

STORM DRAINAGE
STANDARD DETAILS

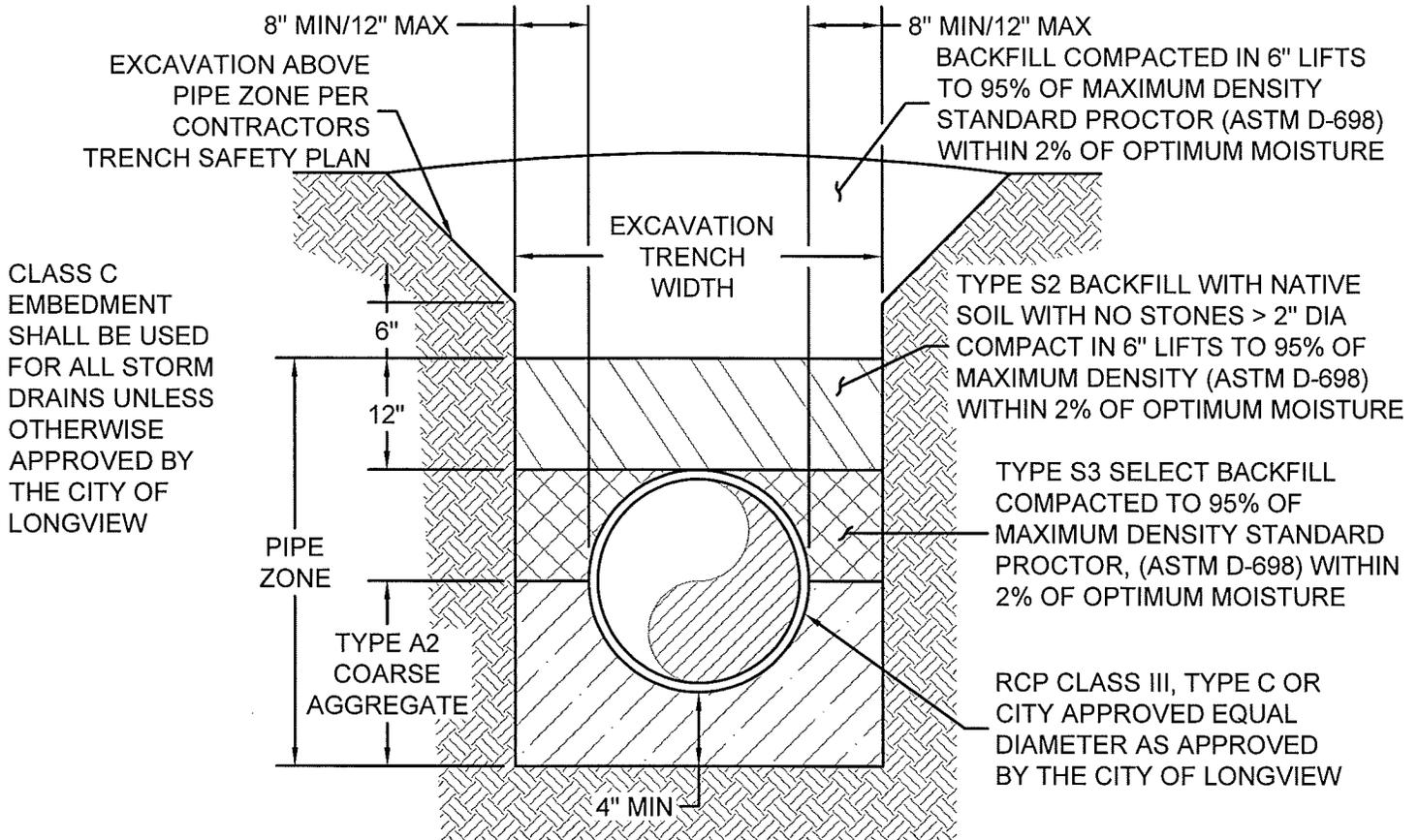
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STORM DRAINAGE
STANDARD DETAILS

PREFACE HERE

STORM DRAINAGE DETAILS

Storm Drainage Line Class C Embedment.....	4
Storm Drainage Line Class D Embedment	5
Offset Curb Inlet Page 1 of 3.....	6
Offset Curb Inlet Page 2 of 3.....	7
Offset Curb Inlet Page 3 of 3.....	8
5-Ft Curb Inlet Page 1 of 3	9
5-Ft Curb Inlet Page 2 of 3	10
5-Ft Curb Inlet Page 3 of 3	11
10-Ft Curb Inlet Page 1 of 3	12
10-Ft Curb Inlet Page 2 of 3	13
10-Ft Curb Inlet Page 3 of 3	14
Storm Drainage Manhole Ring and Cover	15
Tie-In to Existing Box or Inlet.....	16
Junction Box.....	17
Area Inlet	18
Double Wall HDPE Pipe Install Page 1 of 2	19
Double Wall HDPE Pipe Install Page 2 of 2	20
Joint Sealing	21

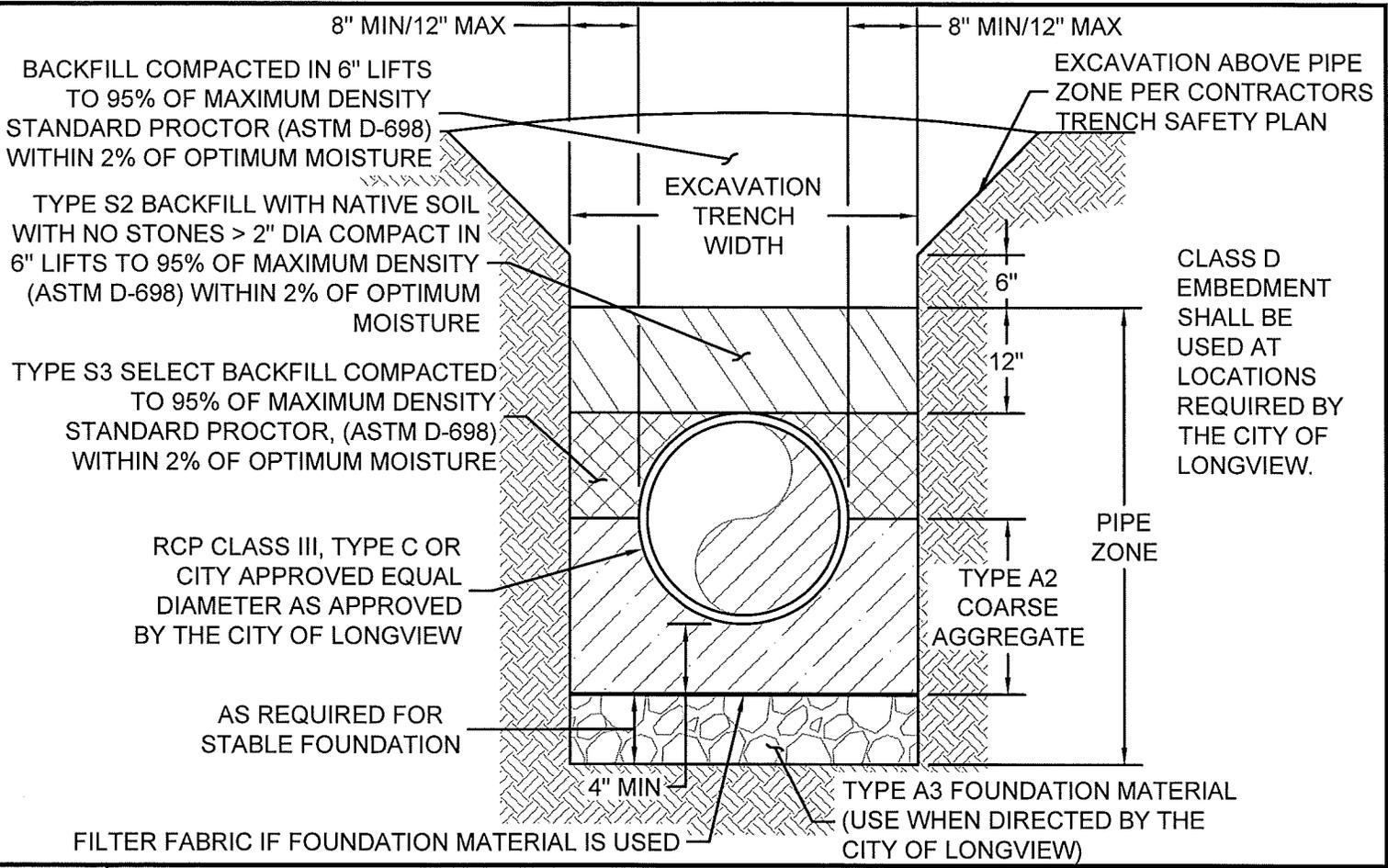


TYPE A2	ANGULAR 3/4" TO 1" CRUSHED ROCK OR NATURAL STONE MEETING THE REQUIREMENTS OF ATM C-33 No. 57. EMBEDMENT MATERIAL SHALL BE CLEAN, WASHED, SOUND, DURABLE, AND WELL GRADED.
TYPE S2	GRADED FREE OF LUMPS LARGER THAN 3", ROCKS LARGER THAN 2", EXCESSIVE SILTS, AND DEBRIS. DO NOT USE SOIL CONTAINING BRUSH, ROOTS, OR SIMILAR ORGANIC MATTER. CONFORMING TO ASTM D2487 CLASS II OR CLASS III SOILS WITH A LIQUID LIMIT LESS THAN 40, AND THE PLASTICITY INDEX LESS THAN 20, BUT GREATER THAN 4.
TYPE S3	CLAYEY SAND SOILS FREE FROM ORGANIC MATTER WITH NO LUMPS LARGER THAN 1", NO ROCKS LARGER THAN 1/2", NOR EXCESSIVE SILTS. DO NOT USE SOILS CONTAINING BRUSH, ROOTS, SOD, OR OTHER ORGANIC MATERIALS. SELECT FILL SHALL CONFORM TO ASTM D2487 CLASS II OR CLASS III AND SHALL HAVE A LIQUID LIMIT LESS THAN 30 WITH PLASTICITY INDEX LESS THAN 15, BUT GREATER THAN 4.

