RELOCATION OF 37TH STREET NORTH

(HILLSIDE STREET TO OLIVER STREET)

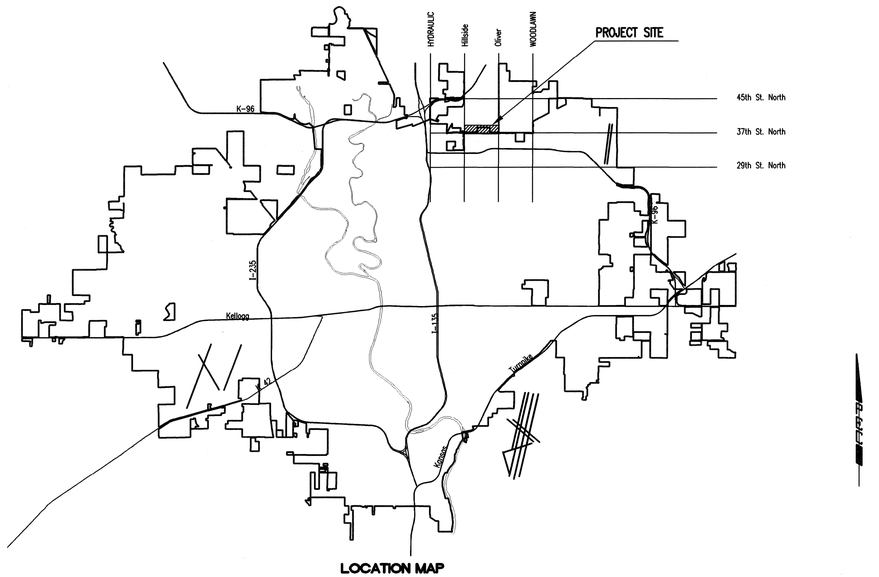
WATER DISTRIBUTION SYSTEM IMPROVEMENTS

CITY OF WICHITA PROJECT NO. 448-90587

OCA NO. 707047

CITY OF WICHITA, KANSAS

GARY JANZEN, P.E. - CITY ENGINEER



LOCATION MAP

INDEX OF SHEETS

MAY 2013

PLANS PREPARED BY

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

ENGINEERS

WICHITA, KANSAS

MICHAEL D. KELSEY
LICENSED
13944
5/31/13
KANSAS
PROFESSIONAL ENGINEER

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LEGEND

EXISTING WATER MAIN
PROPOSED WATER MAIN
PROPOSED WATER MAIN BY OTHERS
EXISTING WATER MAIN TO BE ABANDONED
EXISTING WATER VALVE
PROPOSED WATER VALVE
EXISTING FIRE HYDRANT
PROPOSED FIRE HYDRANT

RELOCATED 37TH STREET N.
RESERVE A
KOCH CAMPUS ADDITION
1
1
HILLSIDE STREET
OLIVER STREET
37TH STREET N.
12" Water Line
16" Water Line
Existing 24" Waterline
Existing 20" Waterline
Existing 6" Waterline (Det Fire)
Existing 16" Waterline
RESERVE B
PROPOSED BUILDING H
EXISTING BUILDING D
EXIST. BLDG C
EXISTING BUILDING T
EXIST. BLDG B
EXISTING BUILDING A
EXISTING BUILDING E
ACT PROPERTIES, LLC ADDITON
1
1
RES. B

PROPOSED 20" WATER MAIN LINE NO. 1, See sheet no. B7–B19.

PROPOSED 12" WATER MAIN See Koch Wichita Campus Expansion– Phase II Sitework

PROPOSED 12" WATER MAIN See Koch Wichita Campus Expansion – Phase II Sitework

N: 1,709,893.8238, E: 1,659,559.6749 @ 37th St. N., Sta. 100+148.00, 38.2' Lt. Remove existing Water Meter and Salvage to City.

DESIGNATED STOCK PILE LOCATION

FIRE HYDRANT RELOCATION See sheet no. B21

Abandon 2402 L.F. existing 20" Waterline. See sheet no. B3 for construction and pipe removal sequencing.

Abandon 1250 L.F. existing 20" Waterline. See sheet no. B3 for construction and pipe removal sequencing.

SCALE: 1" = 200'
0 200 400

SEE SHEET NO. B3 FOR 37TH ST. N. WATERLINE AND KOCH SITE WATERLINE IMPROVEMENTS CONSTRUCTION SEQUENCING

NOTE: WATERLINE VALVES OWNED BY THE CITY TO BE OPERATED BY CONTRACTOR ONLY IF WATER DEPARTMENT REPRESENTATIVE IS ON SITE.

GENERAL NOTES

1. ALL ELEVATIONS SHOWN ARE NAVD 88 DATUM.
2. CONTRACTOR WILL BE REQUIRED TO PROVIDE A MINIMUM ADVANCE NOTICE OF SEVENTY–TWO (72) HOURS TO UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION AS FOLLOWS:

KANSAS ONE–CALL	687–2470 or 811

THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:

EMERGENCY DISPATCH	911
COX COMMUNICATIONS	800–778–9140
KANSAS GAS SERVICE	888–482–4950
WESTAR ENERGY	800–383–1183
BLACK HILLS ENERGY	800–694–8889
AT&T	800–286–8313
CITY OF WICHITA WATER DEPARTMENT	262–6000
CITY OF WICHITA SEWER MAINTENANCE	262–6000

3. ALL WATER MAINS AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF WICHITA, KANSAS STANDARD SPECIFICATIONS.
4. OPENING AND CLOSING WATER VALVES SHALL BE DONE SLOWLY TO PREVENT DAMAGE TO THE WATER DISTRIBUTION SYSTEM FROM WATER HAMMER. ALL VALVES CLOSED BY THE CONTRACTOR MUST BE REOPENED AS NEW CONSTRUCTION PERMITS. PROJECT INSPECTOR MUST ASCERTAIN THAT ANY VALVE CLOSED BY THE CONTRACTOR IS REOPENED. CONTRACTOR WILL BE PERMITTED TO OPERATE WATER VALVES ONLY WHEN THE PROJECT INSPECTOR ASSIGNED TO THE PROJECT IS PRESENT.
5. THE CONTRACTOR SHALL NOT START WORK ON THE PROJECT UNTIL THE PROJECT INSPECTOR IS ASSIGNED TO THE PROJECT AND IS PRESENT ON THE SITE. ANY WORK DONE WITHOUT INSPECTION WILL BE REQUIRED TO BE UNCOVERED FOR INSPECTION.
6. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY DIRECTLY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL BE REQUIRED TO RE–ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE–ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.
8. THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, ENTRANCES, AND BANKLINES TO THEIR ORIGINAL SLOPES AND GRADES EXCEPT AS SHOWN OTHERWISE.
9. NO SERVICES WILL BE INSTALLED AS PART OF THIS PROJECT.
10. INTERURBAN TRAFFIC GENERATED OUTSIDE THE PROJECT AREA AND LOCAL BUSINESS OR RESIDENTIAL TRAFFIC GENERATED WITHIN THE PROJECT AREA ARE TO BE CARRIED THROUGH CONSTRUCTION AS FURTHER PROMULGATED BY PROJECT SPECIAL PROVISIONS. THE CONTRACTOR SHALL UTILIZE BARRICADES, SIGNS, GUARDS, AND FLAGMEN IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
11. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED AND TREE TRIMMINGS AND EXCESS EXCAVATED MATERIAL SHALL BE DISPOSED OF ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL ALSO BE APPROVED OF BY THE ENGINEER AS TO SUITABILITY, APPEARANCE, AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WILL REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS MAY REQUIRE ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED DISPOSAL LOCATION.
12. ALL APPROVED EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE STOCKPILED WITHIN KOCH CAMPUS ADDITION AT NO ADDITIONAL COST TO THE OWNER. STOCKPILE LOCATIONS SHALL BE AS DIRECTED BY THE DEVELOPER AND IN ACCORDANCE WITH GENERAL NOTE NO. 11 ABOVE.
13. THE CONTRACTOR SHALL SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITH TEMPORARY RYE GRASS. RYE GRASS SEED SHALL BE PLANTED AT A MINIMUM RATE OF SIX (6) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET. THIS TEMPORARY SEEDING MAY BE OMITTED ONLY IF OTHER SEEDING IS REQUIRED IN ACCORDANCE WITH GENERAL NOTE NO. 14 ABOVE. TEMPORARY SEEDING OR PERMANENT SEEDING/SODDING SHALL BE APPLIED WITHIN 14 DAYS AFTER THE AREA HAS BEEN DISTURBED.
14. EACH BIDDER SHALL VISIT THE SITE OF THE PROJECT BEFORE SUBMITTING THE PROPOSAL FOR THIS WORK SO THAT HE WILL BE FULLY INFORMED OF THE EXISTING FIELD CONDITIONS AND THE OBSTACLES WHICH MIGHT BE ENCOUNTERED. UPON AWARD OF THE CONTRACT THE CONTRACTOR WILL NOT BE GRANTED ANY ADDITIONAL COMPENSATION WITH REGARDS TO TIME AND MONEY FOR CONDITIONS THAT MAY HAVE BEEN EVALUATED DURING ANY INSPECTION OF THE SITE.
15. EROSION CONTROL (BMP'S)
EROSION CONTROL MEASURES FOR THE PROJECT WILL BE PERFORMED BY THE GENERAL CONTRACTOR. THE CONTRACTOR SHALL COORDINATE ALL ACTIVITIES WITH THE GENERAL CONTRACTOR AND ENSURE THAT EROSION PROTECTION MEASURES ARE IN PLACE PRIOR TO EXCAVATION FOR INSTALLATION OF THE WATERLINE. SEE PAVING/SWD PLANS FOR ADDITIONAL INFORMATION.
16. IT SHOULD BE NOTED THAT OTHER BURIED LINES AND CABLE MAY EXIST WHICH ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING TRENCHING OPERATIONS TO AVOID DAMAGING THESE LINES AND CABLES. ANY UTILITIES DAMAGED SHALL BE REPLACED OR REPAIRED IMMEDIATELY AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL PROTECT FROM DAMAGE AND SUPPORT EXISTING UTILITIES THROUGH CONSTRUCTION AS APPROVED BY THE UTILITY OWNER AND THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
17. WHERE THE IMPROVEMENTS CROSS EXISTING PUBLIC OR PRIVATE UTILITIES WHICH ARE NOT TO BE ADJUSTED BY OTHERS, THE CONTRACTOR SHALL PROVIDE THE MATERIAL AND MEANS TO PROTECT AND SUPPORT SAID UTILITIES DURING CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER.
18. CONTRACTOR SHALL PROVIDE MATERIALS FOR TEMPORARY BLOWOFF OF WATERLINES. CONNECTIONS TO THE EXISTING WATERLINE SHALL BE MADE WITH CLEAN, SWABBED PIPE AND FLUSHED UPON COMPLETION OF TIE–INS.
19. THE CONTRACTOR MUST SCHEDULE THE CONNECTIONS TO THE EXISTING MAINS WITH THE CITY SUCH THAT THERE IS MINIMUM DISRUPTION TO THE CITY. CONNECTIONS SHALL BE MADE DURING PERIODS AT LOW WATER USAGE.
20. PAVEMENT REMOVAL AND/OR REPLACEMENT WILL BE MEASURED AND PAID FOR ON THE LINEAL FOOT BASIS AS MEASURED ALONG THE CENTERLINE OF THE WATER LINE REGARDLESS OF WIDTH, PAVEMENT TYPE AND/OR PAVEMENT THICKNESS. MINIMUM LIMITS OF SUCH PAVEMENT REMOVAL AND REPLACEMENT SHALL BE 1.0 FOOT BEYOND THE LIMITS OF THE EXCAVATION MADE FOR THE WATER LINE OR THE STRUCTURE, EXCEPT WHEN SUCH SAW CUTS ARE WITHIN ONE 3.0 FEET OF AN EXISTING JOINT THE LIMITS OF REMOVAL SHALL BE EXTENDED TO THE EXISTING JOINT. REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE CITY OF WICHITA STANDARD SPECIFICATION.
21. DEFLECTIONS AT PIPE JOINTS OR COUPLINGS SHALL NOT NOT EXCEED THE PIPE MANUFACTURER'S RECOMMENDED MAXIMUM. WHERE REQUIRED DEFLECTIONS ARE GREATER THAN THE MAXIMUM ALLOWED, THE CONTRACTOR SHALL UTILIZE CI MJ LONG SLEEVES OR MULTIPLE JOINTS.
22. THE CONTRACTOR SHALL COORDINATE ANY CONNECTIONS THAT WILL CREATE LOSS OF WATER SERVICE TO KOCH INDUSTRIES. LOSS OF WATER SERVICE SHALL BE LIMITED TO A MAXIMUM PERIOD OF 4 HOURS AND SHALL BE ACCOMPLISHED AS APPROVED BY KOCH INDUSTRIES AND DURING NON–PEAK HOURS.
23. THE CONTRACTOR SHALL RESTRAIN ALL BENDS, VALVES, AND TEES THROUGH THE USE OF RESTRAINED JOINT PIPE AS SPECIFIED. ALL VALVES/FITTINGS FOR THIS PROJECT SHALL BE RESTRAINED JOINT.

RESTRAINED JOINT DUCTILE IRON PIPE SHALL BE GRIFFIN SNAP–LOK, AMERICAN FLEX RING, OR APPROVED EQUAL, IN ACCORDANCE WITH CITY OF WICHITA SPECIFICATIONS.

THE CONTRACTOR MAY USE SIGMA PV–LOK SERIES PWP OR APPROVED EQUAL FOR RESTRAINING PVC PIPE BELL ASSEMBLIES. CLAMPING RING SHALL BE OF HIGH STRENGTH DUCTILE IRON AND SHALL CONFORM TO ASTM A536, GRADE 65–45–12. SIDE CLAMPING BOLT AND HEX NUTS SHALL BE AT HIGH STRENGTH STEEL AND SHALL CONFORM TO ASTM A449 AND ZINC PLATED TO B633, TYPE III SC. 1. RESTRAINING RODS AND HEX NUTS SHALL BE AT HIGH STRENGTH, LOW ALLOY STEEL AND SHALL CONFORM TO AWWA/ANSI C111/A21.11 AND PRORATE A MINIMUM 45,000 PSI YIELD AND 60,000 PSI TENSILE STRENGTH.

THE CONTRACTOR MAY USE SIGMA PV–LOK SERIES PWM OR APPROVED EQUAL FOR RESTRAINT OF FITTINGS ON THE PROJECT. CLAMPING RING SHALL BE OF HIGH STRENGTH DUCTILE IRON AND SHALL CONFORM TO ASTM A536, GRADE 65–45–12. SIDE CLAMPING BOLT AND HEX NUTS SHALL BE AT HIGH STRENGTH STEEL AND SHALL CONFORM TO ASTM A449 AND ZINC PLATED TO B633, TYPE III SC. 1. RESTRAINING RODS AND HEX NUTS SHALL BE AT HIGH STRENGTH, LOW ALLOY STEEL AND SHALL CONFORM TO AWWA/ANSI C111/A21.11 AND PRORATE A MINIMUM 45,000 PSI YIELD AND 60,000 PSI TENSILE STRENGTH.

24. PIPE DEFLECTIONS SHOWN IN THE PLANS MAY EXCEED THE MAXIMUM PIPE DEFLECTIONS ALLOWABLE PER THE PIPE MANUFACTURERS RECOMMENDATIONS. THESE PIPE DEFLECTIONS MAY BE ACCOMPLISHED THROUGH MORE THAN ONE JOINT. PIPE DEFLECTIONS AT A JOINT SHALL NOT EXCEED THE MANUFACTURERS RECOMMENDATIONS.
25. ALL FITTINGS INSTALLED SHALL NOT BE BACKFILLED UNTIL THE FIELD ENGINEER ESTABLISHES TIES TO ESTABLISHED LANDMARKS.
26. THE CONTRACTOR SHALL PROVIDE THREADED RODS AND COLLARS TO ANCHOR VALVES AND SLEEVES TO PROPOSED RESTRAINED JOINT PIPING, AS SHOWN IN THE PLANS. THREADED RODS AND COLLARS SHALL BE HIGH STRENGTH, HEAT TREATED CORTEN STEEL AND SHALL CONFORM TO ASTM A242, TYPE 2, AS MANUFACTURED BY STAR NATIONAL PRODUCTS OR APPROVED EQUAL. THE NUMBER OF TIEBOLT RESTRAINERS AND FASTENING METHOD SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. TIE BOLTS SHALL BE DESIGNED FOR A TOTAL DESIGN PRESSURE OF 200 PSI.

