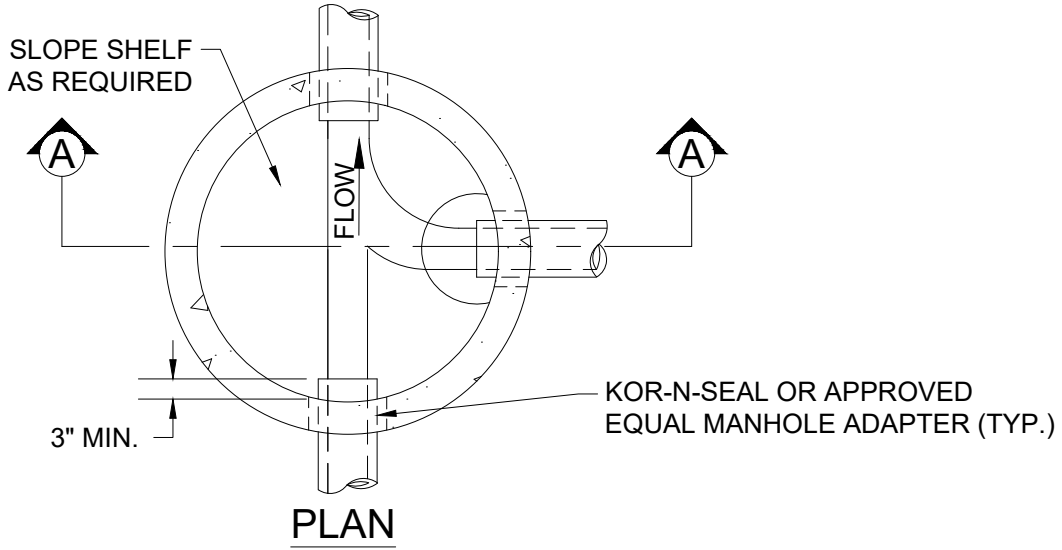
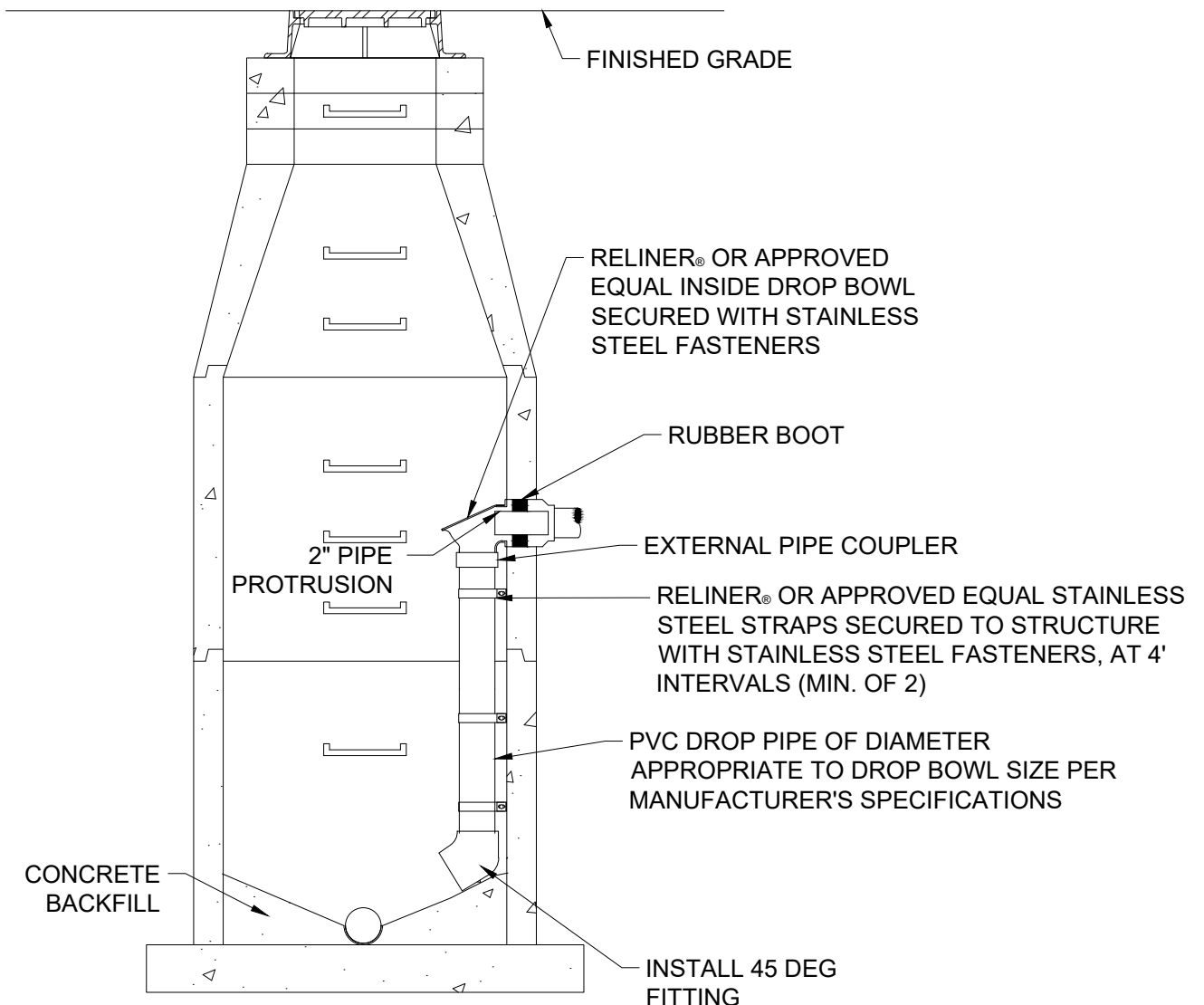


FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\300_wastewater\wastewater cad\301.dwg, Plotted 9/18/2023 1:21 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



PLAN



SECTION A-A

**CITY OF
GRESHAM**

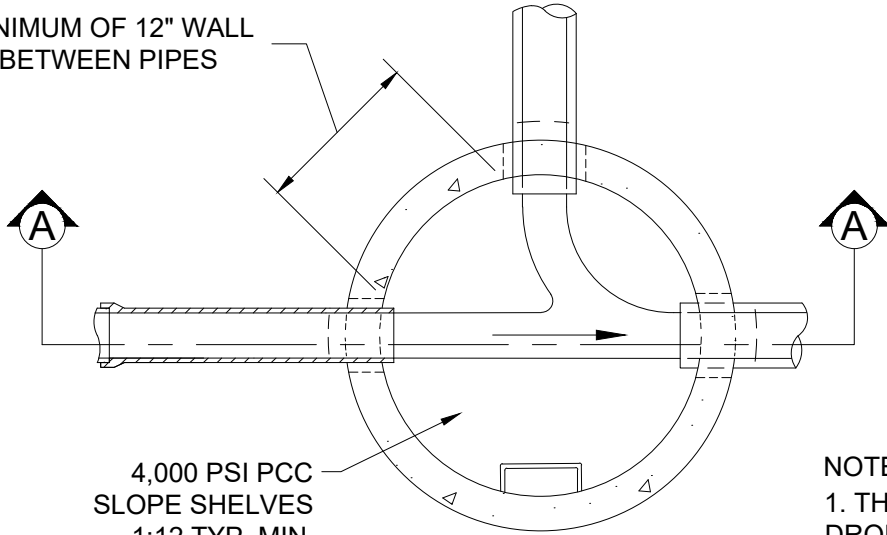
STANDARD INSIDE DROP MANHOLE

PWS VERSION: JAN 2024

DRAWN	AJT
REV. DATE	JAN 2019
APPR.	<i>[Signature]</i>
DETAIL NO.	301

FILENAME: y:\inter-departmental\development_engineering_projects\public_works_standards\2.0_pws_revision_copy\details\300_wastewater\wastewater_cad\302.dwg, Plotted 9/18/2023 1:22 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)

