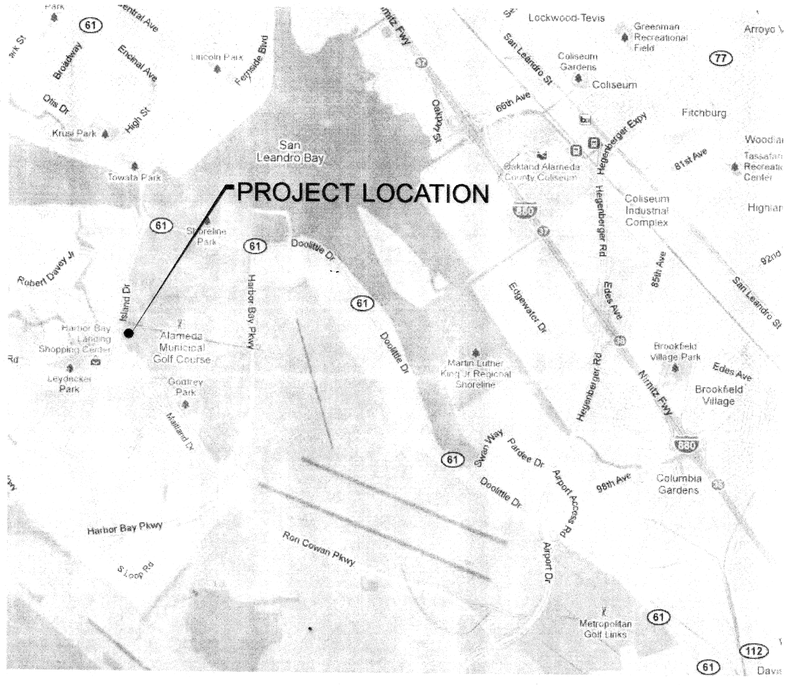
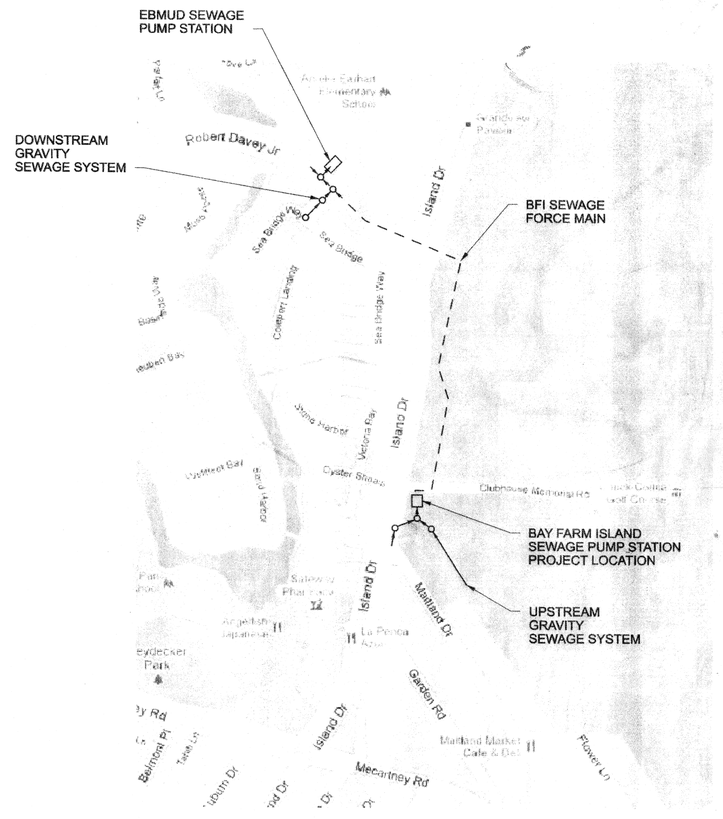
CITY OF ALAMEDA

BAY FARM ISLAND PUMP STATION REHABILITATION PROJECT

VOLUME 2 - DRAWINGS



VICINITY MAP
NTS



LOCATION MAP
NTS

WATERWORKS ENGINEERS
JULY 2011

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PERMIT CENTER
ALAMEDA, CA 94501

AS-BUILTS

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY DURBIN
No. C57194
Exp. 9-30-12
CIVIL
STATE OF CALIFORNIA
07-08-11

FOR INFORMATION REGARDING THIS PROJECT CONTACT:

TIMOTHY DURBIN, PE
(510) 428-9590 EXT.112

FILENAME: 1105D-G001.dgn PLOT DATE: 08-JUL-2011 PLOT TIME: 08:46:08

9349-95

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CB11-04427

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GENERAL NOTE

NO WORK SHALL BE CONCEALED UNTIL AFTER INSPECTION AND APPROVAL BY PROPER AUTHORITIES. IF WORK IS CONCEALED WITHOUT INSPECTION AND APPROVAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK REQUIRED TO OPEN AND RESTORE THE CONCEALED AREAS IN ADDITION TO ALL REQUIRED MODIFICATIONS. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS FOR ALL WORK AND SHALL HAVE HIS WORK INSPECTED BY STATE AND LOCAL AGENCIES HAVING APPLICABLE JURISDICTION. CALL 510-747-6800 BETWEEN 7:30 AM TO 8:30 AM TO SCHEDULE ALL INSPECTIONS.

REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. DURBIN No. C 24455 Exp. 3-31-12 CIVIL STATE OF CALIFORNIA

07-08-11

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DESIGN T. DURBIN
DRAWN J. MARTIN
CHECKED M. FISHER
APPROVED J. GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

GENERAL
INDEX TO DRAWINGS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER G-2
SHEET NUMBER 2

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ABBREVIATIONS

@	AT
AB	ANCHOR BOLT, AGGREGATE BASE
AC	ASPHALTIC CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
ADD	ADDITIONAL
ADH AB	ADHESIVE ANCHOR BOLT
ADJ	ADJACENT, ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHP	AIR: HIGH PRESSURE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL, ALUM	ALUMINUM
ALP	AIR LOW PRESSURE
ALTN	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
APVD	APPROVED
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ARCH, A	ARCHITECTURAL
ARV	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AIR/VACUUM ASSEMBLY
AVE	AVENUE
AWG	AMERICAN WIRE GAGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
B	BORING
BC	BEGIN CURVE, BOTTOM OF CURB
BF	BLIND FLANGE, BOTTOM FACE
BFD	BUTTERFLY VALVE DAMPER
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BLM	BUREAU OF LAND MANAGEMENT
BM	BENCH MARK, BEAM
BO	BLOW OFF
BOO	BOTTOM OF OPENING
BOT	BOTTOM
BRG	BEARING
BV	BALL VALVE
BVC	BEGINNING OF VERTICAL CURVE
BYP	BYPASS
C to C, CC	CENTER TO CENTER
C	CHANNEL (BEAM)
CAA/ARV	COMBINATION AIR ADMISSION/ AIR RELEASE VALVE
CARV	COMBINATION AIR RELEASE VALVE
CATH	CATHODIC PROTECTION
CATV	CABLE TELEVISION
CB	CATCH BASIN
CCP	CONCRETE CYLINDER PIPE
CCS	CENTRAL CONTROL SYSTEM
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEM	CHEMICAL
CI	CAST IRON
CIGC	CAST IRON GROOVED COUPLING
CIMJ	CAST IRON MECHANICAL JOINT
CIP	CAST IRON PIPE
CIRJ	CAST IRON RESTRAINED JOINT
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT, CONTRACTION JOINT
CLDIP	CEMENT-LINED DUCTILE IRON PIPE
CLG	CEILING
CLR	CLEAR, CLEARANCE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CL	CENTERLINE
CML, CSP	CONCRETE MORTAR LINED AND COATED STEEL PIPE
CMLSP	CEMENT MORTAR LINED STEEL PIPE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COM	COMMUNICATION
COMB	COMBINED
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS, CONTINUATION
COORD	COORDINATE
CU	COPPER
CPLG	COUPLING
CTD	CENTERED
CTR	CENTER
CU FT	CUBIC FOOT
CU IN	CUBIC INCH
CU YD	CUBIC YARD
CULV	CULVERT
CV	CHECK VALVE
°C	CELSIUS
d	PENNY
DBA	DEFORMED BAR ANCHOR
DR	DRAIN
DBL	DOUBLE
DEC	DECANT
DET	DETAIL
DF	DOUGLAS FIR/LARCH
DI	DROP INLET, DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGONAL
DIL	DILUTE
DIM	DIMENSION
DIMJ	DUCTILE IRON MECHANICAL JOINT
DIP	DUCTILE IRON PIPE
DIPPL	DUCTILE IRON PIPE, POLYETHYLENE LINED
DIR	DIRECTION
DIST	DISTANCE
DN	DOWN
do	DITTO
DWG	DRAWING
E	EAST, ELECTRIC, ELECTRICAL
EA	EACH
EC	END CURVE
ECC	ECCENTRIC
EF	EACH FACE, EXHAUST FAN
EFL	EFFLUENT
EJ	EXPANSION JOINT
EL	ELEVATION
ELB, ELL	ELBOW
ELC	ELECTRICAL LOAD CENTER
ELEC	ELECTRIC, ELECTRICAL
ENGR	ENGINEER
EO	EMERGENCY OVERFLOW
EP	EDGE OF PAVEMENT
EQL SP	EQUALLY SPACED
EQPT	EQUIPMENT
ESC	EROSION SEDIMENT CONTROL
ERW	EFFLUENT REUSE WATER
ESA	ENVIRONMENTALLY SENSITIVE AREA
EVC	END OF VERTICAL CURVE
EW	EACH WAY
EWEF	EACH WAY, EACH FACE
EXC	EXCAVATE
EXP	EXPOSED, EXPANSION
EXP JT	EXPANSION JOINT
EXST	EXISTING
FB	FLAT BAR
FC	FLEXIBLE COUPLING
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDA	FLOOR DRAIN W/INTEGRAL TRAP
FDN	FOUNDATION
FES	FLARED END SECTION
FEXT	FIRE EXTINGUISHER
FF	FINISH FLOOR
FG	FINISH GRADE
FHY	FIRE HYDRANT
FIG	FIGURE
FL	FLOOR, FLOW LINE
FLG	FLANGE
FLH	FLAT HEAD
FLL	FLOW LINE
FLTR	FILTER
FNSH	FINISH
FOC	FACE OF CONCRETE
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FOOT OR FEET
FTG	FOOTING
FWD	FORWARD
°F	DEGREE FAHRENHEIT
G	GAS
GA	GAGE
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GC	GROOVED COUPLING
GCO	GRADE CLEAN OUT
GCF	GROOVED COUPLING FITTING
GE	GROOVED END
GL	GLASS
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GVL	GRAVEL
GW	GROUND WATER
HD	HUB DRAIN
HDPE	HIGH DENSITY POLYETHLENE PIPE
HDR	HEADER
HDW	HARDWARE
HGT	HEIGHT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPT	HIGH POINT
HR	HANDRAIL
HSS	HOLLOW STRUCTURE STEEL
HV	HOSE VALVE
HWY	HIGHWAY
HYD	HYDRANT
I&C	INSTRUMENTATION & CONTROL
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
INFL	INFLUENT
INSTM	INSTRUMENTATION
INSUL	INSULATE, INSULATION
INV	INVERT
INVERT EL	INVERT ELEVATION
IP	IRON PIPE
IR	IRON ROD
JT	JOINT
KIP	THOUSAND POUNDS
KW	KILOWATT
L	LEFT, ANGLE, LENGTH
LAB	LABORATORY
LAT'L	LATERAL
LB	POUNDS
LB/CU FT	POUNDS PER CUBIC FOOT
LF	LINEAR FEET
LG	LONG
LONG	LONGITUDINAL
LP	LOW POINT
LR	LONG RADIUS
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MPH	MILES PER HOUR
MSNRY	MASONRY
MSP	MILL STEEL PIPE, MANUAL OF STANDARD PRACTICE
MTL	MATERIAL
MWS	MAXIMUM WATER SURFACE
N	NORTH
NC	NORMALLY CLOSED
NE	NORTHEAST
NIC	NOT IN CONTRACT
NO	NUMBER, NUMBERING
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER
OD	OUTSIDE DIAMETER, OVERFLOW DRAIN
OF	OUTSIDE FACE, OVERFLOW
OFR	OVERFLOW RETURN
OG	ORIGINAL GROUND
OHE	OVERHEAD ELECTRIC
OMRF	ORDINARY MOMENT RESISTING FRAME
O TO O	OUT TO OUT
OPNG	OPENING
OPP	OPPOSITE
OZ	OUNCE
PC	POINT OF CURVE
PE	PLAIN END, POLYETHYLENE AND PERMANENT EASEMENT
PENT	PENETRATION
PI	POINT OF INTERSECTION
PJF	PREMOLDED JOINT FILLER
PL	PLATE, PROPERTY LINE
PLYWD	PLYWOOD
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
POE	POINT OF ENDING
PP, P&P	PLAN AND PROFILE, POWER POLE
PPM	PARTS PER MILLION
PRC	POINT OF REVERSE CURVE
PRCST	PRECAST
PREFAB	PREFABRICATED
PREFAB	PREFABRICATED
PRESS	PRESSURE
PRC	POINT OF REVERSE CURVE
PRI	PRIMARY
PROP	PROPERTY
PRV	PRESSURE RELEASE VALVE
PSF	POUNDS PER SQUARE FOOT
PS	PUMP STATION
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PT	POINT OF TANGENCY
P.U.E.	PUBLIC UTILITY EASEMENT
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE PLASTIC POINT OF VERTICAL CURVE
PVCGS	POLYVINYL CHLORIDE PLASTIC-GRAVITY SEWER TYPE
PVCW	POLYVINYL CHLORIDE PLASTIC-WATER DISTRIBUTION SERVICE TYPE
PVMT	PAVEMENT
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY, PRIVATE
PW	POTABLE WATER
R, RAD	RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD, ROOF DRAIN
RDCR	REDUCER
REF	REFER OR REFERENCE
REINF	REINFORCED, REINFORCING, REINFORCE
REQD	REQUIRED
RJ	RESTRAINED JOINT
RLS	RUBBER LINED STEEL
RM	ROOM
RMJ	RESTRAINED MECHANICAL JOINT
RO	ROUGH OPENING
RP	RADIUS POINT
R/R	REMOVE AND REPLACE
RST	REINFORCING STEEL
RT	RIGHT
RTN	RETURN
RV	ROOF VENT
RW	RAW WATER
R/W	RIGHT-OF-WAY
S	!-BEAM, SOUTH, SLOPE
S =	SLOPE EQUALS
SA	SAMPLE
SAT	SUSPENDED ACOUSTIC TILE
SC	SCUM
SCFH	STANDARD CUBIC FEET PER HOUR
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	STORM DRAIN
SE	SOUTHEAST
SEC	SECONDARY
SECT	SECTION
SH	SHEET
SIM	SIMILAR
SLD	SLUDGE
SLP	SLOPE
SOLN	SOLUTION
SP	SPACE OR SPACES
SPD	SUMP PUMP DRAIN
SPEC	SPECIFICATIONS
SPLY	SUPPLY
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SS	SANITARY SEWER
SSH	SAFETY SHOWER
SST	STAINLESS STEEL
ST	STRAIGHT, STREET
STA	STATION
STD	STANDARD
STIF	STIFFENER
STL	STEEL, STEEL PIPE
STLS	STEEL PIPE (SPECIAL)
STR	STRAIGHT
STRL	STRUCTURAL
STRUCT	STRUCTURE
SUBFL	SUBFLOOR
SUSP	SUSPEND
SW	SOUTHWEST
SYMM	SYMMETRICAL
T	TANGENT, TELEPHONE LINE, TOP
TBG	TUBING
T&B	TOP AND BOTTOM
TC	TOP OF CURB, TOP OF CONCRETE
TCE	TEMPORARY CONSTRUCTION EASEMENT
TDH	TOTAL DYNAMIC HEAD
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPORARY, TEMPERATURE
TF	TOP FACE
T&G	TONGUE AND GROOVE
THD	THREAD
THK	THICK
TP	TURNING POINT, TEST PIT
TRANS	TRANSITION
TRANSV	TRANSVERSE
TS	TUBE STEEL
TST	TOP OF STEEL
TT	THRUST TIE
TW	TOP OF WALL
TWS	TRACER WIRE STATION
TYP	TYPICAL
t, T	THICKNESS
UBC	UNIFORM BUILDING CODE
UD	UNDERDRAIN
UG	UNDERGROUND
UH	UNIT HEATER
UNK	UNKNOWN
UNO	UNLESS NOTED OTHERWISE
V	VENT, VOLT, VALVE
VAC	VACUUM
VAR	VENT ACID RESISTANT
VC	VERTICAL CURVE
VERT	VERTICAL
VPI	VERTICAL POINT OF INTERSECTION
VPS	VENEER PLASTER SYSTEM
VTR	VENT THRU ROOF
W/	WITH
W	WIDE FLANGE (BEAM), WEST, WATER
WC	WATER CLOSET
WD	WOOD
WH	WATER HEATER
WM	WATER METER
WR	WATER RESISTANT
WS	WATER SURFACE, WATER STOP
W SH ST	WEATHERING SHEET STEEL
WSP	WELDED STEEL PIPE
WT	WATER TIGHT
WTR	WATER
WW	WASHWATER
WWF	WELDED WIRE FABRIC
YD	YARD

NOTES

1. FOR ELECTRICAL AND INSTRUMENTATION ABBREVIATIONS, SEE ELECTRICAL AND INSTRUMENTATION DRAWINGS.
2. CONTACT THE ENGINEER FOR ABBREVIATIONS NOT LISTED.
3. THIS IS A STANDARD LEGEND SHEET, THEREFORE, SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET AND MAY NOT BE UTILIZED ON THIS PROJECT.

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DRAWN J MARTIN
CHECKED M FISHER
APPROVED J GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

GENERAL
ABBREVIATIONS

REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. DURBIN No. C 24458 Exp. 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER G-3
SHEET NUMBER 3

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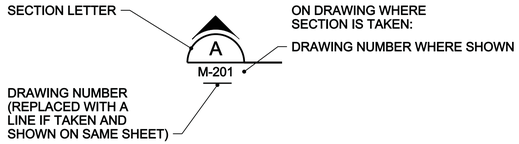
FILENAME: 1105d-g004.dgn PLOT DATE: 30-JUN-2011 PLOT TIME: 13:30:24

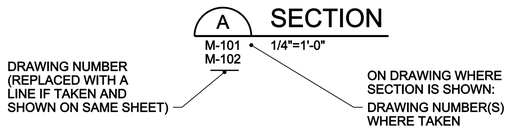
DISCIPLINE

LETTER	DISCIPLINE
G	GENERAL
D	DEMOLITION
C	CIVIL
A	ARCHITECTURAL
S	STRUCTURAL
M	MECHANICAL
H	HEATING, VENTILATION AND COOLING
P	PLUMBING
E	ELECTRICAL
N	INSTRUMENTATION
Y	YARD PIPING

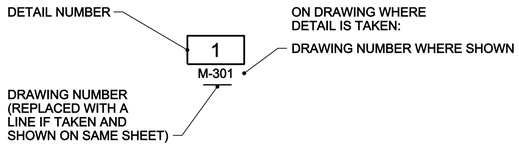
DRAWING NUMBER

SECTION





DETAIL



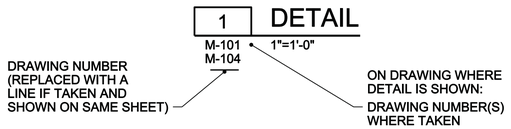
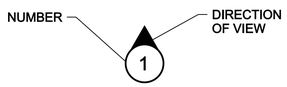
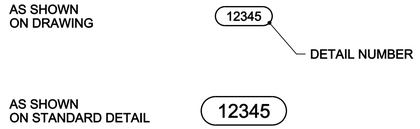


PHOTO OR ELEVATION



STANDARD DETAIL



NOTES:

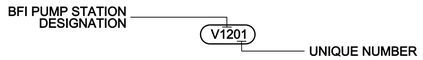
1. STANDARD DETAIL CALLOUTS ARE SHOWN TO INDICATE DETAIL REQUIRED AT SPECIFIC LOCATIONS. DETAILS ARE NOT CALLED OUT AT ALL LOCATIONS. WHERE A STANDARD DETAIL CALLOUT IS NOT SHOWN, THE CONTRACTOR SHALL USE THE STANDARD DETAIL MOST APPLICABLE AND CONSISTENT WITH OTHER WORK UNDER THIS CONTRACT.

STANDARD VALVE AND OPERATION

NOTES:

1. SEE SPECIFICATION SECTION 15200.

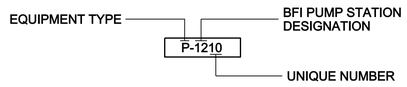
UNIQUE VALVE AND OPERATOR



NOTES:

1. SEE SPECIFICATION SECTION 15200 FOR VALVE SCHEDULE.

EQUIPMENT DESIGNATION



LINE TYPE APPEARANCE

———	BLACK	NEW 'ON' DISCIPLINE
———	LIGHT OR MEDIUM GRAY OR SCREENED	EXISTING 'ON' OR 'OFF' DISCIPLINE
———	DARK GRAY	NEW 'OFF' DISCIPLINE

GENERAL SYMBOLOGY

	STRUCTURE OR EQUIPMENT TO BE REMOVED OR DEMOLISHED

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN T. DURBIN
DRAWN J. MARTIN
CHECKED M. FISHER
APPROVED J. GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

GENERAL

STANDARD DESIGNATIONS

REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. DURBIN No. C 23458 Exp: 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER G-4
SHEET NUMBER 4

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FILENAME: 1105d-g005.dgn PLOT DATE: 30-JUN-2011 PLOT TIME: 13:42:40

CIVIL LEGEND

⊗ 158.5	SPOT ELEVATION
155	CONTOUR LINE
4:1	CUT SLOPE (HORIZ:VERT)
4:1	EMBANKMENT - FILL SLOPE (HORIZ:VERT)
	DRAINAGEWAY OR DITCH
	DIRECTION OF FLOW
	CENTER LINE, BUILDING, ROAD
	PROPERTY LINE
	RIGHT OF WAY, EASEMENT OR SETBACK
	STAGING OR WORK AREA LIMITS
N 1000.00 E 1000.00	STRUCTURE, BUILDING OR FACILITYLOCATION POINT COORDINATES
OR	STRUCTURE, BUILDING OR FACILITY
	RETAINING WALL
	CONCRETE CURB
	ARCHITECTURAL FENCE
	GUARD RAIL/BARRICADE
	CHAIN LINK FENCE WITH 3 STRAND BARBED WIRE TOPPING
	WIRE FENCE
	BARBED WIRE
	SINGLE SWING GATE
	DOUBLE SWING GATE
	SLIDING GATE
	CULVERT
	WALL
	BRUSH/TREE LINE
	TREE
OR OR	DEMOLITION
	AUTOMATIC AIR RELEASE VALVE
	MANUAL AIR RELEASE VALVE

	BEDROCK
	ROCKS OR RIPRAP
	SAND
	AGGREGATE BASE
	NATURAL SOIL
	COMPACTED SOIL
	CONCRETE
	GROUT
	CONTROLLED LOW STRENGTH MATERIAL (CLSM)
	PAVEMENT
	GRATING

MAPPING LEGEND

	AIR RELEASE VALVE
	ASPHALT PAVEMENT
	BOLLARD
CT	CABLE TELEVISION
	CATCH BASIN
EM	ELECTRIC METER
EP	ELECTRIC PULLBOX
ER	ELECTRIC RISER
ES	ELECTRIC SWITCHBOX
ET	ELECTRIC TRANSFORMER
	FIRE HYDRANT
	GAS VALVE
	GRAY PVC CONDUIT PIPES
	GUARD POST
	GUY WIRE
IB	IRRIGATION BOX
	IRRIGATION VALVE
	LIGHT POLE WITH NO ARM
	LIGHT POLE WITH ARM ATTACHED TO UTILITY POLE
	REBAR
R/W	RIGHT-OF-WAY
	SEWER CLEANOUT
S	SEWER MANHOLE
	SOLAR PANEL
	STORM DRAIN MANHOLE
	STREET SIGN
	SURVEY CONTROL POINT OR POINT OF INTERSECTION
	TELEPHONE BOX
	TRAFFIC CONTROL BOX
	TRAFFIC SIGNAL BOX
	TRAFFIC SIGNAL WITH ARM
	TRAFFIC SIGNAL WITH NO ARM
	TRAFFIC WALK SWITCH
	UTILITY POLE
	WATER VALVE
W	WATER MANHOLE
WM	WATER METER
	WELL

NOTES:

1. EXISTING PIPING, EQUIPMENT, AND TOPOGRAPHY IS SHOWN SCREENED AND/OR LIGHT-LINED. NEW PIPING, EQUIPMENT, STRUCTURE, AND FINISHED GRADE IS SHOWN HEAVY-LINED.
2. THIS IS A STANDARD LEGEND SHEET. SOME SYMBOLS MAY APPEAR ON THIS SHEET AND NOT BE USED ON THE PLANS.

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGN T. DURBIN
DRAWN J. MARTIN
CHECKED M. FISHER
APPROVED J. GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

GENERAL
CIVIL LEGEND

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER G-5
SHEET NUMBER 5

REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. DURBIN No. C-34457 Exp. 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

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DESIGN CRITERIA:

1. APPLICABLE CODE: 2010 CALIFORNIA BUILDING CODE (CBC)
2. REFER TO THE SPECIFICATIONS FOR ADDITIONAL AND SPECIFIC STRUCTURE LOADINGS AND REQUIREMENTS.
3. ROOF LOADS:
   125 PSF MINIMUM LIVE LOAD
4. WIND LOAD:
   ASCE 7-05 METHOD 1 (SIMPLIFIED PROCEDURE)
   BASIC WIND SPEED: 85 MPH, EXPOSURE CATEGORY: C
   Iw: 1.15
5. SEISMIC LOAD:
   SEISMIC OCCUPANCY CATEGORY: III
   SEISMIC IMPORTANCE FACTOR Ie: 1.25
   SEISMIC DESIGN CATEGORY: D
   SDS: 1.000g
   SD1: 0.600g
   SITE CLASS: D

GENERAL INFORMATION:

1. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE CBC.
2. FOR ABBREVIATIONS NOT LISTED, SEE ASME Y14.38 "ABBREVIATIONS AND ACRONYMS" PUBLICATION AS DISTRIBUTED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).
3. DESIGN DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO ALL SIMILAR SITUATIONS OCCURRING THROUGHOUT THE PROJECT, WHETHER OR NOT THEY ARE KEYED IN EACH LOCATION. CONSULT THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.
4. VERIFY ALL OPENING DIMENSIONS IN WALLS, SLABS, AND DECKS WITH THE ARCHITECTURAL, MECHANICAL, HVAC AND ELECTRICAL DRAWINGS.
5. FOR NUMBER, TYPE, SIZE ARRANGEMENT, AND/OR LOCATION OF EQUIPMENT PADS SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, HVAC AND PLUMBING DRAWINGS. COORDINATE WITH EQUIPMENT SUPPLIER PRIOR TO PLACING SLABS, WALLS AND FOUNDATIONS. COORDINATE ALL MECHANICAL, ELECTRICAL, AND HVAC PIPING OPENINGS WITH MECHANICAL, ELECTRICAL AND HVAC DRAWINGS.
6. NO STRUCTURAL MEMBERS SHALL BE CUT FOR PIPES, DUCTS, ETC UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
7. SPECIAL INSPECTION IS REQUIRED IN ACCORDANCE WITH IBC SECTION 108.4 AND CHAPTER 17 ON THE FOLLOWING PORTIONS OF THE WORKS:
   CONCRETE PLACEMENT, REINFORCING STEEL PLACMENT, EMBEDS AND BOLTS INSTALLED IN CONCRETE, POST INSTALLED CONCRETE BOLTS.

CONCRETE:

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AND A MAXIMUM SLUMP AS SPECIFIED IN SECTION 03300.
2. THE CONTRACTOR SHALL SUBMIT THE CONCRETE MIX DESIGNS TO THE ENGINEER FOR REVIEW PRIOR TO USE.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS PRIOR TO THE PLACEMENT OF CONCRETE.
4. HORIZONTAL CONSTRUCTION JOINTS SHALL BE PREPARED TO EXPOSE CLEAN, SOLIDLY EMBEDDED AGGREGATE OVER THE ENTIRE JOINT INTERFACE.
5. PLACEMENT OF PIPES, CONDUITS OR OTHER EMBEDDED ITEMS IN THE CONCRETE SHALL BE IN ACCORDANCE WITH THESE DRAWINGS OR SHALL BE APPROVED BY THE ENGINEER.
6. NO ALUMINUM CONDUIT OR PRODUCTS CONTAINING ALUMINUM OR ANY OTHER MATERIAL INJURIOUS TO CONCRETE SHALL BE EMBEDDED IN THE CONCRETE.
7. ALL DIMENSIONS SHOWN FOR LOCATION OF REINFORCING STEEL ARE TO FACE OF BAR AND DENOTE CLEAR COVERAGE. UNLESS SPECIFICALLY NOTED OTHERWISE, CONCRETE COVERAGE SHALL BE 3" WHERE CONCRETE IS PLACED DIRECTLY AGAINST THE GROUND AND 2" WHERE CONCRETE IS EXPOSED TO THE GROUND BUT IS PLACED AGAINST THE FORMS. SLABS ON GRADE SHALL HAVE REINFORCING AT MID-DEPTH UNLESS NOTED OTHERWISE.
8. CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C 94.
9. THE REQUIREMENTS FOR CONCRETE MIXES, PLACING, TESTING AND CURING ARE CONTAINED IN CBC SECTIONS 1905 - 1906.
10. PORTLAND CEMENT SHALL CONFORM TO ASTM C150 TYPE II, AGGREGATE SHALL CONFORM TO ASTM C33.

FOUNDATIONS

1. FOUNDATIONS HAVE BEEN DESIGNED AS FULLY COMPENSATED AS STATED IN THE GEOTECHNICAL INVESTIGATION REPORT.
2. NO BACKFILL SHALL BE PLACED BEHIND WALLS UNTIL THE CONCRETE HAS ATTAINED 100% OF ITS SPECIFIED COMPRESSIVE STRENGTH.
3. THE CONTRACTOR SHALL PROVIDE THE ENGINEER AT LEAST 48 HOURS NOTICE FOLLOWING EXCAVATION FOR FOUNDATIONS AND PRIOR TO THE PLACEMENT OF FORMWORK, REINFORCING STEEL AND CONCRETE.

CONCRETE REINFORCING

1. PROVIDE LARGER SIZES AND MORE REINFORCING IN ALL SECTIONS OF CONCRETE WHERE REQUIRED BY THE DETAILS ON THE DRAWINGS OR BY THE SPECIFICATIONS.
2. CLEARANCE FOR REINFORCEMENT BARS, UNLESS SHOWN OTHERWISE, SHALL BE:CAST AGAINST EARTH = 3", ALL OTHER CONCRETE SURFACES = 2".
3. ALL BENDS, UNLESS OTHERWISE SHOWN, SHALL BE 90 DEGREE ACI 318 STANDARD HOOKS.
4. PROVIDE A MINIMUM OF TWO VERTICAL DOWELS AT WALL ENDS, CORNERS AND INTERSECTIONS WITH SIZE TO MATCH TYPICAL VERTICAL REINFORCING STEEL SHOWN.
5. ALL REINFORCING BENDS AND LAPS, UNLESS OTHERWISE NOTED, SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS:

CONCRETE DESIGN STRENGTH = 4,000 PSI		GRADE 60 REINF STEEL				
BAR SIZE		#3	#4	#5	#6	#7
LAP SPLICE LENGTH						
SPACING < 6"	TOP BAR ⁕	1'-4"	2'-0"	3'-0"	4'-0"	5'-10"
	OTHER BAR	1'-4"	1'-7"	2'-4"	3'-1"	4'-6"
SPACING ≥ 6"	TOP BAR ⁕	1'-4"	1'-8"	2'-0"	2'-5"	3'-6"
	OTHER BAR	1'-4"	1'-4"	1'-7"	1'-10"	2'-9"
EMBEDMENT LENGTH						
SPACING < 6"	TOP BAR ⁕	1'-0"	1'-7"	2'-4"	3'-1"	4'-6"
	OTHER BAR	1'-0"	1'-3"	1'-9"	2'-5"	3'-6"
SPACING ≥ 6"	TOP BAR ⁕	1'-0"	1'-3"	1'-7"	1'-10"	2'-9"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-5"	2'-1"

⁕ TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.

⁕⁕ WHERE 3000 PSI CONCRETE IS USED, INCREASE ABOVE LENGTHS BY 16%.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS AND CODE OF STANDARD PRACTICE.

   STRUCTURAL STEEL SHALL CONFORM TO ASTM:
   HOLLOW STRUCTURAL SECTIONS: A500 GRADE B MINIMUM Fy = 46 ksi
   PIPE: A53 GRADE B MINIMUM Fy = 35 ksi
   WIDE FLANGE SECTIONS: A992 MINIMUM Fy = 50 ksi
   PLATES, ANGLES, AND CHANNELS: A36 MINIMUM Fy = 36 ksi
   STAINLESS STEEL PLATES: A240
   STAINLESS STEEL SHAPES: A276 OR A479
2. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWS D1.1-06 AND CBC SECTION 2204.
3. WELDING ELECTRODES SHALL BE THE FOLLOWING TYPES: E70XX.
4. ALL BOLTS SHALL BE STAINLESS STEEL ASTM A320 UNLESS NOTED OTHERWISE.
5. STRUCTURAL STEEL SHALL BE FREE OF EXCESSIVE RUST, MILL SCALE OR GREASE.
6. ALL FILLET WELDS SHALL BE AISC MINIMUM AND BUTT WELDS SHALL BE FULL PENETRATION.
7. INSTALLATION AND INSPECTION OF HIGH STRENGTH BOLTS SHALL CONFORM TO THE REQUIREMENTS OF THE 2005 AISC SPECIFICATION. CONTACT FACES OF STEEL AT CONNECTIONS WHERE HIGH STRENGTH BOLTS ARE USED SHALL NOT BE PAINTED.
8. OPENINGS SHALL NOT BE PLACED IN STEEL MEMBERS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL PLANS.
9. DISTANCE FROM EDGE OF PLATE TO CENTER OF BOLT SHALL BE 1 1/2" UNLESS NOTED OTHERWISE.
10. THE STRUCTURAL STEEL FABRICATOR/CONTRACTOR SHALL FURNISH SHOP DRAWINGS OF ALL STRUCTURAL STEEL FOR ARCHITECTS AND ENGINEERS REVIEW PRIOR TO FABRICATION.

