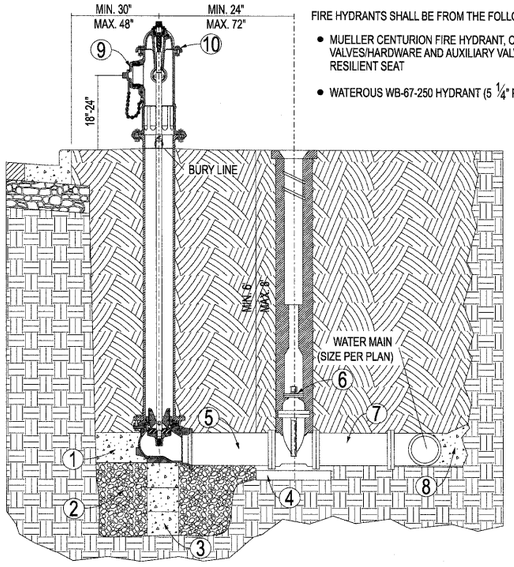
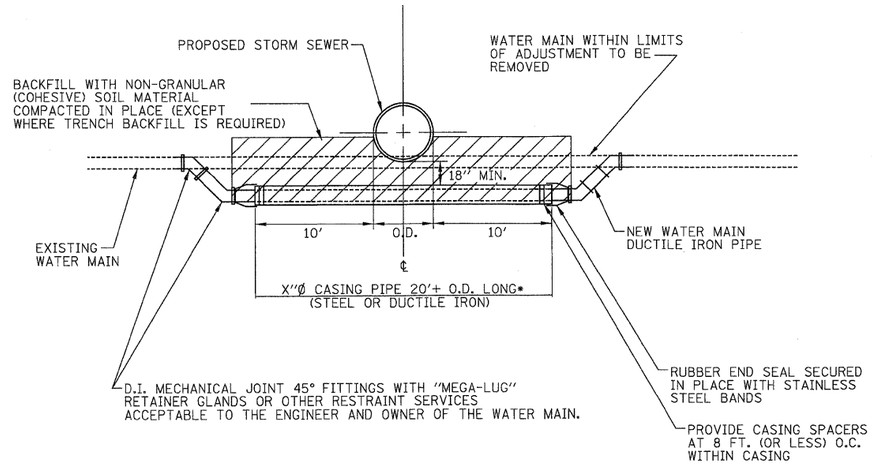


FIRE HYDRANTS SHALL BE FROM THE FOLLOWING LIST, AS APPROVED BY THE CITY:

- MUELLER CENTURION FIRE HYDRANT, OPT-094 (5 ¼" BARREL) WITH MUELLER VALVES/HARDWARE AND AUXILIARY VALVE 6" GATE VALVE NO. 2360-23-9020 MODIFIED WEDGE RESILIENT SEAT
- WATEROUS WB-67-250 HYDRANT (5 ¼" PACER) WITH SERIES 2500-1 RESILIENT WEDGE GATE VALVE

1. PROVIDE CLASS SI CONCRETE BASE AND BLOCKING AGAINST UNDISTURBED EARTH
2. DRAIN SUMP TO BE ¾ CUBIC YARD OF ¾" WASHED STONE
3. CONCRETE SUPPORT
4. CONCRETE BLOCK OR BRICK SUPPORT
5. PIPE AS REQUIRED TO MAINTAIN 24" SEPARATION AS SHOWN (DIRECT MECHANICAL JOINT CONNECTION IF APPROVED BY CITY)
6. RUBBER VALVE BOX STABILIZER
7. USE "CORTEN" STEEL TIE RODS BETWEEN AUXILARY VALVE AND WATER MAIN (STAINLESS STEEL MAY BE REQUIRED BY THE CITY ENGINEER). ANY DISTANCE GREATER THAN 30" SHALL BE RODDED TO MEGA-LUG FLANGE. NO COUPLINGS ARE PERMITTED IN RODS.
8. CONCRETE BLOCKING CAST IN PLACE 3000 P.S.I.
9. 4 ½" PORT TO FACE PAVEMENT OR AS DIRECTED BY CITY ENGINEER
10. ALL NEWLY INSTALLED HYDRANTS MUST BE TOP COATED WITH RUST-OLEUM FIRE HYDRANT ENAMEL (COLOR = FIRE HYDRANT RED)
11. MIN. 48" BETWEEN HYDRANT AND ANY VERTICAL OBSTRUCTIONS.
12. MIN. 72" BETWEEN HYDRANT AND ANY LANDSCAPING WITH A MATURE HEIGHT GREATER THAN 12".
13. ALL VALVE AND HYDRANT HARDWARE MUST BE STAINLESS STEEL INCLUDING NUTS, BOLTS, AND WASHERS.

