

## CONSTRUCTION NOTES

- The Contractor shall notify the City of Sterling Heights Office of Engineering (586-446-2720) 48 hours prior to the start of construction of public utilities or of construction within City Rights-Of-Way.
- All construction shall conform to the current standards and specifications of the City of Sterling Heights which are included as part of these plans.
- After the completion of construction of public utilities or construction within City Rights-Of-Way, the Contractor must request a Final Inspection. Any Punchlist items resulting from the Final Inspection must be resolved prior to the final release and acceptance.
- The existing utilities indicated on this plan are in accordance with available information. It shall be the Contractor's obligation to verify the exact location of all existing utilities which might affect this job.
- The Contractor shall notify "Miss Dig" (647-7344) at least 3 working days prior to the start of construction.
- The Contractor shall at all times be aware of inconvenience caused to the abutting property owners and general public. Where undue inconveniences are not remedied by the Contractor, the City, upon four hours notice, reserves the right to perform the necessary work and deduct the cost therefore from the money due the Contractor.
- During construction the Contractor shall provide watchmen and flagmen as may be required for the safety and convenience of the public and shall furnish all barricades, signs, and lights necessary to protect the public. Traffic shall be maintained at all times unless otherwise authorized by the City of Sterling Heights. Traffic control shall be in accordance with the Michigan Manual of Uniform Traffic Control Devices, current edition by the Michigan Department of Transportation.
- In cases where detour roads are necessary, traffic shall be routed over roads as directed by the City of Sterling Heights. In all cases, the detour roads shall be maintained with dust control and grading as required by the Engineer.
- Existing roads used as haulroutes shall be approved by the City of Sterling Heights and the Contractor shall maintain them with grading and dust control as required by the Engineer.
- The Contractor is to provide adequate dust control when such a problem has been caused by his construction operations. Dust control methods must meet the approval of the City.
- All property irons and monuments disturbed or destroyed by the Contractor's operations shall be replaced by a Registered Land Surveyor provided by the Contractor at the Contractor's expense.
- Contractor shall provide Owner and Engineer a copy of written permission to use private property for storage of equipment and materials or for his construction operations.
- Trench backfill under existing or proposed roadways, driveways and parking areas, unless otherwise noted, shall be sand or gravel, placed in 12 inch layers (maximum) and consolidated to 95% maximum density as measured by modified proctor.
- Gravel or slag roadways, driveways, parking areas and shoulders shall be restored by placing 8 inches of 21AA limestone and shall be maintained as settling takes place.
- Trees and shrubs are to be protected during construction and bared where necessary unless other arrangements are made with the abutting property owner from whom a written release shall be obtained and provided to the City. Unless specifically designated at a location on the plan, tunnel or bore of tree(s), shrubs, etc. shall be incidental to the unit price of the utility.
- Existing fences shall be removed and restored to their original condition or better where in conflict with construction.
- Driveways, culverts, ditches, drain tile, sprinkler systems, drainage structures, etc., that are disturbed by the Contractor's operations shall be immediately restored.
- All established lawn areas disturbed by the Contractor's operations shall be resodded with matching sod or Marion Blue Sod. All other areas shall be seeded and mulched, seeding and mulching shall be done in accordance with the General Specifications. Seeding shall include 4" of topsoil for both field seeding and lawn seeding. Pay item for seeding includes a satisfactory growth of seed. If for whatever reason the seed does not "catch" the first time, then the Contractor is obligated to come back and reseed the area at no additional cost until permanent growth is established.
- All ditch slopes shall have established vegetation and be free from erosion.
- All utility poles in close proximity to construction shall be supported in a manner satisfactory to the utility owner.
- Drive culverts which are removed or destroyed by the contractor's operations shall be replaced with a minimum of 24 feet of 12-inch corrugated metal pipe with end sections. The existing culvert may be reused if it meets City standards.
- Grading of trench backfill shall be kept to within 100 feet of excavation. Soil shall be mounded over the trench continuously. Any surplus excavation (except topsoil) that is left in piles shall be removed from the site within 7 days.
- Existing crushed limestone, decorative stone, etc. drives shall be restored with 8" of like material and be paid for at the unit price indicated in the proposal for 21AA limestone.
- All items not specifically indicated as a pay item in the proposal shall be considered as incidental to the installation of the improvements.
- All utility crossings shall maintain an 18 inch minimum vertical separation.
- All parallel sanitary, storm and water main lines shall maintain a 10 foot minimum horizontal separation.

## PAVING NOTES

### A. GENERAL

- Pavement shall be of the type, thickness, and cross-section as indicated on the plans and as follows:
  - Concrete: Portland cement (air-entrained) with a minimum cement content of 6 sacks per cubic yard, minimum 28 day compressive strength of 3500 psi, and a slump of 1 1/2 to 3 inches.
  - Asphalt: Base course - Michigan Department of Transportation 4:11 (20 A); Surface course - Michigan Department of Transportation 4:12 Type M; Asphalt cement penetration grade-85-100; Prime coat - Michigan Department of Transportation MC-30 at 0.50 gallons per square yard; Bond coat - Michigan Department of Transportation SS-1 at 0.15 gallons per square yard; maximum 2 inch lift.
- The pavement base shall be compacted to 95% of the maximum density (modified Proctor) prior to placement of the pavement.
- Drive approaches shall be constructed in accordance with Michigan Department of Transportation Standard Plan R-28L.
- Sidewalk ramps shall be constructed where required in accordance with Michigan Department of Transportation Standard Plan R-29L.
- All structures (manholes, gatewells, hydrants, etc.) shall be adjusted to the finish grade.
- All proposed elevations are for top of curb unless otherwise noted.
- The pavement shall be centered in the right-of-way unless otherwise noted.
- Expansion joints shall be placed at the end of all intersection radii.
- Edge drains shall be installed where designated by the Engineer.
- Concrete pavement joints shall be filled with hot poured rubber asphalt joint sealing compound. (Federal Specification SS-S-164)

## STORM SEWER NOTES

- All storm sewers shall be installed on a Class "B" or Class "B" Modified bedding (see Standard Detail) unless indicated otherwise.
- Joints for storm sewers shall be plain joints with Dwellitt #10 or an approved equal.
- The inside joints for all storm sewers 30" and larger shall be cement pointed.
- Tees shall be provided for building drains or sump pump leads. Breaking into the storm sewer for connection will not be permitted.
- Whenever existing manholes or sewer pipe are to be tapped, holes are to be drilled 4 inch center to center spacings around the periphery of the proposed opening to create a plane of weakness joint - a 12 inch (minimum) thick concrete collar is to encase the new pipe and opening. See detail on construction plans.

## SITE PLAN NOTES

- All construction shall conform to the current standards and specifications of the City of Sterling Heights.
- The Contractor shall notify "Miss Dig" (647-7344) at least 3 working days prior to the start of construction.
- The Contractor shall notify the City of Sterling Heights Office of Engineering (586-446-2720) 48 hours prior to the start of construction of public utilities or of construction within City Rights-Of-Way.
- Handicapped parking spaces shall be identified with the international symbol.
- Access to a structure shall be provided for the physically handicapped.
- Onsite parking shall be provided for construction workers.
- An as-built reproducible mylar shall be submitted to the Engineering Department prior to the issuance of any occupancy permit or release of builder's bond.
- All on-site storage tanks, except those containing potable water, shall be provided with secondary containment equal to a minimum 110% of tank capacity.
- All potential utility conflicts must be physically determined prior to the start of construction of utilities. An Engineering inspector must be present.

## SANITARY SEWER NOTES

- The Contractor shall notify the Macomb County Public Works Office at (586) 469-5325 at least 3 working days prior to the start of any sanitary sewer construction.
- All sewers to be placed on Class "B" bedding or better.
- Wyes, risers, and house leads are to be placed at locations shown on the plans or as directed by the Engineer. All wyes are incidental.
- Each wye or house lead shall have a plug of the same type of joint as the house lead.
- House leads shall be a minimum of 9 ft. deep at the property line.
- Downspouts or other conduits carrying storm or ground water shall not be connected to the sanitary sewer.
- Whenever existing manholes or sewer pipe are to be tapped, holes are to be drilled 4 inch center to center spacings around the periphery of the proposed opening to create a plane of weakness joint - a 12 inch thick concrete collar is to encase the new pipe and opening.
- Maximum infiltration shall not exceed 100 gallons per inch of diameter per mile of pipe per 24 hours. For purposes of testing infiltration, a video of all pipe must be submitted along with an air pressure test prior to acceptance by the City.
- The inside joints for all sanitary sewers 30" and larger shall be cement pointed.
- All concrete sanitary sewer, manhole and pipe joint shall be modified grooved tongue with rubber gaskets as required under the current adopted A.S.T.M., C-443.
- All sanitary sewer shall be pressure tested and video tested at least 30 days after installation. Maximum 5.0% deflection allowed. Truss pipe installed less than 12 feet below grade will be exempt from the deflection test.

NOTE: ABS & PVC Truss Pipe Will Be Allowed For Sanitary Sewer In Lieu of C-14XM Sanitary Sewer With the Permission of the City Engineer.

## SOIL EROSION AND SEDIMENTATION CONTROL

- All erosion and sediment control work shall conform to standards and specifications of the City of Sterling Heights.
- Daily inspections shall be made by the Contractor to determine effectiveness of erosion and sediment control measures, and any necessary repairs shall be performed without delay.
- Erosion and any sedimentation from work on this site shall be contained on the site and not allowed to collect on any off-site areas or in waterways. Waterways include both natural and man-made open ditches, streams, storm drains, lakes and ponds.
- Erosion and sediment control measures are to be placed prior to, or as the first step in construction. Sediment control practices will be applied as a perimeter defense against any transporting of silt off the site.
- Contractor shall apply temporary erosion and sedimentation control measures as required and as directed on these plans. He shall remove temporary measures as soon as permanent stabilization of slopes, ditches, and other earth changes have been accomplished.
- Permanent soil erosion control measures for all slopes, channels, ditches or any disturbed land area shall be completed within 5 calendar days after final grading or the final earth change has been completed. When it is not possible to permanently stabilize a disturbed area after an earth change has been completed or where significant earth change activity ceases, temporary soil erosion control measures shall be implemented within 30 calendar days. All temporary soil erosion measures shall be maintained until permanent soil erosion control measures are implemented and established before a certificate of compliance is issued.
- All mud/dirt tracked onto existing city/county/state roads from this site, due to construction, shall be removed by the Contractor/Builder at the end of the work day or immediately if a driving hazard is present.
- All onsite and offsite areas disturbed by construction shall be restored to equal or better than original existing conditions. All restoration shall consist of a minimum of 4" topsoil with seed and mulch or 3" of topsoil and Class "A" sod where existing conditions require sod replacement.

## WATER MAIN NOTES

- The Contractor shall notify the Inspection Section of the Detroit Water and Sewerage Dept. at (313) 833-8649 at least 3 working days prior to the start of any water main construction.
- When it is necessary to shut down existing water mains, the Contractor shall contact the City of Sterling Heights Department of Public Services 24 hours prior to the shutdown and he shall cooperate with the City forces in closing the necessary gate valves and in notifying the affected properties.
- Hydrant elevations and gate well top elevations shall be set to existing ground elevations unless otherwise directed by the Engineer.
- All water mains shall be constructed with a minimum cover of 6 ft. below finish grade, unless otherwise indicated on the plans.
- Connections to existing water mains shall not be made until after successful completion of bacteriological and pressure tests.
- All bends, tees, miscellaneous fittings, thrust blocks and sand backfill are to be incidental.
- The Contractor will be paid for horizontal distances only.
- All valves are to be right-hand open.
- All fire hydrants shall be Sterling Heights Standard EJW-6-BR Traffic Type with breakaway flange or Mueller A425 Centurion, Two-Way with two - 4 1/2 inch pumper nozzles or approved equal.
- There shall be a 3/4 inch corporation stops installed on both sides of each gate valve.
- Two brass wedges shall be installed at each joint on cast iron and ductile iron pipe.
- Cadillac wrap, or an approved equal, shall be used around the water main at gatewell walls.
- Service tops, shut-off valves, and service line extensions to the property or easement line shall be made by the City of Sterling Heights Department of Public Works, for connections smaller than 3".
- Where water mains must dig to pass under a storm sewer or sanitary sewer, the sections which are deeper than normal shall be kept to one full length of water pipe and use 45°, 22 1/2°, or 11 1/4° vertical bends properly anchored.
- Hydrants shall be painted Sunrise Red ('Rust-oleum' 7762 or equal). Nozzles and top flange shall be painted white with reflectorized beads.
- Sizes of iron pipes shall be of a class conforming to the following table:

Nominal Diameter (inches)	Ductile Class	Cast Iron Class
6	54	24
8	54	25
12	54	25
16	54	26

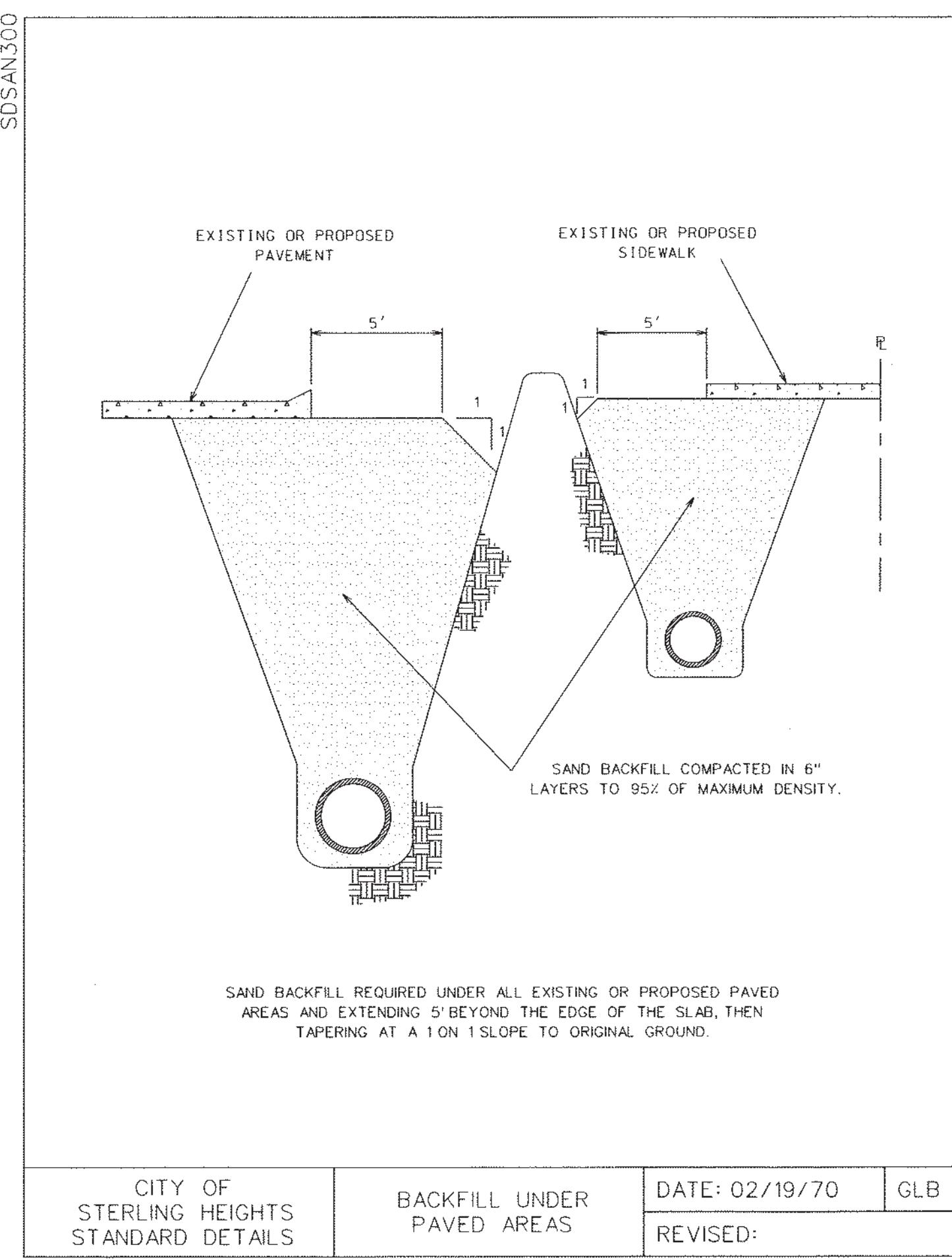
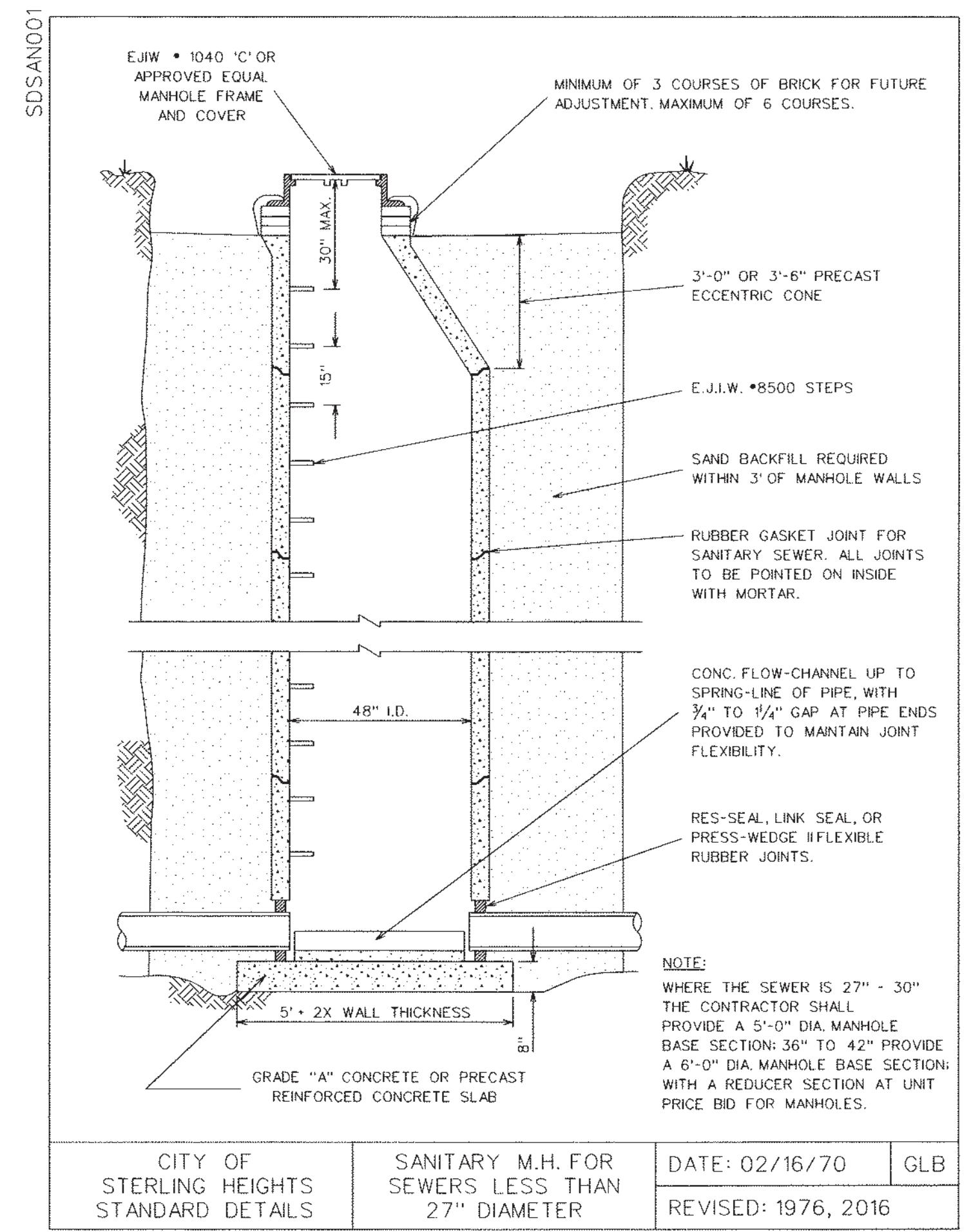
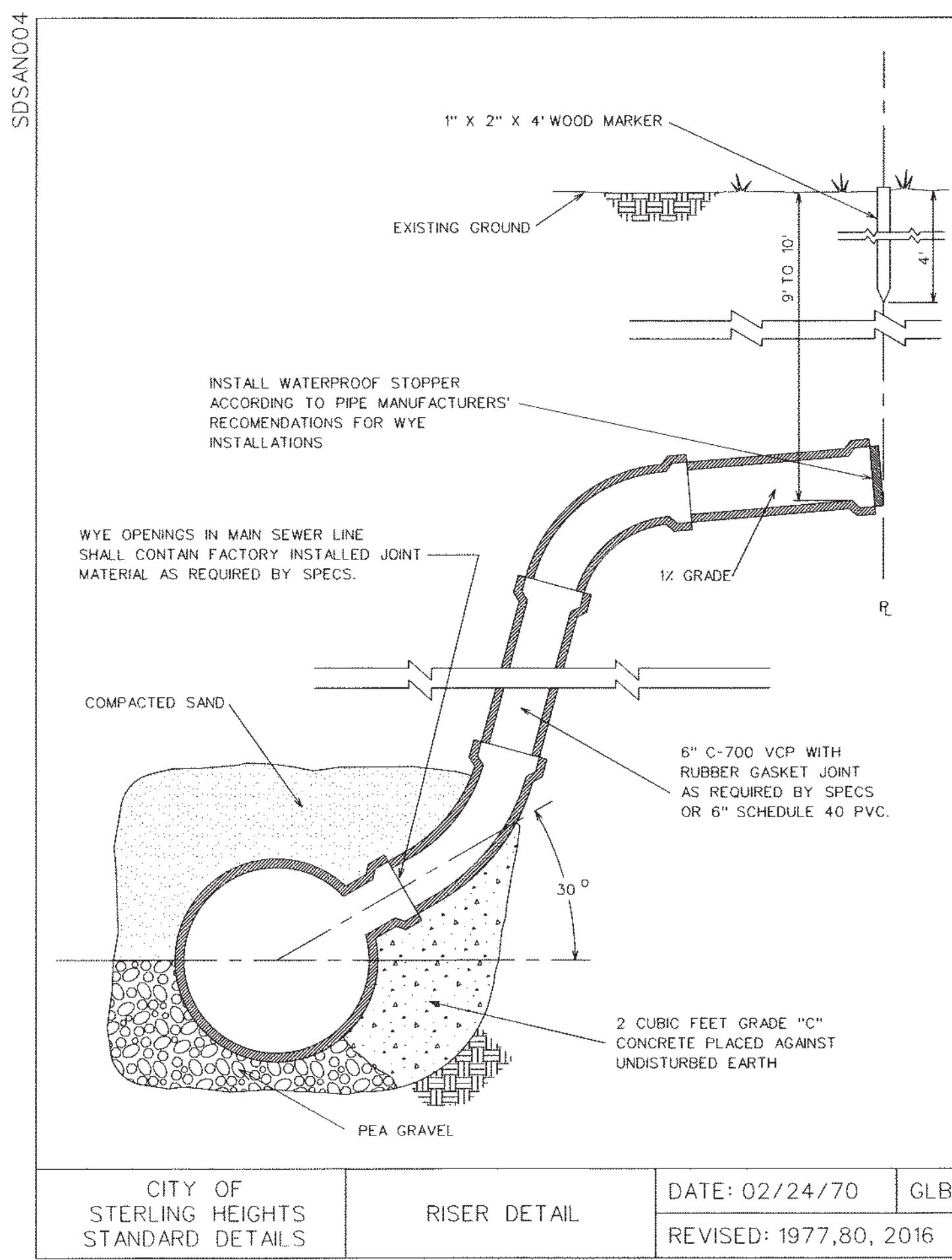
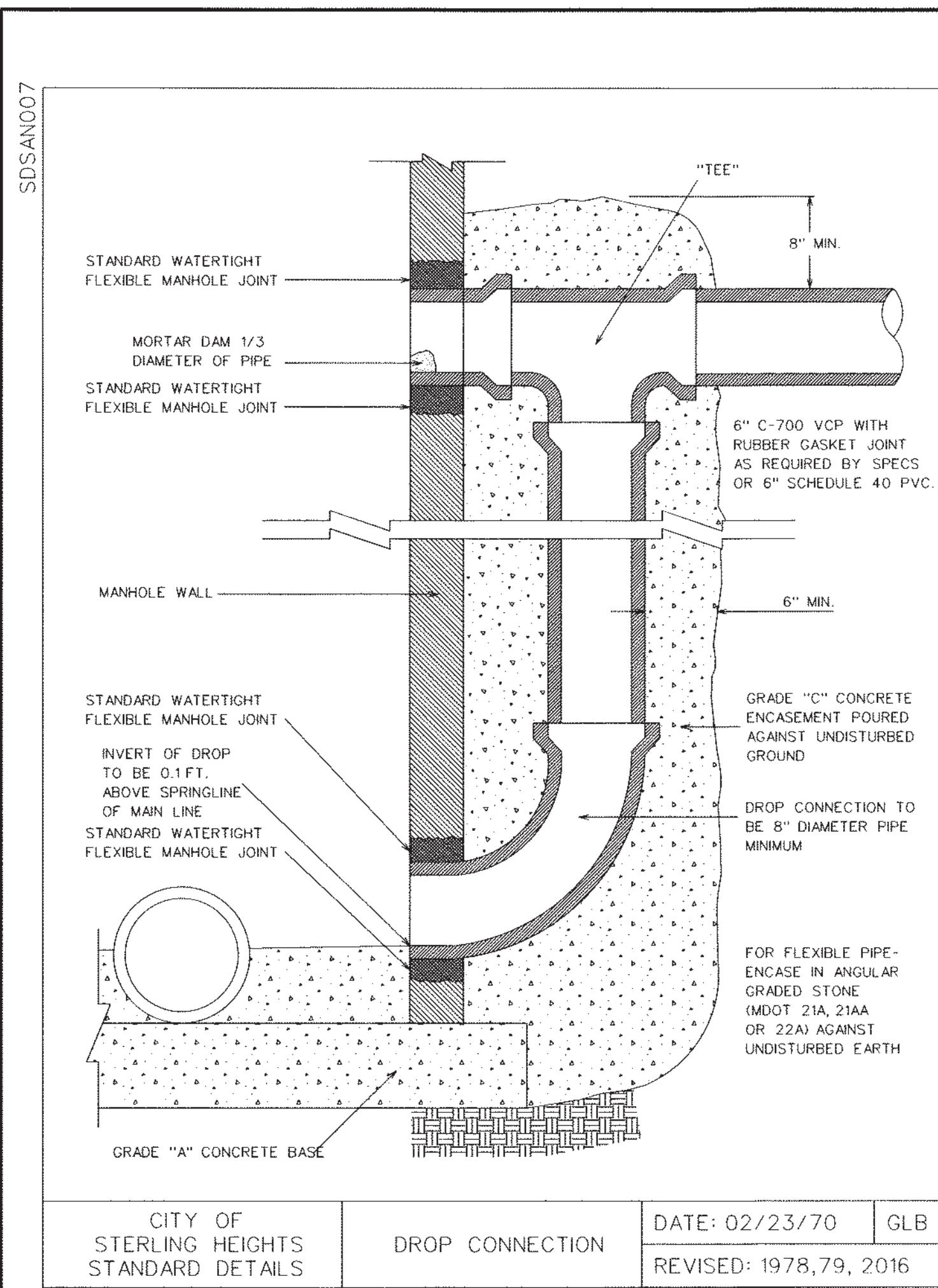
- Water mains shall be leakage and pressure tested in accordance with AWWA standard C600. Prior to testing, mains shall also be appropriately flushed according to C600.
- Pipe joints shall comply with AWWA Standard C111 and/or C115, and fittings shall comply with AWWA C110 or C153.
- Pipe materials shall meet the required ANSI/NSF Certification 61 and shall have their certification information stamped on the pipe exterior wall.
- Water mains shall be disinfected in accordance with AWWA standard C651 most current version, prior to being put into service. Bacteriological sampling shall be in accordance with R325.110 of the administrative rules promulgated under Michigan Safe Drinking Water Act, 1976 PA 399, as amended.
- Installation of bedding/backfill shall comply with AWWA Standard C600.
- Valves should be installed according to the appropriate/ relevant AWWA standards.
- Hydrants shall comply with AWWA Standard C502, and weep holes shall be plugged in areas without adequate soil drainage.