SURVEY PROVIDED BY:
GARBER SURVEYING SERVICE, P.A.
2908 NORTH PLUM STREET
HUTCHINSON, KS. 67502
620–665–7032
www.garbersurveying.com
FEBRUARY 2013

MICHAEL D. KELLEY LICENSED 13944 5/3/13 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

RELOCATION OF 37TH STREET NORTH WATERLINE IMPROVEMENTS

KEY MAP AND GENERAL NOTES

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448–90587

PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	MDK, SAD	Job No.	35–12275–004–7208
Drawn by	CSL, JAN	Date	JANUARY 2013

Sht. B2 of 21

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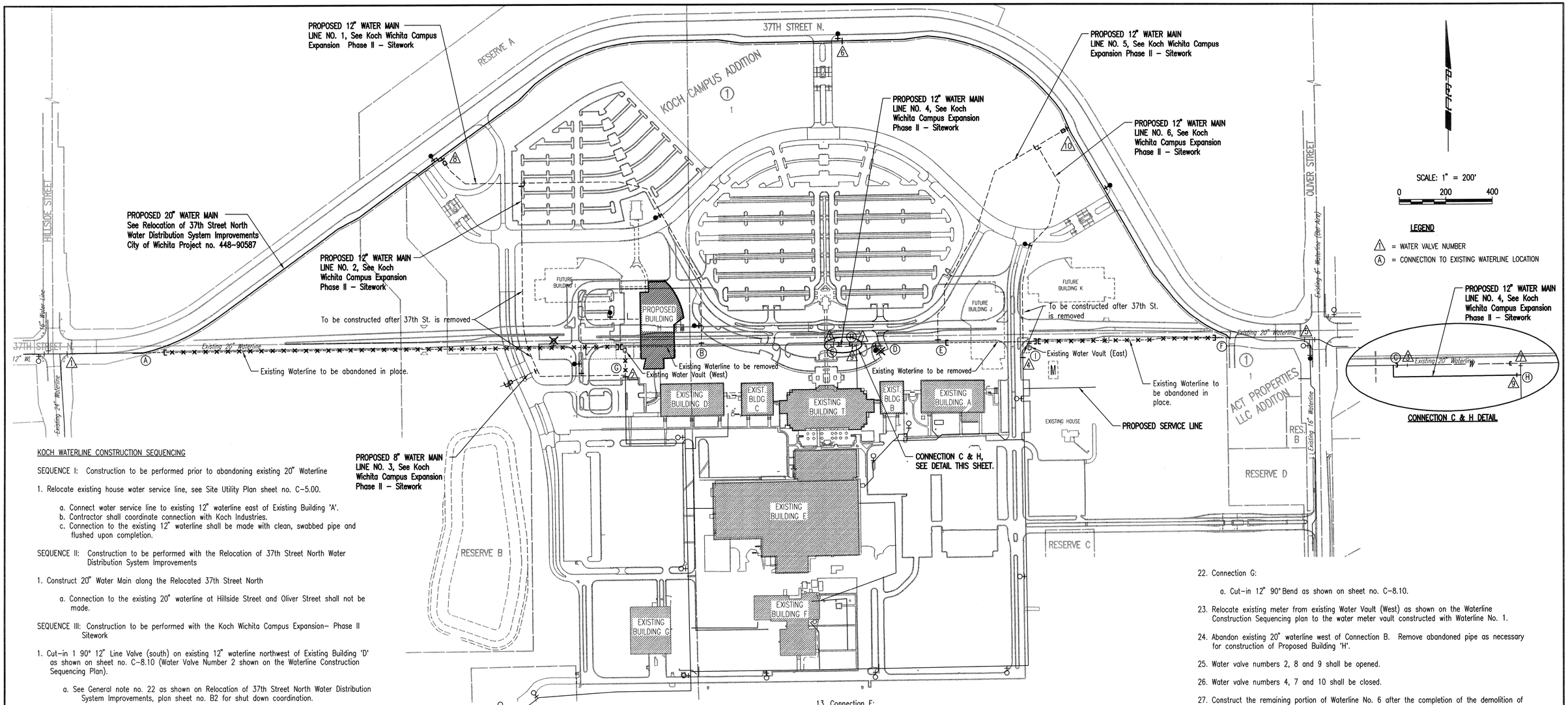
Plot Scale 1:200 05–02–2013 10:00:29 AM by CSL
Q:\2012\12275\002\12275–002–002–Key Map



KOCH WATERLINE CONSTRUCTION SEQUENCING

SEQUENCE I: Construction to be performed prior to abandoning existing 20" Waterline

1. Relocate existing house water service line, see Site Utility Plan sheet no. C-5.00.

   a. Connect water service line to existing 12" waterline east of Existing Building 'A'.
   b. Contractor shall coordinate connection with Koch Industries.
   c. Connection to the existing 12" waterline shall be made with clean, swabbed pipe and flushed upon completion.

SEQUENCE II: Construction to be performed with the Relocation of 37th Street North Water Distribution System Improvements

1. Construct 20" Water Main along the Relocated 37th Street North

   a. Connection to the existing 20" waterline at Hillside Street and Oliver Street shall not be made.

SEQUENCE III: Construction to be performed with the Koch Wichita Campus Expansion– Phase II Sitework

1. Cut-in 1 90° 12" Line Valve (south) on existing 12" waterline northwest of Existing Building 'D' as shown on sheet no. C-8.10 (Water Valve Number 2 shown on the Waterline Construction Sequencing Plan).

   a. See General note no. 22 as shown on Relocation of 37th Street North Water Distribution System Improvements, plan sheet no. B2 for shut down coordination.

2. Cut-in 1- 12" Line Valve on existing 12" waterline northeast of Existing Building 'A' as shown on sheet no. C-8.19 (Water Valve Number 4 shown on the Waterline Construction Sequencing Plan).

   a. See General note no. 22 as shown on Relocation of 37th Street North Water Distribution System Improvements, plan sheet no. B2 for shut down coordination.

3. Construct 12" Waterline No. 1 as shown on sheet nos. C-8.04 thru C-8.07.

   a. Install temporary pipe in new Water Meter Vault until water meter is installed.
   b. Connection to the existing 20" waterline north of Existing Building 'D' shall not be made.

4. Construct 12" Waterline No. 2 as shown on sheet nos. C-8.08 thru C-8.10.

   a. Portion of Waterline No. 2 to be constructed under the existing creek shall not be installed. See Waterline Construction Sequencing plan for approximate location.
   b. Waterline No. 2 shall be plugged north and south of the existing creek until the traffic is rerouted to the Relocated 37th Street North.
   c. Connection to the existing 12" waterline northeast of Existing Building 'D' shall not be made.

5. Water Valve Numbers 1 thru 3 and 6 as shown on the Waterline Construction Sequencing plan shall be closed.

6. Connection A:

   a. Cut-in 20" waterline as shown in the Relocation of 37th Street North Water Distribution System Improvements, plan sheet no. B20.
   b. Install 20" Bell bulkhead cap as shown on plan sheet no. B20.

7. Connection B:

   a. Cut-in 12" 90° Bend as shown on sheet no. C-8.07.
   b. Cut and cap existing 20" waterline west of the existing water vault (west) as shown on the Waterline Construction Sequencing plan.

8. Connection C and H:

   a. Construct 12" Waterline No. 4 as shown in the sheet no. C-8.14. Connection to the existing 10" waterline shall be made as shown on plan sheet no. C-8.14.

9. Water valves numbers 1 and 2 as shown on the Waterline Construction Sequencing plan shall be opened.

10. Construct 12" Waterline No. 5 as shown on sheet nos. C-8.15 thru C-8.17.

    a. Install temporary pipe in new Water Meter Vault until water meter is installed.
    b. Connection to the existing 20" waterline north of Existing Building 'D' shall not be made.

11. Construct 12" Waterline No. 6 as shown on sheet nos. C-8.18 thru C-8.19.

    a. Portion of Waterline No. 6 to be constructed under existing 37th Street North shall not be installed. See Waterline Construction Sequencing plan for approximate location.
    b. Waterline No. 6 shall be plugged north of existing 37th Street North until the traffic is rerouted to the Relocated 37th Street North.

12. Water valves numbers 4 thru 7 as shown on the Waterline Construction Sequencing plan shall be closed.

13. Connection E:

    a. Cut-in 12" 90° Bend as shown on sheet no. C-8.17.
    b. Cut and cap existing 20" waterline east of the existing water vault (east) as shown on the Waterline Construction Sequencing plan.

14. Connection D:

    a. Cut-in Fire Hydrant tee on existing 20" waterline as shown on sheet no. C-8.14.

15. Abandon existing 20" waterline between water valve numbers 3 and 7 as shown on the Waterline Construction Sequencing plan.

    a. Install caps east and west of Connection C and H. See detail this sheet.

16. Connection F:

    a. Cut-in 20" waterline as shown in the Relocation of 37th Street North Water Distribution System Improvements, plan sheet no. B20.
    b. Install 20" Bell bulkhead cap as shown on plan sheet no. B20.

17. Water valve numbers 5 thru 7 shall be opened.

18. Water valve numbers 2, 8 and 9 shall be closed.

19. Construct the remaining portion of Waterline No. 2 after the completion of the demolition of existing 37th Street North and final grading has been performed.

20. Construct 8" Waterline No. 3 as shown on plan sheet nos. C-8.12 thru C-8.13.

21. Construct 6" Waterline No. 2A as shown on plan sheet no. C-8.11.

22. Connection G:

    a. Cut-in 12" 90° Bend as shown on sheet no. C-8.10.

23. Relocate existing meter from existing Water Vault (West) as shown on the Waterline Construction Sequencing plan to the water meter vault constructed with Waterline No. 1.

24. Abandon existing 20" waterline west of Connection B. Remove abandoned pipe as necessary for construction of Proposed Building 'H'.

25. Water valve numbers 2, 8 and 9 shall be opened.

26. Water valve numbers 4, 7 and 10 shall be closed.

27. Construct the remaining portion of Waterline No. 6 after the completion of the demolition of existing 37th Street North and final grading has been performed.

28. Connection I:

    a. Connect Waterline No. 6 as shown on sheet no. C-8.19.

29. Abandon existing 20" waterline east of Connection E. Remove abandon pipe as necessary for the construction of Future Building 'J'.

30. Relocate existing meter from existing Water Vault (East) as shown on the Waterline Construction Sequencing plan to the water meter vault constructed with Waterline No. 5.

31. Water valve numbers 4, 7 and 10 shall be opened.

MICHAEL D. KELSEY LICENSED 13944 5/3/13 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS

WATERLINE CONSTRUCTION SEQUENCING

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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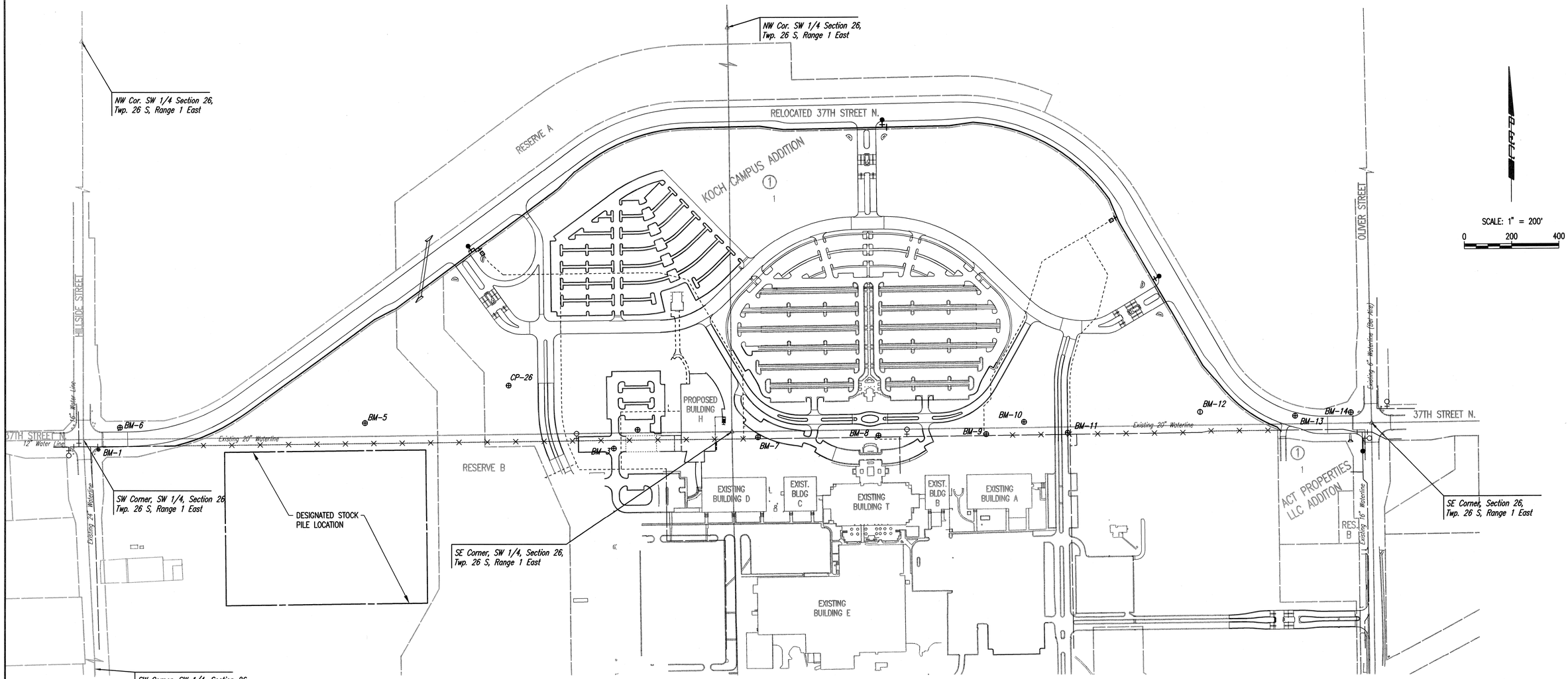
316-262-2691 www.pec1.com

Designed by	MDK, SAD	Job No.	35-12275-004-7208
Drawn by	CSL, JAN	Date	JANUARY 2013

Sht. B3 of 21



CONTROL POINTS:

CP 26:
N:1710079.70 E:1661209.42
1. 5/8" Rebar with green GSS Cap.
2. 31.75' SE to Mag Nail in NW face 6" Tree.
3. 30.80' SSE to Mag Nail in N. face 10" Tree.
4. 74.70' WSW to Mag Nail in East face of 10" Tree.

CP 27:
N:1711177.01 E:1661281.68
1. 5/8" Rebar with green GSS Cap.
2. 5.0' N. to 8 foot tall brace post.
3. 9.35' ENE to spike in fence West face of brace post for fence in East-West tree row North of 37th St.
4. 1250' S. to North back of curb of 37th St.

BENCHMARKS:

BM 1: (City of Wichita) Brass Disk in NW Corner traffic light conc. Base in SE quadrant of Hillside & 37th St.
Elev: 1353.25

BM 2: "+" cut back of curb South side of median East of West Koch building entrance, 3.2' east of bullnose end, 71.3' West of Centerline West entrance median.
Elev: 1365.27

BM 3: 5/8" Rebar with green GSS Cap. 11.6' SE to EOR in West curb & gutter for South bound traffic, West Koch building entrance. 12.3' West to NE Cor. of concrete sign base. 30.9' NW to top centerline fire hydrant. 28.8' E. to centerline West entrance median.
Elev: 1364.97

BM 4: 5/8" Rebar, 33.4' N. to South back of curb of 37th St., 53.4 NE to West edge of conc. Pillar for West end of RCB handrail, 348' NE to cable pedestal.
Elev: 1363.28

BM 5: 5/8" Rebar with red GSS Cap, 18.1' S. to North Back of curb of 37th St., 197.7' WSW to "+" cut in bullnose at West end of West median in 37th St. 391.4' E. to West end of North handrail to RCB.
Elev: 1364.50

BENCHMARKS:

BM 6: 5/8" Rebar with purple GSS Cap, 18.3' S. to North Back of curb of 37th St., 109.8' W. to SE bolt for traffic light pole in NE quadrant of Hillside and 37th St., 130.0 SW to Brass Disk (BM 1)
Elev: 1354.17

BM 7: Square Cut on the South Back of curb of 37th St., 288±' West of the centerline of the West entrance to the front door of the main building, West side of expansion joint.
Elev: 1365.78

BM 8: Square Cut on the South Back of curb of 37th St., 152' West of the centerline of the East entrance to the front door of the main Building, 4.5±' SW to centerline of Koch emblem.
Elev: 1371.60

BM 9: Square Cut on the South Back of curb of 37th St., 314±' West from the centerline of median in the East entrance to main Building. East side of an expansion joint.
Elev: 1376.87

BENCHMARKS:

BM 10: Square Cut on South side of median Back of curb 79.5' West of the bullnose which is West of the East entrance to the main building.
Elev: 1380.73

BM 11: ½" Rebar with Red Cap in island for East entrance for Main Building, 4.0' West of centerline of San. Sewer manhole in island, 8.3' South of South Back of curb of 37th St. 254.0' South to Fire Hydrant.
Elev: 1382.28

BM 12: 5/8" Rebar with Red Cap, 9.4' N. of North Back of curb of 37th St., 161.4' East of 2 telephone pedestals on the North side of 37th St., East of the main Building East entrance, 189.6' East of centerline concrete entrance.
Elev: 1383.23

BM 13: Square Cut on back of curb on the North side of 37th St., 50.0' East of the centerline of the North entrance to Advance Pain Medicine Associates, 17.5' N. to edge of grass, 120.3' W. to base of 40 mph sign.
Elev: 1374.35

