CALIFORNIA
AMERICAN WATER

TRANSMISSION MAINS FOR MONTEREY PENINSULA WATER SUPPLY PROJECT (MPWSP)

PIPELINE DETAILS

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AECOM

AUGUST 2015

GENERAL LEGEND

- WATER METER
- EXISTING CONTROL POINT
- NEW CONTROL POINT/ ELEVATION POINT
- TEST PITS
- EXPLORATORY BORING
- PIEZOMETERS
- PIPE W/ CAP
- SPOT ELEVATION
- TREE, SHRUB
- WATER LEVEL ELEVATION
- SLOPE GRADIENT (HOR. : VERT.) — 1.5:1
- FLOW LINE
- CUT SLOPE
- FILL SLOPE
- EXISTING GRADE CONTOUR — 230
- FINISHED GRADE CONTOUR — 245
- GATE POST — GP
- GUY ANCHOR
- POWER POLE, STEEL
- WATER PIPE MANHOLE — MH
- BLOW OFF VALVE — BO
- CHECK VALVE
- REDUCER
- UTILITY POLE
- EXISTING INCLINOMETER — IN-3
- TELEPHONE POLE — TP
- BFV COVER AND CONCRETE PAD
- GAS VALVE
- TELELPHONE MH OR BOX
- COMMUNICATION BOX
- TRANSMISSION TOWER
- SANITARY SEWER RODDING INLET — RI
- GATE WATER VALVE — WV
- BUTTERFLY WATER VALVE — WV
- BLOWOFF TO FIRE HYDRANT — BO
- COMBINATION AIR RELEASE VALVE — AIR
- ANODE

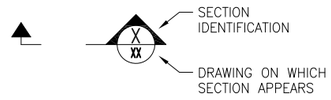
- CLEAN–OUT — CO
- BUBBLE UP — B
- STORM DRAIN MANHOLE — D
- SEWER MANHOLE — S
- EXISTING WATER VALVE
- FIRE HYDRANT
- WATER STRUCTURE — W
- WELL
- WATER VAULT
- CATCH BASIN
- TRANSFORMER W/PAD
- TRANSFORMER SUBSURFACE
- ELECTRICAL BOX — E
- STREETLIGHT
- STREETLIGHT AND UTILITY POLE
- MANHOLE ELECTRICAL — E
- ELECTRIC TEST STATION
- ROCK SURFACE
- NATURAL GROUND OR GRADE
- BACKFILL
- AC BERM
- CONCRETE
- STAGING AREA
- (E) UTILITY REMOVED FROM SERVICE
- (E) UTILITY REMOVED FROM SERVICE AND FILLED WITH CONCRETE SLURRY
- AGGREGATE / BALLAST
- HYDROSEED
- CLEAR & GRUB
- EXISTING TO BE DEMOLISHED
- (N) ASPHALTIC CONCRETE
- AGGREGATE BASE
- (E) ASPHALTIC CONCRETE
- FOUNDATION STONE
- INITIAL BACKFILL
- UNDISTURBED SOIL
- BUILDING

- FENCE — X X X
- COASTAL BOUNDARY
- TAMC RIGHT OF WAY
- CALTRANS RIGHT OF WAY
- PARCEL BOUNDARY
- CITY LIMITS
- LIMITS OF WORK
- GAS LINE — G
- WATER LINE — W
- NEW WATER LINE — W
- RECYCLED WATER LINE — RW
- SANITARY SEWER LINE — SS
- STORMDRAIN LINE — SD
- ELECTRICAL LINE — E
- ELECTRICAL OVERHEAD LINE — (E)OH
- TEL/AT&T LINE — ATT
- IRRIGATION LINE — IR
- DRAIN SWALE
- COMCAST UNDERGROUND — CC
- COMCAST OVERHEAD — CC
- SANITARY SEWER FORCED MAIN — SSFM
- TELEPHONE LINE — T
- BRINE LINE WASTE WATER — BL
- FIBER OPTIC — FO
- FORCED MAIN — FM
- SANTARY SEWER FORCED MAIN — SSFM
- SANTARY OUTFALL — SO

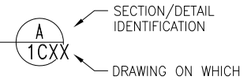
DEMOLITION LEGEND

- DEMOLITION
- ABANDON — XX XX XX XX XX XX
- [1] ITEMS TO BE PROTECTED
- (1) ITEMS TO BE DEMOLISHED / REMOVED
- ⬡1 ITEMS TO BE SALVAGED / REUSED
- ⬡1 POINT ID
- TREE STUMP\ROOT TO BE REMOVED AS NEEDED

TYPICAL SECTION/DETAIL NUMBERING SYSTEM



SECTION — SCALE: NTS



DETAIL — SCALE: NTS

REGISTERED PROFESSIONAL ENGINEER — JOSEPH A. HYMAN — No. C-50928 — CIVIL — STATE OF CALIFORNIA — 8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
GENERAL
PIPELINE DETAILS
GENERAL NOTES

CALIFORNIA AMERICAN WATER

AECOM
1333 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612

AECOM — CALIFORNIA AMERICAN WATER

DRAWN BY C. SOMERA
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH
DATE AUGUST 2015
PROJECT 60424498
USE DIMENSIONS ONLY
SCALE AS SHOWN

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

0000G01

10000000G01

GENERAL ABBREVIATIONS

A	AMPERE
AB	AGGREGATE BASE/ANCHOR BOLT
AC	ASPHALT CONCRETE/AESBESTOS CEMENT
ADAS	AUTOMATIC DATA ACQUISITION SYSTEM
ADD	ADDITION(AL)
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
AL	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASSY	ASSEMBLY
ATS	ANODE BED TEST STATION
AV	AIR VALVE
AVG	AVERAGE
AVMH	AIR VALVE MANHOLE
AUX	AUXILIARY
BB	BEGINNING OF BRIDGE
BC	BEGIN CURVE
BEG	BEGIN(NING)
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BG	BILLION GALLONS
BLDG	BUILDING
BLK	BLACK
BLVD	BOULEVARD
BO	BLOW OFF/BOTTOM OF
BOMH	BLOW-OFF MANHOLE
BOT	BOTTOM
BOF	BOTTOM OF FOOTING
BRG	BEARING
C	CONDUIT
CAP	CAPACITY
CAVV	COMBINATION AIR VACUUM RELEASE VALVE
CB	CATCH BASIN/CIRCUIT BREAKER
C/C or CC	CENTER TO CENTER
℄	CENTER LINE
CF	CUBIC FEET
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CIDH	CAST IN PLACE DRILLED HOLE
CIR	CIRCLE
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CKT. NO.	CIRCUIT NUMBER
CK P.	CHECKER PLATE
CLR	CLEARANCE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COF	CITY OF FREMONT
COMM	COMMUNICATION
CONC	CONCRETE
CONN	CONNECTION
COND	CONDUIT
CONT	CONTINUE/CONTINUOUS
CONST	CONSTRUCTION
CPLG	COUPLING
CTE	COAL TAR ENAMEL
CTEL	CONNECT TO EXISTING LINE
CTR	CENTER
D	DEPTH/DIAMETER
DET	DETAIL
DFT	DRY FILL THICKNESS
DI	DRAINAGE INLET
DIA	DIAMETER
DIAG	DIAGRAM
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DN	DOWN
DR	DRAINAGE, DOOR
DWG	DRAWING
E	EAST
EA	EACH
EB	END OF BRIDGE/EAST BOUND
EC	END CURVE
EE	EACH END
EF	EACH FACE
EG	EXISTING GROUND
EL	ELEVATION
ELEC	ELECTRICAL
ELL	ELBOW
EPS	EXPANDED POLYSTYRENE
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EXH	EXHAUST
(E)	EXISTING
EXP	EXPANSION
FB	FILLER BAR
FDN	FOUNDATION
FE	FLANGE END
FF	FAR FACE
FG	FINISHED GRADE
FIG	FIGURE
FIN	FINISHED
FL	FLOOR, FLOW LINE
FLEX	FLEXIBLE
FLG	FLAG(GED)
Fm	FRANCISCAN COMPLEX FORMATION
FPS	FEET PER SECOND
FS	FACTOR OF SAFETY
FT	FOOT
FUT	FUTURE
F/I	FURNISH AND INSTALL
GA	GAGE
GALV	GALVANIZED
GB	GRADE BEAM
GEN	GENERAL
GPM	GALLONS PER MINUTE
GR	GRADE
GRD	GROUND
GRS	GALVANIZED RIGID STEEL
GRTG	GRATING
GSKT	GASKET
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HGT	HEIGHT
H or HOR	HORIZONTAL
HP	HORSEPOWER, HIGH POINT, HIGH PRESSURE
HPI	HORIZONTAL POINT OF INTERSECTION
HR	HANDRAIL, HOUR
HSR	HIGH STRENGTH ROD
HVAC	HEAT, VENTILATING & AIR CONDITIONING
HV	HOSE VALVE
HWY	HIGHWAY
HYD	HYDRAULIC
ID	INSIDE DIAMETER
IFJ	INSULATED FLANGE JOINT
IN	INCH
INFO	INFORMATION
INST	INSTRUMENTATION
INV	INVERT
IR	IRRIGATION
JT	JOINT
JCT	JUNCTION
JP	JOINT POLE
L	LENGTH
LB	POUND
LEV	LEVEL
LT	LEFT
LONG	LONGITUDINAL
LP	LOW POINT, LOW PRESSURE
LTG	LIGHTING
MB	MACHINE BOLT
MAN	MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCU	MEASUREMENT CONTROL UNIT
MECH	MECHANICAL
MFR	MANUFACTURE(R)
MH	MANHOLE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
M, MTR	MOTOR
N	NORTH
NB	NORTH BOUND
NC	NORMALLY CLOSED
NEC/N.E.C.	NATIONAL ELECTRICAL CODE
NF	NEAR FACE
NIC	NOT IN CONTRACT
NJD	NOMINAL JOINT DIAMETER
NO	NORMALLY OPEN, NUMBER
NPT	NATIONAL PIPE THREAD
NMWS	NORMAL MAXIMUM WATER SURFACE
NOM	NOMINAL
NTS	NOT TO SCALE
(N)	NEW
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND SURFACE
OH	OVERHEAD/OPPOSITE HAND
OPNG	OPENING
P	POLE
PB	PULL BOX
PC	PIECE, POINT OF CURVE
PCC	PORTLAND CEMENT CONCRETE
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PE	PLAIN END
PG	PRESSURE GAGE/PRONG
PH	PHASE
PL, ℄	PLATE OR PROPERTY LINE
PI	POINT OF INTERSECTION
PKWY	PARKWAY
PMF	PROBABLE MAXIMUM FLOOD
POC	POINT OF CONNECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PIPE SLEEVE
PT	POINT, POINT OF TANGENCY
PTFE	POLYTETRAFLUOROETHYLENE (TEFLON)
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
R	RADIUS, RISER
RCP	REINFORCED CONCRETE PIPE
RC	REINFORCED CONCRETE
RD	ROAD OR ROOF DRAIN
RED	REDUCER
REF	REFERENCE
REINF	REINFORCEMENT
REM	REMOVABLE
REQ'D/REQ	REQUIRED
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RT	RIGHT
RUB	RUBBER
ROW	RIGHT OF WAY
RWQCB	REGIONAL WATER QUALITY CONTROL BOARD
R/W	RIGHT OF WAY
S	SLOPE
SB	SOUTH BOUND
SCH	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SECT	SECTION
SFPUC	SAN FRANCISCO PUBLIC UTILITIES COMMISSION
SFWD	SAN FRANCISCO WATER DEPARTMENT
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	SANITARY SEWER/STAINLESS STEEL
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
STL	STEEL, STREET LIGHTING
STRUCT	STRUCTURE
SURF	SURFACE
SVU	SALINAS VALLEY RETURN PIPELINES
SYM ABT	SYMMETRIC ABOUT
T	TREAD
t	THICKNESS
T & B	TOP & BOTTOM
TEL	TELEPHONE/TELECOM
TEMP	TEMPORARY
TO	TOP OF
TOC	TOP OF CURB, TOP OF CONCRETE
TOW	TOP OF WALL
TYP	TYPICAL
THK	THICK
Tts	TEMBLOR SANDSTONE FORMATION
THRU	THROUGH
TS	TEST STATION
TYP	TYPICAL
UG, U/G	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
USD	UNION SANITARY DISTRICT
U/N, U.O.N.	UNLESS OTHERWISE NOTED
V/VERT	VERTICAL
VAC	VACUUM
VC	VERTICAL CURVE
VL	VALVE
VOL	VOLUME
VPI	VERTICAL POINT OF INTERSECTION
V.I.F.	VERIFY IN FIELD
WB	WEST BOUND
WEF	WILDLIFE EXCLUSION FENCE
WI	WROUGHT IRON
W/	WITH
W/O	WITHOUT
W	WIDTH, WEST, WATER, WIRE
WD	WOOD
WHT	WHITE
WS	WATER SURFACE
WSE	WATER SURFACE EXIST
WSL	WATER SURFACE LEVEL
WSP	WELDED STEEL PIPE
WT	WATER TIGHT, WEIGHT
YD	YARD
1d	EMBEDMENT LENGTH
#	NUMBER

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8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
GENERAL
PIPELINE DETAILS
GENERAL ABBREVIATIONS

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0000G02

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GENERAL NOTES:

1. DIMENSIONS TAKE PRECEDENCE OVER GENERAL NOTES, TYPICAL DETAILS AND SCALED DETAILS.

2. THE UNDERGROUND UTILITIES SHOWN IN PLAN DRAWINGS ARE FOR INFORMATION ONLY. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF ALL EXISTING UTILITIES. CONTRACTOR SHALL POTHOLE EXISTING PIPELINES TO VERIFY THE VERTICAL AND HORIZONTAL ALIGNMENT PRIOR TO PERFORMING EARTHWORK ADJACENT TO SAID PIPELINES. CONTACT USA (1–800–227–2600) PRIOR TO CONSTRUCTION.

3. THE OWNER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS OF UTILITY INFORMATION. THE CONTRACTOR SHALL EXERCISE CAUTION WHILE EXCAVATING AND SHALL PROTECT ALL EXISTING SERVICES FROM DAMAGE DUE TO HIS OPERATIONS. SUPPORT EXISTING UTILITIES THAT ARE EXPOSED DUE TO CONSTRUCTION ACTIVITIES.

4. UTILITY LATERALS SUCH AS WATER, GAS AND SEWER LATERALS ARE GENERALLY NOT SHOWN. IF THEY ARE DISPLAYED, LOCATIONS ARE APPROXIMATE, CONTRACTOR SHALL LOCATE AND PROTECT UTILITY LATERALS.

5. A. SEWER LINES BASED ON MAPS PROVIDED BY MRWPCA
   B. UTILITIES IN TAMC ROW ARE FROM CADD PROVIDED BY TAMC, SURVEYED BY TOWILL IN 2005.

SURVEY NOTES:

1. THE COORDINATES FOR THIS PROJECT ARE DERIVED FROM GPS OBSERVATIONS OVER A TWO MONTH PERIOD FROM NOVEMBER TO DECEMBER OF 2014. EQUIPMENT UTILIZED WAS A LEICA GS–14 GPS ROVER AND LEICA 1200 GPS ROVER. THE MEASUREMENTS WERE OBTAINED USING THE LEICA REAL TIME NETWORK, SMARTNET, AS THE BASE STATION. DATA WAS DOWNLOADED AND POST PROCESSED FOR THE SMARTNET–MONTEREY BASE STATION AND THREE LOCAL CORS STATIONS FOR TWO SEPARATE DAYS. THESE OBSERVATIONS WERE POST PROCESSED TO OBTAIN COORDINATES FOR THE MONTEREY BASE STATION.

2. THE COORDINATES WERE PROCESSED FROM THE PUBLISHED DATUM FOR THE CONTROL STATION (NAD 83(2011) EPOCH 2010.00) TO A MORE CURRENT DATUM (NAD 83(2011) EPOCH 2014.25) USING THE HORIZONTAL TIME–DEPENDANT POSITIONING (HTDP) TOOL PROVIDED BY NGS ON THEIR WEB SITE.

3. EACH CONTROL POINT IS MEASURED AT LEAST FOUR TIMES AT TWO DIFFERENT TIMES OF DAY TO CAPTURE DIFFERENT SATELLITE CONFIGURATIONS. THE DATA WAS ANALYZED TO BE SURE THAT THE MEAN VALUES OBTAINED USING LEICA SMARTWORK SOFTWARE FOR ALL COORDINATES WERE WITHIN LESS THAN +/–0.035' HORIZONTALLY AND +/–0.05' VERTICALLY.

4. ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) AT NATIONAL GEODETIC SURVEY (NGS) BENCHMARK PID GU4116 DESIGNATED 941 3450M TIDAL WITH ELEVATION OF 11.70 FEET.

5. BASIS OF BEARING
   BEARINGS ARE BASED ON THE MERIDIAN OF THE CALIFORNIA STATE PLANE COORDINATE SYSTEM, ZONE 4, NAD 83 (2011), EPOCH 2014.25. THEY ARE DERIVED FROM NATIONAL GEODETIC SURVEY CONTINUOUSLY OPERATING REFERENCE STATIONS (NGS CORS) DATA PROCESSED USING HORIZONTAL TIME–DEPENDANT POSITIONING (HTDP) FROM NAD 83(2011) EPOCH 2010.00 TO NAD 83(2011) EPOCH 2014.25.

6. CORS STATIONS UTILIZED WERE ELKHORN SLOUGH (D17526 DESIGNATION – ELKHRNSLGHCN2005 CORS ARP), SANTA LUCIA (DH3876 DESIGNATION – SANTALUCIACN2004 CORS ARP) AND HOPKINS (DN7560 DESIGNATION – HDPKINSSTNCN2006 CORS ARP).

TOPOGRAPHICAL MAPPING

1. THE TOPOGRAPHIC/PLANIMETRIC MAPPING SHOWN HEREIN WAS COMPILED BY AERIAL PHOTOMAPPING SERVICES USING AERIAL PHOTOGRAPHY DATED 12/23/14 AT THE REQUEST OF URS/AECOM. THE STRIP MAPPING BEGINS AT PACIFIC GROVE TO THE SOUTH AND CONTINUES NORTH WHERE IT ENDS AT THE MRWPCA. CONTROL WAS PROVIDED BY POLARIS CONSULTING, CARMEL VALLEY CA. 831–659–9564.

2. AERIAL PHOTOGRAPHY OUTSIDE THE PIPELINE 150 FEET IS FROM U.S. GEOLOGICAL SURVEY, ORTHORECTIFIED BY HJW GEOSPATIAL, INC. 2011. EXCEPT FOR THE GENERAL JIM MOORE BLVD. AREA. DIGITAL GLOBE GEOEYE–1 SATELLITE; ORTHORECTIFIED BY APOLLO IMAGING 2013. 0.5–METER PIXELS.

UTILITY CONTACTS FOR PROJECT AREA

AGENCY	TYPE	CONTACT	TITLE	PHONE	EMAIL
AT&T	Communications	Janice Comaskey	Admin Manager Construction and Engineering	(408) 635-8781	jc4636@att.com
California American Water	Water	Douglas Fraser	Senior Project Manager	(831) 236-4494	douglas.fraser@amwater.com
Comcast	Communications	Mark Rose	Cable Contractor	(831) 633-2392	mark.rose@cablecomllc.net
City of Marina	Sewer and Storm Drain	Nourdin Khayata	City Engineer	(831) 884-1212	nkhayata@ci.marina.ca.us
City of Monterey	Sewer and Storm Drain	John Kuele	Building Official	(831) 646-5643	kuehl@monterey.org
City of Pacific Grove	Sewer and Storm Drain	Vince Gentry	Sewer Field Supervisor	(831) 648-5722	vgentry@ci.pg.ca.us
City of Seaside	Sewer, Storm Drain, Water	Rick Riedl	Senior Civil Engineer	(831) 899-6884	rriedl@ci.seaside.ca.us
County of Monterey	Sewer and Storm Drain	Chad Alinio	Civil Engineer	(831) 755-4937	aliniocs@co.monterey.ca.us
Marina Coast Water District	Water	Brian True	Capital Projects Manager	(831) 384-6131	btrue@mcwd.org
PG&E	Gas and Electric	Weidong Tan	Engineering and Planning Division	(831) 784-3510	wxtk@pge.com
Monterey Peninsula Water Management District	Water	Joe Oliver	Water Resources Manager	-	joe@mpwmd.dst.ca.us
Monterey Regional Water Pollution Control Agency	Sewer and Recycled Water	Jennifer Gonzalez	Engineering Manager	(831) 883-6172	jennifer@mrwpca.com

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8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
GENERAL
PIPELINE DETAILS
GENERAL NOTES – 1

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0000G03

10000000G03

GENERAL NOTES:

1. HEAVY LINES AND SYMBOLS INDICATE WORK TO BE DONE BY THE CONTRACTOR. LIGHT LINES AND SYMBOLS INDICATE EXISTING FEATURES OR WORK TO BE DONE BY ANOTHER ENTITY.
2. WHERE THERE IS A DISCREPANCY BETWEEN THE WRITTEN DIMENSION AND SCALED DIMENSION, WRITTEN DIMENSIONS SHALL GOVERN.
3. ALL DISCREPANCIES BETWEEN THE INFORMATION SHOWN IN THE DRAWINGS AND THE ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
4. LEGEND SHEETS ARE PROVIDED FOR EACH DISCIPLINE. SYMBOLS MAY NOT BE CONSISTENT BETWEEN DIFFERENT DISCIPLINE LEGENDS. USE THE APPROPRIATE LEGEND SHEET WITH THE CORRESPONDING DISCIPLINE DRAWINGS.
5. THE LOCATION AND GENERAL ARRANGEMENT OF UNDERGROUND UTILITIES, UNDERGROUND STRUCTURES, PIPES WITH FITTINGS, VALVES, AND APPURTENANCES WHERE SHOWN, ARE DIAGRAMMATIC AND SUBJECT TO VERIFICATION AND ADJUSTMENT IN THE FIELD.
6. CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (U.S.A.) 811 AT LEAST ONE WEEK IN ADVANCE OF STARTING EXCAVATION TO PROVIDE FOR MARKING OF UTILITIES. ONLY TWO WEEKS OF WORK WILL BE LOCATED ON EACH REQUEST. THE CONTRACTOR SHALL MARK THE LIMITS OF EACH REQUEST.
7. THE CONTRACTOR WILL BE RESPONSIBLE FOR FIELD STAKING THE PROPOSED PIPELINES IN THE FIELD FOR OPEN TRENCH CONSTRUCTION.
8. CONTRACTOR SHALL AT ALL TIMES COMPLY WITH THE RULES AND REGULATIONS ESTABLISHED BY CALOOSHA AND OTHER AGENCIES HAVING JURISDICTION OVER THE WORK.
9. SHUT DOWN ANY WATER, LINE OWNED BY CAW SHALL ONLY BE PREFORMED BY CAW OPERATIONS SECTION. ADVANCE NOTICE OF 24 HOURS IS REQUIRED.
10. CONTRACTOR SHALL PROVIDE UNINTERRUPTED UTILITY SERVICE THROUGHOUT THE LENGTH OF THE PROJECT.
11. THE CONTRACTOR SHALL PROVIDE TRENCH DEWATERING AND THE BYPASSING OF WASTE WATER AS REQUIRED THROUGHOUT THE LIMITS OF THE PROJECT. PAYMENT FOR SUCH WORK SHALL BE INCLUDED IN THE PROJECT PAY ITEMS AND WILL NOT BE PAID SEPARATELY.
12. THE APPROXIMATE LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN ON THESE PLANS IS BASED UPON BEST AVAILABLE PUBLIC RECORDS. THE INFORMATION SHOWN ON THE PLANS MAY BE INCOMPLETE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE POSITION OF AND PROVIDE PROTECTION FOR SUCH UTILITIES AND STRUCTURES.
13. CONTRACTOR SHALL TAKE EXTREME CAUTION WHEN EXCAVATING ADJACENT TO ACP WATER MAINS, ELECTRIC LINES AND GAS LINES. ANY DAMAGE TO WATER, SEWER AND OTHER UTILITIES INCLUDING ELECTRIC, GAS, FIBER AND TRAFFIC LOOPS SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER. ANY DAMAGE TO THE ELECTRIC OR GAS LINES WILL BE REPAIRED BY THE CITY AND THE COST WILL BE PAID BY THE CONTRACTOR. CONTACT CHIEF ELECTRICAL INSPECTOR AT 650-496-6965 PRIOR TO ANY EXCAVATION NEAR ELECTRICAL UNDERGROUND HIGH VOLTAGE LINES.
14. ALL DISTANCES, DIMENSIONS AND QUANTITIES SHOWN ON THE DRAWINGS ARE ESTIMATED FROM PUBLIC RECORDS. CONTRACTOR SHALL VERIFY ALL INFORMATION.
15. PRIOR TO EXCAVATION, HORIZONTAL DIRECTION DRILLING, JACK AND BORE OR OTHER METHODS OF PIPELINE CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS SHOWN.
16. CONTRACTOR SHALL MAINTAIN A CURRENT, COMPLETE AND ACCURATE RECORD OF ANY CHANGES IN THE CONSTRUCTION OF IMPROVEMENTS AS PROPOSED IN THE DRAWINGS AND SPECIFICATIONS FOR THE PURPOSE OF PROVIDING THE ENGINEER WITH A BASIS FOR THE RECORD DRAWINGS. NO CHANGES SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER.
17. CONTRACTOR SHALL NOTIFY CITY SURVEYOR PRIOR TO ANY EXCAVATION WORK WITHIN 5 FEET OF A SURVEY MONUMENT. CITY SURVEYOR MUST BE PRESENT DURING EXCAVATION WITHIN 5 FEET OF SURVEY MONUMENT.
18. EXISTING UTILITY LINES/PIPELINES SHALL BE SUPPORTED AND PROTECTED DURING CONSTRUCTION, EXISTING UTILITIES WHICH WERE PROPERLY SHOW ON THE PLANS OR FIELD LOCATED, BUT ARE DAMAGED DURING WORK BY THE CONTRACTOR, SHALL BE REPLACED TO CONFORM WITH CURRENT CITY STANDARDS AT THE CONTRACTOR'S EXPENSE.
19. UNDERGROUND ELECTRIC LIGHTING, TELEPHONE AND TELECOMMUNICATION LINES, UNDERGROUND FIBER OPTIC LINES, CABLE TELEVISION LINES, OVERHEAD ELECTRIC LINES, UNDERGROUND SECONDARY ELECTRIC LINES ARE GENERALLY NOT SHOWN ON ALL DRAWINGS FOR CLARITY.
20. THE CONTRACTOR IS CAUTIONED TO PROPERLY SUPPORT ALL EXCAVATIONS WHEN WORKING IN AND AROUND EXISTING PIPELINES AND CONDUITS. SOME OF THE TRENCHES FOR THESE FACILITIES HAVE GRANULAR SAND BACKFILL WHICH MAY COLLAPSE WHEN DISTURBED, CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY DAMAGE TO EXISTING PIPELINES AND CONDUITS.
21. WHERE POSSIBLE, A MANHOLE IS TO BE CONSTRUCTED ON AN EXISTING STRAIGHT THROUGH STORM DRAIN. THE TOP PORTION OF THE STORM DRAIN PIPE SHALL NOT BE REMOVED UNTIL THE MANHOLE HAS BEEN COMPLETED AND TESTED.
22. AS THE FIRST ORDER OF WORK, THE CONTRACTOR SHALL POTHOLE ALL LOCATIONS WHERE THE DRAWINGS SHOW UTILITY CROSSINGS.
23. ALL TRAFFIC CONTROL SHALL BE CONDUCTED IN ACCORDANCE WITH THE CONTRACTOR'S SPECIFIC TRAFFIC CONTROL PLANS AS APPROVED BY THE CITIES AND COUNTY.
24. WHERE SHOWN, FINISHED MANHOLE RIM ELEVATIONS ARE APPROXIMATE ONLY. ALL NEW AND EXISTING MANHOLE RIMS, UTILITY VAULTS, VALVE LIDS, AND UTILITY BOXES SHALL BE ADJUSTED TO MATCH ADJACENT TO MATCH ADJACENT GRADE UNLESS OTHERWISE NOTED ON PLANS.
25. ALL EXISTING IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO IRRIGATION LINES, LANDSCAPING, DRIVEWAYS, CURB, GUTTER, SIDEWALK, CULVERTS, DRAINS, TRAFFIC CONDITION IN WHICH THEY WERE, OR BETTER, BEFORE THE IMPROVEMENTS SHALL BE CONSIDERED AS INCLUDED IN THE ITEMS OF THE WORK INVOLVED AND SEPARATE PAYMENT FOR RESTORATION WILL NOT BE MADE.
26. POST "TOW AWAY NO PARKING" SIGNS A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION.
27. THE CONTRACTOR SHALL COORDINATE WITH THE CITY TRAFFIC SIGNAL AND COAX SHOP AT (650) 4966991, ANY WORK WITHIN 150 FEET OF ANY SIGNALIZED INTERSECTION. TRAFFIC SIGNAL FACILITIES (LLPS AND CONDUITS) DAMAGED SHALL BE REPLACED BY THE CONTRACTOR AT HIS/HER EXPENSE. REFER TO PROJECT SPECIFICATIONS, SECTION 02200.
28. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS TO CAUSE THE LEAST POSSIBLE OBSTRUCTION AND INCONVENIENCE TO THE PUBLIC. THROUGHOUT THE PERFORMANCE OF THE WORK THE CONTRACTOR SHALL CONSTRUCT AND ADEQUATELY MAINTAIN SUITABLE AND SAFE CROSSINGS OVER TRENCHES. DRIVEWAY ACCESS AND SUCH DETOURS AS ARE NECESSARY FOR PUBLIC PEDESTRIAN AND VEHICULAR TRAFFIC.

DEMOLITION NOTES:

1. CLEAR AND REMOVE ALL ORGANIC MATTER, DEBRIS, AND RUBBISH FROM WITHIN THE LIMIT OF WORK. CONTRACTOR SHALL DISPOSE OF SAID MATERIAL IN A LEGAL MANNER AS HIS PROPERTY.
2. CONTRACTOR MAY RE-USE MATERIAL SUBJECT TO SUBMITTALS PER SPECIFICATION AND REVIEW BY THE ENGINEER.
3. ALL EXCAVATION WORK WITHIN DRIP LINE OF EXISTING TREES THAT ARE TO REMAIN SHALL BE DONE BY HAND PER SPECIFICATIONS AND PROJECT PERMITS. CLEANLY CUT ANY ROOT LARGER THAN ONE INCH DIAMETER. DO NOT TEAR ROOTS.

WATER GENERAL NOTES:

1. ALL MATERIALS, CONSTRUCTION PROCEDURES AND APPURTENANCES SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE PROJECT SPECIFICATIONS, PROJECT DRAWINGS, UTILITIES STANDARDS AND STANDARD SPECIFICATIONS OF CAW.
2. ALL EXISTING WATER VALVES AND FIRE HYDRANTS REMOVED FROM THE ABANDONED SYSTEM BY THE CONTRACTOR SHALL BE SALVAGED AND DELIVERED TO THE CAW CORPORATION YARD.
3. CONTRACTOR SHALL CLOSE ALL VALVES OF ABANDONED PIPELINES, REMOVE VALVE BOX FOR EACH ABANDONED VALVE, FILL RISER WITH CDF, AND PLACE CONCRETE OR A.C. PATCH OVER EACH HOLE CREATED BY REMOVAL OF EXISTING VALVE BOX.
4. SHUTDOWN OF ALL UTILITIES WILL BE PREFORMED BY OR UNDER THE DIRECTION OF CAW OPERATIONS DIVISION. ADVANCE NOTICE OF 5 WORKING DAYS IS REQUIRED FOR SHUTDOWNS.
5. MINIMUM COVER OVER NEW WATER MAINS:

MAIN SIZE	MINIMUM COVER
8"	36"
≥10"	48"

6. CONTRACTOR SHALL INSTALL APPROPRIATE 2" CORPORATION STOPS AND SADDLES TO BLEED AIR, PERFORM BACTERIOLOGICAL AND CHLORINATION TESTS.
7. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY.
8. TRENCH BACKFILL STANDARD DETAIL FOR SHALLOW WATER MAINS SHALL APPLY AND GOVERN FOR ALL LOCATIONS WHERE DEPTH OF COVER OF NEW WATER MAINS IS LESS THEN 3 FEET.
9. ALL FIRE SERVICES SHALL BE POTHOLED BY THE CONTRACTOR PRIOR TO RECONNECTION FOR POSSIBLE CONFLICTS, ALL FIRE SERVICE RECONNECTS SHALL HAVE RESTRAINED JOINTS FROM THE TEE TO THE FIRST FITTING AFTER THE VALVE. CONTRACTOR SHALL FURNISH SHOP DRAWINGS OF HOW RECONNECTION WILL BE CONSTRUCTED AND SHALL INFORM NEAREST CITY FIRE STATION AND CITY COMMUNICATIONS CENTER OF THE FIRE SERVICE WORK AND MAKE ANY NECESSARY SCHEDULE ARRANGEMENTS TO ACCOMMODATE CUSTOMER'S NEEDS.
10. UNDER NO CIRCUMSTANCE SHALL PIPE MATERIAL BE INSTALLED DEFLECTED OTHER THAN AT THE JOINTS, PER PROJECT SPECIFICATIONS.
11. UNLESS OTHERWISE NOTED, EACH ADDRESS SHALL HAVE A WATER SERVICE CONNECTION. EXISTING WATER SERVICES MAY NOT BE SHOWN ON THE DRAWINGS.

RIGHT OF WAY IMPROVEMENT AND RESTORATION:

1. ALL IMPROVEMENTS IN THE PUBLIC RIGHT OF WAY SHALL BE RESTORED IN KIND TO PRIOR CONDITION. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL IMPROVEMENTS WITHIN THE PUBLIC EASEMENT SUCH AS STREETS SHALL MEET THE LOCAL CITY AND COUNTY STANDARDS.
2. REFERENCE DRAWINGS MAY BE OBSOLETE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THE LATEST CAW STANDARDS.
3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING IMPROVEMENTS. ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR RECONSTRUCTED TO ORIGINAL DESIGN CONDITION AND/OR AS SPECIFIED AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL LIMIT CONSTRUCTION OPERATIONS TO WITHIN THE RIGHT-OF-WAY AND EASEMENTS AND DESIGNATED WORK AREAS AS INDICATED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DAMAGES OUTSIDE THE RIGHT-OF-WAY, EASEMENTS, AND DESIGNATED WORK AREAS SHOWN ON THE DRAWINGS.

EXISTING UTILITIES:

1. CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (U.S.A.) 811 AT LEAST ONE WEEK IN ADVANCE OF STARTING EXCAVATION TO PROVIDE FOR MARKING OF UTILITIES. ONLY TWO WEEKS OF WORK WILL BE LOCATED ON EACH REQUEST. THE CONTRACTOR SHALL MARK THE LIMITS OF EACH REQUEST.
2. LOCATIONS OF ALL UTILITY SERVICE LINES SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY AND SHALL BE FIELD VERIFIED BY POT HOLING PRIOR TO COMMENCING ANY GRADING, TRENCHING OR TUNNEL EXCAVATION.
3. UTILITIES, EXISTING AT THE TIME OF CONSTRUCTION, ARE SHOWN ON THESE PLANS FOR CONVENIENCE OF THE CONTRACTOR. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITY PIPES AND/OR STRUCTURES, AS SHOWN, ARE BASED ON INFORMATION OBTAINED FROM AVAILABLE RECORDS AND/OR IN ACCORDANCE WITH TYPICAL LOCATIONS NOTED IN AGENCY STANDARDS.
4. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT UTILITY LINES AND STRUCTURES SHOWN AS WELL AS ANY AND ALL OTHERS NOT OF RECORD OR NOT SHOWN ON THESE PLANS. EXISTING UTILITY SERVICE LATERALS ARE SPECIFICALLY NOT SHOWN ON THESE PLANS AND ARE TO BE PROTECTED BY THE CONTRACTOR DURING PIPELINE CONSTRUCTION.
5. ALL CONTRACTOR WORK AROUND EXISTING UTILITIES SHALL BE IN CONFORMANCE WITH CALIFORNIA GOVERNMENT CODE 4216.
6. THE CONTRACTOR SHALL PROTECT IN PLACE ALL OVERHEAD INTERFERENCE. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD OR UNDERGROUND POWER, GAS, AND/OR OTHER UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COSTS AND LIABILITY IN CONNECTION THEREWITH.
7. CONTRACTOR SHALL CONTACT UTILITY POLE OWNER PRIOR TO WORKING IN AREA AND UTILITY POLE OWNER WILL DO ALL WORK ON UTILITY POLES. THE CONTRACTOR SHALL PAY ALL THE COSTS ASSOCIATED WITH UTILITY POLE MODIFICATIONS AND THE CONTRACTOR SHALL INCLUDE THE TIME NEEDED BY THE UTILITY POLE OWNER AS PART OF THE OVERALL WORK.

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REGISTERED PROFESSIONAL ENGINEER — JENNIFER A. HYMAN — No. C-50926 — CIVIL — STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
GENERAL
PIPELINE DETAILS
GENERAL NOTES – 2

CALIFORNIA
AMERICAN WATER

AECOM
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OAKLAND, CALIFORNIA 94612

DRAWN BY C. SOMERA
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH
DATE AUGUST 2015
PROJECT 60424498
USE DIMENSIONS ONLY
SCALE AS SHOWN

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

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PIPELINE GENERAL NOTES:

PIPELINE SUBMITTALS AND SURVEYS

1. CAW ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE FACILITIES SHOWN ON THE PLANS. DIMENSIONS, LOCATIONS, AND OTHER UTILITY DATA SHOWN ON THE PLANS ARE APPROXIMATE.
2. THE LOCATIONS AND ELEVATIONS OF THE POINTS OF CONNECTION TO EXISTING PIPELINES OWNED BY CAW ARE APPROXIMATE.
3. CONTRACTOR SHALL EMPLOY A LAND SURVEYOR TO CONDUCT ALL SITE SURVEYS INCLUDING, BUT NOT LIMITED TO, TOPOGRAPHICAL AND UTILITY SURVEYS. LAND SURVEYOR SHALL BE LICENSED IN THE STATE OF CALIFORNIA.
4. POTHOLE ALL EXISTING UTILITIES ADJACENT TO THE WORK AND PROVIDE UTILITY INFORMATION TO THE OWNER REPRESENTATIVE IN A TIMELY MANNER. PROVIDE COORDINATES, ELEVATIONS, AND DIMENSIONS OF EACH UTILITY. IMMEDIATELY NOTIFY THE OWNER REPRESENTATIVE IF ANY APPARENT UTILITY INTERFERENCES ARE DISCOVERED.
5. POTHOLE IN ADVANCE OF THE ALL OTHER RELATED WORK IN ACCORDANCE WITH APPROVED POTHOLING PLAN SUBMITTALS. SEQUENCE AND COORDINATE POTHOLING WORK WITH THE PREPARATION, REVISION, AND APPROVAL OF RELATED SUBMITTALS INCLUDING, BUT NOT LIMITED TO, PIPE FABRICATION DRAWINGS OR "LAY SHEETS," EXCAVATION SUBMITTALS, SHORING AND BRACING SUBMITTALS, DEWATERING PLANS, PERMITS, AND ALL OTHER SUBMITTALS REQUIRED TO PERFORM THE WORK.
6. POTHOLE ALL EXISTING WATER PIPELINES OWNED BY CAW ADJACENT TO THE WORK, AT CROSSINGS, AND AT POINTS OF CONNECTION AS SHOWN ON THE PLANS. PROVIDE WATER PIPELINE INFORMATION TO THEOWNER REPRESENTATIVE IN A TIMELY MANNER. CONTRACTOR SHALL PROVIDE COORDINATES, ELEVATIONS, CIRCUMFERENCES, AND JOINT TYPES OF EXISTING PIPELINES AT POINTS OF CONNECTION.
7. POTHOLE ALL POINTS OF CONNECTION WITH EXISTING WATER PIPELINES OWNED BY CAW. POTHOLING SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO, SECURING PIPELINES IN–PLACE SO AS TO AVOID MOVEMENT OR DAMAGE, INITIAL EARTHWORK AT THE POINTS OF CONNECTION SHOWN ON THE DRAWINGS AND ALL SUBSEQUENT WORK REQUIRED TO DETERMINE LOCATIONS OF NEAREST EXISTING PIPE JOINT AS DIRECTED BY THE ENGINEER. ALL SUCH POTHOLING ACTIVITIES SHALL BE PERFORMED AT NO ADDITIONAL EXPENSE TO THE OWNER.
8. SUBMIT PLANS TO THE OWNER REPRESENTATIVE THAT DEMONSTRATE PHASED EXCAVATION, DEWATERING, SHORING, AND BRACING WORK PROTECTS EXISTING PIPELINE SYSTEMS.

COORDINATION OF WATER PIPELINE WORK

1. CONSTRUCT ALL PIPELINES WITH A MINIMUM COVER OF FOUR (4) FEET UNLESS SHOWN OTHERWISE ON TEH PLANS. THERE SHALL BE A MINIMUM OF ONE (1) FOOT CLEARANCE BETWEEN OUTSIDE DIAMETER OF NEW PIPELINES (OR PIPELINE CONNECTIONS) AND OUTSIDE DIAMETER OF EXISTING UTILITY, OUTSIDE BOTTOM DIMENSION OF MANMADE CHANNEL, OR CONCRETE STRUCTURES. OTHER MINIMUM CLEARANCES ARE SHOWN ON THE PLANS.
2. CONSTRUCT PIPELINES IN ACCORDANCE WITH ANY PLANNED OUTAGES OF CAW PIPELINES OWNED AND OPERATED BY CAW AND AFFECTED WATER USERS.
3. COORDINATE WORK WITH OTHER CONCURRENT PROJECTS INCLUDING, BUT NOT LIMITED TO, THE MRWPCA GROUNDWATER RECHARGE INJECTION PIPELINE, THE CAW DESAL PLANT AND WELLS CONSTRUCTION, AND ALL THE OTHER PIPELINES IN THIS PROJECT, IF CONTRACTED SEPARATELY.
4. PROTECT EXISTING PIPELINE SYSTEMS OWNED BY CAW. PIPELINE SYSTEMS TO BE PROTECTED INCLUDE, BUT ARE NOT LIMITED TO, PIPELINES, BYPASS CONNECTIONS, VALVES, VAULTS, CATHODIC PROTECTION SYSTEMS, UNRESTRAINED PIPE JOINTS, AND THRUST RESTRAINT SYSTEMS. EXERCISE EXTREME CAUTION WHEN EXCAVATING IN THE VICINITY OF EXISTING WATER PIPELINES.
5. REMOVE AND DISPOSE OF ALL EXISTING IMPROVEMENTS THAT MAY AFFECT PIPELINE CONSTRUCTION. REPLACE ALL EXISTING IMPROVEMENTS IN–KIND AS DIRECTED BY THE OWNER REPRESENTATIVE UNLESS SHOWN OTHERWISE ON THE PLANS. SUCH IMPROVEMENTS INCLUDE, BUT ARE NOT LIMITED TO, TREES, PLANTS, BOX PLANTERS, SPRINKLERS, PIPING, ELECTRICAL WIRING, BENCHES, SHED, CONCRETE/ASPHALT MARKERS, CURBS, GUTTERS, GATES, FENCES, POSTS, SURVEY MONUMENTS, TRAFFIC DETECTORS, ETC.
6. CONSTRUCT SUPPORT SYSTEMS THAT PROTECT PIPELINES ON STEEP HILLSIDES OR ADJACENT TO DEEP EXCAVATIONS, AS REQUIRED. PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT LOADS AND INSTALLATION AND REMOVAL OF SHORING AND BRACING SYSTEMS. RESTRAIN ALL EXISTING PIPELINE FROM ANY MOVEMENT ASSOCIATED WITH THE WORK INCLUDING, BUT NOT LIMITED TO, POTHOLING WORK AND MAKING CONNECTIONS.
7. SEE PLANS AND SPECIFICATIONS FOR PIPELINE CORROSION PROTECTION REQUIREMENTS.

