

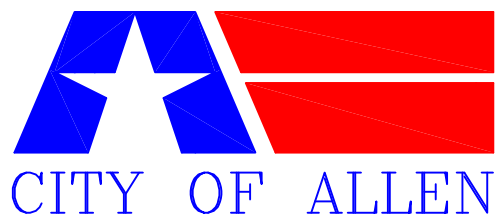
STANDARD CONSTRUCTION DETAILS

STORM DRAINAGE

EROSION CONTROL

RESIDENTIAL LOT DRAINAGE REQUIREMENTS

REVISED - JULY 2010



DEPARTMENT OF ENGINEERING

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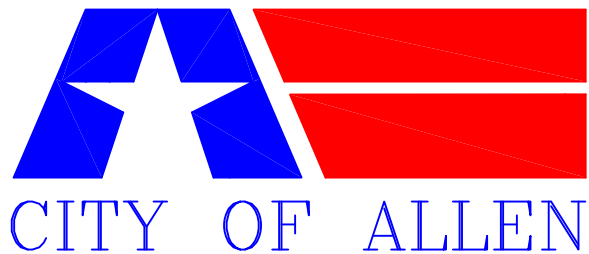
RESIDENTIAL LOT DRAINAGE REQUIREMENT

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STANDARD CONSTRUCTION DETAILS

STORM DRAINAGE

REVISED - JULY 2010



DEPARTMENT OF ENGINEERING

GENERAL NOTES

1. ALL CONCRETE DRAINAGE STRUCTURES SHALL HAVE A MINIMUM COMPRESSED STRENGTH OF 3600 P.S.I.
2. ALL CRUSHED STONE SHALL BE 3/4", PASSING #4 SIEVE.
3. ALL FIELD JOINTS WILL BE APPROVED BY THE CITY ENGINEER IF NECESSARY. FIELD JOINTS SHALL BE WIPED ON THE INSIDE AND OUTSIDE TO PROVIDE FOR SMOOTH FLOW OF WATER.
4. RAMNECK COMPOUND OR APPROVED EQUAL SHALL BE USED FOR JOINT SEALS.
5. ALL STORM SEWER PIPE SHALL BE CAMERA INSPECTED AFTER THE INSTALLATION OF ALL UTILITIES AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.



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DEPARTMENT OF ENGINEERING

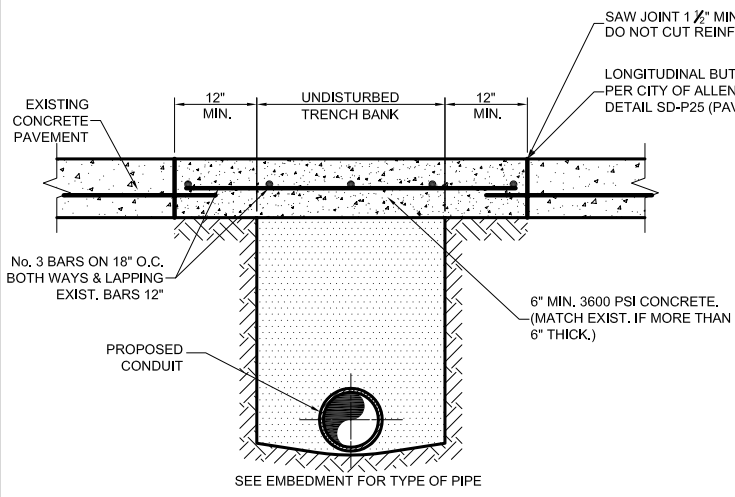
GENERAL NOTES

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

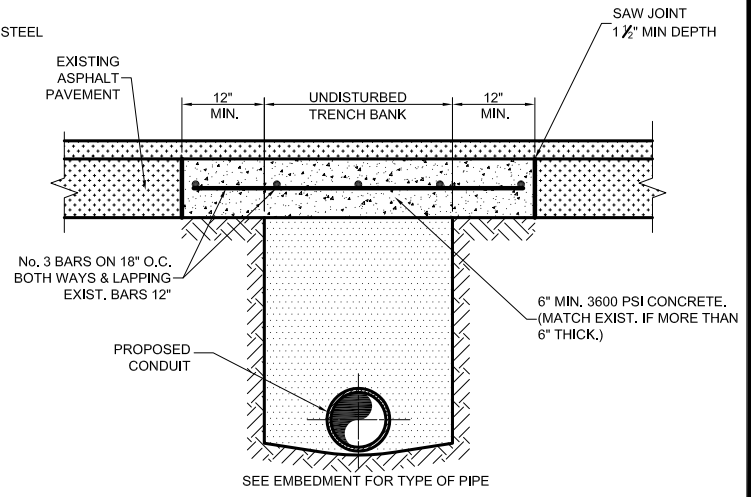
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AUG. 2006

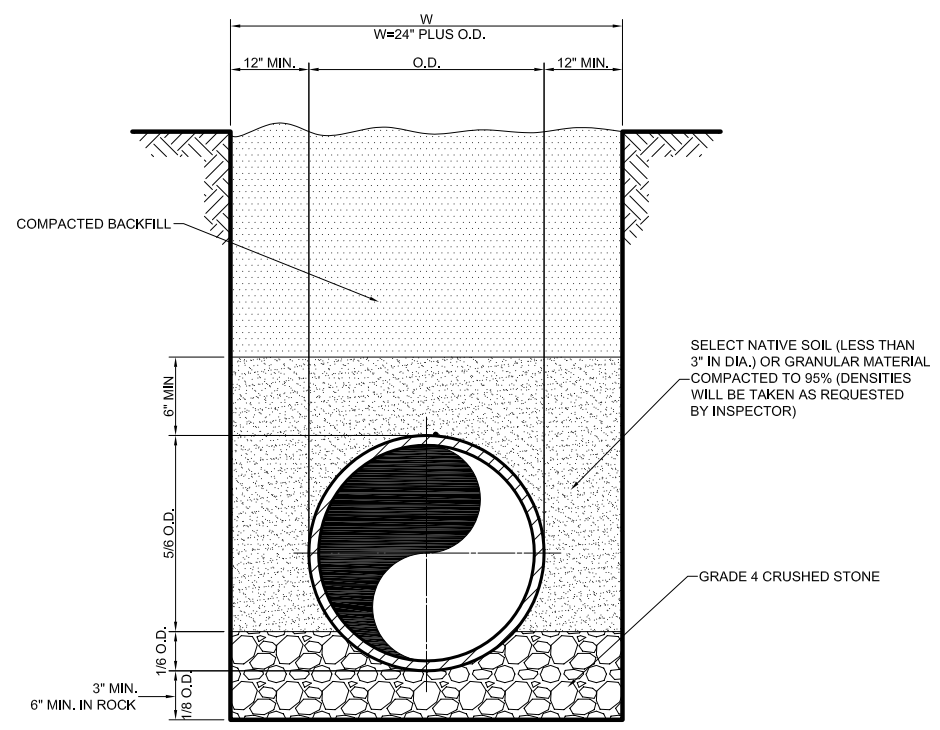
SHEET :
SD-D01



CONCRETE STREET OR DRIVEWAY REPAIR
N.T.S.



ASPHALT STREET OR DRIVEWAY REPAIR
N.T.S.



RCP STORM SEWER PIPE BEDDING

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



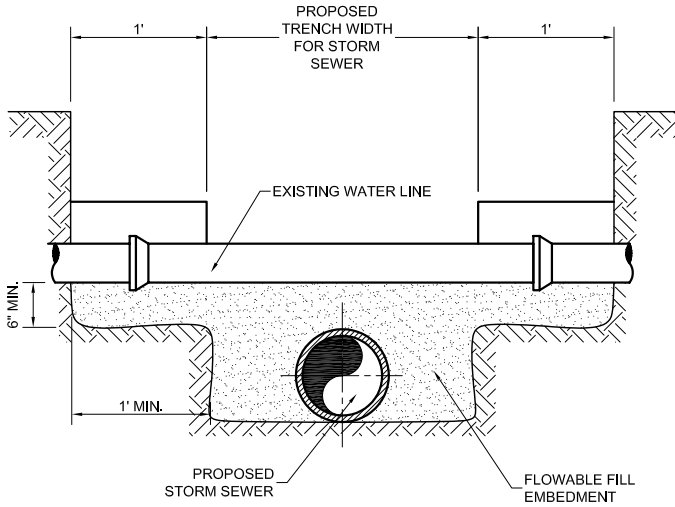
**CONCRETE STREET REPAIR
 ASPHALT STREET REPAIR
 PIPE BEDDING**

STANDARD CONSTRUCTION DETAILS
 STORM DRAINAGE

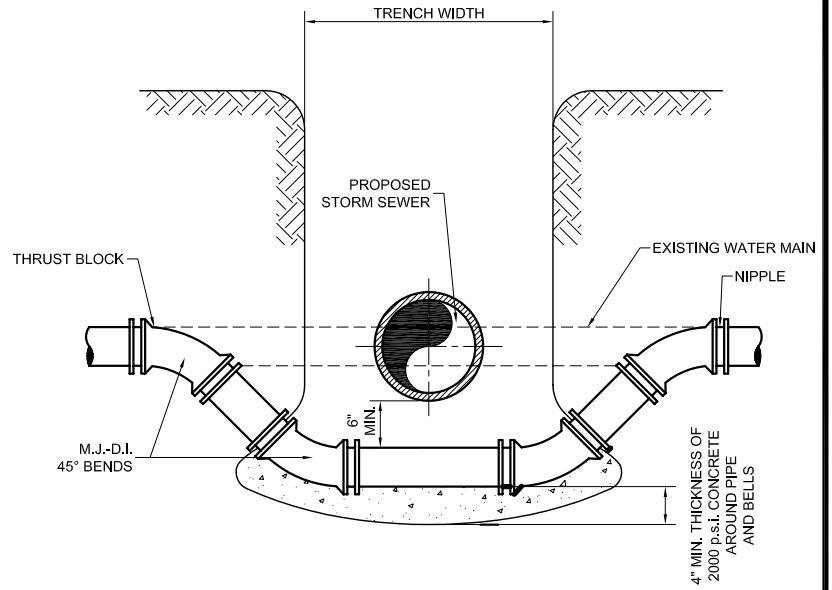
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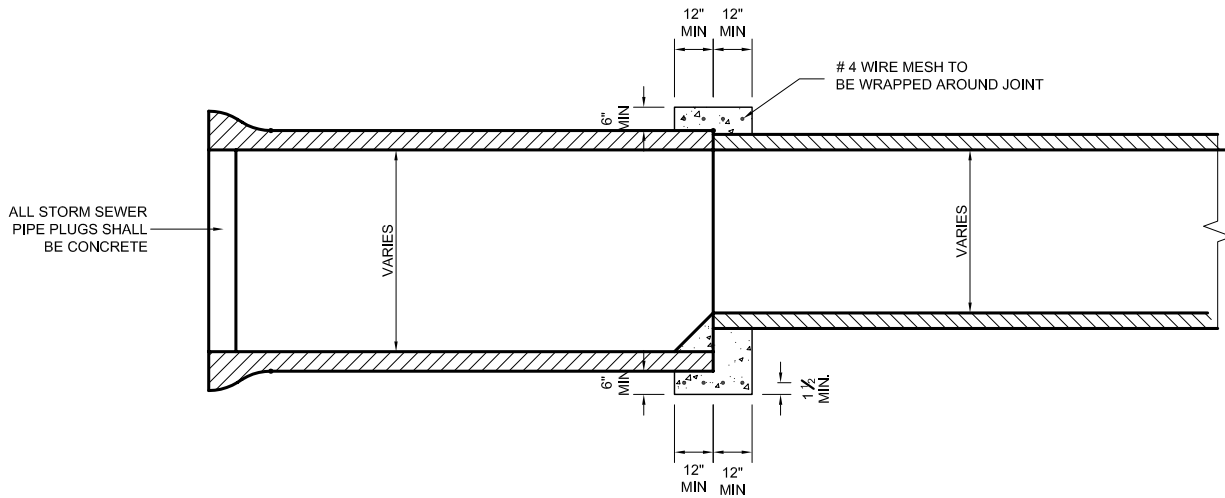
SHEET :
 SD-D02



DETAIL OF
UTILITY SUPPORT



DETAIL FOR
WATER MAIN LOWERING



DETAIL OF CONCRETE COLLAR
FOR PIPE CONNECTIONS



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DEPARTMENT OF ENGINEERING

UTILITY SUPPORT
WATER MAIN LOWERING
CONCRETE COLLAR

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

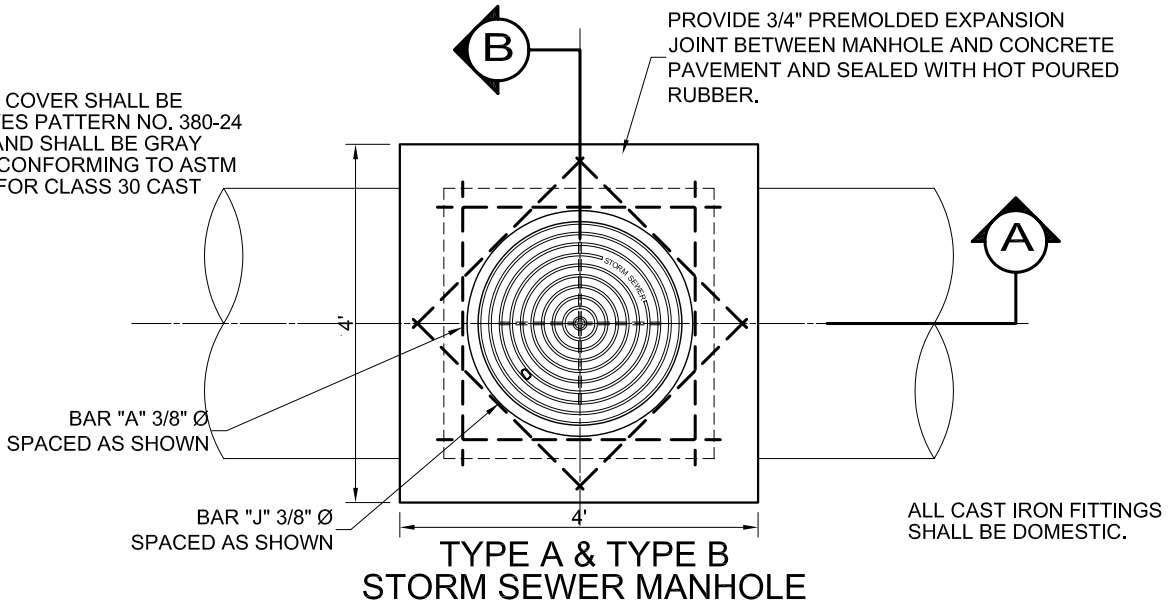
DATE:
JULY 1991

REV DATE:
AUG. 2006

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 CAST IRON.

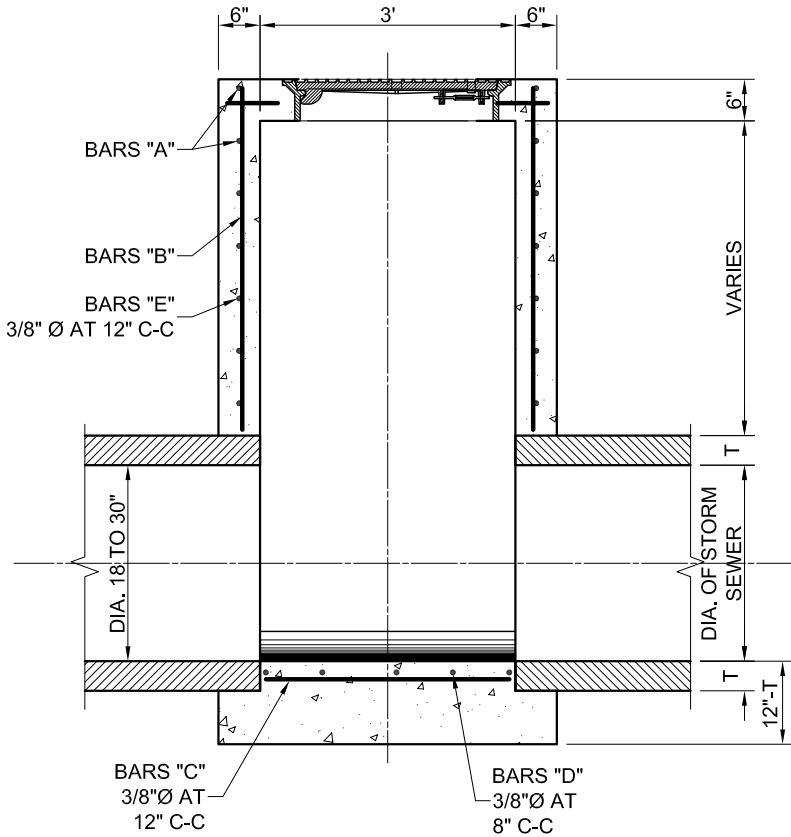


**TYPE A & TYPE B
STORM SEWER MANHOLE**

NOTE : MAXIMUM PIPE SIZE TO BE USED 78"Ø

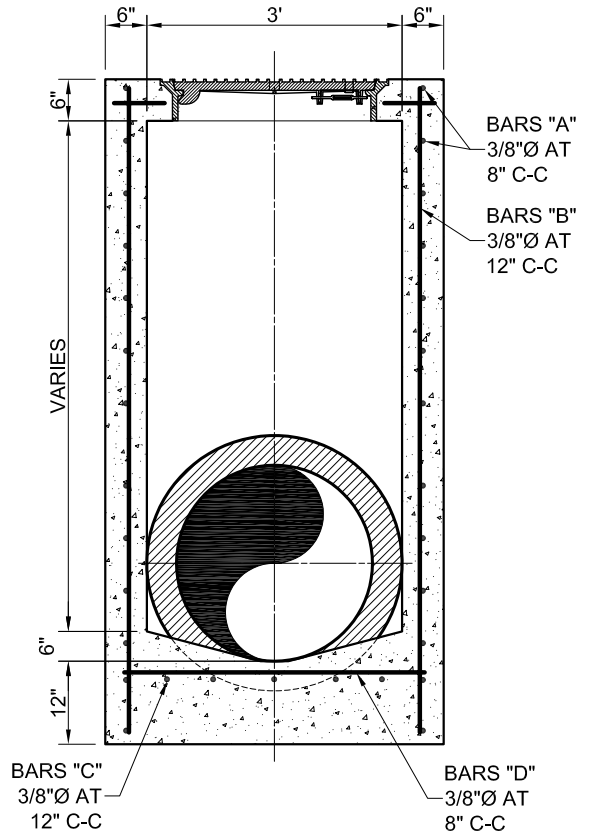
PLAN

SCALE N.T.S.



SECTION A

SCALE N.T.S.



SECTION B

SCALE N.T.S.



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

TYPE "A" STORM SEWER MANHOLE

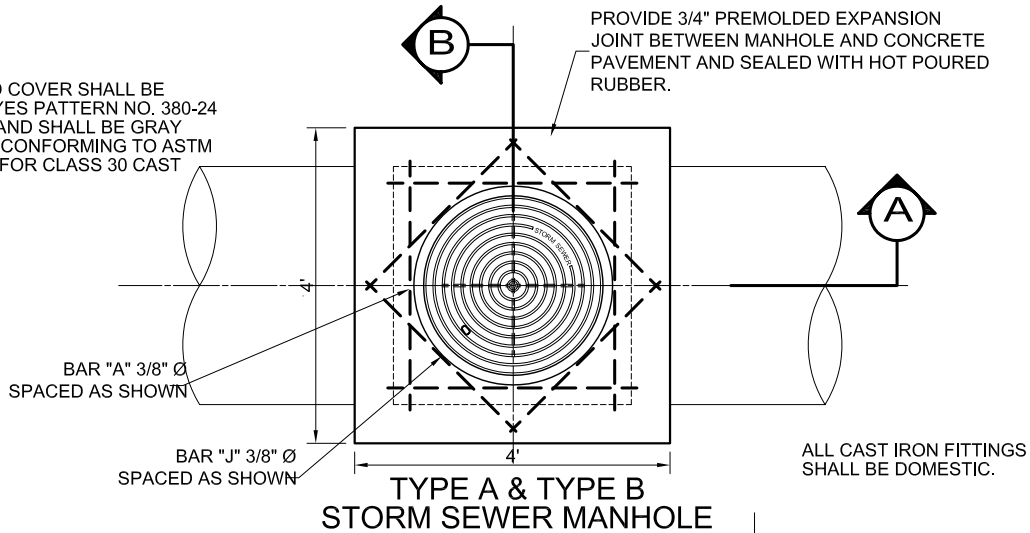
STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
JULY 1991

REV DATE:
AUG. 2006

SHEET :
SD-D04

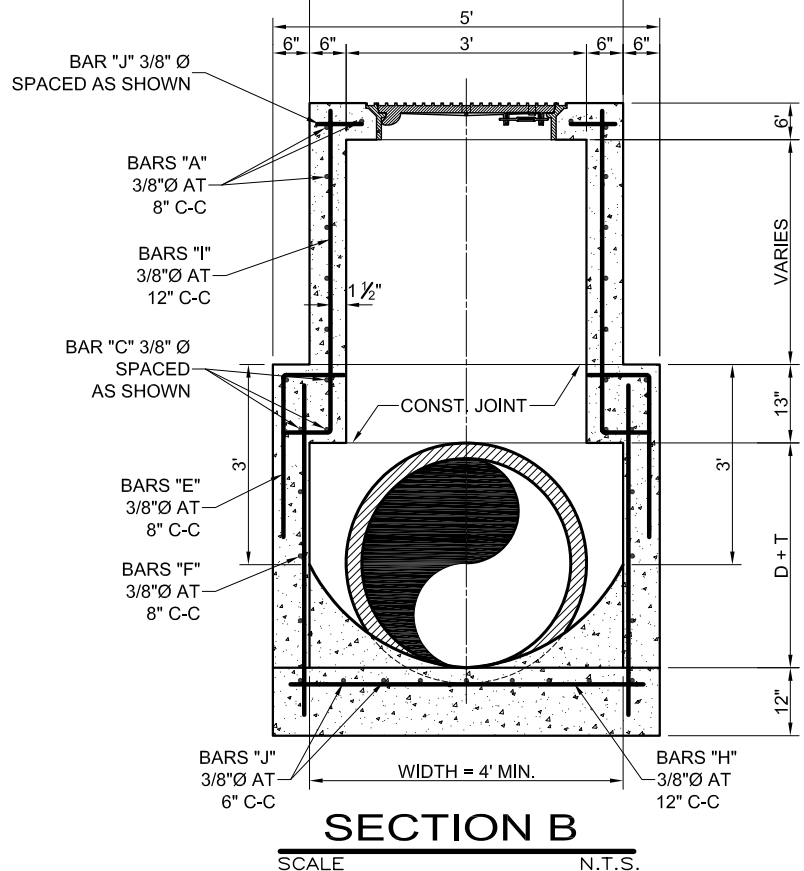
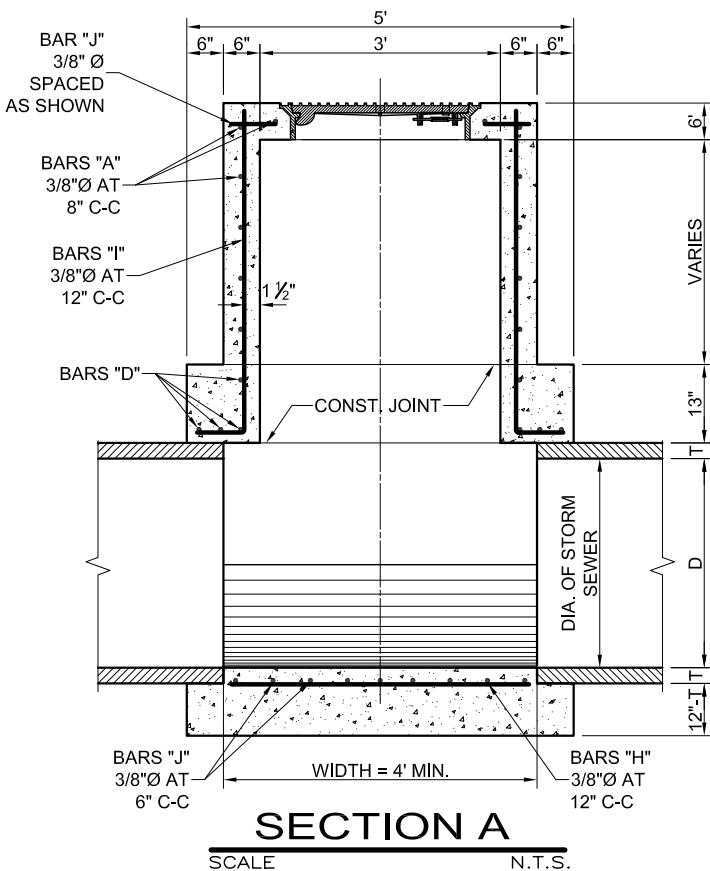
NOTE :
 FRAME AND COVER SHALL BE
 BASS & HAYES PATTERN NO. 380-24
 OR EQUAL AND SHALL BE GRAY
 CAST IRON CONFORMING TO ASTM
 SPEC. A-48 FOR CLASS 30 CAST
 IRON.