STANDARD DETAILS	PROJECT INFORMATION		CITY OF STERLING HEIGHTS 40556 UTICA ROAD P.O. BOX 8009 STERLING HEIGHTS, MI 48311-8009 C.P. NO: _____ FILE NAME: F:\\DRAW\\DETAILS\\SHOOT.DWG	REVISIONS
	LOCATION/CITY OF STERLING HEIGHTS	SCALE: 1" = 50'		
	STATION: _____	DRAWN D.W.M. CHECKED S.A.C. DATE: 05/13/99		
	SECTION: _____	FIELD BOOK: CITY ENGINEER DATE: _____		

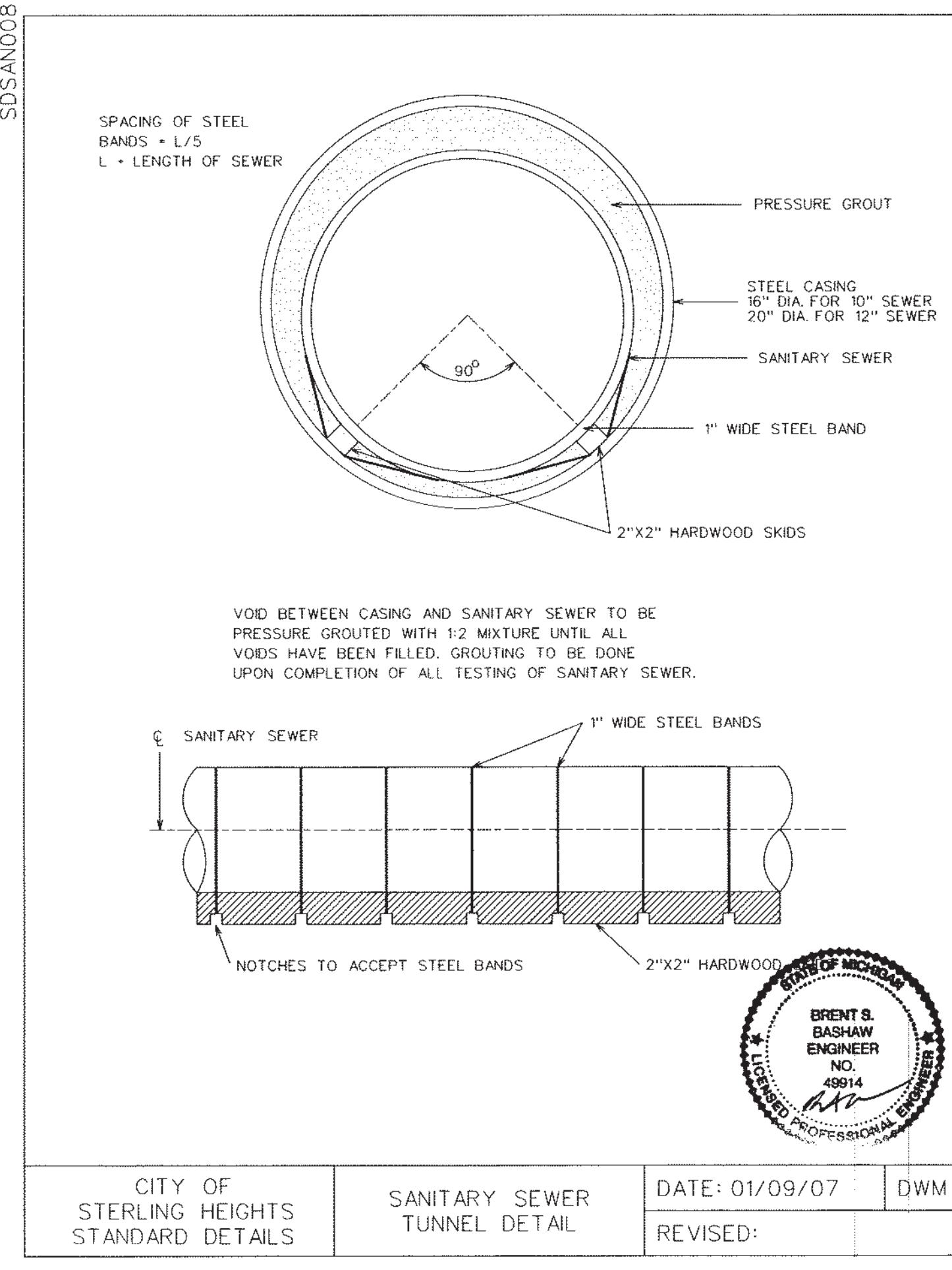
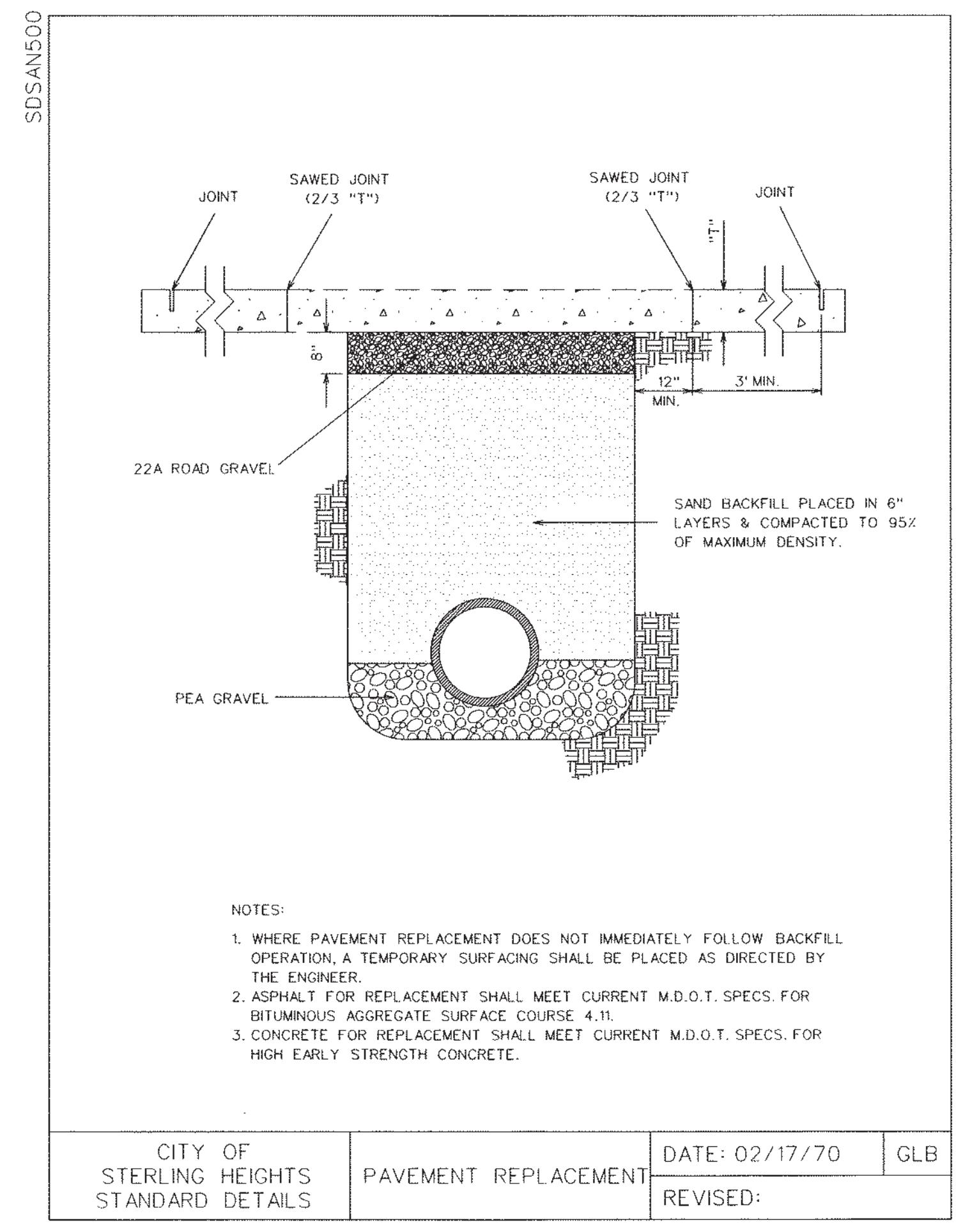
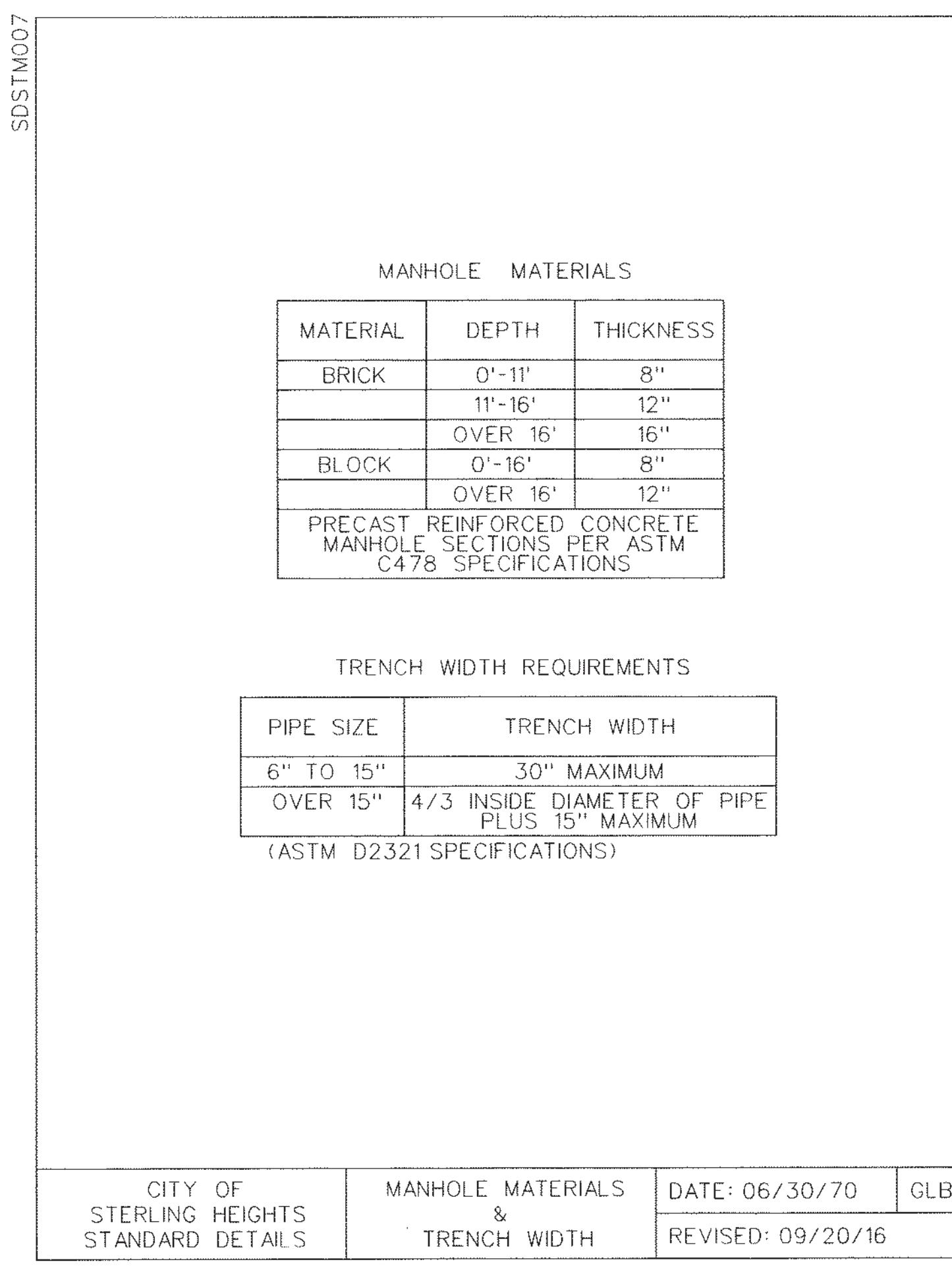
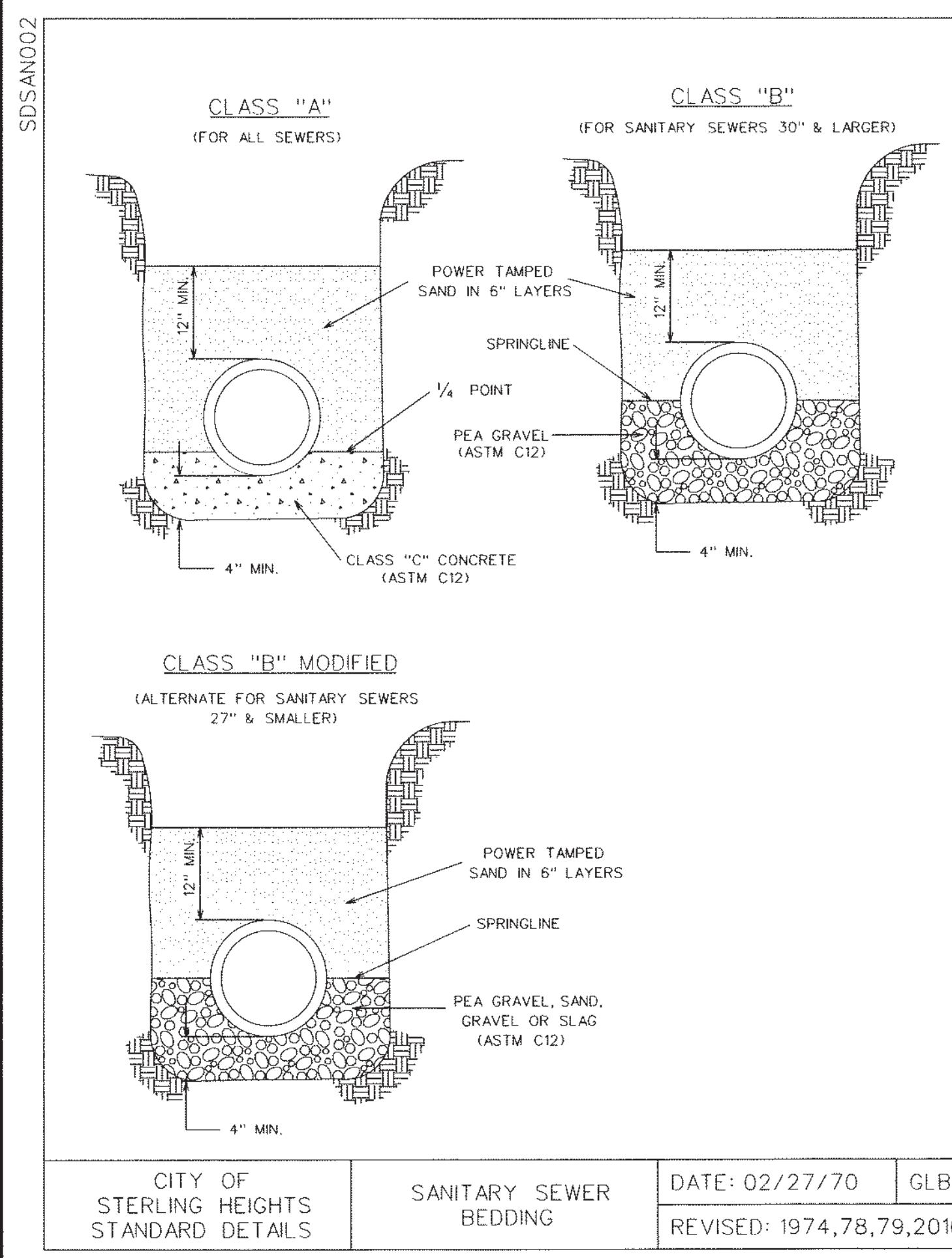
SHEET 1 OF 7



BRENT S.  
BASHAW  
ENGINEER  
NCE  
48514  
PROFESSIONAL



REVISIONS	
DESCRIPTION	DATE
MDEQ Sanitary Updates	09/20/16



PROJECT INFORMATION		CITY OF STERLING HEIGHTS	
LOCATION CITY OF STERLING HEIGHTS	40565 UTICA ROAD	STATION:	P.O. BOX 8009
C.P. NO.:	STERLING HEIGHTS, MI 48311-8009	SECTION:	(586) 446-2489
FILENAME: F:\DRAW\DETAILS\SDSAN008.DWG			

STANDARD DETAILS  
SANITARY

SHEET 20 OF 7

SDPAV004

$\frac{1}{8}'' - \frac{1}{4}''$  SAW CUT - PRESSURE SEAL WITH APPROVED MATERIAL

T/3 - MIN. 2-3/4"

T/2

1/2" DIA. - 30" LONG DEFORMED TIE BARS SPACED 60" CENTER TO CENTER

LONGITUDINAL SAWED JOINT (JOINT "A")

$\frac{1}{4}''$  PREMOLDED FILLER - SET FLUSH WITH CONCRETE SURFACE, DO NOT EDGE.

