

FREQUENCY  
CHART IN  
YEARS

FIGURE 1

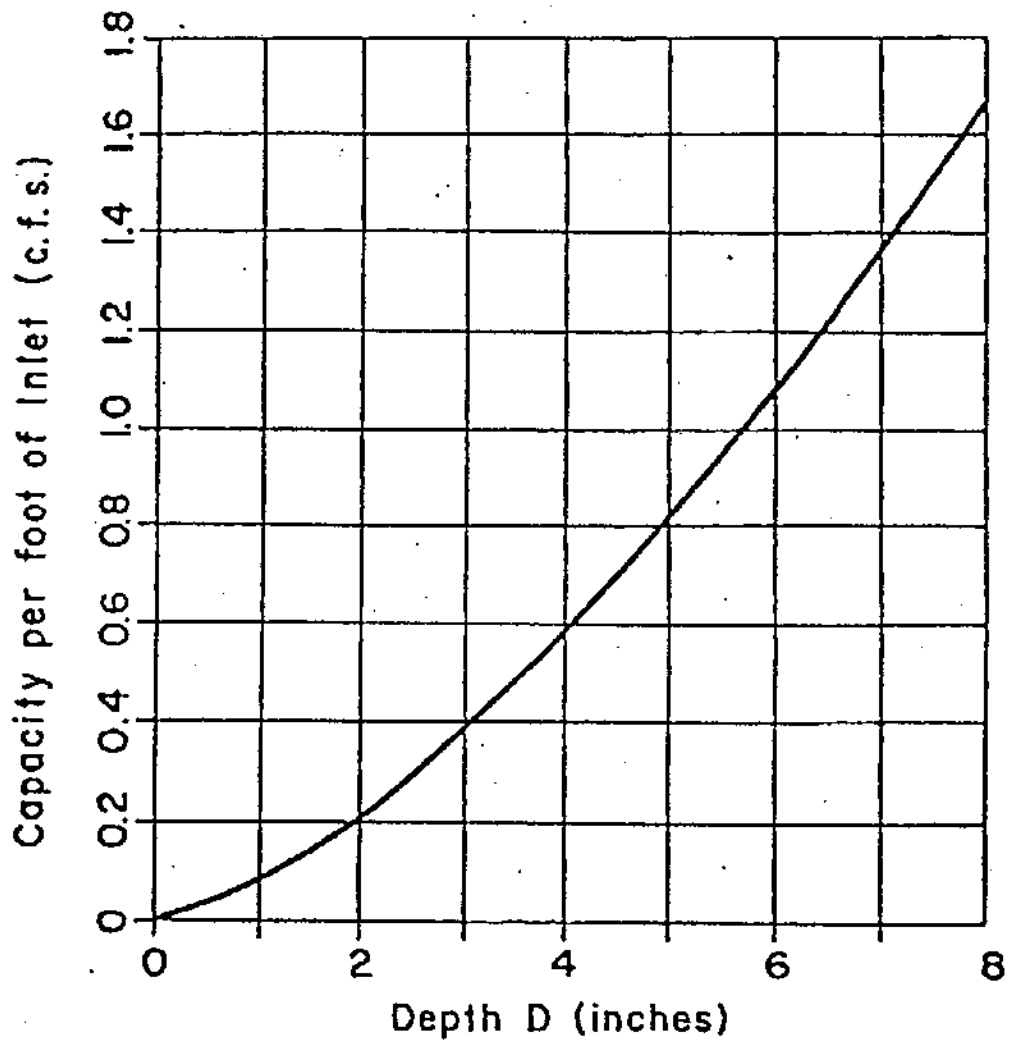
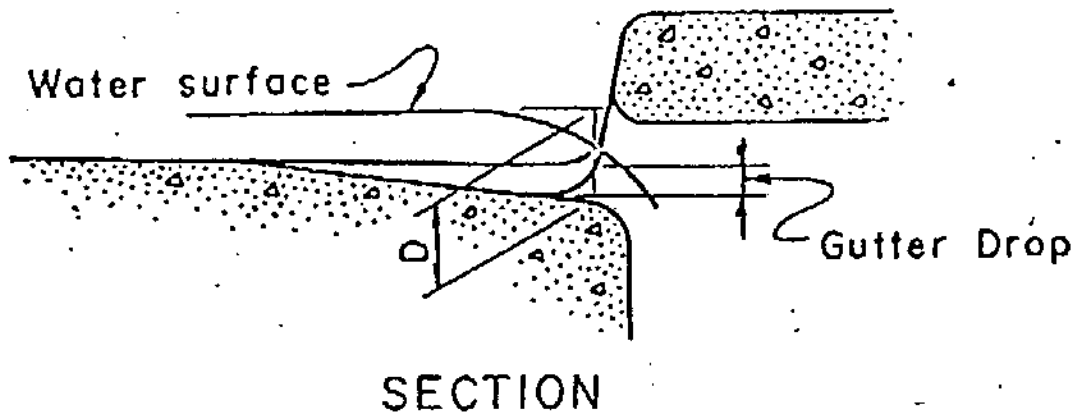
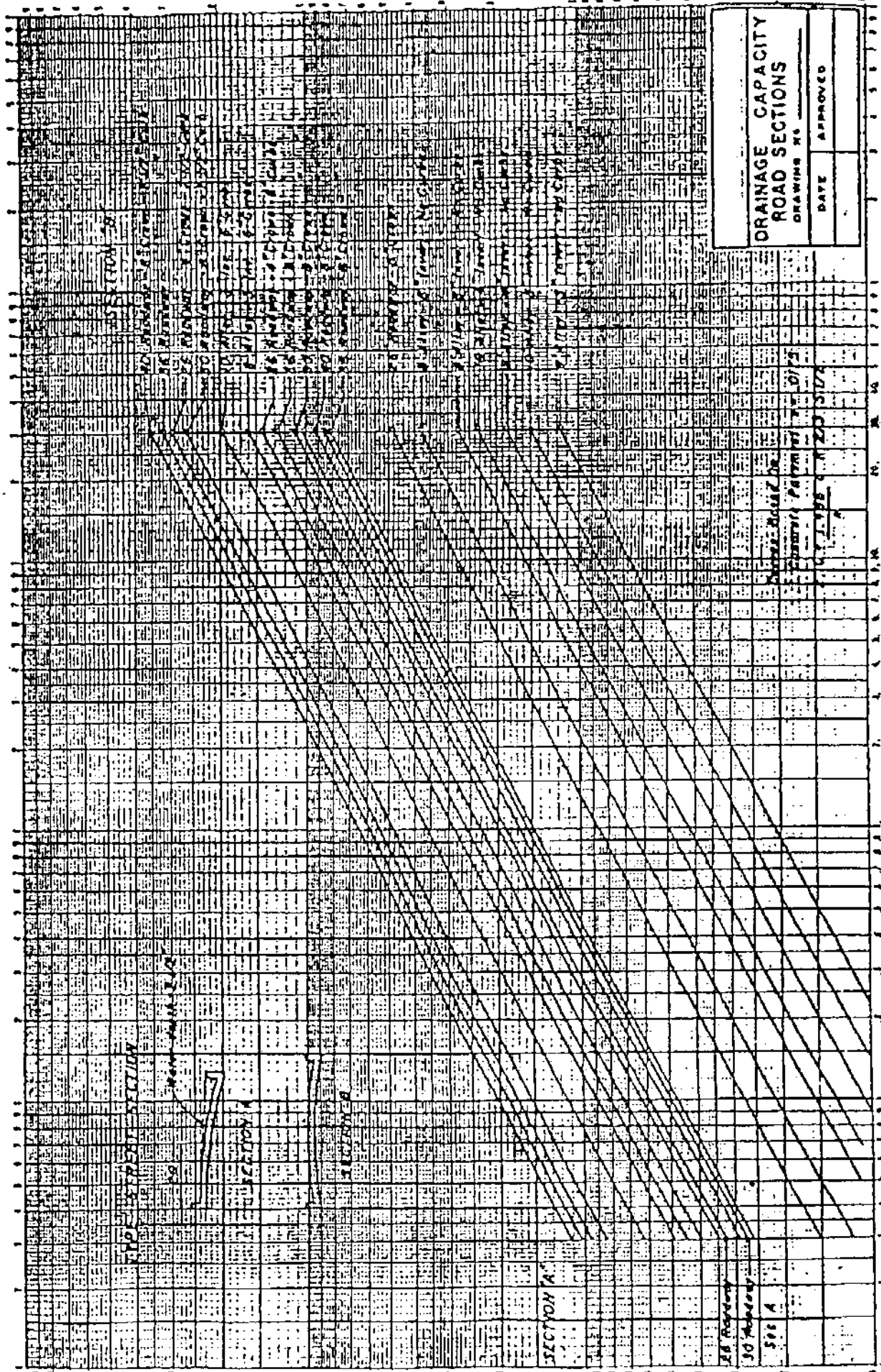


FIGURE 2

INLET CAPACITY  
FOR  
LOW POINT INLETS



**DRAINAGE CAPACITY  
ROAD SECTIONS**  
DRAWING NO. \_\_\_\_\_  
DATE \_\_\_\_\_ APPROVED \_\_\_\_\_

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10000

**FIGURE 3**

# STORM DRAINAGE

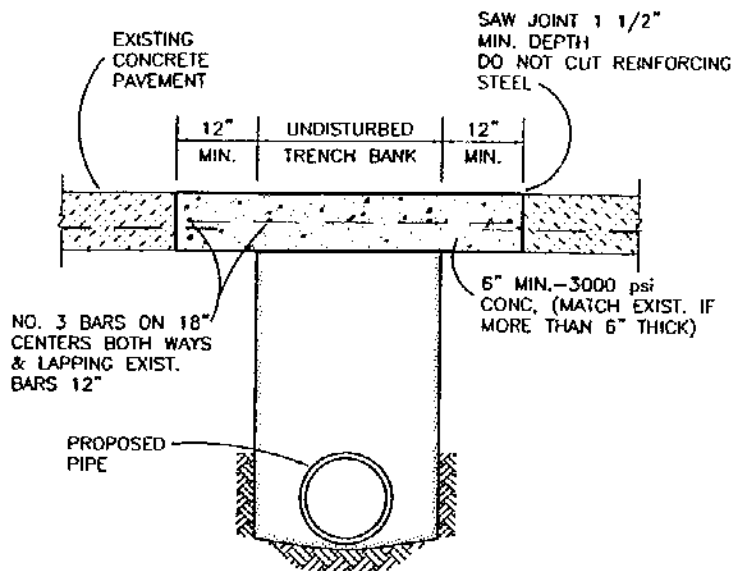
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## GENERAL NOTES

1. ALL MATERIALS AND PRACTICES SHALL BE AS SPECIFIED IN THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (WITH MOST RECENT AMENDMENTS).
2. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE PIPE.
3. STORM SEWER PIPES SHALL BE MINIMUM 18" DIAMETER.
4. ALL STORM SEWER TO BE T.V. INSPECTED AFTER INSTALLATION.

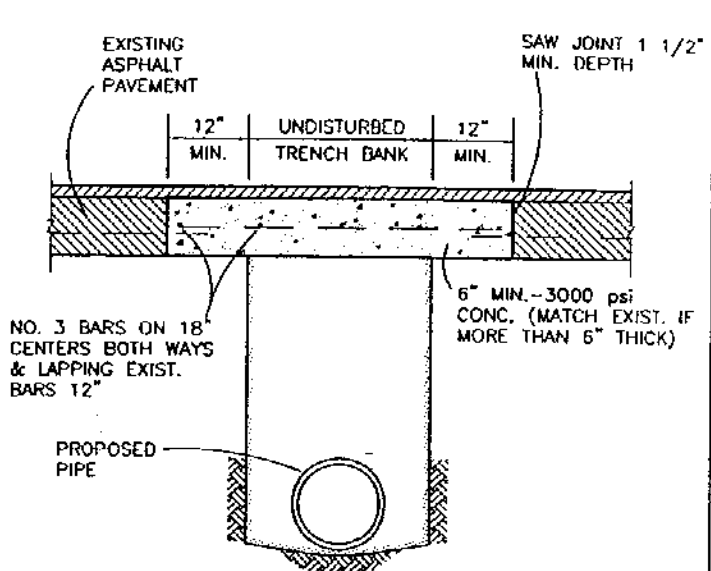
	<b>GENERAL NOTES:</b>  <b>STORM DRAINAGE</b>	<b>STANDARD CONSTRUCTION DETAILS</b> <b>STORM DRAINAGE</b>	
		<b>DATE:</b> 1999	<b>SHEET:</b> SD-D01



SEE EMBEDMENT FOR TYPE OF PIPE

CONCRETE STREET  
OR DRIVEWAY REPAIR

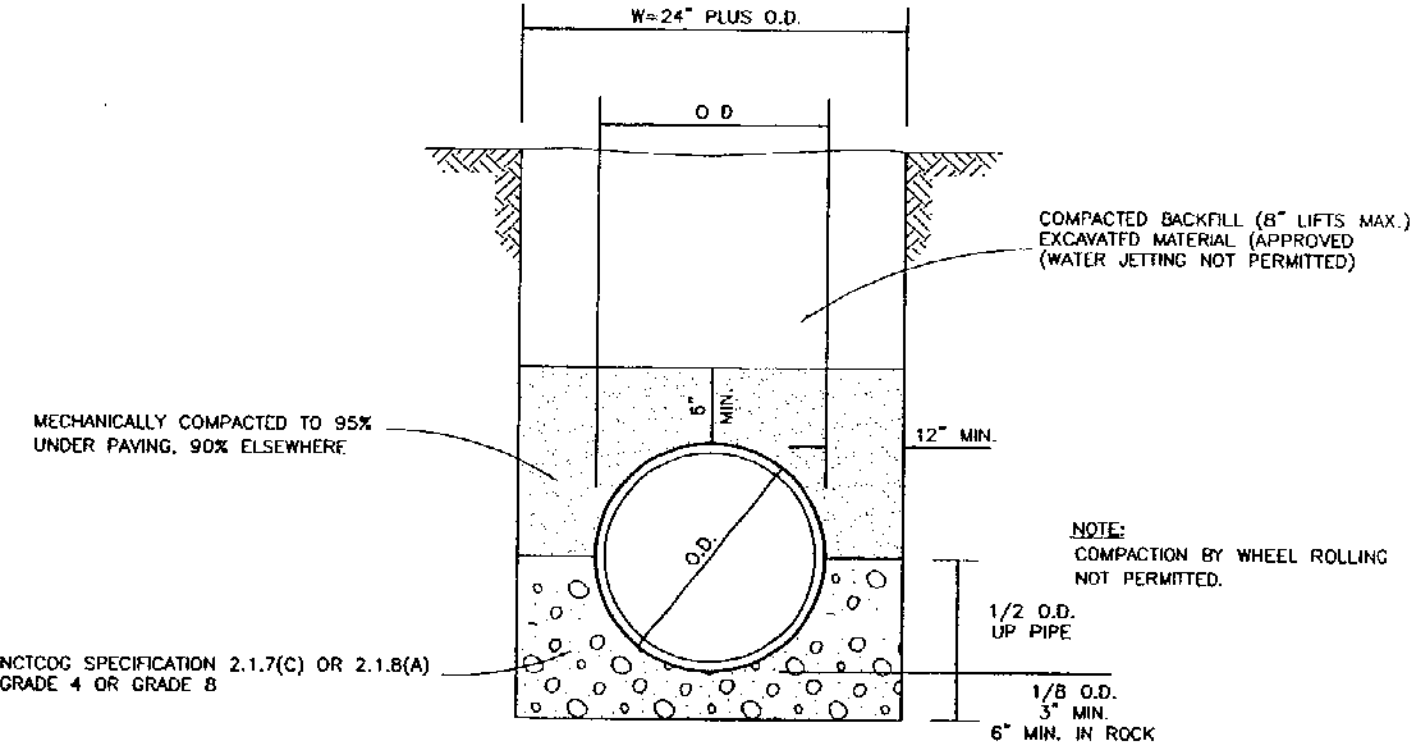
N.T.S.



SEE EMBEDMENT FOR TYPE OF PIPE

ASPHALT STREET  
OR DRIVEWAY REPAIR

N.T.S.

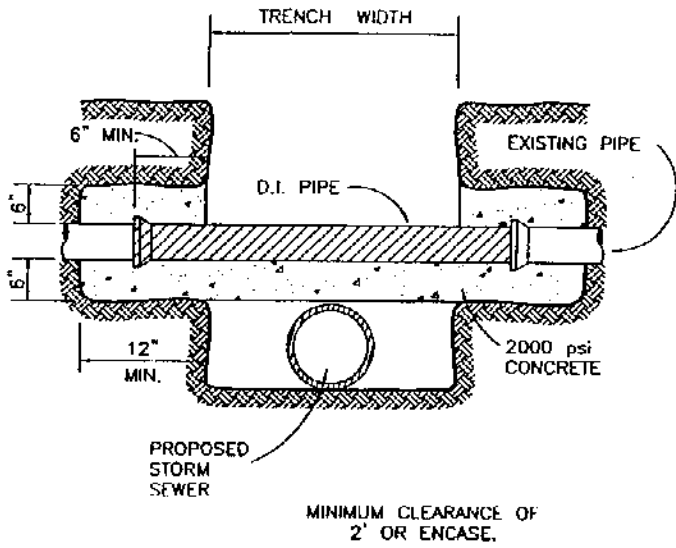


STORM SEWER PIPE BEDDING

N.T.S.

