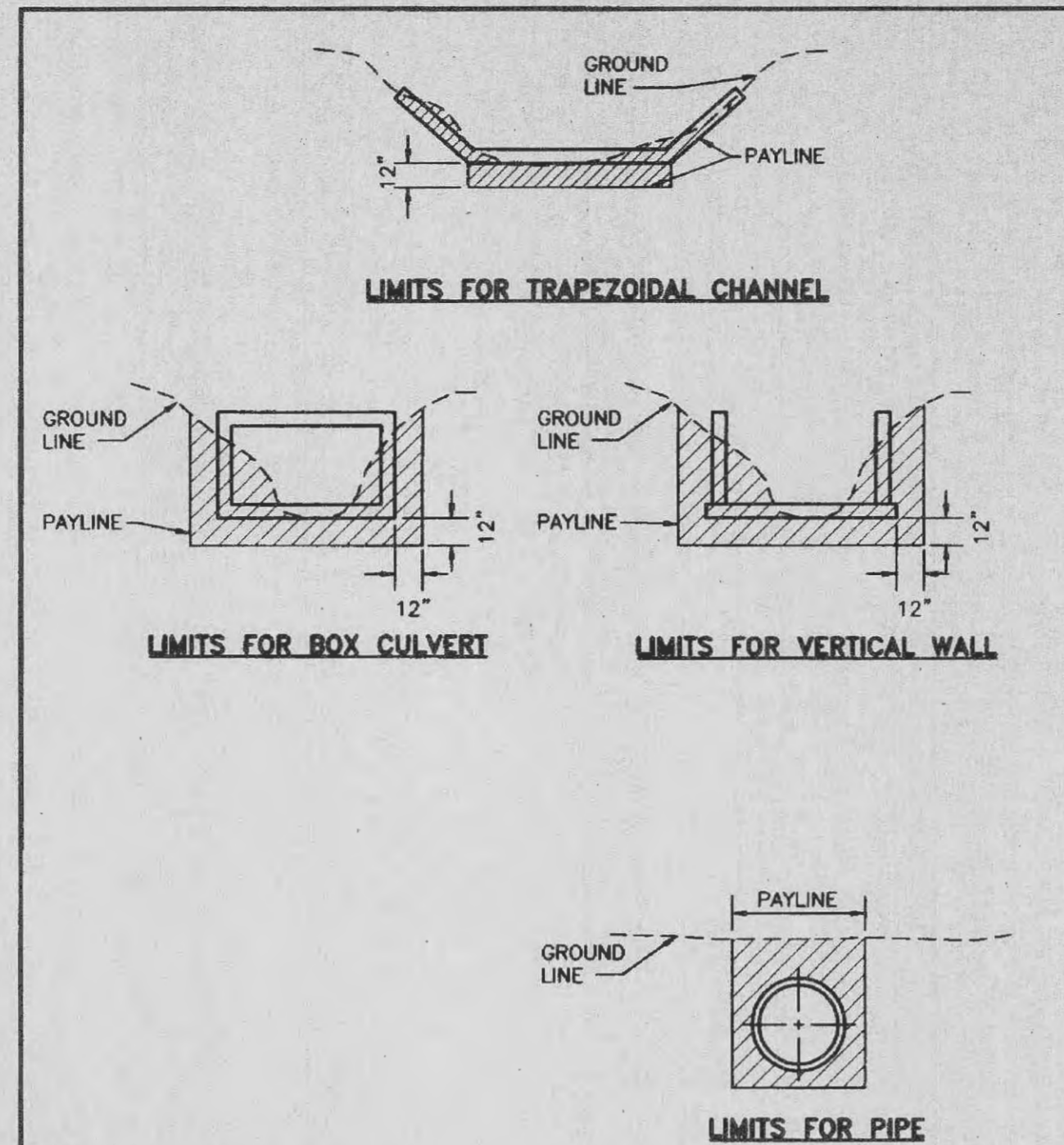


ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
INSIDE DIAMETER OF PIPE (INCHES)	"W" PAYLINE WIDTH OF TRENCH (INCHES)	"W" PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUMES CU. FT. PER FT. CONCRETE ENCASUREMENT	INSIDE DIAMETER OF PIPE (INCHES)	"W" PAYLINE WIDTH OF TRENCH (INCHES)	"W" PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUMES CU. FT. PER FT. CONCRETE ENCASUREMENT
4	30	2.50	3.28				
6	30	2.50	3.59				
8	30	2.50	3.87				
10	30	2.50	4.09				
12	30	2.50	4.25				
15	36	3.00	5.55				
18	36	3.00	5.77				
21	39	3.25	6.61				
24	42	3.50	7.39				
27	45	3.75	8.18				
30	49	4.08	9.30				
33	53	4.42	10.53				
36	56	4.67	11.43				
39							
DISCONTINUED							
42	63	5.25	13.38	14 x 23	41	3.42	5.94
48	70	5.83	15.67	19 x 30	49	4.08	7.68
