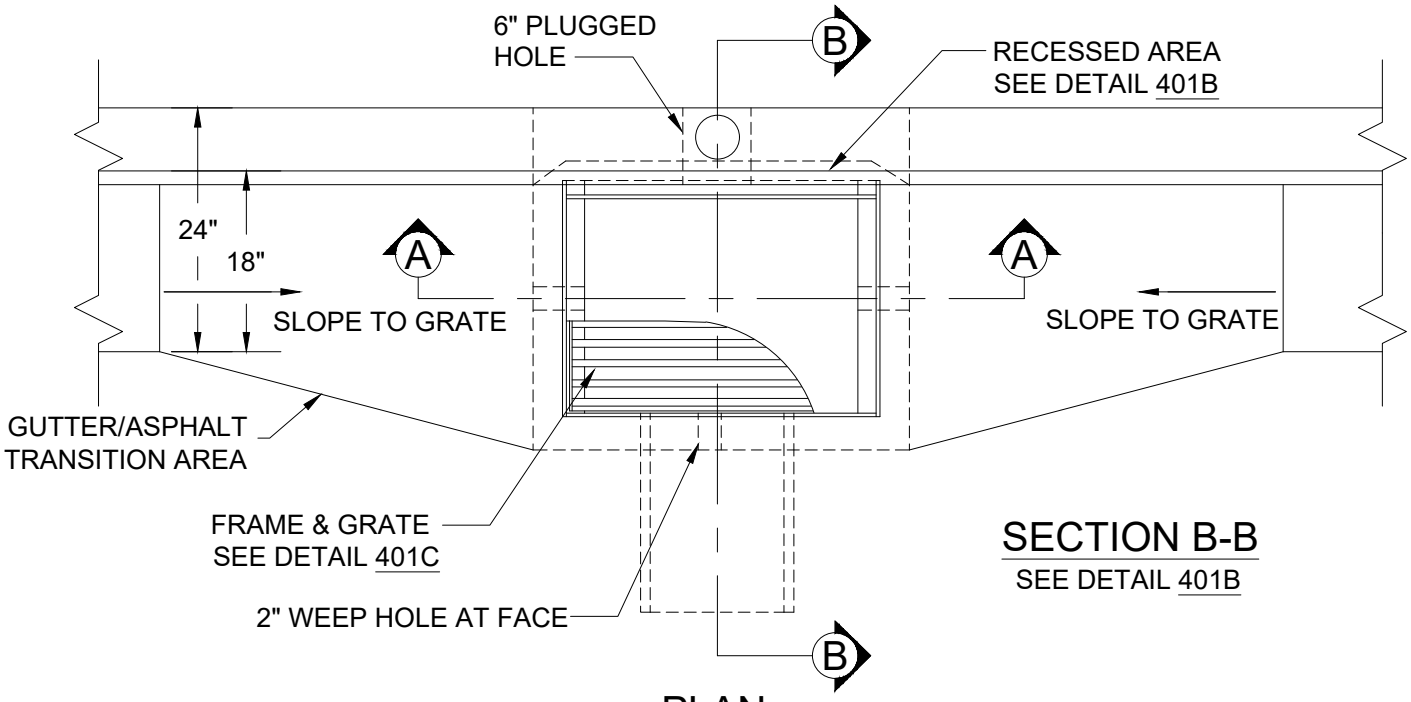
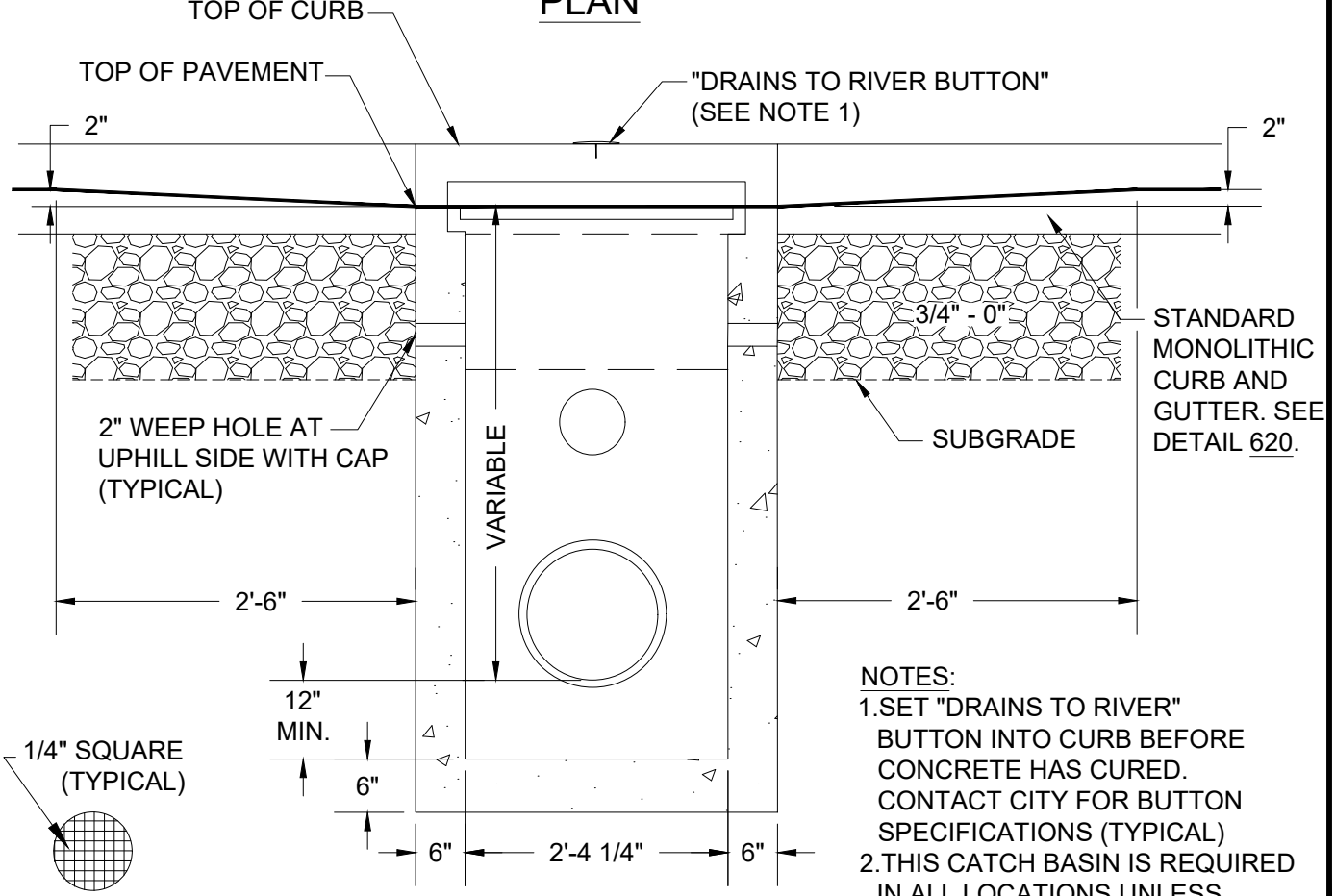


SECTION B-B

SEE DETAIL 401B

PLAN



SECTION A-A PROFILE

NOTES:

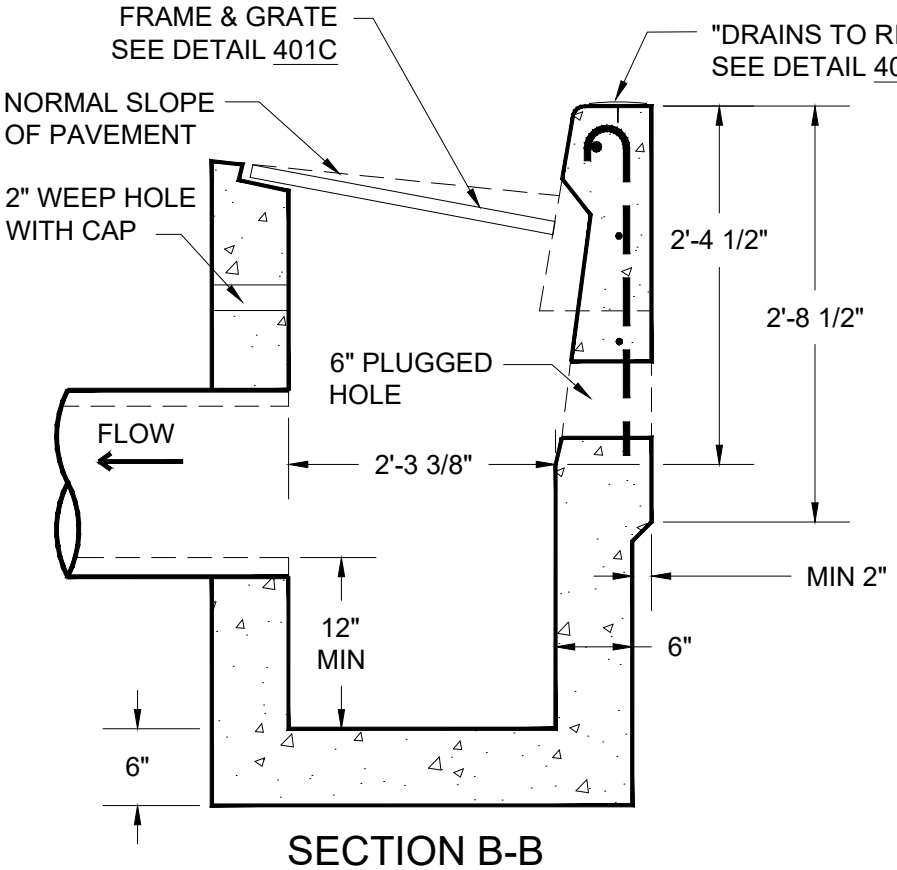
1. SET "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS CURED. CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL)
2. THIS CATCH BASIN IS REQUIRED IN ALL LOCATIONS UNLESS OTHERWISE SPECIFIED BY THE ENGINEER

CITY OF GRESHAM

CATCH BASIN

PWS VERSION: JAN 2024

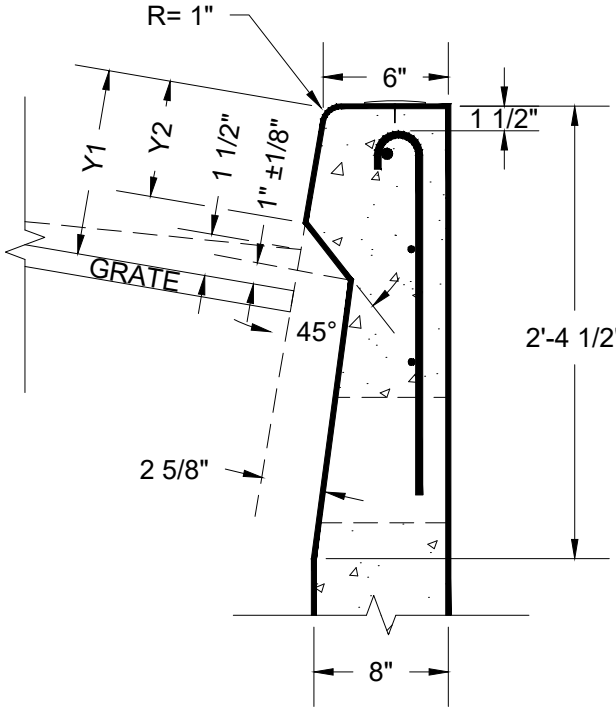
DRAWN	CMC
REV. DATE	JAN 2019
APPR.	
DETAIL NO.	401A



SECTION B-B

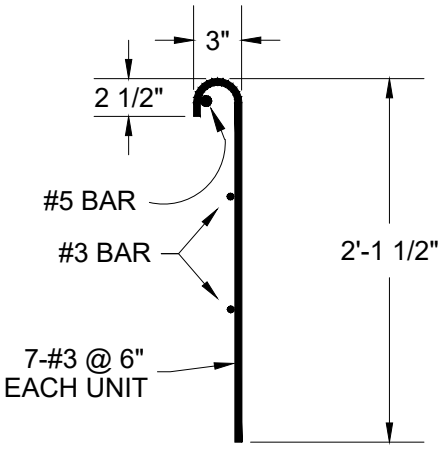
NOTES:

1. INSTALL 6" DRAIN PIPE SUCH THAT THE TOP OF PIPE IS 6" BELOW GRATE OR ALIGNED WITH THE CROWN OF THE OUTLET, WHICHEVER IS LOWER.
2. IF CATCH BASIN WILL BE PART OF A DRIVEWAY WING, SLANT THE REBAR CAGE AND INLET FORM TO THE SLOPE OF THE TOP OF CURB IN THE WING WHEN POURING THE CATCH BASIN. MAINTAIN THE "Y2" DIMENSION AND DECREASE THE INLET AS NEEDED.
3. IF THE DISTANCE FROM TOP OF CURB TO THE GRATE IS EQUAL TO OR LESS THAN "Y2" NO CURB INLET IS REQUIRED.
4. #3 AND #5 BARS SHALL BE PLACED DURING CURB CONSTRUCTION.
5. ALL BARS SHALL BE PLACED 1 1/2" CLEAR OF NEAREST FACE OF CONCRETE UNLESS SHOWN OR OTHERWISE NOTED.
6. ALL BAR SPLICE LENGTHS SHALL BE A MIN 20".
7. CONCRETE WITH 4,000 PSI STRENGTH AT 28-DAYS SHALL BE USED IN ALL INLET CONSTRUCTION.



