



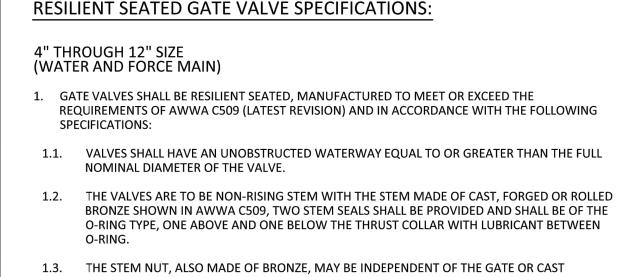
- 1. ALL JOINTS BETWEEN BENDS AT HORIZONTAL & VERTICAL OFFSETS SHALL BE RESTRAINED.
- 2. MECHANICAL THRUST RESTRAINTS FOR D.I.P. FITTINGS ON D.I.P. OR P.V.C. PIPE SHALL BE MEGALUG AS MANUFACTURED BY EBAA IRON, INC., OR APPROVED EQUAL.
- 3. DUCTILE IRON FITTINGS UP TO 20-INCHES IN DIAMETER SHALL BE RESTRAINED BY MECHANICAL MEANS, I.E., MEGALUGS OR APPROVED EQUAL.
- 4. DUCTILE IRON FITTINGS 24-INCH IN DIAMETER AND ABOVE SHALL BE RESTRAINED BY MECHANICAL MEANS, I.E., MEGALUGS OR APPROVED EQUAL, WITH THE ADDITION OF THRUST BLOCKS AND CONCRETE ANCHORS AT THE DISCRETION OF THE ENGINEER OF RECORD.
- 5. ANY THRUST BLOCKS AND ANCHORS ARE TO BE DESIGNED BY THE ENGINEER OF RECORD. SIGNED AND SEALED CALCULATIONS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO
- 6. THRUST BLOCKS CONSISTING OF POURED-IN-PLACE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGH OF 2,500 PSI AFTER 28 DAYS.

DAMOND GOLD COAST	ISSUED:	03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
	DRAWN:	EAM	JOINT RESTRAINT DESIGN FOR PVC AND DIP THRUST RESTRAINT NOTES	DRAWING NO. G-11
	APPROVE	D: XXX		

STATE OF

SONALY

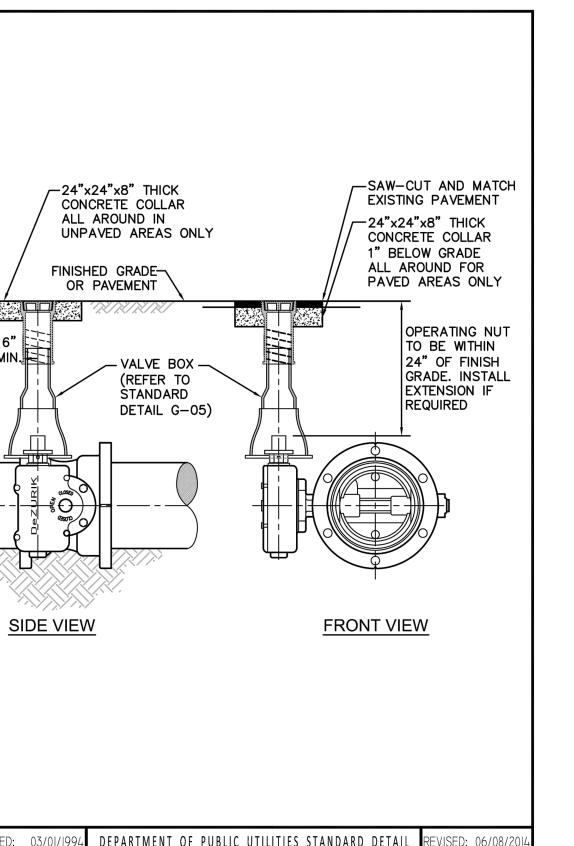
SHEET NUMBER C-405

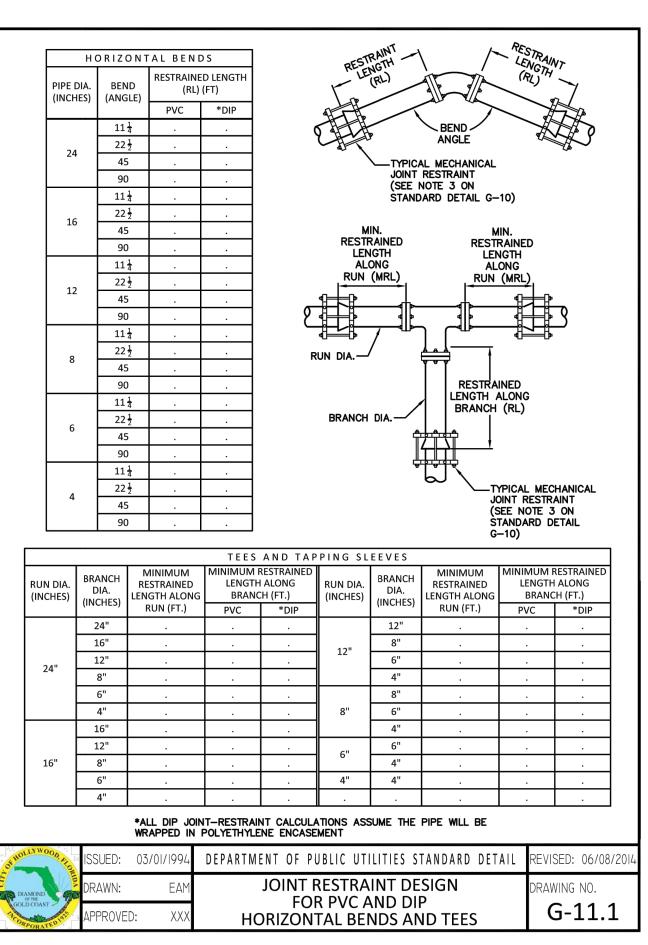


	o nine.
1.3.	THE STEM NUT, ALSO MADE OF BRONZE, MAY BE INDEPENDENT OF THE GATE OR CAST
	INTEGRALLY WITH THE GATE. IF THE STEM NUT IS CAST INTEGRALLY, THE THREADS SHALL BE
	STRAIGHT AND TRUE WITH THE AXIS OF THE STEM TO AVOID BINDING DURING THE OPENING OR
	CLOSING CYCLE

