## 6" SANITARY SIDE SEWER **12 INCH AND SMALLER MAINS** 2

Nenatchee

MA

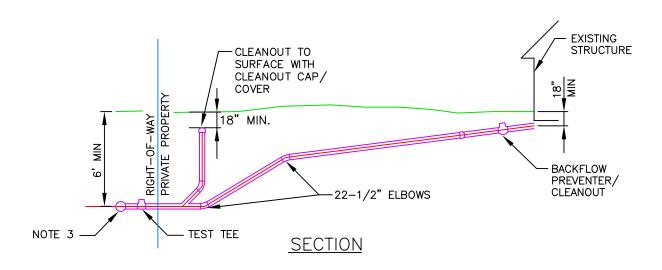
DETAIL NO.

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7-08 7-18

## 45° WYE CLEANOUT -22-1/2" ELBOWS TEST TEE -EXISTING -CLEANOUT STRUCTURE -NOTE 2 CITY SEWER-MAIN **BACKFLOW** PREVENTER/ CLEANOUT 100' MAX MIN I PLAN



## NOTES:

- 1. ELBOWS SHALL NOT BE GREATER THAN 45 DEGREES.
- 2. CLEAN OUT IS REQUIRED FOR EACH PIPE LENGTH GREATER THAN 100' AND FOR EACH 90 DEGREES ACCUMULATED ELBOW PER 100'.
- 3. RIGHT-OF-WAY RESTORATION SHALL MATCH OR EXCEED THE ORIGINAL CONDITION AND BE IN ACCORDANCE WITH THE CITY STANDARD.
- 4. BACKFILL FOR PAVED AREA SHALL BE 3/4" MINUS CRUSHED SURFACING TOP COURSE, COMPACTED IN 12" LIFTS.
- 5. ALL HOUSE PLUMBING OUTLETS MUST BE CONNECTED TO THE SEWER. NO DOWNSPOUTS OR STORM DRAINAGE MAY BE CONNECTED TO THE SEWER
- 7. 6' MINIMUM COVERAGE AT PROPERTY LINE.
- 8. LAY PIPE IN STRAIGHT LINE BETWEEN BENDS. MAKE ALL CHANGES IN GRADE OR LINE WITH A 1/8 BEND OR WYE. 90 DEGREE CHANGE WITH 1/8 BEND AND WYE.
- 9. 6" SEWER PIPE MINIMUM SIZE IN STREET, AND ELSEWHERE AS DIRECTED BY ENGINEER. 2% MINIMUM GRADE (UNLESS DIRECTED BY ENGINEER) 50% MAXIMUM.
- 10. 4" SEWER PIPE MINIMUM SIZE ON PROPERTY. 2% MINIMUM GRADE, 100% (45 DEGREE) MAXIMUM.
- 11. TEST "T" WITH PLUG AT WYE.

- 12. CONSTRUCTION IN STREET MUST BE DONE BY A REGISTERED/LICENSED CONTRACTOR.
- 13. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT SIDE SEWER ORDINANCES.
- 14. ALL CONSTRUCTION REQUIRES A PERMIT AND PAYMENT OF FEE, COMPLETE LEGAL DESCRIPTION OF PROPERTY AND DIMENSIONS.
- 15. BACKFLOW PREVENTER (CHECK VALVE) IS REQUIRED:

A. IF CONNECTED TO A COMBINED SIDE SEWER. B. IF CONNECTION AT HOUSE IS LOWER THAN BOTH UPSTREAM AND DOWNSTREAM MANHOLE LID.

- 16. AS-BUILT DRAWING SHOWING LOCATION OF SIDE SEWER IN RELATION TO THE HOUSE IS REQUIRED AFTER INSTALLATION.
- 17. BEDDING TO BE CLASS C (GRAVEL BORROW) FOR RIGID PIPE AND CLASS F (PEA GRAVEL) FOR FLEXIBLE PIPE (APWA), SECTION 61.

ASTM D-3034 OR SDR-35.

## **SEWER INSTALLATION** STANDARD DETAIL RESIDENTIAL SIDE



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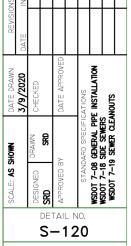
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PAGE

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## DOUBLE CLEANOUT SANITARY SEWER



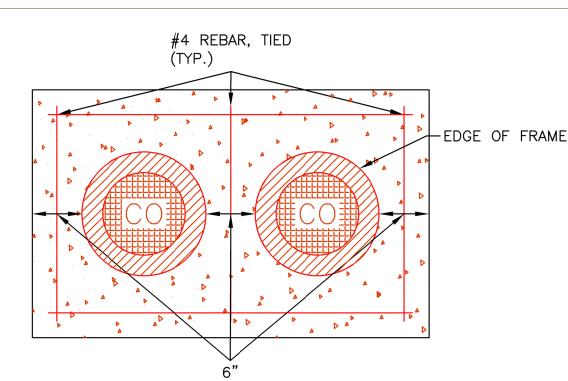


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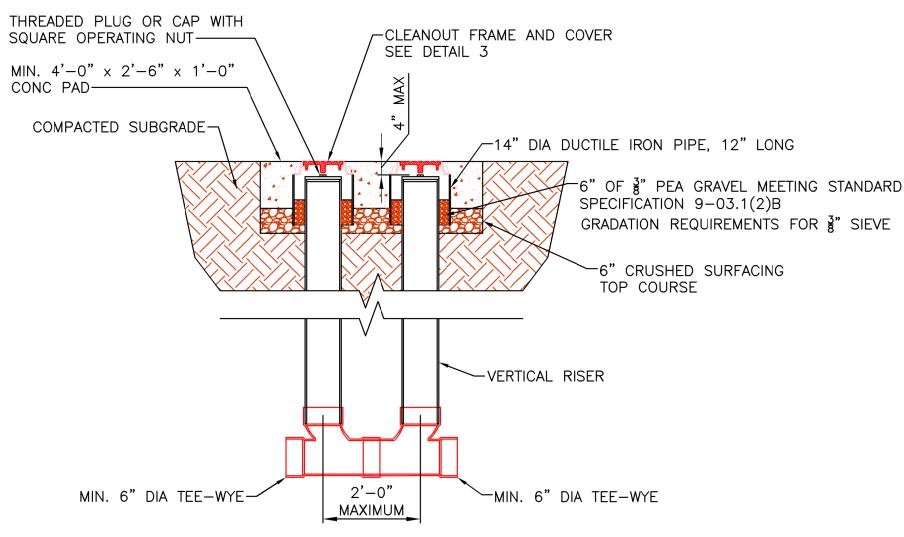
CLEANOUT FRAME AND COVER Scale: N.T.S.

