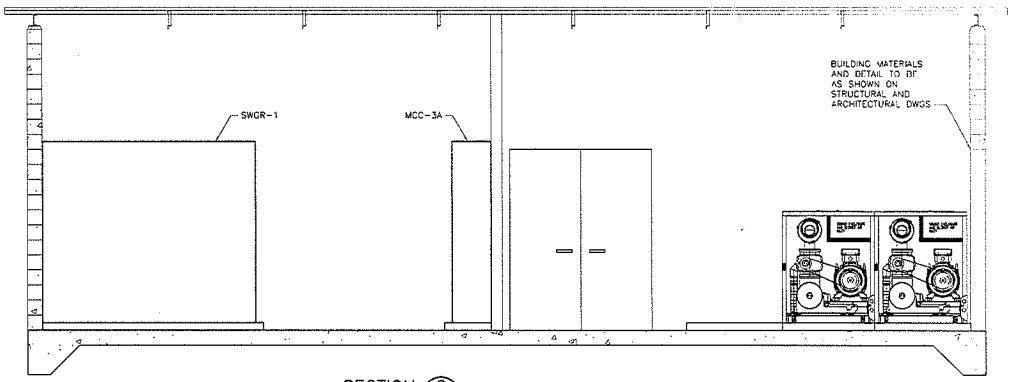
PLAN
3/8" = 1'-0"



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



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



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

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN 3 DAYS BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" — VERIFY SCALES — 1"
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

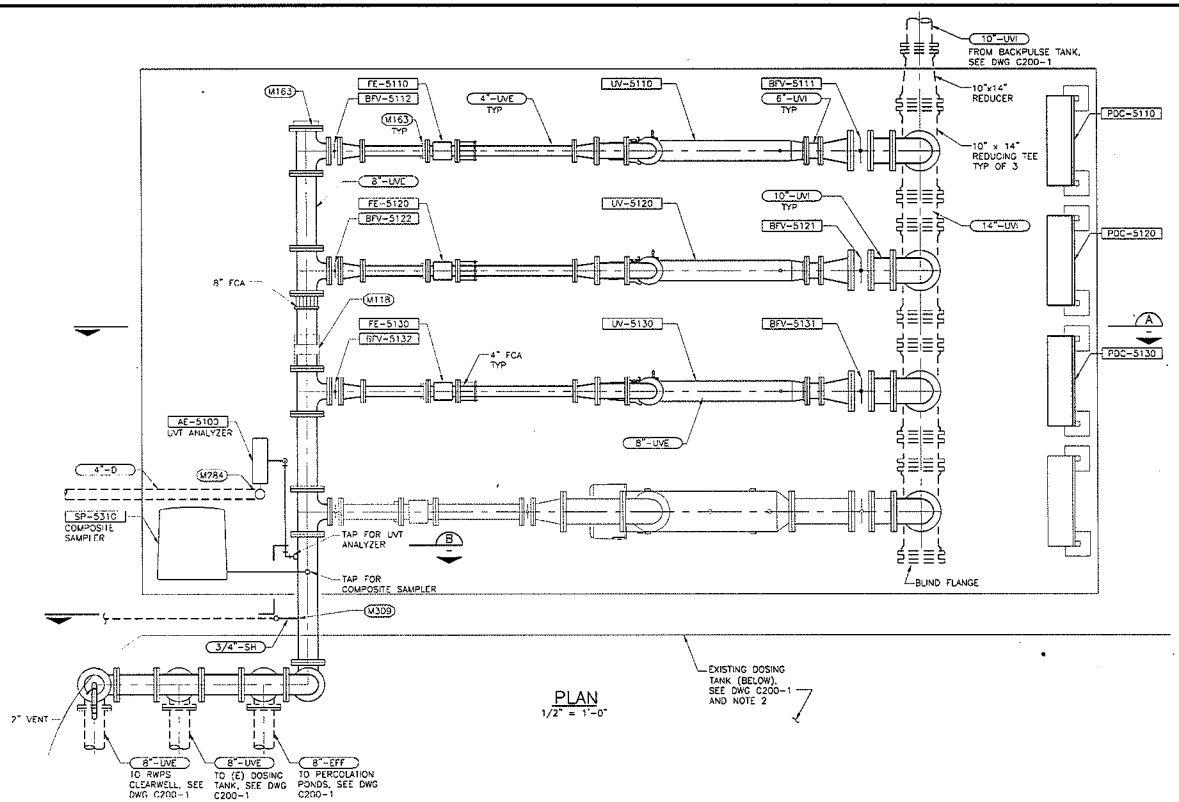
ELECTRICAL AND BLOWER BLDG
PLAN AND SECTIONS

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-14
DRAWN BY: M.Foyle	DATE	AS SHOWN	
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	

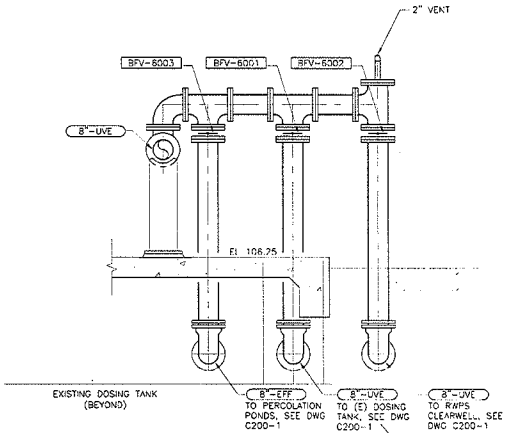
Plan No. M4600-1

Sheet _____ of XXX Sheets

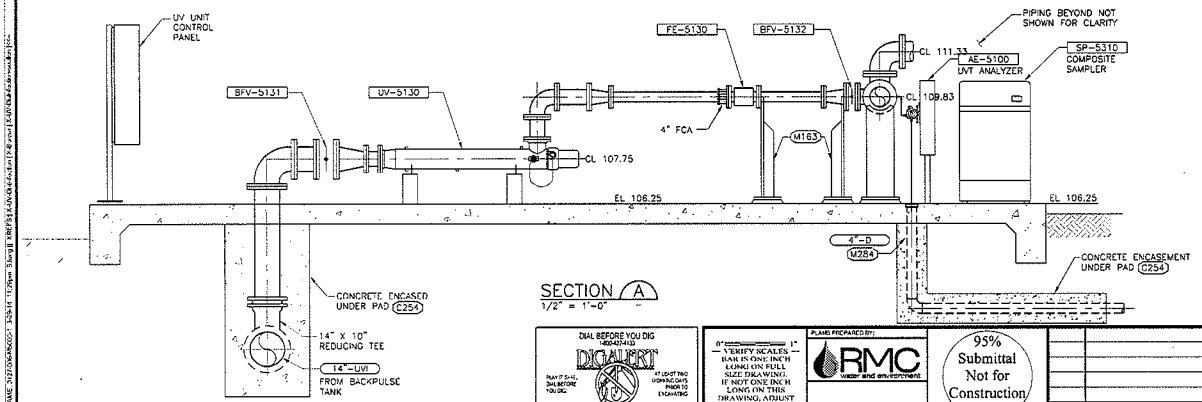
Last Saved By: S.Jung 3-26-14 02:16pm



PLAN
1/2" = 1'-0"



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



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

NOTES:

1. UV ARRANGEMENT IS BASED ON TROJAN'S UV FIT SYSTEM. USE OF ANOTHER MANUFACTURER MAY REQUIRE REARRANGEMENT OF EQUIPMENT AND PIPING AND IS SUBJECT TO APPROVAL BY ENGINEER. PROPOSED ALTERNATES MUST FIT WITHIN
2. EXISTING DOSING/SURGE TANK IS A FIBERGLASS TANK MANUFACTURERED BY XERSES CORPORATION. CONTRACTOR, AT NO ADDITIONAL COST TO OWNER, SHALL COMPLY WITH PROCEDURES AND INSTRUCTIONS IN THE XERXES INSTALLATION MANUAL AND OPERATING GUIDELINES, INCLUDING BUT NOT LIMITED TO INSTALLATION, BACKFILL AND EXCAVATION REQUIREMENTS.

DIAL BEFORE YOU DIG 1-800-227-2133 DIGALERT

"VERIFY SCALES" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

UV DISINFECTION AREA
PLAN AND SECTION

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN	XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. M5000-1 Sheet ____ of XXX Sheets

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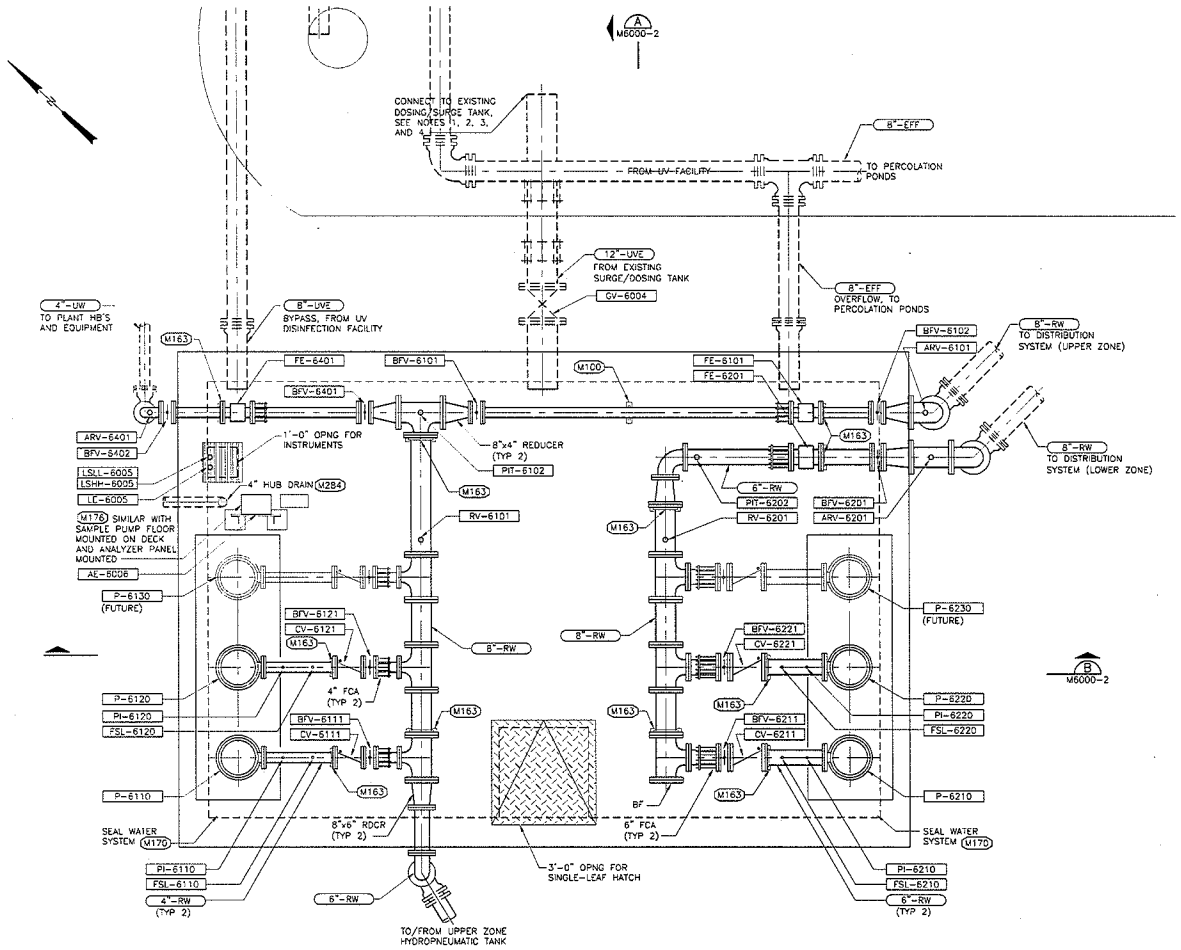

PLAN
1/2" = 1'-0"

NOTES:

1. EXISTING DOSING/SURGE TANK IS A FIBERGLASS TANK MANUFACTURERED BY XERXES CORPORATION. THE MANUFACTURER'S FABRICATION DRAWING CAN BE PROVIDED ELECTRONICALLY UPON REQUEST.
2. CONNECTION TO THE EXISTING DOSING/SURGE TANK SHALL BE PERFORMED BY XERXES REPRESENTATIVE OR IN ACCORDANCE WITH XERXES RECOMMENDATIONS AND REQUIREMENTS BY AN INSTALLER WITH EXPERIENCE RETROFITTING XERXES TANKS.
3. PIPE OUTLET SHALL MAINTAIN A STRAIGHT RUN FOR AT LEAST 18 INCHES PAST TANK.
4. PRIOR TO BACKFILL, THE TANK SHALL BE PARTIALLY FILLED WITH WATER TO ALLOW ENGINEER TO CONFIRM THE NEW CONNECTION DOES NOT LEAK.
5. NO CONSTRUCTION EQUIPMENT IS ALLOWED OVER THE TANK AT ANY TIME, AND DURING EXCAVATION AND CONSTRUCTION ACTIVITIES THE TANK, CARE SHALL BE TAKEN TO PREVENT TRANSMISSION OF LOADS FROM CONSTRUCTION EQUIPMENT TO THE TANK.
6. CONTRACTOR, AT NO ADDITIONAL COST TO OWNER, SHALL COMPLY WITH PROCEDURES AND INSTRUCTIONS IN THE XERXES INSTALLATION MANUAL AND OPERATING GUIDELINES, INCLUDING BUT NOT LIMITED TO INSTALLATION, BACKFILL AND EXCAVATION REQUIREMENTS.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

RECYCLED WATER/UTILITY WATER/EFFLUENT PS PLAN

DIAL BEFORE YOU DIG — DIGALERT — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M6000-1 — Sheet ____ of XXX Sheets

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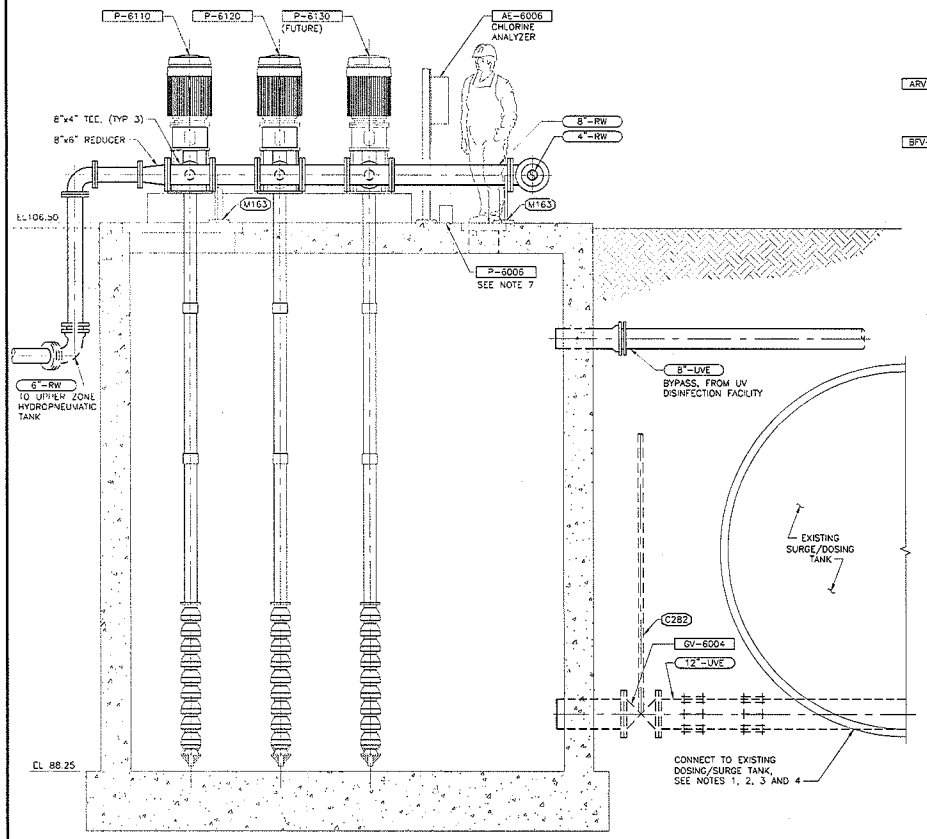
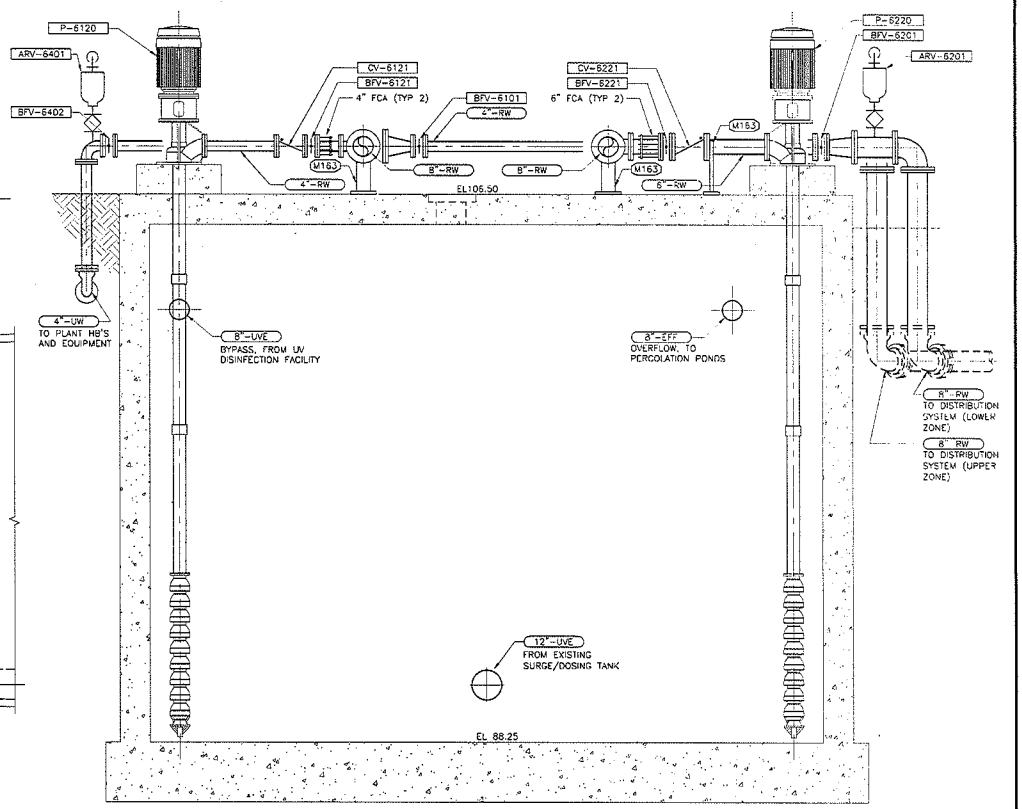


SECTION A
1/2" = 1'-0"



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

NOTES:

1. EXISTING DOSING/SURGE TANK IS A FIBERGLASS TANK MANUFACTURERED BY XERXES CORPORATION. THE MANUFACTURER'S FABRICATION DRAWING CAN BE PROVIDED ELECTRONICALLY UPON REQUEST.
2. CONNECTION TO THE EXISTING DOSING/SURGE TANK SHALL BE PERFORMED BY XERXES REPRESENTATIVE OR IN ACCORDANCE WITH XERXES RECOMMENDATIONS AND REQUIREMENTS BY AN INSTALLER WITH EXPERIENCE RETROFITTING XERXES TANKS.
3. PIPE OUTLET SHALL MAINTAIN A STRAIGHT RUN FOR AT LEAST 18 INCHES PAST TANK.
4. PRIOR TO BACKFILL, THE TANK SHALL BE PARTIALLY FILLED WITH WATER TO ALLOW ENGINEER TO CONFIRM THE NEW CONNECTION DOES NOT LEAK.
5. NO CONSTRUCTION EQUIPMENT IS ALLOWED OVER THE TANK AT ANY TIME, AND DURING EXCAVATION AND CONSTRUCTION ACTIVITIES THE TANK, CARE SHALL BE TAKEN TO PREVENT TRANSMISSION OF LOADS FROM CONSTRUCTION EQUIPMENT TO THE TANK.
6. CONTRACTOR, AT NO ADDITIONAL COST TO OWNER, SHALL COMPLY WITH PROCEDURES AND INSTRUCTIONS IN THE XERXES INSTALLATION MANUAL AND OPERATING GUIDELINES, INCLUDING BUT NOT LIMITED TO INSTALLATION, BACKFILL AND EXCAVATION REQUIREMENTS.
7. SAMPLE PUMP TO PROVIDE 250 ML/MIN. FLOWRATE AT 30-FT. TDH.

DIAL BEFORE YOU DIG 800-227-2600 — DIGALERT — MARK'S SAFE, SAVE BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NO. & SO. CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

RECYCLED WATER/UTILITY WATER/EFFLUENT PS SECTIONS

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN	XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. M6000-2

Sheet ____ of XXX Sheets

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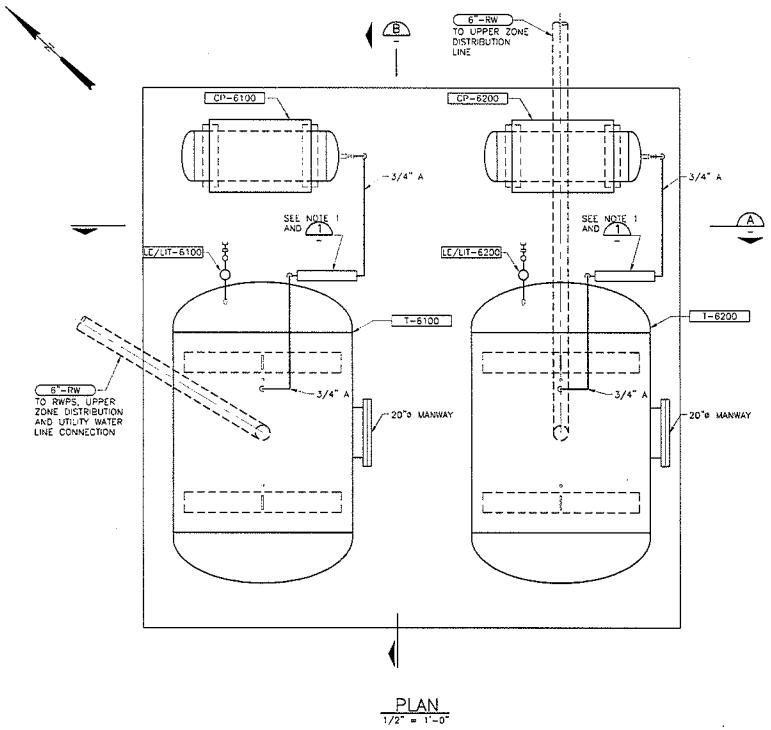
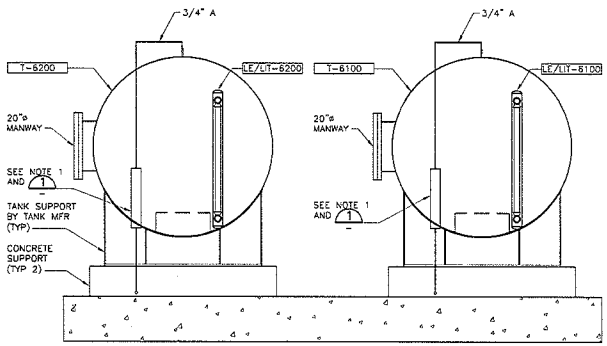
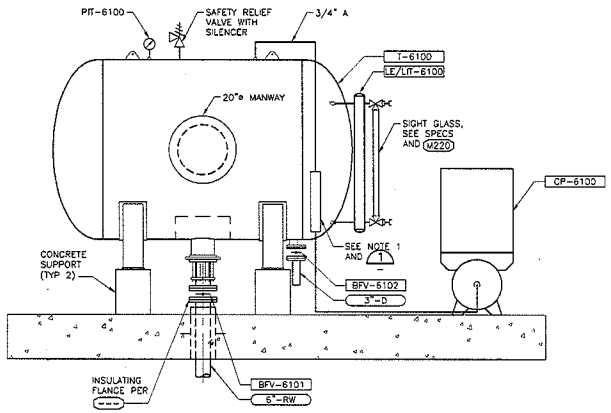


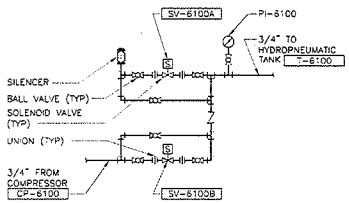
PLAN
1/2" = 1'-0"



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



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



SCHEMATIC
DETAIL 1
1" = 1'-0"

NOTES:

1. PIPING, VALVING, INSTRUMENTS AND APPURTENANCES SHALL BE MOUNTED TO 7/8" STEEL PLATE (HDG) AND STANCHION MOUNTED SIMILAR TO M102 OR ATTACHED TO TANK.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HYDROPNEAUMATIC TANKS
PLAN AND SECTIONS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN'S SAFE, DIG EFFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO DIGGING

— 0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft	DATE	SCALE: AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: M.Foyle	DATE XX-XX-14		
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER: 2036	

Plan No. M6000-3

Sheet _____ of XXX Sheets

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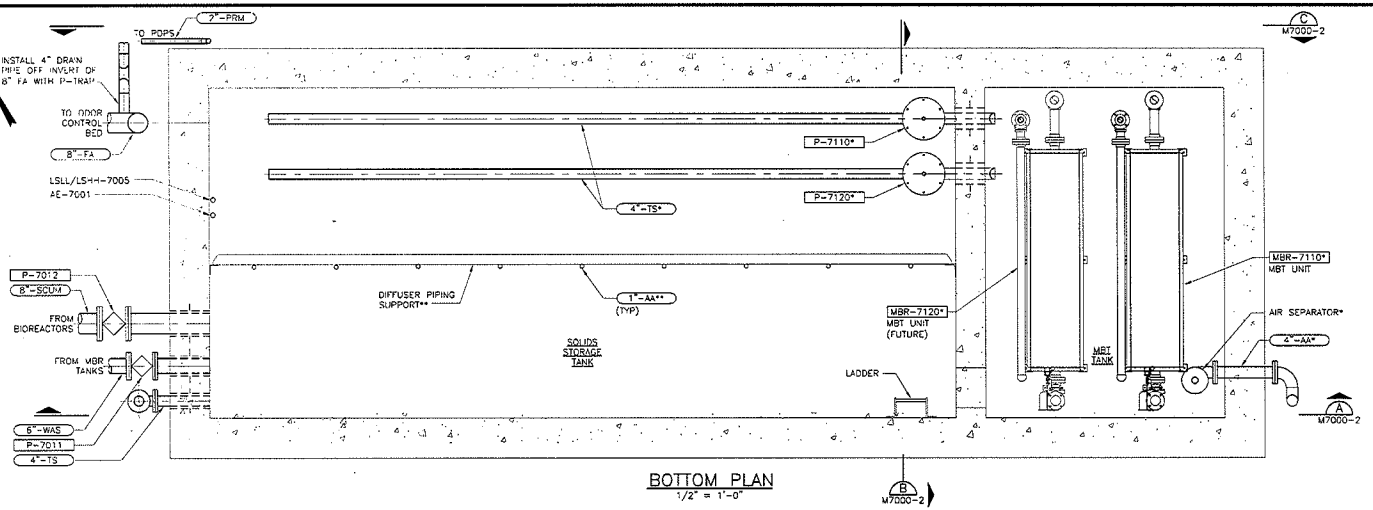
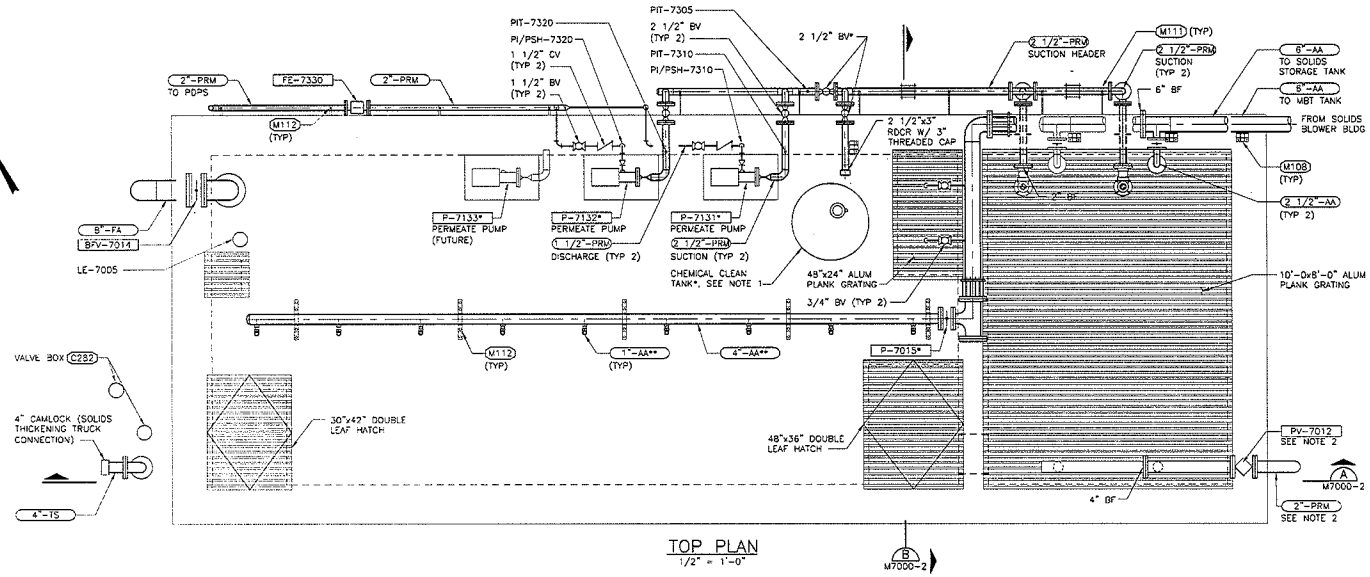


BOTTOM PLAN
1/2" = 1'-0"



TOP PLAN
1/2" = 1'-0"

NOTES:

1. PROVIDE 160 GALLON, 30" DIAMETER PORTABLE CHEMICAL CLEAN TANK AND SUBMERSIBLE CHEMICAL FEED PUMP.
2. "*" INDICATES EQUIPMENT TO BE FURNISHED BY MEMBRANE EQUIPMENT SUPPLIER. MEMBRANE EQUIPMENT SHALL BE INSTALLED BY CONTRACTOR.
3. ** INDICATES EQUIPMENT SYSTEMS TO BE FURNISHED BY MEMBRANE THICKENING MANUFACTURER IF MEMBRANE THICKENING IS INCLUDED IN THE CONSTUCTION CONTRACT. IF MEMBRANE THICKENING IS NOT INCLUDED IN THE CONSTRUCTION CONTRACT, THE CONTRACTOR SHALL FURNISH THE EQUIPMENT SEPARATELY. EQUIPMENT, PIPING AND APPURTENANCES SHALL BE INSTALLED BY CONTRACTOR.
4. THE MEMBRANE THICKENING SYSTEM IS BASED ON OVIVO MEMBRANE THICKENING PROCESS. THE MEMBRANE EQUIPMENT SCOPE OF SUPPLY IS AN OPTIONAL BID ITEM PER SPECIFICATION 00310 AND 01025.
5. THE AERATION SYSTEM SHOWN IS SCHEMATIC AND THE MEMBRANE THICKENING EQUIPMENT MANUFACTURER SHALL DESIGN THE DROP PIPE, AIR HEADER PIPE, AERATOR PATTERN AND COVERAGE TO FACILITATE ADEQUATE AERATION AND MIXING IN THE SOLIDS STORAGE TANK. REQUIRED AERATION SYSTEM MODIFICATIONS SHALL BE FURNISH AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
6. THE MEMBRANE EQUIPMENT SUPPLIER SHALL DESIGN THE DUAL AIR LIFT PUMP ARRANGEMENT TO FACILITATE REQUIRED CIRCULATION OF FLOW BETWEEN THE SOLIDS STORAGE TANK AND MBT TANK.THE DUAL AIR LIFT PUMP SHALL ALLOW FOR THE 8 FT WATER LEVEL RANGE IN THE SOLIDS STORAGE TANK.
7. THE MEMBRANE EQUIPMENT MANUFACTURER SHALL PROVIDE SUPPORTS AND ANCHORAGE INSTALLATION REQUIREMENTS FOR THEIR SUPPLIED EQUIPMENT, PIPING, AND APPURTENANCES. CONTRACTOR SHALL INSTALL IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN TO DIG? CALL BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS STORAGE FACILITY
PLANS

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: M.Foyle	DATE	AS SHOWN	DATE XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	

Plan No. M7000-1 Sheet ____ of XXX Sheets

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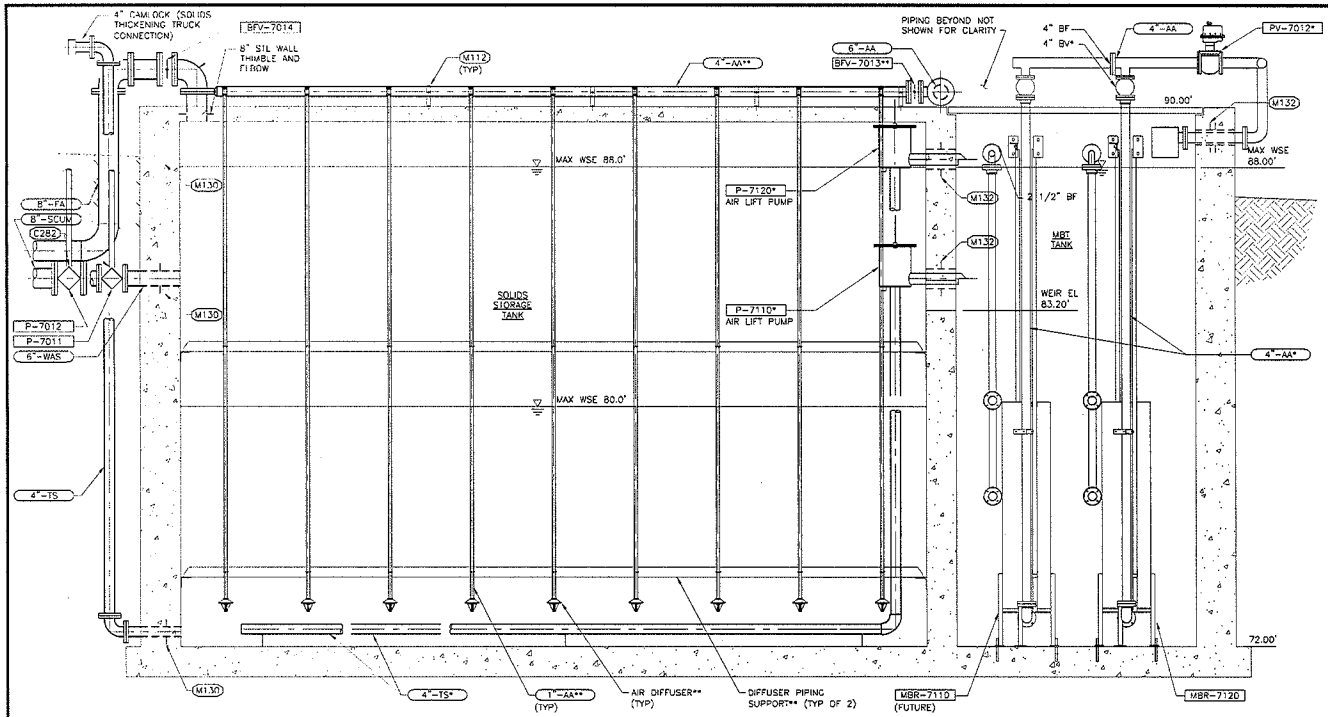
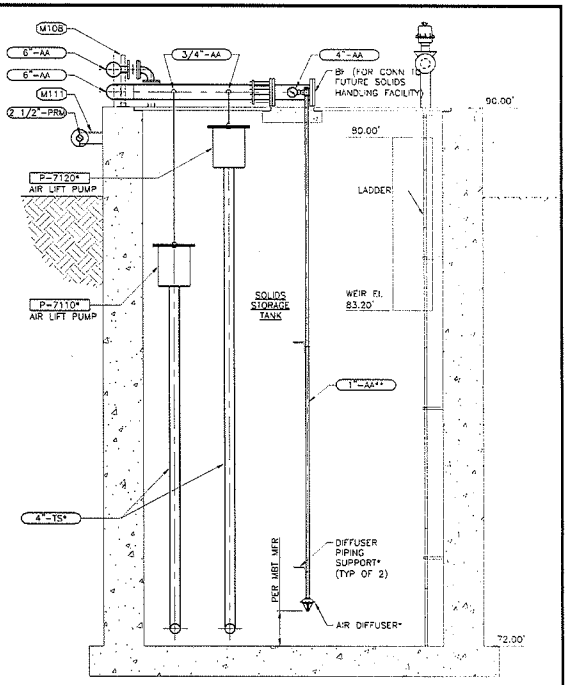
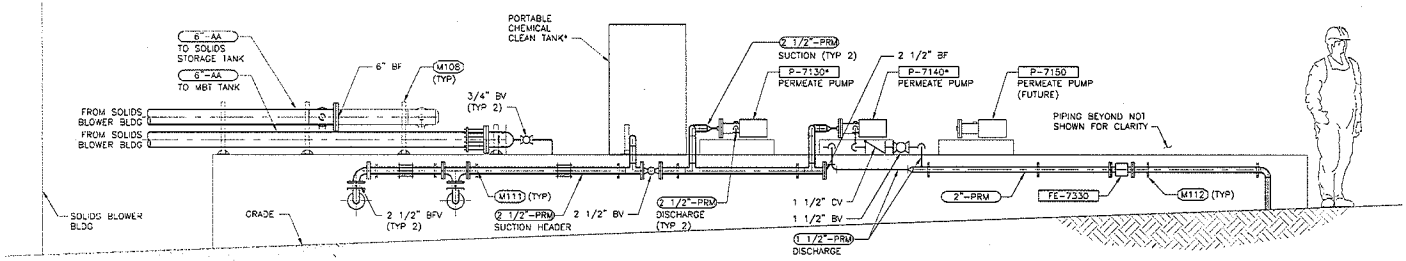


SECTION A
1/2" = 1'-0" M7000-1



SECTION B
1/2" = 1'-0" M7000-1



SECTION C
1/2" = 1'-0" M7000-1

NOTES:

1. REFER TO NOTES ON DWG M7000-1.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS STORAGE FACILITY
SECTIONS

DIAL BEFORE YOU DIG
DIGALERT
SERVING ALL SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC
water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft
DRAWN BY: M.Foyle
CHECKED BY: M.Nakamoto
DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036

APPROVED BY:
DATE: XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. M7000-2
Sheet _____ of XXX Sheets

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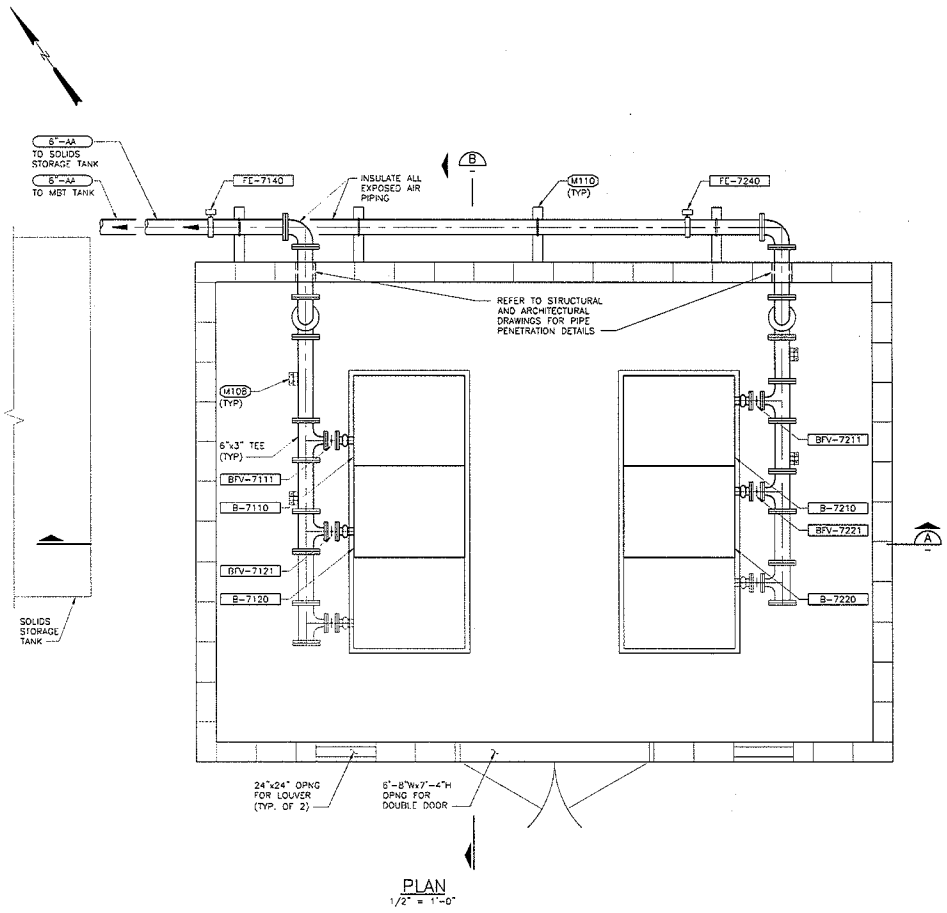
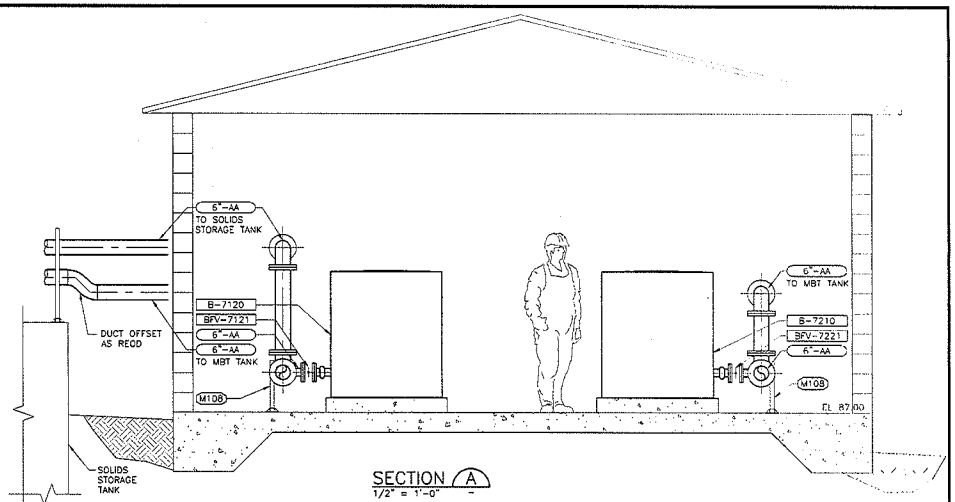
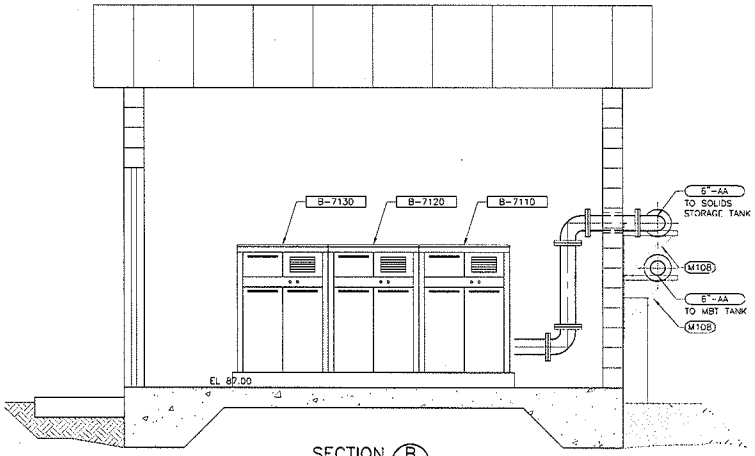


PLAN
1/2" = 1'-0"



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



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

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS MBT BLOWER BUILDING
PLAN AND SECTIONS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE, DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

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NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft — DATE
DRAWN BY: M.Foyle — DATE
CHECKED BY: M.Nakamoto — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036

Plan No. M7100-1

APPROVED BY: — DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

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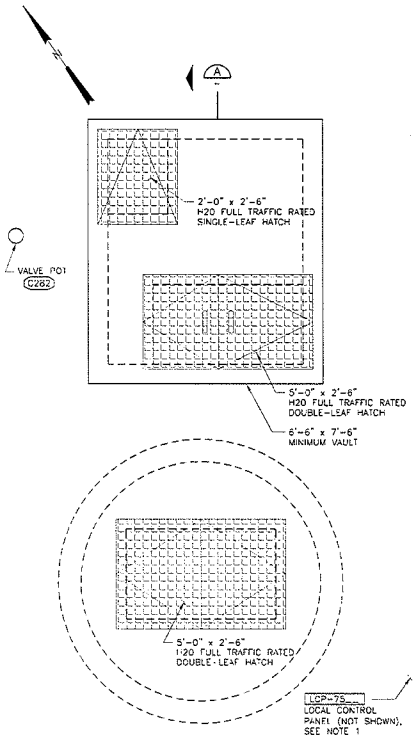
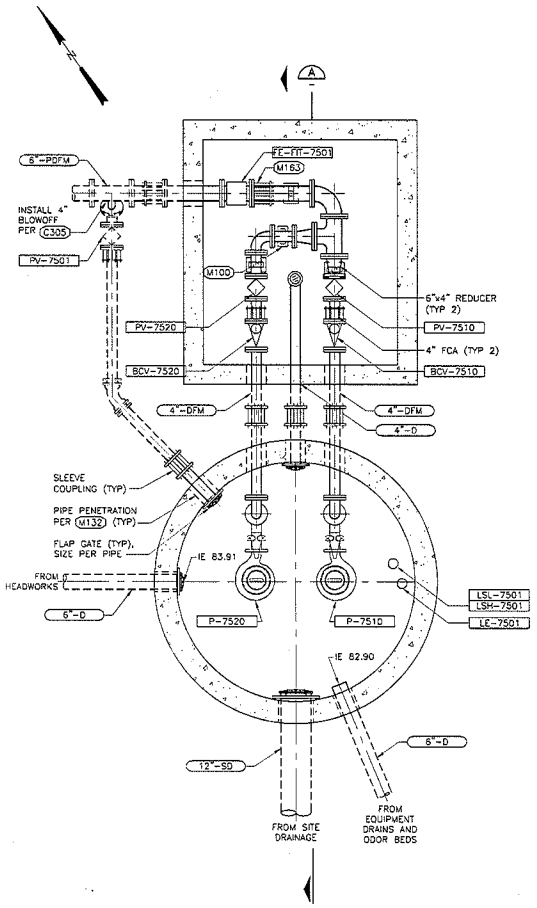
NOTES:

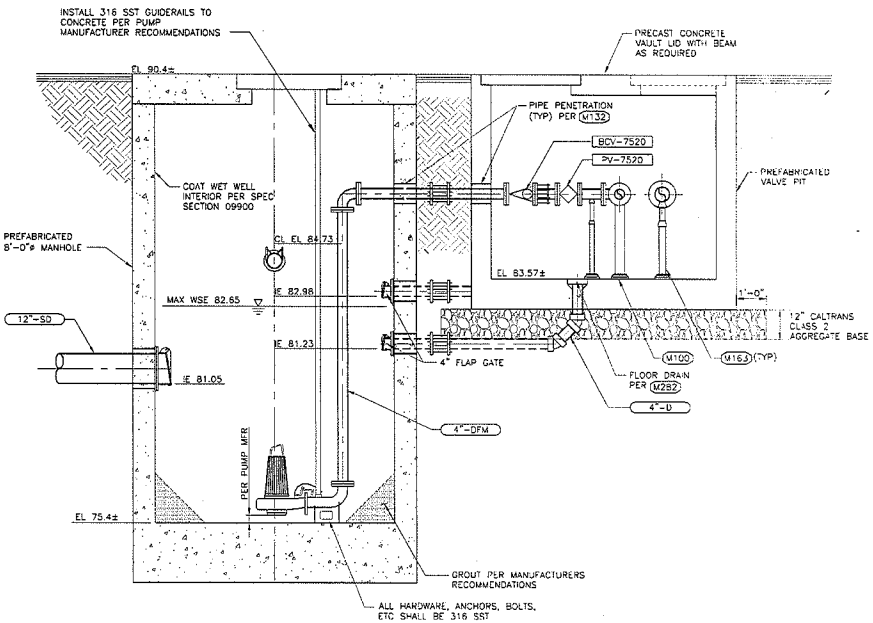
1. LOCAL CONTROL PANEL TO BE FIELD LOCATED AT EDGE OF ROADWAY OR OUTSIDE OF HEADWORK BUILDING.



TOP PLAN
1/2" = 1'-0"



BOTTOM PLAN
1/2" = 1'-0"



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

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PLANT DRAIN PUMP STATION
PLANS AND SECTIONS

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT — PLAN? DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NW & SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC WATER AND ENVIRONMENT

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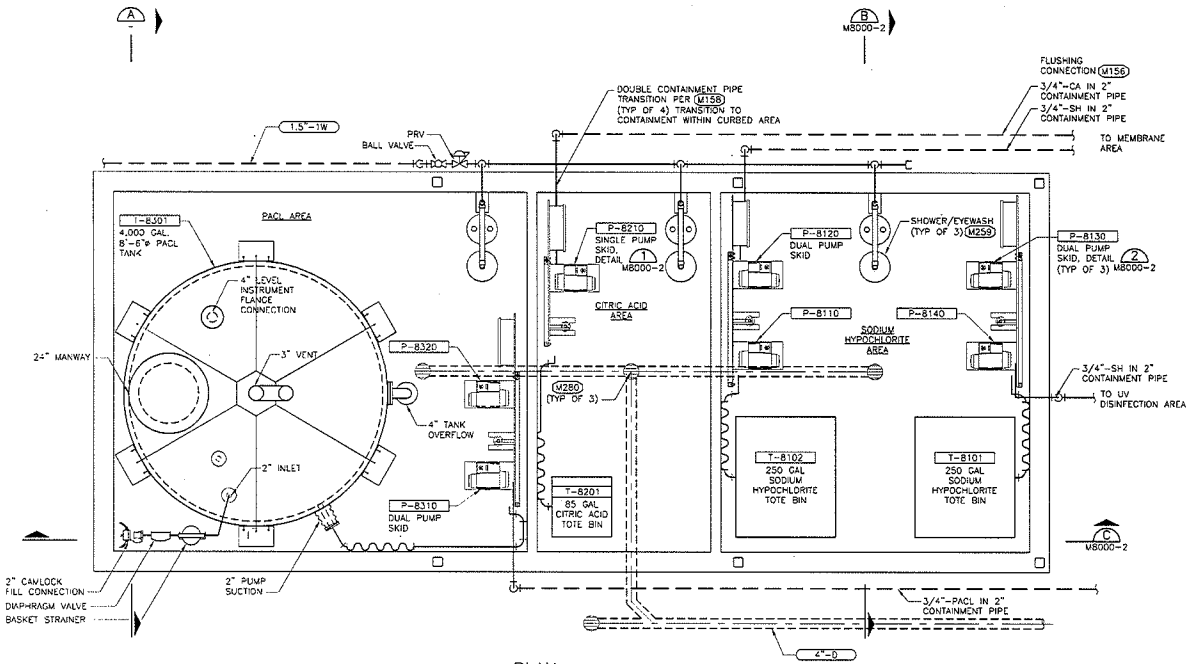
NO.	REVISION	BY	CHKD.	DATE

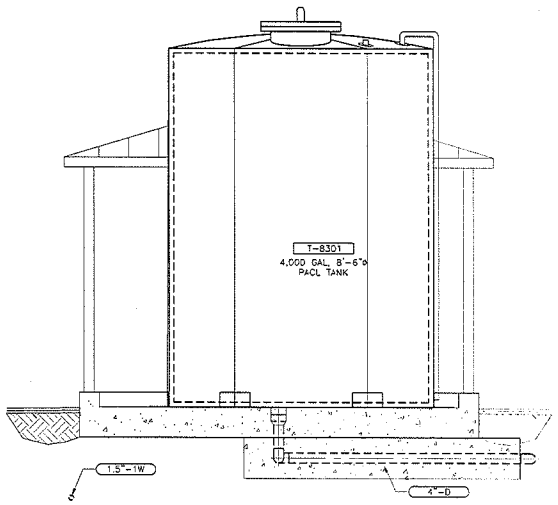
DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M7500-1 — Sheet _____ of XXX Sheets

Last Saved By: sjang 3-27-14 09:14am



PLAN
1/2" = 1'-0"



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

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CHEMICAL AREA
PLAN AND SECTION

DIAL BEFORE YOU DIG 800-422-4133 DIGALERT — PLAN AHEAD, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" VERIFY SCALES 1" — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

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NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M8000-1

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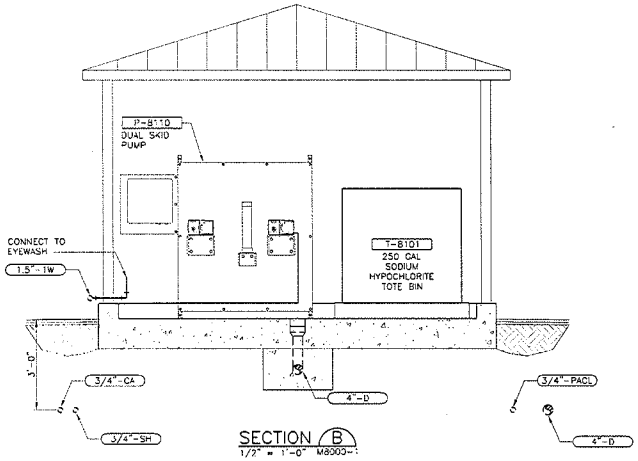
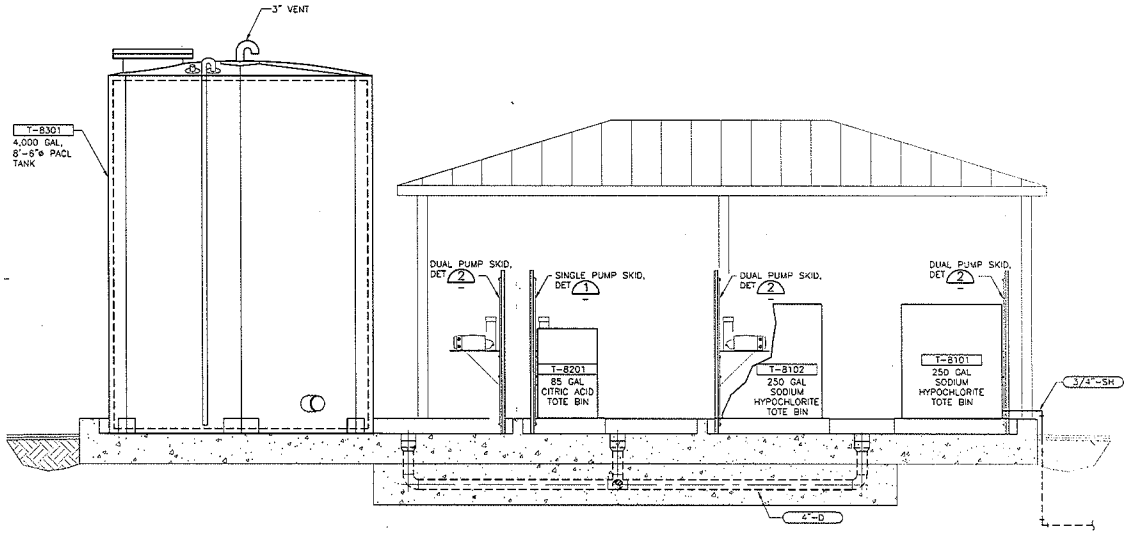
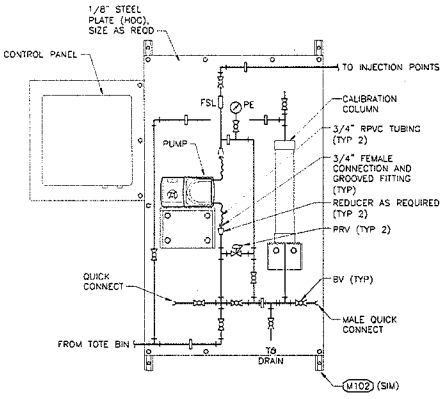


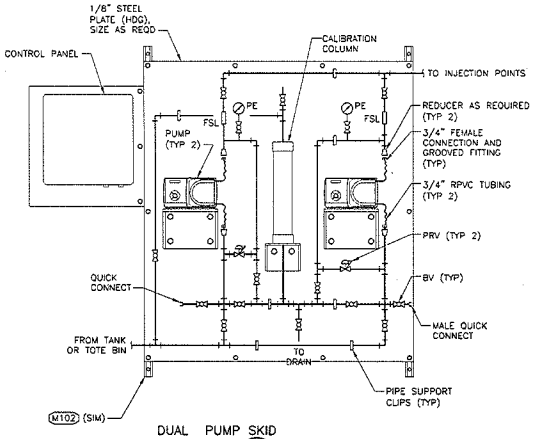
SECTION B
1/2" = 1'-0" M8000-1



SECTION C
1/2" = 1'-0" M8000-1



SINGLE PUMP SKID
DETAIL 1
1" = 1'-0"



DUAL PUMP SKID
DETAIL 2
1" = 1'-0"

NOTES:

1. MODIFY INLET PIPE, OUTLET PIPING, CONTROL PANEL AS NEEDED FOR SITE LAYOUT.
2. SET TOP OF STEEL PLATE BACKBOARD AT 5.5' ABOVE FINISH GRADE.
3. WHERE PIPES CROSS, CONTRACTOR SHALL PROVIDE REQUIRED FITTING AND SUPPORTS TO FACILITATE CROSSINGS.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CHEMICAL AREA SECTIONS

DESIGNED BY: M.Hoeft
DRAWN BY: M.Foyle
CHECKED BY: M.Nakamoto
DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036

APPROVED BY:
DATE: XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. M8000-2

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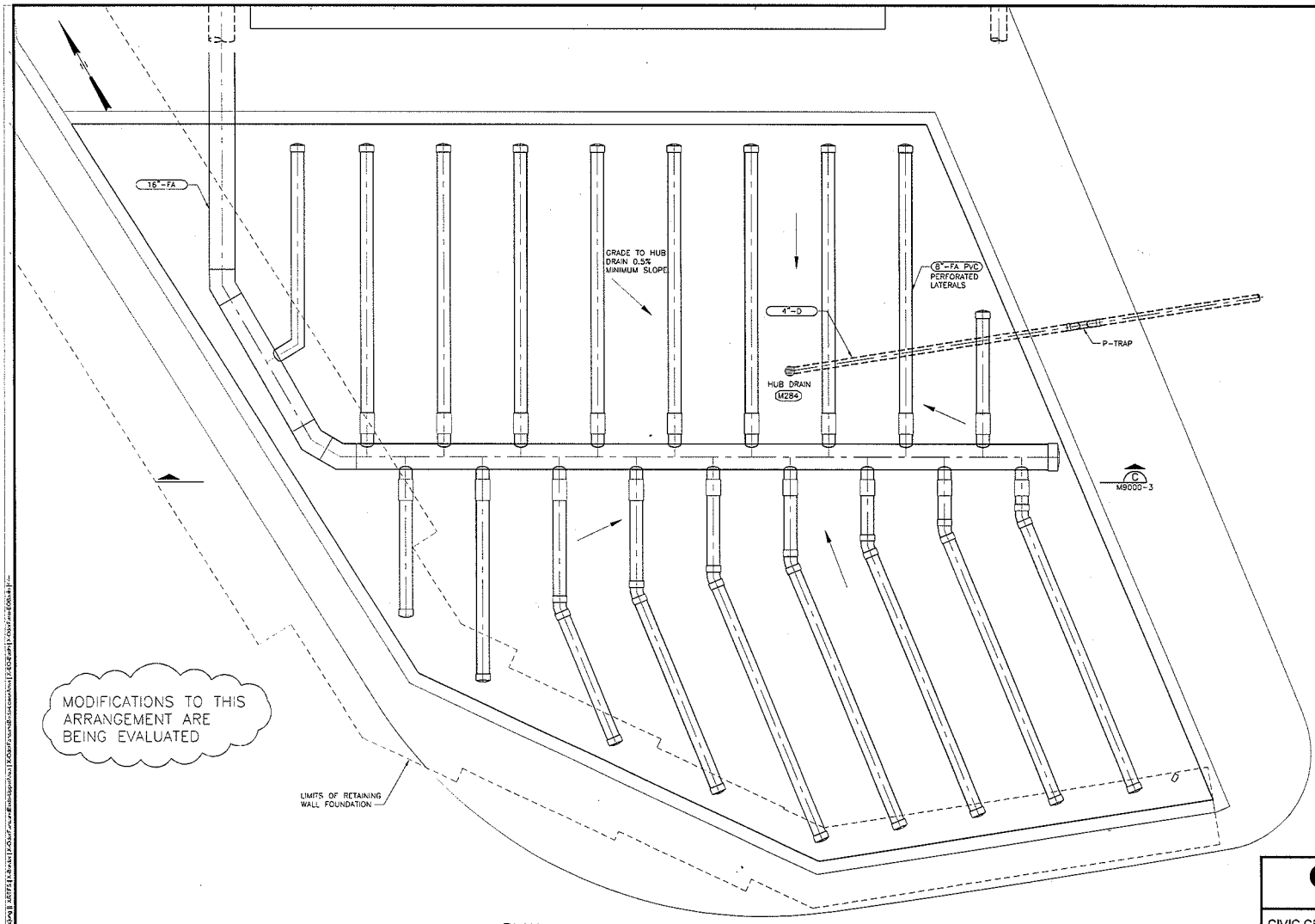

PLAN
3/8" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LOWER AREA ODOR CONTROL
PLAN

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IT SAFE. DIAL BEFORE YOU DIG!
AT LEAST TWO WORKING DAYS PRIOR TO DIGGING
SERVING NINE SOUTHERN CALIFORNIA COUNTIES

1" VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

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NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M.Hoefl	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN	XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
Plan No. M9100-1			Sheet ____ of XXX Sheets

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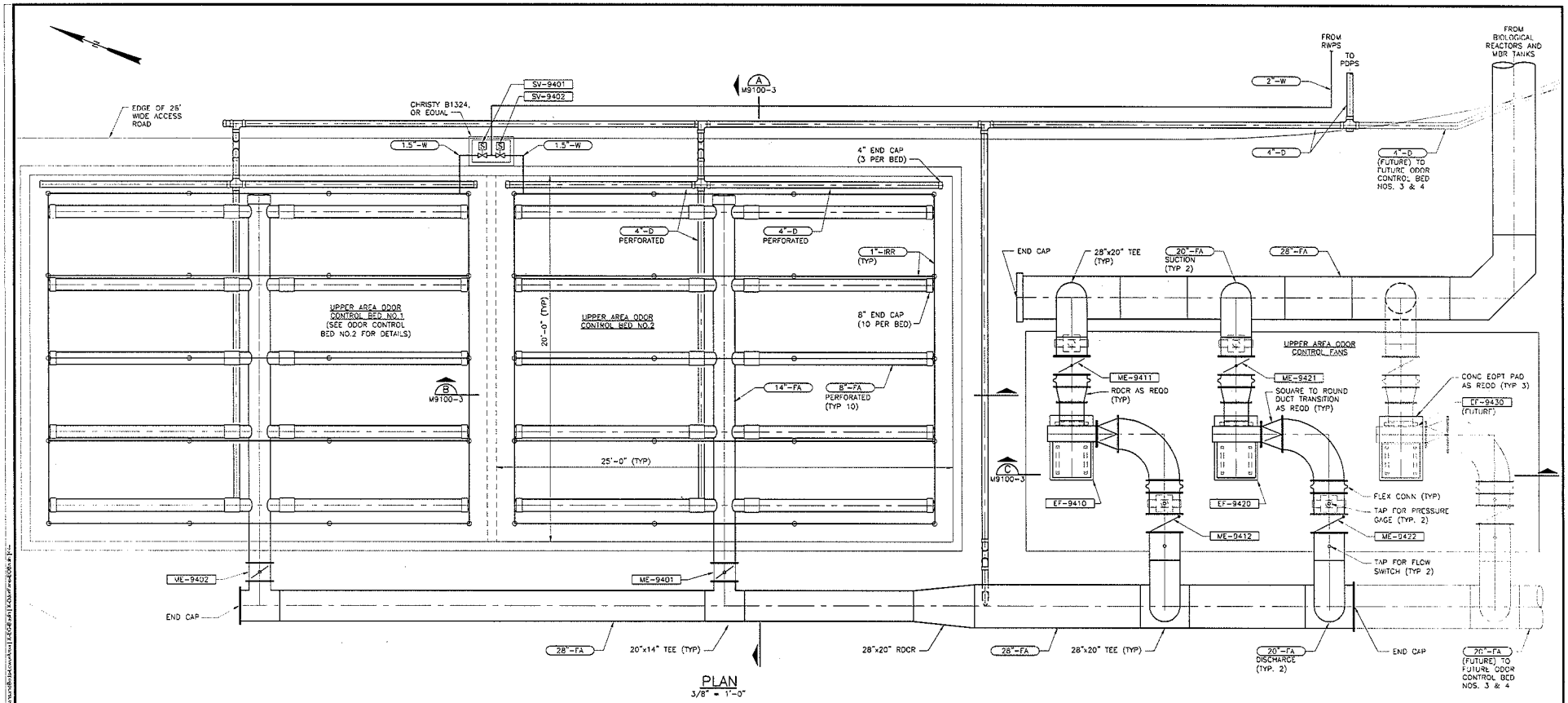

PLAN
3/8" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

UPPER AREA ODOR CONTROL
PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

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DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M9100-2

Sheet _____ of XXX Sheets

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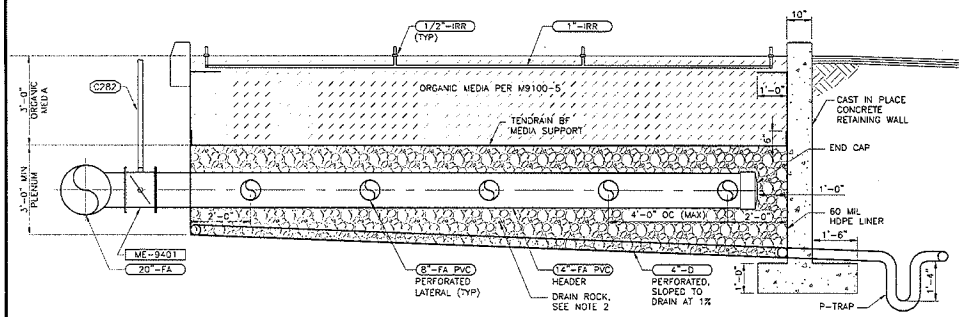
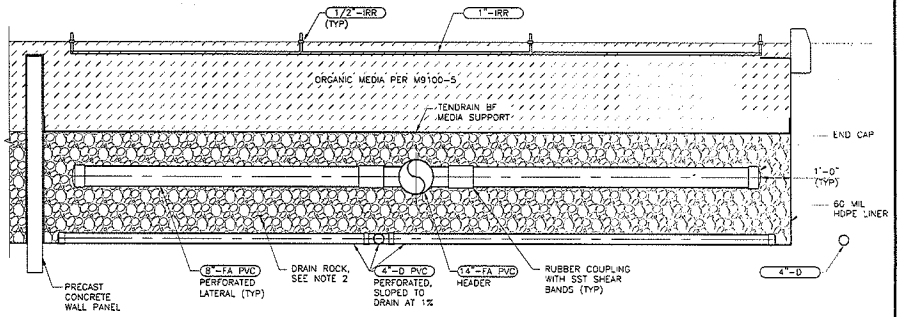
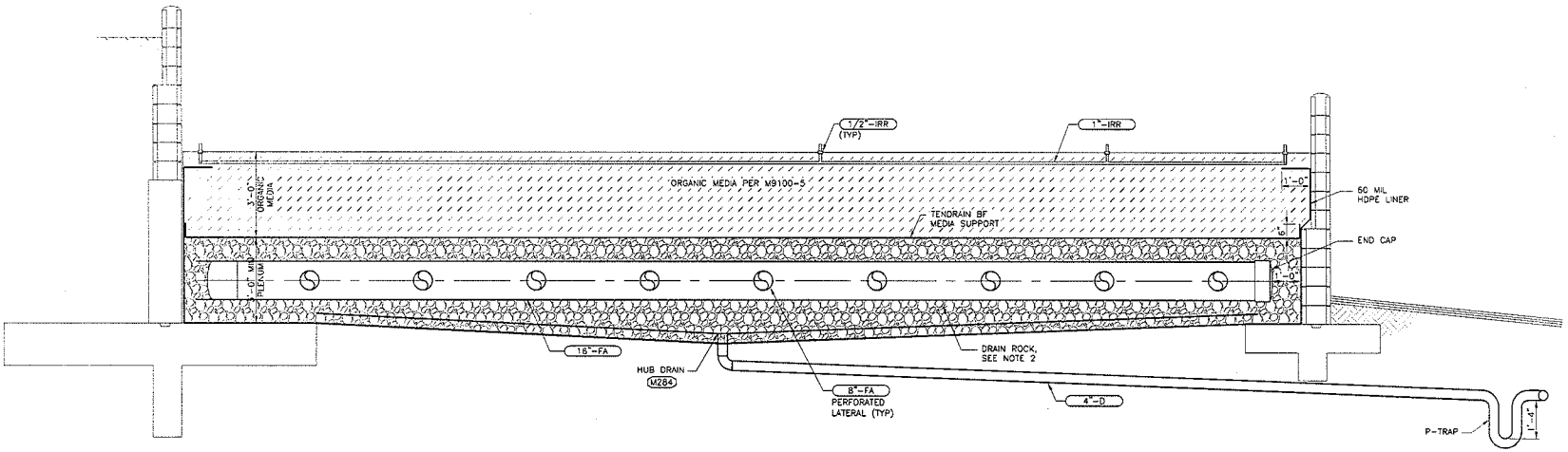


SECTION A
1/2" = 1'-0" M9100-2



SECTION B
1/2" = 1'-0" M9100-2



ILLUSTRATIVE SECTION C
1/2" = 1'-0" M9100-1

NOTES:

1. HEADER DUCTS AND LATERALS SHALL HAVE 1/2" HOLES ALONG FLOW LINE AT THREE FOOT INTERVALS WITHIN ODOR CONTROL BED.
2. DRAIN ROCK SHALL BE RESISTANT TO SULPHURIC ACID.
3. INSTALL 1"ø IRRIGATION LINE AROUND PERIMETER OF ODOR CONTROL BED AT A DEPTH OF 6". PROVIDE SPRINKLER RISERS WHERE INDICATED ON PLAN.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN AHEAD. DIG IN SAFE. YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO DIGGING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" — VERIFY SCALES — 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

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CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

UPPER AREA ODOR CONTROL SECTIONS

DESIGNED BY: M.Hoeft	DATE	SCALE	APPROVED BY:	DATE
DRAWN BY: M.Foyle	DATE	AS SHOWN		XX-XX-14
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., U.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. M9100-3

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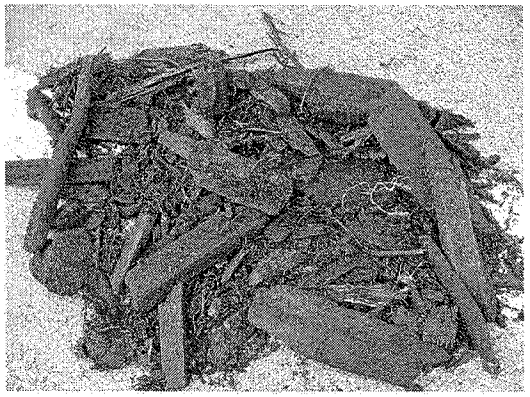
NOTE:
QUARTER SHOWN FOR SCALE OF MEDIA MIX

ORGANIC MEDIA - ACCEPTABLE

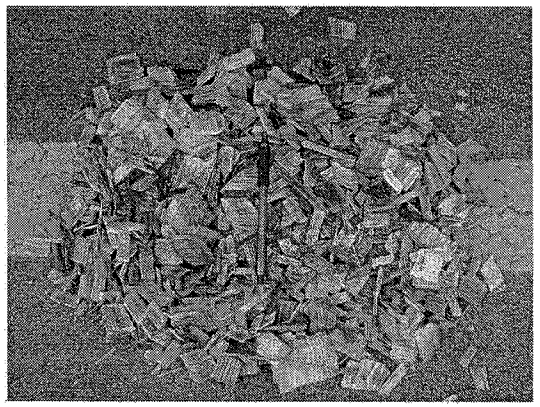


NOTE:
TOO MANY FINES

ORGANIC MEDIA - UNACCEPTABLE

NOTE:
HOSE SHOWN FOR SCALE OF MEDIA MIX

ORGANIC MEDIA - ACCEPTABLE



NOTE:
WOOD CHIPS ARE UNACCEPTABLE

ORGANIC MEDIA - UNACCEPTABLE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ODOR CONTROL BEDS
ORGANIC MEDIA PHOTOS

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IT SAFE. DIAL 811 OR 1-800-227-2600. AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING.
SERVING NINE SOUTHERN CALIFORNIA COUNTIES

1" VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

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DESIGNED BY: M.Hoeft	DATE	SCALE: AS SHOWN
DRAWN BY: M.Foyle	DATE	
CHECKED BY: M.Nakamoto	DATE	PROJECT NUMBER: 2036

APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. M9100-5

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Last Saved By: dking 3-28-14 10:59am

MECHANICAL LEGEND (CONT.)

SYMBOL	ABBR.	DESCRIPTION
	(E)	EXISTING
	OBD	OPPOSED BLADE DAMPER
	AFF	ABOVE FINISHED FLOOR
	SQ. FT.	SQUARE FEET
	DB	DRY BULB
	WB	WET BULB
	°F	DEGREES FAHRENHEIT
	MAX.	MAXIMUM
	MIN.	MINIMUM
	PD	PRESSURE DROP (FEET OF WATER)
	VEL	VELOCITY
	GPM	GALLONS PER MINUTE
	LBS	POUNDS (WEIGHT)
	GAL	GALLON
	AMB	AMBIENT
	H2O	WATER
	FLA	FULL LOAD AMPERES
	KW	KILOWATTS
	HP	HORSE POWER
	TONS	CAPACITY IN TONS OF REFRIGERATION
	EF	EXHAUST FAN
	OA	OUTSIDE AIR
	ESP	EXTERNAL STATIC PRESSURE (INCHES OF WATER)
	TSP	TOTAL STATIC PRESSURE (INCHES OF WATER)
	CFM	CUBIC FEET PER MINUTE
	OV	OUTLET VELOCITY
	FPM	FEET PER MINUTE
	RPM	REVOLUTIONS PER MINUTE
	MBH	CAPACITY EXPRESSED IN THOUSANDS OF BTU/HR

MECHANICAL LEGEND

SYMBOL	ABBR.	DESCRIPTION
		DUCTWORK
		LINED DUCTWORK
		FLEXIBLE DUCTWORK
		SUPPLY DIFFUSER
		RETURN AIR REGISTER
		EXHAUST AIR GRILLE
		ACCESS DOORS, VERTICAL OR HORIZONTAL
		SUPPLY DUCT SECTION
		RETURN DUCT SECTION
		EXHAUST DUCT SECTION
		ROUND DUCT SECTION
	SR	SIDEWALL REGISTER
	FC	FLEXIBLE CONNECTION
	TG	TRANSFER AIR GRILLE BOOT ASSEMBLY
FD/SFD	FD/SFD	FIRE DAMPER OR SMOKE / FIRE DAMPER [DIAGRAMMATIC]
VD	VD	VOLUME DAMPER [DIAGRAMMATIC]
MD	MD	MOTORIZED CONTROL DAMPER [DIAGRAMMATIC]
(MD-NO.)	MDFA	MOTORIZED DAMPER FIRE ALARM [DIAGRAMMATIC]
18"x12"		RECTANGULAR DUCTWORK (DOUBLE LINE) FIRST NUMBER INDICATES SIDE SHOWN
18"ø		ROUND DUCTWORK (DOUBLE LINE)
		RECTANGULAR 20" ELBOW WITH AIRFOIL TURNING VANES
D/L	D/L	DOOR LOUVER (INDICATED FREE AREA)
U/C	U/C	UNDERCUT DOOR (INDICATED AFF CLEARANCE)
	P.O.C.	POINT OF CONNECTION
SD		SMOKE DETECTOR
T		THERMOSTAT
S		SENSOR
CO2		CARBON MONOXIDE REMOTE SENSOR
		DIFFUSER / GRILLE CALLOUT
CFM		CFM
RL		REFRIGERANT LIQUID
RS		REFRIGERANT SUCTION

GENERAL NOTES

1. ALL CONTRACT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO EACH OTHER IN THAT ALL APPARATUS, MATERIALS, EQUIPMENT, AND METHOD OF INSTALLATION OUTLINED IN THE DRAWINGS AND / OR SPECIFIED HEREIN SHALL BE CONSIDERED ESSENTIAL TO THE CONTRACT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO ANY CONSTRUCTION.
2. NEW AND / OR EXISTING EQUIPMENT INDICATED ON THIS DRAWING IS SHOWN IN APPROXIMATE POSITION(S). THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, INCLUDING EQUIPMENT LOCATIONS, POINT OF CONNECTION, AND STRUCTURAL MEMBERS PRIOR TO INSTALLATION. NOTIFY THE CONSTRUCTION COORDINATOR OF ANY DISCREPANCIES OF CONFLICTS PRIOR TO COMMENCING ANY WORK. DO NOT PROCEED WITHOUT CONSTRUCTION COORDINATE APPROVAL FOR ANY CHANGES REQUIRED.
3. CONTRACTOR SHALL COORDINATE ALL DUCT, PIPE, AND EQUIPMENT LOCATIONS WITH ELECTRICAL, STRUCTURAL, PLUMBING, AND ALL OTHER TRADES.
4. ALL WORK SHALL BE IN ACCORDANCE WITH CITY CODES, STATE OF CALIFORNIA ENERGY CONSERVATION STANDARDS, AND ALL OTHER APPLICABLE CODES.
5. ROOM TEMPERATURE SHALL BE CAPABLE OF BEING SET TO MAINTAIN SPACE TEMPERATURE SET POINTS FROM 55°F TO 85°F, AND BE CAPABLE OF OPERATING THE HEATING AND COOLING IN SEQUENCE. THERMOSTATS SHALL BE ADJUSTABLE TO PROVIDE A TEMPERATURE RANGE OF UP TO 10°F BETWEEN FULL HEATING AND FULL COOLING BEING SUPPLIED. CONTROLS SHALL HAVE THE CAPACITY OF TERMINATING ALL HEATING AT A TEMPERATURE NOT MORE THAN 70°F AND COOLING AT A TEMPERATURE NOT LESS THAN 78°F. THERMOSTATS SHALL BE HANDICAP ACCESSIBLE, LOCATED AT 48 INCHES ABOVE FINISHED FLOOR.
6. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED, AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS AND PROCEDURES DETAILED IN THE A.S.H.R.A.E. HANDBOOK OF FUNDAMENTALS, OR THE APPLICABLE STANDARDS ADOPTED BY S.M.A.C.N.A. PROVIDE RECTANGULAR DUCTS OF GALVANIZED STEEL AND PREFABRICATED SPIRAL LOCK-SEAM DUCTS AND FITTINGS. ALL DUCT SIZES SHOWN ARE NET INSIDE CLEAR DIMENSIONS (I.E. AFTER DUCT INSULATION HAS BEEN INSTALLED). REVIEW PLANS CLOSELY FOR LINED DUCTWORK.
7. ALL FLEXIBLE DUCT SHALL BE CONSTRUCTED WITH AN EXTERIOR REINFORCED LAMINATED VAPOR BARRIER, 1-1/2 INCHES THICK FIBERGLASS INSULATION (K-25 AT 75°F), ENCAPSULATED SPRING STEEL WIRE HELIX, AND IMPERVIOUS SMOOTH NONPERFORATED INTERIOR VINYL LINER. INDIVIDUAL LENGTHS OF FLEXIBLE DUCT SHALL BE SUPPORTED AT OR NEAR MID-LENGTH WITH 2 INCHES WIDE 26-GAGE STEEL HANGER COLLAR, ATTACHED TO THE STRUCTURE WITH AN APPROVED DUCT HANGER. IN COMPLETE CONFORMANCE WITH 2007 C.M.C. APPENDIX 'A'. MAXIMUM LENGTH OF CONNECTION TO TERMINAL OUTLET SHALL BE 7 FEET.
8. ALL CEILING DIFFUSERS SHALL BE 4-WAY THROW, UNLESS SHOWN OTHERWISE.
9. ALL H.V.A.C. SYSTEMS SHALL MEET THE CONTROL REQUIREMENTS PER SECTION 111 AND 122 E.E.S.
10. ALL H.V.A.C. EQUIPMENT AND APPLIANCES SHALL MEET THE REQUIREMENTS PER SECTIONS 111-113, 115, AND 123-129 E.E.S.
11. DO NOT SCALE DRAWINGS - ALL DIMENSIONS AND JOB SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO BID SUBMITTAL, START OF CONSTRUCT AND / OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES, EQUIPMENT, AREAS, AND PROPERTY THAT MAY BE DAMAGED AS A RESULT OF ANY DEMOLITION AND / OR NEW WORK.
13. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF CEILING DIFFUSERS AND GRILLES.
14. SEE ARCHITECTURAL DRAWINGS FOR ROOF ACCESS AND ADDITIONAL ENERGY CONSERVATION NOTES.
15. SEE PLUMBING DRAWINGS FOR GAS PIPING, PRIMARY AND SECONDARY CONDENSATE PIPING, AND FINAL CONNECTIONS.
16. NO RANGE HOOD VENTS, DRYER VENTS, COMBUSTION VENTS, OR HEATING DUCTS ARE PERMITTED IN AREA SEPARATION WALL.
17. PROVIDE SEISMIC RESTRAINTS FOR ALL MECHANICAL SYSTEMS PER CODE.
18. ALL PIPING AND DUCTWORK SHALL BE INSULATED CONSISTENT WITH THE REQUIREMENTS OF SECTIONS 118, 123, 124 OF THE TITLE 24 ENERGY STANDARDS AND TABLE 6-6A AND 6-6B OF C.M.C.
19. INSULATION, ADHESIVES, VAPOR-BARRIER MATERIALS, AND OTHER ACCESSORIES SHALL BE NONCOMBUSTIBLE. THE MATERIALS SHALL HAVE U.L. FLAMESPREAD RATING NOT MORE THAN 25 AND A SMOKE DENSITY NO MORE THAN 50.
20. ALL SUPPLY, RETURN, OUTSIDE, AND RELIEF BRANCH DUCTS SHALL BE PROVIDED WITH ACCESSIBLE MANUAL VOLUME DAMPERS WITH LOCKS.
21. PROVIDE FLEXIBLE CONNECTIONS AT THE INLET AND OUTLET OF ALL FANS.
22. EACH SYSTEM SUPPLYING AIR IN EXCESS OF 2,000 CFM SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF. AUTOMATIC SHUTOFF SHALL SHUT DOWN THE AIR-MOVING EQUIPMENT WHEN SMOKE IS DETECTED IN THE SUPPLY AIR. DETECTOR SHALL BE INSTALLED INT THE MAIN SUPPLY, AHEAD OF ANY SUPPLY BRANCHES. SPACES SERVED BY MULTIPLE AIR-MOVING SYSTEMS SHALL HAVE INTERLOCKED SMOKE DETECTORS, CONNECTED TOGETHER THROUGH A RELAY PANEL TO SHUTOFF ALL EQUIPMENT SERVING THE SPACE WHEN SMOKE IS DETECTED BY ANY SINGLE SMOKE DETECTOR.
23. PVC PIPING SHALL NOT BE ALLOWED IN THE BUILDING.
24. FIRE-STOPPING SHALL BE PROVIDED WHERE PENETRATING ITEMS PASS ENTIRELY THROUGH BOTH PROTECTIVE MEMBRANES OF BEARING WALLS REQUIRED TO HAVE A FIRE-RESISTIVE RATING, AND WALLS REQUIRING PROTECTED OPENINGS. FIRE-STOPPING SHALL ALSO BE PROVIDED AT PENETRATIONS OF FIRE RESISTIVE FLOORS, AND FLOORS WHICH ARE PART OF CEILING-FLOOR ASSEMBLY. FIRE-STOPPING SHALL HAVE AN 'F' OF 'T' RATING AS DETERMINED BY TEST CONDUCTED IN ACCORDANCE WITH C.B.C, 2007 EDITION.
25. AIR FILTERS SHALL BE STAT FIRE MARSHALL APPROVED AND LISTED. PRE-FORMED FILTERS HAVING COMBUSTIBLE FRAMING SHALL BE TESTED AS A COMPLETE ASSEMBLY. SIR FILTERS IN ALL OCCUPANCIES SHALL BE CLASS 2 OR BETTER (AS SHOWN IN THE STATE FIRE MARSHALL LISTING). AIR FILTERS SHALL BE ACCESSIBLE FOR CLEANING AND / OR REPLACEMENT.
26. ALL SPLIT-SYSTEM AIR CONDITIONING SYSTEMS SHALL HAVE REFRIGERANT LINES SIZED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR EACH SYSTEM APPLICATION. THIS CONTRACT SHALL INCLUDE ALL ACCESSORIES, HARDWARE, ETC. THAT MAY BE RECOMMENDED.
27. ALL EVAPORATOR AND CONDENSING COILS (INDOOR AND OUTDOOR COILS) SHALL BE TREATED WITH SPRAY-ON PHENOLIC COATING FOR SALT AND CHEMICAL PROTECTION BY AN INDEPENDENT CONTRACTOR SPECIALIZING IN THE PROCESS (OR BY THE EQUIPMENT MANUFACTURER). PROVIDE CONTRACTOR'S EXPERIENCE AND PROPOSED PROCESS DURING THE SUBMITTAL PERIOD.
28. OUTDOOR AIR SUPPLY AND EXHAUST EQUIPMENT SHALL BE INSTALLED WITH DAMPERS THAT AUTOMATICALLY CLOSE DURING PERIODS OF NON-USE OF THE AREAS SERVED BY THE EQUIPMENT.
29. PRE-OCCUPANCY VENTILATION SHALL BE: (a) THE MINIMUM RATE OF OUTDOOR AIR REQUIRED BY CALIFORNIA ENERGY EFFICIENCY STANDARDS SECTION 121(b), OR (b) THREE COMPLETE AIR CHANGES, WHICHEVER IS LESS, AND SHALL BE SUPPLIED TO THE ENTIRE BUILDING DURING THE ONE-HOUR PERIOD IMMEDIATELY BEFORE THE BUILDING IS NORMALLY OCCUPIED.
30. WHERE A RETURN PLENUM IS USED TO DISTRIBUTE OUTDOOR AIR TO A ZONAL HEATING OR COOLING UNIT, WHICH THEN SUPPLIES THE AIR TO A SPACE: IN ORDER TO MEET THE REQUIREMENTS OF SECTION 121(b)2, THE OUTDOOR AIR SHALL BE DUCTED TO DISCHARGE EITHER: (a) WITHIN 5 FEET OF UNIT, OR (b) WITHIN 15 FEET OF THE UNIT, SUBSTANTIALLY TOWARD THE UNIT, AND AT A VELOCITY NOT LESS THAN 500 FEET PER MINUTE.
31. ALL DAMPERS AND CIRCUIT SETTERS SHALL BE READILY ACCESSIBLE FOR TESTING AND MAINTENANCE, LEFT OPEN, CHECKED FOR RANGE OF ADJUSTMENT, AND NOT INSULATED OVER UNTIL TEST AND BALANCE IS COMPLETED.
32. CERTIFICATE OF ACCEPTANCE (MECH-1-A) AND ALL RELATED ACCEPTANCE DOCUMENTS SHALL BE SUBMITTED TO THE FIELD INSPECTOR DURING CONSTRUCTION. CERTIFICATE OF OCCUPANCY WILL NOT BE ISSUED UNTIL THESE FORMS ARE REVIEWS AND APPROVED.

MPA McPARLANE & ASSOCIATES
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DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT
PLAN IT SAFE, USE RIGHT TOOLS, DIG RIGHT
(2 DAYS NOTIFICATION PRIOR TO EXCAVATING)
SERVING THE SOUTH COAST AREA COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jett kutz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MECHANICAL NOTES AND LEGEND

DESIGNED BY: TM	DATE XX/2014	SCALE	APPROVED BY: DATE
DRAWN BY: MH	DATE XX/2014		XX-XX-14
CHECKED BY: TM	DATE XX/2014	PROJECT NUMBER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. H-0.1 SHEET ___ of 100 SHEETS

AIR DISTRIBUTION SCHEDULE

MARK	SIZE NECK	SIZE FACE		MANUFACTURER	MODEL	CFM RANGE	REMARKS
SUPPLY DIFFUSER							
A	6"ø	LAY-IN	24" x 24"	TITUS	PCS3FW	0 TO 100	STEEL PERFORATED NECK MOUNTED CURVE BLADE DEFLECTORS, LAY-IN BORDER FLUSH FACE
		HARD LID	12" x 12"				
B	8"ø	LAY-IN	24" x 24"			101 TO 200	
		HARD LID	12" x 12"				
C	10"ø	LAY-IN	24" x 24"			201 TO 300	
		HARD LID	16" x 16"				
D	12"ø	LAY-IN	24" x 24"			301 TO 450	
		HARD LID	20" x 20"				
E	14"ø	LAY-IN	24" x 24"			451 TO 600	
		HARD LID	20" x 20"				
F	16"ø	LAY-IN	24" x 24"			601 TO 800	
		HARD LID	24" x 24"				
RETURN / EXHAUST REGISTER							
AA	6"ø	LAY-IN	24" x 24"	TITUS	PAR3FW	0 TO 100	STEEL PERFORATED RETURN DIFFUSER, LAY-IN BORDER TYPE 1, HARD LID BORDER FLUSH FACE
		HARD LID	12" x 12"				
BB	8"ø	LAY-IN	24" x 24"			101 TO 250	
		HARD LID	16 "x 16"				
CC	10"ø	LAY-IN	24" x 24"			251 TO 400	
		HARD LID	16" x 16"				
DD	12"ø	LAY-IN	24" x 24"			401 TO 600	
		HARD LID	20" x 20"				
EE	14"ø	LAY-IN	24" x 24"			601 TO 800	
		HARD LID	20" x 20"				
FF	18"x18"	LAY-IN	24" x 24"			801 TO 1100	
		HARD LID	20" x 20"				

NOTES:

1. ALL SUPPLY DIFFUSERS SHALL BE SELECTED AT A MAX. 30 NC.
2. DIFFUSER BRANCH DUCTWORK SHALL BE THE SAME SIZE AS THE DIFFUSER NECK.
3. REFER TO ARCHITECTURAL PLANS FOR CEILING TYPES.
4. DIFFUSERS IN HARD LID CEILING SHALL HAVE O.B.D. DAMPER IN DIFFUSERS.
5. GRILLE FINISH TO MATCH ADJACENT FINISH.

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(IT'S FREE)
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(A MEMBER OF SOUTHERN CALIFORNIA CENTER)

0" VERIFY SCALE 1"
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PLANS PREPARED BY:
RMC
WATER AND ENVIRONMENT
JEFF HUEY ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MECHANICAL SCHEDULES

DESIGNED BY: Appenee	DATE XX/2014	SCALE	APPROVED BY: DATE
DRAWN BY Author	DATE XX/2014		XX-XX-14
CHECKED BY: Checker	DATE XX/2014	PROJECT NUMBER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. H-0.2			SHEET ___ of 100 SHEETS

OPERATIONS BUILDING EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL NO.	LOCATION	AREA SERVED	TYPE	CFM	SP (IN. H_2O)	OV FPM	FAN SIZE (IN.)	FAN RPM	HP / WATTS	ELECTRICAL VOLT	PH.	CYCLE	OPER. WEIGHT (LBS.)	REMARKS
EF 1	GREENHECK	SP-B150	CEILING	OPERATIONS BUILDING RESTROOM	CEILING	152	0.371	-	6	1050	- / 150	115	1	60	15	
EF 2	GREENHECK	SP-B150	CEILING	OPERATIONS BUILDING RESTROOM	CEILING	152	0.371	-	6	1050	- / 150	115	1	60	15	
EF 3	GREENHECK	G-133-VG	ROOF	OPERATIONS BUILDING ELECTRICAL ROOM	ROOF	1731	0.35	-	14.5"x14.5"	1365	1/2 / -	115	1	60	60	
EF 4	GREENHECK	GB-180-4	ROOF	OPERATIONS BUILDING LAB	ROOF	1650	0.25	-	20.5"x20.5"	570	1/4 / -	115	1	60	90	

OPERATIONS BUILDING MAKE UP AIR UNIT SCHEDULE

MARK	MANUFACTURER	MODEL NO.	LOCATION	SYSTEM SERVED	CFM	ESP (IN. H_2O)	COIL MBH	COIL EWT.	COIL LWT.	COIL ROWS	COIL GPM	ELECTRICAL DATA SHP	ELECTRICAL DATA HP	ELECTRICAL DATA VOLT	ELECTRICAL DATA PH.	ELECTRICAL DATA CYCLE	FILTER TYPE	OPER. WEIGHT (LBS.)	REMARKS
MUA 1	AAON	RQ-003-3-W	OPERATION BUILDING ROOF	LAB	1050	2.35	42.25	-	-	-	-	-	-	460	3	60	MERV 14	600	-

OPERATIONS BUILDING SPLIT SYSTEM FAN COIL / CONDENSING UNIT SCHEDULE (COOLING ONLY)

MARK	MANUFACTURER	MODEL NO.	LOCATION	AREA SERVED	CFM	MIN. O.A.	EXT. SP (IN. WC)	ELECTRICAL COMP. FLA	COND FAN FLA	EVAP FAN FLA	EVAP FAN HP	FAN HP	VOLT	PH.	CYCLE	MCA	MAX. FUSE	COOLING CAP. (MBH)	CAP. SENS.	ENT. DB (°F)	ENT. WB (°F)	AMB. (°F)	S.E.E.R.	OPER. WEIGHT (LBS.)	REMARKS
FC 2	CARRIER	40QNC018	OPERATIONS BUILDING ELECT. CEILING	ELECTRICAL ROOM 103	600	-	0.1	-	0.35	-	-	-	208	1	60	0.48	15	-	-	-	-	-	-	40	-
CU 2	CARRIER	38HDF018	ON GRADE	FC-2	-	-	-	9.0	-	0.38	-	-	208	1	60	12.1	20	-	-	-	-	-	-	170	-

BLOWER BUILDING SPLIT SYSTEM FAN COIL / CONDENSING UNIT SCHEDULE (COOLING ONLY)

MARK	MANUFACTURER	MODEL NO.	LOCATION	AREA SERVED	CFM	MIN. O.A.	EXT. SP (IN. WC)	ELECTRICAL COMP. FLA	COND FAN FLA	EVAP FAN FLA	EVAP FAN HP	FAN HP	VOLT	PH.	CYCLE	MCA	MAX. FUSE	COOLING CAP. (MBH)	CAP. SENS.	ENT. DB (°F)	ENT. WB (°F)	AMB. (°F)	S.E.E.R.	OPER. WEIGHT (LBS.)	REMARKS
FC 1	CARRIER	40QNC018	CEILING	BLOWER BUILDING ELECTRICAL ROOM	-	-	-	-	0.38	-	-	-	208	1	60	0.48	15	-	-	-	-	-	-	40	-
CU 1	CARRIER	38HDF018	ON GRADE	FC-1	-	-	-	9.0	-	0.38	-	-	208	1	60	12.1	20	-	-	-	-	-	-	170	-

BLOWER BUILDING EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL NO.	LOCATION	AREA SERVED	TYPE	CFM	SP (IN. H_2O)	OV FPM	FAN SIZE (IN.)	FAN RPM	HP / WATTS	ELECTRICAL VOLT	PH.	CYCLE	OPER. WEIGHT (LBS.)	REMARKS
EF 1	GREENHECK	G-133-VG	ROOF	BLOWER BUILDING ELECTRICAL ROOM	ROOF	1750	0.25	-	14.5"x14.5"	1365	1/2 / -	115	1	60	60	
EF 2	GREENHECK	G-133-VG	ROOF	BLOWER BUILDING BLOWER ROOM	ROOF	1750	0.25	-	14.5"x14.5"	1365	1/2 / -	115	1	60	60	
EF 3	GREENHECK	G-133-VG	ROOF	BLOWER BUILDING BLOWER ROOM	ROOF	1750	0.25	-	14.5"x14.5"	1365	1/2 / -	115	1	60	60	

HEADWORKS BUILDING SPLIT SYSTEM FAN COIL / CONDENSING UNIT SCHEDULE (COOLING ONLY)

MARK	MANUFACTURER	MODEL NO.	LOCATION	AREA SERVED	CFM	MIN. O.A.	EXT. SP (IN. WC)	ELECTRICAL COMP. FLA	COND FAN FLA	EVAP FAN FLA	EVAP FAN HP	FAN HP	VOLT	PH.	CYCLE	MCA	MAX. FUSE	COOLING CAP. (MBH)	CAP. SENS.	ENT. DB (°F)	ENT. WB (°F)	AMB. (°F)	S.E.E.R.	OPER. WEIGHT (LBS.)	REMARKS
FC 1	CARRIER	40QNC018	CEILING	HEADWORKS BUILDING ELECTRICAL ROOM	-	-	-	-	0.38	-	-	-	208	1	60	0.48	15	-	-	-	-	-	-	40	-
CU 1	CARRIER	38HDF018	ON GRADE	FC-1	-	-	-	9.0	-	0.38	-	-	208	1	60	12.1	20	-	-	-	-	-	-	170	-

HEADWORKS BUILDING EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL NO.	LOCATION	AREA SERVED	TYPE	CFM	SP (IN. H_2O)	OV FPM	FAN SIZE (IN.)	FAN RPM	HP / WATTS	ELECTRICAL VOLT	PH.	CYCLE	OPER. WEIGHT (LBS.)	REMARKS
EF 1	GREENHECK	G-133-VG	ROOF	BLOWER BUILDING ELECTRICAL ROOM	ROOF	1550	0.25	-	14.5"x14.5"	1365	1/2 / -	115	1	60	60	
EF 2	GREENHECK	G-133-VG	ROOF	BLOWER BUILDING HEADWORKS	ROOF	1550	0.25	-	14.5"x14.5"	1365	1/2 / -	115	1	60	60	
EF 3	GREENHECK	G-133-VG	ROOF	BLOWER BUILDING HEADWORKS	ROOF	1550	0.25	-	14.5"x14.5"	1365	1/2 / -	115	1	60	60	

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PLANS PREPARED BY: RMC water and environment; jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

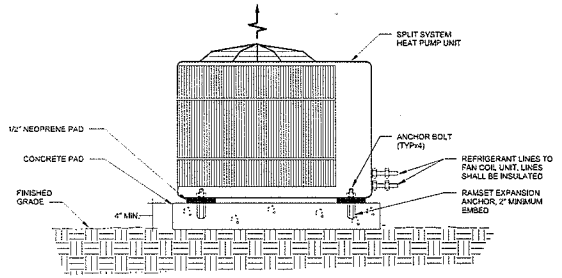
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MECHANICAL SCHEDULES

DESIGNED BY Approver XX/2014	DATE	SCALE	APPROVED BY DATE
DRAWN BY Author XX/2014	DATE		XX-XX-14
CHECKED BY Checker XX/2014	DATE	PROJECT NUMBER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

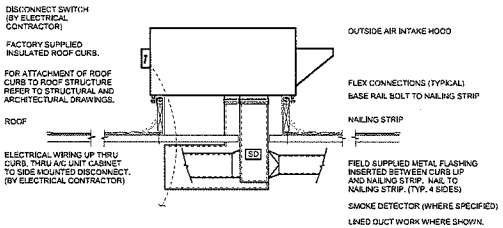
PLAN NO. H-0.3 SHEET ____ of 190 SHEETS



SPLIT SYSTEM HEAT PUMP AT GRADE (TYPICAL FOR COOLING ONLY SYSTEM)

NO SCALE

3 M-2.0



AC UNIT INSTALLATION

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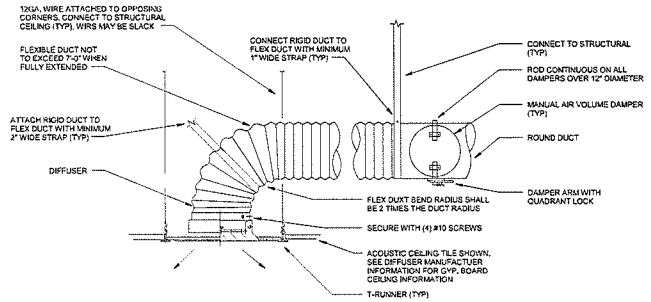
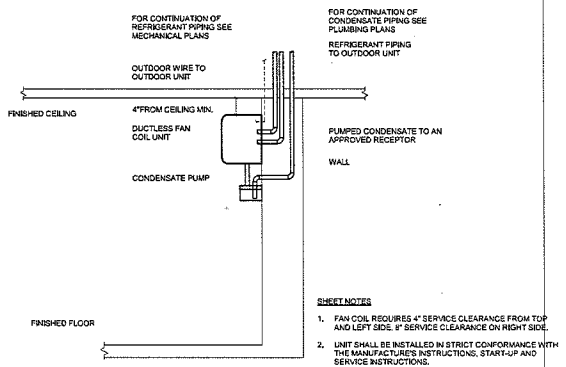
1 M-2.0



DIFFUSER DETAIL

NO SCALE

4 M-2.0



DUCTLESS FAN COIL UNIT MOUNTING DETAIL

NO SCALE

2 M-2.0

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CONSULTING MECHANICAL ENGINEERS
4630 WORKMAN AVE.
SAN DIEGO, CA 92173
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SERVING THE SOUTHERN CALIFORNIA COUNTIES

0" VERIFY SCALES 1"
BAR IS ONE INCH LONG ON FULL-SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC WATER AND ENVIRONMENT
JAMES KATZ ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

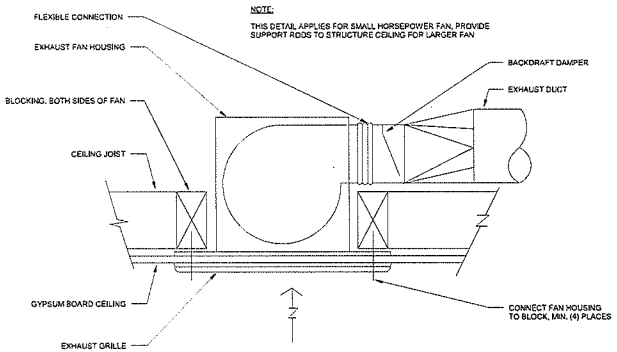
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MECHANICAL DETAILS

DESIGNED BY Approved	DATE XX/2014	SCALE	APPROVED BY: DATE
DRAWN BY Author	DATE XX/2014		XX-XX-14
CHECKED BY Checker	DATE XX/2014	PROJECT NUMBER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

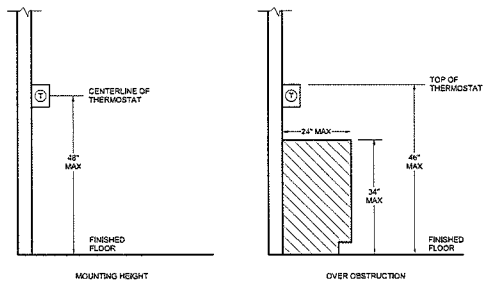
PLAN NO. H-2.0 SHEET ____ of 100 SHEETS



CEILING MOUNTED EXHAUST FAN

NO SCALE

3 M-2.1



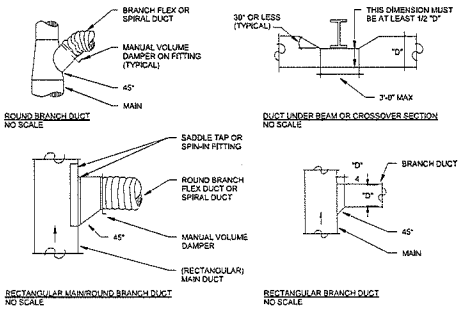
ACCESS NOTE:

THERMOSTATS ARE TO BE LOCATED NO MORE THAN 48" ABOVE FINISHED FLOOR
(46" MAXIMUM HEIGHT IF LOCATED OVER A COUNTER)
(24" MAXIMUM REACH DEPTH AT COUNTER)
COORDINATE WITH ARCHITECTURAL DRAWING

THERMOSTAT MOUNTING DETAIL

NO SCALE

1 M-2.1



TYPICAL DUCT TAKEOFF DETAILS

NO SCALE

2 M-2.1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MECHANICAL DETAILS

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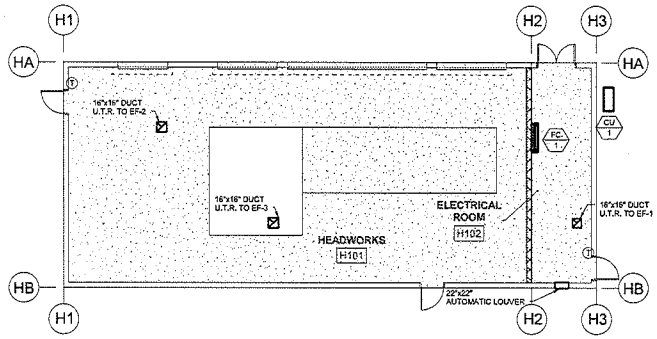
PLAN NO. H-2.1 SHEET ____ of 100 SHEETS



1 H2000-1 MECHANICAL FIRST FLOOR PLAN - HEADWORKS

MPA McPARLANE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERS
4630 VIEWRIDGE AVE.
SAN DIEGO, CA 92123
PH: 858-277-9721 FAX: 858-277-9730

DIAL BEFORE YOU DIG
DIGALERT
811
PLAN IF SAFE, DIAL 811 FOR YOUR DEPTH
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
REMAINING SOUTHERN CALIFORNIA COUNTIES

0" VERIFY SCALES 1"
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
soltz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

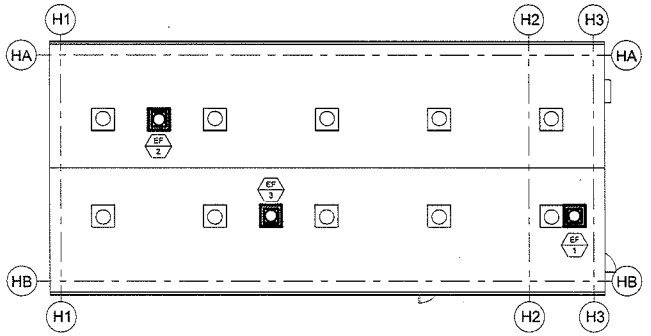
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MECHANICAL FLOOR PLAN HEADWORKS

DESIGNED BY: Approver XX/2014	SCALE	APPROVED BY:	DATE
DRAWN BY: Author XX/2014			XX-XX-14
CHECKED BY: Checker XX/2014	PROJECT NUMBER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

PLAN NO. H2000-1 SHEET ___ of 100 SHEETS



1 MECHANICAL ROOF PLAN - HEADWORKS
H2000-2 SCALE: 1/4"=1'-0"

MPA McPARLANE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERS
4630 VIEWRIDGE AVE.
SAN DIEGO, CA 92123
PH: 858-277-9781 FAX: 858-277-9782

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING THE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

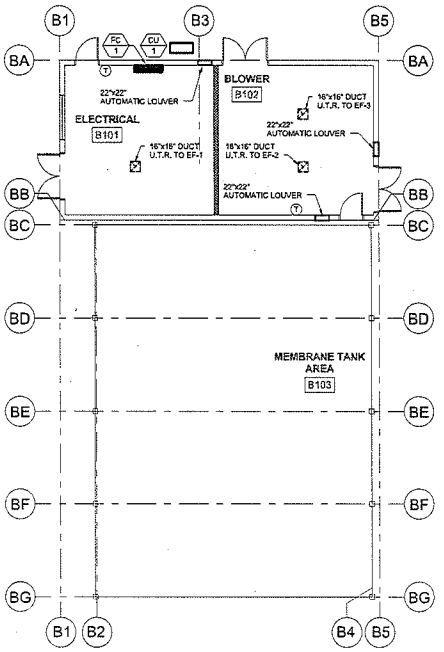
NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MECHANICAL ROOF PLAN HEADWORKS

DESIGNED BY: Approver XX/2014	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: Author XX/2014	DATE		XX-XX-14
CHECKED BY: Checker XX/2014	DATE	PROJECT MANAGER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
PLAN NO. H2000-2		SHEET ____ of 199 SHEETS	



1 MECHANICAL FLOOR PLAN - BLOWER BUILDING
H4600-1 SCALE: 3/8" = 1'-0"

MPA McPARLANE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERS
4030 VIEWRIDGE AVE.
SAN DIEGO, CA 92123
PH: 858-277-9721 FAX: 858-277-9760
PRO. E. NO. 3791

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
PLAN IT SAFE, DIAL 48 (ONE) YOU DIG!
REPRESENTING SOUTHERN CALIFORNIA DIGALERT

0" 1" VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

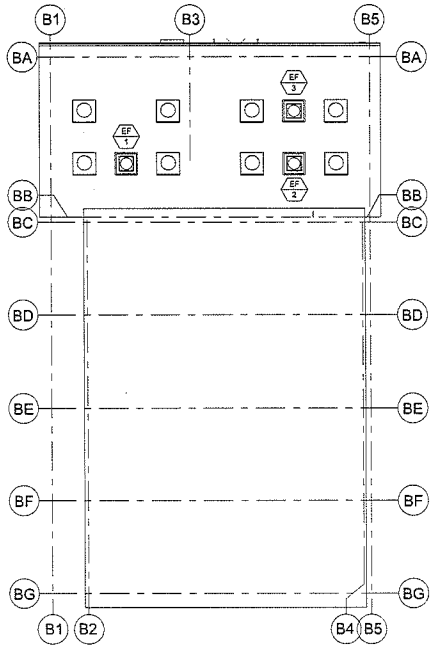
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MECHANICAL FLOOR PLAN BLOWER BUILDING

DESIGNED BY: Approver XX/2014	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: Author XX/2014	DATE		XX-XX-14
CHECKED BY: Checker XX/2014	DATE	PROJECT NUMBER #2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. H4600-1 SHEET ____ of 100 SHEETS



1 MECHANICAL ROOF PLAN - BLOWER BUILDING
H4600-2 SCALE 1/8" = 1'-0"

McPARLANE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERS
4830 VIEWRIDGE AVE.
SAN DIEGO, CA 92123
PH: 858-277-9721 FAX: 858-277-9763

DIAL BEFORE YOU DIG
DIGALERT
PLAN TO SAVE, DIG IN ONE WORKING DAY OR MORE PRIOR TO EXCAVATING
IT'S AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING SOUTHERN CALIFORNIA DIGALERT

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

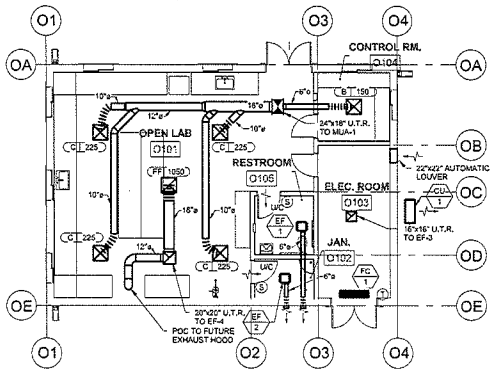
CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MECHANICAL ROOF PLAN BLOWER BUILDING

DESIGNED BY: Approver XX/2014	DATE	SCALE	APPROVED BY: DATE
DRAWN BY: Author XX/2014	DATE		XX-XX-14
CHECKED BY: Checker XX/2014	DATE	PROJECT NUMBER: #2036	ROBERT BRACER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

PLAN NO. H4600-2 SHEET _____ of 100 SHEETS



1 H9000-1 MECHANICAL FLOOR PLAN - OPERATIONS BUILDING

MPA McPARLANE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERING
4630 MISSION AVE.
SAN DIEGO, CA 92103
PH: 858-277-9721 FAX: 858-277-9750

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING

MEMBERS OF THE SOUTHERN CALIFORNIA CONNECTS

0" 1" VERIFY SCALE BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:

RMC water and environment

Structure ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

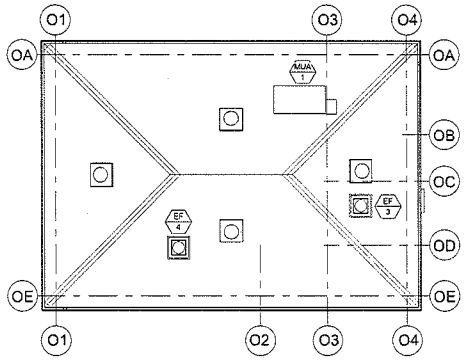
CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MECHANICAL FLOOR PLAN OPERATIONS BUILDING

DESIGNED BY: Approver XX/2014 DATE
DRAWN BY: Author XX/2014 DATE
CHECKED BY: Checker XX/2014 DATE
SCALE
PROJECT NUMBER: #2036

APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR / CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

PLAN NO. H9000-1
SHEET ____ of 100 SHEETS



1 MECHANICAL ROOF PLAN - OPERATIONS BUILDING
H9000-2 SCALE: 1/8" = 1'-0"

McPARLANE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERS
4030 VOLTAIRE AVE.
SAN DIEGO, CA 92123
PH: 858-277-9721 FAX: 858-277-9760

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IF SAFE, DIG BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
RUNNING LINE STATE OF CALIFORNIA CENTER

0" VERIFY SCALE 1"
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY.

PLANS PREPARED BY:
RMC water and environment
jeff katz ARCHITECTURE

NOT FOR CONSTRUCTION

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTE WATER TREATMENT FACILITY - PHASE 1

MECHANICAL ROOF PLAN OPERATIONS BUILDING

DESIGNED BY: Approver XX/2014	DATE	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR / CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: Author XX/2014	DATE		DATE XX-XX-14
CHECKED BY: Checker XX/2014	DATE	PROJECT MANAGER #2036	
PLAN NO. H9000-2			SHEET ____ of 100 SHEETS

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
XXXXXXXX	XXXXXXXX	EQUIPMENT IDENTIFIER AS DEFINED BY THE PROCESS
ZXXX	ZXXX	CONDUIT ID: Z = CONDUIT TYPE (AS NOTED OR SCHEDULED) XXX = NUMBER PER SCHEDULE (NOTE 3)
MOV	MOV	MOTOR OPERATED VALVE
G	G	GENERATOR, RATINGS AND CONNECTIONS AS NOTED
#	M	MOTOR, NUMERAL INDICATES HORSEPOWER
UTILITY METER	N/A	UTILITY METER
DMM	N/A	DIGITAL MULTIMETER
TRIP FRAME TRIP FRAME	CB	LOW VOLTAGE AIR OR MOLDED CASE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED; STABS INDICATE DRAWOUT TYPE
52 CS TRIP FRAME	CB	MEDIUM VOLTAGE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED; STABS INDICATE DRAWOUT TYPE
		SOLID STATE MOTOR CONTROL * D.C. = D.C. DRIVE CONTROLLER SCR = SILICON CONTROLLED RECTIFIER VFD = VARIABLE FREQUENCY DRIVE RVSS = REDUCED VOLTAGE SOLID STATE
TVSS	N/A	TRANSIENT VOLTAGE SURGE SUPPRESSION
MCP		COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC MOTOR STARTER, FULL VOLTAGE NON-REVERSING UNLESS OTHERWISE NOTED: * FVR FULL VOLTAGE REVERSING 2S2W TWO SPEED, TWO WINDING RVAT REDUCED VOLTAGE, AUTO TRANSFORMER # NUMERAL INDICATES NEMA SIZE
		NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE * AMPERE RATING NOTED IF OTHER THAN 30A
	F	FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, AMPERE RATING AND FUSE SIZE AS NOTED * AMPERE RATING NOTED IF OTHER THAN 30A # FUSE RATING EXAMPLE 15
	P 2	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD HEATER "P" INDICATES WITH PILOT LIGHT "2" INDICATES TWO POLE
	T	POWER TRANSFORMER, * RATINGS AND CONNECTIONS AS SHOWN ON THE SINGLE LINE DIAGRAM
	T	CONTROL TRANSFORMER, * RATINGS AND CONNECTIONS AS SHOWN ON THE SINGLE LINE DIAGRAM
100A ATS-1 N S	N/A	AUTOMATIC TRANSFER SWITCH NO. 1 (ATS-1) "N" INDICATES NORMAL SOURCE "S" INDICATES STANDBY SOURCE 100A INDICATES CONTINUOUS CURRENT RATING
	N/A	ARRESTOR, TYPE AS INDICATED * LA = LIGHTNING SURGE ARRESTOR SA = SURGE ARRESTOR
		GROUND OR GROUND ROD
		TERMINAL LUG, TERMINATION POINT, OR GROUNDING BOND POINT
30A	N/A	FUSE, AMPERE RATING AS NOTED
	N/A	CONTACT, NORMALLY OPEN (NO)
	N/A	CONTACT, NORMALLY CLOSED (NC)
MS #	N/A	MOTOR STARTER COIL, NUMBER AS INDICATED
CR #	N/A	CONTROL RELAY COIL, NUMBER AS INDICATED
	N/A	TERMINAL TO EXTERNAL DEVICE (FIELD OR OTHER PANEL)

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
N/A	## CS	CONTROL STATION, TAG NO. AS INDICATED * DEVICE TYPE DEFINED ON P&ID SHEETS OR CONTROL DIAGRAMS ## LOOP NO.
	CS	PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED
	CS	PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY OPEN
	CS	PUSHBUTTON WITH RED MUSHROOM HEAD OPERATOR (MAINTAINED CONTACT)
A B	CS	SELECTOR SWITCH A ON LOCAL B OFF REMOTE
H A (XOO) (OXO) (OOX)	CS	3 POSITION SELECTOR SWITCH, MAINTAINED CONTACT O=OPEN X=CLOSED POSITION | TOP CONTACT | MIDDLE CONTACT | BOTTOM CONTACT A | X | O | O B | O | X | O C | O | O | X NAMEPLATE (A/B/C) * HOA – HAND/OFF/AUTO HOR – HAND/OFF/REMOTE LOR – LOCAL/OFF/REMOTE OSC – OPEN/STOP/CLOSE
TD	N/A	TIME DELAY RELAY, NUMBER AS INDICATED RANGE AS NOTED SETPOINT AS NOTED
	N/A	NOTC–NORMALLY OPEN, TIMED CLOSING WHEN ENERGIZED (ON DELAY)
	N/A	NCTO–NORMALLY CLOSED, TIMED OPENING WHEN ENERGIZED (ON DELAY)
	N/A	NOTO–NORMALLY OPEN, TIMED OPENING WHEN DE-ENERGIZED (OFF DELAY)
	N/A	NCTC–NORMALLY CLOSED, TIMED CLOSING WHEN DE-ENERGIZED (OFF DELAY)
N/A	##	FIELD INSTRUMENT, TAG NO. AS INDICATED * INSTRUMENT TYPE DEFINED ON P&ID SHEETS, CONTROL DIAGRAMS, AND DIVISION 13 ## LOOP NO.
		LIQUID LEVEL SWITCH
		NORMALLY OPEN, CLOSES ON RISING LEVEL
		NORMALLY CLOSED, OPENS ON RISING LEVEL
		PRESSURE SWITCH
		NORMALLY OPEN, CLOSES ON RISING PRESSURE
		NORMALLY CLOSED, OPENS ON RISING PRESSURE
		NORMALLY OPEN, CLOSES ON DROPPING PRESSURE
		NORMALLY CLOSED, OPENS ON DROPPING PRESSURE
		FLOW SWITCH (AIR, WATER, ETC.)
		NORMALLY OPEN, CLOSES ON INCREASED FLOW
		NORMALLY CLOSED, OPENS ON INCREASED FLOW
		POSITION (LIMIT) SWITCH
		NORMALLY OPEN
		NORMALLY OPEN – HELD CLOSED
		NORMALLY CLOSED
		NORMALLY CLOSED – HELD OPEN
		TORQUE SWITCH NORMALLY CLOSED, OPENS ON HIGH TORQUE
	T	TEMPERATURE SWITCH OR ROOM THERMOSTAT
		NORMALLY OPEN, CLOSES ON RISING TEMPERATURE
		NORMALLY OPEN, CLOSES ON DROPPING TEMPERATURE
		NORMALLY CLOSED, OPENS ON RISING TEMPERATURE
		NORMALLY CLOSED, OPENS ON DROPPING TEMPERATURE

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
	HTR	STRIP HEATER OR HEATING ELEMENT
	SV	SOLENOID VALVE
ETM	N/A	ELAPSED TIME METER
K	N/A	KEY INTERLOCK
RTD		RESISTANCE TEMPERATURE DETECTOR
VE		VIBRATION DETECTOR
	N/A	PILOT LIGHT AND PILOT LIGHT PUSH-TO-TEST TYPE COLOR AS NOTED * R – RED G – GREEN B – BLUE W – WHITE A – AMBER
ISA	N/A	INTRINSICALLY SAFE RELAY; RELAY NUMBER AS INDICATED
# OR #	N/A	RELAY, NUMBER AS INDICATED 15 SPEED OR FREQUENCY MATCHING DEVICE 25 SYNCHRONISM CHECK RELAY 27 UNDERVOLTAGE RELAY 32 DIRECTIONAL POWER RELAY 38 BEARING PROTECTIVE DEVICE 40 LOSS OF EXCITATION RELAY 42 RUNNING CONTACTOR/PILOT RELAY 46 REVERSE PHASE/PHASE BALANCE/CURRENT RELAY 47 PHASE SEQUENCE VOLTAGE RELAY 49 MACHINE OR TRANSFORMER THERMAL RELAY 50 INSTANTANEOUS OVERCURRENT RELAY 50G INSTANTANEOUS GROUND 51 TIME OVERCURRENT RELAY 51G TIME OVERCURRENT RELAY, GROUNDING RESISTOR TYPE 51N TIME OVERCURRENT RELAY, RESIDUAL TYPE 51V TIME OVERCURRENT RELAY WITH VOLTAGE RESTRAINT 59 OVERVOLTAGE RELAY 60 NEGATIVE SEQUENCE VOLTAGE RELAY 62 TIME DELAY RELAY 63 OVERPRESSURE RELAY 65 GOVERNOR 67 AC DIRECTIONAL OVERCURRENT RELAY 75 POSITION CHANGING MECHANISM 81O OVER FREQUENCY RELAY 81U UNDER FREQUENCY RELAY 83 AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY 86 LOCKING-OUT RELAY 86UL LOCKING-OUT RELAY, "UP" POSITION SWITCH 87 DIFFERENTIAL PROTECTIVE RELAY 90 VOLTAGE AND POWER DIRECTIONAL RELAY AFD ARC FLASH DETECTOR B SUFFIX INDICATES "BUS" G SUFFIX INDICATES "GENERATOR" GF GROUND FAULT ST SHUNT TRIP PAF PHASE ARC FLASH T SUFFIX INDICATES "TRANSFORMER" X SUFFIX INDICATES "AUXILIARY" # NUMBER OF PHASE
	N/A	DRAWOUT TYPE EQUIPMENT OR DEVICE
	N/A	MEDIUM VOLTAGE CABLE TERMINATION
	N/A	MEDIUM VOLTAGE AIR INTERRUPTER SWITCH
	N/A	MEDIUM VOLTAGE FUSED AIR INTERRUPTER SWITCH
	N/A	MEDIUM VOLTAGE FUSED MOTOR CONTROLLER
# -120	N/A	POTENTIAL TRANSFORMER * QUANTITY # PRIMARY VOLTS
#	N/A	CURRENT TRANSFORMER * TURNS RATIO # QUANTITY
5KW	E	UNIT HEATER – ELECTRIC HEATING COIL AND FAN
5KW	E	UNIT HEATER – GAS HEATING COIL AND FAN
	N/A	CAPACITOR

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
	N/A	CONDUCTORS ELECTRICALLY CONNECTED
		INDICATES LIMITS OR EQUIPMENT OR WIRING ENCLOSURE
	N/A	INDUCTOR
	N/A	OVERLOAD HEATER
DM	DM	DAMPER MOTOR
		CONDUIT, CIRCUIT, OR EQUIPMENT TO BE DEMOLISHED

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — TOLL FREE CALL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SUBMEMBERS SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. BRWIN No. E 14767 — EXP. 6/30/14

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL LEGENDS AND ABBREVIATIONS
SHEET 1

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE NONE	APPROVED BY: / DATE XX-XX-13
DRAWN BY: B. VUE	DATE 06/2013		ROBERT BRAGER, P.E., J.D.
CHECKED BY: –	DATE 06/2013	PROJECT NUMBER XXXX	PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E-1 — Sheet ____ of XXX Sheets

FILENAME: E-01 2-24-14 09:36am Joel_K:\PE\2013 Activity\Civic...