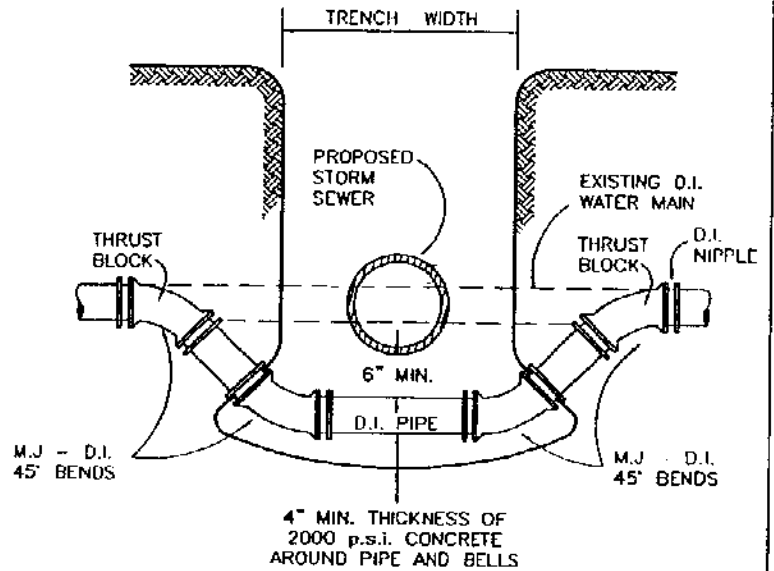
NOTE :  
DEPTH OF TRENCH BELOW PIPE  
3" MIN. FOR 27" PIPE & SMALLER  
4" MIN. FOR 30" TO 60" PIPE  
6" MIN. FOR 66" PIPE & LARGER

CONCRETE STREET REPAIR ASPHALT STREET REPAIR PIPE BEDDING	STANDARD CONSTRUCTION DETAILS STORM DRAINAGE	
	DATE: 1999	SHEET: SD-D02



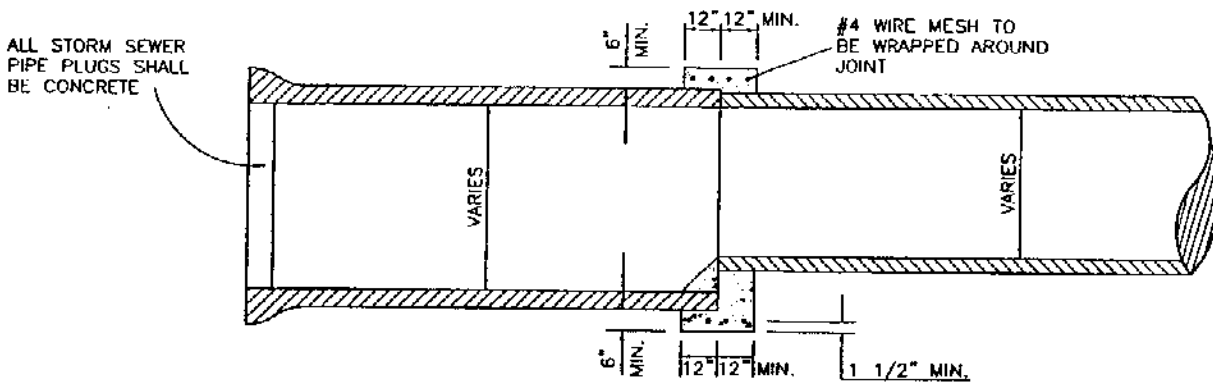
DETAIL OF UTILITY SUPPORT

N.T.S.



DETAIL FOR WATER MAIN LOWERING

N.T.S.



DETAIL OF CONCRETE COLLAR FOR PIPE CONNECTIONS

N.T.S.

UTILITY SUPPORT  
WATER MAIN LOWERING  
CONCRETE COLLAR

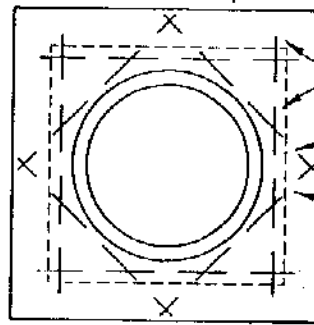
STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

DATE:  
1999

SHEET:  
SD-D03

NOTE :  
 FRAME AND COVER SHALL BE  
 BASS & HAYES PATTERN NO. 380-24  
 OR EQUAL AND SHALL BE GRAY  
 CAST IRON CONFORMING TO ASTM  
 SPEC. A-48 FOR CLASS 30  
 IRON.

PROVIDE 3/4" PREMOLDED EXPANSION  
 JOINT BETWEEN MANHOLE AND CONCRETE  
 PAVEMENT AND SEAL WITH HOT POURED  
 RUBBER.



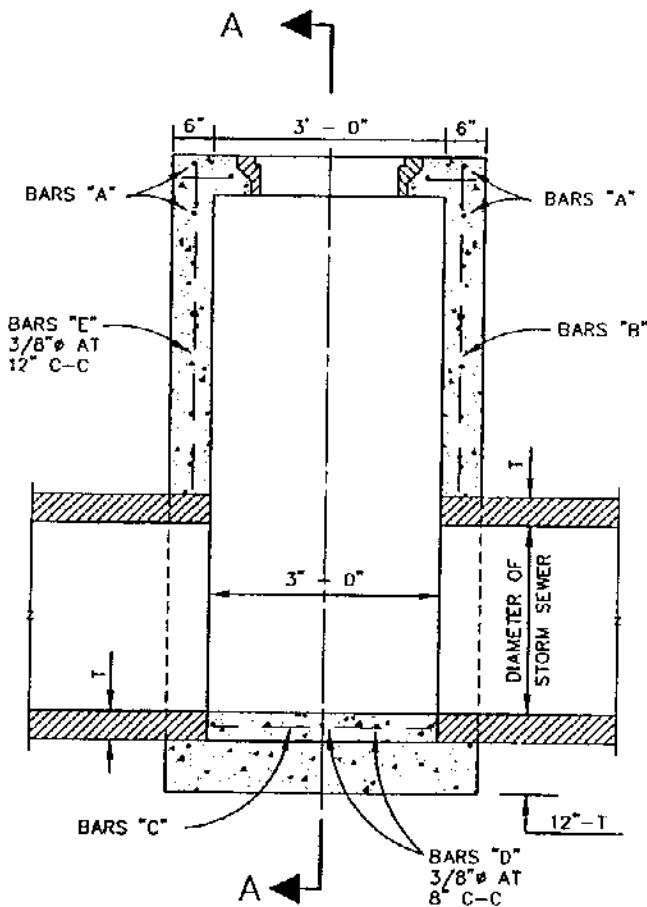
BARS "A" - 3/8"φ  
 SPACED AS SHOWN

BARS "J" - 3/8"φ  
 SPACED AS SHOWN

TOP PLAN  
 TYPE A & TYPE B  
 STORM SEWER MANHOLE

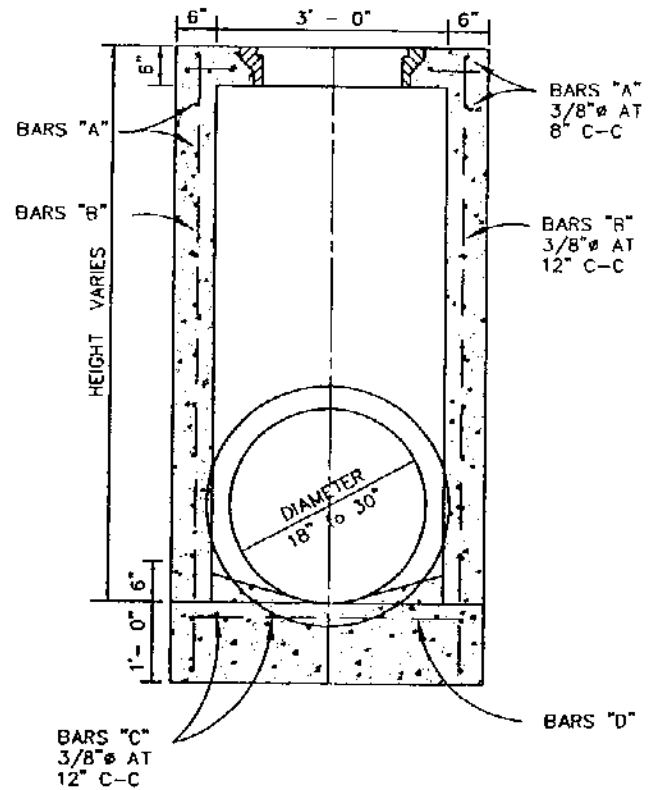
NOTE : MAXIMUM PIPE SIZE  
 TO BE USED 78"φ

N.T.S.



ELEVATION

N.T.S.



SECTION A-A

N.T.S.

TYPE A STORM SEWER MANHOLE

STANDARD CONSTRUCTION DETAILS  
 STORM DRAINAGE

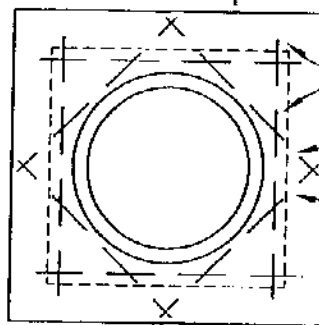
DATE:  
 1999

SHEET:  
 SD-D04



NOTE :  
 FRAME AND COVER SHALL BE  
 BASS & HAYES PATTERN NO. 380-24  
 OR EQUAL AND SHALL BE GRAY  
 CAST IRON CONFORMING TO ASTM  
 SPEC. A-48 FOR CLASS 30 CAST  
 IRON.

PROVIDE 3/4" PREMOLDED EXPANSION  
 JOINT BETWEEN MANHOLE AND CONCRETE  
 PAVEMENT AND SEAL WITH HOT POURED  
 RUBBER.

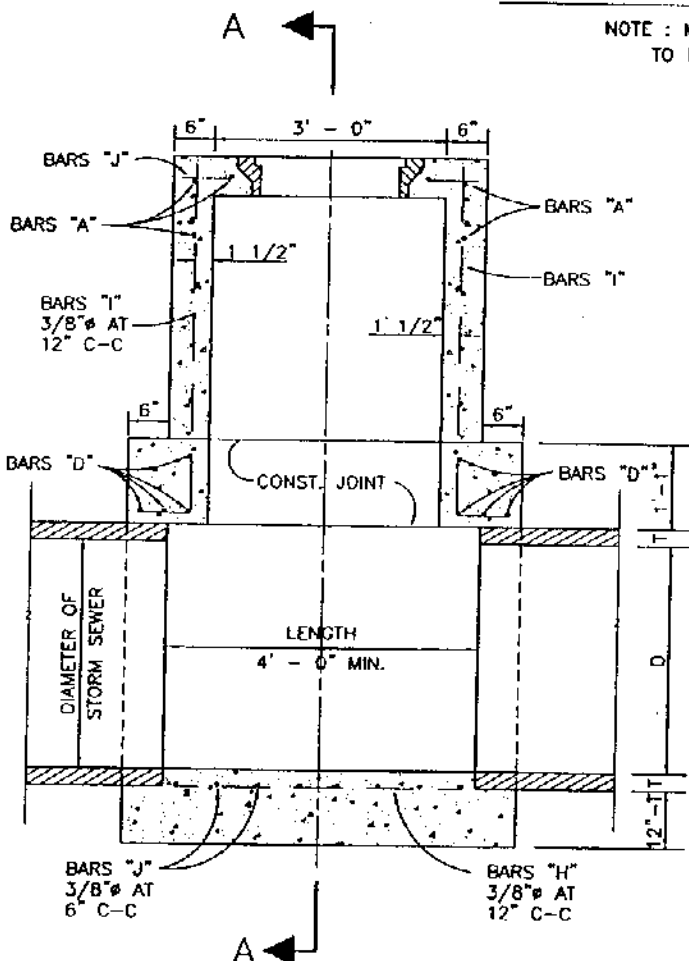


BARS "A" - 3/8"φ  
 SPACED AS SHOWN

BARS "J" - 3/8"φ  
 SPACED AS SHOWN

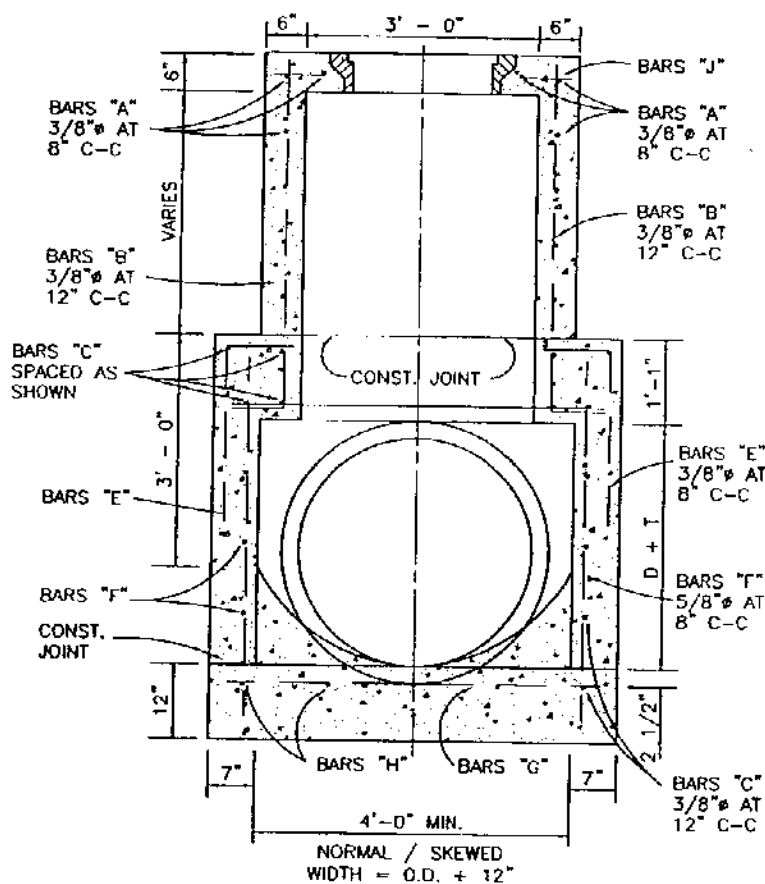
### TOP PLAN TYPE A & TYPE B STORM SEWER MANHOLE

NOTE : MAXIMUM PIPE SIZE  
 TO BE USED 78"φ  
 N.T.S.



### ELEVATION

N.T.S.



### SECTION A-A

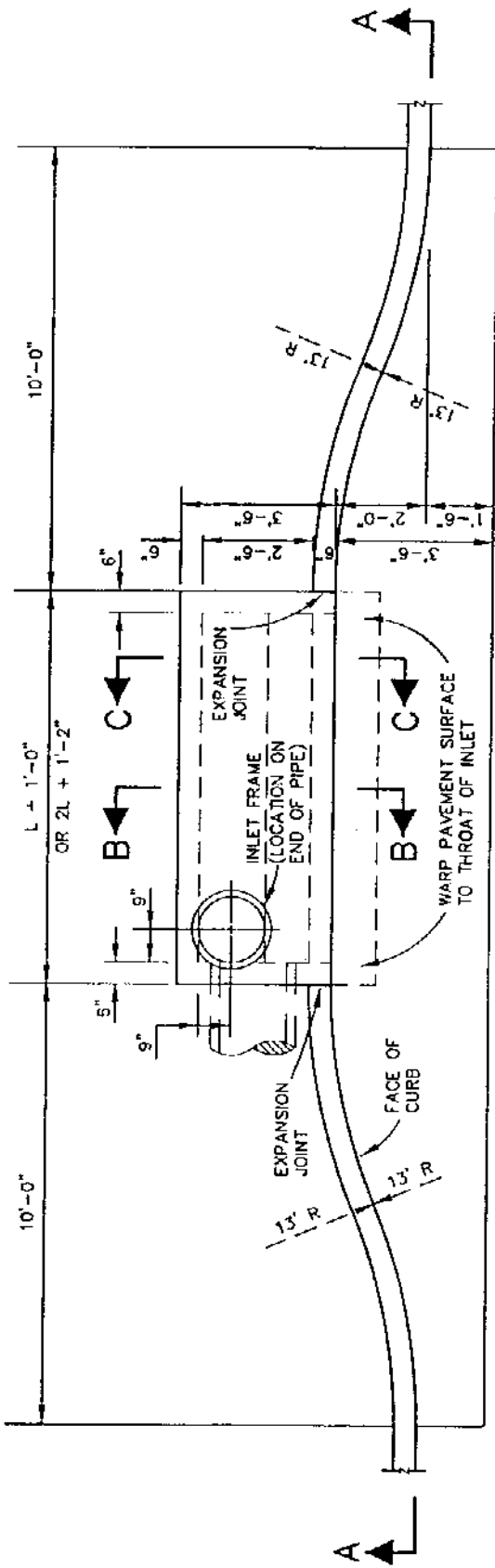
N.T.S.

