Lateral 7, Main 5, Northwest Interceptor Sewer

SANITARY SEWER IMPROVEMENTS

to serve

LIBERTY PARK 2ND ADDITION & LIBERTY PARK 3RD ADDITION PHASE I

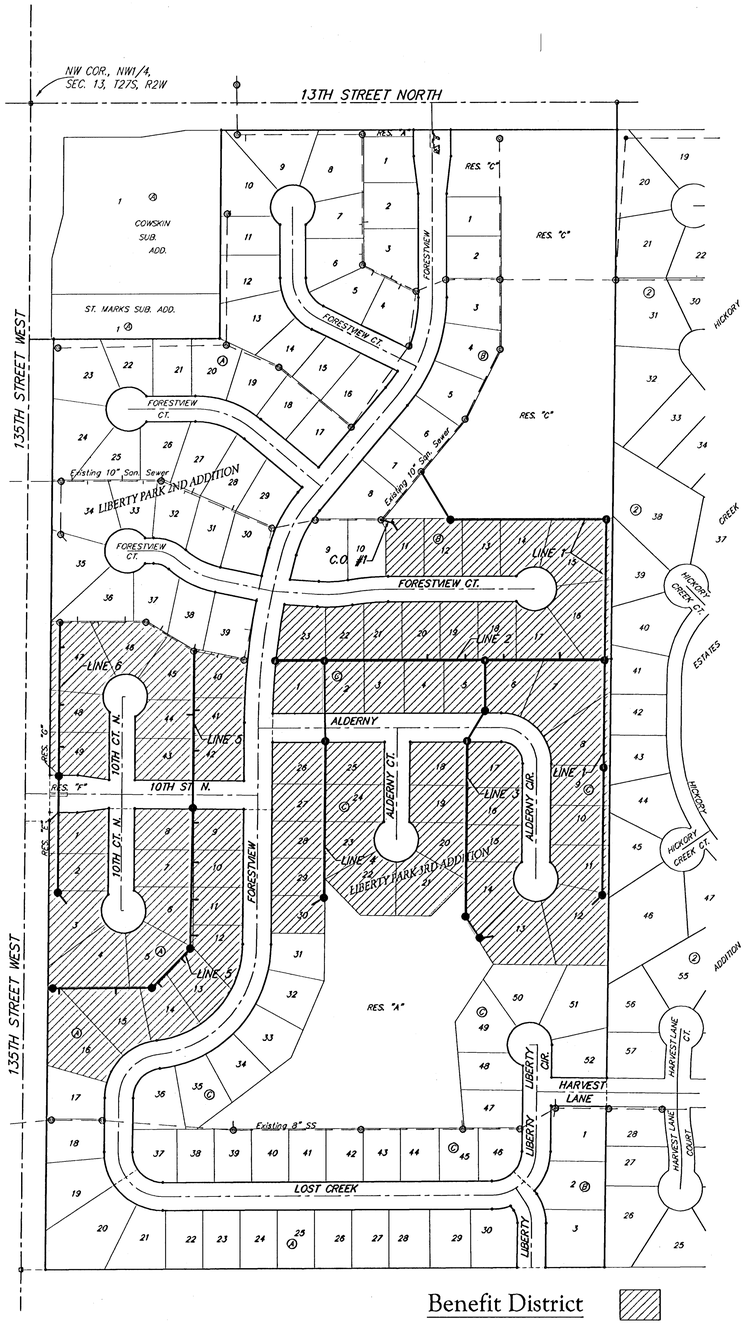
CITY OF WICHITA, KANSAS

James L. Armour, P.E. City Engineer

Project Number
468-83730

O.C.A. Number
744175

Mies Construction, Inc. - Contractor
Shearer, City - Inspector
Released 7/11/06
As-Built
Risers + Stubs
.pdf by JDL 10/13/06



Benefit District

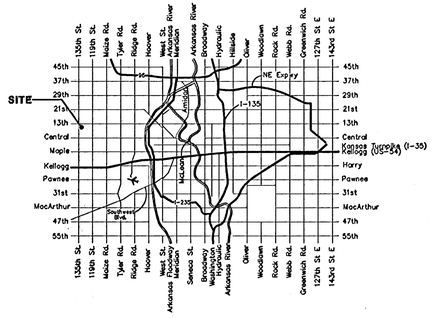
Scale: 1" = 150'

Benchmarks

BM #1: C.O.W. benchmark disk. 58' E and 55' N of CL 135th St. W. & 13th St. N. Elev. = 167.83 (City Datum)

BM #2: C.O.W. benchmark disk. 1/2 mile south of 13th St. 39' east of CL 135TH St. 18' south of hedge east. Elev. = 159.71 (City Datum)

Sheet Index



Vicinity Map

GENERAL NOTES:

1. Contractor will be required to provide notice to utility companies a minimum of twenty-four (24) hours prior to any excavation, as follows:

   Kansas One-Call 687-2470

   The Contractor must notify the following in case of an emergency.

Cox Communications	262-4270
Kansas Gas Service	1-888-482-4950
Westar Energy	383-8650
Aquila Energy	1-800-303-0357
SBC	268-2245
City of Wichita Water Dept.	268-4563
City of Wichita Sewer Maint.	268-4024
City of Wichita Storm Sewer Maint.	268-4090
City of Wichita Traffic Maint.	268-4034
Conoco Pipeline Co.	1-800-231-2551
Southern Star Pipeline Co.	529-6600
Phillips Pipeline Co.	1-800-766-8230
Jayhawk Pipeline Co.	1-888-542-9575

2. Utility service lines, poles, valve boxes, meters, and etcetera are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor or unless the plans specifically identify a utility to be adjusted by its owner during construction. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

3. Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted 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, in the opinion of the Engineer, that 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.

4. 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. Trees and shrubs which are not in direct conflict with proposed new construction shall be saved and protected from damage.

5. The Contractor shall give all property owners and/or tenants of developed property abutting the construction of this project a minimum of ten (10) days advance notice prior to start of construction.

6. 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

7. All existing and proposed erosion control measures including silt fencing, erosion control mat, straw bales, inlet barriers, and const. entrance shall be maintained throughout construction by the contractor and until project is accepted by the City of Wichita. The on-site engineer shall complete weekly reports on the status of erosion control measures. The contractor shall be required to comply with maintenance and/or replacement of erosion control measures as determined by the on-site engineer until project is accepted by City of Wichita. Maintenance and/or replacement of erosion control measures to be paid by L.S. bid item "Site Clearing & Restoration"

8. All excess excavation shall remain on-site and shall be stockpiled or spread at a location determined by the engineer.

9. The Contractor shall be responsible for maintaining continuous flow of sewage through construction. Contractor's proposed method for maintaining sewage flow shall be approved by the Engineer. Cost of maintaining flow of sewage through construction will not be paid for directly and this cost shall be considered as subsidiary to the other pay items of work.

10. When connecting to existing manhole or stub, the contractor shall reshape manhole bottom or adjust the existing stub's alignment or elevation as necessary. Cost shall be subsidiary to project.

11. All areas disturbed during construction shall be seeded at 300 lbs./acre with Rye Grass immediately following construction in that area. Contractor shall prepare ground per City Specifications.

12. The developer for this project is Paul E. Kelsey, and may be reached at (316) 722-1077

Baughman

Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316-262-2271 F 316-262-0141
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

BENCHMARKS:
BM #1: C.O.W. benchmark disk. 56' E and 55' N of CL 135th St. W. & 13th St. N.
Elev. = 167.83 (City Datum)

BM #2: C.O.W. benchmark disk. 1/2 mile south of 13th St. 39' east of CL 135TH St. 18' south of hedge east.
Elev. = 159.71 (City Datum)

Sta. 0+00, Begin Line 1
Connect to Existing 8" Stub and Extend 8" Pipe S.E. Contractor to Verify Depth and Location of Existing Stub Prior to Construction.

CAUTION! Underground Utilities In Area

Sta. 0+00, Cleanout #1
Core Existing Manhole and Install Std. 8" Cleanout (Single Wye) Assy. w/ 16.2 L.F. 8" Pipe.
Contractor to Verify Depth and Location of Existing Stub Prior to Construction.

NOTE:
8" cleanout assy. shall be bid per each. 8" pipe from manhole to cleanout riser shall be bid as L.F. 8" pipe.

NOTE:
4" service line shall extend 5' from the 8"x4" wye fitting. This shall be incidental to the 8" cleanout.

Sta. 0+16.2, Cleanout #1
Begin Installation of Standard Cleanout Riser
Top Elev. = 161.10

Sta. 1+26.2, Line 1
Construct Standard Manhole.
Top Elev. = 157.90

Existing Pond
Static WS Elev. 152.0 City Datum
100-yr. Design WS Elev. 154.9 City Datum

RES. "C"

Sta. 4+77.8, Line 1
Const. Shallow Type "P" Manhole.
Top Elev. = 155.40
Match Point

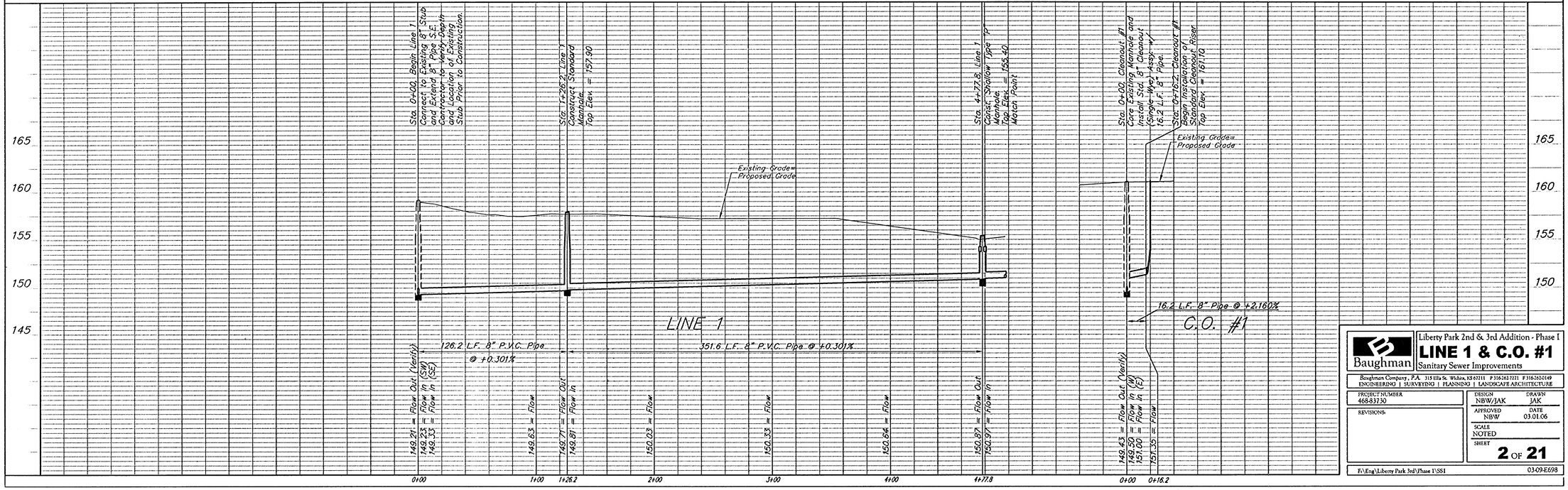
HICKORY CREEK ESTATES

LIBERTY PARK 2ND ADDITION

CO #1

LINE 1

SCALE:
1" = 40' HORIZONTAL
1" = 5' VERTICAL
• = IRON



Baughman

Liberty Park 2nd & 3rd Addition - Phase I

LINE 1 & C.O. #1

Sanitary Sewer Improvements

Baughman Company, P.A. 315 Ella St. Wichita, KS 67211 P 3162627221 F 3162620149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER 468-83730

REVISIONS:

DESIGN NBW/JAK | DRAWN JAK

APPROVED NBW | DATE 03.01.06

SCALE NOTED

SHEET 2 OF 21

F:\Eng\Liberty Park 3rd\Phase 1\SS1 03-09-E698

BENCHMARKS:
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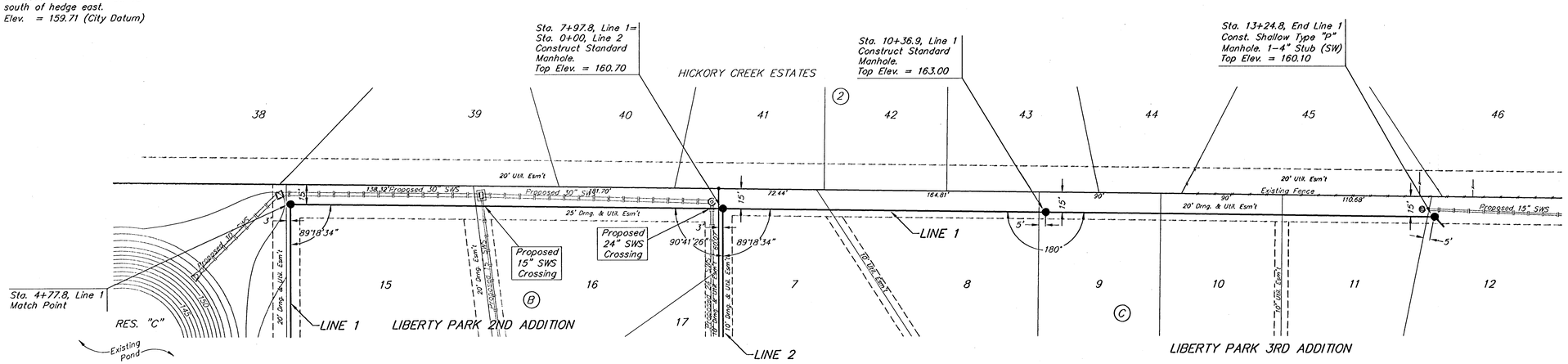

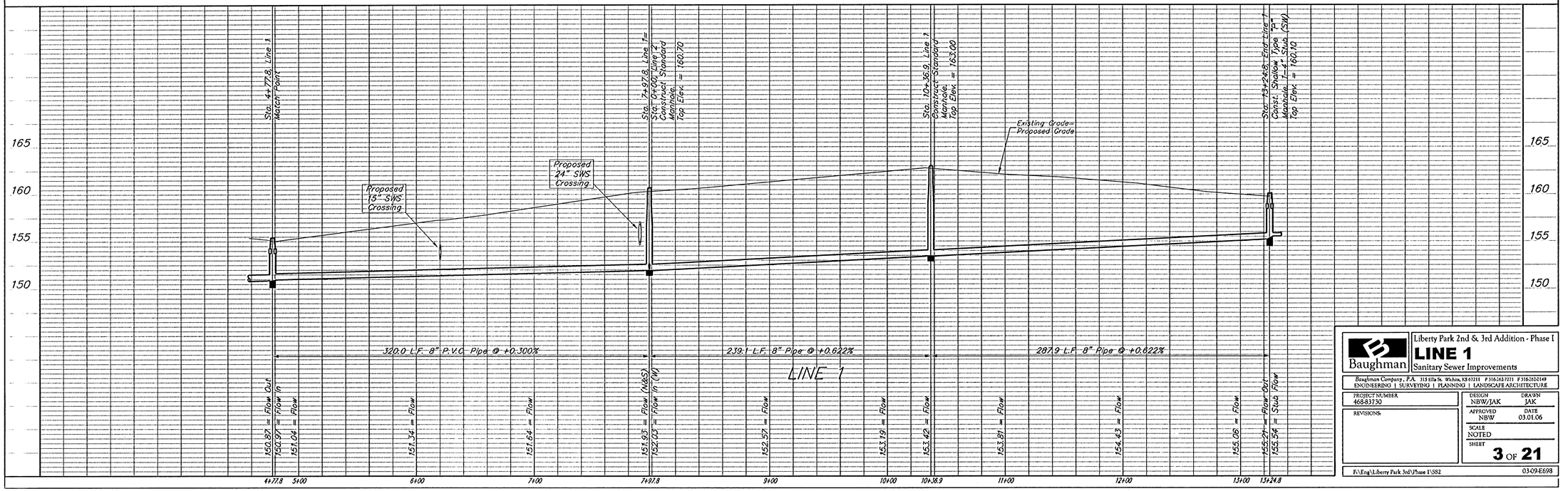

Baughman

Liberty Park 2nd & 3rd Addition - Phase I

LINE 1

Sanitary Sewer Improvements

Baughman Company, P.A. 315 Ella St. Wichita, KS 67211 P 316.262.7721 F 316.262.6249
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER 468-83730	DESIGN NBW/JAK — DRAWN JAK
REVISIONS	APPROVED NBW — DATE 03.01.06
	SCALE NOTED
	SHEET 3 OF 21

F:\Eng\Liberty Park 3rd\Phase 1\SS2 — 03-09-E698

BENCHMARKS:
BM #1: C.O.W. benchmark disk.
56' E and 55' N of CL 135th St. W. & 13th St. N.
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BM #2: C.O.W. benchmark disk.
1/2 mile south of 13th St.
39' east of CL 135TH St. 18' south of hedge east.
Elev. = 159.71 (City Datum)

SEWER SERVICE TABLE

NUMBER	TYPE	LOCATION LOT NO.	LOCATION BLOCK NO.	LOCATION LINE NO.	STATION/ DIRECTION	FOR INFORMATION ONLY APPROXIMATE LENGTH 4" PIPE VERTICAL	FOR INFORMATION ONLY APPROXIMATE LENGTH 4" PIPE HORIZONTAL
1	8" X 4" Tee Saddle	17	8	2	1+01/Rt.	4'	13'
2	8" X 4" Tee Saddle	18	8	2	2+28/Rt.	2.5'	13'
3	8" X 4" Tee Saddle	19	8	2	3+14/Rt.	2.5'	13'
4	8" X 4" Tee Saddle	20	8	2	4+00/Rt.	2.5'	13'

NOTE: Vertical Riser Pipe shall be extended to 2' minimum above ground water elevation and 4' maximum below proposed ground elevation.

