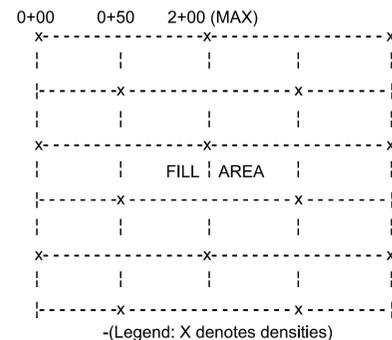


STORM DRAIN GENERAL NOTES

1. All construction shall be in accordance with the standard specifications of the Town of Northlake and the Fifth Edition of the "Standard Specifications for Public Works Construction - North Central Texas" herein referred to as "COG" specifications. Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888. (817) 640- 3300.
2. Storm drain lines shall be installed per COG Item 508 specifications.
3. Only Reinforced Concrete Pipe (RCP) or Reinforced Concrete Box (RCB) is approved for use in public right-of-way or easements.
4. For pipes, embedment shall be per the Street Backfill & Repair detail on the Backfill / Embedment Standard Detail. For box culverts, embedment shall be per the Box Culvert Embedment detail on the Backfill / Embedment Standard Detail.
Note that flowable backfill is only required below areas to be paved.
5. The CONTRACTOR shall seal all joints on closed conduits with Omni-Flex joint seals, or equal; unless approved otherwise by the Town.
6. All concrete to be used in pre-cast products for reinforced concrete pipes or boxes shall come from plants certified by the National Pre-cast Concrete Association.
7. The CONTRACTOR shall use only pre-fabricated fittings on new construction projects. Field connections shall be made only to existing pipe with Town approval. The connection shall be a smooth connection and concrete wrapped on the outside and inside.
8. Concrete collars shall be constructed per the Concrete Collar Details on the Headwalls & Pipe Collars Standard Detail at all storm drain size and at grade changes or in curves where the joint is being pulled more than recommended by the manufacturer. Please refer to the details on the Headwalls & Pipe Collars Standard Detail and COG Item 508.3.4.1 specifications.
9. All inlets shall be poured in place. Precast inlets, junction boxes, manholes, and headwalls are not allowed.
10. Bottoms, tops, and variable height curb to be separate pours (3 pours) for curb inlets.
11. Curb inlet bottoms shall be poured prior to any paving.
12. Ring and cover on curb inlets to be located directly over the outlet pipe.
13. Concrete shall be made with a minimum of 5 sacks of cement and have a minimum compressive strength of 3,600 PSI at 28 days.
14. All reinforcing steel shall be new, neat, billet-steel per ASTM designation A-615, Grade 60, and shall be detailed and placed per ACI Manuals SP-88 and 318, latest additions. All reinforcing steel shall have minimum 15-inch lap splices, unless noted otherwise on the plans.
15. The CONTRACTOR shall use a liquid membrane-forming curing compound per COG Item 303.2.13.1.1.
16. All exposed surfaces shall have 3/4 -inch chamfer.
17. All closed conduits shall be Television Inspected.
18. The CONTRACTOR shall be responsible for notifying the Town Inspector at least 24 hours prior to any required testing.
 - a. Soil and material testing technicians shall provide written proof of having minimum of two (2) years of related field experience.
 - b. The CONTRACTOR shall coordinate all testing activities with the Town Inspector and shall facilitate required testing throughout the construction period. The Inspector shall be present during all testing.
 - c. The Town shall make final decision as to the validity of all testing results.
 - d. The CONTRACTOR shall be responsible for ensuring that materials to be tested are in compliance with all plans and specifications prior to testing. All materials found not to be in compliance with the plans and specifications before and after testing shall be removed and replaced at the CONTRACTOR'S expense.
 - e. All costs associated with the retesting of work that fails to meet the specifications required in the contract documents shall be borne by the CONTRACTOR. For Town projects, retesting cost shall be withheld from pay requests submitted by the CONTRACTOR, this cost will be based on the Town's cost with no additional mark-up. A letter of acceptance will not be issued until all testing deficiencies are addressed and all related cost paid.

- f. The Town Inspector shall be notified of concrete placement 24 hours in advance for steel and form inspection.
- g. One set of four cylinders (2-7 day, 2-28 day) for cast-in-place concrete shall be made for every day that concrete is placed (ASTM C-31). Air, slump, and temperature tests shall be taken for every set of cylinders made. Concrete with a temperature above 95 degrees will be rejected. Additional cylinders and or tests may be requested at the Inspector or ENGINEER'S discretion. Exterior forms shall not be removed for a minimum of 24 hours unless approved by Inspector or ENGINEER. Sulfate resistant concrete shall be used for all manholes.
- h. Backfill and Density Testing
 - 1) All trenches shall be backfilled in accordance with standard details and mechanically compacted with approved vibratory methods in accordance with COG Item 504.5.3.2.1 and paragraph 3) below, unless otherwise stated on the plans or in the specifications.
 - 2) Densities shall conform to standard trench details, COG Item 504.5.3.2.1, and paragraph 3) below, unless otherwise stated on the plans or in the specifications. Proctor samples shall be taken for all classifications of soil on site. Atterberg Limits shall be determined on all Proctor samples. No "potholing" will be allowed. Densities shall be taken on all storm drain laterals within the Right-of-Way and shall conform to paragraph 3) below and COG Item 504.5.3.2.1, unless otherwise stated on the plans or in the specifications. Backfill adjacent to all structures shall be compacted manually and density tested on every lift.
 - 3) Mechanical Tamping of Backfill
 - a) All ditch lines and bore pits shall be mechanically tamped.
 - b) Backfill, other than select fill, may consist of onsite or offsite inorganic soils and should be placed in loose lifts 6" - 8" in thickness (not to exceed 12") and should be mechanically compacted to 95 percent of the maximum dry density as defined by ASTM D-698 (Standard Proctor) procedures under existing and proposed pavement, and to 90 percent standard proctor procedures elsewhere. The moisture content of the fill at the time of compaction shall be between minus 2% of optimum to four percentage points above the proctor optimum value.
 - c) All backfill material to be select native material, 6" diameter clods and smaller, unless directed otherwise on the plans or in the specifications and to be mechanically tamped and density controlled as described in Paragraph b) above.
 - d) Water jetting is not permitted.
 - e) Densities shall be taken every one (1) lift at staggered locations not to exceed 200 feet increments at the time of backfilling. Offset fifty (50') feet every other lift.
 - f) Densities may be taken at typical locations as shown below; also, densities will be taken at random locations and at the geotechnician's discretion.



SD-1

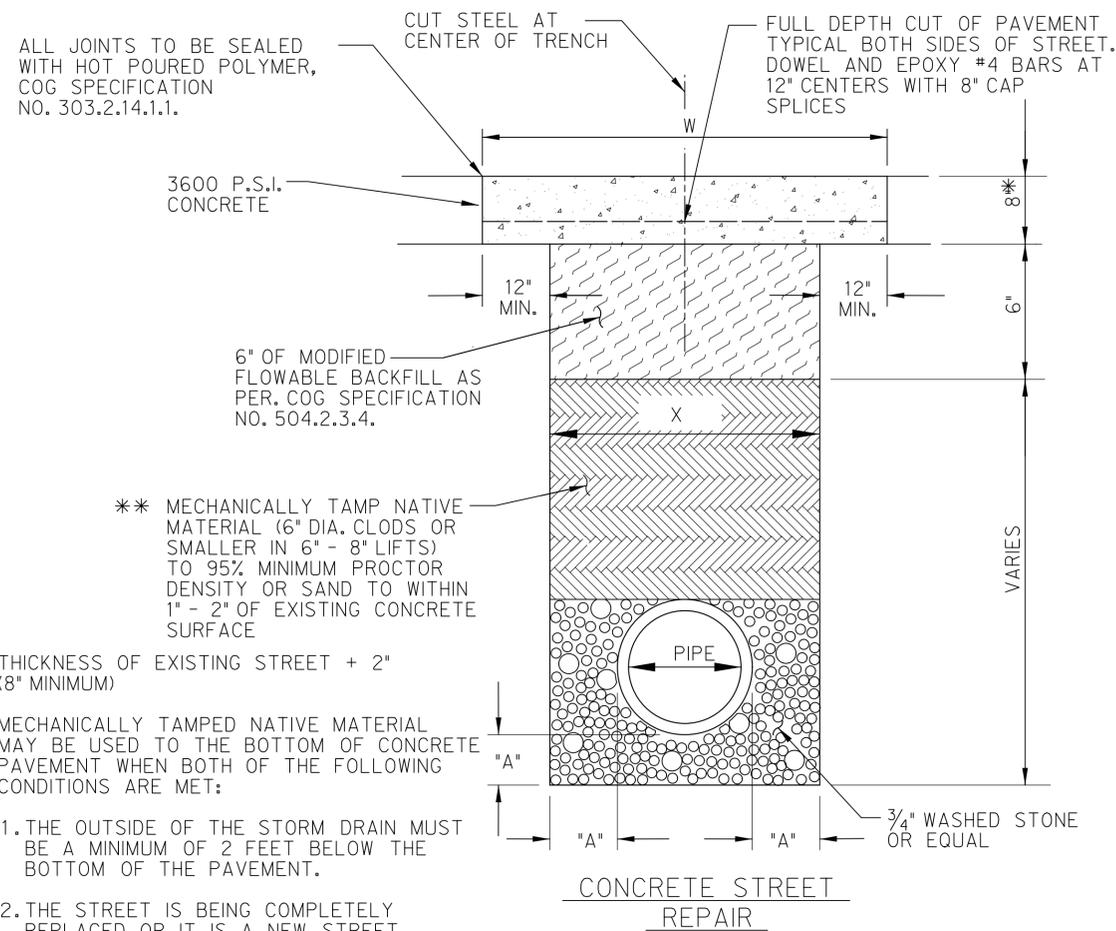
STORM DRAIN STANDARD DETAILS
STORM DRAIN GENERAL NOTES



THE TOWN OF NORTHLAKE
TEXAS

CERTIFICATION:
THIS TOWN OF NORTHLAKE STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE TOWN OF NORTHLAKE.

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	AUG 2023	N. T. S.	SD-1	___



ALL JOINTS TO BE SEALED WITH HOT POURED POLYMER, COG SPECIFICATION NO. 303.2.14.1.1.

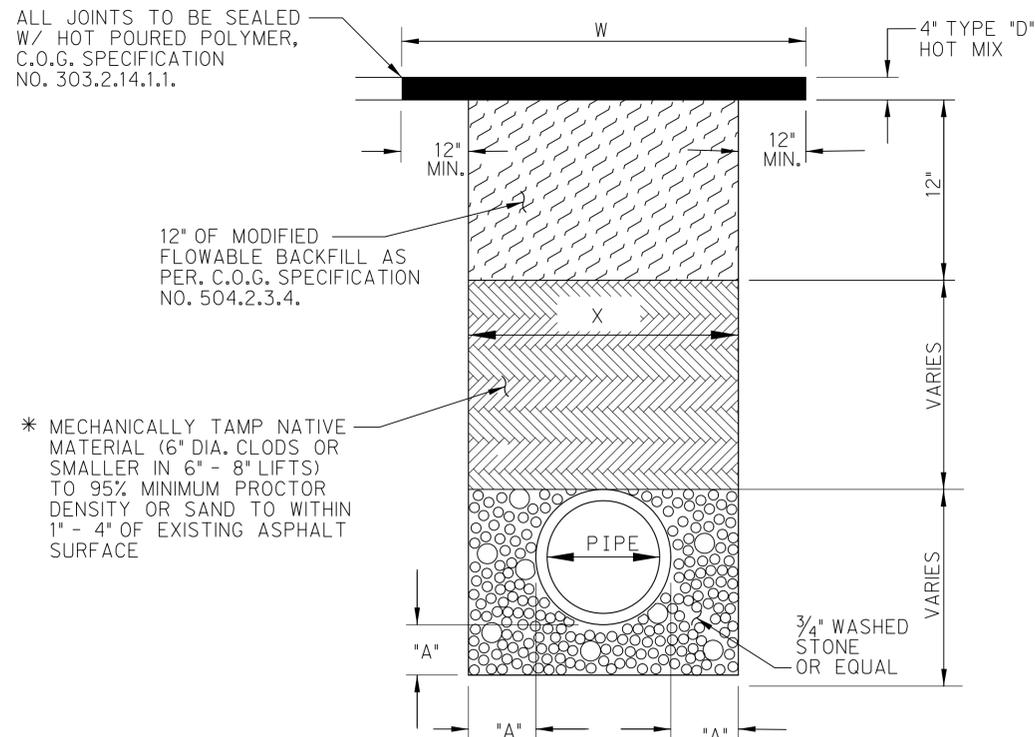
3600 P.S.I. CONCRETE

6\"/>

** MECHANICALLY TAMP NATIVE MATERIAL (6\"/>

1. THE OUTSIDE OF THE STORM DRAIN MUST BE A MINIMUM OF 2 FEET BELOW THE BOTTOM OF THE PAVEMENT.

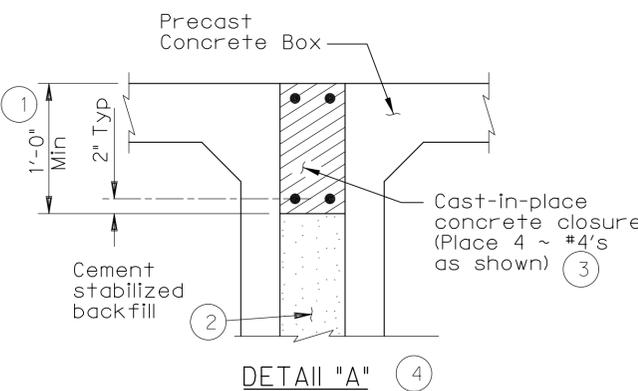
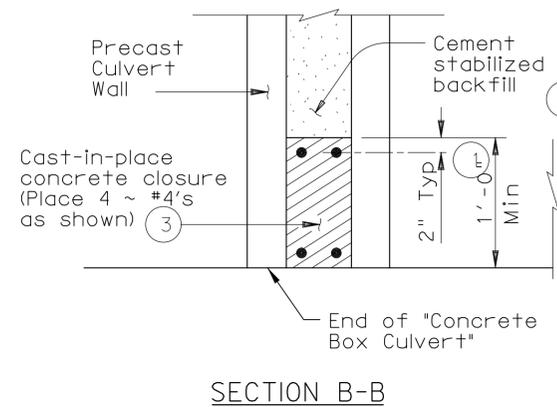
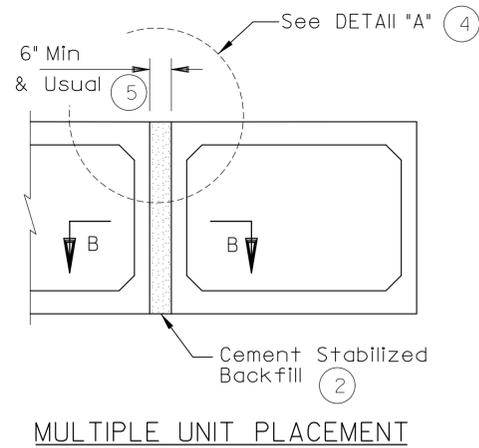
2. THE STREET IS BEING COMPLETELY REPLACED OR IT IS A NEW STREET.