54	77	6.42	18.15	22 x 34	53	4.42	8.81
60	84	7.00	20.73	24 x 38	58	4.83	9.70
66	91	7.58	23.45	27 x 42	62	5.17	10.71
72	98	8.17	26.37	29 x 45	66	5.50	11.72
78	105	8.75	29.39	32 x 49	71	5.92	13.14
84	112	9.33	32.57	34 x 53	75	6.25	14.05
90	119	9.92	35.90	38 x 60	83	6.92	16.18
96	126	10.50	39.37	43 x 68	92	7.67	18.81
102	133	11.08	42.99	48 x 76	101	8.42	21.59
108	140	11.67	46.75	53 x 83	109	9.08	24.35
114	147	12.25	50.66	58 x 91	118	9.83	27.45
120	154	12.83	54.72	63 x 98	126	10.50	30.50
126	161	13.42	58.92	68 x 106	135	11.25	33.91
132	168	14.00	63.27	72 x 113	143	11.92	36.99
144	182	15.17	72.40	77 x 121	152	12.67	40.89
				82 x 128	160	13.33	44.45
				87 x 136	168	14.00	47.79
				92 x 143	176	14.67	51.70
				97 x 151	185	15.42	56.01
				106 x 166	202	16.83	64.48
				116 x 180	218	18.17	73.59