CURB DETAIL AT CATCH BASIN

TABLE 601-C	CURB TYPE	
	TYPE 'C'	MONOLITHIC
Y1	8 1/2"	7 1/2"
Y2	5 3/4"±	4 3/4"±

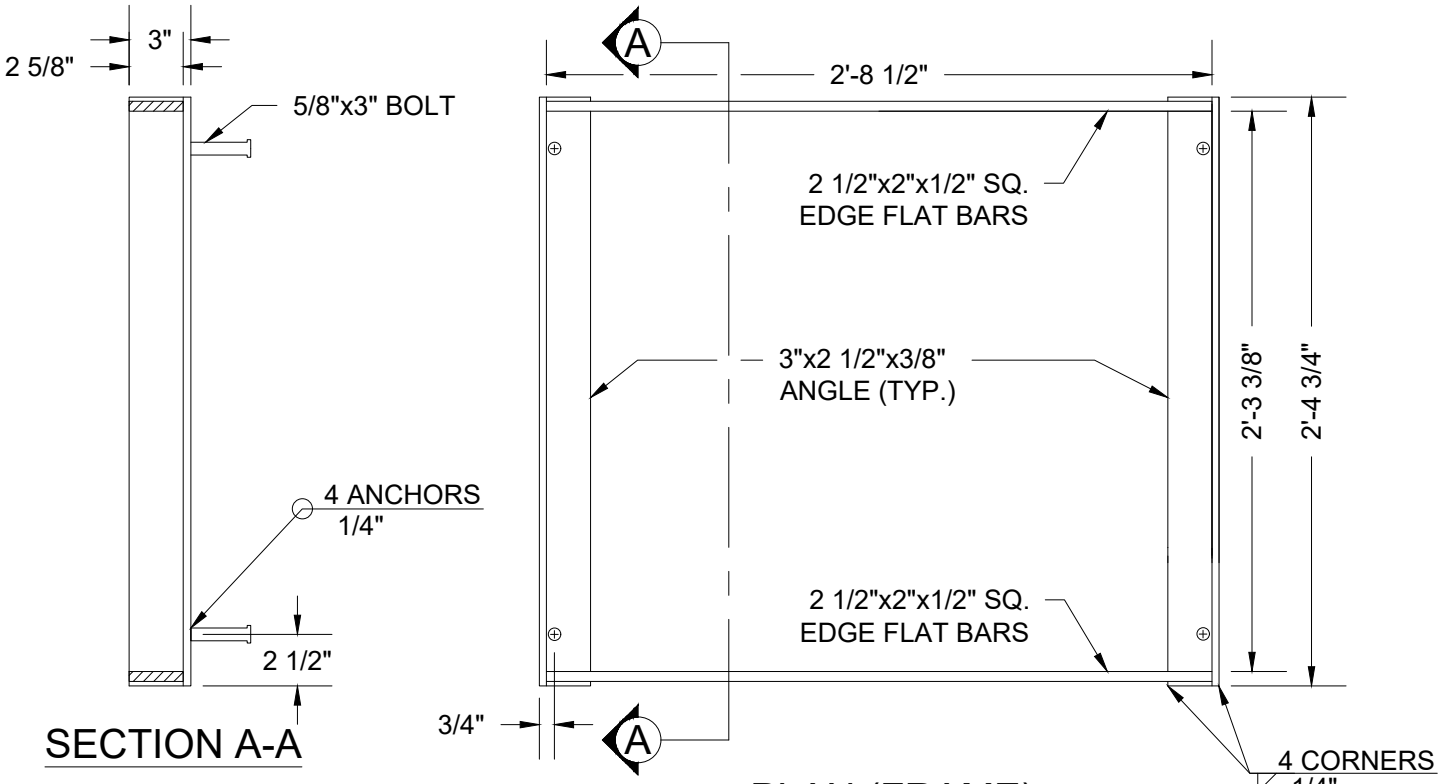


CITY OF GRESHAM

CATCH BASIN SECTION

PWS VERSION: JAN 2024

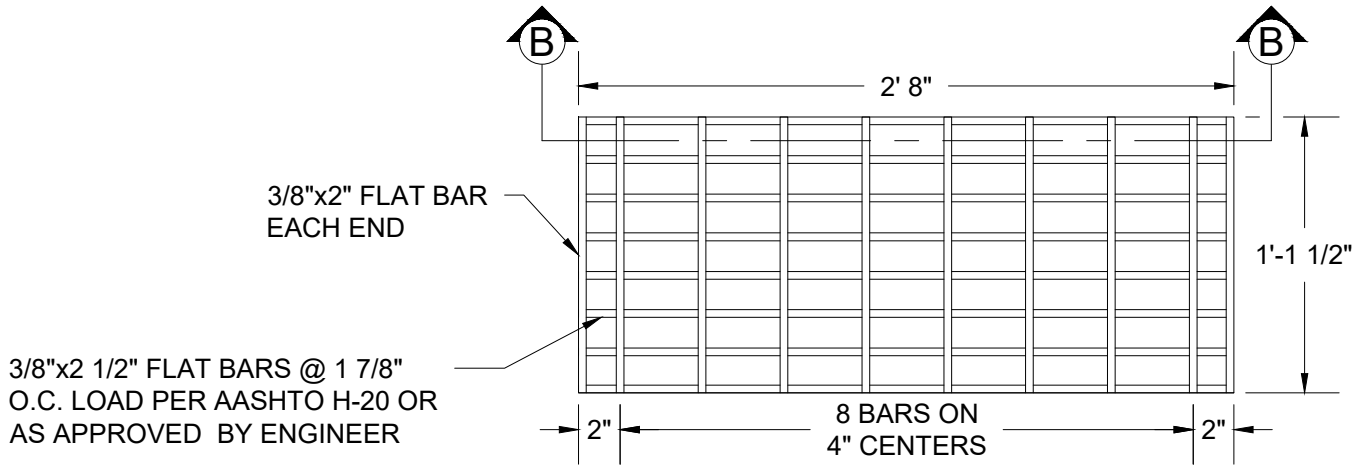
DRAWN	RMS
REV. DATE	MAR 2021
APPR.	
DETAIL NO.	401B



SECTION A-A

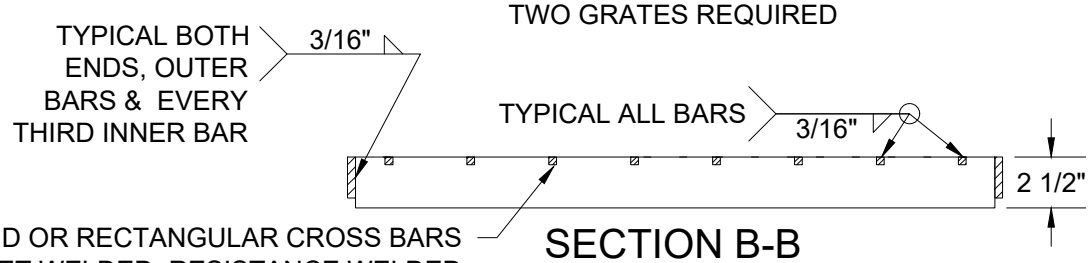
PLAN (FRAME)

NOTE:
USE VERTICAL BEADS IN CORNERS, FILLET WELD JOINT ON BOTTOM OF FRAME. GRATE MUST REST FLAT ON FRAME SURFACE.



PLAN (GRATE)

TWO GRATES REQUIRED



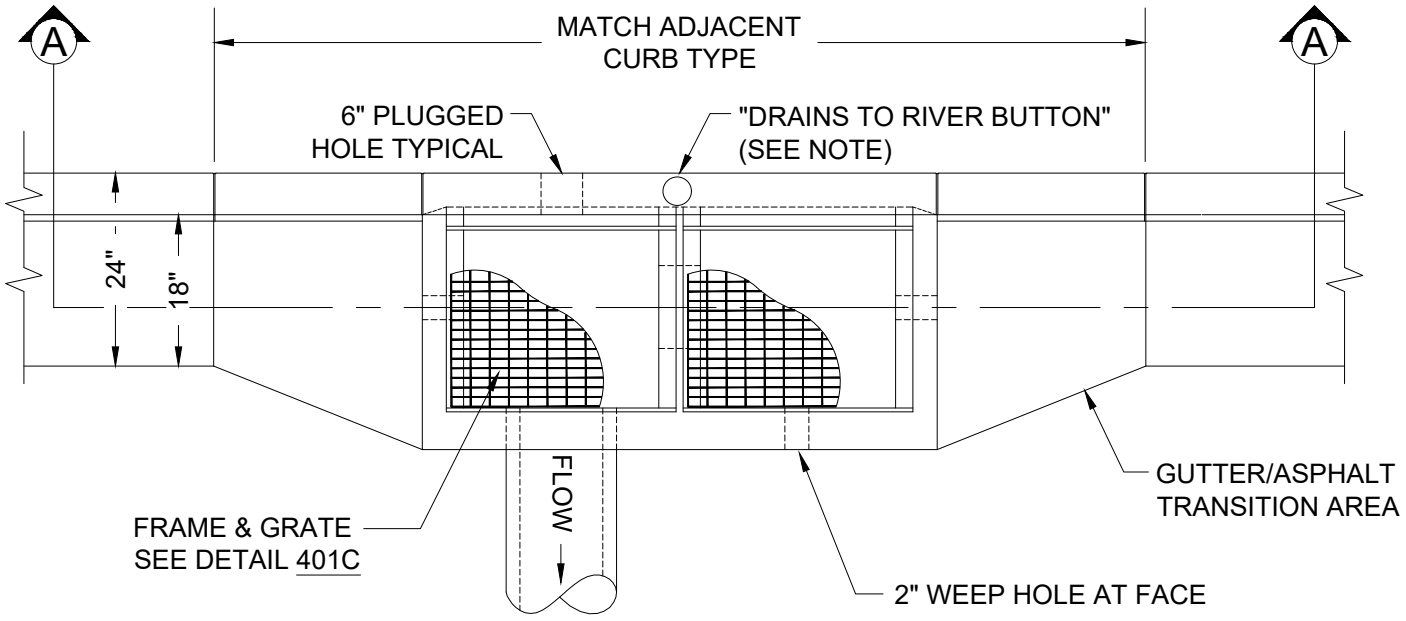
SECTION B-B

CITY OF GRESHAM

CATCH BASIN FRAME AND GRATE

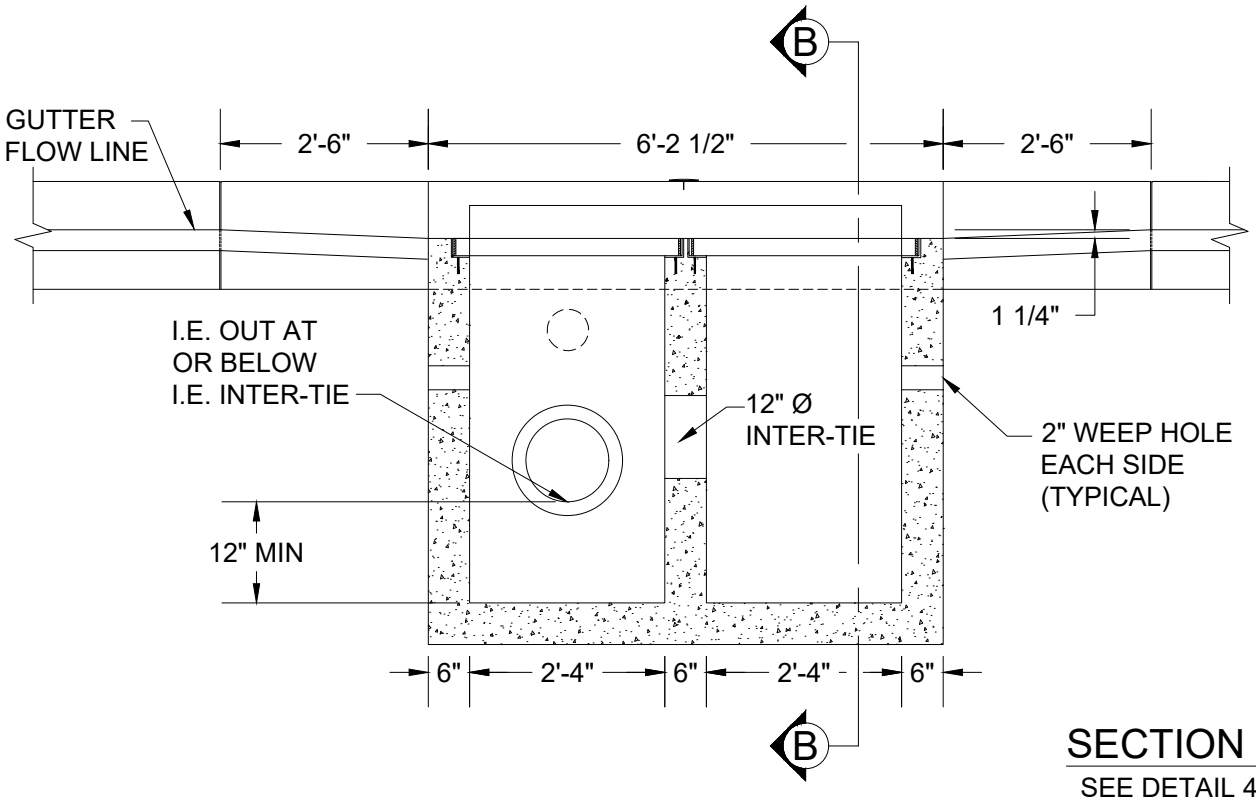
PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2019
APPR.	
DETAIL NO.	401C



PLAN

NOTE:
SET "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS CURED. CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL)



SECTION B-B

SEE DETAIL 401B

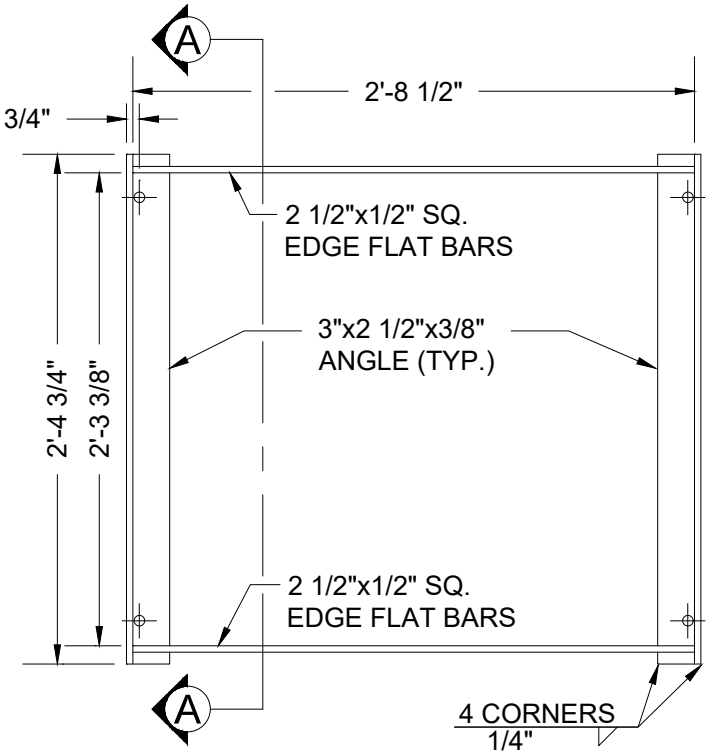
SECTION A-A

CITY OF GRESHAM

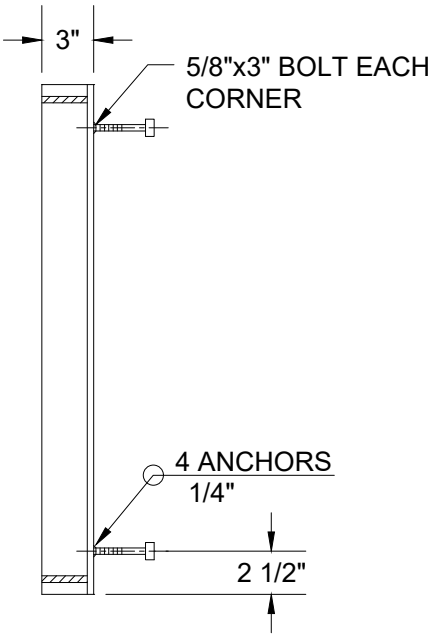
DOUBLE CATCH BASIN

PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2019
APPR.	
DETAIL NO.	401D