STRUCTURAL ABBREVIATIONS

AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL	ALUMINUM
ALT	ALTERNATE
ANC	ANCHOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APVD	APPROVED
ARCH	ARCHITECT, ARCHITECTURAL
BC	BOTTOM CHORD
BLK	BLOCK
BOC	BOTTOM OF CONCRETE
BOS	BOTTOM OF STEEL
BOT	BOTTOM, BOTTOM OF TRENCH
BM	BEAM
BRG	BEARING
BTWN	BETWEEN
C	CAMBER
CC	CENTER TO CENTER
CHKD	CHECKERED
CIP	CAST IN PLACE
CJ	CONSTRUCTION JOINT
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
CP	COMPLETE PENETRATION
CTR	CENTER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DIA Ø	DIAMETER
DWG	DRAWING
EA	EACH
ECS	EPOXY COATED STEEL
EE	EACH END
EF	EACH FACE
EL, ELEV	ELEVATION
EMBED	EMBEDMENT
EN	EDGE NAIL
EQ, EQL, SP	EQUALLY SPACED
ES	EASH SIDE
EW	EACH WAY
EXP	EXPANSION
EXST, (E)	EXISTING
FD	FLOOR DRAIN
FDN	FOUNDATION
FIN	FINISH
FF	FINISHED FLOOR
FLG	FLANGE
FLR	FLOOR
FOB	FACE OF BLOCK
FOC	FACE OF CONCRETE
FOS	FACE OF STUD / STEEL
FP	FULL PENETRATION
FRMG	FRAMING
FRP	FIBER REINFORCED PLASTIC
FS	FAR SIDE
FTG	FOOTING
GA	GAUGE, GAGE
GALV	GALVANIZED
GLB	GLULAM BEAM
GRD	GRADE
GRT	GROUT
GRTG	GRATING
H	HIGH
H.A.S.	HEADED ANCHOR STUD
HCA	HEADED CONCRETE ANCHOR
HD	HOLDOWN
HORIZ	HORIZONTAL
HSB	HIGH STRENGTH BOLT
IF	INSIDE FACE
IN	INCHES
JT	JOINT
L	LOW / ANGLE
LONG	LONGITUDINAL
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SLOTTED HOLE
MFR	MANUFACTURER
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MIN	MINIMUM
MTL	METAL
NDT	NON-DESTRUCTIVE TESTING
NIC	NOT IN CONTRACT
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
O/O	OUT TO OUT
OPNG	OPENING
OPP	OPPOSITE
OSH	OVERSIZED HOLE
OWJ	OPEN WEB JOIST
PC	PRECAST
PLCS	PLACES
PJF	PREMOLDED JOINT FILLER
PL	PLATE
PLYWD	PLYWOOD
PP	PARTIAL PENETRATION
PROJ	PROJECTION
PT	PRESSURE TREATED
PVC	POLYVINYL CHLORIDE
REINF	REINFORCE, REINFORCING
REQD	REQUIRED
RTN	RETURN
SHT	SHEET
SIB	STRUCTURAL ISOLATION BREAK
SIM	SIMILAR
SJ	SAWN JOINT
SLV	SHORT LEG VERTICAL
SMS	SHEET METAL SCREWS (SELF-TAPPING)
SPCG, SPA	SPACING
SPCS	SPACES
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STSMS	SELF-TAPPING SHEET METAL SCREW
SW	STUD WELD
SYM	SYMMETRICAL
T&B	TOP & BOTTOM
TC	TOP CHORD
TD	TRUSS DIAGONAL
THK	THICK
TN	TOE NAIL
TO	TOP OF
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOG	TOP OF GRATING
TOS	TOP OF STEEL
TOT	TOTAL
TOW	TOP OF WALL
TRANS	TRANSVERSE
TV	TRUSS VERTICAL
TYP	TYPICAL
UN	UNLESS NOTED
UT	ULTRASONIC TESTING
VERT	VERTICAL
W	WIDE
W/	WITH
W/O	WITH OUT
WP	WORK POINT
WS	WATERSTOP
WWF	WELDED WIRE FABRIC

REGISTERED PROFESSIONAL ENGINEER
JEREMY A. REDLEWSKI
No. C73233
Exp: 3-31-12
CIVIL
STATE OF CALIFORNIA
07-08-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGN J KELLOGG
DRAWN P WEBSTER
CHECKED J KELLOGG
APPROVED J GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

GENERAL
STRUCTURAL NOTES

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER G-6
SHEET NUMBER 6

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PIPE AND FITTING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		EXISTING PIPE (SCREENED)
		NEW PIPE
		EXISTING PIPE TO BE ABANDONED
		EXISTING PIPE TO BE REMOVED
		WELDED JOINT
		GROOVED END JOINT - FLEXIBLE
		GROOVED END JOINT - RIGID
		FLANGED JOINT
		MECHANICAL JOINT
		HUB & SPIGOT JOINT (RUBBER GASKET PUSH-ON)
		BALL JOINT
		FLANGE COUPLING ADAPTER
		FLEXIBLE COUPLING
		FLEXIBLE COUPLING WITH THRUST TIES
		DISMANTLING JOINT
		STEEL BELLOWS EXPANSION JOINT
		ELASTOMER BELLOWS EXPANSION JOINT
		ELBOW - 90 DEGREE
		ELBOW UP - 90 DEGREE
		ELBOW DOWN - 90 DEGREE
		ELBOW - 45 DEGREE
		ELBOW UP - 45 DEGREE
		ELBOW DOWN - 45 DEGREE
		TEE
		TEE UP
		TEE DOWN
		CROSS
		LATERAL
		LATERAL UP
		LATERAL DOWN
		REDUCER - CONCENTRIC

PIPE AND FITTING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		REDUCER - ECCENTRIC
		UNION
		BLIND FLANGE
		PLUG
		CAP

VALVE SYMBOLS

DOUBLE LINE	SINGLE LINE	
		GATE
K	K	KNIFE GATE
		BUTTERFLY
		GLOBE
		BALL
V	V	VEE BALL
		PLUG OR COCK
SEAT PORT		ECCENTRIC PLUG WITH REQUIRED SEAT LOCATION
FP	FP	FULL PORT PLUG
		NEEDLE
		DIAPHRAGM
		PINCH VALVE
		SWING CHECK
		DOUBLE DISK OR SILENT CHECK
		BALL CHECK
		HOSE VALVE
	X	NON FREEZE HOSE VALVE X=NUMBER IN SPECIFICATIONS
	X	NON FREEZE HOSE VALVE WITH HOSE RACK X=NUMBER IN SPECIFICATIONS
	S	SAMPLE
		MUD
		PRESSURE RELIEF
		AIR AND OR VACUUM RELEASE
REGULATED SIDE		PRESSURE CONTROL
		MULTI-PORT VALVE ARROWS INDICATE FLOW PATTERN. SEAT PORTS ARE IMPLIED BY INDICATED FLOW PATTERN. BALL VALVE SHOWN. FOR OTHER VALVE TYPES, APPROPRIATE VALVE SYMBOL SHOWN.
		FIRE HYDRANT
		CATHODIC PROTECTION TEST STATION
		CATHODIC PROTECTION ANODE

FLOW METERS

DOUBLE LINE	SINGLE LINE	
		MAGMETER
		PROPELLER METER
		INSERTION METER

PUMPS

	METERING
	DIAPHRAGM
	CENTRIFUGAL
	PERISTALTIC

MIXERS

	STATIC MIXER

ACTUATORS

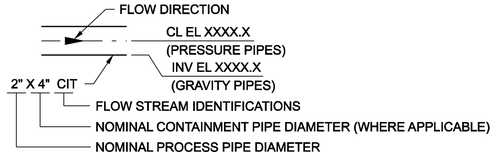
P	PNEUMATIC
M	MOTORIZED
S	SOLENOID

MISCELLANEOUS PIPING SYMBOLS

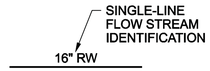
	STRAINER
	SIGHT GLASS
	FLEXIBLE (ELASTOMER) PIPE CONNECTION
	GAUGE WITH COCK
	THERMOMETER
	ROTAMETER
A	GALVANIC ANODE
XX	AIR SET XX = SUPPLY PRESSURE - PSIG
PS 26-1-2	TYPICAL INSTRUMENT SYMBOL (SEE I&C LEGEND)
	DRAIN
	DOUBLE CONTAINMENT PIPE

PIPING DESIGNATION

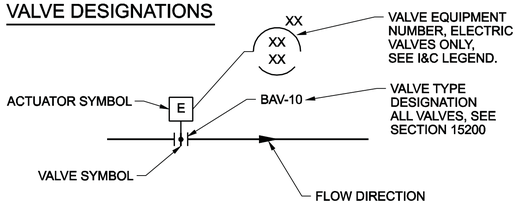
DOUBLE LINE



SINGLE LINE



VALVE DESIGNATIONS



NOTES

1. ELECTRIC VALVE SHOWN, MANUAL VALVE SIMILAR.

NOTES

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

GENERAL PIPING NOTES

1. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS. MINIMUM COVER SHALL BE 36 INCHES UNLESS OTHERWISE SHOWN.
2. SIZE OF FITTINGS SHOWN ON DRAWINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
3. LOCATION AND NUMBER OF PIPE HANGERS AND PIPE SUPPORTS SHOWN IS ONLY APPROXIMATE. FINAL SUPPORT REQUIREMENTS SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. MAXIMUM SPACING SHALL BE AS SPECIFIED.
4. APPROPRIATE STANDARD WALL PIPE DETAIL SHALL BE USED WHEREVER PIPING PASSES FROM A STRUCTURE TO BACKFILL.
5. ALL FLEXIBLE CONNECTORS OR FLANGED COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST TIES, BLOCKS, OR ANCHORS, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.
6. SYMBOLS, LEGENDS, AND PIPE USE IDENTIFICATIONS SHOWN SHALL BE FOLLOWED THROUGHOUT THE DRAWINGS, WHEREVER APPLICABLE. ALL OF THE VARIOUS APPLICATIONS ARE NOT NECESSARILY USED IN THE PROJECT.
7. ALL PIPING SPECIFIED TO BE PRESSURE TESTED, EXCEPT FLANGED, WELDED, GROOVED END OR SCREWED PIPING, SHALL BE PROVIDED WITH THRUST PROTECTION AT ALL DIRECTION CHANGES, UNLESS OTHERWISE NOTED. SEE THRUST DETAILS AND NOTES ON DRAWINGS.
8. NUMBER AND LOCATION OF UNIONS SHOWN ON DRAWINGS ARE ONLY APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
9. THE CONTRACTOR FOR THIS PROJECT IS RESPONSIBLE FOR COORDINATING AND PERFORMING THE CONNECTION OF THE PIPING AND ASSOCIATED APPURTENANCES INSTALLED UNDER THIS CONTRACT TO BOTH THE EXISTING PIPING AND FACILITIES.
10. PRIOR TO SUBMITTING PIPING DRAWINGS FOR ANY NEW PIPE THAT IS TO CONNECT TO OR CROSS AN EXISTING PIPE OR STRUCTURE, THE CONTRACTOR SHALL EXPOSE THE EXISTING PIPE OR STRUCTURE TO VERIFY ITS EXACT LOCATION, SIZE, MATERIALS, AND INVERT ELEVATIONS.
11. COMPONENTS SHOWN WITH A DOUBLE ASTERISK (**) ARE PART OF A PACKAGE SYSTEM. SEE EQUIPMENT SPECIFICATIONS.
12. "NO WORK SHALL BE CONCEALED UNTIL AFTER INSPECTION AND APPROVAL BY PROPER AUTHORITIES. IF WORK IS CONCEALED WITHOUT INSPECTION AND APPROVAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK REQUIRED TO OPEN AND RESTORE THE CONCEALED AREAS IN ADDITION TO ALL REQUIRED MODIFICATIONS. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS FOR ALL WORK AND SHALL HAVE HIS WORK INSPECTED BY STATE AND LOCAL AGENCIES HAVING APPLICABLE JURISDICTION. CALL 510-747-6800 BETWEEN 7:30 AM TO 8:30 AM TO SCHEDULE ALL INSPECTIONS."

REGISTERED PROFESSIONAL ENGINEER — TIMOTHY D. DURBIN — No. C 23458 — Exp. 3-31-12 — CIVIL — STATE OF CALIFORNIA

07-08-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

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DRAWN J. MARTIN
CHECKED M. FISHER
APPROVED J. GESELBRACHT

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CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

GENERAL
MECHANICAL LEGEND

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER G-7
SHEET NUMBER 7

FILENAME: 1105d-g006.dgn PLOT DATE: 08-JUL-2011 PLOT TIME: 08:47:30

NOTES:

1. SALVAGE GENERATOR. DEMOLISH EQUIPMENT PAD.
2. DEMOLISH TREES (6). PROTECT ALL UTILITIES AND SIGNS BENEATH AND SURROUNDING.
3. DEMOLISH EXISTING BACKFLOW PREVENTER.
4. DEMOLISH EXISTING BUSHES AND LANDSCAPING, PROTECT IN PLACE EXISTING UTILITIES AND CAP IRRIGATION NOZZLES AT DEMOLISHED BUSHES.
5. DEMOLISH EXISTING BRICK AND CONCRETE SEWER MANHOLE AND CAP 21" VCP GRAVITY SEWER.
6. CONTRACTOR MAY UTILIZE EXISTING FORCE MAIN BY-PASS PUMPING CONNECTION POINT PRIOR TO DEMOLITION. EXISTING 12" BY-PASS CONNECTION BLIND FLANGE INSIDE VAULT.
7. DEMOLISH/SALVAGE EXISTING ELECTRICAL AND CONTROL PANELS IN ACCORDANCE WITH ELECTRICAL SHEETS.
8. CONTRACTOR SHALL PARTICIPATE IN SITE WALK WITH CITY OF ALAMEDA OPERATIONS AND MAINTENANCE STAFF AND ENGINEER PRIOR TO COMMENCING DEMOLITION. ITEMS IDENTIFIED BY CITY DURING SITE WALK SHALL BE SALVAGED AND RETURNED TO CITY IN ACCORDANCE WITH SPECIFICATIONS.

NOTE 2, TYP

NOTE 3

NOTE 4, SEE DWG C2

NOTE 6

NOTE 7, SEE DWG E-09

NOTE 1

NOTE 5, SEE DWG Y-1

EXISTING PAVED/GRAVEL ACCESS DRIVE - POOR CONDITION, SEE DWG C-2

EXST PUMP STATION CONCRETE STRUCTURE FOR DEMOLITION SEE DWG D-1

EXISTING CONCRETE PAD PROTECT IN PLACE

EXISTING PAVED/DIRT ACCESS DRIVE - PARTIALLY OVER GROWN - POOR CONDITION, SEE DWG C-2

SURVEY POINT #1
4.65
CP/ 1/2"-RBR

7273
2.258

PLAN
1"=5'

NORTH

5 0 5 10 FEET
SCALE 1"-5'

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGN M FISHER
DRAWN M STEELE
CHECKED J GESELBRACHT
APPROVED M FISHER

WATERWORKS ENGINEERS
5767 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND SEWAGE
LIFT STATION UPGRADE

CIVIL
DEMOLITION PLAN

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER C-1
SHEET NUMBER 8

REGISTERED PROFESSIONAL ENGINEER
MATTHEW A. FISHER
No. C061184
Exp. 6-30-12
CIVIL
STATE OF CALIFORNIA
07-08-11

T:\CAD\PROJECTS\11-005 ALAMEDA BFI PS\DRAWINGS\DELIVERABLES\1105D-5-C100.DWG

JOB NUMBER: 10-053 FILENAME: 1105D-5-C100.DWG PLOT DATE: 08-Jul-11 PLOT TIME: 12:42:43

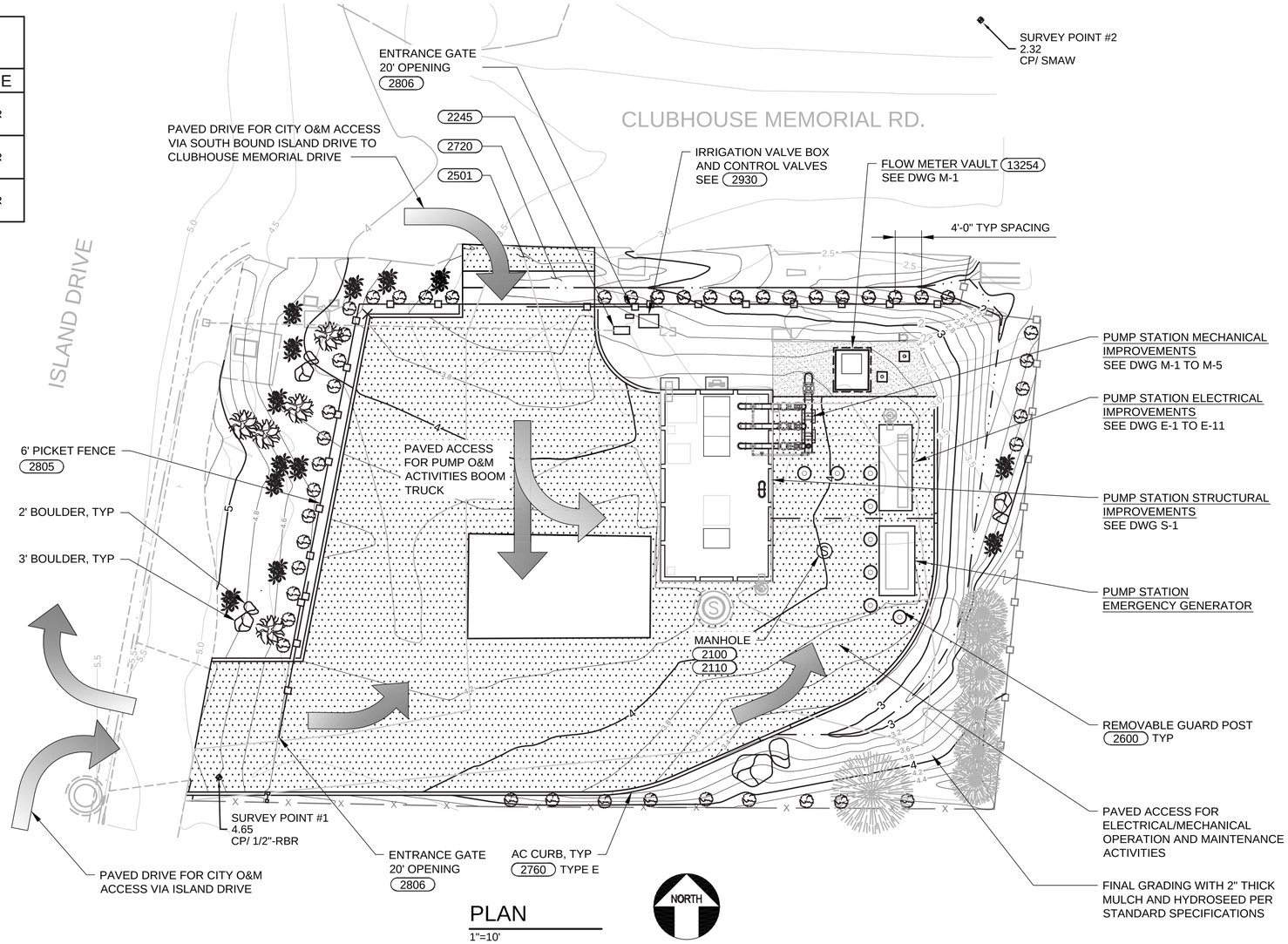
PLANT LIST				
QTY	SYMBOL	NAME	COMMON NAME	SPRINKLER TYPE
45		MACFADYENA UNGUIS-CATI	YELLOW TRUMPET VINE	0.9 GPH DRIP EMITTER
6		PHORMIUM TENAX	NEW ZEALAND FLAX	0.9 GPH DRIP EMITTER
15		ERIOGONUM ARBORESCENS	SANTA CRUZ ISLAND BUCKWHEAT	0.9 GPH DRIP EMITTER

YELLOW TRUMPET VINE

NEW ZEALAND FLAX

SANTA CRUZ ISLAND BUCKWHEAT

ROUND SIERRA BOULDER
(OR APPROVED EQUAL)



PLAN
1"=10'

SURVEY CONTROL POINTS				
POINT #	NORTHING	EASTING	ELEVATION	RAW DESCRIPTION
1	1666984.2290	6492848.7290	4.653	CP/ 1/2"-RBR
2	1667098.8970	6492964.0710	2.322	CP/ SMAW

NOTES:

1. EXISTING CONDITIONS MAPPING PER FEB 28, 2011 FIELD SURVEY BY ANDREGG GEOMATICS.
2. UNDERGROUND UTILITY MAPPING IS BASED ON VISIBLE EVIDENCE AND INTERPRETATION OF A PARTIAL COLLECTION OF PLANS AND SCHEMATICS. VERIFY ALL LOCATIONS, SIZES, AND MATERIALS.

10 0 10 20 FEET
SCALE 1"=10'

07-08-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DESIGN M.FISHER
DRAWN M.STEELE
CHECKED J.GESELBRACHT
APPROVED M.FISHER

WATERWORKS ENGINEERS
5767 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND SEWAGE
LIFT STATION UPGRADE

CIVIL
SITE PLAN

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER C-2
SHEET NUMBER 9

JOB NUMBER: 10-053 FILENAME: 1105D-5-C100.DWG PLOT DATE: 08-Jul-11 PLOT TIME: 11:38:09

T:\CAD\PROJECTS\11-005 ALAMEDA BFI PSI\DRAWINGS\DELIVERABLES\1105D-5-C100.DWG

FENCE CORNER
N 1667055.90
E 6492869.99
EL 3.83

N 1667060.90
E 6492885.63
EL 3.50

N 1667064.97
E 6492885.63
EL 3.62

N 1667064.46
E 6492905.62
EL 3.13

N 1667064.84
E 6492889.97
EL 3.50

N 1667058.40
E 6492885.63
EL 3.46

N 1667060.90
E 6492905.63
EL 3.50

N 1667058.40
E 6492905.63
EL 3.20

FENCE CORNER
N 1667055.90
E 6492905.63
EL 3.48

N 1667058.40
E 6492937.06
EL 2.43

EXST FENCE POST
N 1667063.14
E 6492962.52
EL 2.68

N 1667059.94
E 6492964.10
EL 1.72

CONNECT TO EXST FENCE
N 1667055.90
E 6492961.00
EL 2.22

FENCE CORNER
N 1667055.90
E 6492885.63
EL 3.50

N 1667053.90
E 6492871.63
EL 3.78

N 1667055.05
E 6492905.63
EL 3.46

N 1667053.90
E 6492885.69
EL 3.50

N 1667052.42
E 6492905.63
EL 3.76

N 1667051.34
E 6492909.72
EL 3.56

N 1667042.43
E 6492915.63
EL 4.13

N 1667048.95
E 6492942.14
EL 3.60

N 1667048.95
E 6492947.14
EL 3.61

N 1667050.22
E 6492932.45
EL 3.44

N 1667050.22
E 6492954.28
EL 3.44

N 1667047.99
E 6492952.53
EL 3.53

N 1667044.89
E 6492949.16
EL 3.68

N 1667041.91
E 6492932.63
EL 4.13

EL 3.95

EL 3.75

EL 3.54

EL 3.91

N 1667041.91
E 6492957.05
EL 3.70

N 1667037.63
E 6492948.71
EL 3.95

ELECTRICAL
EQUIPMENT PAD
SEE DWG E10
3200E

TC 4.13

1'-6" CURB
OPENING
N 1667023.46
E 6492957.05
EL 3.64

N 1667024.63
E 6492948.71
EL 3.80

N 1667024.63
E 6492953.71

EL 3.32

N 1667017.77
E 6492957.05
EL 3.70

EL 3.31

N 1667022.29
E 6492948.71
EL 3.80

TC 4.13

N 1667011.75
E 6492948.71
EL 3.90

N 1667016.47
E 6492962.52
EL 2.47

GENERATOR
EQUIPMMENT
PAD 3200E

N 1667011.75
E 6492954.12

EL 3.22

1'-1½"

1'-4"

1"-6" CURB
OPENING
N 1667026.33
E 6492866.26
EL 4.34

SSMH
N 1667017.98
E 6492939.90
RIM EL 4.00

N 1667021.12
E 6492886.55
EL 4.30

N 1667020.73
E 6492914.17
EL 4.30

CONCRETE PAD
REMOVED
NOT EXISTING

GRADE BREAK
HIGH POINT
N 1667021.12
E 6492865.24
EL 4.45

EXISTING CONCRETE
PAD TO REMAIN

N 1667013.93
E 6492915.59
EL 4.13

N 1667005.27
E 6492886.38
EL 4.33

N 1667005.40
E 6492914.02
EL 4.26

11' OF 30" HDPE SDR 26

14.3' OF 10" DIP

MH
NEW

N 1667013.90
E 6492932.61
EL 4.13

N 1667001.80
E 6492847.60
EL 4.83

N 1667001.80
E 6492861.47
EL 4.20

FENCE CORNER
N 1667002.30
E 6492859.53
EL 4.47

ASPHALTIC
CONCRETE
PAVEMENT
2501

SSMH
N 1667009.88
E 6492923.67
RIM EL 4.17

N 1666992.17
E 6492935.18
~~EL 3.25~~

CURB CUT
N 1666990.71
E 6492933.09
~~EL 3.16~~

N 1666990.17
E 6492930.60
~~EL 3.25~~

N 1666995.32
E 6492942.37
EL 3.41

N 1666990.71
E 6492943.00
EL 2.96

N 1666982.01
E 6492855.57
EL 4.20

N 1666982.01
E 6492856.41
EL 4.19

N 1666982.01
E 6492905.68
EL 3.78
SAME

N 1666984.53
E 6492917.70
EL 3.54

3.72

N 1666982.01
E 6492843.82
EL 5.02

RECEIVED
JUL 13 2011
PERMIT CENTER
ALAMEDA, CA 94501

PLAN
1"=5'

NORTH

5 0 5 10 FEET
SCALE 1"-5'

07-08-11

JOB NUMBER: 10-053 FILENAME: 1105D-5-C100.DWG PLOT DATE: 08-Jul-11 PLOT TIME: 12:43:50

T:\CAD\PROJECTS\11-005 ALAMEDA BFI PS\DRAWINGS\DELIVERABLES\1105D-5-C100.DWG

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

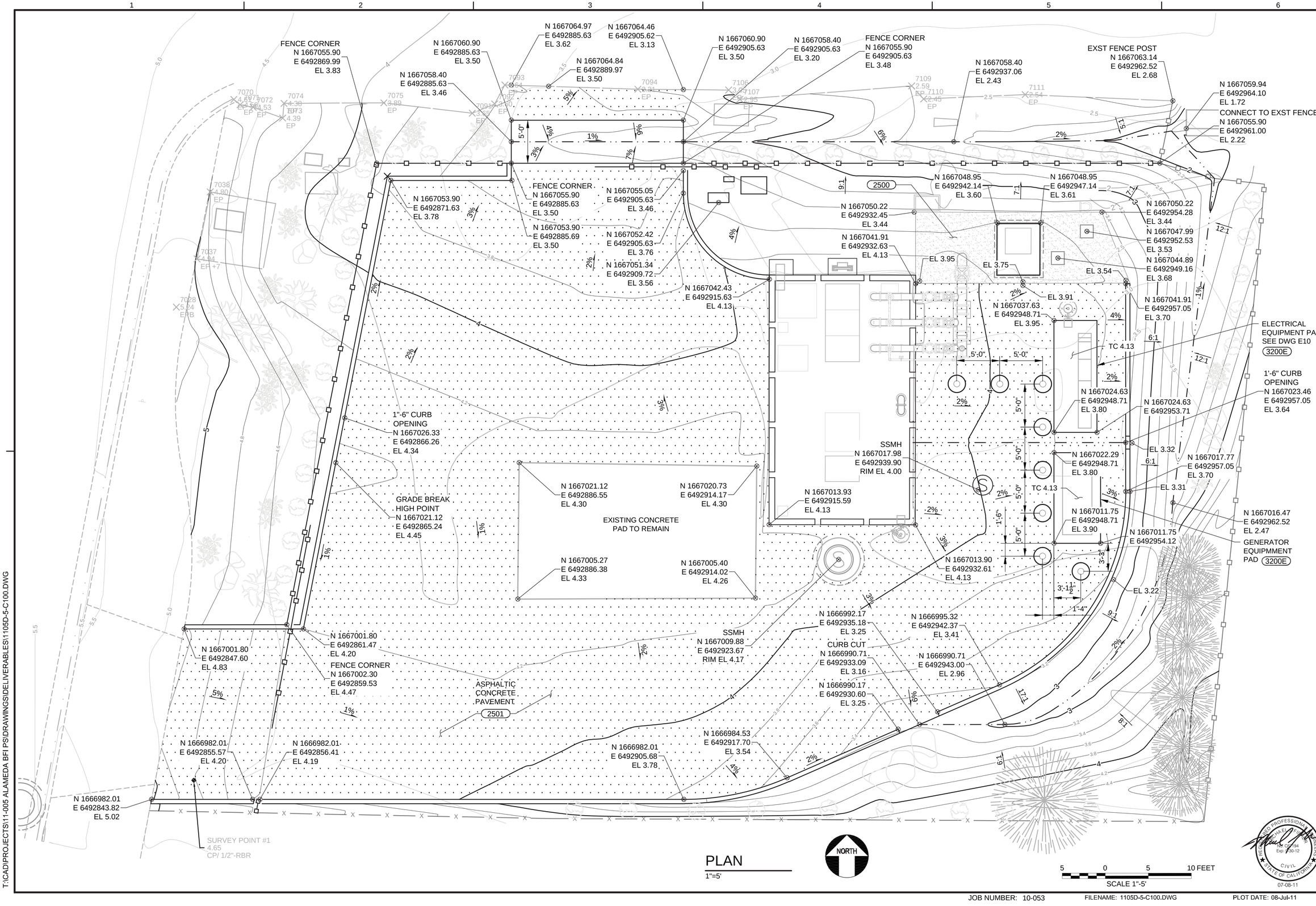
DESIGN M FISHER
DRAWN M STEELE
CHECKED J GESELBRACHT
APPROVED M FISHER

WATERWORKS ENGINEERS
5767 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND SEWAGE
LIFT STATION UPGRADE

CIVIL
GRADING AND DRAINAGE PLAN

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER C-3
SHEET NUMBER 10



VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGN M FISHER
DRAWN M STEELE
CHECKED J GESELBRACHT
APPROVED M FISHER

WATERWORKS ENGINEERS
5767 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND SEWAGE
LIFT STATION UPGRADE

CIVIL

GRADING AND DRAINAGE PLAN

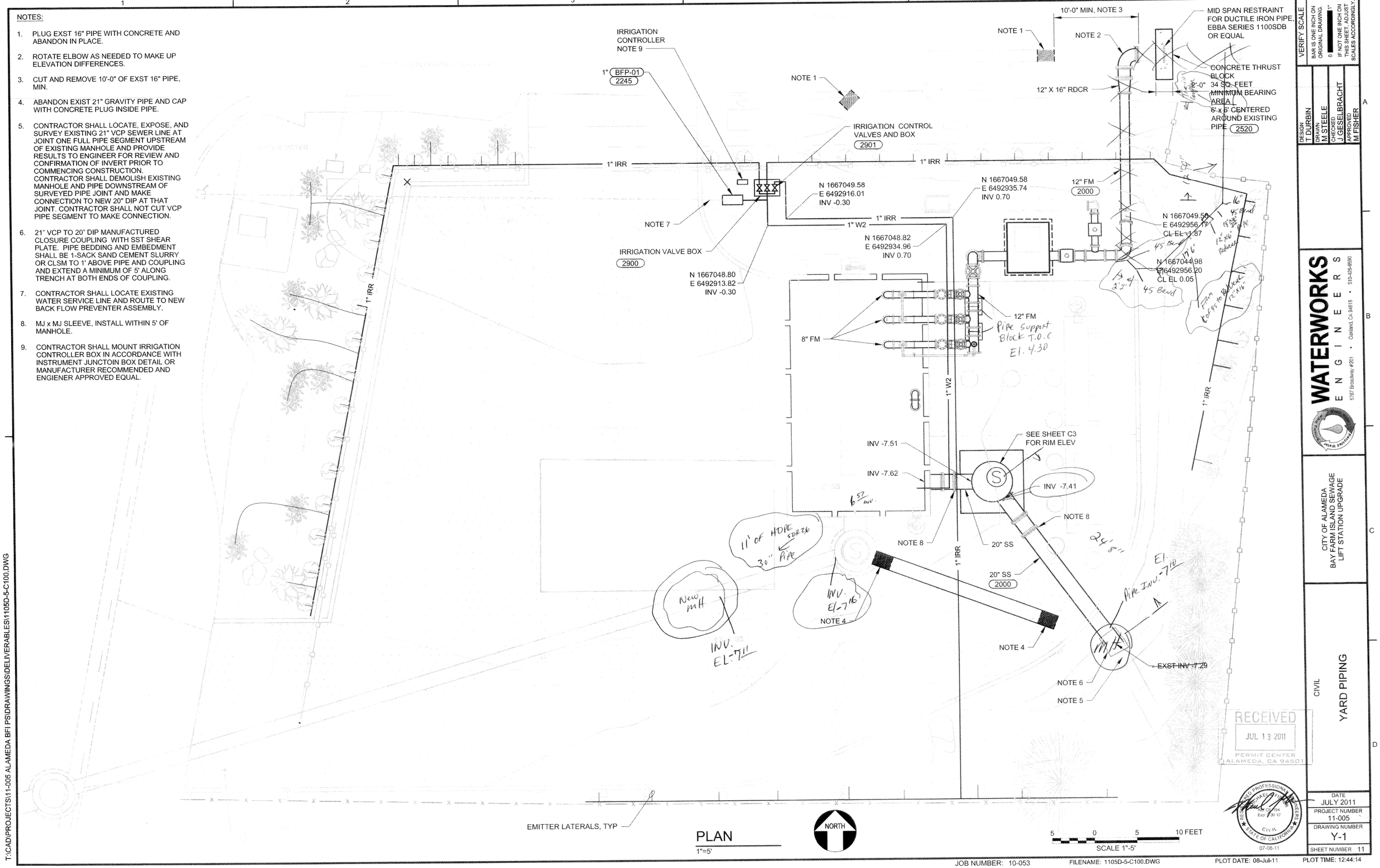
DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER C-3
SHEET NUMBER 10

JOB NUMBER: 10-053 FILENAME: 1105D-5-C100.DWG PLOT DATE: 08-Jul-11 PLOT TIME: 12:43:50

T:\CAD\PROJECTS\11-005 ALAMEDA BFI PS\DRAWINGS\DELIVERABLES\1105D-5-C100.DWG

NOTES:

1. PLUG EXST 16" PIPE WITH CONCRETE AND ABANDON IN PLACE.
2. ROTATE ELBOW AS NEEDED TO MAKE UP ELEVATION DIFFERENCES.
3. CUT AND REMOVE 10'-0" OF EXST 16" PIPE, MIN.
4. ABANDON EXIST 21" GRAVITY PIPE AND CAP WITH CONCRETE PLUG INSIDE PIPE.
5. CONTRACTOR SHALL LOCATE, EXPOSE, AND SURVEY EXISTING 21" VCP SEWER LINE AT JOINT ONE FULL PIPE SEGMENT UPSTREAM OF EXISTING MANHOLE AND PROVIDE RESULTS TO ENGINEER FOR REVIEW AND CONFIRMATION OF INVERT PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL DEMOLISH EXISTING MANHOLE AND PIPE DOWNSTREAM OF SURVEYED PIPE JOINT AND MAKE CONNECTION TO NEW 20" DIP AT THAT JOINT. CONTRACTOR SHALL NOT CUT VCP PIPE SEGMENT TO MAKE CONNECTION.
6. 21" VCP TO 20" DIP MANUFACTURED CLOSURE COUPLING WITH SST SHEAR PLATE. PIPE BEDDING AND EMBEDMENT SHALL BE 1-SACK SAND CEMENT SLURRY OR CLSM TO 1' ABOVE PIPE AND COUPLING AND EXTEND A MINIMUM OF 5' ALONG TRENCH AT BOTH ENDS OF COUPLING.
7. CONTRACTOR SHALL LOCATE EXISTING WATER SERVICE LINE AND ROUTE TO NEW BACK FLOW PREVENTER ASSEMBLY.
8. MJ x MJ SLEEVE, INSTALL WITHIN 5' OF MANHOLE.
9. CONTRACTOR SHALL MOUNT IRRIGATION CONTROLLER BOX IN ACCORDANCE WITH INSTRUMENT JUNCTOIN BOX DETAIL OR MANUFACTURER RECOMMENDED AND ENGIENER APPROVED EQUAL.



PLAN
1"=5'

RECEIVED
JUL 13 2011
PERMIT CENTER
ALAMEDA, CA 94501

T:\CAD\PROJECTS\11-005 ALAMEDA BFI PS\DRAWINGS\DELIVERABLES\1105D-5-C100.DWG

JOB NUMBER: 10-053 FILENAME: 1105D-5-C100.DWG PLOT DATE: 08-Jul-11 PLOT TIME: 12:44:14

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DESIGN T DURBIN
DRAWN M STEELE
CHECKED J GESELBRACHT
APPROVED M FISHER

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

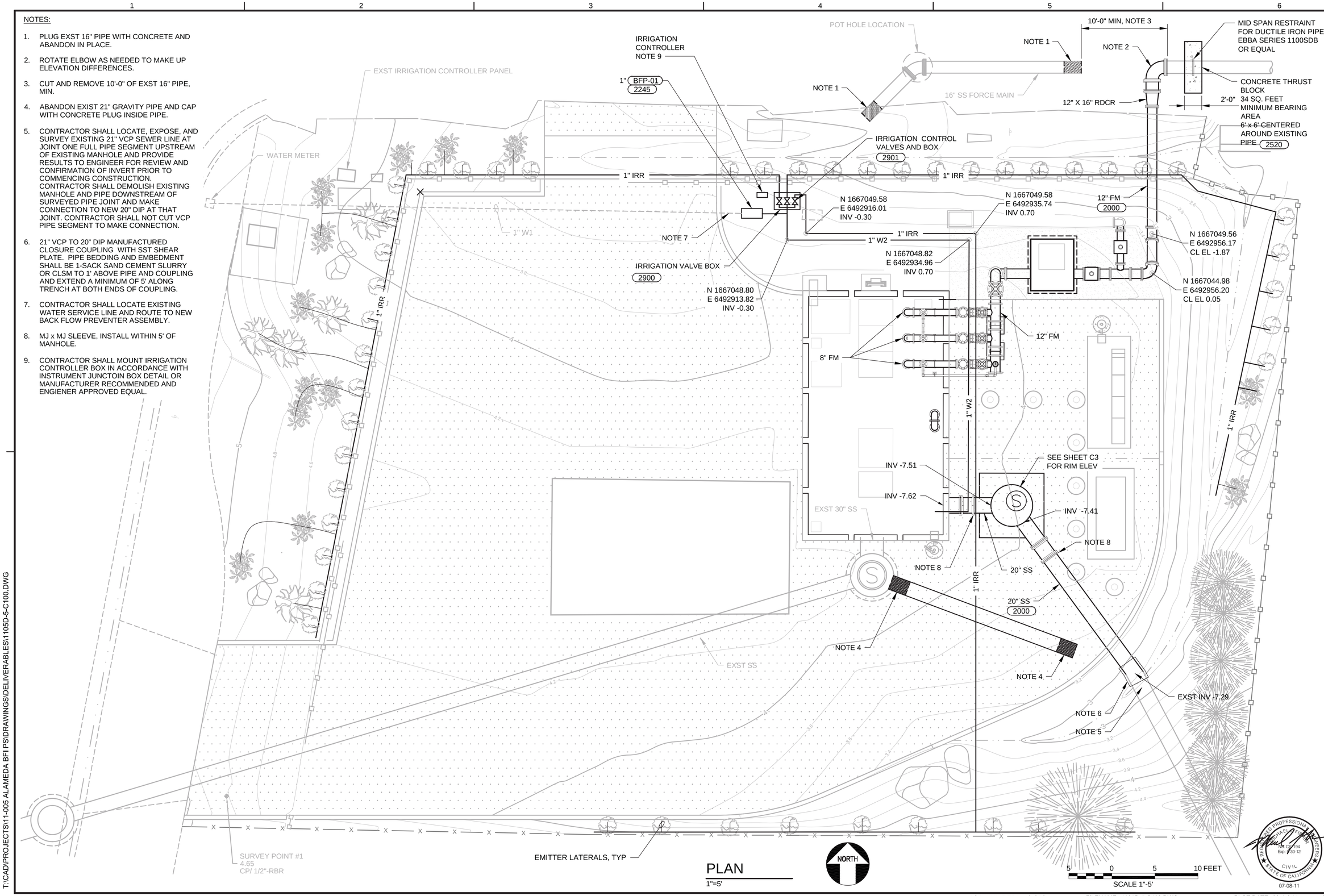
CITY OF ALAMEDA
BAY FARM ISLAND SEWAGE LIFT STATION UPGRADE

CIVIL
YARD PIPING

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER Y-1
SHEET NUMBER 11

NOTES:

1. PLUG EXST 16" PIPE WITH CONCRETE AND ABANDON IN PLACE.
2. ROTATE ELBOW AS NEEDED TO MAKE UP ELEVATION DIFFERENCES.
3. CUT AND REMOVE 10'-0" OF EXST 16" PIPE, MIN.
4. ABANDON EXIST 21" GRAVITY PIPE AND CAP WITH CONCRETE PLUG INSIDE PIPE.
5. CONTRACTOR SHALL LOCATE, EXPOSE, AND SURVEY EXISTING 21" VCP SEWER LINE AT JOINT ONE FULL PIPE SEGMENT UPSTREAM OF EXISTING MANHOLE AND PROVIDE RESULTS TO ENGINEER FOR REVIEW AND CONFIRMATION OF INVERT PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL DEMOLISH EXISTING MANHOLE AND PIPE DOWNSTREAM OF SURVEYED PIPE JOINT AND MAKE CONNECTION TO NEW 20" DIP AT THAT JOINT. CONTRACTOR SHALL NOT CUT VCP PIPE SEGMENT TO MAKE CONNECTION.
6. 21" VCP TO 20" DIP MANUFACTURED CLOSURE COUPLING WITH SST SHEAR PLATE. PIPE BEDDING AND EMBEDMENT SHALL BE 1-SACK SAND CEMENT SLURRY OR CLSM TO 1' ABOVE PIPE AND COUPLING AND EXTEND A MINIMUM OF 5' ALONG TRENCH AT BOTH ENDS OF COUPLING.
7. CONTRACTOR SHALL LOCATE EXISTING WATER SERVICE LINE AND ROUTE TO NEW BACK FLOW PREVENTER ASSEMBLY.
8. MJ x MJ SLEEVE, INSTALL WITHIN 5' OF MANHOLE.
9. CONTRACTOR SHALL MOUNT IRRIGATION CONTROLLER BOX IN ACCORDANCE WITH INSTRUMENT JUNCTOIN BOX DETAIL OR MANUFACTURER RECOMMENDED AND ENGIENER APPROVED EQUAL.



