CITY OF SEAL BEACH

STANDARD DRAWINGS

2021 Edition
STANDARD DRAWINGS FOR WATER FACILITIES

2021

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CALIFORNIA DEPARTMENT OF PUBLIC HEALTH, CRITERIA FOR WATER MAIN SEPARATION [SECTION 64572]

THE CALIFORNIA WATERWORKS STANDARDS (CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 22, DIVISION 4, CHAPTER 16, SECTION 64572) ESTABLISH CRITERIA FOR THE SEPARATION OF NEW WATER MAINS FROM NON-POTABLE PIPELINES. PUBLIC WATER SYSTEMS SHOULD ENSURE THAT THESE DISTANCES ARE MET, WHENEVER FEASIBLE, FOR ALL NEW CONSTRUCTION. THE DIVISION OF DRINKING WATER (DIVISION) RECOGNIZES THAT CERTAIN CONDITIONS MAY CALL FOR THE INSTALLATION OF PIPELINES WITH LESS SEPARATION DISTANCE THAN WHAT IS REQUIRED BY THE REGULATIONS. IN THESE SITUATIONS, THE WATER SYSTEM MAY PROPOSE AN ALTERNATIVE PURSUANT TO CCR, TITLE 22, SECTION 64551.100:

IT WILL BE THE CITY’S RESPONSIBILITY TO DETERMINE IF THE MITIGATION MEASURE SHOULD BE SUBMITTED TO THE HEALTH DEPARTMENT FOR REVIEW.

§64551.100. WAIVERS AND ALTERNATIVES.
(A) A WATER SYSTEM THAT PROPOSES TO USE AN ALTERNATIVE TO A REQUIREMENT IN THIS CHAPTER SHALL:
(1) DEMONSTRATE TO THE STATE BOARD THAT THE PROPOSED ALTERNATIVE WOULD PROVIDE AT LEAST THE SAME LEVEL OF PROTECTION TO PUBLIC HEALTH; AND
(2) OBTAIN WRITTEN APPROVAL FROM THE STATE BOARD PRIOR TO IMPLEMENTATION OF THE ALTERNATIVE.

IN PROPOSING AN ALTERNATIVE TO THE WATERWORKS STANDARDS, WATER SYSTEMS SHOULD OBSERVE THE FOLLOWING:

• THE WATER SYSTEM MUST ACCEPT RESPONSIBILITY FOR THE ADEQUACY OF THE PROPOSED ALTERNATIVE, THE DIVISION MAY REQUIRE A WRITTEN STATEMENT, SIGNED BY THE WATER SYSTEM’S MANAGEMENT, CERTIFYING THAT THE PROPOSED ALTERNATIVE ADEQUATELY PROTECTS PUBLIC HEALTH.

• IN MOST CIRCUMSTANCES, THE DIVISION CANNOT OFFER TECHNICAL ASSISTANCE WITH PIPELINE OR INFRASTRUCTURE DESIGN. THE WATER SYSTEM PROPOSING AN ALTERNATIVE MUST DEMONSTRATE ADEQUATE EXPERTISE ON THE PART OF ITS OWN PERSONNEL OR ITS HIRED CONSULTANTS.

• THE WATER SYSTEM SHOULD DESCRIBE HOW THE PROPOSED ALTERNATIVE PROVIDES AT LEAST THE SAME LEVEL OF PROTECTION TO PUBLIC HEALTH AS THE MINIMUM SEPARATION DISTANCES PRESCRIBED IN THE REGULATION.

• WHILE EXORBITANT COST MAY PRESENT A HARDSHIP IN MEETING THE REGULATORY SEPARATION REQUIREMENTS AND CAN BE CONSIDERED, PUBLIC HEALTH MUST BE PRIORITIZED ABOVE CONSTRUCTION COSTS IN DETERMINING AN ACCEPTABLE ALTERNATIVE.

SEAL BEACH STANDARD PLANS FOR WATER FACILITIES
DESIGN CRITERIA FOR SEPARATION OF WATER AND SEWER MAINS

DRAWN BY: M. URIBE
CHECKED BY: J. LEE
DATE: OCT 2021
SCALE: NO SCALE

APPROVED BY: [Signature]
DIRECTOR OF PUBLIC WORKS
10/7/2021
DATE

W-1
SHEET 1 OF 5
§64572. WATER MAIN SEPARATION.

(A) NEW WATER MAINS AND NEW SUPPLY LINES SHALL NOT BE INSTALLED IN THE SAME TRENCH AS, AND SHALL BE AT LEAST 10 FEET HORIZONTALLY FROM AND ONE FOOT VERTICALLY ABOVE, ANY PARALLEL PIPELINE CONVEYING:

(1) UNTREATED SEWAGE,
(2) PRIMARY OR SECONDARY TREATED SEWAGE,
(3) DISINFECTED SECONDARY–2.2 RECYCLED WATER (DEFINED IN SECTION 60301.220),
(4) DISINFECTED SECONDARY–23 RECYCLED WATER (DEFINED IN SECTION 60301.225), AND
(5) HAZARDOUS FLUIDS SUCH AS FUELS, INDUSTRIAL WASTES, AND WASTEWATER SLUDGE.

(B) NEW WATER MAINS AND NEW SUPPLY LINES SHALL BE INSTALLED AT LEAST 4 FEET HORIZONTALLY FROM, AND ONE FOOT VERTICALLY ABOVE, ANY PARALLEL PIPELINE CONVEYING:

(1) DISINFECTED TERTIARY RECYCLED WATER (DEFINED IN SECTION 60301.230), AND
(2) STORM DRAINAGE.

(C) NEW SUPPLY LINES CONVEYING RAW WATER TO BE TREATED FOR DRINKING PURPOSES SHALL BE INSTALLED AT LEAST 4 FEET HORIZONTALLY FROM, AND ONE FOOT VERTICALLY BELOW, ANY WATER MAIN.

(D) IF CROSSING A PIPELINE CONVEYING A FLUID LISTED IN SUBSECTION (A) OR (B), A NEW WATER MAIN SHALL BE CONSTRUCTED NO LESS THAN 45-DEGREES TO AND AT LEAST ONE FOOT ABOVE THAT PIPELINE. NO CONNECTION JOINTS SHALL BE MADE IN THE WATER MAIN WITHIN EIGHT HORIZONTAL FEET OF THE FLUID PIPELINE.

(E) THE VERTICAL SEPARATION SPECIFIED IN SUBSECTIONS (A), (B), AND (C) IS REQUIRED ONLY WHEN THE HORIZONTAL DISTANCE BETWEEN A WATER MAIN AND PIPELINE IS LESS THAN TEN FEET.