STANDARD CONSTRUCTION DETAILS  
 STORM DRAINAGE

TYPE B STORM SEWER MANHOLE

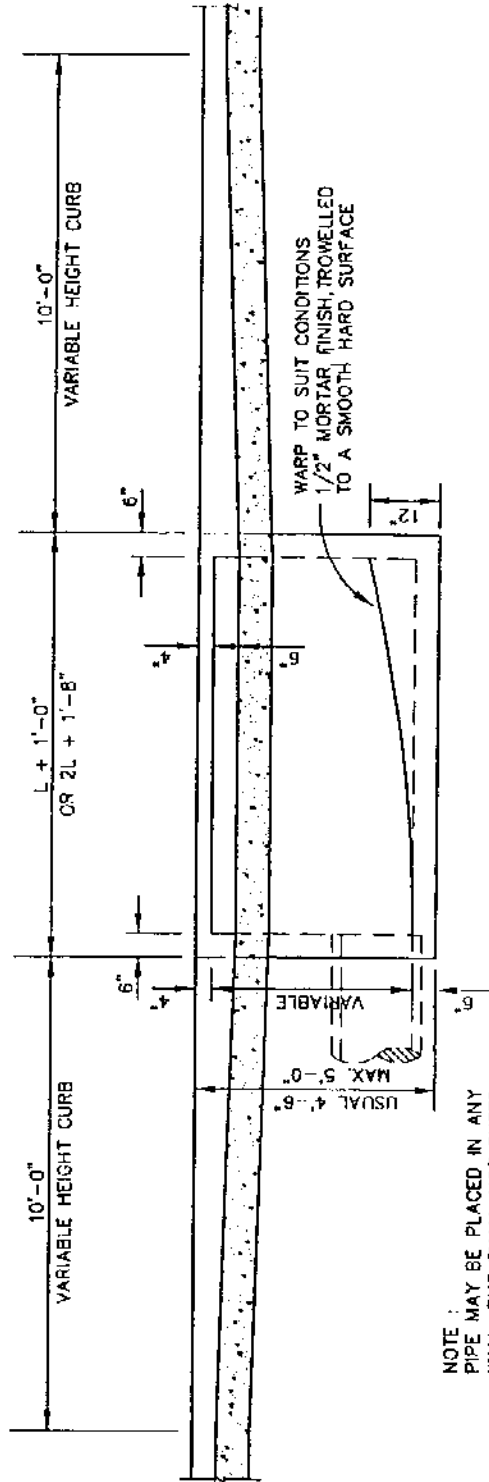
DATE:  
 1999

SHEET:  
 SD-005



PLAN - RECESSED INLET

N.T.S.



SECTION A-A

N.T.S.

NOTE: #3 BAR 18" O.C.E.W. IN BLOCK OUT DRILLED INTO EXISTING CONCRETE.

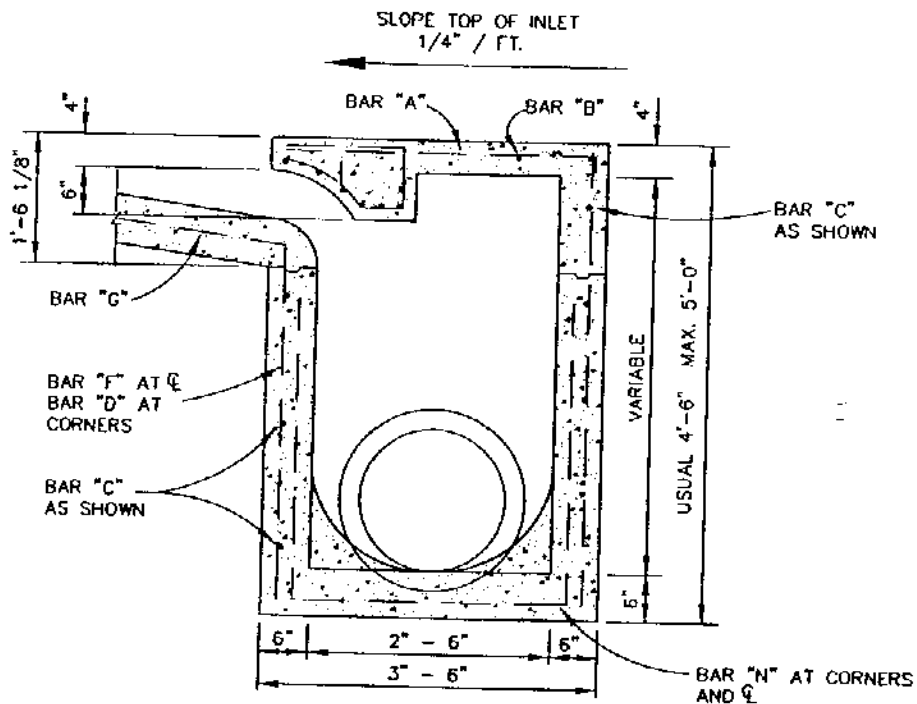
NOTE: PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.

RECESSED CURB INLET  
4,6,8 and 10 FOOT INLETS

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

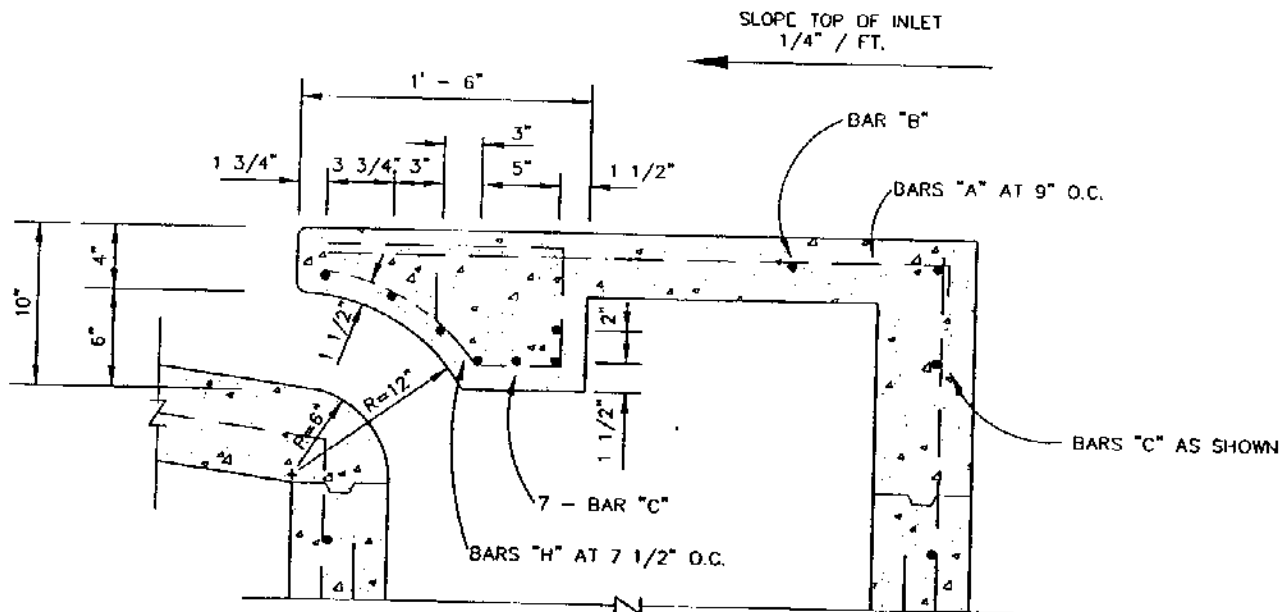
DATE:  
1999

SHEET:  
SD-D06



**SECTION B-B**

N.T.S.



**SECTION C-C**

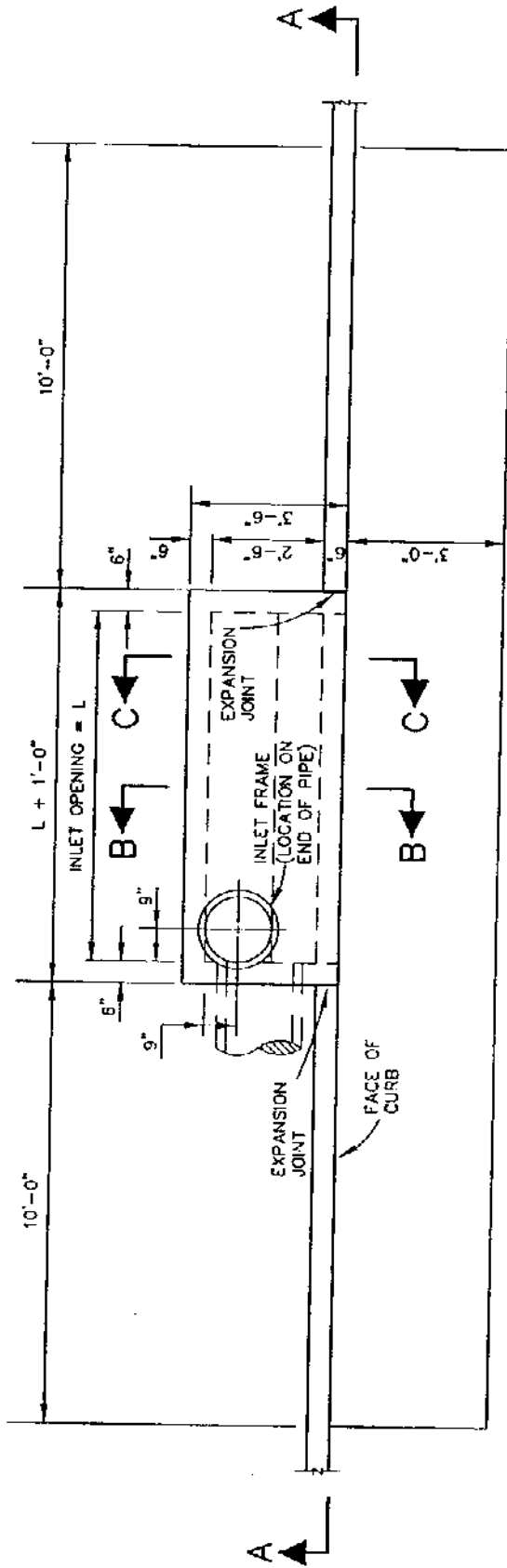
N.T.S.

RECESSED CURB INLET  
4, 6, 8 & 10 FOOT INLETS

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

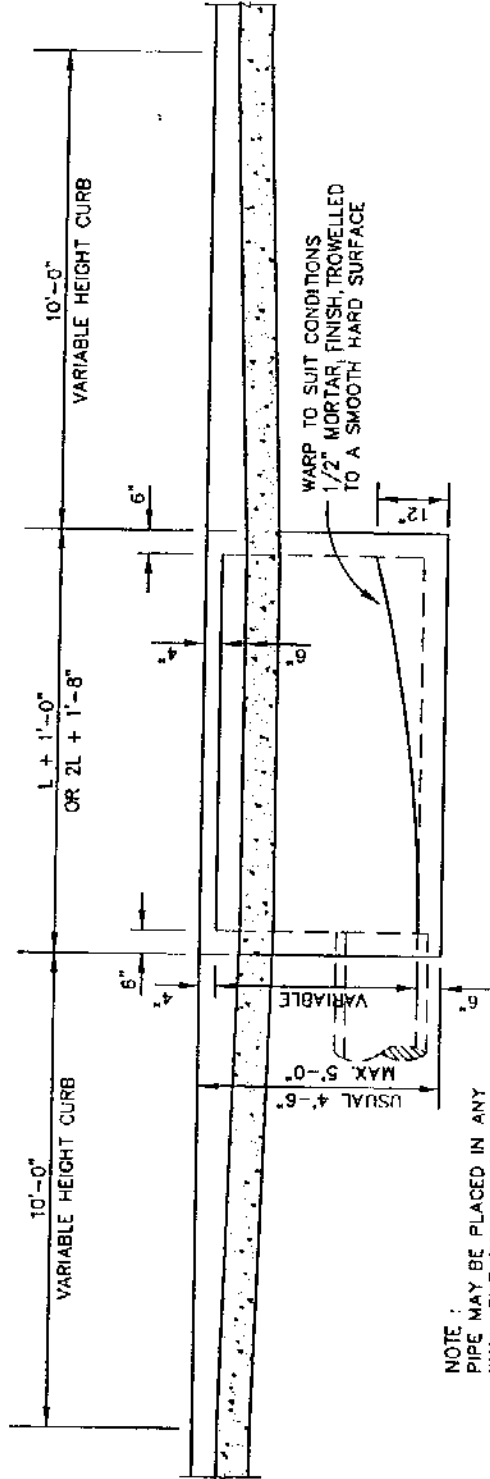
DATE:  
1999

SHEET:  
SD-D07



PLAN - STANDARD INLET

N.T.S.



SECTION A-A

N.T.S.

NOTE: #3 BAR 18" O.C.E.W. IN BLOCK CUT DRILLED INTO EXISTING CONCRETE.

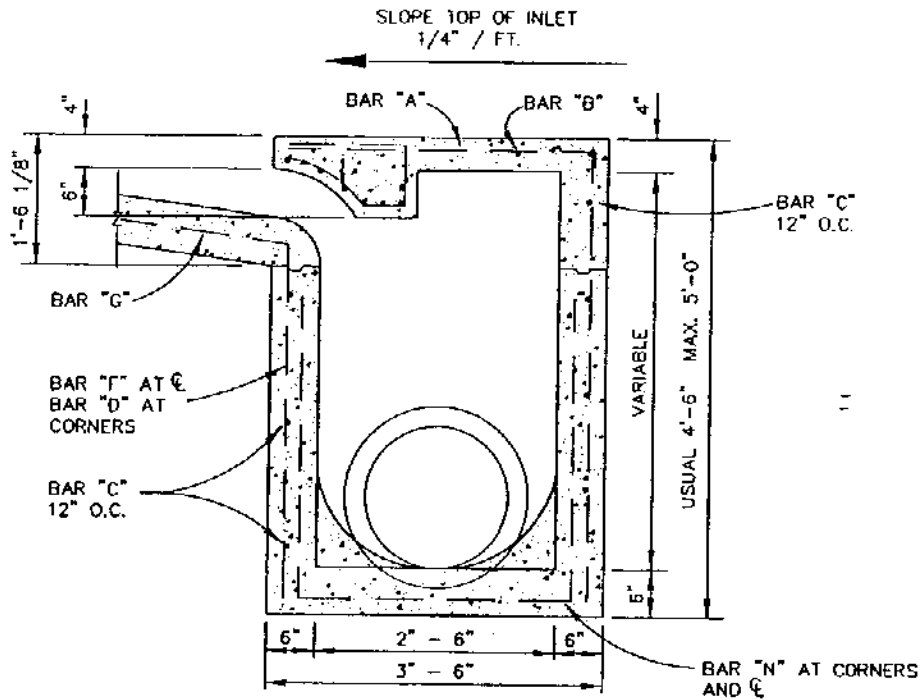
NOTE: PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.

STANDARD CURB INLET  
4,6,8 and 10 FOOT INLETS

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

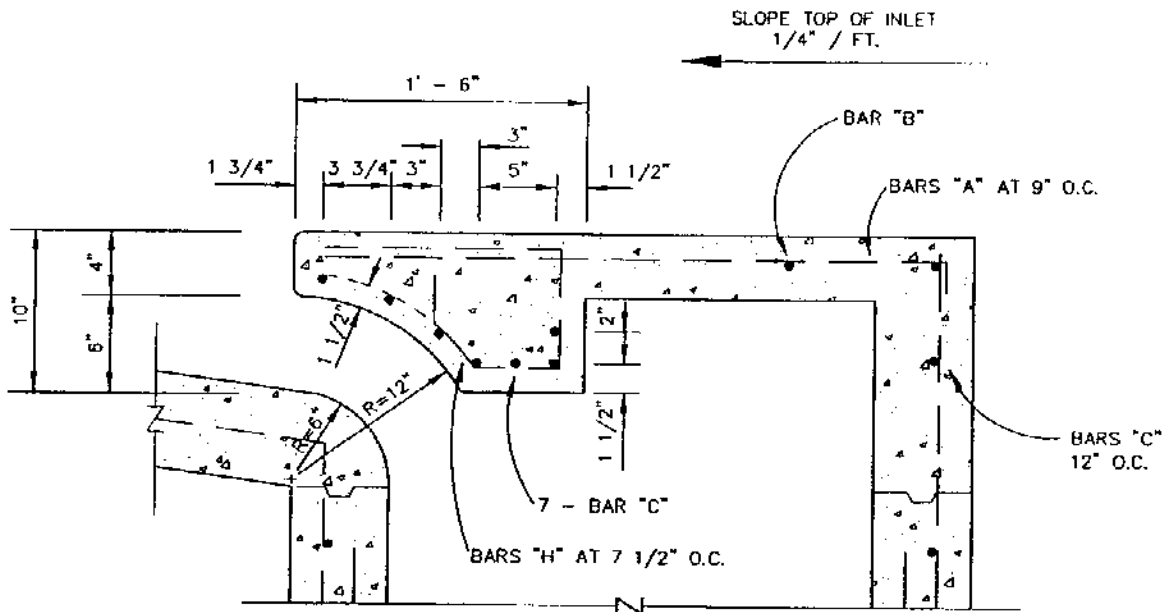
DATE:  
1999

SHEET:  
SD-008



**SECTION B-B**

N.T.S.