PREPARATION AND TESTING

1. VALVES WILL BE OPERATED BY THE OWNER. SCHEDULE THE WORK SUCH THAT ADEQUATE NOTICE IS GIVEN TO OPERATIONS STAFF (MINIMUM 1 WEEK NOTICE). CONTRACTOR SHALL NOTIFY ALL CUSTOMERS AFFECTED BY SHUTDOWN AT LEAST 48 HOURS IN ADVANCE BY HANGING DOOR HANGERS PROVIDED BY OWNER.
2. SUBMIT WORK PLANS FOR THE DISPOSAL OF WATER DRAINED FROM ALL PIPELINES AND THE PROCUREMENT AND HANDLING OF WATER FOR HYDROSTATIC PRESSURE TESTING.
3. SUBMIT WORK PLANS FOR HYDROSTATIC PRESSURE TESTS IN ACCORDANCE WITH THE SPECIFICATIONS. PERFORM HYDROSTATIC PRESSURE TESTS AND PROVIDE TEST BULKHEADS FOR EACH PHASE OF THE WORK. PERFORM HYDROSTATIC PRESSURE TEST FOR EACH PHASE OF THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR QUANTITY TAKEOFF'S ASSOCIATED WITH PHASED HYDROSTATIC TESTING. WORK PLANS SHALL SPECIFY THE NUMBER OF BULKHEADS REQUIRED FOR EACH PHASE OF TESTING.
4. PERFORM HYDROSTATIC PRESSURE TESTS AGAINST BULKHEADS IN ACCORDANCE WITH APPROVED HYDROSTATIC PRESSURE TEST WORK PLANS. HYDROSTATIC TESTING AGAINST VALVES OR EXISTING WATER SYSTEMS SHALL NOT BE ALLOWED.
5. SUBMIT FABRICATION DRAWINGS THAT SHOW ALL DETAILS ASSOCIATED WITH EACH PHASE OF CONSTRUCTION AND TESTING OF ALL PIPELINE SYSTEMS INCLUDING, BUT NOT LIMITED TO, PIPE, VALVES, FLANGES, OUTLETS, CLOSURE PIECES, JOINT DETAILS, LINING, AND COATING.

REGISTERED PROFESSIONAL ENGINEER
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No. C-50926
CIVIL
STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
GENERAL
PIPELINE DETAILS
GENERAL NOTES – 3

CALIFORNIA
AMERICAN WATER

AECOM
1333 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612

DRAWN BY C. SOMERA
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH

DATE AUGUST 2015
PROJECT 60424498

USE DIMENSIONS ONLY
SCALE AS SHOWN

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

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TABLE 1. PIPING AND VALVE SCHEDULE

Pipe Name	Pipeline Length (ft)	Pipe Diameter (OD in inches unless noted)	Pipe Type	Pressure rating (psi)	Iso valve Type	Iso valve Size (in)	Iso valve Body Material	CAVV Size (in)	CAVV material
Monterey Pipeline	34090	36	NOTE 1	250	Butterfly	36	CI	6	CI
Misc Water Line Replacements		8 and under	PVC	305	Gate	8 and under	CI	2	CI
Misc Water Line Replacements		10, 12	DI	150	Gate	10, 12	CI	2	CI
Misc Water Line Replacements		14 and over	DI	200	Butterfly	14 and over	CI	4	CI
Transfer Pipeline	49205	36	NOTE 1	250	Butterfly	36	DI	6	CI
ASR Extension Pipelines (3)	13300	16	NOTE 1	250	Butterfly	16	DI	3	CI
Feed Pipeline	13900	42 (ID)	HDPE OR PVC	150	Plug	42	Type 316 SS	6	SS
8" Water line to cemex	13900	8	NOTE 1	150	Gate	8	CI	2	CI
Salinas valley Return	5700	12	NOTE 1	250	Gate	12	CI	2	CI
Water main to WWTP	3200	8	PVC	305	Gate	8	CI	2	CI
Brine Line	3000	36 (ID)	HDPE OR PVC	150	Plug	36	Type 316 SS	6	SS
SSFM to WWTP	4400	3	HDPE OR PVC	150	Plug	3	CI	1	SS

TABLE 1 NOTES:

1. CONTRACTOR MAY SELECT AWWA–APPROVED PIPE TYPE.
2. CONTRACTOR TO DESIGN PIPE CATHODIC PROTECTION SYSTEM AS NEEDED FOR PIPE TYPE AND APPURTENANCES.

TABLE 3. FLOW METER AND INSTRUMENTATION SCHEDULE

Item	Type	Diameter (in)	Operating range
HILBY FLOW METER - MONTEREY PIPELINE			
Flow	In line Mag meter	24	0-11 fps
Pressure transmitter	4-20mA OUT		0-100 psi
Pressure gage	Dial		0-160 psi
CREST PRS – MONTEREY PIPELINE			
Pressure Reducing Valve No. 1		8	2,500 gpm; 91 psi pressure drop
Pressure Reducing Valve No. 2		12	4,500 gpm; 54 psi pressure drop
Upstream Pressure Transmitter	4-20mA OUT		0-150 psi
Upstream Pressure gage	Dial		0-300 psi
Downstream Pressure Transmitter	Digital		0-150 psi
Downstream Pressure gage	Dial		0-300 psi
NORTH FLOW METER – TRANSFER PIPELINE			
Flow	In line Mag meter	24	0-10 fps
Pressure transmitter	4-20mA OUT		0-150 psi
Pressure gage	Dial		0-160 psi
ASR FLOW METER – ASR EXTENSIONS PIPELINES			
Flow	In line Mag meter	30	0-7 fps
Pressure transmitter	4-20mA OUT		0-70 psi
Pressure gage	Dial		0-160 psi

TABLE 2. RESTRAINED PIPING SCHEDULE

Restrained Joint Locations

Monterey Pipeline		ASR Pipeline Extension		ASR Recirculation Pipeline		ASR Pump to Waste Line		Salinas Valley Return Pipeline		Transfer Pipeline		8-inch Waterline to Cemex	
Station No.	Length of Pipeline in Restrained Zone (LF)	Station No.	Length of Pipeline in Restrained Zone (LF)	Station No.	Length of Pipeline in Restrained Zone (LF)	Station No.	Length of Pipeline in Restrained Zone (LF)	Station No.	Length of Pipeline in Restrained Zone (LF)	Station No.	Length of Pipeline in Restrained Zone (LF)	Station No.	Length of Pipeline in Restrained Zone (LF)
8+77 - 19+08	1031	31+32 - 38+28	696	14+82 - 17+13	231	30+82 - 37+58	676	3+89 - 4+61	72	23+45 - 25+66	221	3+44 - 3+80	36
21+47 - 23+83	236	39+84 - 44+38	454	31+02 - 37+78	676	40+14 - 44+00	386	22+39 - 22+71	32	28+31 - 33+15	484	5+87 - 6+23	36
33+86 - 41+23	737			40+54 - 44+38	384			24+09 - 24+41	32	48+09 - 52+89	480	23+31 - 24+56	125
41+97 - 49+83	786							53+59 - 53+91	32	64+94 - 66+16	122	25+69 - 26+05	36
53+09 - 64+31	1122							55+24 - 57+00	176	72+39 - 77+22	483	27+29 - 27+65	36
67+81 - 68+89	108									89+54 - 97+00	746	28+69 - 29+05	36
69+77 - 73+94	417									97+71 - 102+54	483	66+44 - 66+85	41
77+27 - 111+38	3411									109+57 - 114+92	535	81+69 - 82+05	36
114+17 - 131+23	1706									115+28 - 120+32	504	90+59 - 90+95	36
133+52 - 135+88	236									128+51 - 135+45	694	91+41 - 91+77	36
138+52 - 140+93	241									152+90 - 154+70	180	96+39 - 96+75	36
143+17 - 145+53	236									155+00 - 157+90	290	103+87 - 104+23	36
153+ 00 - 161+00	800									158+74 - 169+46	1072	110+79 - 111+15	36
169+27 - 188+13	1886									171+74 - 179+96	822	112+09 - 112+45	36
196+12 - 197+63	151									185+82 - 188+18	236		
199+69 - 200+41	72									192+00 - 196+84	484		
215+00 - 219+00	400									215+60 - 226+44	1084		
221+89 - 222+61	72									275+70 - 277+90	220		
224+02 - 231+50	748									284+12 - 290+48	636		
232+47 - 237+23	476									317+07 - 324+58	751		
239+07 - 243+68	461									339+42 -342+60	318		
244+92 - 257+78	1286									389+79 - 395+00	521		
260+77 - 265+98	521									429+64 - 430+36	72		
266+97 - 269+33	236									431+34 - 432+06	72		
277+52 - 283+68	616									432+64 - 433+36	72		
293+37 - 299+38	601									434+24 - 434+96	72		
299+57 - 307+93	836									486+86 - 488+14	128		
308+27 - 312+98	471									495+66 - 497+74	208		
317+47 - 329+53	1206									501+46 - 502+54	108		
333+72 - 338+98	526									508+70 - 510+50	180		
340+02 -346+43	641									513+35 - 517+86	451		
348+82 - 350+21	139												
Total Restrained Joint Length (LF)	**22412**		**1150**		**1291**		**1062**		**344**		**12729**		**598**

TABLE 2 NOTES:

1. FEED WATER AND BRINE PIPING IS NOT LISTED SINCE IT IS ALL RESTRAINED BY FUSION WELDING.
2. ALL ELBOWS, TEES, CROSSES, AND VALVES SHALL BE RESTRAINED.

REGISTERED PROFESSIONAL ENGINEER — JENNIFER A. HYMAN — No. C-50926 — CIVIL — STATE OF CALIFORNIA — 8/12/15

REVISIONS

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PIPELINE DETAILS
PIPING AND VALVE SCHEDULES

CALIFORNIA
AMERICAN WATER

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CALIFORNIA AMERICAN WATER

DRAWN BY C. SOMERA
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH

DATE AUGUST 2015
PROJECT 60424498

USE DIMENSIONS ONLY
SCALE AS SHOWN

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

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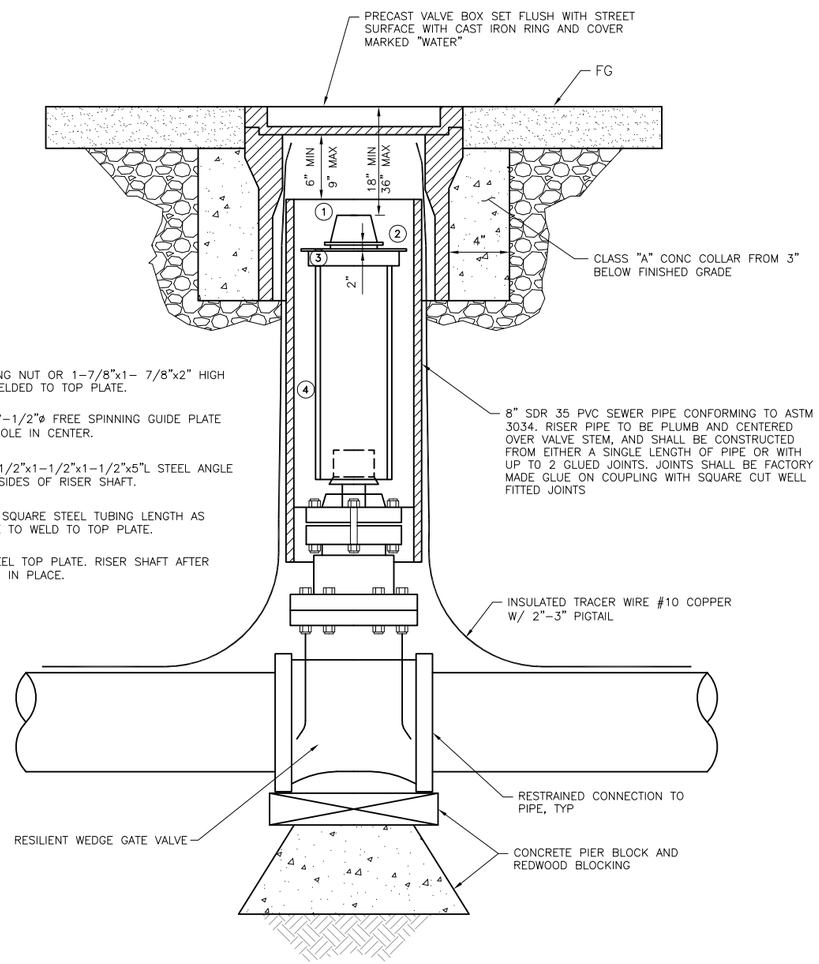
STEM EXTENSION FABRICATION NOTES:

1. ALL WELDS TO RISER SHAFT SHALL BE FILLET WELD ALL AROUND AS SPECIFIED BELOW.
2. ALL STEEL REQUIRED FOR RISER FABRICATION SHALL BE STRUCTURAL STEEL PER ASTM A36.



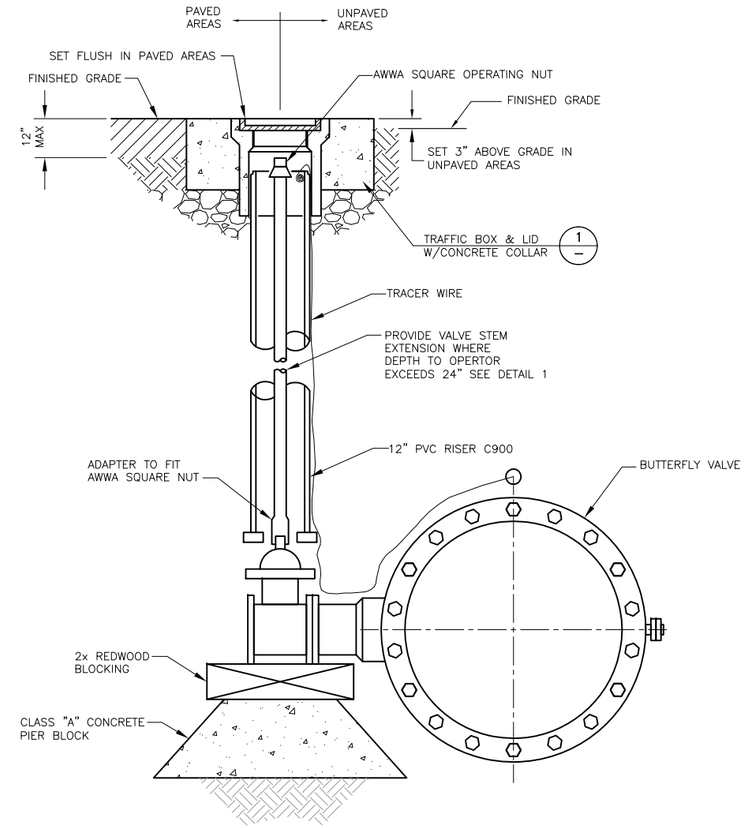
PARTS LIST:

1. VALVE OPERATING NUT OR 1-7/8"x1- 7/8"x2" HIGH SOLID STEEL WELDED TO TOP PLATE.
2. 3/16" THK x 7-1/2"ø FREE SPINNING GUIDE PLATE W/ 3-5/8"ø HOLE IN CENTER.
3. TWO 3/16"x1-1/2"x1-1/2"x1-1/2"x5"L STEEL ANGLE WELD TO TWO SIDES OF RISER SHAFT.
4. 2-1/2"x3/16" SQUARE STEEL TUBING LENGTH AS REQUIRED EDGE TO WELD TO TOP PLATE.
5. 3"x3"x1/4" STEEL TOP PLATE. RISER SHAFT AFTER GUIDE PLATE IS IN PLACE.

VALVE NOTES:

1. ALL EXTERNAL BOLTS AND NUTS ON VALVES SHALL BE 304 STAINLESS STEEL AND THE ENTIRE VALVE SHALL BE WRAPPED TIGHTLY WITH POLYETHYLENE FILM HELD SECURELY WITH ADHESIVE TAPE.
2. IF VALVE IS INSTALLED SO THAT THE TOP OF THE OPERATING NUT IS LESS THAN 30" BELOW FINISHED GRADE, THE VALVE STEM RISER IS NOT REQUIRED.

TYPICAL VALVE INSTALLATION, 12 INCHES AND SMALLER (1/-)
SCALE: NTS



NOTES:

1. PROVIDE PROTECTIVE COATING TO EXTERIOR SURFACE OF VALVE BODY. WRAP WITH WAX TAPE WRAPPING SYSTEM.
2. INSTALL 2-IN BYPASS LINE AROUND EACH BFV.
   a. USE 2-IN AWWA RESILIENT WEDGE GATE VALVE INSTALLED PER DETAIL 1.
   b. USE STAINLESS STEEL THREADED OUTLET TAPPING SLEEVE ON DI PIPE. USE HDPE IPS MOLDED BRANCH SADDLE, PRESSURE CLASS 200 AWWA COMPLIANT ON HDPE PIPE (REQUIRES SPECIAL HEATERS AND EQUIPMENT TO INSTALL). LOCATE SADDLES MIN 1-FT FROM BFV. INSTALL 2-IN CORP STOP ON SERVICE SADDLES.
   c. INSTALL 2-IN PVC SCH. 80 PIPE BETWEEN 2-IN CORP AND 2-IN GATE VALVE ON EACH SIDE IN CONFORMANCE WITH CAW STANDARD DRAWING No. 8A FOR A 2-IN WATER SERVICE.

TYPICAL VALVE INSTALLATION, LARGER THAN 12 INCHES (2/-)
SCALE: NTS

REVISIONS

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8/12/15

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
VALVE DETAILS

CALIFORNIA
AMERICAN WATER

AECOM
1333 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612

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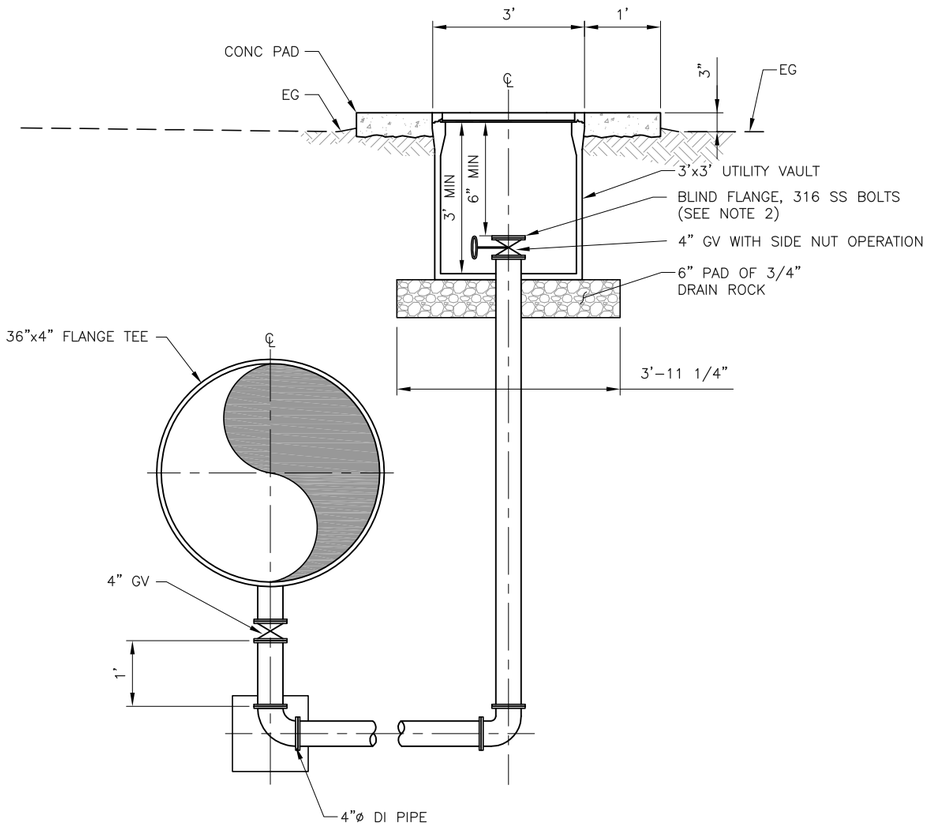

PUMP OUT BLOWOFF DETAIL 1
SCALE: NTS

NOTES:

1. INSTALL PUMP OUT BLOWOFF OUTSIDE OF CAW SERVICE AREA, (ALL PIPELINES EXCEPT MONTEREY PIPELINE).
2. ALL HARDWARE TO BE 316 SS.

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REVISIONS

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MECHANICAL
PIPELINE DETAILS
PUMP OUT BLOWOFF DETAILS

CALIFORNIA
AMERICAN WATER

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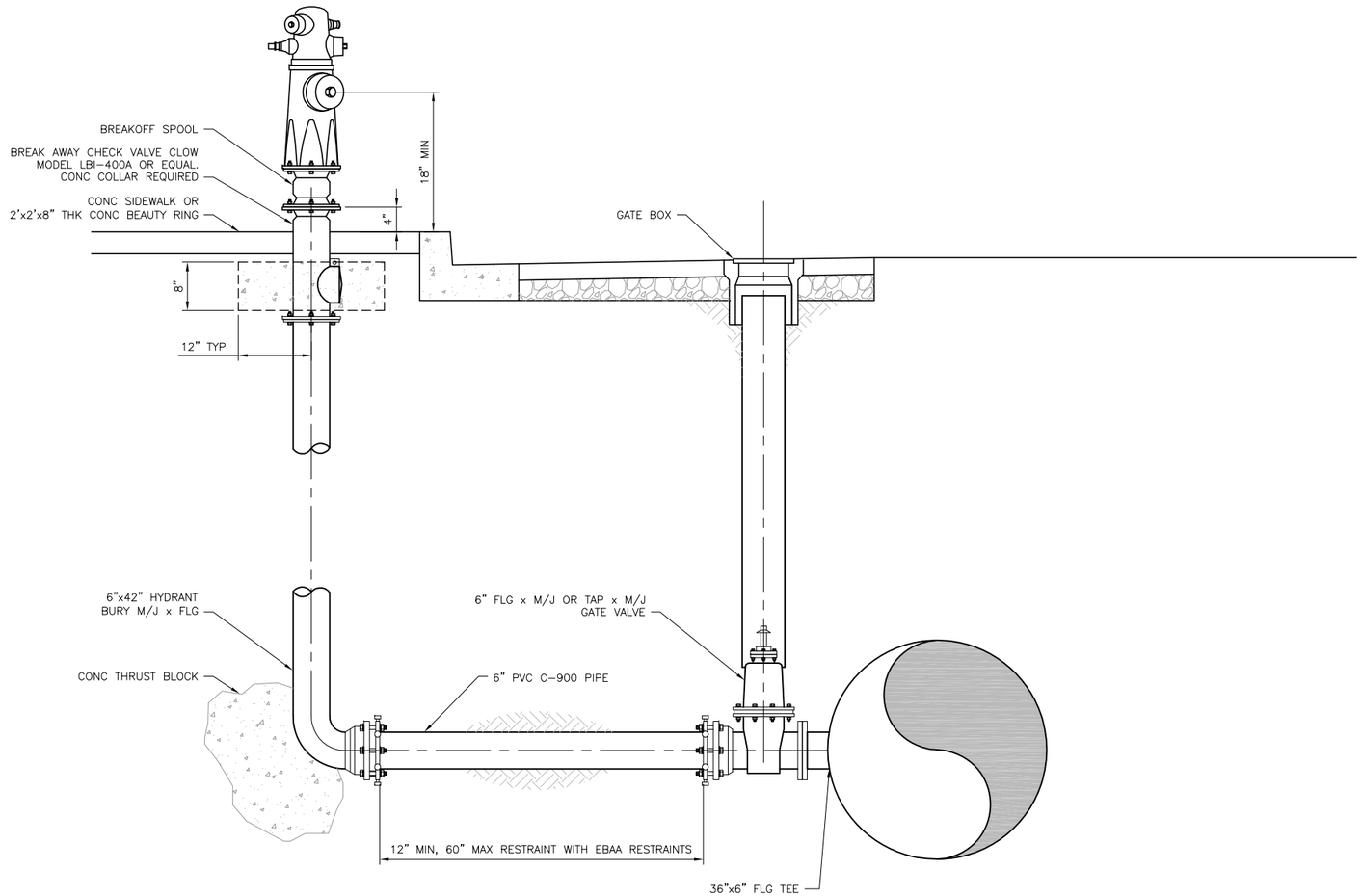

6 INCH FIRE HYDRANT INSTALLATION DETAIL (1/–)
SCALE: 1"=2'

NOTES:

1. HYDRANT LOCATION TO VARY. CONTRACTOR SHALL VERIFY LOCATION PRIOR TO INSTALLATION BASED ON THE FOLLOWING CONDITIONS:
   - WHEN SIDEWALKS ARE ADJACENT TO CURB, HYDRANTS SHALL BE CENTERED AT BACK OF SIDEWALK.
   - WHEN SIDEWALKS ARE CONSTRUCTED WITH WIDTHS GREATER THAN 6' FROM CURB FACE TO OUTSIDE EDGE OF SIDEWALK HYDRANTS SHALL BE PLACED 24" FROM THE CURB FACE.
   - WHEN INVERTED SHOULDER SECTION IS PERMITTED AND CURB, GUTTER AND SIDEWALKS ARE WAIVED, THE HYDRANT SHALL BE CENTERED 24" BEHIND THE EDGE OF PAVEMENT.
2. REQUIREMENT OF LOCAL AUTHORITY HAVING JURISDICTION SHALL PREVAIL. IN THEIR ABSENCE, THE INSTALLATION SHOWN MAY BE USED.
3. EXACT HYDRANT LOCATION TO BE FIELD DETERMINED BY LOCAL AUTHORITY HAVING JURISDICTION.
4. FIRE HYDRANT CENTERLINE TO EDGE OF CURB IS 24" WHEN PROPERTY LINE IS 6' OR GREATER. FIRE HYDRANT CENTERLINE TO EDGE OF CURB VARIES WHEN PROPERTY LINE IS 24" OR LESS.
5. BAG FIRE HYDRANT UNTIL PLACED INTO SERVICE.
6. INSTALL FIRE HYDRANT PROTECTION BOLLARDS WHEN DIRECTED BY CAL-AM OR FIRE DEPARTMENT.
7. INSTALL FH BLOWOFFS WITHIN CAW SERVICE AREA ONLY.

0 2 4 6
VERT 1" = 2'

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REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
FIRE HYDRANT BLOWOFF DETAIL

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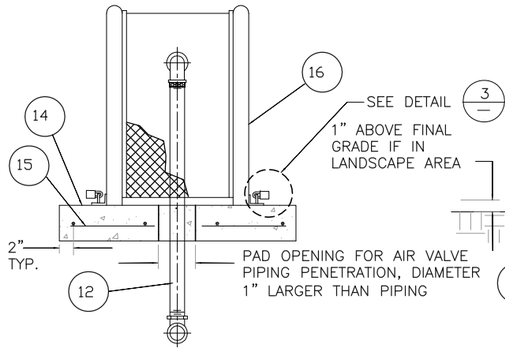
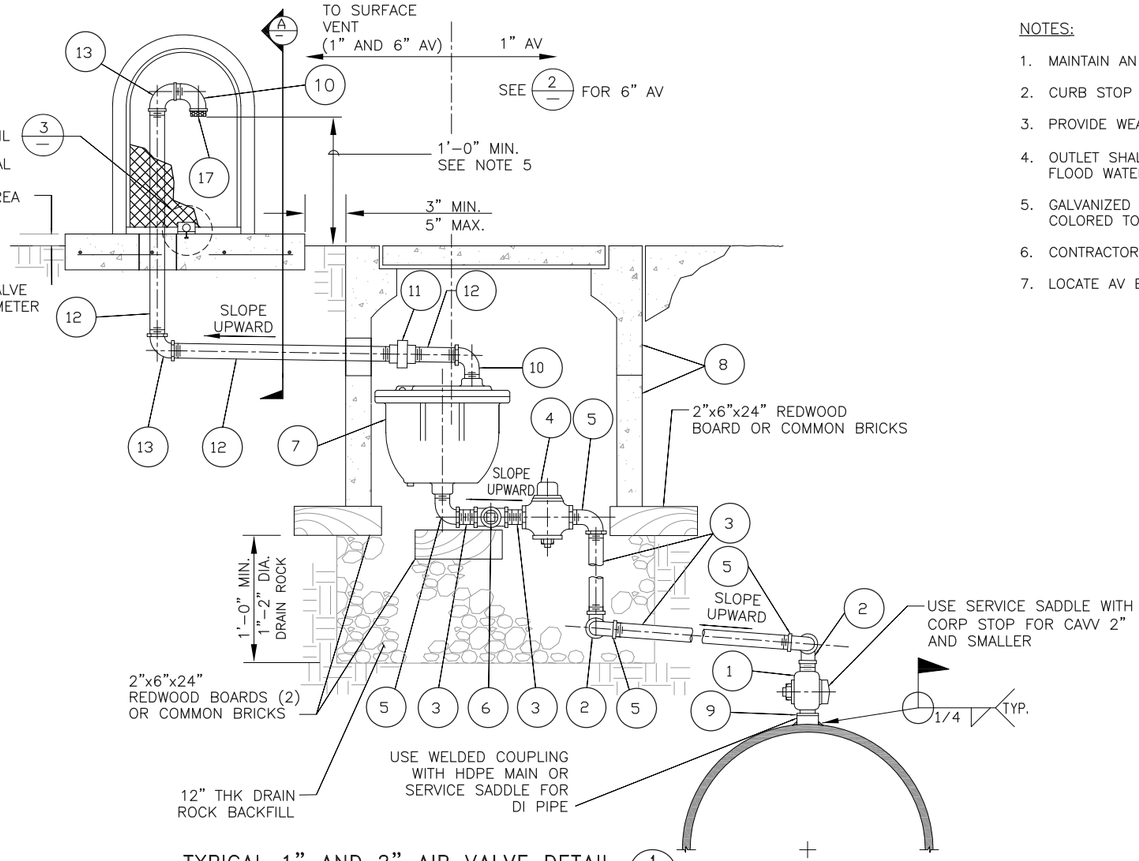
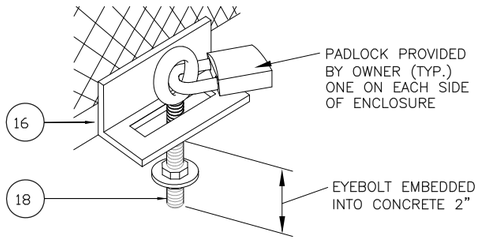


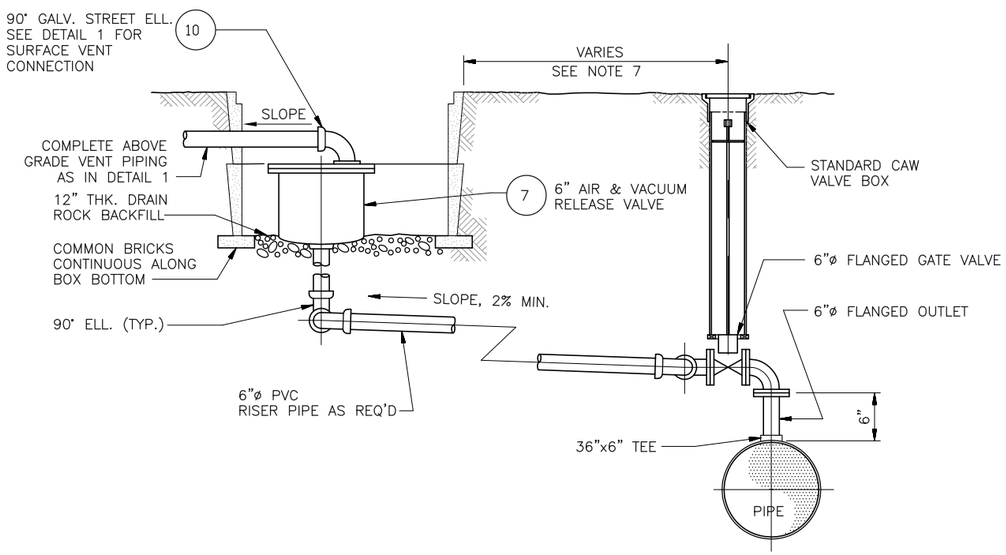
SECTION–A



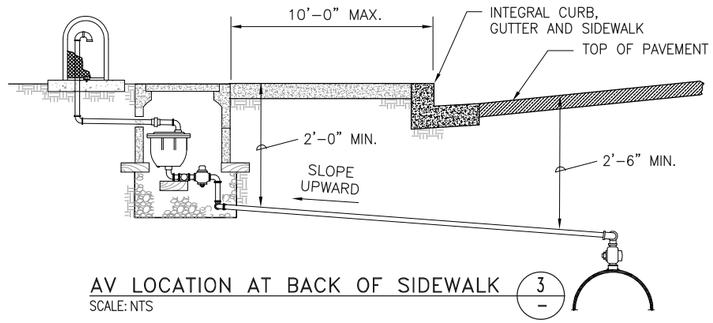
TYPICAL 1" AND 2" AIR VALVE DETAIL 1
SCALE: NTS



DETAIL 4
SCALE: NTS



TYPICAL 4" AND 6" AIR VALVE DETAIL 2
SCALE: NTS



AV LOCATION AT BACK OF SIDEWALK 3
SCALE: NTS

NOTES:

1. MAINTAIN AN UPWARD SLOPE TO PIPE FROM AV AT MAIN TO AIR VALVE VENT.
2. CURB STOP TO BE EXPOSED IN METER BOX AND ACCESSIBLE TO OPERATE.
3. PROVIDE WEATHERPROOF LABEL ON ENCLOSURE WITH AV AND STATION NUMBER.
4. OUTLET SHALL BE A MINIMUM 1'–0" ABOVE FINISHED GRADE OR 1'–0" ABOVE THE CALCULATED 100–YEAR FLOOD WATER LEVEL OR HIGHEST RECORDED WATER LEVEL, WHICHEVER IS HIGHER.
5. GALVANIZED AIR VALVE PIPING ABOVE GRADE SHALL BE COATED WITH TWO COATS OF RUST–OLEUM PAINT COLORED TO MATCH ENCLOSURE COLOR.
6. CONTRACTOR TO FIELD WRAP RISER PIPE AND FITTINGS PER ACWD STD. SPECIFICATIONS.
7. LOCATE AV BOX AS SHOWN ON PLAN AND PROFILE DRAWINGS.

TABLE A

ITEM	DESCRIPTION
1	VALVE
2	90° STRAIGHT ELBOW (RED BRASS) (2)
3	RED BRASS PIPE (4)
4	CURB STOP
5	90° STREET ELBOW (RED BRASS) (4)
6	FIPTxFIPTxFIPT BRASS TEE WITH BRASS PLUG**
7	COMBINATION AIR VACUUM RELIEF VALVE (CAVV)
8	UTILITY BOXES. SEE TABLE B
9	NYLON BUSHING (STEEL MAIN ONLY)**
10	90° STREET ELBOW (GALVANIZED)** (2). SEE NOTE 5
11	UNION (GALVANIZED)**
12	GALVANIZED STEEL PIPE** (3). SEE NOTE 5
13	90° STRAIGHT ELBOW (GALVANIZED)** (2). SEE NOTE 5
14	CONCRETE BASE 20"Wx20"Lx3"D
15	6"/6"x#10/10 WELDED WIRE MESH
16	ENCLOSURE BPDI CGS–1. COLOR SHALL BE GREEN
17	STAINLESS STEEL MESH INSECT SCREEN CAP**
18	THREADED EYEBOLT (GALVANIZED) WITH 7/16" MIN. I.D. (2)

** SIZED THE SAME DIAMETER AS THE AIR VALVE

TABLE B

UTILITY BOXES FOR AIR VALVES

A.V. SIZE	CHRISTY OR APPROVED EQUAL METER BOX	LID
1" CAVV	B24BOX (BOX) W/ B24BOX (EXTENSION)	B24D
4" AND 6" CAVV	N48T BOX W/ REINFORCED BOX (EXTENSION)	N48–62J GALV. STEEL CHECKER PLATE

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8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
COMBINATION AIR RELEASE VALVE

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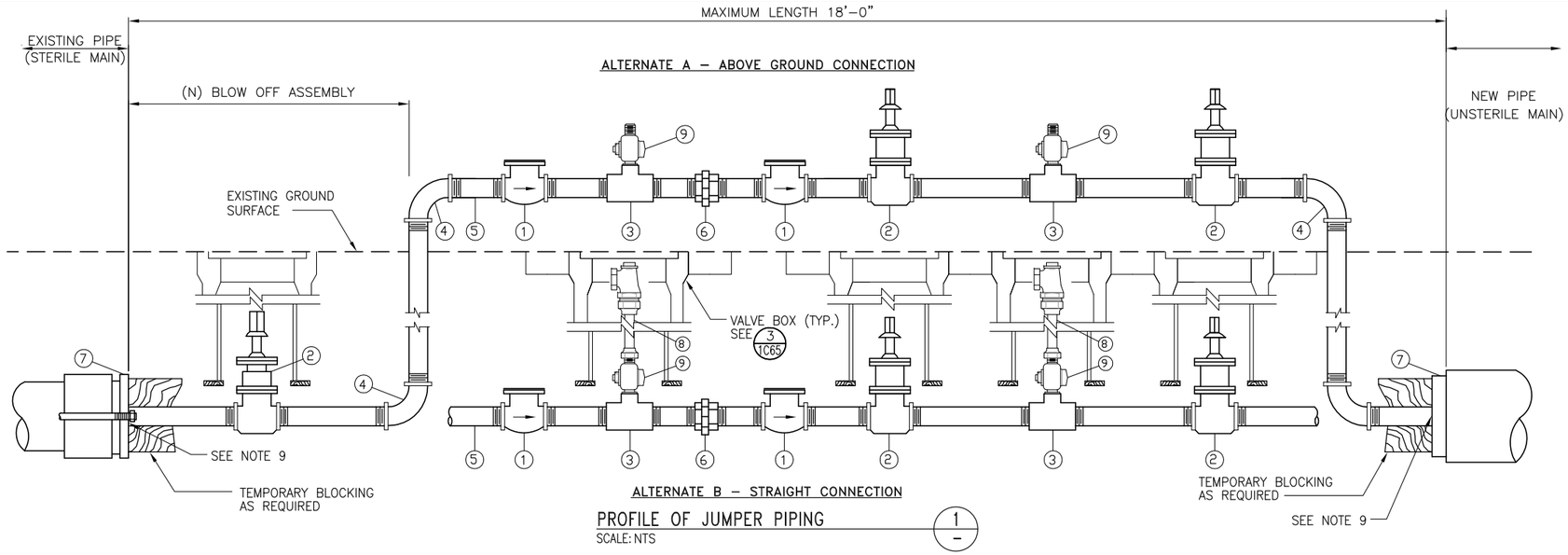


PROFILE OF JUMPER PIPING 1

SCALE: NTS

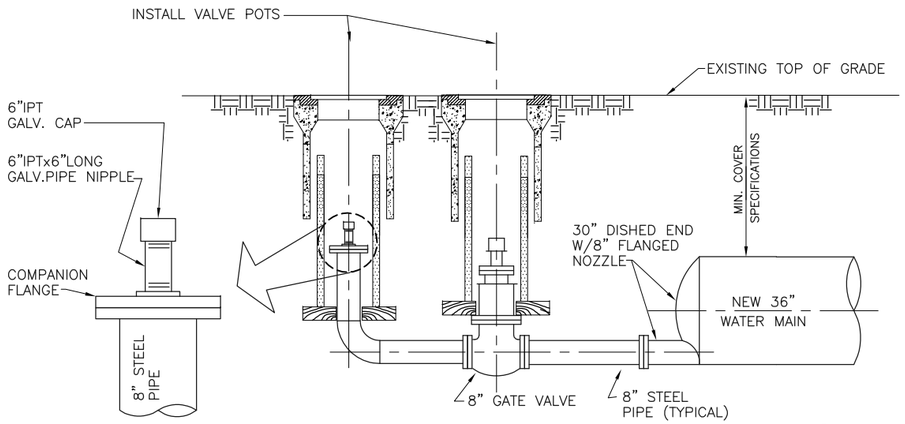
ITEM	JUMPER PIPE MATERIAL DESCRIPTION. SEE NOTES
1	CHECK VALVE
2	GATE VALVE
3	TEE
4	90° ELL
5	PIPE
6	UNION OR FLEX COUPLING
7	TEST BULKHEAD
8	1" COPPER TUBING WITH 1" BRASS ANGLE METER STOP
9	1" BRASS CORP STOP

NOTES

1. JUMPER PIPING AND MATERIALS TO BE THOROUGHLY CLEANED AND DISINFECTED WITH 5% HYPOCHLORITE SOLUTION PRIOR TO INSTALLATION.
2. JUMPER CONSTRUCTION OTHER THAN SHOWN AND SPECIFIED WILL NOT BE ALLOWED WITHOUT PERMISSION OF CAW.
3.