- 1.4. THE SEALING MECHANISM SHALL CONSISTS OF A CAST IRON GATE HAVING A VULCANIZED SYNTHETIC RUBBER COATING OR A RUBBER SEAT MECHANICALLY RETAINED ON THE GATE, THE RESILIENT SEALING MECHANISM SHALL PROVIDE ZERO LEAKAGE AT THE WATER WORKING
- PRESSURE WHEN INSTALLED WITH THE LINE FLOW IN EITHER DIRECTION. 1.5. A 2-INCH SQUARE WRENCH NUT SHALL BE PROVIDED FOR OPERATING THE VALVE.
- 1.6. ALL VALVES ARE TO BE SUPPLIED COMPLETE AND READY FOR INSTALLATION INCLUDING, BUT NOT LIMITED TO ALL NUTS, BOLTS RINGS AND RUBBERS.
- 1.7. ALL VALVES ARE TO BE TESTED IN STRICT ACCORDANCE WITH AWWA C509 LATEST REVISION).

DIAMOND OF THE STATE OF THE STA	ISSUED:	03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
	DRAWN:	EAM	RESILIENT SEATED GATE VALVE	DRAWING NO.
	APPROVEI	O: XXX	SPECIFICATIONS	G-07.1





1. THE MINIMUM DEPTH OF COVER OVER D.I.P. SANITARY SEWER GRAVITY OR FORCE MAINS IS 30". THE MINIMUM

3. LEAKAGE TESTS AND ALIGNMENT (LAMPING) TESTS SHALL BE PERFORMED ON ALL NEW SEWER LINES UP TO THE

CONNECTION POINT WITH THE EXISTING SEWER SYSTEM. THESE TESTS SHALL BE REQUESTED AND PAID FOR BY THE

4. LAMPING TESTS SHALL BE PERFORMED ON GRAVITY SEWERS FROM MANHOLE TO MANHOLE UP TO AND INCLUDING

LATERALS AND MANHOLES, FOR A CONTINUOUS PERIOD OF NO LESS THAN 2 HOURS. AT THE END OF THE TEST, THE

TOTAL MEASURED LEAKAGE SHALL NOT EXCEED 100 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY FOR

ANY SECTION OF THE SYSTEM, WITH ZERO ALLOWABLE LEAKAGE FOR LATERALS AND MANHOLES. AN EXFILTRATION

OR INFILTRATION TEST SHALL BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET ON THE SECTION BEING

6. FORCE MAINS SHALL BE PRESSURE-TESTED IN ACCORDANCE WITH RULE 62-555.330 (FAC). THE PRESSURE TEST SHALL

CONSIST OF HOLDING A TEST PRESSURE OF 150 PSI ON THE PIPELINE FOR A CONTINUOUS PERIOD OF 2 HOURS THE

7. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTYFYING CONFLICTS WITH FORCE MAINS PLACED AT MINIMUM

SEPARATION FROM WATER MAINS AND 6" MINIMUM SEPARATION FROM OTHER UTILITIES. NO ADDITIONAL PAYMENT SHALL BE DUE TO CONTRACTOR FOR LOWERING THE MAIN OR THE ADDITIONAL FITTINGS USED THEREON.

8. WHENEVER IT IS NECESSARY, IN THE INTEREST OF SAFETY, TO BRACE THE SIDES OF A TRENCH, THE CONTRACTOR SHALL FURNISH, PUT IN PLACE AND MAINTAIN SUCH SHEETING OR BRACING AS MAY BE NECESSARY TO SUPPORT THE

COVER. IN CASE OF CONFLICT, FORCE MAIN SHALL BE LOWERED TO PASS UNDER CONFLICTS WITH 12" MINIMUM

SIDES OF THE EXCAVATION TO ENSURE PERSONNEL SAFETY, AND TO PREVENT MOVEMENT WHICH CAN IN ANY WAY

DAMAGE THE WORK OR ENDANGER ADJACENT STRUCTURES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SEQUENCE, METHODS AND MEANS OF CONSTRUCTION, AND FOR THE IMPLEMENTATION OF ALL OSHA AND

DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAI

SANITARY SEWER MAIN

CONSTRUCTION NOTES

AWING NO.

S-01

5. LEAKAGE TESTS SHALL BE PERFORMED ON ALL SEGMENTS OF A GRAVITY SEWER SYSTEM, INCLUDING SERVICE

DEPTH OF COVER OVER PVC SANITARY SEWER OR FORCE MAINS IS 36".

THE POINT OF CONNECTION TO THE EXISTING SEWER SYSTEM.

