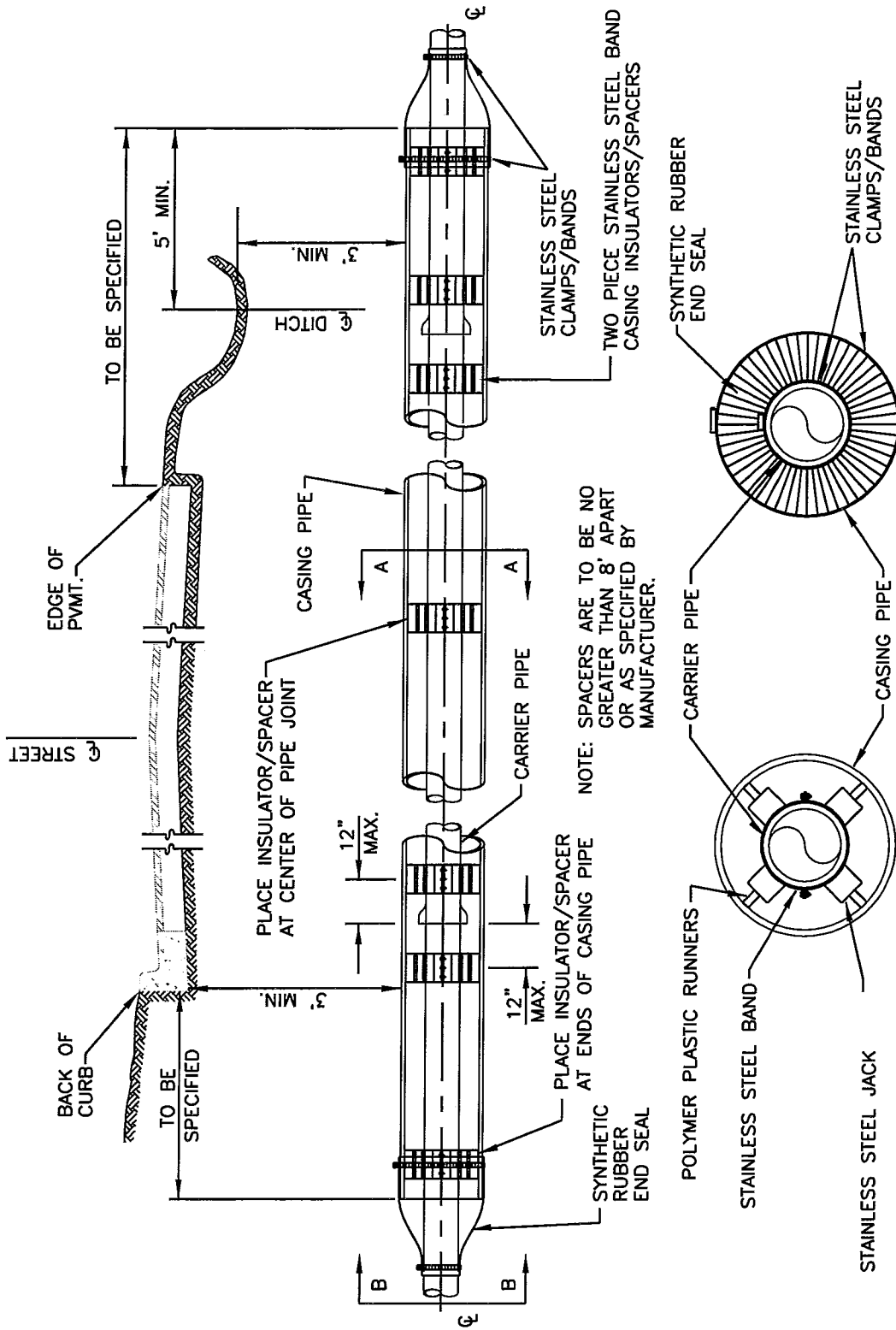


# ENCASEMENT DETAIL



NOTE: SPACERS ARE TO BE NO GREATER THAN 8' APART OR AS SPECIFIED BY MANUFACTURER.

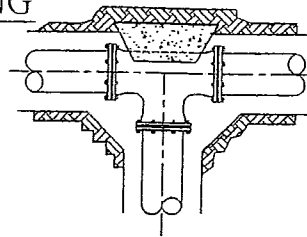
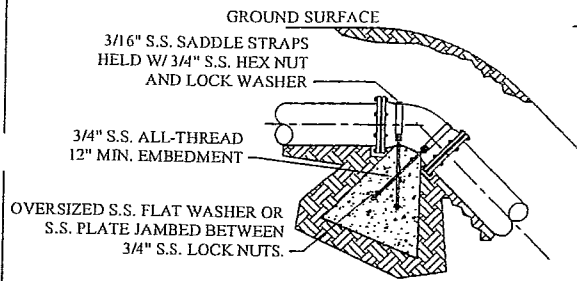
NOTE: SINGLE #14 GAUGE TYPE INSULATED TRACER WIRE REQUIRED ON ALL MAINS PE WATER SERVICES OR OTHER APPURTENANCES  
 NOTE: DUCTILE IRON, OR PVC PIPE REQUIRED FOR WATER, OR SEWER.