PLAN
1"=5'

07-08-11

T:\CAD\PROJECTS\11-005 ALAMEDA BFI PS\DRAWINGS\DELIVERABLES\1105D-5-C100.DWG

JOB NUMBER: 10-053 FILENAME: 1105D-5-C100.DWG PLOT DATE: 08-Jul-11 PLOT TIME: 12:44:14

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

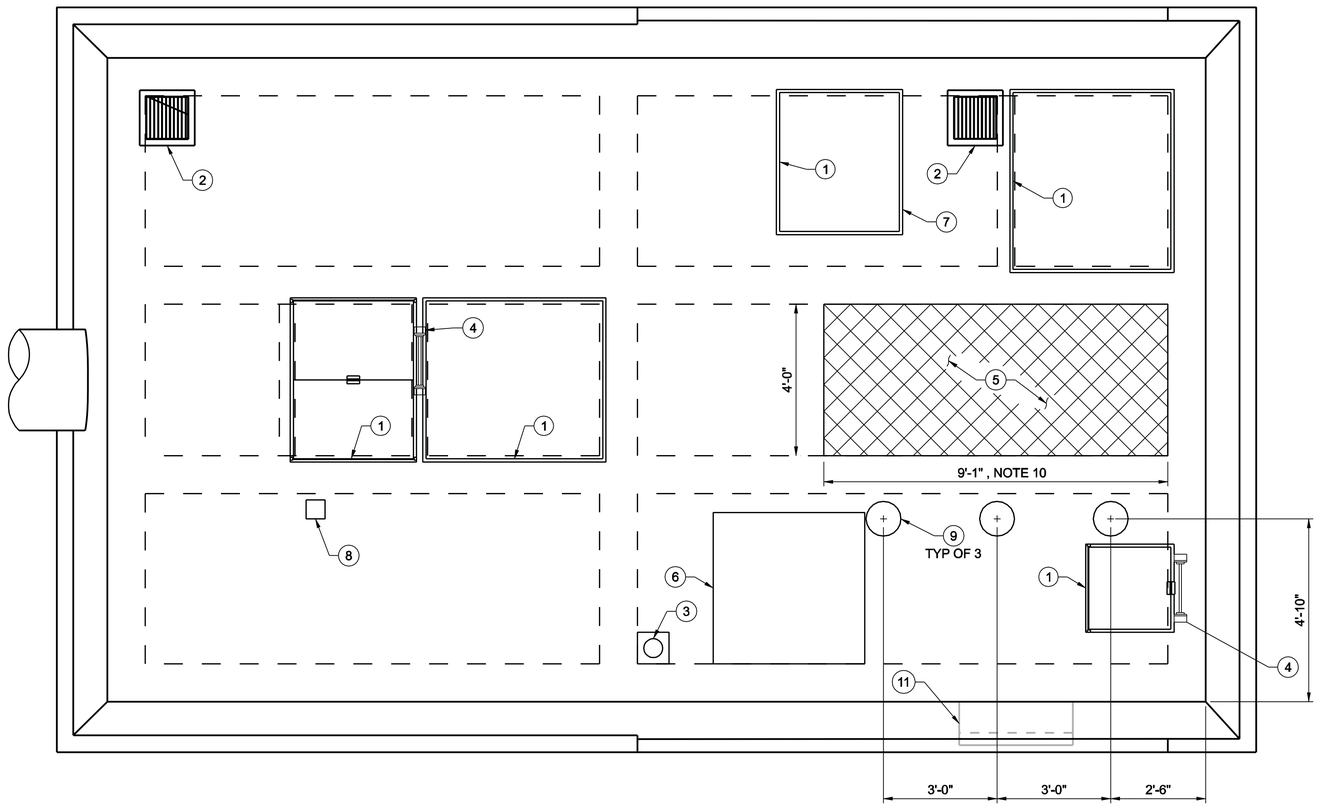
DESIGN T. DURBIN
DRAWN M. STEELE
CHECKED J. GESEL BRACHT
APPROVED M FISHER

WATERWORKS ENGINEERS
5767 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND SEWAGE LIFT STATION UPGRADE

CIVIL
YARD PIPING

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER Y-1
SHEET NUMBER 11



PLAN
1/2"=1'-0"

NOTES:

1. DEMOLISH EXISTING HATCH COVER AND FRAME.
2. DEMOLISH EXISTING GRATING AND FRAME.
3. DEMOLISH EXISTING VENT. SAW-CUT 14" SQUARE 1-INCH DEEP AT THE TOP AND BOTTOM OF THE SLAB. DO NOT OVERCUT AT THE CORNERS. CHIP TO REMOVE THE EXISTING CONCRETE WITHIN THE SCORE LINE, WHILE PRESERVING THE EXISTING REINFORCING.
4. DEMOLISH EXISTING LADDER.
5. SAW-CUT AND DEMOLISH EXISTING CONCRETE AT NEW HATCHES. DO NOT OVERCUT AT CORNERS.
6. SAW-CUT 1-INCH DEEP AROUND THE EXISTING PATCH AT THE TOP AND BOTTOM OF SLAB. DO NOT OVERCUT AT THE CORNERS. CHIP TO REMOVE THE EXISTING CONCRETE PATCH WITHIN THE SCORE LINE, WHILE PRESERVING THE EXISTING REINFORCING.
7. SAW-CUT AROUND THE PERIMETER OF THE EXISTING OPENING TO PROVIDE A CLEAN TRANSITION FOR NEW CONCRETE PATCH. DO NOT OVERCUT AT CORNERS.
8. DEMOLISH EXISTING COVER.
9. CORE DRILL 11" DIA HOLE.
10. VERIFY LENGTH WITH STRUCTURAL DETAILS AND HATCH MANUFACTURER FRAME DIMENSIONS.
11. DEMOLISH EXISTING CONCRETE EXTENSION UNDER EXISTING CONTROL PANEL.
12. CONTRACTOR SHALL DEMOLISH ALL EXISTING BELOW GRADE EQUIPMENT, REFERENCE PHOTOS ARE FOR INFORMATION ONLY AND ARE INTENDED TO ILLUSTRATE SUBSTANTIAL EQUIPMENT FOR REMOVAL.
13. CONTRACTOR SHALL PARTICIPATE IN SITE WALK WITH CITY OF ALAMEDA OPERATIONS AND MAINTENANCE STAFF AND ENGINEER PRIOR TO COMMENCING DEMOLITION. ITEMS IDENTIFIED BY CITY DURING SITE WALK SHALL BE SALVAGED AND RETURNED TO CITY IN ACCORDANCE WITH SPECIFICATIONS.

2 0 2 4 FEET
SCALE 1/2"=1'-0"

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED J KELLOGG
APPROVED J GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

DEMOLITION
ROOF PLAN

REGISTERED PROFESSIONAL ENGINEER
JEREMY A. KELLOGG
No. C73233
Exp: 3-31-12
CIVIL
STATE OF CALIFORNIA
07-08-11

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER D-1
SHEET NUMBER 12

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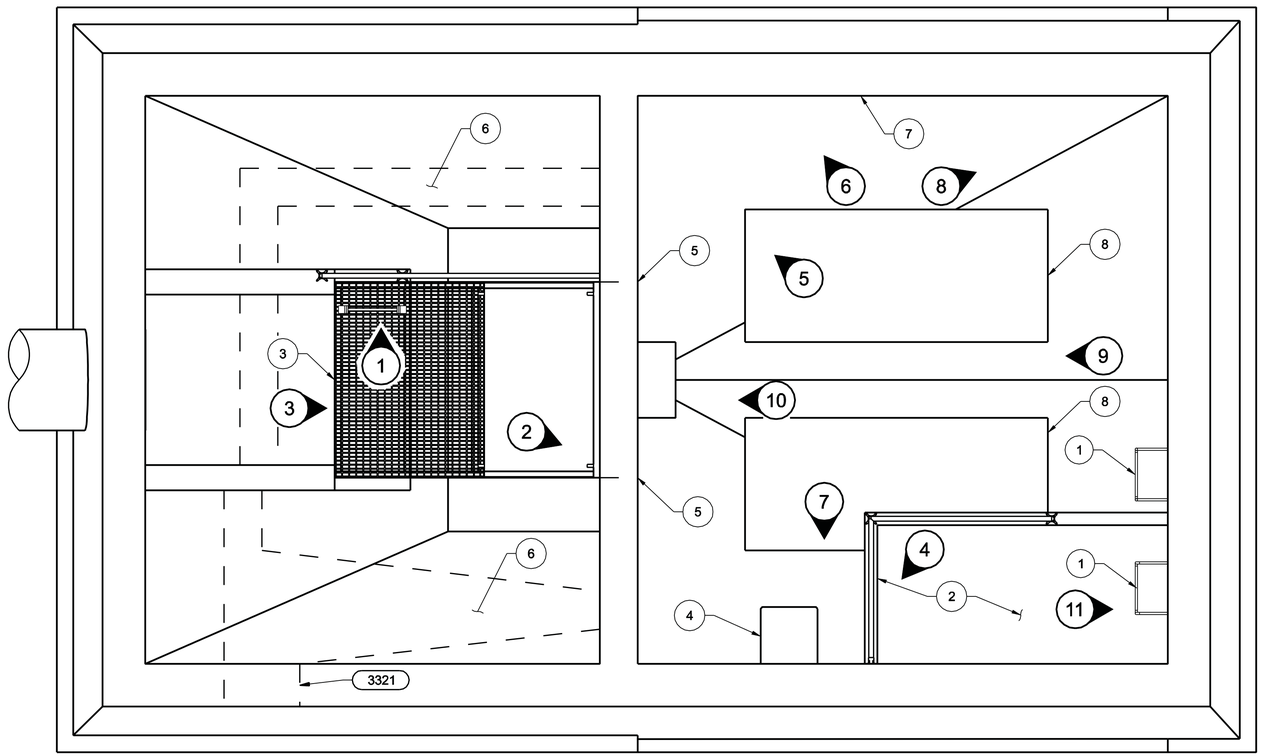
FILENAME: 1105d-10d100.dgn PLOT DATE: 08-JUL-2011 PLOT TIME: 08:57:14



PLAN
1/2"=1'-0"

NOTES:

1. DEMOLISH EXISTING LADDER.
2. DEMOLISH EXISTING MEZZANINE AND GUARDRAIL. GRIND WALL SMOOTH AT MEZZANINE JOINT.
3. DEMOLISH EXISTING GRATING SUPPORTS, AND LADDER. GRIND CONCRETE SMOOTH AT END WALL AND GRATING SUPPORT JOINT.
4. DEMOLISH EXISTING BLOWER SUPPORT. GRIND WALL SMOOTH AT SUPPORT JOINT.
5. SAW-CUT OPENING IN EXISTING WALL. SEE STRUCTURAL DRAWINGS FOR OPENING DIMENSIONS. DO NOT OVERCUT AT CORNERS.
6. SAW-CUT AND DEMOLISH PORTION OF EXISTING CONCRETE FLOW CHANNEL TO 4" MINIMUM BELOW NEW FINISH SURFACE ELEVATION. COORDINATE LOCATION AND AND DEPTH OF SAW-CUTS WITH STRUCTURAL DRAWINGS.
7. PRIOR TO COMMENCING DEMOLITION, COMPLETE ASBESTOS AND LEAD IN PAINT TESTING OF EXISTING PUMP STATION FACILITIES BY ACCREDITED 3RD PARTY LABORATORY AND TESTING FIRM IN ACCORDANCE WITH SPECIFICATIONS. CONDUCT ASBESTOS INSPECTION IN COMPLIANCE WITH US EPA NESHAP REQUIREMENTS FOR ASBESTOS INSPECTION OF A BUILDING STRUCTURE PRIOR TO RENOVATION OR DEMOLITION AND FOR CAL/OSHA COMPLIANCE WITH TITLE 8 1532.1 LEAD IN CONSTRUCTION REQUIREMENTS. ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH ABATEMENT RECOMMENDATIONS FOR LEAD IN PAINT AND ASBESTOS RESULTING FROM THE INSPECTION.
8. DEMOLISH EXISTING PUMP SUPPORTS.
9. AT ALL SAW-CUTS NOT COVERED BY NEW CONCRETE, BURN BACK ALL EXPOSED/CUT REINFORCING BARS 1-INCH MINIMUM AND PATCH RECESS PER CONCRETE REPAIR SPECIFICATIONS.
10. DEMOLITION PHOTOGRAPHS ARE SHOWN ON SHEETS D3 TO D5. REFERENCE PHOTOGRAPHS ARE FOR INFORMATION ONLY AND ARE INTENDED TO ILLUSTRATE SUBSTANTIAL EQUIPMENT FOR REMOVAL ONLY.
11. DEMOLISH ALL EXISTING BELOW GRADE MECHANICAL EQUIPMENT.

2 0 2 4 FEET
SCALE 1/2"=1'-0"

07-06-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN T.DURBIN
DRAWN J.MARTIN
CHECKED J.KELLOGG
APPROVED J.GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

DEMOLITION
LOWER PLAN

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER D-2
SHEET NUMBER 13

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FILENAME: 1105d-10d101.dgn PLOT DATE: 08-JUL-2011 PLOT TIME: 09:03:29

1 LADDER, PLATFORM & PUMP DEMOLITION
NTS

2 CHECK VALVE & ELBOW DEMOLITION
NTS

3 LADDER & PLATFORM DEMOLITION
NTS

4 LEVEL SWITCH, PIPING & DUCTING
NTS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN T. DURBIN
DRAWN J. MARTIN
CHECKED M. FISHER
APPROVED J. GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

DEMOLITION
PHOTOS

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY D. DURBIN
No. C24456
Exp. 3-31-12
CIVIL
STATE OF CALIFORNIA
07-08-11

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER D-3
SHEET NUMBER 14

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FILENAME: 1105d-10d102.dgn PLOT DATE: 20-MAY-2011 PLOT TIME: 13:32:21

5 PIPING, VALVES, PUMP & DUCTING DEMOLITION
NTS

6 PIPING AND VALVE DEMOLITION
NTS

7 HANDRAIL, PLATFORM, PIPING & DUCTING DEMOLITION
NTS

8 DUCTING & VALVE DEMOLITION
NTS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN T. DURBIN
DRAWN J. MARTIN
CHECKED M. FISHER
APPROVED J. GESELBRACHT

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5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

DEMOLITION
PHOTOS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER D-4
SHEET NUMBER 15

REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. DURBIN No. C-58458 Exp: 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

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FILENAME: 1105d-10d102.dgn PLOT DATE: 20-MAY-2011 PLOT TIME: 13:32:21

9 EQUIP PAD, PUMPS, PIPING AND VALVES DEMOLITION
NTS

10 PUMP AND PIPING DEMOLITION
NTS

11 LADDER DEMOLITION
NTS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGN T. DURBIN
DRAWN J. MARTIN
CHECKED M. FISHER
APPROVED J. GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

DEMOLITION
PHOTOS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER D-5
SHEET NUMBER 16

REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. DURBIN No. C 23456 Exp: 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

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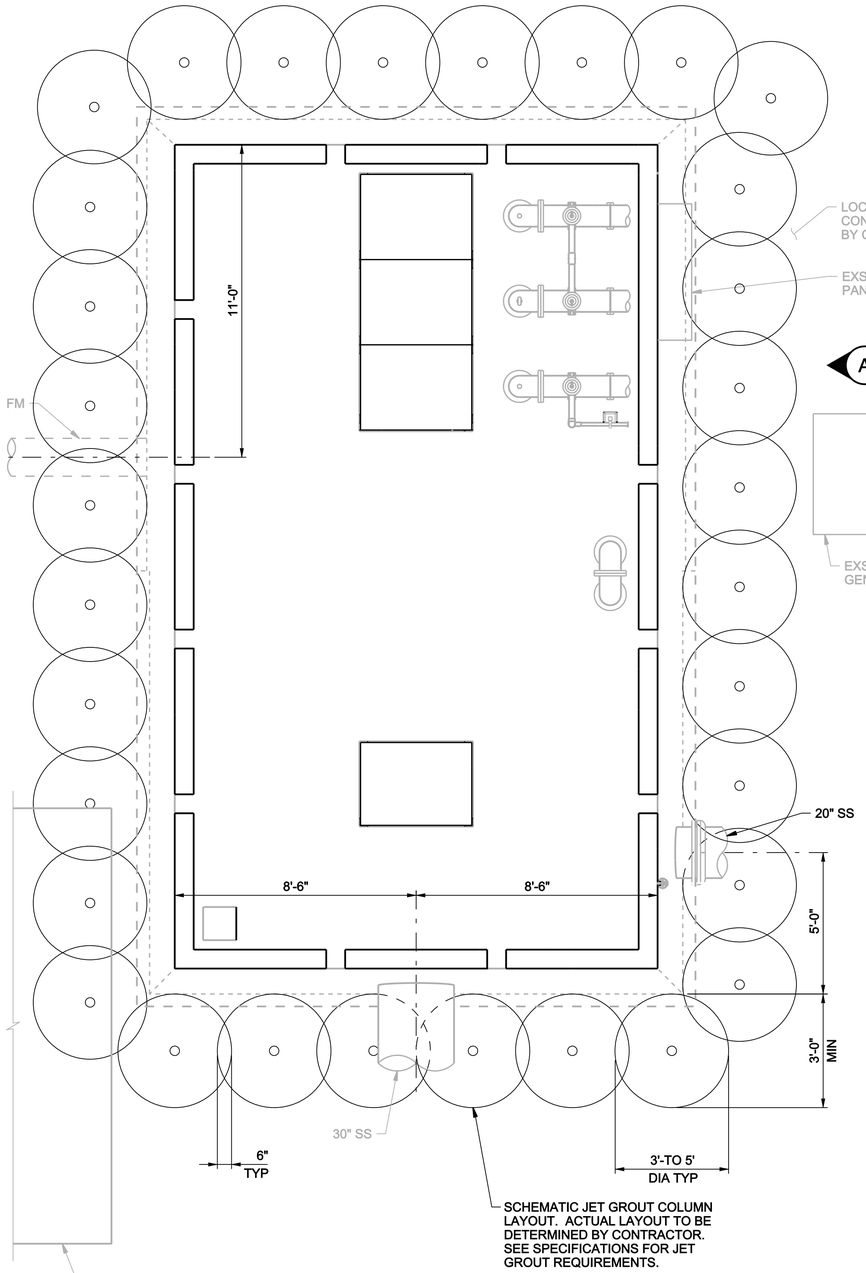
FILENAME: 1105d-10d102.dgn PLOT DATE: 07-JUL-2011 PLOT TIME: 10:34:43

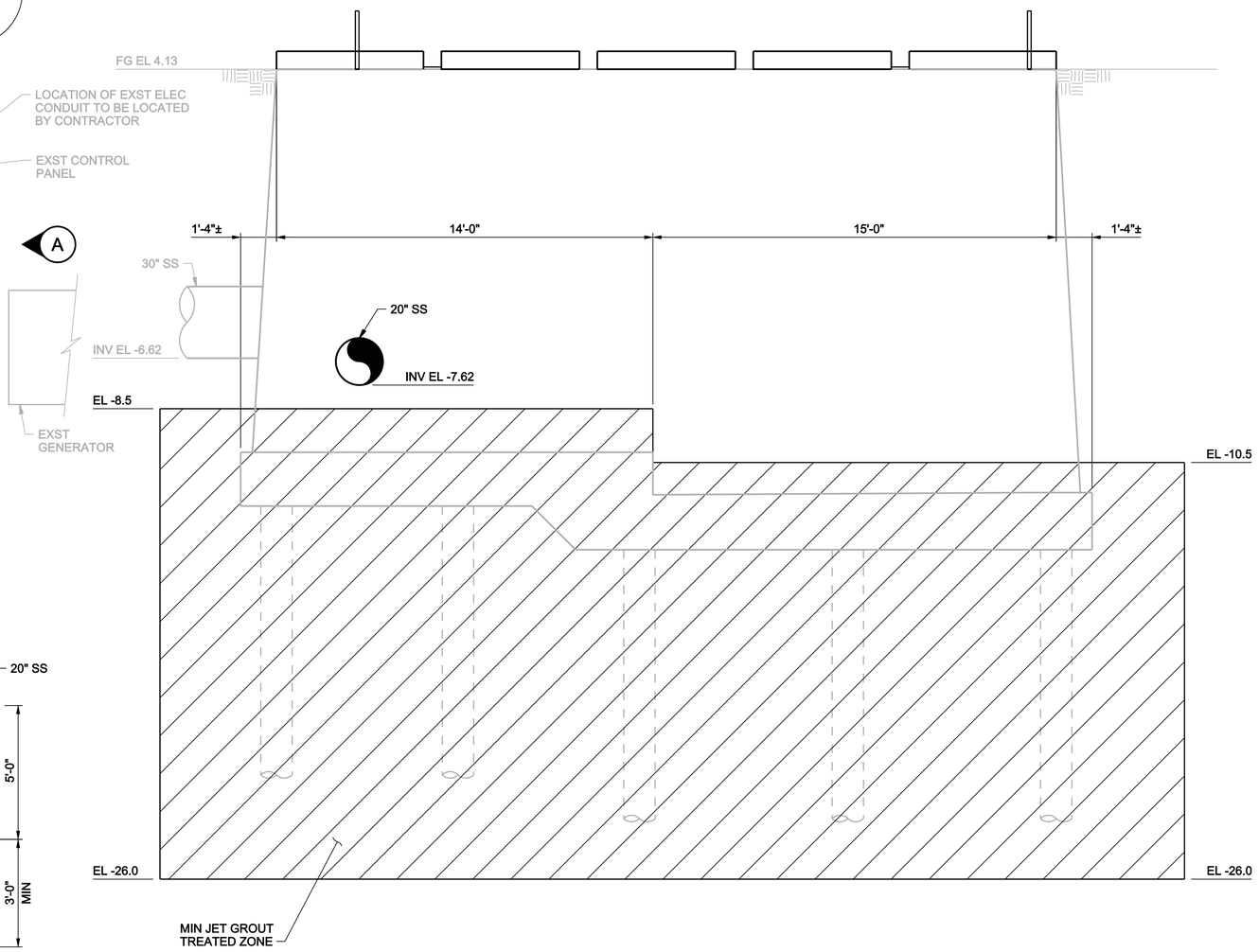
NOTE:

1. CONTRACTOR SHALL LOCATE ALL EXST UNDERGROUND UTILITIES PRIOR TO FINAL JET GROUT COLUMN LAYOUT.

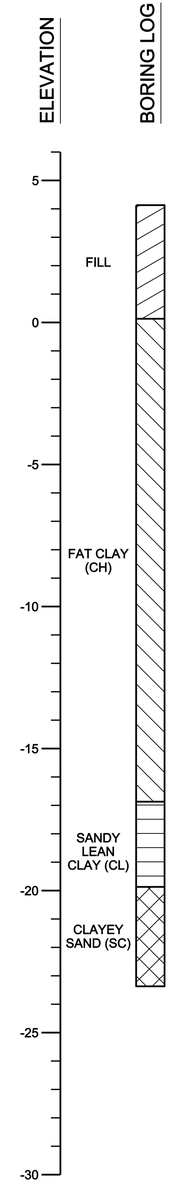


SCHEMATIC JET GROUT COLUMN LAYOUT. ACTUAL LAYOUT TO BE DETERMINED BY CONTRACTOR. SEE SPECIFICATIONS FOR JET GROUT REQUIREMENTS.

PLAN
3/8"=1'-0"



A EAST ELEVATION
3/8"=1'-0"



BORING LOG

2 0 2 4 FEET
SCALE 3/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER JEREMY A. KELLOGG No. C73233 Exp: 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN J.KELLOGG
DRAWN J.MARTIN
CHECKED J.KELLOGG
APPROVED J.GESELBRACHT

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5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

STRUCTURAL
JET GROUT
PLAN AND ELEVATION

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER S-1
SHEET NUMBER 17

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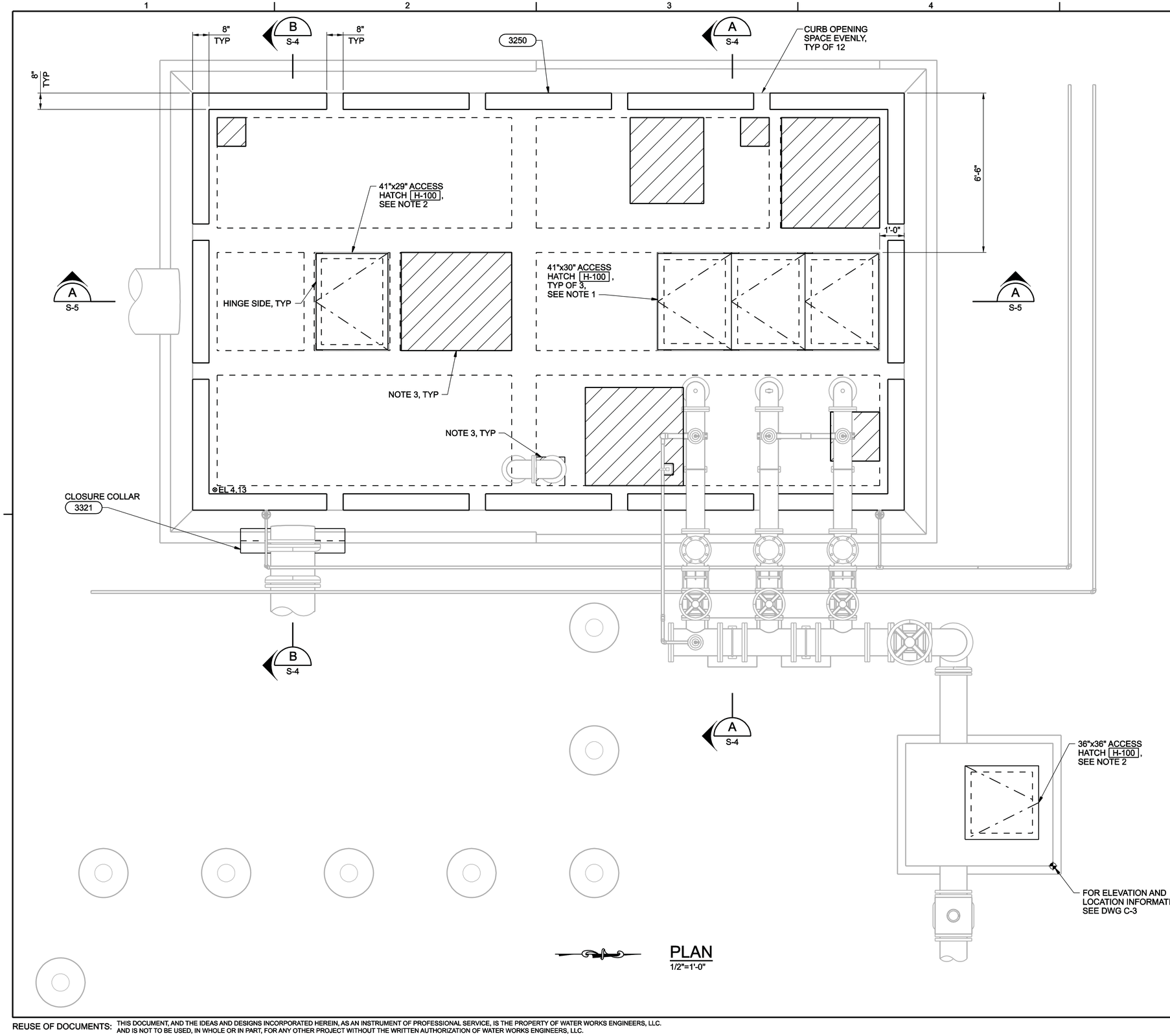
FILENAME: 1105d-20s102.dgn PLOT DATE: 23-MAY-2011 PLOT TIME: 11:49:03



PLAN
1/2"=1'-0"

NOTES:

1. PROVIDE HATCH FALL PROTECTION GRATING PER SPECIFICATIONS.
2. PROVIDE HATCH SAFETY NET PER SECTION 10520.
3. CONCRETE FILL PER 4 / S-6, TYP.
4. FIELD VERIFY EXISTING STRUCTURE DIMENSIONS PRIOR TO ORDERING OR FABRICATING MATERIALS.
5. ATTACH ACCESS HATCHES TO STAINLESS STEEL SUPPORTS WITH 4 - #12 STAINLESS STEEL SCREWS. SEE DWG S-6.
6. REMOVE ACCESS HATCH DRAIN COUPLING AT 4 HATCHES IN PUMP STATION ROOF AND PROVIDE 1" DIA HOLE IN THE STAINLESS STEEL SUPPORT BELOW THE ACCESS HATCH DRAIN.
7. HATCH DIMENSIONS SHOWN ARE DIMENSIONS OF THE INTERIOR OPENING.

2 0 2 4 FEET
SCALE 1/2"=1'-0"

REGISTERED PROFESSIONAL ENGINEER JEREMY A. HELLOGG No. C73233 Exp: 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN T.DURBIN
DRAWN J.MARTIN
CHECKED J.KELLOGG
APPROVED J.GESELBRACHT

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CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

STRUCTURAL
ROOF PLAN

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER S-2
SHEET NUMBER 18

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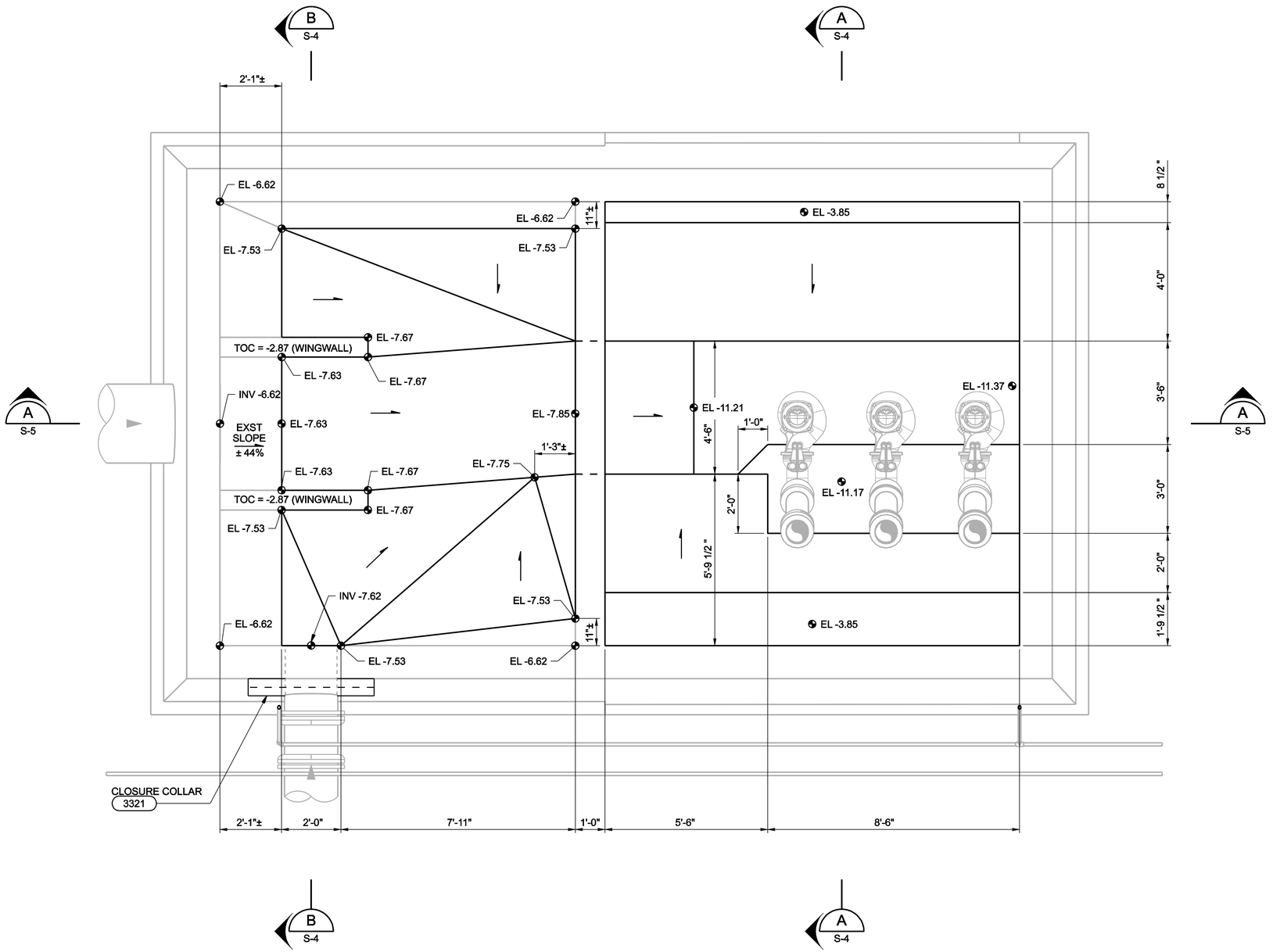
FILENAME: 1105d-20s100.dgn PLOT DATE: 05-JUL-2011 PLOT TIME: 11:24:04

NOTES:

1. ELEVATIONS SHOWN ARE FINISH SURFACE. COORDINATE WITH COATING SPECIFICATIONS.



PLAN
1/2"=1'-0"

2 0 2 4 FEET
SCALE 1/2"=1'-0"

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FILENAME: 1105d-20s101.dgn PLOT DATE: 05-JUL-2011 PLOT TIME: 13:12:13

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED J KELLOGG
APPROVED J GESELBRACHT

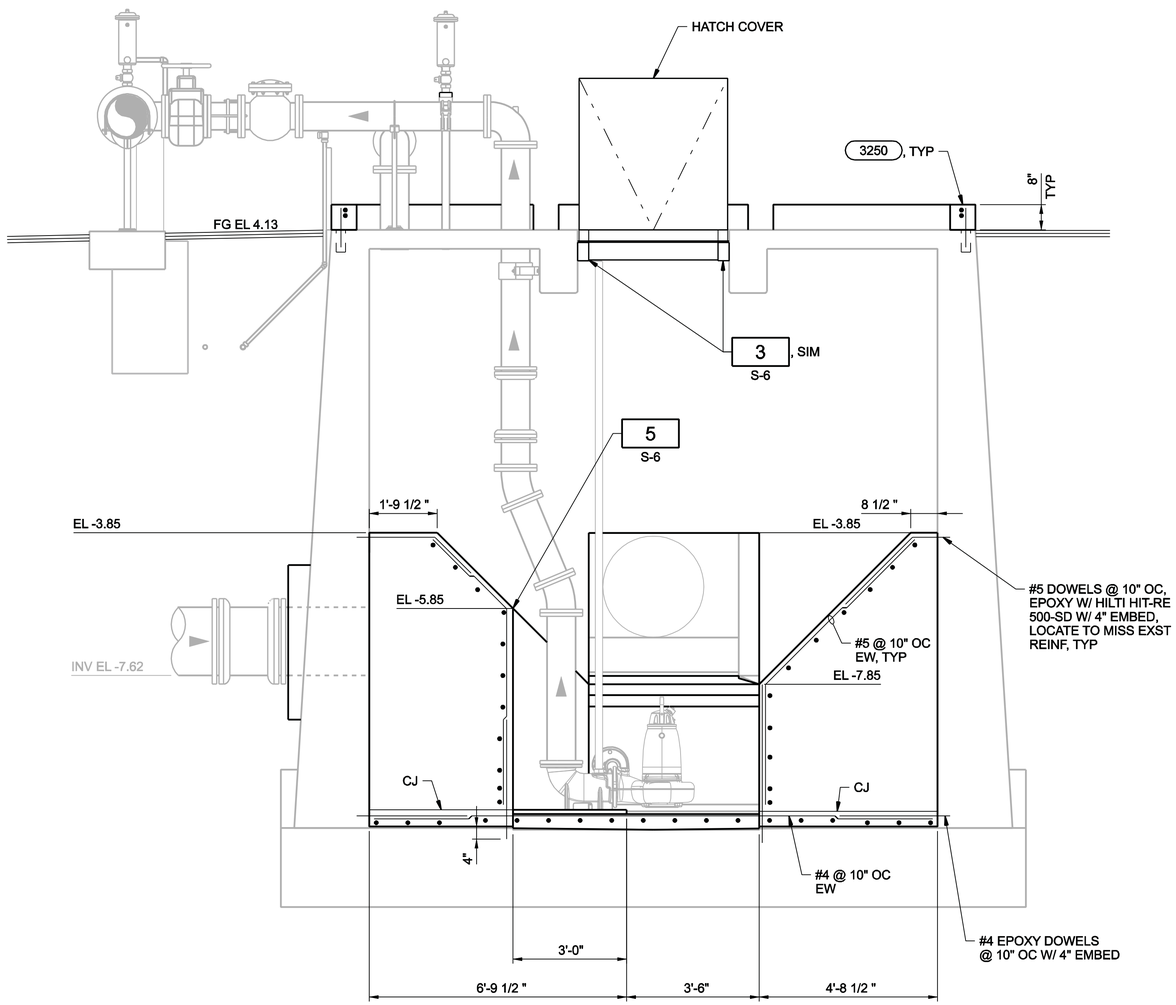
WATERWORKS ENGINEERS
5707 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