FIRE HYDRANT DETAIL



WATER MAIN ADJUSTMENT DETAIL

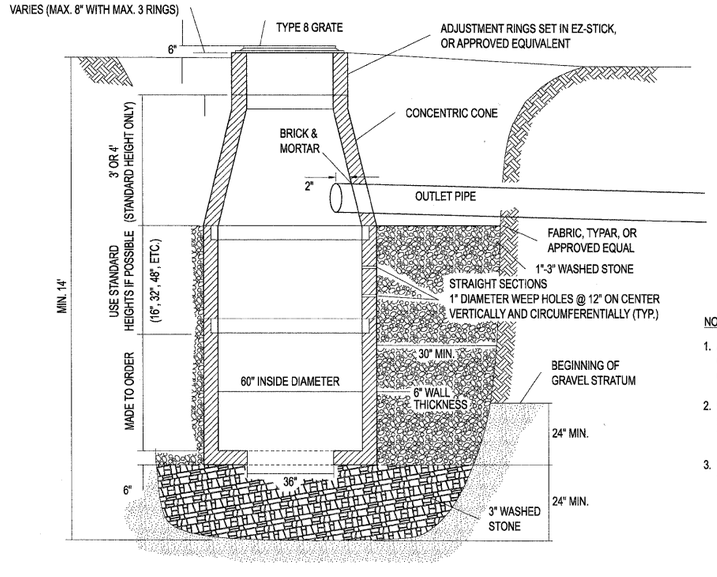
WATER MAIN CROSSING NOTES

CARRIER PIPE JOINTS LOCATED WITHIN THE CASING PIPE SHALL BE RESTRAINED

ADJUSTED WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE.

ARRANGE CROSSING SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING).

*WHERE PROPOSED STORM SEWER MEETS WATER MAIN REQUIREMENTS, CASING PIPE SHALL BE OMITTED.



NOTES:

1. ADDITIONAL REQUIREMENTS FROM THE CITY'S STORMWATER MANAGEMENT ORDANANCE MAY APPLY.
2. LOCAL SOIL CONDITIONS MAY NECESSITATE A DEEPER EXCAVATION TO PENETRATE GRANULAR SUBSOIL
3. THE DRY WELL RIM SHALL BE RAISED 6" TO 12" ABOVE THE SURROUNDING GRADE FOR GRASSY AREAS ONLY.

DRY WELL DETAIL

NOTE:
ALL MANHOLES MUST BE DAMP PROOF PER IDOT SPECIFICATIONS 1060 "WATER PROOFING MATERIALS"

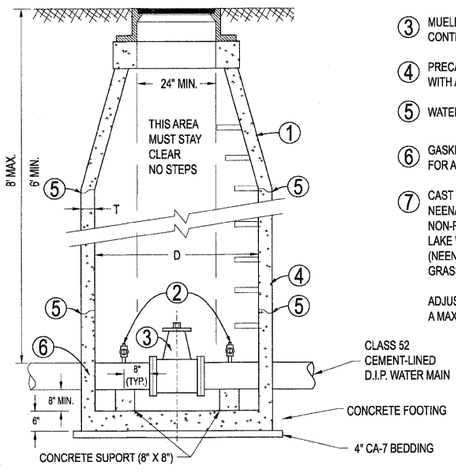
ALL LIDS TO BE USED ON WATER SYSTEM STRUCTURE SHALL BEAR THE WORDS "CITY OF CRYSTAL LAKE WATER".

DRAIN FOR VALVE VAULT SHALL BE CONSTRUCTED ONLY WHEN SHOWN ON THE PLANS.

FRAME AND RING(S) TO BE SET IN MORTAR BED OR SEALED WITH A PREFORMED BITUMEN SEAL (E-Z-STICK OR APPROVED EQUAL).

FOR PRESSURE CONNECTION, SEE DETAIL UW-2.

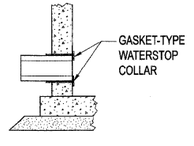
DIAMETER OF WATER MAIN	D	T
8 INCHES AND OVER	5 FT.	5"



NOTE: ALL VALVE HARDWARE MUST BE STAINLESS STEEL INCLUDING NUTS, BOLTS & WASHERS.

1. CONCENTRIC CONES REQUIRED
2. 1" (PREFERRED, 3/4" MIN.) MUELLER, A.Y. McDONALD, OR FORD CORPORATION STOP EACH SIDE OF VALVE MUST BE A COMPRESSION FITTING.
3. MUELLER 2360-23-9020 OR AMERICAN FLOW CONTROL 2500-1 RESILIENT SEAT GATE VALVE
4. PRECAST CONCRETE MANHOLE SECTIONS WITH A MINIMUM THICKNESS OF 5"
5. WATERTIGHT JOINT
6. GASKET-TYPE WATERSTOP COLLAR FOR ALL WATER MAIN CONNECTIONS
7. CAST IRON MANHOLE FRAME & COVER SIMILAR TO NEENAH R-1712, OR EQUAL WITH STANDARD DUTY, NON-ROCKING TYPE LIDS WITH "CITY OF CRYSTAL LAKE WATER" CAST INTO LID. (NEENAH R-2535, OR EQUAL MAY BE USED IN GRASSY AREAS)

ADJUSTING RING HEIGHT NOT TO EXCEED 8" WITH A MAXIMUM OF THREE (3) ADJUSTMENT RINGS.



VALVE VAULT DETAIL

PATRICK ENGINEERING INC. LISLE, ILLINOIS

USER NAME = jmacke(Chicago_R)	DESIGNED - D.DOERFLER	REVISED -	
PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - D.DOERFLER	REVISED -	
PLOT SCALE = 1:50	CHECKED - E.CHOW	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

MCHENRY COUNTY DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
DRAINAGE DETAILS

SCALE: 1"=50' | SHEET NO. DU 31 OF 47 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	214
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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