BM 14: Square Cut on the East end of the North headwall for RCB, NW quadrant of Oliver St. & 37th St., 15.4' S. to North Back of curb of 37th St., 29.2' E. to NW bolt of signal pole in NW quadrant of Oliver St. & 37th St., 35.18' SW to NE Corner of East curb inlet.
Elev: 1374.09

SECTION CORNERS:

SW Cor. Sec. 26, T26S, R1E
N: 1,709,854.0133, E: 1,659,412.1043
1. Found PK Nail in centerline pavement joint
2. "+" cut on concrete traffic signal base 70.48' NW
3. "+" cut on concrete traffic signal base 70.60' NE
4. City of Wichita benchmark disk 76.13' SE

SE Cor. Sec. 26, T26S, R1E
N: 1,709,916.0066, E: 1,664,853.8669
1. Found No. 4 Bar on Concrete Surface in Center Seam of Roadway
2. Hilti nail and square washer in the West face of power pole 96.07' SSE
3. PK nail in the North face of high voltage pole 71.50' SW
4. Chiseled out cross 3' West to the East end of the hubguard of the RCBC 97.94' WNW
5. Top center of fire hydrant

SE Corner, SW 1/4, SEC.26, T26S, R1E
N: 1,709,884.8651, E: 1,662,151.7272
1. Fd. 1" IP in thimble
2. 3 Nails in Power Pole 48.68' SW
3. Chiseled + on concrete headwall of roof drain of Koch building 72.91' SE
4. Chiseled + on curb of RCB 151.00' NW & SW
5. Nail & washer in Power Pole 49.15' SW

MICHAEL D. KEITH LICENSED KANSAS 13944 5/3/13 PROFESSIONAL ENGINEER

No.	Revision	By	Date

RELOCATION OF 37TH STREET NORTH WATERLINE IMPROVEMENTS

HORIZONTAL AND VERTICAL CONTROL

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	MDK, SAD	Job No.	35-12275-004-7208
Drawn by	CSL, JAN	Date	JANUARY 2013

Sht. B4 of 21

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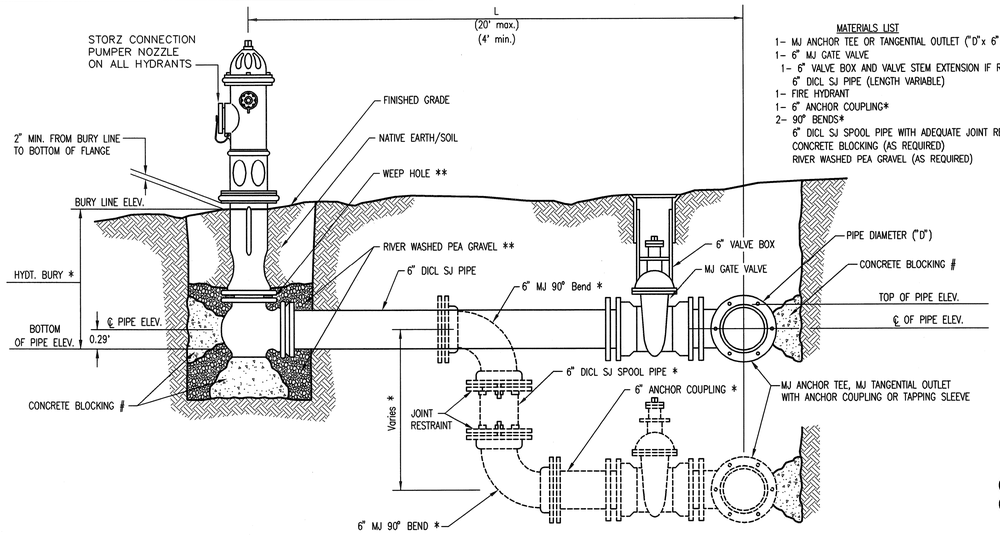


MATERIALS LIST
1- MJ ANCHOR TEE OR TANGENTIAL OUTLET ("D"x 6")
1- 6" MJ GATE VALVE
1- 6" VALVE BOX AND VALVE STEM EXTENSION IF REQUIRED *
6" DICL SJ PIPE (LENGTH VARIABLE)
1- FIRE HYDRANT
1- 6" ANCHOR COUPLING*
2- 90° BENDS*
6" DICL SJ SPOOL PIPE WITH ADEQUATE JOINT RESTRAINT *
CONCRETE BLOCKING (AS REQUIRED)
RIVER WASHED PEA GRAVEL (AS REQUIRED)

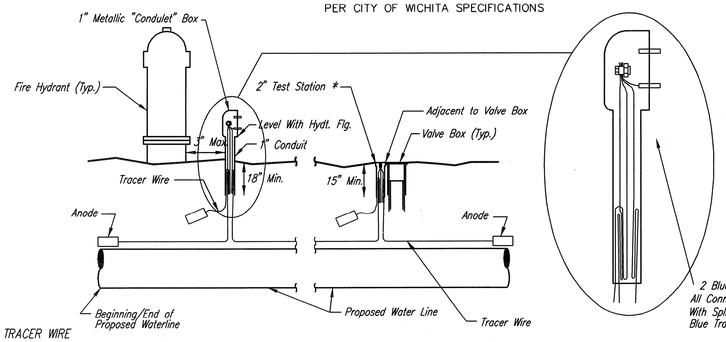
* IF THE REQUIRED HYDRANT BURY IS IN EXCESS OF 5', BUT LESS THAN 7', CONTRACTOR SHALL USE STANDARD 5' HYDRANT BURY AND HYDRANT BARREL EXTENSIONS AS NECESSARY. IF THE REQUIRED HYDRANT BURY IS GREATER THAN 7', CONTRACTOR SHALL USE 5' HYDRANT BURY, 2-MJ 90° BENDS, 6" ANCHOR COUPLING AND 6" DICL SPOOL PIPE AS NECESSARY FOR VERTICAL ADJUSTMENT. THE CONTRACTOR SHALL PROVIDE ADEQUATE THRUST BLOCKING AT HYDRANT AND MEGALUGS, ROD AND LUG OR SIMILAR RESTRAINT BETWEEN 90° BENDS TO SECURE ALL FITTINGS DURING TESTING AND OPERATION. THE CONTRACTOR SHALL PROVIDE A VALVE STEM EXTENSION PER DETAIL THIS SHEET.

** CAUTION!!! WEEP HOLES TO BE KEPT CLEAR DURING CONSTRUCTION AND BACKFILL. CONCRETE FOR THRUST BLOCKING SHALL NOT OBSTRUCT WEEP HOLES. PLACE 1 CUBIC FOOT OF RIVER WASHED PEA GRAVEL AROUND EACH WEEP HOLE.

CONCRETE THRUST BLOCKING SHALL BE KEPT CLEAR OF BOLTS, NUTS, AND MJ ACCESSORIES.

FIRE HYDRANT ASSEMBLY

PER CITY OF WICHITA SPECIFICATIONS



* FLUSH STYLE TEST STATIONS SHALL ONLY BE USED IN PAVEMENT.

TRACER WIRE

Conductive type pipe locator/tracer wire shall be installed to locate all waterline pipe regardless of pipe material. The wire shall extend the entire length of the proposed pipe. The wire shall be taped to the waterline and pulled with the pipe. Split-bolt connectors shall be used at splice locations. Electrical tape shall cover all splices so no bare wire is exposed. Test stations shall be installed adjacent to all fire hydrants along the waterline and at blowoffs or valves near the ends of the waterlines. Any exceptions to the location of test stations shall be approved by the engineer. At each test station, the tracer wire shall be connected to a 3 lb. Zinc or magnesium anode. Anodes shall also be attached to the tracer wire at both the beginning and the end of the proposed waterline. A typical layout of the tracer wire and test station is provided in the above figure.

WIRE

The tracer wire shall be Blue No. 12 THHN annealed soft copper wire with thermal plastic insulation or Blue No. 12 AWG CCS with 30 mil HDPE insulation. The insulation shall be heat, oil, and gasoline resistant as manufactured by Temple Electric or approved equal. To allow for grade adjustment, a minimum of 12" of excess wire shall be coiled at the bottom of the test station for all wires. The insulation sheathing shall be removed such that 1" bare copper wire at all points of connection. Contractor shall attach wire being installed with proposed water main to any tracer wire installed with adjacent waterline projects.

TEST STATIONS

The test station for fire hydrant applications shall be a 1 inch galvanized "condulet" style test station as manufactured by AGRA Industries with a removable solid cover having two leads extending from the face or approved equal. The test station for valve applications shall be 2 inch flush style test station T2PS3B as manufactured by HANDLEY Industries or approved equal. The "condulet" style test station shall be attached to a 1 inch rigid galvanized conduit with a minimum length of 36" and plastic end bushing. The flush style shall have the word "WATER" stamped or molded into the lid. All test stations shall be manufactured using molded blue tops or sufficiently coated with blue enamel paint. The tracer wire and the anode wire shall be installed to allow 10 inches of wire within the test station. In concrete environments such as sidewalks or in the downtown area the contractor shall use the flush style test station. The location of all test stations shall be approved by the engineer, recorded, and shown in the as-built drawings.

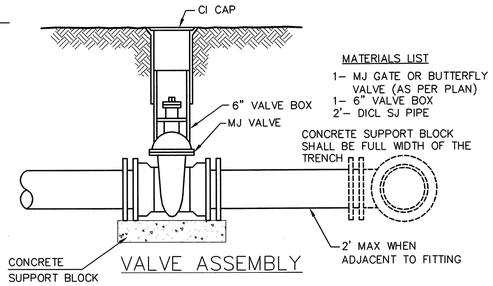
ANODES

The anodes shall be 3 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the waterline at each test station. The anodes shall be connected to Black No. 12 THHN annealed soft copper wire which shall be extended to the test station.

TRACER WIRE DETAIL

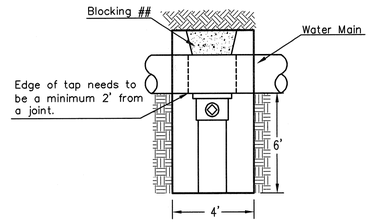
~~COST IS SUBSIDIARY TO PIPE INSTALLATION~~

FIRE HYDRANTS REQUIRED				
STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*	VALVE STEM EXT. REQUIRED (ft)*
25+25.14	1371.7	1366.39	7.0'	2.0'
43+93.46	1373.6	1369.29	5.5'	none
58+42.88	1380.8	1376.49	5.5'	none



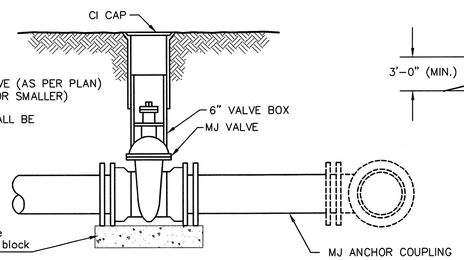
MATERIALS LIST
1- MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
1- 6" VALVE BOX
2'- DICL SJ PIPE

VALVE ASSEMBLY



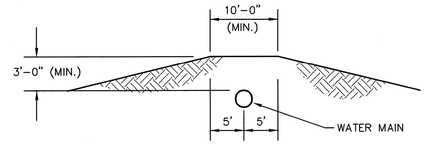
CITY TAP

When the City of Wichita makes tap, blocking is to be done by Contractor



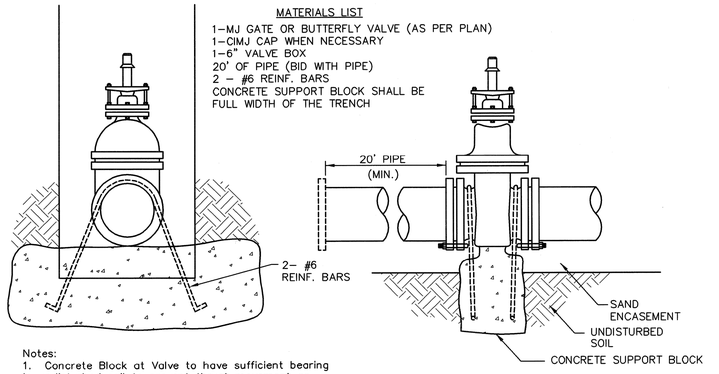
MATERIALS LIST
1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
1-MJ ANCHOR COUPLING (12" OR SMALLER)
1-6" VALVE BOX
CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

ANCHORED VALVE ASSEMBLY



PROTECTIVE FILL DETAIL

MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE COVER OVER THE PROP. WATER LINE IS LESS THAN 3'.
~~(COST SUBSIDIARY TO PIPE INSTALLATION)~~

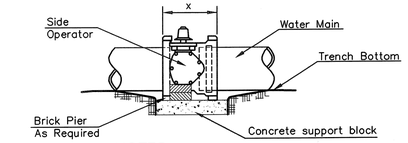


MATERIALS LIST
1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
1-CIMJ CAP WHEN NECESSARY
1-6" VALVE BOX
20' OF PIPE (BID WITH PIPE)
2 - #6 REINF. BARS
CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

Notes:
1. Concrete Block at Valve to have sufficient bearing in undisturbed soil to prevent thrust movement as shown in table at right. Field Engineer to determine thrust loading of undisturbed soil and final size of thrust block.
2. The thrust block shall be constructed such that bolts, nuts, and other MJ accessories are kept clear of concrete.
3. All valves at dead ends and at other locations as called out on the plans shall be blocked as shown here.

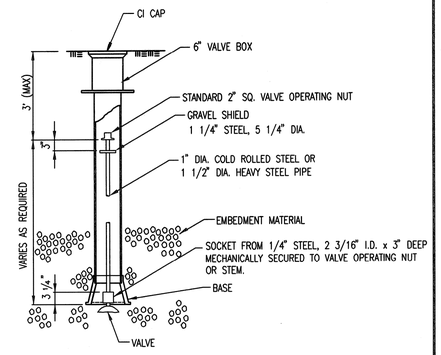
THRUST AT VALVES	
VALVE	THRUST AT 150 #/in²
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.

ANCHORED VALVE ASSEMBLY, SPECIAL



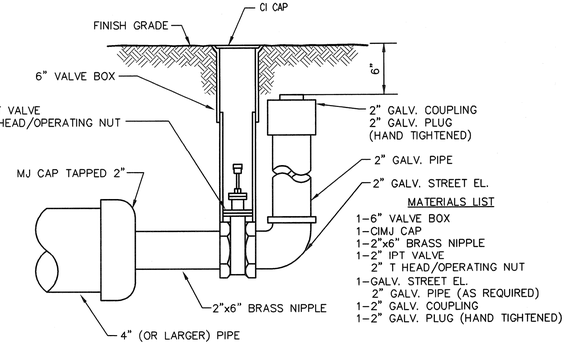
NOTES
1. This detail covers Butterfly Valve installation, inclusive, regardless of type of pipe or joint used. 24" and larger lines to be detailed on plans.
2. 6" Valve Box and Cover required per City of Wichita Std. Specifications.
3. Conc. Support Block to be full width of trench.

CONCRETE SUPPORT BLOCKING FOR BUTTERFLY VALVE INSTALLATION



VALVE STEM EXTENSION DETAIL

NOTE: ONE VALVE STEM EXTENSION FOR EACH VALVE BURIED GREATER THAN 5'.