Last Saved By: Joel 2-24-14 01:11pm

M:\LOCAL - 2012 Projects\112017 - RMC, Malibu Wastewater and Recycled Water Facilities\112017 - Civil\E-01 10/7/13 13:06 andra XREFS: X-Border

PLAN	DESCRIPTION
NEMA X	NEMA AREA: "X" INDICATES REQUIRED NEMA RATING OF EQUIPMENT IN THE AREA
	EXPOSED CONDUIT (SEE NOTE 4)
	CONCEALED CONDUIT (SEE NOTE 4)
A E-10	UNDERGROUND DUCT BANK, CONCRETE ENCASED UNLESS OTHERWISE NOTED. CONDUIT ARRAY SHOWN IN SECTION A ON SHEET E-10.
G 1,3,LP-1	HOMERUN TO PANEL AND CIRCUIT SHOWN WITH TICK MARK INDICATES NUMBER OF CONDUCTORS: SHORT TICK = HOT LONG TICK = NEUTRAL LONG TICK WITH "G"= GROUND EXAMPLE SHOWN: CIRCUITS 1 AND 3 TO PANEL LP-1 (HOT, HOT, NEUTRAL, AND GROUND). (SEE NOTE 3)
	CONDUIT STUBBED OUT AND CAPPED
	FLEXIBLE METAL CONDUIT "WHIP" FOR RECESSED LIGHTING FIXTURES AND LIQUID TIGHT MOTOR CONNECTIONS (SEE NOTE 4)
WW	WIREWAY
	EXPOSED CONDUIT TURNING UP
	EXPOSED CONDUIT TURNING DOWN
TD	HOMERUN TO TELEPHONE BACKBOARD
LP-XXX	LIGHTING PANELBOARD (120, 208, 240V)
UPS	UNINTERRUPTIBLE POWER SUPPLY
	DISTRIBUTION PANELBOARD (277/480V)
A 3 b	CEILING MOUNTED INCANDESCENT, COMPACT FLUORESCENT OR H.I.D. TYPE LIGHTING FIXTURE "A" – FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) "b" – CONTROLLED BY SWITCH "b" "3" – CIRCUIT NUMBER
A 3 b	FLUORESCENT TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
A 3 b	WALL OUTLET AND INCANDESCENT, COMPACT FLUORESCENT OR H.I.D. TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
A 3 b	POLE MOUNTED H.I.D. TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
A 3 b OR A 3 b	CROSS HATCH INDICATES LIGHTING FIXTURE FOR EMERGENCY EGRESS LIGHTING
A 3	EMERGENCY LIGHTING FIXTURE. NOTATIONS SAME AS ABOVE (NO SWITCHING REQUIRED).
E	EXIT SIGN. ARROW INDICATES DIRECTION OF EGRESS
$ b	SINGLE POLE SWITCH "b" INDICATES SWITCHLEG SHALL CONTROL LIGHT FIXTURES WITH "b" DESIGNATION
$ 2 a	DOUBLE POLE SWITCH "a" INDICATES SWITCHLEG SHALL CONTROL LIGHT FIXTURES WITH "a" DESIGNATION
$ 3 c	THREE WAY SWITCH "c" INDICATES SWITCHLEG SHALL CONTROL LIGHT FIXTURES WITH "c" DESIGNATION
$ 4 d	FOUR WAY SWITCH "d" INDICATES SWITCHLEG SHALL CONTROL LIGHT FIXTURES WITH "d" DESIGNATION
$ M	SINGLE POLE, DOUBLE THROW MOMENTARY CONTACT SWITCH, CENTER OFF
$ P	SINGLE POLE SWITCH AND PILOT LIGHT

PLAN	DESCRIPTION
4	DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W, NUMBER INDICATES CIRCUIT * GF GROUND FAULT INTERRUPTER TYPE WP WEATHERPROOF T TRANSIENT VOLTAGE SURGE SUPPRESSOR TR TAMPER RESISTANT
#	MULTIPLEX RECEPTACLE, 20A, 120V, 2P, 3W # INDICATES NUMBER OF RECEPTACLES
	SPECIALTY POWER RECEPTACLE, FUNCTION AS NOTED
	SPECIAL SYSTEM JACK, TELEPHONE / DATA
TD	TELEPHONE DEMARCATION (CABINET OR BACKBOARD)
J OR	JUNCTION BOX
P	PULL BOX
TB	TERMINAL BOX
*–XXX	UNDERGROUND STRUCTURE (MANHOLE OR HANDHOLE) * STRUCTURE TYPE (MH OR HH) XXX ID NUMBER PER PLANS, SCHEDULE, OR AS SPECIFIED
D	DIMMER LIGHTING CONTROL SWITCH
C	LIGHTING CONTACTOR WITH NUMBER OF POLES AS INDICATED
TM	TIME SWITCH
	THREE CELL UNDERFLOOR DUCT SYSTEM JUNCTION BOX
OS	OCCUPANCY SENSOR
PC	PHOTOCELL
#	PHOTO VANTAGE POINT AND DIRECTION # PHOTO NUMBER

CONTROL SYSTEM INPUT/OUTPUT DEVICES

- DI — DIGITAL INPUT
- DIGITAL OUTPUT NORMALLY OPEN MOMENTARY CONTROL OUTPUT
- DIGITAL OUTPUT NORMALLY CLOSED MOMENTARY CONTROL OUTPUT
- DIGITAL OUTPUT NORMALLY OPEN MAINTAINED CONTROL OUTPUT
- DIGITAL OUTPUT NORMALLY CLOSED MAINTAINED CONTROL OUTPUT
- AI — ANALOG INPUT 4–20ma UNLESS NOTED
- AO — ANALOG OUTPUT 4–20MA UNLESS NOTED
- PI — PULSE INPUT

ABBREVIATIONS

A, AMP	AMPERE
AC	ALTERNATING CURRENT
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
AI	ANALOG INPUT
AIC	AMPERE INTERRUPTING CAPACITY
AO	ANALOG OUTPUT
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BCG	BARE COPPER GROUND
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT, CONTACTOR
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CL	CONTINUOUS LOAD
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL STATION
CT	CURRENT TRANSFORMER
CU	COPPER
CWS	CONDUIT WALL SEAL
DC	DIRECT CURRENT
DI	DIGITAL/DISCRETE INPUT
DIA	DIAMETER
DMM	DIGITAL MULTIMETER
DO	DIGITAL/DISCRETE OUTPUT
(E)	EXISTING
ELEC	ELECTRICAL
EL	ELEVATION
ENCL	ENCLOSURE OR ENCLOSED
EQUIP	EQUIPMENT
ETM	ELAPSED TIME METER
(F)	FUTURE
FO	FIBER OPTIC
FU	FUSE
GCP	GENERATOR CONTROL PANEL
GEN	GENERATOR
GB	GROUND BAR
GRD	GROUND
GFI	GROUND FAULT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
HID	HIGH INTENSITY DISCHARGE
HH	HANDHOLE
HP	HORSEPOWER
HT	HEIGHT
HTR	HEATER
HVAC	HEATING VENTILATION AIR CONDITIONING
HZ	HERTZ
INST	INSTANTANEOUS
INSTR	INSTRUMENT
IS	INTRINSICALLY SAFE
K	KILO (PREFIX)
KCMIL	1000 CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATTS
LA	LIGHTNING ARRESTER
LES	LOCAL EMERGENCY STOP
LGTS	LIGHTS
LTG	LIGHTING
LP	LIGHTING PANEL
LV	LOW VOLTAGE
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
ML	MOTOR LOAD
MLO	MAIN LUGS ONLY
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
N	NEUTRAL
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NCL	NON–CONTINUOUS LOAD
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OH	OVERHEAD
OL	OVERLOAD
OS	OCCUPANCY SENSOR
P	POLE
PB	PULL BOX
PC	PHOTOCELL
PCC	PUMP CONTROL CONSOLE
PCP	PUMP CONTROL PANEL
PH	PHASE
PI	PULSE INPUT
PNL	PANEL OR PANELBOARD
PR	PAIR
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RECPT	RECEPTACLE
REQD	REQUIRED
RTD	RESISTANCE TEMPERATURE DETECTOR
SA	SURGE ARRESTER
SC	SURGE CAPACITOR
SEC	SECONDS OR SECONDARY
SH	SHIELDED OR SHEET
SHT	SHEET
SS	STAINLESS STEEL
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITHBOARD
SWGR	SWITCHGEAR
TC	TIME DELAY ON CLOSING
TEL	TELEPHONE
TELCO	TELEPHONE COMPANY
TD	TELEPHONE DEMARCATION POINT
TM	TIME SWITCH
TO	TIME DELAY ON OPENING
TSP	TWISTED SHIELDED PAIR
TVSS	TRANSIENT VOLTAGE SURGE SUPRESSOR
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VA	VOLT AMPS
VAR	VOLT AMPS REACTIVE
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE, WATTS, WITH, WIDTH
WP	WEATHERPROOF
XP	EXPLOSION PROOF
XFMR	TRANSFORMER

NOTES:

1. THIS IS A STANDARD LEGEND SHEET. SOME SYMBOLS MAY NOT APPEAR WITHIN THE DRAWING SET FOR THIS PROJECT.
2. DETAILS REPRESENT TYPICAL INSTALLATION REQUIREMENTS TO BE USED ON THIS PROJECT FOR THE CONDITION SHOWN. DETAILS ARE NOT SPECIFICALLY CALLED OUT AT EVERY APPLICATION POINT FOR CLARITY AND SIMPLICITY. THE INDICATED DETAIL REQUIREMENTS SHALL APPLY FOR ALL APPLICABLE LOCATIONS.
3. PLANS DO NOT SHOW ROUTES OR SIZING OF RACEWAYS AND CONDUCTORS FOR RECEPTACLES, LIGHTING FIXTURES, LIGHTING SWITCHES, OR OTHER LOADS. PROVIDE RACEWAYS AND CONDUCTORS AS REQUIRED PER THE DEVICE LOCATION, SWITCH DESIGNATION, PANEL/CIRCUIT NUMBER, AND PROTECTIVE DEVICE RATING SHOWN ON THE DRAWINGS. HOMERUNS SHOWN CONCEALED OR EXPOSED SHALL BE INDICATIVE OF THE ENTIRE CIRCUIT INSTALLATION.
4. IF NOT SHOWN, PROVIDE MINIMUM CONDUIT AND WIRE CIRCUIT RUN CONSISTING OF 3/4" CONDUIT WITH 2#12, 1#12 GROUND.

3 / E-5 — SHEET NO. WHERE SECTION IS DRAWN

SYMBOL WHERE THERE IS A SECTION

SUBTITLE — SECTION NUMBER
SECTION 3 (NTS) — E-4 — SHEET NO. WHERE SECTION IS DRAWN

SYMBOL WHERE SECTION IS DRAWN

DETAIL SYMBOL

16410 / QE-2 — SHEET NO. WHERE DETAIL IS DRAWN

SYMBOL WHERE THERE IS A DETAIL

ASSOCIATED SPECIFICATION DIVISION NUMBER — DETAIL NUMBER
SUBTITLE
DETAIL 16110 (NTS) — VAR

SYMBOL WHERE DETAIL IS DRAWN

DETAIL SYMBOL
(NOTE 2)

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL LEGENDS AND ABBREVIATIONS
SHEET 2

DESIGNED BY: W. OUYANG — DATE 06/2013
DRAWN BY: B. VUE — DATE 06/2013
CHECKED BY: – — DATE 06/2013
SCALE: NONE
PROJECT NUMBER: XXXX

APPROVED BY: — DATE
XX-XX-13
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. E-2 — Sheet ___ of XXX Sheets

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE (DIG) BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

"IF PRINT SCALES — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY"

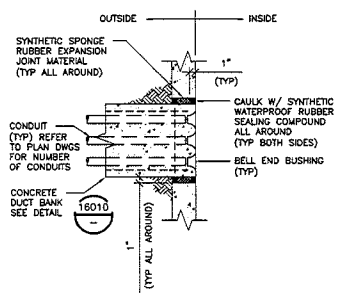
PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN, No. E 14767

NO.	REVISION	BY	CHKD.	DATE

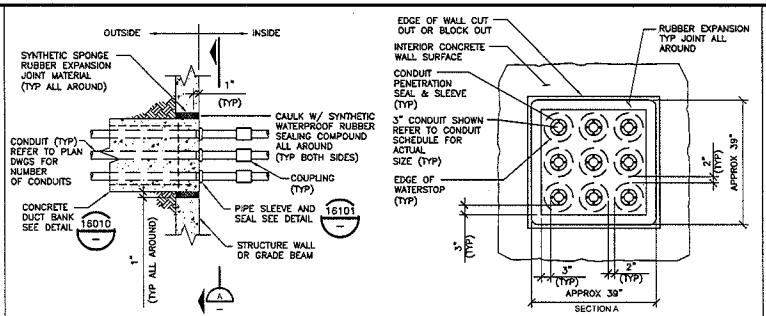
M:\CAD4 - 2012 Projects\(12017 - RMC, Malibu Wastewater and Recycled Water Facilities)\12017 - Elec\ E-02 02/25/14 09:40 bee XREFs: X-Borders

Last Saved By: bee 2-24-14 01:11pm



CONCRETE ENCASED ELECTRICAL CONDUITS AT PRECAST MANHOLE OR HANDHOLE WITHOUT WATERSTOP

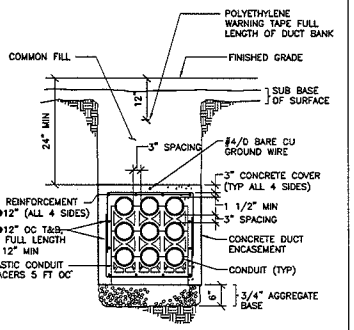
DETAIL 16000 NTS VAR



CONCRETE ENCASED ELECTRICAL CONDUITS AT STRUCTURES

DETAIL 16003 NTS VAR

NOTE:
SECTION SHOWN IS TYPICAL FOR NINE (9) 3" CONDUITS IN A DUCTBANK. SIZE OF CONDUITS PER THE CONDUIT SCHEDULE AND CONFIGURATION OF DUCTBANK WILL DETERMINE ACTUAL SIZE OF WALL CUT OUT.

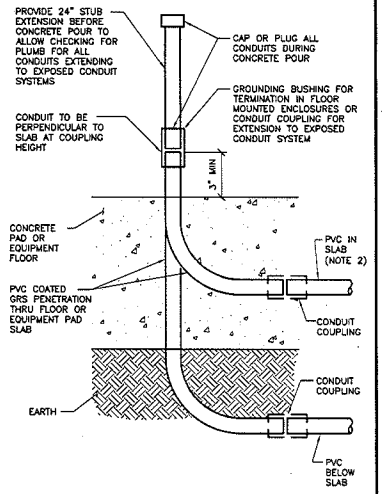


NOTES:

1. MAINTAIN A MINIMUM OF 12" SEPARATION BETWEEN INSTRUMENTATION AND POWER DUCT BANKS.
2. DETAIL IS APPLICABLE TO ALL UNDERGROUND CONDUIT RUNS.
3. DETAIL IS SHOWN WITH 9 CONDUITS AS A TYPICAL ONLY. REFER TO THE DETAILED PLAN DRAWINGS FOR THE QUANTITY AND SIZE OF CONDUITS REQUIRED FOR EACH DUCT BANK.
4. CONCRETE AND SOILS SHALL BE COMPACTED PER PROJECT SPECIFICATIONS.

REINFORCED CONCRETE DUCT BANK

DETAIL 16010 NTS VAR

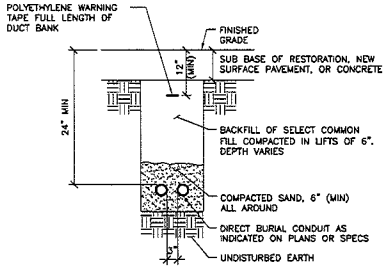


NOTE:

1. APPLICABLE IN ALL AREAS UNLESS NOTED OTHERWISE.
2. CONDUITS MAY BE ENCASED IN SLAB ONLY WHERE SPECIFICALLY SHOWN ON THE PLAN DRAWINGS. COORDINATE ENCASED CONDUIT WITH SLAB REINFORCEMENT.

CONDUIT STUB UP / FLOOR PENETRATION

DETAIL 16107 NTS VAR

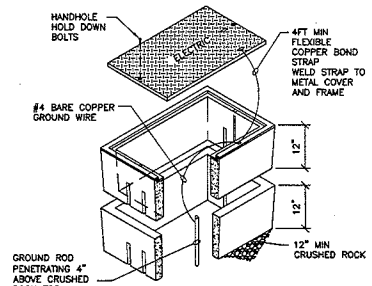


NOTES:

1. FIELD CONDITIONS MAY REQUIRE A MINIMUM DEPTH GREATER THAN SHOWN.
2. SHARP TURNS OR BENDS OR OTHER IRREGULARITIES IN THE CONDUIT MUST BE AVOIDED.
3. IF BOTTOM OF TRENCH IS ROCKY AND PLASTIC CONDUITS ARE USED, USE ROCK FREE BACKFILL AND TAMP TO AFFORD A SMOOTH BEDDING FOR THE CONDUIT. BEFORE TAMPING IN AREA OF PLASTIC CONDUIT, APPLY AT LEAST SIX INCHES OF BACKFILL OVER TOP OF CONDUIT TO AVOID BREAKAGE. FINAL BACKFILL MAY THEN BE PLACED IN THE TRENCH AND TAMPING EMPLOYED TO FINISH GRADE. IN ORDER TO REDUCE COSTS, THE SOIL ORIGINALLY REMOVED FROM THE TRENCH SHOULD BE USED AS BACKFILL WHEREVER POSSIBLE.
4. DO NOT USE SALT WATER SAND BACKFILL WITH STEEL CONDUIT.

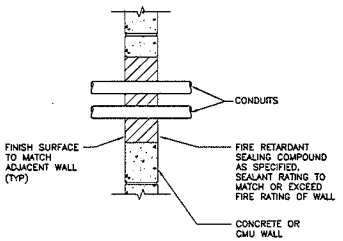
DIRECT BURIAL CONDUIT OR CABLE

DETAIL 16020 NTS VAR



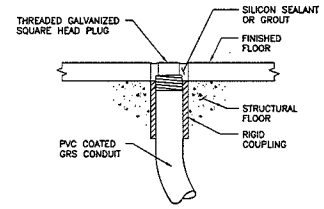
SITE LIGHTING HANDHOLE
10"x17" NOM I.D.

DETAIL 16060 NTS VAR



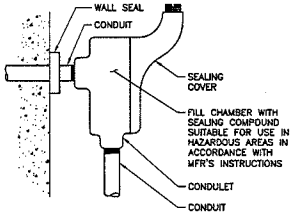
ABOVE GRADE WALL CONDUIT PENETRATION

DETAIL 16104 NTS VAR



FUTURE CONDUIT TERMINATION IN FLOOR

DETAIL 16111 NTS VAR



CONDUIT SEALOFF FITTING

DETAIL 16114 NTS VAR

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

PLAN PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction MICHAEL J. ERWIN No. E 14767 CIVIL

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL STANDARD DETAILS
SHEET 1

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE NONE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: A. PRIOR	DATE 06/2013		DATE XX-XX-13
CHECKED BY: --	DATE 06/2013	PROJECT NUMBER XXXX	

Plan No. E-3 Sheet ____ of XXX Sheets

Last Saved By: awatts 10-17-13 12:19pm

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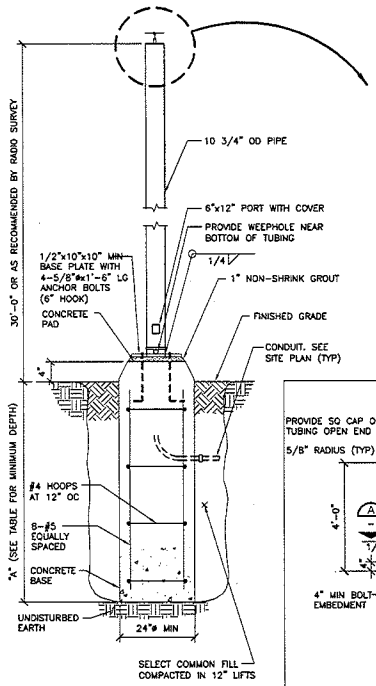
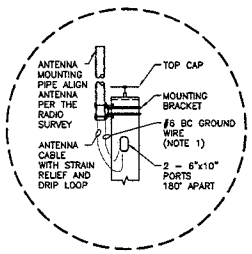


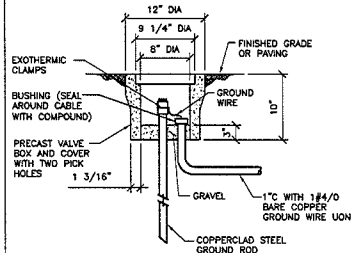
ANTENNA MAST
DETAIL 16121 NTS VAR



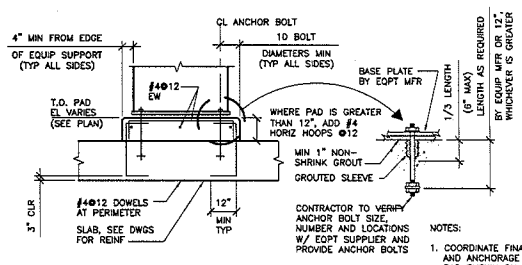
MAXIMUM POLE HEIGHT	DIMENSION "A"
20'-0"	4'-6"
30'-0"	6'-6"

DETAIL NOTE:

1. ANTENNA GROUND WIRE SHALL BE BONDED TO THE ANTENNA TOWER 3' TO 5' BELOW ANTENNA AND GROUND ROD IN NEARBY GROUND WELL. SEE GROUND ROD AND WELL INSTALLATION DETAIL. GROUND WIRE ROUTED TO GROUNDING JUNCTION BOX PRIOR TO CONNECTION TO GROUND GRID. SEE DETAIL 16200



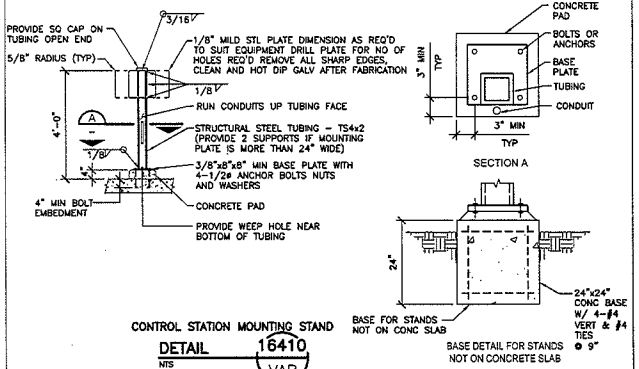
GROUND ROD
DETAIL 16200 NTS VAR



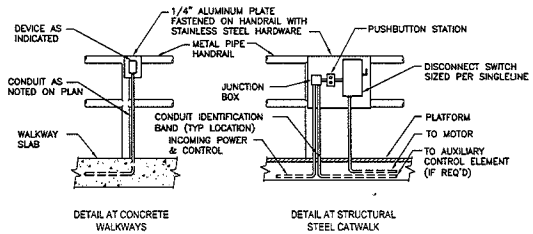
NOTES:

1. COORDINATE FINAL MOUNTING AND ANCHORAGE WITH MOUNTING PAD SHOWN ON CIVIL SHEET.

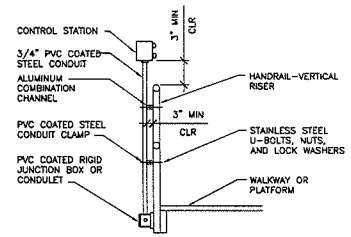
FREESTANDING EQUIPMENT MOUNTING
DETAIL 16400 NTS VAR



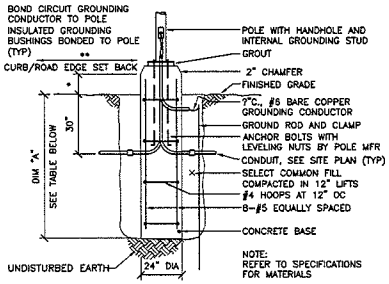
CONTROL STATION MOUNTING STAND
DETAIL 16410 NTS VAR



INSTALLATION OF EQUIPMENT ON GUARDRAIL
DETAIL 16412 NTS VAR



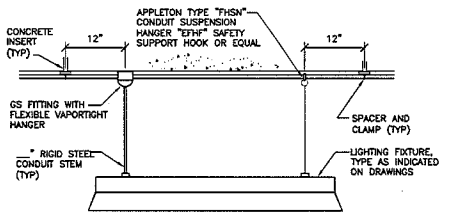
GUARDRAIL MOUNTED CONTROL STATION
DETAIL 16413 NTS VAR



POLE HEIGHT	DIMENSION "A"
10'-0"	4'-6"
20'-0"	4'-6"
30'-0"	6'-6"
40'-0"	6'-6"

* = 2" AT WALKWAYS* = 48" AT 18" AT ROADWAYS & WALKWAYS; 24" AT PARKING AREAS ROADWAYS

STANDARD LIGHTING BASE
DETAIL 16500 NTS VAR



PENDANT MOUNTED LIGHTING FIXTURE
DETAIL 16522 NTS VAR

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NOR. SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — Exp. 6-30-15

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL STANDARD DETAILS
SHEET 2

DESIGNED BY:	DATE	SCALE	APPROVED BY:	DATE
W. OUYANG	06/2013	NONE		XX-XX-13
DRAWN BY:	DATE		ROBERT BRAGER, P.E., J.D.	
A. PRIOR	06/2013		PUBLIC WORKS DIRECTOR/CITY ENGINEER	
CHECKED BY:	DATE	PROJECT NUMBER	RCE NO. 52102	EXP. 12/31/2014
—	06/2013	XXXX		

Plan No. E-4 Sheet ____ of XXX Sheets

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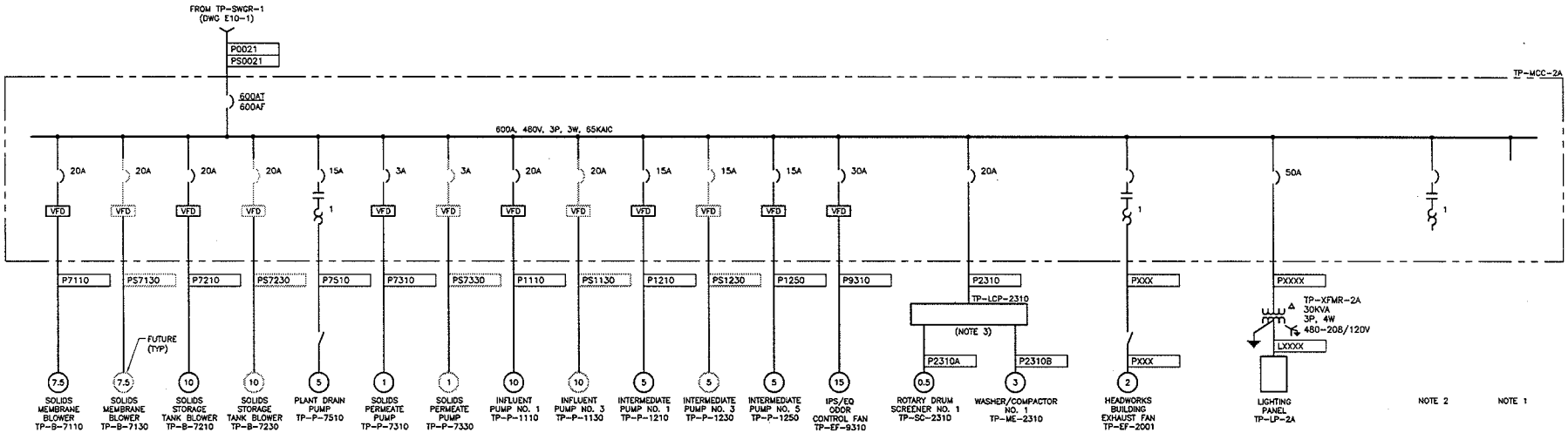

NOTES:

1. PROVIDE BUS AND SPACE PROVISION FOR FUTURE LOAD CONNECTION. REFER TO MCC ELEVATIONS FOR REQUIRED MCC EMPTY BUCKETS.
2. NOT ALL SPARES ARE SHOWN. REFER TO MCC ELEVATIONS FOR REQUIRED SPARE MCC BUCKETS.
3. EQUIPMENT IS FURNISHED BY PROCESS EQUIPMENT SUPPLIER AND IS INSTALLED BY THE CONTRACTOR.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SINGLE LINE DIAGRAM - TP-MCC-2A

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE	APPROVED BY:	DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE		XX-XX-13
CHECKED BY: –	DATE 06/2013	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. E10-2

Sheet _____ of XXX Sheets

Last Saved By: Anstin 3-31-14 11:04am

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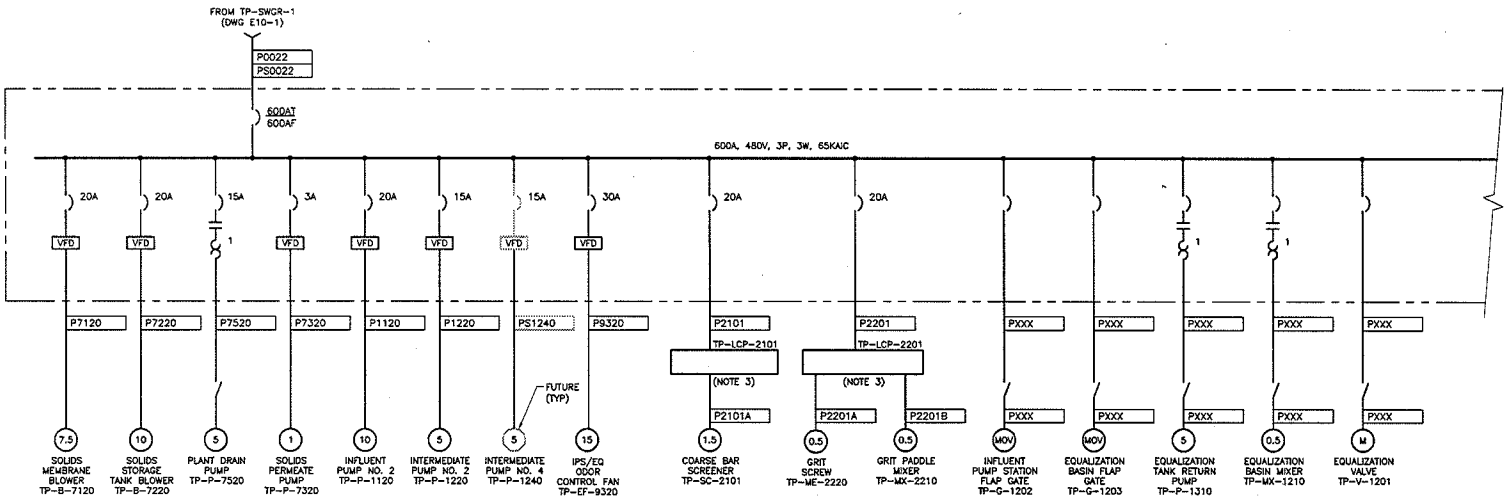

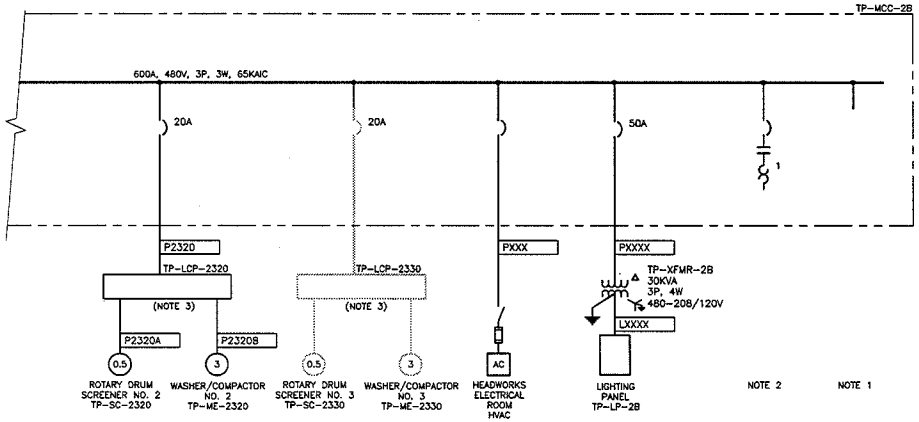

NOTES:

1. PROVIDE BUS AND SPACE PROVISION FOR FUTURE LOAD CONNECTION. REFER TO MCC ELEVATIONS FOR REQUIRED MCC EMPTY BUCKETS.
2. NOT ALL SPARES ARE SHOWN. REFER TO MCC ELEVATIONS FOR REQUIRED SPARE MCC BUCKETS.
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CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SINGLE LINE DIAGRAM - TP-MCC-2B

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE	APPROVED BY:
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	DATE XX-XX-13
CHECKED BY: –	DATE 06/2013	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E10-3 Sheet ____ of XXX Sheets

IF PRINTED SCALES — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

W:\LADA – 2012 Projects\12017 – RMC, Malibu Wastewater and Recycled Water Facilities\12017 – Elec\ E10-03 03/31/14 11:05 cadia MECS 3 x-Refer

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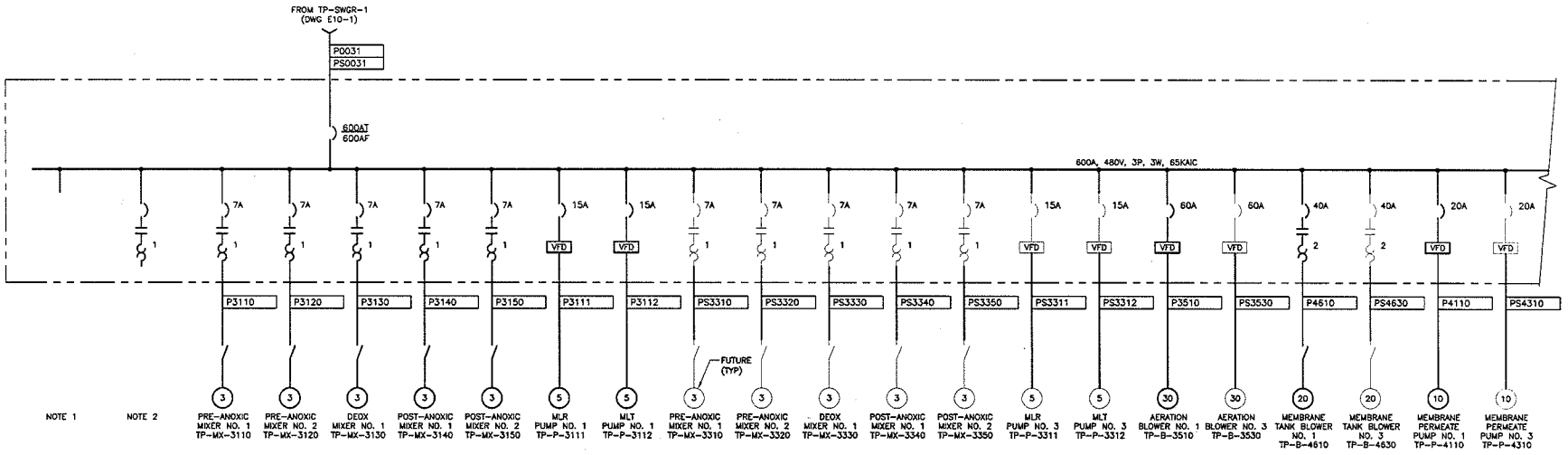

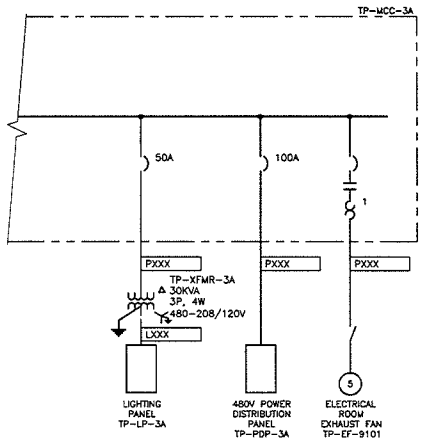

NOTES:

1. PROVIDE BUS AND SPACE PROVISION FOR FUTURE LOAD CONNECTION. REFER TO MCC ELEVATIONS FOR REQUIRED MCC EMPTY BUCKETS.
2. NOT ALL SPARES ARE SHOWN. REFER TO MCC ELEVATIONS FOR REQUIRED SPARE MCC BUCKETS.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SINGLE LINE DIAGRAM - TP-MCC-3A

DESIGNED BY: W. OUYANG DATE 06/2013
DRAWN BY: A. PRIOR DATE 06/2013
CHECKED BY: - DATE 06/2013
SCALE: NONE
PROJECT NUMBER: XXXX
APPROVED BY: DATE XX-XX-13
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. E10-4
Sheet ___ of XXX Sheets

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

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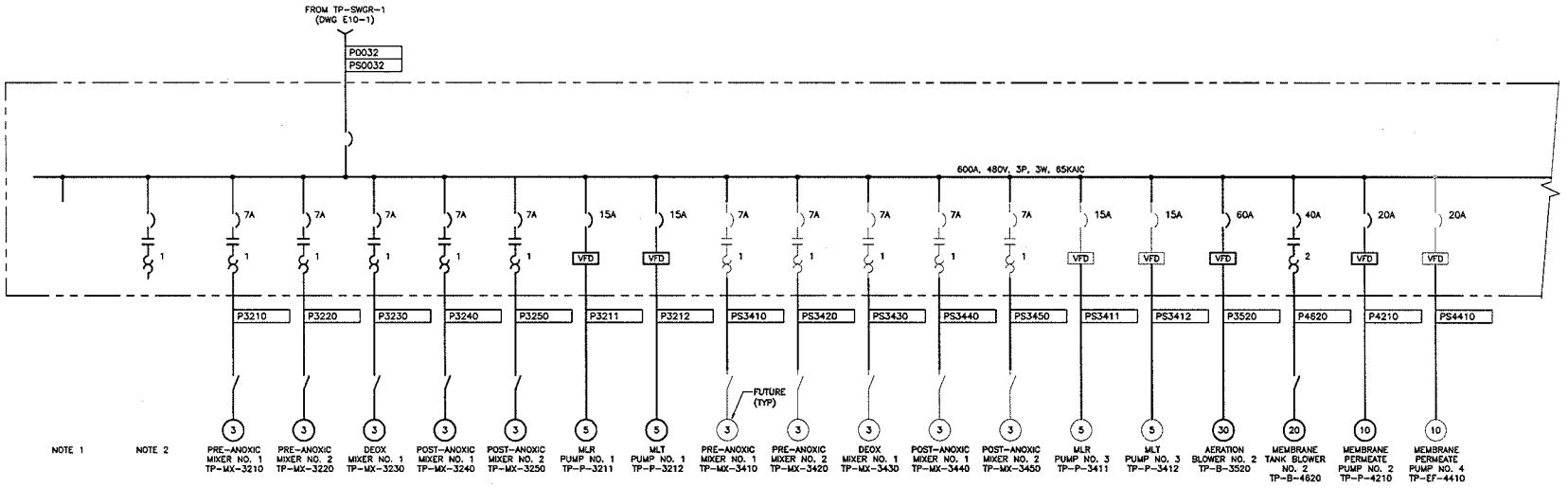

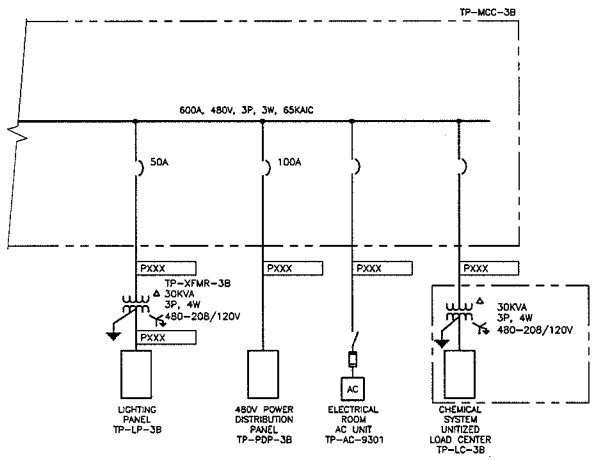

NOTES:

1. PROVIDE BUS AND SPACE PROVISION FOR FUTURE LOAD CONNECTION. REFER TO MCC ELEVATIONS FOR REQUIRED MCC EMPTY BUCKETS.
2. NOT ALL SPARES ARE SHOWN. REFER TO MCC ELEVATIONS FOR REQUIRED SPARE MCC BUCKETS.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SINGLE LINE DIAGRAM - TP-MCC-3B

DESIGNED BY: W. OUYANG DATE: 06/2013
DRAWN BY: A. PRIOR DATE: 06/2013
CHECKED BY: – DATE: 06/2013
SCALE: NONE
PROJECT NUMBER: XXXX
APPROVED BY: DATE: XX-XX-13
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. E10-5
Sheet ____ of XXX Sheets

NO.	REVISION	BY	CHKD.	DATE

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN
No. E 14767

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

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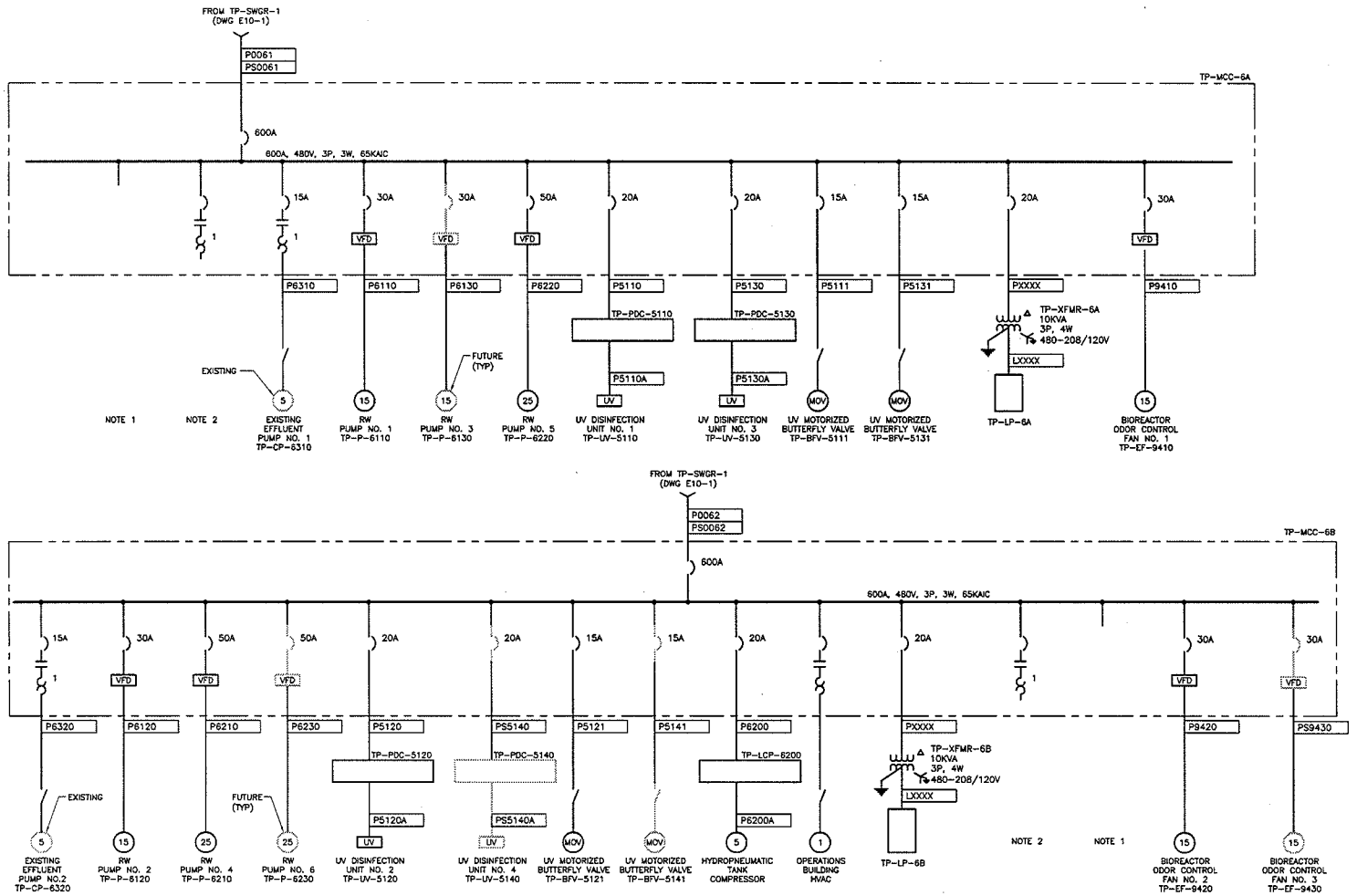

NOTES:

1. PROVIDE BUS AND SPACE PROVISION FOR FUTURE LOAD CONNECTION. REFER TO MCC ELEVATIONS FOR REQUIRED MCC EMPTY BUCKETS.
2. NOT ALL SPARES ARE SHOWN. REFER TO MCC ELEVATIONS FOR REQUIRED SPARE MCC BUCKETS.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SINGLE LINE DIAGRAM
TP-MCC-6A AND TP-MCC-6B

DESIGNED BY: W. OUYANG DATE: 06/2013
DRAWN BY: A. PRIOR DATE: 06/2013
CHECKED BY: — DATE: 06/2013
SCALE: NONE
PROJECT NUMBER: 2036
APPROVED BY: DATE: XX-XX-13
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. E10-6
Sheet ____ of XXX Sheets

NO.	REVISION	BY	CHKD.	DATE

95% Submittal Not for Construction

PLANS PREPARED BY: PMC Water and Environment

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

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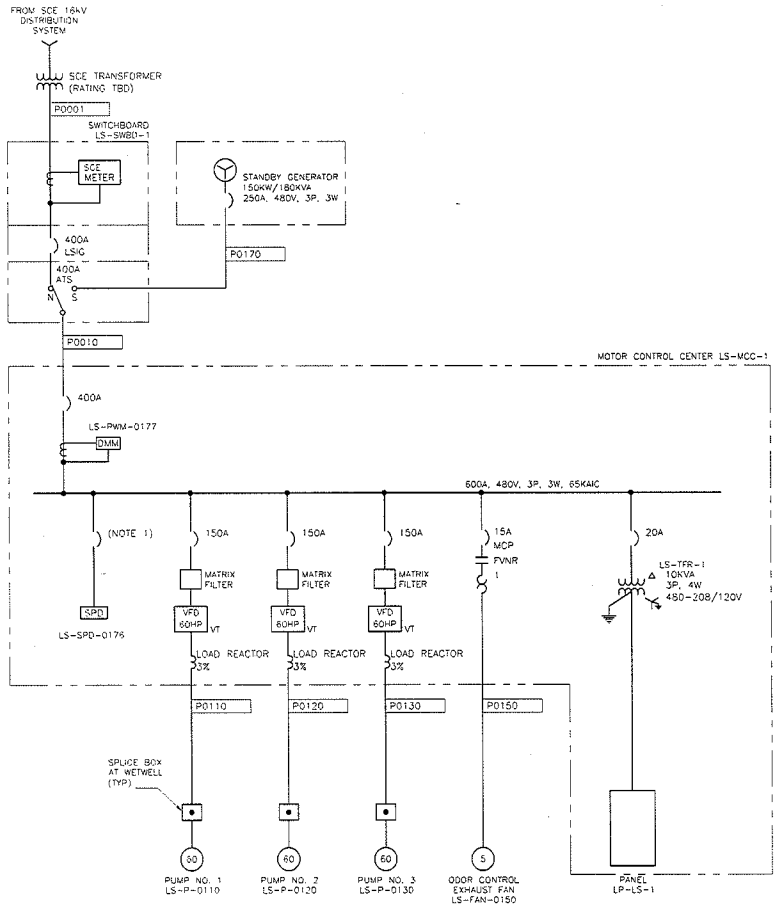

NOTES:

1. SIZE AS REQUIRED BY MANUFACTURER.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LEGACY PARK LIFT STATION
SINGLE LINE DIAGRAM

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14757 — EXP. 6-30-15

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE NONE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: A. PRIOR	DATE 06/2013		DATE XX-XX-13
CHECKED BY: --	DATE 06/2013	PROJECT NUMBER XXXX	

Plan No. E10-8

Sheet _____ of XXX Sheets

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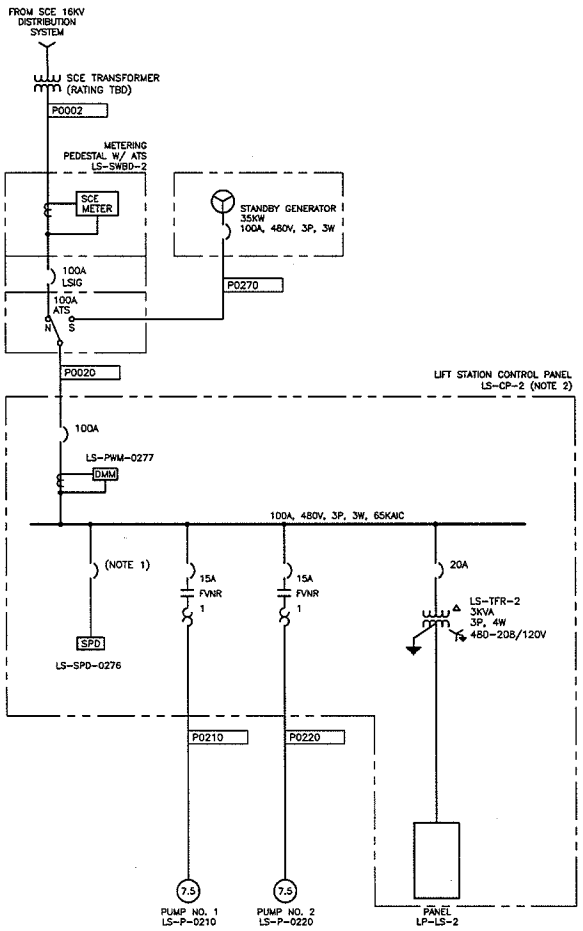

NOTES:

1. SIZE AS REQUIRED BY MANUFACTURER.
2. LIFT STATION CONTROL PANEL PROVIDED BY LIFT STATION PUMP SUPPLIER AND INSTALLED BY THE CONTRACTOR.

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BLUFFS PARK LIFT STATION
SINGLE LINE DIAGRAM

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE. DIG RIGHT. YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NORTHERN AND SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — DATE 6/30/14

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE	APPROVED BY:
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	DATE XX-XX-13
CHECKED BY: —	DATE 06/2013	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E10-9

Sheet _____ of XXX Sheets

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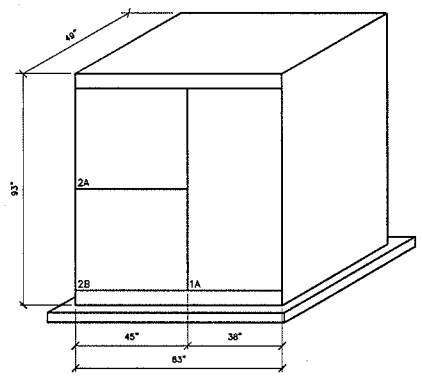
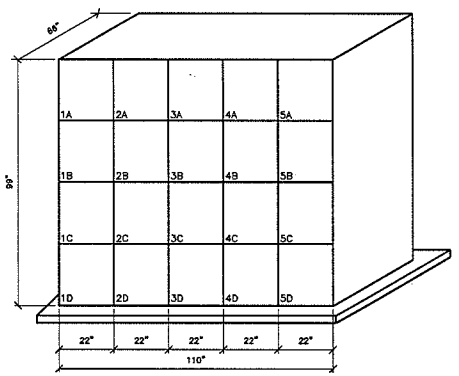


SWITCHBOARD (TP-SWBD-1)
NTS



MAIN SWITCHGEAR (TP-SWGR-1)
NTS

SWITCHBOARD (SWBD-1) NAMEPLATE SCHEDULE			
NO.	LINE 1 - EQUIPMENT ID	LINE 2 - EQUIPMENT DESCRIPTIONS	CHAR. SIZE
1A		UTILITY PULL SECTION	1/4"
2A		UTILITY METERING SECTION	1/4"
2B		MAIN BREAKER	1/4"

DISTRIBUTION SWITCHGEAR (TP-SWGR-1) NAMEPLATE SCHEDULE			
NO.	LINE 1 - EQUIPMENT ID	LINE 2 - EQUIPMENT DESCRIPTIONS	CHAR. SIZE
1A		INCOMING METERINGS, CTS, PTS	1/4"
1B		MAIN BREAKER	1/4"
1C		SPD	1/4"
1D		FEEDER BREAKER (SPARE)	1/4"
2A	TP-MCC-2A	FEEDER BREAKER (MCC-2A)	1/4"
2B	TP-MCC-3A	FEEDER BREAKER (MCC-3A)	1/4"
2C	TP-MCC-5A	FEEDER BREAKER (MCC-5A)	1/4"
2D	PORTABLE GEN.	FEEDER BREAKER	1/4"
3A		SPACE	1/4"
3B		TIE BREAKER	1/4"
3C		SPACE	1/4"
3D		SPACE	1/4"
4A	TP-MCC-2B	FEEDER BREAKER (MCC-2B)	1/4"
4B	TP-MCC-3B	FEEDER BREAKER (MCC-3B)	1/4"
4C	TP-MCC-5B	FEEDER BREAKER (MCC-5B)	1/4"
4D		FEEDER BREAKER (SPARE)	1/4"
5A		INCOMING METERINGS, CTS, PTS	1/4"
5B		GENERATOR BREAKER	1/4"
5C		SPD	1/4"
5D		FEEDER BREAKER (SPARE)	1/4"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL EQUIPMENT ELEVATIONS AND NAMEPLATE SCHEDULES SHEET 1

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAY IT SAFE (811 BEFORE YOU DIG) — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W. OUYANG	DATE: 06/2013	SCALE: NONE
DRAWN BY: B. VUE	DATE: 06/2013	XX-XX-13
CHECKED BY: -	DATE: 06/2013	PROJECT NUMBER: 2036

Plan No. E20-1

APPROVED BY: DATE

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Sheet _____ of XXX Sheets

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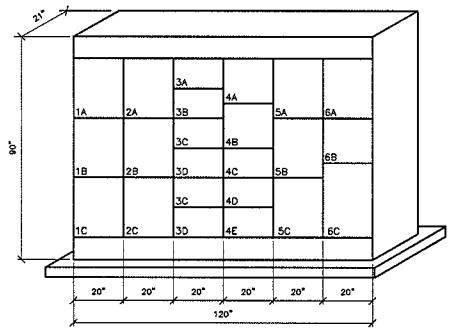
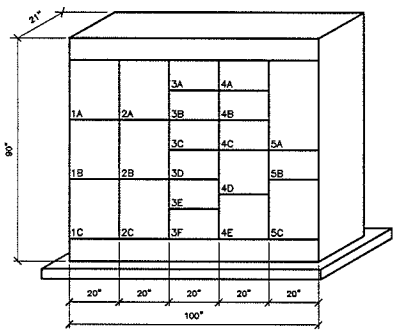


MOTOR CONTROL CENTER (TP-MCC-2A)

NTS

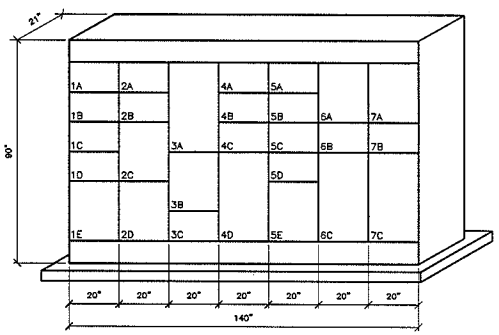
MOTOR CONTROL CENTER (TP-MCC-2A) NAMEPLATE SCHEDULE			
NO.	LINE 1 – EQUIPMENT ID	LINE 2 – EQUIPMENT DESCRIPTIONS	CHAR. SIZE
1A	TP-B-7110	SOLIDS MEMBRANE BLOWER NO. 1	1/4"
1B	TP-EF-9310	IPS/EQ ODOR CONTROL FAN	1/4"
1C		INCOMING MAIN BREAKER	1/4"
2A	TP-P-1110	INFLUENT PUMP NO. 1	1/4"
2B	TP-P-1210	INTERMEDIATE PUMP NO. 1	1/4"
2C	TP-P-1250	INTERMEDIATE PUMP NO. 5	1/4"
3A	TP-B-7210	SOLIDS STORAGE TANK BLOWER NO. 1	1/4"
3B	TP-LCP-2310	DRUM SCREEN NO. 1 CONTROL PANEL	1/4"
3C	TP-EF-2001	HEADWORKS BUILDING HVAC	1/4"
3D	TP-LP-2A	XFMR 2A – 208/120V LP-2A	1/4"
3E	TP-P-7510	PLANT DRAIN PUMP NO. 1	1/4"
4A	TP-P-7310	SOLIDS PERMEATE PUMP NO. 1	1/4"
4B		SPARE	1/4"
4E		SPACE AND BUS PROVISION FOR FUTURE LOAD	1/4"
5A	TP-B-7230	SOLIDS STORAGE TANK BLOWER NO. 3 (FUTURE)	1/4"
5B	TP-P-1130	INFLUENT PUMP NO. 3 (FUTURE)	1/4"
5C	TP-P-1230	INTERMEDIATE PUMP NO. 3 (FUTURE)	1/4"
6A	TP-B-7130	SOLIDS MEMBRANE BLOWER NO. 3 (FUTURE)	1/4"
6B	TP-P-7330	SOLIDS PERMEATE PUMP NO. 3 (FUTURE)	1/4"
6C		SPACE (FUTURE)	1/4"



MOTOR CONTROL CENTER (TP-MCC-2B)

NTS

MOTOR CONTROL CENTER (TP-MCC-2B) NAMEPLATE SCHEDULE			
NO.	LINE 1 – EQUIPMENT ID	LINE 2 – EQUIPMENT DESCRIPTIONS	CHAR. SIZE
1A	TP-B-7120	SOLIDS MEMBRANE BLOWER NO. 2	1/4"
1B	TP-B-7220	SOLIDS STORAGE TANK BLOWER NO. 2	1/4"
1C		INCOMING MAIN BREAKER	1/4"
2A	TP-P-1120	INFLUENT PUMP NO. 2	1/4"
2B	TP-P-1220	INTERMEDIATE PUMP NO. 2	1/4"
2C	TP-EF-9320	IPS/EQ ODOR CONTROL FAN	1/4"
3A	TP-P-7520	PLANT DRAIN PUMP NO. 2	1/4"
3B	TP-EF-2002	HEADWORKS ELECTRICAL ROOM HVAC	1/4"
3C	TP-LCP-2101	COARSE SCREEN CONTROL PANEL	1/4"
3D	TP-LCP-2201	GRIT SYSTEM CONTROL PANEL	1/4"
3E	TP-LCP-2320	DRUM SCREEN NO. 2 CONTROL PANEL	1/4"
3F	TP-LP-2B	XFMR 2B – 208/120V LP-2B	1/4"
4A	TP-G-1202	INFLUENT PUMP STATION FLAP GATE	1/4"
4B	TP-G-1203	EQUALIZATION BASIN FLAP GATE	1/4"
4C		SPARE	1/4"
4D	TP-P-7320	SOLIDS PERMEATE PUMP NO. 2	1/4"
4E		SPACE AND BUS PROVISION FOR FUTURE LOAD	1/4"
5A		SPACE (FUTURE)	1/4"
5B	TP-LCP-2330	DRUM SCREEN NO. 3 CONTROL PANEL (FUTURE)	1/4"
5C	TP-P-1240	INTERMEDIATE PUMP NO. 4 (FUTURE)	1/4"



MOTOR CONTROL CENTER (TP-MCC-3A)

NTS

MOTOR CONTROL CENTER (TP-MCC-3A) NAMEPLATE SCHEDULE			
NO.	LINE 1 – EQUIPMENT ID	LINE 2 – EQUIPMENT DESCRIPTIONS	CHAR. SIZE
1A	TP-LP-3A	XFMR 3A – 208/120V LP-3A	1/4"
1B	TP-MX-3110	PRE-ANOXIC MIXER NO. 1	1/4"
1C	TP-MX-3120	PRE-ANOXIC MIXER NO. 2	1/4"
1D	TP-MX-3130	DEOX MIXER NO. 1	1/4"
1E		INCOMING MAIN BREAKER	1/4"
2A	TP-MX-3140	POST-ANOXIC MIXER NO. 1	1/4"
2B	TP-MX-3150	POST-ANOXIC MIXER NO. 2	1/4"
2C	TP-P-3111	MLR PUMP #1	1/4"
2D	TP-P-3160	MLT PUMP #1	1/4"
3A	TP-B-3510	AERATION BLOWER NO. 1	1/4"
3B	TP-P-4110	MEMBRANE PERMEATE PUMP NO. 1	1/4"
3C	TP-B-4610	MEMBRANE TANK BLOWER NO. 1	1/4"
4A		SPARE	1/4"
4B	TP-EF-9101	ELECTRICAL ROOM HVAC	1/4"
4C	TP-DP-3A	ELECTRICAL BUILDING 480VAC DISTRIBUTION PANEL 3A	1/4"
4D		SPACE AND BUS PROVISION FOR FUTURE LOAD	1/4"
5A	TP-MX-3310	PRE-ANOXIC MIXER NO. 1 (FUTURE)	1/4"
5B	TP-MX-3320	PRE-ANOXIC MIXER NO. 2 (FUTURE)	1/4"
5C	TP-MX-3330	DEOX MIXER NO. 1 (FUTURE)	1/4"
5D	TP-MX-3340	POST-ANOXIC MIXER NO. 1 (FUTURE)	1/4"
5E	TP-P-3311	MLR PUMP #3 (FUTURE)	1/4"
6A	TP-P-3380	MLT PUMP #3 (FUTURE)	1/4"
6B	TP-MX-3350	POST-ANOXIC MIXER NO. 2 (FUTURE)	1/4"
6C	TP-B-3530	AERATION BLOWER NO. 3 (FUTURE)	1/4"
7A	TP-P-4310	MEMBRANE PERMEATE PUMP NO. 3 (FUTURE)	1/4"
7B	TP-B-4630	MEMBRANE TANK BLOWER NO. 3 (FUTURE)	1/4"
7C		SPACE AND BUS PROVISION FOR FUTURE LOAD	1/4"

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NW. SOUTH PA GULF STATES COUNTIES

0" ——— 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — PROF. ENGR.

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL EQUIPMENT ELEVATIONS AND NAMEPLATE SCHEDULES SHEET 2

DESIGNED BY:	DATE	SCALE	APPROVED BY:	DATE
W. OUYANG	06/2013	NONE		
DRAWN BY:	DATE			XX-XX-13
B. VUE	06/2013		ROBERT BRAGER, P.E., J.D.	
CHECKED BY:	DATE	PROJECT NUMBER	PUBLIC WORKS DIRECTOR/CITY ENGINEER	
–	06/2013	2036	RCE NO. 52102 EXP. 12/31/2014	

Plan No. E20-2 — Sheet _____ of XXX Sheets

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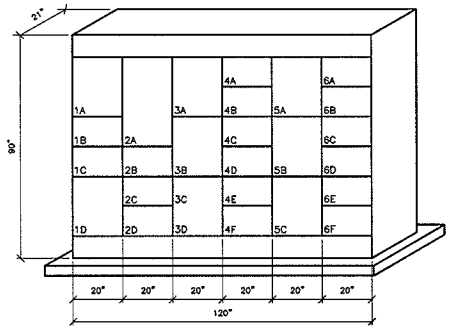
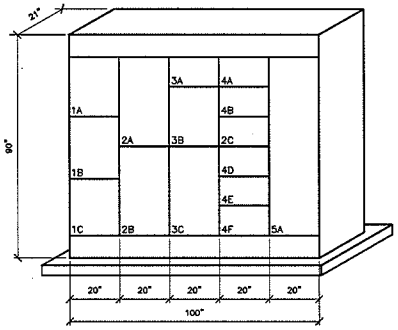


MOTOR CONTROL CENTER (TP-MCC-3B)

NTS

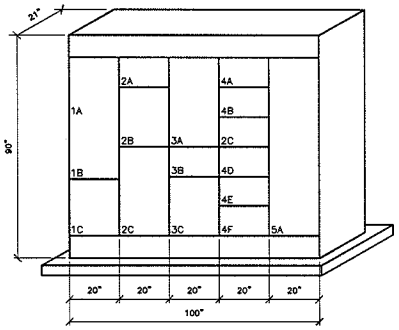
MOTOR CONTROL CENTER (TP-MCC-3B) NAMEPLATE SCHEDULE			
NO.	LINE 1 – EQUIPMENT ID	LINE 2 – EQUIPMENT DESCRIPTIONS	CHAR. SIZE
1A		SPACE AND BUS PROVISION FOR FUTURE LOAD	1/4"
1B	TP-AC-9301	ELECTRICAL ROOM AC UNIT	1/4"
1C		SPARE	1/4"
1D		INCOMING MAIN BREAKER	1/4"
2A	TP-B-3520	AERATION BLOWER NO. 2	1/4"
2B	TP-B-4620	MEMBRANE TANK BLOWER NO. 2	1/4"
2C	TP-LP-3B	XFMR 3B – 208/120V LP-3B	1/4"
2D	TP-LC-3B	UNITIZED LOAD CENTER (LC-1) – CHEMICAL SYSTEM	1/4"
3A	TP-P-4210	MEMBRANE PERMEATE PUMP NO. 2	1/4"
3B	TP-P-3211	MLR PUMP #2	1/4"
3C	TP-P-3260	MLT PUMP #2	1/4"
4A	TP-MX-3210	PRE-ANOXIC MIXER NO. 1	1/4"
4B	TP-MX-3220	PRE-ANOXIC MIXER NO. 2	1/4"
4C	TP-MX-3230	DEOX MIXER NO. 1	1/4"
4D	TP-MX-3240	POST-ANOXIC MIXER NO. 1	1/4"
4E	TP-MX-3250	POST-ANOXIC MIXER NO. 2	1/4"
4F	TP-DP-3B	ELECTRICAL BUILDING 480VAC DISTRIBUTION PANEL 3B	1/4"
5A	TP-P-3411	MLR PUMP #4 (FUTURE)	1/4"
5B	TP-P-3460	MLT PUMP #4 (FUTURE)	1/4"
5C	TP-P-4410	MEMBRANE PERMEATE PUMP NO. 4 (FUTURE)	1/4"
6A	TP-MX-3410	PRE-ANOXIC MIXER NO. 1 (FUTURE)	1/4"
6B	TP-MX-3420	PRE-ANOXIC MIXER NO. 2 (FUTURE)	1/4"
6C	TP-MX-3430	DEOX MIXER NO. 1 (FUTURE)	1/4"
6D	TP-MX-3440	POST-ANOXIC MIXER NO. 1 (FUTURE)	1/4"
6E	TP-MX-3450	POST-ANOXIC MIXER NO. 2 (FUTURE)	1/4"
6F		SPACE (FUTURE)	1/4"



MOTOR CONTROL CENTER (TP-MCC-6A)

NTS

MOTOR CONTROL CENTER (TP-MCC-6A) NAMEPLATE SCHEDULE			
NO.	LINE 1 – EQUIPMENT ID	LINE 2 – EQUIPMENT DESCRIPTIONS	CHAR. SIZE
1A	TP-EF-9410	BIOREACTOR ODOR CONTROL FAN NO. 1	1/4"
1B	TP-EF-9430	BIOREACTOR ODOR CONTROL FAN NO. 3 (FUTURE)	1/4"
1C		INCOMING MAIN BREAKER (BUS A)	1/4"
2A	TP-P-6220	RW PUMP NO. 5 (FUTURE)	1/4"
2B		SPARE	1/4"
3A		SPARE	1/4"
3B	TP-P-6110	RW PUMP NO. 1	1/4"
3C	TP-P-6130	RW PUMP NO. 3 (FUTURE)	1/4"
4A	TP-EF-0201	OPERATIONS BUILDING HVAC	1/4"
4B	TP-BFV-5111	MOTORIZED BUTTERFLY VALVE	1/4"
4C	TP-BFV-5131	MOTORIZED BUTTERFLY VALVE	1/4"
4D	TP-UV-5110	UV DISINFECTION UNIT NO. 1	1/4"
4E	TP-UV-5130	UV DISINFECTION UNIT NO. 3	1/4"
4F	TP-CP-6310	EXISTING EFFLUENT PUMP	1/4"
5A	TP-LP-6A	XFMR-6A, LP-6A	1/4"



MOTOR CONTROL CENTER (TP-MCC-6B)

NTS

MOTOR CONTROL CENTER (TP-MCC-6B) NAMEPLATE SCHEDULE			
NO.	LINE 1 – EQUIPMENT ID	LINE 2 – EQUIPMENT DESCRIPTIONS	CHAR. SIZE
1A		SPACE AND BUS PROVISION FOR FUTURE LOAD	1/4"
1B		INCOMING MAIN BREAKER (BUS B)	1/4"
2A		SPARE	1/4"
2B	TP-P-6120	RW PUMP NO. 2	1/4"
2C	TP-P-6210	RW PUMP NO. 4 (FUTURE)	1/4"
3A	TP-P-6230	RW PUMP NO. 6 (FUTURE)	1/4"
3B		SPARE	1/4"
3C	TP-EF-9420	BIOREACTOR ODOR CONTROL FAN NO. 2	1/4"
4A	TP-LCP-6200	HYDROPNEUMATIC TANK CONTROL PANEL	1/4"
4B	TP-BFV-5121	MOTORIZED BUTTERFLY VALVE	1/4"
4C	TP-BFV-5141	MOTORIZED BUTTERFLY VALVE (FUTURE)	1/4"
4D	TP-UV-5120	UV DISINFECTION UNIT NO. 2	1/4"
4E	TP-UV-5140	UV DISINFECTION UNIT NO. 4 (FUTURE)	1/4"
4F	TP-CP-6320	EXISTING EFFLUENT PUMP	1/4"
5A	TP-LP-6B	XFMR-6B, LP-6B	1/4"

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL EQUIPMENT ELEVATIONS AND NAMEPLATE SCHEDULES SHEET 3

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NPE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — Civil

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE NONE	APPROVED BY:
DRAWN BY: B. VUE	DATE 06/2013		DATE XX-XX-13
CHECKED BY: –	DATE 06/2013	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E20-3

Sheet _____ of XXX Sheets

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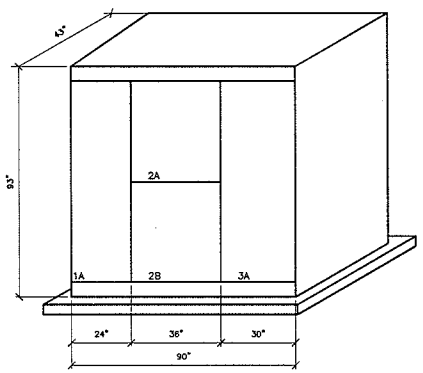
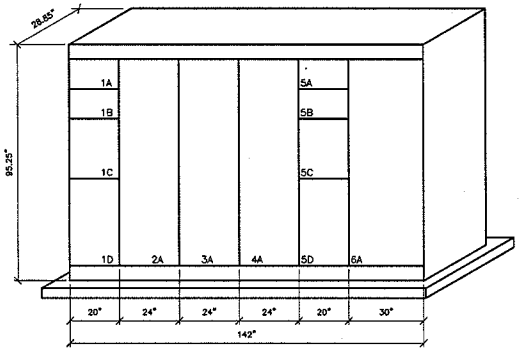


SWITCHBOARD (SWBD-LS1)
NTS



MOTOR CONTROL CENTER (LS-MCC-LS1)
NTS

SWITCHBOARD (SWBD-LS1) NAMEPLATE SCHEDULE			
NO.	LINE 1 – EQUIPMENT ID	LINE 2 – EQUIPMENT DESCRIPTIONS	CHAR. SIZE
1A		UTILITY PULL SECTION	1/4"
2A		UTILITY METERING SECTION	1/4"
2B		MAIN BREAKER	1/4"
3A	LS-ATS-0175	AUTOMATIC TRANSFER SWITCH	1/4"

MOTOR CONTROL CENTER (MCC-LS1) NAMEPLATE SCHEDULE			
NO.	LINE 1 – EQUIPMENT ID	LINE 2 – EQUIPMENT DESCRIPTIONS	CHAR. SIZE
1A	LS-SPD-0176	SURGE PROTECTIVE DEVICE	1/4"
1B	LS-PWM-0177	POWER MONITOR	1/4"
1C	SPACE		1/4"
1D	LS-MCC-1	MAIN BREAKER	1/4"
2A	LS-VFD-0110	LIFT PUMP 1	1/4"
3A	LS-VFD-0120	LIFT PUMP 2	1/4"
4A	LS-VFD-0130	LIFT PUMP 3	1/4"
5A	LS-FAN-0150	ODOR CONTROL FAN	1/4"
5B	SPACE		1/4"
5C	LS-LP-1	PANELBOARD	1/4"
5D	LS-TFR-1	TRANSFORMER (10kVA)	1/4"
6A	LS-CP-1	LEGACY PARK LS CONTROL PANEL	1/4"

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN TO DIG? CALL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: BMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — EXP. 6/30/15

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LEGACY PARK LIFT STATION ELECTRICAL
EQUIPMENT ELEVATIONS AND NAMEPLATE SCHEDULES

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: B. VUE	DATE 06/2013	NONE	XX-XX-13
CHECKED BY: –	DATE 06/2013	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E20-8 — Sheet ____ of XXX Sheets

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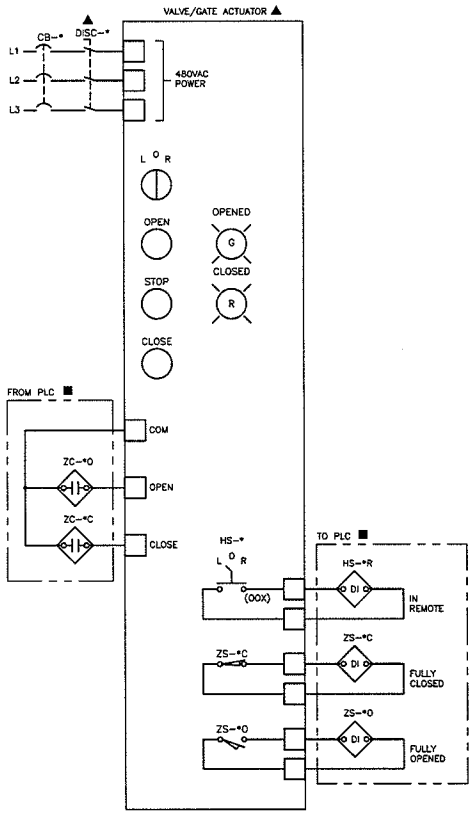
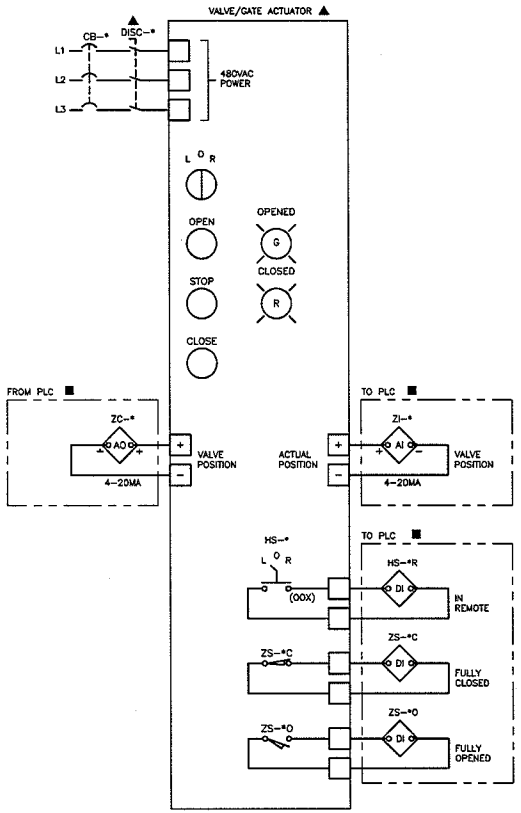


SCHEMATIC 1A – OPEN/CLOSE TYPE ACTUATOR SCHEMATIC

SCALE: NTS



SCHEMATIC 1B – MODULATING TYPE ACTUATOR SCHEMATIC

SCALE: NTS

LEGEND

▲ FIELD DEVICE AT EQUIPMENT
■ AT PLC PANEL
● AT LOCAL CONTROL PANEL

TAG TABLE 1A – OPEN/CLOSE TYPE ACTUATORS

EQUIPMENT NO.	DESCRIPTION	* LOOP	CB LOCATION	PLC/CONTROL PANEL NO.	P&ID
TP-PV-3101	BIOLOGICAL REACTOR 1 SCUM VALVE	3101	TP-PDP-3A	TP-PLC-3	13000-2
TP-PV-4100	MBR TANK 1 INFLUENT VALVE	4100	TP-PDP-3A	TP-PLC-4	14000-1
TP-BFV-4113	PERMEATE PUMP 1 INLET VALVE	4113	TP-PDP-3A	TP-PLC-4	14000-2
TP-BFV-4115	PERMEATE PUMP 1 BACKPULSE VALVE	4115	TP-PDP-3A	TP-PLC-4	14000-2
TP-PV-4119	MBR TANK 1 DRAIN VALVE	4119	TP-PDP-3A	TP-PLC-4	14000-1
TP-PV-4200	MBR TANK 2 INFLUENT VALVE	4200	TP-PDP-3B	TP-PLC-4	14000-1
TP-BFV-4213	PERMEATE PUMP 2 INLET VALVE	4213	TP-PDP-3B	TP-PLC-4	14000-2
TP-BFV-4215	PERMEATE PUMP 2 BACKPULSE VALVE	4215	TP-PDP-3B	TP-PLC-4	14000-2
TP-PV-4219	MBR TANK 2 DRAIN VALVE	4219	TP-PDP-3B	TP-PLC-4	14000-1
TP-BFV-4651	MBR TANK 1 AIR VALVE	4651	TP-PDP-3A	TP-PLC-4	14000-1
TP-BFV-4652	MBR TANK 2 AIR VALVE	4652	TP-PDP-3B	TP-PLC-4	14000-1
TP-BFV-5111	UV DISINFECTION UNIT 1 INLET VALVE	5111	TP-MCC-6A	TP-PLC-5	15000-1
TP-BFV-5121	UV DISINFECTION UNIT 2 INLET VALVE	5121	TP-MCC-6B	TP-PLC-5	15000-1
TP-BFV-5131	UV DISINFECTION UNIT 3 INLET VALVE	5131	TP-MCC-6A	TP-PLC-5	15000-1
TP-BFV-6001	RECYCLED WATER SURGE TANK VALVE	6001	TP-MCC-6B	TP-PLC-6	16000-1
TP-BFV-6003	RECYCLED WATER BYPASS VALVE	6003	TP-MCC-6B	TP-PLC-6	16000-1
TP-BFV-7015	MBT TANK AIR-WATER SEPARATOR VALVE	7015	TP-MCC-2B	TP-PLC-2	17000-1

TAG TABLE 1B – MODULATING TYPE ACTUATORS

EQUIPMENT NO.	DESCRIPTION	* LOOP	CB LOCATION	PLC/CONTROL PANEL NO.	P&ID
TP-BV-3531	AERATION BASIN BLOWERS BLOW OFF VALVE	3531	TP-PDP-3A	TP-PLC-3	13000-3
TP-PV-4700	THICKENED SLUDGE FLOW CONTROL VALVE	4700	TP-PDP-3A	TP-PLC-4	14000-1

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONTROL SCHEMATICS - 1
VALVE AND GATE ACTUATORS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NW & SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14750 — EXP. 12/31/14

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: B. VUE	DATE 06/2013	NONE	XX-XX-13
CHECKED BY: –	DATE 06/2013	PROJECT MANAGER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E30-1 — Sheet ____ of XXX Sheets

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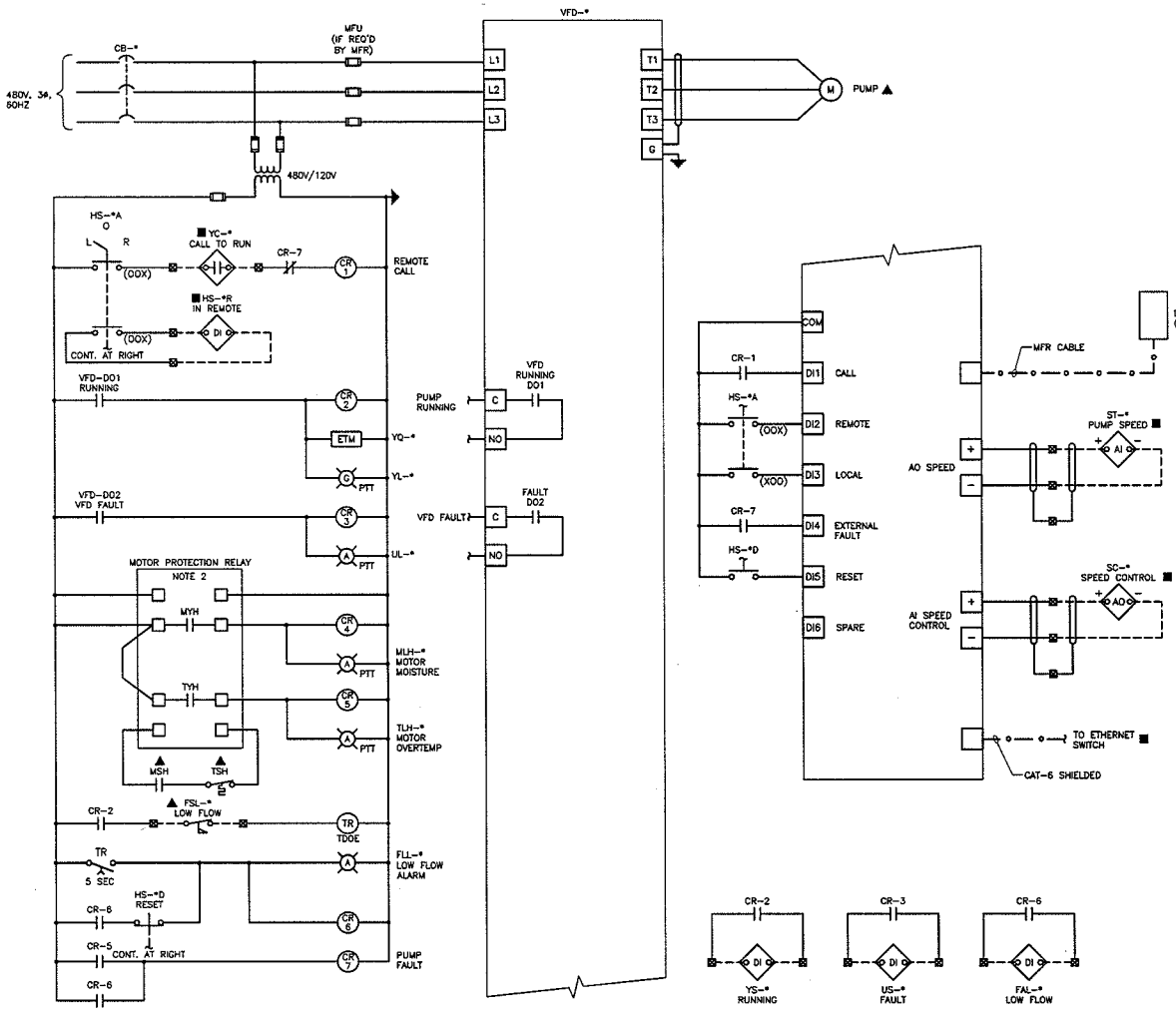

LEGEND

▲ FIELD DEVICE AT EQUIPMENT
■ AT PLC PANEL
● AT LOCAL CONTROL PANEL

TAG TABLE 2A – SUBMERSIBLE VARIABLE SPEED PUMPS

EQUIPMENT NO.	DESCRIPTION	* LOOP	VFD LOCATION	PLC/CONTROL PANEL NO.	P&ID
LS-P-0110	LEGACY PARK LIFT PUMP 1	0110	LS-MCC-1	LS-RTU-1	1900-1
LS-P-0120	LEGACY PARK LIFT PUMP 2	0120	LS-MCC-1	LS-RTU-1	1900-1
LS-P-0130	LEGACY PARK LIFT PUMP 3	0130	LS-MCC-1	LS-RTU-1	1900-1
TP-P-1110	INFLUENT PUMP 1	1110	TP-MCC-2A	TP-PLC-2	11100-1
TP-P-1120	INFLUENT PUMP 2	1120	TP-MCC-2B	TP-PLC-2	11100-1
TP-P-1210	INTERMEDIATE PUMP 1	1210	TP-MCC-2A	TP-PLC-2	11200-1
TP-P-1220	INTERMEDIATE PUMP 2	1220	TP-MCC-2B	TP-PLC-2	11200-1
TP-P-1250	INTERMEDIATE PUMP 5	1250	TP-MCC-2A	TP-PLC-2	11200-1
TP-P-3160	BIOLOGICAL REACTOR 1 MLT PUMP	3160	TP-MCC-3A	TP-PLC-3	13000-2
TP-P-3260	BIOLOGICAL REACTOR 2 MLT PUMP	3260	TP-MCC-3B	TP-PLC-3	13000-2

NOTES:

1. VFD HMI SHALL INCLUDE START AND STOP PUSH-BUTTONS, AND A DIAL OR ARROW KEYS TO ADJUST THE SPEED. THESE HMI CONTROLS SHALL BE CONFIGURED TO FUNCTION ONLY WHEN THE DRIVE IS IN LOCAL MODE.
2. MOTOR PROTECTION RELAY PROVIDED BY PUMP MANUFACTURER, INSTALLED AND WIRED BY VFD/MCC SUPPLIER.

SCHEMATIC 2A – SUBMERSIBLE VARIABLE SPEED PUMP SCHEMATIC

SCALE: NTS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONTROL SCHEMATICS - 2
SUBMERSIBLE PUMPS

DESIGNED BY: M. ERWIN 06/2013
DRAWN BY: B. VUE 06/2013
CHECKED BY: – 06/2013
SCALE: NONE
PROJECT MANAGER: XXXX
APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DATE: XX-XX-13

Plan No. E30-2 | Sheet ____ of XXX Sheets

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE. DIG BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — EXP. 6/30/14

NO.	REVISION	BY	CHKD.	DATE

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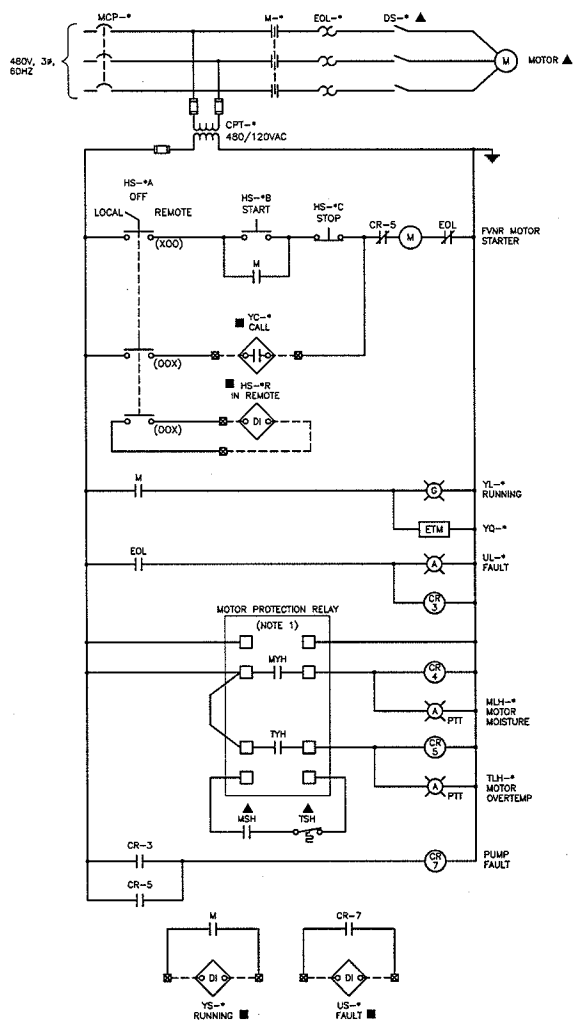
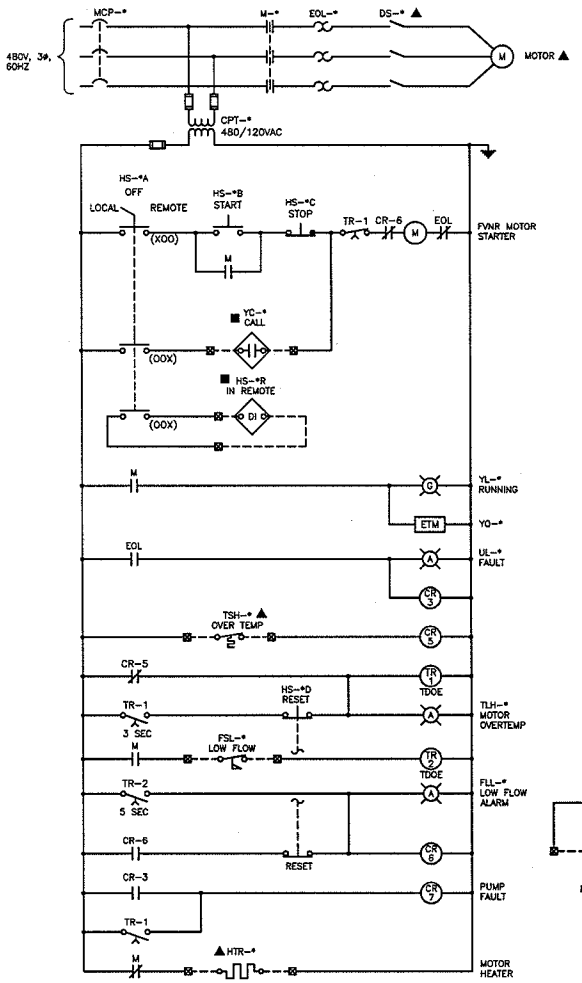


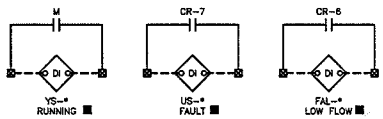
SCHEMATIC 3A – FVNR SUBMERSIBLE MIXERS AND PUMPS

SCALE: NTS



SCHEMATIC 3B – FVNR BLOWERS AND ODOR CONTROL FANS

SCALE: NTS



LEGEND

▲ FIELD DEVICE AT EQUIPMENT
■ AT PLC PANEL
● AT LOCAL CONTROL PANEL

TAG TABLE 3A – FVNR SUBMERSIBLE MIXERS AND PUMPS

EQUIPMENT NO.	DESCRIPTION	* LOOP	STARTER LOCATION	PLC/CONTROL PANEL NO.	P&ID
TP-MX-3110	BIOREACTOR 1 PRE-ANOXIC BASIN 1 MIXER	3110	TP-MCC-3A	TP-PLC-3	13000-1
TP-P-3161	BIOREACTOR 1 MLR PUMP	3160	TP-MCC-3A	TP-PLC-3	13000-2
TP-MX-3120	BIOREACTOR 1 PRE-ANOXIC BASIN 2 MIXER	3120	TP-MCC-3A	TP-PLC-3	13000-1
TP-MX-3130	BIOREACTOR 1 DEOXYGENATION BASIN MIXER	3130	TP-MCC-3A	TP-PLC-3	13000-2
TP-MX-3140	BIOREACTOR 1 POST-ANOXIC BASIN 1 MIXER	3140	TP-MCC-3A	TP-PLC-3	13000-2
TP-MX-3150	BIOREACTOR 1 POST-ANOXIC BASIN 2 MIXER	3150	TP-MCC-3A	TP-PLC-3	13000-2
TP-P-3160	BIOREACTOR 1 MLT PUMP	3160	TP-MCC-3A	TP-PLC-3	13000-2
TP-MX-3210	BIOREACTOR 2 PRE-ANOXIC BASIN 1 MIXER	3210	TP-MCC-3B	TP-PLC-3	13000-1
TP-P-3211	BIOREACTOR 2 MLR PUMP	3260	TP-MCC-3B	TP-PLC-3	13000-2
TP-MX-3220	BIOREACTOR 2 PRE-ANOXIC BASIN 2 MIXER	3220	TP-MCC-3B	TP-PLC-3	13000-1
TP-MX-3230	BIOREACTOR 2 DEOXYGENATION BASIN MIXER	3230	TP-MCC-3B	TP-PLC-3	13000-2
TP-MX-3240	BIOREACTOR 2 POST-ANOXIC BASIN 1 MIXER	3240	TP-MCC-3B	TP-PLC-3	13000-2
TP-MX-3250	BIOREACTOR 2 POST-ANOXIC BASIN 2 MIXER	3250	TP-MCC-3B	TP-PLC-3	13000-2
TP-P-3260	BIOREACTOR 2 MLT PUMP	3260	TP-MCC-3B	TP-PLC-3	13000-2
TP-P-7510	PLANT DRAIN PUMP 1	7510	TP-MCC-2A	TP-PLC-2	17500-1
TP-P-7520	PLANT DRAIN PUMP 2	7520	TP-MCC-2B	TP-PLC-2	17500-1

TAG TABLE 3B – FVNR BLOWERS AND ODOR CONTROL FANS

EQUIPMENT NO.	DESCRIPTION	* LOOP	CB LOCATION	PLC/CONTROL PANEL NO.	P&ID
TP-B-4610	MEMBRANE TANK BLOWER 1	4610	TP-MCC-3A	TP-PLC-4	13000-3
TP-B-4620	MEMBRANE TANK BLOWER 2	4620	TP-MCC-3B	TP-PLC-4	13000-3
TP-B-7110	MBT BLOWER 1	7110	TP-MCC-2A	TP-PLC-2	17000-2
TP-B-7120	MBT BLOWER 2	7120	TP-MCC-2B	TP-PLC-2	17000-2
TP-EF-9310	IPS/EQ/HEADWORKS ODOR CONTROL FAN 1	9310	TP-MCC-2A	TP-PLC-2	19000-1
TP-EF-9320	IPS/EQ/HEADWORKS ODOR CONTROL FAN 2	9320	TP-MCC-2B	TP-PLC-2	19000-1

NOTES:

1. MOTOR PROTECTION RELAY PROVIDED BY PUMP MANUFACTURER, INSTALLED AND WIRED BY VFD/MCC SUPPLIER.

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONTROL SCHEMATICS - 3

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction MICHAEL J. ERWIN No. E 14707

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY:	DATE
DRAWN BY: B. VUE	DATE 06/2013	NONE		XX-XX-13
CHECKED BY: -	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. E30-3 Sheet ____ of XXX Sheets

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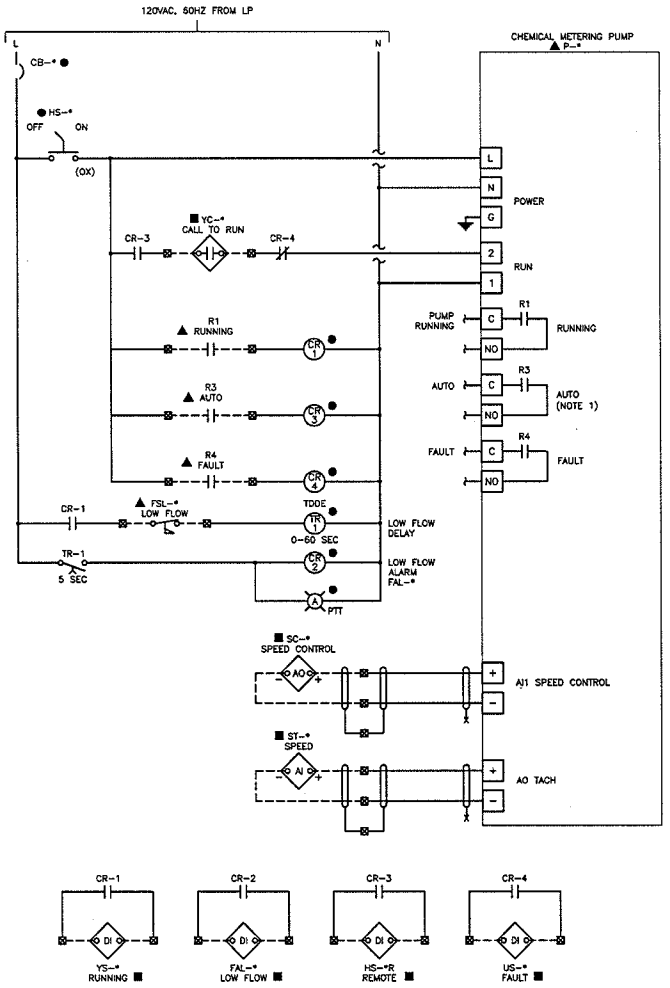
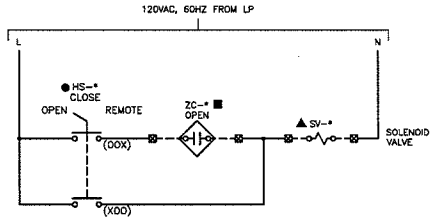


SCHEMATIC 4A – CHEMICAL FEED PUMP SCHEMATIC

SCALE: NTS

LEGEND

▲ FIELD DEVICE AT EQUIPMENT
■ AT PLC PANEL
● AT LOCAL CONTROL PANEL



SCHEMATIC 4B – SOLENOID VALVE SCHEMATIC

SCALE: NTS

TAG TABLE 4A – CHEMICAL PUMPS

EQUIPMENT NO.	DESCRIPTION	* LOOP	LP CKT LOCATION	PLC/CONTROL PANEL NO.	P&ID
TP-P-8110	SODIUM HYPOCHLORITE FEED PUMP 1	8110	LP-3A / CKT-??	TP-PLC-4	I8000-1
TP-P-8120	SODIUM HYPOCHLORITE FEED PUMP 2	8120	LP-3B / CKT-??	TP-PLC-4	I8000-1
TP-P-8130	SODIUM HYPOCHLORITE FEED PUMP 3	8130	LP-3A / CKT-??	TP-PLC-3	I8000-1
TP-P-8140	SODIUM HYPOCHLORITE FEED PUMP 4	8140	LP-3B / CKT-??	TP-PLC-3	I8000-1
TP-P-8210	CITRIC ACID FEED PUMP 1	8210	LP-3? / CKT-??	TP-PLC-4	I8000-2
TP-P-8310	LIQUID ALUM FEED PUMP 1	8310	LP-3A / CKT-??	TP-PLC-3	I8000-2
TP-P-8320	LIQUID ALUM FEED PUMP 2	8320	LP-3B / CKT-??	TP-PLC-3	I8000-2
TP-P-8410	MICRO-C FEED PUMP 1	8410	LP-3A / CKT-??	TP-PLC-3	I8000-3
TP-P-8420	MICRO-C FEED PUMP 2	8420	LP-3B / CKT-??	TP-PLC-3	I8000-3
TP-P-8430	MICRO-C FEED PUMP 3	8410	LP-3A / CKT-??	TP-PLC-3	I8000-3
TP-P-8440	MICRO-C FEED PUMP 4	8420	LP-3B / CKT-??	TP-PLC-3	I8000-3
TP-P-8510	SODIUM BICARBONATE FEED PUMP 1	8510	LP-2A / CKT-??	TP-PLC-2	I8000-4
TP-P-8520	SODIUM BICARBONATE FEED PUMP 2	8520	LP-2B / CKT-??	TP-PLC-2	I8000-4

TAG TABLE 4B – SOLENOID VALVES

EQUIPMENT NO.	DESCRIPTION	* LOOP	LP CKT LOCATION	PLC/CONTROL PANEL NO.	P&ID
TP-SV-1201	EQ BASIN TIPPING TROUGH 1 FILL SOLENOID	1201	LP-2A / CKT-??	TP-PLC-2	I1200-1
TP-SV-1202	EQ BASIN TIPPING TROUGH 2 FILL SOLENOID	1202	LP-2B / CKT-??	TP-PLC-2	I1200-1
TP-SV-3102	BIOREACTOR 1 SCUM TROUGH SPRAY SOLENOID	3102	LP-3? / CKT-??	TP-PLC-3	I3000-2
TP-SV-3202	BIOREACTOR 2 SCUM TROUGH SPRAY SOLENOID	3202	LP-3? / CKT-??	TP-PLC-3	I3000-2
TP-SV-9301	HEADWORKS MEDIA BED SPRAY SOLENOID	9301	LP-2? / CKT-??	TP-PLC-2	I9000-1
TP-SV-9401	BIOREACTOR MEDIA BED 1 SPRAY SOLENOID	9401	LP-6A / CKT-??	TP-PLC-3	I9000-2
TP-SV-9402	BIOREACTOR MEDIA BED 2 SPRAY SOLENOID	9402	LP-6B / CKT-??	TP-PLC-3	I9000-2

NOTES:

1. CHEMICAL FEED PUMPS SHALL BE CONFIGURED FOR REMOTE CONTROL OPERATION WHEN THE ON-BOARD CONTROL SWITCH IS PLACED IN AUTO MODE.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONTROL SCHEMATICS - 4
CHEMICAL FEED PUMPS AND SOLENOID VALVES

DESIGNED BY: M. ERWIN DATE: 06/2013
DRAWN BY: B. VUE DATE: 06/2013
CHECKED BY: – DATE: 06/2013
SCALE: NONE
PROJECT NUMBER: XXXX
APPROVED BY: DATE: XX-XX-13
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. E30-4
Sheet ____ of XXX Sheets

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

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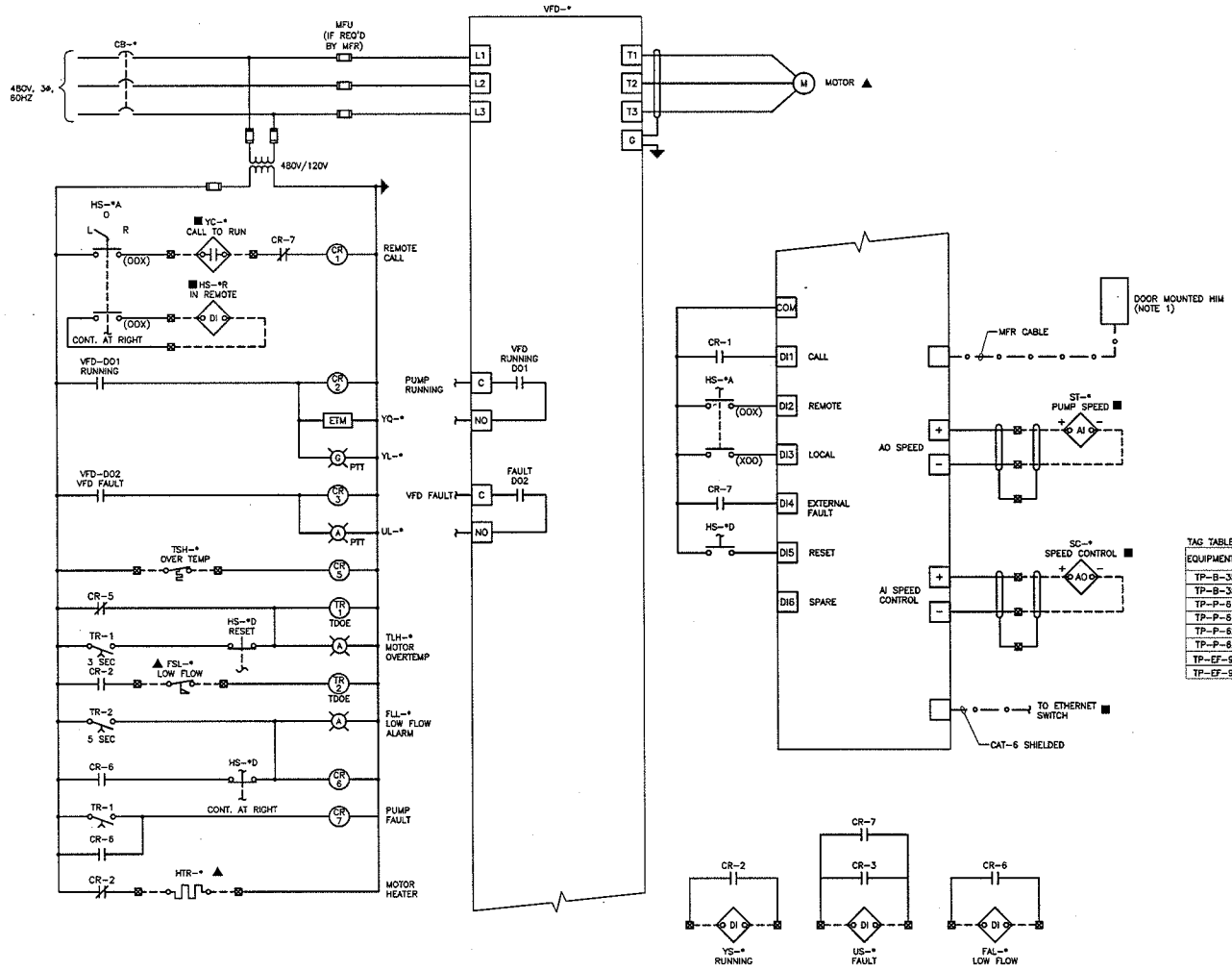

LEGEND

▲ FIELD DEVICE AT EQUIPMENT
■ AT PLC PANEL
● AT LOCAL CONTROL PANEL

TAG TABLE 5A – MISC VARIABLE SPEED MOTORS

EQUIPMENT NO.	DESCRIPTION	* LOOP	VFD LOCATION	PLC/CONTROL PANEL NO.	P&ID
TP-B-3510	MBR AERATION BLOWER 1	3510	TP-MCC-3A	TP-PLC-3	13000-3
TP-B-3520	MBR AERATION BLOWER 2	3520	TP-MCC-3B	TP-PLC-3	13000-3
TP-P-6110	UPPER ZONE RW PUMP 1	6110	TP-MCC-6A	TP-PLC-6	16000-1
TP-P-6120	UPPER ZONE RW PUMP 2	6120	TP-MCC-6B	TP-PLC-6	16000-1
TP-P-6210	LOWER ZONE RW PUMP 1	6210	TP-MCC-6A	TP-PLC-6	16000-1
TP-P-6220	LOWER ZONE RW PUMP 2	6220	TP-MCC-6B	TP-PLC-6	16000-1
TP-EF-9410	BIOREACTOR ODOR CONTROL FAN 1	9410	TP-MCC-6A	TP-PLC-6	19000-2
TP-EF-9420	BIOREACTOR ODOR CONTROL FAN 2	9420	TP-MCC-6B	TP-PLC-6	19000-2

NOTES:

1. VFD HMI SHALL INCLUDE START AND STOP PUSH-BUTTONS, AND A DIAL OR ARROW KEYS TO ADJUST THE SPEED. THESE HMI CONTROLS SHALL BE CONFIGURED TO FUNCTION ONLY WHEN THE DRIVE IS IN LOCAL MODE.

SCHEMATIC 5A – MISC. VARIABLE SPEED MOTORS

SCALE: NTS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONTROL SCHEMATICS - 5
MISC. VARIABLE SPEED MOTORS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — SERVING NHL SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 4767

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE: NONE
DRAWN BY: B. VUE	DATE 06/2013	
CHECKED BY: –	DATE 06/2013	PROJECT NUMBER: XXXX

Plan No. E30-5

APPROVED BY: _____ DATE XX-XX-13
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

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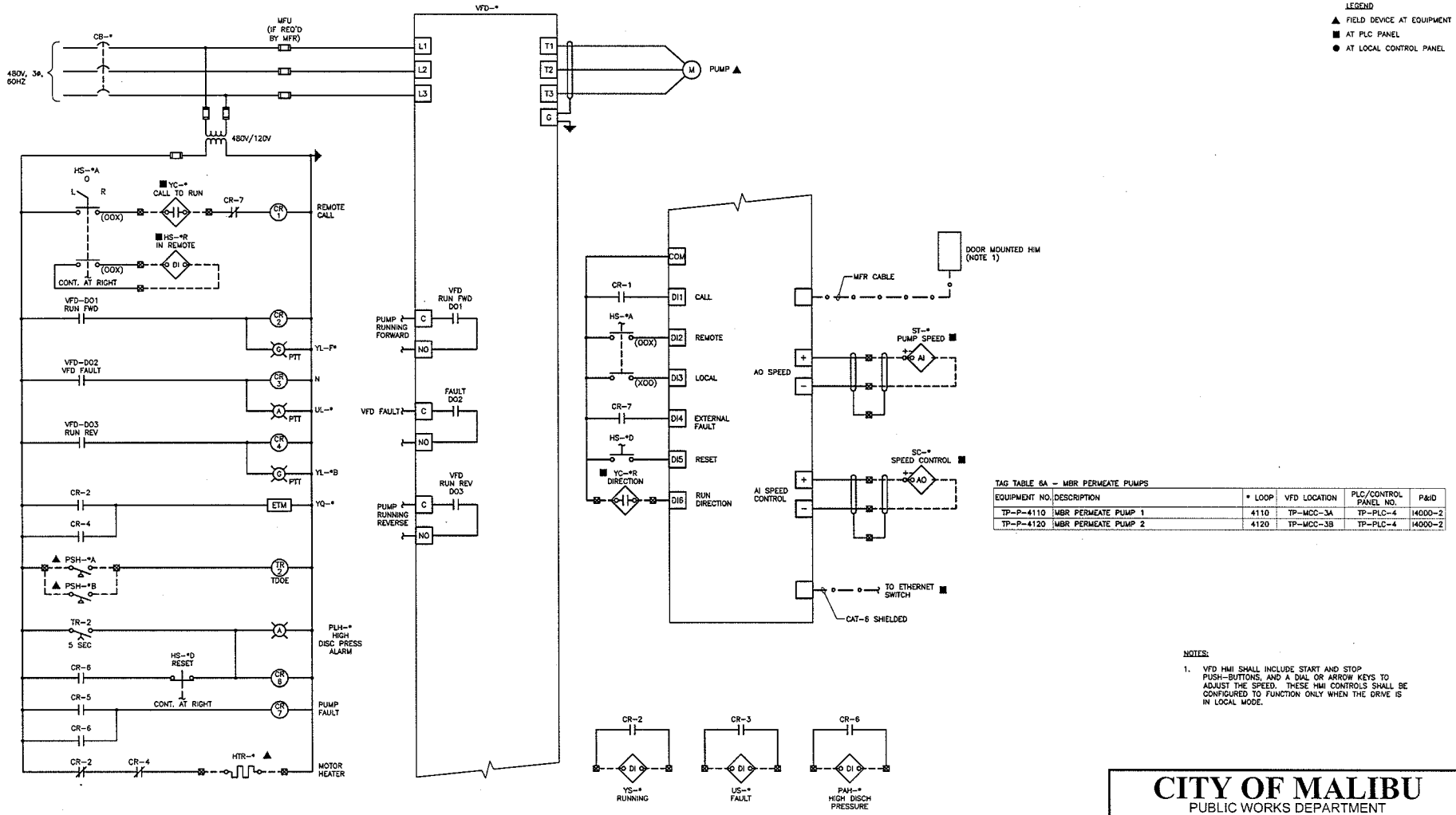

TAG TABLE 6A – MBR PERMEATE PUMPS

EQUIPMENT NO.	DESCRIPTION	* LOOP	VFD LOCATION	PLC/CONTROL PANEL NO.	P&ID
TP-P-4110	MBR PERMEATE PUMP 1	4110	TP-MCC-3A	TP-PLC-4	14000-2
TP-P-4120	MBR PERMEATE PUMP 2	4120	TP-MCC-3B	TP-PLC-4	14000-2

NOTES:

1. VFD HMI SHALL INCLUDE START AND STOP PUSH-BUTTONS, AND A DIAL OR ARROW KEYS TO ADJUST THE SPEED. THESE HMI CONTROLS SHALL BE CONFIGURED TO FUNCTION ONLY WHEN THE DRIVE IS IN LOCAL MODE.

SCHEMATIC 6A – MBR PERMEATE PUMPS

SCALE: NTS

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONTROL SCHEMATICS - 6
MBR PERMEATE PUMPS

DESIGNED BY: M. ERWIN DATE 06/2013
DRAWN BY: B. VUE DATE 06/2013
CHECKED BY: – DATE 06/2013
SCALE: NONE
PROJECT NUMBER: XXXX
APPROVED BY: DATE XX-XX-13
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. E30-6
Sheet ___ of XXX Sheets

NO.	REVISION	BY	CHKD.	DATE

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN R.C.E. 52102

DIAL BEFORE YOU DIG 800-227-2600 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

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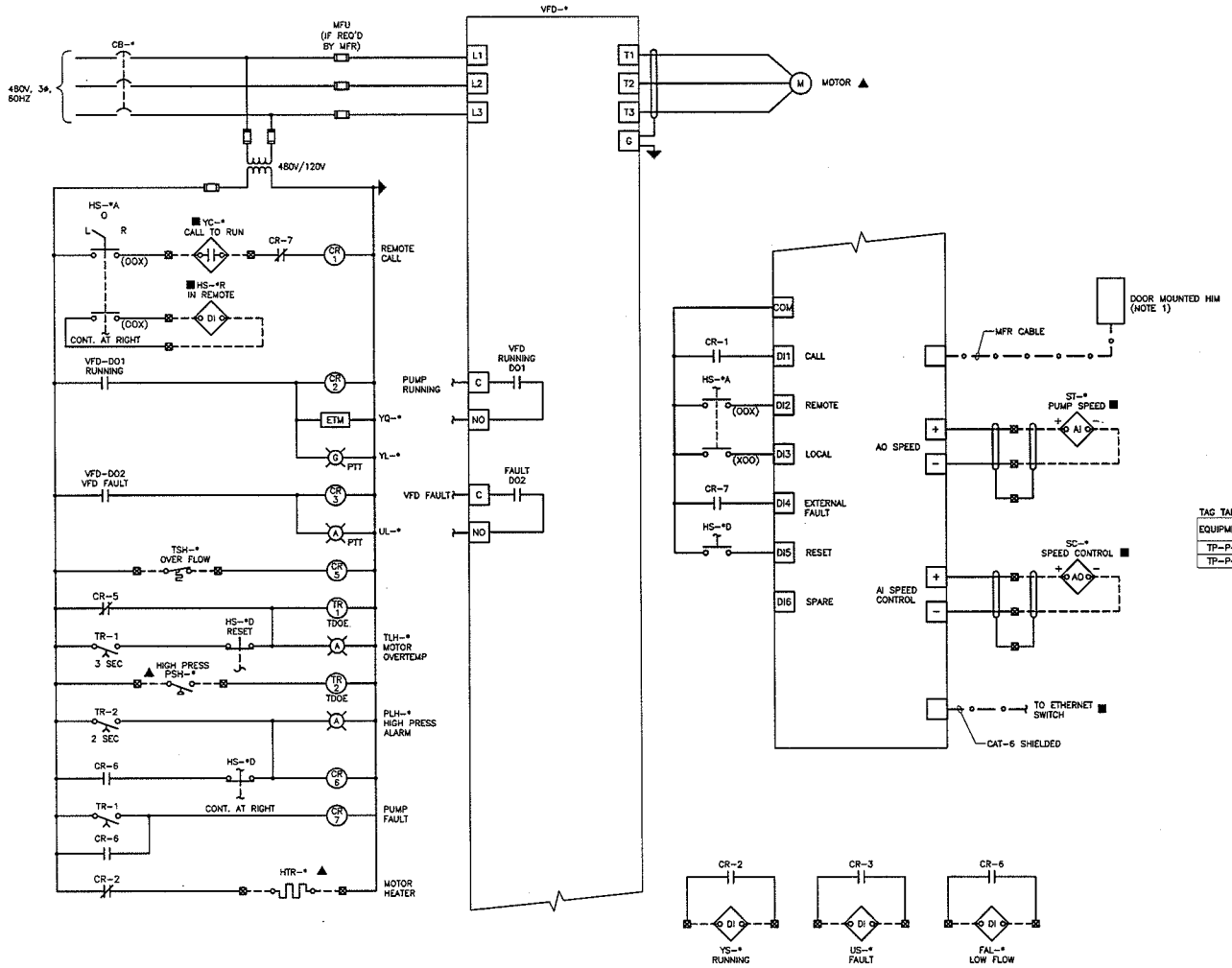

LEGEND

▲ FIELD DEVICE AT EQUIPMENT
■ AT PLC PANEL
● AT LOCAL CONTROL PANEL

TAG TABLE 7A – MBT PERMEATE PUMPS

EQUIPMENT NO.	DESCRIPTION	* LOOP	VFD LOCATION	PLC/CONTROL PANEL NO.	P&ID
TP-P-7310	MBT PERMEATE PUMP 1	7310	TP-MCC-2A	TP-PLC-7	17000-3
TP-P-7320	MBT PERMEATE PUMP 2	7320	TP-MCC-2B	TP-PLC-7	17000-3

NOTES:

1. VFD HMI SHALL INCLUDE START AND STOP PUSH-BUTTONS, AND A DIAL OR ARROW KEYS TO ADJUST THE SPEED. THESE HMI CONTROLS SHALL BE CONFIGURED TO FUNCTION ONLY WHEN THE DRIVE IS IN LOCAL MODE.

