

FINAL ENGINEERING PLANS FOR

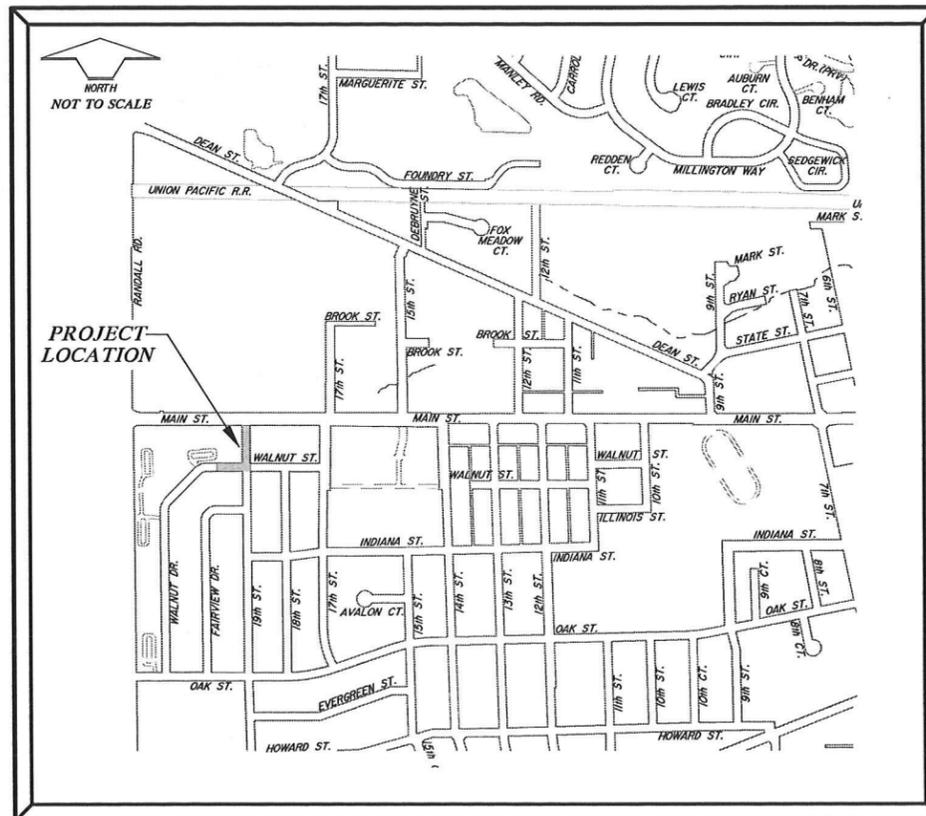
SOUTH 19TH ST. & WALNUT DR.

WATER MAIN IMPROVEMENTS

CITY OF ST. CHARLES
KANE COUNTY, ILLINOIS
2014

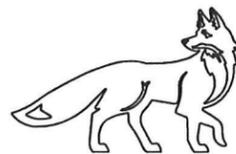
LEGEND

	EXISTING FIRE HYDRANT
	PROPOSED FIRE HYDRANT
	EXISTING VALVE BOX
	EXISTING VALVE VAULT
	PROPOSED VALVE VAULT
	EXISTING WATER MAIN
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	PROPOSED WATER MAIN
	EXISTING AERIAL UTILITIES
	EXISTING GAS MAIN
	EXISTING TREE & SIZE
	EXISTING MANHOLE
	EXISTING INLETS
	EXISTING STREET SIGNS
	EXISTING UTILITY POLE
	EXISTING STREET LIGHT
	EXISTING ELEVATION
	PROPOSED ELEVATION



LOCATED IN THE NORTHWEST QUARTER OF
SECTION 33, TOWNSHIP 40 NORTH, RANGE 8 EAST

LOCATION MAP



CITY OF ST. CHARLES
Engineering Office
200 Devereaux Way
St. Charles, Illinois 60174
(630) 377-4486
www.StCharlesIL.gov



I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED
UNDER MY DIRECT SUPERVISION
DATED AT ST. CHARLES, ILLINOIS.
THIS 18th DAY OF February, 2014

[Signature]
JAMES J. BERNAHL
ILLINOIS REGISTERED PROFESSIONAL ENGINEER
NO. 062.060788 - EXPIRES 11/30/2015

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES & QUANTITIES
3	PLAN SHEET
4 & 5	PROFILES
6 & 7	TYPICAL DETAILS

Benchmarks:

- No. 1
Rim of Sanitary Manhole 6.2-077 at Station 18+50, 0' Lt.
on Walnut Drive, Elevation = 765.47
- No. 2
Rim of Storm Manhole 6.2-606 at Station 16+36, 14.5' Lt.
on South 19th Street, Elevation = 760.21
- No. 3
Rim of Sanitary Manhole 6.3-021 at Station 17+66, 0' Lt.
on South 19th Street, Elevation = 761.90
- No. 4
Rim of Storm Manhole 6.3-228 at Station 19+37, 30.5' Lt.
on South 19th St. at West Main St, Elevation = 769.89

Note: Benchmark Elevations to be Transferred by the Contractor if Structure Rims are to be Adjusted.

REVISED, FEBRUARY 14, 2014
DATE, AUGUST 27, 2013



Joint
Utility
Locating
Information
for
Excavators

800.892.0123
OR 811

Call 48 hours before you dig
(Excluding Sat., Sun. & Holidays)