CARRIER & CASING SIZES									
CARRIER	4"	6"	8"	10"	12"	14"	16"	18"	20"
CASING	16"	16"	16"	18"	20"	24"	30"	30"	36"
CASING/WALL THICKNESS	.219	.219	.219	.250	.281	.344	.406	.406	.500

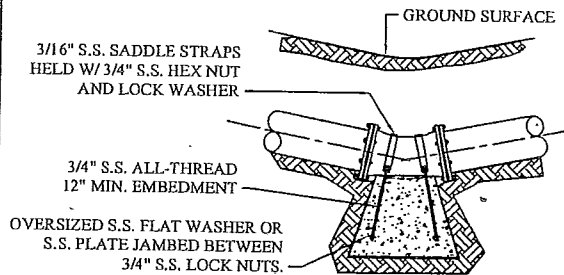
**CITY OF TONNITTOWN**

GEN. WATER/SEWER DETAIL: GWS01  
 LAST REVISION DATE: 08/29/02  
 DRAWN BY: CRB    CHECKED BY: \_\_\_\_\_    APPROVED: \_\_\_\_\_    DATE: 09/01/05

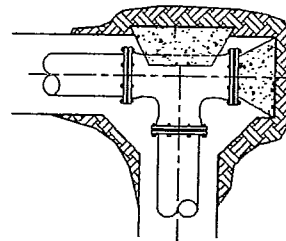
# THRUST BLOCKING



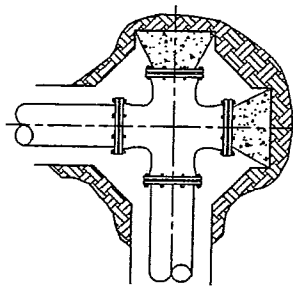
BLOCKING FOR TEE



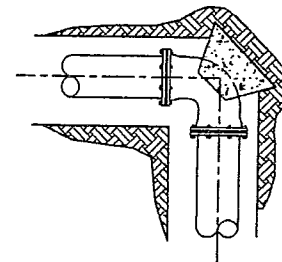
TYPICAL BLOCKING FOR VERTICAL BENDS



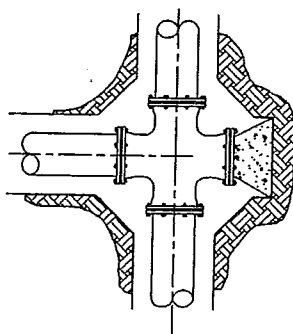
\* SPECIAL BLOCKING OF TEE & PLUG (WHEN DIRECTED BY WATER DEPT.)



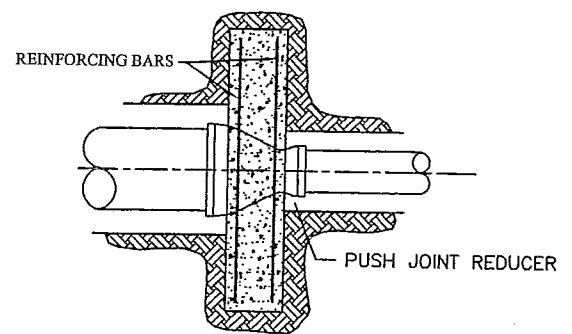
TYPICAL SECTION OF CROSS & 2 PLUG BLOCKING (WHEN DIRECTED BY WATER DEPT.)



TYPICAL BLOCKING FOR HORIZONTAL BENDS



TYPICAL SECTION OF CROSS & PLUG BLOCKING (WHEN DIRECTED BY WATER DEPT.)



THRUST SUPPORT FOR REDUCER (SIZE TO BE DETERMINED BY WATER DEPT.)

## NOTES ON THRUST BLOCKING

1. ALL BLOCKING SHALL BE AGAINST UNDISTURBED SOIL USING 3,000 PSI CONCRETE.
2. WHERE SOIL CONDITIONS MAKE IT NECESSARY TO POUR CONCRETE OVER JOINTS, THE ENDS OF THE ADJACENT PIPES MUST HAVE A THRUST BLOCK TO RESIST MOVEMENT OF THESE JOINTS.
3. WEIGHT CALCULATIONS TO BE BASED ON REACTION BACKING TABLE (SEE GWS10).
4. WHEN BLOCKING AGAINST FITTINGS, FITTINGS SHALL BE COVERED WITH POLYETHYLENE TUBING TO PREVENT BONDING OF CONCRETE.
5. WHERE SHEAR BECOMES A PROBLEM PROPER REINFORCING MUST BE INSTALLED INTO THE BLOCKING.
6. CLEARANCE SHALL BE A MINIMUM OF 6" BETWEEN PIPE AND OBSTRUCTIONS.
7. CLEARANCE ON PIPES BELONGING TO OIL/GAS COMPANIES SHALL BE 18" UNLESS SPECIAL PERMISSION IS GIVEN BY THESE COMPANIES.