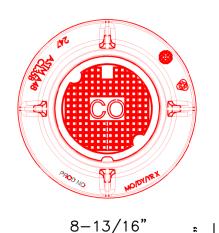
## GENERAL NOTES

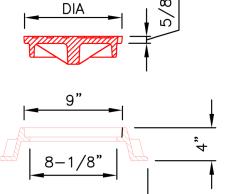
- 1. ALL CONNECTIONS MUST BE APPROVED BY THE CITY OF WENATCHEE AND INSTALLED PER MANUFACTURER RECOMMENDATIONS.
- 2. THE SANITARY SEWER LATERAL, INCLUDING THE TAP, SADDLE, TEE, PIPE, AND CLEANOUT IS CONSIDERED "PRIVATE" UPSTREAM OF THE MAIN LINE POINT OF CONNECTION.
- 3. MINIMUM 6 INCH DIAMETER CLEANOUTS SHALL BE CONSTRUCTED ON ALL SEWER LATERALS. THE VERTICAL RISER SHALL BE OF EQUAL SIZE AS THE LATERAL PIPE OR LARGER.
- 4. CLEANOUTS MAY BE LOCATED IN THE PLANTER STRIP AT THE BACK OF WALK, IF ONE EXISTS, AND SHALL BE VISIBLE AT FINISHED GRADE. CLEANOUTS LOCATED BELOW FINISHED GRADE SHALL HAVE ACCESSIBLE COVERS.
- 5. CLEANOUT FRAME AND COVER SHALL BE HEAVY DUTY, BOLT DOWN EAST JORDAN MODEL 3675 OR APPROVED EQUAL AND LABELED "SEWER" OR "CLEANOUT".
- 6. MAXIMUM CENTER-TO-CENTER SPACING BETWEEN CLEANOUTS SHALL BE 2'-0". MODIFICATIONS TO THIS SPACING REQUIRE THE APPROVAL OF THE ENGINEER.
- 7. CONCRETE PAD FC' SHALL BE 3,000 PSI OR GREATER.
- 8. ALL #4 REBAR SHALL HAVE 2" MINIMUM COVER.



## **CLEANOUT PLAN VIEW** Scale: N.T.S.

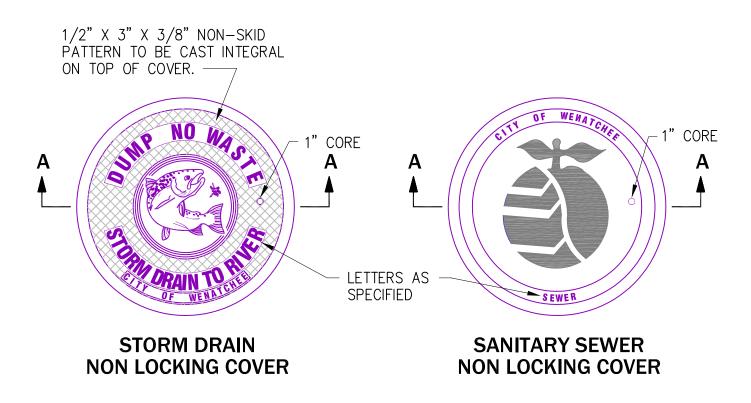


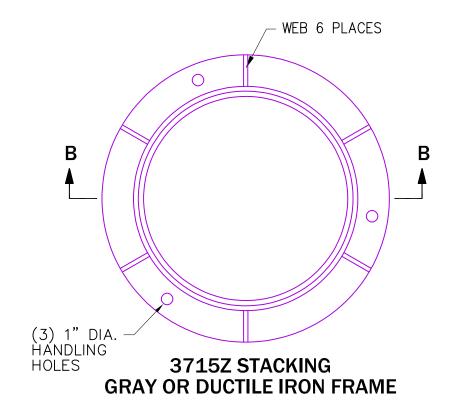




15" DIA

CLEANOUT DETAIL Scale: N.T.S.

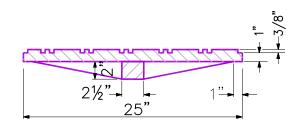




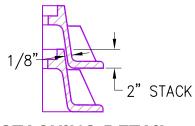
## **NOTES:**

STANDARD SPECIFICATION SECTION 9-05.15(1) AND 9-06.14

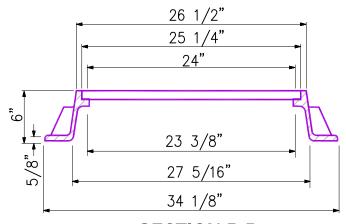
- 1. COVER SHALL BE AT MINIMUM 100 LBS
- 2. MINIMUM WEIGHT OF FRAME SHALL BE 134 LBS
- 3. PRODUCT SUPPLIES BY EAST JORDAN IRON WORKS, OR APPROVED EQUAL
- 4. CITY OF WENATCHEE LOGO REQUIRED
- 5. FRAME AND COVER SHALL BE H-20 LOADING RATED



SECTION A-A - DUCTILE IRON NON LOCKING COVER MINIMUM WEIGHT 100 LBS.