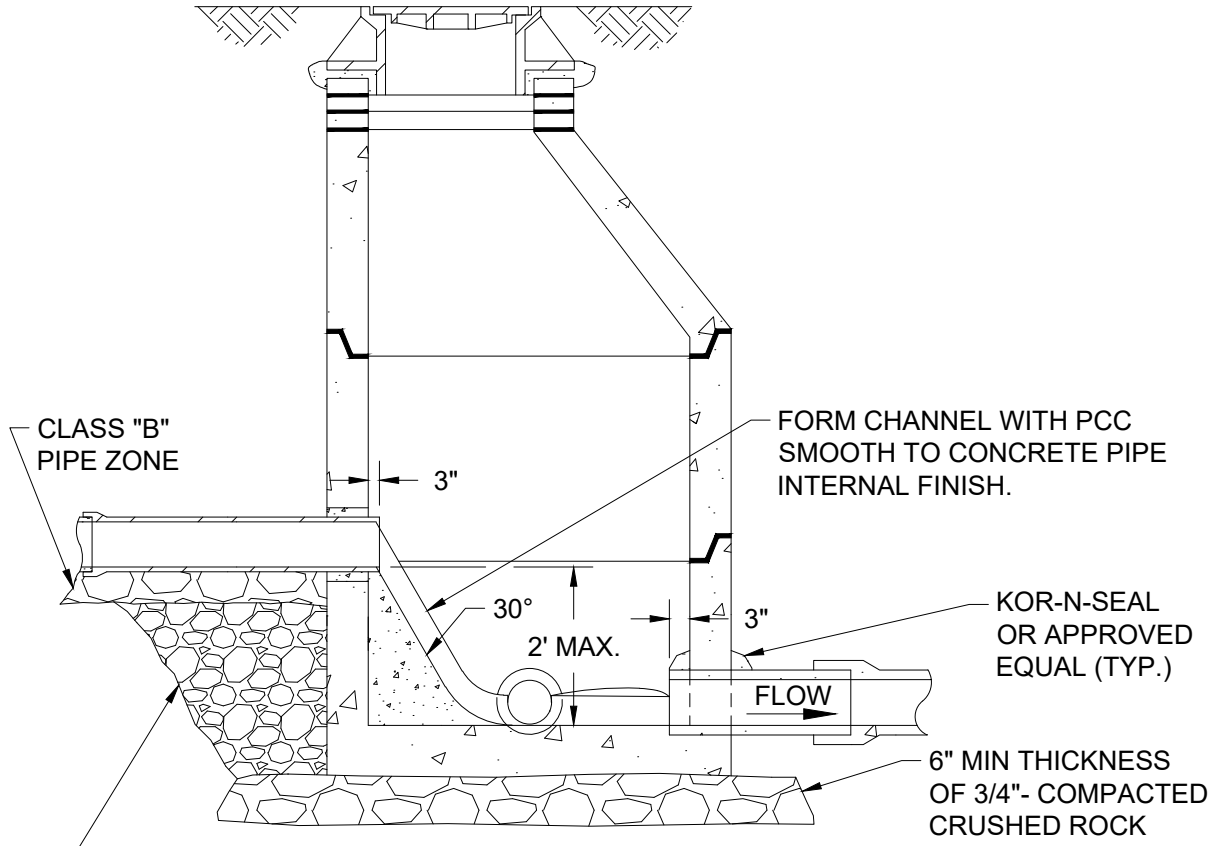
MINIMUM OF 12" WALL
BETWEEN PIPES



4,000 PSI PCC
SLOPE SHELVES
1:12 TYP. MIN.

NOTES:
1. THIS DESIGN TO BE USED FOR ALL
DROPS 2 FEET AND LESS.

PARTIAL TOP VIEW



CLASS "B"
PIPE ZONE

FORM CHANNEL WITH PCC
SMOOTH TO CONCRETE PIPE
INTERNAL FINISH.

KOR-N-SEAL
OR APPROVED
EQUAL (TYP.)

6" MIN THICKNESS
OF 3/4"- COMPACTED
CRUSHED ROCK

SECTION A-A

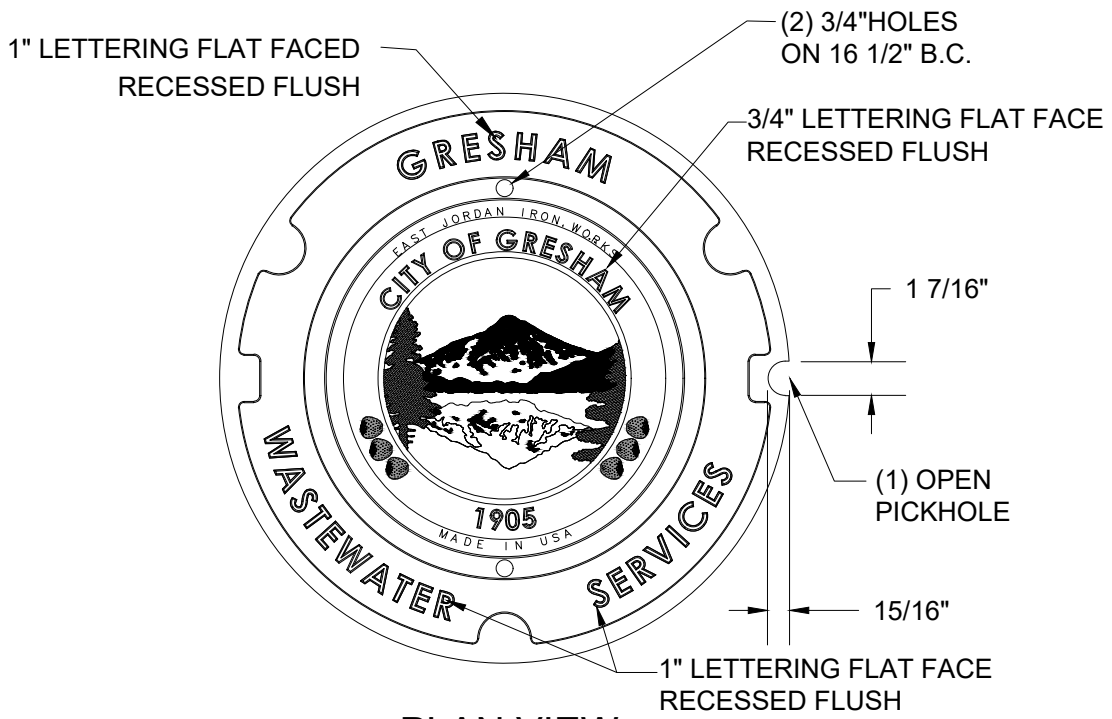
IMPORTED SELECT (CRUSHED AGGREGATE)
BACKFILL COMPACTED TO 95% M.D.D. PER ASTM
D1557, OR C.D.F. AS REQUIRED.