GENERAL CONSTRUCTION NOTES

- ALL GRADING AND STREET CONSTRUCTION WITHIN THE LIMITS OF THE PROJECT SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS", ADOPTED JANUARY 1, 2012, THERETO, UTILIZING THE "SUPPLEMENTAL SPECIFICATIONS" AND "RECURRING SPECIAL PROVISIONS" ADOPTED JANUARY 1, 2014; AND THESE "CONSTRUCTION NOTES" AND WITH THE STANDARD SPECIFICATIONS PER THE CITY OF ST. CHARLES ORDINANCE.
- ALL WATER & SEWER MAIN CONSTRUCTION WITHIN THE LIMITS OF THIS PROJECT SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS", MOST CURRENT EDITION, AND ALL REVISIONS THERETO; WITH THE STANDARD SPECIFICATIONS FOR THIS CONTRACT/PROJECT AND WITH THESE CONSTRUCTION NOTES. A COPY OF THE ABOVE SPECIFICATIONS SHALL BE IN THE POSSESSION OF THE CONTRACTOR ON THE PROJECT AT ALL TIMES.
- THE CONTRACTOR(S) SHALL COMPLY WITH ALL LOCAL AND STATE SAFETY LAWS, REGULATIONS AND ORDINANCES; AND FEDERAL SAFETY REGULATIONS AS OUTLINED IN THE LATEST REVISIONS OF THE FEDERAL CONSTRUCTION SAFETY STANDARDS AND WITH ALL PROVISIONS AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS. EACH CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SAFE WORKING PLACE FOR THEIR EMPLOYEES. THE CONTRACTOR(S) ARE RESPONSIBLE FOR THE SUPERVISION, DIRECTION AND CONDUCT OF THEIR EMPLOYEES, AGENTS, MATERIAL SUPPLIERS AND VENDORS. THE CONTRACTOR(S), BY USING THESE PLANS FOR THEIR WORK, AGREE TO HOLD HARMLESS THE CITY, THEIR EMPLOYEES AND AGENTS WHILE ACTING WITHIN THE SCOPE OF THEIR DUTIES FROM AND AGAINST ANY AND ALL LIABILITY, CLAIMS DAMAGES, AND THE COST OF DEFENSE ARISING OUT OF CONTRACTOR(S) PERFORMANCE OF THE WORK DESCRIBED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE OWNERS OF ALL EXISTING FACILITIES SO THAT THE UTILITIES AND THEIR APPURTENANCES MAY BE LOCATED AND ADJUSTED OR MOVED, IF NECESSARY, PRIOR TO THE START OF CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL COOPERATE WITH ALL UTILITY OWNERS AS PROVIDED FOR IN THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND OR SURFACE UTILITIES EVEN THOUGH THEY MAY NOT BE SHOWN ON THE PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER OR THE OWNER OR REPLACED. THIS WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER BRACING, SHORING, AND OTHER REQUIRED PROTECTION OF ALL ROADWAYS BEFORE CONSTRUCTION BEGINS. TRENCH SHEETING IS REQUIRED WHENEVER EXCAVATION IS WITHIN 10' OF THE PAVEMENT EDGE OF AN ILLINOIS STATE HIGHWAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE STREETS OR ROADWAYS AND ASSOCIATED STRUCTURES AND SHALL MAKE REPAIRS AS NECESSARY TO THE SATISFACTION OF THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ADEQUATE SIGNS AND WARNING DEVICES TO INFORM AND PROTECT THE PUBLIC WHERE THE OPERATION ABUTS PUBLIC THOROUGHFARE AND ADJACENT PROPERTY.
- UTILITIES WITHIN THE PUBLIC RIGHT OF WAY ARE SHOWN ON THE PLANS ACCORDING TO INFORMATION AVAILABLE TO THE ENGINEER AND ARE ONLY INCLUDED FOR THE CONVENIENCE OF THE BIDDER. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY WHATSOEVER IN RESPECT TO THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS RELATIVE TO THE LOCATION OF UNDERGROUND UTILITY FACILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION IN THE FIELD OF ALL UTILITY LINES AND FOR THEIR PROTECTION FROM DAMAGE DUE TO CONSTRUCTION OPERATIONS. IF EXISTING UTILITY LINES OF ANY NATURE ARE ENCOUNTERED WHICH CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT THE CONFLICT SHALL BE RESOLVED.
- ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION OPERATIONS SHALL BE CONNECTED TO THE STORM SEWER SYSTEM OR EXTENDED TO OUTLET INTO A DRAINAGE WAY. (THE CITY OF ST. CHARLES SEWER DIVISION SHALL BE NOTIFIED OF LINE BREAKS OR WHEN NEW LINES ARE ENCOUNTERED.) IF THIS CANNOT BE ACCOMPLISHED, THEN IT SHALL BE REPAIRED WITH NEW PIPE OF SIMILAR SIZE AND MATERIAL TO THE ORIGINAL LINE AND PUT IN ACCEPTABLE OPERATING CONDITION. A RECORD OF THE LOCATION OF ALL FIELD TILE OR DRAIN PIPE ENCOUNTERED SHALL BE KEPT BY THE CONTRACTOR AND TURNED OVER TO THE ENGINEER UPON COMPLETION OF THE PROJECT
- CONTRACTOR ACCESS POINTS TO THE SITE SHALL BE PROTECTED IN SUCH A WAY AS TO PREVENT ACCUMULATIONS OF MUD OR SOIL ON PUBLIC THOROUGHFARES. AT THE END OF EACH DAY THE CONTRACTOR SHALL CLEAN UP ALL MUD OR SOIL WHICH HAS BEEN TRACKED ON PUBLIC STREETS OR AS REQUIRED BY THE CITY OF ST. CHARLES.
- BEFORE APPROVAL BY THE CITY OF ST. CHARLES AND FINAL PAYMENT, ALL WORK SHALL BE INSPECTED BY THE CITY OF ST. CHARLES. FINAL PAYMENT WILL BE MADE AFTER ALL OF THE CONTRACTOR'S WORK HAS BEEN APPROVED AND CERTIFIED COMPLETE. THE CONTRACTOR SHALL GUARANTEE HIS WORK FOR A PERIOD OF ONE (1) YEAR FROM THE DATE ON THE CERTIFICATE OF COMPLETION AND WORKMANSHIP OF THIS WORK DURING THAT PERIOD. DIRECT FINAL INSPECTION REQUESTS TO: KRISTI DOBBS AT THE CITY ENGINEERING OFFICE.

- THE CITY ENGINEER SHALL BE NOTIFIED AT 630-377-4486 TWO (2) WORKING DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- THE UNDERGROUND CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS OF ALL SERVICE STUB LOCATIONS, FOR USE BY THE CITY OF ST. CHARLES.
- THE CONTRACTOR SHALL FIELD CHECK ALL DIMENSIONS, COORDINATES, ELEVATIONS, AND EXISTING UTILITIES BEFORE PROCEEDING WITH THE WORK. NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES FOUND.
- PARKWAY RESTORATION SHALL BE ACCOMPLISHED WITH FOUR (4) INCHES OF PULVERIZED TOPSOIL AND SOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER WATERING OF THE SOD UNTIL A FIRM ROOT SYSTEM HAS BEEN ESTABLISHED ALL RESTORATION SHALL MEET THE SATISFACTION OF THE CITY OF ST. CHARLES.
- ALL CONFLICTS INVOLVING A POTENTIAL FIELD CHANGE SHALL BE BROUGHT TO THE ATTENTION OF THE CITY OF ST. CHARLES ENGINEERING OFFICE BEFORE CONSTRUCTION OF THE FIELD CHANGE BEGINS. FAILURE TO COMPLY WITH THIS ISSUE MAY RESULT IN CONSTRUCTION THAT HAS NOT BEEN APPROVED AND THEREFORE WILL NOT BE COMPENSATED FOR IN FINAL PAYMENT.
- SANITARY SEWER SERVICES ARE NOT DEPICTED BUT MAY BE PRESENT. THE CONTRACTOR SHALL USE CARE NOT TO DAMAGE EXISTING SEWER SERVICE. IF A SERVICE IS DISCOVERED THE CONTRACTOR SHALL CONTACT THE SEWER DEPARTMENT @ 630-377-4405 IMMEDIATELY. IF A SERVICE IS DAMAGED THE CONTRACTOR SHALL REPAIR ALL DAMAGE TO THE CITY'S SATISFACTION. CASING AND SEPARATION REQUIREMENTS PER WATER MAIN NOTE #22 & 23 SHALL APPLY.