CITY OF  
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GEN. WATER/SEWER DETAIL: GWS02

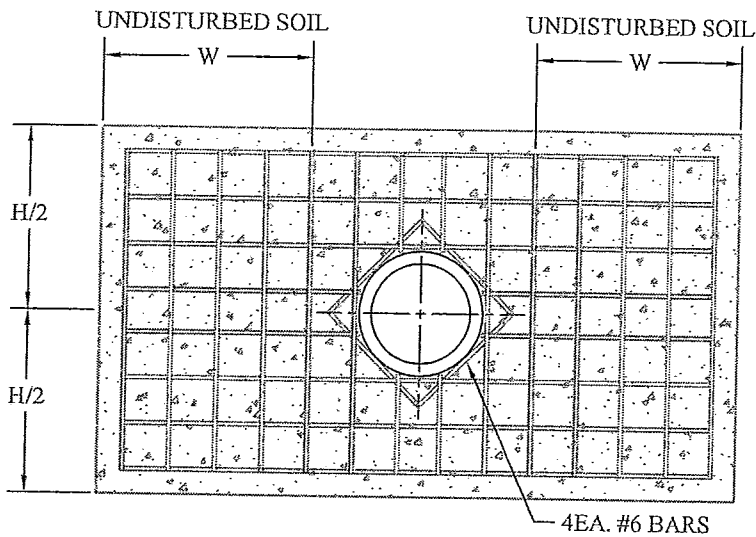
LAST REVISION DATE: 08/29/02

APPROVED: \_\_\_\_\_

DATE: 09/01/05

# ANCHOR COLLAR SPECIFICATIONS

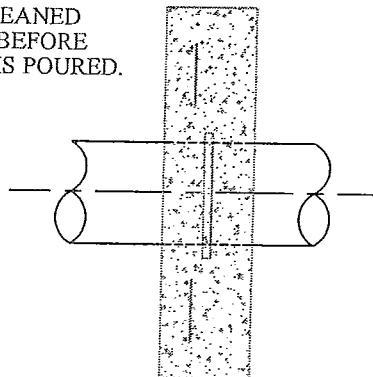
ANCHOR COLLAR SCHEDULE						
PIPE SIZE	DIMENSIONS				REINFORCING BARS	
	W	H	T	M	"A" BARS	"B" BARS
6"	1.5'	2.0'	1.0'	M.J. RETAINER GLAND	#6@6"	#6@6"
8"	1.5'	2.5'	1.0'	M.J. RETAINER GLAND	#6@6"	#6@6"
12"	2.0'	4.0'	1.5'	M.J. RETAINER GLAND	#6@6"	#6@6"
16"	3.0'	4.5'	1.5'	M.J. RETAINER GLAND	#6@6"	#6@6"
20"	3.0'	5.0'	2.0'	M.J. RETAINER GLAND	#6@6"	#6@6"
24"	3.5'	5.5'	2.0'	M.J. RETAINER GLAND	#7@6"	#6@10"
30"	6.5'	6.0'	2.5'	4"	#8@6"	#7@10"
36"	7.0'	7.0'	2.5'	4"	#8@6"	#7@10"



ANCHOR COLLAR (ELEVATION)

NOTE:  
PIPE SURFACES SHALL BE CLEANED  
OF ALL FOREIGN MATERIAL BEFORE  
3000 PSI CONCRETE COLLAR IS POURED.

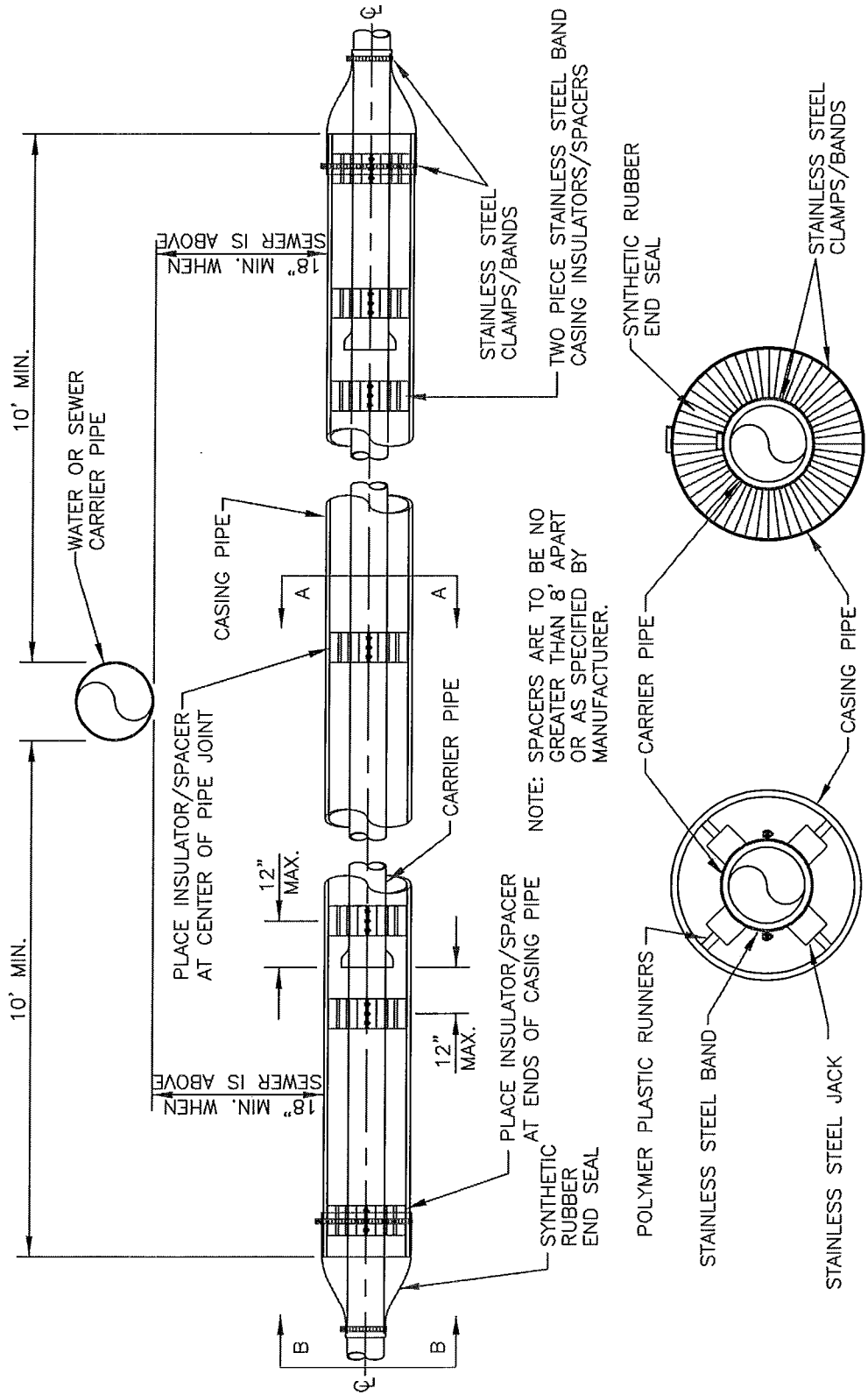
NOTE:  
USE M.J. RETAINER GLANDS FOR  
PIPE 24" AND SMALLER.