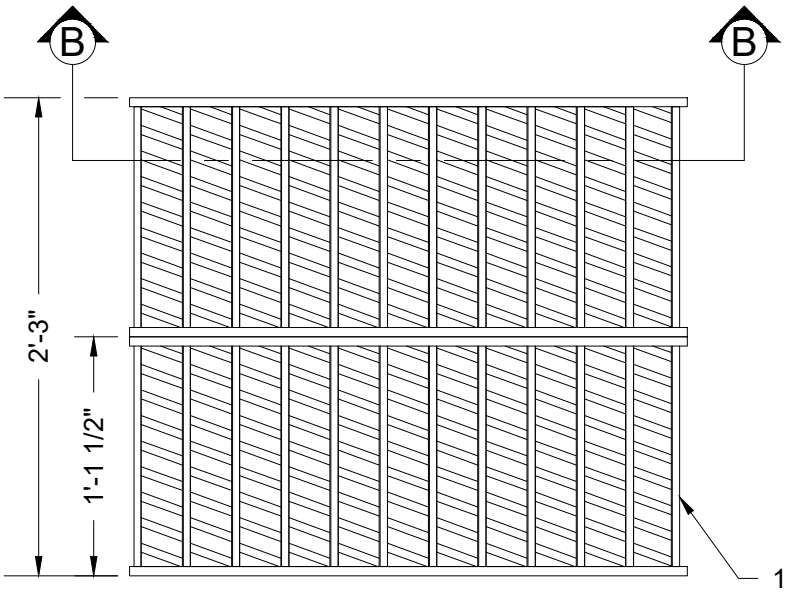


PLAN (FRAME)

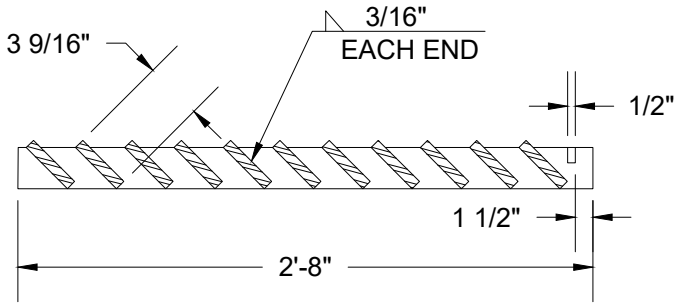


SECTION A-A

NOTE:
USE VERTICAL BEADS IN CORNERS, FILLET WELD JOINT ON BOTTOM OF FRAME. GRATE MUST REST FLAT ON FRAME SURFACE. BAR SIZE PER AASHTO LOAD REQUIREMENTS AND AS APPROVED BY ENGINEER.



PLAN (GRATES)



SECTION B-B

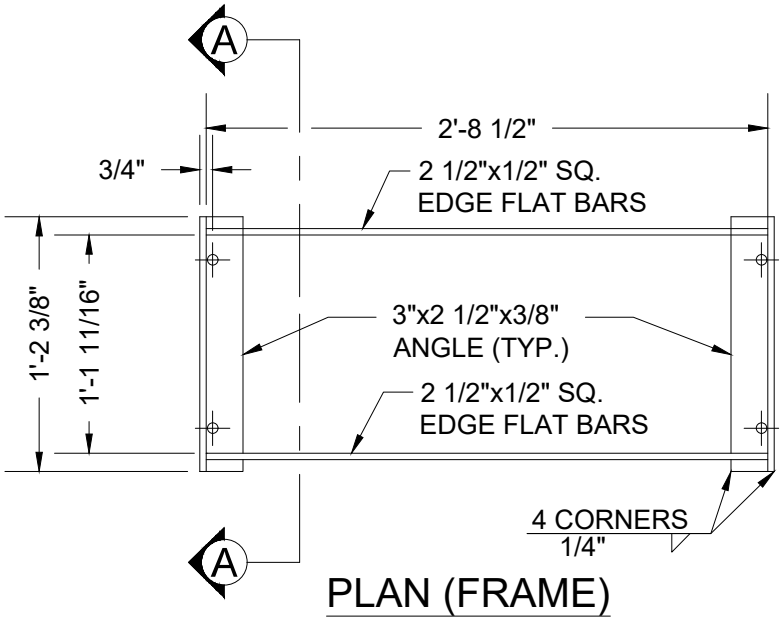
NOTE:
THIS GRATE MAY BE REQUIRED IN HILLSIDE AND GEOLOGIC RISK OVERLAY DISTRICTS OR WHERE STREET SLOPES EXCEED 5 PERCENT GRADE, OR WHERE THE CATCH BASIN FRAME AND GRATE (STANDARD DETAIL 401C) IS NOT CAPABLE OF INTERCEPTING COMPLETELY THE DESIGN STORM FLOW AT THE CURB.

CITY OF GRESHAM

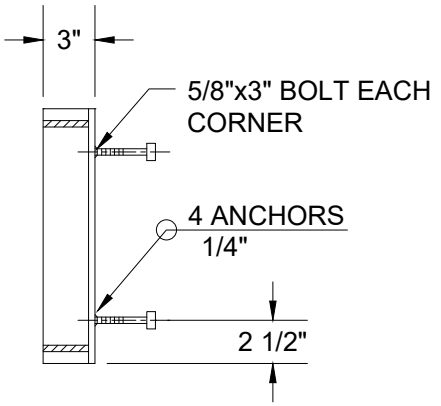
CATCH BASIN WITH P-45 GRATE

PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	401E

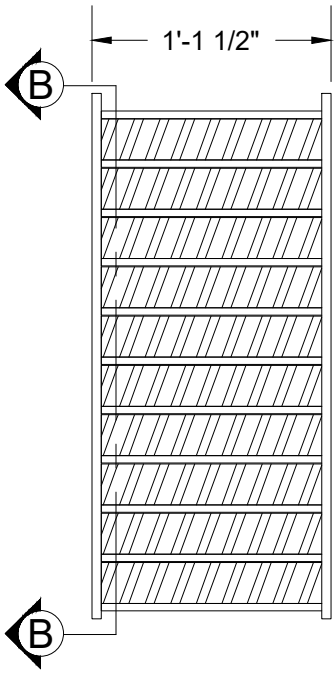


PLAN (FRAME)

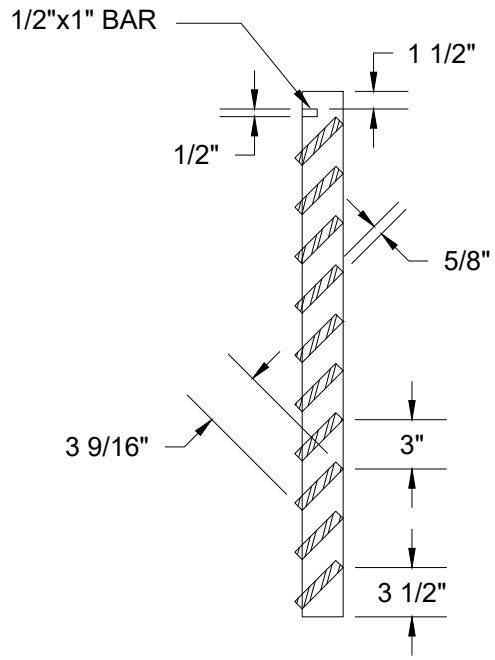


SECTION A-A

NOTE:
USE VERTICAL BEADS IN CORNERS, FILLET WELD JOINT ON BOTTOM OF FRAME. GRATE MUST REST FLAT ON FRAME SURFACE. BAR SIZE PER AASHTO LOAD REQUIREMENTS AND AS APPROVED BY ENGINEER.



PLAN (GRATE)



SECTION B-B

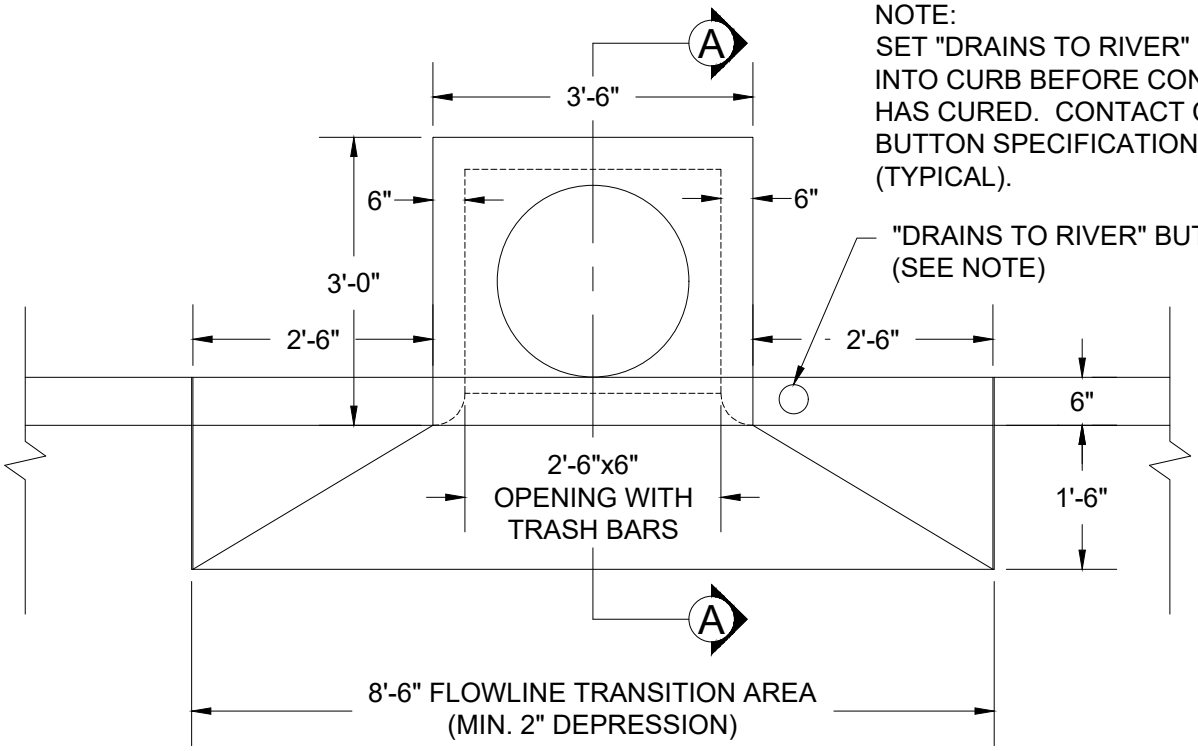
NOTE:
THIS GRATE MAY BE REQUIRED IN HILLSIDE AND GEOLOGIC RISK OVERLAY DISTRICTS OR WHERE STREET SLOPES EXCEED 5 PERCENT GRADE, OR WHERE THE CATCH BASIN FRAME AND GRATE (STANDARD DETAIL 401C) IS NOT CAPABLE OF INTERCEPTING COMPLETELY THE DESIGN STORM FLOW AT THE CURB.

CITY OF GRESHAM

MODIFIED CATCH BASIN FRAME WITH SINGLE P-45 GRATE

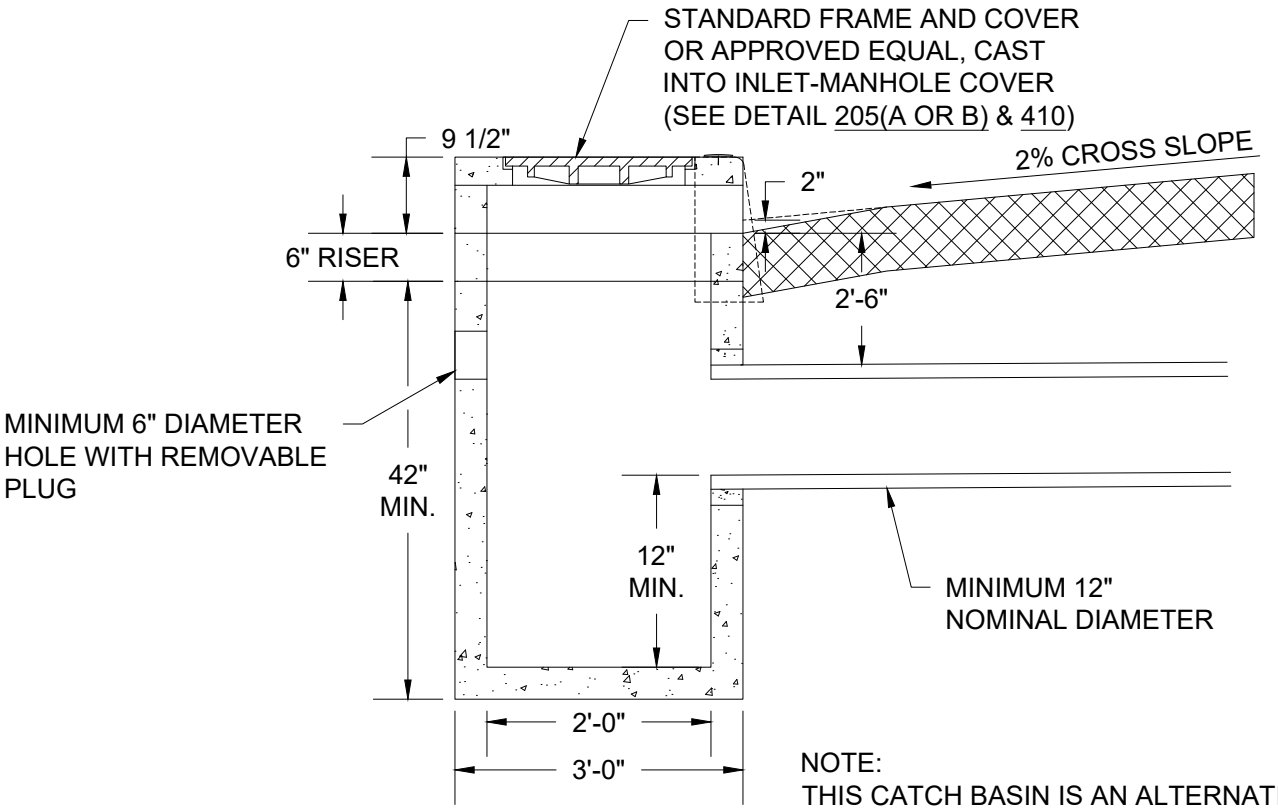
PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	401F



NOTE:
SET "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS CURED. CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL).