(F) NEW WATER MAINS SHALL NOT BE INSTALLED WITHIN 100 HORIZONTAL FEET OF THE NEAREST EDGE OF ANY SANITARY LANDFILL, WASTEWATER DISPOSAL POND, OR HAZARDOUS WASTE DISPOSAL SITE, OR WITHIN 25 HORIZONTAL FEET OF THE NEAREST EDGE OF ANY CESSPOOL, SEPTIC TANK, SEWAGE LEACH FIELD, SEEPAGE PIT, UNDERGROUND HAZARDOUS MATERIAL STORAGE TANK, OR GROUNDWATER RECHARGE PROJECT SITE.

(G) THE MINIMUM SEPARATION DISTANCES SET FORTH IN THIS SECTION SHALL BE MEASURED FROM THE NEAREST OUTSIDE EDGE OF EACH PIPE BARREL.

(H) WITH STATE BOARD APPROVAL, NEWLY INSTALLED WATER MAINS MAY BE EXEMPT FROM THE SEPARATION DISTANCES IN THIS SECTION, EXCEPT SUBSECTION (F), IF THE NEWLY INSTALLED MAIN IS:

(1) LESS THAN 1320 LINEAR FEET,
(2) REPLACING AN EXISTING MAIN, INSTALLED IN THE SAME LOCATION, AND HAS A DIAMETER NO GREATER THAN SIX INCHES MORE THAN THE DIAMETER OF THE MAIN IT IS REPLACING, AND
(3) INSTALLED IN A MANNER THAT MINIMIZES THE POTENTIAL FOR CONTAMINATION, INCLUDING, BUT NOT LIMITED TO:
   (A) SLEEving THE NEWLY INSTALLED MAIN, OR
   (B) UTILIZING UPGRADED PIPING MATERIAL.
FIGURE 1: CASE SECTION 64572 (a) WATER MAIN PARALLEL CONSTRUCTION

FIGURE 2: SECTION 64572 (a) UTILITY PIPE PARALLEL CONSTRUCTION
FIGURE 3: SECTION 64572 (b) & (c) NEW WATER MAIN PARALLEL CONSTRUCTION

NO NEED FOR WAIVER  |  WAIVER ZONE  |  PROHIBITED ZONE  |  WAIVER ZONE  |  NO NEED FOR WAIVER

NEW WATER MAIN  |  EXIST. PIPE SEC. 64572 (B)&(C)

1 FT  |  3 FT  |  1 FT

FIGURE 4: SECTION 64572 (b) & (c) UTILITY PIPE PARALLEL CONSTRUCTION

NO NEED FOR WAIVER  |  WAIVER ZONE  |  PROHIBITED ZONE  |  WAIVER ZONE  |  NO NEED FOR WAIVER

EXIST. WATER MAIN  |  NEW PPE SEC. 64572 (B)&(C)

1 FT  |  3 FT  |  1 FT

SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

DESIGN CRITERIA FOR SEPARATION OF WATER AND SEWER MAINS
FIGURE 5: SECTION 64572 (D) NEW UTILITY MAIN CROSSING CONSTRUCTION

NOTE: TO MAXIMIZE THE LENGTH OF PIPE WITHOUT JOINTS IN ZONE C, AN 18 TO 20+ FOOT PIPE LENGTH CAN BE CENTERED ABOVE A WATER MAIN WITH A DIAMETER OF LESS THAN 24-INCHES

WAIVER ZONE C

PROHIBITED ZONE

EXIST. WATER MAIN

PROHIBITED ZONE

WAIVER ZONE

NO SPECIAL REQUIREMENTS

FIGURE 6: SECTION 64572 (D) NEW WATER MAIN CROSSING CONSTRUCTION

NOTE: TO MAXIMIZE THE LENGTH OF PIPE WITHOUT JOINTS IN ZONE C, AN 18 TO 20+ FOOT PIPE LENGTH CAN BE CENTERED ABOVE A NON-POTABLE MAIN WITH A DIAMETER OF LESS THAN 24-INCHES

NO SPECIAL REQUIREMENTS

WAIVER ZONE

PROHIBITED ZONE

EXIST. UTILITY MAIN

PROHIBITED ZONE

WAIVER ZONE C
SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

3/4" & 1" WATER SERVICE INSTALLATION

NOTES:
1. SERVICE SADDLE SHALL NOT BE INSTALLED WITHIN 18" OF VALVE, COUPLING, JOINT OR FITTING. TAPPED COUPLINGS ARE NOT PERMITTED.
2. WATER SERVICES AND METER BOXES TO BE INSTALLED BY THE CONTRACTOR AND APPROVED AND INSPECTED BY CITY. METER TO BE INSTALLED BY THE WATER DIVISION AND PAID FOR BY THE DEVELOPER/OWNER.
3. IN ALLEYS, METER BOX SHALL BE 4" TO 6" FROM PROPERTY LINE IN THE PUBLIC RIGHT OF WAY.
4. FOR TRAFFIC LOADING AREAS USE ARMORCAST A6004B4T-30K. NON-TRAFFIC AREAS USE ARMORCAST A6004B64. VERIFY WITH CITY PRIOR TO ORDERING.
5. ALL FITTINGS SHALL BE COMPRESSION FITTINGS.
6. ALL COPPER PIPE SHALL BE COVERED WITH 4 MIL PLASTIC SLEEVING. SEAL ENDS WITH 10 MIL TAPE. PLASTIC SLEEVING SHALL BE SPECIALTY PRODUCTS P-3015/P-3016 OR APPROVED EQUAL.
NOTES:

1. SERVICE SADDLE SHALL NOT BE INSTALLED WITHIN 18" OF VALVE, COUPLING, JOINT OR FITTING. TAPPED COUPLINGS ARE NOT PERMITTED.

2. WATER SERVICES AND METER BOXES TO BE INSTALLED BY THE CONTRACTOR AND APPROVED AND INSPECTED BY CITY. METER TO BE INSTALLED BY THE WATER DIVISION AND PAID FOR BY THE DEVELOPER/OWNER.

3. IN ALLEYS, METER BOX SHALL BE 4" TO 6" FROM PROPERTY LINE IN THE PUBLIC RIGHT OF WAY.

4. FOR TRAFFIC LOADING AREAS USE ARMORCAST A6004B4T–30K. NON–TRAFFIC AREAS USE ARMORCAST A600484. VERIFY WITH CITY PRIOR TO ORDERING.