NOTE : MAXIMUM PIPE SIZE
 TO BE USED 78"Ø

PLAN

SCALE N.T.S.



CITY OF ALLEN
 DEPARTMENT OF ENGINEERING

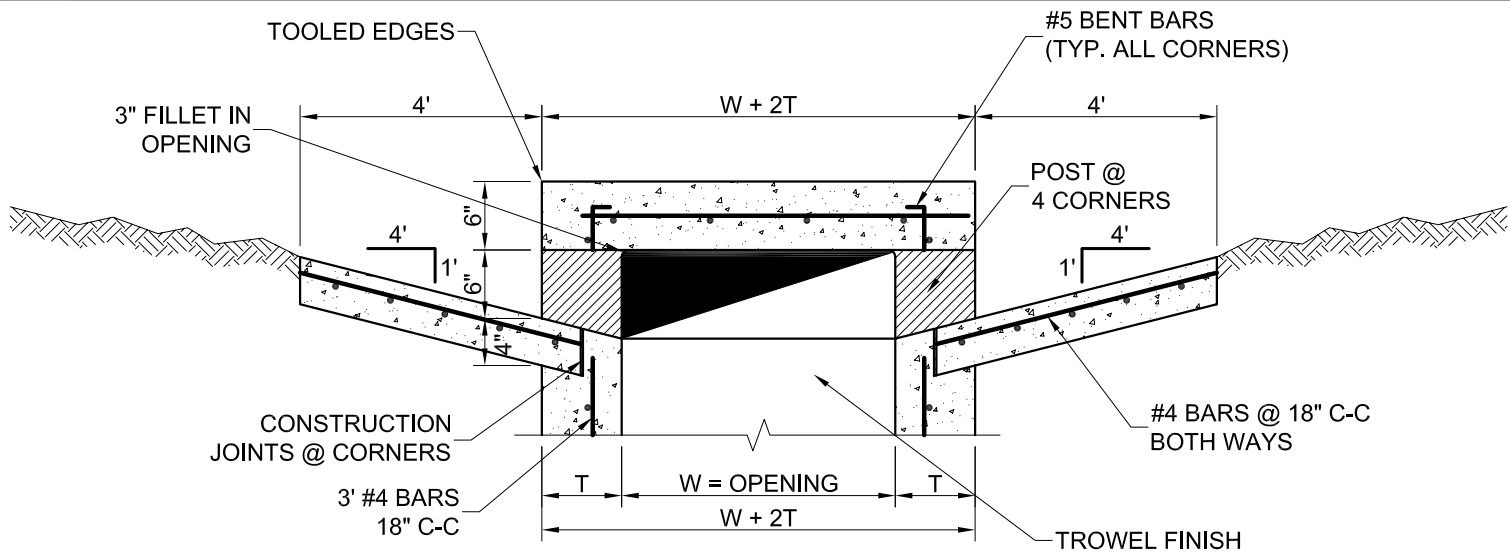
TYPE "B" STORM SEWER MANHOLE

STANDARD CONSTRUCTION DETAILS
 STORM DRAINAGE

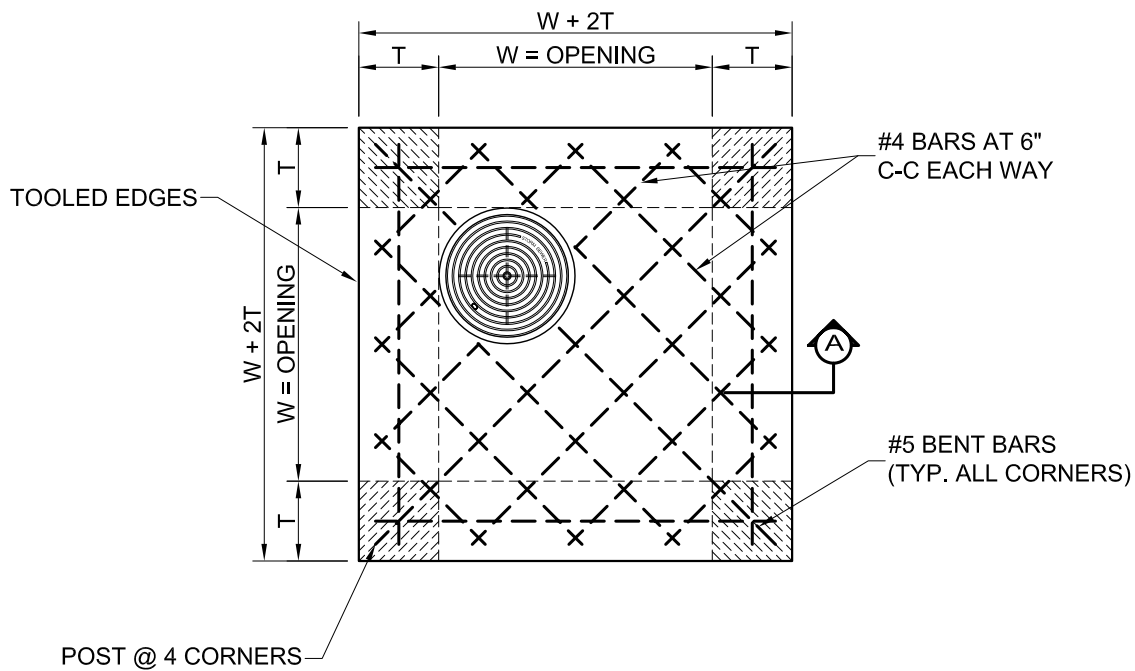
DATE:
 JULY 1991

REV DATE:
 AUG. 2006

SHEET :
 SD-D05

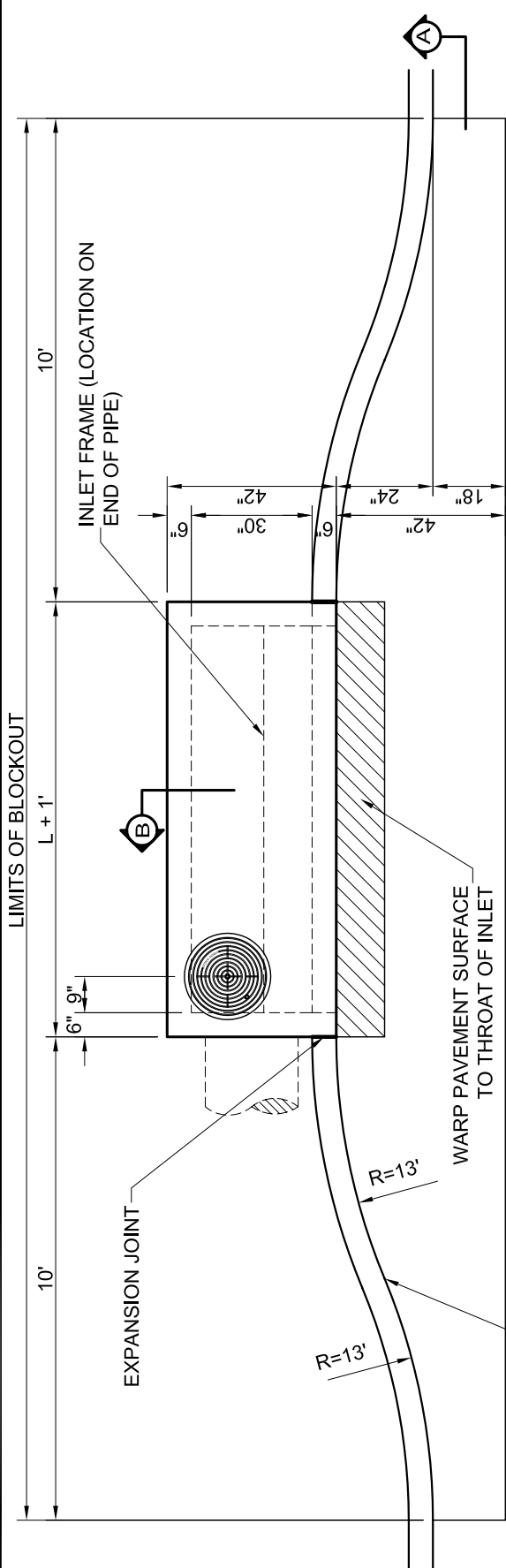


SECTION A
SCALE N.T.S.



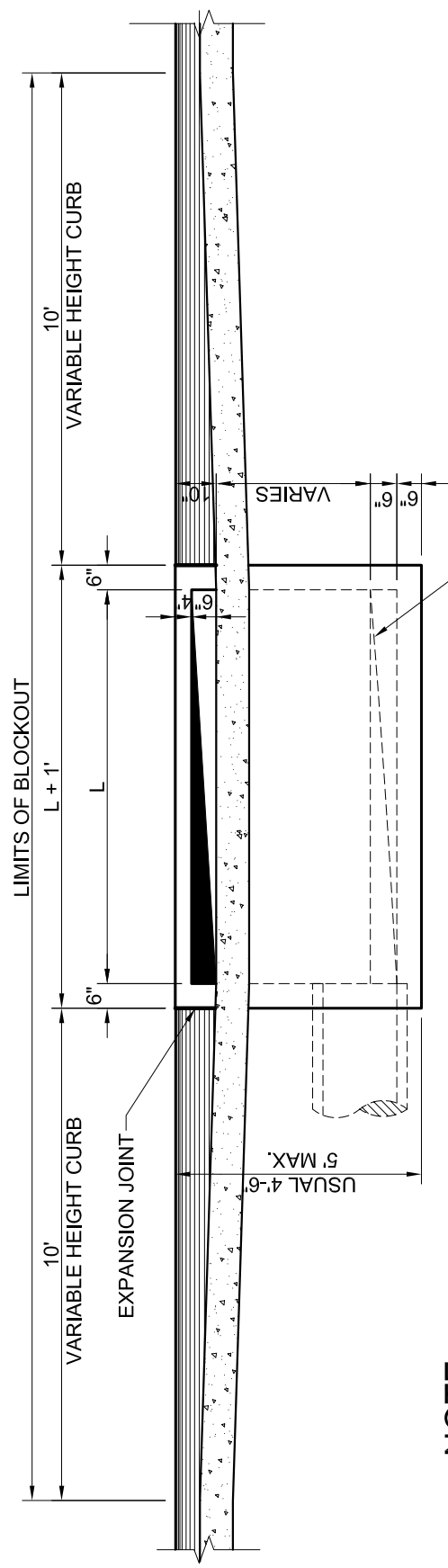
PLAN OF TOP SLAB
SCALE N.T.S.

INLET SIZE	T	W
2' SQUARE	7"	2'-0"
4' SQUARE	7"	4'-0"
5' SQUARE	8"	5'-0"
6' SQUARE	9"	6'-0"



PLAN

SCALE N.T.S.



SECTION A

SCALE N.T.S.

NOTE :
 PIPE MAY BE PLACED IN ANY WALL, BUT SHALL NOT ENTER ANY CORNER OR BOTTOM.
 #3 BAR 18" O.C.E.W. IN BLOCK OUT DRILLED INTO EXISTING CONCRETE.



**RECESSED CURB INLET
 4,6,8 AND 10 FEET INLETS**

STANDARD CONSTRUCTION DETAILS
 STORM DRAINAGE

DATE:
 JULY 1991

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SHEET :
 SD-D07

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DEPARTMENT OF ENGINEERING

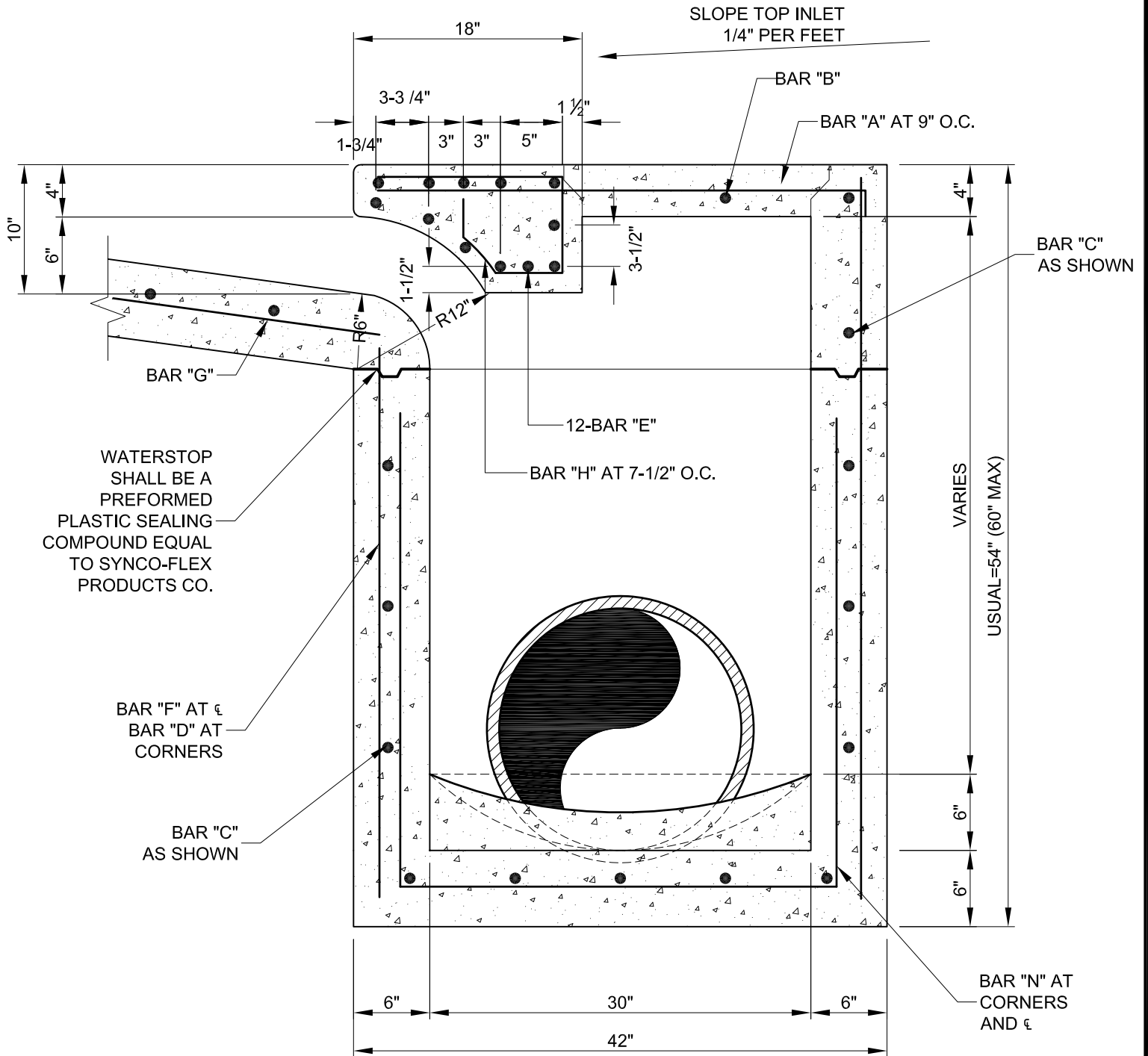
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STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
XX

REV DATE:
XX

SHEET :
SD-D08



TYPICAL SECTION B
SCALE N.T.S.

**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"	-	-
	E	5	6	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"	-	-
	E	5	6	6'-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"	-	-
	E	5	6	8'-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"
10'	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



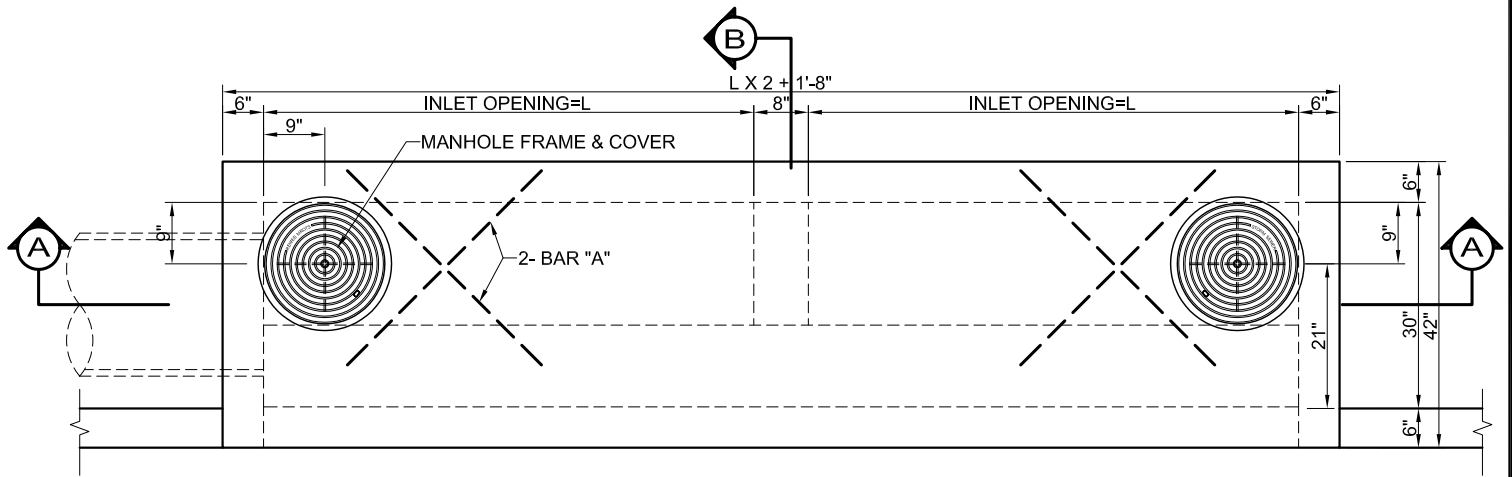
**REINFORCING STEEL SCHEDULE
4,6,8 AND 10 FEET INLETS**

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

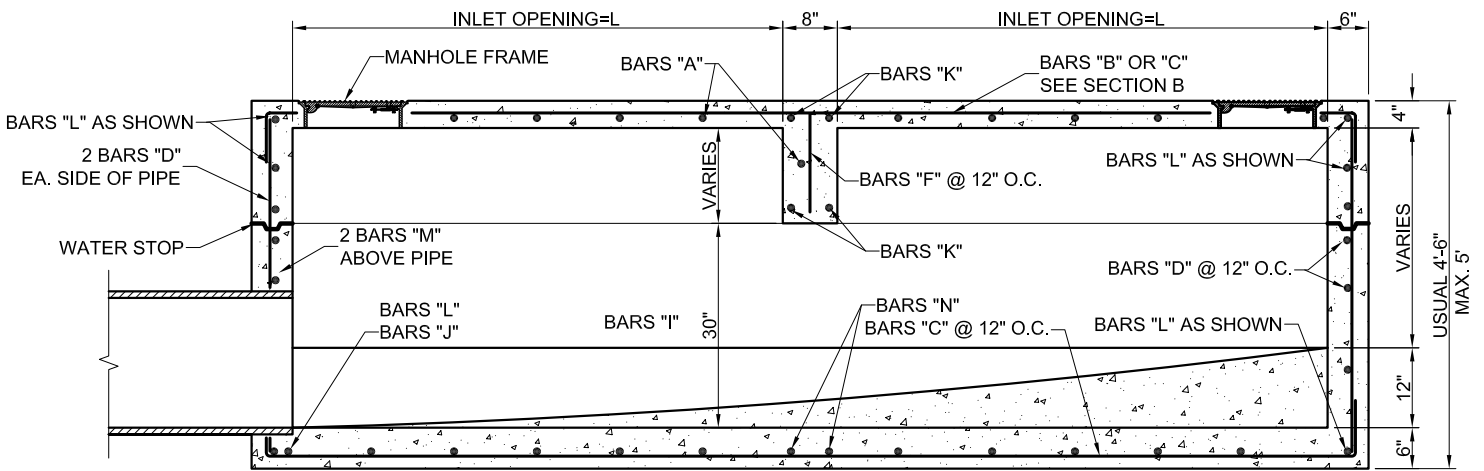
DATE:
JULY 1991

REV DATE:
JUL. 2010

SHEET :
SD-D11



PLAN-STANDARD INLET
SCALE N.T.S.



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

SECTION A
SCALE N.T.S.



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

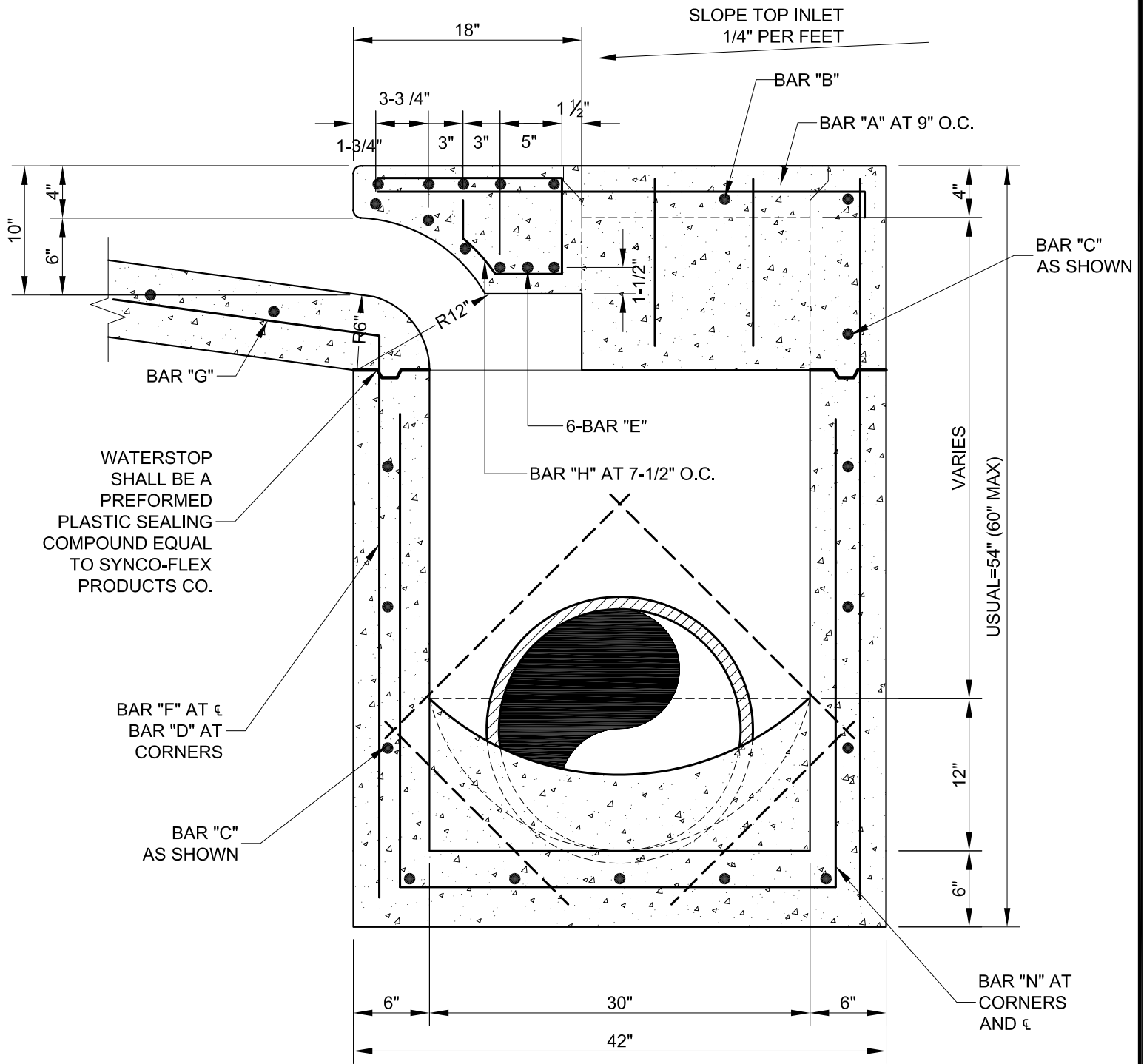
12,14,16 AND 20 FEET INLETS

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
JULY 1991

REV DATE:
AUG. 2006

SHEET :
SD-D12



SECTION B

SCALE N.T.S.