**SECTION C-C**

N.T.S.

STANDARD CURB INLET  
4,6,8 & 10 FOOT INLETS

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

DATE:  
1999

SHEET:  
SD-D09

## REINFORCING STEEL SCHEDULE

DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLET

INLET LENGTH	BAR TYPE	BAR DIA. (1/8")	NO. REQ'D.	BAR DIMENSIONS		
				A	B	C
4'	A	3	6	3'-2"	0'-3"	-
	B	3	1	2'-10"	-	-
	C	4	15	4'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	3	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
6'	A	3	9	3'-2"	0'-3"	-
	B	3	1	4'-10"	-	-
	C	4	15	6'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	3	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
8'	A	3	12	3'-2"	0'-3"	-
	B	3	1	6'-10"	-	-
	C	4	15	8'-8"	0'-6"	-
	D	4	5	4'-8"	-	-
	F	4	1	3'-2"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	4	*	*	*
	N	3	3	3'-2"	3'-2"	3'-2"
8'	A	3	10	3'-2"	0'-3"	-
	B	3	2	8'-10"	-	-
	C	4	16	10'-8"	0'-6"	-
	D	4	4	4'-8"	-	-
	E	5	6	10'-8"	-	-
	G	3	5	2'-0"	1'-3"	-
	H	3	15	*	*	*
	I	4	8	4'-8"	3'-2"	3'-2"
	L	4	5	4'-3"	-	-

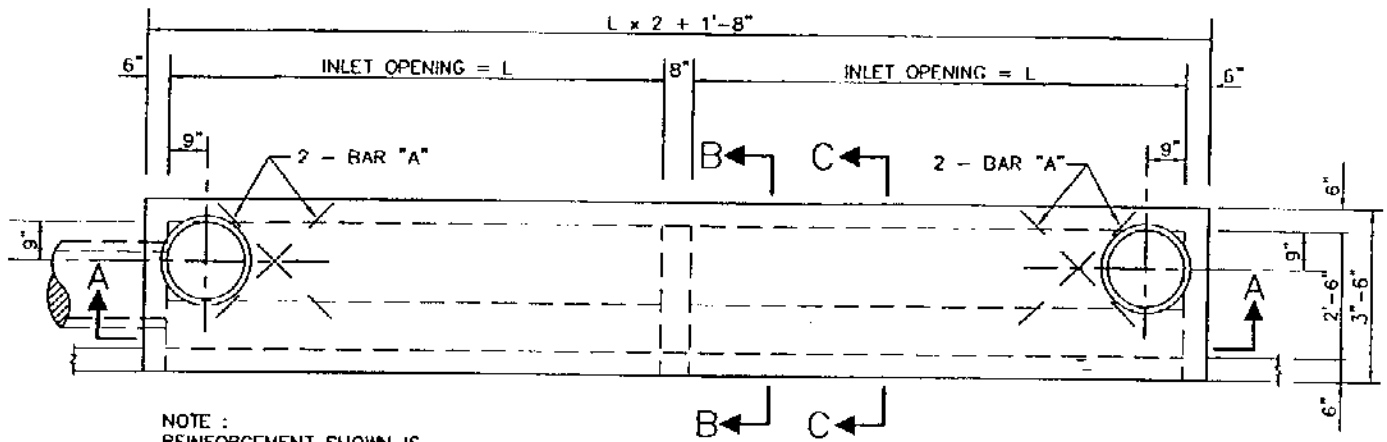
\* SEE DIAGRAM FOR DIMENSIONS

REINFORCING STEEL SCHEDULE  
4, 6, 8, & 10 FOOT INLETS

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

DATE:  
1999

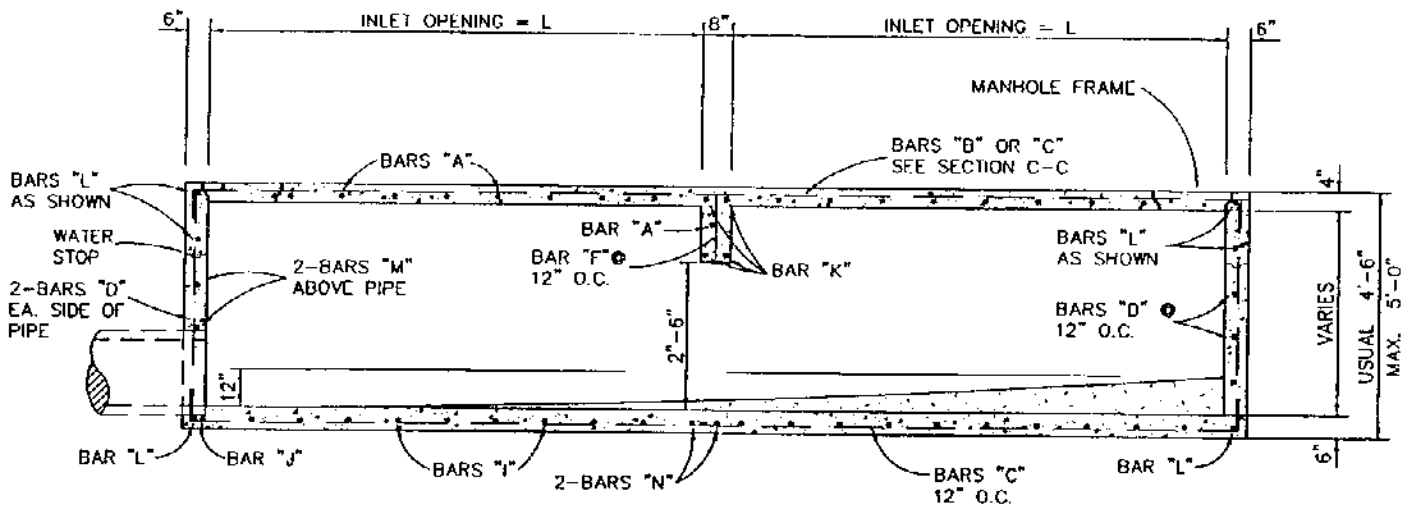
SHEET:  
SD-D10



NOTE :  
 REINFORCEMENT SHOWN IS  
 ADDITIONAL FOR SPECIAL  
 CONDITION, FOR REMAINDER  
 OF REINFORCEMENT SEE  
 SECTIONS.

PLAN

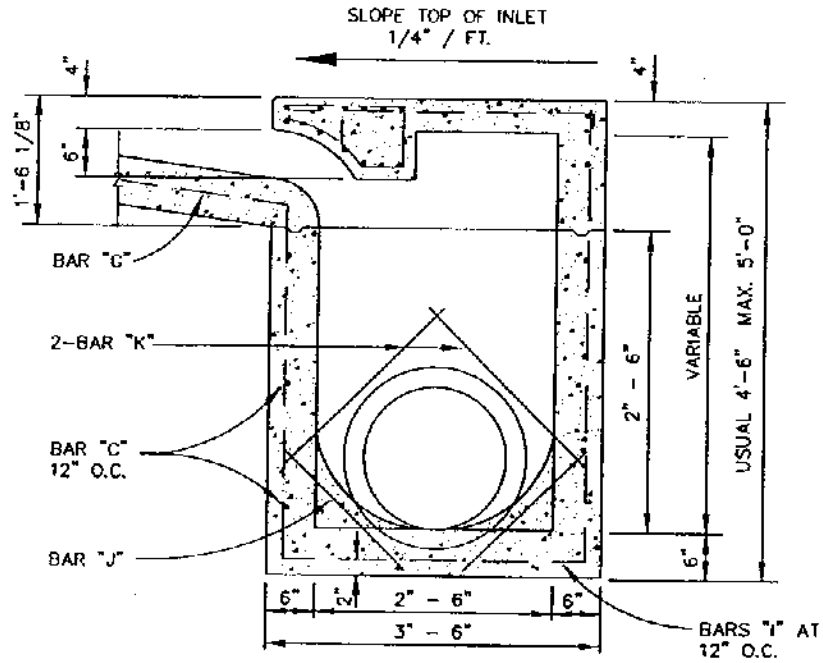
N.T.S.



SECTION A-A

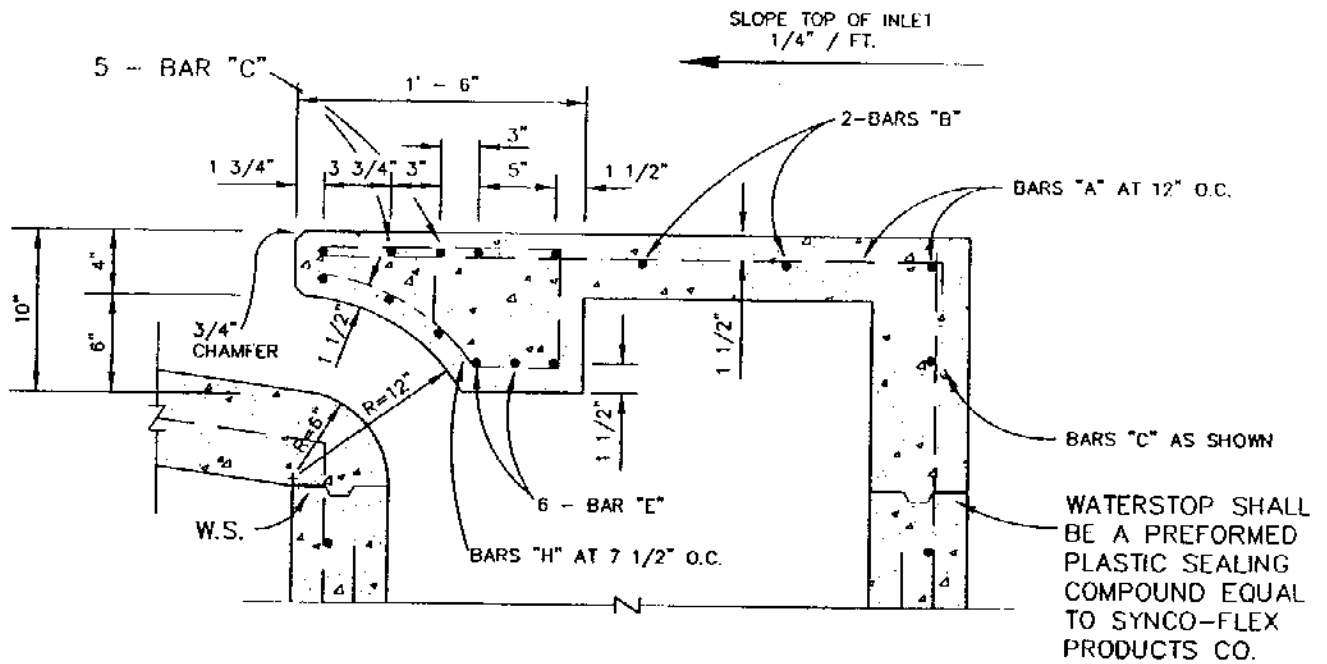
N.T.S.

	12, 14, 16 AND 20 FOOT INLETS	STANDARD CONSTRUCTION DETAILS STORM DRAINAGE	
		DATE: 1999	SHEET: SD-011



**SECTION B-B**

N.T.S.



**SECTION C-C**

N.T.S.

CURB INLETS  
12, 14, 16, AND 20 FOOT INLETS

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

DATE:  
1999

SHEET:  
SD-D12



# REINFORCING STEEL SCHEDULE

DIMENSIONS ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA. (1/8")	NO. REQD.	BAR DIMENSIONS			INLET LENGTH	BAR TYPE	BAR DIA. (1/8")	NO. REQD.	BAR DIMENSIONS		
				A	B	C					A	B	C
6'	A	3	15	3'-2"	0'-6"	-	8'	A	3	19	3'-2"	0'-6"	C
	B	3	2	11'-6"	-	-		B	3	2	15'-6"	-	-
	C	4	16	13'-4"	0'-6"	-		C	4	16	17'-4"	0'-6"	-
	D	4	9	4'-8"	-	-		D	4	9	4'-8"	-	-
	E	5	6	13'-4"	-	-		E	5	6	17'-4"	-	-
	F	4	5	1'-2"	-	-		F	4	5	1'-2"	-	-
	G	3	12	2'-0"	1'-3"	-		G	3	12	2'-0"	1'-3"	-
	H	3	26	"	"	"		H	3	26	"	"	"
	I	4	12	4'-8"	3'-2"	3'-2"		I	4	16	4'-8"	3'-2"	3'-2"
	J	5	1	"	"	"		J	5	1	"	"	"
	K	5	6	3'-2"	0'-6"	-		K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-		L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"***	-	-		M	4	2	3'-0"***	-	-
	N	4	2	4'-8"	3'-2"	4'-8"		N	4	2	4'-8"	3'-2"	4'-8"
	A	3	17	3'-2"	0'-6"	-	10'	A	3	23	3'-2"	0'-6"	-
	B	3	2	13'-6"	-	-		B	3	2	19'-6"	-	-
C	4	16	15'-4"	0'-6"	-		C	4	15	21'-4"	0'-6"	-	
D	4	9	4'-8"	-	-		D	4	9	4'-8"	-	-	
E	5	6	15'-4"	-	-		E	5	6	21'-4"	-	-	
F	4	5	1'-2"	-	-		F	4	5	1'-2"	-	-	
G	3	15	2'-0"	1'-3"	-		G	3	15	2'-0"	1'-3"	-	
H	3	32	"	"	"		H	3	32	"	"	"	
I	4	14	4'-8"	3'-2"	3'-2"		I	4	20	4'-8"	3'-2"	3'-2"	
J	5	1	"	"	"		J	5	1	"	"	"	
K	5	6	3'-2"	0'-6"	-		K	5	6	3'-2"	0'-6"	-	
L	4	11	3'-2"	0'-6"	-		L	4	11	3'-2"	0'-6"	-	
M	4	2	3'-0"***	-	-		M	4	2	3'-0"***	-	-	
N	4	2	4'-8"	3'-2"	4'-8"		N	4	2	4'-8"	3'-2"	4'-8"	

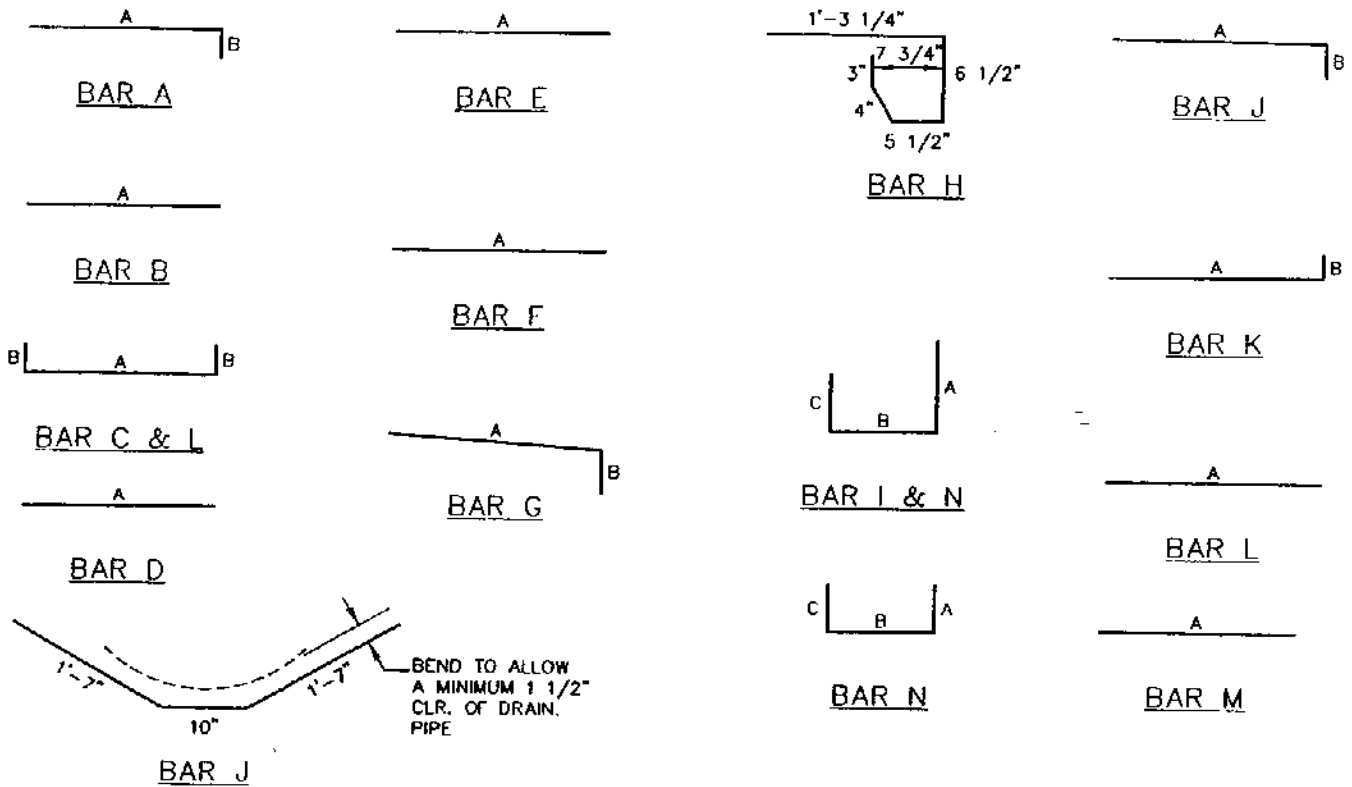
• SEE DIAGRAM FOR DIMENSION  
 \*\* FIELDS CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE

## REINFORCING STEEL SCHEDULE 12, 14, 16, & 20 FOOT INLETS

STANDARD CONSTRUCTION DETAILS  
 STORM DRAINAGE

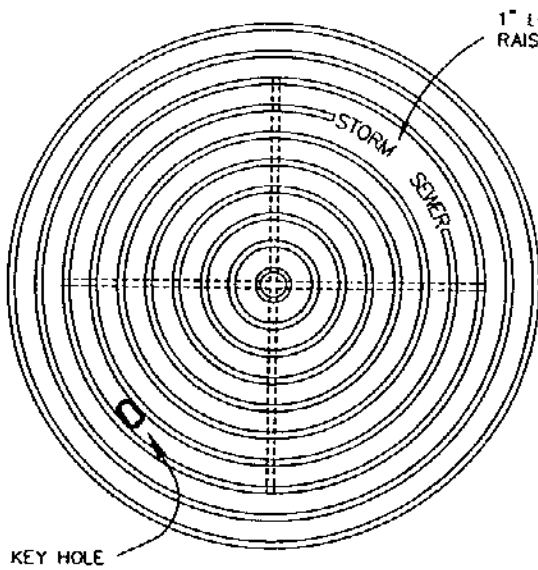
DATE:  
 1999

SHEET:  
 SD-013

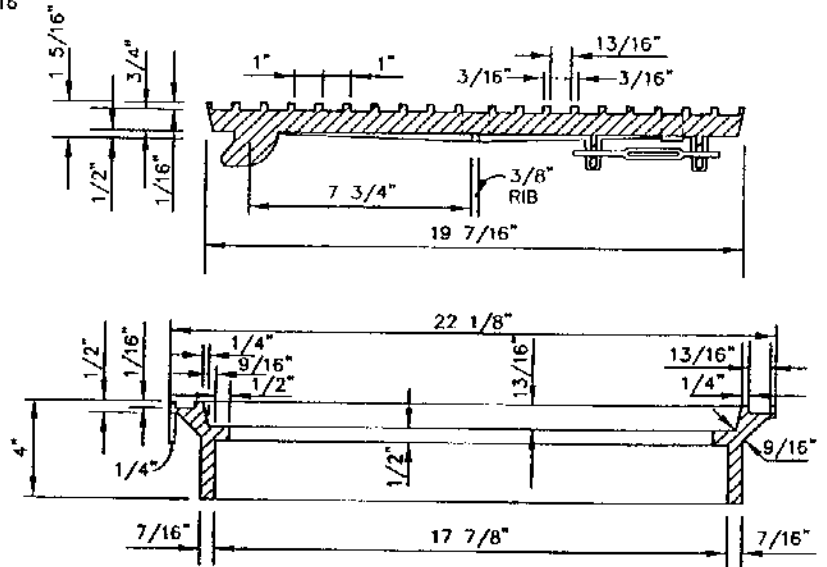


### BAR DIAGRAMS

N.T.S.



PLAN OF FRAME



SECTION OF FRAME AND COVER

### INLET FRAME AND COVER

N.T.S.

BAR DIAGRAMS  
INLET FRAME & COVER

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

DATE:  
1999

SHEET:  
SD-D14

1/2" DOWEL 12" LONG TO BE INSERTED IN HOLES PROVIDED.

BOTTOM OF THROAT AND GUTTER TO BE POURED BY INLET CONTRACTOR AFTER STREET PAVING.

GROUT AROUND PIPE AFTER INSTALLING

NOTE :  
PRECAST INLETS MUST BE APPROVED BY CITY ENGINEER.

POUR INVERT IN BOTTOM OF INLET AFTER INSTALLING PIPE

NOTE:

PIPES SHALL CONNECT TO THE SIDES OF INLETS. CONNECTION NOT TO BE MADE AT CORNERS OR BOTTOM.

SEE PRECAST INLET NOTES THIS SHEET

## INSTALLATION DRAWING FOR PRECAST 5' AND 10' CURB INLETS

N.I.S.

### NOTES FOR PRECAST INLET :

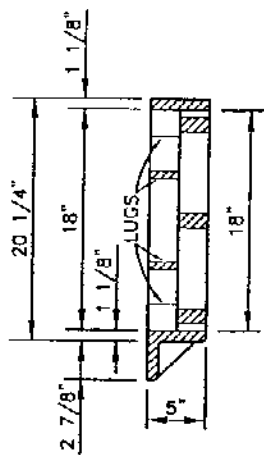
1. THE FLOOR OF THE EXCAVATION MUST PROVIDE A FIRM, LEVEL BED FOR THE BASE SECTION TO REST UPON.
2. A MINIMUM OF 6" OF 1" DIAMETER (MAX.) ROCK OR GRAVEL SHALL BE USED TO PREPARE THE BEDDING TO FINAL GRADE OR IN LIEU OF THIS, THAT AT LEAST 6" OF 2 SACK CEMENT STABILIZED SAND BE USED TO PREPARE THE BEDDING TO GRADE. CEMENT STABILIZED SAND TO BE ALLOWED TO SET BY KEEPING HOLE PUMPED DRY.
3. AFTER CASTING HAS BEEN INSTALLED ON THE PROPER BEDDING, THE BACKFILL MATERIAL, WHICH IS FREE FLOWING AND CLEAR OF ROCKS IN EXCESS OF 4" DIAMETER AND OTHER LUMPS WHICH WOULD PROHIBIT PROPER COMPACTION, SHALL BE COMMENCED IN LIFTS OF NO MORE THAN 18". THE MATERIAL USED FOR BACKFILL SHOULD BE OF A TYPE SUITABLE TO OBTAIN THE DENSITY REQUIREMENTS FOR THE SPECIFIC JOB.

PRECAST CURB INLET

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

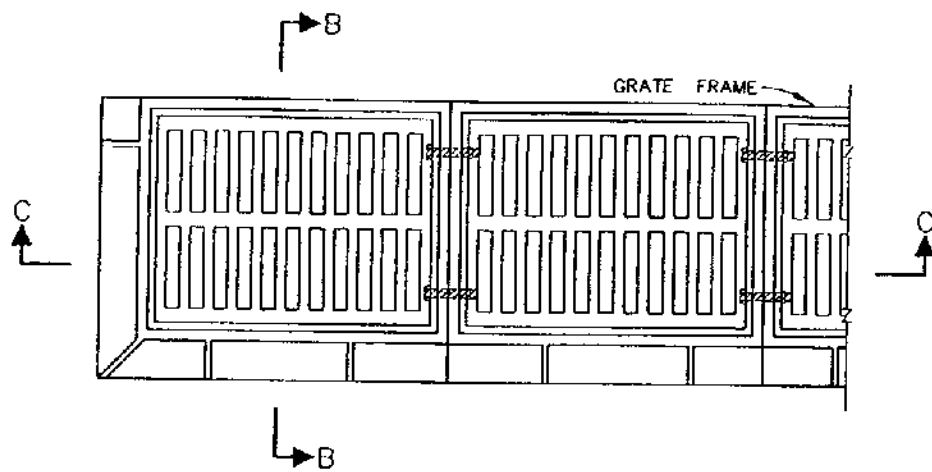
DATE:  
1999

SHEET:  
SD-015



SECTION B-B

N.T.S.

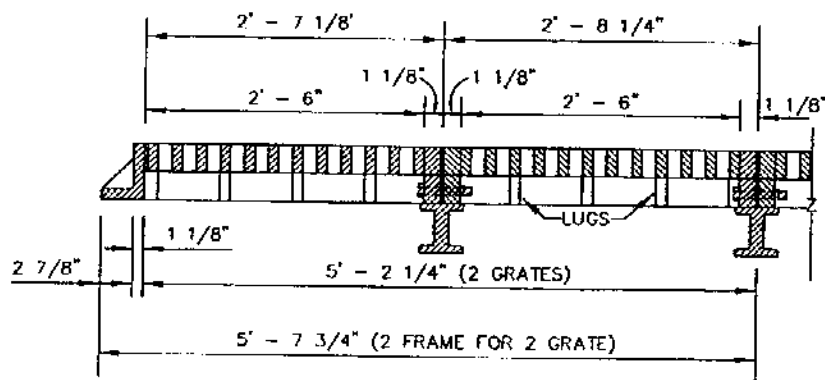


PLAN VIEW - GRATE

N.T.S.

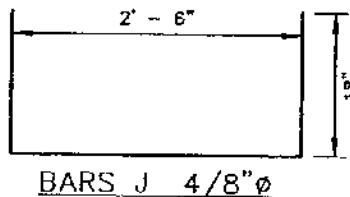
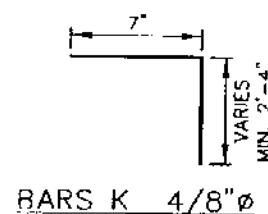
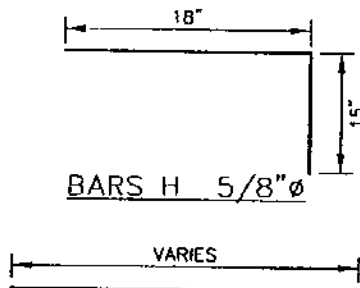
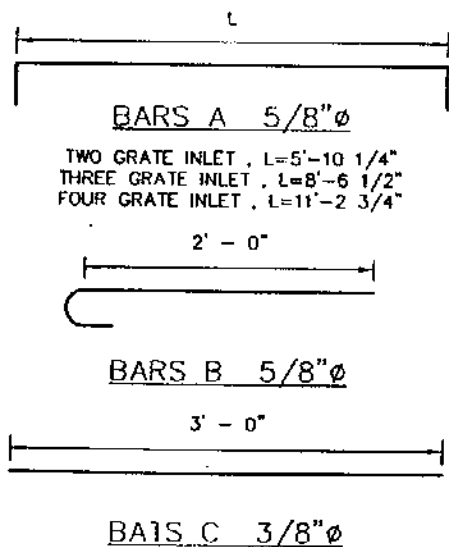
NOTES :

1. ALL LAPS AND EXTENSIONS OF REINFORCING BARS SHALL BE 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
2. TACK WELD GRATES IN PLACE.
3. PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.



SECTION C-C

N.T.S.



NOTE :

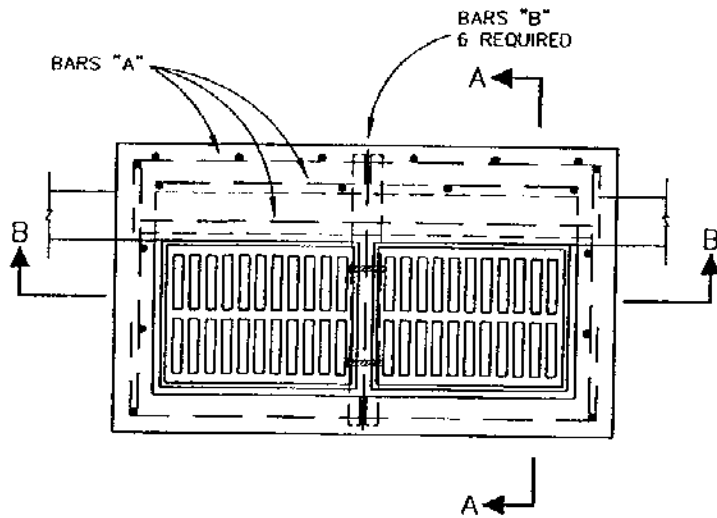
GRATE AND FRAME SHALL BE PATTERN NO. 814 AS MANUFACTURED BY BASS & HAYES FOUNDRY, INC. OR APPROVED EQUAL.

COMBINATION INLETS  
GRATE DETAILS  
BAR DIAGRAMS

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

DATE:  
1999

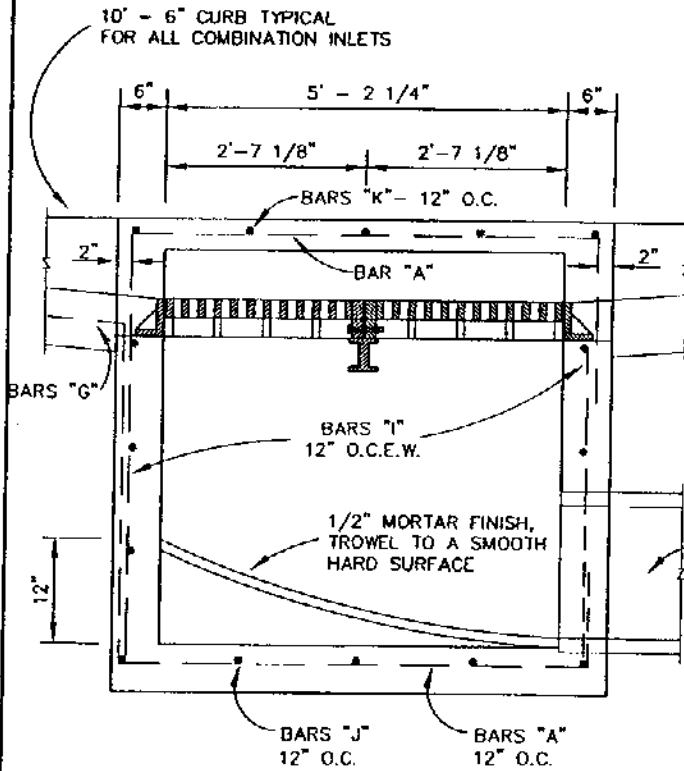
SHEET:  
SD-016



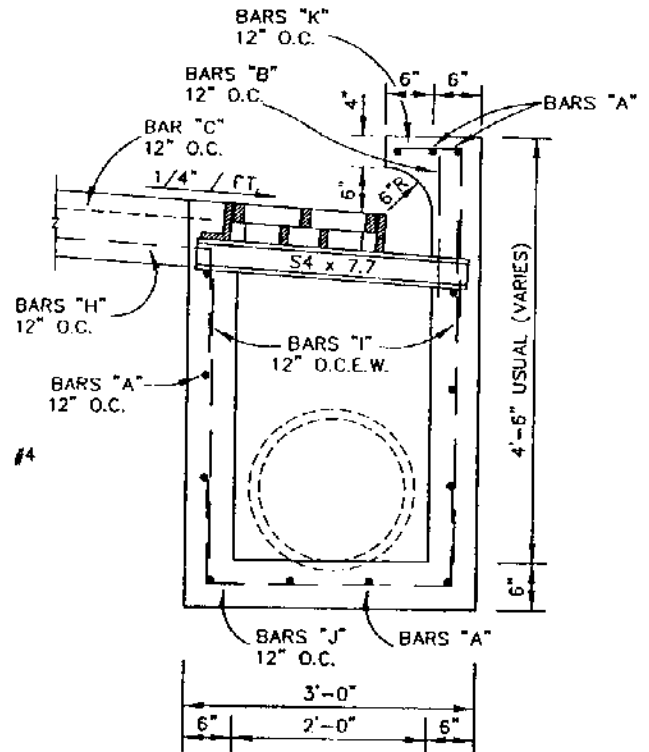
**TWO GRATE INLET**  
**PLAN VIEW**  
 N.T.S.

NOTES :

1. COMBINATION INLETS TO BE USED IN ALL ALLEYS WHERE INLETS ARE REQUIRED.
2. ALL LAPS AND EXTENSIONS OF REINFORCING BARS SHALL BE 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
3. TACK WELD GRATES IN PLACE.
4. PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.