PLAN



SECTION A-A

NOTE:
THIS CATCH BASIN IS AN ALTERNATIVE, FOR USE IN SPECIAL CIRCUMSTANCES AS REQUIRED BY THE ENGINEER.

CITY OF GRESHAM

NON-GRATED CATCH BASIN

PWS VERSION: JAN 2024

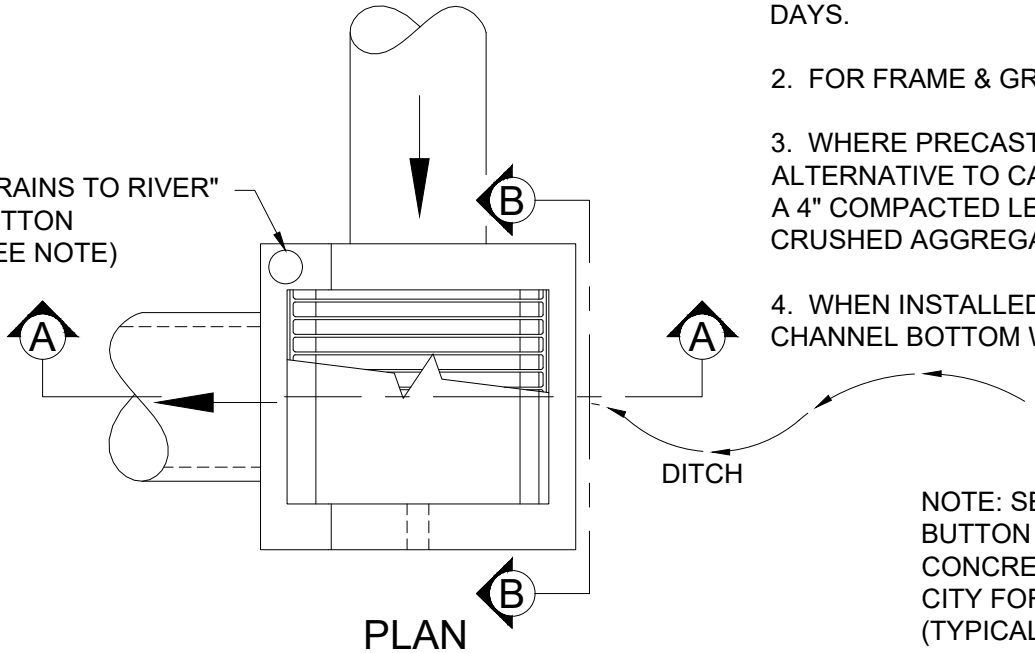
DRAWN	CMC
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	402

1. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4,000 P.S.I. IN 28 DAYS.

2. FOR FRAME & GRATE DETAIL SEE DETAIL 403C.

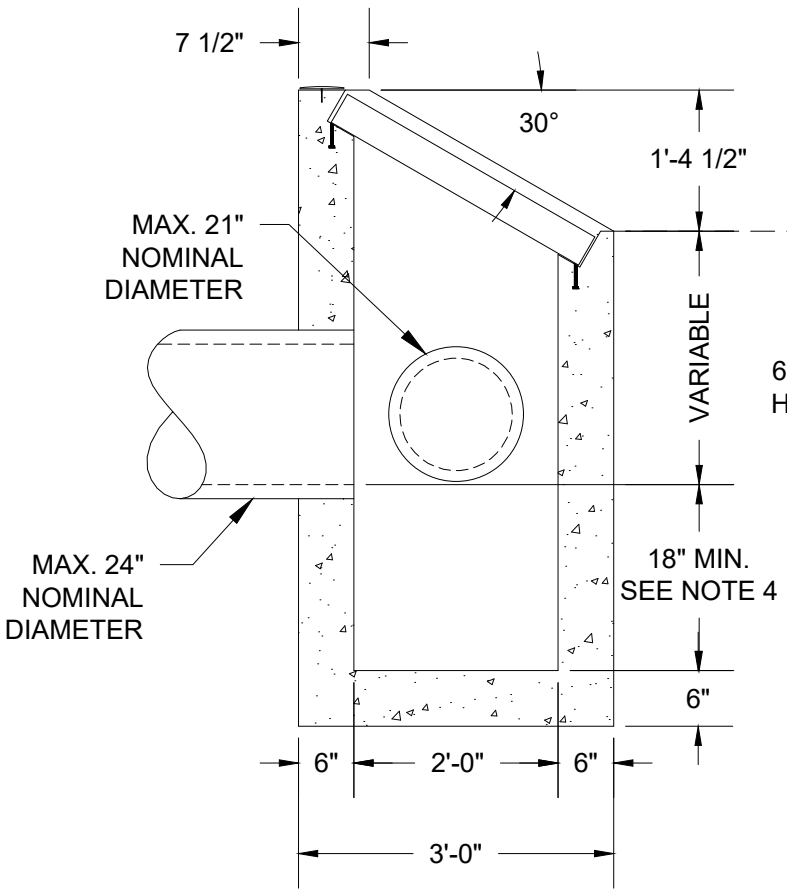
3. WHERE PRECAST INLETS ARE USED AS AN ALTERNATIVE TO CAST IN PLACE INLETS, A 4" COMPACTED LEVELING BED OF 3/4"-0" CRUSHED AGGREGATE SHALL BE PROVIDED.

4. WHEN INSTALLED AS A POND OUTLET, CHANNEL BOTTOM WITHOUT A SUMP.

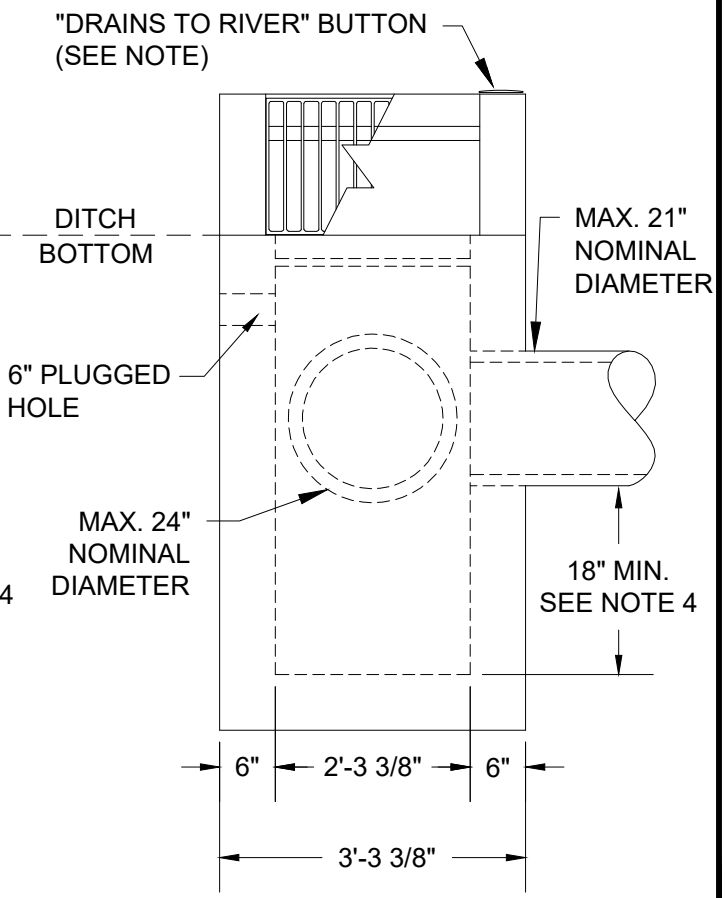


PLAN

NOTE: SET "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS CURED. CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL).



SECTION A-A



SECTION B-B

CITY OF GRESHAM

DITCH INLET TYPE D - 30°

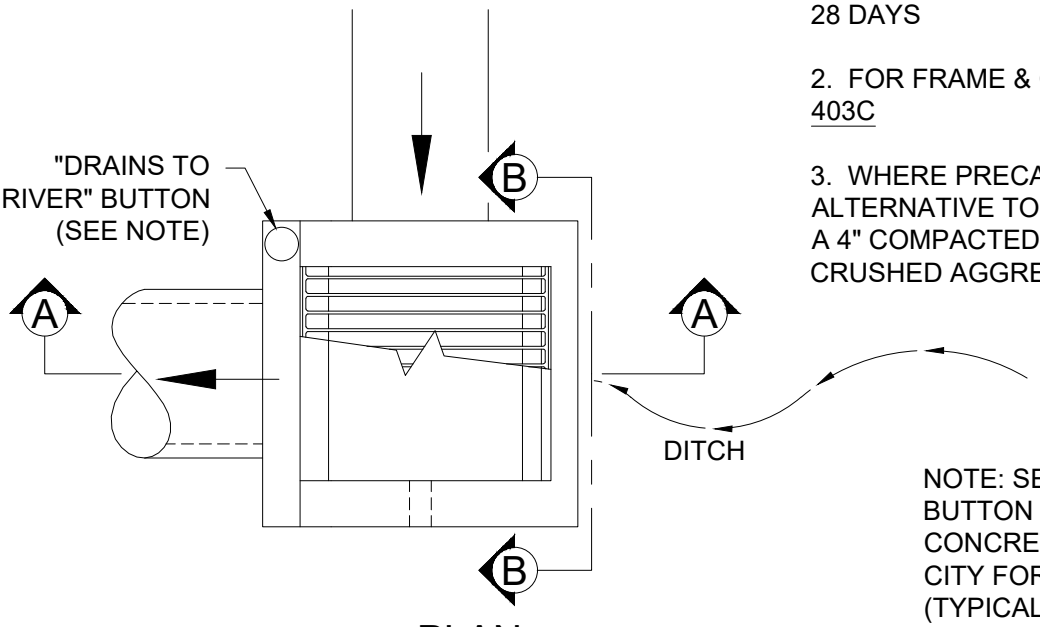
PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	MAR 2021
APPR.	
DETAIL NO.	403A

1. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4,000 P.S.I. IN 28 DAYS

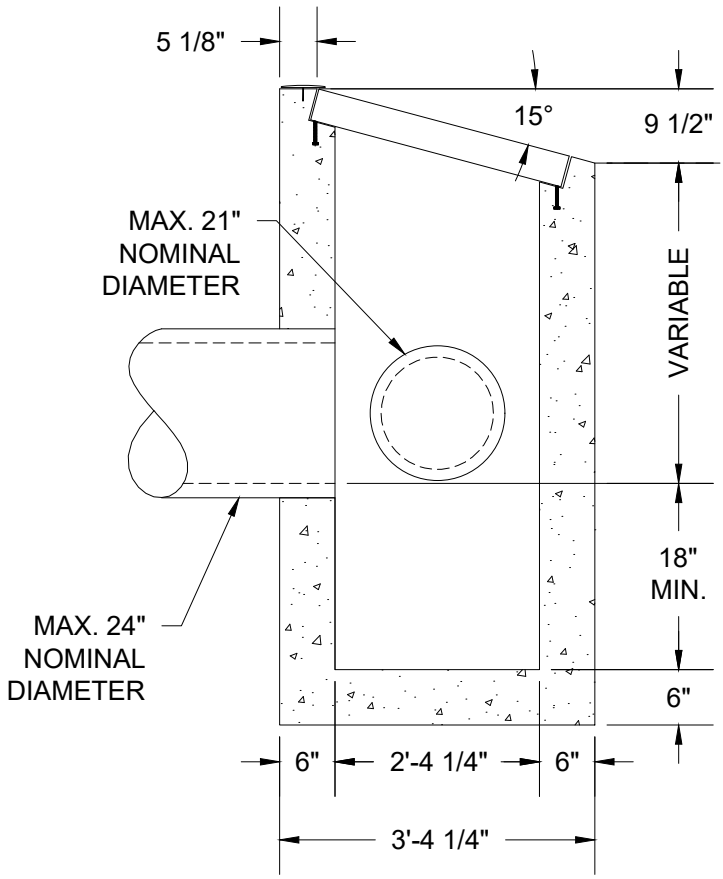
2. FOR FRAME & GRATE DETAIL SEE DETAIL 403C

3. WHERE PRECAST INLETS ARE USED AS AN ALTERNATIVE TO CAST IN PLACE INLETS, A 4" COMPACTED LEVELING BED OF 3/4"-0" CRUSHED AGGREGATE SHALL BE PROVIDED

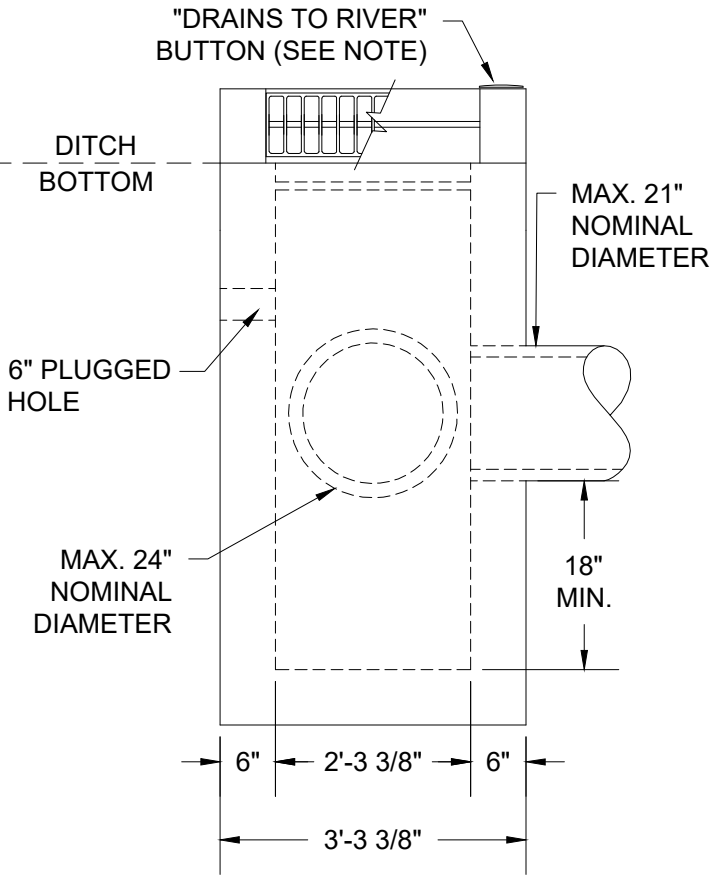


PLAN

NOTE: SET "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS CURED. CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL).