SCALE:
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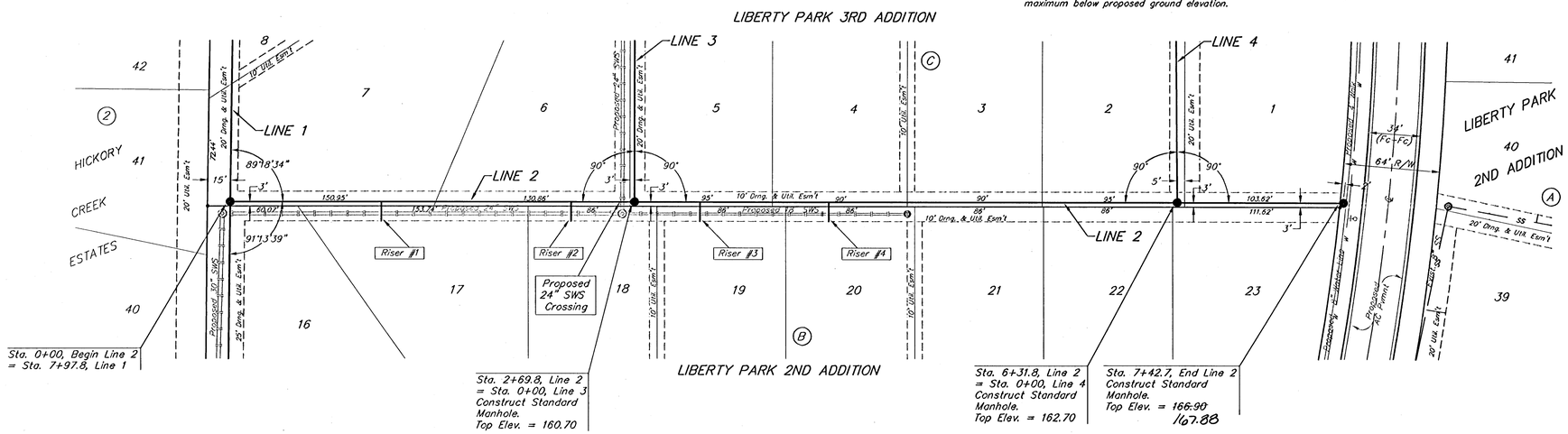
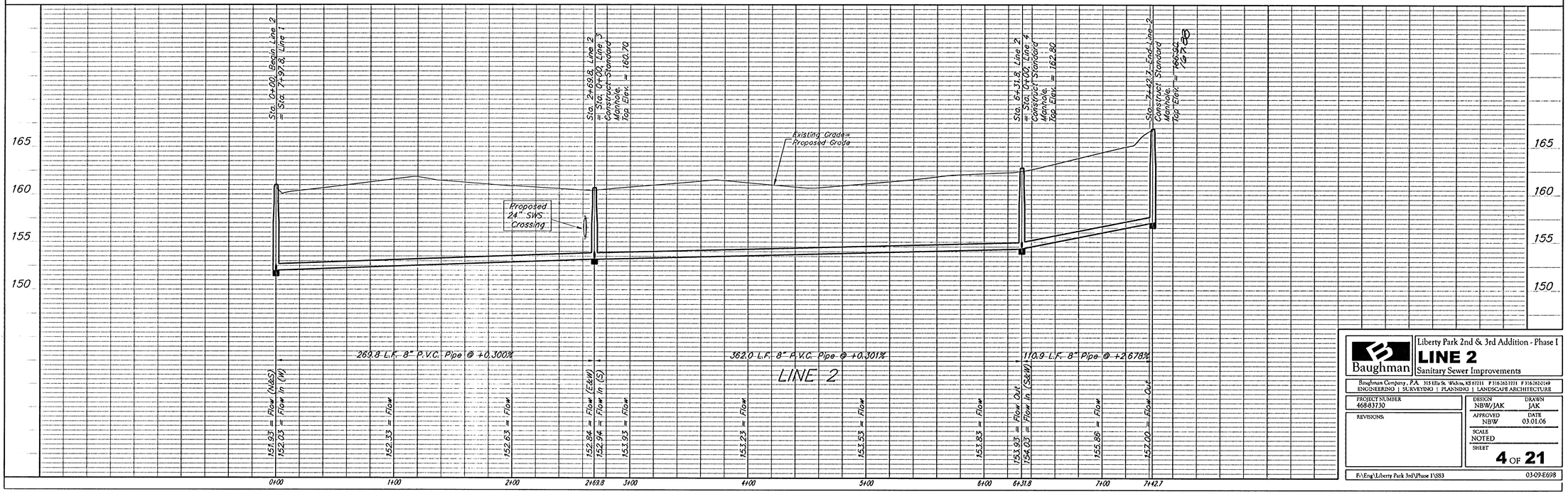
• = IRON





Baughman

Liberty Park 2nd & 3rd Addition - Phase I
LINE 2
Sanitary Sewer Improvements

Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316.263.7721 F 316.262.0149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER 468-83730
REVISIONS:
DESIGN NBW/JAK
DRAWN JAK
APPROVED NBW
DATE 03.01.06
SCALE NOTED
SHEET 4 OF 21

F:\Eng\Liberty Park 3rd\Phase I\SS3 03-09-E698

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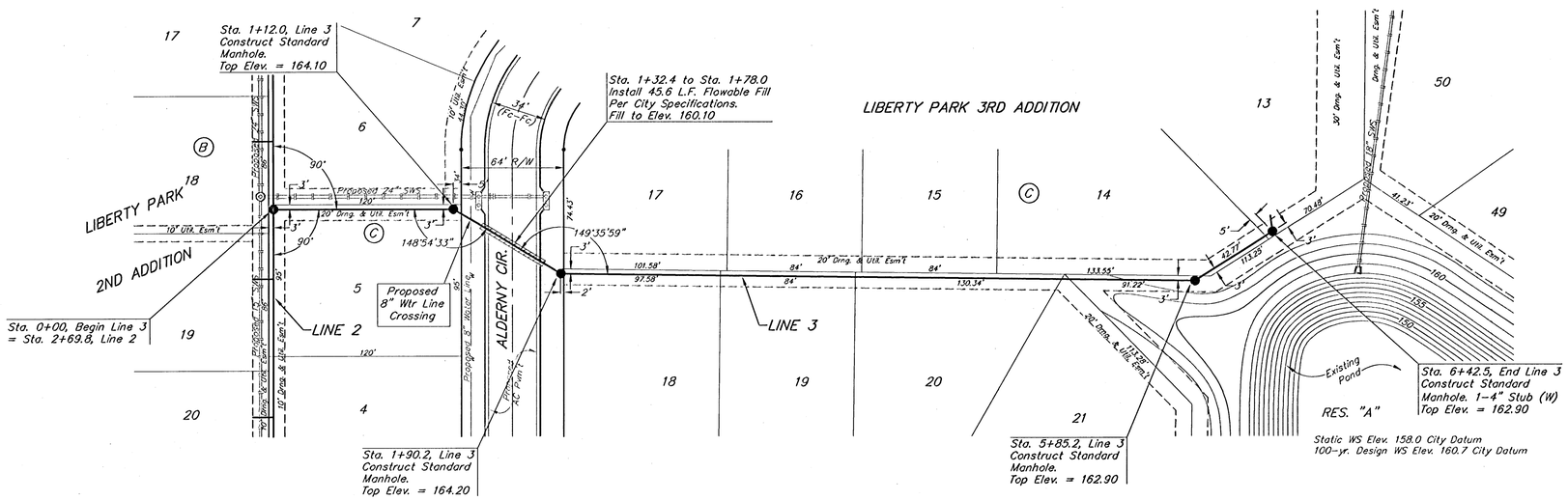

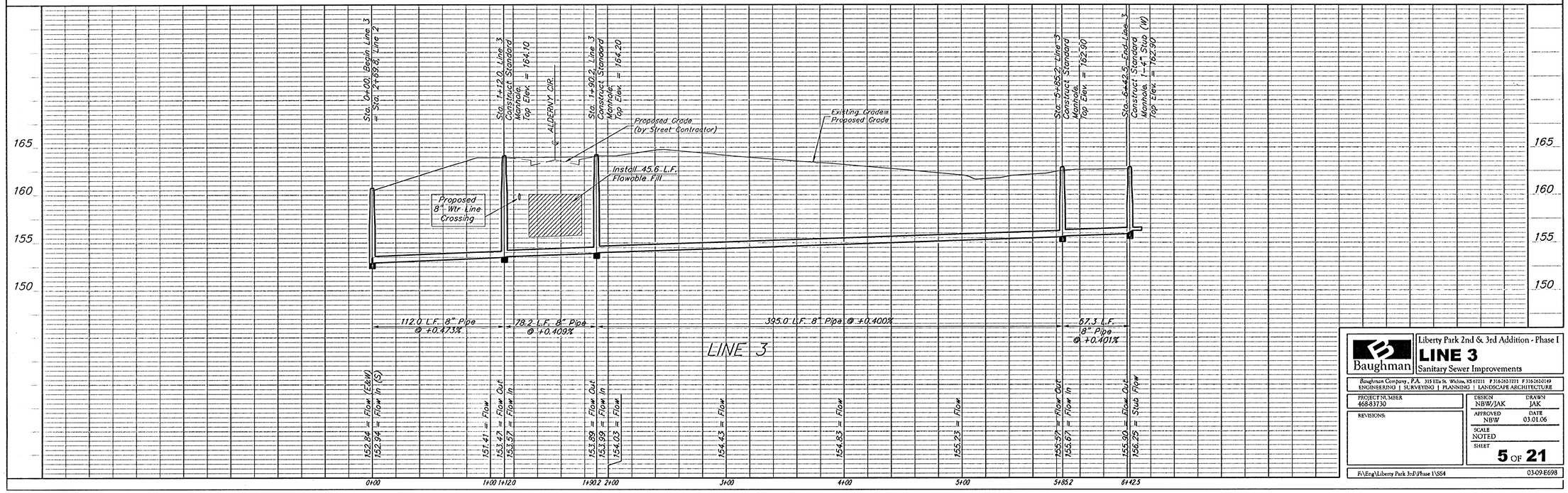

Baughman

Liberty Park 2nd & 3rd Addition - Phase I

LINE 3

Sanitary Sewer Improvements

Baughman Company, P.A. 315 Ella St. Wichita, KS 67211 P 3162627271 F 3162620149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER 468-83730

REVISIONS:

DESIGN NBW/JAK | DRAWN JAK
APPROVED NBW | DATE 03.01.06
SCALE NOTED
SHEET **5** OF **21**

F:\Eng\Liberty Park 3rd\Phase 1\SS4 03-09-E698

BENCHMARKS:
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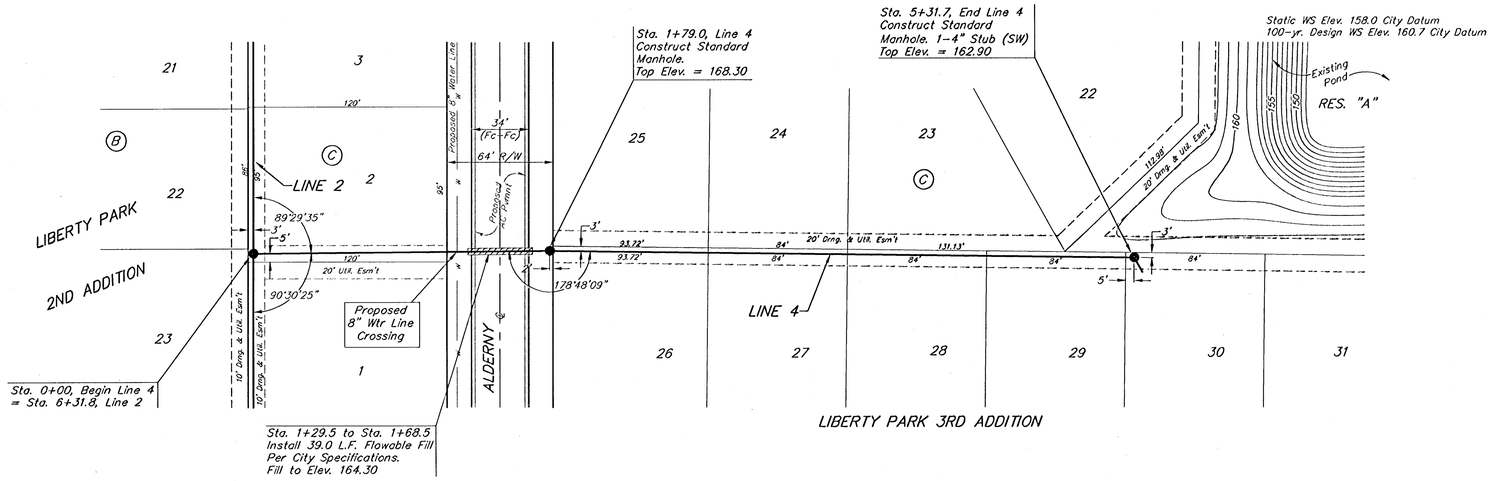

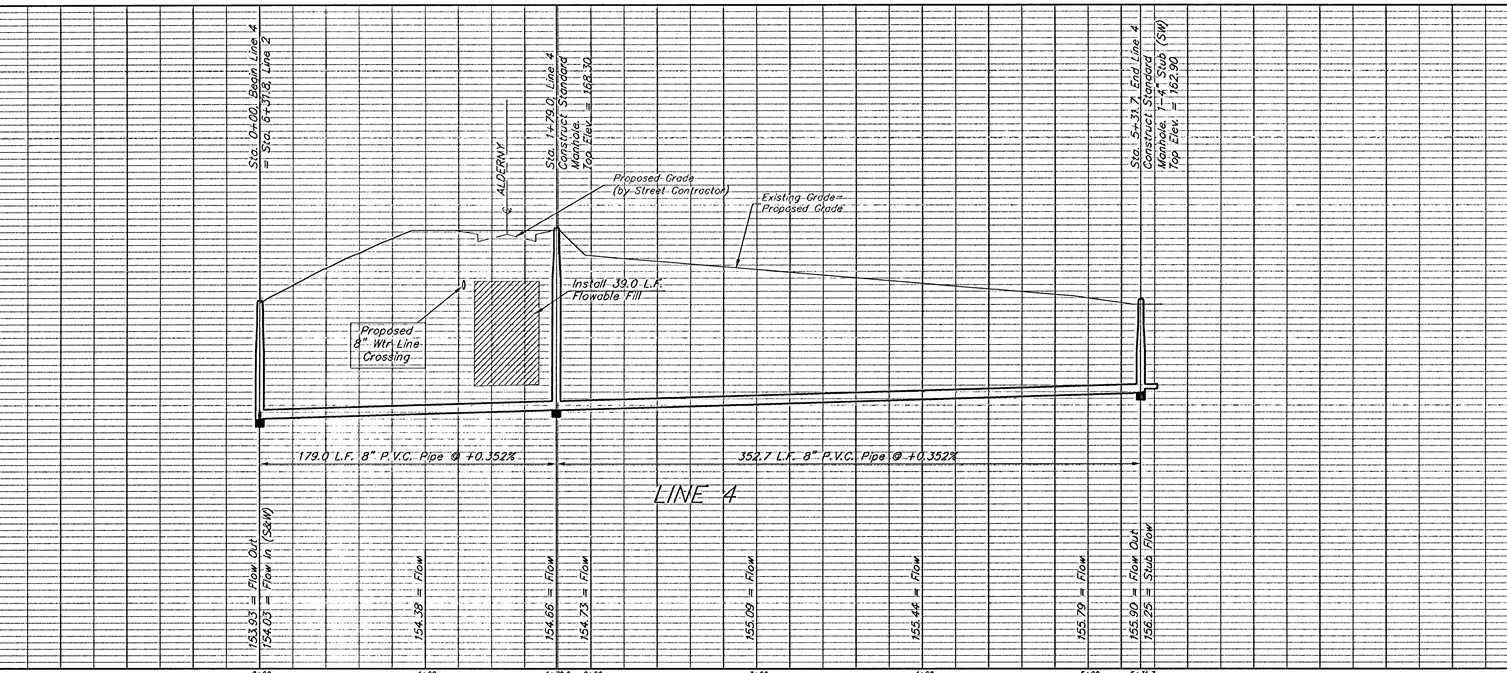

SCALE:
1" = 40' HORIZONTAL
1" = 5' VERTICAL
• = IRON

Baughman

Liberty Park 2nd & 3rd Addition - Phase I

LINE 4

Sanitary Sewer Improvements

Baughman Company, P.A. 315 Ella St. Wichita, KS 67211 P 316.262.7271 F 316.262.0149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER 468-83730

REVISIONS:

DESIGN
DRAWN JAK
APPROVED
DATE 03.01.06
SCALE NOTED
SHEET **6** OF **21**

F:\Eng\Liberty Park 3rd\Phase 1\SS5 03-09-E698

BENCHMARKS:
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BM #2: C.O.W. benchmark disk. 1/2 mile south of 13th St. 39' east of CL 135TH St. 18' south of hedge east.
Elev. = 159.71 (City Datum)

Sta. 0+00, Begin Line 5 Connect to Existing 8" Stub and Extend 8" Pipe South Contractor to Verify Depth and Location of Existing Stub Prior to Construction.

