

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 (316)687-2470

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

Cox Communications (316)262-4270
or (316)263-2061

Westar Energy/ Kansas Gas & Electric Company (800)482-4950
AT&T 1-555-1212

City of Wichita Water Department (316)268-4908
City of Wichita Sewer Department (316)268-4071

Aquila Natural Gas (316)941-1608
or (800)303-0357

2. Exist. utilities and their locations, as shown on the plans, represent the best information attainable for design. Location information has been obtained from the various utility companies and is either from company record drawings or company-provided field locations. The Contractor will be required to work around existing utilities which do not conflict with proposed constructions.

3. The Contractor to verify utility locations prior to construction of this project.

4. Utility service and installation shall be coordinated with the respective utility owner. Contacts are:

Kansas Gas Service Jim Coe (316)832-3126
Westar Energy Miles Capps (316)261-6251
Aquila Networks Calvin Briggs (316)942-8811
Wichita Water & Sewer Kerry Gibson (316)268-4555
AT&T Jim Toben (316)268-2759
Cox Communications Mark Anaya (316)262-4270

5. All lawn/turf areas disturbed by construction of proposed improvements shall be restored with the same grass as existing. Restoration of disturbed areas shall include, but not limited to, soil preparation, fertilizing, seeding, mulching (all seeded areas, outside the limits of erosion mat placement), and/or reseeding, and installation of erosion control mat. All seeding work shall be in accordance with the City of Wichita Standard Specifications and the City of Wichita Administrative Regulations No. AR 6.5 which governs cleanup and respiration or replacement following construction. All cost for the soil preparation, seeding and mulching (all seeded areas, outside the limits of erosion mat placement) shall be paid for through the lump sum bid item for "Seeding." All seeded areas within eight feet of the back of new curb shall be covered with an approved erosion mat, which shall be paid for by the measured quantity bid item "Back of Curb Protection (8' wide)."

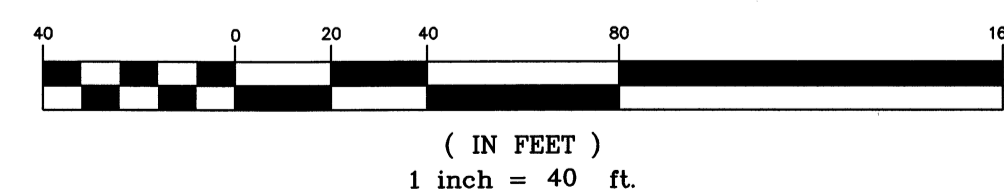
6. Traffic affected by the construction of this project shall be handled in accordance with the latest edition of the Manual on Uniform Traffic Control Devices.

7. It is the contractor's responsibility to visit this site to better understand the extent of site clearing and restoration to be performed. Site Clearing and Restoration shall include all costs for removal of items which a pay item is not provided.

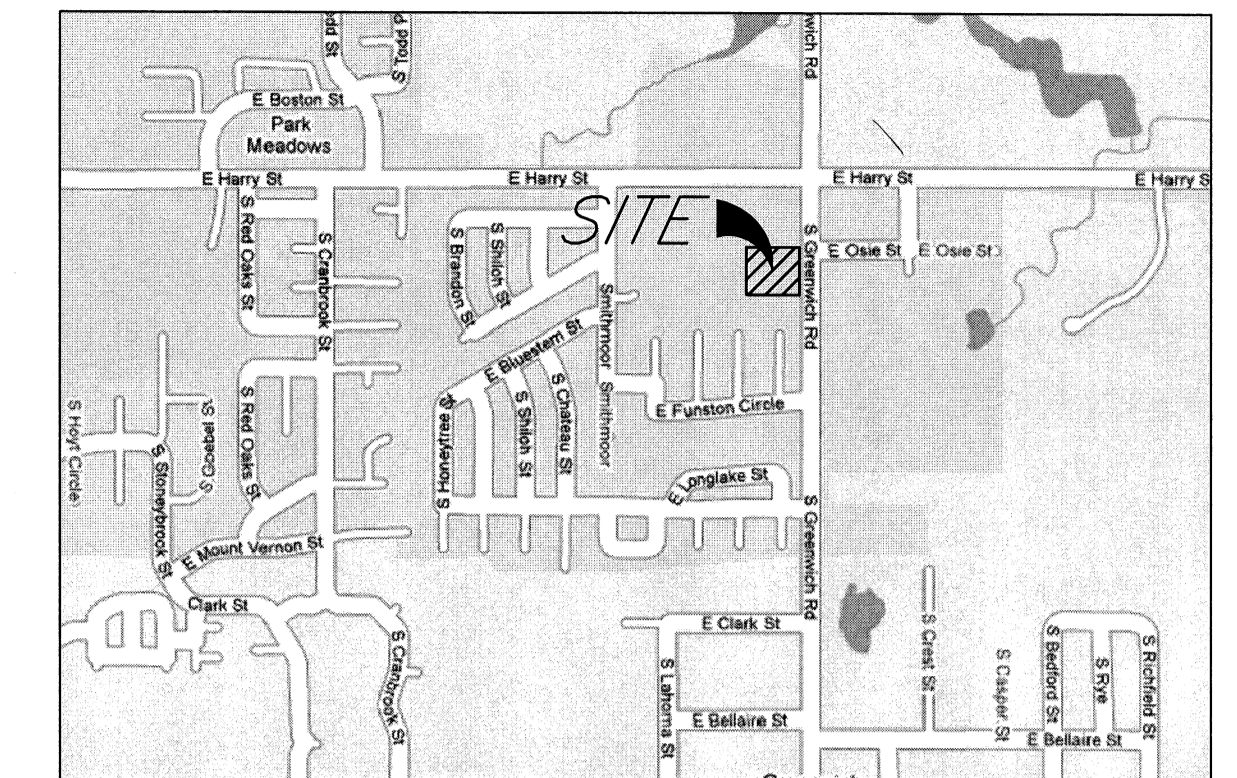
8. The contractor shall be responsible for preserving property irons. The contractor will be required to re-establish any property irons which are damaged or destroyed by the construction operations. Such irons shall be re-established by a licensed land surveyor in accordance with state laws.

9. Properties within the project limits may have underground sprinkler systems in public right-of-way which conflict with new construction. Contractor will be required to remove such improvements should they not be removed by their owner at the time of construction of the project. The contractor will be required to salvage all sprinkler heads and/or valves and give such material to owner. Portions of underground sprinkler systems not in conflict with new construction shall be protected from damage and shall remain in place. All work in connection with underground sprinkler systems shall be considered as subsidiary to the contract pay items for work.

10. Cuts made in paved surfaces on public property will be repaired by the City's Contractor and charged against the contractor. Unit Repair prices are available from the city at 268-4418. A surcharge may be applicable. Call 268-4418 for details. Repair costs to be paid prior to release of utility service if utilities are effected.



STORM WATER TO SERVE SMITHMOOR STORAGE UNITS Lot 9, Smithmoor Commercial 2037 PPS (607861) CITY OF WICHITA, KANSAS Jim Armour, P.E., City Engineer



LOCATION MAP
(For Visual Use Only)

INDEX OF SHEETS:

1. Cover Sheet
2. Plan
3. Inlet Details
4. Rip-Rap Details

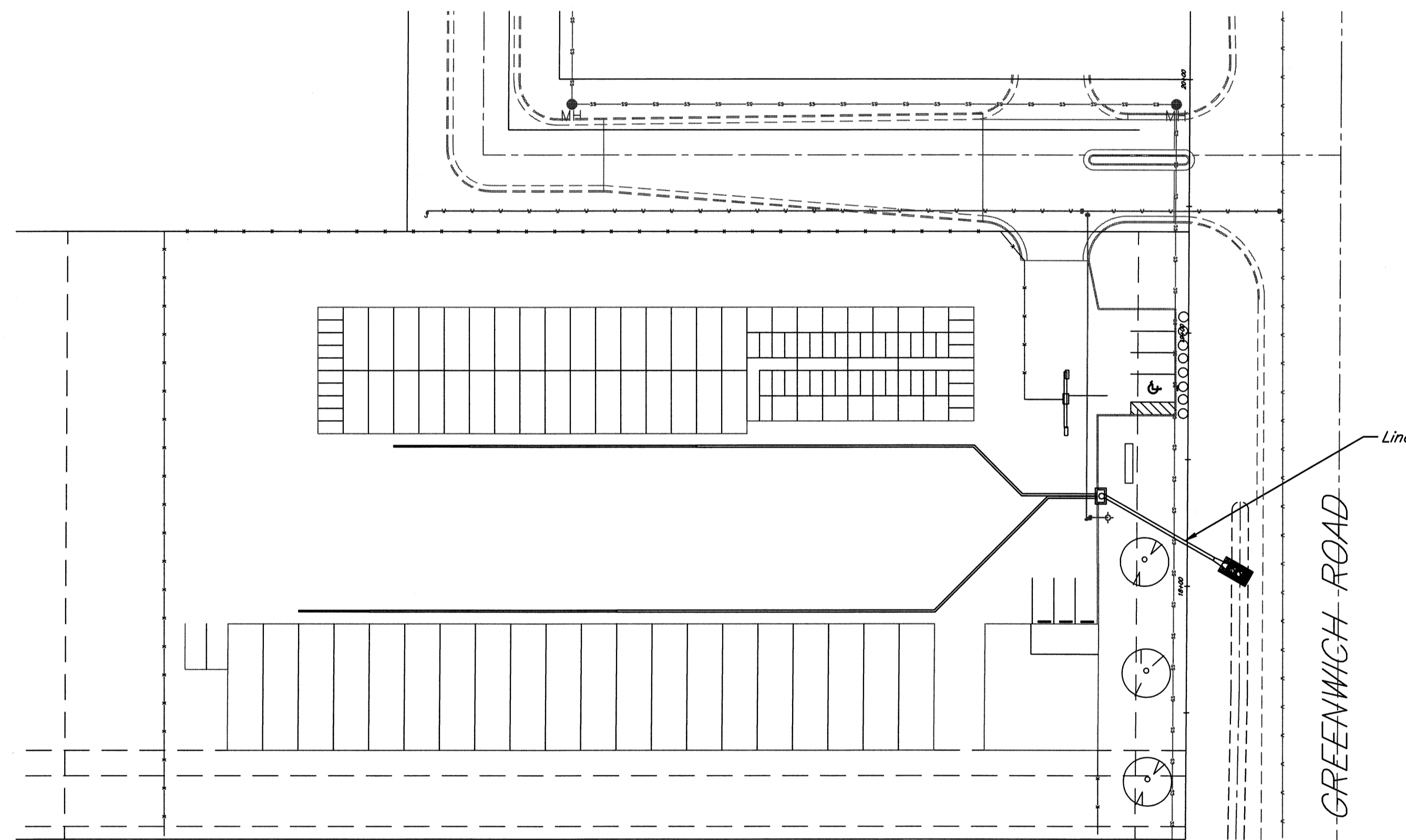
Baseline:

Station 20+00 at Northeast Property Corner following East Property Line.

Benchmark:

"□" Cut on top of curb South end of island in drive at Greenwich Village Shopping Center. Approx 750' West of Greenwich Road.

Elev. = 1344.40



APPROVED AS NOTED
City Engineers Office: *Shawn Miller* 3-31-10
NOTE TO CONTRACTORS
Installation, inspection and testing for this project is to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection nor shall any work be commenced without written authorization by the City Engineer. All Construction and Materials shall comply with the City of Wichita Specifications and Standards (on file and available in the City Engineer's Office).

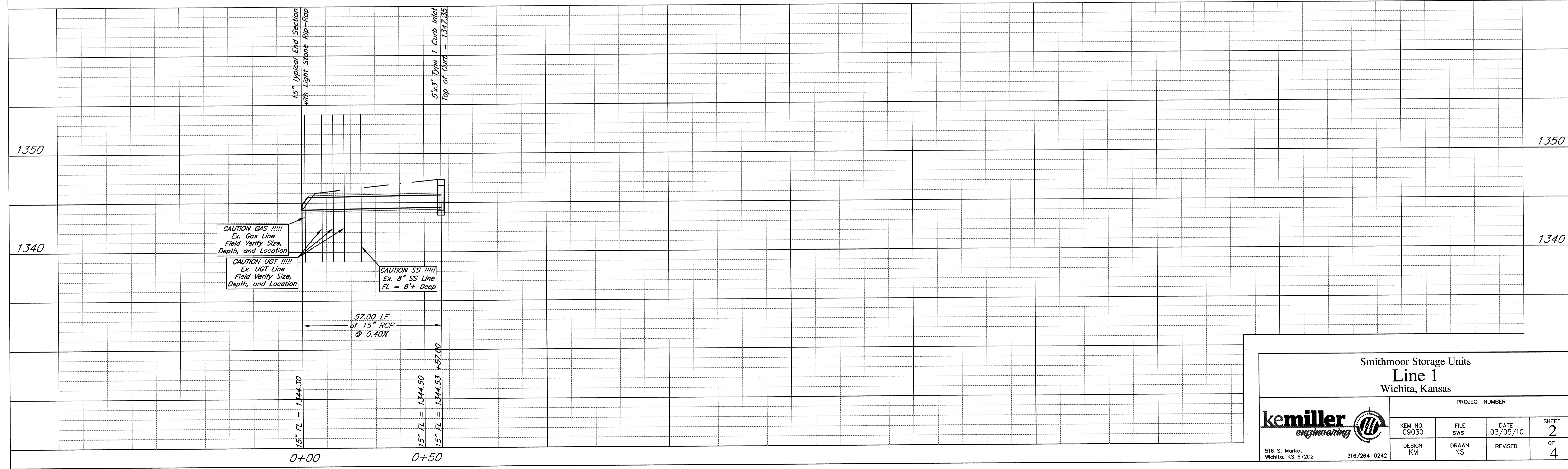
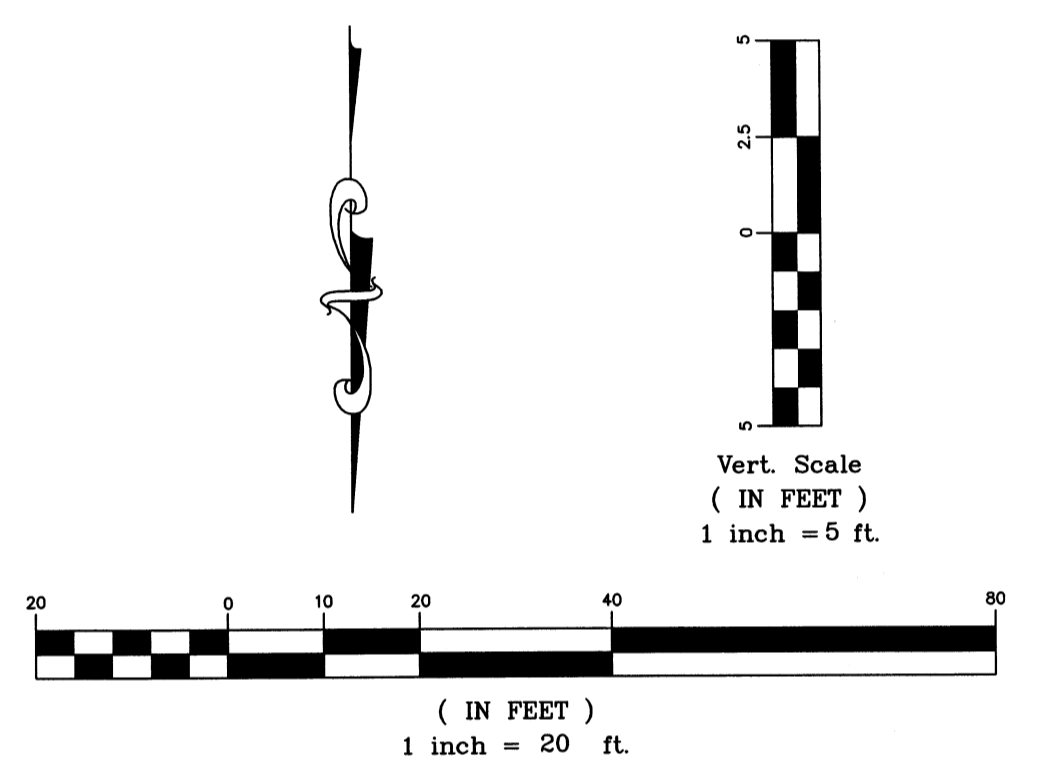
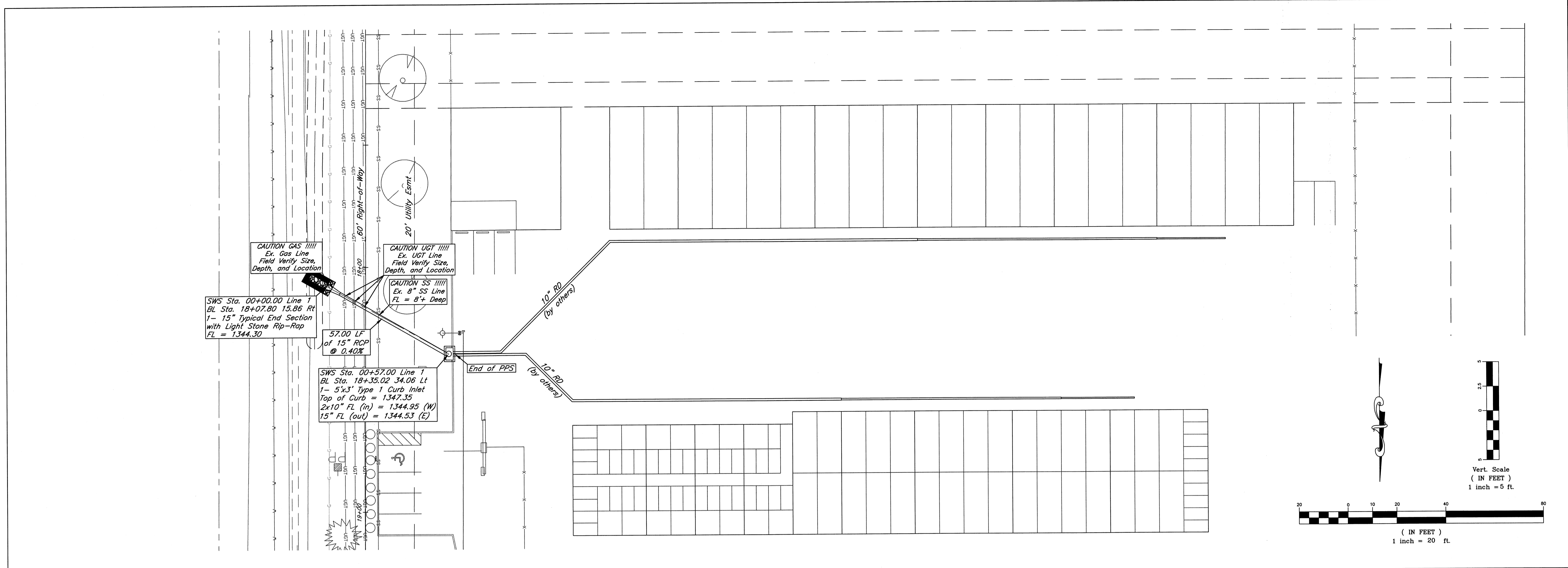
AS BUILTS:

CONTRACTOR: _____
INSPECTOR: _____
COMPANY: _____
DATE: _____



516 S. Market,
Wichita, KS 67202 316/264-0242

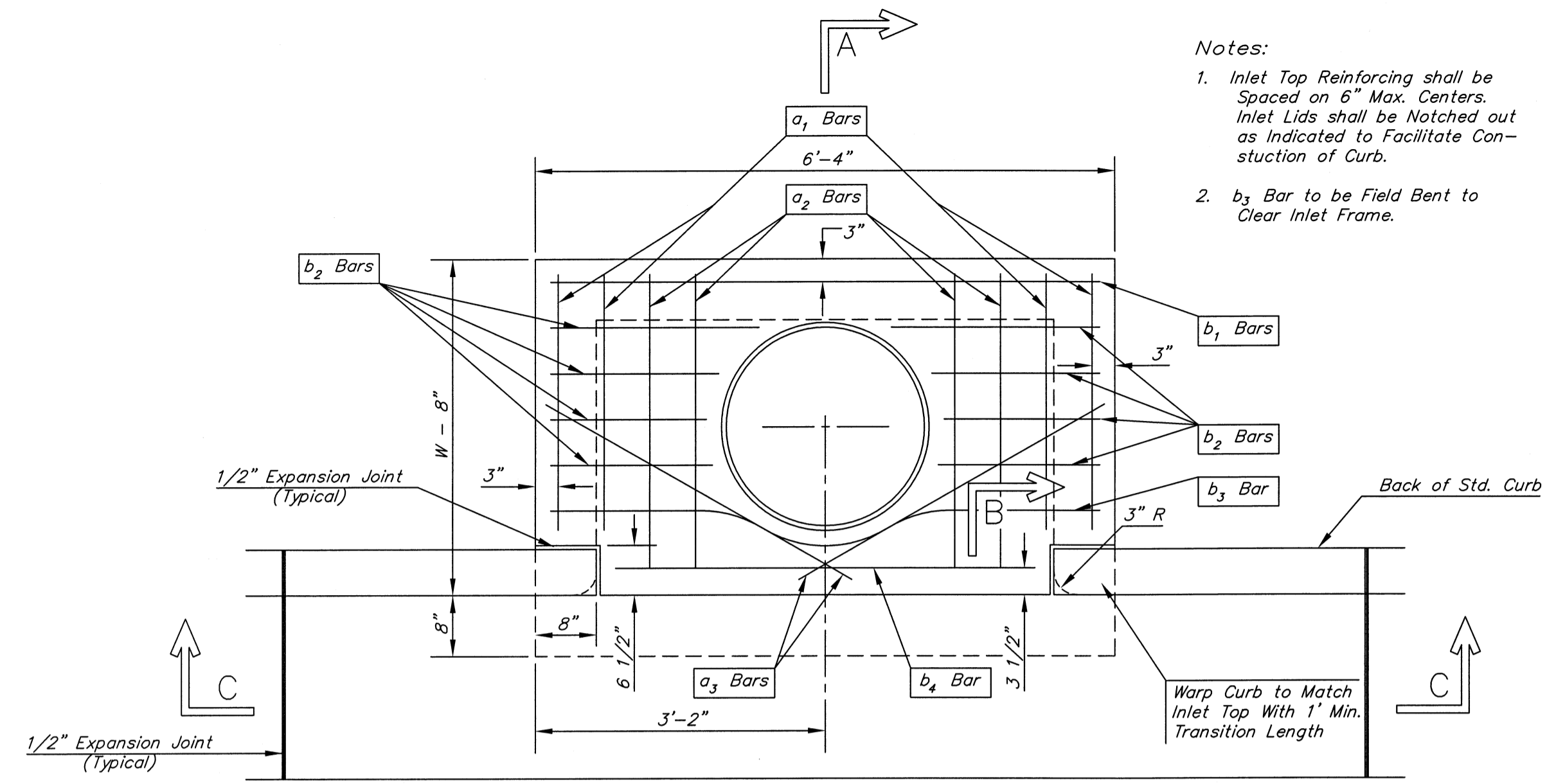
March 2010



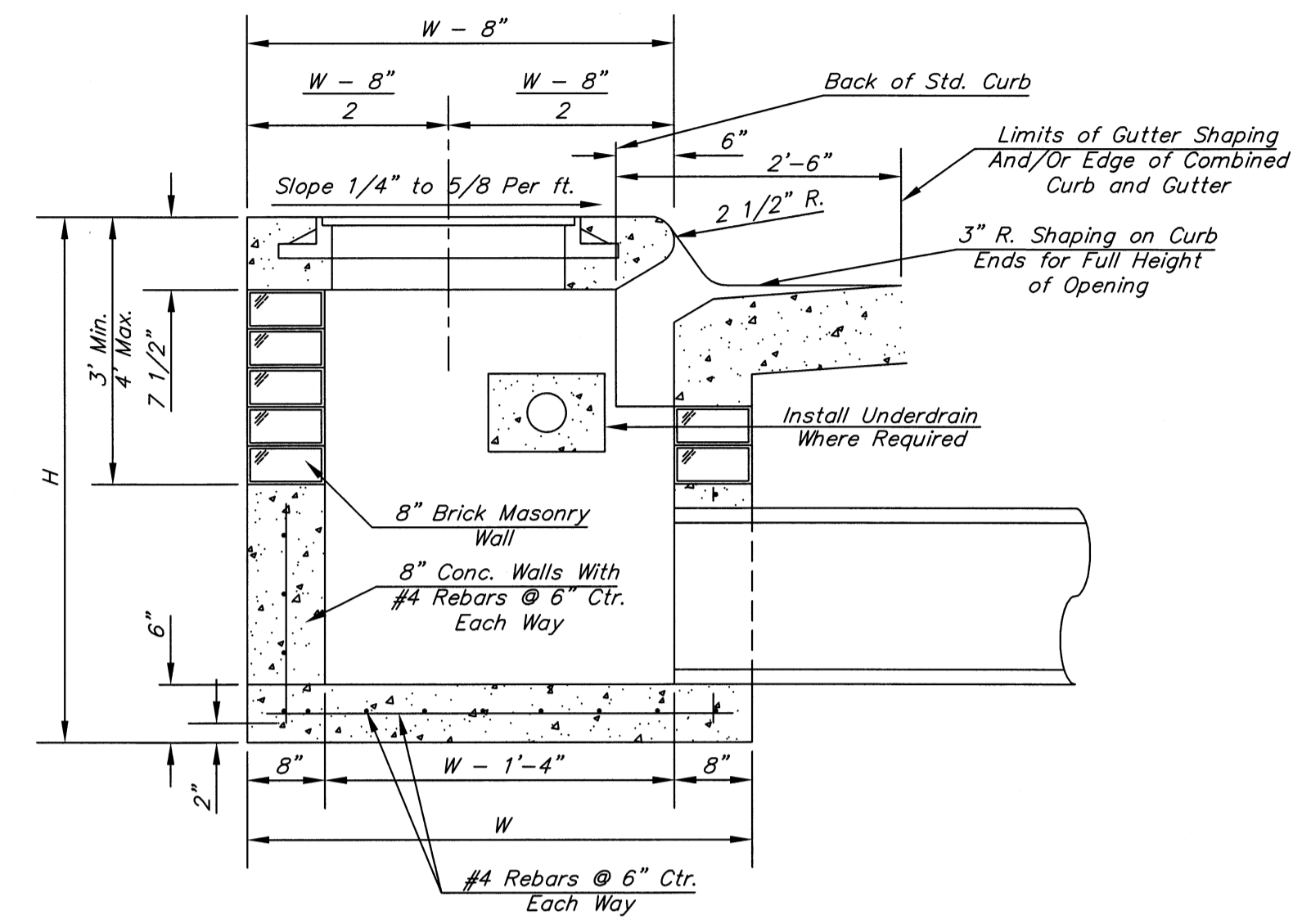
**Smithmoor Storage Units
Line 1
Wichita, Kansas**