SECTION A-A



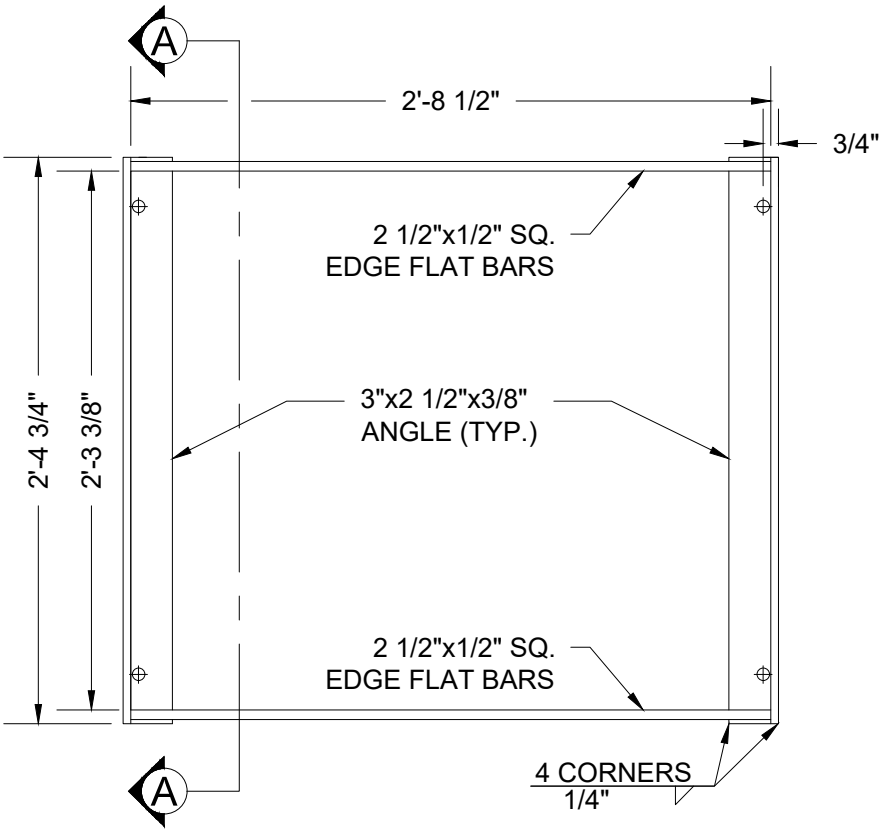
SECTION B-B

CITY OF GRESHAM

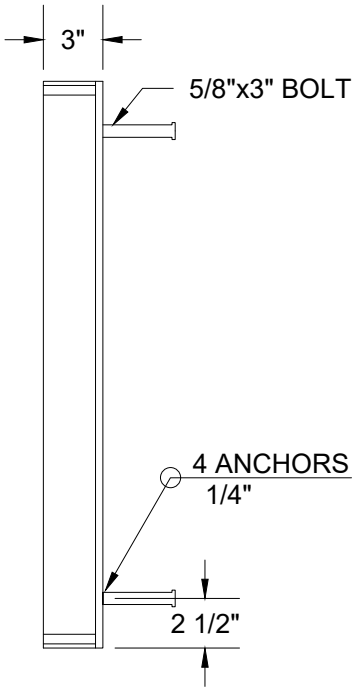
DITCH INLET TYPE D - 15°

PWS VERSION: JAN 2024

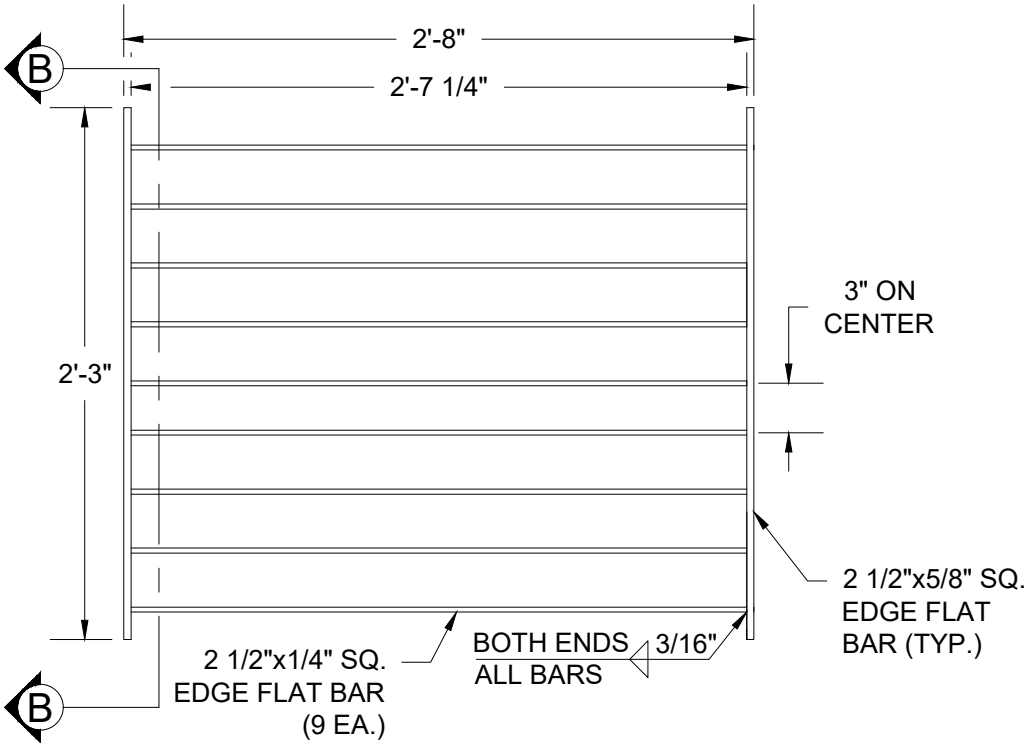
DRAWN	CMC
REV. DATE	MAR 2021
APPR.	
DETAIL NO.	403B



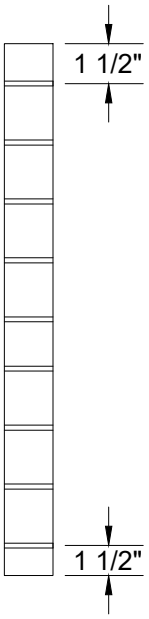
PLAN (FRAME)



SECTION A-A



PLAN (GRATE)



SECTION B-B

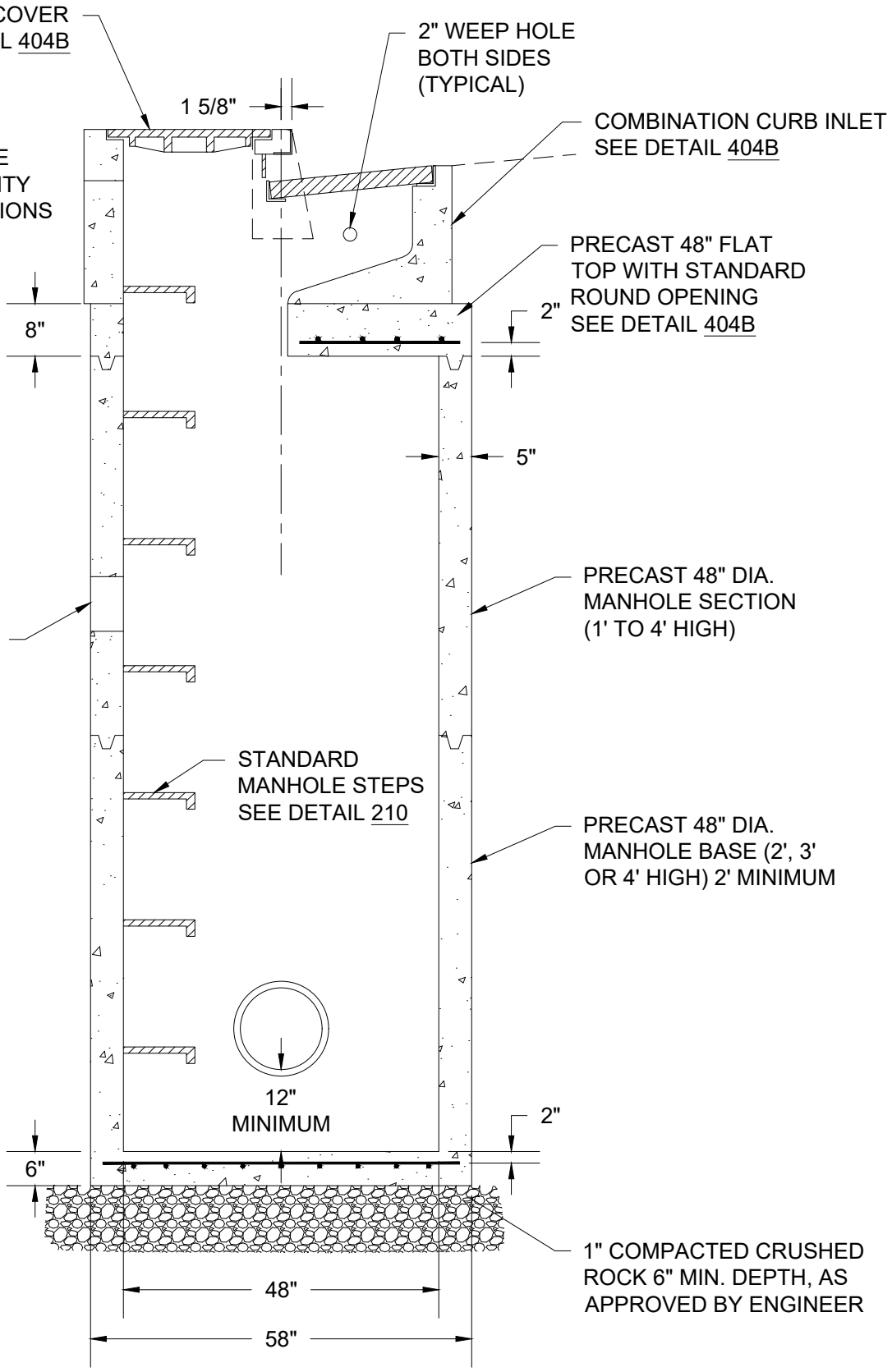
1. WHEN INSTALLED AS A POND OUTLET GRATE, HINGE THE TOP OF THE GRATE TO THE FRAME.

CITY OF GRESHAM

DITCH INLET FRAME AND GRATE

PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2020
APPR.	
DETAIL NO.	403C



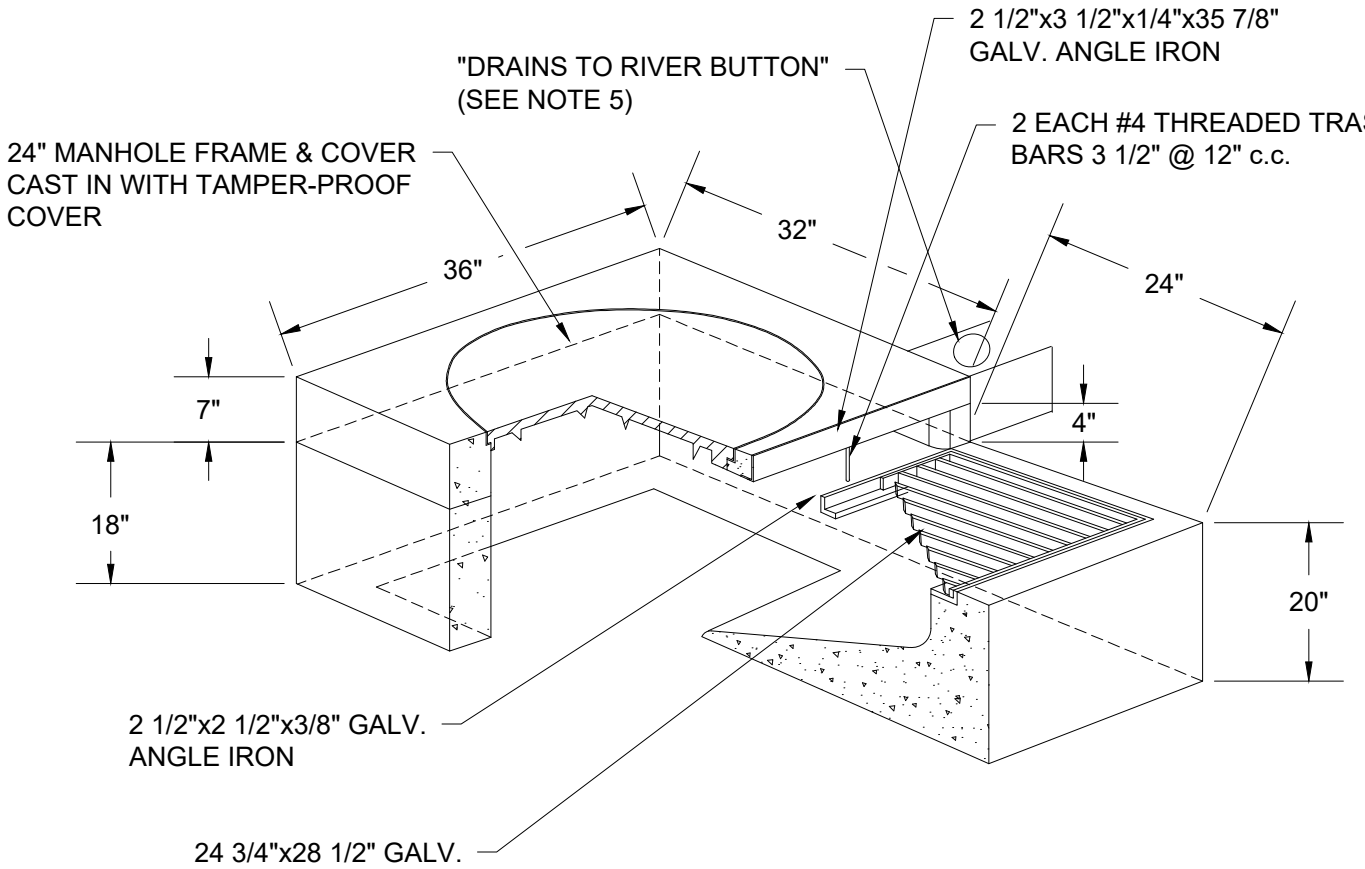
PROFILE

CITY OF GRESHAM

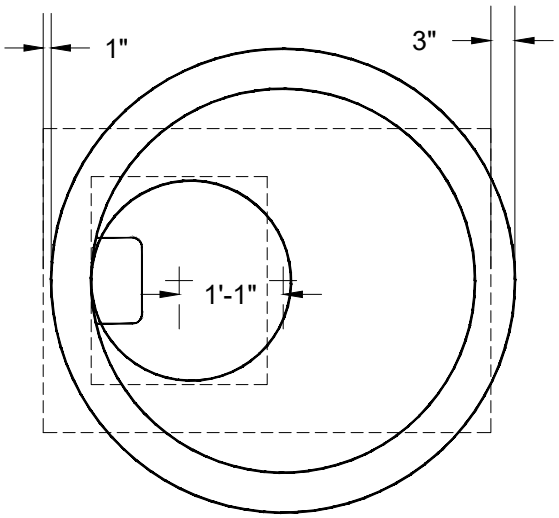
INLET-MANHOLE STANDARD

PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2019
APPR.	
DETAIL NO.	404A



COMBINATION CURB INLET



STANDARD FLAT TOP WITH ROUND OPENING

NOTES:

1. REINFORCING FOR INLET UNIT: 3 EA. #4 HORIZONTAL BARS.
2. REINFORCING FOR TOP UNIT: 2 EA. #3 HORIZONTAL BARS.
3. REINFORCING FOR INLET SLOPED BASE: 4" X 4" MESH.
4. GUTTER IS TAPERED DOWN TO GRATE INLET.
5. SET "DRAINS TO RIVER" BUTTON INTO ADJACENT CURB BEFORE CONCRETE HAS CURED, CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL).

