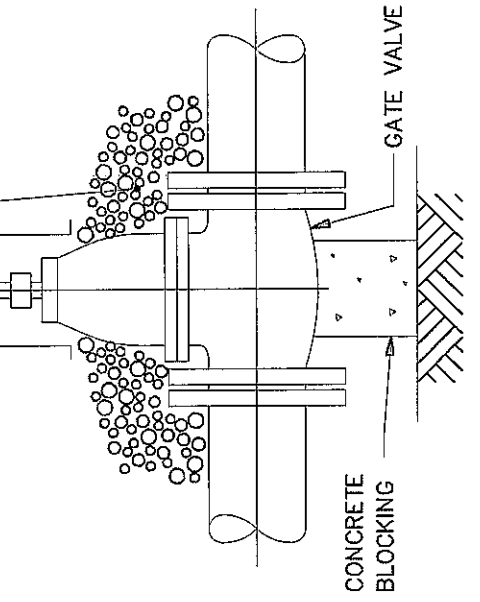
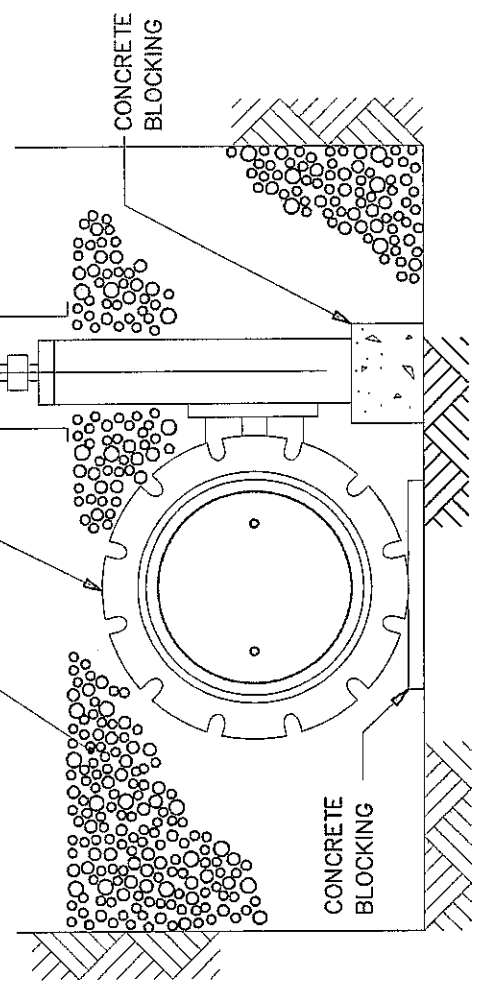


BUTTERFLY VALVE

ADDITIONAL 1" WASHED GRANULAR BACKFILL AS REQUIRED TO SUPPORT VALVE BOX



BUTTERFLY VALVE BOX

GATE VALVE BOX

NO SCALE



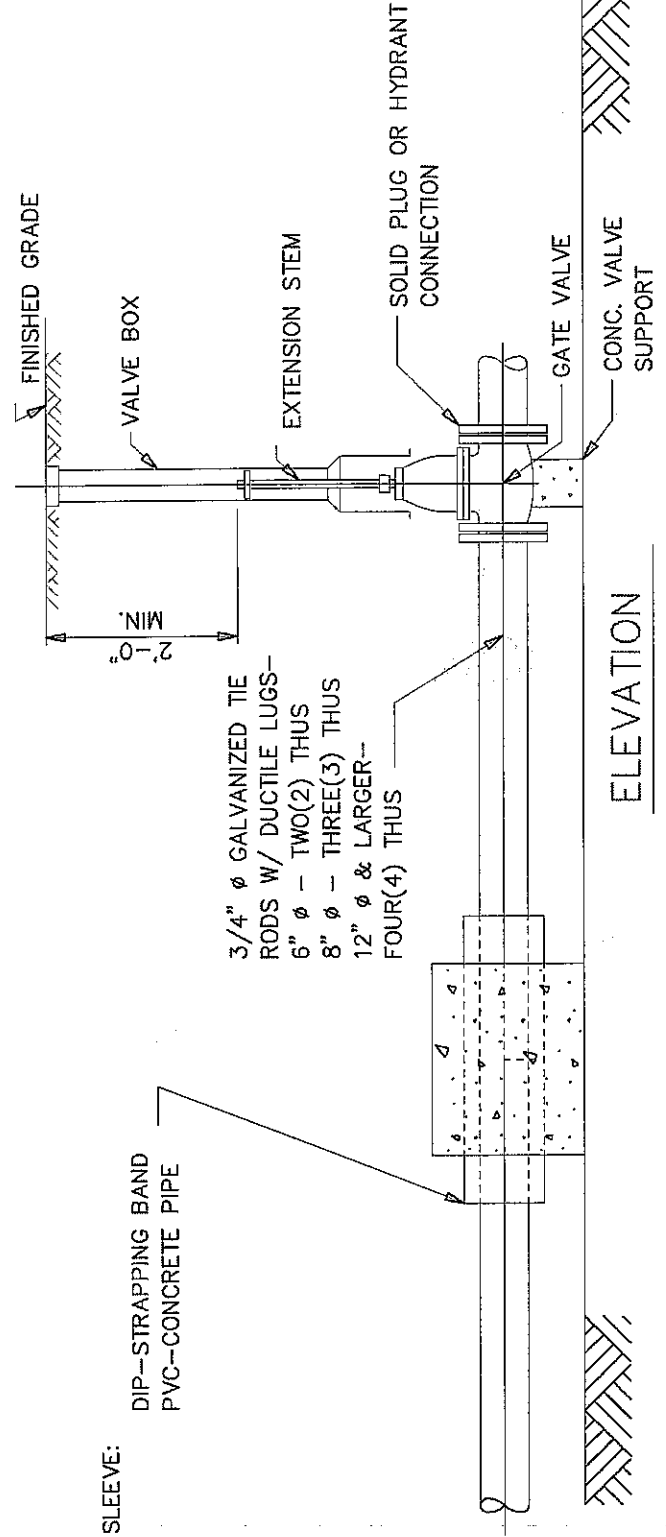
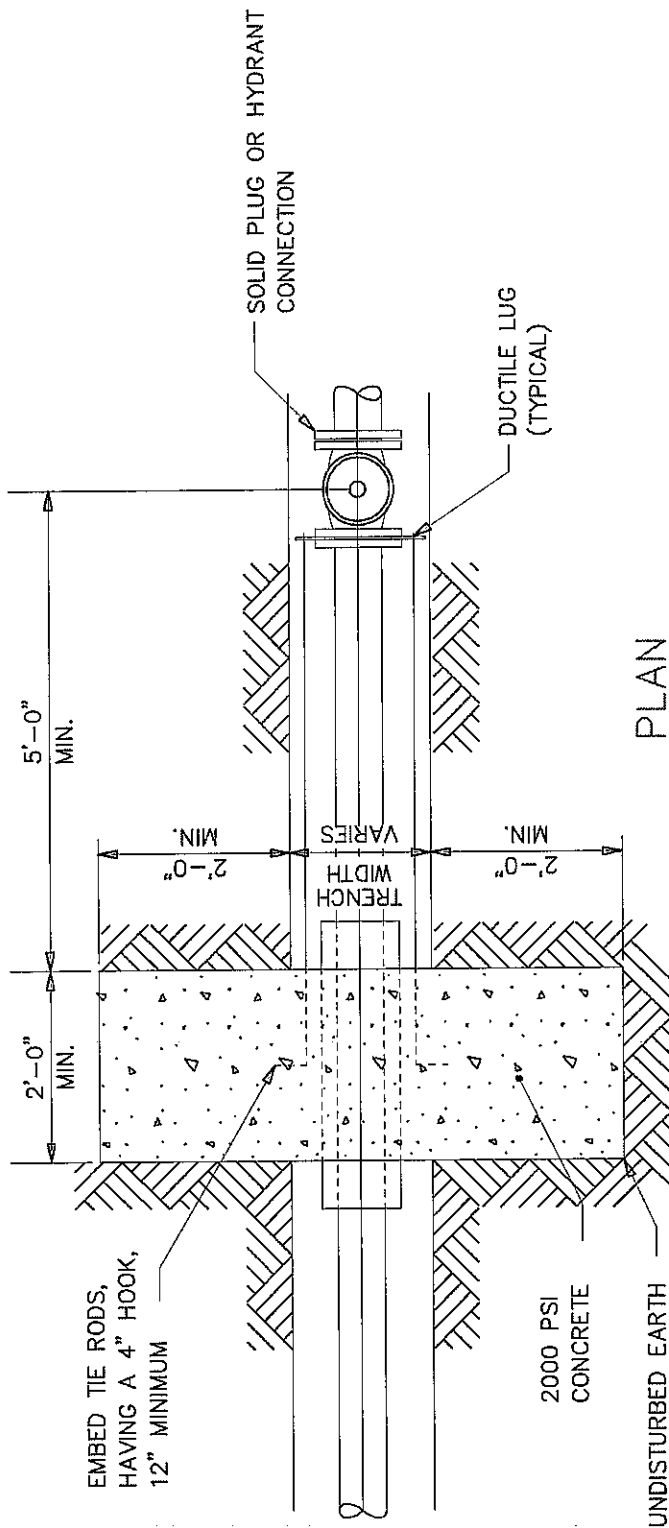
CLERMONT COUNTY
SEWER DISTRICT

APPROVED _____
DATE _____

GATE & BUTTERFLY
VALVES

DRAWING NO.