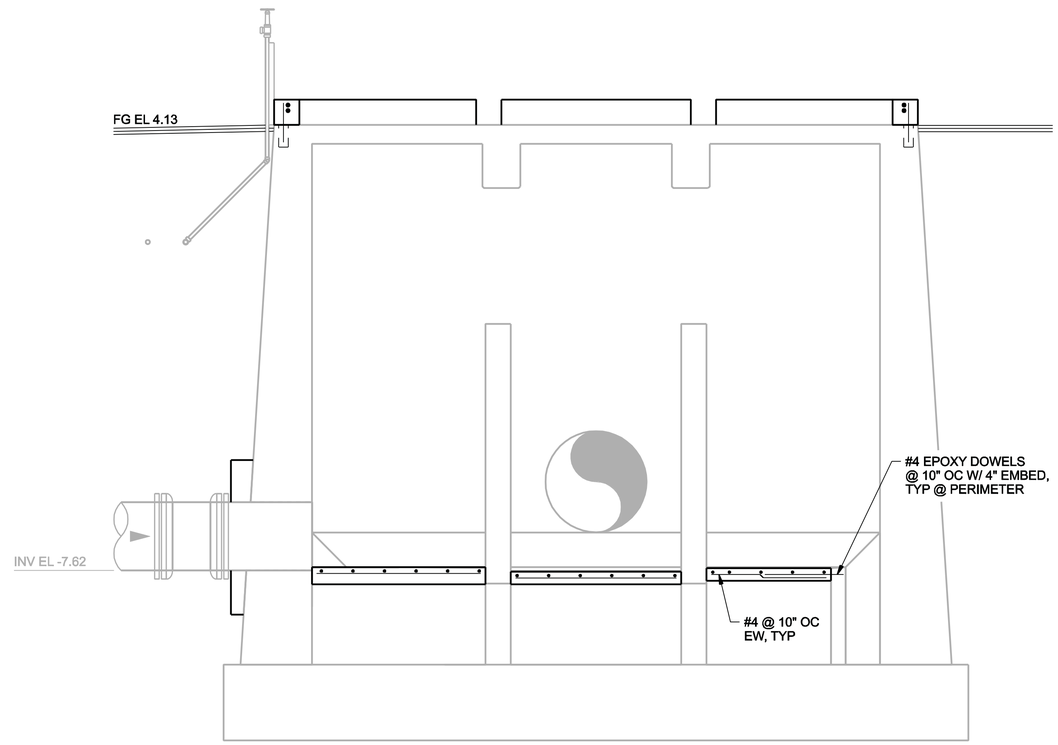
STRUCTURAL
LOWER PLAN

REGISTERED PROFESSIONAL ENGINEER JEREMY A. KELLOGG No. C73233 Exp: 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER S-3
SHEET NUMBER 19



A SECTION
S-2 S-3 1/2"= 1'-0"



B SECTION
S-2 S-3 1/2"= 1'-0"

2 0 2 4 FEET
SCALE 1/2"=1'-0"

REGISTERED PROFESSIONAL ENGINEER JEREMY A. REINGOLD No. C73233 Exp: 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGN T.DURBIN
DRAWN J.MARTIN
CHECKED M.FISHER
APPROVED J.GESELBRACHT

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CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

STRUCTURAL
SECTIONS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER S-4
SHEET NUMBER 20

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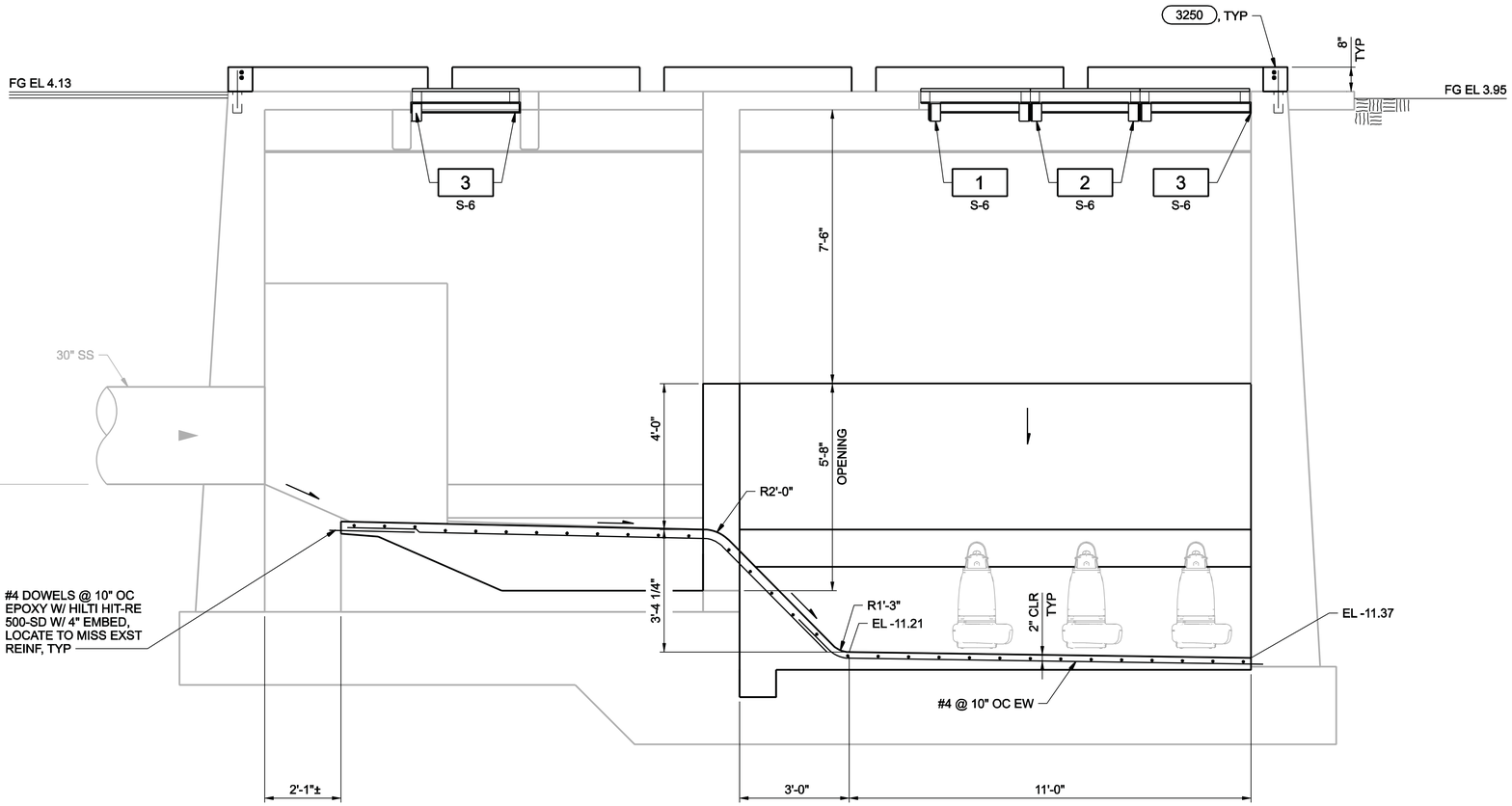
FILENAME: 1105d-20s200.dgn PLOT DATE: 07-JUL-2011 PLOT TIME: 11:00:14



A SECTION
S-2 S-3 1/2"= 1'-0"

2 0 2 4 FEET
SCALE 1/2"=1'-0"

REGISTERED PROFESSIONAL ENGINEER JEREMY A. REMLOV No. C73233 Exp: 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED M FISHER
APPROVED J GESELBRACHT

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CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

STRUCTURAL
SECTION

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER S-5
SHEET NUMBER 21

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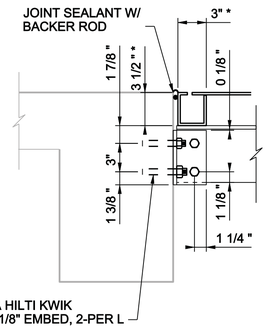
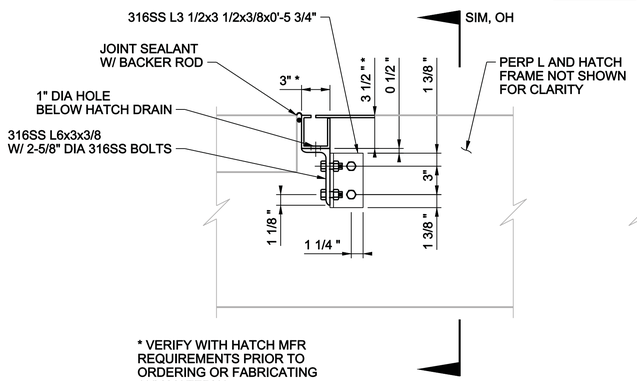
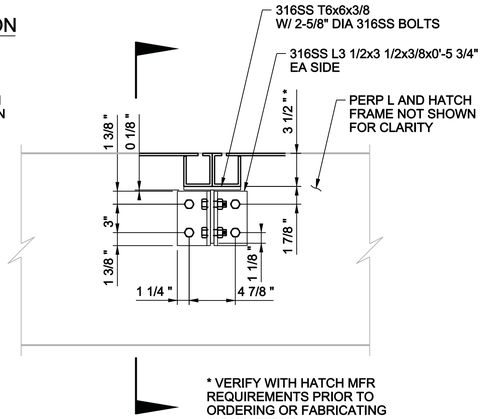
FILENAME: 1105d-20s201.dgn PLOT DATE: 07-JUL-2011 PLOT TIME: 11:38:16



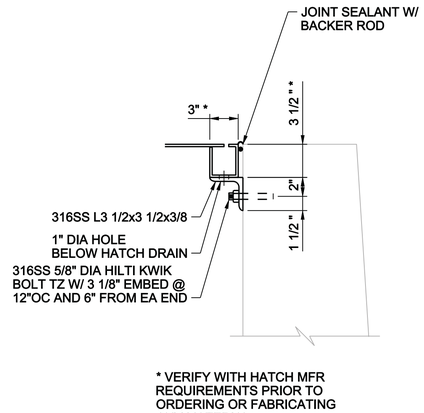
SECTION



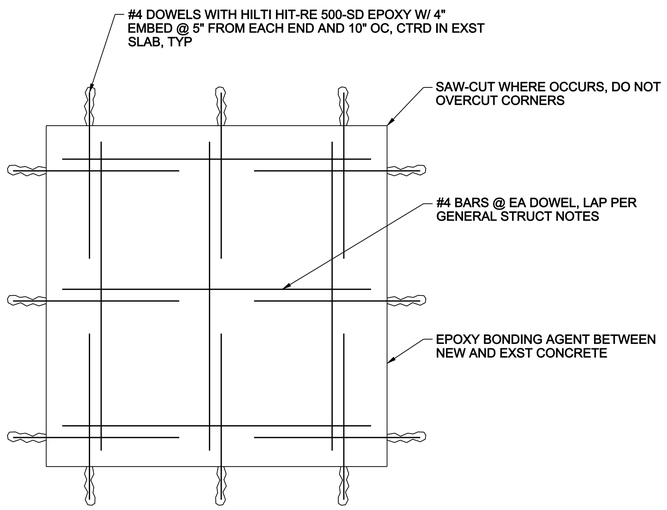
1 DETAIL
S-5 1 1/2"=1'



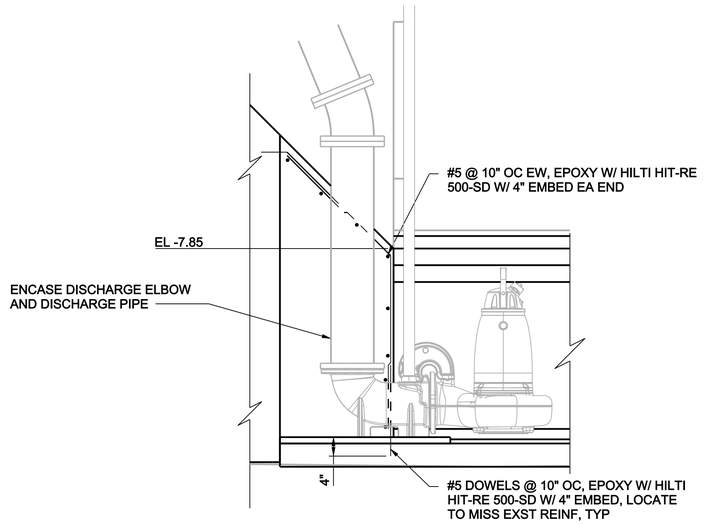
2 DETAIL
S-5 1 1/2"=1'



3 DETAIL
S-4 1 1/2"=1'
S-5



4 DETAIL
S-2 NTS



5 DETAIL
S-4 3/4"=1'

1 0 1 2 FEET
3/4"=1'-0"

6" 0 6" 1 FEET
SCALE 1 1/2"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
JEREMY A. HEITZMAN
No. C73233
Exp: 3-31-12
CIVIL
STATE OF CALIFORNIA
07-08-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED M FISHER
APPROVED J GESELBRACHT

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5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

STRUCTURAL
DETAILS

DATE
JULY 2011
PROJECT NUMBER
11-005
DRAWING NUMBER
S-6
SHEET NUMBER 22

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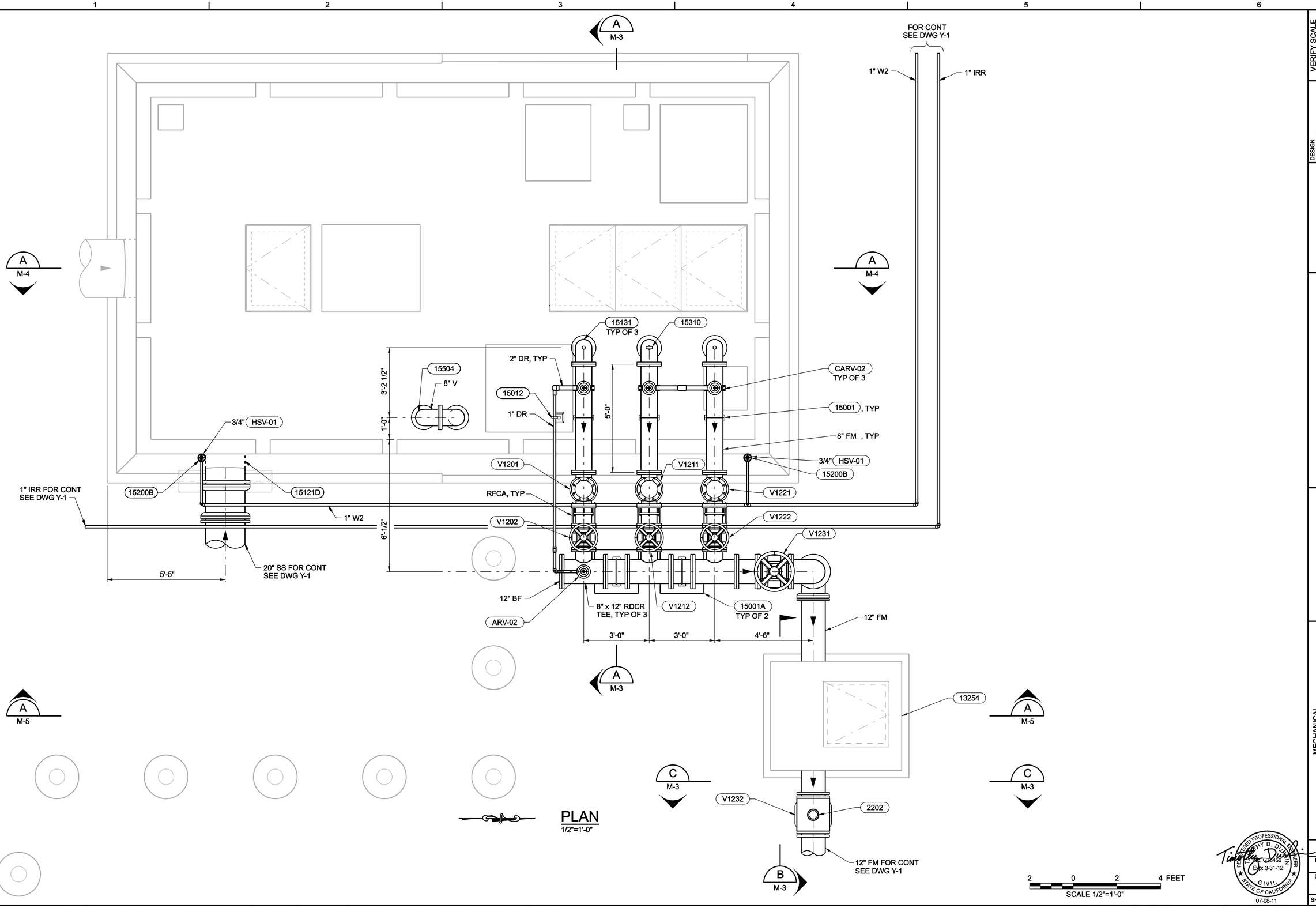
FILENAME: 1105d-20sd301.dgn PLOT DATE: 23-MAY-2011 PLOT TIME: 13:48:18



PLAN
1/2"=1'-0"

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED M FISHER
APPROVED J GESELBRACHT

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5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

MECHANICAL
ROOF PLAN

TIMOTHY D. DURBIN
No. C 23456
Exp: 3-31-12
CIVIL
STATE OF CALIFORNIA
07-08-11

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER M-1
SHEET NUMBER 23

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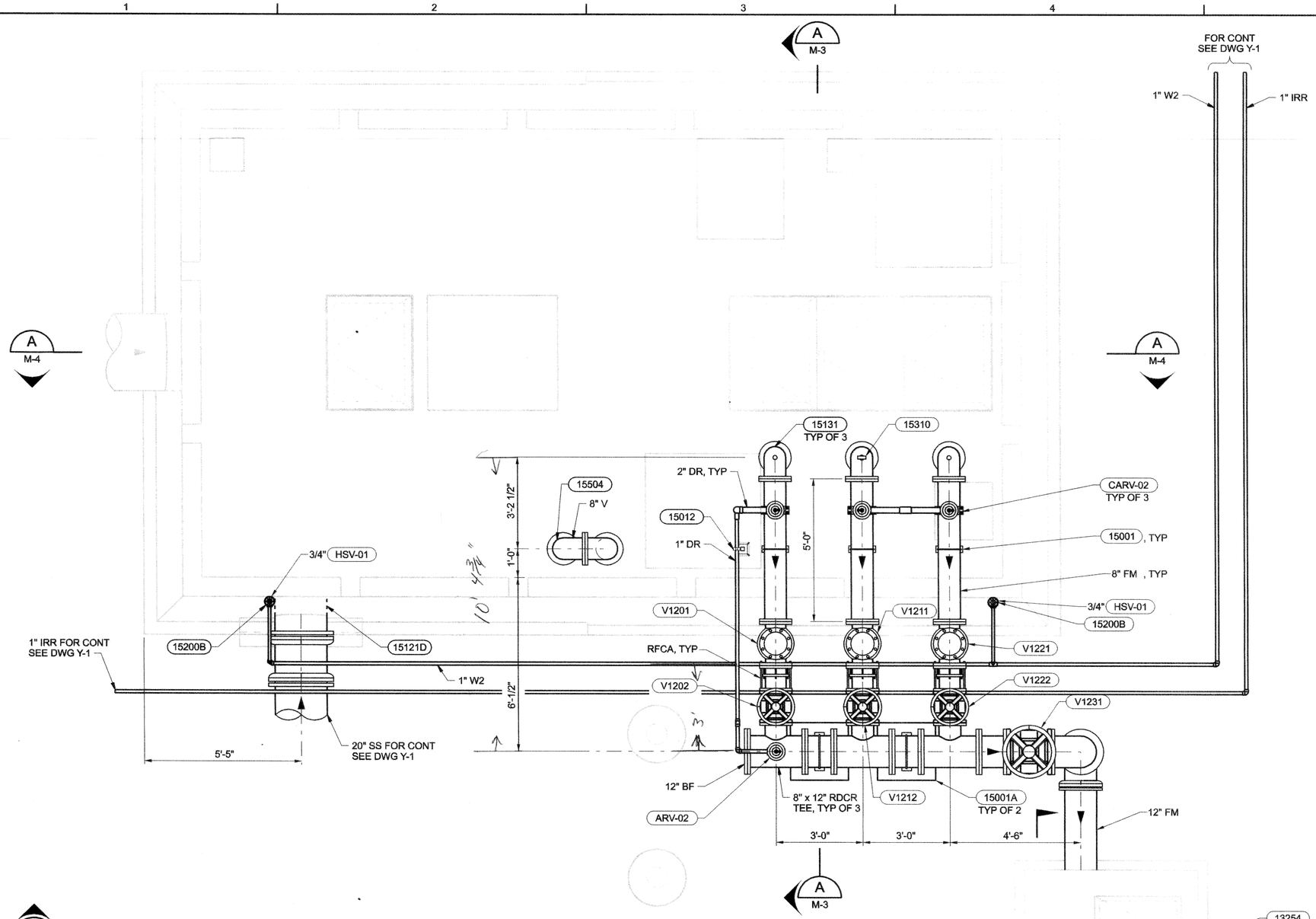

PLAN
1/2"=1'-0"

2 0 2 4 FEET
SCALE 1/2"=1'-0"

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED M FISHER
APPROVED J GESELBRACHT

WATERWORKS ENGINEERS
5757 Broadway #201 • Oakland, CA 94618 • 510-428-9890

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

MECHANICAL

ROOF PLAN

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY D. DURBIN
No. C 34455
Exp. 3-31-12
CIVIL
STATE OF CALIFORNIA
07-08-11

DATE
JULY 2011
PROJECT NUMBER
11-005
DRAWING NUMBER
M-1
SHEET NUMBER 23

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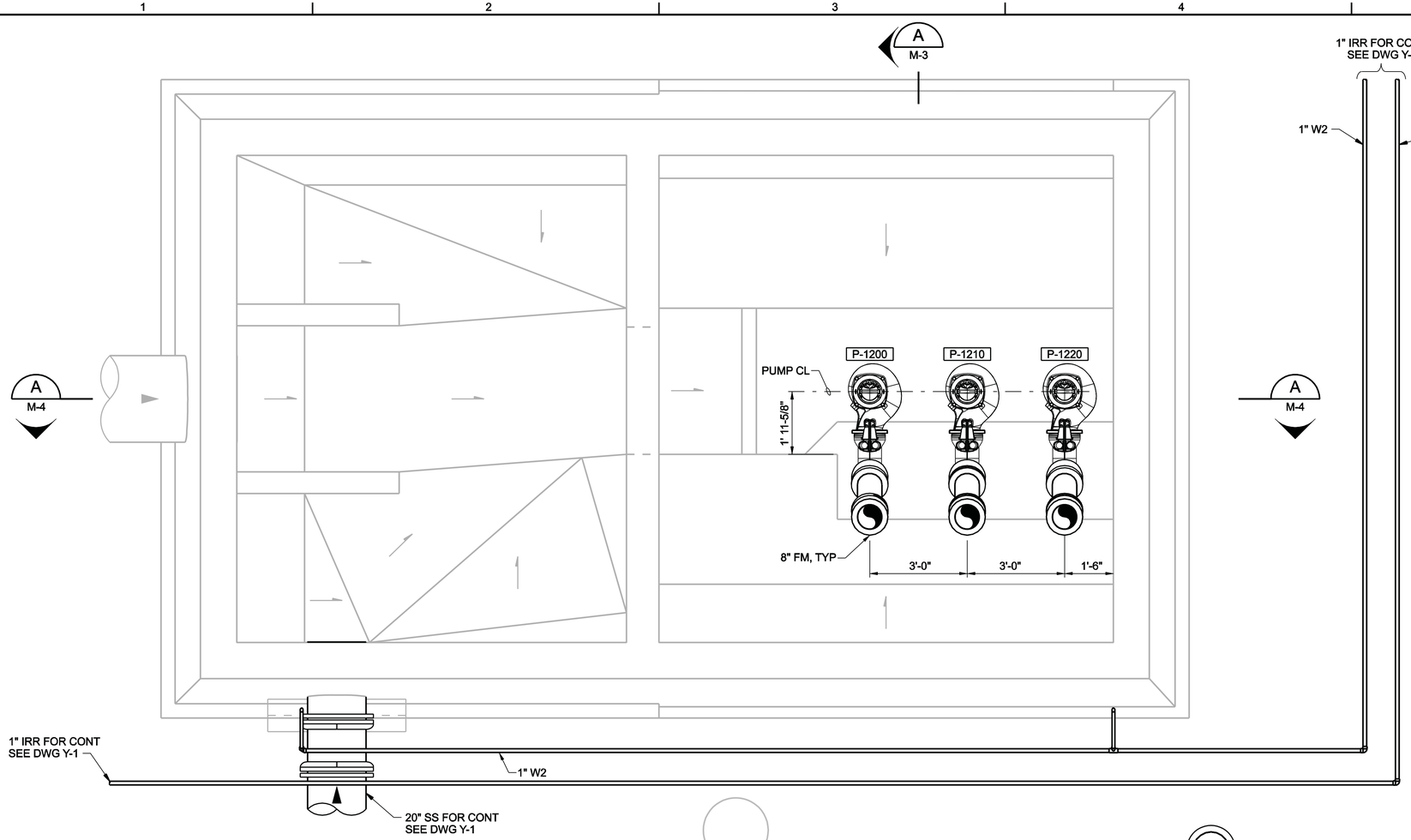
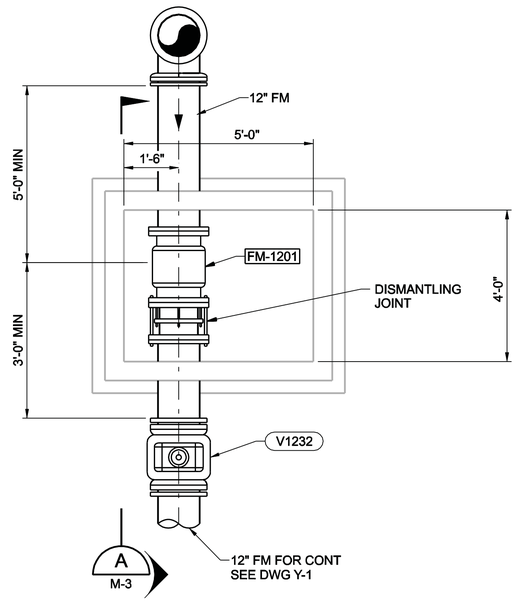
FILENAME: 1105d-20m100.dgn PLOT DATE: 07-JUL-2011 PLOT TIME: 11:40:58



PLAN
1/2"=1'-0"



2 0 2 4 FEET
SCALE 1/2"=1'-0"

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED M FISHER
APPROVED J GESELBRACHT

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5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

MECHANICAL
LOWER PLAN

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER M-2
SHEET NUMBER 24

REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. DURBIN No. C 24455 Exp. 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

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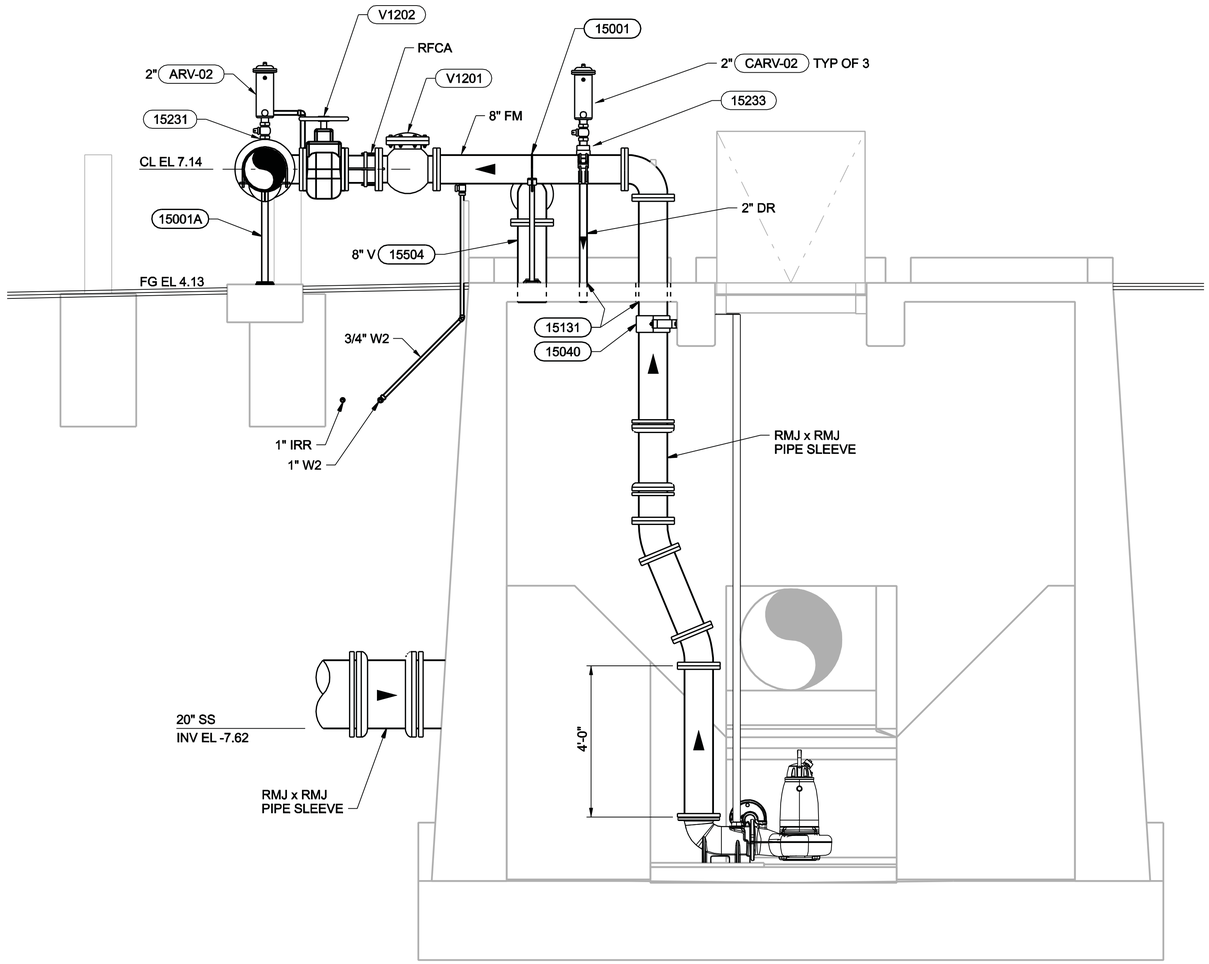
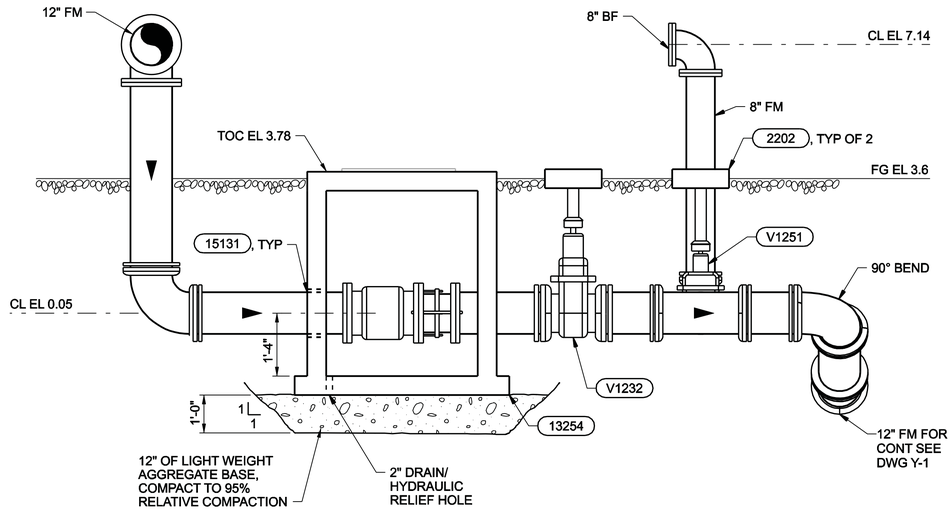
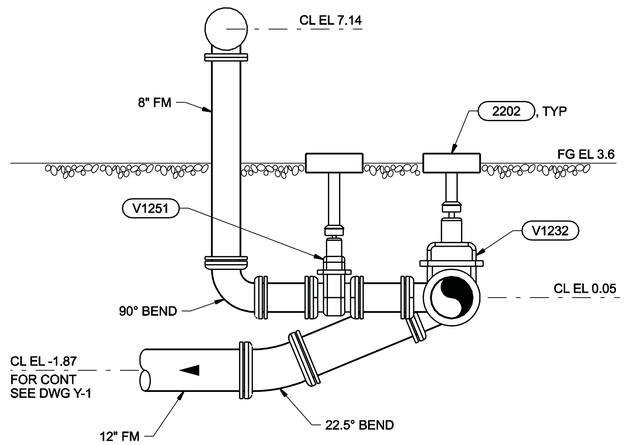
FILENAME: 1105d-20m101.dgn PLOT DATE: 05-JUL-2011 PLOT TIME: 13:38:20



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



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



C SECTION
M-1 M-2 1/2"=1'-0"

2 0 2 4 FEET
SCALE 1/2"=1'-0"

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED M FISHER
APPROVED J GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

MECHANICAL
SECTIONS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER M-3
SHEET NUMBER 25

REGISTERED PROFESSIONAL ENGINEER TIMOTHY D DURBIN No. C-34452 Exp. 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

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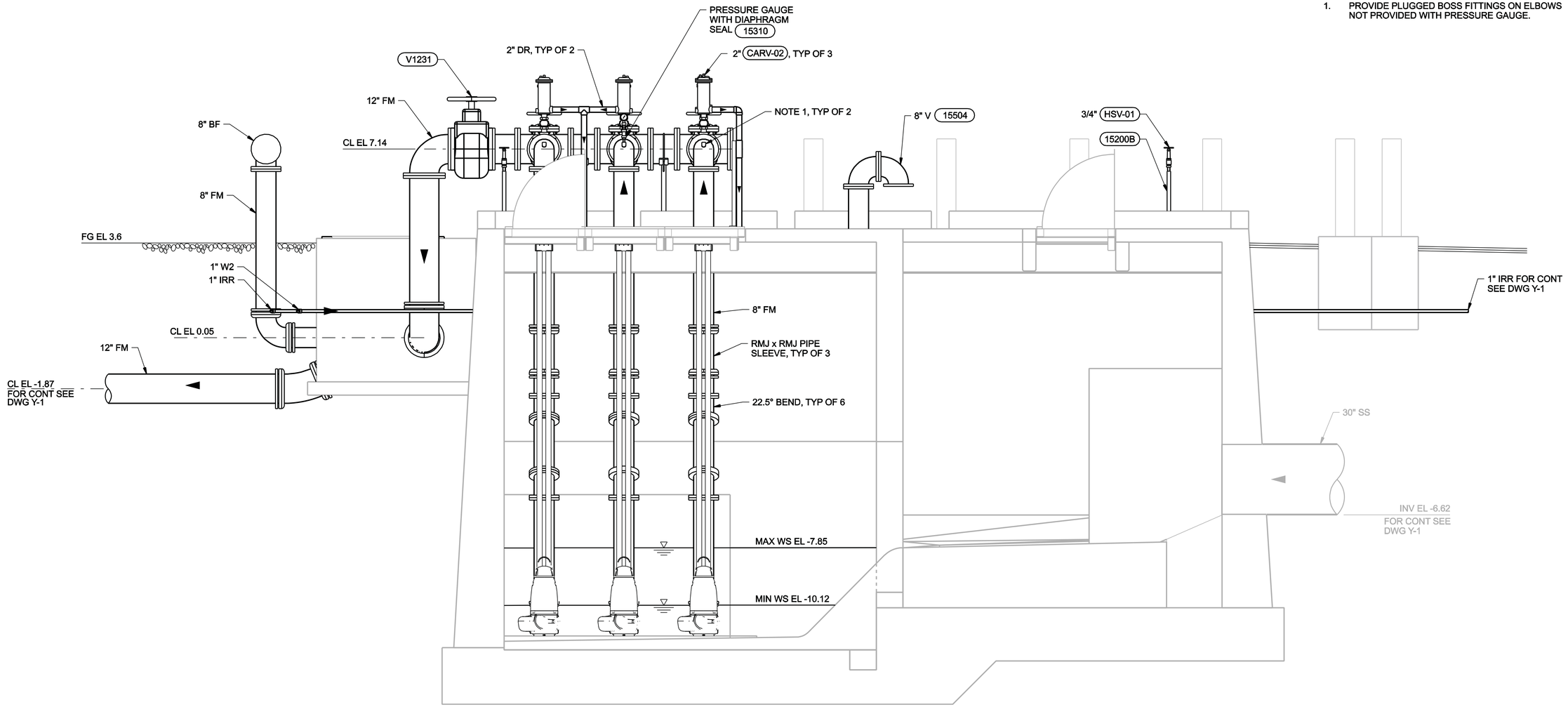
FILENAME: 1105D-20M200.dgn PLOT DATE: 07-JUL-2011 PLOT TIME: 11:58:50