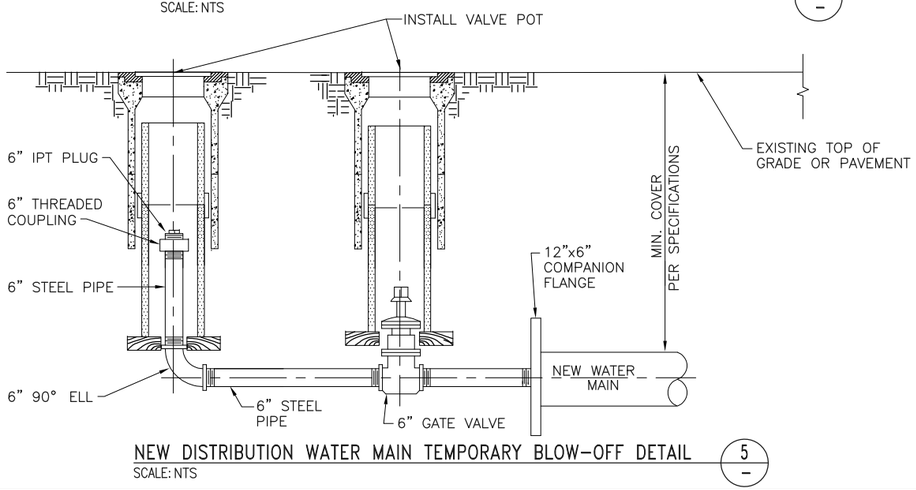
MAIN SIZE	MINIMUM JUMPER PIPE SIZE
6" AND 8"	2"
10" AND 12"	4"
14" AND 16"	6"
18" OR LARGER	8"

4. JUMPER PIPE SIZE MUST CORRESPOND WITH LARGEST DIAMETER SIZED PIPE ON PROJECT.
5. JUMPER PIPING MAY BE INSTALLED EITHER ABOVE GROUND OR IN A DIRECT ALIGNMENT, AS INDICATED ABOVE ON PROFILE.
6. JUMPER PIPING MATERIAL SHALL BE STEEL (OR IRON) UNLESS OTHERWISE NOTED.
7. FOR VALVE BOX INSTALLATION, SEE CAW STD DWG.
8. JUMPER PIPING SHOWN WITH THREADED CONNECTIONS, HOWEVER, FLANGED CONNECTIONS ARE ALSO ACCEPTABLE.
9. JUMPER PIPING TO HAVE FLANGED CONNECTIONS AT BOTH ENDS.



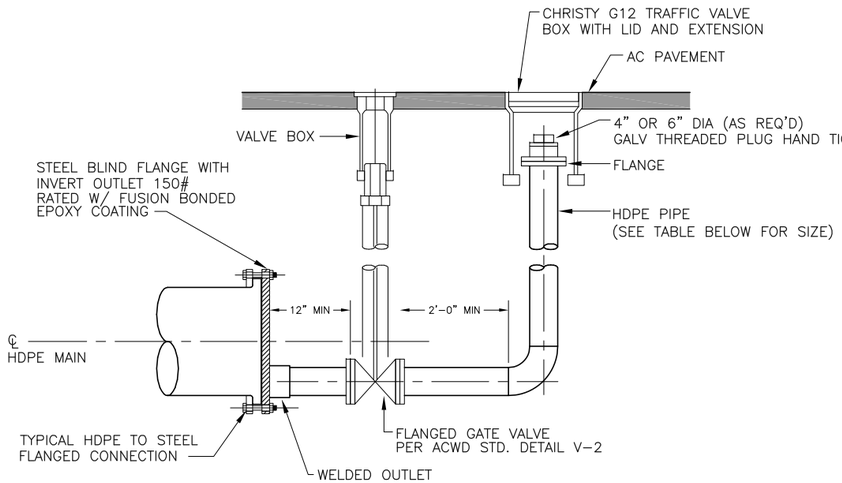
NEW DI TRANSMISSION WATER MAIN TEMPORARY BLOW OFF DETAIL 2

SCALE: NTS



NEW DISTRIBUTION WATER MAIN TEMPORARY BLOW-OFF DETAIL 5

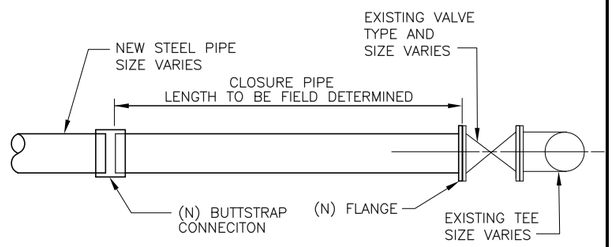
SCALE: NTS



HDPE WATER MAIN TEMPORARY BLOW OFF DETAIL 3

SCALE: NTS

HDPE MAIN SIZE (NOMINAL OD)	BLOW OFF SIZE (HDPE)
14" OR UNDER	6" (5.81" ID)
18" OR OVER	8" (7.57" ID)



CLOSURE PIECE 4

SCALE: NTS

REVISIONS

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TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
TEMPORARY TESTING PIPING DETAILS

CALIFORNIA AMERICAN WATER

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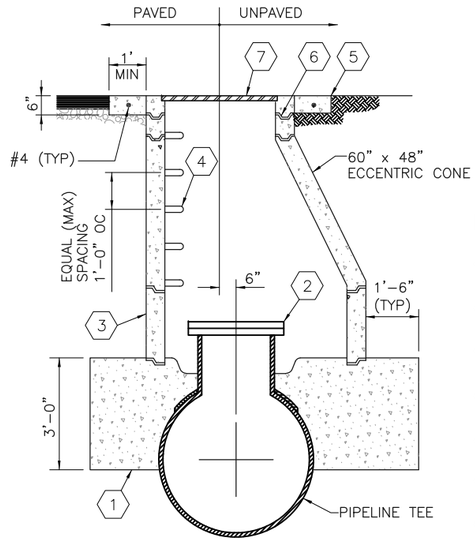
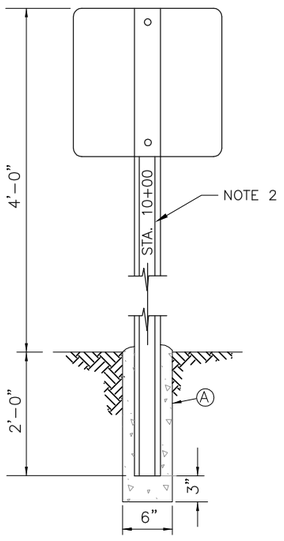


DETAIL KEY NOTES:

1. 8'-0" LONG (BOTH WAYS) 3000 PSIG CONCRETE
2. 36" ACCESS MANWAY BLIND FLANGE WITH 316 SS BOLTS
3. VERTICAL MANHOLE SECTION
4. EMBEDDED STEEL STEP, POLYPROPYLENE ENCASED
5. CONCRETE RING
6. 36" MANHOLE FRAME WITH BOLT DOWN COVER
7. MANHOLE COVER

INSPECTION MANWAY DETAIL 1/–
SCALE: NTS



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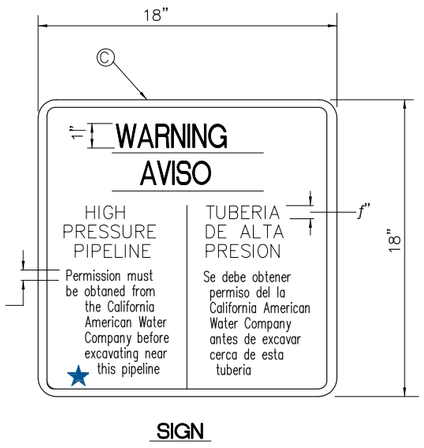

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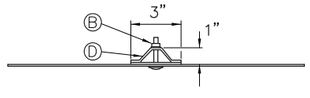

PLAN

WARNING SIGN DETAIL 2/–
SCALE: NTS

A	CONCRETE FOOTING
B	TWO BOLTS x 2", TWO NUTS, TWO FIBER WASHERS, TWO 1|" x 3" x" PLATES
C	PERMA SIGN REFLECTIVE – 18" x 18", RED ON WHITE
D	6'-0" PAINTED PRESSURE TREATED 4" x 4" WOOD

NOTES:

1. PLACE POST APPROXIMATELY AS INDICATED IN ALL UNPAVED AREAS AT STATION NUMBER MULTIPLES OF 20+00. FINAL LOCATION TO BE DETERMINED BY THE OWNER.
2. ON THE POST WRITE STATION NUMBERS IN WEATHER AND WATER PROOF PAINT.

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REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
MANWAY AND SIGN DETAILS

CALIFORNIA
AMERICAN WATER

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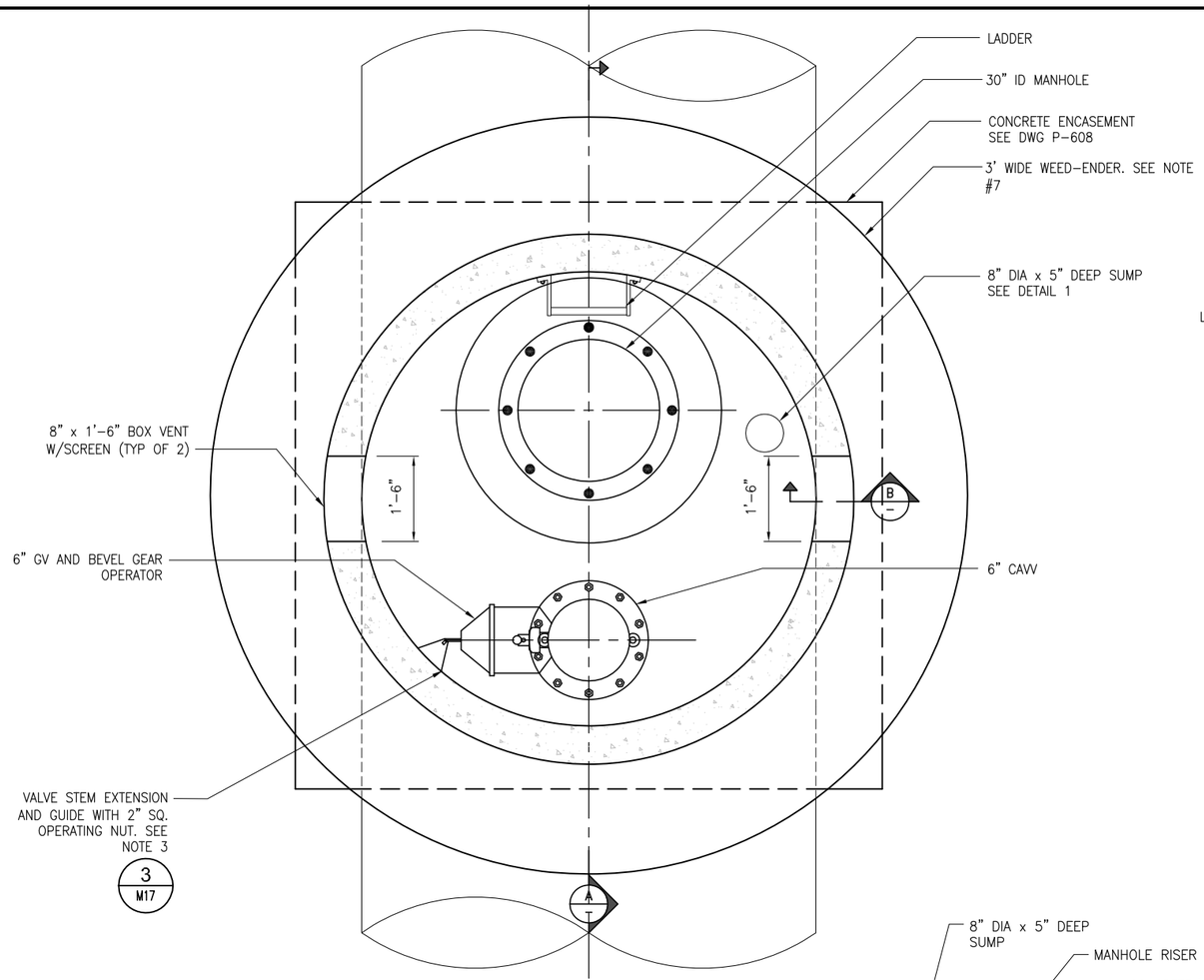
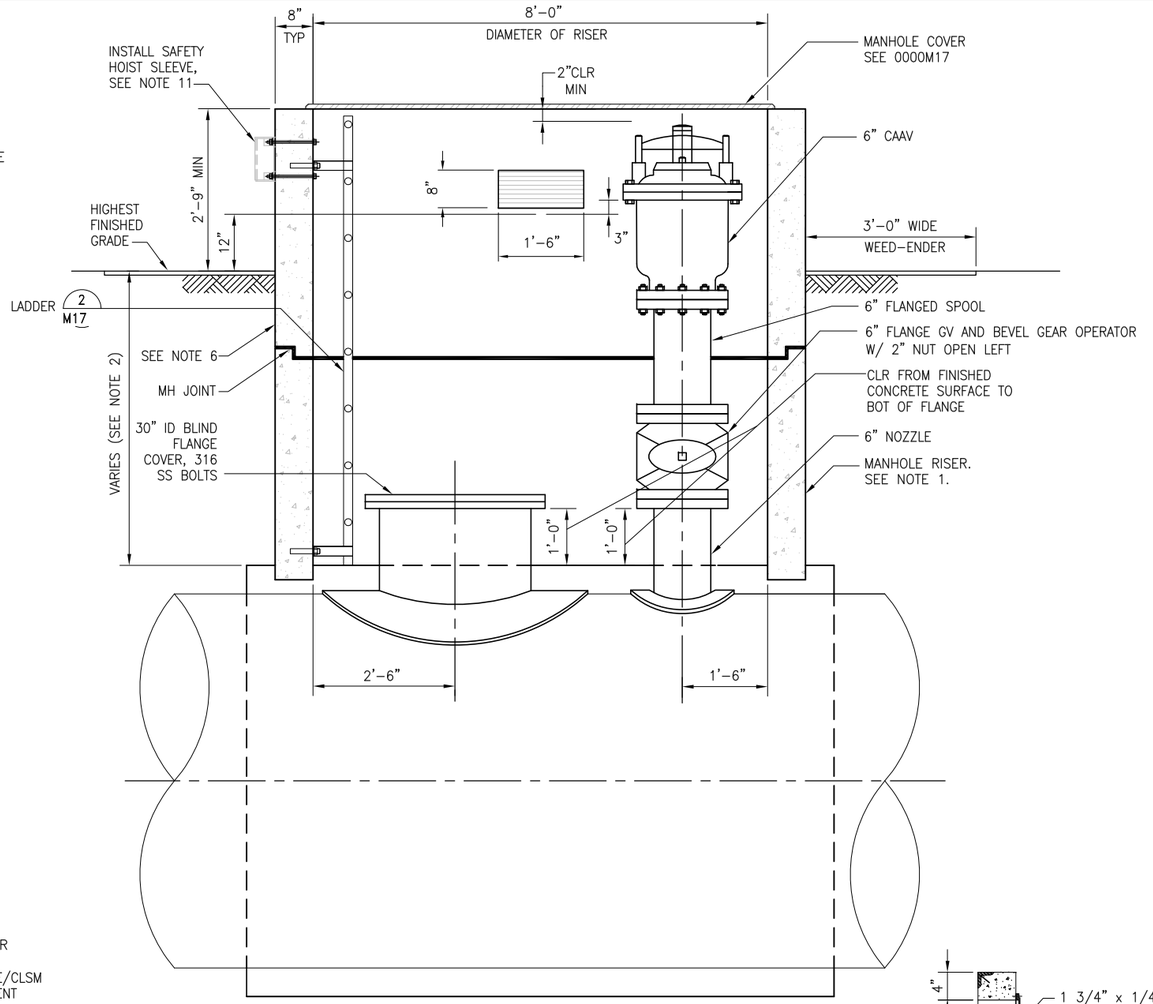


MANHOLE AND AIR VALVES

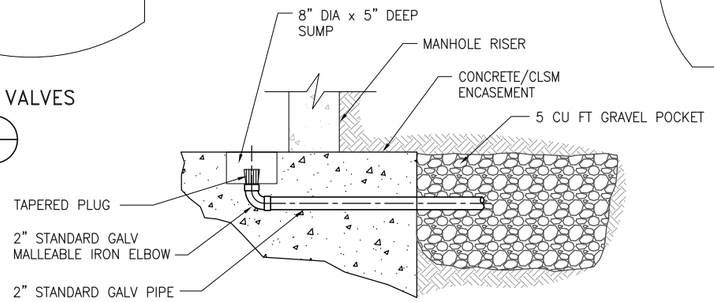
DETAIL 1

SCALE: NTS



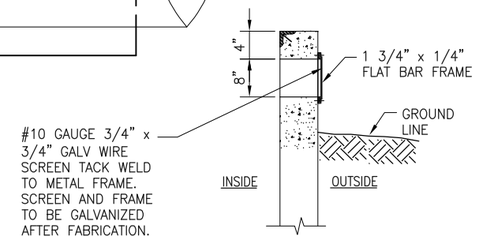
SECTION A

SCALE: NTS



SUMP DETAIL 1

SCALE: NTS



SECTION B

SCALE: NTS

NOTES:

1. ALL PRE-FABRICATED CONCRETE SHALL MEET ASTM C-478 SPECIFICATION, SUCH AS THE ONES OFFERED BY HANSON CONCRETE PRODUCTS.
2. THE HEIGHT OF THE VACUUM VALVE RISER VAULT SHALL EXTEND 2'-9" ABOVE GRADE. THE TOTAL HEIGHT OF THE RISER SHALL DEPEND ON THE DEPTH OF THE PIPE BELOW THE SURFACE.
3. LOOKING DOWNSTREAM, THE FLANGED ENCLOSED BEVEL GEAR GATE VALVE WITH 2" OPERATING NUT SHALL BE POSITIONED ON OPPOSIITE SIDE OF THE AIR RELEASE VALVE.
4. THE BOTTOM OF THE AIR VENT SCREEN SHALL BE PLACED 1'-0" ABOVE GRADE, AND IF LOCATED ON A HILL, IT SHALL FACE DOWN SLOPE.
5. THE DISTANCE BETWEEN THE TOP OF THE VAULT TO THE TOP OF THE STEM EXTENSION OPERATING NUT SHALL BE NO MORE THAN 18".
6. CONTRACTOR SHALL NOTIFY THE OWNER REPRESENTATIVE IN WRITING IF ANY PART OF THIS RISER STANDARD OR SPECIFICATION CAN NOT BE MET. ANY ALTERATION OR MODIFICATION OF INSTALLING THE RISER SHALL BE APPROVED BY THE OWNER REPRESENTATIVE.
7. INSTALL 3' WIDE WEED-ENDER AROUND THE UNPAVED RISER. THE MANUFACTURER OF WEED-ENDER IS U-TECH. (WWW.UTECH.COM, 1-800-542-7011). FOLLOW MANUFACTURER'S RECOMMENDATIONS/ PROCEDURES TO INSTALL WEED-ENDER PRODUCT DESCRIPTION/NUMBER: WEED-ENDER MANHOLE MAT/8MHK12D
8. CHIP CEMENT MORTAR COATING TO ACCOMMODATE THE INSTALLATION OF THE MANHOLE RISER.
9. CONCRETE STRENGTH OF PIPE ENCASEMENT SHALL MATCH THE CONCRETE STRENGTH OF THE RISER.
10. NOTE THAT THE FLANGE BOLT PATTERN OF 250 POUND GATE VALVE IS DIFFERENT FROM THE FLANGE BOLT PATTERN OF 125 POUND FLANGE.
11. 18348 UCL ADVANCED WALL MOUNT SLEEVE, 304 STAINLESS STEEL FINISH.

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REVISIONS

TRANSMISSION MAINS FOR MPWSP MECHANICAL PIPELINE DETAILS MANHOLE WITH AIR VALVE

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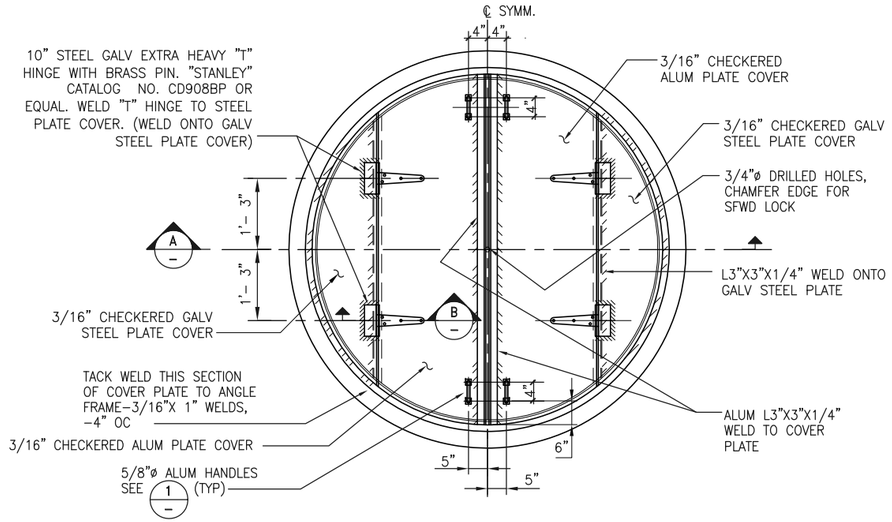
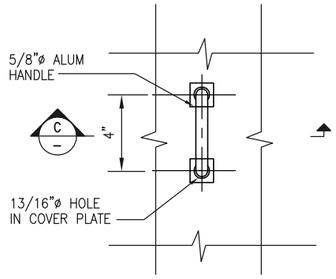
0000M16

10000000M16



COVER FOR 96" I.D. BOX
PLAN
SCALE: NTS



DETAIL 1
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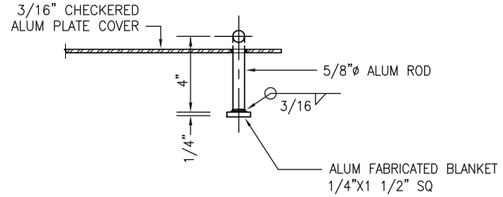

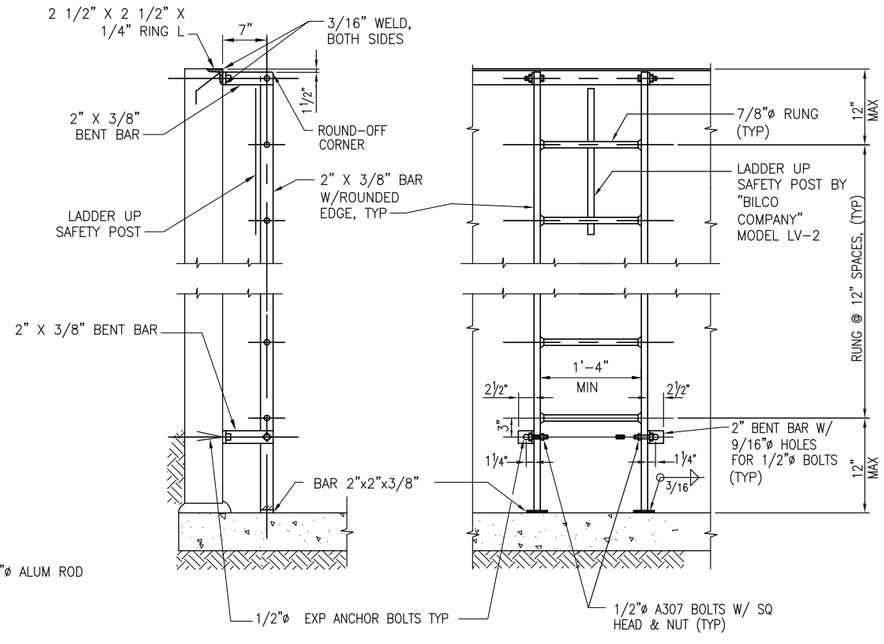

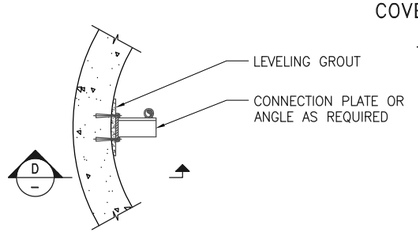

PLAN
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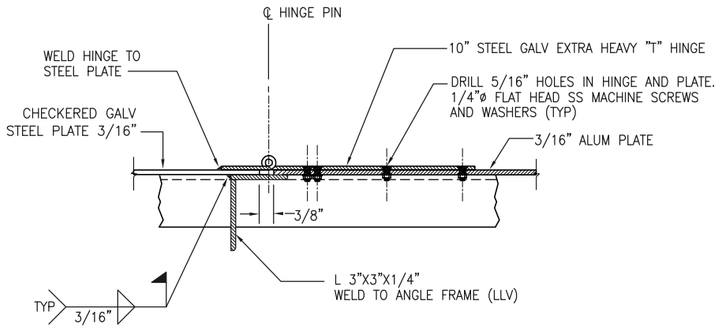
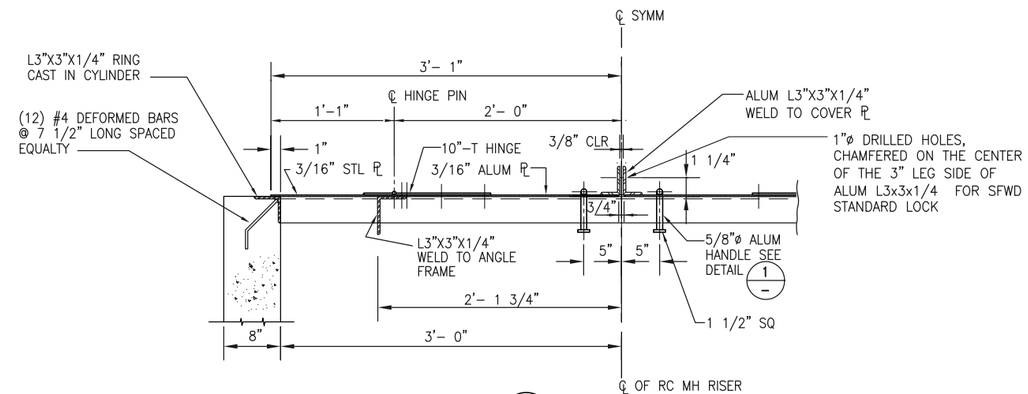


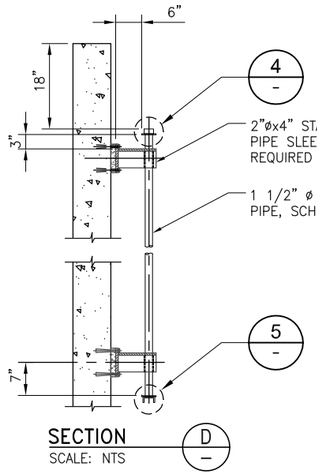
HINGE CONNECTION
SECTION B
SCALE: NTS

SECTION C
SCALE: NTS

LADDER FOR RISERS DETAIL 2
SCALE: NTS
M16

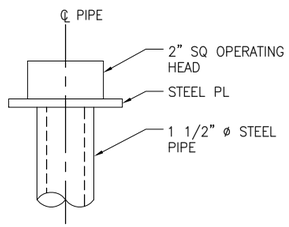


SECTION A
SCALE: NTS

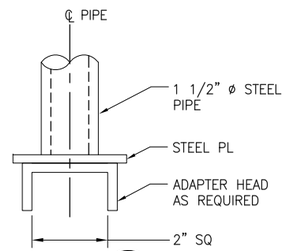


SECTION D
SCALE: NTS

STANDARD VALVE STEM EXTENSION 3 M16
SCALE: NTS (TWO BRACKET REQUIRED)



DETAIL 4
SCALE: NTS



DETAIL 5
SCALE: NTS

NOTES:

1. ALL OPERATING NUTS SHALL BE 2" STD SQ NUT. THE "OPEN" DIRECTION SHALL BE INDICATED BY AN ARROW WITH THE WORD "OPEN" CAST ON THE SKIRT OF THE FLANGE OR AT THE TOP OF THE NUT.
2. ALL WORK PERFORMED SHALL MEET LATEST EDITION OF CALIFORNIA BUILDING CODE AND AWWA CODE REQUIREMENTS.

REGISTERED PROFESSIONAL ENGINEER JENNIFER A. HYMAN No. C-58926 CIVIL STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
MANHOLE COVER-SECTIONS & DETAILS

CALIFORNIA
AMERICAN WATER

AECOM
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APPROVED C. SMITH
DATE AUGUST 2015
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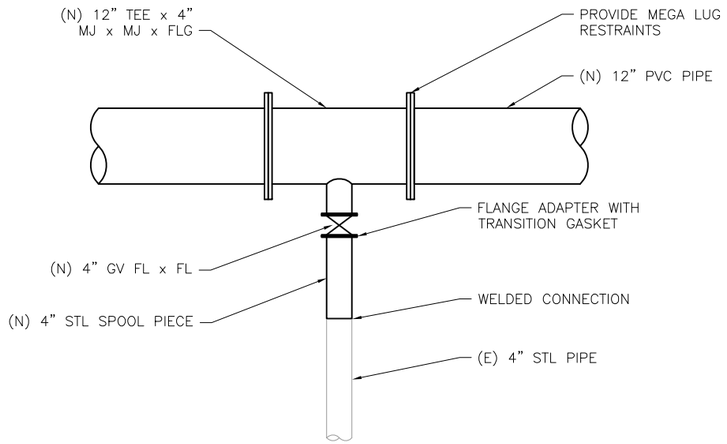
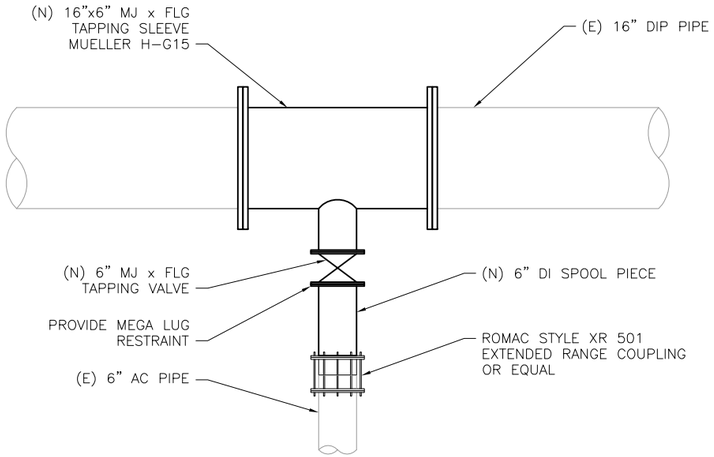
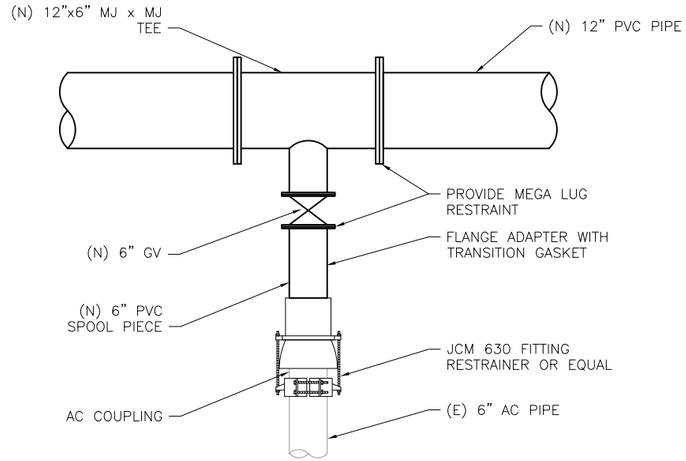


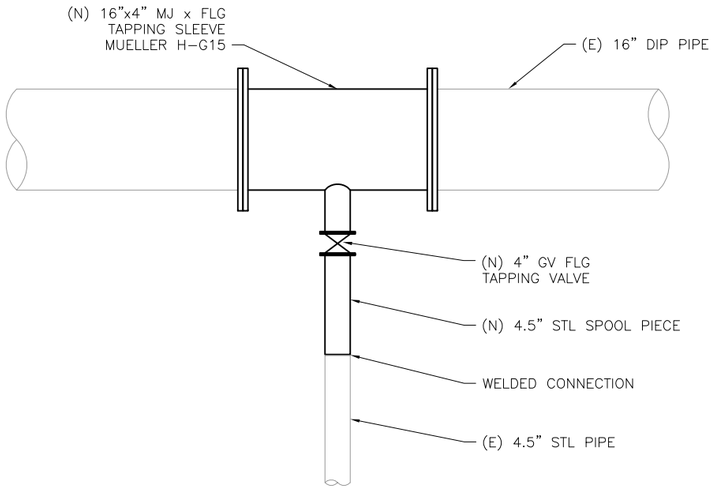
DETAIL 1 — 1001C39A/C41A
SCALE: NTS



DETAIL 2 — 1001C39A/C40A
SCALE: NTS



DETAIL 3 — 1001C39A
SCALE: NTS



DETAIL 4 — 1001C41
SCALE: NTS

NOTES:

1. CONTRACTOR SHALL CONFIRM EXISTING PIPE DIAMETERS AND MATERIALS.

REGISTERED PROFESSIONAL ENGINEER — JONATHAN A. HYMAN — No. C-50926 — CIVIL — STATE OF CALIFORNIA — 8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
RETIREMENT AND REPLACEMENT DETAILS – 1

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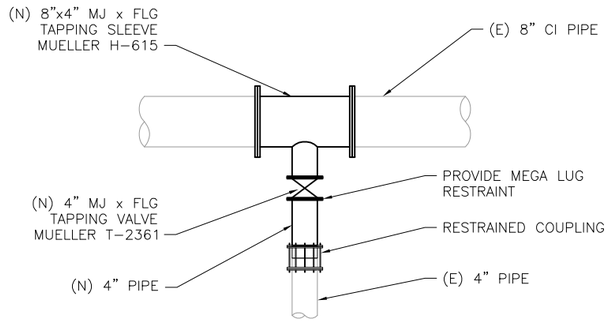

DETAIL 1 — 1001C14A/C15A
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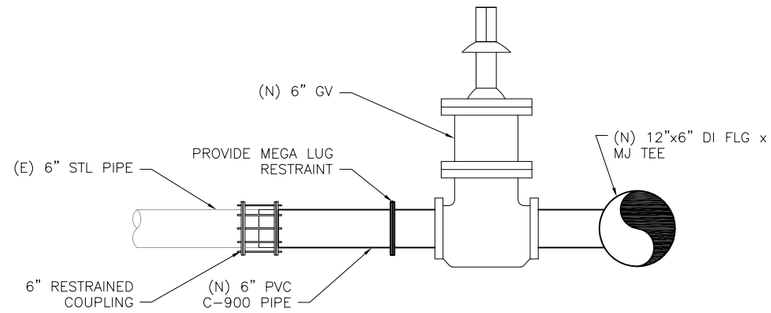
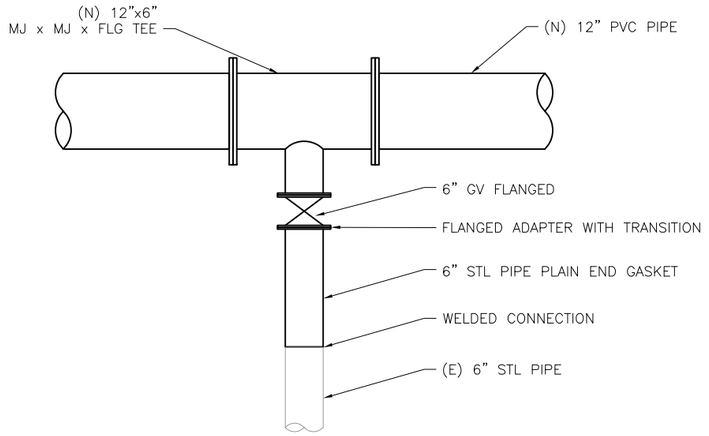
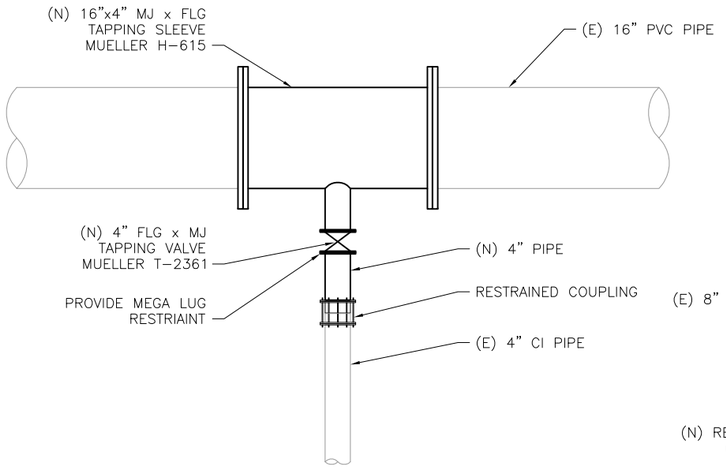


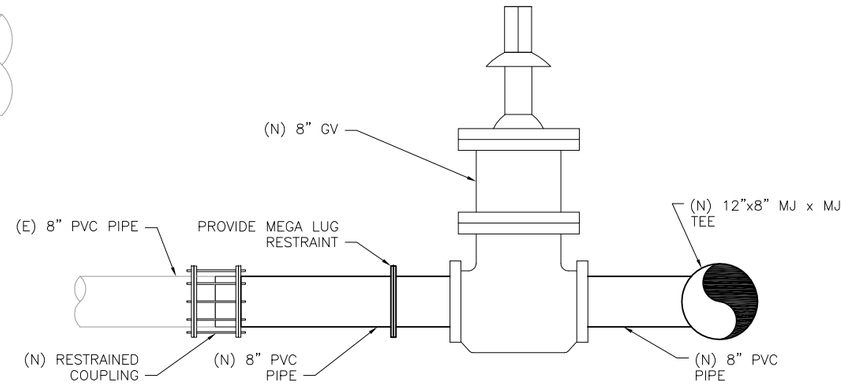
DETAIL 3 — 1001C36A/C38A
SCALE: NTS



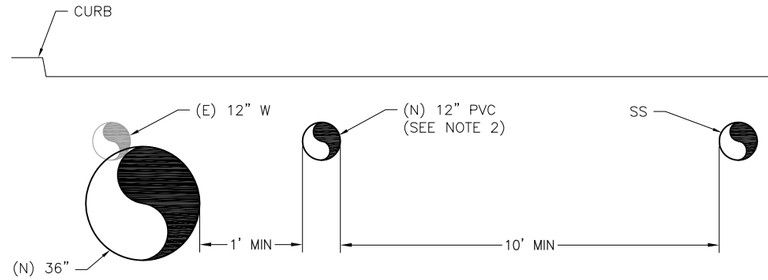
DETAIL 5 — 1001C38A/C39A
SCALE: NTS



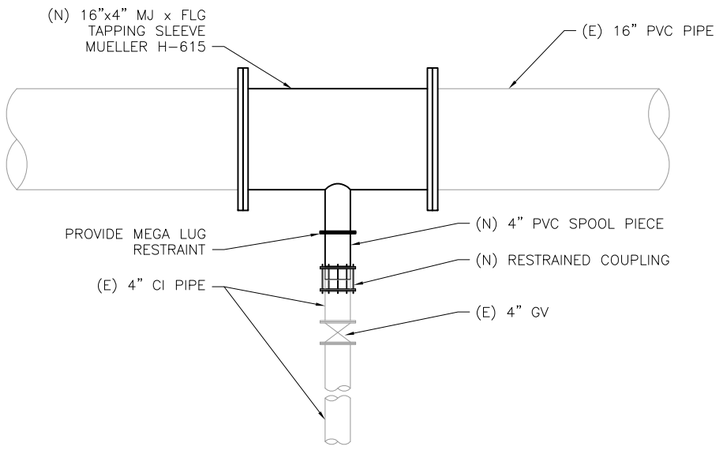
DETAIL 1001C16A — 2
SCALE: NTS



DETAIL 1001C37A — 4
SCALE: NTS



HILBY WATERMAIN REPLACEMENT CROSS-SECTION
SCALE: NTS



DETAIL 1001C17A — 3
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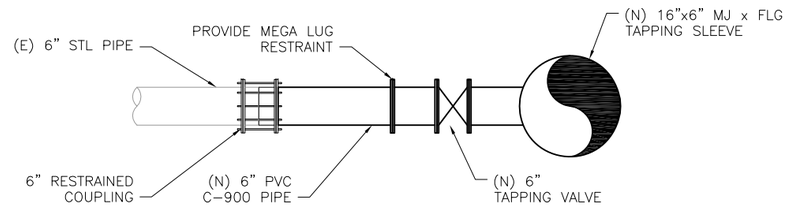

DETAIL 3 — 1001C36A/C38A
SCALE: NTS

NOTES:

1. CONTRACTOR SHALL CONFIRM EXISTING PIPE DIAMETERS AND MATERIALS.
2. CONSTRUCTION SEQUENCING;
   a. INSTALL (N) 12"
   b. MOVE SERVICES OVER FROM (E) STL 12" TO (N) 12"
   c. REMOVE (E) 12" STL AND INSTALL (N) 36"

REGISTERED PROFESSIONAL ENGINEER — JENNIFER A. HYMAN — No. C-50926 — CIVIL — STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
RETIREMENT AND REPLACEMENT DETAILS – 2

CALIFORNIA
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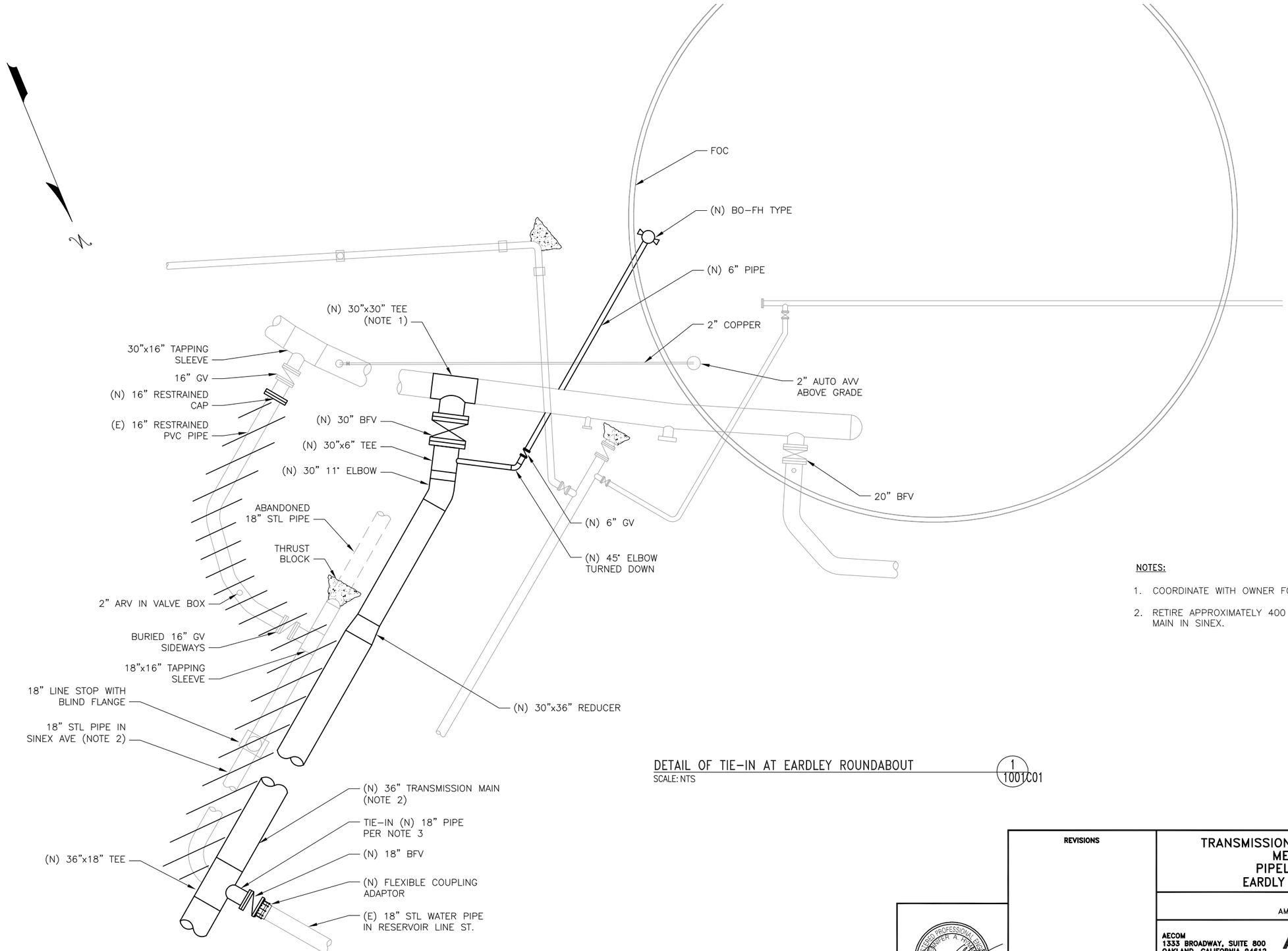