STACKING DETAIL

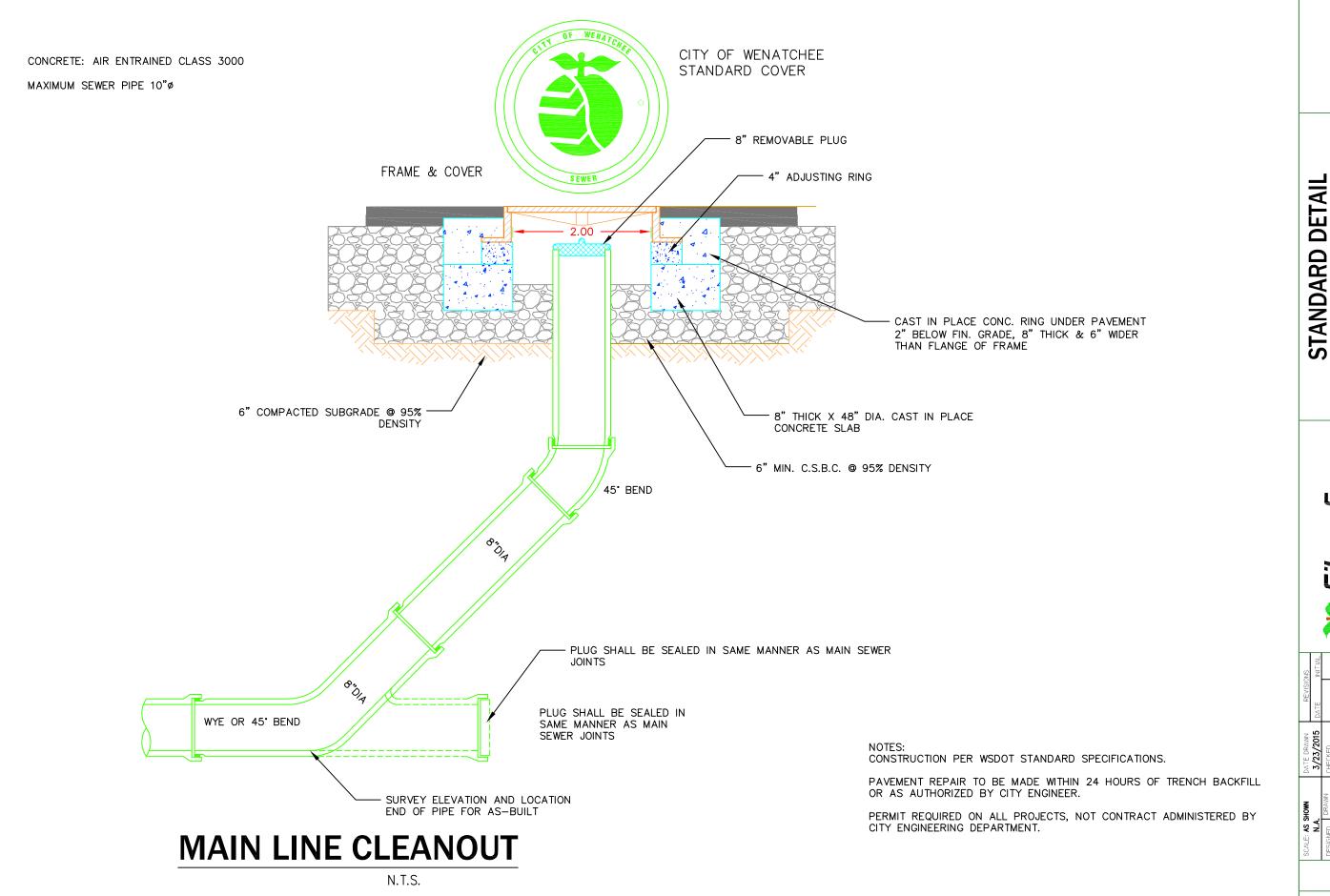


SECTION B-B GRAY IRON OR DUCTILE IRON FRAME MINIMUM WEIGHT 135 LBS.

## STANDARD DETAIL CIRCLE FRAME RING AND COVER DETAIL



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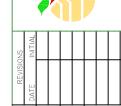
SANITARY SEWER MAIN CLEANOUT

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TRENCH



SCALE: AS SHOWN DATE DRAWIN

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DESIGNED CAW CHECKED

CAW DATE APPROVED

STANDARD SPECIFICATIONS

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PAGE **1 OF 1** 

## SAWCUT (TYP.) 12" MIN - EXIST. PAVEMENT MOUND 4" MIN. TYP - PAVEMENT RESTORATION SLOPE AT ANGLE AS REQUIRED. OF REPOSE SELECT OR NATIVE TRENCH **BACKFILL COMPACTED TO 90%** OF MAX. DRY DENSITY (PER ASTM D1557) IN UNPAVED AREA "CRUSHED SURFACING-TOP COURSE" PER WSDOT STD SPEC 9-03.9(3). COMPACT TO 95% MAX DENSITY, SEE NOTES BELOW. 6' MAX SELECT OR NATIVE TRENCH **BACKFILL COMPACT TO 95%** 6" MIN OR TO TOP OF OF MAX. DRY DENSITY (PER TRENCH, WHICHEVER IS LESS ASTM D1557) IN PAVED AREA. BENCH AS NEEDED FOR SHORING OR TRENCH BOX (TYP.) WHEN DEPTH IS 4' OR GREATER SAND OR CRUSHED ROCK FOR 6 OR GREATER FROM SURFACE TO SEWER PIPE CROWN OF PIPE. FOR LESS THAN 6', CRUSHED SURFACING TOP COURSE (CSTC) (PER WSDOT STD SPEC 9-03.9[3]).

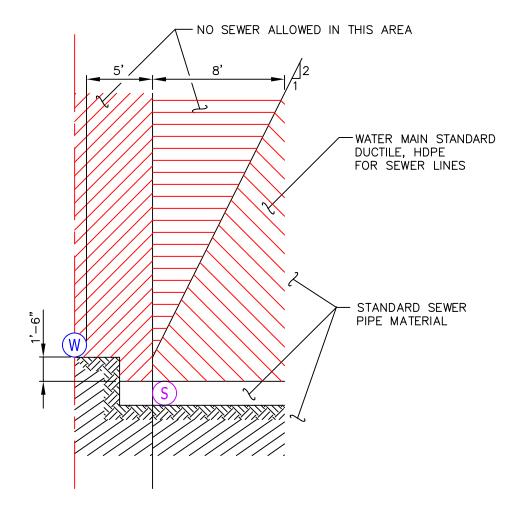
SEE NOTE 1

PAVED AREAS

UNPAVED AREAS

## NOTES

- 1. TRENCH BACKFILL BELOW TOP 4 FEET MAY BE NATIVE MATERIALS OR AS REQUIRED BY THE SPECIFICATIONS, OR AS DIRECTED BY THE PUBLIC WORKS INSPECTOR.
- 2. MINIMUM TRENCH WIDTH SHALL BE PIPE ID + 24".
- 3. IN PAVED AREAS USE CRUSHED ROCK BACKFILL
  - \* FULL DEPTH OF TRENCH WHERE SEWER MAIN CROSSES PERPENDICULAR TO THE TRAVELED LANE OR DRIVEWAY.
  - \* TOP FOUR FEET WHERE SEWER MAIN RUNS PARALLEL TO THE TRAVELED LANE, UNLESS EXISTING MATERIAL IS DETERMINED BY THE ENGINEER TO BE SUITABLE FOR BACKFILL.
- 4. THE STREET SHALL BE OVERLAID WHEN THE ASPHALT ROADWAY IS LESS THAN 5YRS OLD FOR UTILITY CROSSINGS, THE STREET SHALL BE OVERLAID AT LEAST 25 FEET ON EACH SIDE OF THE TRENCH.