MATERIALS LIST
1-6" VALVE BOX
1-CIMJ CAP
1-2"x6" BRASS NIPPLE
1-2" IPT VALVE
2" T HEAD/OPERATING NUT
1-GALV. STREET EL.
2" GALV. PIPE (AS REQUIRED)
1-2" GALV. COUPLING
1-2" GALV. PLUG (HAND TIGHTENED)

2" BLOWOFF ASSEMBLY

MICHAEL D. KEISER
LICENSED
13944
5/31/13
KANSAS
PROFESSIONAL ENGINEER

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

STANDARD WATER ASSEMBLY DETAIL

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
448-90587	707047	12/2011

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

SHEET
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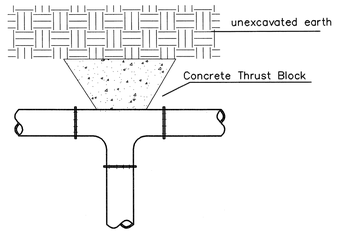
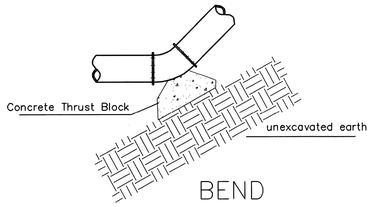
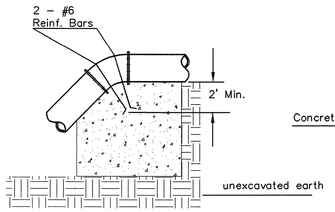


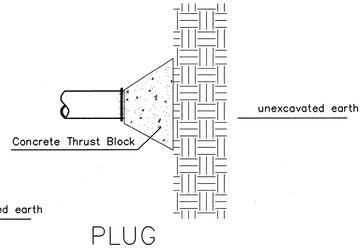
TEE



BEND



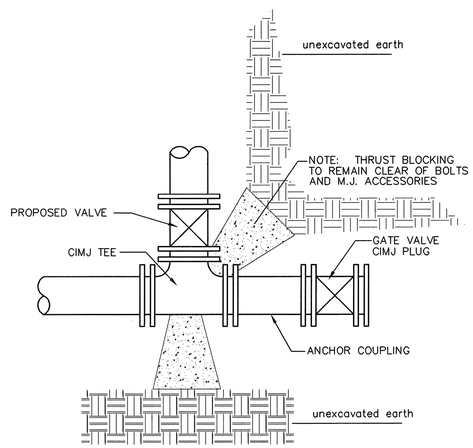
VERTICAL BEND



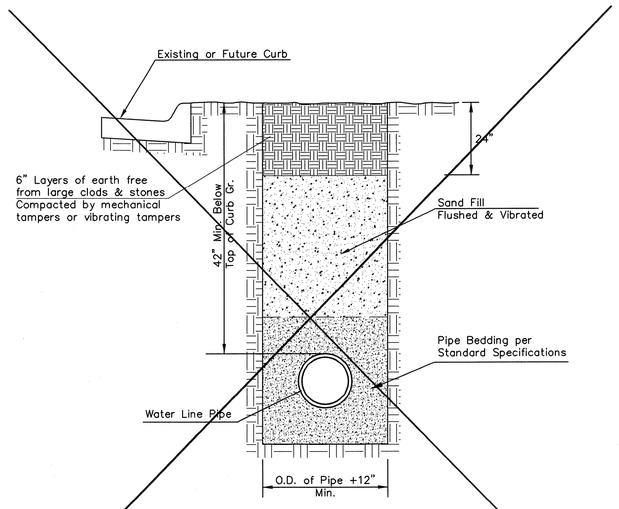
PLUG

PIPE SIZE	THRUST AT FITTINGS IN TONS-AT 150#/IN^{2}P					
	PLUG	90°	45°	22 1/2°	11 1/4°	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.10	31.15
24"	44.55	63.0	34.1	17.4	8.75	44.55

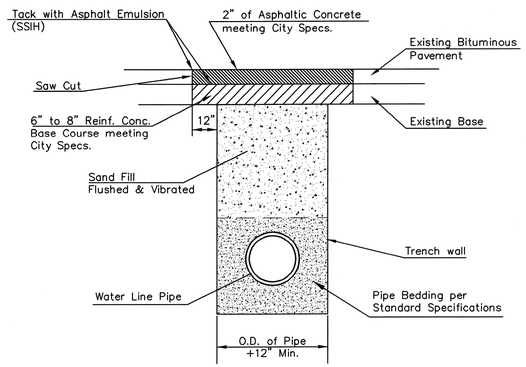
TYPICAL THRUST BLOCKS



KEY BLOCK DETAIL

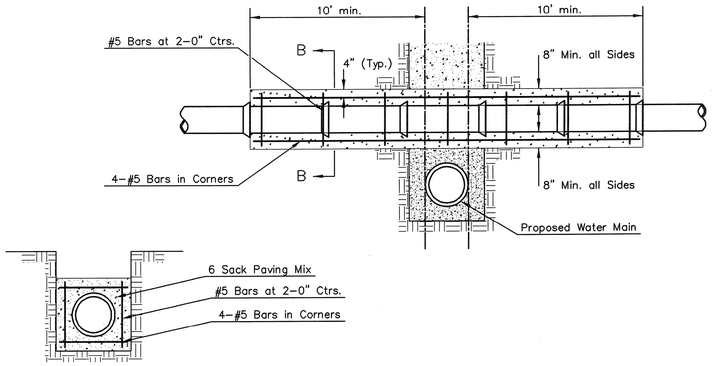


TRENCH COMPACTION IN ROAD RIGHT-OF-WAY



PAVEMENT REPLACEMENT & TRENCH COMPACTION UNDER EXISTING AND PROPOSED CITY ROADS

* UNLESS OTHERWISE NOTED ON PLANS



Note: Encasement to begin and end at a Bell on Sanitary Sewer Pipe.

SECTION B-B

REINFORCED CONCRETE ENCASEMENT OF SANITARY SEWER

MICHAEL D. KERBY LICENSED 13944 5/2/13 KANSAS PROFESSIONAL ENGINEER

CITY OF WICHITA
PUBLIC WORKS & UTILITIES
ENGINEERING DIVISION

MISCELLANEOUS WATER DETAILS

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER	OCA NUMBER	DATE
448-90587	707047	01/2012

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501

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B6 of 21

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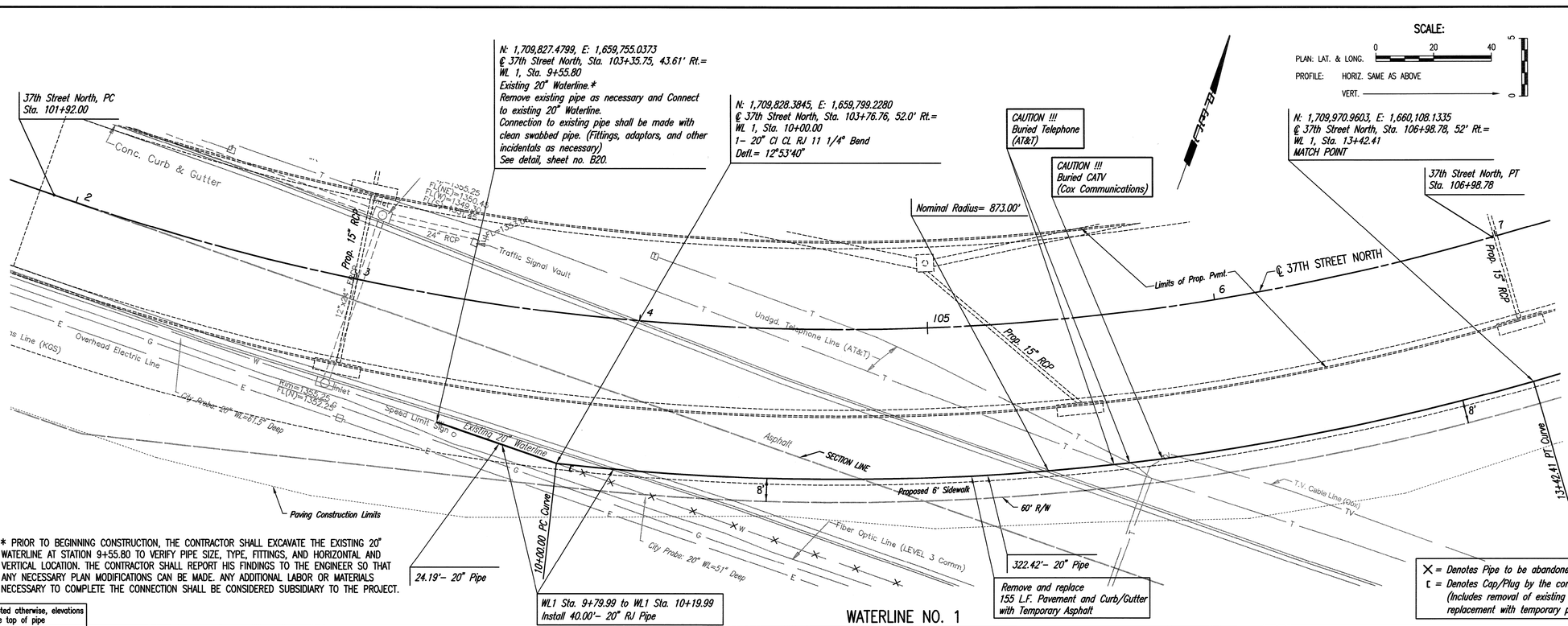


WL CURVE DATA

Δ=50° 40' 26" Rt D= 7° 27' 2.5" R= 769.00' L= 680.12' T= 364.11' E= 81.85'

CURVE DATA BASED ON ℄ RADIUS Δ/2= 25° 20' 13"

WL STATION	WL ARC LENGTH	CHORD LENGTH ON 8' OFFSET Right	DEFLECTION ANGLE	TOTAL DEFLECTION
PC 47+78.09			0° 00' 00.0"	0° 00' 00.0"
48+00.00	21.91'	21.68'	0° 48' 58.4"	00° 48' 58.4"
48+25.00	25.00'	24.74'	0° 55' 52.8"	01° 44' 51.2"
48+50.00	25.00'	24.74'	0° 55' 52.8"	02° 40' 44.0"
48+75.00	25.00'	24.74'	0° 55' 52.8"	03° 36' 36.8"
49+00.00	25.00'	24.74'	0° 55' 52.8"	04° 32' 29.7"
49+25.00	25.00'	24.74'	0° 55' 52.8"	05° 28' 22.5"
49+50.00	25.00'	24.74'	0° 55' 52.8"	06° 24' 15.3"
49+75.00	25.00'	24.74'	0° 55' 52.8"	07° 20' 08.1"
50+00.00	25.00'	24.74'	0° 55' 52.8"	08° 16' 00.9"
50+25.00	25.00'	24.74'	0° 55' 52.8"	09° 11' 53.7"
50+50.00	25.00'	24.74'	0° 55' 52.8"	10° 07' 46.5"
50+75.00	25.00'	24.74'	0° 55' 52.8"	11° 03' 39.3"
51+00.00	25.00'	24.74'	0° 55' 52.8"	11° 59' 32.1"
51+25.00	25.00'	24.74'	0° 55' 52.8"	12° 55' 25.0"
51+50.00	25.00'	24.74'	0° 55' 52.8"	13° 51' 17.8"
51+75.00	25.00'	24.74'	0° 55' 52.8"	14° 47' 10.6"
52+00.00	25.00'	24.74'	0° 55' 52.8"	15° 43' 03.4"
52+25.00	25.00'	24.74'	0° 55' 52.8"	16° 38' 56.2"
52+50.00	25.00'	24.74'	0° 55' 52.8"	17° 34' 49.0"
52+75.00	25.00'	24.74'	0° 55' 52.8"	18° 30' 41.8"
53+00.00	25.00'	24.74'	0° 55' 52.8"	19° 26' 34.6"
53+25.00	25.00'	24.74'	0° 55' 52.8"	20° 22' 27.5"
53+50.00	25.00'	24.74'	0° 55' 52.8"	21° 18' 20.3"
53+75.00	25.00'	24.74'	0° 55' 52.8"	22° 14' 13.1"
54+00.00	25.00'	24.74'	0° 55' 52.8"	23° 10' 05.9"
54+25.00	25.00'	24.74'	0° 55' 52.8"	24° 05' 58.7"
54+50.00	25.00'	24.74'	0° 55' 52.8"	25° 01' 51.5"
PT 54+58.21	8.21'	8.12'	0° 18' 21.1"	25° 20' 13.1"
TOTAL	L= 680.12'	Defl./ft.= 2.235206 min.		

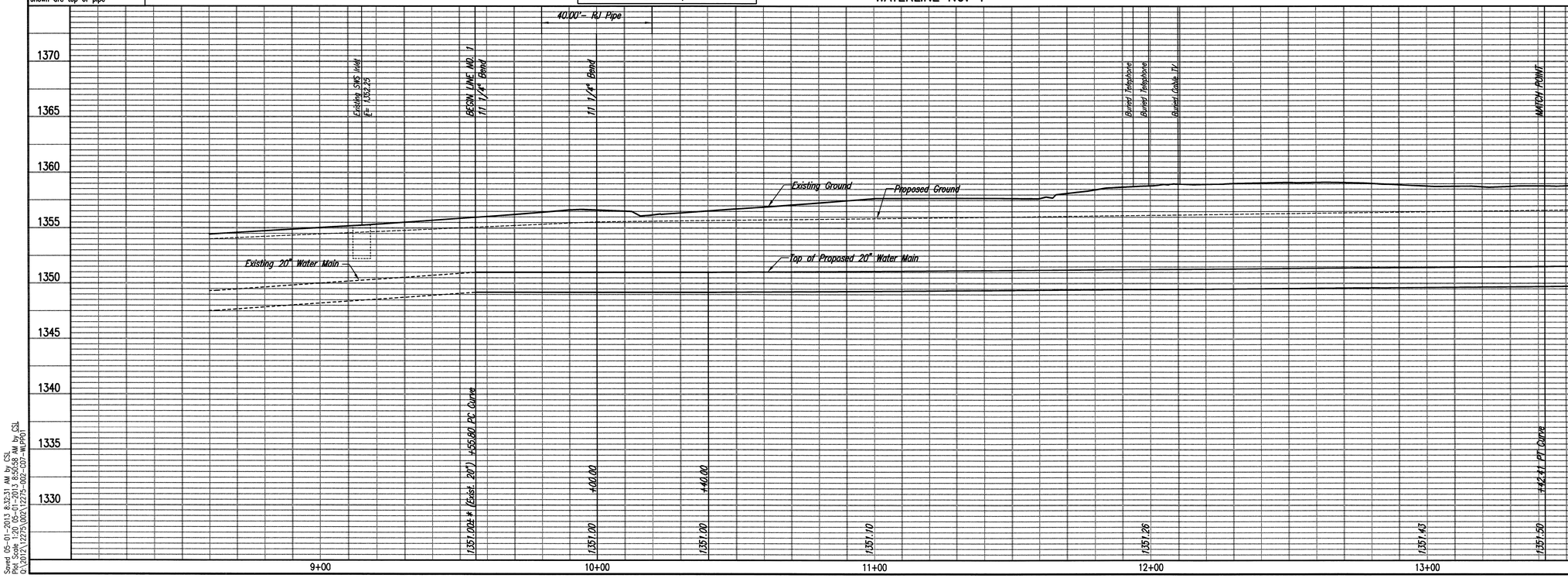
* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 20" WATERLINE AT STATION 9+55.80 TO VERIFY PIPE SIZE, TYPE, FITTINGS, AND HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL REPORT HIS FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

X = Denotes Pipe to be abandoned in place.
℄ = Denotes Cap/Plug by the contractor (Includes removal of existing pavement and replacement with temporary pavement.)

Unless noted otherwise, elevations shown are top of pipe

PLAN — BY | DATE | CHECKED | CHECKED

PROFILE — BY | DATE | CHECKED | CHECKED



PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 35-12275-004-7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

RELOCATION OF 37TH STREET NORTH WATERLINE IMPROVEMENTS

WATERLINE NO. 1

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

Sheet B7 of 21

MICHAEL D. KELLEY LICENSED PROFESSIONAL ENGINEER 13944 5/3/13 KANSAS

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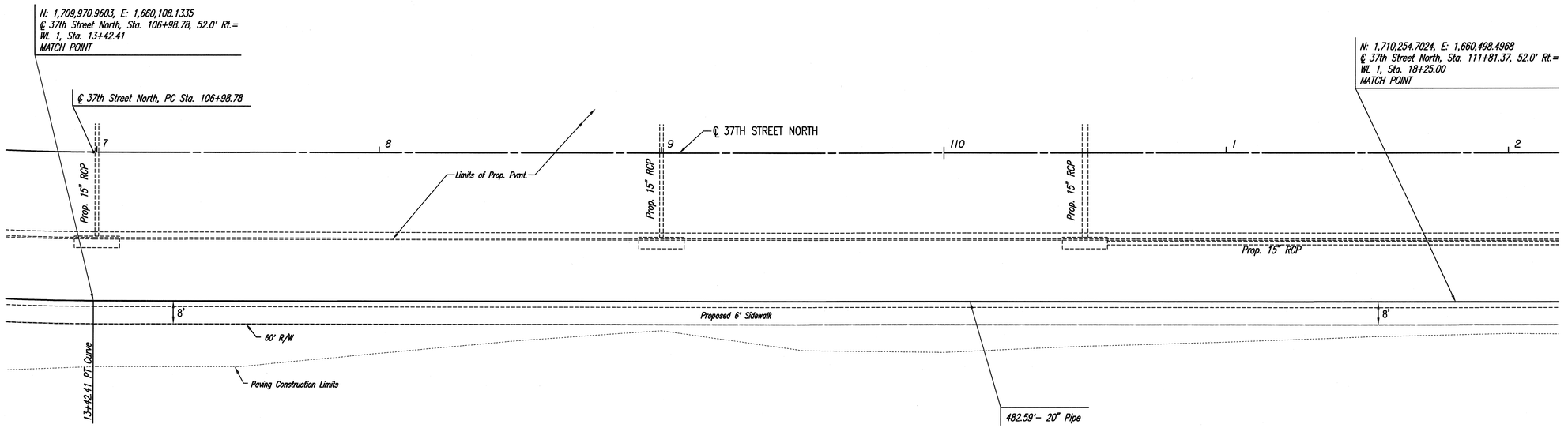
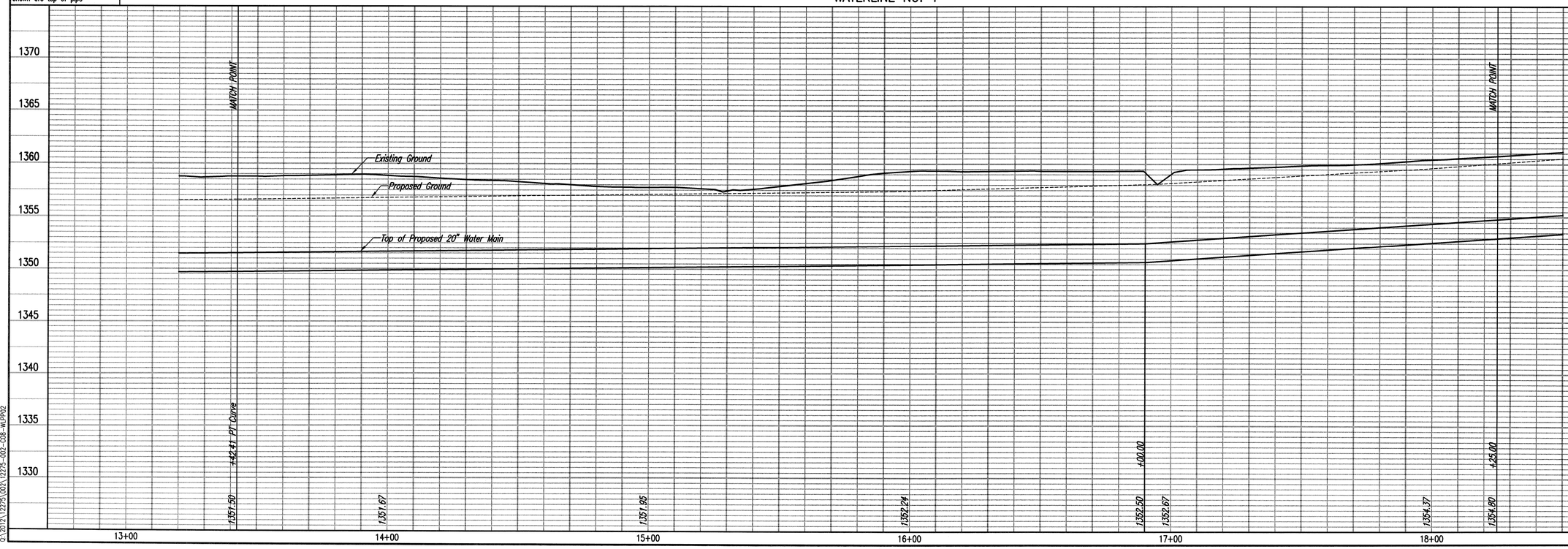


