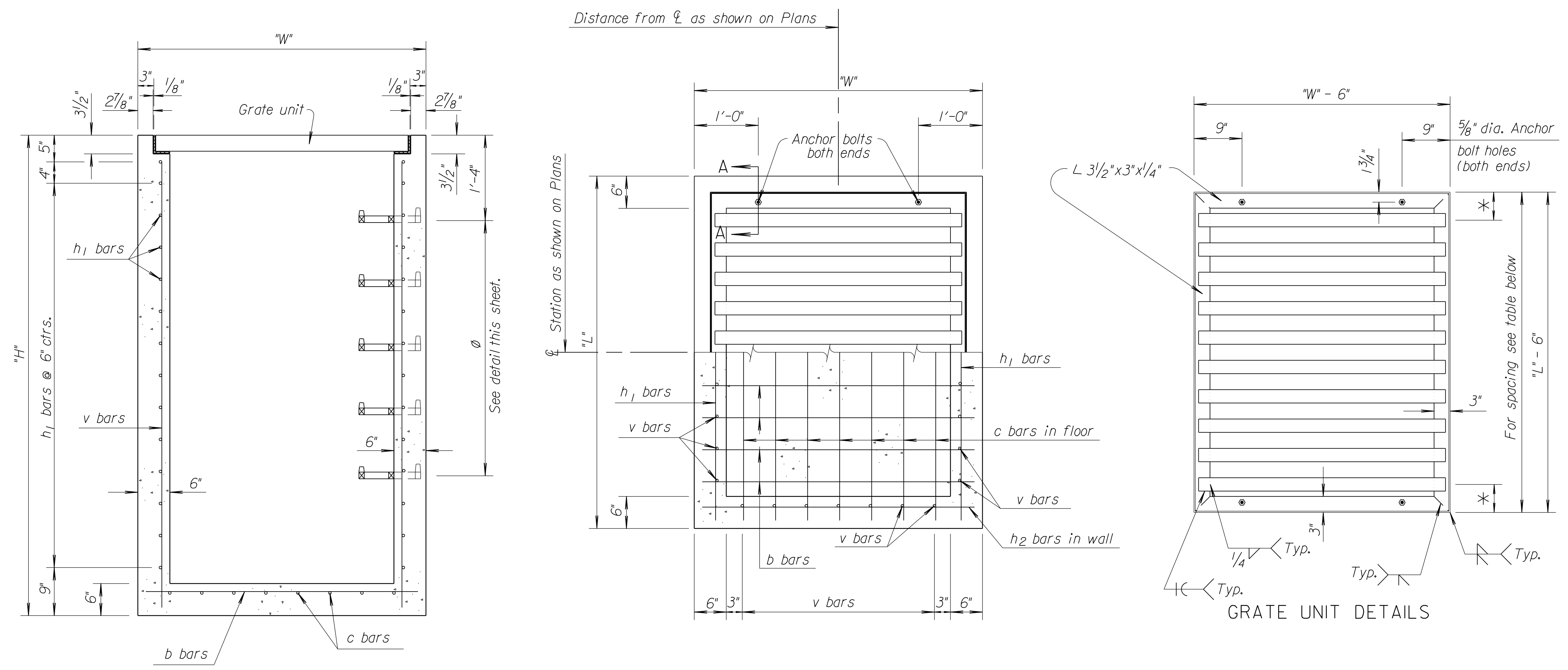


Note to Designer: For dimensions in any direction larger than those listed on this sheet, a structural design of both the inlet and grate should be performed.



**GENERAL NOTE**

Use Concrete Grade 3.0 throughout. All exposed edges shall be finished with an edging tool.

At the contractor's option, Concrete Grade 3.0 (AE) or mix used in concrete pavement may be used throughout.

In general, pipes will enter and leave the manhole at various positions. Where possible bend bars around pipes.

Floor of inlet shall be shaped as shown in various "Examples" on Reinforced Concrete Manhole Standard Drawing RD633. Concrete used for shaping shall be unreinforced Concrete Grade 3.0 or concrete pavement mix. No addition in concrete quantities shall be made for shaping floor of inlets.

Manhole steps, where used, shall be placed to afford easy access to top of shaped invert.

No deductions in concrete quantities shall be made for pipe openings.