**CITY OF
GRESHAM**

SHALLOW INSIDE DROP MANHOLE

PWS VERSION: JAN 2024

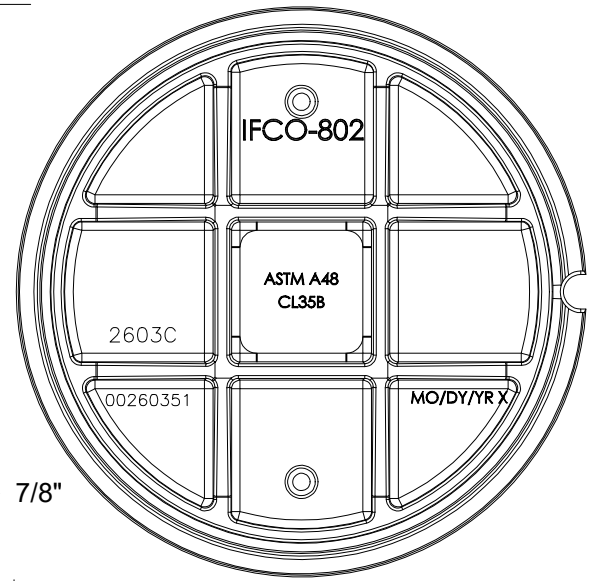
DRAWN	KRB
REV. DATE	JAN 2024
APPR.	<i>[Signature]</i>
DETAIL NO.	302



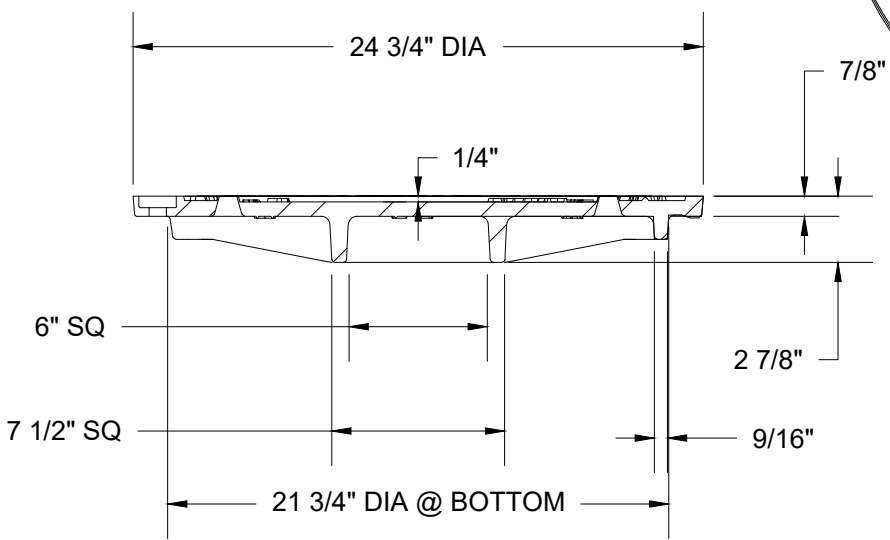
PLAN VIEW

NOTES:

1. ALL MANHOLES LOCATED IN-ROAD PAVEMENT SHALL USE THE STANDARD MANHOLE COVER AS PRODUCED BY: EJIW, OR EQUAL
2. MATERIAL SHALL BE GREY IRON, ASTM A-48, CLASS 35-B. APPROXIMATE WT. = 134 lbs.



COVER BACK



SECTION

CITY OF GRESHAM

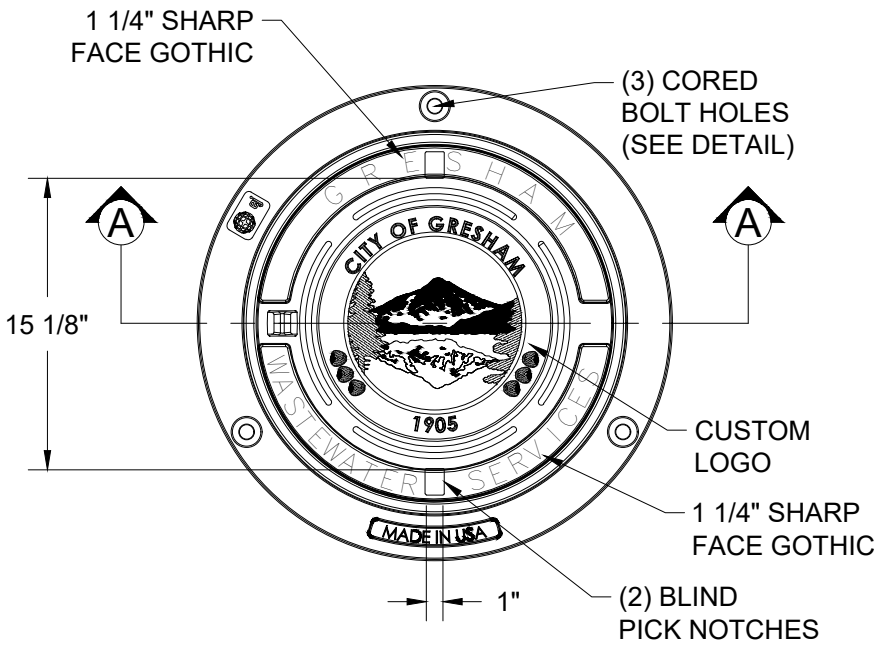
STANDARD WASTEWATER MANHOLE COVER

PWS VERSION: JAN 2024

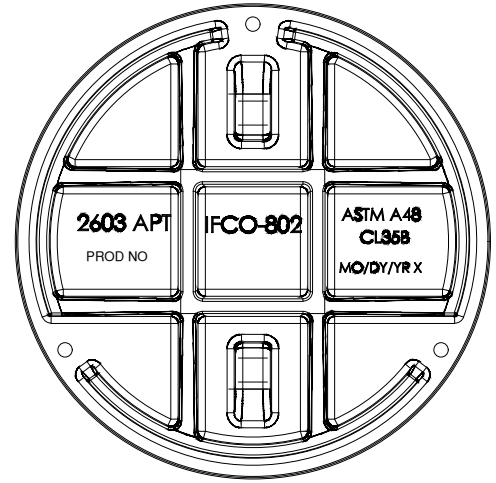
DRAWN	JDP
REV. DATE	JAN 2019
APPR.	<i>[Signature]</i>
DETAIL NO.	303

FILENAME: y:\inter-departmental\development engineering projects\public works standards\20 pws revision copy\details\300_wastewater\wastewater.cad\303.dwg, Plotted 9/18/2023 1:25 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)

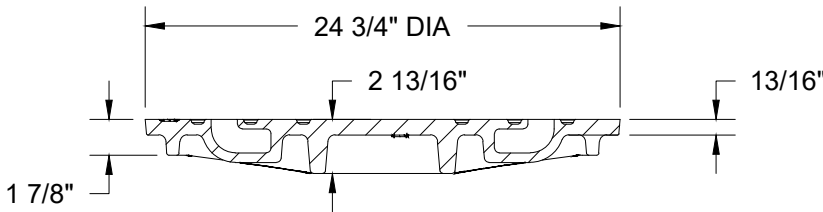
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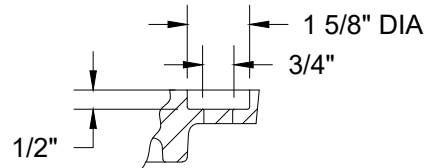
PLAN