PROJECT NUMBER			
KEM NO. 09030	FILE SWS	DATE 03/05/10	SHEET 2
DESIGN KM	DRAWN NS	REVISED	OF 4

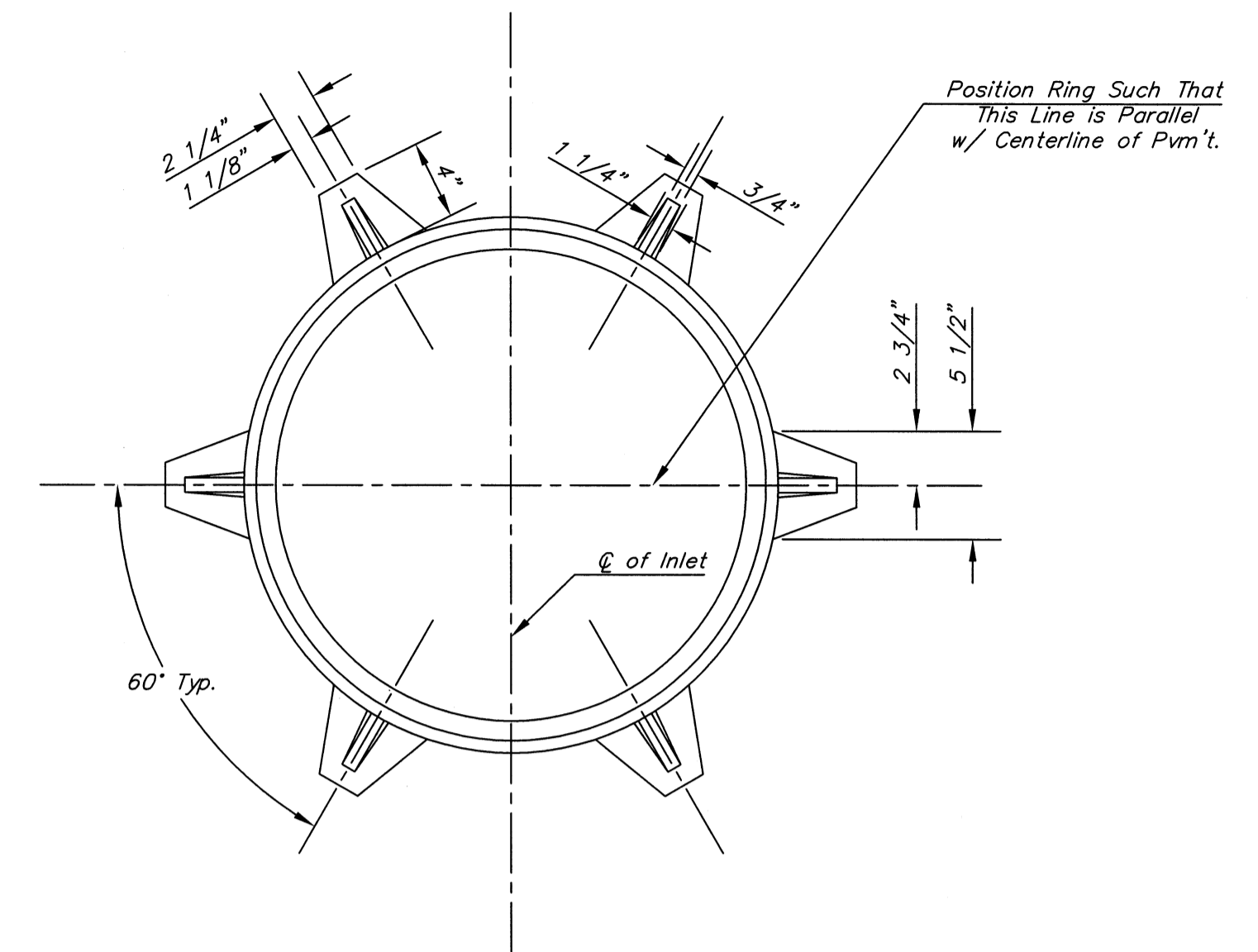
516 S. Market, Wichita, KS 67202 316/264-0242