ANCHOR COLLAR (SIDE)

<b>CITY OF TONTITOWN</b>		GEN. WATER/SEWER DETAIL: GWS03	
		LAST REVISION DATE: 08/29/02	
DRAWN BY: CRB	CHECKED BY: _____	APPROVED: _____	DATE: 09/01/05

# ENCASEMENT CROSSING DETAIL



SECTION A-A                      SECTION B-B

CARRIER & CASING SIZES									
CARRIER	4"	6"	8"	10"	12"	14"	16"	18"	20"
CASING	16"	16"	16"	18"	20"	24"	30"	30"	36"
CASING/WALL THICKNESS	.219	.219	.219	.250	.281	.344	.406	.406	.500

NOTE: SINGLE #14 GAUGE TYPE INSULATED TRACER WIRE REQUIRED ON ALL MAINS PE WATER SERVICES OR OTHER APPURTENANCES

NOTE: DUCTILE IRON, OR PVC PIPE REQUIRED FOR WATER, OR SEWER.

CITY OF  
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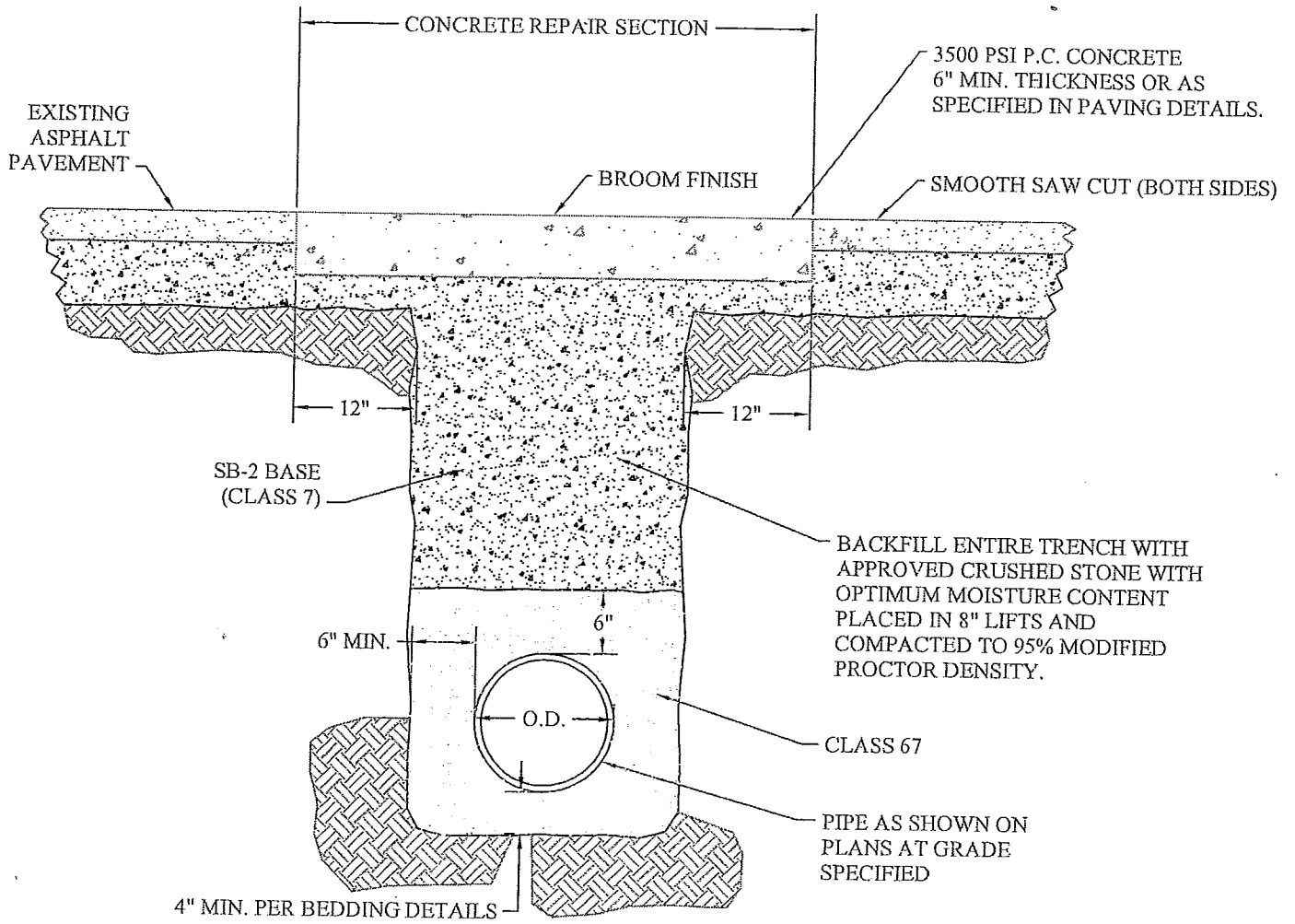
DRAWN BY: CRB      CHECKED BY: \_\_\_\_\_