PARALLEL CONSTRUCTION

TABLE 1
WATER MAIN STANDARD PIPE MATERIAL

AWWA STANDARD									
TYPE OF PIPE	PIPE	JOINT	FITTINGS						
DUCTILE IRON	C 1.52	C 111	C 110						
CONCRETE CYLINDER	C 303								

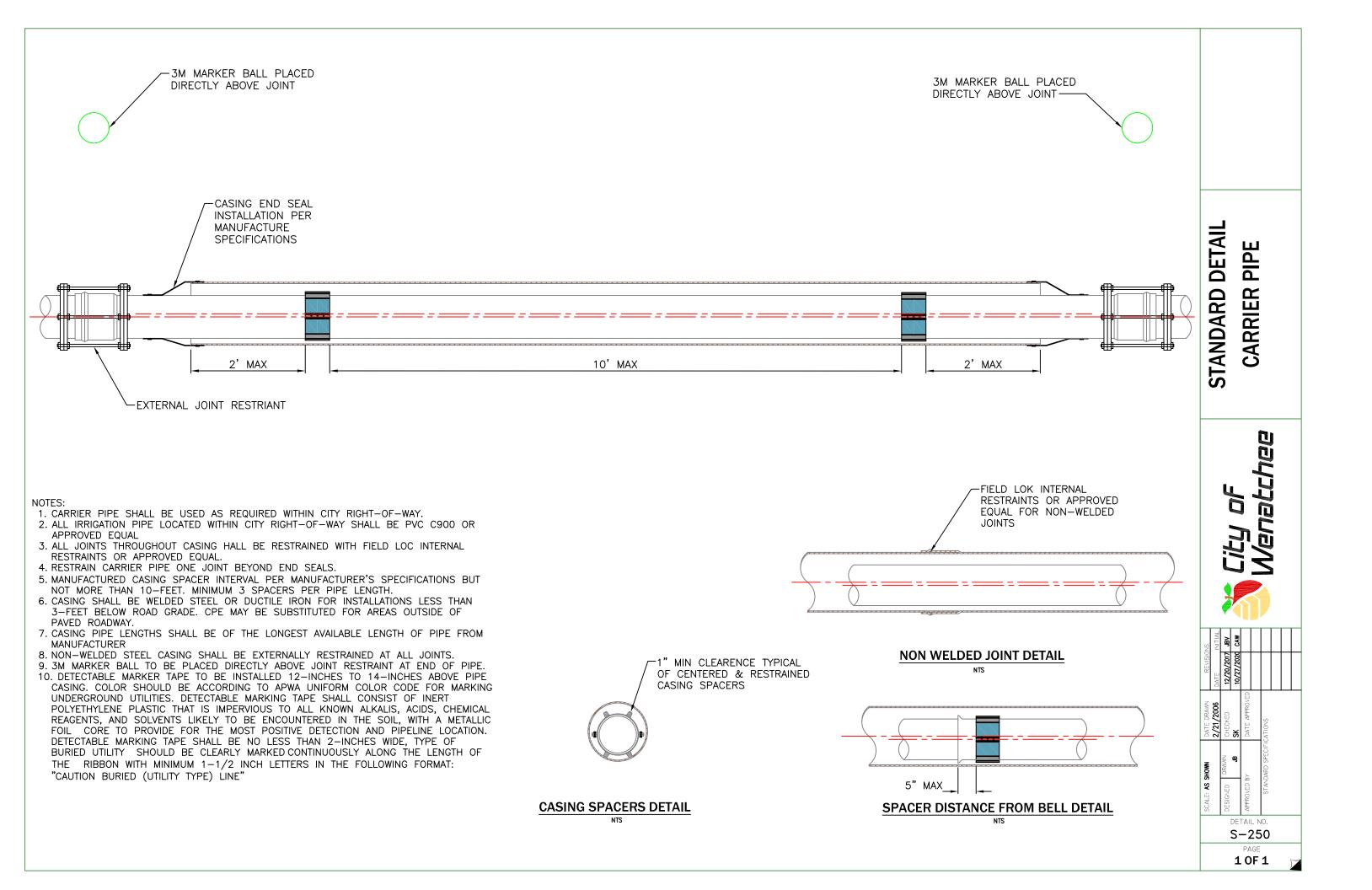
## NOTE:

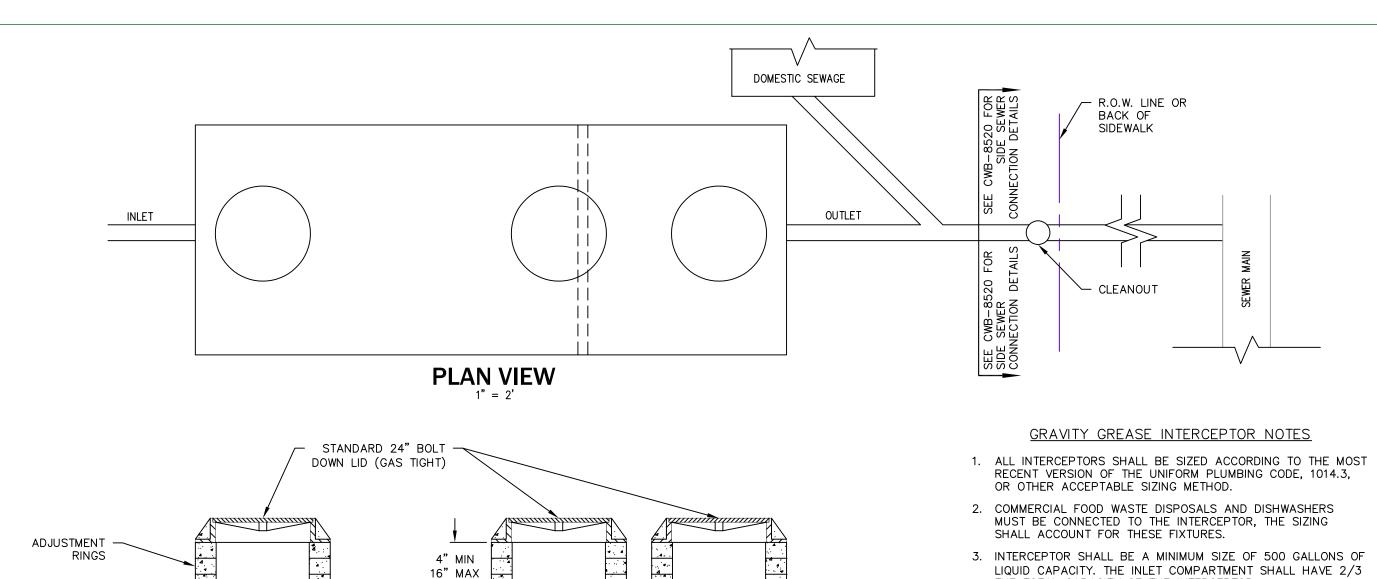
1. TO BE USED WHEN 10' MINIMUM SEPARATION CANNOT BE OBTAINED.