5. ALL FITTINGS SHALL BE COMPRESSION FITTINGS.

6. ALL COPPER PIPE SHALL BE COVERED WITH 4 MIL PLASTIC SLEEVING. SEAL ENDS WITH 10 MIL TAPE. PLASTIC SLEEVING SHALL BE SPECIALTY PRODUCTS P–3015/P–3016 OR APPROVED EQUAL.
1. WATER MAIN POINT OF CONNECTION
2. 4" (RW) GATE VALVE (FLG X MJ) PER STD. PLAN W-9.
3. 4" PVC WATER PIPE DR 14 (LENGTH VARIES)
4. 4" X 3" REDUCER (MJ X FLG)
5. 3" FLG'D 90' ELBOW WITH THRUST BLOCK PER STD PLAN W-10
6. 3" FLG'D D.I.P. SPOOL (LENGTH VARIES)
7. 3" FLG'D (RW) GATE VALVE (WITH 2" OPERATING NUT)
8. 3" FLG'D D.I.P. SPOOL (12" LONG)
9. 3" FLG'D WATER METER STRAINER
10. 3" WATER METER—TURBO COMPOUND CONTACT PUBLIC WORKS FOR METER SPECS.
11. 8" DIA. NON–FERROUS VALVE STACK
12. EISEL 4TT VALVE BOX COVER — MARKED WATER
13. ARMORCAST #A6001430PCX12 WATER METER BOX.

NOTES:
1. THE OVERALL LAYING LENGTH FOR THE 3-INCH WATER METER ASSEMBLY IS ±8 FT.
2. SELECT A LOCATION WHICH WILL ACCOMMODATE THE WATER METER ASSEMBLY AND WHERE THE SURFACE IS RELATIVELY FLAT.
GENERAL NOTES:
1. METER BOXES SHALL BE PLACED SUCH THAT SPACE BETWEEN BOXES IS A MINIMUM OF 4 INCHES.

2. WHERE PRACTICAL, A CONCRETE SLAB SHALL BE POURED AROUND AND BETWEEN METER BOXES.

3. FOR TRAFFIC LOADING AREAS USE ARMORCAST A600484T–30K. NON–TRAFFIC AREAS USE ARMORCAST A600484. VERIFY WITH CITY PRIOR TO ORDERING.

4. NO DRIVEWAY/CURB RAMP INSTALLATIONS. INSTALL PERPENDICULAR TO PARKWAY.
GENERAL NOTES:
1. REFER TO STD. PLAN W-2 AND W-3 FOR ADDITIONAL WATER SERVICE DETAILS.

SECTION A–A
SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

1" AND 2" COMBINATION AIR & VACUUM RELEASE VALVE ASSEMBLY

NOTES:
1. ALL COPPER TUBING CONNECTIONS SHALL BE MADE WITH COMPRESSION FITTINGS.
2. INSTALL AIR/VAC PER CASE No. 1, CASE No. 2 OR CASE No. 3.
3. ALL COPPER PIPE SHALL BE BEDDED IN 6" OF WASHED SAND, ON TOP, BOTTOM, AND SIDES.
4. ALL COPPER PIPE SHALL BE COVERED WITH 4 MIL PLASTIC SLEEVING. SEAL ENDS WITH 10 MIL TAPE. PLASTIC SLEEVING SHALL BE SPECIALTY PRODUCTS P-3015/P-3016 OR APPROVED EQUAL.

BRASS CORPORATION STOP
FORD FB-1000 NL OR EQUAL

BRASS WATER SERVICE SADDLE, DOUBLE STRAP, FORD 202BS OR EQUAL

LOCATE ASSEMBLY PER CASE 1, 2 OR 3

ARMORCAST A6004B4

#10 MESH THREADED SS VENT SCREEN

2% SLOPE MIN

1" OR 2" COPPER TUBING TYPE
K-50I SOFT BEDDED IN 6" OF WASHED SAND, ON TOP, BOTTOM, AND SIDES.
SLOPE TO BE ¼" PER 12" MIN.

ANGLE METER STOP
KV43-444-W OR EQUAL FOR 1"
FV43-777W-NL OR EQUAL FOR 2"

20"x36" ENCLOSURE
ARMORCAST P6002002
SANDBSTONE COLOR.
ARI D-040 COMBINATION AIR RELEASE VACUUM VALVE OR EQUAL.

1" OR 2" COPPER THREADED ADAPTER FITTING

½" 316 S.S. ANCHOR BOLTS.
EPOXY INTO BASE, 3 REQ'D.
(MIN. EMBED = 3")

30"x30" CLASS 560-C-3250
CONC. BASE WITH 4x4-W1.4xW1.4
WWF REINFORCEMENT

2" PVC SLEEVE FOR 1" COPPER
3" PVC SLEEVE FOR 2" COPPER

CONCRETE BASE
METER BOX
12" MIN.

SIDEWALK
CONCRETE BASE
PARKWAY 12" MIN.

METER BOX
CONCRETE BASE
PARKWAY 12" MIN.

SIDEWALK
METER BOX
12" MIN.

CURB AND GUTTER
CURB AND GUTTER
CURB AND GUTTER

W-6

SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

DRAWN BY: M. URIBE
CHECKED BY: J. LEE
DATE: OCT 2021
SCALE: NO SCALE

APPROVED BY:
DIRECTOR OF PUBLIC WORKS
10/7/2021
DATE
SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

WATER TEST STATION

NOTES:
1. ALL COPPER TUBING CONNECTIONS SHALL BE MADE WITH COMPRESSION FITTINGS.

2. INSTALL WATER TEST STATION PER CASE No. 1, CASE No. 2 OR CASE No. 3.

3. ALL COPPER PIPE SHALL BE BEDDED IN 6" OF WASHED SAND, ON TOP, BOTTOM, AND SIDES.

4. ALL COPPER PIPE SHALL BE COVERED WITH 4 MIL PLASTIC SLEEVING. SEAL ENDS WITH 10 MIL TAPE. PLASTIC SLEEVING SHALL BE SPECIALTY PRODUCTS P-3015 OR APPROVED EQUAL.

LOCATE ASSEMBLY PER CASE 1, 2 OR 3

CASE 1
CONCRETE BASE
PARKWAY 12" MIN.
5.5' SIDEWALK
CURB AND GUTTER

CASE 2
SIDEWALK
PARKWAY CONCRETE BASE 12" MIN.

CASE 3
SIDEWALK
8' OR MORE

CONCRETE BASE 12" MIN.