DETAIL OF TIE–IN AT EARDLEY ROUNDABOUT (1 / 1001C01)
SCALE: NTS

NOTES:

1. COORDINATE WITH OWNER FOR SHUTDOWN FOR TIE–INS.
2. RETIRE APPROXIMATELY 400 LF OF 18" STEEL WATER MAIN IN SINEX.

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — JENNIFER A. HYMAN — No. C-58926 — CIVIL — STATE OF CALIFORNIA — 8/12/15

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
EARDLY TIE–IN DETAILS

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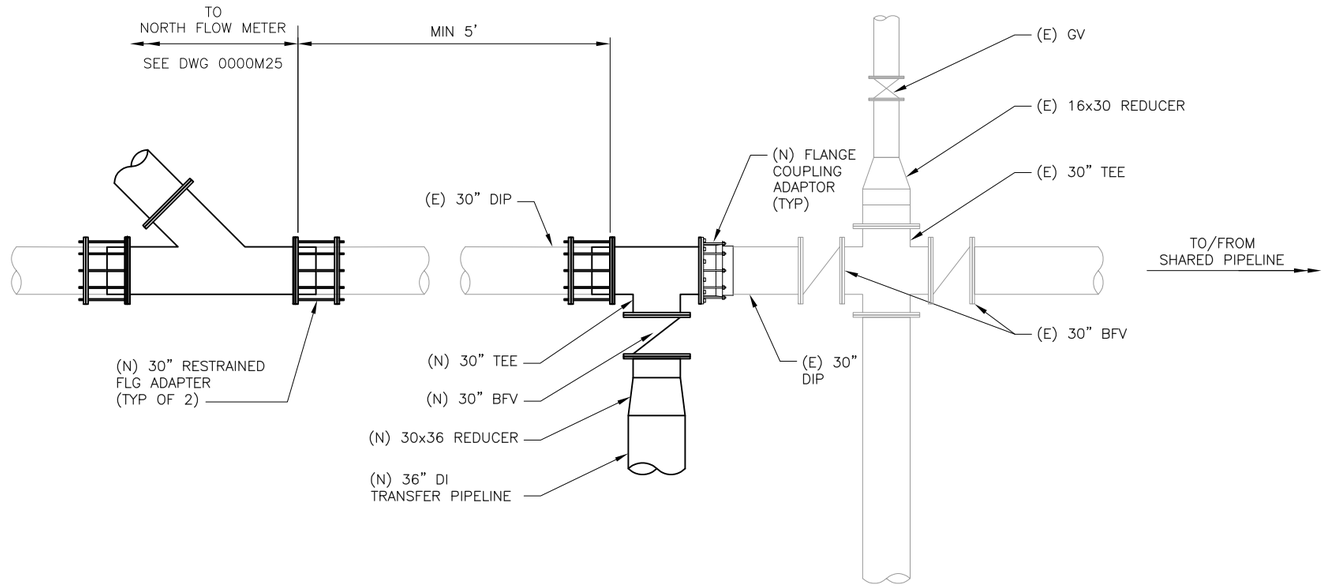
NOTES:

1. COORDINATE SHUT DOWN OF (E) 30" PIPE WITH OWNER.
2. RESTRAIN ALL JOINTS.



TIE-IN OF SOUTH END OF TRANSFER PIPELINE (1 / 3003C01)
SCALE: NTS

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
JENNIFER A. TRIEBSCH
No. C-50928
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STATE OF CALIFORNIA
9/12/15

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
TRANSFER TIE-IN DETAILS

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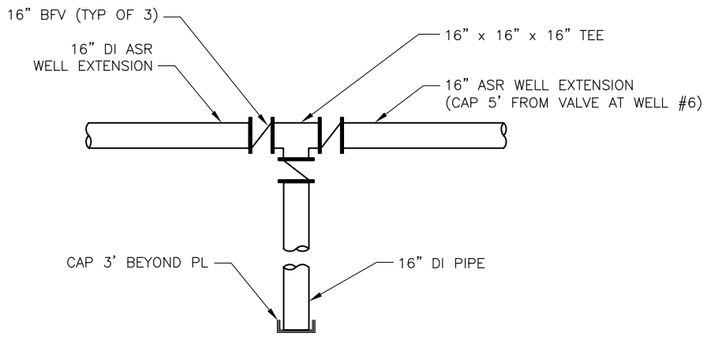
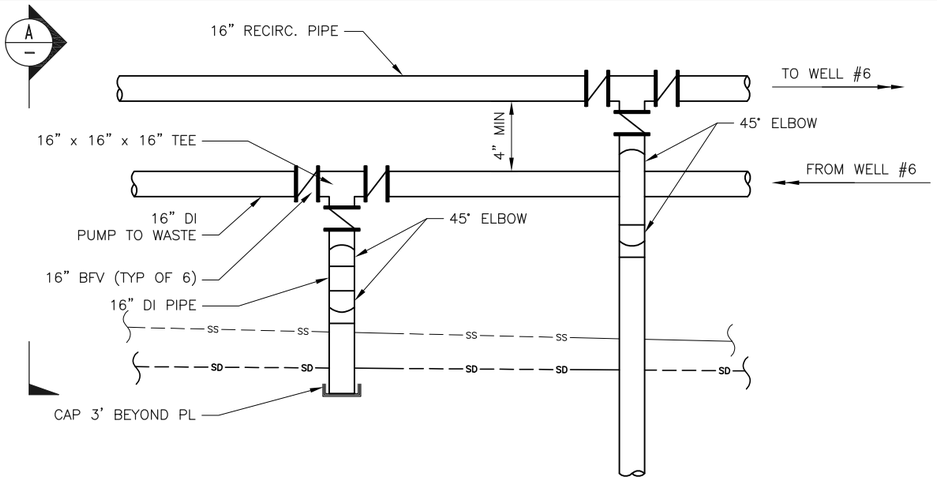
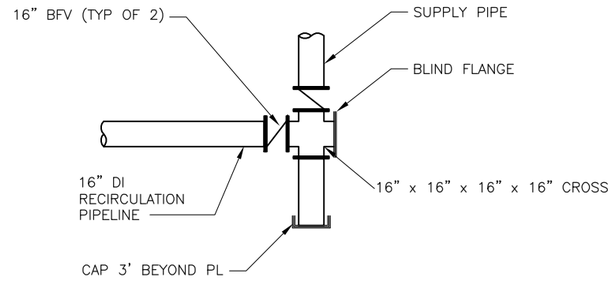


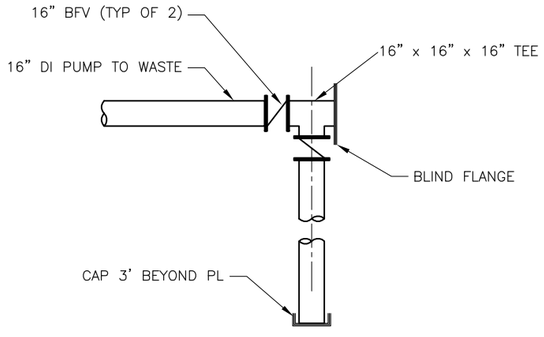
WELL #5 & #6 SUPPLY CONNECTION (1) 2002C15, 2002C16
SCALE: NTS



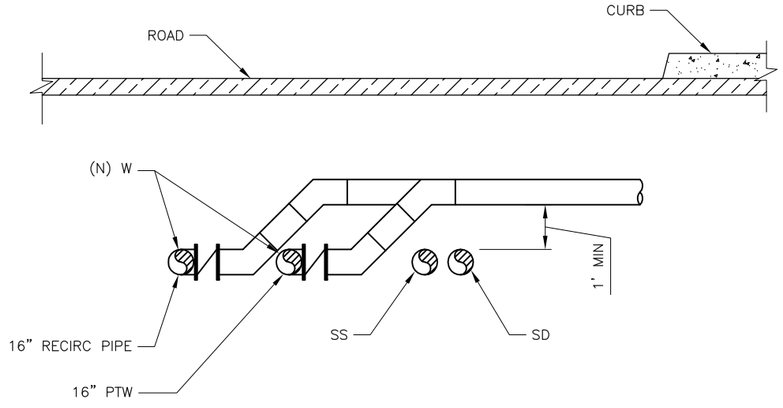
WELL #5 RECIRC AND PUMP TO WASTE CONNECTIONS (2) 2002C15
SCALE: NTS



WELL #6-RECIRCULATION CONNECTION (3) 2002C16
SCALE: NTS



WELL #6-PUMP TO WASTE CONNECTION (4) 2002C16
SCALE: NTS



SECTION THROUGH DETAIL 2 (A) –
SCALE: NTS

NOTES:

1. ALL CONNECTIONS SHALL BE RESTRAINED.

REGISTERED PROFESSIONAL ENGINEER A. TOM GREEN No. C-50929 CIVIL STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
ASR PIPELINE EXTENSION DETAILS – 1

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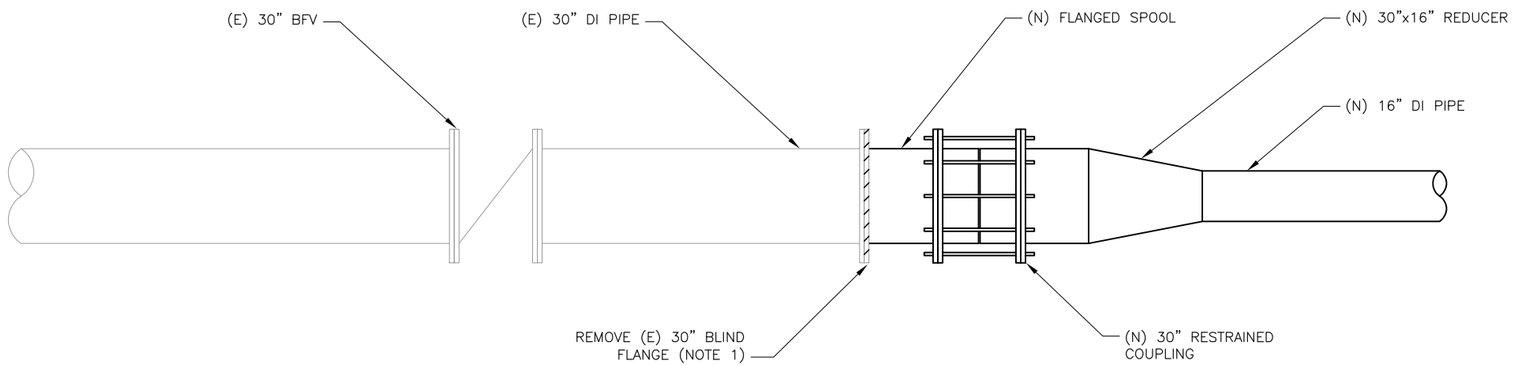
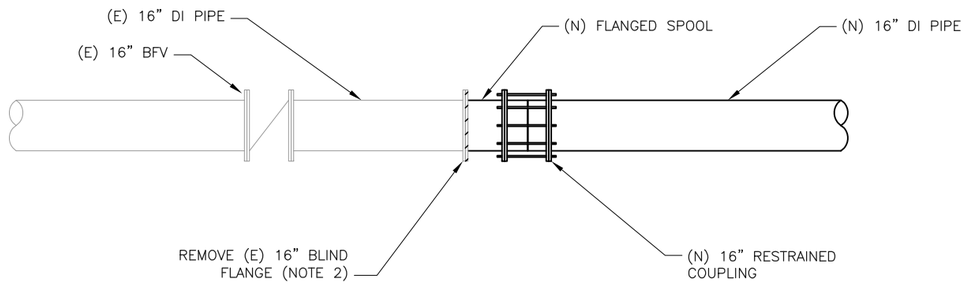


TIE-IN FOR EXTENSION TO WELLS 5 AND 6, FITCH PARK DETAIL (1) 2002C12
SCALE: NTS



TIE-IN FOR PUMP-TO-WASTE AND RECIRCULATION PIPELINE DETAIL (2) 2002C12, 2002C17
SCALE: NTS

NOTES:

1. ISOLATE END OF EXISTING 30-IN LINE BY CLOSING EXISTING 30-IN VALVE, REMOVE BLIND FLANGE, AND CONNECT TO NEW 16-IN PIPE WITH A RESTRAINED COUPLING OR CONNECT TO EXISTING FLANGE WITH A FLANGED REDUCER.
2. ISOLATE END OF EXISTING 16-IN LINE BY CLOSING EXISTING 16-IN VALVE. REMOVE BLIND FLANGE AND CONNECT TO NEW 16-IN PIPE WITH RESTRAINED COUPLING OR FLANGE COUPLING ADAPTER.

REGISTERED PROFESSIONAL ENGINEER JENNIFER A. HYMAN No. C-50926 CIVIL STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
ASR PIPELINE EXTENSION DETAILS - 2

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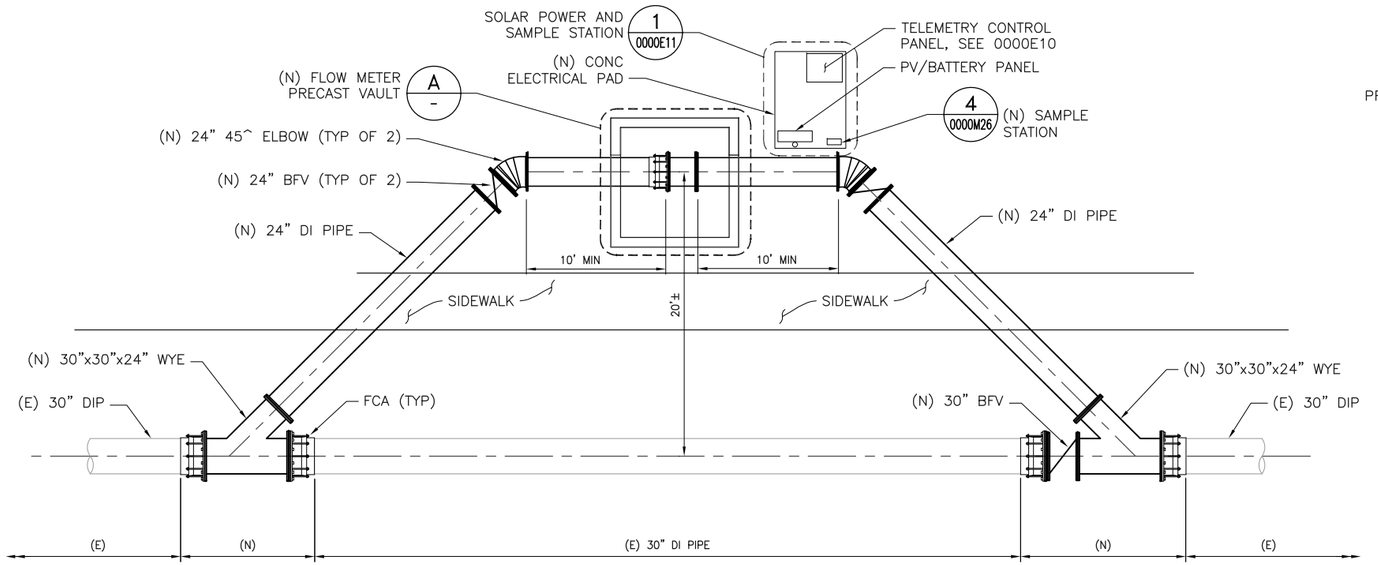
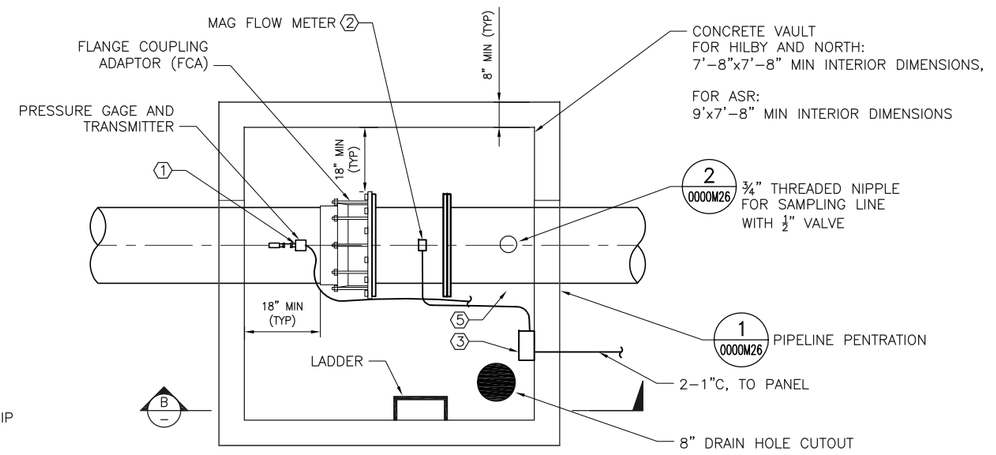
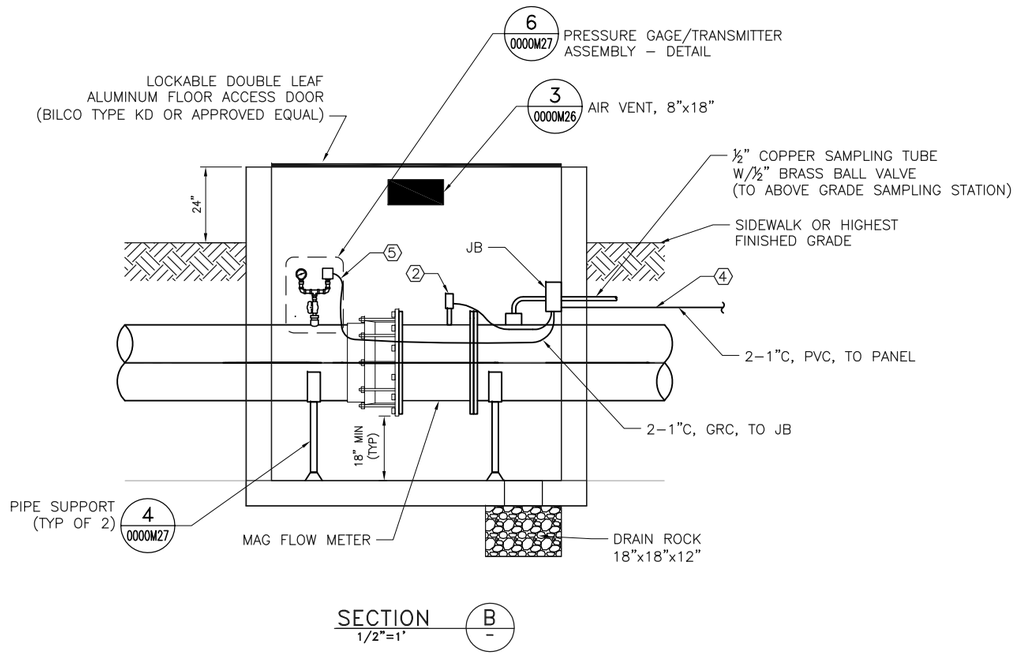


NORTH FLOW METER PIPING PLAN (TRANSFER PIPELINE) 1 / 3003C01

SCALE: 3/16" = 1'-0"



FLOW METER VAULT PLAN A / – 1/2"=1'



SECTION B / – 1/2"=1'

NOTES:

1. CONTRACTOR SHALL CONFIRM LOCATIONS WITH OWNER PRIOR TO STAKING.
2. THE BOTTOM OF THE AIR VENT SCREEN SHALL BE 12" ABOVE SIDEWALK, AND IF LOCATED ON A HILL, IT SHALL NOT FACE UP SLOPE.
3. THE LADDER SHALL HAVE A PERMANENTLY MOUNTED TELESCOPING SAFETY POST.
4. FLOW METER VAULT DETAILS APPLY TO BOTH NORTH AND ASR FLOW METERS.
5. SEE HILBY FLOW METER PIPING PLAN ON SHEET 0000M40.

NUMBERED NOTES:

1. CONNECT TO 2–WIRE PRESSURE TRANSMITTER WITH FLEX CONDUIT.
2. MAGMETER SHALL BE DC POWERED. PROVIDE MFR SENSOR CABLE TO PANEL MOUNTED TRANSMITTER. PROVIDE GROUNDING PER MFR REQUIREMENTS.
3. PROVIDE NEMA 4X JUNCTION BOX, MOUNT TO CONCRETE WALL WITH STANDOFFS. SEAL ALL CONDUITS AFTER TESTING.
4. SEE ELECTRICAL SHEETS FOR ELECTRICAL CONTROL PANEL DETAILS.
5. PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT FOR ALL FIELD CONNECTIONS.

0 4 8 16
3/16"=1'

0 2 4
1/2"=1'

REVISIONS

REGISTERED PROFESSIONAL ENGINEER JENNIFER A. HYMAN No. C-50928 CIVIL STATE OF CALIFORNIA
8/12/15

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
FLOW METER DETAILS –1

CALIFORNIA AMERICAN WATER

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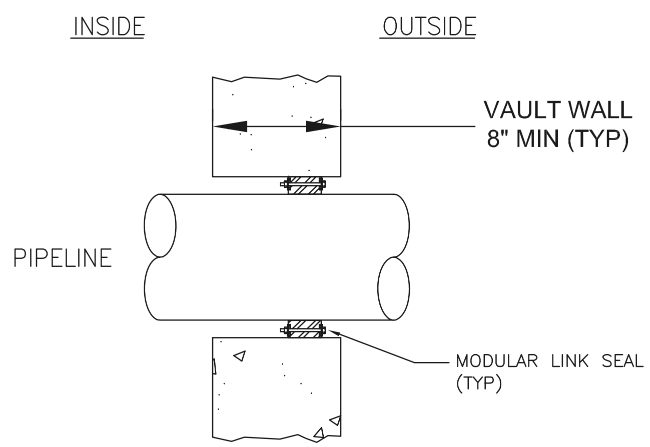
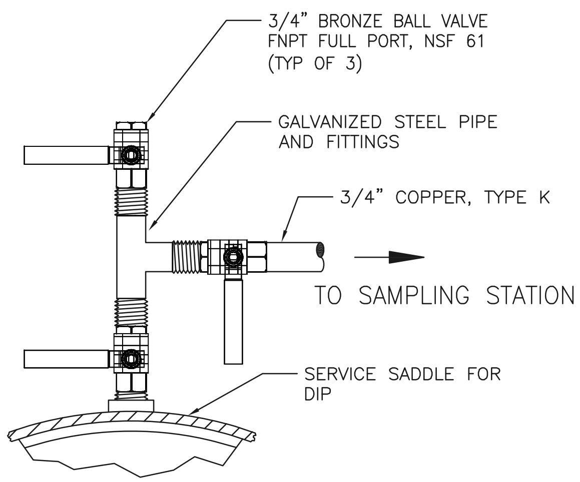


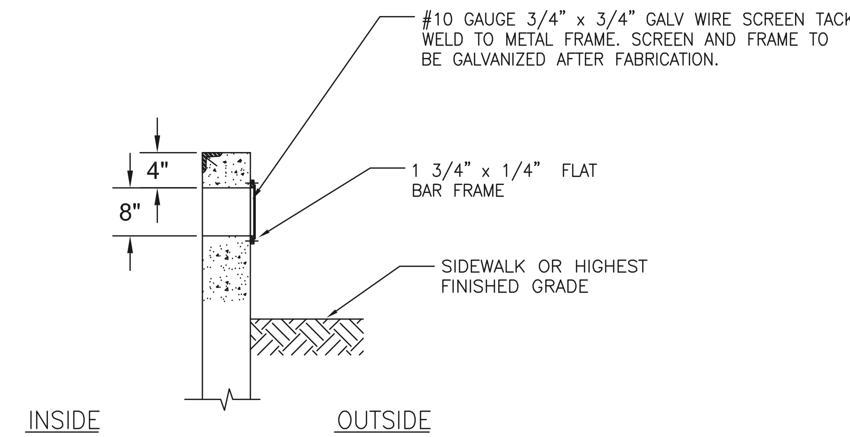
PIPELINE PENETRATION

DETAIL 1 / 0000M25
SCALE: NTS



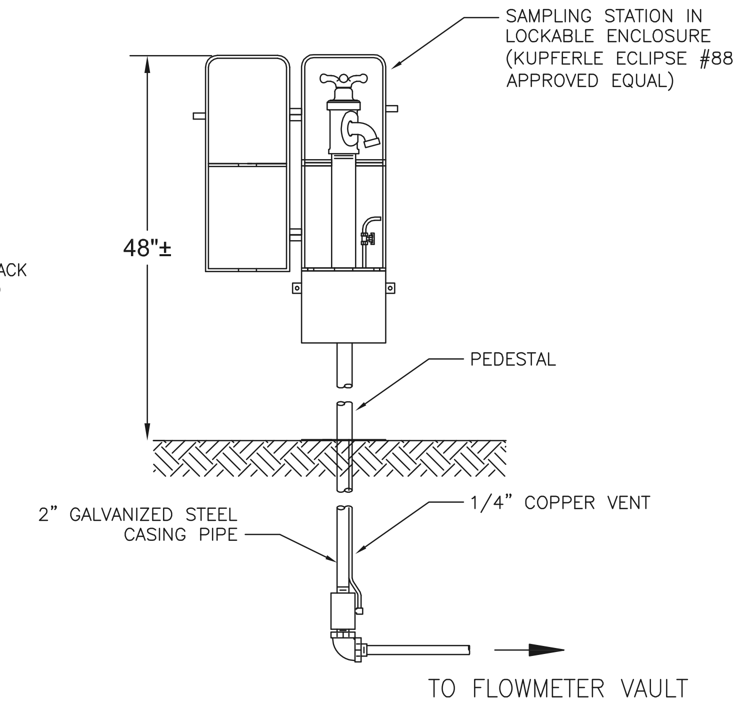
SAMPLING LINE

DETAIL 2 / 0000M25
SCALE: NTS



AIR VENT

DETAIL 3 / 0000M25
SCALE: NTS



SAMPLING STATION

DETAIL 4 / 0000M25
SCALE: NTS

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
FLOW METER DETAILS – 2

CALIFORNIA
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CALIFORNIA AMERICAN WATER

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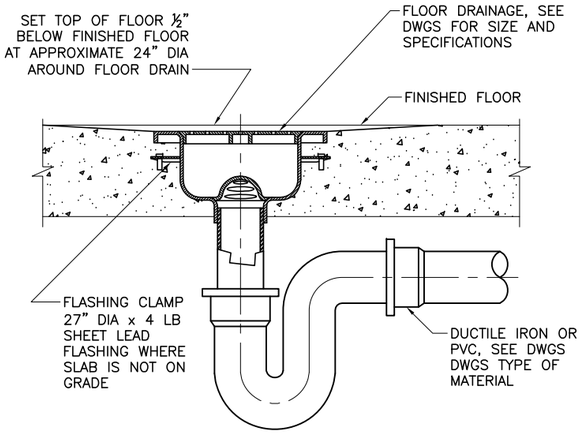
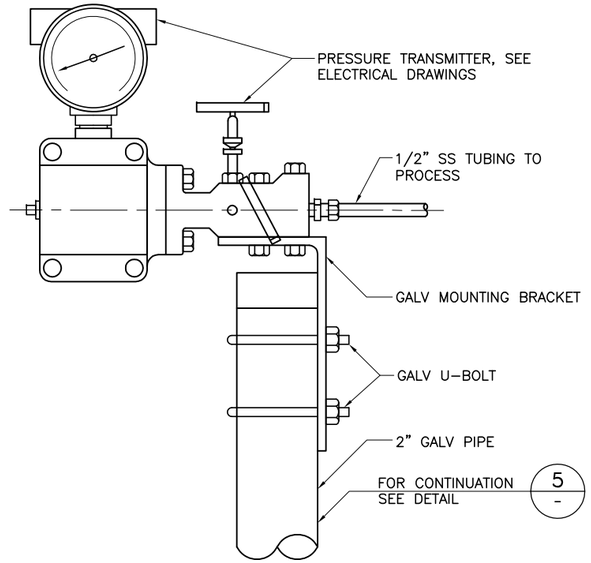
0000M26

10000000M26



FLOOR DRAIN 2/-
SCALE: NTS



INSTRUMENTATION MOUNTING DETAIL 2/-
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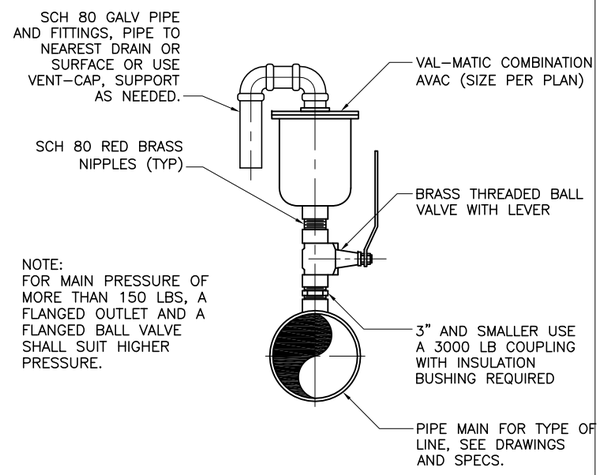
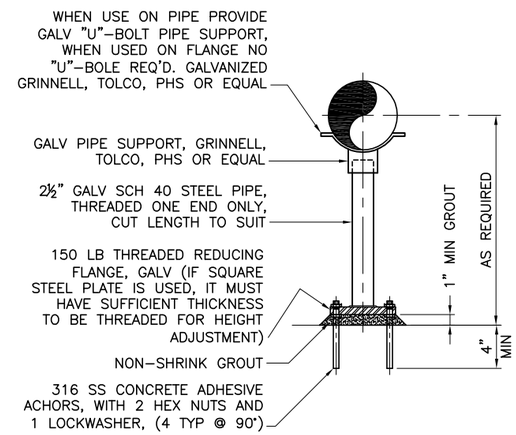
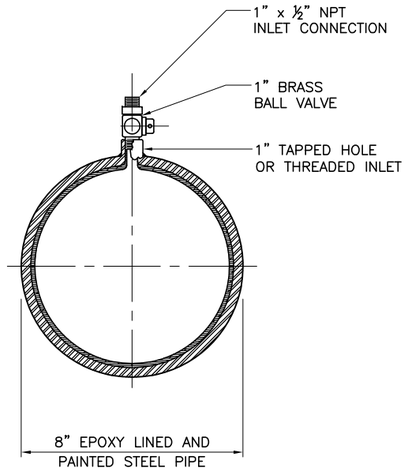


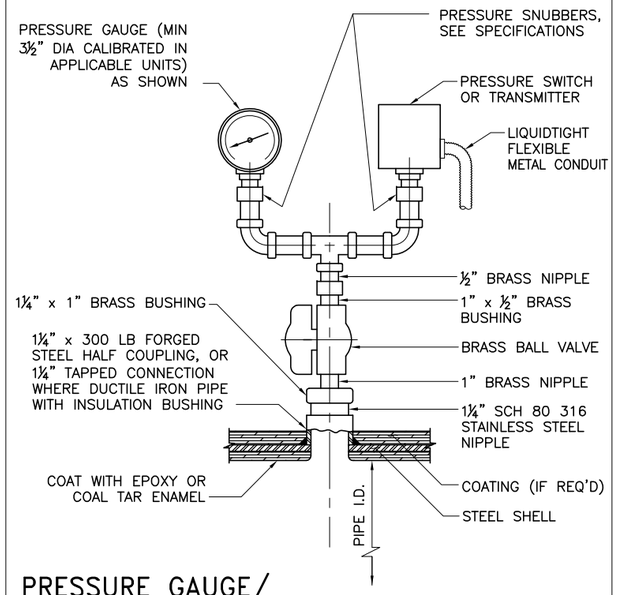
AIR VACUUM/ AIR RELEASE ASSEMBLY 3/-
SCALE: NTS



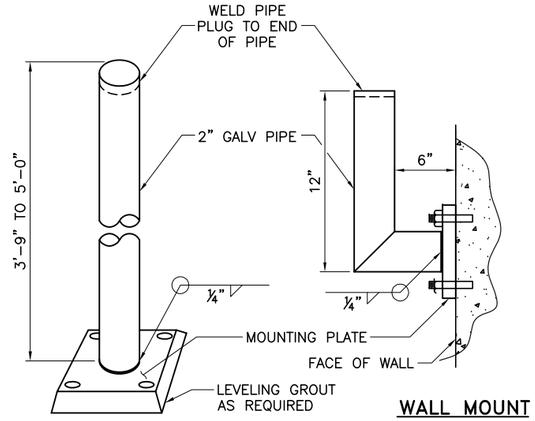
PIPE SUPPORT 4/0000M25
SCALE: NTS



SAMPLE PORT 5/-
SCALE: NTS



PRESSURE GAUGE/ TRANSMITTER ASSEMBLY WITH SEAL 6/0000M25
SCALE: NTS



FLOOR STAND

WALL MOUNT

FLOOR STAND / WALL MOUNT 7/-
SCALE: NTS

NOTE:
1. TYPICAL MOUNTING PLATE: 6" x 6" x 3/16" WITH FOUR 5/8" BOLT HOLES.
2. PROVIDE FOUR 2" x 9/16" CAPSULE ANCHOR BOLTS.

REVISIONS

REGISTERED PROFESSIONAL ENGINEER JENNIFER A. HYMAN No. C-50928 CIVIL STATE OF CALIFORNIA
8/12/15

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
MISCELLANEOUS VAULT DETAILS

CALIFORNIA AMERICAN WATER

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CALIFORNIA AMERICAN WATER

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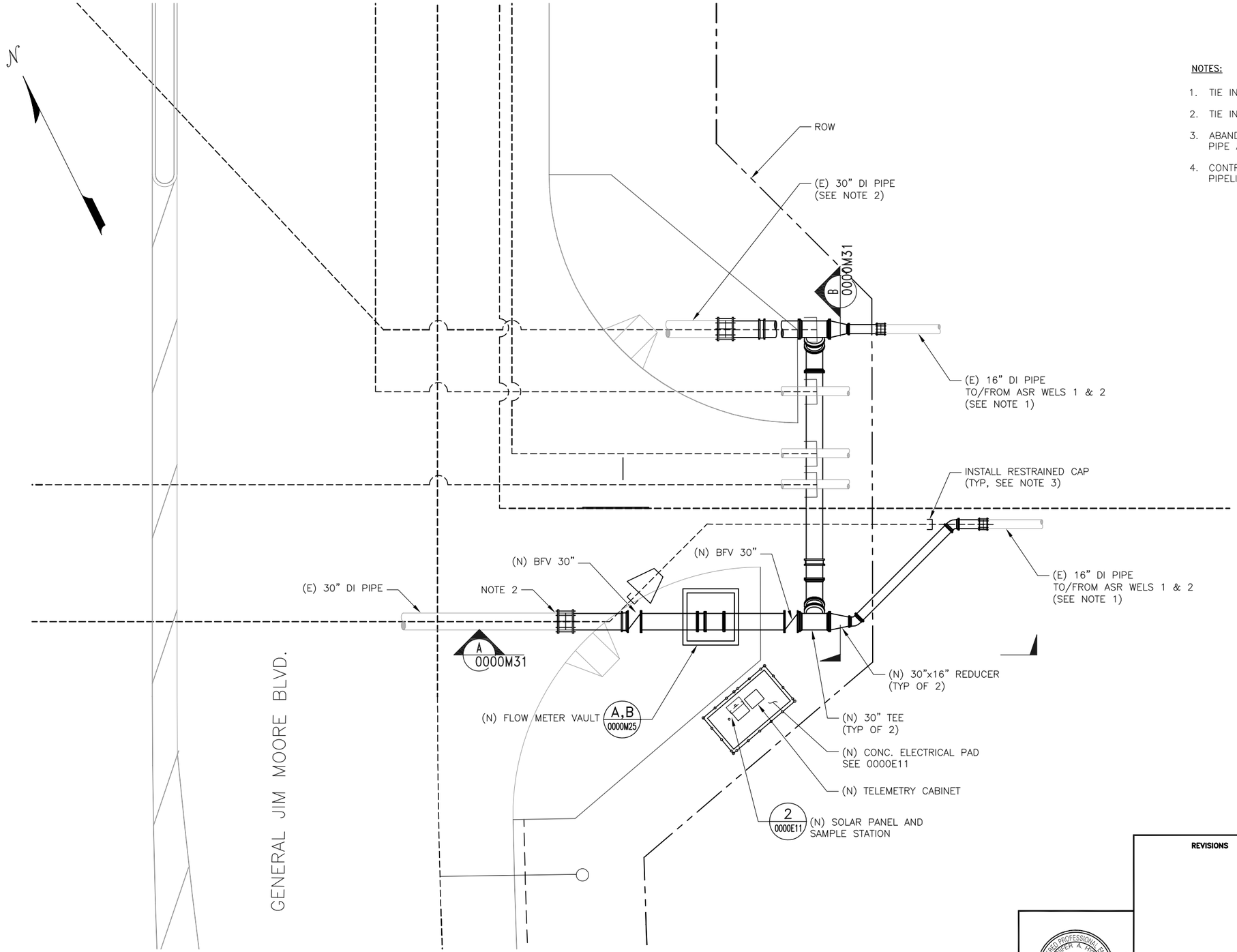
0000M27

10000000M27



ASR FLOW METER AND PIPING PLAN (ASR PIPELINES EXTENSION) 1 2002C01
SCALE: 1"=100'

NOTES:

1. TIE INTO EXISTING 16–IN PIPE WITH RESTRAINED FLEX COUPLING.
2. TIE INTO EXISTING 30–IN PIPE WITH RESTRAINED FLEX COUPLING.
3. ABANDON PIPE IN PLACE BY CAPPING EACH END. REMOVE EXISTING PIPE AS NECESSARY TO INSTALL NEW PIPE.
4. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS AND LAYOUT PIPELINES PRIOR TO ORDERING MATERIALS.

