WATER DISTRIBUTION SYSTEM IMPROVEMENTS

TO SERVE

THE CORNERSTONE THIRD ADDITION

THE CITY OF ANDOVER, BUTLER COUNTY, KANSAS

CITY OF WICHITA PRIVATE PROJECT NO. 1369PPW

OCA NO. 607853

GENERAL NOTES

1. ALL WATER MAINS AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF ANDOVER, AND CITY OF WICHITA, KANSAS STANDARD SPECIFICATIONS FOR WATER MAIN INSTALLATIONS.

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 1–800–344–7233
   or 687–2470 (LOCAL WICHITA)

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

COX COMMUNICATIONS (CABLE)	262–0661
BUTLER RURAL ELECTRIC (AFTER HOURS)	(800)464–0600
OR 220–2608	(LOCAL WICHITA)
KANSAS GAS SERVICE (GAS)	383–8600
SBC (TELEPHONE)	1–800–734–7630
CITY OF ANDOVER (LES MANGUS)	733–2621
CITY OF BENTON	778–1625
WESTAR	383–8600

3. THE WATER MAIN SHALL BE CONSTRUCTED ON THE ALIGNMENT SHOWN ON THE PLANS. TREES AND SHRUBS IN PUBLIC RIGHT OF WAY WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR WITH THE ENGINEER'S APPROVAL, AND SHALL BE INCLUDED IN THE PRICE BID FOR THE INSTALLED WATER PIPE. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH PROPOSED CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE.

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. 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. UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT–OF–WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

7. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY DIRECTLY ABUTTING CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS NOTICE PRIOR TO START OF CONSTRUCTION.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL 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. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO SITE RESTORATION.

9. THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, ENTRANCES AND BANK LINES TO THEIR ORIGINAL SLOPES AND GRADES EXCEPT AS SHOWN OTHERWISE.

10. NO SERVICES WILL BE INSTALLED AS PART OF THIS PROJECT.

11. 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.

12. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED AND TREE TRIMMINGS SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR. THESE SITES SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, WILL 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 WOULD 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 WOULD REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.

13. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICES TO CONTAIN EROSION.

14. ALL DISTURBED AREAS TO BE SEEDED WITH RYE GRASS AT A RATE OF 200 LBS. PER ACRE WITHIN 10 DAYS OF CONSTRUCTION. CONTRACTOR TO PREPARE GROUND PER CITY SPECIFICATIONS. COST IS SUBSIDIARY TO SITE PREPARATION AND RESTORATION.

15. THE CONTRACTOR SHALL LAY A TRACER WIRE & SET TEST STATIONS ALONG ALL WATER LINE PIPE INSTALLED IN ACCORDANCE WITH CITY OF WICHITA SPECIFICATIONS & TRACER WIRE DETAIL ON DETAIL SHEET. COST IS SUBSIDIARY TO PIPE INSTALLATION.

16. WATER LINE TRENCHES SHALL BE BACKFILLED PER CITY SPEC. SPECIAL CARE SHALL BE TAKEN WHEN BACKFILLING TRENCHES IN PROPOSED STREET R.O.W.. TRENCHES SHALL BE COMPACTED TO 95% STD. DENSITY IN 6"–8" MAX LIFTS.

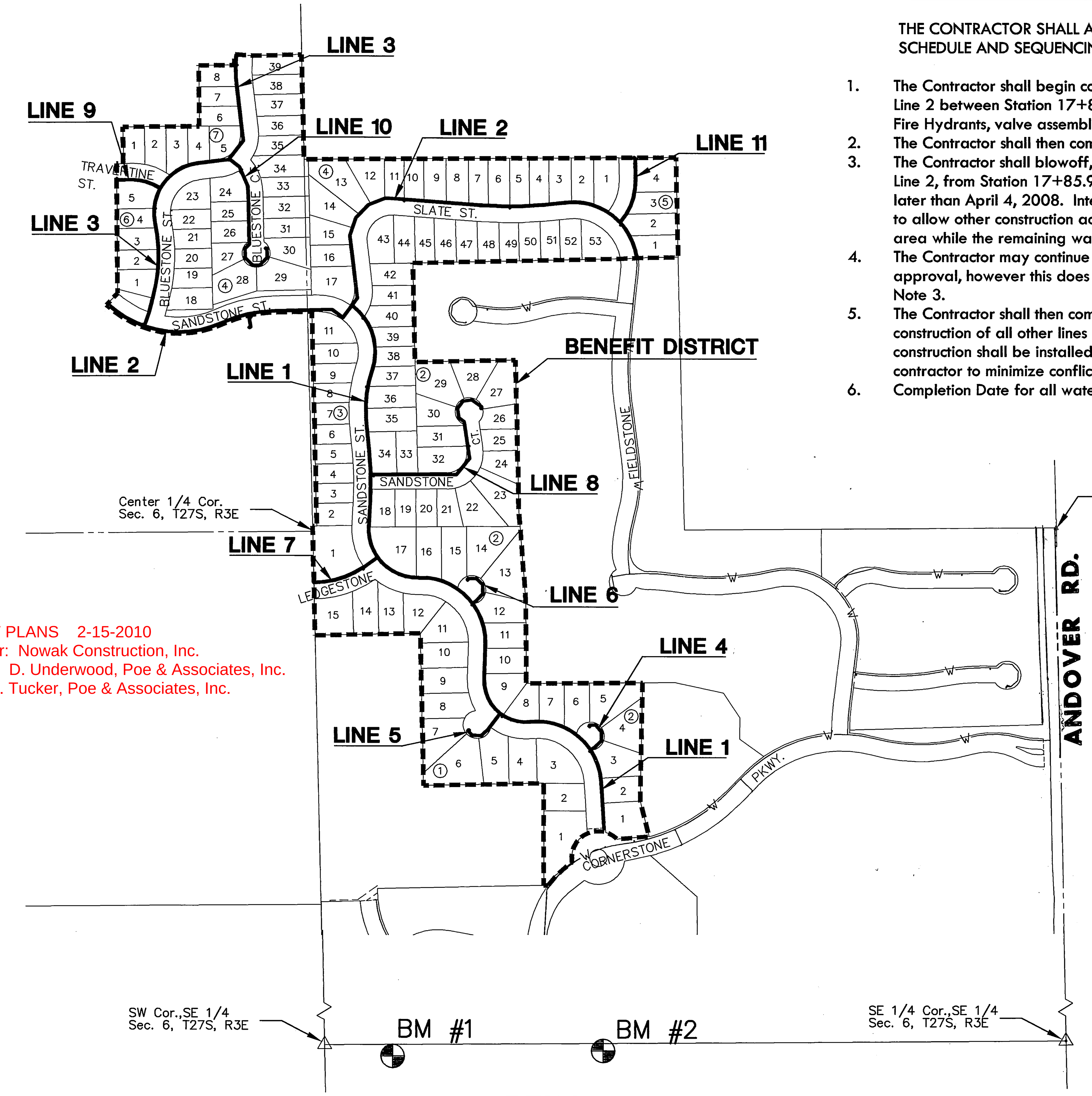
17. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION OF WATER LINE WITH OTHER CONSTRUCTION ACTIVITIES ON SITE.

18. DEVELOPER FOR THIS PROJECT IS:
    RITCHIE ASSOCIATES
    8100 E. 22ND NORTH, #1000
    WICHITA, KS 67226
    CONTACT – ROB RAMSEYER
    (316) 684–7300

WATER LINE VALVES TO BE OPERATED BY CONTRACTOR ONLY IF WATER INSPECTOR IS ON SITE.

PLOTTED: Thursday, January 03, 2008 @ 08:27AM

AS BUILT PLANS 2-15-2010
Contractor: Nowak Construction, Inc.
Inspector: D. Underwood, Poe & Associates, Inc.
PDF's: M. Tucker, Poe & Associates, Inc.



SCALE: 1" = 300'

BENCHMARKS

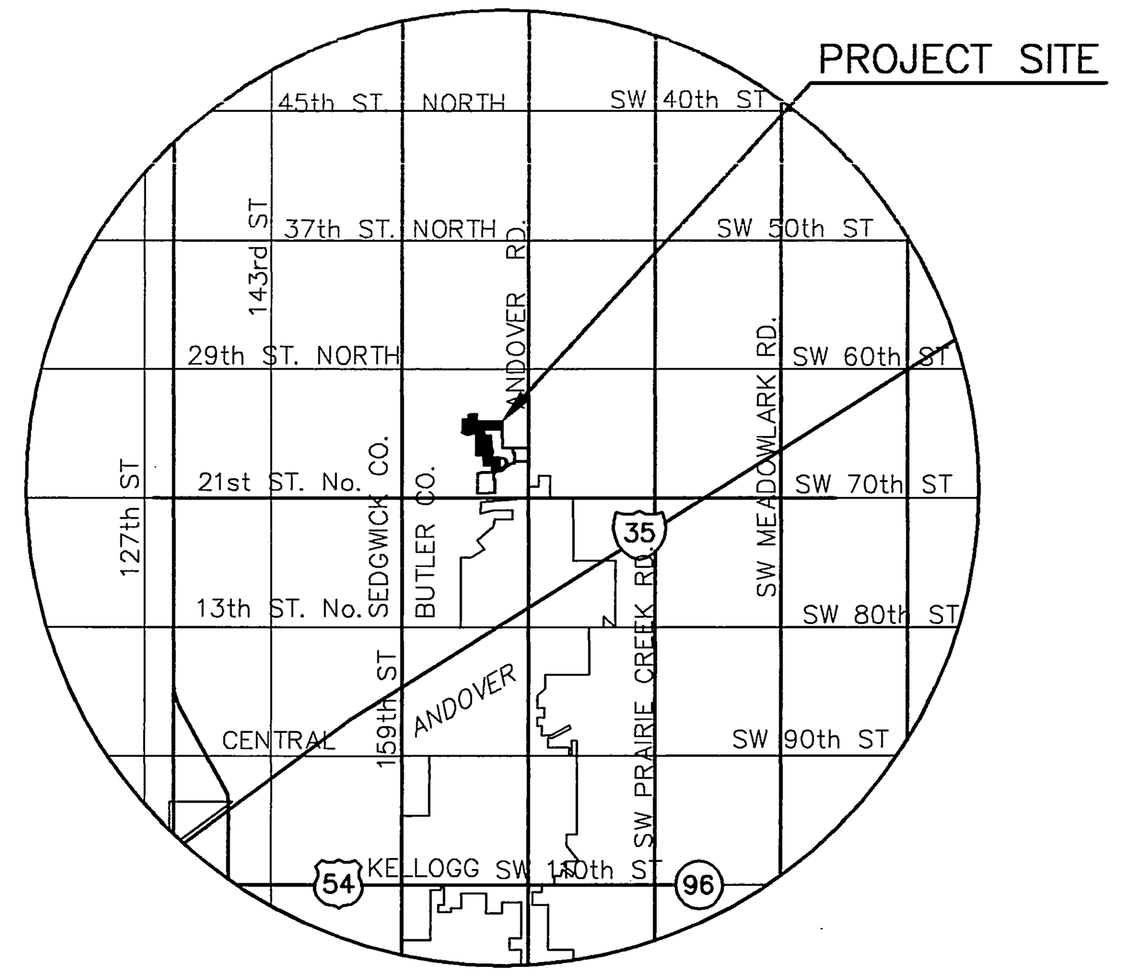
BM #1 Chiseled square on center of south headwall of RCB under 21st Street North, 243' East and 41' South of the South Quarter Corner of Sec. 6, T27S, R3E. Elev. = 1345.60.

BM #2 Chiseled square on top of curb at East return of East Drive to "Life Care Center", 994' East and 26.5' South of the South Quarter corner of Sec. 6, T27S, R3E. Elev. = 1348.785.

CONSTRUCTION SEQUENCE

THE CONTRACTOR SHALL ADHERE TO THIS CONSTRUCTION SCHEDULE AND SEQUENCING.

1. The Contractor shall begin construction of the water distribution on Line 2 between Station 17+85.96 and Station 32+42.09 and install Fire Hydrants, valve assemblies and appropriate blocking.
2. The Contractor shall then complete construction of Line 11.
3. The Contractor shall blowoff, clean, test, and obtain approval of Line 2, from Station 17+85.96 to Station 32+42.09 and Line 11, no later than April 4, 2008. Intent of the above construction sequence is to allow other construction activities (i.e. sws, pav) to begin in this area while the remaining water lines are being completed.
4. The Contractor may continue construction of Line 2 prior to obtaining approval, however this does not negate the requirement set forth in Note 3.
5. The Contractor shall then complete construction of Line 2 and begin construction of all other lines beginning with Line 1. Remaining line construction shall be installed in coordination with the Sanitary Sewer contractor to minimize conflicts.
6. Completion Date for all water lines is May 19,2008.



VICINITY MAP

INDEX TO DRAWINGS

APPROVED AS NOTED BY CITY ENGINEER OF WICHITA, BY WICHITA WATER & SEWER DEPARTMENT, & BY WICHITA FIRE DEPARTMENT

Water Mains VRH 1/3/08
(Public Works)

Water Mains ______
(Water & Sewer Dept.)

Fire Prot. Line ______
(Fire Dept.)

NOTE TO CONTRACTORS

Public Property:

Inspection and testing for the waterline is to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita Standard Construction Engineering Practices and certified by a Professional Engineer licensed in the state of Kansas. No work shall be performed in dedicated easements or public rights–of–way by the Contractor without such inspection, nor shall any work be commenced without written authorization by the City Engineer. All construction and materials shall comply with the City of Wichita Specifications and Standards (on file and available in the City Engineer's Office).

Private Property:

Installation and testing for the fire protection line is to be performed by a City of Wichita Licensed Fire Protection Contractor in accordance with the fire codes as adopted by the City of Wichita. All materials and construction practices for the fire protection line shall comply with the fire codes as adopted by the City of Wichita (available from the City of Wichita Fire Department). The Contractor shall not commence work without notification to and approval of the Wichita Fire Department. Inspection of the fire protection line is to be provided by a licensed engineering firm under contract with the Owner/Developer and the Fire Department. The contractor shall not start work until the project inspector is assigned to the project and present on the site. Any work done without inspection will be required to be uncovered for inspection.

MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

GREGORY J. ... LICENSED PROFESSIONAL ENGINEER KANSAS 1/3/08

WATER DISTRIBUTION SYSTEM IMPROVEMENTS
THE CORNERSTONE
THIRD ADDITION

TITLE SHEET
SHEET TITLE

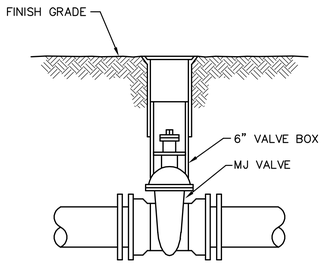
1369PPW
PROJECT NUMBER

DFL	BG/KKL	GJA
DESIGNED	DRAWN	CHECKED

ISSUED January 2008

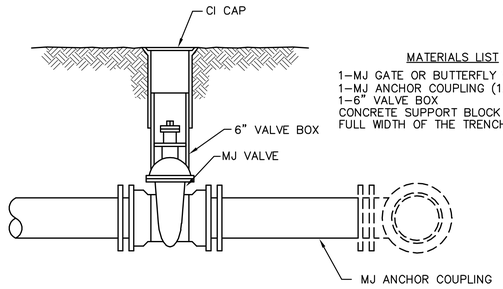
REVISED

J:\CIVIL\04294\DWG\WTR\THIRD\04294_CT.DWG



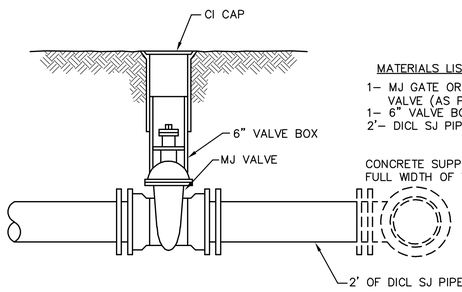
MATERIALS LIST
1–MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
1–6" VALVE BOX
CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

LINE VALVE ASSEMBLY



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

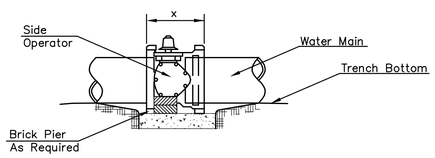
ANCHORED VALVE ASSEMBLY



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

CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

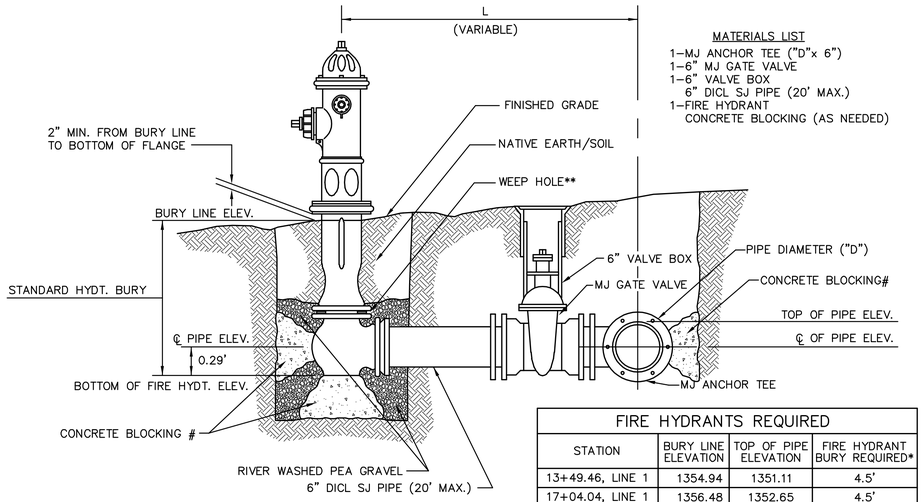
VALVE ASSEMBLY



NOTES

1. This detail covers Butterfly Valve installation, inclusive, regard–less of type of pipe or joint used. 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



MATERIALS LIST
1–MJ ANCHOR TEE ("D"x 6")
1–6" MJ GATE VALVE
1–6" VALVE BOX
6" DICL SJ PIPE (20' MAX.)
1–FIRE HYDRANT
CONCRETE BLOCKING (AS NEEDED)

** CAUTION! WEEP HOLES TO BE KEPT CLEAR DURING CONSTRUCTION AND BACKFILL. CONCRETE FOR THRUST BLOCKING SHALL NOT OBSTRUCT WEEP HOLES.

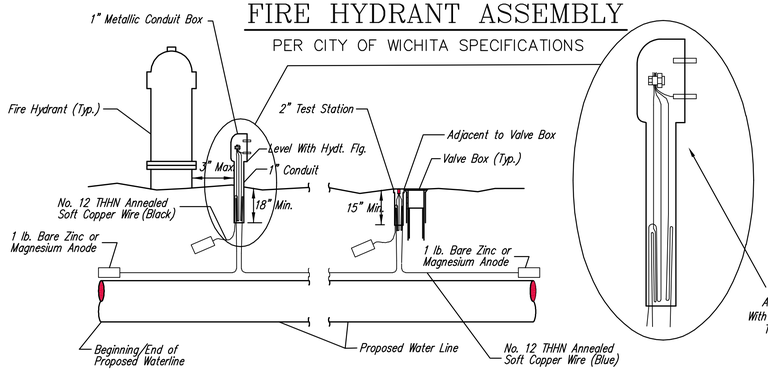
CONCRETE THRUST BLOCKING SHALL BE KEPT CLEAR OF BOLTS, NUTS, AND MJ ACCESSORIES.

* IF HYDRANT BURY IS IN EXCESS OF 5', CONTRACTOR SHALL USE STANDARD 5' HYDRANT BURY AND HYDRANT BARREL EXTENSIONS AS NECESSARY.

FIRE HYDRANTS REQUIRED			
STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*
13+49.46, LINE 1	1354.94	1351.11	4.5'
17+04.04, LINE 1	1356.48	1352.65	4.5'
21+31.52, LINE 1	1361.53	1357.70	4.5'
31+42.06, LINE 1	1366.92	1363.09	4.5'
34+01.34, LINE 1	1367.70	1363.87	4.5'
9+92.00, LINE 2	1368.92	1365.26	4.5'
23+08.30, LINE 2	1371.45	1367.29	5.0'
26+85.84, LINE 2	1370.81	1366.65	5.0'
31+09.05, LINE 2	1366.96	1362.13	5.5'
14+26.75, LINE 3	1372.66	1368.83	4.5'
21+35.44, LINE 3	1368.72	1364.90	4.5'
10+65.31, LINE 7	1363.89	1360.06	4.5'
10+10.74, LINE 8	1364.85	1361.02	4.5'
14+24.31, LINE 8	1362.17	1358.34	4.5'
10+58.57, LINE 10	1372.95	1369.12	4.5'

FIRE HYDRANT ASSEMBLY

PER CITY OF WICHITA SPECIFICATIONS



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 1 lb. Zinc or magnesium anode. Anodes should 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. 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 is exposed 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

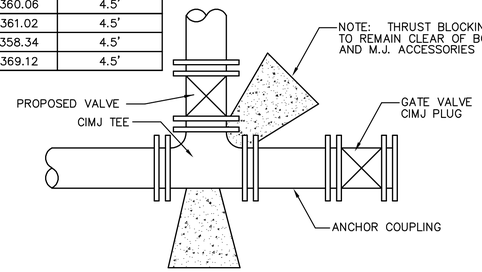
The test station for fire hydrant applications shall be a 1 inch galvanized conduit style test station as manufactured by AGRA Industries with a removable solid cover having two leads extending from the face or approved equal. The test station for valve applications shall be 2 inch flush style test station T2PS3B as manufactured by HANDLEY Industries or approved equal. The conduit style 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

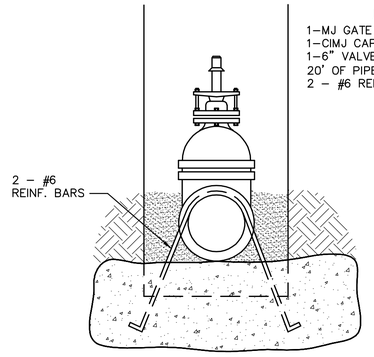
The anodes shall be 1 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the waterline at each test station. The anodes shall be connected to Black No. 12 THHN annealed soft copper wire which shall be extended to the test station.

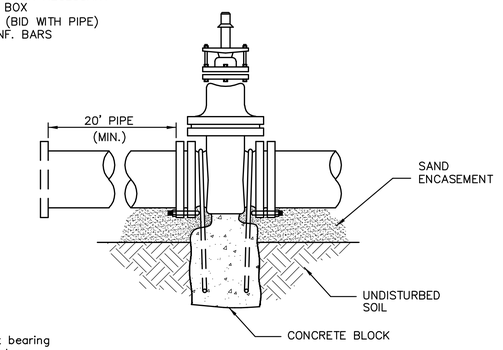
TRACER WIRE DETAIL

COST IS SUBSIDIARY TO PIPE INSTALLATION



KEY BLOCK DETAIL



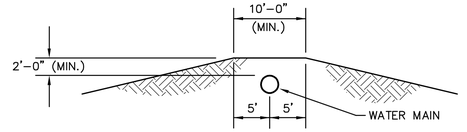


MATERIALS LIST
1–MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
1–CIMJ CAP WHEN NECESSARY
1–6" VALVE BOX
20' OF PIPE (BID WITH PIPE)
2 – #6 REINF. BARS

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.