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

CURB INLET
12,14,16 AND 20 FEET INLETS

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
JULY 1991

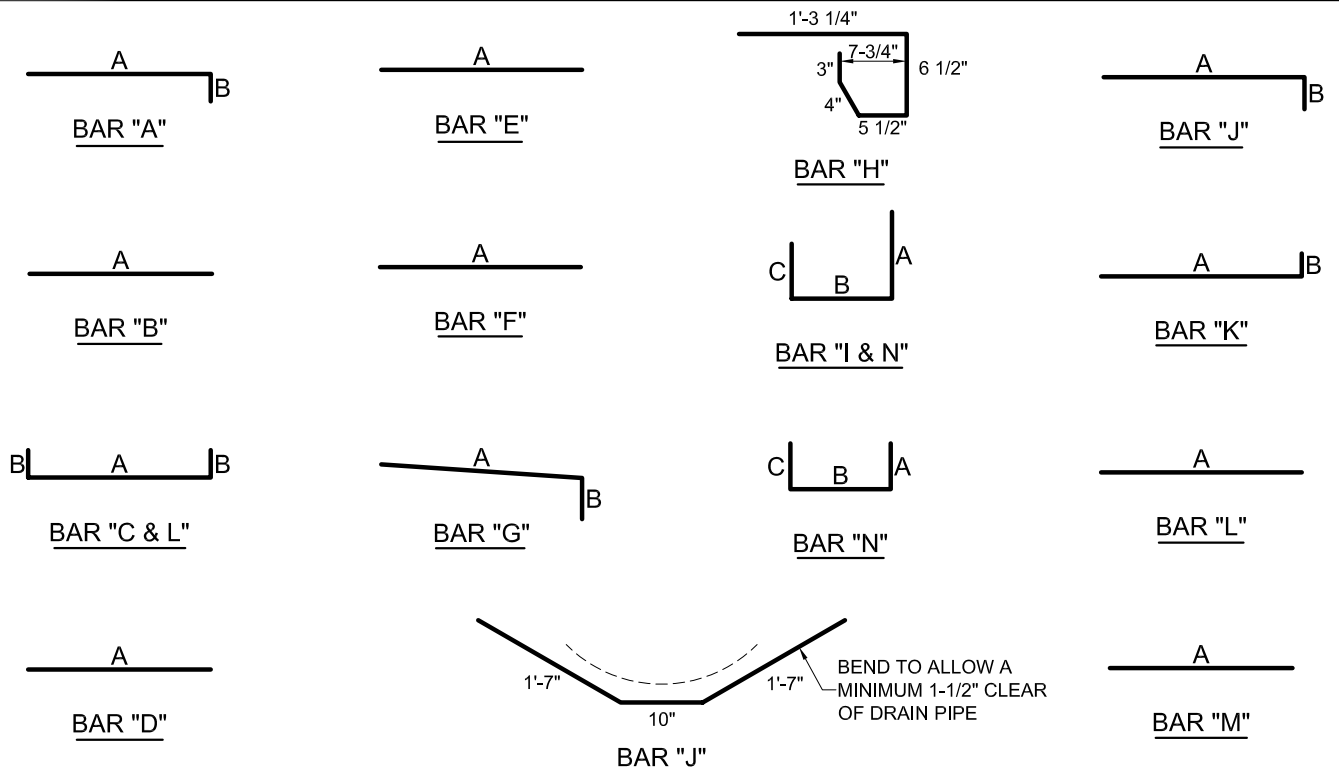
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SHEET :
SD-D13

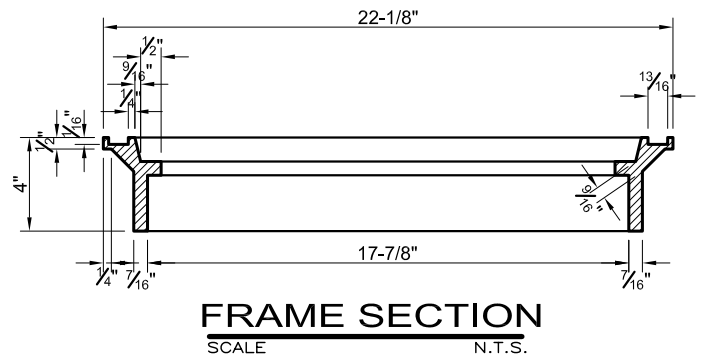
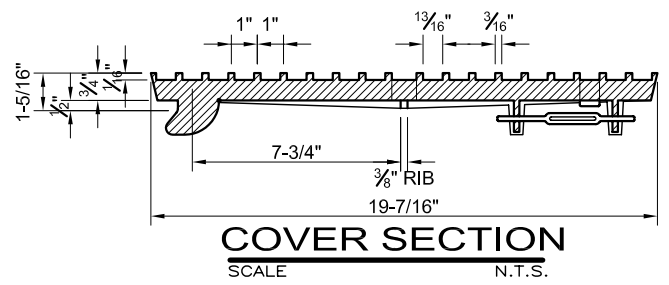
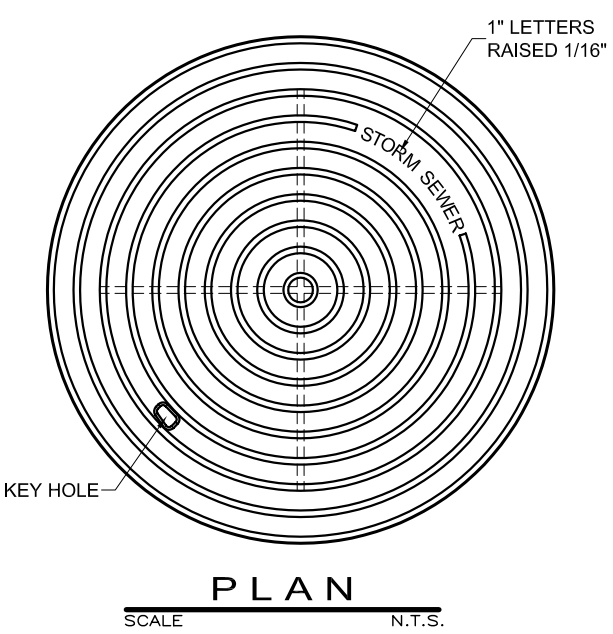
REINFORCING STEEL SCHEDULE
DIMENSIONS ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA. (1/8")	NO. REQ'D.	BAR DIMENSIONS			INLET LENGTH	BAR TYPE	BAR DIA. (1/8")	NO. REQ'D.	BAR DIMENSIONS		
				A	B	C					A	B	C
6'	A	3	15	3'-2"	0'-6"	-	8'	A	3	19	3'-2"	0'-6"	-
	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"	
7'	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	16	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
*** FIELD CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE



BAR DIAGRAMS
SCALE N.T.S.



NOTE :
ALL CAST IRON FITTINGS SHALL BE DOMESTIC.



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

BAR DIAGRAMS AND
INLET FRAME & COVER DETAIL

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
JULY 1991

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AUG. 2006

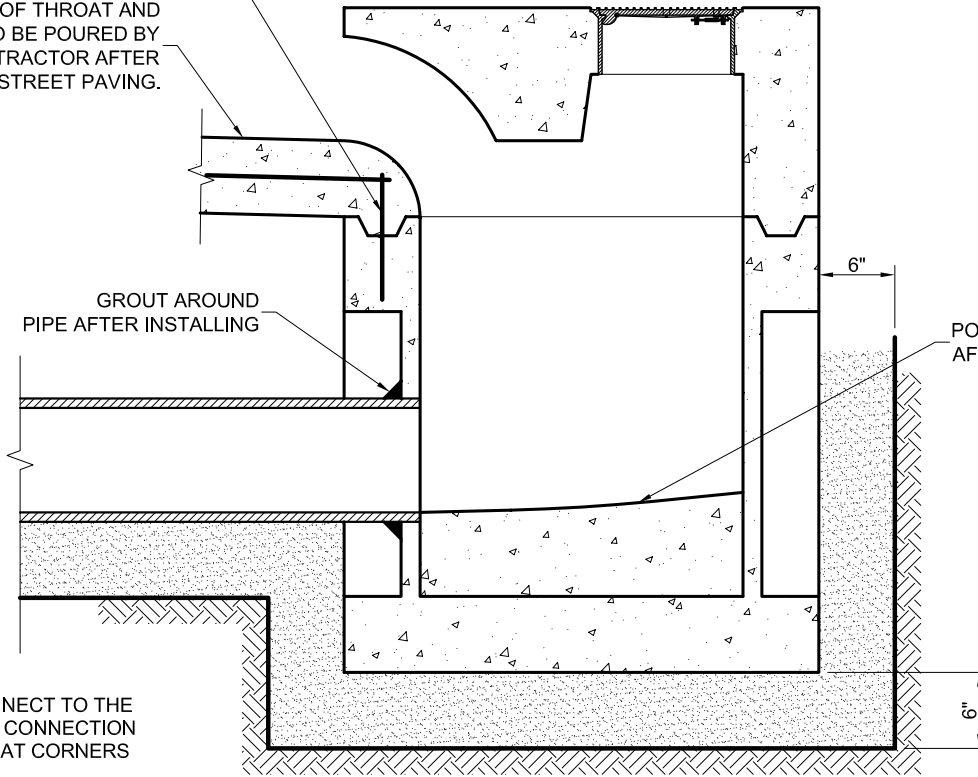
SHEET :
SD-D15

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

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.

PRECAST INLETS MUST BE APPROVED BY CITY ENGINEER.

INSTALLATION DRAWING FOR PRECAST 5' AND 10' CURB INLETS

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.



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

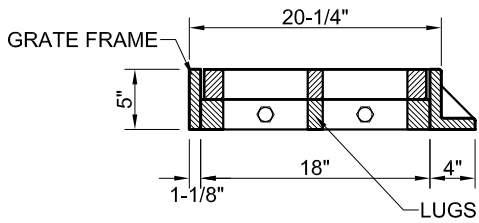
PRECAST CURB INLET

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

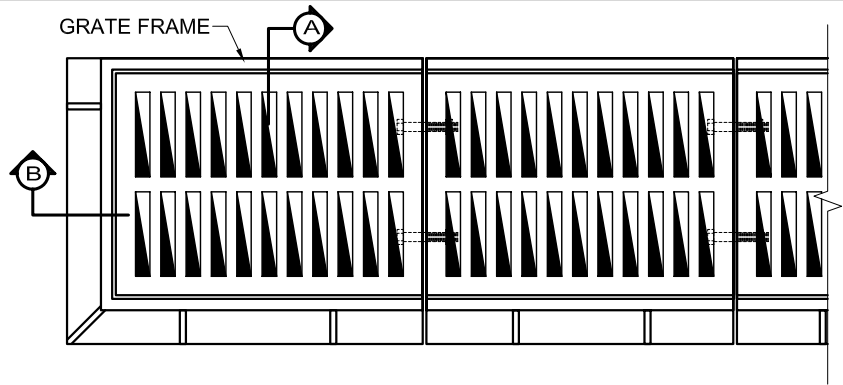
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REV DATE:
AUG. 2006

SHEET :
SD-D16



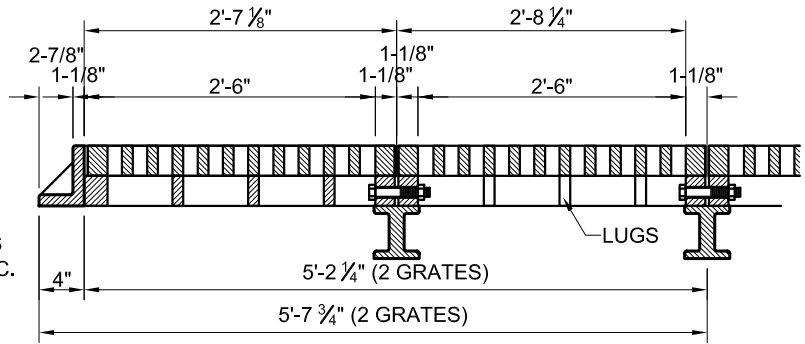
SECTION A
SCALE N.T.S.



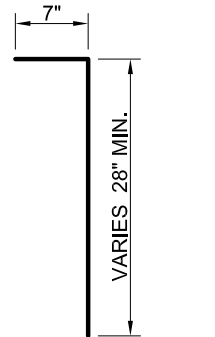
PLAN
SCALE N.T.S.

NOTES :

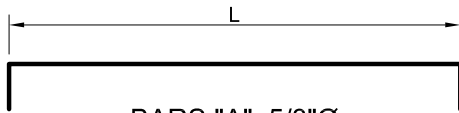
1. ALL LAPS AND EXTENSION OF REINFORCING BARS SHALL BE 36 BAR IN DIAMETERS UNLESS NOTED OTHERWISE.
2. TACK WELD GRATES IN PLACE.
3. PIPE MAYBE PLACED IN ANY WALL, BUT
4. SHALL NOT ENTER ANY CORNER OR BOTTOM.
5. GRATE AND FRAME SHALL BE PATTERN No. 814AS MANUFACTURED BY BASS & HAYES FOUNDRY, INC. OR APPROVED EQUAL.
6. ALL CAST IRON FITTINGS SHALL BE DOMESTIC.



SECTION B
SCALE N.T.S.

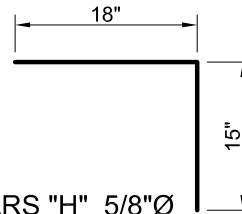


BARS "K" 4/8"Ø

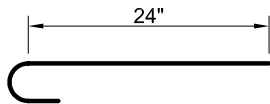


BARS "A" 5/8"Ø

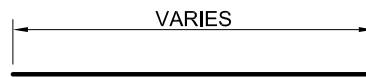
TWO GRATE INLET , L=5'-10 1/4"
THREE GRATE INLET , L=8'-6 1/2"
FOUR GRATE INLET , L=11'-2 3/4"



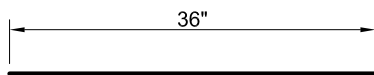
BARS "H" 5/8"Ø



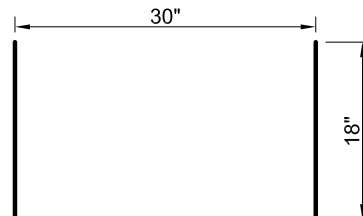
BARS "B" 5/8"Ø



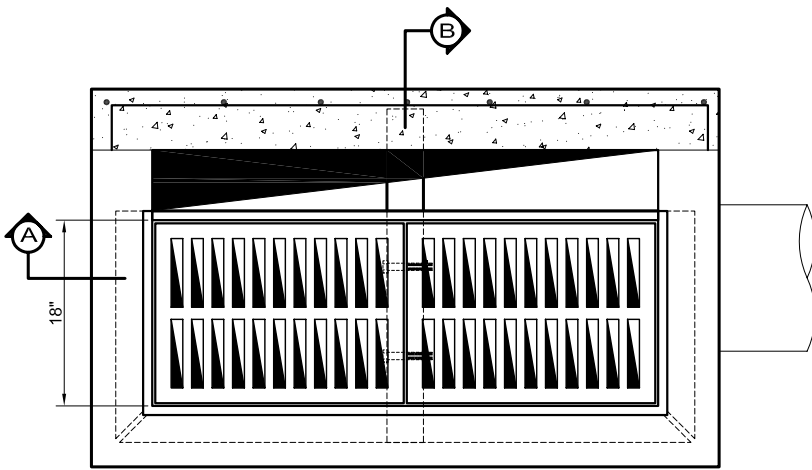
BARS "I" 4/8"Ø



BARS "C" 3/8"Ø



BARS "J" 4/8"Ø

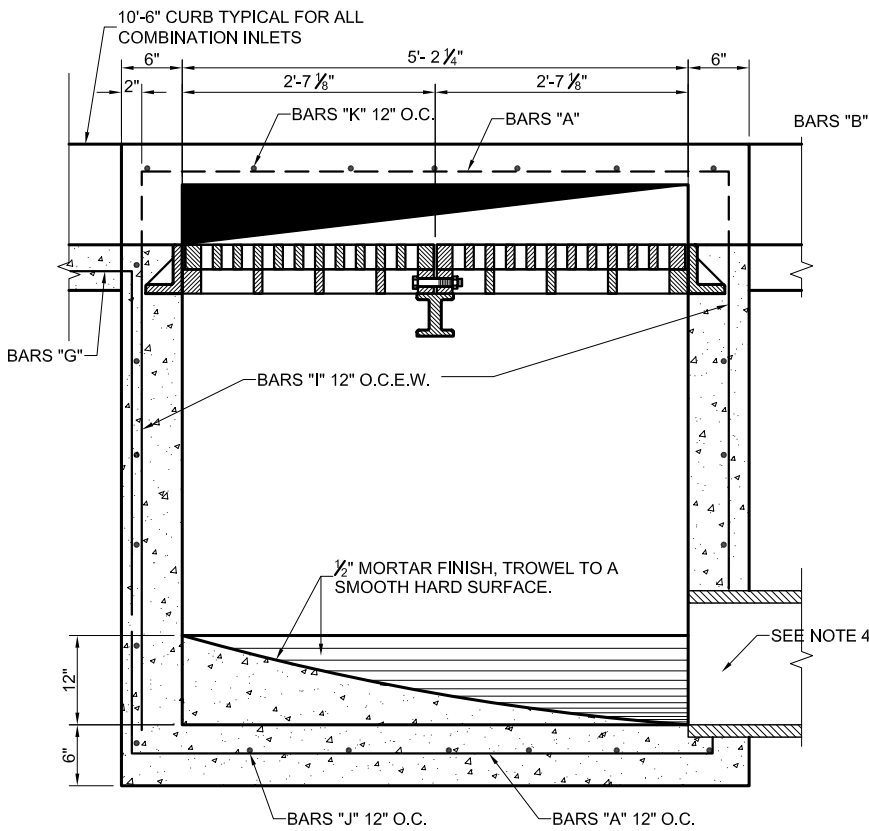


PLAN

SCALE N.T.S.

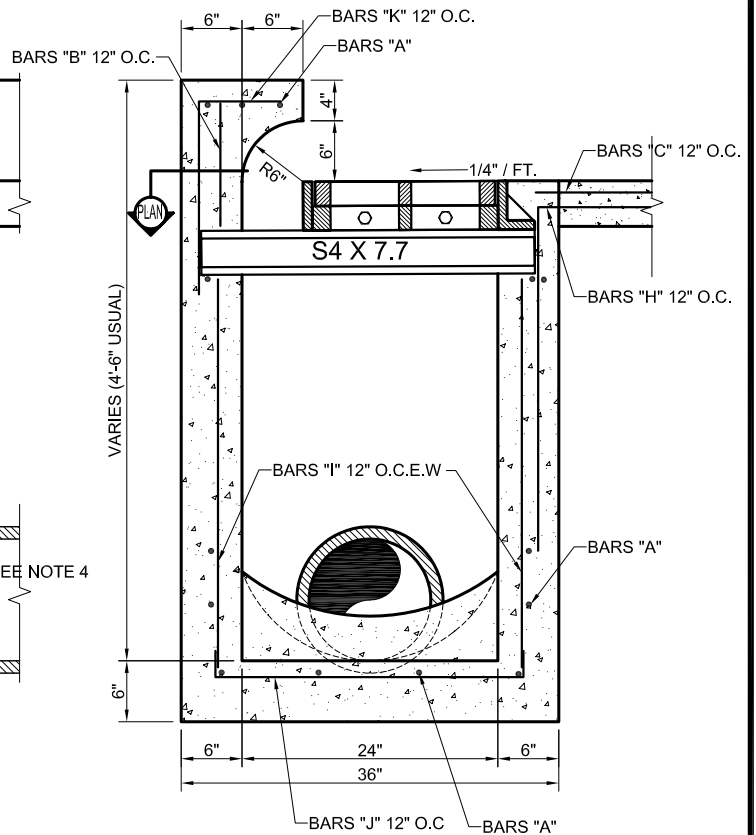
NOTES :

1. COMBINATION INLETS TO BE USE IN ALL ALLEYS WHERE INLETS ARE REQUIRED.
2. ALL LAPS AND EXTENSION 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.
5. ALL CAST IRON FITTINGS SHALL BE DOMESTIC.



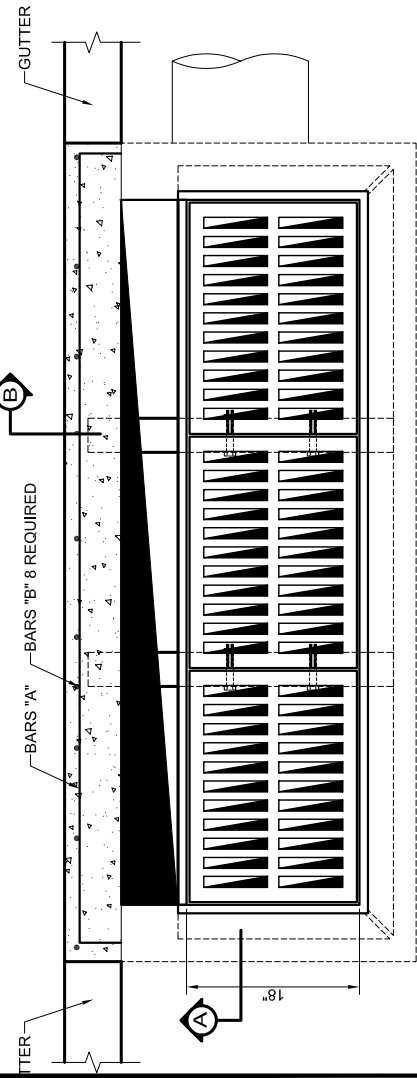
SECTION A

SCALE N.T.S.



SECTION B

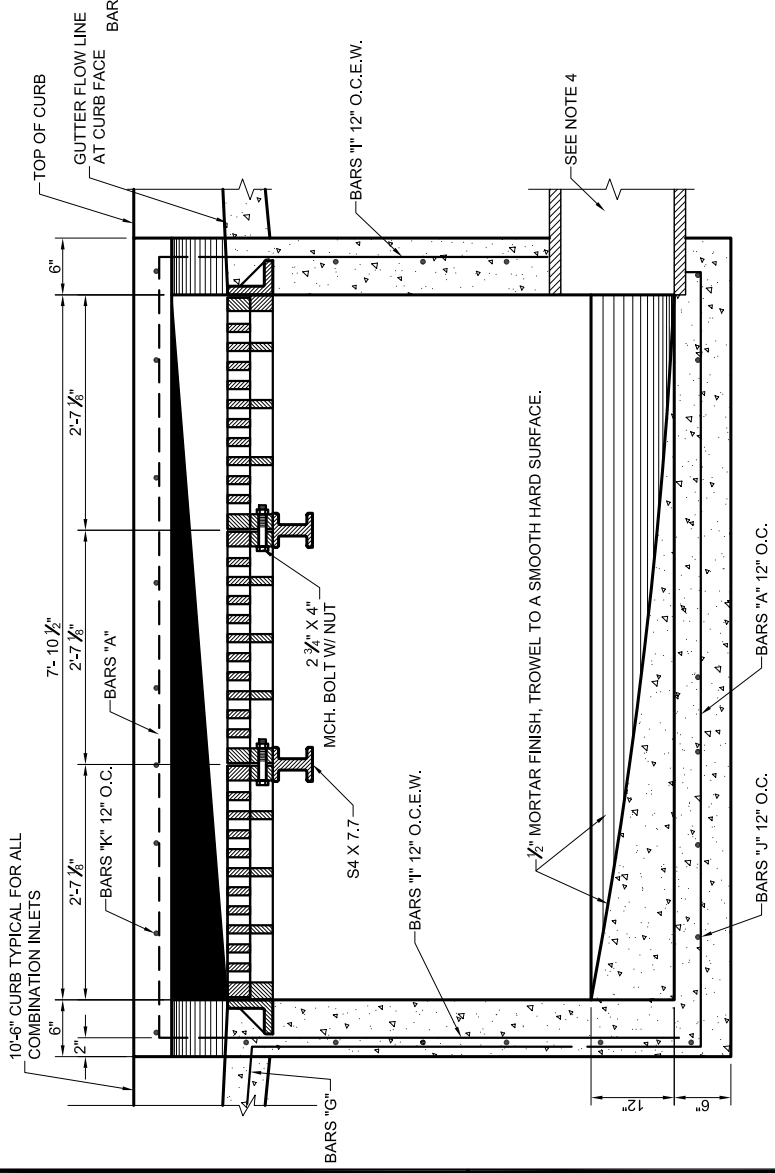
SCALE N.T.S.