WATER MAINS

- ALL WATER MAINS SHALL BE DUCTILE CAST IRON, CLASS 52, IN ACCORDANCE WITH ANSI SPECIFICATION A21.51 OR AWWA C-151. FITTINGS SHALL BE CEMENT LINED IN ACCORDANCE WITH AWWA C-104. JOINTS SHALL BE PUSH ON OR MECHANICAL. ELECTRICAL CONDUCTIVITY SHALL BE PROVIDED WITH BRASS WEDGES.
- ALL SURPLUS EXCAVATED MATERIAL FROM THE TRENCH WILL BE DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE.
- THE UNDERGROUND CONTRACTOR SHALL BE RESPONSIBLE TO PLACE AT GRADE AND COORDINATE WITH OTHER CONTRACTORS ALL UNDERGROUND STRUCTURE FRAMES SUCH AS CATCH BASINS, INLETS, MANHOLES, HYDRANTS, BUFFALO BOXES, VALVES, ETC. NO ADDITIONAL COMPENSATION WILL BE PAID AND SAID ADJUSTMENTS SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS OF CONSTRUCTION. ADJUSTMENT SHALL NOT EXCEED 8 INCHES.
- THE EXPLORATION TRENCH AND ANY NECESSARY WATER MAIN PROTECTION WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT. NO ADDITIONAL COMPENSATION WILL BE GIVEN.
- IF THE CONTRACTOR ENCOUNTERS ROCK THAT DOES NOT ALLOW THE MINIMUM 5' OF COVER, THE ENGINEERING OFFICE SHALL BE NOTIFIED IMMEDIATELY. THE CONTRACTOR MAY BE REQUIRED TO REMOVE ROCK OR THE WATER MAIN DEPTH MAY BE ADJUSTED. THE CONTRACTOR IS OBLIGATED TO DEMONSTRATE TO THE CITY'S SATISFACTION THE CONDITION OF ROCK AT ANY TIME. REMOVAL OF ROCK NOT AUTHORIZED BY THE CITY WILL NOT BE PAID FOR.
- SERVICE TAPS: WATER SERVICES MAY ONLY BE INTERRUPTED WHEN THE TRANSFER OF SERVICES TO THE NEW MAIN TAKES PLACE. SERVICES SHALL BE TRANSFERRED SUBSEQUENT TO TESTING AND CHLORINATION OF THE PROPOSED MAIN. THE CONTRACTOR SHALL CONTACT THE ST. CHARLES WATER DIVISION AT 630-377-4405 PRIOR TO TRANSFER OF SERVICES. RESIDENTS MUST BE INFORMED OF ANY INTERRUPTION TO THEIR WATER SERVICES 24 HOURS IN ADVANCE.
- SERVICE TAPS TO WATER MAINS ARE NOT PERMITTED UNTIL AFTER BACTERIOLOGIC SAMPLING AND ANALYSIS HAS BEEN COMPLETED TO THE SATISFACTION OF THE APPROPRIATE ENGINEERING DIVISION. NO WATER SERVICE CONNECTION SHALL BE MADE BY ANY PERSON OR FIRM OTHER THAN A STATE OF ILLINOIS CONTRACTOR, WITH A STATE OF ILLINOIS LICENSED PLUMBER ON THE JOB, BONDED WITH THE CITY.
- BOLTS AND FASTENERS: ALL BELOW GRADE, BOLTS AND FASTENERS SHALL BE 304 GRADE STAINLESS STEEL, EXCEPT ON MJ FITTINGS.
- VALVES AND VAULTS STRUCTURES FOR WATER MAIN VALVE VAULTS SHALL BE IN ACCORDANCE WITH THESE IMPROVEMENT PLANS AND THE APPLICABLE STANDARD SPECIFICATIONS. WHERE GRANULAR TRENCH BACKFILL IS REQUIRED AROUND THESE STRUCTURES, THE COST SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE STRUCTURES.

VALVE VAULTS ARE TO BE PRECAST REINFORCED CONCRETE, ESENTRIC AND CONCENTRIC TYPE (REFER TO STANDARD DETAIL AND MATERIALS SECTION FOR SIZING SPECIFICATIONS). A MAXIMUM OF (8-INCHES) OF ADJUSTING RINGS SHALL BE USED. ALL VALVE VAULT STRUCTURES SHALL HAVE A NEENAH FOUNDRY COMPANY R-1713 FRAME AND TYPE "B" LID WITH CONCEALED PICK HOLE. LIDS SHALL BE FURNISHED WITH THE CITY STANDARD LOGO. SEE DETAIL SHEET.

- VALVE SPACING: RIGHT-HAND CLOSING RESILIENT WEDGE GATE VALVES AT INTERVALS NOT OVER 600 FEET.
- COVER DEPTH: ALL WATER MAIN, HYDRANT LEADS, AND SERVICES MUST HAVE A MINIMUM COVER OF FIVE (5) FEET, AND A MAXIMUM COVER OF (10) FEET. VARIATION FROM THESE STANDARDS WILL REQUIRE APPROVAL OF APPROPRIATE ENGINEERING DIVISION.
- HYDRANT SPACING: HYDRANTS MUST BE PLACED AT A MINIMUM OF 400-FOOT INTERVALS, AND MAY NOT BE LESS THAN FIVE (5) FEET FROM BACK OF CURB. NO BUILDABLE AREA SHALL BE FURTHER THAN 300' FROM A FIRE HYDRANT, AND A MINIMUM OF ONE HYDRANT SHALL BE LOCATED AT EACH INTERSECTION. FOR LARGER PROJECTS, HYDRANTS SHALL BE PROPOSED A HIGH POINTS FOR AIR RELEASE. ALL HYDRANTS SHALL BE COORDINATED WITH THE CITY OF ST. CHARLES FIRE DEPARTMENT AND APPROPRIATE ENGINEERING DIVISION.
- FIRE HYDRANTS: FIRE HYDRANTS SHALL BE INSTALLED WITH A MAXIMUM OF ONE EXTENSION KIT USED, AND A MAXIMUM EXTENSION OF 36". FIRE HYDRANT EXTENSION KITS MUST BE OF THE SAME MANUFACTURE AS THE HYDRANT, AND MUST BE INSTALLED ACCORDING TO THE MANUFACTURERS SPECIFICATIONS.
- CONNECTION TO EXISTING WATER MAINS: CONNECTION TO THE END OF AN EXISTING WATER MAIN SHALL BE WITH A VALVE ONLY. NO NEW WATER MAIN SHOULD BE CONNECTED TO THE EXISTING WATER MAIN UNLESS THE NEW WATER MAIN CAN BE PRESSURE TESTED SEPARATELY. CONNECTION TO AND EXISTING WATER MAIN SHALL BE DONE BY PRESSURE CONNECTION ONLY UNLESS AUTHORIZED BY THE APPROPRIATE ENGINEERING DIVISION. PRESSURE CONNECTION AND VALVE SHALL BE LOCATED WITHIN THE VALVE VAULT. NO PRESSURE CONNECTION SHALL BE WITHIN 3 FEET OF AN EXISTING WATER MAIN JOINT. IF PRESSURE CONNECTION CANNOT BE DONE, USE A CUT IN SLEEVE AND TEE CONNECTION. ALL FITTINGS WILL BE SWABBED OUT WITH A CHLORINE SOLUTION OF AT LEAST 50 MG/L. A CITY REPRESENTATIVE MUST TEST THIS SOLUTION.
- JOINT RESTRAINT: ALL MECHANICAL JOINT FITTINGS SHALL HAVE RESTRAINING GLANDS INSTALLED. RESTRAINT DEVICE SHALL BE UNI-FLANGE BY FORD COMPANY OF MEGA-LUG BY EBAA IRON. PUSH JOINT PIPE RESTRAINT SHALL BE FIELD LOCK GASKETS BY US PIPE OR SERIES 1700 MEGA-LUG OR SERIES 1390 PIPE RESTRAINT BY FORD. LENGTHS OF PIPE RESTRAINT SHALL BE DETERMINED FROM MANUFACTURERS INSTALLATION SPECIFICATIONS (REFER TO WATER MAIN RESTRAINT DETAIL).
- APPURTENANCES SHALL BE A MINIMUM OF (20) FEET FROM PERMANENT STRUCTURES; THIS APPLIES TO ANY STRUCTURE THAT MAY REQUIRE A BUILDING PERMIT (I.E. RETAINING WALLS, POOLS, SHED, GARAGES, ECT.)
- ABANDONING AND REPLACING EXISTING SERVICES: ALL EXISTING SERVICES SHALL BE ABANDONED AT THE CORPORATION STOP (CLOSE CORPORATION STOP, SERVICES, AND INSTALL COPPER DISK). EXISTING SERVICES SHOULD BE REPLACED FROM THE NEW MAIN TO THE B-BOX IF SERVICE IS LEAD. IF SERVICE IS COPPER, IT SHOULD BE CUT AND TAPPED INTO THE NEW MAIN. APPROVED TRENCH BACKFILL MATERIAL IS TO BE PLACED WHERE ANY TRENCH LIES WITHIN (3) FEET OF THE EDGE OF PAVEMENT, CURB, OR SIDEWALK. IT IS ASSUMED ALL LINES ARE LEAD AND MUST BE REPLACED TO B-BOX.
- THRUST BLOCKING: PREFORMED CONCRETE BLOCK THRUST BLOCKING SHALL BE PROVIDED AT ALL BENDS GREATER THAN 10 DEGREES, AT ALL MECHANICAL JOINT CONNECTIONS, AND AT ALL FIRE HYDRANTS (REFER TO CITY THRUST BLOCKING DETAIL)
- TRENCH BACKFILL: ALL UTILITY AND SERVICE TRENCHES WITHIN (3) FEET OF PAVED SURFACES, OR AT A DISTANCE SPECIFIED BY THE ENGINEER, SHALL BE BACKFILLED WITH CA-7 (VIRGIN CRUSHED LIMESTONE). FA-6 (CLEAN BEACH SAND) MATERIAL SHALL BE USED IN ALL OTHER UNPAVED LOCATIONS. ALL BACKFILL MATERIAL SHALL BE PROPERLY COMPACTED UNLESS OTHERWISE DIRECTED BY THE APPROPRIATE ENGINEERING DIVISION.
- WATER MAIN PIPES:
 - DUCTILE IRON CLASS 52, CONFORMING TO AWWA STANDARD C-151
 - CEMENT LINING, CONFORMING TO AWWA STANDARD C-104.
 - MECHANICAL OR PUSH-ON JOINTS SHALL CONFORM TO AWWA STANDARD C-111
 - AT MINIMUM, TYPE 3 LAYING CONDITIONS SHALL BE PROVIDED, CONFORMING TO AWWA STANDARD C-600 (ATTACHED)
 - ALL WATER MAINS SHALL BE ENCASED IN A HIGH DENSITY POLYETHYLENE ENCASEMENT WITH ITS MATERIAL SPECIFICATIONS AND INSTALLATION METHOD IN ACCORDANCE WITH ANSI. AWWA C105/A21.5, ASTM A674, USING "METHOD A" INSTALLATION.
 - ALL SIDE YARD AND REAR YARD WATER MAINS NOT DIRECTLY ADJACENT TO PUBLIC ROADWAYS OR PAVED SURFACES SHALL BE DUCTILE PIPE CLASS 55 WITH TYPE 5 LAYING CONDITION.
 - BRASS WEDGES SHALL BE INSTALLED TO PROVIDE ELECTRICAL CONDUCTIVITY.