# STANDARD DETAIL WATER AND SEWER SPACING & CLEARANCE



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6"x4"

TEE

(MIN)

MAX

44 4 4 4 4 4 4

6" PIPE

6"x6" TEE

**PROFILE VIEW** 

INLET COMPARTMENT

· OUTLET

1' MAX

4" OUTLET

PIPING (MIN)

6" x 4"

INLET

1' MAX

TEE (MIN)

4" INLET

AT WALL

TYP.

PIPING (MIN)

SAND COLLAR

PENETRATIONS,

- THE TOTAL CAPACITY OF THE INTERCEPTOR.
- 4. SANITARY SEWER SHALL BE CONVEYED BY A SEPARATE LINE DOWNSTREAM OF THE INTERCEPTOR. ONLY GREY-WATER SHALL BE ROUTED THROUGH THE INTERCEPTOR.
- 5. PLACE INTERCEPTOR IN LOCATION THAT ALLOWS FOR PUMP TRUCK MAINTENANCE ACCESS.
- 6. INTERCEPTOR UNIT SHALL BE RATED FOR H20-44 AASHTO LOADING. (CERTIFIED)
- 7. A CENTER MANHOLE IS REQUIRED AND SHALL HAVE STANDARD 24" BOLT DOWN LID.
- 8. POSITION ADJUSTMENT RINGS TO ALLOW ACCESS AND ENTRY.
- INTERCEPTOR SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
- 10. CENTER MANHOLE MUST BE CENTERED OVER THE CROSSOVER TEE AND BAFFLE, THE CROSSOVER TEE CAN BE OFFSET FROM CENTER.
- 11. GROUT INLET, OUTLET AND CROSSOVER TEES.
- 12. ALTERNATE STYLES OR BRANDS MAY BE ALLOWED WITH DIRECTOR'S WRITTEN APPROVAL.



STANDARD DETAIL

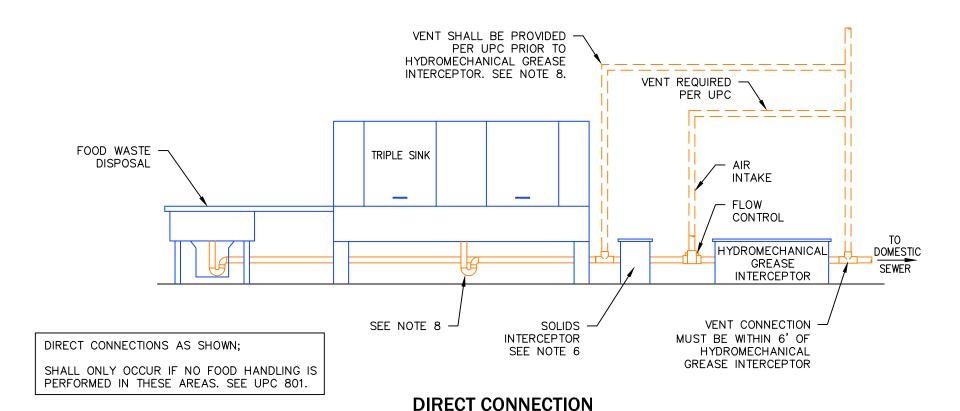
**GRAVITY GREASE** 

INTERCEPTOR



DETAIL NO.

S-300



## HYDROMECHANICAL GREASE INTERCEPTOR (HGI) NOTES

- 1. HYDROMECHANICAL GREASE INTERCEPTORS INSTALLED IN LIEU OF EXTERNAL GRAVITY GREASE INTERCEPTORS ARE ONLY ALLOWED WITH THE WRITTEN PERMISSION OF THE PUBLIC WORKS DIRECTOR.
- MINIMUM REQUIRED FLOW RATE OF 20 GALLONS PER MINUTE AND GREASE RETENTION CAPACITY OF 40 POUNDS.
- 3. ALL INTERCEPTORS WILL BE APPROPRIATELY SIZED TO THE UNIFORM PLUMBING CODE OR OTHER ACCEPTABLE SIZING METHOD.
- 4. INSTALL THE INTERCEPTOR IN AN ACCESSIBLE LOCATION FOR EASE OF BOTH MAINTENANCE AND INSPECTIONS. THE TOP CLEARANCE SHALL PROVIDE TWO TIMES THE PHYSICAL DEPTH.
- 5. FOOD WASTE DISPOSALS MUST BE CONNECTED TO THE INTERCEPTOR.
- 6. IF A FOOD WASTE DISPOSAL IS CONNECTED, THEN THE INTERCEPTOR MUST HAVE A SOLIDS INTERCEPTOR INSTALLED PRIOR TO THE FLOW CONTROL DEVICE.
- 7. IF A SOLIDS INTERCEPTOR IS NOT REQUIRED, THEN A WATER SEAL MUST BE PROVIDED BETWEEN THE FIXTURES AND INTERCEPTOR.
- 8. EACH PLUMBING FIXTURE CONNECTED TO THE INTERCEPTOR SHALL BE INDIVIDUALLY TRAPPED AND VENTED IN AN APPROVED MANNER. VENTING AND FLOW CONTROL DEVICES ARE TO BE LOCATED IN A READILY ACCESSIBLE AND VISIBLE PLACE.
- 9. ALL WASTE SHALL ENTER THE INTERCEPTOR THROUGH AN INLET PIPE ONLY.
- 10. "GRAY WATER ONLY", DOMESTIC (SANITARY) SEWER SHALL BE CONVEYED BY A SEPARATE LINE DOWNSTREAM OF THE INTERCEPTOR.
- 11. DISHWASHER WASTE MUST NOT PASS THROUGH THE INTERCEPTOR.
- 12. NOT MORE THAN FOUR (4) SEPARATE FIXTURES SHALL BE CONNECTED TO OR DISCHARGE INTO ANY ONE INTERCEPTOR.