W1.1



NO SCALE



CLERMONT COUNTY
SEWER DISTRICT

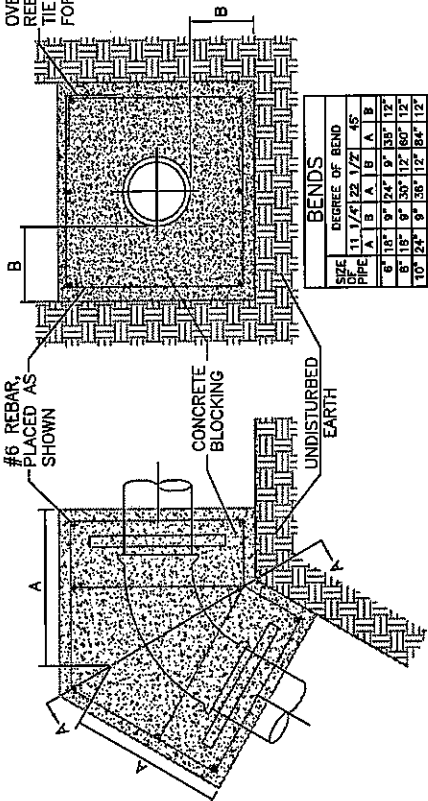
APPROVED _____
DATE _____

VALVE RESTRAINT
BLOCKING

DRAWING NO.

W1.2

OVERLAP REBAR AND TIE TO FORM CAGE

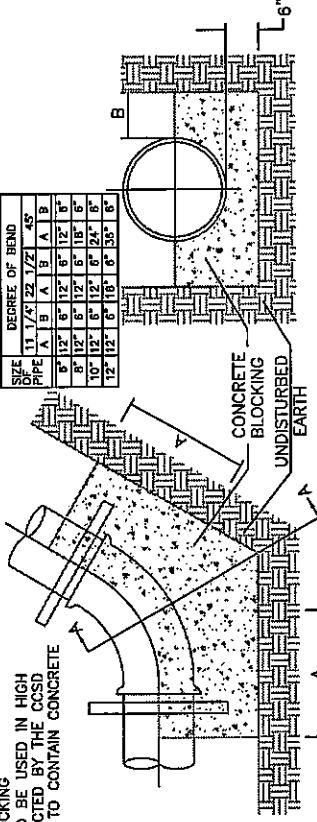


SIZE PIPE	DEGREE OF BEND			
	11, 17, 21, 24, 30	12, 18, 24, 30	12, 18, 24, 30	45
8"	A	A	B	A, B
10"	A	A	B	A, B
12"	A	A	B	A, B
15"	A	A	B	A, B
18"	A	A	B	A, B
24"	A	A	B	A, B
30"	A	A	B	A, B

SECTION A TYPICAL

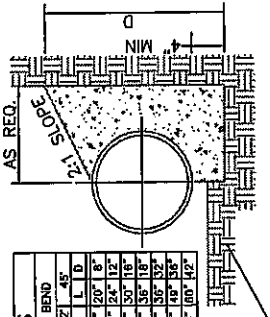
TOP VERTICAL BENDS
N.T.S.

SIZE PIPE	DEGREE OF BEND			
	11, 17, 21, 24, 30	12, 18, 24, 30	12, 18, 24, 30	45
8"	A	A	B	A, B
10"	A	A	B	A, B
12"	A	A	B	A, B
15"	A	A	B	A, B
18"	A	A	B	A, B
24"	A	A	B	A, B
30"	A	A	B	A, B



SECTION A TYPICAL

BOTTOM VERTICAL BENDS
N.T.S.



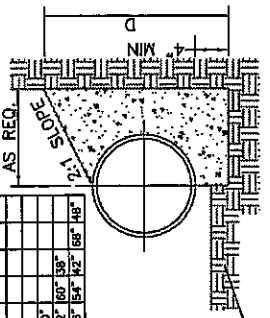
SIZE PIPE	DEGREE OF BEND			
	11, 17, 21, 24, 30	12, 18, 24, 30	12, 18, 24, 30	45
8"	L	L	L	L, D
10"	L	L	L	L, D
12"	L	L	L	L, D
15"	L	L	L	L, D
18"	L	L	L	L, D
24"	L	L	L	L, D
30"	L	L	L	L, D

SECTION A TYPICAL

BENDS 45° AND UNDER
N.T.S.

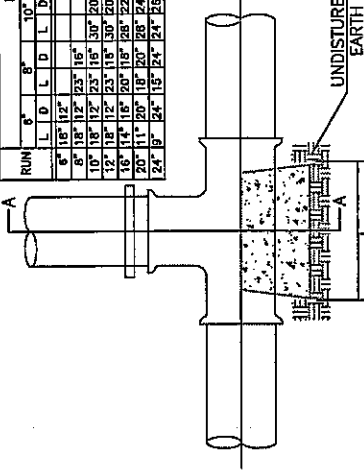
- BLOCKING NOTES:**
- BLOCKING SHALL BE CLASS "C" CONCRETE
 - BLOCKING REQUIRED AT ALL BENDS
 - FACE OF EACH BLOCK MUST BE PERPENDICULAR TO THE LINE OF THRUST
 - FITTINGS TO BE WRAPPED WITH 4 MIL PLASTIC TO PREVENT CONCRETE CONTACTING BOLTS, GLANDS, AND NUTS
 - CONCRETE TO BE POURED AGAINST UNDISTURBED EARTH ON THE THRUST SIDE
 - D.I. RETAINER GLANDS TO BE USED IN ADDITION TO CONCRETE THRUST BLOCKING
 - 3/4" REINFORCING BARS TO BE USED IN HIGH PRESSURE ZONES AS DIRECTED BY THE CCSD RUDIMENTARY FORMS USED TO CONTAIN CONCRETE IN THRUST AREA

RADIUS	BRANCH			
	8"	10"	12"	15"
8"	L, D	L, D	L, D	L, D
10"	L, D	L, D	L, D	L, D
12"	L, D	L, D	L, D	L, D
15"	L, D	L, D	L, D	L, D
20"	L, D	L, D	L, D	L, D
24"	L, D	L, D	L, D	L, D
30"	L, D	L, D	L, D	L, D



SECTION A TYPICAL

TEES
N.T.S.



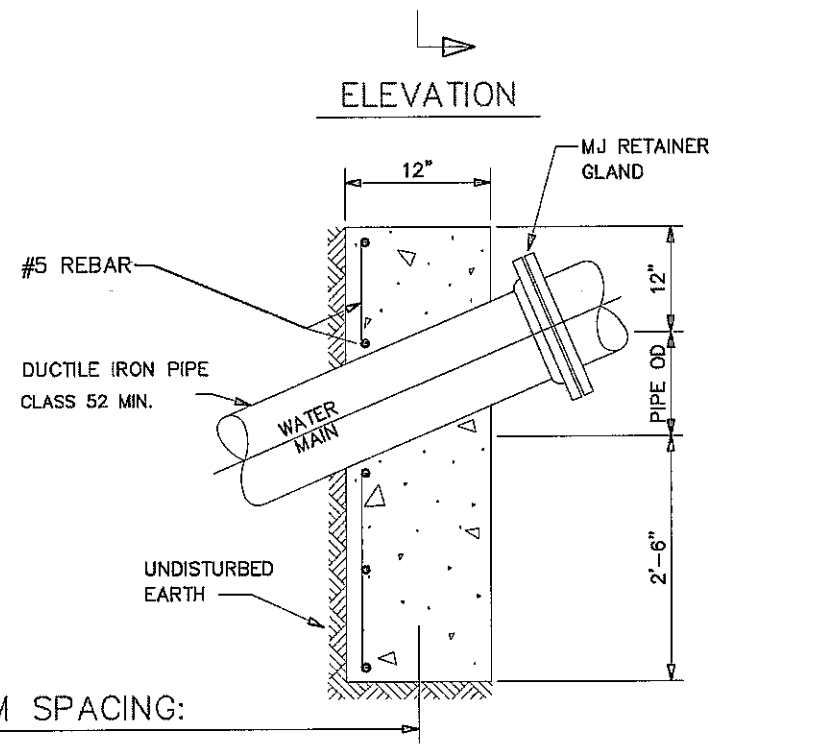
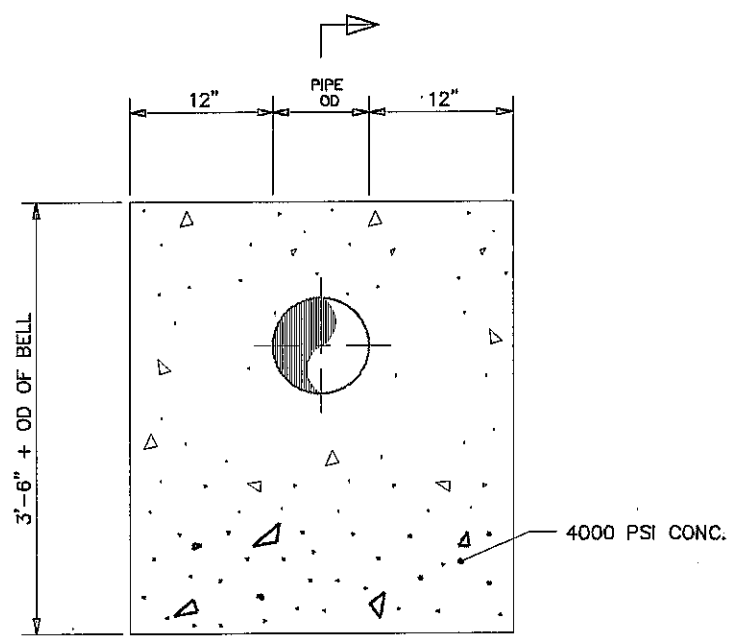
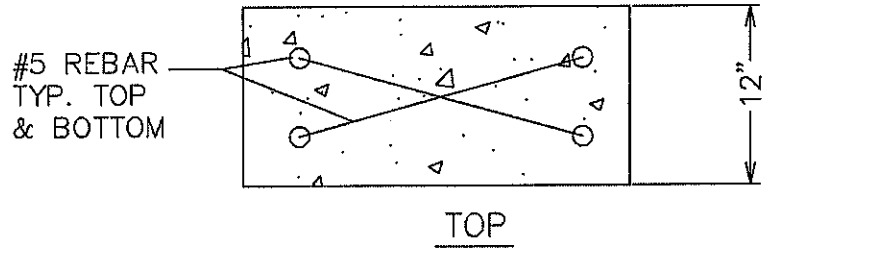
CLERMONT COUNTY
SEWER DISTRICT