- COPPER SERVICE LINES:
 - ONE- INCH DIAMETER MINIMUM
 - TYPE K COPPER TUBING
 - COMPRESSION FITTINGS ONLY

1-INCH SERVICE CONNECTIONS ONLY MAY BE CONNECTED UTILIZING THE DIRECT TAP METHODS TO 6-INCH MAINS AND LARGER ONLY. IF THERE IS INSUFFICIENT DIAMETER WATER MAIN TO INSTALL A DIRECT TAP, THEN A SADDLE TAP SHALL BE ALLOWED. SERVICE TAPS OF 1-1/4", 1-1/2", & 2" REQUIRE THE USE OF A TAPPING SADDLE. SADDLES SHALL BE FULL CIRCLE, 304-GRADE STAINLESS STEEL, WITH NYLON WASHERS AND NITRILE GASKET, AS MANUFACTURED BY SMITH -BLAIR; MODEL #372, OR APPROVED EQUAL.
- TAPPING SLEEVES:
 - 4" THROUGH 8" DIAMETER:
 - ROMAC SST-945 STAINLESS STEEL OR APPROVED EQUAL OR SMITH-BLAIR 665 STAINLESS STEEL OR APPROVED EQUAL, OR MUELLER H-615 CAST IRON OR APPROVED EQUAL.
 - 10" AND LARGER DIAMETER:
 - MUELLER H-615 CAST IRON OR APPROVED EQUAL.
 - FLANGE FASTENERS SHALL BE 304-GRADE STAINLESS STEEL.
- HORIZONTAL SEPARATION - WATER MAINS AND SEWERS
 - WATER MAINS SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED DRAIN, STORM SEWER, SANITARY SEWER, COMBINED SEWER, OR SEWER SERVICE CONNECTION.
 - WATER MAINS SHALL BE LOCATED CLOSER THAN 10 FEET TO A SEWER LINE WHEN:
 - LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET; AND
 - THE WATER MAIN INVERT IS AT LEAST 18 INCHES ABOVE THE CROWN OF THE SEWER; AND
 - THE WATER MAIN IS EITHER IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON AN UNDISTURBED EARTH SHELF LOCATED TO ONE (1) SIDE OF THE SEWER.
 - WHEN IT IS IMPOSSIBLE TO MEET A OR B ABOVE, BOTH THE WATER MAIN AND DRAIN OR SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST OR DUCTILE IRON PIPE, ASBESTOS-CEMENT PRESSURE PIPE, PRE STRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION. THE DRAIN OR SEWER SHALL BE PRESSURE TESTED TO THE MAXIMUM EXPECTED SURCHARGE HEAD BEFORE BACKFILLING.
- VERTICAL SEPARATION - WATER MAINS AND SEWERS
 - A WATER MAIN SHALL BE SEPARATED FROM A SEWER SO THAT ITS INVERT IS A MINIMUM OF 18 INCHES ABOVE THE CROWN OF THE DRAIN OR SEWER WHENEVER WATER MAINS CROSS STORM SEWERS, SANITARY SEWERS, OR SEWER SERVICE CONNECTIONS. THE VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATER MAIN LOCATED WITHIN 10 FEET HORIZONTALLY OF ANY SEWER OR DRAIN CROSSED. A LENGTH OF WATER MAIN SHALL BE CENTERED OVER THE SEWER TO BE CROSSED WITH JOINTS EQUIDISTANT FROM THE SEWER OR DRAIN.
 - BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST OR DUCTILE IRON PIPE, ASBESTOS-CEMENT PRESSURE PIPE, PRE STRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION WHEN:
 - IT IS IMPOSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION AS DESCRIBED IN A ABOVE; OR
 - THE WATER MAIN PASSES UNDER A SEWER OR DRAIN
 - A VERTICAL SEPARATION OF 18 INCHES BETWEEN THE INVERT OF THE SEWER OR DRAIN AND THE CROWN OF THE WATER MAIN SHALL BE MAINTAINED WHERE A WATER MAIN CROSSES UNDER A SEWER. SUPPORT THE SEWER OR DRAIN LINES TO PREVENT SETTling AND BREAKING THE WATER MAIN, AS SHOWN ON THE PLANS APPROVED BY THE ENGINEER.
 - CONSTRUCTION SHALL EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE PERPENDICULAR DISTANCE FROM THE WATER MAIN TO THE SEWER OR DRAIN LINE IS AT LEAST 10 FEET.

TRAFFIC CONTROL

- THE CONTRACTOR SHALL AT ALL TIMES PROVIDE PROTECTION FOR TRAFFIC AS CALLED FOR IN THE SPECIAL PROVISIONS & PLANS.
- THE CONTRACTOR SHALL MAINTAIN EXISTING SIDE STREET ACCESS AND EXISTING DRIVEWAY ACCESS TO ABUTTING PROPERTY AT ALL TIMES DURING CONSTRUCTION OF THIS PROJECT.
- ALL TRAFFIC CONTROL AND OTHER ADVISORY SIGNS NEEDED FOR CONSTRUCTION ARE TO BE FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH SECTION 107.14 OF THE STANDARD SPECIFICATIONS.

SIGNS

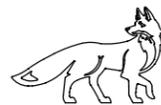
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR, ENGINEER AND CITY MAINTENANCE PERSONNEL SHALL INVENTORY THE LOCATION, SIZE, TYPE AND CONDITION OF ALL EXISTING SIGNS. ANY SIGN DAMAGED DURING CONSTRUCTION OR STORAGE SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE IN ACCORDANCE WITH ARTICLE 107.25 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR WILL BE REQUIRED TO RELOCATE OR REMOVE AND REPLACE SIGNS WHICH INTERFERE WITH HIS CONSTRUCTION OPERATIONS AND TEMPORARILY RESET ALL SUCH SIGNS DURING CONSTRUCTION OPERATIONS. THIS WORK WILL BE CONSIDERED INCLUDED IN THE COST OF THE CONTRACT.
- SIGNS SHALL NOT BE MOVED UNTIL THE PROGRESS OF WORK NECESSITATES IT.
- EVERY SIGN REMOVED MUST BE RE-ERECTED AT A TEMPORARY LOCATION IN WORKMANLIKE MANNER AND BE VISIBLE TO TRAFFIC FOR WHICH IT IS INTENDED. ALL SUCH SIGNS MUST BE MAINTAINED STRAIGHT AND CLEAN FOR THE DURATION OF THE TEMPORARY SETTING.
- ALL SIGNS SHALL BE RE-ERECTED IN PERMANENT LOCATIONS AS THE WORK IS COMPLETED. HORIZONTAL LOCATION FROM THE EDGE OF PAVEMENT SHALL BE AS DESIGNATED BY THE ENGINEER.
- ALL UNUSED SIGNS WILL BE RETURNED TO THE CITY.
- LONGER POSTS MAY BE REQUIRED AS SOME TEMPORARY OR PERMANENT SIGN LOCATIONS TO MAINTAIN PROPER SIGN ELEVATIONS.