SCHEMATIC 7A– MBT PERMEATE PUMPS

SCALE: NTS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONTROL SCHEMATICS - 7
MBT PERMEATE PUMPS

DESIGNED BY: M. ERWIN 06/2013
DRAWN BY: B. VUE 06/2013
CHECKED BY: – 06/2013
SCALE: NONE
PROJECT MANAGER: XXXX
APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DATE: XX-XX-13

Plan No. E30-7 | Sheet ____ of XXX Sheets

NO.	REVISION	BY	CHKD.	DATE

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14761

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES – BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

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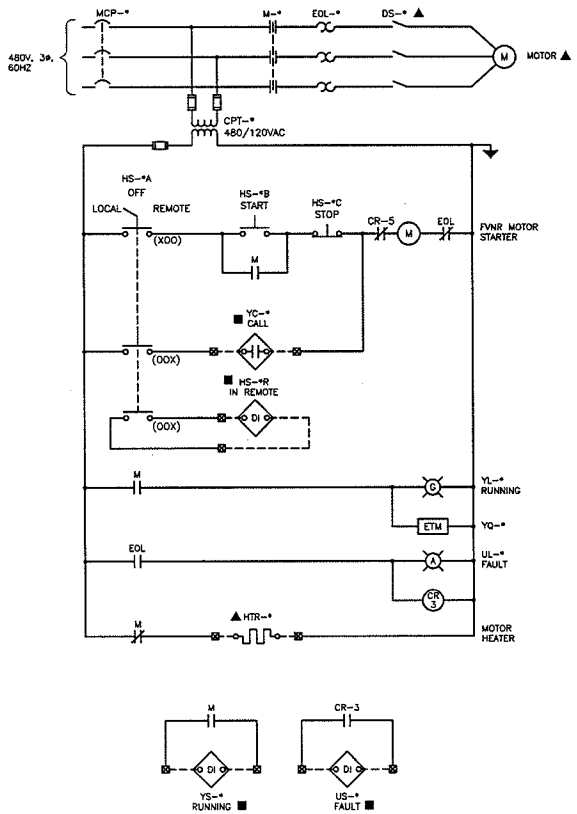
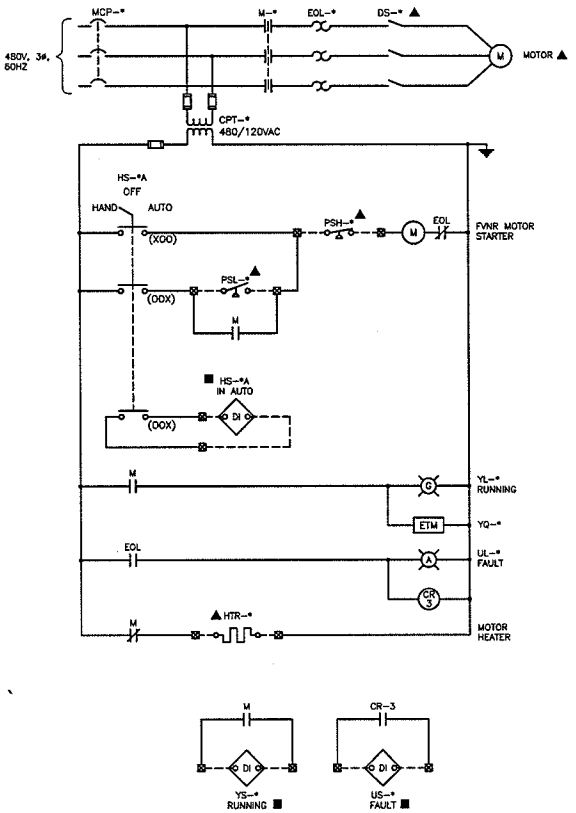
LEGEND
▲ FIELD DEVICE AT EQUIPMENT
■ AT PLC PANEL
● AT LOCAL CONTROL PANEL



SCHEMATIC 8A – FVNR CENTRIFUGAL PUMPS
SCALE: NTS



SCHEMATIC 8B – FVNR HYDROPNEUMATIC SYSTEM COMPRESSORS
SCALE: NTS

TAG TABLE 8A – FVNR CENTRIFUGAL PUMPS

EQUIPMENT NO.	DESCRIPTION	* LOOP	STARTER LOCATION	PLC/CONTROL PANEL NO.	P&ID
TP-P-6310	EFFLUENT CENTRIFUGAL PUMP 1 (EXISTING PUMP)	6310	TP-MCC-6A	TP-PLC-6	16000-1
TP-P-6320	EFFLUENT CENTRIFUGAL PUMP 2 (EXISTING PUMP)	6320	TP-MCC-6B	TP-PLC-6	16000-1

TAG TABLE 8B – FVNR HYDROPNEUMATIC SYSTEM COMPRESSORS

EQUIPMENT NO.	DESCRIPTION	* LOOP	CB LOCATION	PLC/CONTROL PANEL NO.	P&ID
TP-CP-6100	UPPER ZONE RW HYDROPNEUMATIC COMPRESSOR	6100	TP-MCC-6A	TP-PLC-6	16000-1
TP-CP-6200	LOWER ZONE RW HYDROPNEUMATIC COMPRESSOR	6200	TP-MCC-6B	TP-PLC-6	16000-2

NOTES:
1. MOTOR PROTECTION RELAY PROVIDED BY PUMP MANUFACTURER, INSTALLED AND WIRED BY VFD/MCC SUPPLIER.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONTROL SCHEMATICS - 8

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN TO MAKE EXCAVATIONS AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — EXP. 6-30-14

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: B. VUE	DATE 06/2013	NONE	XX-XX-13
CHECKED BY: –	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E30-8 — Sheet ____ of XXX Sheets

PREPARED IN 2007 BY CCS3D, Inc. & AUTOCAD 2011

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CONDUIT SCHEDULE

CONDUIT NO.	SIZE	CONDUCTORS	SPARES	FROM	TO	NOTES
PUD001A	5"	PULL ROPE		SCE UTILITY VAULT	SCE TRANSFORMER	CONDUCTORS BY SCE
PUD001B	5"	PULL ROPE		SCE UTILITY VAULT	SCE TRANSFORMER	CONDUCTORS BY SCE
SU0002A	4"	PULL ROPE		SCE TRANSFORMER	SWBD-1	CONDUCTORS BY SCE
SU0002B	4"	PULL ROPE		SCE TRANSFORMER	SWBD-1	CONDUCTORS BY SCE
SU0002C	4"	PULL ROPE		SCE TRANSFORMER	SWBD-1	CONDUCTORS BY SCE
SU0002D	4"	PULL ROPE		SCE TRANSFORMER	SWBD-1	CONDUCTORS BY SCE
SU0002E	4"	PULL ROPE		SCE TRANSFORMER	SWBD-1	CONDUCTORS BY SCE
SU0002F	4"	PULL ROPE		SCE TRANSFORMER	SWBD-1	CONDUCTORS BY SCE
P0003A	4"	3#500 MCM, #1G		SWBD-1	SWGR-1	
P0003B	4"	3#500 MCM, #1G		SWBD-1	SWGR-1	
PS0003A	4"	PULL ROPE		SWBD-1	SWGR-1	
PS0003B	4"	PULL ROPE		SWBD-1	SWGR-1	
PS0003C	4"	PULL ROPE		SWBD-1	SWGR-1	
PS0003D	4"	PULL ROPE		SWBD-1	SWGR-1	
P0004A	4"	3#500 MCM, #1/0G		GEN-1	SWGR-1	
P0004B	4"	3#500 MCM, #1/0G		GEN-1	SWGR-1	
P0004C	4"	3#500 MCM, #1/0G		GEN-1	SWGR-1	
P0005A	4"	3#500 MCM, #1/0G		GEN TB-1	SWGR-1	
P0005B	4"	3#500 MCM, #1/0G		GEN TB-1	SWGR-1	
P0005C	4"	3#500 MCM, #1/0G		GEN TB-1	SWGR-1	
P0021	4"	3#500 MCM, #4/0 G		SWGR-1	MCC-2A	
PS0021	4"	PULL ROPE		SWGR-1	MCC-2A	
P0022	4"	3#500 MCM, #4/0 G		SWGR-1	MCC-2B	
PS0022	4"	PULL ROPE		SWGR-1	MCC-2B	
P0031	4"	3#500 MCM, #4/0 G		SWGR-1	MCC-3A	
PS0031	4"	PULL ROPE		SWGR-1	MCC-3A	
P0032	4"	3#500 MCM, #4/0 G		SWGR-1	MCC-3B	
PS0032	4"	PULL ROPE		SWGR-1	MCC-3B	
P0061	4"	3#500 MCM, #4/0 G		SWGR-1	MCC-6A	
PS0061	4"	PULL ROPE		SWGR-1	MCC-6A	
P0062	4"	3#500 MCM, #4/0 G		SWGR-1	MCC-6B	
PS0062	4"	PULL ROPE		SWGR-1	MCC-6B	
F00020	2"	12-FIBER MM CABLE		ELECT. BLDG PATCH PANEL	HEADWORKS PATCH PANEL	MAIN FIBER OPTIC RING SEGMENT
F00021	1.25"	2-FO PATCH	2-FO PATCH	HEADWORKS PATCH PANEL	PLC-2	
F00030	2"	12-FIBER MM CABLE		OPS BLDG NETWORK RACK	ELECT. BLDG PATCH PANEL	MAIN FIBER OPTIC RING SEGMENT
F00031	1.25"	2-FO PATCH	2-FO PATCH	ELECT. BLDG PATCH PANEL	PLC-3	
F00060	2"	12-FIBER MM CABLE		OPS BLDG NETWORK RACK	HEADWORKS PATCH PANEL	MAIN FIBER OPTIC RING SEGMENT
P1110	1"	3#12, 1#12G		MCC-2A	JBX-P1110	VIA HH-P1100 TO P-1110
P1120	1"	3#12, 1#12G		MCC-2B	JBX-P1120	VIA HH-P1100 TO P-1120
PS1130	1"	PULL STRING		MCC-2A	HH-P1100	
PC1110		MFR CABLE		JBX-P1110	P-1110	CABLE BY MANUFACTURER
PC1120		MFR CABLE		JBX-P1120	P-1120	CABLE BY MANUFACTURER
PC1130		NOT USED				FOR FUTURE
C1110	1"	8#14, 1#12 G		MCC-2A	HH-P1100	
C1110A	3/4"	4#14, 1#12 G		HH-P1100	JBX-P1110	TSH/MSH-1110
C1110B	3/4"	2#14, 1#12 G		HH-P1100	LES-1110	
C1110C	3/4"	2#14, 1#12 G		HH-P1100	FSL-1110	
C1120	1"	8#14, 1#12 G		MCC-2A	HH-P1100	
C1120A	3/4"	4#14, 1#12 G		HH-P1100	JBX-P1110	TSH/MSH-1110
C1120B	3/4"	2#14, 1#12 G		HH-P1100	LES-1110	
C1120C	3/4"	2#14, 1#12 G		HH-P1100	FSL-1110	
CS1130	1"	PULL STRING		MCC-2A	HH-P1100	
C1120A		NOT USED				FOR FUTURE
CS1120B	3/4"	PULL STRING		HH-P1100	LES-1110	
C1120C		NOT USED				FOR FUTURE
J1105	1"	4#14, 1#12 G		PLC-2	HH-P1100	LSHH-1105 AND LSLL-1105
J1105A	3/4"	4#14, 1#12 G		HH-P1100	LSHH-1105/LSLL-1105	
I1105	1"	1-TSP, 1#12 G		PLC-2	HH-I1100	
I1105B	1"	1-TSP, 1#12 G		HH-I1100	LIT-1105	
I1105C	1"	MFR CABLE		LIT-1105	LE-1105	CABLE BY MANUFACTURER
L1105	1"	2#12, 1#12 G		LP-2A	LIT-1105	VIA HH-P1100

CONDUIT SCHEDULE

CONDUIT NO.	SIZE	CONDUCTORS	SPARES	FROM	TO	NOTES
P1210	1"	3#12, 1#12 G		MCC-2A	JBX-P1210	VIA PB-P1200
P1220	1"	3#12, 1#12 G		MCC-2B	JBX-P1220	VIA PB-P1200
P1230	1"	PULL STRING		MCC-2A	PB-P1200	VIA PB-P1200
P1240	1"	PULL STRING		MCC-2B	PB-P1200	VIA PB-P1200
P1250	1"	3#12, 1#12 G		MCC-2A	JBX-P1250	VIA PB-P1200
PC1210		MFR CABLE		JBX-P1210	P-1210	CABLE BY MANUFACTURER
PC1220		MFR CABLE		JBX-P1220	P-1220	CABLE BY MANUFACTURER
PC1230		NOT USED		JBX-P1230	P-1230	FOR FUTURE
PC1240		NOT USED		JBX-P1240	P-1240	FOR FUTURE
PC1250		MFR CABLE		JBX-P1250	P-1250	CABLE BY MANUFACTURER
C1210	1"	8#14, 1#12 G		MCC-2A	PB-P1200	
C1210A	3/4"	2#14, 1#12 G		PB-P1200	FSL-1210	
C1210B	3/4"	2#14, 1#12 G		PB-P1200	LES-1210	
C1210C	3/4"	4#14, 1#12 G		PB-P1200	JBX-P1210	
C1210D	3/4"	4#14, 1#12 G		JBX-P1210	MSH-1210/TSH-1210	
C1220	1"	8#14, 1#12 G		MCC-2B	PB-P1200	
C1220A	3/4"	2#14, 1#12 G		PB-P1200	FSL-1220	
C1220B	3/4"	2#14, 1#12 G		PB-P1200	LES-1220	
C1220C	3/4"	4#14, 1#12 G		PB-P1200	JBX-P1210	
C1220D	3/4"	4#14, 1#12 G		JBX-P1210	MSH-1220/TSH-1220	
C1230	1"	8#14, 1#12 G		MCC-2A	PB-P1200	
C1230A		NOT USED		PB-P1200	FSL-1230	FOR FUTURE
C1230B	3/4"	SPARE		PB-P1200	LES-1230 (FUTURE)	
C1230C		NOT USED		PB-P1200	JBX-P1230	FOR FUTURE
C1230D		NOT USED		JBX-P1230	MSH-1230/TSH-1230	FOR FUTURE
C1240	1"	8#14, 1#12 G		MCC-2B	PB-P1200	
C1240A		NOT USED		PB-P1200	FSL-1240	FOR FUTURE
C1240B	3/4"	2#14, 1#12 G		PB-P1200	LES-1240 (FUTURE)	
C1240C		NOT USED		PB-P1200	JBX-P1240	FOR FUTURE
C1240D		NOT USED		JBX-P1210	MSH-1240/TSH-1240	FOR FUTURE
C1250	1"	8#14, 1#12 G		MCC-2A	PB-P1200	
C1250A	3/4"	2#14, 1#12 G		PB-P1200	FSL-1250	
C1250B	3/4"	2#14, 1#12 G		PB-P1200	LES-1250	
C1250C	3/4"	4#14, 1#12 G		PB-P1200	JBX-P1250	
C1250D	3/4"	4#14, 1#12 G		JBX-P1210	MSH-1250/TSH-1250	
J1205	1"	4#14, 1#12 G		PLC-2	PB-P1200	LSHH-1205 AND LSLL-1205
J1205A	3/4"	4#14, 1#12 G		PB-P1200	LSLL-1205/LSHH-1205	FROM PLC-2
L1205	3/4"	2#12, 1#12 G		LP-2A	LIT-1205	VIA PB-P1200
L1211	3/4"	2#12, 1#12 G		LP-2A	FIT-1211	VIA PB-P1200
L1221	3/4"	2#12, 1#12 G		LP-2B	FIT-1221	VIA PB-P1200
L1231	3/4"	SPARE		LP-2A	FIT-1231 (FUTURE)	VIA PB-P1200
L1241	3/4"	SPARE		LP-2B	FIT-1241 (FUTURE)	VIA PB-P1200
I1205	1"	1-TSP, 1#12 G		PLC-2	LIT-1205	VIA PB-I1200
I1205A	3/4"	MFR CABLE		LIT-1205	LE-1205	
I1211	2"	1-TSP, 1#12 G		PLC-2	JUNCTION BOX	VIA PB-I1200
I1211A	1"	1-TSP, 1#12 G		JUNCTION BOX	FIT-1211	
I1231A		NOT USED		JUNCTION BOX	FIT-1231	FOR FUTURE
I1221	2"	1-TSP, 1#12 G		PLC-2	JUNCTION BOX	VIA PB-I1200
I1221A	1"	1-TSP, 1#12 G		JUNCTION BOX	FIT-1221	
I1241A		NOT USED		JUNCTION BOX	FIT-1241	FOR FUTURE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL
CONDUIT SCHEDULE SHEET 1

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NPA SOUTHERN CALIFORNIA COUNTIES

1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — REGISTERED ENGINEER

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: B. VUE	DATE 06/2013	NONE	XX-XX-13
CHECKED BY: M. ERWIN	DATE 06/2013	PROJECT MANAGER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E40-1 — Sheet ____ of XXX Sheets

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Last Saved By: ben 2-25-14 04:11pm

CONDUIT SCHEDULE						
CONDUIT NO.	SIZE	CONDUCTORS	SPARES	FROM	TO	NOTES
P9310	1"	3#12, 1#12 G		MCC-2A	EF-9310	VIA PB-P1200
P9320	1"	3#12, 1#12 G		MCC-2B	EF-9320	VIA PB-P1200
PS9330	1"	PULL STRING		MCC-2B	EF-9330 (FUTURE)	STUB UP AND CAP
C9310	1"	8#14, 1#12 G		MCC-2A	LES/TSH/WSH-9310 AND SV-1201	VIA JUNCTION BOX
C9320	1"	8#14, 1#12 G		MCC-2B	LES/TSH/WSH-9320 AND SV-1202	VIA JUNCTION BOX
CS9330	1"	PULL STRING		MCC-2B	EF-9330 (FUTURE)	STUB UP AND CAP
C1201	3/4"	4#14, 1#12 G		PLC-2	JB-1201C	
L1201	3/4"	2#12, 1#12 G		LP-2A	JB-1201L	
C1201A	3/4"	2#14, 1#12 G		JB-1201C	HS-1201	
L1201A	3/4"	4#12, 1#12 G		JB-1201L	HS-1201	
C1201B	3/4"	2#14, 1#12 G		HS-1201	SV-1201	
C1202A	3/4"	2#14, 1#12 G		JB-1201C	HS-1202	
L1202A	3/4"	4#12, 1#12 G		JB-1201L	HS-1202	
C1202B	3/4"	2#14, 1#12 G		HS-1202	SV-1202	
I2100	1"	1-TSP, 1#12 G		PLC-2	FIT-2100	
L2100	1"	2#12, 1#12 G		LP-2B	FIT-2100	
P2101	1"	3#10, 1#10 G		MCC-2B	LCP-2101	
C2101	1"	10#14, 1#12 G	4#14	PLC-2	LCP-2101	
I2101A	1"	1-TSP, 1#12 G	1-TSP	PLC-2	LCP-2101	
I2101B	3/4"	1-TSP, 1#12 G		LCP-2101	LIT-2101	
L2101	3/4"	2#12, 1#12 G		LCP-2101	LIT-2101	
PC2101	1"	3#12, 2#14, 1#12 G		LCP-2101	SC-2101	
C2101A	3/4"	2#14, 1#12 G	2#14	LCP-2101	LES-2101	
C2102A	3/4"	4#14, 1#12 G		LCP-2101	JB-2102	
C2102B	3/4"	2#14, 1#12 G		JB-2102	SV-2102	
C2103	3/4"	2#14, 1#12 G		JB-2102	SV-2103	
P2201	1"	3#10, 1#10 G		MCC-2B	LCP-2201	
C2201	1-1/4"	16#14, 1#12 G	8#14	PLC-2	LCP-2201	
PC2210	1"	3#12, 2#14, 1#12 G		LCP-2201	ME-2210	
C2210	3/4"	2#14, 1#12 G	2#14	LCP-2201	LES-2210	
C2212	3/4"	2#14, 1#12 G		LCP-2201	SV-2212	
PC2220	1"	3#12, 2#14, 1#12 G		LCP-2201	ME-2220	
C2220	3/4"	2#14, 1#12 G	2#14	LCP-2201	LES-2220	
P2310	1"	3#10, 1#10 G		MCC-2A	LCP-2310	
C2310	1"	14#14, 1#12 G	6#14	PLC-2	LCP-2310	
PC2310A	1"	3#12, 2#14, 1#12 G		LCP-2310	SC-2310	
PC2310B	1"	3#12, 2#14, 1#12 G		LCP-2310	ME-2310	
C2310A	1"	12#14, 1#14	2#14	LCP-2310	JB-2310A	
C2310B	3/4"	2#14, 1#14		JB-2310A	LSHH-2310	
C2310C	1"	10#14, 1#14	2#14	JB-3210A	JB-2310B	
C2311A	3/4"	2#14, 1#14		JB-2310B	SV-2311	
C2311B	3/4"	2#14, 1#14		JB-2310B	FSL-2311	
C2312	3/4"	2#14, 1#14		JB-2310B	SV-2312	
C2313	3/4"	2#14, 1#14		JB-2310B	SV-2313	
C2314	3/4"	2#14, 1#14		JB-2310B	SV-2314	
P2315	3/4"	3#12, 1#12 G		LCP-2310	HTR-2315	
P2320	1"	3#10, 1#10 G		MCC-2B	LCP-2320	
C2320	1"	14#14, 1#12 G	6#14	PLC-2	LCP-2320	
PC2320A	1"	3#12, 2#14, 1#12 G		LCP-2320	SC-2320	
PC2320B	1"	3#12, 2#14, 1#12 G		LCP-2320	ME-2320	
C2320A	1"	12#14, 1#14	2#14	LCP-2320	JB-2320A	
C2320B	3/4"	2#14, 1#14		JB-2320A	LSHH-2320	
C2320C	1"	10#14, 1#14	2#14	JB-3210A	JB-2320B	
C2321A	3/4"	2#14, 1#14		JB-2320B	SV-2321	
C2321B	3/4"	2#14, 1#14		JB-2320B	FSL-2321	
C2322	3/4"	2#14, 1#14		JB-2320B	SV-2322	
C2323	3/4"	2#14, 1#14		JB-2320B	SV-2323	
C2324	3/4"	2#14, 1#14		JB-2320B	SV-2324	
P2325	3/4"	3#12, 1#12 G		LCP-2320	HTR-2325	
XP2330	1"	PULL STRING		MCC-2A	LCP-2330 (FUTURE)	SPARE - STUB UP AND CAP
XC2330	1"	PULL STRING		PLC-2	LCP-2330 (FUTURE)	SPARE - STUB UP AND CAP
XPC2330A	1"	PULL STRING		LCP-2330 (FUTURE)	SC-2330 (FUTURE)	SPARE - STUB UP AND CAP
XPC2330B	1"	PULL STRING		LCP-2330 (FUTURE)	ME-2330 (FUTURE)	SPARE - STUB UP AND CAP
XC2330A	1"	PULL STRING		LCP-2330 (FUTURE)	JB-2330A (FUTURE)	SPARE - STUB UP AND CAP

CONDUIT SCHEDULE						
CONDUIT NO.	SIZE	CONDUCTORS	SPARES	FROM	TO	NOTES
L8510A	3/4"	2#12, 1#12 G		LP-2A	LCP-8510	
L8510B	3/4"	2#12, 1#12 G		LCP-8510	P-8510	
J8510	1"	10#14, 1#12 G	2#14	PLC-2	LCP-8510	
C8510A	3/4"	8#14, 1#12 G	2#14	LCP-8510	P-8510	
C8510B	3/4"	2#14, 1#12 G		LCP-8510	FSL-8510	
I8510A	1"	3-TSP, 1#12 G	1-TSP	PLC-2	LCP-8510	
I8510B	3/4"	1-TSP, 1#12 G		LCP-8510	P-8510	
I8510C	3/4"	1-TSP, 1#12 G		LCP-8510	PIT-8510	
L8520A	3/4"	2#12, 1#12 G		LP-2B	LCP-8520	
L8520B	3/4"	2#12, 1#12 G		LCP-8520	P-8520	
J8520	1"	10#14, 1#12 G	2#14	PLC-2	LCP-8520	
C8520A	3/4"	8#14, 1#12 G	2#14	LCP-8520	P-8520	
C8520B	3/4"	2#14, 1#12 G		LCP-8520	FSL-8520	
I8520A	1"	3-TSP, 1#12 G	1-TSP	PLC-2	LCP-8520	
I8520B	3/4"	1-TSP, 1#12 G		LCP-8520	P-8520	
I8520C	3/4"	1-TSP, 1#12 G		LCP-8520	PIT-8520	
P2320	1"	3#10, 1#10 G		MCC-2B	LCP-2320	

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN, No. E 14767, CIVIL, STATE OF CALIFORNIA

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL
CONDUIT SCHEDULE SHEET 2

DESIGNED BY: W. OUYANG	DATE: 06/2013	SCALE: NONE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE: XX-XX-13
DRAWN BY: B. VUE	DATE: 06/2013		
CHECKED BY: M. ERWIN	DATE: 06/2013	PROJECT MANAGER: XXXX	

Plan No. E40-2 — Sheet _____ of XXX Sheets

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PANELBOARD SCHEDULE

CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS	CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS
1	CL	CONTROL PANEL	500	-	-	20	2	CL	MCC SPACE HEATERS	800	-	-	20
3	CL	GENERATOR CONTROLS	-	500	-	20	4	NCL	MCC RECEPTACLES	-	100	-	20
5	CL	GENERATOR HEATER	-	-	500	20	6	CL	MCC LIGHTS	-	-	200	20
7	CL	GENERATOR BATTERY CHARGER	200	-	-	20	8	NCL	MCC AIR CONDITIONER	600	-	-	20
9	NCL	VAULT RECEPTACLES	-	360	-	20	10	NCL		-	600	-	
11	CL	SWITCHBOARD HEATER	-	-	400	20	12	NCL	SPARE	-	-	0	20
13	NCL	SPARE	0	-	-	20	14	NCL	SPARE	0	-	-	20
15	NCL	SPARE	-	0	-	20	16	NCL	SPARE	-	0	-	20
17	NCL	SPARE	-	-	0	20	18	ML	SPARE	-	-	0	20
		PHASE VA SUBTOTALS	700	860	900				PHASE VA SUBTOTALS	1400	700	200	
									PHASE VA TOTALS	2100	1560	1100	
									PANELBOARD VA TOTAL			4760	

100% TOTAL CONTINUOUS LOADS (VA):	3100	PANEL NO.: LS-LP-1
TOTAL NON-CONTINUOUS LOADS (VA):	1660	LOCATION: LEGACY PARK LIFT STATION MCC
LARGEST MOTOR LOAD (VA):	600	VOLTAGE: 208Y/120 V, 3 PHASE, 4 WIRE
25% LARGEST MOTOR LOAD (VA):	150	BUS RATING: 100A
CALCULATED TOTAL LOAD (VA):	4910	MAIN BREAKER: 50A
CALCULATED TOTAL LOAD (AMPS):	13.63	SHORT CIRCUIT RATING: 10 kAIC

ABBREVIATIONS
CL - CONTINUOUS LOAD
ML - MOTOR LOAD
NCL - NON-CONTINUOUS LOAD

PANELBOARD SCHEDULE

CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS	CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS
1	CL	HEADWORKS ELEC RM - INT LTGS	500	-	-	20/1	2	CL	HEADWORKS ELEC RM - EXT LTGS	500	-	-	20/1
3	CL	HEADWORKS ELEC RM - RECEP	-	500	-	20/1	4	CL	HEADWORKS ELEC RM - EXT RECEP	-	500	-	20/1
5	CL	HEADWORKS - INT LTGS	-	-	100	20/1	6	CL	HEADWORKS - EXT LTGS	-	-	100	20/1
7	CL	HEADWORKS - INT RECEP	200	-	-	20/1	8	CL	HEADWORKS - EXT RECEP	200	-	-	20/1
9	CL	FE/FIT-1211	-	200	-	20/1	10	CL	FE/FIT-1231 (FUTURE)	-	200	-	20/1
11	CL	FE/FIT-1221	-	-	200	20/1	12	CL	FE/FIT-1241 (FUTURE)	-	-	200	20/1
13	CL	SPARE	-	-	-	20/1	14	CL	LIT-1105	300	-	-	20/1
15	CL	SPARE	-	-	-	20/1	16	CL	SPARE	-	-	-	20/1
17	CL	HEADWORKS CP (PLC-2)	-	-	400	20/1	18	ML	SOLIDS CP (PLC-7)	-	-	400	20/1
		PHASE VA SUBTOTALS	700	700	700				PHASE VA SUBTOTALS	1000	700	700	
									PHASE VA TOTALS	1700	1400	1400	
									PANELBOARD VA TOTAL			4500	

125% TOTAL CONTINUOUS LOADS (VA):	4100	PANEL NO.: TP-LP-2A
TOTAL NON-CONTINUOUS LOADS (VA):	320	LOCATION: HEADWORKS - ELECTRICAL ROOM
LARGEST MOTOR LOAD (VA):	0	VOLTAGE: 208Y/120 V, 3 PHASE, 4 WIRE
25% LARGEST MOTOR LOAD (VA):	0	BUS RATING: 100A
CALCULATED TOTAL LOAD (VA):	4420	MAIN BREAKER: 100A
CALCULATED TOTAL LOAD (AMPS):	12.27	SHORT CIRCUIT RATING: 10KAIC

ABBREVIATIONS
CL - CONTINUOUS LOAD
ML - MOTOR LOAD
NCL - NON-CONTINUOUS LOAD

PANELBOARD SCHEDULE

CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS	CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS
1	CL	HEADWORKS CP (PLC-2)	400	-	-		2	CL	SOLIDS CP (PLC-7)	400	-	-	
3	CL		-	100	-		4	CL		-	100	-	
5	CL		-	-	100		6	CL		-	-	100	
7	CL		200	-	-		8	CL		200	-	-	
9	NCL		-	200	-		10	NCL		-	200	-	
11	NCL		-	-	200		12	NCL		-	-	200	
13	NCL		300	-	-		14	NCL		300	-	-	
15	NCL		-	300	-		16	NCL		-	300	-	
17	ML		-	-	300		18	ML		-	-	300	
19	ML	Use only if necessary	0	-	-		20	ML	18-slot panels preferred	0	-	-	
21	ML		-	0	-		22	ML		-	0	-	
23	ML		-	-	0		24	ML		-	-	0	
25	CL		0	-	-		26	CL		0	-	-	
27	CL		-	0	-		28	CL		-	0	-	
29	CL		-	-	0		30	CL		-	-	0	
		PHASE VA SUBTOTALS	900	600	600				PHASE VA SUBTOTALS	900	600	600	
									PHASE VA TOTALS	1800	1200	1200	
									PANELBOARD VA TOTAL			4200	

100% TOTAL CONTINUOUS LOADS (VA):	1600	PANEL NO.: TP-LP-2B
TOTAL NON-CONTINUOUS LOADS (VA):	2600	LOCATION: HEADWORKS MCC-2B
LARGEST MOTOR LOAD (VA):	0	VOLTAGE: 208Y/120 V, 3 PHASE, 4 WIRE
25% LARGEST MOTOR LOAD (VA):	0	BUS RATING 100A
CALCULATED TOTAL LOAD (VA):	4200	MAIN BREAKER:
CALCULATED TOTAL LOAD (AMPS):	11.66	SHORT CIRCUIT RATING:

ABBREVIATIONS
CL - CONTINUOUS LOAD
ML - MOTOR LOAD
NCL - NON-CONTINUOUS LOAD

PANELBOARD SCHEDULE

CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS	CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS
1	CL	ELECTRICAL BLDG. CP (PLC-3)	400	-	-		2	CL	MBR MASTER CP (PLC-4)	400	-	-	
3	CL		-	100	-		4	CL		-	100	-	
5	CL		-	-	100		6	CL		-	-	100	
7	CL		200	-	-		8	CL		200	-	-	
9	NCL		-	200	-		10	NCL		-	200	-	
11	NCL		-	-	200		12	NCL		-	-	200	
13	NCL		300	-	-		14	NCL		300	-	-	
15	NCL		-	300	-		16	NCL		-	300	-	
17	ML		-	-	300		18	ML		-	-	300	
19	ML	Use only if necessary	0	-	-		20	ML	18-slot panels preferred	0	-	-	
21	ML		-	0	-		22	ML		-	0	-	
23	ML		-	-	0		24	ML		-	-	0	
25	CL		0	-	-		26	CL		0	-	-	
27	CL		-	0	-		28	CL		-	0	-	
29	CL		-	-	0		30	CL		-	-	0	
		PHASE VA SUBTOTALS	900	600	600				PHASE VA SUBTOTALS	900	600	600	
									PHASE VA TOTALS	1800	1200	1200	
									PANELBOARD VA TOTAL			4200	

100% TOTAL CONTINUOUS LOADS (VA):	1600	PANEL NO.: TP-LP-3A
TOTAL NON-CONTINUOUS LOADS (VA):	2600	LOCATION: ELECTRICAL BLDG. MCC-3A
LARGEST MOTOR LOAD (VA):	0	VOLTAGE: 208Y/120 V, 3 PHASE, 4 WIRE
25% LARGEST MOTOR LOAD (VA):	0	BUS RATING 100A
CALCULATED TOTAL LOAD (VA):	4200	MAIN BREAKER:
CALCULATED TOTAL LOAD (AMPS):	11.66	SHORT CIRCUIT RATING:

ABBREVIATIONS
CL - CONTINUOUS LOAD
ML - MOTOR LOAD
NCL - NON-CONTINUOUS LOAD

PANELBOARD SCHEDULE

CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS	CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS
1	CL	ELECTRICAL BLDG. CP (PLC-3)	400	-	-		2	CL	MBR MASTER CP (PLC-4)	400	-	-	
3	CL		-	100	-		4	CL		-	100	-	
5	CL		-	-	100		6	CL		-	-	100	
7	CL		200	-	-		8	CL		200	-	-	
9	NCL		-	200	-		10	NCL		-	200	-	
11	NCL		-	-	200		12	NCL		-	-	200	
13	NCL		300	-	-		14	NCL		300	-	-	
15	NCL		-	300	-		16	NCL		-	300	-	
17	ML		-	-	300		18	ML		-	-	300	
19	ML	Use only if necessary	0	-	-		20	ML	18-slot panels preferred	0	-	-	
21	ML		-	0	-		22	ML		-	0	-	
23	ML		-	-	0		24	ML		-	-	0	
25	CL		0	-	-		26	CL		0	-	-	
27	CL		-	0	-		28	CL		-	0	-	
29	CL		-	-	0		30	CL		-	-	0	
		PHASE VA SUBTOTALS	900	600	600				PHASE VA SUBTOTALS	900	600	600	
									PHASE VA TOTALS	1800	1200	1200	
									PANELBOARD VA TOTAL			4200	

100% TOTAL CONTINUOUS LOADS (VA):	1600	PANEL NO.: TP-LP-3B
TOTAL NON-CONTINUOUS LOADS (VA):	2600	LOCATION: ELECTRICAL BLDG. MCC-3B
LARGEST MOTOR LOAD (VA):	0	VOLTAGE: 208Y/120 V, 3 PHASE, 4 WIRE
25% LARGEST MOTOR LOAD (VA):	0	BUS RATING 100A
CALCULATED TOTAL LOAD (VA):	4200	MAIN BREAKER:
CALCULATED TOTAL LOAD (AMPS):	11.66	SHORT CIRCUIT RATING:

ABBREVIATIONS
CL - CONTINUOUS LOAD
ML - MOTOR LOAD
NCL - NON-CONTINUOUS LOAD

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN AHEAD, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING THE SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14747 — PROFESSIONAL ENGINEER

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL
PANEL BOARD SCHEDULES

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: B. VUE	DATE 06/2013	NONE	XX-XX-13
CHECKED BY: M. ERWIN	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E60-1 — Sheet ____ of XXX Sheets

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W:\CIVIL - 2012 Projects\112017 - RMC, MeBu Wastewater and Recycled Water Facilities\112017 - Elect\ E60-01 02/25/14 16:01 bve XREFS: X-Border

PANELBOARD SCHEDULE

CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS	CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C
1	CL	OPERATIONS BLDG. CP (PLC-6)	400	-	-		2	CL	UV SYSTEM CP (PLC-5)	400	-	-
3	CL		-	100	-		4	CL		-	100	-
5	CL		-	-	100		6	CL		-	-	100
7	CL		200	-	-		8	CL		200	-	-
9	NCL		-	200	-		10	NCL		-	200	-
11	NCL		-	-	200		12	NCL		-	-	200
13	NCL		300	-	-		14	NCL		300	-	-
15	NCL		-	300	-		16	NCL		-	300	-
17	ML		-	-	300		18	ML		-	-	300
19	ML	Use only if necessary	0	-	-		20	ML	18-24 panels ordered	0	-	-
21	ML		-	0	-		22	ML		-	0	-
23	ML		-	-	0		24	ML		-	-	0
25	CL		0	-	-		26	CL		0	-	-
27	CL		-	0	-		28	CL		-	0	-
29	CL		-	-	0		30	CL		-	-	0
		PHASE VA SUBTOTALS	900	600	600				PHASE VA SUBTOTALS	900	600	600
									PHASE VA TOTALS	1800	1200	1200
									PANELBOARD VA TOTAL			4200

100% TOTAL CONTINUOUS LOADS (VA):	1800
TOTAL NON-CONTINUOUS LOADS (VA):	2600
LARGEST MOTOR LOAD (VA):	0
25% LARGEST MOTOR LOAD (VA):	0
CALCULATED TOTAL LOAD (VA):	4200
CALCULATED TOTAL LOAD (AMPS):	11.66

PANEL NO.: TP-LP-6A
LOCATION: OPERATIONS BLDG. MCC-6A
VOLTAGE: 208Y/120 V, 3 PHASE, 4 WIRE
BUS RATING 100A
MAIN BREAKER:
SHORT CIRCUIT RATING:

ABBREVIATIONS
CL - CONTINUOUS LOAD
ML - MOTOR LOAD
NCL - NON-CONTINUOUS LOAD

PANELBOARD SCHEDULE

CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C	BRKR A/PLS	CKT NO	LOAD TYPE	USAGE	VA PHASE A	VA PHASE B	VA PHASE C
1	CL	OPERATIONS BLDG. CP (PLC-6)	400	-	-		2	CL	UV SYSTEM CP (PLC-5)	400	-	-
3	CL		-	100	-		4	CL		-	100	-
5	CL		-	-	100		6	CL		-	-	100
7	CL		200	-	-		8	CL		200	-	-
9	NCL		-	200	-		10	NCL		-	200	-
11	NCL		-	-	200		12	NCL		-	-	200
13	NCL		300	-	-		14	NCL		300	-	-
15	NCL		-	300	-		16	NCL		-	300	-
17	ML		-	-	300		18	ML		-	-	300
19	ML	Use only if necessary	0	-	-		20	ML	18-24 panels ordered	0	-	-
21	ML		-	0	-		22	ML		-	0	-
23	ML		-	-	0		24	ML		-	-	0
25	CL		0	-	-		26	CL		0	-	-
27	CL		-	0	-		28	CL		-	0	-
29	CL		-	-	0		30	CL		-	-	0
		PHASE VA SUBTOTALS	900	600	600				PHASE VA SUBTOTALS	900	600	600
									PHASE VA TOTALS	1800	1200	1200
									PANELBOARD VA TOTAL			4200

100% TOTAL CONTINUOUS LOADS (VA):	1600
TOTAL NON-CONTINUOUS LOADS (VA):	2600
LARGEST MOTOR LOAD (VA):	0
25% LARGEST MOTOR LOAD (VA):	0
CALCULATED TOTAL LOAD (VA):	4200
CALCULATED TOTAL LOAD (AMPS):	11.66

PANEL NO.: TP-LP-6B
LOCATION: OPERATIONS BLDG. MCC-6B
VOLTAGE: 208Y/120 V, 3 PHASE, 4 WIRE
BUS RATING 100A
MAIN BREAKER:
SHORT CIRCUIT RATING:

ABBREVIATIONS
CL - CONTINUOUS LOAD
ML - MOTOR LOAD
NCL - NON-CONTINUOUS LOAD

LIGHTING FIXTURE SCHEDULE

TYPE	FIXTURE DESCRIPTION	LIGHT SOURCE	DRIVER MODULE	MAXIMUM WATTS	INPUT VOLTAGE	NORMAL FIXTURE SIZE	MOUNTING ARRANGEMENT	FIXTURE CONSTRUCTION NOTES	MANUFACTURER AND MODEL NUMBER	NOTES
A	BOLLARD	4000K LED 1588L	LED LIGHT ENGINE	31	120VAC	42"HX8" DIA	BOLLARD	LED BOLLARD LUMINAIRE, ZERO PERCENT UPLIGHT, ASYMMETRIC TYPE 3 DISTRIBUTION, IP66 RATED LIGHT ENGINE, LISTED CSA CERTIFIED TO U.S. AND CANADIAN STANDARDS.	LITHONIA: DSXB-LED-12C-700-40K-ASY-120-PE-DMB-ELCW-DDBXD, OR EQUAL	PHOTOCELL, 0-10V DIMMING, EMERGENCY BATTERY BACKUP.
B	INDUSTRIAL LED AREA LIGHTING	4000K LED 6307L	LED LIGHT ENGINE	72	120VAC	26"LX13"WX7"H	POLE MOUNT	D-SERIES LED AREA LUMINAIRE, CLASS 1 ELECTRONIC DRIVERS, >90 PERCENT POWER FACTOR, ZERO UPLIGHT, NIGHTIME FRIENDLY, IP66 RATED LIGHT ENGINE, CSA CERTIFIED TO U.S. AND CANADIAN STANDARDS.	LITHONIA: DSXD-LED-20C-1000-40K-T3M-120-RPA-DMG-DDBXD, OR EQUAL	PROVIDED WITH 12 FT. ROUND NON-TAPERED POLE, 0-10V DIMMING.
C	INDUSTRIAL LED	4000K LED 3606L	LED LIGHT ENGINE	36	120VAC	13"WX10"DX6"H	WALL MOUNT	TWO-PIECE DIA CAST ALUMINUM HOUSING, INTEGRAL HEAT SINK, POWDER COAT FINISH, ACRYLIC LENSES. NIGHTIME FRIENDLY. CSA CERTIFIED TO U.S. AND CANADIAN STANDARDS.	LITHONIA: DSXW1-LED-20C-530-40K-T3M-120-DMG-PIR-HS-DDBXD, OR EQUAL	0-10V DIMMING, 180 DEGREE MOTION SENSOR, HOUSE SIDE SHIELD.
D	SELF CONTAINED BATTERY POWERED LIGHT FIXTURE	(2) 2.8W LED LAMP HEADS	-	3.6	120 VAC	10" X 3"	WALL MOUNT	EMERGENCY LIGHTING UNIT, NICKLE-CADIUM BATTERY, TEST SWITCH AND STATUS INDICATOR, U.L. LISTED FOR INDOOR DAMP LOCATIONS.	LITHONIA: EU2- LED-M12 OR EQUAL.	UNIT SHALL BE CAPABLE OF OPERATING 1-1/2 HOURS ON INTERNAL BETTERY.
E	EXIT SIGN	LEF (LIGHT EMITTING DIODE)	LED LIGHT ENGINE	0.6	120 VAC	11" X 8"	UNIVERSAL MOUNTING	EMERGENCY EXIT SIGN. BATTERY CHARGER WITH RED INDICATOR LIGHT, SEALED NICKLE - CADIUM BATTERY, STATUS INDICATOR TEST SWITCH U.L. LISTED FOR DAMP LOCATIONS.	LITHONIA: LQC- W-1-R-EL- N OR EQUAL.	UNIT SHALL BE CAPABLE OF OPERATING FOR 1- 1/2 HOURS ON INTERNAL BATTERY.

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING

SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14767 REG. ENGINEER

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL
PANEL BOARD AND FIXTURE SCHEDULES

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE NONE	APPROVED BY: DATE XX-XX-13
DRAWN BY: B. VUE	DATE 06/2013		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER
CHECKED BY: M. ERWIN	DATE 06/2013	PROJECT NUMBER XXXX	RCE NO. 52102 EXP. 12/31/2014

Plan No. E60-2 Sheet ____ of XXX Sheets

Last Saved By: ben 2-25-14 04:00pm

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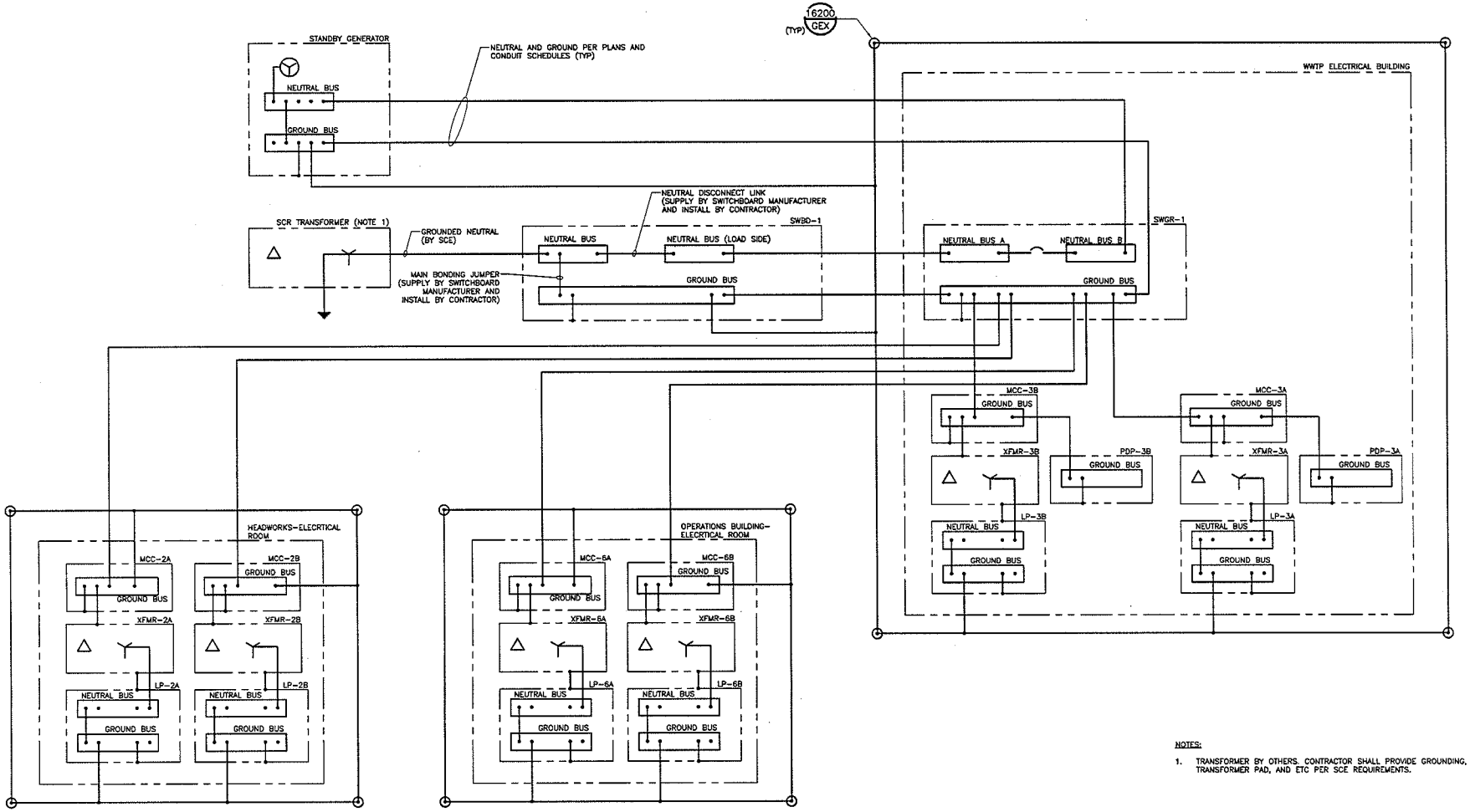

NOTES:

1. TRANSFORMER BY OTHERS. CONTRACTOR SHALL PROVIDE GROUNDING, TRANSFORMER PAD, AND ETC PER SCE REQUIREMENTS.

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL GROUNDING SCHEMATIC

DESIGNED BY: W. OUYANG DATE 06/2013
DRAWN BY: A. PRIOR DATE 06/2013
CHECKED BY: – DATE 06/2013
SCALE: NONE
PROJECT NUMBER: XXXX
APPROVED BY: DATE XX-XX-13
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. E70-1 Sheet ____ of XXX Sheets

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN, No. E 14707

NO.	REVISION	BY	CHKD.	DATE

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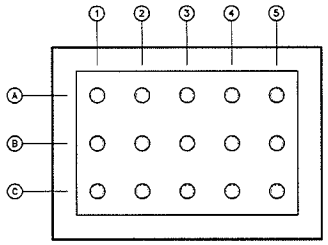
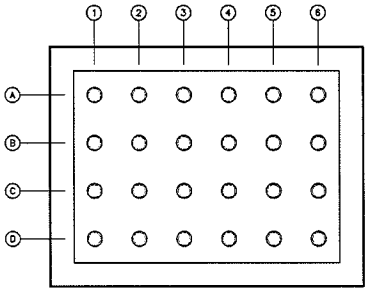


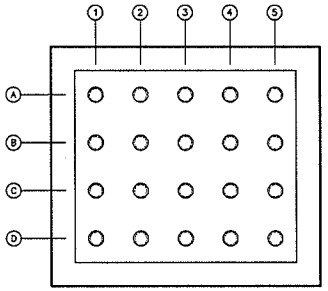
CONDUIT NUMBERS AND LOCATIONS					
	1	2	3	4	5
A	P1110	C1110	11105	11135	11105
B	P1120	C1120	LXXXX	SPARE	SPARE
C	PS1130	CS1130	LXXXX	SPARE	SPARE

SECTION A
NTS E100-1



CONDUIT NUMBERS AND LOCATIONS						
	1	2	3	4	5	6
A	P0021	P0061	SP001	SP005	LXXXX	FO0001
B	PS0021	PS0061	SP002	SP006	LXXXX	FO0002
D	P0022	P0062	SP003	SP007	LXXXX	FO0003
C	PS0022	PS0062	SP004	SP008	LXXXX	FO0004

SECTION B
NTS E100-1



CONDUIT NUMBERS AND LOCATIONS					
	1	2	3	4	5
A	P0061	SP001	SP005	LXXXX	FO0001
B	PS0061	SP002	SP006	LXXXX	FO0002
D	P0062	SP003	SP007	LXXXX	FO0003
C	PS0062	SP004	SP008	LXXXX	FO0004

SECTION C
NTS E100-1

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IT SAFE, CALL BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" 1"
VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN
No. E 14747
EXP. 6/30/14

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL
DUCTBANK SECTION AND DETAILS SHEET 1

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: B. VUE	DATE 06/2013	AS SHOWN	XX-XX-13
CHECKED BY: M. ERWIN	DATE 06/2013	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E80-2 Sheet ____ of XXX Sheets

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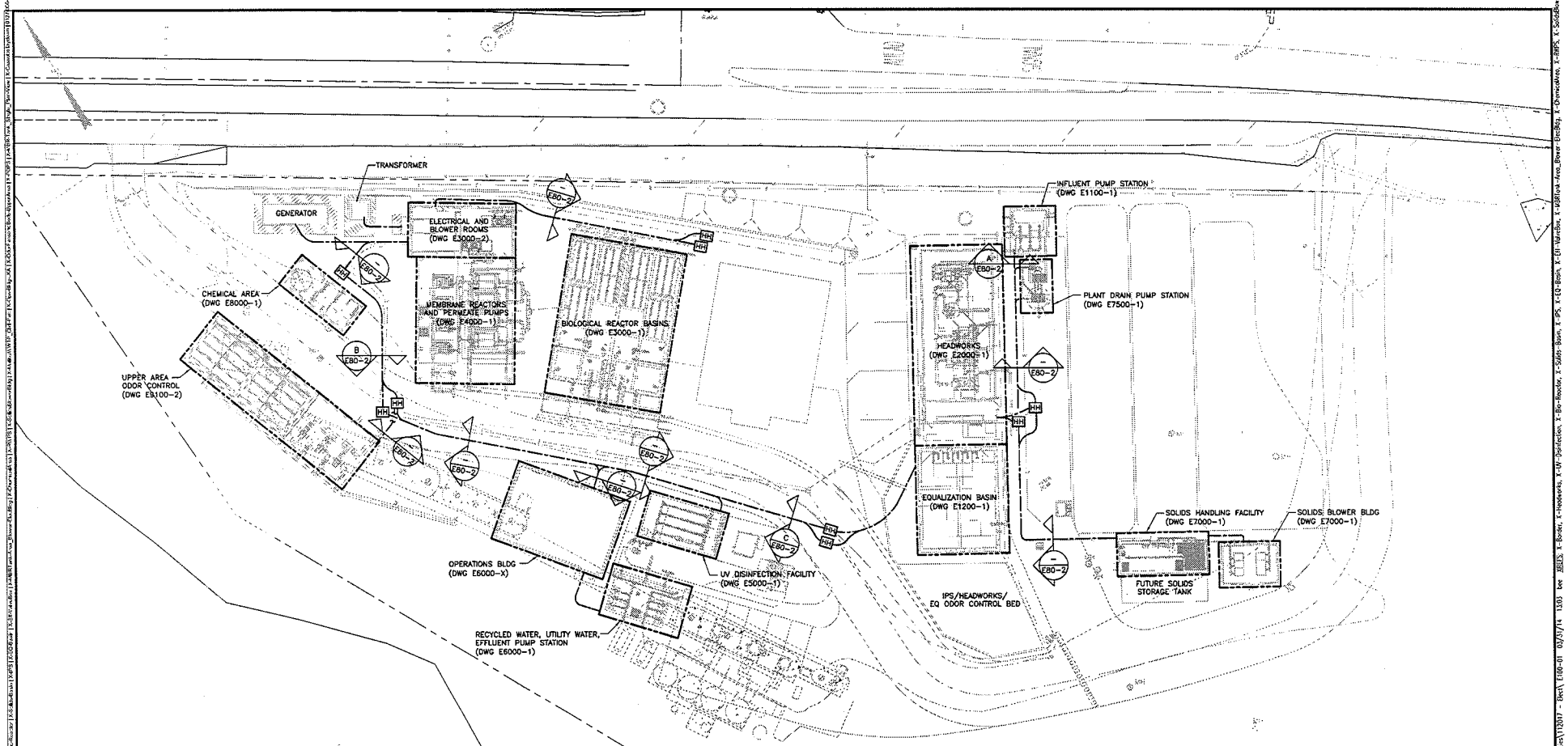

SITE PLAN
1" = 20'-0"

SCALE: 1"=20'
0 20 40 60
SCALE IN FEET

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

ELECTRICAL SITE PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE, CALL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14767 Exp. 12/31/2014

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W. DUYANG	DATE 06/2013	SCALE	APPROVED BY:	DATE
DRAWN BY: B. VUE	DATE 06/2013	AS SHOWN		XX-XX-13
CHECKED BY: M. ERWIN	DATE 06/2013	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014	

Plan No. E100-1 — Sheet ____ of XXX Sheets

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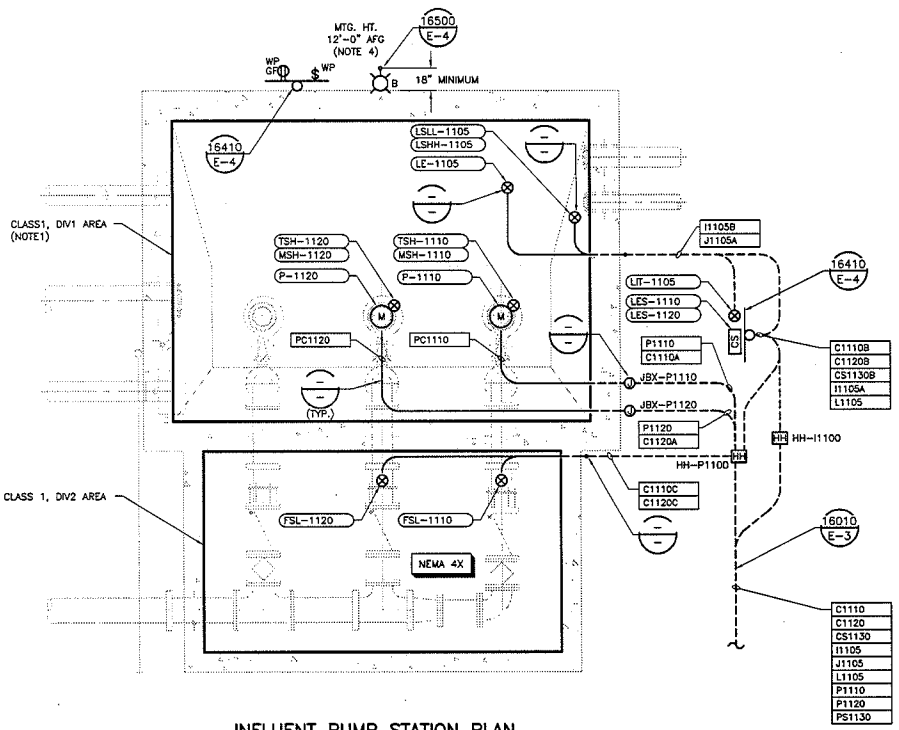

INFLUENT PUMP STATION PLAN

1/2" = 1'-0"

NOTES:

1. CONDUIT SEALS SHALL BE INSTALLED IN EACH CONDUIT RUN PASSING FROM A CLASSIFIED AREA (CLASS 1, DIV 1 OR DIV 2) INTO AN UNCLASSIFIED AREA. THE CONDUIT SEAL SHALL BE LOCATED WITHIN 10 FEET OF THE CLASSIFIED BOUNDARY. THERE SHALL BE NO UNION, COUPLING, BOX, OR FITTING BETWEEN THE CONDUIT SEAL AND THE POINT AT WHICH THE CONDUIT LEAVES THE CLASSIFIED AREA. FOR CLARITY, THE CONDUIT SEALS ARE NOT SHOWN ON THE DRAWING. REFER TO NEC ARTICLE 501.15 SEALING AND DRAINAGE FOR ADDITIONAL REQUIREMENTS.

2. CLASS 1, DIVISION 1 BOUNDARY:
   a. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.
   b. 3 FEET AROUND AND 1.5 FEET ABOVE ANY HATCH WITHIN THE CLASS 1, DIV 1 AREA.
   c. 3 FEET ENVELOPE AROUND ANY OPENING WITHIN THE CLASS 1, DIV 1 AREA.

3. CLASS 1, DIVISION 2 BOUNDARY:
   a. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 2 AREA.
   b. 5 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.

4. MOUNTED HEIGHT MEASURED TO THE BOTTOM OF THE LIGHTING FIXTURE.

DIAL BEFORE YOU DIG 1-800-227-2133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INFLUENT PUMP STATION AND
POWER, SIGNAL, AND LIGHTING PLAN

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE AS SHOWN	APPROVED BY: / DATE
DRAWN BY:	DATE 06/2013		XX-XX-13
CHECKED BY: M. ERWIN	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E1100-1 Sheet ____ of XXX Sheets

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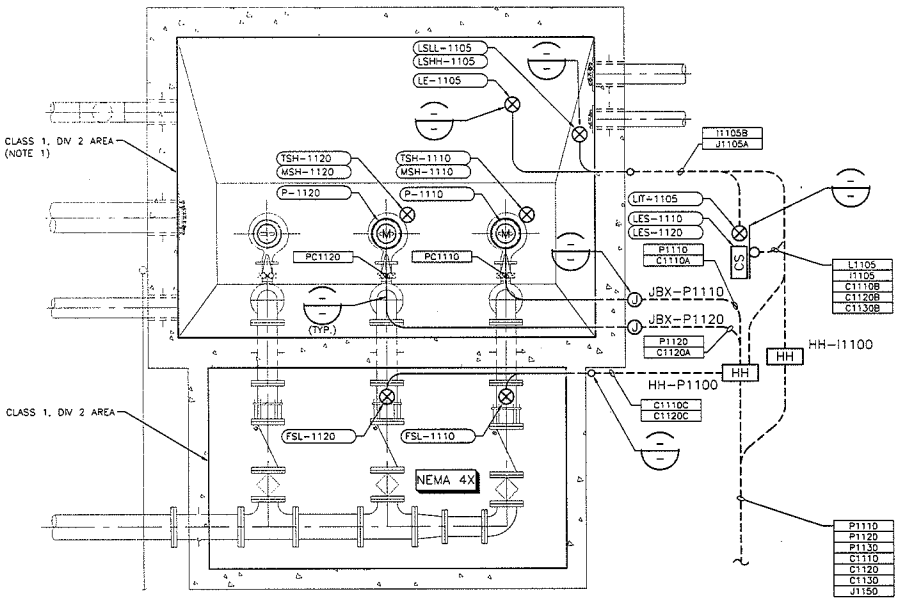

BOTTOM PLAN
1/2" = 1'-0"

NOTES:

1. CONDUIT SEALS SHALL BE INSTALLED IN EACH CONDUIT RUN PASSING FROM A CLASSIFIED AREA (CLASS 1, DIV 1 OR DIV 2) INTO AN UNCLASSIFIED AREA. THE CONDUIT SEAL SHALL BE LOCATED WITHIN 10 FEET OF THE CLASSIFIED BOUNDARY. THERE SHALL BE NO UNION, COUPLING, BOX, OR FITTING BETWEEN THE CONDUIT SEAL AND THE POINT AT WHICH THE CONDUIT LEAVES THE CLASSIFIED AREA. FOR CLARITY, THE CONDUIT SEALS ARE NOT SHOWN ON THE DRAWING. REFER TO NEC ARTICLE 501.15 SEALING AND DRAINAGE FOR ADDITIONAL REQUIREMENTS.

2. CLASS 1, DIVISION 1 BOUNDARY:
   a. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.
   b. 3 FEET AROUND AND 1.5 FEET ABOVE ANY HATCH WITHIN THE CLASS 1, DIV 1 AREA.
   c. 3 FEET ENVELOPE AROUND ANY OPENING WITHIN THE CLASS 1, DIV 1 AREA.

3. CLASS 1, DIVISION 2 BOUNDARY:
   a. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 2 AREA.
   b. 5 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.

DIAL BEFORE YOU DIG
DIGALERT
PLAN IT SAFE, DIG BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NRS. SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN
No. P 14767
REG. 12/31/14

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INFLUENT PUMP STATION AND
POWER, SIGNAL, AND LIGHTING PLAN

DESIGNED BY: M.Hoeft	DATE 06/2013	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE XX-XX-13
DRAWN BY: M.Feyle	DATE 06/2013		
CHECKED BY: M.Nakamoto	DATE 06/2013	PROJECT NUMBER XXXX	

Plan No. E1100-1 Sheet ____ of XXX Sheets

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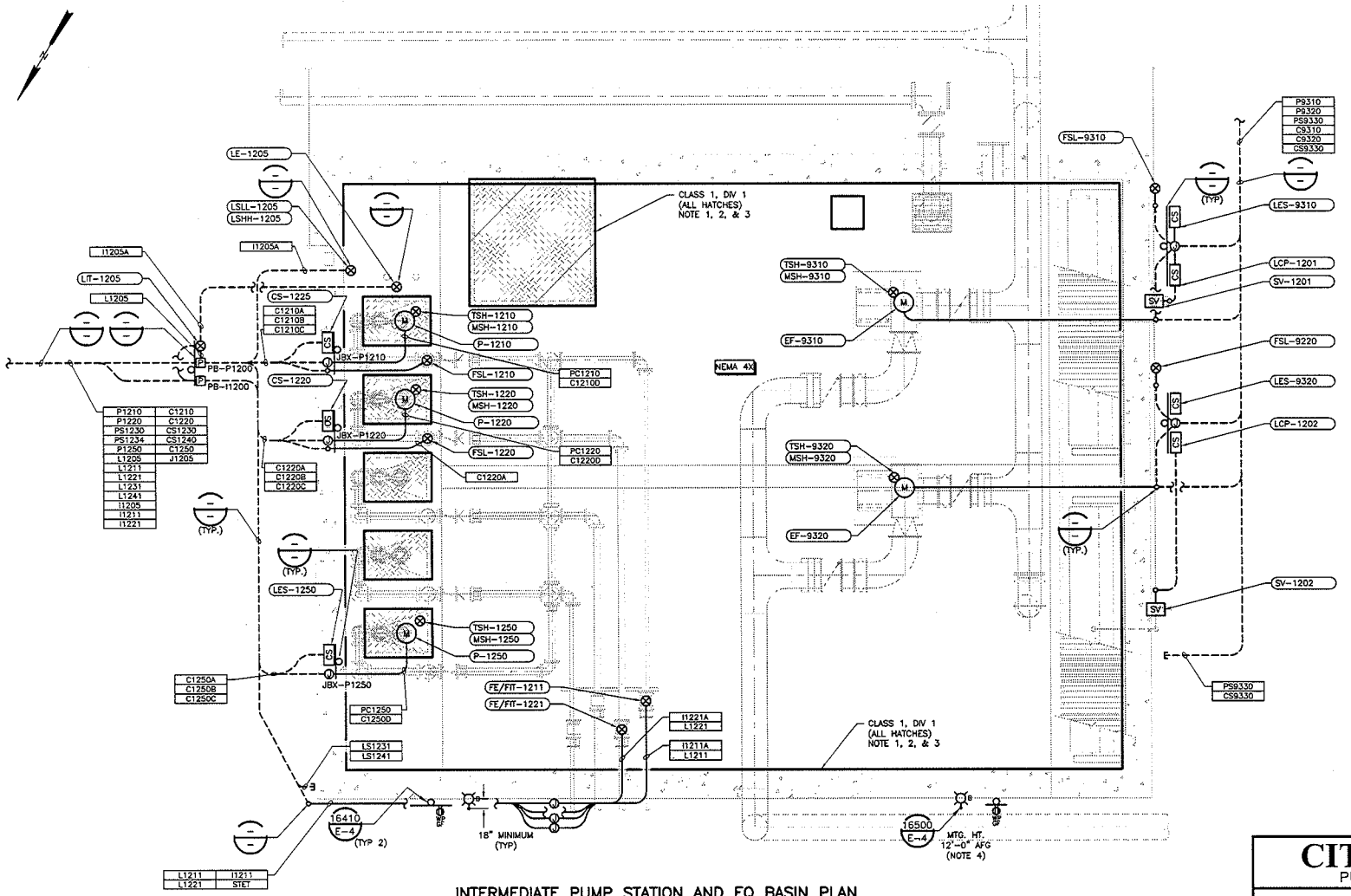
Last Saved By: snguyen 1-30-14 9:10am



INTERMEDIATE PUMP STATION AND EQ BASIN PLAN

3/8" = 1'-0"

NOTES:

1. CONDUIT SEALS SHALL BE INSTALLED IN EACH CONDUIT RUN PASSING FROM A CLASSIFIED AREA (CLASS 1, DIV 1 OR DIV 2) INTO AN UNCLASSIFIED AREA. THE CONDUIT SEAL SHALL BE LOCATED WITHIN 10 FEET OF THE CLASSIFIED BOUNDARY. THERE SHALL BE NO UNION, COUPLING, BOX, OR FITTING BETWEEN THE CONDUIT SEAL AND THE POINT AT WHICH THE CONDUIT LEAVES THE CLASSIFIED AREA. FOR CLARITY, THE CONDUIT SEALS ARE NOT SHOWN ON THE DRAWING. REFER TO NEC ARTICLE 501.15 SEALING AND DRAINAGE FOR ADDITIONAL REQUIREMENTS.
2. CLASS 1, DIVISION 1 BOUNDARY:
   a. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.
   b. 3 FEET AROUND AND 1.5 FEET ABOVE ANY HATCH WITHIN THE CLASS 1, DIV 1 AREA.
   c. 3 FEET ENVELOPE AROUND ANY OPENING WITHIN THE CLASS 1, DIV 1 AREA.
3. CLASS 1, DIVISION 2 BOUNDARY:
   a. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 2 AREA.
   b. 5 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.
4. MOUNTED HEIGHT MEASURED TO THE BOTTOM OF THE LIGHTING FIXTURE.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INTERMEDIATE PUMP STATION AND EQ BASIN POWER, SIGNAL, AND LIGHTING PLAN

DESIGNED BY:	DATE	SCALE
W. OUYANG	06/2013	AS SHOWN
DRAWN BY:	DATE	XX-XX-13
	06/2013	
CHECKED BY:	DATE	PROJECT NUMBER
M. ERWIN	06/2013	XXXX

APPROVED BY: DATE

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. E1200-1 Sheet _____ of XXX Sheets

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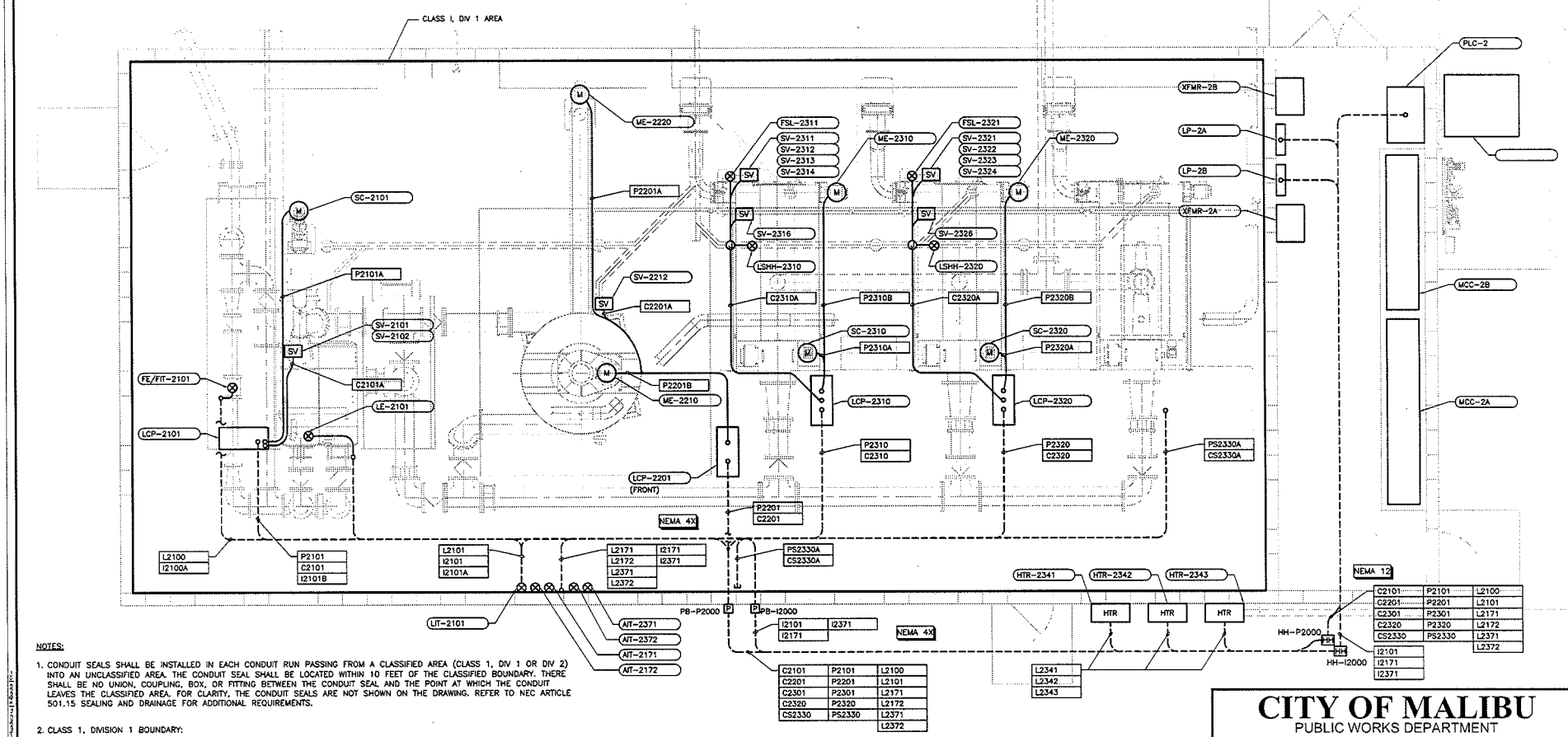

NOTES:

1. CONDUIT SEALS SHALL BE INSTALLED IN EACH CONDUIT RUN PASSING FROM A CLASSIFIED AREA (CLASS 1, DIV 1 OR DIV 2) INTO AN UNCLASSIFIED AREA. THE CONDUIT SEAL SHALL BE LOCATED WITHIN 10 FEET OF THE CLASSIFIED BOUNDARY. THERE SHALL BE NO UNION, COUPLING, BOX, OR FITTING BETWEEN THE CONDUIT SEAL AND THE POINT AT WHICH THE CONDUIT LEAVES THE CLASSIFIED AREA. FOR CLARITY, THE CONDUIT SEALS ARE NOT SHOWN ON THE DRAWING. REFER TO NEC ARTICLE 501.15 SEALING AND DRAINAGE FOR ADDITIONAL REQUIREMENTS.

2. CLASS 1, DIVISION 1 BOUNDARY:
   a. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.
   b. 3 FEET AROUND AND 1.5 FEET ABOVE ANY HATCH WITHIN THE CLASS 1, DIV 1 AREA.
   c. 3 FEET ENVELOPE AROUND ANY OPENING WITHIN THE CLASS 1, DIV 1 AREA.

3. CLASS 1, DIVISION 2 BOUNDARY:
   a. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 2 AREA.
   b. 5 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.

HEADWORKS PLAN
3/8" = 1'-0"

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — REG. 12/31/2013

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

HEADWORKS
POWER, SIGNAL, AND LIGHTING PLAN

DESIGNED BY: W.OUYANG	DATE 06/2013	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. — DATE XX-XX-13
DRAWN BY:	DATE 06/2013	AS SHOWN	PUBLIC WORKS DIRECTOR/CITY ENGINEER
CHECKED BY: M.ERWIN	DATE 06/2013	PROJECT NUMBER XXXX	RCE NO. 52102 EXP. 12/31/2014

Plan No. E2000-1 — Sheet ____ of XXX Sheets

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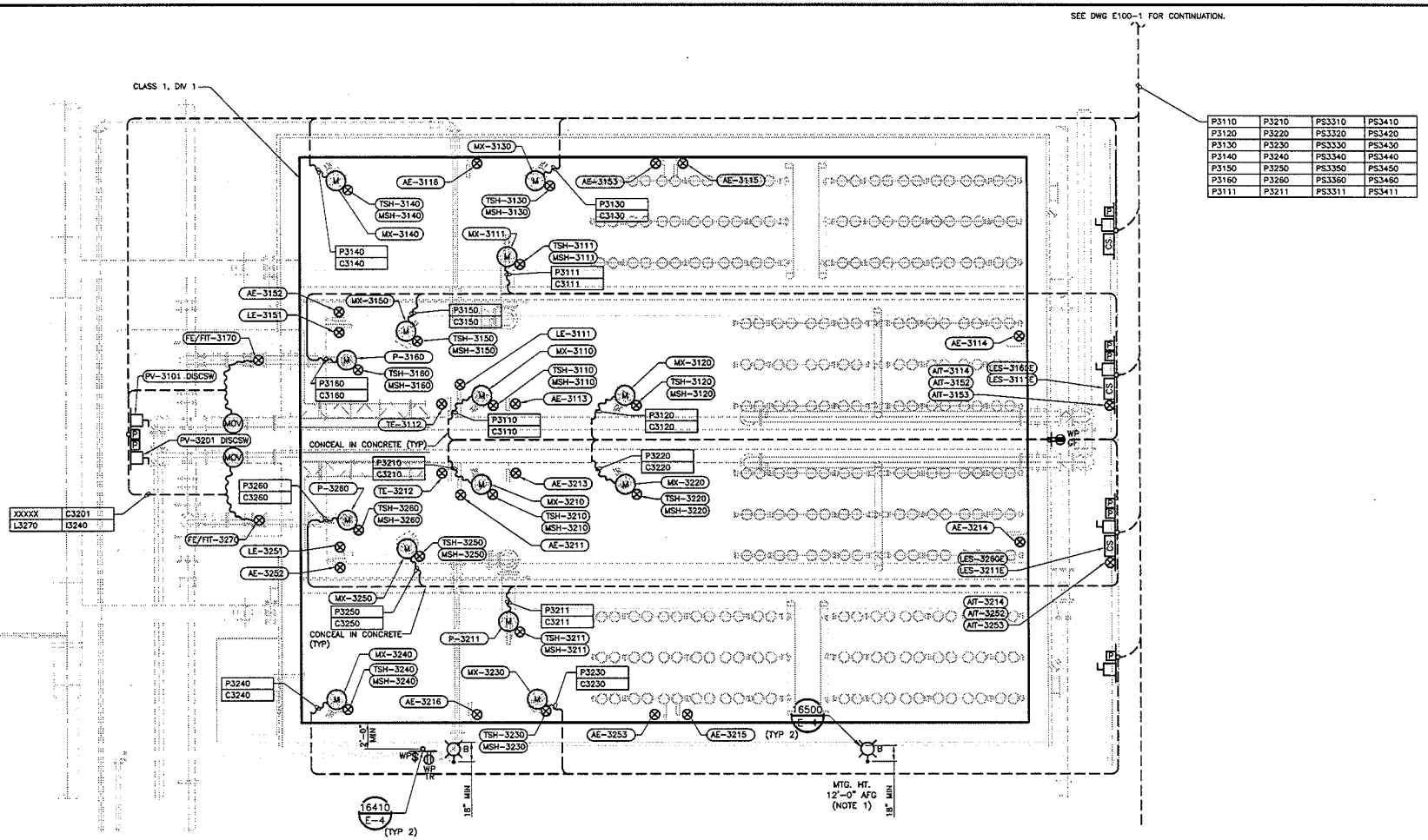

NOTES:

1. MOUNTING HEIGHTS MEASURED TO THE BOTTOM OF THE LIGHTING FIXTURE.

BIOLOGICAL REACTOR PLAN

1/4" = 1'-0"

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BIOLOGICAL REACTOR
POWER, SIGNAL, AND LIGHTING PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14767 Exp. 12/31/14

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-13
DRAWN BY:	DATE 06/2013		
CHECKED BY: W. ERWIN	DATE 06/2013	PROJECT NUMBER 2036	

Plan No. E3000-1 — Sheet ____ of XXX Sheets

Last Saved By: anedra 3-31-14 01:30pm

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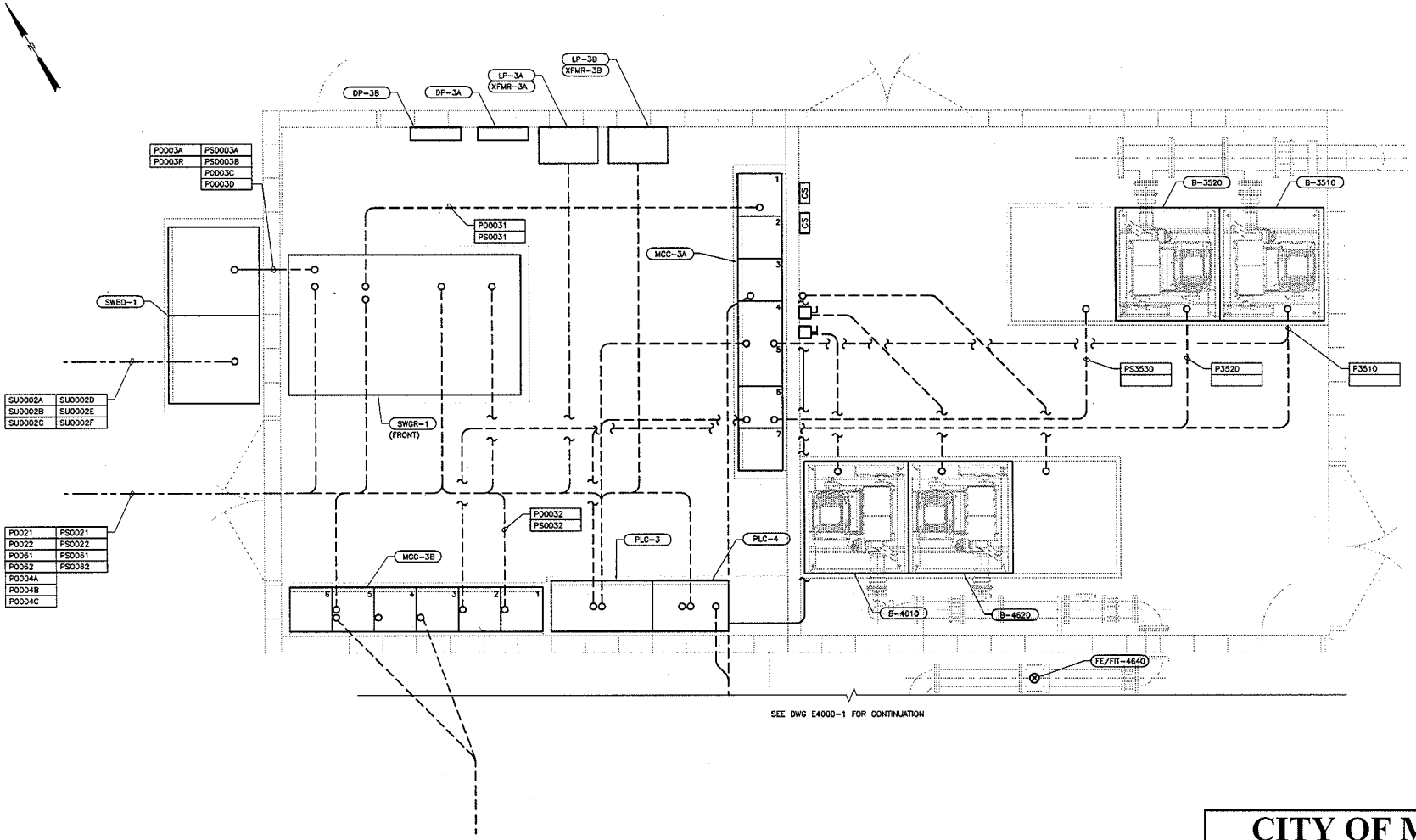

ELECTRICAL AND BLOWER ROOM PLAN

1/2" = 1'-0"

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BLOWER AND ELECTRICAL ROOM LAYOUT

DIAL BEFORE YOU DIG 1-800-227-2600 — DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W.OUYANG	DATE 06/2013	SCALE	APPROVED BY: / DATE
DRAWN BY:	DATE 06/2013	AS SHOWN	XX-XX-13
CHECKED BY: M.ERWIN	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E3000-2 — Sheet ____ of XXX Sheets

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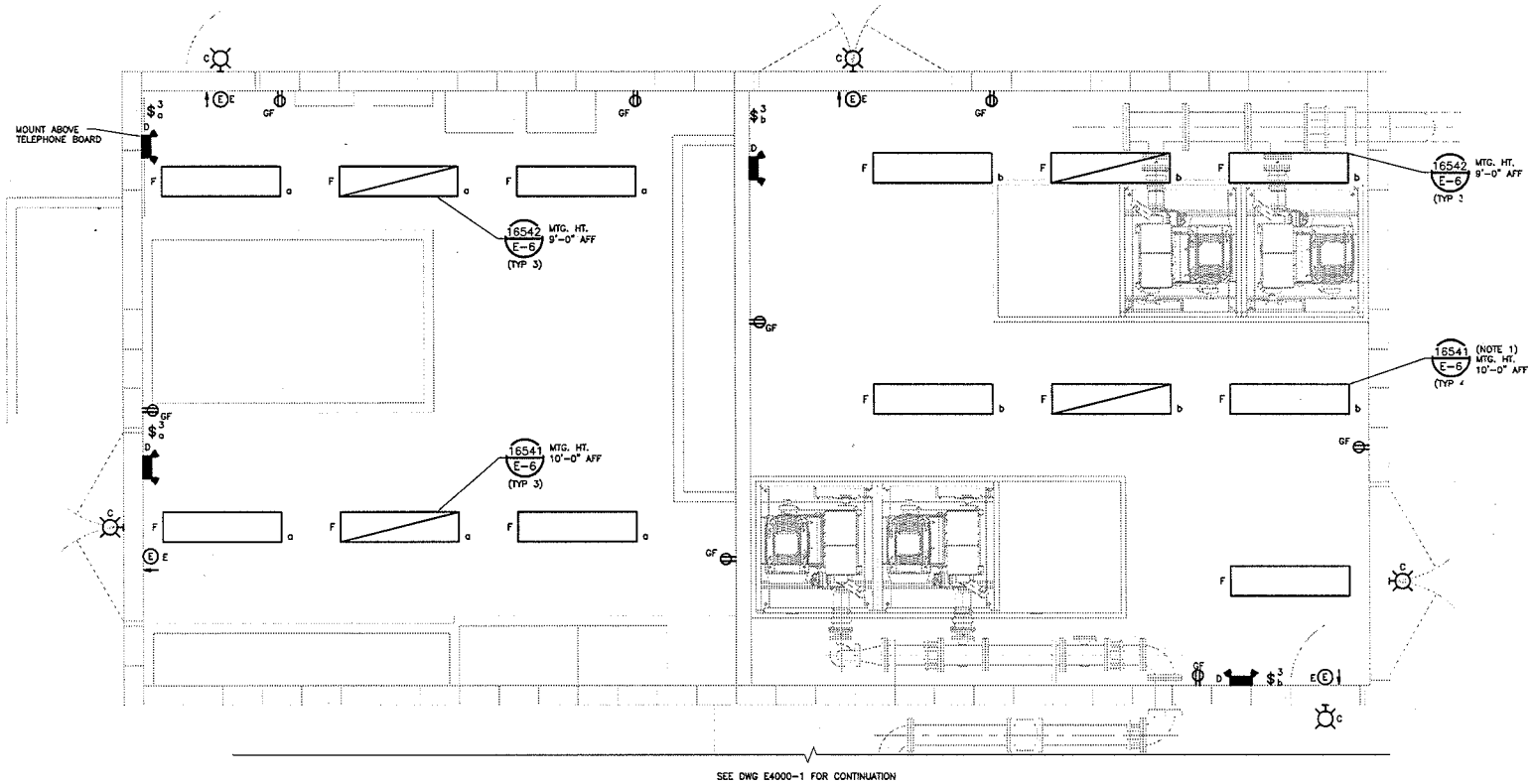

ELECTRICAL AND BLOWER ROOM PLAN
1/2" = 1'-0"

NOTES:

1. MOUNTING HEIGHTS MEASURED TO THE BOTTOM OF THE LIGHTING FIXTURE.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BLOWER AND ELECTRICAL ROOM LAYOUT
LIGHTING PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: L.JACKSON	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: B.VUE	DATE 06/2013	AS SHOWN	XX-XX-13
CHECKED BY: M.ERWIN	DATE 06/2013	PROJECT MANAGER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E3000-3 Sheet _____ of XXX Sheets

Last Saved By: bon 3-18-14 01:52pm

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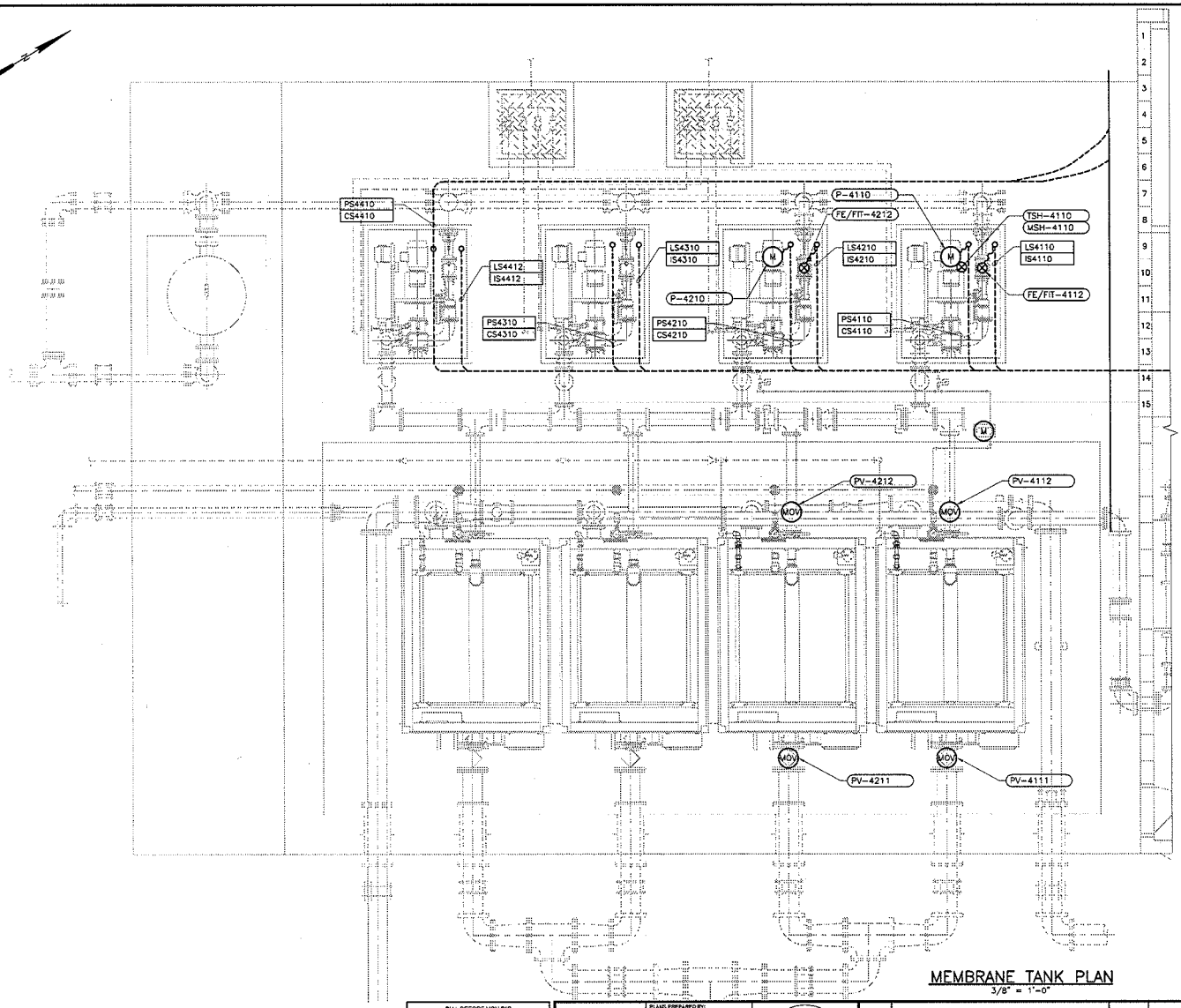

MEMBRANE TANK PLAN
3/8" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MEMBRANE TANK AREA
POWER, SIGNAL, AND LIGHTING PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE. CALL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING THE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14760 EXP. 6/30/15

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W.OUYANG	DATE 06/2013	SCALE	APPROVED BY:
DRAWN BY:	DATE 06/2013	AS SHOWN	DATE XX-XX-13
CHECKED BY: M.ERWIN	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E4000-1 | Sheet _____ of XXX Sheets

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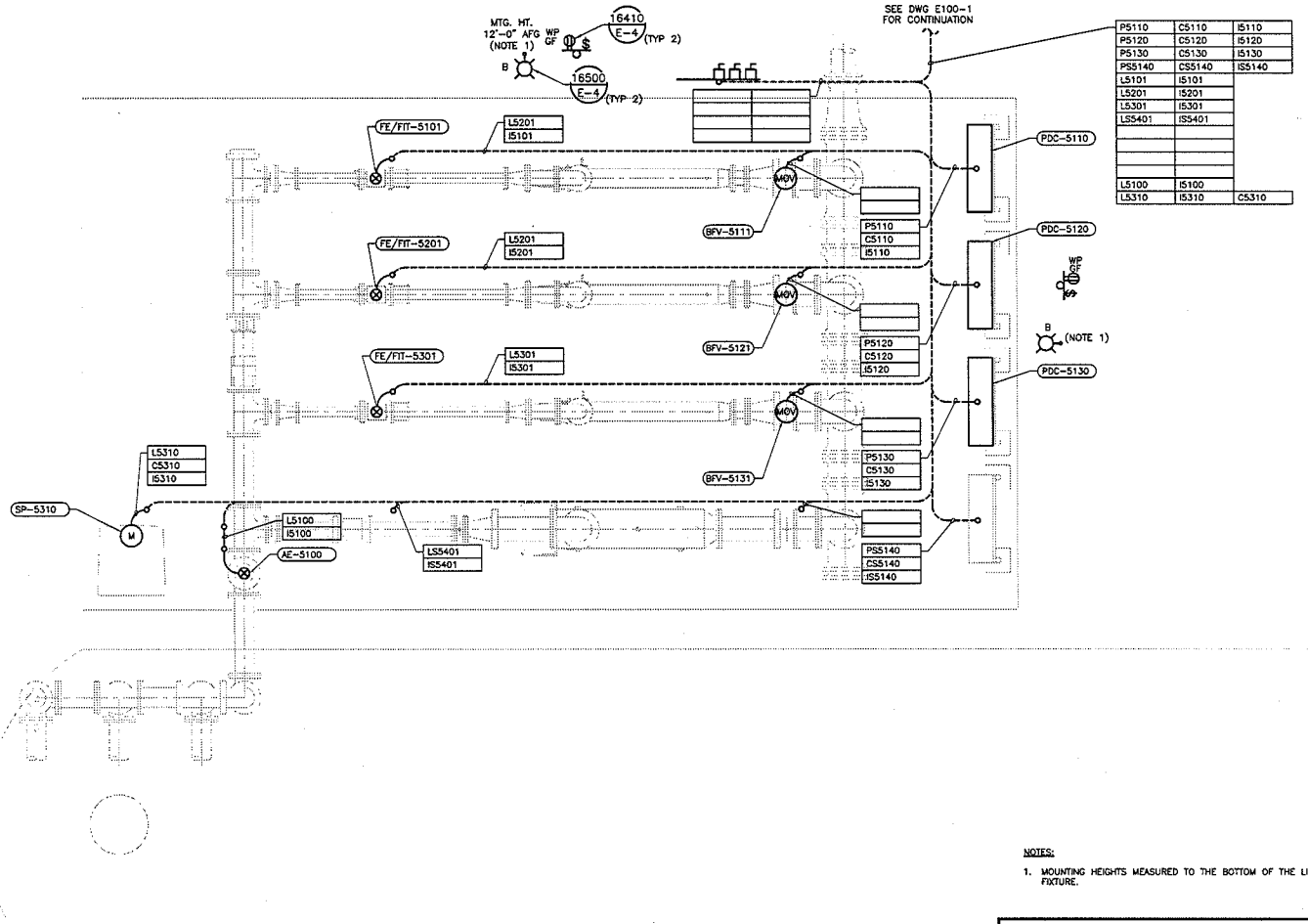

PLAN
1/2" = 1'-0"

NOTES:

1. MOUNTING HEIGHTS MEASURED TO THE BOTTOM OF THE LIGHTING FIXTURE.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

UV DISINFECTION AREA
POWER, SIGNAL, AND LIGHTING PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NPC SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14757 EXP. 6/30/14

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W.OUYANG	DATE 08/2013	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE
DRAWN BY:	DATE 08/2013		XX-XX-13
CHECKED BY: M.ERWIN	DATE 08/2013	PROJECT NUMBER 2036	
Plan No. E5000-1			Sheet ____ of XXX Sheets

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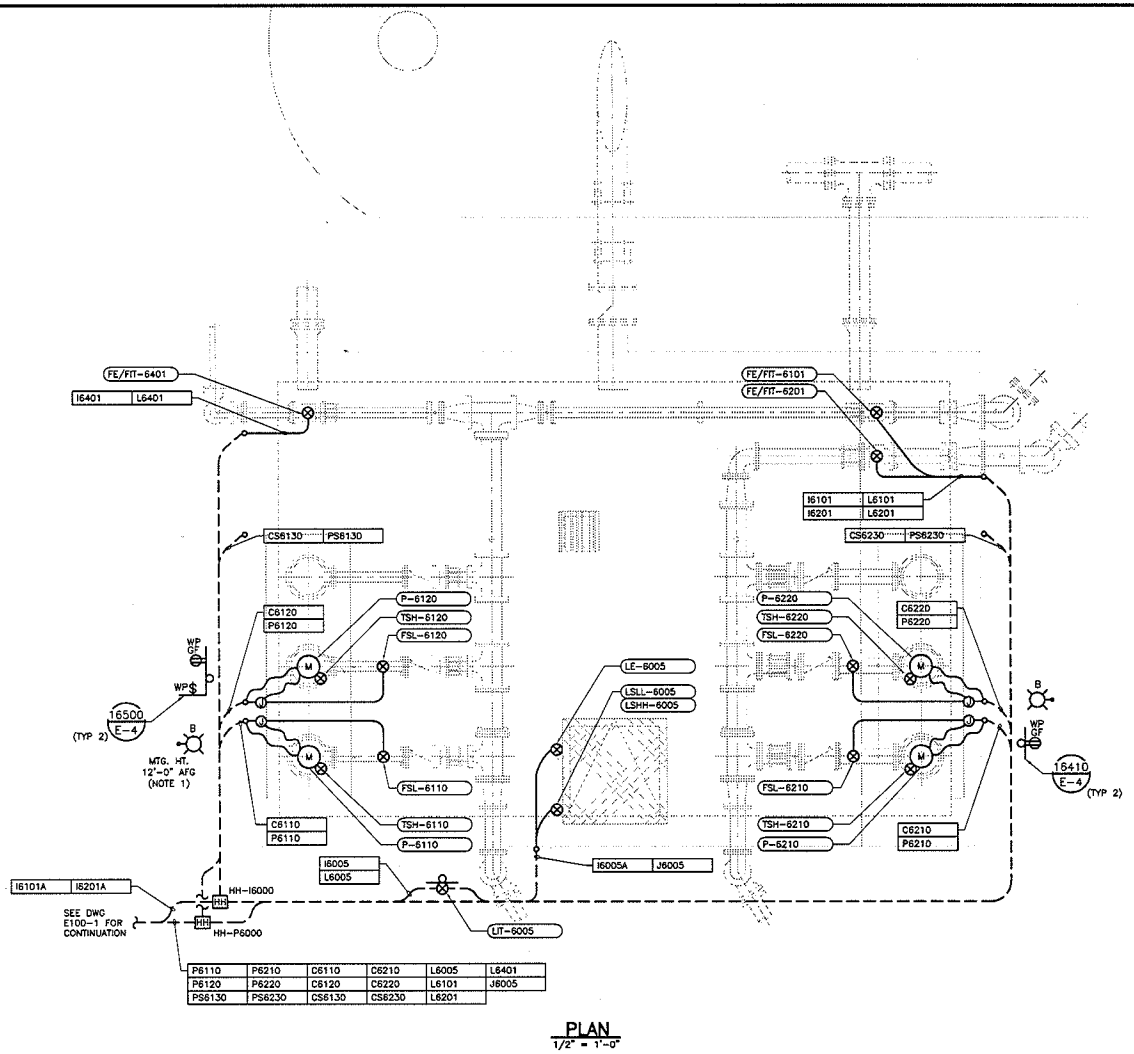

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P6120	P6220	C6120	C6220	L6101	J6005
PS6130	PS6230	CS6130	CS6230	L6201	

PLAN
1/2" = 1'-0"

NOTES:

1. MOUNTING HEIGHTS MEASURED TO THE BOTTOM OF THE LIGHTING FIXTURE.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

RECYCLED WATER/UTILITY WATER/EFFLUENT PS
POWER, SIGNAL, AND LIGHTING PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14783 EXP. 12/31/14

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W. OUYANG	DATE 06/2013	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE
DRAWN BY:	DATE 06/2013	XX-XX-13	
CHECKED BY: M. ERWIN	DATE 06/2013	PROJECT NUMBER 2036	

Plan No. E6000-1

Sheet _____ of XXX Sheets

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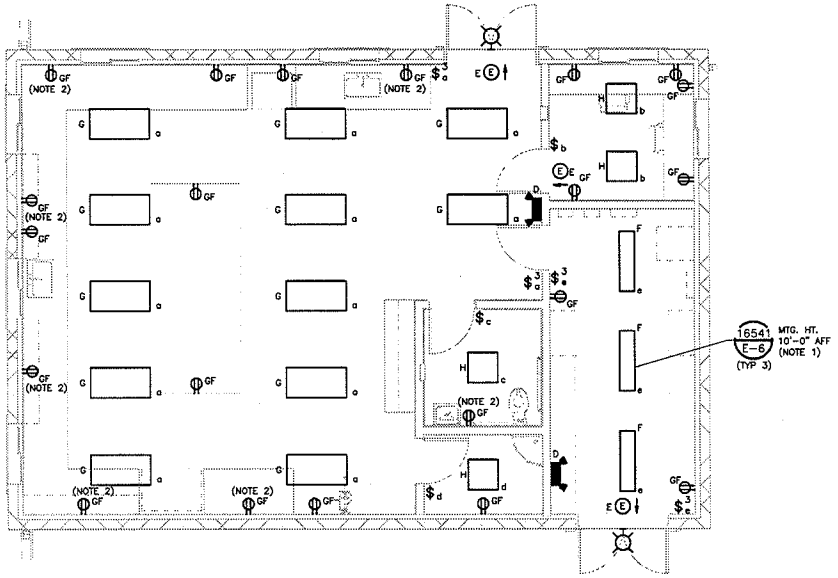

OPS BUILDING PLAN
1/4" = 1'-0"

NOTES:

1. MOUNTING HEIGHTS MEASURED TO THE BOTTOM OF THE LIGHTING FIXTURE.
2. MOUNT RECEPTACLE ABOVE COUNTER TOP/CERAMIC TILE (WHERE OCCURS).

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

OPS BLDG - ELECTRICAL ROOM LAYOUT

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14767 Exp. 12/31/14

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: L.JACKSON	DATE 06/2013	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-13
DRAWN BY: B.VUE	DATE 06/2013		
CHECKED BY: M.ERWIN	DATE 06/2013	PROJECT NUMBER 2036	

Plan No. E6000-2 | Sheet ____ of XXX Sheets

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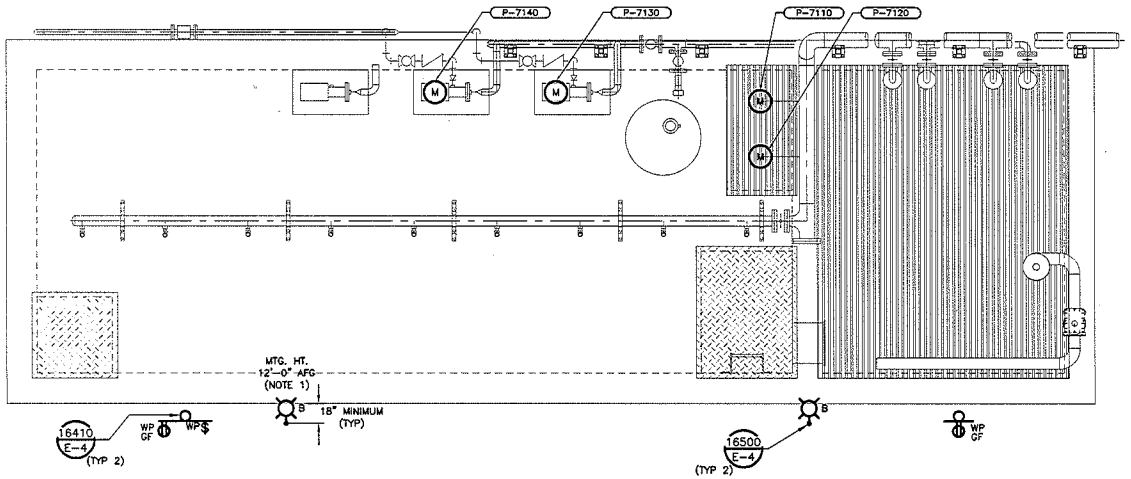

SOLIDS STORAGE PLAN
1/2" = 1'-0"

NOTES:

1. MOUNTING HEIGHTS MEASURED TO THE BOTTOM OF THE LIGHTING FIXTURE.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS STORAGE FACILITY
POWER, SIGNAL, AND LIGHTING PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" — 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — EXP. 12/31/14

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W.OUYANG	DATE 06/2013	SCALE 1/2" = 1'-0"	APPROVED BY:
DRAWN BY:	DATE 06/2013		DATE XX-XX-13
CHECKED BY: M.ERWIN	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
Plan No. E7000-1			Sheet ____ of XXX Sheets

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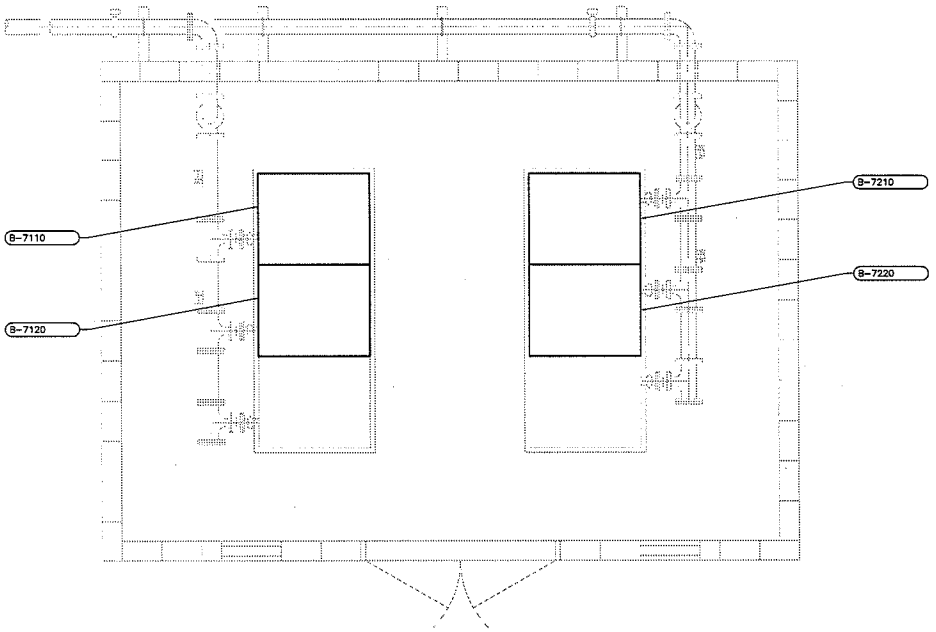

PLAN
1/2" = 1'-0"

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SOLIDS AREA BLOWER BUILDING
POWER, SIGNAL, AND LIGHTING PLAN

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE. DIG BEFORE YOU DIG. AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING. SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN
No. E 14757
PROF. ENGR.

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: W.OUYANG	DATE 06/2013	SCALE	APPROVED BY: / DATE
DRAWN BY:	DATE 06/2013	1/2" = 1'-0"	XX-XX-13
CHECKED BY: W.ERWIN	DATE 06/2013	PROJECT NUMBER 2035	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E7000-2 | Sheet _____ of XXX Sheets

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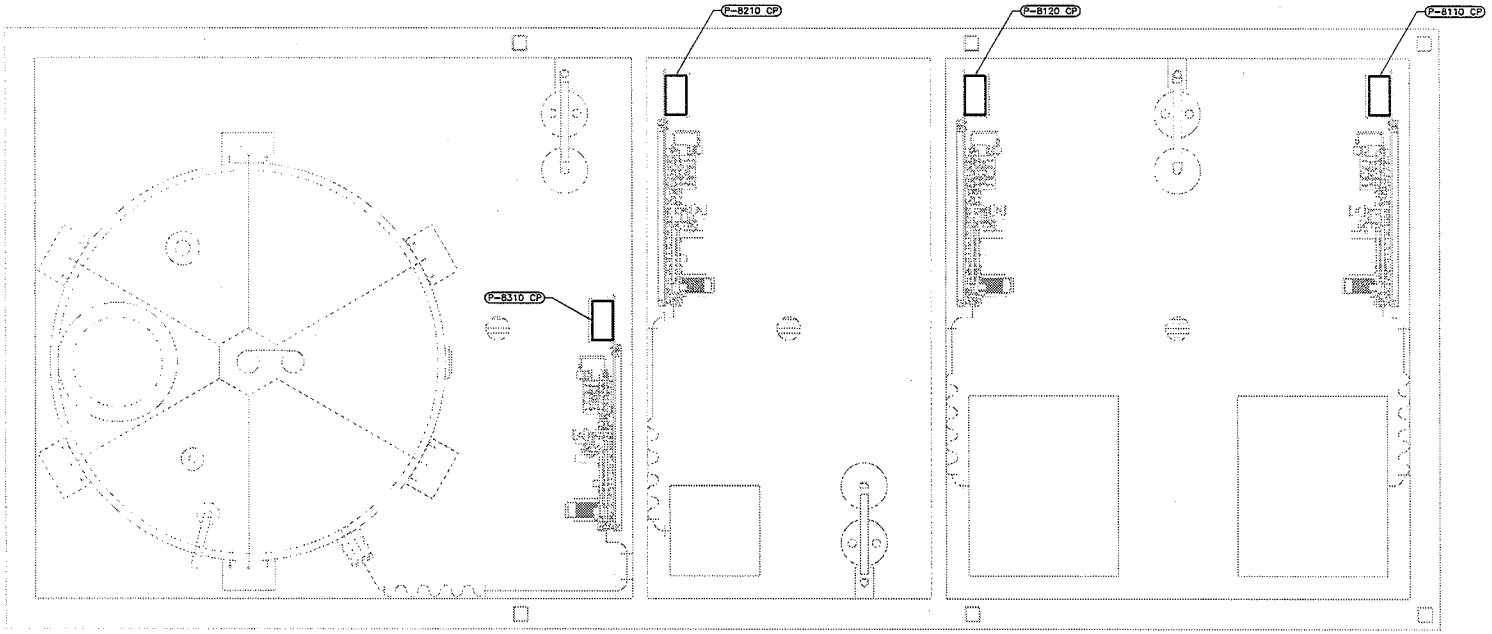

PLAN
3/4" = 1'-0"

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IT SAFE, DIAL BEFORE YOU DIG!
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NW & SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES —
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN
No. E 14767

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CHEMICAL AREA
POWER, SIGNAL, AND LIGHTING PLAN

DESIGNED BY: W.OUYANG	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY:	DATE 06/2013	AS SHOWN	XX-XX-13
CHECKED BY: M.ERWIN	DATE 06/2013	PROJECT MANAGER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. E8000-1 Sheet _____ of XXX Sheets

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DRAWING SYMBOLS

GENERAL INSTRUMENT OR FUNCTION SYMBOLS

	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	PRIMARY AUXILIARY LOCATION NORMALLY NOT ACCESSIBLE TO OPERATOR	SECONDARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	SECONDARY AUXILIARY LOCATION NORMALLY NOT ACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	XX / ZZ	XX / ZZ	XX / ZZ	XX / ZZ	XX / ZZ
COMPUTER FUNCTION, SHARED DISPLAY, OR CONTROL (NOTE 5)	XX / ZZ	N/A	XX / ZZ	XX / ZZ	XX / ZZ
PROGRAMMABLE LOGIC CONTROLLER	XX / ZZ	N/A	XX / ZZ	XX / ZZ	XX / ZZ
PILOT LIGHT	XX / ZZ	XX / ZZ	N/A	XX / ZZ	N/A

INDICATES HAVING A SINGLE INSTRUMENT OR OTHER COMPONENT HAVING MULTIPLE FUNCTIONS IN COMMON DEVICE

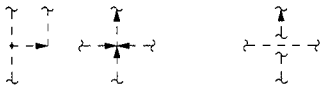
XXXX — INDICATES MOTOR STARTER, INTERLOCK, OR LOGIC AT MOTOR CONTROL CENTER; XXXX – MCC DESIGNATION

XXXX — INDICATES MOTOR STARTER, INTERLOCK, OR LOGIC IN LOCAL CONTROL PANEL (REFER TO CONTROL DESCRIPTIONS AND/OR CONTROL SCHEMATICS); XXXX – PANEL DESIGNATION

XXXX — INDICATES VARIABLE FREQUENCY DRIVE IN LOCAL CONTROL PANEL, MOTOR CONTROL CENTER, OR DRIVE ENCLOSURE; XXXX – VFD DESIGNATION OR LOCATION

INSTRUMENT LINE SYMBOLS

- ELECTRICAL SIGNAL
- LOGICAL SIGNAL PATH (ETHERNET SOFTWARE LINK)
- FIBER OPTIC SIGNAL
- INSTRUMENT SENSING LINE OR CONNECTION TO PROCESS
- EXISTING LINES TO REMAIN IN PLACE (ELECTRICAL SIGNAL SHOWN – TYPICAL FOR OTHER SIGNALS)



CONNECTING LINES — NON-CONNECTING LINES

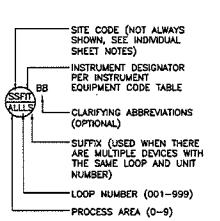
CONTROLLER INPUT/OUTPUT (I/O) SYMBOLS

ANALOG INPUT (AI) — ANALOG OUTPUT (AO) — DIGITAL INPUT (DI) — DIGITAL OUTPUT (DO)

INSTRUMENT EQUIPMENT CODE TABLE

	FIRST LETTER: MEASURED OR INITIATING VARIABLE	FIRST LETTER: MODIFIER	SUCCEEDING LETTERS: READOUT OR PASSIVE FUNCTION	SUCCEEDING LETTERS: OUTPUT FUNCTION	SUCCEEDING LETTERS: MODIFIER
A	ANALYSIS		ALARM		
B	BURNER		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	CLOSE
D	USER'S CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO			
G	USER'S CHOICE		SIGHT GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATOR		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME, RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, OR PRESENCE	Y AXIS		RELAY, COMPUTE, OR CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

TYPICAL INSTRUMENTATION TAGGING



PROCESS AREAS

0 OPERATIONS 1 SITE
1 INFLUENT PS
2 HEADWORKS
3 BIO REACTORS/ELECTRICAL
4 MBR
5 UV SYSTEM
6 RECYCLED WATER
7 SOLIDS
8 CHEMICALS
9 ODOR CONTROL

CLARIFYING ABBREVIATIONS

%LEL COMBUSTIBLE GAS
DO DISSOLVED OXYGEN
CL2 RESIDUAL CHLORINE
H2S HYDROGEN SULFIDE
NO3 NITRATES
NTU TURBIDITY
O2 OXYGEN
SST SUSPENDED SOLIDS

HAND SWITCHES

SELECTOR SWITCH

CLARIFYING ABBREVIATIONS

ACK ACKNOWLEDGE
C CLOSE
FSOA FAST – SLOW – OFF – AUTO
FSOR FAST – SLOW – OFF – REMOTE
HOA HAND – OFF – AUTOMATIC
HOR HAND – OFF – REMOTE
LES LOCAL EMERGENCY STOP
LOR LOCAL – OFF – REMOTE
LR LOCAL – REMOTE
MA MANUAL – AUTO
O/C OPEN / CLOSE
O/O ON / OFF
O OPEN
OOA ON – OFF – AUTO
OOR ON – OFF – REMOTE
RST RESET
S/F SLOW / FAST
S/S START / STOP
SIL SILENCE
STRT START
STOP STOP
TEST TEST

GENERAL SHEET NOTES

1. THIS IS A GENERAL P&ID LEGEND SHEET. SOME SYMBOLS OR NOTATIONS SHOWN MAY NOT BE USED ON THIS PROJECT.
2. EXISTING EQUIPMENT AND PROCESS PIPING AND STRUCTURES ARE SHOWN SCREENED BACK.
3. ALL NECESSARY VALVES ARE NOT SHOWN ON THE P&ID'S FOR CLARITY. PROVIDE ISOLATION VALVES ON ALL SAMPLE LINES TO SENSORS, THREE-VALVE MANIFOLDS FOR ALL ABSOLUTE AND GAUGE PRESSURE TRANSMITTERS, AND FIVE-VALVE MANIFOLDS FOR ALL DIFFERENTIAL PRESSURE TRANSMITTERS.

ABBREVIATIONS AND LETTER SYMBOLS

AC ALTERNATING CURRENT
AI ANALOG INPUT
ANN ANNUNCIATOR
AO ANALOG OUTPUT
AVG AVERAGE
CLG CHLORINE GAS
CL2 CHLORINE (TYP – USE STANDARD CHEMICAL ELEMENT ABBREV.)
CP CONTROL PANEL
CR CONTROL RELAY
DC DIRECT CURRENT
DCS DISTRIBUTED CONTROL SYSTEM
DCU DISTRIBUTED CONTROL UNIT
DI DISCRETE INPUT
DO DISCRETE OUTPUT OR DISSOLVED OXYGEN
DS PUMP ROOM SUMP DRAIN
FCL FREE CHLORINE RESIDUAL
FD FLOOR DRAIN
FM FORCE MAIN
HMI HUMAN MACHINE INTERFACE
I INTERLOCK
I/O INPUT/OUTPUT
ISB INTRINSICALLY SAFE BARRIER
ISR INTRINSICALLY SAFE RELAY
LAN LOCAL AREA NETWORK
LEL LOWER EXPLOSIVE LIMIT
LOP LOCAL OPERATION PANEL
MCC MOTOR CONTROL CENTER
MLC MULTILOOP CONTROLLER
MOD MODULATING
MTD MOUNTED
MUX MULTIPLEXER
NO3 NITRATES
O/C OPEN/CLOSE
OIP OPERATOR INTERFACE PANEL
OIT OPERATOR INTERFACE TERMINAL
ORP OXIDATION REDUCTION POTENTIAL
OL OVERLOAD
pH HYDROGEN ION CONCENTRATION
PLC PROGRAMMABLE LOGIC CONTROLLER
RIO REMOTE PLC INPUT/OUTPUT RACK
RTD RESISTANCE TEMPERATURE DETECTOR
RTU REMOTE TELEMETRY UNIT
RW RAW WATER; RECYCLED WATER
S SEWER
SCADA SUPERVISORY CONTROL AND DATA ACQUISITION
SCD STREAMING CURRENT DETECTOR
TD TIME DELAY
TDOD TIME DELAY ON DE-ENERGIZATION
TDOE TIME DELAY ON ENERGIZATION
TURB TURBIDIMETER
TVSS TRANSIENT VOLTAGE SUREGE SUPPRESSOR
UPS UNINTERRUPTIBLE POWER SUPPLY
VFD VARIABLE FREQUENCY DRIVE
VHC VOLATILE HYDROCARBONS
VIB VIBRATION
VOC VOLATILE ORGANIC COMPOUNDS
WAN WIDE AREA NETWORK
Δ DIFFERENCE
Σ SUM
× MULTIPLY
÷ DIVIDE
√ SQUARE ROOT
> SELECT HIGHEST SIGNAL
< SELECT LOWEST SIGNAL

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS & INSTRUMENTATION DIAGRAMS & ABBREVIATIONS 1

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN FIRST. DIAL BEFORE YOU DIG. AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING. SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN, No. E 14797, FOR A USER

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-13
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	

Plan No. I-1 — Sheet ____ of XXX Sheets

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PROCESS SYMBOLS

PAGE REFERENCE ARROW

PRIMARY PROCESS

PRIMARY PROCESS BYPASS

SECONDARY PROCESS

FLOW DIRECTION ARROW

PACKAGE SYSTEM BOUNDARY

VALVES

AIR RELEASE VALVE

AIR/VACUUM RELIEVE VALVE

BALL CHECK VALVE

BALL VALVE

BUTTERFLY VALVE

CHECK VALVE

DIAPHRAGM VALVE

PLUG VALVE

PRESSURE REDUCING VALVE

PRESSURE RELIEF VALVE

SOLENOID VALVE (TWO-WAY)

SOLENOID VALVE (THREE-WAY)

TELESCOPING VALVE

MISCELLANEOUS

BLIND FLANGE

QUICK CONNECT

REDUCER

STRAINER

SPRAY NOZZLE

EQUIPMENT OR FLOOR DRAIN

VENT

CALIBRATION COLUMN

FILTER

PULSATION DAMPENER

FLUSHING CONNECTION

SILENCER

WATER SURFACE ELEVATION

PRESSURE GUAGE (SHOWN WITH BALL VALVE AND DIAPHRAGM SEAL)

MECHANICAL EQUIPMENT

MOTOR

BLOWER

FAN

DAMPER

MIXER

MAGNETIC FLOWMETER

PARSHALL FLUME

WEIR

FLAP GATE

STOP GATE

PUMPS

TURBO PUMP

ROTARY LOBE PUMP

MIX PUMP

PERISTALTIC PUMP

PUMP (UNCLASSIFIED)

SUBMERSIBLE CENTRIFUGAL PUMP

SUBMERSIBLE VERTICAL TURBINE PUMP

PIPING IDENTIFICATION

16"-RAS

- FLOW STREAM IDENTIFICATION (SEE BELOW)
- NOMINAL PIPE SIZE

FLOW STREAM ABBREVIATIONS

AA	AERATION AIR
AL	ALUM SOLUTION
CA	CALCIUM SOLUTION
D	DRAIN
DFM	DRAIN FORCEMAIN
EFF	EFFLUENT
FA	FOUL AIR
MC	MICRO-C SOLUTION
MLR	MIXED LIQUOR RETURN
MLT	MIXED LIQUOR TRANSFER
OF	OVERFLOW
PRM	PERMEATE
RAS	RETURN ACTIVATED SLUDGE
RW	RECYCLED WATER
SB	SODIUM BICARBONATE SOLUTION
SCUM	SCUM
SCWW	SCREENED WATEWATER
UVE	ULTRAVIOLET EFFLUENT
UVI	ULTRAVIOLET INFLUENT
UW	UTILITY WATER
WAS	WASTE ACTIVATED SLUDGE
WW	WASTEWATER

EQUIPMENT ABBREVIATIONS

ARV	AIR RELIEF VALVE
AVRV	AIR/VACUUM RELIEF VALVE
B	BLOWER
BCV	BALL-CHECK VALVE
BFV	BUTTERFLY VALVE
BV	BALL VALVE
CP	CENTRIFUGAL PUMP
CV	CHECK VALVE
DV	DIAPHRAGM VALVE
EF	EXHAUST FAN
FE	FLOW ELEMENT
G	GATE
H	HOIST
M	MOTOR
MBR	MEMBRANE REACTOR
ME	MECHANICAL EQUIPMENT
MX	MIXER
P	PUMP
PRV	PRESSURE REDUCING VALVE
PV	PLUG VALVE
RV	RELIEF VALVE
SC	SCREEN
SP	COMPOSITE SAMPLER
SV	SOLENOID VALVE
T	TANK
TV	TELESCOPING VALVE
UV	ULTRAVIOLET UNIT
WC	WASHER/COMPACTOR

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INSTRUMENATION LEGENDS AND ABBREVIATIONS 2

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE NONE	APPROVED BY: DATE XX-XX-13
DRAWN BY: A. PRIOR	DATE 06/2013		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	

Plan No. I-2

Sheet ____ of XXX Sheets

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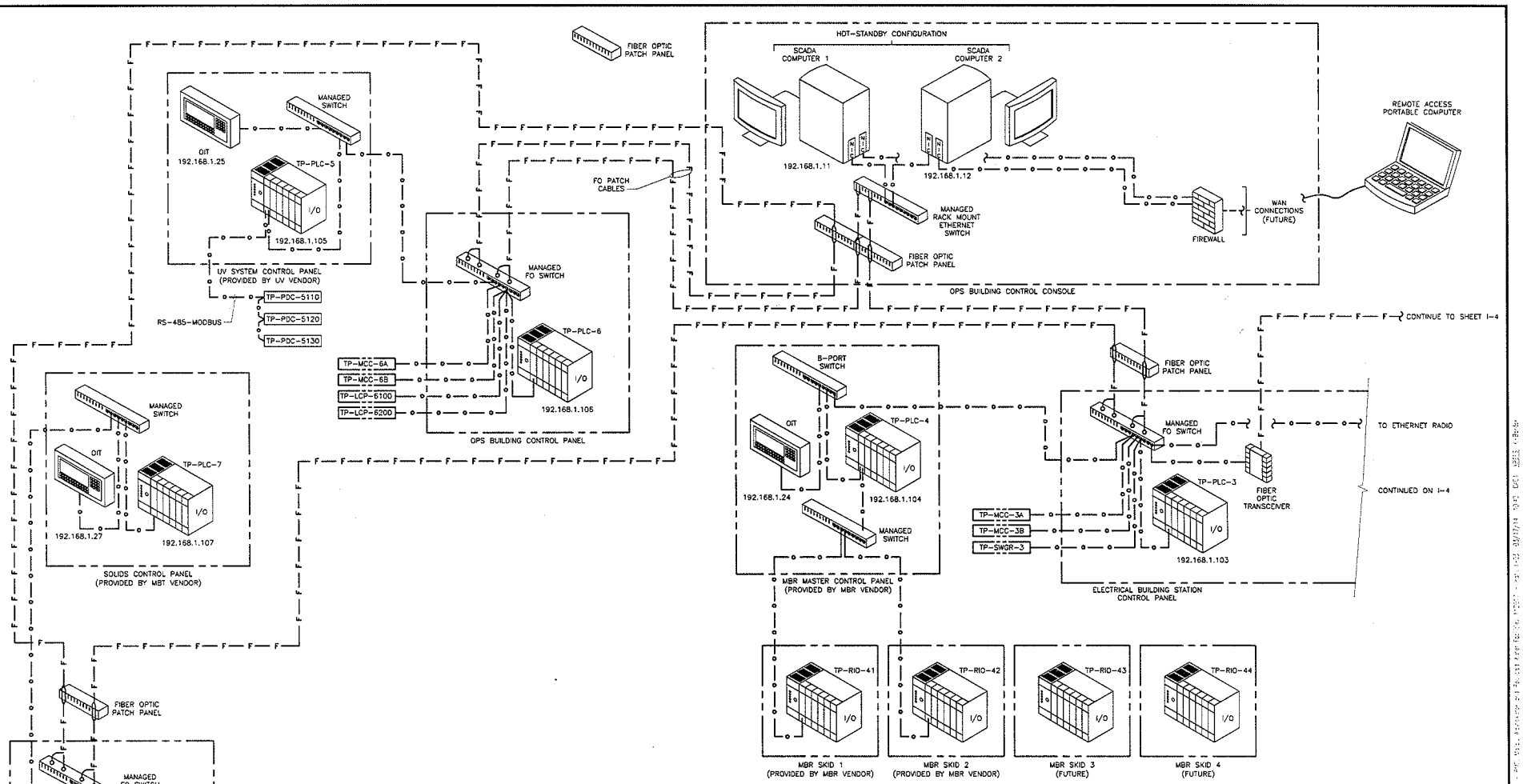


CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

SYSTEM ARCHITECTURE AND NETWORK DIAGRAM - WWTP

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

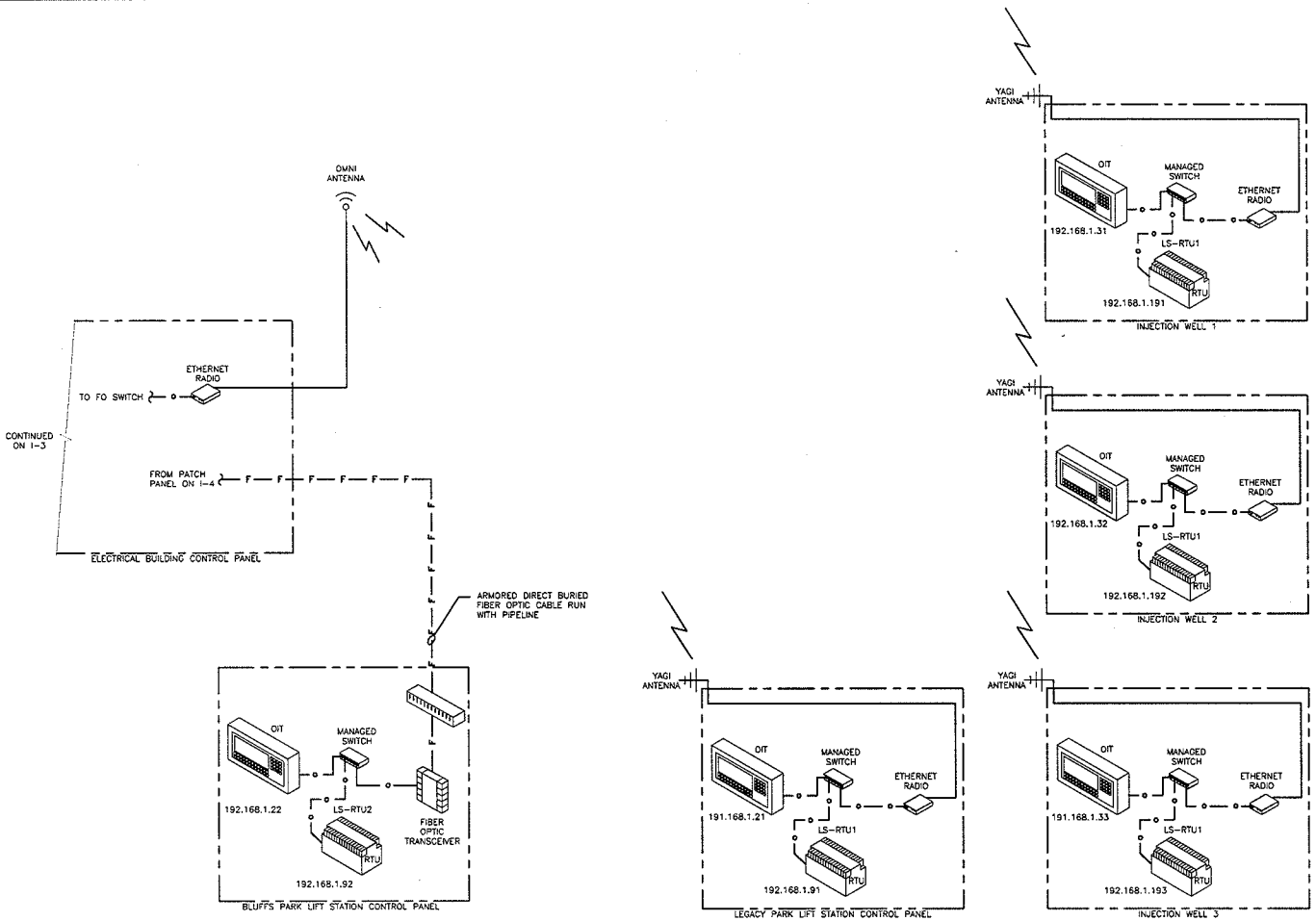
95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 REGISTERED ENGINEER

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE: 06/2013	SCALE: NONE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: A. PRIOR	DATE: 06/2013		DATE: XX-XX-13
CHECKED BY: -	DATE: 06/2013	PROJECT NUMBER: XXXX	

Plan No. I-3

Sheet _____ of XXX Sheets



LEGACY PARK LIFT STATION CONTROL PANEL

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONTROL SYSTEM ARCHITECTURE & NETWORK DRAWING - LIFT STATIONS/INJECTION WELLS

DIAL BEFORE YOU DIG — DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE: 06/2013	SCALE: NONE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE. NO. 52102 EXP. 12/31/2014 — DATE
DRAWN BY: A. PRIOR	DATE: 06/2013		DATE: XX-XX-13
CHECKED BY: —	DATE: 06/2013	PROJECT NUMBER: XXXX	

Plan No. I-4 | Sheet ____ of XXX Sheets

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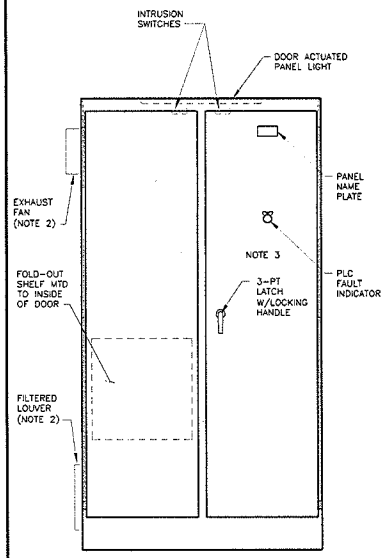
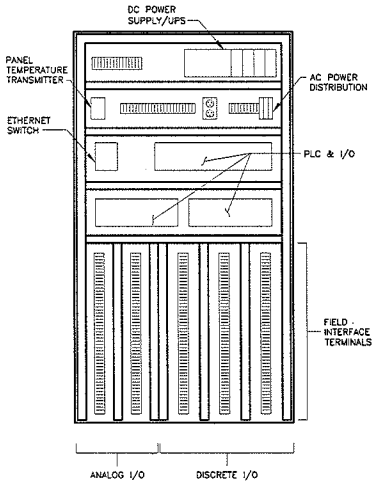


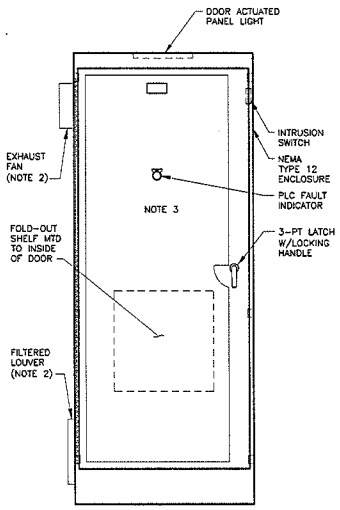
PANEL ELEVATION
(NOTE 1)



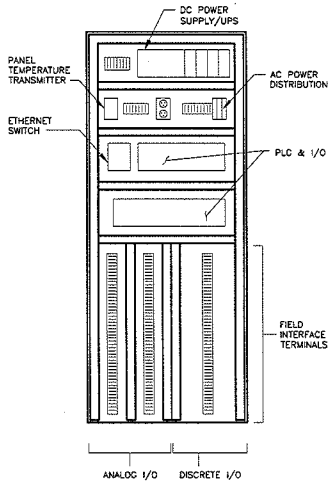
MOUNTING PANEL LAYOUT
(NOTE 1)

TYPICAL PLC CONTROL PANEL (DOUBLE DOOR)

SCALE: (NTS) (TP-PLC-2 & TP-PLC-3)



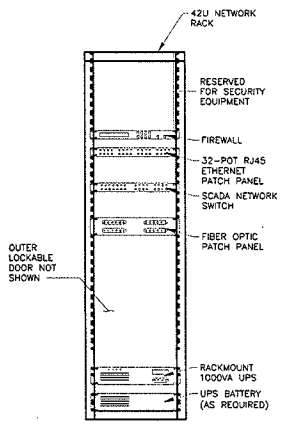
PANEL ELEVATION
(NOTE 1)



MOUNTING PANEL LAYOUT
(NOTE 1)

TYPICAL MOUNTING PANEL LAYOUT (SINGLE DOOR)

SCALE: (NTS) (TP-PLC-6)



OPERATION BUILDING NETWORK RACK

SCALE: (NTS)

NOTES:

1. PANEL ELEVATIONS ARE PROVIDED TO SHOW THE GENERAL ARRANGEMENT OF COMPONENTS ONLY. NOT ALL REQUIRED COMPONENTS ARE SHOWN. THE CONTRACTOR SHALL SIZE AND ARRANGE CONTROL PANEL COMPONENTS AS REQUIRED BASED ON THE ACTUAL EQUIPMENT PROVIDED.
2. THE ACTUAL SIZE, TYPE, AND LOCATION OF PANEL VENTILATION COMPONENTS SHALL BE PROVIDED BASED ON THE CONTRACTORS HEAT DISSIPATION CALCULATIONS AND THE LOCATION OF ADJACENT EQUIPMENT.
3. PROVIDE FRONT PANEL OPERATOR DEVICES AS REQUIRED BY P&ID DRAWINGS. NOT ALL SHOWN ON THIS DRAWING.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IS SAFE, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS BEFORE EXCAVATING — SERVING NW SOUTH MS/CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN
No. E 13457
EXP. 6/30/15

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONTROL PANEL ELEVATIONS

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	XX-XX-13
CHECKED BY: –	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. I-5

Sheet _____ of XXX Sheets

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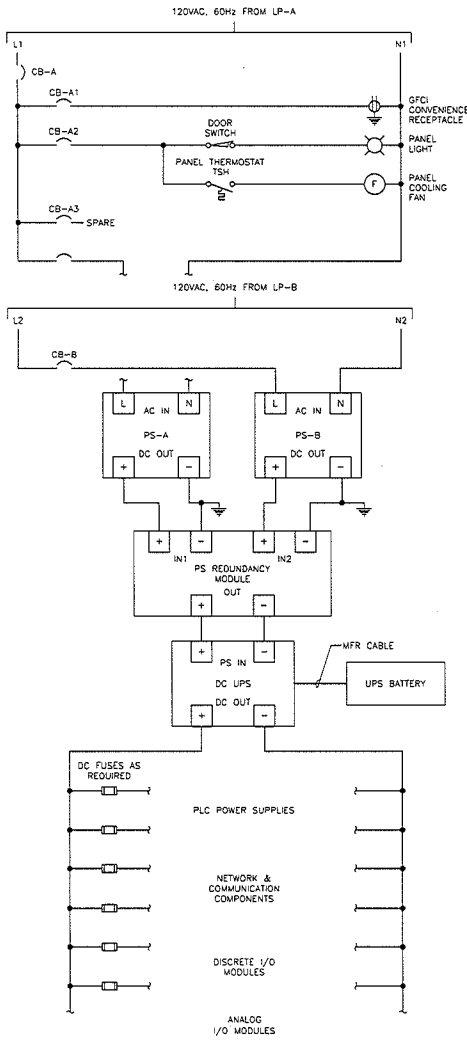

CONTROL PANEL POWER DISTRIBUTION

SCALE: (NTS) TYPICAL FOR ALL PLC AND RIO PANELS

LEGEND

- ▲ FIELD DEVICE AT EQUIPMENT
- ■ AT PLC PANEL
- ● AT LOCAL CONTROL PANEL

DIAL BEFORE YOU DIG 1-800-DIG-1213 — DIGALERT — PLAN TO SAFE, DIG SLOPE YOU DO — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" — 1" — VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. P 16743 — PROFESSIONAL ENGINEER

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONTROL PANEL SCHEMATIC DIAGRAMS

DESIGNED BY: M. ERWIN	DATE: 06/2013	SCALE: NONE	APPROVED BY: / DATE: XX-XX-13
DRAWN BY: A. PRIOR	DATE: 06/2013		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
CHECKED BY: –	DATE: 06/2013	PROJECT NUMBER: XXXX	

Plan No. I-6 — Sheet ____ of XXX Sheets

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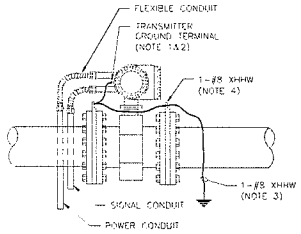
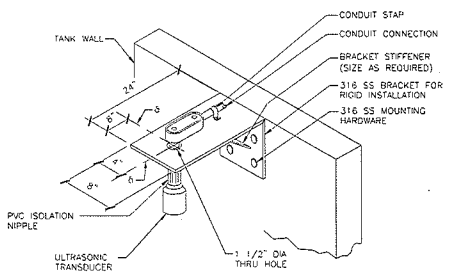


NOTES:

1. CONTRACTOR SHALL VERIFY ZERO GROUND POTENTIAL BETWEEN FLOW TUBE AND TRANSMITTER GROUND TERMINAL.
2. CONTRACTOR SHALL CONNECT TRANSMITTER GROUND TERMINAL TO GROUND RINGS.
3. METER BODY SHALL BE CONNECTED TO EARTH GROUND POTENTIAL.
4. EQUALIZE POTENTIAL VIA GROUND RINGS BETWEEN FLUID AND MAGMETER.