REGISTERED PROFESSIONAL ENGINEER JENNIFER A. HYMAN No. C-50926 CIVIL STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
ASR WELLS 1 & 2 PIPING UPGRADES

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0000M30

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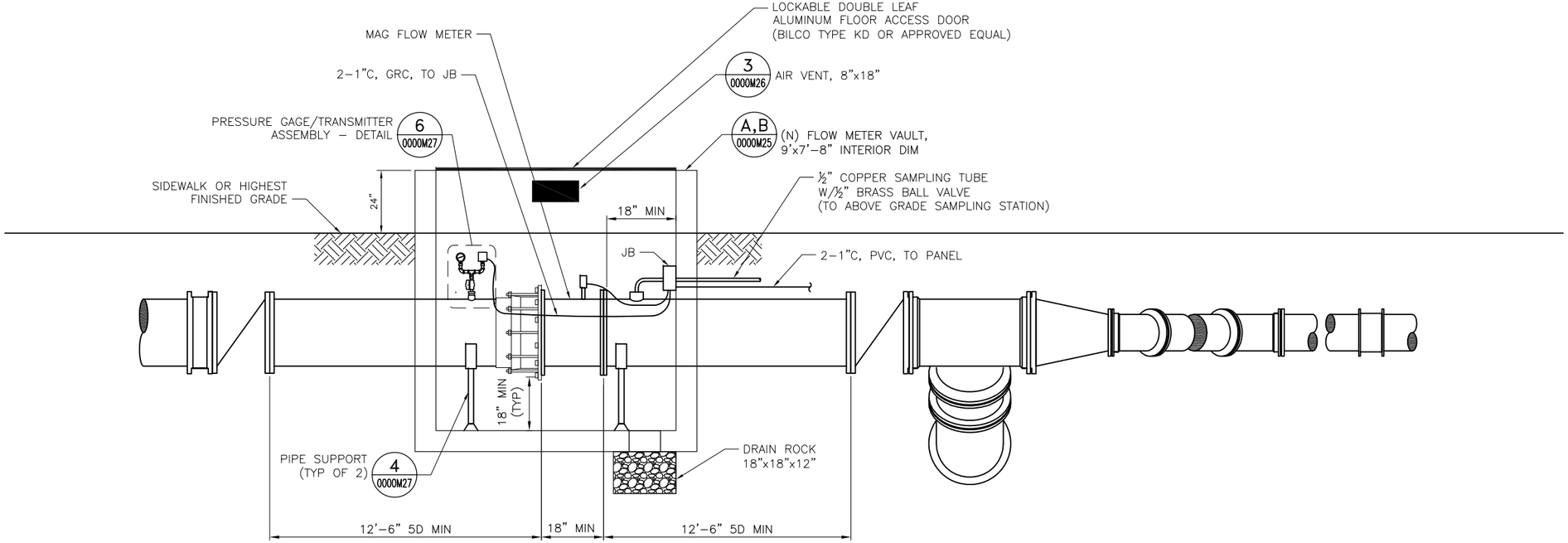
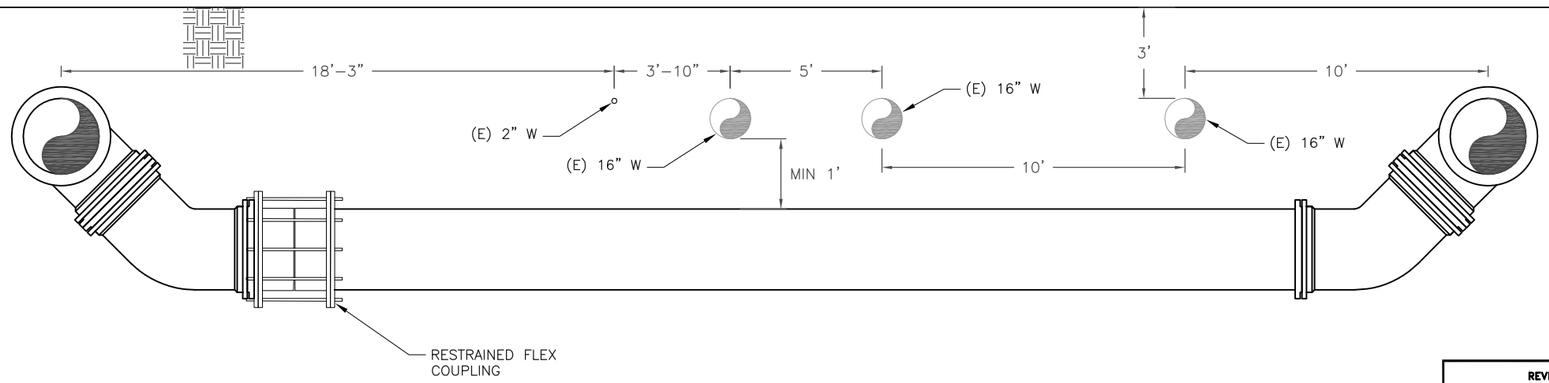


SECTION A
SCALE: 1"=40'
0000M30



SECTION B
SCALE: 1"=30'
0000M30

REGISTERED PROFESSIONAL ENGINEER
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8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
ASR WELLS 1 & 2 PIPING DETAILS

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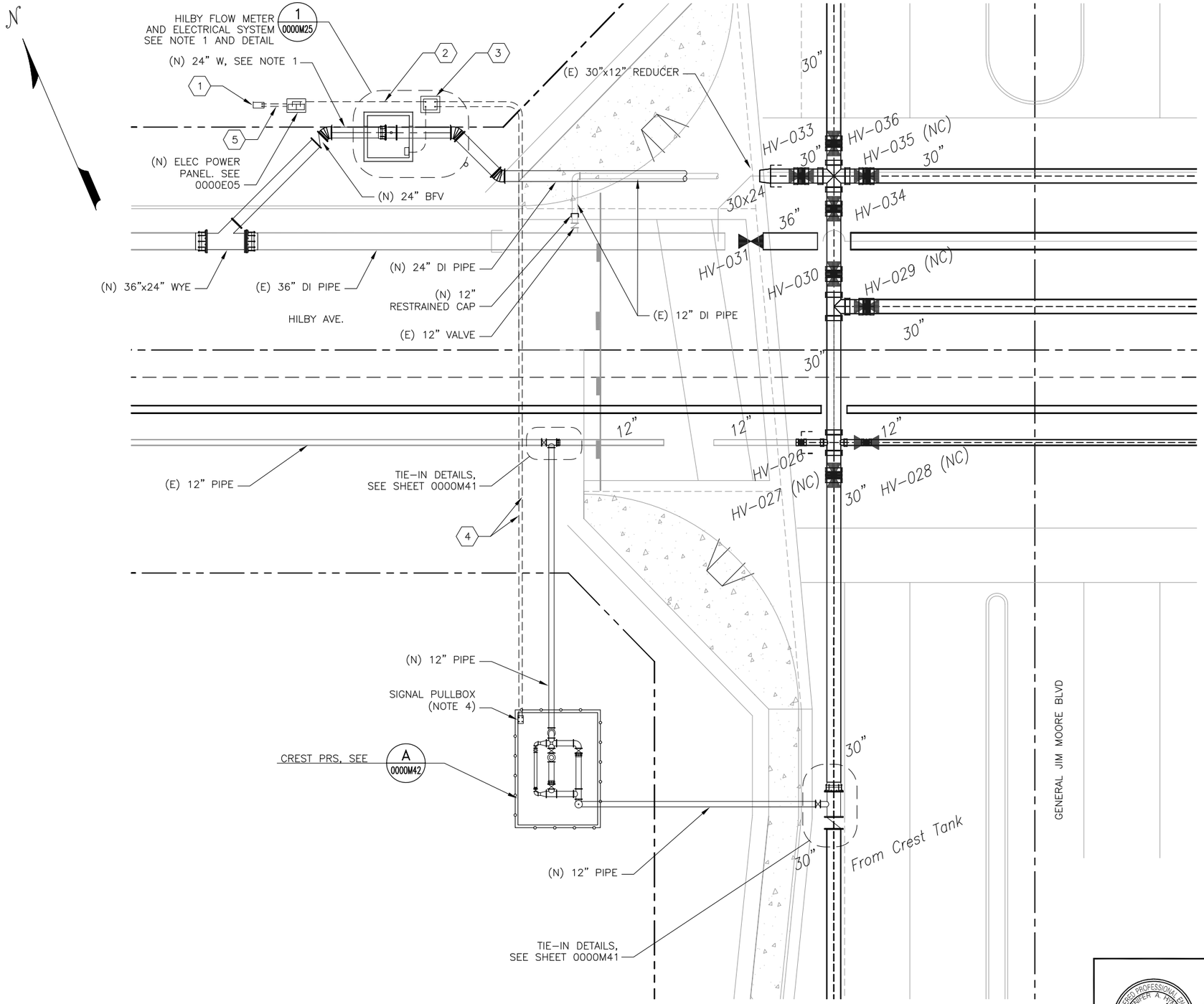

CREST PRS AND HILBY FLOW METER TIE-IN PLAN (MONTEREY PIPELINE) 1 1001C43
SCALE: 1"=10'

NOTES:

1. FOR HILBY FLOW METER PIPING:
   a. REMOVE 30"X12" REDUCER AND TIE IN NEW 24" PIPE WITH NEW 30"X24" REDUCER.
   b. REMOVE EAST – WEST PORTION OF EXISTING 12" PIPE AND LAY NEW 24" PIPE IN SAME LOCATION.
   c. INSTALL NEW 24" PIPE TO NEW FLOW METER VAULT LOCATED JUST BEHIND SIDEWALK WITH POWER AND TELEMETRY AS SHOWN ON SHEET 0000M25 AND ASSOCIATED ELECTRICAL DRAWINGS.
   d. TIE IN ON WEST END WITH 24"x36" TEE SIMILAR TO 0000M25 DETAIL 1.
   e. ABANDON EXISTING 12" WATER LINE BY CAPPING END OF ABANDONED PIPE AND VALVE WITH RESTRAINED CAP.
2. COORDINATE WITH OWNER FOR THEM TO DO SHUTDOWNS FOR TIE-INS.
3. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND LAYOUT PIPING, VAULT AND ELECTRICAL FOR OWNER REVIEW BEFORE ORDERING EQUIPMENT AND PARTS.
4. AT PRS, PROVIDE PRESSURE TRANSMITTERS, WIRE TO CONTROL PANEL AT HILBY FLOW METER STATION. PROVIDE SPARE CONDUIT WITH PULLWIRE.

NUMBERED NOTES:

1. PROVIDE 13x24-INCH PULLBOX FOR POWER CONDUITS.
2. ROUTE 1"C TO NEW TELEMETRY CONTROL CABINET, 120V, 2#12, #12 GND.
3. HILBY PIPELINES TELEMETRY CONTROL CABINET. SEE SHEET E10.
4. PROVIDE 2, 1 ½"C TO CREST PRS: 1 WITH 2-TSP#16; 1 CONDUIT AS SPARE, W/PULLWIRE.
5. ROUTE 2, 1 ½"C FROM MINI POWER CENTER TO PULLBOX.

REGISTERED PROFESSIONAL ENGINEER JENNIFER A. HYMAN No. C-50926 CIVIL STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
CREST PRS AND HILBY FLOW METER PIPING PLAN

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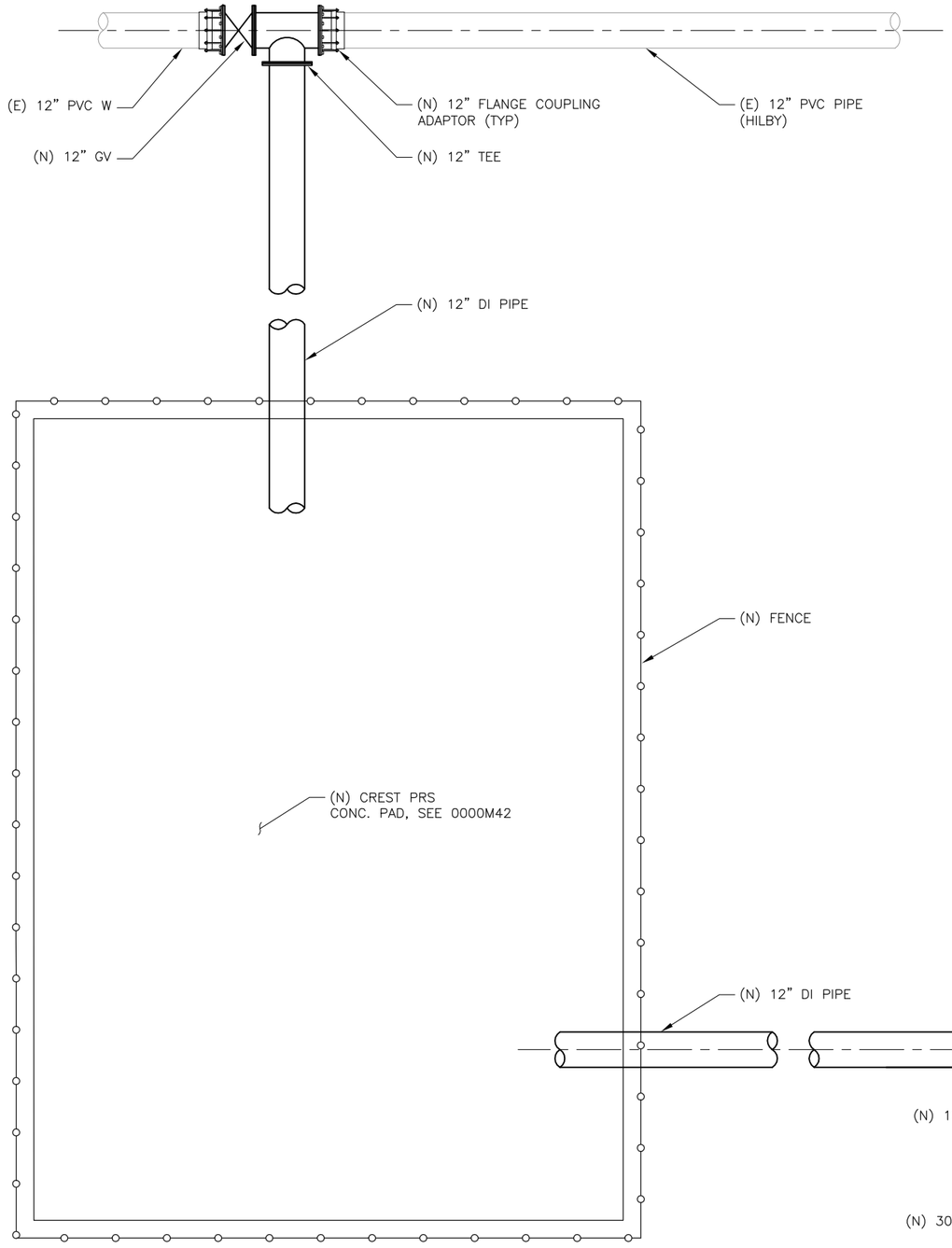

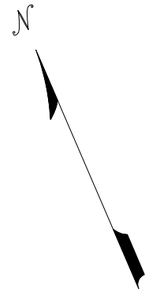

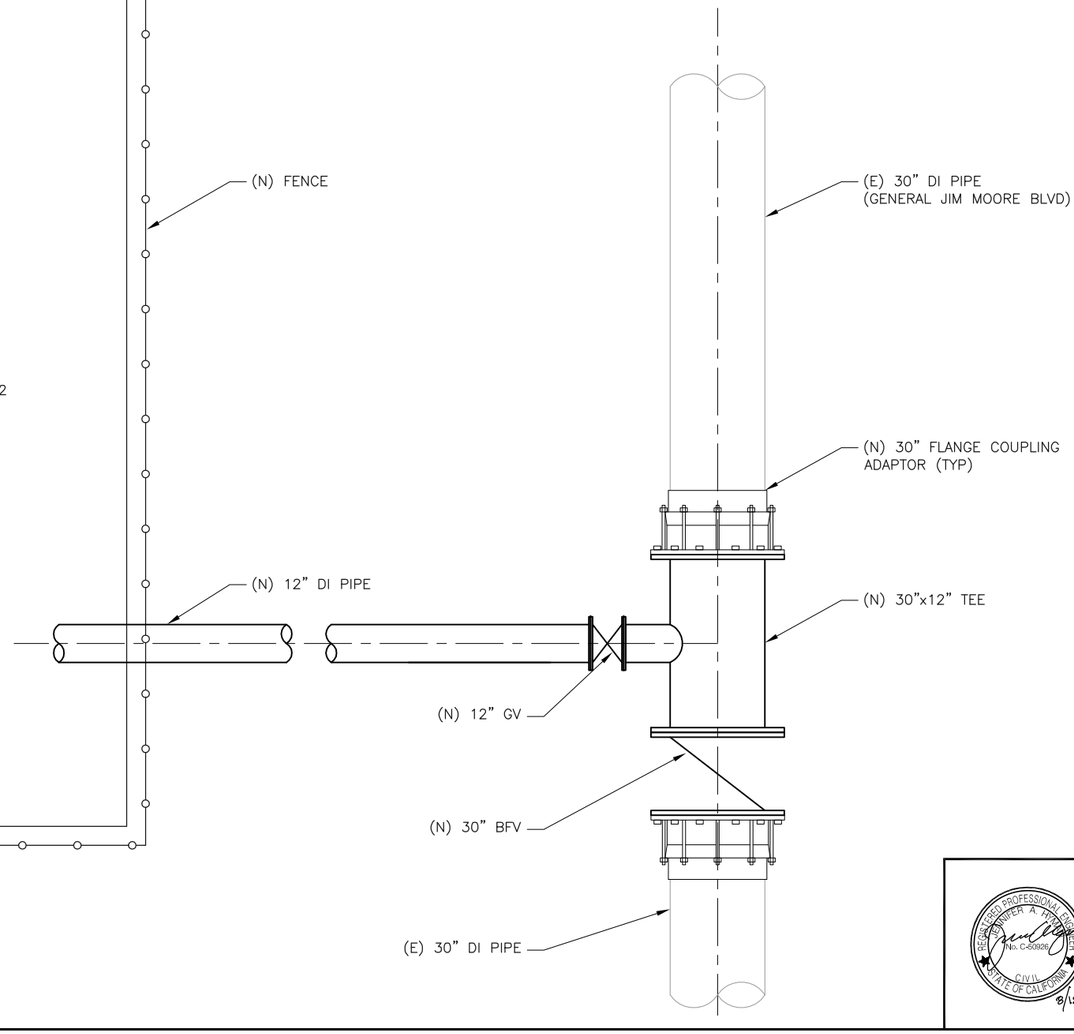

REGISTERED PROFESSIONAL ENGINEER
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8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
CREST PRS TIE-IN DETAILS

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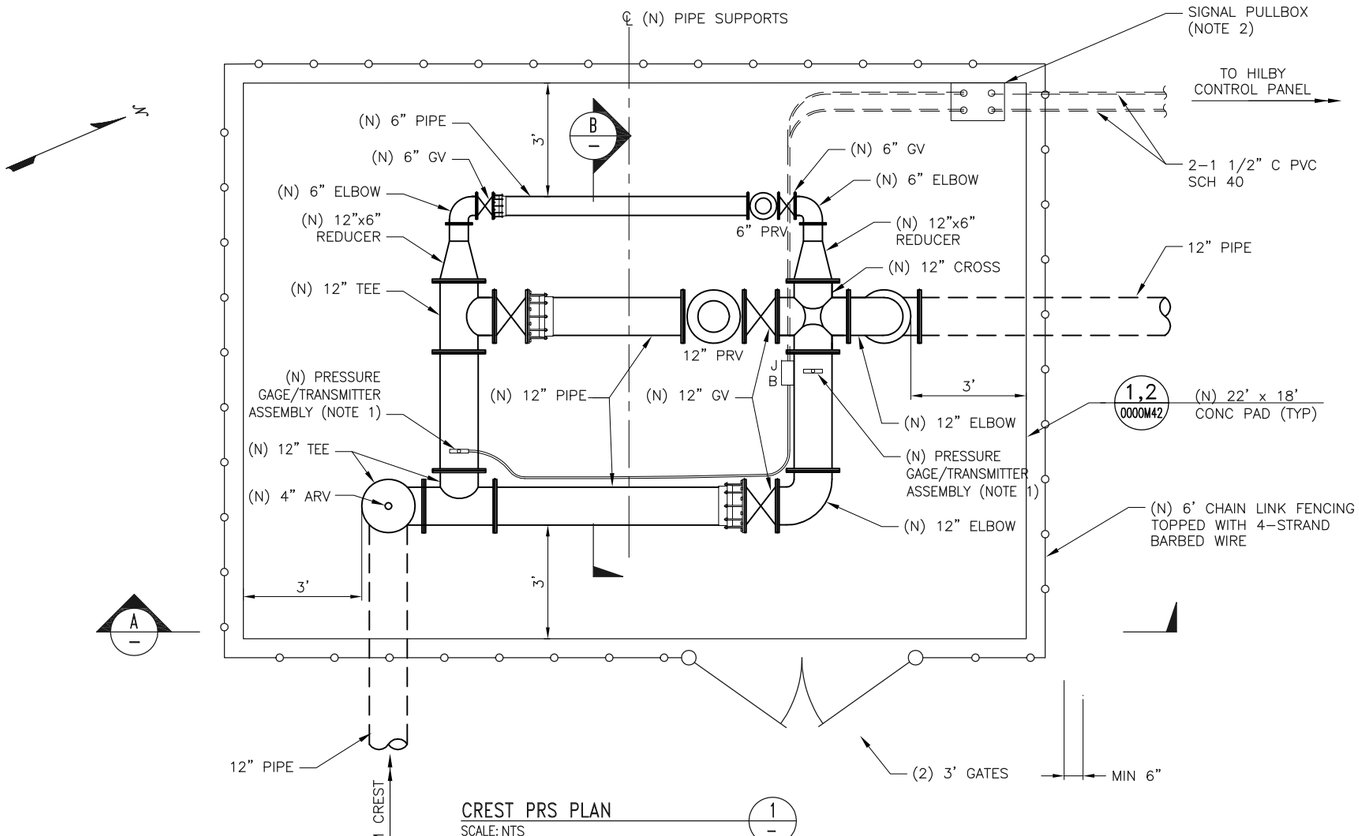
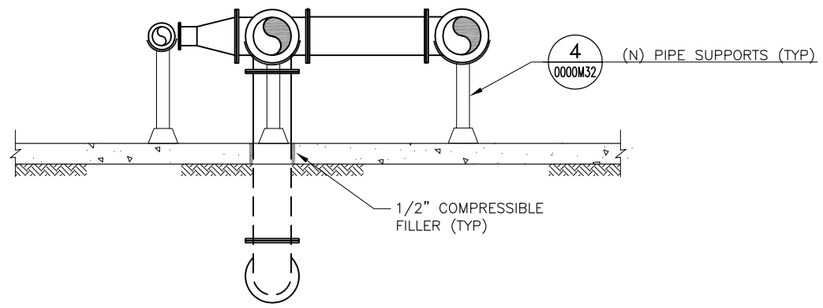


CREST PRS PLAN (1)
SCALE: NTS



SECTION (B)
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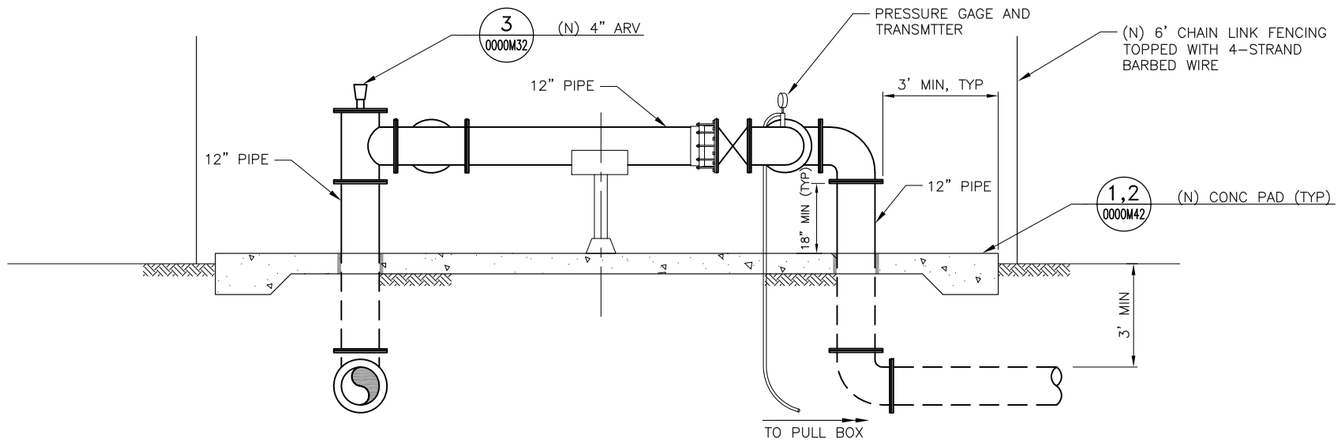

CREST PRS SECTION (A)
SCALE: NTS

NOTES:

1. WIRE UPSTREAM AND DOWNSTREAM PRESSURE TRANSMITTERS TO SEND THE DATA TO THE DESAL PLANT SCADA. INSTALL CONDUIT AND WIRING TO NORTH FLOW METER VAULT ACROSS THE STREET OR INSTALL NEW TELEMETRY AND ANTENNA AT THIS SITE. SUBMIT WIRING AND SCADA PLAN TO OWNER FOR REVIEW.
2. PROVIDE 12"x17" PULLBOX FOR SIGNAL WIRING. SEE 0000M25 FOR TYPICAL CONSTRUCTION DETAILS.

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8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
CREST PRS DETAILS – 1

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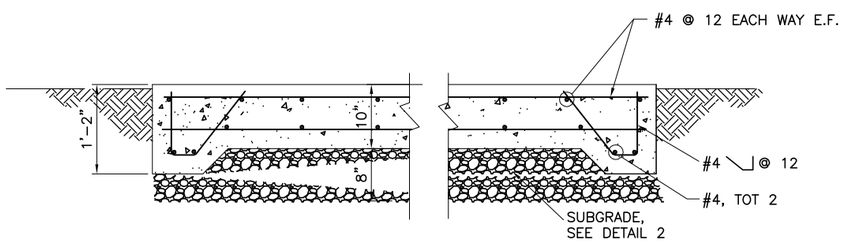
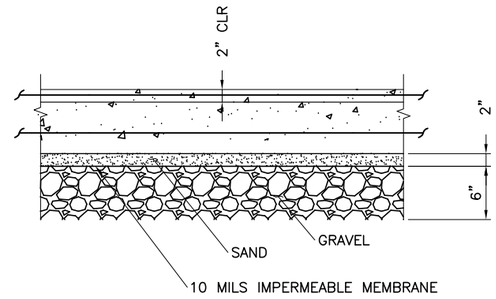


TYPICAL EQUIPMENT PAD

DETAIL 1 / SCALE: NTS



TYPICAL SUBGRADE FOR MAT FOUNDATION

DETAIL 2 / SCALE: NTS

NOTES:

1. SLOPE PAD AWAY FROM CENTER ON ALL SIDES SO WATER DRAINS OFF EASILY.
2. PROVIDE 1-#4x4'-0" DIAGONAL TOP AND BOTTOM AT EACH PAD PENETRATION.

REGISTERED PROFESSIONAL ENGINEER JENNIFER A. HYMAN No. C-50926 CIVIL STATE OF CALIFORNIA 8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
CREST PRS DETAILS - 2

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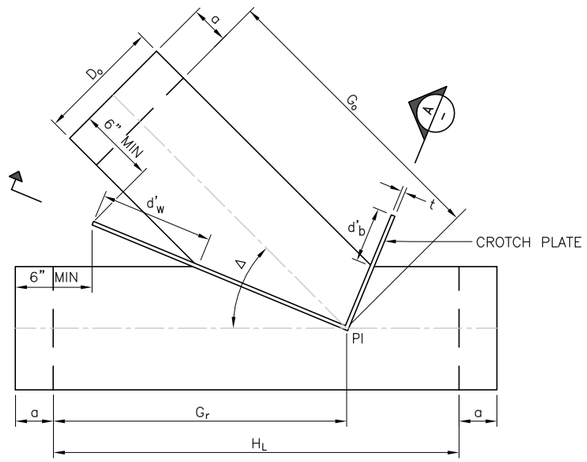
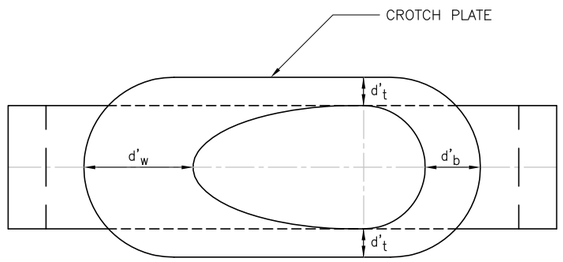
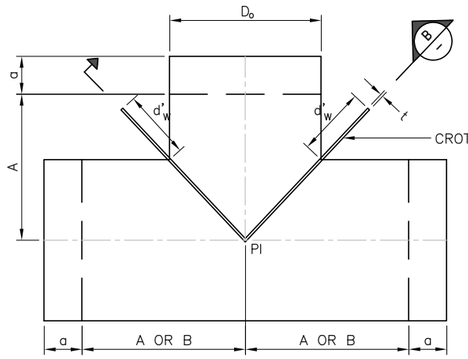


PLAN

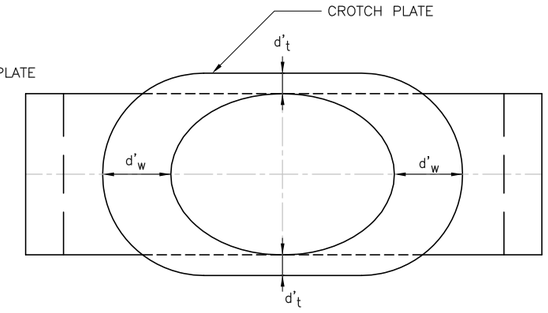


SECTION A
SCALE: NTS

WYE BRANCH



PLAN



SECTION B
SCALE: NTS

TEE

DEFINITIONS

a	ADDITIONAL LENGTH PER JOINT REQUIREMENTS (SEE NOTE 10)
A	LENGTH OF A TEE OR CROSS (SEE NOTE 10)
B	LENGTH OF REDUCING TEE OR CROSS (SEE NOTE 10)
D_o	OUTLET DIAMETER
Δ	ANGLE OF DEFLECTION (°)
SL	SPRINGLINE ELEVATION AT P.I. (FT)
HGL	HYDRAULIC GRADE LINE ELEVATION AT P.I. (FT)
M	MULTIPLIER OF CROSS-SECTIONAL AREA OF REPLACED STEEL
PI	POINT OF INTERSECTION (SEE NOTE 10)
t_w	MINIMUM THICKNESS OF CROTCH PLATE (IN)
d'_b	MINIMUM DEPTH OF PLATE AT ACUTE CROTCH (IN)
d'_t	MINIMUM DEPTH OF PLATE AT OBTUSE CROTCH (IN)
d'_o	MINIMUM DEPTH OF PLATE AT TOP AND BOTTOM (IN)
r	MINIMUM OUTSIDE RADIUS OF PLATE AT BOTH CROTCHES (IN)
G_o	LENGTH OF OUTLET LEG (SEE NOTE 10)
G_r	LENGTH OF OUTLET RUN (SEE NOTE 10)
H_L	LENGTH OF LATERAL RUN (SEE NOTE 10)

NOTES

1. DIMENSIONS OF CROTCH PLATES SHOWN ON THIS PLAN ARE MINIMUM VALUES AND ARE SHOWN FOR INFORMATION ONLY. SUBMIT DRAWINGS SHOWING CROTCH PLATE DIMENSIONS THAT ARE BASED UPON A TWO-PLATE CONFIGURATION.
2. COLLAR AND WRAPPER DIMENSIONS ARE NOT SHOWN ON THIS PLAN. SUBMIT COLLAR AND WRAPPER LAYOUTS IN ACCORDANCE WITH THE SPECIFICATIONS.
3. FABRICATE FITTINGS WITH OUTSIDE DIAMETERS THAT MATCH EXISTING PIPELINES AT ALL POINTS OF CONNECTION. ACTUAL OUTSIDE DIAMETERS AND FINISHED INSIDE DIAMETERS OF FITTINGS SHALL MATCH FABRICATED PIPELINES IN ACCORDANCE WITH RESULTS OF POTHOLING, APPROVED PIPELINE SUBMITTALS, AND APPROVED LINING AND COATING SYSTEMS.
4. SCHEDULE AND COORDINATE FABRICATION OF FITTINGS WITH POTHOLING AND CONSTRUCTION SEQUENCING.
5. SUBMIT FABRICATION DRAWINGS SHOWING DIMENSIONS OF WRAPPERS AND COLLARS FOR WYES AND TEES, AS REQUIRED.
6. WHERE BUTT STRAPS ARE REQUIRED THE LENGTH (OR RUN) SHALL BE INCREASED AS REQUIRED.
7. FITTING LENGTHS PER AWWA C208 AS MEASURED ALONG THE PIPE CENTERLINE.

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8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
FABRICATED STEEL FITTING DETAILS -1

CALIFORNIA
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0000M50

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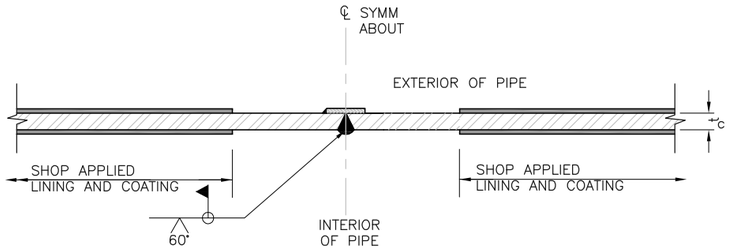
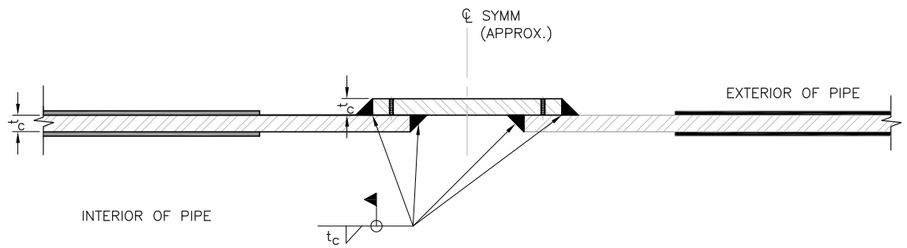
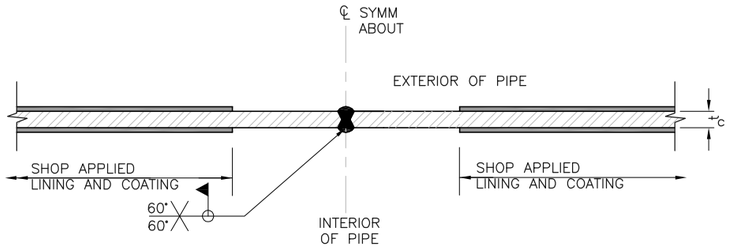


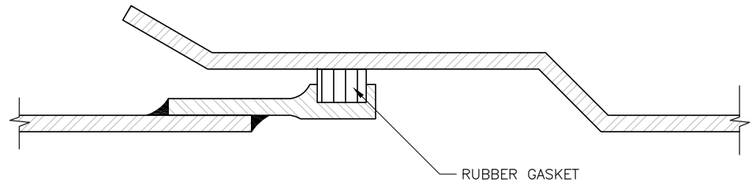
BUTT WELD W/ BACKING PLATE
SCALE: 1/4" = 1'-0"



BUTT STRAP JOINT
SCALE: 1/4" = 1'-0"



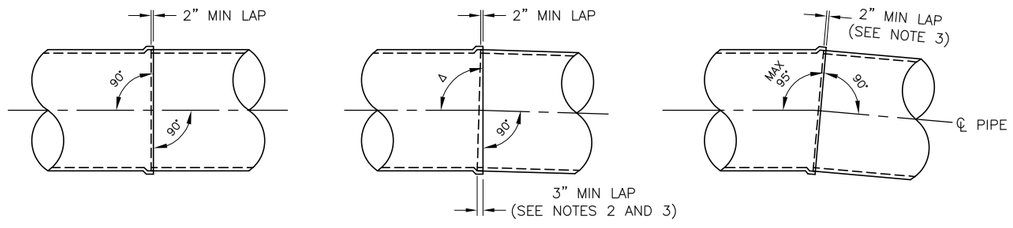
BUTT WELD
SCALE: 1/4" = 1'-0"



CARNEGIE – SHAPE RUBBER GASKET JOINT
SCALE: NTS

NOTES:

1. EACH TEST HOLE SHALL BE 1/4-INCH NPT WITH A THREADED STEEL PLUG. EQUALLY SPACE EIGHT (8) TEST HOLES AROUND CIRCUMFERENCE OF PIPE FOR EACH BUTT STRAP CLOSURE.
2. REMOVE EXISTING LINING AND COATING AND OVERLAP NEW LINING AND COATING 3" MINIMUM.
3. FIELD APPLY HOLD LINING AND COATING AFTER INSTALLATION PER SPECIFICATIONS.



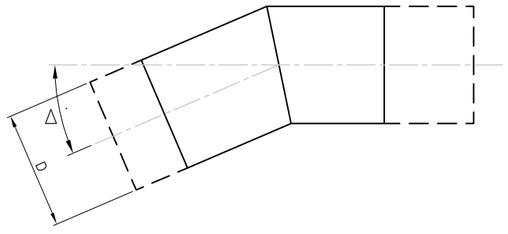
WELDED BELL AND SPIGOT JOINT
SCALE: NTS

DEFINITIONS

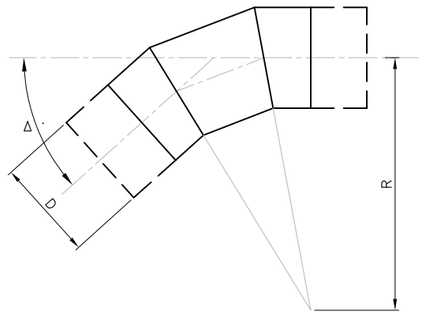
D	=	NOMINAL PIPE SIZE (IN)
OD	=	OUTSIDE DIAMETER OF STEEL CYLINDER (IN)
Δ	=	ANGLE OF DEFLECTION (°)
R	=	RADIUS OF CURVATURE (FT)

ELBOW NOTES

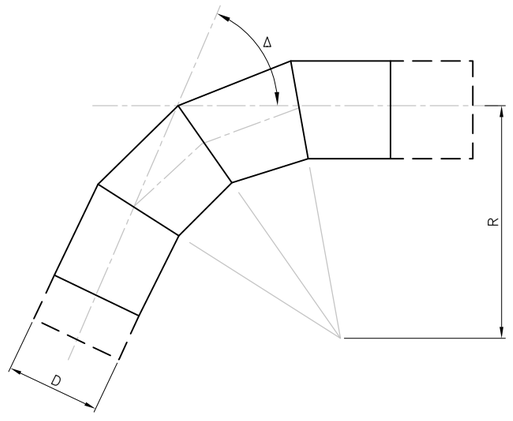
1. DEFLECTION ANGLES SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE SHOWN FOR INFORMATION ONLY. SUBMIT DRAWINGS THAT SHOW ELBOW DIMENSIONS THAT ARE BASED UPON OUTSIDE DIAMETERS OF FABRICATED PIPELINES AND ASSOCIATED RADII OF CURVATURE.
2. ACTUAL OUTSIDE DIAMETERS AND FINISHED INSIDE DIAMETERS OF FITTINGS SHALL MATCH FABRICATED PIPELINES IN ACCORDANCE WITH RESULTS OF POTHOLING, APPROVED PIPELINE SUBMITTALS, AND APPROVED LINING AND COATING SYSTEMS.
3. SCHEDULE AND COORDINATE FABRICATION OF PIPE AND APPURTENANCES WITH POTHOLING AND CONSTRUCTION SEQUENCING.



TWO-PIECE ELBOW (0 TO 22.5°)
SCALE: NTS



THREE-PIECE ELBOW (22.5° TO 45°)
SCALE: NTS



FOUR-PIECE ELBOW (45° TO 67.5°)
SCALE: NTS

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REVISIONS

TRANSMISSION MAINS FOR MPWSP
MECHANICAL
PIPELINE DETAILS
FABRICATED STEEL FITTING DETAILS -2

CALIFORNIA
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CALIFORNIA AMERICAN WATER

DRAWN BY C. SOMERA
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH

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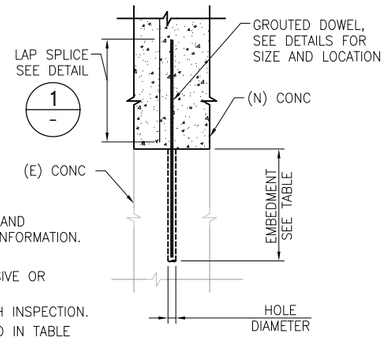
REBAR LAP SPLICE LENGTH SCHEDULE (INCHES)						
CLASS B LAP SPLICE	f'c = 3000 psi		f'c = 4000 psi		f'c = 5000 psi	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	29	21	25	18	22	17
#4	38	28	33	25	30	22
#5	48	36	42	31	37	28
#6	58	43	50	37	45	33
#7	81	62	70	54	63	48
#8	93	71	80	62	72	55
#9	104	80	90	70	81	62
#10	118	90	102	78	91	70
#11	131	100	113	87	101	78

NOTES:

1. DEVELOPMENT LENGTH AND LAP SPLICE LENGTH REQUIREMENTS ARE BASED ON ACI 318-11. SPLICE LENGTHS SHOWN IN TABLE ABOVE ARE IN INCHES.
2. TENSION BAR LAP SPLICES SHALL CONFORM TO ACI CLASS B SPLICE LAP LENGTHS TYPICAL, UNLESS NOTED OTHERWISE. WHEN CLASS A SPLICE IS SPECIFIED, SPLICE LENGTHS ARE 77% OF THE TABULATED CLASS B SPLICE LENGTHS.
3. TOP REINFORCEMENT IS DEFINED AS HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICES.
4. LAP SPLICE LENGTHS ARE BASED ON GRADE 60 REINFORCING AND NORMAL WEIGHT AGGREGATE CONCRETE.
5. EMBEDMENT LENGTH "E" WHERE SHOWN ON DRAWINGS IS EQUAL TO CLASS A SPLICE LENGTH (77% OF TABULATED CLASS B LAP SPLICE LENGTH).
6. WHERE 2 DIFFERENT BAR SIZES ARE LAPPED, THE SPLICE LENGTH SHALL BE BASED ON THE LARGER BAR SIZE.

GROUTED DOWELS			
DOWEL SIZE	HOLE ø	EMBEDMENT	TEST LOAD (lbs.)
#3	5/8"	6"	5,200
#4	3/4"	8"	9,600
#5	7/8"	10"	14,800
#6	1"	12"	21,000
#7	1 1/8"	14"	29,000
#8	1 1/4"	16"	38,000
#9	1 3/8"	18"	48,000

THREADED GROUTED DOWELS (A307) & (316 SS)			
DOWEL SIZE	HOLE ø	EMBEDMENT	TEST LOAD (lbs.)
1/2"ø	3/4"	8"	3,800
3/4"ø	1"	12"	8,800
1"ø	1 1/4"	16"	16,000



NOTES:

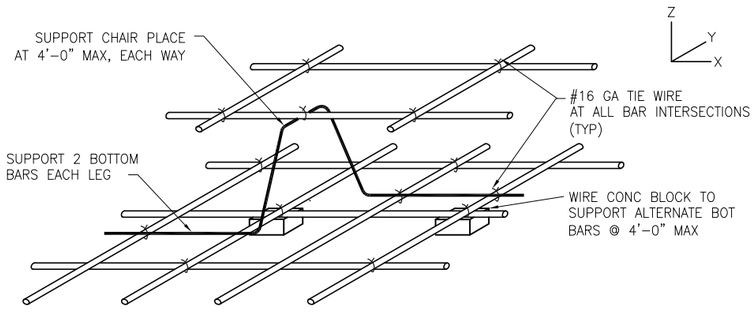
1. SEE DRILLED CONCRETE ANCHOR NOTES ON S2 AND SPECIFICATION SECTION 03250 FOR ADDITIONAL INFORMATION.
2. DOWELS SHALL BE CENTERED IN HOLES.
3. GROUT SHALL BE HIT-RE 500-SD EPOXY ADHESIVE OR APPROVED EQUAL
4. ALL GROUTED DOWELS SHALL BE INSTALLED WITH INSPECTION.
5. TEST 25% OF ALL DOWELS TO TEST LOAD LISTED IN TABLE ABOVE.

GENERAL NOTES:

1. ALL MATERIALS USED IN REINFORCED CONCRETE CONSTRUCTION THAT COULD COME IN CONTACT WITH DRINKING WATER SHALL BE CERTIFIED AS ACCEPTABLE FOR POTABLE WATER USE ACCORDING TO NSF 61.