**Duckett Creek Sanitary District**

PAYLINE WIDTHS OF TRENCH AND PAY-QUANTITIES OF CONCRETE

Desig. By: BSM App. By: KLA Detail No. 1  
 Chg. By: MDOB Date: 12-21-99

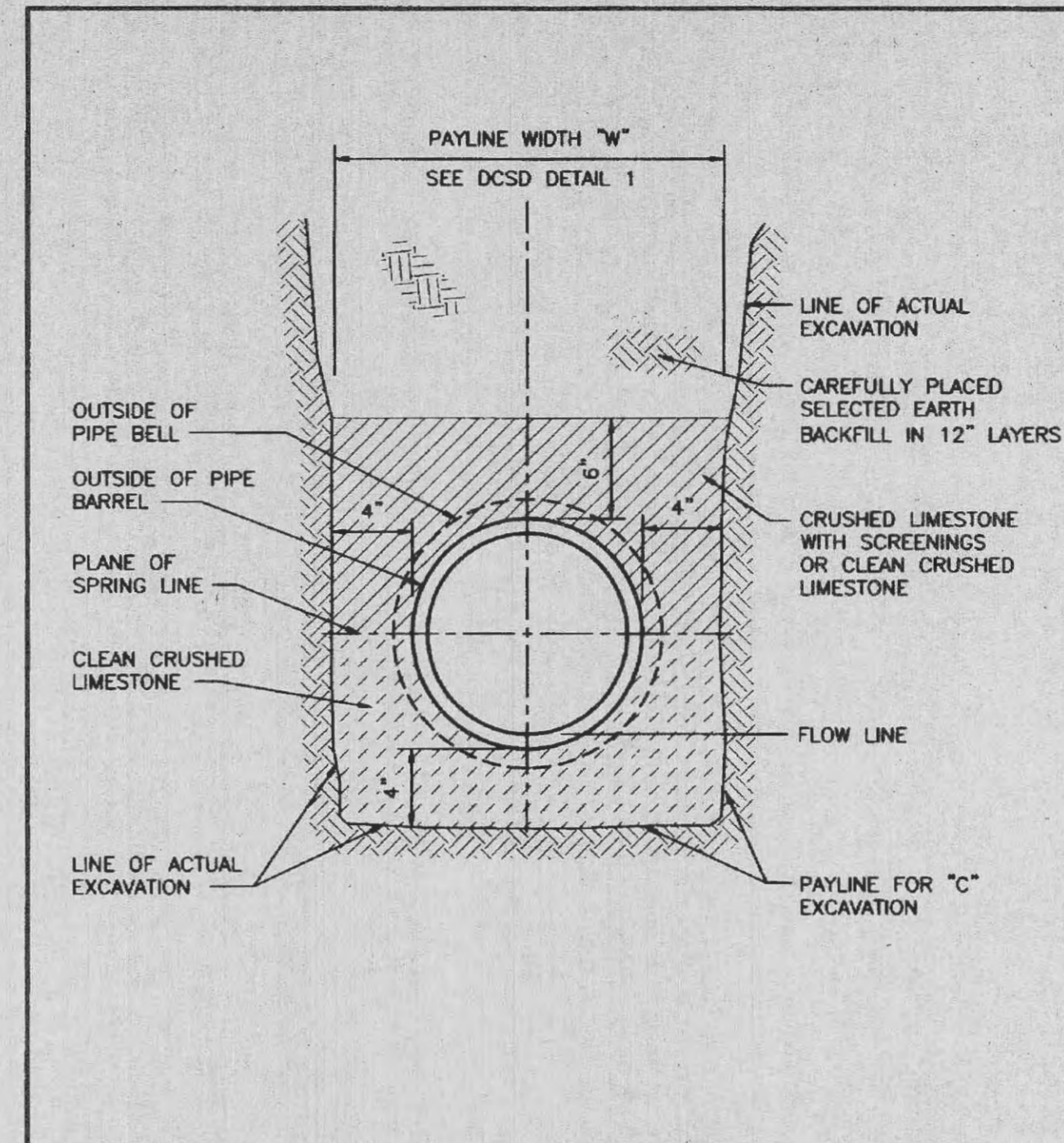


NOTE: PAYLINE FOR ANY OTHER TYPE CHANNEL EXCAVATION SHALL BE THE EXACT SHAPE OF THE SUBGRADE.