## STANDARD DETAIL HYDROMECHANICAL GREASE INTERCEPTOR

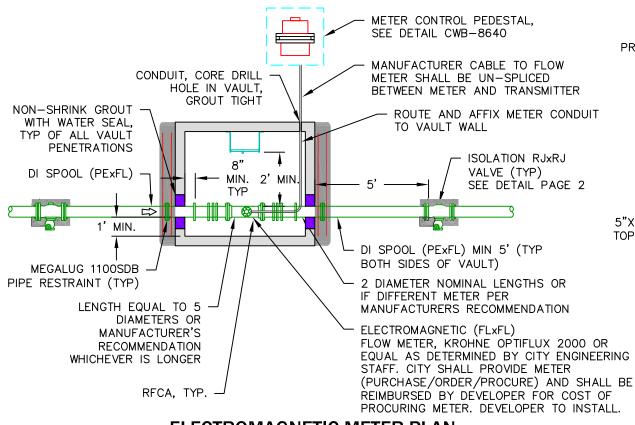


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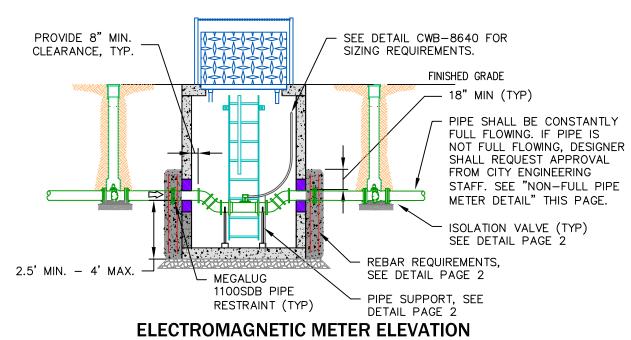
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	ELECTROMAGNETIC METER NOTES
MATERIAL - PIPELINE	PIPING SHALL BE DUCTILE IRON
COATINGS — PIPELINE	EXTERNAL PIPE COATINGS — PIPE SHALL BE COATED WITH: PRIMER, SERIES 1 OMNITHANE (2.5 TO 3.5 MIL DFT); INTERMEDIATE COAT, SERIES N69 HI—BUILD EPOXOLINE II (6 TO 8 MILS DFT); FINISH COAT, SERIES 73 ENDURA—SHIELD (3 TO 5 MILS DFT). PIPE OUTSIDE VAULT SHALL BE ASPHALTIC COATED FOR BURY.  INTERNAL PIPE COATINGS — CEMENT MORTAR LINED FROM ISOLATION VALVE TO ISOLATION VALVE.

METER VAULT SIZING								
METER SIZE	INTERIOR VAULT (MIN) (WIDTH x LENGTH)	HATCH (MIN)	LEAF					
3"	5'-6" x 6'-4"	36"x48"	1					
4"	5'-6" x 6'-4"	36"x48"	1					
6"	6'-4" x 6'-4"	48"x60"	2					
8"	6'-4" x 6'-4"	48"x60"	2					



## **ELECTROMAGNETIC METER PLAN**

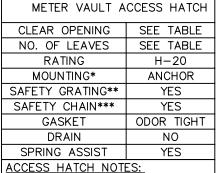


6" MIN. THICK FOUNDATION MATERIAL CLASS A CONFORMING TO WSDOT SS 9-03.17, COMPACT TO 95% OF THE MODIFIED PROCTOR, TYP.

### ALUMINUM ACCESS LADDER SEE DETAIL PAGE 2 INSTALLATION SHALL BE PER DRAWING SHOWN WHEN A PRECAST CONCRETE VAULT TOP, NON-FULL FLOWING CONDITION SHALL BE H-20 RATED MAY EXIST WITHIN A FORCE MAIN. MANUFACTURERS RECOMMENDED LAYOUT MAY 1/4" SS, TYPE 316, SAFETY ALSO BE USED WITH CHAIN WITH 1/4" SS CLEVIS ENGINEERING APPROVAL. GRAP HOOK WITH SAFETY LATCH EACH SIDE, TYP. PROVIDE 3/4" SS, TYPE 316, EYE BOLT INSIDE HATCH CORNERS FOR SAFETY CHAIN, DI 45° BEND (FLxFL) 5"X2-1/4" GALV. STL. SLEEVE IN TYP OF 4 SAFETY GRATE TOP WITH REMOVABLE PLUG, TYP. \*\*SEE HATCH NOTES

## METER VAULT STRUCTURAL PLAN NON

## NON-FULL PIPE METER DETAIL

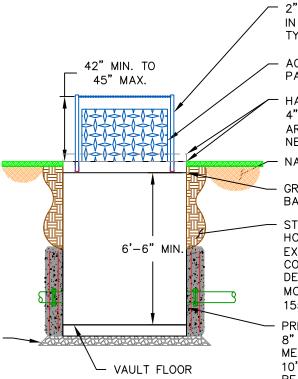


\* ACCESS HATCH OVER METER
VAULT SHALL BE MOUNTED
USING STAINLESS STEEL BOLTS
AS SHOWN ON THIS PLAN.

\*\*ACCESS HATCH SHALL HAVE REMOVABLE SAFETY GRATING COVER BELOW ACCESS HATCH LID.

\*\*\* SAFETY CHAINS SHALL BE PROVIDED ON ACCESS HATCHES AS DETAILED FOR EACH HATCH ON THIS SHEET.

\*\*\*\*ACCESS HATCH TO HAVE HASP FOR PADLOCK



2" DIAMETER GALV. STL POLE SET IN 2-1/4" SLEEVE, REMOVABLE, TYP.

ACCESS HATCH WITH HASP FOR PADLOCK, AND A SAFETY GRATE

HATCH FLUSH IN TRAVELED AREAS/
4" ABOVE GRADE IN UNTRAVELED
AREAS, ADD RISER(S) AS
NECESSARY

NATIVE FILL

GROUT LIFT HOOKS PRIOR TO BACKFILLING, TYP.

STRUCTURAL BACKFILL 2'
HORIZONTALLY OF STRUCTURES
EXTERIOR, 12" MAX. LIFTS,
COMPACTED TO 95% MAXIMUM DRY
DENSITY AS DETERMINED BY THE
MODIFIED PROCTOR TEST (ASTM D
1557) TYP.