PLAN | BY | DATE | CHECKED | CHECKED

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1



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MICHAEL D. KEISER LICENSED 13944 5/3/13 KANSAS PROFESSIONAL ENGINEER

RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS

WATERLINE NO. 1

GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

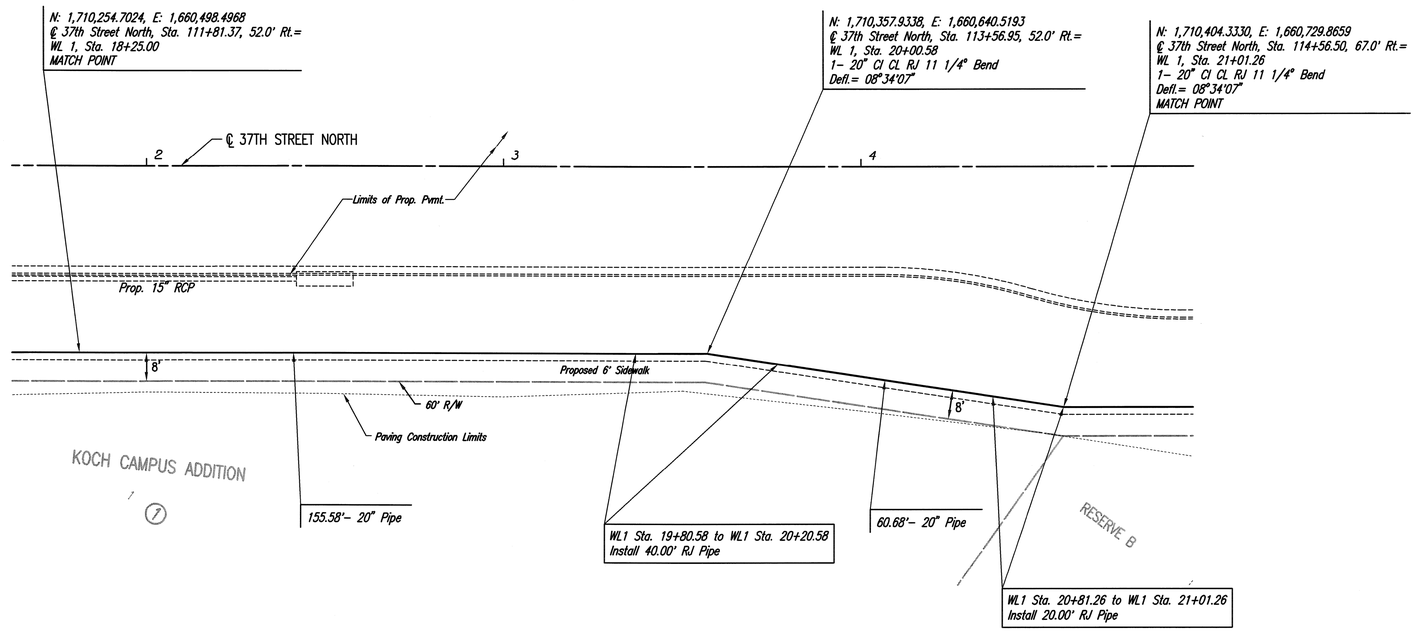
Job No. 35-12275-004-7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

SCALE:

PLAN: LAT. & LONG. 0 20 40

PROFILE: HORIZ. SAME AS ABOVE

VERT. 0 5



PLAN

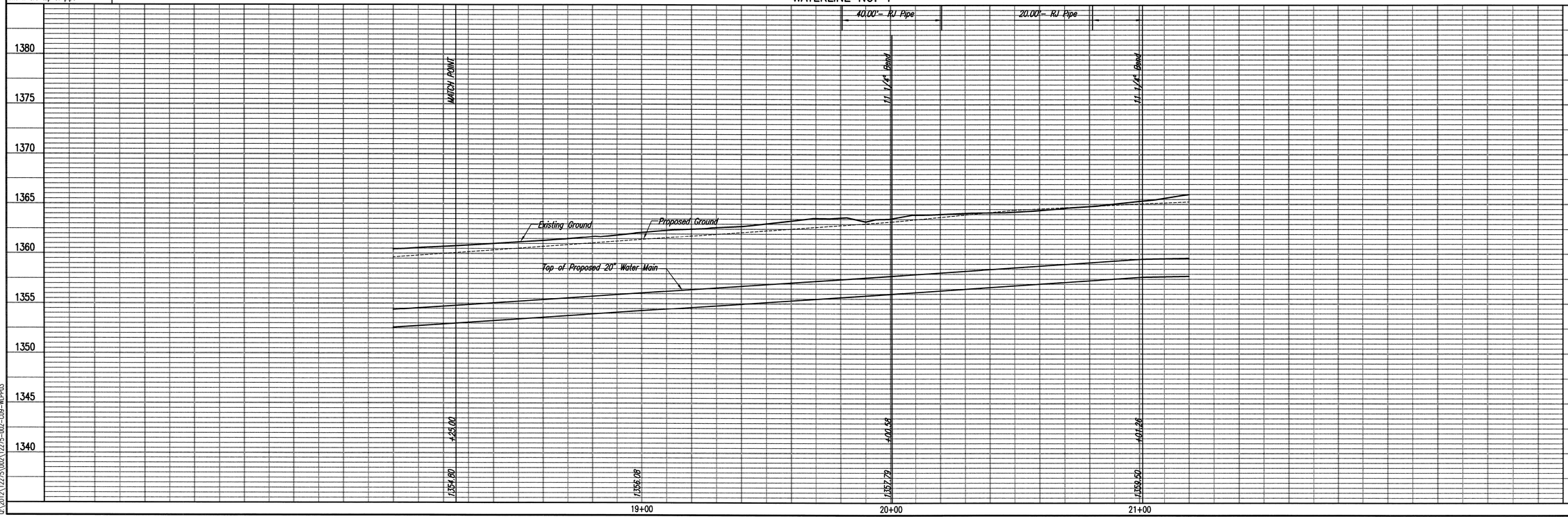
	BY	DATE
CHECKED		
CHECKED		

PROFILE

	BY	DATE
CHECKED		
CHECKED		

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1



RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS

WATERLINE NO. 1

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

PEC

Job No. 35–12275–004–7208

Date JANUARY 2013

Designed By MDK, SAD

Drawn By CSL, JAN

Sheet B9 of 21

Saved: 05–01–2013 8:51:27 AM by CSL
Plotted: 5/2/2013 8:51:48 AM by CSL
O:\2012\12275\002\12275–002–C09–WPP03

N: 1,710,404.3330, E: 1,660,729.8659
℄ 37th Street North, Sta. 114+56.50, 67.0' Rt.=
WL 1, Sta. 21+01.26
11 1/4° Bend
MATCH POINT

CAUTION !!!
10' x 5' RCB
Storm Water Sewer

℄ 37TH STREET NORTH

115 6 7 8 9

Prop. 10' x 5' RCB

Prop. 42" RCP

Prop. 42" RCP

Limits of Prop. Pvmt.

Prop. 15" RCP

Prop. Gas Line (NGS)

N: 1,710,653.5588, E: 1,661,072.7428
℄ 37th Street North, Sta. 118+80.38, 67.0' Rt.=
WL 1, Sta. 25+25.14
1- Fire Hydrant Assembly (w/RJ Tee)
L= 18'
Top Valve Box El.= 1372.3
FH Bury Line El.= 1372.3
1- 20" Line Valve (E)
(Butterfly Valve)
Top Valve Box El.= 1371.7

N: 1,710,659.4384, E: 1,661,080.8317
℄ 37th Street North, Sta. 118+90.38, 67.0' Rt.=
WL 1, Sta. 25+35.14
1- 20" x 12" CI CL RJ Tee
1- 12" Anchored Valve Assembly (SE)
(Butterfly Valve)
Top Valve Box El.= 1372.6
1- 12" CIMJ Plug (SE)
MATCH POINT

SCALE:
PLAN: LAT. & LONG. 0 20 40
PROFILE: HORIZ. SAME AS ABOVE
VERT.

8' Proposed 6' Sidewalk

Paving Construction Limits

75' R/W

KOCH CAMPUS ADDITION
(1)

RESERVE B

NORTHWEST ENTRANCE TO KOCH INDUSTRIES

Prop. Communications Duct Bank (reference Electrical Plans)

93.50'- 20" Pipe

250.38'- 20" Pipe

WL1 Sta. 20+01.26 to WL1 Sta. 21+21.26
Install 20.00' RJ Pipe

WL1 Sta. 22+14.76 to WL1 Sta. 22+54.76
Install 40.00' RJ Pipe

WL1 Sta. 25+05.14 to WL1 Sta. 25+35.14
Install 30.00' RJ Pipe

12" PRIVATE WATERLINE
See Koch Wichita Campus Expansion-Phase II Sitework

MICHAEL D. KEESEE
LICENSED
13944
5/3/13
KANSAS
PROFESSIONAL ENGINEER

PLAN | CHECKED | CHECKED | BY | DATE

PROFILE | CHECKED | CHECKED | BY | DATE

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1

20.00'- RJ Pipe | 40.00'- RJ Pipe | 30.00'- RJ Pipe

11 1/4° Bend

Prop. 10' x 5' RCB
℄= 1357.88

Fire Hydrant Assembly

20" x 12" Tee

Existing Ground

Proposed Ground

Top of Proposed 20" Water Main

	21+00			22+00			23+00		24+00		25+00		
	01.26	12.00	80.00	00.00	20.00	50.00	70.00	90.00	70.00	90.00	25.14	35.14	
1385													1385
1380													1380
1375													1375
1370													1370
1365													1365
1360													1360
1355													1355
1350													1350
1345													1345
	1359.50	1359.72	1358.15	1356.05	1355.00	1355.00	1356.05	1358.15	1358.83	1363.64	1364.14	1365.53	1366.06	1366.39	1366.22

RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS

WATERLINE NO. 1

GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
300 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 35-12275-004-7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

Sheet B10 of 21

Saved 05-02-2013 9:48:32 AM by CSL
Plot Scale 1:20 05-02-2013 9:48:48 AM by CSL
Q:\2012\12275\002\12275-002-C10-WLPP04

SCALE:
PLAN: LAT. & LONG. 0 20 40
PROFILE: HORIZ. SAME AS ABOVE
VERT. 0 5

N: 1,710,659.4384, E: 1,661,080.8317
℄ 37th Street North, Sta. 118+90.38, 67.0' Rt.=
WL 1, Sta. 25+35.14
20" x 12" CI CL RJ Tee & Anchored Valve Assembly
MATCH POINT

CAUTION !!!
Prop. Communications Lines (AT&T) (Level 3)

CAUTION !!!
Proposed Gas Line (KGS)

N: 1,710,836.7133, E: 1,661,324.7209
℄ 37th Street North, Sta. 121+91.87, 67.0' Rt.=
WL 1, Sta. 28+36.65
1- 2" Air Release Assembly
See detail, sheet no. B20

N: 1,710,903.9210, E: 1,661,417.1830
℄ 37th Street North, Sta. 123+06.20, 67.0' Rt.=
WL 1, Sta. 29+50.96
1- 20" CI CL RJ 11 1/4° Bend
Defl.= 08°31'51"

N: 1,710,974.8500, E: 1,661,489.2529
℄ 37th Street North, Sta. 124+06.20, 52.0' Rt.=
WL 1, Sta. 30+52.08
1- 20" CI CL RJ 11 1/4° Bend
Defl.= 08°31'50"
MATCH POINT

℄ 37TH STREET NORTH

Prop. 15" RCP

Prop. Gas Line (KGS)

Prop. 42" RCP

Limits of Prop. Pvmt.

Prop. 42" RCP

8'

Proposed 6' Sidewalk

75' R/W

Paving Construction Limits

Prop. Communications Duct Bank (Reference Electrical Plans)

PROPOSED TRUCK ENTRANCE

WL1 Sta. 25+35.14 to WL1 Sta. 25+55.14
Install 20.00' RJ Pipe

375.82'- 20" Pipe

61.12'- 20" Pipe

WL1 Sta. 29+30.96 to WL1 Sta. 29+70.96
Install 40.00' RJ Pipe

WL1 Sta. 30+32.08 to WL1 Sta. 30+52.08
Install 20.00' RJ Pipe

MICHAEL D. KEISER
LICENSED
13944
5/31/13
KANSAS
PROFESSIONAL ENGINEER

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1

20.00'- RJ Pipe
40.00'- RJ Pipe
20.00'- RJ Pipe

20" x 12" Tee
Prop. Comm. Line
Prop. Gas Line
Air Release Assembly
11 1/4° Bend
11 1/4° Bend

Existing Ground
Proposed Ground
Top of Proposed 20" Water Main

1390
1385
1380
1375
1370
1365
1360
1355
1350

+35.14 1366.22
1367.15
1368.58
+50.00 1369.30
+90.00 1369.40
1369.87
+36.65 1371.59
+70.00 1370.54
1370.43
+50.96 1370.25
1370.07
+52.08 1369.89

25+00 26+00 27+00 28+00 29+00 30+00

PLAN
PROFILE
DATE | BY | CHECKED | CHECKED

RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS
WATERLINE NO. 1
GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 35-122275-004-7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

Sheet B11 of 21

Saved 05-02-2013 9:42:27 AM by CSL
Print Scale 1:20 05-02-2013 9:42:44 AM by CSL
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WL CURVE DATA

Δ=34°56'52"Rt D= 7° 27' 2.5" R= 769.00' L= 469.05' T= 242.08' E= 37.2'

CURVE DATA BASED ON ℄ RADIUS Δ/2= 17° 28' 26"

WL STATION	WL ARC LENGTH	CHORD LENGTH ON 8' OFFSET Right	DEFLECTION ANGLE	TOTAL DEFLECTION
PC 31+09.85			0°00'00.0"	0°00'00.0"
31+25.00	15.15'	14.99'	0°33'51.8"	00°33'51.8"
31+50.00	25.00'	24.74'	0°55'52.8"	01°29'44.6"
31+75.00	25.00'	24.74'	0°55'52.8"	02°25'37.4"
32+00.00	25.00'	24.74'	0°55'52.8"	03°21'30.2"
32+25.00	25.00'	24.74'	0°55'52.8"	04°17'23.1"
32+50.00	25.00'	24.74'	0°55'52.8"	05°13'15.9"
32+75.00	25.00'	24.74'	0°55'52.8"	06°09'08.7"
33+00.00	25.00'	24.74'	0°55'52.8"	07°05'01.5"
33+25.00	25.00'	24.74'	0°55'52.8"	08°00'54.3"
33+50.00	25.00'	24.74'	0°55'52.8"	08°56'47.1"
33+75.00	25.00'	24.74'	0°55'52.8"	09°52'39.9"
34+00.00	25.00'	24.74'	0°55'52.8"	10°48'32.7"
34+25.00	25.00'	24.74'	0°55'52.8"	11°44'25.5"
34+50.00	25.00'	24.74'	0°55'52.8"	12°40'18.4"
34+75.00	25.00'	24.74'	0°55'52.8"	13°36'11.2"
35+00.00	25.00'	24.74'	0°55'52.8"	14°32'04.0"
35+25.00	25.00'	24.74'	0°55'52.8"	15°27'56.8"
35+50.00	25.00'	24.74'	0°55'52.8"	16°23'49.6"
35+75.00	25.00'	24.74'	0°55'52.8"	17°19'42.4"
PT 35+78.90	3.90'	3.86'	0°08'43.0"	17°28'26.1"
TOTAL	L= 469.05'	Defl./ft.= 2.235206 min.		