Sta. 3+50.6, Line 5 Construct Standard Manhole. Top Elev. = 167.00

Sta. 3+01.1 to Sta. 3+40.1 Install 39.0 L.F. Flowable Fill Per City Specifications. Fill to Elev. 163.10

Sta. 6+66.5, Line 5 Construct Standard Manhole. Top Elev. = 164.70

Sta. 7+90.0, Line 5 Construct Standard Manhole. Top Elev. = 165.40

Sta. 10+13.8, End Line 5 Construct Standard Manhole. Top Elev. = 166.60

SCALE:
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1" = 5' VERTICAL
• = IRON

LINE 5

LIBERTY PARK 2ND ADDITION

LIBERTY PARK 3RD ADDITION

10TH ST. N.

135TH STREET WEST

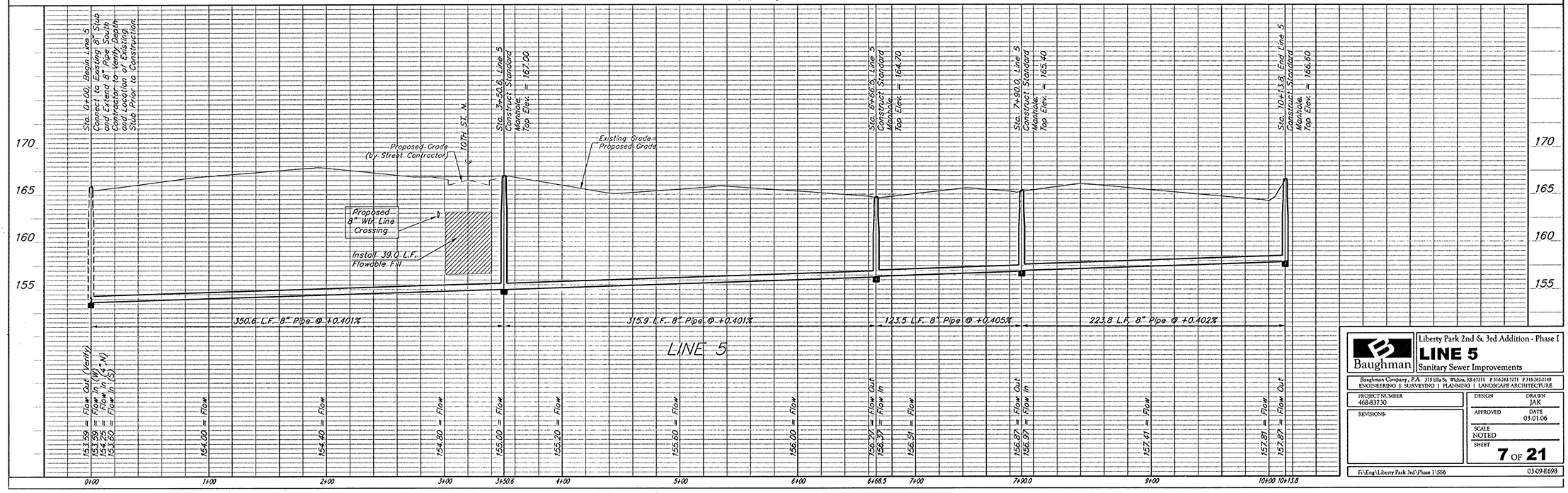
Proposed 8" Wtr Line Crossing

Riser #5, #6, #7, #8, #9, #10, #11, #12, #13, #14, #15

SEWER SERVICE TABLE

NUMBER	TYPE	LOCATION LOT NO.	LOCATION BLOCK NO.	LOCATION LINE NO.	STATION/ DIRECTION	FOR INFORMATION ONLY APPROXIMATE LENGTH 4" PIPE VERTICAL	FOR INFORMATION ONLY APPROXIMATE LENGTH 4" PIPE HORIZONTAL
5	8" X 4" Tee Saddle	41	A	5	1+32/Lt.	8'	13'
6	8" X 4" Tee Saddle	44	A	5	1+42/Rt.	8'	7'
7	8" X 4" Tee Saddle	42	A	5	2+21/Lt.	8'	13'
8	8" X 4" Tee Saddle	9	A	5	3+84/Lt.	6.2'	13'
9	8" X 4" Tee Saddle	10	A	5	4+74/Lt.	5'	14'
10	8" X 4" Tee Saddle	11	A	5	5+59/Lt.	5'	15'
11	8" X 4" Tee Saddle	12	A	5	6+37/Lt.	4'	16'
12	8" X 4" Tee Saddle	13	A	5	6+96/Lt.	4'	14'
13	8" X 4" Tee Saddle	14	A	5	7+72/Lt.	4'	13'
14	8" X 4" Tee Saddle	15	A	5	8+71/Lt.	4'	12'
15	8" X 4" Tee Saddle	16	A	5	9+99/Lt.	1.5'	12'

NOTE: Vertical Riser Pipe shall be extended to 2' minimum above ground water elevation and 4' maximum below proposed ground elevation.



Baughman

Liberty Park 2nd & 3rd Addition - Phase I

LINE 5

Sanitary Sewer Improvements

Baughman Company, P.A. 315 Ella St. Wichita, KS 67211 P 3162627271 F 3162620149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER 468-83730
REVISIONS
DESIGN
DRAWN JAK
APPROVED
DATE 03.01.06
SCALE NOTED
SHEET 7 OF 21

F:\Eng\Liberty Park 3rd\Phase 1\SS6 03-09-E698

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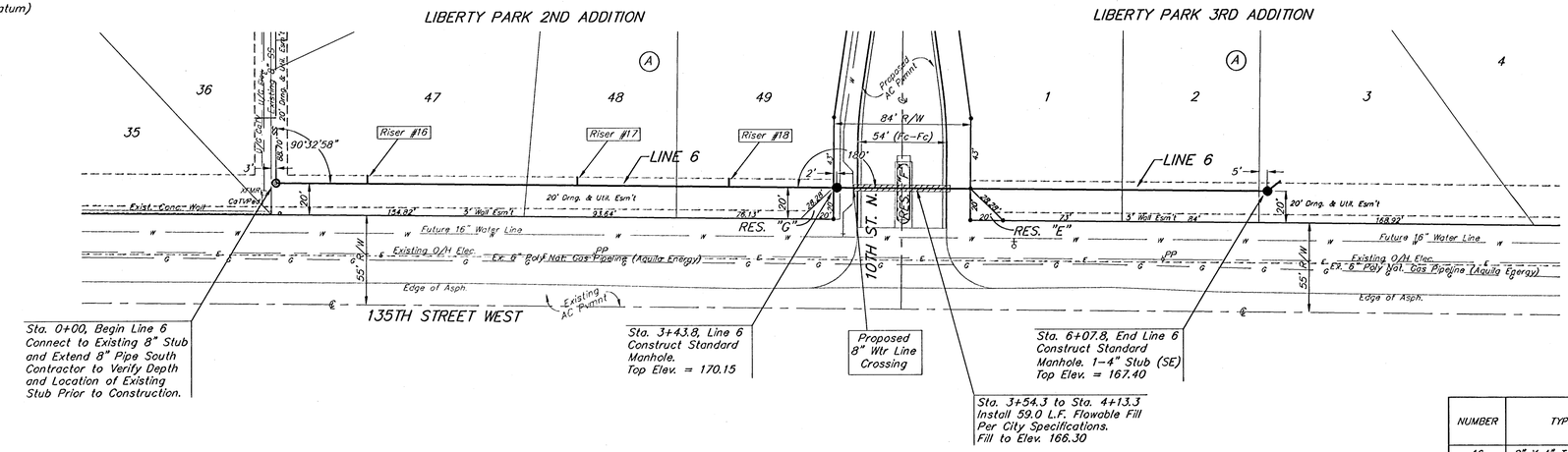
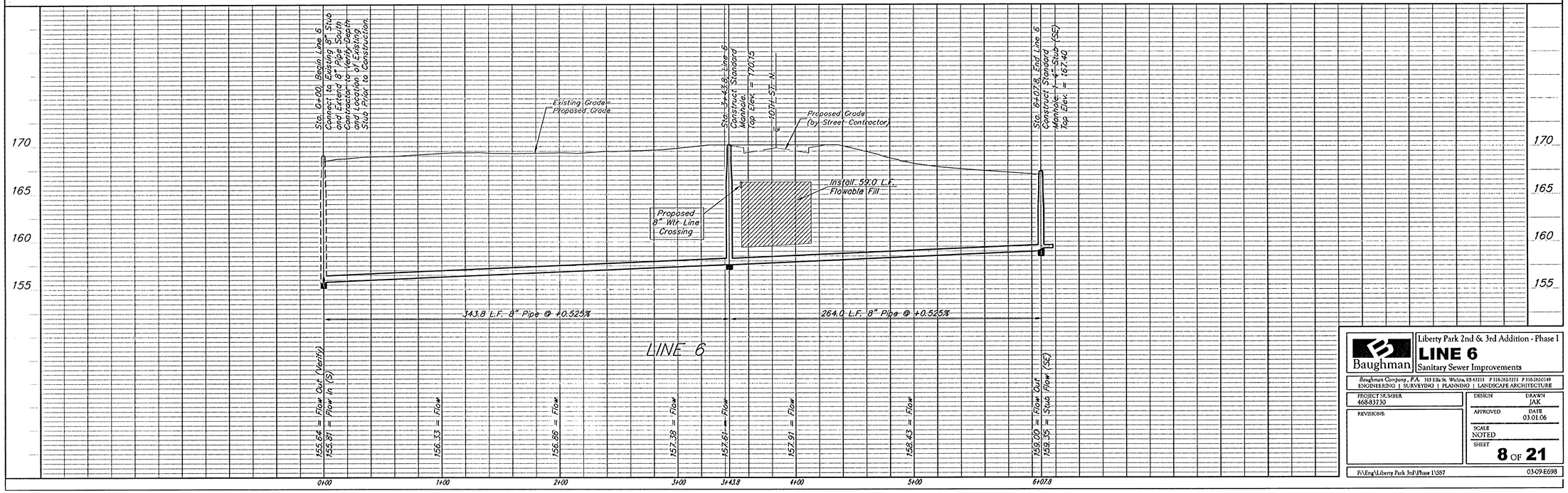


SEWER SERVICE TABLE

NUMBER	TYPE	LOCATION			STATION/ DIRECTION	FOR INFORMATION ONLY	
		LOT NO.	BLOCK NO.	LINE NO.		APPROXIMATE LENGTH 4" PIPE	
						VERTICAL	HORIZONTAL
16	8" X 4" Tee Saddle	47	A	6	0+56/Lt.	8'	5'
17	8" X 4" Tee Saddle	48	A	6	1+85/Lt.	7.5'	5'
18	8" X 4" Tee Saddle	49	A	6	2+78/Lt.	7'	5'

NOTE: Vertical Riser Pipe shall be extended to 2' minimum above ground water elevation and 4' maximum below proposed ground elevation.



Baughman

Liberty Park 2nd & 3rd Addition - Phase I

LINE 6

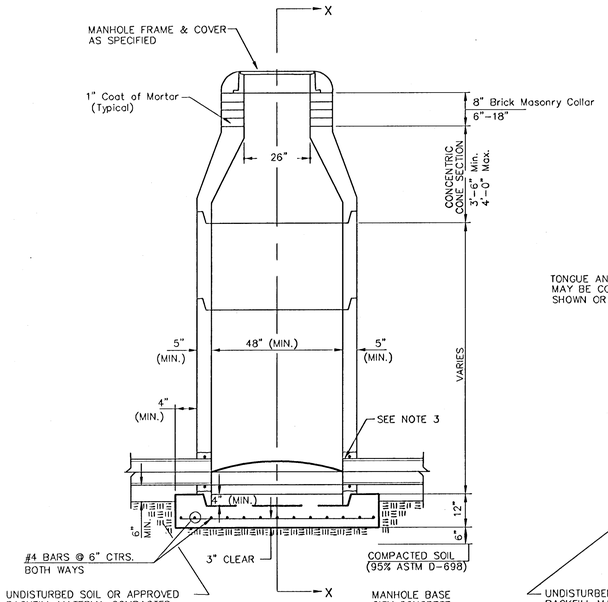
Sanitary Sewer Improvements

Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 3162632727 F 3162620149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

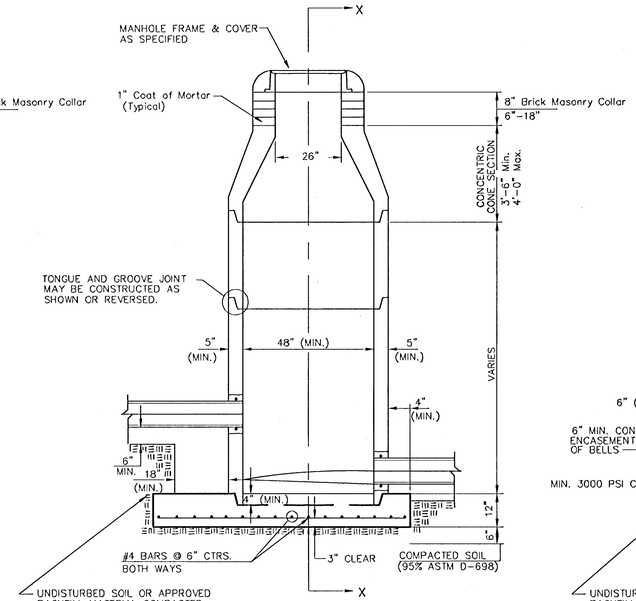
PROJECT NUMBER 468-83730
REVISIONS:
DESIGN
DRAWN JAK
APPROVED
DATE 03.01.06
SCALE NOTED
SHEET 8 OF 21

F:\Eng\Liberty Park 3rd\Phase 1\SS7 03-09-E698

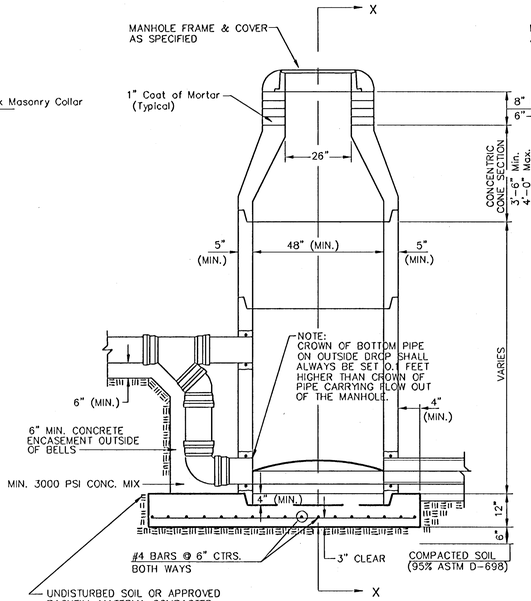
SEWER APPURTENANCES DETAILS



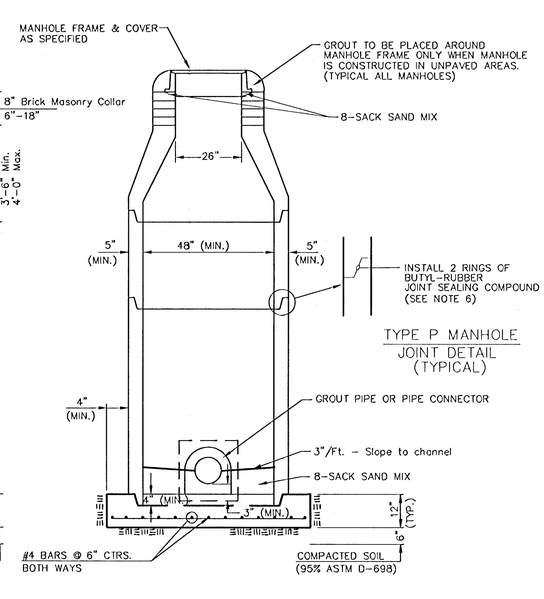
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE

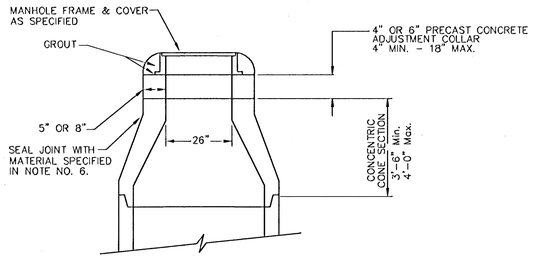


SECTION X
(TYPICAL)

GENERAL NOTES

PRECAST MANHOLE NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNEMEC SERIES 66 HI-BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
6. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
8. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
9. LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
10. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5'. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
11. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
12. OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NON-SHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
13. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
14. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
15. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
16. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
17. STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR. THE USE OF PRE-CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.