APPROVED _____
DATE _____

CONCRETE BLOCKING
FOR PIPE FITTINGS


DRAWING NO.

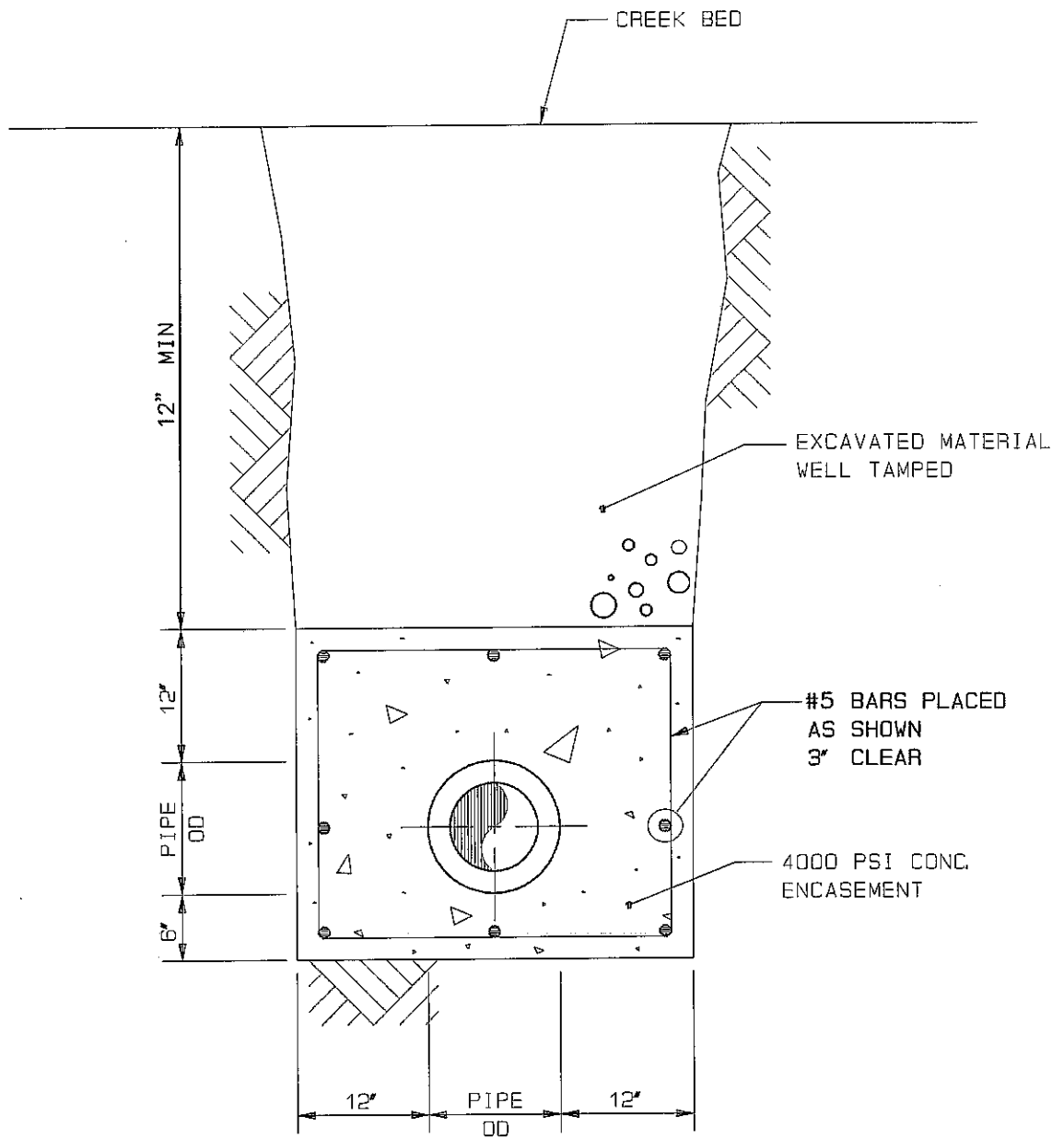
W1.3



MINIMUM SPACING:
 36' ON GRADES 15%-35%
 24' ON GRADES 35%-50%
 16' ON GRADES OVER 50%

NO SCALE

	CLERMONT COUNTY SEWER DISTRICT	KEYBLOCK ANCHORS FOR WATERMANS ON STEEP SLOPES	DRAWING NO. W1.7
	APPROVED _____ DATE _____		



NOTE: REBAR WHERE APPLICABLE BY CCSD

NO SCALE



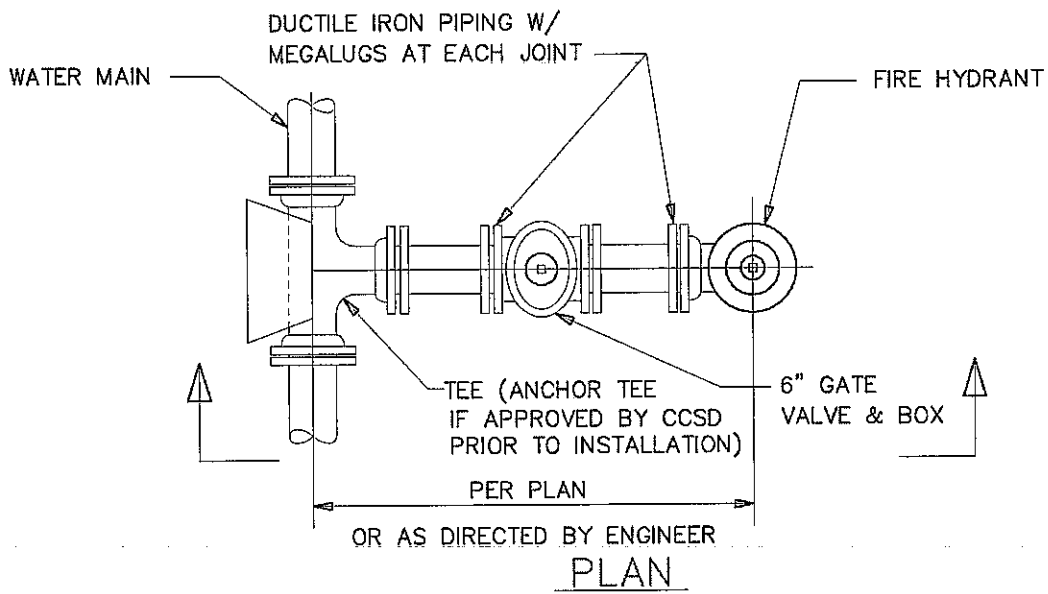
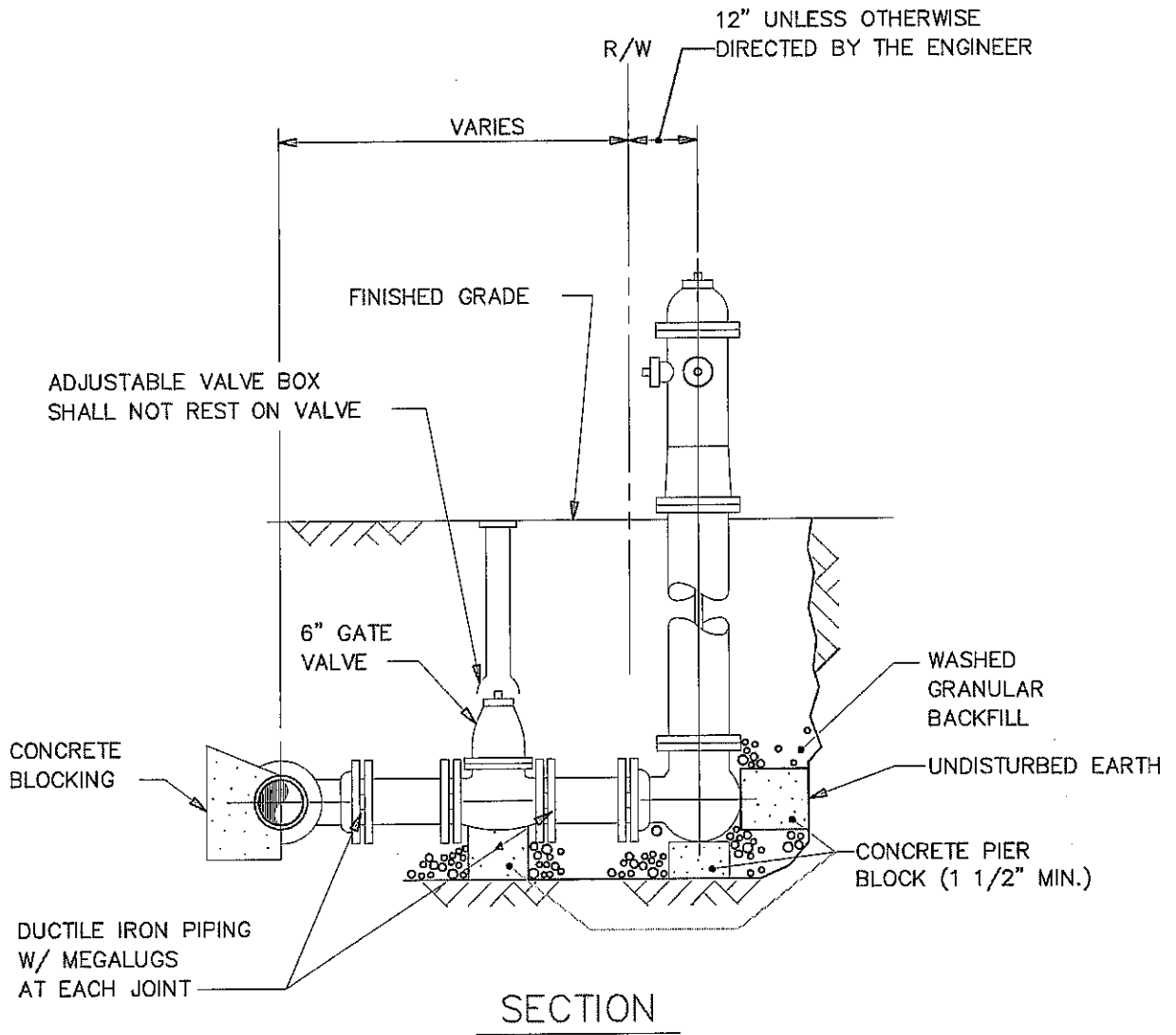
CLERMONT COUNTY
SEWER DISTRICT