T/3-MIN. 2-1/4"

PREMOLDED CONTRACTION JOINT (JOINT "B")

$\frac{1}{8}'' - \frac{1}{4}''$  SAW CUT - PRESSURE SEAL WITH APPROVED MATERIAL

T/3-MIN. 2-1/4"

T/2

SAWED CONTRACTION JOINT (JOINT "B")

CITY OF STERLING HEIGHTS STANDARD DETAILS	TYPICAL PAVEMENT JOINTS - 1	DATE: 06/25/70	GLE
		REVISED:	

SDPAV005

2ND POUR

1ST POUR

EDGE WITH  $\frac{1}{4}$ " RADIUS

POURED JOINT - PRESSURE SEAL  
WITH APPROVED MATERIAL

2" DEEP

T/2

NOTE:  $\frac{1}{2}$ " DIA. HOOK BOLTS SPACED 40" CENTER TO CENTER

LONGITUDINAL CONSTRUCTION JOINT (JOINT "C")

EDGE WITH  $\frac{1}{4}$ " RADIUS

POURED JOINT - PRESSURE SEAL  
WITH APPROVED MATERIAL

1"

EXPANSION JOINT (JOINT "D")

2ND POUR

1ST POUR

EDGE WITH  $\frac{1}{4}$ " RADIUS

POURED JOINT - PRESSURE SEAL  
WITH APPROVED MATERIAL

T/2

NOTE:

DELETE KEYWAY IF HOOK BOLTS ARE USED; HOOK BOLTS SPACE 40" CENTER TO CENTER;  
WITH KEYWAY  $\frac{1}{2}$ " DIA. - 30" LONG DEFORMED TIE BAR MAY BE USED SPACED 40" CENTER TO CENTER

TRANSVERSE CONSTRUCTION JOINT (JOINT "E")

CITY OF  
STERLING HEIGHTS  
STANDARD DETAILS

TYPICAL  
PAVEMENT  
JOINTS - 2

DATE: 05/26/70

GL

REVISED:

SDPAV006

LOCAL STREET

FEEDER STREET

BOULEVARD PAVEMENT

PAVEMENT WIDTH STANDARD STREET	X <sub>1</sub>	X <sub>2</sub>	A	B	C	D	LANE WIDTH			
							1	2	3	4
28'	3'-6"	2'-6"	3/4"	1-5/8"	2-1/2"	3"	9'	10'	9'	-
36'	4'-6"	4'-0"	1"	2-1/8"	3-1/4"	4"	9'	9'	9'	9'

PAVEMENT WIDTH BOULEVARD	X <sub>1</sub>	A	B	C	D	LANE WIDTH	
						1	2
20'	4'-9"	7/8"	1-3/4"	2-5/8"	3-1/2"	10'	10'
22'	5'-3"	1"	2"	3"	4"	11'	11'
24'	5'-9"	1-7/8"	2-1/4"	3-3/8"	4-1/2"	12'	12'

CITY OF STERLING HEIGHTS STANDARD DETAILS	PAVEMENT CROWNS	DATE: 07/13/70	GL
		REVISED:	

SDPAV007

**EDGE WITH  $\frac{1}{4}$ " RADIUS**

**INTEGRAL MOUNTABLE CURB**

**EDGE WITH  $\frac{1}{4}$ " RADIUS**

**INTEGRAL ROLL CURB**

The figure contains two technical drawings of curbs. The top drawing, labeled 'INTEGRAL MOUNTABLE CURB', shows a curb with a vertical face and a horizontal top edge with a  $\frac{1}{4}$ " radius. A vertical dimension line indicates a height of 4" from the base to the top of the curb. A horizontal dimension line shows a distance of 12" from the vertical face to the center of the curb's edge. The bottom drawing, labeled 'INTEGRAL ROLL CURB', shows a curb with a vertical face and a horizontal top edge with a  $\frac{1}{4}$ " radius. A vertical dimension line indicates a height of 6" from the base to the top of the curb. A horizontal dimension line shows a distance of 7-1/2" from the vertical face to the center of the curb's edge. Both drawings show a textured surface with small triangles and a base line with arrows.

TYPICAL CONTRACTION JOINTS

2' MIN.

EXPANSION JOINT

1/2" DIA. DEFORMED TIE BARS AT 60" CENTER TO CENTER SPACING

20'

20'

16'

10'

16'

20'

20'

15'

9' 10' 9'

20'

SDPAV009

SAWED CONTRACTION JOINTS

2' MIN.

EXPANSION JOINTS

1/2" DIA. DEFORMED TIE BARS AT 60° CENTER TO CENTER SPACING

20' 16' 9' 10' 9' X/2 X/2

9' 16' 20'

EYEBROW JOINTING

CITY OF STERLING HEIGHTS STANDARD DETAILS	EYEBROW JOINTING	DATE: 03/30/70	GL
		REVISED:	

SDPAV001

DRIVEWAY APPROACH

SIDEWALK

PAVEMENT

"D"

"X"

"D" (FT)	MAXIMUM "X" (FT)
3	0.21
4	0.28
5	0.35
6	0.42
7	0.49
8	0.56
9	0.63
10	0.70
11	0.77

"D" (FT)	MAXIMUM "X" (FT)
12	0.84
13	0.91
14	0.98
15	1.05
16	1.12
17	1.19
18	1.26
19	1.33
20	1.40

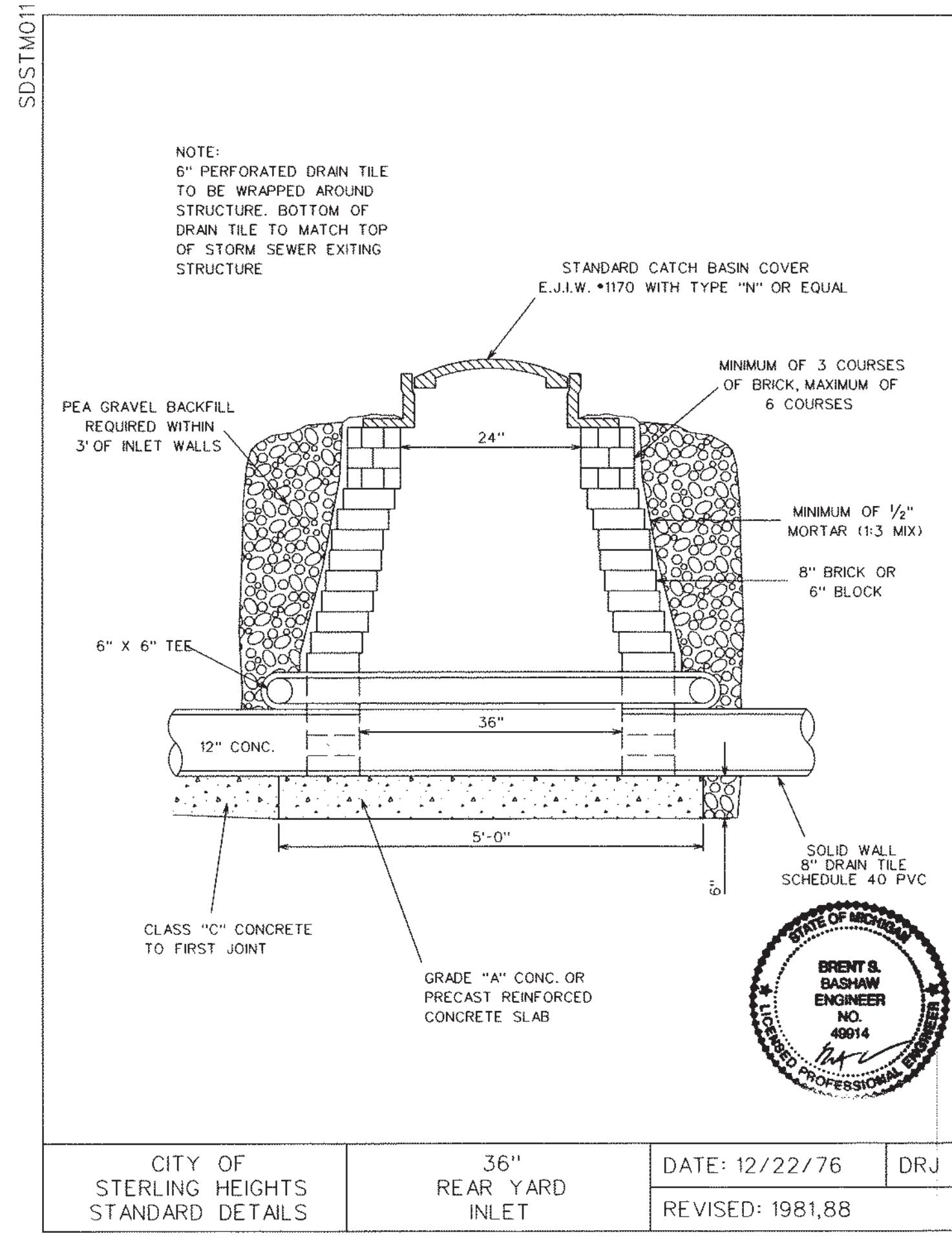
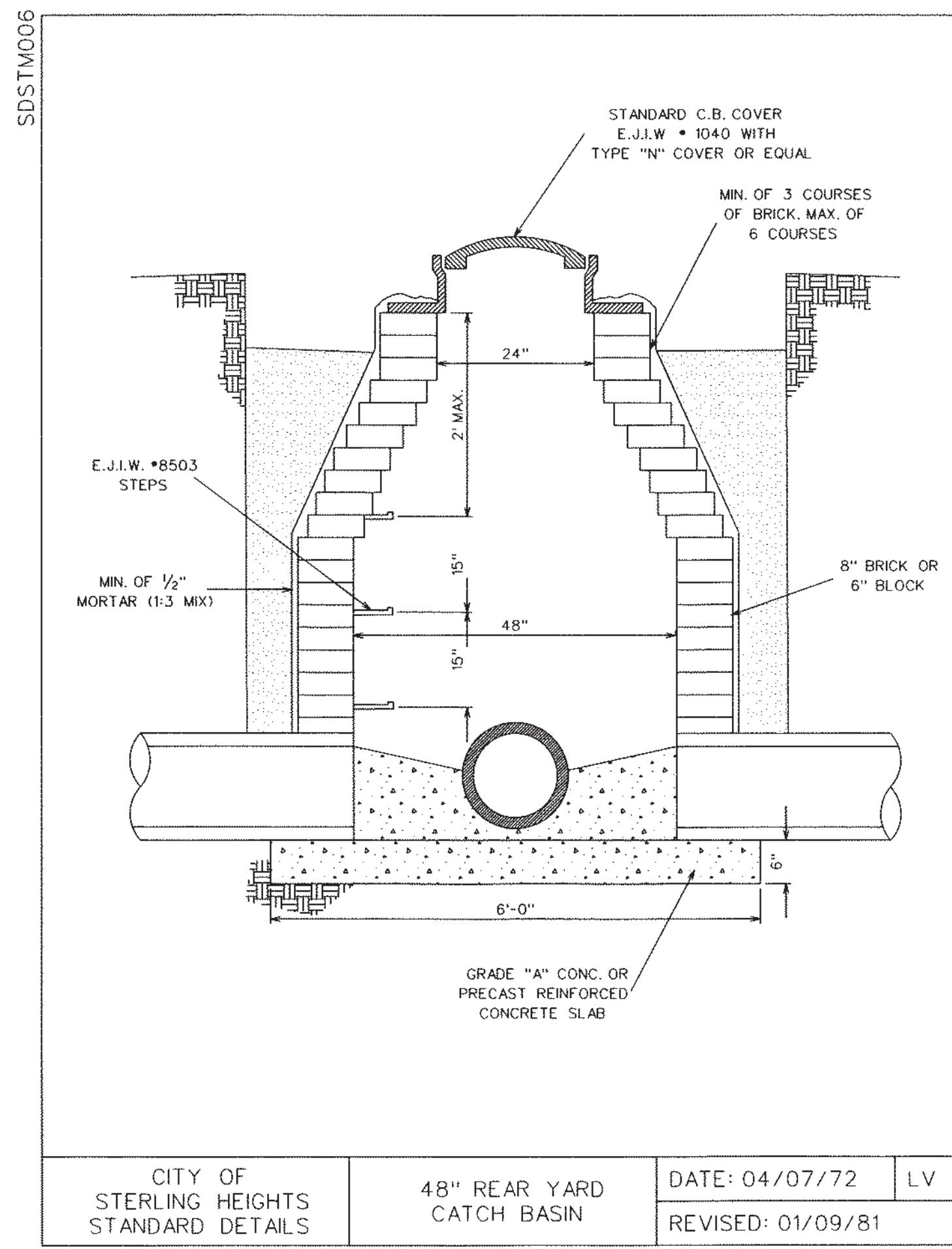
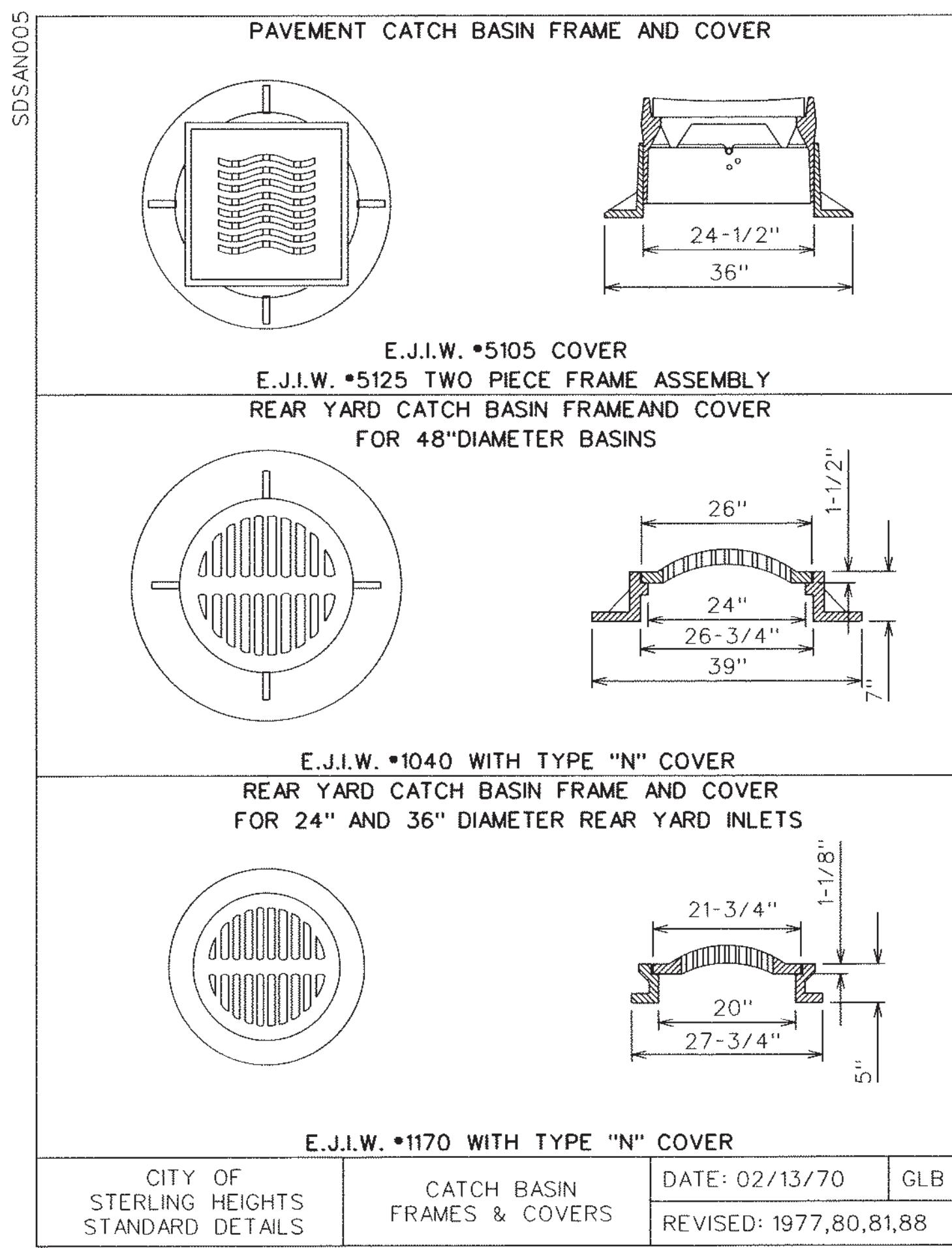
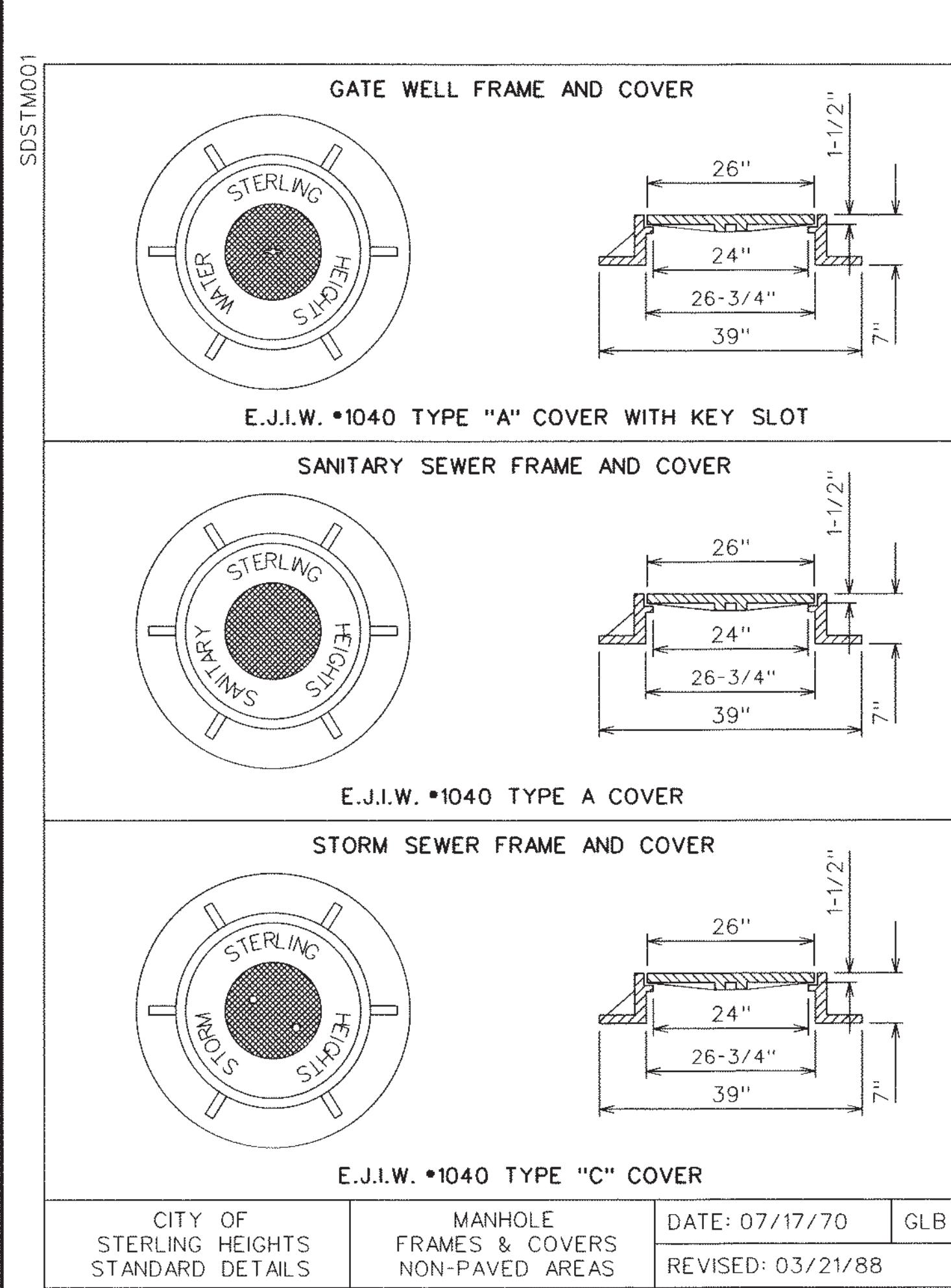
MAXIMUM SLOPE = 7%