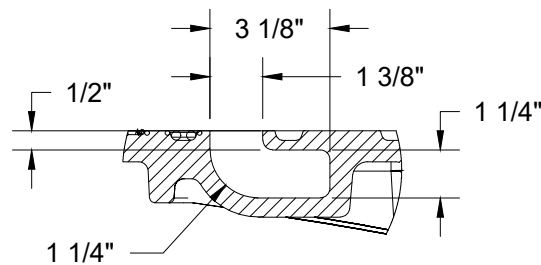
BOTTOM VIEW



SECTION A-A



BOLT HOLE



PICK NOTCH

CITY OF GRESHAM

WASTEWATER TAMPERPROOF AND WATERTIGHT MANHOLE COVER

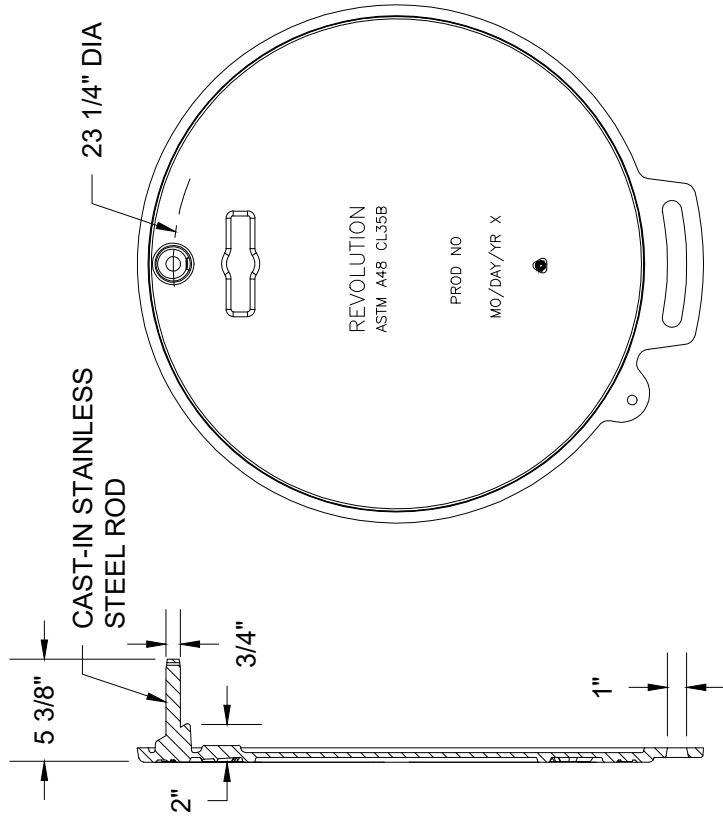
PWS VERSION: JAN 2024

DRAWN KCK

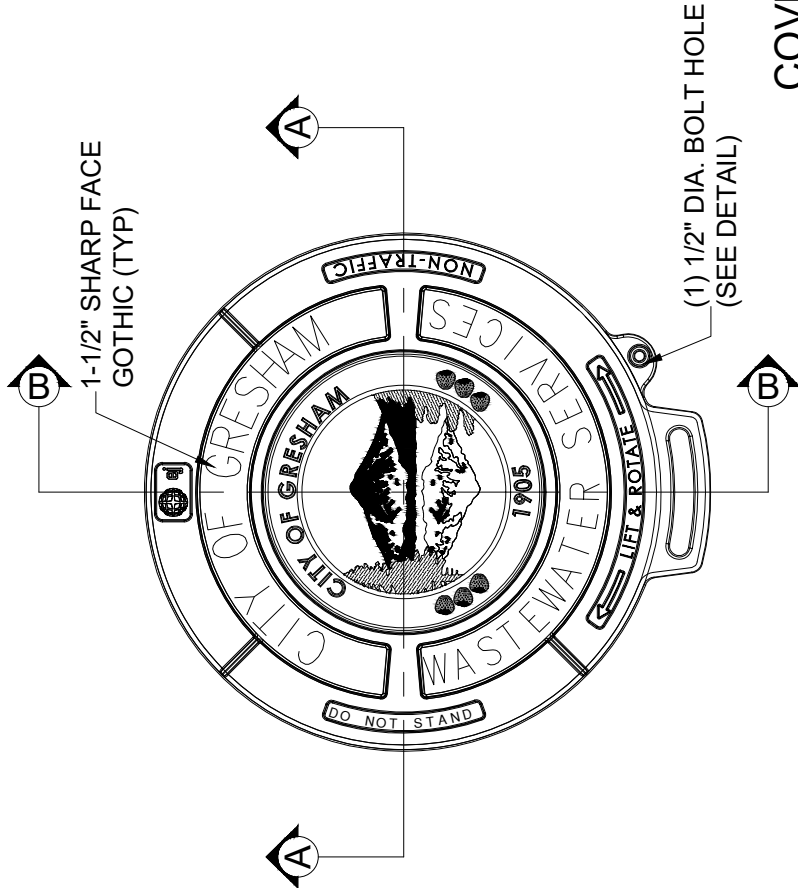
REV. DATE MAR 2021

APPR. 

