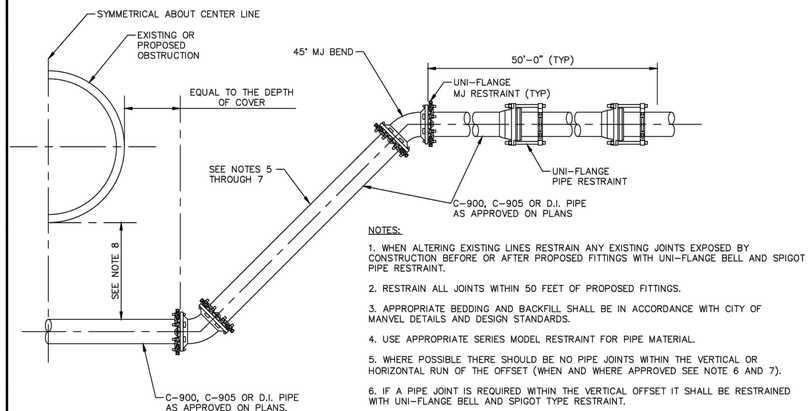


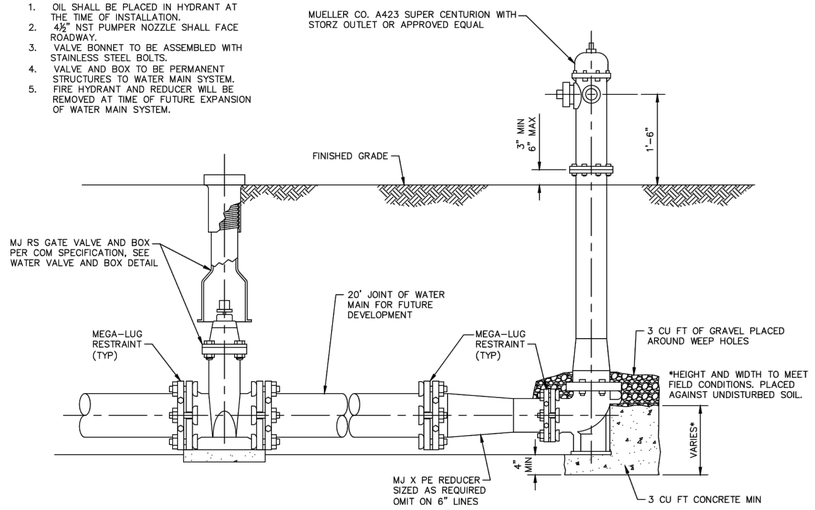
NOTES:

1. WHEN ALTERING EXISTING LINES RESTRAIN ANY EXISTING JOINTS EXPOSED BY CONSTRUCTION BEFORE OR AFTER PROPOSED FITTINGS WITH UNI-FLANGE BELL AND SPIGOT PIPE RESTRAINT.
2. RESTRAIN ALL JOINTS WITHIN 50 FEET OF PROPOSED FITTINGS.
3. APPROPRIATE BEDDING AND BACKFILL SHALL BE IN ACCORDANCE WITH CITY OF MANVEL DETAILS AND DESIGN STANDARDS.
4. USE APPROPRIATE SERIES MODEL RESTRAINT FOR PIPE MATERIAL.
5. WHERE POSSIBLE THERE SHOULD BE NO PIPE JOINTS WITHIN THE VERTICAL OR HORIZONTAL RUN OF THE OFFSET (WHEN AND WHERE APPROVED SEE NOTE 6 AND 7).
6. IF A PIPE JOINT IS REQUIRED WITHIN THE VERTICAL OFFSET IT SHALL BE RESTRAINED WITH UNI-FLANGE BELL AND SPIGOT TYPE RESTRAINT.
7. WHEN DEPTH OF OFFSET REQUIRES MORE THAN A STANDARD LENGTH OF PIPE NO SEGMENT SHALL BE LESS THAN 5' IN LENGTH.
8. THE MINIMUM CLEARANCE SHALL BE DETERMINED BY THE AMOUNT OF BEDDING AND BACKFILL REQUIRED BY THE PROSPECTIVE PIPE AND THEIR USAGE. SEE THE BEDDING AND BACKFILL DETAILS FOR DIMENSIONS.
9. A SOLID CONTINUOUS JOINT OF PIPE SHALL BE USED AT ALL TIMES FOR THE HORIZONTAL SECTION OF THE OFFSET. IF THE MINIMUM SIDE CLEARANCE DISTANCES PLUS THE DIMENSION OF THE OBSTRUCTION IS GREATER THAN A STANDARD JOINT OF PIPE AN APPROPRIATELY SIZED AND CONTINUOUS LENGTH OF HDPE SHALL BE USED WITH TRANSITION FITTING OR GASKETS AS SPECIFIED BY THE MANUFACTURER IF NEEDED.