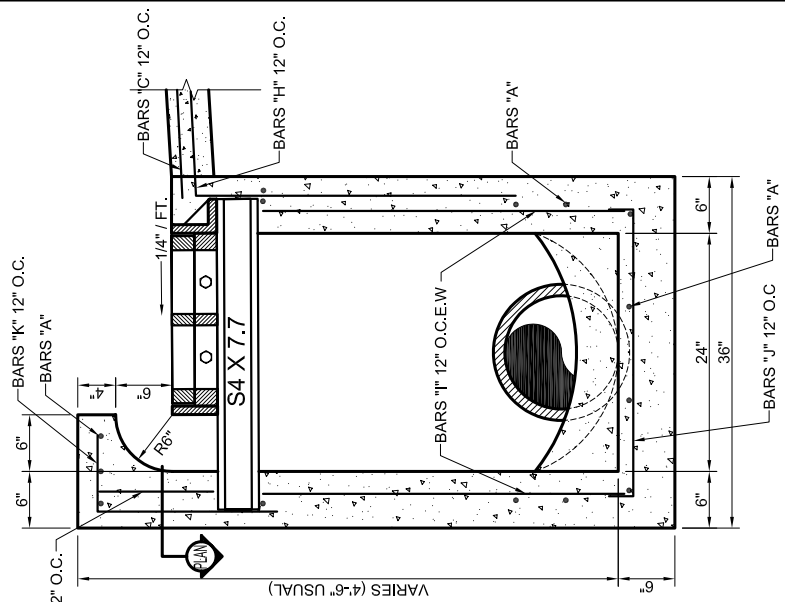
PLAN
SCALE N.T.S.

NOTES :

1. COMBINATION INLETS TO BE USE IN ALL ALLEYS WHERE INLETS ARE REQUIRED.
2. ALL LAPS AND EXTENSION 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.
5. ALL CAST IRON FITTINGS SHALL BE DOMESTIC.



SECTION A
SCALE N.T.S.



SECTION B
SCALE N.T.S.

STANDARD CONSTRUCTION DETAILS STORM DRAINAGE		
DATE: JULY 1991	REV DATE: AUG. 2006	SHEET : SD-D19

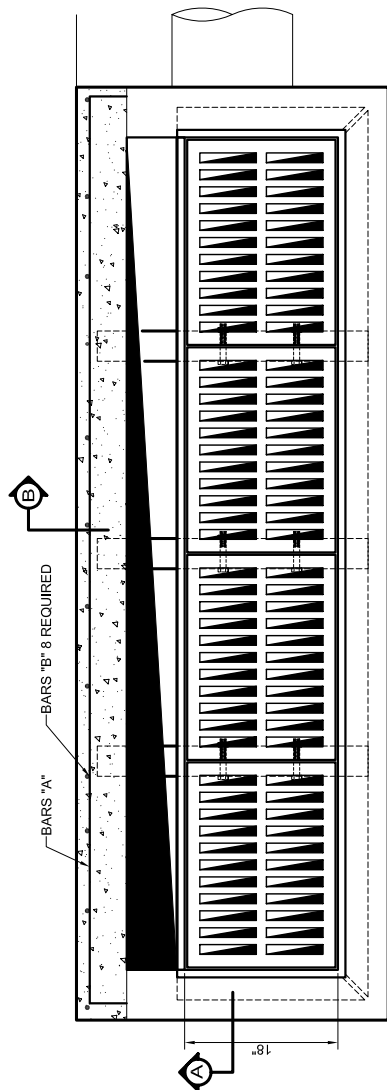
COMBINATION INLET FOUR GRATE INLET

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
JULY 1991

REV DATE:
AUG. 2006

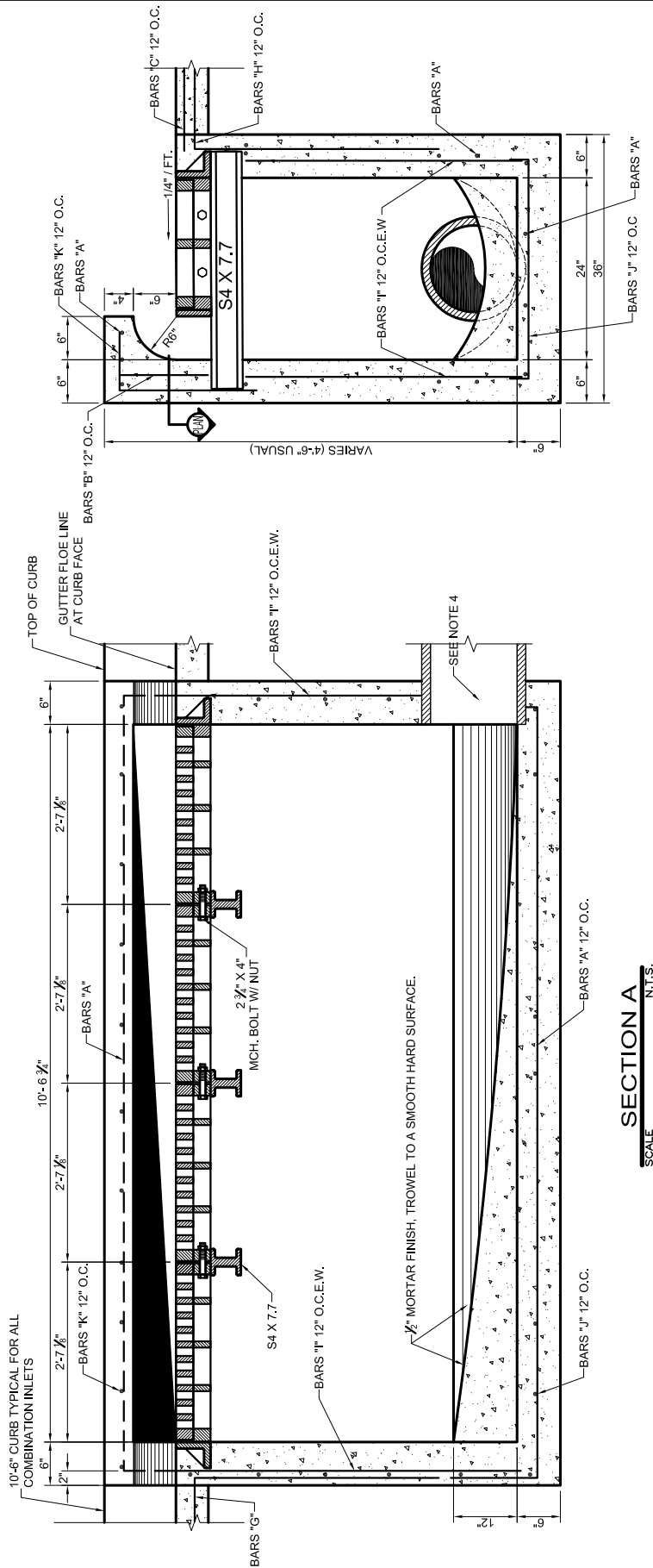
SHEET :
SD-D20



PLAN
SCALE N.T.S.

NOTES :

1. COMBINATION INLETS TO BE USED IN ALL ALLEYS WHERE INLETS ARE REQUIRED.
2. ALL LAPS AND EXTENSION OF REINFORCING BARS SHALL BE 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
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5. ALL CAST IRON FITTINGS SHALL BE DOMESTIC.



SECTION A
SCALE N.T.S.

SECTION B
SCALE N.T.S.

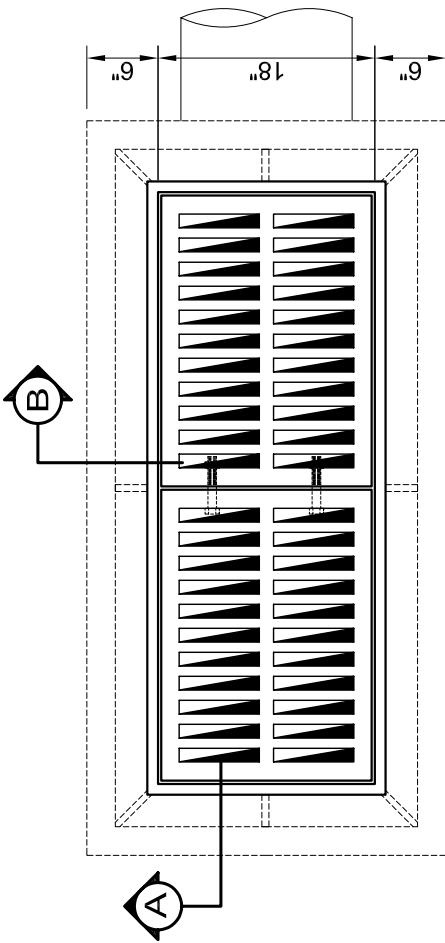
TWO GRATE INLET

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
JULY 1991

REV DATE:
AUG. 2006

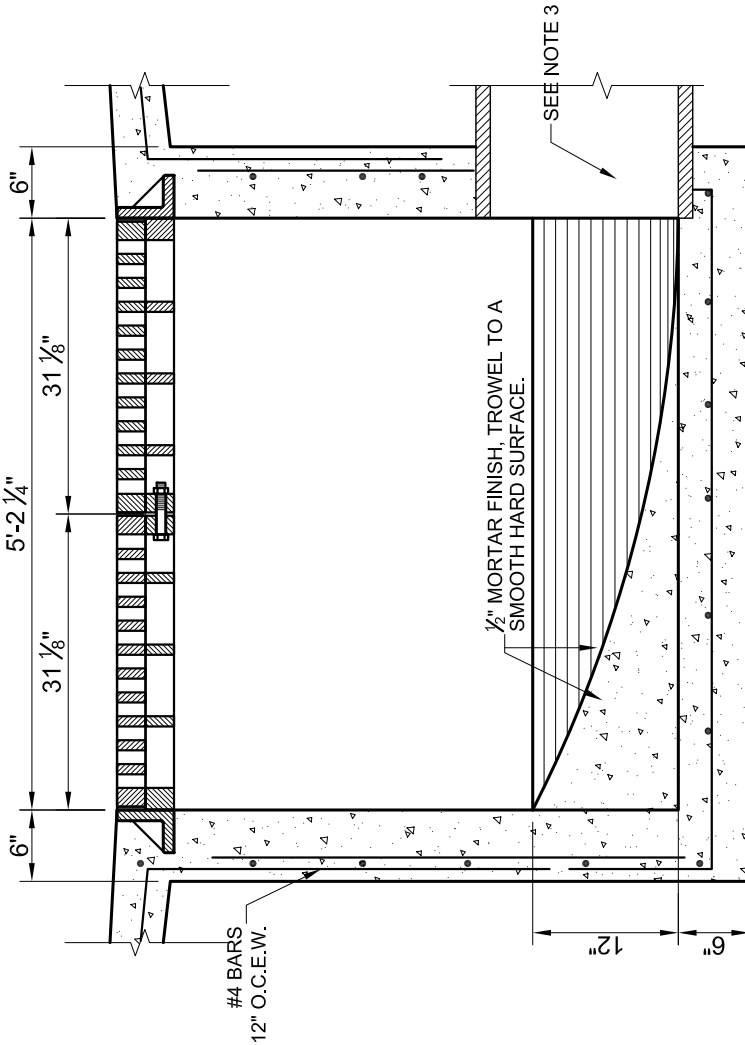
SHEET :
SD-D21



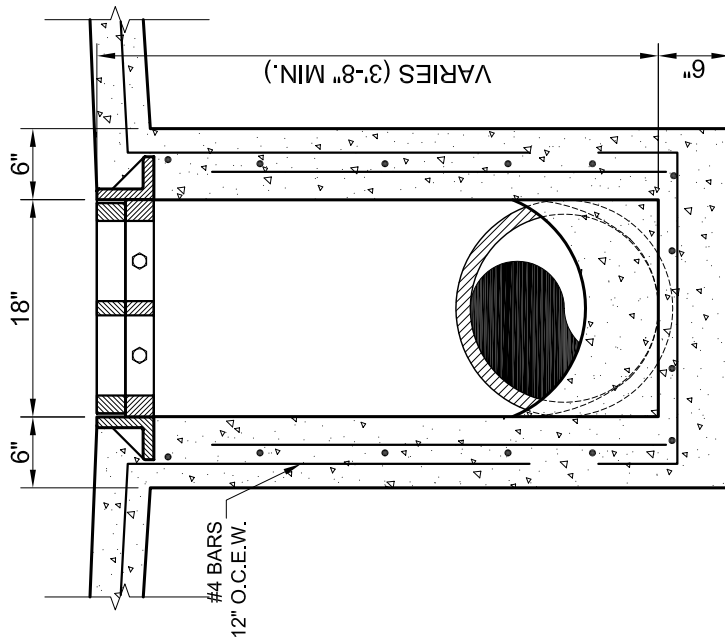
PLAN
SCALE N.T.S.

NOTES :

1. ALL LAPS AND EXTENSION 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.
4. ALL CAST IRON FITTINGS SHALL BE DOMESTIC.



SECTION A
SCALE N.T.S.



SECTION B
SCALE N.T.S.

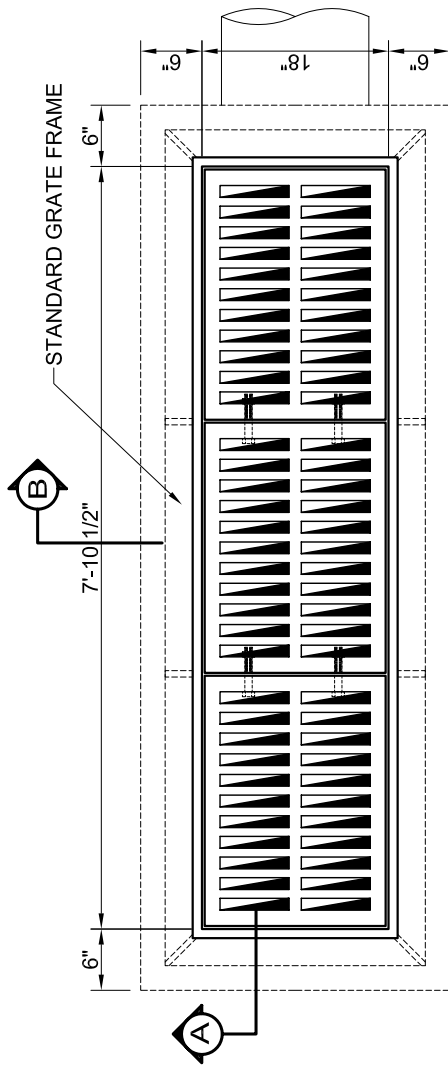
THREE GRATE INLET

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
JULY 1991

REV DATE:
AUG. 2006

SHEET :
SD-D22

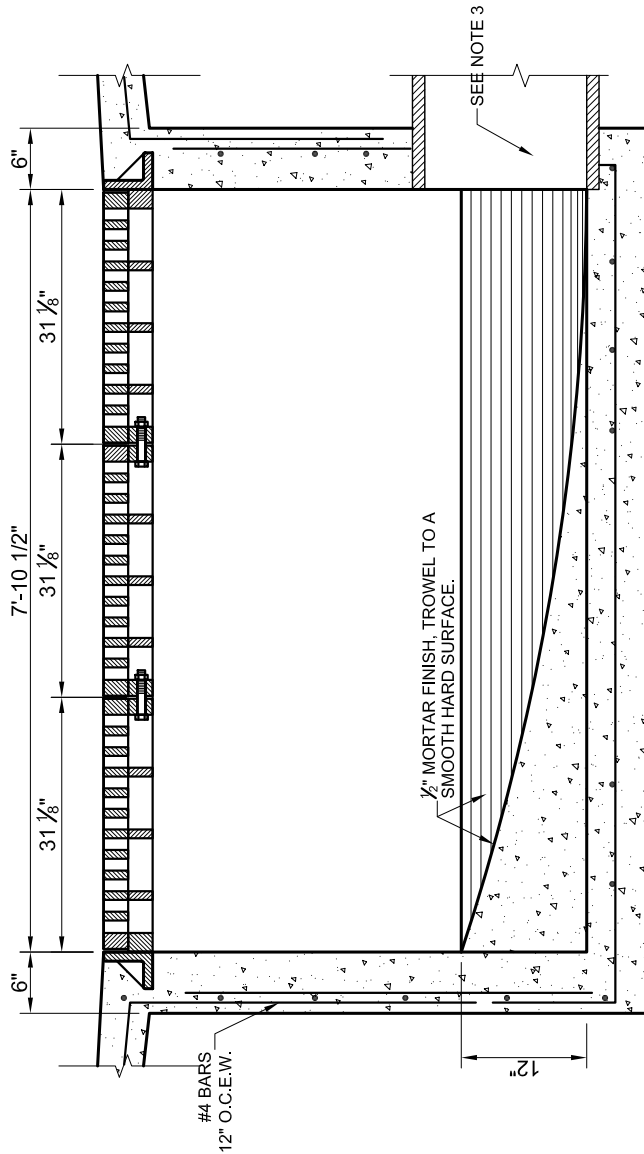


PLAN

SCALE N.T.S.

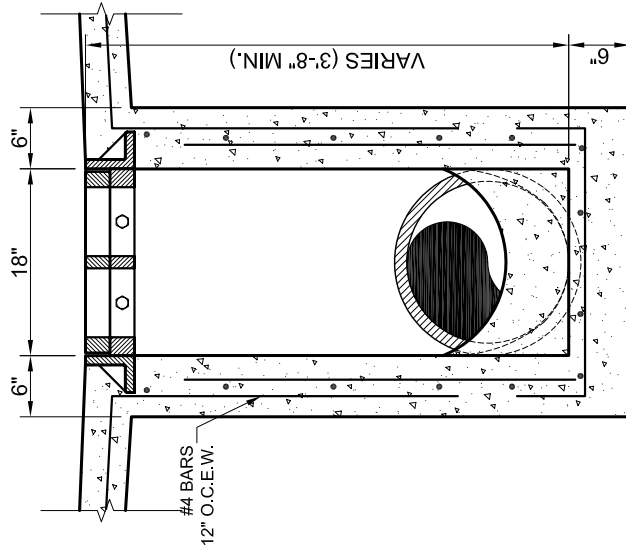
NOTES :

1. ALL LAPS AND EXTENSION 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.
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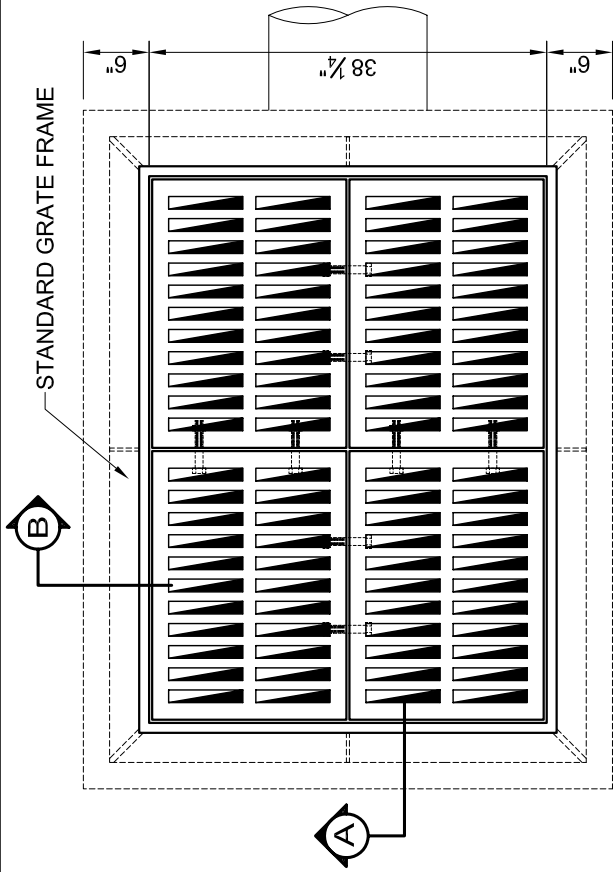
SECTION A

SCALE N.T.S.



SECTION B

SCALE N.T.S.

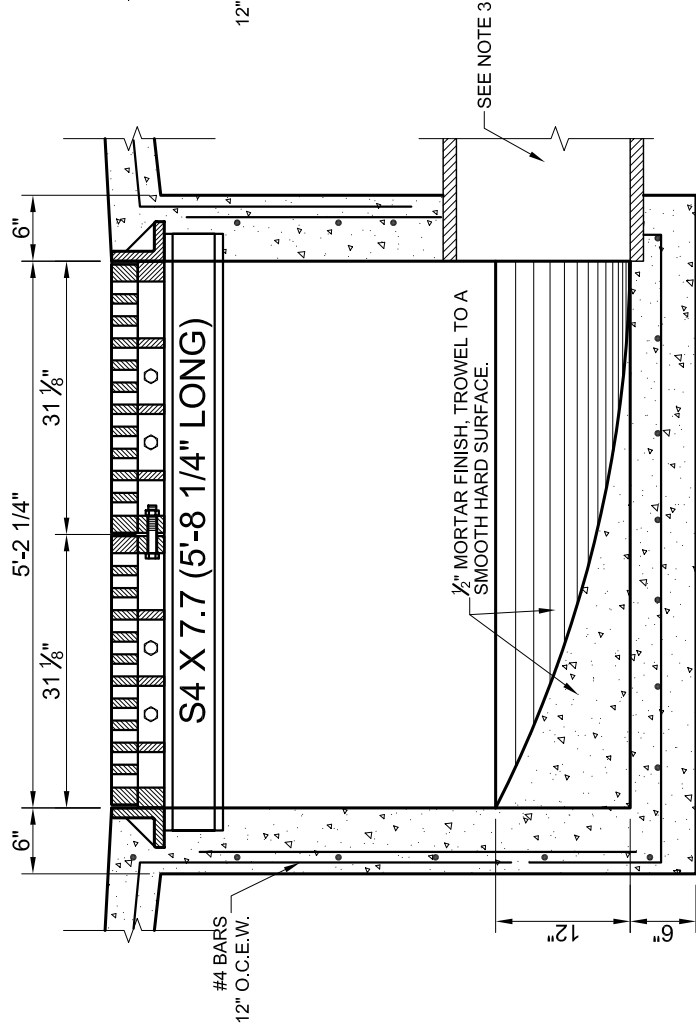


PLAN

SCALE N.T.S.