GEN. WATER/SEWER DETAIL: GWS04

LAST REVISION DATE: 08/29/02

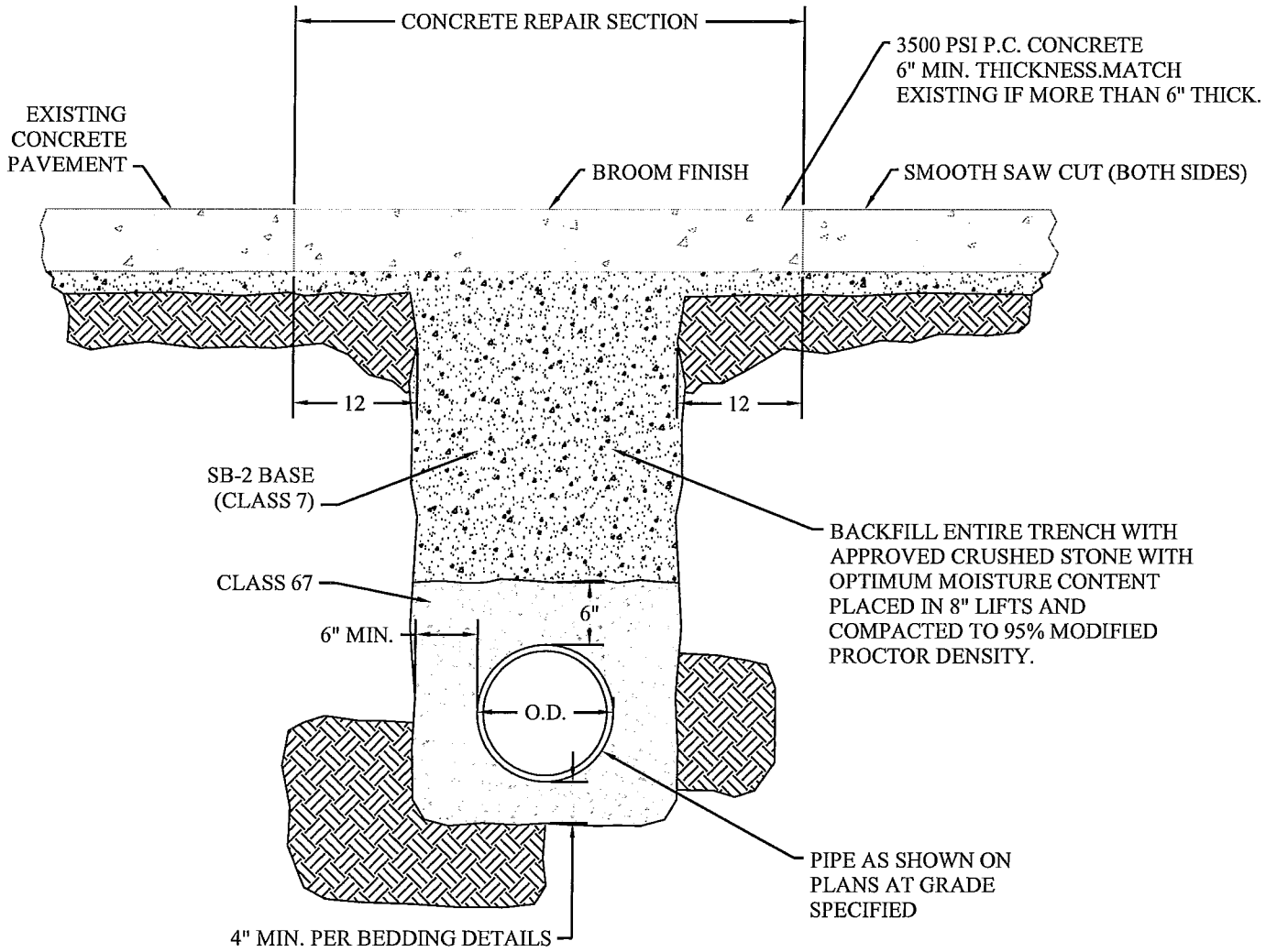
APPROVED: \_\_\_\_\_ DATE: 09/01/05

ASPHALT STREET OR  
DRIVE CUT/REPAIR



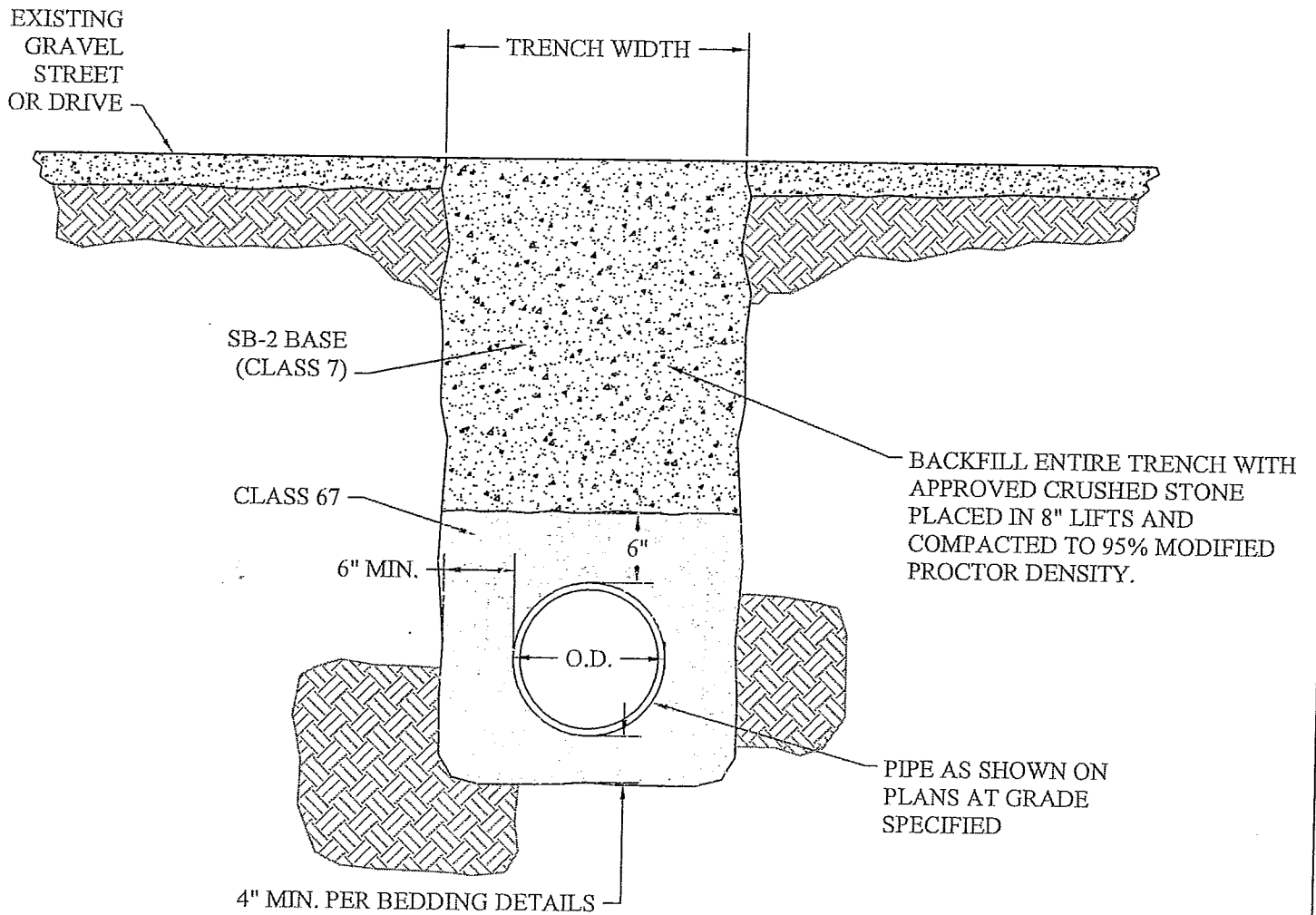
CITY OF <b>TONTITOWN</b>		GEN. WATER/SEWER DETAIL: GWS05	
		LAST REVISION DATE: 08/29/02	
DRAWN BY: CRB	CHECKED BY: _____	APPROVED: _____	DATE: 09/01/05

