

CLEVELAND DIVISION
OF WATER
CONSTRUCTION
STANDARDS

Details Index

PLAN REVIEW AND DESIGN REQUIREMENTS

SERVICE CONNECTION REQUIREMENTS

EASEMENTS FOR WATER SUPPLY MAINS, CIRCULATION MAINS, AND VAULTS

HYDRANT RELOCATION

GENERAL DETAILS

STD-001 – WATER MAIN TRENCH DETAILS

STD-002 – ALTERNATE PRESSURE TESTING DETAIL

STD-003 – TYPICAL FLUSHING ASSEMBLY

STD-004 – PLUGGING ABANDONED WATER MAIN ENDS

STD-005 – CUT IN VALVE DETAIL

STD-006 – TYPICAL THRUST BLOCK DETAIL FOR HORIZONTAL DEFLECTION FOR PIPE UP TO 16” DIAMETER

STD-007 – SLEEVE-IN INSTALLATION DETAIL

STD-008 – SPOOL PIECE INSTALLATION DETAIL

STD-009 – TYPICAL FROSTPROOFING DETAIL

STD-010 – SAMPLE RIGHT OF WAY CROSS SECTION FOR NEW CONSTRUCTION

STD-011 – CLEVELAND WATER NOTES FOR WATER MAIN INSTALLATION AND/OR REPLACEMENT

STD-012 – STRAIGHT CUL-DE-SAC SCHEMATIC

STD-013 – STANDARD CUL-DE-SAC HYDRANT/LOOP SCHEMATIC

STD-014 – ALTERNATE CUL-DE-SAC HYDRANT/LOOP SCHEMATIC

STD-016 – CASING DETAIL NO. 2 END OF CASING AND CASING CHOCK DETAIL

STD-017 – HORIZONTAL CLEARANCE FOR UTILITIES

STD-018 – VERTICAL CLEARANCE FOR UTILITIES

STD-019 – CROSSING LARGE DITCHES OR SMALL STREAMS PROFILE – OPEN CUT METHOD

STD-020 – CROSSING LARGE DITCHES OR SMALL STREAMS SECTION A-A – OPEN CUT METHOD

STD-021 – SPLIT CASING DETAIL

STD-022 – GUARDRAIL DETAILS AT HYDRANT

STD-023 – SERVICE CONNECTION BACKFILL DETAIL

HYDRANT DETAILS

STD-H01 – DISTURBING EXISTING LEADED HYDRANTS AND LEADED FITTINGS

STD-H02 – EXTEND, SHORTEN AND ADJUST HYDRANT GRADE, STRAIGHT TYPE

STD-H03 – EXTEND, SHORTEN AND ADJUST HYDRANT TO GRADE, OFFSET TYPE 1
STD-H04 – EXTEND, SHORTEN AND ADJUST HYDRANT TO GRADE, OFFSET TYPE 2
STD-H05 – EXTEND, SHORTEN AND ADJUST HYDRANT TO GRADE, OFFSET TYPE 3
STD-H06 – REPLACING EXISTING HYDRANT WITH NEW 6" HYDRANT, STRAIGHT TYPE
STD-H07 – REPLACING EXISTING HYDRANT WITH NEW 6" HYDRANT, OFFSET TYPE
STD-H08 – CUT-IN TEE FOR NEW HYDRANT INSTALLATION ON EXISTING WATER MAIN
STD-H09 – TYPICAL NEW HYDRANT INSTALLATION DETAIL A
STD-H10 – TYPICAL NEW HYDRANT INSTALLATION DETAIL B
STD-H11 – TYPICAL NEW HYDRANT INSTALLATION DETAIL C
STD-H12 – ADJUSTING 6" HYDRANT ELEVATION
STD-H13 – 6" HYDRANT ELEVATION
STD-H14 – TEMPORARY WATER MAIN & HYDRANT CONNECTION ASSEMBLY-A
STD-H16 – TEMPORARY WATER MAIN & HYDRANT CONNECTION ASSEMBLY-C OUTLET END
STD-H17 – TEMPORARY WATER SERVICE FROM PUBLIC FIRE HYDRANT
STD-H18 – TEMPORARY WATER SERVICE FOR HOSE CONNECTION FROM PUBLIC FIRE HYDRANT