BRASS WATER SERVICE SADDLE, DOUBLE STRAP, FORD 202BS OR EQUAL

1" COPPER TUBING TYPE K—SOFT BEDDED IN 6" OF WASHED SAND, ON TOP, BOTTOM, AND SIDES. SLOPE TO BE 1/4" PER 12" MIN.

1" COPPER TUBING TYPE K—SOFT BEDDED IN 6" OF WASHED SAND, ON TOP, BOTTOM, AND SIDES. SLOPE TO BE 1/4" PER 12" MIN.

6" DIA. HOLE THRU CONCRETE PAD

2% SLOPE MIN

30'

LOCATE ASSEMBLY PER CASE 1, 2 OR 3

AMERICAN MACHINE & CONVEYOR CORP.
VENTURA CA.
EZ WATER SAMPLING
STATION EZ-01F

STATION BODY,
8"x8"x0.18" WALL
(6063—T52 ALUM.
WITH LID SUPPORT)

1" CRUSHED ROCK

1/2" 316 S.S. ANCHOR BOLTS.
EPoxy INTO BASE. 4 REQ'D.
(MIN. EMBED = 3"

24"x24" CLASS 560—C-3250 CONC.
BASE WITH 4x4—W1.4xW1.4
WWF REINFORCEMENT
MECHANICAL JOINT TAPPING SLEEVE. SEE STD. PLAN W-21.

FLEXIBLE JOINT OR COUPLING WITHIN 3'-0" OF VALVE. TYPICAL

PLAN

TAPPING VALVE SEE STD PLAN W-9 AND W-21.

FLEXIBLE JOINT OR COUPLING WITHIN 3'-0" OF VALVE. TYPICAL

SECTION

THRUST BLOCK PER STD. PLAN W-10.

ANCHOR BLOCK PER STD. PLAN W-10.
SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

WATER VALVE BOX INSTALLATION

CAST WATER ON COVER

TOP OF PAVEMENT

CONCRETE RING
CLASS 560-C-3250
WITH A MAXIMUM SLUMP OF 3"

EISEL 4TT
VALVE BOX AND COVER

8" PVC C-900
VALVE CAN (1 PIECE)

LOCATE WIRE

8 GAUGE HDPE INSULATED
COPPER LOCATION WIRE

1/2" MIN.

GATE VALVE.
SEE STD.
PLAN W-21

NOTE:
PROVIDE VALVE STEM
EXTENSION IF DEPTH
TO VALVE NUT EXCEEDS
6 FEET.

A.C. PAVEMENT

8"

CONC.
COLLAR

TOP VIEW

TOP OF PAVEMENT

8" MIN.

2"

6" MIN.

M. URIBE

J. LEE

OCT 2021

NO SCALE

10/7/2021

DIRECTOR OF PUBLIC WORKS
SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

THRU LOTO BLOCK DETAILS

SEAL BEACH
STANDARD PLANS FOR WATER FACILITIES

THRU LOTO BLOCK DETAILS

NOTE:
ANCHOR STRAPS SHALL BE #4 EPOXY COATED REBAR OR STAINLESS STEEL WITH ACI HOOKED ENDS. ALL EXPOSED REBAR SHALL BE COATED WITH NO-OX-ID "A SPECIAL" GREASE AND WRAP.

VERTICAL ANCHORS

PLAN

SECTION

REDCR

TEE

REDUCERS AND CAPPED ENDS WHERE INDICATED

CROSS

SECTION OF THRUST BLOCK

PLAN VIEW OF THRUST BLOCK

NOTES:
1. ALL FITTINGS SHALL MEET THE AWWA C-110 STANDARDS
2. CONCRETE BLOCKS SHALL BEAR ON UNDISTURBED EARTH
3. FOR SIZES OF CONCRETE BLOCKS, SEE STD. PLAN W-10, SHEET 3 OF 4.
4. INSTALL TRACER WIRE AND DETECTABLE TAPE OVER PIPE.
5. CONCRETE SHALL BE 560-C-3250.
SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

Fitting Thrust in Pounds
At 100 psig Water Pressure

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Estimated Bearing Load

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Notes:
1. All fittings shall meet the AWWA C-110 Standards.
2. Concrete blocks shall bear on undisturbed earth.
3. For sizes of concrete blocks, see Std. Plan W-10, Sheet 3 of 4.
4. Install tracer wire and detectable tape over pipe.
5. Concrete shall be 560-C-3250.

Seal Beach Standard Plans for Water Facilities

Thrust Block Details

Drawn By: M. Uribe
Checked By: J. Lee
Approved By: [Signature]
Date: Oct 2021
Scale: No Scale

Director of Public Works: [Signature]
Date: 10/7/2021

Sheet 2 of 4
## THRUST BLOCK SIZES

<table>
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<th>PIPE CLASS</th>
<th>PRESSURE P.S.I.</th>
<th>AREA</th>
<th>SQ. FT.</th>
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SIZE FOR 1500 LB. PER SQ. FT. BRG. SOIL  
SIZE FOR 2000 LB. PER SQ. FT. BRG. SOIL  
NOTE: USE SIZES FOR 1500 LB. PER SQ. FT. BRG. SOIL UNLESS HIGHER VALUE IS  
SUBLIMATED BY APPROVED SOILS REPORT. A SPECIAL DESIGN MUST BE SUBMITTED FOR THE  
DIRECTOR'S APPROVAL FOR ALL VERTICAL ANCHORS.
NOTES:
1. THRUST BLOCK BEARING AREA BASED ON ALLOWABLE SOIL BEARING VALUE OF 1500 PSF PRESSURE.
2. CONCRETE BLOCKS SHALL BEAR ON UNDISTURBED EARTH.
3. CONCRETE SHALL BE 5600–C–3250.
4. NO CONCRETE SHALL BE POURED ON VALVE OR PIPE JOINT.
5. ALL EXPOSED REBAR SHALL BE COATED WITH NO–OX–10 "A SPECIAL" GREASE AND WRAP.
6. INSTALL TRACER WIRE AND DETECTABLE TAPE OVER PIPE.
PIPE BEDDING

NOTES:

1. TRENCH WIDTH AT THE UPPER LIMIT OF THE PIPE ZONE SHALL BE WITHIN THE FOLLOWING LIMITS FOR TYPICAL NORMAL BEDDING.
   (A) MAXIMUM TRENCH WIDTH—O.D. PIPE OR BELL PLUS 8-INCHES MAX. EACH SIDE OF PIPE.
   (B) MINIMUM TRENCH WIDTH—O.D. PIPE OR BELL PLUS 6-INCHES MIN. EACH SIDE OF PIPE.