CITY OF GRESHAM

INLET-MANHOLE COMBINATION CURB INLET

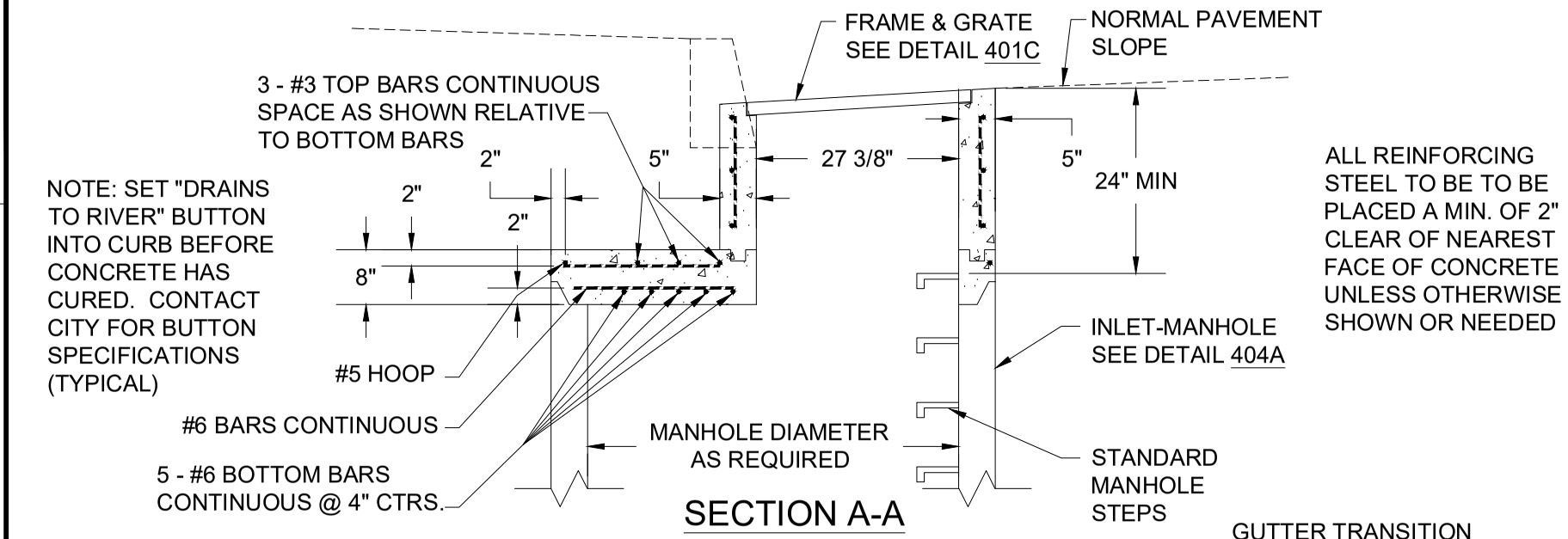
PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2019
APPR.	
DETAIL NO.	404B

CITY OF GRESHAM

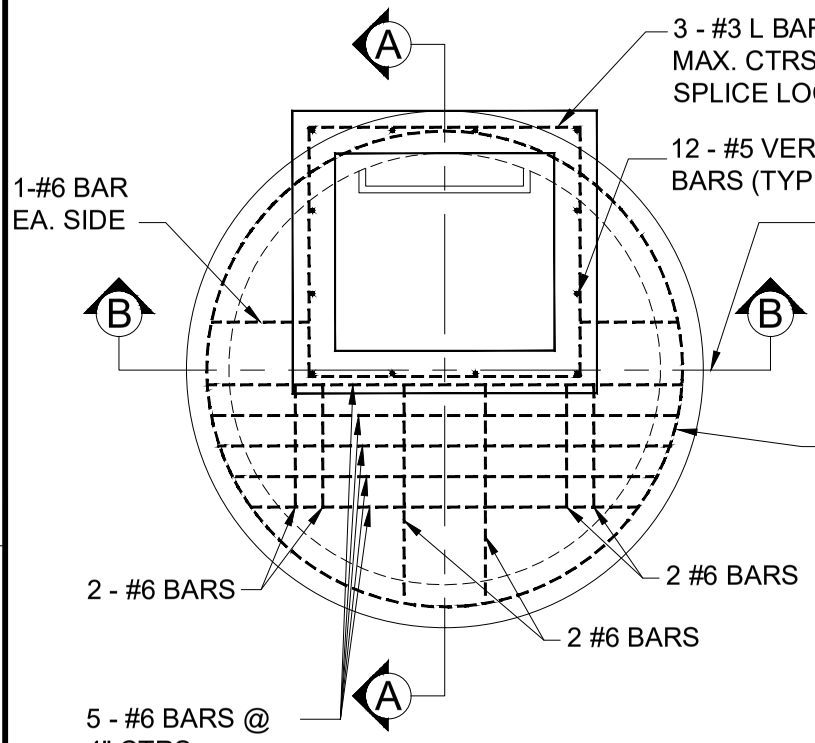
PWS VERSION: JAN 2024

INLET-MANHOLE ALTERNATE TOP



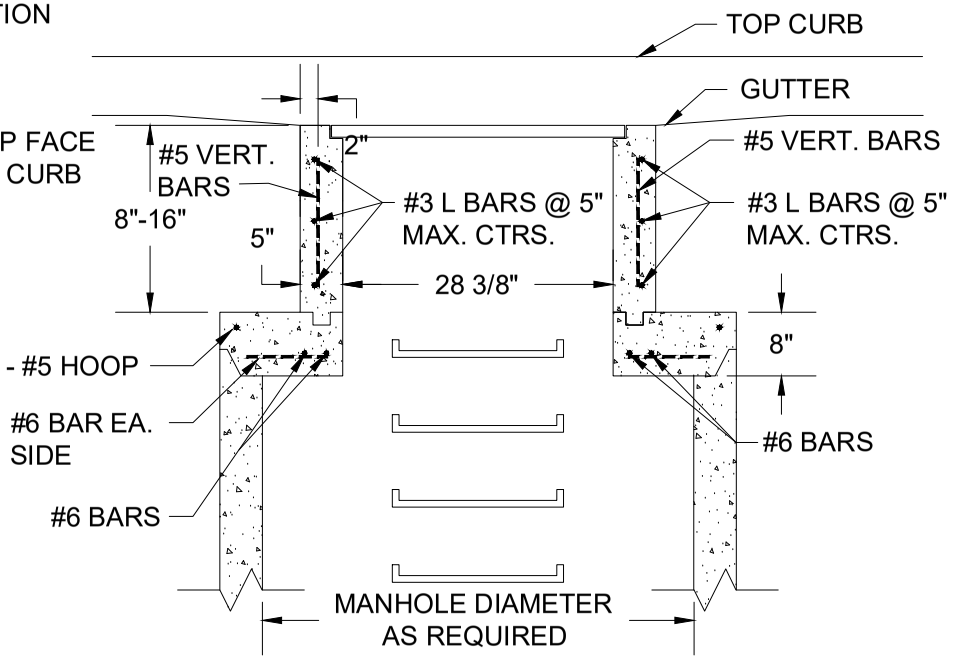
SECTION A-A

GUTTER TRANSITION SEE DETAIL 401A



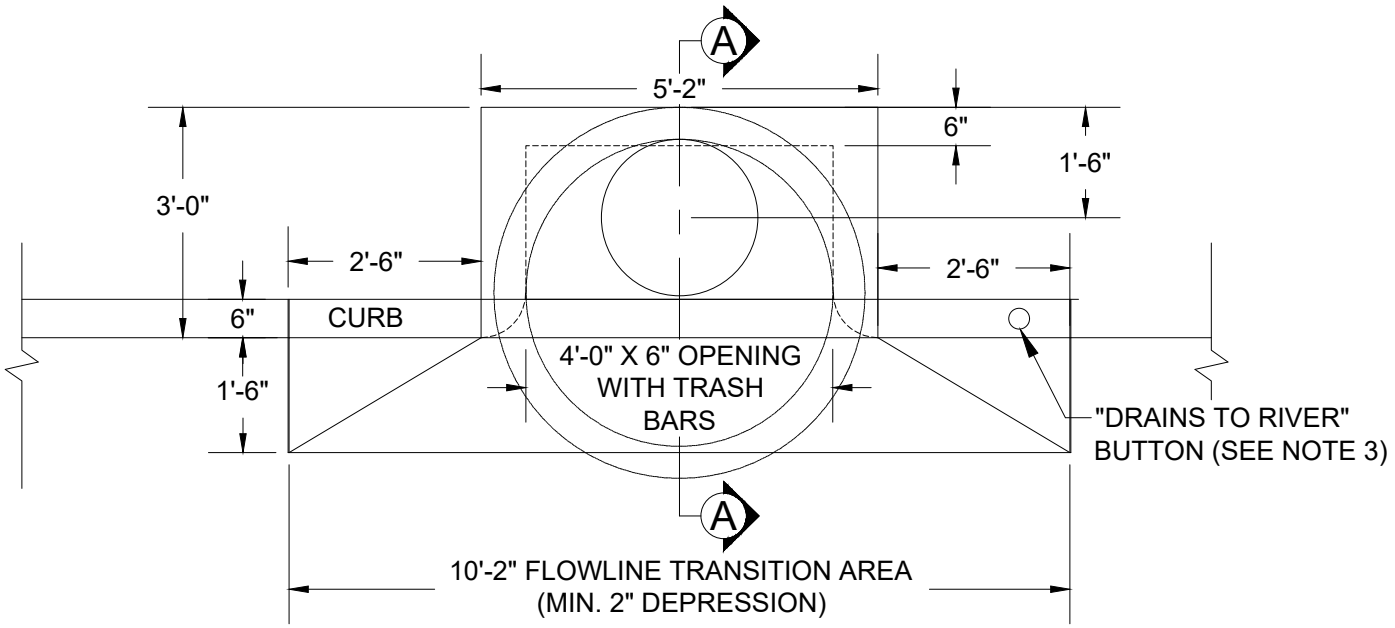
PLAN

(TOP BARS NOT SHOWN IN PLAN VIEW)

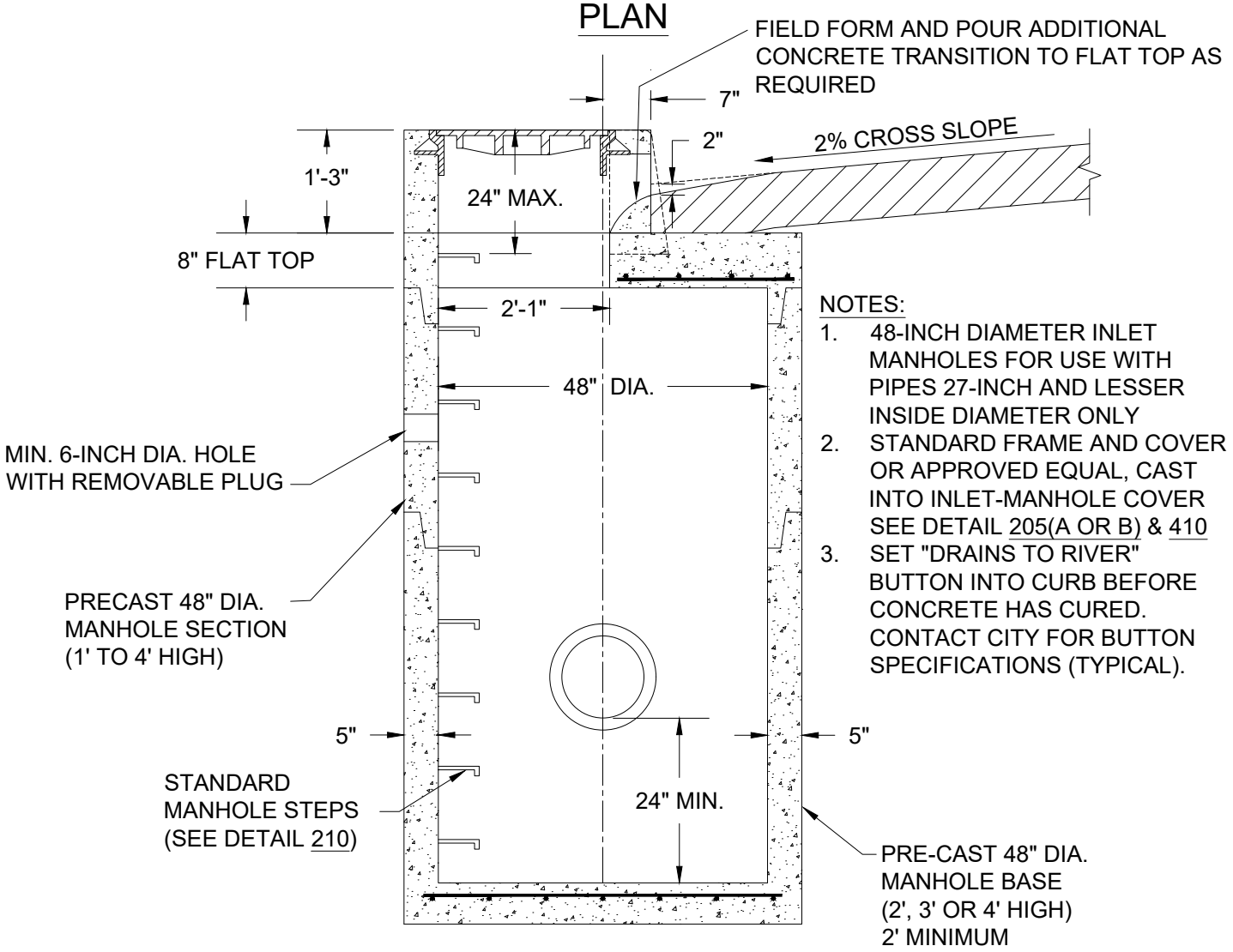


SECTION B-B

DETAIL NO.	APPR.	REV. DATE	DRAWN
404C		JAN 2019	CMC



PLAN



NOTES:

1. 48-INCH DIAMETER INLET MANHOLES FOR USE WITH PIPES 27-INCH AND LESSER INSIDE DIAMETER ONLY
2. STANDARD FRAME AND COVER OR APPROVED EQUAL, CAST INTO INLET-MANHOLE COVER SEE DETAIL 205(A OR B) & 410
3. SET "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS CURED. CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL).