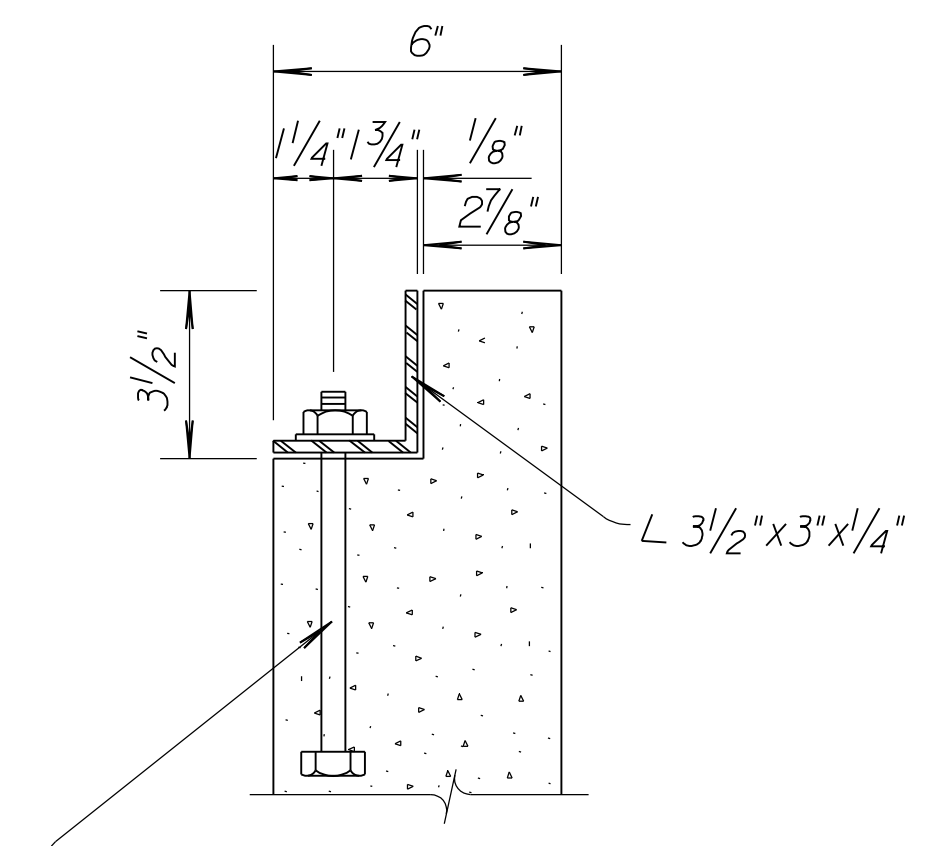
All bars are #4 @ 6" spacing and shall have a minimum clearance of 1 1/2" unless otherwise noted on the plans.

The top of the manhole shall be sloped slightly to approximately fit the ground line or other conditions as directed by the Engineer.

Steps shall be installed on all storm sewer inlets when specified in the plans or when "H" is equal to or greater than six feet. Steps shall comply with the KDOT Standard Specification.

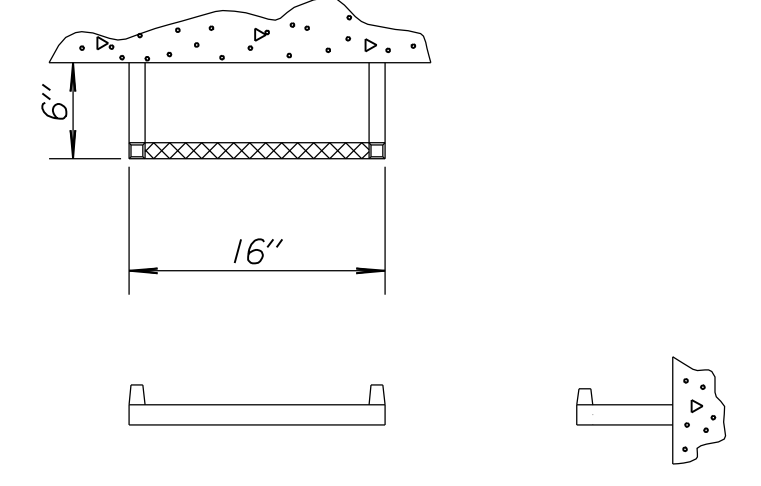
The grate shall be fabricated from standard or commercial grade structural steel and black steel pipe. The unit shall be hot dipped, galvanized after fabrication, in accordance with ASTM A123 except the weight of coating shall average not less than 2.0 ounces per square foot of actual surface and no individual test shall show less than 1.8 ounces of coating per square foot of actual surface area.

GRATE UNIT DETAILS



SECTION A-A

Note: Anchor bolts are subsidiary to the bid item "Inlet-Manhole, Special".



STEP DETAILS

BILL OF MATERIALS FOR INLET-MANHOLE (SPECIAL)

"L"	"W"	"H"	"L"	"W"	"H"	"L"	"W"	"H"	"L"	"W"	"H"	"L"	"W"	"H"	"L"	"W"	"H"	"L"	"W"	"H"			
4'-6"	4'-6"	3'-6"	7'-6"	4'-6"	7'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"			
Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length
v	28	#4	3'-0"	v	40	#4	7'-0"	v		#4		v		#4		v		#4		v		#4	
c	7	#4	4'-3"	c	7	#4	7'-3"	c		#4		c		#4		c		#4		c		#4	
b	7	#4	4'-3"	b	13	#4	4'-3"	b		#4		b		#4		b		#4		b		#4	
h <sub>1</sub>	12	#4	4'-3"	h <sub>1</sub>	28	#4	7'-3"	h <sub>1</sub>		#4		h <sub>1</sub>		#4		h <sub>1</sub>		#4		h <sub>1</sub>		#4	
h <sub>2</sub>	12	#4	4'-3"	h <sub>2</sub>	28	#4	4'-3"	h <sub>2</sub>		#4		h <sub>2</sub>		#4		h <sub>2</sub>		#4		h <sub>2</sub>		#4	
Conc. Grade 3.0			1.23 Cu.Yd.	Conc. Grade 3.0			3.42 Cu.Yd.	Conc. Grade 3.0			Cu.Yd.	Conc. Grade 3.0			Cu.Yd.	Conc. Grade 3.0			Cu.Yd.	Conc. Grade 3.0			Cu.Yd.
Reinf. steel			164 Lbs.	Reinf. steel			473 Lbs.	Reinf. steel			Lbs.	Reinf. steel			Lbs.	Reinf. steel			Lbs.	Reinf. steel			Lbs.
Struct. steel			260 Lbs.	Struct. steel			430 Lbs.	Struct. steel			Lbs.	Struct. steel			Lbs.	Struct. steel			Lbs.	Struct. steel			Lbs.
Class III Excav.			5 Cu.Yd.	Class III Excav.			17 Cu.Yd.	Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.	Class III Excav.			Cu.Yd.