LOWERING DETAILS

STD-L01 – PIPE LOWERING
STD-L02 – DETAIL FOR TYPICAL WATER MAIN LOWERING ON OBSTRUCTIONS LESS THAN 24" IN DIAMETER OR WIDTH FOR EXISTING CONSTRUCTION
STD-L03 – DETAIL FOR TYPICAL WATER MAIN LOWERING ON OBSTRUCTIONS 24" & LARGER IN DIAMETER OR WIDTH FOR EXISTING CONSTRUCTION
STD-L04 – DETAIL FOR TYPICAL WATER MAIN LOWERING ON OBSTRUCTIONS LESS THAN 24" IN DIAMETER OR WIDTH FOR NEW CONSTRUCTION
STD-L05 – DETAIL FOR TYPICAL WATER MAIN LOWERING ON OBSTRUCTIONS 24" & LARGER IN DIAMETER OR WIDTH FOR NEW CONSTRUCTION
STD-L06 – DETAIL FOR WATER MAIN LOWERING USING MECHANICAL JOINT OFFSETS UNDER OBSTRUCTIONS LESS THAN 24" IN DIAMETER OR WIDTH FOR NEW CONSTRUCTION
STD-L07 – DETAIL FOR WATER MAIN LOWERING USING MECHANICAL JOINT OFFSETS UNDER OBSTRUCTIONS 24" & LARGER IN DIAMETER OR WIDTH FOR NEW CONSTRUCTION
STD-L08 – DETAIL FOR WATER MAIN LOWERING USING MECHANICAL JOINT OFFSETS UNDER OBSTRUCTIONS LESS THAN 24" IN DIAMETER OR WIDTH FOR EXISTING MAINS
STD-L09 – DETAIL FOR WATER MAIN LOWERING USING MECHANICAL JOINT OFFSETS UNDER OBSTRUCTIONS 24" & LARGER IN DIAMETER OR WIDTH FOR EXISTING MAINS

TEE DETAILS

STD-T01 – CUT-IN TEE METHOD #1

STD-T02 – CUT-IN TEE METHOD #2

STD-T03 – CUT-IN TEE METHOD #3

AIR RELIEF DETAILS

STD-A01 – 2" AIR RELIEF VALVE FOR STEEL WATER MAINS

STD-A02 – 2" AIR RELIEF VALVE FOR CONCRETE MAINS

STD-A03 – 2" AIR RELIEF VALVE FOR DUCTILE IRON MAINS

STD-A04 – 2" AIR RELIEF/FLUSHING OUTLET VALVE FOR STEEL MAINS ON BRIDGES

REGULATORS

8" REGULATOR – PLAN, ELEVATION, AND SECTION

8" REGULATOR – PLAN VIEW

8" REGULATOR – ELEVATION

8" REGULATOR – CROSS SECTION

8" REGULATOR – BILL OF MATERIALS

12" REGULATOR – PLAN, ELEVATION, AND SECTION

12" REGULATOR – PLAN VIEW

12" REGULATOR – ELEVATION

12" REGULATOR – CROSS SECTION

12" REGULATOR – BILL OF MATERIALS

CONNECTIONS DETAILS

STD-C01 – WATER SERVICE CONNECTION EXTENSION OR REPLACEMENT FOR 1" & SMALLER

STD-C02 – WATER SERVICE CONNECTION EXTENSION FOR 1-1/2" & 2"

STD-C03 – WATER SERVICE CONNECTION REPLACEMENT FOR 1-1/2" & 2"

STD-C04 – NEW 1" SERVICE CONNECTION DETAIL IN PUBLIC RIGHT OF WAY (**COMMONLY USED FOR NEW HOMES**)

STD-C05 – TWO-PLEX SETTING FOR REMOTE REGISTER METER AT BUILDING – PLAN

STD-C06 – TWO-PLEX SETTING FOR REMOTE REGISTER METER AT BUILDING - PROFILE

STD-C07 – THREE-PLEX SETTING FOR REMOTE REGISTER METER AT BUILDING

STD-C08 – FOUR-PLEX SETTING FOR REMOTE REGISTER METER AT BUILDING

STD-C09 – EXTEND 3" & LARGER CONNECTION

STD-C10 – NEW WATER SERVICE CONNECTION FOR 1-1/2" & 2" (**COMMONLY USED FOR SOME NEW HOMES AND SMALL BUSINESSES**)