ALTERNATE CONSTRUCTION
IN UNPAVED AREAS

Baughman

CITY OF WICHITA, KANSAS
STANDARD MANHOLE DETAILS
SEWER APPURTENANCES DETAILS

Baughman Company, P.A. 315 Ella St. Wichita, KS 67211 P 316.263.7221 F 316.262.0149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER	DESIGN	DRAWN
468-83730	STAFF	STAFF
REVISIONS:	APPROVED	DATE 11/05
	SCALE NONE	
	SHEET 9 OF 21	

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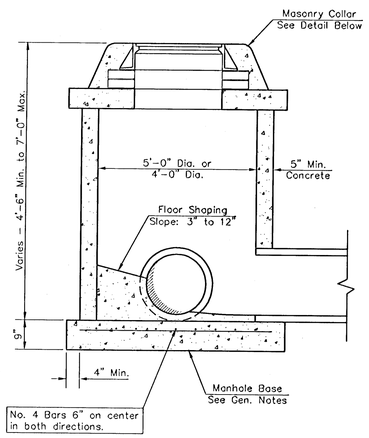
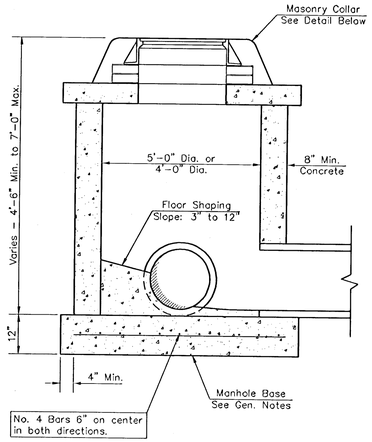
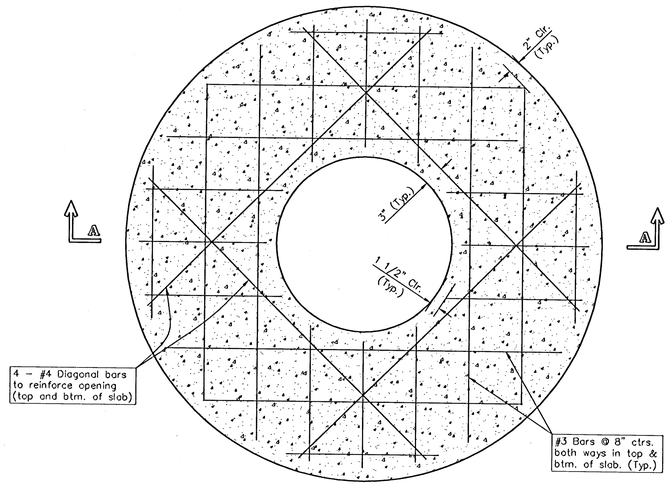


SHALLOW TYPE "P" MANHOLE



SHALLOW TYPE "C" MANHOLE



PLAN

GENERAL NOTES

1. Mortar used in masonry construction shall contain 8 sacks of cement per cubic yard. Concrete used in manhole bases shall conform to the requirements of concrete for concrete pavement construction as specified in the city standard paving specifications using city concrete cement mix without air entraining admixture. Mortar shall be placed around the manhole ring as shown on the drawings when manholes are constructed in unpaved areas. Manholes constructed where pipe sizes are smaller than 24" shall have an inside diameter of 4'. Manholes constructed where pipe sizes are 24" or larger shall have an inside diameter of 5'. Completed manhole shall be without leaks and water tight.

2. Reinforcing steel shall be installed in the manhole bases and shall consist of no. 4 bars placed on 6" centers in both directions. The manhole base reinforcement shall be placed 6" above the bottom of the manhole base. All costs for furnishing and installing reinforcing steel shall be included in the unit price bid for the manhole.

3. The floors of all manholes shall be shaped with flow channels such that the manholes will be self cleaning and free of areas where solids could be deposited as sewage flows through the manhole from all inlet pipes to the outlet pipe. Flow channels shall be formed to match the bottom halves of the inflowing pipes and the outflowing pipe as shown by the drawings. Manhole floors shall have slopes of 3 inches per foot in the areas outside of the flow channels sloped toward the flow channels. Pipes laid through manholes shall have the top half removed to neat lines for the full inside diameter of the manhole. Manhole floors shall then be shaped around the bottom half of the pipe which forms the flow channel.

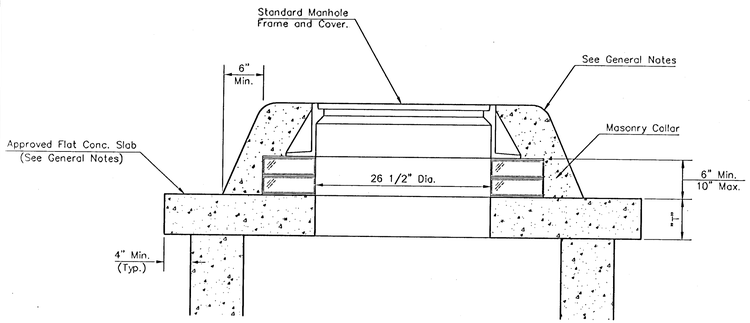
4. Pipes installed within the excavation made for the manhole shall be cradled with concrete to the limits of the manhole excavation. When clay pipe is used, the cradle shall extend to the first joint outside the manhole. The cradle shall be terminated at the clay pipe joint in a manner which will maintain the flexibility of the joint. Cost of cradle within manhole excavation or to clay pipe joints adjacent to manhole shall be included in the unit price bid for the manhole.

5. Manhole cover castings and manhole frame castings shall conform to the requirements as indicated in the standard specifications and as shown in the standard detail drawings.

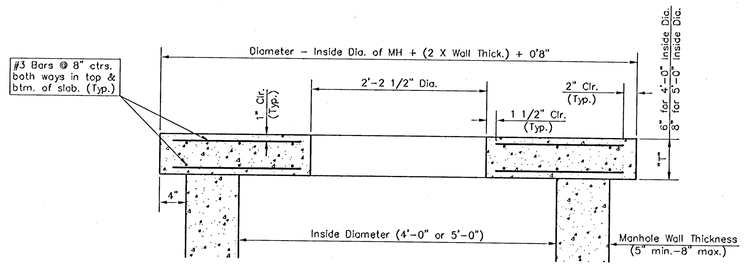
6. The crowns of inflowing pipes shall never be set lower than the crown of the outflowing pipe.

7. Standard shallow manholes type "P" and "C" shall be paid for at the unit price bid per each for the type and diameter indicated. All standard shallow manhole diameters will be 4' unless indicated otherwise.

8. All brick used in manhole construction shall meet Grade SW of ASTM C652 or C62-87.



MASONRY COLLAR DETAIL



SECTION A–A

FLAT CONCRETE SLAB DETAILS

Baughman

Std. Shallow Manholes
Type "P" and Type "C"

Baughman Company, P.A. 315 Ella St. Wichita, KS 67211 P 316.262.7271 F 316.262.0149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

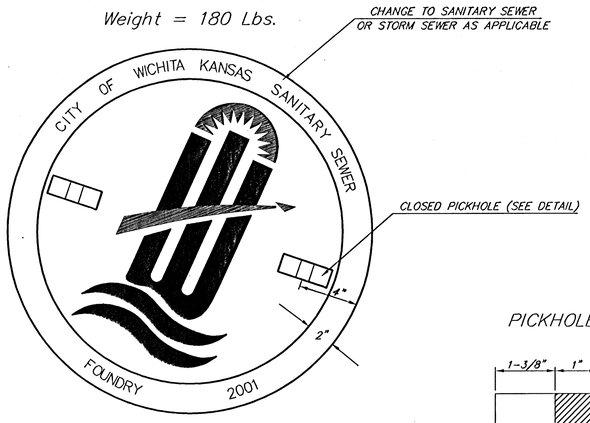
PROJECT NUMBER	DESIGN	DRAWN
468-83730	C.O.W.	Staff
REVISIONS	APPROVED	DATE
	SCALE: None	
	SHEET: 10 OF 21	

03-09-E698

STANDARD AND LIGHT WEIGHT MANHOLE FRAME AND COVER DETAIL

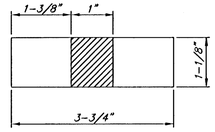
ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

MANHOLE COVER
Weight = 180 Lbs.

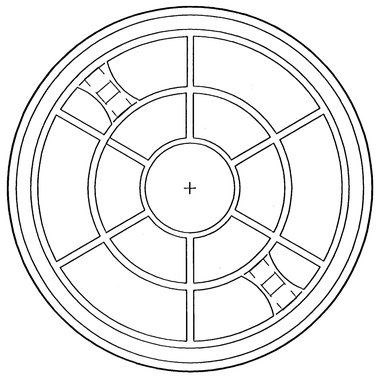


TOP VIEW

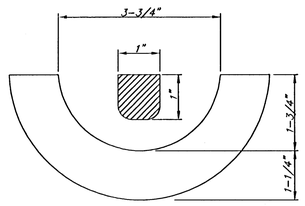
PICKHOLE DETAIL



TOP VIEW

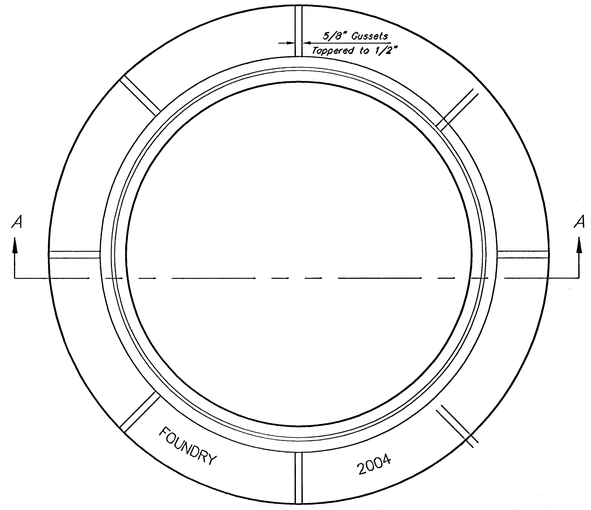


BOTTOM VIEW

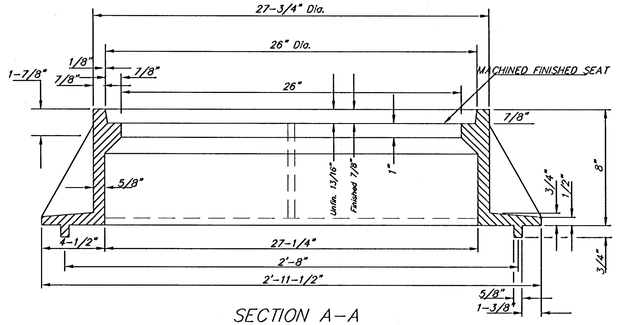


SECTION VIEW

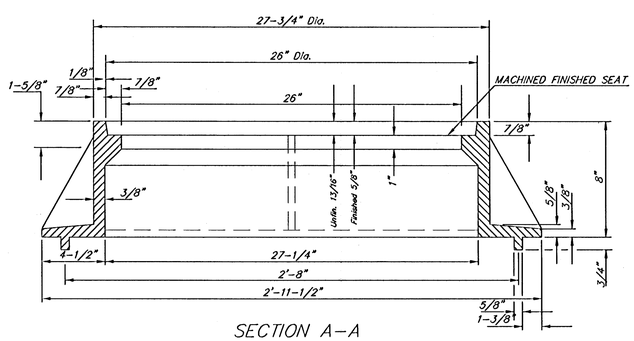
LIGHT WEIGHT
MANHOLE FRAME
Weight = 161 Lbs.



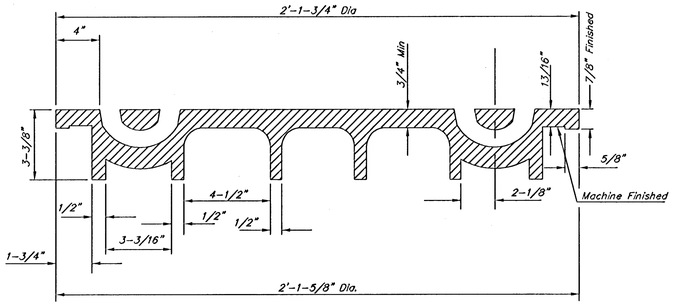
TOP VIEW



SECTION A-A
STANDARD
MANHOLE FRAME
Weight = 250 Lbs.



SECTION A-A
LIGHT WEIGHT
MANHOLE FRAME
Weight = 161 Lbs.



SECTION VIEW

GENERAL NOTES

1. MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.
2. LIGHT WEIGHT MANHOLE CASTINGS SHALL WEIGH A MINIMUM OF 180 POUNDS ON THE SOLID COVER AND 161 POUNDS ON THE MANHOLE RING. THIS IS A TOTAL OF 341 POUNDS ON A RING AND COVER SET. CASTINGS WEIGHING LESS THAN THE MINIMUM SPECIFICATIONS WILL NOT BE ACCEPTED.
3. STANDARD MANHOLE CASTINGS SHALL WEIGH A MINIMUM OF 180 POUNDS ON THE SOLID COVER AND 430 POUNDS ON THE MANHOLE RING. THIS IS A TOTAL OF 430 POUNDS ON A RING AND COVER SET. CASTINGS WEIGHING LESS THAN THE MINIMUM SPECIFICATIONS WILL NOT BE ACCEPTED.
4. MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.
5. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH THAT THESE SEATING SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.
6. THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1 INCH IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SANITARY SEWER", OR "CITY OF WICHITA STORM SEWER". THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.
7. MANHOLE FRAME WITHOUT MUDRING TO BE USED ONLY ON RECONSTRUCTION PROJECTS WHERE ADDITIONAL CLEARANCE IS NEEDED.