STATE OF MICHIGAN  
BRENT S. BASHAW  
ENGINEER  
NO. 49914  
PRAIRIE PROFESSIONAL ENGINEER

NOTE: "X" IS MEASURED FROM TOP OF CURB DROP WHERE 4" MOUNTABLE CURB IS NOT USED

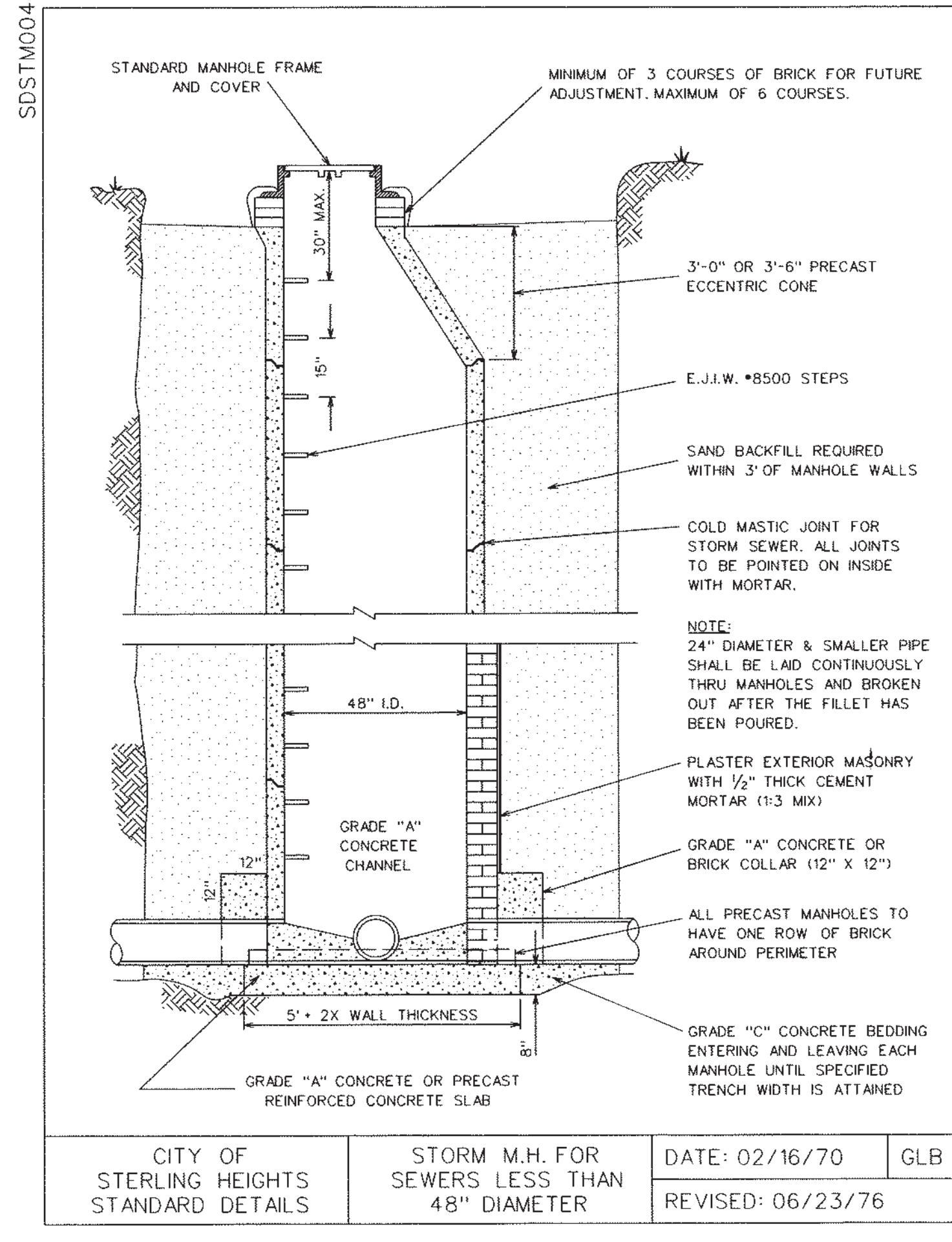
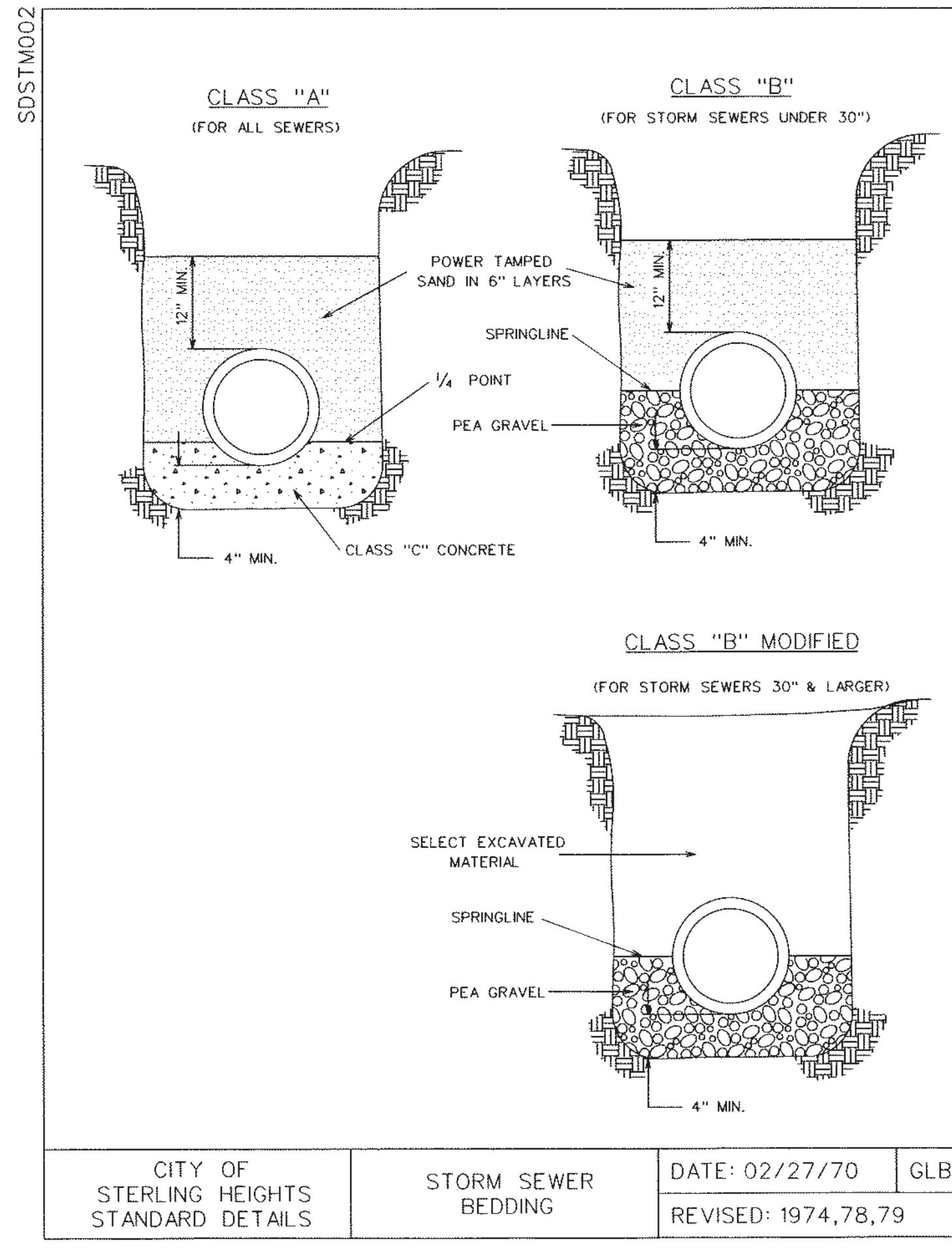
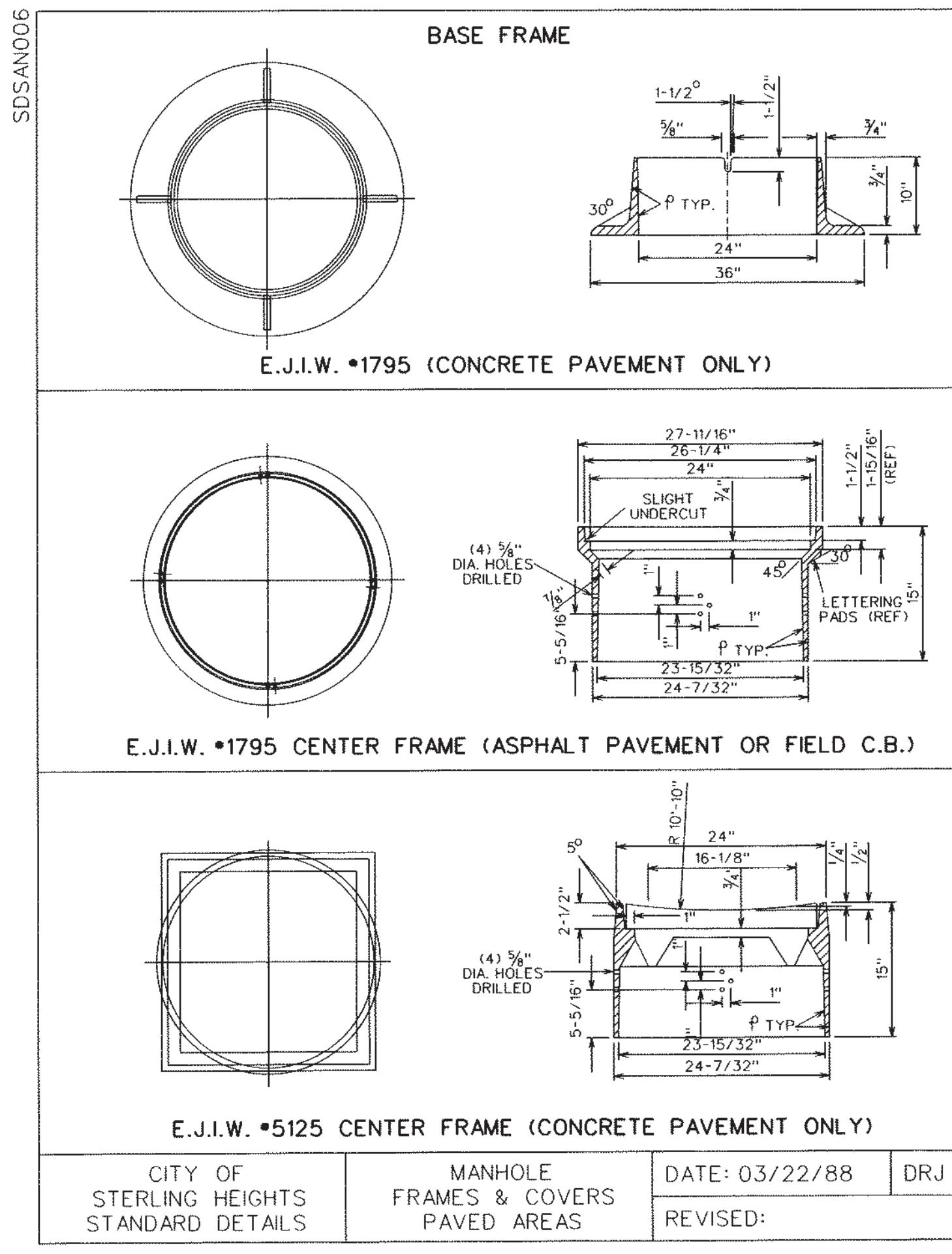
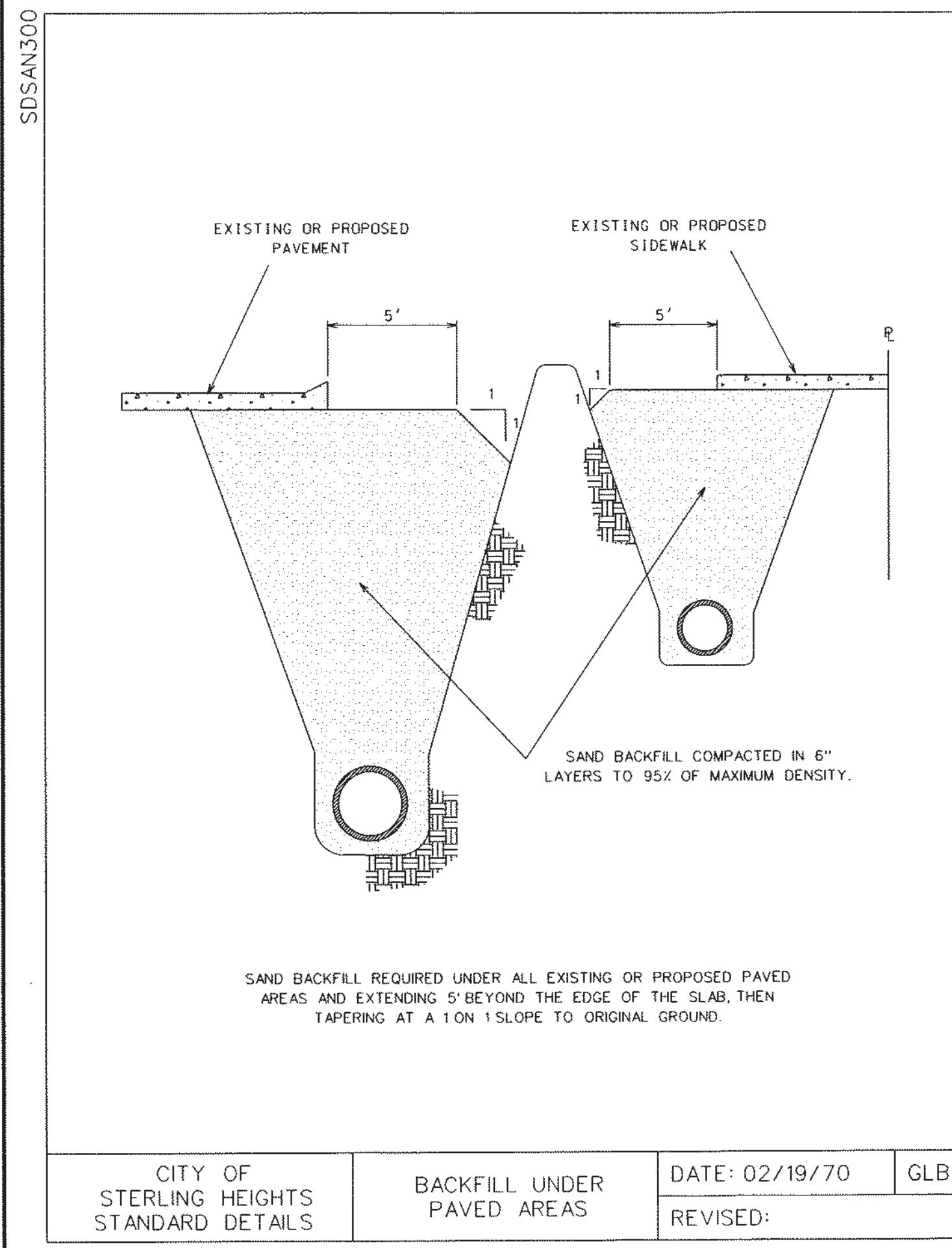
CITY OF STERLING HEIGHTS STANDARD DETAILS	STANDARD DRIVEWAY APPROACH SLOPE DETAIL	DATE: 01/08/70	GL
		REVISED: 06/19/97	

PROJECT INFORMATION		CITY OF STERLING HEIGHTS		REVISIONS	
STANDARD DETAILS	PAVING	40555 UTICA ROAD	SCALE: 1" = 50'	DATE	DESCRIPTION
STATION:		P.O. BOX 8009	DRAWN: DWM	DATE: NOTED	CHECKED: GLB
C.P. NO.:	SECTION:	STERLING HEIGHTS, MI 48311-8009	APPROVED: TRD	FIELD BOOK:	FIELD BOOK:
BY NAME: F. D. DAWSON, DETAIL SURVEYOR, DGN		(586) 446-2489	CITY ENGINEER		PAGE:



REVISIONS		DATE
DESCRIPTION		

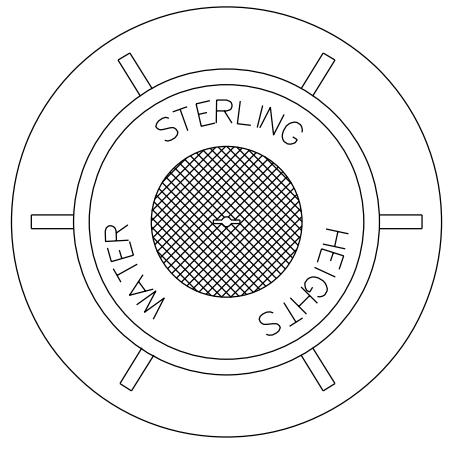
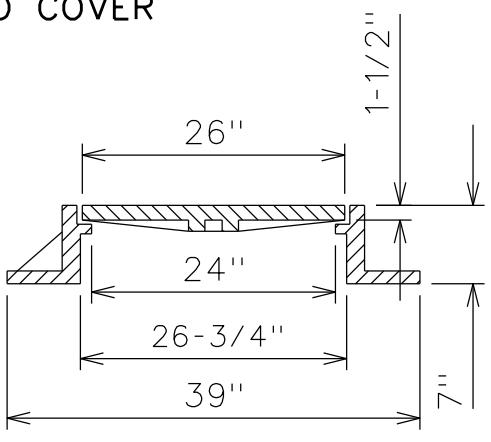
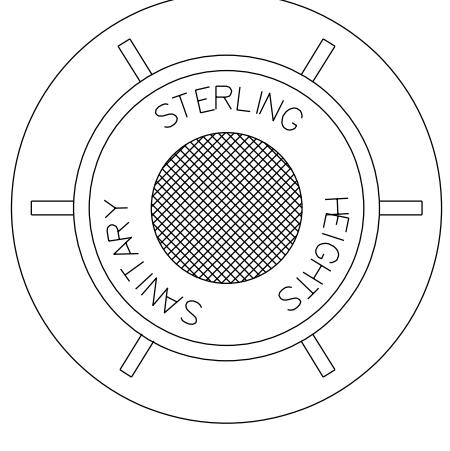
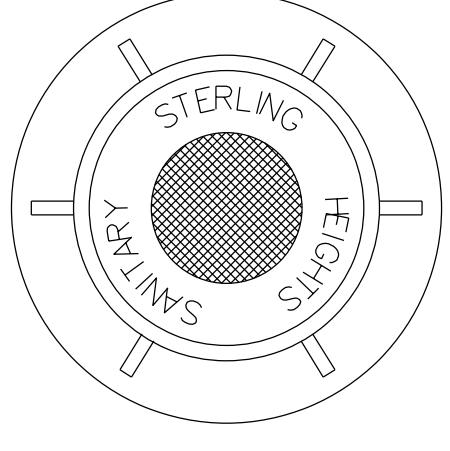
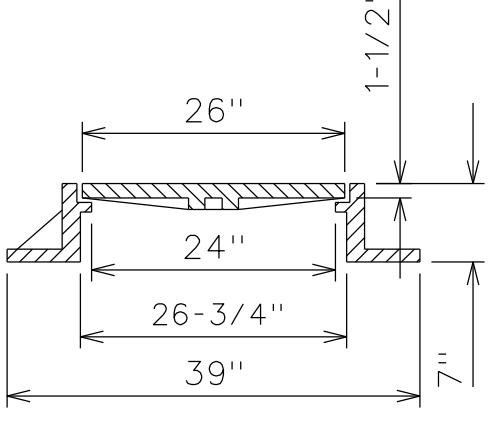
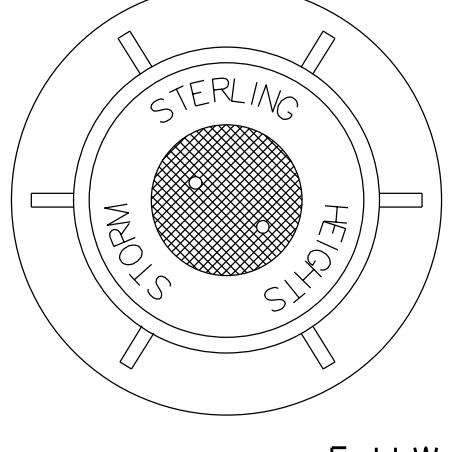
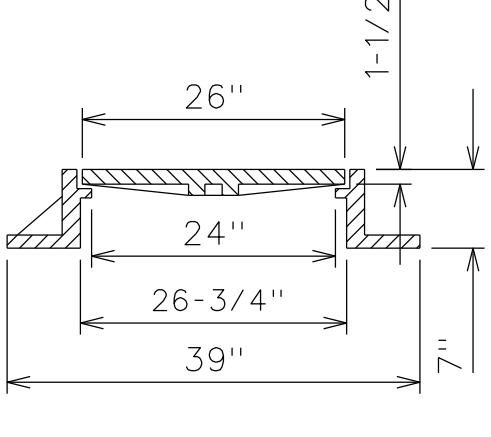
(586) 446-2489



STANDARD DETAILS  
STORM 1 OF 2

SHEET 4 OF 7

PROJECT INFORMATION	CITY OF STERLING HEIGHTS	40555 UTICA ROAD P.O. BOX 8009 STERLING HEIGHTS, MI 48311-8009 (586) 446-2489	SDSAN006
LOCATION: CITY OF STERLING HEIGHTS STATION:			
C.P. NO.:			
FILENAME: F:\DRAW\DETAILS\SDSTM004.DWG			

SDSTM001	<p style="text-align: center;"><b>GATE WELL FRAME AND COVER</b></p> 	
	<p style="text-align: center;"><b>E.J.I.W. #1040 TYPE "A" COVER WITH KEY SLOT</b></p> 	
	<p style="text-align: center;"><b>SANITARY SEWER FRAME AND COVER</b></p> 	
	<p style="text-align: center;"><b>E.J.I.W. #1040 TYPE A COVER</b></p>	
	<p style="text-align: center;"><b>STORM SEWER FRAME AND COVER</b></p> 	
	<p style="text-align: center;"><b>E.J.I.W. #1040 TYPE "C" COVER</b></p>	
CITY OF STERLING HEIGHTS STANDARD DETAILS	MANHOLE FRAMES & COVERS NON-PAVED AREAS	DATE: 07/17/70 REVISED: 03/21/88

SDSANO05

PAVEMENT CATCH BASIN FRAME AND COVER

E.J.I.W. #5105 COVER

E.J.I.W. #5100 ONE PIECE FRAME

REAR YARD CATCH BASIN FRAME AND COVER  
FOR 48" DIAMETER BASINS

E.J.I.W. #1040 WITH TYPE "N" COVER

REAR YARD CATCH BASIN FRAME AND COVER  
FOR 24" AND 36" DIAMETER REAR YARD INLETS

E.J.I.W. #1170 WITH TYPE "N" COVER

CITY OF STERLING HEIGHTS STANDARD DETAILS	CATCH BASIN FRAMES & COVERS	DATE: 02/13/70	GLB
		REVISED: 77,80,81,88,22	

SDSTM006

STANDARD C.B. COVER  
E.J.I.W. # 1040 WITH  
TYPE "N" COVER OR EQUAL

MIN. OF 3 COURSES  
OF BRICK. MAX. OF  
6 COURSES

E.J.I.W. #8503  
STEPS

MIN. OF  $\frac{1}{2}$ "  
MORTAR (1:3 MIX)

8" BRICK OR  
6" BLOCK

24" MAX.

15"

48"

6"

GRADE "A" CONC. OR  
PRECAST REINFORCED  
CONCRETE SLAB

CITY OF  
STERLING HEIGHTS  
STANDARD DETAILS

48" REAR YARD  
CATCH BASIN

DATE: 04/07/72  
REVISED: 01/09/81

LV

SDSTM011

NOTE:  
6" PERFORATED DRAIN TILE  
TO BE WRAPPED AROUND  
STRUCTURE. BOTTOM OF  
DRAIN TILE TO MATCH TOP  
OF STORM SEWER EXITING  
STRUCTURE

STANDARD CATCH BASIN COVER  
E.J.I.W. #1170 WITH TYPE "N" OR EQUAL

PEA GRAVEL BACKFILL  
REQUIRED WITHIN  
3' OF INLET WALLS

6" X 6" TEE

12" CONC.

CLASS "C" CONCRETE  
TO FIRST JOINT

GRADE "A" CONC. OR  
PRECAST REINFORCED  
CONCRETE SLAB

36"

5'-0"

24"

MINIMUM OF 3 COURSES  
OF BRICK, MAXIMUM OF  
6 COURSES

MINIMUM OF  $\frac{1}{2}$ "  
MORTAR (1:3 MIX)

8" BRICK OR  
6" BLOCK

SOLID WALL  
8" DRAIN TILE  
SCHEDULE 40 PVC

SDSAN300

EXISTING OR PROPOSED PAVEMENT

EXISTING OR PROPOSED SIDEWALK

5'

1

1

PL

SAND BACKFILL COMPACTED IN 6" LAYERS TO 95% OF MAXIMUM DENSITY.

SAND BACKFILL REQUIRED UNDER ALL EXISTING OR PROPOSED PAVED AREAS AND EXTENDING 5' BEYOND THE EDGE OF THE SLAB, THEN TAPERING AT A 1 ON 1 SLOPE TO ORIGINAL GROUND.

CITY OF STERLING HEIGHTS STANDARD DETAILS	BACKFILL UNDER PAVED AREAS	DATE: 02/19/70	GLE
		REVISED:	

SDSTM002

CLASS "A"

(FOR ALL SEWERS)

Diagram of Class A storm sewer bedding detail. It shows a circular sewer pipe resting on a 4" MIN. thick base of CLASS "C" CONCRETE. A 1/4 POINT is shown at the interface between the concrete and the sand. Above the concrete, there is a 12" MIN. thick layer of POWER TAMPED SAND IN 6" LAYERS. The bedding is bounded by vertical brick walls.

CLASS "B"

(FOR STORM SEWERS UNDER 30")

Diagram of Class B storm sewer bedding detail. It shows a circular sewer pipe resting on a 4" MIN. thick layer of PEA GRAVEL. Above the gravel, there is a 12" MIN. thick layer of POWER TAMPED SAND IN 6" LAYERS. The bedding is bounded by vertical brick walls. A SPRINGLINE is indicated at the top of the sand layer.

CLASS "B" MODIFIED

(FOR STORM SEWERS 30" & LARGER)

Diagram of Class B Modified storm sewer bedding detail. It shows a circular sewer pipe resting on a 4" MIN. thick layer of PEA GRAVEL. Above the gravel, there is a 4" MIN. thick layer of SELECT EXCAVATED MATERIAL. A SPRINGLINE is indicated at the top of the gravel layer.

CITY OF  
STERLING HEIGHTS  
STANDARD DETAILS

STORM SEWER  
BEDDING

DATE: 02/27/70 GLB

REVISED: 1974, 78, 79

SDSTM004

STANDARD MANHOLE FRAME AND COVER

MINIMUM OF 3 COURSES OF BRICK FOR FUTURE ADJUSTMENT. MAXIMUM OF 6 COURSES.

3'-0" OR 3'-6" PRECAST ECCENTRIC CONE

E.J.I.W. #8500 STEPS

SAND BACKFILL REQUIRED WITHIN 3' OF MANHOLE WALLS

COLD MASTIC JOINT FOR STORM SEWER. ALL JOINTS TO BE POINTED ON INSIDE WITH MORTAR.

NOTE:  
24" DIAMETER & SMALLER PIPE SHALL BE LAID CONTINUOUSLY THRU MANHOLES AND BROKEN OUT AFTER THE FILLET HAS BEEN POURED.