NOTES:

1. PROVIDE PLUGGED BOSS FITTINGS ON ELBOWS NOT PROVIDED WITH PRESSURE GAUGE.



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

2 0 2 4 FEET
SCALE 1/2"=1'-0"

07-08-11

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DESIGN T.DURBIN
DRAWN J.MARTIN
CHECKED M.FISHER
APPROVED J.GESELBRACHT

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CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

MECHANICAL
SECTION

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER M-4
SHEET NUMBER 26

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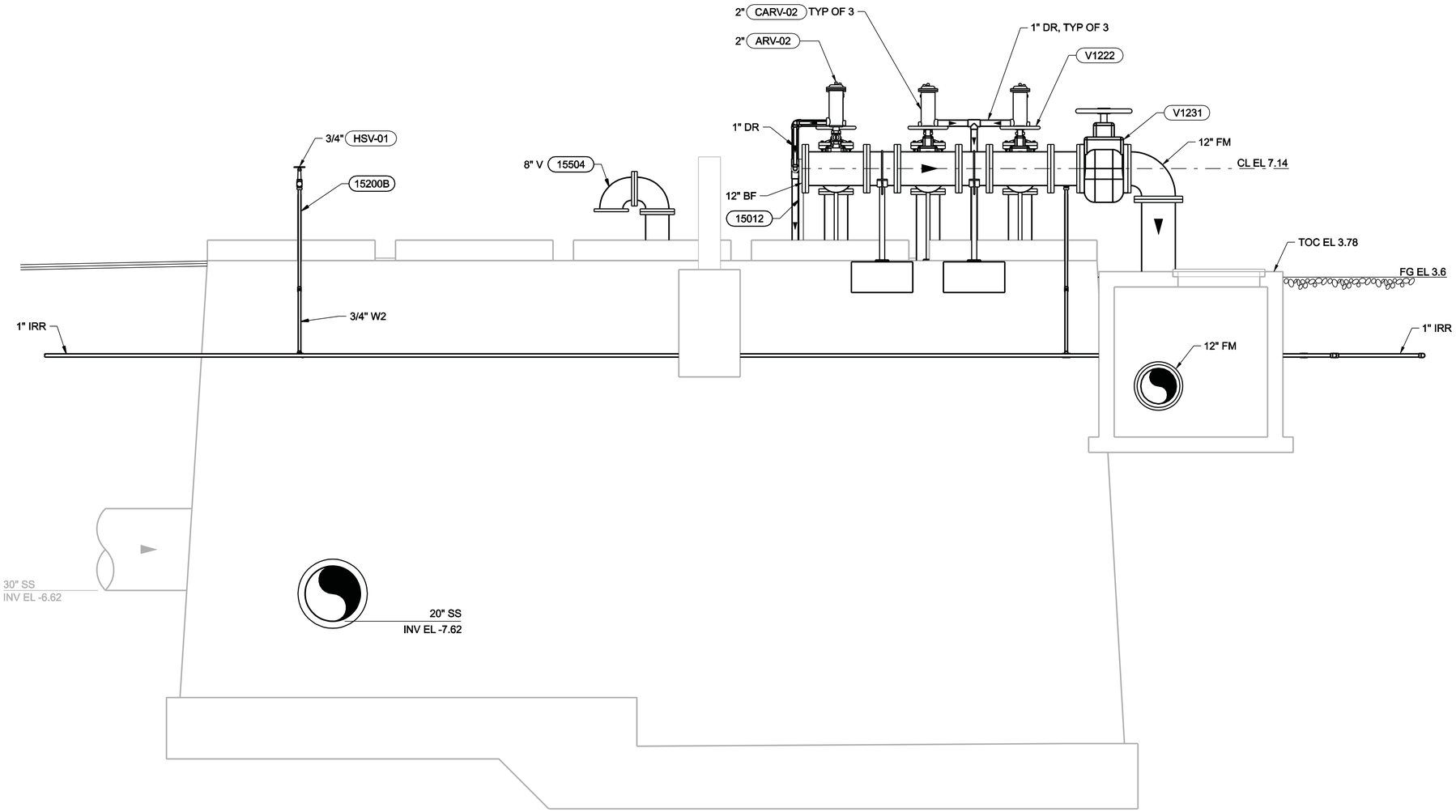
FILENAME: 1105d-20m201.dgn PLOT DATE: 07-JUL-2011 PLOT TIME: 12:05:46



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

2 0 2 4 FEET
SCALE 1/2"=1'-0"

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CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

MECHANICAL
SECTION

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER M-5
SHEET NUMBER 27

REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. DURBIN No. C-20455 Exp. 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

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FILENAME: 1105D-20M202.dgn PLOT DATE: 05-JUL-2011 PLOT TIME: 15:44:19

COMPONENTS

SYMBOL	DESCRIPTION
RES	RESISTOR
	POTENTIOMETER
	CAPACITOR, FIXED
	CAPACITOR, ADJUSTABLE
	DIODE
	DIODE, ZENER
	VARISTOR TRANSIENT VOLTAGE SUPPRESSOR
	VOLTAGE SURGE SUPPRESSOR, AC
MOV	METAL OXIDE VARISTOR

DEVICES — MISCELLANEOUS

SYMBOL	DESCRIPTION
	AUDIBLE ALARM
	BATTERY
HTR	HEATER
?	3 PHASE MOTOR ? = MOTOR HP
M	3 PHASE MOTOR
M	SINGLE PHASE MOTOR
	TRANSFORMER SIZE AND VOLTAGE AS SHOWN
M	UTILITY POWER METER

SWITCHES — OPERATOR

SYMBOL	DESCRIPTION
SW	TOGGLE OR DISCONNECT SWITCH
PB	PUSHBUTTON — NORMALLY OPEN, MOMENTARY ACTION
PB	PUSHBUTTON — NORMALLY CLOSED, MOMENTARY ACTION
PB	PUSHBUTTON, MECHANICALLY INTERLOCKED, DOUBLE CIRCUIT — NORMALLY CLOSED AND NORMALLY OPEN, MAINTAINED ACTION
H O A	SELECTOR SWITCH, 3 POSITION — CONTACT STATUS SHOWN EXISTS AT POSITION OF H—HAND, O—OFF, OR A—AUTO
2—1 1—2	SELECTOR SWITCH, 2 POSITION — CONTACT STATUS SHOWN EXISTS AT POSITION AS SHOWN

SWITCHES — PROCESS

SYMBOL	DESCRIPTION
FS	FLOW SWITCH — CLOSES UPON INCREASING FLOW
FS	FLOW SWITCH — OPENS UPON INCREASING FLOW
LS	LEVEL SWITCH — CLOSES UPON INCREASING LEVEL
LS	LEVEL SWITCH — OPENS UPON INCREASING LEVEL
PS	PRESSURE SWITCH — CLOSES UPON INCREASING PRESSURE (DECREASING VACUUM)
PS	PRESSURE SWITCH — OPENS UPON INCREASING PRESSURE (DECREASING VACUUM)
TS	TEMPERATURE SWITCH — CLOSES UPON INCREASING TEMPERATURE
TS	TEMPERATURE SWITCH — OPENS UPON INCREASING TEMPERATURE
ZS	LIMIT SWITCH — CLOSES AT SET LIMIT
ZS	LIMIT SWITCH — OPENS AT SET LIMIT
ZS	PROXIMITY SWITCH — CLOSES UPON DECREASING DISTANCE
ZS	PROXIMITY SWITCH — OPENS UPON DECREASING DISTANCE
WS	TORQUE SWITCH — CLOSES UPON INCREASING TORQUE
WS	TORQUE SWITCH — OPENS UPON INCREASING TORQUE

DEVICES — FRONT PANEL

SYMBOL	DESCRIPTION
X	INDICATING LIGHT, LETTER "X" INDICATES COLOR: R=RED G=GREEN, A=AMBER, W=WHITE Y=YELLOW, B=BLUE
PTT X	INDICATING LIGHT, PUSH TO TEST
AMP	AMP METER
VOLT	VOLT METER
ETM	ELAPSED TIME METER
XS	MULTI—POSITION SWITCH WHERE LETTER "X" IS FUNCTION: A=AMP, V=VOLT

DEVICES — RELAY

SYMBOL	DESCRIPTION
M1	CONTACTOR OR STARTER M1
CR 1	CONTROL RELAY CR1
TR 2	TIME DELAY RELAY TR2 — ADJUSTABLE TIME DELAY RANGE & SETTING AS SHOWN
TDOE TDOD	TIME DELAY ON ENERGIZATION TIME DELAY ON DE—ENERGIZATION
107, 121	REFERENCED RELAY WITH N.O. CONTACT ON LINE 107 N.C. CONTACT ON LINE 121
CR1 (105)	NORMALLY OPEN, RELAY CONTACT — ACTUATED BY RELAY CR1 COIL LOCATED ON LINE 105
CR1	NORMALLY CLOSED, RELAY CONTACT — ACTUATED BY RELAY CR1
TR2	NORMALLY OPEN, TIME DELAY RELAY CONTACT — CONTACT CLOSES AFTER TR2 IS ENERGIZED
TR2	NORMALLY CLOSED, TIME DELAY RELAY CONTACT — CONTACT OPENS AFTER TR2 IS ENERGIZED
TR2	NORMALLY OPEN, TIME DELAY RELAY CONTACT — CONTACT OPENS AFTER TR2 IS DE—ENERGIZED
TR2	NORMALLY CLOSED, TIME DELAY RELAY CONTACT — CONTACT CLOSES AFTER TR2 IS DE—ENERGIZED
TR2	CONTACT OPENS AND CLOSES IN A TIMED REPEAT CYCLE
SV	SOLENOID COIL

DEVICES — PROTECTIVE

SYMBOL	DESCRIPTION
500A 3P LSI	CIRCUIT BREAKER, WITH AMPS OR POLES AS SHOWN OR NOTED PROVIDE TRIP UNIT AS SHOWN MCP— MOTOR CIRCUIT PROTECTOR TM— THERMAL MAGNETIC LSIG— LONG, SHORT, INST, GFI MCS— MOLDED CASE SWITCH, NO TRIP
OL	THERMAL OVERLOAD CONTACT
	THERMAL OVERLOAD ELEMENT
	FUSE WITH BLOWN FUSE INDICATING LIGHT
	FUSE
K	KIRK—KEY INTERLOCK
500A 3P DISC	DISCONNECT SWITCH, WITH POLES AS SHOWN OR NOTED PROVIDE AMP RATING OR HP RATING AS SHOWN

WIRING — CONNECTIONS

SYMBOL	DESCRIPTION
	PANEL OR EQUIPMENT WIRING
	FIELD WIRING
	CONDUCTORS — NOT CONNECTED
	CONDUCTORS — CONNECTED
	GROUND
	PLUG AND RECEPTACLE
	INCOMING LINE
123 123 123	TERMINAL BLOCKS WITH TERMINAL NUMBER AS SHOWN
	TERMINAL BLOCKS WITH TERMINAL NUMBER DETERMINED BY SUBMITTAL
SHIELD CONDUCTOR	SHIELDED CABLE

PLAN — SYMBOLS

SYMBOL	DESCRIPTION
	CONDUIT, EXPOSED
	CONDUIT, IN SLAB OR BELOW GRADE
	CONDUIT, CONCEALED IN WALL OR CEILING
	CONDUIT STUBBED OUT & CAPPED
	CONDUIT BENDS TOWARD OBSERVER
	CONDUIT BENDS AWAY FROM OBSERVER
	CONDUIT ENDS
J	FLEXIBLE CONDUIT CONNECTION FROM J—BOX TO EQUIPMENT
	CONDUIT CHANGE IN ELEVATION
G	BARE COPPER GROUND WIRE
G	GROUND CONNECTION BOLTED TYPE
G	GROUND CONNECTION EXOTHERMIC WELD TYPE
	DISCONNECT SWITCH
	FIELD MOUNTED DEVICE
	SPECIAL RECEPTACLE
	TELEPHONE/DATA RECEPTACLE 2 PORT TA568A, 2 CAT 6 CABLES
#	CONDUIT NUMBER
T	THERMOSTAT
E	EYS SEAL
J	JUNCTION BOX
	PULL BOX OF SIZE SHOWN (CHRISTY BOX SIZE MINIMUM)
# A a	LIGHTING FIXTURE # — CIRCUIT BREAKER NUMBER A — FIXTURE SCHEDULE REF. a — CONTROL SWITCH REFERENCE
#	DUPLEX AND QUADPLEX RECEPTACLE # — CIRCUIT BREAKER NUMBER
# $ 2 a	TOGGLE SWITCH # — CIRCUIT BREAKER NUMBER SUBSCRIPT — CIRCUIT CONTROLLED SUPERSCRIPT — BLANK = 1 POLE 2 = 2 POLE 3 = 3 WAY OTHER — M = MOTION DETECTOR T = TIMER SWITCH

MISCELLANEOUS ABBREVIATIONS

&	AND	MTR	MOTOR
@	AT	MUX	MULTIPLEXER
A	AMBER, AMPERES	MV	MERCURY VAPOR, MEDIUM VOLTAGE
AC	ALTERNATING CURRENT	N	NEUTRAL
ACK	ACKNOWLEDGE	NC	NORMALLY CLOSED
AFF	ABOVE FINISHED FLOOR	NHC	NORMALLY HELD CLOSED
AH	AMP HOUR	NHO	NORMALLY HELD OPEN
AI	ANALOG INPUT	NIC	NOT IN CONTRACT
AIC	AMP INTERRUPTING CAPACITY SYMMETRICAL	NL	NIGHT LIGHT
AM	AMP METER	NO	NORMALLY OPEN
AO	ANALOG OUTPUT	NTS	NOT TO SCALE
AWG	AMERICAN WIRE GUAGE	(N)	NEW
ATS	AUTOMATIC TRANSFER SWITCH	OC	ON CENTER
BATT	BATTERY	OI	OPERATOR INTERFACE
(B)	PROVIDED BY OWNER — INSTALLED BY CONTRACTOR	OL	OVERLOAD
BFC	BELOW FINISHED CEILING	ORP	OXIDATION REDUCTION POTENTIAL
BOD	BIOCHEMICAL OXYGEN DEMAND	P	POLE
BPF	BAND PASS FILTER	PB	PUSHBUTTON
BYP	BYPASS	PBX	PULL BOX
C	CONDUIT	PF	POWER FACTOR
CAP	CAPACITOR	PFR	POWER FAIL RELAY
CB	CIRCUIT BREAKER	PH	HYDROGEN ION CONCENTRATION
CKT	CIRCUIT	PLC	PROGRAMMABLE LOGIC CONTROLLER
COAX	COAXIAL CABLE	PM	POWER MONITOR
COMM	COMMUNICATION	PNL	PANEL
CR	CONTROL RELAY	POT	POTENTIOMETER
CT	CURRENT TRANSFORMER	PRESS	PRESSURE
CS	CONSTANT SPEED	PR	PAIR, TWISTED AND SHIELDED
CU	COPPER	PRI	PRIMARY
DC	DIRECT CURRENT	PROVIDE	FURNISH, INSTALL, AND CONNECT
DET	DETAIL	PS	PRESSURE SWITCH
DI	DIGITAL INPUT	PT	POTENTIAL TRANSFORMER
DISC	DISCONNECT	PTT	PUSH TO TEST
DO	DIGITAL OUTPUT	PVC	POLYVINYLCHLORIDE
DPDT	DOUBLE POLE DOUBLE THROW	PWR	POWER
DWG	DRAWING	REF	REFERENCE
E—DTL	ELECTRICAL DRAWING DETAIL	RFI	RADIO FREQUENCY INTERFERENCE
ELEV	ELEVATION	RMS	ROOT MEAN SQUARE
EOL	ELECTRONIC OVERLOAD RELAY	RTD	RESISTANCE TEMPERATURE DETECTOR
ETM	ELAPSED TIME METER	RST	RESET
ESW	ETHERNET SWITCH	RVAT	REDUCE VOLTAGE AUTO TRANSFORMER
(E)	EXISTING	RTU	REMOTE TERMINAL UNIT
FCS	FIELD CONTROL STATION	(R)	REWIRE, RELOCATE, REVISE, REUSE
FLA	FULL LOAD AMPS	SCH	SCHEDULE
FLEX	FLEXIBLE LIQUID TIGHT CONDUIT	SEC	SECONDARY, SECOND
FRP	FIBERGLASS REINFORCED PLASTIC	SECS	SECONDS
FS	FULL SPEED	SEL	SELECTOR
FVNR	FULL VOLTAGE NON—REVERSING	SFA	SERVICE FACTOR AMPS
FVR	FULL VOLTAGE REVERSING	SPEC	SPECIFICATION
FWD	FORWARD	SS	STAINLESS STEEL
(F)	FUTURE	SSRC	STAINLESS STEEL RIGID CONDUIT
GALV	GALVANIZED	SSS	SOLID STATE STARTER
GFI	GROUND FAULT INTERRUPTER	STT	START
GND	GROUND	STP	STOP
GRS	GALVANIZED RIGID STEEL CONDUIT	SV	SOLENOID VALVE
GRS—PVC	PVC COATED GRS CONDUIT	SW	SWITCH
HI	HIGH	SWBD	SWITCHBOARD
HIM	HUMAN INTERFACE MODULE	SYMM	SYMMETRICAL
HOA	HAND OFF AUTO	TB	TERMINAL BLOCK
HP	HORSE POWER	TC	TIME CLOCK
HPS	HIGH PRESSURE SODIUM	TDOD	TIME DELAY ON DE—ENERGIZATION
HS	HAND SWITCH	TDOE	TIME DELAY ON ENERGIZATION
HTR	HEATER	TELCO	TELEPHONE COMPANY
HZ	HERTZ	TM	THERMAL MAGNETIC
HZD	HAZARD	TEMP	TEMPERATURE
I	INTERLOCK	TR	TIME DELAY RELAY
I—DTL	INSTRUMENTATION DRAWING DETAIL	TRIAD	TWISTED AND SHIELDED 3 CONDUCTOR
I/O	INPUT/OUTPUT	TS	TEMPERATURE SWITCH
INST	INSTANTANEOUS	TSPR	TWISTED AND SHIELDED PAIR
ISB	INTRINSICALLY SAFE BARRIER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
ISR	INTRINSICALLY SAFE RELAY	TYP	TYPICAL
J	JUNCTION BOX	UG	UNDERGROUND
K	KILO, PREFIX	ULH	ULTRA LOW HARMONIC
LA	LIGHTNING ARRESTOR	UON	UNLESS OTHERWISE NOTED
LC	LIGHTING CONTACTOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
LEL	LOWER EXPLOSION LIMIT	V	VOLTAGE
LO	LOW	VA	VOLT AMPS
LOS	LOCK OUT STOP	VAR	VOLT AMPS REACTIVE
LR	LATCHING RELAY	VFD	VARIABLE FREQUENCY DRIVE
LS	LIMIT SWITCH	VLV	VALVE
M	MOTOR CONTACTOR	VM	VOLTMETER
MAG	MAGNETIC FLOWMETER	VMR	VOLTAGE MONITOR RELAY
MAX	MAXIMUM	VR	VOLTAGE RELAY
MCM	THOUSAND CIRCULAR MILS	W	WATTS
MCP	MOTOR CIRCUIT PROTECTOR	WP	WEATHER PROOF, NEMA 3R
MCS	MOLDED CASE SWITCH	WTP	WATER TREATMENT PLANT
MH	MANHOLE	WWTP	WASTE WATER TREATMENT PLANT
MIN	MINIMUM, MINUTE	XFMR	TRANSFORMER
MODEM	MODEM	Z	IMPEDANCE
MOV	MOTOR OPERATED VALVE	ZS	LIMIT SWITCH

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DESIGN S PENNER
DRAWN N CONANT
CHECKED T FRISCH
APPROVED M FISHER

WATERWORKS ENGINEERS

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

ELECTRICAL
SYMBOLS AND ABBREVIATIONS

FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
110 BLUE RAVINE RD, SUITE 101 PH 916 353 1025
FOLSOM, CA 95630 FX 916 353 1028

REGISTERED PROFESSIONAL ENGINEER THOMAS P. FRISCH No. E15761 Exp. 09-30-12 ELECTRICAL STATE OF CALIFORNIA

FILE: 1102D-E01.DWG DATE: JUL 07, 2011 TIME: 12:57:22PM

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER E01
SHEET NUMBER 28

P&ID SYMBOLS

ISA SYMBOLS

SYMBOL	DESCRIPTION
XXX / XXX	FIELD MOUNTED INSTRUMENT
XXX / XXX	INSTRUMENT MOUNTED ON DOOR OF LOCAL PANEL, OPERATOR ACCESSIBLE
XXX / XXX	INSTRUMENT MOUNTED ON DOOR OF FIELD PANEL, OPERATOR ACCESSIBLE
XXX / XXX	INSTRUMENT MOUNTED WITHIN PANEL, OPERATOR INACCESSIBLE
XXX / XXX	INSTRUMENT MOUNTED WITHIN FIELD PANEL, OPERATOR INACCESSIBLE
I	OPERATION PERFORMED WITH LOGIC OR HARDWIRED DEVICES
MCE–XX	ASSOCIATED MOTOR CONTROL ELEMENTARY IF APPLICABLE
UNIT XXX / XXX	VISUAL DISPLAY OF PLC ANALOG REGISTER SCALE TO UNITS AS SHOWN
XXX / XXX	VISUAL DISPLAY OF PLC ANALOG ALARM REGISTER
XXX / XXX	VISUAL DISPLAY OF PLC DIGITAL REGISTER
XXX / XXX	VISUAL DISPLAY OF PLC DIGITAL ALARM REGISTER
XX XX	TAG DESCRIPTION
LA??HH	PLC I/O TAG
△	PLC DIGITAL INPUT
▽	PLC DIGITAL OUTPUT
▲	ANALOG INPUT
▼	ANALOG OUTPUT
	AUDIBLE ALARM (BUZZER OR HORN)
X	LAMP INDICATION COLOR DENOTED BY "X" RED, BLU, GRN, WHT, AMBER
a XXXX / XXXX a	CONTINUATION TAG FROM ONE AREA TO ANOTHER AREA OF DIFFERENT DRAWINGS "a" TAG IDENTIFIER TO POINT ON DRAWING NUMBER XXXX.
I–X / I–X	CONTINUED ON DWG I–X

LINE TYPES

———	PRIMARY PROCESS LINE
———	SECONDARY PROCESS LINE
— — —	ELECTRICAL SIGNAL LINE (DIGITAL OR ANALOG)
.....	SOFTWARE OR DATA LINK
—— - ——	BOUNDARY OF EQUIPMENT PACKAGE SYSTEM
—o—o—	COMMUNICATION CONNECTION

VALVES

SYMBOL	DESCRIPTION
	GATE VALVE
	CHECK VALVE
	PLUG VALVE
	BALL VALVE
	BALL CHECK VALVE
	BUTTERFLY VALVE
	ANGLE VALVE
	NEEDLE VALVE
	RELIEF VALVE
	DIAPHRAGM VALVE
	3–WAY VALVE
	FLOW CONTROL VALVE
S	SOLENOID VALVE (2–WAY) (S→M FOR MOTORIZED VALVE)
S	SOLENOID VALVE (3–WAY) (S→M FOR MOTORIZED VALVE)
S	SOLENOID VALVE (4–WAY) (S→M FOR MOTORIZED VALVE)
	PNEUMATIC DIAPHRAGM CONTROL VALVE
	PRESSURE SUSTAINING VALVE
	PRESSURE REGULATING VALVE
	MULTIFUNCTION VALVE
	SLUICE GATE (SG) OR SLIDE GATE (SLG)
	AIR RELIEF VALVE (ARV)
	FLOAT VALVE
	STRAINER
	BACKFLOW PREVENTER
CV	CALIBRATION VALVE
	CALIBRATION COLUMN
	ROTAMETER
	UNION

ACTUATORS

M	MOTORIZED
S	SOLENOID
S / A	PNEUMATIC OPERATOR S– SOLENOID – OPEN/CLOSE A– POSITIONER – MODULATING

PUMPS

SYMBOL	DESCRIPTION
	CENTRIFUGAL PUMP OR BLOWER
	SUBMERSIBLE SEWAGE PUMP
	VERTICAL TURBINE PUMP OR WELL PUMP
	SUBMERSIBLE WELL PUMP
	GEAR PUMP
	POSITIVE DISPLACEMENT PUMP OR BLOWER
	DIAPHRAGM PUMP
	PERISTALTIC PUMP
M M	MOTOR

SENSORS

SYMBOL	DESCRIPTION
	ORIFICE PLATE
MAG	MAGNETIC FLOWMETER
%	DENSITY METER
~	ULTRASONIC FLOWMETER
	TURBINE OR PROPELLER METER
	VENTURI TUBE
	THERMAL DISPERSION FLOWMETER OR SWITCH
LIT XXX	ULTRASONIC LEVEL TRANSMITTER (FLOW IF OVER FLUME OR WEIR)
LE XXX	CONDUCTANCE TYPE LEVEL ELEMENTS
LIT XXX	RADAR TYPE LEVEL TRANSMITTER
	GUIDED OPTION
LIT XXX	CAPACITANCE TYPE LEVEL TRANSMITTER

MISCELLANEOUS MECHANICAL ITEMS

SYMBOL	DESCRIPTION
	PIPE REDUCER
	RUPTURE DISC
	PRESSURE OR VACUUM RELIEF VALVE
	DIAPHRAGM SEAL
	ANNUALAR SEAL
M	MIXER
F OR F	FILTER
	VENT W/CAP OR SCREEN
	FLEXIBLE HOSE OR TUBING
	SPRAY NOZZLE SYSTEM
	EXPANSION JOINT
	STATIC MIXER
	EJECTOR / EDUCTOR
	HOSE COUPLING
	PULSATION DAMPENER
	OMNI ANTENNA NON–DIRECTIONAL
	YAGI ANTENNA DIRECTIONAL

P&ID ABBREVIATIONS

INSTRUMENTATION SYBMOLS

	FIRST LETTER: MEASURED OR INITIATING VARIABLE	FIRST LETTER: MODIFIER	SUCCEEDING LETTERS: READOUT PASSIVE FUNCTION	SUCCEEDING LETTERS: OUTPUT FUNCTION	SUCCEEDING LETTERS: MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROLLER	
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR, PRIMARY ELEMENT		
F	FLOW	RATIO			
G	GENERAL		GLASS VIEWING DEVICE		
H	HAND				HIGH, OPENED
I	CURRENT		INDICATING, INDICATOR		
J	POWER	SCAN			
K	TIME, TIME SCHEDULED	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW, CLOSED
M	MOISTURE	MOMENTARY			MIDDLE
N	STATUS		STATUS	USER'S CHOICE	USER'S CHOICE
O	OPERTOR		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RESET		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMITTER	TEST
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VAVE, DAMPER, LOUVER	
W	WEIGHT		WELL		
X	SWITCH	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OF PRESENCE	Y AXIS		RELAY, COMPUTER, CONVERTER	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

P&ID ABBREVIATIONS

SWITCH IDENTIFIER

F/R	FORWARD/REVERSE	S/D	SHUTDOWN
HOA	HAND–OFF–AUTO	SEL	SELECTOR
HOR	HAND–OFF–REMOTE	S/S	START / STOP
LOS	LOCK OUT STOP	%	PERCENT ADJUSTMENT
MOA	MANUAL–OFF–AUTO		
OCA	OPEN–CLOSE–AUTO		
O/C	OPEN / CLOSE		
O/O	ON / OFF		
O/R	OVERRIDE		

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WATERWORKS ENGINEERS

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

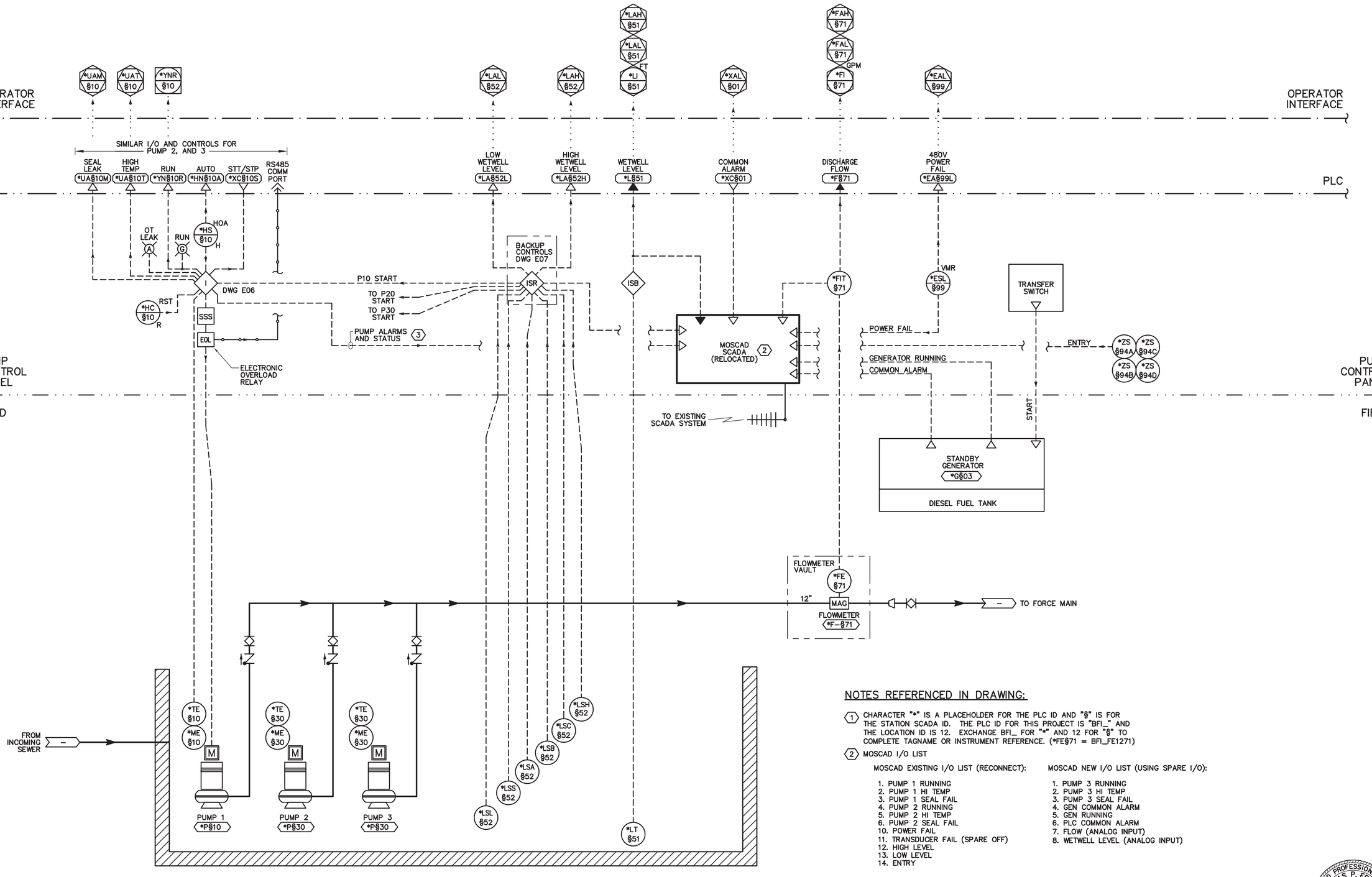
INSTRUMENTATION
SYMBOLS AND ABBREVIATIONS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER E02
SHEET NUMBER 29

FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
110 BLUE RAVINE RD, SUITE 101 FOLSOM, CA 95630
PH 916 353 1025 FX 916 353 1028

REGISTERED PROFESSIONAL ENGINEER THOMAS P. FRISCH No. E15761 Exp. 09–30–12 ELECTRICAL STATE OF CALIFORNIA

FILE: 1102D-E02.DWG DATE: JUL 07, 2011 TIME: 12:57:28PM



BFI PUMP STATION P&ID 1

NOTES REFERENCED IN DRAWING:

1. CHARACTER "*" IS A PLACEHOLDER FOR THE PLC ID AND "§" IS FOR THE STATION SCADA ID. THE PLC ID FOR THIS PROJECT IS "BFI_" AND THE LOCATION ID IS 12. EXCHANGE BFI_ FOR "*" AND 12 FOR "§" TO COMPLETE TAGNAME OR INSTRUMENT REFERENCE. (*FE§71 = BFI_FE1271)
2. MOSCAD I/O LIST

MOSCAD EXISTING I/O LIST (RECONNECT):

1. PUMP 1 RUNNING
2. PUMP 1 HI TEMP
3. PUMP 1 SEAL FAIL
4. PUMP 2 RUNNING
5. PUMP 2 HI TEMP
6. PUMP 2 SEAL FAIL
10. POWER FAIL
11. TRANSDUCER FAIL (SPARE OFF)
12. HIGH LEVEL
13. LOW LEVEL
14. ENTRY

MOSCAD NEW I/O LIST (USING SPARE I/O):

1. PUMP 3 RUNNING
2. PUMP 3 HI TEMP
3. PUMP 3 SEAL FAIL
4. GEN COMMON ALARM
5. GEN RUNNING
6. PLC COMMON ALARM
7. FLOW (ANALOG INPUT)
8. WETWELL LEVEL (ANALOG INPUT)

VERIFY SCALE
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DESIGN S PENNER
DRAWN N CONANT
CHECKED T FRISCH
APPROVED M FISHER

WATERWORKS ENGINEERS

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION REHABILITATION PROJECT

ELECTRICAL
PUMP STATION P&ID

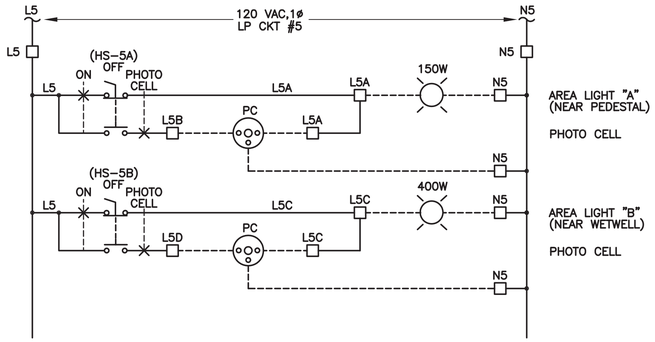
DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER E03
SHEET NUMBER 30

FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
110 BLUE RAVINE RD, SUITE 101 PH 916 353 1025
FOLSOM, CA 95630 FX 916 353 1028

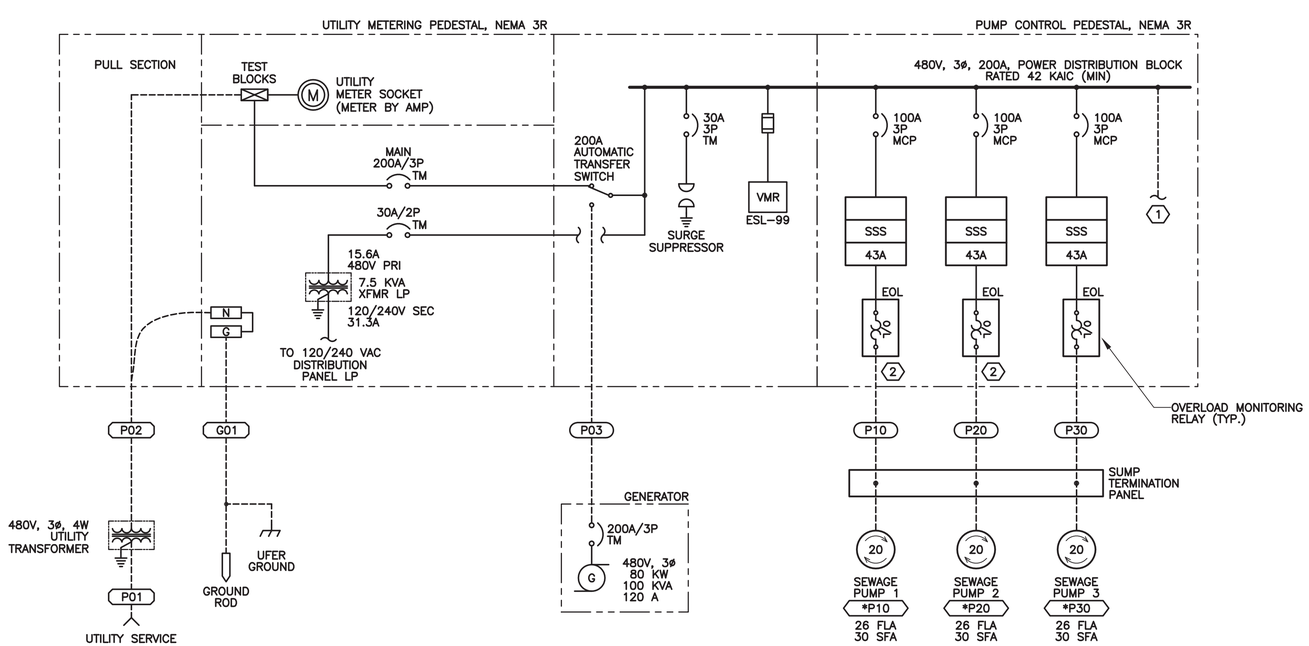
REGISTERED PROFESSIONAL ENGINEER THOMAS P. FRISCH No. E15761 Exp. 09-30-12 ELECTRICAL STATE OF CALIFORNIA

FILE: 1102D-E03.DWG DATE: JUL 07, 2011 TIME: 12:57:37PM

LOAD CALCULATIONS									
	CONNECTED LOAD			DEMAND LOAD			GENERATOR LOAD		
LOAD DESCRIPTION	LOAD	QTY	TOTAL	LOAD	QTY	TOTAL	LOAD	QTY	TOTAL
20 HP SEWAGE PUMP	26.00 A	3	64848.0 VA	26.00 A	2	43232.0 VA	26.00 A	3	64848.0 VA
7.5 KVA PANELBOARD TRANSFORMER	6.13 A	1	5100.0 VA	6.13 A	1	5100.0 VA	6.13 A	1	5100.0 VA
TOTAL LOAD =	84.13 A		69948.0 VA	58.13 A		48332.0 VA	84.13 A		69948.0 VA
LOAD CORRECTION FACTORS									
LARGEST MOTOR LOAD x 25%:							GENERATOR SIZE		
20 HP HP => 0.25 x 21616.0 VA =	6.50 A		5404.0 VA	6.50 A		5404.0 VA	SIZE =		80 KW
80% BREAKER DERATING = TOTAL x 0.25 =	22.66 A		18838.0 VA	16.16 A		13434.0 VA			100 KVA
FOR CONTINUOUS LOADS NEC 210-20									
SERVICE SIZE (MIN) =	113.29 A		94190.0VA	80.79 A		67170.0VA	AMPERAGE =		120 A
UTILITY SERVICE SIZE REQUIRED =	200 AMP						UTLIZATION % =		70 %
480V, 3 PHASE, 4 WIRE							MAX VOLT DIP % =		15 %



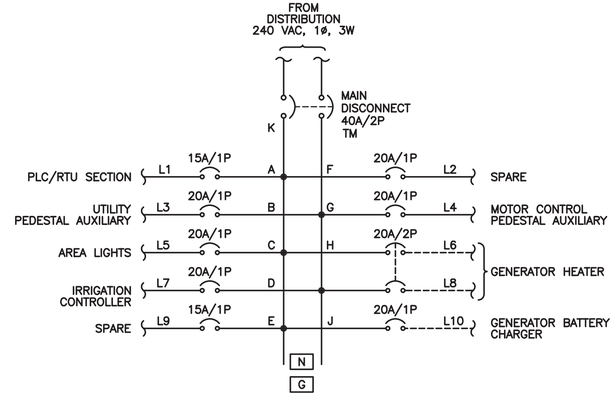
AREA LIGHTING WIRING DIAGRAM



ONE-LINE DIAGRAM

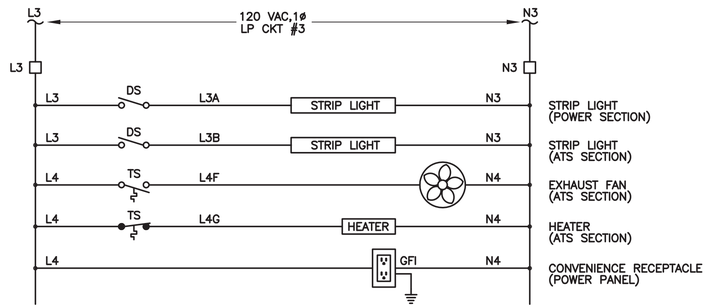
DRAWING REFERENCED NOTES:

1. AVAILABLE (3-PHASE) CONNECTION POINT FOR TEMPORARY BYPASS PUMPING SYSTEM. SEE SPECIFICATIONS FOR PROJECT CONSTRAINTS.
2. TEMPORARY PUMPS MAY BE OPERATED FROM NEW CONTROL PANEL UTILIZING MOTOR STARTERS AND BACKUP FLOAT CONTROL SYSTEM. CONFIGURE MOTOR CONTROLS FOR BYPASS AND PERMANENT PUMPS.