STD-C11 – 3" AND LARGER CONNECTION DATED

STD-C14 – RESIDENTIAL SERVICE CONNECTION INSTALLATION DETAIL WITH METER IN VAULT (**COMMONLY USED FOR NEW HOMES**)

STD-C15 – RESIDENTIAL SERVICE CONNECTION DETAIL WITH METER IN HOUSE (**COMMONLY USED FOR NEW HOMES**)

MATERIAL REQUIRED FOR INSTALLATION OF 1" CONNECTION FOR DOMESTIC SUPPLY

MATERIAL REQUIRED FOR INSTALLATION - 1-1/2" CONNECTION FOR DOMESTIC SUPPLY OR FIRE PROTECTION CONNECTION

MATERIAL REQUIRED FOR INSTALLATION - 2" CONNECTION FOR DOMESTIC SUPPLY OR FIRE PROTECTION CONNECTION

MATERIALS REQUIRED FOR INSTALLATION - 3" CONNECTION FOR DOMESTIC SUPPLY OR FIRE PROTECTION CONNECTION

MATERIALS REQUIRED FOR INSTALLATION - 4" CONNECTION FOR DOMESTIC SUPPLY OR FIRE PROTECTION CONNECTION

MATERIALS REQUIRED FOR INSTALLATION - 6" CONNECTION FOR DOMESTIC SUPPLY OR FIRE PROTECTION CONNECTION

MATERIALS REQUIRED FOR INSTALLATION - 8" CONNECTION FOR DOMESTIC SUPPLY OR FIRE PROTECTION CONNECTION

MATERIALS REQUIRED FOR INSTALLATION - 10" CONNECTION FOR DOMESTIC SUPPLY OR FIRE PROTECTION CONNECTION

MATERIALS REQUIRED FOR INSTALLATION - 12" CONNECTION FOR DOMESTIC SUPPLY OR FIRE PROTECTION CONNECTION

METER SETTING DETAILS

STD-M01 – STANDARD 1-1/2" METER SETTING WITH 1-1/2" METER FOR VAULTS AND BILL OF MATERIAL

STD-M02 – STANDARD 2" METER SETTING WITH 2" METER FOR VAULTS 10-1-97 AND BILL OF MATERIAL

STD-M04 – STANDARD 3" METER SETTING WITH 2" METER FOR VAULTS – PLAN

STD-M05 – STANDARD 3" METER SETTING WITH 2" METER FOR VAULTS – ELEVATION

STD-M06 – STANDARD 3" METER SETTING WITH 3" METER FOR VAULTS – PLAN

STD-M07 – STANDARD 3" METER SETTING WITH 3" METER FOR VAULTS – ELEVATION AND BILL OF MATERIAL

STD-M08 – STANDARD 4" METER SETTING WITH 4" METER FOR VAULTS DATED 10-1-97 AND BILL OF MATERIAL

STD-M09 – STANDARD 4" METER SETTING WITH 3" METER FOR VAULTS AND BILL OF MATERIAL

STD-M10 – STANDARD 6" METER SETTING WITH 6" METER FOR VAULTS AND BILL OF MATERIAL

STD-M11 – STANDARD 6" METER SETTING WITH 4" METER FOR VAULTS AND BILL OF MATERIAL

STD-M12 – STANDARD 8" METER SETTING WITH 8" METER FOR VAULTS AND BILL OF MATERIAL

STD-M13 – STANDARD 8" METER SETTING WITH 6" METER FOR VAULTS AND BILL OF MATERIAL

STD-M14 – STANDARD 12" METER SETTING WITH 12" METER FOR VAULTS AND BILL OF MATERIAL

STD-M15 – TYPICAL 3", 4", 6", AND 8" METER SETTINGS WITH 1", 1-1/2" OR 2" LAWN SPRINKLER CONNECTION

STD-M16 – TYPICAL 1-1/2" & 2" METER SETTINGS WITH 1" & 1-1/2" LAWN SPRINKLER CONNECTION

STD-M17 – APPROVED INSIDE BUILDING METER SETTINGS FOR 1" METERS (**COMMONLY USED**)