PLASTER EXTERIOR MASONRY WITH  $\frac{1}{2}$ " THICK CEMENT MORTAR (1:3 MIX)

GRADE "A" CONCRETE OR BRICK COLLAR (12" X 12")

ALL PRECAST MANHOLES TO HAVE ONE ROW OF BRICK AROUND PERIMETER

GRADE "C" CONCRETE BEDDING ENTERING AND LEAVING EACH MANHOLE UNTIL SPECIFIED TRENCH WIDTH IS ATTAINED

GRADE "A" CONCRETE OR PRECAST REINFORCED CONCRETE SLAB

5' + 2X WALL THICKNESS

12"

12"

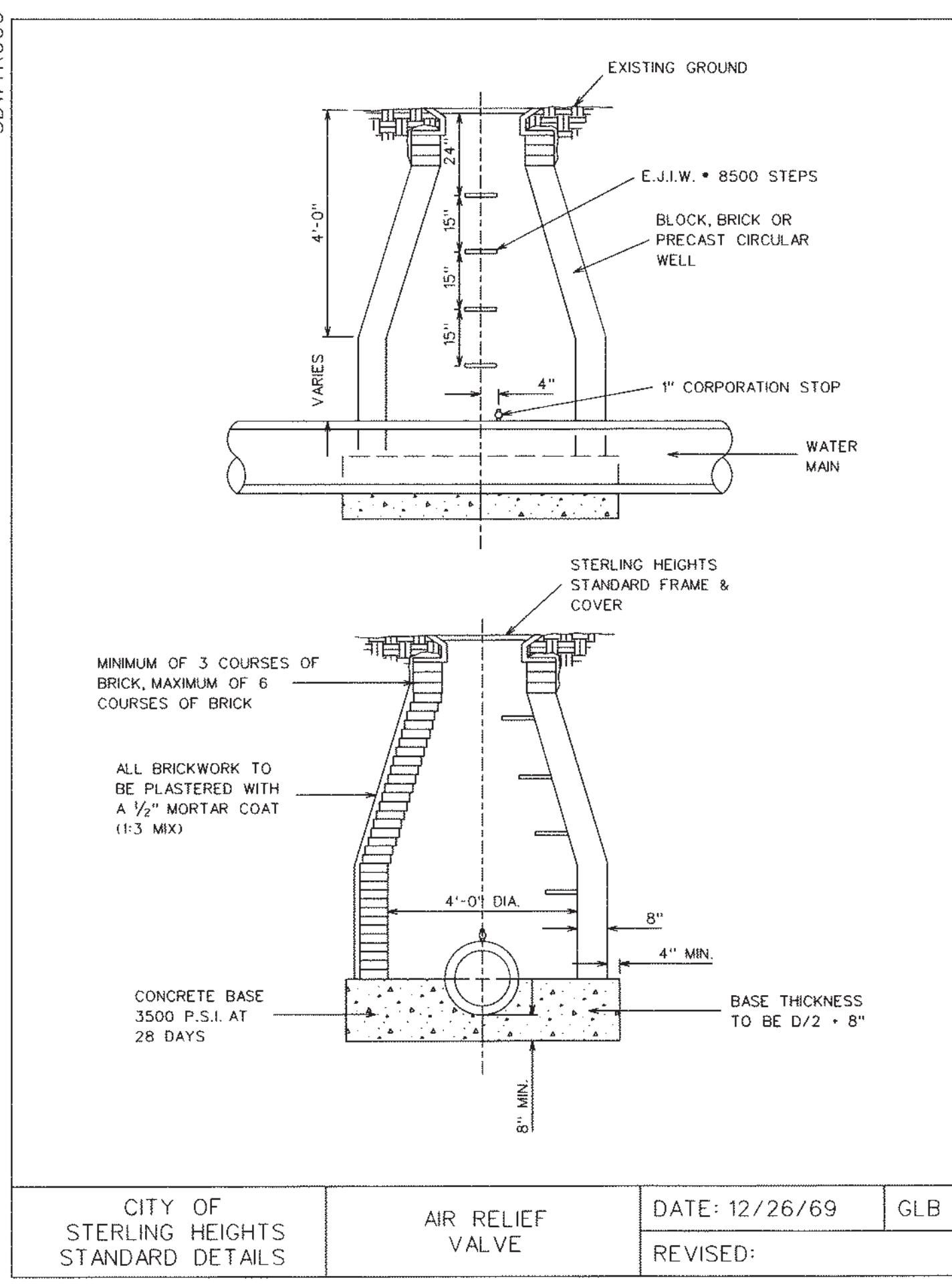
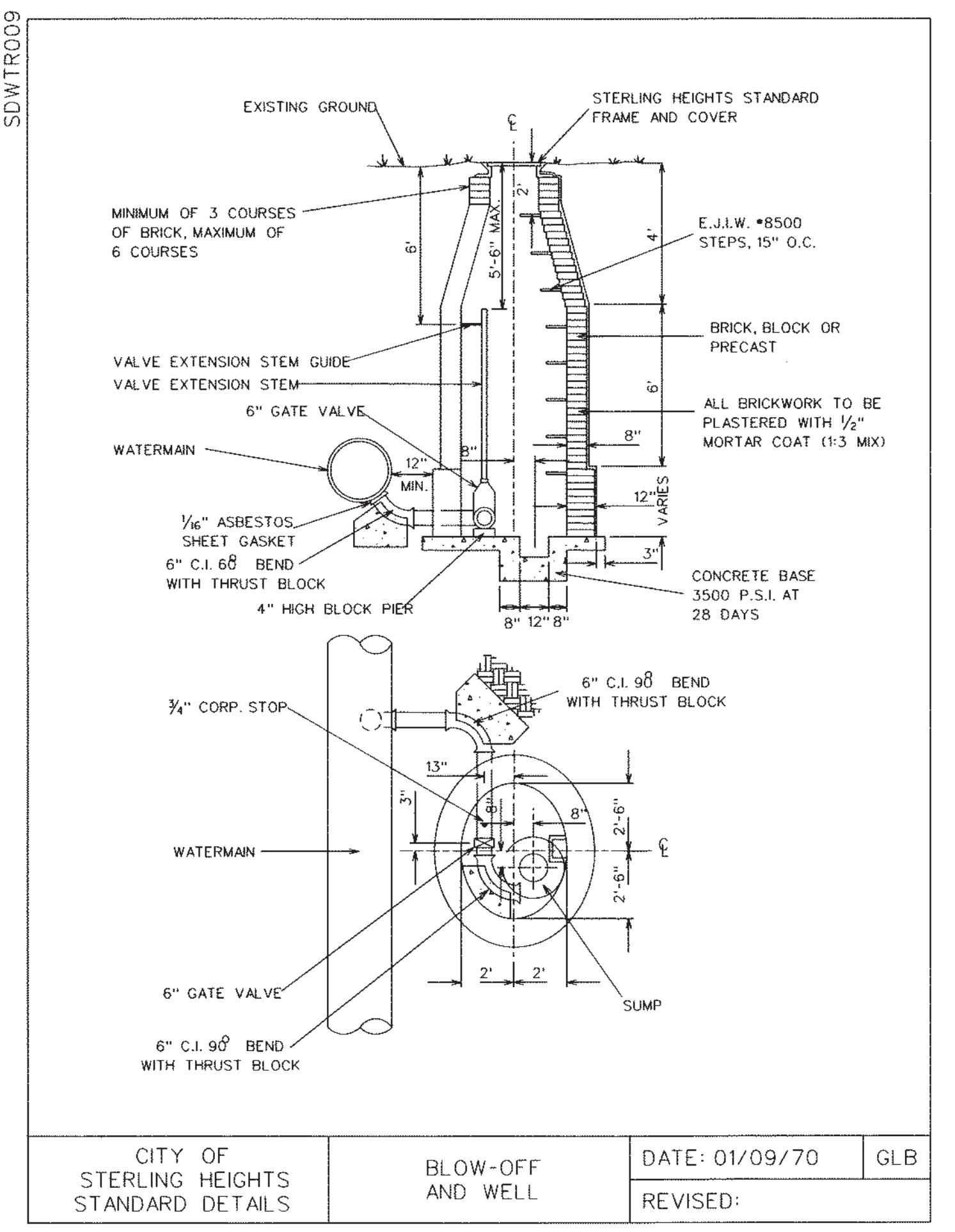
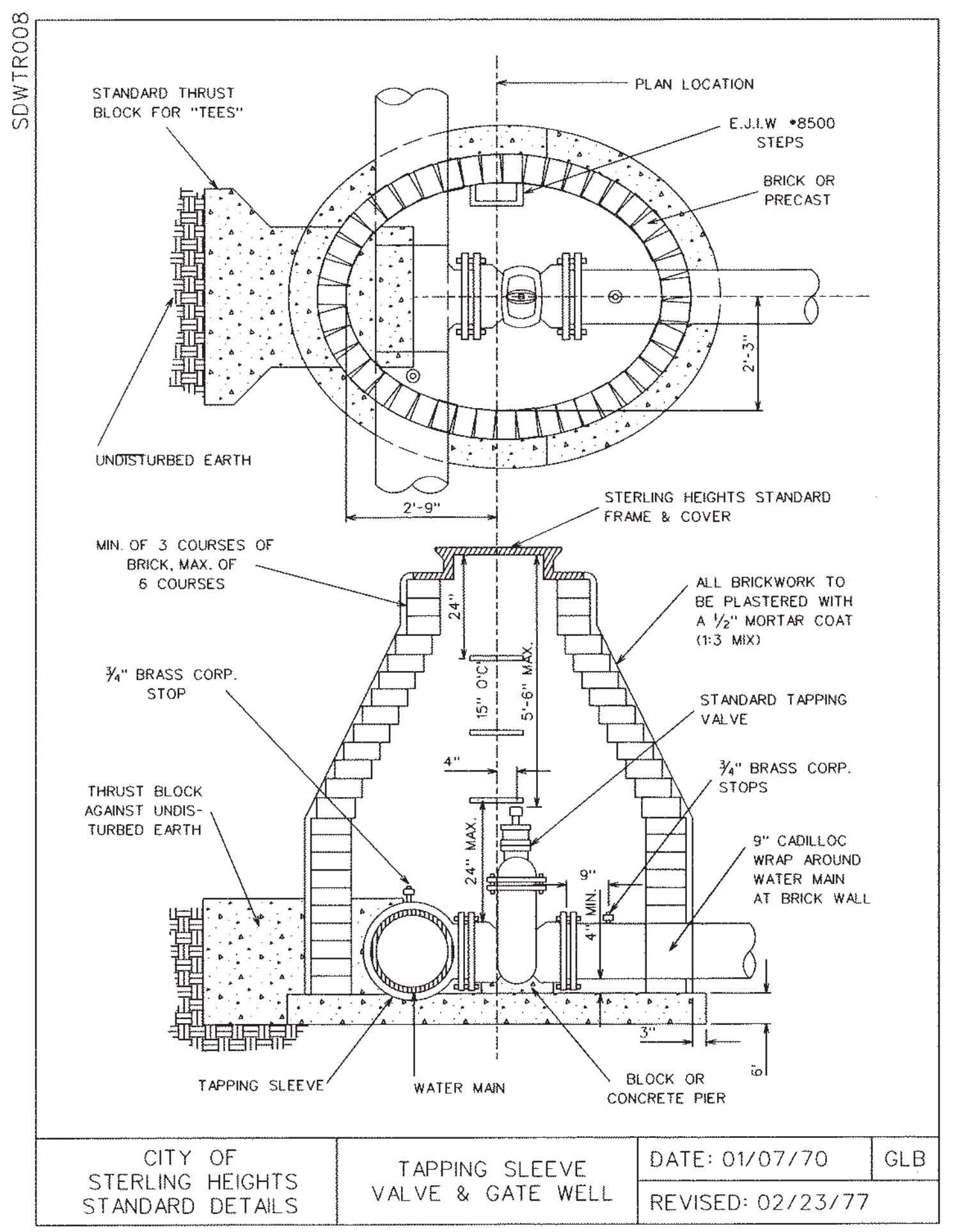
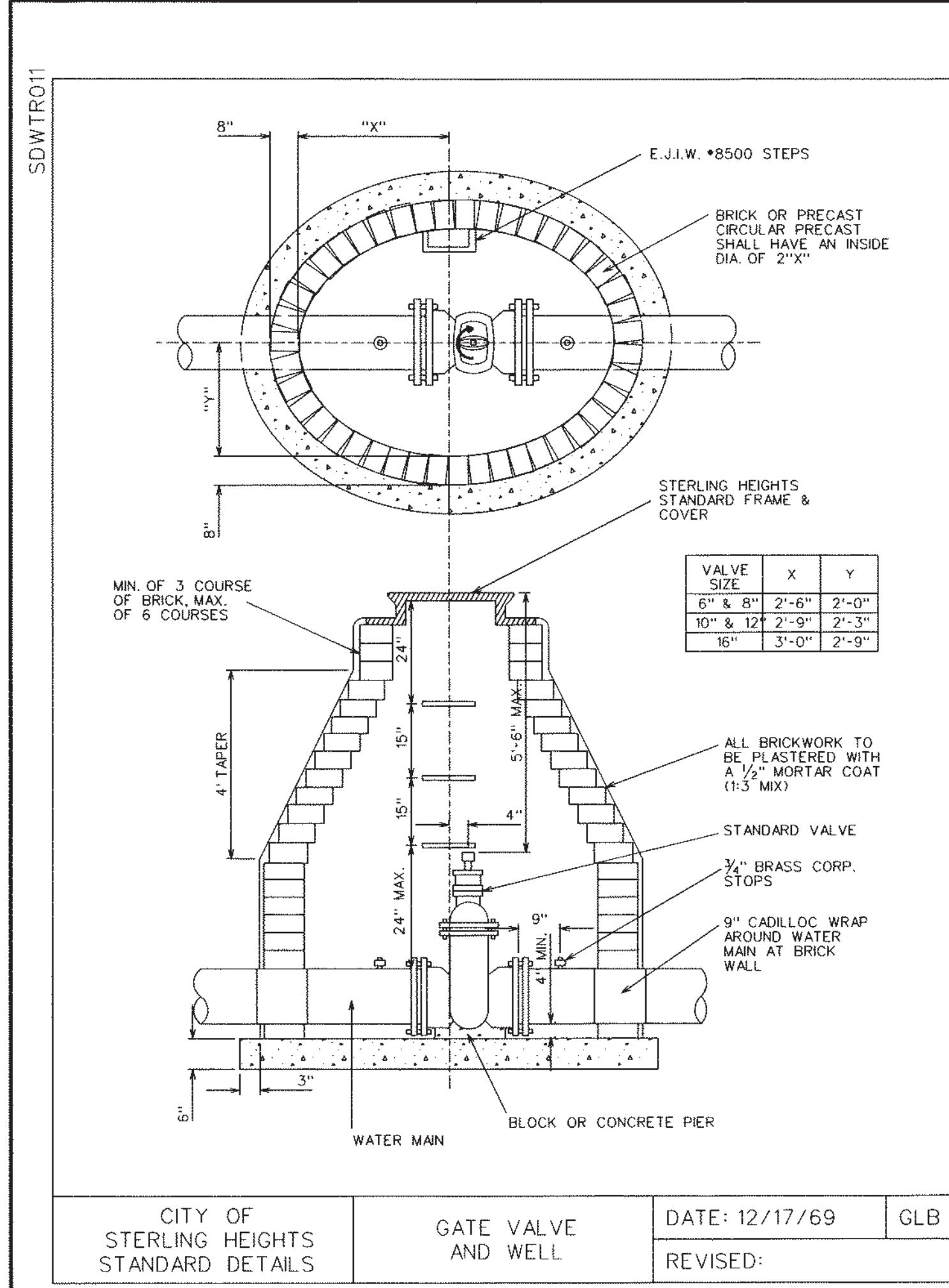
48" I.D.

GRADE "A" CONCRETE CHANNEL

15"

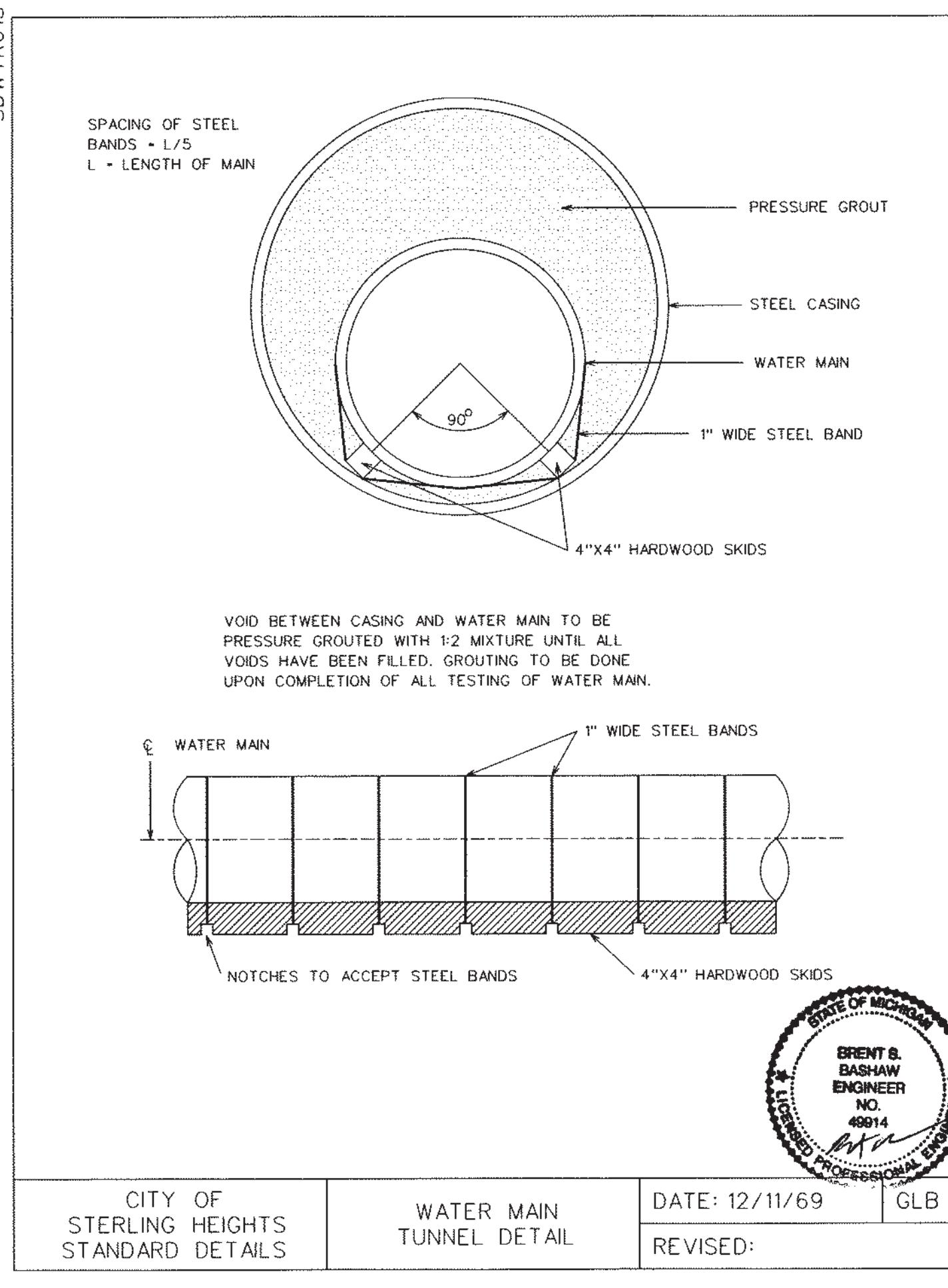
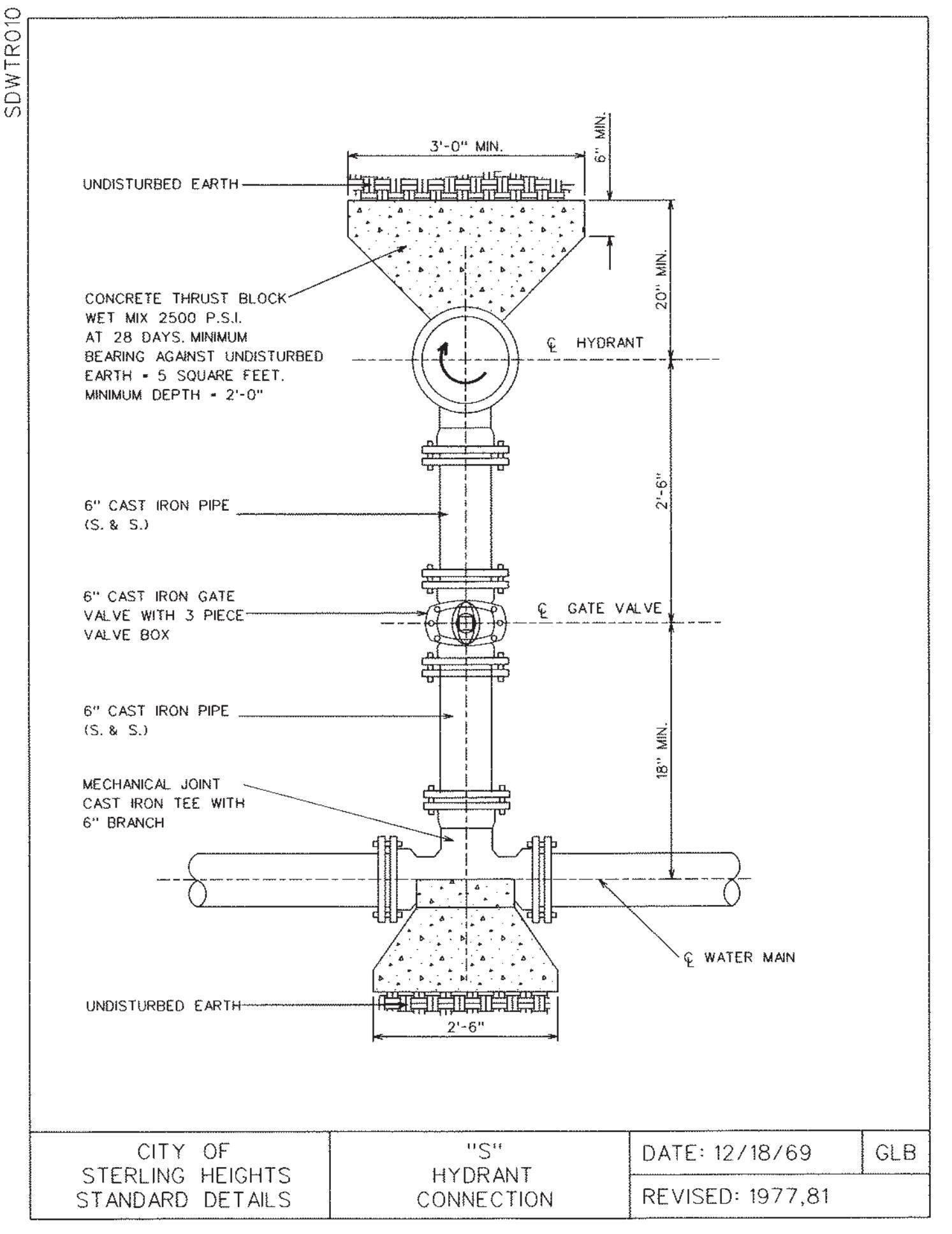
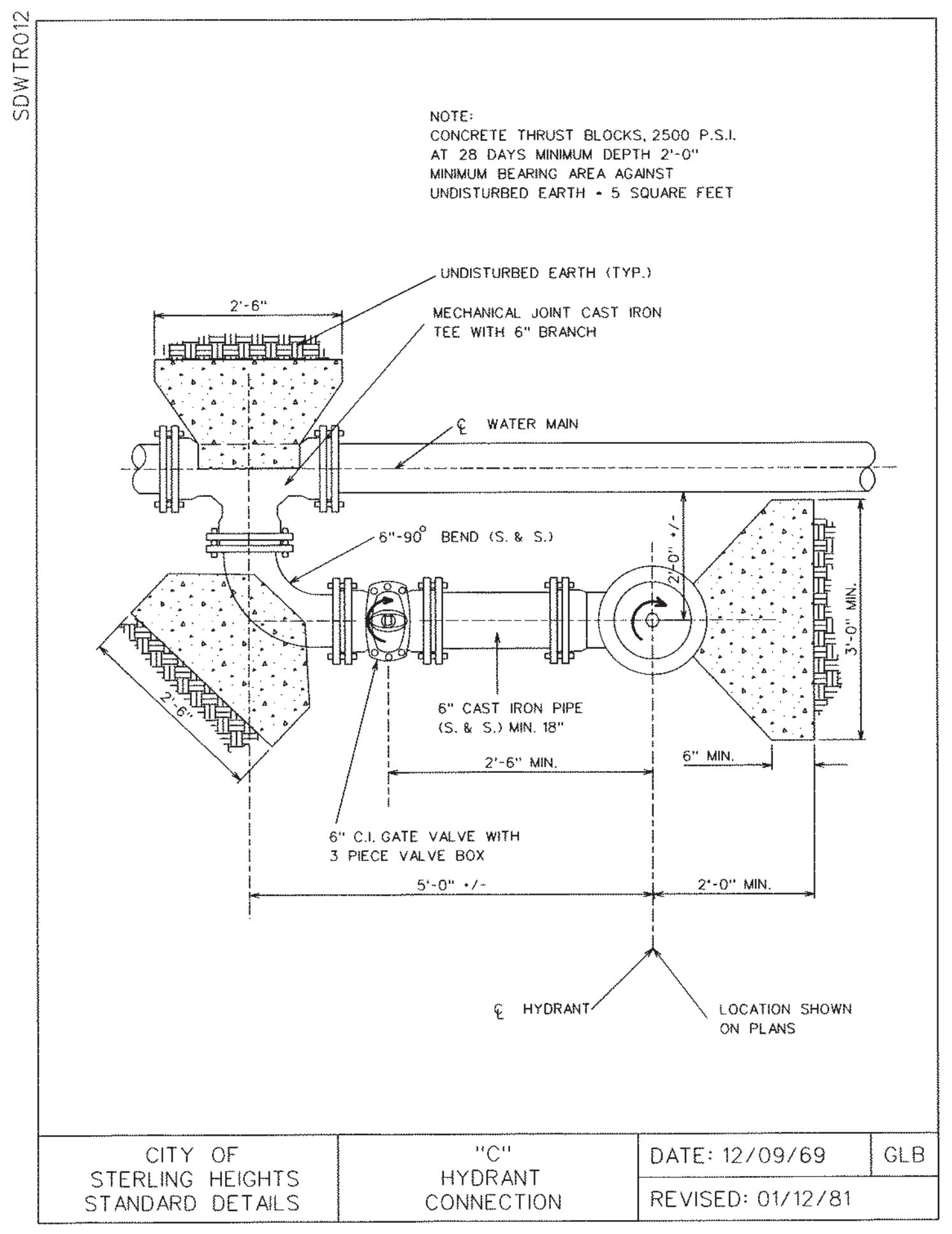
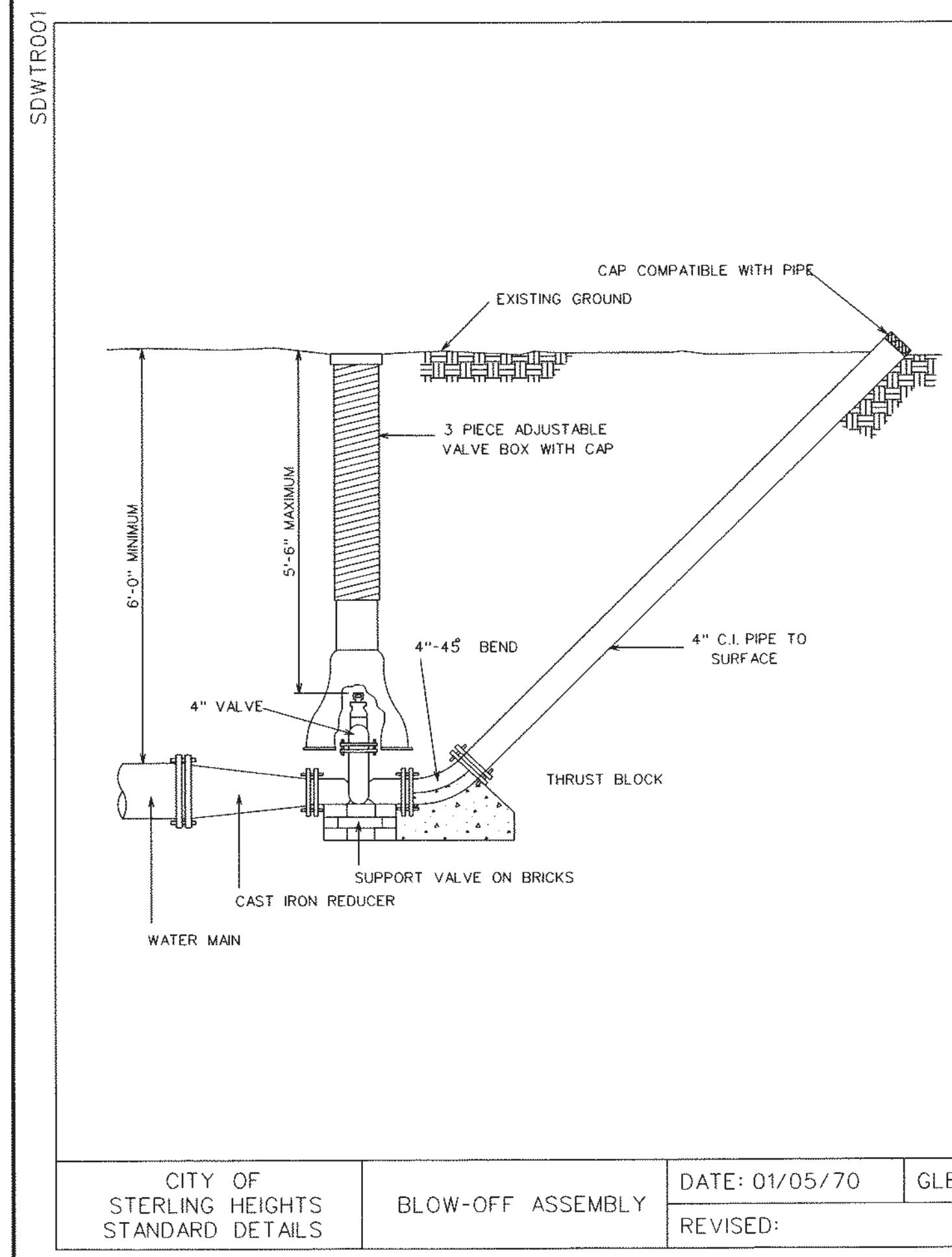
30" MAX.