REV. 3-13-02, MCG

L:\Sewers\Manhole Frame Cover Light Weight R.dwg

CITY OF WICHITA
PUBLIC WORKS
ENGINEERING

STANDARD & LIGHT WEIGHT MANHOLE FRAME AND COVER

CITY ENGINEER
JAMES L. ARMOUR, P.E. CITY ENGINEER

PROJECT NUMBER	OCA NUMBER	DATE
468-83730	744175	3/01/06

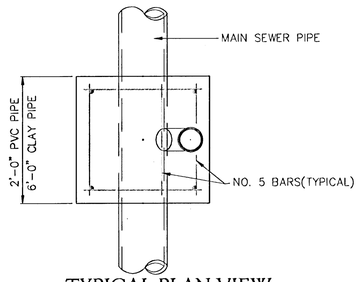
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501
(316) 268-4114 Fax

DESIGN	DRAWN
COW	COW

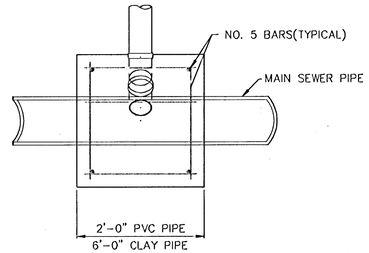
SHEET
11 OF 21

VERTICAL RISER DETAILS

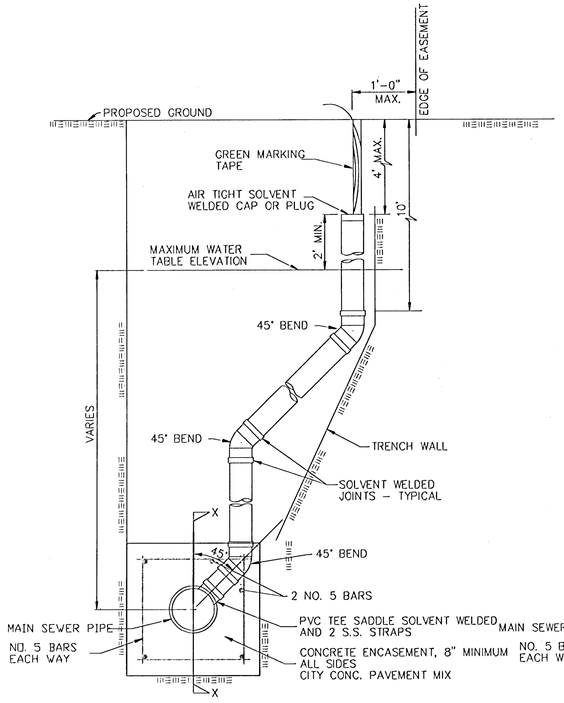
ADOPTED AS STANDARD DESIGN
BY
CITY OF WICHITA, KANSAS
OCTOBER 1992



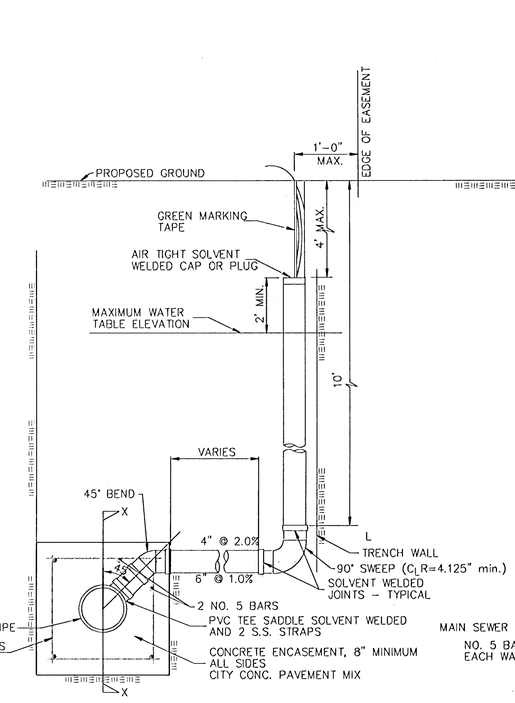
TYPICAL PLAN VIEW



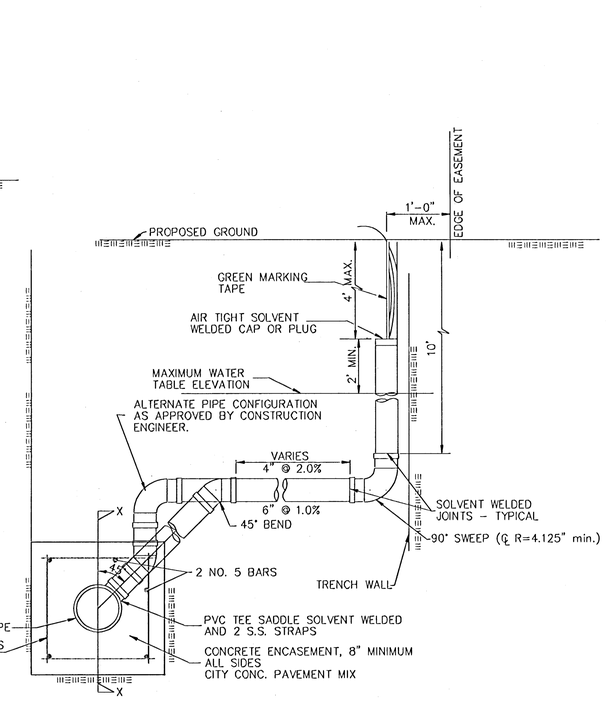
TYPICAL SECTION X-X



METHOD "A"



METHOD "B"



METHOD "C"

NOTE: RISER PIPE REQUIREMENTS AT MANHOLE STUBS SHALL BE SIMILAR TO THOSE SHOWN ABOVE.

GENERAL NOTES

1. RISERS. Risers shall be installed to serve all lots or tracts where the sanitary sewer main is below the water table. Risers shall also be installed to serve all lots and tracts where the sanitary sewer main depth is greater than 12 feet below the proposed ground elevation. Installation of risers because of field conditions shall be as approved by the Construction Engineer. The location of the risers to serve developed property shall be approved by the property owner and the Construction Engineer.

2. PIPE STUBS. Pipe stubs shall be installed in manholes where locations of manholes will provide satisfactory service connection as determined by the Construction Engineer. The vertical distance between the flowline of the manhole pipe stub and the flowline of the sanitary sewer main out of the manhole shall not exceed 2 feet. Risers shall be utilized at manhole pipe stubs as indicated in Note 1. Manhole pipe stubs shall be set such that the top of the stub is not lower than the top of the sanitary sewer main.

3. SIZING. Pipe stubs and risers shall be sized according to the plans and riser table where risers are indicated by the plans. Where risers or pipe stubs are required because of field conditions, the risers and stubs shall be six-inch diameter for commercial or industrial properties and 4" or 6" diameter for residential properties, based on lot size and sanitary sewer main depth. Sizing of risers and stubs shall be approved by the Construction Engineer prior to installation.

4. RISER OR STUB MATERIAL. Risers and stubs shall be constructed of Schedule 40 PVC Pipe, meeting the requirements of the latest revision of A.S.T.M. . All pipe joints shall be solvent welded.

5. REINFORCED CONCRETE ENCASEMENT. Riser connections to clay pipe sanitary sewers shall be reinforced concrete encased both ways from the riser centerline. The reinforced concrete encasement shall extend three feet from the riser centerline or stop at the first sanitary sewer pipe joint within three feet of the riser centerline. Riser connections to PVC Sanitary Sewer mains shall be reinforced concrete encased one foot each way from the riser centerline. The concrete encasement shall be reinforced using reinforcing steel as shown in the appropriate drawing. The concrete shall conform to the City Standard Specifications for concrete pavement.

6. BEDDING. Bedding around the sanitary sewer riser shall be compacted Pipe Bedding Type 1 or 2. The bedding shall be placed and compacted from the depth of the sanitary sewer main to the top of the sanitary sewer riser pipe. Compacted Pipe Bedding Type 1 or 2 shall be required for all risers whether constructed in vertical wall or sloped wall trenches. Bedding material and construction practices shall be approved by the Construction Engineer prior to installation.

7. SUPPORT OF RISERS. Sanitary sewer riser pipe shall be supported during trench backfill. The riser pipe shall be held in a vertical position at all times until trench backfill and compaction has been completed. Contractor's methods for supporting and backfilling the riser pipe shall be approved by the Construction Engineer.

8. PLUGGING. The ends of the riser pipes and manhole stubs shall be plugged using an airtight solvent welded cap or plug. Cap or plug fittings shall be approved by the Construction Engineer prior to installation. Caps or plugs which do not provide an airtight seal will not be accepted.

9. TOP OF THE RISER PIPE. The top elevation of the sanitary sewer riser pipe shall be built per plan elevations, unless otherwise directed by the Construction Engineer. Where riser elevations are not shown on the plans, the top of the risers shall be set at an elevation four feet below the proposed ground surface. If ground water is encountered, the top of the riser pipe shall be set at an elevation two feet (min.) above the maximum water table elevation, regardless of the riser elevation shown on the plans.

10. MARKING. Locations of the ends of the sanitary sewer riser pipe shall be marked by fastening green colored plastic tape to the end of the riser. The tape shall be supported by a length of wooden 2 x 4, extending from the top of the riser pipe to the proposed ground surface. The green tape shall be visible and extend one foot above the proposed ground surface. The green tape shall be 4 mil Polyethylene film with a minimum width of three inches, specifically manufactured for the purpose of identification of underground sewers.

11. LOCATION MEASURES. The project inspector shall record and document the location of all risers constructed as measured from the nearest manhole, indicating the direction from the manhole, the direction and distance from the main, riser size, and elevation of the top of the riser.

12. RISER LOCATION. The riser shall be located per plan if shown. If not shown on the plan, the riser shall be located at the center of the lot, within one foot of the property side of the easement for the lot being served. All riser locations shall be approved by the Construction Engineer prior to installation.

13. PAYMENT. "Sanitary sewer risers" shall be paid for at the contract unit price per each, which price shall be full compensation for all pipe, fittings, marking tape, length of wooden 2 x 4, reinforced concrete encasement, support during backfill, backfill, labor, site restoration, and any other items necessary to complete the work.

"Manhole stubs" shall be paid for at the contract unit price per each, which shall be full compensation for all labor, material, and incidentals necessary to complete the work including all pipe, fittings, reinforced concrete encasement, and all other items as required and listed for "Sanitary Sewer Risers".

Baughman

CITY OF WICHITA, KANSAS

Riser Details

Baughman Company, P.A. 315 Ella St. Wichita, KS 67211 P 316.263.7271 F 316.262.0149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER	DESIGN	DRAWN
468837.00	STAFF	STAFF
REVISIONS:	APPROVED	DATE
		3/01/06
	SCALE	
	NONE	
	SHEET	
	12 OF 21	

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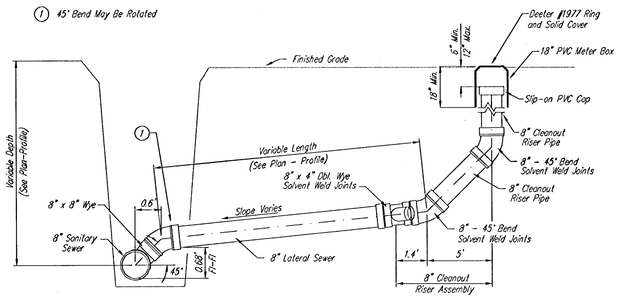
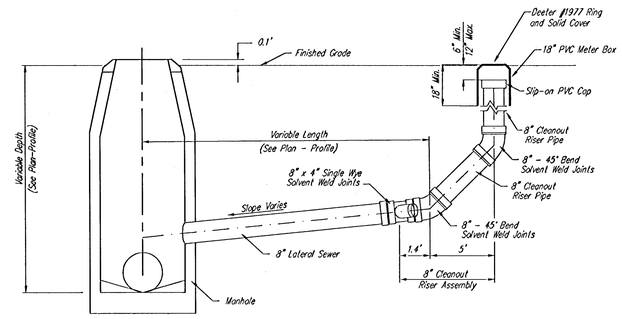


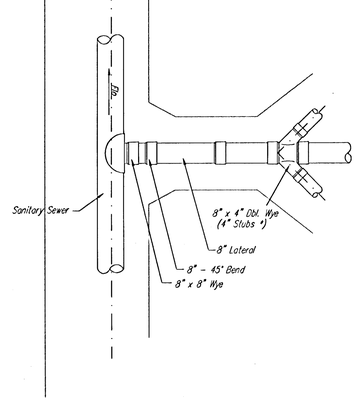
8" CLEANOUT RISER ASSEMBLY DETAIL
W/ WYE CONNECTION

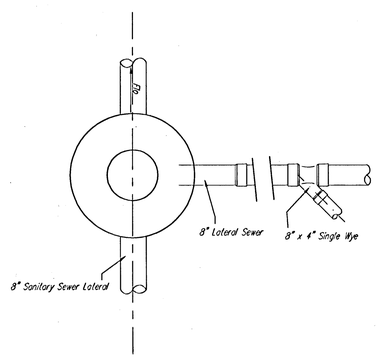


8" CLEANOUT RISER ASSEMBLY DETAIL
W/ MANHOLE CONNECTION

* 4" Branch (each side) To Serve as 4" Stub. Temporary Plug Until Service Connection is Required. Singel Wye to be Used Where Indicated on Plan.

** 8" Lateral to be Air-Tested up to the Top of PVC Pipe, per Standard Specifications.





Baughman

CITY OF WICHITA, KANSAS

8" CLEANOUT RISER DETAIL

Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316.262-7271 F 316.265.0149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER 46883730

DESIGN STAFF DRAWN STAFF

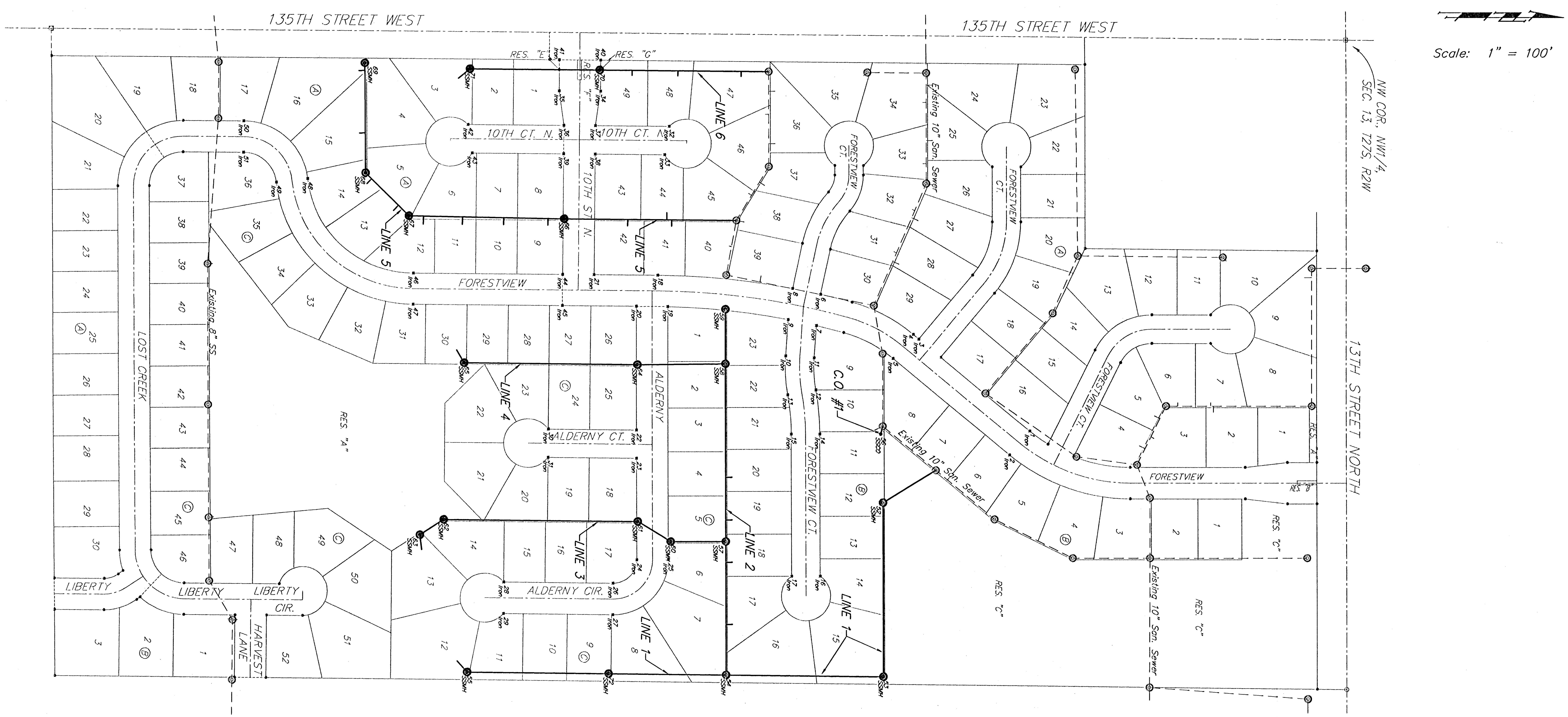
APPROVED DATE 3/01/06

REVISIONS:

SCALE NONE

SHEET 13 OF 21

L:\Sewers\Cor8.dwg



Pnt	Northing	Easting	Desc
1	27012.1655	15807.7052	Iron
2	26971.0778	15856.7746	Iron
3	26786.9375	15619.1129	Iron
4	26775.5806	15609.6034	Iron
5	26734.4929	15658.6727	Iron
6	26587.1460	15527.9316	Iron
7	26578.5913	15591.6577	Iron
8	26530.4050	15515.9122	Iron
9	26521.3054	15579.3376	Iron
10	26516.1935	15653.1797	Iron
11	26574.0550	15657.1853	Iron
12	26577.4431	15722.4932	Iron
13	26520.3068	15732.4649	Iron
14	26585.3200	15813.4419	Iron
15	26527.3200	15813.4419	Iron
16	26585.3200	16102.2169	Iron
17	26527.3200	16102.2169	Iron
18	26256.0417	15488.4677	Iron
19	26276.3200	15552.8131	Iron
20	26212.3200	15552.0508	Iron
21	26126.2679	15487.2228	Iron
22	26212.3200	15804.7769	Iron
23	26212.3200	15862.7811	Iron
24	26212.3200	16068.2174	Iron
25	26276.3200	16068.2174	Iron
26	26163.7414	16116.2140	Iron
27	26162.9700	16180.2093	Iron
28	25941.2736	16113.5323	Iron
29	25940.5022	16177.5277	Iron
30	26033.0306	15802.6157	Iron
31	26032.3315	15860.6115	Iron
32	26279.5356	15184.6783	Iron
33	26270.2912	15242.5924	Iron
34	26139.8628	15112.3359	Iron
35	26055.8666	15111.5306	Iron
36	26065.1855	15182.6232	Iron
37	26129.1825	15183.2368	Iron
38	26128.6264	15241.2341	Iron
39	26064.6294	15240.6205	Iron
40	26140.4668	15049.3388	Iron
41	26056.4706	15048.5335	Iron
42	25870.2362	15180.7541	Iron
43	25878.3685	15238.8347	Iron
44	26062.2709	15486.6092	Iron
45	26061.6573	15550.6063	Iron
46	25758.4363	15483.6961	Iron
47	25757.8227	15547.6932	Iron
48	25543.8608	15289.7900	Iron
49	25480.2525	15296.8605	Iron
50	25413.9343	15172.3789	Iron
51	25413.3207	15236.3760	Iron
52	26713.3200	15953.3288	SSMH
53	26713.3200	16304.8519	SSMH
54	26393.3200	16300.9946	SSMH
55	25866.4336	16294.6434	SSMH
56	26709.3200	15813.4932	SSCO
57	26393.3200	16031.2169	SSMH
58	26393.3200	15669.2169	SSMH
59	26393.3200	15558.2728	SSMH
60	26281.3200	16031.2169	SSMH
61	26214.3200	15990.8145	SSMH
62	25819.3462	15986.0534	SSMH
63	25770.9329	16016.7905	SSMH
64	26214.3200	15670.8008	SSMH
65	25861.6502	15666.5496	SSMH
66	26065.3733	15371.6337	SSMH
67	25749.4697	15365.1900	SSMH
68	25661.5844	15278.5524	SSMH
69	25660.8415	15054.7407	SSMH
70	26138.2751	15069.3187	SSMH
71	25874.2872	15066.7877	SSMH
72	26154.2730	16298.1130	SSMH

Baughman

Liberty Park 2nd & 3rd Addition - Phase I

Coordinate Sheet

Sanitary Sewer Improvements

Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316-262-7271 F 316-262-0149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER 468-83730

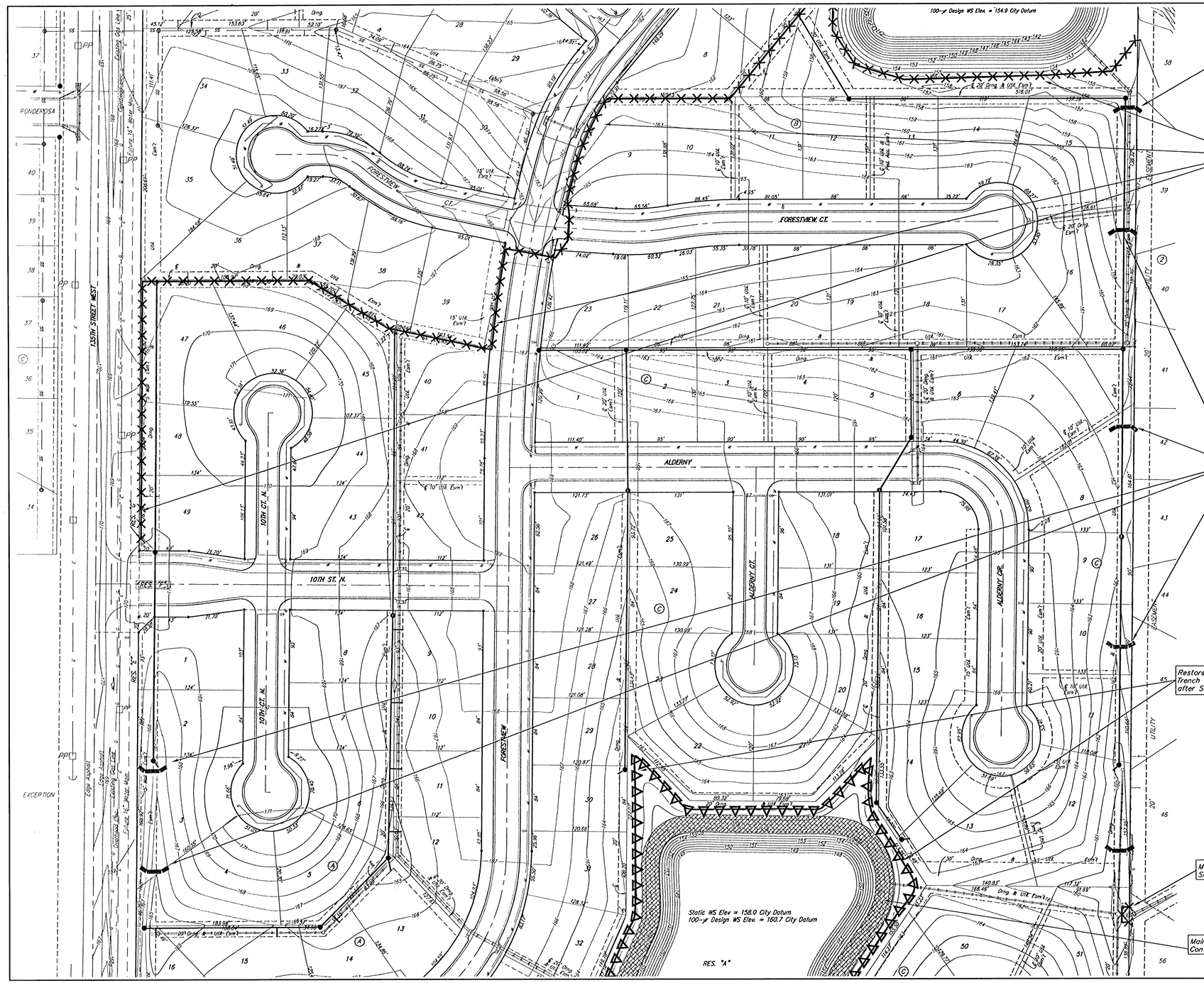
REVISIONS:

DESIGN JAK | DRAWN JAK

APPROVED | DATE 11/05

SCALE 1" = 100'

Liberty park 3rd\Phase 1\SSCoord



Remove & Replace Staw Bale Ditch Check as Necesary for San. Sewer Construction

Maintain 2018 L.F. Silt Fencing.

Remove & Replace Staw Bale Ditch Check as Necesary for San. Sewer Construction

Restore Cut-off Trench as Necessary after SS instalation

Maintain 38 L.F. Silt Fencing.

Maintain Pond Erosion Control Blanket

NOTES:

1. This Plan Is Not To Be Used As A Comprehensive Grading Plan. All Spot Elevations Are Proposed & Subject To Change.

2. Each Lot Area Disturbed By Construction Shall Be the Responsibility of Each Individual Homeowner. Owner Responsible to Follow All SWPP Plans & Guidelines For The Area.

3. Erosion Control Matting and/or Other Approved Bank Stabilization w/Seeding & Fertilizer Shall Be Installed at Engineered Channels or Sedimentation Basins Where the Designed Sideslopes Will be Greater Than 8:1. All Other Disturbed Areas Shall be Seeded, Fertilized, & Mulched As Follows:

SEED --
150 lbs. per acre of K-31 Fescue.
200 lbs. per acre of Annual Rye.
50 lbs. per acre of Brome
FERTILIZER --
12-24-12 Ratio - 350 lbs./ac.
MULCH --
2 Tons of Prairie Hay or Bromegrass Hay per Acre "Patted" w/Forks Or Punched Into Soil To Reduce Loss Due To Wind.

4. Install 6' Wide Curlex/Excelsior Blanket, or Approved Equal, on Prepared Surface Back of Curb. Edge of Blanket Will Be At Back of Curb. Install Per Manufactures Recommendation, Including Staples.

5. The Earth Dikes Constructed Around the Ponds May be Substituted with Silt Fence with Approval of Developer.

6. All Seeding Shall Be Drilled During Spring or Fall Planting Seasons. Fall Seeding Shall Be September 1 thru Mid October. Spring Seeding Shall be From March 15 thru Mid May.

7. Install Curlex/Excelsior Blanket, or Approved Equal, on Prepared Surface where Soil Has Been Disturbed Due To Construction of Drive Entrances Joining into the Exist. Arterial Street.

EROSION CONTROL PLAN LEGEND

(Installation Details Found in the SWP2 Plan)

- ▨ - LIGHT STONE RIP-RAP
- ⌑ - DROP INLET PROTECTION
- ○ - CURB INLET PROTECTION
- ▬ - STRAW BALE BARRIERS
- ─✕─ - SILT FENCING
- ─△─ - EARTH DIKES

NO SCALE

EROSION CONTROL MEASURE	UNITS	QUANTITY
SILT FENCE	L.F.	maintain
RIPRAP	S.Y.	-
DROP INLET BARRIER	EA.	-
CURB INLET BARRIER	EA.	-
STRAW BALE DITCH CHECK	EA.	-
EARTHEN DIKES	L.F.	maintain
CURLEX	S.Y.	-
POND E.C. BLANKET	S.Y.	maintain
Construction Entrance	EA.	1

QUANTITIES ARE FOR INFORMATION ONLY! CONTRACTOR SHALL VERIFY QUANTITIES PER SPECIFIC ENGINEERING PLAN SHEET.

Baughman

Liberty Park 2nd & 3rd Addition - Phase I

EROSION CONTROL PLAN

Sanitary Sewer Improvements

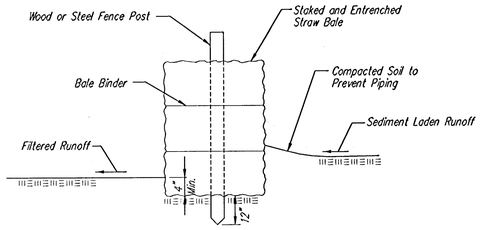
Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316-262-7271 F 316-262-0149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER

REVISIONS:

DESIGN
JAK
DRAWN
JAK
APPROVED
DATE
3/01/06
SCALE
1" = 100'
SHEET
15 OF 21

Liberty park 3rd\Phase 1\SS Erosion



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.

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:

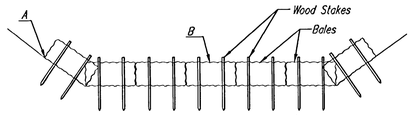
When practicable, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the 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?

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.
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".

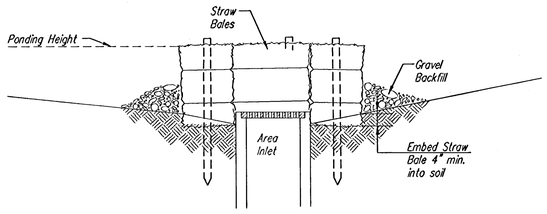
List of common placement/installation mistakes to avoid:

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.

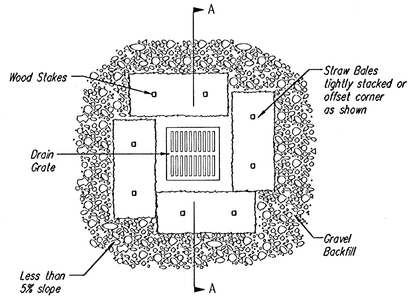
Inspection and Maintenance:

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.

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.

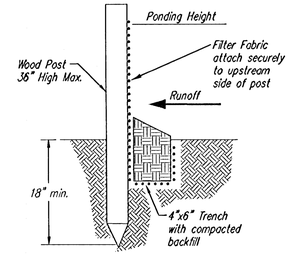
List of common placement installation mistakes to avoid:

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?



SILT FENCE BARRIERS

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, iiails, 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:

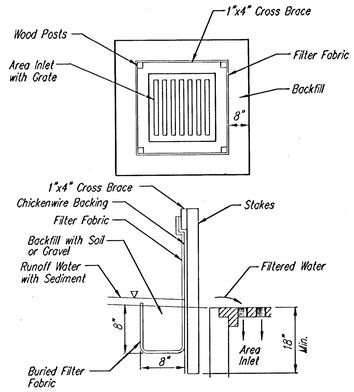
Are there any points along the slope barrier where water is concentrating?
Does water flow under the slope barrier?
Do the silt fences sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the slope barrier?

CITY OF WICHITA

SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83730	744175
DATE 3/01/06	SHEET 16 OF 21



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 barrierfor 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 overlopped 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 rood. In this configuration, water may spread onto the roadway causing a hazardous condition.

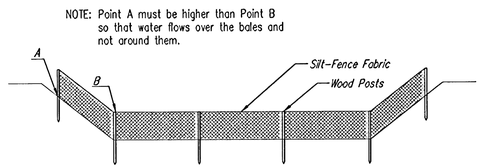
List of common placement/installation mistakes to avoid:

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:

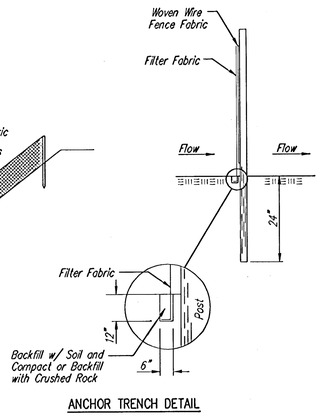
Silt fence barrier for area inlets should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

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?



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.
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 Check Ditch grade (%)	Spacing 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.

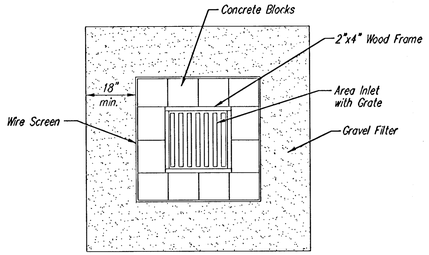
List of common placement/installation mistakes to avoid:

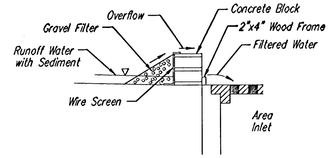
Water should flow through a silt fence ditch check-not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them.
Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration, 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?





CONCRETE BLOCK FILTER FOR AREA DRAIN
(INLET PROTECTION)

Gravel barriers provide little filtering of large inflow waters. However, when installed correctly and maintained, they can effectively treat low runoff flows.

Placement of gravel filters around area drains must be completed in a manner that will not cause local flooding.

Gravel filters can be used if the immediate and adjacent area to the area drain consists of soil or pavement.

Only gravel filters are to be installed on top of the pavement.

Instructions for Installing:

STEP 1: Place concrete blocks around the grate. The blocks can be stacked one or two high and should be supported by a 2"x4" board.
STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary.

An alternative method is use of gravel bags that are supported to prevent collopsing.

Use of rock having diameters smaller than 1" may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All gravel filters installed around area drains should be inspected and repaired after each runoff event. Sediment should be removed when material is within 3" of the top of any block. Periodically, the gravel should be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets after every runoff event.

* FOR INFORMATION ONLY

1 EA. STABILIZED CONSTRUCTION ENTRANCE

* TO BE PAID FOR AS THE LUMP SUM BID ITEM "EROSION CONTROL BMP'S"

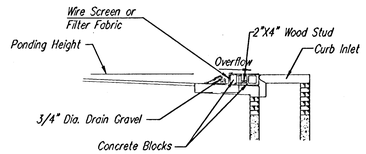
CITY OF WICHITA

SOIL EROSION BMP DETAILS

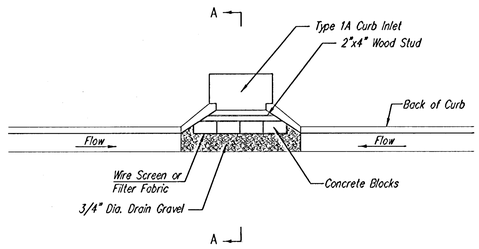
CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83730	744175

DATE 3/01/06



SECTION A-A



CURB INLET GRAVEL FILTERS
(INLET PROTECTION-RESIDENTIAL STREETS ONLY)

NOTE: Other types of curb inlet protection may be approved by the city so long as equal protection is provided.

A gravel inlet filter shall be installed at sump locations on residential streets. This type of protection is not to be used on arterial or collector streets at any time that it would pose an undue traffic hazard.

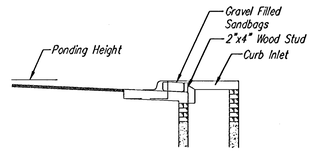
Instructions for Installing:

STEP 1: Place concrete blocks around the inlet as shown on drawing. Insert 2x4 board as shown.
STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary. An alternative installation is the use of gravel bags supported by a 2"x4" board to prevent collapsing.

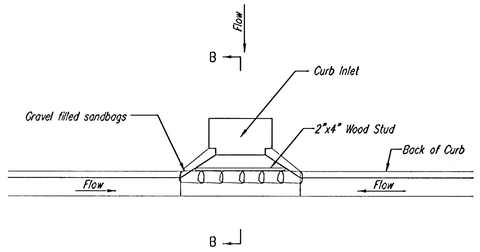
Use of rock with diameters smaller than 1" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All curb inlet gravel filters shall be inspected and repaired after each runoff event. Sediment deposits are to be removed once material is within .8 cm (3 inches) of the top of any block. Periodically, the gravel shall be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets.