INTEGRAL MAGNETIC FLOW METER GROUNDING

DETAIL 13001 VAR NTS

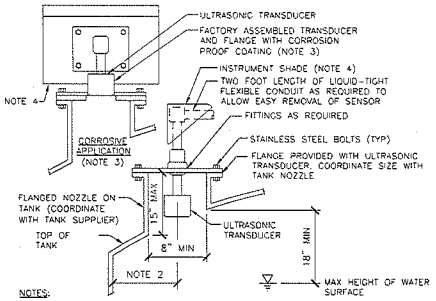


NOTES:

1. PROVIDE AND INSTALL ULTRASONIC TRANSDUCER IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
2. WHERE REQUIRED OR SHOWN ON DRAWINGS PROVIDE 4 INCH DIAMETER PVC PIPE WITH A VENT HOLE FOR A STILLING WELL.

ULTRASONIC TRANSDUCER OPEN CHANNEL/TANK INSTALLATION

DETAIL 13101 VAR NTS

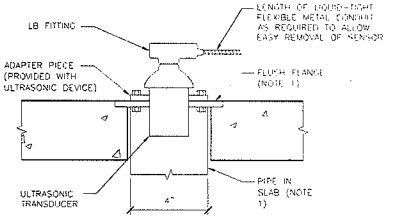


NOTES:

1. PROVIDE AND INSTALL ULTRASONIC TRANSDUCER IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
2. MINIMUM OFFSET OF NOZZLE FROM INTERIOR TANK WALL SHALL BE 2'-0" FOR A MEASURING RANGE OF 0-18' (FROM TRANSDUCER FACE). FOR MEASURING RANGES GREATER THAN 0-18' REFER TO THE SPECIFICATIONS.
3. WHERE REQUIRED BY CHEMICAL BEING MONITORED (EG. CORROSIVE ENVIRONMENTS), THE TRANSDUCER FACE SHALL BE PROVIDED WITH A CHEMICALLY IMPERVIOUS COATING EXTENDING OVER THE ENTIRE FLANGE FACE. DIMENSIONS SAME AS SHOWN BELOW.
4. PROVIDE INSTRUMENT SUNSHIELD BY ANDERSON GREENWOOD INSTRUMENTATION MODEL 5S; OR APPROVED EQUAL. OPENED AREA SHALL BE INSTALLED FACING NORTH.

ULTRASONIC LEVEL SENSOR CLOSED TOP TANK INSTALLATION

DETAIL 13102 VAR NTS

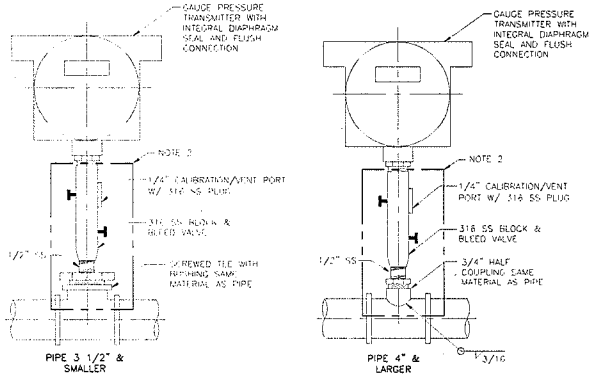


NOTES:

1. REFER TO DETAIL FOR PIPE IN SLAB PENETRATION REQUIREMENTS.
2. WHERE REQUIRED OR SHOWN ON DRAWINGS PROVIDE 4" DIAMETER PVC PIPE WITH A VENT HOLE FOR A STILLING WELL.

ULTRASONIC LEVEL SENSOR INSTALLATION DETAIL IN SLAB PENETRATION

DETAIL 13103 VAR NTS

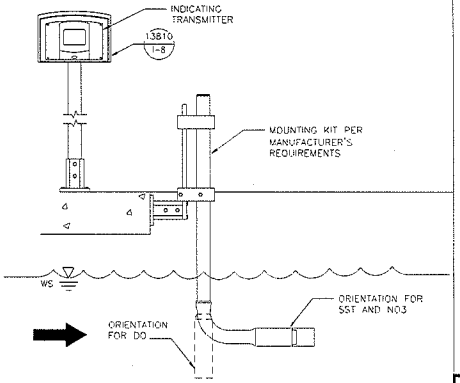


NOTES:

1. TYPICAL MANIFOLD CONNECTION AND ISOLATION VALVE ARE SHOWN. ISOLATION VALVE, MANIFOLD TYPE AND CONNECTIONS ARE AS REQUIRED PER SECTION 13323. PROVIDE REQUIRED MANIFOLDS AND ISOLATION VALVE PER DETAIL 13801.

DIRECT PIPE MOUNT PRESSURE TRANSMITTER

DETAIL 13204 VAR NTS



ANALYZER PROBE MOUNTING DETAIL

DETAIL 13501 VAR NTS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INSTRUMENTATION STANDARD DETAILS

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN AHEAD SAVE TIME AND MONEY — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14167 DATE 6/28/13

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE NONE
DRAWN BY: A. PRIOR	DATE 06/2013	
CHECKED BY: –	DATE 06/2013	PROJECT NUMBER XXXX

APPROVED BY: DATE

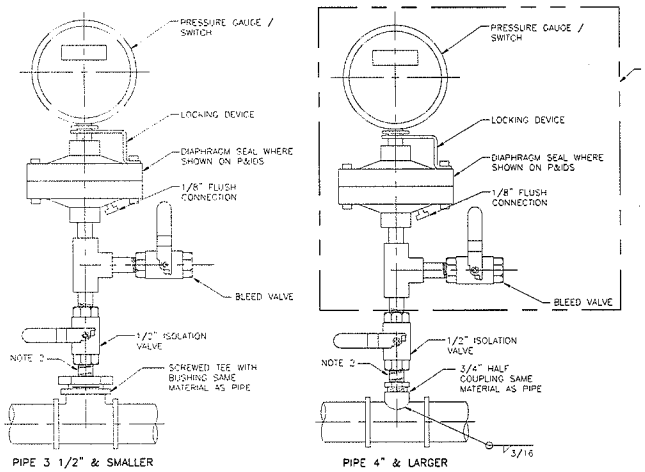
XX-XX-13

ROBERT BRAGER, P.E. / I.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 57102 EXP. 12/31/2014

Plan No. I-7 Sheet ____ of XXX Sheets

FREEMAN, SAY & 2-19-14 09:12am CAD FILE: DETAILS.dwg Plot:

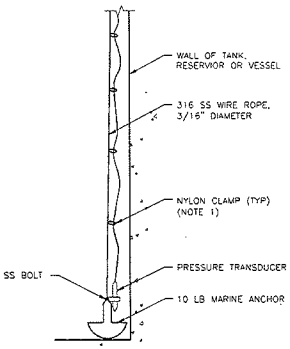
Last Saved By: CAD1 2-19-14 09:22am



NOTES:

1. FOR PRESSURE GAUGE IN STAINLESS STEEL LINES, PROVIDE 316 STAINLESS STEEL PIPING AND VALVES. FOR PLASTIC LINES, PROVIDE PLASTIC PIPING AND VALVES. FOR ALL OTHER LINES, PROVIDE BRASS OR BRONZE. SEE DIVISION 15.
2. PROVIDE MINIMUM 1/4" STAINLESS STEEL PROCESS CONNECTION FOR CLEAN WATER APPLICATIONS OR 1/2" STAINLESS STEEL PROCESS CONNECTION FOR FLUIDS WITH SUSPENDED SOLIDS. PROVIDE TRI-CLAMP FITTINGS FOR SLUDGE APPLICATIONS.
3. WHERE SHOWN ON P&ID WITH MULTIPLE PRESSURE INSTRUMENTS ON THE SAME PROCESS CONNECTION. PROVIDE EACH PRESSURE INSTRUMENT WITH SEPARATE DIAPHRAGM SEAL AND BLEED VALVE.

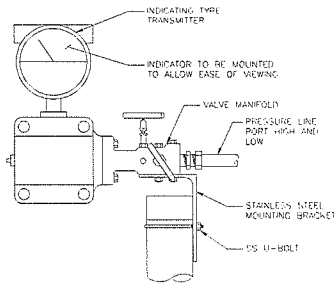
PRESSURE GAUGE / SWITCH
DETAIL 13205 VAR
NTS



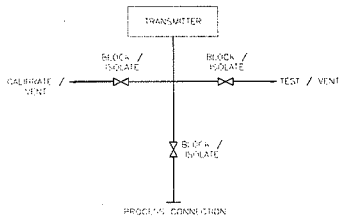
NOTE:

1. PROVIDE NYLON CLAMP ON EVERY 6 FEET.

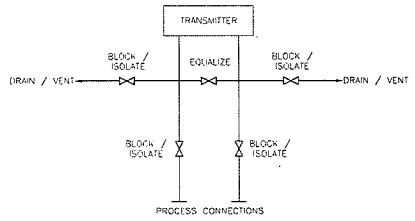
DROP IN PRESSURE TRANSDUCER MOUNTING DETAIL
DETAIL 13206 VAR
NTS



DIFFERENTIAL AND GAUGE PRESSURE TRANSMITTER MOUNTING
DETAIL 13207 VAR
NTS

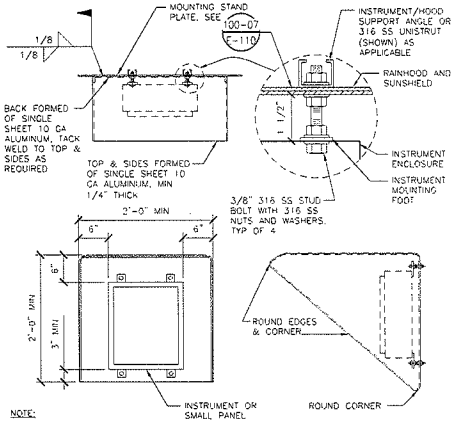


THREE – VALVE MANIFOLD CONNECTION DIAGRAM FOR ABSOLUTE AND GAGE PRESSURE TRANSMITTER



FIVE – VALVE MANIFOLD CONNECTION DIAGRAM FOR DIFFERENTIAL PRESSURE TRANSMITTER

VALVE MANIFOLD CONNECTION DIAGRAM
DETAIL 13801 VAR
NTS



NOTE:

1. ALL EXPOSED EDGES TO BE GROUND SMOOTH AND BURR FREE.

RAIN HOOD AND SUNSHIELD INSTALLATION
DETAIL 13810 VAR
NTS

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

INSTRUMENTATION STANDARD DETAILS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING THE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN, No. E 14767, STATE OF CA/NV

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE: 06/2013	SCALE: NONE	APPROVED BY:
DRAWN BY: A. PRIOR	DATE: 06/2013		DATE: XX-XX-13
CHECKED BY: –	DATE: 06/2013	PROJECT NUMBER: XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. I-8

Sheet _____ of XXX Sheets

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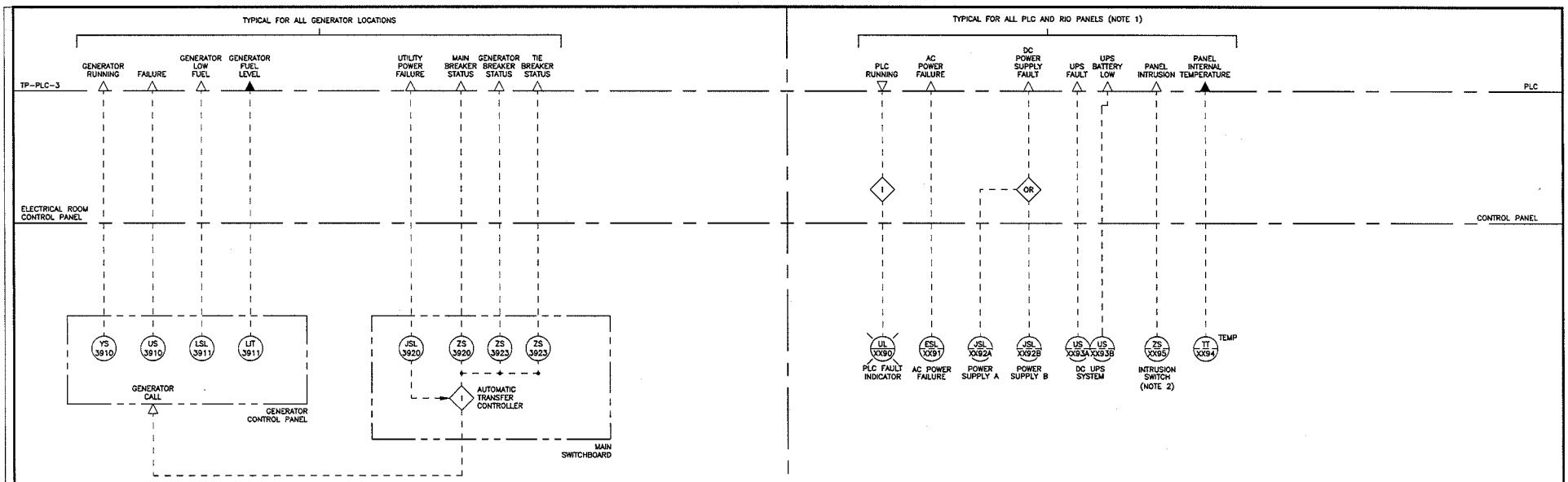

NOTES:

1. TYPICAL FOR ALL PLC AND RTU CONTROL PANELS. SEE I/O LIST FOR SPECIFIC TAG NAMES.
2. PROVIDE ONE INTRUSION SWITCH FOR EACH CONTROL PANEL ACCESS DOOR. WIRE NC CONTACTS IN SERIES TO A SINGLE INPUT.
3. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" _____ 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14707 — REGISTERED ENGINEER

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS & INSTRUMENTATION DIAGRAM
MISCELLANEOUS PLANT SYSTEMS

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE: NONE
DRAWN BY: A. PRIOR	DATE 06/2013	XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX

APPROVED BY: _____ DATE _____
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. 1100-1

Sheet _____ of XXX Sheets

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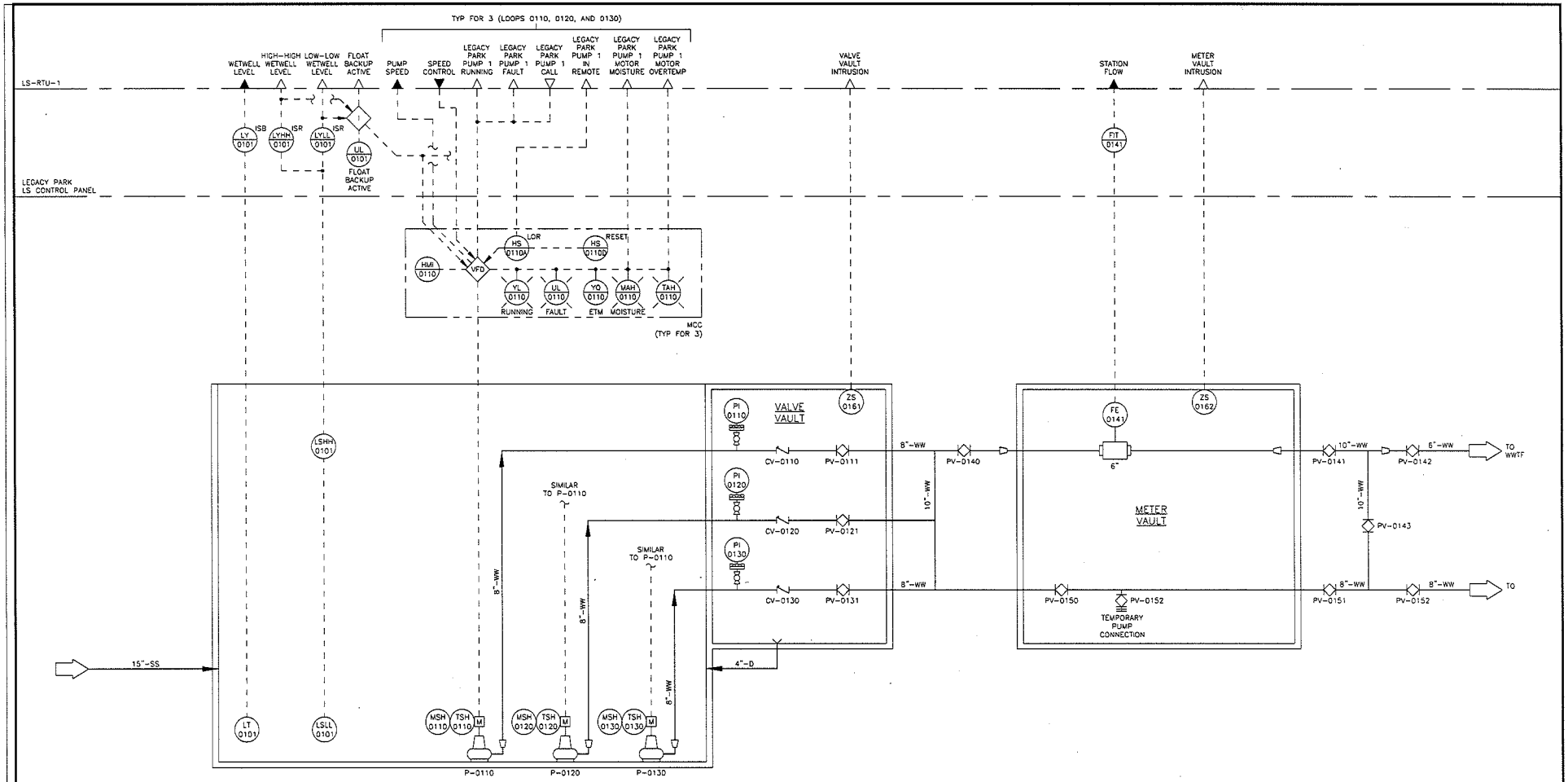

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "LS-" PREFIX.

DIAL BEFORE YOU DIG — DIGALERT — PLAN IT SAFE, CALL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NEW & SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN — No. R 64767 — REG. ASSOC.

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
LEGACY PARK LIFT STATION

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE NONE	APPROVED BY: DATE XX-XX-13
DRAWN BY: A. PRIOR	DATE 06/2013		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	

Plan No. 1900-1 — Sheet ____ of XXX Sheets

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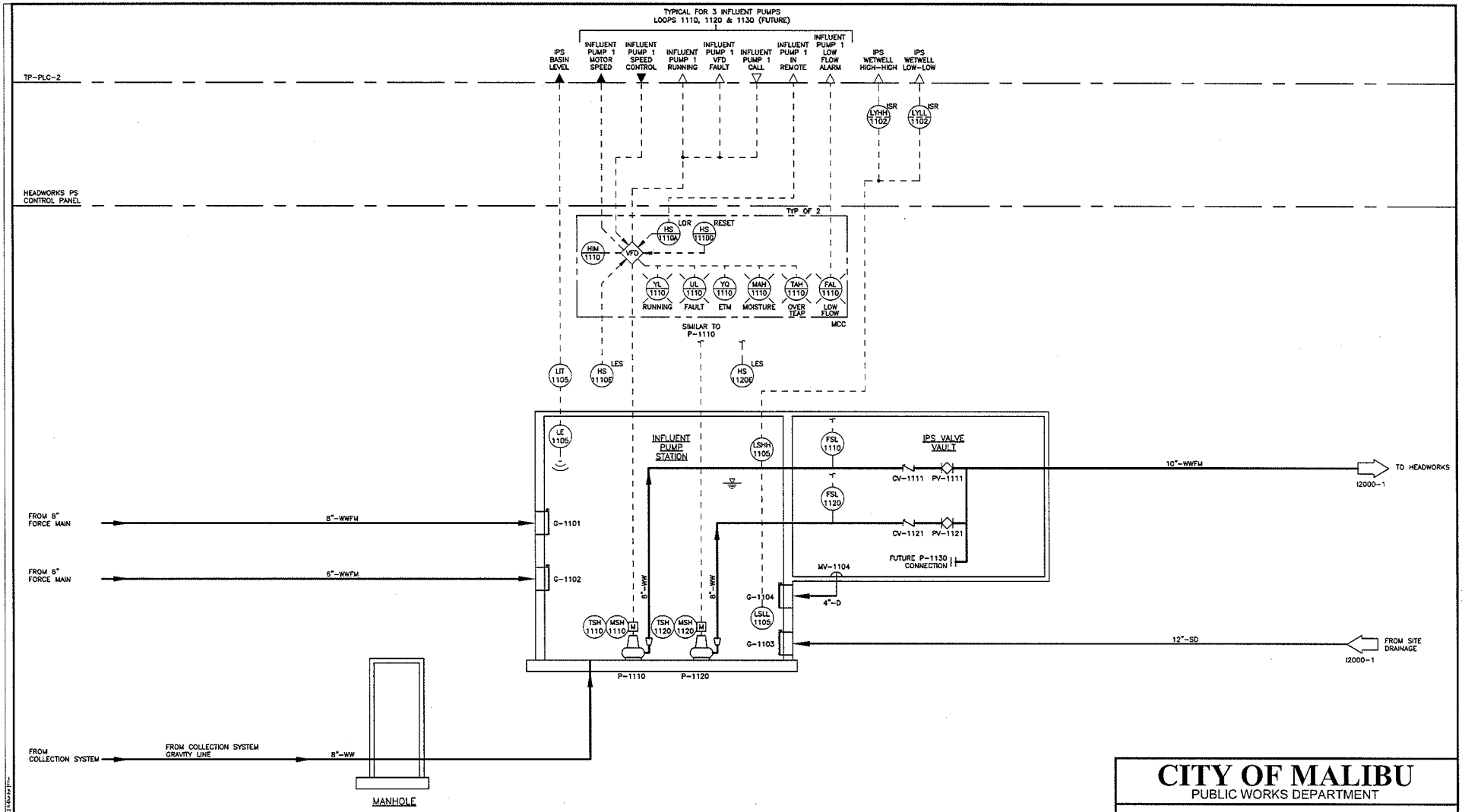

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN TIME DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY.

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — PROF. ENGINEER

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
INFLUENT PUMP STATION

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. 11100-1 — Sheet ____ of XXX Sheets

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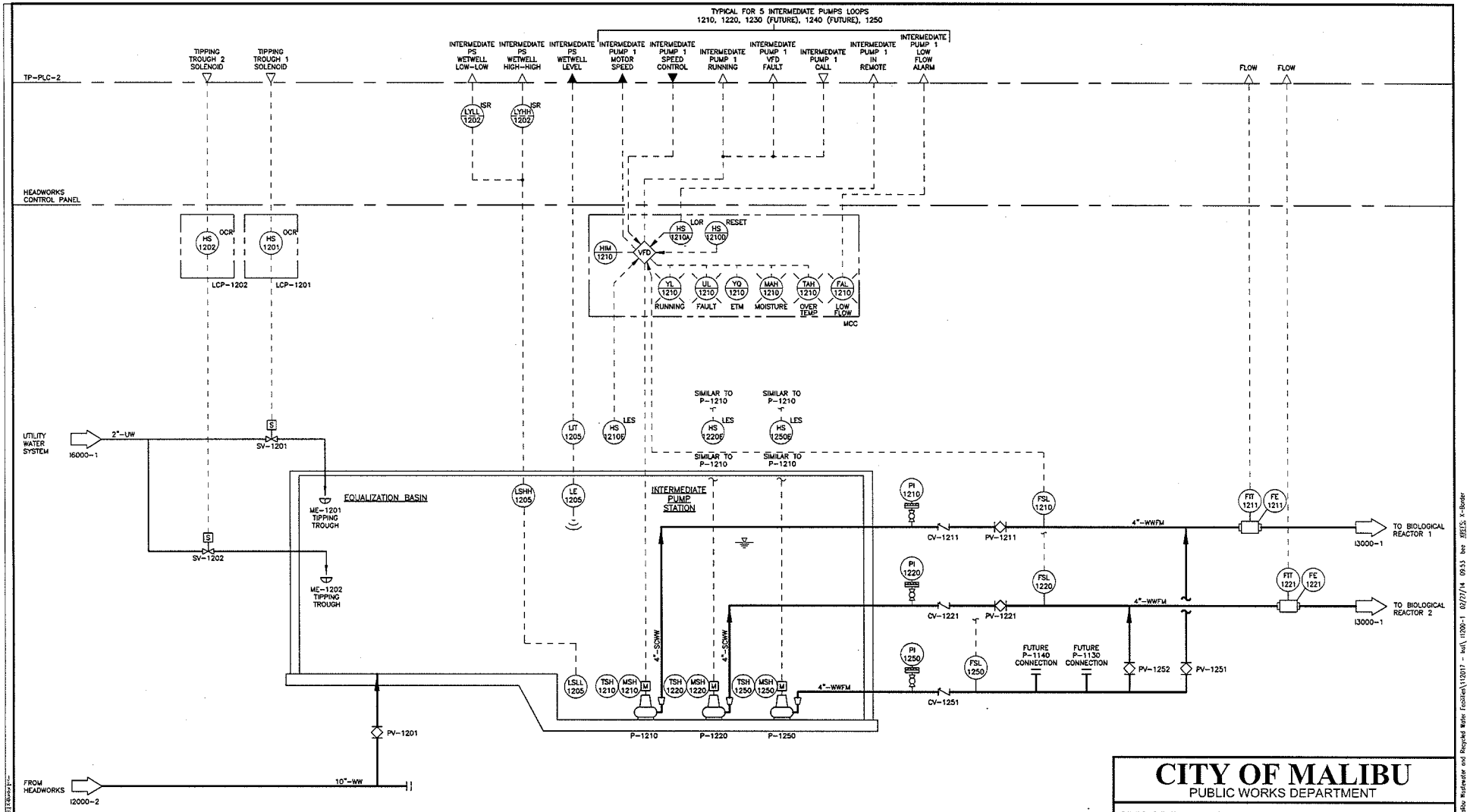

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

DIAL BEFORE YOU DIG 800-422-4133 — DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING RIVERSIDE, SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14747 — PROF. ENGR.

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
INTERMEDIATE PS AND EQUALIZATION TANKS

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT MANAGER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. 11200-1 — Sheet ____ of XXX Sheets

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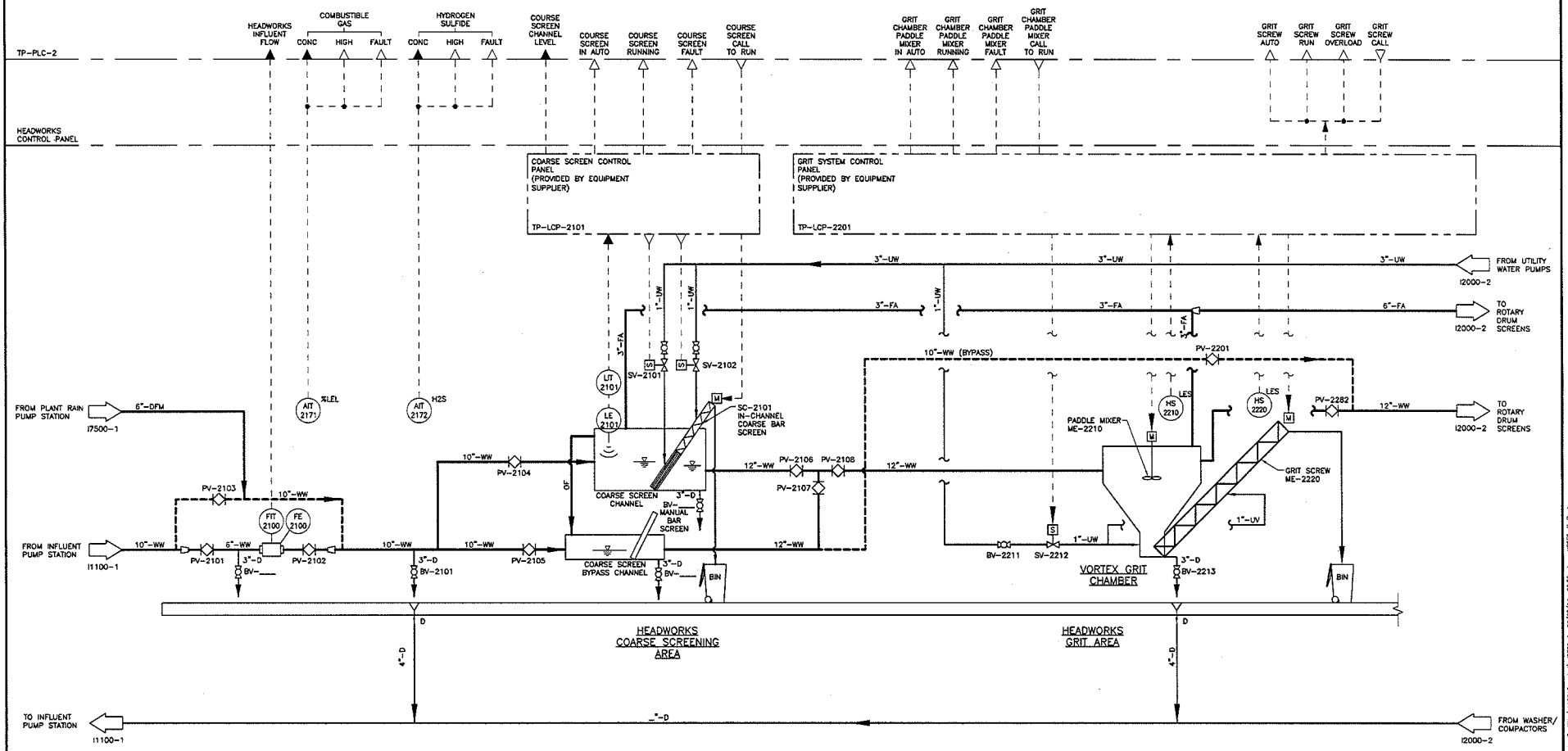

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

DIAL BEFORE YOU DIG — DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction
MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
HEADWORKS - COARSE SCREENS & GRIT AREA

DESIGNED BY: M. ERWIN	DATE: 06/2013	SCALE: NONE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: A. PRIOR	DATE: 06/2013		DATE: XX-XX-13
CHECKED BY:	DATE: 06/2013	PROJECT NUMBER: XXXX	

Plan No. I2000-1

Sheet _____ of XXX Sheets

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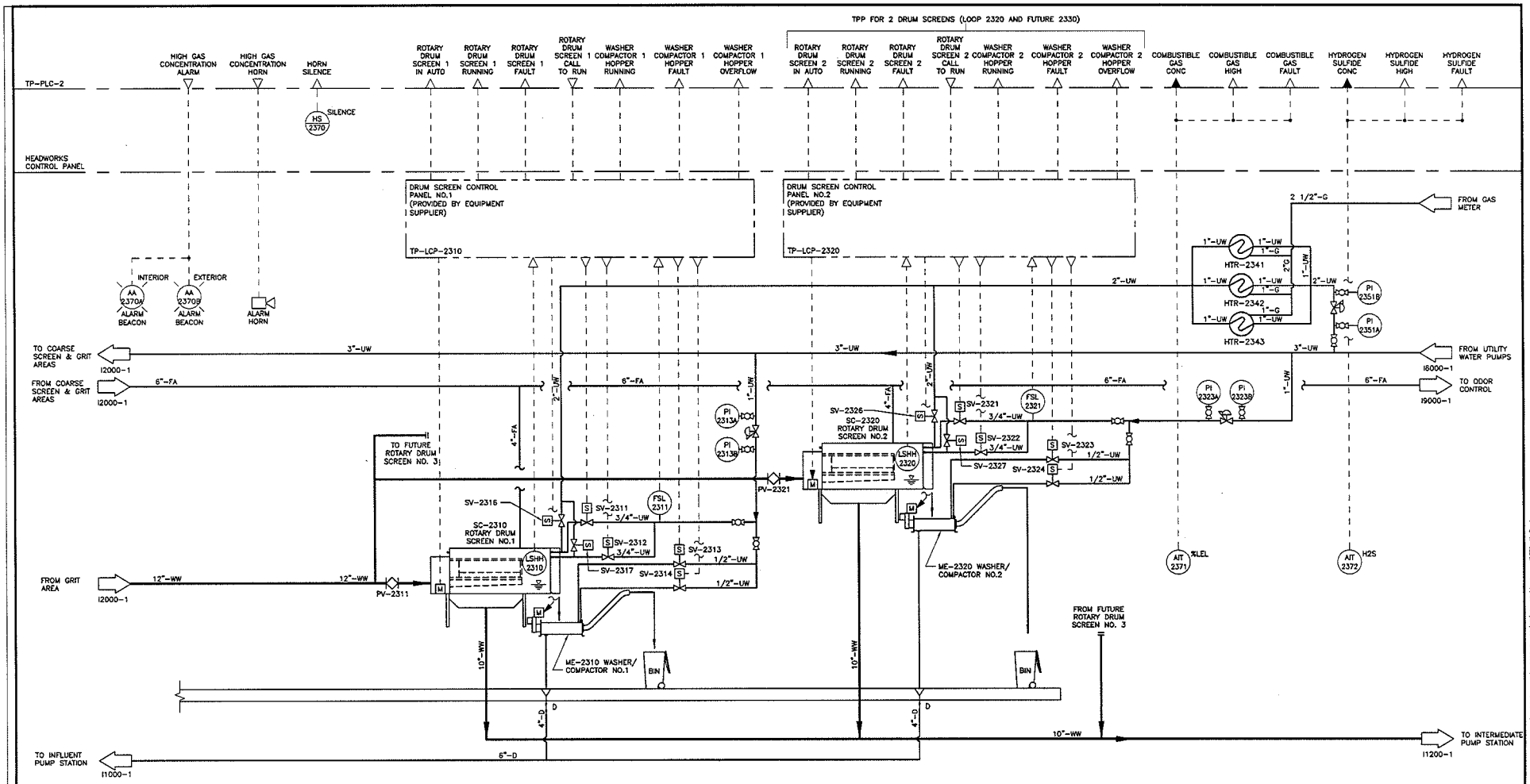

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
HEADWORKS - FINE SCREEN & FLOW SPLITS

DIAL BEFORE YOU DIG — DIGALERT

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE: NONE
DRAWN BY: A. PRIOR	DATE 06/2013	
CHECKED BY:	DATE 06/2013	PROJECT NUMBER: XXXX

APPROVED BY: DATE XX-XX-13
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. 12000-2 | Sheet ____ of XXX Sheets

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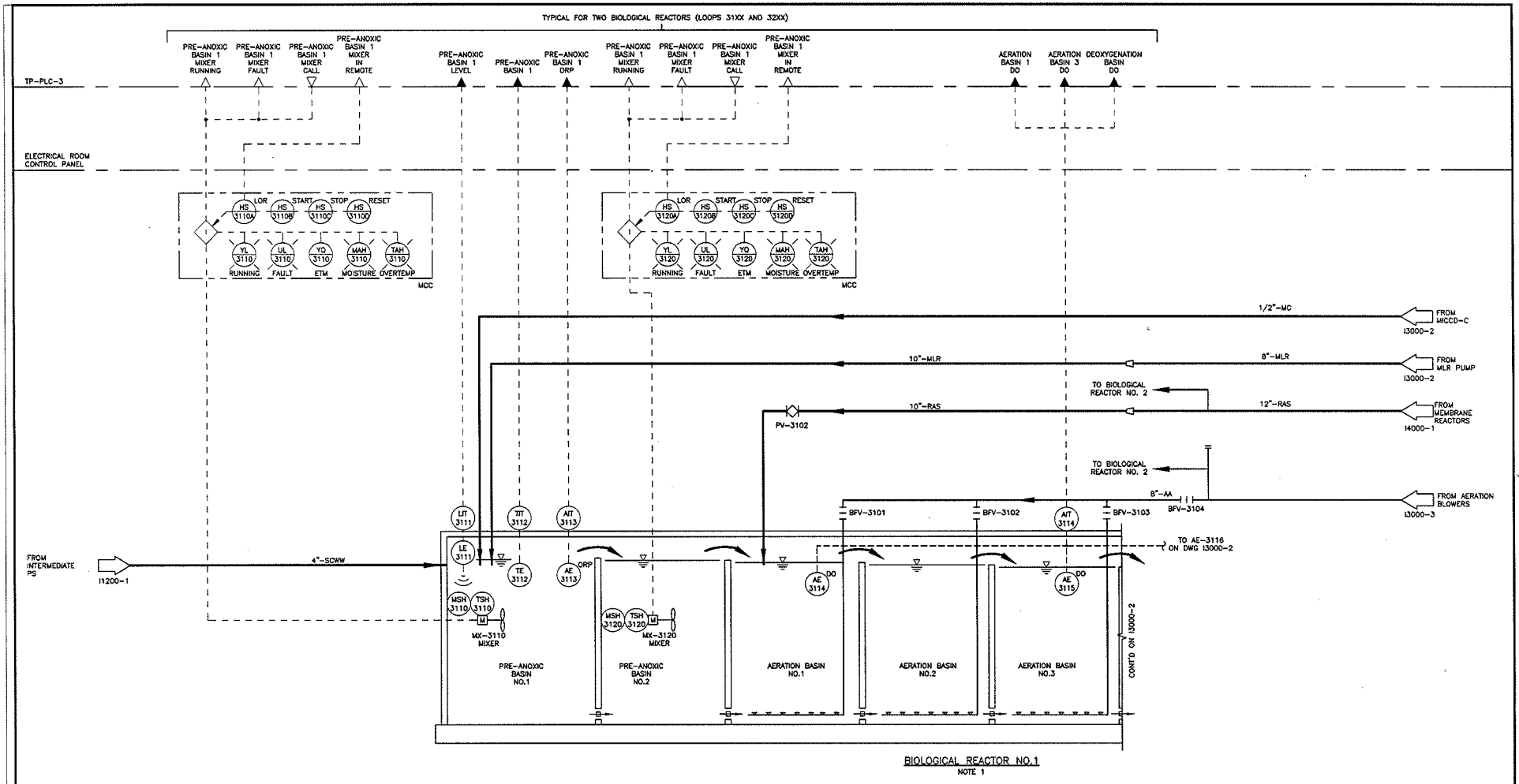

BIOLOGICAL REACTOR NO.1
NOTE 1

NOTES:

1. THIS DRAWING IS TYPICAL FOR BIOLOGICAL REACTORS NO. 1 AND NO. 2. BOTH BIOLOGICAL REACTORS NO. 1 AND NO. 2 SHALL BE INSTALLED AS PART OF PHASE 1 CONSTRUCTION. LOOP NUMBERS FOR REACTORS NO. 1 BEGIN WITH 31, LOOP NUMBERS FOR REACTOR NO. 2 BEGIN WITH 32.
2. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction MICHAEL J. ERWIN No. E 12121 CIVIL STATE OF CALIFORNIA

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
BIOLOGICAL REACTORS - 1

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	DATE XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	
Plan No. I3000-1			Sheet ____ of XXX Sheets

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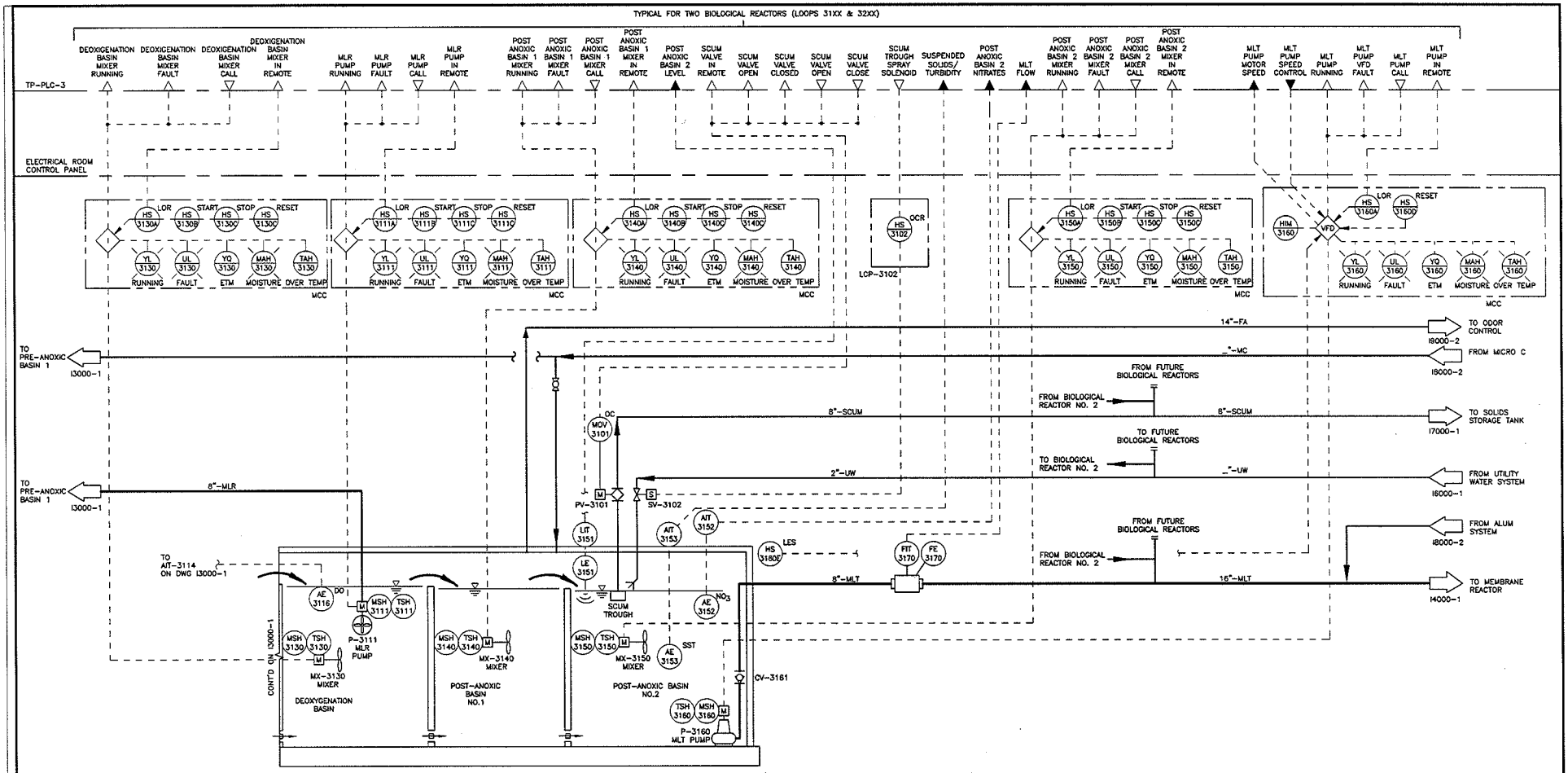

BIOLOGICAL REACTOR NO.1
NOTE 1

NOTES:

1. THIS DRAWING IS TYPICAL FOR BIOLOGICAL REACTORS NO. 1 AND NO. 2. BOTH BIOLOGICAL REACTORS NO. 1 AND NO. 2 SHALL BE INSTALLED AS PART OF PHASE 1 CONSTRUCTION. LOOP NUMBERS FOR REACTORS NO. 1 BEGIN WITH 31, LOOP NUMBERS FOR REACTOR NO. 2 BEGIN WITH 32.
2. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

DIAL BEFORE YOU DIG 1-800-227-2600 — DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN — No. E 14767 — PROF. ENGINEER

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
BIOLOGICAL REACTORS - 2

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	DATE XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT MANAGER XXXX	
Plan No. 13000-2			Sheet ____ of XXX Sheets

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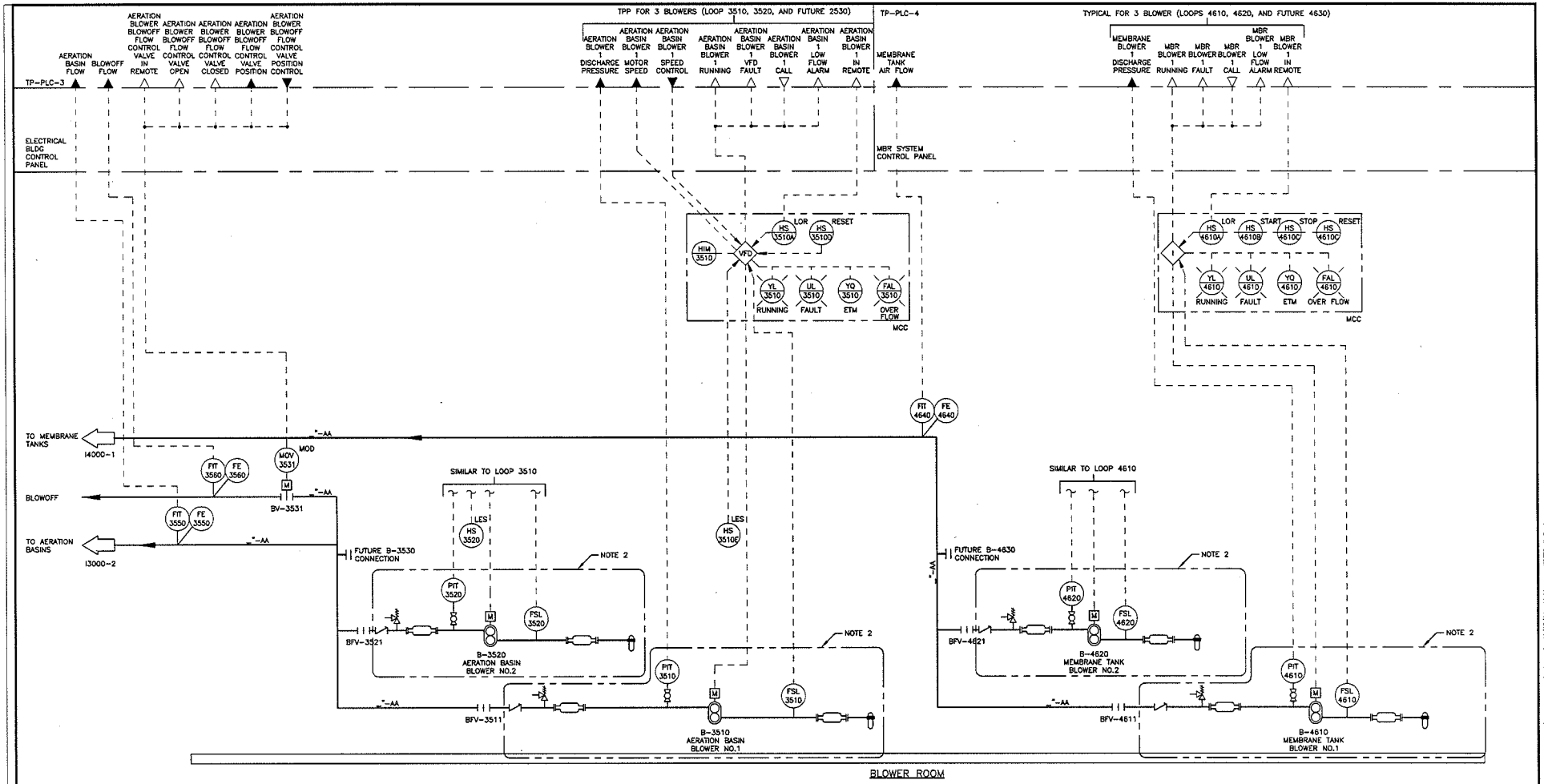

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.
2. COMPONENTS PROVIDED BY PACKAGED SYSTEM SUPPLIER.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN AHEAD, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO DIGGING — SERVING NW & SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — REGISTERED ENGINEER

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
BLOWER ROOM

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. 13000-3 — Sheet ____ of XXX Sheets

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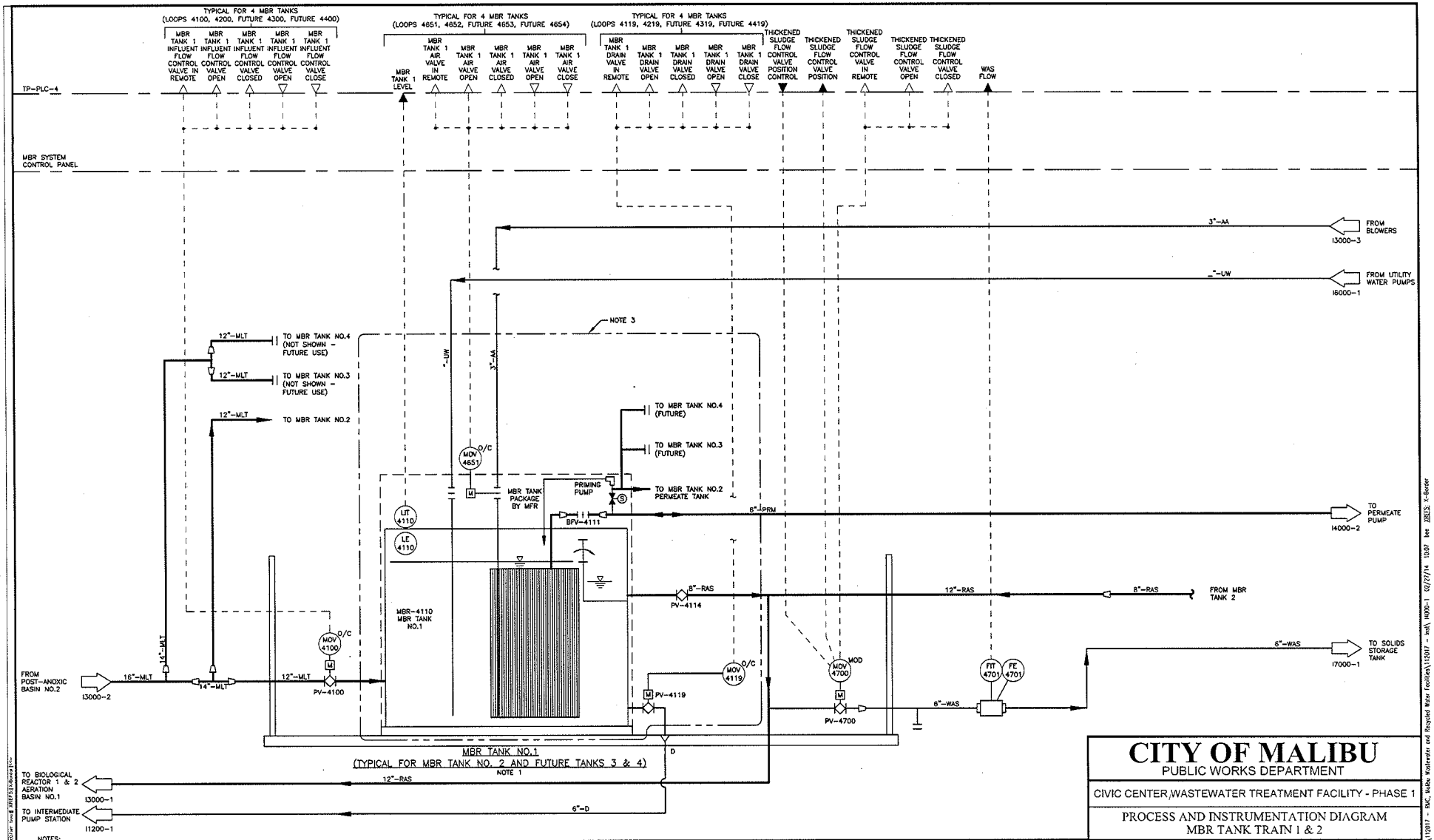

NOTES:

1. THIS DRAWING IS TYPICAL FOR MBR TANKS NO. 1 AND NO. 2, BOTH MBR TANKS NO. 1 AND NO. 2 SHALL BE INSTALLED AS PART OF PHASE 1 CONSTRUCTION. LOOP NUMBERS FOR MBR TANK TANK NO. 1 BEGIN WITH 41, LOOP NUMBERS FOR MBR TANK NO. 2 BEING WITH 42.
2. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.
3. COMPONENTS PROVIDED BY PACKAGED SYSTEM SUPPLIER.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14761

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
MBR TANK TRAIN 1 & 2

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE: NONE
DRAWN BY: A. PRIOR	DATE 06/2013	APPROVED BY: DATE XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. 14000-1 — Sheet ____ of XXX Sheets

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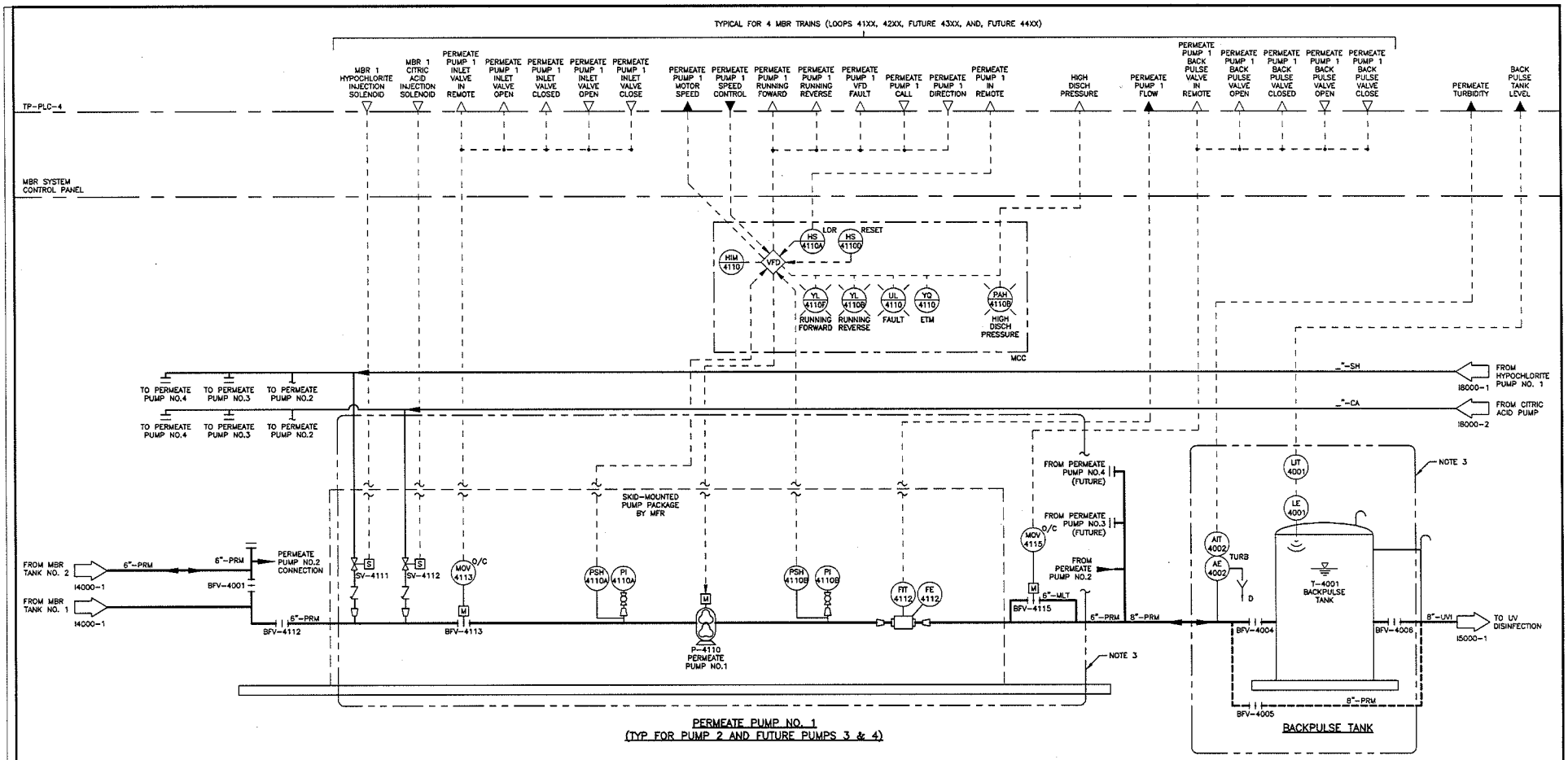

PERMEATE PUMP NO. 1
(TYP FOR PUMP 2 AND FUTURE PUMPS 3 & 4)

NOTES:

1. THIS DRAWING IS TYPICAL FOR MBR TANKS NO. 1 AND NO. 2. BOTH MBR TANKS NO. 1 AND NO. 2 SHALL BE INSTALLED AS PART OF PHASE 1 CONSTRUCTION. LOOP NUMBERS FOR MBR TANK TANK NO. 1 BEGIN WITH 41, LOOP NUMBERS FOR MBR TANK NO. 2 BEING WITH 42.
2. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.
3. COMPONENTS PROVIDED BY PACKAGED SYSTEM SUPPLIER.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction MICHAEL J. ERWIN No. E 14767 PROFESSIONAL ENGINEER

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
MBR TRAIN 1&2 PERMEATE PUMPS & BACK PULSE TANK

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE NONE	APPROVED BY: DATE XX-XX-13
DRAWN BY: A. PRIOR	DATE 06/2013		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	

Plan No. 14000-2 Sheet ____ of XXX Sheets

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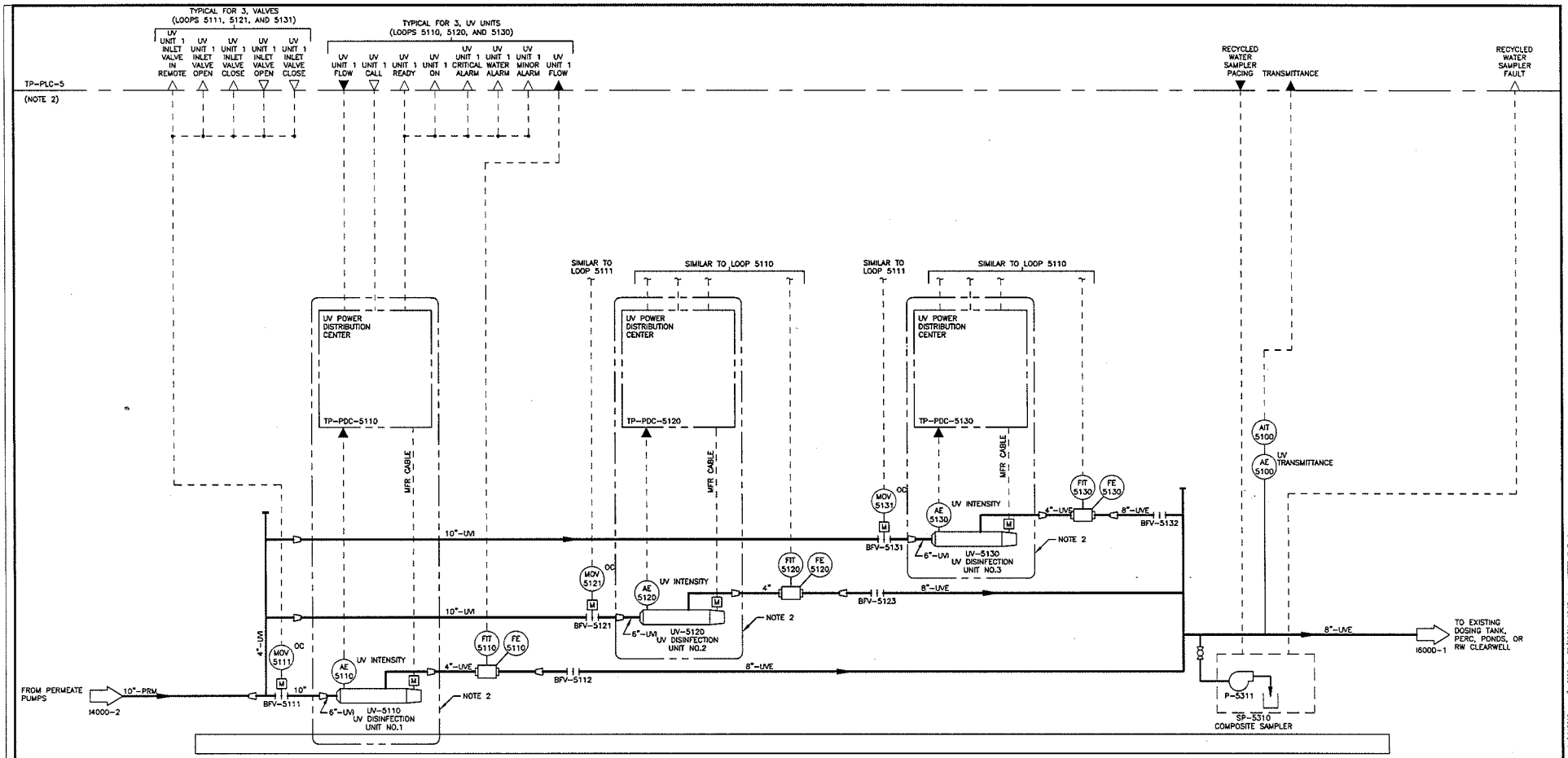

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.
2. COMPONENTS PROVIDED BY PACKAGED SYSTEM SUPPLIER.

DIAL BEFORE YOU DIG 800-422-4133 — DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767 — Exp. 6/30/14

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
UV DISINFECTION

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT MANAGER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. I5000-1 — Sheet ____ of XXX Sheets

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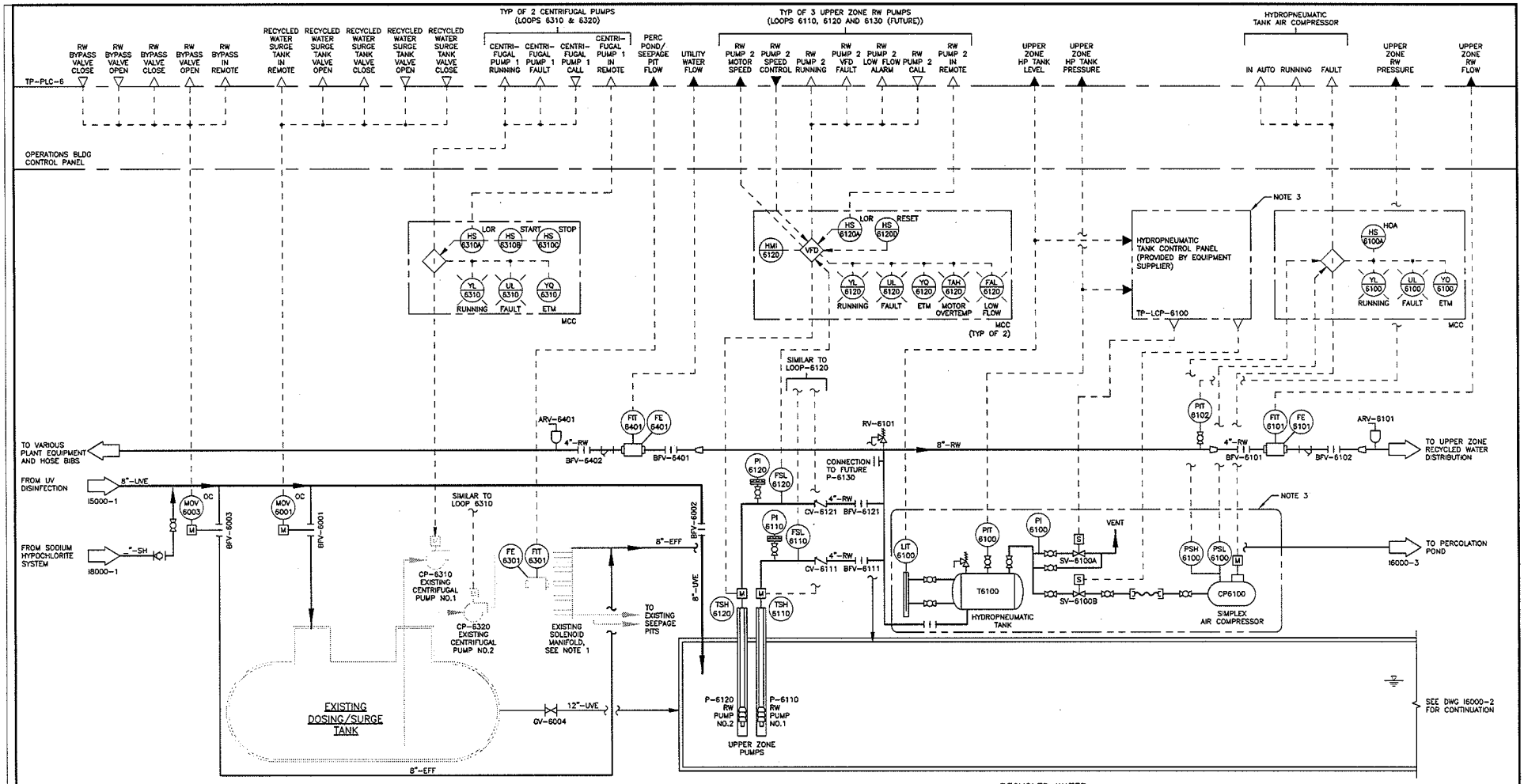

NOTES:

1. TWO EFFLUENT PUMPS CURRENTLY PUMP INTO A MANIFOLD WITH 16 SOLENOID VALVES. TWO OF THE SOLENOID VALVES WILL BE KEPT IN SERVICE TO EXISTING SEEPAGE PITS, AND THREE WILL BE RE-PURPOSED FOR DISCHARGE TO PERCOLATION PONDS.
2. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.
3. EQUIPMENT PROVIDED BY THE HYDROPNEUMATIC TANK SYSTEM SUPPLIER AND INSTALLED BY THE CONTRACTOR.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING RIVERSIDE, SOUTHERN CALIFORNIA COUNTIES

0" — 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14760 — PROFESSIONAL ENGINEER

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
UPPER ZONE RECYCLED WATER PUMPS & UTILITY WATER

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. 16000-1 — Sheet ____ of XXX Sheets

Last Saved By: ben 3-05-14 12:01pm

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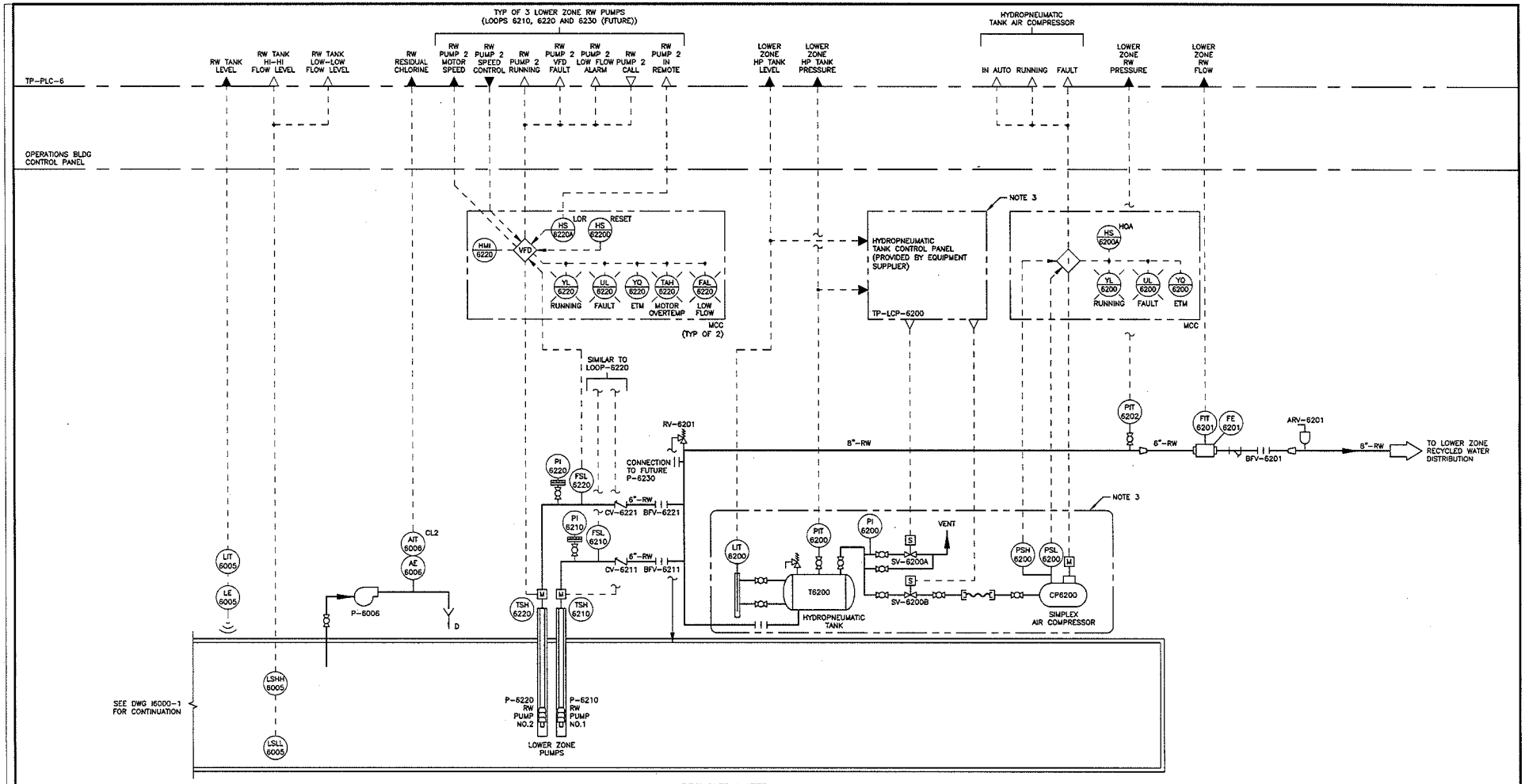

NOTES:

1. TWO EFFLUENT PUMPS CURRENTLY PUMP INTO A MANIFOLD WITH 16 SOLENOID VALVES. TWO OF THE SOLENOID VALVES WILL BE KEPT IN SERVICE TO EXISTING SEEPAGE PITS, AND THREE WILL BE RE-PURPOSED FOR DISCHARGE TO PERCOLATION PONDS.
2. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.
3. EQUIPMENT PROVIDED BY THE HYDROPNEUMATIC TANK SYSTEM SUPPLIER AND INSTALLED BY THE CONTRACTOR.

DIAL BEFORE YOU DIG 800-227-2600 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction MICHAEL J. ERWIN No. E 14767 Exp. 6/30/14

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
LOWER ZONE RECYCLED WATER PUMPS

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. 16000-2 Sheet ____ of XXX Sheets

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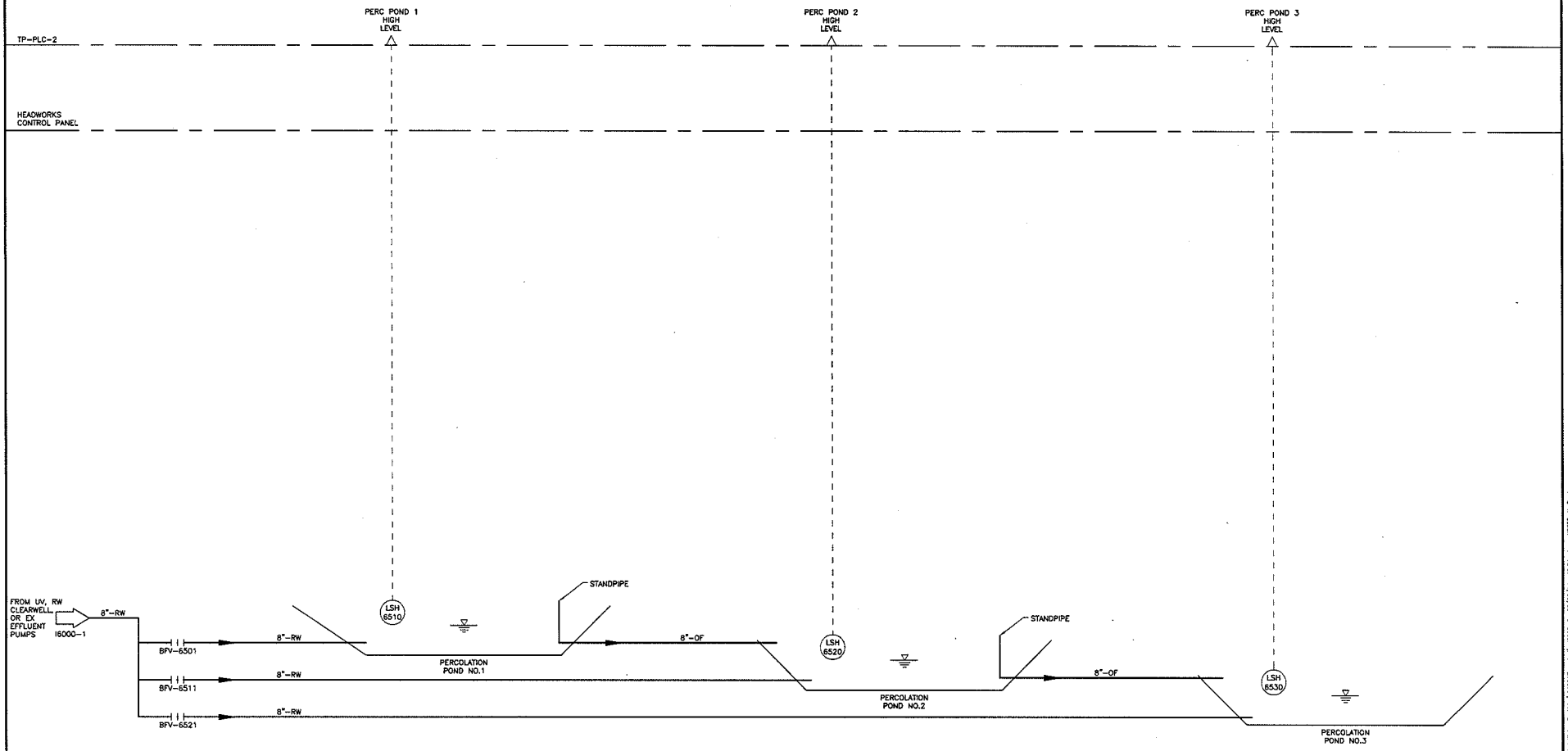

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" — 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN — RCE 52102 — EXP. 12/31/2014

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
PERCOLATION PONDS

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE NONE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-13
DRAWN BY: A. PRIOR	DATE 06/2013		
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	

Plan No. 16000-3 — Sheet ____ of XXX Sheets

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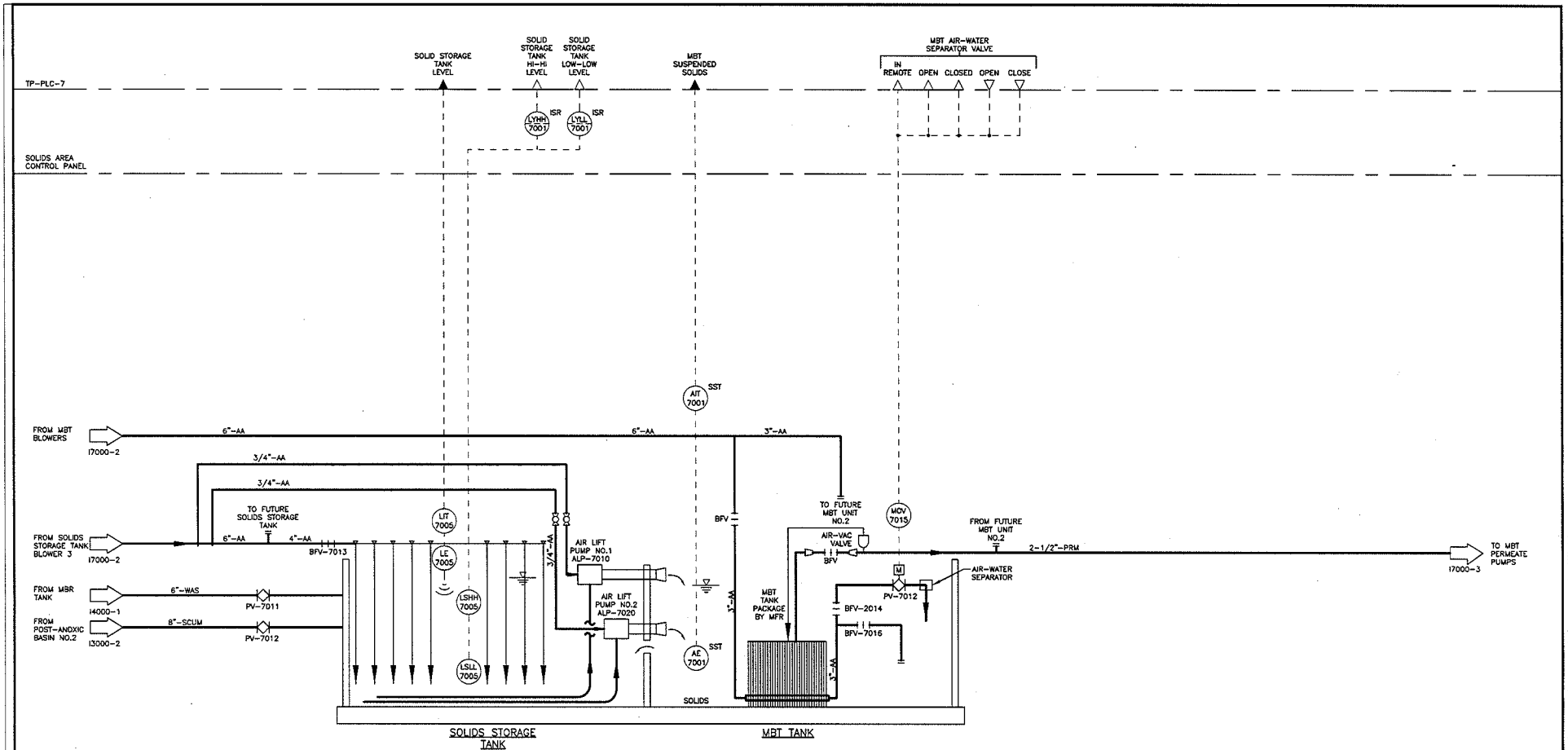

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES — 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14761

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM SOLIDS STORAGE TANK AND MEMBRANE THICKENER

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. 17000-1 Sheet ____ of XXX Sheets

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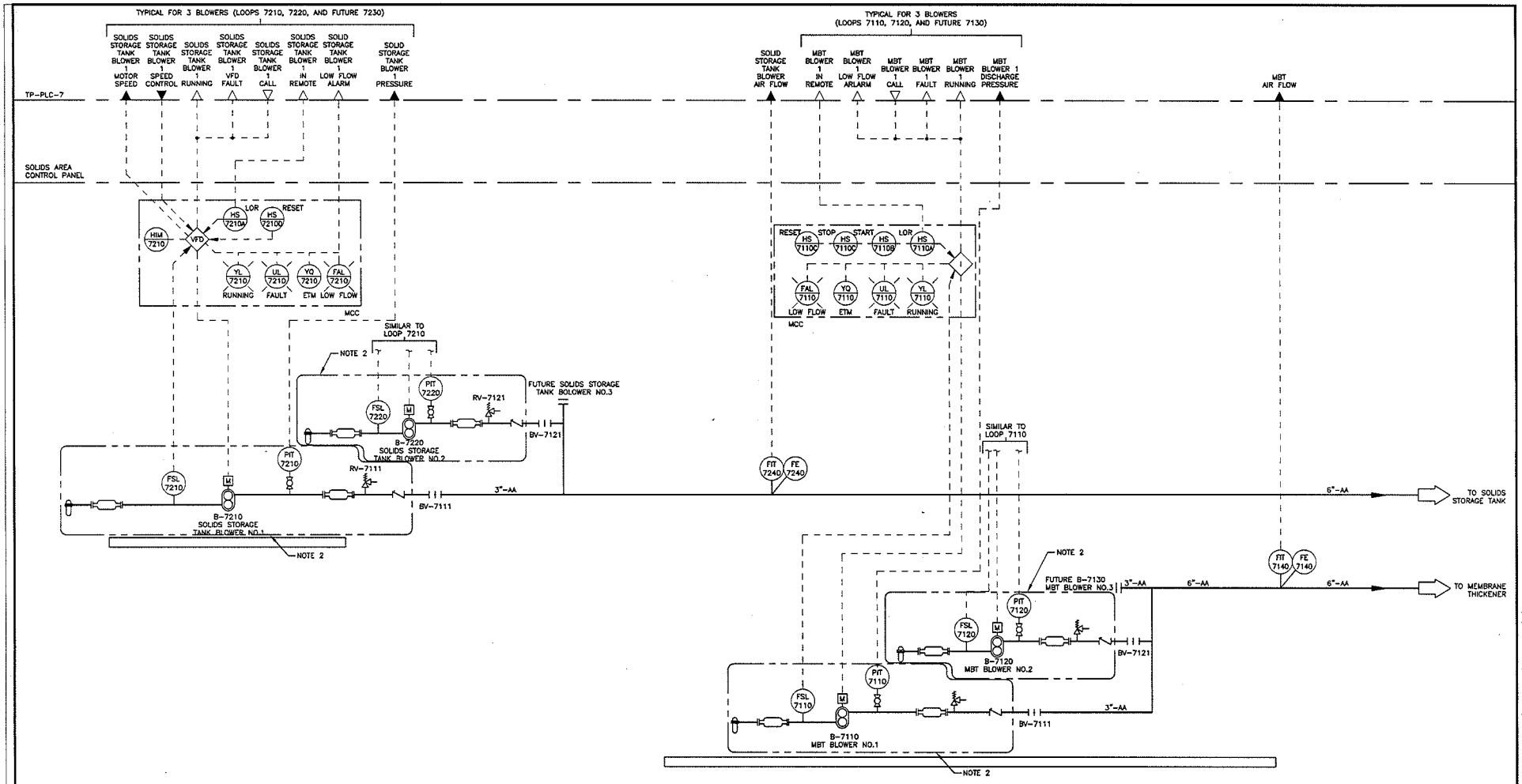

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.
2. COMPONENTS PROVIDED BY PACKAGED SYSTEMS SUPPLIER.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14747 — PROFESSIONAL ENGINEER

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
SOLIDS AREA BLOWERS

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. 17000-2 — Sheet _____ of XXX Sheets

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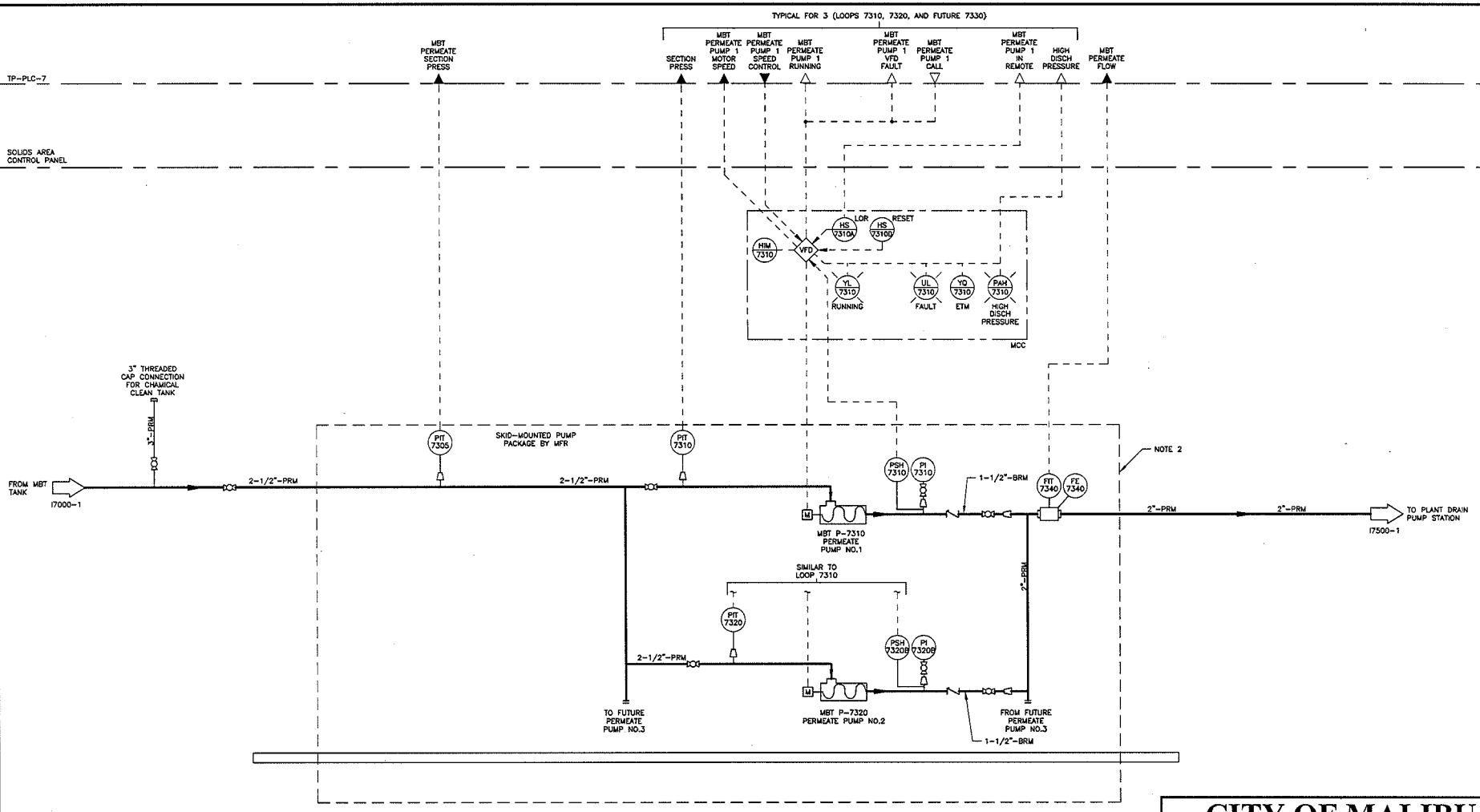

MBT SYSTEM PERMEATE PUMP SKID

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.
2. CLASS 1, DIVISION 1 BOUNDARY:
   a. 3 FEET RADIUS FROM ANY VENT WITHIN THE CLASS 1, DIV 1 AREA.
   b. 3 FEET AROUND AND 1.5 FEET ABOVE ANY HATCH WITHIN THE CLASS 1, DIV 1 AREA.
   c. 3 FEET ENVELOPE AROUND ANY OPENING WITHIN THE CLASS 1, DIV 1 AREA.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14763

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
MBT PERMEATE PUMPS

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE: NONE
DRAWN BY: A. PRIOR	DATE 06/2013	
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX

APPROVED BY: DATE XX-XX-13
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. 17000-3

Sheet ____ of XXX Sheets

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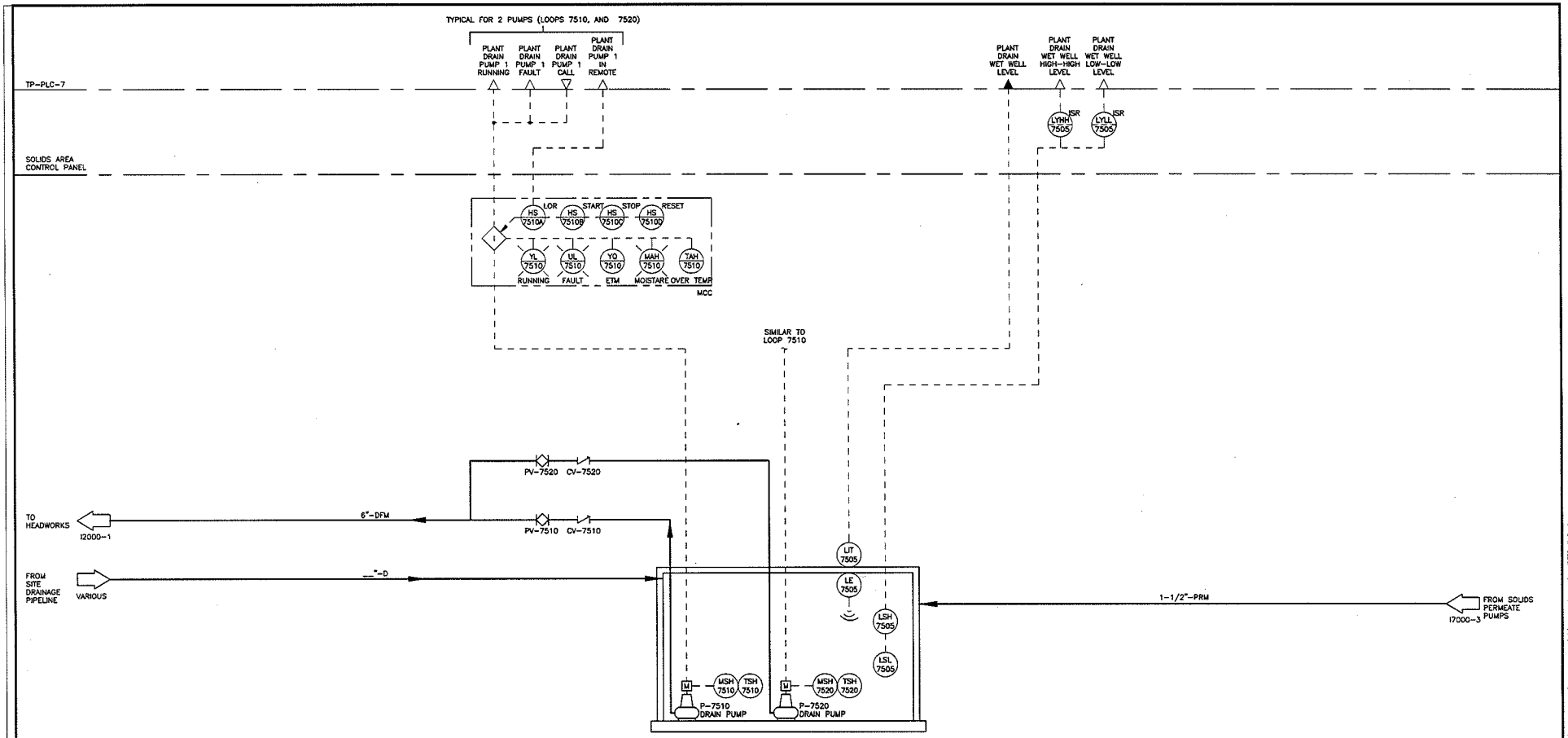

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
PLANT DRAIN PS

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT MANAGER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. 17500-1 — Sheet ____ of XXX Sheets

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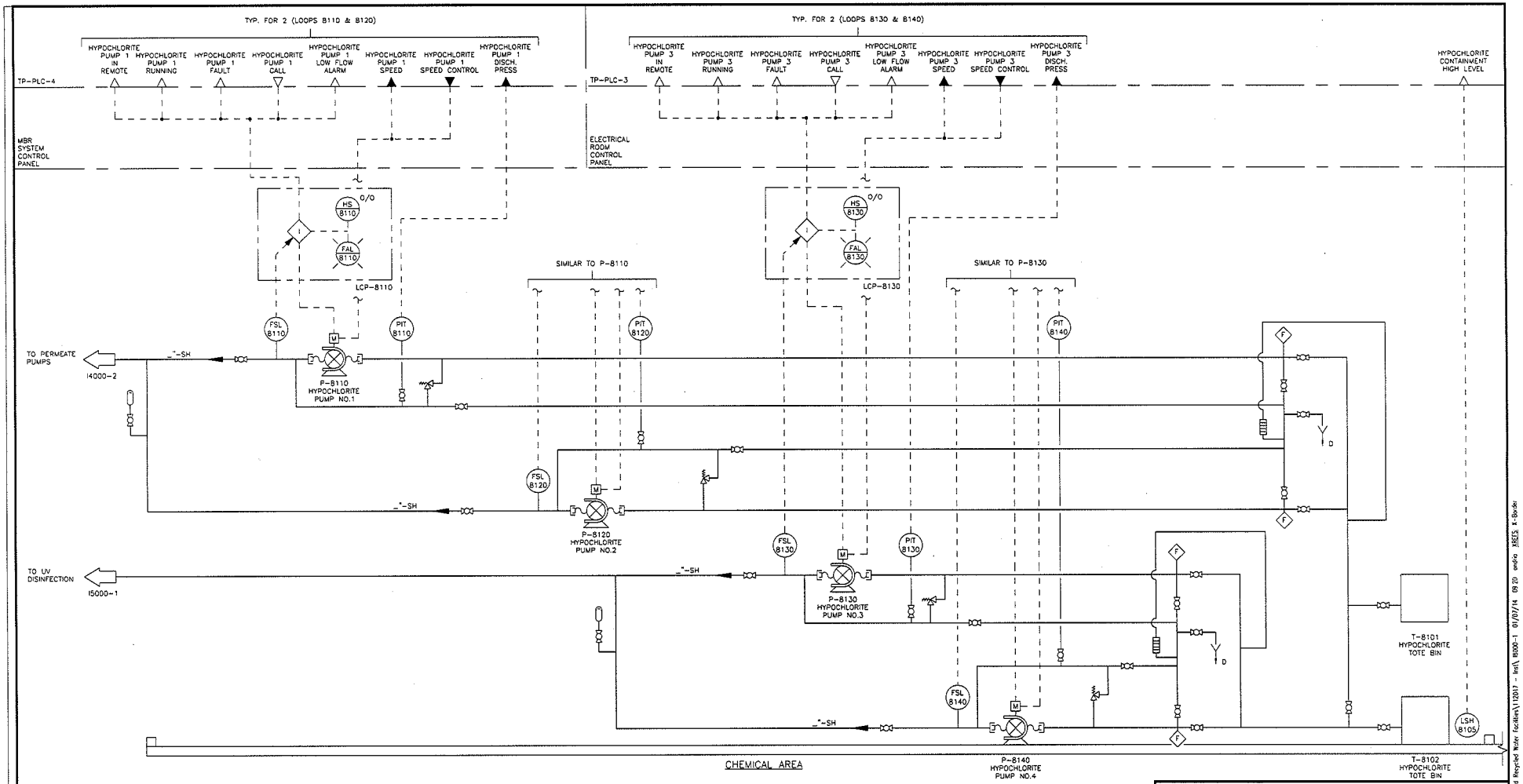

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DRAWING
HYPOCHLORITE SYSTEM

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIAL 811 ONE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. P 16747 — REGISTERED PROFESSIONAL ENGINEER

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE NONE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: A. PRIOR	DATE 06/2013		DATE XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	

Plan No. 18000-1 — Sheet ____ of XXX Sheets

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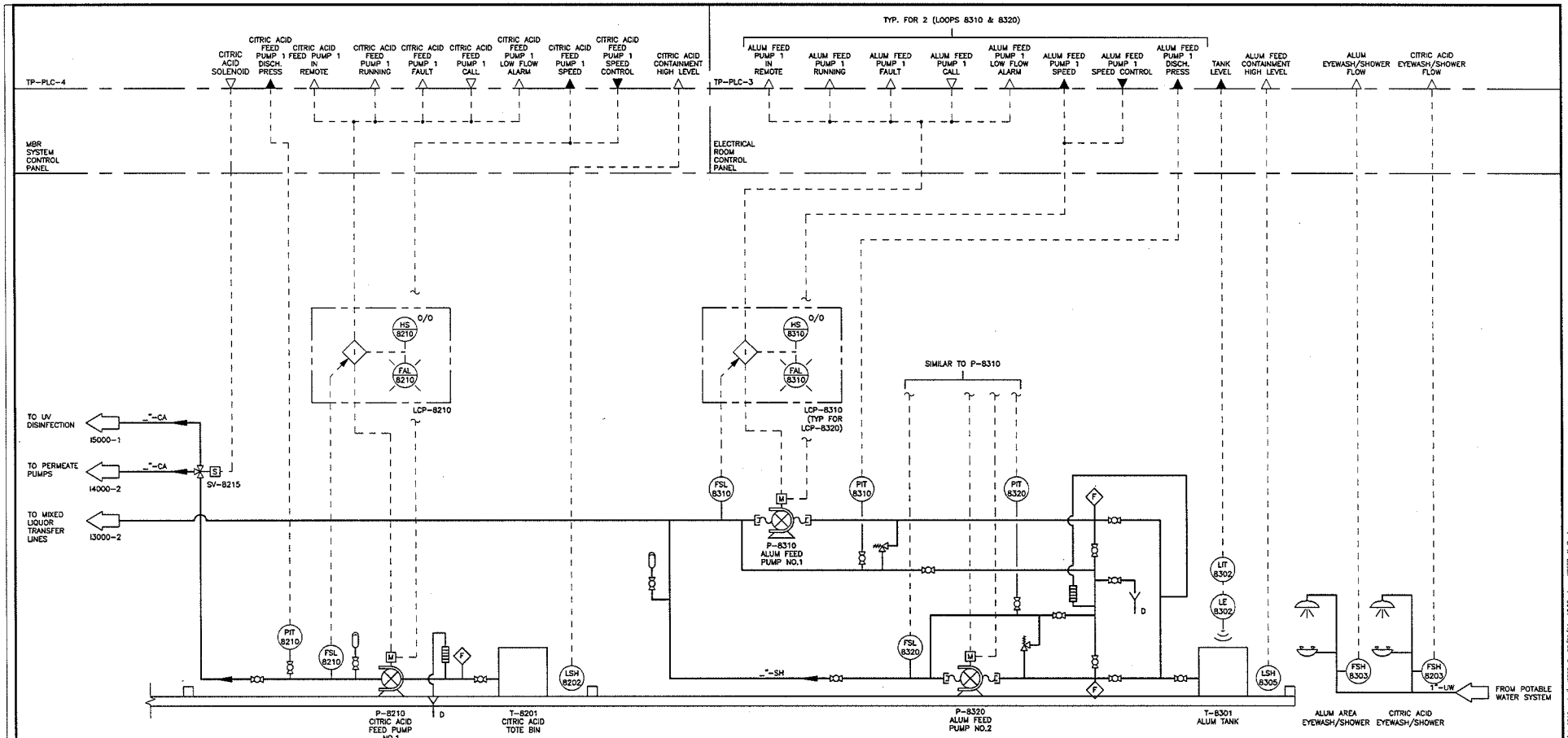

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

DIAL BEFORE YOU DIG 800-422-4133 DIGALERT

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DRAWING
CITRIC ACID & ALUM SYSTEMS

DESIGNED BY: M. ERWIN	DATE: 06/2013	SCALE: NONE	APPROVED BY: DATE: XX-XX-13
DRAWN BY: A. PRIOR	DATE: 06/2013		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
CHECKED BY:	DATE: 06/2013	PROJECT NUMBER: XXXX	

Plan No. 18000-2 Sheet ____ of XXX Sheets

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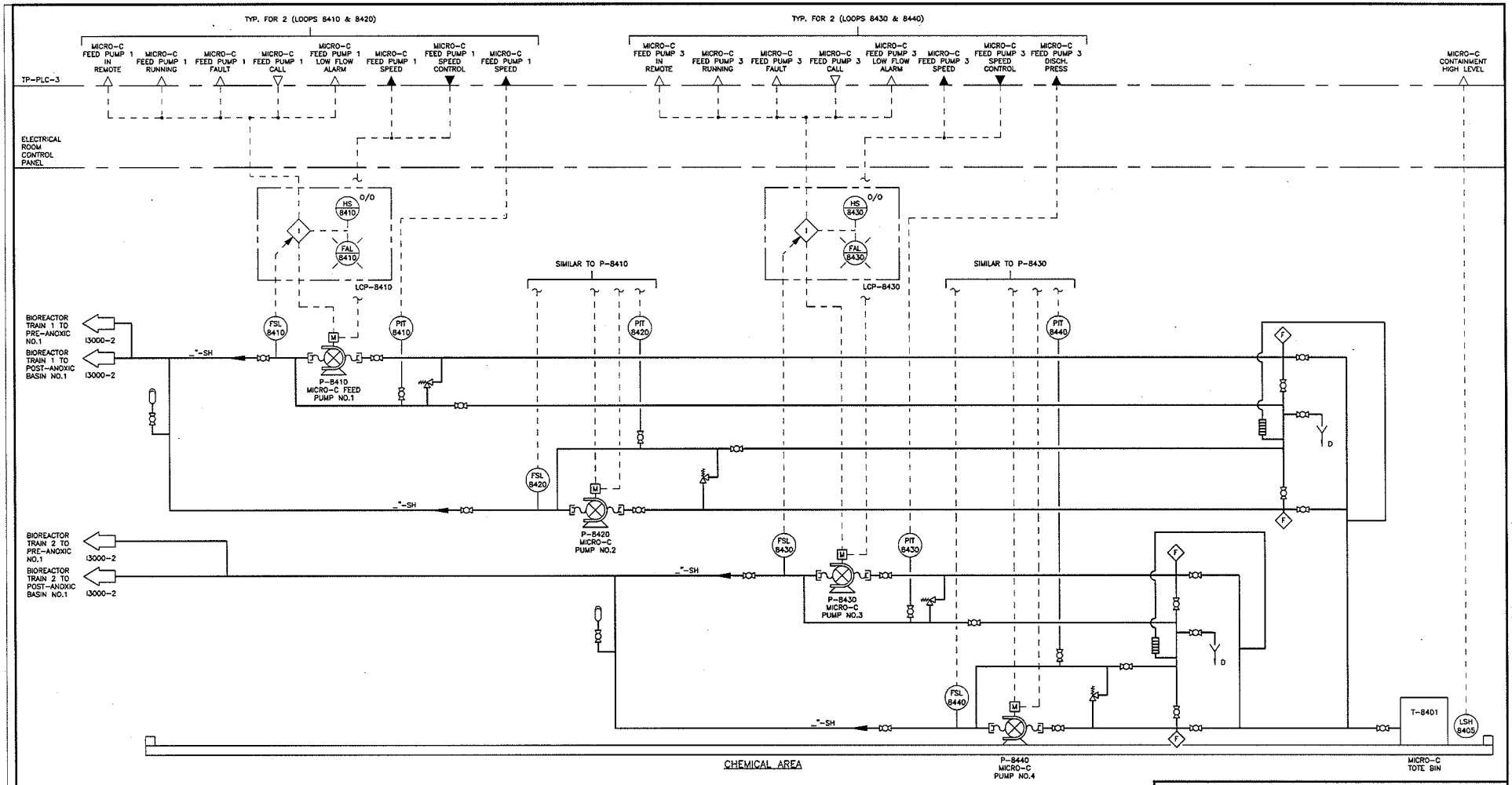

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.
2. MICRO C WILL BE INSTALLED NEXT TO BIOLOGICAL REACTORS.

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 13705

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
MICRO-C SYSTEM

DESIGNED BY: M. ERWIN	DATE: 06/2013	SCALE: NONE	APPROVED BY: DATE: XX-XX-13
DRAWN BY: A. PRIOR	DATE: 06/2013		ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
CHECKED BY:	DATE: 06/2013	PROJECT NUMBER: XXXX	

Plan No. 18000-3 — Sheet ____ of XXX Sheets

Last Saved By: kngyuyen 2/03/14 01:18pm

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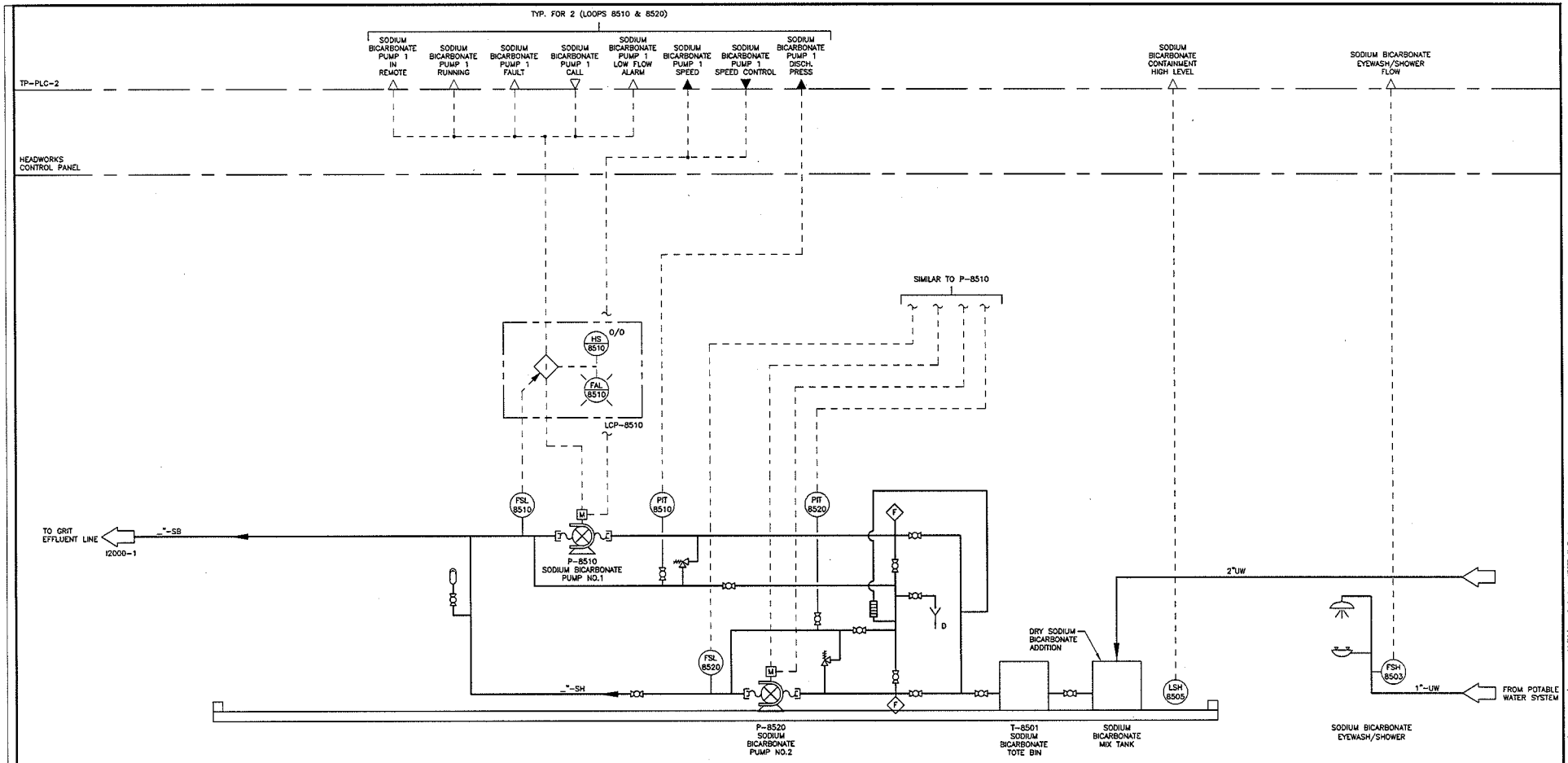

CHEMICAL AREA

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.
2. ALUM WILL BE NEXT TO HYPOCHLORITE AND CITRIC ACID.
3. SODIUM BICARBONATE WILL BE INSTALLED DOWN NEAR HEADWORKS.

DIAL BEFORE YOU DIG 1-800-227-2600 — DIGALERT — PLAN IT SAFE DIG BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING THE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 19121 — EXP. 12/31/2014

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
SODIUM BICARBONATE SYSTEM

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: DATE
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. 18000-4 — Sheet ____ of XXX Sheets

Last Saved By: bmr 2-25-14 04:43pm

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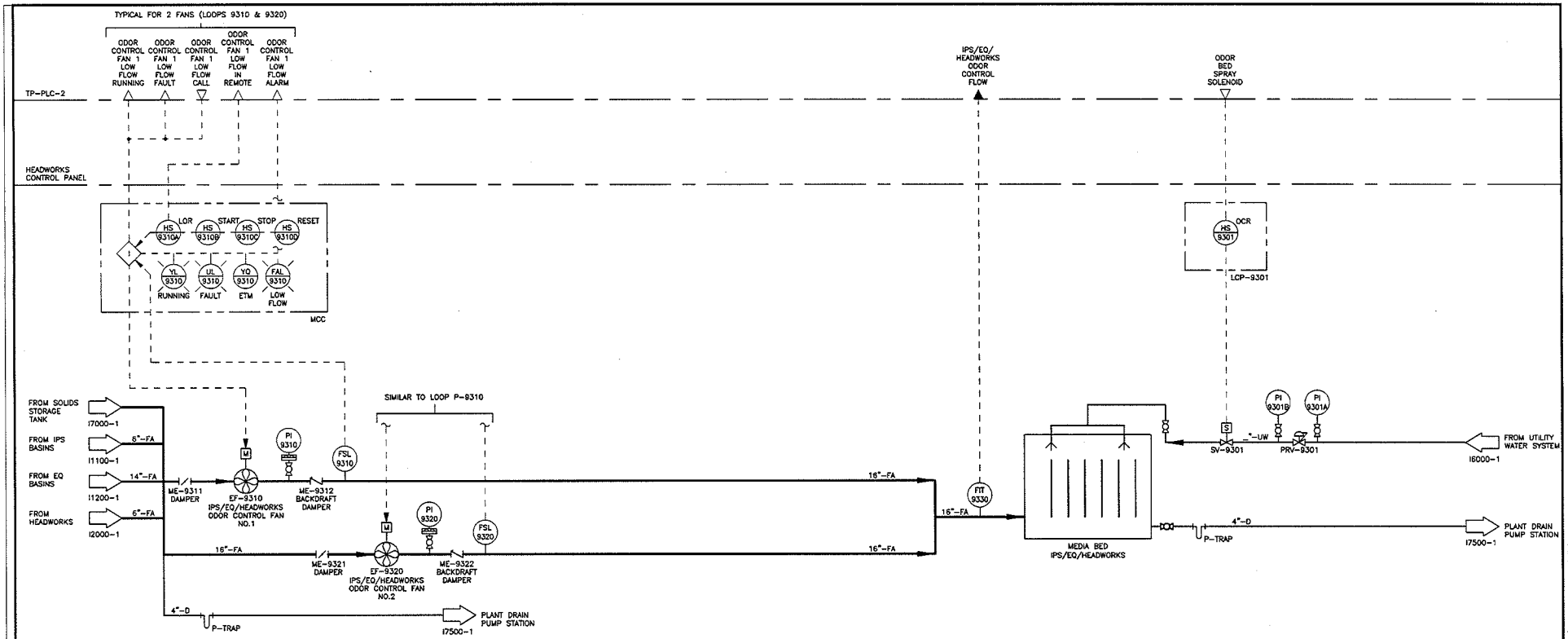

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

DIAL BEFORE YOU DIG — DIGALERT — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14767

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
IPS/EQ/HEADWORKS ODOR CONTROL

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	DATE XX-XX-13
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	

Plan No. 19000-1 — Sheet ____ of XXX Sheets

Last Saved By: ben 2/26/14 09:09am

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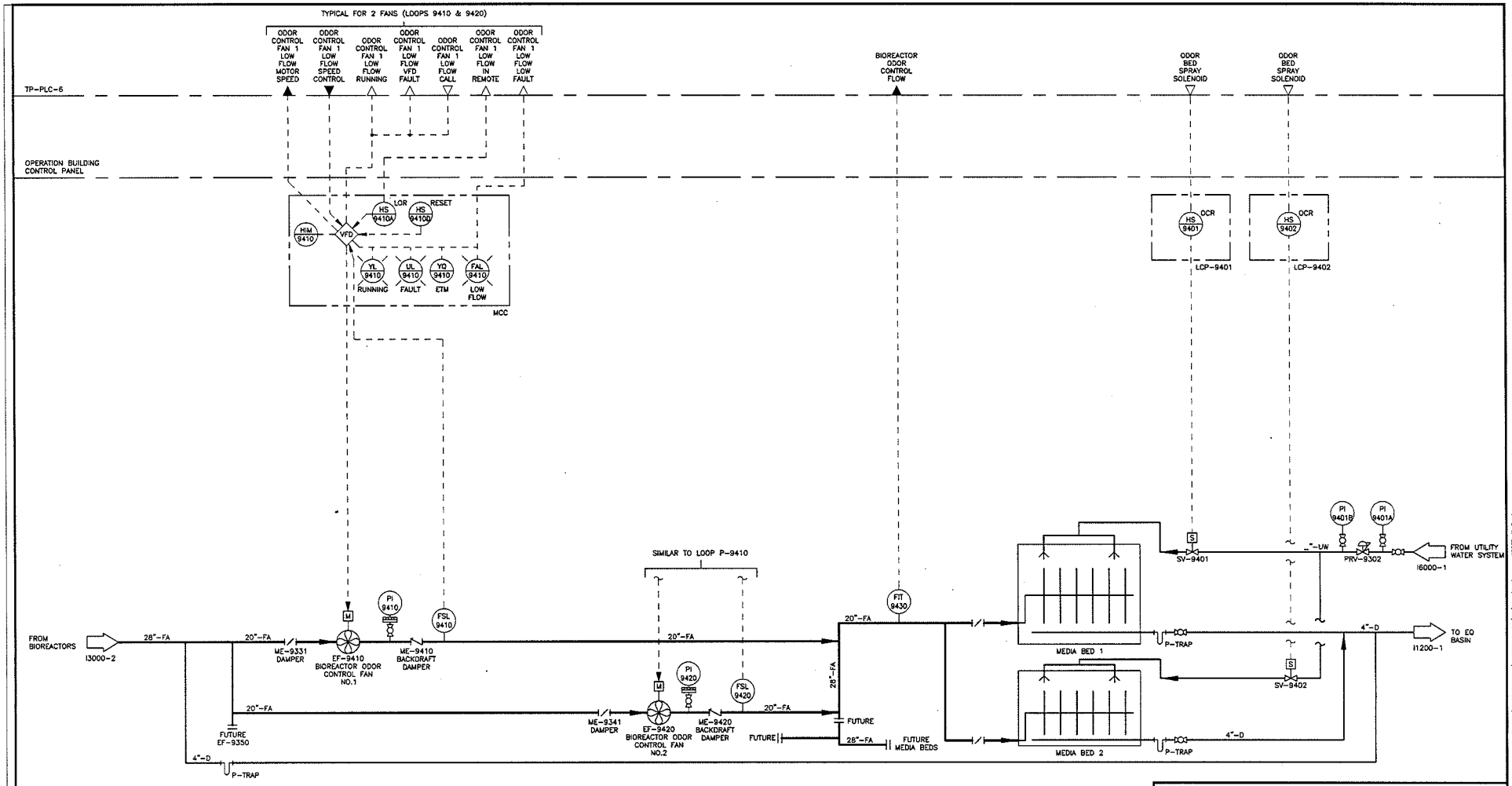

NOTES:

1. COMPLETE TAG NAMES FOR ALL DEVICES SHOWN INCLUDE "TP-" PREFIX.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

PROCESS AND INSTRUMENTATION DIAGRAM
BIOREACTOR ODOR CONTROL

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC Water and Environment

95% Submittal Not for Construction — MICHAEL J. ERWIN No. E 14743 EXP. 6/30/14

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: M. ERWIN	DATE 06/2013	SCALE	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-13
DRAWN BY: A. PRIOR	DATE 06/2013	NONE	
CHECKED BY:	DATE 06/2013	PROJECT NUMBER XXXX	

Plan No. 19000-2 — Sheet ____ of XXX Sheets

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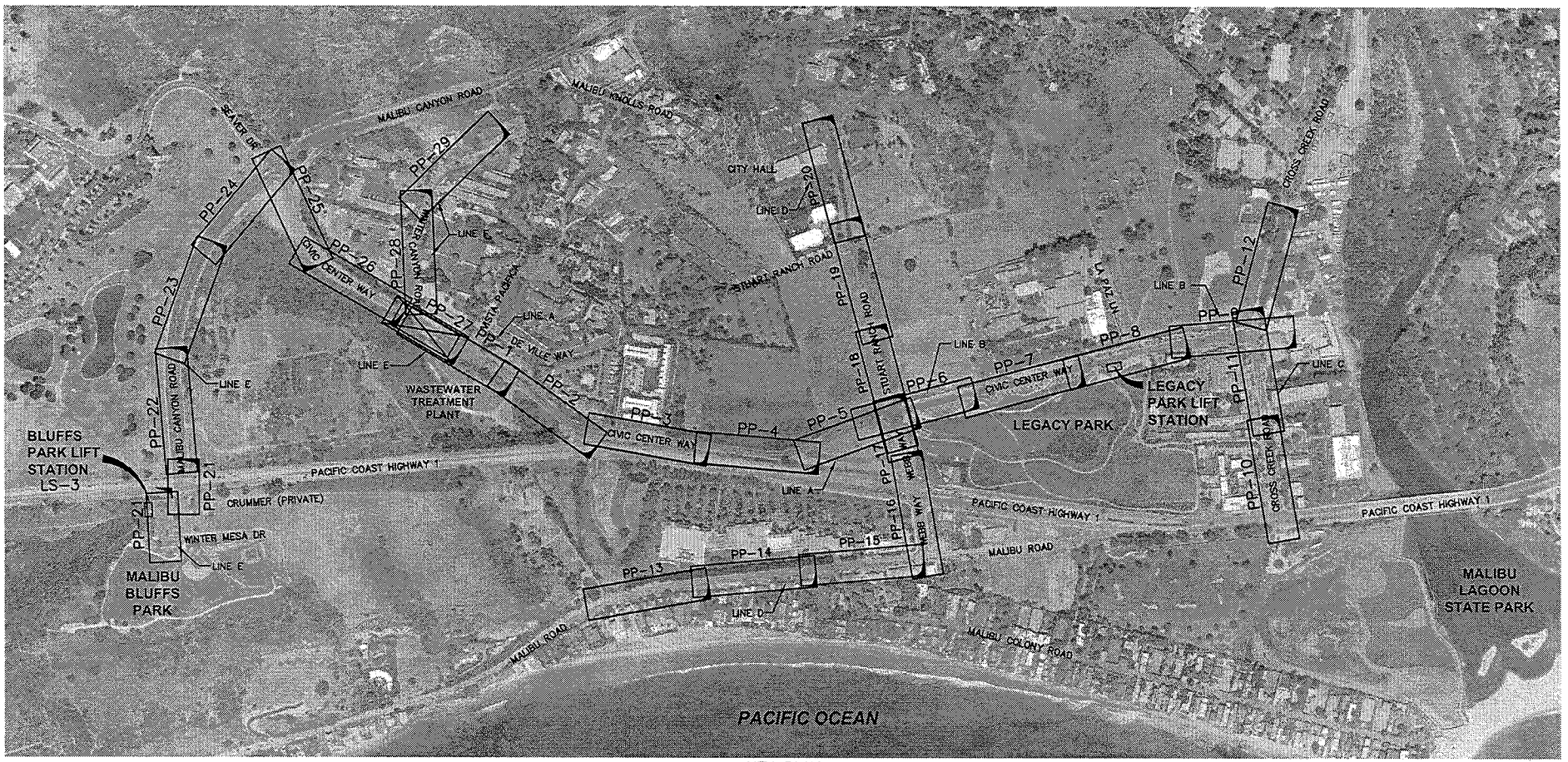

KEY PLAN
1"=250'

DRAWING NUMBER — PP-1 — PLAN WINDOW, ON SHEET

INDICATES LOWER RIGHT CORNER OF PLAN WINDOW

N

0 250 500 750
SCALE IN FEET

BASIS OF COORDINATES
NAD 83 (1991.35 EPOCH)

NGS CONTROL
MALIBU EW9594
N 1835201.779'
E 6349016.800'

STAINLESS STEEL ROD IN MONUMENT WELL 59.0 FEET SOUTHWESTERLY OF THE SOUTHWEST CORNER OF THE MAINTENANCE BUILDING AND 56.0 FEET SOUTHEASTERLY OF THE SOUTHEASTERN ANGLE POINT OF THE BASEBALL FIELD FENCE IN MALIBU BLUFFS STATE BEACH. STAMPED "MALIBU 1992 LS 6172". STAMP IS ON UNDERSIDE OF MONUMENT WELL LID.

NGS CONTROL
P 99 RESET EW4014
N 1837107.330'
E 6385054.836'

BENCHMARK DISK SET IN THE TOP AND 1.9 FOOT WEST OF THE EAST END OF THE SOUTH CONCRETE RETAINING WALL FOR THE EAST ABUTMENT OF BRIDGE 53-35 OVER TOPANGA CREEK, 35 FEET SOUTH OF THE CENTERLINE OF THE SOUTH LANES OF PACIFIC COAST HIGHWAY, STAMPED "P 99 1933".

BENCHMARK
BM 5395
ELEV. 56.643'
COUNTY OF LOS ANGELES DATUM

IN CENTER ISLAND OF PACIFIC COAST HIGHWAY 1,246.71 FEET WEST OF WEBB WAY AND 52.49 FEET SOUTHWEST OF LIGHT STANDARD #2081389E, MARKED "LAS FLORES A-8 1950".

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN TO EXCAVATE YOU DIG! AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING MOST SOUTHERN CALIFORNIA COUNTIES

0" 1" VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY.