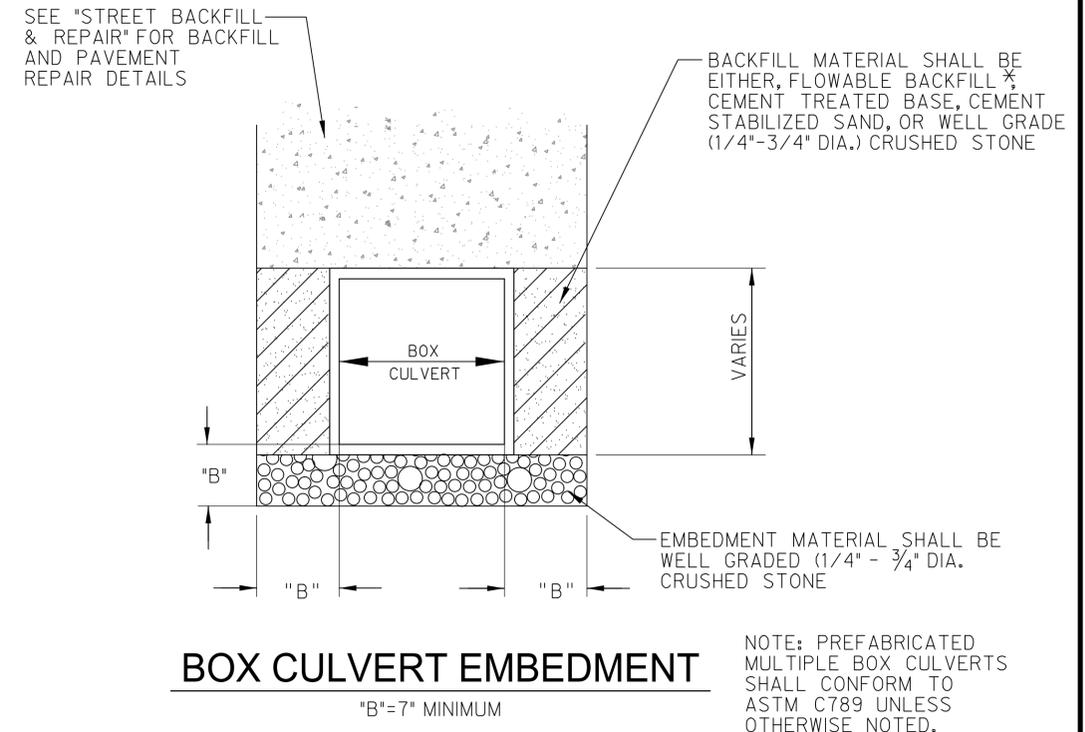
* MECHANICALLY TAMP NATIVE MATERIAL (6\"/>

STREET BACKFILL & REPAIR

N.T.S.
NOTE: SAWCUT TO REPAIR ASPHALT OR CONCRETE PAVEMENT PRIOR TO OPENING THE DITCH IN ORDER TO ENSURE A NEAT STRAIGHT EDGE.



- ① For multiple unit placements the length of the closure for the interior walls may be adjusted as necessary. The length of the top slab, bottom slab, and exterior wall closure shall not be less than 3'-0\"/>
- ② Cement Stabilized Backfill between boxes is considered part of the Box Culvert for payment.
- ③ Any additional concrete and reinforcing required for the closures shall be considered as subsidiary to the Concrete Box Culvert.
- ④ For multiple unit placement with the top slab as the final riding surface, provide wall closure as shown in DETAIL \"A\".
- ⑤ This dimension may be increased with approval of the Engineer to allow the precast boxes to be tunneled or jacked. No payment will be made for any additional material in the gap between adjacent boxes.



* FLOWABLE BACKFILL IS ONLY REQUIRED FOR AREAS TO BE PAVED.

NORMAL SIZE OF PIPE IN INCHES	O.D. OF PIPE BELL IN INCHES CLASS III R.C.P.	MINIMUM TRENCH WALL CLEARANCE \"A\" IN INCHES	WIDTH OF TRENCH (\"X\")		WIDTH OF P.V.M.T. REPLACEMENT * (\"W\") CONC. & ASPHALT **
			MAXIMUM ** IN INCHES	MINIMUM ** IN INCHES	
18	22.5	6	48	36	60
24	29.0	6	48	42	60
30	35.5	6	52	48	72
36	42.5	6	61	55	72
42	49.75	6	68	62	86
48	56.5	8	75	69	93
54	63.25	8	82	76	100
60	70.5	8	89	83	107
66	77.5	8	96	90	114
72	84.5	8	103	97	121
72+	VARIES	8	*	*	*

NOTE: * REFER TO THE PLANS FOR SPECIFIED WIDTH OF REPLACEMENT.
** RECOMMENDED WIDTHS - VARIES BASED ON DEPTH, AND SOIL MATERIAL.

TABLE OF DIMENSIONS FOR WIDTH OF TRENCH AND PAVEMENT REPLACEMENT

SD-2

CERTIFICATION:
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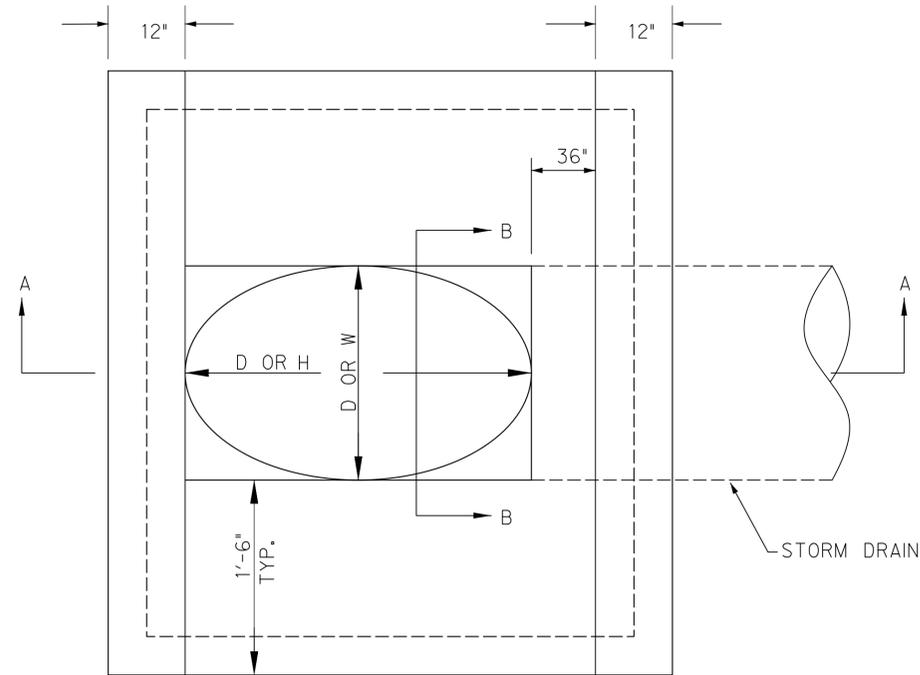
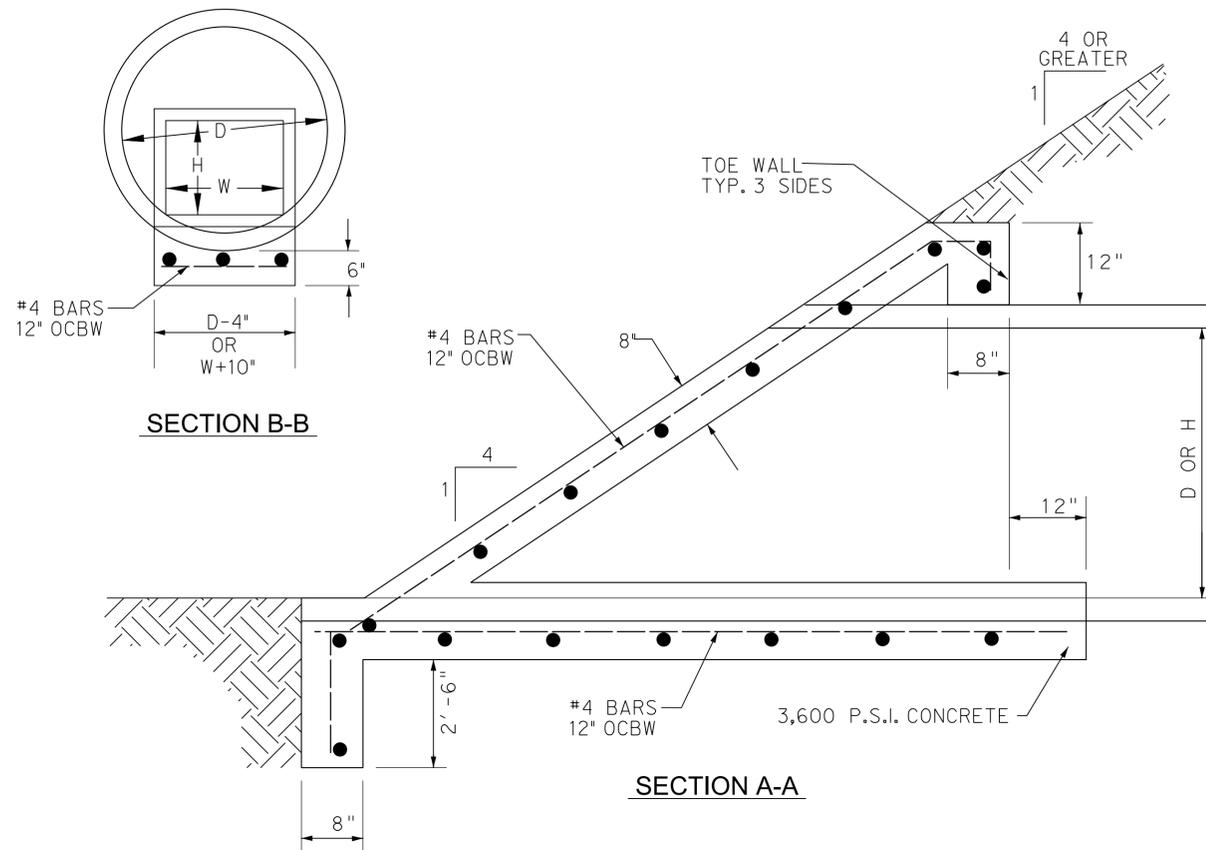
STORM DRAIN STANDARD DETAILS

BACKFILL / EMBEDMENT

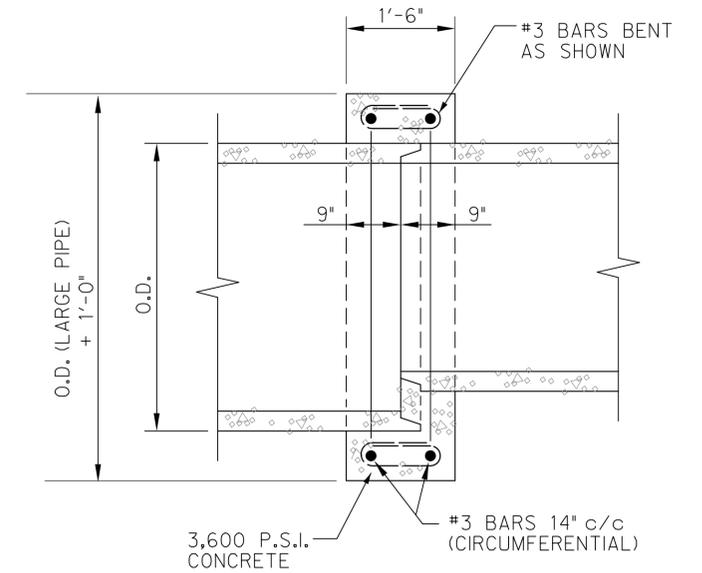
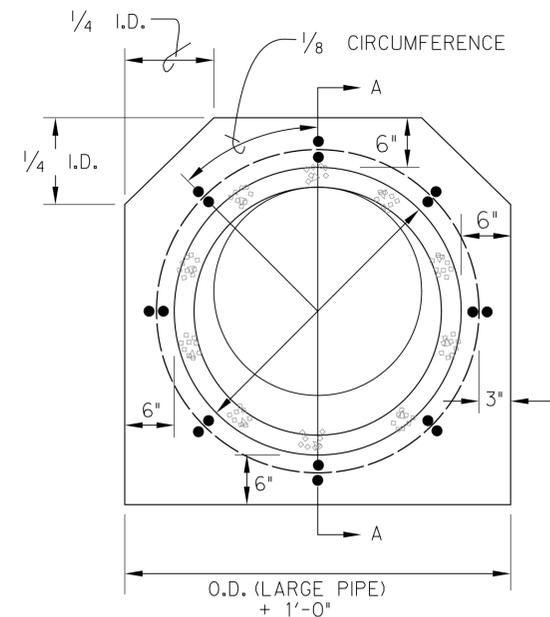


THE TOWN OF NORTHLAKE TEXAS

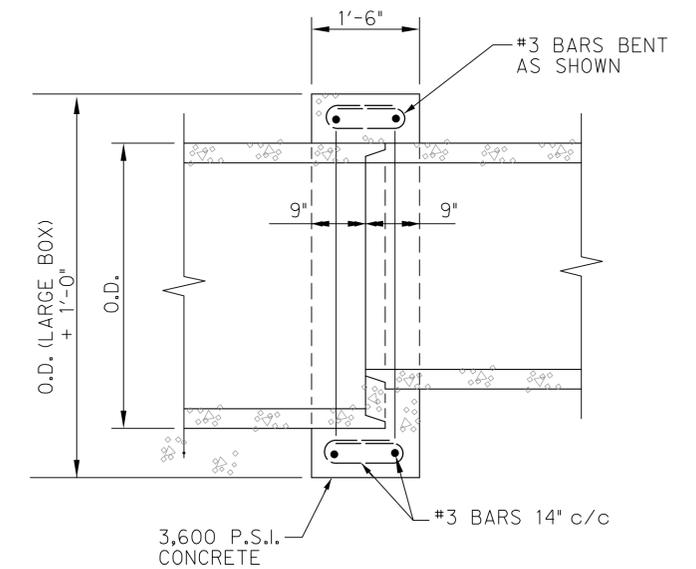
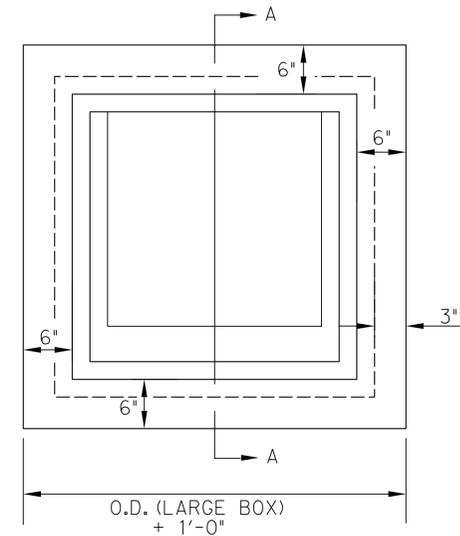
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	AUG 2023	N. T. S.	SD-2	



SLOPED HEADWALL
N. T. S.