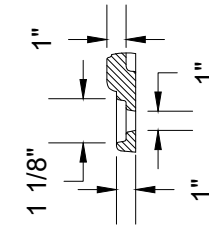
DETAIL NO. 304



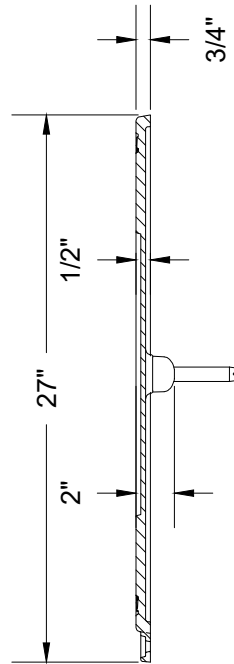
BOTTOM VIEW



COVER SECTION B-B



BOLTHOLE DETAIL



COVER SECTION A-A

CITY OF GRESHAM

**WASTEWATER MANHOLE,
OFF-ROAD ELEVATED COVER (PIN)**

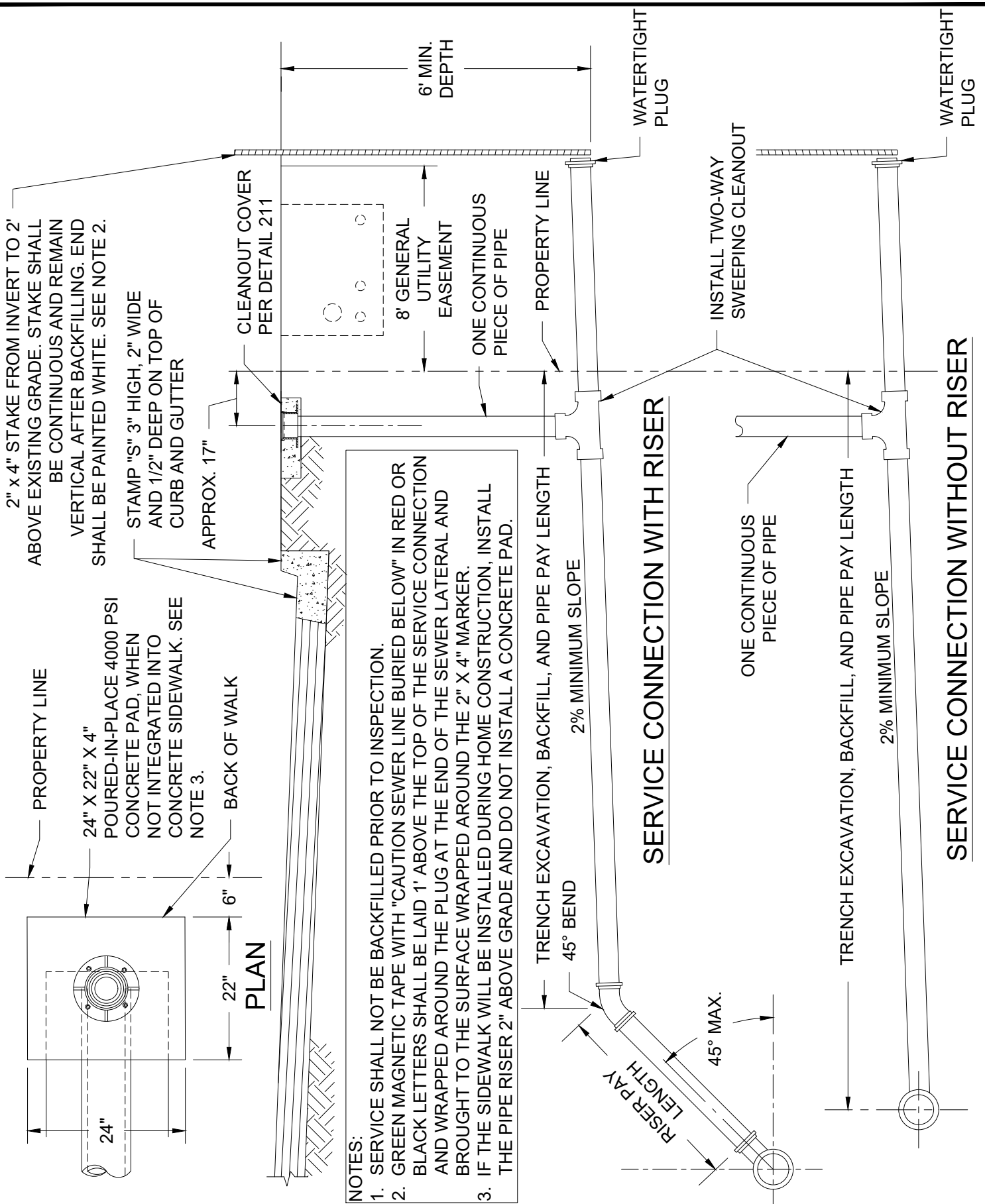
PWS VERSION: JAN 2024

DRAWN KCK

REV. DATE JAN 2019

APPR. *[Signature]*

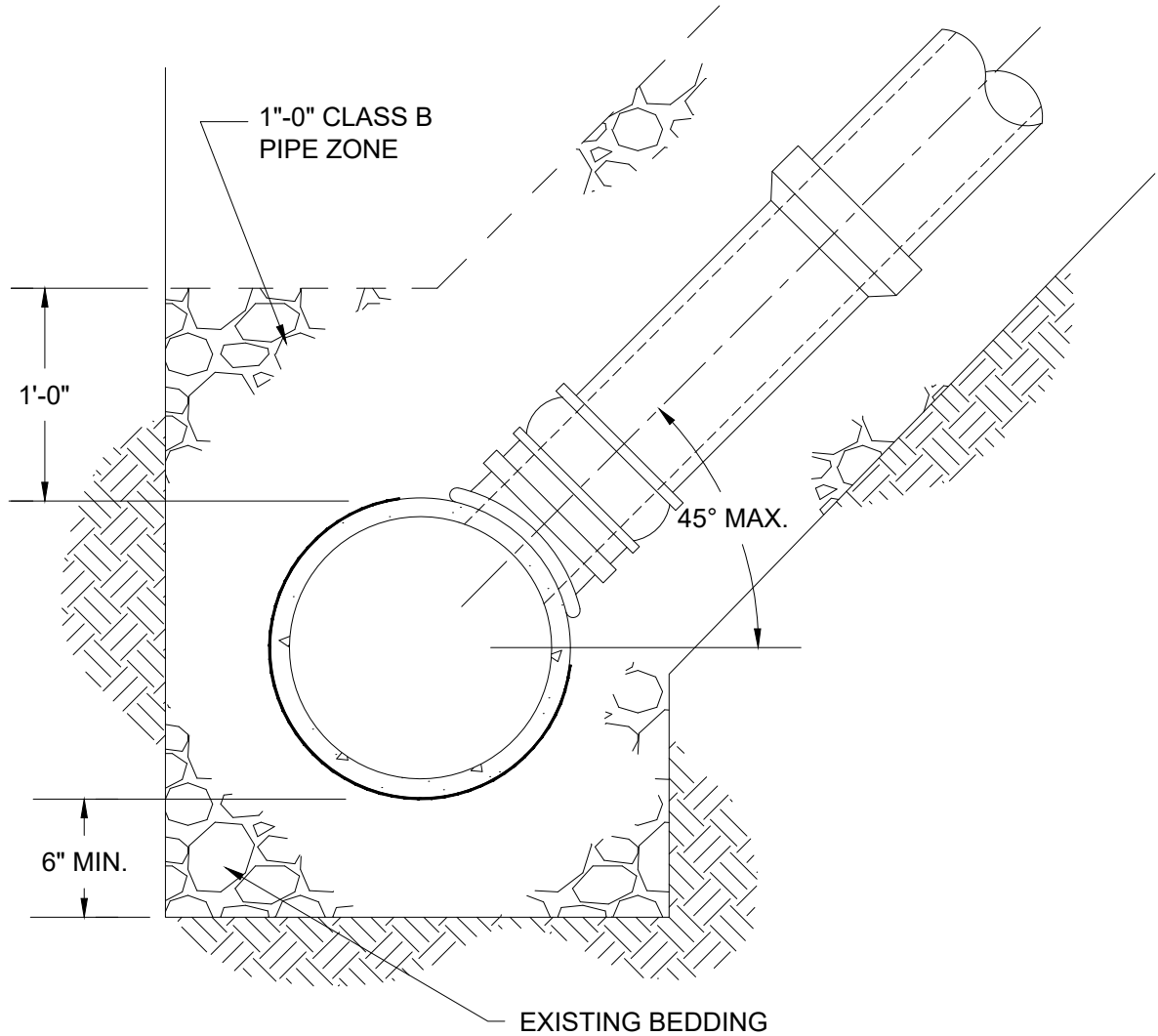
DETAIL NO. 306



- NOTES:**
- SERVICE SHALL NOT BE BACKFILLED PRIOR TO INSPECTION.
 - GREEN MAGNETIC TAPE WITH "CAUTION SEWER LINE BURIED BELOW" IN RED OR BLACK LETTERS SHALL BE LAID 1' ABOVE THE TOP OF THE SERVICE CONNECTION AND WRAPPED AROUND THE PLUG AT THE END OF THE SEWER LATERAL AND BROUGHT TO THE SURFACE WRAPPED AROUND THE 2" X 4" MARKER.
 - IF THE SIDEWALK WILL BE INSTALLED DURING HOME CONSTRUCTION, INSTALL THE PIPE RISER 2" ABOVE GRADE AND DO NOT INSTALL A CONCRETE PAD.