PLANS PREPARED BY
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

KEY PLAN

DESIGNED BY K. Erickson	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY R. Martinez	DATE		
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	
Plan No. GP-1		Sheet ____ of XXX Sheets	

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Last Saved By: rmartinez 3-31-14 08:31am

SANITARY SEWER CONSTRUCTION NOTES:

1. FOR PIPE SEPARATION AND TRENCH DETAIL 1/UC-3
2. FOR PIPE SEPARATION AND TRENCH DETAIL 2/UC-3
3. FOR PIPE SEPARATION AND TRENCH DETAIL 3/UC-3
4. FOR PIPE SEPARATION AND TRENCH DETAIL 4/UC-3
5. FOR PIPE SEPARATION AND TRENCH DETAIL 5/UC-3
6. FOR PIPE SEPARATION AND TRENCH DETAIL 6/UC-3
7. FOR PIPE SEPARATION AND TRENCH DETAIL 7/UC-3
8. FOR PIPE SEPARATION AND TRENCH DETAIL 8/UC-3
9. FOR PIPE SEPARATION AND TRENCH DETAIL 9/UC-3
10. FOR PIPE SEPARATION AND TRENCH DETAIL 10/UC-3
11. NOT USED
12. NOT USED
13. NOT USED
14. NOT USED
15. INSTALL ISOLATION VALVE ON RW LINE, SEE DETAIL C282/GC-9
16. INSTALL AIR RELEASE VALVE PER DETAIL C300/GC-9
17. INSTALL RW CONNECTION TO RW SERVICE PER DETAIL 4/GP-3
18. INSTALL RECYCLED WATER SERVICE PER DETAIL 4/GP-3
19. INSTALL SANITARY SEWER COSTUMER CONNECTION PER DETAIL 3/GP-3

SANITARY SEWER CONSTRUCTION NOTES:

20. CONSTRUCT SEWER MANHOLE PER DETAIL C200/GC-5 SIZE PER PLANS
21. SEE SHEET C200-1 FOR CONTINUATION AT WWTP.
22. EXIST. UTILITY CROSSING WITH PROPOSED SS, FM, RW, PER DETAIL C248/GC-8
23. INSTALL SANITARY SEWER LATERAL. SEE DETAIL GC-_
24. RE-ROUTE EXIST. UTILITY. SEE DETAIL GP-_
25. CONSTRUCT BLUFF PARK LIFT STATION PER SHEET LS-03
26. CONSTRUCT SEWER SERVICE CONNECTION PER DETAIL GP-3 SIZE PER DETAILS.
27. CONSTRUCT DROP SEWER MANHOLE PER DETAIL 2/GP-3
28. CONNECTION TO SANITARY SEWER MH PER DETAIL 1/GP-3

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT — PLAN AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" ____ 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CONSTRUCTION NOTES

DESIGNED BY / DATE	SCALE	APPROVED BY: / DATE
K. Erickson	AS SHOWN	XX-XX-14
DRAWN BY / DATE: R. Martinez		ROBERT BRAGER, P.E., J.D.
CHECKED BY / DATE: T. Butler	PROJECT NUMBER: 2036	PUBLIC WORKS DIRECTOR/CITY ENGINEER
		RCE NO. 52102 EXP. 12/31/2014

Plan No. GP-2

Sheet _____ of XXX Sheets

[RELEASE 02/26/09 GP 10, 3.31.14 - 10:21am - martinez] R:\RDB\[X Section]\LS SS CONST NOTES1.dgn
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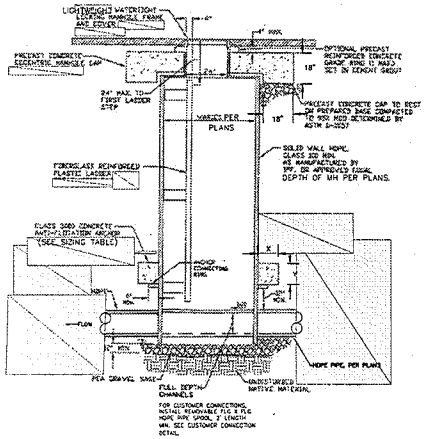
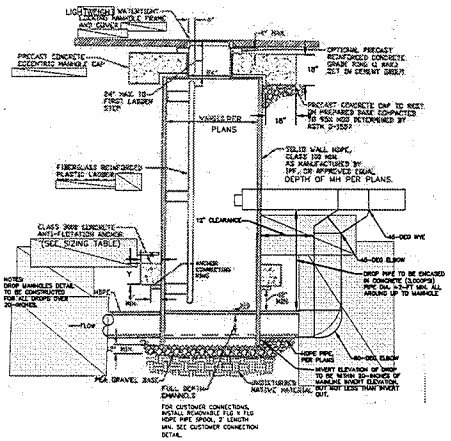
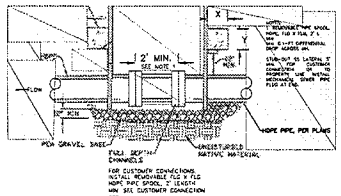


HDPE MANHOLE
DETAIL 1
NTS



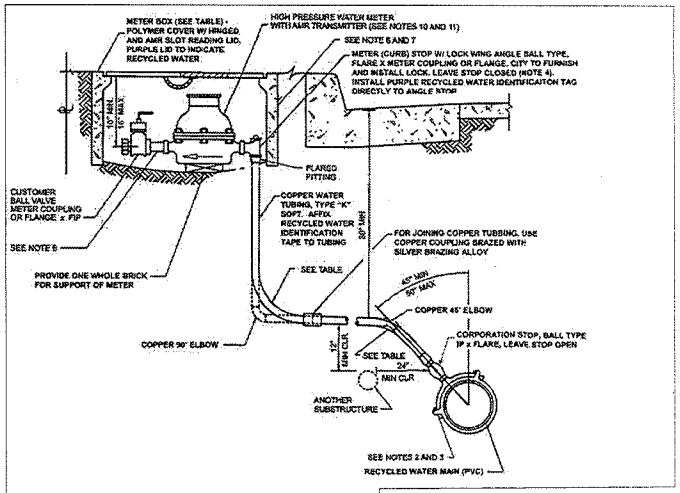
HDPE DROP MANHOLE
DETAIL 2
NTS



CUSTOMER CONNECTION DETAIL
DETAIL 3
NTS

SIZING TABLE

HDPE MANHOLE ANTI-FLOTATION ANCHOR SIZING TABLE				
DEPTH, RIM TO INVERT (FT)	DIA. 48"		DIA. 60"	
	X (IN)	Y (IN)	X (IN)	Y (IN)
6'	20"	12"	-	-
8'	20"	10"	-	-
10'	18"	9"	-	-
12'	18"	9"	-	-
>14'	16"	8"	20"	10"



METER VALVE SIZE	MAIN VALVE SIZE	MIN. SIZE TUBING	MIN. RADIUS TUBING BEND	POLYMER METER BOX NOMINAL INSIDE DIMENSION
3/4"	1"	1"	18" RADIUS	13" W x 20"L x 12" D
1"	1"	1"	18" RADIUS	13" W x 20"L x 12" D
1 1/2"	1 1/2"	1 1/2"	COPPER ELBOW	17" W x 30" x 12" D
2"	1 1/2"	1 1/2"	COPPER ELBOW	17" W x 30" x 12" D
3"	3"	3"	COPPER ELBOW, DIP OR PVC W/ APPROVAL	24" W x 36" L x 14" D W/ TWO-P-IECE LID
4"	4"	4"	COPPER ELBOW, DIP OR PVC W/ APPROVAL	24" W x 36" L x 14" D W/ TWO-P-IECE LID

RECYCLED WATER SERVICE CONNECTION
DETAIL 4
NTS

GENERAL NOTES:

1. NO METER BOX SHALL BE INSTALLED CLOSER THAN 18 FEET FROM EDGE OF DRIVEWAY APRON (TOP OF 3), OR 18 FEET FROM THE PROJECTION OF THE EDGE OF THE GARAGE OVERHANG, WHICHEVER PROVIDES THE LARGEST SEPARATION BETWEEN THE METER BOX AND THE DRIVEWAY.

   NO METER BOX SHALL BE INSTALLED IN A LOCATION WHERE VEHICLE LOADING MAY DAMAGE THE METER BOX AND/OR METER. NO METER BOX SHALL BE INSTALLED ADJACENT TO SIDEWALK TRANSITIONS WHERE SIDEWALK IS NOT PARALLEL TO STREET.
2. MINIMUM DISTANCE BETWEEN SERVICE PIPE OR MAIN TO A DRILL OR COUPLING JOINT, OR FITTING IS 24 INCHES.
3. USE MALLEABLE IRON OR DUCTILE IRON DOUBLE STRAP CLAMPS ON CAST IRON, DUCTILE IRON, AND STEEL PIPE LESS THAN 16 GA WALL THICKNESS. USE BRONZE DOUBLE STRAP CLAMPS ON ACP. USE A WELDED THREADED OUTLET ON STEEL PIPE (WALL THICKNESS 16 GA AND GREATER).
4. TEST AT SYSTEM PRESSURE AND FLUSH SERVICE LINE BEFORE LOCKING.
5. ONLY EXCAVATED SOIL OR BACKFILL MATERIAL APPROVED BY CITY IS TO BE USED TO BACKFILL TRENCH. NO TRASH IS TO BE LEFT IN TRENCH.
6. FRONT EDGE OF METER BOX TO BE PLACED AGAINST REAR OF CURB EXCEPT WHEN THERE IS A SIDEWALK ADJACENT TO REAR OF CURB. THEN, FRONT EDGE OF METER BOX TO BE PLACED AGAINST REAR OF SIDEWALK. HEAVY DUTY PLASTIC OR POLYMER COMPOSITE BOXES MAY BE USED WITH CITY APPROVAL.
7. ALL SERVICE CONNECTIONS SHALL BE INSTALLED FROM THE MAIN IN THE STREET FROM WHICH THE SERVICE IS ADDRESSED, AT RIGHT ANGLES TO THE RECYCLED WATER MAIN, LOCATED AS SHOWN ON PLANS OR DIRECTED BY CITY, AND NOT CLOSER THAN 7 FEET TO ANY DRIVEWAY (TOP OF 3). WHERE PHYSICAL CONDITIONS OR EXISTING UTILITY LINES DO NOT PERMIT, A DIFFERENT LOCATION MAY BE APPROVED BY CITY AS SHOWN ON THE APPROVED PLAN.
8. ALL METERED SHALL HAVE FLARE CONNECTIONS ON THE MAIN SIDE, AND ALL NECESSARY BOLTS, NUTS AND RUBBER GASKETS.
9. 3" LARGER METER SIZES ARE NOT AVAILABLE. USE MULTIPLE METER MANIFOLDS TO PROVIDE SERVICE WITH CITY'S APPROVAL.
10. METERED RECYCLED WATER SERVICE CONNECTIONS MAY ONLY BE INSTALLED UNDER CITY SUPERVISION, AFTER RECEIPT AND PROCESSING OF RECYCLED WATER SERVICE APPLICATION BY THE CITY AND PAYMENT OF ALL APPLICABLE CHARGES.
11. THE RECYCLED WATER METER MUST BE COMPATIBLE WITH THE CITY'S AUTOMATED METER READING (AMR) SYSTEM. FOR DETAILS, SEE METER SPECIFICATIONS ISSUED AT THE TIME OF APPLICATION FOR RECYCLED WATER SERVICE. UPON CITY FACILITIES APPROVED, METERS MAY BE EXEMPT FROM PROVIDING AN AMR SYSTEM.
12. FOR METER SIZES 3 INCH AND GREATER, DUCTILE IRON PIPE OR PURPLE PVC C900 MAY BE USED WITH CITY APPROVAL. TRACER RESISTANCE REQUIRED.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CUSTOMER CONNECTION DETAILS

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — IT'S FAST, SAFE, AND BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING MOST SOUTHERN CALIFORNIA COUNTIES

1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY	DATE	SCALE	APPROVED BY:	DATE
K. Erickson		AS SHOWN		XX-XX-14
DRAWN BY: R. Martinez	DATE		ROBERT BRAGER, P.E., J.D.	
CHECKED BY: T. Butler	DATE	PROJECT NUMBER 2036	PUBLIC WORKS DIRECTOR/CITY ENGINEER	
			RCE NO. 52102	EXP. 12/31/2014

Plan No. GP-3 — Sheet ____ of XXX Sheets

P:\RENAME\07\08\GP-03 SHEET 10 (1).mxd\mxd B 11"X17" Export 11"X17" CONSTNOTES.prj

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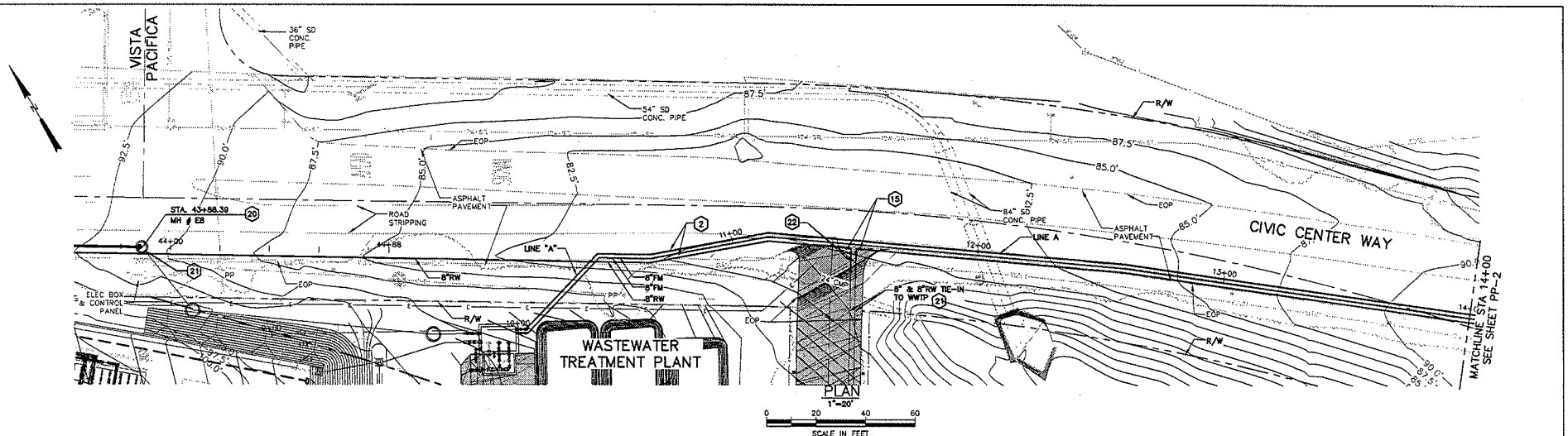
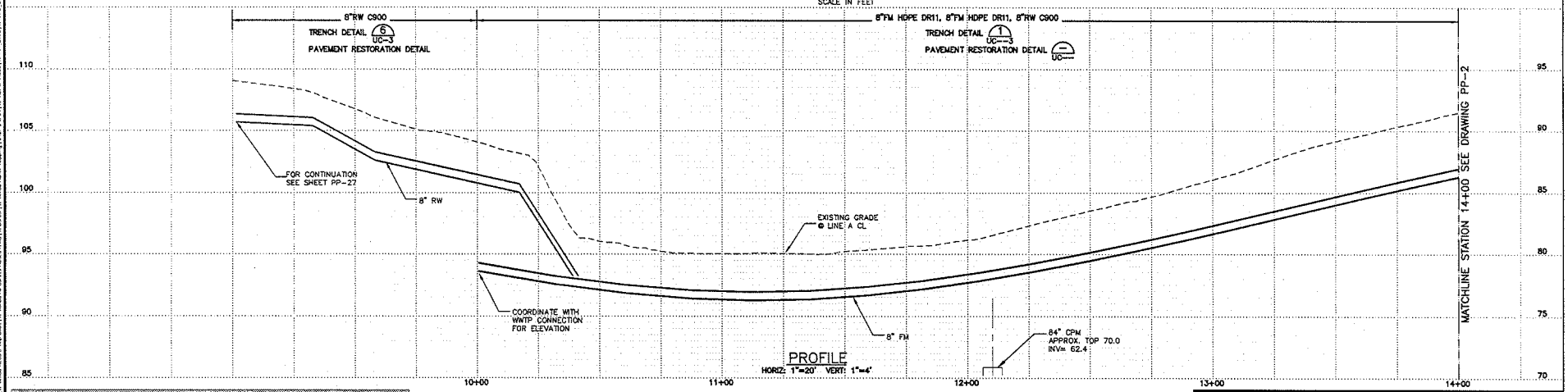
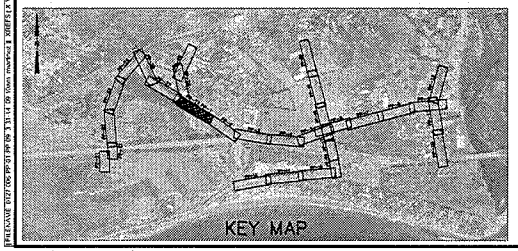






NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIAL BEFORE YOU DIG — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NEW SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

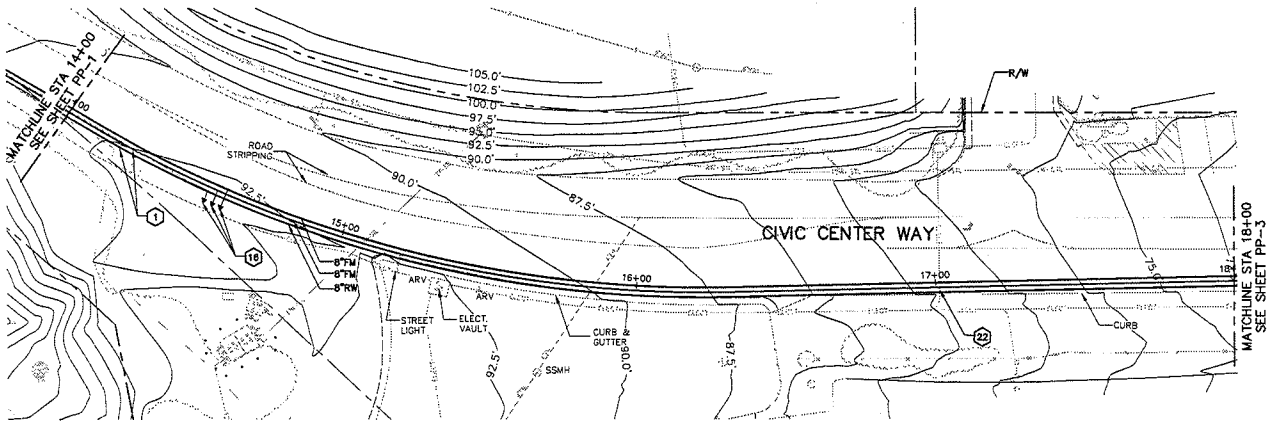
CIVIC CENTER WAY - 1
LINE -A

DESIGNED BY: K. Erickson — DATE
DRAWN BY: R. Martinez — DATE
CHECKED BY: T. Butler — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036
APPROVED BY: — DATE: XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

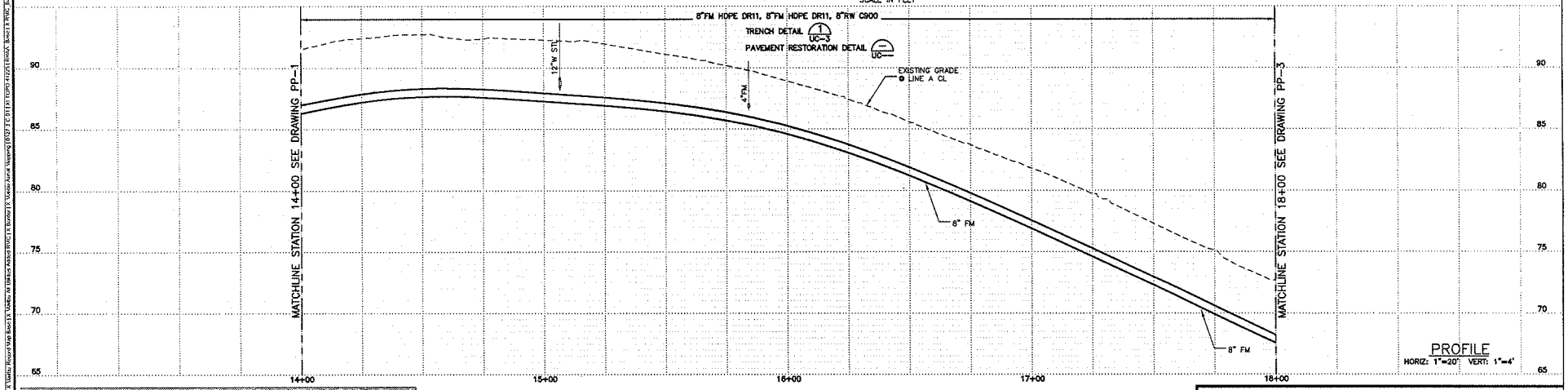
Plan No. PP-1

Sheet _____ of XXX Sheets

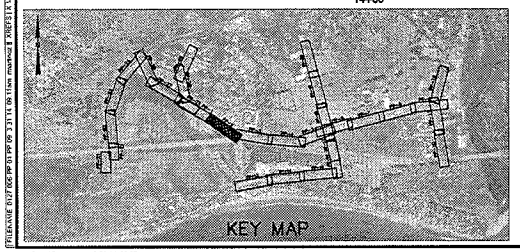
Last Saved By: rmartinez 3-31-14 09:07am



PLAN
1"=20'
0 20 40 60
SCALE IN FEET



PROFILE
HORIZ: 1"=20' VERT: 1"=4'



NOTES:
1. DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG 1-800-227-2133 DIGALERT

VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIC CENTER WAY - 2
LINE - A

DESIGNED BY K. Erickson DATE
DRAWN BY R. Martinez DATE
CHECKED BY T. Butler DATE
SCALE AS SHOWN
PROJECT NUMBER 2036

APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. PP-2
Sheet ____ of XXX Sheets

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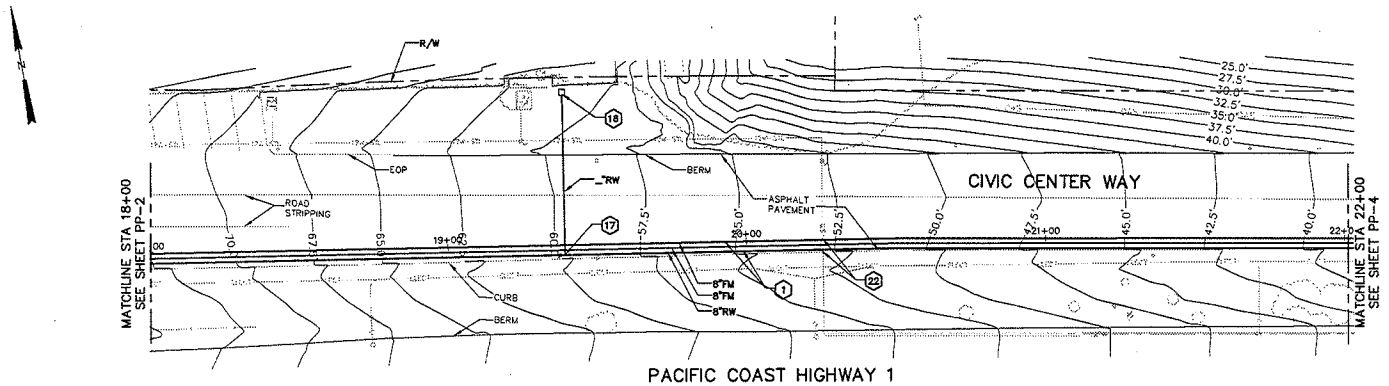
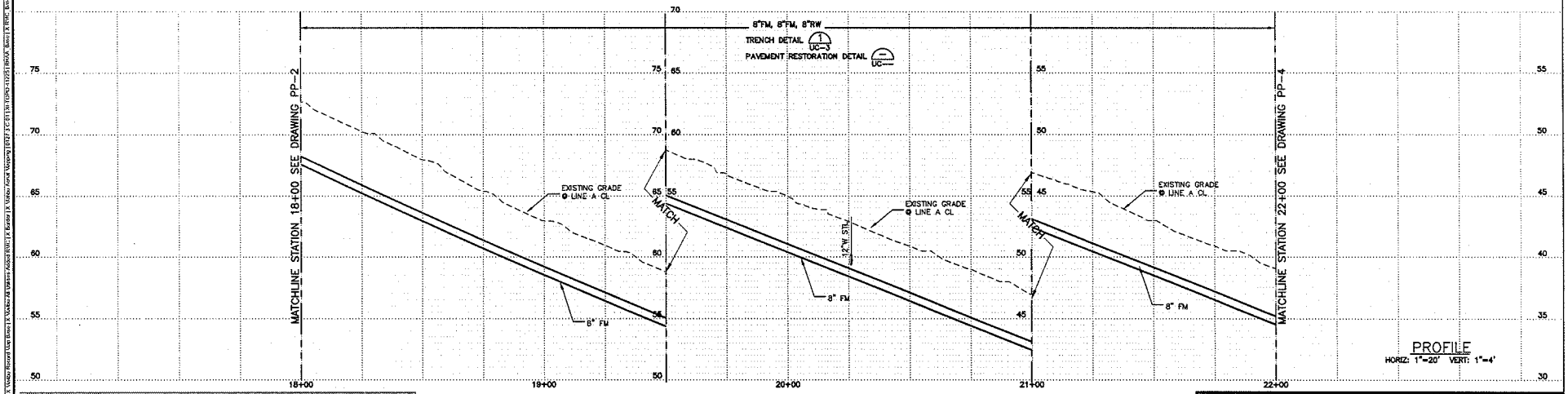
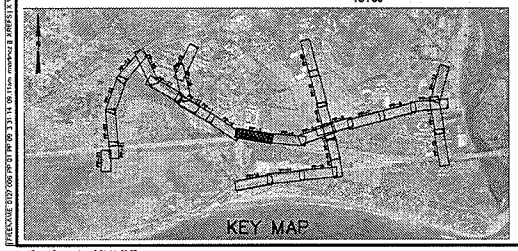


PLAN

0 20 40 60
1"=20'
SCALE IN FEET



PROFILE
HORIZ: 1"=20' VERT: 1"=4'



NOTES:

1 DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

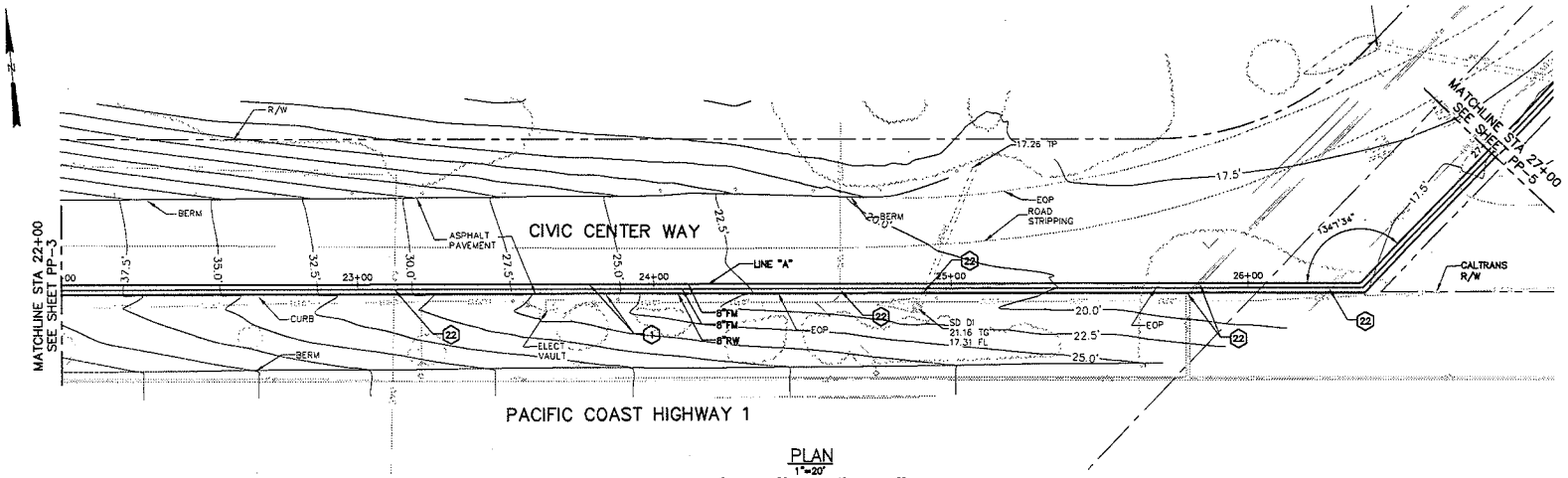
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

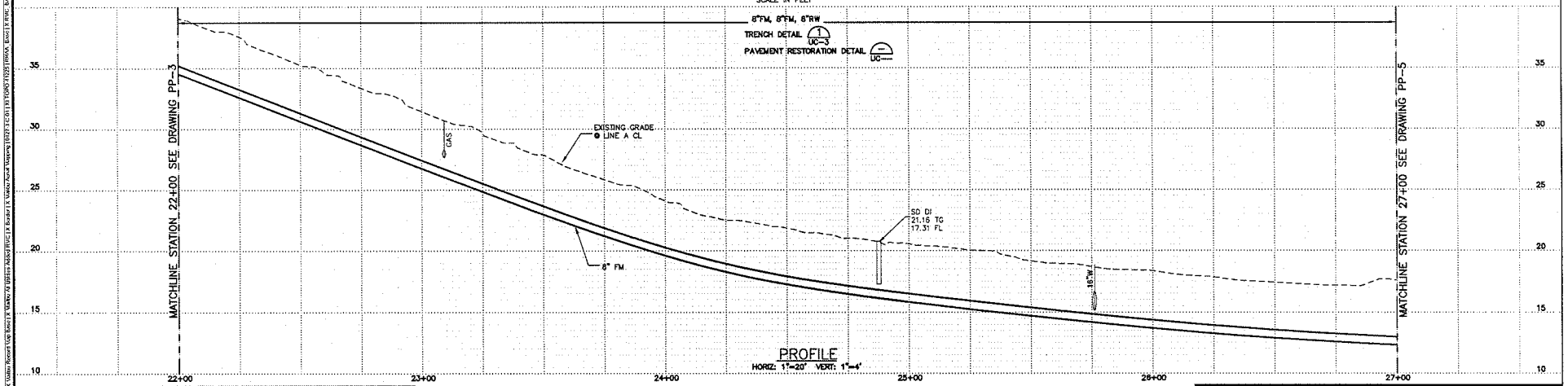
CIVIC CENTER WAY - 3
LINE - A

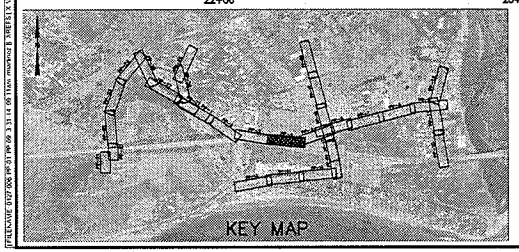
DESIGNED BY K. Erickson	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., I.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY R. Martinez	DATE		
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	

Plan No. PP-3 Sheet ____ of XXX Sheets

Last Saved By: rmartinez 3-31-14 08:07am







NOTES:

1. DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
DIGALERT

VERIFY SCALES
BAR IS ONE INCH
LONG ON FULL
SIZE DRAWING.
IF NOT ONE INCH
LONG ON THIS
DRAWING, ADJUST
SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIC CENTER WAY - 4
LINE -A
0

DESIGNED BY: K. Erickson DATE
DRAWN BY: R. Martinez DATE
CHECKED BY: T. Butler DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036
APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. PP-4
Sheet ____ of XXX Sheets

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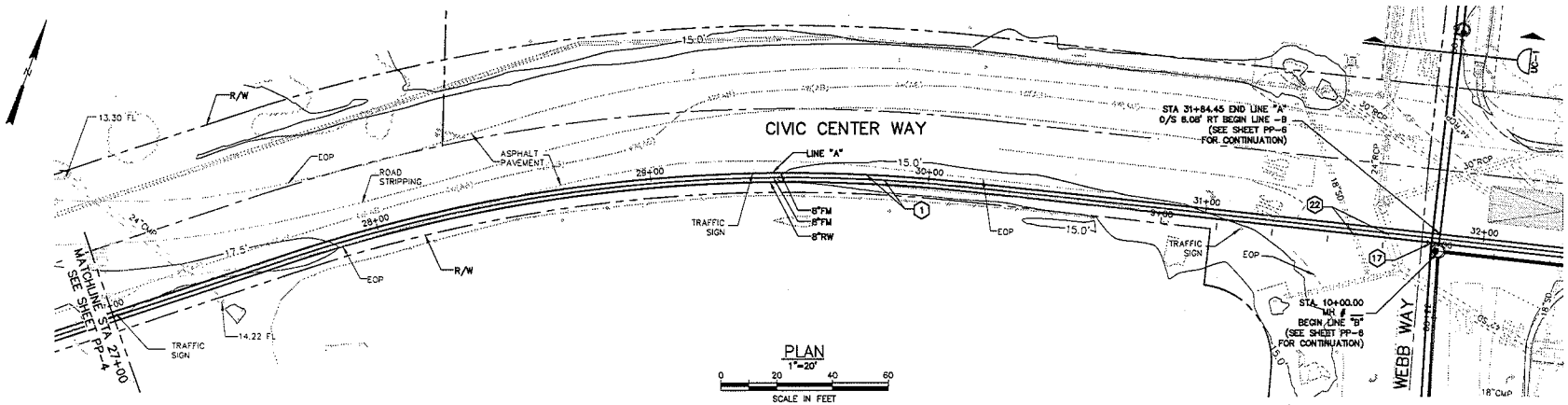
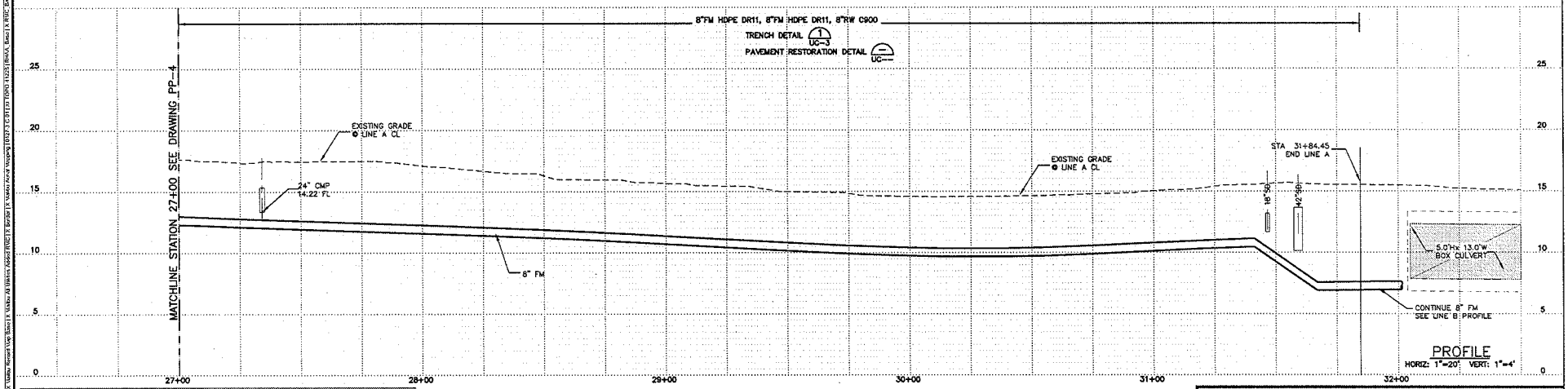
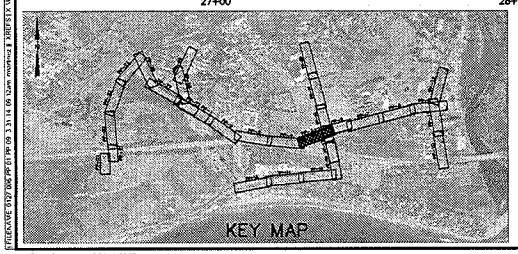


PLAN
1"=20'
0 20 40 60
SCALE IN FEET



PROFILE
HORIZ: 1"=20', VERT: 1"=4'



NOTES:
1. DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IT SAFE, DIAL BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NEW SOUTHERN CALIFORNIA COUNTIES

1" VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

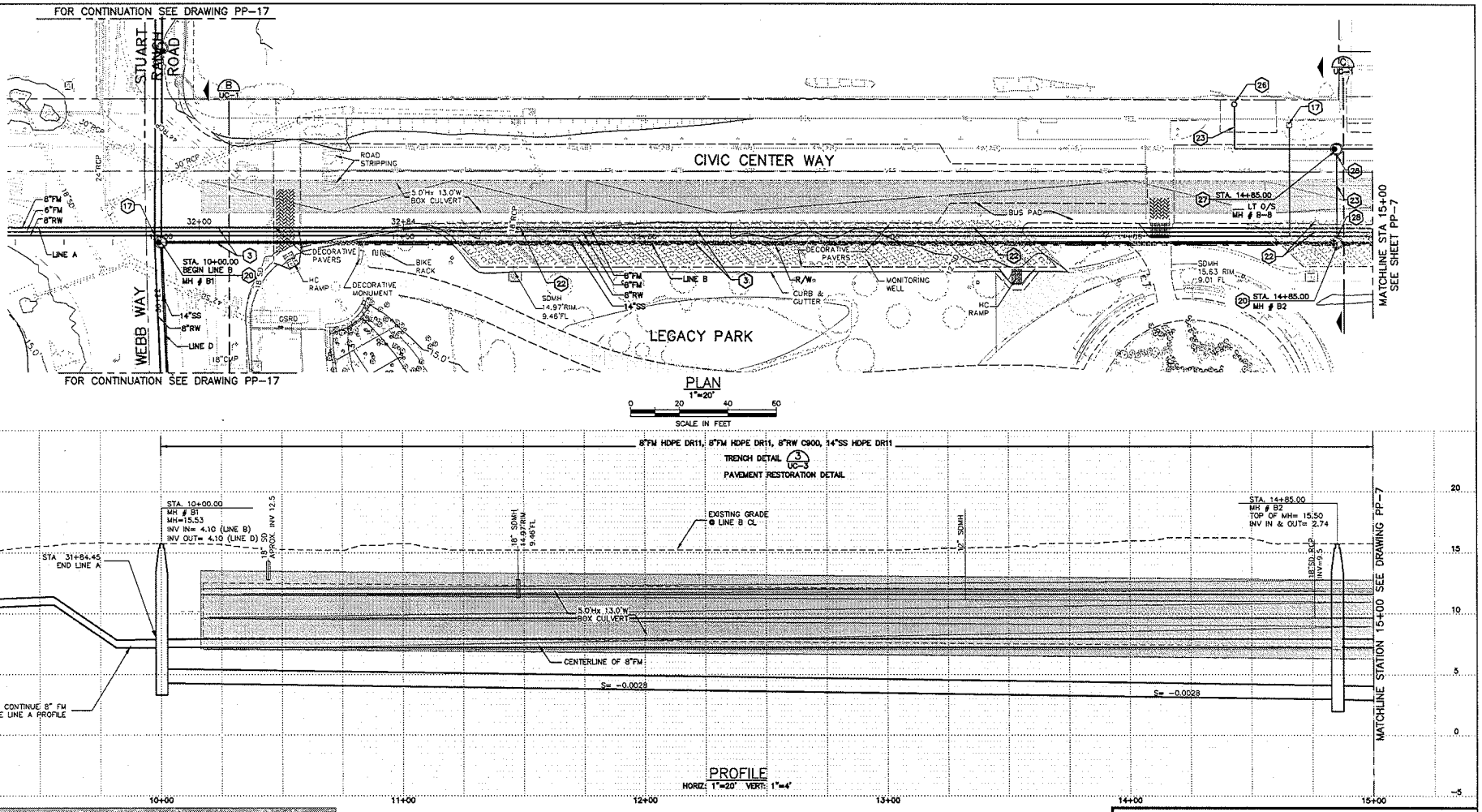
CIVIC CENTER WAY - 5
LINE - A

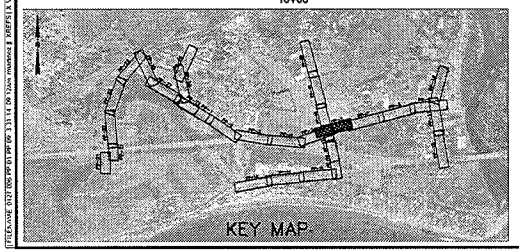
DESIGNED BY: K. Erickson	DATE	SCALE: AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., U.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY: R. Martinez	DATE		
CHECKED BY: T. Butler	DATE	PROJECT MANAGER: 2036	

Plan No. PP-5

Sheet _____ of XXX Sheets

Last Saved By: rmartinez 5-31-14 08:07am





NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIC CENTER WAY - 6
LINE - B

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

1" VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY RMC water and environment

95% Submittal Not for Construction

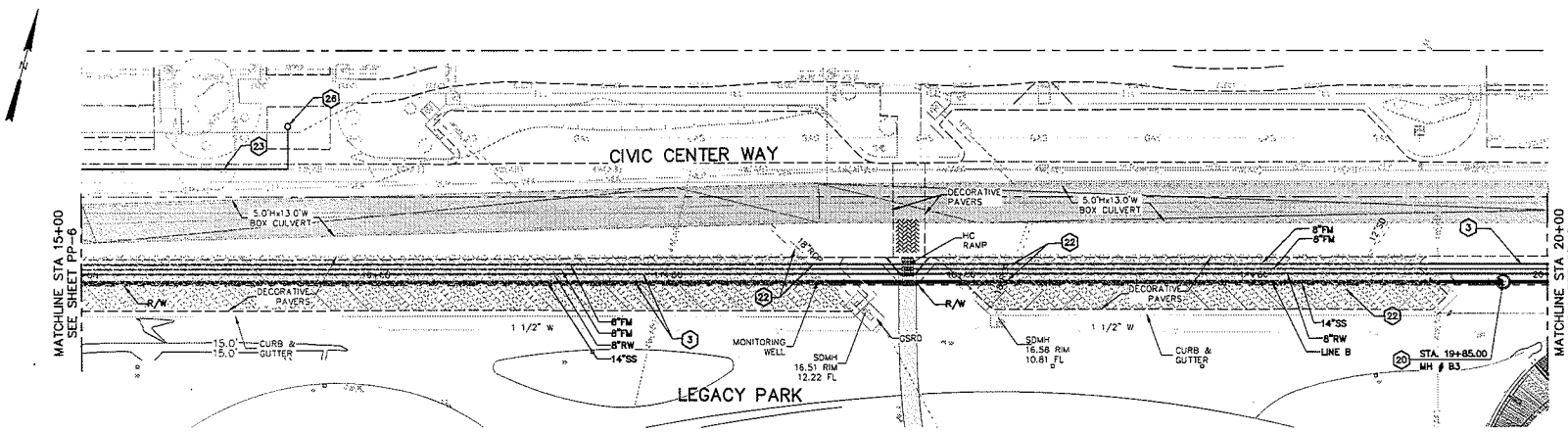
NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY K. Erickson DATE
DRAWN BY R. Martinez DATE
CHECKED BY T. Butler DATE
SCALE AS SHOWN
PROJECT MANAGER 2036
APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

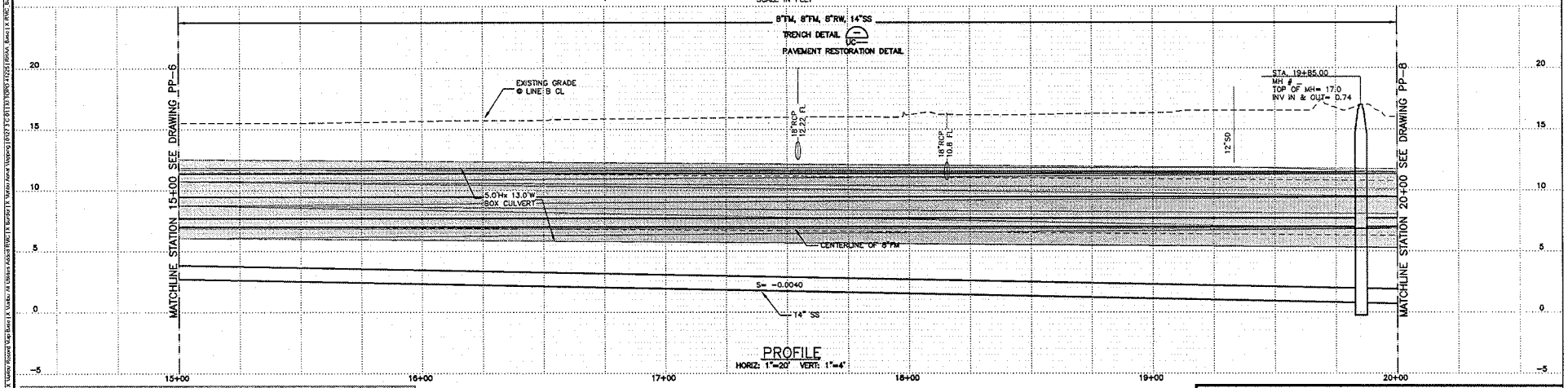
Plan No. PP-6

Sheet _____ of XXX Sheets

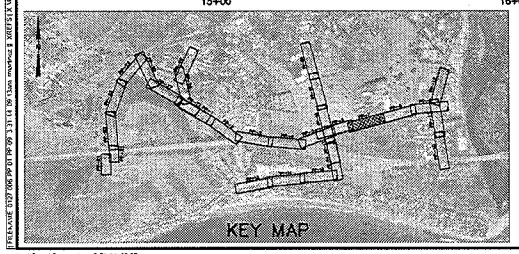
Last Saved By: martinez 3 31 14 08:07am



PLAN
1"=20'
0 20 40 60
SCALE IN FEET



PROFILE
HORIZ: 1"=20' VERT: 1"=4'



NOTES:
(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
DIGALERT

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

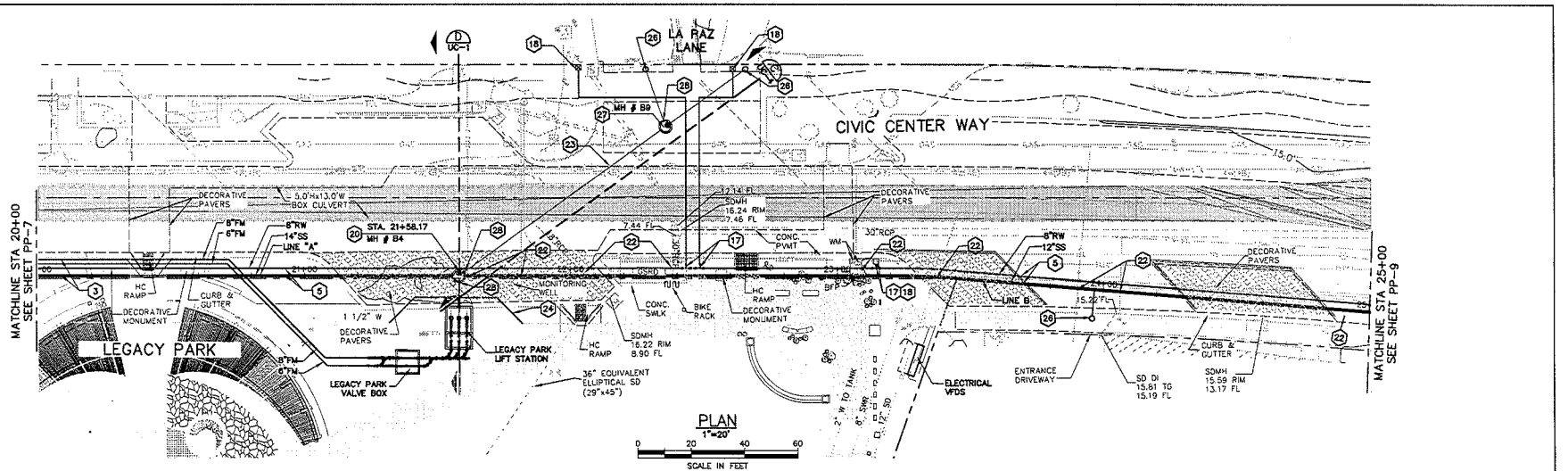
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

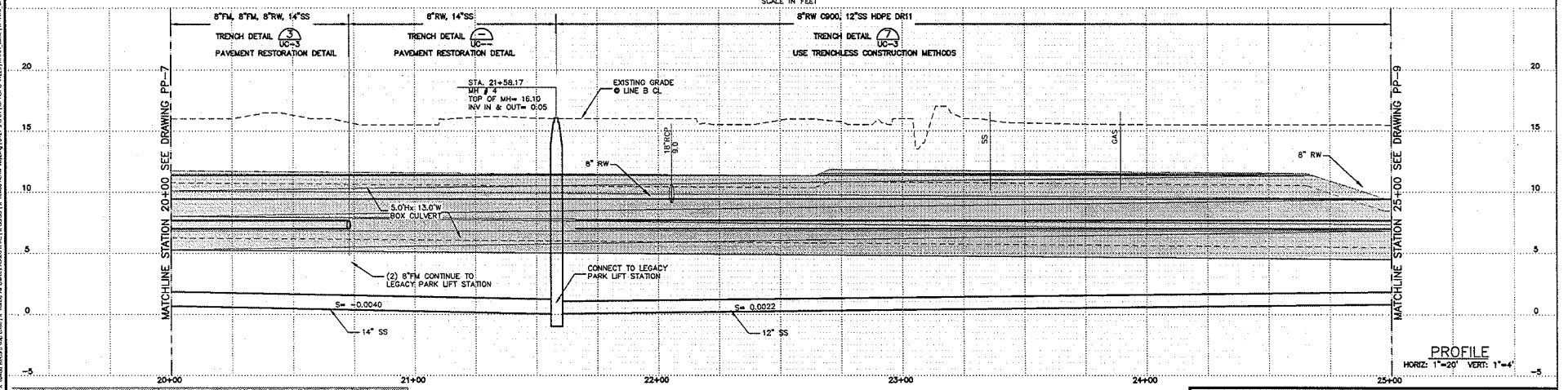
CIVIC CENTER WAY - 7
LINE - B

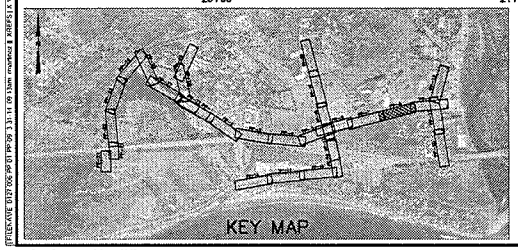
DESIGNED BY K. Erickson	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY R. Martinez	DATE		
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	

Plan No. PP-7 Sheet ____ of XXX Sheets

Last Saved By: rmartinez 3-31-14 08:07am







NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIC CENTER WAY - 8
LINE - B

DESIGNED BY K. Erickson DATE
DRAWN BY R. Martinez DATE
CHECKED BY T. Butler DATE
SCALE AS SHOWN
PROJECT NUMBER 2036
APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

"VERIFY SCALES" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

Plan No. PP-8

Sheet _____ of XXX Sheets

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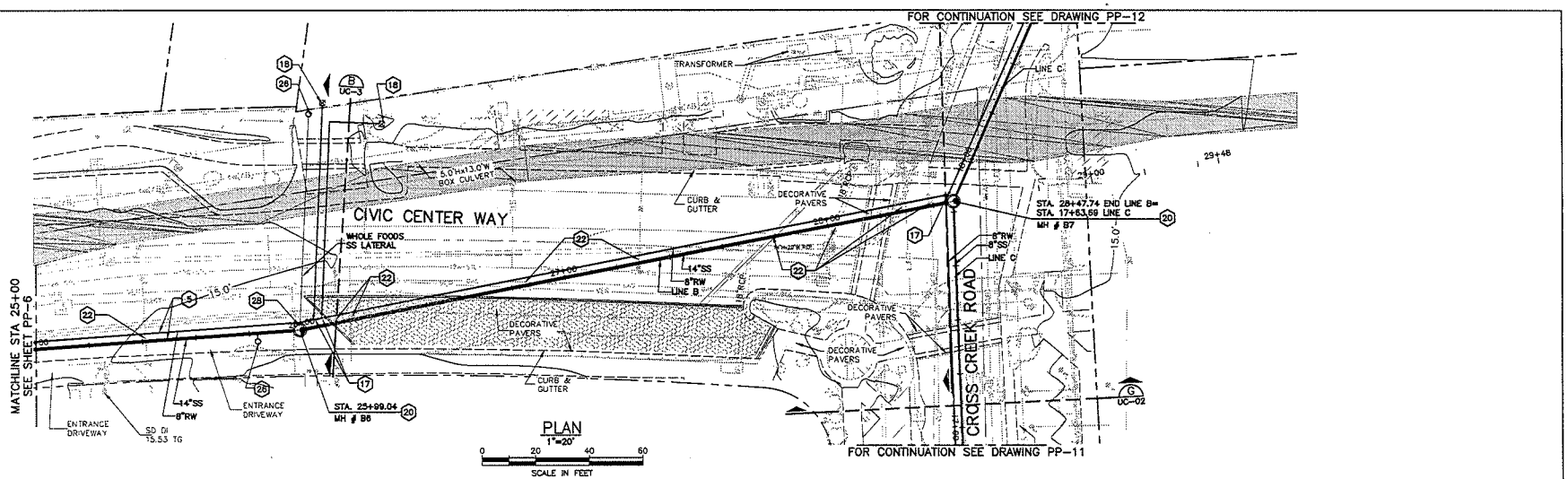

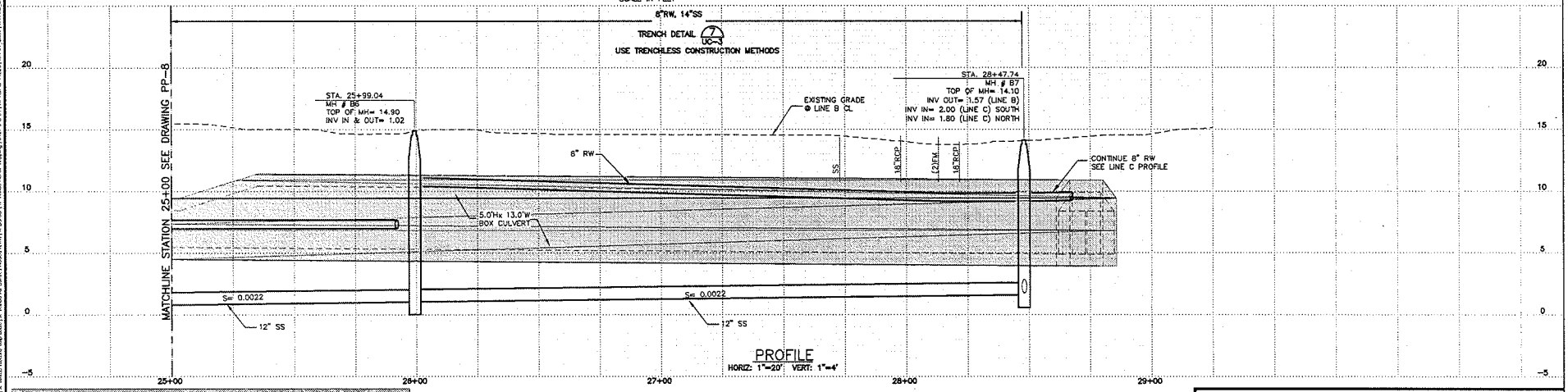

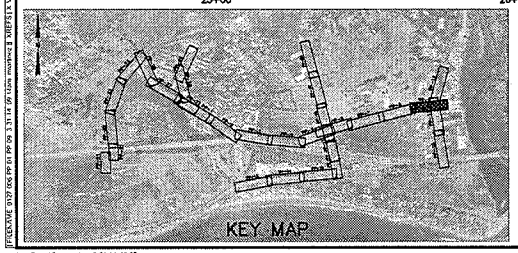

NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIC CENTER WAY - 9
LINE - B

DESIGNED BY K. Erickson	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-14
DRAWN BY R. Martinez	DATE		
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	

Plan No. PP-9

Sheet _____ of XXX Sheets

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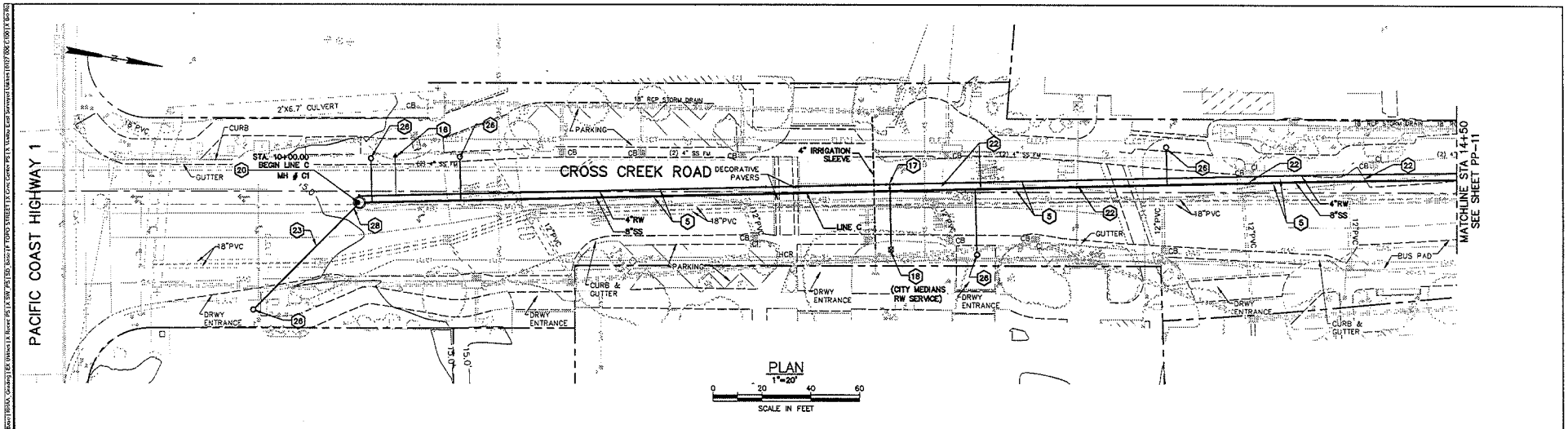
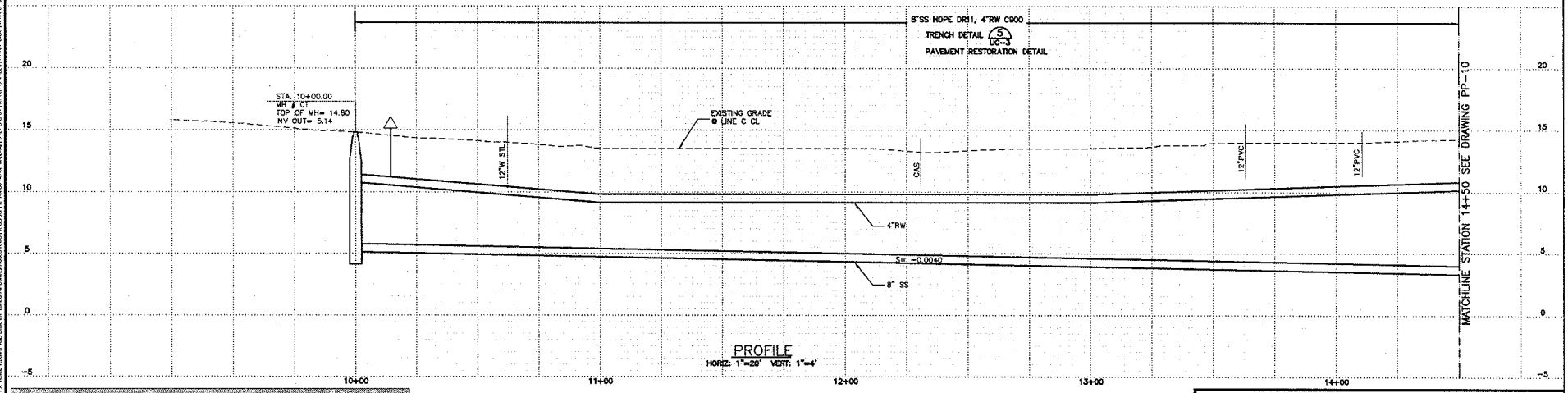
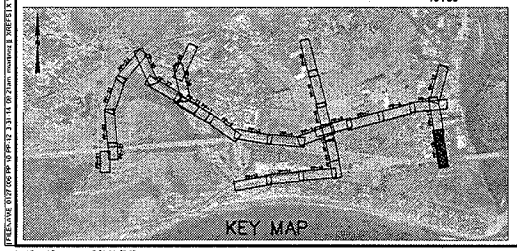


PLAN
1"=20'
0 20 40 60
SCALE IN FEET



PROFILE
HORIZ: 1"=20' VERT: 1"=4'



NOTES:
(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IF SAFE, DIG BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NON-SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

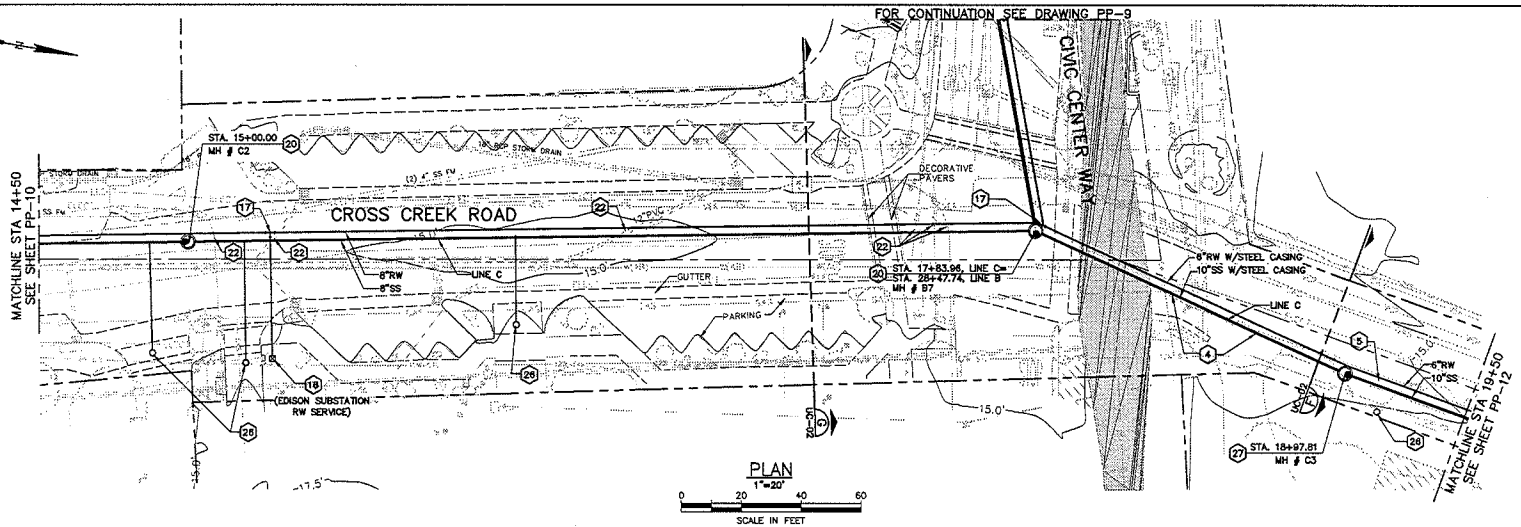
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CROSS CREEK ROAD - 2
LINE C

DESIGNED BY: K. Erickson — DATE
DRAWN BY: R. Martinez — DATE
CHECKED BY: T. Butler — DATE
SCALE: AS SHOWN
PROJECT NUMBER: 2036
APPROVED BY: — DATE: XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

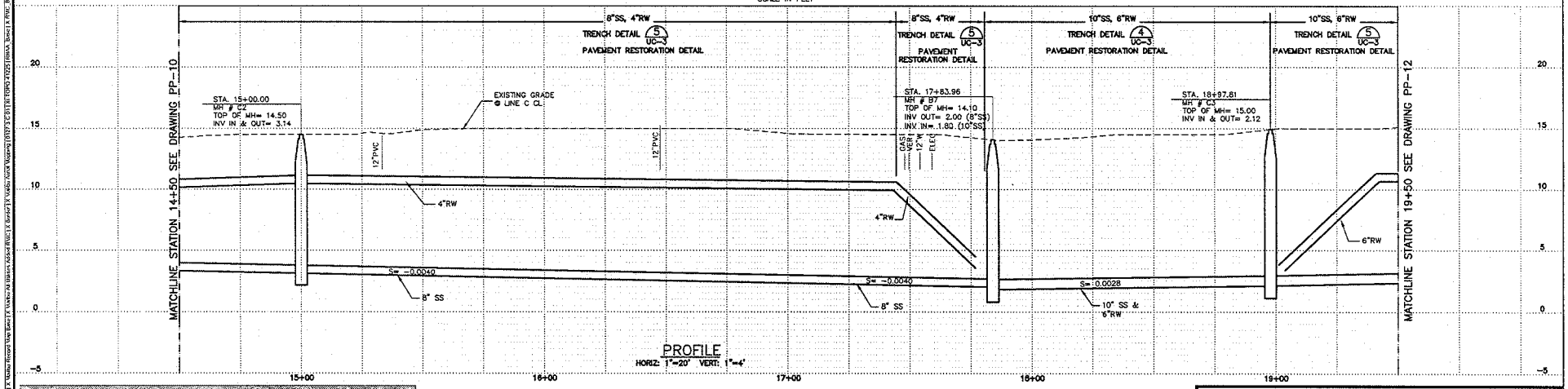
Plan No. PP-10
Sheet _____ of XXX Sheets

Last Saved By: rmartinez 3-21-14 09:13am

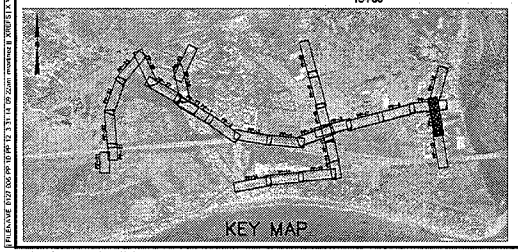


PLAN
1"=20'

0 20 40 60
SCALE IN FEET



PROFILE
HORIZ: 1"=20' VERT: 1"=4'



NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE, DIG BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" VERIFY SCALES 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CROSS CREEK ROAD - 3
LINE C

DESIGNED BY K. Erickson	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 — DATE XX-XX-14
DRAWN BY R. Martinez	DATE		
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	

Plan No. PP-11

Sheet _____ of XXX Sheets

RELEASE FOR BID PP-10 PP-11 3-31-14 09:22am mramirez g:\PROJECTS\Malibu Civic Center\Civil\Malibu Civic Wastewater\DWG\PP-10 PP-11.dwg
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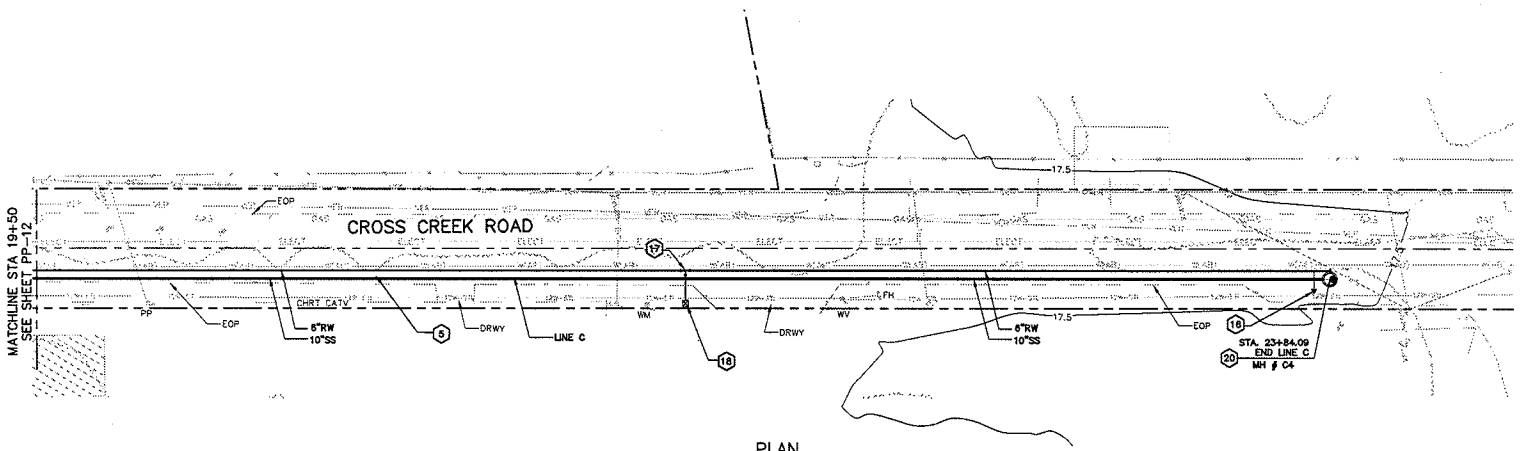
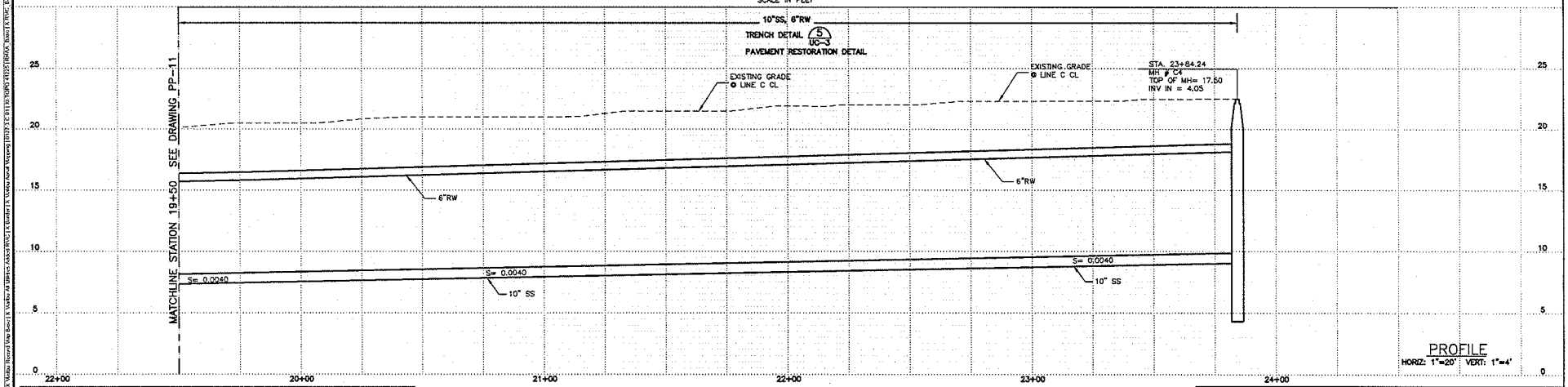
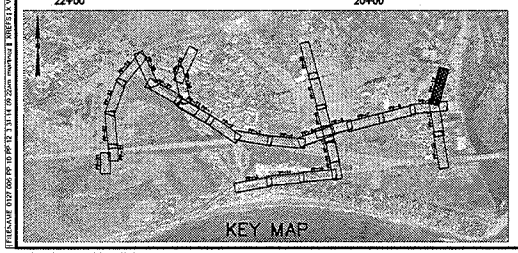


PLAN
1"=20'
0 20 40 60
SCALE IN FEET



PROFILE
HORIZ: 1"=20' VERT: 1"=4'



NOTES:
(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
USA 811
DIGALERT
PLAN SAFE, DIG BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NOR SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

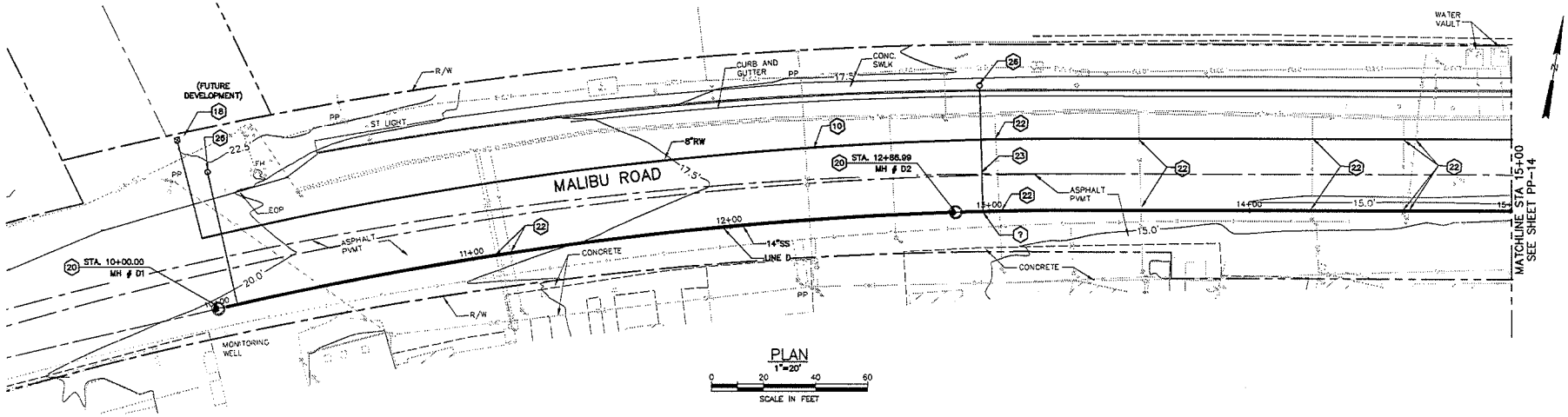
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

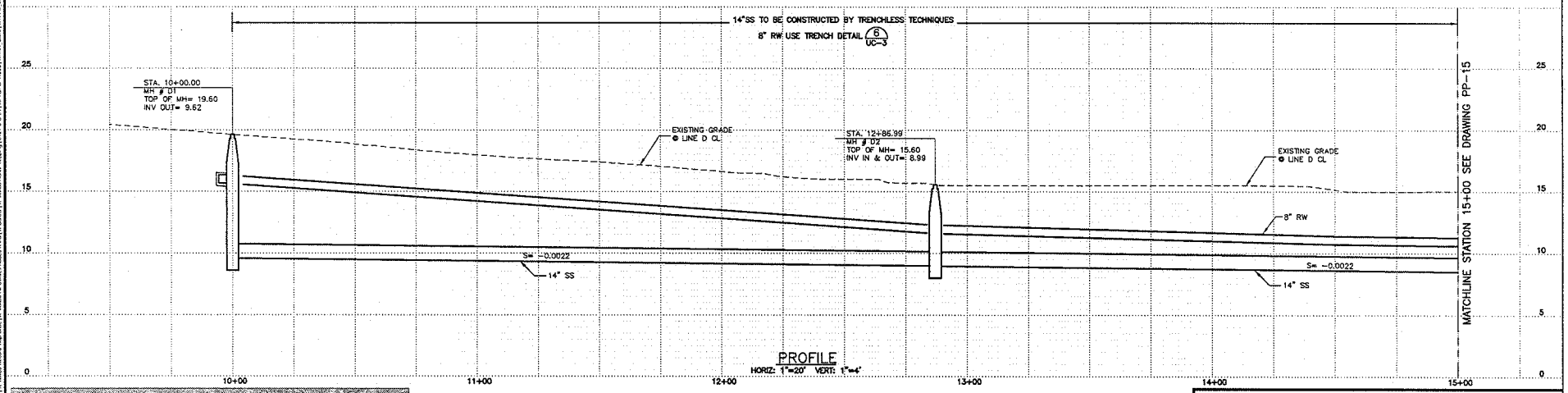
CROSS CREEK ROAD - 1
LINE C

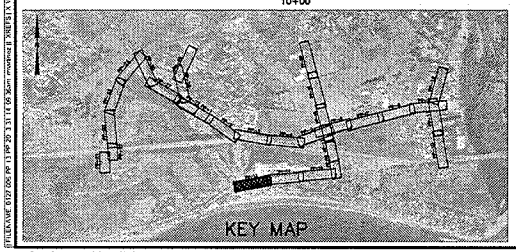
DESIGNED BY: K. Erickson	DATE:	SCALE: AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: R. Martinez	DATE:		DATE: XX-XX-14
CHECKED BY: T. Butler	DATE:	PROJECT NUMBER: 2036	

Plan No. PP-12 Sheet ____ of XXX Sheets

Last Saved By: rmartinez 3-31-14 09:13am







NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG 1-800-424-4133 DIGALERT

"VERIFY SCALES" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

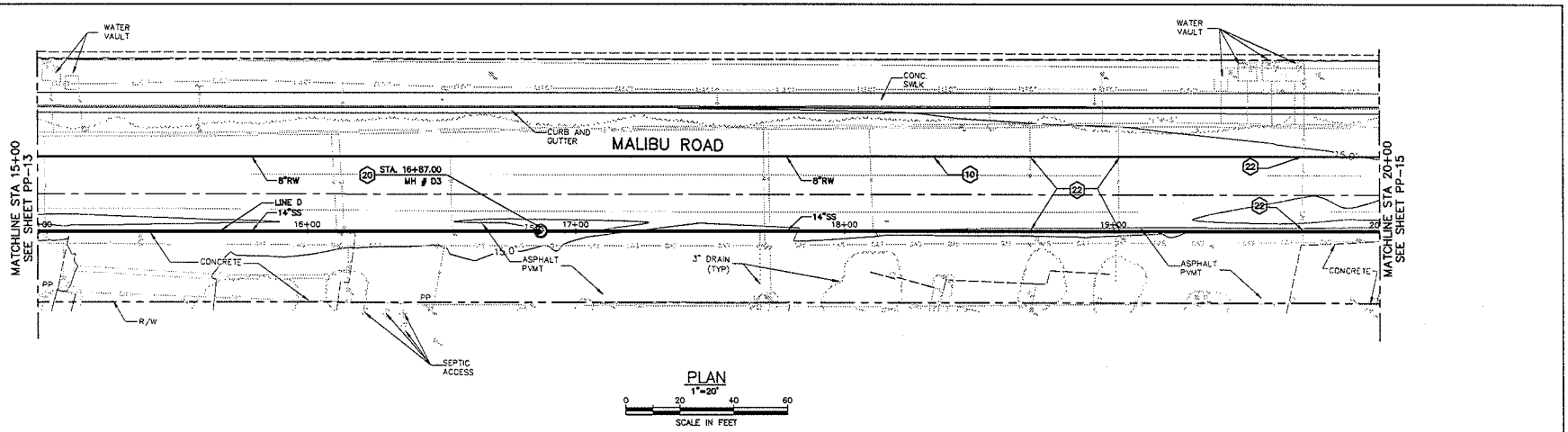
MALIBU ROAD - 1
LINE D

DESIGNED BY / DATE	SCALE	APPROVED BY: / DATE
K. Erickson	AS SHOWN	XX-XX-14
DRAWN BY / DATE: R. Martinez		ROBERT BRAGER, P.E., J.D.
CHECKED BY / DATE: T. Butler	PROJECT NUMBER: 2036	PUBLIC WORKS DIRECTOR/CITY ENGINEER
		RCE NO. 52102 EXP. 12/31/2014

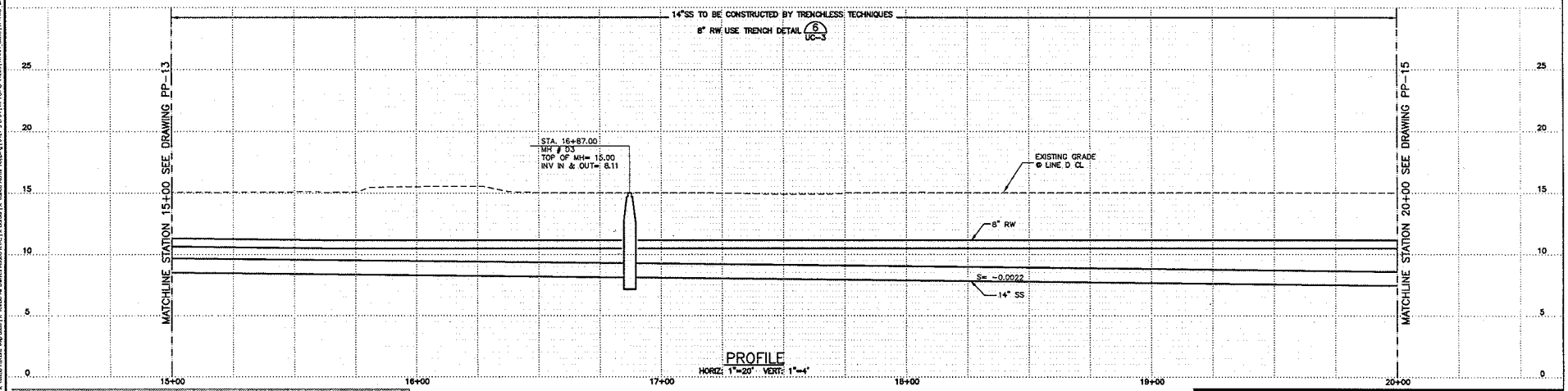
Plan No. PP-13

Sheet _____ of XXX Sheets

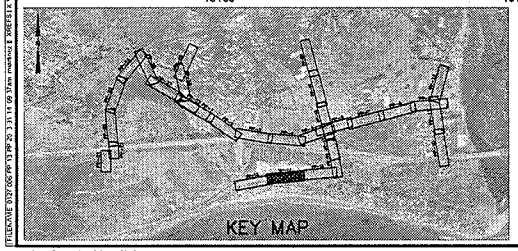
Last Saved By mwinnicz 3-31-14 08:16am



PLAN
1"=20'
0 20 40 60
SCALE IN FEET



PROFILE
HORIZ: 1"=20' VERT: 1"=4'



NOTES:
(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MALIBU ROAD - 2
LINE D

DESIGNED BY K. Erickson	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY R. Martinez	DATE		
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	

Plan No. PP-14 Sheet ____ of XXX Sheets

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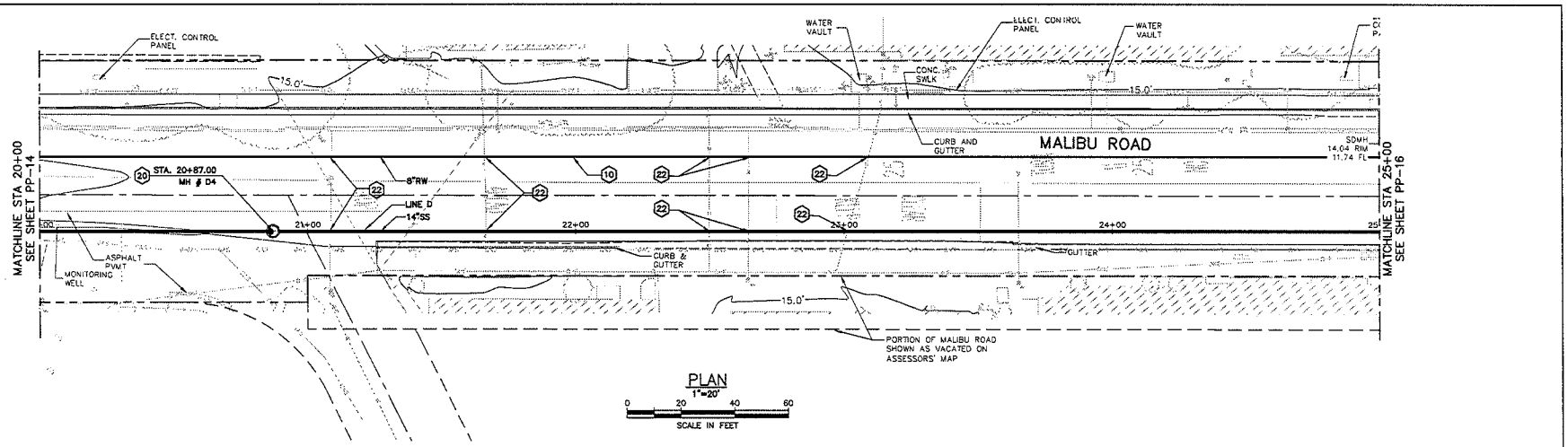
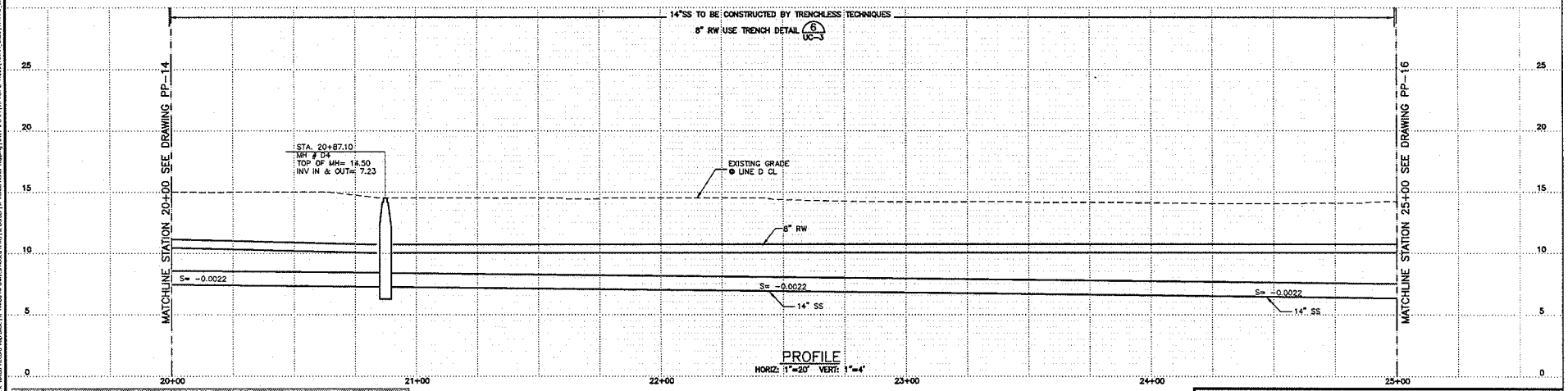
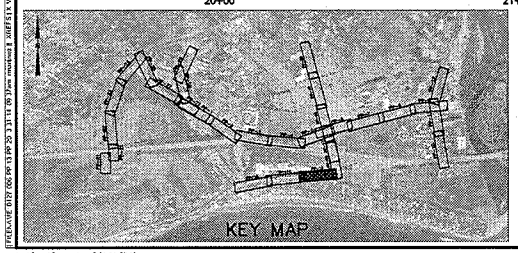


PLAN
1"=20'
0 20 40 60
SCALE IN FEET



PROFILE
HORIZ: 1"=20' VERT: 1"=4'



NOTES:
(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
DIGALERT

" VERIFY SCALES " BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MALIBU ROAD - 3

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY K. Erickson	DATE	SCALE	APPROVED BY: DATE
DRAWN BY R. Martinez	DATE	AS SHOWN	XX-XX-14
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. PP-15

Sheet _____ of XXX Sheets

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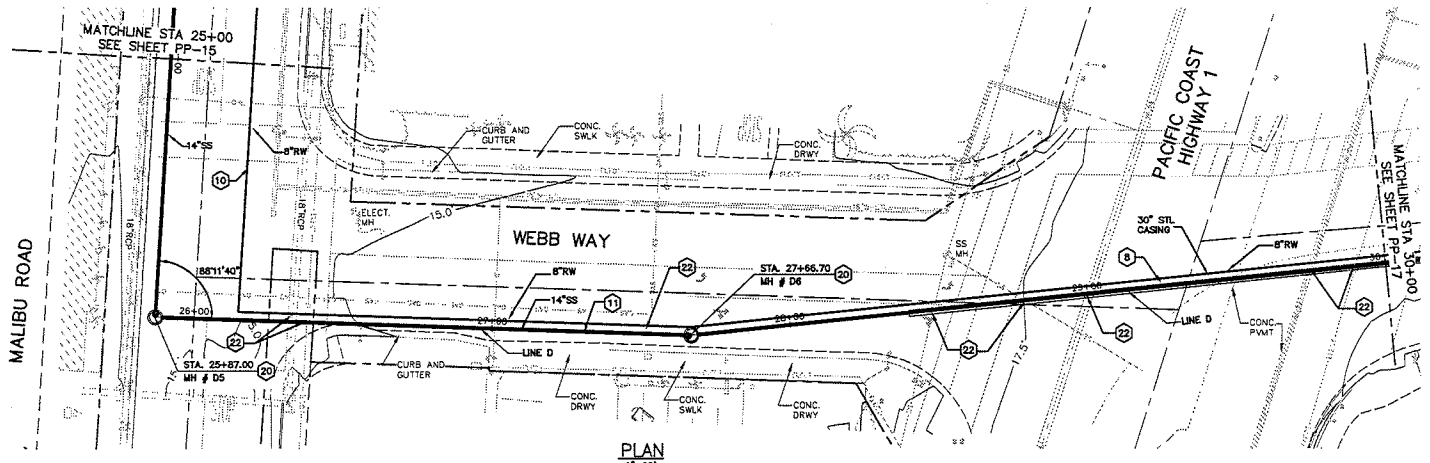
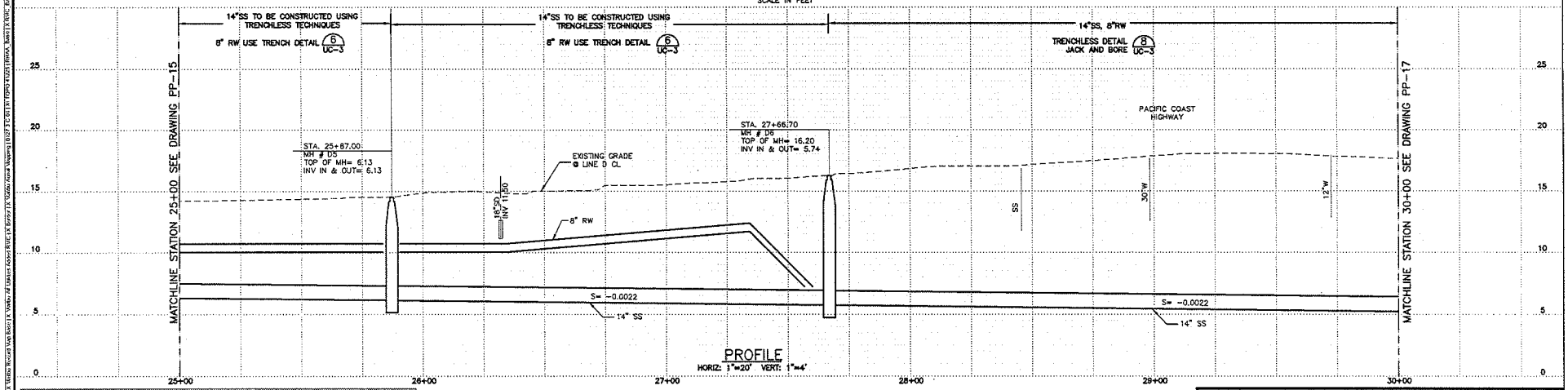
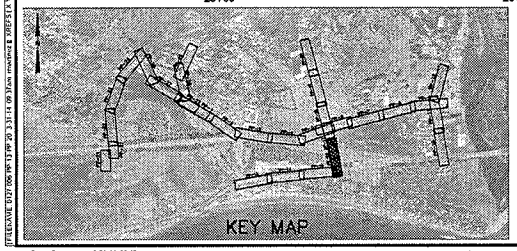


PLAN
1"=20'
0 20 40 60
SCALE IN FEET



PROFILE
HORIZ: 1"=20' VERT: 1"=4'



NOTES:
(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IT SAFE, DIAL BEFORE YOU DIG!
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING MOST SOUTHERN CALIFORNIA COUNTIES

— VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

WEBB WAY - 1
LINE D

DESIGNED BY: K. Erickson	DATE	SCALE: AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: R. Martinez	DATE: XX-XX-14		DATE
CHECKED BY: T. Butler	DATE	PROJECT NUMBER: 2036	

Plan No. PP-16

Sheet ____ of XXX Sheets

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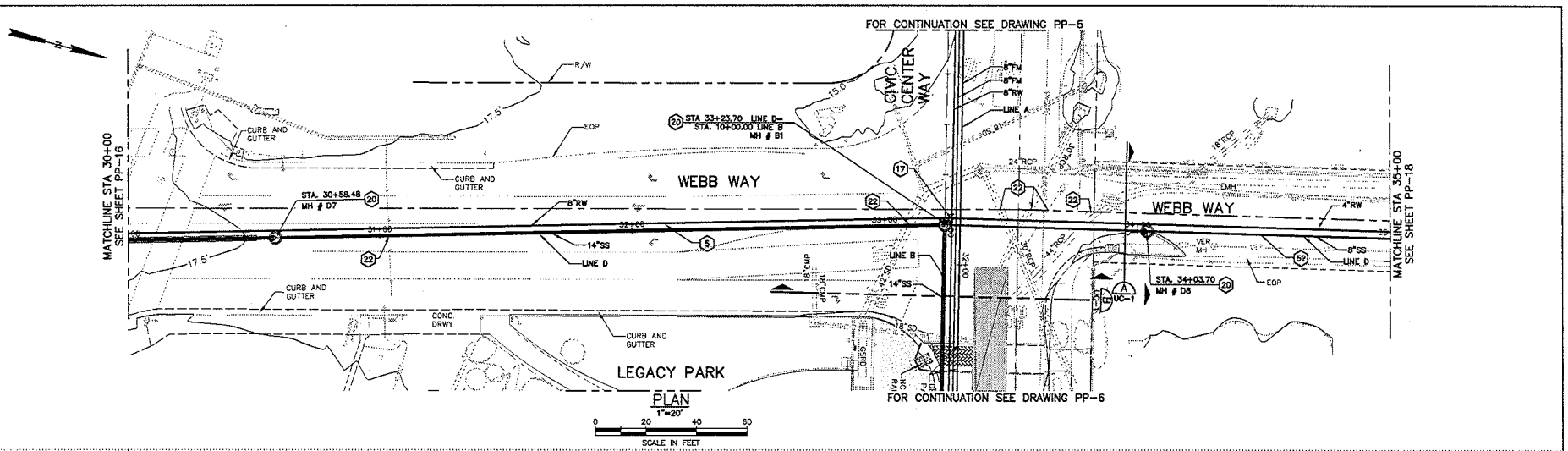

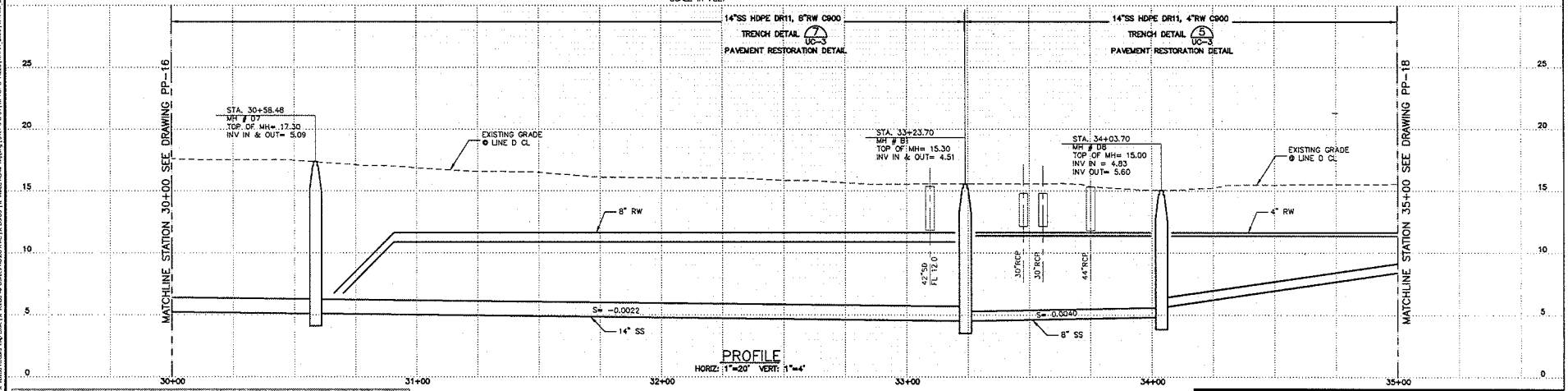

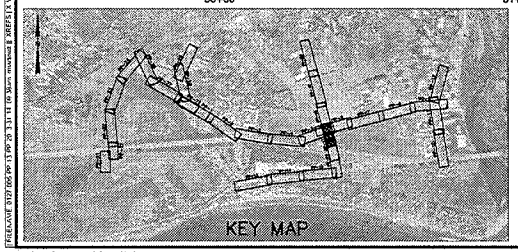

NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
DIGALERT
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING THE SOUTHERN CALIFORNIA CONTROL

1" VERIFY SCALES 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

WEBB WAY - 2
LINE D

DESIGNED BY K. Erickson	DATE	SCALE	APPROVED BY: DATE
DRAWN BY R. Martinez	DATE	AS SHOWN	XX-XX-14
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. PP-17

Sheet _____ of XXX Sheets

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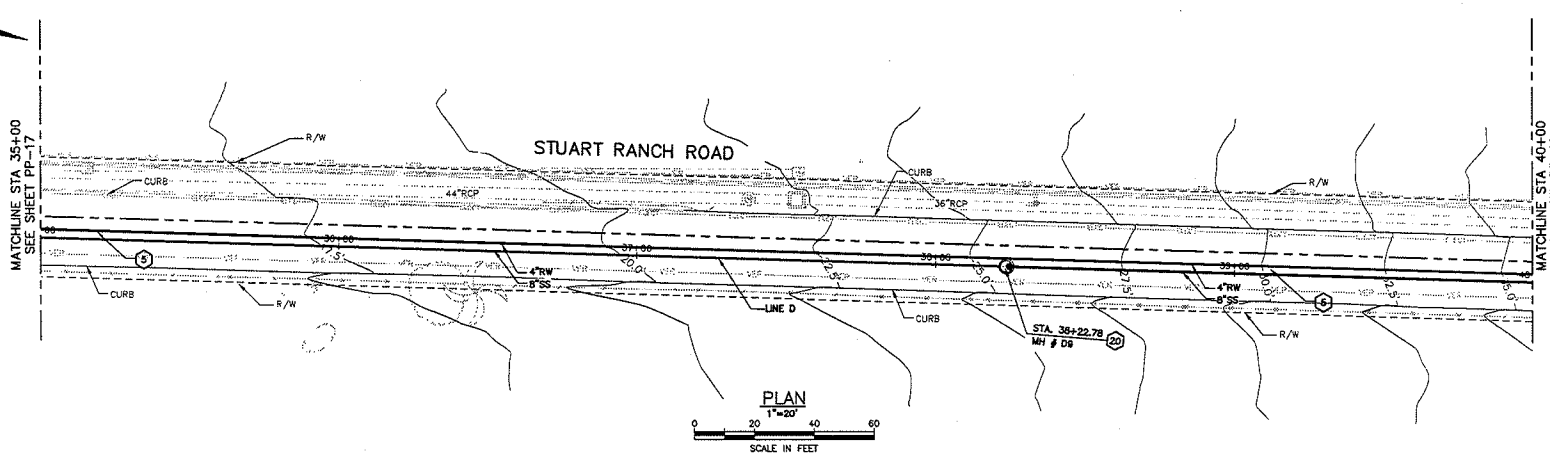

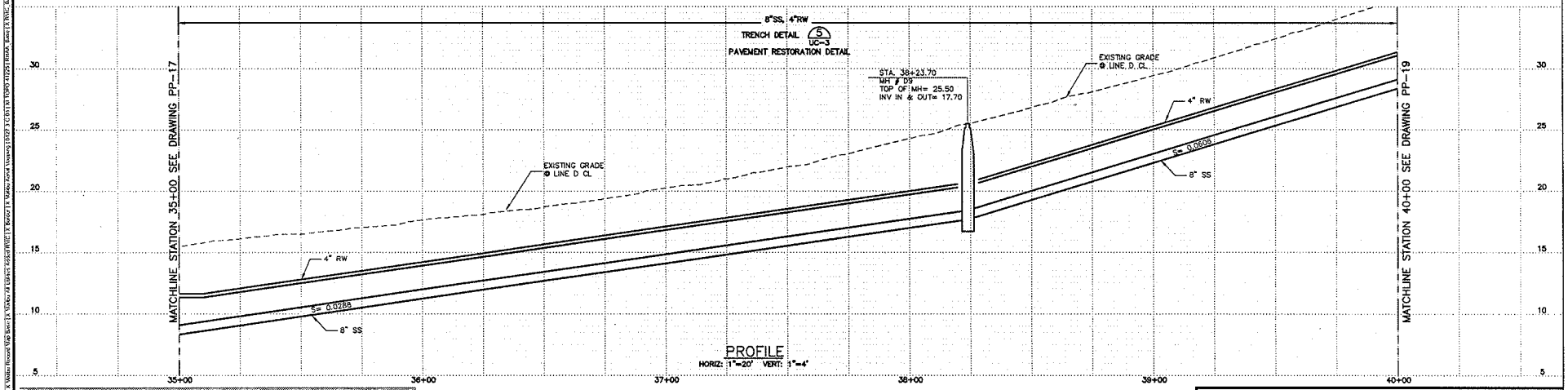

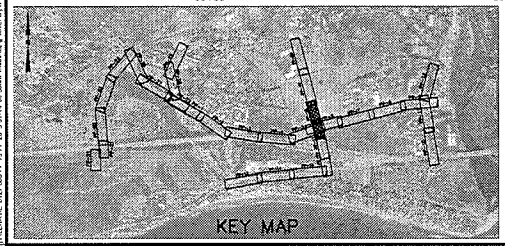

NOTES:

1 DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
DIGALERT
PLAN'S SAFE, CALL BEFORE YOU DIG

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

STUART RANCH ROAD - 1
LINE D

DESIGNED BY K. Erickson	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY R. Martinez	DATE		
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	

Plan No. PP-18

Sheet _____ of XXX Sheets

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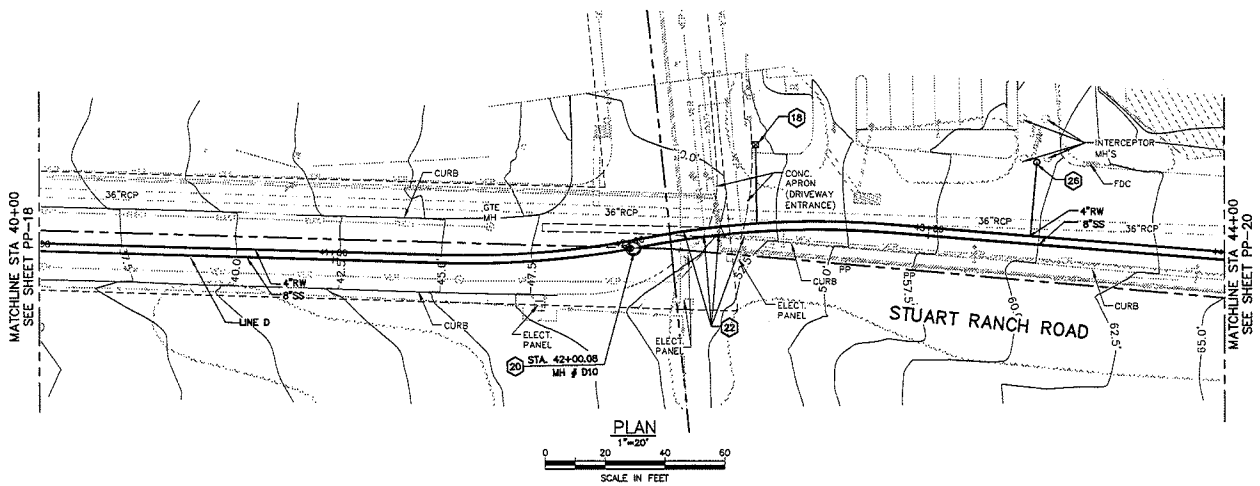

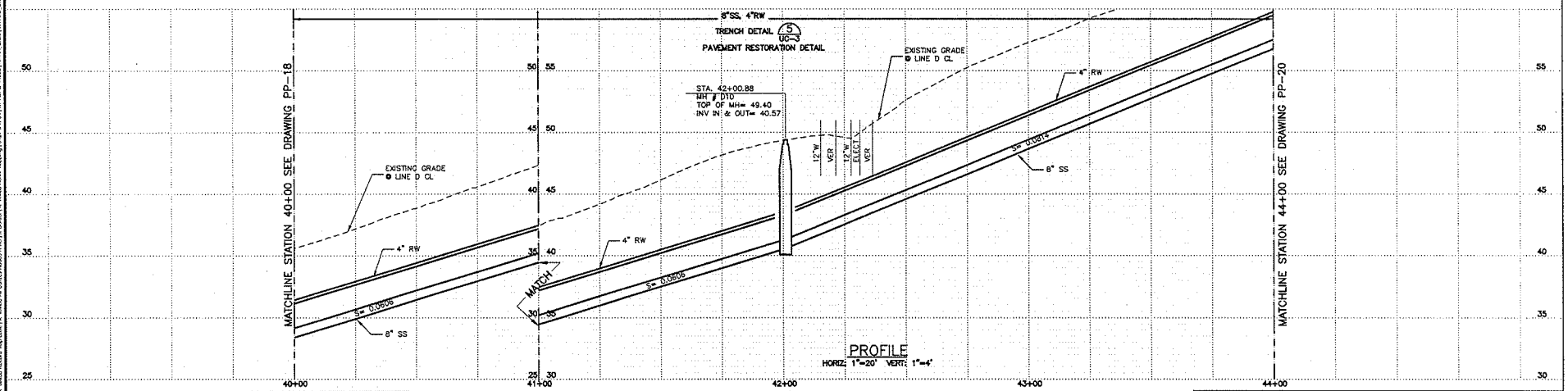

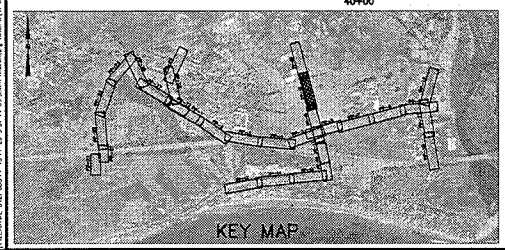

NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

STUART RANCH ROAD - 2
LINE D

DESIGNED BY: K. Erickson	DATE:	SCALE: AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: R. Martinez	DATE:		DATE: XX-XX-14
CHECKED BY: T. Butler	DATE:	PROJECT NUMBER: 2036	

Plan No. PP-19

Sheet _____ of XXX Sheets

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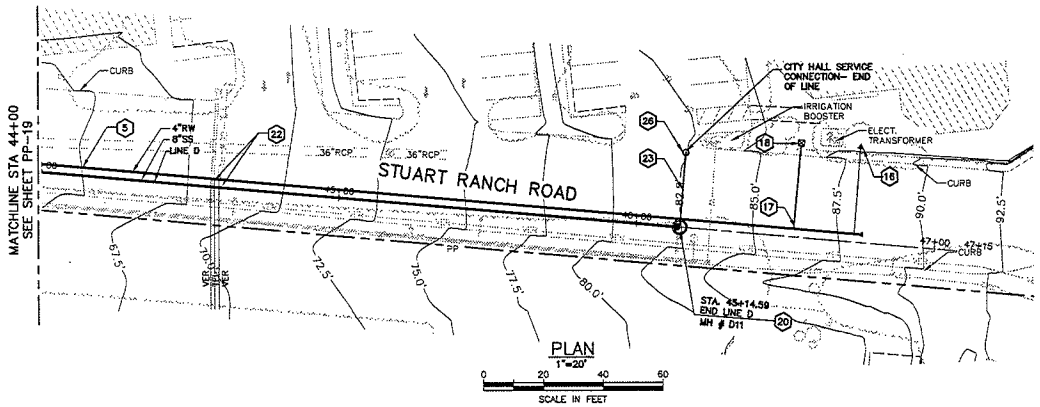

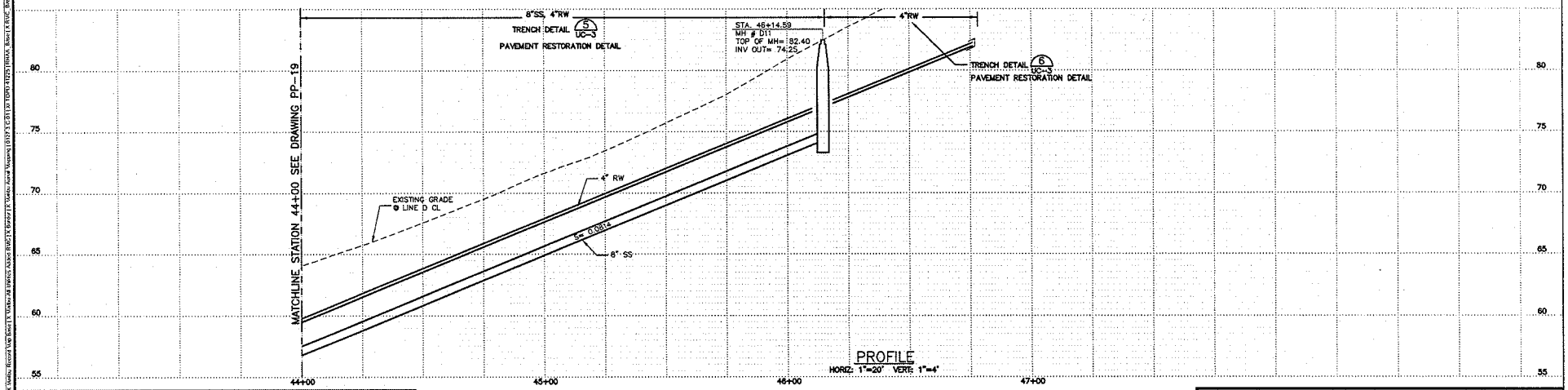

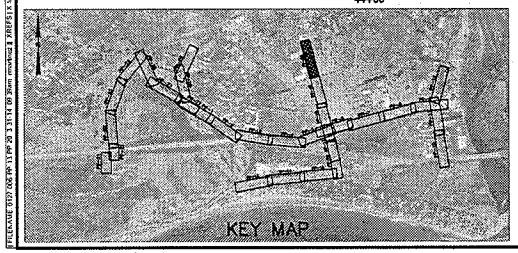

NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
DIGALERT
PLAN IN SAFE DIG BEFORE YOU DIG!
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING THE SOUTHERN CALIFORNIA COUNTIES

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

STUART RANCH ROAD - 3
LINE D

DESIGNED BY K. Erickson	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY R. Martinez	DATE		
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	

Plan No. PP-20

Sheet _____ of XXX Sheets

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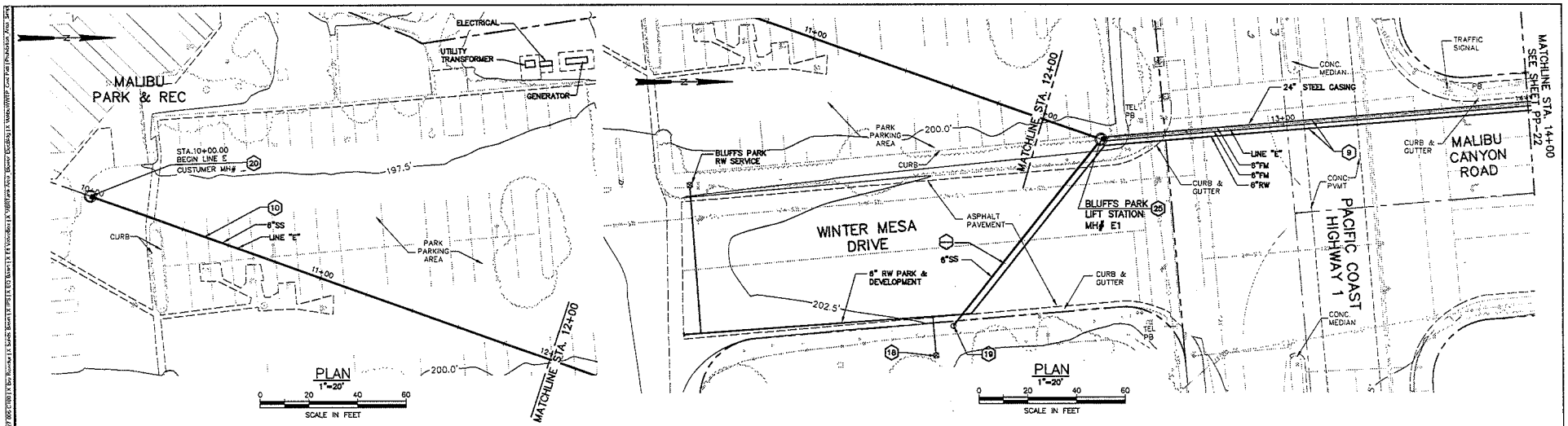

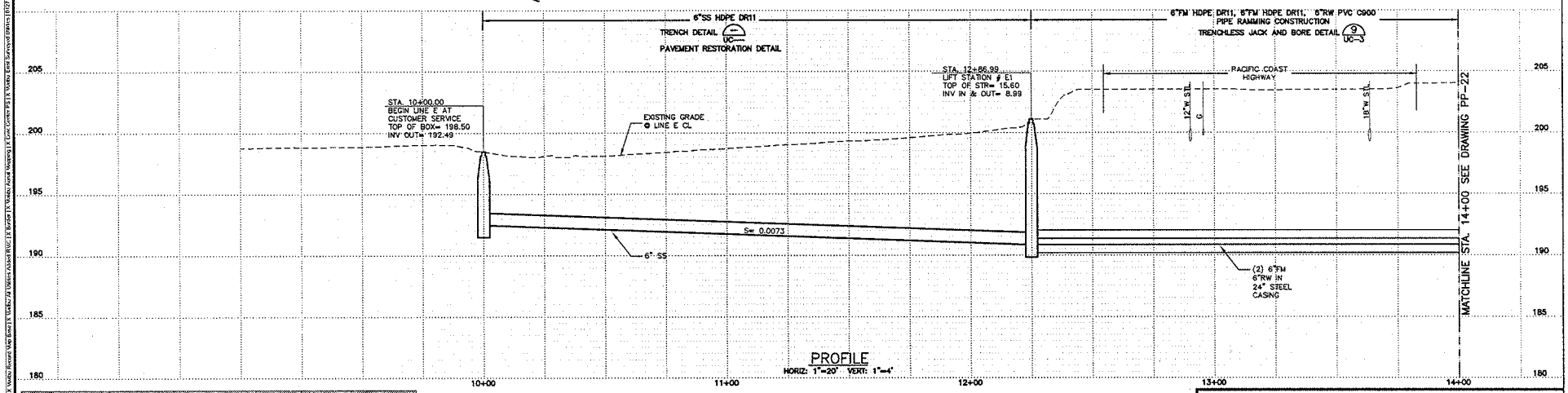

PROFILE
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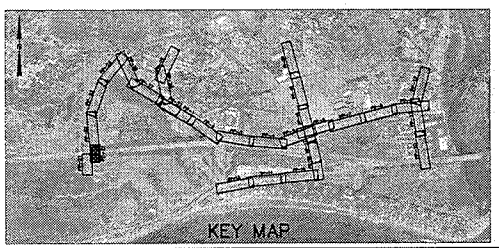

NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN'S SAFE, DIAL BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO DIGGING
SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

WINTER MESA DRIVE - I
LINE E

DESIGNED BY: K. Erickson	DATE	SCALE	APPROVED BY:
DRAWN BY: R. Martinez	DATE	AS SHOWN	DATE XX-XX-14
CHECKED BY: T. Butler	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. PP-21 Sheet _____ of XXX Sheets

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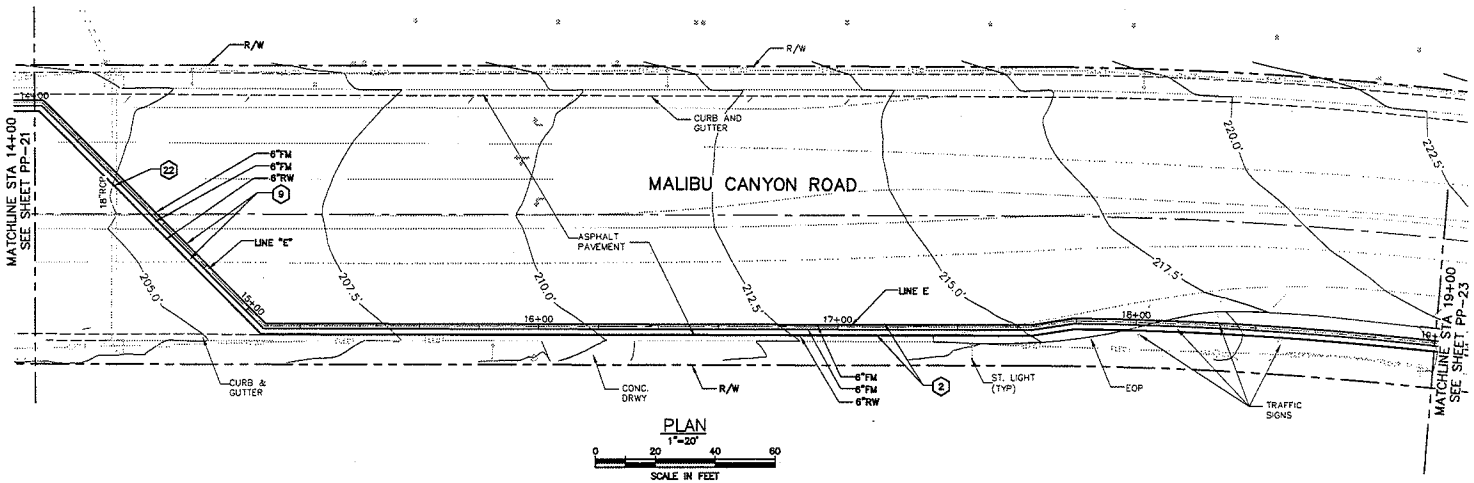
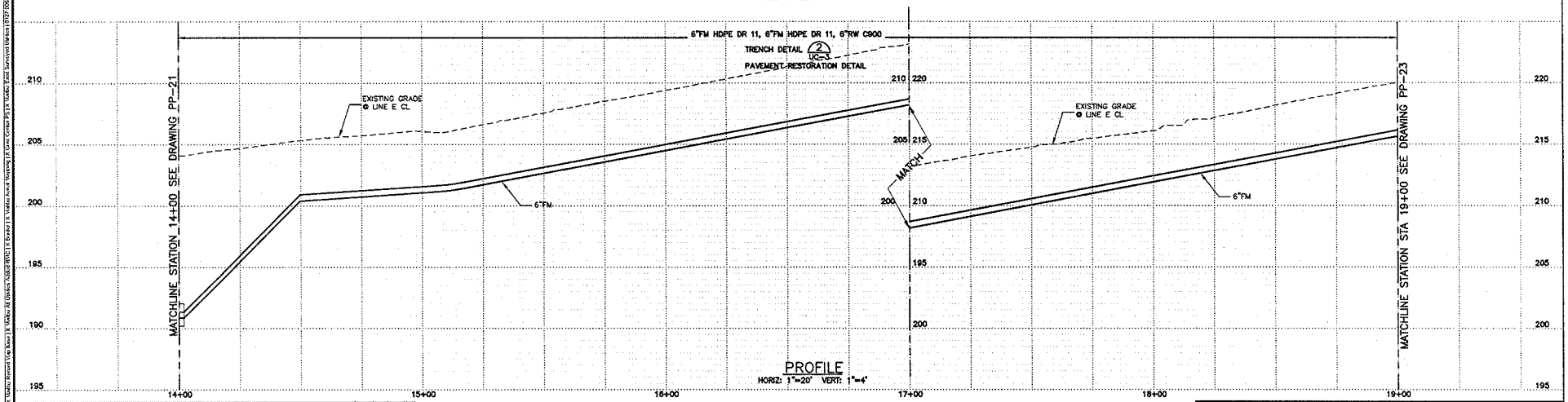
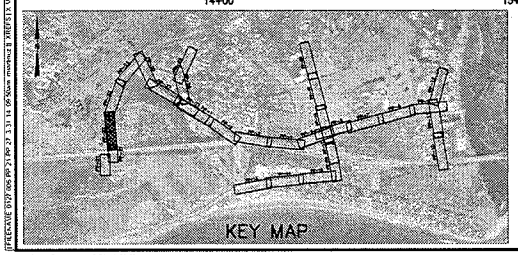


PLAN
1"=20'
0 20 40 60
SCALE IN FEET



PROFILE
HORIZ: 1"=20' VERT: 1"=4'



NOTES:
(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
1-800-DIG-1133
DIGALERT
PLAN AHEAD. DIG BEFORE YOU DIG!
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING NORTHERN AND CENTRAL CALIFORNIA COUNTIES

-- VERIFY SCALES --
BAR IS ONE INCH LONG ON FULL SIZE DRAWING
IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

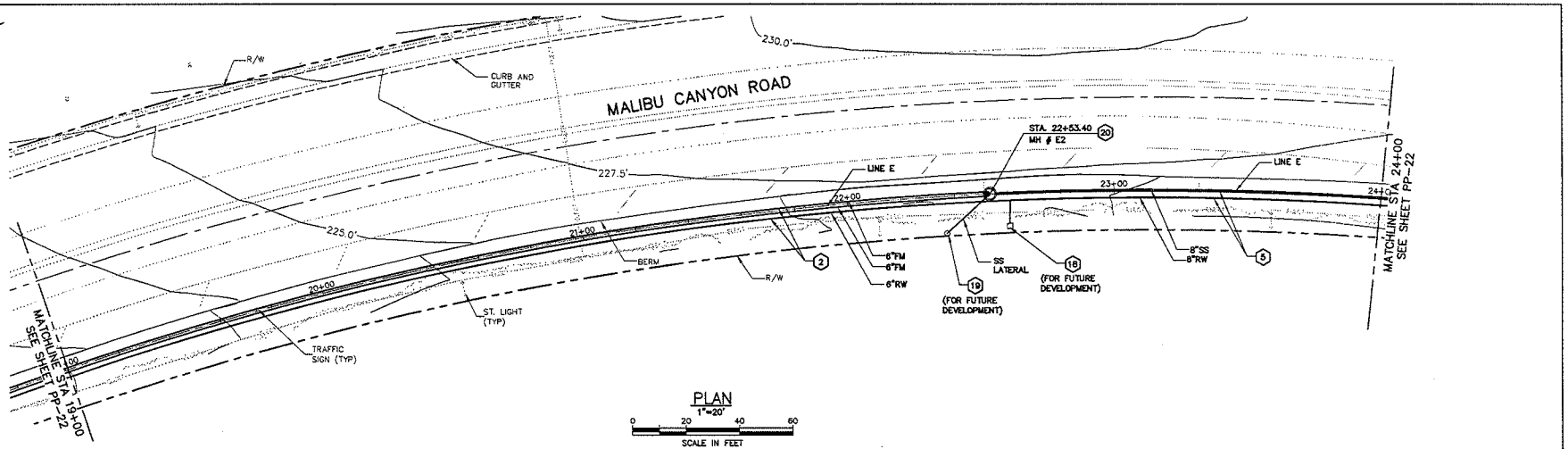
CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MALIBU CANYON DRIVE - 1
LINE E

DESIGNED BY K. Erickson	DATE	SCALE	APPROVED BY: DATE
DRAWN BY R. Martinez	DATE	AS SHOWN	XX-XX-14
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. PP-22 Sheet ____ of XXX Sheets

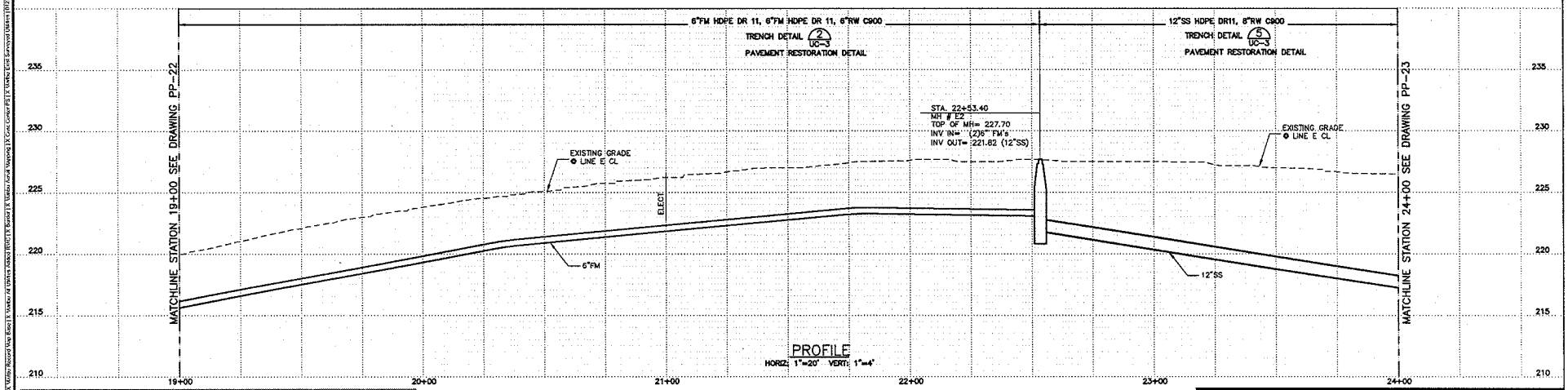
Last Saved By mmartinez 3 31 14 09:08am



PLAN

0 20 40 60

SCALE IN FEET



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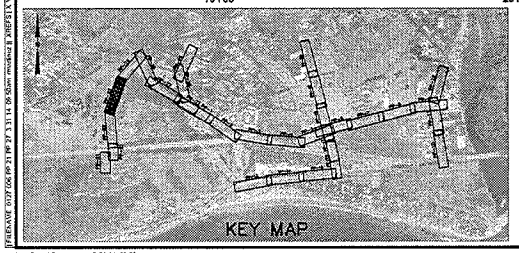
HORIZ: 1"=20' VERT: 1"=4'



NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MALIBU CANYON DRIVE - 2

LINE E

DUAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

PLAN PREPARED BY RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY K. Erickson DATE