CONCRETE COLLAR DETAIL (PIPE)



CONCRETE COLLAR DETAIL (BOX)

CONCRETE COLLAR

N. T. S.

SD-3

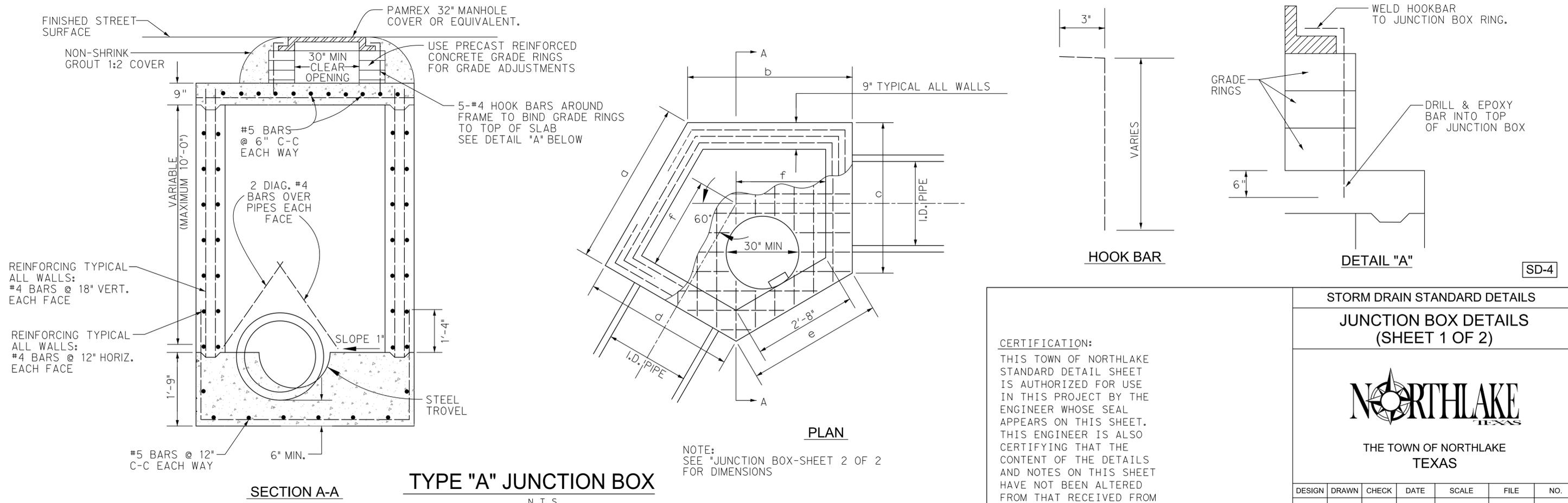
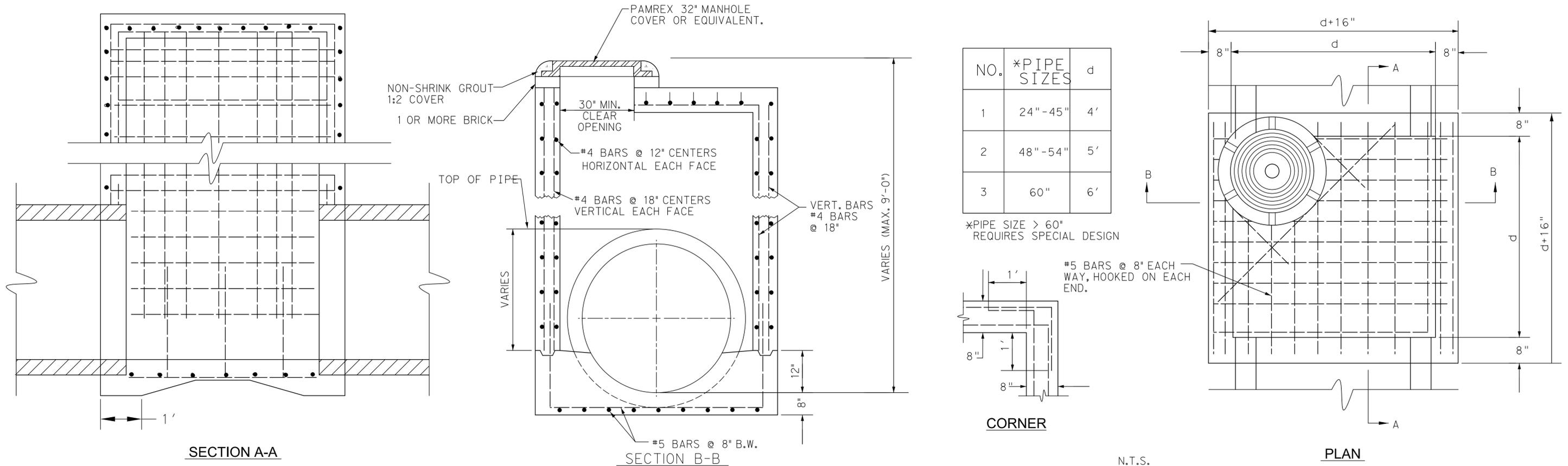
CERTIFICATION:
THIS TOWN OF NORTHLAKE
STANDARD DETAIL SHEET
IS AUTHORIZED FOR USE
IN THIS PROJECT BY THE
ENGINEER WHOSE SEAL
APPEARS ON THIS SHEET.
THIS ENGINEER IS ALSO
CERTIFYING THAT THE
CONTENT OF THE DETAILS
AND NOTES ON THIS SHEET
HAVE NOT BEEN ALTERED
FROM THAT RECEIVED FROM
THE TOWN OF NORTHLAKE.

STORM DRAIN STANDARD DETAILS
HEADWALLS & PIPE COLLARS



THE TOWN OF NORTHLAKE
TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	AUG 2023	N. T. S.	SD-3	—



CERTIFICATION:
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STORM DRAIN STANDARD DETAILS

JUNCTION BOX DETAILS (SHEET 1 OF 2)

NORTHLAKE TEXAS

THE TOWN OF NORTHLAKE TEXAS

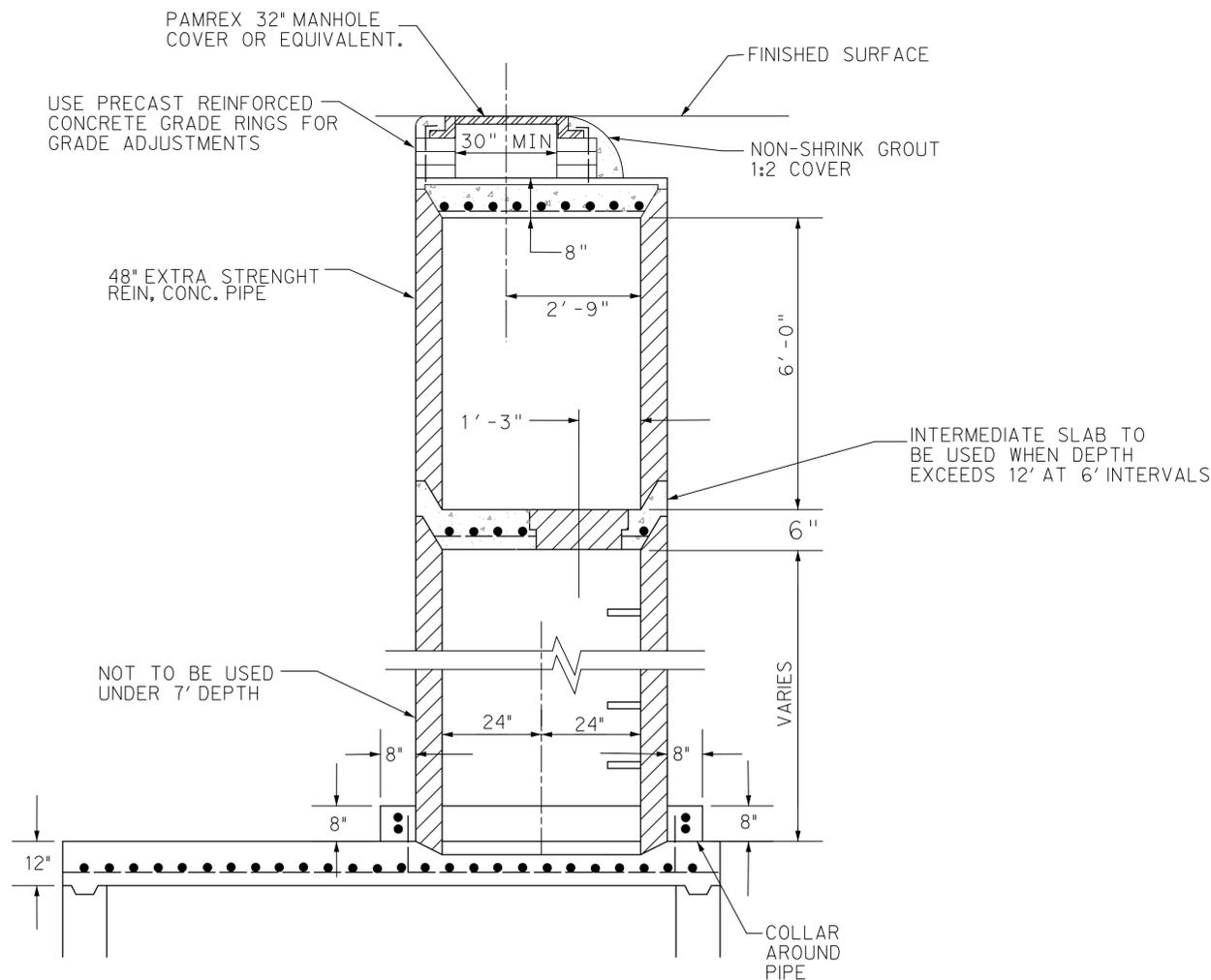
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HALFF	HALFF	HALFF	AUG 2023	N. T. S.	SD-4	

TYPE "A" JUNCTION BOX DIMENSIONS

NO.	PIPE SIZES	a	b	c	d	e	f
1	18"-24"	4'-5½"	4'-5½"	4'-2"	4'-2"	3'-6½"	2'-5"
2	27"-33"	4'-11⅝"	4'-11⅝"	5'-1"	5'-1"	3'-6¾"	2'-8"
3	36"-42"	5'-5⅝"	5'-5⅝"	5'-11¼"	5'-11¼"	3'-6¾"	2'-11"
4	48"-54"	6'-1¾"	6'-1¾"	7'-1¼"	7'-1¼"	3'-6½"	3'-3"
5	60"-66"	6'-9⅞"	5'-9⅞"	8'-3¼"	8'-3¼"	3'-6½"	3'-7"
6	72"-78"	7'-6"	7'-6"	9'-5¼"	9'-5¼"	3'-6½"	3'-11"
7	84"-96"	8'-6⅞"	8'-6⅞"	11'-2¼"	11'-2¼"	3'-6½"	4'-5½"

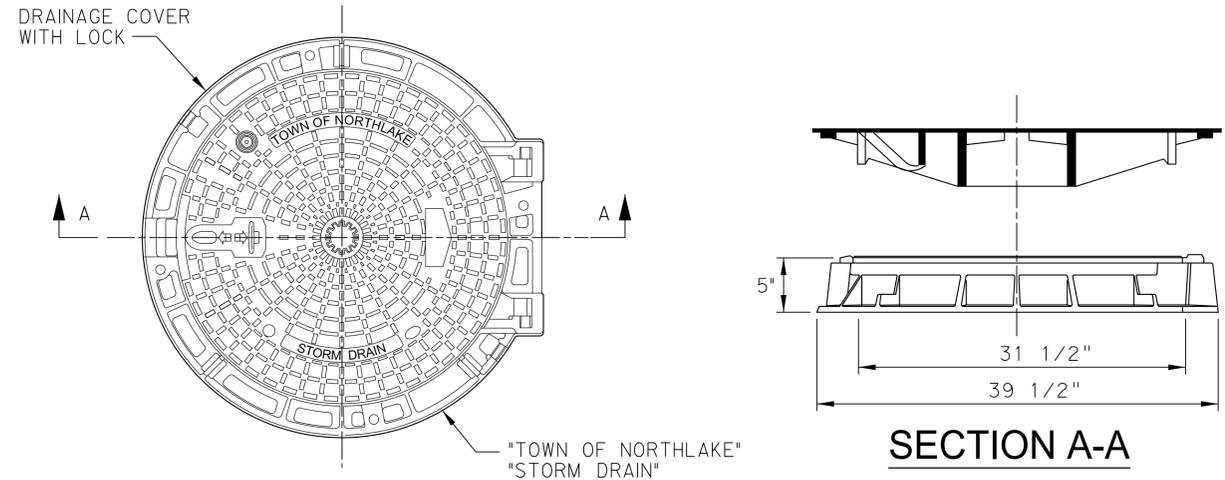
GENERAL NOTES:

- (A) All construction shall be in accordance with the standard specifications of the TOWN OF NORTHLAKE, which has also adopted the Fifth Edition of the "Standard Specifications for Public Works Construction - North Central Texas" herein referred to as "COG" specifications. Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888. (817) 640-3300.
- (B) All manholes shall be poured in place. Precast junction boxes or manholes are not allowed.
- (C) Concrete shall be made with a minimum of 5 sacks of cement and have a minimum compressive strength of 3,600 PSI at 28 days.
- (D) All reinforcing steel shall be new, neat, billet-steel per ASTM designation A-615, Grade 60, and shall be detailed and placed per ACI Manuals SP-88 and 318, latest additions. All reinforcing steel shall have minimum 15 inch lap splices, unless noted otherwise on the plans.
- (E) The Contractor shall use a liquid membrane-forming curing compound per COG item 303.2.13.1.1 specifications.
- (F) Light broom finish required on all exposed manhole tops.
- (G) Manhole steps, frame and cover shall be installed as per the details on this sheet.
- (H) Staked manhole extension shall be installed, where specified on the plans and as per the details on this sheet.
- (I) Manholes shall be constructed per details on this sheet and COG item 502.1.4 specifications.