**Duckett Creek Sanitary District**

PAYLINE LIMITS FOR EXCAVATION

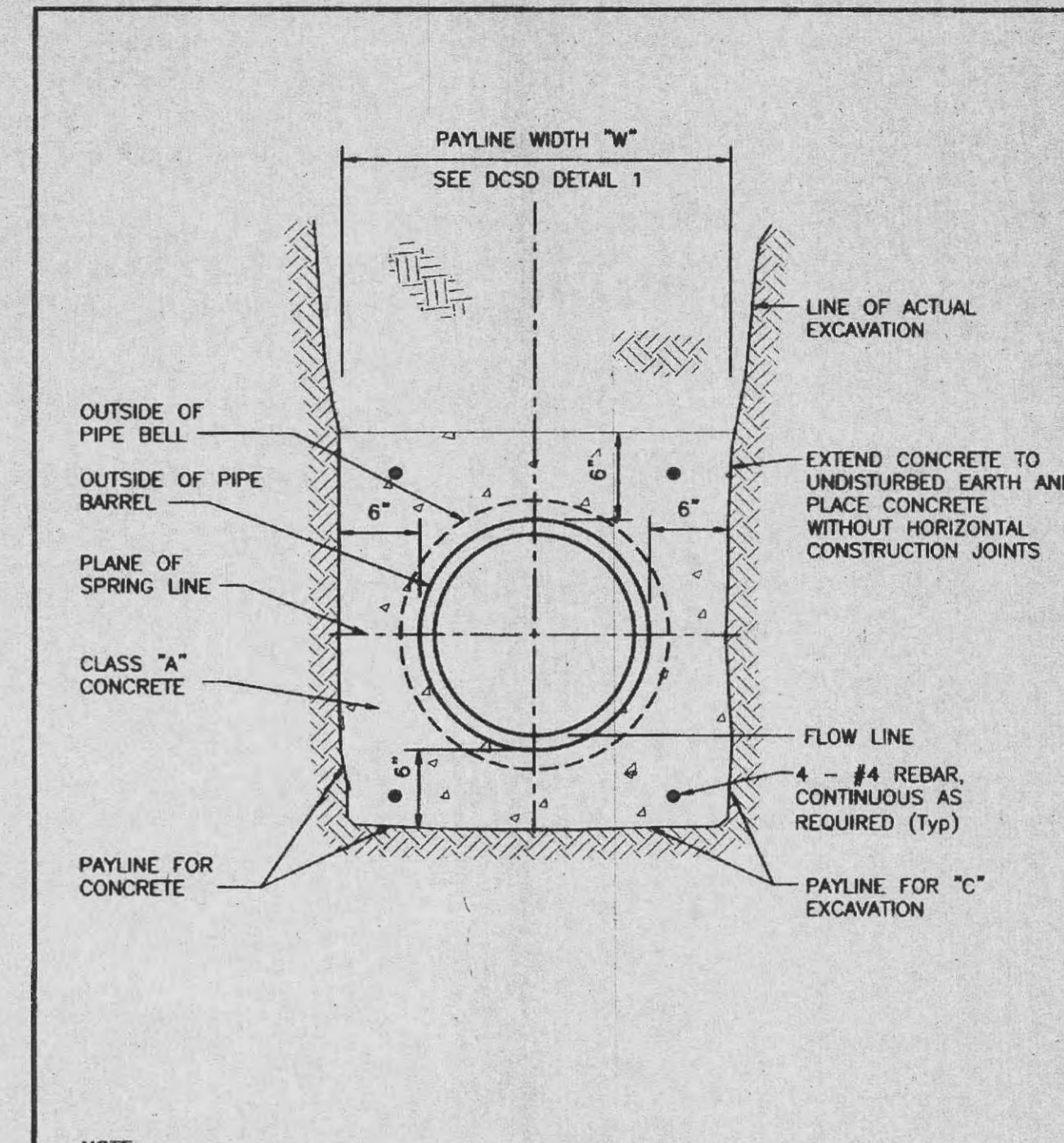
Desig. By: BSM App. By: KLA Detail No. 2  
 Chg. By: MDOB Date: 12-21-99



**Duckett Creek Sanitary District**

PIPE BEDDING CLASS "C" (FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)

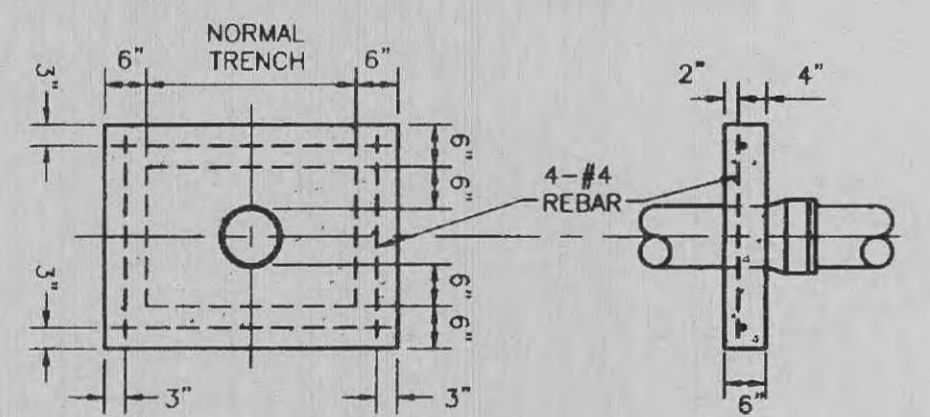
Desig. By: BSM App. By: KLA Detail No. 3  
 Chg. By: MDOB Date: 12-21-99