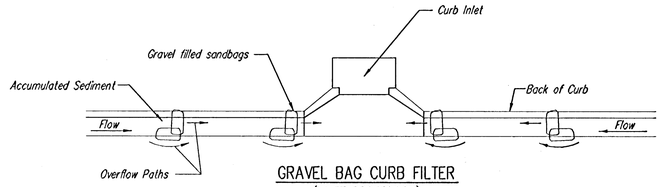


SECTION B-B



CURB INLET SANDBAG FILTERS
(INLET PROTECTION)

NOTE: Other types of curb inlet protection may be approved by the City so long as equal protection is provided.



GRAVEL BAG CURB FILTER
(INLET PROTECTION)

NOTE: Place two or more sets of bags in a manner that results in maximum support. The flow line bag must be lower than top of curb.

CURB SEDIMENT TRAPS

When inlets are located on streets having a grade (i.e., sump conditions do not exist), installing gravel (or sand) bags in the gutter flow line to create small sediment traps can be considered. Gravel bags are recommended over sand bags to allow for drainage.

If the spacing between bags becomes too large, little sediment may be trapped. Spacing of bags should be completed using the table or graph that illustrates placement distances based upon street slope. When installed in the gutter, bag tops must be lower than the sidewalk.

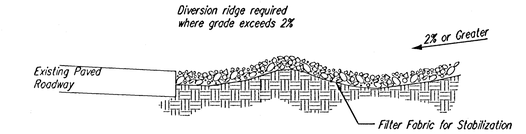
Spacing:

Gravel bags are to be placed according to street grades using the following table or graph that appears below.

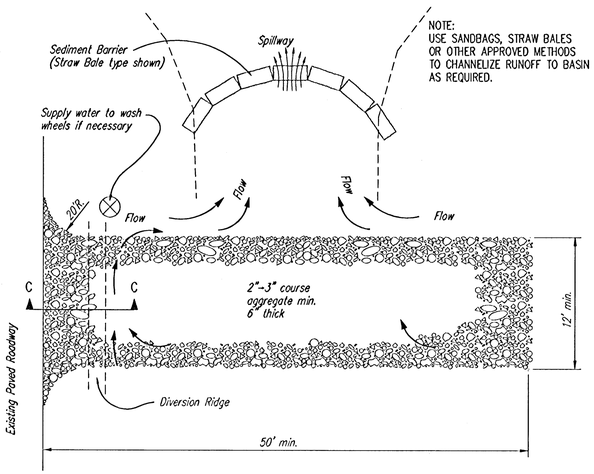
GRADE (%)	SPACING (FEET)
0.5	75
1.0	45
2.0	18
3.0	12
4.0	9
5.0	6

Maintenance:

Collected sediment shall be removed after every runoff event. Bags that are destroyed by vehicular traffic or through natural deterioration are to be immediately replaced.



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.

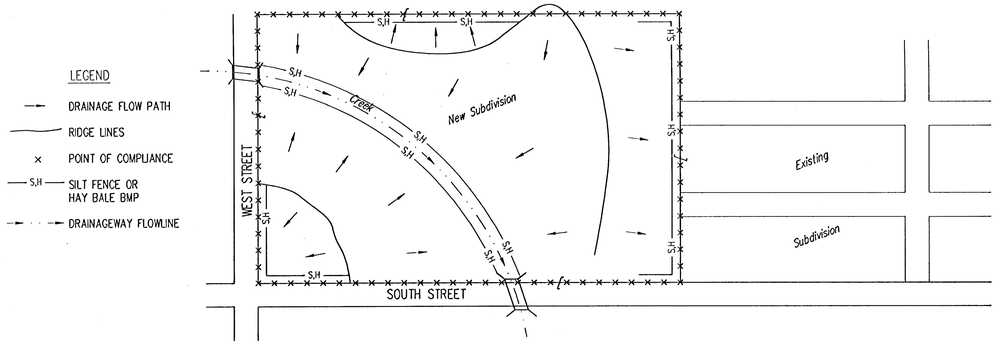
CITY OF WICHITA

SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

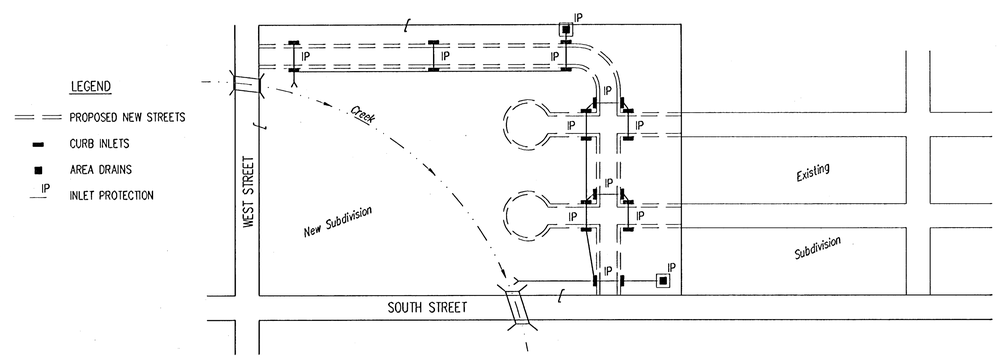
PROJECT NUMBER 468-83730
OCA NO. 744175
DATE 3/01/06

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



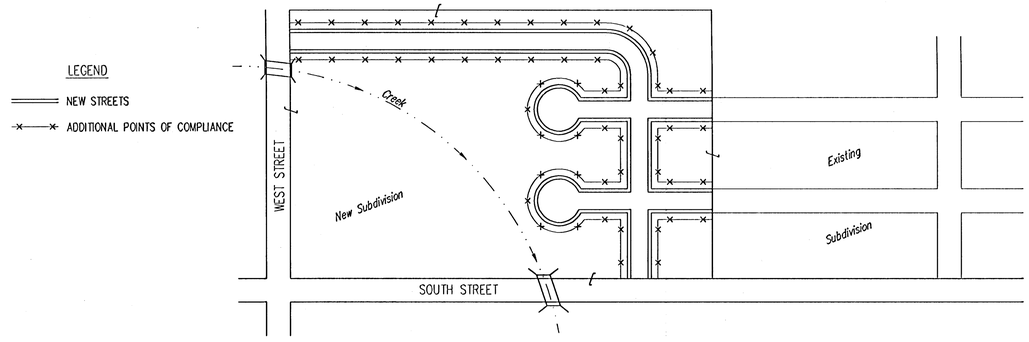
1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. HAYBALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE BMP'S WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
3. SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR GUTTERLINES ON THE ADJACENT BOUNDRY STREETS, APPROPRIATE BMP'S WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
4. ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED AT THE END OF EACH WORK DAY.
5. CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL BMP'S AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDRY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE BMP'S AT THEIR WORK LOCATIONS, AS NEEDED.
6. UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
7. THE SUBDIVISION DEVELOPER (OWNER) SHALL INSTALL AND MAINTAIN THE ON-SITE BMP'S.

PHASE 2 – INSTALLATION OF STORM SEWER

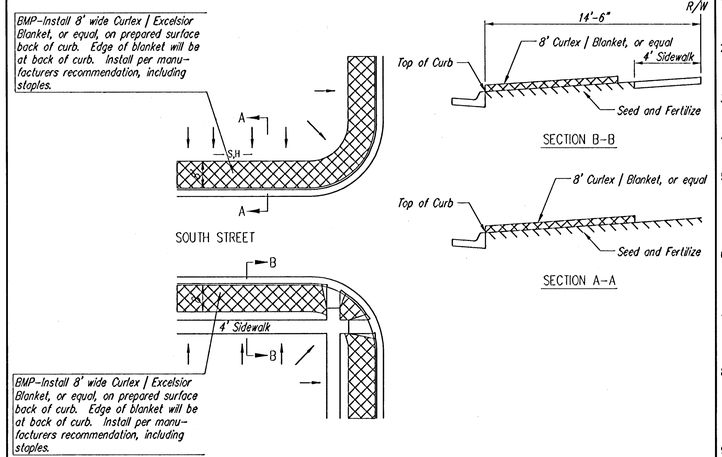


1. DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL BMP'S REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
2. AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
3. AREA DRAINS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAYBALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
4. CURB OPENING INLETS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION BMP'S MUST BE INSTALLED. SEE PHASE 3 – STREET CONSTRUCTION.
5. THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE BMP'S. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION.
6. THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE BMP'S ONCE INSTALLED.
7. 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.

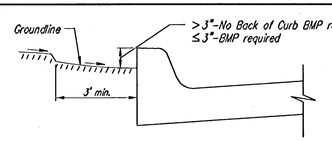
PHASE 3 – STREET CONSTRUCTION



1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL BMP'S 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. BMP'S WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED TO WITHIN 3" OR LESS OF THE TOP OF CURB (SEE CURB BACKFILL DETAIL). FOR CURBS NOT YET ENTIRELY BACKFILLED (3" OR MORE BELOW TOP OF CURB), BMP'S WILL BE REQUIRED AT POINTS WHERE WATER BREAKS OVER CURB WHICH COULD RESULT IN THE PLACEMENT OF SEDIMENT IN THE GUTTER.
4. SEE DETAIL THIS SHEET ON BACK OF CURB PROTECTION.
5. THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLIMENTED WITH HAYBALE OR SILT FENCE BMP'S 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 BMP'S.
7. THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB BMP'S IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.



BACK OF CURB PROTECTION DETAIL



CURB BACKFILL DETAIL

GENERAL NOTES:

1. THE INTENT OF ALL BEST MANAGEMENT PRACTICES (B.M.P.'S) IS TO PREVENT ERODED SOIL FROM ENTERING DITCHES, STORM SEWERS, OR ANY OTHER DRAINAGE FEATURE.
2. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPE OF BMP'S WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
3. BMP'S SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS TO REMAIN EFFECTIVE. MAINTENANCE SHALL BE AS INDICATED ON THE BMP DETAIL SHEETS.
4. PERSONS DESTROYING BMP'S SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING THEM OR INSTALLING SUITABLE REPLACEMENT BMP'S.
5. THE DEVELOPMENT OF ANY SUBDIVISION THAT DISTURBS 5 ACRES OR MORE WILL REQUIRE A FEDERAL/STATE NPDES STORMWATER PERMIT. THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED. EROSION CONTROL BMP'S ARE REQUIRED. THE DETAILS SHOWN ON THIS SHEET ARE THE MINIMUM STANDARDS TO BE SHOWN ON POLLUTION PREVENTION PLAN.
6. FOR SUBDIVISIONS SMALLER THAN 5 ACRES, SOIL EROSION BMP'S ARE REQUIRED. ALSO, DEVELOPERS AND CONTRACTORS ARE ENCOURAGED TO DEVELOP POLLUTION PREVENTION PLANS FOR EACH PROJECT PRIOR TO CONSTRUCTION.
7. FAILURE TO USE AND MAINTAIN BMP'S IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE SUBDIVISION DEVELOPER AND CONTRACTORS TO THE PENALTIES PROVIDED THEREIN.
8. THE APPLICATION OF BMP'S SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT BMP OTHER THAN THAT SHOWN. BMP'S, OTHER THAN THOSE SHOWN, MAY BE UTILIZED SO LONG AS THEY ARE EFFECTIVE AND MAINTAINED.
9. A STABILIZED EARTH SURFACE IS DEFINED AS ONE THAT IS HARD SURFACED WITH CONCRETE, ASPHALT, OR THE LIKE, OR ONE ON WHICH 70% OF THE GRASS HAS GERMINATED ON THE ENTIRE SURFACE.

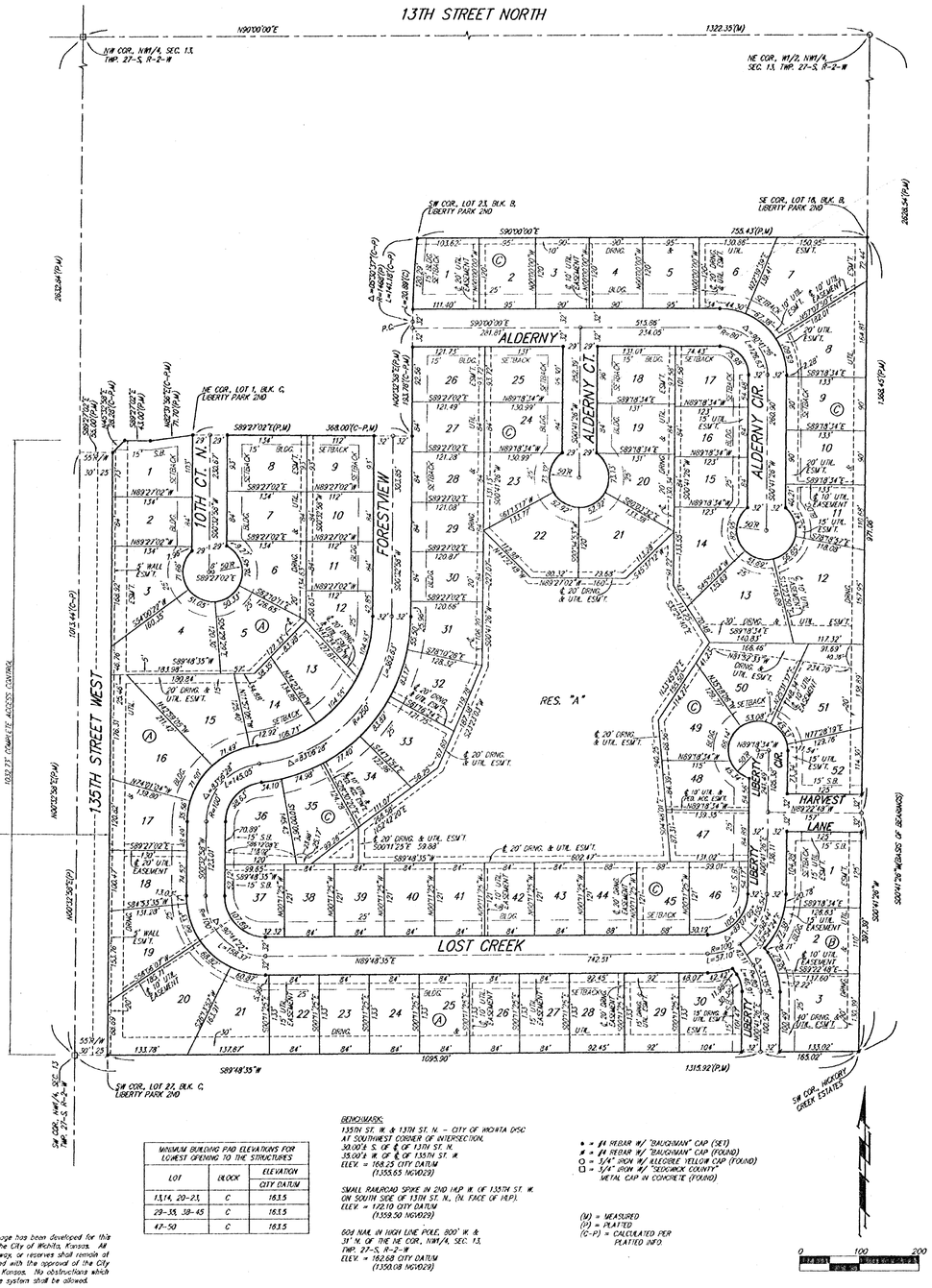
CITY OF WICHITA

SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83730	744175
DATE 3/01/06	SHEET 19 OF 21

LIBERTY PARK 3RD
AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS



MINIMUM BUILDING PAD ELEVATIONS FOR LOWEST OPENING TO THE STRUCTURES		
LOT	BLOCK	ELEVATION CITY DATUM
13,14, 20-23,	C	163.5
29-35, 38-45	C	163.5
47-50	C	163.5

NOTE:
A master grading plan for drainage has been developed for this subdivision and is on file with the City of Wichita, Kansas. All drainage easements, rights-of-way, or reserves shall remain at established grades or as modified with the approval of the City Engineer of the City of Wichita, Kansas. No obstructions which impede the flow of this drainage system shall be allowed.

BENCHMARKS:
135TH ST. W. & 13TH ST. N. - CITY OF WICHITA DISC. AT SOUTHWEST CORNER OF INTERSECTION.
30.00'± S. OF ℄ OF 13TH ST. N.
35.00'± W. OF ℄ OF 135TH ST. W.
ELEV. = 168.25 CITY DATUM
(1355.65 NGVD29)

SMALL RAILROAD SPIKE IN 2ND HUP W. OF 135TH ST. W. ON SOUTH SIDE OF 13TH ST. N., (N. FACE OF HUP).
ELEV. = 172.10 CITY DATUM
(1359.50 NGVD29)

60d NAIL IN HIGH LINE POLE, 800' W. & 31'± N. OF THE NE COR., NW1/4, SEC. 13, TWP. 27-S, R-2-W
ELEV. = 182.68 CITY DATUM
(1350.08 NGVD29)

● = ⅝ REBAR W/ "BAUGHMAN" CAP (SET)
⊗ = ⅝ REBAR W/ "BAUGHMAN" CAP (FOUND)
○ = 3/4" IRON W/ ILLEGIBLE YELLOW CAP (FOUND)
□ = 1/4" IRON W/ "SEDGWICK COUNTY" METAL CAP IN CONCRETE (FOUND)

(M) = MEASURED
(P) = PLATTED
(C-P) = CALCULATED PER PLATTED INFO.