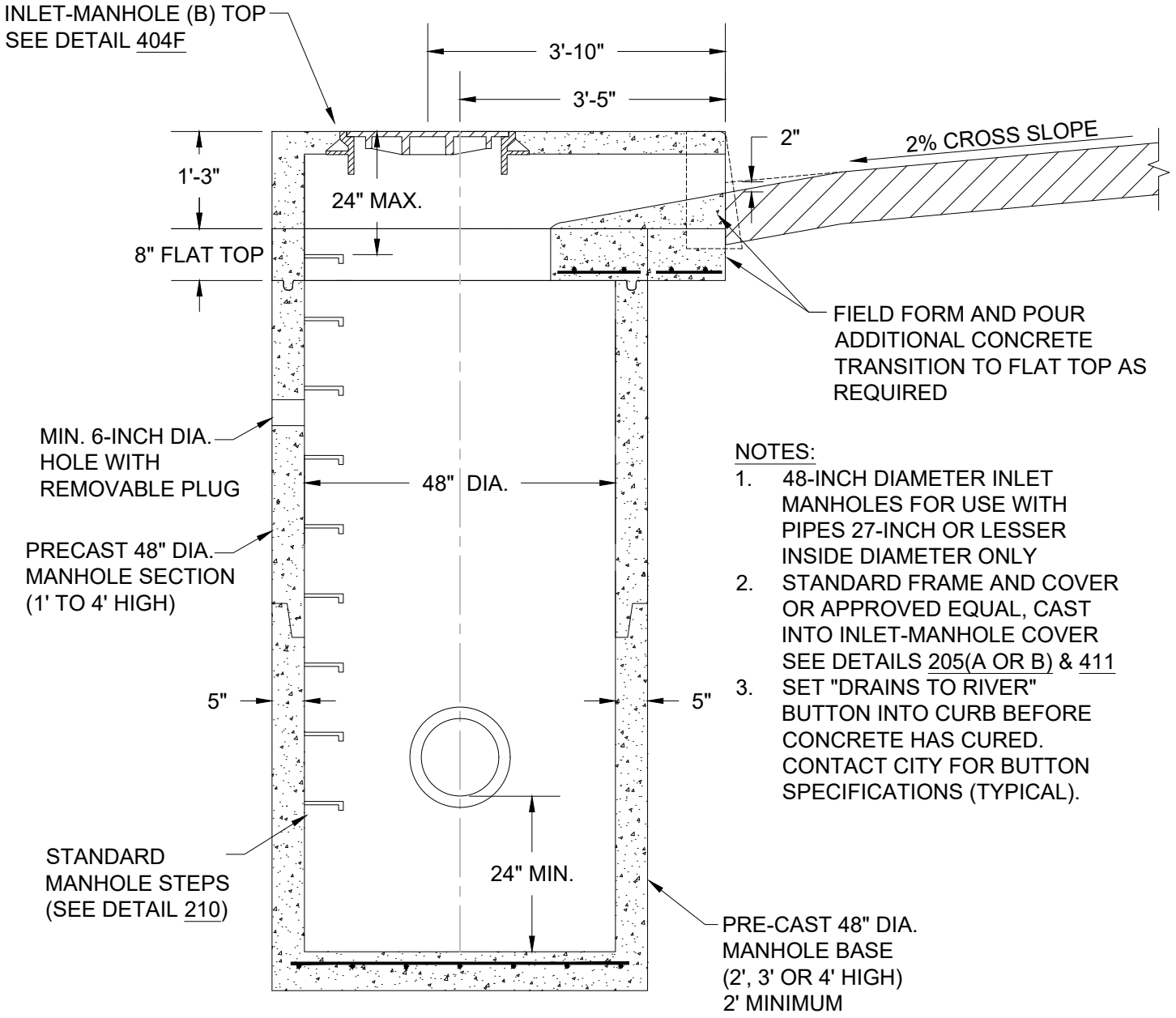
SECTION A-A

CITY OF GRESHAM

NON-GRATED INLET-MANHOLE (A)

PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	404D



NOTES:

1. 48-INCH DIAMETER INLET MANHOLES FOR USE WITH PIPES 27-INCH OR LESSER INSIDE DIAMETER ONLY
2. STANDARD FRAME AND COVER OR APPROVED EQUAL, CAST INTO INLET-MANHOLE COVER SEE DETAILS 205(A OR B) & 411
3. SET "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS CURED. CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL).

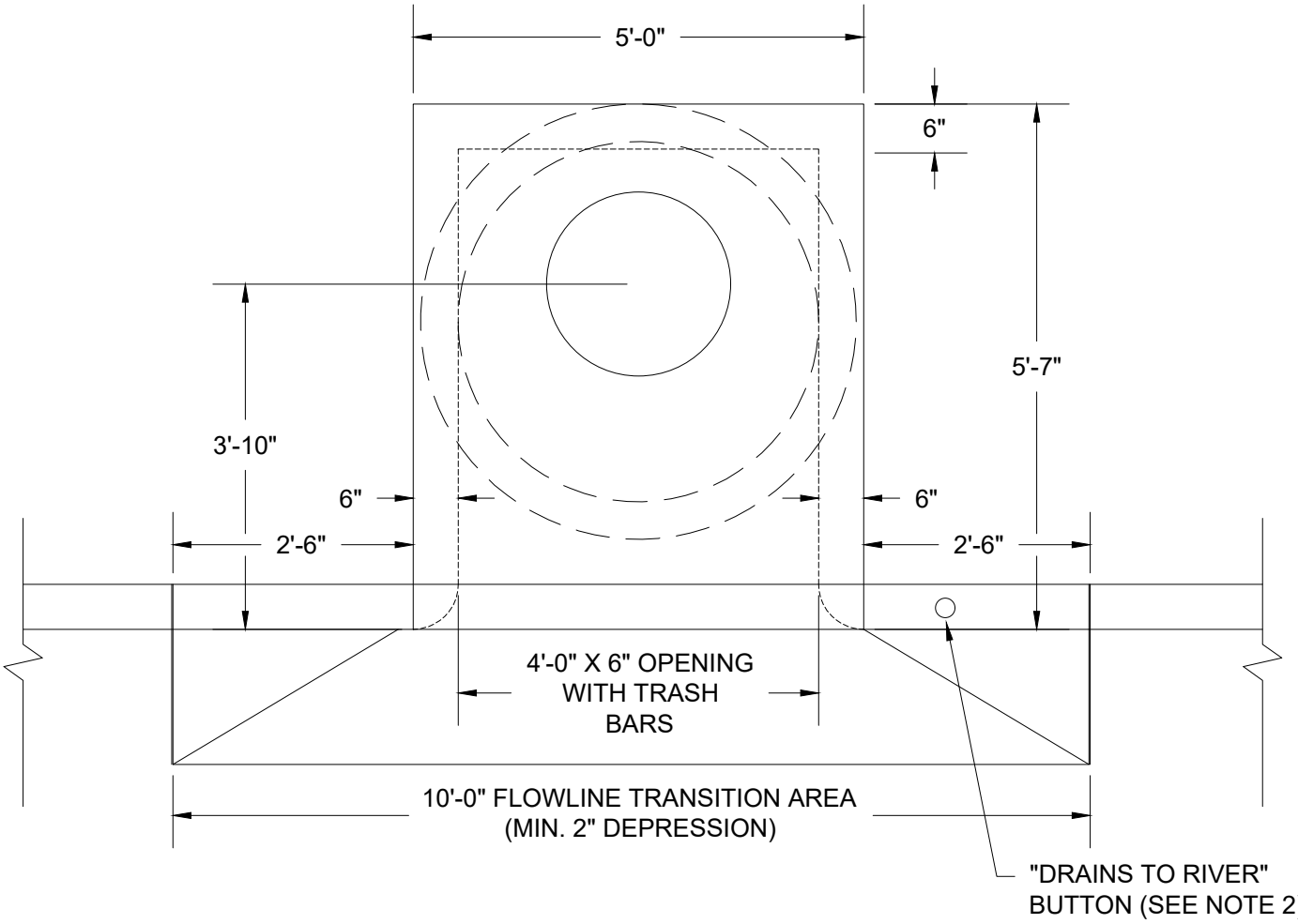
PROFILE

CITY OF GRESHAM

NON-GRATED INLET-MANHOLE (B)

PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	404E



NOTES:

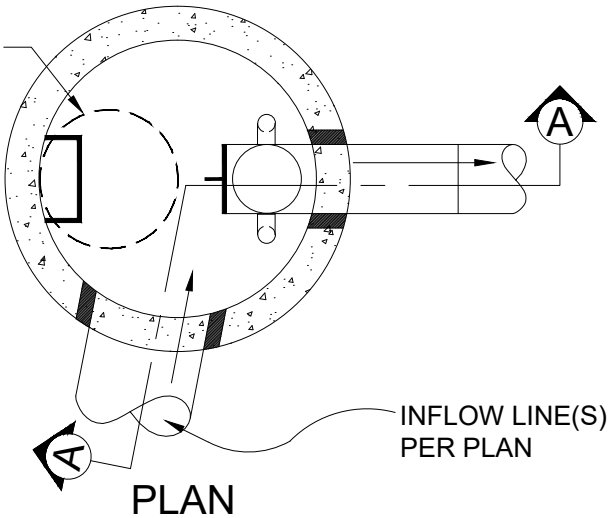
1. STANDARD FRAME AND COVER OR APPROVED EQUAL, CAST INTO INLET-MANHOLE TOP. SEE DETAILS 205(A OR B) & 411
2. SET "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS CURED. CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL).

CITY OF GRESHAM

NON-GRATED INLET-MANHOLE (B) TOP

PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	404F



PLAN

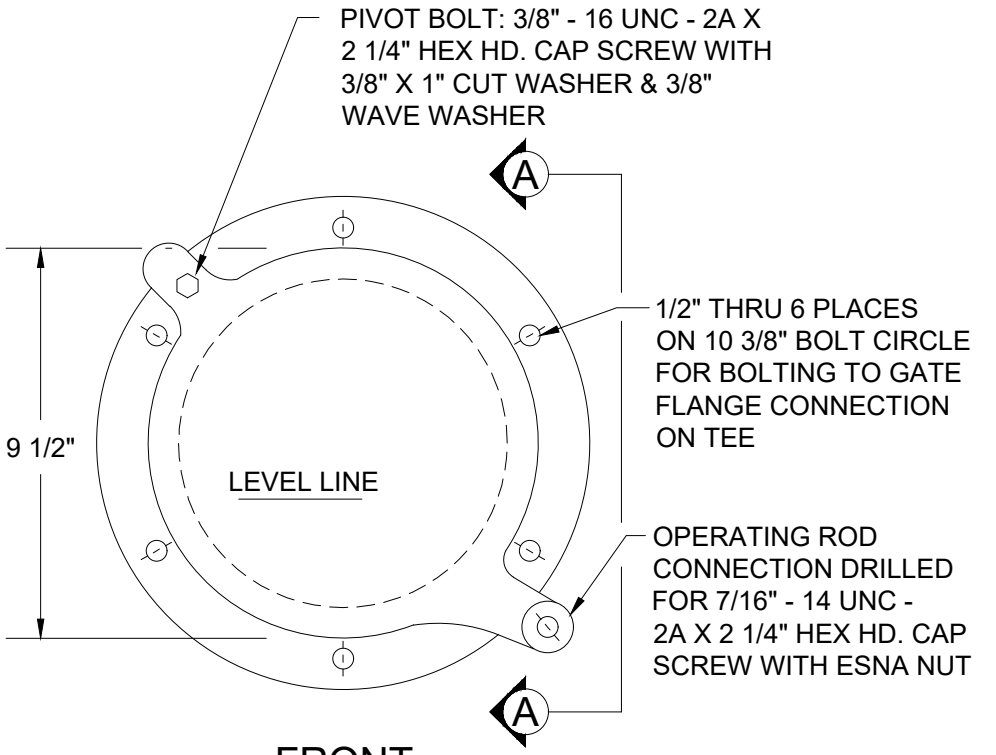
SECTION A-A

CITY OF GRESHAM

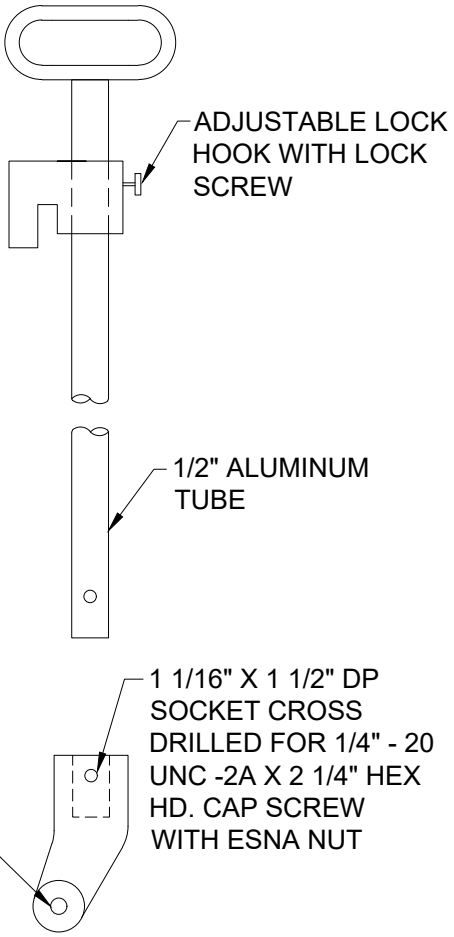
FLOW CONTROL MANHOLE

PWS VERSION: JAN 2024

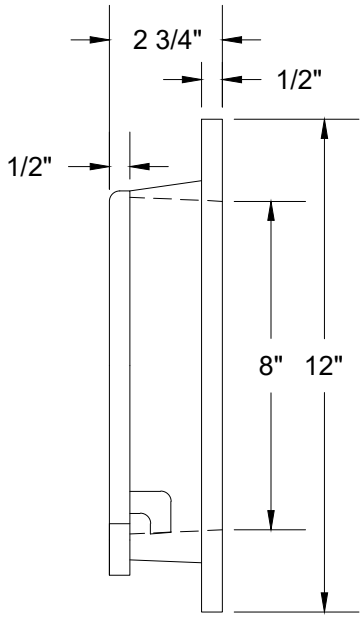
DRAWN	CMC
REV. DATE	MAR 2021
APPR.	
DETAIL NO.	405A