DRAWN BY R. Martinez DATE

CHECKED BY T. Butler DATE

SCALE AS SHOWN

PROJECT NUMBER 2036

APPROVED BY: DATE XX-XX-14

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. PP-23

Sheet _____ of XXX Sheets

"VERIFY SCALES" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

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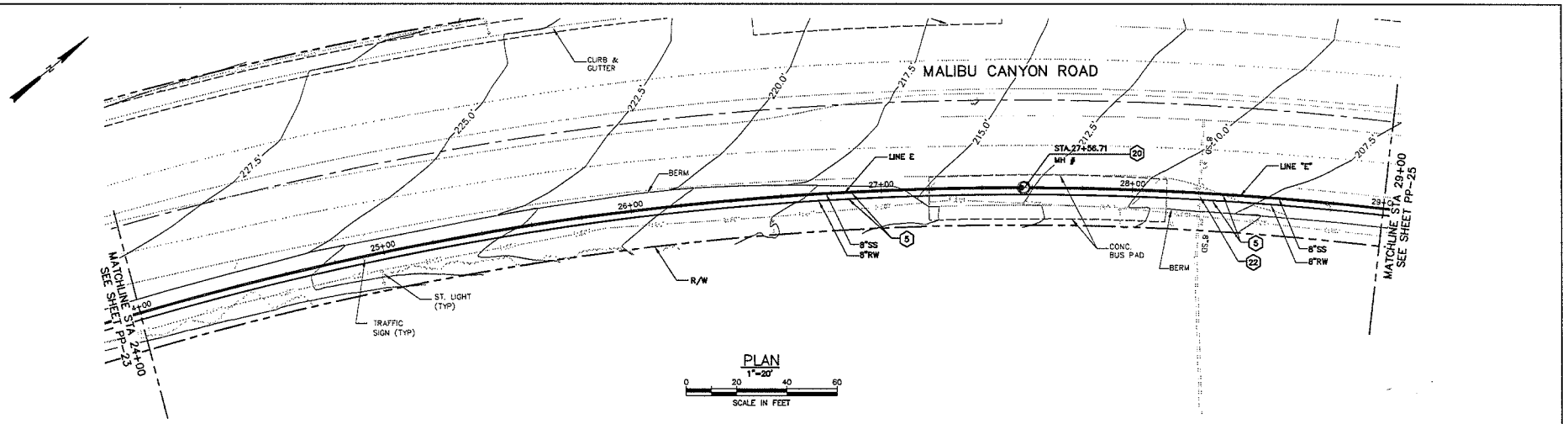

PLAN
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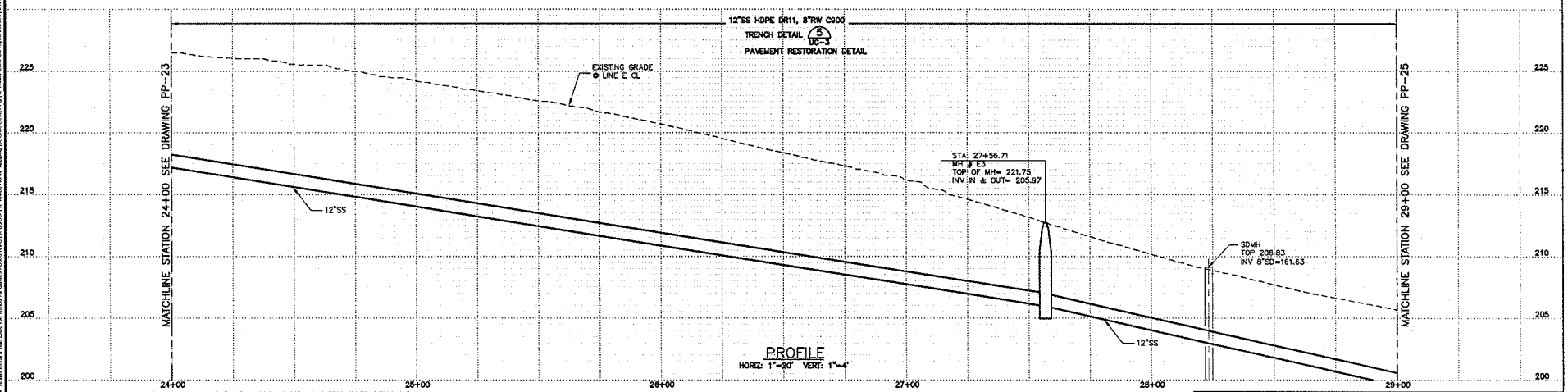
SCALE IN FEET



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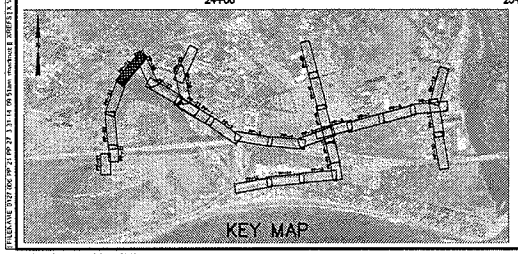

NOTES:
(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

MAILBU CANYON ROAD - 3
LINE E

DESIGNED BY K. Erickson DATE
DRAWN BY R. Martinez DATE
CHECKED BY T. Butler DATE
SCALE AS SHOWN
PROJECT NUMBER 2036
APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. PP-24
Sheet ____ of XXX Sheets

DIAL BEFORE YOU DIG
DIGALERT

PLANS PREPARED BY
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

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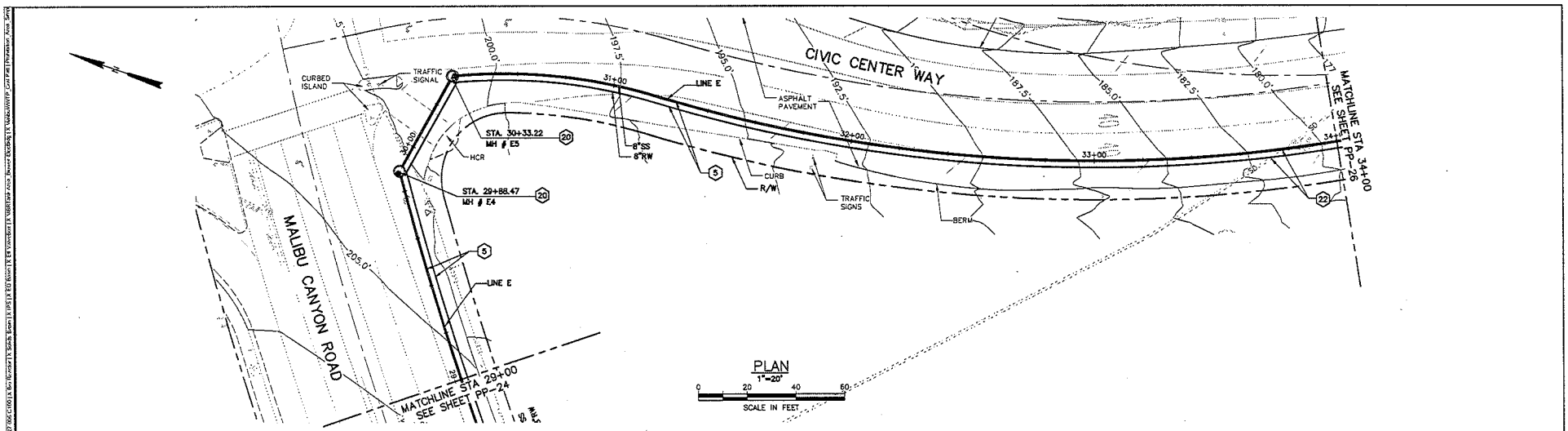

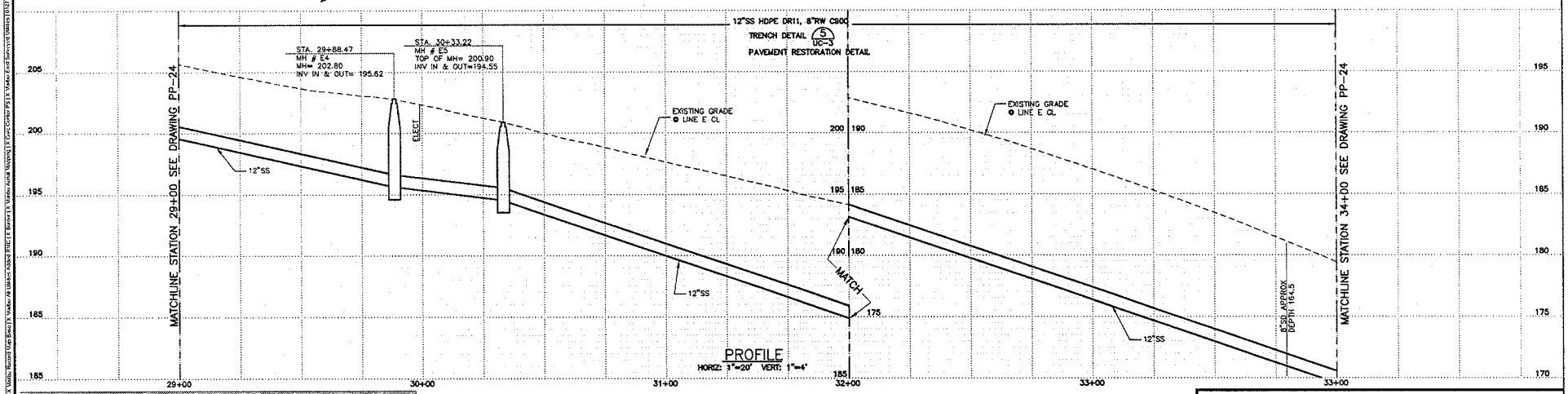

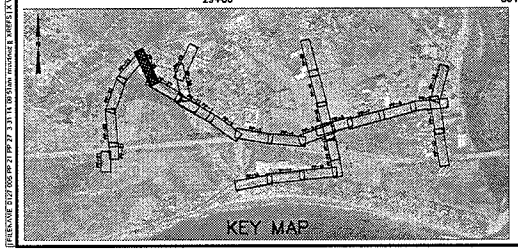

NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIC CENTER WAY - 1
LINE E

DESIGNED BY K. Erickson
DRAWN BY R. Martinez
CHECKED BY T. Butler
SCALE AS SHOWN
PROJECT NUMBER 2036
APPROVED BY: ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014
Plan No. PP-25
Sheet ____ of XXX Sheets

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT

VERIFY SCALES BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

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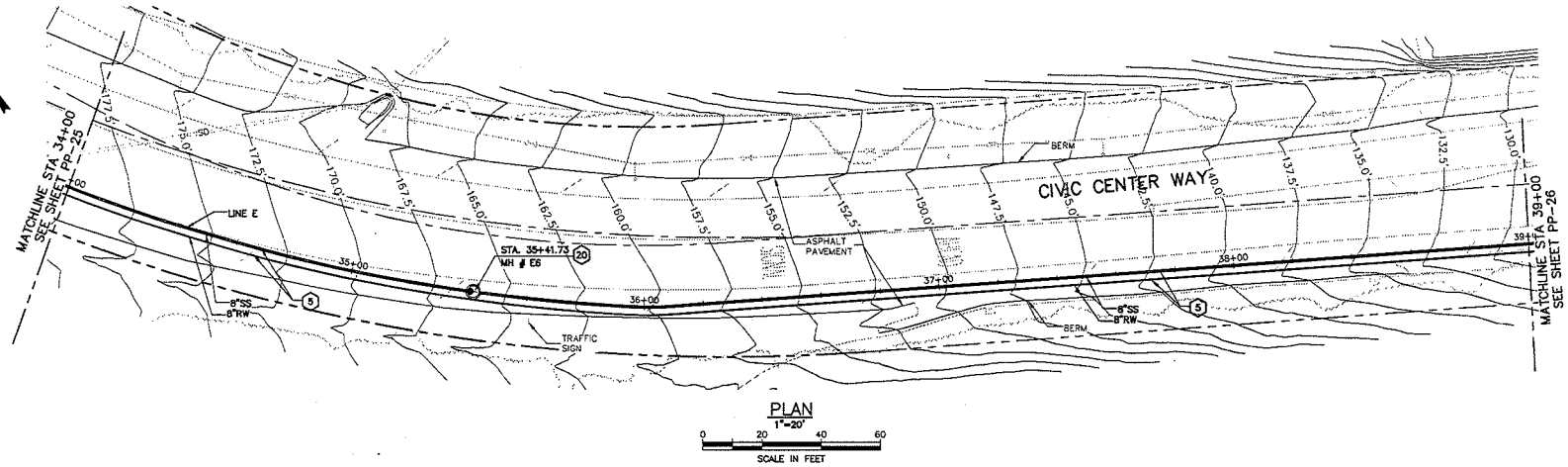

PLAN
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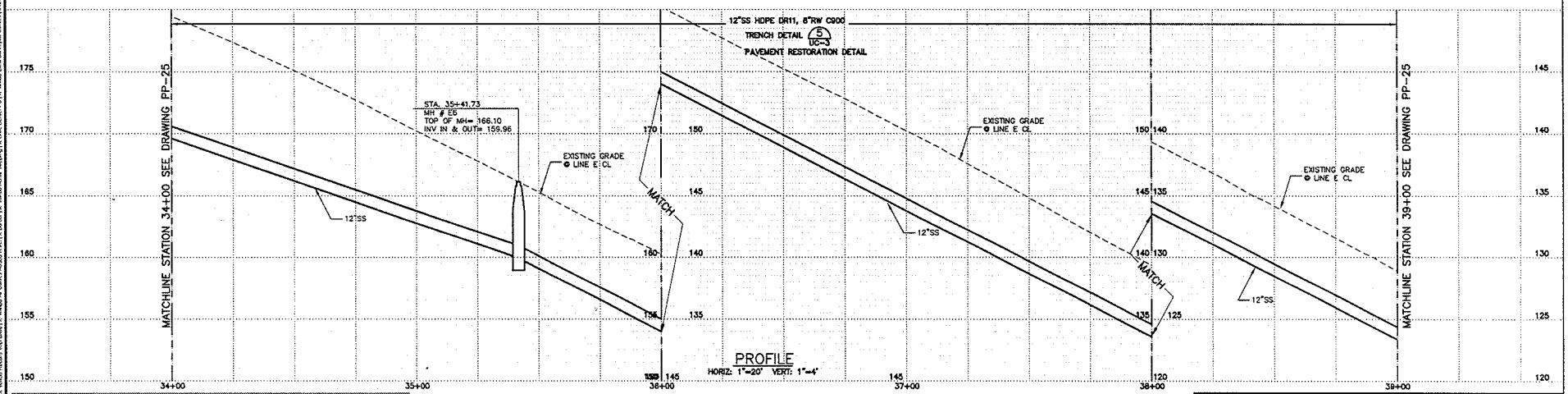
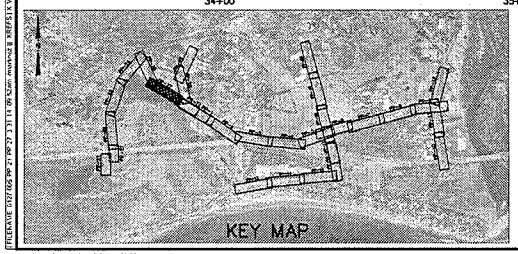
SCALE IN FEET



PROFILE
HORIZ: 1"=20' VERT: 1"=4'



NOTES:
(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

DIAL BEFORE YOU DIG
DIGALERT

VERIFY SCALES
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIC CENTER WAY - 2
LINE E

DESIGNED BY K. Erickson DATE
DRAWN BY R. Martinez DATE
CHECKED BY T. Butler DATE
SCALE AS SHOWN
PROJECT NUMBER 2036
APPROVED BY: DATE XX-XX-14
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. PP-26
Sheet ____ of XXX Sheets

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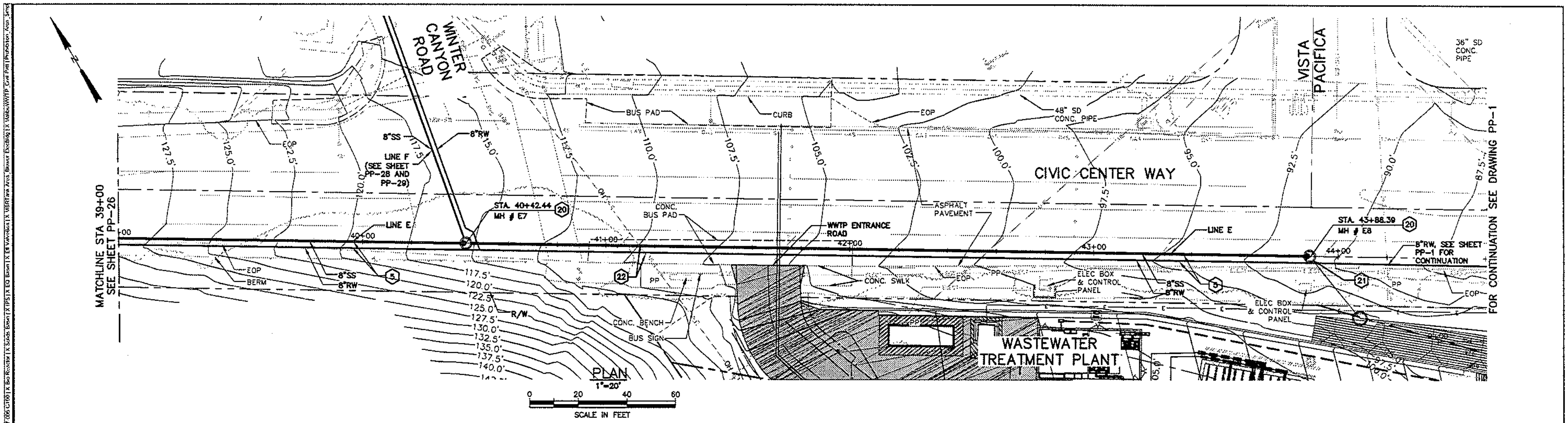

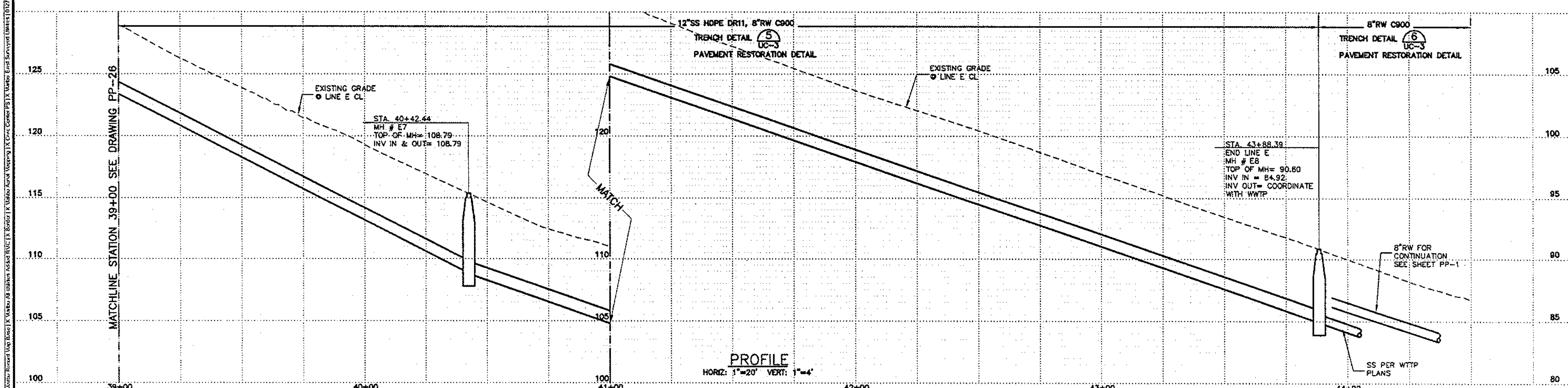

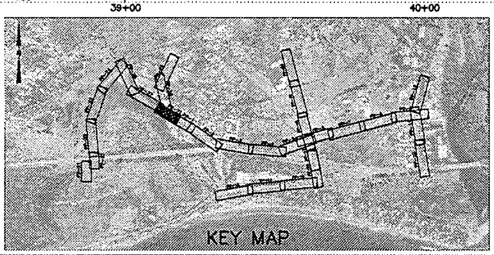

NOTES:

(1) DENOTES CONSTRUCTION NOTE, SEE SHEET GC-01 FOR DESCRIPTION

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

CIVIC CENTER WAY - 3
LINE E

95% Submittal Not for Construction

VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY RMC water and environment

DIAL BEFORE YOU DIG — DIGALERT

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY K. Erickson	SCALE AS SHOWN	APPROVED BY:
DRAWN BY R. Martinez		XX-XX-14
CHECKED BY T. Butler	PROJECT NUMBER 2036	ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014

Plan No. PP-27 Sheet ____ of XXX Sheets

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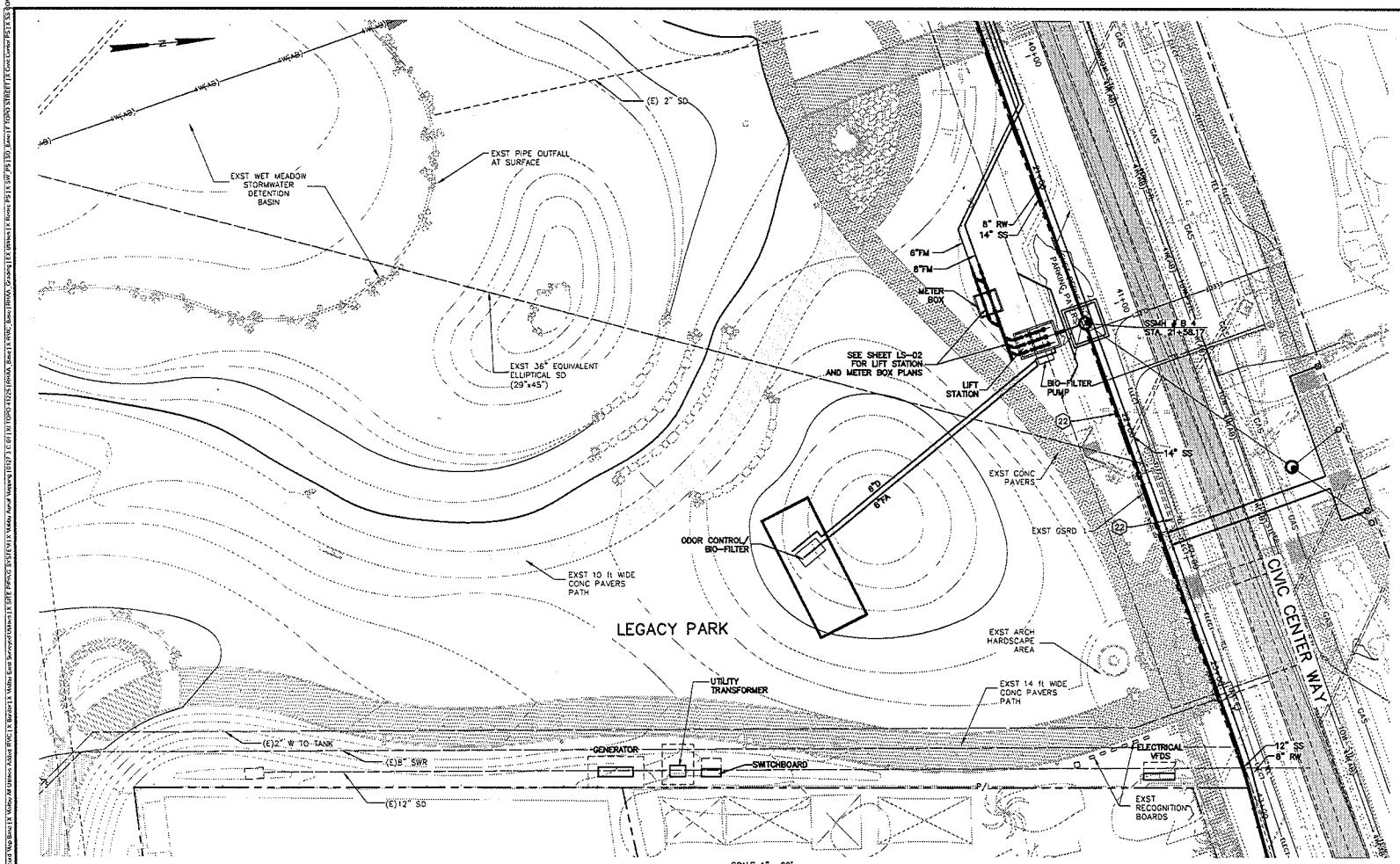

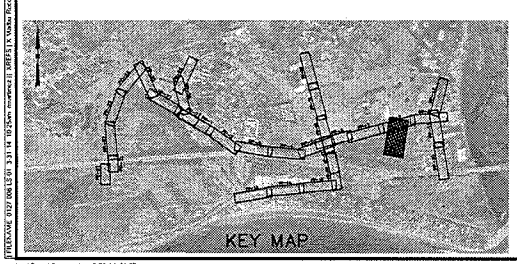

DIAL BEFORE YOU DIG 1-800-227-2600 DIGALERT

IF BAR IS ONE INCH LONG ON FULL SIZE DRAWING, IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LEGACY PARK
LIFT STATION SITE PLAN

DESIGNED BY: K. Erickson	DATE:	SCALE: AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: R. Martinez	DATE:		DATE: XX-XX-14
CHECKED BY: T. Butler	DATE:	PROJECT NUMBER: 2036	

Plan No. LS-1

Sheet _____ of XXX Sheets

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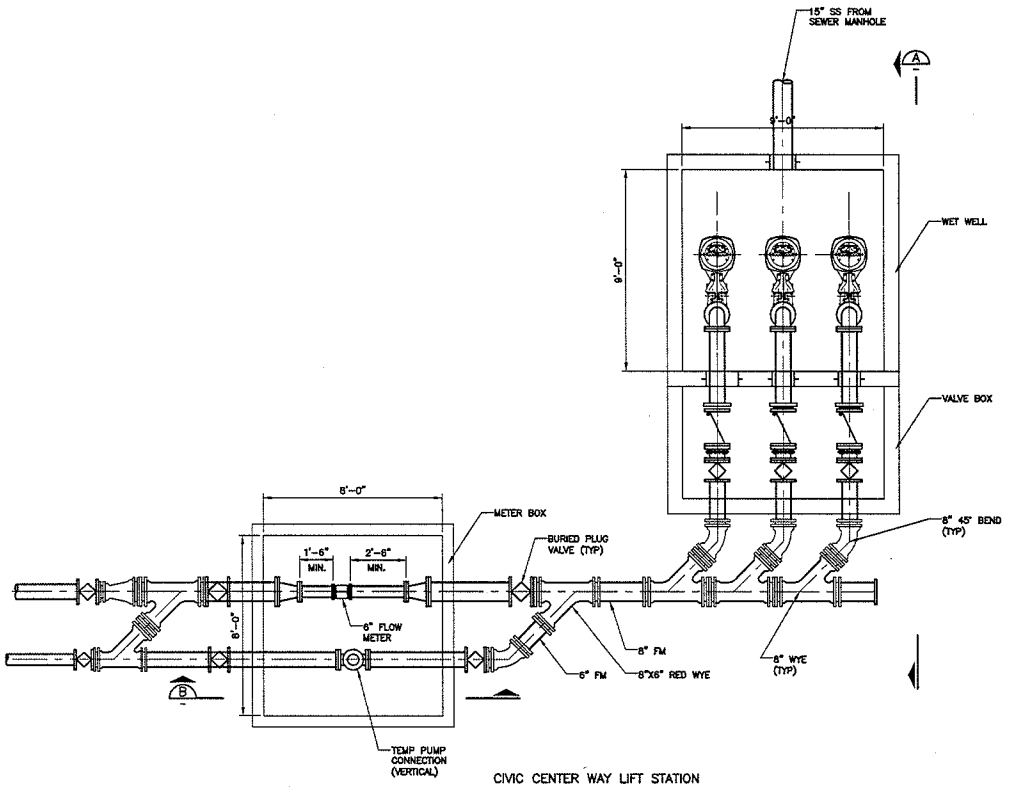
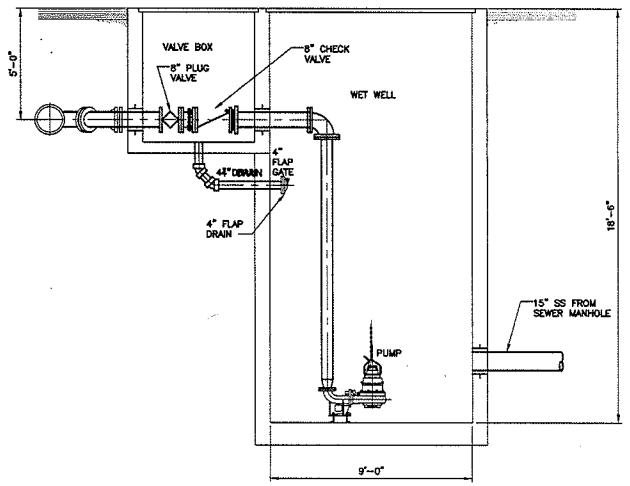


CIVIC CENTER WAY LIFT STATION

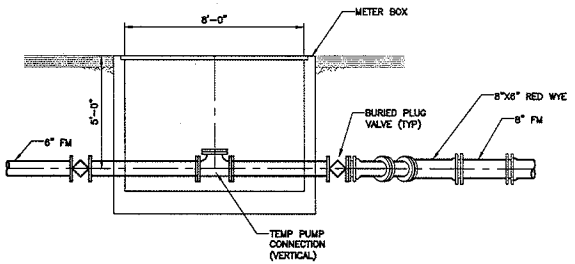
PLAN

SCALE 3/8" = 1'-0"



SECTION A

3/8" = 1'-0"



SECTION B

3/8" = 1'-0"

CONSTRUCTION NOTES:

1.

2.

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

LEGACY PARK LIFT STATION
PLAN AND SECTIONS

DESIGNED BY: K. Erickson — DATE
DRAWN BY: R. Martinez — DATE
CHECKED BY: T. Butler — DATE
SCALE: AS SHWON
PROJECT NUMBER: 2036

APPROVED BY: — DATE XX-XX-14

ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. LS-02

Sheet _____ of XXX Sheets

DIAL BEFORE YOU DIG 1-800-422-4133 — DIGALERT — PLAN IT SAFE. DIAL BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING NINE SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

F:\LEVAUE\2007\05\15\07305\33114 10:04am mmartinez E SHEETS\Arch\TX Civic Center\PRLTX SITE 3D Design1.rvt
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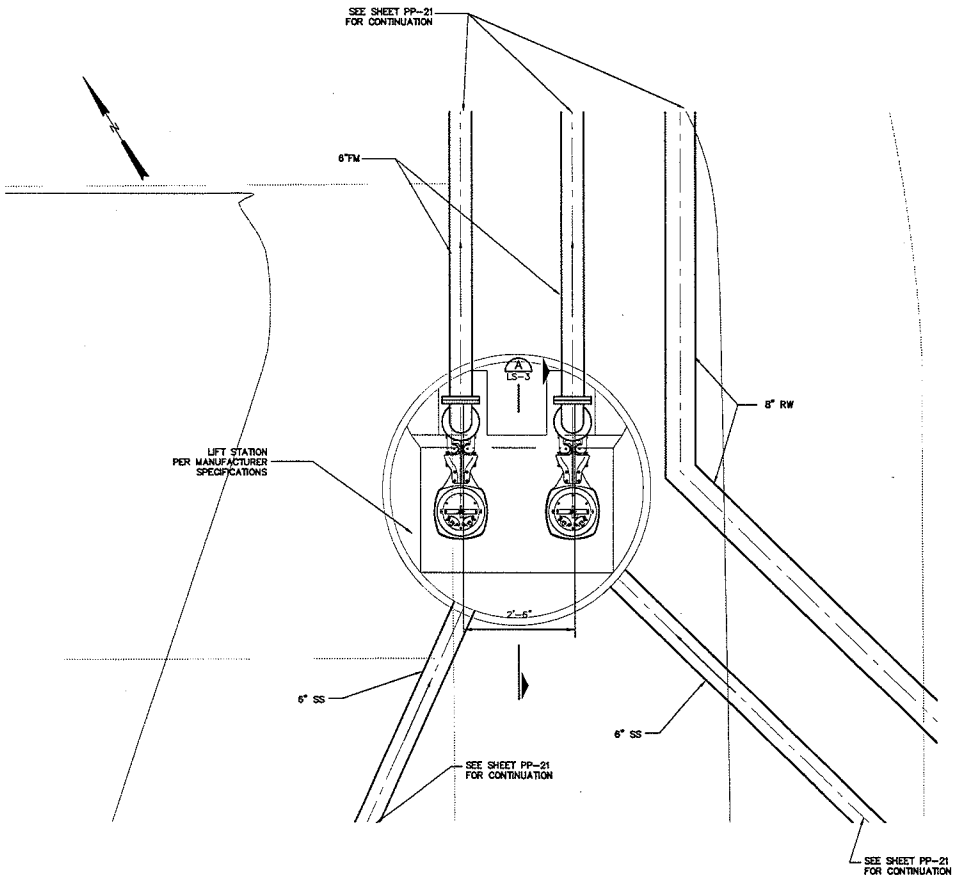
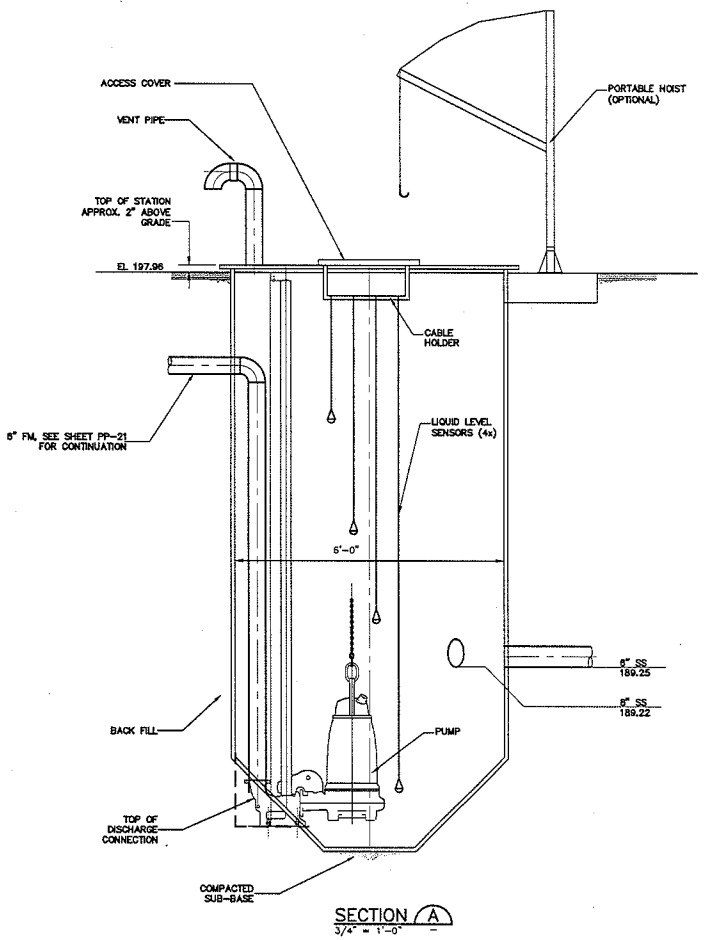


BLUFF PARK LIFT STATION
PLAN
SCALE 3/4" = 1'-0"



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

CONSTRUCTION NOTES:

1

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLAN IT SAFE.
DIG RIGHT.
DIG SAFE.
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
SERVING MOST SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

BLUFF PARK
LIFT STATION PLAN AND SECTION

DESIGNED BY	DATE	SCALE	APPROVED BY:	DATE
—				
DRAWN BY	DATE	AS SHOWN		XX-XX-14
R. Martinez			ROBERT BRAGER, P.E., J.D.	
CHECKED BY	DATE	PROJECT NUMBER	PUBLIC WORKS DIRECTOR/CITY ENGINEER	
T. Butler		2036	RCE NO. 52102 EXP. 12/31/2014	

Plan No. LS-3

Sheet ____ of XXX Sheets

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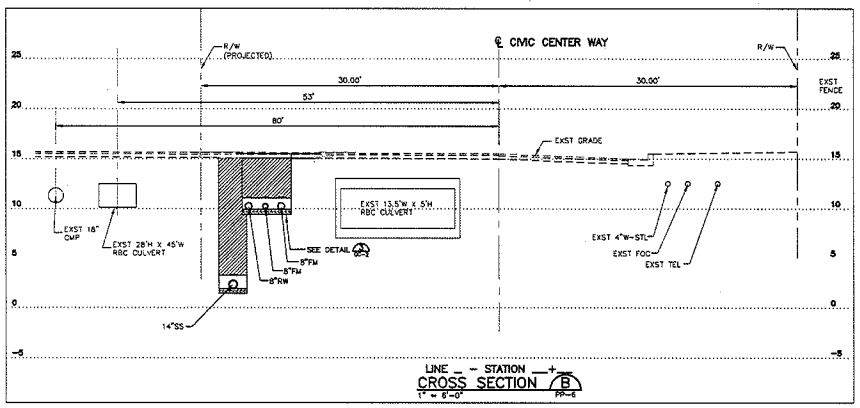

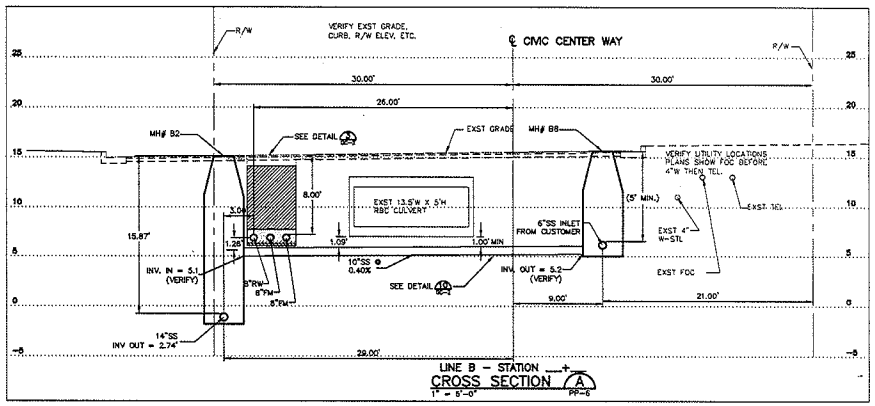

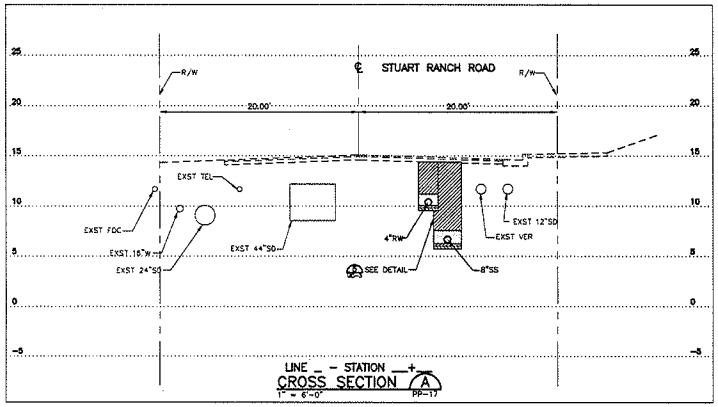

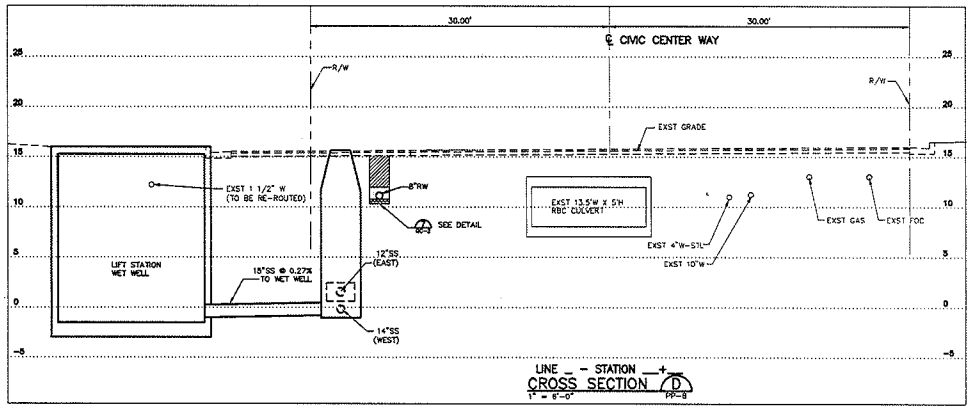

SCALE 1"= 6'

0 6' 12' 18'

SCALE IN FEET

DIAL BEFORE YOU DIG
1-800-422-4133
DIGALERT
PLEASE EMAIL OR CALL BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
IN PRIVATE SOUTHERN CALIFORNIA COUNTIES

1" VERIFY SCALES 1"
BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY:
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

UTILITIES CROSS SECTION - 1

DESIGNED BY / DATE	SCALE	APPROVED BY: / DATE
K. Erickson	AS SHOWN	XX-XX-14
DRAWN BY / DATE: R. Martinez		ROBERT BRAGER, P.E., J.D.
CHECKED BY / DATE: T. Butler	PROJECT NUMBER: 2036	PUBLIC WORKS DIRECTOR/CITY ENGINEER
Plan No. UC-1		RCE NO. 52102 EXP. 12/31/2014
		Sheet _____ of XXX Sheets

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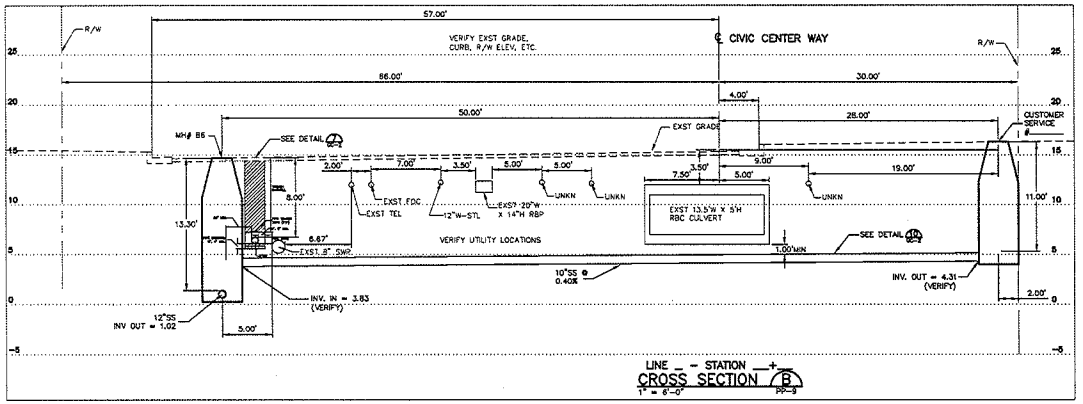

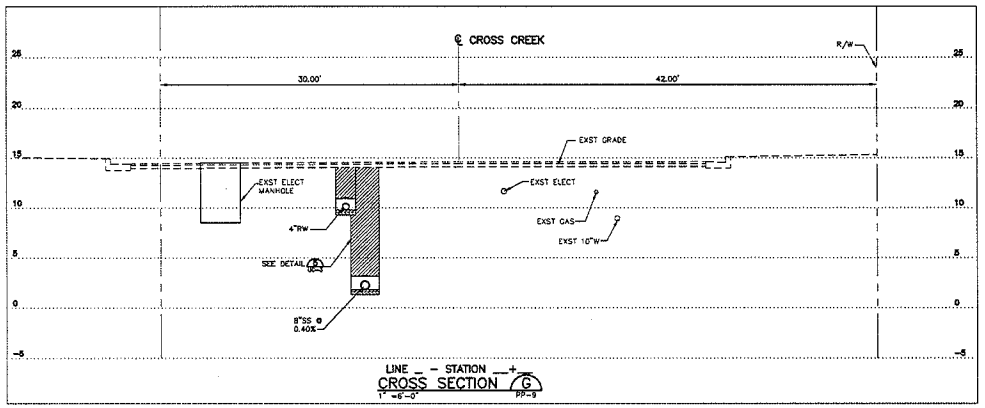

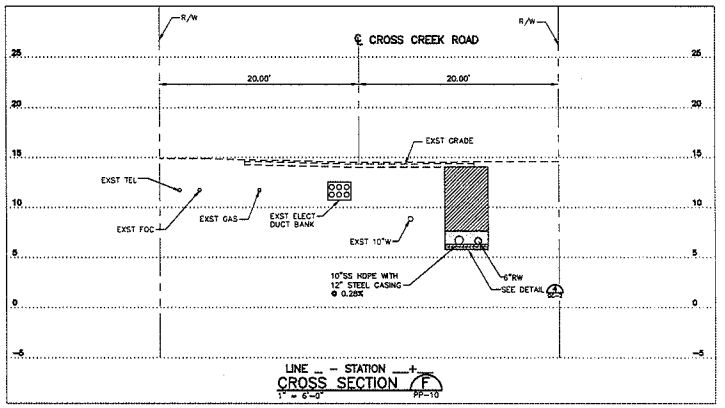

SCALE 1"= 6'

0 6' 12' 18'

SCALE IN FEET

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

UTILITIES CROSS SECTION - 2

DIAL BEFORE YOU DIG 1-800-422-4133 DIGALERT — PLAN IT SAFE! CALL BEFORE YOU DIG! — AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING — SERVING MOST SOUTHERN CALIFORNIA COUNTIES

0" 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY K. Erickson	DATE	SCALE AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014 DATE XX-XX-14
DRAWN BY R. Martinez	DATE		
CHECKED BY T. Butler	DATE	PROJECT NUMBER 2036	

Plan No. UC-2

Sheet _____ of XXX Sheets

[FILENAME D:\2036\06\UC-1 2 3 31-14 10-52am mwinslow] [REFEDIT] [EXPORT]

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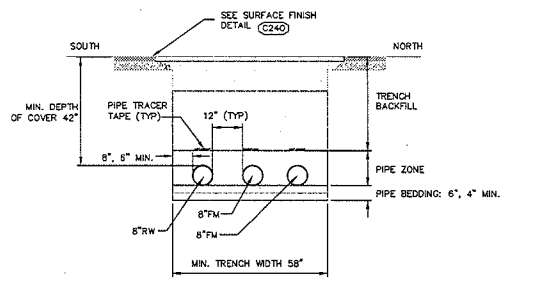
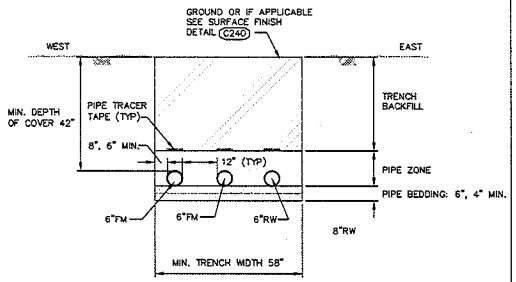


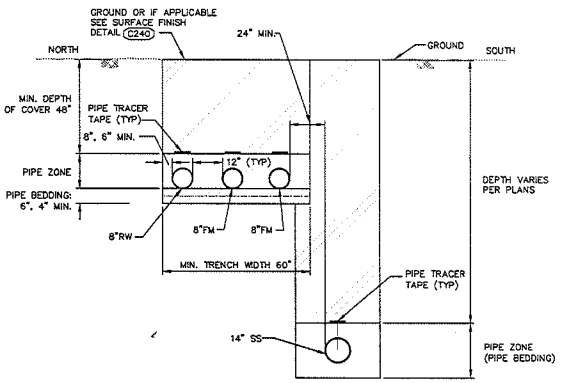
TWIN 8" FM, 8" RW–CIVIC CENTER WAY (WEST)
DETAIL 1
1" = 2'

NOTE:
SEE PLANS FOR SIZES AND ORIENTATION OF PIPES

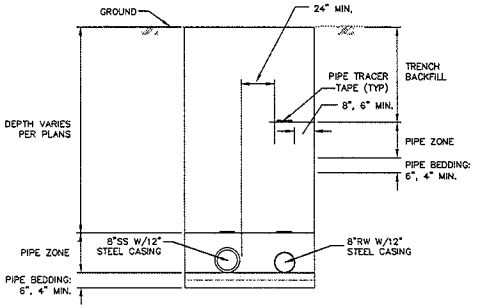


TWIN 6" FMs, 6" RW – MALIBU CANYON ROAD
DETAIL 2
1" = 2'

NOTE:
SEE PLANS FOR SIZES AND ORIENTATION OF PIPES

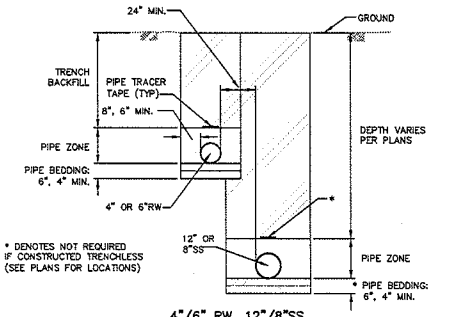


14" SS, 8" FM, 8" RW – CIVIC CENTER WAY (EAST)
DETAIL 3
1" = 2'



8"SS W/12" STL CASING,
8" RW W/ 12" STEEL CASING
DETAIL 4
1" = 2'

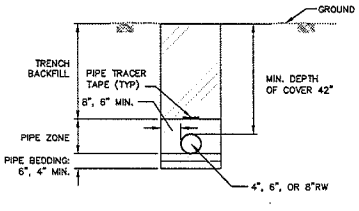
NOTE:
SEE PLANS FOR SIZES AND ORIENTATION OF PIPES



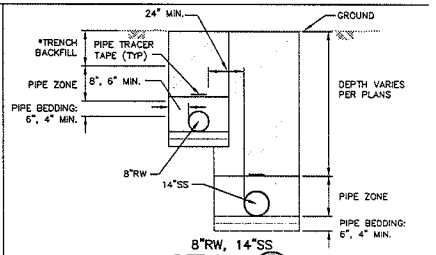
* DENOTES NOT REQUIRED IF CONSTRUCTED TRENCHLESS (SEE PLANS FOR LOCATIONS)

NOTE:
SEE PLANS FOR SIZES, ORIENTATION OF PIPES AND PORTIONS TO BE CONSTRUCTED TRENCHLESS

4"/6" RW, 12"/8"SS
DETAIL 5
1" = 2'

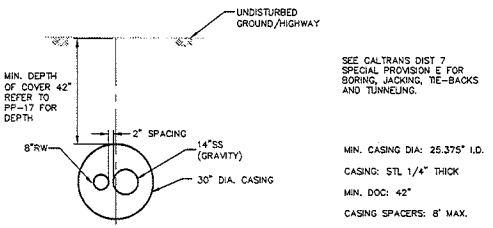


4", 6" OR 8" RW
DETAIL 6
1" = 2'

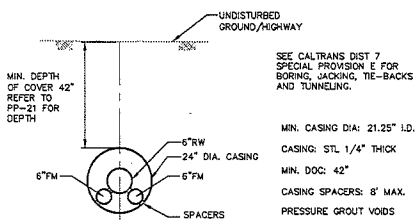


NOTE:
*USE TRENCHLESS TECHNIQUES WHERE INDICATED ON PLANS

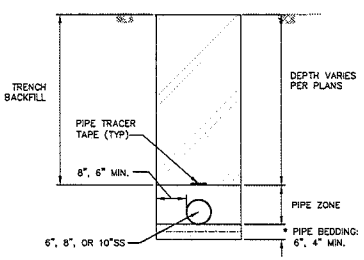
8"RW, 14"SS
DETAIL 7
1" = 2'



JACK AND BORE DETAIL – 8" RW, 14" SS– WEBB WAY
DETAIL 8
1" = 2'



JACK AND BORE DETAIL–6" RW, TWIN 6" FMs MALIBU CANYON RD.
DETAIL 9
1" = 2'



NOTE:
SEE PLANS FOR SIZES, ORIENTATION OF PIPES AND PORTIONS TO BE CONSTRUCTED TRENCHLESS

6", 8", 10"SS
DETAIL 10
1" = 2'

NOTES:

1. ALTERNATE TRENCH SECTIONS SHOWN ARE FOR USE WHERE COMPACT, STABLE SOIL CONDITIONS EXISTING DIRECTIONAL DRILLING AND TRENCHLESS TECHNOLOGIES SHALL BE IMPLEMENTED AS SHOWN ON THE PLANS. WHERE LARGE ROCKS OR STRUCTURES ARE ENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER AND WIDER THAN THOSE SHOWN. COMBINATION OF SLOPING AND VERTICAL TRENCH WALLS:

   (A) TRENCH DEPTHS < 5'–0" SHALL HAVE VERTICAL WALLS IN PIPE ZONE UNLESS NOTED OTHERWISE.
   (B) TRENCH DEPTHS > 5'–0" SEE SPEC 2200.

2. WHERE NET AND UNSTABLE SOIL IS ENCOUNTERED, SOLID SHEATHING IS REQUIRED FOR ALL VERTICAL TRENCH WALLS.
3. SEE SPEC SECTION 02200 FOR BACKFILL REQUIREMENTS.
4. SEE STD. DETAIL C240 FOR SURFACE FINISH.

CITY OF MALIBU
PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

UTILITIES CROSS SECTION - 3

DIAL BEFORE YOU DIG
USA — 811
DIGALERT
PLAN IT SAFE. DIG BEFORE YOU DIG
AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING
REPRESENTING SOUTHERN CALIFORNIA COUNTIES

IF THIS BAR IS NOT 1" WHEN PLOTTED, VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY
RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY	DATE	SCALE
K. Erickson		
DRAWN BY	DATE	AS SHOWN
R. Martinez		
CHECKED BY	DATE	PROJECT NUMBER
T. Butler		2036

APPROVED BY: DATE

XX-XX-14

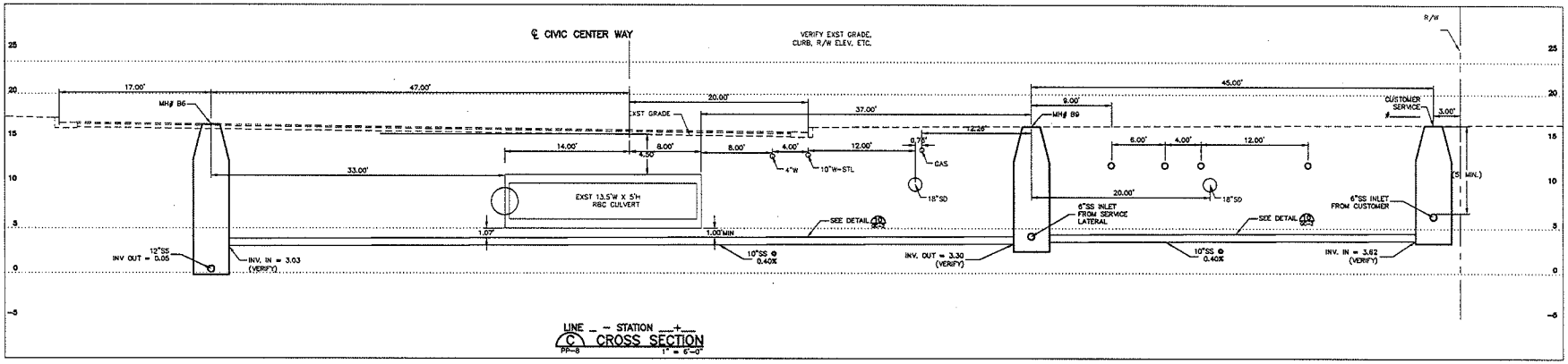
ROBERT BRAGER, P.E., J.D.
PUBLIC WORKS DIRECTOR/CITY ENGINEER
RCE NO. 52102 EXP. 12/31/2014

Plan No. UC-3

Sheet _____ of XXX Sheets

[RELEASE 01/07/06 LOC:\D 3.31.14 10:52am mmartinez] X:\DEPTS\PW\Survey\SS\CONST NOTES.ps

Last Saved By: mmartinez 3-31-14 08:53am



SCALE 1"= 6'

0 6' 12' 18'

SCALE IN FEET

CITY OF MALIBU

PUBLIC WORKS DEPARTMENT

CIVIC CENTER WASTEWATER TREATMENT FACILITY - PHASE 1

UTILITIES CROSS SECTION - 4

DIAL BEFORE YOU DIG 1-800-(DIG-ITS) DIGALERT AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATING. PLAN ST SAFE, DIAL BEFORE YOU DIG! ATTWO NAE SOUTHERN CALIFORNIA COUNTIES

6" VERIFY SCALES 1" BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

PLANS PREPARED BY: RMC water and environment

95% Submittal Not for Construction

NO.	REVISION	BY	CHKD.	DATE

DESIGNED BY: K. Erickson	DATE	SCALE: AS SHOWN	APPROVED BY: ROBERT BRAGER, P.E., J.D. PUBLIC WORKS DIRECTOR/CITY ENGINEER RCE NO. 52102 EXP. 12/31/2014
DRAWN BY: R. Martinez	DATE		DATE: XX-XX-14
CHECKED BY: T. Butler	DATE	PROJECT NUMBER: 2036	

Plan No. UC-4

Sheet _____ of XXX Sheets

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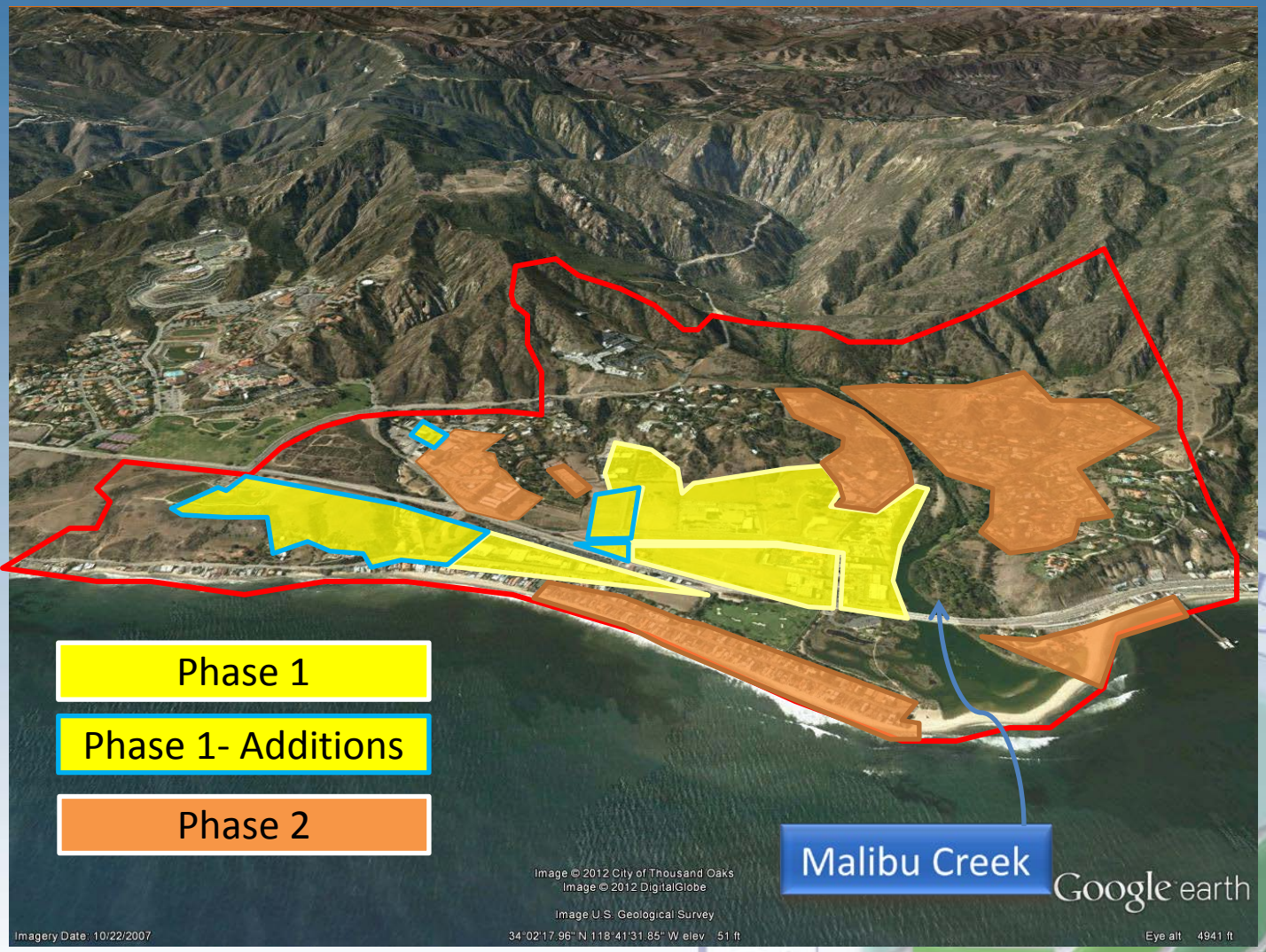
Progress Report
Civic Center
Wastewater Treatment
Facility Design

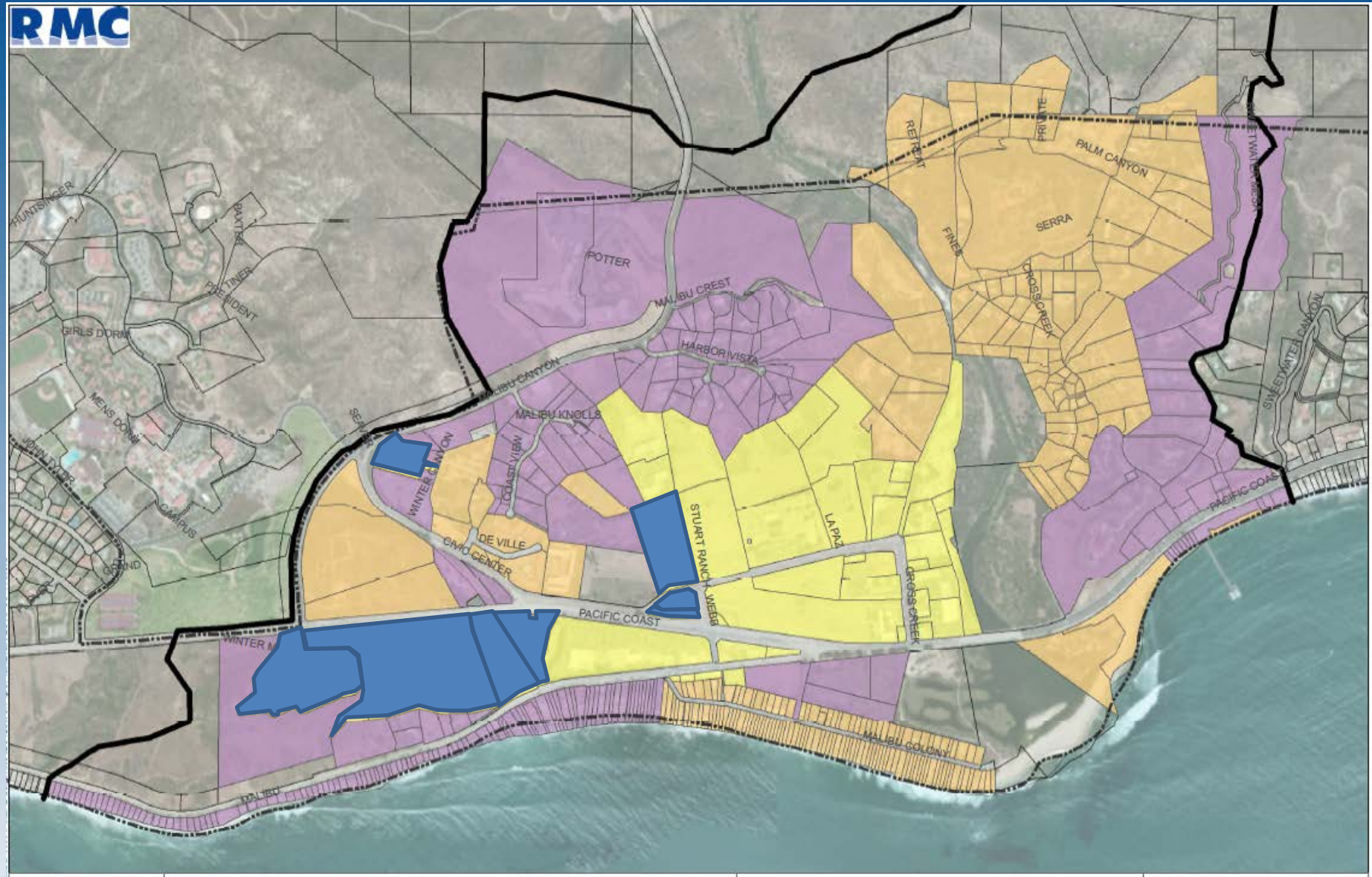
March 6, 2014

Prohibition Area

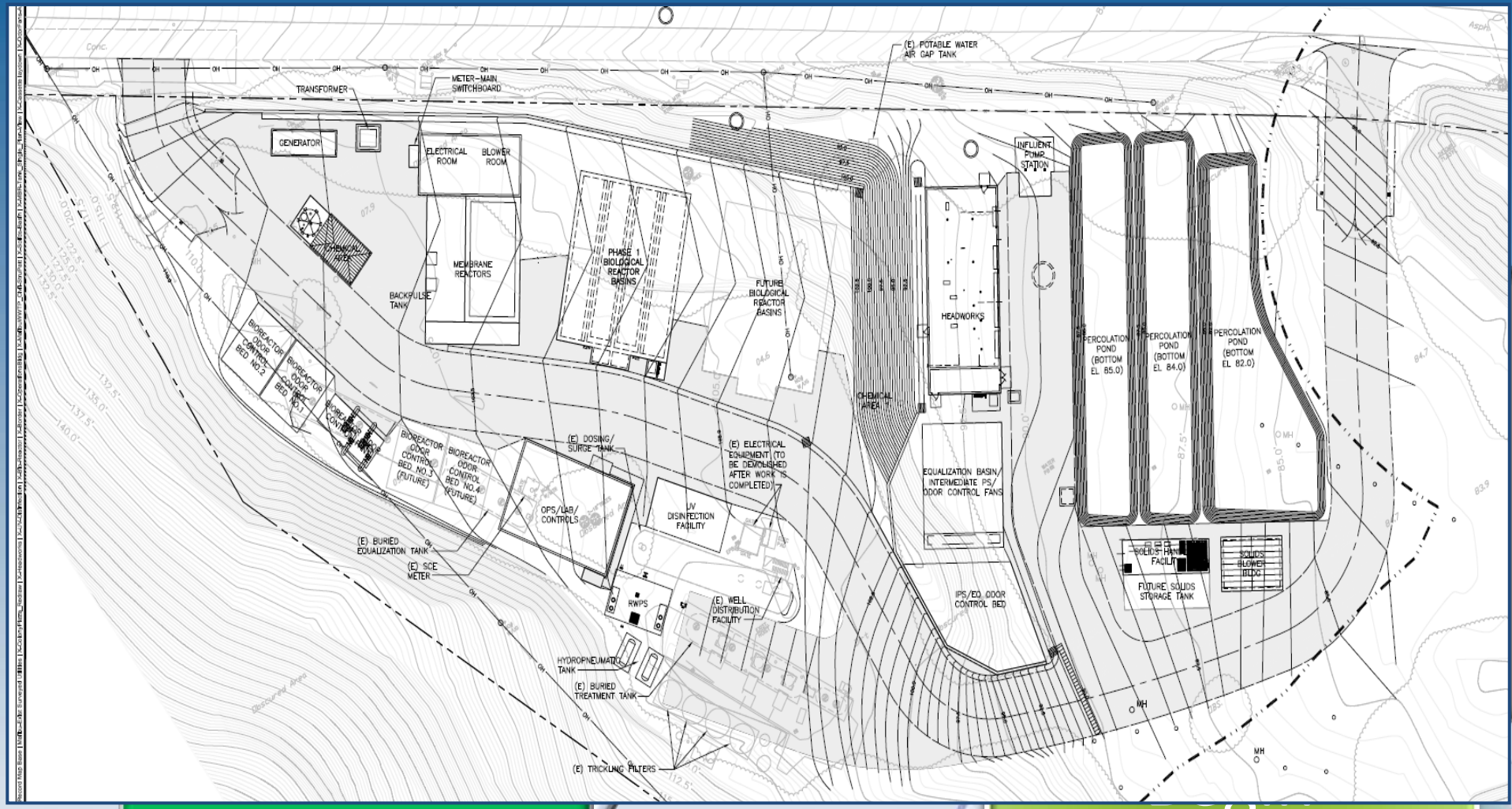


CHUMASH

Humaliwo, "surf sounds loudly," was a Chumash Indian village on the high ground at the foot of Malibu Canyon where the creek ran into the ocean.


RMC
POTTER
MALIBU CREST
HARBOR VISTA
MALIBU CANYON
MALIBU KNOLLS
COAST VIEW
WINTER CANYON
DE VILLE
CIVIC CENTER
PACIFIC COAST
STUART RANCH
LA PAZ
CROSS CREEK
PALM CANYON
SERRA
FINES
RETREAT
PRIVATE
SWEETWATER CANYON
PACIFIC COAST
MALIBU COLONY
GIRLS DORM
MENS DORM
CAMPUS
PRESIDENT
HUNTSINGER
Phase 1 – New Parcels
N
0 500 1,000 2,000
Feet
Prohibition Boundary
Malibu City Boundary
RWQCB Phase
Phase 1
Phase 2
Phase 3
City of Malibu
Prohibition Area
1/6/2014

Tasks



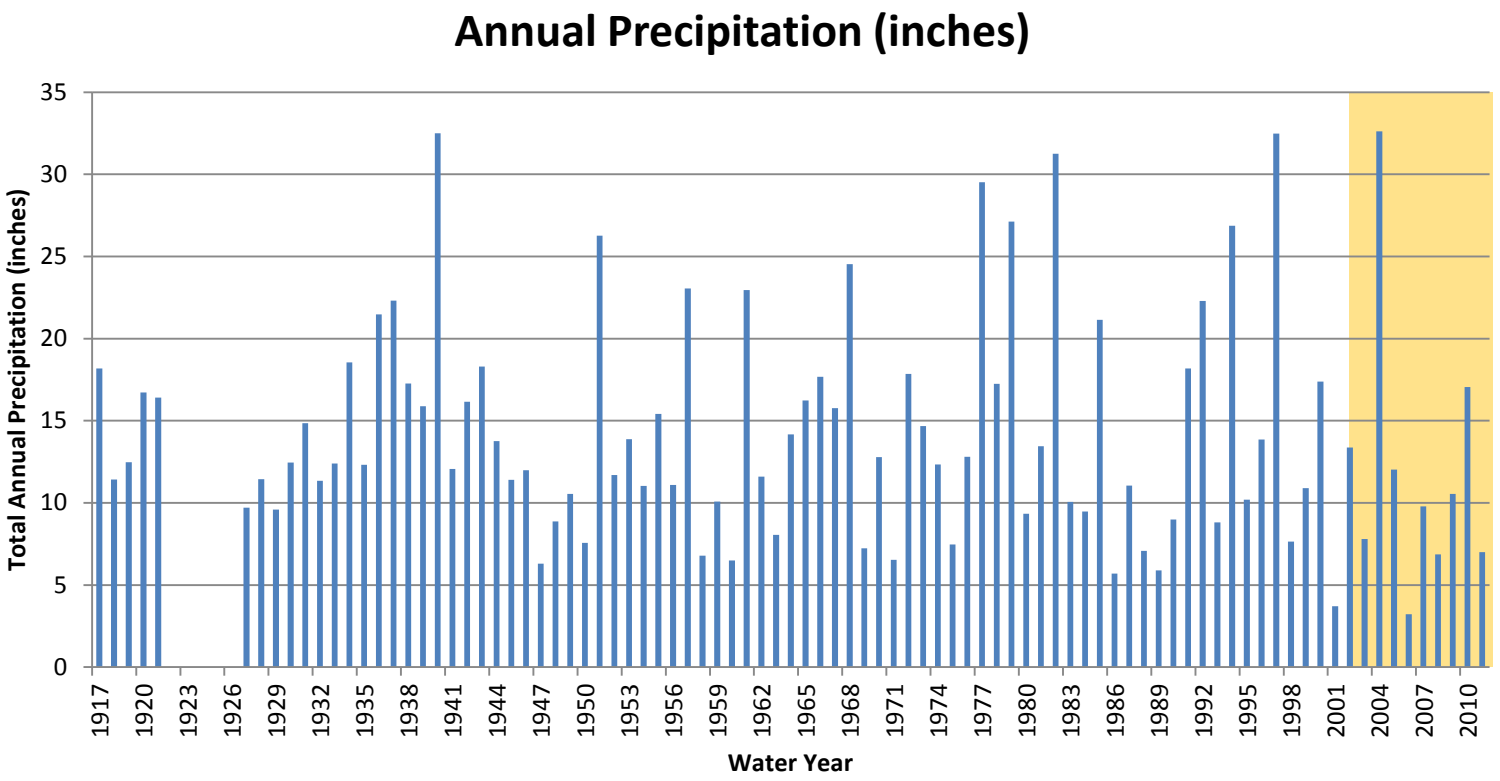
Assessment District

Operation

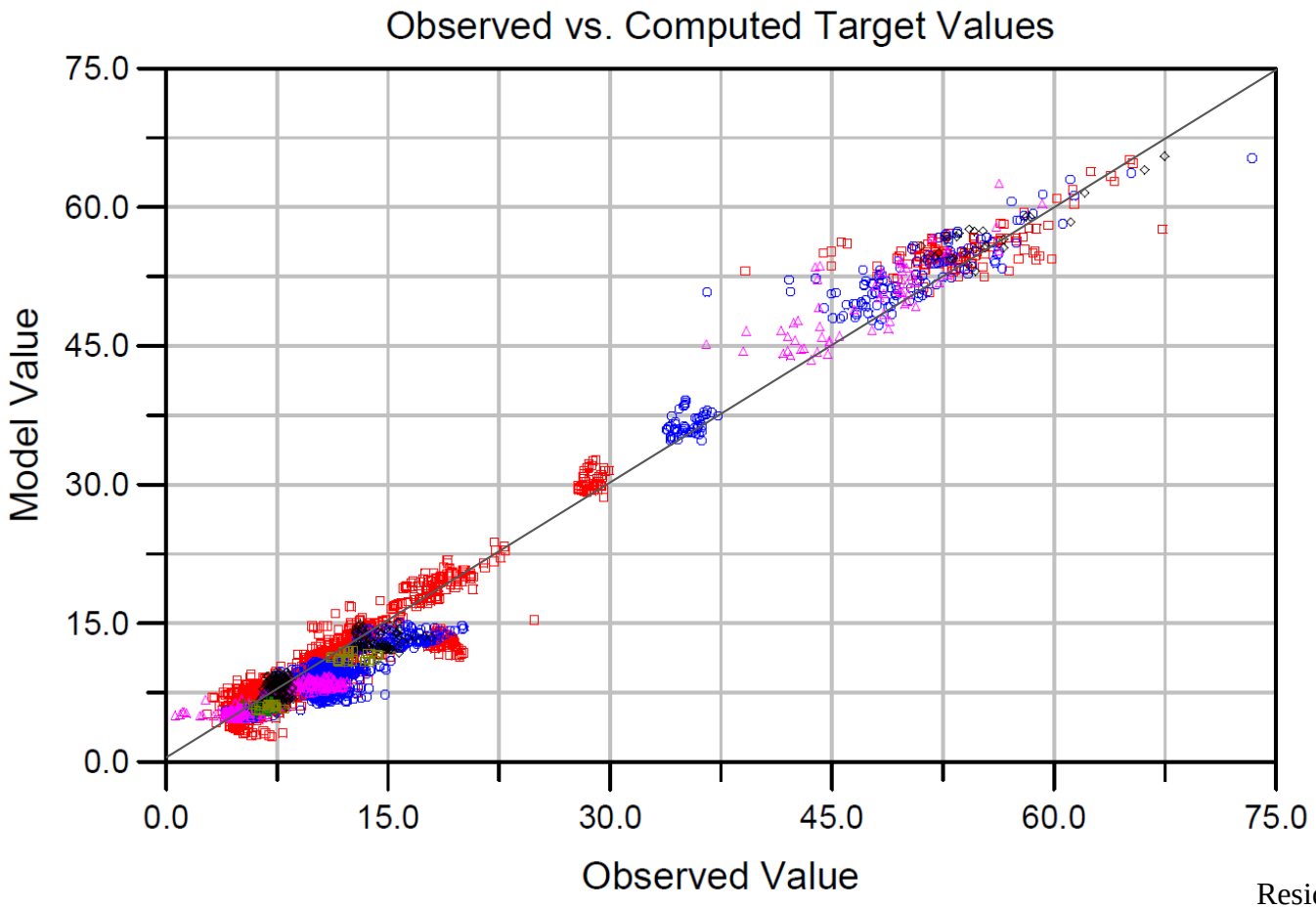
Groundwater Model (MODFLOW) Update

- Update Hydrogeology
- Calibration
  - Compare modeled ground water elevations to actual field measurements
  - Compare modeled injection testing to field observations
- Scenario Planning and Analysis
- Sensitivity Analyses

Model Simulation Period
9 years

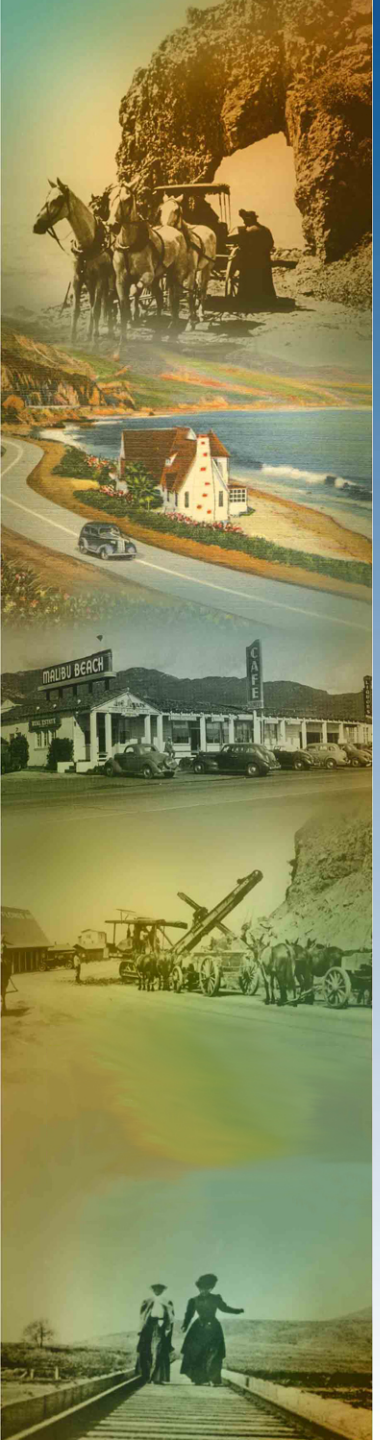


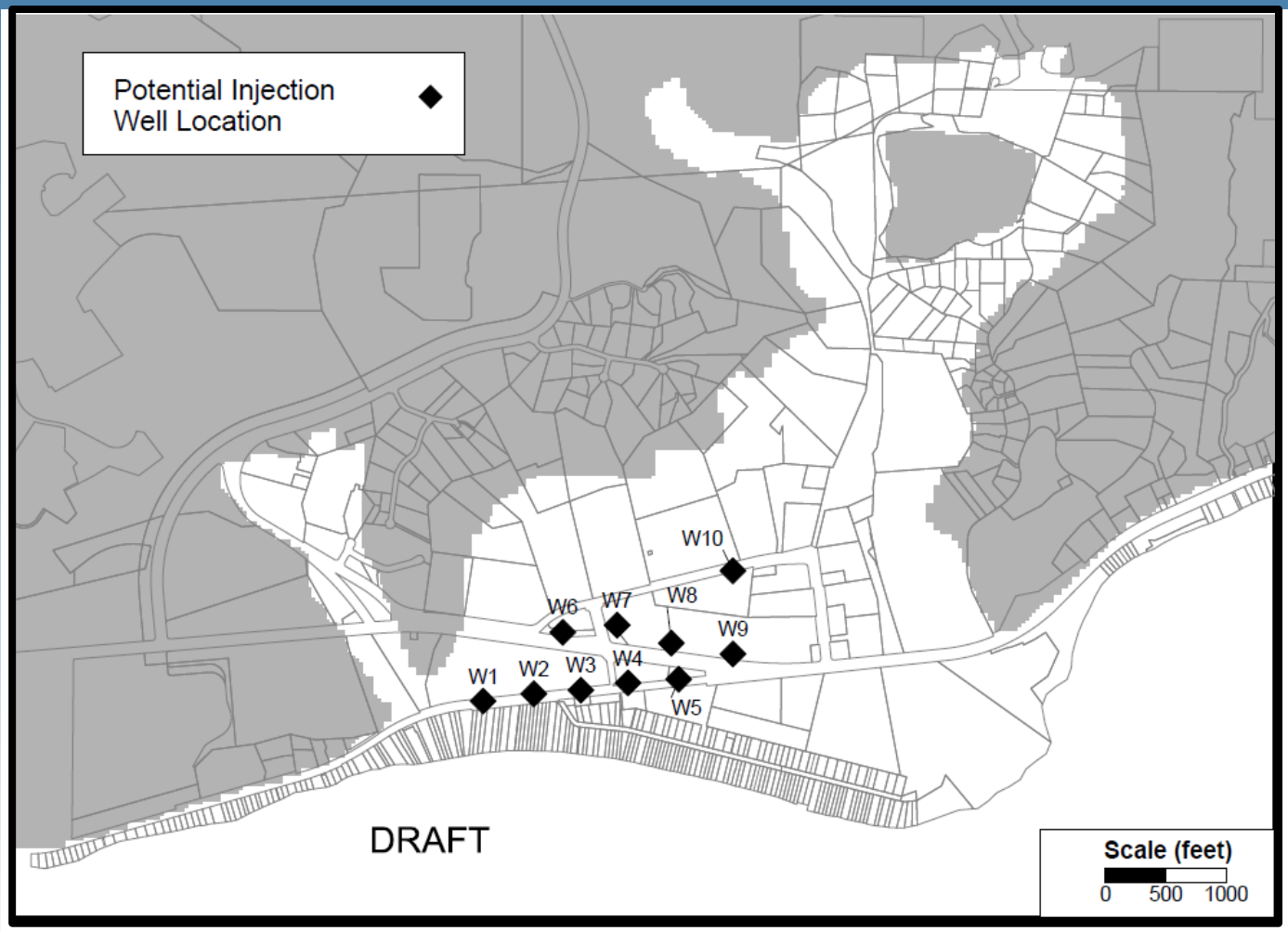
Recalibration Shows Good Results



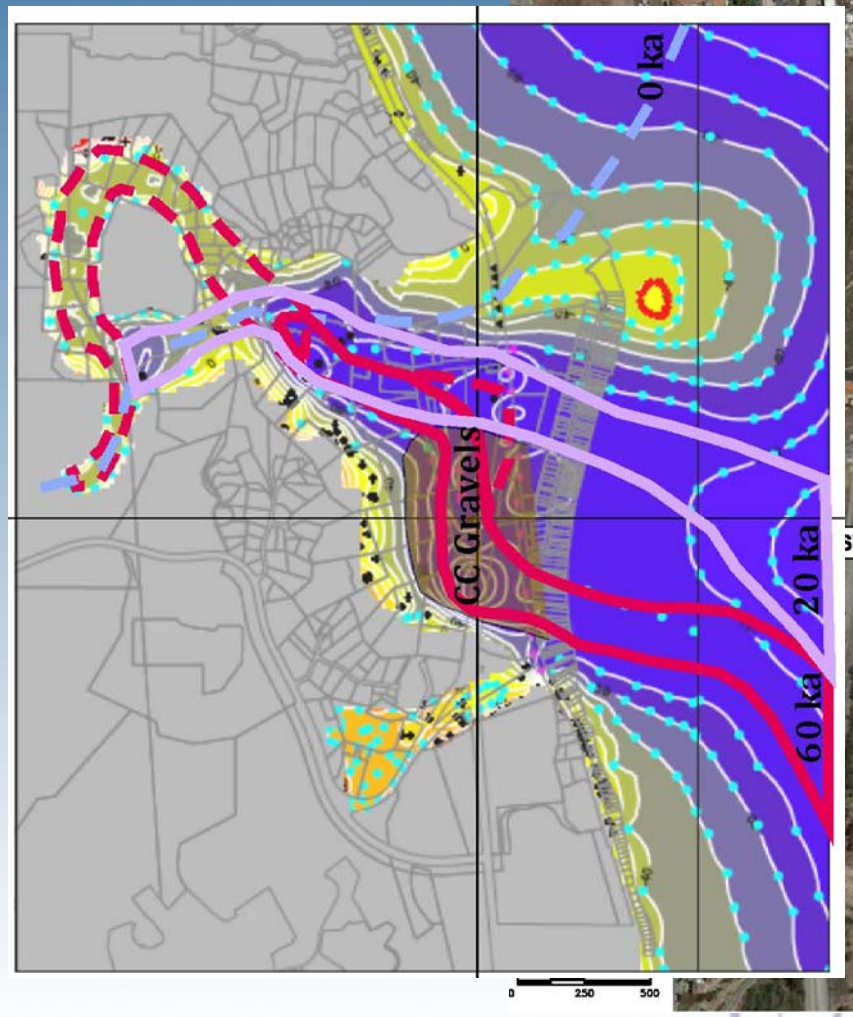
Residual Mean = 0.19 ft
Absolute Residual Mean = 1.47 ft
Sum of Squares = 1.49e4 ft2
Number of Observations = 3513
Number of Locations = 101

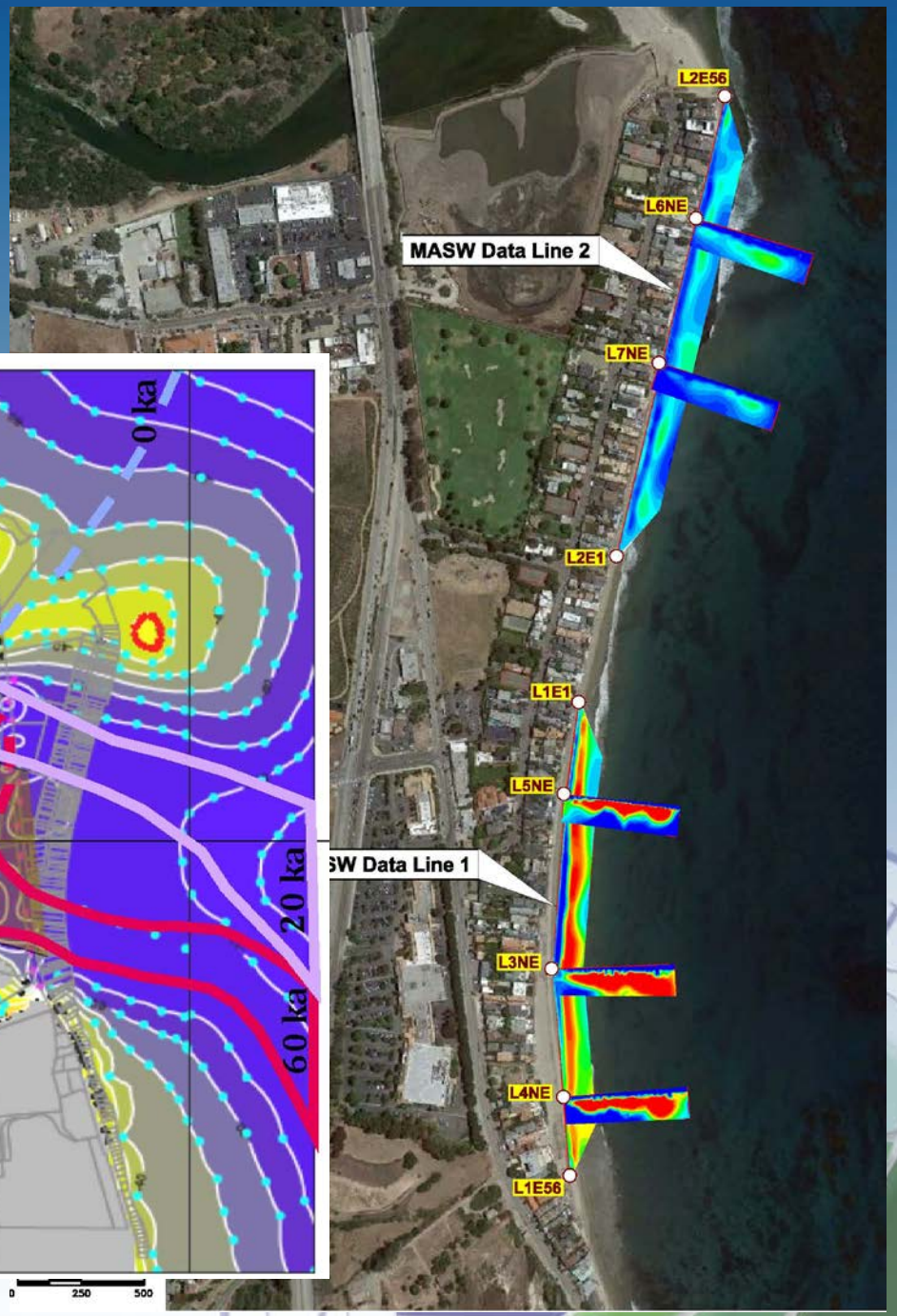
Possible Injection Well Locations



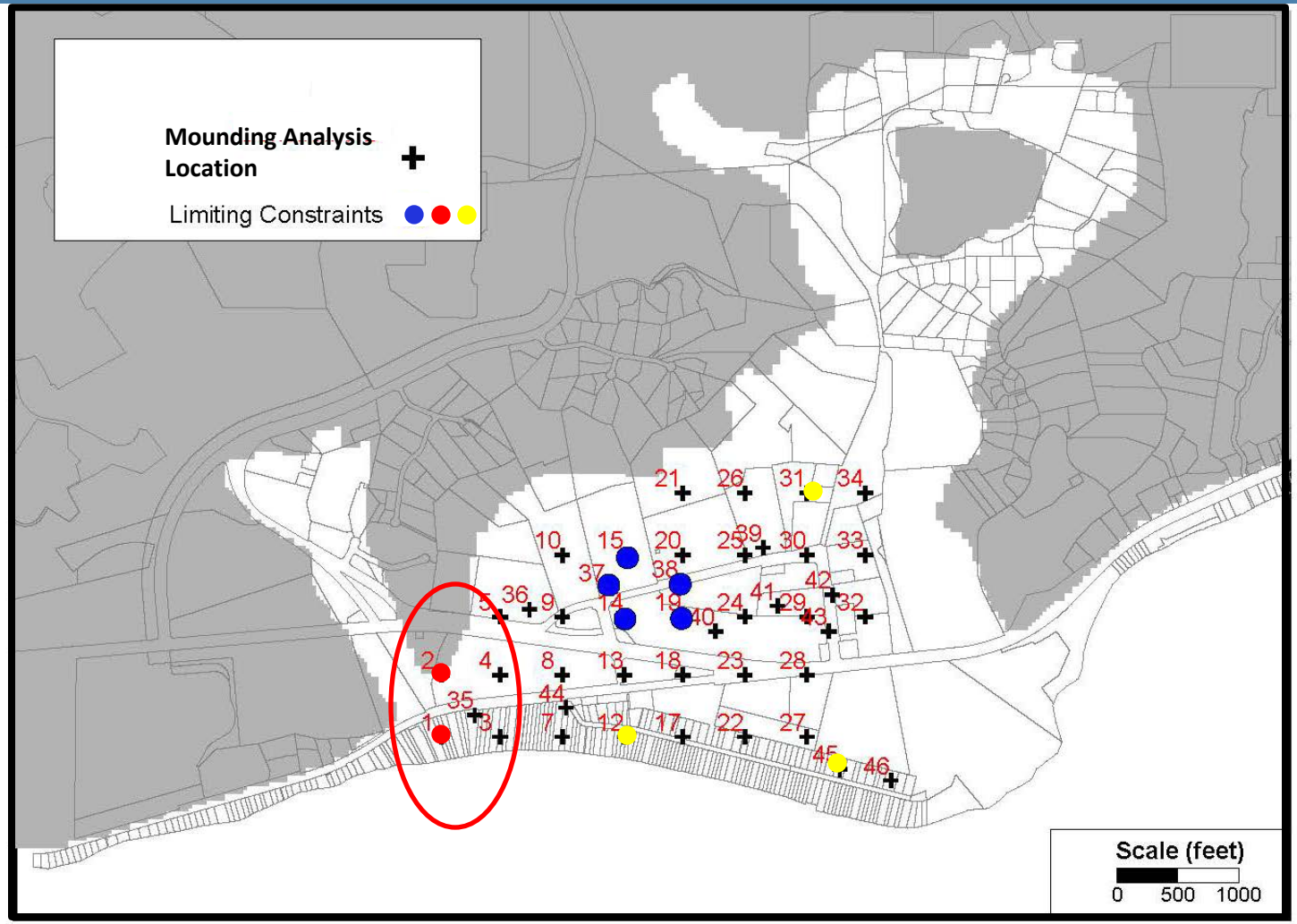


Electrical Resistivity Survey



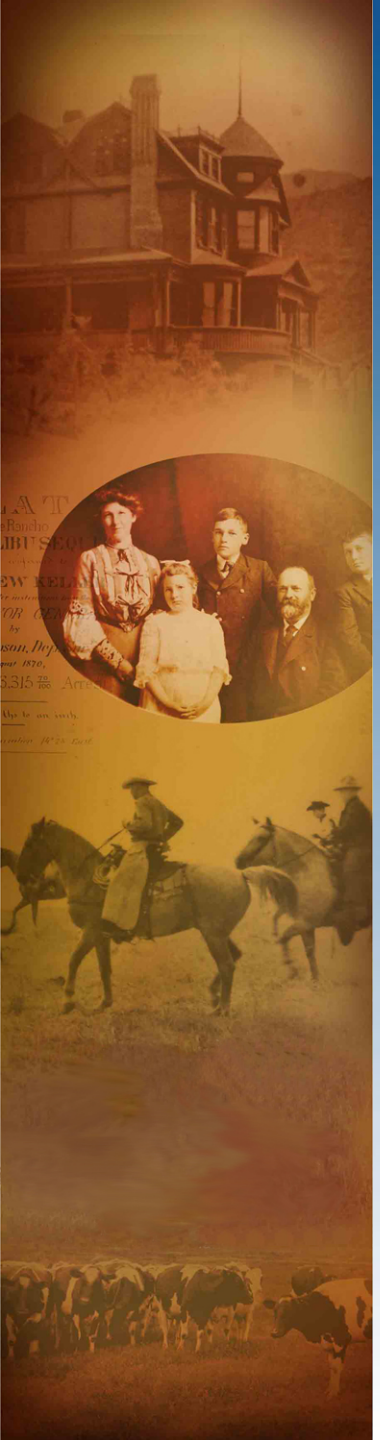


Groundwater Elevation Analysis Locations



Mounding Analysis – Location 2

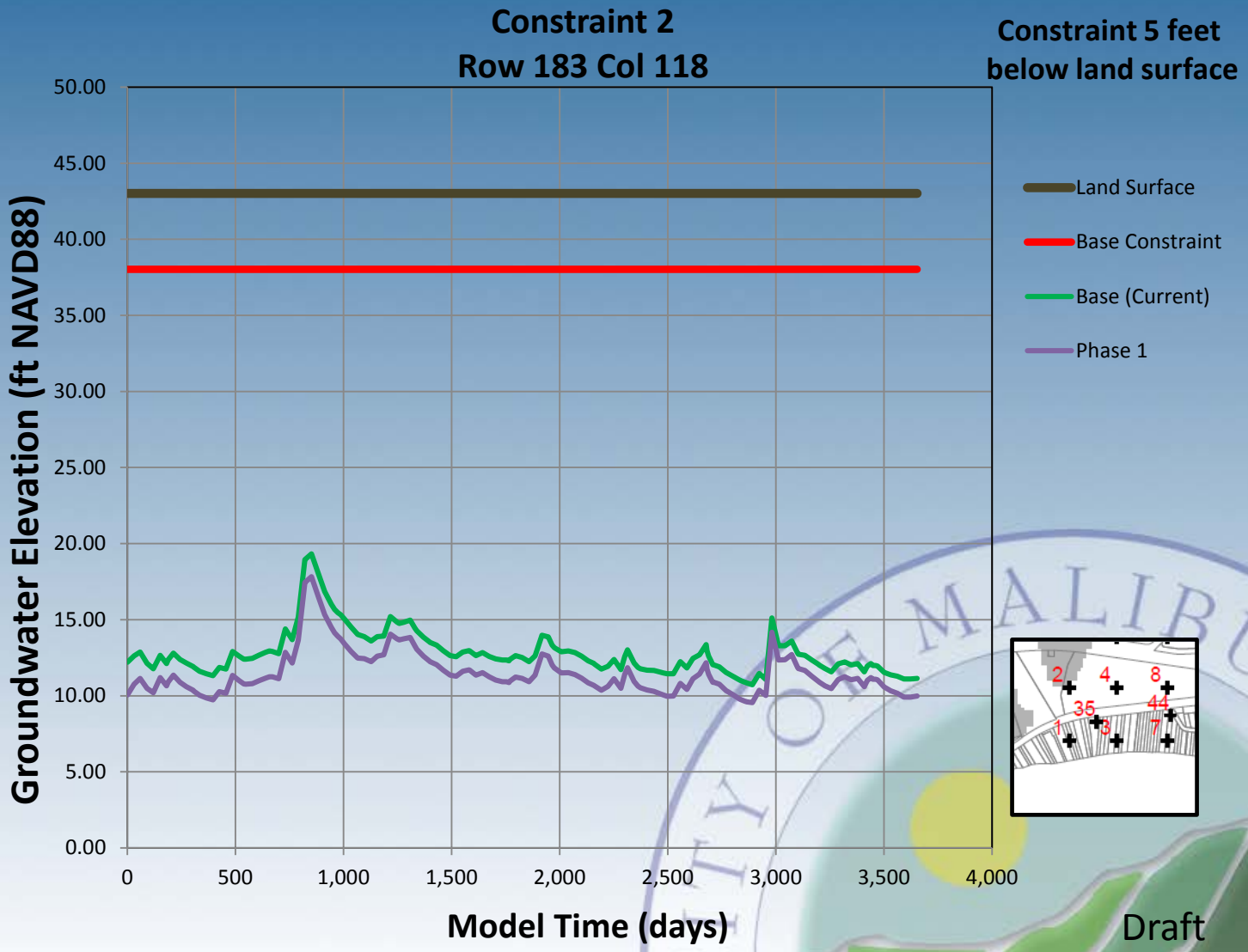
(Project lowers groundwater elevations)



Draft

Mounding Analysis – Location 2

(Project lowers groundwater elevations)



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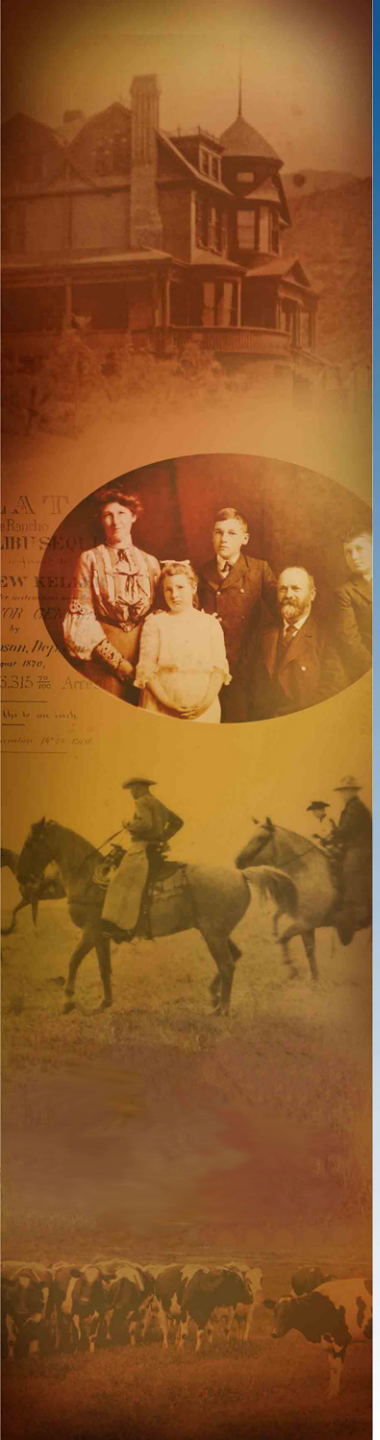
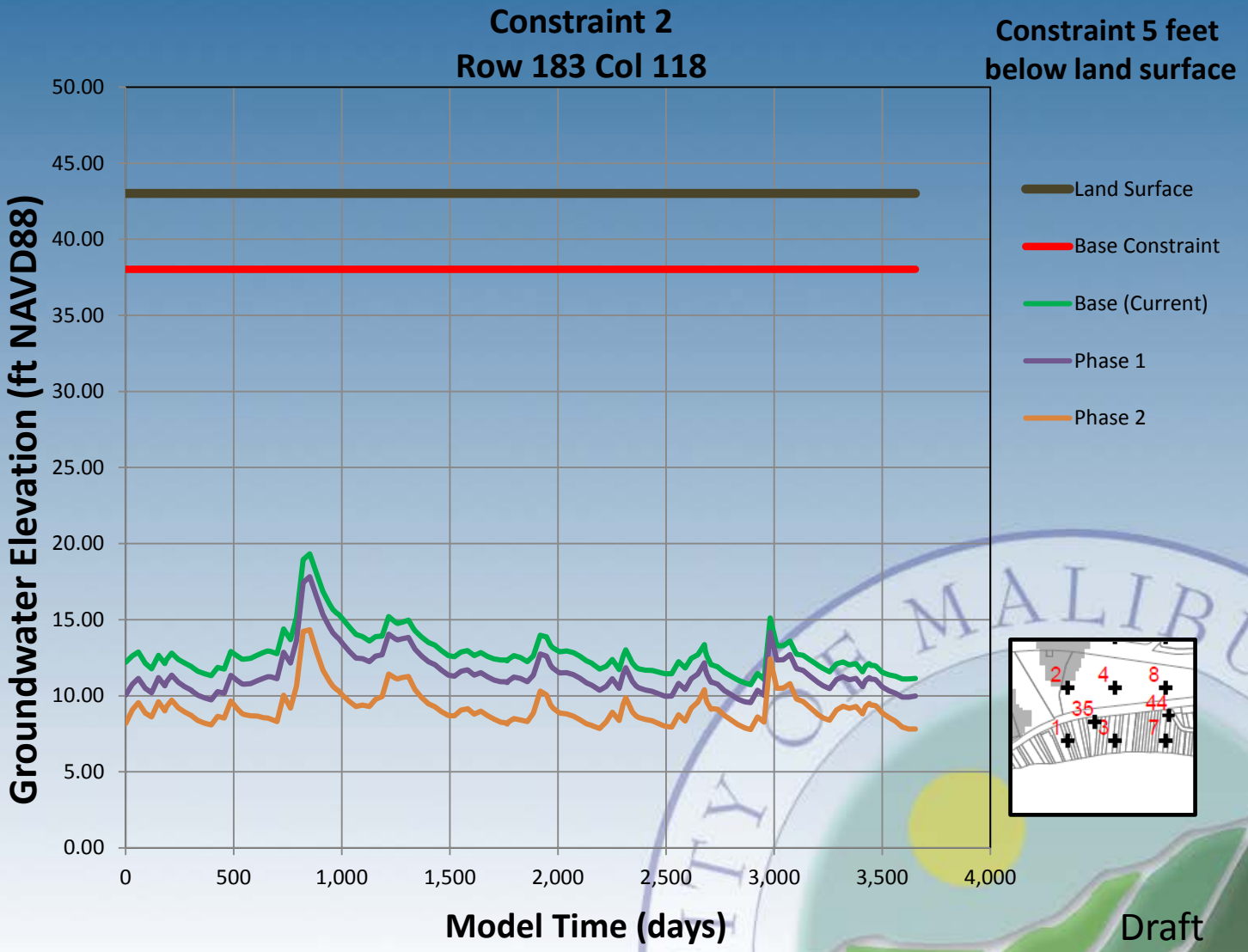


Mounding Analysis – Location 2

(Project lowers groundwater elevations)



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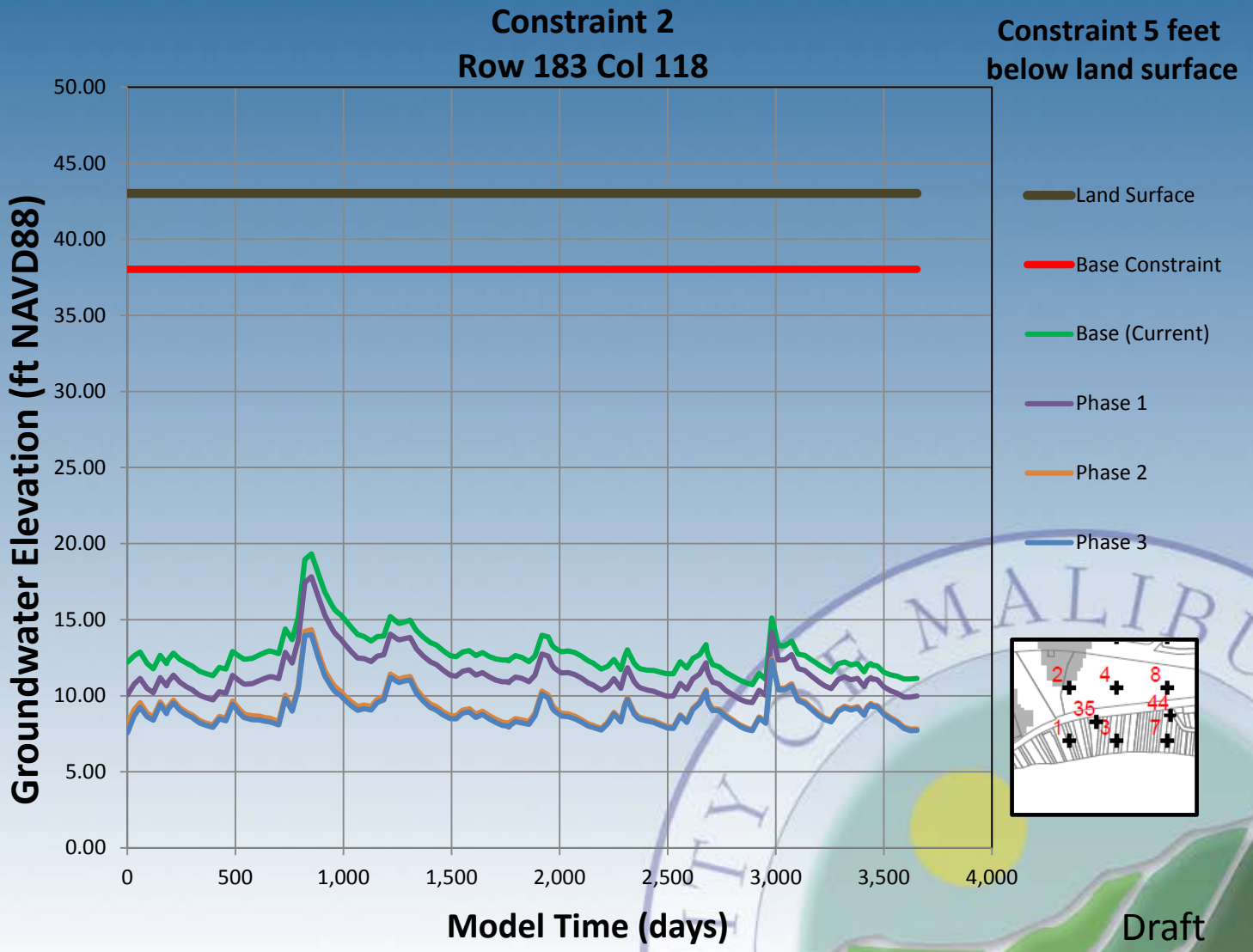
Mounding Analysis – Location 2

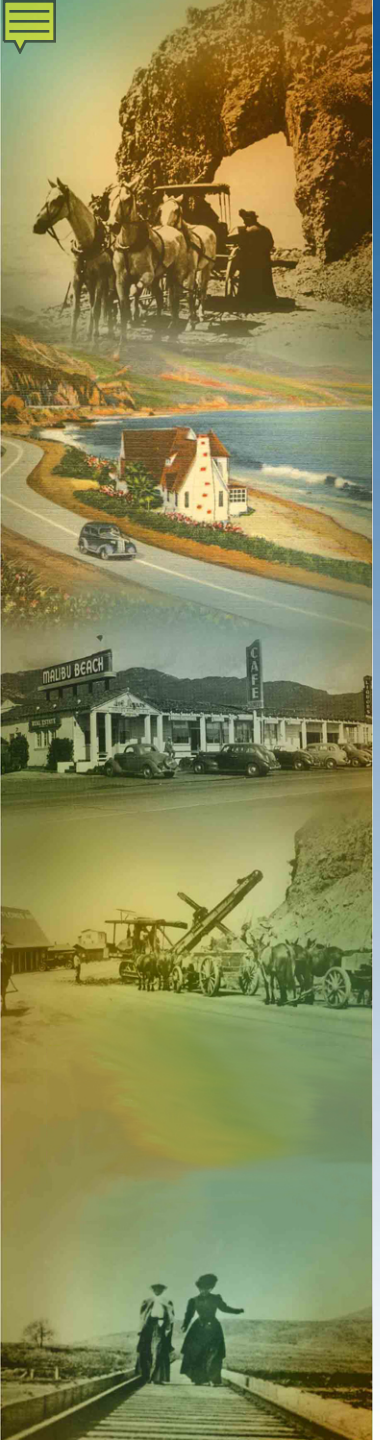
(Project lowers groundwater elevations)

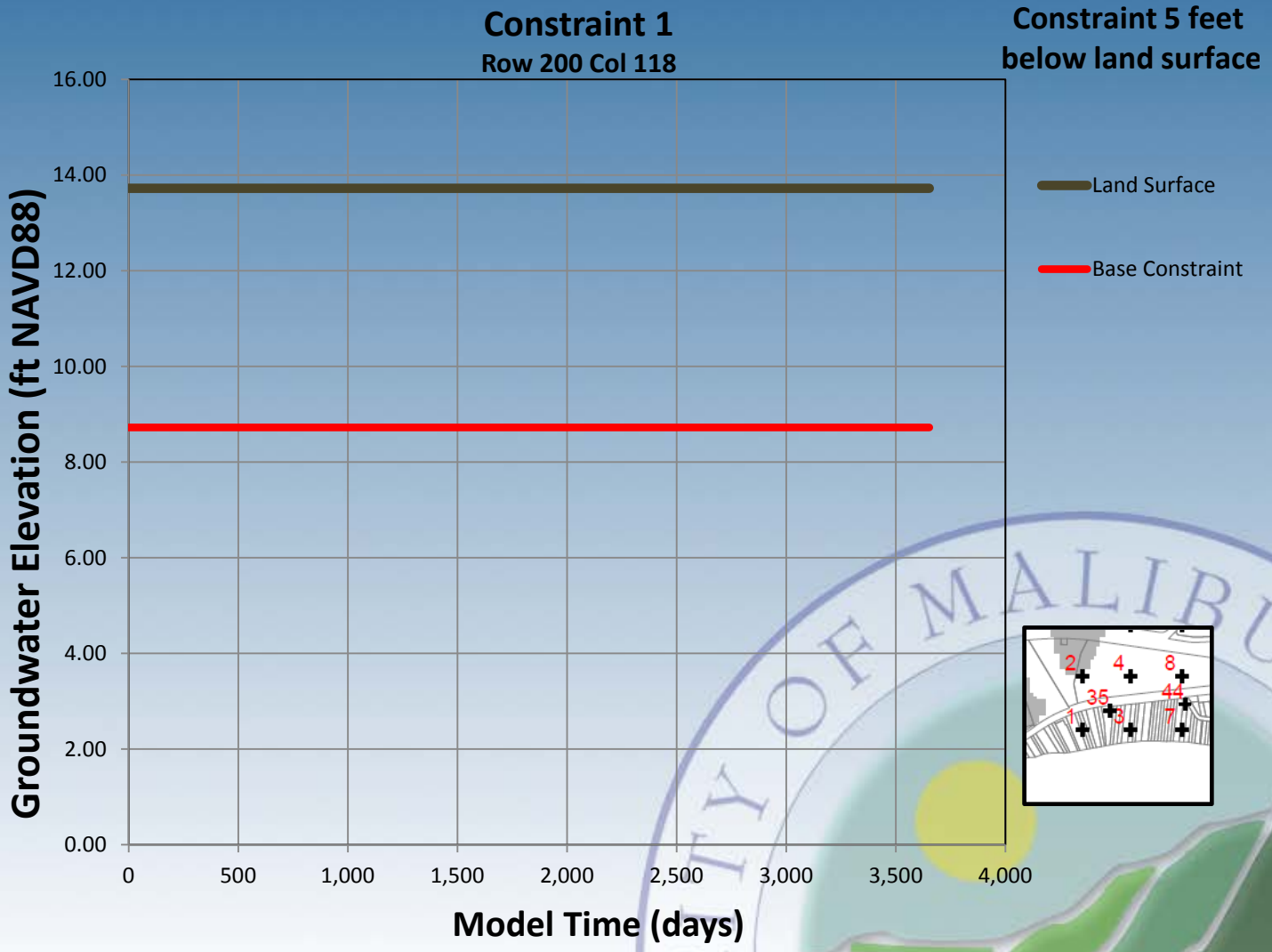


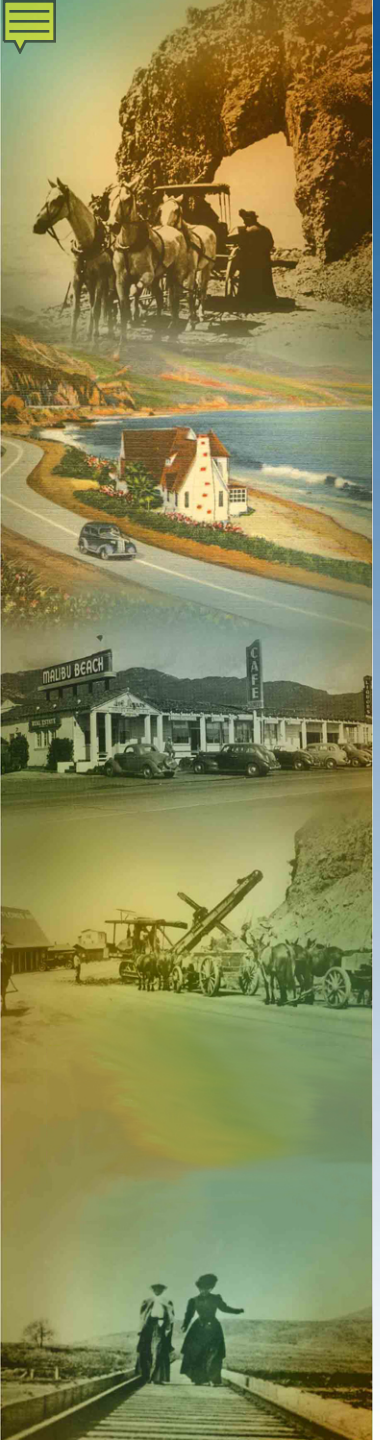
Draft

Mounding Analysis – Location 1

(Project lowers groundwater elevations)

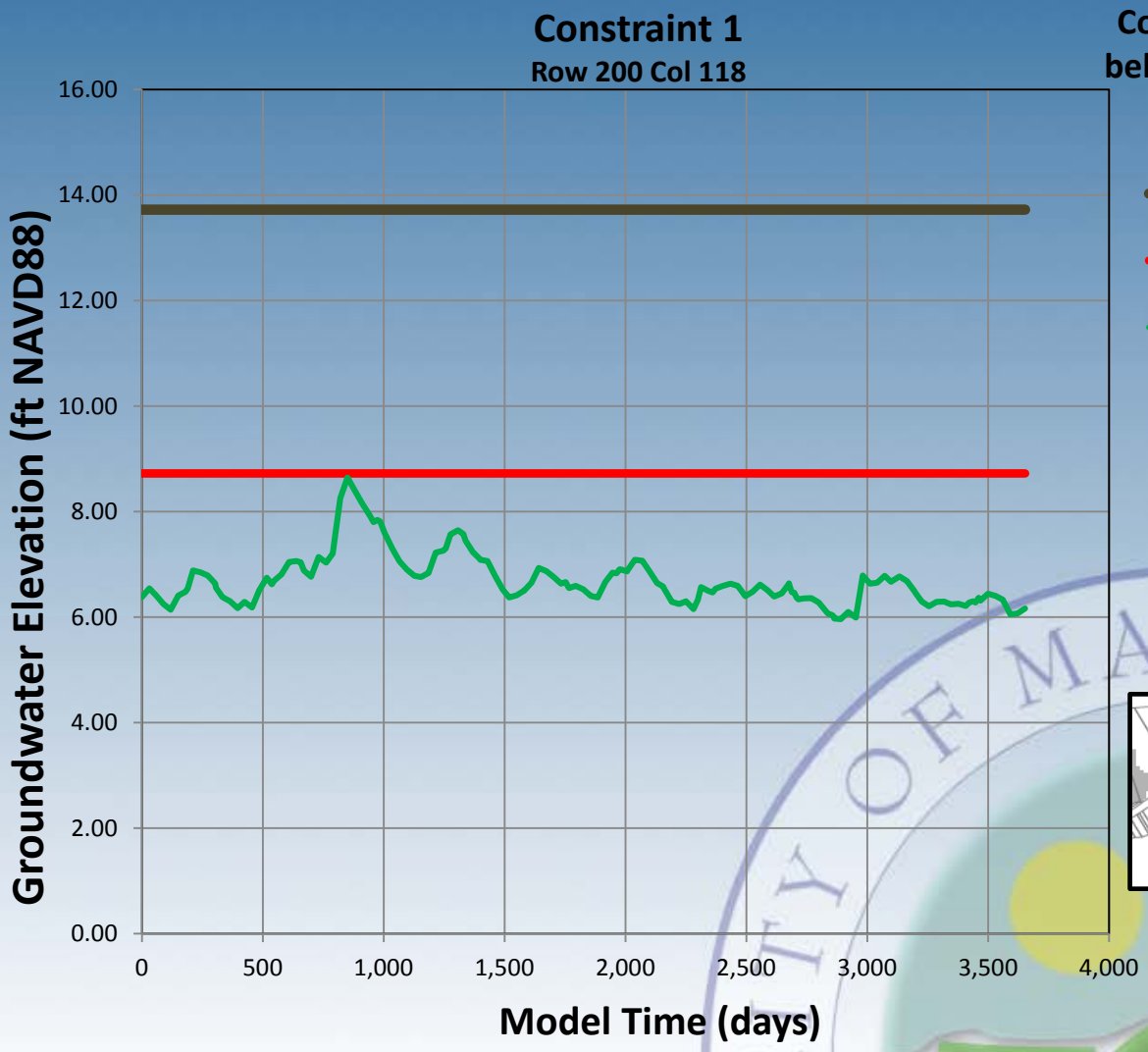






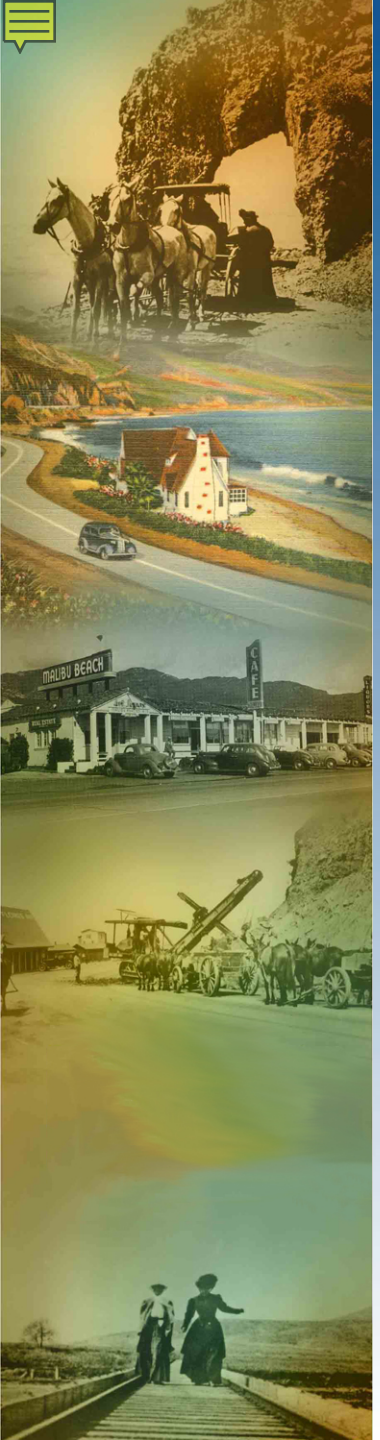
Mounding Analysis – Location 1

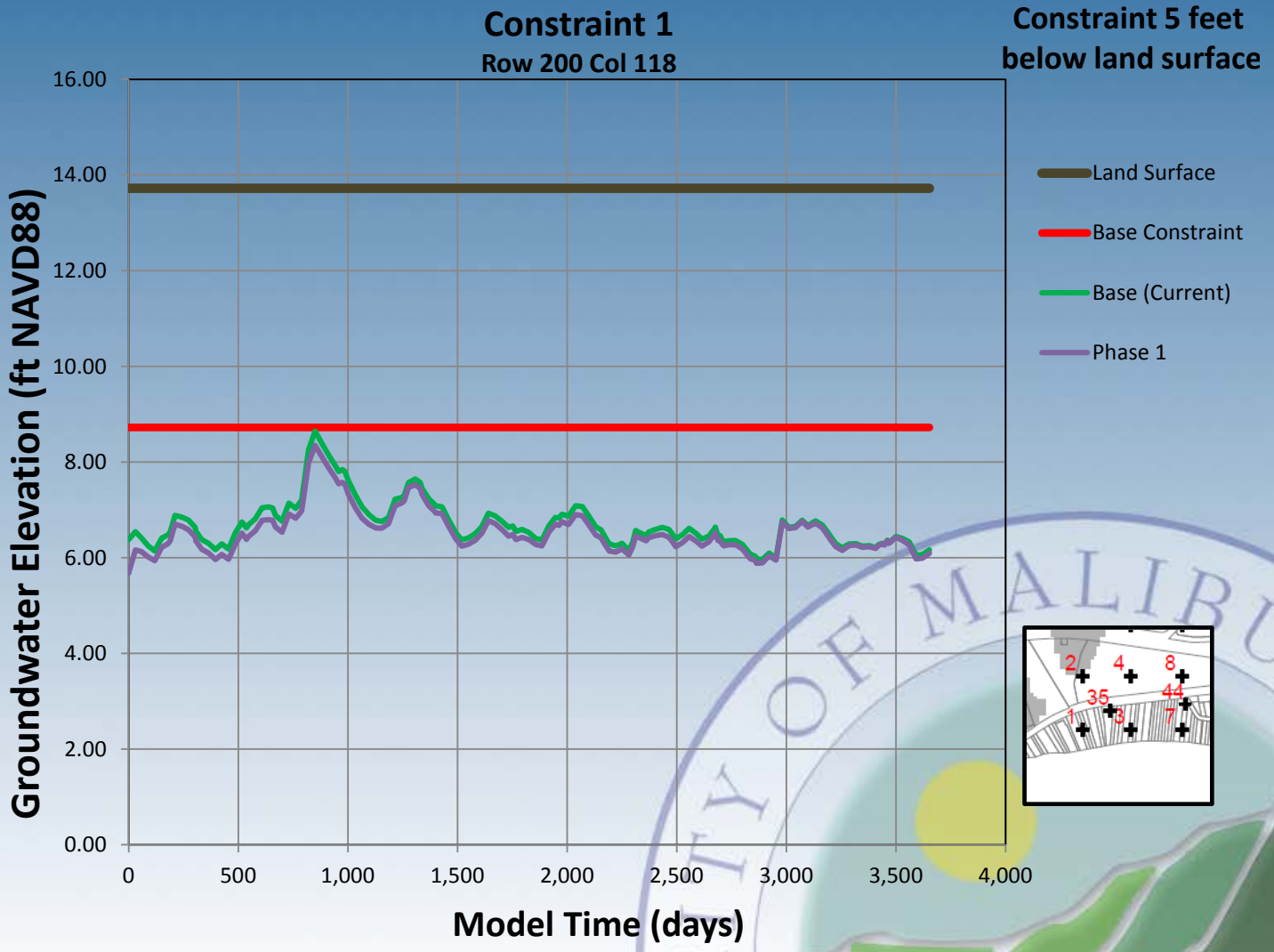
(Project lowers groundwater elevations)



Mounding Analysis – Location 1

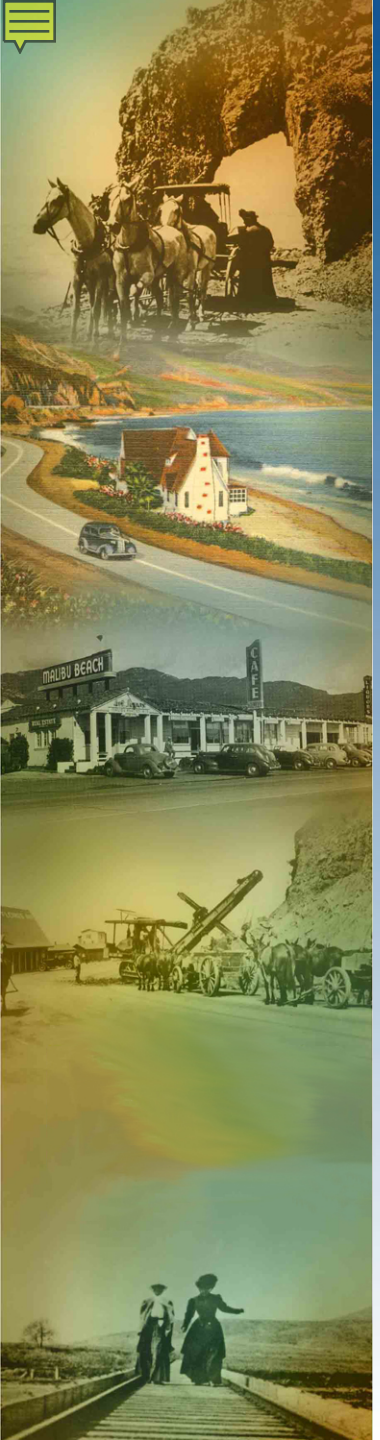
(Project lowers groundwater elevations)

