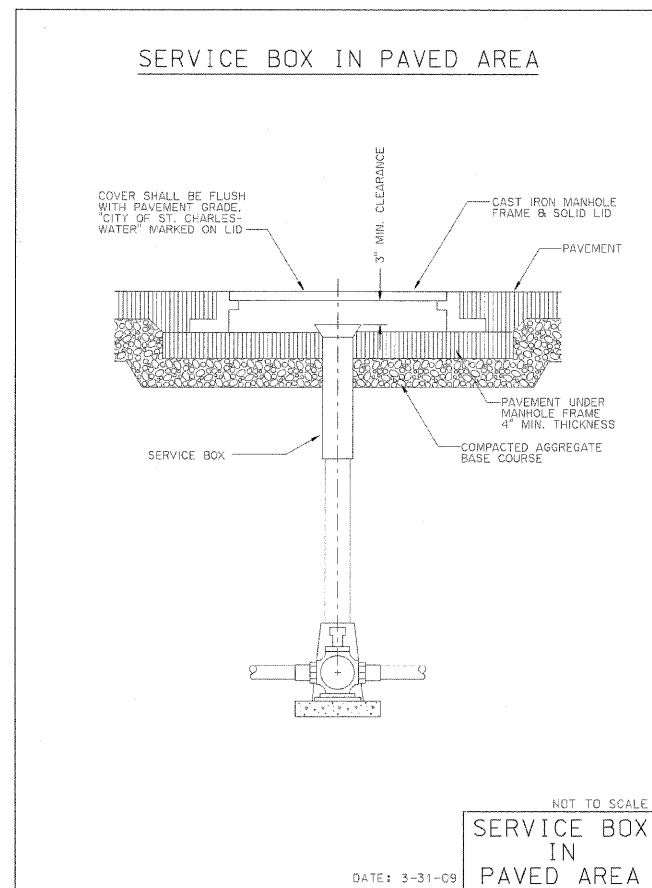
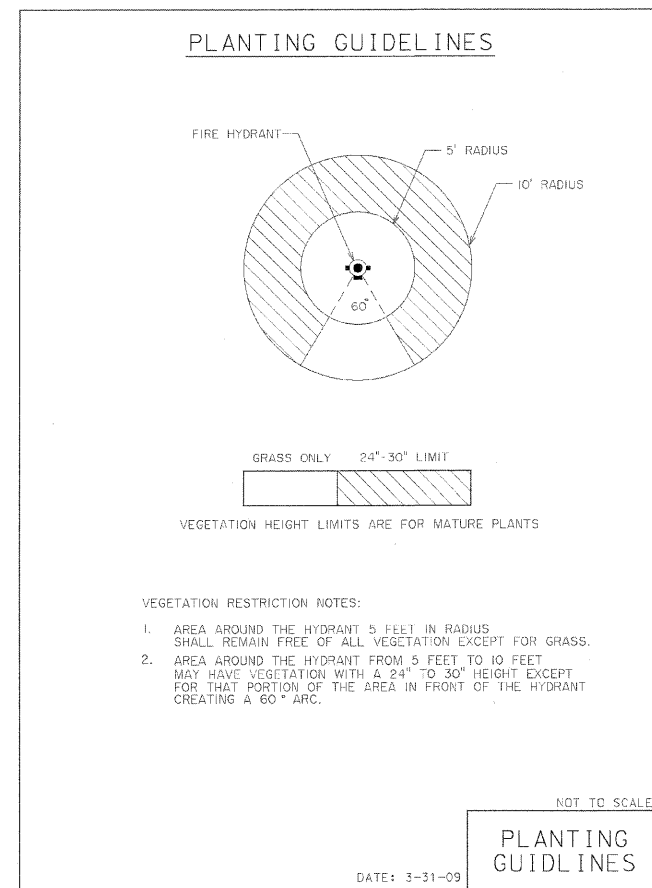