PLAN

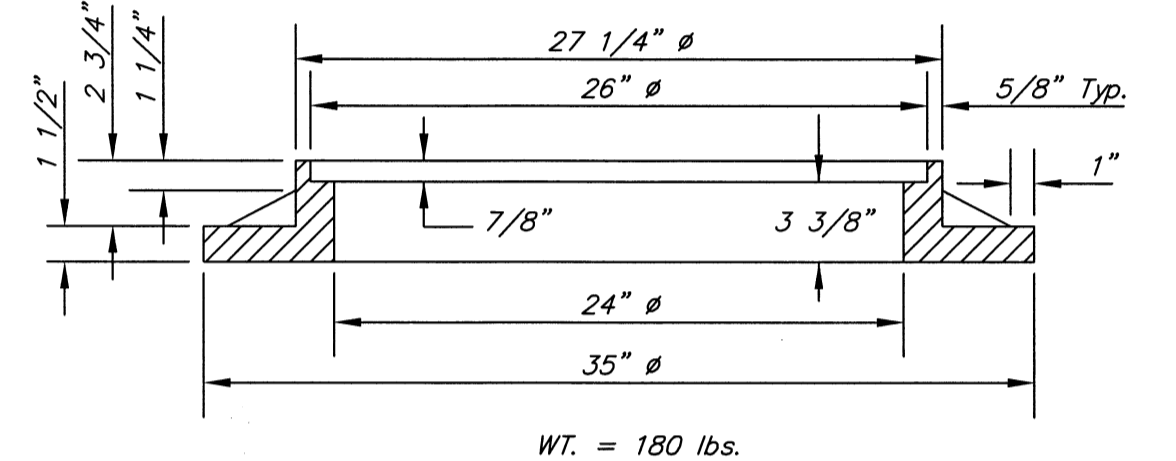


SECTION A-A



MANHOLE RING AND COVER

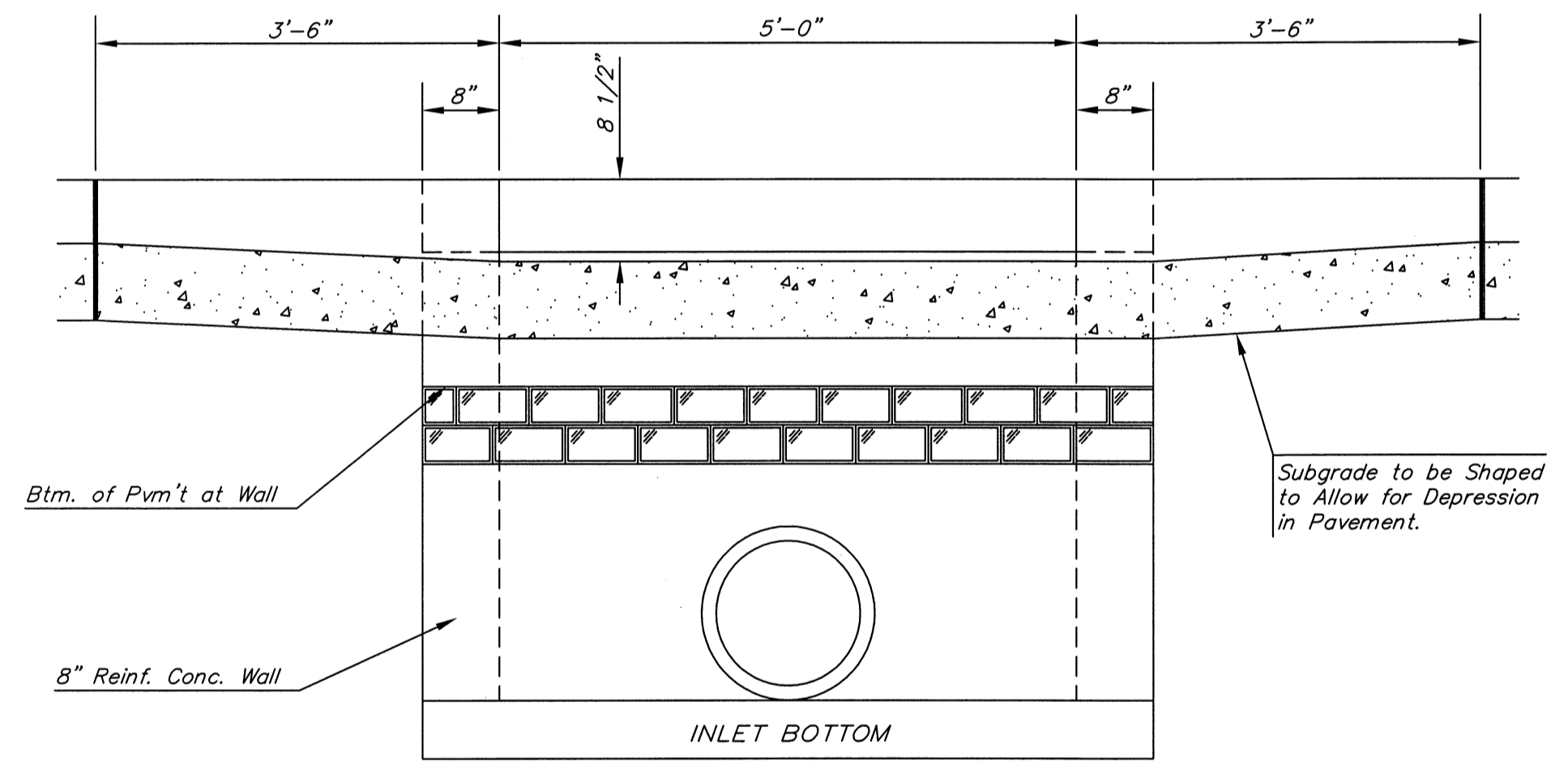
*See City of Wichita Standard Manhole Ring and Cover Detail Sheet for Cover Details to Be Used With Inlet Frame.



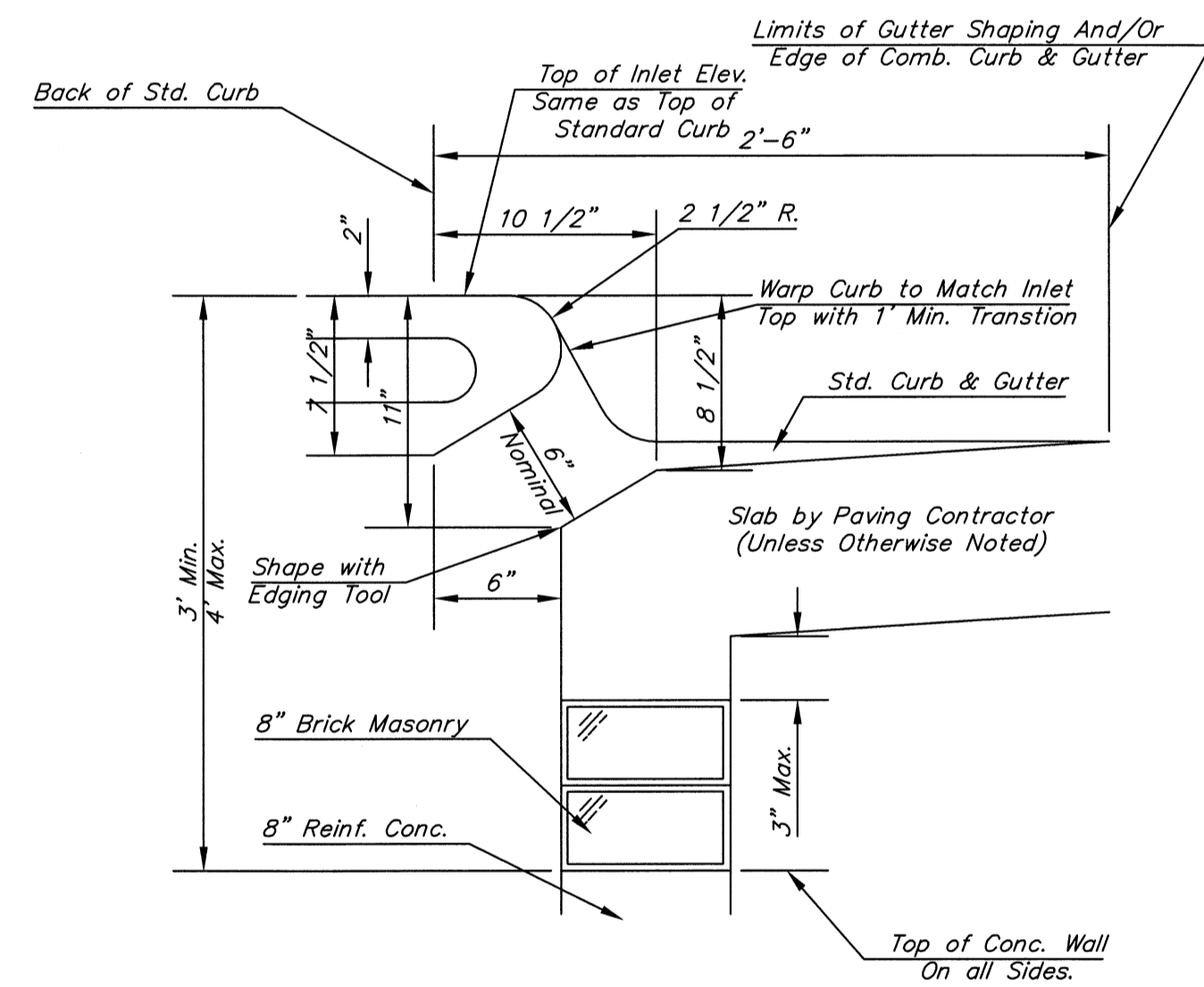
BENDING DIAGRAM

GENERAL NOTES

- Concrete tops to be installed on thin mortar cushion to insure full support along brick walls. Concrete tops may be cast in place or precast. Concrete used for inlet construction shall be concrete pavement mix.
- Contractor shall have the option of constructing 8 inch brick masonry walls between the concrete inlet base and top on this inlet when W=5'-0" and H=7'-0" or less.
- Inlet invert shall be shaped with 8 sack sand mix concrete to create flow channels and to increase hydraulic efficiency such that the inlet will be self cleaning between all inlet and/or outlet pipes.
- The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.