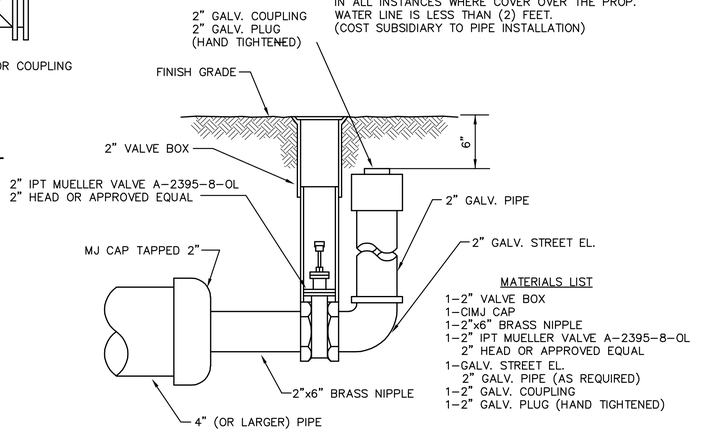
THRUST AT VALVES	
VALVE	THRUST AT 150 #/in²
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.

ANCHORED VALVE ASSEMBLY, SPECIAL



PROTECTIVE FILL DETAIL

MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE COVER OVER THE PROP. WATER LINE IS LESS THAN (2) FEET. (COST SUBSIDIARY TO PIPE INSTALLATION)



MATERIALS LIST
1–2" VALVE BOX
1–CIMJ CAP
1–2"x6" BRASS NIPPLE
1–2" IPT MUELLER VALVE A–2395–8–OL
2" HEAD OR APPROVED EQUAL
1–GALV. STREET EL.
2" GALV. PIPE (AS REQUIRED)
1–2" GALV. COUPLING
1–2" GALV. PLUG (HAND TIGHTENED)

2" BLOWOFF ASSEMBLY

6" and 8" Gate Valves and Blow Off Valves - CLOW
12" Butterfly Valves - PRATT
Fire Hydrants - CLOW

RECORD DRAWING 2-15-2010

Revised: 11–13–00, MCG
Revised: 6–7–00, MCG

THE CITY OF WICHITA

CITY ENGINEER'S OFFICE
CITY HALL – SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268–4501
(316) 268–4114 FAX

STANDARD WATER ASSEMBLY DETAILS

JAMES L. ARMOUR, CITY ENGINEER

PROJECT NUMBER	INDEX CODE
1369PPW	607853
DATE	Sheet 2 of 22
Jan–08	

RECORD DRAWING 2-15-2010

CORNERSTONE PKWY.

CL OF EXISTING DITCH TO BE PROTECTED DURING CONSTRUCTION. INSTALL 20 LF OF 8" DRAIN PIPE UNDER PROPOSED WATER LINE TO MAINTAIN DITCH FLOW. CONTRACTOR TO INSTALL EROSION CONTROL AS NEEDED. COST SUBSIDIARY TO PROJECT.

CORNERSTONE THIRD ADDITION

STA. 10+64.64, LINE 1=
ST. STA. 11+02.66, 27.0' RT.
REMOVE EXIST. BLOWOFF
CONNECT TO EXIST. 8"

284.82' OF 8" PIPE

LINE 1

SANDSTONE ST.

STA. 13+49.46, LINE 1=
ST. STA. 13+73.73, 27.0' RT.
1-FIRE HYDT. ASSY.
L=5'

Valve 3' Behind Hydt. in Sidewalk

3.15' OF 8" DICL PIPE

LINE 4

STA. 13+52.61, LINE 1=
ST. STA. 13+76.50, 27.0' RT.
1-8"x6" DIMJ TEE
1-6" VALVE ASSY.
(MJ GATE VALVE)
VALVE BOX EL=1355.1

3'9" NW of Hydt., Then 7'6" NE - in Sidewalk

STA. 15+84.87, TO
STA. 15+96.97, LINE 1
2-8" DIMJ 22.5° BENDS
13.10' OF 8" DICL PIPE

STA. 17+04.04, LINE 1=
ST. STA. 17+16.92, 27.0' RT.
1-FIRE HYDT. ASSY.
L=5'

Valve 3'4" Behind Hydt. in Sidewalk

11.73' OF 8" DICL PIPE

LINE 5

TC=1356.48

C2 NOM. R=148'

STA. 15+52.82, TO
STA. 15+64.87, LINE 1
2-8" DIMJ 22.5° BENDS
13.05' OF 8" DICL PIPE

200.21' OF 8" PIPE

107.07' OF 8" PIPE

20' OF 8" DICL PIPE

STA. 17+15.77, LINE 1=
ST. STA. 17+30.79, 27.0' RT.
1-8"x6" DIMJ TEE
1-6" VALVE ASSY.
(MJ GATE VALVE)
VALVE BOX EL=1357.2

10'6" NW of Hydt., Then 2' NE

STA. 19+52.71, TO
STA. 19+60.16, LINE 1
2-8" DIMJ 22.5° BENDS
8.03' OF 8" DICL PIPE

20.00' OF 8" DICL PIPE

236.94' OF 8" PIPE

STA. 19+80.16, TO
STA. 19+88.56, LINE 1
2-8" DIMJ 22.5° BENDS
9.10' OF 8" DICL PIPE

STA. 21+00.00= ST. STA. 21+26.58, 27.00' RT. MATCH LINE

111.44' OF 8" PIPE

NOTE:
CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXIST. 8" WATER LINE PRIOR TO CONSTRUCTION.

SCALE: 1"= 40'
0 20 40 80

PLAN LINE 1

PROFILE LINE 1

SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'

REMOVE EXIST. BLOWOFF CONNECT TO EXIST. 8"
FIRE HYDRANT BURY LINE EL=1354.94 VALVE BOX EL=1355.1
8"x6" TEE, LINE 4
22.5° BEND
FIRE HYDRANT BURY LINE EL=1356.48 VALVE BOX EL=1356.7
8"x6" TEE, LINE 5
MATCH LINE

PROTECTIVE FILL
PROP. TOP OF 8" WATER
PROP. GROUND ON ℄ OF PIPE
EXIST. GROUND ON ℄ OF PIPE
PROP. 48" SWS FL=1346.91
PROP. 24" SWS FL=1355.27
20 LF OF 8" DRAIN PIPE
4" SERVICE FL=1341.3
4" SERVICE FL=1341.4
8" DICL
PROP. 30" SWS FL=1345.00
PROP. 8" SAN. FL=1344.91
4" SERVICE FL=1343.6
8" DICL PIPE @ 0.00%
4" SERVICE FL=1343.5
4" SERVICE FL=1349.0
4" SERVICE FL=1349.1
4" SERVICE FL=1350.1
8" DICL PIPE @ 0.00%
8" PIPE @ -0.92%
8" PIPE @ 1.27%
8" PIPE @ -0.30%
8" PIPE @ 2.00%
8" PIPE @ 1.40%

1365 1360 1355 1350 1345 1340 1335

+64.64 +49.46 +52.61 +52.82 +64.87 +84.87 +96.97 +04.64 +15.77 +80 +52.71 +60.16 +80.16 +88.56

1347.50 1351.11 1351.10 1350.50 1345.50 1345.50 1350.51 1352.65 1352.88 1356.17 1355.50 1352.50 1352.50 1355.98 1357.54

10 11 12 13 14 15 16 17 18 19 20 21

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MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

WATER DISTRIBUTION PLANS
THE CORNERSTONE
THIRD ADDITION

LINE 1
SHEET TITLE

1369PPW
PROJECT NUMBER

DFL
DESIGN BY

KKL
DRAWN BY

GJA
CHECKED BY

ISSUED
January 2008
REVISED

SHEET NO.
3 of 22

RECORD DRAWING 2-15-2010

4' NW of Hydt., Then 7' NE in Sidewalk

STA. 21+34.67, LINE 1=
ST. STA. 21+57.12, 27' RT.
1–8"x6" DIMJ TEE
1–6" VALVE ASSY.
(MJ GATE VALVE)
VALVE BOX EL=1361.7

STA. 21+00.00= ST. STA. 21+26.58, 27.00' RT. MATCH LINE

31.52' OF 8" PIPE

STA. 21+31.52, LINE 1=
ST. STA. 21+54.35, 27' RT.
1–FIRE HYDT. ASSY.
L=5'
Valve 2'8" Behind Hydt.

3.15' OF 8" DICL PIPE

391.50' OF 8" PIPE

STA. 25+26.17, LINE 1=
ST. STA. 25+49.05, 27' RT.
1–8"x8" DIMJ TEE
1–8" VALVE ASSY. (N)
1–8" VAVLE ASSY. (W)
(MJ GATE VALVES)
VALVE BOX EL=1364.1

57.72' OF 8" PIPE

STA. 25+81.61, TO
STA. 25+91.00, LINE 1
2–8" DIMJ 22.5° BENDS
10.17' OF 8" DICL PIPE

STA. 26+11.00, TO
STA. 26+21.91, LINE 1
2–8" DIMJ 22.5° BENDS
11.72' OF 8" DICL PIPE

20' OF 8" DICL PIPE

208.70' OF 8" PIPE

8' W of Hydt., Then 5' N

STA. 28+28.30, LINE 1=
ST. STA. 28+67.34, 27.0' RT.
1–8"x8" DIMJ TEE
1–8" VALVE ASSY.
(MJ GATE VALVE)
VALVE BOX EL=1365.42

132.50' OF 8" PIPE

STA. 29+60.80, TO
STA. 29+65.18, LINE 1
2–8" DIMJ 22.5° BENDS
4.74' OF 8" DICL PIPE

20.00' OF 8" DICL PIPE

STA. 29+85.18, TO
STA. 29+90.45, LINE 1
2–8" DIMJ 22.5° BENDS
5.70' OF 8" DICL PIPE

151.61' OF 8" PIPE

STA. 31+42.06, LINE 1=
ST. STA. 31+86.80, 27.0' RT.
1–FIRE HYDT. ASSY.
L=5'
Valve 3'3" Behind Hydt. in Sidewalk

57.94' OF 8" PIPE

STA. 32+00.00= ST. STA. 32+48.04 27.00' RT. MATCH LINE

*Valve along BOC 41' NW of Wheelchair Ramp, Then 6' NE from BOC
*Valve along BOC 43'6" NW of Wheelchair Ramp, Then 8'6" NE from BOC in sidewalk

CORNERSTONE THIRD ADDITION

LEDGESTONE

STOCKPILE

LINE 7

LINE 6

LINE 8

LINE 1

SANDSTONE ST.

SANDSTONE CT.

PROP. SAN. SEW.

PROP. SWS

STBK.

BLDG.

DRNG. & UTIL. ESMT.

NOM. R=173'

NOM. R=227'

NOM. R=427'

NOM. R=473'

TC=1361.53

TC=1366.92

SCALE: 1"= 40'
0 20 40 80

PLAN LINE 1

PROFILE LINE 1

SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5

MATCH LINE
FIRE HYDRANT
BURY LINE EL=1361.53
VALVE BOX EL=1361.7
8"x6" TEE, LINE 6
8"x8" TEE, LINE 7
22.5° BEND
℄ SANDSTONE CT.
8"x8" TEE, LINE 8
FIRE HYDRANT
BURY LINE EL=1366.92
VALVE BOX EL=1362.2

PROP. GROUND ON ℄ OF PIPE
EXIST. GROUND ON ℄ OF PIPE
PROTECTIVE FILL
TOP OF PROP. 8" WATER

8" PIPE @ 0.50%
8" PIPE @ 0.60%
8" PIPE @ 0.00%
8" PIPE @ 0.60%
8" PIPE @ 0.60%
8" PIPE @ 0.30%

PROP. 8" SAN. FL=1350.80
4" SERVICE FL=1351.9
4" SERVICE FL=1352.0
PROP. 24" SWS FL=1359.00
PROP. 8" SAN. FL=1349.47
8" DICL PIPE @ 0.00%
4" SERVICE FL=1355.7
4" SERVICE FL=1355.8
PROP. 15" SWS FL=1361.67
4" SERVICE FL=1356.4

+00.00 +31.52 +34.67 +26.17 +81.61 +91.00 +11.00 +21.91 +60.80 +65.18 +90.45 +42.06

1357.54 1357.70 1357.72 1360.06 1360.39 1356.50 1356.50 1361.02 1361.82 1360.00 1362.18 1363.09 1363.26

1370 1365 1360 1355 1350 1345 1340

21 22 23 24 25 26 27 28 29 30 31 32

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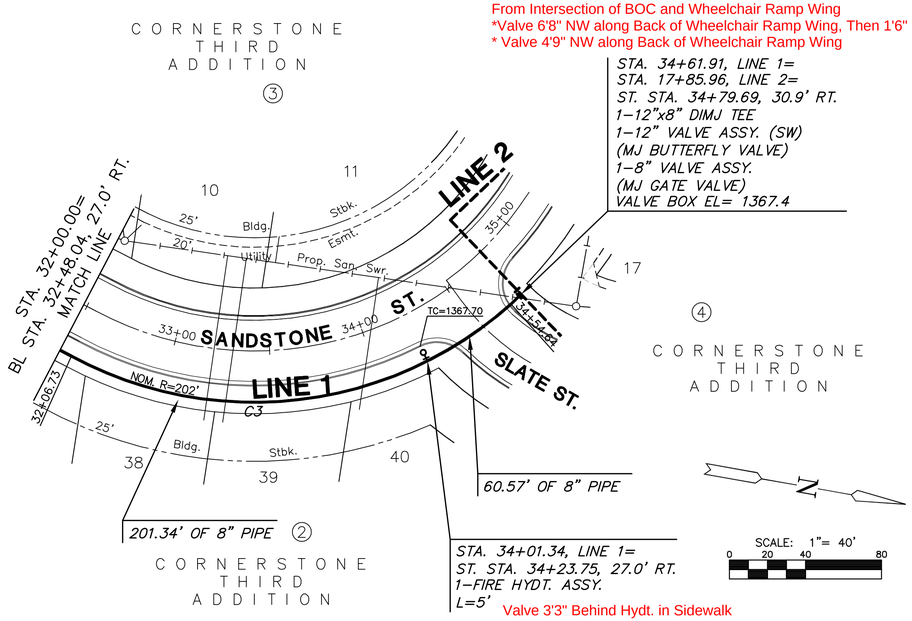
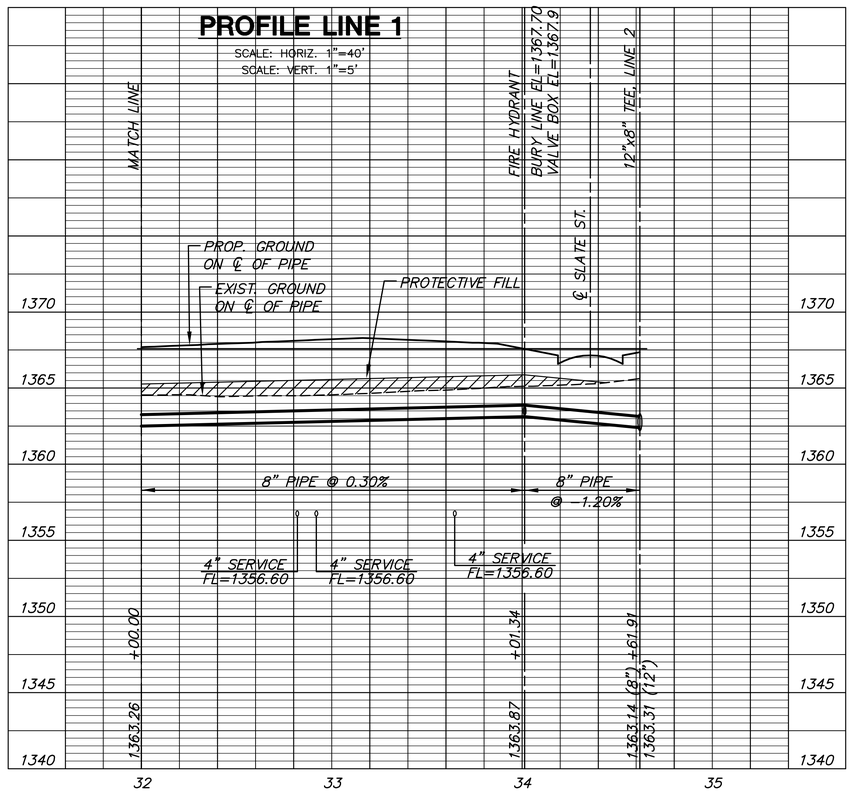
4 of 22

RECORD DRAWING 2-15-2010



PLAN LINE 1



PLOTTED: Friday, January 11, 2008 @ 03:36PM

CURVE TABLE – C1

△ = 92°53'19" R = 227.00' T = 238.74' L = 368.02' LC = 329.02'

CURVE DATA BASED ON WATERLINE △/2 = 46°26'40"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
12+33.90	–	–	–	00°00'00"	00°00'00"
12+48.90	15.00'	–	15.39'	01°53'35"	01°53'35"
12+50.00	1.10'	–	1.13'	00°08'20"	02°01'55"
12+56.73	6.73'	–	6.91'	00°50'58"	02°52'52"
12+75.00	18.27'	–	18.75'	02°18'21"	05°11'13"
13+00.00	25.00'	–	25.65'	03°09'18"	08°20'31"
13+25.00	25.00'	–	25.65'	03°09'18"	11°29'49"
13+49.46	24.46'	–	25.09'	03°05'13"	14°35'02"
13+50.00	.54'	–	.55'	00°04'05"	14°39'07"
13+52.61	2.61'	–	2.68'	00°19'46"	14°58'53"
13+75.00	22.39'	–	22.97'	02°49'32"	17°48'26"
14+00.00	25.00'	–	25.65'	03°09'18"	20°57'44"
14+25.00	25.00'	–	25.65'	03°09'18"	24°07'02"
14+50.00	25.00'	–	25.65'	03°09'18"	27°16'20"
14+75.00	25.00'	–	25.65'	03°09'18"	30°25'38"
15+00.00	25.00'	–	25.65'	03°09'18"	33°34'57"
15+25.00	25.00'	–	25.65'	03°09'18"	36°44'15"
15+50.00	25.00'	–	25.65'	03°09'18"	39°53'33"
15+59.48	9.48'	–	9.73'	01°11'47"	41°05'20"
15+64.87	5.39'	–	5.53'	00°40'49"	41°46'09"
15+75.00	10.13'	–	10.40'	01°16'42"	43°02'51"
15+84.87	9.87'	–	10.13'	01°14'44"	44°17'35"
15+92.29	7.42'	–	7.62'	00°56'11"	45°13'47"
16+00.00	7.71'	–	7.91'	00°58'23"	46°12'09"
16+01.92	1.92'	–	1.97'	00°14'30"	46°26'39"

Def/Ft = 7.57213 Min.

CURVE TABLE – C2

△ = 98°19'22" R = 148.00' T = 171.23' L = 253.98' LC = 223.94'

CURVE DATA BASED ON WATERLINE △/2 = 49°09'41"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
16+01.92	–	–	–	00°00'00"	00°00'00"
16+25.00	23.08'	23.99'	–	04°28'03"	04°28'03"
16+50.00	25.00'	25.98'	–	04°50'21"	09°18'24"
16+75.00	25.00'	25.98'	–	04°50'21"	14°08'45"
17+00.00	25.00'	25.98'	–	04°50'21"	18°59'06"
17+04.04	4.04'	4.20'	–	00°46'55"	19°46'01"
17+15.77	11.73'	12.20'	–	02°16'14"	22°02'15"
17+25.00	9.23'	9.60'	–	01°47'12"	23°49'27"
17+50.00	25.00'	25.98'	–	04°50'21"	28°39'48"
17+75.00	25.00'	25.98'	–	04°50'21"	33°30'09"
18+00.00	25.00'	25.98'	–	04°50'21"	38°20'30"
18+25.00	25.00'	25.98'	–	04°50'21"	43°10'51"
18+50.00	25.00'	25.98'	–	04°50'21"	48°01'12"
18+55.90	5.90'	6.13'	–	01°08'29"	49°09'41"

Def/Ft =11.61401 Min.

CURVE TABLE – C3

△ = 94°08'31" R = 227.00' T = 244.03' L = 372.98' LC = 332.42'

CURVE DATA BASED ON WATERLINE △/2 = 47°04'16"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
19+82.32	–	–	–	00°00'00"	00°00'00"
20+00.00	17.68'	–	18.14'	02°13'53"	02°13'53"
20+25.00	25.00'	–	25.65'	03°09'18"	05°23'11"
20+50.00	25.00'	–	25.65'	03°09'18"	08°32'29"
20+75.00	25.00'	–	25.65'	03°09'18"	11°41'47"
21+00.00	25.00'	–	25.65'	03°09'18"	14°51'05"
21+25.00	25.00'	–	25.65'	03°09'18"	18°00'23"
21+31.52	6.52'	–	6.69'	00°49'22"	18°49'46"
21+34.67	3.15'	–	3.23'	00°23'51"	19°13'37"
21+50.00	15.33'	–	15.73'	01°56'05"	21°09'42"
21+75.00	25.00'	–	25.65'	03°09'18"	24°19'00"
22+00.00	25.00'	–	25.65'	03°09'18"	27°28'18"
22+25.00	25.00'	–	25.65'	03°09'18"	30°37'36"
22+50.00	25.00'	–	25.65'	03°09'18"	33°46'54"
22+75.00	25.00'	–	25.65'	03°09'18"	36°56'13"
23+00.00	25.00'	–	25.65'	03°09'18"	40°05'31"
23+25.00	25.00'	–	25.65'	03°09'18"	43°14'49"
23+50.00	25.00'	–	25.65'	03°09'18"	46°24'07"
23+55.30	5.30'	–	5.44'	00°40'08"	47°04'15"

Def/Ft = 7.57213 Min.

CURVE TABLE – C4

△ = 97°59'17" R = 173.00' T = 198.97' L = 295.87' LC = 261.11'

CURVE DATA BASED ON WATERLINE △/2 = 48°59'39"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
23+55.30	–	–	–	00°00'00"	00°00'00"
23+75.00	19.70'	20.37'	–	03°15'44"	03°15'44"
24+00.00	25.00'	25.84'	–	04°08'24"	07°24'08"
24+25.00	25.00'	25.84'	–	04°08'24"	11°32'31"
24+50.00	25.00'	25.84'	–	04°08'24"	15°40'55"
24+75.00	25.00'	25.84'	–	04°08'24"	19°49'18"
25+00.00	25.00'	25.84'	–	04°08'24"	23°57'42"
25+25.00	25.00'	25.84'	–	04°08'24"	28°06'05"
25+26.17	1.17'	1.21'	–	00°11'37"	28°17'43"
25+50.00	23.83'	24.64'	–	03°56'46"	32°14'29"
25+75.00	25.00'	25.84'	–	04°08'24"	36°22'52"
26+00.00	25.00'	25.84'	–	04°08'24"	40°31'16"
26+25.00	25.00'	25.84'	–	04°08'24"	44°39'39"
26+50.00	25.00'	25.84'	–	04°08'24"	48°48'03"
26+51.17	1.17'	1.21'	–	00°11'36"	48°59'39"

Def/Ft = 9.93568 Min.