STORM SEWER PIPE MATERIAL NOTES:

1. REINFORCED CONCRETE PIPE (RCP): ASTM C76, CLASS III WITH WALL TYPE C; BAR REINFORCEMENT; INSIDE NOMINAL DIAMETER OF AS APPROVED BY THE CITY OF LONGVIEW.
2. ALL PIPE SHALL BE MACHINE-MADE BY A PROCESS WHICH SHALL PROVIDE FOR A UNIFORM PLACEMENT OF ZERO SLUMP CONCRETE IN THE FORM AND COMPACTION BY MECHANICAL DEVICES ASSURING A DENSE CONCRETE IN THE FINISHED PRODUCT.
3. REINFORCED CONCRETE PIPE JOINT DEVICE: ASTM C443, RUBBER COMPRESSION GASKET JOINT. JOINTS SHALL BE MADE WITH FORSHEDA PRE-LUBRICATED GASKETS.
4. SEAL JOINTS WATERTIGHT, AND WRAP ALL JOINTS WITH DUPONT TYPAR FABRIC A MINIMUM OF 24 INCHES AROUND THE PIPE AND SHALL BE 18 INCHES WIDE.

STORM DRAINAGE	CITY OF LONGVIEW, TEXAS STANDARD DETAILS	STORM DRAINAGE LINE CLASS C EMBEDMENT



TYPE A2	ANGULAR 3/4" TO 1" CRUSHED ROCK OR NATURAL STONE MEETING THE REQUIREMENTS OF ATM C-33 NO. 57. EMBEDMENT MATERIAL SHALL BE CLEAN, WASHED, SOUND, DURABLE, AND WELL GRADED.
TYPE A3	COARSE STONE OR CRUSHED GRAVEL. FOUNDATION MATERIAL SHALL BE PIT RUN ANGULAR CRUSHED, NATURAL WASHED STONE FREE OF SHALE, CLAY, FRIABLE MATERIAL AND DEBRIS; WELL GRADED BETWEEN 1" AND 3" IN SIZE, WITH A MINIMUM OF 90% RETAINED ON A 1" SIEVE.
TYPE S2	GRADED FREE OF LUMPS LARGER THAN 3", ROCKS LARGER THAN 2", EXCESSIVE SILTS, AND DEBRIS. DO NOT USE SOIL CONTAINING BRUSH, ROOTS, OR SIMILAR ORGANIC MATTER. CONFORMING TO ASTM D2487 CLASS II OR CLASS III SOILS WITH A LIQUID LIMIT LESS THAN 40, AND THE PLASTICITY INDEX LESS THAN 20, BUT GREATER THAN 4.
TYPE S3	CLAYEY SAND SOILS FREE FROM ORGANIC MATTER WITH NO LUMPS LARGER THAN 1", NO ROCKS LARGER THAN 1/2", NOR EXCESSIVE SILTS. DO NOT USE SOILS CONTAINING BRUSH, ROOTS, SOD, OR OTHER ORGANIC MATERIALS. SELECT FILL SHALL CONFORM TO ASTM D2487 CLASS II OR CLASS III AND SHALL HAVE A LIQUID LIMIT LESS THAN 30 WITH PLASTICITY INDEX LESS THAN 15, BUT GREATER THAN 4.

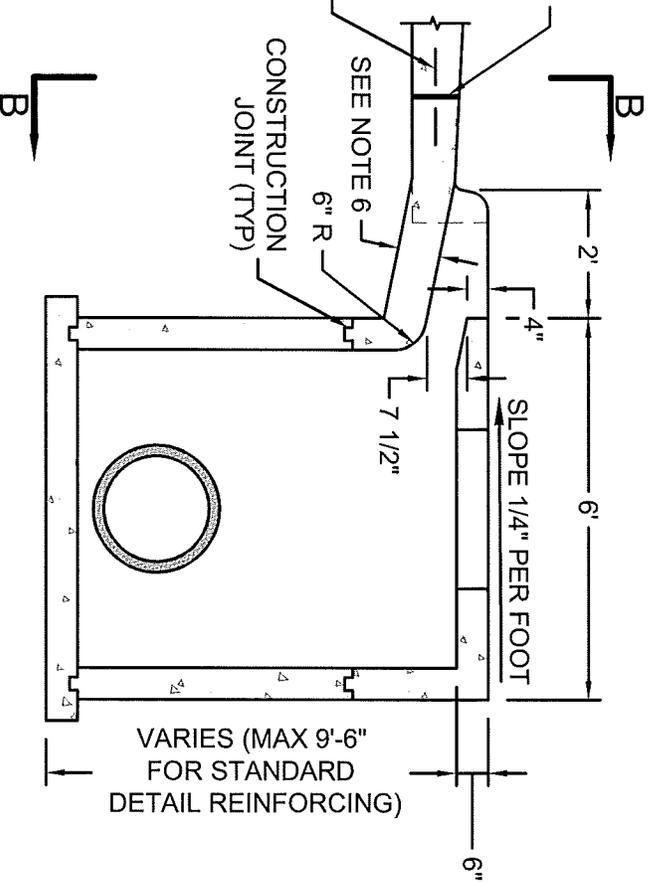
STORM SEWER PIPE MATERIAL NOTES:

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STORM DRAINAGE LATEST REVISION: 10/26/2018	CITY OF LONGVIEW, TEXAS STANDARD DETAILS	STORM DRAINAGE LINE CLASS D EMBEDMENT
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FACE OF CURB AND GUTTER OR
EDGE OF BLOCKOUT LINE
INSTALL DOWEL BARS AT
BLOCKOUT BETWEEN CONCRETE
PAVEMENT AND INLET APRON

SMOOTH DOWEL BARS 7/8"
DIAMETER x 18" LONG SPACED AT
12" OC FOR LENGTH OF BLOCKOUT
TYPICAL ALL CONCRETE PAVEMENT



SECTION A-A
NTS

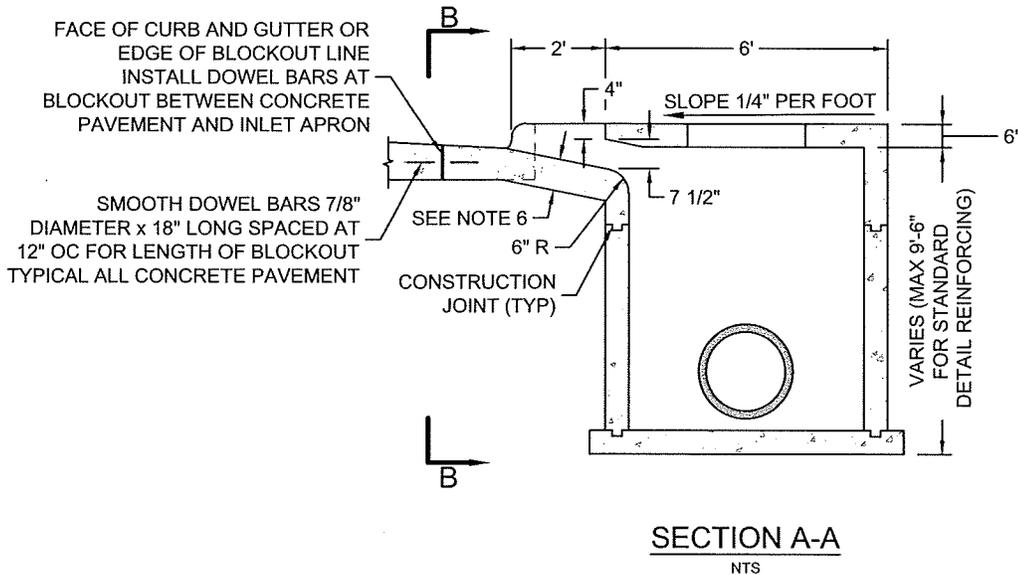
NOTES:

1. REINFORCEMENT OMITTED FOR CLARITY. REFER TO CURB INLET DETAILS FOR REQUIRED REINFORCEMENT.
2. ALL CURB INLETS SHALL BE OFFSET UNLESS OTHERWISE APPROVED BY THE CITY OF LONGVIEW.
3. INSTALL DOWEL BARS AT BLOCKOUT BETWEEN CURB AND GUTTER AND CONCRETE PAVEMENT.
4. ALL CONCRETE SHALL BE 3,500 PSI AT 28 DAYS.
5. ALL EXPOSED CONCRETE EDGES SHALL HAVE 3/4 CHAMFER. ALL EXPOSED CONCRETE SHALL HAVE BROOM FINISH.
6. INLET APRON THICKNESS SHALL MATCH CURB AND GUTTER AND/OR PAVEMENT THICKNESS (6" MIN).