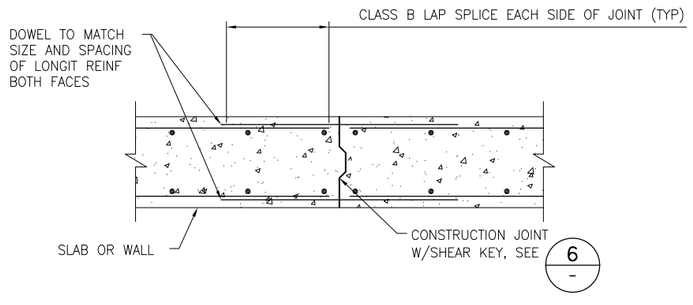
MINIMUM CONCRETE COVER	
MINIMUM CONCRETE COVER (UNLESS OTHERWISE NOTED)	CLEAR COVER
CONCRETE EXPOSED TO WATER	4"
CAST AGAINST AND PERMENENTLY EXPOSED TO EARTH (UNLESS OTHERWISE SHOWN ON DRAWINGS)	3"

TENSION LAP SPLICE AND EMBEDMENT LENGTHS — 1/-
SCALE: NTS



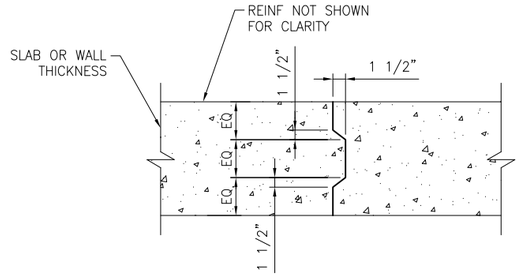
REBAR PLACING DETAIL — 4/-
SCALE: NTS

GROUTED DOWEL DETAIL — 2/-
SCALE: NTS

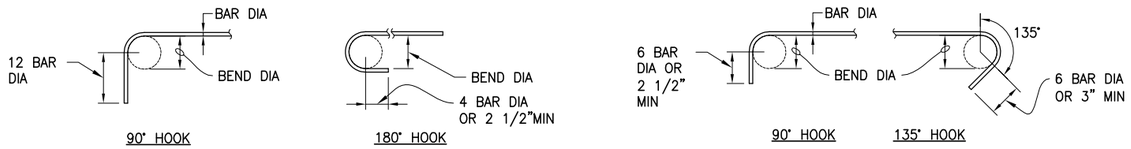


CONSTRUCTION JOINT — 5/-
SCALE: NTS

CONCRETE PROTECTION FOR REINFORCEMENT — 3/-
SCALE: NTS



TYPICAL SHEAR KEY DETAIL — 6/-
SCALE: NTS



TYPICAL BAR BENDING DETAILS — 7/-
SCALE: NTS

MAIN BAR SIZE	MIN BEND DIA
#3 THRU #7	6 BAR DIA
#8 THRU #11	8 BAR DIA

TIE BAR SIZE	MIN BEND DIA
#3 THRU #5	4 BAR DIA
OTHERS	SAME AS MAIN REINF

REGISTERED PROFESSIONAL ENGINEER — JENNIFER A. HYMAN — No. C-50926 — CIVIL — STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
CONCRETE DETAILS

CALIFORNIA AMERICAN WATER

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OAKLAND, CALIFORNIA 94612

DRAWN BY C. SOMERA
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH

DATE AUGUST 2015
PROJECT 60424498

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PAVING SCHEDULE

PAVEMENT REPLACEMENT NOTES

1. CONTRACTOR SHALL REPLACE PAVEMENT PER LOCAL STANDARD WITHIN ONE WEEK AFTER INSTALLATION OF PIPELINE. SEE SPECIFICATION APPENDIX F FOR TRENCH DETAILS FOR EACH LOCAL COMMUNITY.
2. NO MORE THAN 100' OF UNPAVED TRENCH SHALL BE ALLOWED AT ANY TIME.
3. PROVIDE TRAFFIC CONTROL AS REQUIRED BY EACH COMMUNITY.
4. PROVIDE TEMPORARY STRIPING AND MARKING UNTIL PERMANENT PAVMENT IS COMPLETE.
5. TEMPORARY PAVEMENTS SHALL BE REMOVED WITHIN 2 WEEKS AND REPLACED WITH PERMANENT PAVEMENT.
6. CONTRACTOR SHALL INSPECT PAVEMENTS WEEKLY AND MAKE NECESSARY REPAIRS IMMEDIATELY.
7. ANY TRENCH SETTLEMENT > 6" SHALL BE COMPLETELY EXCAVATED DOWN TO PIPELINE TO INSPECT FOR DAMAGE, THEN RESTORED.
8. AFTER 3 MONTHS, CONTRACTOR SHALL INSPECT PAVEMENT WITH ENGINEER AND REPAIR ANY SETTLED SECTIONS. REMOVE PAVEMENT, ADD NECESSARY SUBGRADE MATERIAL, COMPACT, TEST DENSITY, AND THEN RESTORE PAVEMENT.
9. AFTER 3 MONTHS, CONTRACTOR SHALL MILL PAVEMENT 1" AND INSTALL ASPHALT CONCRETE WEARING COURSE PER PAVEMENT REPLACEMENT TABLE BELOW.
10. AFTER MILLING AND PAVING, REPLACE STRIPING AND SIGNAL LOOPS.

MONTEREY PIPELINE

ROAD LOCATION	STATIONS	MILLING EXTENT	PAVEMENT DESCRIPTION
SINEX AVE. TO FREMONT ST.	8+70 TO 146+70	FULL ROAD WIDTH, CURB TO CURB	6" AC PAVEMENT 6" CLASS 2 AB
FREMONT ST.	146+70 TO 173+00	FULL ROAD WIDTH, WEST BOUND LANES ONLY	6" AC PAVEMENT 6" CLASS 2 AB
FREMONT ST.	173+00 TO 175+00	FULL ROAD WIDTH, EAST BOUND AND WEST BOUND LANES	6" AC PAVEMENT 6" CLASS 2 AB
AGUAJTO RD.	175+00 TO 187+00	FULL ROAD WIDTH, WEST BOUND LANES ONLY	6" AC PAVEMENT 6" CLASS 2 AB
MARK THOMAS DR.	187+00 TO 225+50	FULL ROAD WIDTH, CURB TO CURB	6" AC PAVEMENT 6" CLASS 2 AB
OLD SALINAS HWY	225+50 TO 226+50	FULL ROAD WIDTH, CURB TO CURB AND BRIDGE JOINT	6" AC PAVEMENT 6" CLASS 2 AB
GARDEN RD.	229+50 TO 230+30	FULL ROAD WIDTH, CURB TO CURB AND BRIDGE JOINT	6" AC PAVEMENT 6" CLASS 2 AB
FAIRGROUND RD. TO AIRPORT RD.	230+30 TO 253+00	FULL ROAD WIDTH, CURB TO CURB AND PARKING ZONES	6" AC PAVEMENT 6" CLASS 2 AB
AIRPORT RD.	253+00 TO 256+00	FULL ROAD WIDTH, CURB TO CURB	6" AC PAVEMENT 6" CLASS 2 AB
FREMONT ST.	256+00 TO 277+50	NO MILLING OR OVERLAY IN THIS AREA	8" CONCRETE PAVEMENT 8" CLASS 2 AB
FREMONT ST.	277+50 TO 297+00	FULL ROAD WIDTH, NORTH BOUND LANES ONLY	6" AC PAVEMENT 6" CLASS 2 AB
HILBY AVE.	297+00 TO 365+50	FULL ROAD WIDTH, CURB TO CURB	6" AC PAVEMENT 6" CLASS 2 AB
GENERAL JIM MOORE BLVD.	365+50 TO 366+70	FULL INTERSECTION AT HILBY, CURB TO CURB	8" AC PAVEMENT 8" CLASS 2 AB

TRANSFER PIPELINE

ROAD LOCATION	STATIONS	MILLING EXTENT	PAVEMENT DESCRIPTION
GENERAL JIM MOORE	23+00 TO 80+00	FULL ROAD WIDTH, NORTH BOUND AND SOUTHBOUND LANES	5" AC PAVEMENT 8" CLASS 2 AB
GENERAL JIM MOORE	80+00 TO 92+50	FULL ROAD WIDTH, SOUTH BOUND LANES ONLY	5" AC PAVEMENT 8" CLASS 2 AB
GENERAL JIM MOORE	92+50 TO 132+50	FULL ROAD WIDTH, NORTH BOUND LANES ONLY	5" AC PAVEMENT 8" CLASS 2 AB
LIGHTFIGHTER	132+50 TO 153+50	FULL ROAD WIDTH, EAST BOUND LANES ONLY	5" AC PAVEMENT 12" CLASS 2 AB
LIGHTFIGHTER / 1ST AVE.	153+50 TO 155+00	FULL INTERSECTION, ALL LANES	5" AC PAVEMENT 12" CLASS 2 AB
DEL MONTE BLVD.	276+50 TO 287+45	FULL ROAD WIDTH, SOUTH BOUND LANES ONLY	8" CONC PAVEMENT, 8" CLASS 2 AB 2" AC WEARING COURSE
PALM AVE.	300+30 TO 300+75	TRENCH + 5' EACH SIDE	6" AC PAVEMENT, 12" AB
RESERVATION RD.	319+60 TO 320+20	TRENCH + 5' EACH SIDE	6" AC PAVEMENT, 12" AB
BEACH RD.	342+60 TO 343+70	TRENCH + 5' EACH SIDE	6" AC PAVEMENT, 12" AB
MARINA GREEN DR.	369+70 TO 370+20	TRENCH + 5' EACH SIDE	6" AC PAVEMENT, 12" AB
CEMEX DR.	420+20 TO 420+90	TRENCH + 5' EACH SIDE	6" AC PAVEMENT, 6" AB
DEL MONTE BLVD.	460+30 TO 461+10	FULL WIDTH OF TAMC ROW, EAST BOUND AND WEST BOUND LANES	8" CONC PAVEMENT, 8" CLASS 2 AB 2" AC WEARING COURSE
NEPONSET RD.	472+00 TO 473+00	FULL ROAD WIDTH AND DRIVEWAYS	6" AC PAVEMENT, 6" AB
NEPONSET RD.	473+00 TO 520+26	FULL ROAD WIDTH AND DRIVEWAYS	6" CLASS 2 AB

TREES

1. NO TREE REMOVAL OR PRUNING OR ROOT CUTTING IS ALLOWED WITHOUT OWNERS APPROVAL.
2. CONTRACTOR SHALL HIRE A LICENSED CA ARBORIST TO INSPECT LIMITS OF WORK AND IDENTIFY ALL TREES.
3. CONTRACTOR SHALL PROTECT ALL TREES WITH ENVIRONMENTAL FENCING AND ORANGE SAFETY FENCING.
4. CONTRACTOR'S ARBORIST SHALL EVALUATE PIPE ALIGNMENT AND ADVISE OWNER IF TRENCHING ACTIVITIES WILL BE HARMFUL TO TREE ROOT SYSTEMS. NOTIFY ENGINEER OF ANY DETREMENTAL IMPACTS SO THAT THE PIPE ALIGNMENT CAN BE ADJUSTED.

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REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
TYPICAL DETAILS
PAVEMENT SCHEDULE

CALIFORNIA
AMERICAN WATER

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DATE AUGUST 2015
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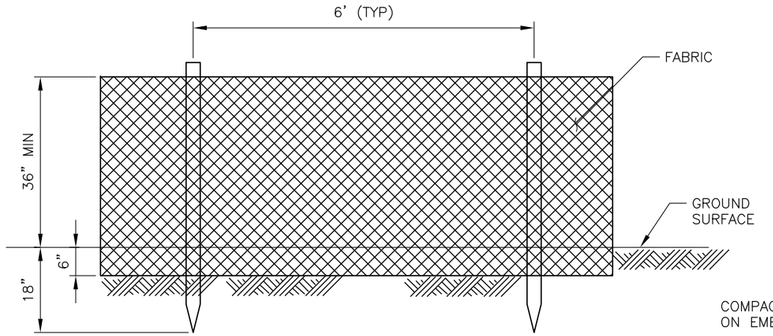
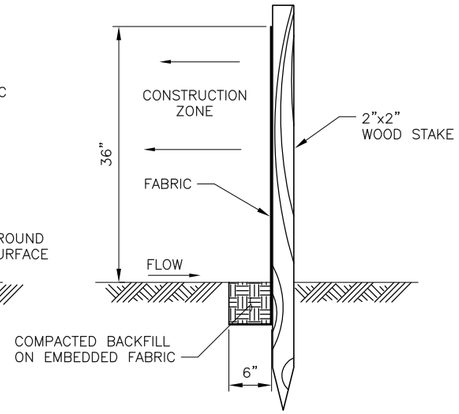
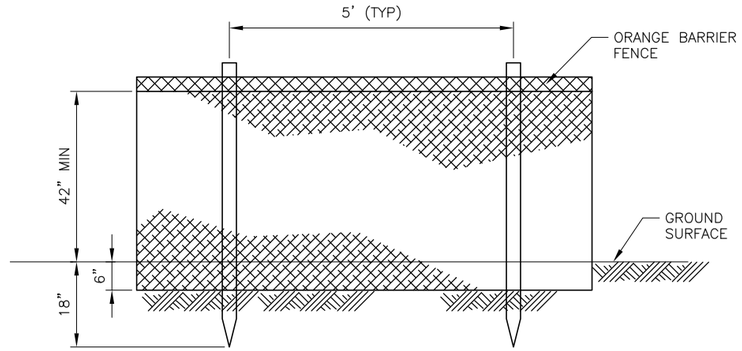


FENCE ELEVATION



FENCE SECTION



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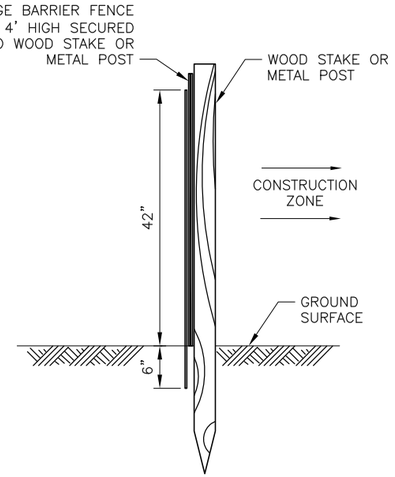
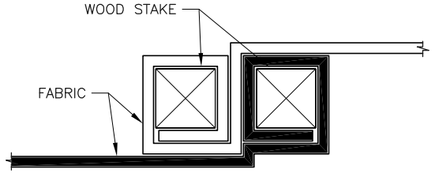
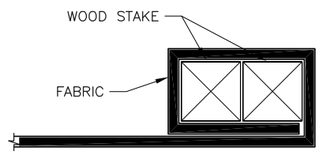


FENCE SECTION

ORANGE BARRIER FENCE DETAIL 2
SCALE: NTS



JOINT SECTION (TOP VIEW)



END SECTION (TOP VIEW)

SILT FENCE DETAIL 1
SCALE: NTS

NOTES

1. STAKES TO OVERLAP & FENCE FABRIC TO FOLD AROUND EACH STAKE ONE FULL TURN. SECURE FABRIC TO STAKE WITH 4 STAPLES.
2. STAKES SHALL BE DRIVEN TIGHTLY TOGETHER TO PREVENT POTENTIAL FLOW THROUGH OF SEDIMENT AT JOINT. THE TOPS OF THE STAKES SHALL BE SECURED WITH WIRE.
3. FOR END STAKE, FENCE SHALL BE FOLDED AROUND TWO STAKES ONE FULL TURN & SECURED WITH 4 STAPLES.
4. STAKE DIMENSIONS ARE NOMINAL.
5. CONTRACTOR SHALL PLACE SILT FENCE AND ORANGE BARRIER FENCE ALONG PERIMETER OF LIMITS OF WORK AS SHOWN IN THESE DRAWINGS AND IN ACCORDANCE WITH THE SPECIFICATIONS.
6. PLACE ORANGE BARRIER FENCE AT DRIP LINE OF ALL TREES WITHIN LIMITS OF WORK.
7. PLACE ORANGE BARRIER FENCE AROUND SPECIAL PLANT COMMUNITIES PER SPEC SECTION 01062.

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REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
EXCLUSION FENCE DETAILS

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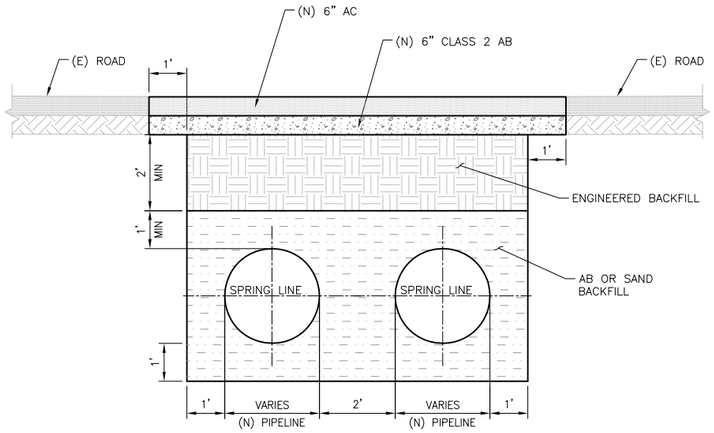
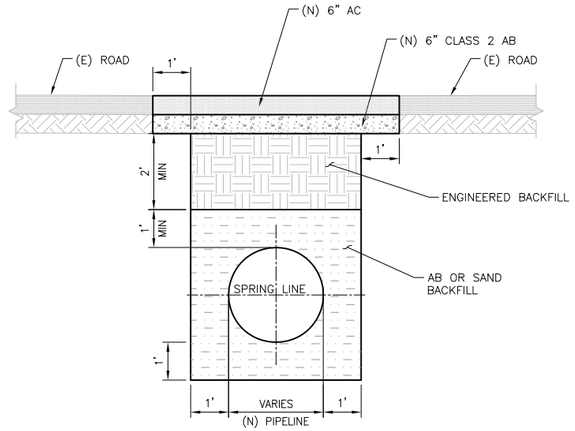


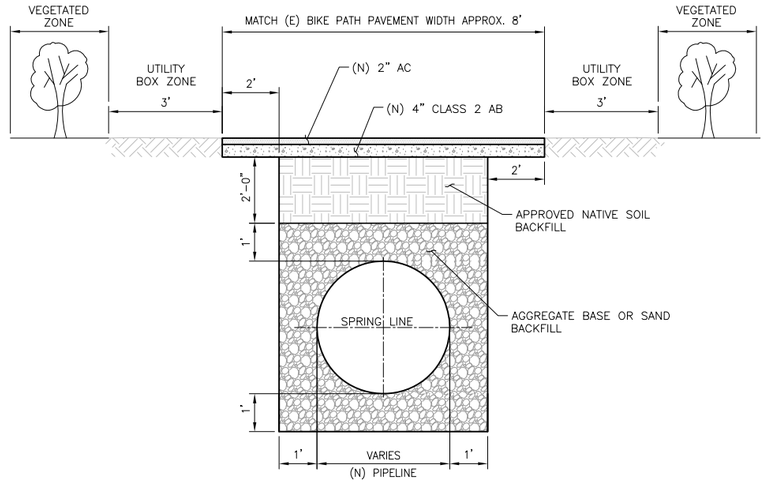
TYPICAL TRENCH BACKFILL FOR DUAL PIPELINES IN PAVED PRIVATE ACCESS ROAD (A)

SCALE: 1"=2'



TYPICAL TRENCH BACKFILL FOR SINGLE PIPELINE IN PAVED PRIVATE ACCESS ROAD (B)

SCALE: 1"=2'



TYPICAL TRENCH BACKFILL UNDER MONTEREY COUNTY BIKE PATH (C)

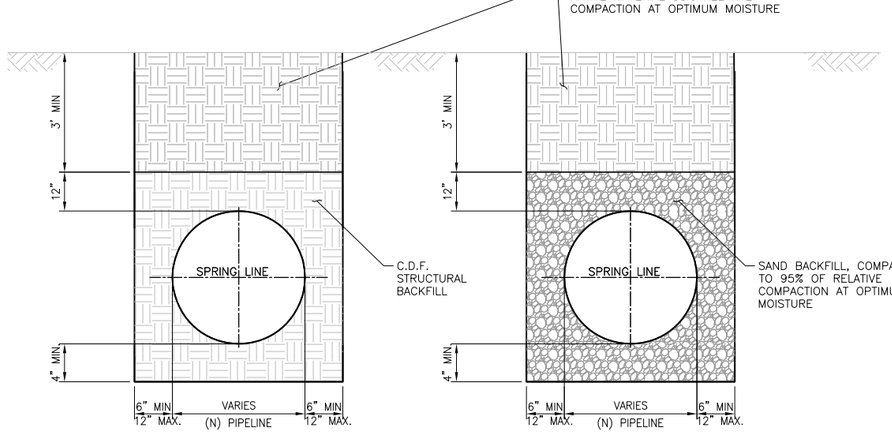
SCALE: 1"=2'

NOTES:

1. IF ONE OF THE PIPE IS TREATED (DRINKING) WATER, IT SHALL BE PLACED IN A SEPARATE TRENCH FROM NON-POTABLE PIPES.
2. ALL (N) PIPES SHALL BE INSTALLED WITH 10 GA. STRANDED COATED TRACER WIRE DUCTAPED TO THE TOP-CENTER OF PIPE AT 10-FT INTERVALS.
3. ALL WATER PIPES SHALL HAVE PLASTIC WARNING TAPE MARKED "WATER" INSTALLED AT TOP OF PIPE ZONE.
4. FOR OTHER TRENCH SECTIONS, SEE SPEC APPENDIX F.

TABLE 1 – TRENCH SECTION SCHEDULE

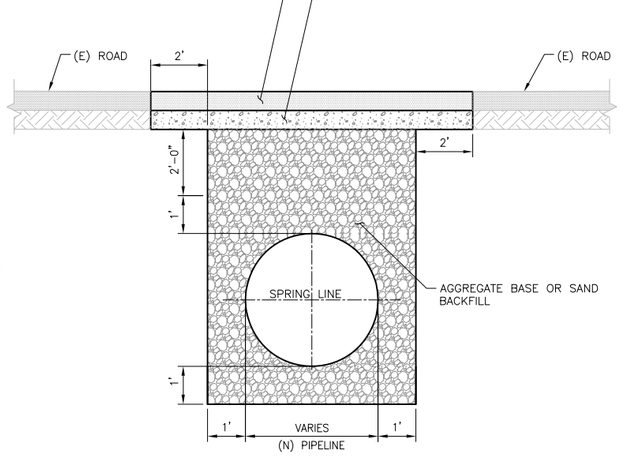
LOCALITY	TRENCH AND PAVING SPECIFICATIONS REFERENCE	DETAIL NO.	SHEET NO.
MONTEREY COUNTY COSTAL BIKE PATH	CALTRANS SPECIFICATIONS FOR BIKE PATHS - HIGHWAY DESIGN MANUAL, CHAPTER 1000	C	C50
CALTRANS	CALTRANS SPECIFICATIONS - HIGHWAY DESIGN MANUAL, CHAPTER 300	E	C50
COUNTY OF MONTEREY	SEE SPEC APPENDIX F		
SAND CITY	SEE SPEC APPENDIX F		
CITY OF SEASIDE	SEE SPEC APPENDIX F		
CITY OF PACIFIC GROVE	SEE SPEC APPENDIX F		
CITY OF MONTEREY	SEE SPEC APPENDIX F		
CITY OF MARINA	SEE SPEC APPENDIX F		
PRESIDIO OF MONTEREY	SEE SPEC APPENDIX F		
CEMEX ACCESS ROAD		A/B	C50
MONTEREY RWPCA ACCESS ROAD		A/B	C50
TAMC ROW		D	C50
NEPONSET RD.		A	C51



FOR HDPE PIPE — FOR DI, STEEL, AND PVC PIPE

TAMC ROW – TRENCH EXCAVATION DETAILS (D)

SCALE: NTS



TYPICAL TRENCH BACKFILL UNDER CALTRANS ROADWAY (E)

SCALE: 1"=2'

0 2 4 6

SCALE: 1" = 2'-0"

REGISTERED PROFESSIONAL ENGINEER A. TROY SMITH No. C-50926 CIVIL STATE OF CALIFORNIA 8/12/15

REVISIONS

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TYPICAL TRENCH DETAILS

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SCALE AS SHOWN

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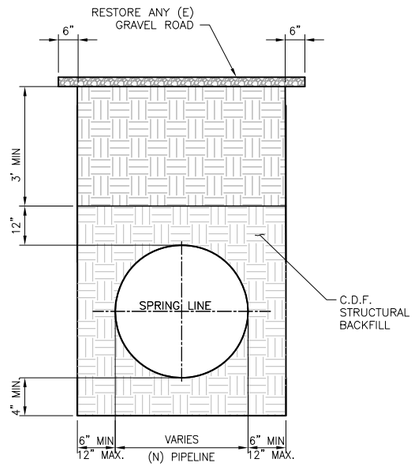
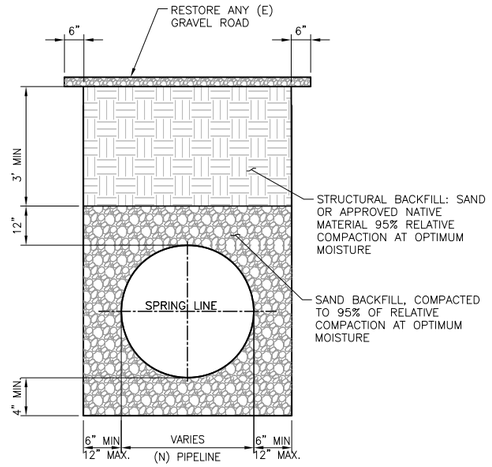


FOR HDPE PIPE



FOR DI, STEEL, AND PVC PIPE

NEPONSET RD – TRENCH DETAILS

SCALE: NTS

B
–

NOTES:

1. IF ONE OF THE PIPE IS TREATED (DRINKING) WATER, IT SHALL BE PLACED IN A SEPARATE TRENCH FROM NON–POTABLE PIPES.
2. ALL (N) PIPES SHALL BE INSTALLED WITH 10 GA. STRANDED COATED TRACER WIRE DUCT APED TO THE TOP–CENTER OF PIPE AT 10–FT INTERVALS.
3. ALL WATER PIPES SHALL HAVE PLASTIC WARNING TAPE MARKED "WATER" INSTALLED AT TOP OF PIPE ZONE.

0 2 4 6
SCALE: 1" = 2'–0"

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REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
NEPONSET TRENCH DETAILS

CALIFORNIA
AMERICAN WATER

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AECOM
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PROJECT ENG'R J. HYMAN
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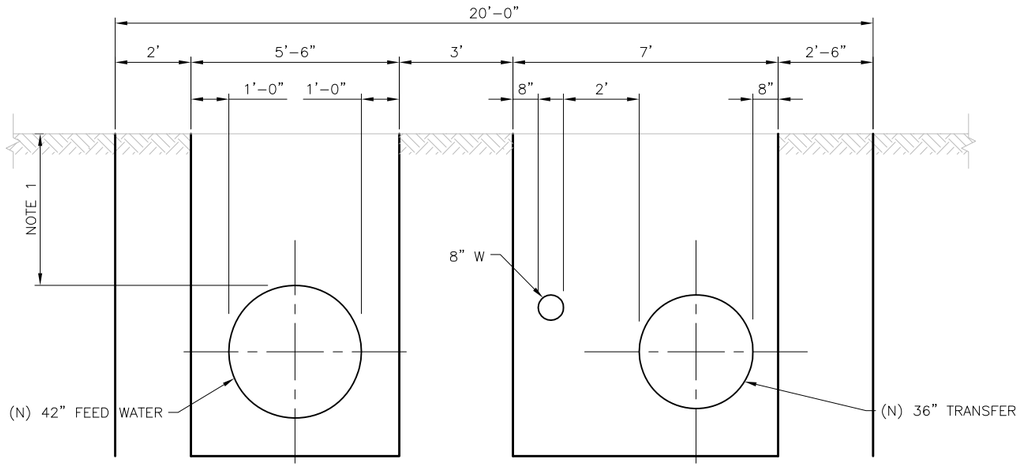
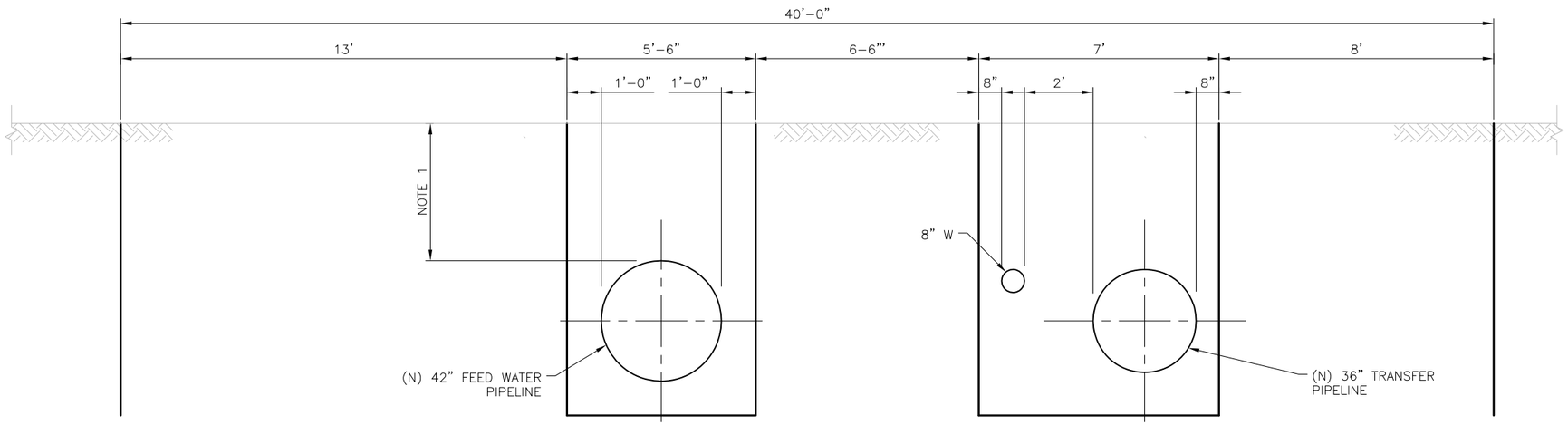


TRENCH SECTION THROUGH 20 FT-WIDE EASEMENT IN NEPONSET (A / C09)
SCALE: 1"=2'

NOTES:

1. 4-FT TYPICAL MIN COVER OVER ALL PIPES.



TRENCH SECTION THROUGH 40 FT-WIDE EASEMENT IN NEPONSET (B / C10)
SCALE: 1"=2'

0 2 4 6
VERT 1" = 2'

REGISTERED PROFESSIONAL ENGINEER JENNIFER A. TRIEBSCH No. C-50928 CIVIL STATE OF CALIFORNIA
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REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
NEPONSET TRENCH SECTIONS

CALIFORNIA
AMERICAN WATER

AECOM
1333 BROADWAY, SUITE 800
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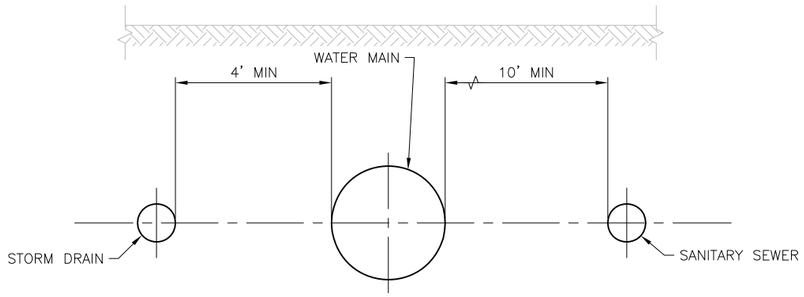
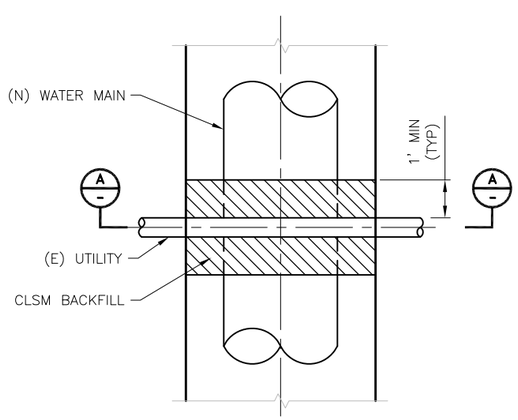


PARALLEL CONSTRUCTION

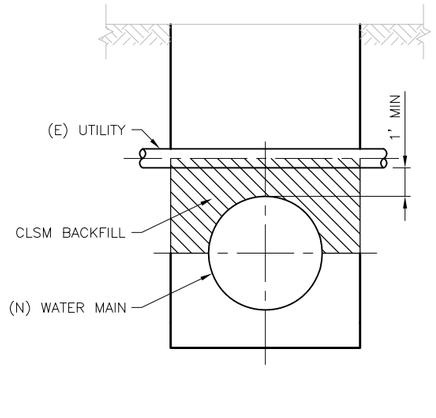
PARALLEL CONSTRUCTION DETAIL 1
SCALE: 1"=2'

NOTES:

1. PIPELINE INSTALLATION SHALL COMPLY WITH 17 CCR AND 22 CCR UNLESS APPROVED BY CDPH.
2. WATER MAINS SHALL CROSS OVER SANITARY AND STORM DRAINS UNLESS APPROVED BY CDPH.
3. PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN NEW WATER MAIN AND SANITARY SEWERS SHALL BE AT LEAST 10 FEET AND AT LEAST 4 FEET FROM STORM DRAINS UNLESS APPROVED BY CDPH.
4. PIPES FOR RAW WATER (SEA WATER INTAKE) AND TERTIARY TREATED RECYCLED WATER ARE CONSIDERED EQUIVALENT TO A STORM DRAIN. SECONDARY TREATED RECYCLED WATER PIPE IS EQUIVALENT TO A SANITARY SEWER.
5. RAW WATER (SEA WATER INTAKE) PIPE MAY NOT BE INSTALLED IN THE SAME TRENCH AS DRINKING WATER PRESSURE PIPE.
6. WHERE THE WATER MAIN CROSSES OVER OR UNDER AN EXISTING UTILITY, THE WATER MAIN SHALL HAVE CLSM BACKFILL BETWEEN THE SPRING LINE OF THE WATER MAIN AND THE SPRING LINE OF THE UTILITY WITHIN 2 FT OF THE EXISTING UTILITY. SEE DETAILS 2 AND 3. IN ADDITION, THE WATER MAIN SHALL BE CONSTRUCTED AT NO LESS THAN 45-DEGREES TO AND AT LEAST 1-FT ABOVE THAT PIPELINE. NO CONNECTION JOINTS SHALL BE MADE IN THE WATER MAIN WITHIN 8 HORIZONTAL FEET OF THE UTILITY.

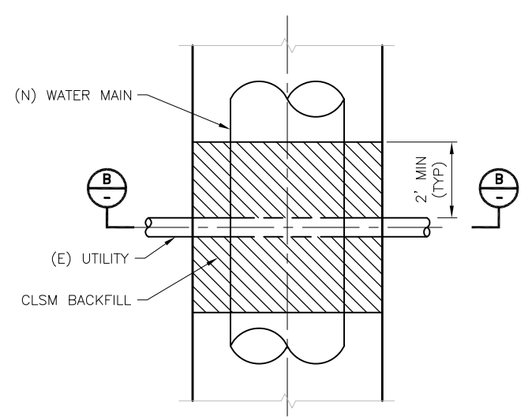


PLAN VIEW

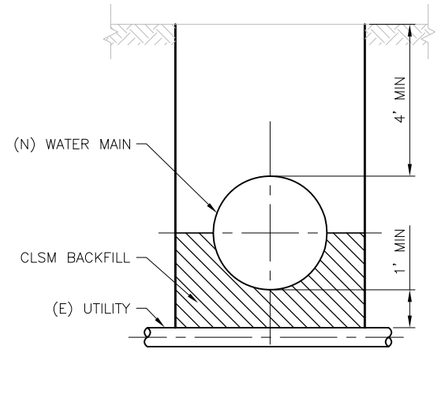


SECTION A

CLSM BACKFILL DETAIL AT CROSSING UNDER UTILITY 2
SCALE: 1"=2'



PLAN VIEW



SECTION B

CLSM BACKFILL DETAIL AT CROSSING UNDER UTILITY 3
SCALE: 1"=2'

0 2 4 6
VERT 1" = 2'

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REVISIONS

TRANSMISSION MAINS FOR MPWSP
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PIPELINE DETAILS
DETAILS FOR SEPARATION BETWEEN WATER MAINS AND SEWERS

CALIFORNIA
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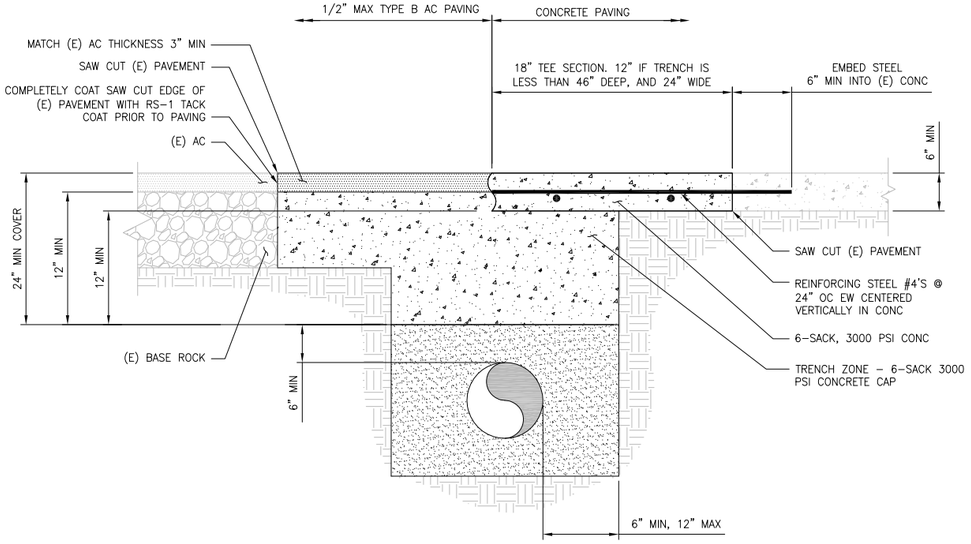
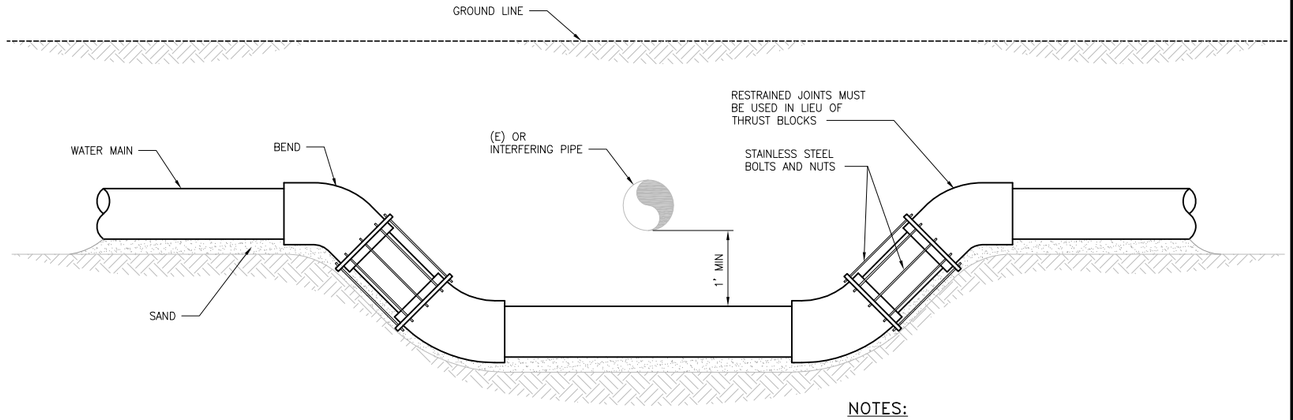


CONCRETE CAP FOR PIPE INSTALLED AT SUB-STANDARD DEPTH (1/-)
SCALE: NTS

NOTES:

1. IF ANY PORTION OF (E) PAVEMENT WITHIN SAWCUT LIMITS IS CONCRETE AT THE SURFACE, ENTIRE TRENCH SHALL BE RE-PAVED WITH CONCRETE AS SHOWN.
2. FOR UNPAVED AREAS, INSTALL 6-IN NATIVE TOP SOIL OVER CONCRETE CAP.
3. INSTALL CONCRETE CAP WHERE COVER OVER 36-IN AND 42-IN PIPE IS LESS THAN PIPE DIAMETER, AND FOR PIPE SMALLER THAN 36-IN WHERE COVER IS LESS THAN 36-IN.



UNDER CROSSING DETAIL (2/-)
SCALE: NTS

NOTES:

1. ALL MATERIAL SHALL BE DUCTILE IRON.
2. RESTRAINED JOINT PIPE SHALL BE USED INSTEAD OF THRUST BLOCKS.
3. WATER MAIN OFFSET MAY BE ACCOMPLISHED USING ALLOWABLE DEFLECTION AT PIPE JOINTS.

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REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
CONCRETE CAP AND UNDERCROSSING DETAILS

CALIFORNIA
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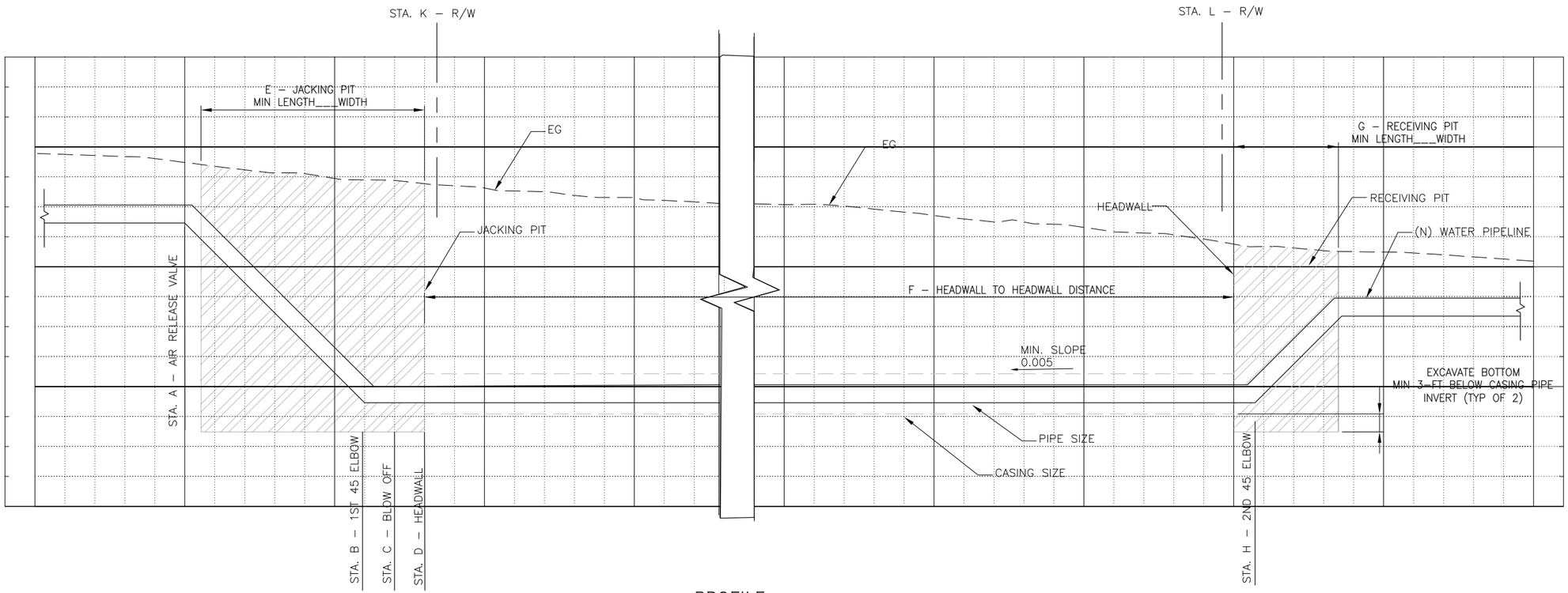

PROFILE
SCALE: NTS

SITE NO	LOCATION	STA A - AIR RELEASE VALVE	STA B - 1st 45 ELBOW	STA C - BLOW-OFF	STA D - HEADWALL	E - JACKING PIT MIN LENGTH WIDTH (FT)	F - HEADWALL TO HEADWALL DISTANCE	G - RECEIVING PIT MIN LENGTH WIDTH (FT)	STA H - 2nd 45 ELBOW	STA K - RIGHT OF WAY	STA L - RIGHT OF WAY	PIPE SIZE	CASING SIZE
1	HWY 1 CROSSING AT LIGHT FIGHTER RD.	166+34.64	161+98.75	165+97.28	162+01.66	35 (L) / 15 (W)	408.00	20 (L) / 35 (W)	166+11.83	162+05.33	165+84.52	36	48
2	RR SPUR CROSSING BY BEACH RANGE RD	184+56.44	N/A [2]	186+90.69	186+75.66	35 (L) / 15 (W)	173.74	20 (L) / 15 (W)	N/A [2]	N/A [4]	N/A [4]	36	48
3	RR CROSSING AT MARINA DR	287+03.06	N/A [2]	286+95.63	288+52.43	35 (L) / 15 (W)	90.95	20 (L) / 15 (W)	287+59.83	N/A [4]	287+45.36	36	48
4	RR CROSSING AT LAPIS RD.	392+52.73	393+61.78	393+58.34	393+55.82	30 (L) / 15 (W)	49.00	20 (L) / 15 (W)	393+00.14	N/A [4]	N/A [4]	36	48
5	RR CROSSING AT LAPIS RD. (DOUBLE IN FEED WATER)	48+20.22	N/A [2]	47+77.67	47+08.44	35 (L) / 20 (W) [3]	62.17	20 (L) / 20 (W) [3]	47+62.90	46+61.43	N/A [4]	42	60
		48+20.22	N/A [2]	47+77.67					47+66.24			8	16

NOTES:

1. INSTALL CASING PIPE WITH MIN. 5.5–FT COVER AT SITES 2–5 AND MIN. 15–FT COVER AT SITE 1.
2. NO ELBOW CONNECTION AT THE STATION NOTED.
3. TO ACCOMMODATE CONSTRUCTION OF TWO PARALLEL BORING–AND–JACKING OPERATIONS.
4. PIPELINE ALIGNMENT DOES NOT TRAVERSE THE ROW LINE BOUNDARY AT THE STATION NOTED.
5. ALL SITES ARE ON THE TRANSFER PIPELINE EXCEPT SITE 5.