2. PROVIDE CLASS 100–E–100 CEMENT SLURRY IN PIPE ZONE FOR OVERWIDTH TRENCH CONDITIONS.

3. IF UNSUITABLE SUBGRADE SOIL CONDITIONS ARE ENCOUNTERED, A REGISTERED GEOTECHNICAL ENGINEER SHALL DETERMINE DEPTH OF REMOVAL. MINIMUM DEPTH OF REMOVAL SHALL BE 12-INCHES.

4. FOUNDATION ROCK SHALL BE 1½" GRAVEL WRAPPED IN MIRAFLY 140N FILTER FABRIC.

5. USE SLURRY BACKFILL FOR THE PIPE AND TRENCH ZONE IF DETERMINED BY THE CITY REPRESENTATIVE.
SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

TEMPORARY PLUG AND BLOW-OFF

NOTES:

1. ALL COPPER TUBING CONNECTIONS SHALL BE MADE WITH COMPRESSION FITTINGS

2. INSTALL BLOW-OFF PER CASE No. 1, CASE No. 2 OR CASE No. 3.

3. ALL COPPER PIPE SHALL BE BEDDED IN 6" OF WASHED SAND, ON TOP, BOTTOM, AND SIDES.

4. ALL COPPER PIPE SHALL BE COVERED WITH 4 MIL PLASTIC SLEEVING. SEAL ENDS WITH 10 MIL TAPE. PLASTIC SLEEVING SHALL BE SPECIALTY PRODUCTS P-3016 OR APPROVED EQUAL.

CASE 1

METER BOX
PARKWAY 12"

CURB AND GUTTER

CASE 2

METER BOX
PARKWAY 12"

SIDEWALK

CURB AND GUTTER

CASE 3

METER BOX
PARKWAY 12"

SIDEWALK

CURB AND GUTTER

CURB AND GUTTER

CURB AND GUTTER

CURB AND GUTTER

CURB AND GUTTER

CURB AND GUTTER

CURB AND GUTTER

CURB AND GUTTER

CURB AND GUTTER

CURB AND GUTTER
SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

STANDARD FIRE HYDRANT

NOTES:
1. FIRE HYDRANT RUNS 50' & OVER SHALL HAVE AN ADDITIONAL VALVE 20' FROM FIRE HYDRANT.
2. HYDRANTS IN RESIDENTIAL AREAS USE JONES 3700 WITH BRASS CAPS.
3. HYDRANTS IN INDUSTRIAL/COMMERCIAL AREAS USE JONES 3765 WITH BRASS CAPS.
4. PAINT FIRE HYDRANTS – FINISH COAT TO BE RUST-OLEUM YELLOW #7644 (TWO (2) COATS).
5. CITY MAY MAKE ADJUSTMENTS TO THE FIRE HYDRANT LOCATION, AS NECESSARY.
6. INSTALL 4" GUARD POST IN INDUSTRIAL/COMMERCIAL AREAS (PAINTED SAFETY YELLOW).
7. PROVIDE A MINIMUM 4'-FT CLEARANCE FROM FIRE HYDRANT PER ADA REQUIREMENTS.
8. WRAP ALL DUCTILE IRON MATERIAL WITH POLYETHYLENE WRAP.

SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

STANDARD FIRE HYDRANT

DRAWN BY: M. URIBE
CHECKED BY: J. LEE
DATE: OCT 2021
SCALE: NO SCALE

APPROVED BY:
DIRECTOR OF PUBLIC WORKS

W-13

10/7/2021

SHEET 1 OF 1
FIRE HYDRANT DEMOLITION

- Remove existing valve box and riser. Abandon existing valve in the closed position.
- Backfill with impured sand to 95% of the maximum fill density.

- Remove existing hydrant.
- Bury and pipe. Backfill with native or imported SE 30 material compacted to 95% of the maximum fill density.

- Existing 12" watermain.
- 12" x 6" tee (PO x FLG) with thrust block per STD. PLAN W-10.

- 6" resilient wedge gate valve (FLG x FLG).
- Install 6-inch MJ plug.

- Construct thrust block per STD. PLAN W-10.

- Backfill with SE 30 material and resurface with full concrete panels per city street standards.

- Existing fire hydrant to be removed.

EXISTING CONCRETE SIDEWALK

SEAL BEACH STANDARD PLANS FOR WATER FACILITIES
SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

FIRE DOUBLE CHECK DETECTOR BACKFLOW PREVENTION ASSEMBLY (DCDA)

1. TAPPING SLEEVE OR TEE
2. TAPPING VALVE (RW GATE VALVE FLG X MJ)
   PER STD. PLAN W-8
3. PVC WATER PIPE, DR 14
4. 90° ELBOW (FLG X MJ) PIPE CONNECTION
   (2 REQ'D)
5. 90° ELBOW (FLG X FLG)
6. FLG'D D.I. SPOOL - LENGTH VARIES
7. DOUBLE CHECK DETECTOR ASSEMBLY
8. EISEL 4T VALVE BOX, COVER AND 8”
   NON-FERROUS VALVE STACK (8” PVC)
9. PIPE SUPPORT (2 REQ'D) PER STD. PLAN W-19
10. OS&Y RW GATE VALVE (FLG X FLG)

NOTES:
1. INSTALL TRACER WIRE AND DETECTABLE TAPE OVER PIPE.
2. BACKFLOW ASSEMBLY SHALL BE ON APPROVED USC-FCCBR LIST.
3/4" TO 2" REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTION ASSEMBLY

1. TYPE K COPPER PIPE
2. 90° BRASS ELBOW (FNPT X FNPT)
3. THREADED BRASS NIPPLE
4. BACKFLOW PREVENTER (FEBCO MASTERSERIES LF860 OR EQUAL)

NOTES:

1. PROVIDE STAINLESS STEEL BACKFLOW ENCLOSURE (GUARDSHACK OR EQUAL) WITH CONCRETE BASE FOR ALL BACKFLOW PREVENTERS.
2. INSTALL TRACER WIRE AND DETECTABLE TAPE OVER PIPE.
3. BACKFLOW ASSEMBLY SHALL BE ON APPROVED USC–FCCHR LIST.
SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

REDUCED PRESSURE BACKFLOW ASSEMBLY (RP)

W-16

1. PVC WATER PIPE, DR 14
2. 90° ELBOW (FLG X MJ) PIPE CONNECTION (2 REQ'D)
3. 90° ELBOW (FLG X FLG)
4. FLG'D D.I. SPOOL — LENGTH VARIES
5. BACKFLOW PREVENTER (FEBCO MASTERSERIES LF860 OR EQUAL)
6. PIPE SUPPORT (2 REQ'D) PER STD. PLAN W-19

NOTES

1. PROVIDE STAINLESS STEEL BACKFLOW ENCLOSURE (GUARDSHACK OR EQUAL) WITH CONCRETE BASE FOR ALL BACKFLOW PREVENTERS.
2. INSTALL TRACER WIRE AND DETECTABLE TAPE OVER PIPE.
3. BACKFLOW ASSEMBLY SHALL BE ON APPROVED USC-FCCHR LIST.