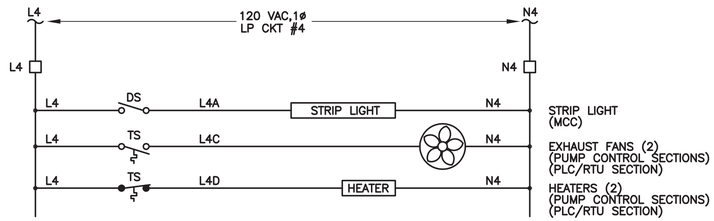


PANELBOARD "LP"

120/240 VAC DISTRIBUTION DIAGRAM
NEUTRALS NOT SHOWN



UTILITY PEDESTAL AUXILIARY



MOTOR CONTROL PEDESTAL AUXILIARY

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APPROVED M FISHER

WATERWORKS ENGINEERS

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

ELECTRICAL
ONE-LINE DIAGRAM
AND AUXILIARY WIRING DIAGRAMS

DATE
JULY 2011
PROJECT NUMBER
11-005
DRAWING NUMBER
E04
SHEET NUMBER 31

FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
110 BLUE RAVINE RD, SUITE 101
FOLSOM, CA 95630
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FX 916 353 1028

REGISTERED PROFESSIONAL ENGINEER
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Exp. 09-30-12
ELECTRICAL
STATE OF CALIFORNIA

FILE: 1102D-E04.DWG DATE: JUL 07, 2011 TIME: 12:57:41 PM

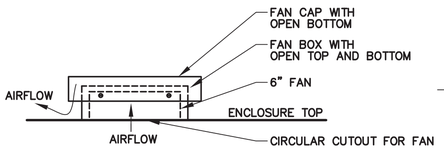
DRAWING REFERENCED NOTES:

(1) ITEMS DRAWN IN DASHED LINES ARE TO BE LOCATED BEHIND DEADFRONT DOORS
OUTER DOORS ARE NOT SHOWN ON FRONT VIEWS FOR ELEVATION CLARITY

(2) PROVIDE METER AND UTILITY ENTRANCE PER ALAMEDA MUNICIPAL POWER REQUIREMENTS.

PEDESTAL FABRICATION METHODS

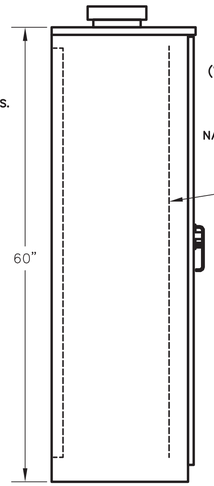
1. NEMA 3R WEATHER-PROOF FOR OUTDOOR INSTALLATION.
2. OUTER DOORS SHALL BE SEALED WITH RUBBERIZED FOAM GASKET.
3. EXTERIOR FABRICATED FROM GALVANIZED SHEET STEEL.
4. 12 GAUGE EXTERIOR AND 14 GAUGE INTERIOR.
5. ALL SEAMS SHALL HAVE CONTINUOUS WELD GROUND SMOOTH.
6. OUTER DOORS TO BE PADLOCKABLE WITH HEAVY DUTY 3 POINT LATCHES.
7. DOOR HINGES AND PINS SHALL BE 316 STAINLESS STEEL.
8. NO SCREWS, RIVETS, OR BOLTS SHALL PROTRUDE EXTERNALLY.
9. INTERNAL SCREWS, RIVETS, BOLTS, AND NUTS SHALL BE STAINLESS STEEL.
10. POWER METERING SHALL PER USERC AND SERVING UTILITY'S REQUIREMENTS.
11. PAINT APPLICATION SHALL BE AS FOLLOWS:
    A. TWO STAGE CHEMICAL BATH CLEANING.
    B. ELECTROSTATICALLY APPLIED POWDER COAT PAINT FINISH.
    C. OVEN CURED FOR TWO HOURS.
    D. INTERIOR DEADFRONT DOOR COLOR: WHITE.
    E. EXTERIOR COLOR SHALL BE: AUTUMN WHITE
12. PHENOLIC SCREW MOUNTED NAMEPLATES SHALL BE PROVIDED FOR ALL OUTER DOOR SECTIONS AND DEVICES ON DEADFRONT.
13. FABRICATION AND WIRING SHALL CONFORM TO UL, NEC AND NEMA STANDARDS.
14. ALL WIRING SHALL BE LABELLED ON BOTH ENDS OF WIRE.
15. AS-BUILT WIRING DIAGRAMS SHALL BE SHIPPED WITH PANEL.
16. PROVIDE DRAWING POCKET ON INSIDE OF CONTROL PANEL DOOR.
17. UPS SHELF SHALL BE 14 GA WELDED STEEL BOLTED TO BACKPAN.



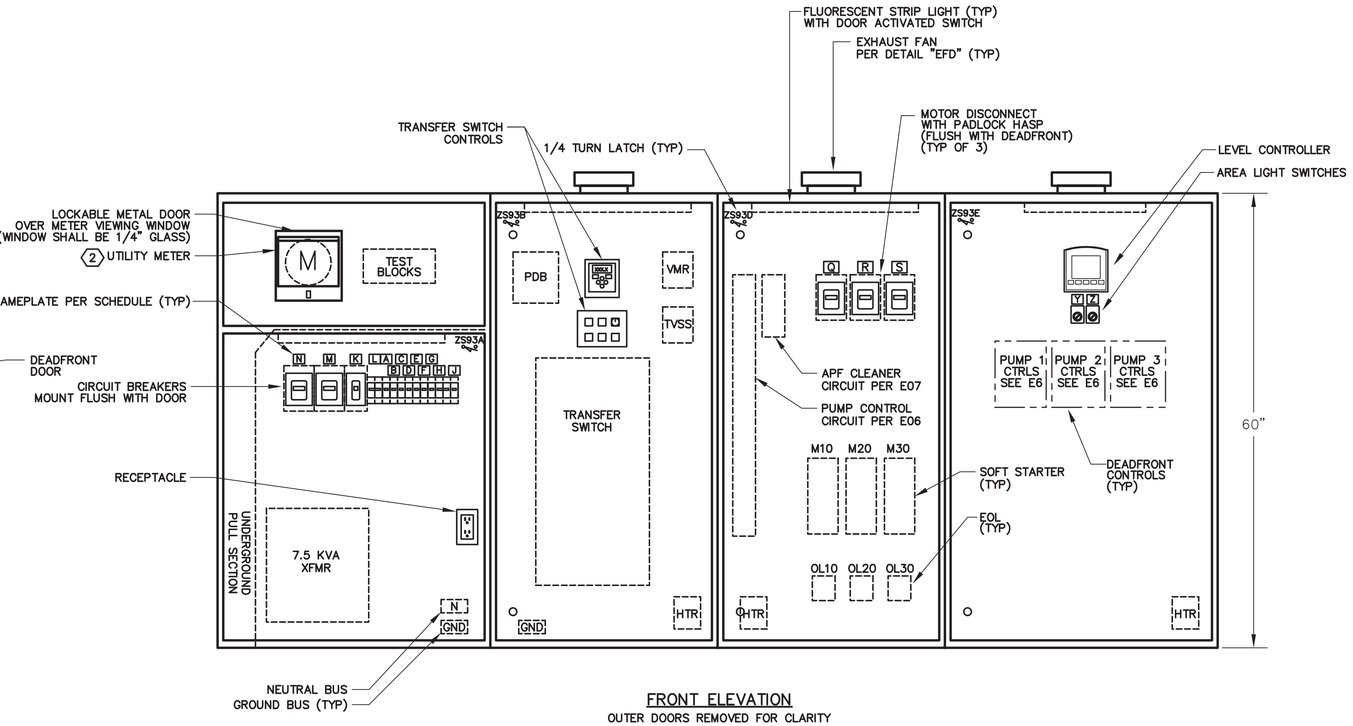
NOTES: 1. FAN CAP AND BOX SHALL BE CONSTRUCTED FROM 14GA GALVANIZED STEEL AND PAINTED WITH CONTROL PANEL.
2. PROVIDE CIRCULAR CUTOUT IN TOP OF ENCLOSURE. SEAL FAN BOX TO ENCLOSURE WITH SILICONE SEALANT.

EFD EXHAUST FAN DETAIL

NOT TO SCALE

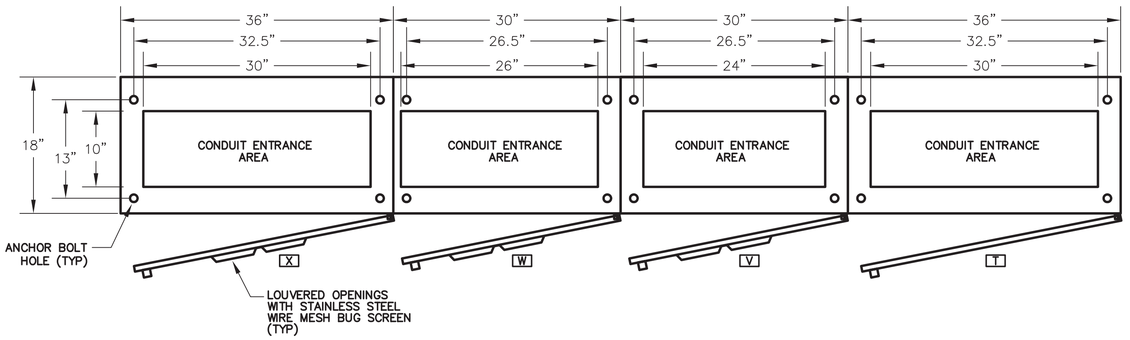


SIDE ELEVATION



FRONT ELEVATION
OUTER DOORS REMOVED FOR CLARITY

PEDESTAL ELEVATION (1)



TOP VIEW

PEDESTAL BASE PLAN

NAMEPLATE SCHEDULE

KEY	ENGRAVING LINE 1	LINE 2	LETTER HEIGHT
A	PLC/RTU SECTION	DISCONNECT	3/16"
B	UTILITY	AUXILIARY	3/16"
C	AREA LIGHT		3/16"
D	IRRIGATION	CONTROLLER	3/16"
E	SPARE BREAKER		3/16"
F	SPARE BREAKER		3/16"
G	MOTOR CONTROLS	AUXILIARY	3/16"
H	GENERATOR	HEATER	3/16"
J	GENERATOR	BATTERY CHARGER	3/16"
K	TRANSFORMER	DISCONNECT	3/16"
L	PANELBOARD	MAIN	3/16"
M	MAIN	DISCONNECT	3/16"
N	GENERATOR	DISCONNECT	3/16"
Q	PUMP 1	DISCONNECT	3/16"
R	PUMP 2	DISCONNECT	3/16"
S	PUMP 3	DISCONNECT	3/16"
T	RTU SECTION	SECTION	3/16"
V	PUMP CONTROL	SECTION	3/16"
W	AUTOMATIC TRANSFER	SWITCH SECTION	3/16"
X	UTILITY	METERING	3/16"
Y	PEDESTAL AREA LIGHT	ON OFF PHOTO CELL	3/16"
Z	WET WELL AREA LIGHT	ON OFF PHOTO CELL	3/16"

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DESIGN S PENNER
DRAWN N CONANT
CHECKED T FRISCH
APPROVED M FISHER

WATERWORKS ENGINEERS

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

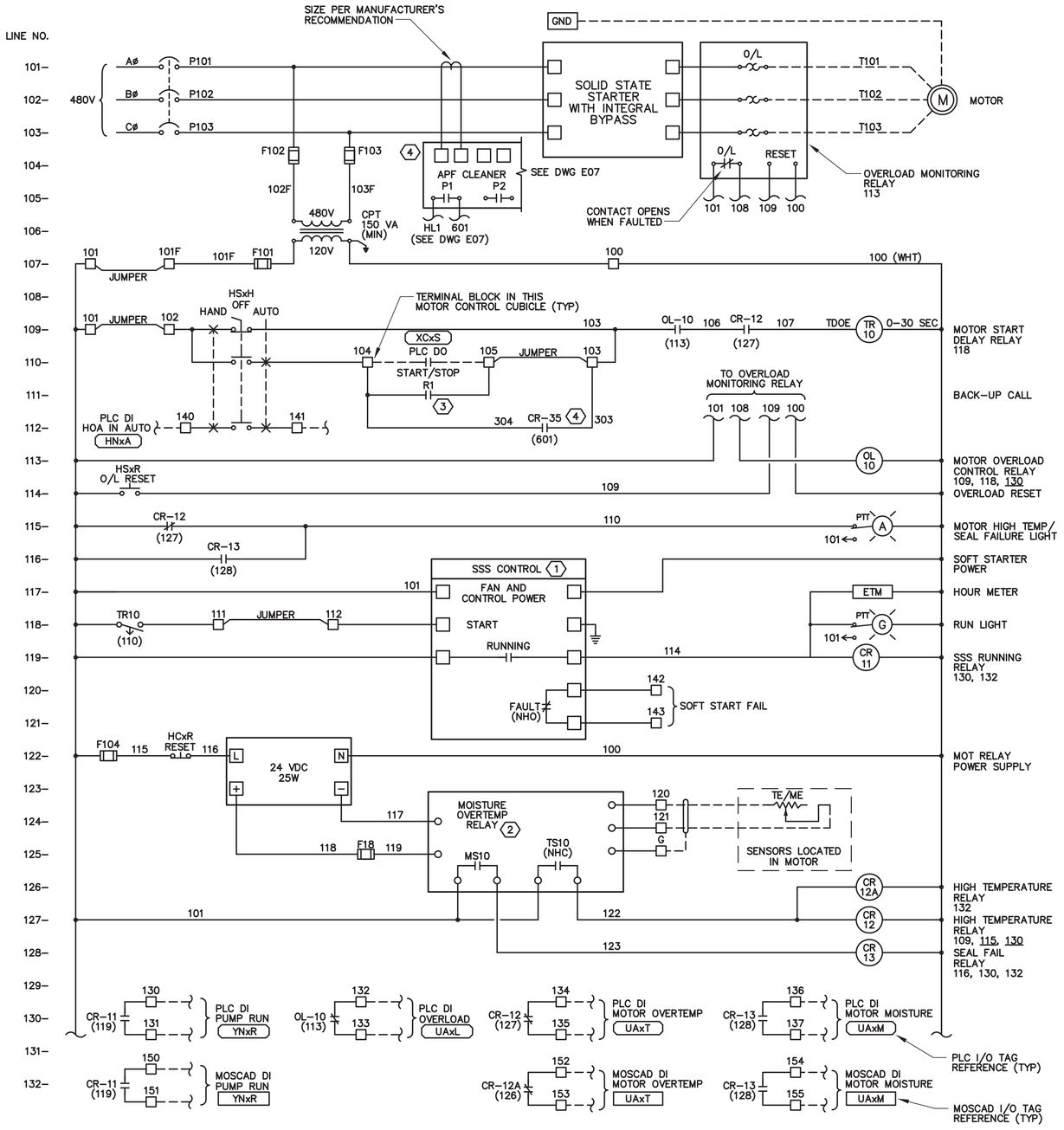
ELECTRICAL
CONTROL PEDESTAL
ELEVATION AND DETAILS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER E05
SHEET NUMBER 32

FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
110 BLUE RAVINE RD, SUITE 101 PH 916 353 1025
FOLSOM, CA 95630 FX 916 353 1028

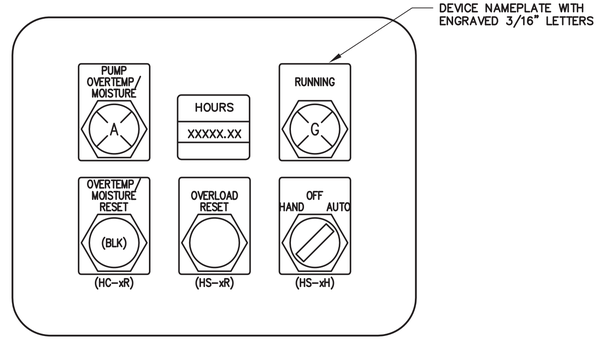
REGISTERED PROFESSIONAL ENGINEER THOMAS P. FRISCH No. E15761 Exp. 09-30-12 ELECTRICAL STATE OF CALIFORNIA

FILE: 1102D-E05.DWG DATE: JUL 07, 2011 TIME: 12:57:45PM



PUMP ELEMENTARY DIAGRAM

P10 P20 P30



PUMP CONTROLS DOOR LAYOUT

P10 P20 P30

NOTES REFERENCED IN DRAWING:

1. SOLID STATE STARTER SHALL PROVIDE THE FOLLOWING USER CONFIGURABLE MOTOR PROTECTION PARAMETERS:
   VOLTAGE, CURRENT, MOTOR PARAMETERS
   PHASE REVERSAL, OVERLOAD, OVERLOAD CLASS
   PHASE LOSS, FULL LOAD CURRENT
   PROVIDE SSS WITH 115 VAC CONTROL CIRCUIT INTERFACE, NO EXCEPTIONS.
2. RELAY TO BE SUPPLIED BY PUMP MANUFACTURER. INSTALL AND WIRE PER MANUFACTURER'S DRAWINGS PRIOR TO FACTORY TESTING AND DELIVERY TO JOB SITE.
3. FLOAT BACK–UP CONTROLS FROM DWG E07.
4. FLYGT AUTOMATIC PUMP SUMP CLEANING SYSTEM (APF–CLEANER OR APPROVED EQUAL) FOR PUMP 3 ONLY. SEE DWG E07 FOR 24VDC SUPPLY.

GENERAL NOTES:

1. SIMILAR DIAGRAM FOR SEWAGE PUMP NO. 2 AND NO.3
2. USE 2, 20 & 200 SERIES NUMBERING FOR PUMP NO.2 DEVICES
3. USE 3, 30 & 300 SERIES NUMBERING FOR PUMP NO.3 DEVICES
4. TERMINAL BLOCKS AND WIRES SHALL BE LABELED AS SHOWN.
   EXCEPTION: WIRES TO PLC SHALL BE NUMBERED PER CONTROL PANEL TERMINAL BLOCK NUMBER.

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REGISTERED PROFESSIONAL ENGINEER THOMAS P. FRISCH No. E15761 Exp. 09–30–12 ELECTRICAL STATE OF CALIFORNIA

FILE: 1102D-E06.DWG DATE: JUL 07, 2011 TIME: 12:57:48PM

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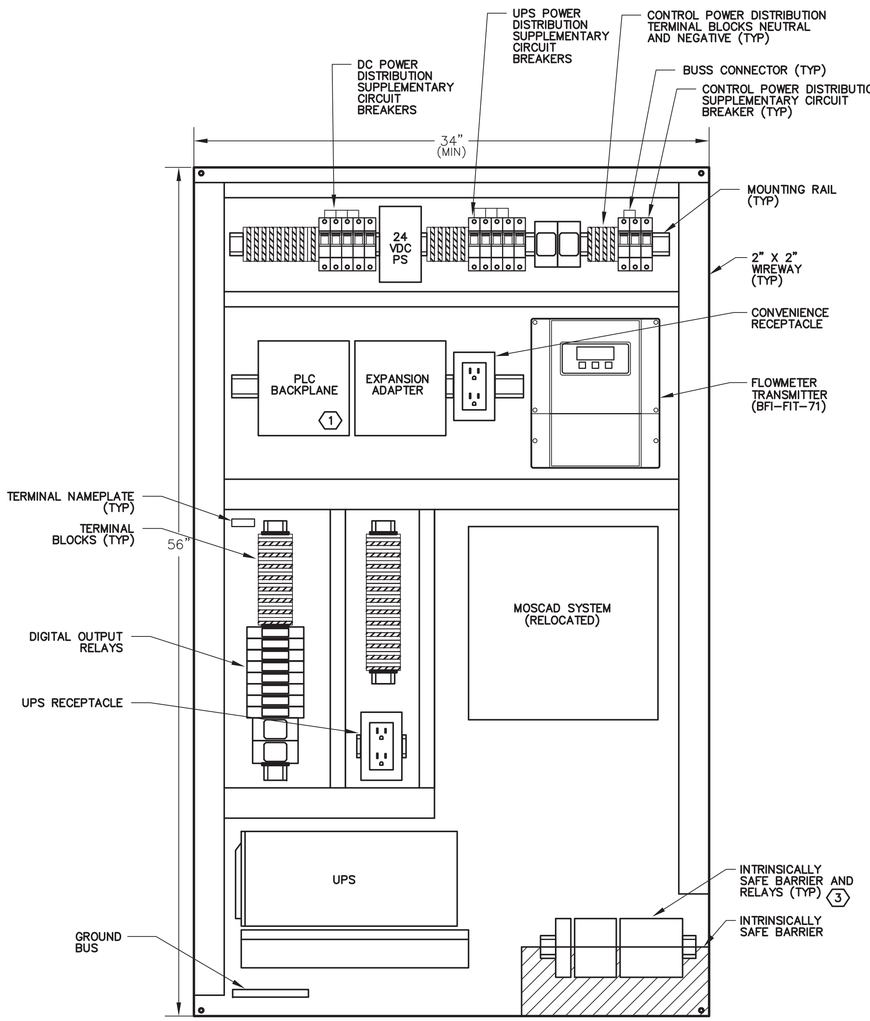
APPROVED M FISHER

WATERWORKS ENGINEERS

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

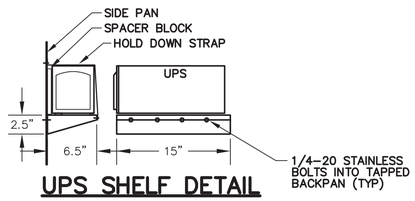
ELECTRICAL
PUMP ELEMENTARY DIAGRAM

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER E06
SHEET NUMBER 33



BACKPAN LAYOUT

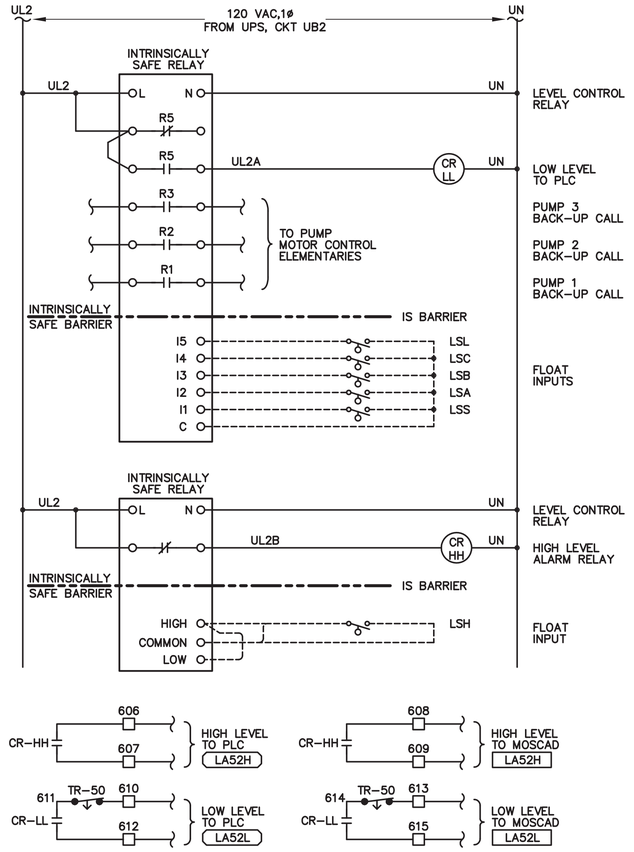
NOT TO SCALE



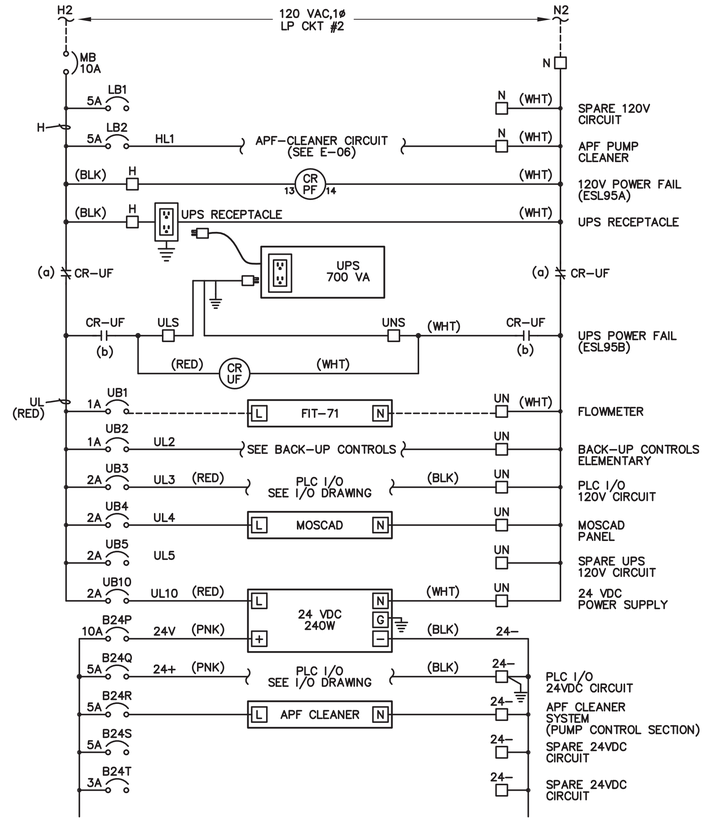
UPS SHELF DETAIL

DETAIL NOTES:

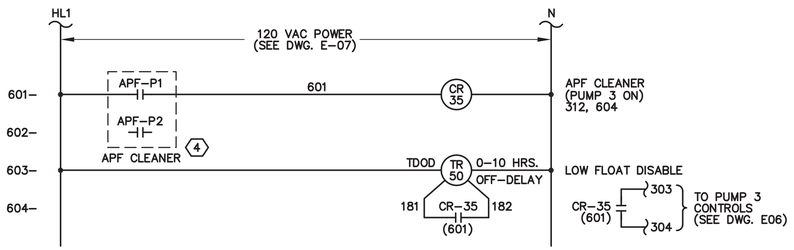
1. DO NOT BLOCK VENTS WITH SPACER BLOCK. USE TWO.
2. FABRICATED FROM 14 GA (MIN) PAINTED GALVANEAL OR STAINLESS STEEL SOLID SIDES, TOP, BACK AND FRONT WITH CONTINUOUS WELDED SEAMS.



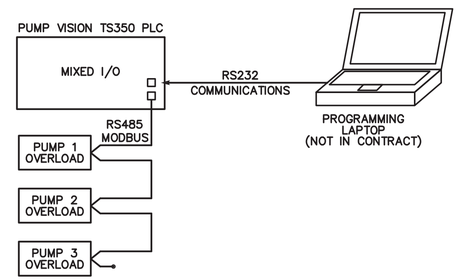
BACK-UP CONTROLS ELEMENTARY DIAGRAM



POWER DISTRIBUTION DIAGRAM



APF CLEANER ELEMENTARY DIAGRAM



PLC BLOCK DIAGRAM

DRAWING REFERENCED NOTES:

1. WIRE I/O TO TERMINAL BLOCK PER I/O WIRING DIAGRAM
2. CONFIGURE FOR 3 PUMP, PUMP DOWN, WITH HIGH ALARM
3. MAINTAIN DISTANCE REQUIREMENTS AS DEFINED BY UL 913 INTRINSICALLY SAFE CIRCUITS.
4. FLYGT AUTOMATIC PUMP SUMP CLEANING SYSTEM (APF-CLEANER OR EQUAL) FOR PUMP 3 ONLY. SEE DWG E06 FOR PUMP CONTROLS.

DRAWING GENERAL NOTES:

1. REPRESENTATIVE OF MAJOR COMPONENTS ONLY. ACTUAL BACKPAN LAYOUT SHALL BE SIMILAR TO LAYOUT SHOWN. SUBMIT SCALED BACKPAN LAYOUT FOR REVIEW BY ENGINEER.
2. QUANTITY OF TERMINAL BLOCKS AND RELAYS SHALL BE AS DETERMINED BY P&IDS AND EXAMPLE I/O WIRING DIAGRAM

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REGISTERED PROFESSIONAL ENGINEER THOMAS P. FRISCH No. E15761 Exp. 09-30-12 ELECTRICAL STATE OF CALIFORNIA

FILE: 1102D-E07.DWG DATE: JUL 07, 2011 TIME: 12:57:52PM

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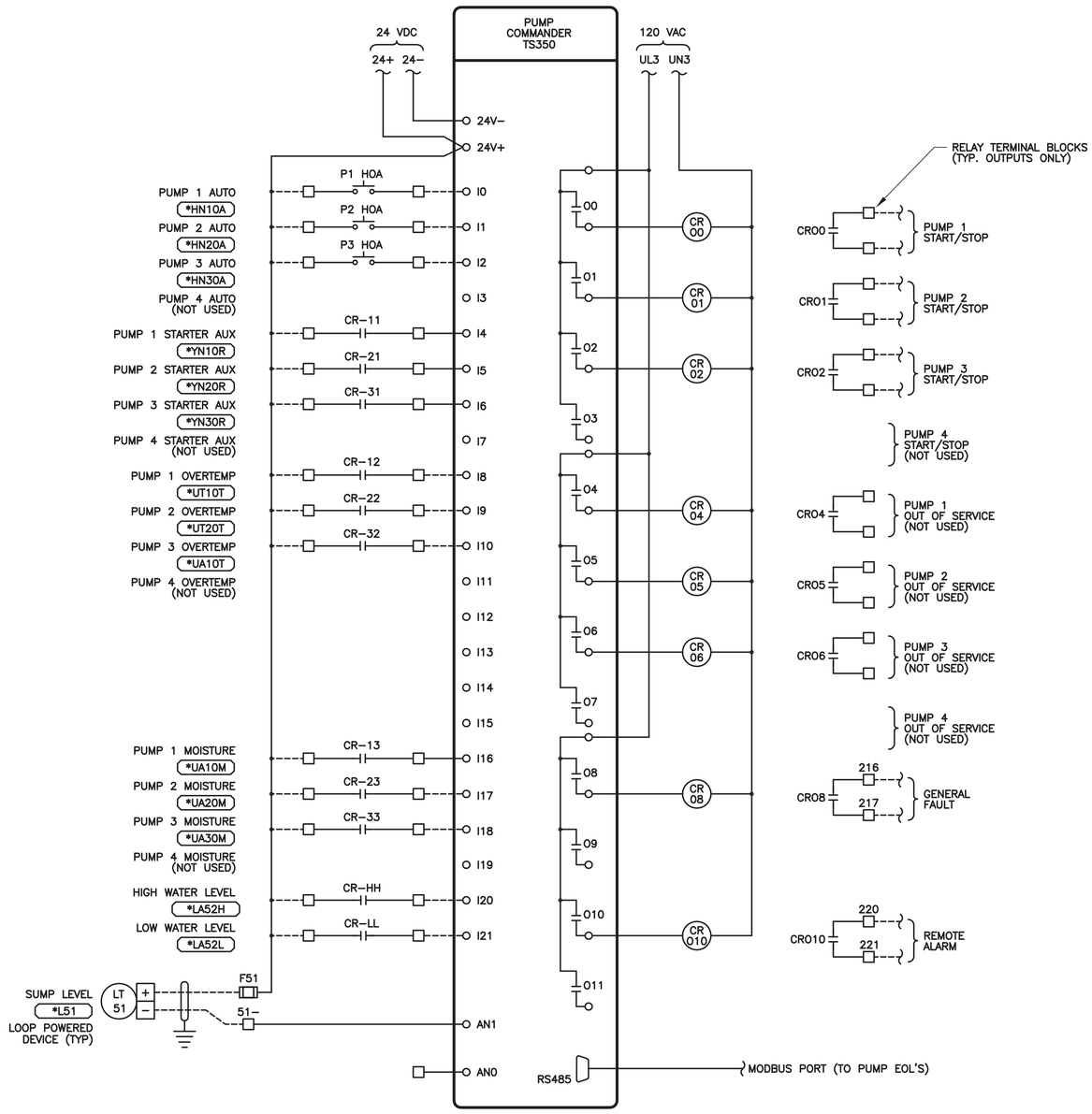
CHECKED T FRISCH
APPROVED M FISHER

WATERWORKS ENGINEERS

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

ELECTRICAL
PLC PANEL BACKPAN LAYOUT AND POWER DISTRIBUTION DIAGRAM

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER E07
SHEET NUMBER 34



PLC I/O WIRING DIAGRAMS

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WATERWORKS ENGINEERS

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

ELECTRICAL
PLC WIRING DIAGRAM

DATE
JULY 2011
PROJECT NUMBER
11-005
DRAWING NUMBER
E08
SHEET NUMBER 35

FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
110 BLUE RAVINE RD, SUITE 101 PH 916 353 1025
FOLSOM, CA 95630 FX 916 353 1028

REGISTERED PROFESSIONAL ENGINEER
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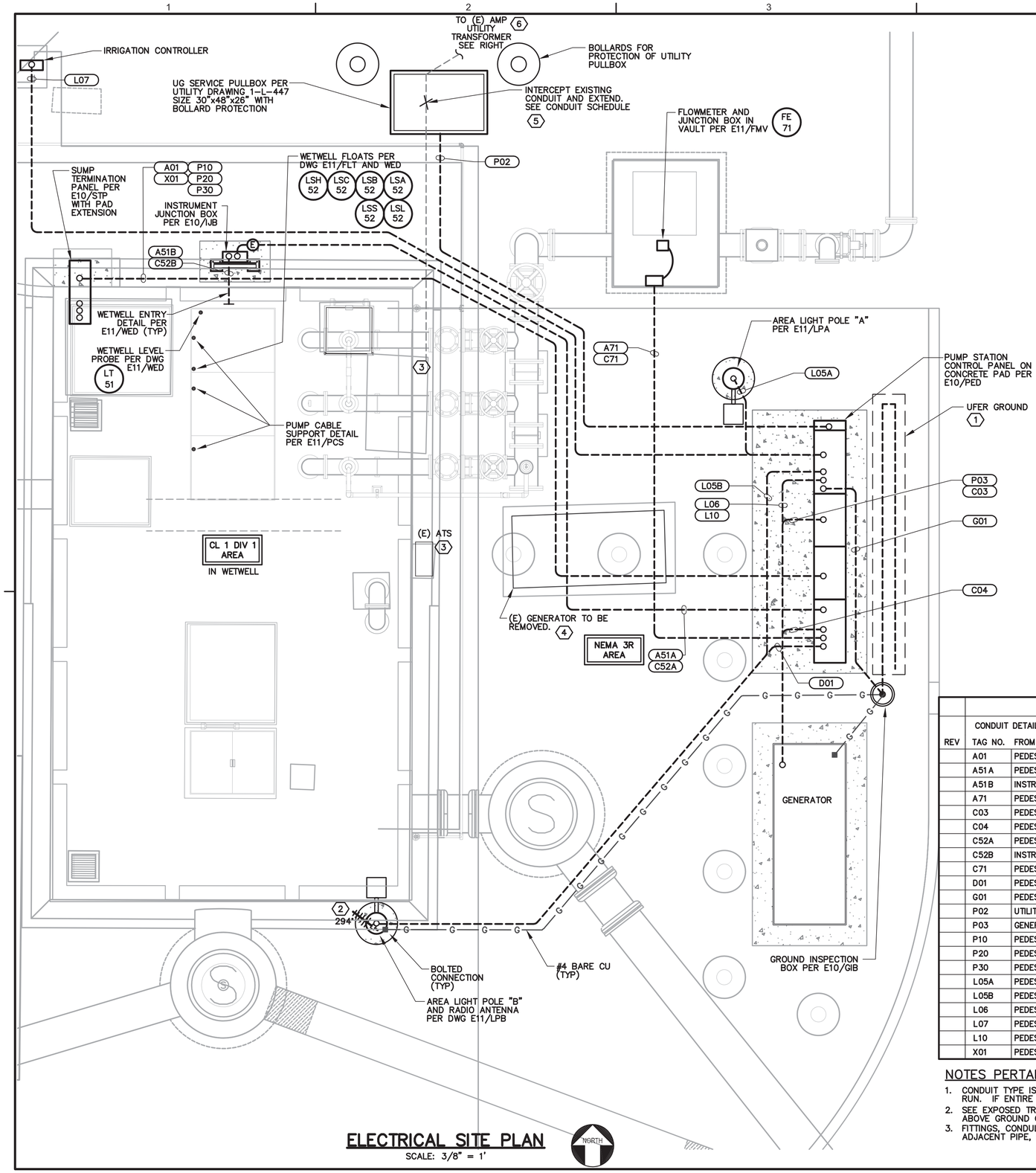
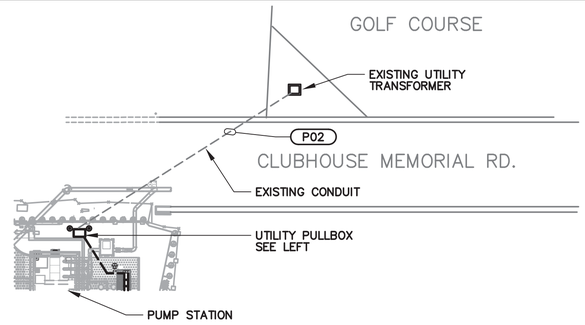
Exp. 09-30-12
ELECTRICAL
STATE OF CALIFORNIA

FILE: 1102D-E08.DWG DATE: JUL 07, 2011 TIME: 12:57:56PM



ELECTRICAL SITE PLAN

SCALE: 3/8" = 1'



UTILITY SITE PLAN

SCALE: 1" = 30'

ELECTRICAL PLAN NOTES

1. UTILITY PRIMARY AND SECONDARY CONDUITS, PULL BOXES SHALL BE INSTALLED PER POWER UTILITY ENGINEERED DRAWINGS AND STANDARDS.
2. ASSUME 50 FT OF ADDITIONAL UNDERGROUND RUN BEYOND DRAWING FOR UTILITY CONNECTIONS. CONNECTION POINT SHALL BE AS DETERMINED BY UTILITY COMPANY.
3. REPAIR SURFACE TO PREVIOUS CONDITION FOR ALL UNDERGROUND CONDUIT ROUTES. GROUT, CAULK, AND PAINT ANY PENETRATIONS INTO STRUCTURES FOR WATERTIGHT SEAL.
4. INSTALL NON-UTILITY CONDUITS PER DRAWING DETAILS AND SPECIFICATIONS SECTION 16110.
5. SITEPLAN ACCURATE FOR ELECTRICAL WORK ONLY. COORDINATE ALL WORK WITH CIVIL PLANS.
6. EXPOSED CONDUIT TRANSITIONS SHALL BE PER EXPOSED CONDUIT TRANSITION DETAIL E10/ECT.
7. INSTALL ALL UNDERGROUND NON-UTILITY CONDUITS PER E10/LVC.
8. USE STAINLESS STEEL EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
9. FITTINGS, CONDULETS, BOXES AND COVERS SHALL MATCH DUTY OF ADJACENT PIPE, SEE SPECIFICATIONS 16110.
10. SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
11. STUB UP CONDUITS BENEATH GENERATOR FRAME PER MANUFACTURER RECOMMENDATIONS. USE FLEXIBLE CONDUIT FOR TRANSITION BETWEEN EXPOSED CONDUIT TRANSTION AND ELECTRICAL CONNECTION BOX AND GENERATOR CONTROL PANEL.