**Duckett Creek Sanitary District**

TYPICAL CONCRETE ENCASUREMENT

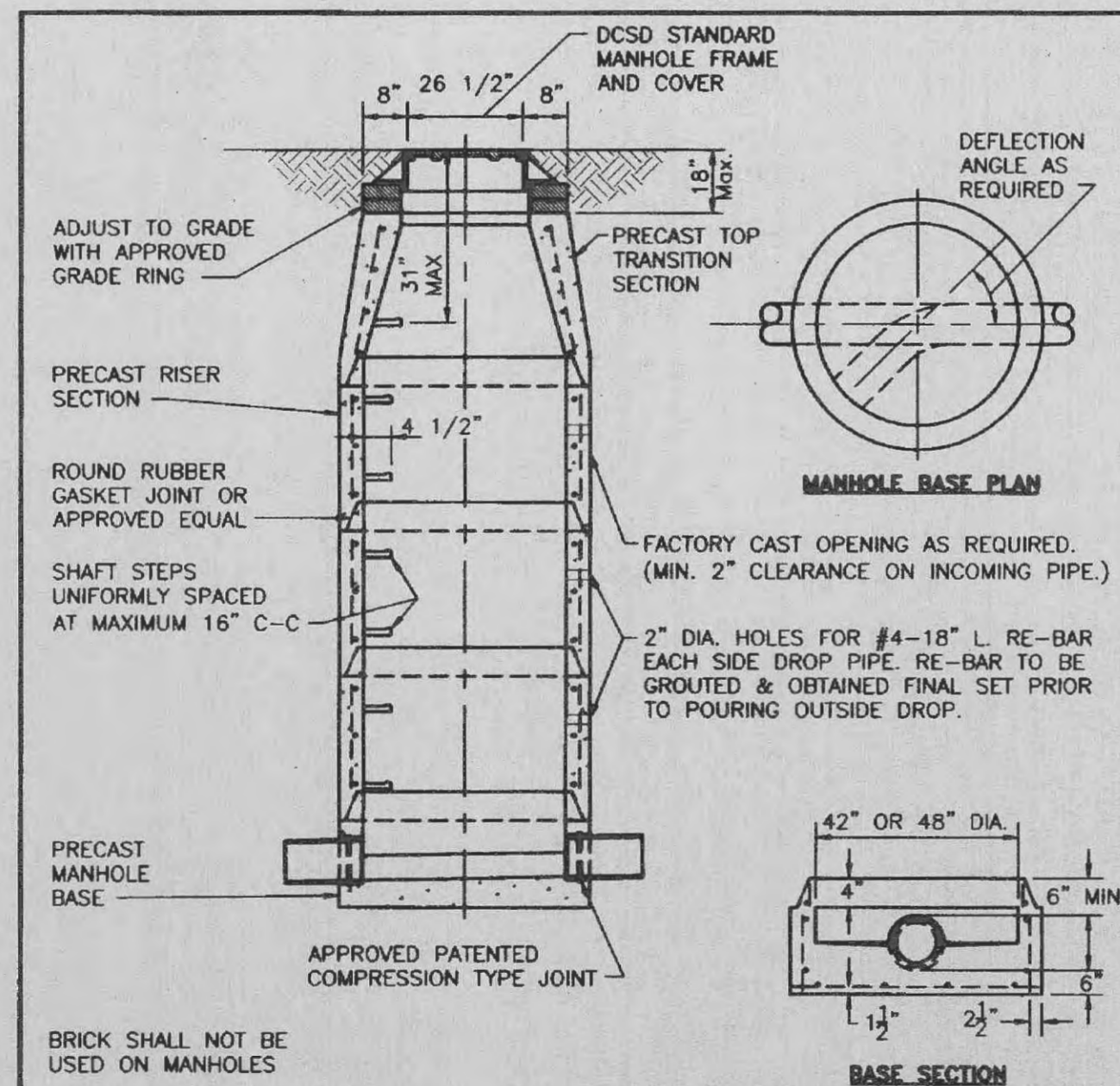
Desig. By: BSM App. By: KLA Detail No. 4  
 Chg. By: MDOB Date: 12-21-99