SUMMARY OF QUANTITIES

Item No.	Items	Unit	Quantity
1	FIRE HYDRANT ASSEMBLY, TO BE REMOVED	EA	2
2	NEW FIRE HYDRANT ASSEMBLY	EA	2
3	10" GATE VALVE IN 5' DIA. VALVE VAULT	EA	3
4	6" DUCTILE IRON WATER MAIN, CLASS 52	FT	10
5	10" DUCTILE IRON WATER MAIN, CLASS 52	FT	485
6	12" DUCTILE IRON WATER MAIN, CLASS 52	FT	14
7	WATER SERVICE CONNECTION	EA	1
8	P.C.C. SIDEWALK REMOVAL & REPLACEMENT	SF	260
9	COMBINATION CURB & GUTTER, REMOVAL & REPLACEMENT	LF	50
10	AGGREGATE DRIVEWAY APRON REMOVAL - REPLACE WITH HOT-MIX ASPHALT	SY	60
11	SODDING, SPECIAL	SY	950
12	TRAFFIC CONTROL & PROTECTION	LS	1

NO.	REVISIONS	BY	DATE
1	UPDATES FOR FINAL BID SET	BH/GL	2-14-14

PREPARED UNDER THE SUPERVISION OF:		
JAMES J. BERNAHL		
062,060788 P.E. NO.	11/30/2015 EXP. DATE	
DRAWN BH. & GL.	CHECKED J.B.	SCALE

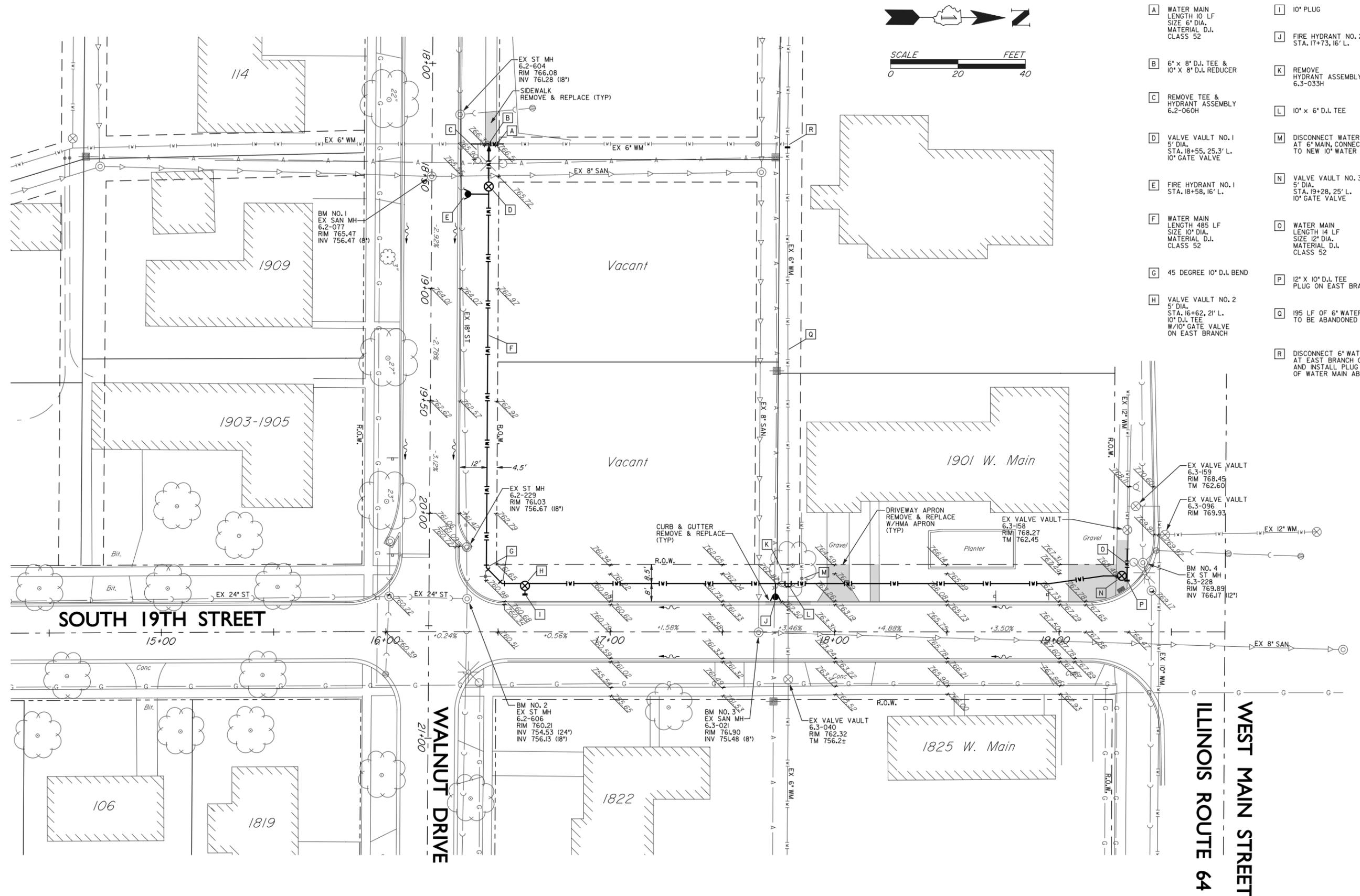


CITY OF ST. CHARLES ENGINEERING DEPARTMENT

200 DEVEREAUX WAY, ST. CHARLES, ILLINOIS 60174 (630) 377-4486

S. 19TH ST. & WALNUT DR. WATER MAIN IMPROVEMENTS GENERAL NOTES & QUANTITIES

PROJECT NO.
DATE: AUGUST 27, 2013
SCALE:
FILE: Quantity Sheet 2 of 6.gdp
SHEET 2 of 7



- A WATER MAIN LENGTH 10 LF SIZE 6" DIA. MATERIAL D.J. CLASS 52
- B 6" x 8" D.I. TEE & 10" x 8" D.I. REDUCER
- C REMOVE TEE & HYDRANT ASSEMBLY 6.2-060H
- D VALVE VAULT NO. 1 5" DIA. STA. 18+55, 25.3' L. 10" GATE VALVE
- E FIRE HYDRANT NO. 1 STA. 18+58, 16' L.
- F WATER MAIN LENGTH 485 LF SIZE 10" DIA. MATERIAL D.J. CLASS 52
- G 45 DEGREE 10" D.I. BEND
- H VALVE VAULT NO. 2 5" DIA. STA. 16+62, 21' L. 10" D.I. TEE W/10" GATE VALVE ON EAST BRANCH
- I 10" PLUG
- J FIRE HYDRANT NO. 2 STA. 17+73, 16' L.
- K REMOVE HYDRANT ASSEMBLY 6.3-033H
- L 10" x 6" D.I. TEE
- M DISCONNECT WATER SERVICE AT 6" MAIN, CONNECT SERVICE TO NEW 10" WATER MAIN
- N VALVE VAULT NO. 3 5" DIA. STA. 19+28, 25' L. 10" GATE VALVE
- O WATER MAIN LENGTH 14 LF SIZE 12" DIA. MATERIAL D.J. CLASS 52
- P 12" x 10" D.I. TEE PLUG ON EAST BRANCH
- Q 195 LF OF 6" WATER MAIN TO BE ABANDONED
- R DISCONNECT 6" WATER MAIN AT EAST BRANCH OF TEE AND INSTALL PLUG AS PART OF WATER MAIN ABANDONMENT