PROJECT INFORMATION		CITY OF STERLING HEIGHTS		REVISIONS	
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STATION:	40555 UTICA ROAD	CHECKED: GLB	SCALE: 1" = 50'	DATE: NOTED	
C.P. NO.:	P.O. BOX 8009	APPROVED: TRD		FIELD BOOK:	
SECTION:	STERLING HEIGHTS, MI 48311-8009	CITY ENGINEER		PAGE:	
FILE NAME: F:\DRAW\DETAILS\DSHT04.DGN					



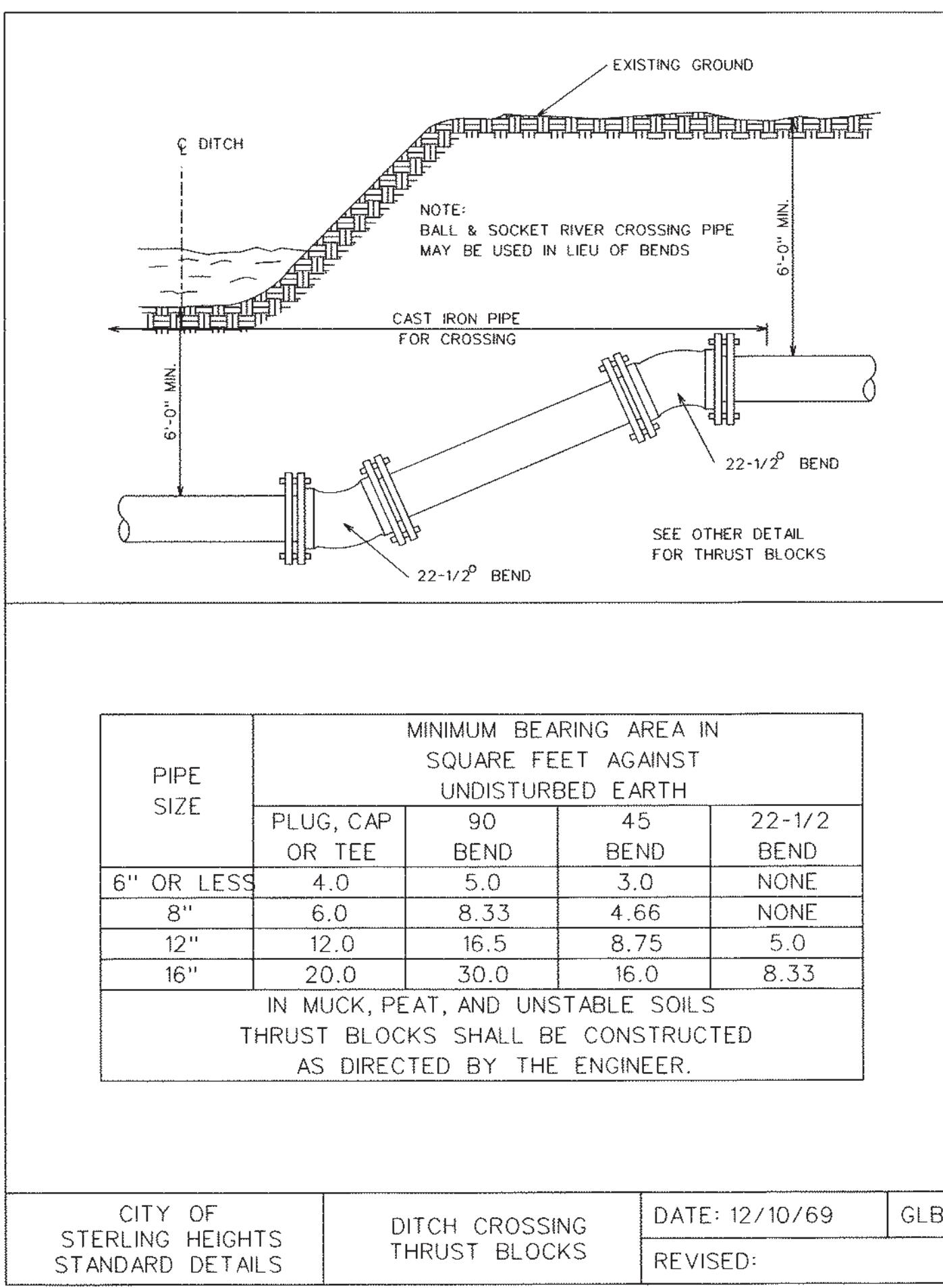
REVISIONS		DATE
DESCRIPTION	DATE NOTED	

SDWTR009  
P.O. BOX 8009  
STERLING HEIGHTS, MI 48311-8009  
(586) 446-2489

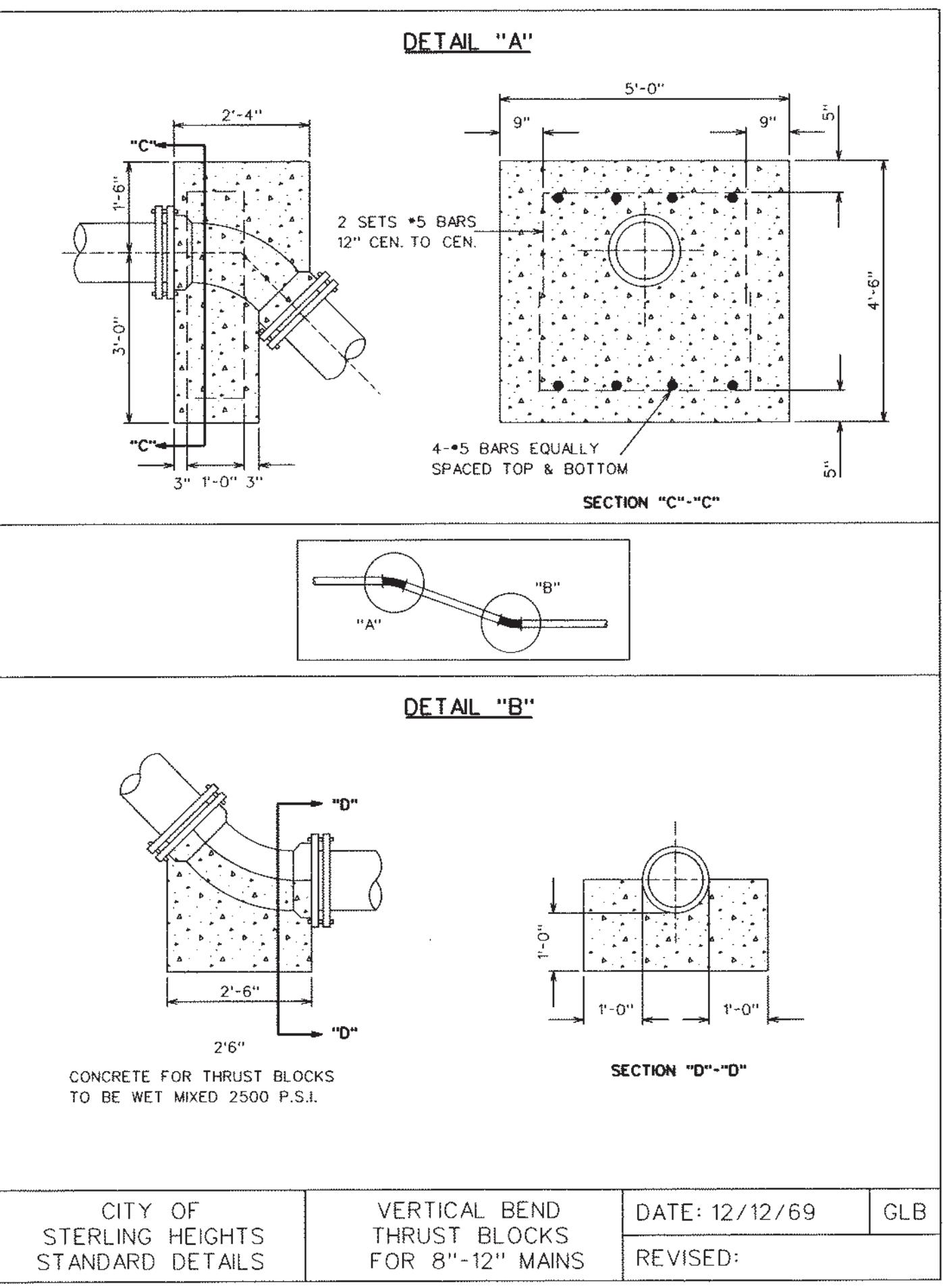


STANDARD DETAILS		PROJECT INFORMATION	CITY OF STERLING HEIGHTS
LOCATION: CITY OF STERLING HEIGHTS	STATION:	40555 UTICA ROAD	P.O. BOX 8009
C.P. NO.:	SECTION:	STERLING HEIGHTS	STERLING HEIGHTS (586) 446-2489
FILENAME: F:\DRAW\DETAILS\SDWTR009.DWG			
SHEET 6 OF 7			

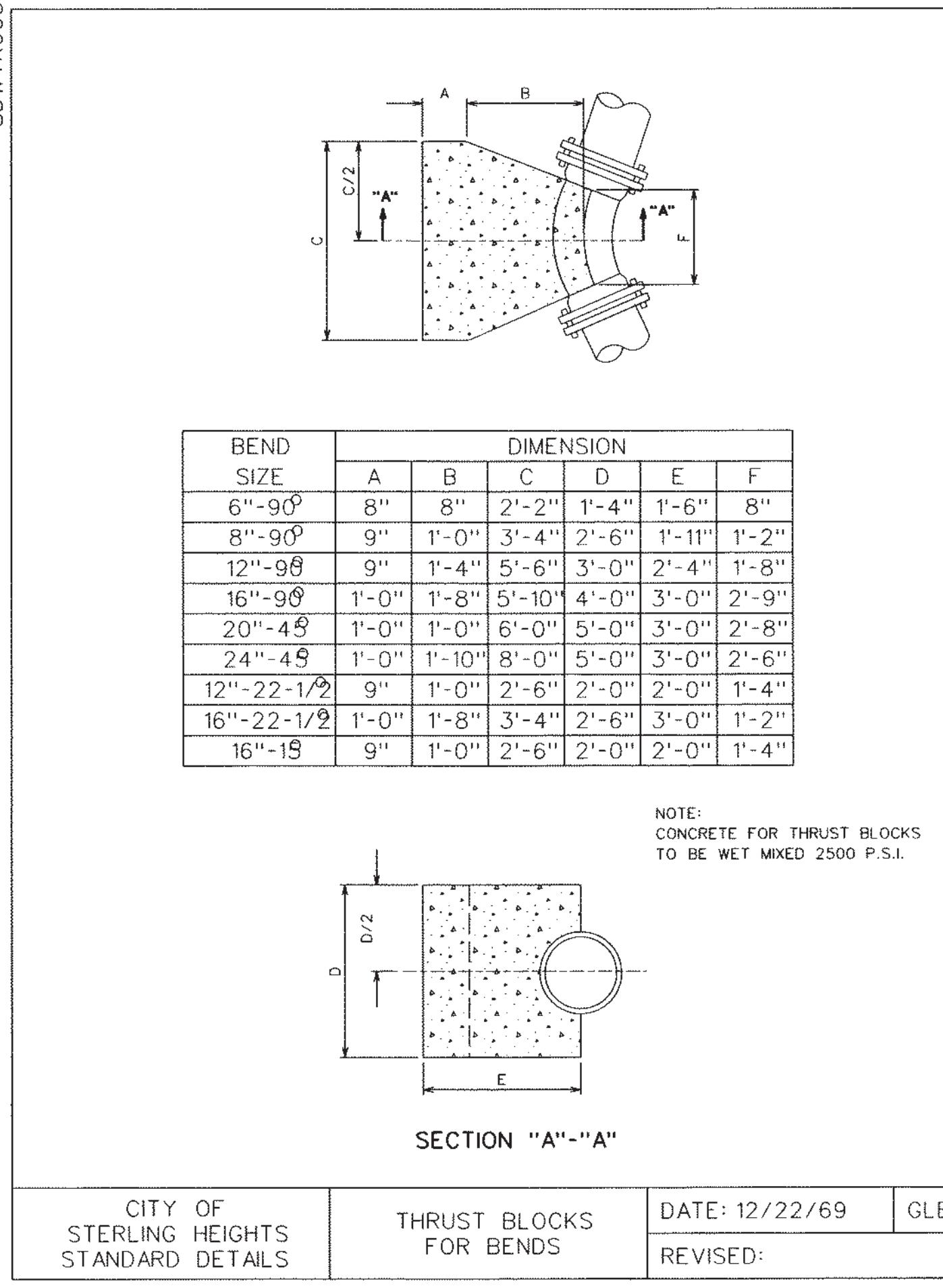
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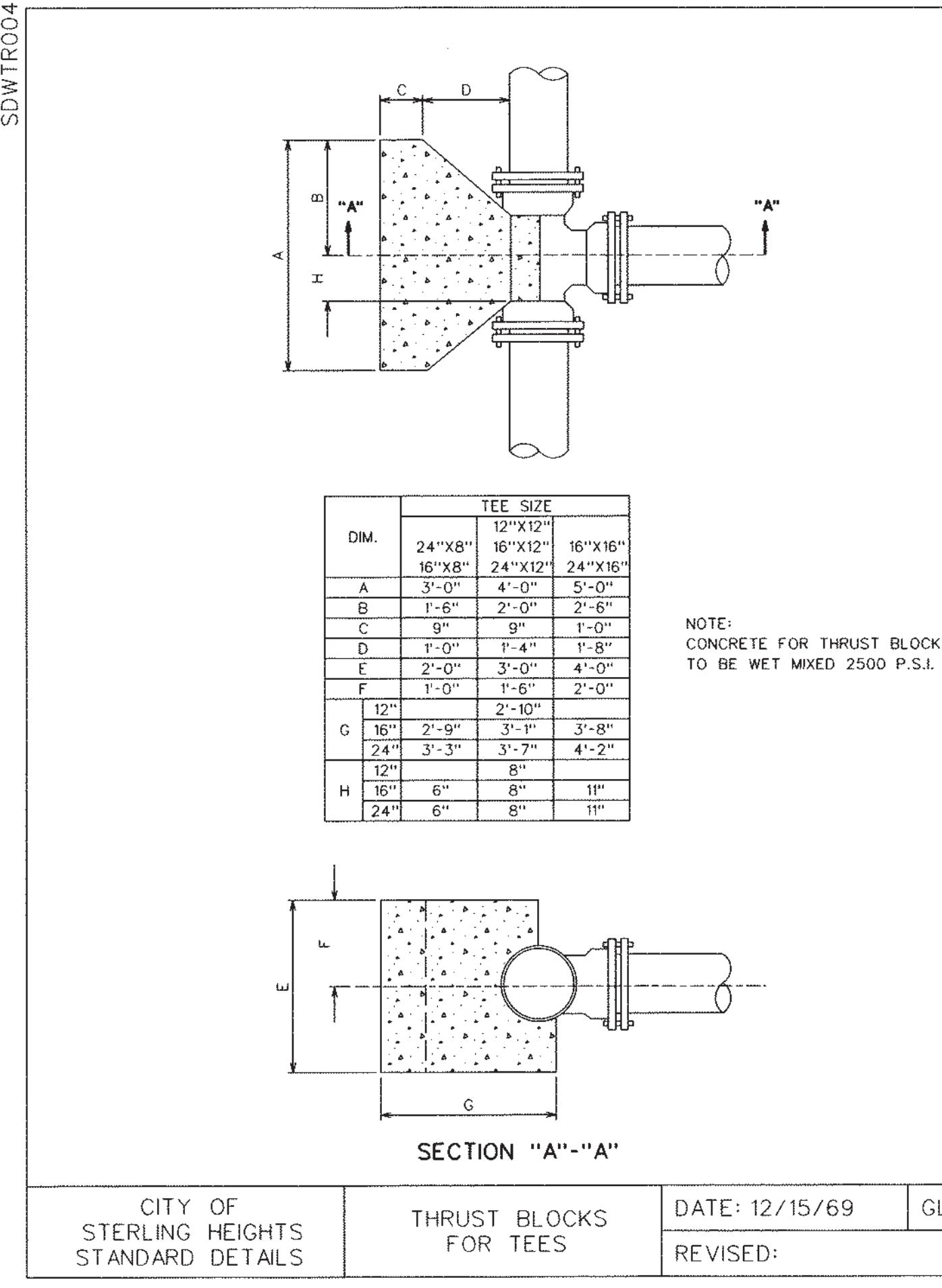
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SDWTRO05