APPROVED _____
DATE _____

CREEK CROSSING
CONCRETE
ENCASEMENT DETAIL

DRAWING NO.

W1-8



NO SCALE



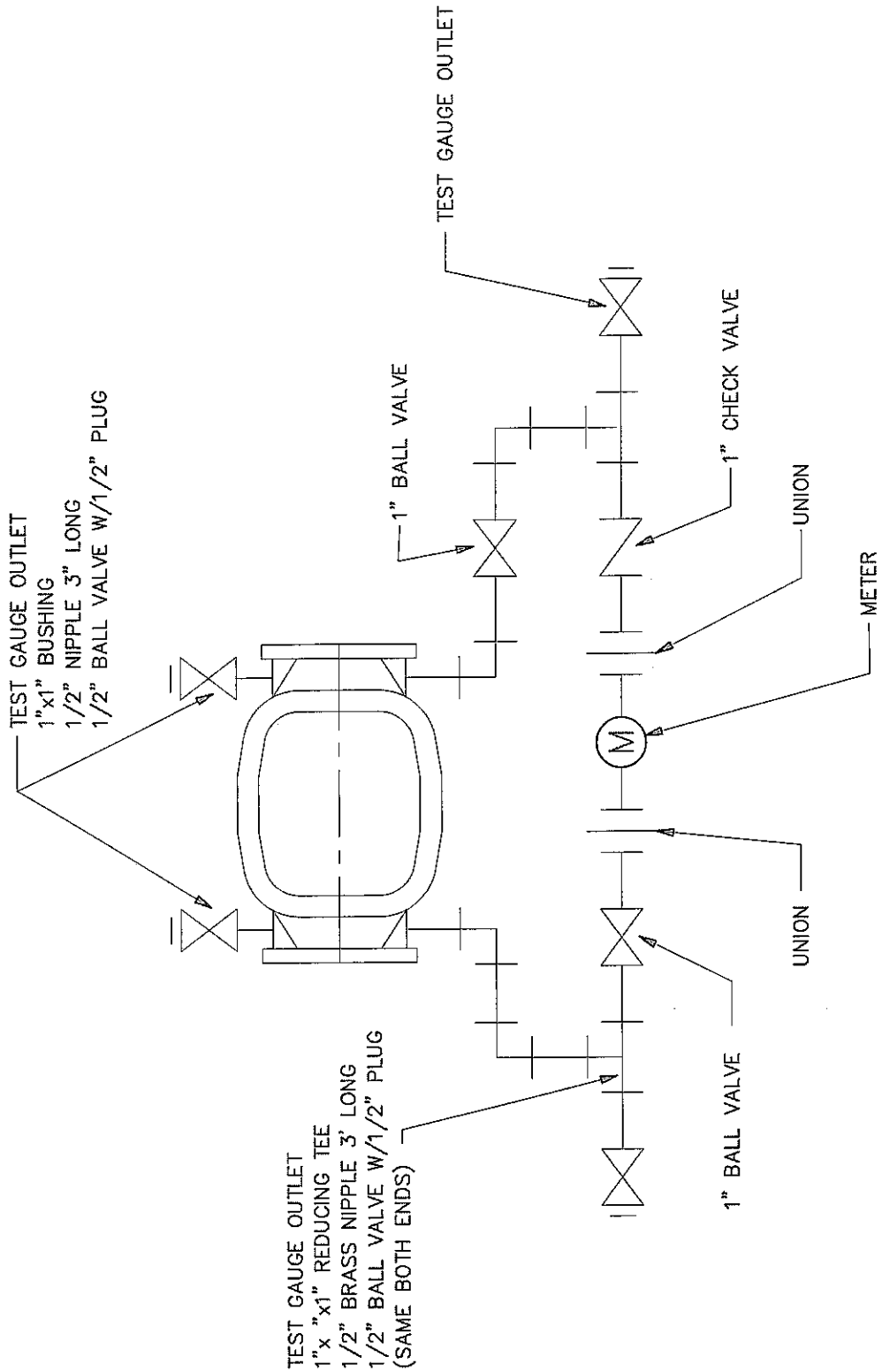
CLERMONT COUNTY
SEWER DISTRICT

APPROVED _____
DATE _____

FIRE HYDRANT
LAYOUT & ASSEMBLY

DRAWING NO.

W2.1



NO SCALE



CLERMONT COUNTY
SEWER DISTRICT

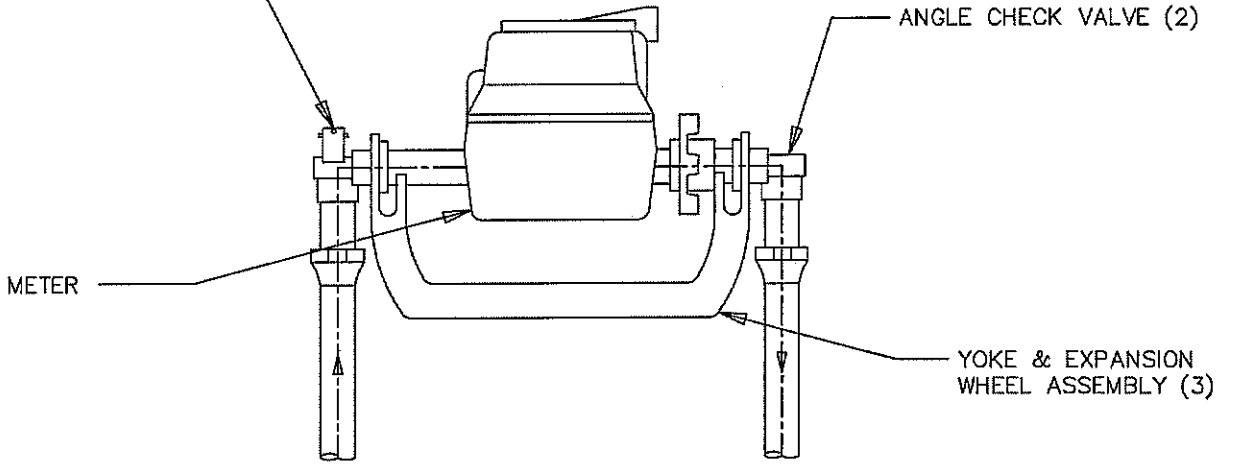
APPROVED _____
DATE _____

DETECTOR
CHECK VALVE
ASSEMBLY

DRAWING NO.