NO.	REVISIONS	BY	DATE
1	UPDATES FOR FINAL BID SET	BH/GL	2-14-14

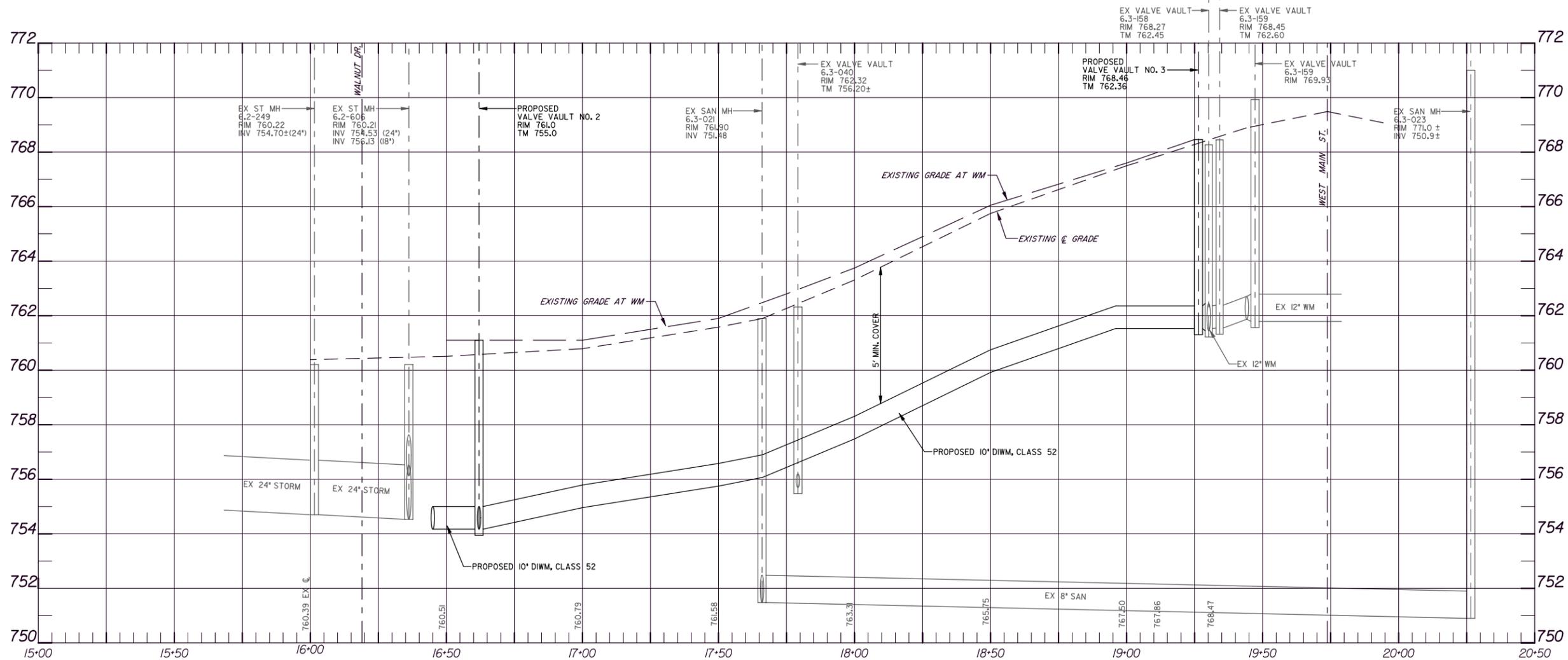
PREPARED UNDER THE SUPERVISION OF:			
JAMES J. BERNAHL			
062,060788		11/30/2015	
P.E. NO.		EXP. DATE	
DRAWN	CHECKED	SCALE	
BH. & GL.	J.B.	1" = 20'	



CITY OF ST. CHARLES
ENGINEERING DEPARTMENT
 200 DEVEREAUX WAY, ST. CHARLES, ILLINOIS 60174 (630) 377-4486

S. 19TH ST. & WALNUT DR.
WATER MAIN IMPROVEMENTS
PLAN

PROJECT NO.	
DATE	AUGUST 27, 2013
SCALE	1" = 20'
FILE	Plan 3 of 7.dgn
SHEET	3 of 7



SCALE:
 1" = 20' HORIZONTAL
 1" = 2' VERTICAL

NO.	REVISIONS	BY	DATE
1	UPDATES FOR FINAL BID SET	BH/GL	2-14-14

PREPARED UNDER THE SUPERVISION OF:
JAMES J. BERNAHL

062,060788
 P.E. NO.

11/30/2015
 EXP. DATE

DRAWN **B.H. & G.L.** CHECKED **J.B.** SCALE 1" = 20'