STORM
DRAINAGE
LATEST
REVISION:
3/21/2018

CITY OF LONGVIEW, TEXAS
STANDARD DETAILS

OFFSET CURB INLET
PAGE 2 OF 3



NOTES:

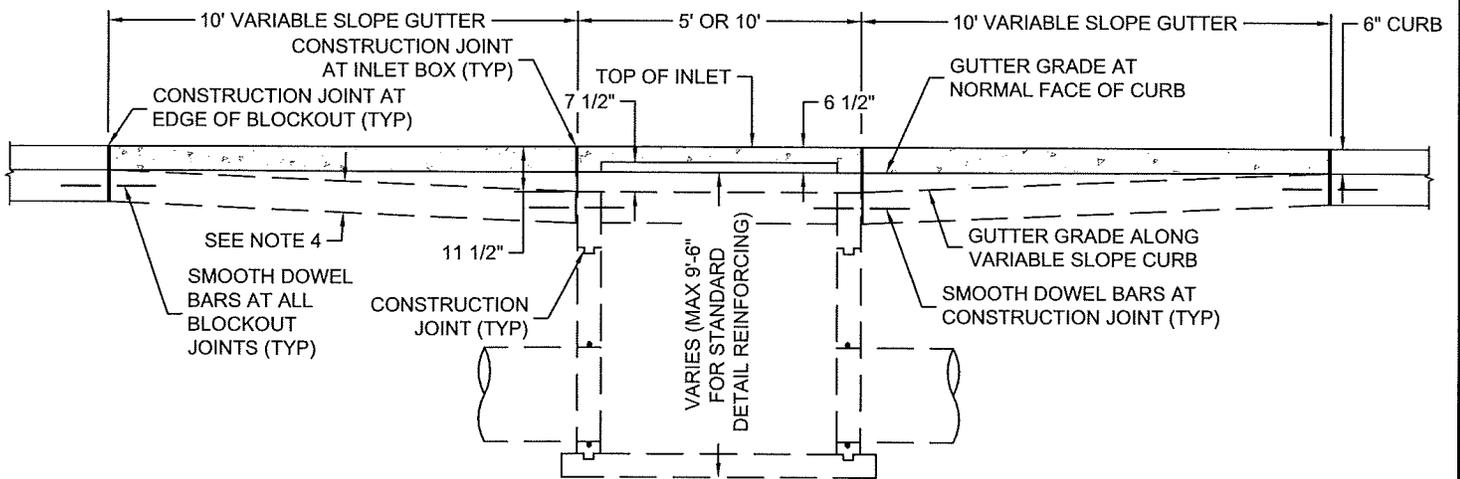
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STORM
DRAINAGE

LATEST
REVISION:
3/21/2018

CITY OF LONGVIEW, TEXAS
STANDARD DETAILS

OFFSET CURB INLET
PAGE 2 OF 3



SECTION B-B

NTS

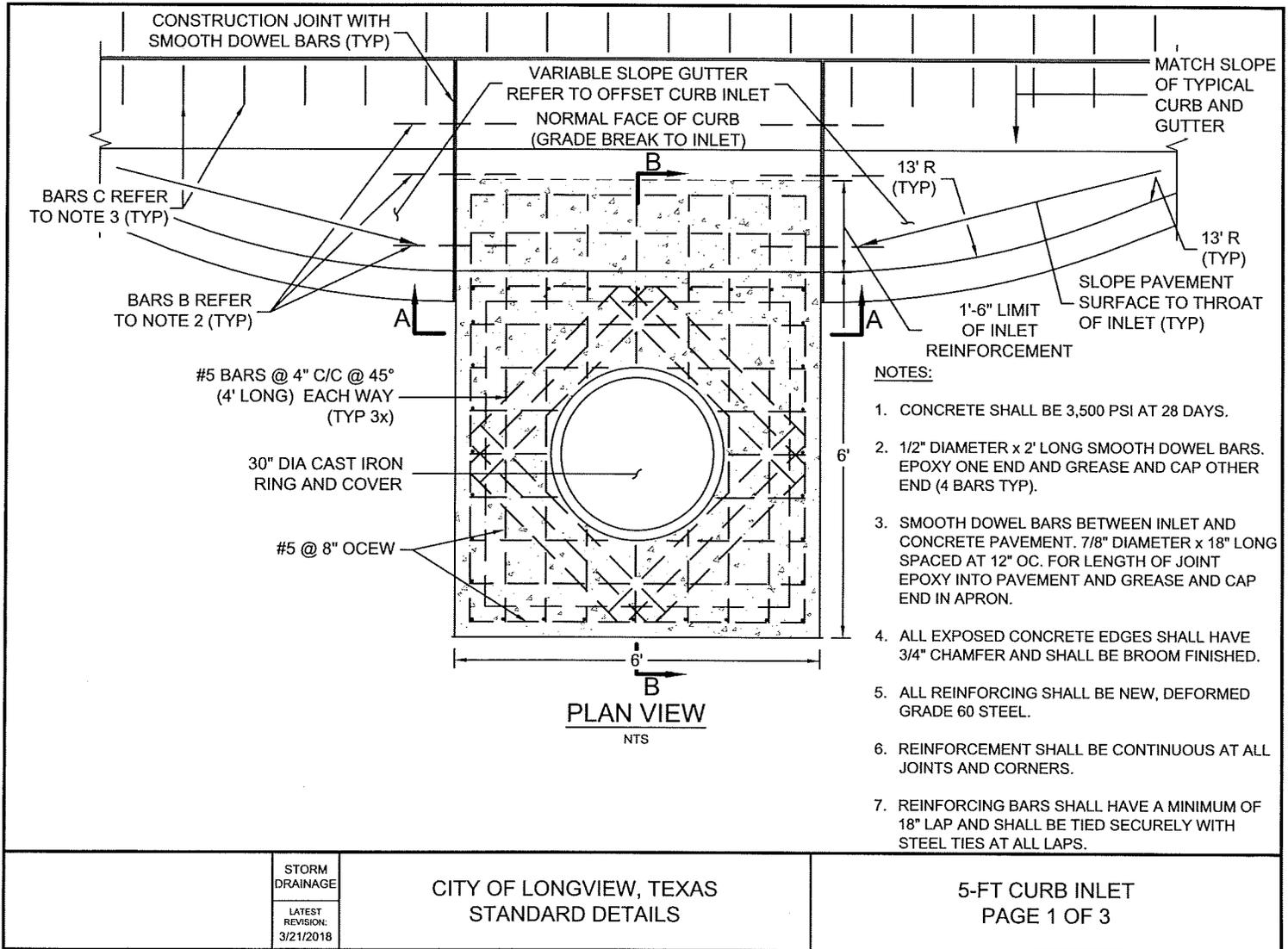
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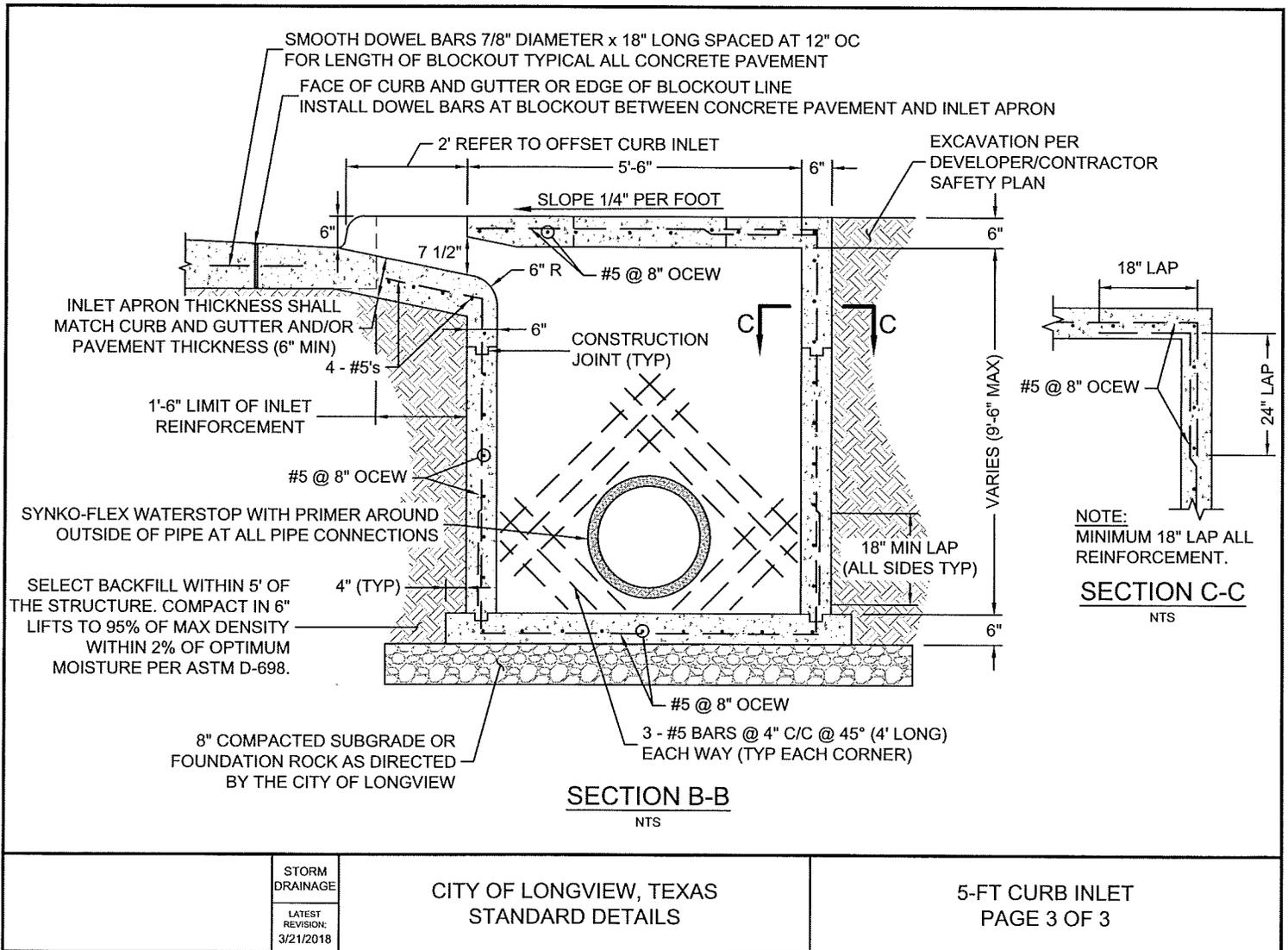
1. REINFORCEMENT OMITTED FOR CLARITY. REFER TO CURB INLET DETAILS FOR REQUIRED REINFORCEMENT.
2. ALL CONSTRUCTION JOINT SHALL MATCH THE PAVEMENT PLAN.
3. ALL JOINT SHALL INCLUDE BACKER ROD AND SEALANT.
4. INLET APRON THICKNESS SHALL MATCH CURB AND GUTTER AND/OR PAVEMENT THICKNESS (6" MIN).