2 1/2" & LARGER REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTION ASSEMBLY

FLOW

18" MIN, 30" MAX

6" THICK CONCRETE SLAB (LENGTH VARIES)

PROTECTIVE ENCLOSURE

#1 CHECK

#2 CHECK

THRUYST BLOCK PER STD. PLAN W-10

6" THICK CONCRETE SLAB (LENGTH VARIES)

FLOW

10' MAX

MIN. 18" MAX. 30"

WATER METER

CURB

NOTE

LOCATE PER APPROVED PLANS AND AS CLOSE TO METER AS PRACTICAL

2" THREADED FLOOR FLANGE

DRY PACK WITH NON-SHRINK GROUT BASE (1" MIN. THICKNESS)

½" Ø 316 S.S. EPOXY ANCHOR (2 REQ'D)
(MIN. EMBED = 3")

PIECE SUPPORT

SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

REDUCED PRESSURE BACKFLOW ASSEMBLY (RP)

DRAWN BY: M. URIBE
CHECKED BY: J. LEE
DATE: OCT 2021
SCALE: NO SCALE

APPROVED BY:

DIRECTOR OF PUBLIC WORKS

DATE

10/7/2021

SHEET 2 OF 2
DETAIL A – LAP WELDED JOINT

DETAIL B – FIELD WELDED BUTT-STRAP JOINT

SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

STEEL PIPE JOINT DETAILS

DRAWN BY: M. URIBE
CHECKED BY: J. LEE
DATE: OCT 2021
SCALE: NO SCALE

APPROVED BY:

DIRECTOR OF PUBLIC WORKS
10/7/2021
DATE

W-17

SHEET 1 OF 2
DETAIL C – POINTING HANDHOLE

NOTES:

1. CEMENT MORTAR SHALL BE APPLIED TO WELDED JOINTS ONLY AFTER THE HEAT OF THE WELDING HAS DISSIPATED. JOINT WELDS SHALL NOT BE COOLED BY QUenching.

2. THE INTERIOR SURFACE OF JOINTS TO BE LINED w/ CEMENT MORTAR SHALL BE CLEANED AND BRUSHED w/ APPROVED CEMENT ADHESIVE IMMEDIATELY BEFORE THE MORTAR IS APPLIED.

3. CEMENT MORTAR FOR THE INTERIOR OF JOINTS CONSIST OF ONE PART CEMENT, ONE PART SAND, WATER AND AN APPROVED CEMENT ADHESIVE ADDED ACCORDING TO MFR. RECOMMENDATIONS.

4. CEMENT MORTAR FOR THE EXTERIOR OF JOINTS SHALL CONSISTS OF ONE PART CEMENT, ONE PART SAND AND WATER AND SHALL BE POURED INTO ONE SIDE OF FORM ONLY.

5. THE INTERIOR OF ALL JOINTS SHALL BE SWABBED BY MEANS OF BALL AND ROD.

6. THE POINTING HANDHOLE SHALL BE INSTALLED CENTERED OVER A BUTT–STRAP JOINT AND SHALL BE USED AS NOTED ON PLANS OR WHERE A BALL AND ROD SWAB CANNOT BE USED.

7. FOR POINTING HANDHOLE, THE MINIMUM LENGTH OF THE BUTT STRAP SHALL BE 9–INCHES FOR ALL PIPE SIZES LISTED IN TABLE BELOW. WITHOUT HANDHOLE, THE MINIMUM LENGTH OF STRAP SHALL BE AS SHOWN IN THE FOLLOWING TABLE:

<table>
<thead>
<tr>
<th>PIPE SIZES TOTAL</th>
<th>MINIMUM LENGTH OF BUTT STRAP REQUIRED, IN INCHES</th>
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<tr>
<td>6 THRU 24</td>
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<td>26 THRU 36</td>
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8. A BOLTED FLANGED JOINT MAY BE USED AS AN ACCEPTABLE ALTERNATIVE TO THE LAP WELDED JOINT OR THE BUTT–STRAP JOINT.
NOTES:
1. MAXIMUM ALLOWABLE ANGLE OF FITTING = 45°
2. MAXIMUM ALLOWABLE PIPE JOINT DEFLECTION SHALL BE MFR. RECOMMENDATION LESS 1', ±1/2''
3. IF RETURN TO DESIGNED PIPE DEPTH BY DEFLECTION CANNOT ACCOMPLISHED WITHIN 2 STANDARD PIPE LENGTHS (36''), PIPE FITTINGS AND APPURTENANCES WILL BE REQUIRED UNLESS OTHERWISE NOTED OR DIRECTED IN THE FIELD.
4. AIR VACUUM RELEASE ASSEMBLY INSTALLATION MAY BE REQUIRED WHEN VERTICAL DISTANCE IS ONE PIPE DIAMETER OR MORE, OR DICTATED BY ENGINEERING DESIGN.
5. USE DUCTILE IRON PIPE UNLESS OTHERWISE SPECIFIED.
6. NO VALVES IN DEFLECTED AREA.
7. IF LOW POINT IN SYSTEM, INSTALL 2" BLOW-OFF PER STD. PLAN W-12.
8. INSTALL THRUST BLOCKS AT ALL FITTINGS.
9. FINAL DESIGN TO BE APPROVED BY DIRECTOR OF PUBLIC WORKS.
TABLE 1

<table>
<thead>
<tr>
<th>WATER MAIN</th>
<th>CASING—INSIDE DIAMETER</th>
<th>WALL THICKNESS</th>
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<td>3/8 INCH</td>
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<tr>
<td>LARGER THAN 16&quot;</td>
<td>REQUIRE ENGINEERING APPROVAL</td>
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NOTES:
1. MAXIMUM ALLOWABLE ANGLE OF FITTINGS = 45°
2. EARTH MORTAR PLUG SHALL BE MADE OF 1 PART CEMENT AND 3 PARTS EARTH AND SHALL PENETRATE THE ENDS OF THE CASING SURROUNDING THE WATER MAIN TO MINIMUM DEPTH OF 1 FOOT.
3. WATERMAIN SHALL BE PVC C900 DR 14.
4. INSTALL THRUST BLOCKS AT ALL FITTINGS.
5. FINAL DESIGN TO BE APPROVED BY DIRECTOR OF PUBLIC WORKS.
ADJUSTABLE PIPE SADDLE SUPPORT
FIGURE 264 OR EQUAL