STACKED JUNCTION BOX EXTENSION

N.T.S.



RING & COVER NOTES:

- 1. THE STD. MANHOLE COVER SHALL BE PAMREX 32" RING AND COVER NO. CDP480EHDR4 OR EQUAL
- 2. APPROXIMATE WEIGHT OF RING=107 LBS. AND COVER=162 LBS.
- 3. MANHOLE COVER AND NECK SHALL HAVE A MINIMUM CLEAR OPENING OF 30".

STANDARD 32" PAMREX RING & COVER

NOT TO SCALE

SD-5

CERTIFICATION:
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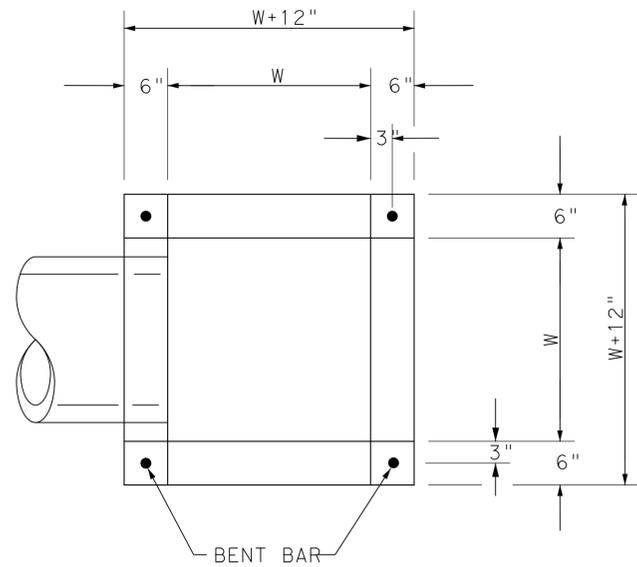
STORM DRAIN STANDARD DETAILS

JUNCTION BOX DETAILS (SHEET 2 OF 2)



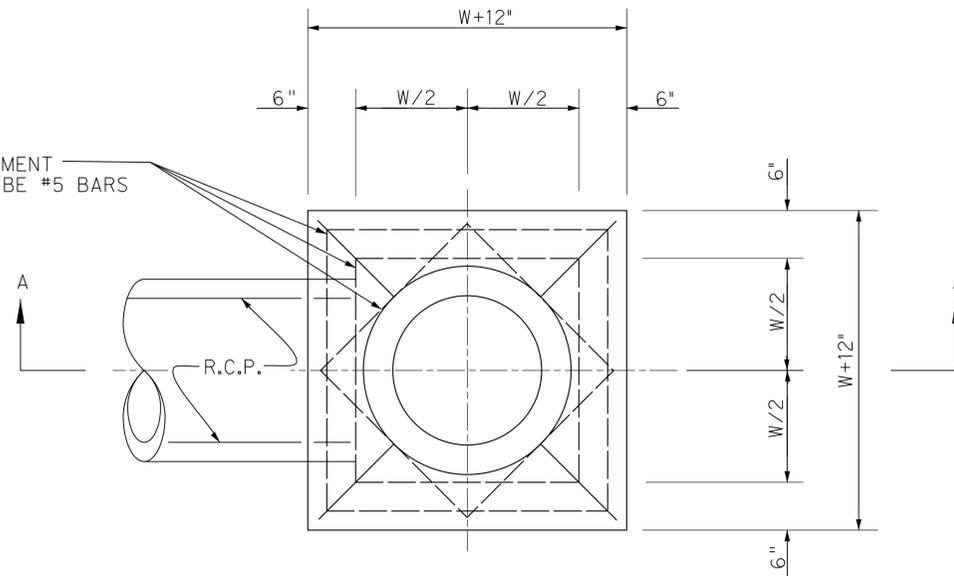
THE TOWN OF NORTHLAKE TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
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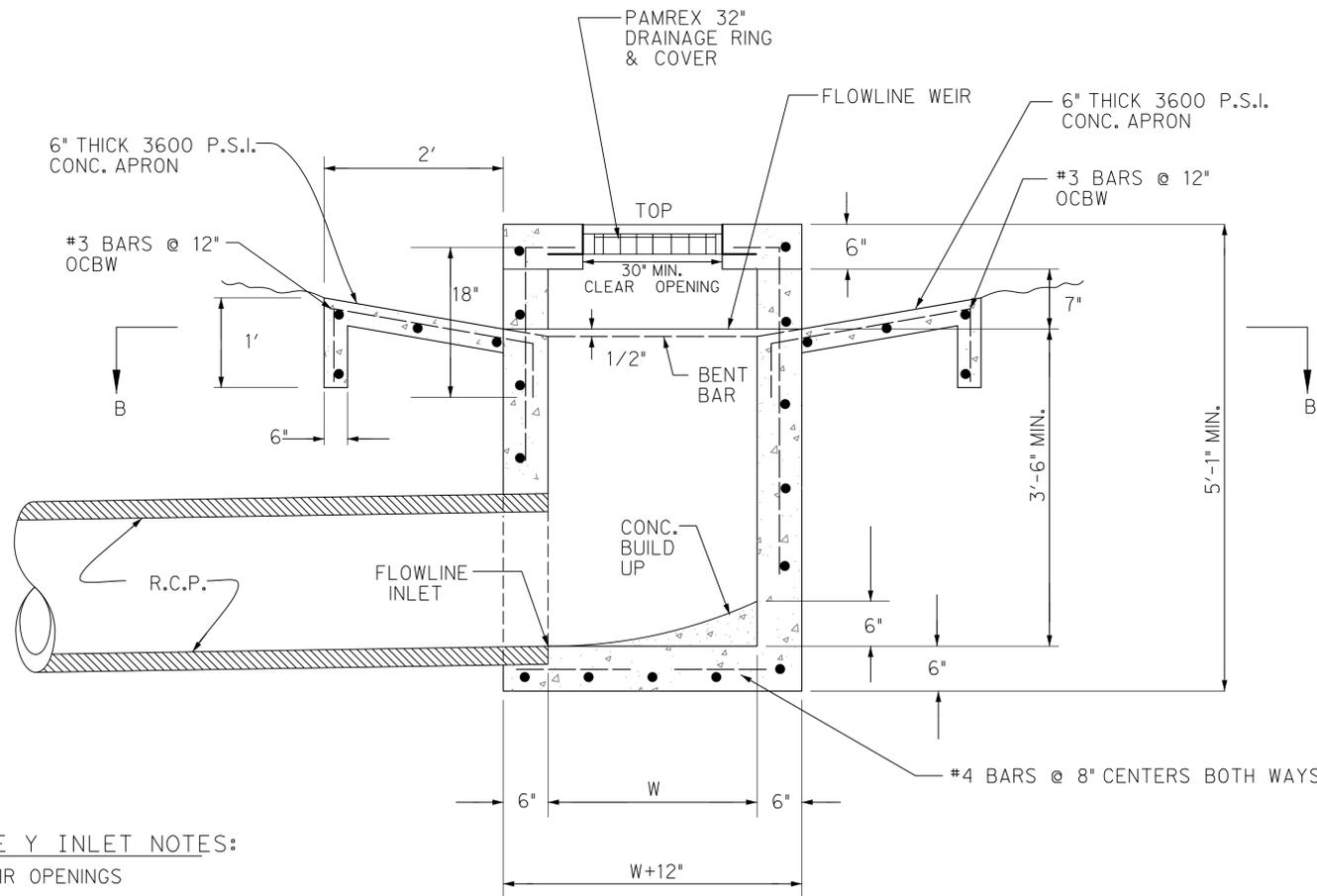


SECTION B-B

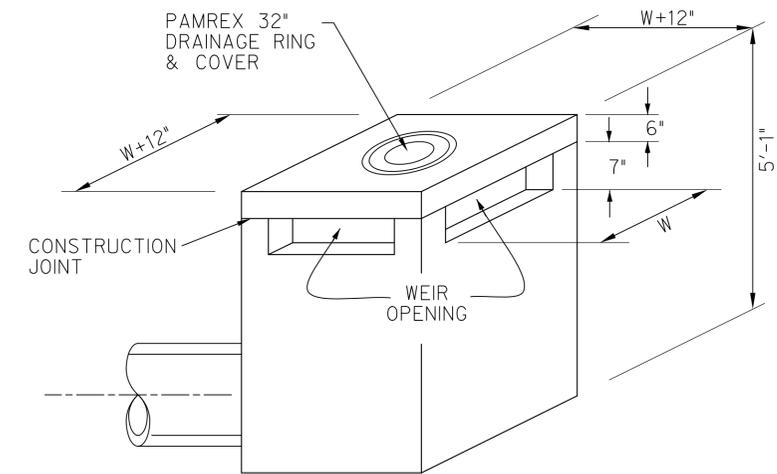
ALL REINFORCEMENT IN TOP SHALL BE #5 BARS



PLAN



SECTION A-A



ISOMETRIC DETAIL

TYPE Y AND SPECIAL TYPE Y INLET NOTES:

1. SPECIAL TYPE Y INLET HAS WEIR OPENINGS REQUIRED ON TWO SIDES.
2. TYPE Y INLET HAS WEIR OPENINGS REQUIRED ON FOUR SIDES.
3. THE MINIMUM OPENINGS FOR TYPE Y AND SPECIAL TYPE Y INLETS IS W=3 FEET
4. ALL REINFORCING SHALL BE WITH #4 BARS @ 12 INCH CENTERS, EXCEPT IN TOP.

TYPE Y & SPECIAL TYPE Y INLET

N.T.S.

NOTE: MINIMUM DIMENSION FOR "W" = 36 INCHES

SD-6

CERTIFICATION:
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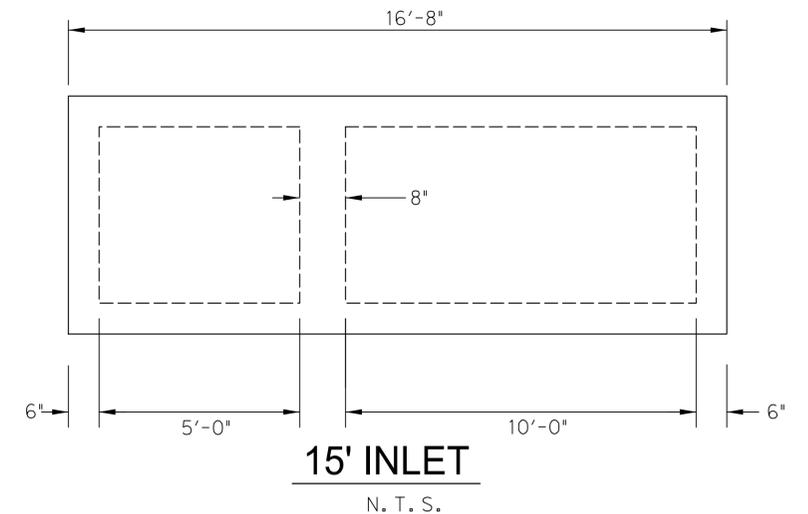
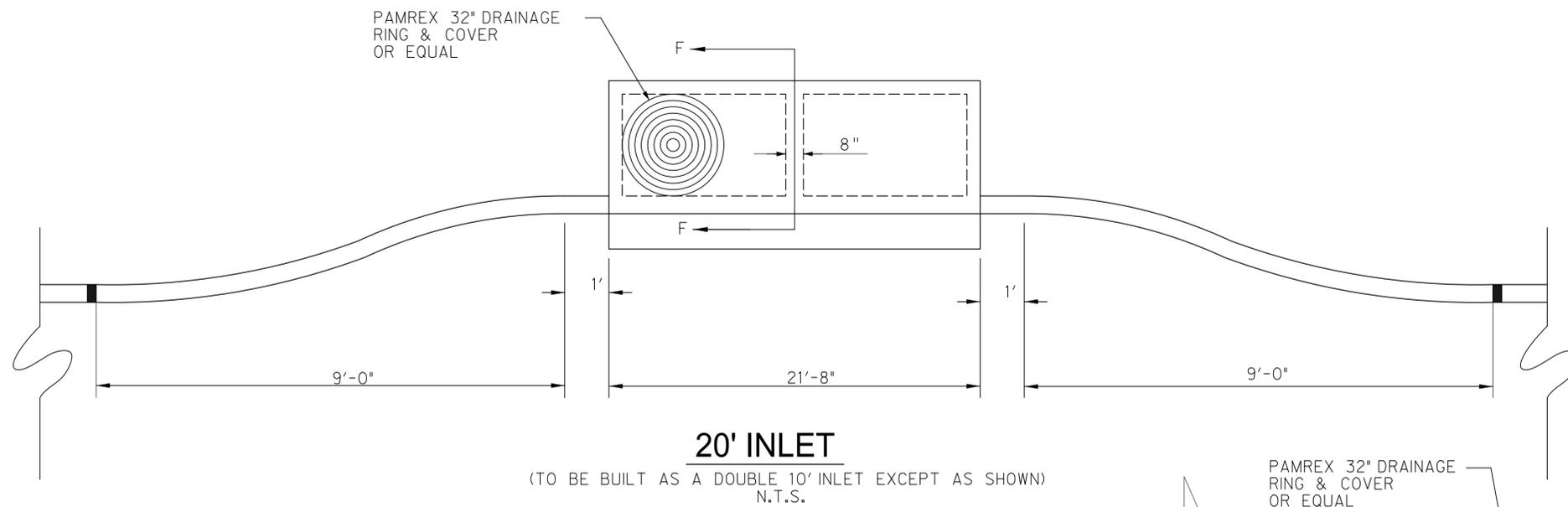
STORM DRAIN STANDARD DETAILS