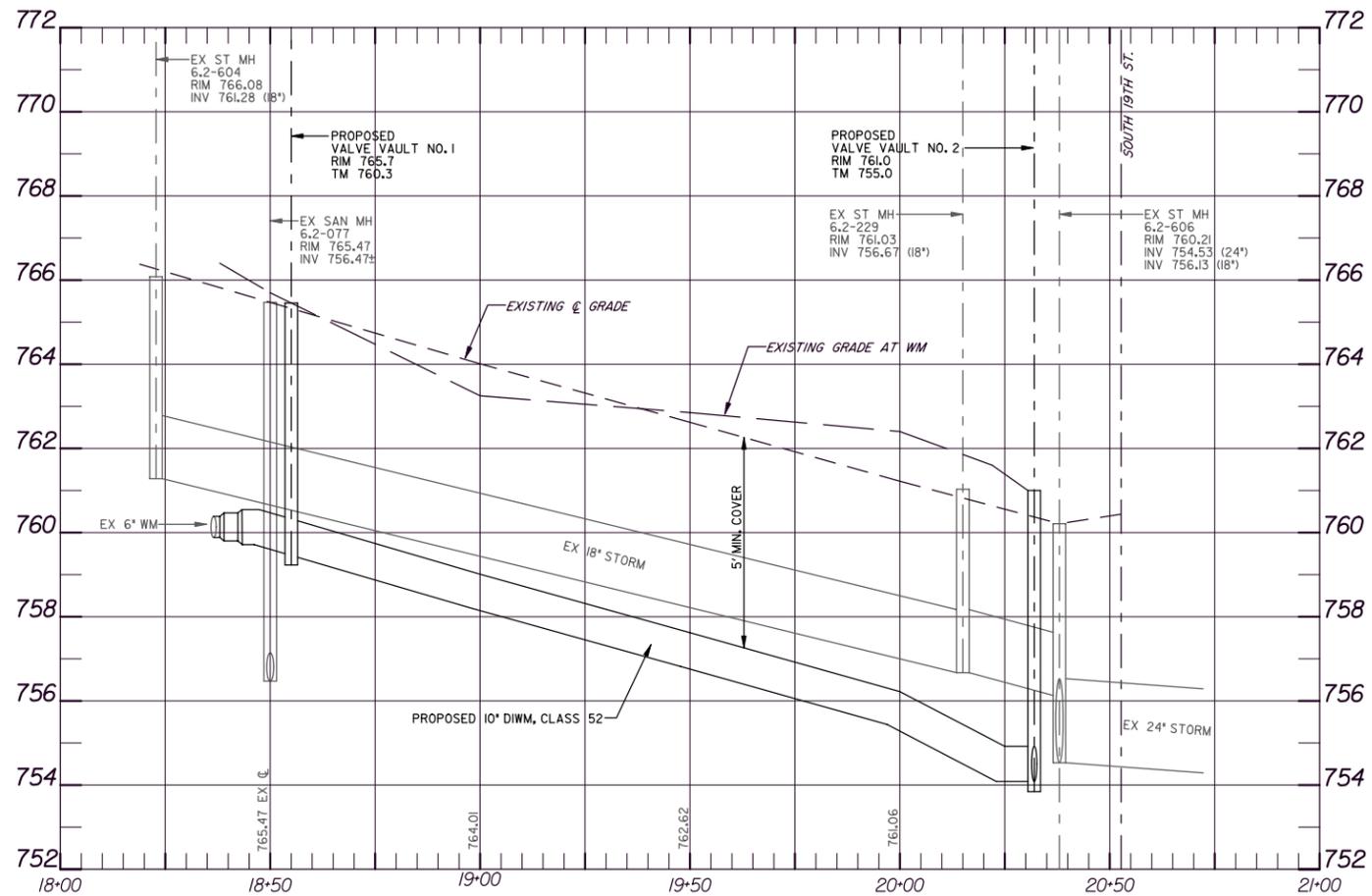


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S. 19TH ST. & WALNUT DR.
WATER MAIN IMPROVEMENTS
PROFILE S. 19TH STREET

PROJECT NO.
 DATE: AUGUST 27, 2013
 SCALE: 1" = 20'
 FILE: Profile 4 of 7.dgn

SHEET
 4 of 7

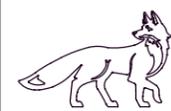


SCALE:
 1" = 20' HORIZONTAL
 1" = 2' VERTICAL



NO.	REVISIONS	BY	DATE
1	UPDATES FOR FINAL BID SET	BH/GL	2-14-14

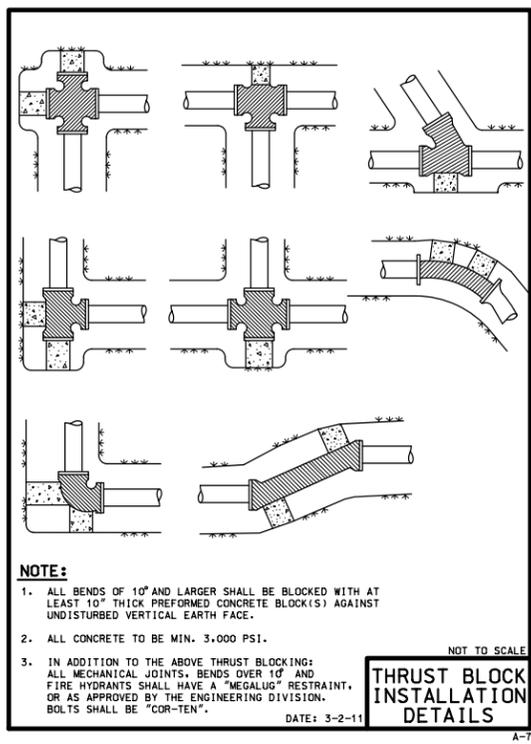
PREPARED UNDER THE SUPERVISION OF:
JAMES J. BERNAHL
 P.E. NO. 062,060788
 EXP. DATE 11/30/2015
 DRAWN **B.H. & G.L.** CHECKED **J.B.** SCALE 1" = 20'



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S. 19TH ST. & WALNUT DR.
WATER MAIN IMPROVEMENTS
PROFILE WALNUT DRIVE

PROJECT NO.	
DATE	AUGUST 27, 2013
SCALE	1" = 20'
FILE	Profile 5 of 7.dgn
SHEET	
5 of 7	