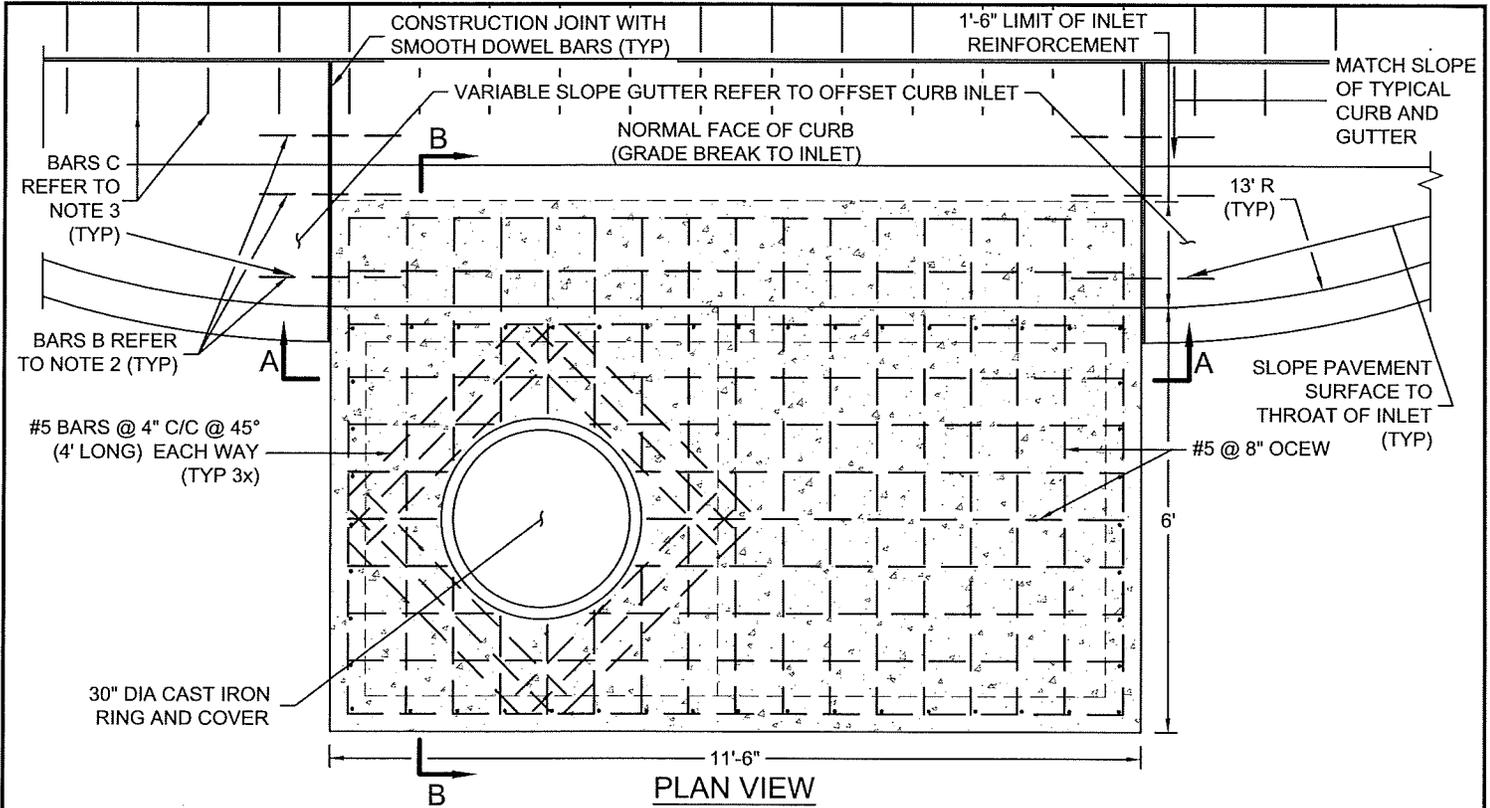
STORM DRAINAGE
LATEST REVISION: 3/21/2018

CITY OF LONGVIEW, TEXAS
STANDARD DETAILS

OFFSET CURB INLET
PAGE 3 OF 3







PLAN VIEW

NOTES:

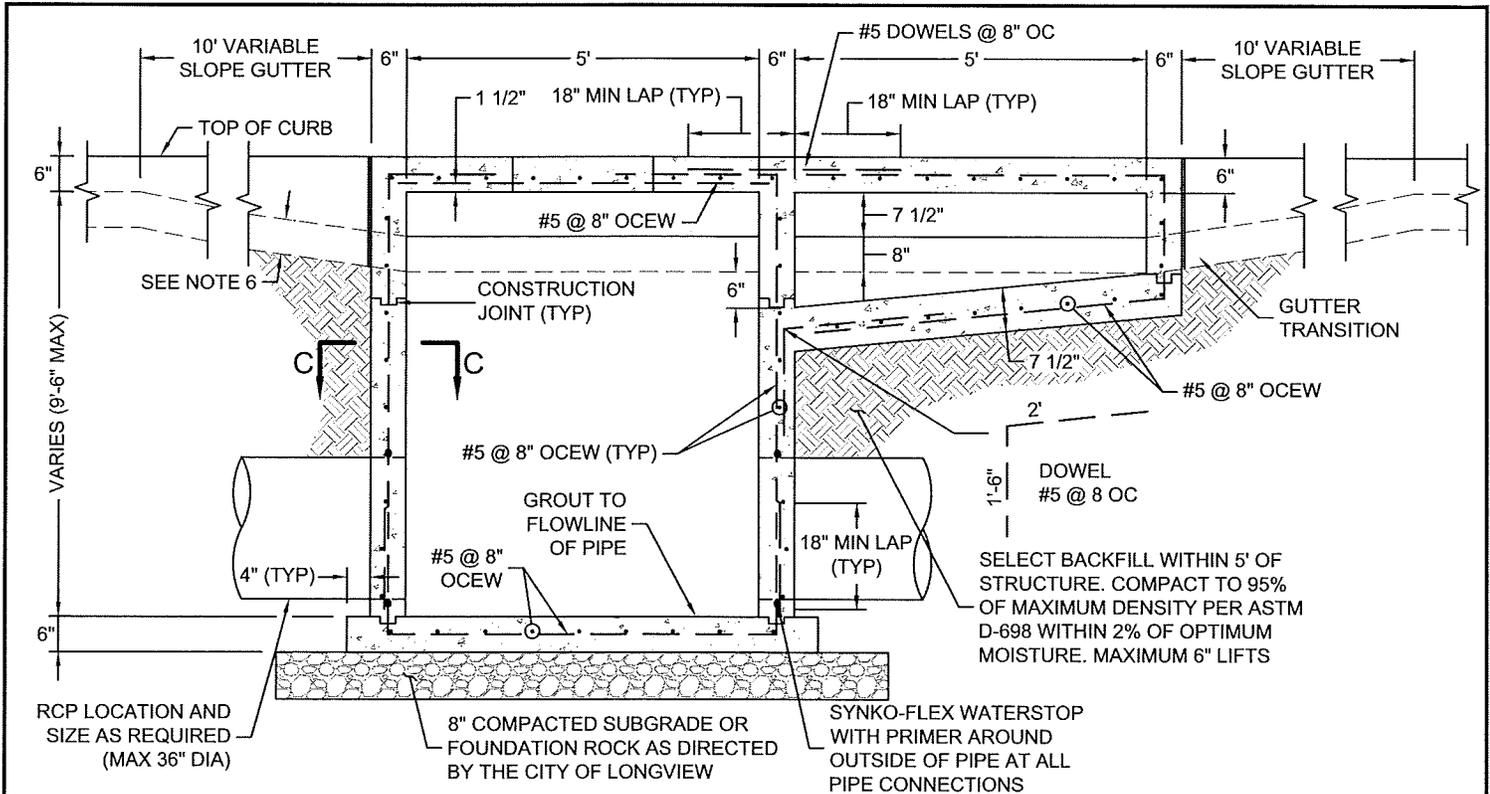
1. CONCRETE SHALL BE 3,500 PSI AT 28 DAYS.
2. 1/2" DIAMETER x 2' LONG SMOOTH DOWEL BARS. EPOXY ONE END AND GREASE AND CAP OTHER END (4 BARS TYP).
3. SMOOTH DOWEL BARS BETWEEN INLET AND CONCRETE PAVEMENT. 7/8" DIAMETER x 18" LONG SPACED AT 12" OC. FOR LENGTH OF JOINT EPOXY INTO PAVEMENT AND GREASE AND CAP END IN APRON.
4. ALL EXPOSED CONCRETE EDGES SHALL HAVE 3/4" CHAMFER AND SHALL BE BROOM FINISHED.
5. ALL REINFORCING SHALL BE NEW, DEFORMED GRADE 60 STEEL.
6. REINFORCEMENT SHALL BE CONTINUOUS AT ALL JOINTS AND CORNERS.
7. REINFORCING BARS SHALL HAVE A MINIMUM OF 18" LAP AND SHALL BE TIED SECURELY WITH STEEL TIES AT ALL LAPS.