SECTION C-C



SECTION B-B

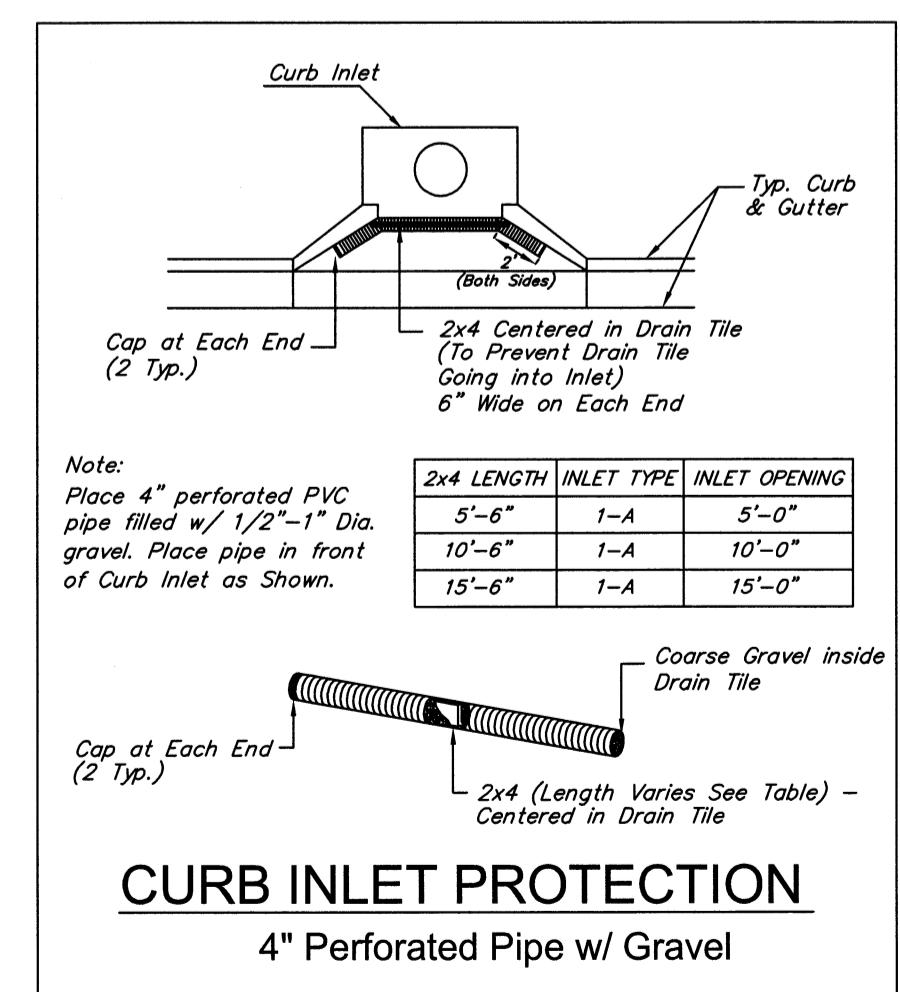
STEEL SCHEDULE

BAR	b ₁										WT. Lbs.	
	a ₁	a ₂	a ₃	W=4'-4"	W=5'-4"	W=6'-4"	W=7'-4"	W=8'-4"	b ₂	b ₃		b ₄
NUMBER	4	4	2	1	3	5	7	9	6	1	1	
SIZE	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#6	
LENGTH	W=3'-0"	5'-7"	6'-7"	4'-0"	6'-1"	-	-	-	1'-9"	6'-2"	4'-8"	60±
	W=4'-0"	7'-7"	8'-7"	5'-0"	6'-1"	-	-	-	1'-9"	6'-2"	4'-8"	81±
	W=5'-0"	9'-7"	10'-7"	6'-0"	-	6'-1"	-	-	1'-9"	6'-2"	4'-8"	101±
	W=6'-0"	11'-7"	12'-7"	7'-0"	-	-	6'-1"	-	1'-9"	6'-2"	4'-8"	121±
	W=7'-0"	13'-7"	14'-7"	8'-0"	-	-	-	6'-1"	1'-9"	6'-2"	4'-8"	141±

Note: a₃ Bars to be Placed Approx. 2" Below Top of Inlet Cover.

STANDARD CURB INLET PRECAST TOPS

W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
3'-0"	3'-8" 6'-4" 7 1/2"	21" & SMALLER	0.38±
4'-0"	4'-8" 6'-4" 7 1/2"	24" & 30"	0.51±
5'-0"	5'-8" 6'-4" 7 1/2"	36" & 42"	0.64±
6'-0"	6'-8" 6'-4" 7 1/2"	48" & 54"	0.77±
7'-0"	7'-8" 6'-4" 7 1/2"	60" & 66"	0.90±



CURB INLET PROTECTION
4" Perforated Pipe w/ Gravel

REV. 5-9-06

CITY OF WICHITA
PUBLIC WORKS
ENGINEERING

STANDARD TYPE 1 CURB INLET 5'-0" OPENING

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

PROJECT NUMBER	OCA NUMBER	DATE
		03/2010

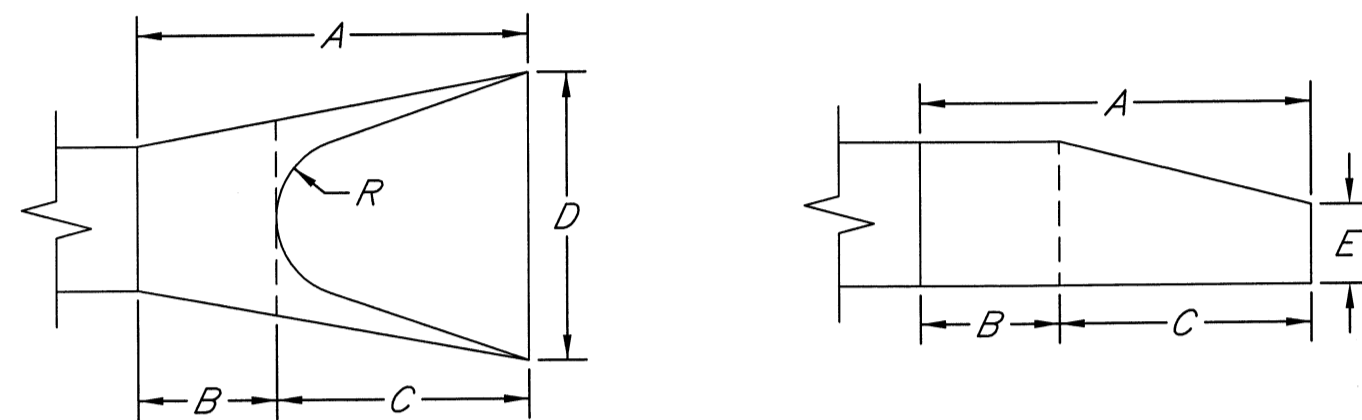
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202-1620
(316) 268-4501
(316) 268-4114 FAX

DESIGN	DRAWN
KM	NS

SHEET
3 OF 4

Re-Enforced Concrete Pipe Information									
Pipe Size	Wall		End Section Information						
	Thickness	Weight per ft	Elliptical Equivalent	"A"	"B"	"C"	"D"	"E"	"R"
12"	2.0"	100 lbs	----	6.07'	4.07'	2.00'	2.00'	0.33'	0.75'
15"	2.5"	128 lbs	----	6.08'	3.83'	2.25'	2.50'	0.50'	0.92'
18"	2.5"	168 lbs	23"x14"	6.08'	3.83'	2.25'	3.00'	0.75'	1.00'
24"	3.0"	268 lbs	30"x19"	6.12'	2.50'	3.62'	4.00'	0.79'	1.16'
30"	3.5"	385 lbs	38"x24"	6.12'	1.64'	4.50'	5.00'	1.00'	1.25'
36"	4.0"	524 lbs	45"x29"	8.14'	2.89'	5.25'	6.00'	1.25'	1.66'
42"	4.5"	684 lbs	53"x34"	8.16'	2.92'	5.25'	6.50'	1.75'	1.83'
48"	5.0"	868 lbs	60"x38"	8.16'	2.16'	6.00'	7.00'	2.00'	1.83'
54"	5.5"	1070 lbs	68"x43"	8.18'	2.77'	5.42'	7.50'	2.25'	2.00'
60"	6.0"	1290 lbs	----	8.25'	3.25'	5.00'	8.00'	2.92'	2.00'
66"	6.5"	1540 lbs	----	----	----	----	----	----	----
72"	7.0"	1800 lbs	----	8.25'	1.75'	6.50'	9.00'	3.00'	2.00'
84"	----	----	----	9.25'	1.75'	7.54'	10.00'	3.00'	2.00'

all measurements approximate



GRADATION REQUIREMENTS:

1. **Heavy Stone Riprap:** Heavy stone riprap shall be constructed twenty-four inches (24") in thickness and shall be placed on a stone filter course backing having a thickness of nine inches (9"). Stone used in riprap shall meet the required quality requirements and the following size requirements.

Weight of Individual Pieces	Minimum Percent Larger Than
1,000 lbs	0%
500 lbs	50%
75 lbs	90%

Filter course backing for heavy stone riprap shall be produced from the stone meeting the quality requirements of stone for riprap and shall have the following size requirements

Sieve Size	Percent Retained
6"	0%
5"	5-25%
2"	40-60%
3/8"	75-95%

2. **Light Stone Riprap:** Light stone riprap shall be constructed eighteen inches (18") in thickness and shall be placed on a stone filter course backing having a thickness of six inches (6"). Stone used in riprap shall meet the required quality requirements and the following size requirements.