**SECTION B-B**  
 N.T.S.



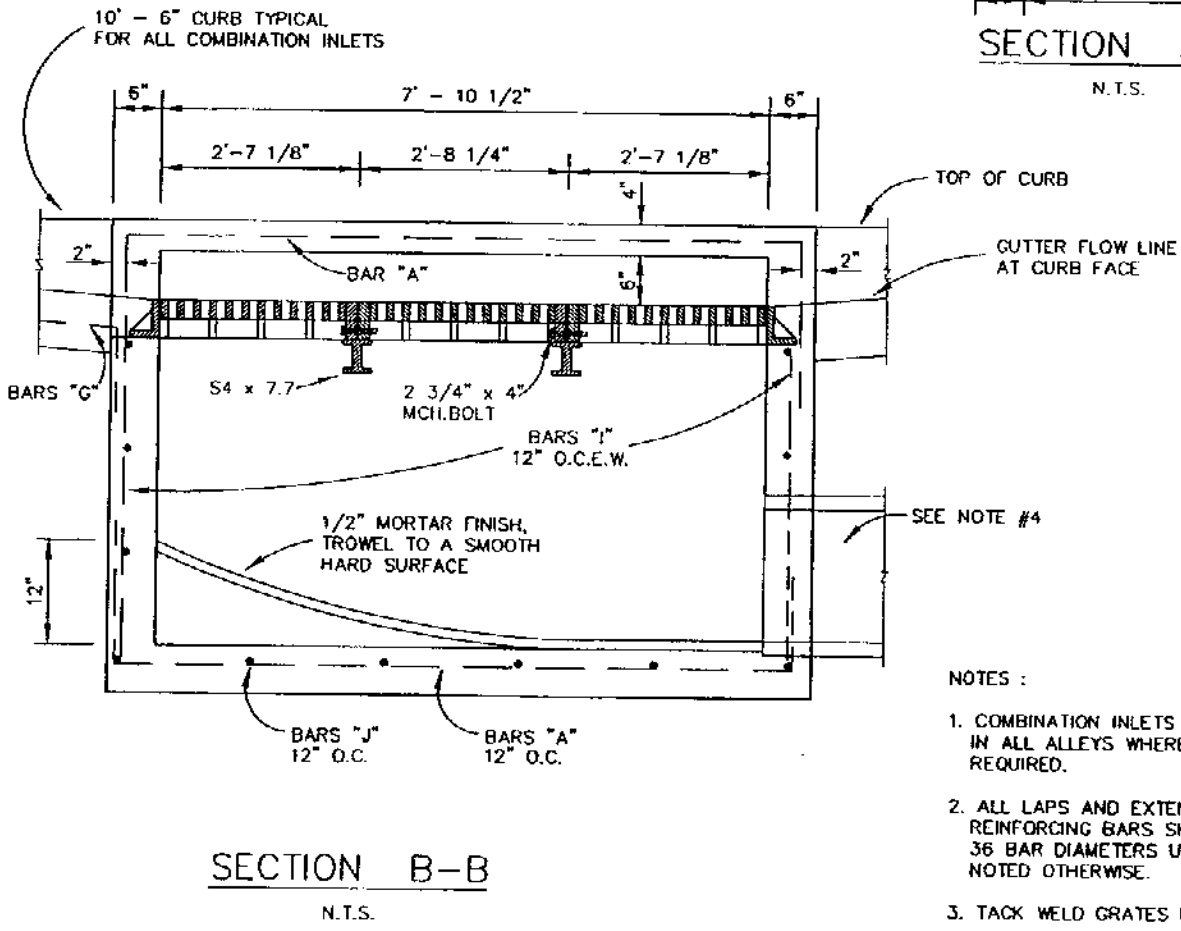
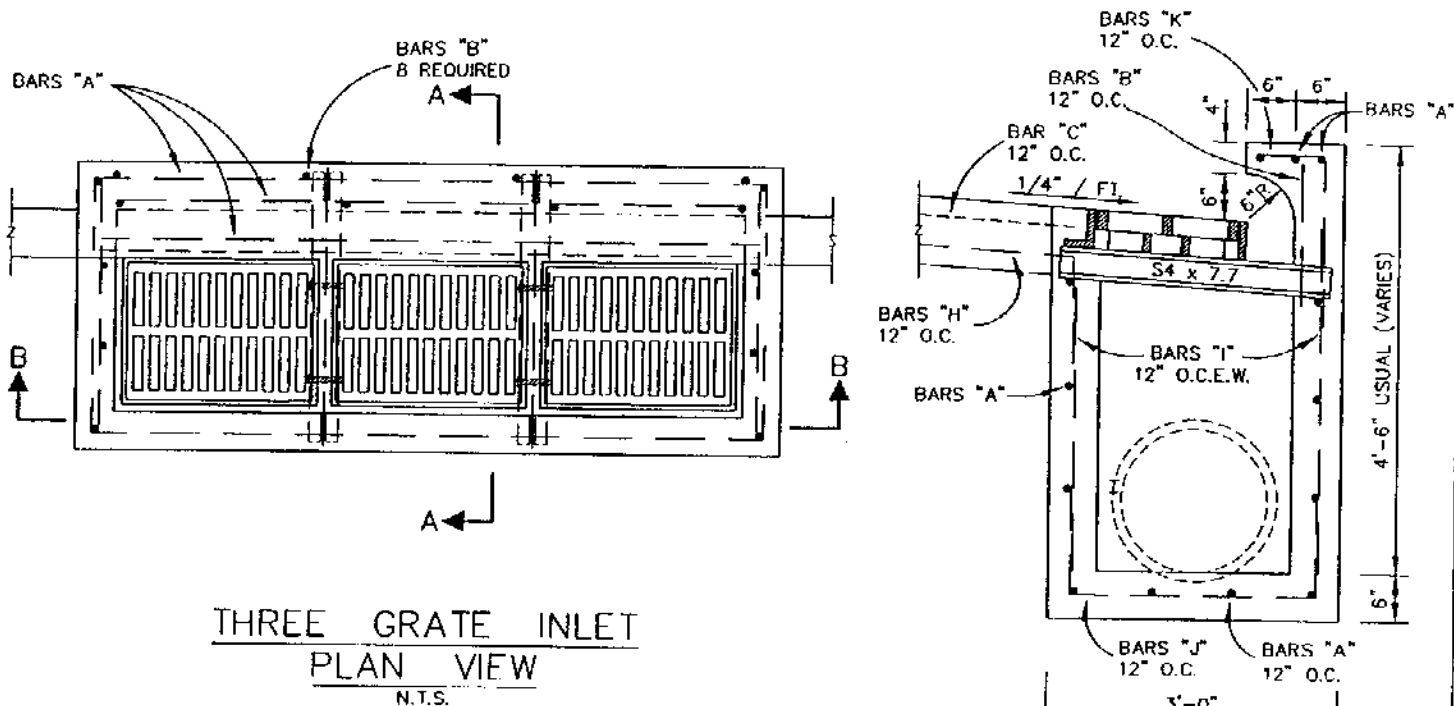
**SECTION A-A**  
 N.T.S.

COMBINATION INLET  
 TWO GRATE INLET

STANDARD CONSTRUCTION DETAILS  
 STORM DRAINAGE

DATE:  
 1999

SHEET:  
 SD-D17



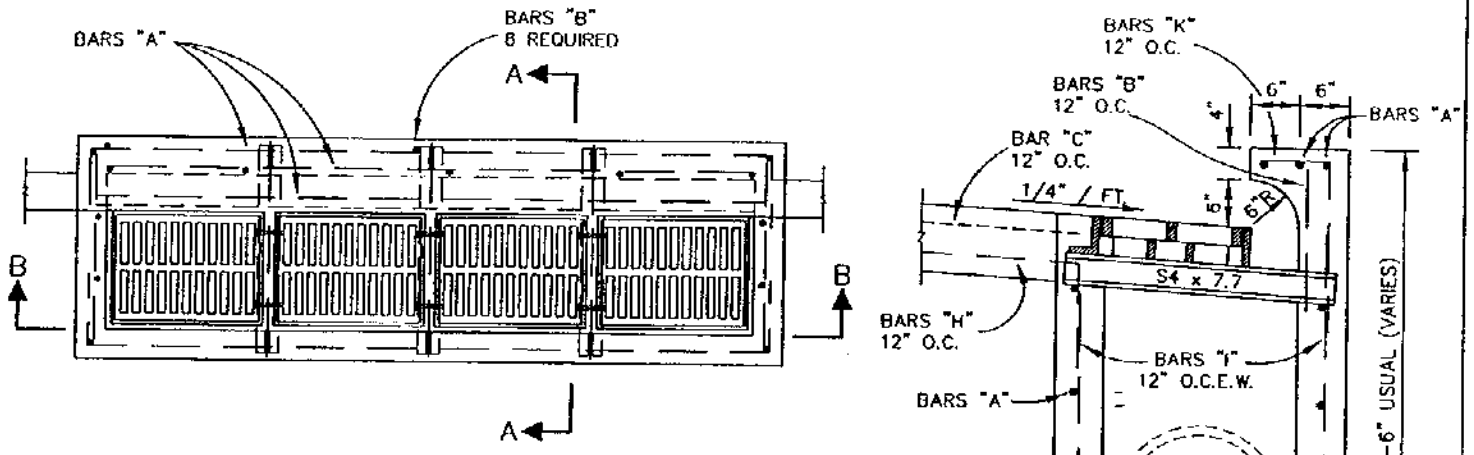
- NOTES :
1. COMBINATION INLETS TO BE USED IN ALL ALLEYS WHERE INLETS ARE REQUIRED.
  2. ALL LAPS AND EXTENSIONS OF REINFORCING BARS SHALL BE 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
  3. TACK WELD GRATES IN PLACE.
  4. PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.

COMBINATION INLET  
THREE GRATE INLET

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

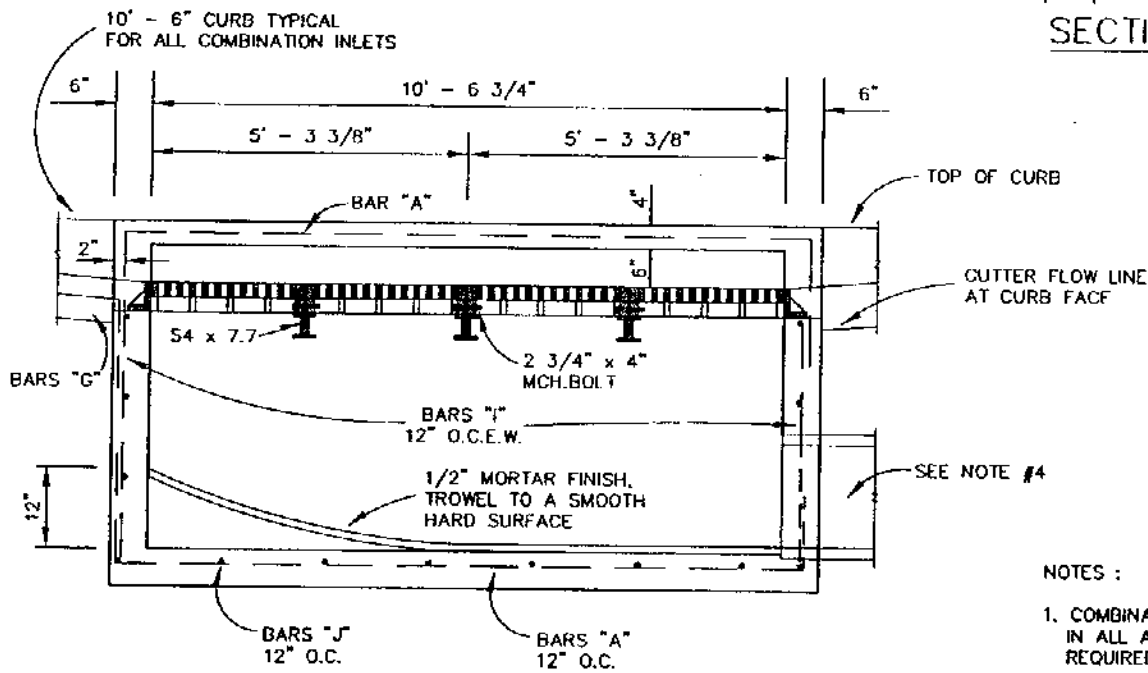
DATE:  
1999

SHEET:  
SD-D18



**FOUR GRATE INLET**  
**PLAN VIEW**  
 N.T.S.

**SECTION A-A**  
 N.T.S.



**SECTION B-B**  
 N.T.S.

**NOTES :**

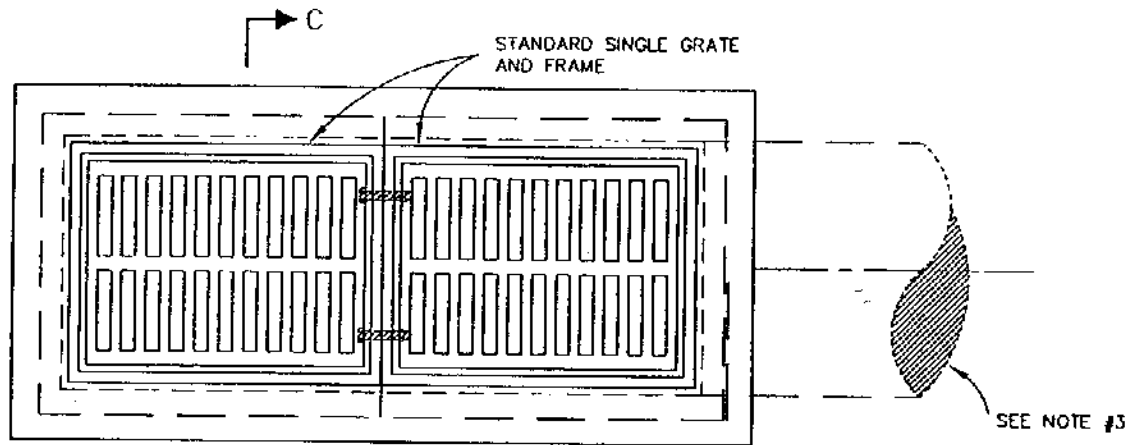
1. COMBINATION INLETS TO BE USED IN ALL ALLEYS WHERE INLETS ARE REQUIRED.
2. ALL LAPS AND EXTENSIONS OF REINFORCING BARS SHALL BE 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
3. TACK WELD GRATES IN PLACE.
4. PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.

COMBINATION INLET  
 FOUR GRATE INLET

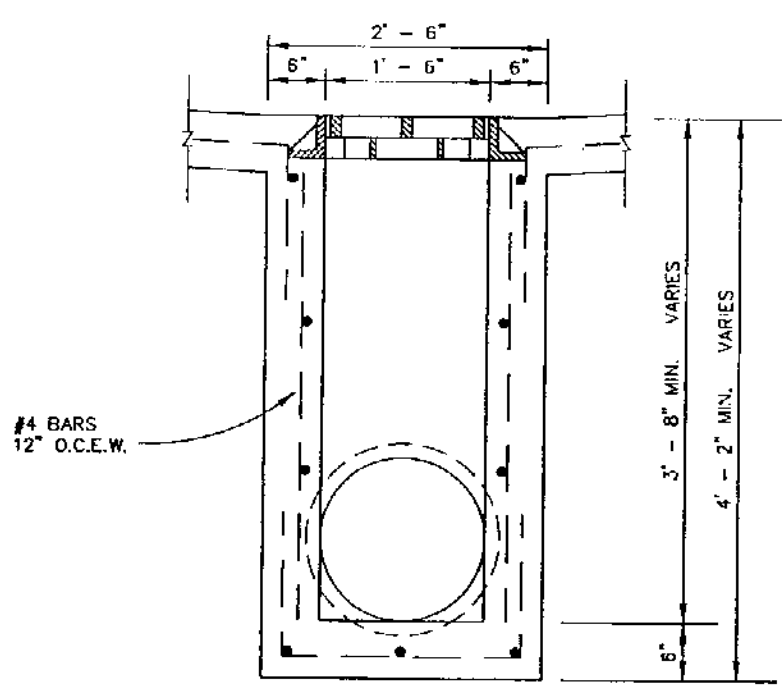
STANDARD CONSTRUCTION DETAILS  
 STORM DRAINAGE

DATE:  
 1999

SHEET:  
 SD-D19



TWO GRATE INLET  
N.T.S.



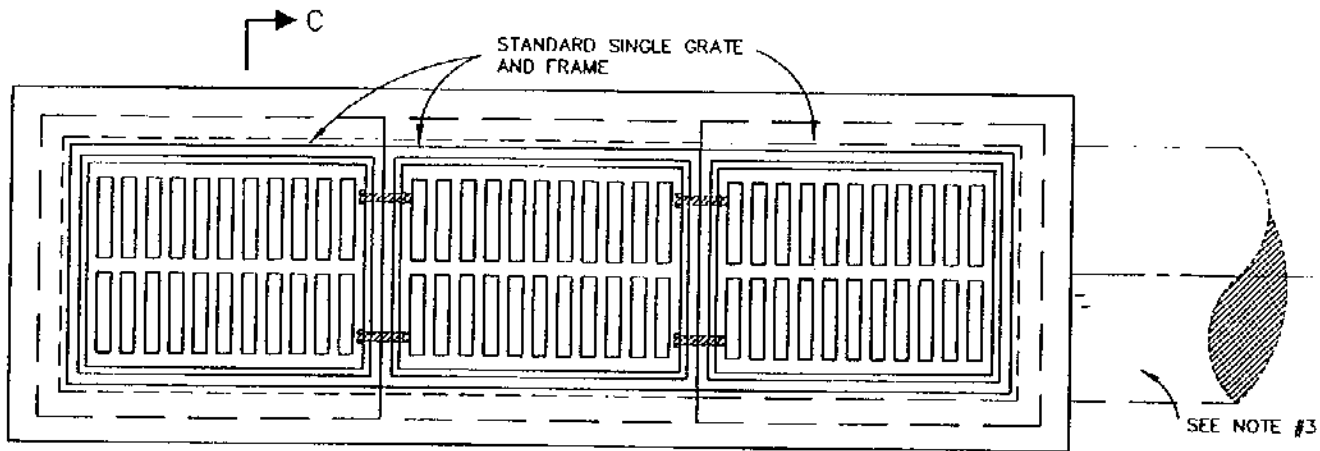
SECTION C-C  
N.T.S.