State of Kansas)
Sedgwick County) SS

We, Baughman Company, P.A., Surveyors in aforesaid county and state do hereby certify that we have surveyed and platted "LIBERTY PARK 3RD", an Addition to Wichita, Sedgwick County, Kansas and that the accompanying plat is a true and correct exhibit of the property surveyed, described as and being a replat of all of Lots 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, and 39, Block B, Liberty Park 2nd, an Addition to Wichita, Sedgwick County, Kansas, together with all of Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, and 37, Block C, in said Liberty Park 2nd, together with all of Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36, Block D, in said Liberty Park 2nd, together with all of Lots 1, 2, and 3, Block E, in said Liberty Park 2nd, together with all of Reserve "D", as platted in said Liberty Park 2nd, together with that part of Forestview lying south of the north line of Lot 9 in said Block C, as extended east to the west line of Lot 2 in said Block D, the most southerly Forestview Ct., 10th Ct. N. lying south of 10th St. N., Alderny, Alderny Ct., Liberty, Harvest Lane, Lost Creek, and Lost Creek Cir., all as dedicated in said Liberty Park 2nd.

Existing public easements and dedications being vacated by virtue of K.S.A. 12-512(b).

All being situated in the NW1/4 of Sec. 13, Twp. 27-S, R-2-W of the 6th P.M., Sedgwick County, Kansas.

Baughman Company, P.A.

Michael G. Conrey, Surveyor

Know all men by these presents that we, the undersigned, have caused the land in the surveyors certificate to be platted into Lots, Blocks, Streets, and a Reserve, to be known as "LIBERTY PARK 3RD", an Addition to Wichita, Sedgwick County, Kansas. The utility easements are hereby granted as indicated for the construction and maintenance of all public utilities. The drainage and utility easements are hereby granted as indicated for drainage purposes and for the construction and maintenance of all public utilities. The drainage easements are hereby granted as indicated for drainage purposes. The wall easement is hereby granted as indicated for the construction and maintenance of a private screening wall and utility main lines and service lines shall be allowed to cross these easements. The utility and pedestrian access easements are hereby granted as indicated for the construction and maintenance of all public utilities and for pedestrian access to or from Reserve "A" and no fences or other obstructions shall be constructed or placed on or within these easements. The streets are hereby dedicated to and for the use of the public. Reserve "A" is hereby reserved for landscaping, lakes, open space, berms, drainage purposes, and utilities as confined to easements. Reserve "A" shall be owned and maintained by the homeowners association for the addition. Access controls shall be as depicted on the face of the plat and are hereby granted to the City of Wichita, Kansas. The Minimum Building Pad Elevations for the lowest opening to the structures shall be as indicated on the face of the plat.

Kelsey Investments, Inc.

Paul E. Kelsey, President

State of Kansas)
Sedgwick County) SS

The foregoing instrument acknowledged before me, this 7TH day of JULY, 2004, by Paul E. Kelsey, President of Kelsey Investments, Inc., on behalf of the corporation.

JUDITH M. TERHUNE, Notary Public
Notary Public - State of Kansas
My Appt. Expires 11-7-2005

My App't. Exp. 11-7-2005

We, the undersigned holders of mortgages on the above described property, do hereby consent to this plat of "LIBERTY PARK 3RD", an Addition to Wichita, Sedgwick County, Kansas.

Legacy Bank

Brad E. Yaeger, S.V.P.
BRAD E. YAEGER (Title)

State of Kansas)
Sedgwick County) SS

The foregoing instrument acknowledged before me, this 7 day of July, 2004, by Brad E. Yaeger, Sr VP (Title) of Legacy Bank, on behalf of the bank.

DANIELLE K. RATCHENBERGER, Notary Public

My App't. Exp. 6/11/05

DANIELLE K. REED RATCHENBERGER
NOTARY PUBLIC
STATE OF KANSAS
My Appt. Exp. 6/11/05

This plat of "LIBERTY PARK 3RD", an Addition to Wichita, Sedgwick County, Kansas has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas.

Dated this 22nd day of August, 2004.
Wichita-Sedgwick County Metropolitan Area Planning Commission

Ronald L. Marnell, Chair

John L. Schlegel, Secretary

This plat approved and all dedications shown hereon accepted by the City Council of the City of Wichita, Kansas, this 31st day August, 2004.

Carlos Mayans, Mayor

Karen Sublett, City Clerk

Reviewed in accordance with K.S.A. 58-2005 on this 9th day of July, 2004.

TRICIA L. ROBELLO, LICENSED, LS-1246, KANSAS, LAND SURVEYOR

Tricia L. Robello, L.S. #1246
Deputy County Surveyor
Sedgwick County, Kansas

Entered on transfer record this 25th day of August, 2004.

Don Brace, County Clerk

State of Kansas)
Sedgwick County) SS

This is to certify that this plat has been filed for record in the office of the Register of Deeds, this 25TH day of August, 2004 at 3:01 o'clock P.M. and is duly recorded.

Bill Meek, Register of Deeds

Linda Kizzire, Deputy

Sedgwick County
Register of Deeds - Bill Meek
DOC #/FLM-PG: 28601/760

Receipt #: 1562159
Pages Recorded: 1
Recording Fee: $20.00
Cashier Initials: GM
Authorized By:

Date Recorded: 8/25/2004 3:01:51 PM

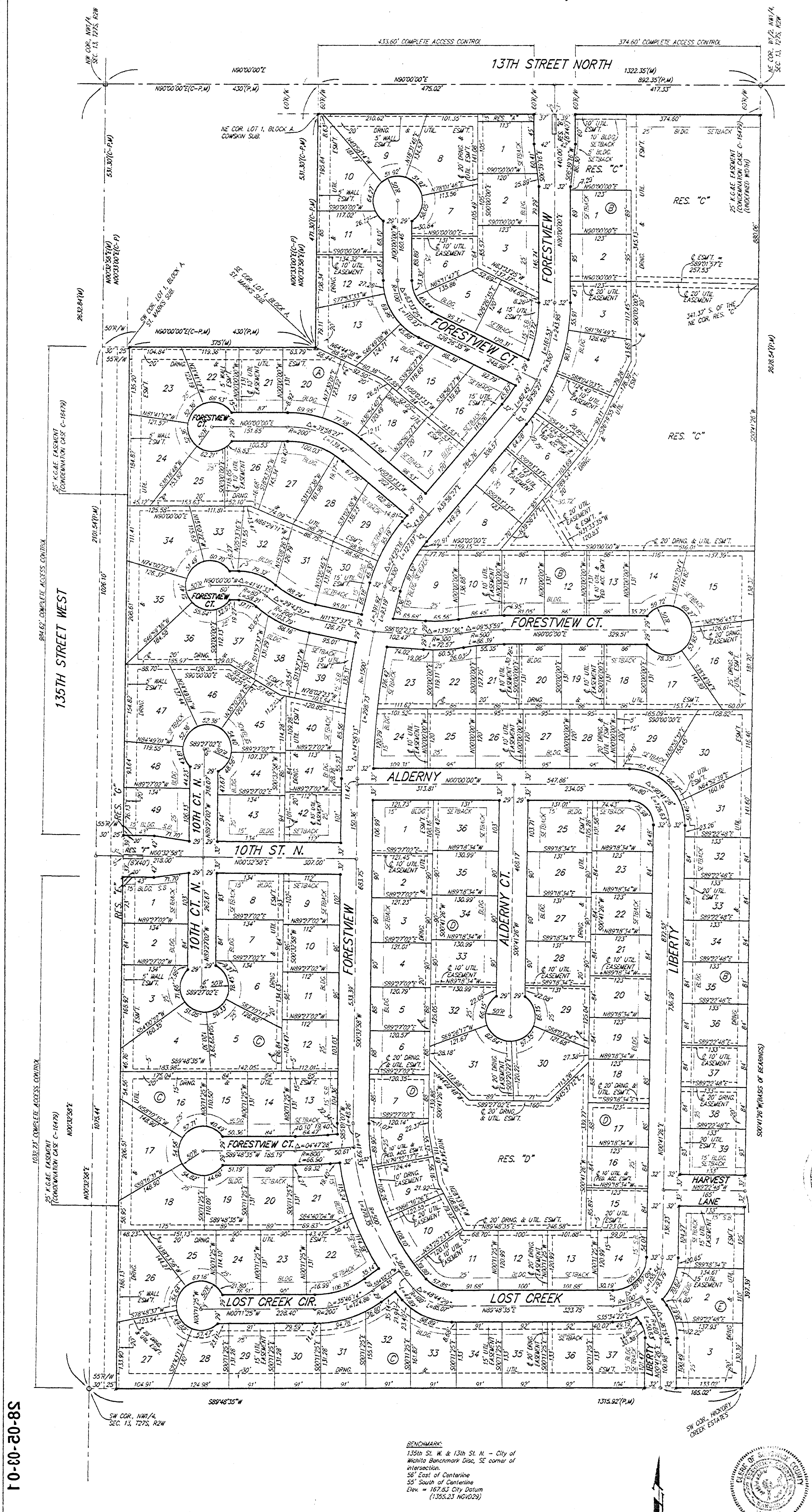
SHEET 20 OF 21

BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211
I:\PLAT\LIBERTY PARK 3RD\WS\LIBERTYPARK3RD.DWG-MGC

LIBERTY PARK THIRD ADDITION

LIBERTY PARK 2ND

AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS



State of Kansas)
SS
Sedgwick County) We, Baughman Company, P.A., Surveyors in aforesaid county and state do hereby certify that we have surveyed and platted "LIBERTY PARK 2ND", an Addition to Wichita, Sedgwick County, Kansas and that the accompanying plat is a true and correct exhibit of the property surveyed, described as and being a replat of all of Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, and 54, Block A, Liberty Park, an Addition to Wichita, Sedgwick County, Kansas, together with all of Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, and 46, Block B, in said Liberty Park, together with all of Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, and 43, Block C, in said Liberty Park, together with all of Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, and 41, Block D, in said Liberty Park, together with all of Lots 1, 2, 3, and 4, Block E, in said Liberty Park, together with all of Reserves "A", "B", "C", "D", "E", "F", "G", and "H" as platted in said Liberty Park, together with all of Forestview, all five Forestview Cts., 10th Street North, both 10th North Cts., Alderny, Alderny Ct., Liberty, Harvest Lane, Lost Creek, and Lost Creek Cir., all as dedicated in said Liberty Park.

Existing public easements and dedications being vacated by virtue of K.S.A. 12-512(b).

All being situated in the NW1/4 of Sec. 13, Twp. 27-S, R-2-W of the 6th P.M., Sedgwick County, Kansas.

Baughman Company, P.A.

Michael G. Conrey 5-2-2003, Surveyor
Michael G. Conrey

Know all men by these presents that we, the undersigned, have caused the land in the surveyors certificate to be platted into Lots, Blocks, Streets, and Reserves, to be known as "LIBERTY PARK 2ND", an Addition to Wichita, Sedgwick County, Kansas. The utility easements are hereby granted as indicated for the construction and maintenance of all public utilities. The drainage and utility easements are hereby granted as indicated for drainage purposes and for the construction and maintenance of all public utilities. The drainage easements are hereby granted as indicated for drainage purposes. The wall easements are hereby granted as indicated for the construction and maintenance of a private screening wall and utility main lines and service lines shall be allowed to cross these easements. The drainage and pedestrian access easement is hereby granted as indicated for drainage purposes and for pedestrian access to or from Reserve "C" and no fences or other obstructions shall be constructed or placed on or within this easement. The utility and pedestrian access easements are hereby granted as indicated for the construction and maintenance of all public utilities and for pedestrian access to or from Reserves "C" and "D", respectively, and no fences or other obstructions shall be constructed or placed on or within these easements. The streets are hereby dedicated to and for the use of the public. Reserves "A", "E", and "G" are reserved for entry monuments, landscaping, open space, berms, drainage purposes, and utilities. Reserves "B" and "F" are reserved for entry monuments, streets, landscaping, open space, drainage purposes, and utilities. Reserve "C" is reserved for entry monuments, landscaping, lakes, open space, berms, drainage purposes, parking, swimming pool and accessories, recreational activities, gazebos, sidewalks, and utilities as confined to easements. Reserve "D" is reserved for landscaping, lakes, open space, berms, drainage purposes, and utilities as confined to easements. Reserves "A", "B", "C", "D", "E", "F", and "G" will be owned and maintained by the homeowners association for the addition. Access controls shall be as depicted on the face of the plat and are hereby granted to the City of Wichita, Kansas. The Minimum Building Pad Elevations for the lowest opening to the structures shall be as indicated on the face of the plat.

Kelsey Investments, Inc.

Paul E. Kelsey, President
Paul E. Kelsey

State of Kansas)
SS
Sedgwick County) The foregoing instrument acknowledged before me, this 22nd day of October, 2003, by Paul E. Kelsey, President of Kelsey Investments, Inc., on behalf of the corporation.

SUSAN K. MONETTE
Notary Public - State of Kansas
My Appt Expires

Susan K. Monette, Notary Public
SUSAN K. MONETTE
My App't. Exp. 11-9-03

We, the undersigned holders of a mortgage on the above described property, do hereby consent to this plat of "LIBERTY PARK 2ND", an Addition to Wichita, Sedgwick County, Kansas.

Legacy Bank

Brad E. Yaeger, S.V.P. (Title)
BRAD E. YAEGER

State of Kansas)
SS
Sedgwick County) The foregoing instrument acknowledged before me, this 24 day of Oct, 2003, by Brad E. Yaeger, SVP (Title) of Legacy Bank, on behalf of the bank.

Danelle K. R., Notary Public
My App't. Exp. 6/11/05

DANELLE K. REICHENBERGER
NOTARY PUBLIC
STATE OF KANSAS
My Appt. Exp. 6/11/05

This plat of "LIBERTY PARK 2ND", an Addition to Wichita, Sedgwick County, Kansas has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas.

Dated this 10th day of April, 2003.
Wichita-Sedgwick County Metropolitan Area Planning Commission

Bernard A. Hentzen, Chair
Bernard A. Hentzen

Dale Miller, Secretary
Dale Miller

This plat approved and all dedications shown hereon accepted by the City Council of the City of Wichita, Kansas, this 18th day of November, 2003.

At the direction of the City Council

Mayor (Title)

Karen Sublett, City Clerk
~~Pat Graves~~ KAREN SCHOFIELD

Reviewed in accordance with K.S.A. 58-2005 on this 5th day of November, 2003.

Tricia L. Robello, L.S. #1246
Deputy County Surveyor
Sedgwick County, Kansas

Entered on transfer record this 12th day of December, 2003.

Don Brace, County Clerk
Don Brace

State of Kansas)
SS
Sedgwick County) This is to certify that this plat has been filed for record in the office of the Register of Deeds, this 12th day of December, 2003 at 10:30 o'clock A.M. and is duly recorded.

Bill Meek, Register of Deeds
Bill Meek

Linda Kizzire, Deputy
Linda Kizzire

BENCHMARK:
135th St. W. & 13th St. N. - City of Wichita Benchmark Disc, SE corner of intersection.
56' East of Centerline
55' South of Centerline
Elev. = 167.83 City Datum
(1355.23 NGVD29)

60d Nail in High Line Pole, 800' W. & 31' N. of the NE cor., NW1/4, Sec. 13, Twp. 27-S, R-2-W
Elev. = 1350.08 NGVD29
(162.68 City Datum)

NOTE:
A master grading plan for drainage has been developed for this subdivision and is on file with the City of Wichita, Kansas. All drainage easements, rights-of-way, or reserves shall remain at established grades or as modified with the approval of the City Engineer of the City of Wichita, Kansas. No obstructions which impede the flow of this drainage system shall be allowed.

- = #4 REBAR W/ "BAUGHMAN" CAP (FOUND)
- = #4 REBAR W/ "BAUGHMAN" CAP (SET)
- ○ = 3/4" IRON (FOUND)
- □ = 1/2" IRON (FOUND)

(M) = MEASURED
(P) = PLATTED
(C-P) = CALCULATED PER PLATTED INFO.

MINIMUM BUILDING PAD ELEVATIONS FOR LOWEST OPENING TO THE STRUCTURES		
LOT	BLOCK	ELEVATION CITY DATUM
1-15	B	156.5
5-20, 29-32	D	163.5

BAUGHMAN COMPANY P. A.
ENGINEERING, SURVEYING, & PLANNING

F:\PLAT\LIBERTY PARK\DWG\LIBERTYPARKF.DWG-MC

10-03-02-85