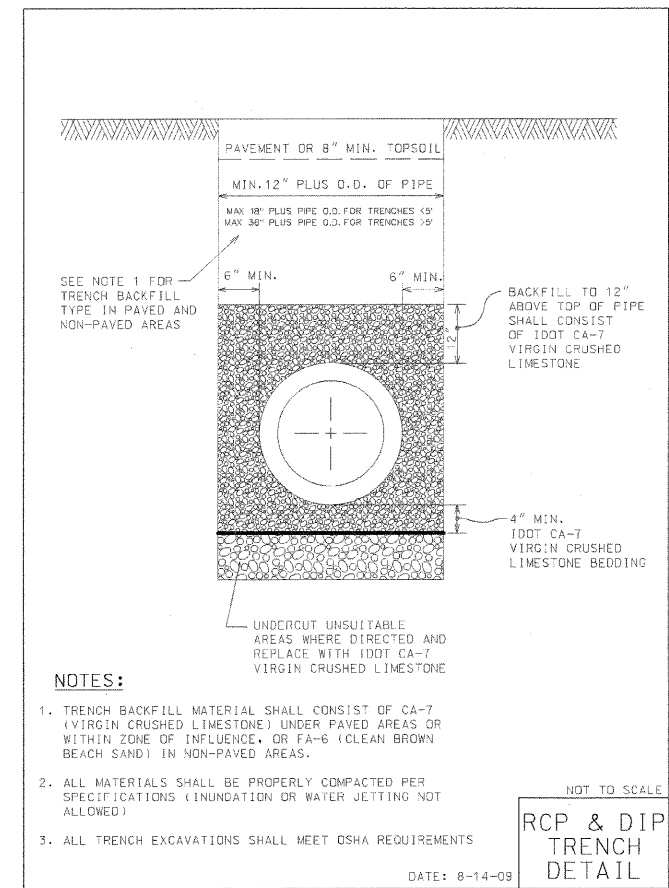
DATE: 11-2-09
CASING PIPE DETAIL
NOT TO SCALE



DATE: 3-31-09
SERVICE BOX IN PAVED AREA
NOT TO SCALE



DATE: 3-31-09
PLANTING GUIDELINES
NOT TO SCALE



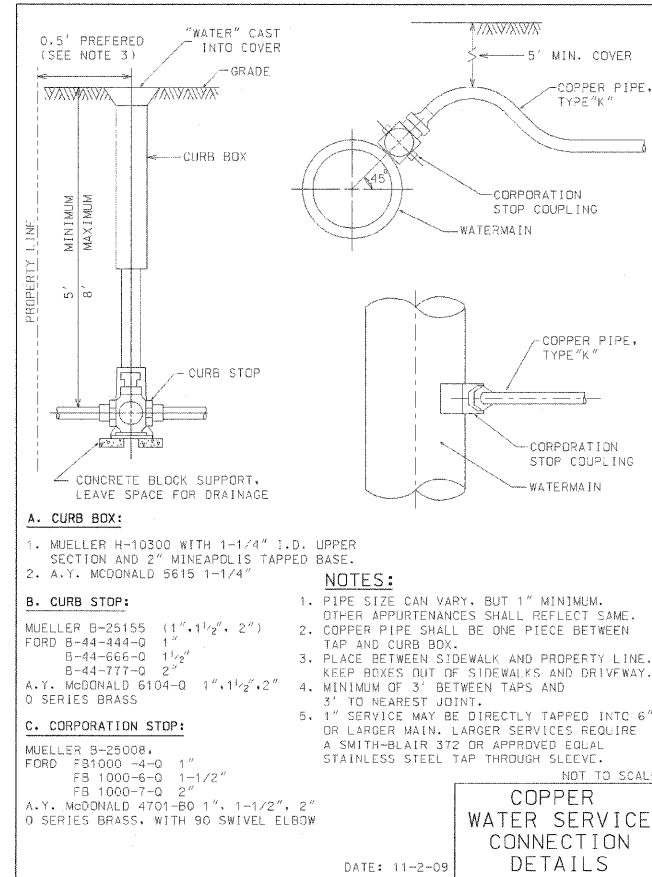
DATE: 8-14-09
RCP & DIP TRENCH DETAIL
NOT TO SCALE

Minimum Restrained Lengths (in feet) back from both sides of fitting

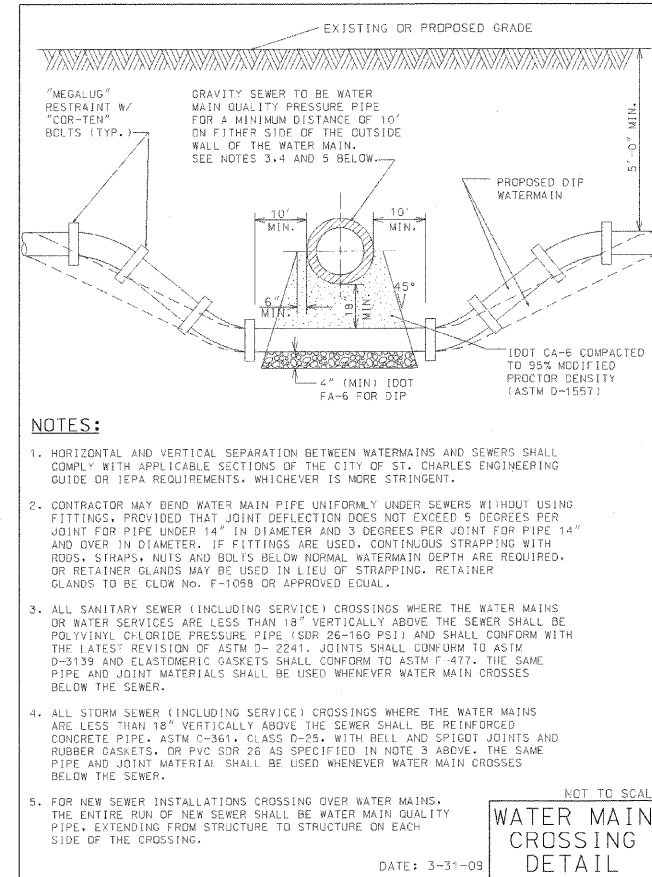
Fitting type/nominal size	4"	6"	8"	10"	12"	16"
90 Degree Bend	17	25	32	38	45	59
45 Degree Bend	7	10	13	16	19	24
22.5 Degree Bend	3	5	6	8	9	12
11.25 Degree Bend	2	2	3	4	4	6
Dead End	39	55	73	87	103	134
Top Side Vertical Offset * (45 Degree)	16	23	30	36	43	55
Bottom Side Vertical Offset * (45 Degree)	4	6	8	10	11	15
Tee Run X Branch **	6" by	1	17			
Tee Run X Branch **	8" by	1	5	34		
Tee Run X Branch **	10" by	1	1	24	49	
Tee Run X Branch **	12" by	1	1	15	41	65
Tee Run X Branch **	16" by	1	1	1	26	95
Reducer ***	6" by	28				
Reducer ***	8" by	52	30			
Reducer ***	10" by	71	54	29		
Reducer ***	12" by	90	75	55	51	
Reducer ***	16" by	123	113	97	94	54