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REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
JACK AND BORE SCHEDULE

CALIFORNIA
AMERICAN WATER

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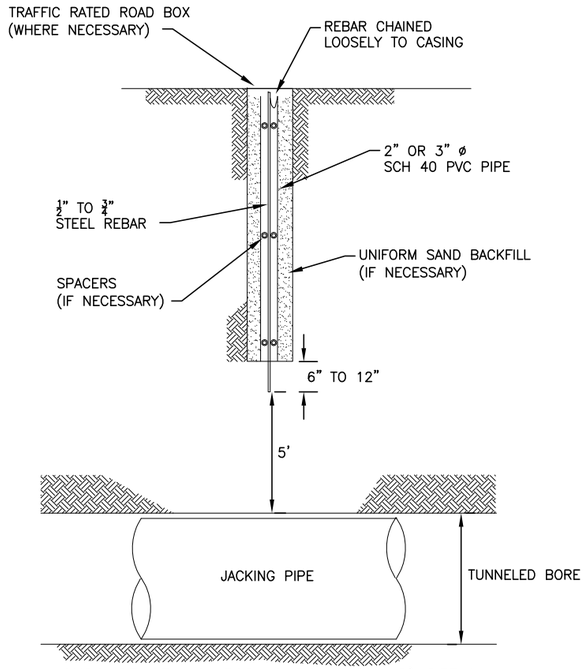
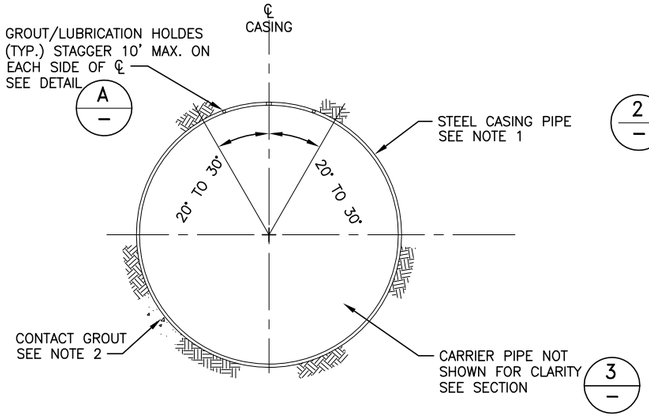


SUBSURFACE MONITORING POINT (SSMP) DETAIL

SECTION 1 / –

SCALE: NTS



STEEL CASING CROSS SECTION

SECTION 2 / –

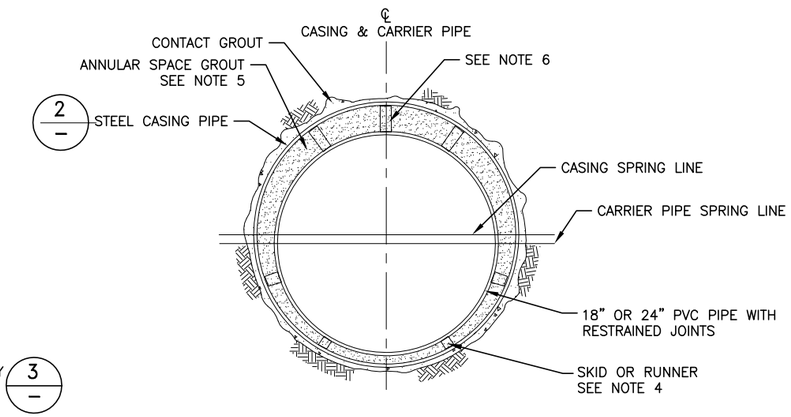
SCALE: NTS

NOTES:

1. MINIMUM WALL THICKNESS FOR VARIOUS STEEL CASING SIZES SHALL BE:

   a. 3/8" FOR 28" OR LESS
   b. 1/2" FOR 30" TO 38"
   c. 3/4" FOR 40" TO 60"

2. FILL VOID CREATED BY OVER CUT BETWEEN PIPE AND GROUND WITH CONTACT GROUT AFTER JACKING IN ACCORDANCE WITH SPECIFICATION SECTION 02330.



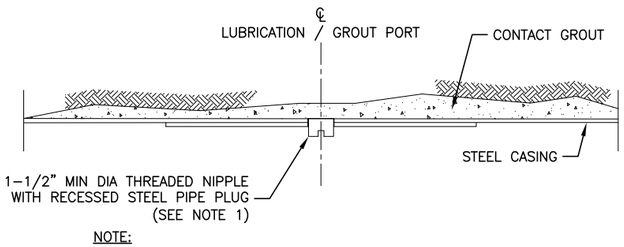
CARRIER PIPE IN STEEL CASING CROSS SECTION

SECTION 3 / –

SCALE: NTS

NOTES:

1. STEEL CASING JOINTS SHALL BE PERMALOK OR WELDED AND APPROVED IN ACCORDANCE WITH SECTION 02322 OF THE SPECIFICATIONS.
2. CASING INSULATION SPACING SHALL BE IN ACCORDANCE WITH INSULATING MANUFACTURER'S RECOMMENDATIONS.
3. STEEL CASING SHALL BE ELECTRICALLY DISCONTINUOUS FROM CARRIER PIPE.
4. ANNULAR CLEARANCE BETWEEN CASING AND CARRIER PIPE SHALL BE 3" MIN, AT THE LARGEST OUTSIDE DIAMETER OF THE CARRIER PIPE INCLUDING ANY ATTACHMENTS. PROVIDE 4 RUNNERS UNDER BOTTOM OF RECYCLED WATER LINE. (TYP)
5. ANNULAR SPACE GROUTING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02330.
6. CASING INSULATORS SHALL BE INSTALLED TO BLOCK THE PIPE AGAINST THE CASING AND PREVENT FLOTATION DURING ANNULAR SPACE GROUTING.
7. CASING END SEALS SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 02322.



NOTE:

1. AFTER CONTACT GROUTING, SEAL GROUT HOLE WITH RECESSED PLUG. INSTALL PLUG FLUSH WITH INSIDE OF PIPE.

LUBRICATION / GROUT PORT FOR STEEL CASING PIPE

DETAIL A / –

SCALE: NTS

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8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
PIPE CASING DETAIL

CALIFORNIA
AMERICAN WATER

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1333 BROADWAY, SUITE 800
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CALIFORNIA AMERICAN WATER

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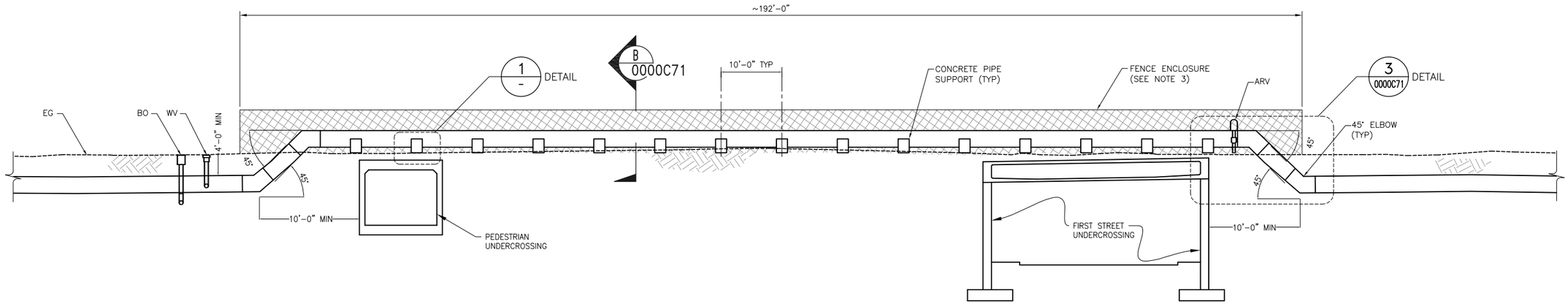
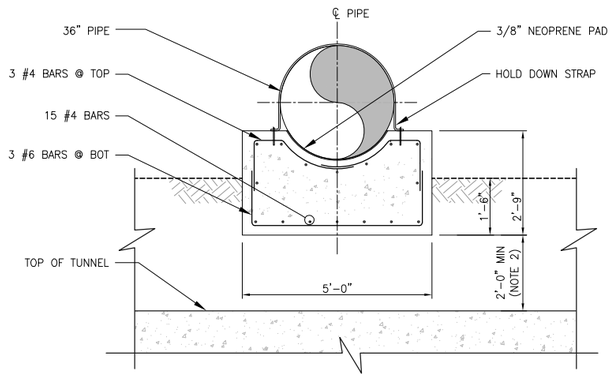


SECTION OF PIPELINE CROSSING OVER 1ST STREET TUNNEL

SCALE: 1"=10'

A
3003C17



CONCRETE PIPE SUPPORT – SECTION

SCALE: N.T.S.

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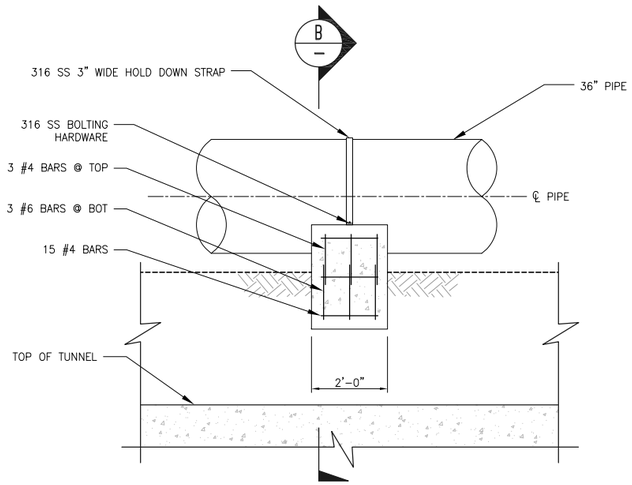

CONCRETE PIPE SUPPORT DETAIL

SCALE: N.T.S.

1
-

NOTES:

1. COMPACT SOIL TO 90% BELOW AND ADJACENT TO SUPPORT.
2. ADD STRUCTURAL FILL AS NEEDED FOR MIN 2-FT COMPACTED SOIL BETWEEN SUPPORT AND TOP OF TUNNEL.
3. FENCE ENCLOSURE SHALL:
   a. BE 8-FT HIGH AND 18-FT WIDE
   b. POLY-COATED CHAIN LINK
   c. LOCKING 6-FT GATE ON EACH END
   d. 4 STRANDS OF BARBED WIRE ON TOP ALL AROUND
4. INSTALL DECORATIVE RETAINING WALL AROUND ABOVE GROUND PIPE.
5. FOR SITE LAYOUT SHOWING EXTENT OF FENCE. SEE SHEET 3003C17.A IN THE TRANSFER PIPELINE PLAN SET.

0 10 20 30

SCALE: 1" = 10'-0"

REGISTERED PROFESSIONAL ENGINEER
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8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
1ST STREET TUNNEL OVER CROSSING – 1

CALIFORNIA
AMERICAN WATER

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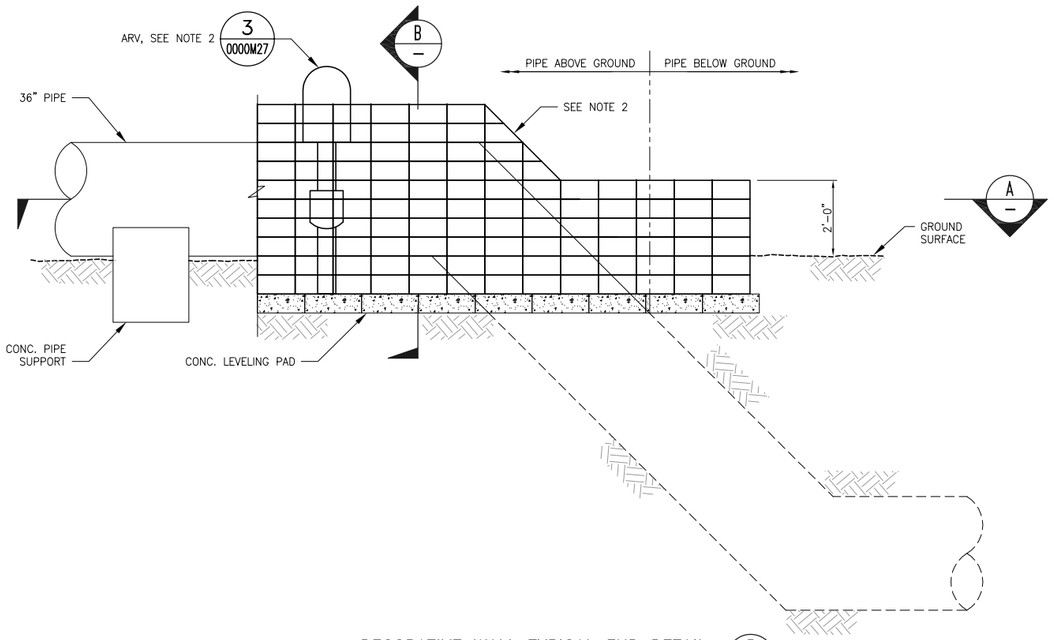
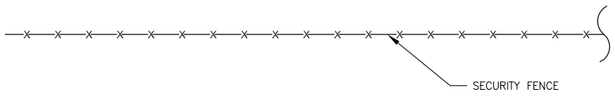
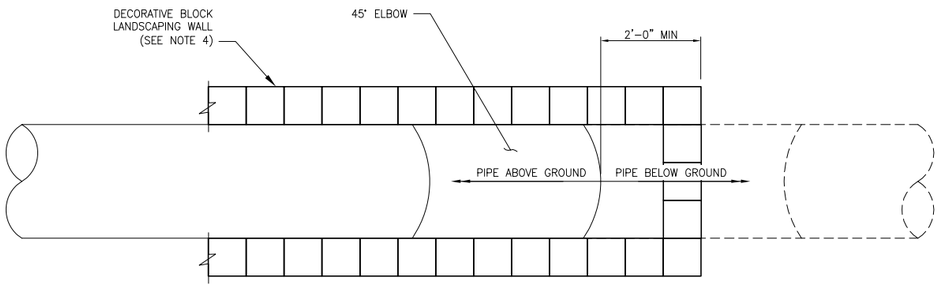
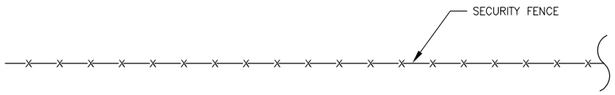


DECORATIVE WALL TYPICAL END DETAIL 3 0000C70
SCALE: N.T.S.



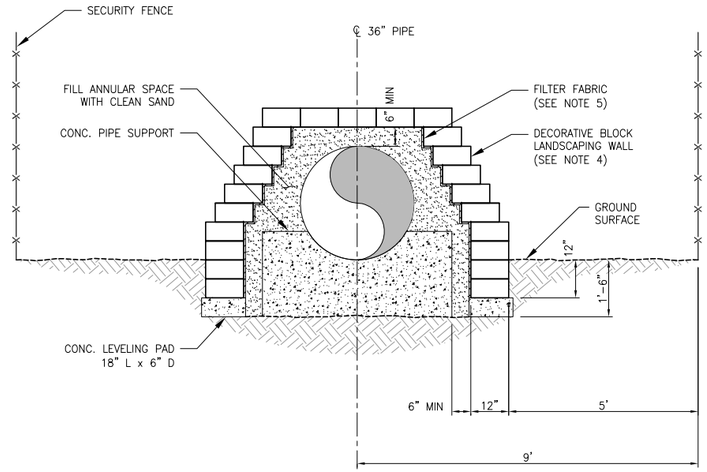




DECORATIVE WALL SECTION A –
SCALE: N.T.S.

NOTES:

1. INSTALL LEVELING PAD A MIN 1'–0" FROM END OF ABOVE GRADE PIPE.
2. CUT BLOCKS TO MATCH SLOPE OF PIPELINE.
3. PROVIDE OPENING FOR AIR RELEASE VALVE. VALVE ASSEMBLY SHALL BE UNBURRIED.
4. WALL SHALL BE ANCHOR BLOCK WALL, HIGHLAND STONE RETAINING WALL, 6" MEDIUM UNIT, SAND COLOR.
5. PLACE FILTER FABRIC DIRECTLY BEHIND THE WALL EXTENDING FROM BOTTOM OF THE BASE COURSE TO THE MIDDLE OF THE TOP COURSE.
6. FOR SITE LAYOUT SHOWING EXTENT OF FENCE. SEE SHEET 3003C17.A IN THE TRANSFER PIPELINE PLAN SET.



DECORATIVE WALL SECTION B –
SCALE: N.T.S.

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — JENNIFER A. TANNER — No. C-50926 — CIVIL — STATE OF CALIFORNIA
8/12/15

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
1ST STREET TUNNEL OVER CROSSING – 2

CALIFORNIA AMERICAN WATER

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USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

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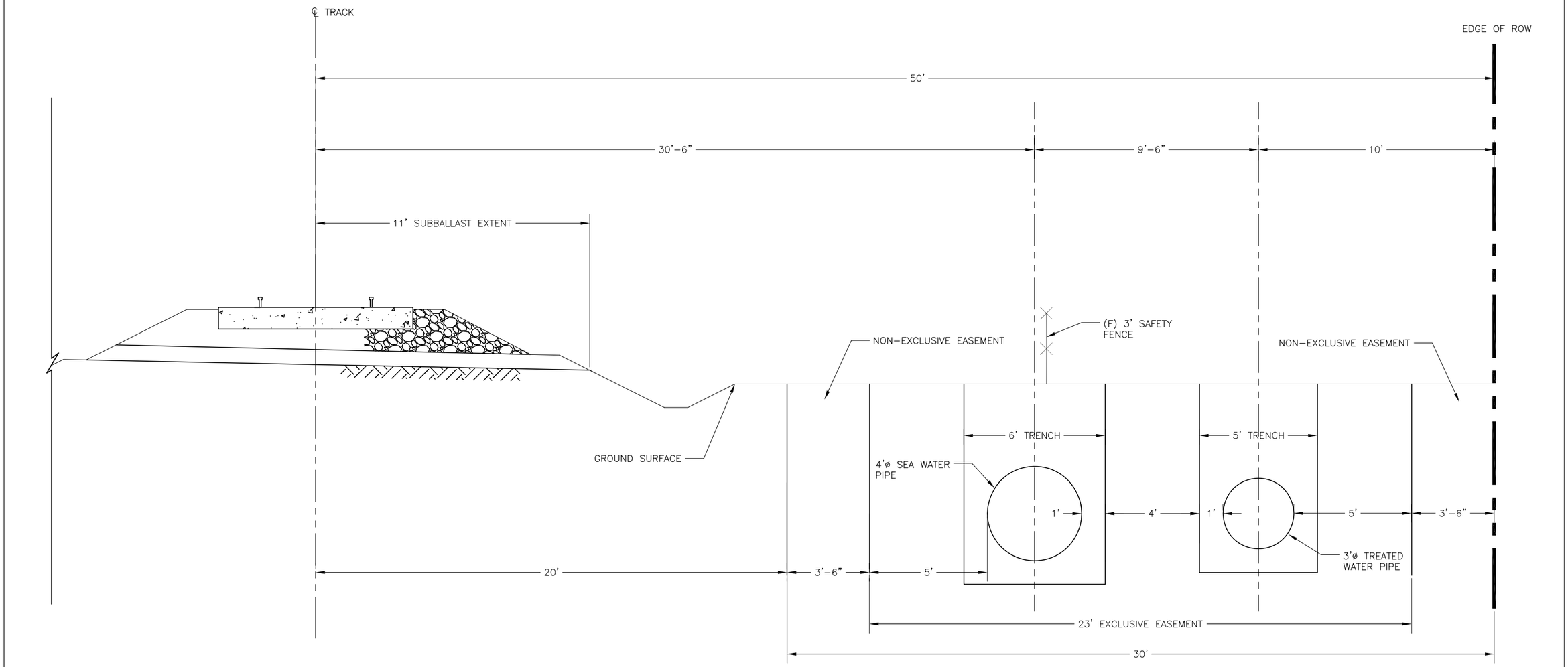

TYPICAL TAMC SECTION – DUAL PIPES

SECTION A
SCALE: NTS

NOTES:

1. 4 FEET TYPICAL COVER OVER PIPE
2. PIPES MUST BE INSTALLED IN SEPARATE TRENCHES PER CDPH REQUIREMENTS.

REGISTERED PROFESSIONAL ENGINEER A. TODD LEE No. C-50920 CIVIL STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
TYPICAL TAMC SECTION DUAL PIPES

CALIFORNIA
AMERICAN WATER

AECOM
1333 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612

DRAWN BY C. SOMERA
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH

DATE AUGUST 2015
PROJECT 60424498

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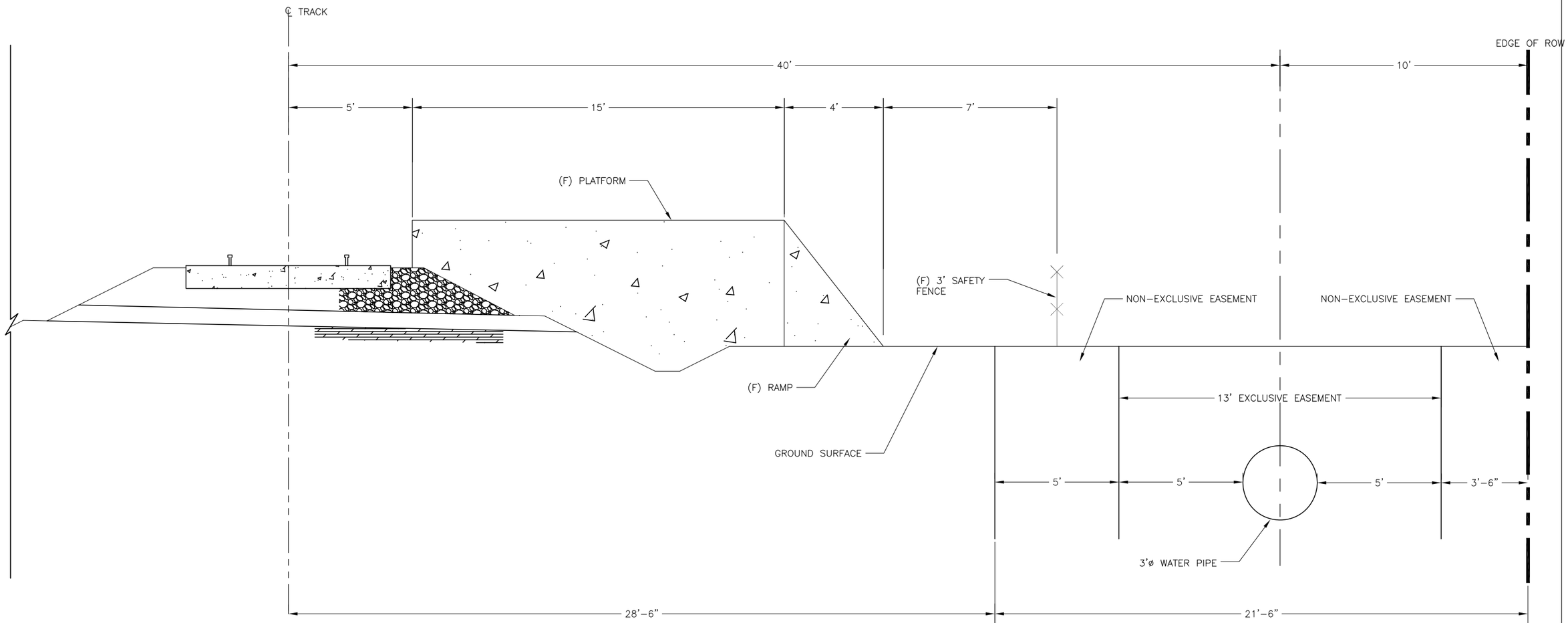

TYPICAL TAMC RAIL STATION PLATFORM

SECTION A
SCALE: NTS

NOTES:

1. 4 FEET TYPICAL COVER OVER PIPE

REGISTERED PROFESSIONAL ENGINEER
JENNIFER A. HYMAN
No. C-50926
CIVIL
STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
PIPELINE DETAILS
TYPICAL TAMC RAIL STATION PLATFORM

CALIFORNIA
AMERICAN WATER

AECOM
1333 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612

DRAWN BY C. SOMERA
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH

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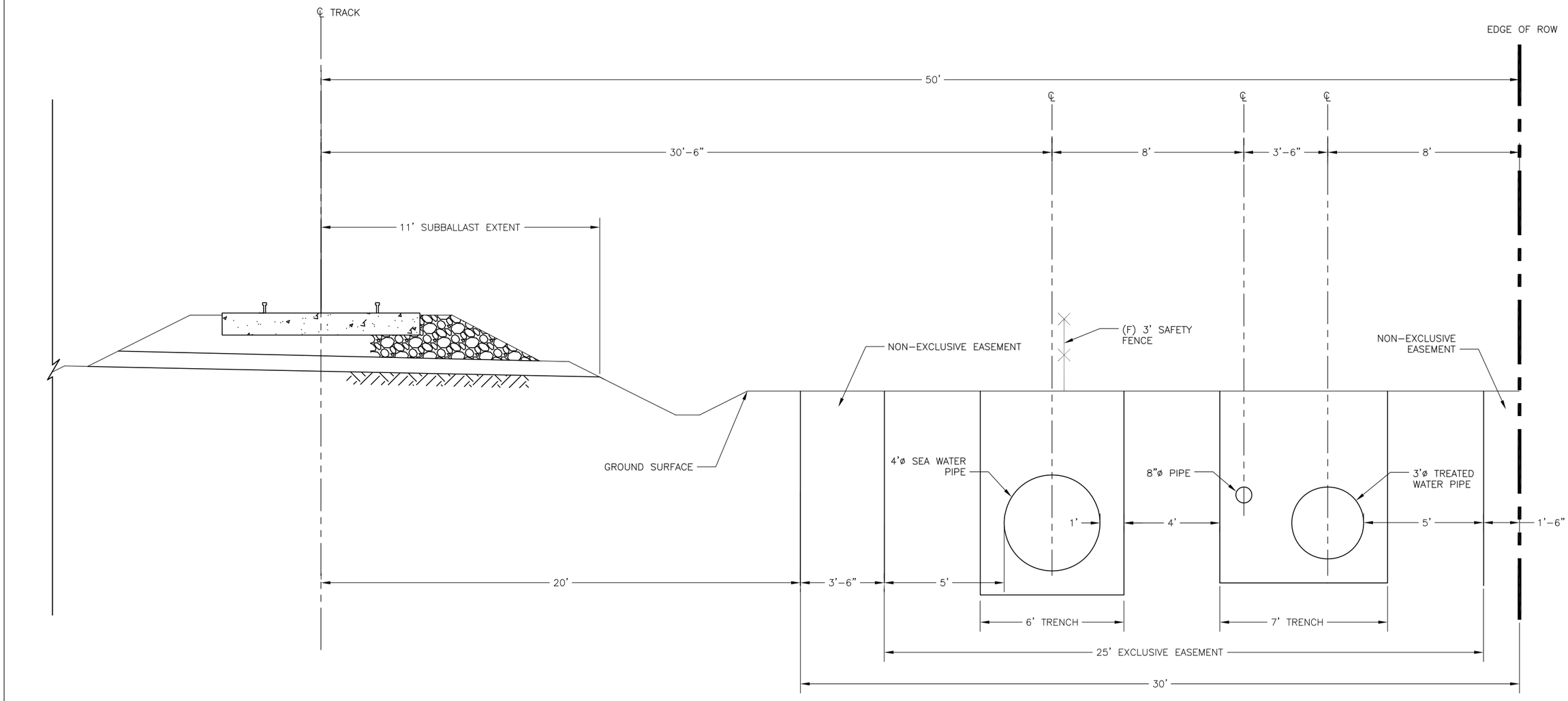

TYPICAL TAMC SECTION – THREE PIPES

SECTION A
SCALE: NTS

NOTES:

1. 4 FEET TYPICAL COVER OVER PIPE
2. SEA WATER PIPE MUST BE INSTALLED IN A SEPARATE TRENCH FROM POTABLE WATER PER CDPH REQUIREMENTS.

REGISTERED PROFESSIONAL ENGINEER A. TODD GREEN No. C-50920 CIVIL STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
TAMC ROW DETAIL
TYPICAL TAMC SECTION THREE PIPES

CALIFORNIA
AMERICAN WATER

AECOM
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OAKLAND, CALIFORNIA 94612

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DATE AUGUST 2015
PROJECT 60424498
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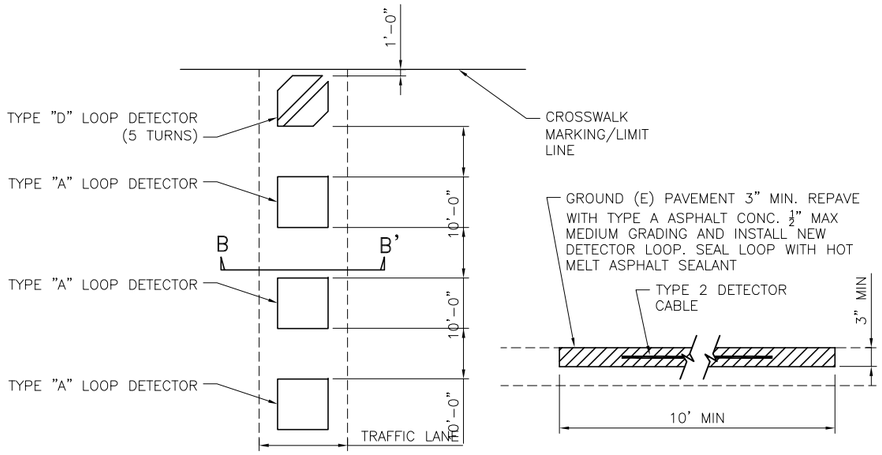

TYPICAL DETECTOR LOOP DETAIL

SECTION B

NOTES:

1. DEPTH OF EXISTING UTILITIES UNKNOWN AT THIS TIME.

0 4 8 12

HORIZ 1" = 4'

REGISTERED PROFESSIONAL ENGINEER
JENNIFER A. HYMAN
No. C-50926
CIVIL
STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
CIVIL
TYPICAL DETAILS
CALTRANS CROSSING DETAILS-1

CALIFORNIA
AMERICAN WATER

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1333 BROADWAY, SUITE 800
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CALIFORNIA AMERICAN WATER

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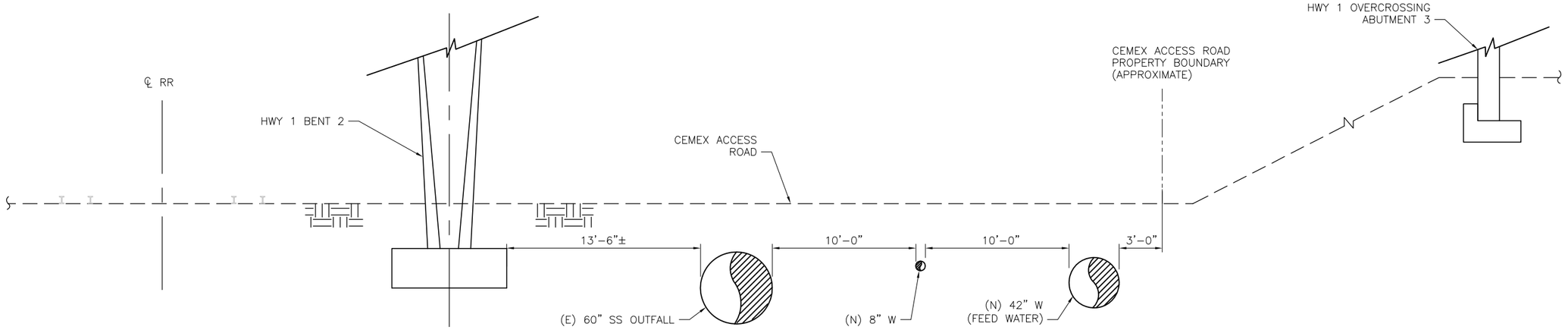
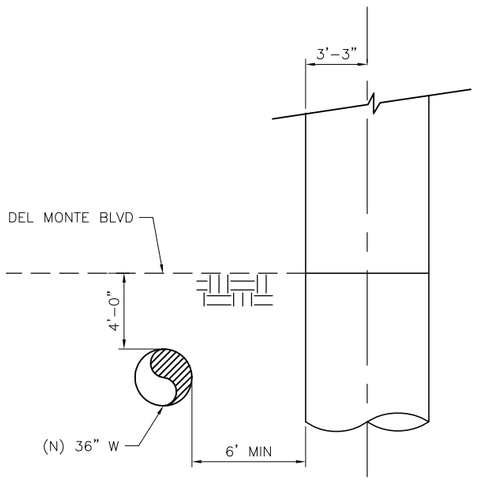


FEED WATER PIPELINE, HWY 1 OC

SECTION (SITE 1) 1 / 6006C02

SCALE: HORIZ 1"=4'

SECTION DETAIL OF WATERLINE INSTALLATION NEAR CALTRANS HWY 1 OVERCROSSING ON CEMEX ACCESS RD.

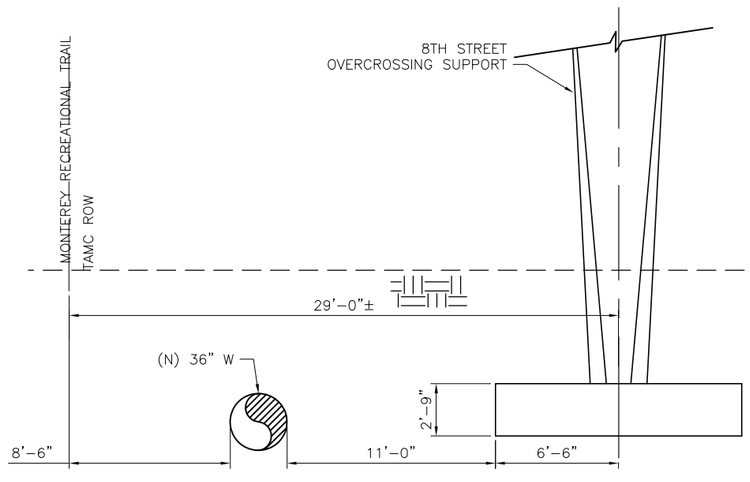


TRANSFER PIPELINE, HWY 1 OC

SECTION (SITE 2) 2 / 3003C12

SCALE: HORIZ: 1"=4'

SECTION DETAIL OF WATERLINE INSTALLATION NEAR CALTRANS SOUTH MARINA OVERHEAD HWY 1 BRIDGE SUPPORT FOOTING (TYP)

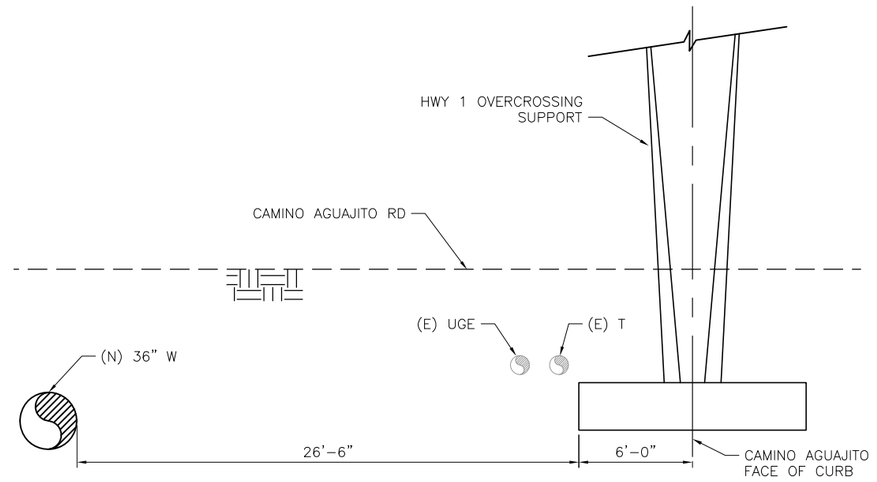


TRANSER PIPELINE, 8TH ST OC

SECTION (SITE 3) 3 / 3003C04

SCALE: HORIZ: 1"=4'

SECTION DETAIL OF WATERLINE INSTALLATION NEAR CALTRANS 8TH STREET OVERCROSSING SUPPORT FOOTING.



MONTEREY PIPELINE, HWY 1 AT CAMINO AGUAJITO RD SECTION (SITE 9)

4 / 1001C23

SCALE: HORIZ: 1"=4'

SECTION DETAIL OF WATERLINE INSTALLATION NEAR CALTRANS AGUAJITO ROAD UNDERCROSSING SUPPORT FOOTING.