STD-M18 – APPROVED INSIDE BUILDING METER SETTINGS FOR 1" METERS FOR SEWER EXEMPTION

STD-M20 – APPROVED INSIDE BUILDING METER SETTING FOR 1-1/2" METER AND BACKFLOW ASSEMBLY

STD-M22 – APPROVED INSIDE BUILDING METER SETTING FOR 2" METER AND BACKFLOW ASSEMBLY

STD-M24 – APPROVED 1" METER SETTING FOR 1" METER AND BACKFLOW ASSEMBLY FOR VAULTS LAWN IRRIGATION ONLY

STD-M25 – STANDARD 1-1/2" METER SETTING WITH 1-1/2" METER IN VAULT FOR 2" CONNECTION AND BILL OF MATERIAL

STD-M26 – STANDARD 1" METER SETTING WITH 1" REGULATOR FOR 2" CONNECTION IN VAULT DATED

STD-M27 – STANDARD 1" METER SETTING WITH 1" REGULATOR FOR 1-1/2" CONNECTION IN VAULT

STD-M28 – STANDARD 1" METER SETTING FOR 2" CONNECTION IN VAULT

STD-M29 – STANDARD 1" METER SETTING FOR 1-1/2" CONNECTION IN VAULT (**COMMONLY USED**)

STD-M30 – STANDARD 1" SERVICE CONNECTION WITH CLEVELAND STANDARD METER PIT WITH REGULATOR DETAIL IN PUBLIC RIGHT OF WAY

STD-M31 – STANDARD 1" SERVICE CONNECTION WITH CLEVELAND STANDARD METER PIT
DETAIL IN PUBLIC RIGHT OF WAY

STD-M33 – 3" IRRIGATION METER SETTING WITH 3" METER DATED AND BILL OF MATERIAL

STD-M34 – 4" IRRIGATION METER SETTING WITH 4" METER AND BILL OF MATERIAL

STD-M35 – 6" IRRIGATION METER SETTING WITH 6" METER AND BILL OF MATERIAL

STD-M36 – LARGE METER SETTINGS INSIDE BUILDINGS

STD-M37 – UL/FM APPROVED 8" COMPOUND METER ASSEMBLY FOR VAULT AND BILL OF
MATERIAL

STD-M39 – UL/FM APPROVED 12" COMPOUND METER ASSEMBLY FOR VAULT AND BILL OF
MATERIAL

STD-M40 – APPROVED 1-1/2" METER SETTING FOR 1-1/2" METER AND BACKFLOW ASSEMBLY
FOR VAULTS LAWN IRRIGATION

VAULT ARRANGEMENT DETAILS

STD-V01 – VAULT AND VALVE ARRANGEMENT

STD-V02 – TYPICAL METER SETTINGS, 3" METER SETTINGS AND LARGER FOR INSIDE BUILDINGS

STD-V03 – SINGLE FEED/COMBINATION VAULT DOMESTIC – FIRELINE CONNECTIONS 3"
DOMESTIC - 4" - 10" FIRELINE

STD-V04 – SINGLE FEED/SEPARATE VAULTS DOMESTIC - FIRELINE CONNECTIONS 4" - 12"
DOMESTIC - 4" - 12" FIRELINE

STD-V05 – SINGLE FEED/SINGLE VAULT FOR FIRELINE CONNECTION/DOMESTIC CONNECTION
WITH REMOTE METER/1" - 2" DOMESTIC/4" - 12" FIRELINE

STD-V06 – SINGLE FEED/COMBINATION VAULT DOMESTIC - FIRELINE/DOMESTIC CONNECTION
1" - 2" DOMESTIC/4" - 8" FIRELINE

THE BELOW DETAILS ARE NOT INCLUDED IN THE FULL DESIGN AND CONSTRUCTION SPECIFICATIONS. THEY ARE PROVIDED AS INDIVIDUAL DOWNLOADS