DIMENSIONS

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<tr>
<th>PIPE SIZE IN.</th>
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SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

PIPE SUPPORT ASSEMBLY

DRAWN BY: M. URIBE
CHECKED BY: J. LEE
DATE: OCT 2021
SCALE: NO SCALE

APPROVED BY: [Signature]
DIRECTOR OF PUBLIC WORKS 10/7/2021
DATE

W-19

SHEET 1 OF 1
SEAL BEACH STANDARD PLANS FOR WATER FACILITIES

MAIN LINE VALVE LOCATION

W-20
PAINTING AND COATING

A. EPOXY
   1. TENMEX SERIES L69
   2. CARBOLINE CARBOGUARD 890 VOC
   3. SHERWIN WILLIAMS MACROPOXY 646–100

B. EPOXY (FOR IMMERSION IN POTABLE OR RECYCLED WATER)
   1. TENMEX SERIES L140
   2. CARBOLINE CARBOGUARD 890 VOC
   3. SHERWIN WILLIAMS MACROPOXY 646–100PW

C. URETHANE
   1. TENMEX SERIES 1095
   2. CARBOLINE CARBOTHANE 134 MC
   3. SHERWIN WILLIAMS HI–SOLIDS POLYURETHANE 100

D. HIGH–SOLIDS EPOXY
   1. TENMEX SERIES 22
   2. CARBOLINE PHENOLINE 341

E. SULFIDE–RESISTANT EPOXY
   1. TENMEX SERIES 435
   2. CARBOLINE PLASITE 4450

F. BITUMINOUS MASTIC
   1. NORTHTOWN COMPANY 50–HT
   2. CHRISTY’S HD50

HOT TAP CONNECTIONS

A. TAPPING SLEEVES FOR TAPS SMALLER THAN THE PIPELINE
   1. JCM
      a. 432 SS
      b. 462 SS
   2. MUELLER H–304SS
   3. ROMAC SST OR SST II

B. TAPPING SLEEVES FOR SIZE ON SIZE TAPS
   1. MUELLER H–616

C. TAPPING SLEEVES ONTO 14–INCH AND LARGER ACP
   1. MUELLER H–304

CORROSION PROTECTION

A. WELD CAP PRIMER
   1. ROYSTON ROYBOND PRIMER 747

B. WELD CAPS
   1. ROYSTON HANDY CAP
   2. TRENTON
DUCTILE-IRON PIPE AND FITTINGS

A. PIPE
1. PACIFIC STATES CAST IRON PIPE COMPANY
2. U.S. PIPE
3. AMERICAN PIPE

B. FITTINGS
1. TYLER
2. TRINITY VALLEY
3. DAYTON
4. SIGMA
5. LONG BEACH IRON

C. PUSH-ON JOINT RESTRAINT HARNESS FOR DUCTILE IRON PIPE:
1. EBAA IRON MEGALUG SERIES
2. SMITH BLAIR BELL-LOCK
3. ROMAC

D. MECHANICAL JOINT Restraining SYSTEM FOR DUCTILE IRON PIPE
1. SMITH BLAIR MJ-LOCK
2. ROMAC ROMOGRIp

E. MECHANICAL JOINT RESTRAINING SYSTEM FOR PVC PIPE
1. SMITH BLAIR MJ-LOCK
2. ROMAC PVC ROMOGRIp

F. PLASTIC FILM WRAP
1. POLYKEN 900
2. SCOTCH WRAP 50

G. CERAMIC EPOXY LINING
1. INDURON PROTECTO 401
2. TNEMEC PERMA-SHIELD PL SERIES 431

H. CORROSION GUARD
1. CHRISTY’S CG-15 CORROSION GUARD
2. TRENTO

BRONZE, BRASS, AND COPPER PIPE FITTINGS AND APPURtenances

A. COPPER TUBING AND FITTINGS
1. MUELLER INDUSTRIES

B. CUSTOMER SERVICE VALVE
1. JONES
2. MUELLER

C. CORPORATION STOP
1. JONES
2. MUELLER
3. FORD

D. ANGLE METER STOP
1. JONES
2. MUELLER
3. FORD

E. SERVICE SADDLES (FOR DUCTILE-IRON MAIN)
1. JONES
2. MUELLER
3. FORD

F. SERVICE SADDLES (FOR PVC MAIN)
1. JONES
2. MUELLER
3. FORD

G. INSULATING PIPE
1. SMITH BLAIR
2. PIPELINE SEAL AND INSULATOR, INC.
PVC PRESSURE DISTRIBUTION PIPE

A. PVC DISTRIBUTION PIPE
   1. NORTH AMERICAN PIPE CORPORATION
   2. VINYLTECH
   3. CERTAINTEED

B. PUSH-ON JOINT RESTRANINT HARNESS FOR PVC PIPE:
   1. EBAA IRON MEGALUG SERIES 1900
   2. SMITH BLAIR BELL-LOCK
   3. ROMAC

MANUAL VALVES

A. METAL SEATED GATE VALVES
   1. MUELLER, SERIES A-2380
   2. CLOW, DOUBLE DISC GATE VALVE
   3. KENNEDY VALVE, DOUBLE DISC GATE VALVE

B. BUTTERFLY VALVES
   1. PRATT
   2. DEZURIK

C. RESILIENT SEATED GATE VALVES
   1. CLOW RW 2639 AND 2640
   2. MUELLER SERIES A-2360
   3. AMERICAN FLOW CONTROL SERIES 2500
   4. KENNEDY VALVE, AWWA C-509
   5. AMERICAN AVK CO., SERIES 45 AND 65
   6. U.S. PIPE A-USP1