L = ALLOWABLE LEAKAGE FOR SYSTEM IN GALLONS PER HOUR

D = PIPE DIAMETER IN INCHES

S = LENGTH OF LINES IN LINEAL FEET

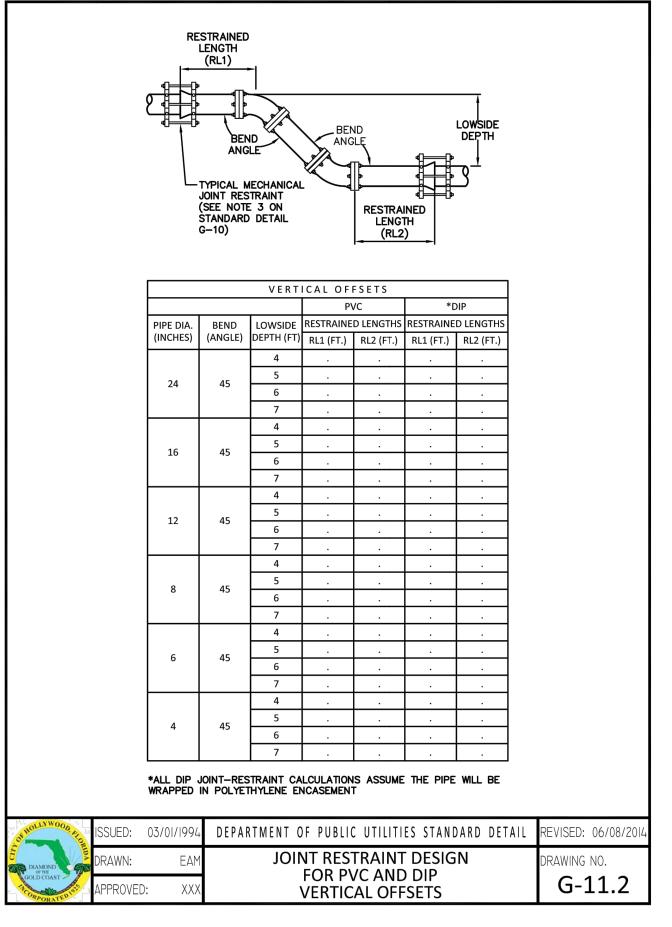
P = AVERAGE TEST PRESSURE IN PSI

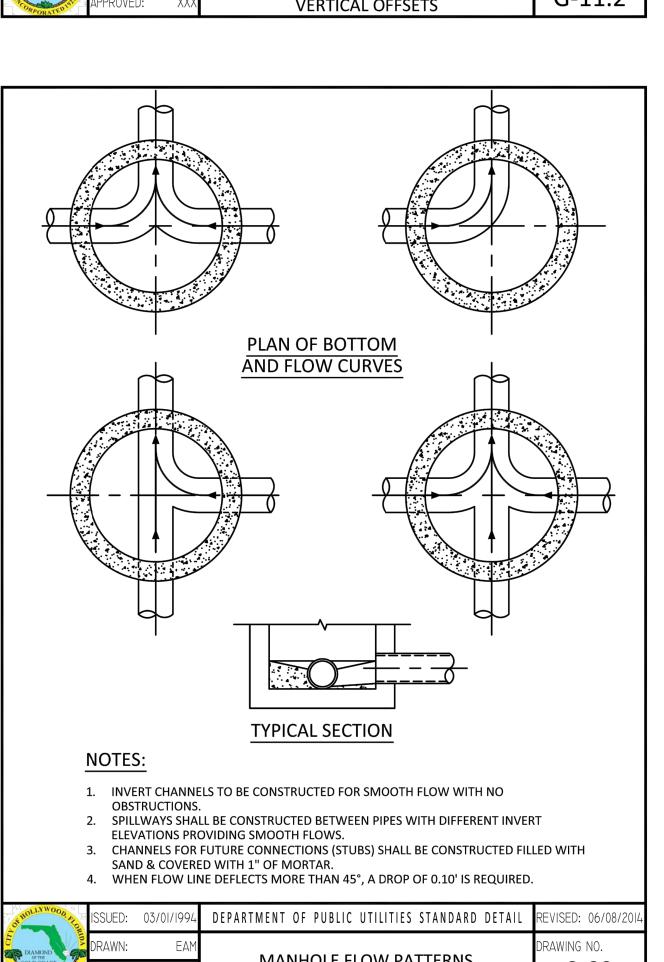
OTHER SAFETY REQUIREMENTS.

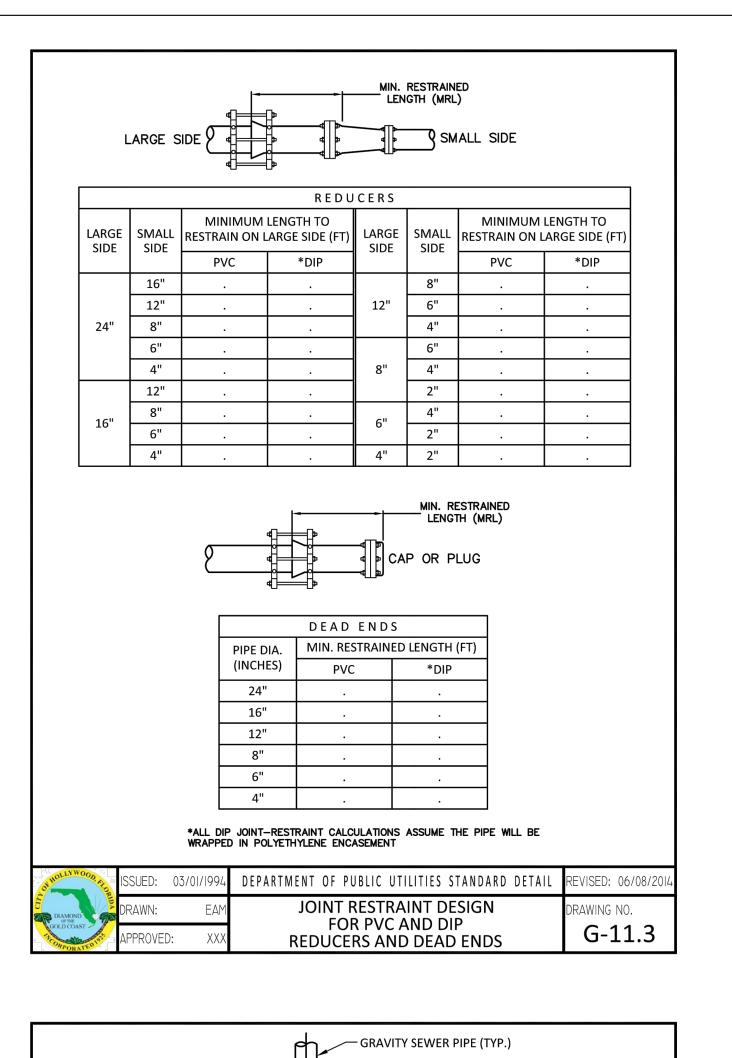
2. ALL CONNECTIONS TO EXISTING MAINS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

MAXIMUM ALLOWABLE LEAKAGE SHALL BE DETERMINED BY THE FOLLOWING FORMULA:

SEWER NOTES:







MANHOLE WALL

(PRECAST CONC.)