INLETS
(SHEET 1 OF 3)



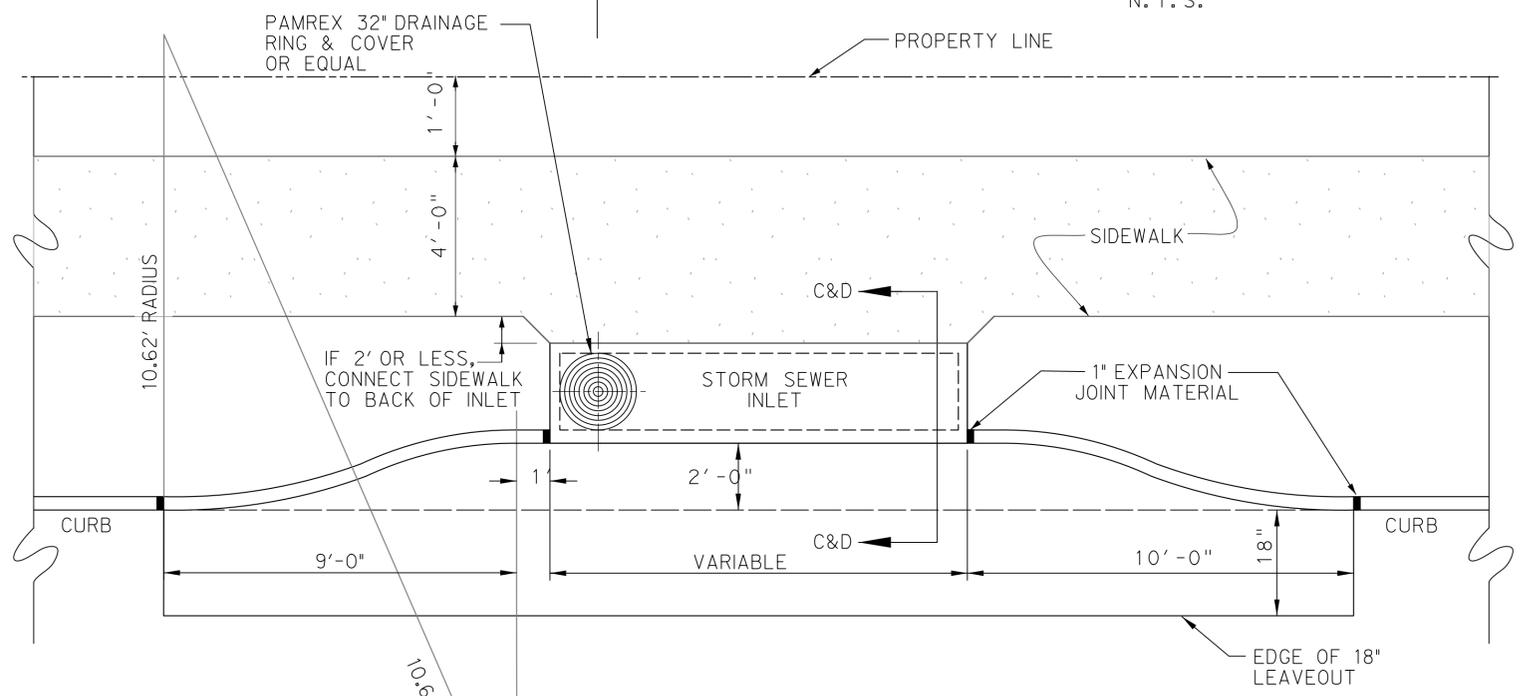
THE TOWN OF NORTHLAKE
TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
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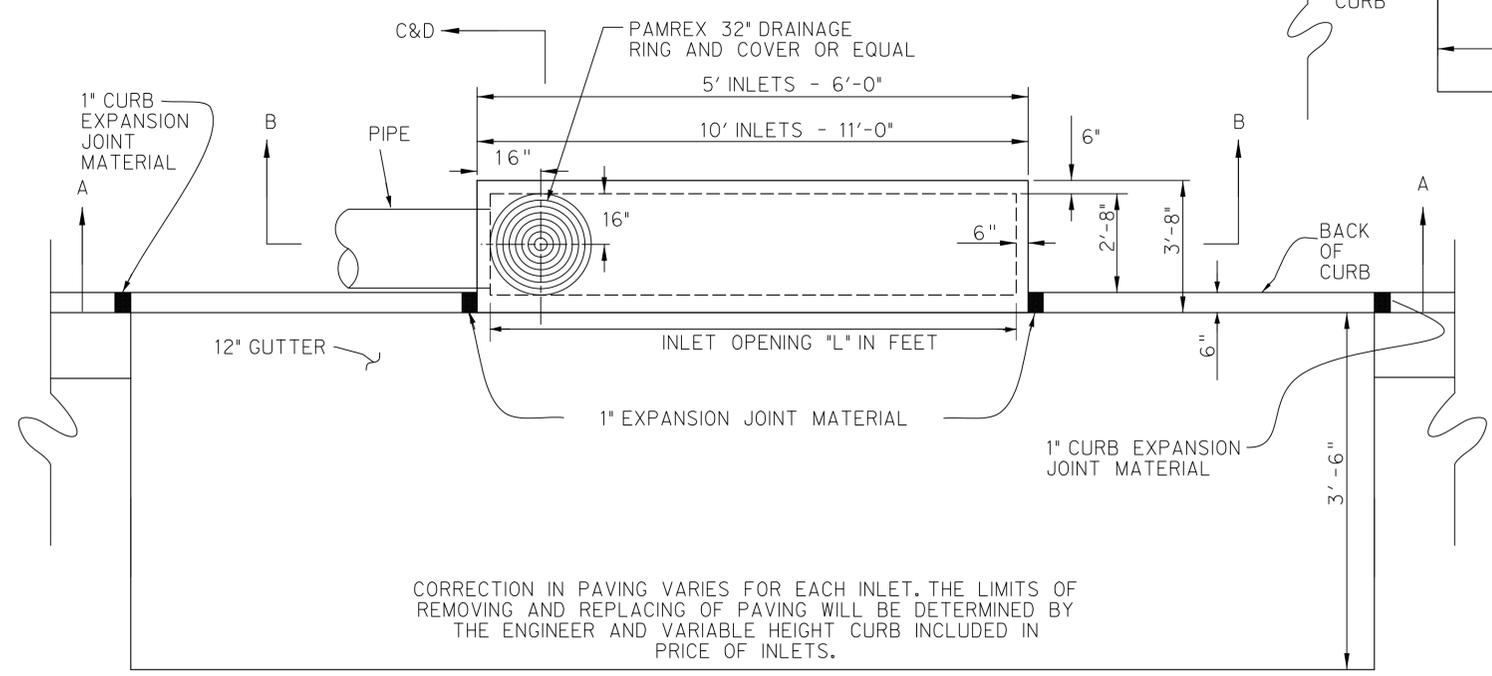


20' INLET
 (TO BE BUILT AS A DOUBLE 10' INLET EXCEPT AS SHOWN)
 N.T.S.

15' INLET
 N. T. S.



**STANDARD RECESSED INLET W/18\"/>
 N. T. S.**



**STANDARD CURB INLET W/36\"/>
 N.T.S.**

CORRECTION IN PAVING VARIES FOR EACH INLET. THE LIMITS OF REMOVING AND REPLACING OF PAVING WILL BE DETERMINED BY THE ENGINEER AND VARIABLE HEIGHT CURB INCLUDED IN PRICE OF INLETS.

NOTE:
 1. MANHOLE COVER AND NECK SHALL HAVE A MINIMUM CLEAR OPENING OF 30\".

