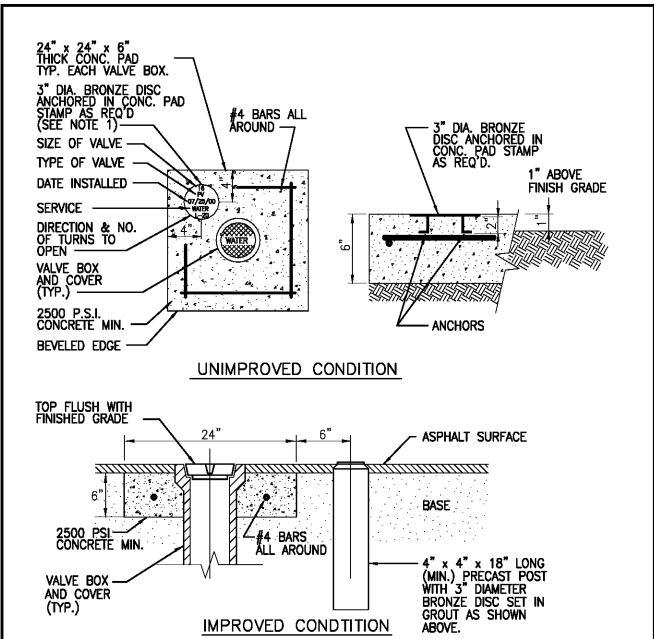


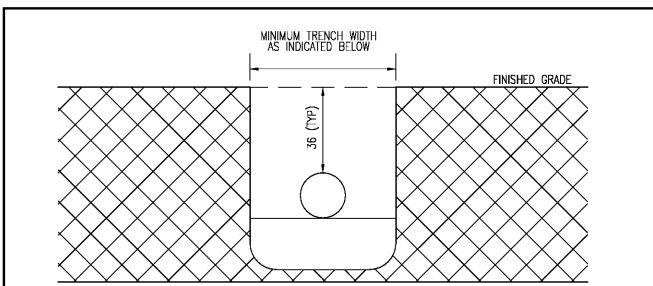
- NOTES:
1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
 2. SPLINNS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOWS.
 3. CHANNELS FOR FUTURE CONNECTIONS (STUBS) SHALL BE CONSTRUCTED, FILLED WITH SAND & COVERED WITH 1" OF MORTAR.
 4. INVERTS AND BENCHES ARE TO BE CONSTRUCTED OF SOLID CONCRETE. (NO FILLERS, ROCK, OR BRICK IS ACCEPTABLE).
 5. BENCHING SHALL BE PROVIDED WITH A MINIMUM SLOPE OF 2" PER FOOT.
 6. MINIMUM 3000 PSI CONCRETE WITH PEA-ROCK.

Date:	Approved By:	Scale: NTS
City of North Port Utilities	MANHOLE INVERTS AND BENCHES	Appr. By:
Dwg.: Manhole3.dwg	Fig: 306	



- NOTES:
1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES.
 2. FINISH CONCRETE WITH BROOM FINISH.
 3. USE APPLICABLE LETTERING: "SEWER, REUSE, OR WATER"

Date:	Approved By:	Scale: NTS
City of North Port Utilities	VALVE COLLAR DETAIL	Appr. By:
Dwg.: Collar2.dwg	Fig: 216	