FORM SMOOTH-

CHANNEL IN GROUT)

PIPE-TO-MANHOLE CONNECTOR -

(REFER TO SPECIFICATIONS FOR

FINISHED GRADE —

BRICK AND MORTAR BY-

CONTRACTOR (3 COURSES

MIN., 5 COURSES MAX.)

INSIDE AND OUTSIDE

RAM-NEK SEAL OR —

APPROVED EQUAL

4' DIAMETER

MIN. 18" STONE BASE MATERIAL

6'-4" DIAMETER

SECTION

BUOYANCY, SHALL BE SUBMITTED TO THE CITY PRIOR TO INSTALLATION.

1. SHOP DRAWINGS SHOWING ALL DIMENSIONS, INCLUDING CONCRETE REINFORCEMENT AND

2. THE BOTTOM SLAB SHALL BE CAST MONOLITHICALLY WITH THE LOWER WALL SECTION TO A MINIMUM

3. NO CONSTRUCTION JOINTS ARE ALLOWED BELOW ELEVATION +2.00 NAVD. ABOVE ELEVATION +2.00

ARE PROVIDED. SUBMIT SHOP DRAWINGS OF JOINT DETAILS TO THE ENGINEER FOR APPROVAL.

NAVD CONSTRUCTION JOINTS ARE ALLOWED, IF ADEQUATE JOINTS WITH KEY-WAYS AND WATER STOPS

DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL

STANDARD PRECAST MANHOLE

STUCCOED W/ 3/4" MORTAR

BRICK/RUBBLE -

NOTES:

W/GROUT

APPROVED TYPES)

MANHOLE BASE —

PROVIDE SMOOTH CHANNEL BETWEEN

MANHOLE FRAME AND COVER SHALL BE

"SANITARY SEWER" CAST INTO THE COVER

U.S. FOUNDRY TYPE 485-C-ORS (OR

- FLUSH WITH FINISHED PAVEMENT

APPROVED EQUAL) WITH THE WORDS

— #4 @ 12" O.C. E.W.

- TWO COATS OF SEWPERCOAT®

MORTAR (OR APPROVED EQUAL)

SHALL BE APPLIED TO THE INSIDE,

AND ONE COAT TO THE OUTSIDE

OF ALL NEW MANHOLE SECTIONS IN ACCORDANCE WITH THE

MANUFACTURE'S SPECIFICATIONS

-PIPE-TO-MANHOLE CONNECTOR

(REFER TO SPECIFICATIONS FOR

AWING NO.

S-03

APPROVED TYPES)

MINIMUM CONCRETE STRENGTH = 4,000 PSI

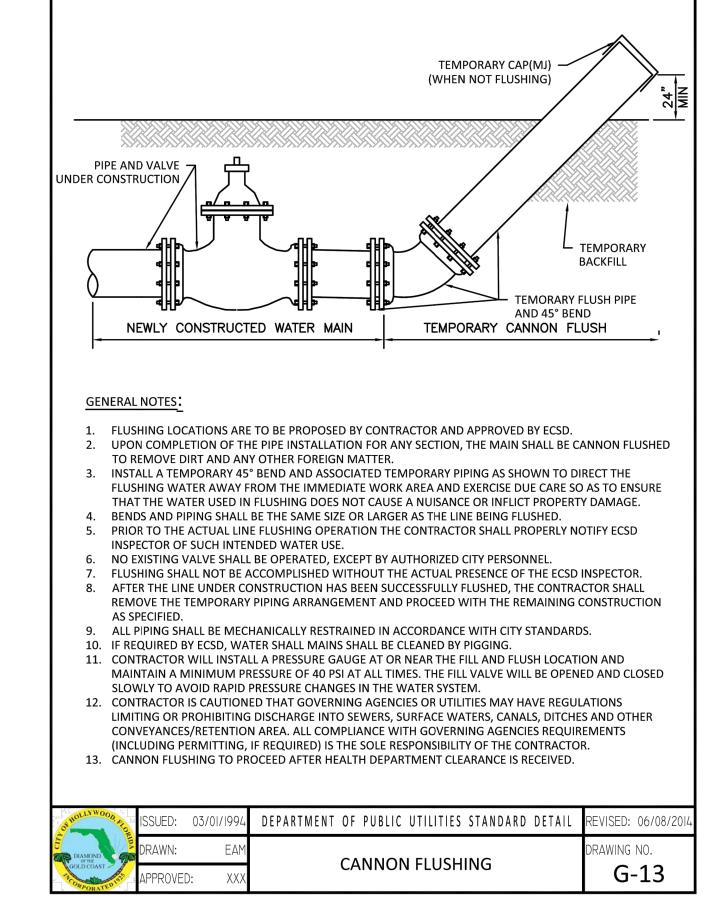
PIPES W/DIFFERENT INVERT ELEV.

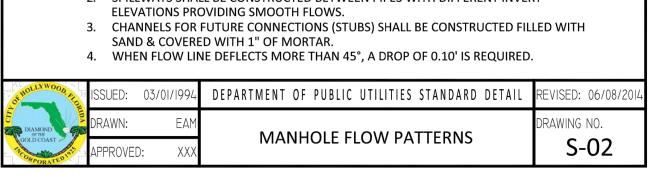
DROP MANHOLE.