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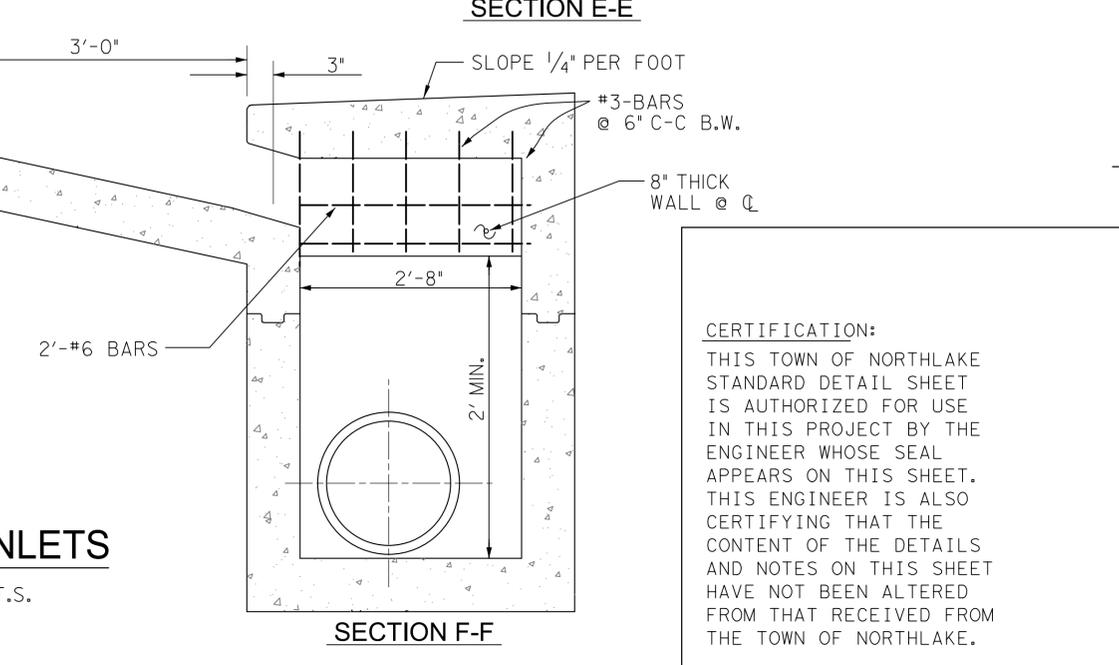
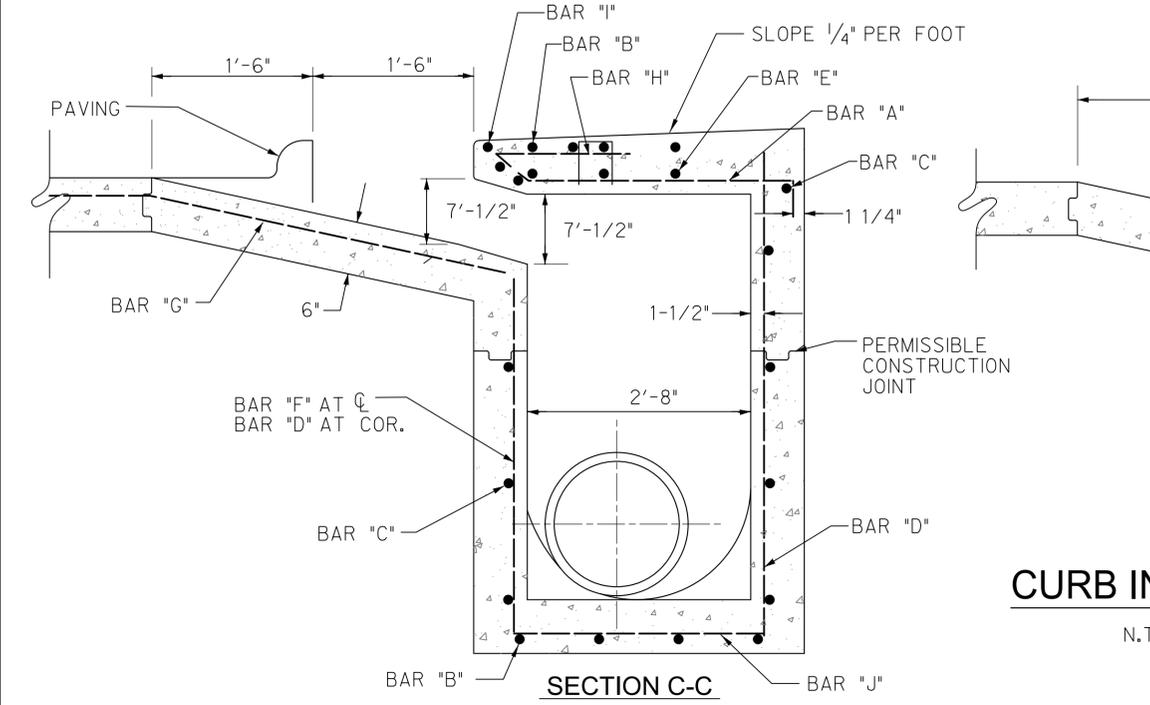
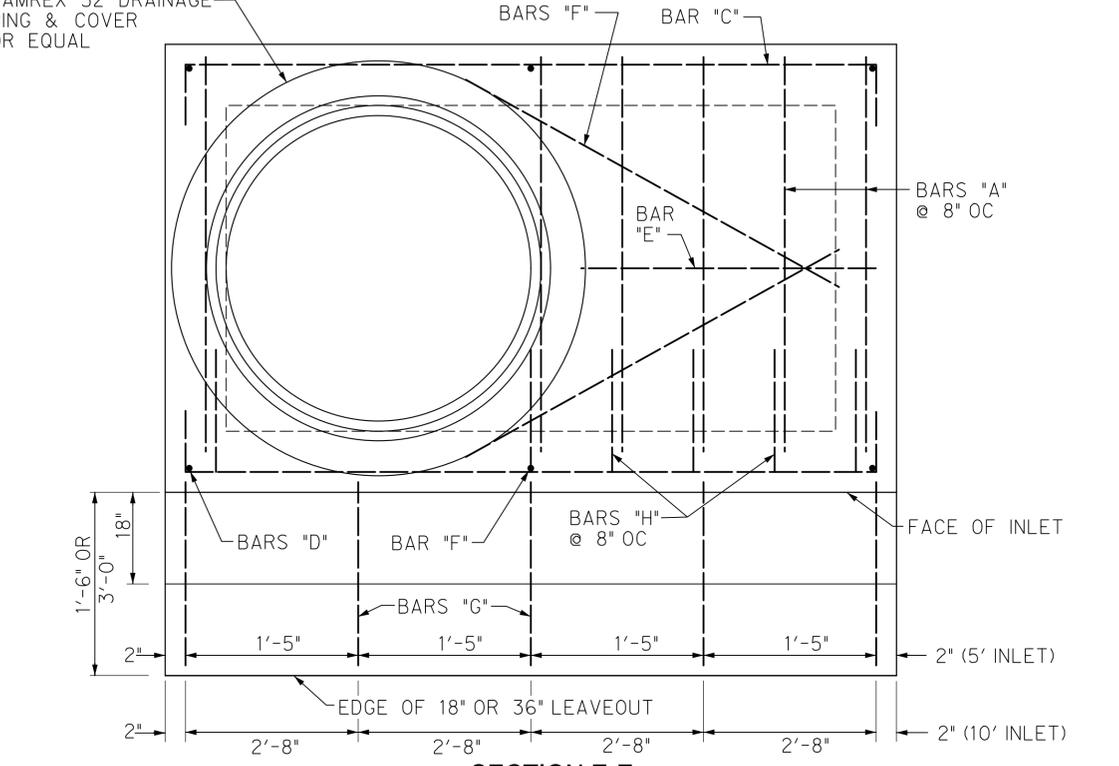
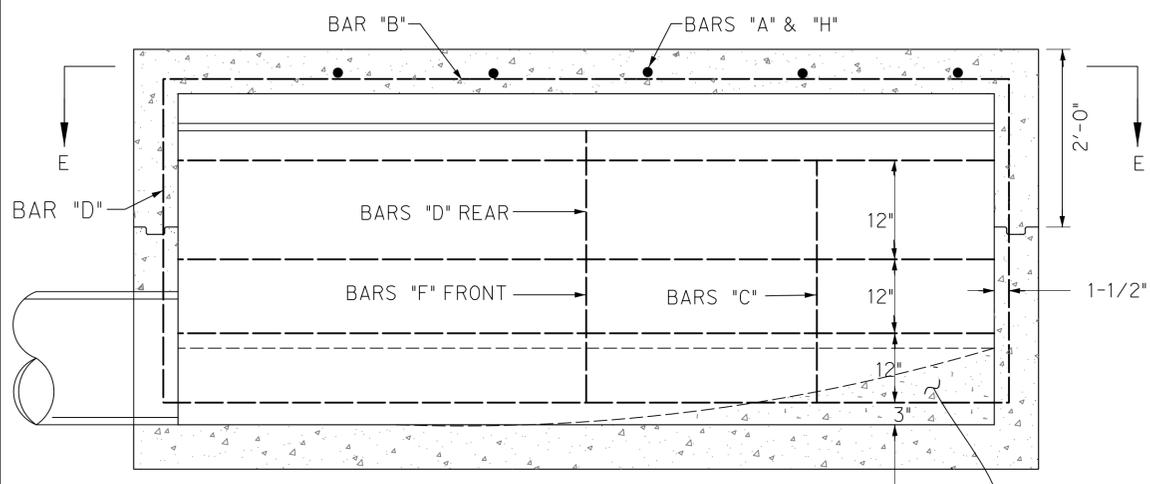
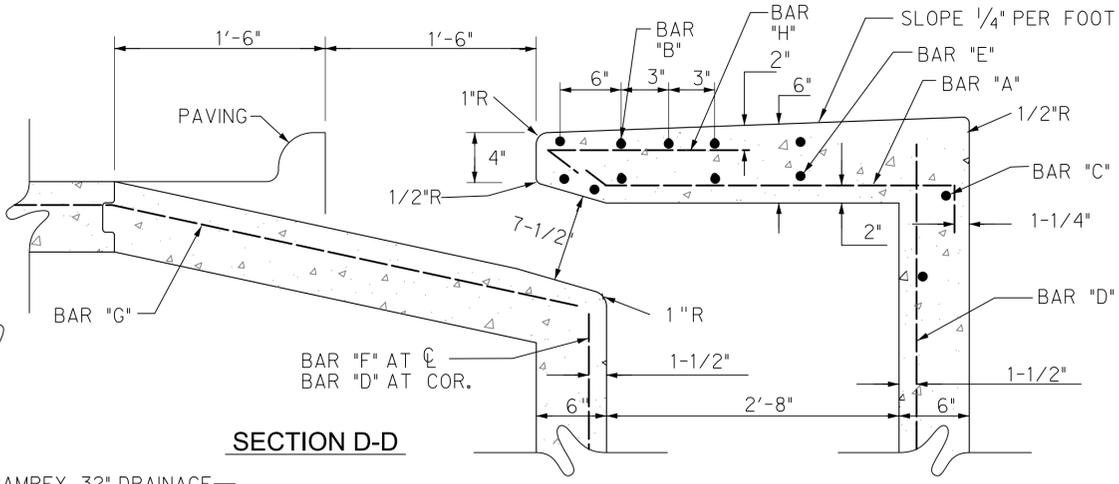
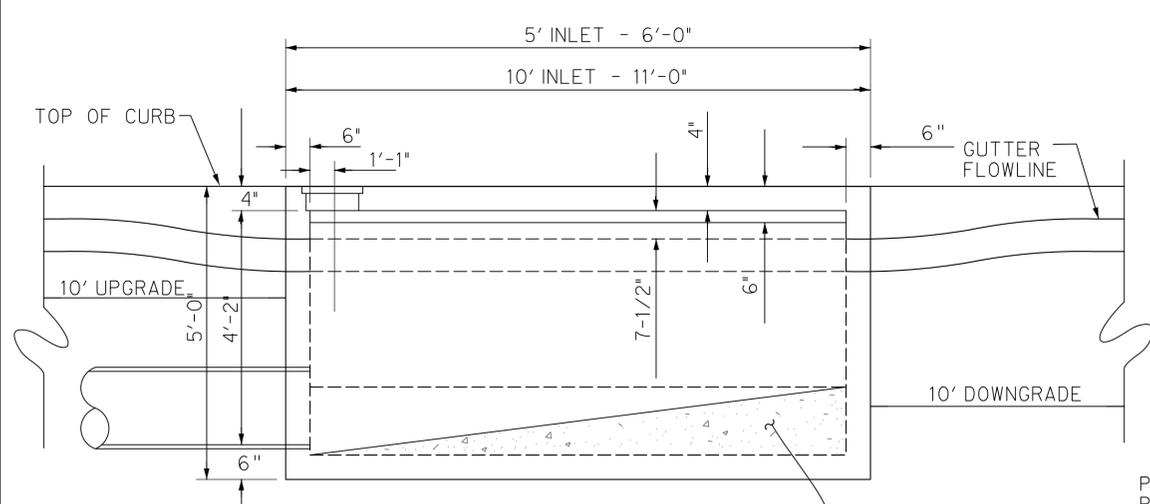
SD-7

STORM DRAIN STANDARD DETAILS
INLETS
 (SHEET 2 OF 3)



THE TOWN OF NORTHLAKE TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	AUG 2023	N. T. S.	SD-7	—



BAR	DESCRIPTION
A	5' INLET -6 NO. 4 10' INLET -13 NO. 4
B	5' INLET -12 NO. 4 10' INLET -13 NO. 4
C	5' INLET -8 NO. 4 10' INLET -8 NO. 4
D	5' INLET -5 NO. 4 10' INLET -7 NO. 4
E	5' INLET -1 NO. 3 10' INLET -1 NO. 3
F	5' INLET -3 NO. 4 10' INLET -4 NO. 4
G	5' INLET -5 NO. 3 10' INLET -7 NO. 3
H	5' INLET -6 NO. 4 10' INLET -13 NO. 4
I	5' INLET -1 NO. 3 10' INLET -1 NO. 3
J	5' INLET -6 NO. 4 10' INLET -11 NO. 4

REINFORCING STEEL SCHEDULE

N. T. S. SD-8

CURB INLETS

N.T.S.

CERTIFICATION:
THIS TOWN OF NORTHLAKE STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE TOWN OF NORTHLAKE.

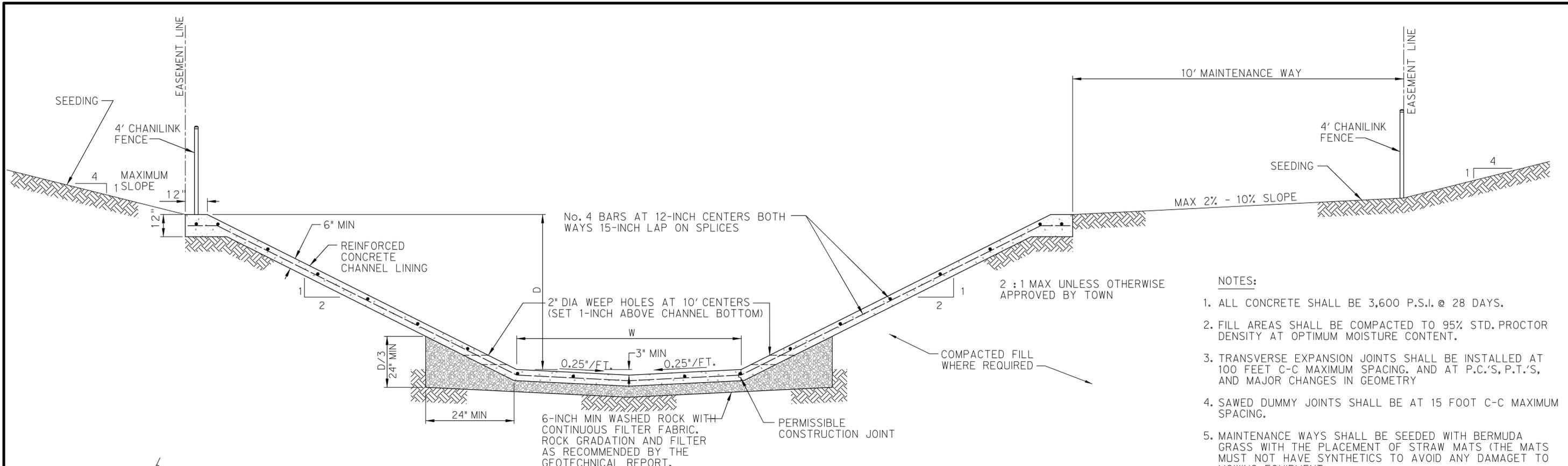
STORM DRAIN STANDARD DETAILS

**INLETS
(SHEET 3 OF 3)**



THE TOWN OF NORTHLAKE
TEXAS

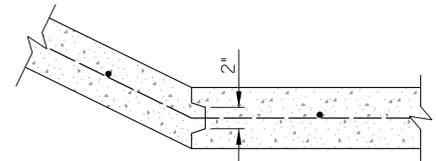
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	AUG 2023	N. T. S.	SD-8	



- NOTES:**
1. ALL CONCRETE SHALL BE 3,600 P.S.I. @ 28 DAYS.
 2. FILL AREAS SHALL BE COMPACTED TO 95% STD. PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT.
 3. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT 100 FEET C-C MAXIMUM SPACING, AND AT P.C.'S, P.T.'S, AND MAJOR CHANGES IN GEOMETRY
 4. SAWED DUMMY JOINTS SHALL BE AT 15 FOOT C-C MAXIMUM SPACING.
 5. MAINTENANCE WAYS SHALL BE SEEDED WITH BERMUDA GRASS WITH THE PLACEMENT OF STRAW MATS (THE MATS MUST NOT HAVE SYNTHETICS TO AVOID ANY DAMAGE TO MOWING EQUIPMENT.

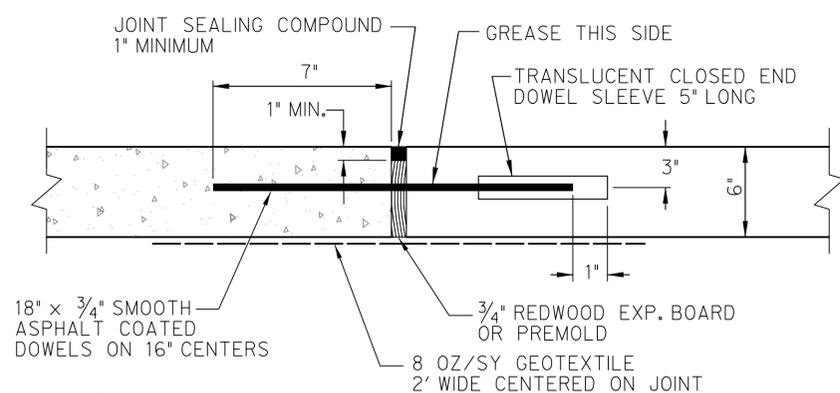
REINFORCED CONCRETE CHANNEL SECTION

NOT TO SCALE



CONSTRUCTION JOINT

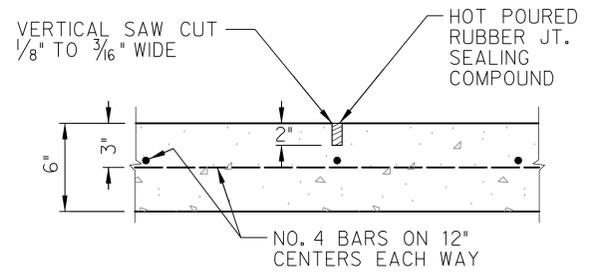
NOT TO SCALE



NOTE:
SLEEVES FOR DOWELS SHALL HAVE AN INSIDE DIAMETER OF 1/16-INCH GREATER THAN THE DIAMETER OF THE DOWELS AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.