SDWTRO04



REVISIONS

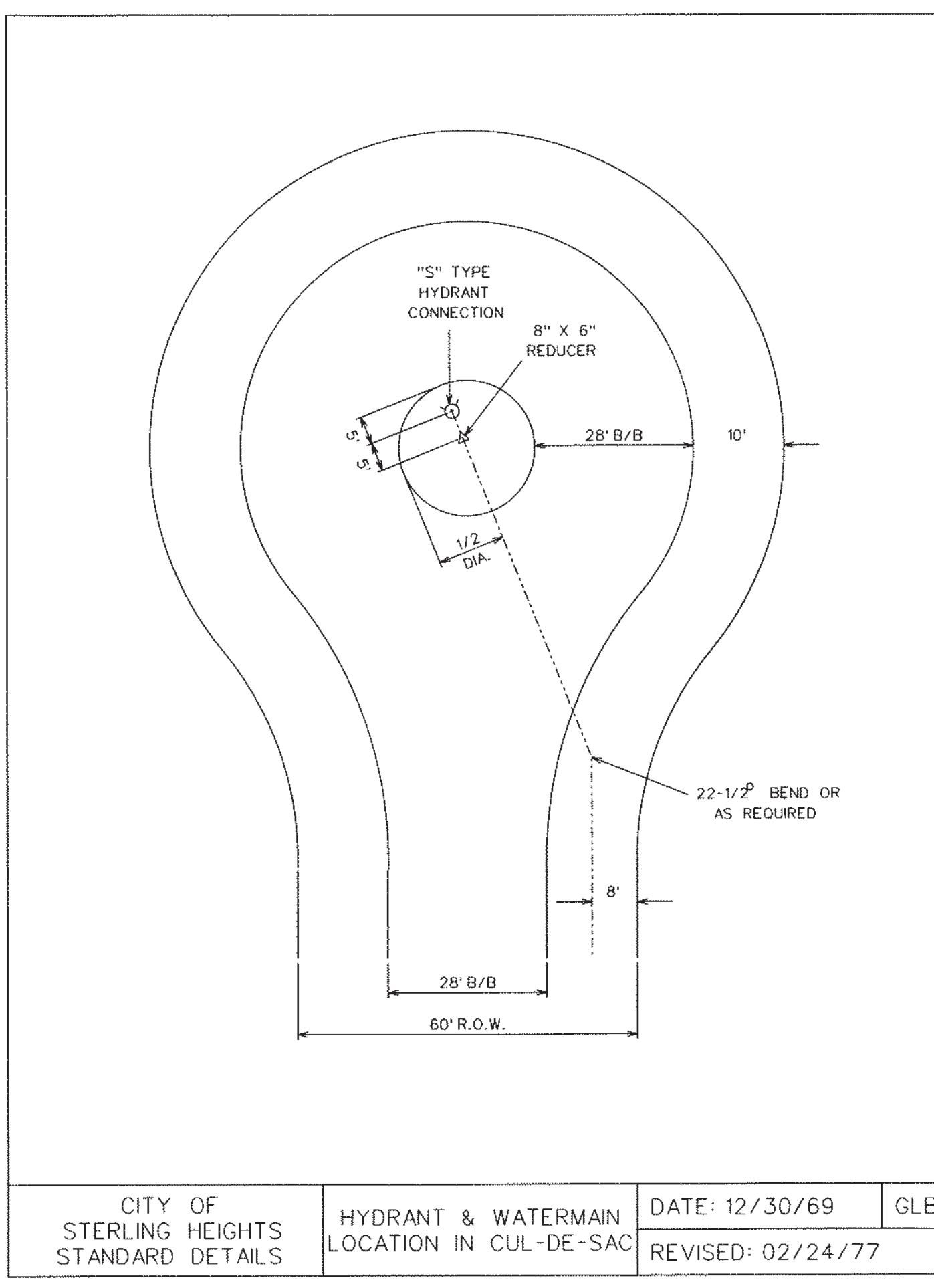
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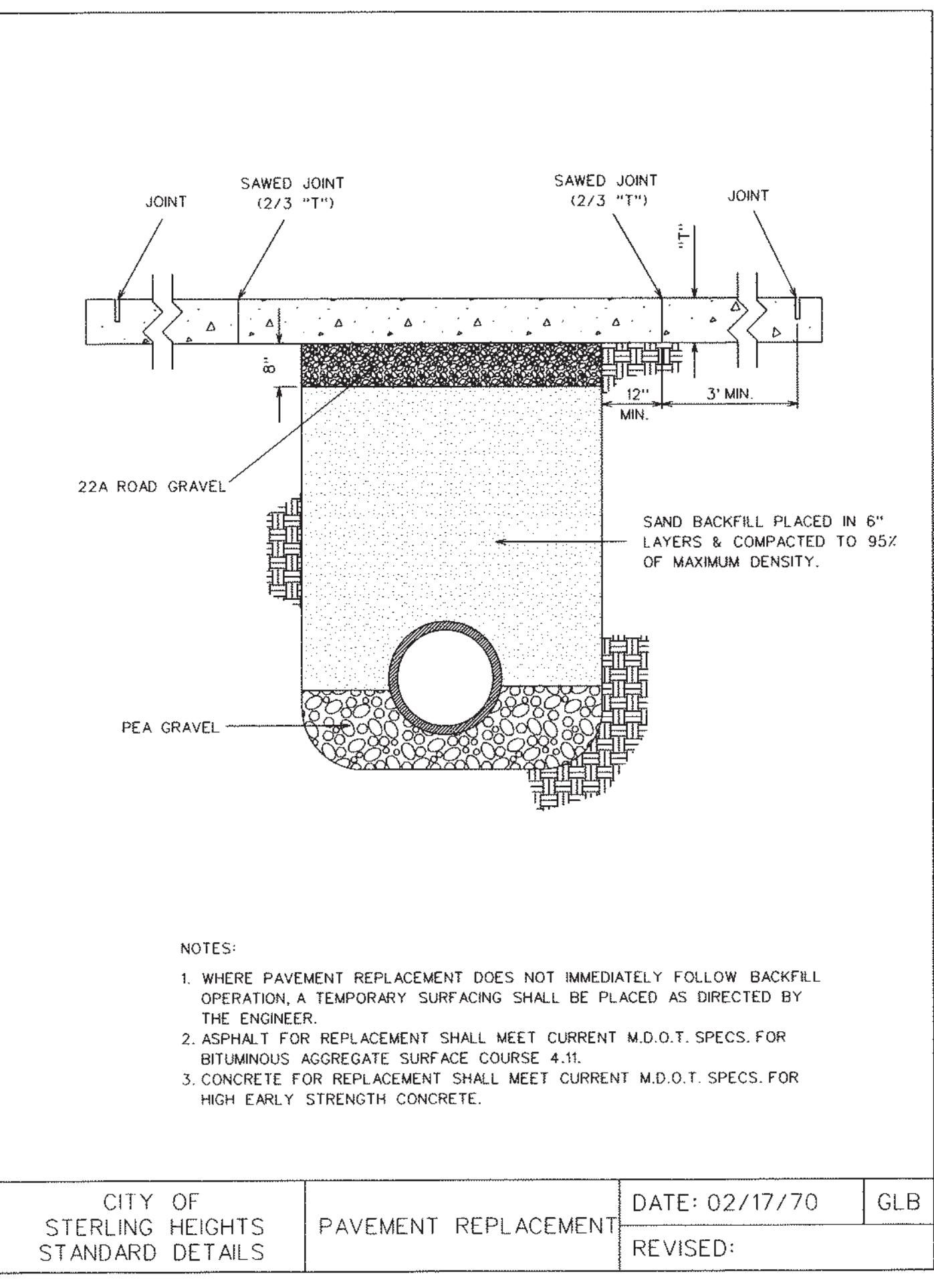
REVISIONS

DATE	DESCRIPTION

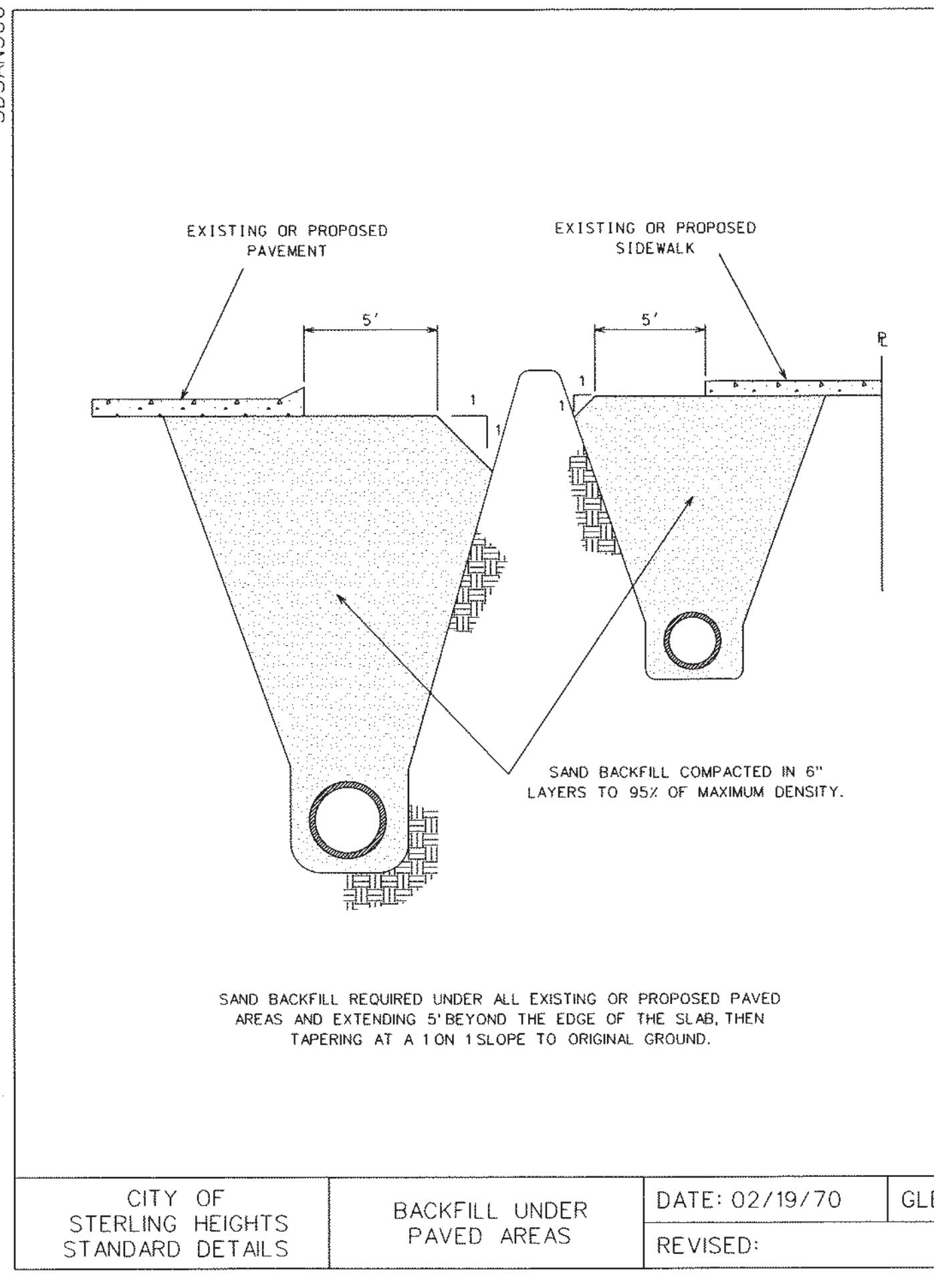
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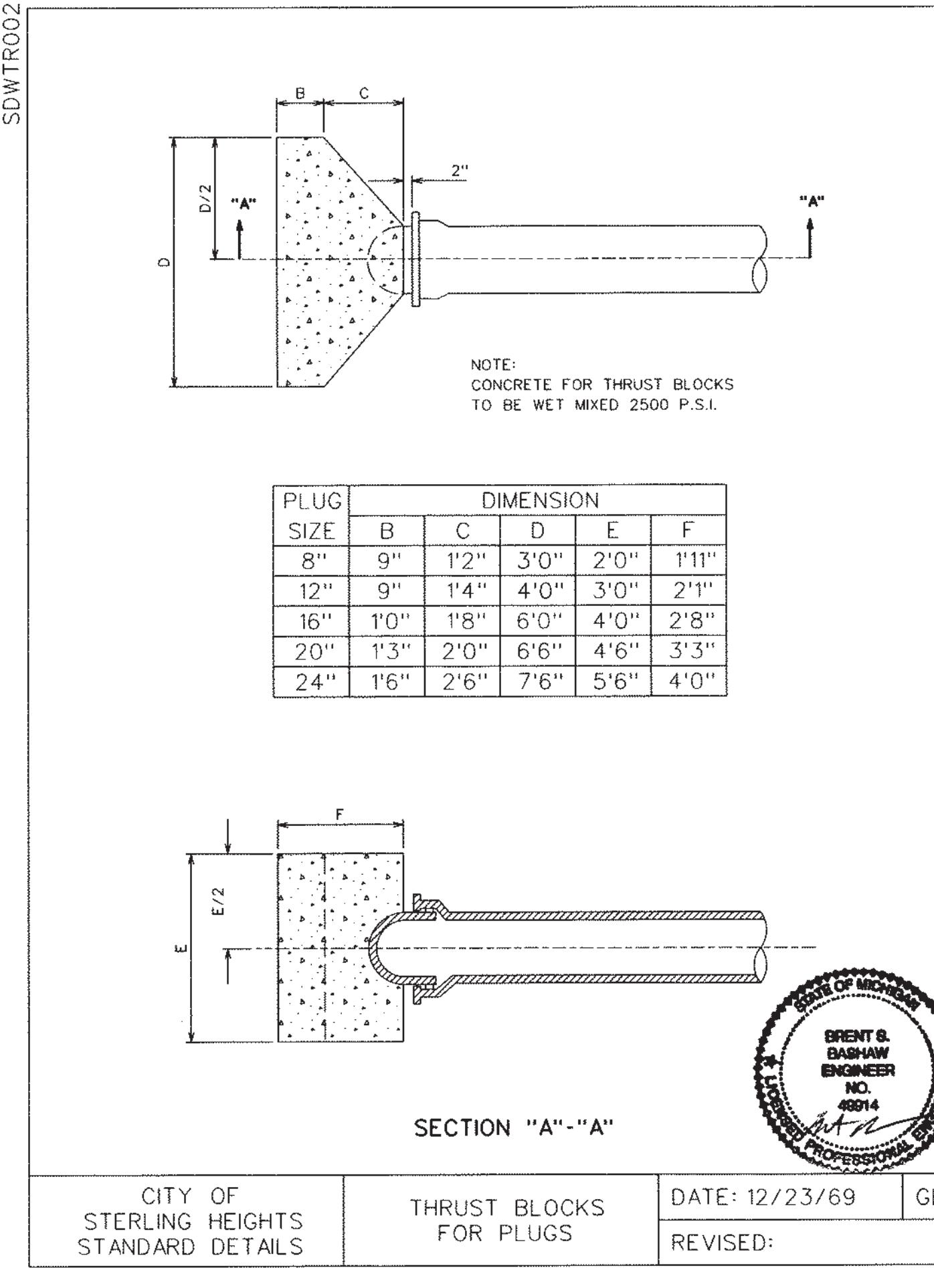
SDSAN500