BILL OF MATERIALS FOR INLET-MANHOLE (SPECIAL)

"L"	"W"	"H"	"L"	"W"	"H"	"L"	"W"	"H"	"L"	"W"	"H"	"L"	"W"	"H"	"L"	"W"	"H"	"L"	"W"	"H"			
4'-6"	4'-6"	6'-0"	5'-6"	4'-6"	7'-6"	4'-0"	4'-0"	4'-6"	4'-6"	4'-6"	4'-0"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"			
Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length	Bar	No.	Size	Length
v	28	#4	5'-6"	v	32	#4	7'-0"	v	24	#4	4'-0"	v	28	#4	3'-6"	v	28	#4	4'-0"	v	32	#4	4'-6"
c	7	#4	4'-3"	c	7	#4	5'-3"	c	6	#4	3'-9"	c	7	#4	4'-3"	c	7	#4	4'-3"	c	7	#4	5'-3"
b	7	#4	4'-3"	b	9	#4	4'-3"	b	6	#4	3'-9"	b	7	#4	4'-3"	b	9	#4	4'-3"	b	9	#4	4'-3"
h <sub>1</sub>	22	#4	4'-3"	h <sub>1</sub>	28	#4	5'-3"	h <sub>1</sub>	16	#4	3'-9"	h <sub>1</sub>	14	#4	4'-3"	h <sub>1</sub>	18	#4	4'-3"	h <sub>1</sub>	18	#4	5'-3"
h <sub>2</sub>	22	#4	4'-3"	h <sub>2</sub>	28	#4	4'-3"	h <sub>2</sub>	16	#4	3'-9"	h <sub>2</sub>	14	#4	4'-3"	h <sub>2</sub>	18	#4	4'-3"	h <sub>2</sub>	18	#4	4'-3"
Conc. Grade 3.0			1.95 Cu.Yd.	Conc. Grade 3.0			2.83 Cu.Yd.	Conc. Grade 3.0			1.30 Cu.Yd.	Conc. Grade 3.0			1.37 Cu.Yd.	Conc. Grade 3.0			1.52 Cu.Yd.	Conc. Grade 3.0			1.91 Cu.Yd.
Reinf. steel			268 Lbs.	Reinf. steel			377 Lbs.	Reinf. steel			174 Lbs.	Reinf. steel			185 Lbs.	Reinf. steel			205 Lbs.	Reinf. steel			261 Lbs.
Struct. steel			260 Lbs.	Struct. steel			315 Lbs.	Struct. steel			206 Lbs.	Struct. steel			260 Lbs.	Struct. steel			260 Lbs.	Struct. steel			315 Lbs.
Class III Excav.			9 Cu.Yd.	Class III Excav.			14 Cu.Yd.	Class III Excav.			6 Cu.Yd.	Class III Excav.			6 Cu.Yd.	Class III Excav.			7 Cu.Yd.	Class III Excav.			9 Cu.Yd.

PIPE DIMENSIONS AND SPACING

L x W	No. of Bars	Dia. x Length x Spacing	*
7'-6" x 4'-6"	13	2 1/2" dia x 3'-10 1/4" pipes @ 6" ctrs.	6"
5'-6" x 4'-6"	10	2 1/2" dia x 3'-10 1/4" pipes @ 5 1/2" ctrs.	5 1/4"
4'-6" x 4'-6"	8	2 1/2" dia x 3'-10 1/4" pipes @ 5 1/2" ctrs.	4 3/4"
4'-0" x 4'-0"	7	2 1/2" dia x 3'-4 1/4" pipes @ 5 1/2" ctrs.	4 1/2"

NO.	DATE	REVISIONS	BY	APP'D.
9	1-28-05	Changed Class to Grade concrete	S.W.K.	J.O.B.
8	12-5-00	Added Note to Designer	R.J.S.	J.O.B.
7	12-16-97	Revised step spacing	R.J.S.	J.O.B.
6	1-30-92	Rev. step det. & notes, ent. on CADD	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

INLET - MANHOLE, SPECIAL

RD648	FHWA APPROVAL	6-10-05	APP'D. James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED B.N.B.
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK. R.J.S.