CURVE TABLE – C5

△ = 13°33'45" R =1427.00' T = 169.69' L = 337.79' LC = 337.00'

CURVE DATA BASED ON WATERLINE △/2 = 06°46'53"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
26+51.17	–	–	–	00°00'00"	00°00'00"
26+75.00	23.83'	–	23.93'	00°28'42"	00°28'42"
27+00.00	25.00'	–	25.10'	00°30'07"	00°58'49"
27+25.00	25.00'	–	25.10'	00°30'07"	01°28'56"
27+50.00	25.00'	–	25.10'	00°30'07"	01°59'03"
27+75.00	25.00'	–	25.10'	00°30'07"	02°29'09"
28+00.00	25.00'	–	25.10'	00°30'07"	02°59'16"
28+25.00	25.00'	–	25.10'	00°30'07"	03°29'23"
28+28.30	3.30'	–	3.31'	00°03'58"	03°33'22"
28+50.00	21.70'	–	21.79'	00°26'08"	03°59'30"
28+75.00	25.00'	–	25.10'	00°30'07"	04°29'37"
29+00.00	25.00'	–	25.10'	00°30'07"	04°59'43"
29+25.00	25.00'	–	25.10'	00°30'07"	05°29'50"
29+50.00	25.00'	–	25.10'	00°30'07"	05°59'57"
29+59.99	9.99'	–	10.03'	00°12'02"	06°11'59"
29+65.18	5.19'	–	5.21'	00°06'15"	06°18'14"
29+75.00	9.82'	–	9.86'	00°11'50"	06°30'04"
29+85.18	10.18'	–	10.22'	00°12'16"	06°42'20"
29+88.96	3.78'	–	3.79'	00°04'33"	06°46'53"

Def/Ft = 1.20454 Min.

CURVE TABLE – C6

△ = 26°22'49" R = 473.00' T = 110.86' L = 217.78' LC = 215.86'

CURVE DATA BASED ON WATERLINE △/2 = 13°11'24"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
29+88.95	–	–	–	00°00'00"	00°00'00"
29+92.67	3.72'	3.77'	–	00°13'31"	00°13'31"
30+00.00	7.33'	7.42'	–	00°26'38"	00°40'09"
30+25.00	25.00'	25.31'	–	01°30'51"	02°11'00"
30+50.00	25.00'	25.31'	–	01°30'51"	03°41'51"
30+75.00	25.00'	25.31'	–	01°30'51"	05°12'42"
31+00.00	25.00'	25.31'	–	01°30'51"	06°43'33"
31+25.00	25.00'	25.31'	–	01°30'51"	08°14'24"
31+42.06	17.06'	17.28'	–	01°02'00"	09°16'24"
31+50.00	7.94'	8.04'	–	00°28'51"	09°45'15"
31+75.00	25.00'	25.31'	–	01°30'51"	11°16'06"
32+00.00	25.00'	25.31'	–	01°30'51"	12°46'57"
32+06.73	6.73'	6.82'	–	00°24'27"	13°11'25"

Def/Ft = 3.63398 Min.

CURVE TABLE – C7

△ = 70°19'00" R = 202.00' T = 142.28' L = 247.91' LC = 232.64'

CURVE DATA BASED ON WATERLINE △/2 = 35°09'30"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
32+06.73	–	–	–	00°00'00"	00°00'00"
32+25.00	18.27'	–	18.81'	02°35'28"	02°35'28"
32+50.00	25.00'	–	25.73'	03°32'44"	06°08'12"
32+75.00	25.00'	–	25.73'	03°32'44"	09°40'56"
33+00.00	25.00'	–	25.73'	03°32'44"	13°13'40"
33+25.00	25.00'	–	25.73'	03°32'44"	16°46'24"
33+50.00	25.00'	–	25.73'	03°32'44"	20°19'07"
33+75.00	25.00'	–	25.73'	03°32'44"	23°51'51"
34+00.00	25.00'	–	25.73'	03°32'44"	27°24'35"
34+01.34	1.34'	–	1.38'	00°11'24"	27°35'59"
34+25.00	23.66'	–	24.35'	03°21'20"	30°57'19"
34+50.00	25.00'	–	25.73'	03°32'44"	34°30'03"
34+54.64	4.64'	–	4.77'	00°39'27"	35°09'30"

Def/Ft = 8.50927 Min.

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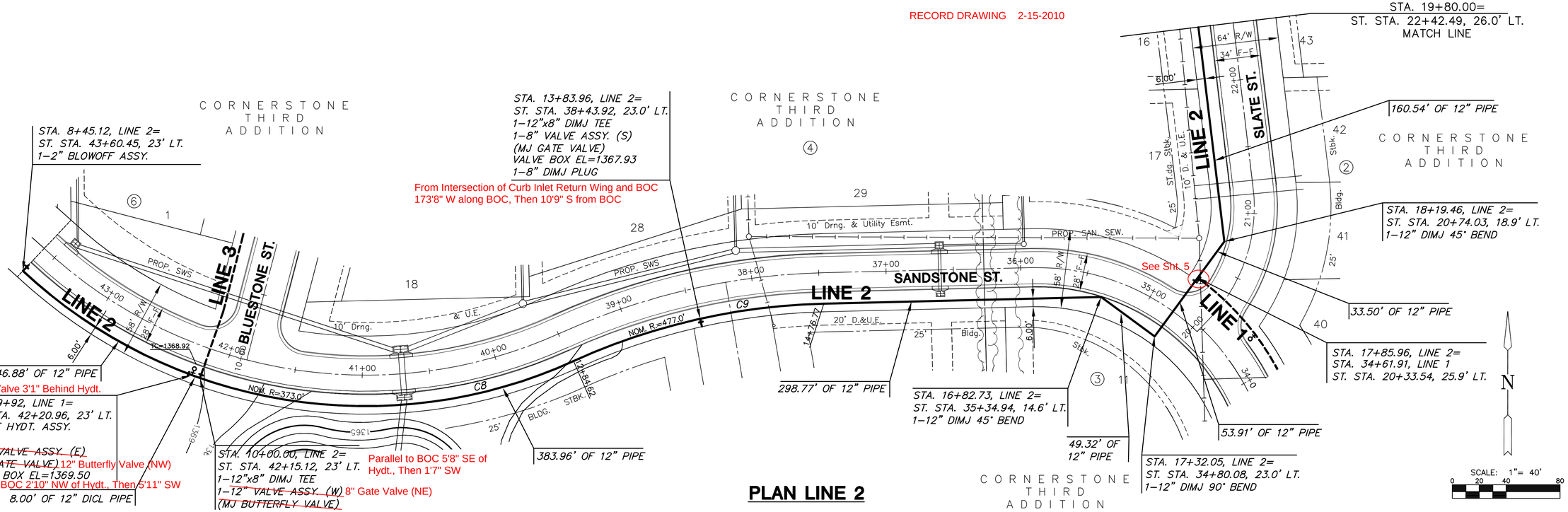
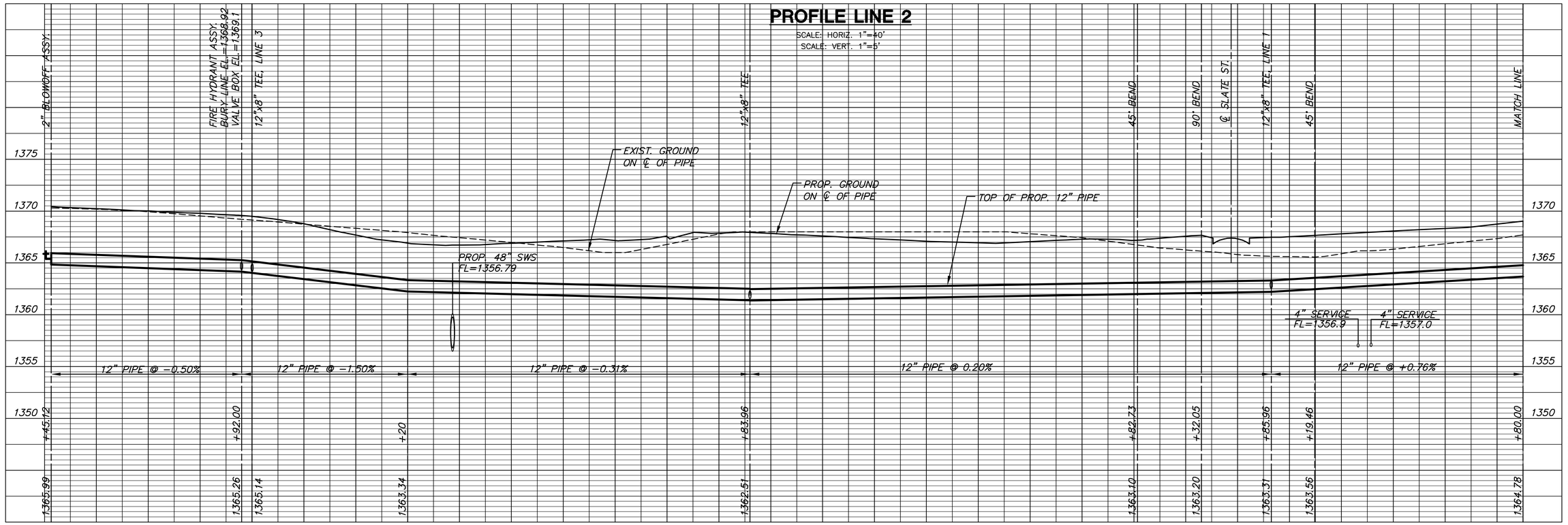
RECORD DRAWING 2-15-2010



PLAN LINE 2

PROFILE LINE 2

SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'



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THE CORNERSTONE
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6 of 22

PLOTTED: Friday, January 11, 2008 @ 03:37PM
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RECORD DRAWING 2-15-2010

STA. 22+40.72, LINE 2=
ST. STA. 24+59.48, 29.6' LT.
1–12" DIMJ 22.5° BEND

67.58' OF 12" PIPE

STA. 23+08.30, LINE 2=
ST. STA. 25+20.80, 26.0' LT.
1–FIRE HYDT. ASSY.
L=5' Valve 3'3" Behind Hydt.

CORNERSTONE THIRD ADDITION ④

STA. 26+85.84, LINE 2=
ST. STA. 29+00.24, 26.0' LT.
1–FIRE HYDT. ASSY.
L=5' Valve 3'3" Behind Hydt.

65.43' OF 12" PIPE

377.54' OF 12" PIPE

413.23' OF 12" PIPE

CORNERSTONE THIRD ADDITION ④

TC=1371.45

STOCKPILE

SLATE ST.

Prop. San. Swr.

6.00'

25' Bldg. Stbk.

25+78.35

LINE 2

C10
Nom. Rad.=1474'

TC=1370.81

28+84.89

C11
Nom. Rad.=226'

FIELDSTONE ST.

LINE 11

CORNERSTONE THIRD ADDITION ⑤

Stbk.

25' Bldg.

24+00

23+00

20' Drng. & Utility Esmt.

PROP SWS

64' R/W

34' F-F

SLATE ST.

Prop. San. Swr.

20' Drng. & Utility Esmt.

25' Bldg. Stbk.

Prop. San. Swr.

STA. 30+99.07
STA. 32+92.27
MATCH LINE

STA. 21+75.29, LINE 2=
ST. STA. 24+06.58, 29.6' LT.
1–12" DIMJ 22.5° BEND

65.42' OF 12" PIPE

STA. 21+09.87, LINE 2=
ST. STA. 23+53.68, 29.6' LT.
1–12" DIMJ 22.5° BEND

65.42' OF 12" PIPE

STA. 19+80.00=
ST. STA. 22+42.49
MATCH LINE

64.45' OF 12" PIPE

STA. 20+44.45, LINE 2=
ST. STA. 23+00.78, 29.6' LT.
1–12" DIMJ 22.5° BEND

STA. 30+99.07, LINE 2=
ST. STA. 32+92.27, 26' LT.
1–12"x12" DIMJ TEE
1–12" VALVE ASSY.
(MJ BUTTERFLY VALVE)
VALVE BOX EL=1367.2
1–12"x8" DIMJ REDUCER, SEB
8'2" NW of Hydt., Then 7'8" NE

CORNERSTONE THIRD ADDITION ②

N

SCALE: 1"= 40'
0 20 40 80

PLAN LINE 2

PROFILE LINE

SCALE: HORIZ. 1"=40'
SCALE: VERT 1"=5'

MATCH LINE

22.5° BEND

FIRE HYDRANT
BURY LINE EL=1371.45
VALVE BOX EL=1371.7

EXIST. GROUND ON ℄ OF PIPE

PROP. 24" SWS
FL=1363.50

PROP. GROUND ON ℄ OF PIPE

FIRE HYDRANT
BURY LINE EL=1370.81
VALVE BOX EL=1371.6

TOP OF PROP. 12" WATER

℄ FIELDSTONE ST.

12"x12" TEE, LINE 11

PROP. 24" SWS
FL=1362.50

1375
1370
1365
1360
1355
1350

12" PIPE @ +0.76%
12" PIPE @ −0.71%
12" PIPE @ −8.16%
12" PIPE @ 7.87%
12" PIPE @ 0.50%
12" PIPE @ −1.23%
12" PIPE @ −6.78%
12" PIPE @ +0.00%
12" PIPE @ +6.96%
12" PIPE @ −0.44%
12" PIPE @ +0.00%

4" SERVICE FL=1361.8
4" SERVICE FL=1361.8
4" SERVICE FL=1360.2
4" SERVICE FL=1360.0
4" SERVICE FL=1359.7
4" SERVICE FL=1359.8
4" SERVICE FL=1359.8
4" SERVICE FL=1359.7
4" SERVICE FL=1358.5
4" SERVICE FL=1358.4
4" SERVICE FL=1356.9

PROP. 8" SAN
FL=1361.29

PROP. 8" SAN
FL=1350.49

+80.00	+44.45	+09.87	+75.29	+40.72	+08.30	+97.23	+54.32	+74.32	+27.05	+85.84	+41.96	+01.32	+21.32	+53.51	+99.07
1364.78	1365.27	1365.77	1366.27	1366.77	1367.29	1366.66	1362.00	1362.00	1365.86	1366.65	1364.73	1360.70	1360.70	1362.94	1362.30

20 21 22 23 24 25 26 27 28 29 30 31

MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

WATER DISTRIBUTION PLANS

THE CORNERSTONE

THIRD ADDITION

LINE 2
SHEET TITLE

1369PPW
PROJECT NUMBER

DFL
DESIGN BY

KKL
DRAWN BY

GJA
CHECKED BY

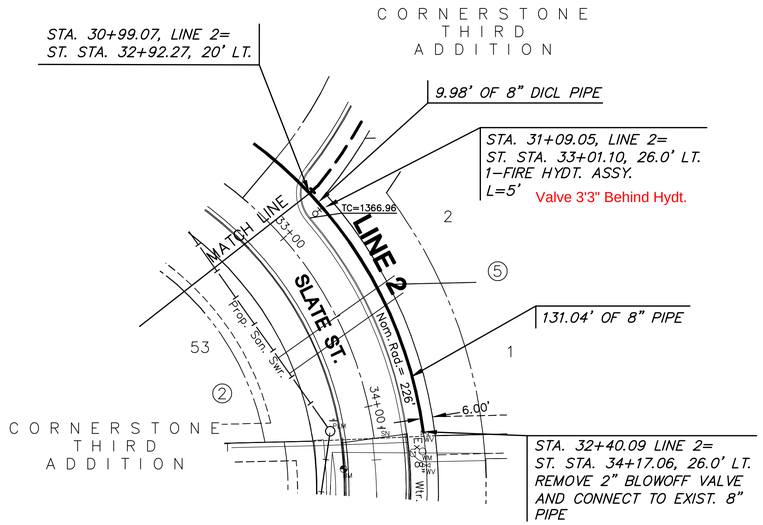
ISSUED
January 2008
REVISED

SHEET NO.
7 of 22

PLOTTED: Friday, January 11, 2008 @ 03:37PM

J:\CIVIL\04294\DWG\WTR\THIRD\04294_C5.DWG

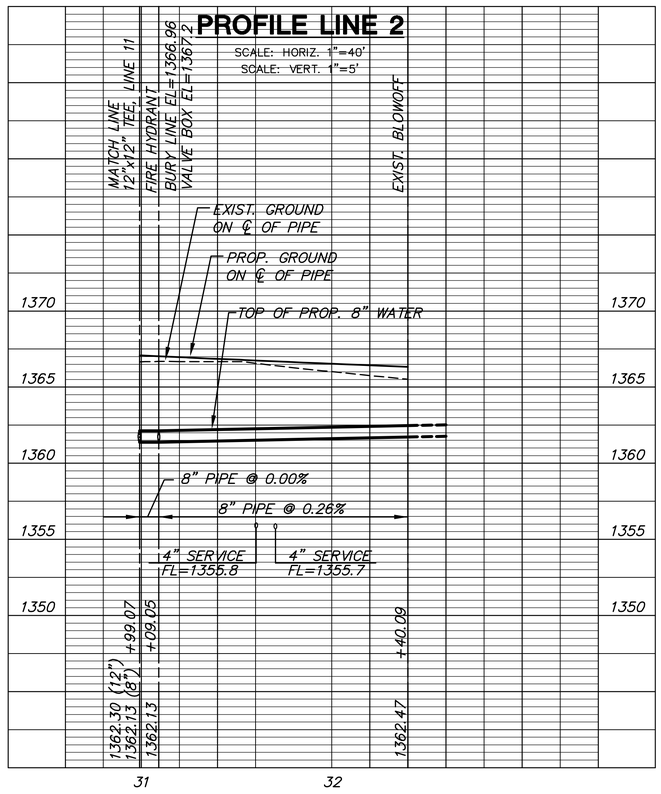
RECORD DRAWING 2-15-2010



PLAN LINE 2

SCALE: 1"= 40'
0 20 40 80

NOTE:
CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXIST. 8" WATER LINE PRIOR TO CONSTRUCTION.



CURVE TABLE – C8

△ = 67°30'39" R = 373.00' T = 249.28' L = 439.50' LC = 414.51'

CURVE DATA BASED ON WATERLINE △/2 = 33°45'20"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
8+45.12	–	–	–	00°00'00"	00°00'00"
8+75.00	29.88'	–	30.35'	02°17'42"	02°17'42"
9+00.00	25.00'	–	25.40'	01°55'12"	04°12'54"
9+25.00	25.00'	–	25.40'	01°55'12"	06°08'06"
9+50.00	25.00'	–	25.40'	01°55'12"	08°03'19"
9+75.00	25.00'	–	25.40'	01°55'12"	09°58'31"
9+92.00	17.00'	–	17.27'	01°18'20"	11°16'51"
10+00.00	8.00'	–	8.13'	00°36'52"	11°53'43"
10+25.00	25.00'	–	25.40'	01°55'12"	13°48'56"
10+50.00	25.00'	–	25.40'	01°55'12"	15°44'08"
10+75.00	25.00'	–	25.40'	01°55'12"	17°39'21"
11+00.00	25.00'	–	25.40'	01°55'12"	19°34'33"
11+08.79	8.79'	–	8.93'	00°40'30"	20°15'03"
11+19.85	11.06'	–	11.24'	00°50'58"	21°06'01"
11+25.00	5.15'	–	5.23'	00°23'44"	21°29'45"
11+39.85	14.85'	–	15.09'	01°08'26"	22°38'11"
11+50.00	10.15'	–	10.31'	00°46'46"	23°24'58"
11+50.08	.08'	–	.08'	00°00'22"	23°25'20"
11+75.00	24.92'	–	25.32'	01°54'50"	25°20'10"
12+00.00	25.00'	–	25.40'	01°55'12"	27°15'22"
12+25.00	25.00'	–	25.40'	01°55'12"	29°10'35"
12+50.00	25.00'	–	25.40'	01°55'12"	31°05'47"
12+75.00	25.00'	–	25.40'	01°55'12"	33°00'59"
12+84.62	9.62'	–	9.78'	00°44'20"	33°45'20"

Def/Ft = 4.60824 Min.

CURVE TABLE – C9

△ = 23°04'51" R = 477.00' T = 97.40' L = 192.15' LC = 190.86'

CURVE DATA BASED ON WATERLINE △/2 = 11°32'25"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
12+84.62	–	–	–	00°00'00"	00°00'00"
13+00.00	15.38'	15.57'	–	00°55'25"	00°55'25"
13+25.00	25.00'	25.31'	–	01°30'05"	02°25'31"
13+50.00	25.00'	25.31'	–	01°30'05"	03°55'36"
13+75.00	25.00'	25.31'	–	01°30'05"	05°25'41"
13+83.96	8.96'	9.07'	–	00°32'17"	05°57'58"
14+00.00	16.04'	16.24'	–	00°57'48"	06°55'46"
14+25.00	25.00'	25.31'	–	01°30'05"	08°25'52"
14+50.00	25.00'	25.31'	–	01°30'05"	09°55'57"
14+75.00	25.00'	25.31'	–	01°30'05"	11°26'02"
14+76.77	1.77'	1.80'	–	00°06'23"	11°32'25"

Def/Ft = 3.60351 Min.

CURVE TABLE – C10

△ = 11°53'46" R =1474.00' T = 153.57' L = 306.04' LC = 305.49'

CURVE DATA BASED ON WATERLINE △/2 = 05°56'53"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
25+78.35	–	–	–	00°00'00"	00°00'00"
26+00.00	21.65'	–	21.74'	00°25'15"	00°25'15"
26+25.00	25.00'	–	25.10'	00°29'09"	00°54'24"
26+50.00	25.00'	–	25.10'	00°29'09"	01°23'33"
26+75.00	25.00'	–	25.10'	00°29'09"	01°52'42"
26+85.84	10.84'	–	10.88'	00°12'38"	02°05'21"
27+00.00	14.16'	–	14.22'	00°16'31"	02°21'52"
27+25.00	25.00'	–	25.10'	00°29'09"	02°51'01"
27+50.00	25.00'	–	25.10'	00°29'09"	03°20'10"
27+75.00	25.00'	–	25.10'	00°29'09"	03°49'19"
28+00.00	25.00'	–	25.10'	00°29'09"	04°18'28"
28+25.00	25.00'	–	25.10'	00°29'09"	04°47'38"
28+50.00	25.00'	–	25.10'	00°29'09"	05°16'47"
28+75.00	25.00'	–	25.10'	00°29'09"	05°45'56"
28+84.39	9.39'	–	9.43'	00°10'57"	05°56'53"

Def/Ft = 1.16613 Min.