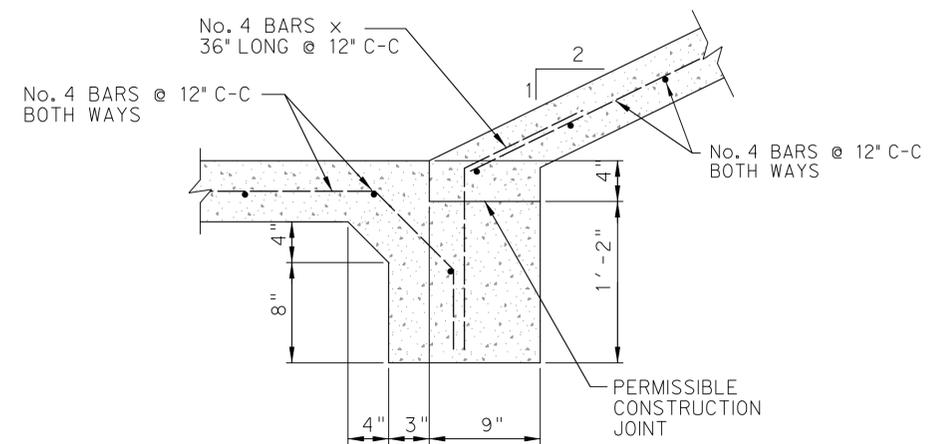
TRANSVERSE EXPANSION JOINT

NOT TO SCALE



SAWED DUMMY JOINT

NOT TO SCALE



ALTERNATE CONSTRUCTION JOINT

NOT TO SCALE

SD-9

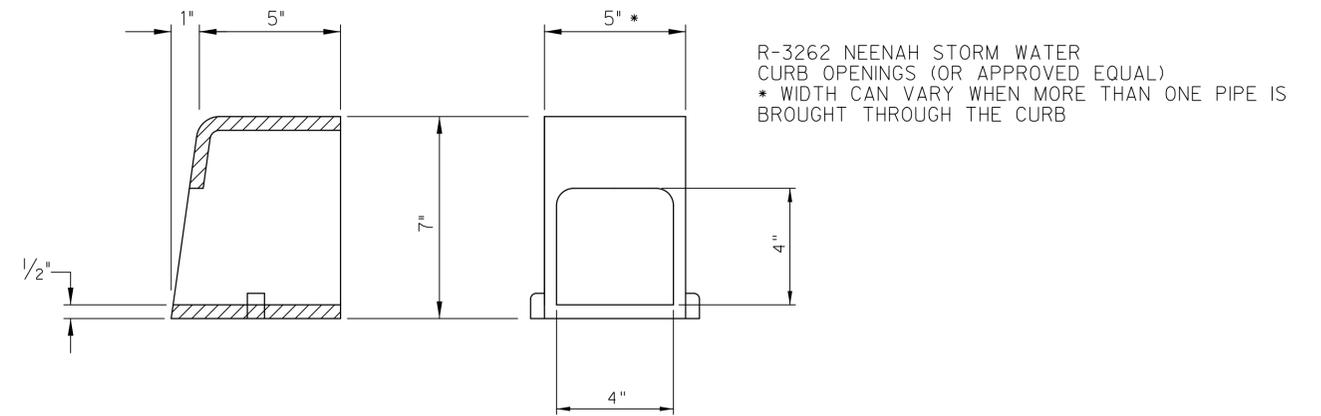
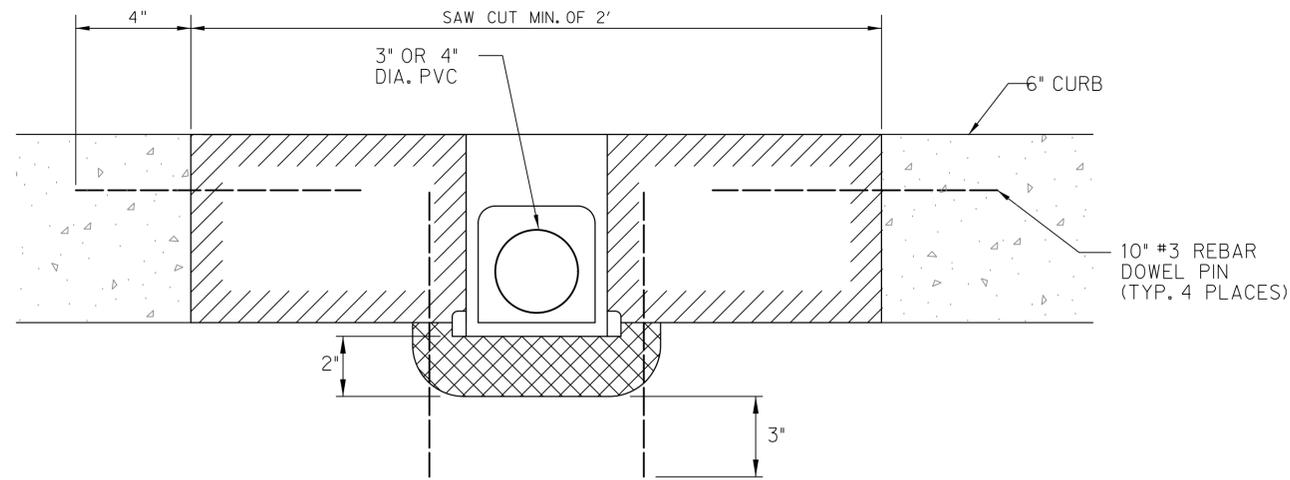
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STORM DRAIN STANDARD DETAILS

FULL CHANNEL LINING CONCRETE REINFORCED

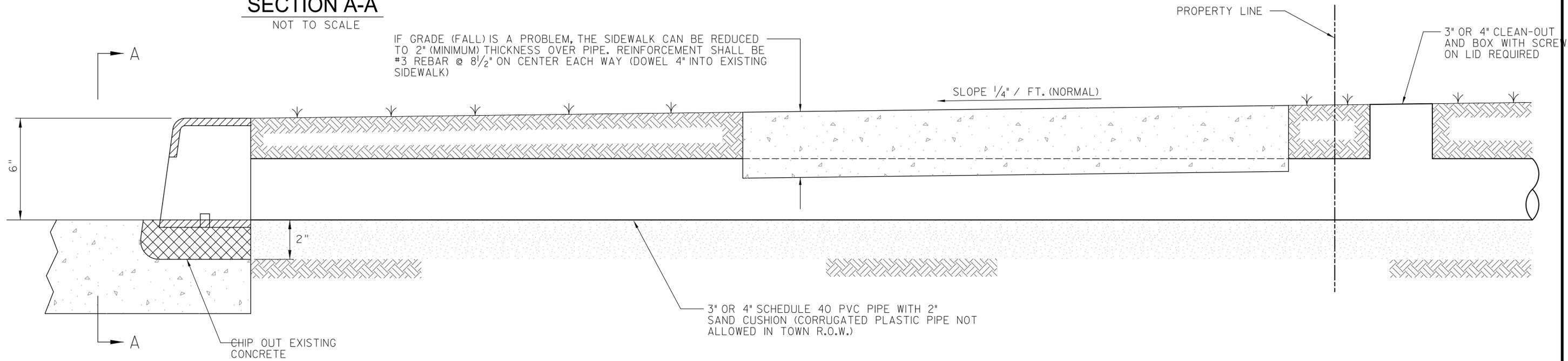
THE TOWN OF NORTHLAKE TEXAS

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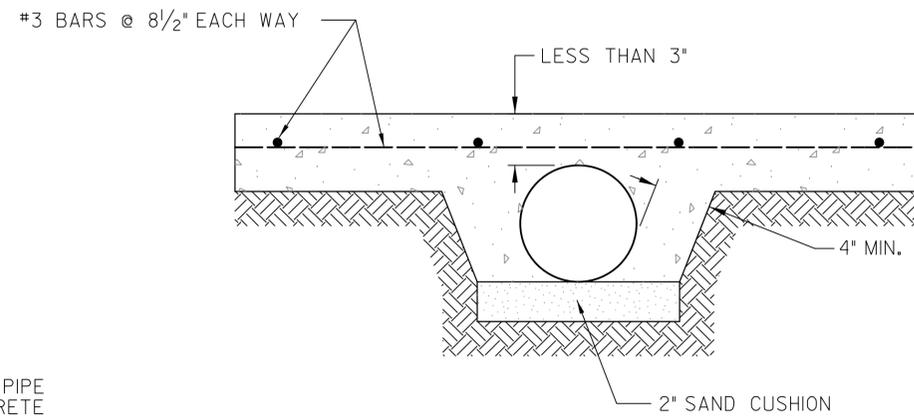


SECTION A-A
NOT TO SCALE

IF GRADE (FALL) IS A PROBLEM, THE SIDEWALK CAN BE REDUCED TO 2" (MINIMUM) THICKNESS OVER PIPE. REINFORCEMENT SHALL BE #3 REBAR @ 8 1/2" ON CENTER EACH WAY (DOWEL 4" INTO EXISTING SIDEWALK)



STORM WATER THROUGH CURB DETAIL
NOT TO SCALE



CONCRETE ENCASED DETAIL

(REQUIRED WHEN LESS THAN 3" CONCRETE OVER PIPE)

NOT TO SCALE

NOTES:

1. REMOVE AND REPLACE ONE 5 FOOT SECTION OF SIDEWALK.
2. IF PIPE COMING FROM PRIVATE PROPERTY IS LARGER THAN 4" IN DIAMETER, A "MANIFOLD" WILL BE USED SO THAT ONLY 3-INCH OR 4-INCH PIPES WILL BE BROUGHT TO AND THROUGH THE SIDEWALK CURB.
3. IF THICKNESS OF SIDEWALK IS LESS THAN 3-INCHES OVER THE PIPE (I.E. WHEN SIDEWALK IS ADJACENT TO CURB), THEN USE CONCRETE ENCASED PIPE (SEE DETAIL).
4. THERE SHALL BE A DUMMY JOINT IN THE SIDEWALK AT CENTERLINE OF DRAIN PIPE.
5. ROOF DRAIN DISCHARGE TO CURB ALLOWED BY TOWN APPROVAL.

SD-10

STORM DRAIN STANDARD DETAILS

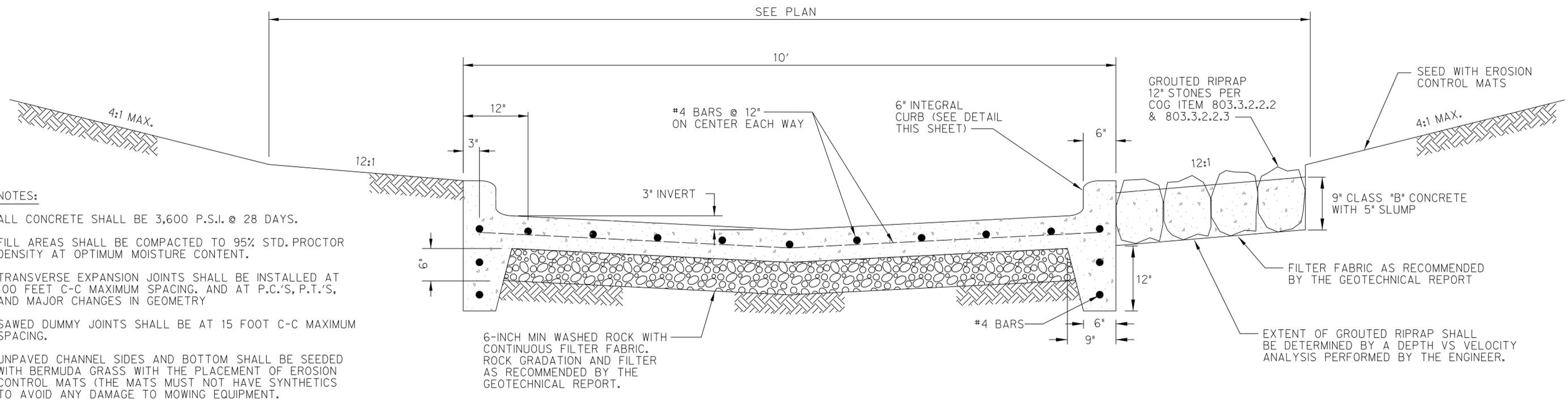
ROOF DRAIN DISCHARGE TO CURB



THE TOWN OF NORTHLAKE
TEXAS

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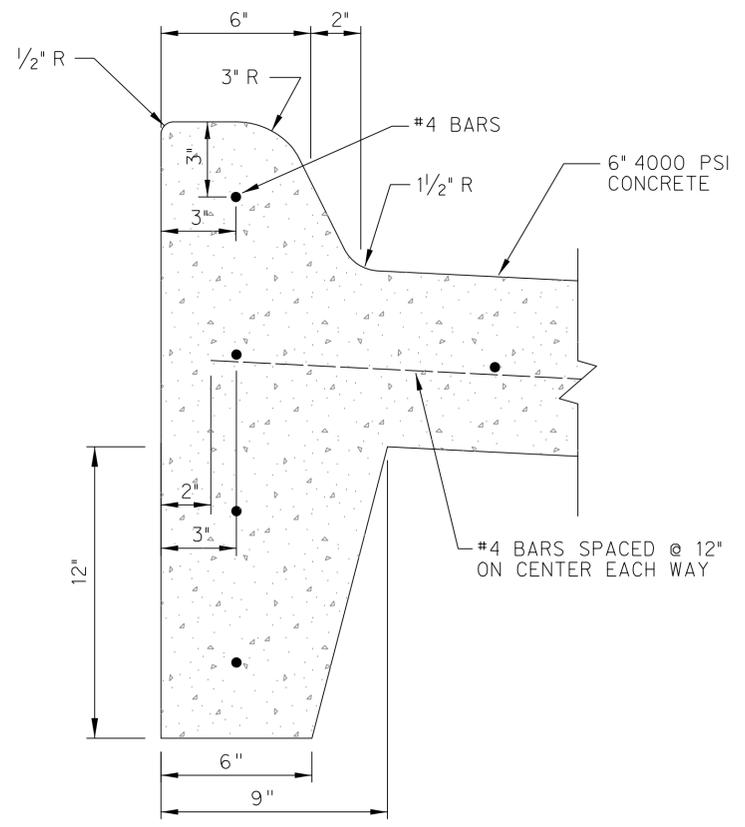
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CONCRETE PILOT CHANNEL DETAIL

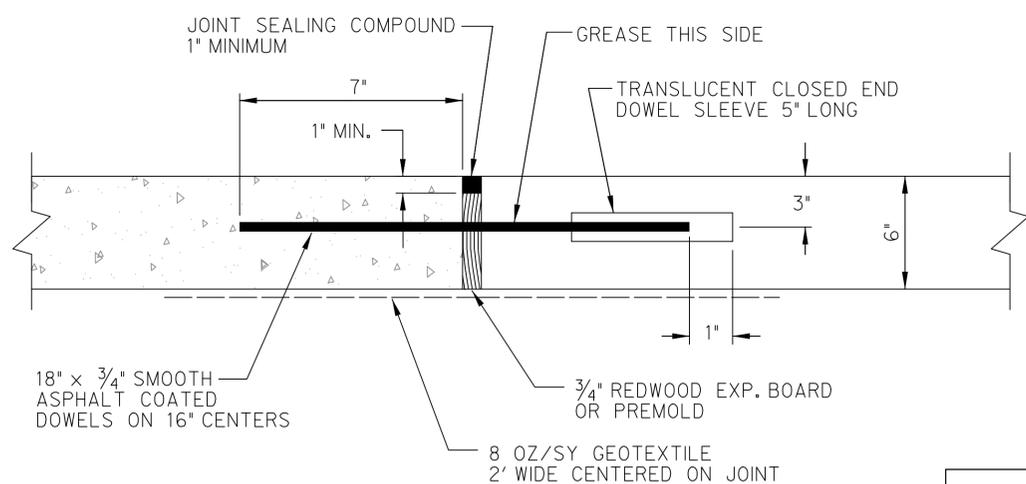
NOT TO SCALE

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 4. SAWED DUMMY JOINTS SHALL BE AT 15 FOOT C-C MAXIMUM SPACING.
 5. UNPAVED CHANNEL SIDES AND BOTTOM SHALL BE SEED WITH BERMUDA GRASS WITH THE PLACEMENT OF EROSION CONTROL MATS (THE MATS MUST NOT HAVE SYNTHETICS TO AVOID ANY DAMAGE TO MOWING EQUIPMENT.