DRAWN	KRB
REV. DATE	MAR 2021
APPR.	<i>[Signature]</i>
DETAIL NO.	307

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\300_wastewater\wastewater cad\308.dwg, Plotted 9/18/2023 1:29 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



NOTES:

1. THE TAP SHALL NOT BE MADE EXCEPT IN THE PRESENCE OF A CITY INSPECTOR; NOR SHALL ANY CONNECTION BE MADE WITHOUT CITY APPROVAL.
2. A "SEALTITE SADDLE" OR "INSERT-A-TEE" (OR APPROVED EQUAL) TYPE CONNECTION SHALL BE USED AND SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. FUSION SADDLES WILL BE USED FOR HDPE PIPE CONNECTIONS.
3. THE HOLE MADE IN MAIN SHALL BE CORED.
4. CENTERLINE OF TAP TO BE ABOVE SPRINGLINE.
5. 4" MAXIMUM HOLE FOR 8" MAIN UNLESS OTHERWISE APPROVED BY THE ENGINEER.

CITY OF
GRESHAM

TAP IN EXISTING MAIN FOR SANITARY
SEWER LATERAL

PWS VERSION: JAN 2024

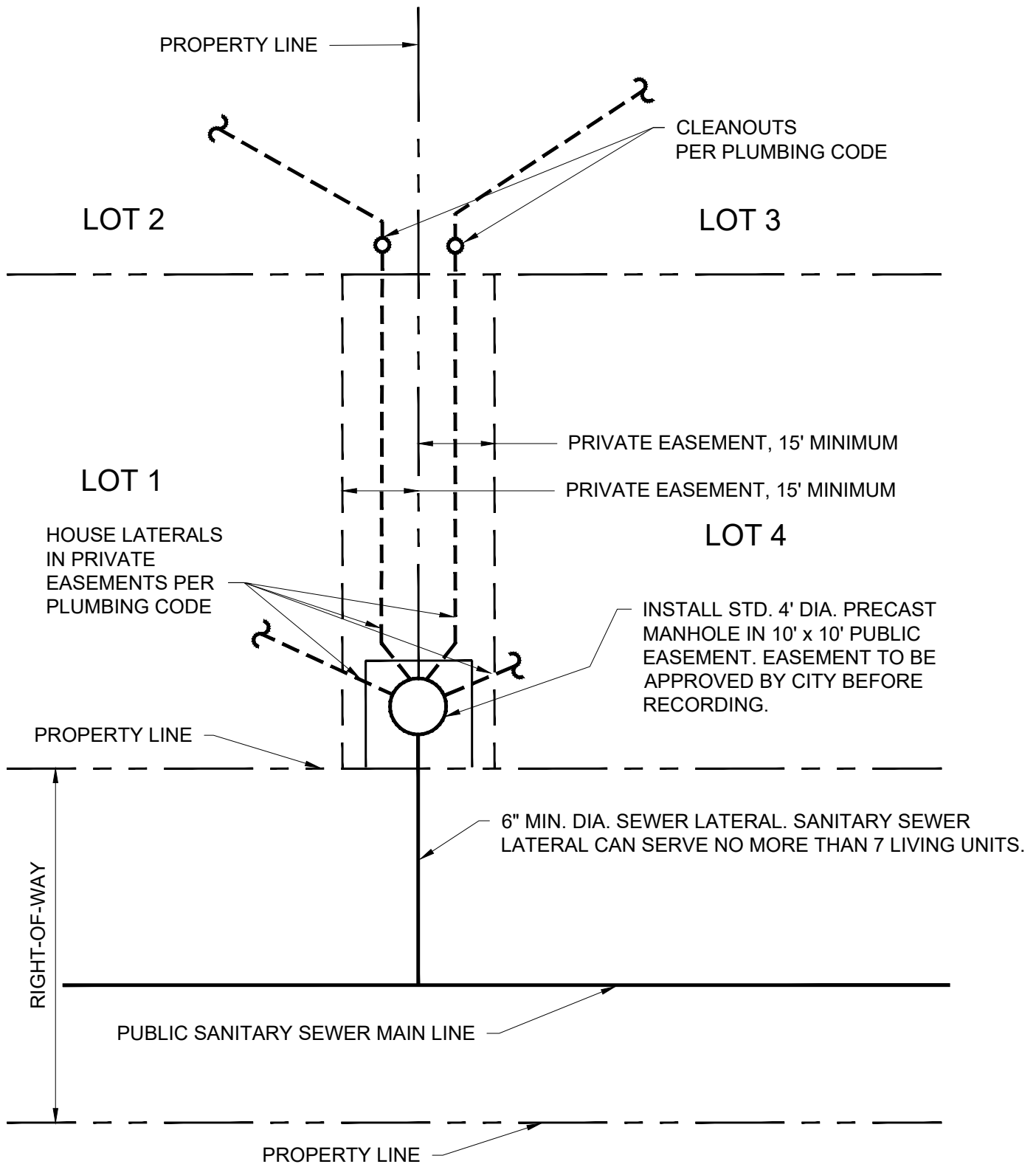
DRAWN KCK

REV. DATE JAN 2019

APPR. 

DETAIL NO. 308

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\300_wastewater\wastewater.cad\300.dwg, Plotted 9/18/2023 1:30 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



NOTES:

1. CONNECTION PLAN FOR 4 LOT COMMON LATERAL (3 LOTS SIMILAR).
2. EASEMENTS TO BE RECORDED & A COPY THEREOF SUBMITTED TO CITY PRIOR TO CONSTRUCTION.
3. PRIVATE EASMENT ARRANGMENT SHOWN TO BE USED ONLY WHEN SEWER IN PUBLIC ROAD RIGHT-OF-WAY CANNOT BE USED AS DETERMINED BY THE ENGINEER