**Duckett Creek Sanitary District**

CONCRETE ANTI-SLIP COLLAR FOR PVC PIPE ON PIPE SLOPES FROM 15% TO 50%

Desig. By: BSM App. By: KLA Detail No. 5  
 Chg. By: MDOB Date: 12-21-99



SECTION OF MANHOLE	DIMENSION
TOP TRANSITION	26 1/2" DIA.
UPPER LOWER	42" DIA.
BOTTOM SECTION	8" DIA. PIPE 42" DIA.
BOTTOM SECTION	10" THRU 36" DIA. PIPE 48" DIA.
BOTTOM SECTION	42" DIA. PIPE 60" DIA.

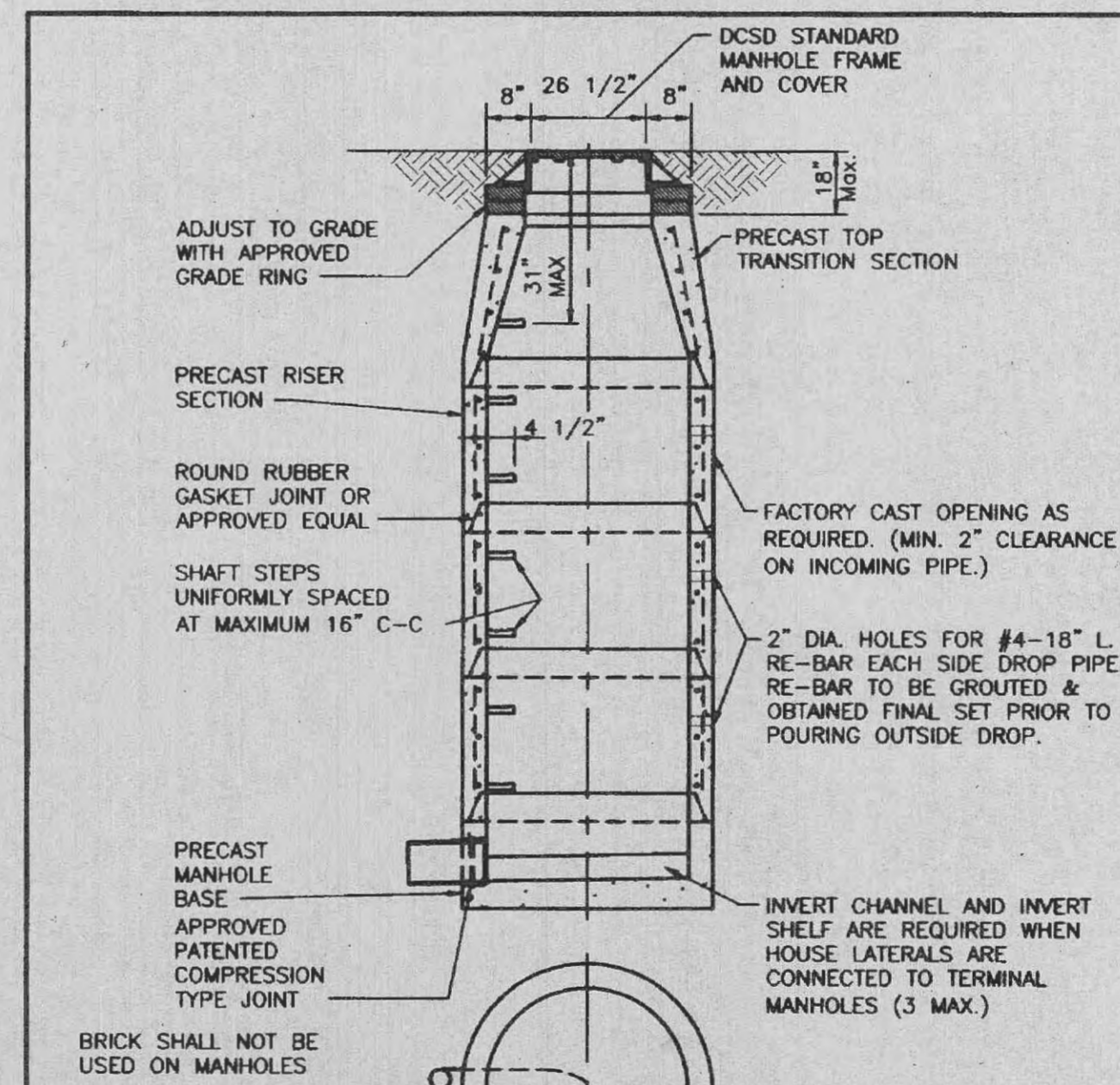
NOTE: ALL INVERTS SHALL HAVE POSITIVE DRAINAGE THROUGH MANHOLE.