Weight of Individual Pieces	Minimum Percent Larger Than
500 lbs	0%
250 lbs	50%
125 lbs	70%
10 lbs	90%

Filter course backing for heavy stone riprap shall be produced from the stone meeting the quality requirements of stone for riprap and shall have the following size requirements

Sieve Size	Percent Retained
4"	0%
2"	10-40%
1"	25-60%
3/8"	55-85%
#4	70-95%

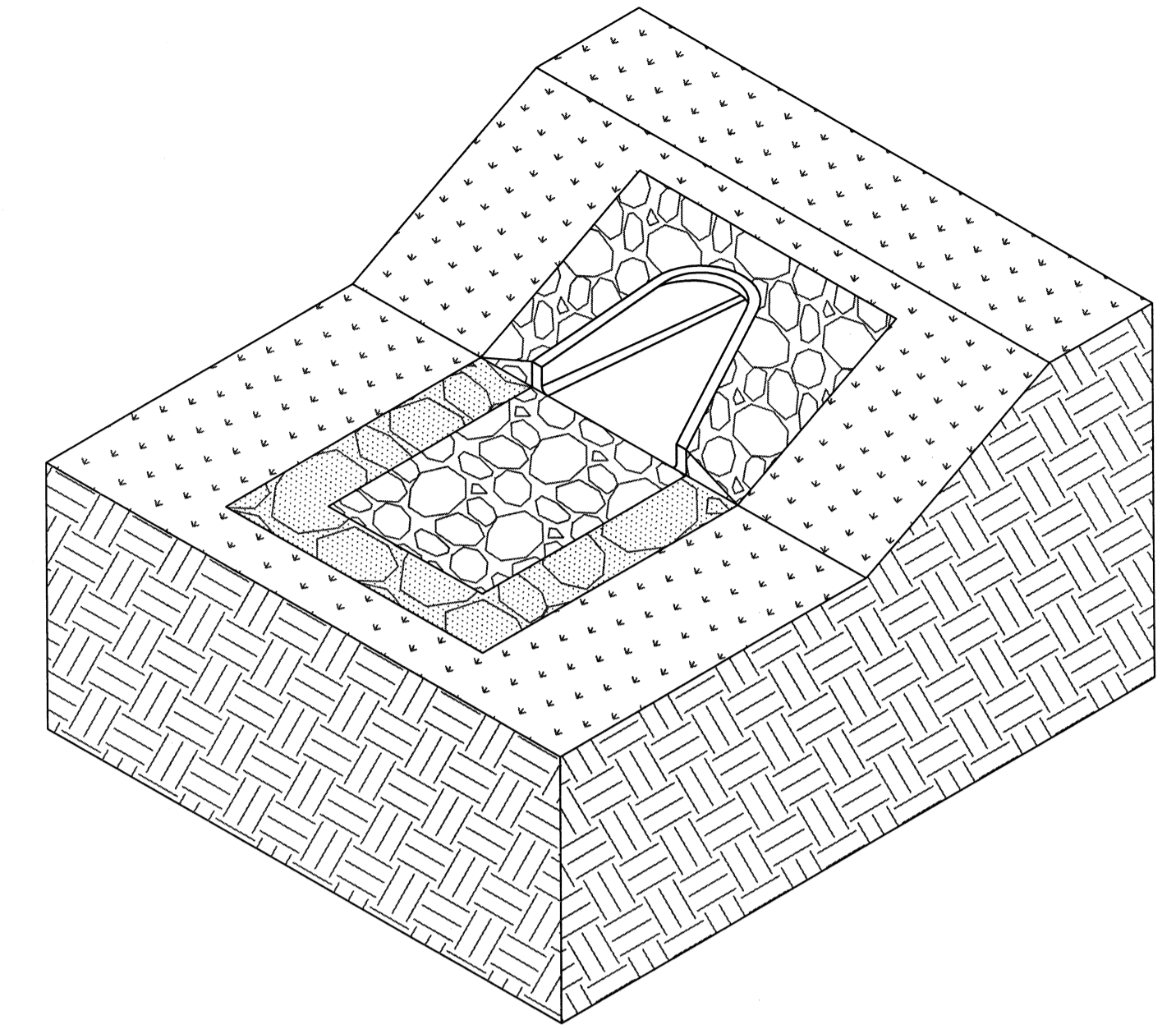
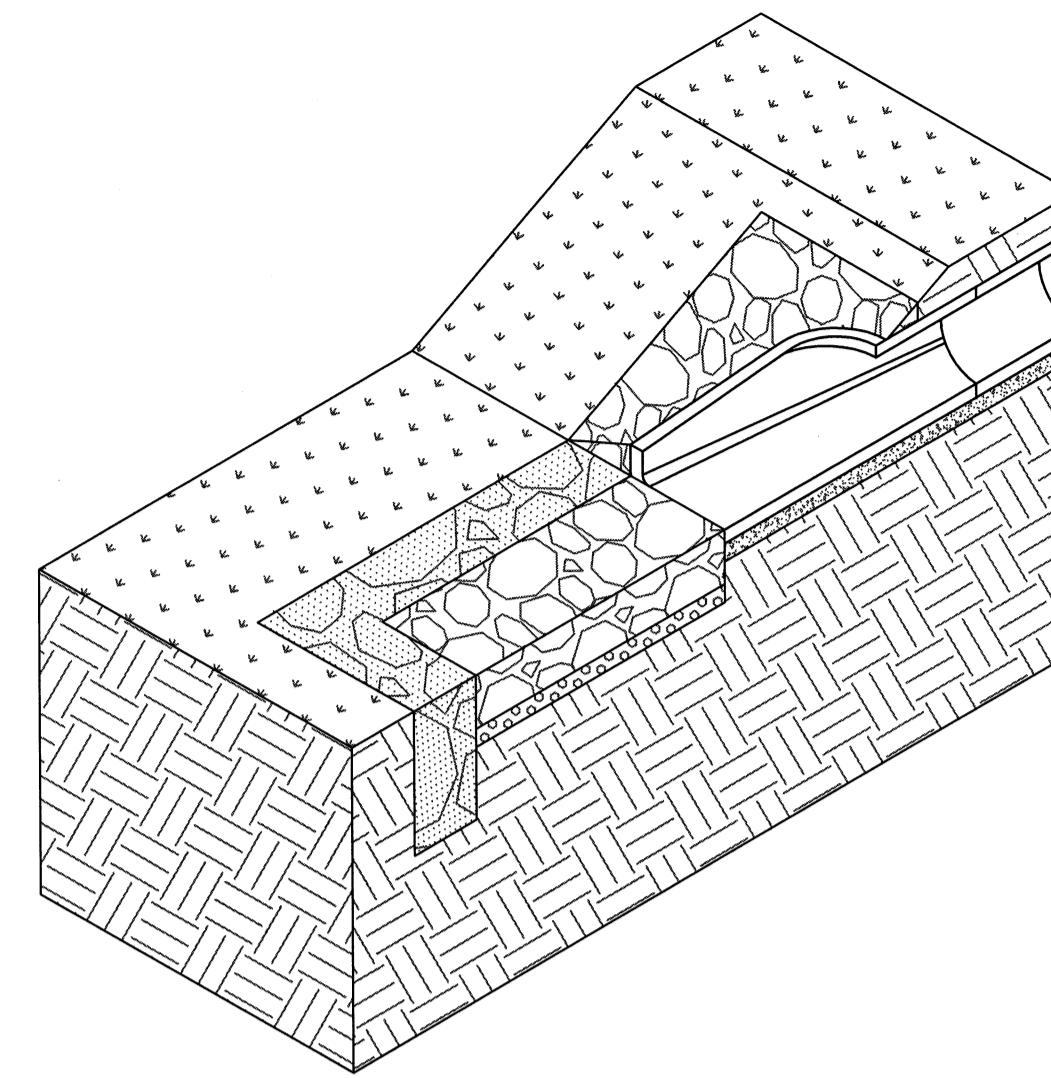
INSTALLATION OF STONE RIPRAP:




Stone riprap shall be placed on a prepared bedding layer so as to produce a reasonably well-graded mass with a minimum percentage of void. Stone riprap shall be placed to it's full course thickness in one operation without displacing the bedding. Placing stone riprap by dumping into chutes or any other method likely to cause segregation will not be permitted. Placement of stone on the slope and in toe trenches shall be accomplished by controlled dumping directly in place.