STORM
DRAINAGE

LATEST
REVISION:
3/21/2018

CITY OF LONGVIEW, TEXAS
STANDARD DETAILS

10-FT CURB INLET
PAGE 1 OF 3

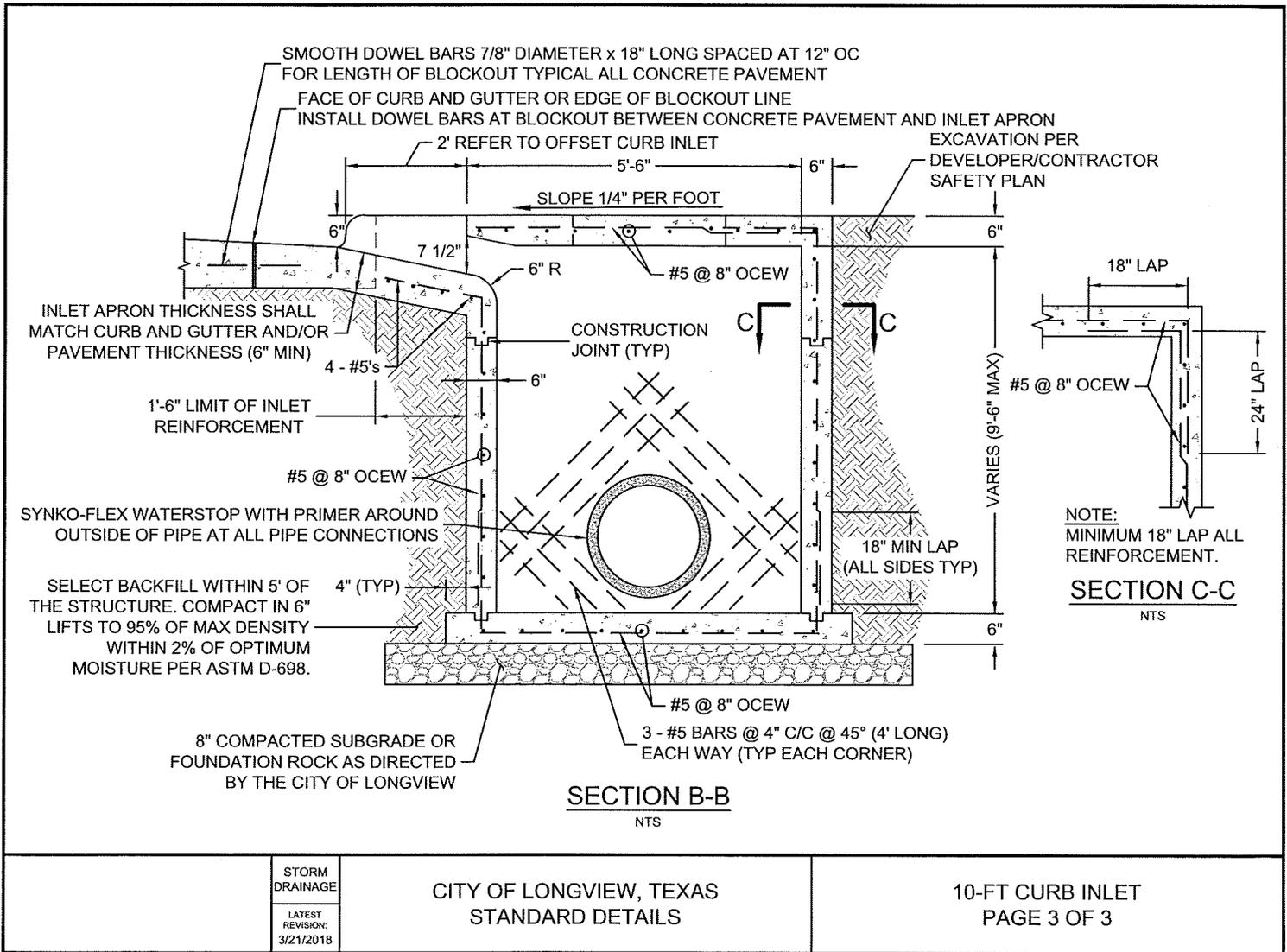


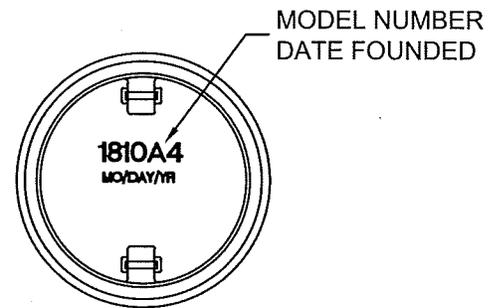
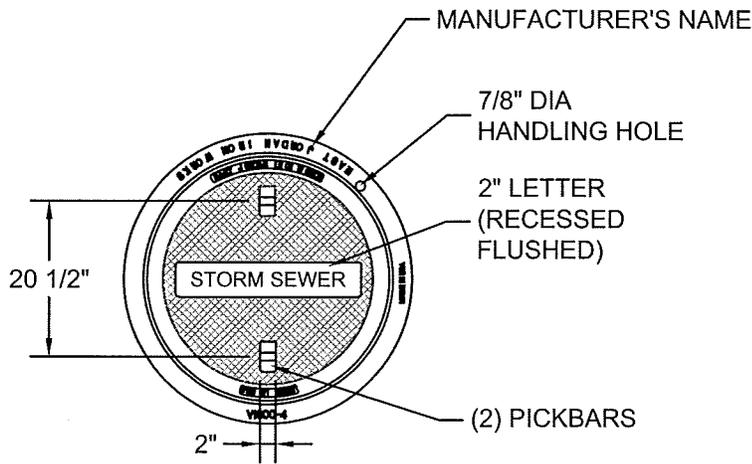
SECTION A-A
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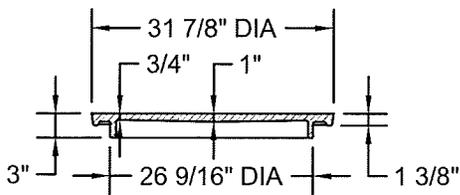
1. CONCRETE SHALL BE 3,500 PSI AT 28 DAYS.
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3. ALL REINFORCING SHALL BE NEW, DEFORMED GRADE 60 STEEL.
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5. REINFORCING BARS SHALL HAVE A MINIMUM OF 18" LAP AND SHALL BE TIED SECURELY WITH STEEL TIES AT ALL LAPS.
6. INLET APRON THICKNESS SHALL MATCH CURB AND GUTTER AND/OR PAVEMENT THICKNESS (6" MIN).