BRIDGE DETAILS

STD-BR01 – FIELD JOINT DETAILS

STD-BR02 – SLEEVE FOR WATER MAIN AT ABUTMENTS DETAIL

STD-BR03 – EXPANSION JOINT DETAIL

STD-BR05 – STEEL TO DUCTILE IRON PIPE CONNECTION DETAIL

STD-BR06 – 12" PIPE INSULATION DETAIL

STD-BR07 – ABOVE GROUND ANCHOR DETAIL

STD-A04 – 2" AIR RELIEF/FLUSHING OUTLET VALVE FOR STEEL MAINS ON BRIDGES

STD-BR08 – CLEVELAND DIVISION OF WATER NOTES FOR WATER MAIN INSTALLATION ON BRIDGES

SPECIFICATIONS - ITEM SPECIAL - EXTRA STRONG WELDED GALVANIZED STEEL PIPE ASTM A-53, GRADE B

SUPPLY MAIN DETAILS (TRUNK MAINS)

SM-STD1 – MANHOLE FRAMES AND COVERS

SM-STD2A – 20" AND 24" VALVE ASSEMBLY DETAILS

SM-STD2B – 30" THROUGH 48" VALVE ASSEMBLY DETAILS

SM-STD3 – VALVE VAULT DETAILS AND ANCHORAGE, TYPE B

SM-STD4 – ACCESS MANHOLE & ANCHORAGE, TYPE A DETAILS

SM-STD5 – ANCHOR RING AND PLAIN CONCRETE ANCHOR DETAILS

SM-STD6 – 2" AIR RELIEF DETAILS, 2" OUTLET DETAILS FOR AIR RELIEF /PITOMETER

SM-STD7 – DRAIN ASSEMBLY DETAILS OUTLET/ DRAIN/ VAULT DETAILS

SM-STD8 – VALVE BOX, STEM & PITOMETER DETAILS

SM-STD9 – FLANGE AND VICTAULIC DETAILS; PCCP AND STEEL PIPE WELDED JOINTS

SM-STD10 – NO LONGER USED - REMOVED FROM DOCUMENT

SM-STD11 – THRUST BLOCK, RESTRAINT & AND TRENCH DETAILS

SM-STD12 – NO LONGER USED - REMOVED FROM DOCUMENT

PVC DETAILS

STANDARD DETAILS

PVC-001 WATER MAIN TRENCH DETAIL

PVC-002 ALTERNATE PRESSURE TESTING DETAIL

PVC-003 TYPICAL FLUSHING ASSEMBLY

PVC-004 PLUGGING ABANDONED WATER MAIN ENDS

PVC-005 CUT-IN-VALVE DETAIL

PVC-006 TYPICAL THRUST BLOCK DETAIL FOR HORIZONTAL DEFLECTION FOR PIPE UP TO 16" DIAMETER

PVC-007 SLEEVE INSTALLATION DETAIL

PVC-008 SPOOL PIECE INSTALLATION DETAIL

PVC-009 TYPICAL FROSTPROOFING DETAIL

PVC-010 TYPICAL PAVEMENT SECTION

PVC-011A CONSTRUCTION NOTES

PVC-011B CONSTRUCTION NOTES

PVC-012 STRAIGHT CUL-DE-SAC SCHEMATIC

PVC-013 STANDARD CUL-DE-SAC HYDRANT/LOOP SCHEMATIC

PVC-014 ALTERNATE CUL-DE-SAC HYDRANT/LOOP SCHEMATIC

PVC-016 CASING DETAIL No. 2 END OF CASING AND CASING CHOCK DETAIL

PVC-017 CLEARANCE FOR UTILITES - PLAN VIEW

PVC-018 CLEARANCE FOR UTILITES - PROFILE VIEW

PVC-019 CROSSING LARGE DITCHES OR SMALL STREAMS PROFILE- OPEN CUT METHOD

PVC-020 CROSSING LARGE DITCHES OR SMALL STREAMS SECTION A-A OPEN CUT METHOD

PVC-021 SPLIT CASING DETAIL

PVC-022 GUARDRAIL DETAILS AT HYDRANT

TEE DETAILS

PVC-T01 CUT-IN TEE METHOD #1

PVC-T02 CUT-IN TEE METHOD #2

PVC-T03 CUT-IN TEE METHOD #3

LOWERING DETAILS

PVC-L01 PIPE LOWERING

PVC-L02 DETAIL FOR TYPICAL WATER MAIN LOWERING ON OBSTRUCTIONS LESS THAN 24" IN DIAMETER OR WIDTH FOR EXISTING CONSTRUCTION