SEE A.S.T.M. C-478 FOR MINIMUM STEEL REQUIREMENTS.

**Duckett Creek Sanitary District**

PRE-CAST CONCRETE MANHOLE FOR SEWERS 8" THROUGH 18"

Desig. By: BSM App. By: KLA Detail No. 7  
 Chg. By: MDOB Date: 12-30-99



SECTION OF MANHOLE	DIMENSION
TOP TRANSITION	26 1/2" DIA.
UPPER LOWER	42" DIA.
BOTTOM SECTION	8" DIA. PIPE 42" DIA.
BOTTOM SECTION	10" THRU 36" DIA. PIPE 48" DIA.
BOTTOM SECTION	42" DIA. PIPE 60" DIA.

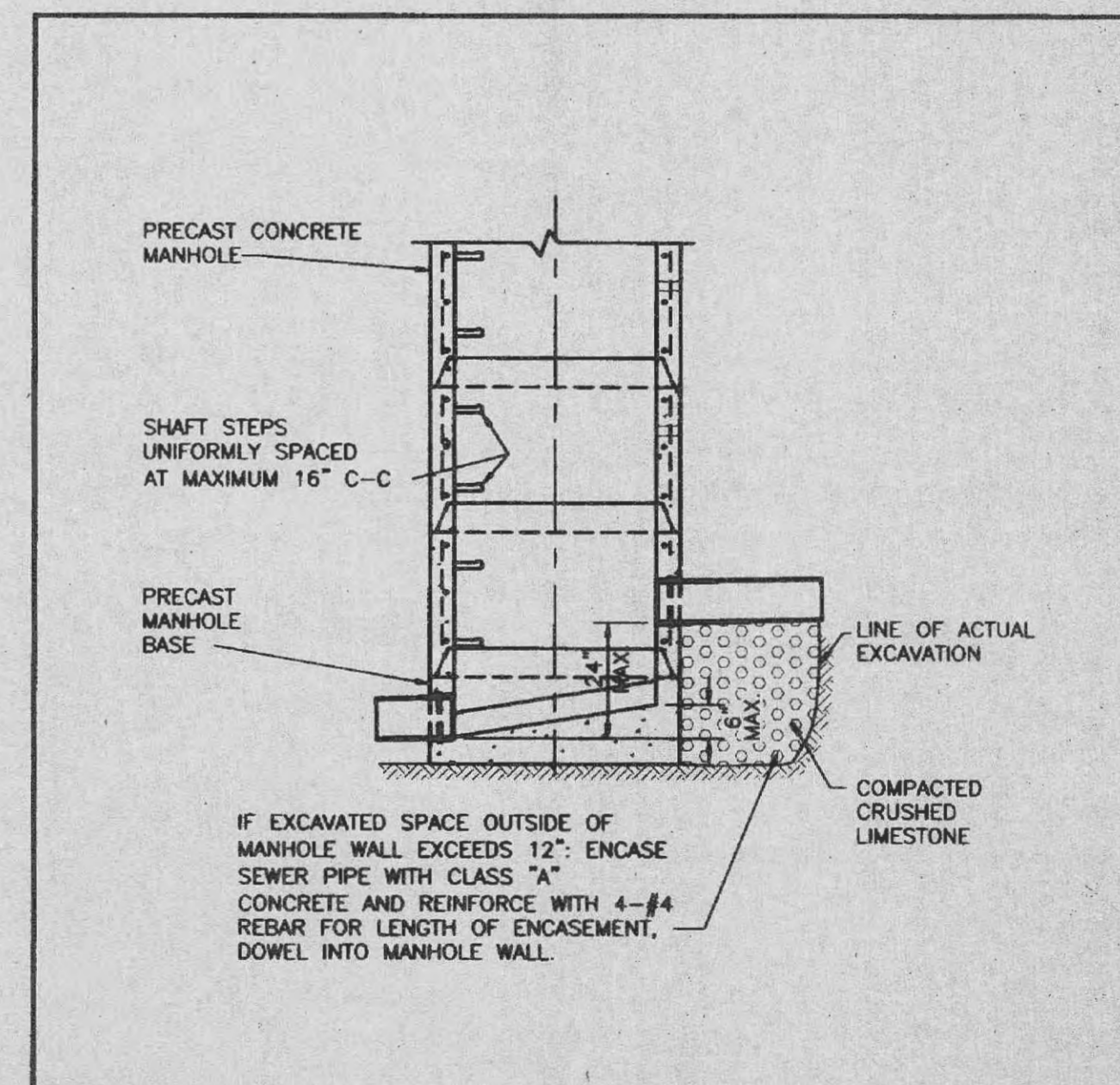
NOTE: ALL INVERTS SHALL HAVE POSITIVE DRAINAGE THROUGH MANHOLE.