STORM DRAINAGE	CITY OF LONGVIEW, TEXAS STANDARD DETAILS	10-FT CURB INLET PAGE 2 OF 3
LATEST REVISION: 3/21/2018		

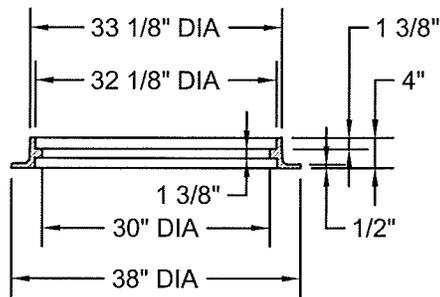




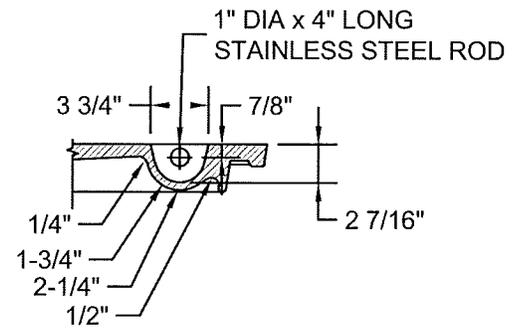
BOTTOM OF COVER



COVER SECTION



FRAME SECTION

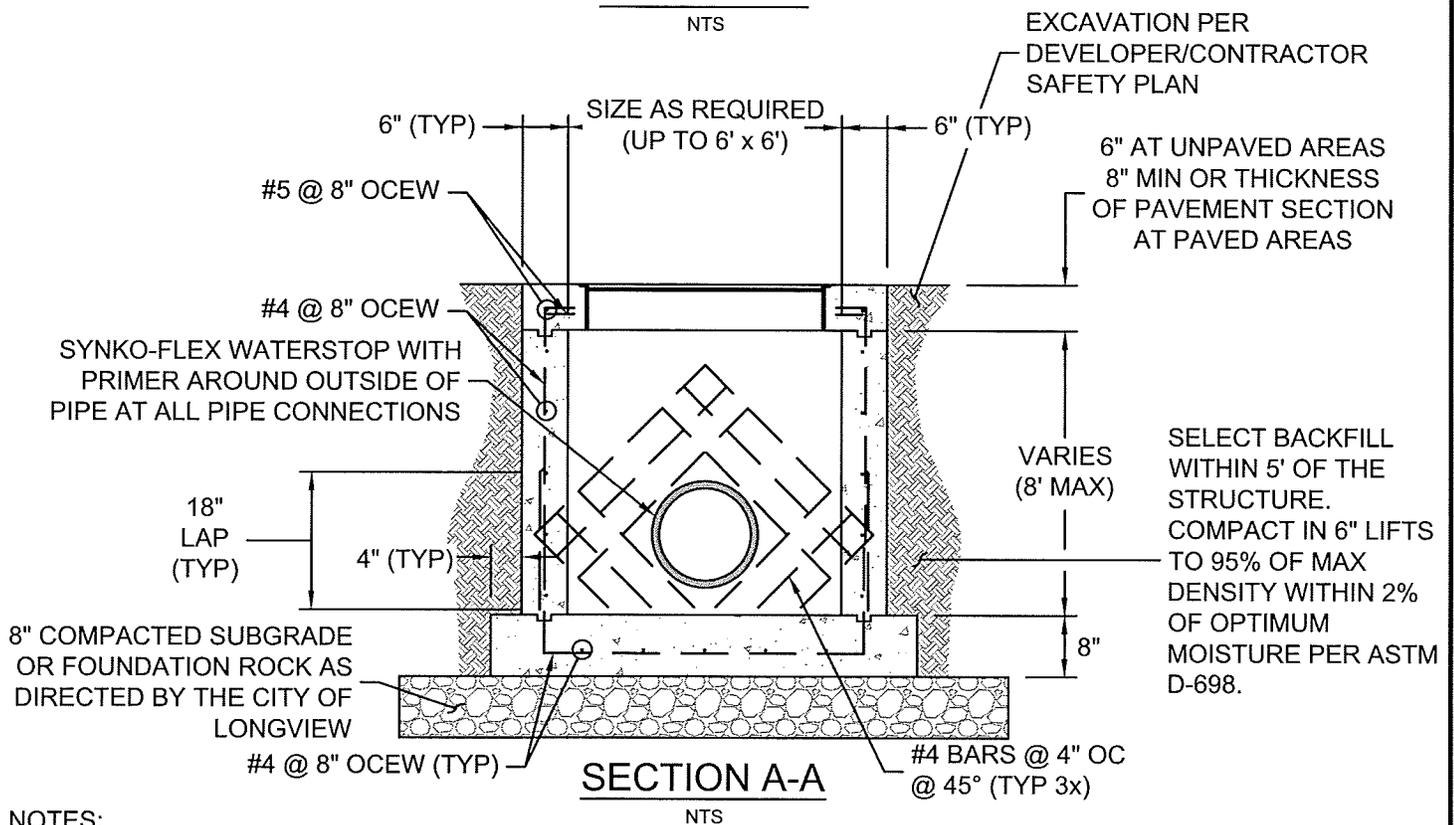
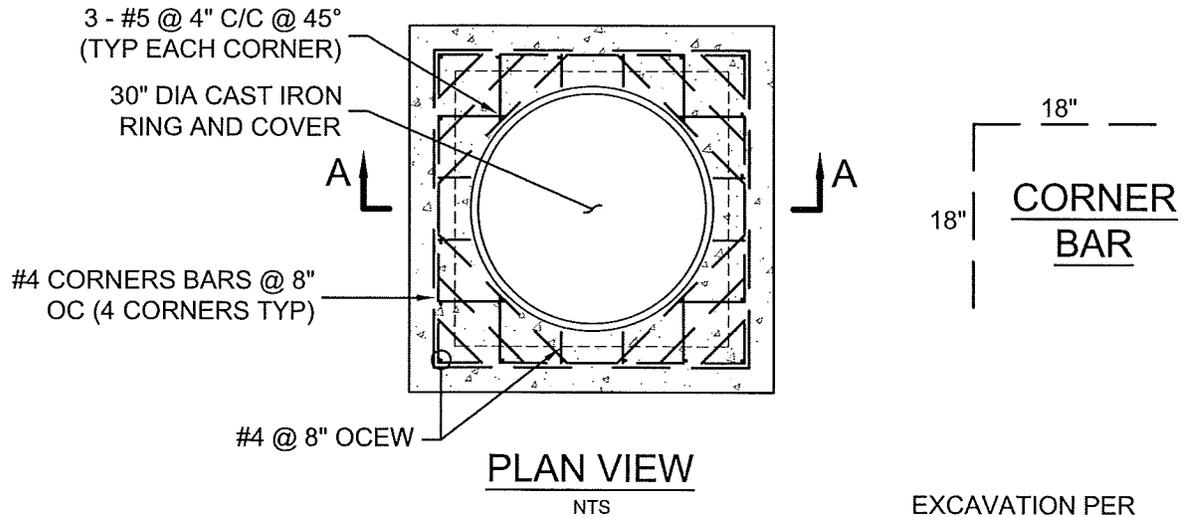


PICKBAR DETAIL

NOTES:

1. MANHOLE RINGS AND COVERS SHALL BE MACHINED SURFACE CAST IRON, NON-ROCKING TYPE.
2. MINIMUM WEIGHT FOR STANDARD RING AND COVER SHALL BE 210 POUNDS.
3. COVER SHALL HAVE RECESS PICK SLOTS AND NO HOLES.

	STORM DRAINAGE	CITY OF LONGVIEW, TEXAS STANDARD DETAILS	STORM DRAINAGE MANHOLE RING AND COVER
	LATEST REVISION: 3/21/2018		

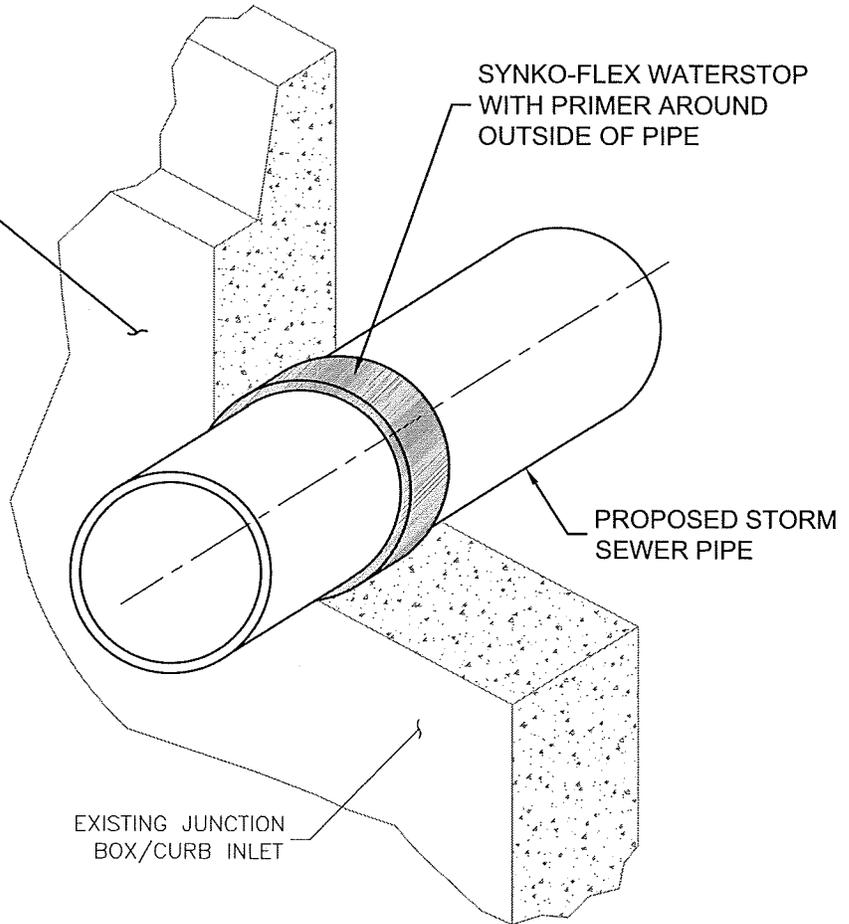


NOTES:

1. ALL CONCRETE SHALL BE CLASS A, 3500 PSI AT 28 DAY COMPRESSIVE STRENGTH.
2. ALL REINFORCING STEEL SHALL BE NEW, GRADE 60 WITH MIN 18" LAP. ALL REINFORCING SHALL BE CONTINUOUS WITH REQUIRED LAPS AT CORNERS AND JOINTS. TIE LAPS SECURELY WITH STEEL WIRE TIES.
3. ALL COVERS SHALL BE MINIMUM 210 LBS AND MEET THE STANDARD MANHOLE RING AND COVER DETAILS.
4. ALL EXPOSED CONCRETE EDGE SHALL BE CHAMFERED 3/4" AND ALL EXPOSED CONCRETE SHALL HAVE BROOM FINISH.