CONCRETE STREET OR  
DRIVE CUT/REPAIR



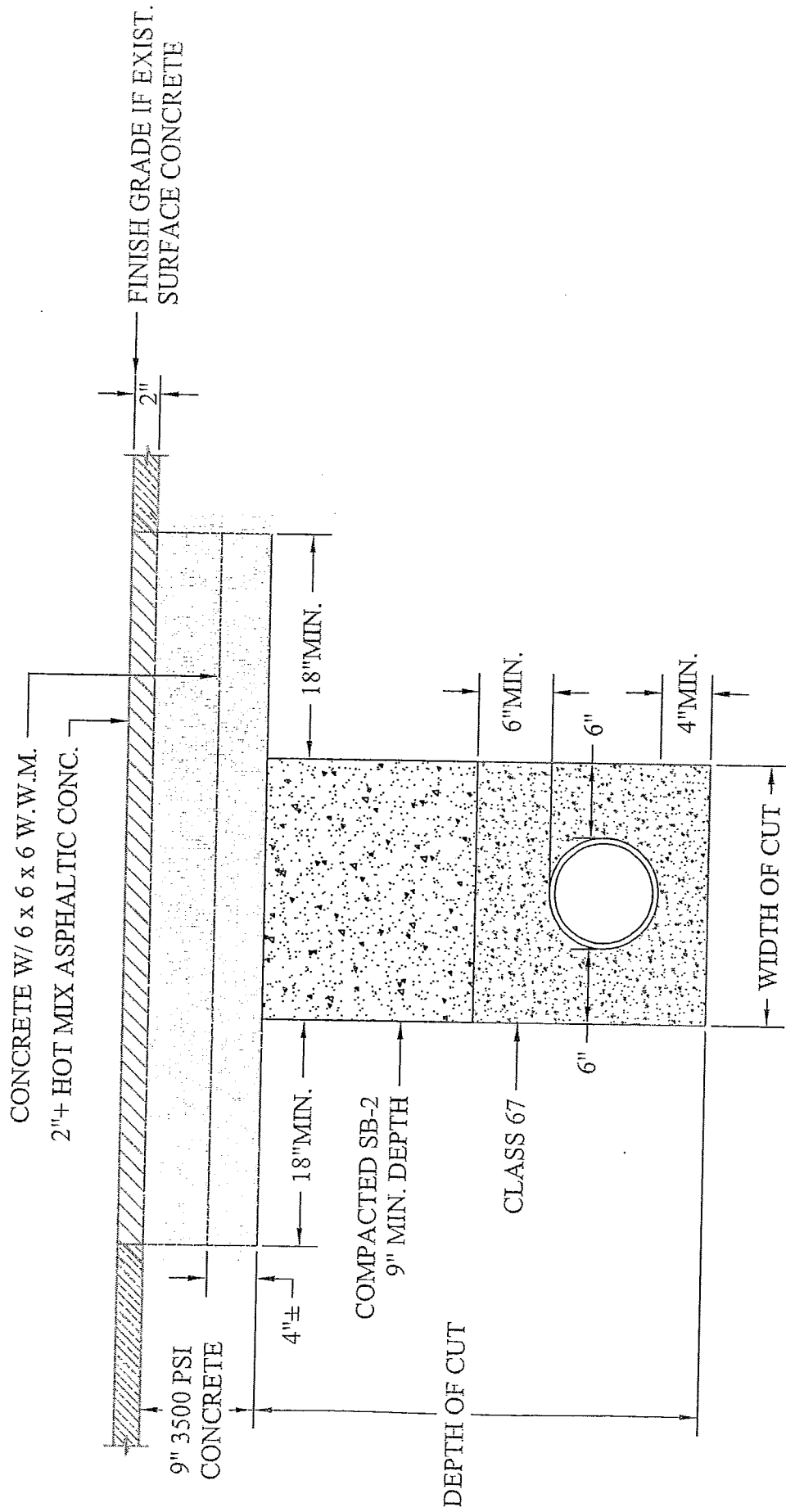
CITY OF TONTITOWN		GEN. WATER/SEWER DETAIL: GWS06	
		LAST REVISION DATE: 08/29/02	
DRAWN BY: CRB	CHECKED BY: _____	APPROVED: _____	DATE: 09/01/05