D. VALVE BOXES
   1. EISEL 4TT VALVE BOX AND COVER

AIR VALVES

A. COMBINATION VALVES ≤2”
   1. ARI

B. COMBINATION VALVES >2”
   1. APCO
   2. VAL-MATIC
   3. CRISPIN
   4. ARI

C. AIR VALVE ENCLOSURE
   1. ARMORCAST
   2. PIPELINE PRODUCTS
### METERS

A. CUSTOMER METERS AND FIRE SERVICE BYPASS METERS (3/4-INCH THROUGH 1-INCH)
   1. SENSUS iPERL

B. CUSTOMER METER (1-1/2 INCH THROUGH 2-INCH)
   1. KAMSTRUP FLOW IQ 3101

C. COMMERCIAL CUSTOMER METERS (3-INCH THROUGH 8-INCH)
   1. SENSUS OMNI COMPOUND (C2)

D. IRRIGATION CUSTOMER METERS (3-INCH THROUGH 8-INCH) AND COMMERCIAL BYPASS METERS (2-INCH)
   1. SENSUS OMNI TURBO (T2)

E. PROPELLER FLOWMETERS
   1. McCROMETER

F. MAGNETIC FLOWMETERS
   1. TOSHIBA

### POTABLE WATER, RECYCLED WATER, AND WASTEWATER FACILITIES IDENTIFICATION

A. WARNING TAPE AND PIPE SLEEVES
   1. GRIFFOLYN COMPANY, INC.
   2. TERRA TAPE, DIVISION OF REEF INDUSTRIES
   3. T. CHRISTY ENTERPRISES, INC.

B. WITNESS MARKERS
   1. CARSONITE WATER LINE MARKERS

### WALL AND SLAB PENETRATIONS

A. WALL PIPE MODULAR SEAL
   1. GPT INDUSTRIES (LINK–SEAL)

### PIPE COUPLINGS AND ADAPTERS

A. SLEEVE–TYPE COUPLINGS
   1. BAKER
   2. ROMAC
   3. SMITH–BLAIR

B. RESTRAINED SLEEVE–TYPE COUPLINGS
   1. EBAA IRON
   2. ROMAC
   3. SMITH–BLAIR

C. RESTRAINED ONE–PIECE COUPLING
   1. ROMAC

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**SEAL BEACH STANDARD PLANS FOR WATER FACILITIES**

**STANDARD MATERIALS LIST**

<table>
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<tr>
<th>DRAWN BY:</th>
<th>M. URIBE</th>
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<td>CHECKED BY:</td>
<td>J. LEE</td>
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<td>DATE:</td>
<td>OCT 2021</td>
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</tbody>
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**APPROVED BY:**

[Signature]

**DIRECTOR OF PUBLIC WORKS**

10/7/2021

**DATE**

**SHEET 4 OF 6**

**W-21**
AUTOMATIC CONTROL VALVES

A. CHECK VALVES
   1. CLA—VAL MODEL 81G—02KC WITH X101 VALVE POSITION INDICATOR
      OR APPROVED EQUAL (INSTALLED BY VALVE MANUFACTURER)

B. SOLENOID CONTROL VALVES
   1. CLA—VAL MODEL 136G—03 YBCSFKC WITH LIMIT SWITCH ASSEMBLY MODEL X105LCW
      OR APPROVED EQUAL (INSTALLED BY VALVE MANUFACTURER)

C. PRESSURE REDUCING VALVES
   1. CLA—VAL MODEL 90G—01YBK (90G—01YSFC FOR VALVES 3 INCHES AND
      SMALLER), WITH X101 VALVE POSITION INDICATOR OR APPROVED EQUAL
      (INSTALLED BY VALVE MANUFACTURER)

D. PRESSURE RELIEF VALVES
   1. CLA—VAL MODEL 50G—01SBK WITH LIMIT SWITCH ASSEMBLY MODEL X105LOW
      OR APPROVED EQUAL (INSTALLED BY VALVE MANUFACTURER)

E. SURGE ANTICIPATOR VALVES
   1. CLA—VAL MODEL 52G—01BKC WITH LIMIT SWITCH ASSEMBLY MODEL X105LOW
      OR APPROVED EQUAL (INSTALLED BY VALVE MANUFACTURER)

F. PUMP CONTROLLER VALVES
   1. CLA—VAL MODEL 60G—11 BKC WITH LIMIT SWITCH ASSEMBLY MODEL X105LCW
      OR APPROVED EQUAL (INSTALLED BY VALVE MANUFACTURER)

G. ALTITUDE VALVES
   1. CLA—VAL MODEL 201—01 WITH X—101 POSITION INDICATOR OR APPROVED EQUAL
      (INSTALLED BY VALVE MANUFACTURER)

CONCRETE

A. FORM TIES
   1. BURKE PENTA—TIE SYSTEM
   2. DAYTON SUPERIOR SNAP—TIES

B. ADMIXTURES
   1. SIKA CORPORATION
   2. BASF
   3. GCP

C. MECHANICAL COUPLERS
   1. DAYTON SUPERIOR DOWEL BAR
   2. ERICO PRODUCTS LENTON FORM SAVER
PRECAST CONCRETE VAULTS
A. PRECAST VAULTS AND METER BOXES
   1. J&R PRODUCTS
   2. JENSEN PRECAST
   3. EISEL ENTERPRISES, INC.

B. LADDERS
   1. GALVANIZED WITH LADDERUP – ALHAMBRA A–3400

C. JOINT SEALING COMPOUND
   1. RAM–NEK AS MANUFACTURED BY K.T. SNYDER COMPANY, INC.
   2. CONSEAL AS MANUFACTURED BY CONCRETE SEALANTS
   3. EZ–STIK AS MANUFACTURED BY PRESS–SEAL GASKET CORPORATION

D. WATERPROOFING
   1. GRACE DEHYDRATINE 4

DISSIMILAR METAL CONNECTIONS
A. INSULATING FLANGE KITS
   1. PSI LINEBACKER

B. INSULATING BUSHINGS
   1. NORHTOWN COMPANY

C. CASING SPACERS
   1. GPT – CBG–2

D. CASING SEAL ENDS
   1. GPT – TYPE KT

E. WAX TAPE COATING SYSTEM
   1. TRENTON

F. WAX TAPE PRIMER
   1. TRENTON

INSTRUMENTATION
A. PRESSURE TRANSMITTERS
   1. ROSEMOUNT, 2051 SMART

B. LEVEL TRANSMITTER
   1. ROSEMOUNT, 5300

C. GAS DETECTORS
   1. MSA

ELECTRICAL COMPONENTS
A. MOTORS
   1. U.S. MOTORS
   2. BALDER–RELIANCE
   3. WEG

B. AUTOMATIC TRANSFER SWITCH
   1. ASCO, 940 SERIES

C. ELECTRIC ACTUATORS
   1. ROTORK
   2. AUMA

SEAL BEACH STANDARD PLANS FOR WATER FACILITIES
STANDARD MATERIALS LIST

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