SCALE:

PLAN: LAT. & LONG. 0 20 40

PROFILE: HORIZ. SAME AS ABOVE

VERT. 0 5

PLAN

DATE | BY | CHECKED | CHECKED

℄ 37th Street North, PC Sta. 124+63.98

N: 1,710,974.8500, E: 1,661,489.2529
℄ 37th Street North, Sta. 124+06.20, 52.0' Rt.=
WL 1, Sta. 30+52.08
MATCH POINT

℄ RELOCATED 37TH STREET NORTH

Prop. 15" RCP

Nominal Radius= 769.00'

Limits of Prop. Pvmt.

N: 1,711,155.6508, E: 1,661,973.8444
℄ 37th Street North, Sta. 129+64.75, 52.0' Rt.=
WL 1, Sta. 35+78.91
MATCH POINT

℄ 37th Street North, PT Sta. 129+64.75

Prop. 36" RCP

Prop. 42" RCP

Proposed 6' Sidewalk

Fence

8'

60' R/W

Paving Construction Limits

526.83'– 20" Pipe

31+09.85 PC Curve

35+78.91 PT Curve

MICHAEL D. KEITH LICENSED KANSAS 13944 5/7/13 PROFESSIONAL ENGINEER

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1

PROFILE | DATE | BY | CHECKED | CHECKED

1390 1385 1380 1375 1370 1365 1360 1355 1350

MATCH POINT

Existing Ground

Proposed Ground

Top of Proposed 20" Water Main

1369.89 | +52.00 | 1369.72 | +09.85 PC Curve | 1369.68 | 1369.74 | 1369.00 | 1368.64 | 1368.28 | +78.91 PT Curve | 1368.00 | MATCH POINT

31+00 32+00 33+00 34+00 35+00

RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS

WATERLINE NO. 1

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 35-12275-004-7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

Sheet B12 of 21

Sheet 04-30-2013 4:37:17 PM by CSL
Plot Scale 1:20 05-01-2013 9:47:25 AM by CSL
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SCALE:
PLAN: LAT. & LONG. 0 20 40
PROFILE: HORIZ. SAME AS ABOVE
VERT. 0 5

PLAN | CHECKED | CHECKED | BY | DATE

N: 1,711,155.6508, E: 1,661,973.8444
℄ 37th Street North, Sta. 129+64.75, 52.0' Rt.=
WL 1, Sta. 35+78.91
MATCH POINT

℄ 37th Street North, PT Sta. 129+64.75

℄ 37TH STREET NORTH

SECTION LINE

130 1 2 3 4 135

Prop. 15" RCP

Prop. 15" RCP

Prop. 15" RCP

Limits of Prop. Pvmt.

Prop. 36" RCP

Prop. 36" RCP

Prop. 36" RCP

Prop. 36" RCP

Proposed 6' Sidewalk

8'

60' R/W

Paving Construction Limits

35+78.91 PT Curve

276.79'– 20" Pipe

N: 1,711,161.1637, E: 1,662,270.5835
℄ 37th Street North, Sta. 132+61.54, 52.0' Rt.=
WL 1, Sta. 38+75.70
1– 20" CI CL RJ 11 1/4" Bend
Defl.= 08°31'51"

WL1 Sta. 38+55.70 to WL1 Sta. 38+95.70
Install 40.00' RJ Pipe

61.12'– 20" Pipe

N: 1,711,148.0238, E: 1,662,370.8449
℄ 37th Street North, Sta. 133+61.54, 67.0' Rt.=
WL 1, Sta. 39+76.82
1– 20" CI CL RJ 11 1/4" Bend
Defl.= 08°31'51"

WL1 Sta. 39+56.82 to WL1 Sta. 39+96.82
Install 40.00' RJ Pipe

8'

75' R/W

103.18– 20" Pipe

N: 1,711,150.3119, E: 1,662,494.0036
℄ 37th Street North, Sta. 134+84.72, 67.0' Rt.=
WL 1, Sta. 41+00.00
MATCH POINT

MICHAEL D. KELSEY
LICENSED
13944
5/3/13
KANSAS
PROFESSIONAL ENGINEER

Unless noted otherwise, elevations shown are top of pipe

PROFILE | CHECKED | CHECKED | BY | DATE

WATERLINE NO. 1

40.00'– RJ Pipe

40.00'– RJ Pipe

MATCH POINT

11 1/4° Bend

11 1/4° Bend

MATCH POINT

Existing Ground

Proposed Ground

Top of Proposed 20" Water Main

	36+00	37+00	38+00	39+00	40+00	41+00
+78.91	1368.00	1367.85	1367.14	1367.00	1367.14	
+75.70					1367.27	1367.32
+76.82					1367.45	1367.49
+00.00						1367.57

1385 1380 1375 1370 1365 1360 1355 1350 1345

RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS

WATERLINE NO. 1

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 35-12275-004-7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

Sheet B13 of 21

Saved: 05-01-2013, 8:54:19 AM, by: CSL
Plot: 05-01-2013, 8:58:38 AM, by: CSL
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SCALE:
PLAN: LAT. & LONG. 0 20 40
PROFILE: HORIZ. SAME AS ABOVE
VERT. 0 5

N: 1,711,150.3119, E: 1,662,494.0036
℄ 37th Street North, Sta. 134+84.72, 67.0' Rt.=
WL 1, Sta. 41+00.00
MATCH POINT

N: 1,711,155.6701, E: 1,662,782.4116
WL 1, Sta. 43+88.46
1- 2" Air Release Assembly
See detail, sheet no. B20

N: 1,711,155.7630, E: 1,662,787.4107
℄ 37th Street North, Sta. 137+78.18, 67.0' Rt.=
WL 1, Sta. 43+93.46
1- Fire Hydrant Assembly (w/RJ Tee)
L= 18'
Top Valve Box El.= 1374.4
FH Bury Line El.= 1373.6
1- 20" Line Valve (E)
(Butterfly Valve)
Top Valve Box El.= 1374.4

N: 1,711,159.5995, E: 1,662,993.9151
℄ 37th Street North, Sta. 139+84.72, 67.0' Rt.=
WL 1, Sta. 46+00.00
MATCH POINT

135 6 ℄ 37TH STREET NORTH 7 8 9 140

Limits of Prop. Pvmt.

Prop. 15" RCP

Prop. 36" RCP

Prop. 30" RCP

8'

Proposed 6' Sidewalk

75' R/W

Paving Construction Limits

NORTH ENTRANCE TO KOCH INDUSTRIES

Proposed 8' Sidewalk

8'

273.46'- 20" Pipe

WL1 Sta. 43+73.46 to WL1 Sta. 44+13.46
Install 40.00' RJ Pipe

186.54- 20" Pipe

MICHAEL D. KEISER
LICENSED
13944
5/31/13
KANSAS
PROFESSIONAL ENGINEER

PLAN	CHECKED	CHECKED	BY	DATE

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1

40.00'- RJ Pipe

Air Release Assembly

Fire Hydrant

MATCH POINT

MATCH POINT

Existing Ground

Proposed Ground

Top of Proposed 20" Water Main

1385 1380 1375 1370 1365 1360 1355 1350 1345

+00.00 1367.67
+40.00 1367.74
+80.00 1367.80
+87.85 1367.85
+60.00 1367.90
+43.46 1368.29
1368.30
+00.00 1368.30

41+00 42+00 43+00 44+00 45+00 46+00

PROFILE	CHECKED	CHECKED	BY	DATE

RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS

WATERLINE NO. 1

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
300 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 35-12275-004-7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

Sheet B14 of 21

Saved: 05-02-2013 9:44:19 AM by CSL
Plotted: 05-02-2013 9:44:44 AM by CSL
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SCALE:
PLAN: LAT. & LONG. 0 20 40
PROFILE: HORIZ. SAME AS ABOVE
VERT. 0 5

N: 1,711,159.5995, E: 1,662,993.9151
℄ 37th Street North, Sta. 139+84.72, 67.0' Rt.=
WL 1, Sta. 46+00.00
MATCH POINT

N: 1,711,161.0237, E: 1,663,070.5749
℄ 37th Street North, Sta. 140+61.39, 67.0' Rt.=
WL 1, Sta. 46+76.67
1- 20" CI CL RJ 11 1/4° Bend
Defl.= 6°57'14"

℄ 37th Street North, PC Sta. 140+97.43

N: 1,711,175.1703, E: 1,663,171.0019
℄ 37th Street North, Sta. 141+66.52, 52.0' Rt.=
WL 1, Sta. 47+58.09
1- 20" CI CL RJ 11 1/4° Bend
Defl.= 11°46'32"

N: 1,711,088.4298, E: 1,663,478.5693
℄ 37th Street North, Sta. 145+10.19, 52.0' Rt.=
WL 1, Sta. 51+00.00
MATCH POINT

℄ 37TH STREET NORTH

Prop. 15" RCP
Limits of Prop. Pvmt.
Prop. 30" RCP
Prop. 30" RCP
Nominal Radius= 769.00' *
℄ 37th Street North, Sta. 145+31.33
Proposed 6' Sidewalk
8'
8'
75' R/W
60' R/W
Paving Construction Limits
47+78.09 PC Curve *
Prop. 24" RCP
Prop. 15" RCP
41.42'- 20" Pipe
301.91'- 20" Pipe
56.67'- 20" Pipe
WL1 Sta. 46+56.67 to WL1 Sta. 46+96.67
Install 40.00' RJ Pipe
WL1 Sta. 47+38.09 to WL1 Sta. 47+78.09
Install 40.00' RJ Pipe

PLAN | CHECKED | CHECKED | BY | DATE

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1

* See sheet no. B16 for WL Curve Data

40.00'- RJ Pipe
40.00'- RJ Pipe
MATCH POINT
11 1/4° Bend
11 1/4° Bend
MATCH POINT
Existing Ground
Proposed Ground
Top of Proposed 20" Water Main
Protective fill to be placed and compacted prior to construction of waterline.
+26.67
+26.09 PC Curve
1400.00
1400.00
1369.30
1369.71
1369.84
1370.26
1370.38
1370.92
1371.46
1372.00

1385 1380 1375 1370 1365 1360 1355 1350 1345

46+00 47+00 48+00 49+00 50+00 51+00

PROFILE | CHECKED | CHECKED | BY | DATE

MICHAEL D. KELSEY LICENSED 13944 5/7/13 KANSAS PROFESSIONAL ENGINEER

RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS
WATERLINE NO. 1

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 35-12275-004-7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

Saved: 05-01-2013 8:45:26 AM by CSL
Plot: Scale: 1:20 05-01-2013 8:56:45 AM by CSL
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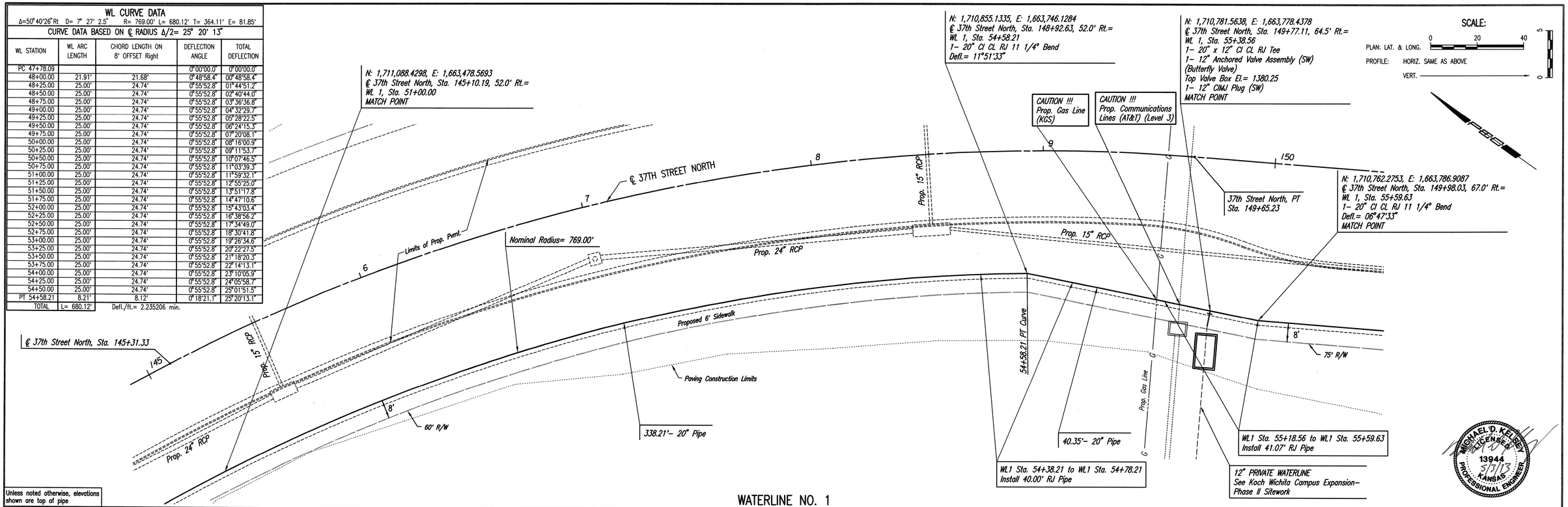
WL CURVE DATA

Δ=50°40'26"Rt D= 7° 27' 2.5" R= 769.00' L= 680.12' T= 364.11' E= 81.85'

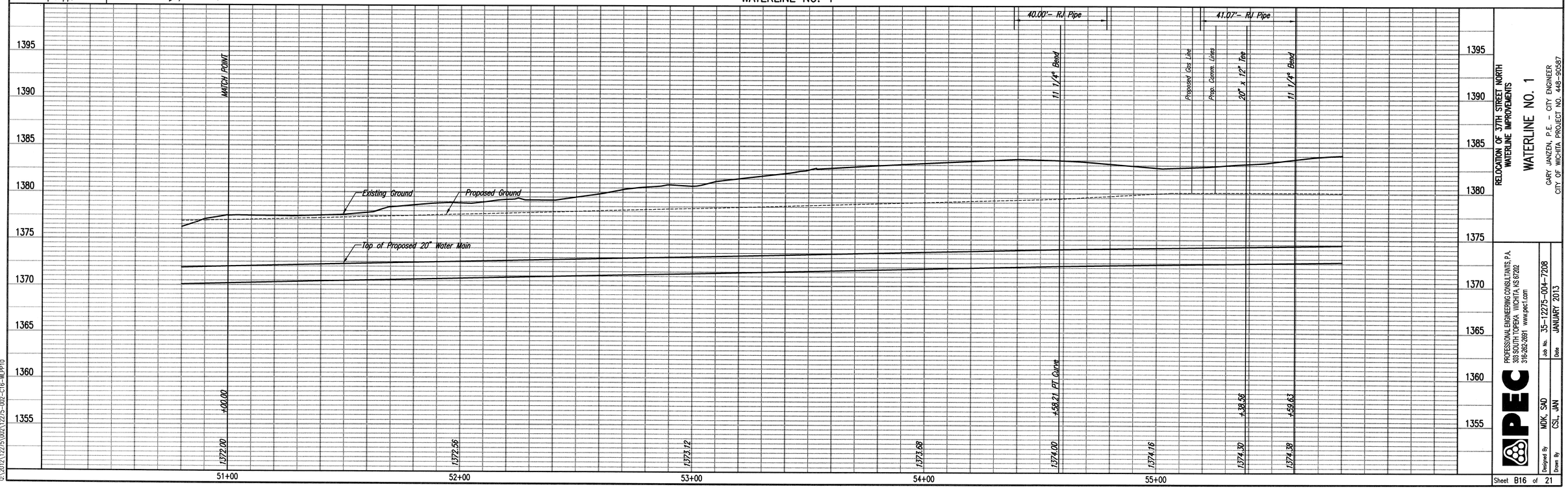
CURVE DATA BASED ON ℄ RADIUS Δ/2= 25° 20' 13"

WL STATION	WL ARC LENGTH	CHORD LENGTH ON 8' OFFSET Right	DEFLECTION ANGLE	TOTAL DEFLECTION
PC 47+78.09			0°00'00.0"	0°00'00.0"
48+00.00	21.91'	21.68'	0°48'58.4"	00°48'58.4"
48+25.00	25.00'	24.74'	0°55'52.8"	01°44'51.2"
48+50.00	25.00'	24.74'	0°55'52.8"	02°40'44.0"
48+75.00	25.00'	24.74'	0°55'52.8"	03°36'36.8"
49+00.00	25.00'	24.74'	0°55'52.8"	04°32'29.7"
49+25.00	25.00'	24.74'	0°55'52.8"	05°28'22.5"
49+50.00	25.00'	24.74'	0°55'52.8"	06°24'15.3"
49+75.00	25.00'	24.74'	0°55'52.8"	07°20'08.1"
50+00.00	25.00'	24.74'	0°55'52.8"	08°16'00.9"
50+25.00	25.00'	24.74'	0°55'52.8"	09°11'53.7"
50+50.00	25.00'	24.74'	0°55'52.8"	10°07'46.5"
50+75.00	25.00'	24.74'	0°55'52.8"	11°03'39.3"
51+00.00	25.00'	24.74'	0°55'52.8"	11°59'32.1"
51+25.00	25.00'	24.74'	0°55'52.8"	12°55'25.0"
51+50.00	25.00'	24.74'	0°55'52.8"	13°51'17.8"
51+75.00	25.00'	24.74'	0°55'52.8"	14°47'10.6"
52+00.00	25.00'	24.74'	0°55'52.8"	15°43'03.4"
52+25.00	25.00'	24.74'	0°55'52.8"	16°38'56.2"
52+50.00	25.00'	24.74'	0°55'52.8"	17°34'49.0"
52+75.00	25.00'	24.74'	0°55'52.8"	18°30'41.8"
53+00.00	25.00'	24.74'	0°55'52.8"	19°26'34.6"
53+25.00	25.00'	24.74'	0°55'52.8"	20°22'27.5"
53+50.00	25.00'	24.74'	0°55'52.8"	21°18'20.3"
53+75.00	25.00'	24.74'	0°55'52.8"	22°14'13.1"
54+00.00	25.00'	24.74'	0°55'52.8"	23°10'05.9"
54+25.00	25.00'	24.74'	0°55'52.8"	24°05'58.7"
54+50.00	25.00'	24.74'	0°55'52.8"	25°01'51.5"
PT 54+58.21	8.21'	8.12'	0°18'21.1"	25°20'13.1"
TOTAL	L= 680.12'	Defl./ft.= 2.235206 min.		



Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1



PLAN / PROFILE — CHECKED / CHECKED — BY / DATE

Unless noted otherwise, elevations shown are top of pipe

Saved 05-02-2013 8:03:22 AM by CSL
Plotted 5/2/2013 8:03:51 AM by CSL
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PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 35-12275-004-7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS

WATERLINE NO. 1

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

MICHAEL D. KELSEY
LICENSED
13944
5/3/13
KANSAS
PROFESSIONAL ENGINEER

SCALE:
PLAN: LAT. & LONG. 0 20 40
PROFILE: HORIZ. SAME AS ABOVE
VERT. 0 5

N: 1,710,762.2753, E: 1,663,786.9087
℄ 37th Street North, Sta. 149+98.03, 67.0' Rt.=
WL 1, Sta. 55+59.63
MATCH POINT

℄ 37TH STREET NORTH

150 1 2 3 4 155

N: 1,710,522.5322, E: 1,663,928.1401
WL 1, Sta. 58+37.88
1– 2" Air Release Assembly
See detail, sheet no. B20

N: 1,710,518.2241, E: 1,663,930.6779
℄ 37th Street North, Sta. 152+81.28, 67.0' Rt.=
WL 1, Sta. 58+42.88
1– Fire Hydrant Assembly (w/RJ Tee)
L= 20'
Top Valve Box El.= 1381.7
FH Bury Line El.= 1380.8

N: 1,710,318.2271, E: 1,664,048.4951
℄ 37th Street North, Sta. 155+13.42, 67.0' Rt.=
WL 1, Sta. 60+75.00
MATCH POINT

Limits of Prop. Pvmt.

Prop. 15" RCP

Prop. 15" RCP

8'

Proposed 6' Sidewalk

75' R/W

Paving Construction Limits

WL1 Sta. 55+59.63 to WL1 Sta. 55+79.63
Install 20.00' RJ Pipe

243.25'– 20" Pipe

WL1 Sta. 58+22.88 to WL1 Sta. 58+62.88
Install 40.00' RJ Pipe

212.12'– 20" Pipe

WATERLINE NO. 1

Unless noted otherwise, elevations shown are top of pipe

20.00'– RJ Pipe

40.00'– RJ Pipe

MATCH POINT

Air Release Assembly

Fire Hydrant

MATCH POINT

Existing Ground

Proposed Ground

Top of Proposed 20" Water Main

1400 1395 1390 1385 1380 1375 1370 1365 1360

+59.63 1374.38

1374.63

1375.58

+37.88 1376.49

+42.88 1376.49

1376.32

+50.00 1375.39

1375.24

1374.86

+75.00 1374.66

56+00 57+00 58+00 59+00 60+00

RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS
WATERLINE NO. 1

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA, PROJECT NO. 448-90587

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 35-12275-004-7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

Sheet B17 of 21

MICHAEL D. KEARNEY
LICENSED
13944
5/3/13
KANSAS
PROFESSIONAL ENGINEER

PLAN
CHECKED
CHECKED
BY
DATE

PROFILE
CHECKED
CHECKED
BY
DATE

Saved: 05-02-2013 9:52:39 AM by CSL
Plot: Scale 1:20, 05-02-2013 9:53:02 AM by CSL
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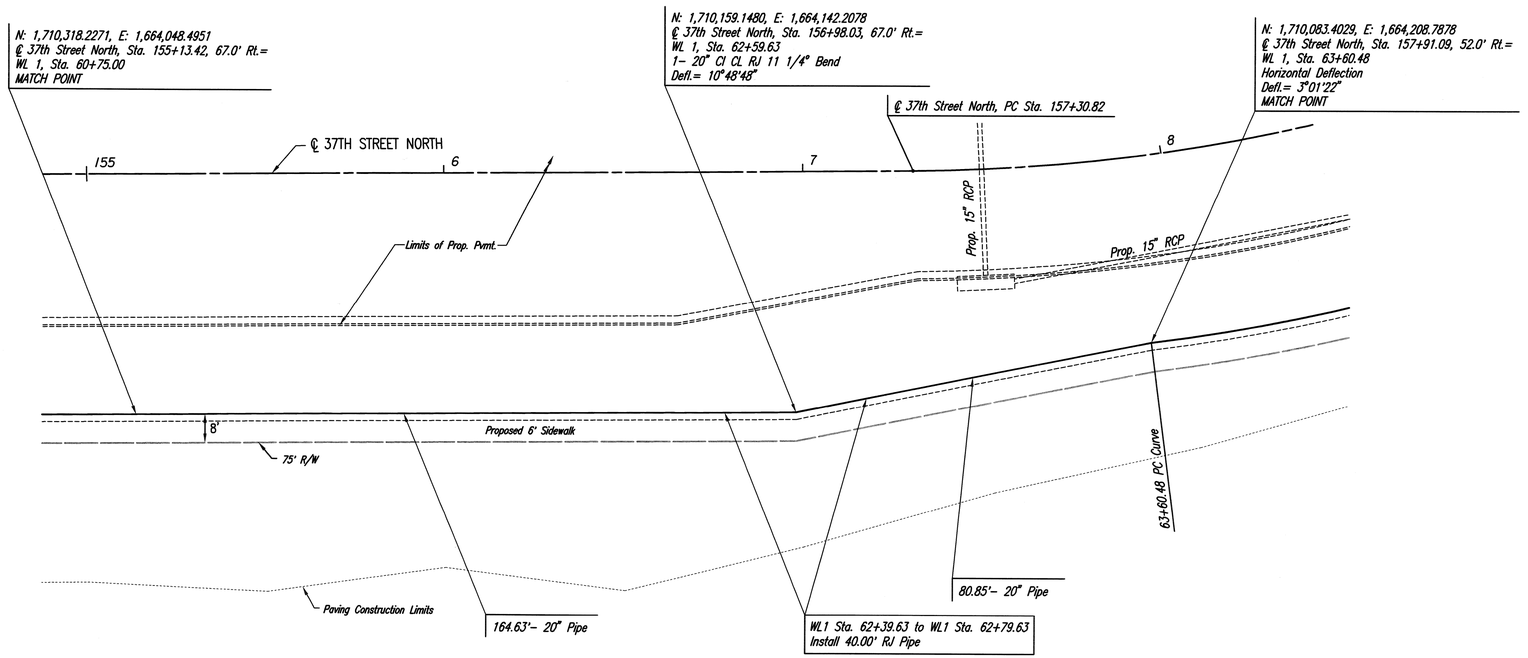
PLAN	BY	DATE
CHECKED		
CHECKED		

WL CURVE DATA

Δ=31°46'50"Rt D= 10° 11' 41.9" R= 562.00' L= 311.73' T= 159.99' E= 22.33'

CURVE DATA BASED ON ℄ RADIUS Δ/2= 15° 53' 25"

WL STATION	WL ARC LENGTH	CHORD LENGTH ON 8' OFFSET Right	DEFLECTION ANGLE	TOTAL DEFLECTION
PC 63+60.48			0°00'00.0"	0°00'00.0"
63+75.00	14.52'	14.31'	0°44'24.6"	00°44'24.6"
64+00.00	25.00'	24.64'	1°16'27.7"	02°00'52.3"
64+25.00	25.00'	24.64'	1°16'27.7"	03°17'20.1"
64+50.00	25.00'	24.64'	1°16'27.7"	04°33'47.8"
64+75.00	25.00'	24.64'	1°16'27.7"	05°50'15.5"
65+00.00	25.00'	24.64'	1°16'27.7"	07°06'43.3"
65+25.00	25.00'	24.64'	1°16'27.7"	08°23'11.0"
65+50.00	25.00'	24.64'	1°16'27.7"	09°39'38.8"
65+75.00	25.00'	24.64'	1°16'27.7"	10°56'06.5"
66+00.00	25.00'	24.64'	1°16'27.7"	12°12'34.3"
66+25.00	25.00'	24.64'	1°16'27.7"	13°29'02.0"
66+50.00	25.00'	24.64'	1°16'27.7"	14°45'29.7"
PT 66+72.21	22.21'	21.89'	1°07'55.8"	15°53'25.0"
TOTAL	L= 311.73'	Defl./ft.= 3.058494 min.		



SCALE:

PLAN: LAT. & LONG. 0 20 40

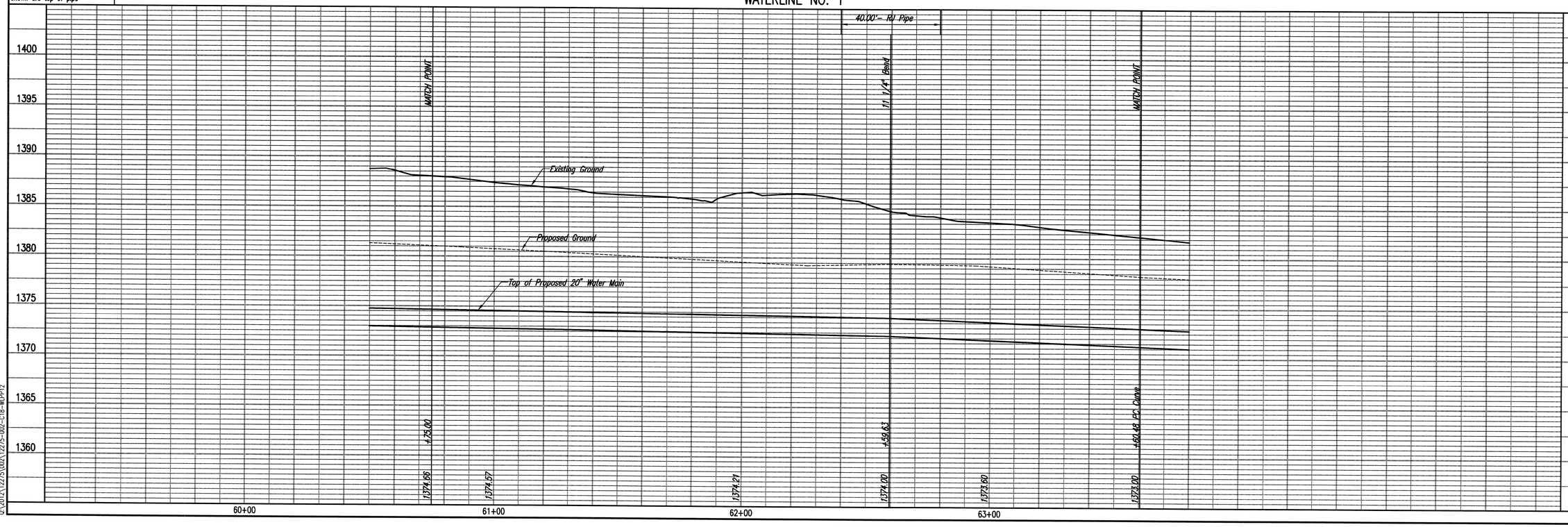
PROFILE: HORIZ. SAME AS ABOVE

VERT. 0 5

MICHAEL D. KELLY LICENSED 13944 5/7/13 KANSAS PROFESSIONAL ENGINEER

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1



PROFILE	BY	DATE
CHECKED		
CHECKED		

Saved: 05-01-2013 8:59:20 AM by CSL
Plot Scale: 1:20 05-01-2013 8:59:39 AM by CSL
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RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS

WATERLINE NO. 1

GARY JANZEN, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Job No. 35-12275-004-7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

℄ 37th Street North, PC Sta. 157+30.82

N: 1,710,083.4029, E: 1,664,208.7878
℄ 37th Street North, Sta. 157+91.09, 52.0' Rt.=
WL 1, Sta. 63+60.48
MATCH POINT

Prop. 15" RCP

℄ 37TH STREET NORTH

Nominal Radius= 562.00' **

63+60.48 PC Curve *

8"

60' R/W

Proposed 6" Sidewalk

Prop. 15" RCP

Prop. 18" RCP

Prop. 24" RCP

291.75'– 20" Pipe

Paving Construction Limits

Remove and replace
130 L.F. Pavement and Curb/Gutter
with Temporary Asphalt

CAUTION !!!
6" Gas Line
(KGS)

CAUTION !!!
Buried Telephone
(AT&T)

CAUTION !!!
6" Gas Line
(KGS)

CAUTION !!!
Buried Telephone
(AT&T)

Remove and reset
sign as required.

66+72.21 PT Curve **

N: 1,709,898.8985, E: 1,664,455.0938
℄ 37th Street North, Sta. 160+73.98, 52.0' Rt.=
WL 1, Sta. 66+72.21
1– 20" CI CL RJ 22 1/2° Bend
Defl.= 22°49'42"
1– 2" Air Release Assembly
See detail, sheet no. B20

CAUTION !!!
Gas Service Line
(KGS)

N: 1,709,882.2890, E: 1,664,472.0906
℄ 37th Street North, Sta. 160+93.43, 61.85' Rt.=
WL 1, Sta. 66+95.98
Existing 20" Waterline.*
Remove existing pipe as necessary and
Cut in 1– 20" CI CL RJ 45° Bend
Defl.= 45°00'00"
Connection to existing pipe shall be made with
clean swabbed pipe. (Fittings, adaptors, and other
incidentals as necessary)
See detail, sheet no. B20.

SCALE:
0 20 40
PLAN: LAT. & LONG.
PROFILE: HORIZ. SAME AS ABOVE
VERT.
0 5

℄ 37th Street North, PT Sta. 162+66.30

Limits of Prop. Pvmt.

SECTION LINE

Concrete

Traffic Signal Vault

Overhead Electric Line

Power Pole w/Guy

Buried Electric (rec. info.)

Existing R/W

Median

Concrete

Speed Limit Sign

Conc. Curb & Gutter

Fiber Optic Line (Qwl (rec. info.)

TV Pedestal

20" PCCP Waterline

20" W.L.=44° Cross

Hydrant

6" Gas Line (KGS)

Undgd. ELEC

* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 20" WATERLINE AT STATION 66+95.98 TO VERIFY PIPE SIZE, TYPE, FITTINGS, AND HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL REPORT HIS FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

** See sheet no. B18 for WL Curve Data

WL1 Sta. 66+52.21 to WL1 Sta. 66+95.98
Install 43.77' RJ Pipe

X = Denotes Pipe to be abandoned in place.
℄ = Denotes Cap/Plug by the contractor
(Includes removal of existing pavement and
replacement with temporary pavement.)