W3.1

ANGLED YOKE VALVE
COMPRESSION COPPER
W/ PADLOCK WING (1)




$\frac{5}{8}$ " X $\frac{3}{4}$ " & 1" METERS

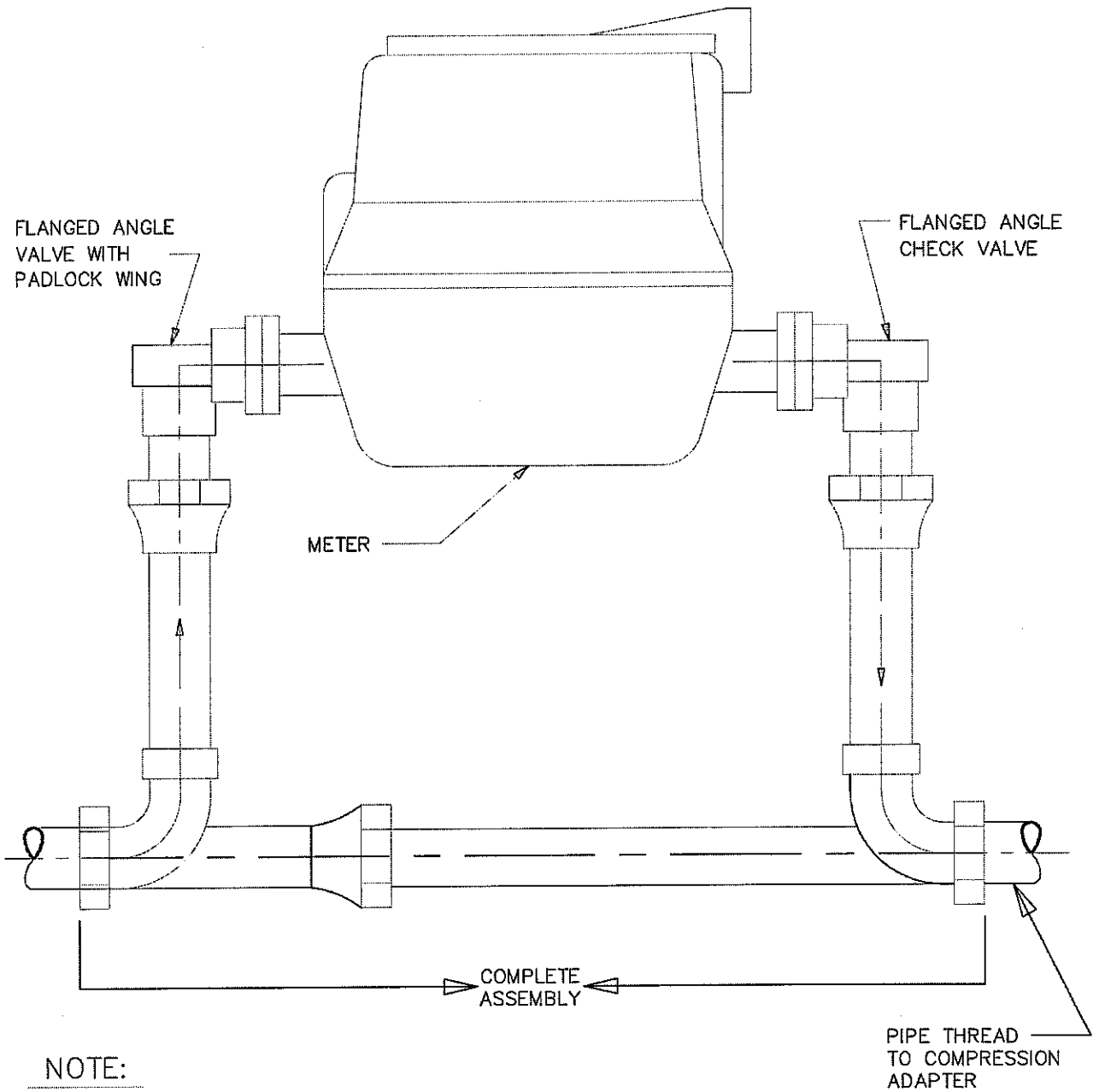
NOTE:

METERS SHALL BE PURCHASED FROM CCSD

METER SIZE	1	2	3
$\frac{5}{8}$ " X $\frac{3}{4}$ "	FORD AV94-323-WG OR EQUAL	FORD HA94 -323-G OR EQUAL	YOKE - FORD Y502, WHEEL-EC-23 OR EQUAL
1"	FORD AV94-444-WG OR EQUAL	L94-44-G OR EQUAL	YOKE-FORD Y504, WHEEL-EC4 OR EQUAL

NO SCALE

	CLERMONT COUNTY SEWER DISTRICT	5/8" X 3/4" & 1" DOMESTIC METERS ASSEMBLY	DRAWING NO. W3.2
	APPROVED _____ DATE _____		




NOTE:

1. METERS SHALL BE PURCHASED FROM CCSD
2. COMPLETE ASSEMBLY TO BE USED.

METER SIZE	COMPLETE ASSEMBLY
1 1/2"	VH76-18-11-66-G
2"	VH77-18-44-77-G

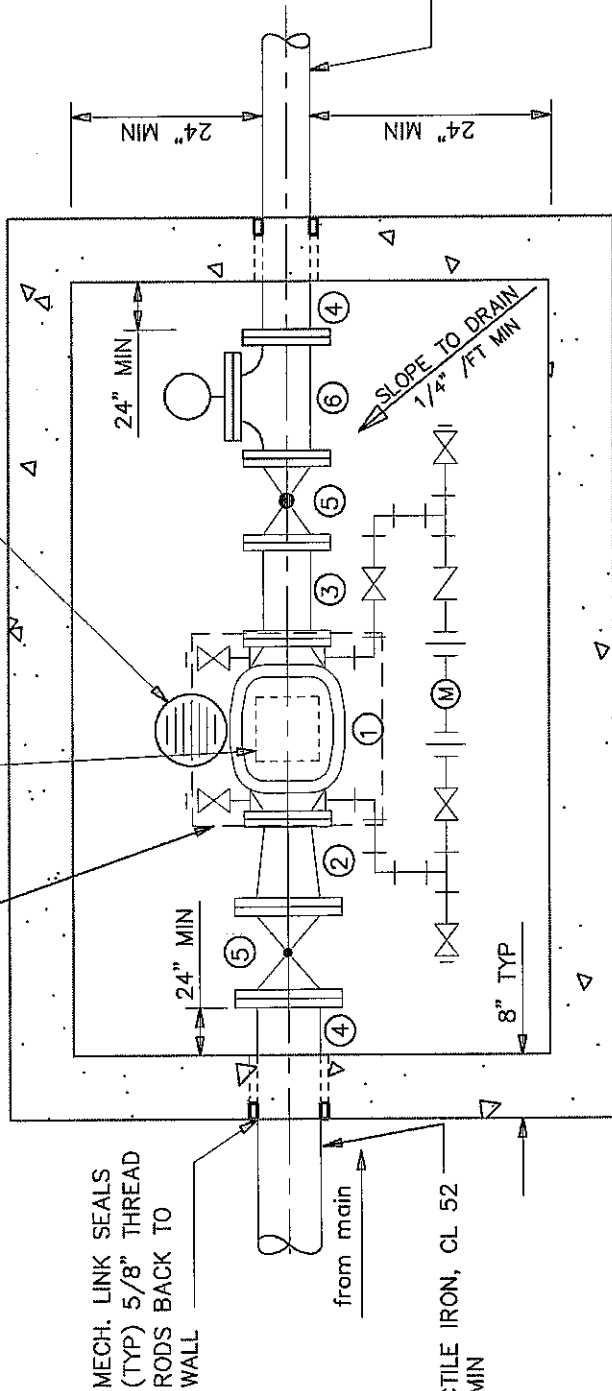
NO SCALE

	<p>CLERMONT COUNTY SEWER DISTRICT</p>	<p>1-1/2" & 2" DOMESTIC METERS ASSEMBLY</p>	<p>DRAWING NO. W3.3</p>
	<p>APPROVED _____ DATE _____</p>		

LID TO BE NEENAH R-6661-LH ALUMINUM W/TYPE G LIFT HANDLES & RATCHETS & TYPE J (T-HANDLES) LOCK OR APPROVED EQUAL. CENTER LID OVER DETECTOR CHECK VALVE ASSEMBLY

8" SQ. 2000 PSI CONCRETE BASE

6" FLOOR DRAIN JOSAM TYPE 32226 OR EQUAL TO STORM SEWER (CENTER DRAIN UNDER MANHOLE LID)



MECH. LINK SEALS (TYP) 5/8" THREAD RODS BACK TO WALL

DUCTILE IRON, CL 52 6" MIN

FIRE LINE - DUCTILE IRON, CL 52 6" MIN. TO 3'-0" OUTSIDE OF VAULT

NOTE:

SEE CCSD STANDARD DWGS W4.5 & W4.6 FOR WATER SYSTEM CHAMBER DETAILS

① DETECTOR CHECK VALVE ASSEMBLY. SEE CCSD STD. DWG. W3.1

② FLANGED CONCENTRIC REDUCER

③ FLANGED SPOOL x 12" LENGTH

④ FLANGED - PLAIN END (3' MIN. LENGTH)

⑤ FLANGED INDICATOR GATE VALVE W/ HANDWHEEL OR POST INDICATOR VALVE, AS REQUIRED BY FIRE DEPARTMENT ELECTRONIC SUPERVISION OF VALVE AS REQUIRED