DRAWING REFERENCED NOTES:

1. UFER GROUND SHALL CONSIST OF 25 FT OF #2 WIRE CENTERED IN 6"H X 9"W X 13'L CONCRETE STRIP. LOCATE STRIP AT 36" NOMINAL DEPTH WITH NATIVE BACKFILL ONLY. NO SAND AND NO ROCKS. LOOP CONDUCTOR TO FIT WITHIN CONCRETE STRIP. MAINTAIN 3" MINIMUM COVER OVER ALL PORTIONS OF CONDUCTOR.
2. RELOCATE EXISTING ANTENNA AND MOUNT ON NEW POLE UTILIZING NEW HARDWARE. ANTENNA TRAJECTORY SHOWN IS MEASURED CW FROM MAGNETIC NORTH.
3. REMOVE EXISTING CONTROL PANEL, AREA LIGHT, ATS, WIRE, AND CONDUIT. CUT CONDUIT FLUSH WITH CONCRETE WET WELL, CAP AND/OR FILL WITH CONCRETE. REMOVE AND RELOCATE EXISTING MOSCAD SYSTEM TO NEW CONTROL PANEL. DELIVER OLD CONTROL PANEL TO CITY YARD UPON REMOVAL.
4. REMOVE EXISTING GENERATOR, WIRE, AND CONDUIT. DELIVER GENERATOR TO CITY YARD UPON REMOVAL.
5. INTERCEPT EXISTING UTILITY FEED CONDUIT AND TEE SPLICE NEW PEDESTAL IN PARALLEL WITH EXISTING CONTROL PANEL DURING CONSTRUCTION. COORDINATE WITH UTILITY FOR SHUTDOWN AND CONNECTION. REMOVE SPLICE WITH EXISTING CONTROL PANEL AFTER TESTING IS COMPLETE.
6. FURNISH SUFFICIENT CONDUCTOR TO REACH UTILITY TRANSFORMER (L-952) ACCROSS STREET AND LEAVE CONDUCTOR IN PULLBOX FOR CONNECTION BY UTILITY. DISTANCE FROM PULLBOX TO TRANSFORMER IS 120 FT.

CONDUIT & WIRE ROUTING SCHEDULE

REV	CONDUIT DETAILS TAG NO.	FROM	TO	QTY	SIZE	TYPE	POWER WIRE QTY	POWER WIRE SIZE	CONTROL WIRE QTY	CONTROL WIRE SIZE	GROUND SIZE	NOTES
	A01	PEDESTAL	SUMP TERMINATION PANEL	1	1-1/2"	PVC-40	–	–	3	#16 TSPR	#12	
	A51A	PEDESTAL	INSTRUMENT JUNCTION BOX	1	1"	PVC-40	–	–	1	#16 TSPR	#12	
	A51B	INSTRUMENT JUNCTION BOX	WET WELL LT-51	1	1"	PVC-40	–	–	1	MFG CABLE	–	
	A71	PEDESTAL	FLOWMETER	1	1"	PVC-40	–	–	1	MFG CABLE	#8	
	C03	PEDESTAL	GENERATOR	1	3/4"	PVC-40	–	–	8	#14	#14	COIL SPARE CONDUCTORS
	C04	PEDESTAL	GENERATOR	1	3/4"	PVC-40	–	–	8	#14	#14	COIL SPARE CONDUCTORS
	C52A	PEDESTAL	INSTRUMENT JUNCTION BOX	1	1"	PVC-40	–	–	12	#14	#12	
	C52B	INSTRUMENT JUNCTION BOX	WET WELL FLOAT SWITCHES	1	2"	PVC-40	–	–	6	MFG CABLE	–	FLOATS
	C71	PEDESTAL	FLOWMETER	1	3/4"	PVC-40	–	–	6	#14	#12	
	D01	PEDESTAL	ANTENNA	1	2"	PVC-40	–	–	1	ANTENNA CABLE	–	
	G01	PEDESTAL	GROUND INSPECTION BOX	1	1"	PVC-40	–	–	–	–	#2	
	P02	UTILITY TRANSFORMER	PEDESTAL	1	3"	PVC-40	3	#3/0	–	–	#6	VIA PULLBOX
	P03	GENERATOR	PEDESTAL	1	3"	PVC-40	3	#3/0	–	–	#6	+#1 NEUTRAL
	P10	PEDESTAL	SEWAGE PUMP 1	1	1-1/2"	PVC-40	3	#8	6	#14	#8	VIA SUMP TERMINATION PANEL
	P20	PEDESTAL	SEWAGE PUMP 2	1	1-1/2"	PVC-40	3	#8	6	#14	#8	VIA SUMP TERMINATION PANEL
	P30	PEDESTAL	SEWAGE PUMP 3	1	1-1/2"	PVC-40	3	#8	6	#14	#8	VIA SUMP TERMINATION PANEL
	L05A	PEDESTAL	AREA POLE LIGHT A	1	3/4"	PVC-40	–	–	5	#12	#12	
	L05B	PEDESTAL	AREA POLE LIGHT B	1	3/4"	PVC-40	–	–	5	#12	#12	
	L06	PEDESTAL	GENERATOR HEATER	1	3/4"	PVC-40	3	#12	–	–	#12	
	L07	PEDESTAL	IRRIGATION CONTROLLER	1	3/4"	PVC-40	2	#12	–	–	#12	
	L10	PEDESTAL	GENERATOR BATT CHGR	1	3/4"	PVC-40	2	#12	–	–	#12	
	X01	PEDESTAL	SUMP TERMINATION PANEL	1	1"	PVC-40	–	–	–	–	–	PULL ROPE

NOTES PERTAINING TO CONDUIT SCHEDULE:

1. CONDUIT TYPE IS TYPICAL FOR UNDERGROUND HORIZONTAL PORTIONS OF RUN. IF ENTIRE RUN OF CONDUIT IS EXPOSED, THEN TYPE IS AS SHOWN.
2. SEE EXPOSED TRANSITION DETAIL OR EQUIPMENT SPECIFIC DETAIL FOR ABOVE GROUND OR EXPOSED PORTIONS OF RUN.
3. FITTINGS, CONDULETS, BOXES AND COVERS SHALL MATCH DUTY OF ADJACENT PIPE, SEE SPECIFICATIONS 16110.

FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
110 BLUE RAVINE RD, SUITE 101
FOLSOM, CA 95630
PH 916 353 1025
FX 916 353 1028

REGISTERED PROFESSIONAL ENGINEER THOMAS P. FRISCH No. E15761 Exp. 09-30-12 ELECTRICAL STATE OF CALIFORNIA

FILE: 1102D-E09.DWG DATE: JUL 07, 2011 TIME: 12:58:00PM

VERIFY SCALE
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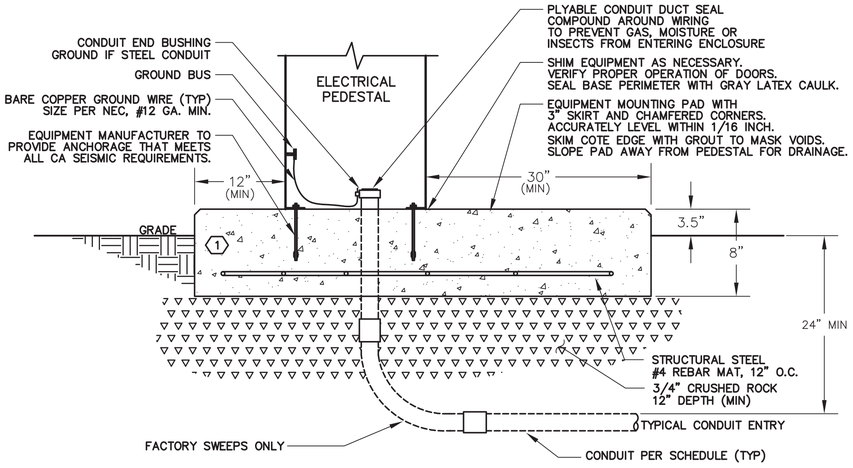
DESIGN S PENNER
DRAWN N CONANT
CHECKED T FRISCH
APPROVED M FISHER

WATERWORKS ENGINEERS

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

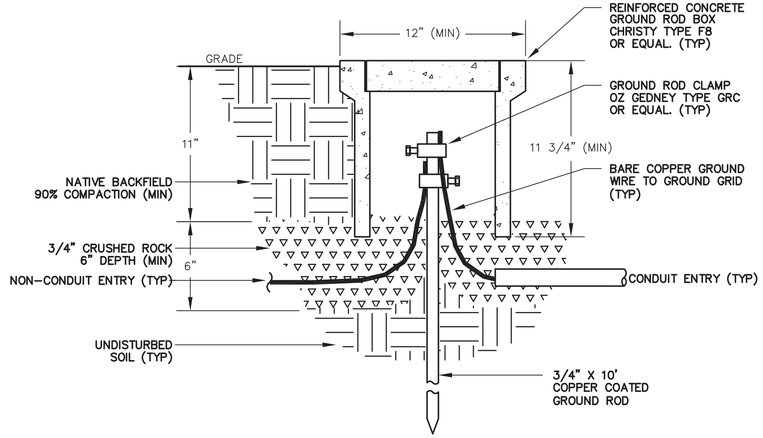
ELECTRICAL
SITE PLAN

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER E09
SHEET NUMBER 36



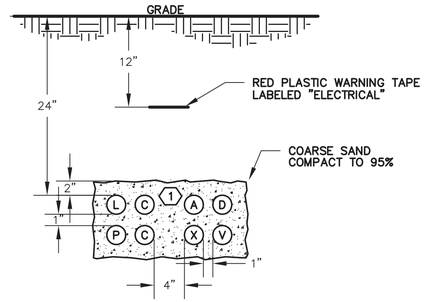
PED — NOT TO SCALE

PEDESTAL CONCRETE PAD DETAIL



GIB — NOT TO SCALE

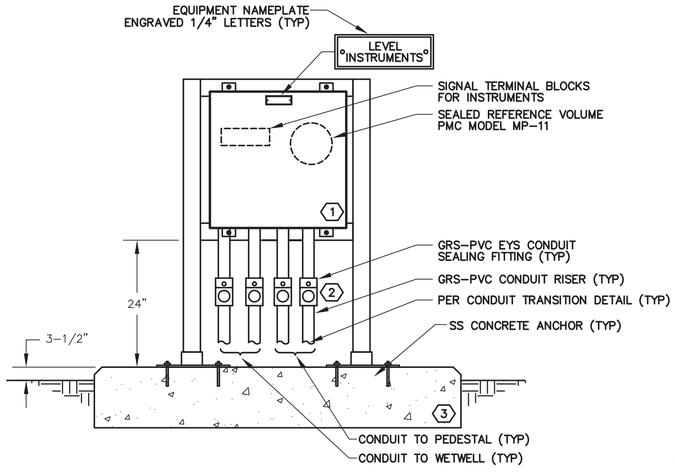
GROUND INSPECTION BOX DETAIL



LVC — NOT TO SCALE

LOW VOLTAGE NON-DUCT BANK SECTION

NOTES:
1. NUMBER OF CONDUITS PER PLANS AND SCHEDULE. MAXIMUM DEPTH OF TRENCH SHALL BE 42". DESIGN TRENCH DESIGN AND INSTALL TRENCH TO MAINTAIN 6" VERTICAL CLEARANCE AND 12" HORIZONTAL CLEARANCE FROM PIPES.
2. P, L, OR C DESIGNATION FOR POWER OR CONTROL CONDUITS.
3. A, D, V, OR X DESIGNATION FOR COMMUNICATION (TELEPHONE, DATA, VIDEO, OR INSTRUMENTATION) CONDUITS.
4. USE CONDUIT SPACERS TO SUPPORT CONDUITS AND MAINTAIN SPACING (3' INTERVALS)



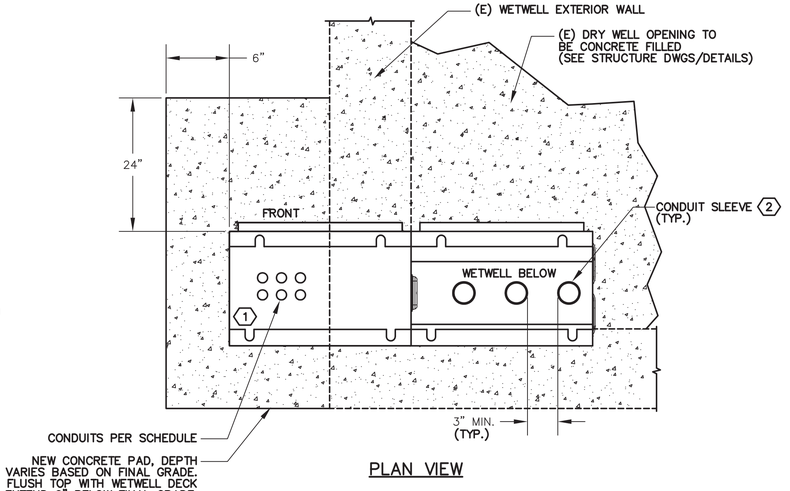
ELEVATION VIEW

DOOR OF JUNCTION BOX REMOVED FOR CLARITY

IJB — NOT TO SCALE

INSTRUMENT JUNCTION BOX DETAIL

NOTES:
1. 14"H X 16"W X 8"D, NEMA 4X STAINLESS STEEL JUNCTION BOX. JUNCTION BOX SHALL BE HOFFMAN CHNFSS OR EQUAL. PROVIDE BACKPAN AND PADLOCK HASP. MOUNT BOX ON STAINLESS STEEL UNISTRUT SUPPORT. USE ALL STAINLESS STEEL HARDWARE.
2. FILL EYS WITH "CHICO" TO PEDESTAL ONLY. OTHERS SHALL BE FILLED WITH "DUCT SEAL". CONDUIT BEHIND EYS SHALL BE GRS-PVC FOR 2 FT. (MIN) WITH GRS-PVC FACTORY SWEEPS.
3. 2' X 3' X 6" CONCRETE PAD WITH CHAMFERED CORNERS.

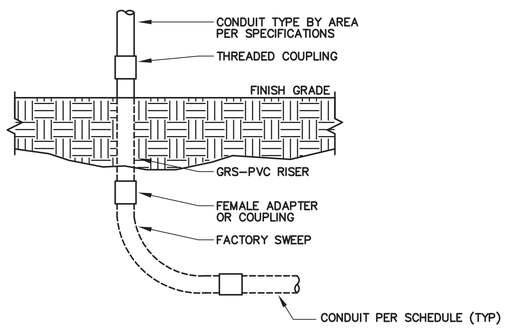


PLAN VIEW

STP — NOT TO SCALE

SUMP TERMINATION PANEL DETAIL

NOTES:
1. ORIENT PANEL SO THAT CONDUIT AND SLEEVES EXTEND WITHIN PANEL AS SHOWN. PROVIDE NEMA 3RX, STAINLESS STEEL SUMP TERMINATION PANEL, TESCO CONTROLS, INC. No. S-3630STP OR EQUAL.
2. INSTALL 2" CONDUIT SLEEVE WITH FLUSH BELL ENDS IN CONCRETE DURING POUR. SLEEVE SHALL BE PERPENDICULAR TO WET WELL DECK. EXTEND MOTOR LEADS THROUGH SLEEVES, COIL EXCESS CABLE AND ZIP TIE LOOPS TO KEEP FROM FALLING BACK. SEE ALSO DETAIL E11/PCS.
3. PANEL SHALL BE MOUNTED, SEALED, ETC. SIMILAR TO DETAIL E10/PED.



ECT — NOT TO SCALE

EXPOSED CONDUIT TRANSITION DETAIL

FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
110 BLUE RAVINE RD, SUITE 101 — PH 916 353 1025
FOLSOM, CA 95630 — FX 916 353 1028

REGISTERED PROFESSIONAL ENGINEER — THOMAS P. FRISCH — No. E15761 — Exp. 09-30-12 — ELECTRICAL — STATE OF CALIFORNIA

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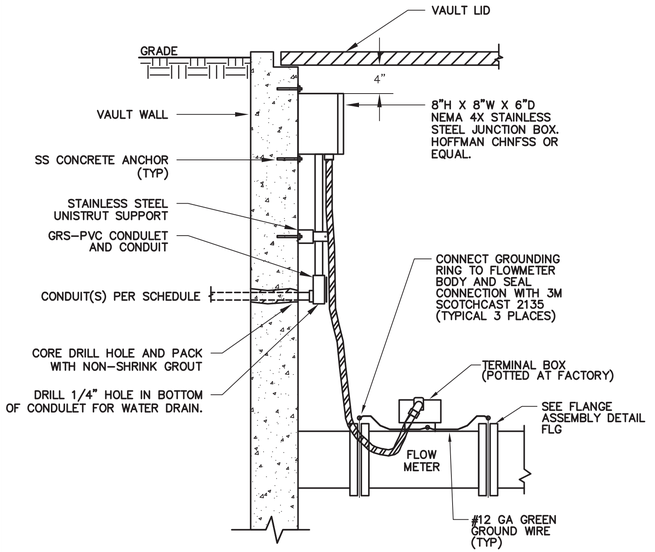
CHECKED T FRISCH
APPROVED M FISHER

WATERWORKS ENGINEERS

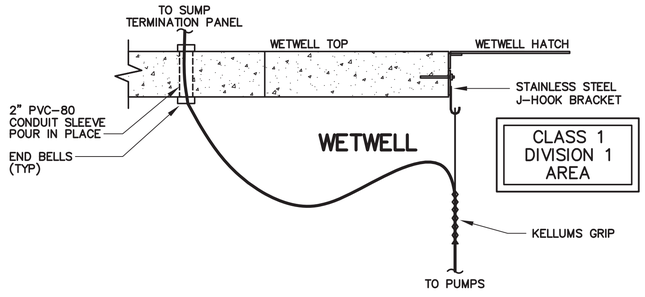
CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

ELECTRICAL
DETAILS I

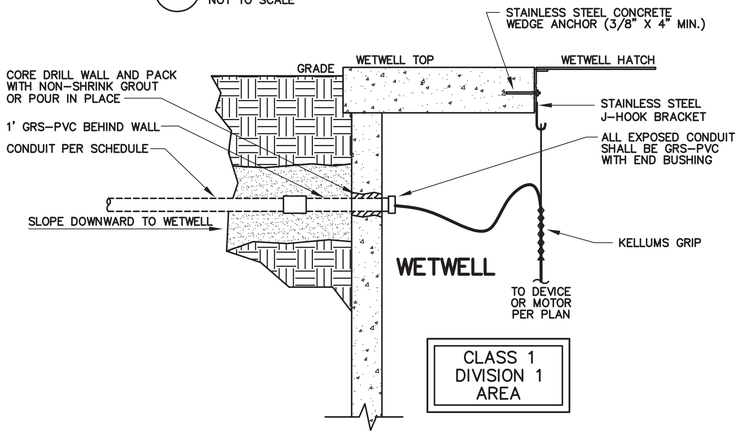
DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER E10
SHEET NUMBER 37



FMV — **FLOWMETER VAULT DETAIL**
NOT TO SCALE

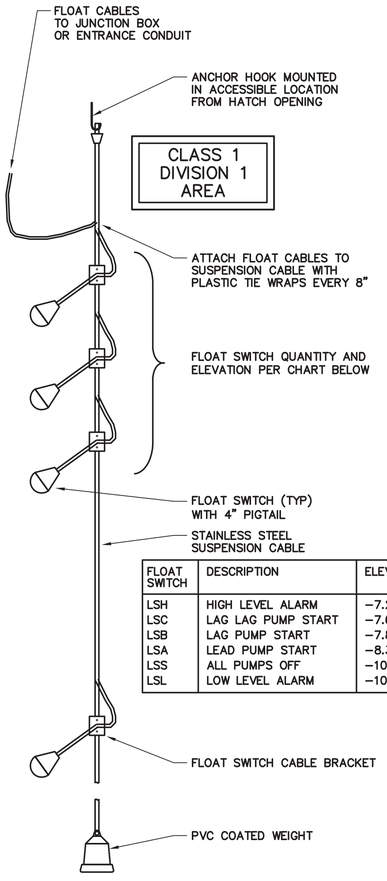


PCS — **PUMP CABLE SUPPORT DETAIL**
NOT TO SCALE



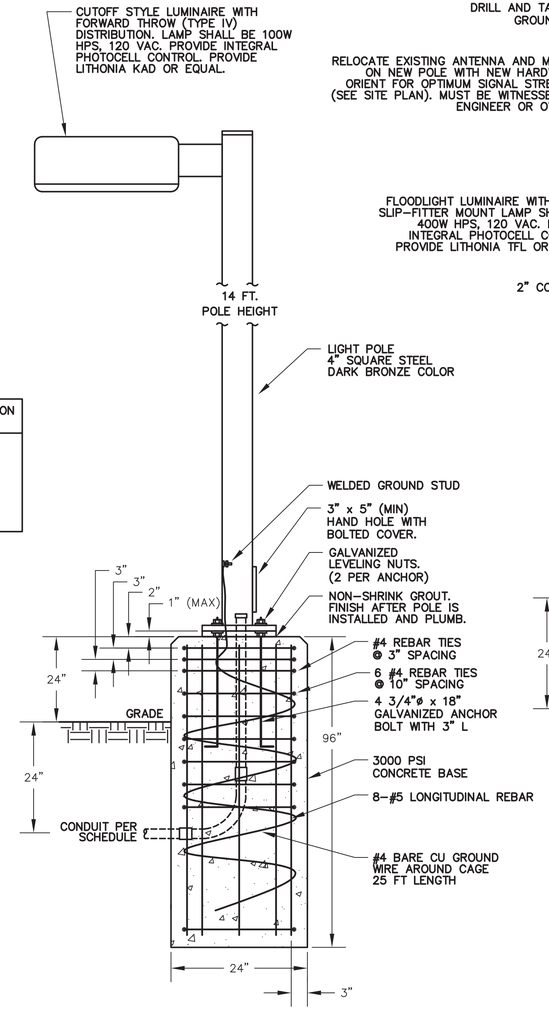
WED — **WETWELL ENTRY DETAIL**
NOT TO SCALE

NOTES: (1) CUSTOM MANUFACTURERED J-HOOK ASSEMBLY CONSISTING OF STAINLESS STEEL PLATE WITH STAINLESS STEEL J-HOOKS WELDED TO PLATE. PROVIDE ONE HOOK PER WETWELL CABLE.

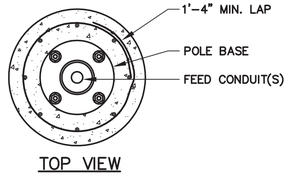


FLOAT SWITCH	DESCRIPTION	ELEVATION
LSH	HIGH LEVEL ALARM	-7.26
LSC	LAG LAG PUMP START	-7.62
LSB	LAG PUMP START	-7.85
LSA	LEAD PUMP START	-8.35
LSS	ALL PUMPS OFF	-10.12
LSL	LOW LEVEL ALARM	-10.87

FSD — **FLOAT SWITCH DETAIL**
NOT TO SCALE

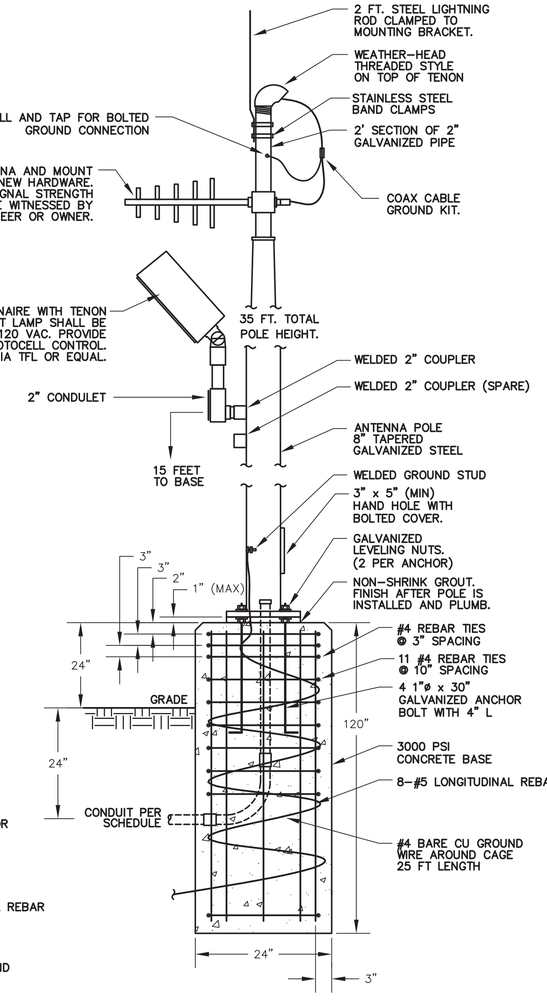


ELEVATION

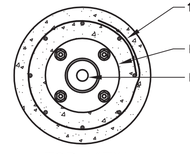


TOP VIEW

LPA — **LIGHT POLE "A" DETAIL**
NOT TO SCALE



ELEVATION



TOP VIEW

LPB — **LIGHT POLE "B" DETAIL**
NOT TO SCALE

LIGHT POLE BASES ONLY

REGISTERED PROFESSIONAL ENGINEER JEREMY A. KEY No. C76... ELECTRICAL STATE OF CALIFORNIA
XX-XX-XX

REGISTERED PROFESSIONAL ENGINEER THOMAS P. FRISCH No. E15761 Exp. 09-30-12 ELECTRICAL STATE OF CALIFORNIA

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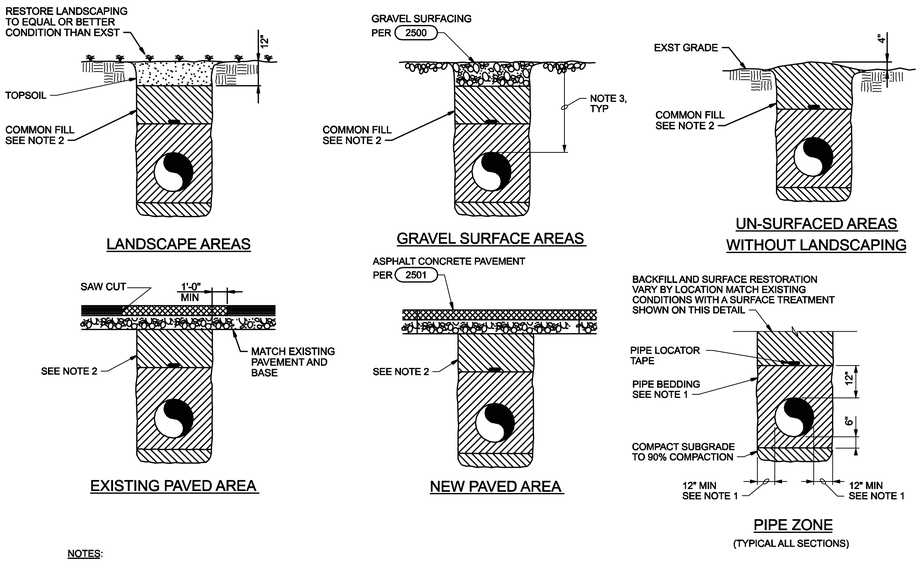
CHECKED T FRISCH
APPROVED M FISHER

WATERWORKS ENGINEERS

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

ELECTRICAL
DETAILS II

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER E11
SHEET NUMBER 38

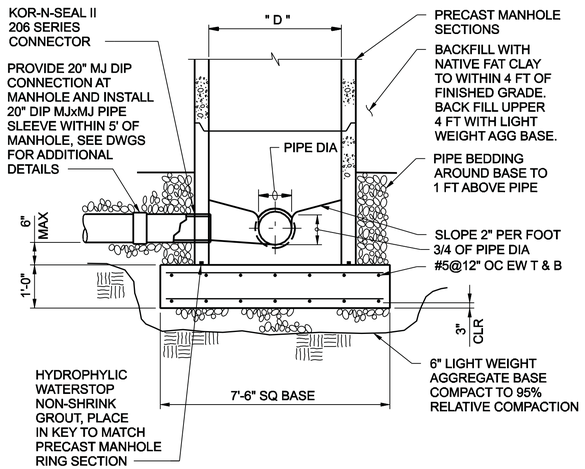


NOTES:

1. PIPE BEDDING SHALL BE LIGHT WEIGHT AGG BASE FOR ALL PIPE. COMPACT TO 90% RELATIVE COMPACTION.
2. COMPACT ALL TRENCH BACK FILL TO 90% COMPACTION MORE THAN 2-FEET BELOW GRADE; 95% COMPACTION LESS THAN 2-FEET BELOW GRADE. PROVIDE LIGHT WEIGHT AGG BASE FROM TOP OF FILL TO 4 FT BELOW GRADE. PROVIDE NATIVE FAT CLAY FILL BETWEEN UPPER LIGHT WEIGHT AGG BASE AND PIPE BEDDING.
3. UNLESS NOTIFIED OTHERWISE, PROVIDE MINIMUM 3-FEET OF COVER OVER ALL BURIED PIPELINES.

TYPICAL TRENCH SECTIONS
NTS

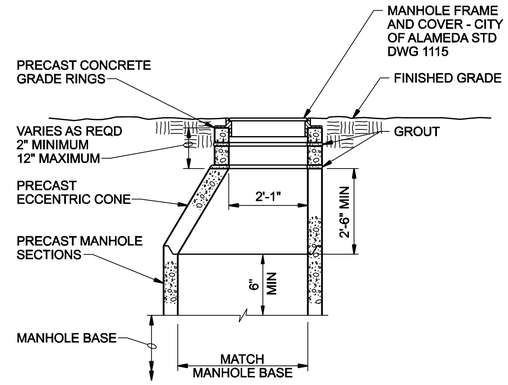
2000



PIPE DIAMETER	MANHOLE DIAMETER "D"
6" THRU 21"	4'-0"

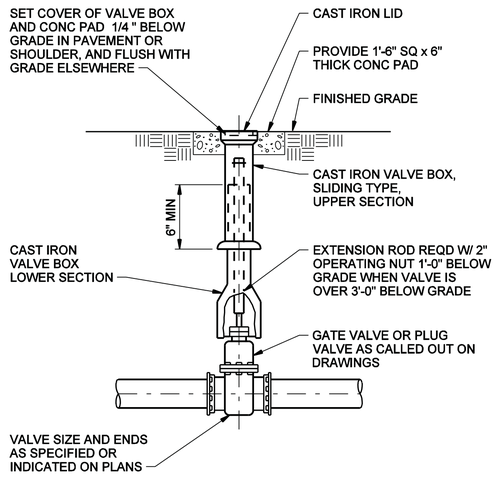
MANHOLE BASE SECTION
NTS

2100



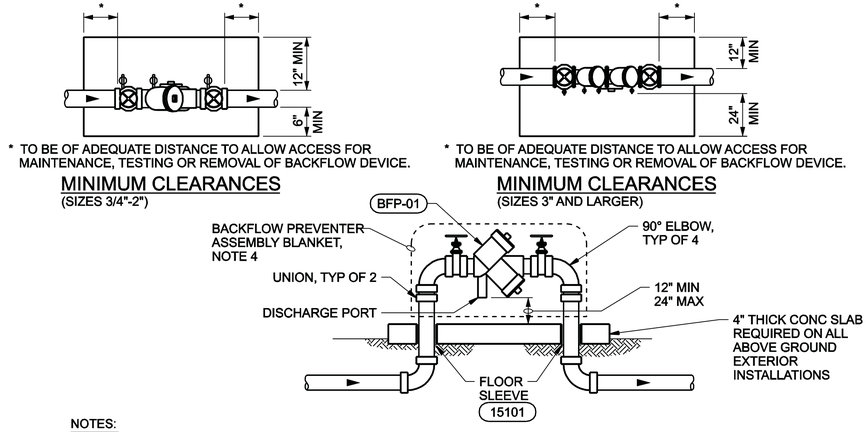
ECCENTRIC MANHOLE TOP SECTION
NTS

2110



BURIED GATE OR PLUG VALVE BOX, TYPE 1
NTS

2202

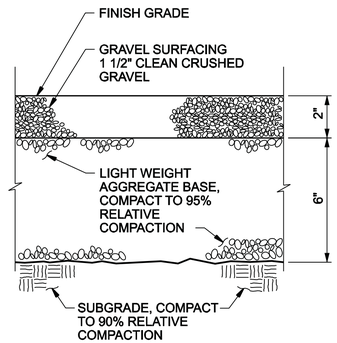


NOTES:

1. ALL BACKFLOW DEVICES SHALL BE INSPECTED AND TESTED UPON INITIAL INSTALLATION BY A CERTIFIED BACKFLOW TESTER (AWWA OR ABPA).
2. NO OUTLET, TAP, TEE OR CONNECTION BETWEEN THE WATER MAIN AND BACKFLOW PREVENTOR IS ALLOWED.
3. ALL ABOVE GROUND PIPING INSTALLATIONS, 2" AND SMALLER SHALLBE RIGID COPPER OR BRASS PIPE AND ALL 3" AND LARGER SHALL BE DUCTILE IRON PIPE WITH FLANGED FITTINGS.
4. PROVIDE VINYL COATED OR POLYMERIC RESIN COATED POLYESTER BLANKET SPECIFICALLY DESIGNED FOR BACKFLOW PREVENTER ASSEMBLIES. MINIMUM R-VALUE OF R-30. BACKFLOW BLANKET, OR EQUAL.