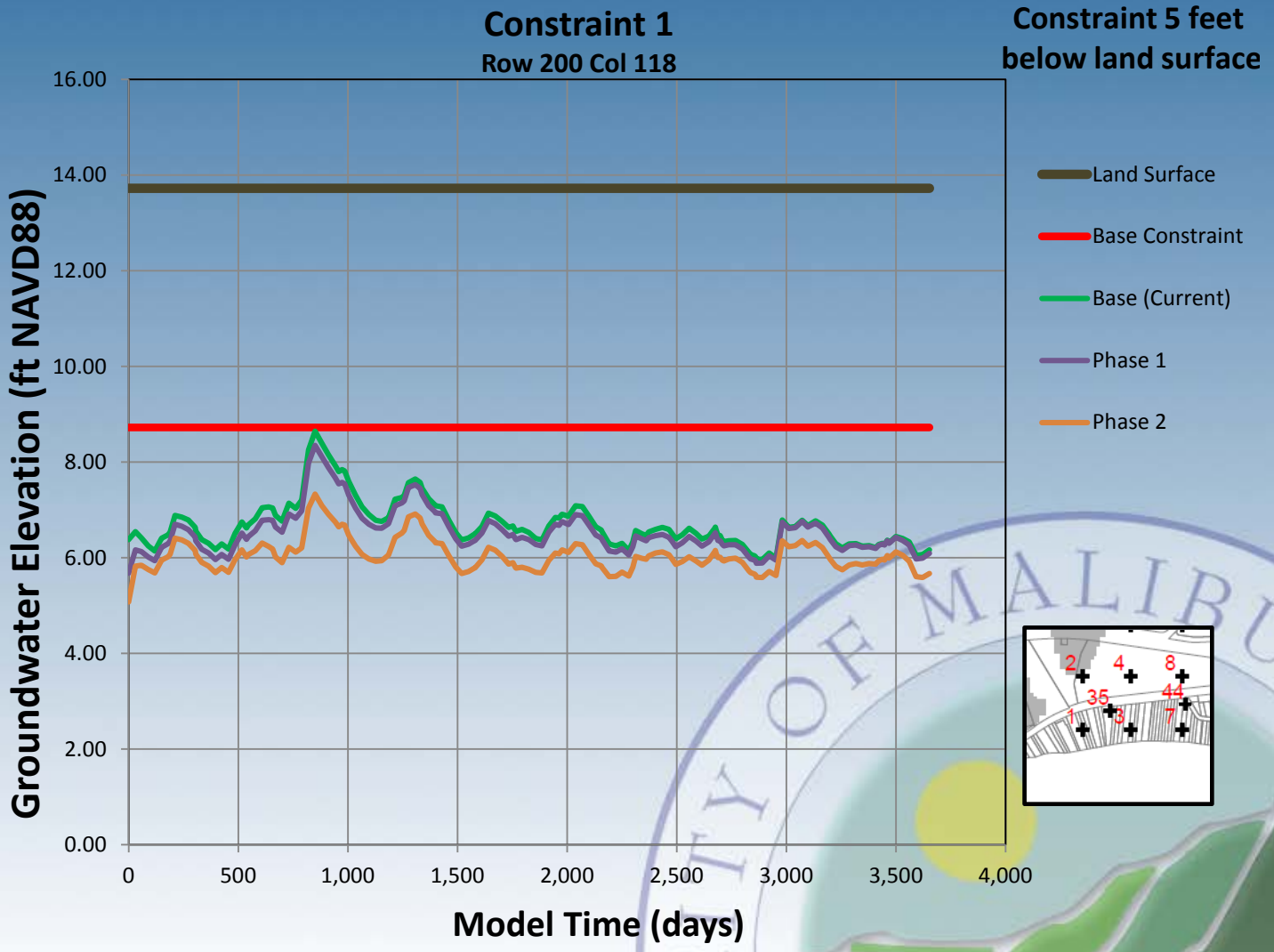


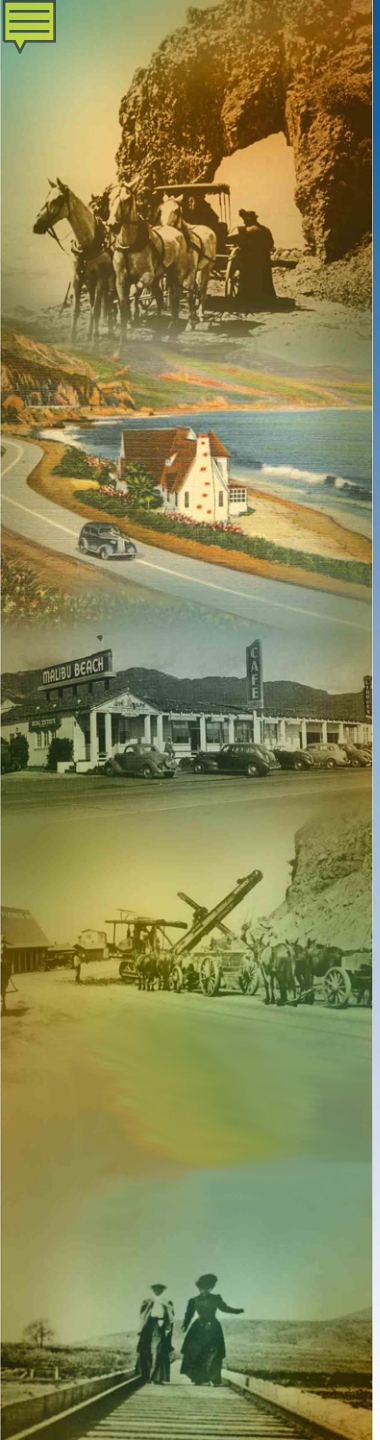


Mounding Analysis – Location 1

(Project lowers groundwater elevations)

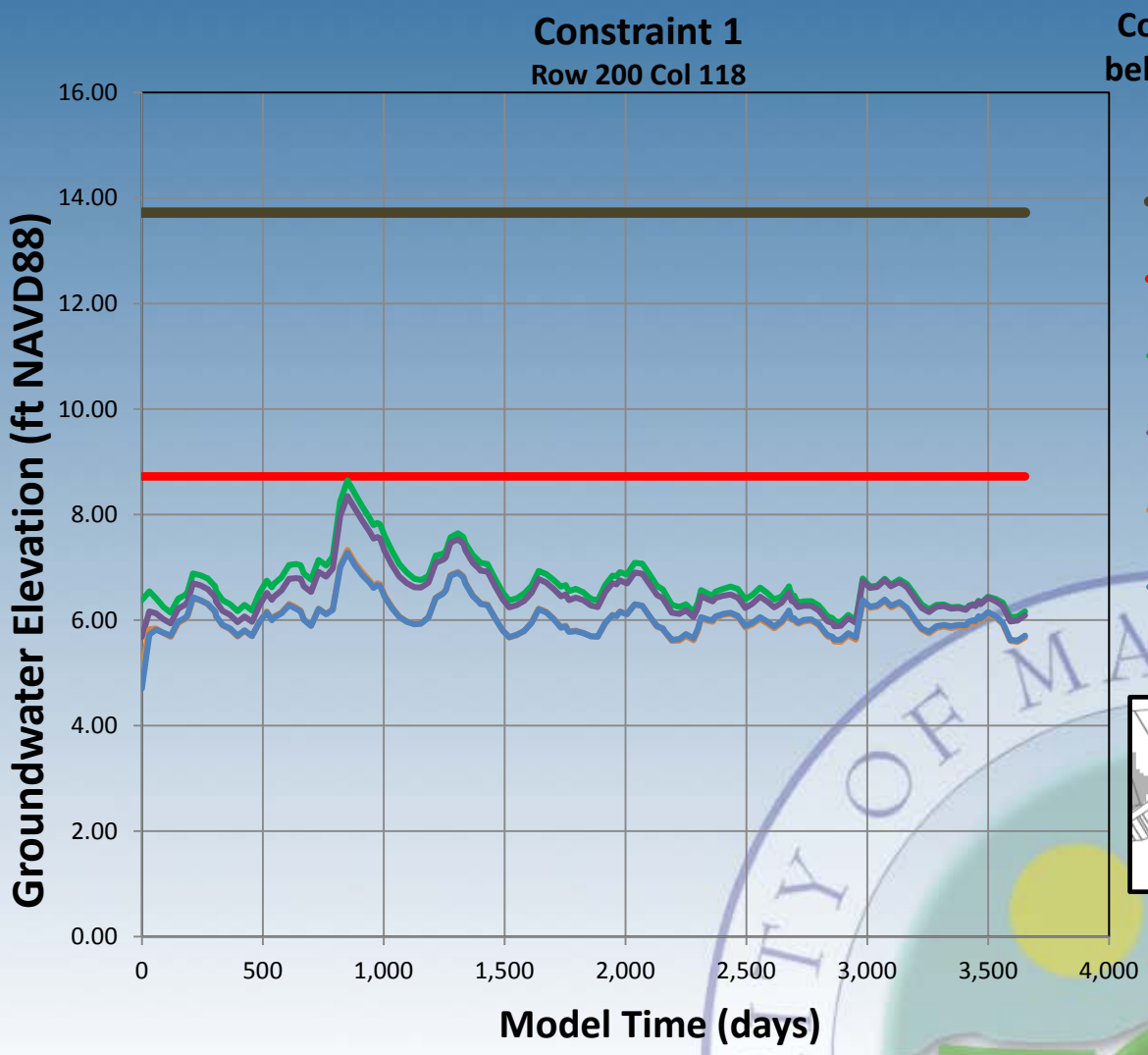






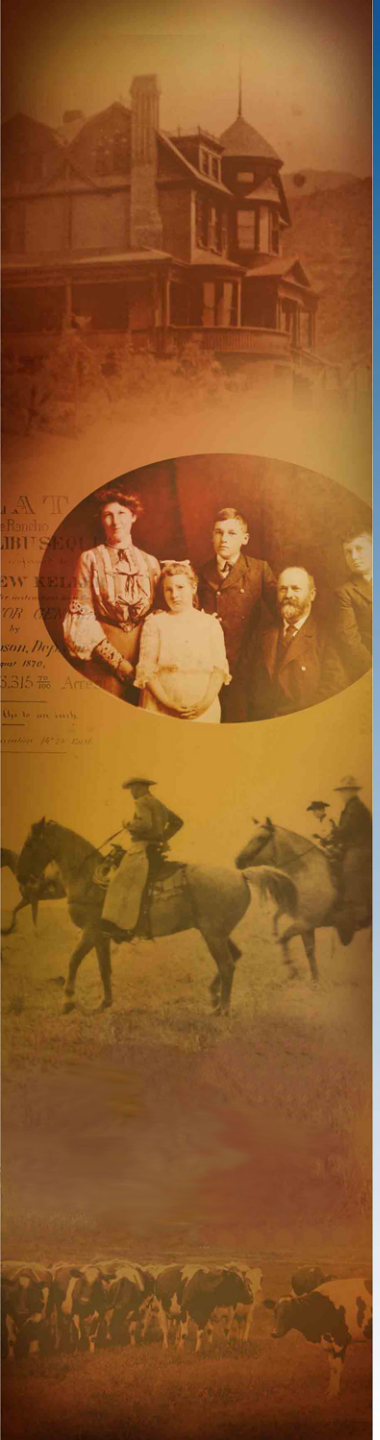
Mounding Analysis – Location 1

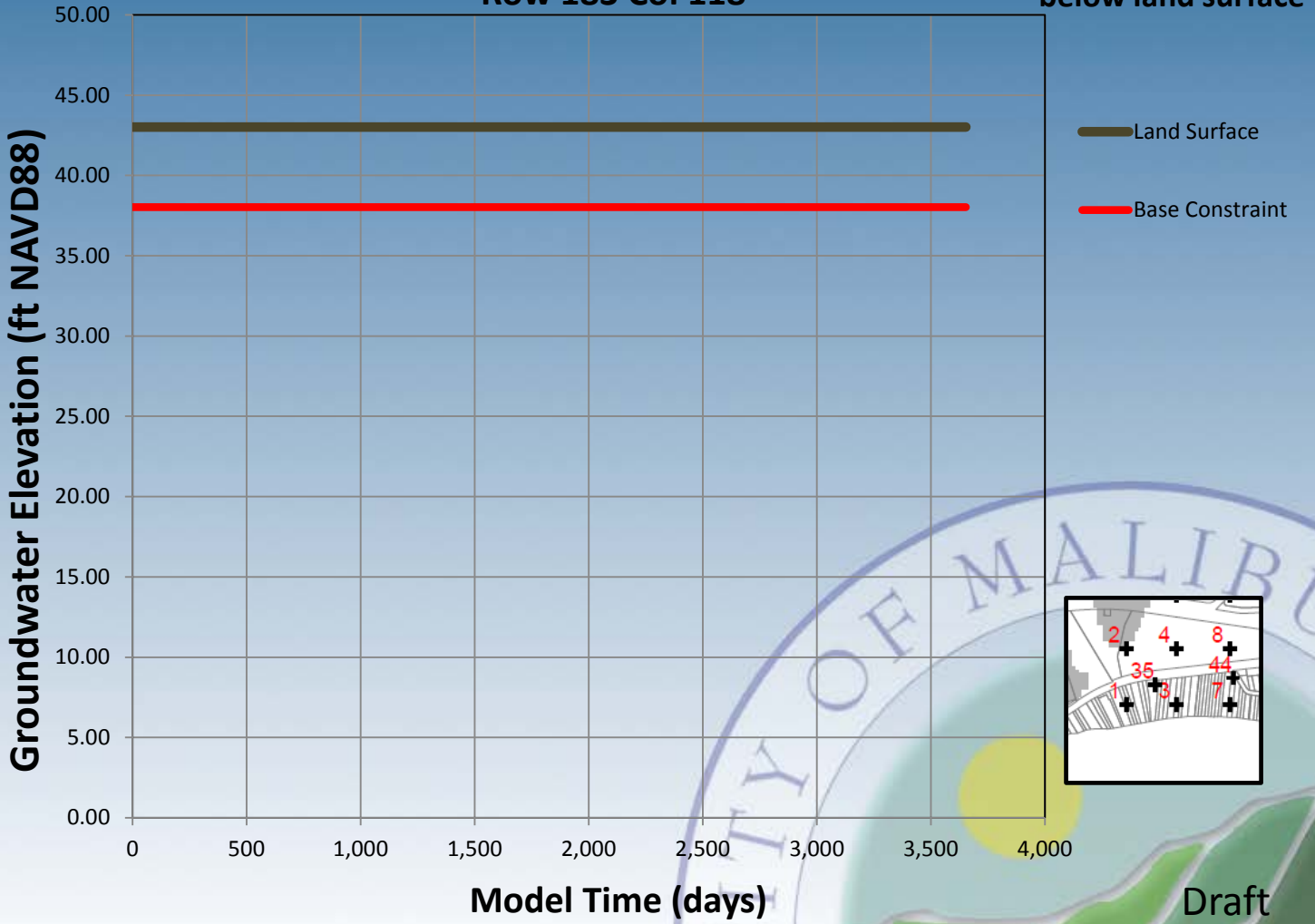
(Project lowers groundwater elevations)



Mounding Analysis – Location 2

(Project lowers groundwater elevations)





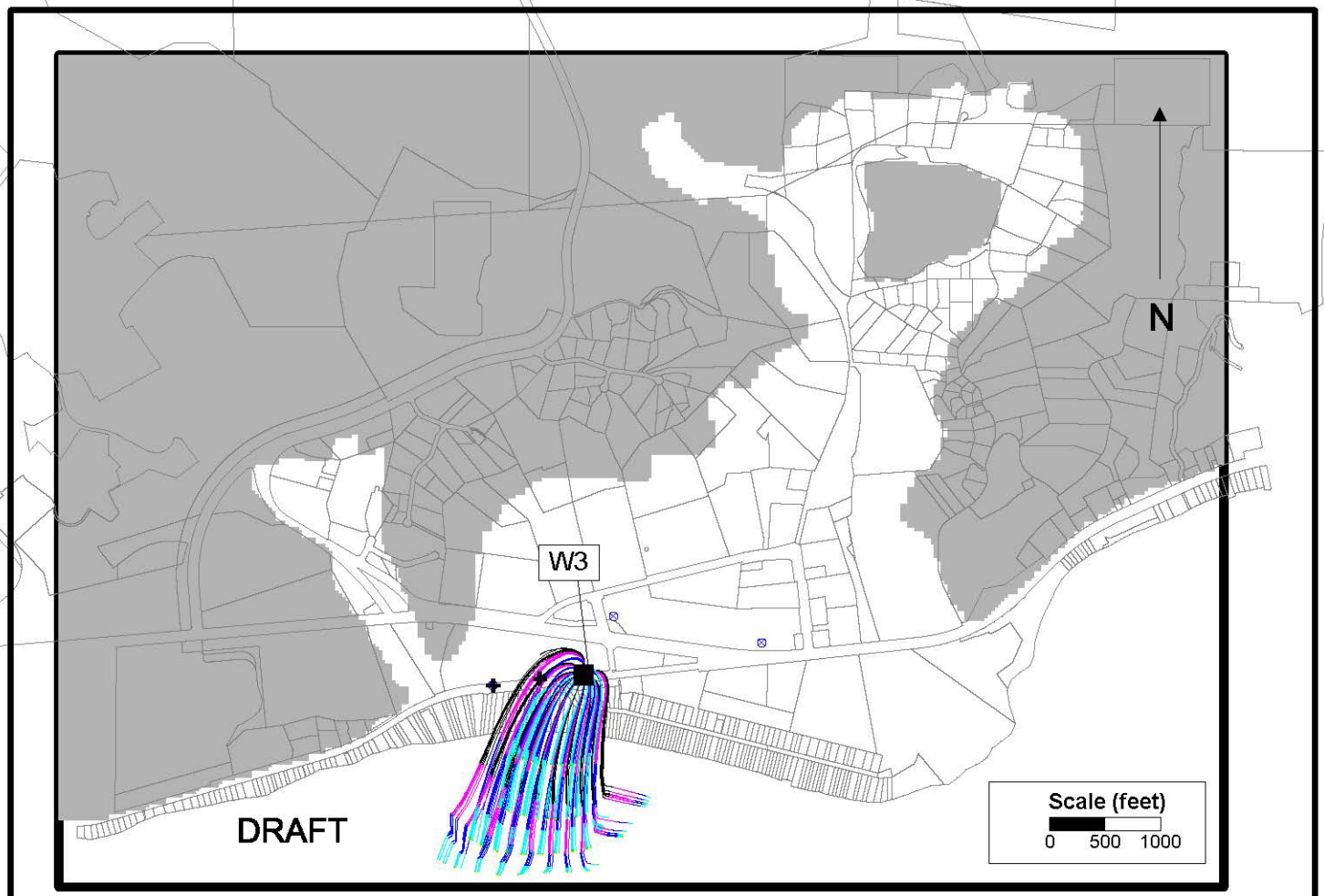
Draft

Flow Analysis – Where does the injected water go?

- Used MODPATH6 for particle tracking
- Simulated flow paths of injected water
- Used MODFLOW results as basis

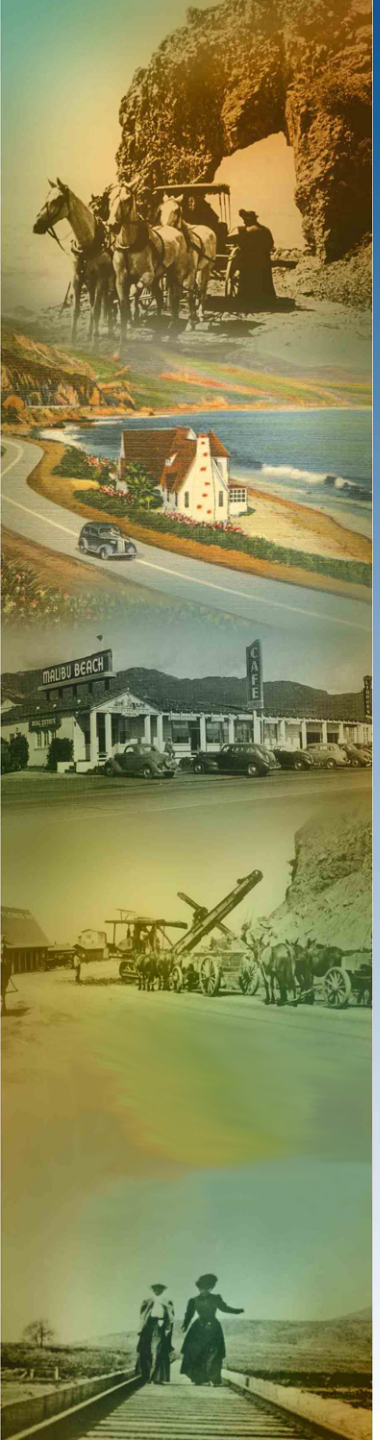
Phase 1 – Flow Location

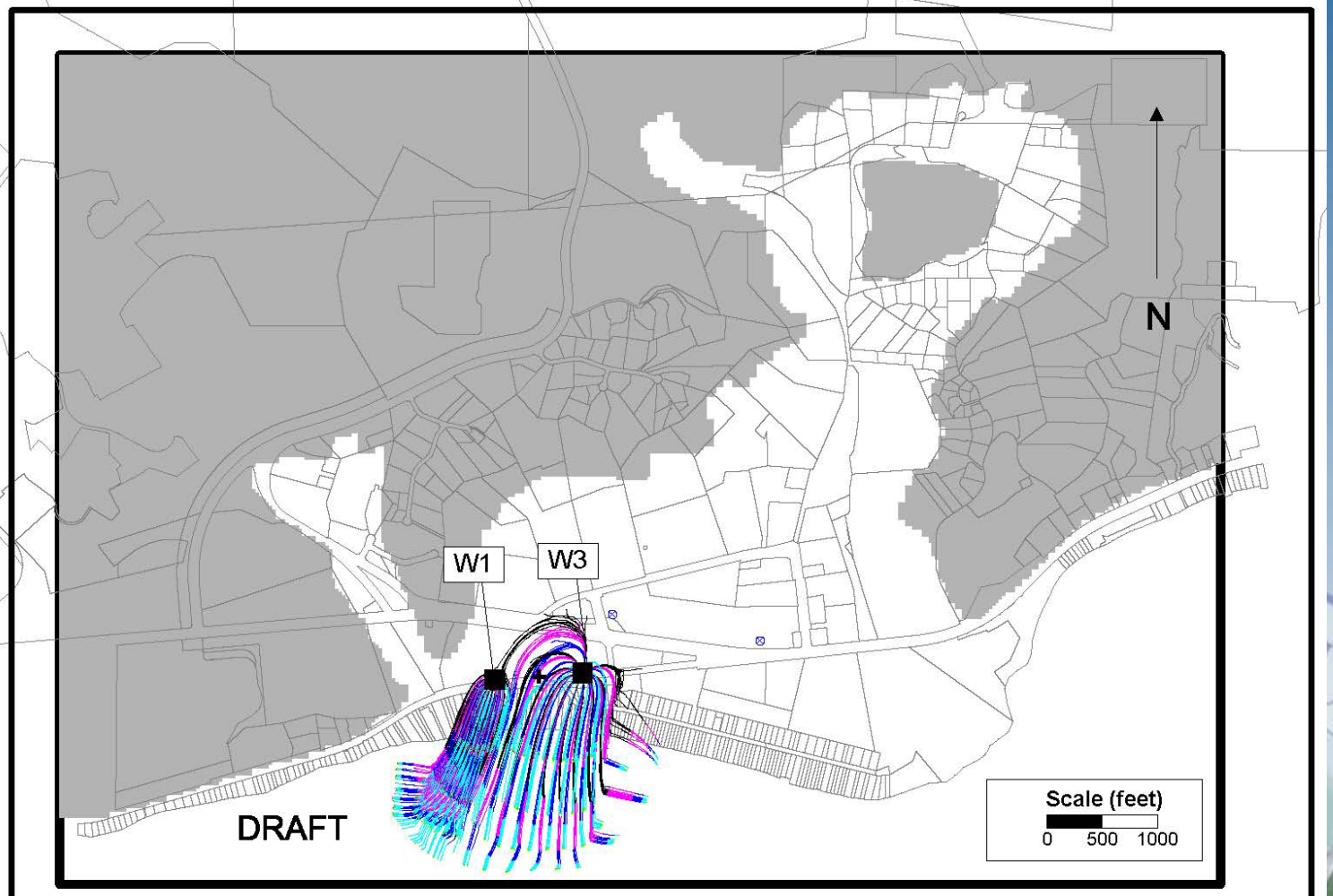
(no flow to Lagoon or Creek)



Phase 2 – Flow Location

(no flow to Lagoon or Creek)





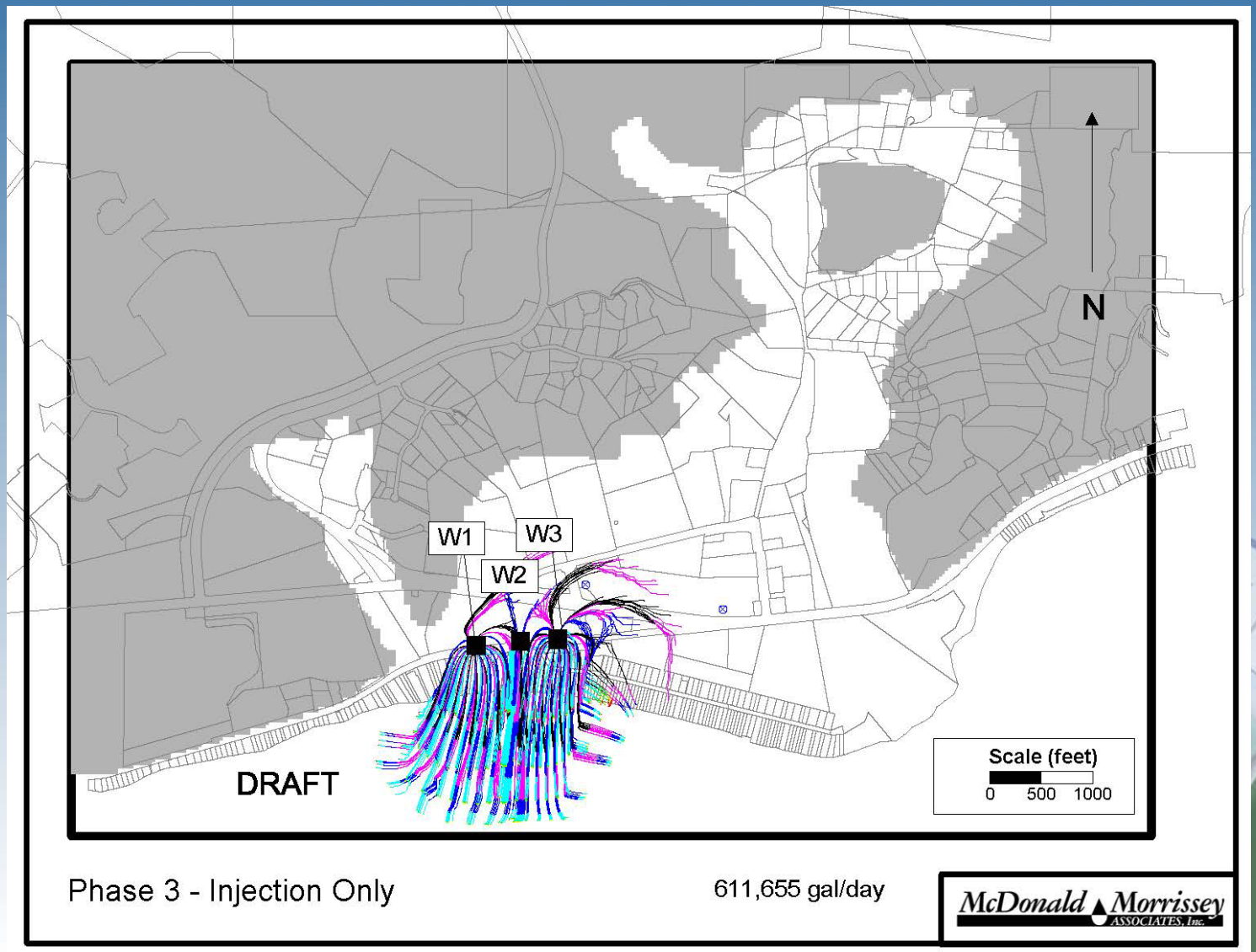
Phase 2 - Injection Only

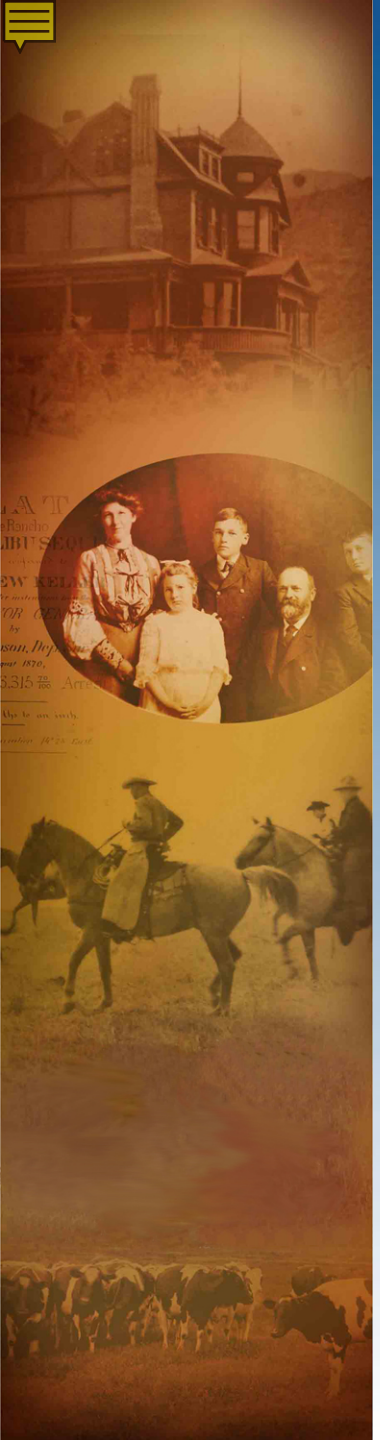
497,642 gal/day

McDonald Morrissey ASSOCIATES, Inc.

Phase 3 – Flow Location

(no flow to Lagoon or Creek)

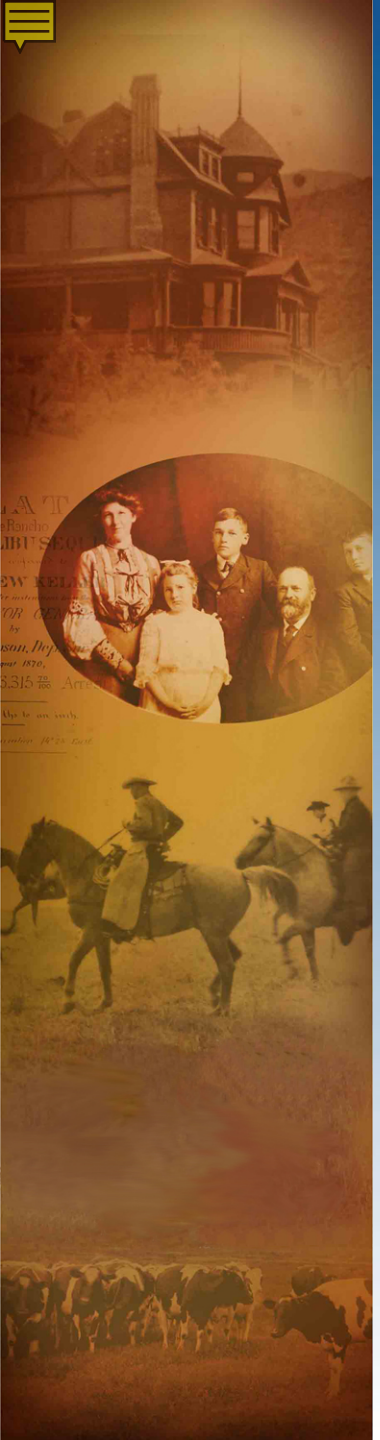




Model Results Demonstrate Sufficient Injection Capacity

	Phase 1	Phase 2	Phase 3
Particles to Lagoon?	No	No	No
Design Requirements			
Total Treated Recycled Water (gpd)	191,000	361,000	507,000
Estimated Reuse/Irrigation (gpd)	68,000	176,000	299,000
Needed Injection Rate (gpd)	123,000	185,000	208,000
Model Results (assuming no reuse/100% Buildout/largest rainfall year)			
Available Injection Capacity (gpd)	311,135	497,642	611,654
Percent Factor of Safety	252%	269%	295%

Draft



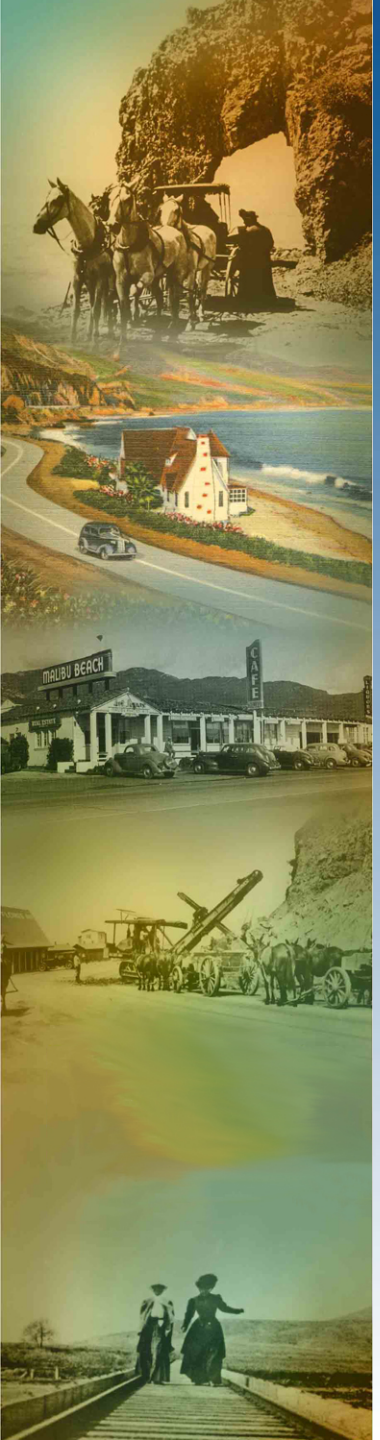
Model Results Demonstrate Sufficient Injection Capacity

	Phase 1	Phase 2	Phase 3
Particles to Lagoon?	No	No	No
Design Requirements			
Total Recycled Water Produced - No Irrigation (gpd)	191,000	361,000	507,000
Estimated Annual Reuse for Irrigation (gpd)	68,000	176,000	299,000
Needed Injection Rate (gpd)	123,000	185,000	208,000
Model Results (assuming no reuse for irrigation)			
Available Injection Capacity (gpd)	311,135	497,642	611,654
Percent Factor of Safety	252%	269%	295%
Winter Canyon Backup Percolation Capacity (gpd)	50,000	100,000	100,000

Draft

Checkpoints to Project Implementation

Checkpoint	Yes	No
1. Has recycled water reuse been maximized?	✓	
2. Is there sufficient groundwater injection capacity?	✓	
3. Will injected water flow to Malibu Creek and/or Lagoon?		✓
4. Will groundwater quality be impacted by the injection?		✓
5. Will there be ocean water quality impacts?		✓
6. Is the project permittable?	✓	



Groundwater Model Conclusions

- Project will lower groundwater levels
- Groundwater Basin has sufficient injection capacity for all project phases
- Injection capacity has large safety factor

Final Steps in Groundwater Modeling

- Sensitivity Analysis
- Sea Level Rise Evaluation

Plant Site – 5-years Post-Construction

View 1 – Plant Site as seen from Condos

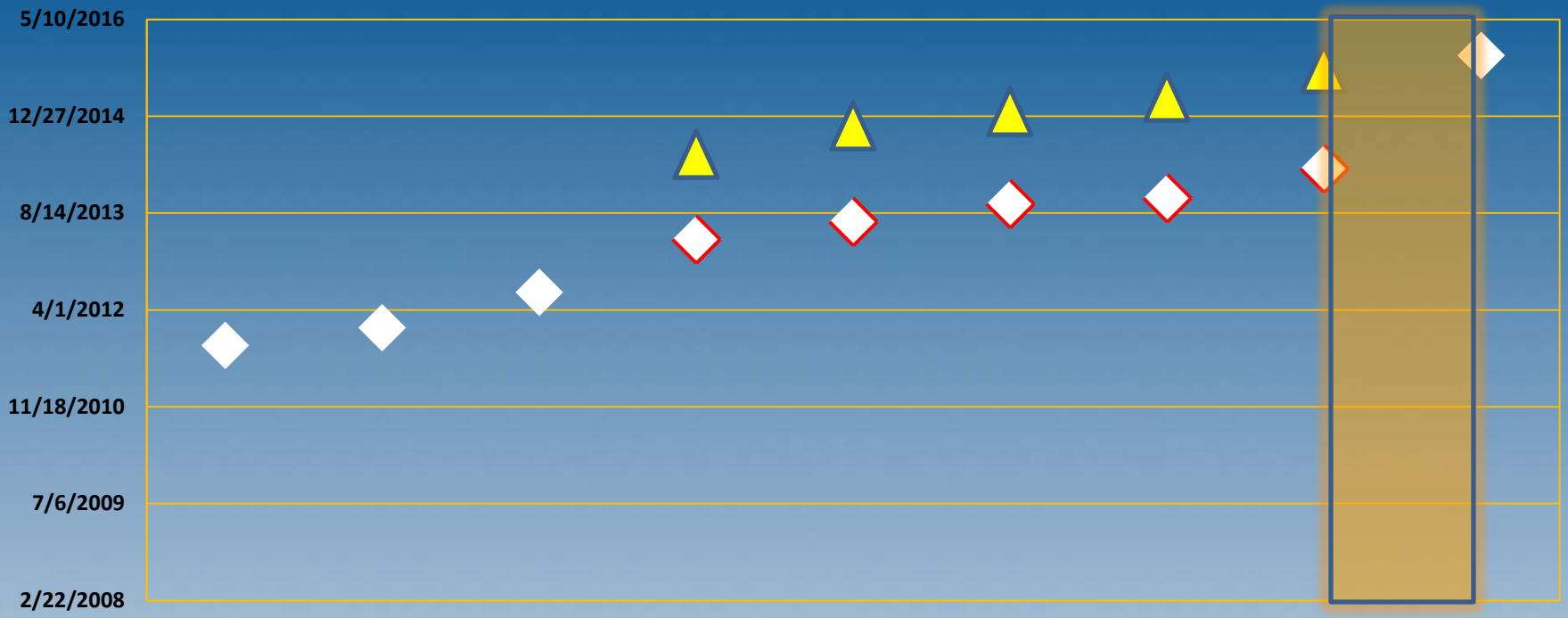
Draft

Plant Site – 5-years Post-Construction

View 2 – Plant Site as seen from Pacific Coast Highway (PCH)

Draft

Timeline for WWTF

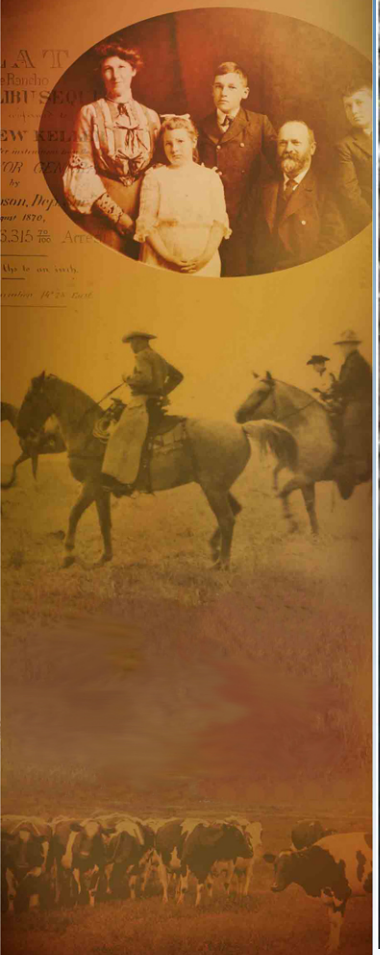


Cooperation

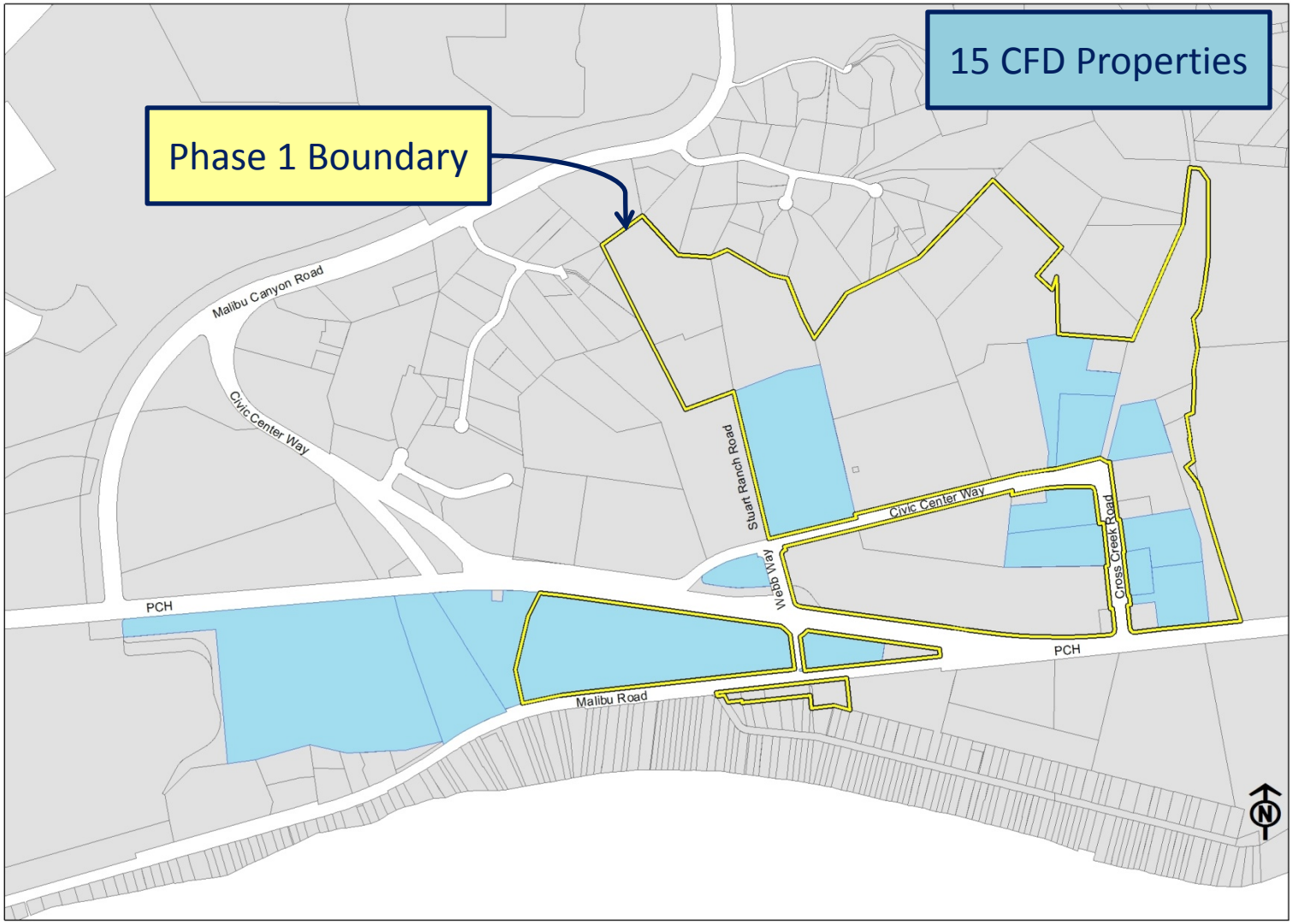
- RWQCB Staff
- Coastal Staff
- Ca Department of Public Health
- NGO's
- Stakeholders (residential/commercial owners /chamber/realtors/etc)
- Technical Advisory Committee Experts
- Pepperdine and LVMWD
- County Water and WW District

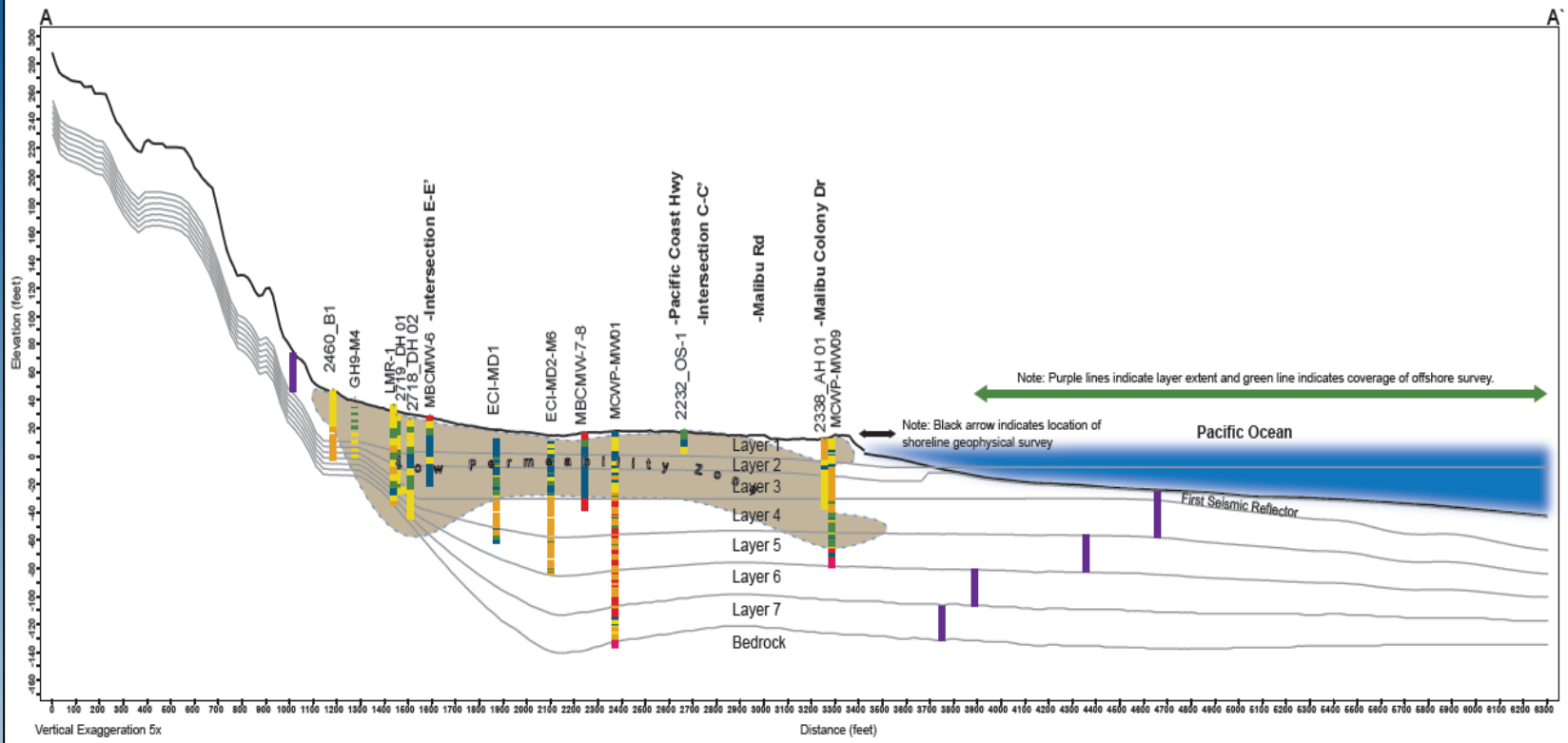
Thank you

Additional Monitoring Wells



Community Facilities District





Cross Section A-A`

Legend

← North

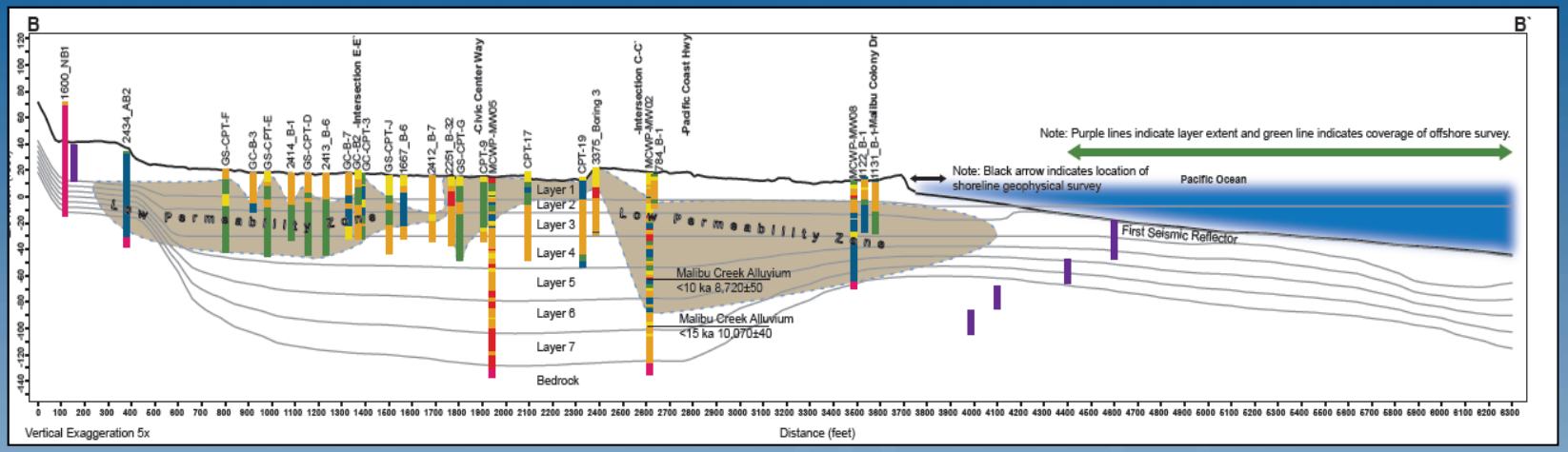
- CL; ML/CL; CL-ML; CH
- ML; ML-SC; ML-SM
- SM; SM-SC; SC-SM; SC
- SP; SW; SW-SC; SP-SC
- GM; GP; GW; GP-SW
- BR
- Stratigraphic Contact Between Fine and Coarse Grains

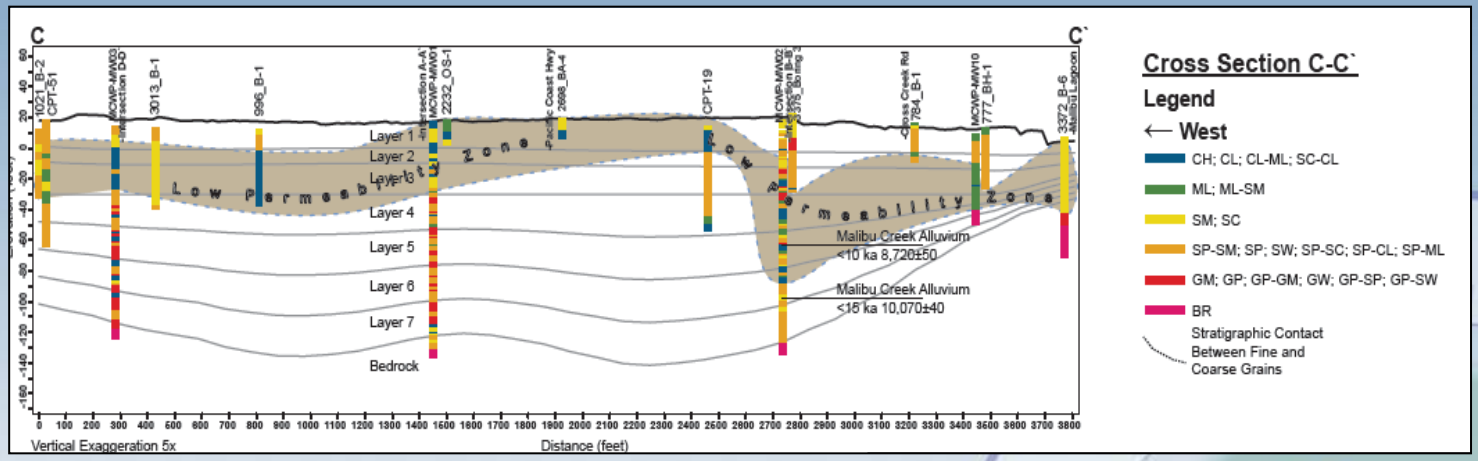
Cross-Section A-A'
Malibu Centralized Wastewater Project
Civic Center Area
Malibu, CA

8/6/2013

earthforensics, inc.

Figure 2


B
B`
Note: Purple lines indicate layer extent and green line indicates coverage of offshore survey.
Note: Black arrow indicates location of shoreline geophysical survey
Pacific Ocean
First Seismic Reflector
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5
Layer 6
Layer 7
Bedrock
Malibu Creek Alluvium <10 ka 8,720±50
Malibu Creek Alluvium <15 ka 10,070±40
Vertical Exaggeration 5x
Distance (feet)


C
C`
Layer 1
Layer 2
Layer 3
Layer 4
Layer 5
Layer 6
Layer 7
Bedrock
Malibu Creek Alluvium <10 ka 8,720±50
Malibu Creek Alluvium <15 ka 10,070±40
Vertical Exaggeration 5x
Distance (feet)
Cross Section C-C`
Legend
← West
CH; CL; CL-ML; SC-CL
ML; ML-SM
SM; SC
SP-SM; SP; SW; SP-SC; SP-CL; SP-ML
GM; GP; GP-GM; GW; GP-SP; GP-SW
BR
Stratigraphic Contact Between Fine and Coarse Grains

Draft Meeting Minutes

City of Malibu Civic Center Wastewater Treatment Facility Project

Subject:	**Project Status**
Prepared For:	Craig George/City of Malibu
Prepared By:	Leslie Dumas/RMC
Date/Time:	January 8, 2014 at 9:00 AM
Project Number:	0127-006

Attendees: Craig George, Andrew Sheldon, Barbara Cameron, Bonnie Blue/City of Malibu; Leslie Dumas, Steve Clary/RMC Water and Environment; Eric Wu, Don Tsai/LA RWQCB

1. Purpose of Meeting

The purpose of the meeting was to provide a project status update for the City of Malibu's Civic Center Wastewater Treatment Facility Project.

2. Discussion Summary

2.1 Status of Injection Program & Modeling

- The first runs of the model have been completed and indicate that between 700,000 and 770,000 gallons per day (gpd) can be injected in the Civic Center area. But the calibration could have been better, so the modelers have gone back to do more calibration. We are waiting on the results from the optimization runs.
- Initial runs also included particle tracking and there were some traces that went towards the Lagoon, but the amount going there was not quantified.
- The optimization model did have head constraints of no water level increases to within 5 feet of the ground surface except at certain locations.
- The geotechnical review evaluated the potential for problems relating to groundwater levels within 5 feet of the ground surface and they found no problems.
- We will be running sensitivity analyses, with one scenario being water level rise relative to ground surface (for example using 7 feet instead of 5 feet).
- Eric noted that, at the end of the day, we don't know if all the OWDSs will be removed so we need to plan for that situation.
- One question the RWQCB has to grapple with is how far to take the WDR – through Phase 2 or through Phase 3. A lot will depend on the percentage of injected flow going to the Lagoon.
- We may want to have another stakeholder workshop to pass on technical information about the program as there is uncertainty if the stakeholders realize the extent of analyses being conducted.
- There will be City elections this April, and we may want to set up outreach during this period.

2.2 Status of City's Regulatory Obligations

- We're about 2/3rd to 3/4th of the way completed with the administrative draft EIR (ADEIR) and the first compile draft will be done by the end of January.
- It will take between 45 and 60 days to get the ADEIR to a public draft (looking at having this done by the end of March/beginning of April).

- One key issue to be addressed in the potential impacts of offshore water quality. RMC has started coordinating with Peter Swarzenski of the USGS about groundwater movement offshore into near-shore waters. He's been involved in the research that's been conducted in Maui and Malibu.
- We are going to need to help the public understand the differences in ocean water quality that are/will be occurring under the current situation versus under the proposed project conditions.
- Per Don, for other wastewater treatment plants (such as Oxnard and Terminal Island), they have been given dilution credits already approved.
- Sam would like Eric to talk with the NPDES folk at the RWQCB to make sure we don't get this discharge permit mixed up with ocean disposal (via an outfall); it's not the same thing.
- Don noted that at these other locations, they are injecting MF/RO treated water into the wells and for their permits, they did not have to evaluate ocean water quality impacts.
- The salt-nutrient management plan (SNMP) is moving forward.
- Regarding the CDP, the City is continuing to add information to the file. We are also finalizing the concept report for inclusion in the CDP application.

2.3 Design Update

- The design is progressing towards 95% completion with 100% completion scheduled to be completed by the end of March.
- Basically, the design is on schedule, barring hiccups.

2.4 Recycled Water Use

- Barbara talked with Jim about the expanded recycled water use area (Malibu Country Estates and PCH from Malibu Canyon to Puerco Canyon). Jim says to hold firm on the recycled water boundaries for Phase 1 for several reasons:
    1. The time required to revamp the EIR with push the schedule out
    2. Without guaranteed grant funding, including the area may move the Phase 1 yes votes to no.
    3. No environmental need as we're currently working towards recycled water demand within the prohibition zone
    4. There is a plan in place that will be tied to expansion of the system.
- The EIR includes a general statement with respect to expanding the recycled water use area to outside the prohibition zone to allow for tiering for a future EIR.

2.5 WDR Permitting

- The self-monitoring reports for the discharge and ASR-related permits have been submitted into Geotracker and the ASR reports moved over to the appropriate WDR number.

2.6 Project WDR

- The LARWQCB will set up a meeting with the California Department of Public Health (CDPH) once we have an idea of the amount of water going to the Lagoon (per model results). After discussion, it was agreed to invite Kurt Souza/CDPH to our next meeting.

- If we have model results by January 17th, Eric can schedule a meeting with Sam. Our next meeting (February 12th) would be the earliest he can bring back information regarding WDR limits.
- In the last TAC meeting, Heal the Bay said that they would like to be involved in the process the RWQCB will implement to get the discharge limits. It would be nice to bring information regarding discharge limits to the next TAC meeting.
- For his meeting with Sam on January 20th, Eric needs an estimate of the volume of water going to the Lagoon and the flow paths.
- Submittals for the WDR application will include documents we are already preparing (including the model report geophysical survey report, the injection testing report, the geochemical analysis TM, the SNMP); a summary TM will be prepared cross-referencing the above requirements and addressing each concern.

2.7 Questions and Answers

- The next TAC meeting will be on February 20th at the City offices.
- Regarding the La Paz property, at the last set of meetings, the owner's rep said that they don't think that they will need to connect and use the WWTP. They know that their permit requires them to connect, but they are not clear on what 'connect' means. At present, per the owner's rep, they are planning to continue use their existing system.
- The RWQCB's current understanding is that the La Paz permit requires them to hook up to the centralized system, and if they don't connect, they will be in violation. If the CCWTF doesn't get constructed, then the RWQCB may reopen their permit to address the 'zero discharge' requirements.
- Our Lady of Malibu (OLM) has been required to drill two monitoring wells and collect water quality samples to determine if their discharges are impacting groundwater. They contacted the RWQCB to ask, if they could connect with Phase 1 of the system, could the monitoring well and sampling requirements be waived.
- Winter Canyon and the County WWTP are both located downgradient of the OLM and have monitoring wells.
- Richard Laton has been looking into well locations and water quality data for the area but couldn't find any.
- The question is, has the OLM OWDS impacted groundwater and does the system need to be upgraded. The RWQCB has the same question for Country Mart 1, 2 and 3.
- OLM has now been placed in Phase 1 of the project.

3. Other

- The next meeting will be held on February 12, 2014 at 9 AM

4. Action Items

Action Item Summary Table

Responsible Party		Task/Action Item
Organization	**Name**	
RMC	Steve Clary/Marc Nakamoto	Provide the City with information as to the dimensions of the proposed lab and recommendations for making it into a certified lab
LA RWQCB	Eric Wu	Talk with LA County regarding how to coordinate with City to connect residents with centralized system
City of Malibu	Craig George/Bob Brager	Start discussions with Water District 29 regarding duplication of services agreement
City of Malibu	Craig George/Bob Brager	The City needs to decide if they will be charging for recycled water.

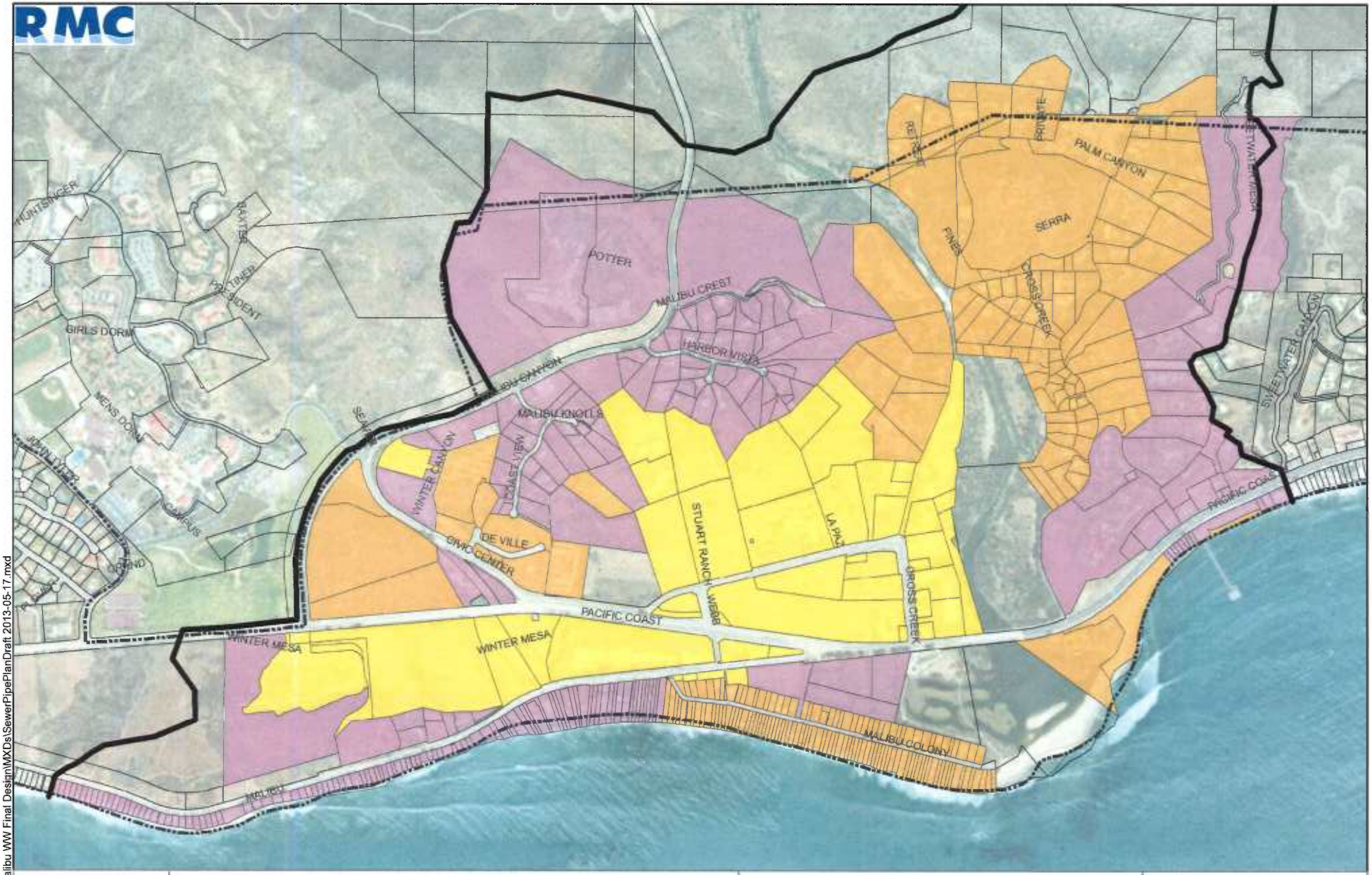
2-12-14

Attendee: Eric > Rwocks
Rebecca
Jim
Andrea
Craig
Bonnie
Bob
Barbara.

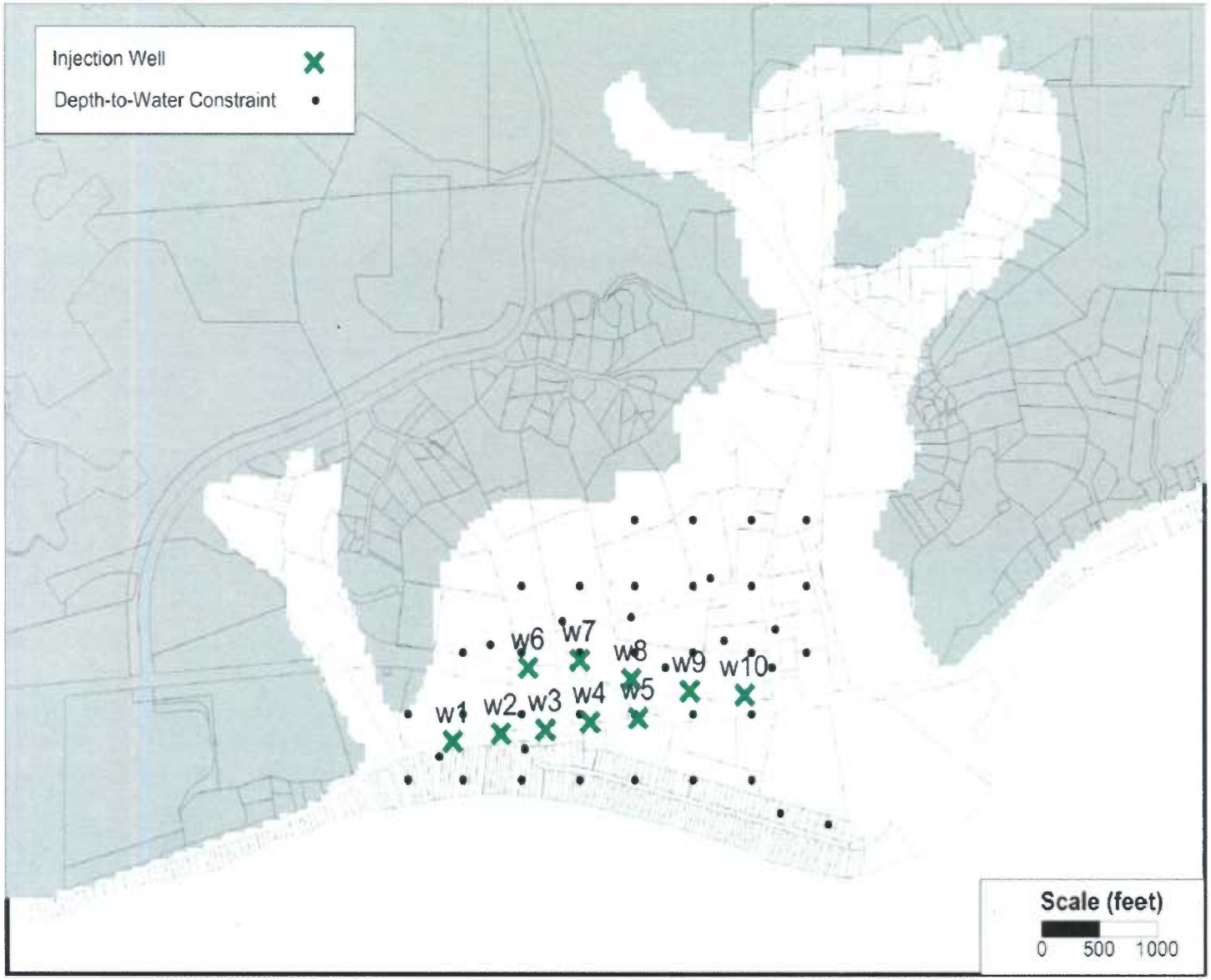
MEETING AGENDA
CCWTF

Wednesday, February 12, 2014, 9:00 AM
City Hall – Westward Conference Room
23825 Stuart Ranch Road

1. Status of the Injection Program – Leslie
2. Status of the City's Regulatory Obligations – CDP, CEQA, EIR – Craig/Leslie
3. Design Update – Steve
4. Recycled Water Use – Barbara/SteveWDR – Permit Project Permit – Craig/Leslie
5. Questions and Answers
6. Next Meeting Date and Time



L:\Projects GIS\10127-004.00 Malibu WW Final Design\MXDs\SewerPipePlanDraft 2013-05-17.mxd


Injection Well
Depth-to-Water Constraint
w1
w2
w3
w4
w5
w6
w7
w8
w9
w10
Scale (feet)
0
500
1000

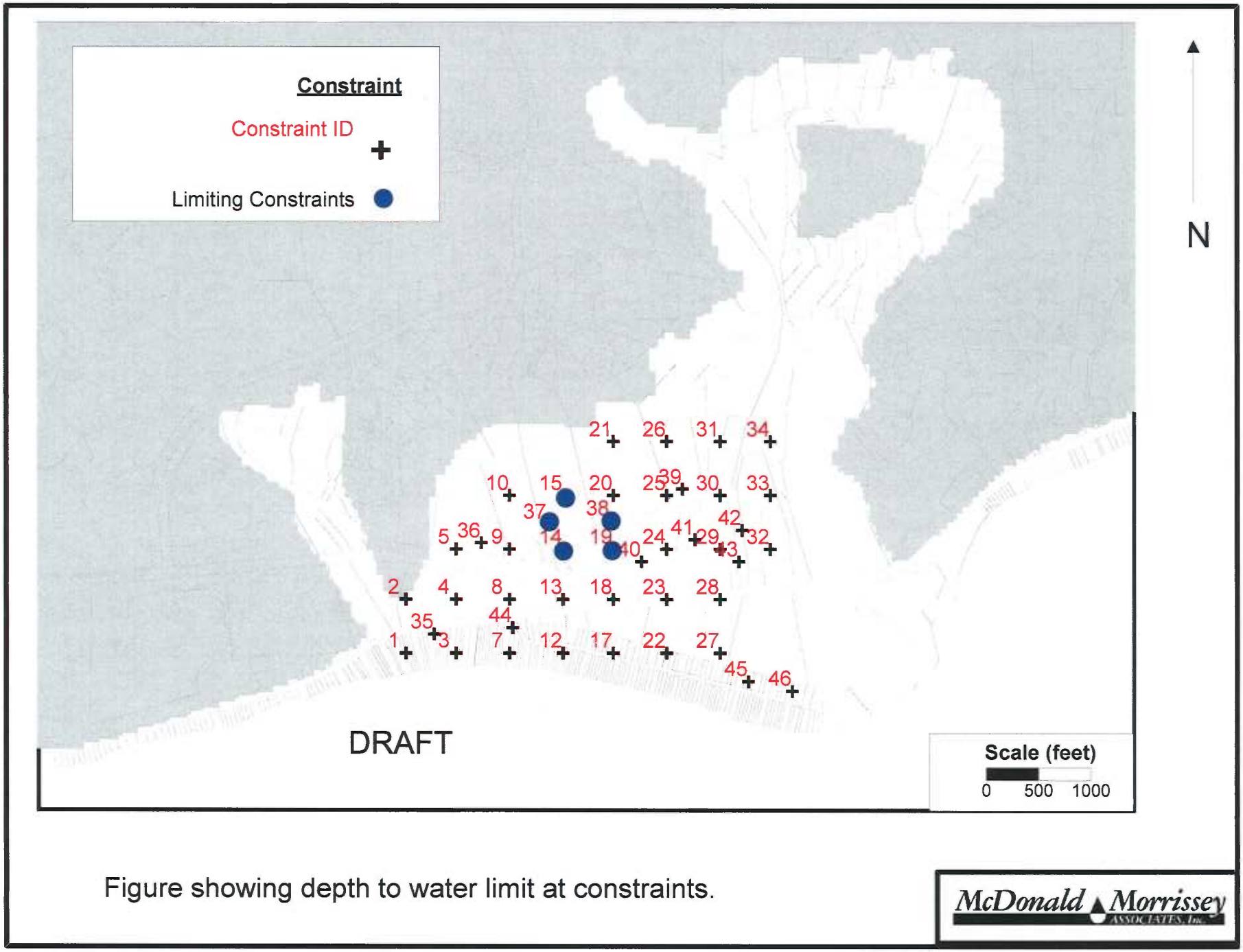
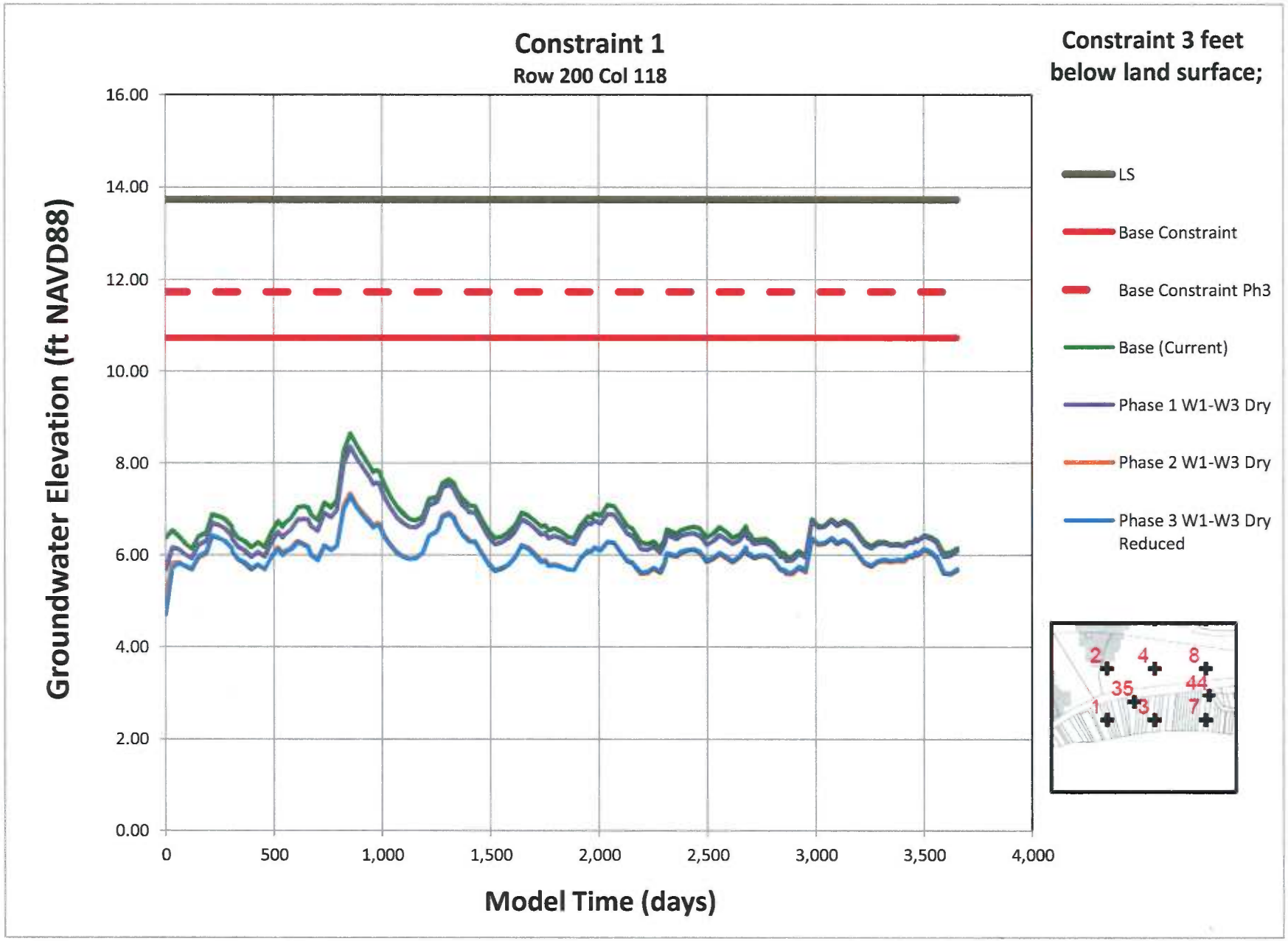


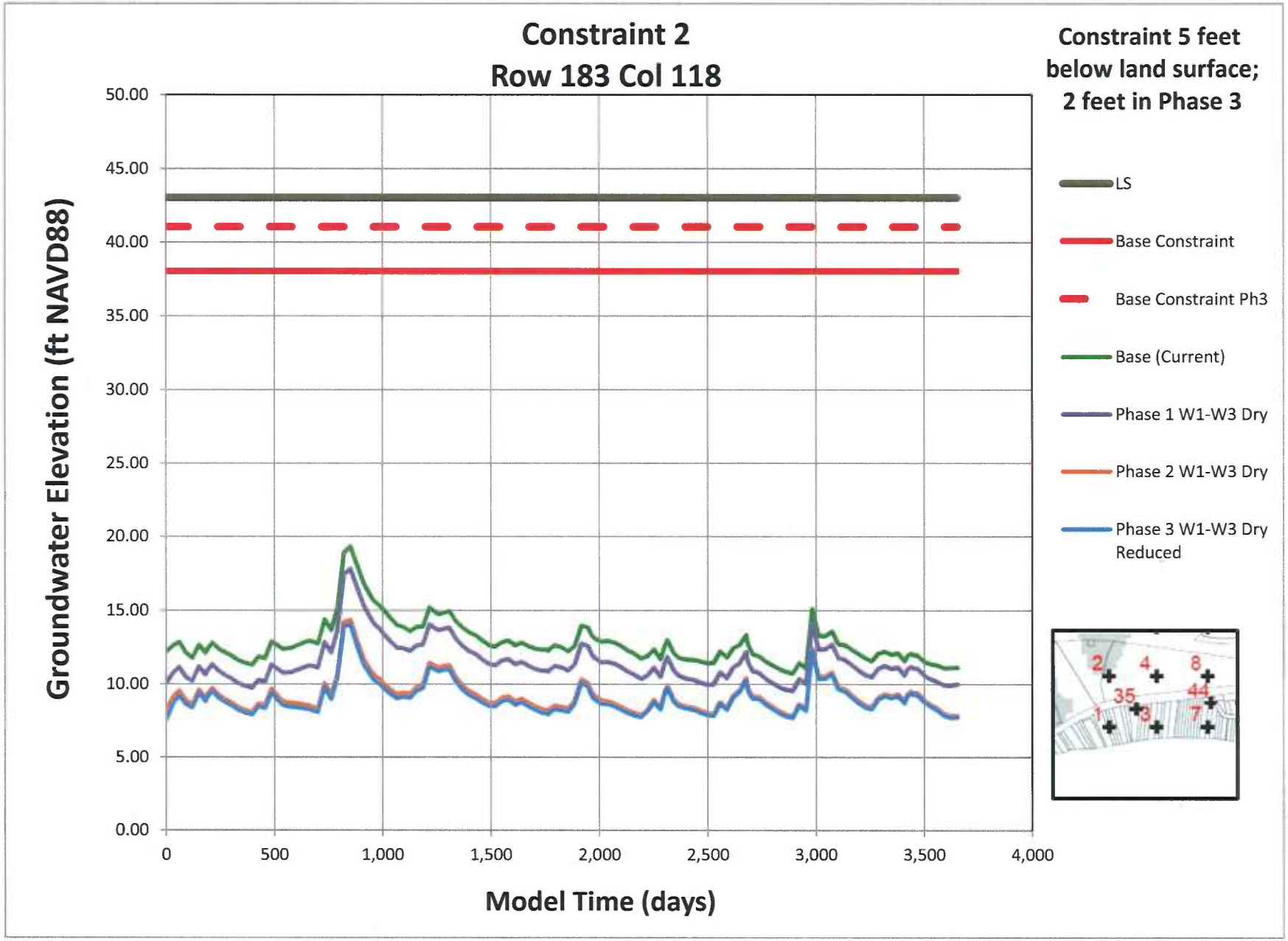
Figure showing depth to water limit at constraints.

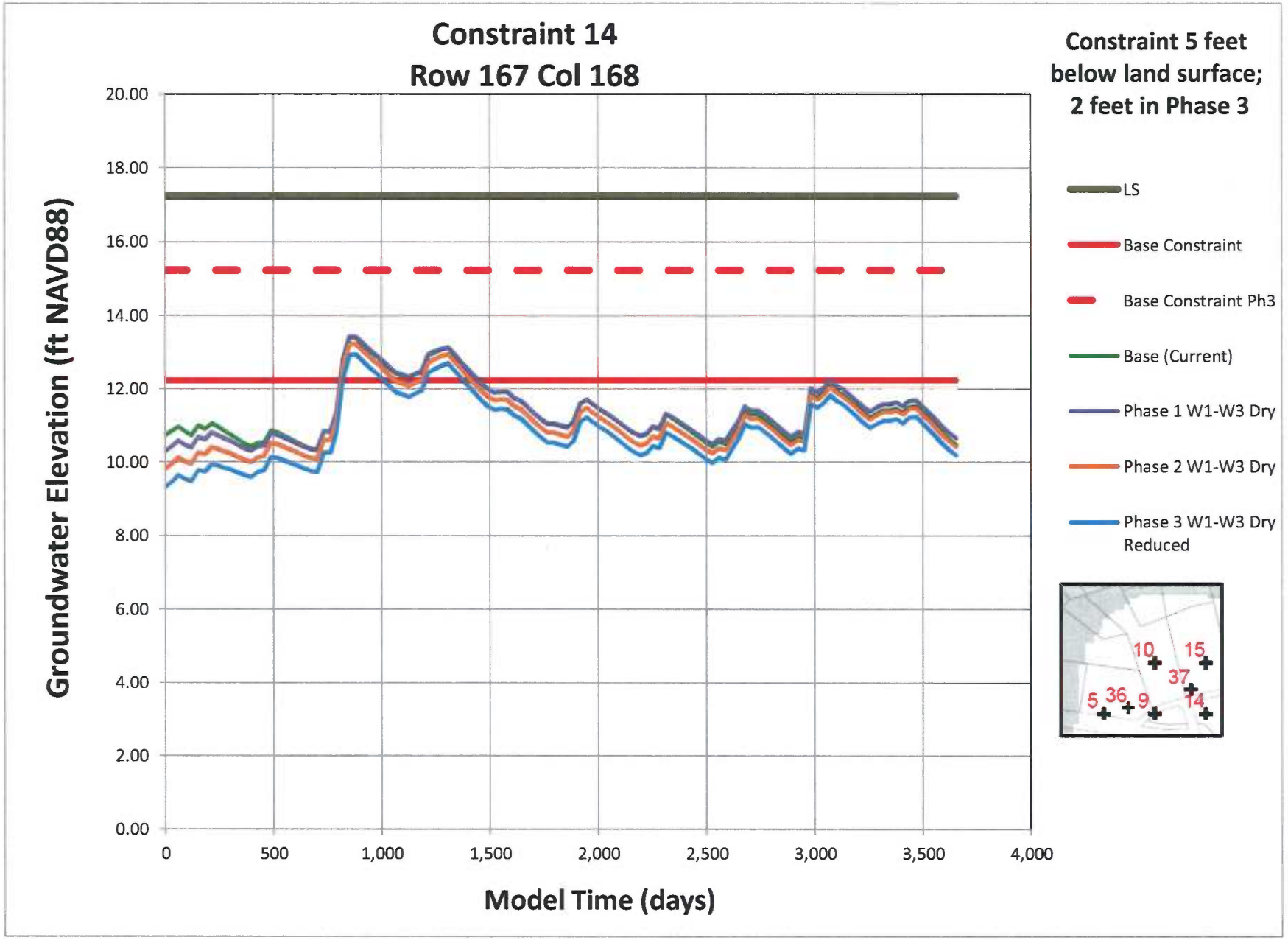
McDonald Morrissey Associates, Inc.

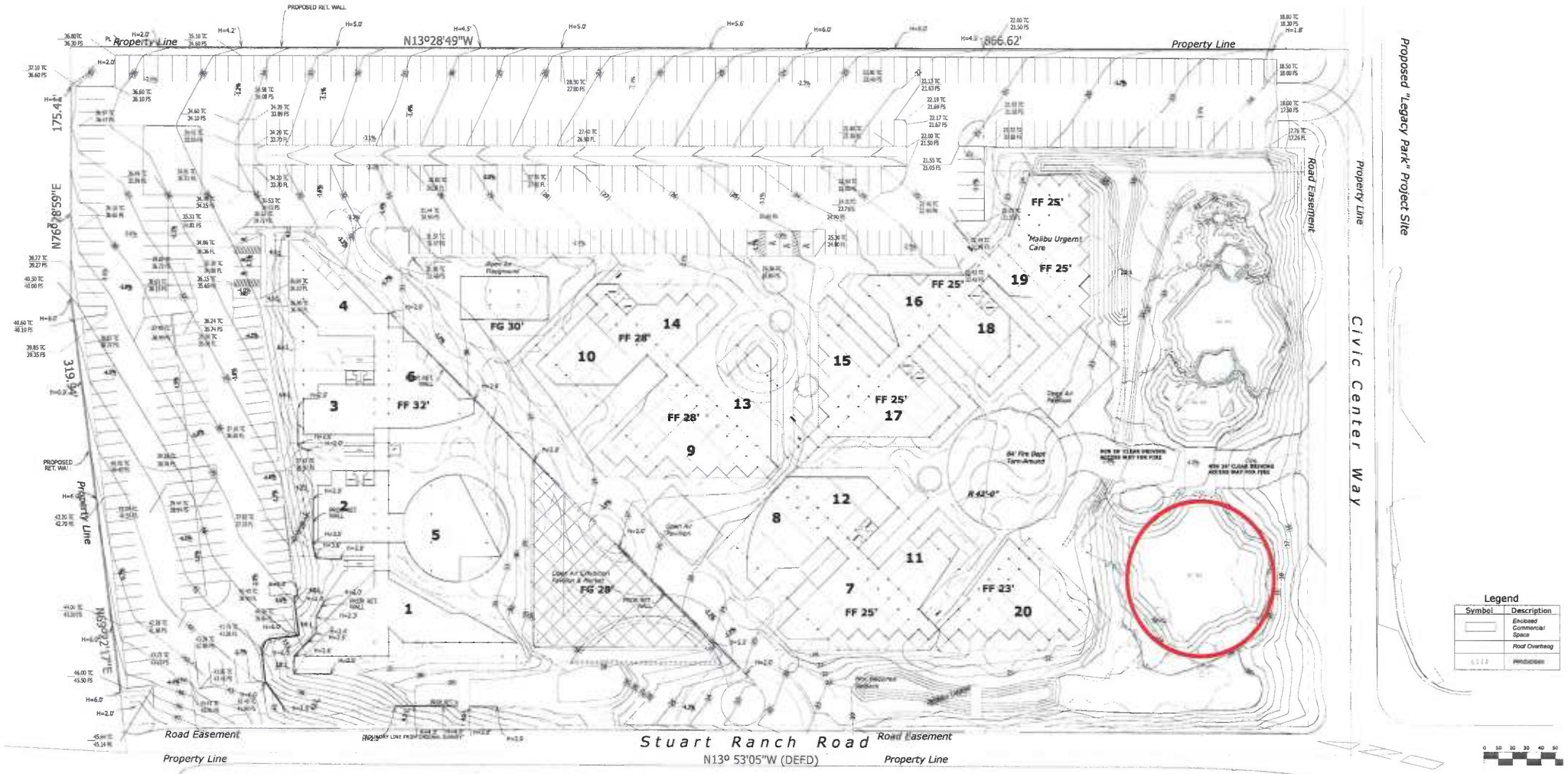
Malibu Optimization Summary

Phase	Injection Needed - No Reuse (gpd)	Estimated Annual Reuse for Irrigation (gpd)	Individual Well Injection Rates (gpm)			Total Injection Rate (gpd)	Comments
			W1	W2	W3		
1	191,000	95,955	0	0	216	311,135	No particles to lagoon
2	361,000	158,909	66	0	280	497,642	No particles to lagoon
3	507,000	228,182	210	5	210	611,654	Same as above reduced 75%, no particles go to lagoon
3	507,000	228,182	280	6	280	815,540	Particles go to the lagoon

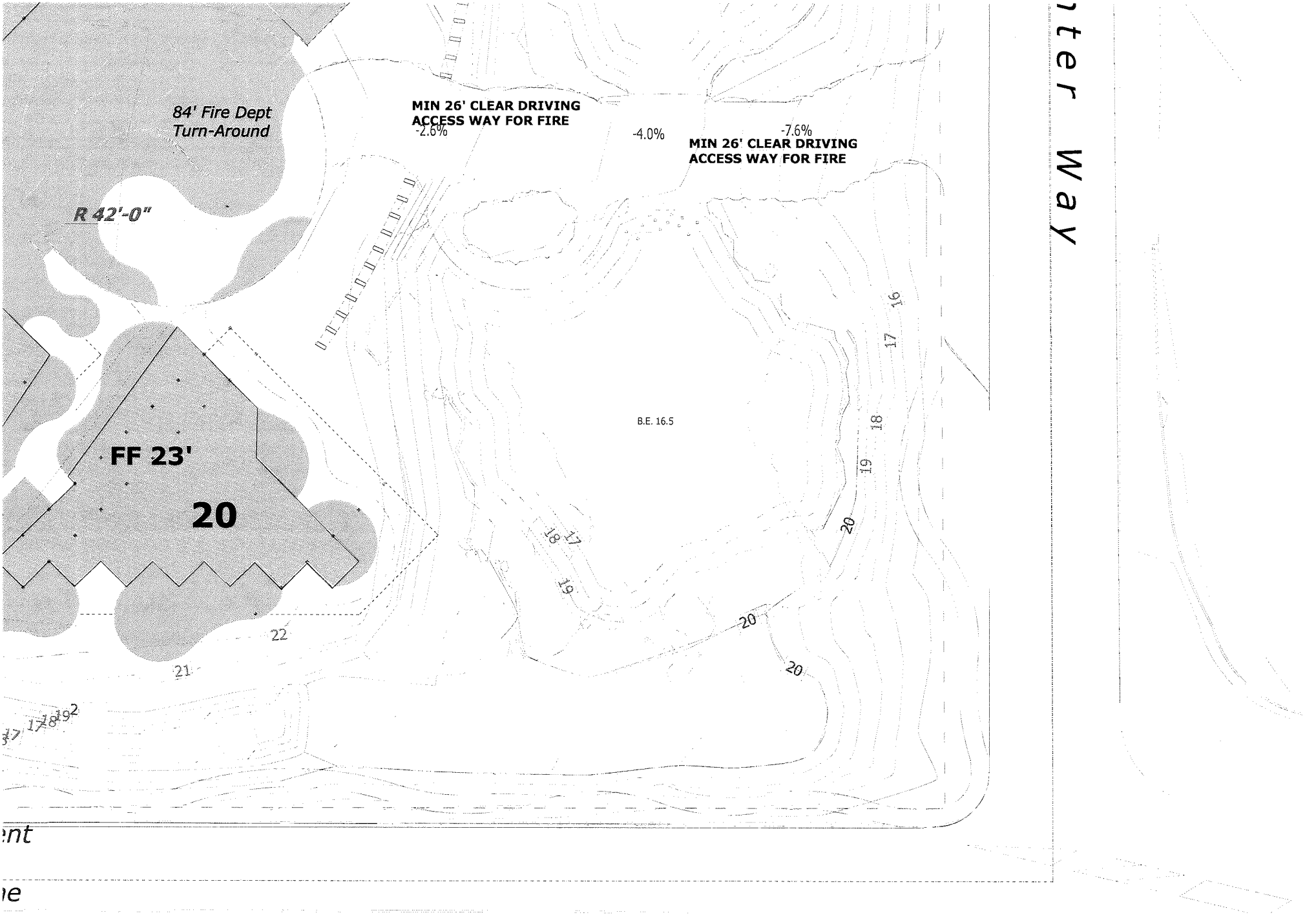

Constraint 1
Row 200 Col 118
Groundwater Elevation (ft NAVD88)
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
500
1,000
1,500
2,000
2,500
3,000
3,500
4,000
Model Time (days)
Constraint 3 feet below land surface;
LS
Base Constraint
Base Constraint Ph3
Base (Current)
Phase 1 W1-W3 Dry
Phase 2 W1-W3 Dry
Phase 3 W1-W3 Dry Reduced
2
4
8
35
44
1
3
7

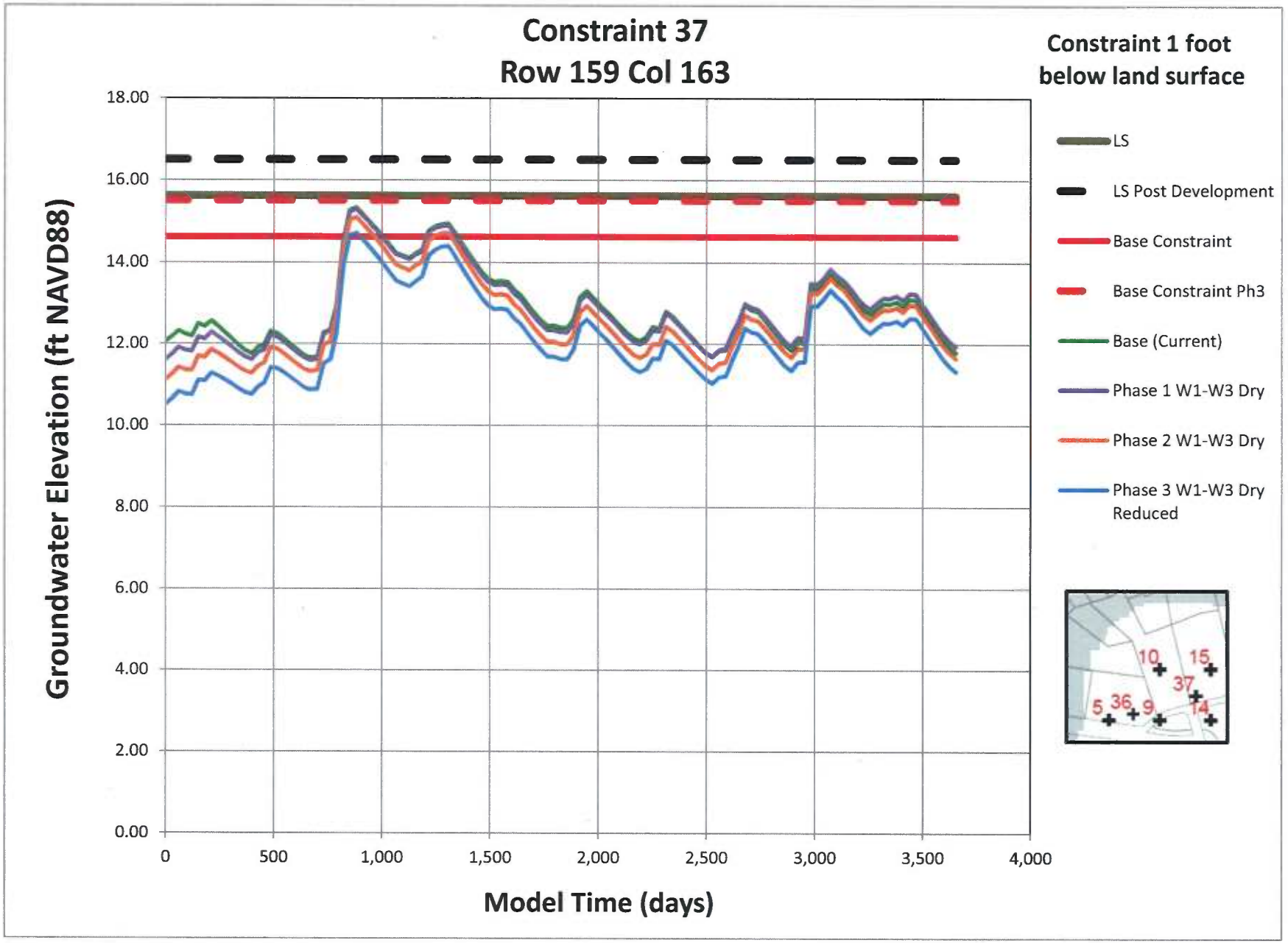

Constraint 2
Row 183 Col 118
Groundwater Elevation (ft NAVD88)
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
500
1,000
1,500
2,000
2,500
3,000
3,500
4,000
Model Time (days)
Constraint 5 feet below land surface; 2 feet in Phase 3
LS
Base Constraint
Base Constraint Ph3
Base (Current)
Phase 1 W1-W3 Dry
Phase 2 W1-W3 Dry
Phase 3 W1-W3 Dry Reduced
2
4
8
35
44
1
3
7

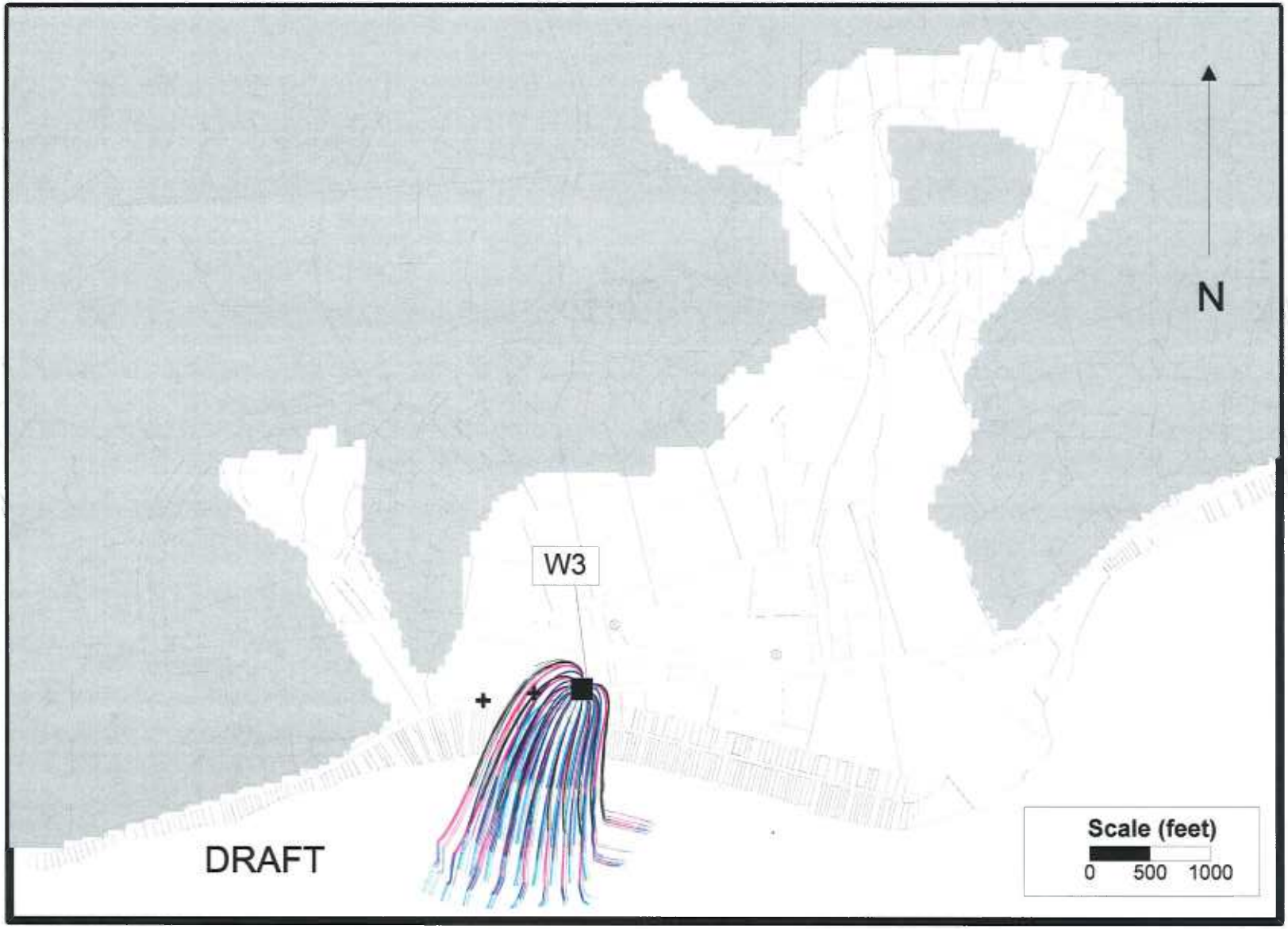

Constraint 14
Row 167 Col 168
Groundwater Elevation (ft NAVD88)
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
500
1,000
1,500
2,000
2,500
3,000
3,500
4,000
Model Time (days)
Constraint 5 feet below land surface; 2 feet in Phase 3
LS
Base Constraint
Base Constraint Ph3
Base (Current)
Phase 1 W1-W3 Dry
Phase 2 W1-W3 Dry
Phase 3 W1-W3 Dry Reduced
10
15
37
5
36
9
14



IOKE Project: FAR .20 - Proposed New Grading Plan


84' Fire Dept
Turn-Around
R 42'-0"
MIN 26' CLEAR DRIVING
ACCESS WAY FOR FIRE
-2.6%
-4.0%
-7.6%
MIN 26' CLEAR DRIVING
ACCESS WAY FOR FIRE
B.E. 16.5
FF 23'
20
16
17
18
19
20
20
22
21
20
ter Way

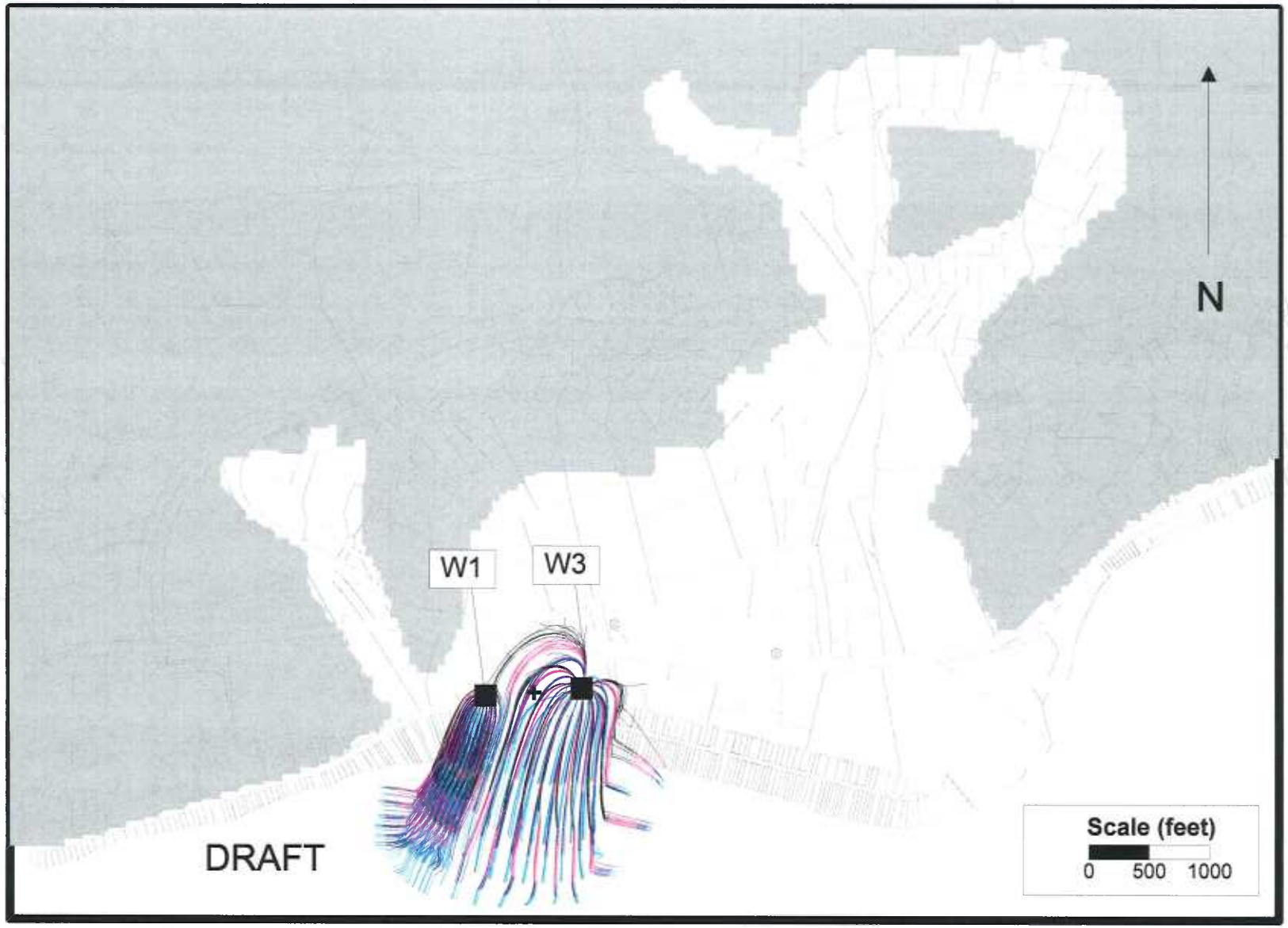

Constraint 37
Row 159 Col 163
Groundwater Elevation (ft NAVD88)
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
500
1,000
1,500
2,000
2,500
3,000
3,500
4,000
Model Time (days)
Constraint 1 foot below land surface
LS
LS Post Development
Base Constraint
Base Constraint Ph3
Base (Current)
Phase 1 W1-W3 Dry
Phase 2 W1-W3 Dry
Phase 3 W1-W3 Dry Reduced
10
15
37
5
36
9
14



Phase 1 - Injection Only

311,135 gal/day

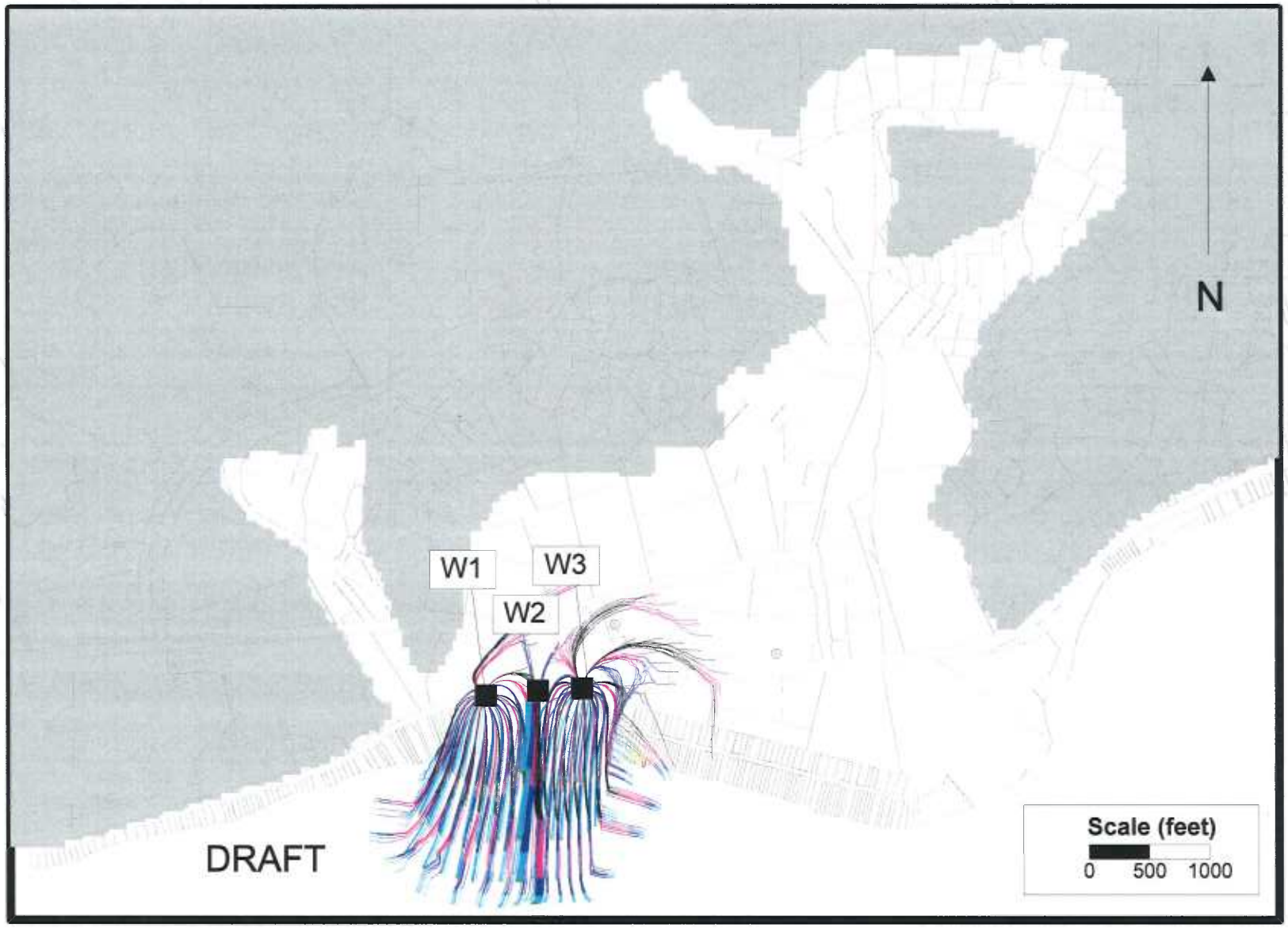
McDonald Morrissey ASSOCIATES, Inc.



Phase 2 - Injection Only

497,642 gal/day

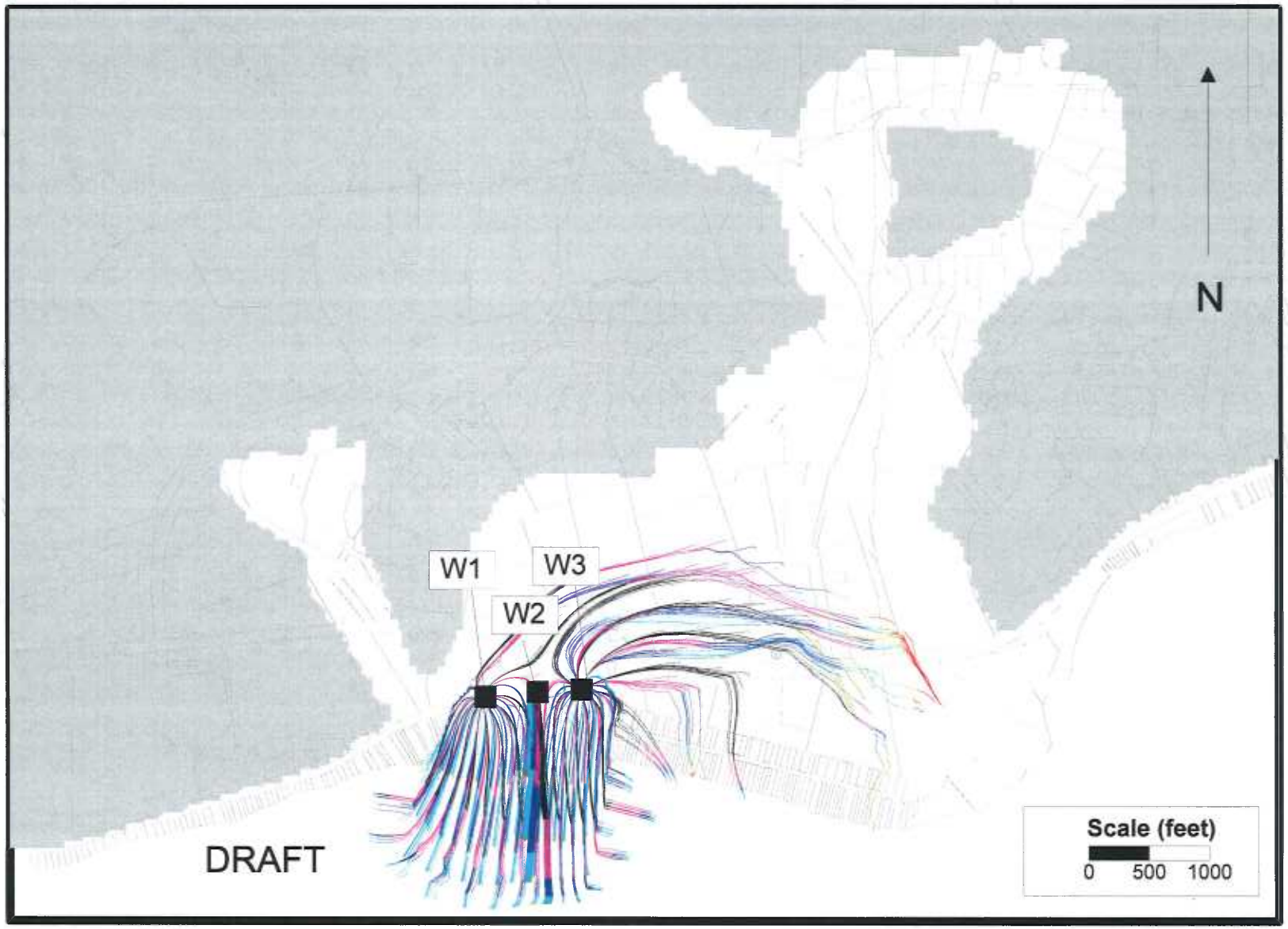
McDonald Morrissey ASSOCIATES, Inc.



Phase 3 - Injection Only Reduced 75%

611,655 gal/day

McDonald Morrissey ASSOCIATES, Inc.



Phase 3 - Injection Only

815,540 gal/day

McDonald Morrissey ASSOCIATES, Inc.

3/17/14

MEETING AGENDA
CCWTF

Monday, March 17, 2014, 9:00 AM
City Hall – Westward Conference Room
23825 Stuart Ranch Road

1. Status of the Injection Program – Leslie
2. Status of the City's Regulatory Obligations – CDP, CEQA, EIR – Craig/Leslie
3. Design Update – Steve
4. Recycled Water Use – Barbara/Steve
5. WDR – Project Permit Status – Craig/Leslie/Steve
6. Questions and Answers
7. Next Meeting Date and Time

Draft Meeting Minutes

City of Malibu Civic Center Wastewater Treatment Facility Project

Subject:	**Project Status**
Prepared For:	Craig George/City of Malibu
Prepared By:	Leslie Dumas/RMC
Date/Time:	March 17, 2014 at 9:00 AM
Project Number:	0127-006

Attendees: Craig George, Andrew Sheldon, Bob Brager, Barbara Cameron, Bonnie Blue/City of Malibu; Leslie Dumas, Steve Clary/RMC Water and Environment; Eric Wu, Don Tsai/LA RWQCB

1. Purpose of Meeting

The purpose of the meeting was to provide a project status update for the City of Malibu's Civic Center Wastewater Treatment Facility Project.

2. Discussion Summary

2.1 Status of Injection Program & Modeling

- The modeling team held a conference call with the RWQCB on March 12, 2014 to discuss the sensitivity analyses to be conducted on the MODFLOW model. It was decided that four runs would be conducted:
    1. Increased hydraulic conductivity for the low permeable zone – simulating the potential for greater impacts on shallow groundwater levels as a result of injection.
    2. Decreased hydraulic conductivity for the Civic Center Gravels – simulating a potential reduction in the volume of water that can be injected into the lower zone and/or changes in flow patterns.
    3. Increased precipitation – simulated as increased recharge to the groundwater basin to simulate potential changes in flow patterns resulting from wetter winters.
    4. Sea level rise
- In regards to sea level rise, Barbara noted that in the Malibu area, there appears to be greater concern with storm surges and not as much from direct sea level rise.
- The USGS is presently doing a study (with their sub, Phillip Williams and Associates) to conduct a vulnerability assessment of impacts from sea level rise in Santa Monica Bay. The Malibu area is part of that study. Barbara will see if she can find out what the status of that study is. 26,473 sq.ft.
- The California Coastal Commission issued draft guidance for evaluating sea level rise for projects in the Coastal Development Zone. They use the NRC study that indicated that sea levels will rise between approximately 16 inches and 65 inches by 2100.
- It was noted that our project life is not that long, so it would be best if we use the sea level rise estimated by 2030, or a range between 1.56 and 11.76 inches.
- RMC will prepare a memorandum showing where the anticipated sea level rise will occur (distance inland), noting that the proposed CCWTF is outside that area of influence and that the City's plan for managing potential impacts on facilities within the sea level rise zone is adaptive management and planned retreat.

- One comment made during the meeting with the modelers and RWQCB was the concern regarding the depth from which the particle tracks are occurring. The modelers can provide a profile figure showing this information.
- There is a lot of monitoring already occurring in the Malibu area and Santa Monica Bay, including some sampling the Hyperion is doing in the Malibu area. The RWQCB will provide the Hyperion monitoring locations, sampling plan and schedule so that the City can consider this information in developing an ocean water quality monitoring program and to avoid duplication of efforts.
- The RWQCB noted that for this project, we will be doing a WDR (not a NPDES permit) as we are injecting into the groundwater basin and not using an ocean outfall. So our points of compliance for monitoring should be within the groundwater basin.
- Present thinking is to have an end-of-the-pipe point of compliance, similar to what is being used in Orange County for the injection barrier projects.
- The RWQCB is still discussing whether they will require an ocean water quality monitoring program as part of the WDR as the ocean is not a point of compliance for the WDR.
- Water quality monitoring is being conducted on a frequent (daily?) basis at Surfrider Beach.
- The City will have three points to be rested upgradient of the injection locations per the MOU.
- RMC prepared a blackbox ocean water quality analysis, estimating what dilution ratios would be achieved over the area where groundwater is anticipated to dissipate up from the ocean floor. These resulting dilution ratios are large, as there is little groundwater moving offshore relative to the volume of ocean water in the overlying ocean column. Further, these analyses show that a 1:10 dilution ratio can be achieved within 2 feet of the ocean floor.
- The RWQCB will likely require collection of water quality samples from both shallow and deep wells along Malibu Road and Malibu Colony Road. This could help with the evaluation of potential ocean water quality impacts in that they could provide onshore controls for offshore water quality.
- RMC will prepare a memorandum summarizing the ocean water quality analysis as a foundation for the work included in the EIR.
- The SNMP assimilative capacity and anti-degradation analysis modeling should be done by the end of this week.

2.2 Status of City's Regulatory Obligations

- RMC is currently preparing the draft Title 22 report. It is anticipated to be completed by the first week of April.
- The RWQCB will need to have the CDPH review the Title 22 report and comment on it before they can draft the WDR.
- Regarding the well prohibition zone ordinance, CDPH can issues report approvals contingent on the City passing the ordinance.
- The City is presently drafting the ordinance and will be working to get it through the planning department.
- The project milestone schedule was reviewed with a focus on key dates as they relate to the draft EIR and the issuance of the WDR.
- The RWQCB can be revising and finalizing the WDR/WRR concurrent with completion of the final EIR, but they can't release it until after the Final EIR is certified.

- The WDR needs to be adopted before the City can finalize and officially form the assessment district.
- There will have to be a 45 day comment period on the draft WDR/WRR.
- The final EIR can be completed by mid-October, but the City needs to take it before the planning commission (in November) and the City Council (in December) before it is certified.
- The City has to do a 7-day public notice period before the planning commission and city council meetings.
- The City cannot advertise the city council meeting until after the planning commission meeting is done. And the City needs a 21-day noticing period for the City Council meeting, which is why it's a month after the planning commission meeting.
- If the Final EIR is certified mid- to late-December of 2014, then:
    - The RWQCB can release the draft WDR for public comment at the beginning of December (December 1)
    - There will be a 45-day comment period, which will take us to the end of January.
    - Two weeks to incorporate comments with a revised WDR by mid-February.
    - A board package will also have to be prepared and time given for board member review (mid-February)
    - The WDR can be adopted (at the earliest) at the March 5, 2015 board meeting. (The board meets the first Thursday of each month). The fallback date would April 2, 2015.
- Jim believes that we have to have the final WDR before the City can get the assessment district engineers' report finalized, which has to happen before the assessment district can be formed. Forming the assessment district will take between 45 days and 3 months, although the assessment engineer can do the pre work prior to the actual vote.
- For scheduling purposes, assume that the City will need 6 months to form the assessment district, from the time the parameters of the draft WDR are available.
- One possible work-around is to have the RWQCB establish raft WDR criteria that the assessment district can work from. So if the RWQCB can provide those criteria by the end of May, things can get going on the City's end.
- RMC will prepare an updated project schedule with a draft WDR release date of the end of May.
- Eric will check with the RWQCB attorney about how soon they can release the WDR after the EIR is certified.

2.3 Design Update

- The MOU plus 9 months means that the design must be done by the end of March.
- The project should be at 90% design by the end of this month.

2.4 Recycled Water Use

- There are no updates on recycled use.

2.5 WDR Permitting

- See the discussion above.

2.6 Project WDR

- Nothing new to report.