NOTES :

1. ALL LAPS AND EXTENSIONS OF REINFORCING BARS SHALL BE 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
2. TACK WELD GRATES IN PLACE.
3. PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.

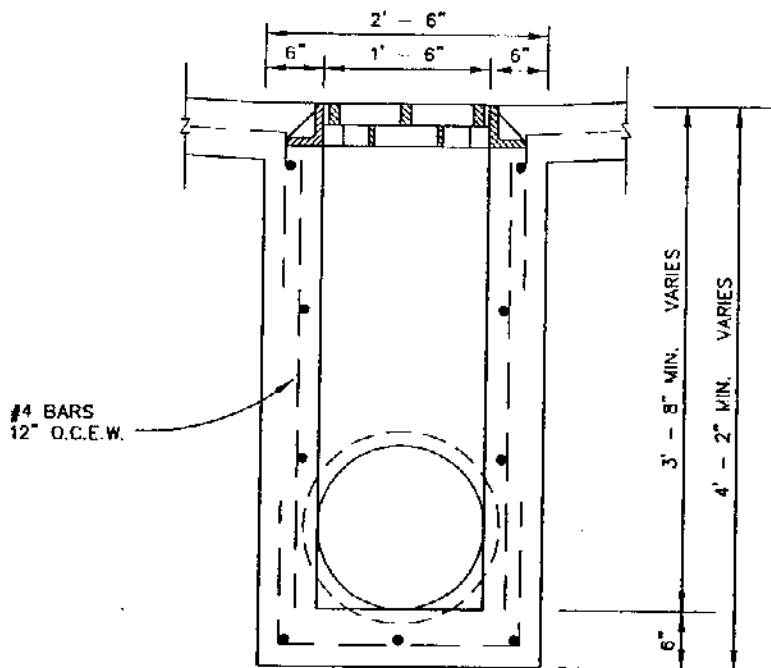
	TWO GRATE INLET	STANDARD CONSTRUCTION DETAILS STORM DRAINAGE	
		DATE: 1999	SHEET: SD-D20





**THREE GRATE INLET**

N.T.S.



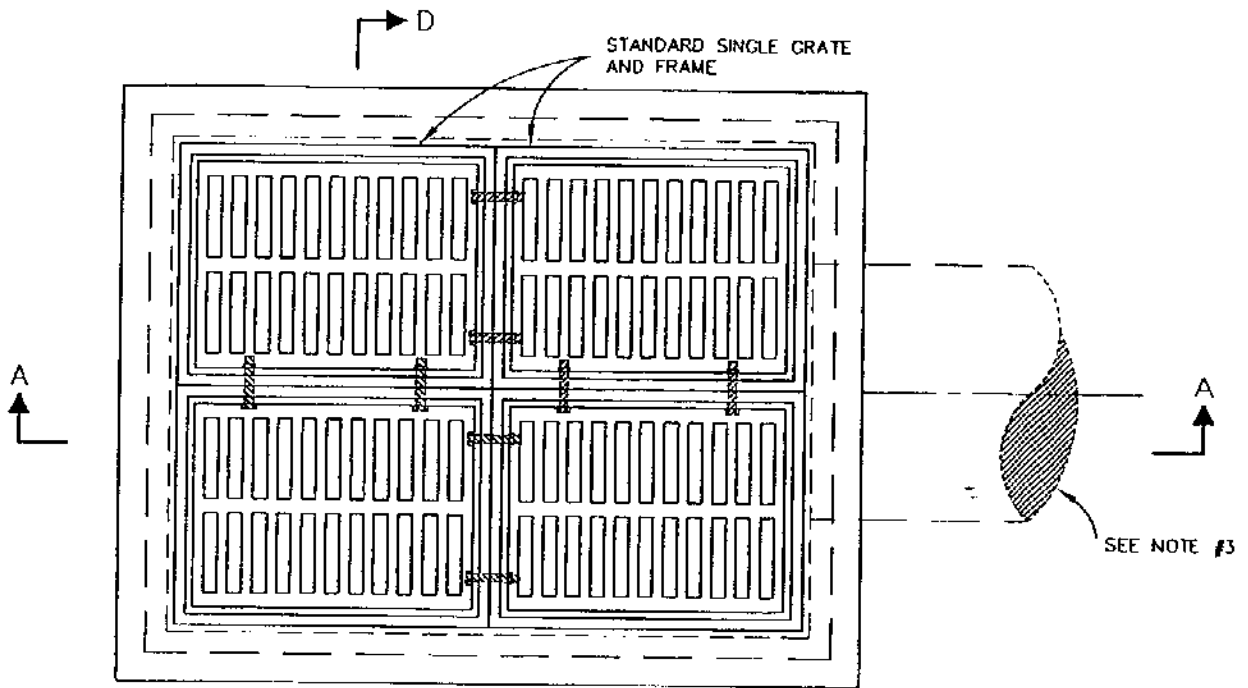
**SECTION C-C**

N.T.S.

NOTES :

1. ALL LAPS AND EXTENSIONS OF REINFORCING BARS SHALL BE 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
2. TACK WELD GRATES IN PLACE.
3. PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.

	THREE GRATE INLET	STANDARD CONSTRUCTION DETAILS STORM DRAINAGE	
		DATE: 1999	SHEET: SD-021

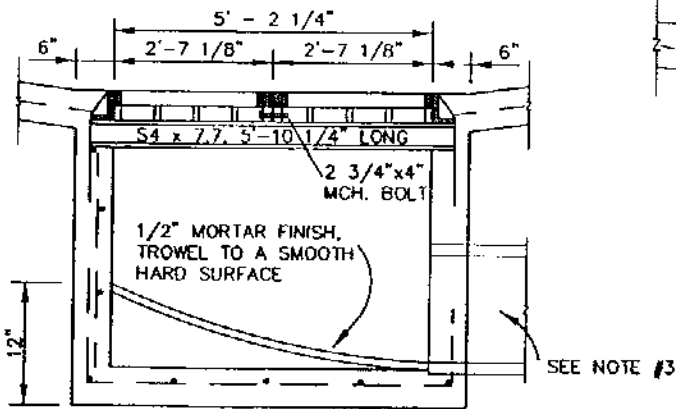


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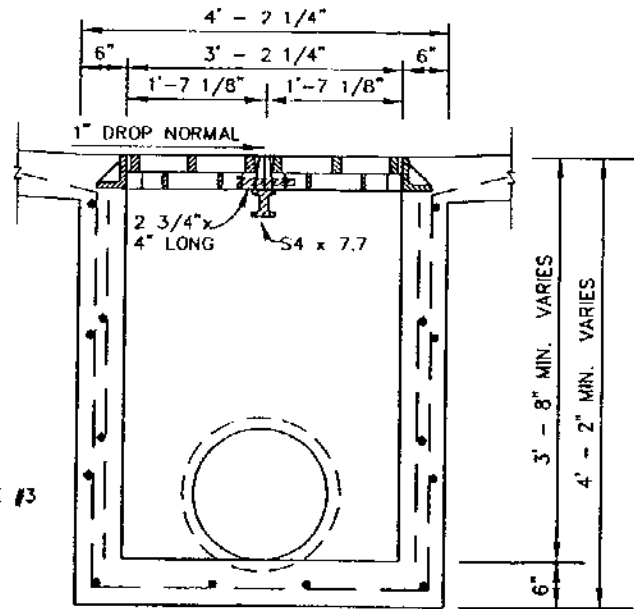
1. ALL LAPS AND EXTENSIONS OF REINFORCING BARS SHALL BE 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
2. TACK WELD GRATES IN PLACE.
3. PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.

## FOUR GRATE INLET

N.T.S.



N.T.S.



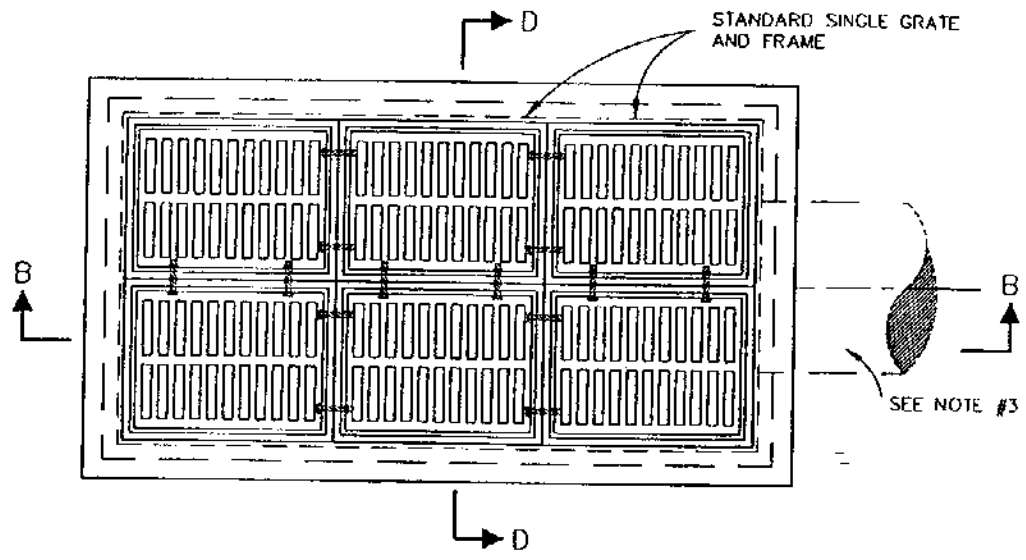
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### FOUR GRATE INLET

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

DATE:  
1999

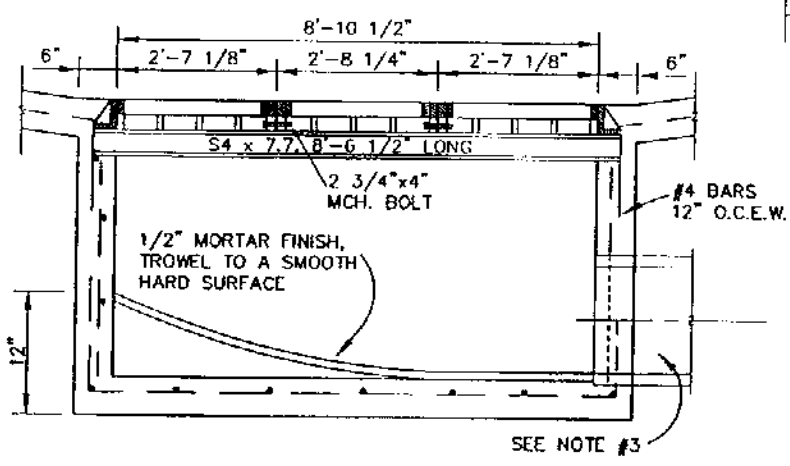
SHEET:  
SD-022



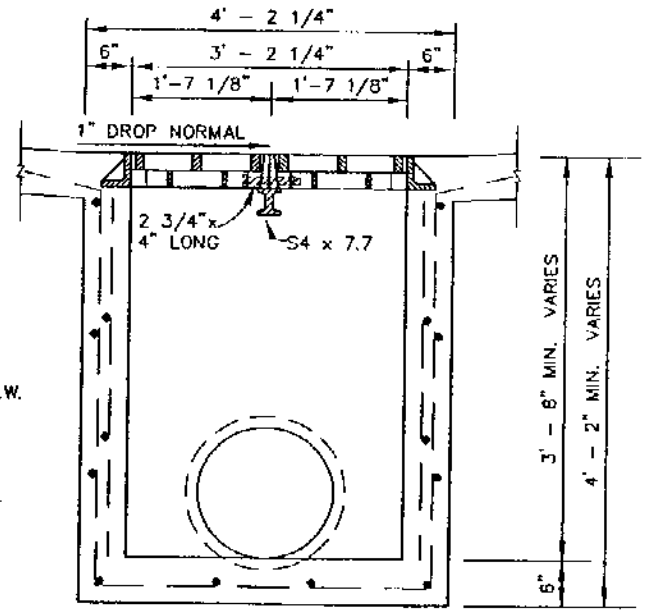
SIX GRATE INLET  
N.T.S.

NOTES :

1. ALL LAPS AND EXTENSIONS OF REINFORCING BARS SHALL BE 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
2. TACK WELD GRATES IN PLACE.
3. PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.

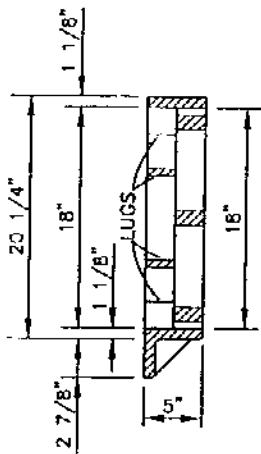


SECTION A-A  
N.T.S.



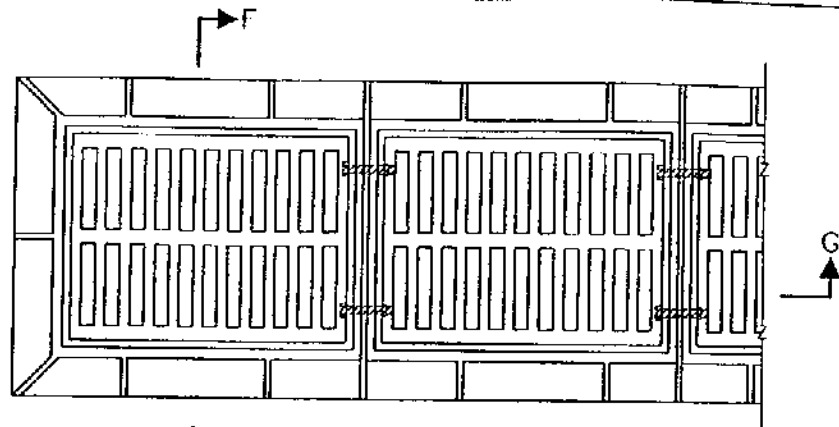
SECTION D-D  
N.T.S.

	SIX GRATE INLET	STANDARD CONSTRUCTION DETAILS STORM DRAINAGE	
		DATE: 1999	SHEET: SD-D23



SECTION F-F

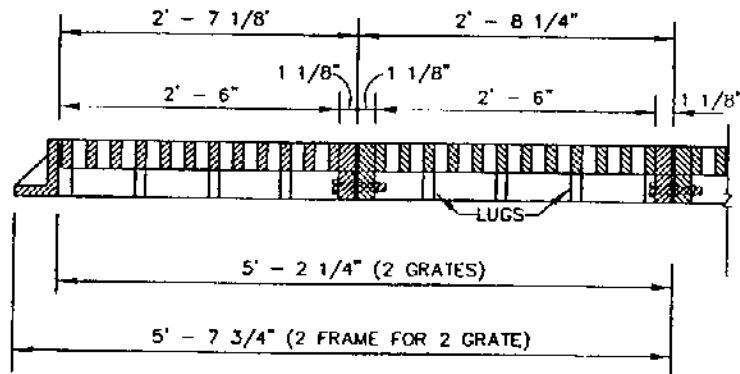
N.T.S.



PLAN VIEW - GRATE

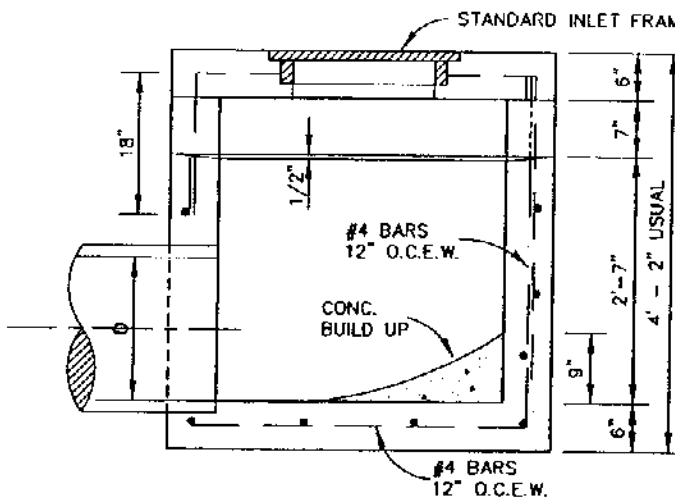
N.T.S.

NOTE :  
GRATE AND FRAME SHALL BE  
PATTERN NO. 814 AS MANUFACTURED  
BY BASS AND HAYES FOUNDRY,  
OR APPROVED EQUAL.



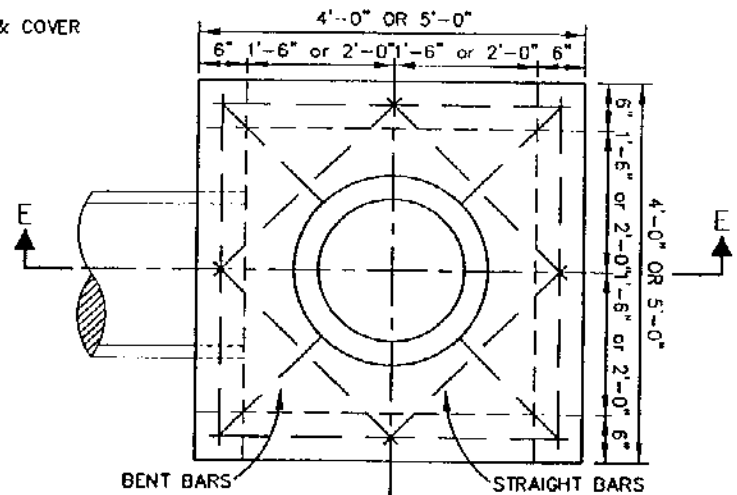
SECTION G-G

N.T.S.