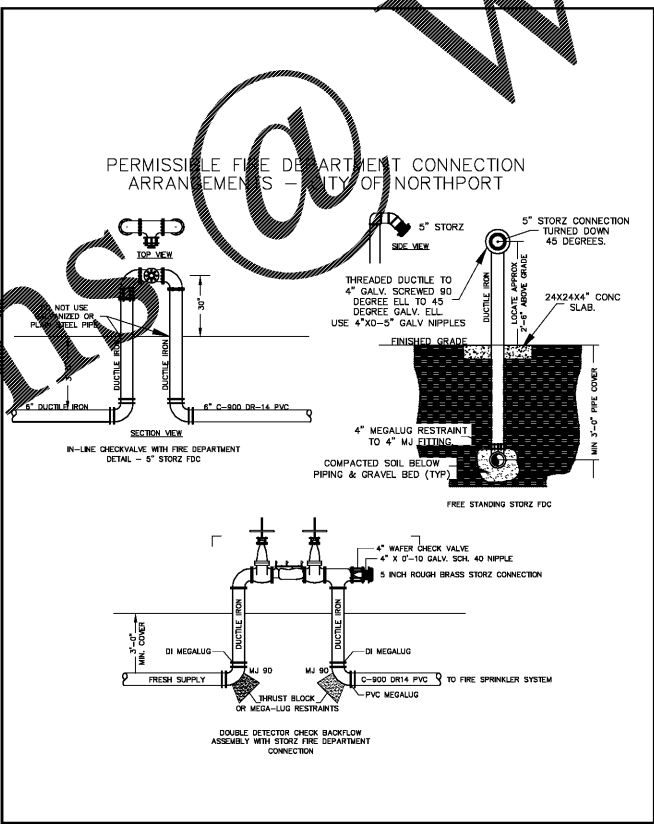


MINIMUM TRENCH WIDTH DETAIL

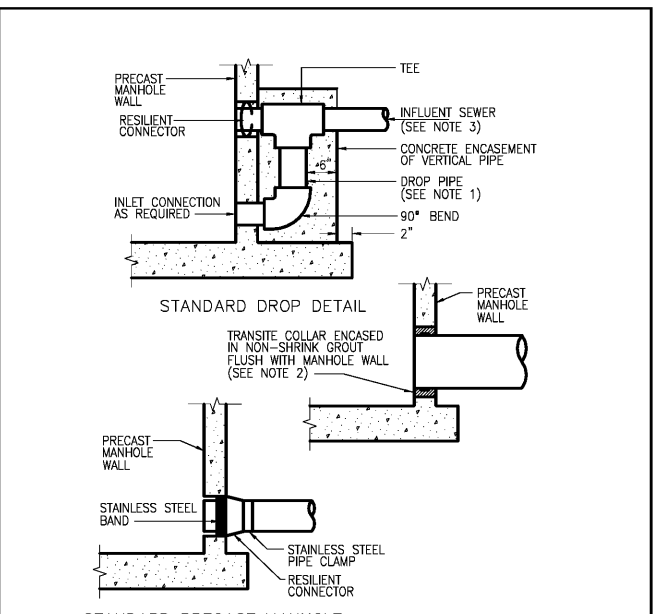
Nominal Pipe Size		Trench Width, Minimum	
Inches	mm.	No. of Pipe Diameters (O.D.)	Inches mm.
4	100	4.3	18 455
6	150	2.9	18 455
8	200	2.9	24 610
10	250	2.5	24 610
12	300	2.4	30 760
15	380	2.0	30 760
18	475	1.8	32 810
21	560	1.6	34 860
24	630	1.5	36 910
27	710	1.5	40 1020
30	762	1.4	42 1067
33	838	1.4	45 1143
36	915	1.4	48 1219
42	1067	1.4	54 1372
48	1219	1.3	60 1524

1. PIPE SHALL BE INSTALLED WITH 36" (MIN) AND 48" (MAX) COVER UNLESS OTHERWISE APPROVED BY THE CITY OF NORTH PORT UTILITIES.
 2. BACKFILL MATERIAL TO BE COMPACTED IN 1' LIFTS AND COMPACTED TO A MINIMUM OF 95% OF THE DRY DENSITY.
 3. ONE (1) COMPACTED TEST LOCATION SHALL BE REQUIRED FOR EACH 100 LINEAL FEET PER 1' OF BACKLIFT OF PIPE AND FOR EVERY 100 SQUARE FEET OF AREA AROUND STRUCTURES AS A MINIMUM.
 4. ONE (1) COMPACTED TEST LOCATION SHALL BE REQUIRED BETWEEN TWO STRUCTURES 25' (OR MORE) APART.
- THE TOP THREE FEET OF ANY TRENCH UNDER A ROAD CROSSING, DRIVEWAY OR STRUCTURE SHALL BE COMPACTED TO A MINIMUM 98% OF THE MAXIMUM DRY DENSITY AS PER AASHTO T-180.

Date:	Approved By:	Scale: NTS
City of North Port Utilities	MINIMUM TRENCH WIDTH DETAIL	Appr. By:
Dwg.: Trench.dwg	Fig: 103	



Date:	Approved By:	Scale: NTS
City of North Port Utilities	FIRE DEPARTMENT CONNECTIONS	Appr. By:
Dwg.: Fire.dwg	Fig: 223	



- NOTES:
1. DROP PIPE AND FITTINGS SHALL BE OF EQUAL SIZE AND MATERIAL AS THE INFLUENT SEWER.
 2. THE CITY MAY APPROVE ALTERNATE WATER TIGHT CONNECTION DETAILS FOR CONNECTION OF 24" DIAMETER PIPES AND LARGER.
 3. AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT WHICH HAVE AN INVERT 2" OR MORE ABOVE THE MANHOLE INVERT.
 4. USE IET LIVING IN DROP MANHOLES, MANHOLES WITH FORCE MAIN DISCHARGE INTO THEM, THE NEXT MANHOLE DOWNSTREAM, AND TWO UPSTREAM MANHOLES FROM ANY LIFTSTATIONS.

Date:	Approved By:	Scale: NTS
City of North Port Utilities	MANHOLE CONNECTION DETAILS	Appr. By:
Dwg.: Connect.dwg	Fig: 304	

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 PROFESSIONAL ENGINEER
 LICENSE NO. 38859
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 AND SEALED BY
 PETER T. VAN BUSKIRK
 P. U.S. 02/27/2018
 AUTHENTICATION CODE:

BUTLER PARK
AQUATIC CENTER
CITY OF NORTHPORT, FL

UTILITY DETAILS

Scale:	AS SHOWN
Designed by:	MCH
Drawn by:	KWS
Checked by:	DP
Date:	DECEMBER 2017
Project No.:	48285014