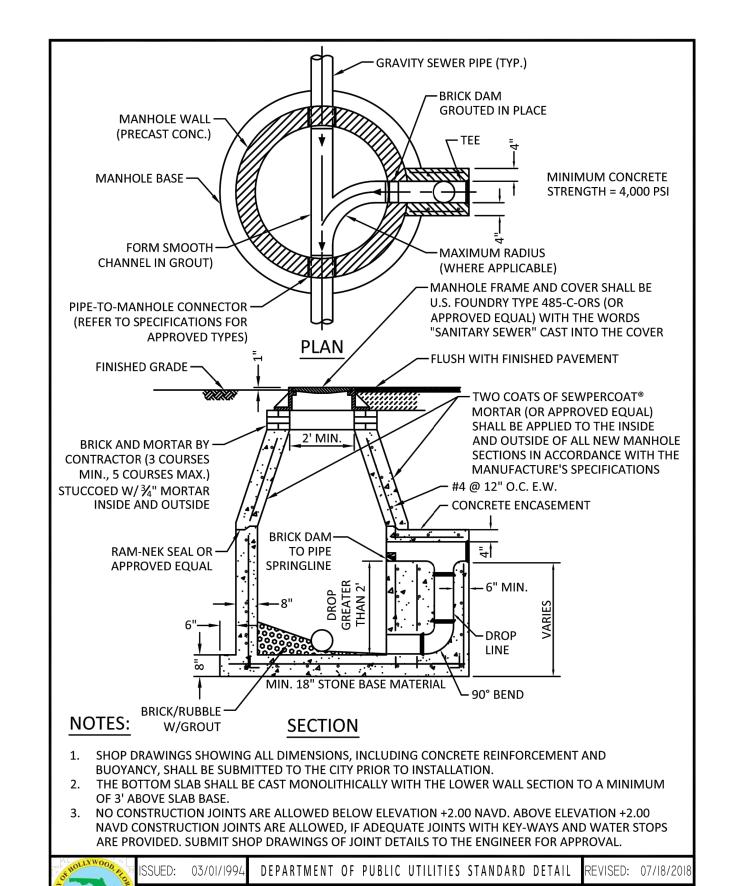
- MAXIMUM RADIUS

(WHERE APPLICABLE)

WHERE DIFFERENCE EXCEEDS 2', USE







DROP MANHOLE

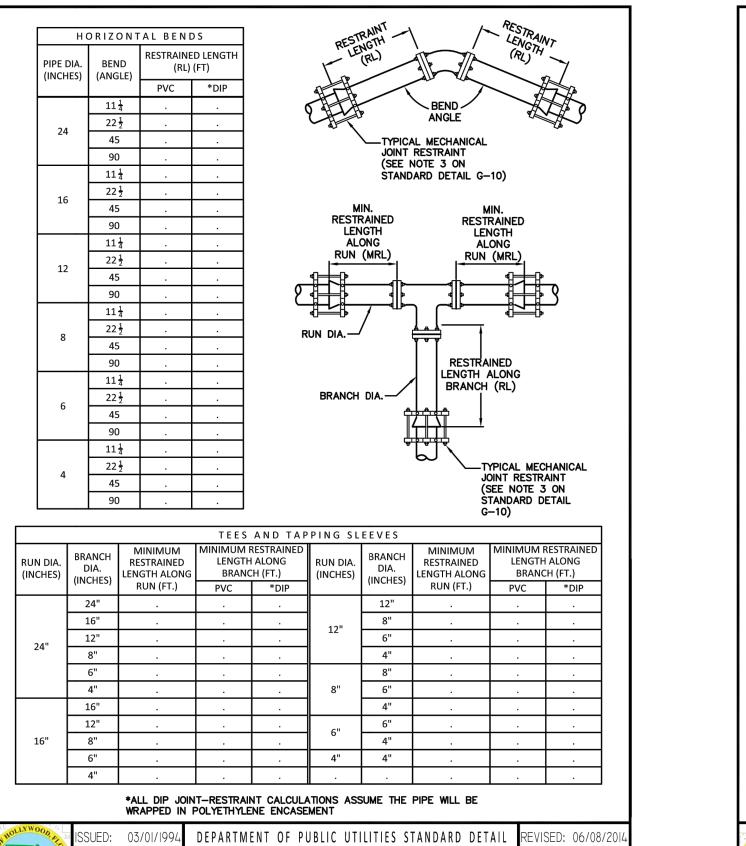
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AWING NO.

S-04

STATE OF

SHEET NUMBER



1. SHOP DRAWINGS SHOWING ALL DIMENSIONS, INCLUDING CONCRETE REINFORCEMENT AND

2. THE BOTTOM SLAB SHALL BE CAST MONOLITHICALLY WITH THE LOWER WALL SECTION TO A MINIMUM

3. NO CONSTRUCTION JOINTS ARE ALLOWED BELOW ELEVATION +2.00 NAVD. ABOVE ELEVATION +2.00

NAVD CONSTRUCTION JOINTS ARE ALLOWED, IF ADEQUATE JOINTS WITH KEY-WAYS AND WATER

STOPS ARE PROVIDED. SUBMIT SHOP DRAWINGS OF JOINT DETAILS TO THE ENGINEER FOR APPROVAL.

DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL

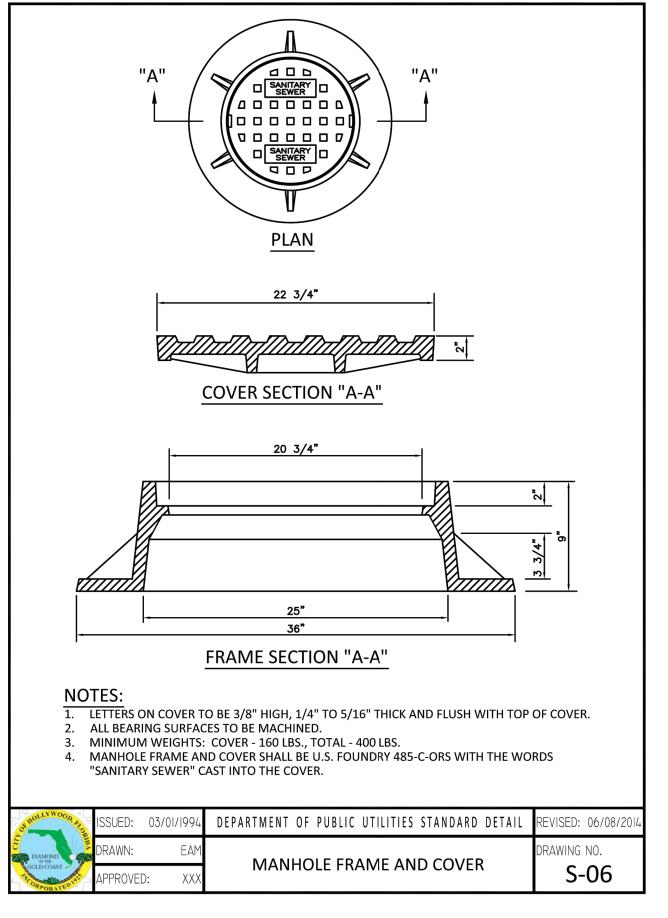
SHALLOW MANHOLE

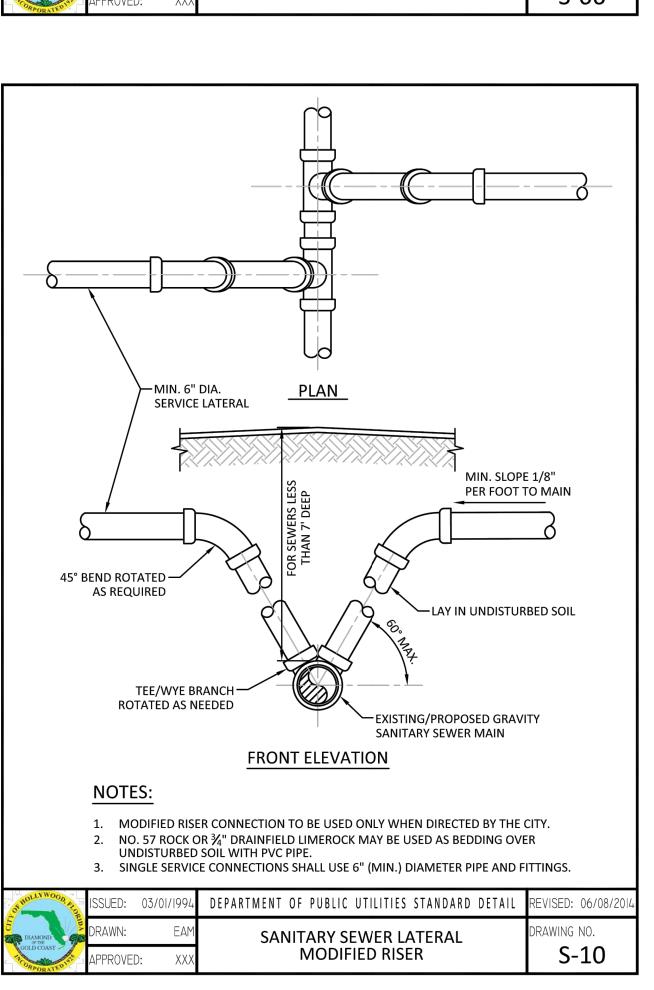
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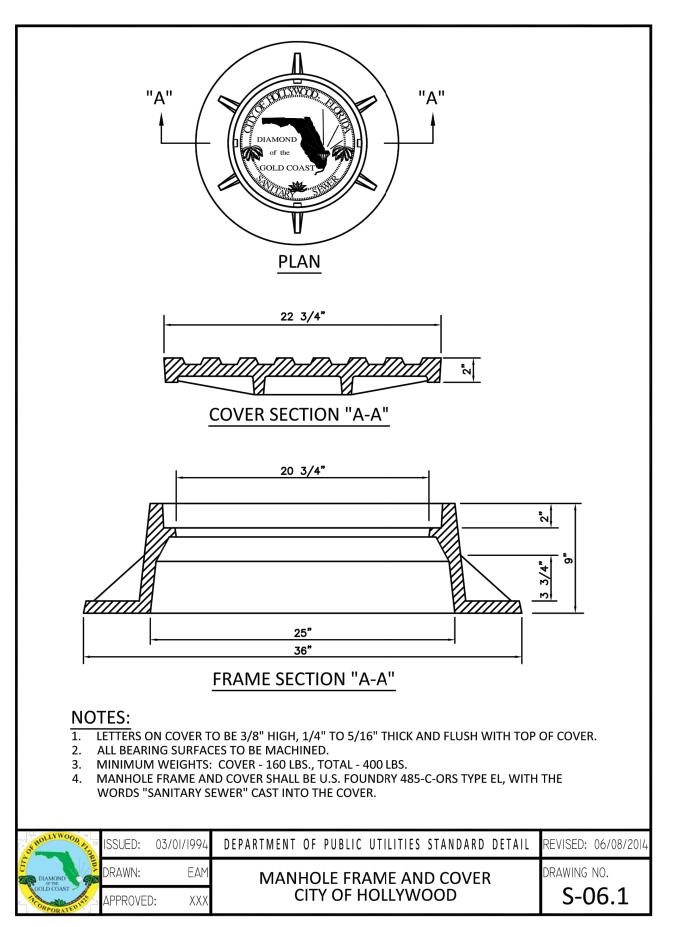
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BUOYANCY, SHALL BE SUBMITTED TO THE CITY PRIOR TO INSTALLATION.







MIN. SLOPE 1/8" PER FOOT TO MAIN

→ 6"X6" (MIN.)

BRANCH

TEE/WYE BRANCH

FRONT ELEVATION

2. NO. 57 ROCK OR ¾" DRAINFIELD LIMEROCK MAY BE USED AS BEDDING OVER

DEEP OR WHEN DIRECTED BY THE CITY.