NOTES:

1. DEPTH OF EXISTING UTILITIES UNKNOWN AT THIS TIME.

0 4 8 12

HORIZ 1" = 4'

REVISIONS

REGISTERED PROFESSIONAL ENGINEER A. TOM LEE No. C-50920 CIVIL STATE OF CALIFORNIA 8/12/15

TRANSMISSION MAINS FOR MPWSP
CIVIL
TYPICAL DETAILS
CALTRANS CROSSING DETAIL – 2

CALIFORNIA AMERICAN WATER

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1333 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612

AECOM

CALIFORNIA AMERICAN WATER

DRAWN BY C. SOMERA
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH

DATE AUGUST 2015
PROJECT 60424498

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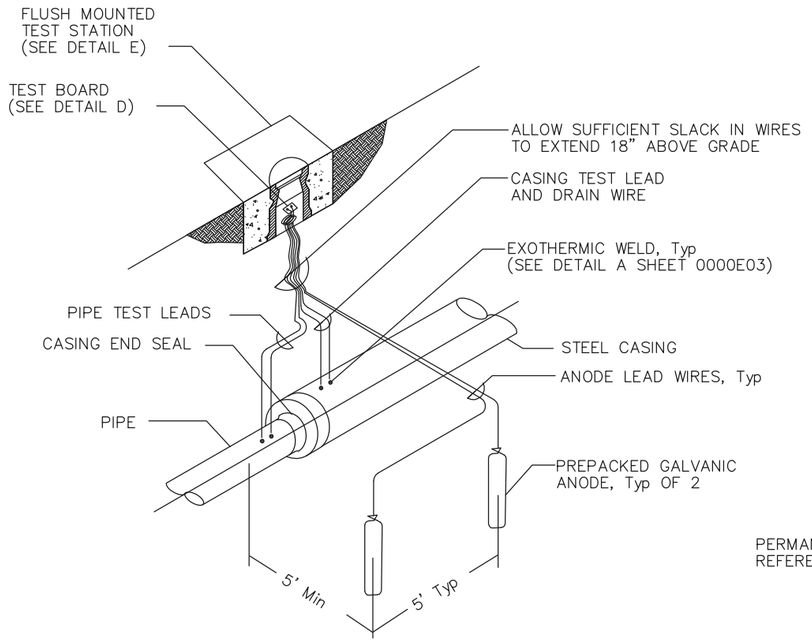
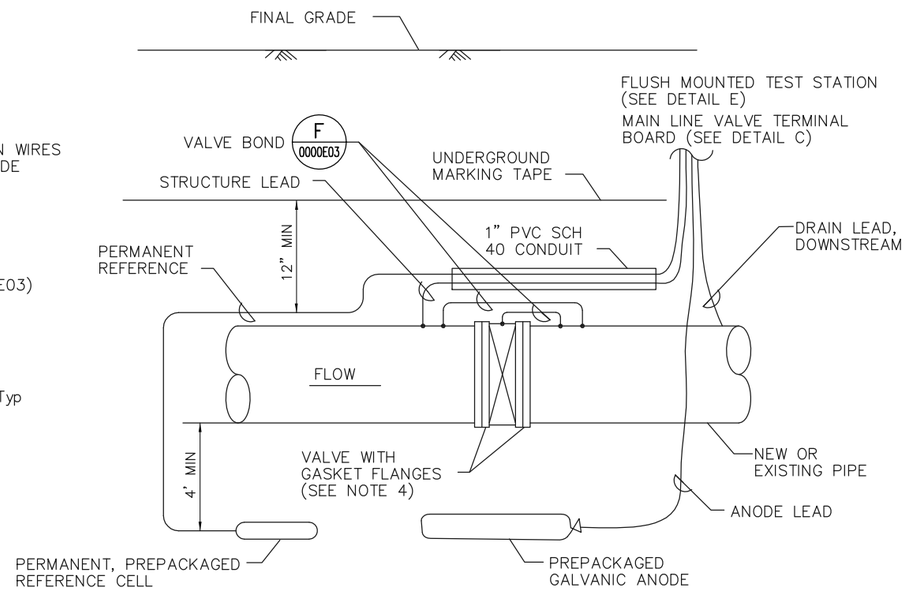
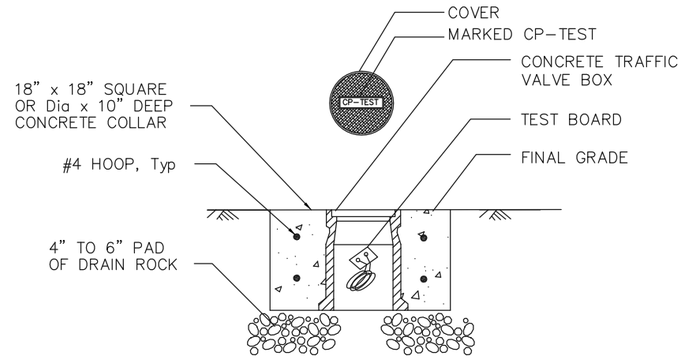


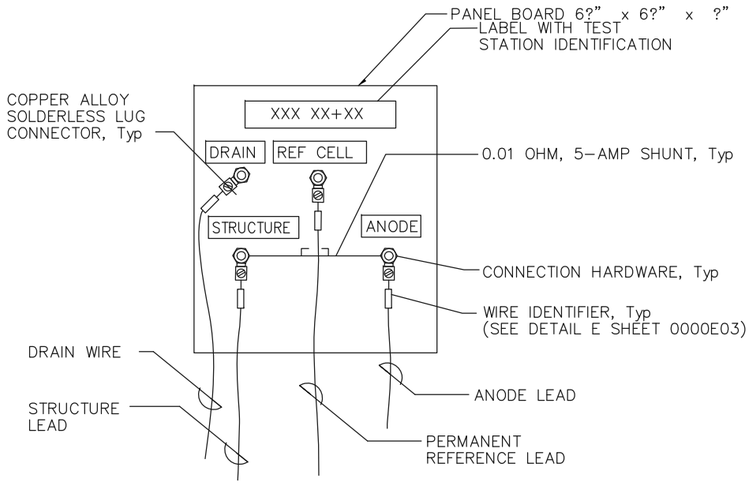
CASING ANODE TEST STATION — A
SCALE: NTS



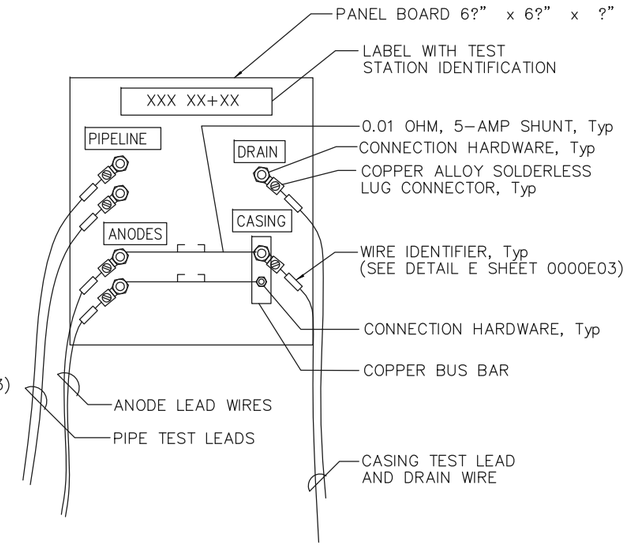
MAINLINE VALVE PIPELINE AND ANODE TEST STATION — B
SCALE: NTS



FLUSH MOUNTED TEST STATION — E
SCALE: NTS



MAINLINE VALVE TEST BOARD — C
SCALE: NTS



CASING ANODE TEST STATION TEST BOARD — D
SCALE: NTS

NOTES:

1. PLACE LEADS IN SCHEDULE 40 PVC CONDUIT IF RUN HORIZONTALLY AND/OR INSTALLED LESS THAN 48" BELOW FINISHED GRADE.
2. LOCATIONS OF ANODES AND TEST STATIONS MAY BE ALTERED TO AVOID BELOW-GRADE OBSTRUCTIONS. ANODES SHALL NOT BE PLACED WITHIN TEN FEET OF FOREIGN METALLIC STRUCTURES.
3. FLOOD ANODE WITH MINIMUM OF 10 GALLONS OF WATER BEFORE BACKFILLING WITH NATIVE SOIL ONLY.
4. PROVIDE POLYWRAP TO VALVE PER SPEC 02565.

REGISTERED PROFESSIONAL ENGINEER
JENNIFER A. HYMAN
No. C-50926
CIVIL
STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
ELECTRICAL
PIPELINE DETAILS
CORROSION CONTROL DETAILS-1

CALIFORNIA
AMERICAN WATER

AECOM
1333 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612

AECOM

CALIFORNIA AMERICAN WATER

DRAWN BY N. HUTTON
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH

DATE AUGUST 2015
PROJECT 60424498

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0000E01

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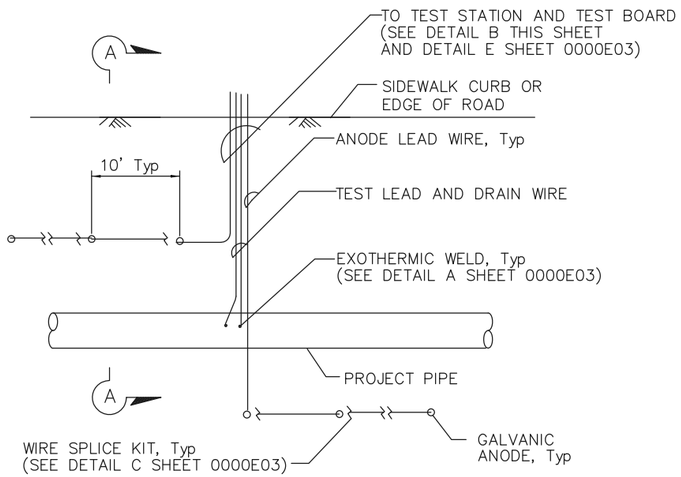
NOTES:

1. PLACE LEADS IN SCHEDULE 40 PVC CONDUIT IF RUN HORIZONTALLY AND/OR INSTALLED LESS THAN 48" BELOW FINISHED GRADE.
2. LOCATIONS OF ANODES AND TEST STATIONS MAY BE ALTERED TO AVOID BELOW-GRADE OBSTRUCTIONS. ANODES SHALL NOT BE PLACED WITHIN TEN FEET OF FOREIGN METALLIC STRUCTURES.
3. FLOOD ANODE WITH MINIMUM OF 10 GALLONS OF WATER BEFORE BACKFILLING WITH NATIVE SOIL ONLY.
4. PROVIDE POLYWRAP TO VALVE PER SPEC SECTION 02565.



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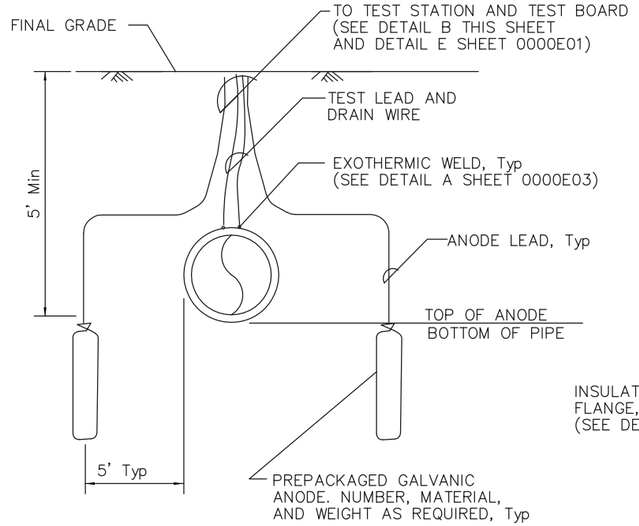
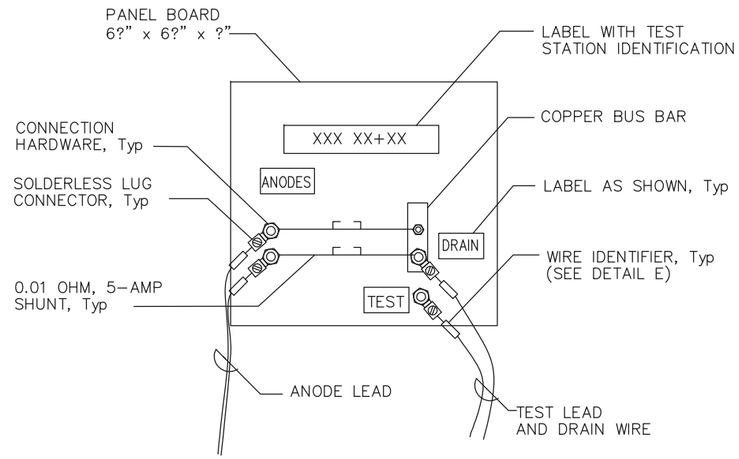
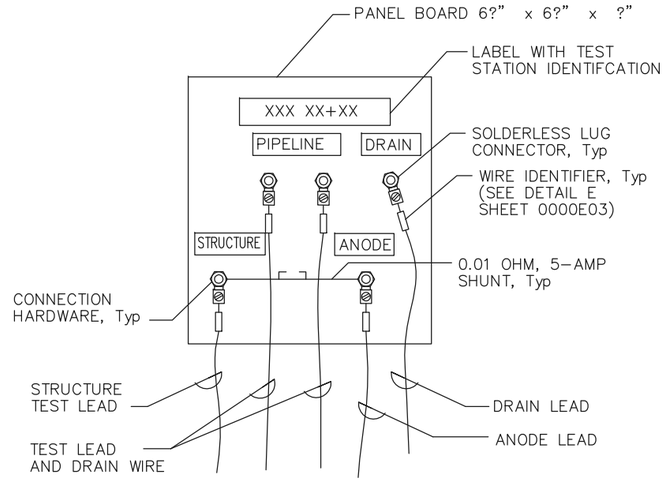


SECTION A-A

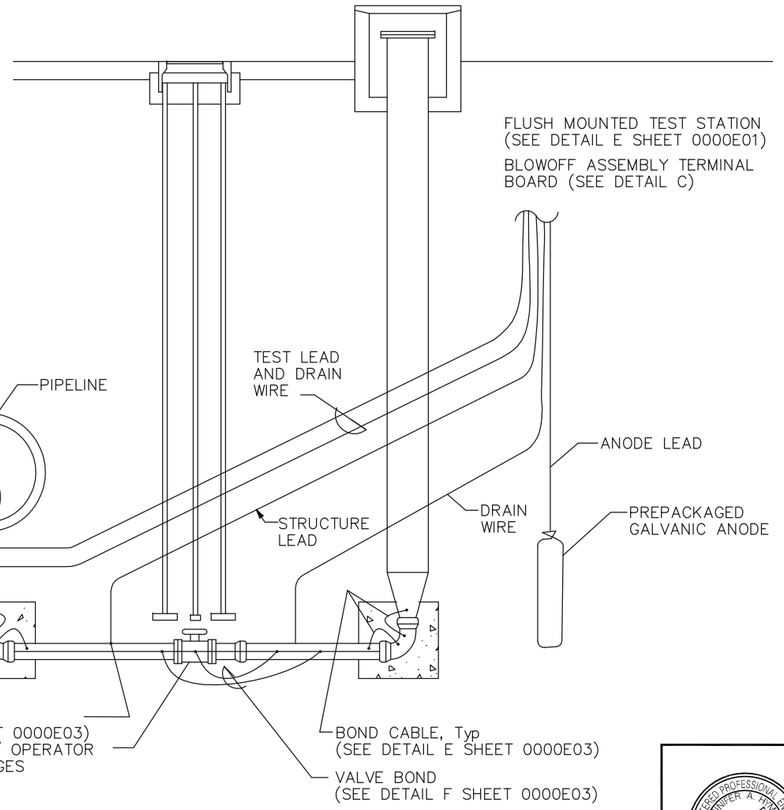
ANODE TEST STATION — A
SCALE: NTS



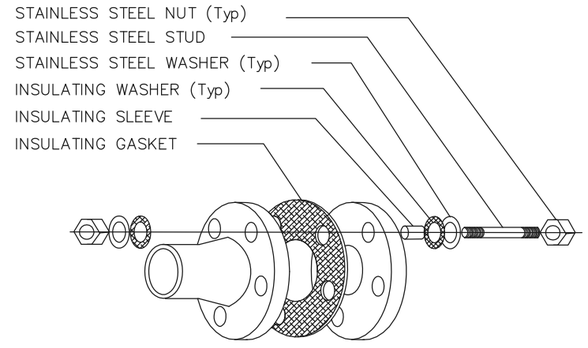
ANODE TEST STATION TEST BOARD — B
SCALE: NTS



BLOWOFF ASSEMBLY TEST BOARD — C
SCALE: NTS



BLOWOFF ASSEMBLY TEST STATION — D
SCALE: NTS



DIELECTRIC INSULATING FLANGE KIT — E
SCALE: NTS

REGISTERED PROFESSIONAL ENGINEER A. TYLER LEE No. C-50928 CIVIL STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP ELECTRICAL PIPELINE DETAILS CORROSION CONTROL DETAILS-2

CALIFORNIA AMERICAN WATER

AECOM
1333 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612

DRAWN BY N. HUTTON
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH

DATE AUGUST 2015
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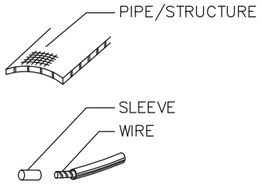
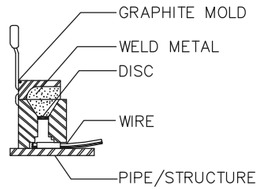
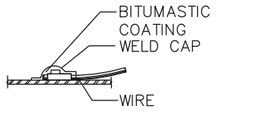


1. FILE PIPE/STRUCTURE TO BARE METAL AND CLEAN SURFACE.
2. STRIP INSULATION FROM WIRE AND ATTACH SLEEVE.

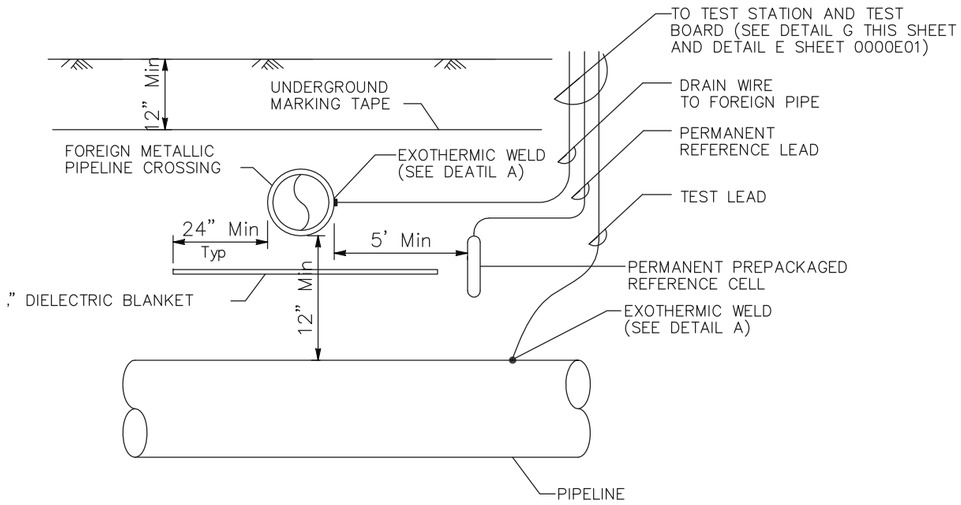


3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR. IGNITE WITH FLINT GUN. REMOVE SLAG FROM CONNECTION WITH CHIPPING HAMMER.

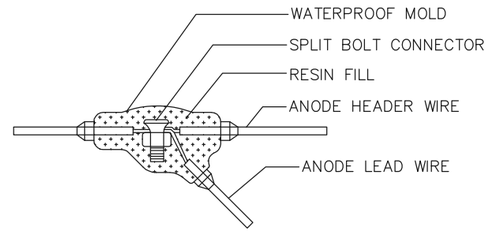


4. COVER CONNECTION WITH BITUMASTIC COATING OVER ALL EXPOSED METAL, PLACE WELD CAP OVER CONNECTION. REPAIR ALL DAMAGE TO COATING AND LINING IN ACCORDANCE WITH MFG RECOMMENDATIONS.

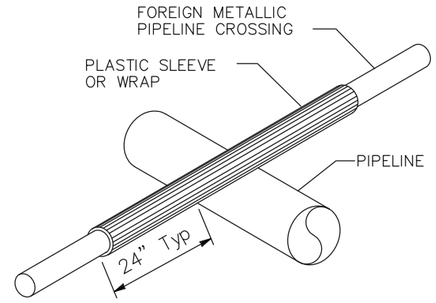
EXOTHERMIC WELD — A
SCALE: NTS



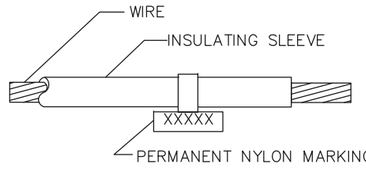
PIPE CROSSING TEST STATION — B
SCALE: NTS



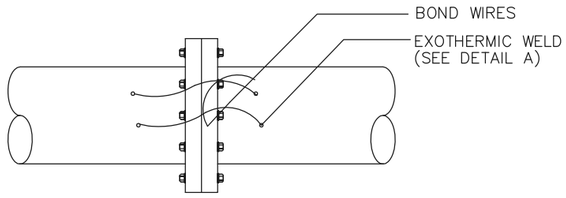
WIRE SPLICE KIT — C
SCALE: NTS



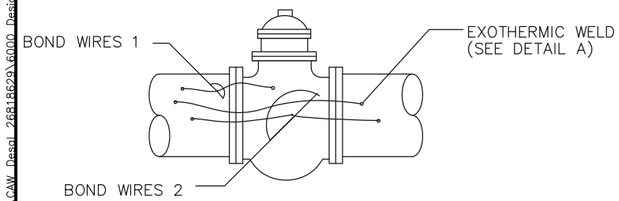
DIELECTRIC SLEEVE/WRAP — H
SCALE: NTS



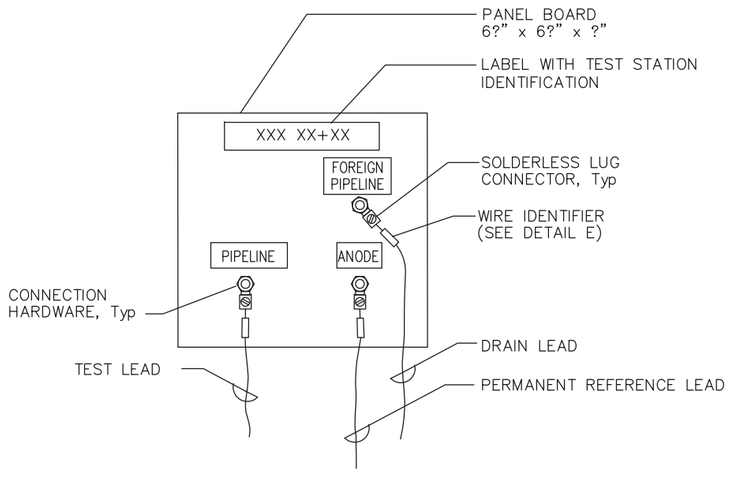
WIRE IDENTIFIER — E
SCALE: NTS



FLANGE JOINT BOND — D
SCALE: NTS



VALVE BOND — F
SCALE: NTS



PIPE CROSSING TEST BOARD — G
SCALE: NTS

NOTES:

1. PLACE LEADS IN SCHEDULE 40 PVC CONDUIT IF RUN HORIZONTALLY AND/OR INSTALLED LESS THAN 48" BELOW FINISHED GRADE.
2. LOCATIONS OF ANODES AND TEST STATIONS MAY BE ALTERED TO AVOID BELOW-GRADE OBSTRUCTIONS. ANODES SHALL NOT BE PLACED WITHIN TEN FEET OF FOREIGN METALLIC STRUCTURES.
3. FLOOD ANODE WITH MINIMUM OF 10 GALLONS OF WATER BEFORE BACKFILLING WITH NATIVE SOIL ONLY.
4. DIELECTRIC BLANKET SHALL BE INSTALLED AS CLOSE TO THE MID-POINT BETWEEN THE TWO LINES AS POSSIBLE.
5. EXTEND DIELECTRIC BLANKET 24" BEYOND THE DIAMETER OF THE LARGEST PIPELINE.
6. ANY FOREIGN METALLIC PIPE, COATED, UNCOATED, OR CONCRETE PIPE WITH STEEL REINFORCING CROSSING THE AQUEDUCT WITHIN A DISTANCE OF 5 FEET MUST PROVIDE THE PROTECTION AS SHOWN.
7. FOREIGN PIPELINES INCLUDE SEWER, NMWD PIPE, GAS, POWER, OR OTHER UTILITY LINES.

REGISTERED PROFESSIONAL ENGINEER — JAMES A. HYMAN — No. C-50936 — CIVIL — STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
ELECTRICAL
PIPELINE DETAILS
CORROSION CONTROL DETAILS-3

CALIFORNIA
AMERICAN WATER

AECOM
1333 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612

DRAWN BY N. HUTTON
PROJECT ENG'R J. HYMAN
APPROVED C. SMITH
DATE AUGUST 2015
PROJECT 60424498
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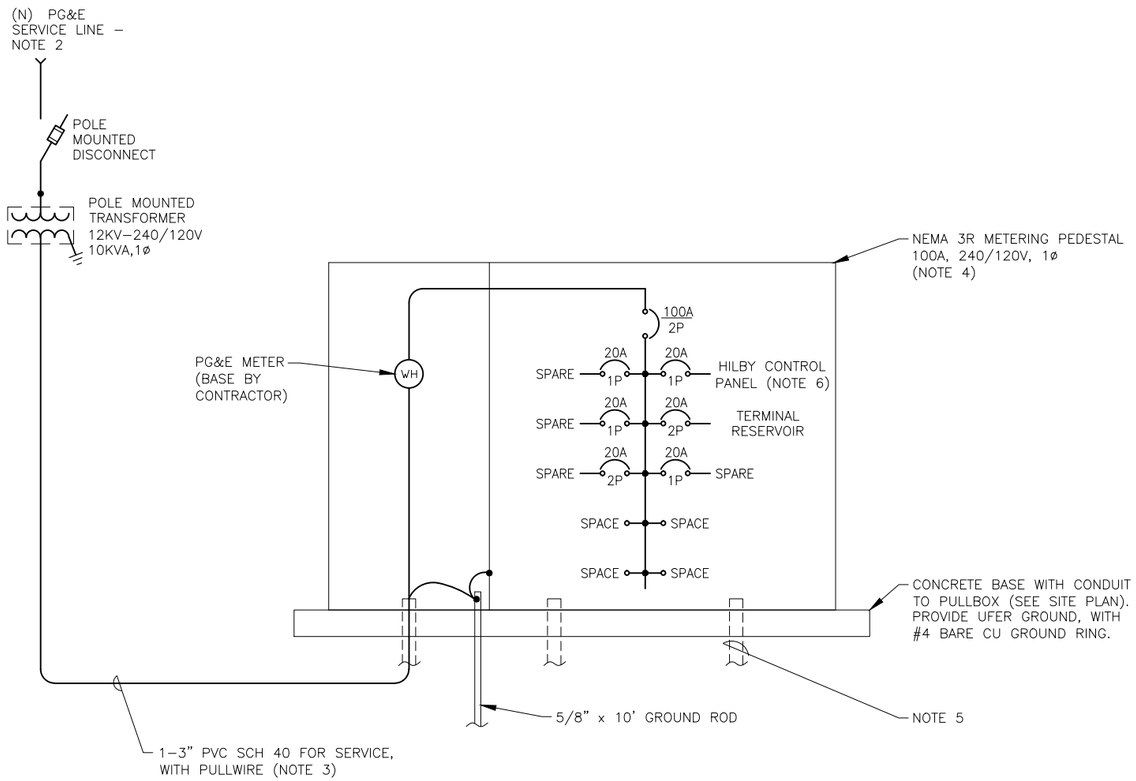

PROJECT POWER PANEL AND METER AT HILBY FLOW METER SINGLE LINE DIAGRAM

SCALE: NONE

1 / 0000M40

ELECTRICAL NOTES

1. SEE SITE PLAN ON SHEET 0000M40 FOR GENERAL ELECTRICAL NOTES.
2. ELECTRICAL SERVICE AND METERING PANEL DRAWINGS SHALL BE SUBMITTED TO OWNER AND PG&E FOR REVIEW AND APPROVAL BEFORE PLACING EQUIPMENT ORDER.
3. CONTRACTOR TO CONFIRM SERVICE CONDUIT SIZE AND ROUTING WITH PG&E. PROVIDE SERVICE CONDUIT AND TRENCH IN ACCORDANCE WITH PG&E REQUIREMENTS.
4. CONTRACTOR SHALL PROVIDE SERVICE PEDESTAL WITH TOTALLY BLANK OUTER PANEL, INTERNAL WATTHOUR METER PROVISIONS, AND DISTRIBUTION PANEL PER PG&E REQUIREMENTS FOR OUTDOOR PANELS. PANEL RATINGS SHALL MEET PG&E FAULT RATING REQUIREMENTS.
5. CONTRACTOR SHALL PROVIDE CONCRETE PANEL BASE, WITH DESIGN FOR SEISMIC AND OVERTURNING CALCULATIONS. PROVIDE 2–1 ½" PVC SCHEDULE 40 CONDUITS TO 13 x 24–INCH PULLBOX WITH PULLWIRE AND CONDUCTORS AS REQUIRED.
6. HILBY TELEMETRY CABINET CABLE REQUIREMENT: PROVIDE 2#12, #12 GND CU CONDUCTORS. USE 1" CONDUIT FROM PULLBOX TO CABINET.
7. CONDUITS SHALL BE PVC SCHEDULE 40 BELOW GRADE AND RIGID GALVANIZED STEEL ABOVE GRADE, WITH LIQUIDTIGHT FLEXIBLE METAL CONDUIT TO FIELD DEVICES (E.G., FLOW METER, PRESSURE TRANSMITTER).

REGISTERED PROFESSIONAL ENGINEER — SINGH KHALSA — No. 11185 — Exp. 06/30/17 — ELECTRICAL — STATE OF CALIFORNIA

8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
ELECTRICAL
PIPELINE DETAILS
SINGLE LINE DIAGRAM

CALIFORNIA
AMERICAN WATER

URS CORPORATION
1333 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612

AECOM

CALIFORNIA AMERICAN WATER

DRAWN BY R. MORRISON
PROJECT ENG'R S. SHALSA
APPROVED C. SMITH

DATE AUGUST 2015
PROJECT 60424498

USE DIMENSIONS ONLY
SCALE AS SHOWN

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G:\Cal American Water\Pipeline\CADD\Drawings\14 Electrical\E05.dwg Robert Morrison Aug 12, 2015 - 1:34pm

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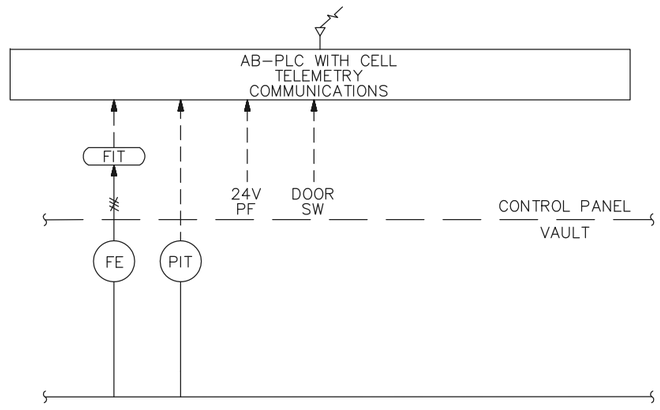
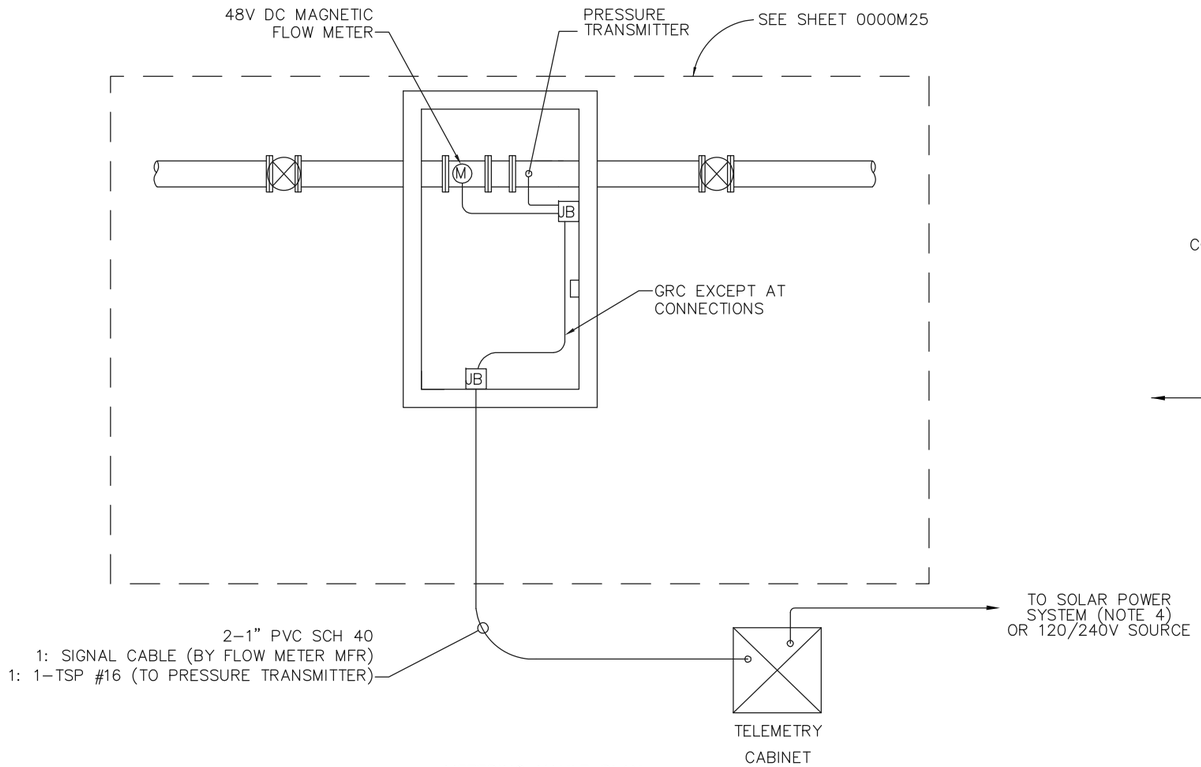


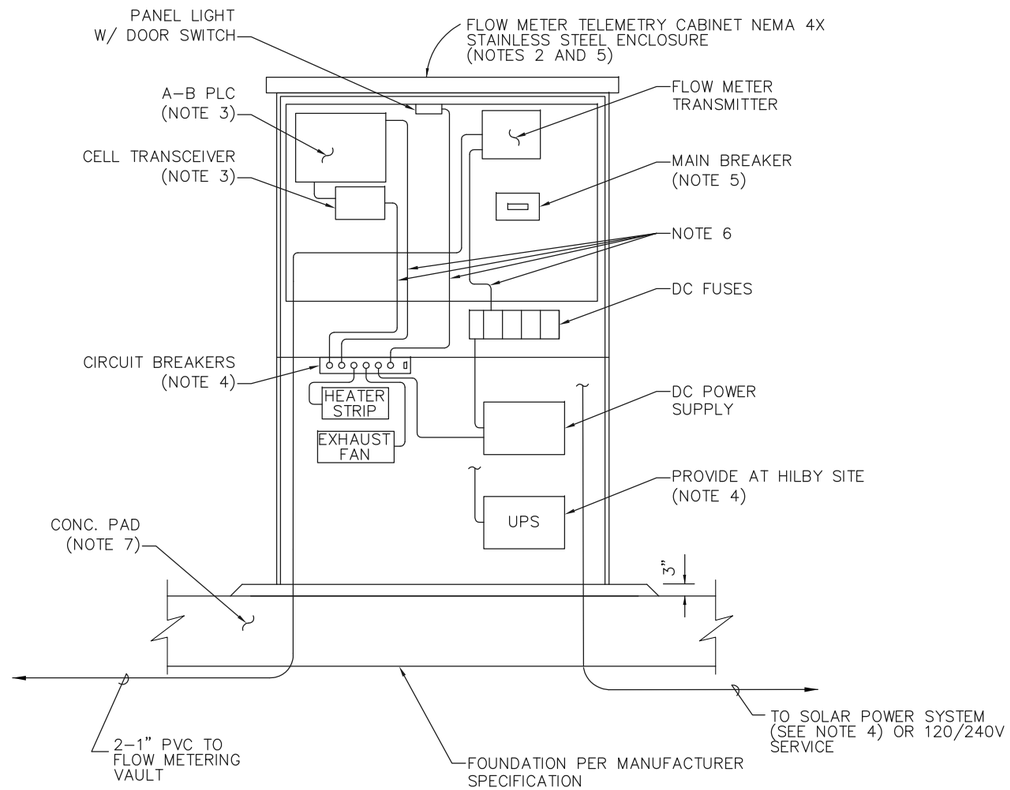
FLOW METERING VAULT P&ID (TYP)
SCALE: NTS



METERING VAULT PLAN
SCALE: NTS

NOTES:

1. WHERE REQUIRED, THE SOLAR ELECTRIC GENERATOR SYSTEM SHALL INCLUDE SOLAR MODULES, BATTERY ENCLOSURE FOR CHARGE CONTROLLER AND BATTERIES, MOUNTING HARDWARE, ALL OTHER NECESSARY MATERIALS, AND BE PROVIDED BY A SINGLE SOURCE VENDOR. THE SYSTEM OUTPUT SHALL BE 80 WATTS MINIMUM. THE SOLAR POWER ENCLOSURE SHALL BE FULLY HINGED, NEMA 3R, PADLOCKABLE, CORROSION RESISTANT, AND VENTED.
2. THE TELEMETRY ENCLOSURE SHALL BE LOCKABLE, WEATHERPROOF, CORROSION RESISTANT, VENTED, MEASURE APPROXIMATELY 60"H x 30"W x 24"D, AND CONTAIN THE FLOW METER REMOTE TRANSMITTER AND DISPLAY, PANEL MOUNTED LED LIGHT FIXTURE WITH DOOR ACTIVATED SWITCH, AND TRANSFORMER, CONVERTER, AND ALL OTHER EQUIPMENT REQUIRED TO MONITOR FIELD PROCESS AND TRANSMIT SIGNAL OUT.
3. CONTRACTOR SHALL PROVIDE ALLEN–BRADLEY PLC FOR FIELD I/O AND COMMUNICATION OUTPUT. CELLULAR TRANSCEIVER SHALL BE SIERRA WIRELESS AIRLINK GX400, BASE MODEL. PROVIDE MOUNTING HARDWARE, POWER SUPPLIES, AND CELLULAR ANTENNA ON ENCLOSURE. SEE SPECIFICATIONS.
4. NORTH FLOW METER AND ASR WELLS SHALL HAVE SOLAR PV POWER SYSTEM. HILBY AND CREST PRS SHALL USE 120V POWER FROM NEW PG&E SERVICE. SOLAR POWER SITES MAY USE 48V OR 24V DC FOR PANEL DEVICE POWER. SITES WITH 120V POWER SHALL HAVE UPS FOR BACKUP POWER SUPPLY FOR DC LOADS, E.G., FLOW METER AND CONTROL DEVICES.
5. TELEMETRY PANEL SHALL BE PROVIDED WITH BLANK FRONT OUTER PANEL, BLANK INNER PANEL WITH PADLOCKABLE MAIN DISCONNECT, AND INNER BACK PANEL. PROVIDE ALL NFPA WARNING SIGNS AND LABELS. PROVIDE SCREENED VENTS AND HIGH TEMP SWITCH CONTROLLED VENTILATION FAN.
6. CONTRACTOR SHALL PROVIDE INTERNAL WIRING AND DEVICES AS REQUIRED. TYPICAL WIRING SHOWN IS FOR DEVICE CALLOUTS AND NOT FOR FINAL WIRING SCHEME.
7. AT HILBY FLOW METER, INSTALL CABINET ON CONCRETE PAD EXTENDING 6–IN BEYOND BASE OF CABINET, AND 3–IN ABOVE GRADE.



TELEMETRY CABINET ELEVATION
SCALE: NTS

REVISIONS

TRANSMISSION MAINS FOR MPWSP
ELECTRICAL
PIPELINE DETAILS
CONTROL PANEL AND DETAILS

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AMERICAN WATER

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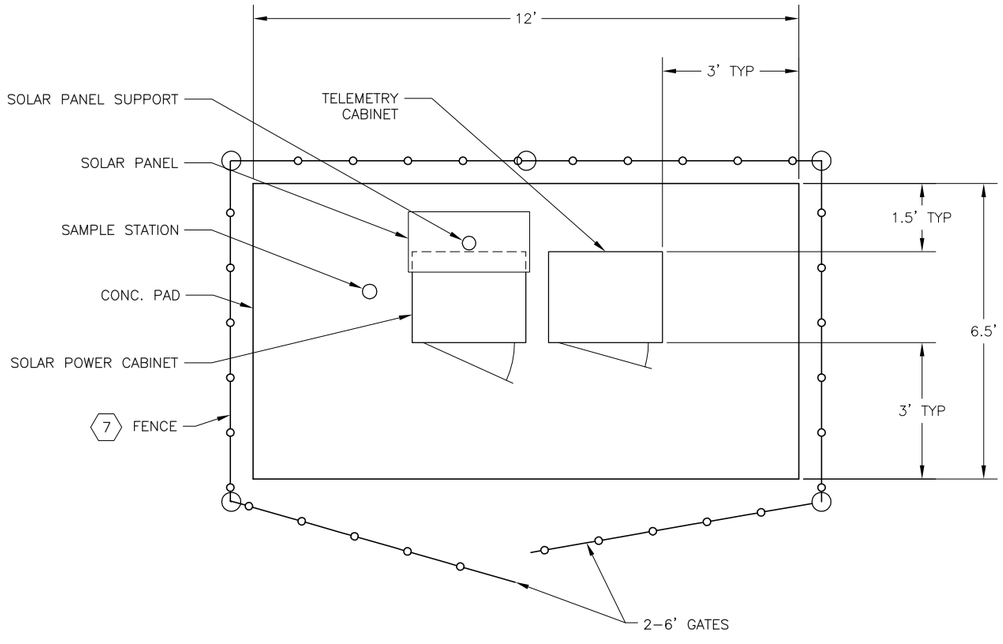
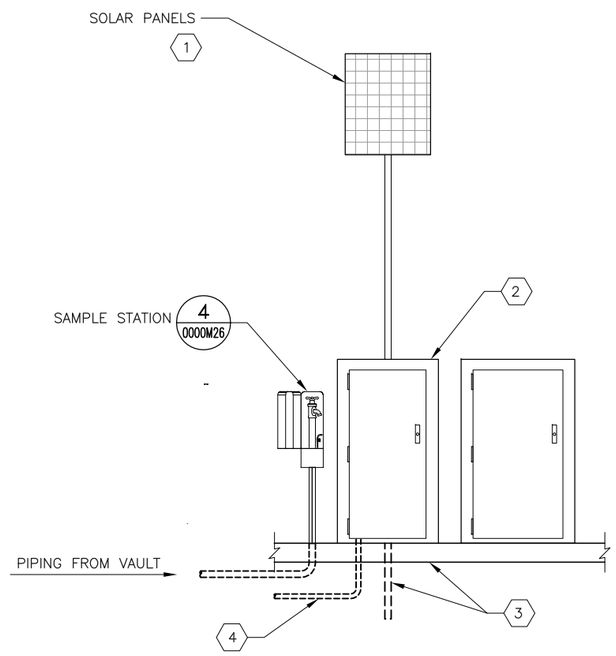
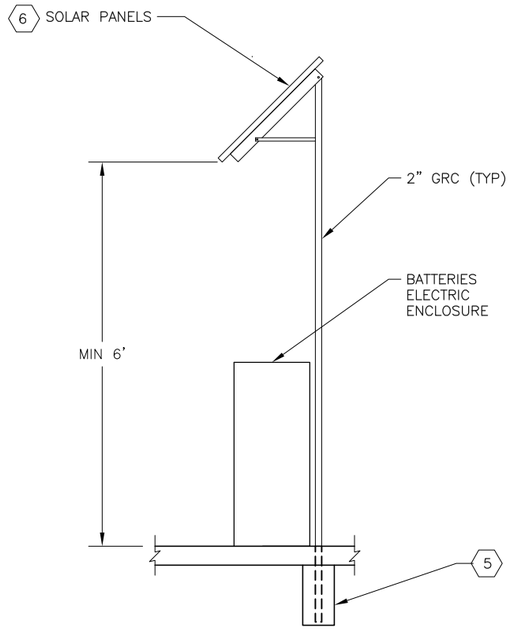


ELECTRICAL PAD WITH SOLAR SYSTEM LAYOUT (1) 0000M25, 0000M30
SCALE: NTS



FRONT VIEW



SIDE VIEW

SOLAR POWER SYSTEM AND SAMPLE STATION DETAIL (2) 0000M25, 0000M30
SCALE: NTS

SHEET NOTES:

1. PV PANELS AND BATTERIES TO BE SIZED BY CONTROL PANEL VENDOR BASED ON LOCAL IRRADIANCE EXPECTATIONS.
2. PROVIDE DC CHARGE CONTROLLER, BATTERIES, AND INVERTER FOR 120V SUPPLY TO FLOW METER PANEL IN NEMA 3R PANEL. (SEE OPTION, NOTE 4, ON SHEET 0000E10).
3. CONTRACTOR SHALL DESIGN SOLAR PANEL SUPPORT AND FOUNDATIONS FOR PANELS.
4. PROVIDE MAIN 120V AC OR DC CIRCUITS TO FLOW METER PANEL.
5. PROVIDE PV PANEL POLE CONCRETE SUPPORT AND GROUNDING AS REQUIRED.
6. TILT PANEL TO OPTIMAL ANGLE TOWARDS THE SUN.
7. INSTALL (N) CHAIN LINK FENCE TOPPED WITH 4-STRAND BARBED WIRE.

REGISTERED PROFESSIONAL ENGINEER — GURMEHAR SINGH KAPOOR — No. 11185 — Exp. 06/30/17 — ELECTRICAL — STATE OF CALIFORNIA
8/12/15

REVISIONS

TRANSMISSION MAINS FOR MPWSP
ELECTRICAL
PIPELINE DETAILS
SOLAR PV ELECTRICAL DETAILS

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