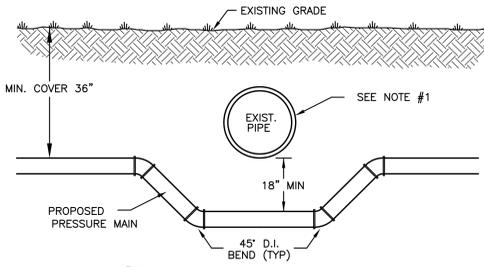


SIZE	1/4 BENDS		1/8 BENDS		1/6 BENDS		TEES			PLUGS	
	A	B	A	B	A	B	A	B	C	D	
6"	16"	10"	9"	10"	6"	8"	10"	12"	10"	21"	
8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"	
10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"	
12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"	
14"	35"	24"	19"	24"	12"	20"	22"	27"	18"	48"	
16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"	

C1 THRUST BLOCK DETAIL
N.T.S.

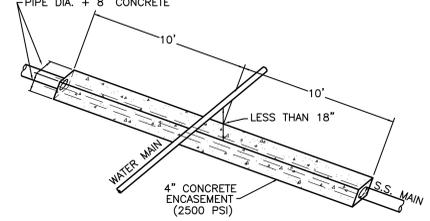
- NOTES:
- IF EXISTING PIPE IS WATER OR SEWER MAIN, REFER TO ENCASEMENT DETAIL FOR ADDITIONAL SPECIFICATIONS.
 - ALL FITTINGS ARE TO BE C.I. RETAINING JOINT TYPE.



D1 CONFLICT DETAIL
N.T.S.

SANITARY SEWER LINES (GRAVITY OR PRESSURE) SHALL HAVE 18" OR GREATER VERTICAL CLEARANCE BELOW ANY POTABLE WATER LINE WHEN CROSSING. A MINIMUM OF 6" VERTICAL CLEARANCE IS REQUIRED FOR OTHER UTILITIES. HORIZONTAL CLEARANCE BETWEEN SANITARY SEWER LINE THAT IS PARALLEL TO AND LESS THAN 18" BELOW A POTABLE WATER LINE SHALL BE 10" OR GREATER. A MINIMUM OF 30" IS REQUIRED FOR OTHER UTILITIES.

IF THIS IS NOT POSSIBLE OR PRACTICAL, SEE BELOW:

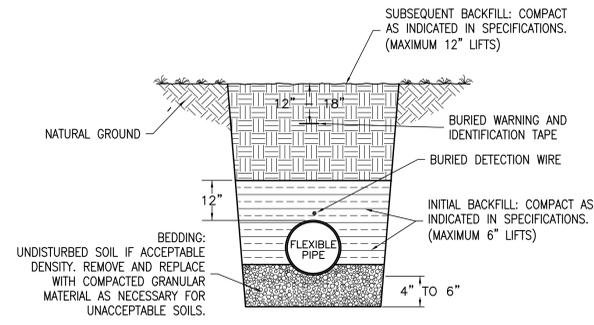


FOR CROSSING: ENCASE AS ABOVE SO THAT THE ENDS OF ENCASEMENT ARE AT LEAST 12' FROM ANY WATER LINE JOINT. WATER LINE JOINT MUST NOT BE CLOSER THAN 5' TO THE POINT OF CROSSING, OR IT MUST ALSO BE ENCASED.

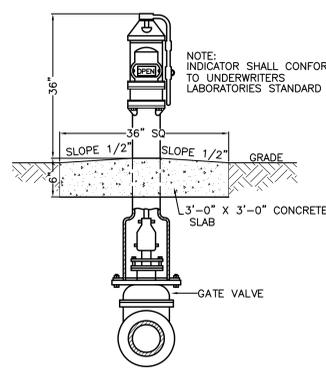
- ALTERNATE 1: USE EQUALLY (OR HIGHER) RATED PRESSURE PIPE FOR SEWER WITH NO JOINTS CLOSER THAN 12' APART AND 6" VERTICAL.
ALTERNATE 2: PLACE SEWER LINE INTO STEEL CASING AND CENTER 20' PIECE WITH 4" VERTICAL CLEARANCE AND SEAL ENDS.

FOR PARALLEL: AND 6' TO 10' APART USE ALTERNATE 2, BUT IF MORE THAN 40' IN LENGTH, ALTERNATE 1 MUST BE USED AND JOINTS ARE TO BE STAGGERED. IF LINES MUST BE 3' TO 6' APART, ALTERNATE 1 MUST BE USED WITH A HIGHER RATED PRESSURE PIPE FOR SEWER (I.E., WATER LINE IS DR25 THEN USE DR18 OR 21 FOR SEWER).

F1 SEWER-WATER SEPARATION & CLEARANCES DETAIL
N.T.S.

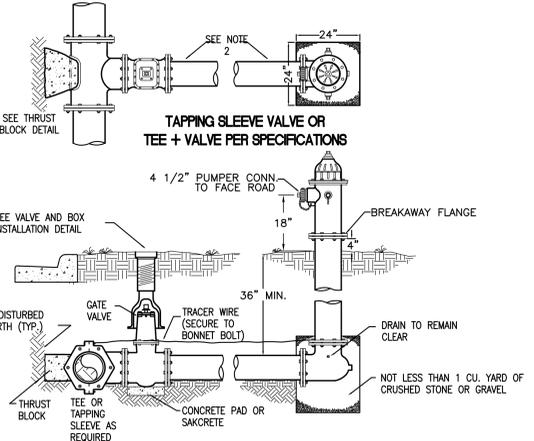


A3 FLEXIBLE PIPE BEDDING DETAIL
N.T.S.