CURVE TABLE – C11

△ = 90°10'37" R = 226.00' T = 226.70' L = 355.70' LC = 320.11'

CURVE DATA BASED ON WATERLINE △/2 = 45°05'19"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
28+84.39	–	–	–	00°00'00"	00°00'00"
28+94.94	10.55'	10.83'	–	01°20'14"	01°20'14"
29+00.00	5.06'	5.19'	–	00°38'29"	01°58'43"
29+01.32	1.32'	1.36'	–	00°10'02"	02°08'46"
29+21.32	20.00'	20.52'	–	02°32'07"	04°40'53"
29+25.00	3.68'	3.78'	–	00°27'59"	05°08'52"
29+27.01	2.01'	2.06'	–	00°15'17"	05°24'09"
29+50.00	22.99'	23.59'	–	02°54'51"	08°19'00"
29+75.00	25.00'	25.65'	–	03°10'08"	11°29'09"
30+00.00	25.00'	25.65'	–	03°10'08"	14°39'17"
30+25.00	25.00'	25.65'	–	03°10'08"	17°49'26"
30+50.00	25.00'	25.65'	–	03°10'08"	20°59'34"
30+75.00	25.00'	25.65'	–	03°10'08"	24°09'43"
30+99.07	24.07'	24.70'	–	03°03'04"	27°12'47"
31+00.00	.93'	.95'	–	00°07'04"	27°19'51"
31+09.05	9.05'	9.29'	–	01°08'50"	28°28'41"
31+25.00	15.95'	16.37'	–	02°01'19"	30°30'00"
31+50.00	25.00'	25.65'	–	03°10'08"	33°40'08"
31+75.00	25.00'	25.65'	–	03°10'08"	36°50'16"
32+00.00	25.00'	25.65'	–	03°10'08"	40°00'25"
32+25.00	25.00'	25.65'	–	03°10'08"	43°10'33"
32+40.09	15.09'	15.49'	–	01°54'45"	45°05'19"

Def/Ft = 7.60563 Min.

MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

WATER DISTRIBUTION PLANS
THE CORNERSTONE
THIRD ADDITION

LINE 2
SHEET TITLE

1369PPW
PROJECT NUMBER

DFL
DESIGN BY

KKL
DRAWN BY

GJA
CHECKED BY

ISSUED
January 2008
REVISED

SHEET NO.
8 of 22

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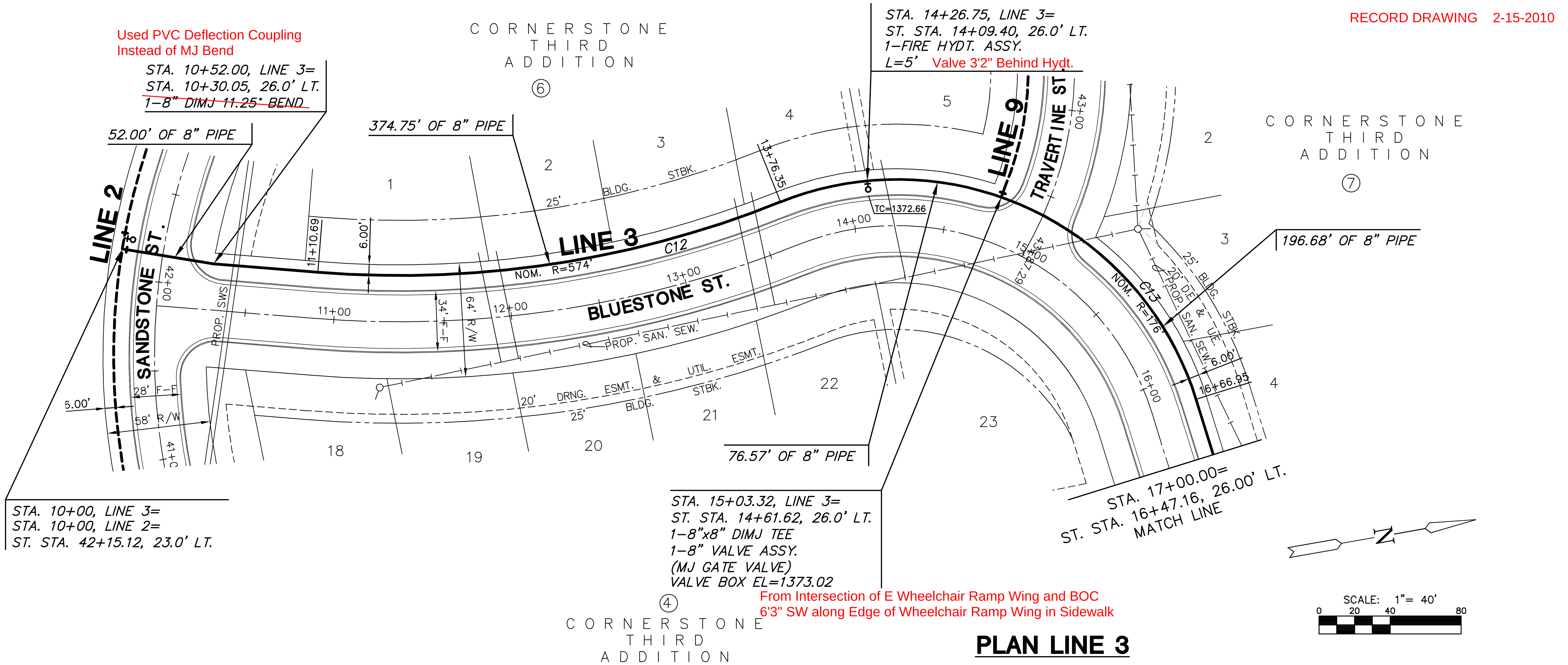
PLOTTED: Friday, January 11, 2008 @ 03:38PM

RECORD DRAWING 2-15-2010



PLAN LINE 3

CURVE TABLE – C12					
△ = 26°31'02" R = 574.00' T = 135.25' L = 265.65' LC = 263.29'					
CURVE DATA BASED ON WATERLINE △/2 = 13°15'31"					
		CHORD LENGTH			
STATION	ARC	6'LT Offset	6'RT Offset	DEFLECTION	TOTAL DEFLECTION
11+10.69	–	–	–	00°00'00"	00°00'00"
11+25.00	14.31'	–	14.46'	00°42'51"	00°42'51"
11+50.00	25.00'	–	25.26'	01°14'52"	01°57'43"
11+75.00	25.00'	–	25.26'	01°14'52"	03°12'35"
12+00.00	25.00'	–	25.26'	01°14'52"	04°27'27"
12+25.00	25.00'	–	25.26'	01°14'52"	05°42'18"
12+50.00	25.00'	–	25.26'	01°14'52"	06°57'10"
12+75.00	25.00'	–	25.26'	01°14'52"	08°12'02"
13+00.00	25.00'	–	25.26'	01°14'52"	09°26'54"
13+25.00	25.00'	–	25.26'	01°14'52"	10°41'46"
13+50.00	25.00'	–	25.26'	01°14'52"	11°56'38"
13+75.00	25.00'	–	25.26'	01°14'52"	13°11'29"
13+76.34	1.34'	–	1.36'	00°04'02"	13°15'31"
				Def/Ft = 2.99455 Min.	

CURVE TABLE – C13					
△ = 94°36'20" R = 176.00' T = 190.75' L = 290.61' LC = 258.70'					
CURVE DATA BASED ON WATERLINE △/2 = 47°18'10"					
		CHORD LENGTH			
STATION	ARC	6'LT Offset	6'RT Offset	DEFLECTION	TOTAL DEFLECTION
13+76.35	–	–	–	00°00'00"	00°00'00"
14+00.00	23.65'	24.44'	–	03°50'58"	03°50'58"
14+25.00	25.00'	25.83'	–	04°04'09"	07°55'08"
14+26.75	1.75'	1.81'	–	00°17'05"	08°12'13"
14+50.00	23.25'	24.03'	–	03°47'04"	11°59'17"
14+75.00	25.00'	25.83'	–	04°04'09"	16°03'27"
15+00.00	25.00'	25.83'	–	04°04'09"	20°07'36"
15+03.32	3.32'	3.43'	–	00°32'25"	20°40'02"
15+25.00	21.68'	22.40'	–	03°31'44"	24°11'46"
15+50.00	25.00'	25.83'	–	04°04'09"	28°15'55"
15+75.00	25.00'	25.83'	–	04°04'09"	32°20'05"
16+00.00	25.00'	25.83'	–	04°04'09"	36°24'14"
16+25.00	25.00'	25.83'	–	04°04'09"	40°28'24"
16+50.00	25.00'	25.83'	–	04°04'09"	44°32'33"
16+66.96	16.96'	17.53'	–	02°45'37"	47°18'10"
				Def/Ft = 9.76633 Min.	

PROFILE LINE 3

SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'

MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316-684-9600

WATER DISTRIBUTION PLANS
THE CORNERSTONE
THIRD ADDITION

LINE 3
SHEET TITLE

1369PPW
PROJECT NUMBER

DFL
DESIGN BY

KKL
DRAWN BY

GJA
CHECKED BY

ISSUED
January 2008
REVISED

J:\CIVIL\04294\DWG\WTR\THIRD\04294_C7.DWG

PLOTTED: Friday, January 11, 2008 @ 03:38PM

SHEET NO.
9 of 22

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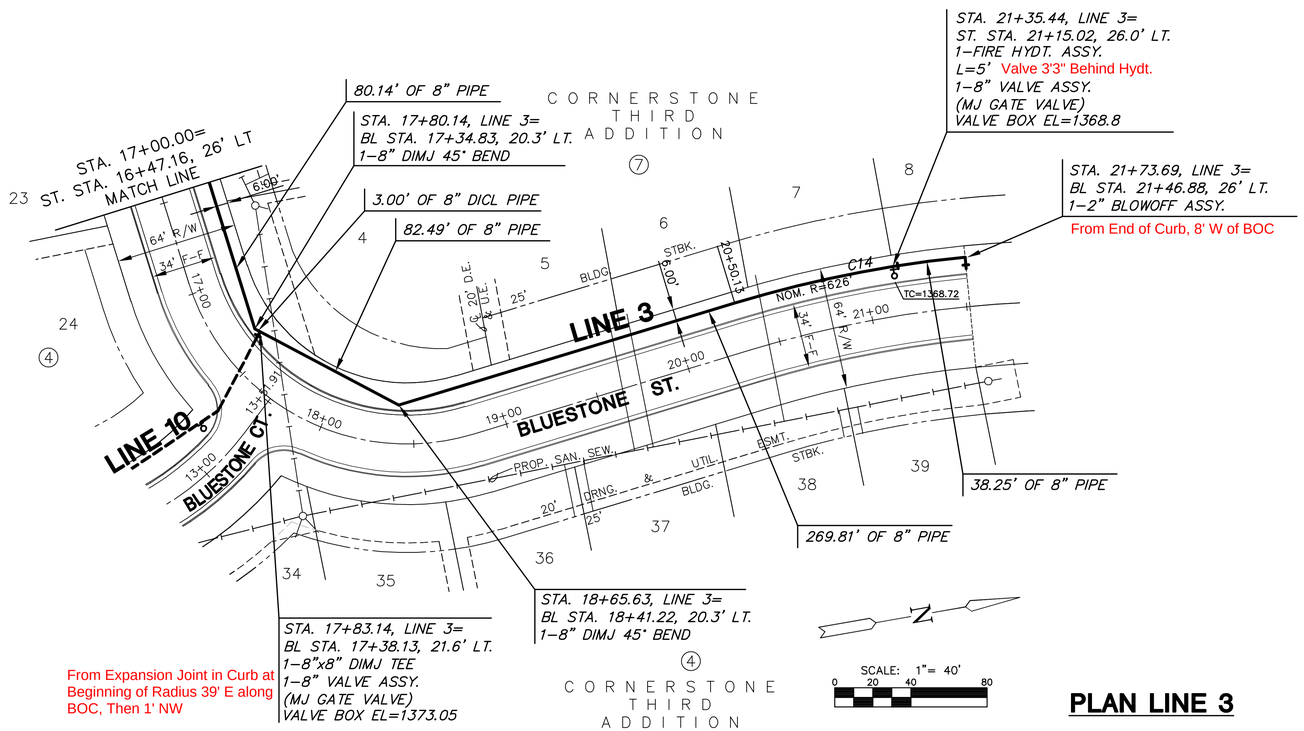


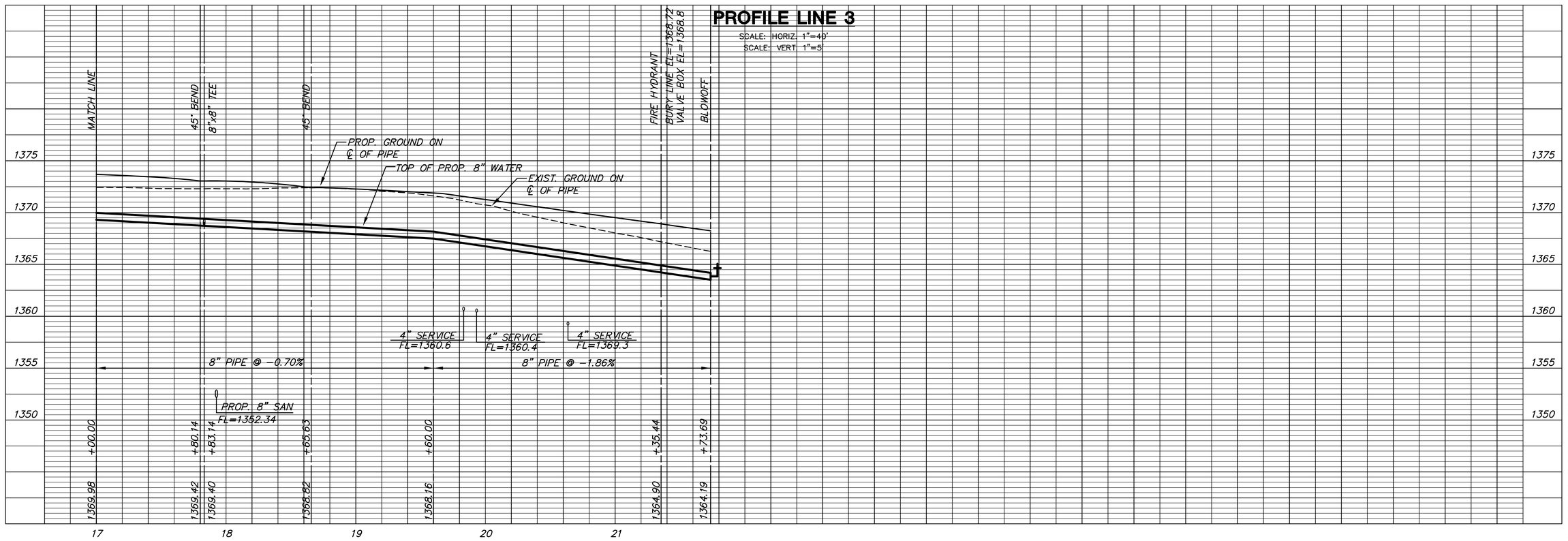
PLAN LINE 3

CURVE TABLE – C14

△ = 10°51'06" R = 626.00' T = 59.46' L = 118.56' LC = 118.39'

CURVE DATA BASED ON WATERLINE △/2 = 05°25'33"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
20+50.13	–	–	–	00°00'00"	00°00'00"
20+75.00	24.87'	25.11'	–	01°08'17"	01°08'17"
21+00.00	25.00'	25.24'	–	01°08'39"	02°16'56"
21+25.00	25.00'	25.24'	–	01°08'39"	03°25'35"
21+35.44	10.44'	10.54'	–	00°28'40"	03°54'15"
21+50.00	14.56'	14.70'	–	00°39'59"	04°34'13"
21+68.69	18.69'	18.87'	–	00°51'20"	05°25'33"
				Def/Ft = 2.74580 Min.	



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WICHITA, KS. 67206
316 - 684 - 9600

WATER DISTRIBUTION PLANS
THE CORNERSTONE
THIRD ADDITION

LINE 3
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1369PPW
PROJECT NUMBER

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DESIGN BY

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GJA
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ISSUED
January 2008
REVISED

SHEET NO.
10 of 22

PLOTTED: Friday, January 11, 2008 @ 03:39PM
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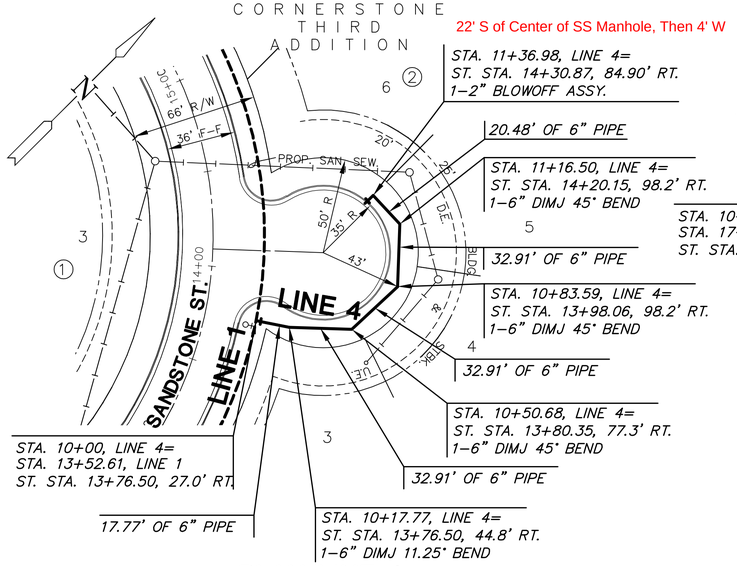
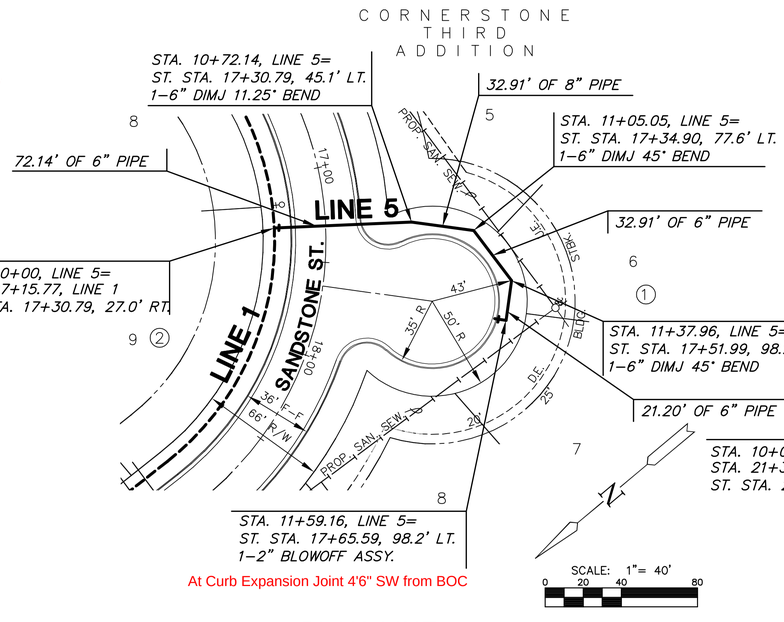
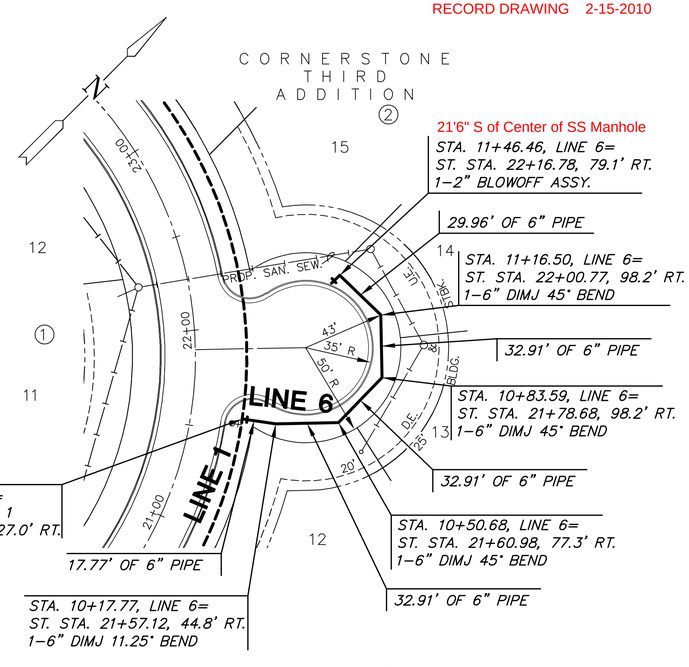
RECORD DRAWING 2-15-2010



PLAN LINE 4



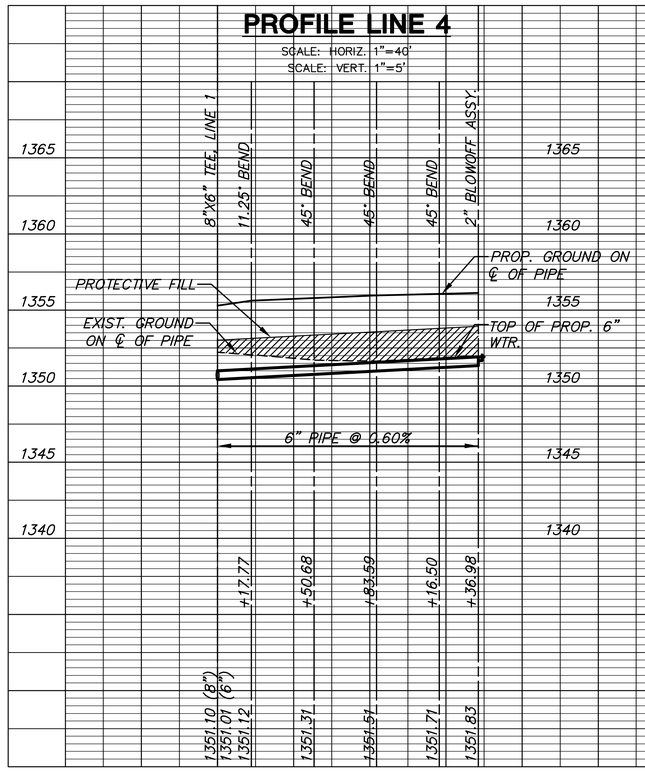
PLAN LINE 5



PLAN LINE 6

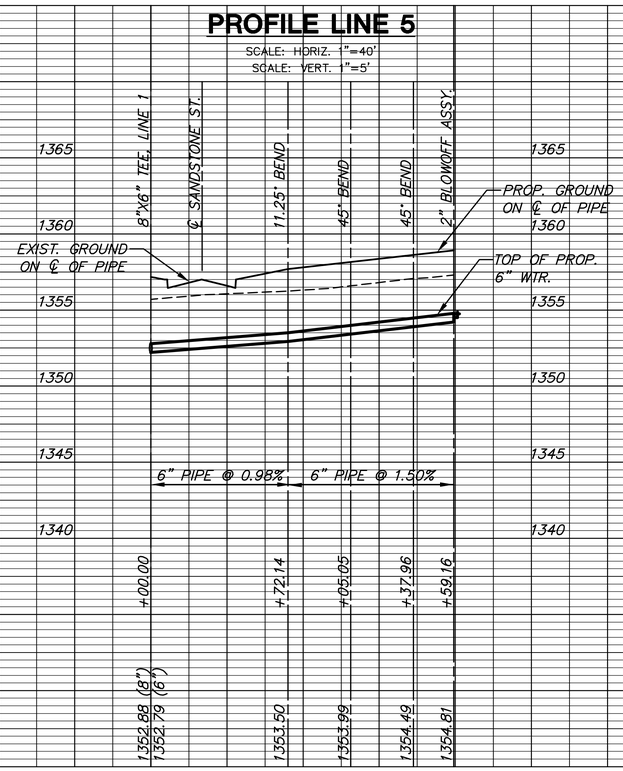
PROFILE LINE 4

SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'



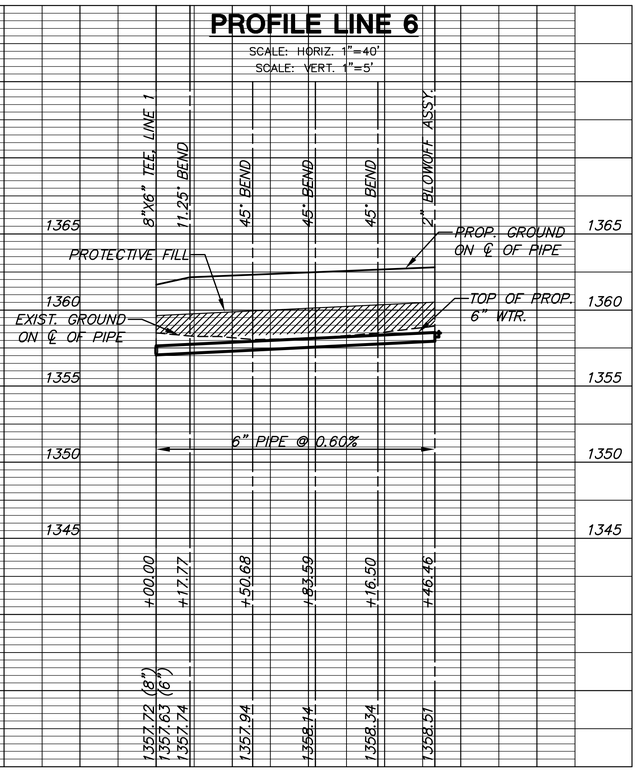
PROFILE LINE 5

SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'



PROFILE LINE 6

SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'



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411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

WATER DISTRIBUTION PLANS

THE CORNERSTONE

THIRD ADDITION

LINE 4, LINE 5 & LINE 6
SHEET TITLE

1369PPW
PROJECT NUMBER

DFL
DESIGN BY

KKL
DRAWN BY

GJA
CHECKED BY

ISSUED
January 2008

REVISED

SHEET NO.
11 of 22

PLOTTED: Friday, January 11, 2008 @ 03:40PM

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RECORD DRAWING 2-15-2010

CORNERSTONE THIRD ADDITION ①

STA. 10+00, LINE 7=
STA. 25+26.17, LINE 1
ST. STA. 25+49.05, 27.0' RT.