BACKFLOW PREVENTER ASSEMBLY (LESS THAN 4")
NTS

2245



GRAVEL ROAD SURFACING
NTS

2500

07-08-11

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CHECKED M FISHER
APPROVED J GESELBRACHT

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5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

DETAILS

DETAILS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER SD-1
SHEET NUMBER 39

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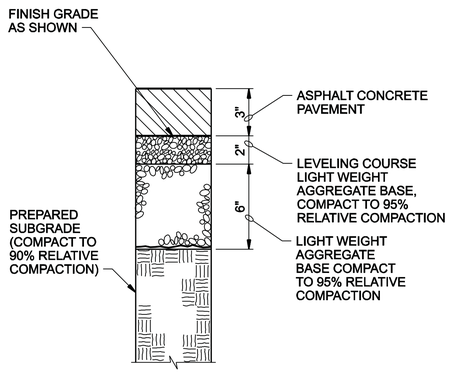


ASPHALT CONCRETE PAVEMENT

NTS

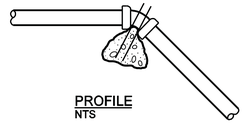
2501

BEARING AREA OF THRUST BLOCKS IN SQ FT (HORIZONTAL BENDS)							
FITTING SIZE	TEE, WYE, PLUG, OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED RUN		BEND ANGLE (DEGREES)		
			A1	A2	45°	22 1/2°	11 1/4°
4	1.0	1.4	1.9	1.4	1.0	-	-
6	2.1	3.0	4.3	3.0	1.6	1.0	-
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.4	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	48.0	68.0	48.0	26.2	13.6	6.8

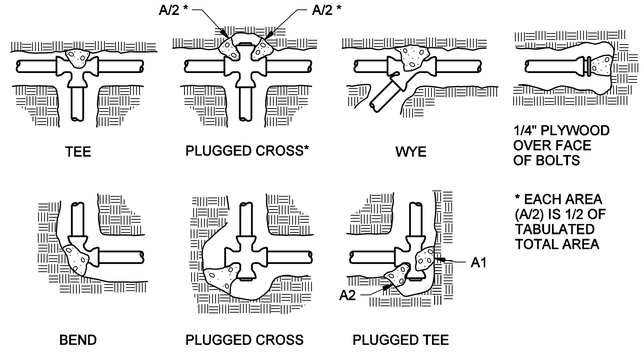
VOLUME OF THRUST BLOCK IN CUBIC YARDS (VERTICAL BENDS)			
FITTING SIZE	BEND ANGLE (DEGREES)		
	45°	22 1/2°	11 1/4°
4	1.1	0.4	0.2
6	2.7	1.0	0.4
8	4.0	1.5	0.6
10	6.0	2.3	0.9
12	8.5	3.2	1.3
14	11.5	4.3	1.8
16	14.8	5.6	2.3

FITTING SIZE	ROD SIZE	EMBEDMENT
12" AND LESS	#6	30"
14" - 16"	#8	36"

GALVANIZED RODS OVER FITTING AND EMBEDDED IN CONCRETE (SEE TABLE FOR SIZES)



PROFILE
NTS



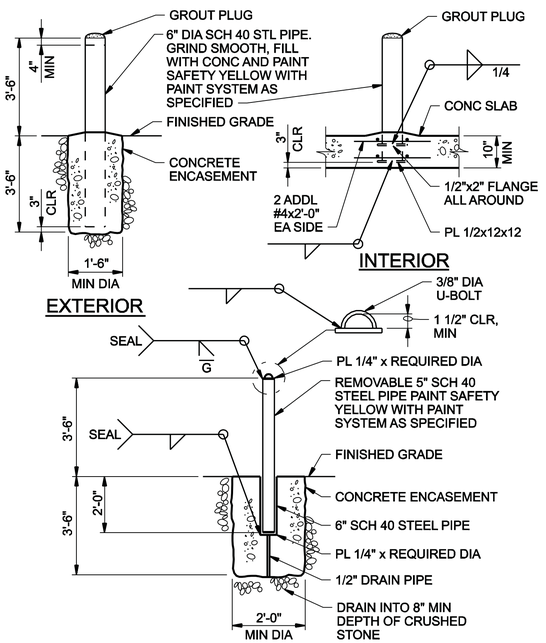
THRUST BLOCK NOTES

1. KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES.
2. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.
3. REQUIRED VOLUMES OR BEARING AREAS AT FITTINGS SHALL BE AS INDICATED BELOW, ADJUSTED, IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS(ES) STATED IN THE SPECIFICATIONS.
4. THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 PSIG AND THE WEIGHT OF CONCRETE = 4050 LBS/CU YD. TO COMPUTE VOLUMES FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION: VOLUME = (TEST PRESS./150) x (TABLE VALUE).
5. BEARING AREAS FOR HORIZONTAL BEND THRUST BLOCKS ARE BASED ON TEST PRESSURE OF 150 PSIG AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 LBS/SQ FT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150) x (2000/SOIL BEARING STRESS) x (TABLE VALUE).
6. THRUST BLOCKS FOR VERTICAL BENDS HAVING DOWNWARD RESULTANT THRUSTS SHALL BE THE SAME AS FOR HORIZONTAL BENDS.
7. BEARING AREAS, VOLUMES, AND SPECIAL BLOCKING DETAILS SHOWN ON DRAWINGS TAKE PRECEDENCE OVER THIS STANDARD
8. BEARING AREA OF THRUST BLOCK SHALL NOT BE LESS THAN 1.0 SQ FT.
9. VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 5 CUBIC YARDS REQUIRE SPECIAL BLOCKING DETAILS. SEE DRAWINGS FOR VOLUMES SHOWN TO LEFT OF SOLID LINE IN TABLE.
10. TEST PRESSURES ARE SHOWN IN THE PIPING SCHEDULE.
11. ALLOWABLE SOIL BEARING STRESS IS 2000 LBS/SQ FT UNLESS OTHERWISE NOTED ON THIS SHEET.

THRUST BLOCKS

NTS

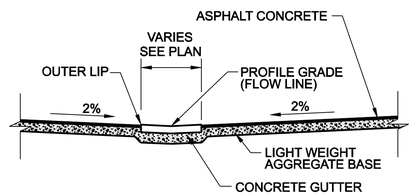
2520



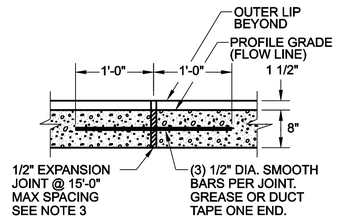
GUARD POST

NTS

2600



TYP. CROSS SECTION



EXPANSION JOINT DETAIL

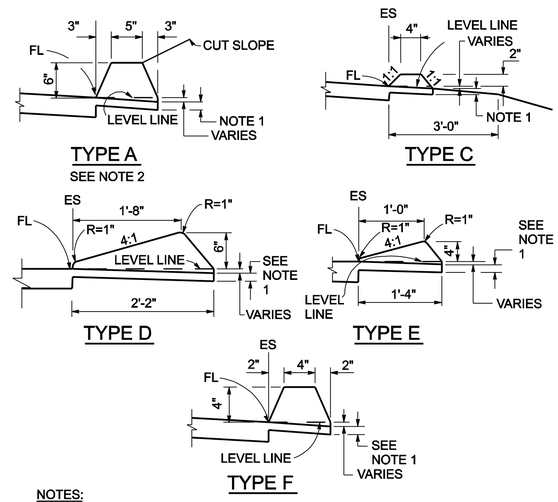
NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROJECT SPECIFICATIONS.
2. SURFACING AND BASE THICKNESS SHALL BE DETERMINED IN ACCORDANCE WITH PROJECT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.
3. 1/2-INCH, PRE-MOLDED EXPANSION JOINT MATERIAL SHALL BE HELD FIRMLY IN PLACE PRIOR TO PLACING CONCRETE.

TYPICAL CONCRETE SWALE

NTS

2720



NOTES:

1. FOR AC SHOULDERS ONLY, EXTEND TOP LAYER OF AC PLACED ON THE SHOULDER UNDER DIKE WITH NO JOINT AT THE ES.
2. TYPE A DIKE ONLY TO BE USED WHERE RESTRICTIVE SLOPE CONDITIONS DO NOT PROVIDE ENOUGH WIDTH TO USE TYPE D OR TYPE E DIKE.

DIKE QUANTITIES

TYPE	CUBIC YARDS PER LINEAR FOOT
A	0.0135
C	0.0038
D	0.0293
E	0.0130
F	0.0066

QUANTITIES BASED ON 5% CROSS SLOPE.

AC DIKE

NTS

2760

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED M FISHER
APPROVED J GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

DETAILS

DETAILS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER SD-2
SHEET NUMBER 40

REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. DURBIN No. C 34155 Exp. 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

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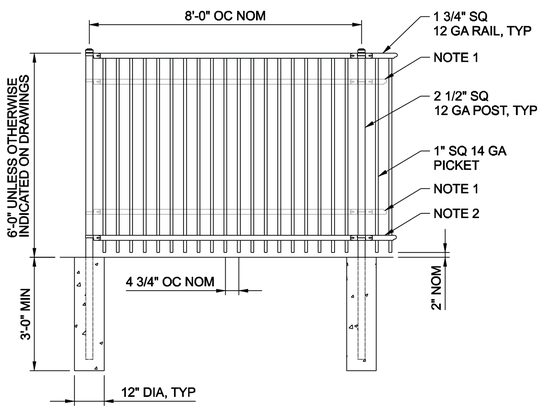
FILENAME: 1105d-20d301.dgn PLOT DATE: 07-JUL-2011 PLOT TIME: 12:56:12



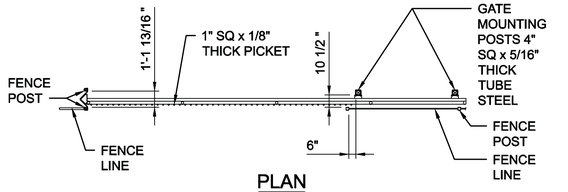
NOTE:

1. PROVIDE THIRD AND FOURTH RAILS IF INDICATED IN SPECIFICATION.
2. PROVIDE FLUSH BOTTOM RAIL IF INDICATED IN SPECIFICATION.

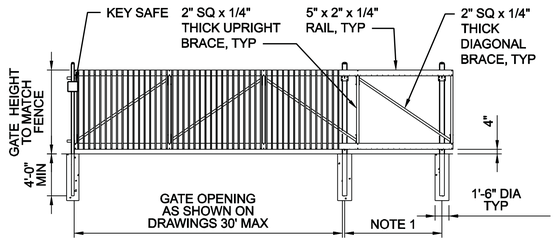
PICKET FENCE

NTS

2805



PLAN



ELEVATION

NOTE:

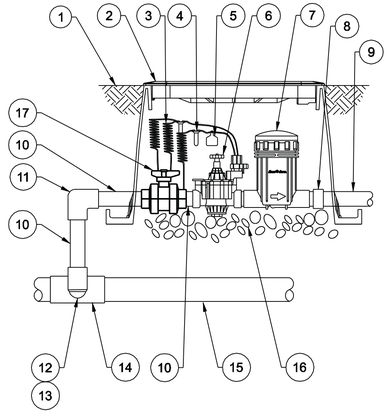
1. GATE MOUNTING POSTS SHALL BE SPACED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES.

CANTILEVER GATE FOR PICKET FENCE

NTS

2806

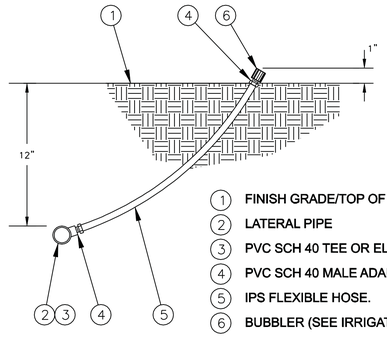
1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER
3. 30-INCH LINEAR LENGTH OF WIRE, COILED
4. WATERPROOF CONNECTION
5. ID TAG
6. REMOTE CONTROL VALVE
7. PRESSURE REGULATING BASKET FILTER
8. PVC SCH 40 FEMALE ADAPTOR
9. LATERAL PIPE
10. PVC SCH 40 NIPPLE (LENGTH AS REQUIRED)
11. PVC SCH 40 ELL
12. PVC SCH 40 NIPPLE (2" LENGTH, HIDDEN)
13. PVC SCH 40 ELL
14. PVC SCH 40 TEE OR ELL
15. MAINLINE PIPE
16. 3" MIN DEPTH OF 3/4" WASHED GRAVEL
17. PVC BALL VALVE



REMOTE CONTROL VALVE

NTS

2930



1. FINISH GRADE/TOP OF MULCH
2. LATERAL PIPE
3. PVC SCH 40 TEE OR ELL
4. PVC SCH 40 MALE ADAPTER
5. IPS FLEXIBLE HOSE.
6. BUBBLER (SEE IRRIGATION PLAN FOR GPM)

NOTES

1. BUBBLER SHALL HAVE THE FOLLOWING FEATURES:

   FULL CIRCLE (TRICKLE PATTERN)
   PRESSURE COMPENSATING BETWEEN 20 & 90 PSI
   LOW FLOW RATES
   NO ADJUSTMENT REQUIRED
   INLET FILTER SCREEN
   DURABLE, NON-CORROSIVE PLASTIC

2. INSTALL BUBBLER ON THE UPHILL SIDE OF THE ROOT BALL.
3. INSTALL BUBBLER THREE INCHES FROM ROOT BALL.
4. USE TEFLON TAPE ON ALL MALE THREADS.
5. USE ONLY IPS WELD #795 SOLVENT CEMENT ON HOSE. APPLY P-70 PRIMER PRIOR TO SOLVENT WELD.

IRRIGATION BUBBLER

NTS

2931

NOTES:

1. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE DRAWINGS OR AS INDICATED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.
2. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER, AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A ONE PIECE TEMPLATE, MATCHING THE BASE PLATE, WHILE PAD IS BEING POURED.
3. ANCHOR BOLT SLEEVES SHALL BE USED TO PROVIDE THE ANCHOR BOLT A MINIMUM MOVEMENT OF 1/2" IN ALL DIRECTIONS. THE MINIMUM SLEEVE LENGTH SHALL BE 8 TIMES THE BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT.
4. ANCHOR BOLT SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 1" GREATER THAN BOLT DIAMETER AND A MAXIMUM INTERNAL DIAMETER 3" GREATER THAN ANCHOR BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT.
5. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS SPECIFIED OTHERWISE.
6. TYPE "D" DETAIL SHALL BE USED ONLY FOR SLABS ON GRADE AND AT GRADE. THE SURROUNDING FLOOR SLAB SHALL NOT BE PLACED UNTIL THE EXACT SIZE AND LOCATION OF THE PAD IS KNOWN.
7. WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE NON-SHRINK GROUT IS PLACED. TEMPORARY LEVELING NUTS SHALL BE BACKED OFF. IF LEFT IN, THE WEDGES OR SHIMS SHALL NOT BE EXPOSED TO VIEW.
8. HEIGHT OF PADS SHALL BE MINIMUM REQUIRED FOR ANCHOR BOLT CLEARANCE TO KEEP ANCHOR BOLT OUT OF SLAB (SEE TABLE BELOW). WHERE EQUIPMENT OR PIPING ELEVATION REQUIRE A PAD HEIGHT LESS THAN THE MINIMUM SHOWN, USE TYPE B WITH BLOCKOUT.

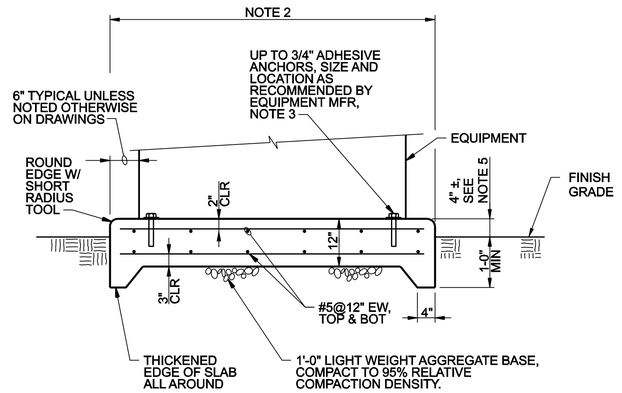
AB DIA (IN.)	1/2	5/8	3/4	7/8	1	1 1/4	1 3/8	1 1/2	1 3/4	2
MIN PAD HT (IN.)	7	8 1/2	10	11	12 1/2	15	16 1/2	18	21	24

9. TYPE "F" PADS MAY BE SUBSTITUTED FOR TYPE "A" PADS FOR LOCATIONS APPROVED IN WRITING BY THE ENGINEER.
10. SEE ANCHOR BOLT AND BLOCKOUT DETAILS (3210).

EQUIPMENT PAD NOTES

NTS

3200



NOTES:

1. SEE (3200) FOR GENERAL EQUIPMENT PAD NOTES.
2. EQUIPMENT PAD SIZE PER DRAWINGS. WHERE PAD SIZE IS NOT SHOWN, SIZE TO FIT EQUIPMENT.
3. IF ANCHOR BOLTS ARE CALLED OUT FOR ON DRAWINGS, PROVIDE ANCHOR BOLTS PER (3210) IN LIEU OF ADHESIVE ANCHORS.
4. ANCHOR BOLT LOCATION SHALL BE WITH IN 4-INCH OF THE FINAL LOCATION REQUIRED FOR EQUIPMENT MOUNTING OR EQUIPMENT PAD SHALL BE DEMOLISHED AND RE-CONSTRUCTED.
5. DIMENSION VARIES PER GRADING AND DRAINGE PLAN.

EQUIPMENT PAD-TYPE E

NTS

3200E

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY D DURBIN
No. C 24455
Exp. 3-31-12
CIVIL
STATE OF CALIFORNIA
07-08-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED M FISHER
APPROVED J GESELBRACHT

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5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

DETAILS
DETAILS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER SD-3
SHEET NUMBER 41

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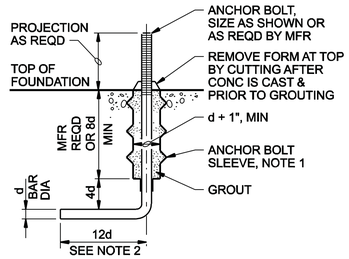
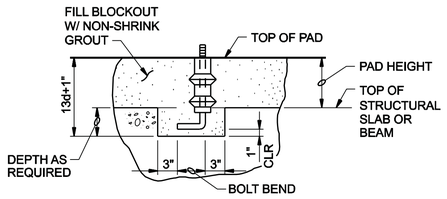


MACHINERY ANCHOR BOLT DETAIL



ANCHOR BOLT BLOCKOUT

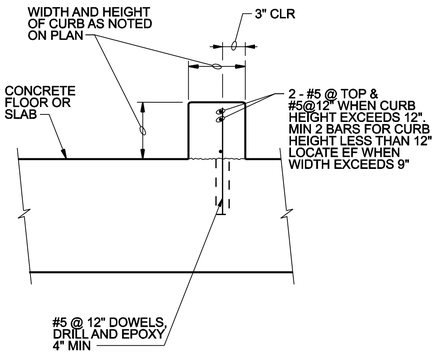
NOTES:

1. ANCHOR BOLT SLEEVE BY THE ANCHOR BOLT SLEEVE COMPANY, SHELTON, CT, OR EQUAL.
2. 3d WHERE MANUFACTURER VERIFIES NO BOLT PULLOUT RESISTANCE REQUIRED.

ANCHOR BOLT DETAILS

NTS

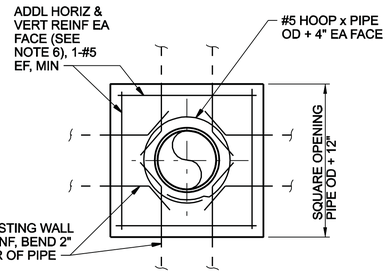
3210



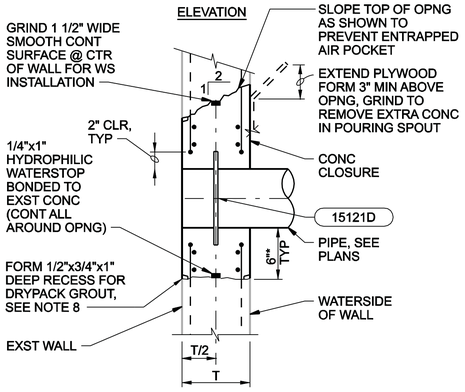
CONCRETE CURB

NTS

3250

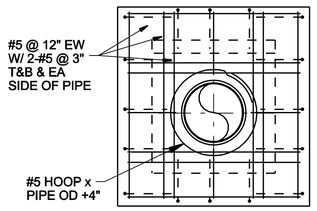


ELEVATION

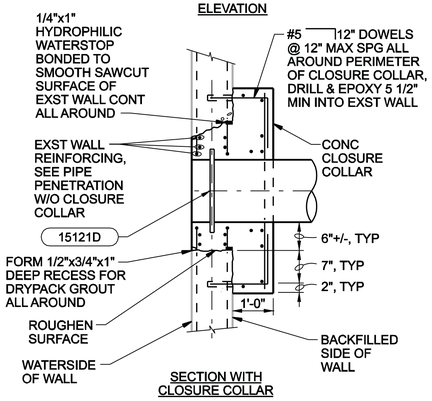


SECTION

WITHOUT CLOSURE COLLAR



ELEVATION



SECTION WITH CLOSURE COLLAR

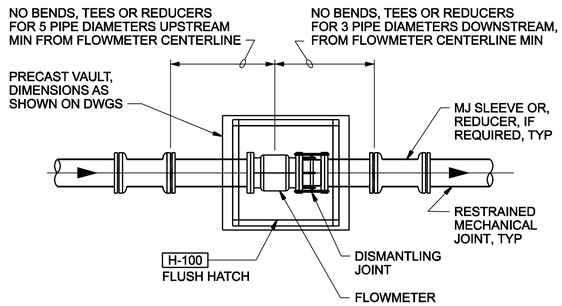
NOTES:

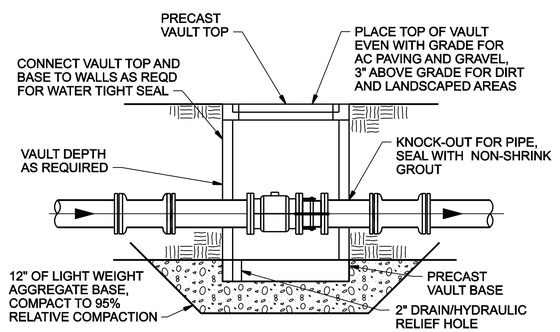
1. SAW-CUT 1-INCH DEEP x PIPE OD + 12" SQUARE SCORE LINE ON EACH FACE OF WALL. (VERIFY DEPTH OF CUT TO CLEAR REINFORCING.) (INCREASE HEIGHT AS NOTED AT TOP FOR POURING.)
2. CHIP TO REMOVE THE CONCRETE WITHIN THE SCORE LINE, WHILE PRESERVING THE EXISTING WALL REINFORCING.
3. CUT EXISTING REINFORCING AT CENTER OF OPENING AND BEND TO CLEAR PIPE.
4. GRIND 1 1/2" WIDE x CONT SMOOTH SURFACE ALL AROUND THE OPENING AT CENTER OF WALL. CLEAN SURFACES AND BOND CONTINUOUS HYDROPHILIC WATERSTOP IN PLACE.
5. INSTALL WALL PIPE. (COAT CONCRETE ENCASED PORTION OF PIPE WITH SPECIFIED COATING SYSTEM.)
6. INSTALL ADDITIONAL REINFORCING EACH FACE, EACH SIDE, ABOVE AND BELOW PIPE. HORIZONTAL REINFORCING TO HAVE COMBINED AREA EQUAL TO AREA OF HORIZONTAL REINFORCING CUT. VERTICAL REINFORCING TO HAVE COMBINED AREA EQUAL TO AREA OF VERTICAL REINFORCING CUT.
7. COAT EXISTING CONCRETE SURFACES WITH EPOXY BONDING AGENT. FORM GROOVE ON ALL SIDES OF OPENING EXCEPT AT TOP ON THE POUR SIDE.
8. CLEAN SURFACES OF FORMED GROOVE WITH POWER WIRE BRUSH OR SANDBLASTING AND DRY-PACK WITH NON-SHRINK GROUT AFTER NEW CONCRETE MIN 28-DAYS OLD.

PENETRATION AT EXISTING WALL

NTS

3321





FLOWMETER MANHOLE 4" TO 16" PIPING

NTS

13254

REGISTERED PROFESSIONAL ENGINEER — TIMOTHY D. DURBIN — No. C 63456 — Exp: 3-31-12 — CIVIL — STATE OF CALIFORNIA

07-08-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED M FISHER
APPROVED J GESELBRACHT

WATERWORKS ENGINEERS
5787 Broadway #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
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REHABILITATION PROJECT

DETAILS
DETAILS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER SD-4
SHEET NUMBER 42

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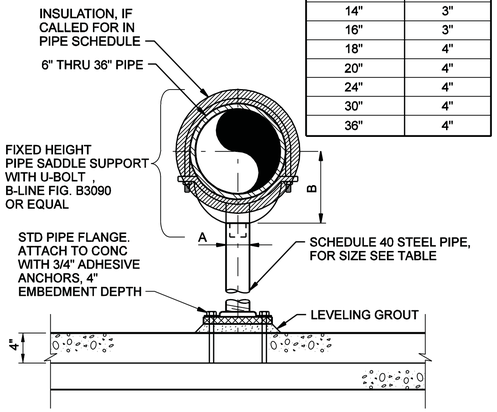
FILENAME: 1105d-20d301.dgn PLOT DATE: 07-JUL-2011 PLOT TIME: 12:57:43

DIMENSION TABLE	
PIPE SIZE	A
6"	3"
8"	3"
10"	3"
12"	3"
14"	3"
16"	3"
18"	4"
20"	4"
24"	4"
30"	4"
36"	4"



NOTES:

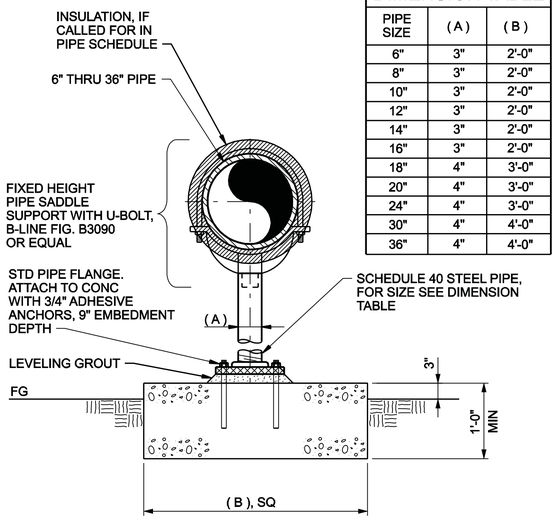
1. MAXIMUM LENGTH BETWEEN SUPPORTS 10'-0".

FIXED-HEIGHT SADDLE PIPE SUPPORT

NTS

15001

DIMENSION TABLE		
PIPE SIZE	(A)	(B)
6"	3"	2'-0"
8"	3"	2'-0"
10"	3"	2'-0"
12"	3"	2'-0"
14"	3"	2'-0"
16"	3"	2'-0"
18"	4"	3'-0"
20"	4"	3'-0"
24"	4"	3'-0"
30"	4"	4'-0"
36"	4"	4'-0"



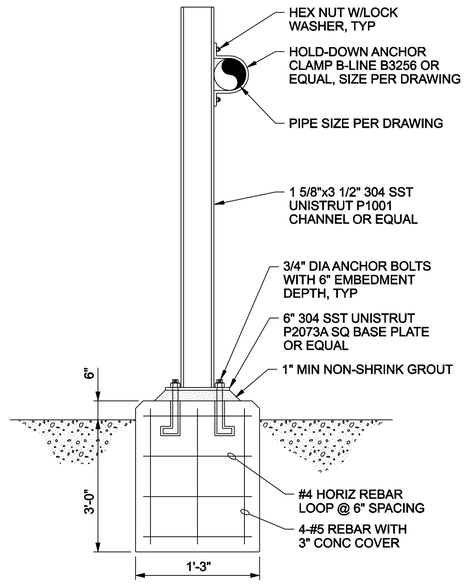
NOTES:

1. MAXIMUM LENGTH BETWEEN SUPPORTS 10'-0".

FIXED-HEIGHT SADDLE PIPE SUPPORT WITH CONCRETE PAD

NTS

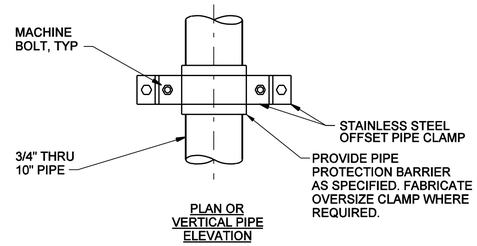
15001A



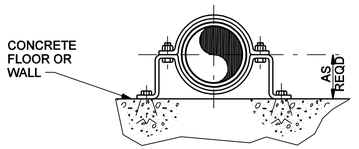
PIPE SUPPORT

NTS

15012



PLAN OR VERTICAL PIPE ELEVATION



SECTION

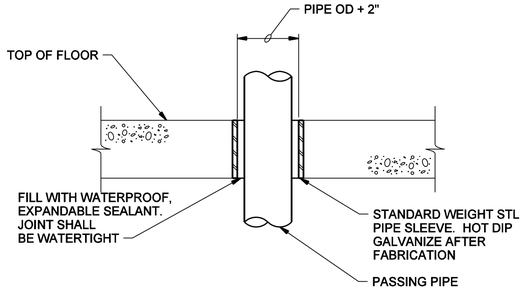
NOTES:

1. FOR VERTICAL PIPE RUNS ONLY.

WALL-MOUNTED STANDOFF PIPE SUPPORT, TYPE 1

NTS

15040



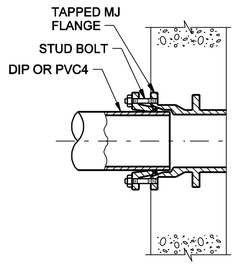
NOTES:

1. COAT FLOOR SLEEVE WITH SPECIFIED PAINT SYSTEM BEFORE CONCRETE PLACEMENT.

FLOOR SLEEVE

NTS

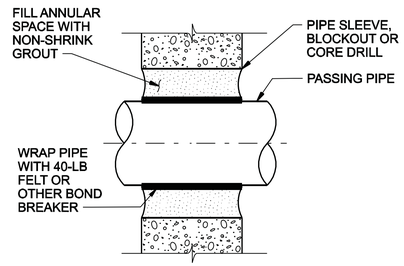
15101



DUCTILE IRON WALL PIPE MECHANICAL JOINT X PLAIN END

NTS

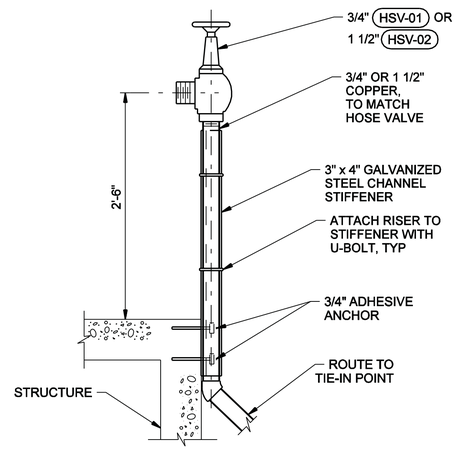
15121D



WALL SLEEVE WITH GROUT SEAL

NTS

15131



CHANNEL SUPPORTED HOSE VALVE

NTS

15200B

REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. DURBIN No. C 34455 Exp: 3-31-12 CIVIL STATE OF CALIFORNIA

07-08-11

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DESIGN T DURBIN
DRAWN J MARTIN
CHECKED M FISHER
APPROVED J GESELBRACHT

WATERWORKS ENGINEERS
5767 Broadway, #201 • Oakland, CA 94618 • 510-428-9590

CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION REHABILITATION PROJECT

DETAILS

DETAILS

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER SD-5
SHEET NUMBER 43

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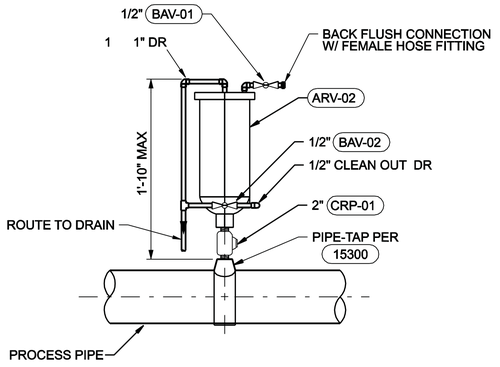
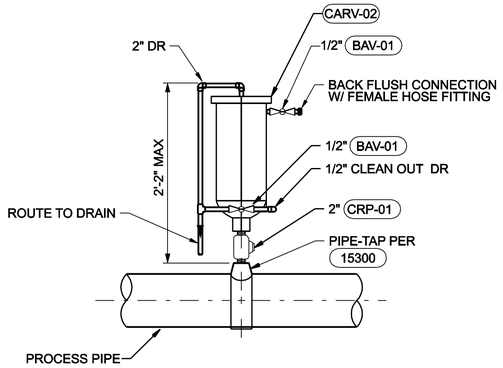


AIR RELEASE VALVE INSTALLATION SEWER SERVICE

NTS

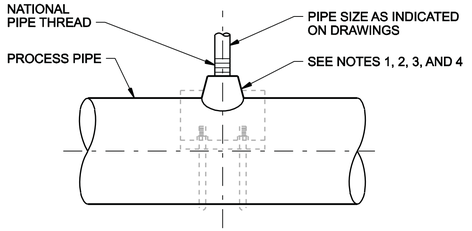
15231



COMBINATION AIR AND VACUUM RELEASE VALVE INSTALLATION SEWER SERVICE

NTS

15233



PIPE TAPS

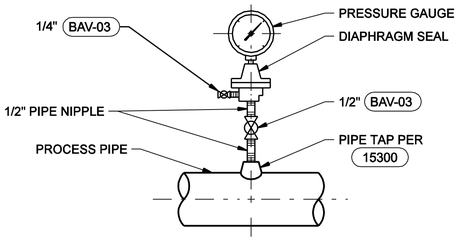
NOTES:

1. FOR STEEL, GALVANIZED STEEL, AND PVC 2 1/2" AND SMALLER USE A BUSHING IN A TEE.
2. FOR DUCTILE IRON, ALL SIZES, USE SERVICE SADDLE.
3. FOR NEW STEEL AND STAINLESS STEEL PIPES 3" AND LARGER, AND PRESSURE VESSELS, USE THRED-O-LET AS SHOWN.
4. FOR EXISTING PVC, STEEL AND STAINLESS STEEL PIPES 3" AND LARGER, USE SERVICE SADDLE.

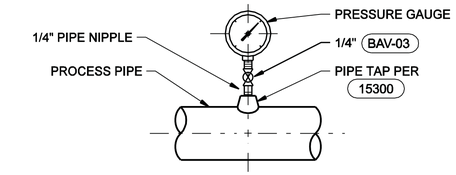
PIPE TAPS

NTS

15300



DIAPHRAGM SEAL INSTALLATION



DIRECT INSTALLATION

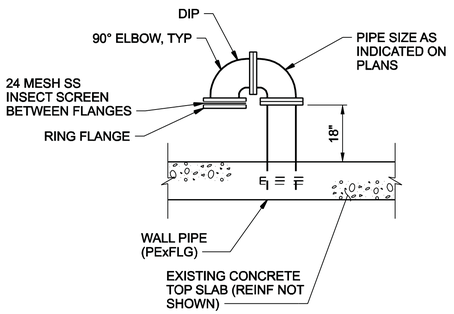
NOTES:
UNLESS NOTED OTHERWISE ON THE DRAWINGS

1. USE DIRECT INSTALLATION FOR POTABLE WATER, RAW WATER, RECLAIMED WATER PROCESS PIPES AND AIR PIPING
2. USE DIAPHRAGM SEAL INSTALLATION FOR SEWAGE, SLUDGE, CHEMICAL AND ALL PROCESS PIPES THAT ARE NOT WATER OR AIR.
3. ALL PIPE NIPPLES TO BE TYPE 304 STAINLESS STEEL.

PRESSURE GAUGE MOUNTING

NTS

15310



GOOSENECK VENT THROUGH CONCRETE SLAB

NTS

15504

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
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DESIGN T.DURBIN
DRAWN J.MARTIN
CHECKED M.FISHER
APPROVED J.GESELBRACHT

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CITY OF ALAMEDA
BAY FARM ISLAND PUMP STATION
REHABILITATION PROJECT

DETAILS
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REGISTERED PROFESSIONAL ENGINEER TIMOTHY D. DURBIN No. C 23456 Exp: 3-31-12 CIVIL STATE OF CALIFORNIA
07-08-11

DATE JULY 2011
PROJECT NUMBER 11-005
DRAWING NUMBER SD-6
SHEET NUMBER 44

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