* Vertical offset with minimum 10' of solid pipe between upper and lower bend.
** Tee with MINIMUM 10' solid pipe on both sides of run.
Number indicates length of branch to be restrained.
*** Length back from Large End of Reducer.

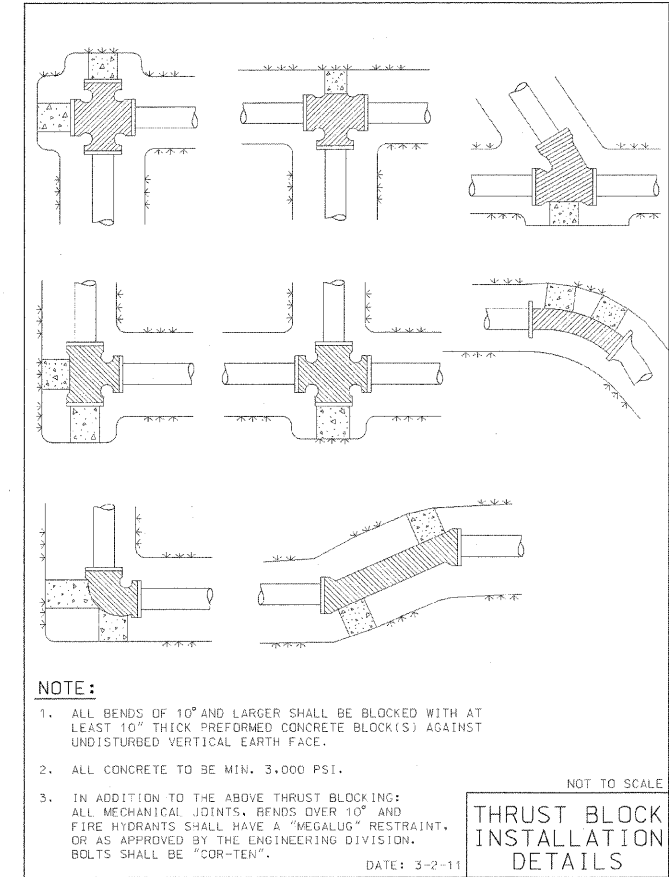
DATE: 3-31-09
WATER MAIN RESTRAINT



DATE: 11-2-09
COPPER WATER SERVICE CONNECTION DETAILS
NOT TO SCALE



DATE: 3-31-09
WATER MAIN CROSSING DETAIL
NOT TO SCALE



DATE: 3-2-11
THRUST BLOCK INSTALLATION DETAILS
NOT TO SCALE

NO.	REVISIONS	BY	DATE	PREPARED UNDER THE SUPERVISION OF:
1.	SHEET ADDED TO PLAN SET	B.H.	10-6-10	JAMES J. BERNAHL
2.	UPDATED THRUST BLOCK DETAIL	B.H.	4-25-11	
				062-041/33 11/30/2011 P.E. NO. DATE
		DRAWN	CHECKED	

CITY OF ST. CHARLES ENGINEERING DEPARTMENT

2 EAST MAIN STREET, ST. CHARLES, ILLINOIS 60174 (630) 377-4486

PHEASANT RUN WATER MAIN REPLACEMENT

KAUTZ ROAD TO PHEASANT RUN ENTRANCE

PROJECT NO. DATE: JUNE 4, 2010 SCALE: 1"=30' FILE: PHEASANT RUN WWSHEET 01/03N SHEET 198 of 6