⑥ FIRE DEPARTMENT CONNECTION AND/OR FIRE ALARM SYSTEM, IF REQUIRED BY FIRE DEPARTMENT

NO SCALE

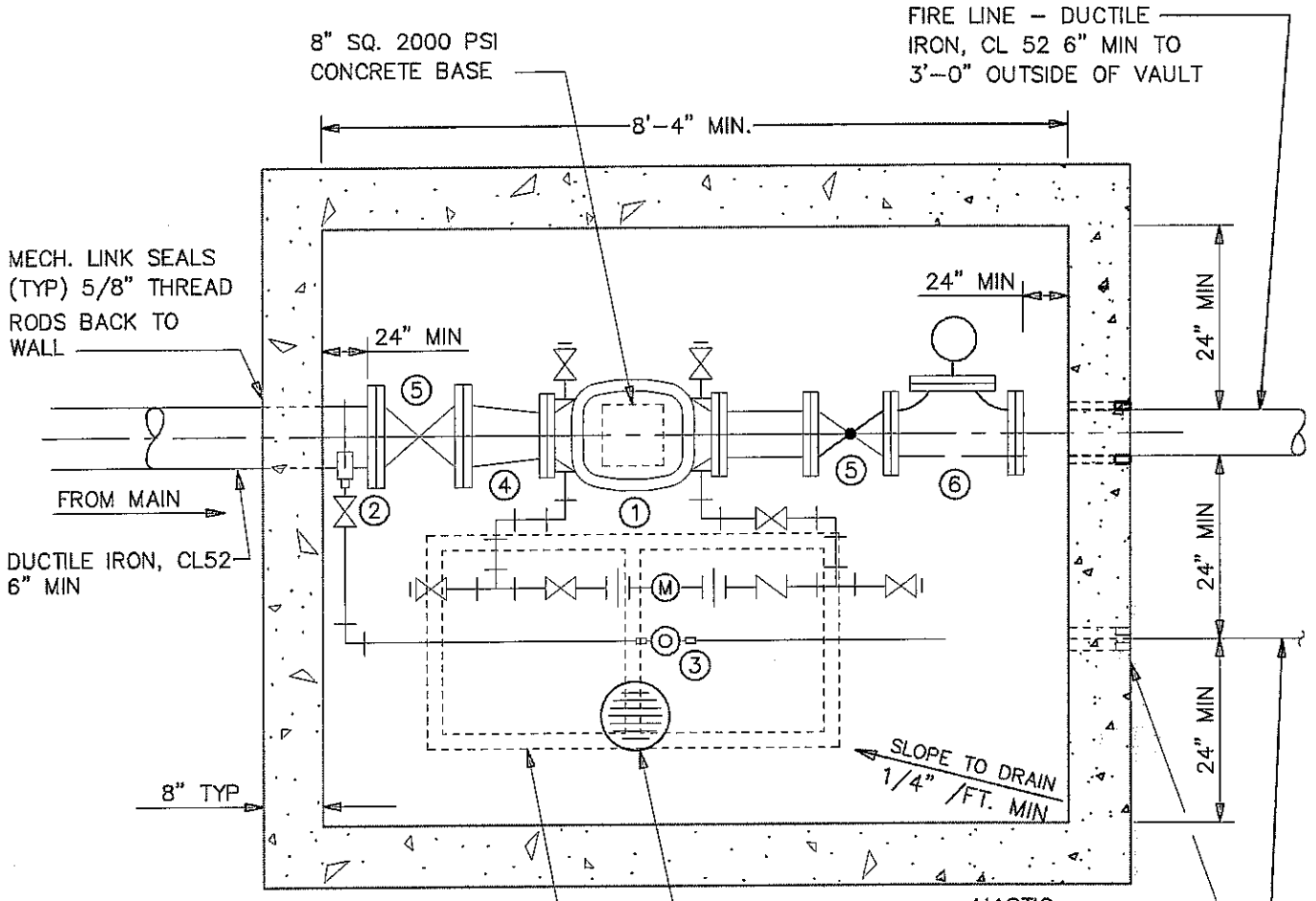


CLERMONT COUNTY SEWER DISTRICT

APPROVED _____
DATE _____

FIRE PROTECTION WITH DETECTOR CHECK

DRAWING NO. W4.1



LID TO BE NEENAH R-6661-LH ALUMINUM W/TYPE G LIFT HANDLES & RATCHETS & TYPE J (T HANDLES) LOCK OR APPROVED EQUAL. CENTER LID LENGTHWISE OVER DOMESTIC METER

MASTIC WATER TIGHT SEAL — UR227 NS JOINT SEALANT OR EQUAL

6" FLOOR DRAIN
JOSAM TYPE 32226 OR EQUAL TO STORM SEWER (CENTER DRAIN UNDER MANHOLE LID)

- ① DETECTOR CHECK VALVE ASSEMBLY SEE CCSD STD. DWG. W3.1
- ② TAPPING SADDLE & CORPORATION STOP
- ③ DOMESTIC METER — SEE CCSD STD. DWGS. W3.2 & W3.3
- ④ FLANGED CONCENTRIC REDUCER
- ⑤ FLANGED INDICATOR GATE VALVE W/ HANDWHEEL OR POST INDICATOR VALVE, AS REQUIRED BY FIRE DEPARTMENT ELECTRONIC SUPERVISION OF VALVE AS REQUIRED
- ⑥ FIRE DEPARTMENT CONNECTION, IF REQUIRED BY FIRE DEPARTMENT

TO DOMESTIC SERVICE
TYPE K COPPER TO 3' OUTSIDE OF PIT

NOTE:

SEE CCSD STANDARD DWGS W4.5 & W4.6 FOR WATER SYSTEM CHAMBER DETAILS

NO SCALE



CLERMONT COUNTY
SEWER DISTRICT

APPROVED _____
DATE _____

DUAL SERVICE
BRANCH SETTING—
DOMESTIC METERS
(2" & SMALLER)

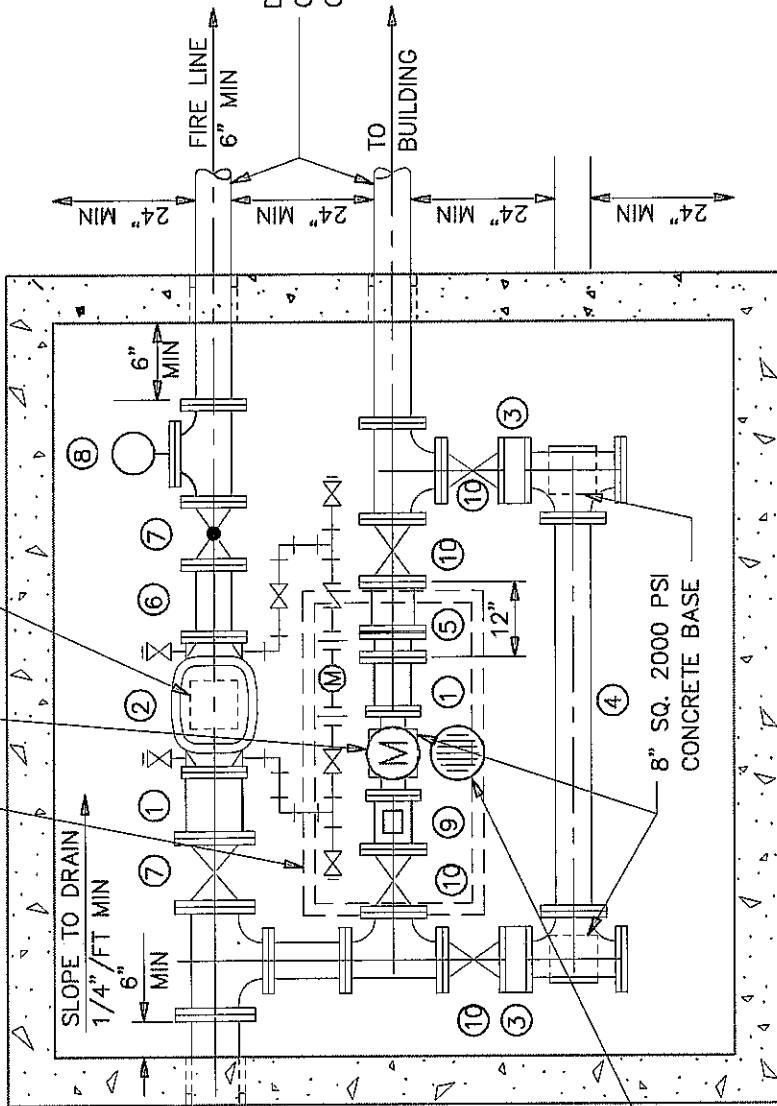
DRAWING NO.
W4.2

NOTE:

SEE CCSD STANDARD DWGS W4.5
& W4.6 FOR WATER SYSTEM
CHAMBER DETAILS

LID TO BE NEENAH R-6661-LH ALUMINUM
W/ TYPE G LIFT HANDLES & RATCHET, &
TYPE J (T HANDLES) LOCK OR APPROVED EQUAL.
CENTER LID LENGTHWISE OVER DOMESTIC METER

METER



SLOPE TO DRAIN
1/4" / FT MIN

MECH. LINK SEALS
(TYP) 5/8" THREADED
RODS BACK TO WALL

FROM
MAIN

DUCTILE IRON, CL 52
6" MIN

6" FLOOR DRAIN
JOSAM TYPE 32226 OR
EQUAL TO STORM
SEWER (CENTER DRAIN
UNDER MANHOLE LID)