STOCKPILE

LEDGESTONE ST.

LINE 7

LINE 1

25' Bldg. Stbk.

20' Drng. Utility Esmt.

Prop. San. Swr.

32+40.14

TC=1363.89

6"

C15

NOM. R=324'

10+60.00

26±

30+00

See Sht. 4

65.31' OF 8" PIPE

184.63' OF 8" PIPE

STA. 10+65.31, LINE 7=
ST. STA. 31+98.84, 26.0' LT.
1-FIRE HYDT. ASSY.
L=5'
Valve 3'3" Behind Hydt.

CORNERSTONE THIRD ADDITION ③

At End of Curb, 8'9" N from BOC
STA. 12+49.93, LINE 7=
ST. STA. 29+99.40, 26.0' LT.
1-2" BLOWOFF ASSY.

SCALE: 1"= 40'
0 20 40 80

PLAN LINE 7

STA. 10+00, LINE 8=
STA. 28+28.30, LINE 1
ST. STA. 10+26.73, 22.9' LT.

10.74' OF 8" DICL PIPE

CORNERSTONE THIRD ADDITION

STA. 10+10.74, LINE 8=
ST. STA. 10+37.47, 23.0' LT.
1-FIRE HYDT. ASSY.
L=5' Valve 3' Behind Hydt.

SANDSTONE ST.

LINE 1

28+00

29+

10+00

TC=1364.85

6"

25' Bldg. Stbk.

11+00

LINE 8

12+00

SANDSTONE CT.

13+00

14+00

20' Drng. & Utility Esmt.

295.82' OF 8" PIPE

25' Bldg. Stbk.

73.83' OF 8" PIPE

STA. 13+06.56, LINE 8=
ST. STA. 13+40.75, 16.35' LT.
1-8" DIMJ 45° BEND

PLAN LINE 8

32.91' OF 6" PIPE

STA. 15+70.21, LINE 8=
ST. STA. 16+22.55, 39.7' LT.
1-6" DIMJ 45° BEND

32.91' OF 6" PIPE

STA. 15+37.30, LINE 8=
ST. STA. 15+89.64, 39.7' LT.
1-6" DIMJ 45° BEND

23.65' OF 6" PIPE

STA. 15+13.65, LINE 8=
ST. STA. 15+72.91, 23.0' LT.
1-6" DIMJ 45° BEND

STA. 16+03.13, LINE 8=
ST. STA. 16+45.82, 16.4' LT.
1-6" DIMJ 45° BEND

32.91' OF 6" PIPE

STA. 16+36.04, LINE 8=
ST. STA. 16+45.82, 16.4' RT.
1-6" DIMJ 45° BEND

43.21' OF 6" PIPE

From Intersection of BOC and Curb Inlet
Return Wing, Along BOC 68'6" N, Then 32'6" E

STA. 16+79.25, LINE 8=
ST. STA. 16+15.26, 47' RT.
1-2" BLOWOFF ASSY.

89.34' OF 6" PIPE

16+00

43' R

35' R

50' R

6"

TC=1362.17

SANDSTONE CT.

CORNERSTONE THIRD ADDITION

STA. 14+24.31, LINE 8=
ST. STA. 14+83.58, 23' LT.
1-FIRE HYDT. ASSY.
L=5' Valve 3'3" Behind Hydt.
1-8"x6" DIMJ REDUCER, SEB

43.92' OF 8" PIPE

STA. 13+80.39, LINE 8=
ST. STA. 14+32.23, 16.5' LT.
1-8" DIMJ 45° BEND

SCALE: 1"= 40'
0 20 40 80

PROFILE LINE 7

SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'

8"x8" TEE, LINE 1
℄ SANDSTONE ST.
FIRE HYDRANT
BURY LINE EL=1363.89
VALVE BOX EL=1364.1
2" BLOWOFF

EXIST. GROUND ON ℄ OF PIPE
TOP OF PROP. 8" WATER
PROP. GROUND ON ℄ OF PIPE

8" PIPE @ 0.00%
8" PIPE @ -0.30%

PROP. 8" SAN. FL=1346.30

1365 1360 1355 1350 1345

1360.06 1360.06 1359.50

+65.31 +49.93

10 11 12

PROFILE LINE 8

SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5

8"x8" TEE, LINE 1
FIRE HYDRANT
BURY LINE EL=1364.85
VALVE BOX EL=1365.0
45° BEND
FIRE HYDRANT
BURY LINE EL=1362.17
VALVE BOX EL=1362.1
2" BLOWOFF

EXIST. GROUND ON ℄ OF PIPE
PROP. GROUND ON ℄ OF PIPE
TOP OF PROP. 8" WATER
PROTECTIVE FILL
PROP. 18" SWS. FL=1357.01

4" SERVICE FL=1353.6
4" SERVICE FL=1353.5

8" PIPE @ 0.00%
8" PIPE @ -0.78%
6" PIPE @ 0.00%
6" PIPE @ 8.74%
6" PIPE @ -7.27%
6" PIPE @ 0.00%

4" SERVICE FL=1351.4
4" SERVICE FL=1351.3
PROP. 8" SAN. FL=1352.28

1365 1360 1355 1350 1345

1361.02 1361.02 1361.02 1359.25 1358.68 1358.34 (6") 1358.25 (6") 1358.04 1355.50 1355.50 1356.26 1358.33 1358.33 1358.33 1358.33 1358.33

+00.00 +10.74 +80 +06.56 +80.39 +24.31 +50 +84.92 +04.92 +13.65 +37.30 +70.21 +03.13 +36.04 +79.25

10 11 12 13 14 15 16

PLOTTED: Friday, January 11, 2008 @ 03:40PM

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MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

WATER DISTRIBUTION PLANS
THE CORNERSTONE
THIRD ADDITION

LINES 7 & 8
SHEET TITLE

1369PPW
PROJECT NUMBER

DFL
DESIGN BY

KKL
DRAWN BY

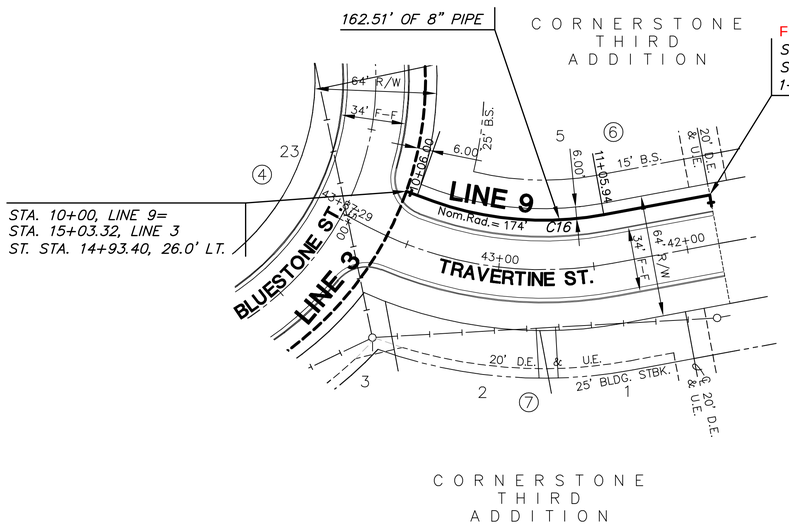
GJA
CHECKED BY

ISSUED
January 2008

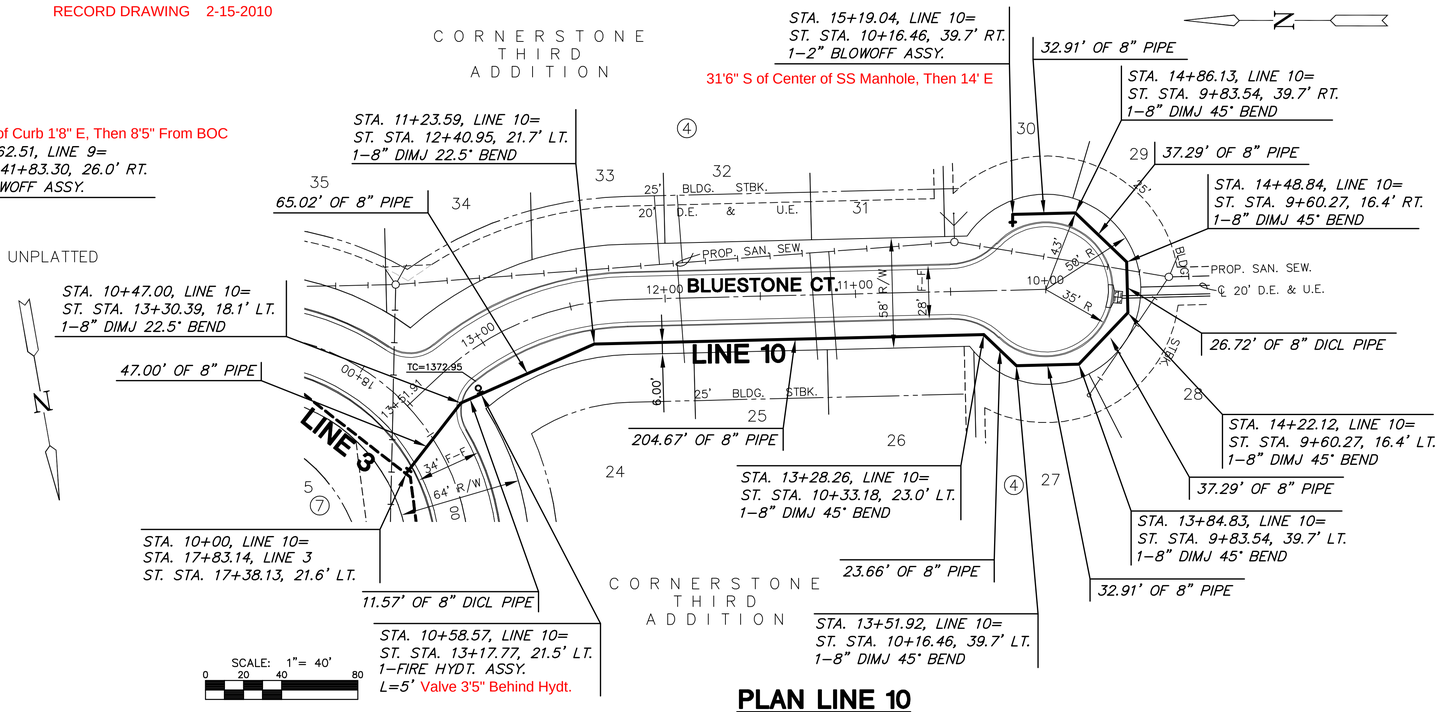
REVISED

SHEET NO.
12 of 22

RECORD DRAWING 2-15-2010



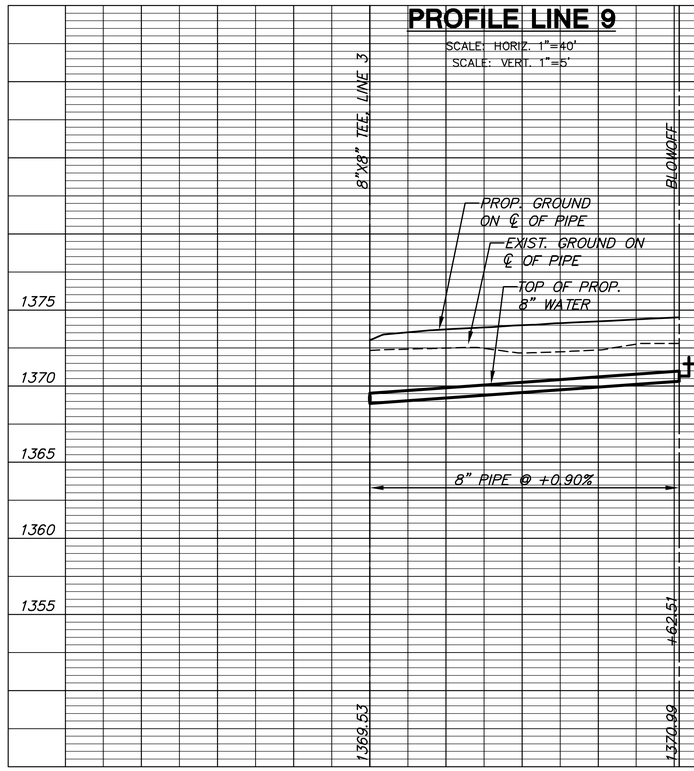
PLAN LINE 9



PLAN LINE 10

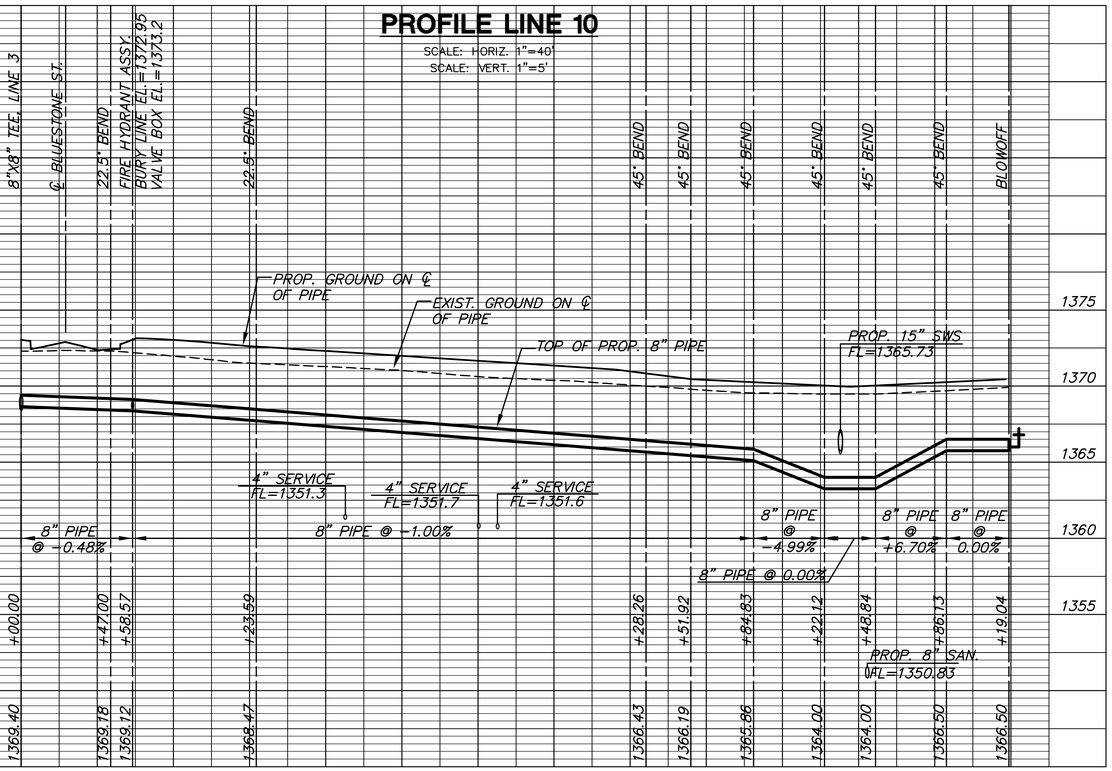
PROFILE LINE 9

SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'



PROFILE LINE 10

SCALE: HORIZ. 1"=40'
SCALE: VERT. 1"=5'



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411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

WATER DISTRIBUTION PLANS
THE CORNERSTONE
THIRD ADDITION

LINES 9 & 10
SHEET TITLE

1369PPW
PROJECT NUMBER

DFL
DESIGN BY

KKL
DRAWN BY

GJA
CHECKED BY

ISSUED
January 2008
REVISED

SHEET NO.
13 of 22

PLOTTED: Friday, January 11, 2008 @ 03:41PM

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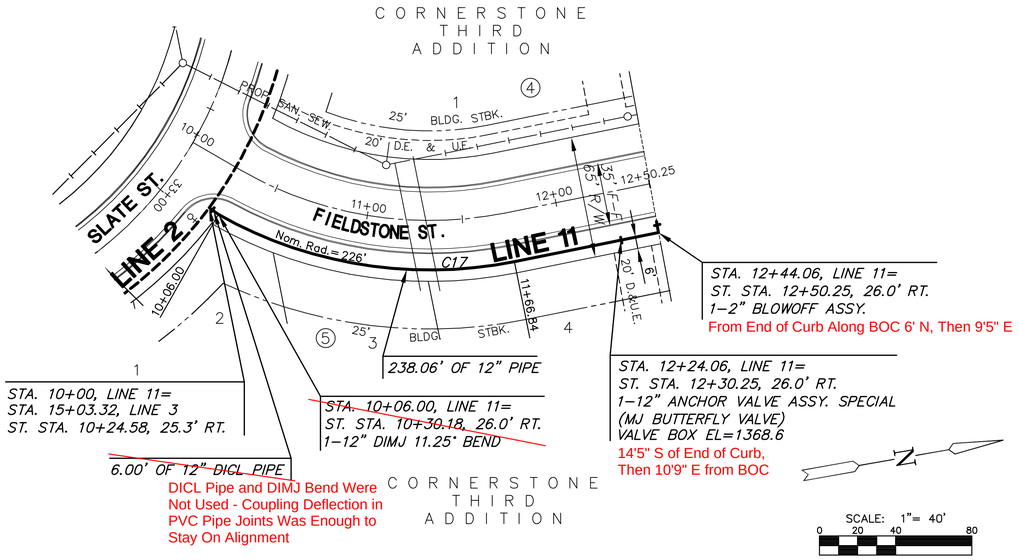
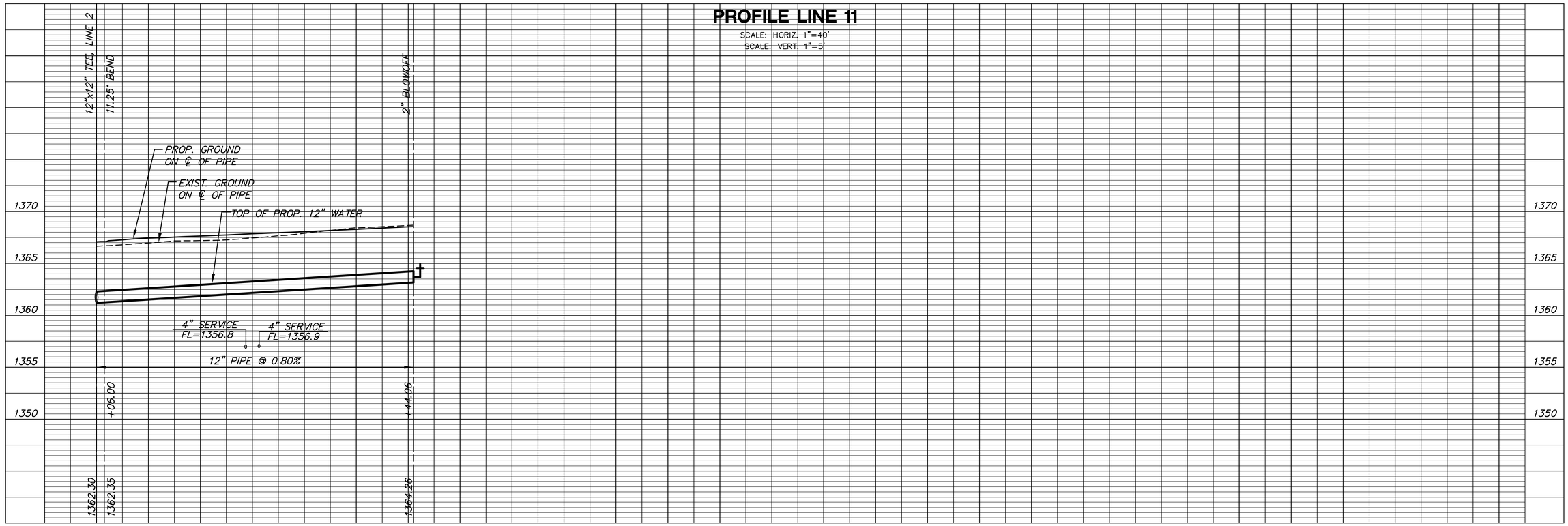
RECORD DRAWING 2-15-2010



PLAN LINE 11

PROFILE LINE 11

SCALE: HORIZ. 1"=40'
SCALE: VERT 1"=5'



CURVE TABLE – C15

△ = 10°60'00" R = 324.00' T = 31.20' L = 62.20' LC = 62.11'

CURVE DATA BASED ON WATERLINE △/2 = 05°30'00"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
10+60.00	–	–	–	00°00'00"	00°00'00"
10+65.31	5.31'	5.41'	–	00°28'10"	00°28'10"
10+75.00	9.69'	9.87'	–	00°51'24"	01°19'35"
11+00.00	25.00'	25.46'	–	02°12'38"	03°32'12"
11+22.20	22.20'	22.61'	–	01°57'48"	05°30'00"
SEE SH. 12				Def/Ft = 5.30516 Min.	