# GRAVEL STREET CUT/REPAIR



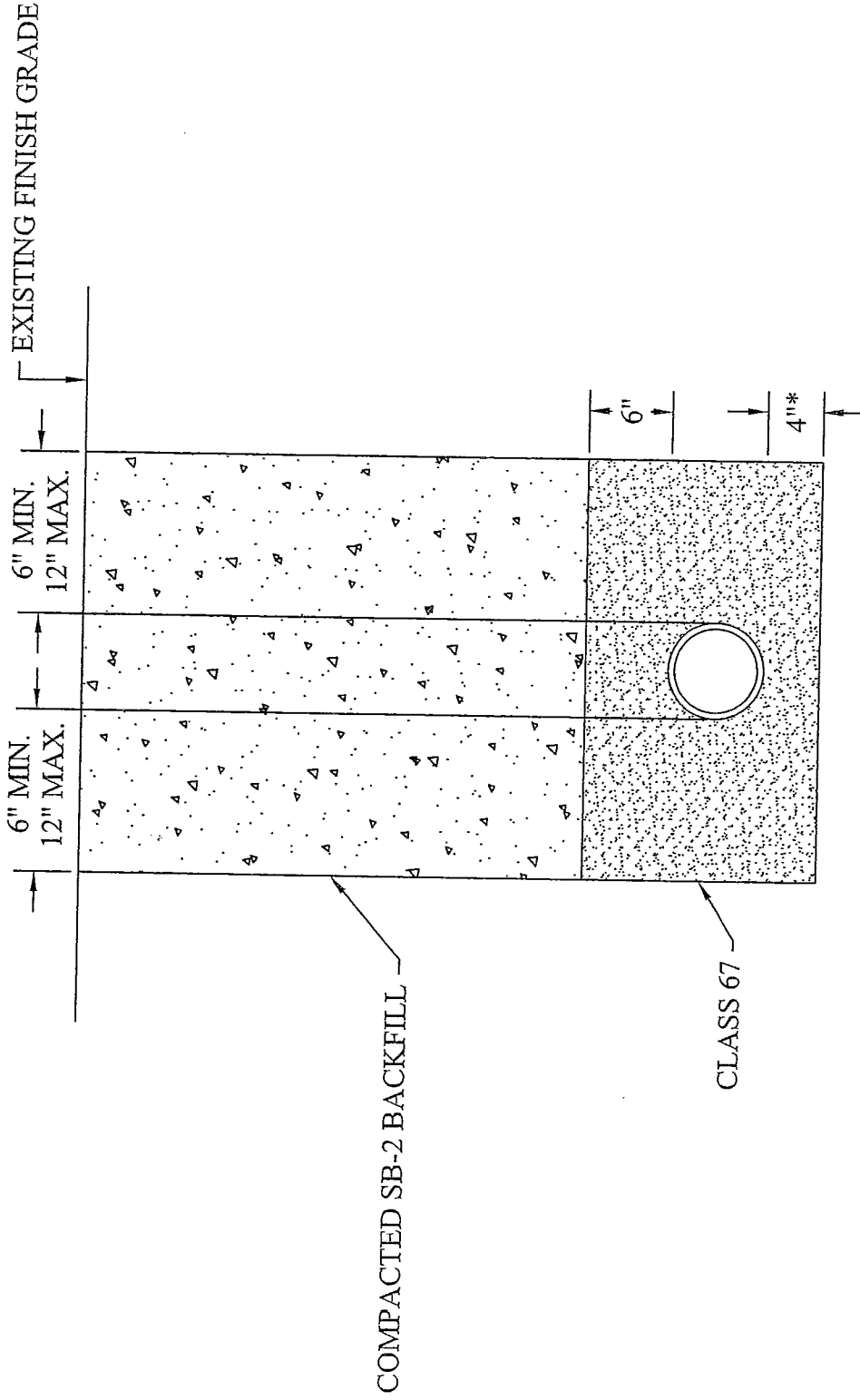
<b>CITY OF TONTITOWN</b>		GEN. WATER/SEWER DETAIL: GWS07 LAST REVISION DATE: 08/29/02	
DRAWN BY: CRB	CHECKED BY: _____	APPROVED: _____	DATE: 09/01/05