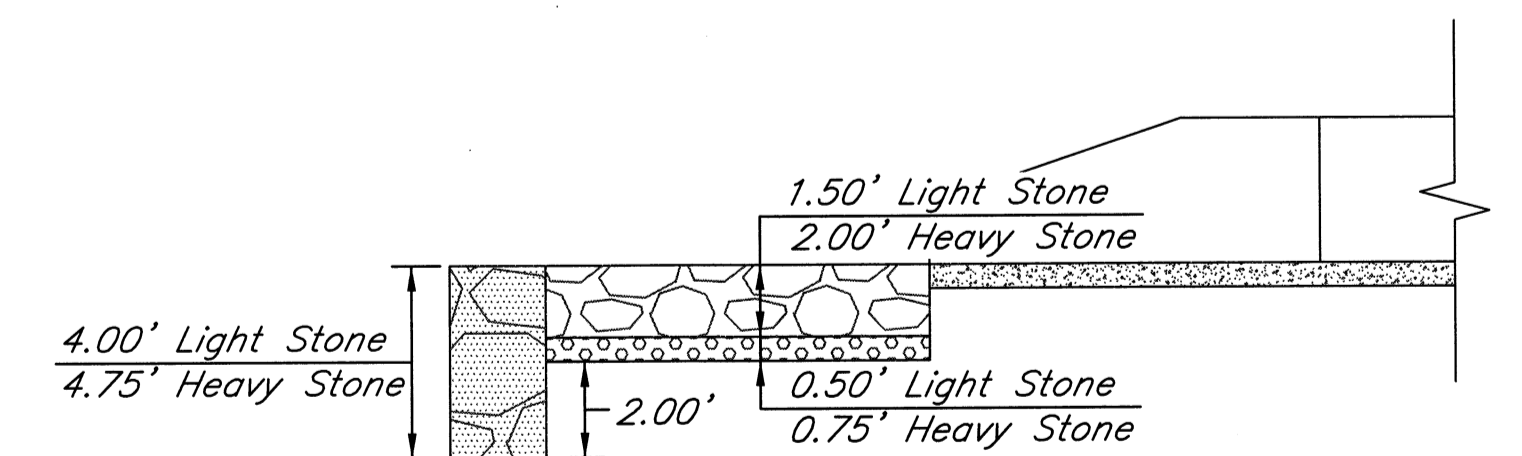
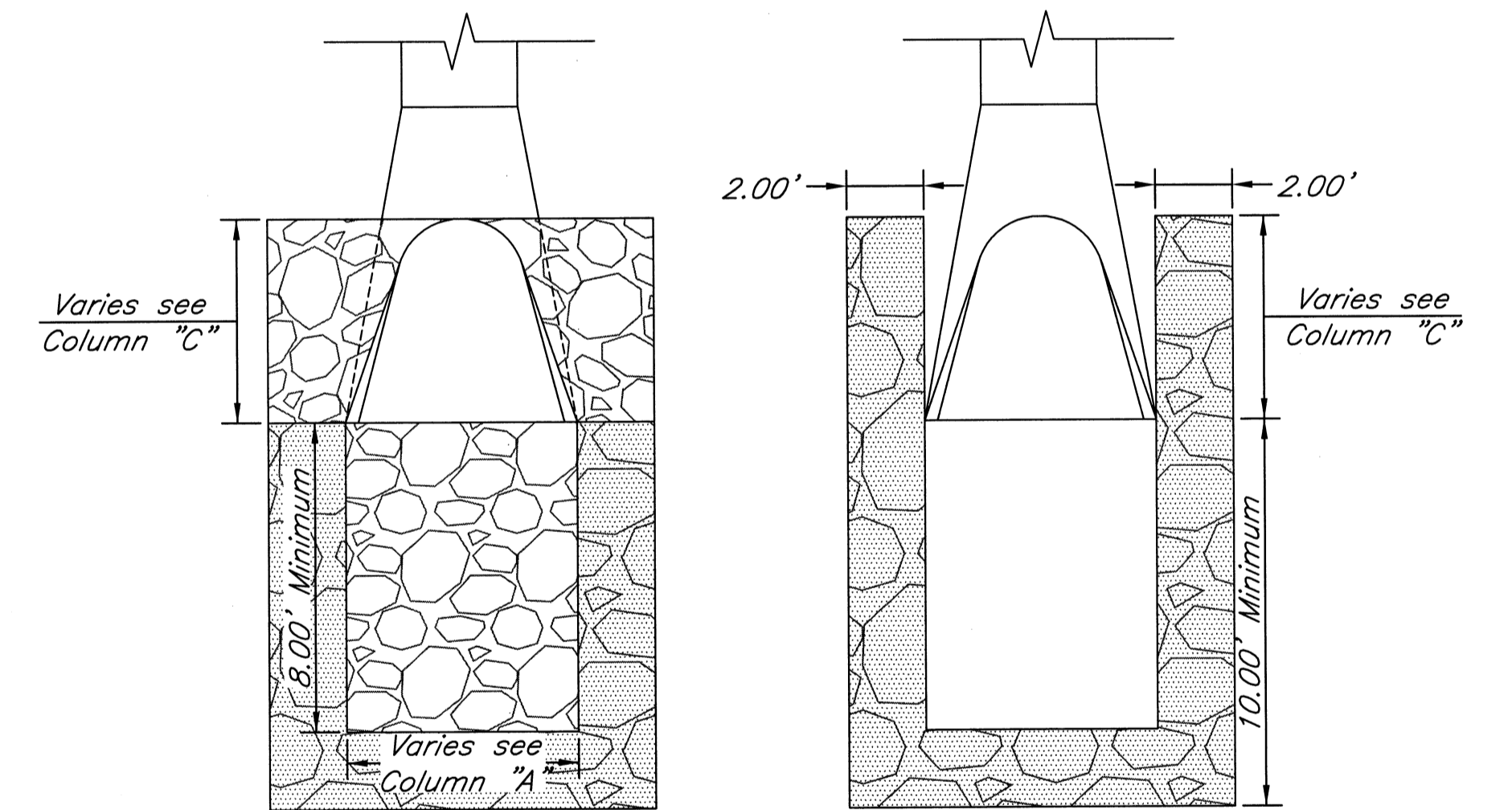
Bulldozing of stone from the upper banks will not be permitted. Use of a drag line or similar equipment operated from the top of the bank to pull stone into position on the upper slope will be permitted. Stone riprap may be placed below water, providing it is placed by skip or another approved method which will prevent segregation. Larger stones should be distributed and the entire mass of stones in their final position should be stable and free of pockets of small stones and clusters of larger ones; rearrangement of individual pieces by hand may be required to obtain the results described above. A tolerance of plus three inches (3") from the lines and grades shown on the continuous over an area greater than 100 square feet. Hand placing of riprap stones shall be necessary to produce reasonably true surfaces and close fit of stones. The larger spaces between the stones shall be fitted with spalls of suitable size, rammed thoroughly in place. The spaces between stones shall be fitted with smaller rock, carefully hand placed in such a manner to obtain a tight surface.


Toewalls shall be installed along all unprotected edges of edges of stone riprap construction. Such toewalls shall be constructed using the same size stone specified for the riprap with the toewall thickness being the same thickness as specified for the riprap without the filter course backing. The toewalls shall extend a minimum distance of 2' below the bottom of the filter course backing material and they shall be constructed perpendicular to the top surface of the riprap construction. Toewall construction shall be grouted in place for the full depth from the bottom of the toewall to the top surface of the riprap for the full thickness of the toewall to the top surface of riprap for the full thickness of the toewall.

When specified, all riprap placed within the limits of a dimension of 10' from pipe ends, pipe end sections and headwall structures, as measured from the outside edges of such pipe ends or structures, shall be grouted in place. Other area shall be grouted when indicated by the plans. When grouted stone riprap is required, the spaces between the riprap stones shall be filled with water to form a plastic mix. The grout mixture shall be poured and broomed into the voids around the rock until all such voids are completely filled. Grouted stone riprap will be cured in the same manner as specified in the standard specifications for concrete pavement.



-  GROUTED TOEWALL
-  STONE RIPRAP
-  FILTER COURSE BACKING



Smithmoor Storage Units Rip-Rap Details Wichita, Kansas				
	PROJECT NUMBER			
	KEM NO. 09030	FILE rr	DATE 03/2010	SHEET 4 OF 4
DESIGN KM	DRAWN NS	REVISED		
516 S. Market, Wichita, KS 67202		316/264-0242		