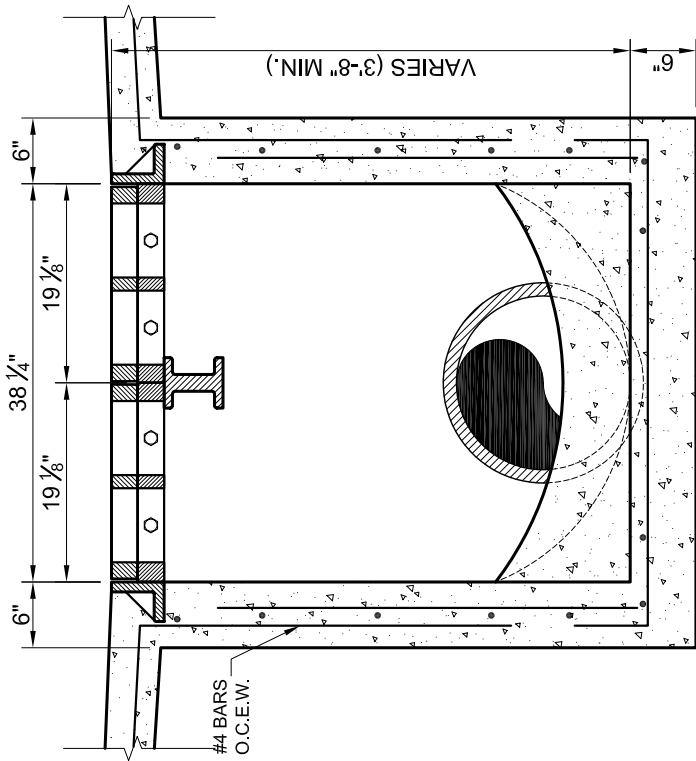
NOTES :

1. ALL LAPS AND EXTENSION 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.
4. ALL CAST IRON FITTINGS SHALL BE DOMESTIC.



SECTION A

SCALE N.T.S.



SECTION B

SCALE N.T.S.

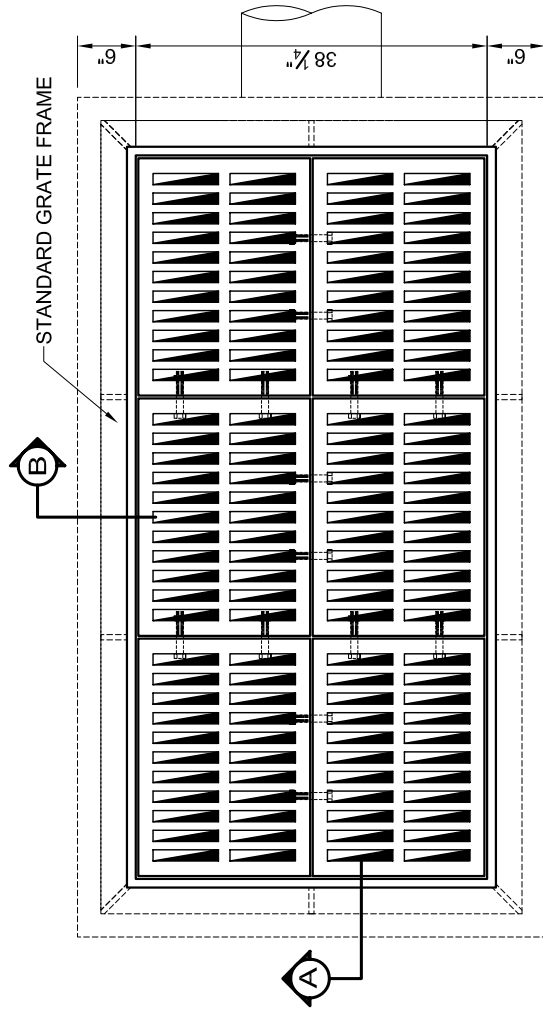
SIX GRATE INLET

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
JULY 1991

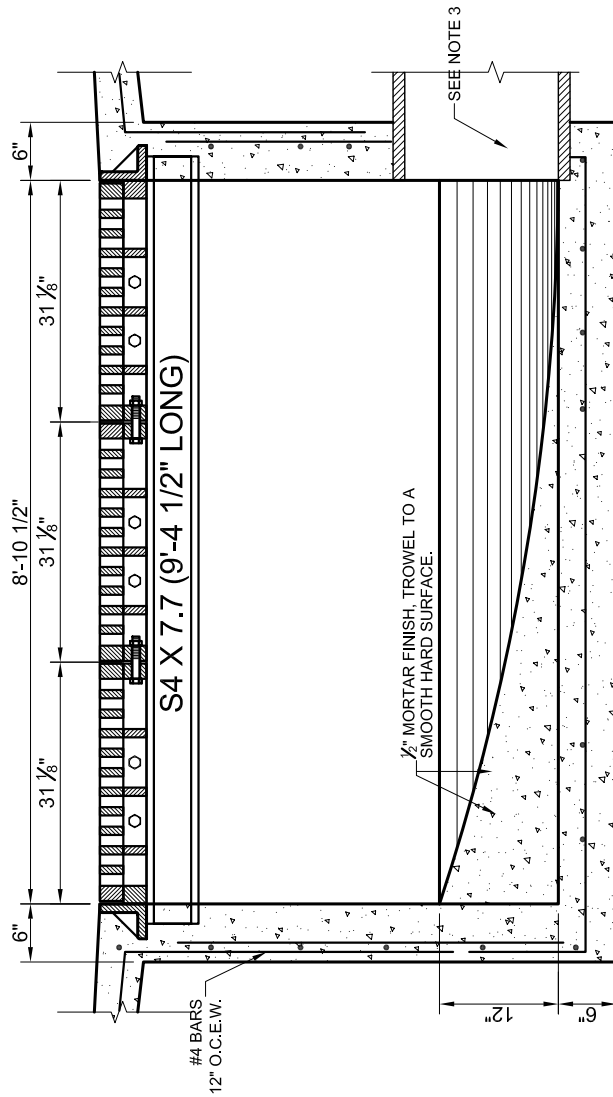
REV DATE:
AUG. 2006

SHEET :
SD-D24



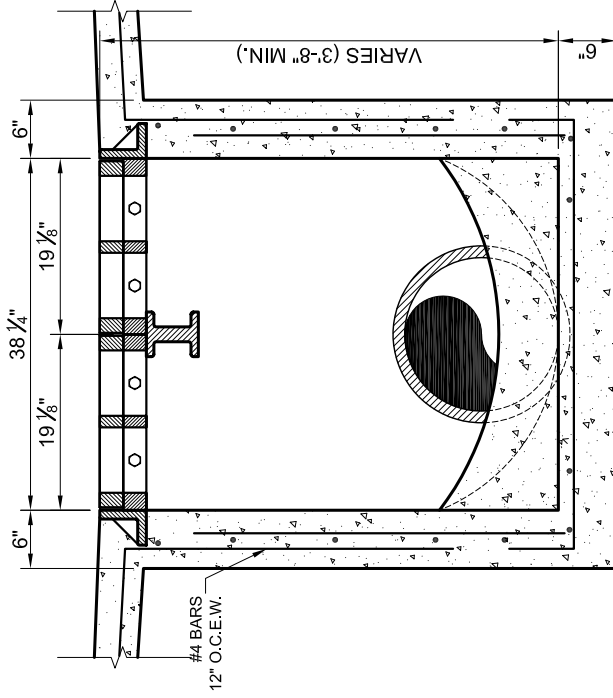
NOTES :

1. ALL LAPS AND EXTENSION 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.
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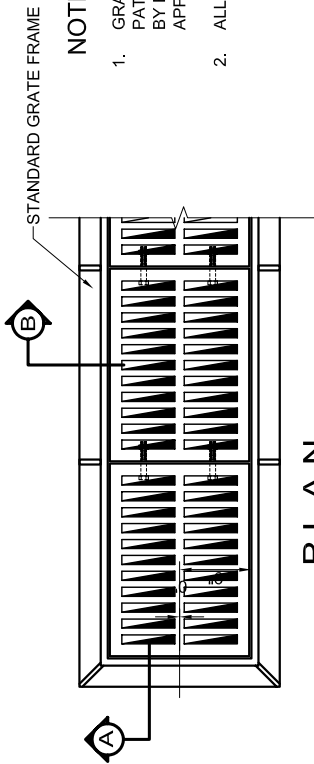
SECTION A

SCALE N.T.S.



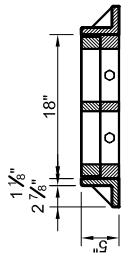
SECTION B

SCALE N.T.S.



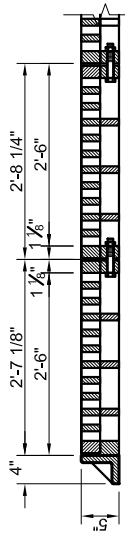
NOTES :

1. GRATE AND FRAME SHALL BE PATTERN NO. 814 AS MANUFACTURED BY BASS AND HAYES FOUNDRY OR APPROVED EQUAL.
2. ALL CAST IRON FITTINGS SHALL BE DOMESTIC.

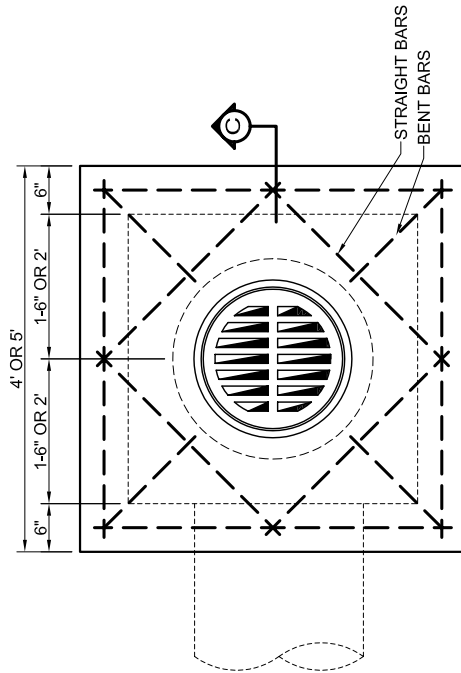
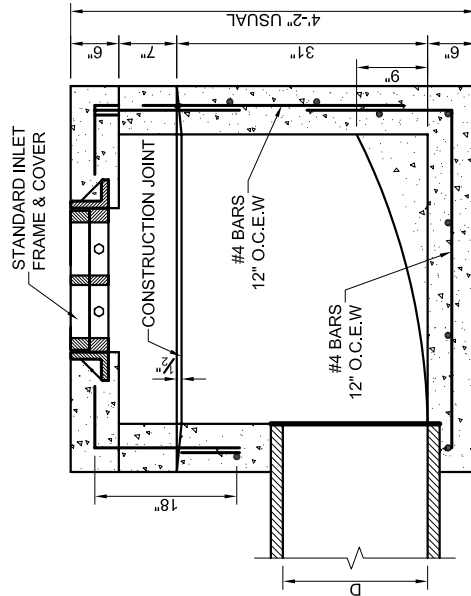


SECTION A

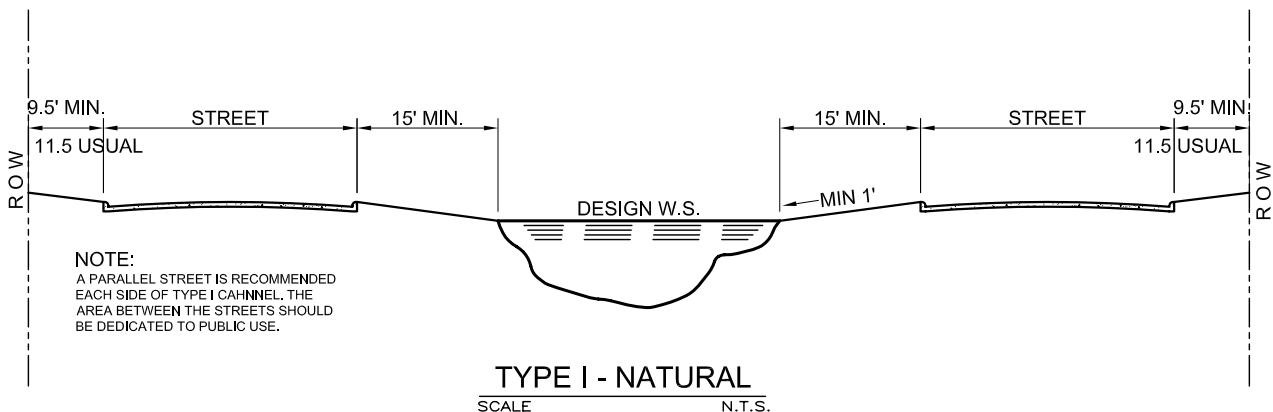
SCALE: N.T.S.



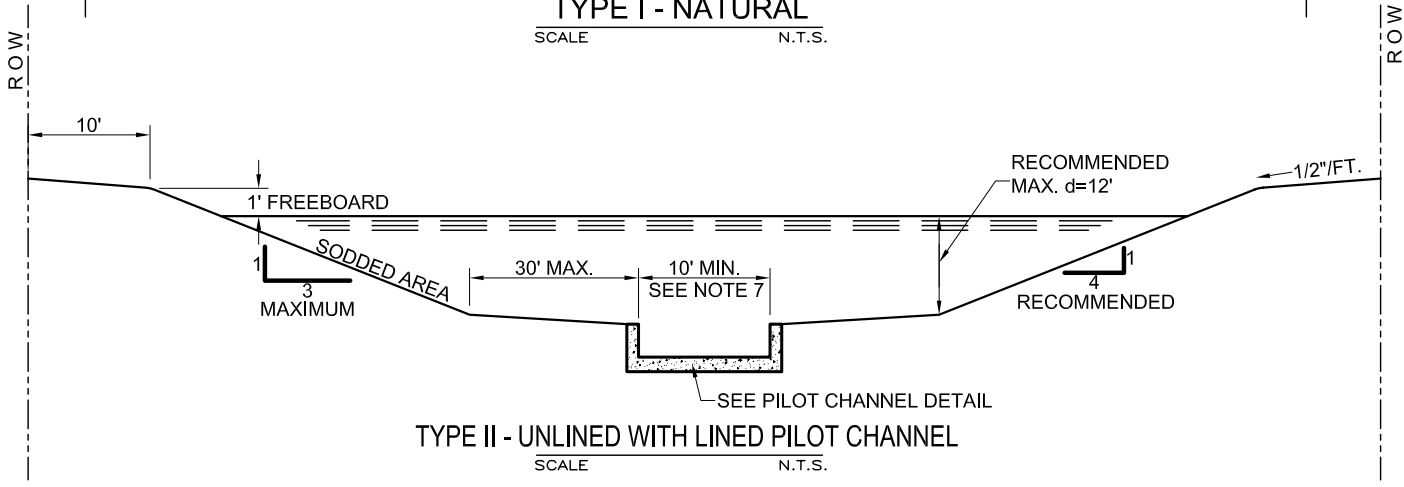
GRATE DETAIL



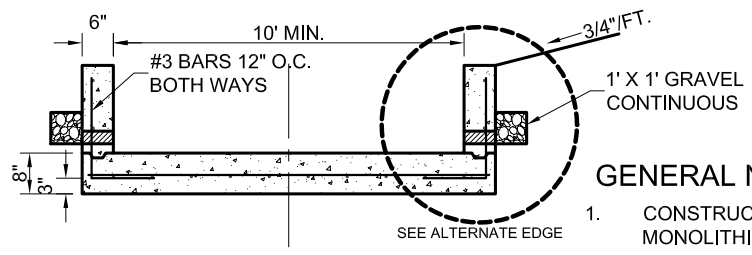
STANDARD DROP INLET



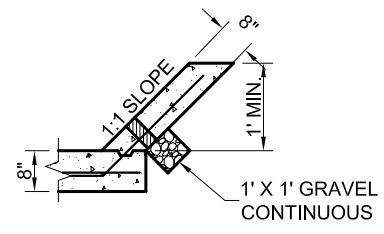
TYPE I - NATURAL
SCALE N.T.S.



TYPE II - UNLINED WITH LINED PILOT CHANNEL
SCALE N.T.S.



PILOT CHANNEL DETAIL
SCALE N.T.S.



ALTERNATE EDGE
SCALE N.T.S.

GENERAL NOTES FOR OPEN CHANNELS

1. CONSTRUCTION JOINT SHOWN FOR CONVENIENCE ONLY. MONOLITHIC CONSTRUCTION MAYBE USED.
2. ALL VISIBLE SURFACES SHALL BE TROWEL FINISH.
3. ALL REINFORCING STEEL SHALL BE 3/8" DIAMETER AND SPACED 12" C TO C BOTH WAYS UNLESS OTHERWISE SPECIFIED.
4. TYPE I CHANNEL, A NATURAL CHANNEL, IS SHOWN FOR LOCATION OF ADJUSCENT STREETS.
5. IF WOOD FORMS ARE USED WITH CONSTRUCTION JOINT, THEY SHALL BE TWO, 2" X 4" AND SHALL NOT BE REMOVED UNTIL CONCRETE ON SLOPES IS READY TO BE PLACED.
6. ALL CONCRETE IN LINED CHANNEL SHALL BE CLASS "A"
7. FLAT BOTTOM TO BE CONSTRUCTED WHEN CHANNEL WIDTH IS LESS THAN 12'.
8. 3/4" CHAMFER ON ALL CONCRETE CORNERS.
9. GRASS COVER REQUIRED FOR ALL SLOPES 3:1 OR FLATTER. CONCRETE RIP-RAP REQUIRED ON SLOPES STEEPER THAN 3:1.



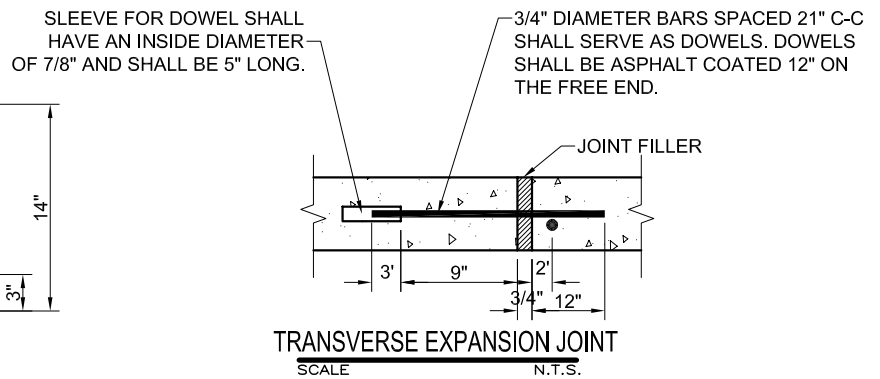
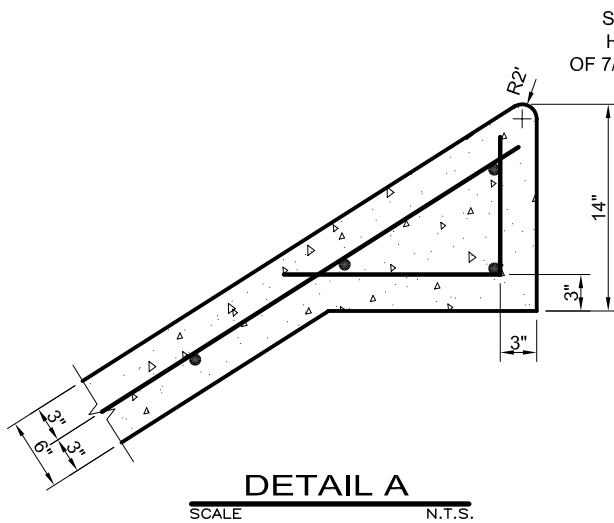
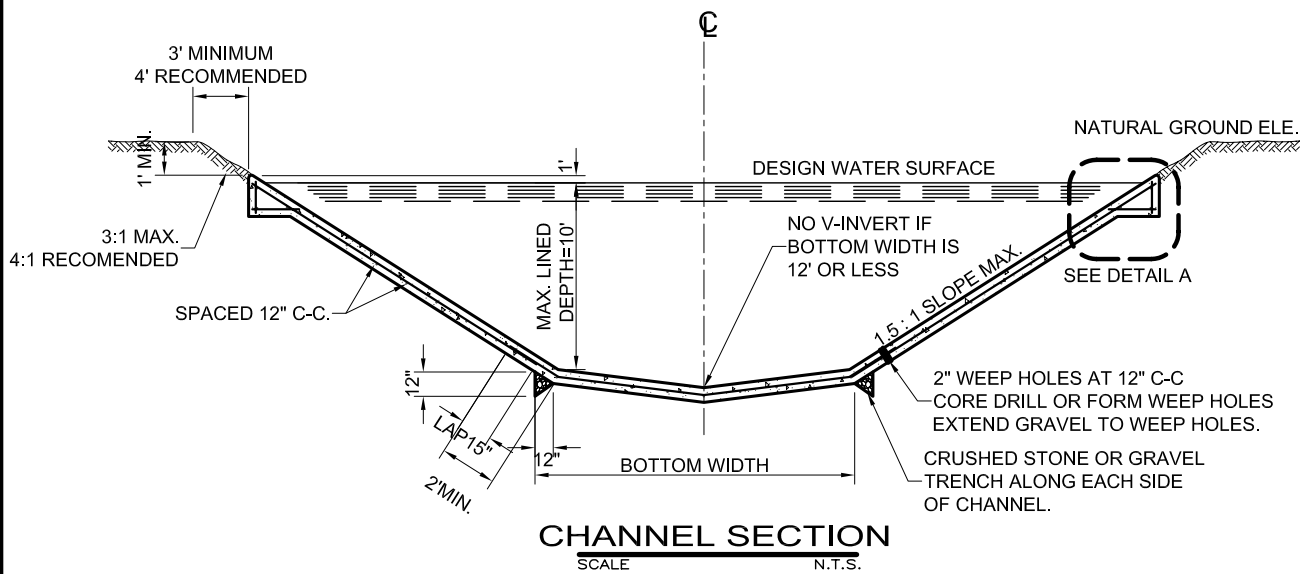
**TYPE I & TYPE II
CHANNEL SECTION**

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
JULY 1991

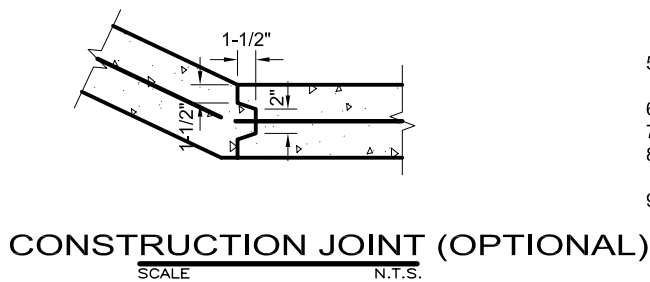
REV DATE:
AUG. 2006

SHEET :
SD-D026



GENERAL NOTES FOR OPEN CHANNELS

1. CONSTRUCTION JOINT SHOWN FOR CONVENIENCE ONLY. MONOLITHIC CONSTRUCTION MAYBE USED.
2. ALL VISIBLE SURFACES SHALL BE 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" X 4" AND SHALL NOT BE REMOVED UNTIL CONCRETE ON SLOPES IS READY TO BE PALCED.
5. ALL CONCRETE IN LINED CHANNEL SHALL BE CLASS "A"
6. FLAT BOTTOM TO BE CONSTRUCTED WHEN CHANNEL WIDTH IS LESS THAN 12'.
- 7.
8. 3/4" CHAMPER ON ALL CONCRETE CORNERS.
9. GRASS COVER REQUIRED FOR ALL SLOPES 3:1 OR FLATTER. CONCRETE RIP-RAP REQUIRED ON SLOPES STEEPER THAN 3:1.