	STORM DRAINAGE	CITY OF LONGVIEW, TEXAS STANDARD DETAILS	JUNCTION BOX
	LATEST REVISION: 3/21/2018		

SCORE OUTSIDE OF EXISTING
WALL WITH CONCRETE SAW
CHIP OPENING
PROTECT EXISTING
REINFORCEMENT
INSTALL STORM SEWER PIPE
WITH WATERSTOP
CONCRETE INTO PLACE WITH
CONCRETE, $f_c = 3,500$ PSI



NOTES:

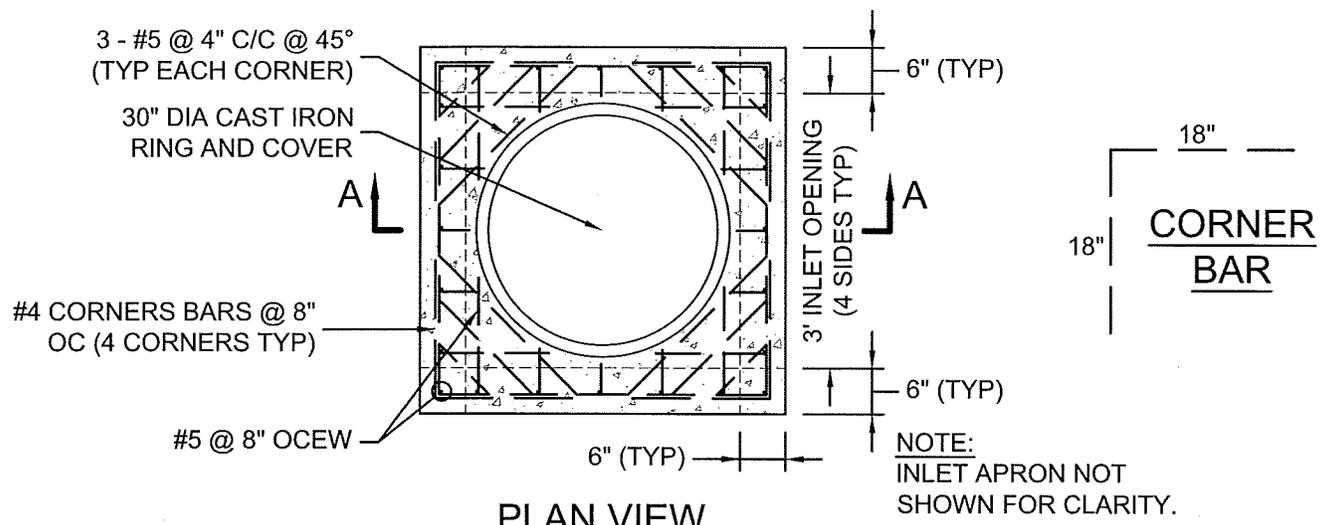
1. DRILL 1/2" TO 3/4" HOLES (SPACED 3" TO 4") AT PERIMETER OF PROPOSED OPENING TO PROTECT WALL FROM DAMAGE IF DIRECTED BY THE CITY OF LONGVIEW.
2. REINFORCEMENT DAMAGED DURING SCORING OR CHIPPING OR IF OPENING IS MORE THAN 5" LARGER THAN PIPE OD, INSTALL #5 REBAR AT 8" OCEW PRIOR TO CONCRETING OPENING. REBAR INSTALLATION SHALL BE APPROVED BY CITY OF LONGVIEW.
3. EXTEND CONCRETE FILL APPROXIMATELY 8" OUTSIDE THE EXISTING WALL WHEN FILLING THE PIPE OPENING TO SUPPORT PIPE AT WALL CONNECTION.