6" INTEGRAL CONCRETE CURB

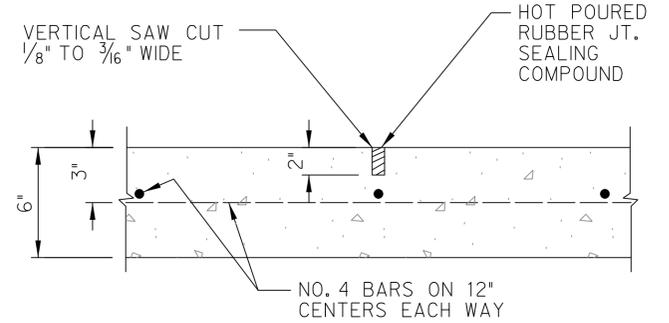
NOT TO SCALE



TRANSVERSE EXPANSION JOINT

NOT TO SCALE

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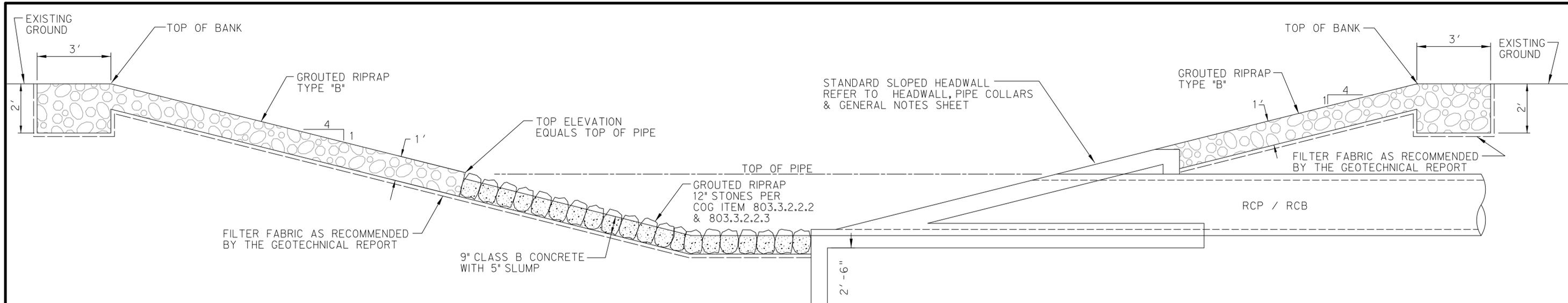
SAWED DUMMY JOINT

NOT TO SCALE

SD-11

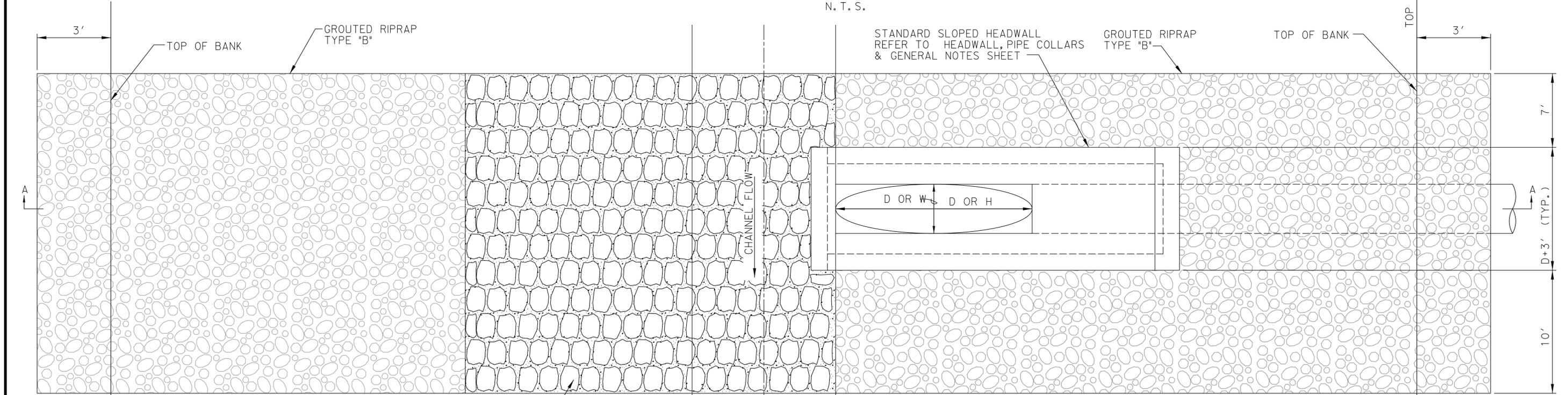
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STORM DRAIN STANDARD DETAILS						
TYPICAL PILOT CHANNEL						
<p>THE TOWN OF NORTHLAKE TEXAS</p>						
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	AUG 2023	N. T. S.	SD-11	—



SECTION A-A
STORM DRAIN OUTFALL PERPENDICULAR TO CENTERLINE OF CREEK

N. T. S.



STORM DRAIN OUTFALL PLAN VIEW

N. T. S.

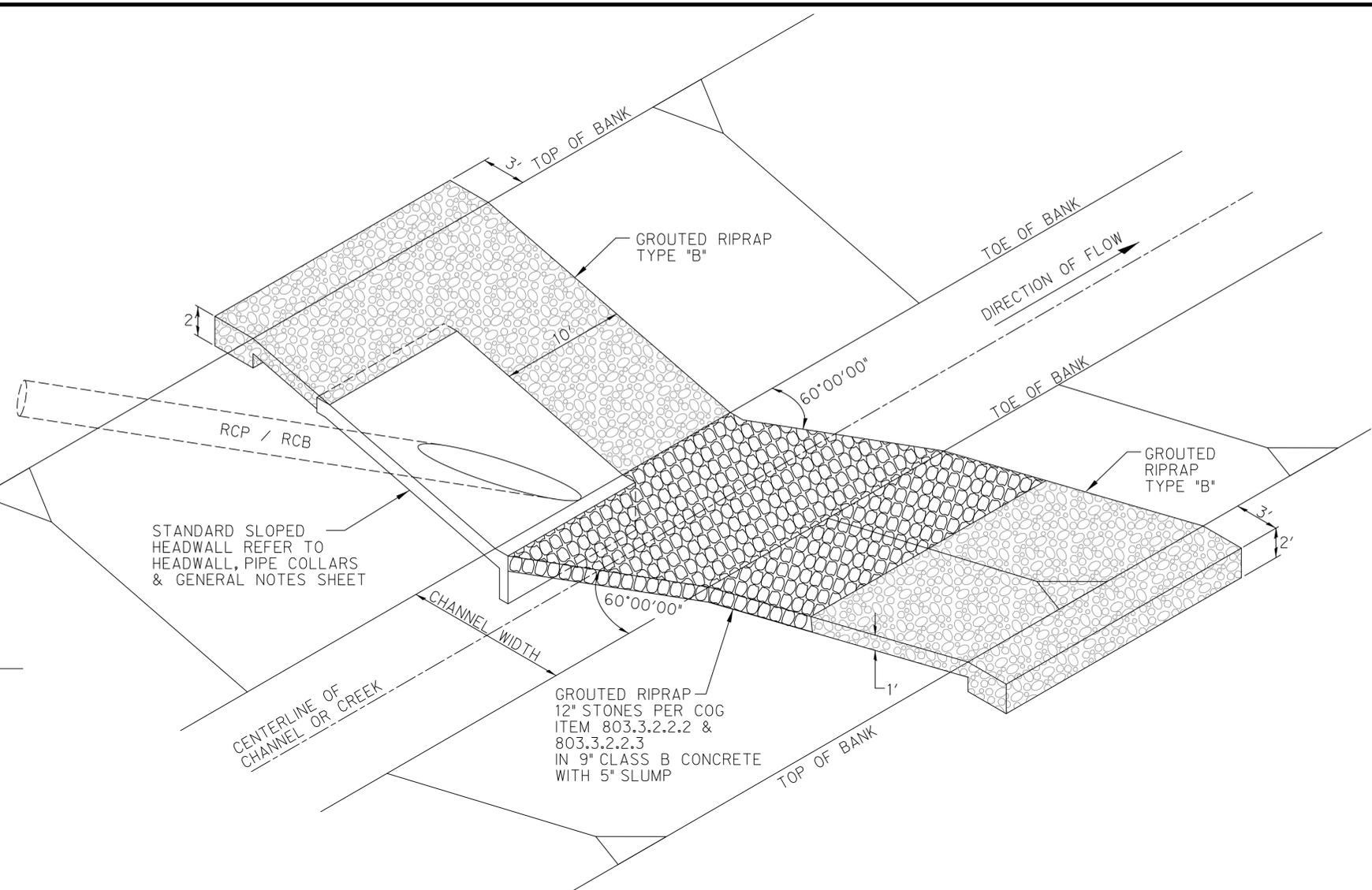
SD-12

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STORM DRAIN STANDARD DETAILS
STORM DRAIN OUTFALL TO CREEK

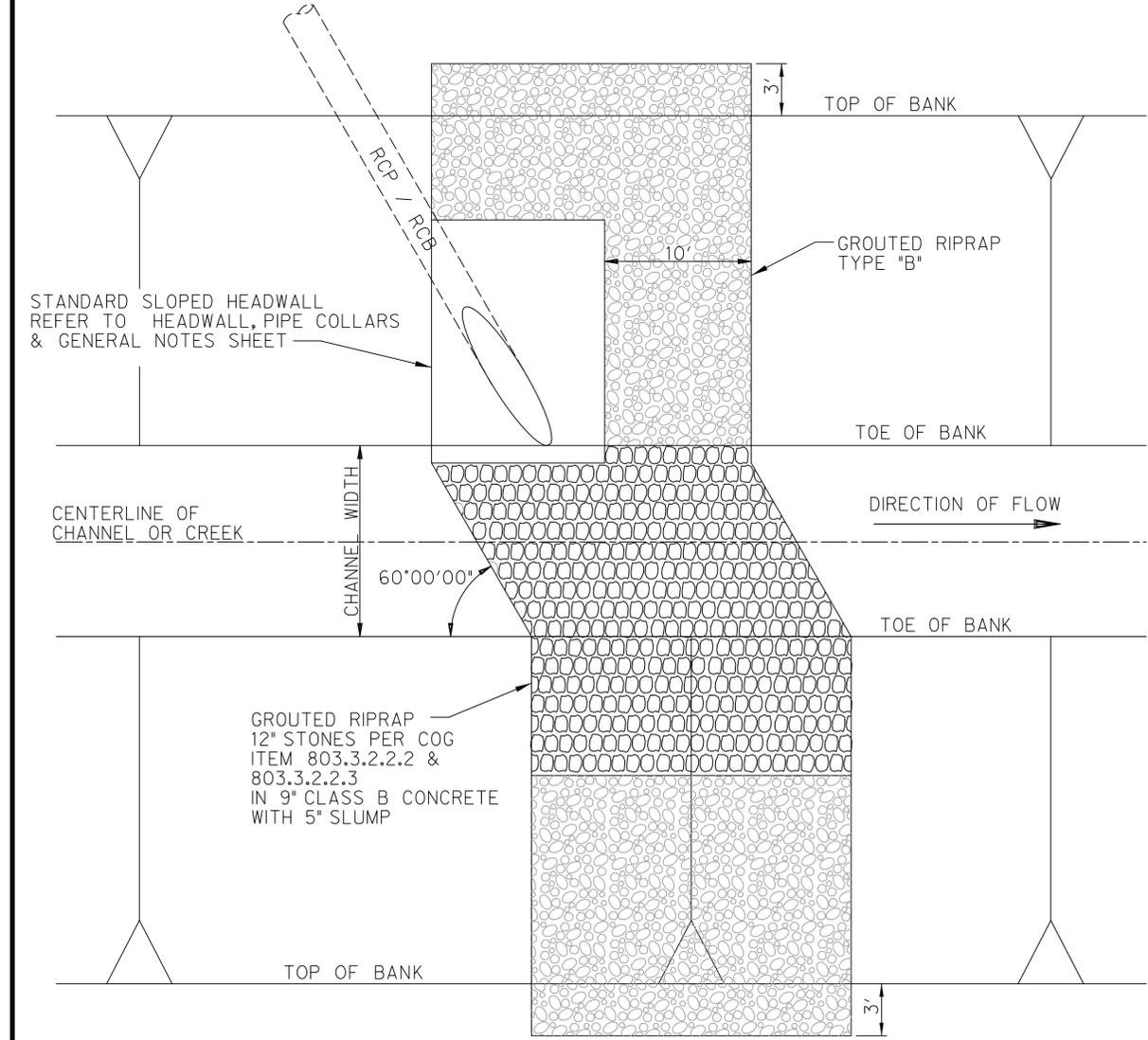

 THE TOWN OF NORTHLAKE
 TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	AUG 2023	N. T. S.	SD-12	—



ISOMETRIC STORM DRAIN OUTFALL VIEW
N.T.S.

STORM DRAIN OUTFALL - 60 DEGREE ANGLE TO CREEK



STORM DRAIN OUTFALL PLAN VIEW
N.T.S.

SD-13

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STORM DRAIN STANDARD DETAILS						
STORM DRAIN OUTFALL 60 DEGREE ANGLE TO CREEK						
 THE TOWN OF NORTHLAKE TEXAS						
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	AUG 2023	N. T. S.	SD-13	—