CITY OF GRESHAM

WASTEWATER CONNECTION, 3 OR 4 LOTS WITH PRIVATE EASEMENTS

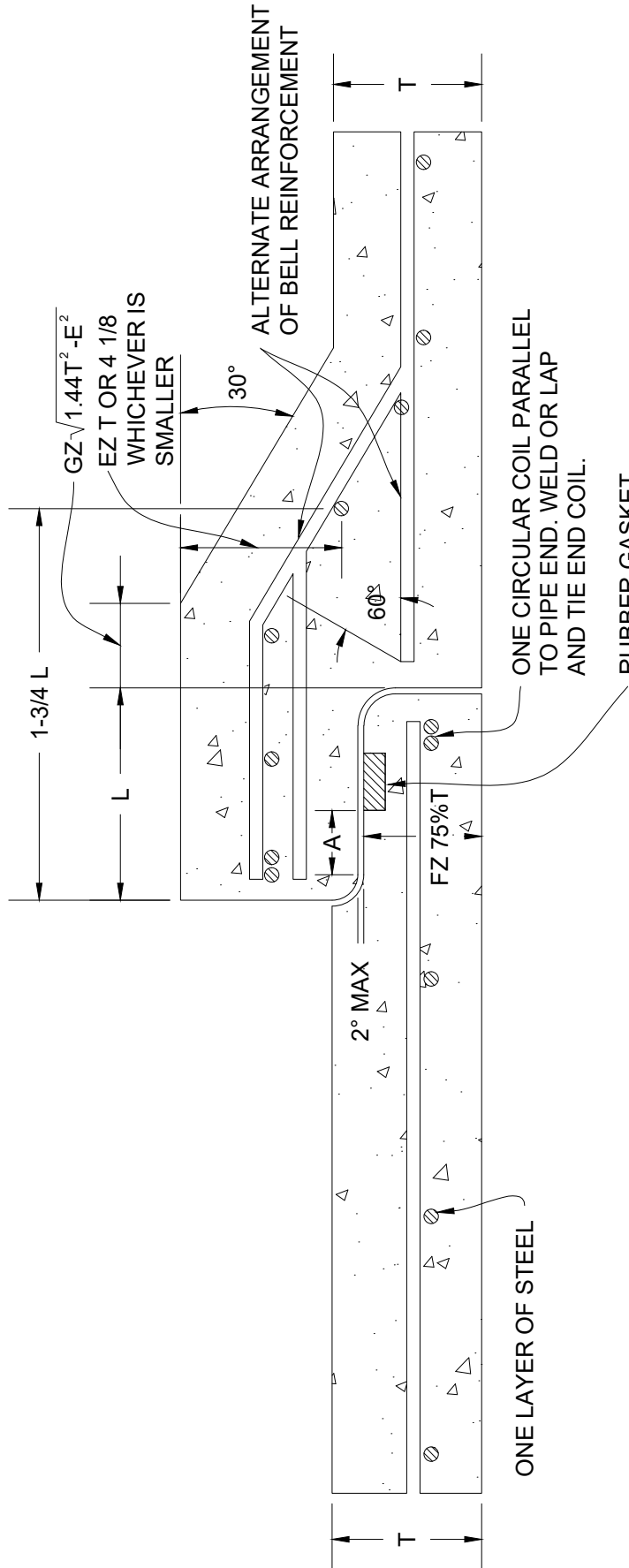
PWS VERSION: JAN 2024

DRAWN KCK

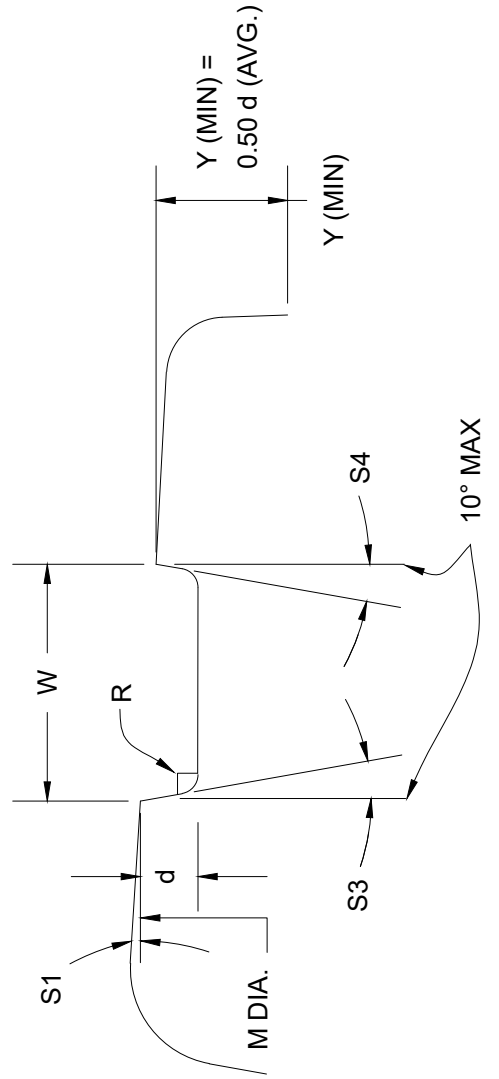
REV. DATE JAN 2019

APPR. *[Signature]*

DETAIL NO. 309



PLAN



SIGOT GROOVE DETAIL

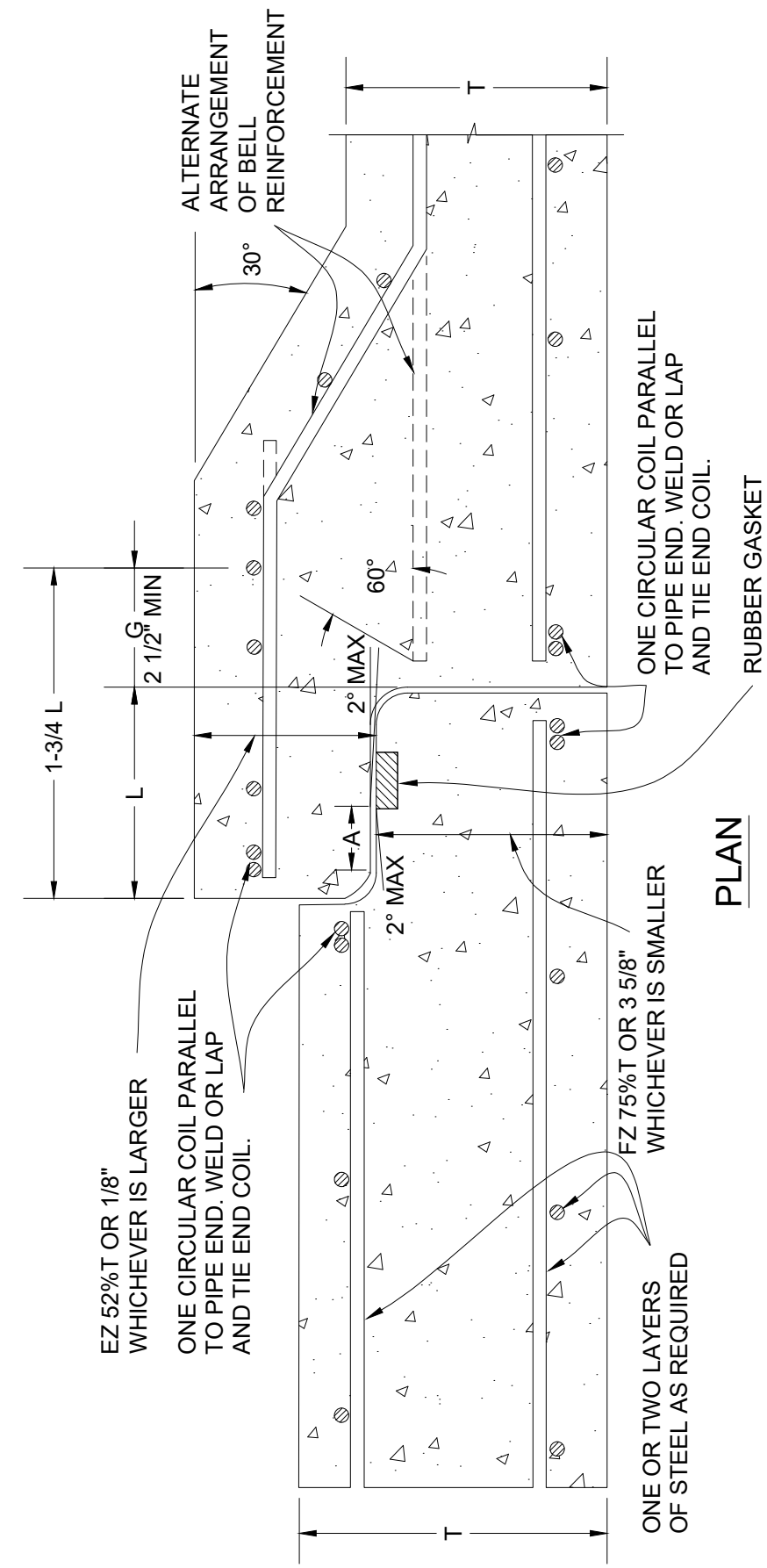
NOTE:
SEE STANDARD DETAIL 312 FOR
VARIABLE DIMENSIONS.