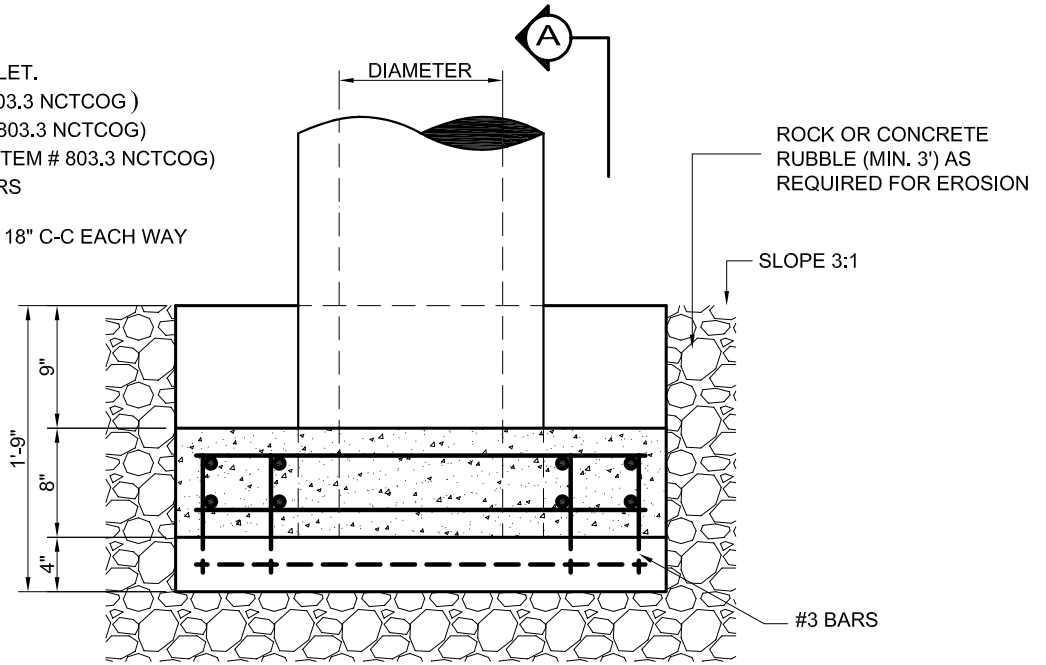
OUTLET FROM PIPES HEADWALLS NEED TO HAVE ADEQUATE EROSION PROTECTION

USE FORMULA $L=0.37 VD$

L=LENGTH OF APRON (FT), V=OUTLET VELOCITY FLOW (FPS),
D=DIAMETER OF PIPE (FT)

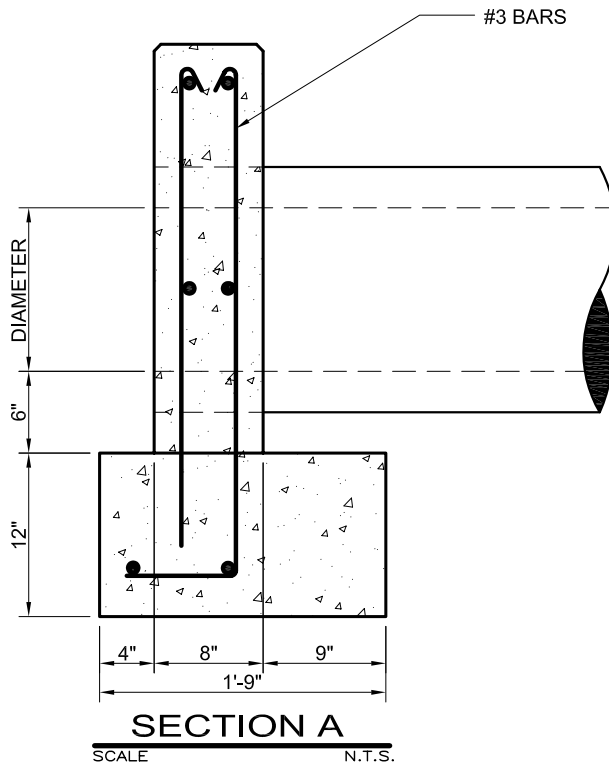
- A) 2 - 5 FPS SOD PROTECTION AT THE OUTLET.
- B) 5 - 8 FPS DRY RIP-RAP (TYPE B, ITEM # 803.3 NCTCOG)
- C) 8 - 11 FPS DRY RIP-RAP (TYPE B, ITEM # 803.3 NCTCOG)
- D) 11 - 18 FPS GROUTED RIP-RAP (TYPE B, ITEM # 803.3 NCTCOG)
- E) >18 FPS ADEQUATE ENERGY DISSIPATERS

REINFORCING BARS SHALL BE #3 BARS ON 18" C-C EACH WAY



REINFORCING BARS SHALL BE #3 BARS 18" C-C EACH WAY

PLAN
SCALE N.T.S.



SECTION A
SCALE N.T.S.

FOR FURTHER INFORMATION,
SEE TxDOT DETAILS



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

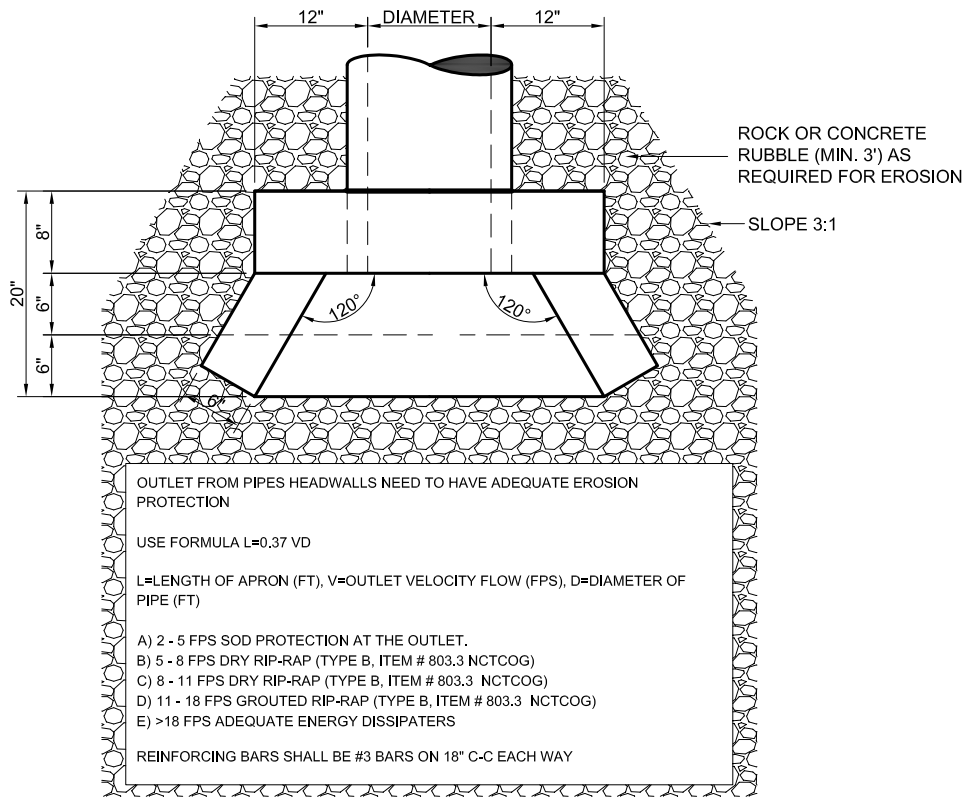
TYPE "A" HEADWALL

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
JAN 1999

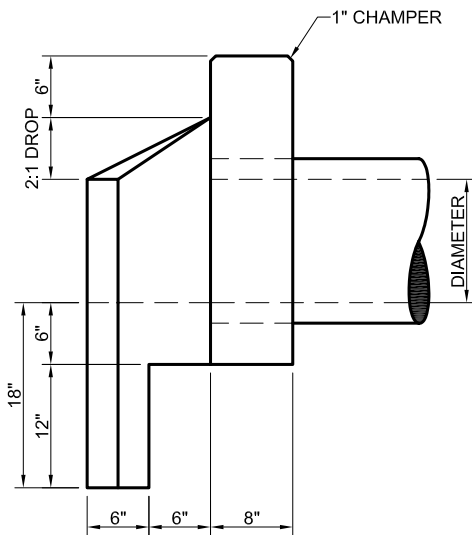
REV DATE:
AUG. 2006

SHEET:
SD-D28



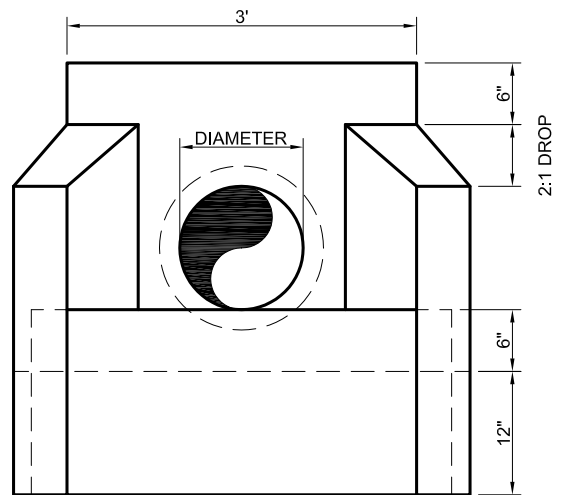
PLAN

SCALE N.T.S.



SIDE VIEW

SCALE N.T.S.



FRONT VIEW

SCALE N.T.S.

FOR FURTHER INFORMATION,
SEE TxDOT DETAILS



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

TYPE "B" HEADWALL

STANDARD CONSTRUCTION DETAILS
BRIDGE

DATE:
JAN 1999

REV DATE:
AUG. 2006

SHEET:
SD-D29

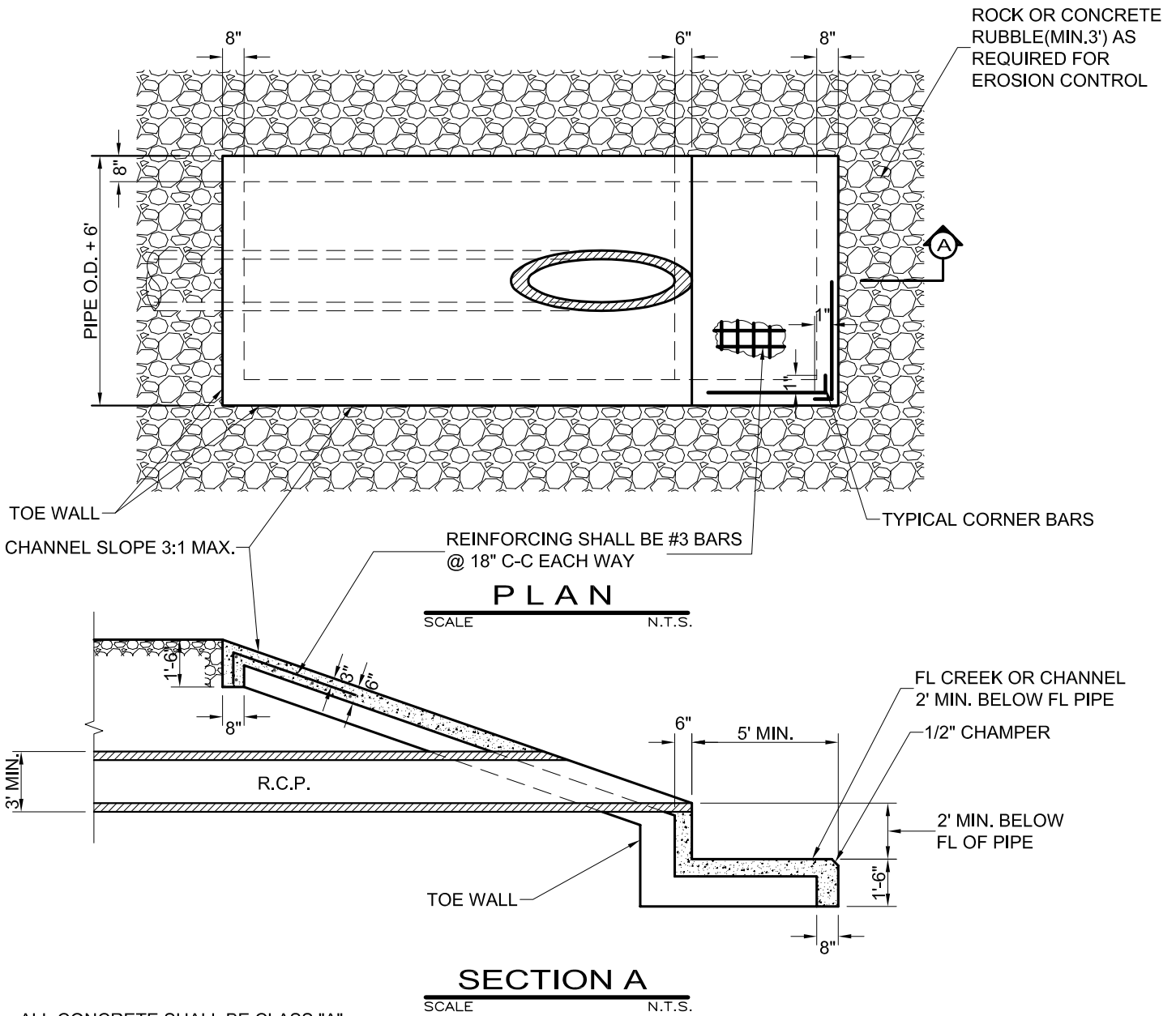
OUTLET FROM PIPES HEADWALLS NEED TO HAVE ADEQUATE EROSION PROTECTION

USE FORMULA $L=0.37 VD$

L=LENGTH OF APRON (FT), V=OUTLET VELOCITY FLOW (FPS),
D=DIAMETER OF PIPE (FT)

- A) 2 - 5 FPS SOD PROTECTION AT THE OUTLET.
- B) 5 - 8 FPS DRY RIP-RAP (TYPE B, ITEM # 803.3 NCTCOG)
- C) 8 - 11 FPS DRY RIP-RAP (TYPE B, ITEM # 803.3 NCTCOG)
- D) 11 - 18 FPS GROUTED RIP-RAP (TYPE B, ITEM # 803.3 NCTCOG)
- E) >18 FPS ADEQUATE ENERGY DISSIPATERS

REINFORCING BARS SHALL BE #3 BARS ON 18" C-C EACH WAY



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

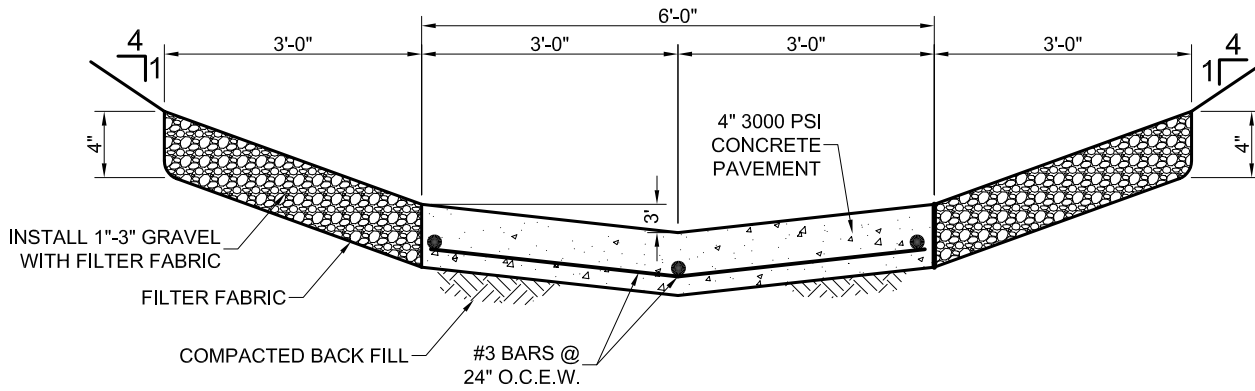
TYPE "C" HEADWALL

STANDARD CONSTRUCTION DETAILS
BRIDGE

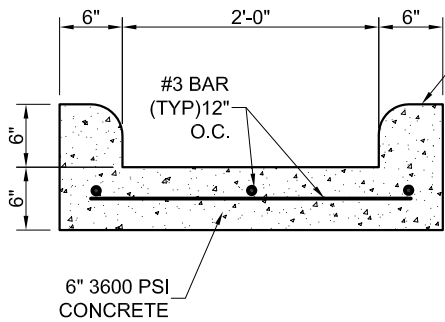
DATE:
JAN 1999

REV DATE:
AUG. 2006

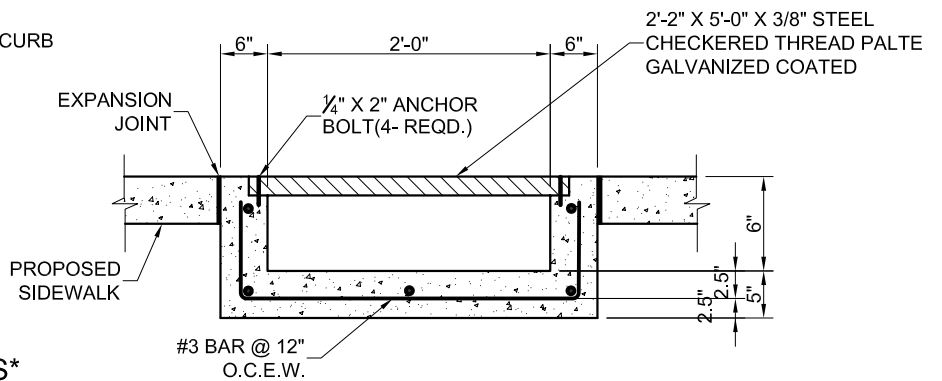
SHEET:
SD-D30



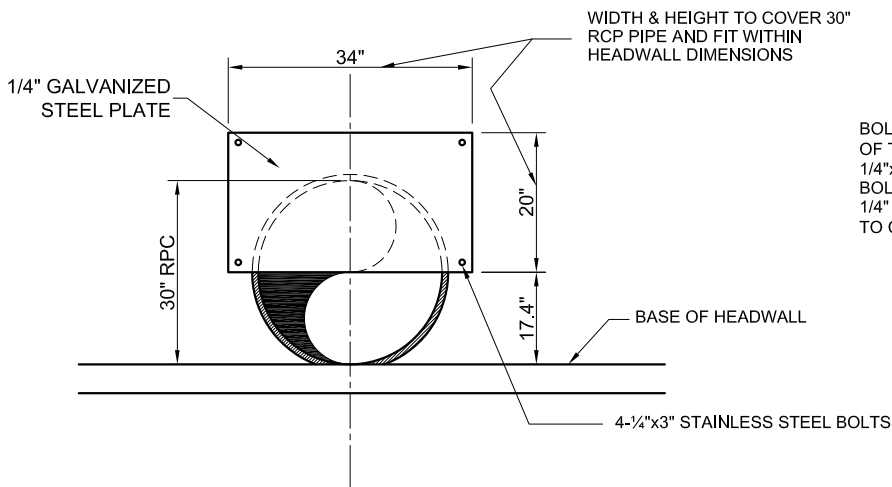
**CONC. FLUME (CURBS REQUIRED AT CULVERT OUTFALL)*
DETENTION POND**



CONC. FLUME IN THE BACK OF LOTS*



CONC. FLUME WITH GRATE COVER*



RESTRICTOR PLATE DETAIL

*FOR ALL FLUMES THE MINIMUM SLOPE WILL BE 0.75%



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

STORM RELATED FLUMES

STANDARD CONSTRUCTION DETAILS
STORM DRAINAGE

DATE:
AUG. 2003

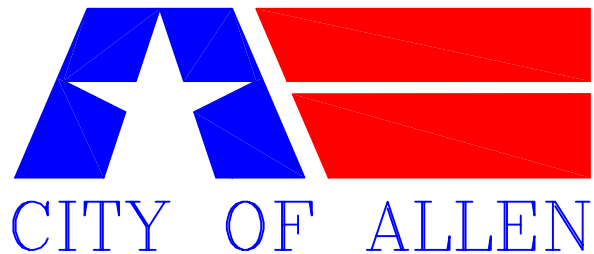
REV DATE:
AUG. 2006

SHEET:
SD-D31

STANDARD CONSTRUCTION DETAILS

EROSION CONTROL

REVISED - AUG. 2006



DEPARTMENT OF ENGINEERING

NOTES : STORM WATER POLLUTION PLAN

1. All operators and/or contractors shall conform to the terms and conditions of the Texas Commission on Environmental Quality (TCEQ), TPDES General Permit No. TXR 150000 Issued and Dated March 5, 2003.
2. The Notice of Intent (NOI), as required by the General Permit, must be properly displayed on site at all times by each operator.
3. All releases of the reportable quantities of hazardous substances shall be reported immediately to the facility operator, EPA, and TCEQ.
4. Qualified operator personnel must inspect the site at least once every 14 days and 24 hours of a storm event at 0.5 inches or greater. As an alternative, an inspection can be conducted once every seven (7) calendar days on a defined day. A decision on which method to use must be decided before work begins and must be followed throughout the project.
5. Modifications to the Storm Water Pollution Prevention Plan shall be implemented and be in-place within a Seven calendar day period.
6. If any contractor sees a violation by an operator or another contractor, that operator or contractor in violation shall be notified as well as the facility operator.
7. Erosion control shall be installed prior to grading.
8. Accumulated silt deposits shall be removed from silt fences and hay bale dikes when silt depth reaches six inches or capacity has been reduced by 50%, whichever occurs first. Removal of silt deposits by the contractor shall be incidental to the performance of the contract and a separate bid item shall not be included.
9. The contractor shall add or delete erosion protection at the request and direction of the Operator of the city.
10. After installation of pavement, final lot benching and general cleanup, the paving Contractor shall establish grass groundcover in all street parkways, lot and all other disturbed areas. Sodding shall be done as specified by Section 202.5 and seeding as specified by Section 200.6 of the October 2004 or Latest edition of NCTCOG Standard Specification.
11. It shall be the contractor's responsibility to control and limit silt and sediment leaving the site. Specifically, the contractor shall protect all public streets, alleys, streams and storm drainage systems from erosion deposits.
12. It shall be the contractor's responsibility to provide a dumpster (or equal) to collect solid waste materials during construction.
13. A drainage area map will be included with the Storm Sewer Pollution Plan.
14. It is anticipated that the following non-storm water discharges will be associated with this project. These discharges are authorized through the construction general permit.
 - A. Fire hydrant flushing
 - B. Discharge from Firefighting activities
 - C. Potable water sources including waterline flushing
 - D. Water used to control dust
 - E. Uncontaminated ground water
 - F. Air Conditioning condensate
 - G. Vehicle, external building and pavement wash water where detergent and soaps are not used and where spills of toxic or hazardous materials have not occurred and the purpose is to remove mud, dirt or dust.
15. Construction waste disposal containers shall be provided on the site for disposal of all non-hazardous construction waste materials. The containers shall be hauled to landfill by the Contractor.
16. All hazardous materials shall be handled and disposed of by the Contractor in accordance with Federal, State and Local regulations.