SDSAN300



SDWTRO02

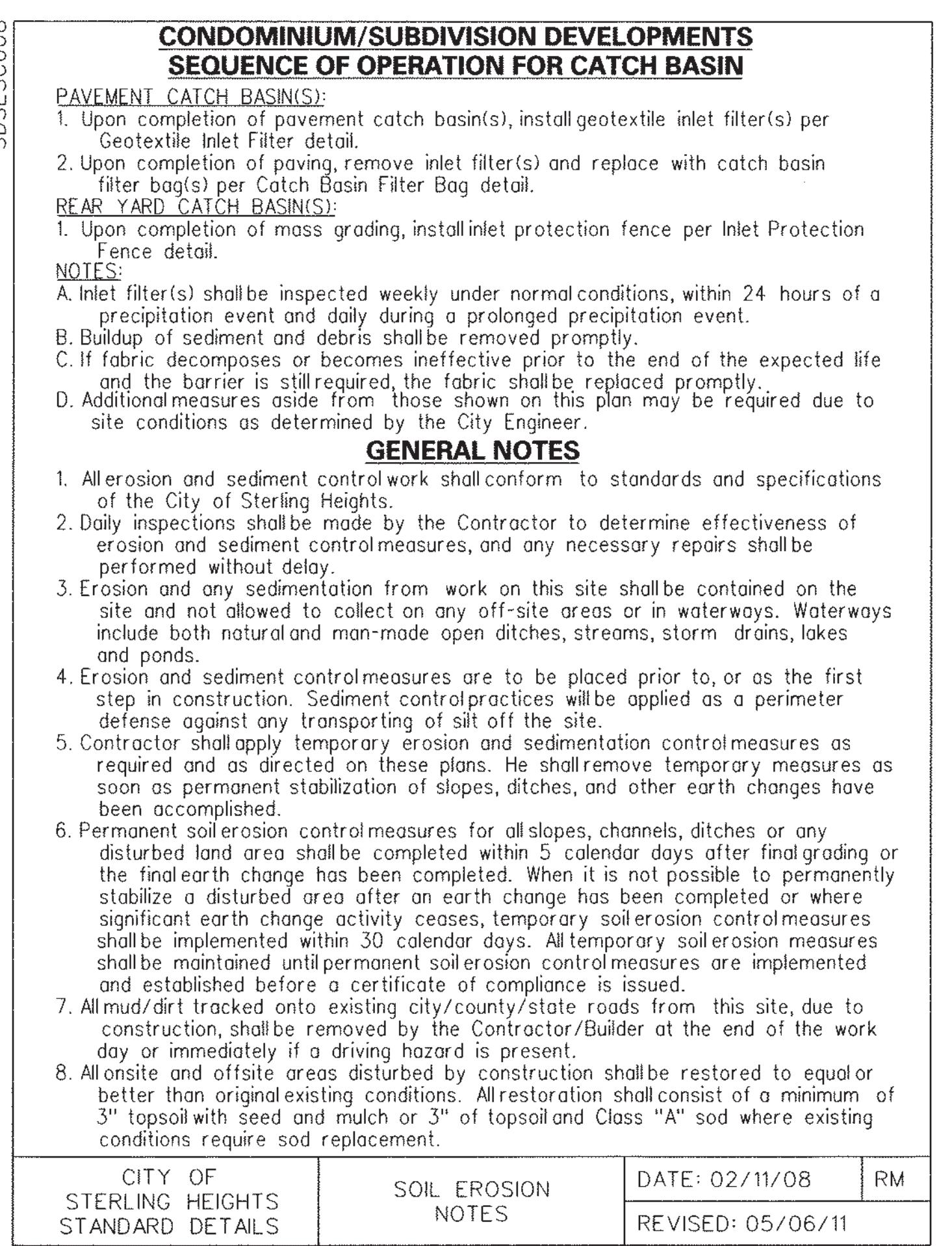
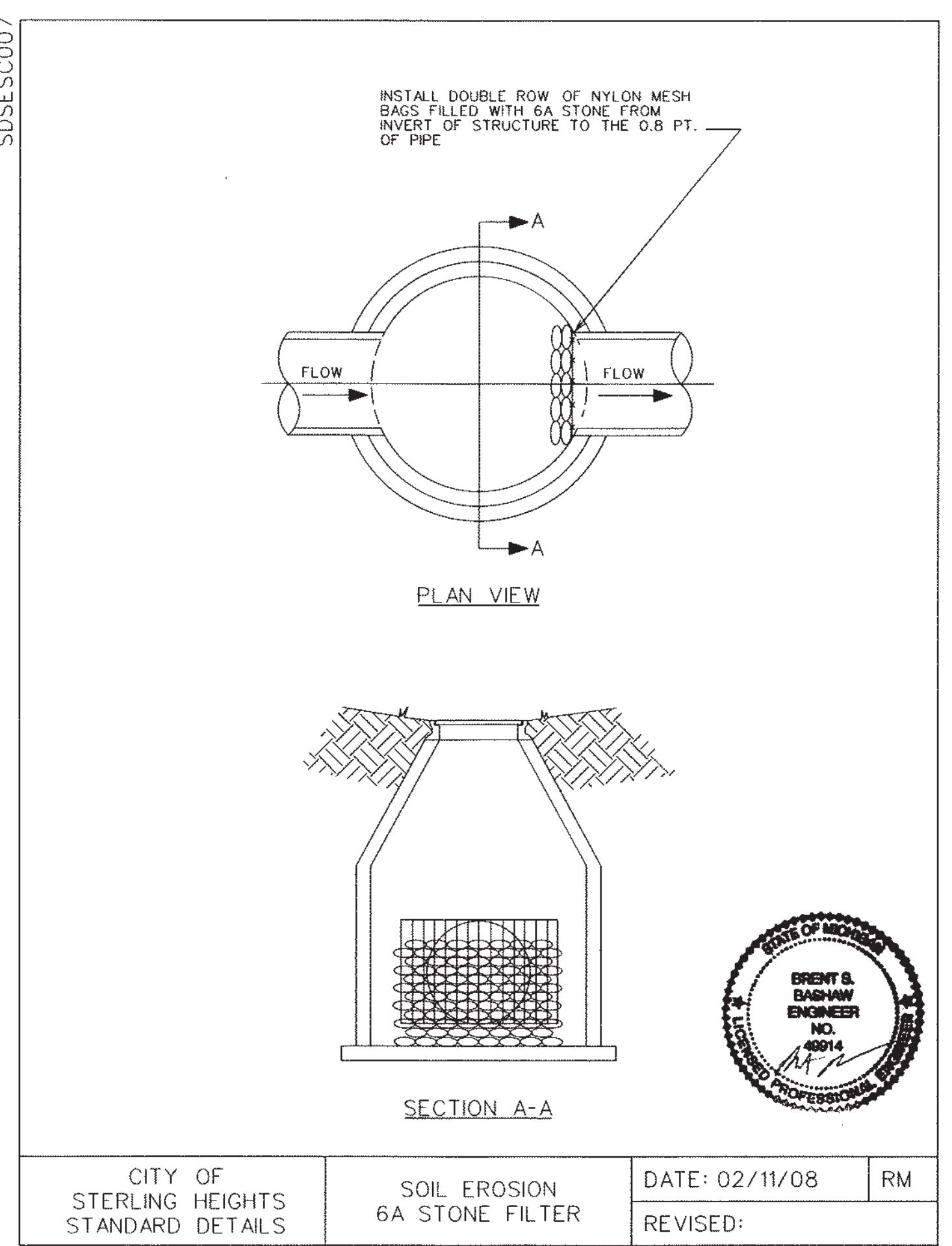
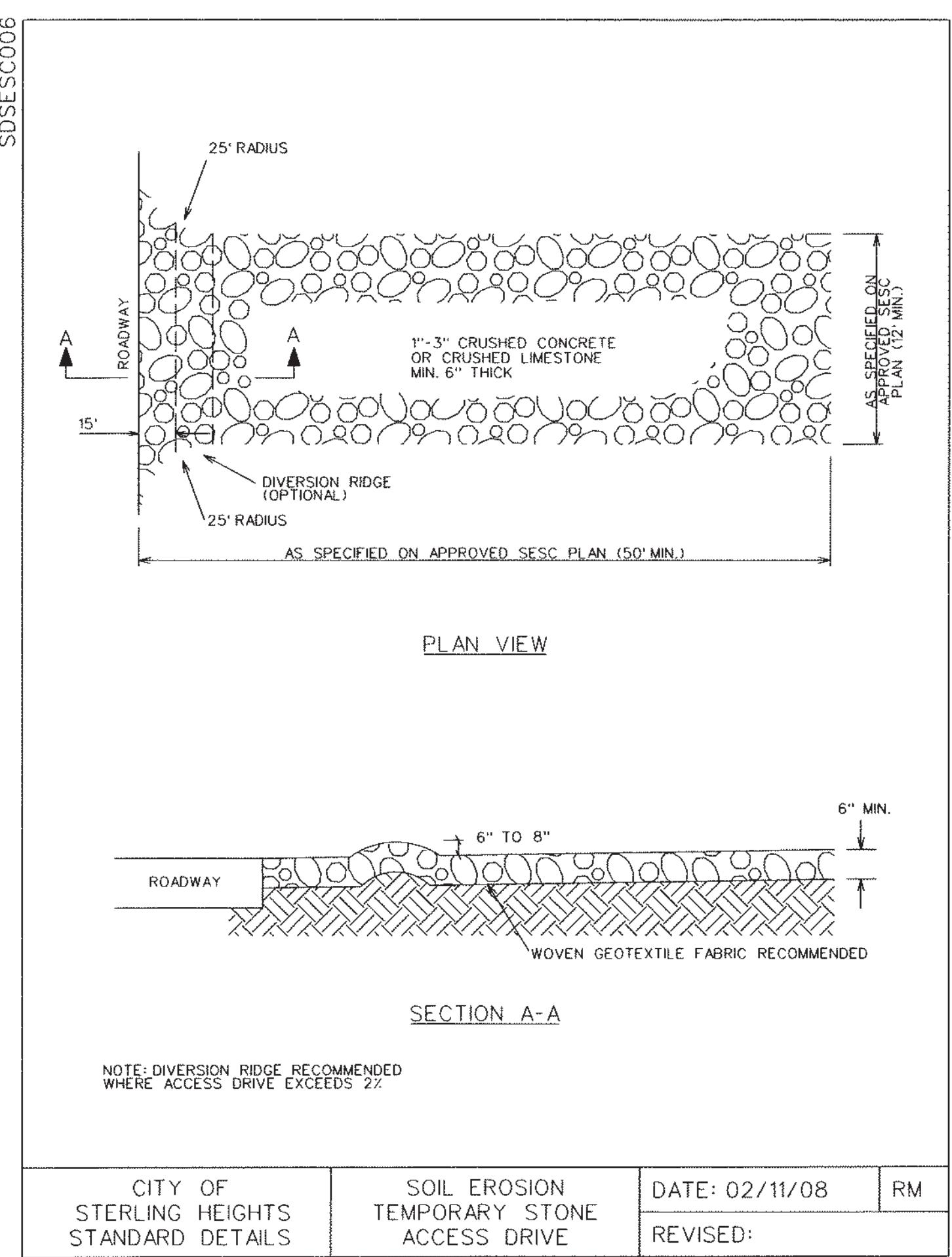
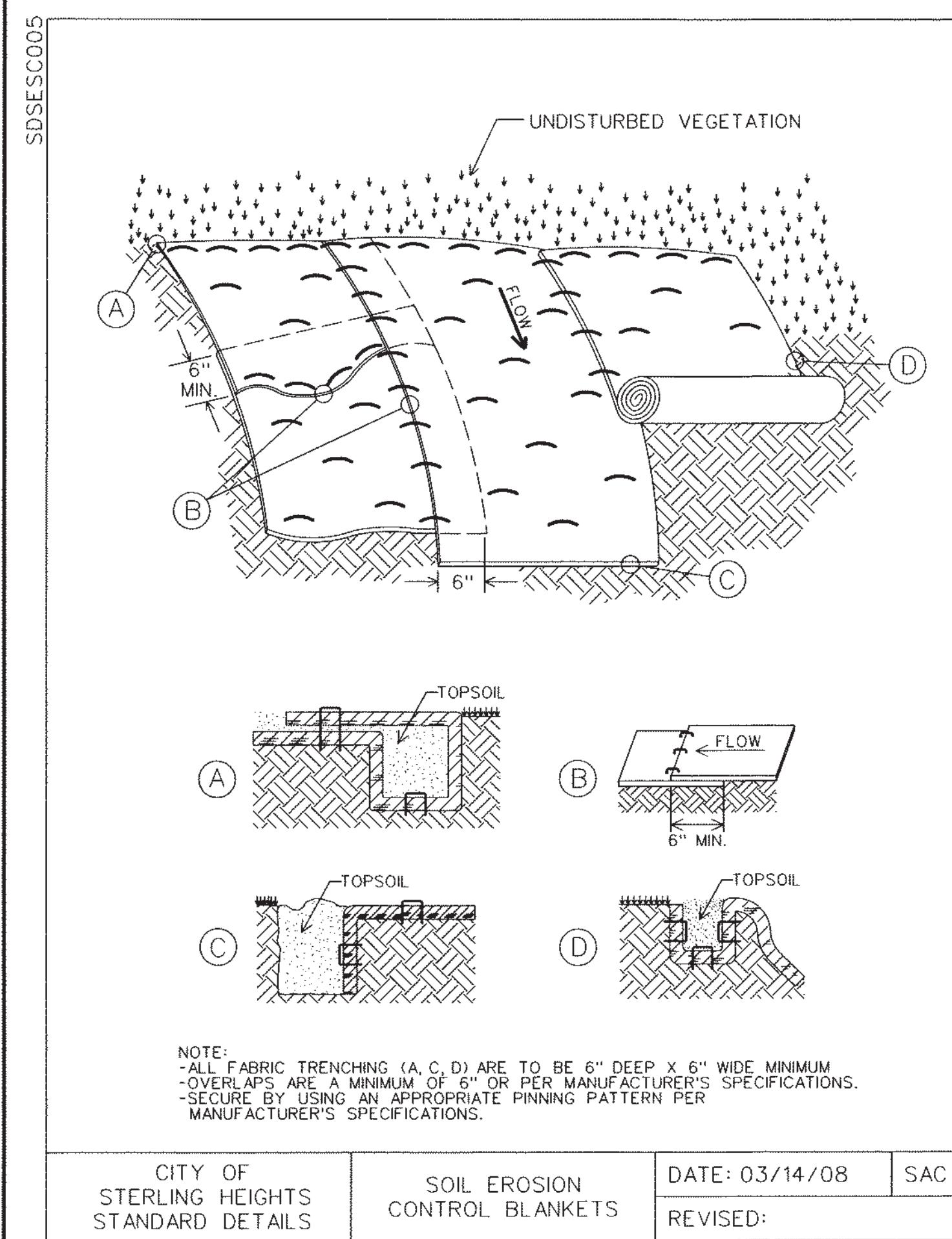
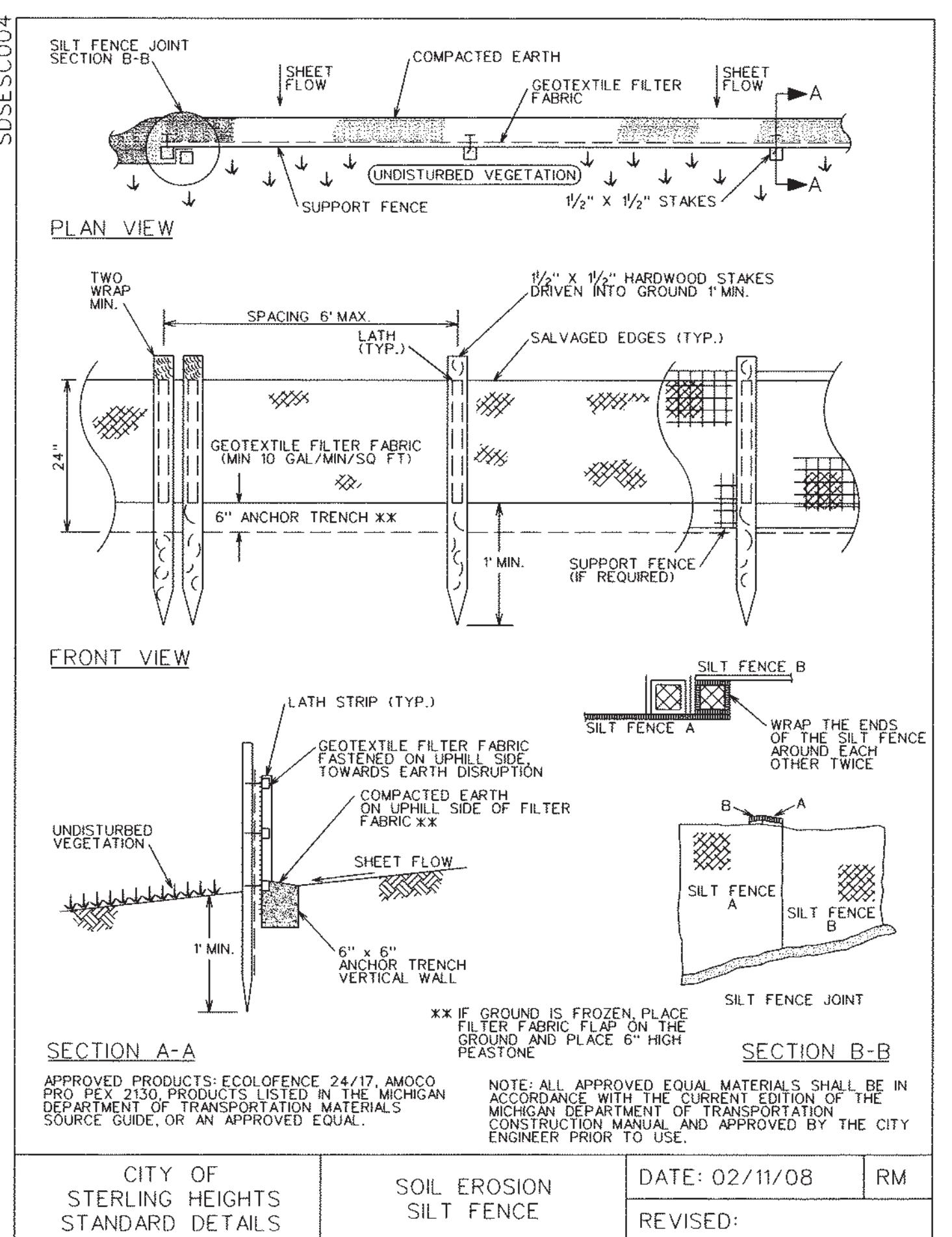
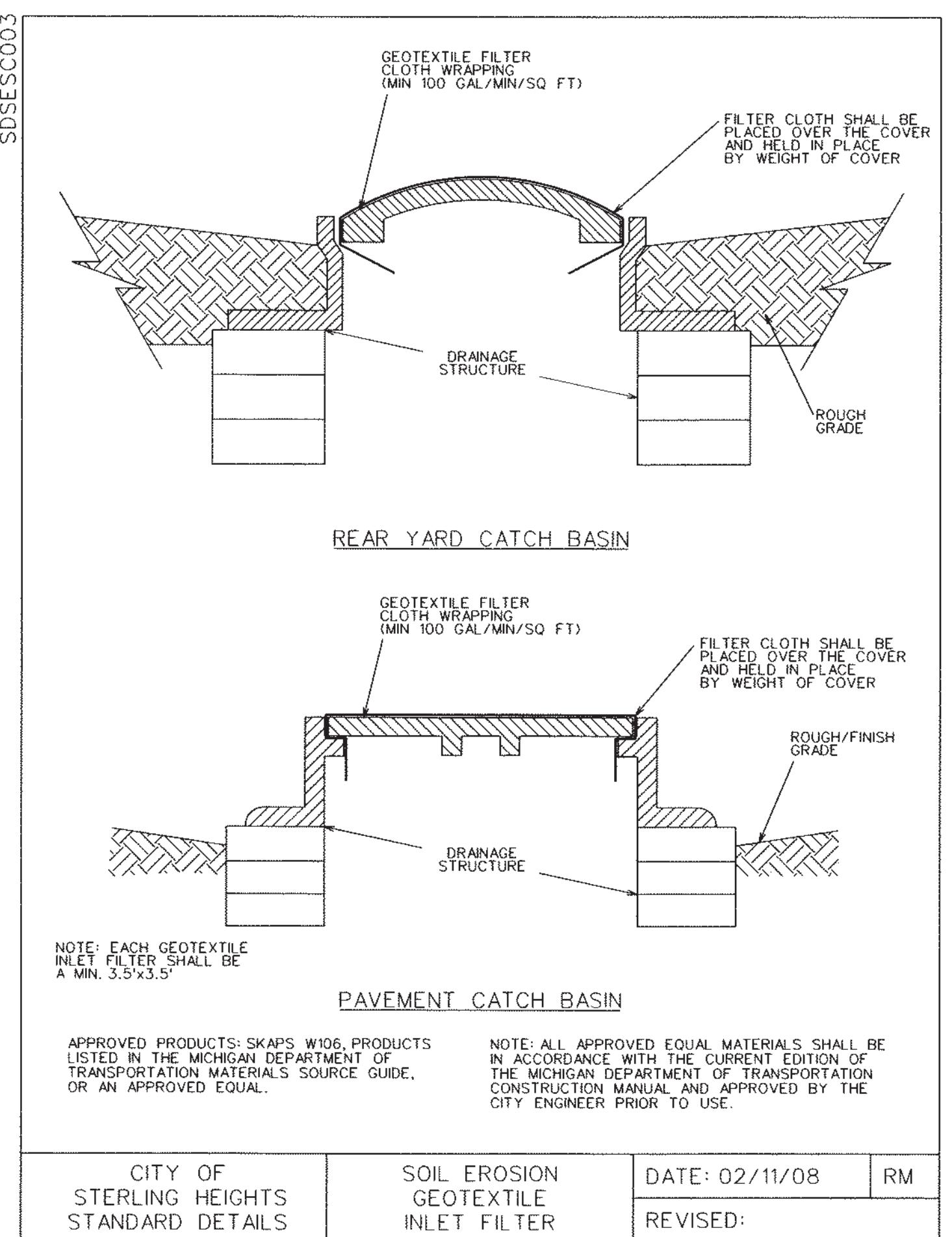
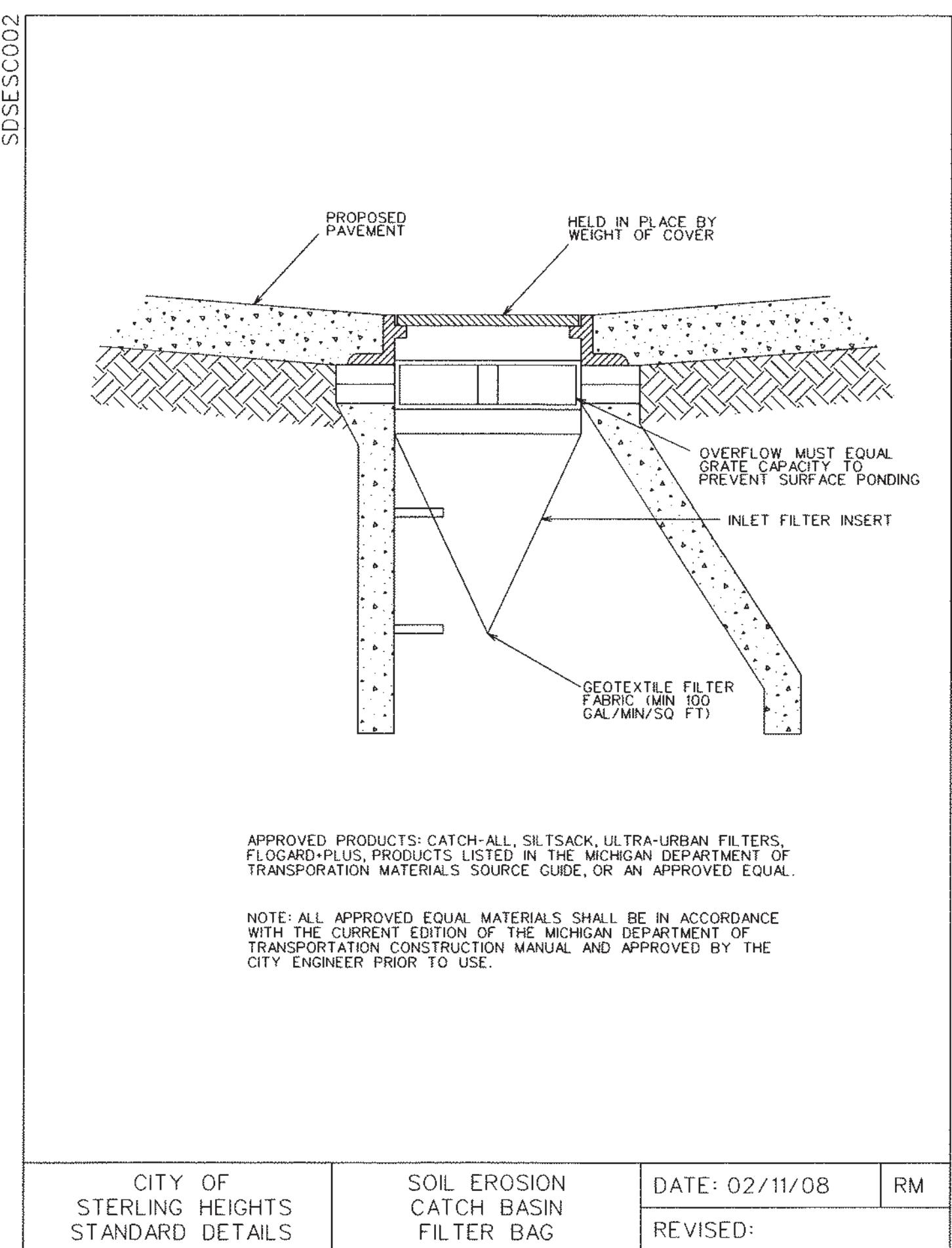
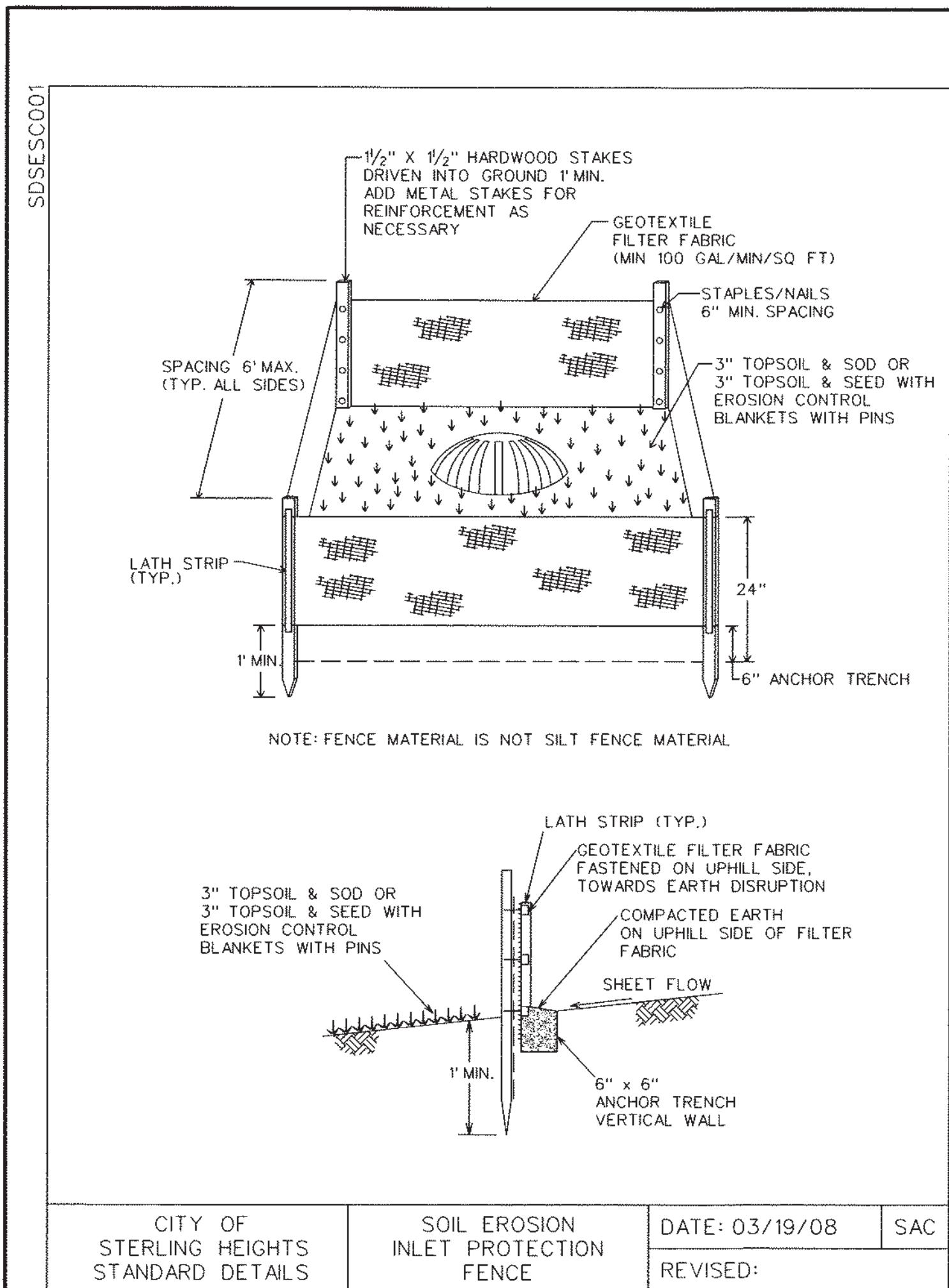


STANDARD DETAILS

SECTION	FILE NAME	DRAWN BY	REVISION
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2	SDWTRO02.DWG	BRENT S. BASHAW	NO. 48914
2	SDWTRO02.DWG	BRENT S. BASHAW	NO. 48914
2	SDWTRO02.DWG	BRENT S. BASHAW	NO. 48914

SHEET

7 OF



PROJECT INFORMATION		CITY OF STERLING HEIGHTS	
LOCATION: CITY OF STERLING HEIGHTS	40555 UTICA ROAD	DRAWN BY:	SCALE: 1" = 50'
STATION:	P.O. BOX 8009	CHECKED BY:	DATE: NOTED
C.P. NO.:	STERLING HEIGHTS, MI 48311-8009	APPROVED BY:	DATE: 06/11
FILE NAME: F:\\DRAWINGS\\DETALS\\DETSC005	REVISIONS		
REVISIONS	DESCRIPTION	DATE	REVISIONS
6	Rev. note 6 of General notes.	06/11	
FIELD BOOK:			
CITY ENGINEER PAGE:			