STORM
DRAINAGE

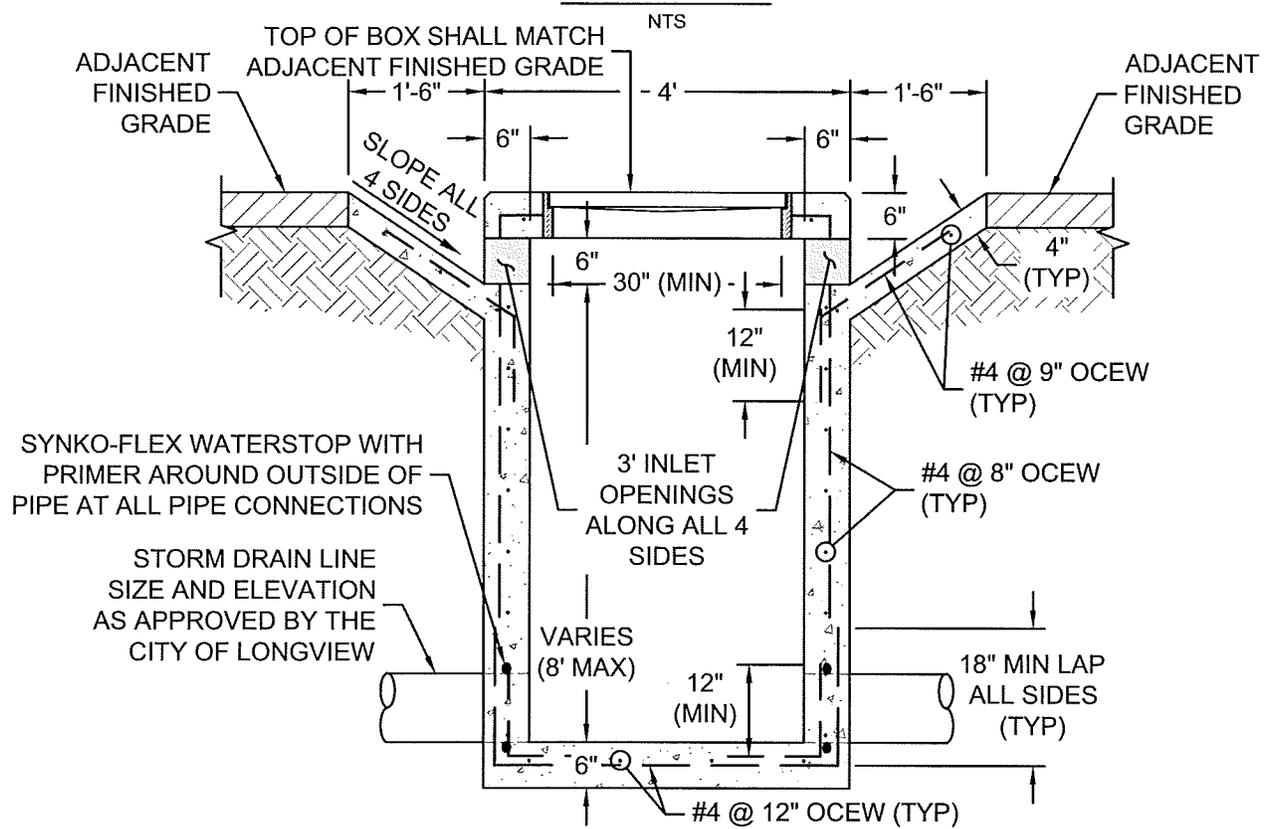
LATEST
REVISION:
3/21/2018

CITY OF LONGVIEW, TEXAS
STANDARD DETAILS

TIE - IN TO EXISTING
BOX OR INLET



PLAN VIEW

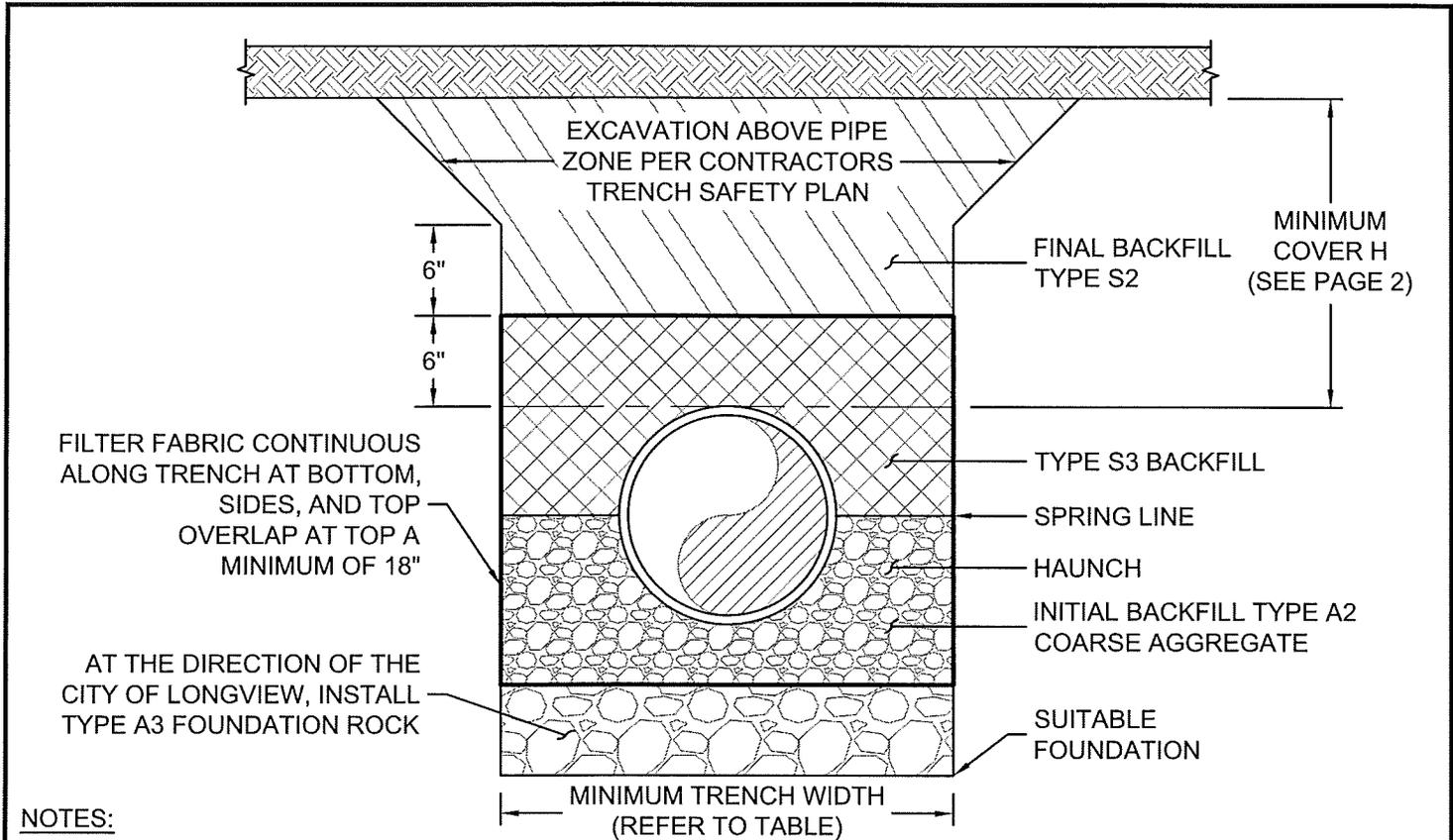


SECTION A-A

NOTES:

1. ALL CONCRETE SHALL BE CLASS A, 3,500 PSI AT 28 DAY COMPRESSIVE STRENGTH.
2. ALL REINFORCING STEEL SHALL BE NEW, GRADE 60 WITH MIN 18" BAR LAP. ALL REINFORCING SHALL BE CONTINUOUS WITH REQUIRED LAP AT CORNERS AND JOINTS. TIE LAPS SECURELY WITH STEEL WIRE TIES.
3. ALL RINGS AND COVERS SHALL BE MINIMUM 210 LBS AND MEET THE STANDARD MANHOLE RING AND COVER DETAILS.
4. ALL EXPOSED CONCRETE EDGE SHALL BE CHAMFERED 3/4" AND ALL EXPOSED CONCRETE SHALL HAVE BROOM FINISH.

	STORM DRAINAGE	CITY OF LONGVIEW, TEXAS STANDARD DETAILS	AREA INLET
	LATEST REVISION: 3/21/2018		



NOTES:

1. HDPE DRAINAGE PIPE SHALL BE DOUBLE WALL WITH SMOOTH INTERIOR SURFACE. HDPE PIPE MAY BE USED IN UNPAVED AREAS ONLY WITH THE APPROVAL OF THE CITY OF LONGVIEW.
2. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.
3. FILTER FABRIC: DUPONT TYPAR OR CITY OF LONGVIEW APPROVED EQUAL.
4. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, EXCAVATE TO A DEPTH REQUIRED BY THE CITY OF LONGVIEW AND REPLACE WITH TYP A3 COURSE STONE 1" TO 3" MIN 90% RETAINED ON A 1" SIEVE.
5. BEDDING: TYPE A2 ANGULAR ROCK 3/4" TO 1" MEETING ASTM C-33 NO. 57 CLEAN, WASHED, SOUND DURABLE, AND WELL GRADED. PROVIDE DOCUMENTATION FOR MATERIAL TO THE CITY OF LONGVIEW. UNLESS OTHERWISE NOTED BY THE CITY OF LONGVIEW, MINIMUM BEDDING THICKNESS SHALL BE 4" FOR 4"-24"; 6" FOR 30"-60" AND SHALL EXTEND UP TO THE SPRING LINE OF THE PIPE.
6. INITIAL BACKFILL: SOIL TYPE S3 SELECT FILL CLAYEY SAND SOILS FREE FROM ORGANIC MATTER WITH NO LUMPS LARGER THAN 1", NO ROCKS LARGER THAN 1/2", NOR EXCESSIVE SILTS, NO BRUSH, ROOTS, OR OTHER WASTE. SOIL SHALL CONFORM TO ASTM D2487 CLASS II OR CLASS III WITH ALL LESS THE 30 AND PI LESS THE 15 BUT GREATER THAN 4. COMPACT IN 6" LIFTS TO 95% OF MAXIMUM DENSITY WITHIN 2% OF OPTIMUM MOISTURE PER ASTM D698. PROVIDE DOCUMENTATION FOR MATERIAL TO THE CITY OF LONGVIEW.
7. FINAL BACKFILL: SOIL TYPE S2 GRADED FREE OF LUMPS LARGER THAN 3", ROCKS LARGER THAN 2" EXCESSIVE SILTS AND DEBRIS. DO NOT USE SOILS CONTAINING BRUSH, ROOTS, OR OTHER ORGANIC MATTER. SOILS SHALL CONFORM TO ASTM D2487 CLASS II OR CLASS III WITH ALL LESS THAN 40 AND A PI LESS THAN 20 BUT GREATER THAN 4. COMPACT IN 6" LIFTS TO 95% OF MAXIMUM DENSITY WITHIN 2% OF OPTIMUM MOISTURE PER ASTM D-698. PROVIDE DOCUMENTATION FOR MATERIAL TO THE CITY OF LONGVIEW.

	STORM DRAINAGE	CITY OF LONGVIEW, TEXAS STANDARD DETAILS	DOUBLE WALL HDPE PIPE INSTALLATION PAGE 1 OF 2
	LATEST REVISION: 3/21/2018		

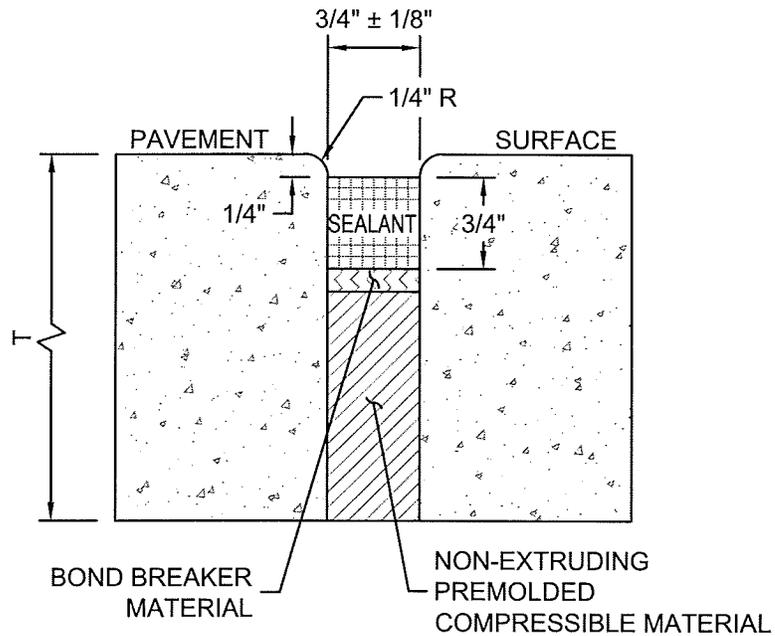
MINIMUM TRENCH WIDTHS	
PIPE DIAMETER	MINIMUM TRENCH WIDTHS
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
60"	96"

MINIMUM COVER BASED ON VEHICLE LOADING CONDITIONS		
	SURFACE LIVE LOADING CONDITION	
PIPE DIAMETER	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD)*
12" - 48"	12"	48"
60"	24"	60"

*VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER.

MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC LOCATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER IS REQUIRED TO PREVENT FLOTATION IN AREAS OF HIGH GROUNDWATER OR FLOODING. FOR TRAFFIC LOCATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF PAVEMENT SECTION. ADDITIONAL COVER IS REQUIRED TO PREVENT FLOTATION IN AREAS OF HIGH GROUNDWATER OR FLOODING.

STORM DRAINAGE LATEST REVISION: 3/21/2018	CITY OF LONGVIEW, TEXAS STANDARD DETAILS	DOUBLE WALL HDPE PIPE INSTALLATION PAGE 2 OF 2



NOTE:

DIMENSIONS MAY VARY WITH SEALANT MANUFACTURER'S WIDTH-TO-DEPTH RATIO REQUIREMENTS. ACTUAL DIMENSION AND MATERIALS SHALL BE APPROVED BY CITY OF LONGVIEW.

STORM DRAINAGE LATEST REVISION: 3/21/2018	CITY OF LONGVIEW, TEXAS STANDARD DETAILS	JOINT SEALING
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