2.7 Questions and Answers

- The next stakeholder meeting will be on April 24th

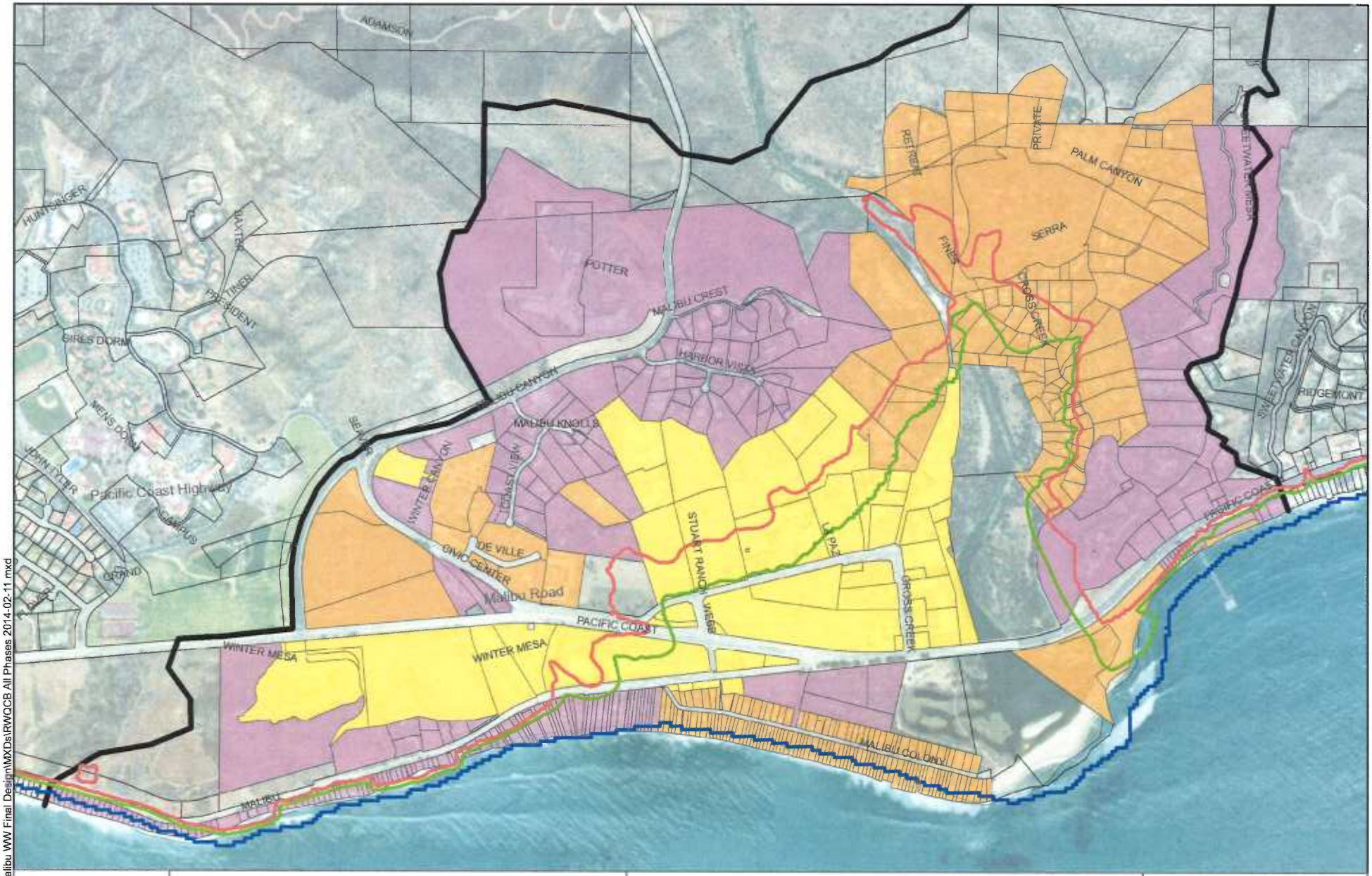
3. Other

- The next meeting will be held on April 30, 2014 at 9 AM

4. Action Items

Action Item Summary Table

Responsible Party		Task/Action Item
Organization	**Name**	
LA RWQCB	Eric Wu	Talk with LA County regarding how to coordinate with City to connect residents with centralized system
City of Malibu	Craig George/Bob Brager	Start discussions with Water District 29 regarding duplication of services agreement
City of Malibu	Craig George/Bob Brager	The City needs to decide if they will be charging for recycled water.
LA RWQCB	Eric Wu	Eric will send an 'email of introduction' to Ginachi Amah at the RWQCB regarding the Malibu SNMP.
City of Malibu	Barbara Cameron	Find out status of USGS sea level rise vulnerability study
RMC	Leslie Dumas	Prepare memorandum documenting sea level rise analysis
LA RWQCB	Eric Wu	Provide Hyperion monitoring plan for ocean water quality (monitoring locations, constituents and frequency)
RMC	Leslie Dumas	Prepare memorandum documenting ocean water quality analysis
RMC	Leslie Dumas	Update project schedule to reflect release of draft WDR criteria by end of May and adding 6 months for formation of the assessment district
City of Malibu	Craig George	Draft groundwater well prohibition zone ordinance



L:\Projects GIS\0127-004.00 Malibu WW Final Design\MXDs\RWQCB All Phases 2014-02-11.mxd

N

0 500 1,000 2,000 Feet

RWQCB Phase

- Phase 1
- Phase 2
- Phase 3

Contour (ft)

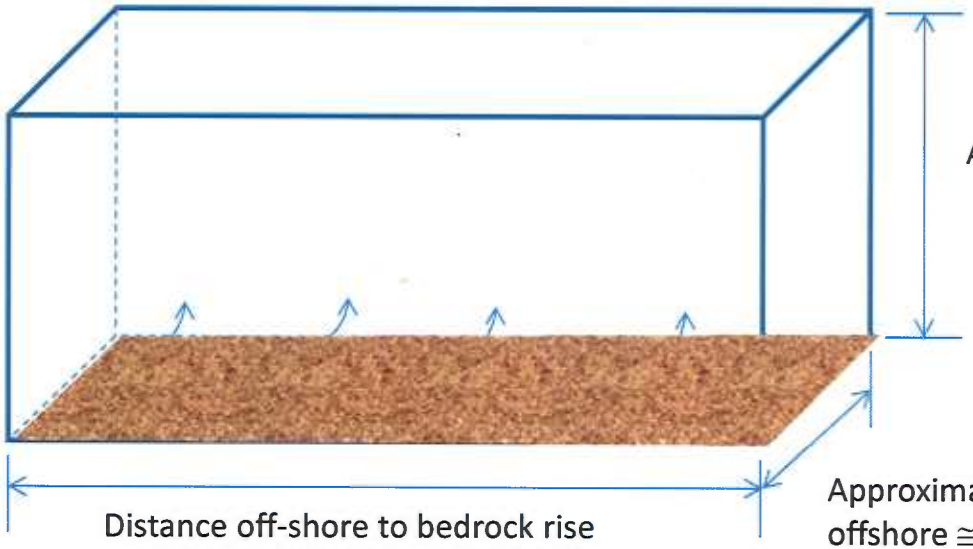
- 0 - Mean Sea Level
- 6 - Coastal Limit
- 8 - with High Tide

City of Malibu Elevations

3/3/2014

3/17/14

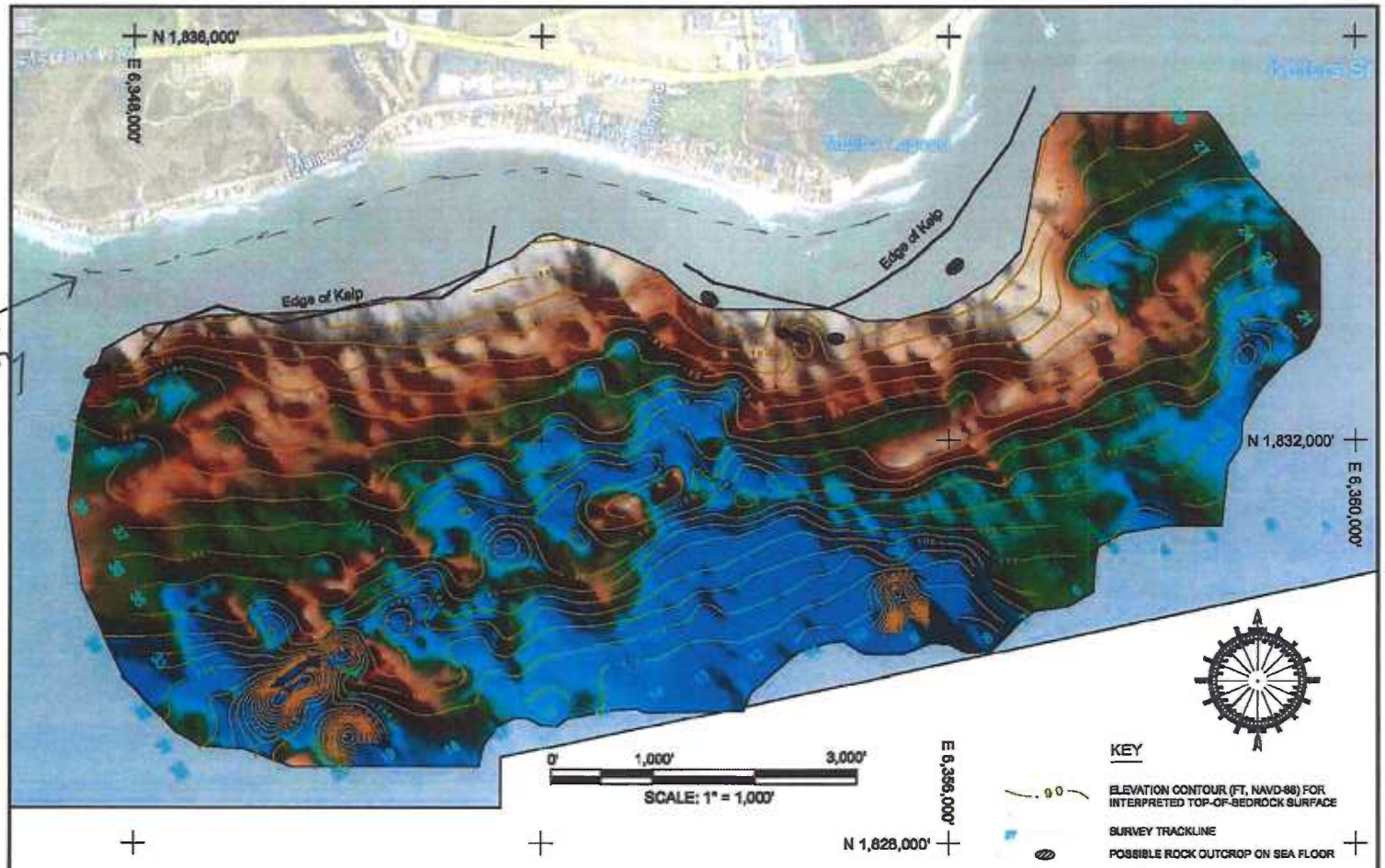
1/3



Mixing Length	270 feet	1,000 ft
Mixing Volume (cu.ft.)	30 x 1,320 x 270	30 x 1,320 x 270
Mixing Volume (mgd)	80	296
Daily Mixing Volume*	160	592

* Daily mixing volume assumes two tidal cycles a day

Extent of resistivity survey.



FIELD SURVEY NOTES:

Seismic reflection (subbottom profiling) data is from a survey conducted by Sea Surveyor, Inc. on 23-27 April 2012 and represents the seafloor conditions present on those dates.

The marine geophysical survey was conducted using Class 1 hydrographic survey methods and accuracies outlined in the Corps of Engineers' HYDROGRAPHIC SURVEYING MANUAL (EM-1110-2-1003, October 1994). The survey was performed using the 72' research vessel LIGHTNING, an OMNISTAR LR-8 differential GPS navigation system, an INNERSPACE Model 448 survey-grade fathometer, and two EDGETECH CHIRP subbottom profiling systems (SB-0512i and SB-0216).

Horizontal datum is based on the California State Plane Coordinate System, Zone 5 (NAD 1983).

DATA INTERPRETATION NOTES:

The seismic reflection survey collected high-resolution subbottom profiles along survey lines spaced at 100m (offshore) and 150m (alongshore) intervals using two (2) CHIRP seismic reflection systems (Edgetech SB-0512i and SB-0216). Seismic reflection interpretation is based on computer contouring of subbottom reflector elevations as picked and digitized from the seismic reflection records, in combination with visual line-to-line correlation of channel images. Other interpretations of seismic reflection configurations are possible.

Bedrock elevation contours are in feet below NAVD-88. Bedrock elevations are determined by adding the thickness of overlying sediment observed in the seismic reflection records to the NAVD-88 elevation of the seafloor. The NAVD-88 elevation of the seafloor is determined by correcting raw water depth measurements for tidal fluctuations measured by NOAA at Santa Monica Pier.

Malibu Seismic Reflection Survey
Bedrock NAVD-88 Elevation Contour Map

SURVEY CONDUCTED BY:
Sea Surveyor, Inc.
960-C Grant Street
Benicia, CA 94510
(707) 746-1553
www.seasurveyor.com

SURVEY CONDUCTED FOR:
RMC Water and Environment
2001 North Main Street, Suite 400
Walnut Creek, CA 94596
(925) 324-4119

CSLC PERMIT: PRC-8988	DRAWING BY: R. SMITH	SCALE: 1" = 1,000'	CHART: 2 OF 3	REV. 0

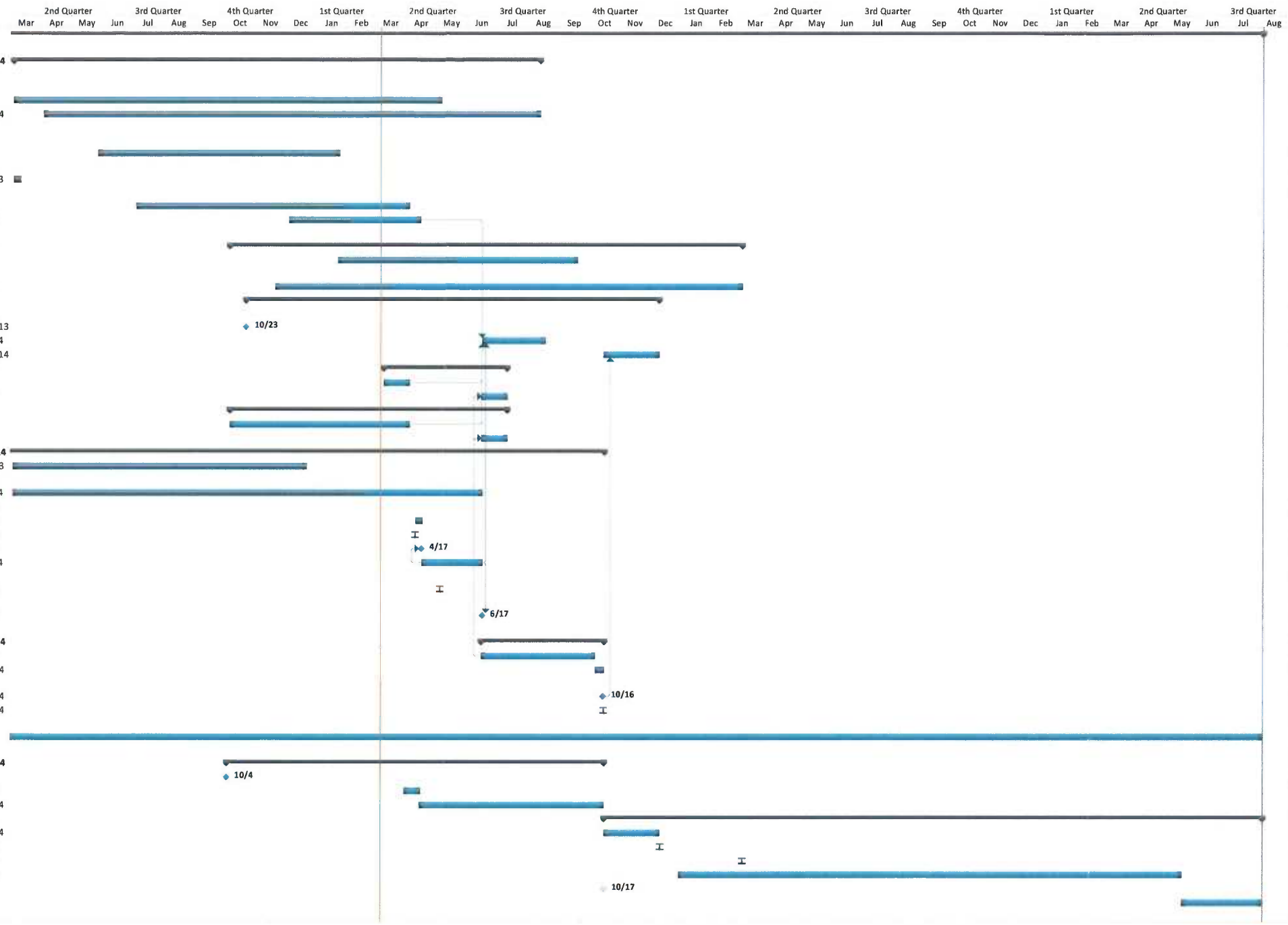
3/17/14 3/3

	Current Conditions	Phase 1	Phase 2	Phase 3
Annual average flux to ocean (from MODFLOW model in cu.ft./day)	117,635	130,763	133,532	136,008
Annual flux to ocean (mgd)	0.88	0.98	1.00	1.02
Dilution ratio assuming 160 mgd dilution volume	1:182	1:163	1:160	1:157
Flux rate required for 1:10 dilution (mgd)	8.8	9.8	1.0	1.02
Depth from ocean floor for 1:10 dilution (ft)*	1.65	1.83	1.87	1.91

* Assumes mixing length of 270 feet offshore

5/7/14

ID	Ta	Task Name	Duration	Start	Finish
1		**Malibu Civic Center Wastewater Treatment Facility Project**	**1280 days**	**Mon 9/12/11**	**Fri 8/5/16**
2		**Task 1 - Aquifer Testing, Groundwater Modeling & Basis of Design**	**377 days**	**Tue 3/5/13**	**Wed 8/13/14**
3		Subtask 1.1 - Pre-Field Program	306 days	Tue 3/5/13	Tue 5/6/14
4		Subtask 1.2 - Field Program - Well Installation and Development	355 days	Thu 4/4/13	Wed 8/13/14
5		Subtask 1.3 - Field Program - Injection Testing	174 days	Tue 5/28/13	Fri 1/24/14
6		Subtask 1.4 - Field Program - Shoreline Geophysical Survey	5 days	Tue 3/5/13	Mon 3/11/13
7		Subtask 1.5 - Modeling	196 days	Fri 7/5/13	Fri 4/4/14
8		Subtask 1.6 - Injection Well Pre-Design	94 days	Thu 12/5/13	Tue 4/15/14
9		**Task 2 - Permitting**	**367 days**	**Mon 10/7/13**	**Tue 3/3/15**
10		Local Coastal Program Amendment	172 days	Thu 1/23/14	Fri 9/19/14
11		Coastal Development Permit	334 days	Thu 11/21/13	Tue 3/3/15
12		**Recycled Water Permit (WDR/WRR)**	**296 days**	**Wed 10/23/13**	**Wed 12/10/14**
13		Notice of Intent	0 days	Wed 10/23/13	Wed 10/23/13
14		Draft WDR/WRR	45 days	Tue 6/17/14	Mon 8/18/14
15		Final WDR/WRR	40 days	Thu 10/16/14	Wed 12/10/14
16		**Title 22 Engineers Report**	**90 days**	**Mon 3/10/14**	**Fri 7/11/14**
17		Draft Title 22 Engineers Report	20 days	Mon 3/10/14	Fri 4/4/14
18		Final Title 22 Engineers Report	20 days	Mon 6/16/14	Fri 7/11/14
19		**SNMP - GWMP**	**200 days**	**Mon 10/7/13**	**Fri 7/11/14**
20		Draft SNMP-GWMP	130 days	Mon 10/7/13	Fri 4/4/14
21		Final SNMP-GWMP	20 days	Mon 6/16/14	Fri 7/11/14
22		**Task 3 - EIR Preparation**	**464 days**	**Mon 1/7/13**	**Thu 10/16/14**
23		Subtask 3.1 - Notice of Preparation	211 days	Mon 3/4/13	Sun 12/22/13
24		Subtask 3.2 - Draft EIR	336 days	Mon 3/4/13	Mon 6/16/14
25		Prepare Administrative Draft	1 day	Mon 1/7/13	Mon 1/7/13
26		Complete Public Draft EIR	5 days	Fri 4/11/14	Thu 4/17/14
27		Issue Notice of Availability	1 day	Thu 4/10/14	Thu 4/10/14
28		Release Public Draft EIR	0 days	Thu 4/17/14	Thu 4/17/14
29		Public Draft EIR public circulation period (60 days)	43 days	Thu 4/17/14	Mon 6/16/14
30		Public Draft EIR public information meeting	1 day	Mon 5/5/14	Mon 5/5/14
31		Close of Public Draft EIR circulation period	0 days	Tue 6/17/14	Tue 6/17/14
32		**Subtask 3.3 - Prepare Final EIR**	**89 days**	**Mon 6/16/14**	**Thu 10/16/14**
33		Address comments	82 days	Mon 6/16/14	Tue 10/7/14
34		Finalize Final EIR for certification and adoption	7 days	Wed 10/8/14	Thu 10/16/14
35		Certification of FEIR	0 days	Thu 10/16/14	Thu 10/16/14
36		Submit copies of Final EIR and MMRP	1 day	Thu 10/16/14	Thu 10/16/14
37		Task 4 -Public Awareness and Outreach	1280 days	Mon 9/12/11	Fri 8/5/16
38		**Task 5 - Final Design**	**270 days**	**Fri 10/4/13**	**Thu 10/16/14**
39		50% Design Submittal	0 days	Fri 10/4/13	Fri 10/4/13
40		95% Design Submittal	12 days	Mon 3/31/14	Tue 4/15/14
41		Complete Bid Package	133 days	Tue 4/15/14	Thu 10/16/14
42		**Construction**	**471 days**	**Fri 10/17/14**	**Fri 8/5/16**
43		Bidding	40 days	Fri 10/17/14	Thu 12/11/14
44		Contract Award	1 day	Fri 12/12/14	Fri 12/12/14
45		Notice to Proceed	1 day	Wed 3/4/15	Wed 3/4/15
46		Construction	360 days	Wed 12/31/14	Tue 5/17/16
47		5/17/16	0 days		
48		Construction Completion and Start-up/Hook-up	58 days	Wed 5/18/16	Fri 8/5/16



Project: Malibu Civic Center WWT
Date: Fri 3/7/14

Task	Summary	External Milestone	Inactive Summary	Manual Summary Rollup	Finish-only
Split	Project Summary	Inactive Task	Manual Task	Manual Summary	Deadline
Milestone	External Tasks	Inactive Milestone	Duration-only	Start-only	Progress

Draft Meeting Minutes

City of Malibu Civic Center Wastewater Treatment Facility (CCWTF) Project

Subject:	**Project Scheduling**
Prepared For:	City of Malibu
Prepared By:	Leslie Dumas/RMC
Date/Time:	March 25, 2014 at 9:00 AM
Project Number:	0127-006

Attendees: Craig George, Andrew Sheldon, Jim Thorsen, Barbara Cameron, Bonnie Blue/City of Malibu; Leslie Dumas, Steve Clary/RMC Water and Environment; Eric Wu /LA RWQCB

1. Purpose of Meeting

Discuss project scheduling relative to preparation of the Waste Discharge Requirements for the CCWTF

2. Discussion Summary

- The City of Malibu (City) is going to coordinate a meeting with the State Water Resources Control Board (SWRCB) on the State Revolving Fund (SRF) application for the project.
- Eric sent out a schedule that the Regional Water Quality Control Board (RWQCB) put together to continue to meet the MOU + 9 months schedule.
- The RWQCB is on board with this schedule, but the RWQCB needs lots of information from the City and RMC to prepare the draft waste discharge requirements (WDR).
- The RWQCB cannot adopt the WDR until the EIR is certified.
- The Board package needs to go out on October 24th for a November meeting date.
- The RWQCB got a call from Health the Bay and BayKeeper. They want to see a copy of the draft WDR before it's released.
- The RWQCB can agendize approval of the WDR for now.
- The schedule does not include a lot of wiggle room. If we don't make the November SWRCB meeting, it'll likely be 3 months before the next one.
- The CCWTF is being designed for a Total N level of between 7and 8 mg/L, almost all of which will be nitrate.
- The Water Quality Objective (WQO) in the Basin Plan for the groundwater basin for nitrate is 10 mg/L nitrate-N. The Ocean Plan does not have any numerical WQOs for nitrate, but does have an ammonia-N WQO of 2.4 mg/L.
- The CCWTF will produce very little ammonia.
- Deb told Eric that they don't have to consider Total Maximum Daily Limits (TMDLs) in the WDR.
- So, left with the anti-degradation analysis, we can use up to 20% of assimilative capacity.
- Based on the RWQCB's estimates, existing groundwater quality for nitrate is ~3.6 mg/L. We would need to have a resulting groundwater concentration of around 4.8 to 4.9 mg/L for 20% assimilative capacity.
- The RWQCB would like to know how much more it would cost to get down to 5 mg/L nitrate-N in the treatment process and what will this do in terms of costs to the assessment district. The RWQCB

will need this information to justify and accept the current plant design. They would like a TM summarizing the cost differential (by April 16th).

- We need to make sure we note in the TM that there are no downgradient users of the basin.
- The RWQCB is presently considering issuing the WDRs for Phases 1 and 2 only (without TMDLs).
- The Current plant site can fit the wastewater treatment plant for all three phases if the discharge limit is around 7 or 8 mg/L for nitrate-N. If we have to go lower, the City may be facing site constraints in terms of size and may require a second plant to meet Phase 3.
- The City should provide the RWQCB with a current table of flows used in the wastewater treatment design (showing totals by phase).
- The City of Malibu should submit Form 200with signatures and with the Concept Project Report prepared for the CDP application as their 'formal' submittal. The RWQCB will then open up a file and website where we can upload additional documents.
- The City is planning to do special meetings for the planning commission and city council meetings in for the EIR.

Meeting Agenda

I. Introductions
II. Update on Design
- Wastewater Treatment Plant
- Wastewater Collection System
- Recycled Water Distribution System

III. Groundwater Injection Studies and Findings
- Model Update
- Salt and Nutrient Management Plan
- Ocean Water Quality Analysis

IV. Permitting and CEQA Documentation
V. Conclusions/Next Steps/Future Meetings

Introductions

Person	Role
Jim Thorsen Bob Brager Rob Duboux Craig George Bonnie Blue Barbara Cameron	City of Malibu
Eric Wu Don Tsai Rebecca Chou	RWQCB
Patricia Leary	SWRCB
Jack Topel	SMBRC
Kirsten James	Heal the Bay
Ric Vardel	Integrated Performance Consultants
Jeff Bouse	LADPW

Person	Role
Michael Stenstrom	UCLA
Steve Clary Leslie Dumas Richard Laton	RMC Design Team

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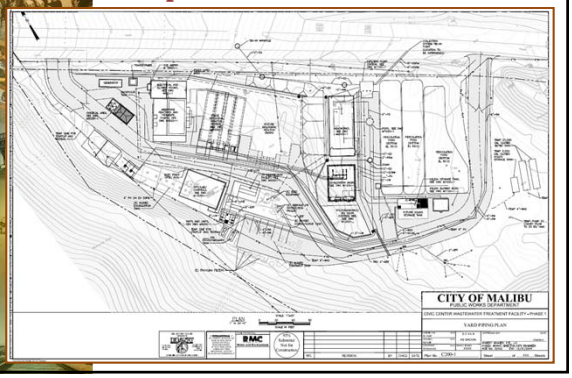
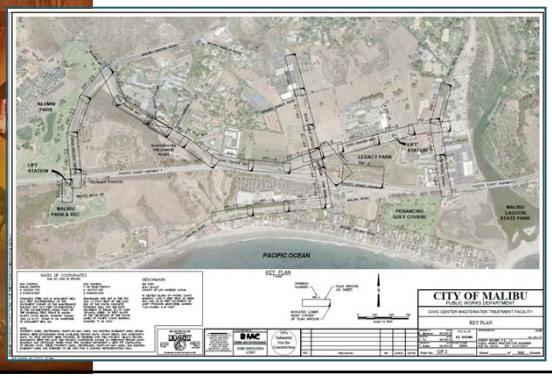
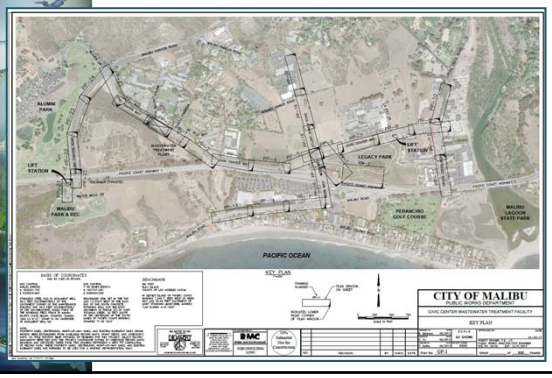
Treatment Plant Design 80% Complete



Collection System Design 80% Complete



Distribution and Injection System Design 65% Complete



Remaining Design Issues

- Exact location of injection wells
  - Along Malibu Rd in public right-of-way
- Percolation capacity in Winter Canyon
  - Next modeling scenarios to estimate
- Waste Discharge Requirements (WDR)
  - Under development at RWQCB

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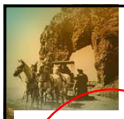
V. Conclusions/Next Steps/Future Meetings

Checkpoints to Project Implementation

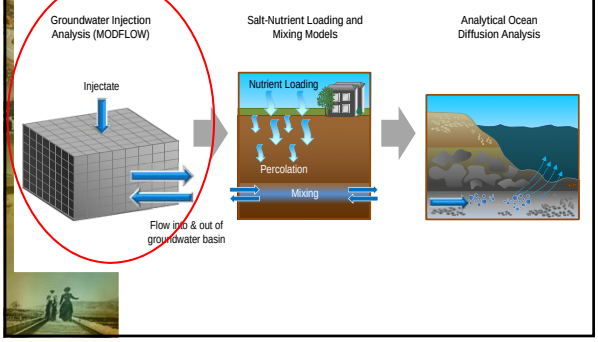
Checkpoint	Yes	No
1. Is there sufficient groundwater injection capacity?		
2. Will injected water flow to Malibu Creek and/or Lagoon?		
3. Will groundwater quality be impacted by the injection?		
4. Will there be ocean water quality impacts?		
5. Is the project permittable?		

2013 Field Program

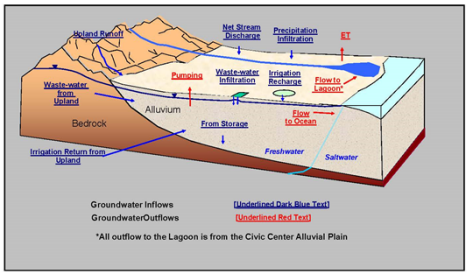
- 9 additional monitoring wells (7 to bedrock; 2 shallow alluvium)
- Shoreline Resistivity Survey
- Pumping and Injection Testing
- Groundwater Model Update (in progress)



Modeling Strategy to Support Permitting



Sources and Sinks for Groundwater Flow System



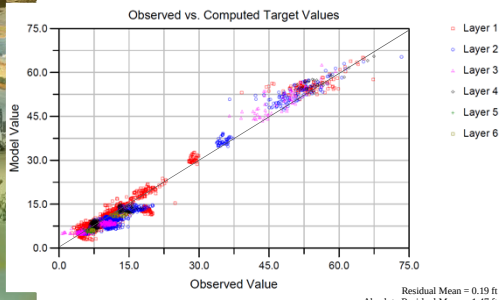
Groundwater Model (MODFLOW) Update

- Update Hydrogeology
- Calibration
- Scenario Planning and Analysis
- Sensitivity Analyses

Model Calibration Strategy

- Compare model-calculated ground water elevations to field measurements for transient simulation 2003-2012
- Compare model-calculated hydraulic responses with field observations during injection testing

Recalibration Shows Good Results

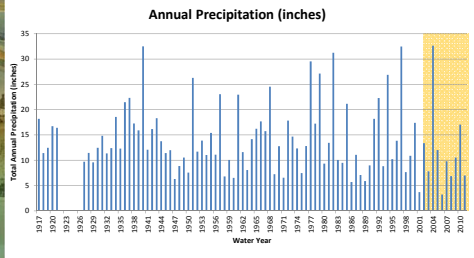


Residual Mean = 0.19 ft
Absolute Residual Mean = 1.47 ft
Sum of Squares = 1.49e4 ft2
Number of Observations = 3513
Number of Locations = 101

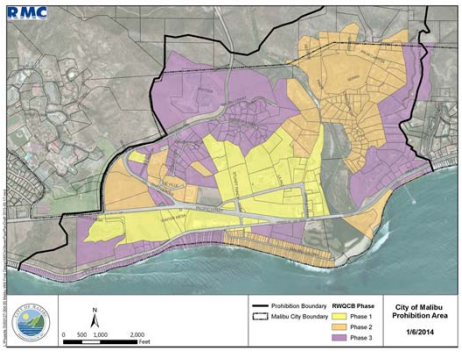
Model Application Runs

- Effects of proposed injection on groundwater elevations
- Maximum injection rates
- Effects of proposed percolation in Winter Canyon

Model Simulation Period



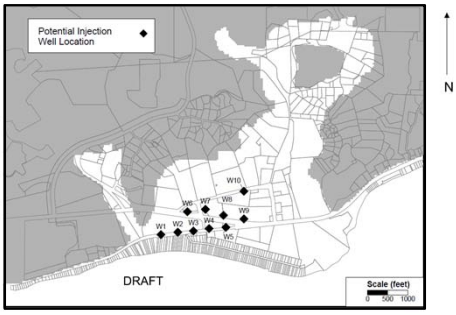
Project Phasing



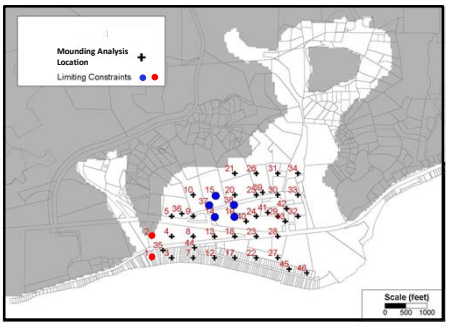
Scenarios Evaluated

- Baseline (current conditions)
- All disposal to injection (no percolation or irrigation)
  - Phase 1
  - Phase 2
  - Phase 3
- All disposal to injection and Winter Canyon percolation
  - Phase 1
  - Phase 2
  - Phase 3

Possible Injection Well Locations



Groundwater Elevation Analysis Locations



Model Results Demonstrate Sufficient Injection Capacity

	Phase 1	Phase 2	Phase 3	Phase 3
Particles to Lagoon?	No	No	No	Yes
Design Requirements				
Total Recycled Water Produced - No Irrigation (gpd)	191,000	361,000	507,000	507,000
Estimated Annual Reuse for Irrigation (gpd)	68,000	176,000	299,000	299,000
Needed Injection Rate (gpd)	123,000	185,000	208,000	208,000
Model Results				
Available Injection Capacity (gpd)	311,135	497,642	611,654	1,135,619
Percent Factor of Safety	252%	269%	295%	546%

Draft

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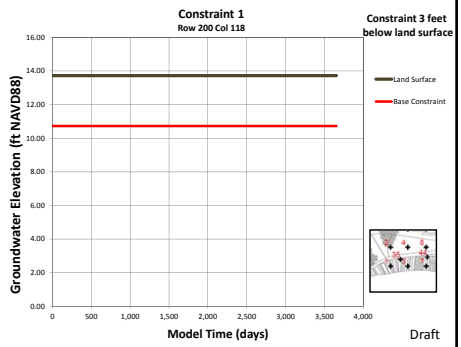
Winter Canyon Backup Percolation Capacity (gpd)	50,000	100,000	100,000	100,000

Draft

Mounding Analysis – Location 1
(Project lowers groundwater elevations)



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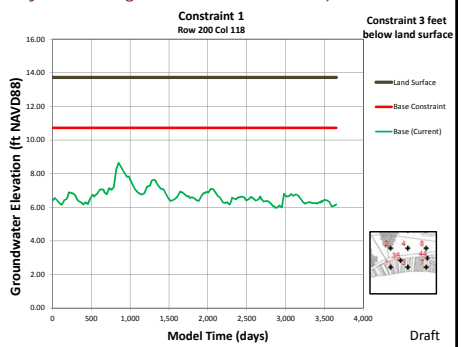
Mounding Analysis – Location 1
(Project lowers groundwater elevations)



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Mounding Analysis – Location 1
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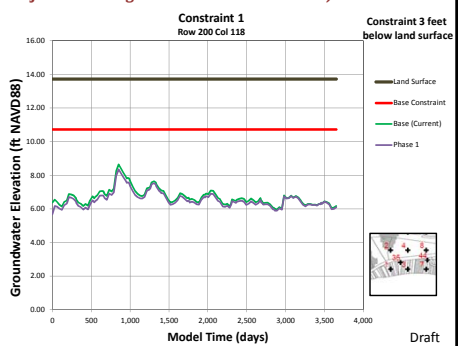

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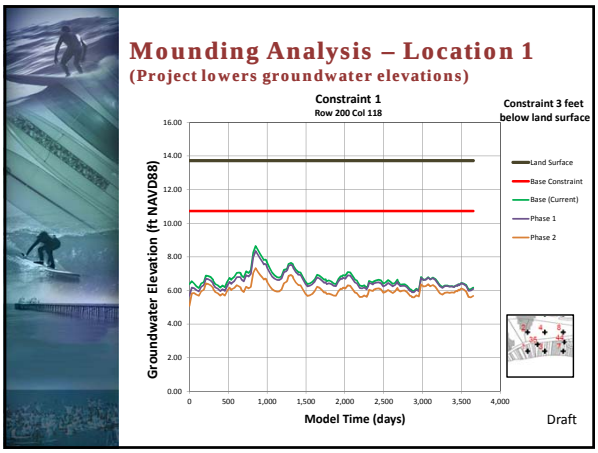
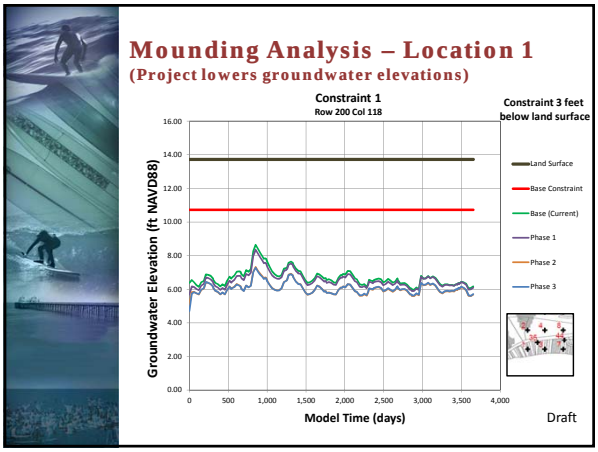

Mounding Analysis – Location 1
(Project lowers groundwater elevations)
Constraint 1
Row 200 Col 118
Constraint 3 feet below land surface
Groundwater Elevation (ft NAVD88)
Model Time (days)
Land Surface
Base Constraint
Base (Current)
Phase 1
Phase 2
Draft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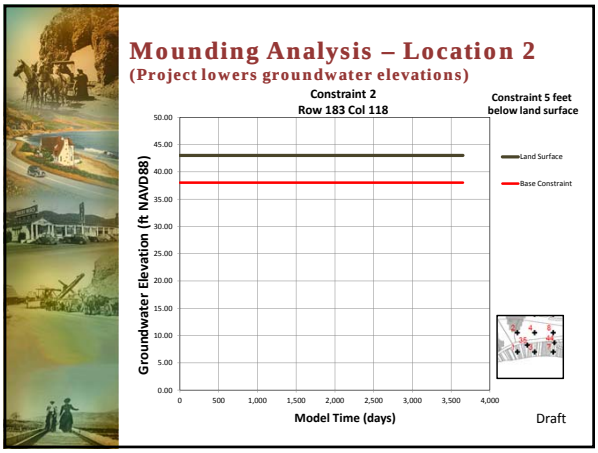
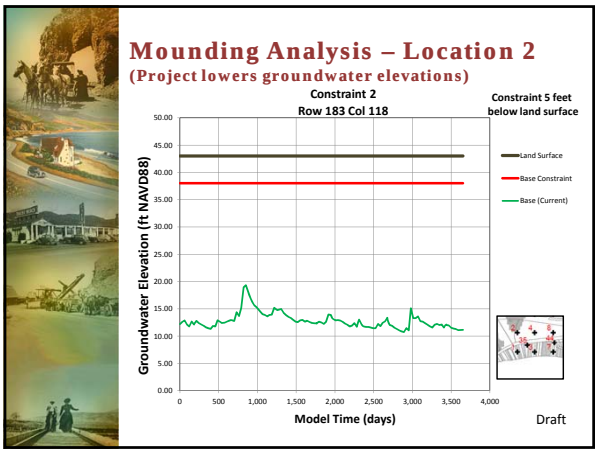

Mounding Analysis – Location 2
(Project lowers groundwater elevations)
Constraint 2
Row 183 Col 118
Constraint 5 feet below land surface
Groundwater Elevation (ft NAVD88)
Model Time (days)
Land Surface
Base Constraint
Draft

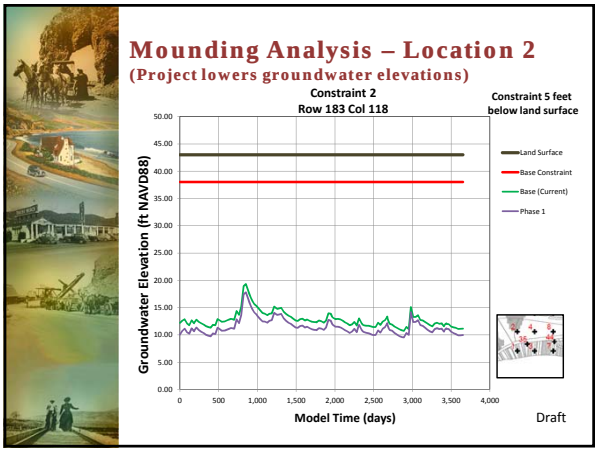
Mounding Analysis – Location 2

(Project lowers groundwater elevations)



Mounding Analysis – Location 2

(Project lowers groundwater elevations)



Mounding Analysis – Location 2

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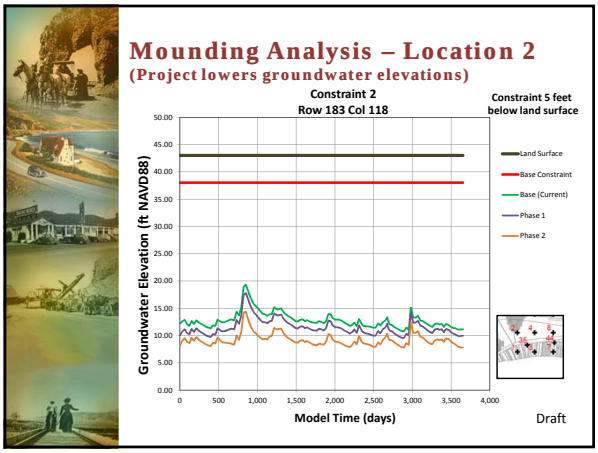

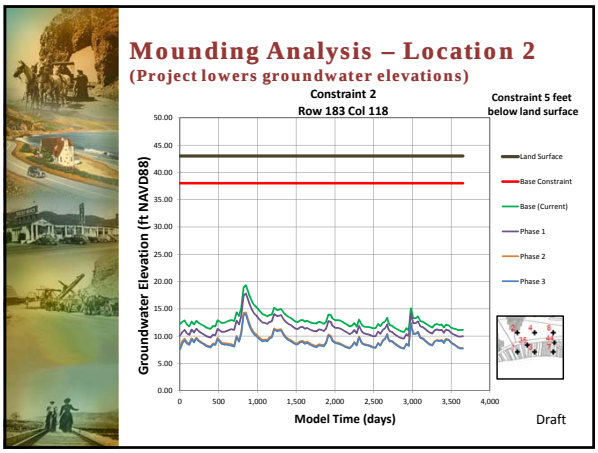
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Land Surface
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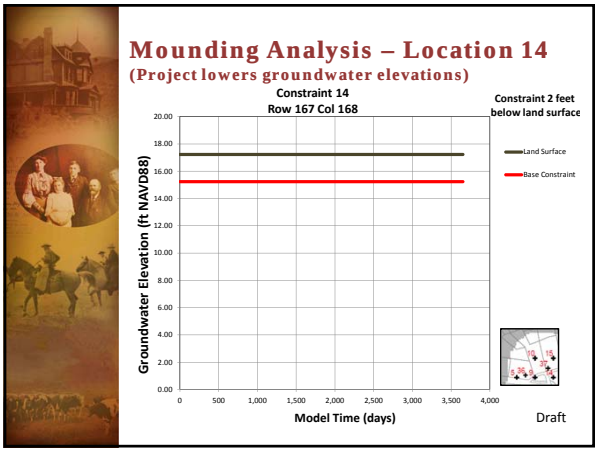
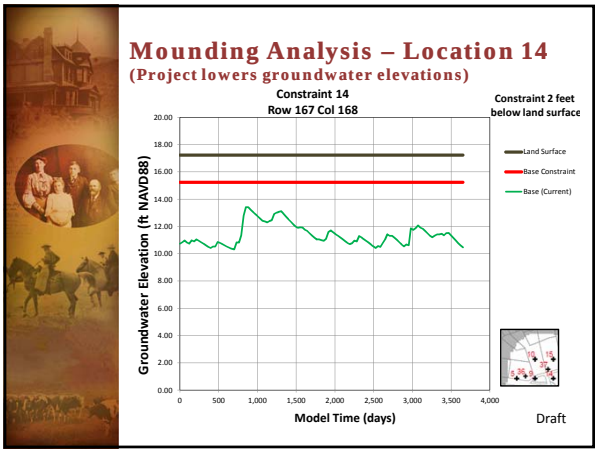
Phase 1
Phase 2
Phase 3
Draft


Mounding Analysis – Location 14
(Project lowers groundwater elevations)
Constraint 14
Row 167 Col 168
Constraint 2 feet below land surface
Groundwater Elevation (ft NAVD88)
Model Time (days)
Land Surface
Base Constraint
Draft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Model Time (days)
Land Surface
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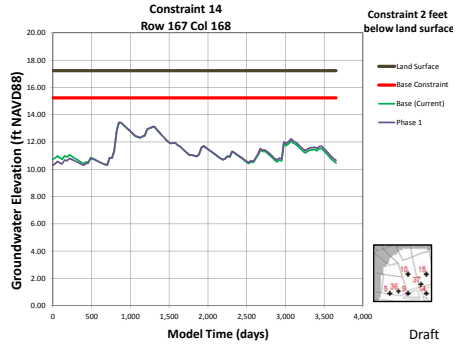

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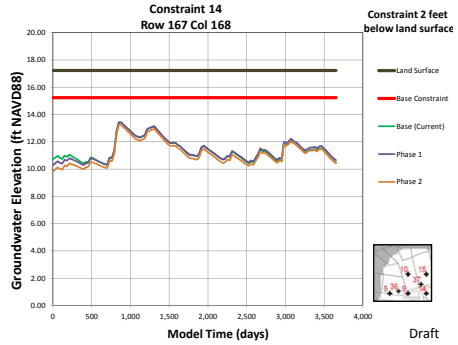

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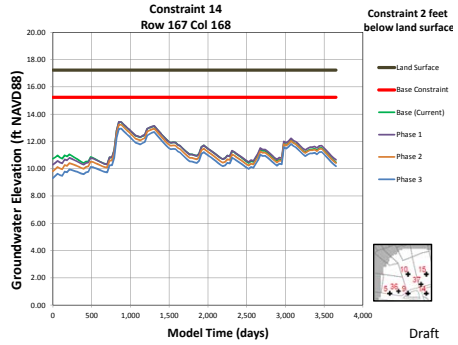

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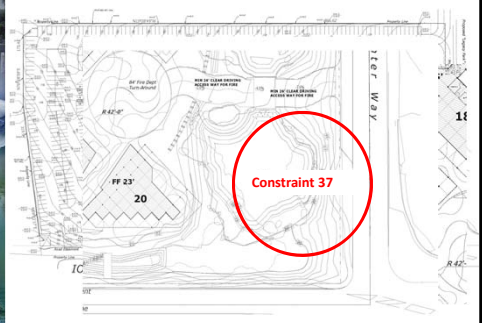
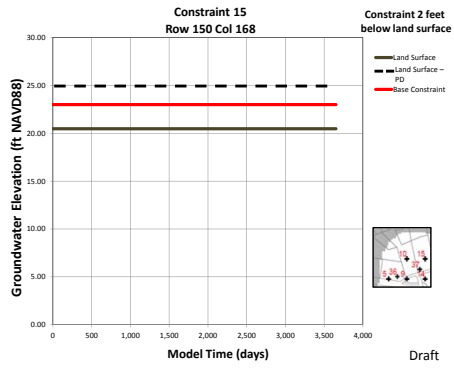
Land Surface at Limiting Location – Post Development



Mounding Analysis – Location 15

(Project lowers groundwater elevations)



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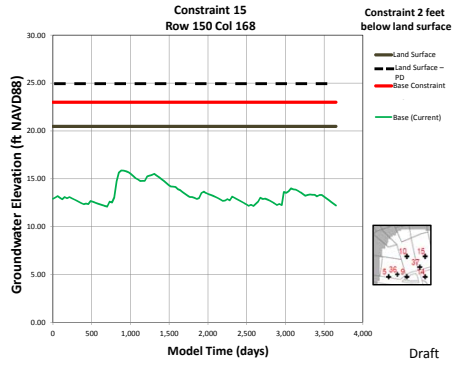
(Project lowers groundwater elevations)



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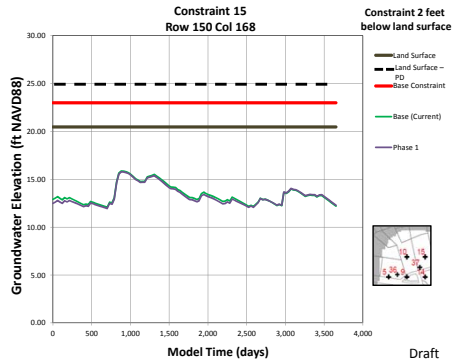
Mounding Analysis – Location 15
(Project lowers groundwater elevations)



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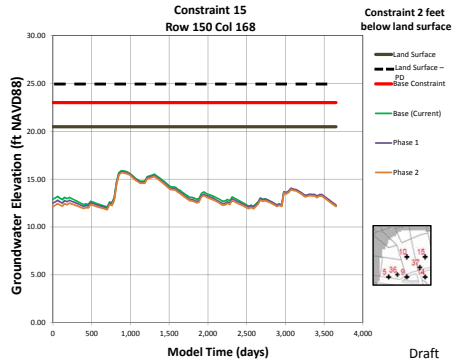

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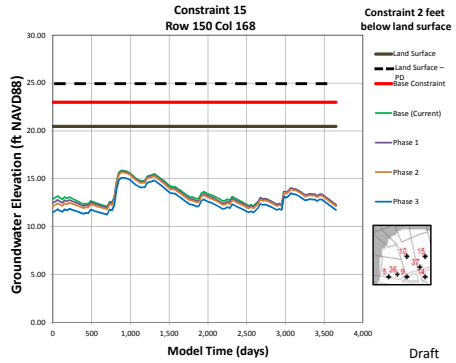

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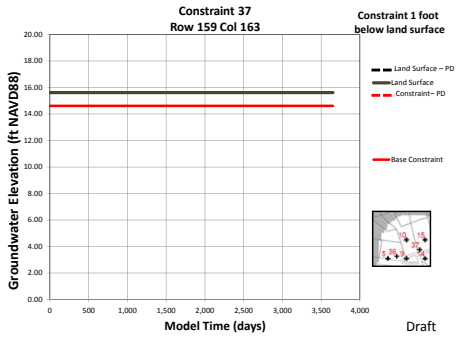
Mounding Analysis – Location 37
(Project lowers groundwater elevations)



Mounding Analysis – Location 37
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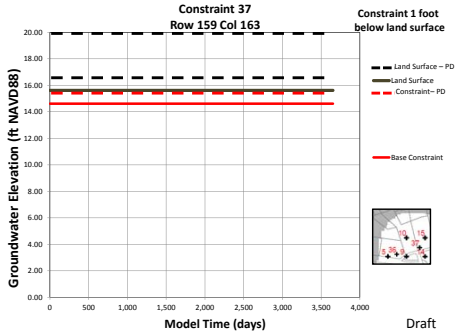
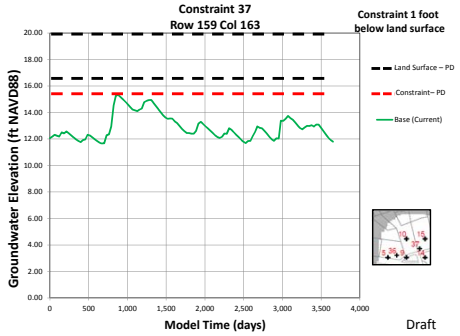


Mounding Analysis – Location 37
(Project lowers groundwater elevations)



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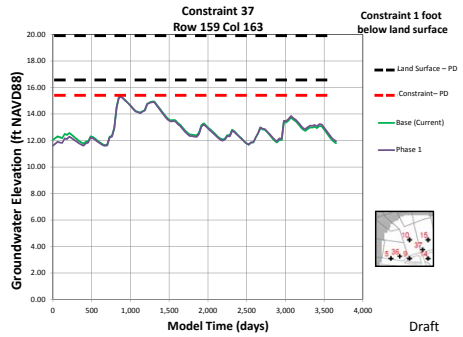

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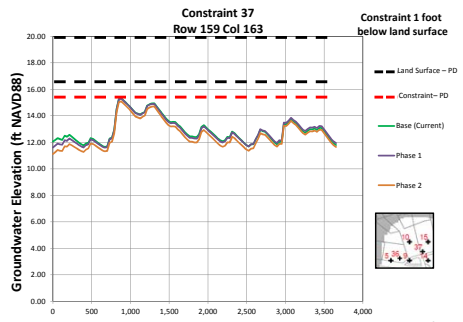

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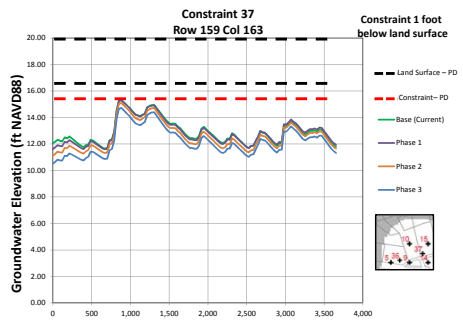

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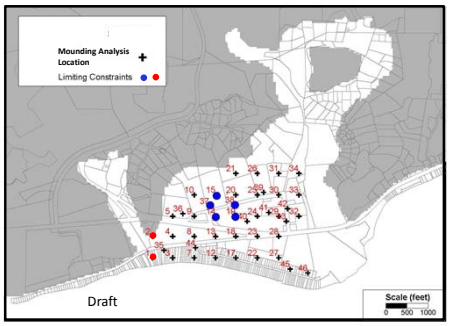
Groundwater Elevation Analysis Locations

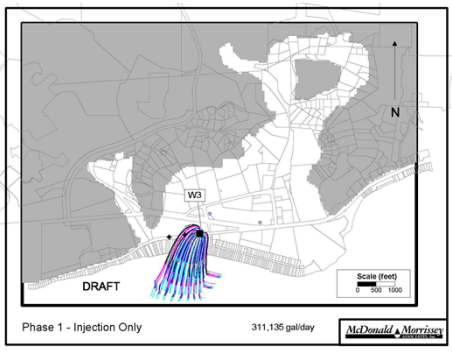


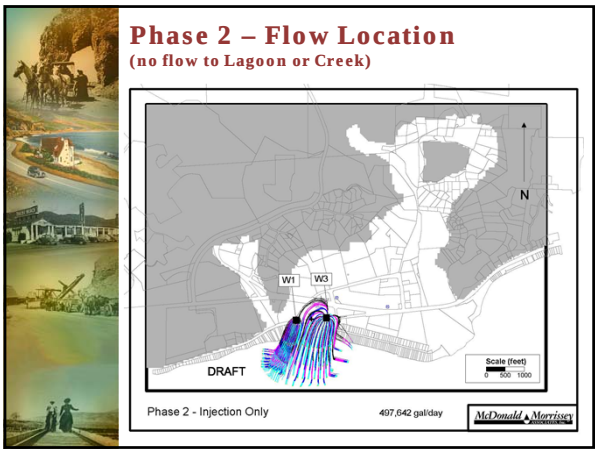
Flow Analysis – Where does the water go?

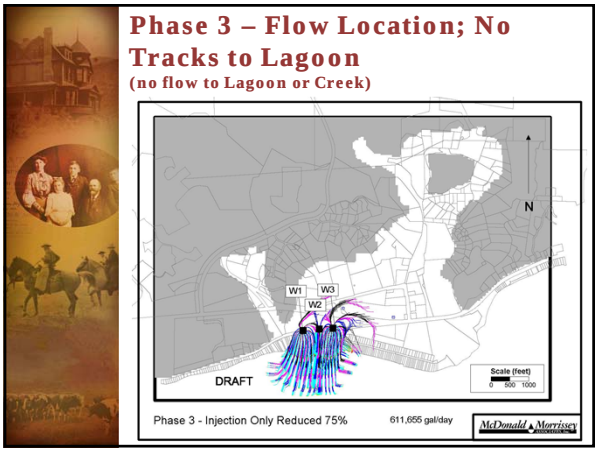
- Used MODPATH6 for particle tracking
- Simulated flow paths of injected water
- Used MODFLOW results as basis

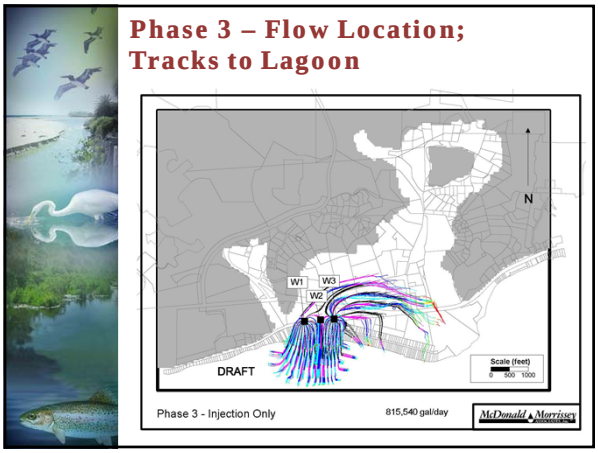
Phase 1 – Flow Location

(no flow to Lagoon or Creek)




Phase 2 – Flow Location
(no flow to Lagoon or Creek)
N
W1
W3
DRAFT
Scale (feet)
0 500 1000
Phase 2 - Injection Only
497,642 gal/day
McDonald Morrissey


Phase 3 – Flow Location; No Tracks to Lagoon
(no flow to Lagoon or Creek)
N
W1
W3
W2
DRAFT
Scale (feet)
0 500 1000
Phase 3 - Injection Only Reduced 75%
611,655 gal/day
McDonald Morrissey


Phase 3 – Flow Location; Tracks to Lagoon
N
W1
W3
W2
DRAFT
Scale (feet)
0 500 1000
Phase 3 - Injection Only
815,540 gal/day
McDonald Morrissey

Winter Canyon Percolation Modeling Goals

- Evaluate the impacts of percolation in Winter Canyon while injecting in Civic Center
- Focus on potential mounding effects at base of Canyon (mounding analysis locations 1 and 2)
- Goal is to determine if Winter Canyon percolation can be conducted jointly with injection or as back-up

Winter Canyon Percolation Modeling Results

- Winter Canyon percolation is backup to Civic Center injection
- Can percolate 50,000 gpd in Phase 1
- Can percolate 100,000 gpd in Phases 2 and 3

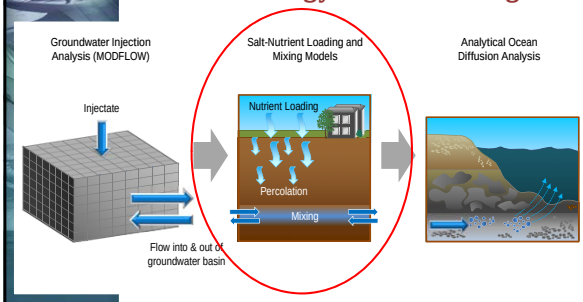
Groundwater Model Conclusions

- Groundwater Basin has sufficient injection capacity for all project phases
- Injection capacity has large safety factor
- Groundwater levels are presently close to land surface elevations in several locations
- Project will lower groundwater levels

Next Steps in Groundwater Modeling

- Sensitivity Analysis
  - Lower hydraulic conductivity and storage coefficient for Civic Center Gravels
  - Higher hydraulic conductivity for Low Permeability Layer
- Sea Level Rise Evaluation

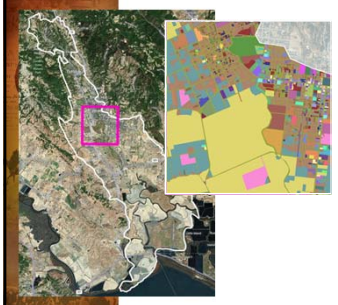
Model Strategy to Permitting



Salt-Nutrient Loading and Mixing Models

- Allows for estimate of assimilative capacity used by Project
- Results feed into ocean water quality analysis
- Utilizes water balance components from MODFLOW model
- Being conducted ‘as we speak’
- Results will simulate changes in groundwater quality

Loading Approach Uses Land Use and Applied Water



List of Land Uses

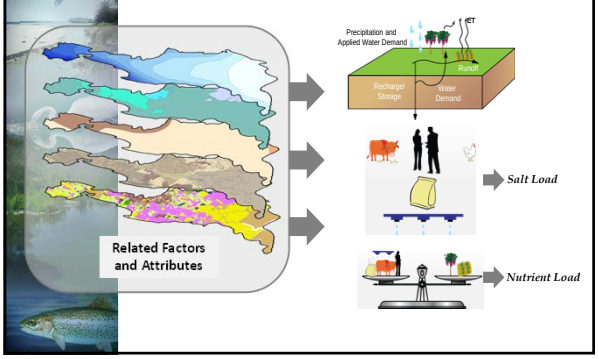
Loading Landuse

- Dairy
- Golf
- Irrigated Agriculture
- Irrigated Vine
- Non-Residential Urban
- Non-irrigated Agriculture
- Parks and Camps
- Residential
- Rural Residential
- Schools
- Vacant Commercial/Industrial
- Vacant Residential
- Water

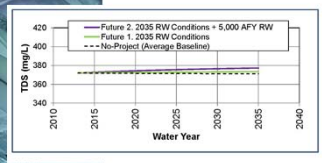
Landuse Factors

- Crop Coefficient
- Irrigation
- Fertilizer/Amendment (Salts)
- Livestock (Salts)
- Fertilizer/Amendment (Nutrients)
- Livestock (Nutrients)
- Uptake/Offtake (Nutrients)
- Other losses (Nutrients)
- Municipal Inputs (Salts)
- Municipal Inputs (Nutrients)

Basin Characteristics are Analyzed to Yield Load Estimates

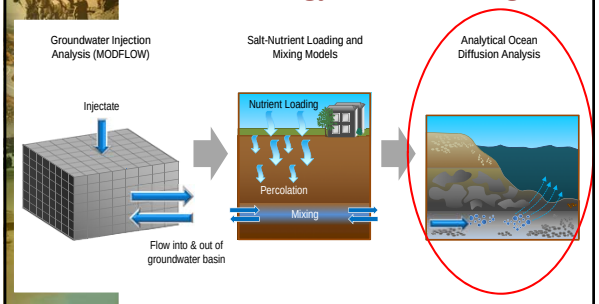


Mixing Modeling Results - Example



- Evaluate future scenario based on projected land and water use
- Compare projected future concentrations to Water Quality Objectives

Model Strategy to Permitting



Ocean Water Quality Analysis

- Analytical model (spreadsheet model) – Fischer et. al. 1979
- Using solution for two-dimensional buoyant plume
- Simulates 'fresh water' plume rising from ocean floor
- What level of ocean nutrient loading is acceptable

Meeting Agenda

I. Introductions
II. Update on Design
   - Wastewater Treatment Plant
   - Wastewater Collection System
   - Recycled Water Distribution System
III. Groundwater Injection Studies and Findings
   - Model Update
   - Salt and Nutrient Management Plan
   - Ocean Water Quality Analysis
IV. Permitting and CEQA Documentation
V. Conclusions/Next Steps/Future Meetings

Primary Permits

- Coastal Development Permit (CDP)
- Water Reclamation Requirements (WRR)/Waste Discharge Requirements (WDR)
- Salt-Nutrient Management Plan (SNMP)

Coastal Development Permit

- Coastal Development Permit is being drafted
  - Slope analysis
  - Site plan
  - Functionally-equivalent Engineer's Report
- CDP application file has been open in City Planning Department
- Draft LCP Amendment has been before Zoning Ordinance Revision and Code Enforcement Subcommittee (1/21/14)

Water Reclamation Requirements/ Waste Discharge Requirements

- Ongoing discussions with RWQCB as to requirements
- Modeling results eliminates need to consider TMDLs in setting compliance and monitoring requirements

EIR Status

- Biology/Habitat, Tree and Cultural Surveys completed
- Presently completing impacts analysis
- Work on design aspects of project – architecture and landscape architecture
- Anticipated release date for Draft EIR – April 14, 2014

Plant Site View Perspectives

View 1 – Plant Site as seen from Condos

View 2 – Plant Site as seen from Pacific Coast Highway (PCH) and Civic Center Way

Plant Site – 5-years Post-Construction

View 2 – Plant Site as seen from Pacific Coast Highway (PCH)

View 1 – Plant Site as seen from Condos

Highway (PCH) and Civic Center Way

Plant Site – Landscape at Maturity

View 3 – Plant Site as seen from Pacific Coast Highway at PCH and Civic Center Way

View 1 – Plant Site as seen from Condos

Meeting Agenda

I. Introductions
II. Update on Design
   - Wastewater Treatment Plant
   - Wastewater Collection System
   - Recycled Water Distribution System
III. Groundwater Injection Studies and Findings
   - Model Update
   - Salt and Nutrient Management Plan
   - Ocean Water Quality Analysis
IV. Permitting and CEQA Documentation
V. Conclusions/Next Steps/Future Meetings

Checkpoints to Project Implementation

Checkpoint	Yes	No
1. Is there sufficient groundwater injection capacity?	✓	
2. Will injected water flow to Malibu Creek and/or Lagoon?		✓
3. Will groundwater quality be impacted by the injection?	●	
4. Will there be ocean water quality impacts?	?	
5. Is the project permittable?	●	

● - in progress

Question for the TAC:

Have we addressed environmental concerns?

Malibu Civic Center Stakeholders Meeting

January 30, 2014
Malibu City Hall
8:30 a.m.

Meeting Agenda

- Regional Water Quality Control Board
- Community Facilities District (CFD)
- Outreach Meetings/Presentations
- Assessment District (AD)
- Wastewater Facility Design
- Questions/Comments
- Next Meeting February 27, 2014
- Adjourn

Regional Water Quality Control Board

- Joint Progress Meetings with Board Staff (Dr. Eric Wu and Dr. Don Tsai of Groundwater and Permitting Unit)
- Monthly Meetings:
  - ✓ April 17, 2013 ✓
  - ✓ June 19, 2013 ✓
  - ✓ July 17, 2013 ✓
  - ✓ August 28, 2013 ✓
  - ✓ September 24, 2013 ✓
  - ✓ October 30, 2013 ✓
  - ✓ October 30, 2013 ✓
  - ✓ November/December 8, 2013 ✓
  - ✓ January 8, 2013 ✓
  - ✓ February 12, 2013 (Next Meeting)

Regional Water Quality Control Board

- Topics of Discussion:
  - Status of the Injection and Modeling Program
  - Status of the City's Regulatory Obligations
    - CDP
    - CEQA
    - EIR
    - LCPA
  - Design Updates
  - Recycled Water Use and Opportunities
  - WDR Discharge Limits
  - WDR – Project Permits for Injection Program
  - Public Outreach
- Quarterly Progress Reports to RWQCB's Executive Officer, Mr. Sam Unger (4th Quarter Report sent 12-30-13).

Community Facilities District (CFD)

- Bond sale closed in February 2013 ✓
- City received funds in February 2013 ✓
- No other updates

Outreach Meetings/Presentations

- **August 6, 2013:** Project Technical Advisory Committee (TAC) at City Hall. ✓
- **August 17, 2013:** Project Presentation to Malibu Knolls HOA. ✓
- **August 21, 2013:** Discussions with Pepperdine University Officials regarding possible future recycled water use and opportunities. ✓
- **August 22, 2013:** Project Presentation to Wastewater Advisory Committee. ✓
- **September 12, 2013:** City Manager presentation of project update to the RWQCB. ✓
- **October 6, 2013:** Project update to Malibu Colony HOA. ✓
- **November 21, 2013:** Issued Notice of Preparation (NOP) for Draft EIR. ✓
- **December 11, 2013:** Held Public Project Scoping Meeting. ✓
- **December 11, 2013:** Held Nov/Dec Stakeholders Meeting. ✓
- **December 12, 2013:** Held 3rd Project Technical Advisory Committee (TAC). ✓

Assessment District (AD)

- **June 24, 2013:** Sent out RFP for Assessment Engineering Consultant. ✓
- **August 1, 2013:** Two proposals received. ✓
- **September 23, 2013:** City Council approved David Taussig & Assoc., Inc. as the Assessment Engineering Consultant for the formation of the Assessment District for the project. ✓
- **October 3, 2013:** Notice to Proceed/Kick-off Meeting. ✓
- **December 11, 2013:** At Stakeholders Meeting, Presentation of Preliminary Assessment Analysis for Phase 1. ✓
- **Current:** Further refining analysis as additional information is obtained. ✓

Wastewater Facility Design

- Groundwater Injection Study
  - Phase 1 – cursory modeling and scoping ✓
  - Phase 2 – preliminary feasibility assessment ✓
  - Phase 3 – monitoring & injection wells
    - Construction ✓
    - Testing ✓
    - Analysis ✓
    - Modeling (preliminary results are positive) ✓
    - Injection and Pre-design (began this task based on positive modeling results) ✓
    - At last Stakeholders Meeting, 1) Presentation of Salt & Nutrient Management Plan (SNMP), 2) Groundwater Management Plan (GWMP). ✓

Wastewater Facility Design

- Regulatory Obligations
  - LCPA
    - Amend existing site use for Public Facilities ✓
    - Zoning Ordinance Revisions & Code Enforcement Subcommittee (ZORACES) (This item was heard on January 28, 2014) ✓
    - Planning Commission (Scheduled for Public Hearing on Feb. 18, 2014) ✓
    - City Council
    - Coastal Commission for certification
  - EIR
    - Project description ✓
    - NOP ✓
    - Scoping Meeting ✓
    - Administrative Draft EIR
    - Draft EIR
    - ERB

+ Planning Commission
+ City Council for certification for Final EIR

Wastewater Facility Design

- CDP
  - Application Package
    - Project Plans
    - Preliminary Reports
      - Biology Assessment
      - Cultural Resources
      - Geology
      - Tree Survey
  - ERB
  - Planning Commission
  - City Council

Wastewater Facility Design

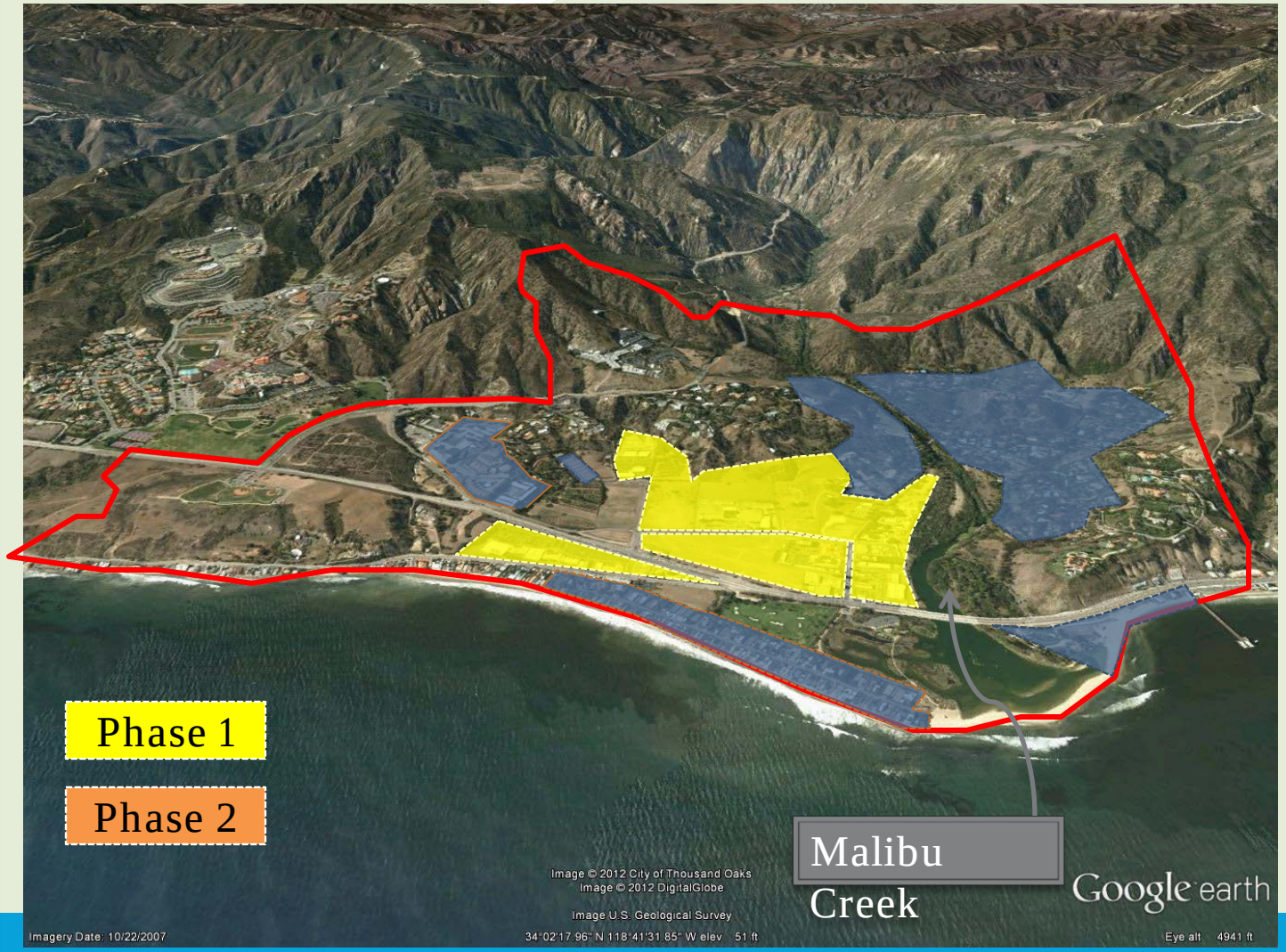
- Design
  - Treatment Plant Facility
  - Injection System
  - Collection System
  - Recycled Water System
  - **Current:** ***Plans are 70% complete!***

Questions / Comments

Next meeting February 27, 2014

Thank you

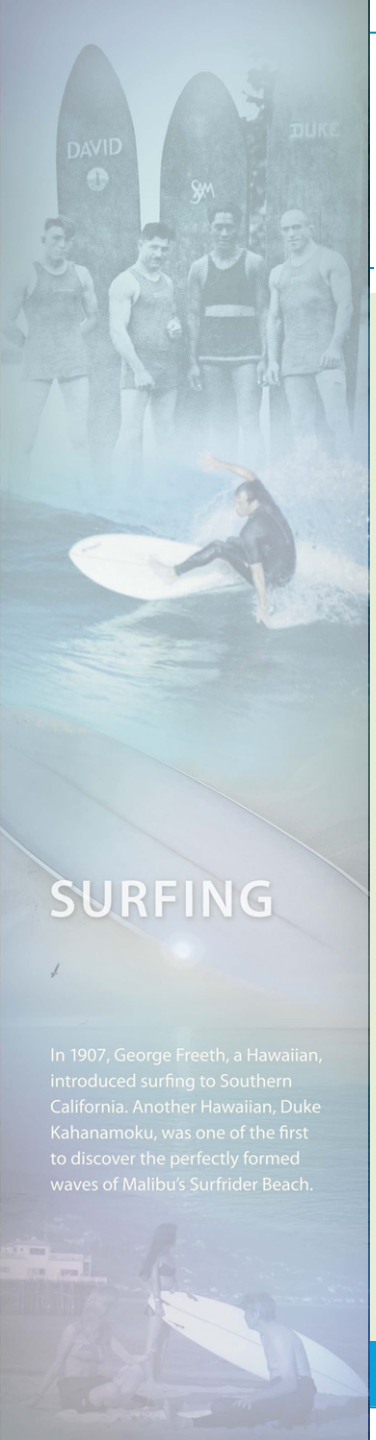
Prohibition Area

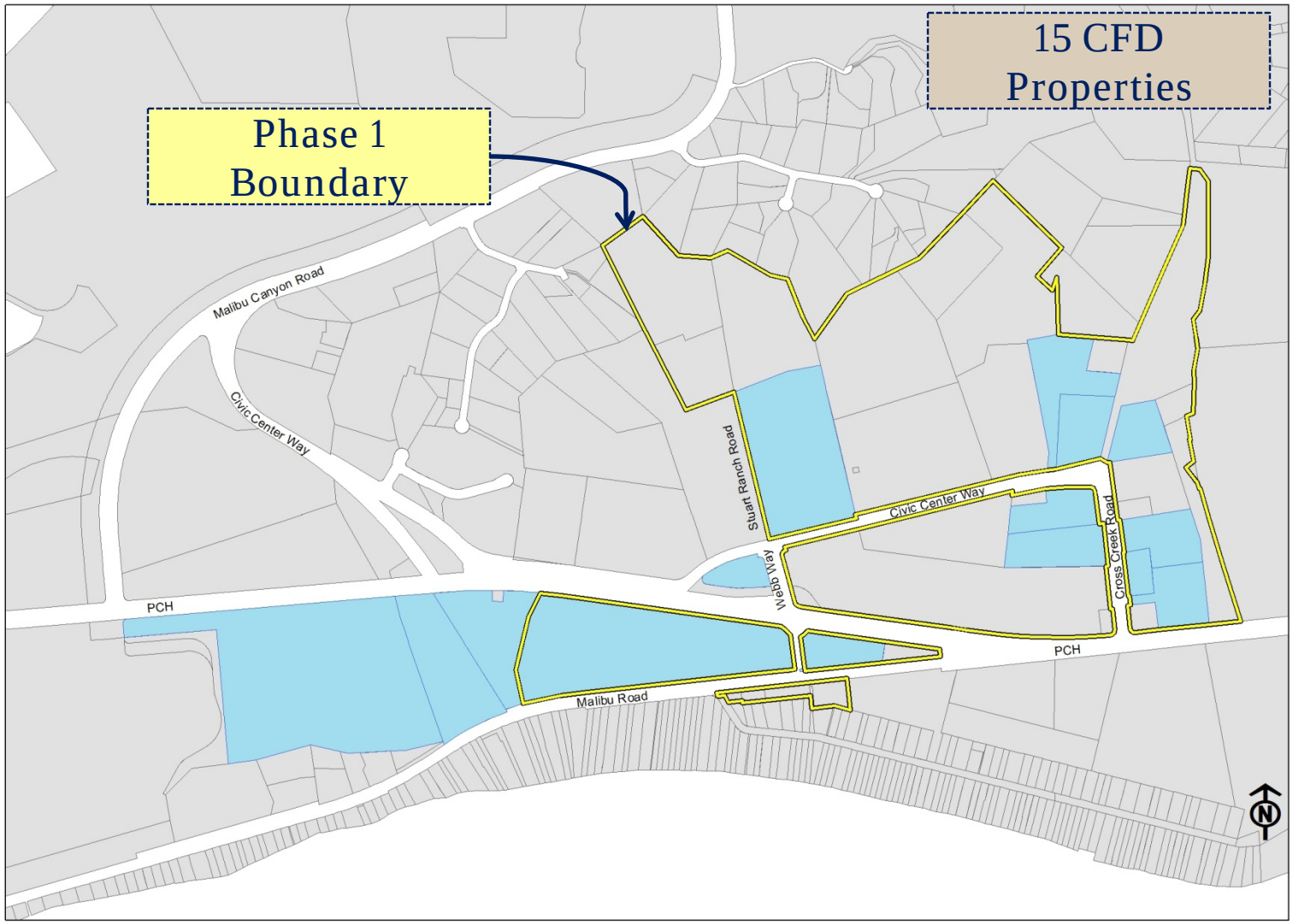


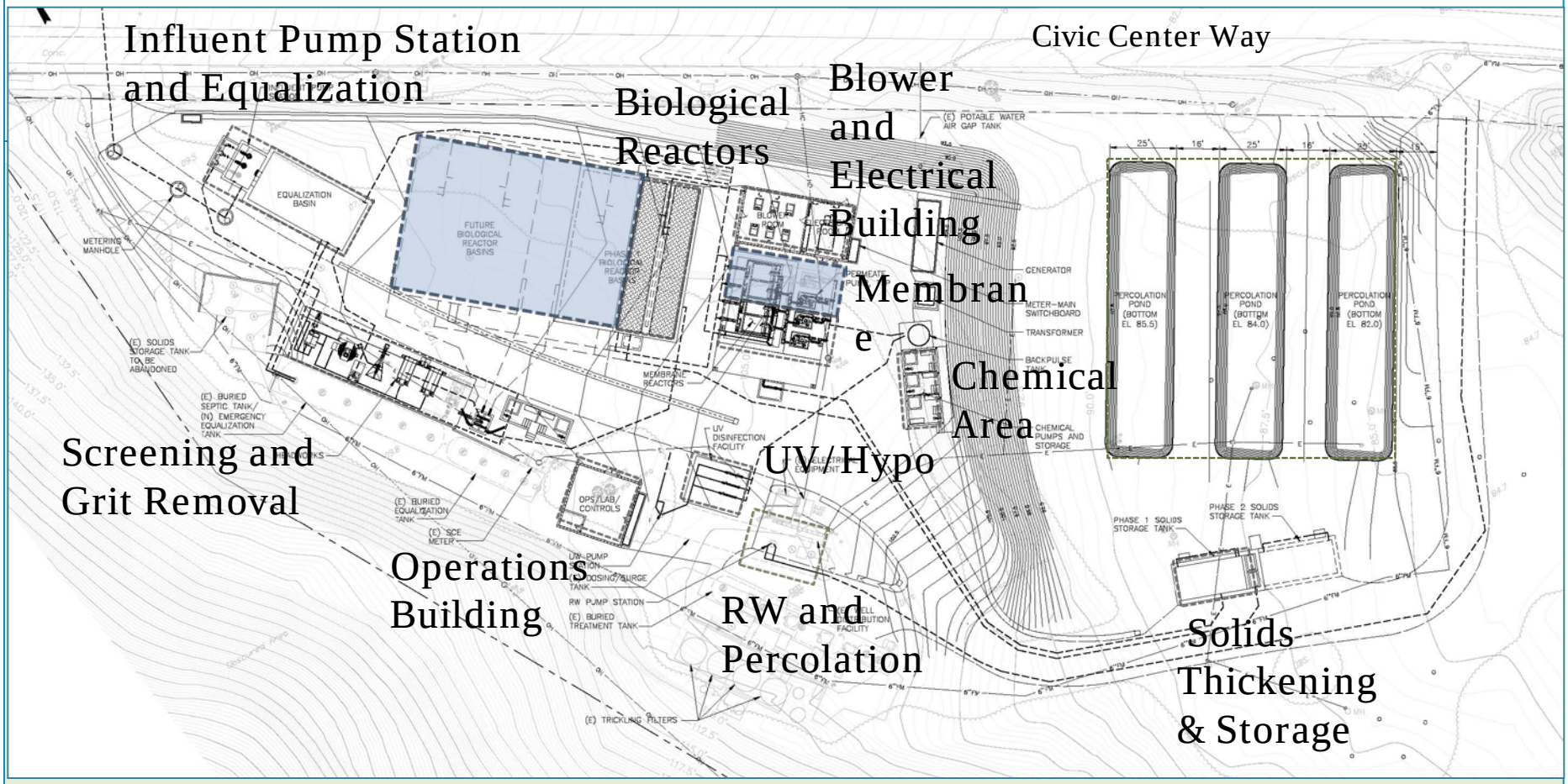
CHUMASH

Humaliwo, "surf sounds loudly," was a Chumash Indian village on the high ground at the foot of Malibu Canyon where the creek ran into the ocean.

Community Facilities District






Influent Pump Station and Equalization
Civic Center Way
Biological Reactors
Blower and Electrical Building
Membrane
Chemical Area
UV/Hypo
Screening and Grit Removal
Operations Building
RW and Percolation
Solids Thickening & Storage
EQUALIZATION BASIN
FUTURE BIOLOGICAL REACTOR BASINS
PHASE 1 BIOLOGICAL REACTOR BASINS
BLOWER ROOM
MEMBRANE REACTORS
(E) POTABLE WATER AIR GAP TANK
GENERATOR
METER-MAIN SWITCHBOARD
TRANSFORMER
BACKPULSE TANK
CHEMICAL PUMPS AND STORAGE
PERCOLATION POND (BOTTOM EL 85.5)
PERCOLATION POND (BOTTOM EL 84.0)
PERCOLATION POND (BOTTOM EL 82.0)
PHASE 1 SOLIDS STORAGE TANK
PHASE 2 SOLIDS STORAGE TANK
UV DISINFECTION FACILITY
OPS/LAB/ CONTROLS
(E) BURIED EQUALIZATION TANK
(E) SCE METER
RW PUMP STATION
(E) BURIED TREATMENT TANK
(E) TRICKLING FILTERS
METERING MANHOLE
(E) SOLIDS STORAGE TANK TO BE ABANDONED
(E) BURIED SEPTIC TANK/ (N) EMERGENCY EQUALIZATION TANK

Stakeholder Meeting

Civic Center Wastewater Treatment Facility

February 27, 2014

RMC

Meeting Agenda

I. Introductions
II. Project Implementation
III. Groundwater Injection Studies and Findings
- Model Update
- Salt and Nutrient Management Plan
- Ocean Water Quality Analysis

IV. CEQA/EIR Analysis
V. Conclusions

Meeting Agenda

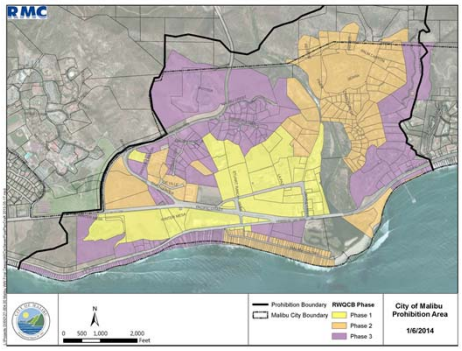
I. Introductions
II. Project Implementation
III. Groundwater Injection Studies and Findings
- Model Update
- Salt and Nutrient Management Plan
- Ocean Water Quality Analysis

IV. CEQA/EIR Analysis
V. Conclusions

Project Implementation

- Phase 1 Project
  - Wastewater collection system
  - Civic Center Wastewater Treatment Facility
  - Recycled water distribution pipeline
- Phase 2 Project
  - Wastewater collection system pipeline extension
  - Civic Center Wastewater Treatment Facility expansion
  - Recycled water distribution pipeline
- Phase 3 Project
  - Wastewater collection system pipeline extension
  - Recycled water distribution pipeline

Project Phasing



Priorities for Reuse

1. Maximize reuse for landscape irrigation
2. Maximize reuse for other non-potable uses
3. Groundwater injection
4. Winter Canyon percolation

Meeting Agenda

I. Introductions
II. Project Implementation
III. Groundwater Injection Studies and Findings
   - Model Update
   - Salt and Nutrient Management Plan
   - Ocean Water Quality Analysis
IV. CEQA/EIR Analysis
V. Conclusions

Checkpoints to Project Implementation

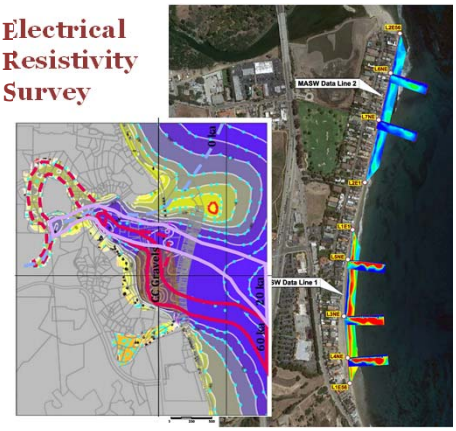
Checkpoint	Yes	No
1. Has recycled water reuse been maximized?		
2. Is there sufficient groundwater injection capacity?		
3. Will injected water flow to Malibu Creek and/or Lagoon?		
4. Will groundwater quality be impacted by the injection?		
5. Will there be ocean water quality impacts?		
6. Is the project permittable?		

2013 Field Program

- 9 additional monitoring wells (7 to bedrock; 2 shallow alluvium)
- Shoreline Resistivity Survey
- Pumping and Injection Testing
- Groundwater Model Update (in progress)

Additional Monitoring Wells

Electrical Resistivity Survey



Injection Testing

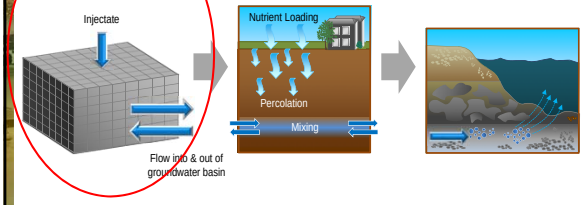
- Step-Injection Testing
- 24-hour Continuous Injection Testing
- 7-day Continuous Injection Testing

Modeling Strategy to Support Design and Analysis

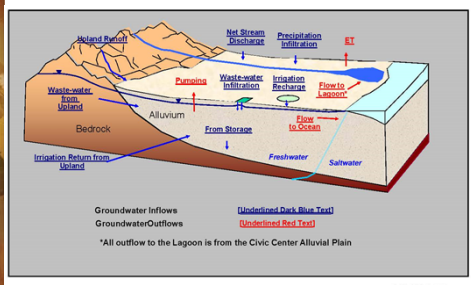
Groundwater Injection Analysis (MODFLOW)

Salt-Nutrient Loading and Mixing Models

Analytical Ocean Diffusion Analysis



Sources and Sinks for Groundwater Flow System

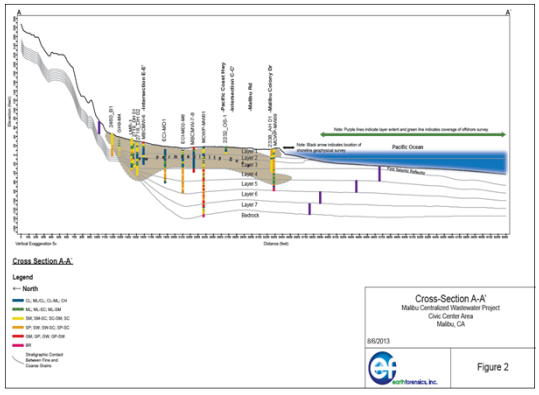


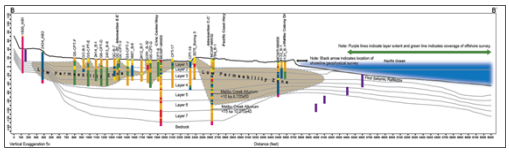
Groundwater Inflows [Underlined Dark Blue Text]

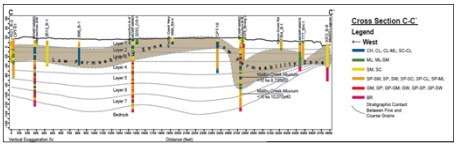
GroundwaterOutflows [Underlined Red Text]

*All outflow to the Lagoon is from the Civic Center Alluvial Plain

Source: Malibu16_PEST







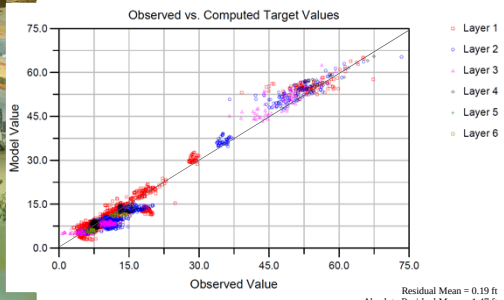
Groundwater Model (MODFLOW) Update

- Update Hydrogeology
- Calibration
- Scenario Planning and Analysis
- Sensitivity Analyses

Model Calibration Strategy

- Compare model-calculated ground water elevations to field measurements for transient simulation 2003-2012
- Compare model-calculated hydraulic responses with field observations during injection testing

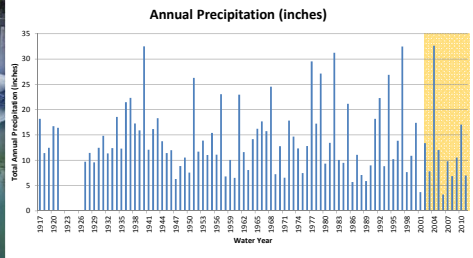
Recalibration Shows Good Results



Model Application Runs

- Effects of proposed injection on groundwater elevations
- Maximum injection rates
- Effects of proposed percolation in Winter Canyon

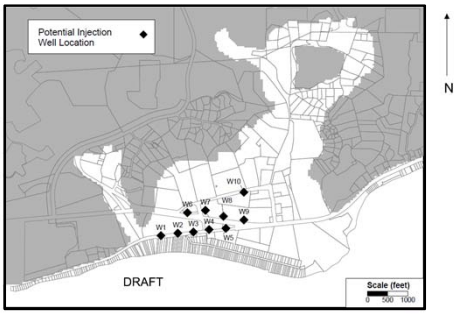
Model Simulation Period



Scenarios Evaluated

- Baseline (current conditions)
- All disposal to injection (no percolation or irrigation)
  - Phase 1
  - Phase 2
  - Phase 3
- All disposal to injection and Winter Canyon percolation
  - Phase 1
  - Phase 2
  - Phase 3

Possible Injection Well Locations



Model Results Demonstrate Sufficient Injection Capacity

	Phase 1	Phase 2	Phase 3
Particles to Lagoon?	No	No	No
Design Requirements			
Total Recycled Water Produced - No Irrigation (gpd)	191,000	361,000	507,000
Estimated Annual Reuse for Irrigation (gpd)	68,000	176,000	299,000
Needed Injection Rate (gpd)	123,000	185,000	208,000
Model Results (assuming no reuse for irrigation)			
Available Injection Capacity (gpd)	311,135	497,642	611,654
Percent Factor of Safety	252%	269%	295%

Draft

Model Results Demonstrate Sufficient Injection Capacity

	Phase 1	Phase 2	Phase 3
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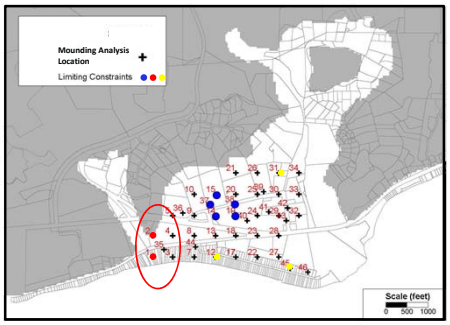
Needed Injection Rate (gpd)	123,000	185,000	208,000
Model Results (assuming no reuse for irrigation)			
Available Injection Capacity (gpd)	311,135	497,642	611,654
Percent Factor of Safety	252%	269%	295%
Winter Canyon Backup Percolation Capacity (gpd)	50,000	100,000	100,000

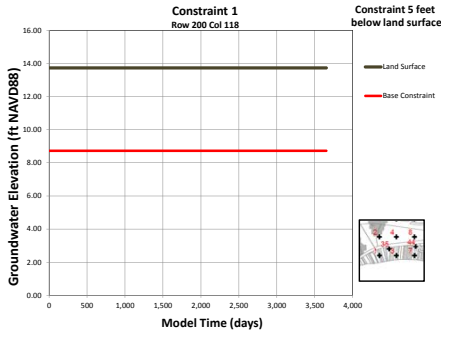
Draft

Groundwater Elevation Analysis Locations

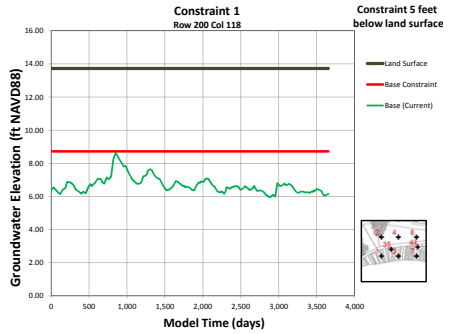


Mounding Analysis – Location 1

(Project lowers groundwater elevations)



Mounding Analysis – Location 1
(Project lowers groundwater elevations)



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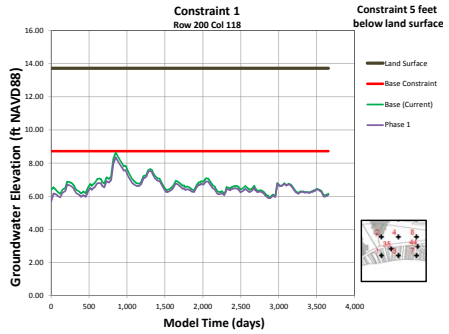
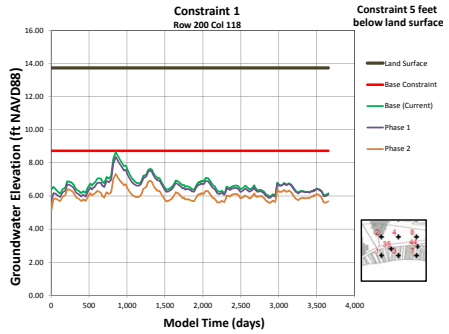
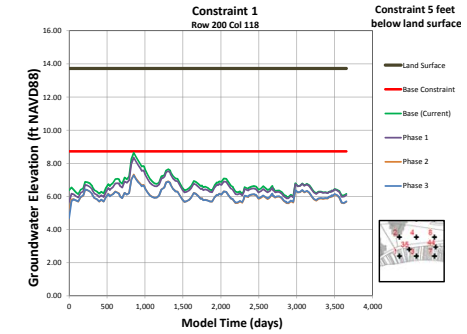


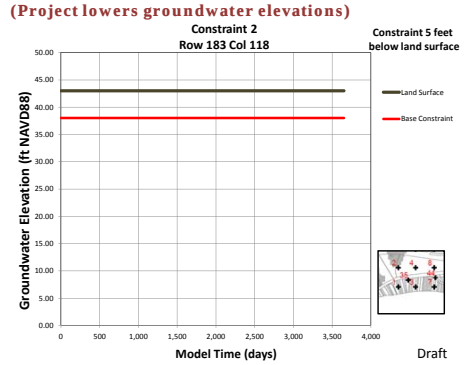
Mounding Analysis – Location 1
(Project lowers groundwater elevations)



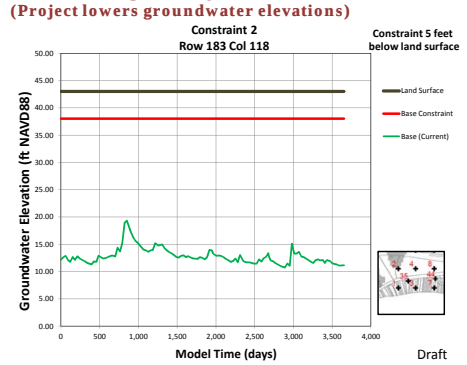
Mounding Analysis – Location 1
(Project lowers groundwater elevations)



Mounding Analysis – Location 2
(Project lowers groundwater elevations)

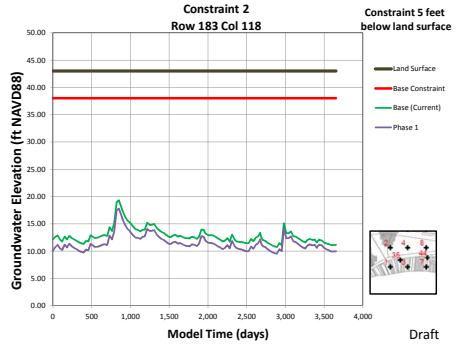


Mounding Analysis – Location 2
(Project lowers groundwater elevations)



Mounding Analysis – Location 2

(Project lowers groundwater elevations)



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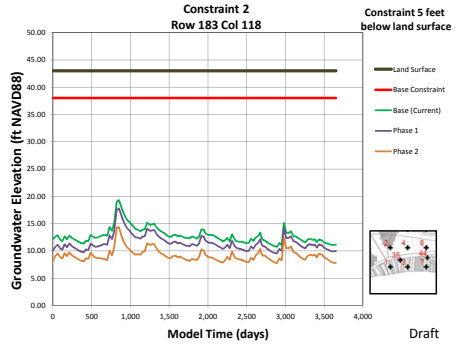
Mounding Analysis – Location 2

(Project lowers groundwater elevations)



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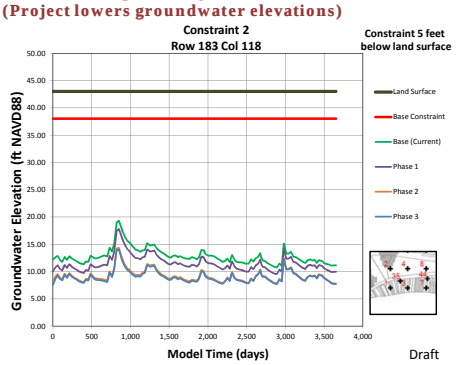
Mounding Analysis – Location 2

(Project lowers groundwater elevations)



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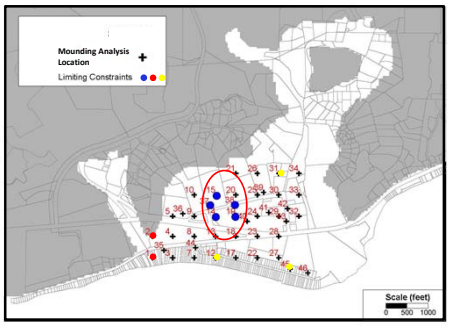
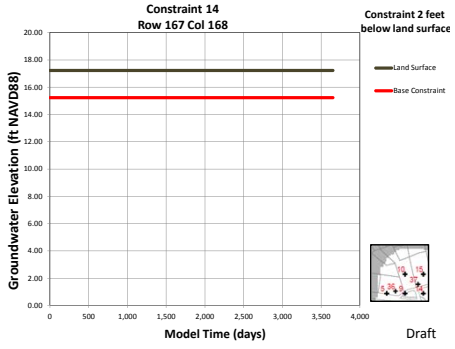
Groundwater Elevation Analysis Locations



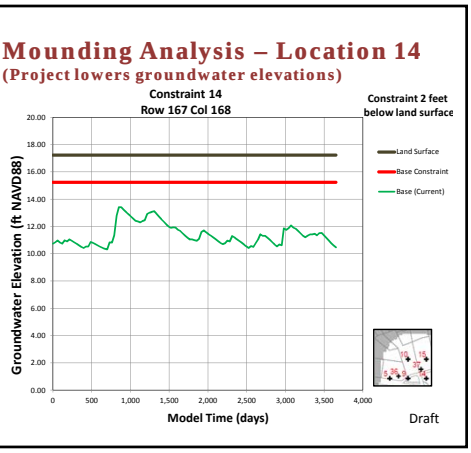
Mounding Analysis – Location 14

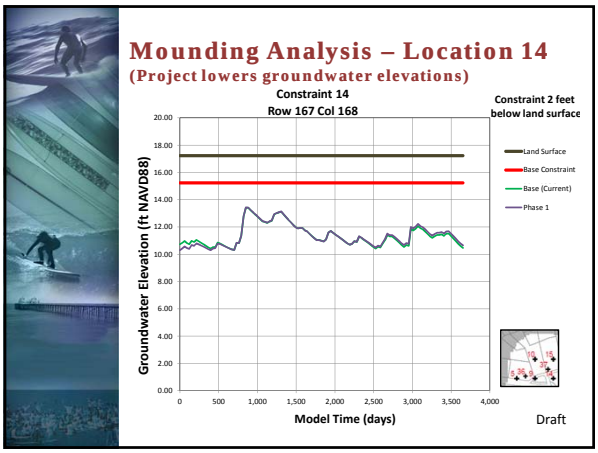
(Project lowers groundwater elevations)

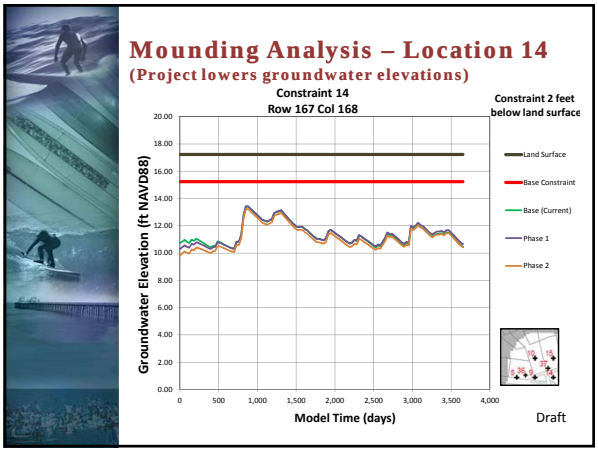


Mounding Analysis – Location 14

(Project lowers groundwater elevations)




Mounding Analysis – Location 14
(Project lowers groundwater elevations)
Constraint 14
Row 167 Col 168
Constraint 2 feet below land surface
Groundwater Elevation (ft NAVD88)
Model Time (days)
Land Surface
Base Constraint
Base (Current)
Phase 1
Draft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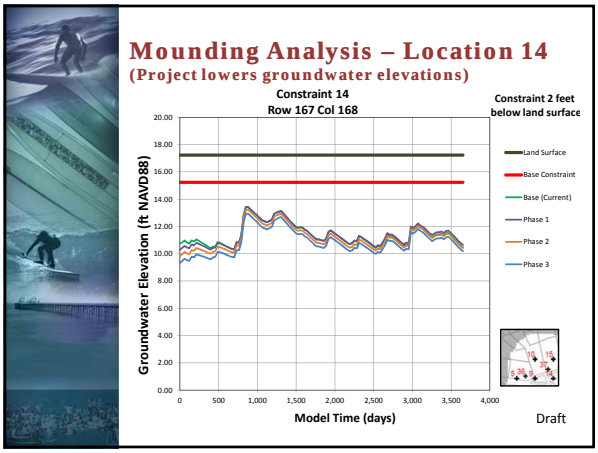
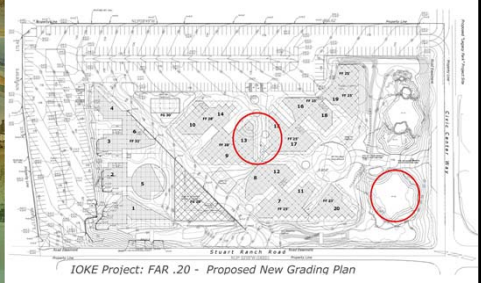
(Project lowers groundwater elevations)
Constraint 14
Row 167 Col 168
Constraint 2 feet below land surface
Groundwater Elevation (ft NAVD88)
Model Time (days)
Land Surface
Base Constraint
Base (Current)
Phase 1
Phase 2
Draft

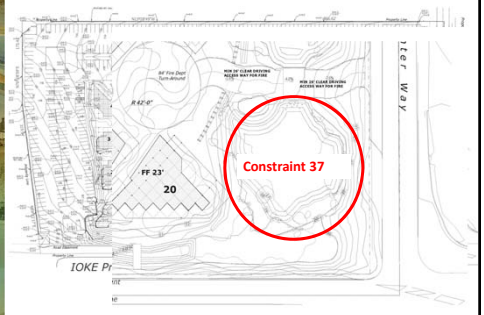

Mounding Analysis – Location 14
(Project lowers groundwater elevations)
Constraint 14
Row 167 Col 168
Constraint 2 feet below land surface
Groundwater Elevation (ft NAVD88)
Model Time (days)
Land Surface
Base Constraint
Base (Current)
Phase 1
Phase 2
Phase 3
Draft

Land Surface at Limiting Location – Post Development



IOKE Project: FAR .20 - Proposed New Grading Plan

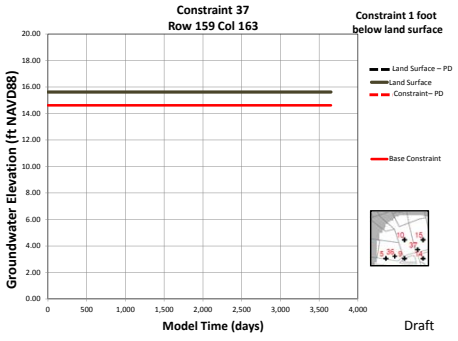
Land Surface at Limiting Location – Post Development



IOKE Pr

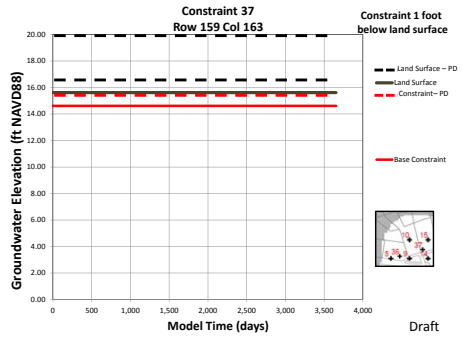
Mounding Analysis – Location 37

(Project lowers groundwater elevations)

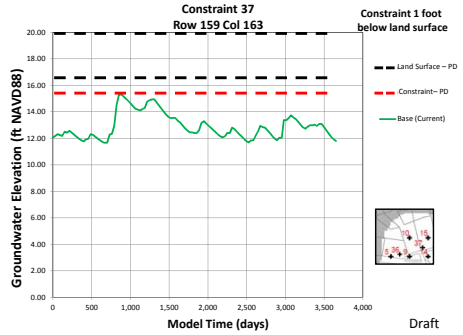


Draft

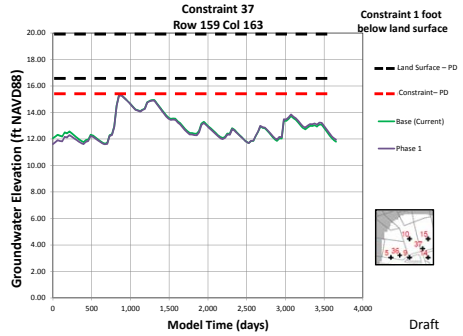
Mounding Analysis – Location 37
(Project lowers groundwater elevations)



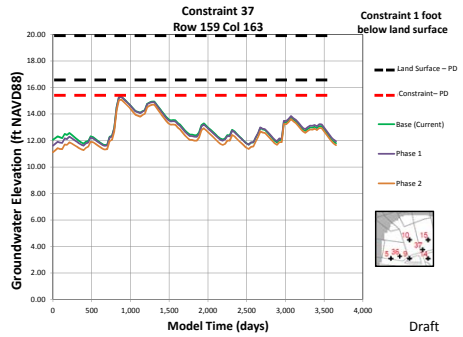
Mounding Analysis – Location 37
(Project lowers groundwater elevations)



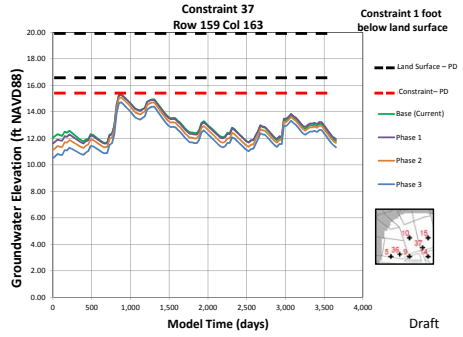
Mounding Analysis – Location 37
(Project lowers groundwater elevations)



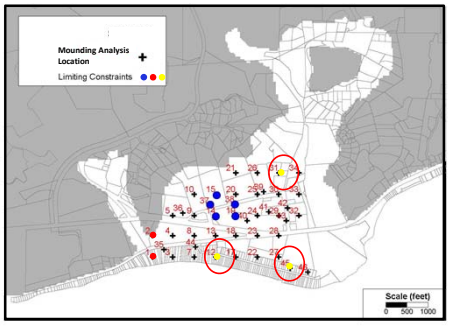
Mounding Analysis – Location 37
(Project lowers groundwater elevations)



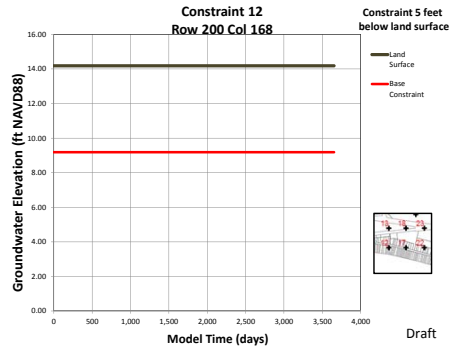
Mounding Analysis – Location 37
(Project lowers groundwater elevations)



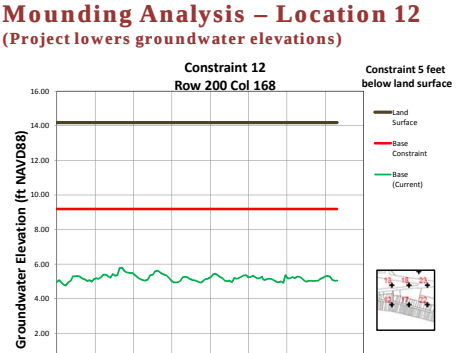
Groundwater Elevation Analysis Locations



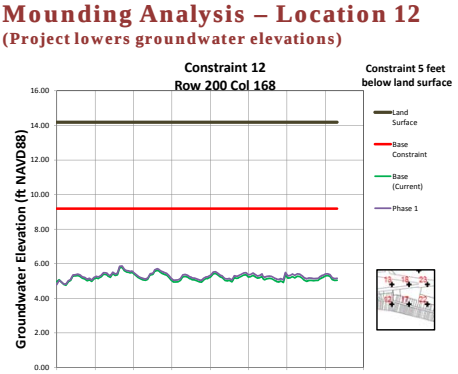
Mounding Analysis – Location 12
(Project lowers groundwater elevations)



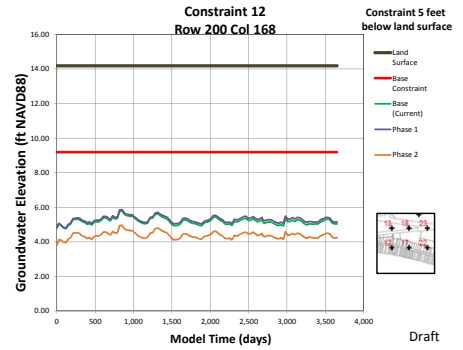
Mounding Analysis – Location 12
(Project lowers groundwater elevations)



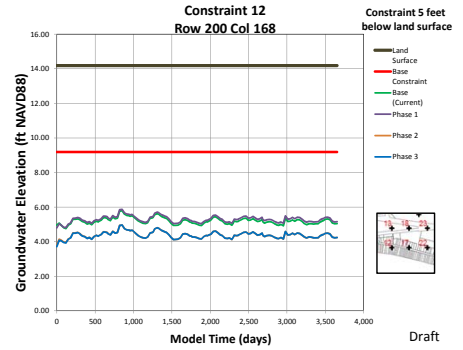
Mounding Analysis – Location 12
(Project lowers groundwater elevations)



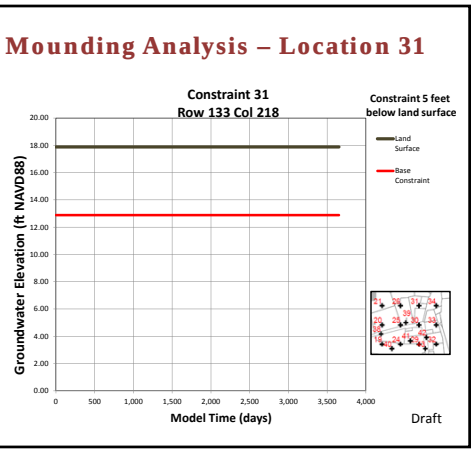
Mounding Analysis – Location 12
(Project lowers groundwater elevations)



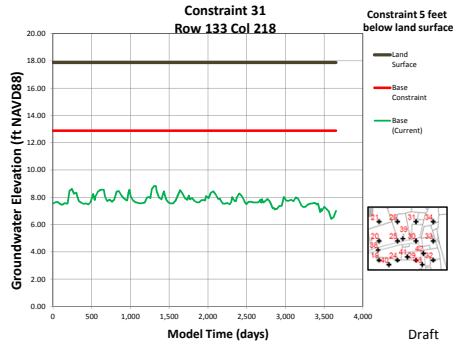
Mounding Analysis – Location 12
(Project lowers groundwater elevations)



Mounding Analysis – Location 31

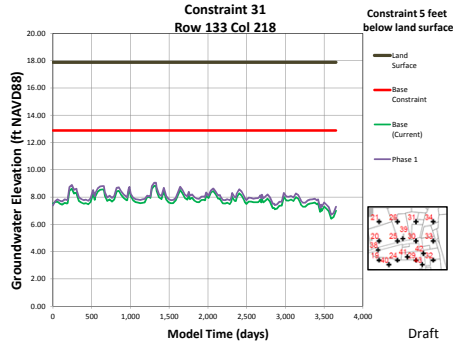


Mounding Analysis – Location 31



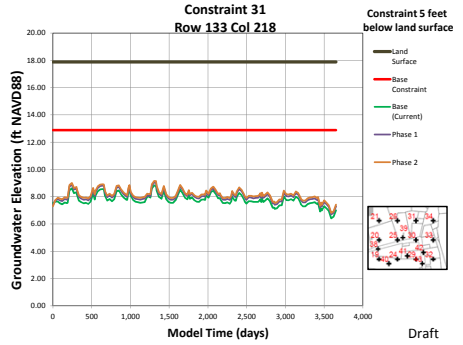
Draft

Mounding Analysis – Location 31



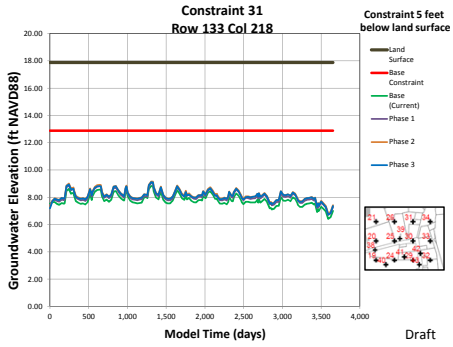
Draft

Mounding Analysis – Location 31

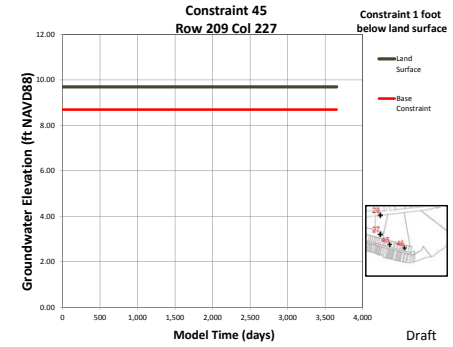


Draft

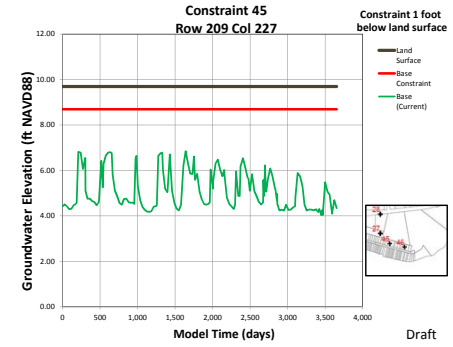
Mounding Analysis – Location 31



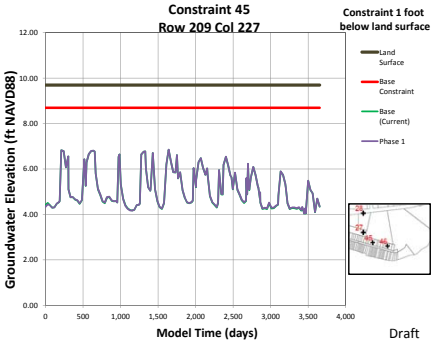
Mounding Analysis – Location 45
(Project lowers groundwater elevations)



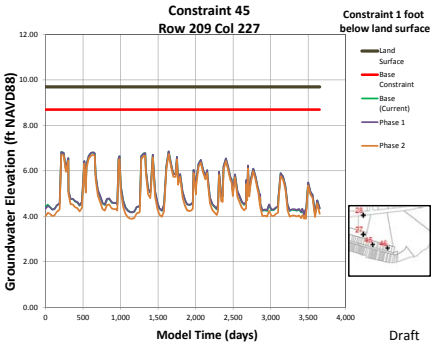
Mounding Analysis – Location 45
(Project lowers groundwater elevations)



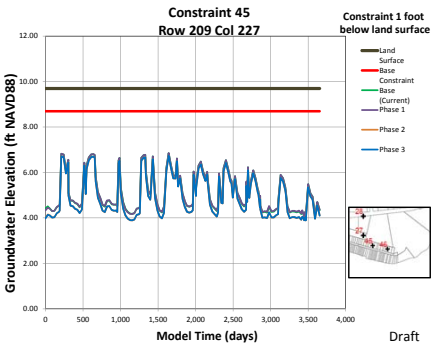
Mounding Analysis – Location 45
(Project lowers groundwater elevations)



Mounding Analysis – Location 45
(Project lowers groundwater elevations)



Mounding Analysis – Location 45
(Project lowers groundwater elevations)

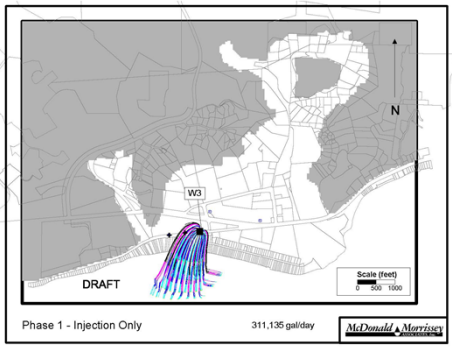


Flow Analysis – Where does the injected water go?

- Used MODPATH6 for particle tracking
- Simulated flow paths of injected water
- Used MODFLOW results as basis

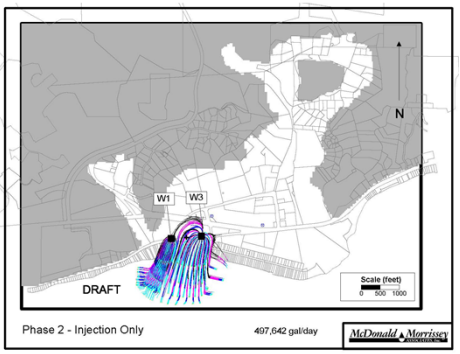
Phase 1 – Flow Location

(no flow to Lagoon or Creek)

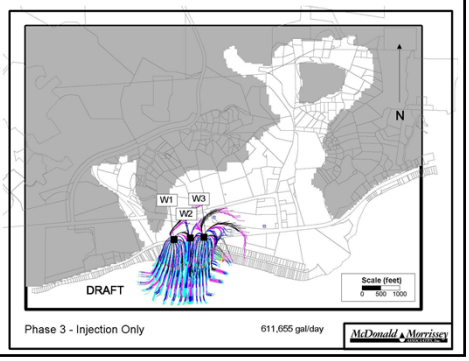


Phase 2 – Flow Location

(no flow to Lagoon or Creek)



Phase 3 – Flow Location
(no flow to Lagoon or Creek)



Winter Canyon Percolation Modeling Goals

- Evaluate the impacts of percolation in Winter Canyon while injecting in Civic Center
- Focus on potential mounding effects at base of Canyon (mounding analysis locations 1 and 2)
- Goal is to determine if Winter Canyon percolation can be conducted jointly with injection or as back-up

Winter Canyon Percolation Modeling Results

- Winter Canyon percolation is backup to Civic Center injection
- Can percolate 50,000 gpd in Phase 1
- Can percolate 100,000 gpd in Phases 2 and 3

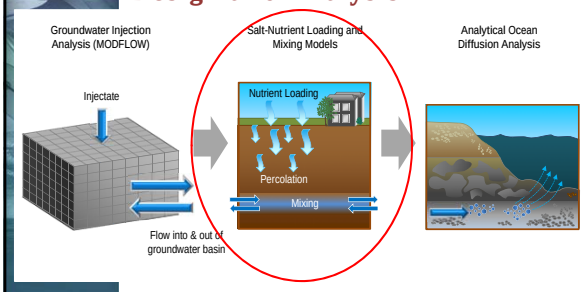
Groundwater Model Conclusions

- Groundwater Basin has sufficient injection capacity for all project phases
- Injection capacity has large safety factor
- Groundwater levels are presently close to land surface elevations in several locations
- Project will lower groundwater levels

Next Steps in Groundwater Modeling

- Sensitivity Analysis
  - Lower hydraulic conductivity and storage coefficient for Civic Center Gravels
  - Higher hydraulic conductivity for Low Permeability Layer
- Sea Level Rise Evaluation

Model Strategy to Support Design and Analysis



Salt-Nutrient Loading and Mixing Models

- Allows for estimate of assimilative capacity used by Project
- Results feed into ocean water quality analysis
- Utilizes water balance components from MODFLOW model
- Being conducted 'as we speak'
- Results will simulate changes in groundwater quality

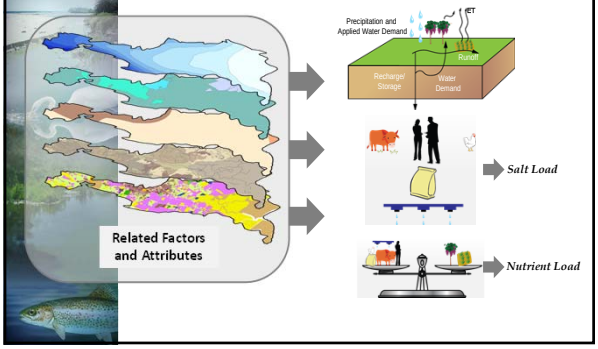
Loading Approach Uses Land Use and Applied Water

List of Land Uses

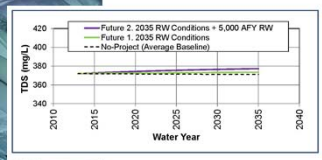
Loading Landuse
- Dairy
- Golf
- Irrigated Agriculture
- Irrigated Vine
- Non-Residential Urban
- Non-irrigated Agriculture
- Parks and Camps
- Residential
- Rural Residential
- Schools
- Vacant Commercial/Industrial
- Vacant Residential
- Water

Landuse Factors
- Crop Coefficient
- Irrigation
- Fertilizer/Amendment (Salts)
- Livestock (Salts)
- Fertilizer/Amendment (Nutrients)
- Livestock (Nutrients)
- Uptake/Offtake (Nutrients)
- Other losses (Nutrients)
- Municipal Inputs (Salts)
- Municipal Inputs (Nutrients)

Basin Characteristics are Analyzed to Yield Load Estimates

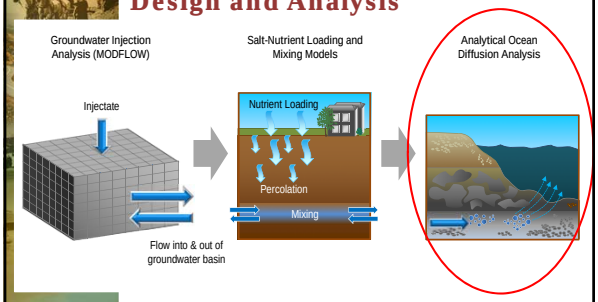


Mixing Modeling Results - Example



- Evaluate future scenario based on projected land and water use
- Compare projected future concentrations to Water Quality Objectives

Model Strategy to Support Design and Analysis



Ocean Water Quality Analysis

- Compare nitrate load from groundwater basin with Project to that from Hyperion
- Consider Ocean Plan water quality objectives

Meeting Agenda

I. Introductions
II. Project Implementation
III. Groundwater Injection Studies and Findings
   - Model Update
   - Salt and Nutrient Management Plan
   - Ocean Water Quality Analysis
IV. CEQA/EIR Analysis
V. Conclusions

EIR Status

- Biology/Habitat, Tree and Cultural Surveys completed
- Presently completing impacts analysis
- Work on design aspects of project – architecture and landscape architecture
- Anticipated release date for Draft EIR – April 14, 2014

Plant Site View Perspectives

View 1 – Plant Site as seen from Condos

Plant Site View Perspectives

View 2 – Plant Site as seen from Pacific Coast Highway (PCH)

Plant Site View Perspectives

View 3 – Plant Site as seen from Intersection of PCH and Civic Center Way

Plant Site – 5-years Post-Construction

View 1 – Plant Site as seen from Condos

Draft

Plant Site – 5-years Post-Construction

View 2 – Plant Site as seen from Pacific Coast Highway (PCH)

Draft

Plant Site – 5-years Post-Construction

View 3 – Plant Site as seen from Intersection of PCH and Civic Center Way

Draft

Plant Site – Landscape at Maturity

View 1 – Plant Site as seen from Condos

Draft

Plant Site – Landscape at Maturity

View 2 – Plant Site as seen from Pacific Coast Highway (PCH)

Draft

Plant Site – Landscape at Maturity

View 3 – Plant Site as seen from Intersection of PCH and Civic Center Way

Draft

Meeting Agenda

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Checkpoints to Project Implementation

Checkpoint	Yes	No
1. Has recycled water reuse been maximized?	✓	
2. Is there sufficient groundwater injection capacity?	✓	
3. Will injected water flow to Malibu Creek and/or Lagoon?		✓
4. Will groundwater quality be impacted by the injection?	●	
5. Will there be ocean water quality impacts?	?	
6. Is the project permittable?	●	

● - in progress

Questions?

Stakeholder Meeting
Civic Center Wastewater Treatment Facility

February 27, 2014

RMC