DUCTILE IRON,
CL 52 TO 3'
OUTSIDE OF PIT

TO
BUILDING

- ① FLANGED SPOOL OR SPACER
- ② DETECTOR CHECK VALVE ASSEMBLY. SEE CCSD STD. DWG. W3.1
- ③ FILLER FLANGE OR SPOOL PIECE AS REQUIRED
- ④ BY-PASS LINE TO BE SAME SIZE AS DOMESTIC LINE
- ⑤ FLANGED ADAPTER EQUAL TO DRESSER STYLE 128 WITH 2" NPT TAP & PLUG (TEST PORT)
- ⑥ FLANGED SPOOL 12" x LENGTH
- ⑦ FLANGED INDICATOR GATE VALVE W/ HANDWHEEL OR POST INDICATOR VALE, AS REQUIRED BY FIRE DEPARTMENT ELECTRONIC SUPERVISION OF VALVE AS REQUIRED
- ⑧ FIRE DEPARTMENT CONNECTION, IF REQUIRED BY FIRE DEPARTMENT
- ⑨ FLANGED STRAINER
- ⑩ FLANGED GATE VALVE W/ HANDWHEEL

NO SCALE

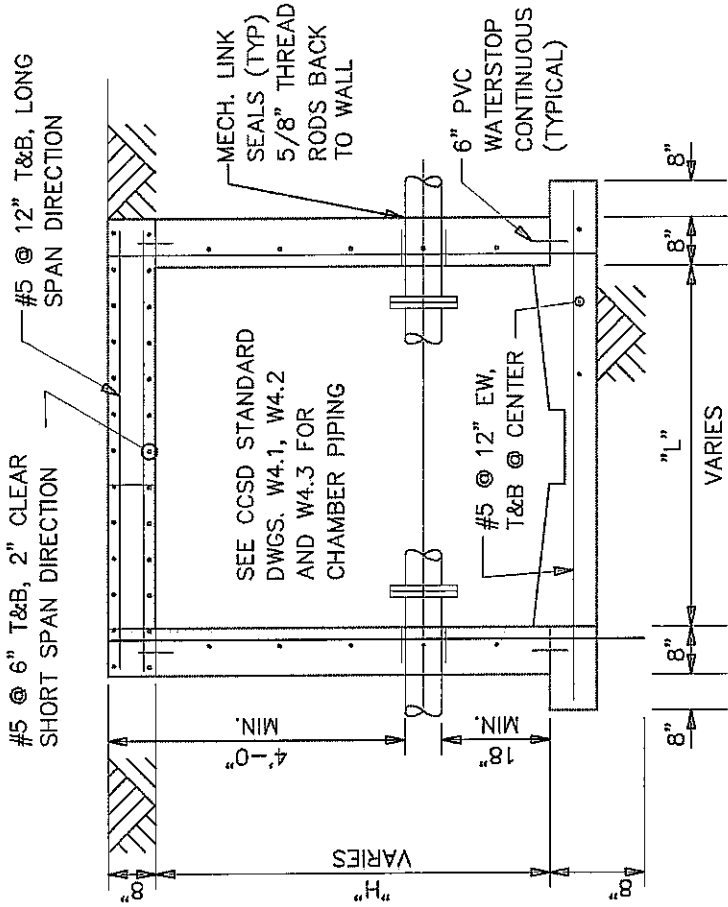
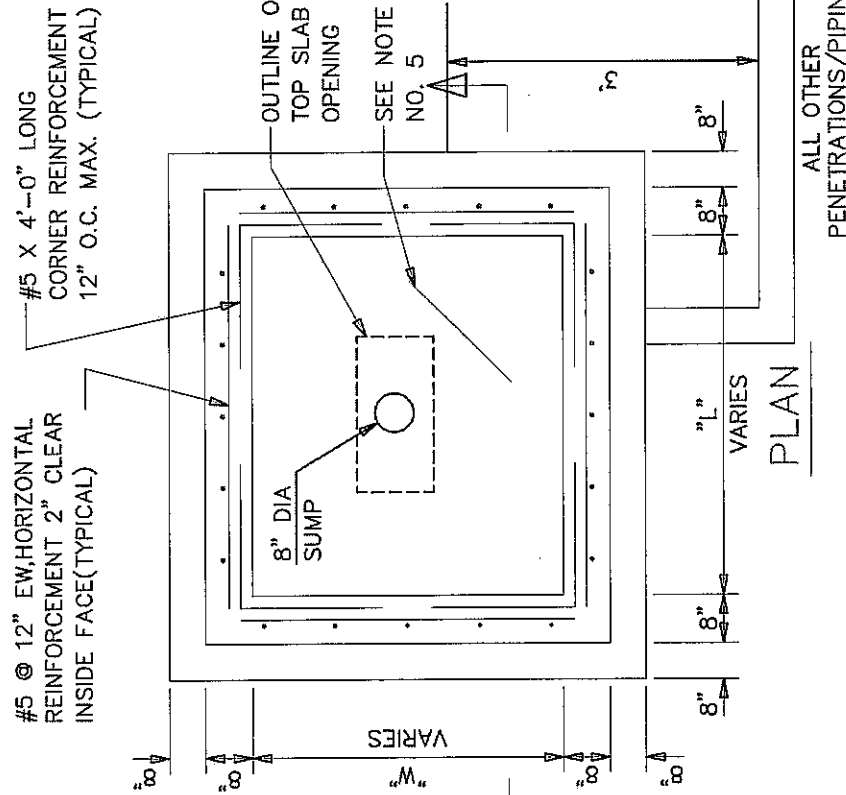


CLERMONT COUNTY
SEWER DISTRICT

APPROVED _____
DATE _____

DUAL SERVICE
BRANCH SETTING- 3"
& LARGER METERS

DRAWING NO.
W4.4



SECTION

PLAN

NOTES:

1. IF A STORM SEWER IS UNAVAILABLE FOR THE 6" PVC SDR 23.5 CHAMBER DRAIN CONNECTION, AN 8 INCH DIAMETER SUMP SHALL BE PROVIDED. SUMP SHALL BE CAST MONOLITHICALLY WITH BASE SLAB. SUMP PUMPS MAY BE CONSIDERED ONLY FOR FIRE SUPPRESSION VAULTS WITH ELECTRONIC MONITORING ONLY IF POSITIVE DRAINAGE CANNOT BE PROVIDED. ELECTRIC CIRCUIT MUST BE GFCI PROTECTED & INSTALLED IN ACCORDANCE TO NATIONAL ELECTRIC CODE. FROM MINIMUM HORIZONTAL CLEARANCE OF 3 FEET.
2. 6" FLOOR DRAIN SHALL BE JOSAM TYPE 32226 OR EQUAL. DRAIN SHALL BE CENTERED UNDER MANHOLE LID.
3. FOR MINIMUM CHAMBER DIMENSIONS: "L", "W", "H" AND LID PLACEMENT & SIZING, SEE CCSD STANDARD DWGS. W4.1, W4.2 AND W4.3.
4. SEE CCSD STANDARD DWG. W4.6 FOR CHAMBER ACCESS LADDER.
5. ADDITIONAL REINFORCEMENT SHALL BE PROVIDED AT EACH CORNER OF EVERY TOP SLAB OPENING—#5 X 2'-0" LONG T&B MINIMUM.
6. REINFORCEMENT SHOWN IS MINIMUM REQUIRED. TOP AND BASE SLABS SHALL BE DESIGNED FOR A UNIFORM LOADING OF 300 PSF LIVE LOAD, WALLS SHALL BE DESIGNED FOR A UNIFORM VARYING LOAD OF 80 PCF PER FOOT OF DEPTH, WITH A SAFETY OF 1.7 MIN.
7. CHAMBERS SHALL BE CAST-IN-PLACE OR PRECAST CONCRETE (4000 PSI)
8. ALL OTHER PENETRATIONS SHALL BE NO MORE THAN 18" BELOW SURFACE