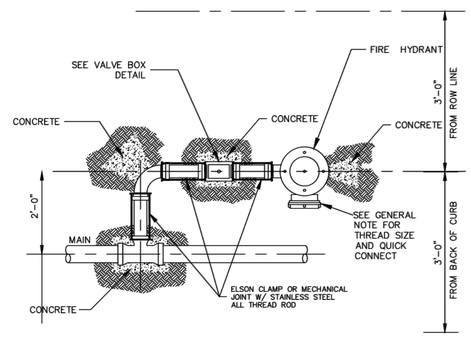
RESTRAINED MECHANICAL JOINT VERTICAL OFFSET
NTS

NOTES:

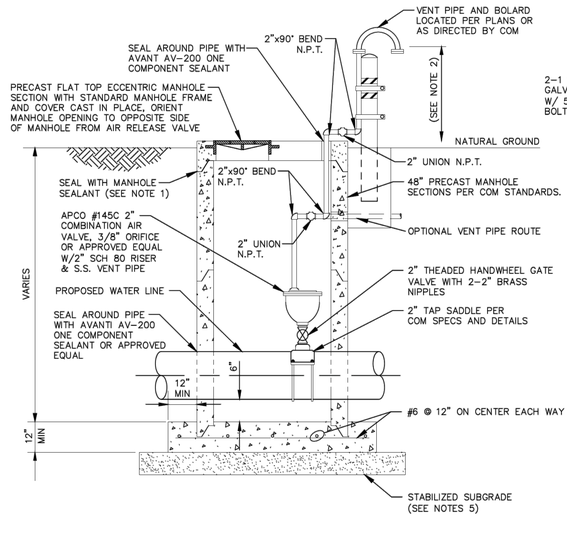
1. OIL SHALL BE PLACED IN HYDRANT AT THE TIME OF INSTALLATION.
2. 4½" NST PUMPER NOZZLE SHALL FACE ROADWAY.
3. VALVE BONNET TO BE ASSEMBLED WITH STAINLESS STEEL BOLTS.
4. VALVE AND BOX TO BE PERMANENT STRUCTURES TO WATER MAIN SYSTEM.
5. FIRE HYDRANT AND REDUCER WILL BE REMOVED AT TIME OF FUTURE EXPANSION OF WATER MAIN SYSTEM.

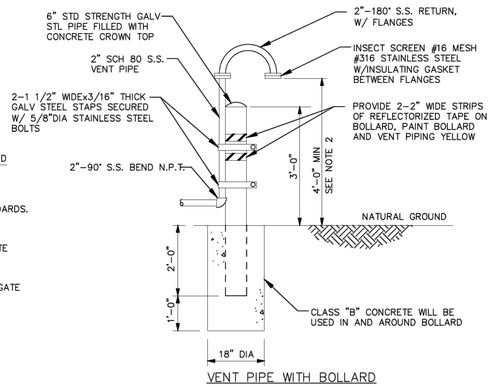


END OF LINE FIRE HYDRANT AND VALVE FOR FUTURE LINE EXTENSION
NTS



ALTERNATE FIRE HYDRANT – PLAN



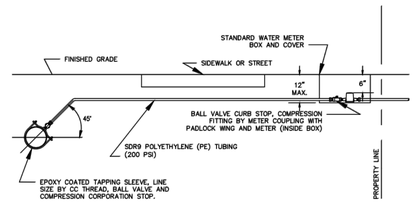


VENT PIPE WITH BOLLARD

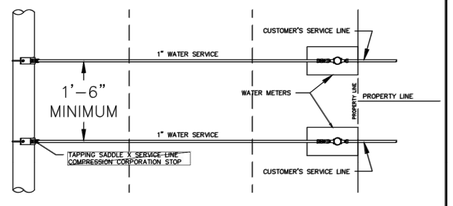
NOTES

1. PROVIDE RAM-NEK OR APPROVAL EQUAL BETWEEN PRECAST SEGMENTS OF THE MANHOLE.
2. VERIFY THAT LOCATION OF SCREEN IS 1 FOOT ABOVE 100-YEAR FLOOD PLAIN ELEVATION OR 4 FEET ABOVE NATURAL GROUND WHICHEVER IS HIGHER.
3. REFER TO PLAN AND PROFILE SHEETS FOR LOCATIONS OF AIR RELEASE VALVE AND MANHOLES.
4. MANHOLE BASE SHALL BE A PRECAST SECTION WITH PROPER SIZED KNOCK OUTS FOR PROPOSED WATER LINE. SEAL AROUND WATER LINE AND MANHOLE AS DESCRIBED IN DETAIL.
5. MANHOLE SHALL BE SET ON A MIN OF 12" COMPACTED CEMENT STABILIZED SAND BEDDING FOR DRY STABLE TRENCH, SEE CRUSHED STONE MANHOLE SUPPORT OR MANHOLE PILE SUPPORT FOR WET AND UNSTABLE CONDITIONS.

COMBINATION AIR RELEASE/AIR VACUUM VALVE ASSEMBLY DETAIL
NTS



PROFILE



PLAN

NOTES

1. ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED FOR WATER SERVICE CONNECTIONS.
2. WATER SERVICE LEADS SHALL BE 1" UNLESS OTHERWISE NOTED. SERVICE LEADS SHALL HAVE 2" SERVICE LEAD SLEEVES FOR ROAD CROSSINGS.
3. WATER METERS SHALL BE 3/4" UNLESS OTHERWISE NOTED.

WATER SERVICE CONNECTIONS

DATE APPROVED: JUNE 2018
SCALE: NTS | REVISED DATE: JUNE 2018

WATER DISTRIBUTION STANDARD DETAILS 2

PROJECT NUMBER: | DATE SUBMITTED: | SHEET: XX OF XX

REVISIONS AND ISSUANCE

NO.	DATE	DESCRIPTION

IVY KIDS EARLY LEARNING CENTER
4434 CR 94
MANVEL, TEXAS 77578

MISSION ENGINEERING INC.
10370 RICHMOND AVE, #560
HOUSTON, TEXAS 77042
[T] 713-981-0018
[E] dzhuang@missioneng.com
TPEF Registration No. F-11771

STATE OF TEXAS
YIFENG ZHUANG
87950
LICENSED PROFESSIONAL ENGINEER
04/16/2019

DRAWING TITLE
CONSTRUCTION DETAILS

DRAWN BY	CHECKED BY
KN	EL
DATE	JOB NO.
04/16/2019	1806251

DRAWING NO.
C9