UNDISTURBED SOIL WITH PVC PIPE.

1. RISER CONNECTION TO BE USED ONLY WHEN SANITARY SEWER IS MORE THAN 7'-0"

3. SINGLE SERVICE CONNECTIONS SHALL USE 6" (MIN.) DIAMETER PIPE AND FITTINGS.

DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL

SANITARY SEWER LATERAL

VERTICAL RISER

NOTES:

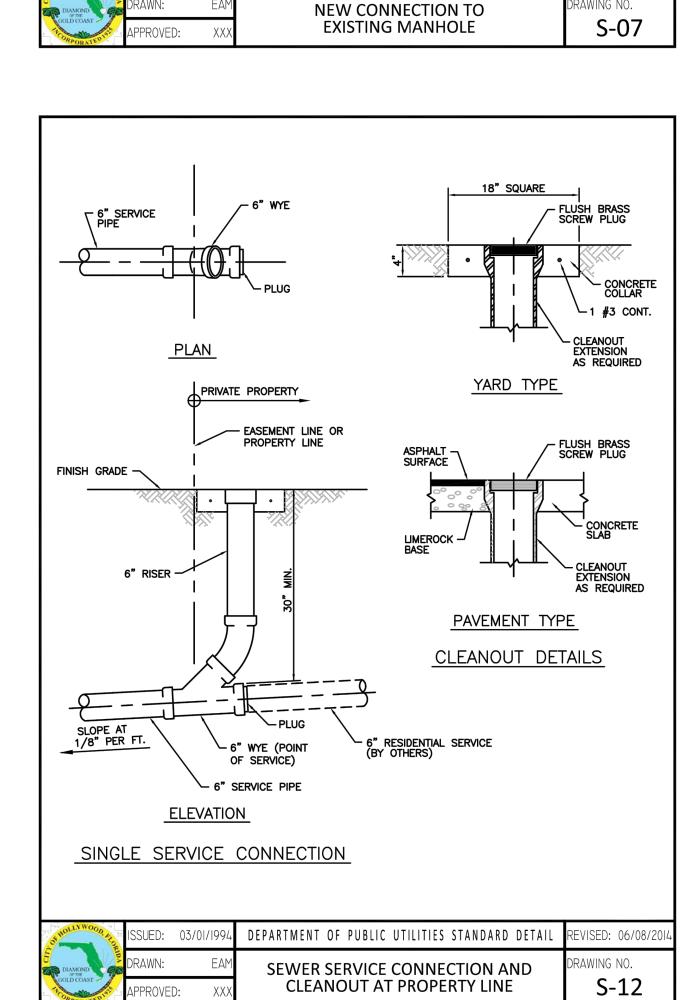
DIAMETER WYE

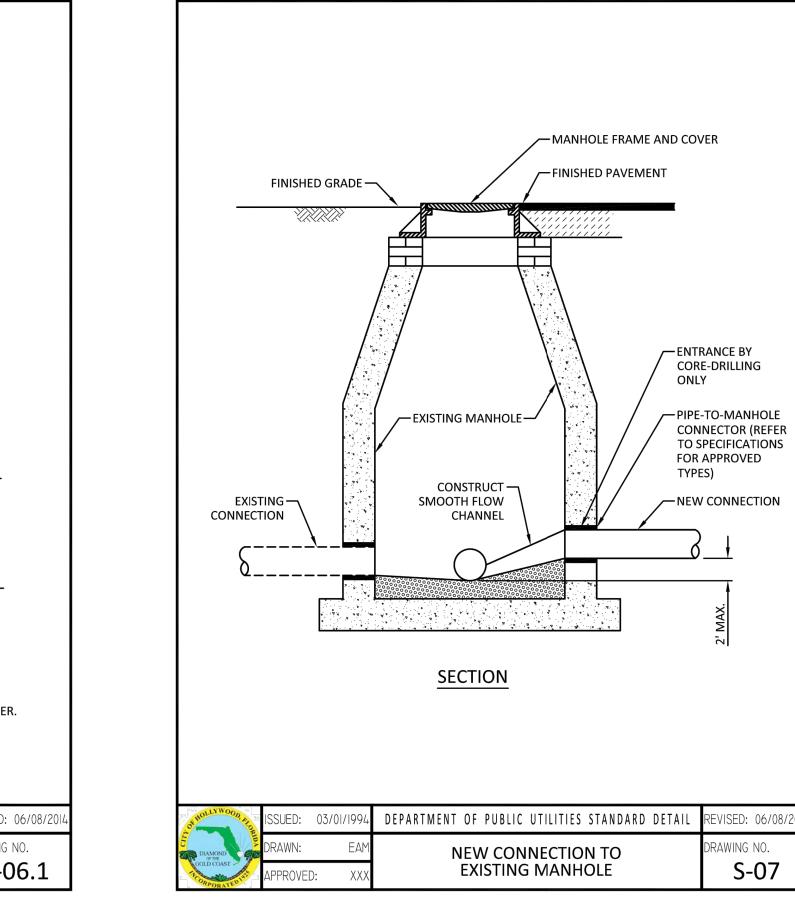