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

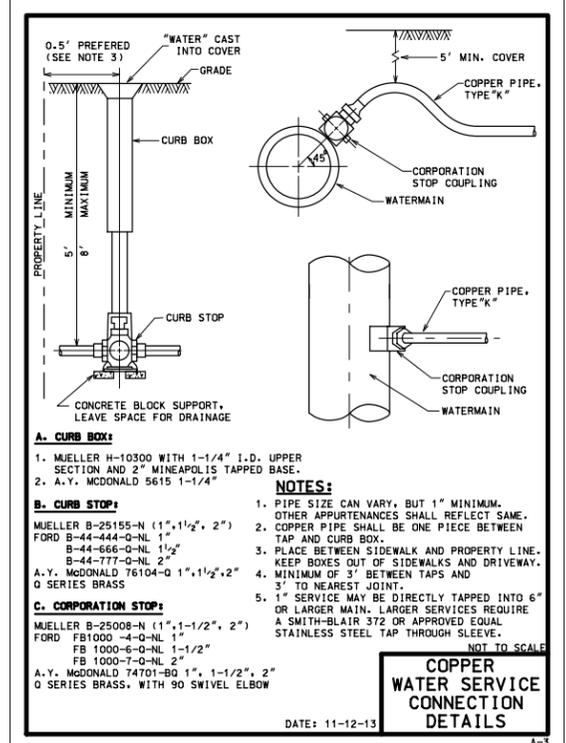
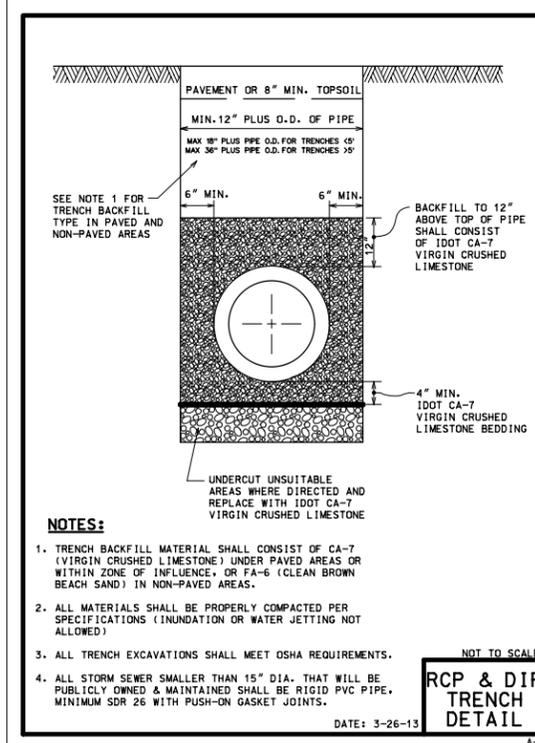
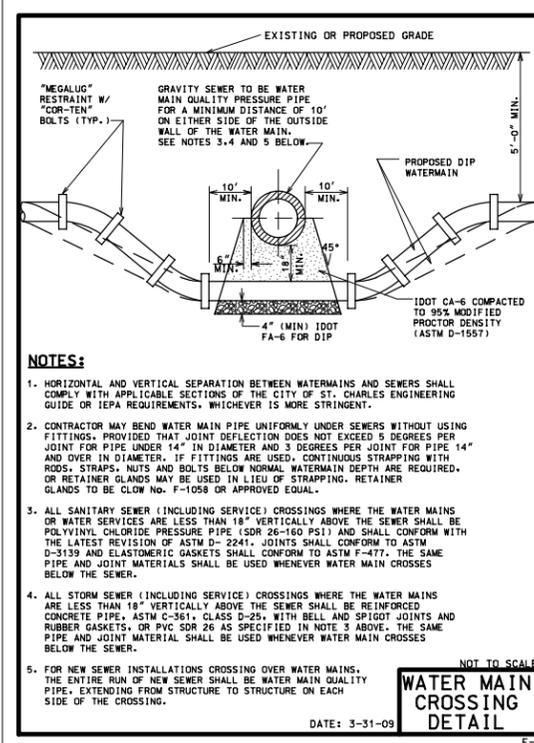
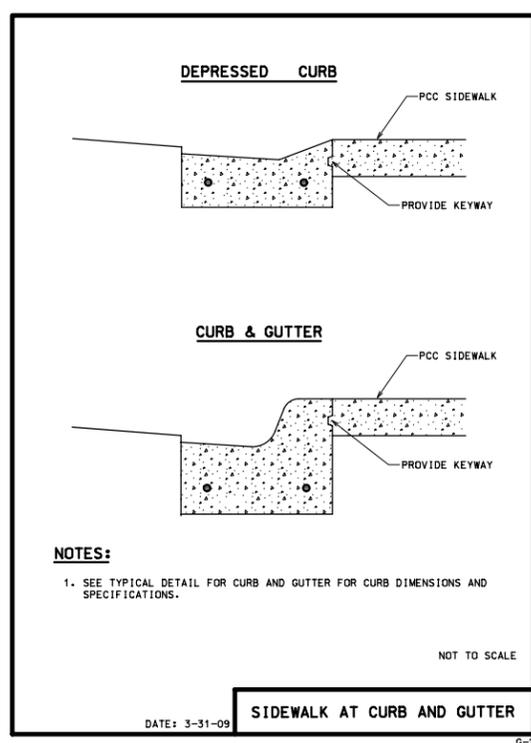
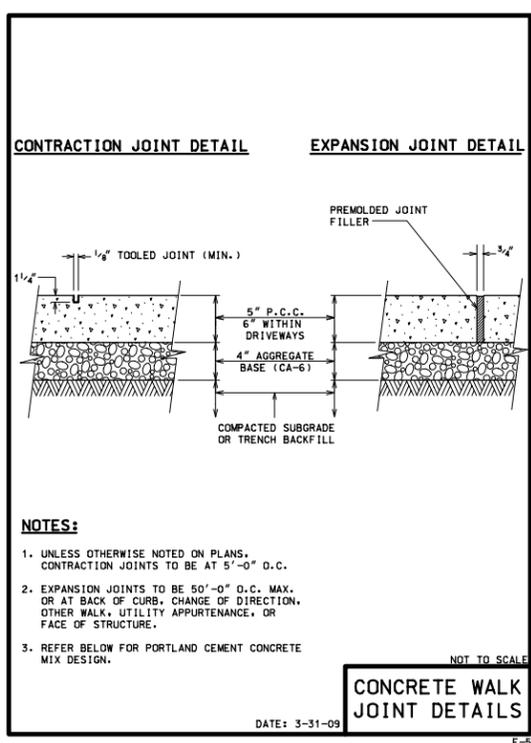
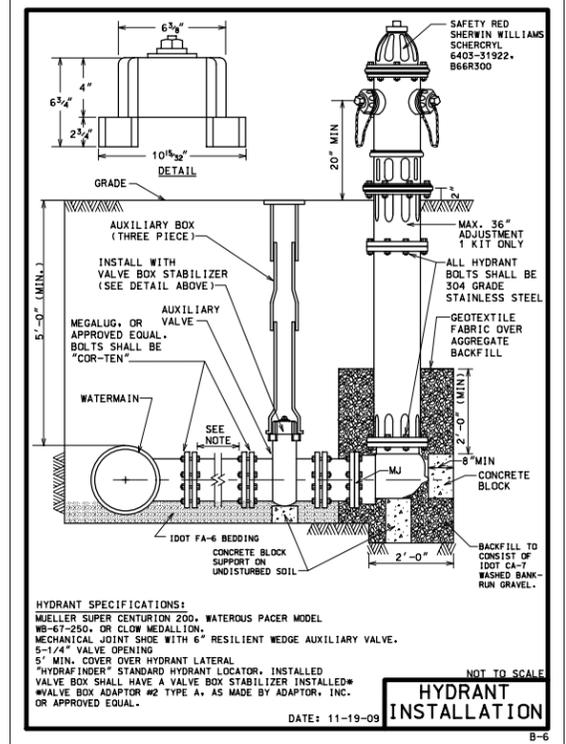
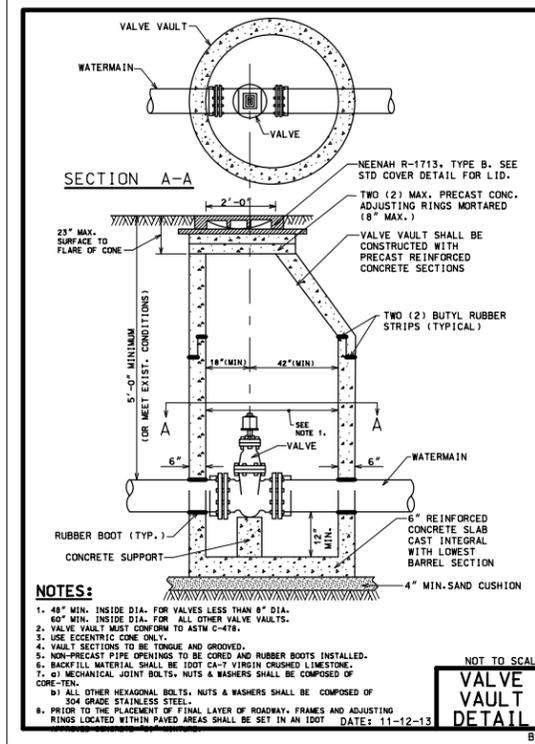
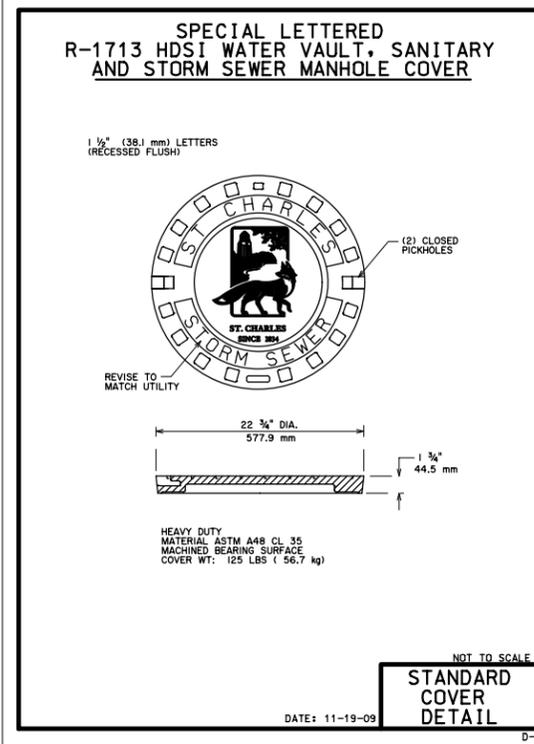
Fitting type/nominal size	4"	6"	8"	10"	12"	16"
90 Degree Bend	17	25	32	38	45	59
45 Degree Bend	7	10	13	16	19	24
22.5 Degree Bend	3	5	6	8	9	12
11.25 Degree Bend	2	2	3	4	4	6
Dead End	39	55	73	87	103	134
Top Side Vertical Offset * (45 Degree)	16	23	30	36	43	55
Bottom Side Vertical Offset * (45 Degree)	4	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	52
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

NOT TO SCALE



NO.	REVISIONS	BY	DATE
1	UPDATES FOR FINAL BID SET	BH/GL	2-14-14

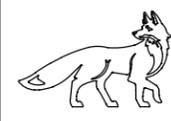
PREPARED UNDER THE SUPERVISION OF:

JAMES J. BERNAHL

062,060788 P.E. NO.

11/30/2015 EXP. DATE

DRAWN BH. & GL. CHECKED J.B. SCALE 1" = 20'



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ENGINEERING DEPARTMENT
 200 DEVEREAUX WAY, ST. CHARLES, ILLINOIS 60174 (630) 377-4486

S. 19TH ST. & WALNUT DR.
WATER MAIN IMPROVEMENTS
TYPICAL DETAILS

DATE: AUGUST 27, 2013

SCALE: NONE

FILE: Details 6 of 7.dgn

SHEET
6 of 7