SECTION E-E

N.T.S.



PLAN VIEW

N.T.S.

STANDARD DROP INLET

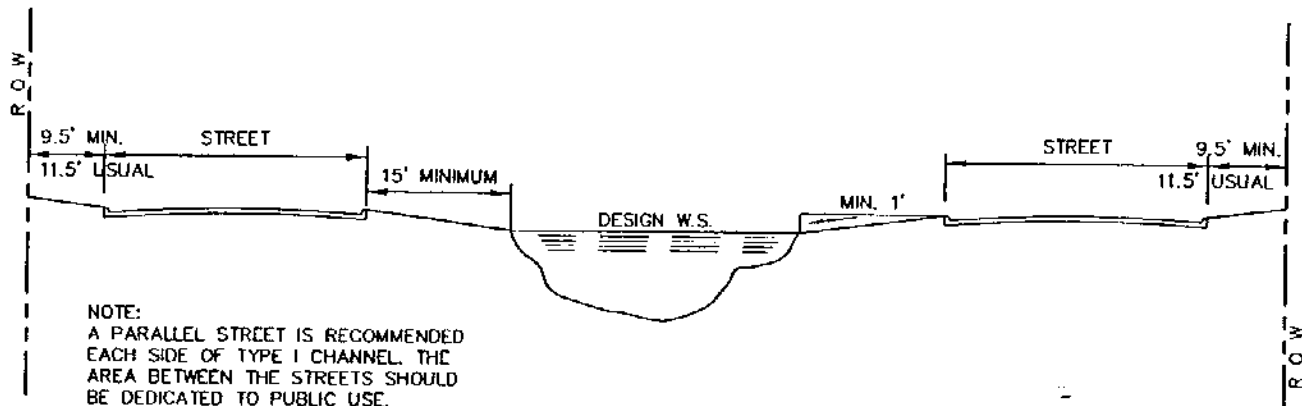
GRATE DETAILS

STANDARD DROP INLET

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

DATE:  
1999

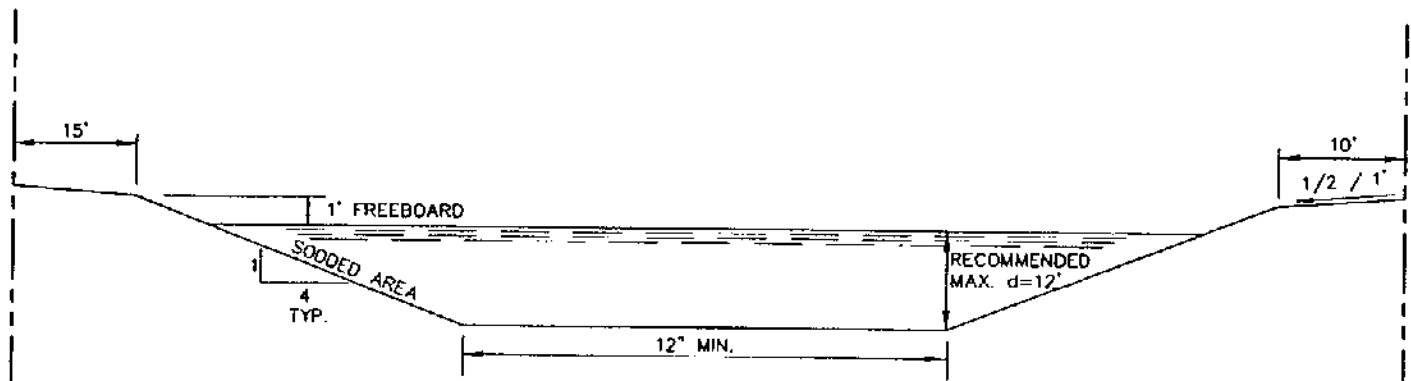
SHEET:  
SD-024



NOTE:  
 A PARALLEL STREET IS RECOMMENDED  
 EACH SIDE OF TYPE I CHANNEL. THE  
 AREA BETWEEN THE STREETS SHOULD  
 BE DEDICATED TO PUBLIC USE.

### NATURAL CHANNEL

N.T.S.



### IMPROVED EARTHEN CHANNEL

N.T.S.

### GENERAL NOTES FOR OPEN CHANNELS

1. NATURAL CHANNEL IS SHOWN FOR LOCATION OF ADJACENT STREETS.
2. GRASS COVER REQUIRED FOR ALL SLOPES

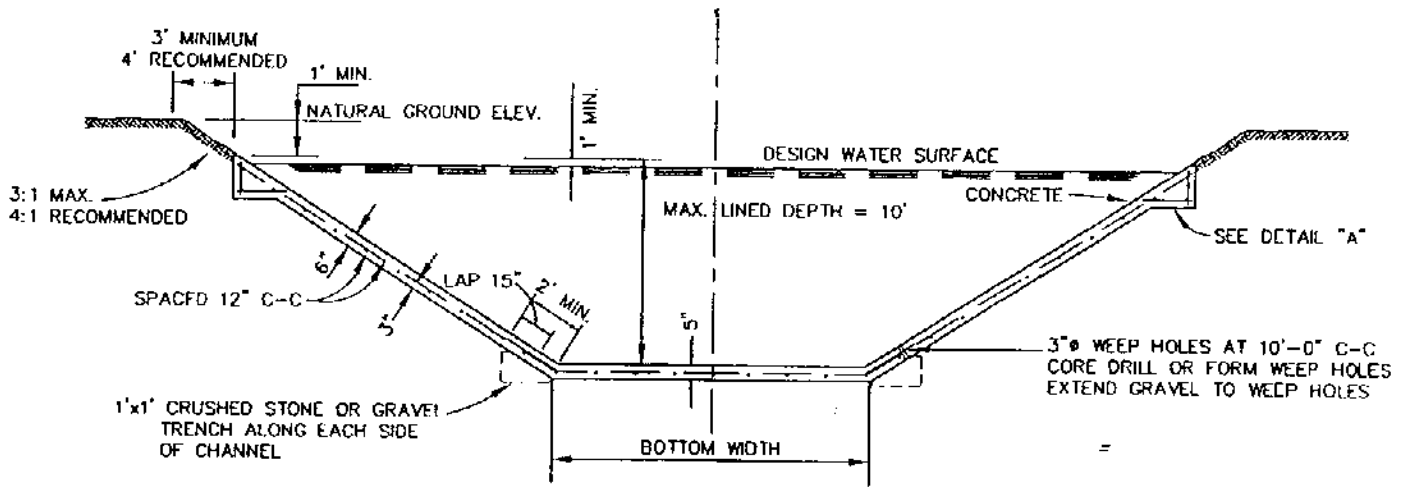
CHANNEL SECTIONS

TYPE III CHANNEL

STANDARD CONSTRUCTION DETAILS  
 STORM DRAINAGE

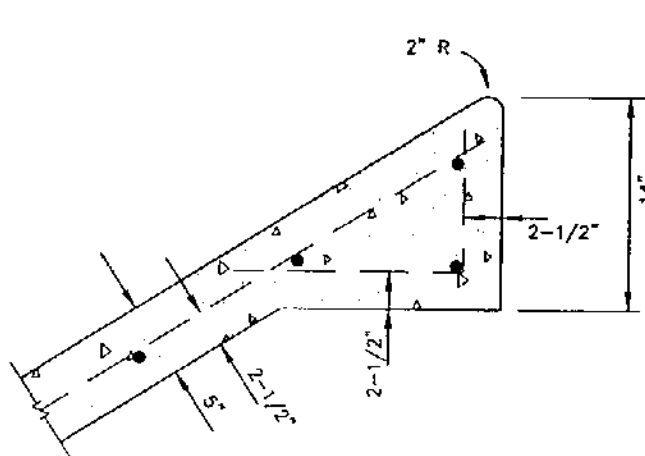
DATE:  
 1999

SHEET:  
 SD-025



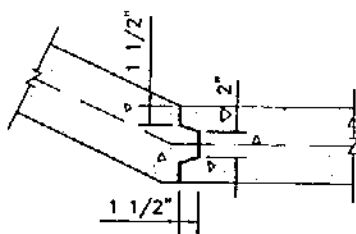
### LINED CHANNEL SECTION

N.T.S.



### SLAB EDGE - DETAIL "A"

N.T.S.

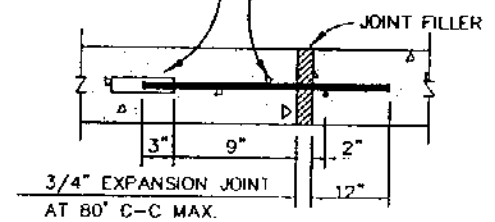


### CONSTRUCTION JOINT

OPTIONAL

N.T.S.

3/4" DIAMETER BARS SPACED 21" C-C SHALL SERVE AS DOWELS. DOWELS SHALL BE ASPHALT COATED 12" ON THE FREE END.

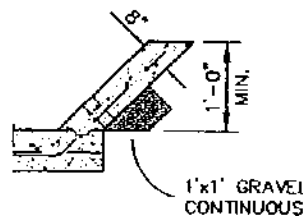


### TRANSVERSE EXPANSION JOINT

N.T.S.

### GENERAL NOTES FOR LINED CHANNELS

1. CONSTRUCTION JOINT SHOWN FOR CONVENIENCE ONLY. MONOLITHIC CONSTRUCTION MAY BE USED.
2. ALL VISIBLE SURFACES SHALL BE A TROWEL FINISH.
3. ALL REINFORCING STEEL SHALL BE 3/8" DIAMETER AND SPACED 12" C TO C BOTH WAYS UNLESS OTHERWISE SPECIFIED.
4. IF WOOD FORMS ARE USED WITH CONSTRUCTION JOINT, THEY SHALL BE TWO, 2"x4", AND SHALL NOT BE REMOVED UNTIL CONCRETE ON SLOPES IS READY TO BE PLACED.
5. ALL CONCRETE IN LINED CHANNEL SHALL BE CLASS "A".
6. 3/4" CHAMFER ON ALL CONCRETE CORNERS.

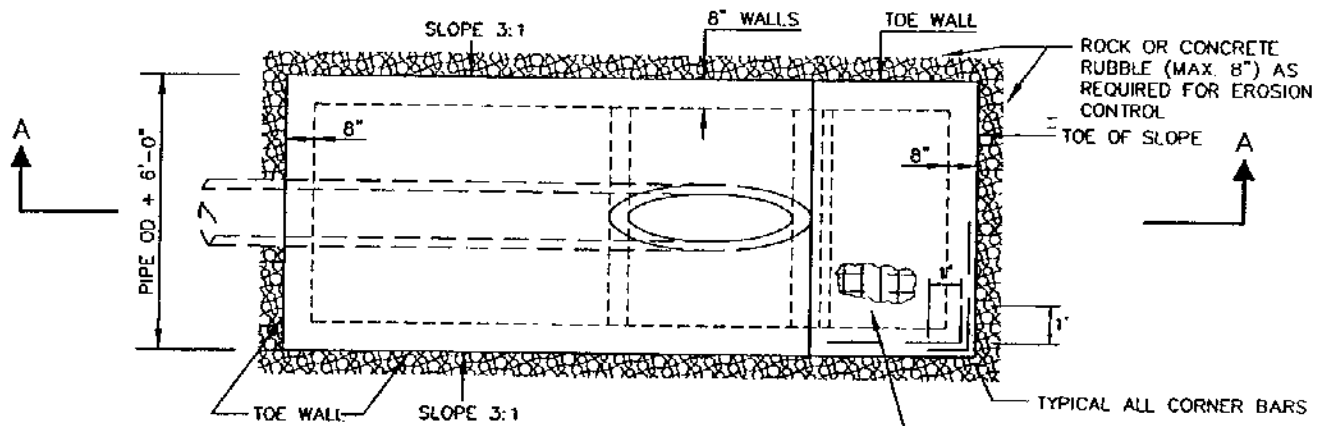


TYPE C HEADWALL

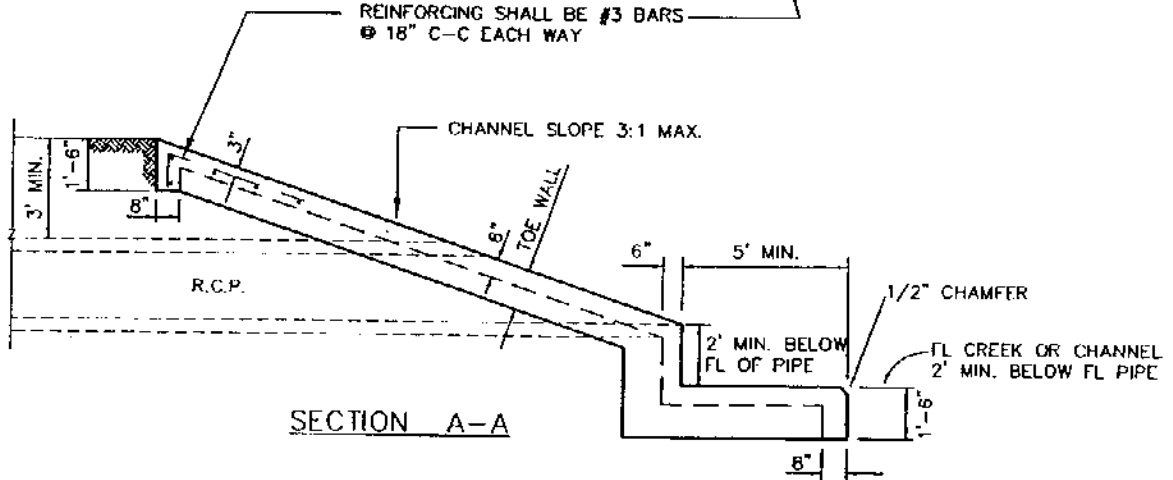
STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

DATE:  
1999

SHEET:  
SD-D26



ALL CONCRETE SHALL BE CLASS "A"  
 REINFORCING SHALL BE #3 BARS  
 @ 18" C-C EACH WAY



SECTION A-A

TYPE C HEADWALL

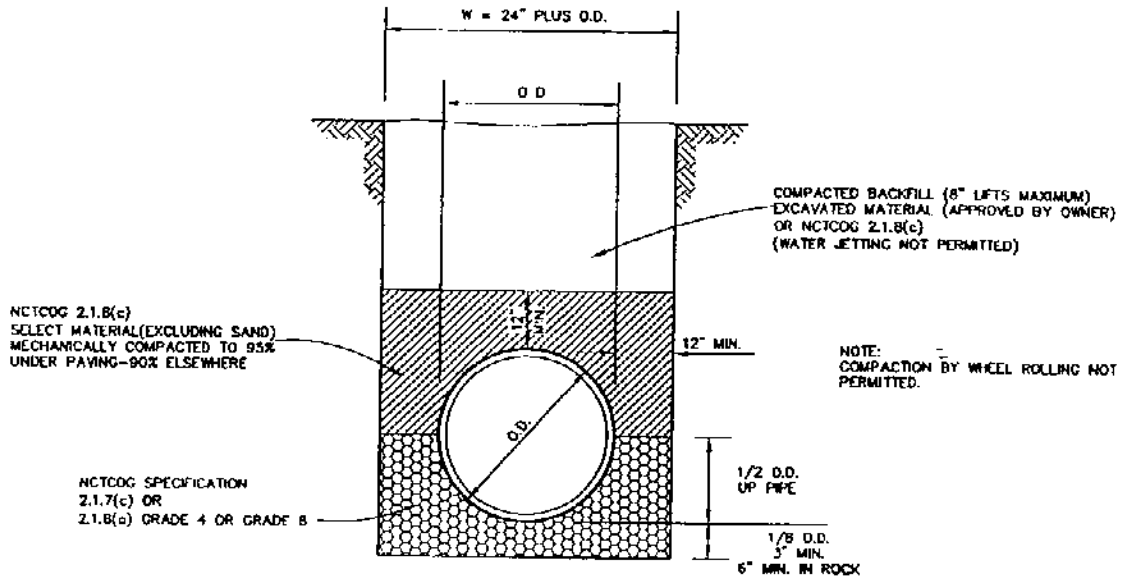
N.T.S.

TYPE C HEADWALL

STANDARD CONSTRUCTION DETAILS  
 STORM DRAINAGE

DATE:  
 1999

SHEET:  
 SD-D27



**STORM SEWER PIPE BEDDING & BACKFILL**

NOTE:  
DEPTH OF TRENCH BELOW PIPE  
3" MIN. FOR 27" PIPE & SMALLER  
4" MIN. FOR 30" TO 54" PIPE  
6" MIN. FOR 60" PIPE & LARGER

N.T.S.

STORM SEWER PIPE  
BEDDING & BACKFILL

STANDARD CONSTRUCTION DETAILS  
STORM DRAINAGE

DATE:  
1999

SHEET:  
SD-D28