PRECAST CONCRETE VAULT: FOR 8" PIPE AND SMALLER, SEE METER VAULT SIZING TABLE; FOR 10" PIPE AND LARGER, VAULT TO BE SUBMITTED FOR ENGINEERING APPROVAL

## METER VAULT STRUCTURAL ELEVATION

## STANDARD DETAIL ELECTROMAGNETIC SEWAGE FLOW METER





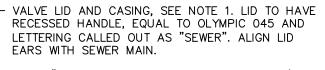
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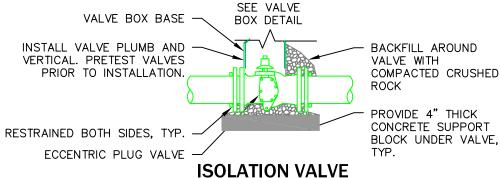
2" COMMERCIAL HMA WHEN IN ASPHALT/ CONCRETE TO SURFACE ALL OTHER LOCATIONS

> COMMERCIAL CONCRETE COLLAR SEE NOTE 2

## GENERAL ADJUSTMENT NOTES:

- 1. THE HIGHEST POINT ON THE CASING, RING, OR COVER SHALL BE NO LESS THAN FLUSH AND NO MORE THAN 1/8" BELOW ASPHALT SURFACE.
- 2. COMMERCIAL CONCRETE COLLAR MUST BE GIVEN 3 DAYS CURE TIME PRIOR TO ASPHALT CAP PLACEMENT. TIME MAY BE REDUCED WITH ENGINEER APPROVAL
- REMOVE ASPHALT AS NECESSARY IN CIRCULAR PATTERN WITH A MINIMUM OF 8 EDGES.

## EMBED 4" MINIMUM PIPE SUPPORT DETAIL



3" MIN.

CLEARANCE, TYP.

REQUIRED

STANDON

ADJUSTABLE

PIPE SUPPORT

**FLOOR** 

VALVE VAULT

2" Ø GALVANIZED STEEL PIPE

(2) 5/8" Ø SS DRILL AND

**ÈPOXY ANCHOR SYSTEM** 

EQUAL TO HILTI "HIT C100"

WITH SS NUT AND WASHER.

SADDLE SUPPORT

2 PIECE CAST IRON VALVE BOX, EQUAL TO OLYMPIC VB940 SEATTLE STYLE. INSTALL STRAIGHT TO PREVENT BINDING OF OPERATOR.

COMMERCIAL CONCRETE

COLLAR MUST EXTEND 4" MIN. BELOW CASTING RING

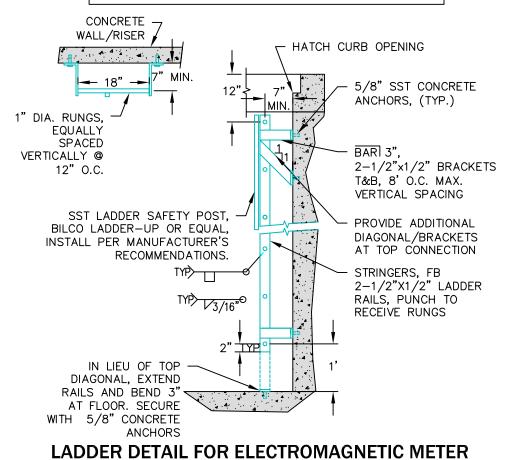
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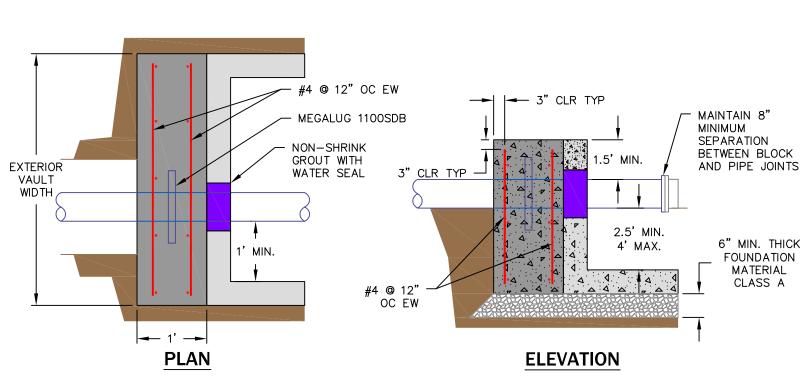
MIN.