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

STORM WATER POLLUTION PLAN
NOTES

STANDARD CONSTRUCTION DETAILS
EROSION CONTROL

DATE:
JULY 2003

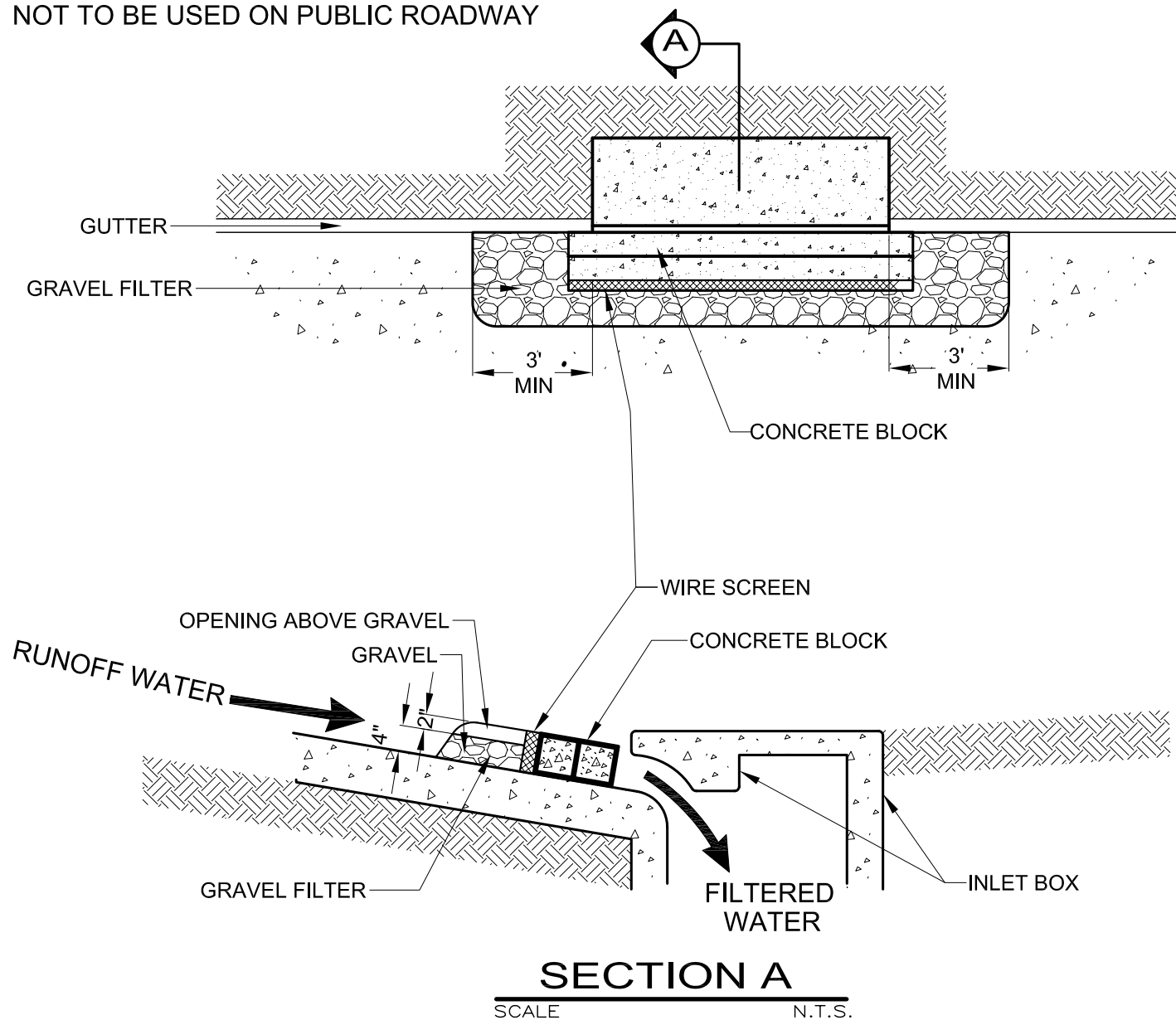
REV DATE:
AUG. 2006

SHEET :
SD-EC01

NOTES: SILT FENCE

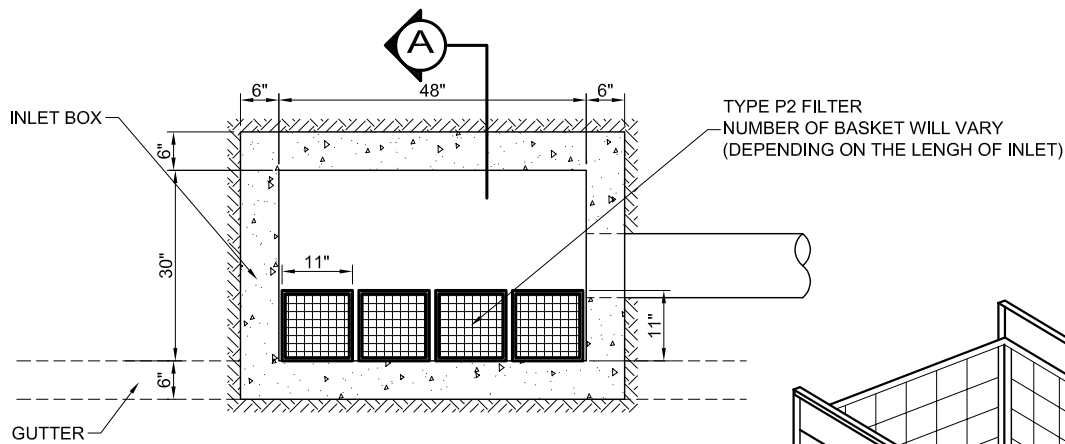
1. Posts which support the silt fence shall be installed on a slight angle toward the anticipated runoff source. The post must be embedded a minimum of 18 inches.
2. The toe of the silt fence shall be trenched in with a spade or mechanical trencher, so that the downslope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g. pavement), weight fabric flap with washed gravel on the uphill side to prevent flow under fence.
3. The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.
4. Silt fence shall be securely fastened to each support post or to woven wire, which is in turn attached to the support post. There shall be a 6 inch double overlap, securely fastened where ends of fabric meet.
5. Inspection shall be made daily or after each rainfall. Repair or replacement shall be made promptly as needed.
6. Silt fence shall be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.
7. Accumulated silt shall be removed when it reached a depth of 3 inches. The silt shall be disposed of at an approved site and in such a manner as to not contribute to additional siltation.

NOTE :
 NOT TO BE USED ON PUBLIC ROADWAY

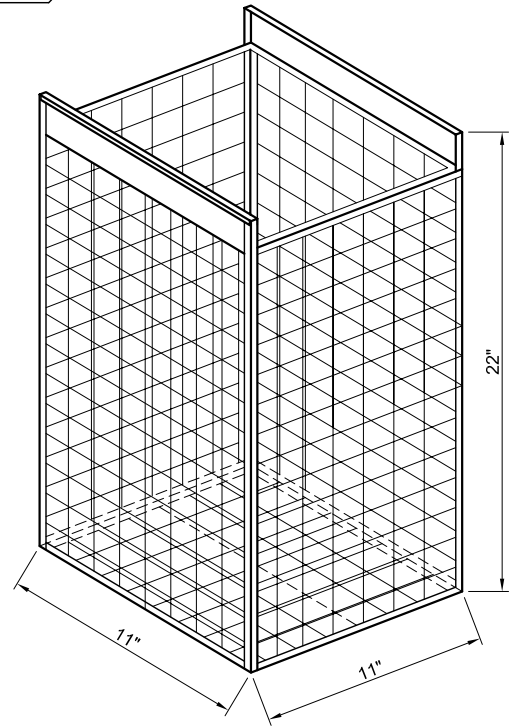


SEDIMENT BARRIER AT INLETS

*P2 INLET FILTERS REQUIRED WHEN STREET IS OPEN TO VEHICULAR TRAFFIC.
 SEDIMENT BARRIERS NOT ALLOWED ON OPEN THOROUGHFARES.

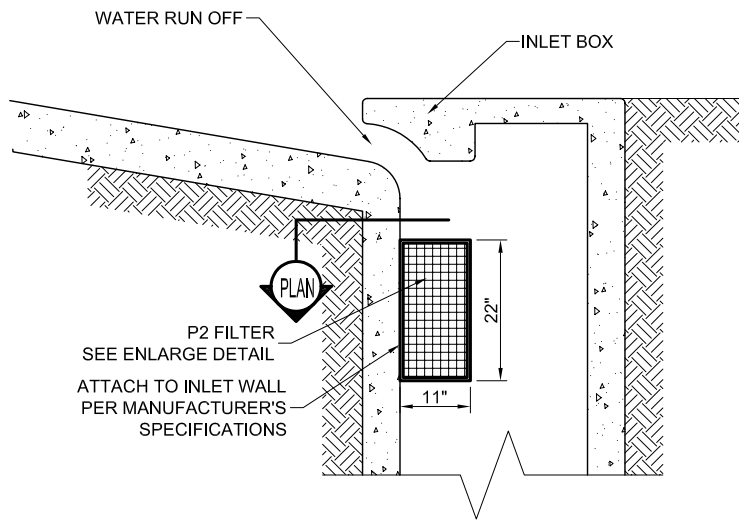


PLAN
SCALE N.T.S.



ENLARGED DETAIL
SCALE N.T.S.

SPECIFICATION :
 INSERT CHAMBER
 WIDTH 11"
 LENGTH 11"
 HEIGHT 22"
 FILTRATION SURFACE AREA 6.3sf.



SECTION A
SCALE N.T.S.

P-2 INLET FILTERS AFTER PAVEMENT CONSTRUCTION

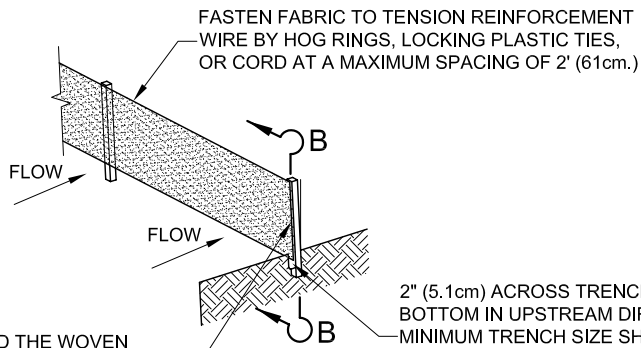
*P2 INLET FILTERS REQUIRED WHEN STREET IS OPEN TO VEHICULAR TRAFFIC.

FOR PRODUCT DETAIL CALL 972 998 2901

NOTE :

1. BASKETS SHALL BE LINED WITH FILTER FABRIC AND CLEANED/MAINTAINED BY CONTRACTOR ON A REGULAR BASIS.
2. P2 FILTERS ARE TO BE REMOVED BY CONTRACTOR WITH ALL EROSION CONTROL (BMPs) AT COMPLETION OF PROJECT.

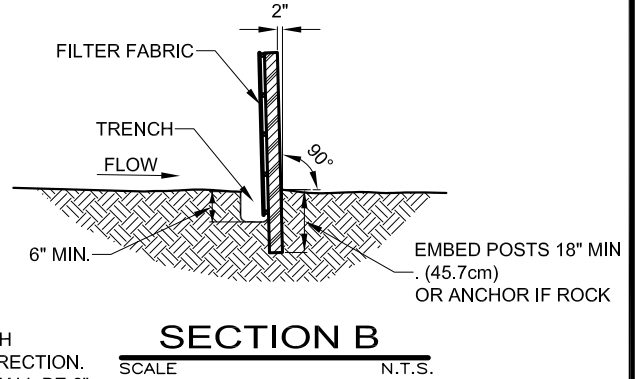
4' (1.2 m) MIN. STEEL OR WOOD POSTS SPACED AT 5' (1.8 m) TO 8' (2.4 m) SOFTWOOD POSTS SHALL BE 3" (7.6 cm) MIN. IN. DIA. OR NOMINAL 2"x4" (5.1 cm x 10.2 cm). HARDWOOD POSTS SHALL HAVE A MIN. CROSS SECTION OF 1.5"x1.5" (3.8 cm x 3.8 cm).



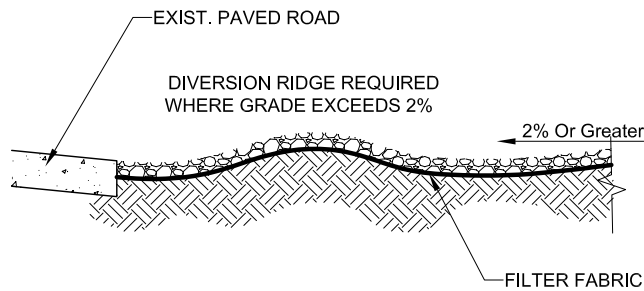
ATTACHED THE WOVEN FABRIC USING EVENLY SPACED STAPLES OR LOCKING PLASTIC TIES FOR WOODEN POSTS AT A MAX. SPACING OF 6" (15.2cm). USE LOCKING PLASTIC TIES OR SEWN VERTICAL POCKETS FOR STEEL POSTS AT SAME SPACING.

SILT FENCE

2" (5.1cm) ACROSS TRENCH BOTTOM IN UPSTREAM DIRECTION. MINIMUM TRENCH SIZE SHALL BE 6" (15.2cm) SQUARE. BACKFILL AND HAND TAMP.

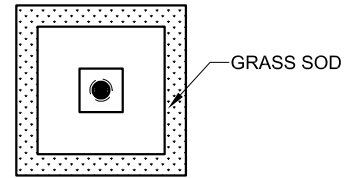


(SEE NOTES CITY OF ALLEN SPECIFICATIONS SD-EC02)

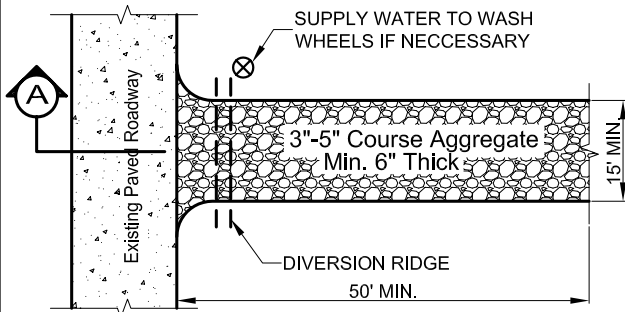


SECTION A

SCALE N.T.S.

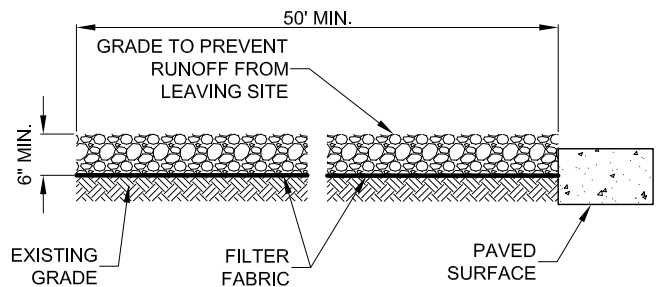


DROP INLET PROTECTION (TYP)



PLAN

SCALE N.T.S.



TEMPORARY STONE CONSTRUCTION ENTRANCE / EXIT

* STORM WATER PLAN APPLICABLE FOR ALL CIVIL ENGINEERING CONSTRUCTION



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

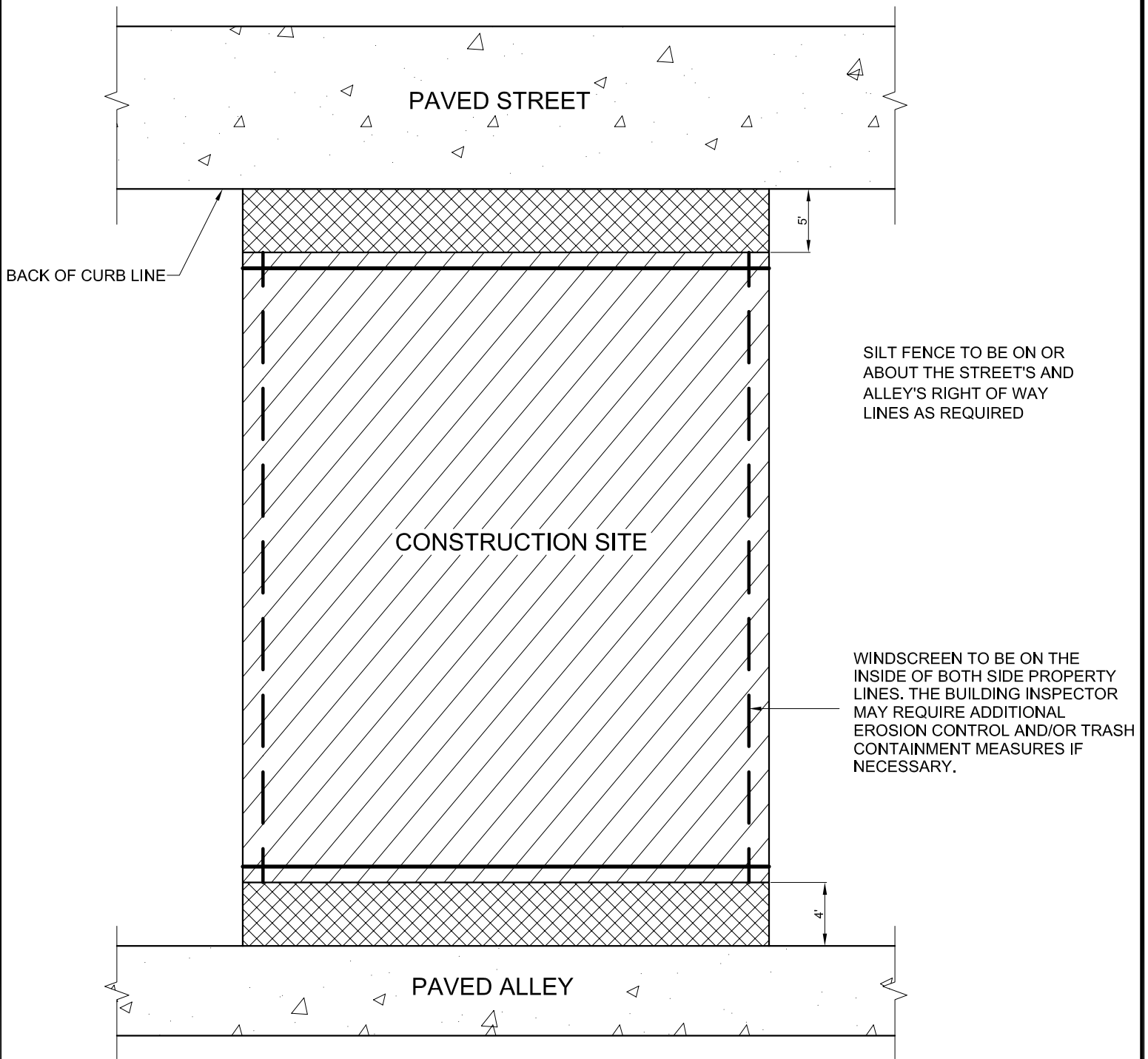
STORM WATER POLLUTION PLAN DETAILS

STANDARD CONSTRUCTION DETAILS
EROSION CONTROL

DATE:
MAY 2005

REV DATE:
AUG. 2006

SHEET :
SD-EC05



BACK OF CURB LINE

PAVED STREET

CONSTRUCTION SITE

PAVED ALLEY

SILT FENCE TO BE ON OR ABOUT THE STREET'S AND ALLEY'S RIGHT OF WAY LINES AS REQUIRED

WINDSCREEN TO BE ON THE INSIDE OF BOTH SIDE PROPERTY LINES. THE BUILDING INSPECTOR MAY REQUIRE ADDITIONAL EROSION CONTROL AND/OR TRASH CONTAINMENT MEASURES IF NECESSARY.



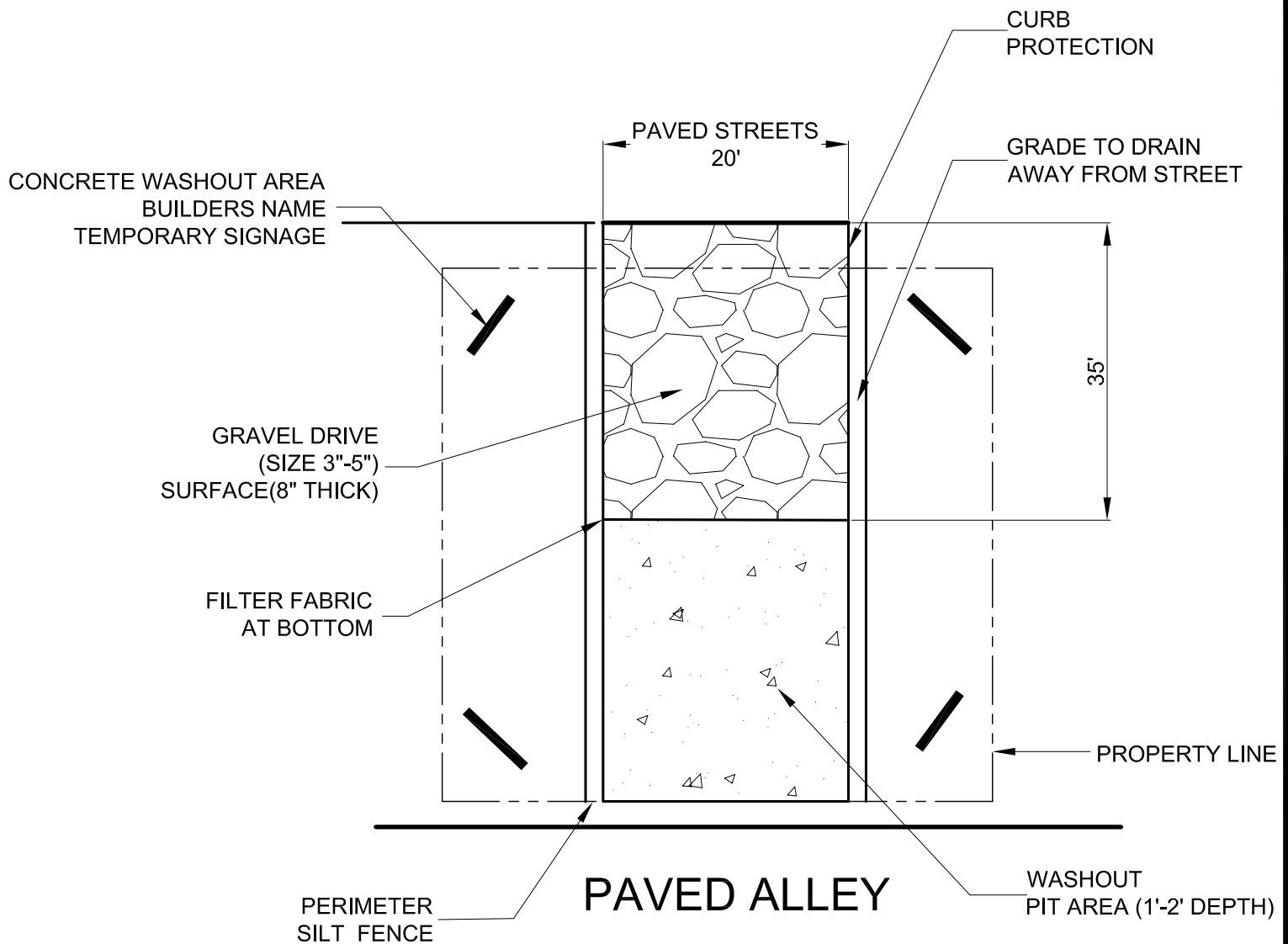
CURLEX OR EQUAL GROUND COVER



4' HIGH WINDSCREEN FENCE



2' HIGH SILT FENCE (WHERE REQUIRED BY SLOPE CONDITIONS)



1. Necessary compliance with EPA requirements will require each builder to direct transit ready-mix concrete trucks to a designated wash out area.
2. This area will be centrally located building lot that is owned, maintained, and returned back to building pad state after subdivision is built out.
3. Waste from the site will require legal disposal.
4. It is the building contractors responsibility to direct the concrete drivers to the designated wash out area for the referenced subdivision.



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

DESIGNATED WASHOUT PIT
FOR RESIDENTIAL LOTS

STANDARD CONSTRUCTION DETAILS
EROSION CONTROL

DATE:
AUG. 2003

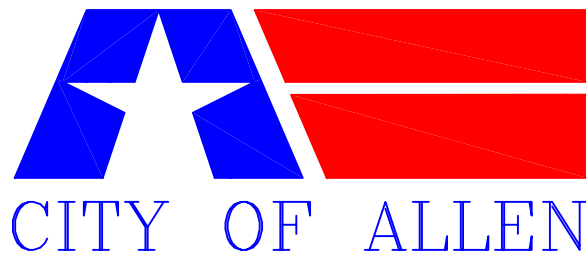
REV DATE:
AUG. 2006

SHEET :
SD-EC07

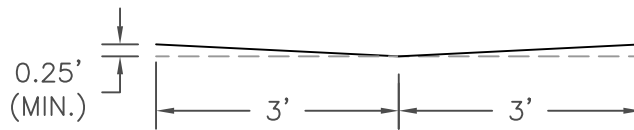
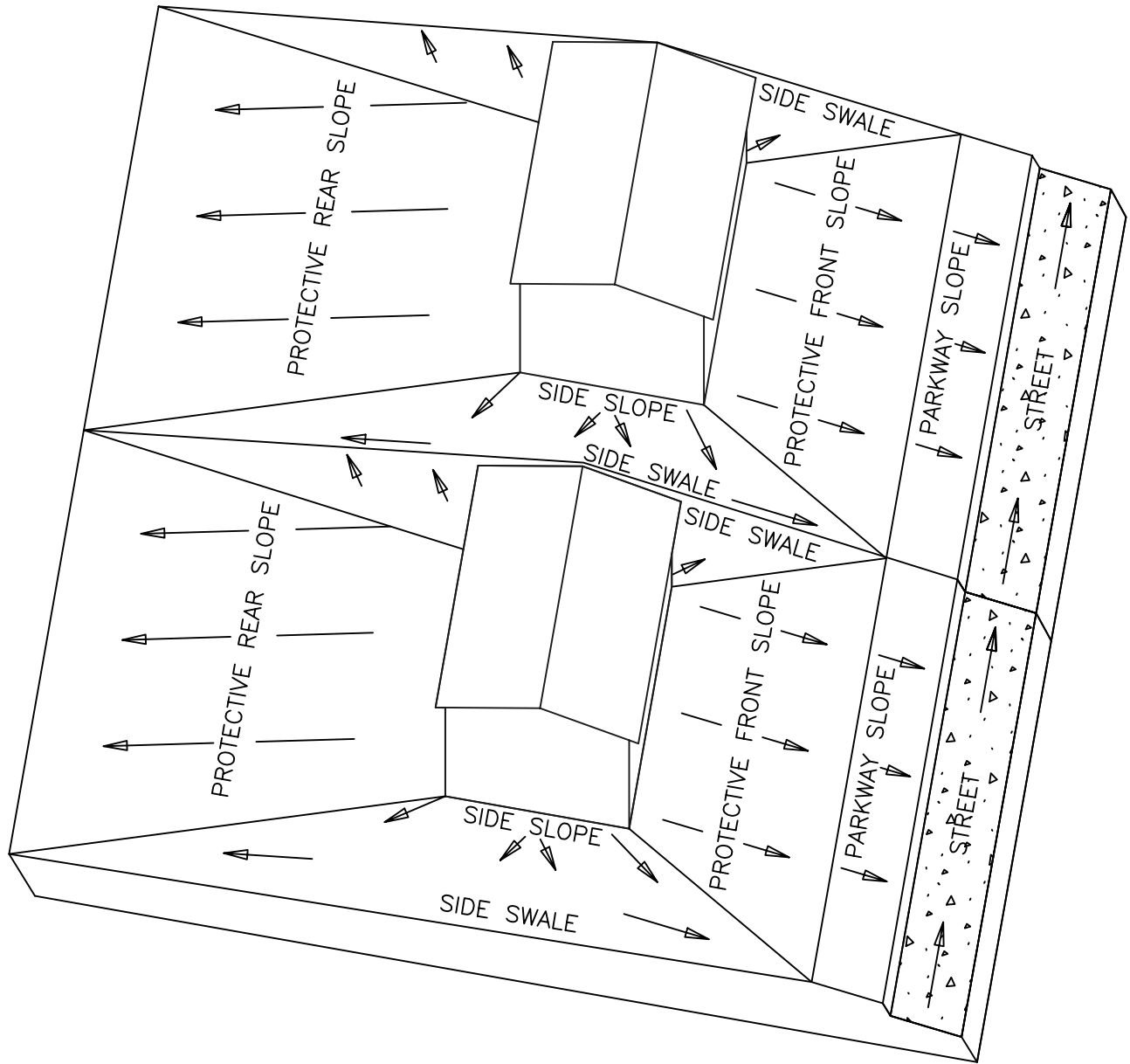
STANDARD CONSTRUCTION DETAILS

RESIDENTIAL LOT DRAINAGE REQUIREMENT

REVISED - AUG. 2006



DEPARTMENT OF ENGINEERING



CROSS SECTION

- * ALL HOUSE DRAINAGE EASEMENTS ARE TO BE PRIVATELY MAINTAINED.
- OPTION FOR LOT TO LOT DRAINAGE IF APPROVED BY ENGINEER.
- MINIMUM OF 1% SLOPE ALONG THE LENGTH OF THE SIDE YARD OR BACK YARD.