CURVE TABLE – C16

△ = 32°54'30" R = 174.00' T = 51.39' L = 99.94' LC = 98.57'

CURVE DATA BASED ON WATERLINE △/2 = 16°27'15"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
10+06.00	–	–	–	00°00'00"	00°00'00"
10+25.00	19.00'	–	19.65'	03°07'42"	03°07'42"
10+50.00	25.00'	–	25.84'	04°06'58"	07°14'39"
10+75.00	25.00'	–	25.84'	04°06'58"	11°21'37"
11+00.00	25.00'	–	25.84'	04°06'58"	15°28'35"
11+05.94	5.94'	–	6.14'	00°58'40"	16°27'15"
SEE SH. 13				Def/Ft = 9.87858 Min.	

CURVE TABLE – C17

△ = 40°46'35" R = 226.00' T = 84.00' L = 160.84' LC = 157.47'

CURVE DATA BASED ON WATERLINE △/2 = 20°23'17"

STATION	ARC	CHORD LENGTH 6'LT Offset	CHORD LENGTH 6'RT Offset	DEFLECTION	TOTAL DEFLECTION
10+06.00	–	–	–	00°00'00"	00°00'00"
10+25.00	19.00'	–	19.50'	02°24'30"	02°24'30"
10+50.00	25.00'	–	25.65'	03°10'08"	05°34'39"
10+75.00	25.00'	–	25.65'	03°10'08"	08°44'47"
11+00.00	25.00'	–	25.65'	03°10'08"	11°54'56"
11+25.00	25.00'	–	25.65'	03°10'08"	15°05'04"
11+50.00	25.00'	–	25.65'	03°10'08"	18°15'13"
11+66.84	16.84'	–	17.28'	02°08'05"	20°23'17"
				Def/Ft = 7.60563 Min.	

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411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

WATER DISTRIBUTION PLANS
THE CORNERSTONE
THIRD ADDITION

LINE 11
SHEET TITLE

1369PPW
PROJECT NUMBER

DFL
DESIGN BY

KKL
DRAWN BY

GJA
CHECKED BY

ISSUED
January 2008
REVISED

SHEET NO.
14 of 22

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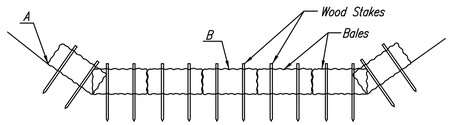
NOTE: Point A must be higher than Point B so that water flows over the bales and not around them.



STRAW BALE DITCH CHECKS

Material Specification:

Bale ditch checks may be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
Optional: The downstream scour apron should be constructed of a double-netted straw erosion-control blanket at least 6' wide.
Optional: The metal landscape staples used to anchor the erosion-control blanket should be at least 8" long.

Placement:

Bale ditch checks should be placed perpendicular to the flowline of the ditch.
The ditch check should extend far enough so that the ground level at the ends of the check is higher than the top of the lowest center bale. This prevents water from flowing around the check.
Straw bale ditch checks should not be placed in ditches where high flows are expected. Rock checks should be used instead.
Bales should be placed in ditches with slopes of 6% or less. For slopes steeper than 6%, rock checks should be used.
The following table provides check spacing for a given ditch grade:

Ditch grade (%)	Check Spacing (feet)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is 4" deep and a bale's width wide. Extend the trench in a straight line along the entire length of the proposed ditch check. Place the soil on the upstream side of the trench-it will be used later.
Optional: On the downstream side of the trench, roll out a length of erosion-control blanket (scour apron) equal to the length of the trench. Place the upstream edge of the erosion-control blanket along the bottom upstream edge of the trench. The erosion control blanket should be anchored in the trench with one row of 8" landscape staples placed on 18" centers. The remainder of the erosion-control blanket (the portion that is not lying in the trench) will serve as the downstream scour apron. This section of the blanket should be anchored to the ground with 8" landscape staples placed around the perimeter of the blanket on 18" centers. The remainder of the blanket should be anchored using two evenly spaced rows of 8" landscape staples on 18" centers placed perpendicular to the flowline of the ditch.
Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the upstream side of the check and compact it. The compacted soil should be no more than 3" to 4" deep and extend upstream no more than 24".

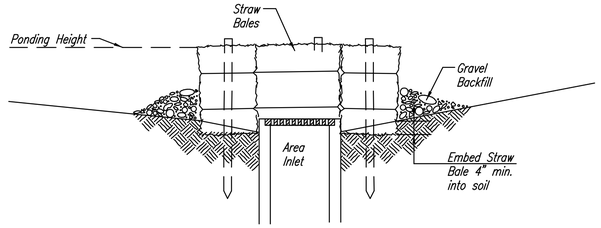
List of common placement/installation mistakes to avoid:

Do not place a bale ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow.
Do not place bale ditch checks in ditches that will likely experience high flows. They will not stand up to concentrated flow.
Follow prescribed ditch-check spacing guidelines. If spacing guidelines are exceeded, erosion will occur between the ditch checks.
Do not allow water to flow around the ditch check. Make sure that the ditch check is long enough so that the ground level at the ends of the check is higher than the top of the lowest center bale.
Do not place bale ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.
Bale ditch checks must be dug into the ground. Bales at ground level do not work because they allow water to flow under the check.

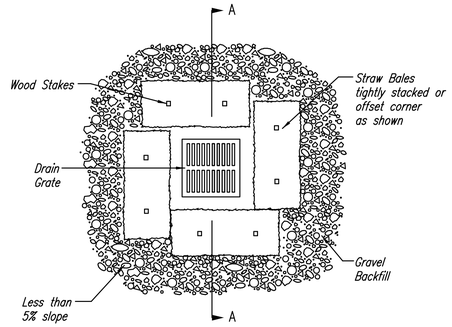
Inspection and Maintenance:

Bale ditch checks should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow around the ditch check?
Does water flow under the ditch check?
Does water flow through spaces between abutting bales?
Are any bales and/or scour aprons (optional) dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the ditch check?



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Bale area inlet barriers should be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
Twine should be used to bind bales. The use of wire binding is prohibited because it does not biodegrade readily.

Placement:

Bale area inlet barriers should be placed directly around the perimeter of a drop inlet.
When a bale area inlet barrier is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Proper Installation Method:

Excavate a trench around the perimeter of the area inlet that is at least 4" deep by a bale's width wide.
Place the bales in the trench, making sure that they are butted tightly. Some bales may need to be shortened to fit into the trench around the area inlet. Two stakes should be driven through each bale, approximately 6" to 8" in from the bale ends.
Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the receiving side of the barrier and compact it. The compacted soil should be no more than 3" to 4" deep.
Note: When a bale area inlet barrier is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

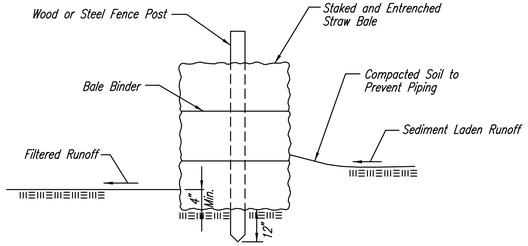
List of common placement installation mistakes to avoid:

Bales should be placed directly against the perimeter of the area inlet. This allows overtopping water to flow directly into the inlet instead of onto nearby soil causing scour.
Bale area inlet barriers must be dug into the ground. Bales at ground level do not work because they allow water to flow under the barrier.

Inspection and Maintenance:

Bale area inlet barriers should be inspected every 7 days and within 24 hours of a rainfall 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow under the area inlet barrier?
Does water flow through spaces between abutting bales?
Are any bales dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the area inlet barrier?



STRAW BALE BARRIERS

Material Specification:

Bale slope barriers may be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
Twine should be used to bind bales. The use of wire binding is prohibited because it does not biodegrade readily.

Placement:

A slope barrier should be used at the toe of a slope when a ditch does not exist. The slope barrier should be placed on nearly level ground 5' to 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out sediment.
When practicable, bale slope barriers should be placed along contours to avoid a concentration of flow.
Bale slope barriers can also be placed along right-of-way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the slope barrier will not likely follow contours.

Proper installation method:

Excavate a trench the length of the planned slope barrier that is 4" deep and a bale's width wide. Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the trench for later use.
Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the upslope side of the check and compact it. The compacted soil should be no more than 3" to 4" deep.

List of common placement/installation mistakes to avoid:

When practical, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the barrier fails.
Do not place bale slope barriers in areas with shallow soils underlain by rock. If the barrier is not anchored sufficiently, it will wash out.
Bale slope barriers must be dug into the ground. Bales at ground level do not work because they allow water to flow under the barrier.

Inspection and Maintenance:

Bale slope barriers should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Are there any points along the slope barrier where water is concentrating?
Does water flow under the slope barrier?
Does water flow through spaces between abutting bales?
Are any bales dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the slope barrier?

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411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

WATER DISTRIBUTION PLANS
THE CORNERSTONE
THIRD ADDITION

STRAW BALE DITCH CHECK AND BARRIER DTLS.
SHEET TITLE

1369PPW
PROJECT NUMBER

MKEC
DESIGN BY
MKEC
DRAWN BY
MKEC
CHECKED BY

ISSUED
January 2008
REVISED

SHEET NO.
15 of 22

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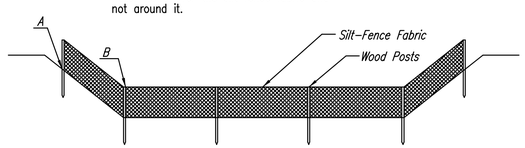
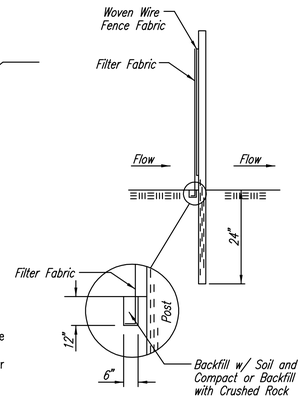
PLOTTED: Friday, January 11, 2008 @ 03:42PM

NOTE: Point A must be higher than Point B so that water flows over the silt fence fabric and not around it.



ELEVATION

SILT FENCE DITCH CHECKS
(STREAM PROTECTION)



ANCHOR TRENCH DETAIL

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
Silt fence fabric should be attached to the wooden posts with staples, wire, zip ties, or nails.

Placement:

Place silt fence in ditches where it is unlikely that it will be overtopped.
Water should flow through a silt fence ditch check, not over it. Silt fence ditch checks often fail when overtopped.
Silt fence ditch checks should be placed perpendicular to the flowline of the ditch.
The silt fence should extend far enough so that the ground level at the ends of the fence is higher than the top of the low point of the fence. This prevents water from flowing around the check.
Silt fence ditch checks should not be placed in ditches where high flows are expected. Rock checks should be used instead.
Silt fence should be placed in ditches with slopes of 6% or less. For slopes steeper than 6%, rock checks should be used.

The following table provides check spacing for a given ditch grade:

Ditch grade (%)	Check Spacing (feet)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is at least 12" deep by 6" wide.
Extend the trench in a straight line along the entire length of the proposed ditch check.
Place the soil on the upstream side of the trench for later use.
Roll out a continuous length of silt fence fabric on the downstream side of the trench.
Place the edge of the fabric in the trench starting at the top upstream edge of the trench.
Line two sides of the trench with the fabric as shown on detail. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed.
Lay the exposed silt fence on the upstream side of the trench to clear an area for driving in the posts. Just downstream of the trench, drive posts into the ground to a depth of at least 24". Place posts no more than 4' apart.
Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

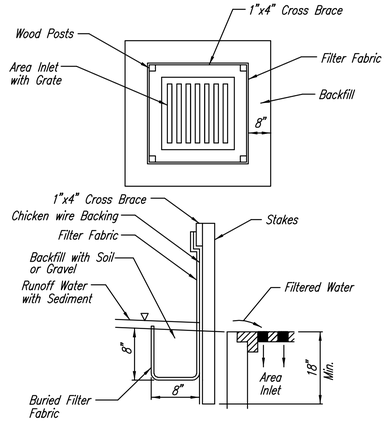
List of common placement/installation mistakes to avoid:

Water should flow through a silt fence ditch check–not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them.
Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration, the force of the water is not restricted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail.
Do not place a silt fence ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow.
Do not place silt fence ditch checks in ditches that will likely experience high flows. They will not stand up to concentrated flow.
Follow prescribed ditch check spacing guidelines. If spacing guidelines are exceeded, erosion will occur between the ditch checks.
Do not allow water to flow around the ditch check. Make sure that the ditch check is long enough so that the ground level at the ends of the fence is higher than the low point on the top of the fence.
Do not place silt fence ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.

Inspection and Maintenance:

Silt fence ditch checks should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow around the ditch check?
Does water flow under the ditch check?
Does the silt fence sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the ditch check?



SILT FENCE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The wire or polymeric mesh backing used to help support the silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
The material used to frame the tops of the posts should be 1" by 4" boards.
Silt fence fabric and support backing should be attached to the wooden posts and frame with staples, wire, zip ties, or nails.

Placement:

Place a silt fence drop inlet barrier in a location where it is unlikely to be overtopped.
Water should flow through silt fence, not over it. Silt fence barriers for area inlets often fail when repeatedly overtopped.
When used as a barrier for area inlets, silt fence fabric and posts must be supported at the top by a wooden frame.
When a silt fence barrier for area inlets is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Proper installation method:

Excavate a trench around the perimeter of the area inlet that is at least 8" deep by 8" wide.
Drive posts to a depth of at least 18" around the perimeter of the area inlet.
The distance between posts should be 4' or less. If the distance between two adjacent corner posts is more than 4', add another post(s) between them.
Connect the tops of all the posts with a wooden frame made of 1" by 4" boards. Use nails or screws for fastening.
Attach the wire or polymeric–mesh backing to the outside of the post/frame structure with staples, wire, zip ties, or nails.
Roll out a continuous length of silt fence fabric long enough to wrap around the perimeter of the area inlet. Add more length for overlapping the fabric joint. Place the edge of the fabric in the trench, starting at the outside edge of the trench. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed.
Attach the silt fence to the outside of the post/frame structure with staples, wire, zip ties, or nails. The joint should be overlapped to the next post.

Note: When a silt fence barrier for area inlet is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

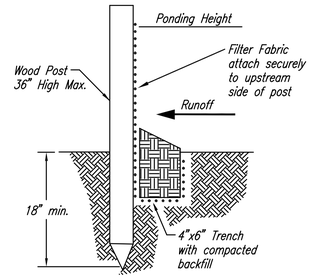
List of common placement/installation mistakes to avoid:

Water should flow through a silt fence barrier for area inlet–not over it. Place a silt fence barrier for area inlet in a location where it is unlikely to be overtopped. Silt fence barrier for area inlets often fail when repeatedly overtopped.
Do not place posts on the outside of the silt fence barrier for area inlet. In this configuration, the force of the water is not resisted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail.
Do not install silt fence barrier for area inlets without framing the top of the posts.
The corner posts around area inlets are stressed in two directions whereas a normal silt fence is only stressed in one direction. This added stress requires more support.

Inspection and Maintenance:

Silt fence barrier for area inlets should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow under the silt fence?
Does the silt fence sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the area inlet barrier?



SILT FENCE BARRIERS

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
Silt fence fabric should be attached to the wooden posts with staples, wire, zip ties, or nails.

Placement:

A slope barrier should be used at the toe of a slope when a ditch does not exist. The slope barrier should be placed on nearly level ground 5' to 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out sediment.
When practicable, silt fence slope barriers should be placed along contours to avoid a concentration of flow.
Silt fence slope barriers can also be placed along right–of–way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the slope barrier will not likely follow contours.

Proper installation method:

Excavate a trench the length of the planned slope barrier that is 6" deep by 4" wide.
Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the trench for later use.
Roll out a continuous length of silt fence fabric on the downslope side of the trench.
Place the edge of the fabric in the trench starting at the top upslope edge. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt–fence fabric should remain exposed.
Lay the exposed silt fence upslope of the trench to clear an area for driving in the posts. Just downslope of the trench, drive posts into the ground to a depth of at least 18".
Place posts no more than 4' apart.
Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

List of common placement/installation mistakes to avoid:

When practicable, do not place silt fence slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. When the flow concentrates, it overtops the barrier and the silt fence slope barrier quickly deteriorates.
Do not place silt–fence posts on the upslope side of the silt fence fabric. In this configuration, the force of the water is not restricted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail.
Do not place silt fence slope barriers in areas with shallow soils underlain by rock. If the barrier is not sufficiently anchored, it will wash out.
Silt fence slope barriers must be dug into the ground–silt fence at ground level does not work because water will flow underneath.

Inspection and Maintenance:

Silt fence slope barriers should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Are there any points along the slope barrier where water is concentrating?
Does water flow under the slope barrier?
Do the silt fences sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the slope barrier?

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WATER DISTRIBUTION PLANS

THE CORNERSTONE

THIRD ADDITION

SILT FENCE DITCH CHECK AND BARRIER DTLS.
SHEET TITLE

1369PPW
PROJECT NUMBER

MKEC
DESIGN BY

MKEC
DRAWN BY

MKEC
CHECKED BY

ISSUED
January 2008

REVISED

SHEET NO.
16 of 22

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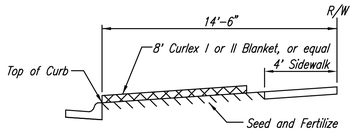
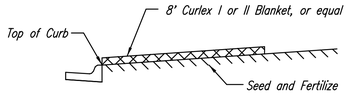
PLOTTED: Friday, January 11, 2008 @ 03:42PM

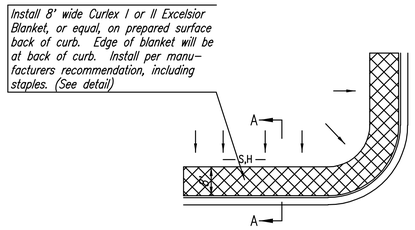
RECORD DRAWING 2-15-2010



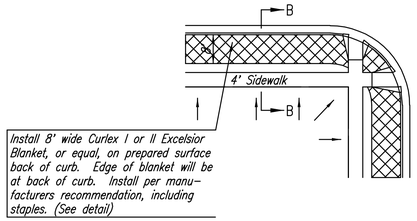
SECTION B-B



SECTION A-A



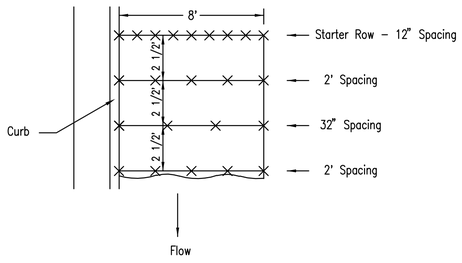
SOUTH STREET

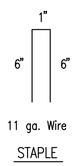


NOTES:

1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

BACK OF CURB PROTECTION DETAIL



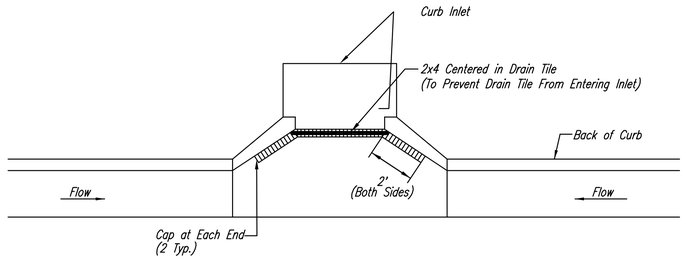


STAPLE

STAPLE PATTERN

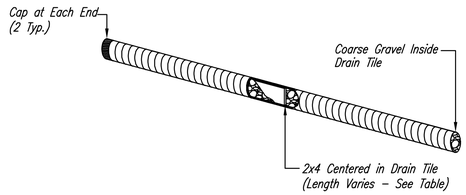
NOTES: Use 6" seam overlap

DETAILS FOR CURLEX I OR II BLANKETS

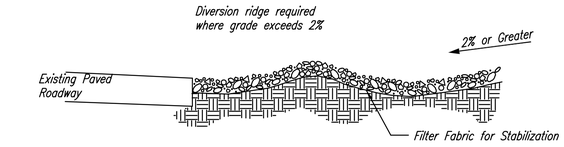


Note:
Place 4" perforated PVC pipe, filled with 1/2"-1" dia. gravel, in front of curb inlet as shown.

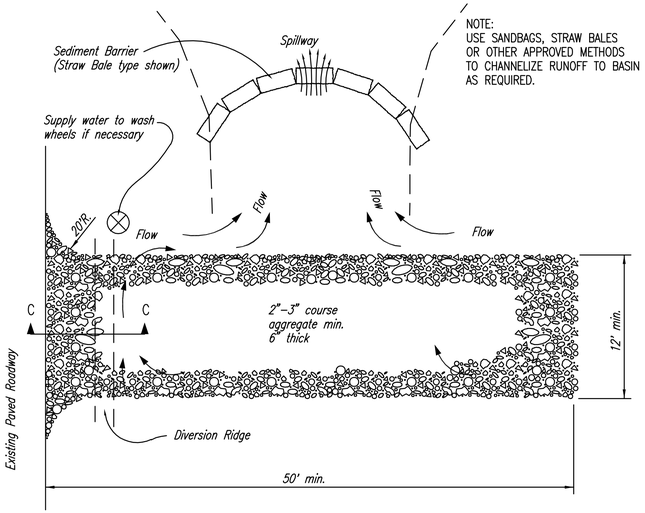
2X4 LENGTH	INLET TYPE	INLET OPENING	
5'-6"	1-A	5'-0"	
10'-6"	1-A	10'-0"	
15'-6"	1-A	15'-0"	



CURB INLET PROTECTION
4" PERFORATED PIPE W/ GRAVEL



SECTION C-C



STABILIZED CONSTRUCTION ENTRANCE

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

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WATER DISTRIBUTION PLANS

THE CORNERSTONE

THIRD ADDITION

BACK OF CURB INLET & CONST. ENTRANCE PROTECTION

SHEET TITLE

1369PPW

PROJECT NUMBER

MKEC
DESIGN BY

MKEC
DRAWN BY

MKEC
CHECKED BY

ISSUED
January 2008

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SHEET NO.
17 of 22

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RECORD DRAWING 2-15-2010

GENERAL NOTES:

1. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPES OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.