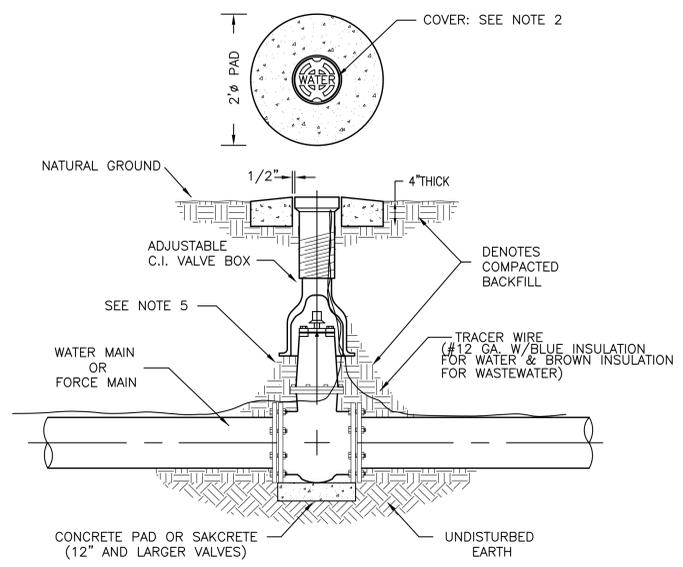
C3 POST INDICATOR VALVE DETAIL
N.T.S.

- NOTES:
- CONTRACTOR TO ADJUST FIRE HYDRANT TO FINISHED GRADE.
 - HYDRANT CONNECTORS, D.I.P. SPOOLS WITH MEGALUG JOINT RESTRAINTS, OR APPROVED EQUAL. (THRUST BLOCKING NOT REQUIRED.)
 - PAIN PER UFC 3-600-01 SECTION 3-7.3.1 AND NFPA 291 (HYDRANT BARRELS SHALL BE RED FOR NON-POTABLE WATER AND YELLOW FOR POTABLE WATER. HYDRANT BONNET TO BE PAINTED ACCORDING TO FLOW RATE IN ACCORDANCE WITH NFPA 291.)

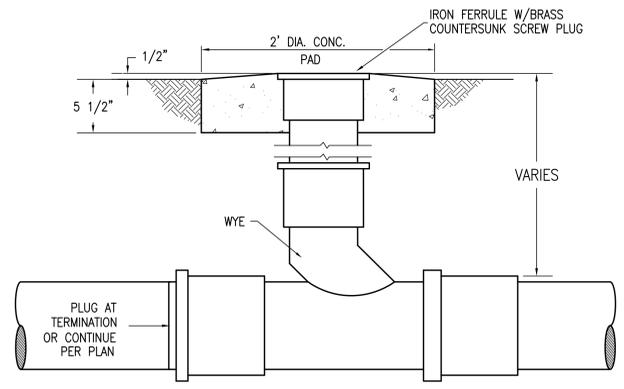


E3 TYPICAL FIRE HYDRANT INSTALLATION DETAIL
N.T.S.

- NOTES:
- VALVE BOX AND BOOT SHALL BE CAST IRON.
 - VALVE COVER SHALL BE MARKED "WATER" OR "SEWER" AS APPLICABLE.
 - VALVE BOX TOP SHALL BE FLUSH WITH FINISHED GRADE OR 1/2" ABOVE NATURAL GROUND LEVEL.
 - GATE VALVE SHALL BE RESILIENT SEAT WITH MECHANICAL JOINT ENDS OR APPROVED EQUAL.
 - EARTH UNDER FLANGE OF VALVE BOX & COLLAR TO BE FIRM AND WELL TAMPED TO ENSURE AGAINST VALVE BOX SETTLING.



C8 TYPICAL VALVE & BOX INSTALLATION (WITHIN PROPERTY) DETAIL
N.T.S.



E8 CLEAN-OUT DETAIL
N.T.S.

FINAL SUBMISSION
APRIL 6, 2012

IF SHEET IS LESS THAN (30"x42") IT IS A REDUCED PRINT; SCALE ACCORDINGLY

CU501

 766 MIDDLE ST., FARMHOPE, AL 36532 251-890-5778 ARCH. & ENGR. SEAL KHA FL. CERT. #8268	NATURAL RESOURCES & ENVIRONMENTAL AFFAIRS SATISFACTORY TO DATE	P.W. DWG. NO.	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NAVAL SUPPORT ACTIVITY PANAMA CITY, FLORIDA	
	SAFETY DEPARTMENT SATISFACTORY TO DATE	DRAWN BY LRR	PANAMA CITY JOINT OUTPATIENT CLINIC NAVAL GULF COAST HEALTH CARE	
	FIRE DEPARTMENT SATISFACTORY TO DATE	CHECKED BY KCH	UTILITY DETAILS	
	PUBLIC WORKS SUPERVISOR SATISFACTORY TO DATE	SUPERVISOR KCH APPROVED DATE	SIZE F	CODE IDENT. NO. N/A
		PUBLIC WORKS OFFICER	N.A.V.F.A.C. DRAWING NO. N/A	
			TRONC PROJ. NO. CONSTR. CONTR. NO.	
			SCALE N.T.S. MACC. T.O.# SHEET 11 OF 14	