NO SCALE

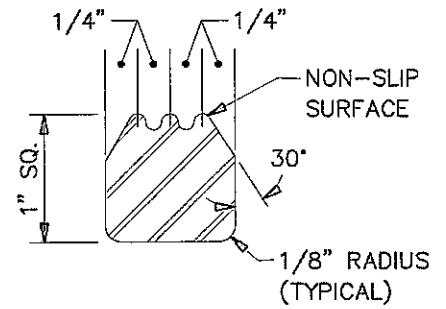
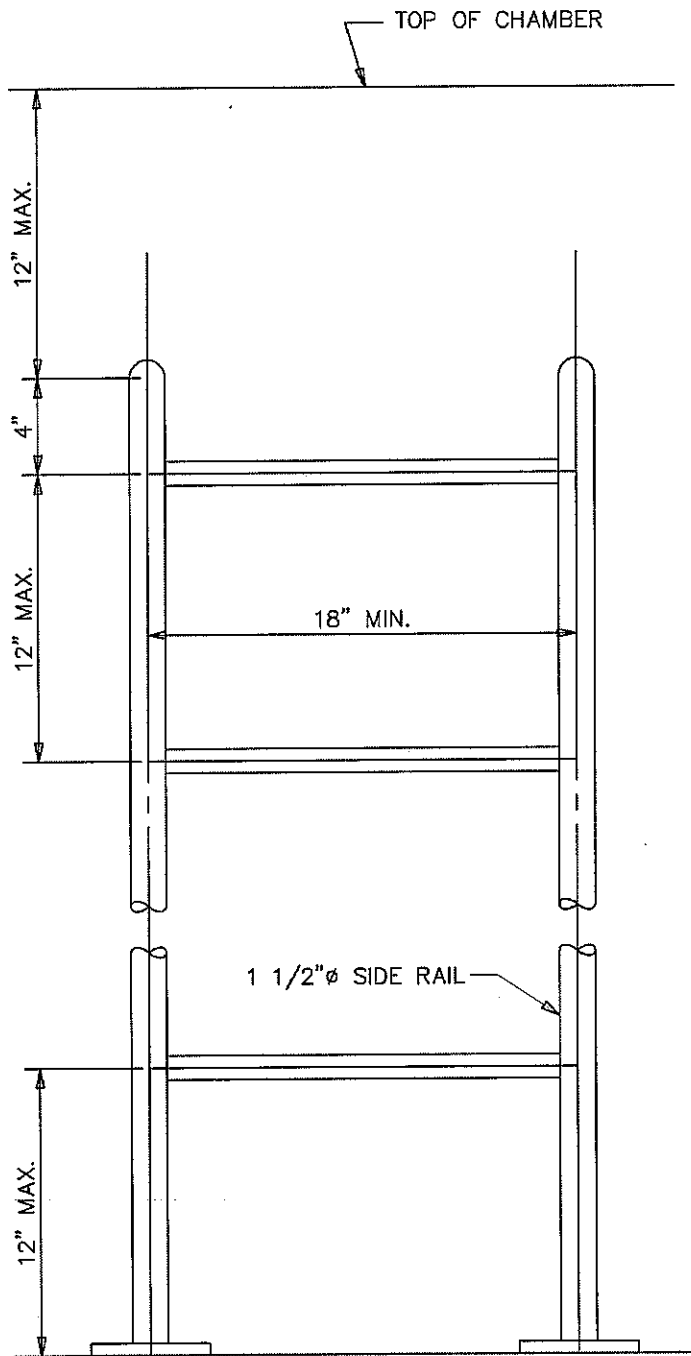


CLERMONT COUNTY
SEWER DISTRICT

APPROVED _____
DATE _____

STANDARD
WATER SYSTEM
CHAMBER

DRAWING NO.
W4.5



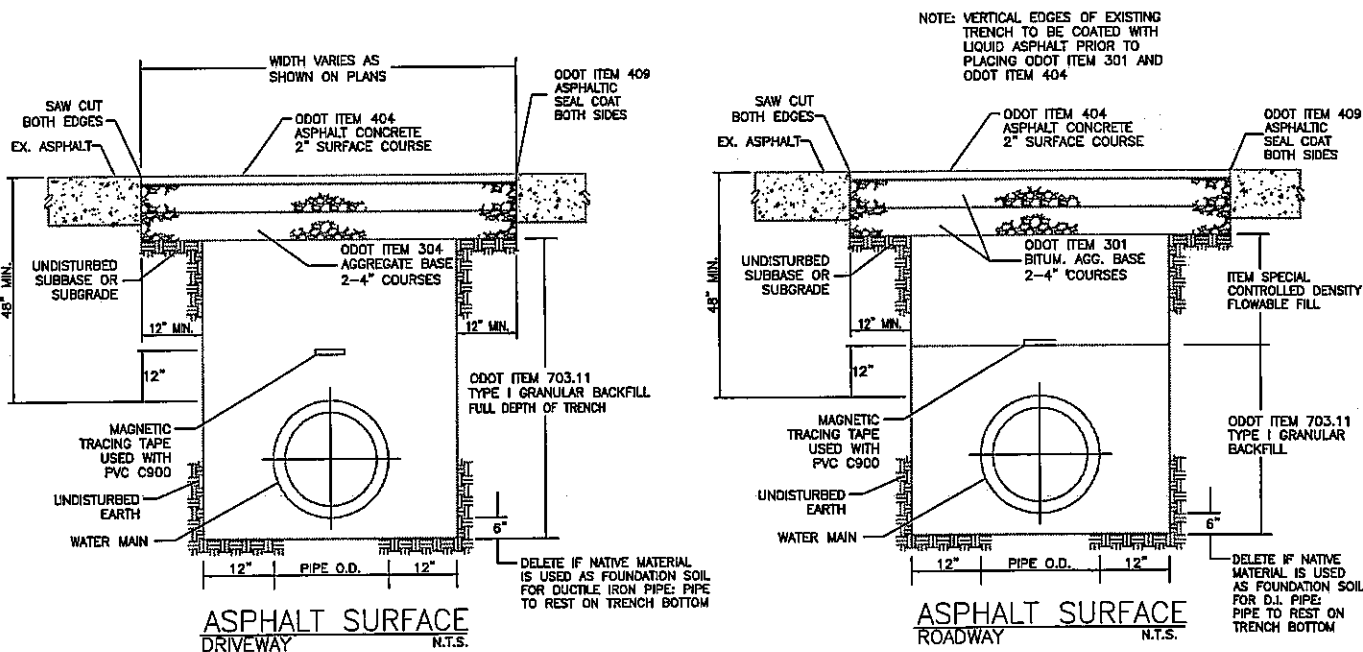
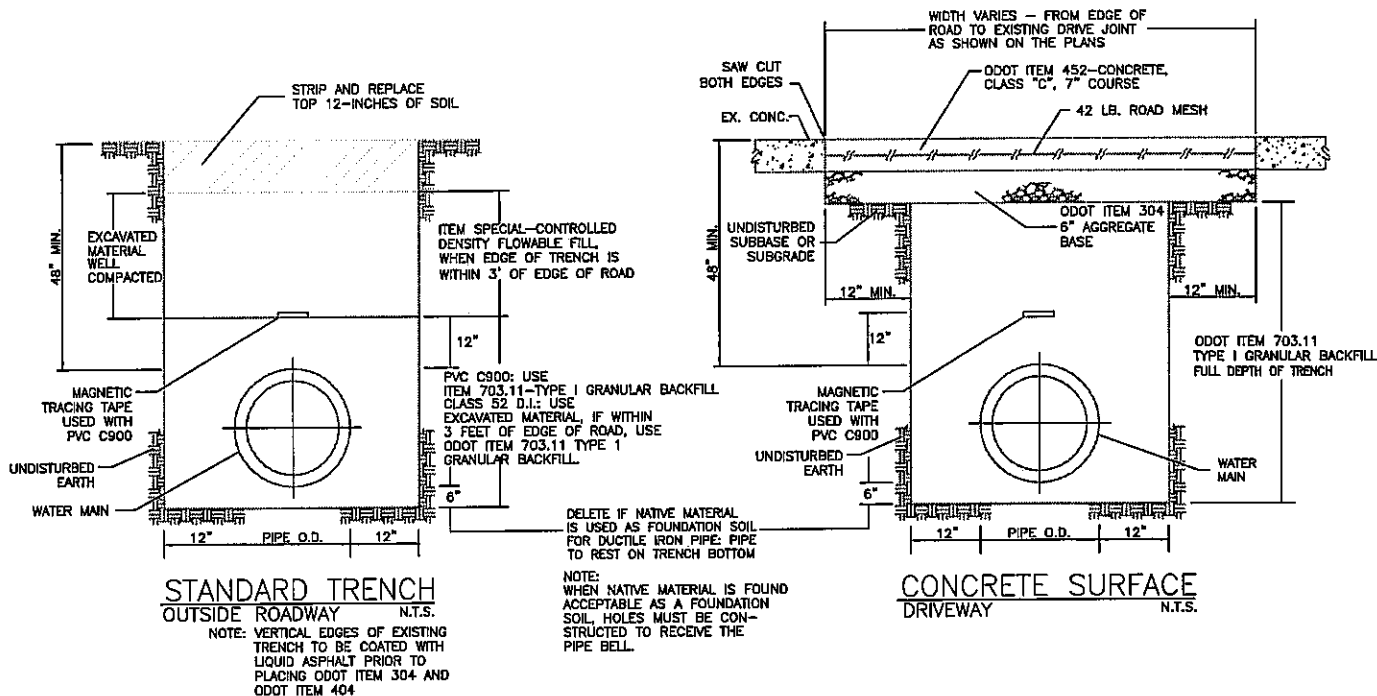
RUNG DETAIL

NOTES:

- 1. LADDERS SHALL BE FABRICATED FROM ALUMINUM TUBING, PLATES & BARS CONFORMING TO ALLOY & TEMPER 6061-T6.
- 2. TUBING SHALL HAVE A 1/8" MIN. WALL THICKNESS.
- 1. LADDER MUST BE FASTENED TO WALL AND FLOOR WITH STAINLESS STEEL ANCHORS.

NO SCALE

	CLERMONT COUNTY SEWER DISTRICT	CHAMBER ACCESS LADDER	DRAWING NO. W4.6
	APPROVED _____ DATE _____		



NOTES:

1. "PAVEMENT" AS USED IN THIS DETAIL SHALL ALSO MEAN SIDEWALKS, CURBS, SLABS & OTHER GRADED STRUCTURES.
2. ALL BACKFILL & BEDDING IS TO BE COMPACTED AS CALLED FOR IN THE SPECIFICATIONS.
3. BEDDING AND BACKFILL MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATION FOR THE SPECIFIC PIPE MATERIAL BEING INSTALLED.

NO SCALE



CLERMONT COUNTY
SEWER DISTRICT

APPROVED _____
DATE _____

WATER MAIN
TRENCH SECTION

DRAWING NO.

W5.1