PVC-L03 DETAIL FOR TYPICAL WATER MAIN LOWERING ON OBSTRUCTIONS 24"& LARGER IN DIAMETER OR WIDTH FOR EXISTING CONSTRUCTION

PVC-L04 DETAIL FOR TYPICAL WATER MAIN LOWERING ON OBSTRUCTIONS LESS THAN 24" IN DIAMETER OR WIDTH FOR NEW CONSTRUCTION

PVC-L05 DETAIL FOR TYPICAL WATER MAIN LOWERING ON OBSTRUCTIONS 24"& LARGER IN DIAMETER OR WIDTH FOR NEW CONSTRUCTION

AIR RELIEF DETAILS

PVC-A03 2" AIR RELIEF/FLUSHING OUTLET VALVE FOR PVC WATER MAINS

CONNECTION DETAILS

PVC-C01 WATER SERVICE CONNECTION EXTENSION OR REPLACEMENT FOR 1" & SMALLER

PVC-C02 WATER SERVICE CONNECTION EXTENSION FOR 1-1/2" & 2"

PVC-C03 WATER SERVICE CONNECTION REPLACEMENT FOR 1-1/2" & 2"

PVC-C04 NEW 1" SERVICE CONNECTION DETAIL IN PUBLIC RIGHT OF WAY

PVC-C09 EXTEND 3" & LARGER CONNECTION

HYDRANT DETAILS

PVC-H02 EXTEND, SHORTEN AND ADJUST EXISTING 6" HYDRANT TO GRADE

PVC-H03 EXTEND, SHORTEN AND ADJUST EXISTING 6" HYDRANT TO GRADE

PVC-H04 EXTEND, SHORTEN AND ADJUST EXISTING 6" HYDRANT TO GRADE

PVC-H07 EXTEND, SHORTEN AND ADJUST EXISTING 6" HYDRANT TO GRADE

PVC-H08 CUT-IN TEE FOR NEW HYDRANT INSTALLATION ON EXISTING WATER MAIN

PVC-H09 TYPICAL NEW HYDRANT INSTALLATION DETAIL A

PVC-H10 TYPICAL NEW HYDRANT INSTALLATION DETAIL B

PVC-H11 TYPICAL NEW HYDRANT INSTALLATION DETAIL C

PVC-H12 ADJUSTING 6" HYDRANT ELEVATION

PVC-H13 6" HYDRANT ELEVATION

TRACER WIRE DETAILS

PVC-TW01 TRACER WIRE AT HYDRANT

PVC-TW02 TRACER WIRE AT HYDRANT TEE

PVC-TW03 TRACER WIRE AT LINE VALVE BOX

CATHODIC PROTECTION DETAILS

BONDING DETAILS

CP-B01 MECHANICAL/DUCTILE IRON PIPE JOINT BOND

CP-B02 MECHANICAL COUPLING JOINT BOND

CP-B03 BONDING GROUP OF FITTINGS

CP-B04 DUCTILE IRON MECHANICAL JOINT VALVE

CP-B05 FIRE HYDRANT BONDING

CP-B06 VAULT BONDING

BELOW GRADE ELECTRICAL CONNECTION DETAILS

CP-EC01 PIN BRAZING

CP-EC02 EXOTHERMIC WELD WIRE CONNECTION

CP-EC03 EXOTHERMIC WELD WIRE SPLICE

ISOLATION DETAILS

CP-I01 INSULATED FLANGE JOINT

CP-I01 COPPER SERVICE LINE

CP-I01 INSULATED FLEXIBLE COUPLING

PVC CATHODIC PROTECTION DETAILS

CP-PV01 PVC C-900

TEST STATION DETAILS

CP-TS01 GALVANIC TEST STATION

CP-TS02 TEST STATION AT FOREIGN PIPELINE CROSSING

CP-TS03 TEST STATION PIPE CASING

CP-TS04 ISOLATION TEST STATION

CP-TS05 IR DROP TEST STATION

CP-TS06 TEST STATION CIRCUIT BOARD

CP-TS07 VAULT TEST WIRES