**CITY OF
GRESHAM**

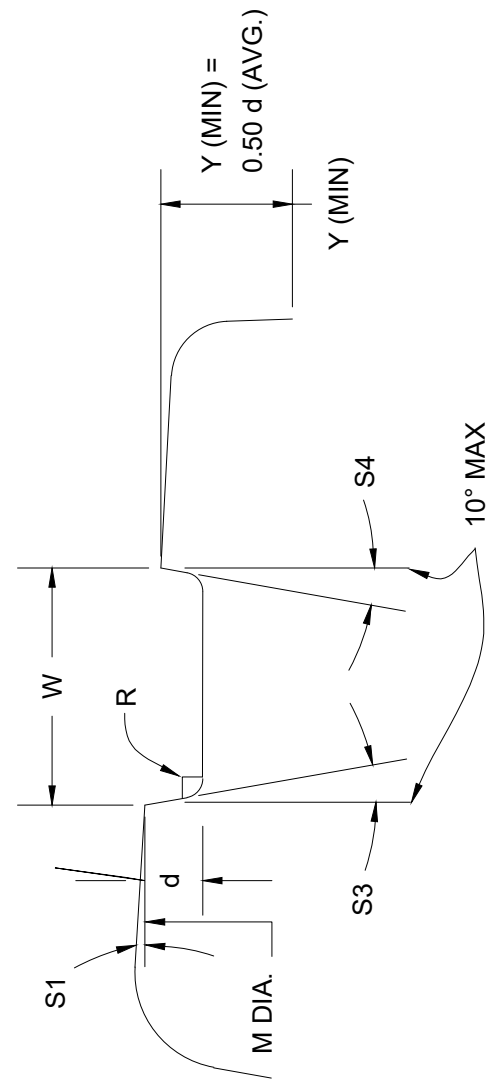
**JOINT DETAIL
REINFORCED CONCRETE (T=LESS THAN 4 5/8")**

PWS VERSION: JAN 2024

DRAWN	KRB
REV. DATE	JAN 2019
APPR.	<i>[Signature]</i>
DETAIL NO.	310



PLAN



SPIGOT GROOVE DETAIL

NOTE:
SEE STANDARD DETAIL 312 FOR
VARIABLE DIMENSIONS.

**CITY OF
GRESHAM**

**JOINT DETAIL
REINFORCED CONCRETE (T=4 5/8" AND
LARGER)**

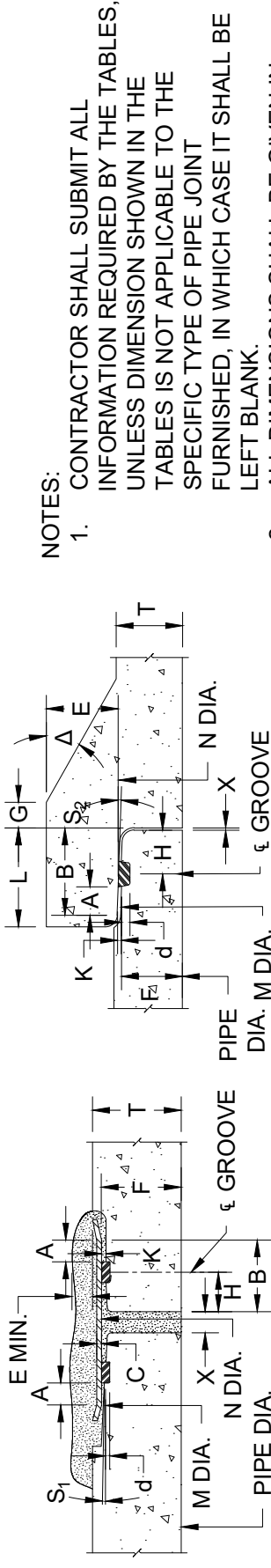
PWS VERSION: JAN 2024

DRAWN	KRB
REV. DATE	JAN 2019
APPR.	<i>[Signature]</i>
DETAIL NO.	311

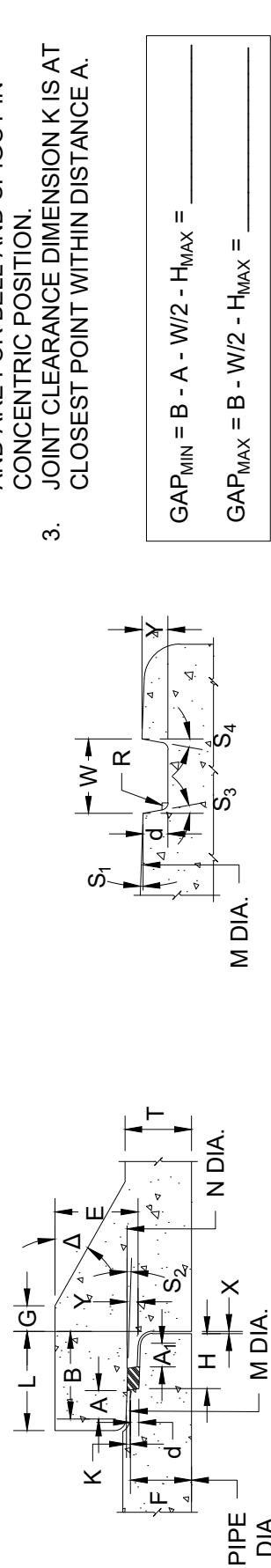
DIMENSIONS										
PIPE DIAMETER	JOINT TYPE	GROOVE WIDTH (W)		R	d		M (DIAMETER)		N (DIAMETER)	
		MINIMUM	MAXIMUM		MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM

JOINT CLEARANCE				SLOPE DEGREES				RUBBER GASKET				H		J	MAX HEAD CLASS	
K		S ₁		S ₂		S ₃		S ₄		% STRETCH		DESIGN				TOLERANCE
MINIMUM	MAXIMUM	DESIGN	MIN	MAX	DESIGN	MIN	MAX	DESIGN	VOLUME CUBIC INCHES	AVERAGE						

Δ DEG.	A	A ₁	B	C	E	F	T	L	X	Y



JOINT TYPE R-1



JOINT TYPE R-3

- NOTES:
- CONTRACTOR SHALL SUBMIT ALL INFORMATION REQUIRED BY THE TABLES, UNLESS DIMENSION SHOWN IN THE TABLES IS NOT APPLICABLE TO THE SPECIFIC TYPE OF PIPE JOINT FURNISHED, IN WHICH CASE IT SHALL BE LEFT BLANK.
 - ALL DIMENSIONS SHALL BE GIVEN IN INCHES, UNLESS OTHERWISE NOTED, AND ARE FOR BELL AND SPIGOT IN CONCENTRIC POSITION.
 - JOINT CLEARANCE DIMENSION K IS AT CLOSEST POINT WITHIN DISTANCE A.

$$GAP_{MIN} = B - A - W/2 - H_{MAX} = \underline{\hspace{2cm}}$$

$$GAP_{MAX} = B - W/2 - H_{MAX} = \underline{\hspace{2cm}}$$

SPIGOT GROOVE DETAIL