DEPARTMENT OF ENGINEERING

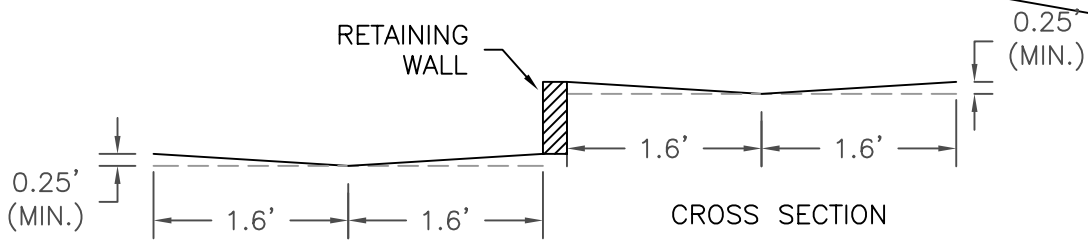
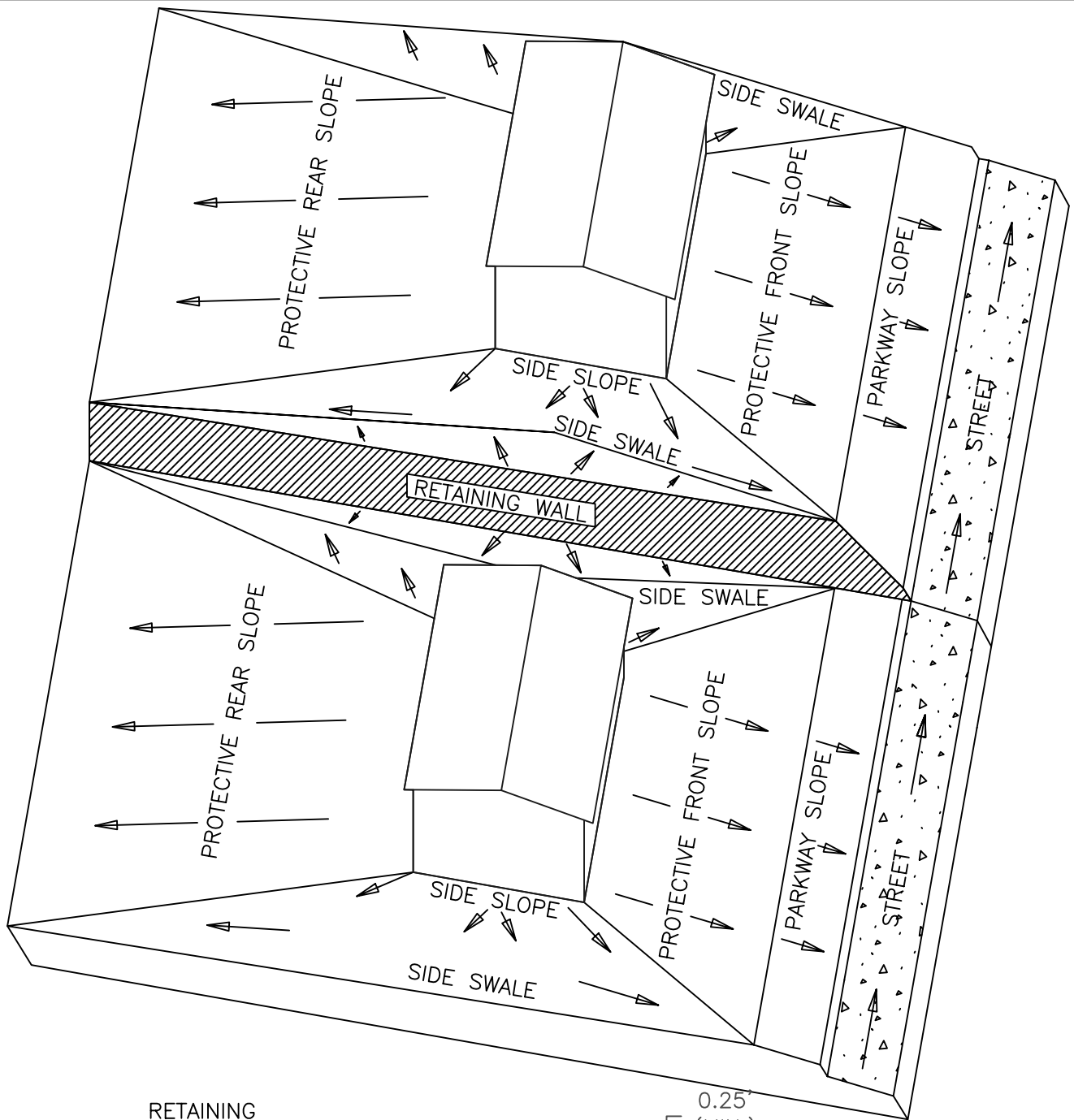
LOT GRADING TYPE "A"

STANDARD CONSTRUCTION DETAILS
RESIDENTIAL LOT DRAINAGE REQUIREMENT

DATE:
MAY 2005

REV DATE:
AUG. 2006

SHEET:
SD-RL01



* ALL HOUSE DRAINAGE EASEMENTS ARE TO BE PRIVATELY MAINTAINED.

OPTION FOR LOT TO LOT DRAINAGE IF APPROVED BY ENGINEER.

MINIMUM OF 1% SLOPE ALONG THE LENGTH OF THE SIDE YARD OR BACK YARD.



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

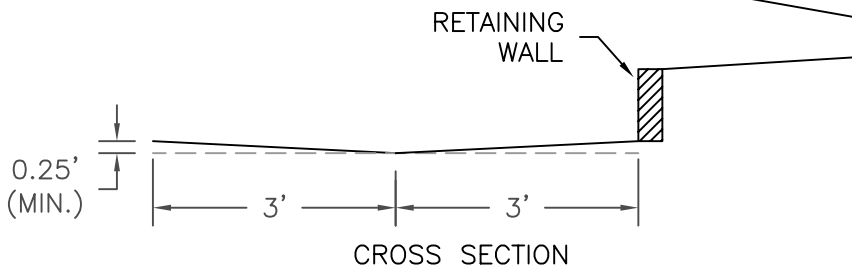
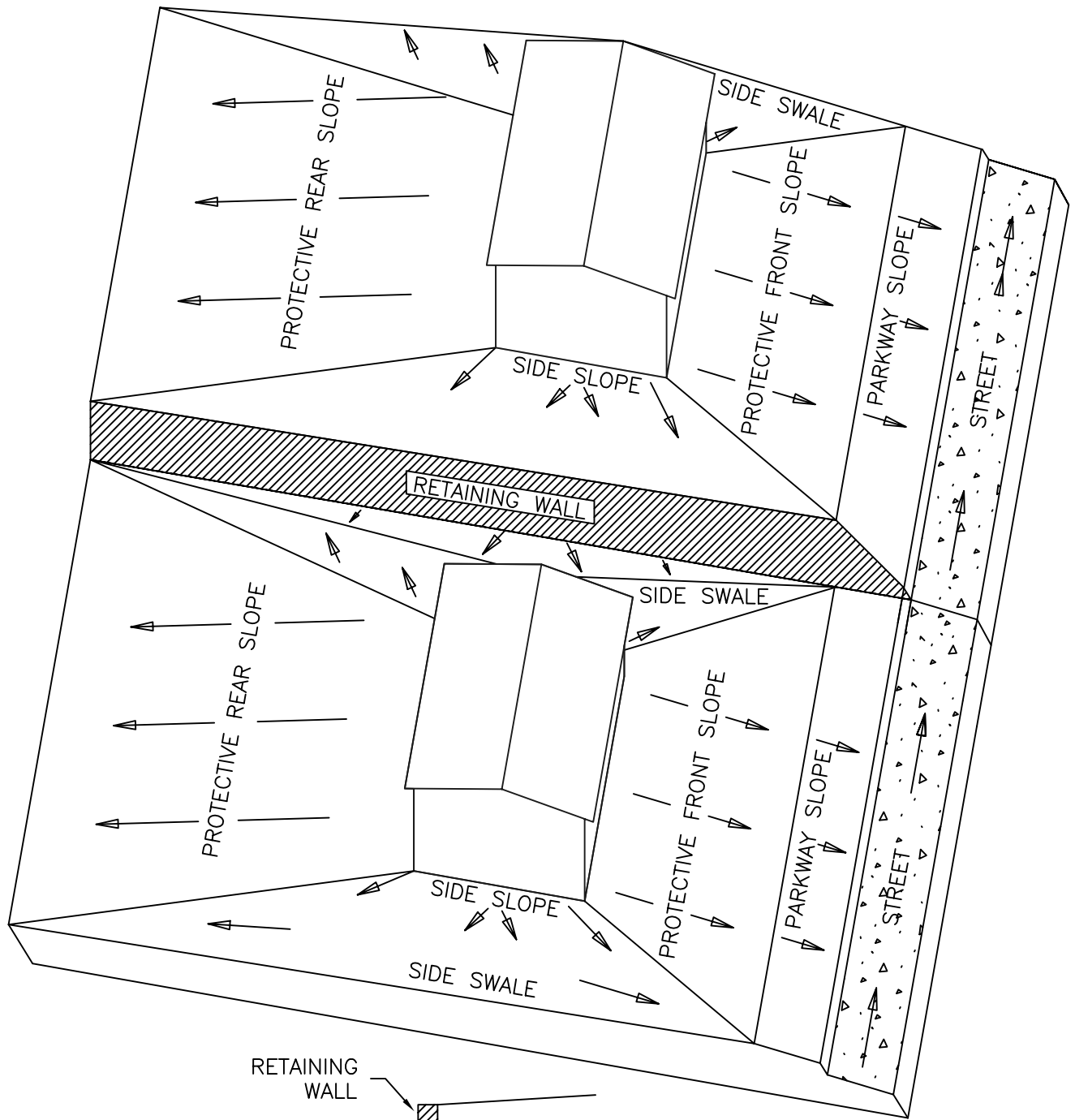
LOT GRADING TYPE "B"

STANDARD CONSTRUCTION DETAILS
RESIDENTIAL LOT DRAINAGE REQUIREMENT

DATE:
MAY 2005

REV DATE:
AUG. 2006

SHEET:
SD-RL02



* ALL HOUSE DRAINAGE EASEMENTS ARE TO BE PRIVATELY MAINTAINED.

OPTION FOR LOT TO LOT DRAINAGE IF APPROVED BY ENGINEER.

MINIMUM OF 1% SLOPE ALONG THE LENGTH OF THE SIDE YARD OR BACK YARD.



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

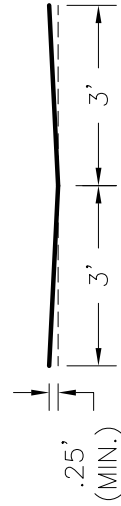
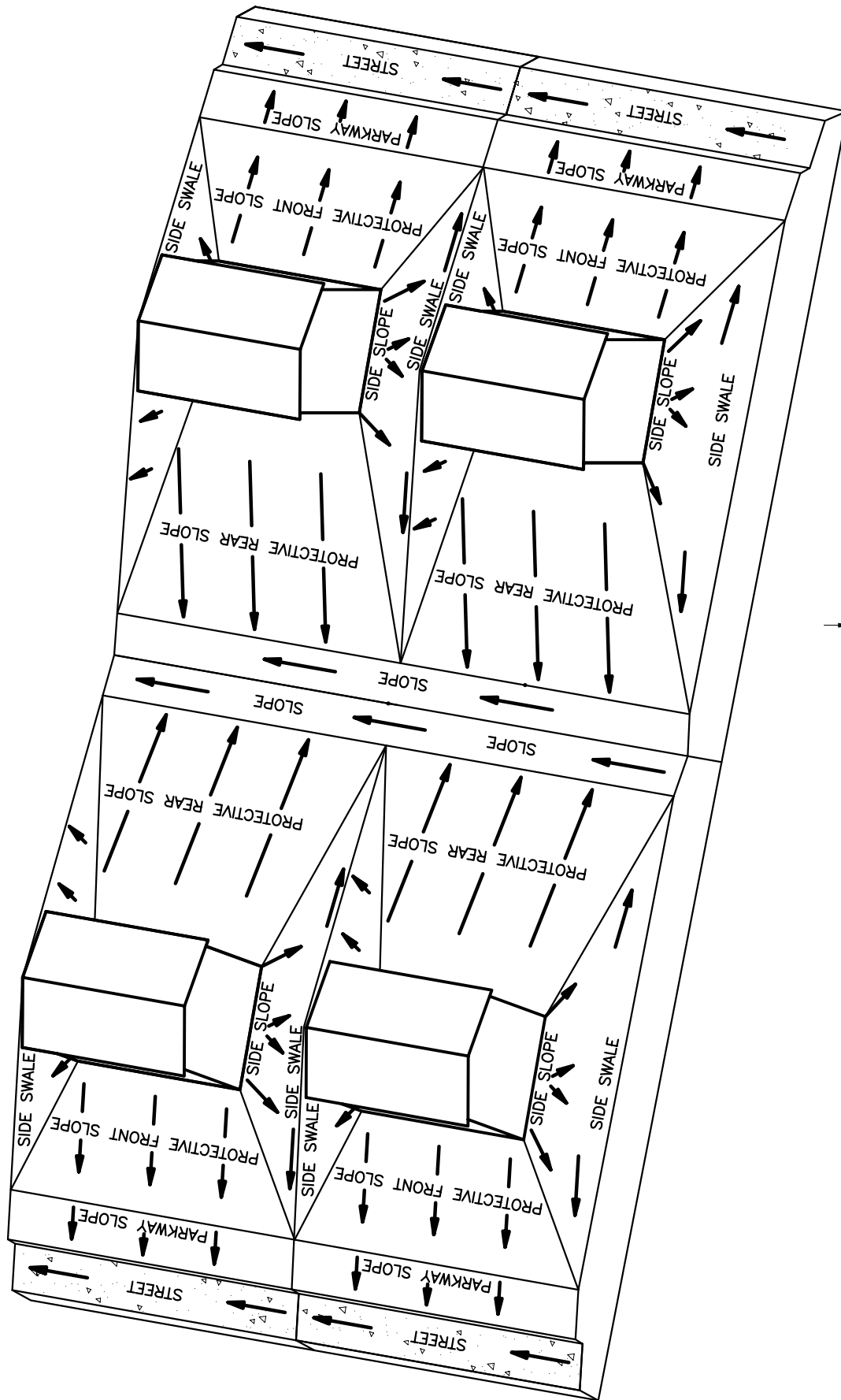
LOT GRADING TYPE "C"

STANDARD CONSTRUCTION DETAILS
RESIDENTIAL LOT REQUIREMENT

DATE:
MAY 2005

REV DATE:
AUG. 2006

SHEET:
SD-RL03



CROSS SECTION

ALL HOUSE DRAINAGE EASEMENTS ARE TO BE PRIVATELY MAINTAINED.

OPTION FOR LOT TO LOT DRAINAGE IF APPROVED BY ENGINEER.

MINIMUM OF 1% SLOPE ALONG THE LENGTH OF THE SIDE YARD OR BACK YARD.



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

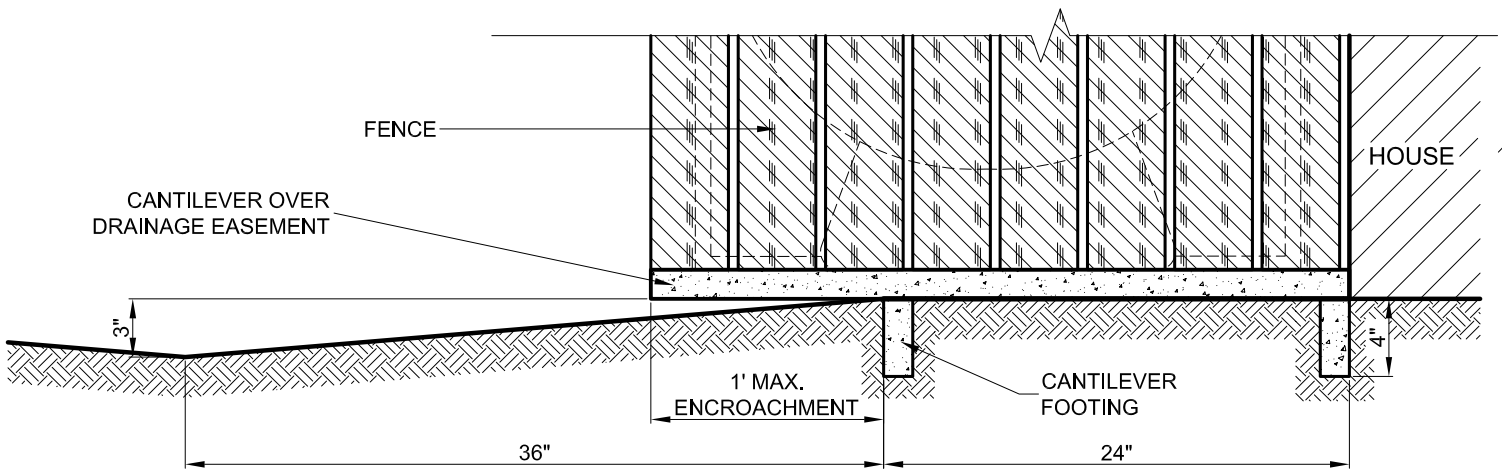
LOT GRADING TYPE "D"

STANDARD CONSTRUCTION DETAILS
RESIDENTIAL LOT GRADING REQUIREMENT

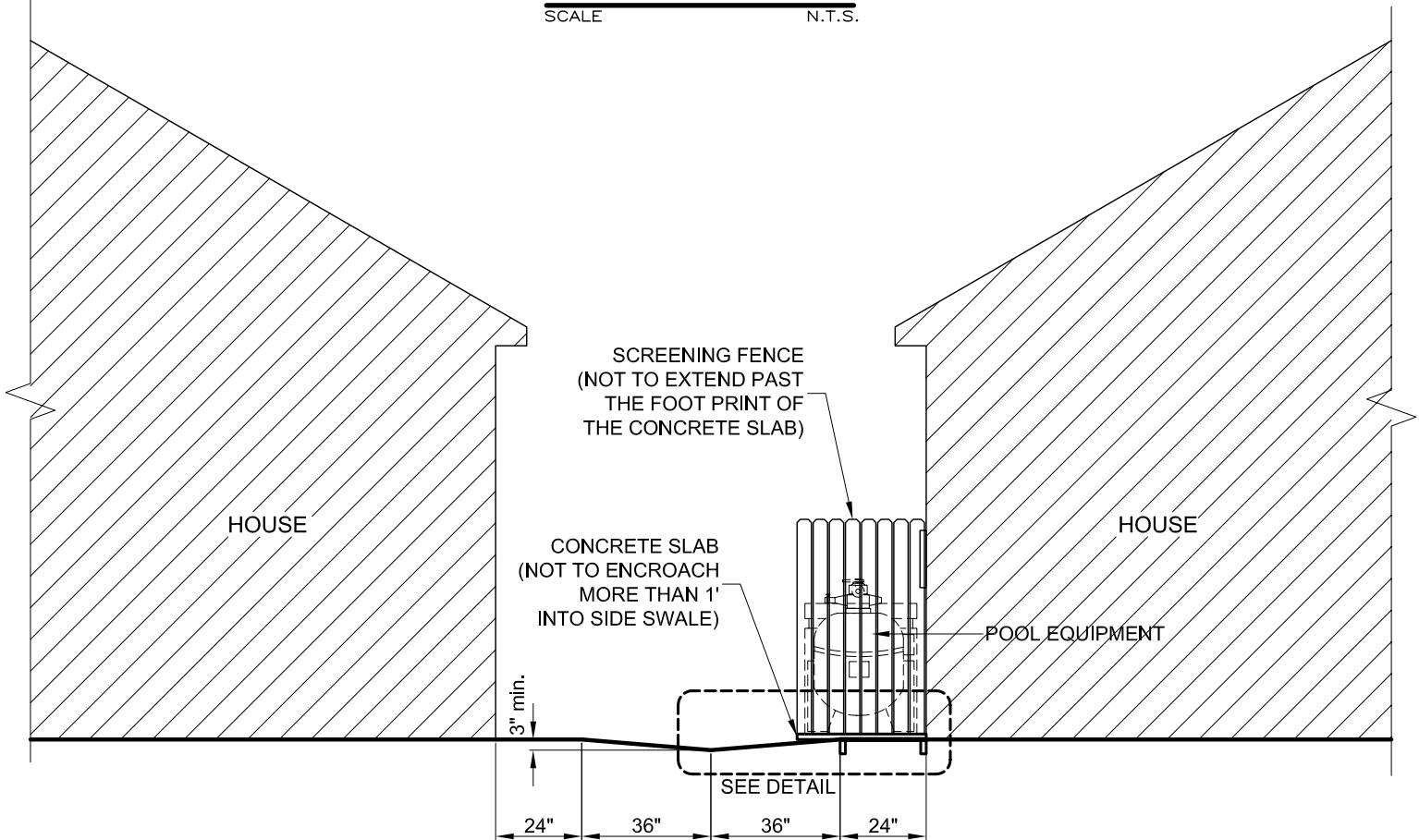
DATE:
MAY 2005

REV DATE:
AUG. 2006

SHEET :
SD-RL04



ENLARGE DETAIL
SCALE N.T.S.



CITY OF ALLEN
DEPARTMENT OF ENGINEERING

SIDE SWALE ENCROACHMENT

STANDARD CONSTRUCTION DETAILS
EROSION CONTROL

DATE:
MAY 2005

REV DATE:
AUG. 2006

SHEET:
SD-RL05