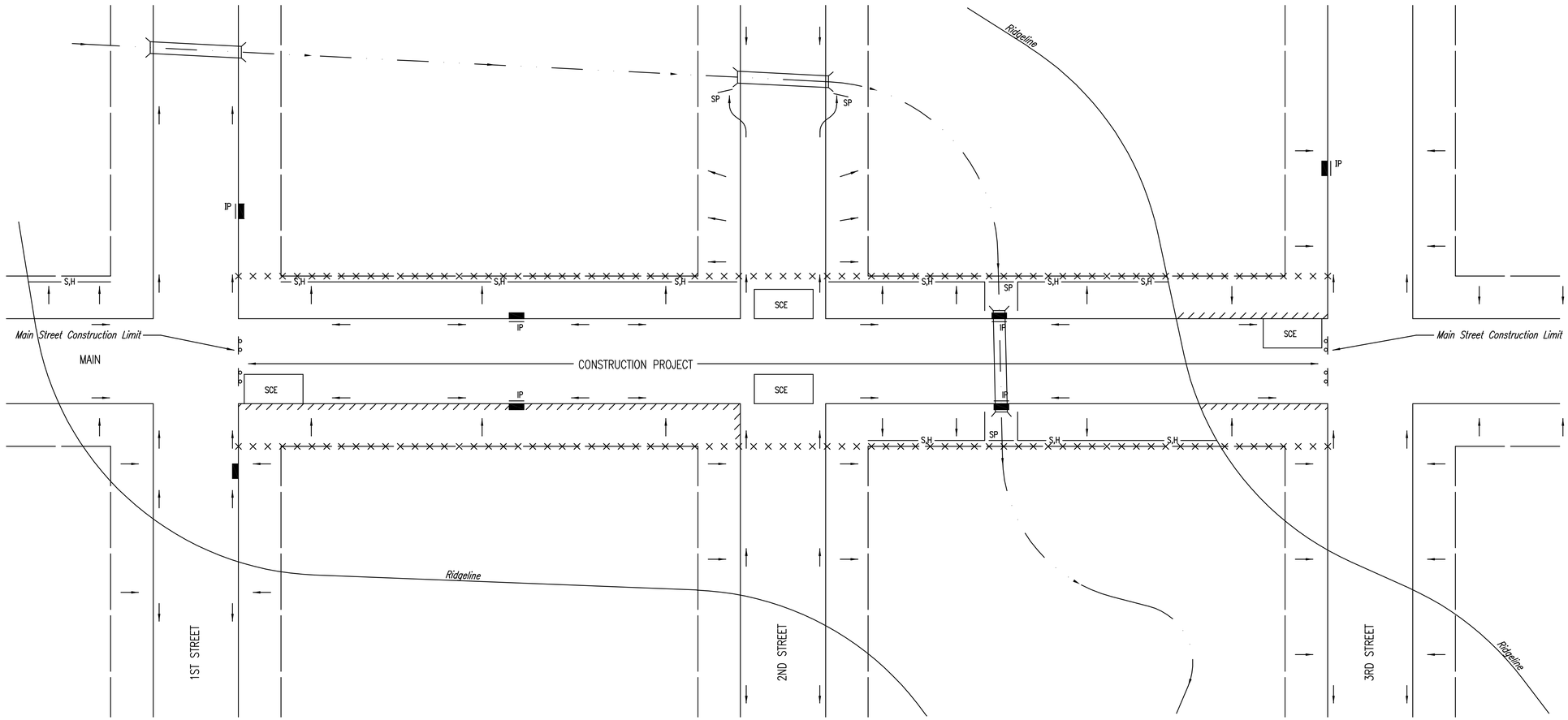
2. EROSION CONTROL DEVICES MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS AND UNTIL THE DISTURBED EARTH IS RESTABILIZED.

3. IF THE PROJECT WILL DISTURB 1 ACRE OR MORE, A FEDERAL/STATE NPDES STORMWATER PERMIT IS REQUIRED. A DETAILED STORMWATER POLLUTION PREVENTION PLAN, IS REQUIRED. THE EROSION CONTROL DEVICES SHOWN ON THIS SHEET ARE CONSIDERED TO BE THE MINIMUM TO BE SHOWN IN THE POLLUTION PREVENTION PLAN.

4. FOR PROJECTS DISTURBING LESS THAN 1 ACRE, CONTRACTORS ARE ENCOURAGED TO PREPARE STORMWATER POLLUTION PREVENTION PLANS PRIOR TO CONSTRUCTION. EROSION CONTROL DEVICES MUST BE USED ON ALL PROJECTS.

5. FAILURE TO USE AND MAINTAIN EROSION CONTROL DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE CONTRACTOR TO THE PENALTIES PROVIDED FOR THEREIN.

6. THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT DEVICE OTHER THAN THOSE SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED AS LONG AS THEY ARE EFFECTIVE AND MAINTAINED.



LEGEND

———	R-O-W LIMITS
——→	DRAINAGE FLOW PATH
× × × × ×	R/W LIMIT WITHIN CONSTRUCTION LIMIT
▬	STORM WATER INLETS
IP	INLET PROTECTION
—— S,H ——	SILT FENCE OR HAY BALE BARRIER
SP	STREAM PROTECTION
SCE	STABILIZED CONSTRUCTION ENTRANCE
//////	BACK OF CURB PROTECTION

NOTES:

1. THE INTENT OF ALL EROSION CONTROL DEVICES IS TO KEEP ALL SEDIMENT CONFINED TO THE CONSTRUCTION SITE, AND OUT OF ALL UNDERGROUND PIPES, DITCHES, LAKES, AND OTHER DRAINAGE FACILITIES, AND OFF OF STREETS.

2. THE POINT OF COMPLIANCE IS GENERALLY THE RIGHT-OF-WAY LINES WITHIN THE LIMITS OF CONSTRUCTION.

3. EROSION CONTROL DEVICES WILL BE REQUIRED AT ALL POINTS ALONG THE PROJECT WHERE DISTURBED EARTH CAN DRAIN ONTO PRIVATE PROPERTY.

4. INLET PROTECTION DEVICES WILL BE REQUIRED WHEREVER WATER CAN DRAIN OFF THE PROJECT SITE INTO AN INLET, INCLUDING ANY SIDE STREET INLETS.

5. EROSION CONTROL DEVICES SHALL BE INSTALLED AT CREEK CROSSINGS SO AS TO PREVENT SEDIMENT FROM ENTERING THEREIN.

6. STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED, AS NEEDED, TO PREVENT MUD FROM TRACKING ONTO STREETS NOT UNDER CONSTRUCTION AND ON STREETS WITHIN THE PROJECT LIMITS IF TRAFFIC IS BEING MAINTAINED THROUGH THE PROJECT.

7. ANY MUD TRACKED ONTO STREETS MUST BE REMOVED AT THE END OF EACH WORK DAY.

8. THE CONTACTOR WILL BE REQUIRED TO PLACE EROSION CONTROL DEVICES BACK OF CURB, WHENEVER WATER CAN DRAIN OVER CURB, TO KEEP ERODED SOIL OUT OF THE GUTTERLINES, IN ACCORDANCE WITH THE FOLLOWING:
   A. THE DEVICE REQUIRED WILL BE CURLEX I OR II EXCELSIOR BLANKET, OR EQUAL. SAID BLANKET SHALL BE PLACED OVER THE APPROPRIATE SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS. (SEE SOIL EROSION BMPs – BACK OF CURB SEDIMENT BARRIER DETAILS)
   B. THIS DEVICE SHALL BE INSTALLED IMMEDIATELY WHENEVER THE CURB IS BACKFILLED TO WITHIN 3" OF THE TOP OF CURB. (SEE CURB BACKFILL DETAIL) OTHER BMP'S MAY BE REQUIRED AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB.
   C. ADDITIONALLY, OTHER EROSION CONTROL DEVICES (HAY BALES, SILT FENCE, ETC.) WILL BE INSTALLED AT LOCATIONS OF CONCENTRATED FLOW RESULTING IN SEDIMENT OVERRUNNING THE MAT.
   D. SHOULD THE PROJECT PLANS SPECIFY THAT THE RIGHT-OF-WAY IS TO BE SODDED, THE EXCELSIOR MAT WILL NOT BE REQUIRED SO LONG AS THE SOD IS PLACED WITHIN 48 HOURS AFTER CURB BACKFILL REACHES A HEIGHT OF 3" OR LESS FROM TOP OF CURB. (SEE CURB BACKFILL DETAIL)

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WATER DISTRIBUTION PLANS

THE CORNERSTONE

THIRD ADDITION

STREET IMPROVEMENT PROJECTS

SHEET TITLE

1369PPW

PROJECT NUMBER

MKEC
DESIGN BY

MKEC
DRAWN BY

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18 of 22

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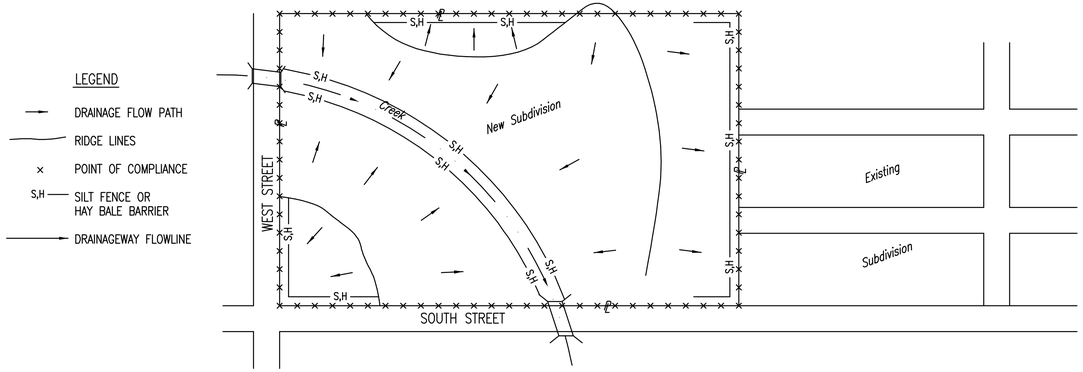
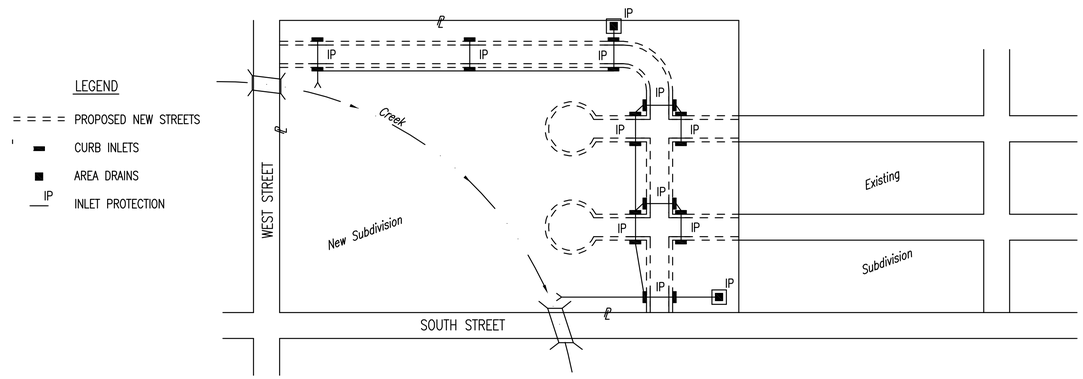
PLOTTED: Friday, January 11, 2008 @ 03:42PM

PHASE 1 – INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)



1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. HAY BALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE EROSION CONTROL DEVICES WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
3. SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR STREETS ON THE ADJACENT BOUNDARY STREETS, APPROPRIATE EROSION CONTROL DEVICES WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
4. ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED WITHIN 48 HOURS OR BY FRIDAY AT 6:00 PM, WHICHEVER IS EARLIER.
5. CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL EROSION CONTROL DEVICES AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDARY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE EROSION CONTROL DEVICES AT THEIR WORK LOCATIONS, AS NEEDED.
6. UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
7. IF THE INITIAL EARTH WORK AND UTILITIES ARE DONE AS PART OF A PUBLIC IMPROVEMENT PROJECT, THESE EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS SPECIFIED IN THE INDIVIDUAL PROJECT CONTRACTS. THE CONTRACTOR WILL MAINTAIN THE DEVICES UNTIL COMPLETION OF THE CONTRACT, AT WHICH TIME THE DEVELOPER WILL ASSUME MAINTENANCE RESPONSIBILITIES. IF THESE CONTRACTS ARE NOT PUBLIC IMPROVEMENT PROJECTS, THE DEVELOPER WILL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING THESE DEVICES.
8. WITHIN 14 DAYS OF COMPLETION OF EARTHWORK ACTIVITIES IN ANY GIVEN AREA, THAT AREA SHALL BE TEMPORARILY OR PERMANENTLY SEEDED AND MULCHED.

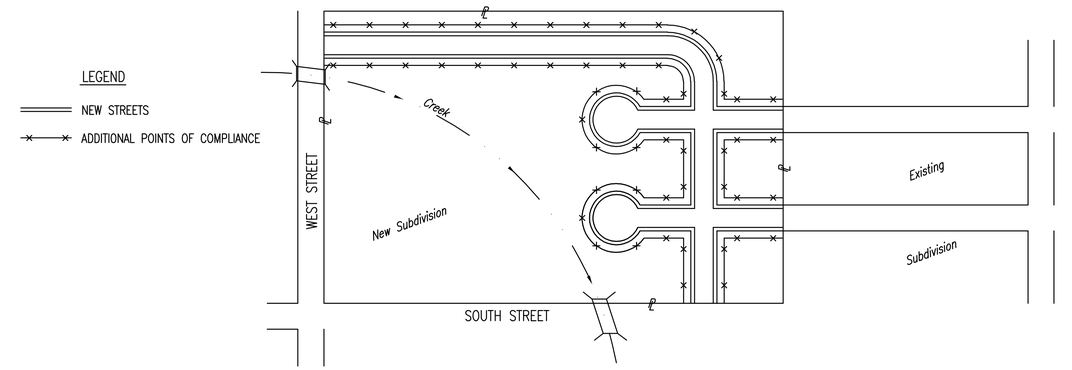
PHASE 2 – INSTALLATION OF STORM SEWER



1. DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL EROSION CONTROL DEVICES REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
2. AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
3. AREA DRAINS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAY BALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
4. CURB OPENING INLETS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION DEVICES MUST BE INSTALLED. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION. SEE PHASE 3 – STREET CONSTRUCTION.
5. THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE DEVICES.
6. THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE EROSION CONTROL DEVICES ONCE INSTALLED.
7. ALL DISTURBED GROUND WILL BE FINAL GRADED AND TEMPORARILY OR PERMANENTLY SEEDED WITHIN 14 DAYS IF COMPLETION OF WORK IN ANY GIVEN PART OF THE SUBDIVISION.
8. ONCE ALL DISTURBED GROUND DRAINING TO AN INLET HAS BEEN RESTABILIZED WITH GRASS OR SOD, THE SUBDIVISION DEVELOPER WILL BE RESPONSIBLE FOR PERMANENTLY REMOVING THE INLET PROTECTION.

PHASE 3 – STREET CONSTRUCTION

RECORD DRAWING 2-15-2010



1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL EROSION CONTROL DEVICES INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
2. CURB OPENING INLET PROTECTION:
   A. SUMP AREAS – INLET PROTECTION SHALL BE PROVIDED WHEN STREET SUBGRADE WORK IS COMPLETED.
   B. NON–SUMP LOCATIONS – PROVIDE INLET PROTECTION AS SOON AS BASE COURSE ASPHALT IS INSTALLED, BEFORE THE SURFACE COURSE LIFT.
3. EROSION CONTROL DEVICES WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED.
4. SEE DETAIL SHEET FOR BACK OF CURB PROTECTION.
5. THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLEMENTED WITH HAY BALE OR SILT FENCE EROSION CONTROL DEVICES AT LOCATIONS WHERE CONCENTRATED FLOW RESULTS IN SEDIMENT BEING CARRIED OVER THE EXCELSIOR MATS.
6. THE STREET CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING BACK OF CURB EROSION CONTROL DEVICES.
7. THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB EROSION CONTROL DEVICES IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.

MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

WATER DISTRIBUTION PLANS

THE CORNERSTONE

THIRD ADDITION

SUBDIVISION DEVELOPEMENT PROCESS

SHEET TITLE

1369PPW
PROJECT NUMBER

MKEC
DESIGN BY

MKEC
DRAWN BY

MKEC
CHECKED BY

ISSUED
January 2008

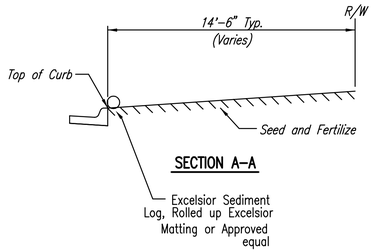
REVISED

SHEET NO.
19 of 22

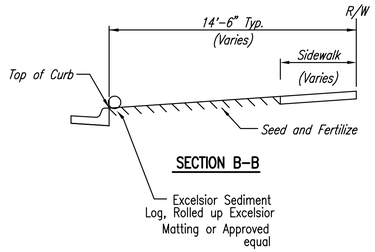
J:\CIVIL\04294\DWG\WTR\THIRD\BMP_5.DWG

PLOTTED: Friday, January 11, 2008 @ 03:43PM

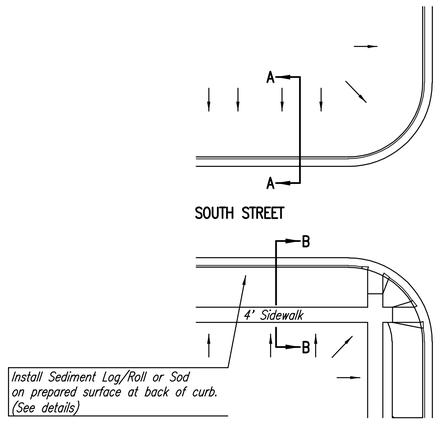
RECORD DRAWING 2-15-2010



SECTION A-A



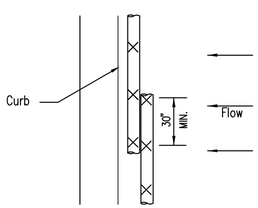
SECTION B-B



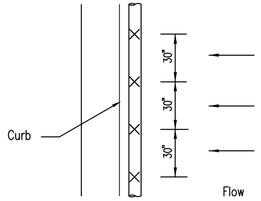
NOTES:

1. EXCELSIOR LOG/ROLL TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. AFTER INSTALLATION OF LOG/ROLL, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

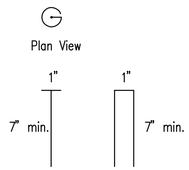
BACK OF CURB PROTECTION DETAIL



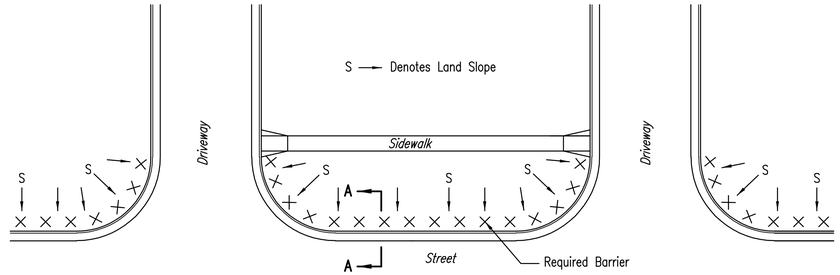
OVERLAP PATTERN

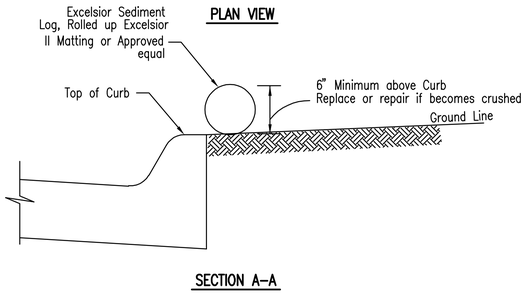


STAPLE PATTERN



STAPLE





SECTION A-A

NOTES:

1. Barriers must be placed back of curb along street and up the driveway sufficiently to catch all sediment from the yard.
2. Anchor to ground every 30" with a 7" min. long staple.
3. Remove accumulated sediment when within 2 inches of top of device.
4. Replace/repair all broken/damaged sediment logs/rolls to maintain effectiveness of device.
5. Sediment logs/rolls can be driven over for access to the site. They need to be picked up and put back down after they have been compacted by any traffic to maintain effectiveness of BMP. Replace as needed per original design.

SEDIMENT LOG BARRIERS

NOTES:
FOLDED Excelsior matting will not be accepted.

MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

WATER DISTRIBUTION PLANS

THE CORNERSTONE

THIRD ADDITION

BACK OF CURB SEDIMENT BARRIER DETAILS

SHEET TITLE

1369PPW

PROJECT NUMBER

MKEC
DESIGN BY

MKEC
DRAWN BY

MKEC
CHECKED BY

ISSUED
January 2008

REVISED

SHEET NO.
20 of 22

PLOTTED: Friday, January 11, 2008 @ 03:43PM

J:\CIVIL\04294\DWG\WTR\THIRD\BMP_6.DWG

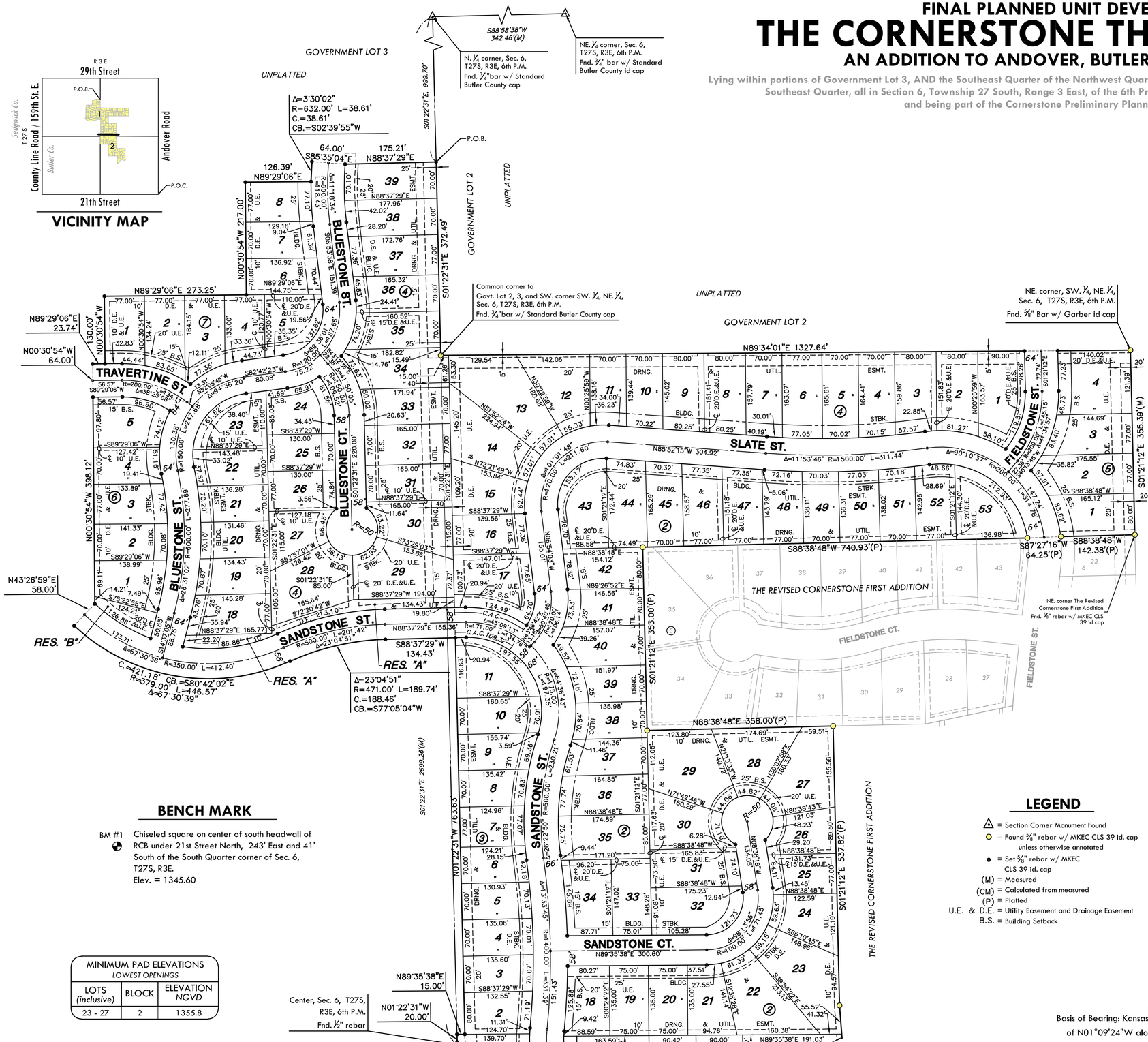
FINAL PLANNED UNIT DEVELOPMENT

THE CORNERSTONE THIRD ADDITION

AN ADDITION TO ANDOVER, BUTLER COUNTY, KANSAS

Lying within portions of Government Lot 3, AND the Southeast Quarter of the Northwest Quarter, AND the Southwest Quarter of the Northeast Quarter, AND Southeast Quarter, all in Section 6, Township 27 South, Range 3 East, of the 6th Principal Meridian, Andover, Butler County, Kansas.
and being part of the Cornerstone Preliminary Planned Unit Development

VICINITY MAP



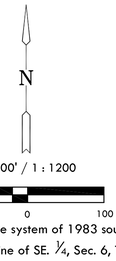
BENCH MARK

BM #1 Chiseled square on center of south headwall of RCB under 21st Street North, 243' East and 41' South of the South Quarter corner of Sec. 6, T27S, R3E.
Elev. = 1345.60

MINIMUM PAD ELEVATIONS *LOWEST OPENINGS*		
LOTS *(inclusive)*	BLOCK	ELEVATION *NGVD*
23 - 27	2	1355.8

LEGEND

- △ = Section Corner Monument Found
- ○ = Found ⅝" rebar w/ MKEC CLS 39 id. cap unless otherwise annotated
- ● = Set ⅝" rebar w/ MKEC CLS 39 id. cap
- (M) = Measured
- (CM) = Calculated from measured
- (P) = Platted
- U.E. & D.E. = Utility Easement and Drainage Easement
- B.S. = Building Setback



Basis of Bearing: Kansas coordinate system of 1983 south zone grid bearing of N01°09'24"W along the E. line of SE. ¼, Sec. 6, T27S, R3E, 6th P.M.

CERTIFICATE OF SURVEY

I, Gregory J. Allison the undersigned registered land surveyor of the State of Kansas, do hereby certify that the following described tract of land was surveyed on _____,2007, and that the accompanying Final Planned Unit Development was prepared and that all monuments shall herein actually exist and their positions are correctly shown to the best of my knowledge and belief.

A contiguous tract of land lying within portions of the Government Lot 3, AND the Southeast Quarter of the Northwest Quarter, AND the Southwest Quarter of the Northeast Quarter, AND Southeast Quarter, all in Section 6, Township 27 South, Range 3 East, of the 6th Principal Meridian, Andover, Butler County, Kansas; said tract being more particularly described as follows:
COMMENCING at the Southeast corner of said Southeast Quarter, thence along the east line of said Southeast Quarter on a Kansas coordinate system of 1983 south zone grid bearing of N01°09'24"W, 2656.39 feet to the east Quarter corner; thence along the east line of said Northeast Quarter, N01°19'54"W, 2746.92 feet to the northeast corner of said Section 6 being coincident with the northeast corner of Government Lot 1, said Section 6; thence along the north lines of said Government Lot 1, and Government Lot 2, said Section 6, N88°33'53"E, 2655.98 feet to the North Quarter corner, being the northeast corner of said Government Lot 3; thence along the common line of said Government Lots 2 and 3, S01°22'31"E, 999.70 feet to the POINT OF BEGINNING; thence continuing along said common line, S01°22'31"E, 372.49 feet to the common corner to said Government Lots 2, 3, and said Southwest corner of the Northeast Quarter and being 20.68 chains south of said northeast corner Government Lot 3; thence along the north line of said Southwest Quarter of the Northeast Quarter being coincident with the south line of Government Lot 2, N89°34'01"E, 1327.64 feet to the common corner of Government Lots 1, 2, and Northeast corner Southwest Quarter of the Northeast Quarter; thence along the east line of said Southwest Quarter of the Northeast Quarter, S01°21'12"E, 355.39 feet to a northeast corner of final planned unit development of The Revised Cornerstone First Addition, an addition to Andover, Butler County, Kansas; thence along the boundary lines of said The Revised Cornerstone First Addition for the next nine (9) courses, thence S88°38'48"W, 142.38 feet; thence S87°27'16"W, 64.26 feet; thence S88°38'48"W, 740.93 feet; thence S01°21'12"E, 353.00 feet; thence N88°38'48"E, 358.00 feet; thence S01°21'12"E, 537.82 feet; thence S04°25'53"E, 223.14 feet; thence S00°24'22"E, 291.12 feet; thence N89°35'37"E, 414.89 feet; thence S01°02'10"W, 421.88 feet; thence S13°58'16"E, 129.83 feet to a boundary line of said The Revised Cornerstone First Addition, being on the north right-of-way line of Cornerstone Parkway; thence along said boundary line and said north right-of-way line for the next nine (9) course S85°04'43"W, 113.76 feet to a point on a non-tangent curve to the left; thence along said curve 48.29 feet, said curve having a central angle of 29°07'31", a radius of 95.00 feet, and a long chord distance of 47.77 feet, bearing N58°49'07"W; thence N03°42'28"W, 15.92 feet; thence S86°17'32"W, 66.00 feet; thence S03°42'28"E, 15.92 feet to a point on a non-tangent curve to the left; thence along said curve 126.12 feet, said curve having a central angle of 76°03'57", a radius of 95.00 feet, and a long chord distance of 117.06 feet, bearing S27°55'59"W; thence S51°37'35"W, 82.42 feet; thence S33°37'11"W, 37.65 feet to the northeast corner of Lot 1, Block 3, said addition; thence along the north line of said Lot 1, S88°42'34"W, 15.38 feet; thence N00°00'00"W, 364.36 feet; thence S88°42'34"W, 429.35 feet; thence N01°17'44"W, 543.23 feet; thence S88°42'16"W, 375.93 feet to the west line of said Southwest Quarter; thence along said east line, N01°17'44"W, 368.94 feet to the Center of said Section 6; thence along the west line of said Southwest Quarter of the Northeast Quarter, N01°22'31"W, 20.00 feet; thence N89°35'37"E, 15.00 feet; thence parallel with and 15.00 feet east of said west line, N01°22'31"W, 763.63 feet; thence S88°37'29"W, 134.43 feet to a point on a curve to the left; thence along said curve to the left having a central angle of 23°04'51", a radius of 471.00 feet, and a long chord distance of 188.46 feet, bearing S77°05'04"W; thence along said reverse curve 446.57 feet, said curve having a central angle of 67°30'38", a radius of 379.00 feet, and a long chord distance of 421.18 feet, bearing N80°42'02"W; thence N43°26'59"E, 58.00 feet; thence N00°30'54"W, 398.12 feet; thence N00°30'54"W, 64.00 feet; thence N89°29'06"E, 23.74 feet; thence N00°30'54"W, 130.00 feet; thence N89°29'06"E, 273.25 feet; thence N00°30'54"W, 217.00 feet; thence N89°29'06"E, 126.39 feet to a point on a non-tangent curve to the right; thence along said curve 38.61 feet, said curve having a central angle of 03°30'02", a radius of 632.00 feet, and a long chord distance of 38.61 feet, bearing N02°39'54"E; thence S85°35'04"E, 64.00 feet; thence N88°37'29"E, 175.21 feet to the POINT OF BEGINNING.
Said contiguous tract CONTAINS: 2,313,842 square feet or 53.12 acres of land, more or less.

All utility easements, drainage easements, together with, any and all other public dedications, rights-of-way(s), and/or easements within the above described property are hereby vacated and replatted by virtue of K.S.A. 12-512(b).

Gregory J. Allison, P.E., R.L.S. #1257
MKEC Engineering Consultants, Inc.
411 N. Webb Rd. Wichita, Kansas 67206
316-684-9600
www.mkec.com

Reviewed in accordance with K.S.A. 58-2005 on this ___ day of _____, 2007.

_____, R.L.S.# 805
Roger L. Cutsinger
Appointed Land Surveyor, Butler County, Kansas

All Section corners shown hereon were verified, found, and or calculated from section reference reports filed at the Kansas State Historical Society; Highway plans of public record were also used to validate certain locations.

MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

CONTINUE TO SHEET 2/2

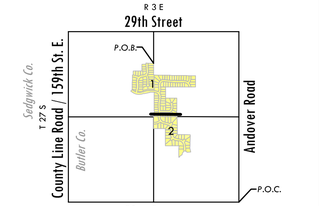
BENCH MARK

BM #1 Chiseled square on center of south headwall of RCB under 21st Street North, 243' East and 41' South of the South Quarter corner of Sec. 6, T27S, R3E.
Elev. = 1345.60

FINAL PLANNED UNIT DEVELOPMENT
THE CORNERSTONE THIRD ADDITION
AN ADDITION TO ANDOVER, BUTLER COUNTY, KANSAS

Lying within portions of Government Lot 3, AND the Southeast Quarter of the Northwest Quarter, AND the Southwest Quarter of the Northeast Quarter, AND Southeast Quarter, all in Section 6, Township 27 South, Range 3 East, of the 6th Principal Meridian, Andover, Butler County, Kansas. and being part of the Cornerstone Preliminary Planned Unit Development

MINIMUM PAD ELEVATIONS LOWEST OPENINGS		
LOTS *(inclusive)*	BLOCK	ELEVATION *NGVD*
23	2	1355.8
5 - 14	2	1356.0



VICINITY MAP

OWNER'S CERTIFICATE

Know all men by these presents that we the undersigned property owners of the land as above set forth in the Registered Land Surveyor's Certificate, have caused the same to be surveyed and platted into Lots, Blocks, Streets and Reserves; the same to be known as the final planned unit development, "THE CORNERSTONE THIRD ADDITION", an addition to the City of Andover, Butler County, Kansas; being part of Cornerstone Preliminary Planned Unit Development.

The streets are hereby dedicated to and for the use of the public. Easements for the construction and maintenance of public utilities and drainage, are hereby granted to the public.

Reserves "A" and "B" are platted for utilities in designated locations, monuments, landscaping, irrigation, berming, open space, and sidewalks. The reserves shall be owned and maintained by a Lot Owners' Association and are reserved for uses stated above, provided however, that the undersigned or Lot Owners' Association as the undersigned successors in interest may, at its discretion deed a parcel of Reserve(s) to an owner(s) of an adjoining lot subject to the obligation to maintain such deeded parcel in compliance with the provisions hereof and in compliance with the maintenance covenants of any applicable restrictive covenants or regulations. Should the owner's of the property described in the platter's text or in any Lot Owners' Association or similar entity created through this plat fail to properly maintain the common areas, reserve parcels or other lands designated for public usage, the City of Andover may maintain the same. In such event, the City may, at its election, assess the costs associated with such maintenance against any or all of the lots within the addition and collect the same in the same fashion as a special tax assessment upon such lot or lot.

A drainage plan has been developed for this plat and all drainage easements, rights-of-way, or reserves shall remain at established grades or as modified with the approval of the applicable City or County Engineer, and unobstructed to allow for the conveyance of storm water.

Certain Lots are required to adhere to the minimum pad elevation those lots are outlined on the "Minimum Pad Elevations" tables.

CHESTNUT RIDGE, LLC, a Kansas limited liability company, by: Ritchie Development Corporation, Manager
and
REED 127TH/COMMERCIAL LLC, a Kansas limited liability company, by: Ritchie Investment Company, Inc., Manager

_____, Vice President
Rob Ramseyer, Vice President
Ritchie Development Corporation and Ritchie Investment Company, Inc.

STATE OF KANSAS, SEDGWICK COUNTY} ss:

This instrument was acknowledged before me on ____ day of _____, 2007, by Rob Ramseyer, Vice President, Ritchie Development Corporation and Ritchie Investment Company, as managers of Chestnut Ridge, LLC, a Kansas limited liability company and Reed 127th/Commercial LLC, a Kansas limited liability company .

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

Affix Seal

_____, Notary Public
Notary Public:

My Term Expires:_____.

MORTGAGE CERTIFICATE

Intrust Bank, holder of a mortgage on the above described property, does hereby consent to the plat of "THE CORNERSTONE THIRD ADDITION".

INTRUST BANK, N.A.

_____, Executive Vice President
Gary D. Schmitt, Executive Vice President

This instrument was acknowledged before me on ____ day of _____, 2007, by Gary D. Schmitt, Executive Vice President, Intrust Bank.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year last above written.

Affix Seal

_____, Notary Public
Notary Public:

My Term Expires:_____.

PLANNING COMMISSION CERTIFICATE

STATE OF KANSAS, BUTLER COUNTY} ss:

This Final Planned Unit Development, "THE CORNERSTONE THIRD ADDITION", an addition to the City of Andover, Butler County, Kansas, was approved by the Andover City Planning Commission. Dated this ____ day of _____, 2007.

ANDOVER PLANNING COMMISSION

_____,Chair
Quentin Coon, Chair

Attest: _____ Secretary
Janice Cox, Secretary

GENERAL PROVISIONS

1. All utilities shall be installed underground. Easements shall be determined on the final PUD plan.

2. **Access Controls:**
21st Street North: Access to 21st Street North shall be limited to fourteen (14) openings. There shall be eight (8) total openings to Parcels 1, 2, and 3, provided that one of which shall be to major entrance serving Parcel 4 to the North, and provided there shall be complete access control on the east 175' of Parcel 1. There shall be six (6) total opening to Parcels 5 and 6, provided one of which shall be to major entrance serving the parcels to the North, and provided, there shall be complete access control on the west 175' of Parcel 6. As stated above, there shall be 2 major collector street entrances onto 21st Street North located accordingly, one within Parcel 3 and one within Parcel 5. The above openings shall be further defined upon filing for final PUD.

3. **Street Requirements:**
A. Arterial Streets: 50' half street right-of-way adjacent to residential zoning and 60' adjacent to commercial zoning, with 75' required within 250' of the arterial intersection with a 100' taper to the 50' or 60' right-of-way.

B. Public Streets:
1. The pavement section for public streets shall meet the City of Andover standards.
2. Right-of-way and pavement widths for public street are as follows:
66' right-of-way - 37' roadway width (back of curb to back of curb) with curb and gutter.
64' right-of-way - 35' roadway width (back of curb to back of curb) with curb and gutter.
60' right-of-way - 31' roadway width (back of curb to back of curb) with curb and gutter.
58' right-of-way - 29' roadway width (back of curb to back of curb) with curb and gutter.
3. There shall be no gated access on public streets.
4. Residential collector street right-of-way may be 58' with a 29' roadway width if designed with no residential driveway access points or on street parking. Commercial collector street right-of-way shall be 70' with a 41' roadway width.

C. Cul-de-sacs: All cul-de-sacs shall have a minimum property line diameter of 100 feet. Maximum length for a cul-de-sac shall not exceed 600 feet.

4. **Drainage:** An overall grading and drainage plan shall be provided as a separate instrument based on a hydrology study. This plan shall be general in character but establish the overall grading and drainage requirements. A final lot grading plan shall be submitted with each final PUD plan which shall include a minimum foundation opening elevation for each lot and elevations of any grading for drainage purposes and/or curb elevations.

5. **Signs:** Signs for all residential parcels designating the name of the development shall be permitted in reserves at the entrances to the overall project and to each of the proposed parcels. The maximum size shall be as per the City Code. The maximum size for each project identification sign shall be 150 square feet. No project signs shall be permitted in public right-of-way.

6. **Homeowners Associations:** A document to create and operate a homeowners association shall be filed with the final PUD plan of each parcel to provide for the maintenance of open space, reserves, parking areas, signs, logos, berms, landscaping, buffer areas, drainage channels, swales, hedge rows within adjacent arterial street right-of-ways, etc. Said document shall be received by the City and recorded with the Butler County Register of Deeds. Failure of the Homeowners Association(s) to properly maintain the areas listed above shall give the City the right to properly maintain the areas listed and to assess the cost of maintenance to the property owners.

7. **Restrictive Covenants:** Shall be filed with the final PUD plan for each parcel.

8. **Relationship to Comprehensive Plan:** The PUD is in keeping with Andover's Comprehensive Development Plan for this area. Appropriate city zoning and subdivision regulations have been utilized as a basis for design of the PUD. The amount of land designated for residential land use and related open space provides for an average area per dwelling unit, which is reflective of the R-2 single-family residential district; in that, said average lot area exceeds the 10,000 sq. ft. per lot requirement. Provided however, within Parcel 4 the minimum lot size may be as little as 8,500 square feet while maintaining an average lot area exceeding 10,000 sq. ft.

9. **Sidewalks:** Sidewalks are proposed along the collector streets and the loop roads within each parcel. The width of the sidewalk on collector streets shall be 8 feet and the width on local loop streets shall be 5 feet. The exact location will be determined at the time of the final PUD plan is submitted for each parcel.

PARCEL DESCRIPTION
Parcel No. 4 - (R-2 Zoning District)
Permitted Uses: All uses permitted in the R-2 zoning district of the Andover Zoning Regulations, provided however, the minimum lot size may be as little as 8,500 square feet while maintaining an average lot area exceeding 10,000 sq. ft.
Gross Area this phase - 40.11 Acres
Net Parcel No. 4 this phase - 32.37 Acres
Dwelling Units this phase - 100
Not to Exceed Net Density - 3.41 DU/AC
Maximum Lot Coverage - 35%
Maximum Building Height - 35 feet
Setbacks - As per zoning code except if two front yards abut a street then one side may be reduced to 15 feet. Except that 25 feet is required in front of garage door opening(s).
Parking Ratio - As per zoning code

PARCEL DESCRIPTION
Parcel No. 9 - (R-2 Zoning District)
Permitted Uses: (same as Parcel No. 4)
Gross Area - 12.81 Acres
Net Parcel No. 4 this phase - 9.07 Acres
Dwelling Units this phase - 35
Not to Exceed Net Density - 3.41 DU/AC
Maximum Lot Coverage - 35%
Maximum Building Height - 35 feet
Setbacks - (same as Parcel No. 4)
Parking Ratio - As per zoning code

GOVERNING BODY CERTIFICATE

STATE OF KANSAS, BUTLER COUNTY} ss:

The dedications shown on this Final Planned Unit Development, are hereby accepted by the Governing Body of the City of Andover, Kansas.

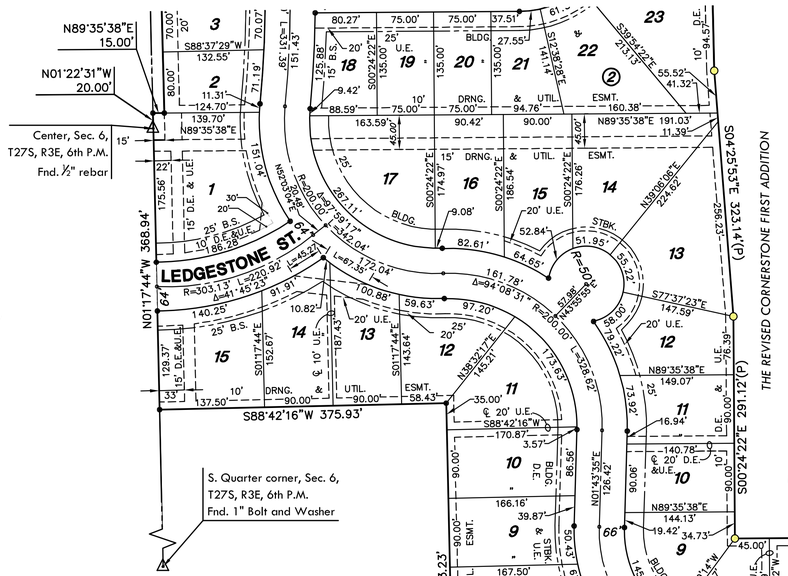
Dated this ____ day of _____, 2007.

_____, Mayor
Ben Lawrence, Mayor

Attest: _____, City Clerk
Jeffrey K. Bridges Jr., City Clerk

Affix Seal

CONTINUE TO SHEET 1/2



LEGEND

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- (P) = Platted
- U.E. & D.E. = Utility Easement and Drainage Easement
- B.S. = Building Setback

TRANSFER RECORD

STATE OF KANSAS, BUTLER COUNTY} ss:

Entered on transfer record this ____ day of _____, 2007.

_____, County Clerk
Ron Roberts, County Clerk

Affix Seal

REGISTER OF DEEDS CERTIFICATE

STATE OF KANSAS, BUTLER COUNTY} ss:

This is to certify that this instrument was filed for record in the Register of Deeds office this ____ day of _____, 2007, at o'clock _M; and is duly recorded in Record Book _____, Page _____, Plat Book _____, Page _____, Doc#._____; Fee: ____.

_____, Register of Deeds
Marcia McCoy, Register of Deeds

Attest: _____, Deputy
Teresa Dawson, Deputy

Affix Seal

Basis of Bearing: Kansas coordinate system of 1983 south zone grid bearing of N01°09'24"W along the E. line of SE. ¼, Sec. 6, T27S, R3E, 6th P.M.

MKEC ENGINEERING CONSULTANTS, INC.
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