SEE A.S.T.M. C-478 FOR MINIMUM STEEL REQUIREMENTS.

**Duckett Creek Sanitary District**

TERMINAL MANHOLE FOR SEWERS 8" THROUGH 18"

Desig. By: BSM App. By: KLA Detail No. 8  
 Chg. By: MDOB Date: 01-03-00



SECTION OF MANHOLE	DIMENSION
TOP TRANSITION	26 1/2" DIA.
UPPER LOWER	42" DIA.
BOTTOM SECTION	8" DIA. PIPE 42" DIA.
BOTTOM SECTION	10" THRU 36" DIA. PIPE 48" DIA.
BOTTOM SECTION	42" DIA. PIPE 60" DIA.

NOTE: ALL INVERTS SHALL HAVE POSITIVE DRAINAGE THROUGH MANHOLE.

SEE A.S.T.M. C-478 FOR MINIMUM STEEL REQUIREMENTS.

**Duckett Creek Sanitary District**

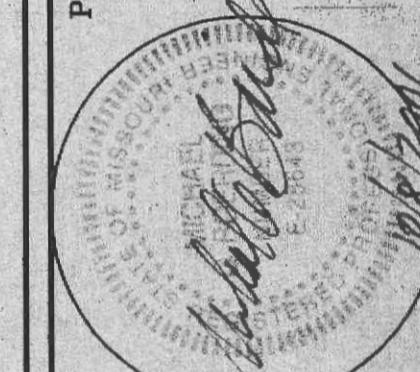
INSIDE FOULWATER DROP MANHOLE (SWEEP INVERT)

Desig. By: BSM App. By: KLA Detail No. 9  
 Chg. By: MDOB Date: 01-04-00

THE UNDERGROUND UTILITIES SHOWN HEREON WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMo.

ISSUE REMARKS/DATE

PREPARED FOR:  
**N & K HIGHWAYS, L.L.C.**  
 5091 NEW BAUMGARTNER ROAD  
 ST. LOUIS, MISSOURI 63129  
 (314) 487-6717



PREPARED BY:  
**THE STERLING CO.**  
 ENGINEERS & SURVEYORS  
 5055 NEW BAUMGARTNER ROAD  
 ST. LOUIS, MISSOURI 63129  
 (314) 777-7777  
 E-Mail: Sterling@sterling-eng-sur.com

DRAWN: DESIGNED: CHECKED:  
**SPRING ORCHARD**  
 SHEET TITLE: DCSD DETAILS

PROJECT: NO. 01 01 008  
 M.S.D. SHEET P/N/A CD5  
 DIGITAL FILE LOCATION: S:\P\N\STERLING-2\CD5.dwg  
 DATE: 01/04/00