MICHAEL D. KELSEY
LICENSED
13944
KANSAS
PROFESSIONAL ENGINEER

PLAN | CHECKED | CHECKED | BY | DATE

PROFILE | CHECKED | CHECKED | BY | DATE

Unless noted otherwise, elevations shown are top of pipe

WATERLINE NO. 1

43.77'– RJ Pipe

MATCH POINT
6" Gas Line
Top of Pipe= connector to verify
Buried Telephone
6" Gas Line
Top of Pipe= connector to verify
Buried Telephone
22 1/2° Bend
Gas Service Line
45° Bend
END LINE NO. 1

Existing Ground
Proposed Ground
Top of Proposed 20" Water Main
Existing 20" Water Main

1373.00 +60.48 PC Curve
1372.61
1371.60
1370.50
1370.50 +110.00
1371.05 +72.21 PT Curve
1371.25± * (Estd. 20") +95.98

1395 1390 1385 1380 1375 1370 1365 1360 1355

64+00 65+00 66+00

RELOCATION OF 37TH STREET NORTH
WATERLINE IMPROVEMENTS
WATERLINE NO. 1

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
300 SOUTH TOPEKA WICHITA, KS 67202
316-262-2891 www.pec1.com

Job No. 35–12275–004–7208
Date JANUARY 2013
Designed By MDK, SAD
Drawn By CSL, JAN

Sheet B19 of 21

Saved: 05–17–2013, 8:46:55 AM by CSL
Plotted: 05–17–2013, 8:50:04 AM by CSL
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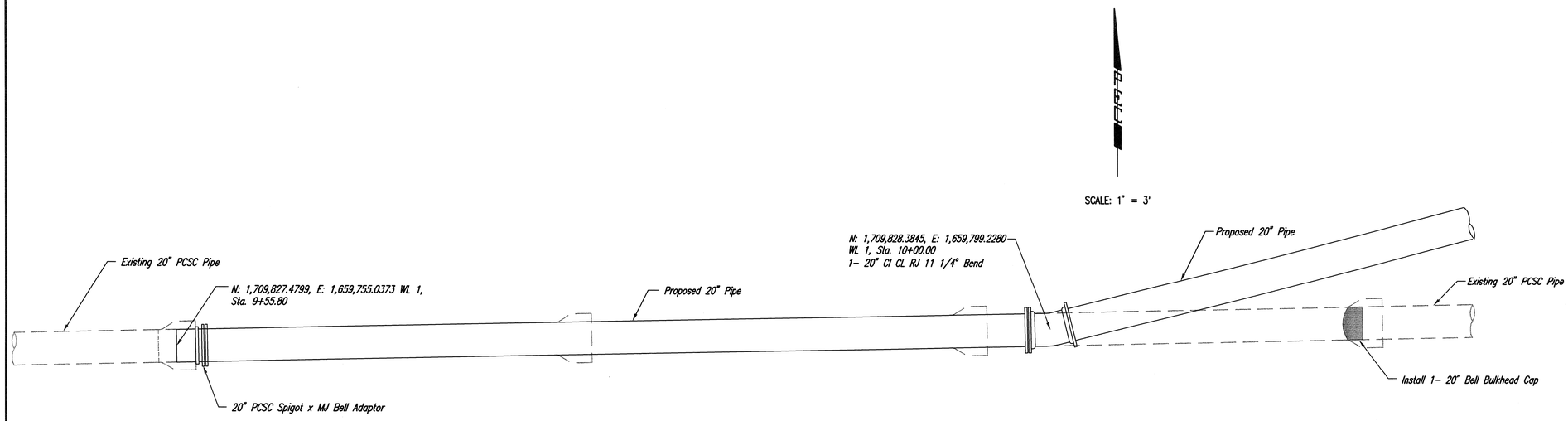
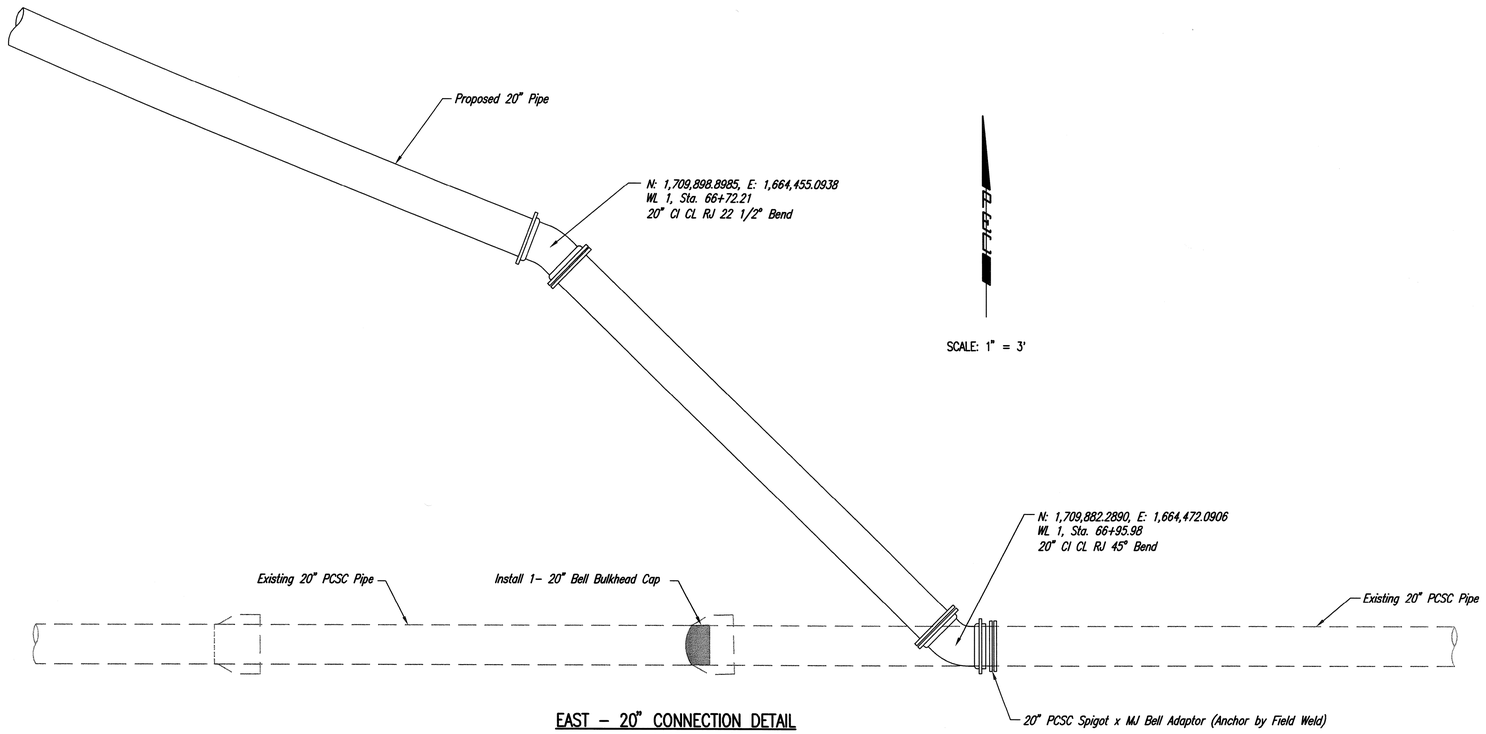


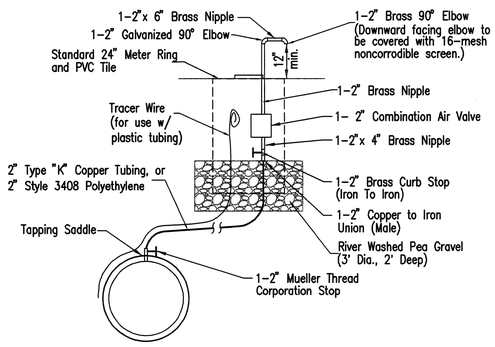
WEST – 20" CONNECTION DETAIL



EAST – 20" CONNECTION DETAIL

CONNECTION DETAIL NOTES

1. CONTRACTOR SHALL NOTIFY CITY WATER DEPARTMENT A MINIMUM OF 48 HOURS BEFORE ANY CONSTRUCTION BEGINS. TIE-INS SHALL OCCUR DURING PERIODS OF LOW WATER USE. CONTRACTOR SHALL SUBMIT A SCHEDULE DEPICTING DATE AND TIME OF SHUTDOWN TO THE CITY WATER DEPARTMENT FOR APPROVAL AT LEAST 2 WEEKS IN ADVANCE OF SHUTDOWN.
2. CONTRACTOR SHALL EXCAVATE THE EXISTING WATERLINE TO VERIFY JOINT LAYOUT, DEPTH, AND CONNECTION DETAIL.
3. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF LAYING DIRECTION, SIZE, OR SPECIFIED MATERIAL TYPE DIFFERS FROM THE DETAILED DRAWING. THERE WILL NOT BE A CHANGE ORDER FOR OPPOSITE LAYING DIRECTION OR FOR MATERIAL TYPE DIFFERENCES.
4. CONTRACTOR SHALL EXCAVATE EXISTING PCSC 20" PIPE AND LOCATE NEAREST JOINT AT WL 1 STATION 9+55.80. EXISTING PCSC 20" PIPE SHALL BE REMOVED TO THE NEAREST JOINT.
5. CONTRACTOR SHALL HAVE FITTINGS, VALVES, AND APPURTENANCES ON SITE TO COMPLETE THE CONNECTION TO THE EXISTING WATERLINE BEFORE REMOVING ANY EXISTING WATERLINES.
6. ALL OVER EXCAVATED AREAS AT THE TIE IN LOCATION SHALL BE FILLED OR ENCASED WITH EXCAVATABLE FLOWABLE FILL.
7. THE CONTRACTOR SHALL UTILIZE RESTRAINED JOINT PIPE, TIE RODS, OR OTHER APPROVAL METHODS TO RESTRAIN ALL VALVES, FITTINGS, AND PIPING AT THE VALVE AND CONNECTION LOCATIONS.
8. ALL COUPLINGS AND DUCTILE IRON FITTINGS AND APPURTENANCES SHALL BE POLY WRAPPED PER THE SPECIFICATIONS.
9. THE CONTRACTOR SHALL CONTACT THE CITY OF WICHITA PRIOR TO MAKING CONNECTION. CONTACT GREG LOLLEY AT 268-4555 TO SCHEDULE. ALL PAVEMENT CUTS, EXCAVATION, THRUST BLOCKING, BACKFILLING, PAVEMENT RECONSTRUCTION, PIPE, FITTINGS, VALVES AND PIPE MATERIALS AND OTHER INCIDENTALS NECESSARY FOR THE NEW CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.



2" COMBINATION AIR VALVE DETAIL

No.	Revision	By	Date

RELOCATION OF 37TH STREET NORTH WATERLINE IMPROVEMENTS

WATERLINE CONNECTION DETAILS

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448-90587

MICHAEL D. KEITH LICENSED KANSAS 13944 PROFESSIONAL ENGINEER 5/3/13

PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	MDK, SAD	Job No.	35-12275-004-7208	Sht. B20 of 21
Drawn by	CSL, JAN	Date	JANUARY 2013	

Saved 05-01-2013 9:08:33 AM by CSL
Plotted 05-01-2013 9:08:50 AM by CATHY S. LINK
G:\2012\12275\002\12275-002-C20-Waterline Connection Details

N: 1,709,878.1671, E: 1,664,817.9132
℄ 37th St. N., Sta. 164+21.9, 37.4' Rt.
Adjust Existing Water Valve Box (C.O.W. #25475)
Existing Top of Box Elev.= 1372.83
Proposed Top of Box Elev.= 1372.85
Difference = +0.02'

N: 1,709,870.6738, E: 1,664,815.5910
℄ 37th St. N., Sta. 164+19.5, 44.9' Rt.
Adjust Existing Water Valve Box (C.O.W. #13559)
Existing Top of Box Elev.= 1372.74
Proposed Top of Box Elev.= 1372.66
Difference = −0.08'

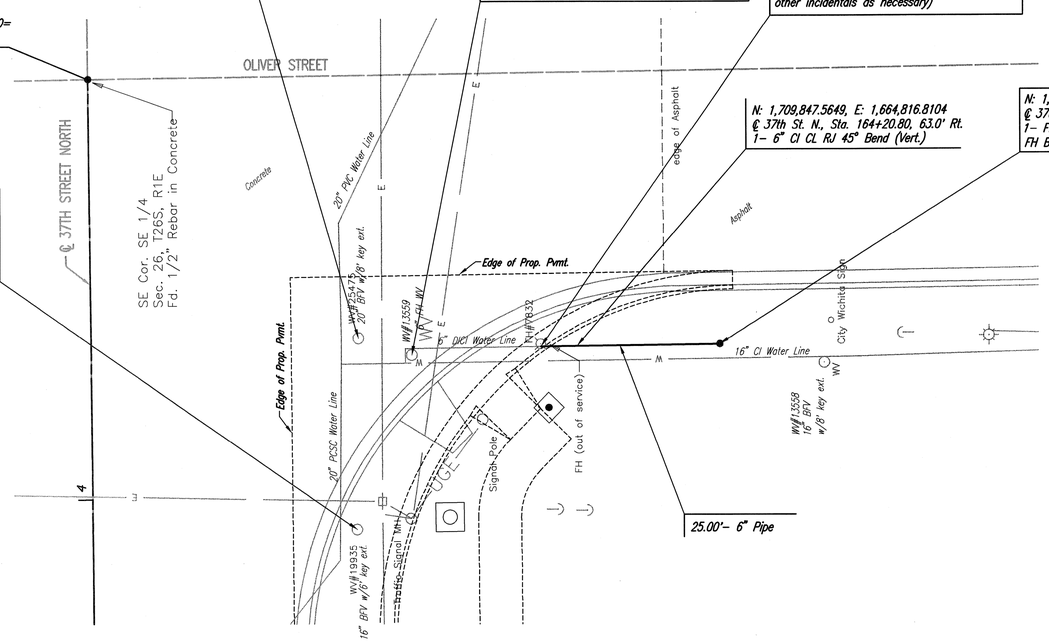
N: 1,709,852.5746, E: 1,664,816.7411
℄ 37th St. N., Sta. 164+20.80, 63.0' Rt.
Existing Fire Hydrant *
Remove Exist. Fire Hydrant, Salvage to City and connect new 6" Pipe.
1− 6" CI CL RJ 45° Bend (Vert.)
Connection to existing pipe shall be made with clean swabbed pipe. (Fittings, adaptors, and other incidentals as necessary)

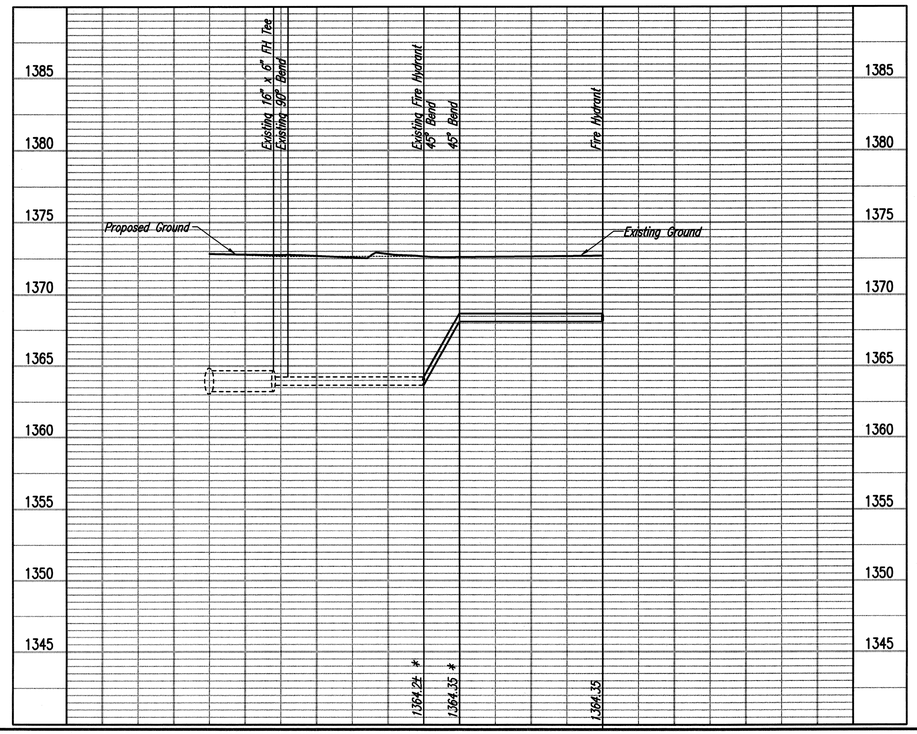
℄ 37th St. N., Sta. 164+58.30=
℄ Oliver

N: 1,709,847.5649, E: 1,664,816.8104
℄ 37th St. N., Sta. 164+20.80, 63.0' Rt.
1− 6" CI CL RJ 45° Bend (Vert.)

N: 1,709,827.5769, E: 1,664,817.0870
℄ 37th St. N., Sta. 164+20.50, 88.0' Rt.
1− Fire Hydrant
FH Bury Line El.= 1368.7

N: 1,709,878.2948, E: 1,664,791.4441
℄ 37th St. N., Sta. 163+95.45, 37.0' Rt.
Adjust Existing Water Valve Box (C.O.W. #19935)
Existing Top of Box Elev.= 1372.87
Proposed Top of Box Elev.= 1372.44
Difference = −0.43'





PEC

SCALE: 1" = 10'

PLAN: LAT. & LONG. 0 10 20

PROFILE: HORIZ. SAME AS ABOVE

VERT. 5 0

* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 6" WATERLINE AT THE EXISTING FIRE HYDRANT LOCATION TO VERIFY PIPE SIZE, TYPE, FITTINGS, AND HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL REPORT HIS FINDINGS TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

MICHAEL D. KEITH LICENSED KANSAS PROFESSIONAL ENGINEER 13944 5/3/13

No.	Revision	By	Date

RELOCATION OF 37TH STREET NORTH WATERLINE IMPROVEMENTS

FIRE HYDRANT RELOCATION

GARY JANZEN, P.E. – CITY ENGINEER
CITY OF WICHITA PROJECT NO. 448−90587

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
303 SOUTH TOPEKA WICHITA, KS 67202
316-262-2691 www.pec1.com

Designed by	MDK, SAD	Job No.	35−12275−004−7208	Sht. B21 of 21
Drawn by	CSL, JAN	Date	JANUARY 2013	

Saved 04-30-2013 4:46:36 PM by CSL
Plot Scale 1:10 04-30-2013 4:47:08 PM by CSL
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