# HIGHWAY STREET REPLACEMENT



<p><b>CITY OF TONTITOWN</b></p>	<p>GEN. WATER/SEWER DETAIL: GWS08 LAST REVISION DATE: 08/29/02 APPROVED: _____ DATE: 09/01/05</p>
<p>DRAWN BY: CRB    CHECKED BY: _____</p>	

# UNIMPROVED ROADS & DRIVEWAYS-PRIVATE DRIVEWAYS & PARKING AREAS



\* IF IN ROCK 6" MIN. CLASS #67 STONE REQUIRED.  
 \*\* IMPROVED PRIVATE DRIVEWAYS AND PARKING AREAS BACKFILLED AS SHOWN ABOVE.  
 SUBSURFACE MATERIAL TO EQUAL OR EXCEED EXISTING SURFACE.  
 ASPHALTIC CONCRETE WALKS - MINIMUM THICKNESS 4"  
 CONCRETE DRIVES OR PARKING AREAS - MINIMUM THICKNESS 6".

NOTE: PRIVATE PARKING AREAS, DRIVEWAYS & WALKS-SEE UNIMPROVED ROADS

CITY OF <b>TONNITTOWN</b>	GEN. WATER/SEWER DETAIL: GWS09 LAST REVISION DATE: 08/29/02 APPROVED: _____ DATE: 09/01/05
DRAWN BY: CRB    CHECKED BY: _____	

## REACTION BACKING TABLE

SIZE	REQUIRED SQ. FT. OF UNDISTURBED EARTH WALL FOR REACTION BACKING					
	TYPE OF FITTINGS					
	TEE	90°	45°	22 1/2°	11 1/4°	PLUG
2"	1	1	1	1	1	1
3"	1	1	1	1	1	1
4"	1	2	1	1	1	2
6"	3	3	2	1	1	3
8"	4	6	3	2	1	4
10"	6	8	5	3	1	6
12"	8	12	6	3	2	8
14"	11	16	9	4	2	11
16"	14	20	11	6	3	14
18"	18	25	14	7	4	18
20"	22	31	17	9	4	22
24"	32	45	24	12	6	32
30"	48	68	37	19	10	48
36"	69	98	53	27	14	69

**NOTES:**

1. ALL FITTINGS SHALL BE MECHANICAL JOINTS.
2. DO NOT COVER BELLS OR FLANGES WITH CONCRETE.
3. WRAP ALL FITTINGS WITH POLY WRAP.
4. BACK ALL TEES ACCORDING TO SIZE OF BRANCH.
5. BACKING FUTURE LINE EXTENSIONS SHALL BE SUCH THAT LATER REMOVAL IS POSSIBLE.
6. ALL BENDS WHERE FITTINGS ARE USED, BOTH HORIZONTAL OR VERTICAL, SHALL BE BACKED.
7. REACTION BACKING TABLE IS BASED ON 150 PSI AND SOIL BEARING PRESSURE OF 2,000 LB/SQ. FT. ADDITIONAL BACKING MAY BE REQUIRED IN SOME AREAS AS REQUIRED BY CITY WATER DEPARTMENT.

<b>CITY OF TONTITOWN</b>		GEN. WATER/SEWER DETAIL: GWS10	
		LAST REVISION DATE: 08/29/02	
DRAWN BY: CRB	CHECKED BY: _____	APPROVED: _____	DATE: 09/01/05