## ROADWAY UTILITY ADJUSTMENT

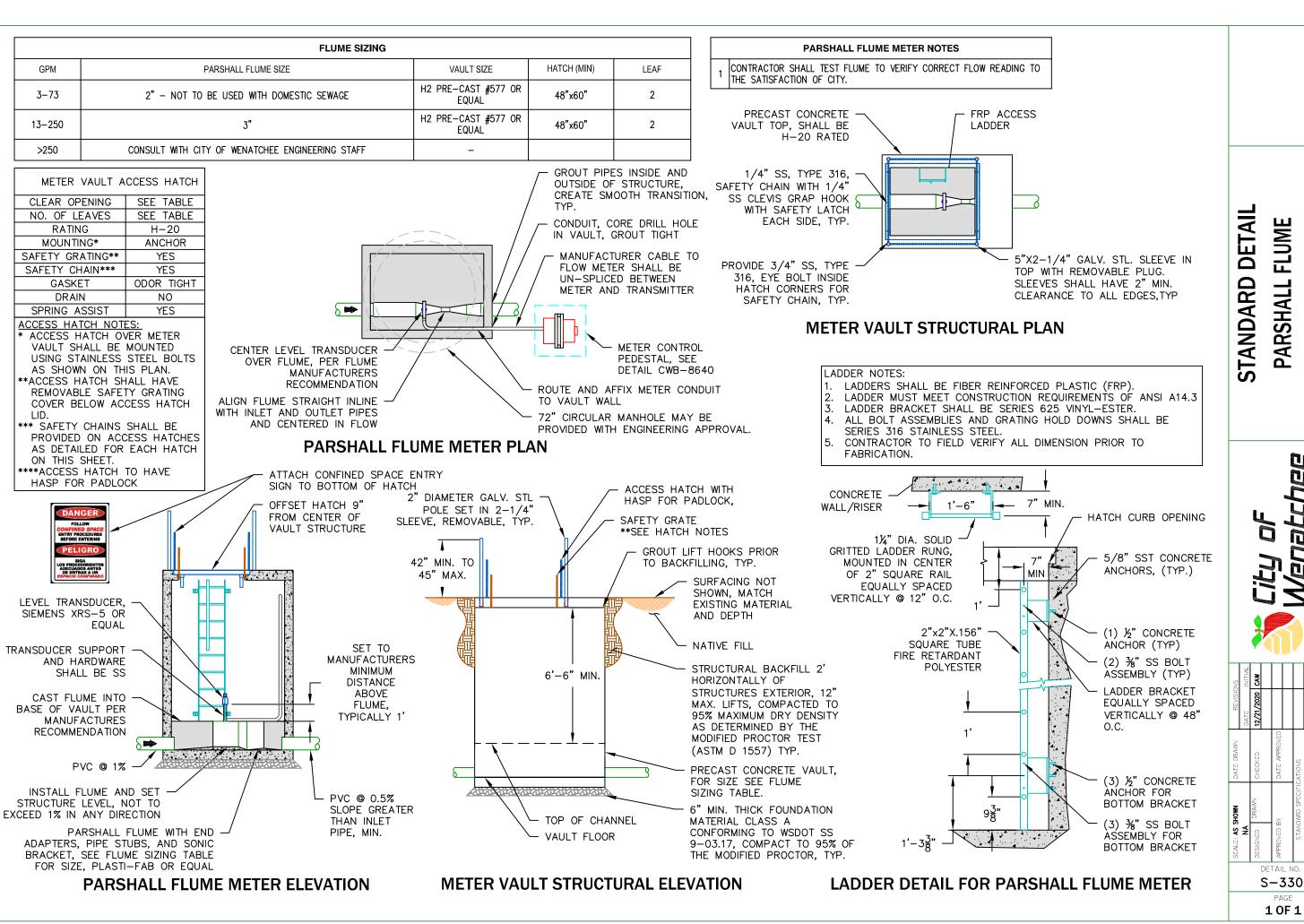


- 1. LADDERS SHALL BE ALUMINUM.
- LADDER MUST MEET CONSTRUCTION REQUIREMENTS OF ANSI A14.3

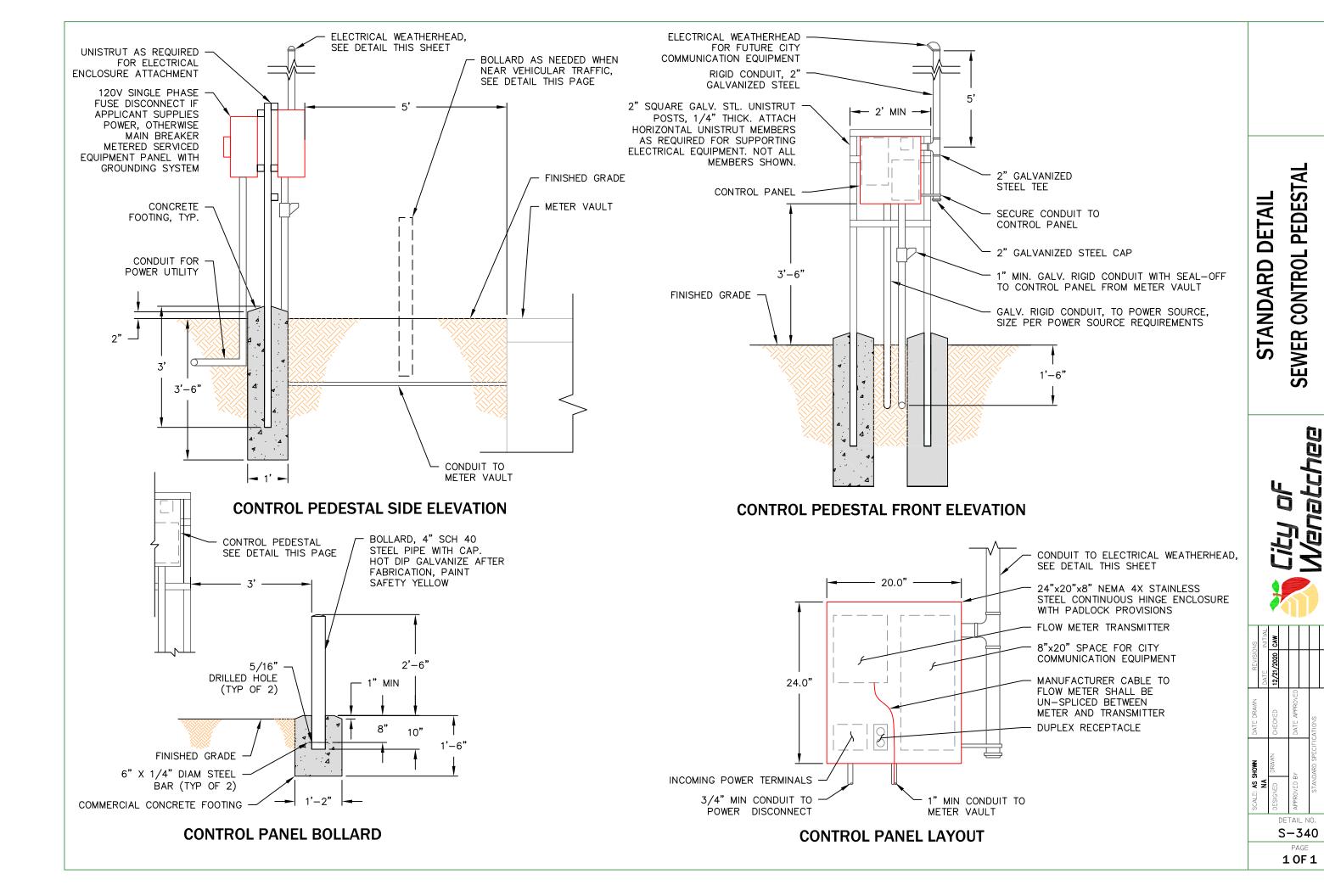


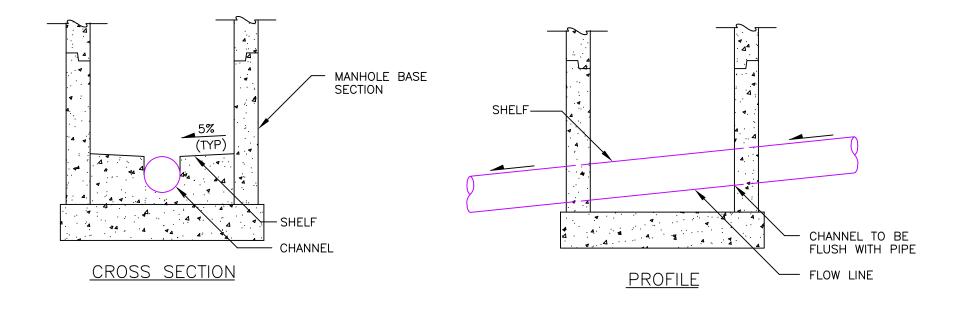


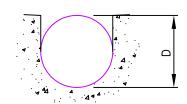
PIPE RESTRAINT



(enatc







## CHANNEL SECTION

## NOTES:

- 1. DEPTH OF CHANNEL MUST BE SAME AS PIPE DIAMETER.
- 2. MINIMUM 0.1' DROP ACROSS CHANNEL; MAXIMUM 1.0' DROP ACROSS CHANNEL.

# STANDARD DETAIL SEWER MANHOLE MAIN

**CHANNEL & SHELF** 

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