-6" (MIN.) DIAMETER RISER PIPE

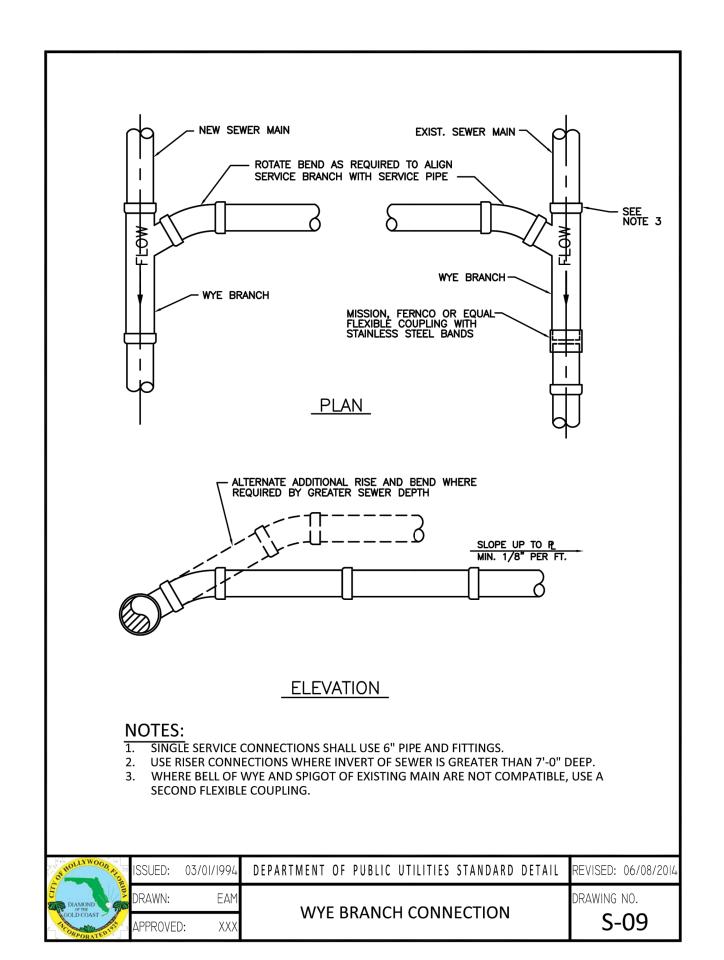
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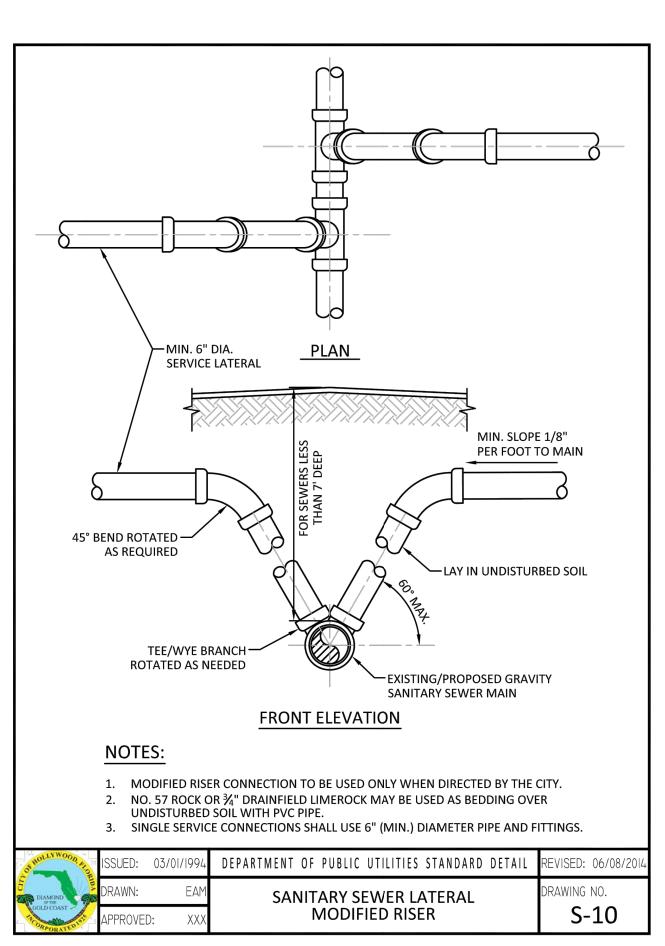
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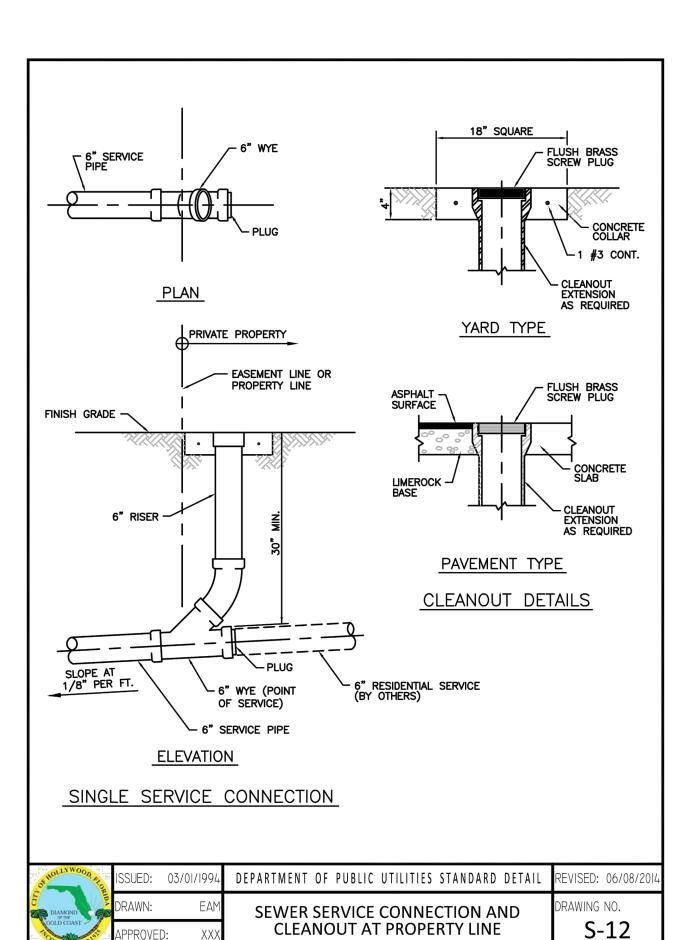
S-11











SOUTH OPPING RE

STATE OF

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SHEET NUMBER C-407