FRONT



LIFT HANDLE AND ADAPTER



SECTION A-A

NOTES:

1. MATERIAL: CAST ALUMINUM ALLOY PER ASTM B26M
2. ALL FASTENERS SHALL BE STAINLESS STEEL
3. INSTALLER SHOULD CONSULT INSTRUCTION NOTES FURNISHED WITH SHEAR GATES
4. A NEOPRENE RUBBER GASKET IS REQUIRED BETWEEN THE RISER MOUNTING FLANGE AND THE GATE FLANGE
5. INSTALL SHEAR GATE WITH THE LEVEL-LINE MARKING ON A TRUE HORIZONTAL PLANE WHEN THE GATE IS IN A CLOSED POSITION

CITY OF GRESHAM

8" SHEAR GATE AND LIFT HANDLE

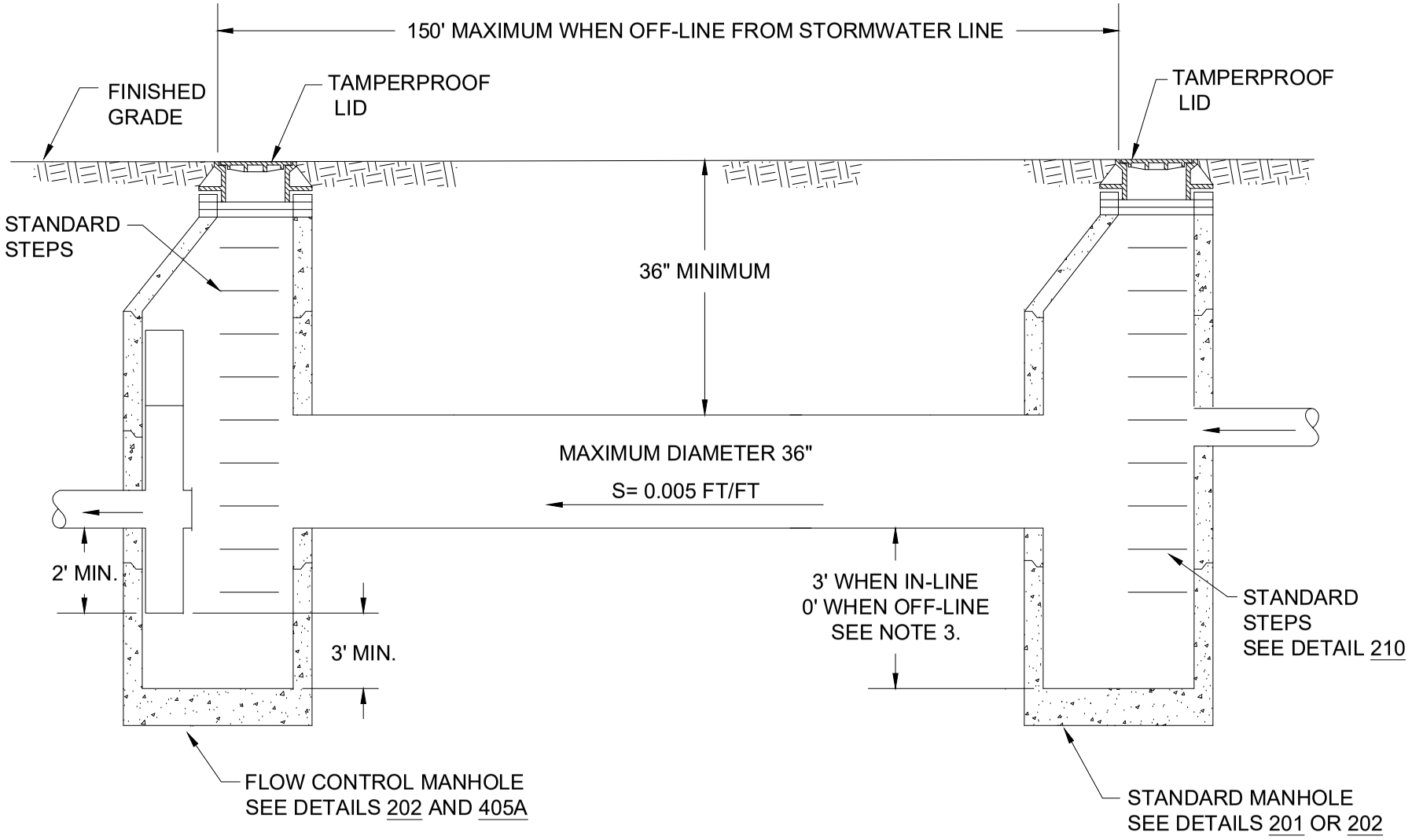
PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2019
APPR.	
DETAIL NO.	405B

CITY OF GRESHAM

PWS VERSION: JAN 2024

DETENTION PIPE
TYPICAL CLOSED



NOTES:

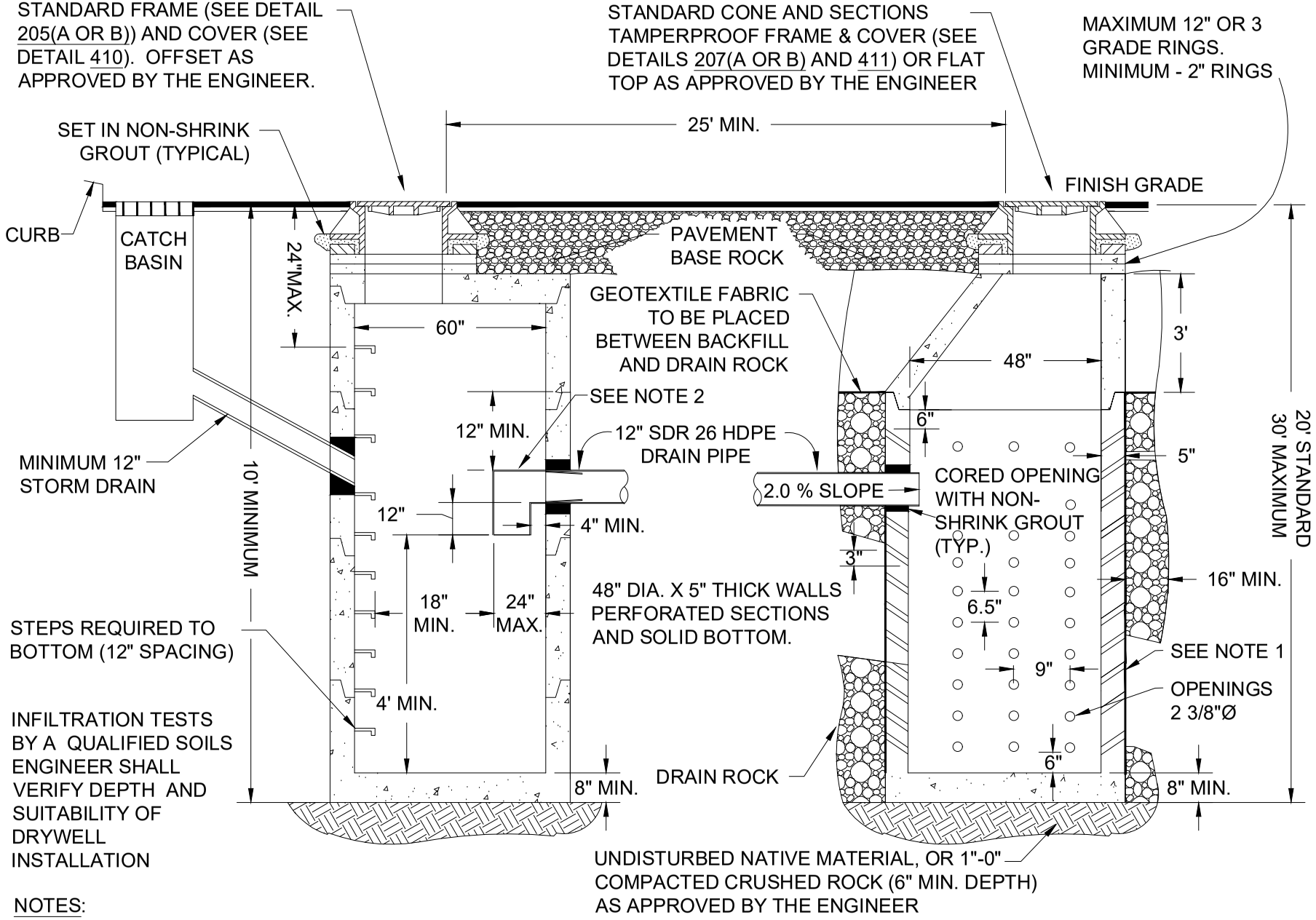
1. THIS DETAIL REPRESENTS A DESIGN CONCEPT. FINAL DESIGN MAY VARY DEPENDING ON SITE CONDITIONS AND SHALL BE APPROVED BY THE ENGINEER.
2. DETENTION PIPE AND ALL CONNECTIONS SHALL BE WATERTIGHT.
3. NO SUMP SHALL BE INSTALLED ON MANHOLES WITHOUT VEHICULAR ACCESS.

DRAWN	REV. DATE	APPR.	DETAIL NO.
CMC	JAN 2024		406

CITY OF GRESHAM

PWS VERSION: JAN 2024

DRYWELL SYSTEM



NOTES:

① HDPE WRAP AROUND THE OUTSIDE OF THE PERFORATED SECTIONS SHALL BE ADDED IF THE DRAIN ROCK IS SMALLER THAN 2"-4".

② 12" FABRICATED SOLID WALL HDPE 90° SHORT RADIUS ELBOW PER ASTM D1248 SDR 26. SLIGHT TAPER ON OUTLET PIPE BY MANUFACTURER TO MAKE WATERTIGHT CONNECTION BY SLIPPING INTO OUTLET PIPE. ELBOW SHALL BE ANCHORED TO MANHOLE WALL WITH STAINLESS STEEL BANDS AND 1/2" STAINLESS STEEL BOLT.

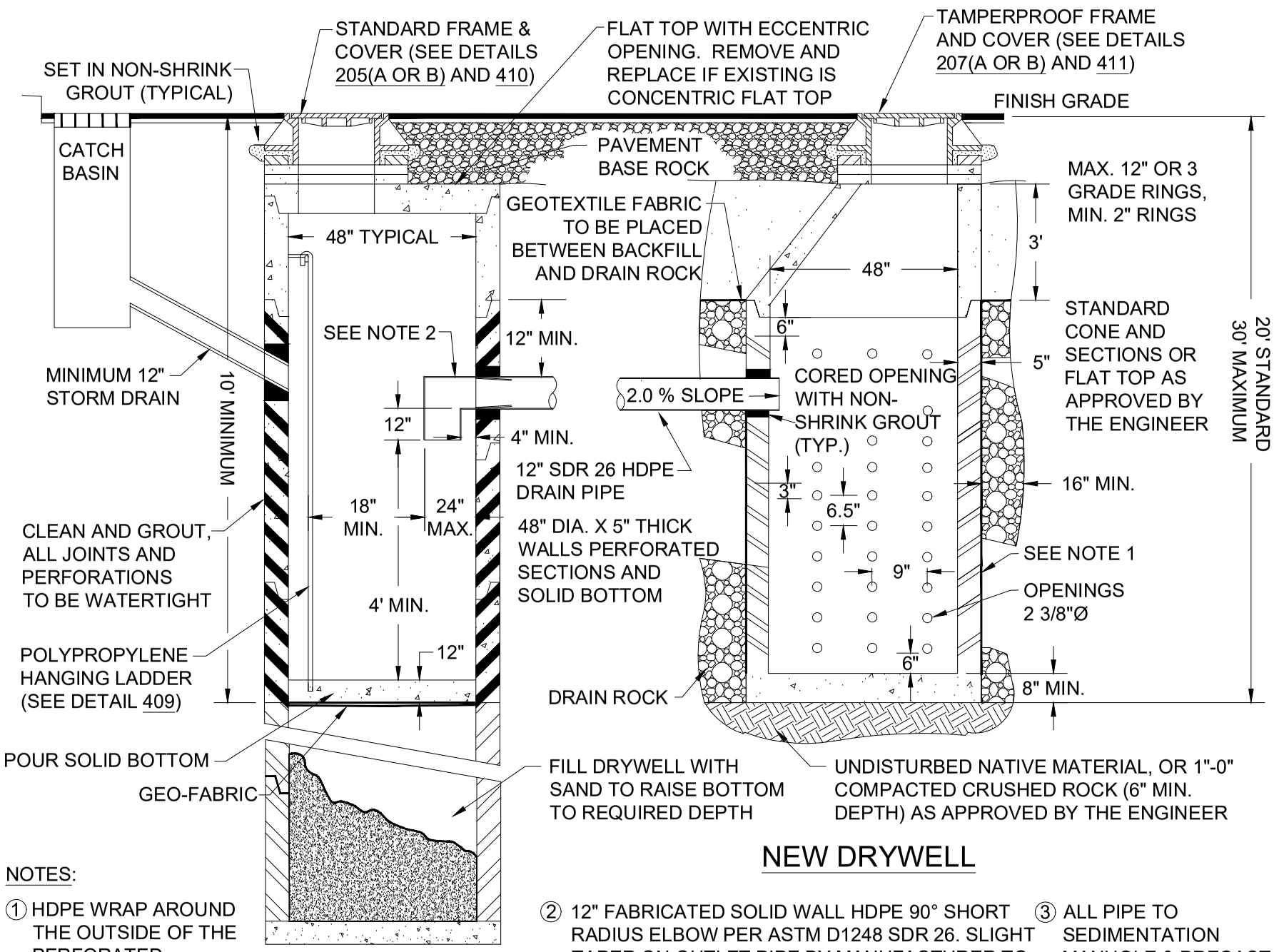
③ ALL PIPE TO SEDIMENTATION MANHOLE & PRECAST DRYWELL SHALL HAVE CLASS "B" BEDDING & PIPE ZONE MATERIAL.

DRAWN	REV. DATE	APPR.	DETAIL NO.
CMC	JAN 2024		407

CITY OF GRESHAM

DRYWELL SYSTEM AND SEDIMENTATION MANHOLE (TYPICAL RETROFIT INSTALLATION)

PWS VERSION: JAN 2024



EXISTING DRYWELL

NEW DRYWELL

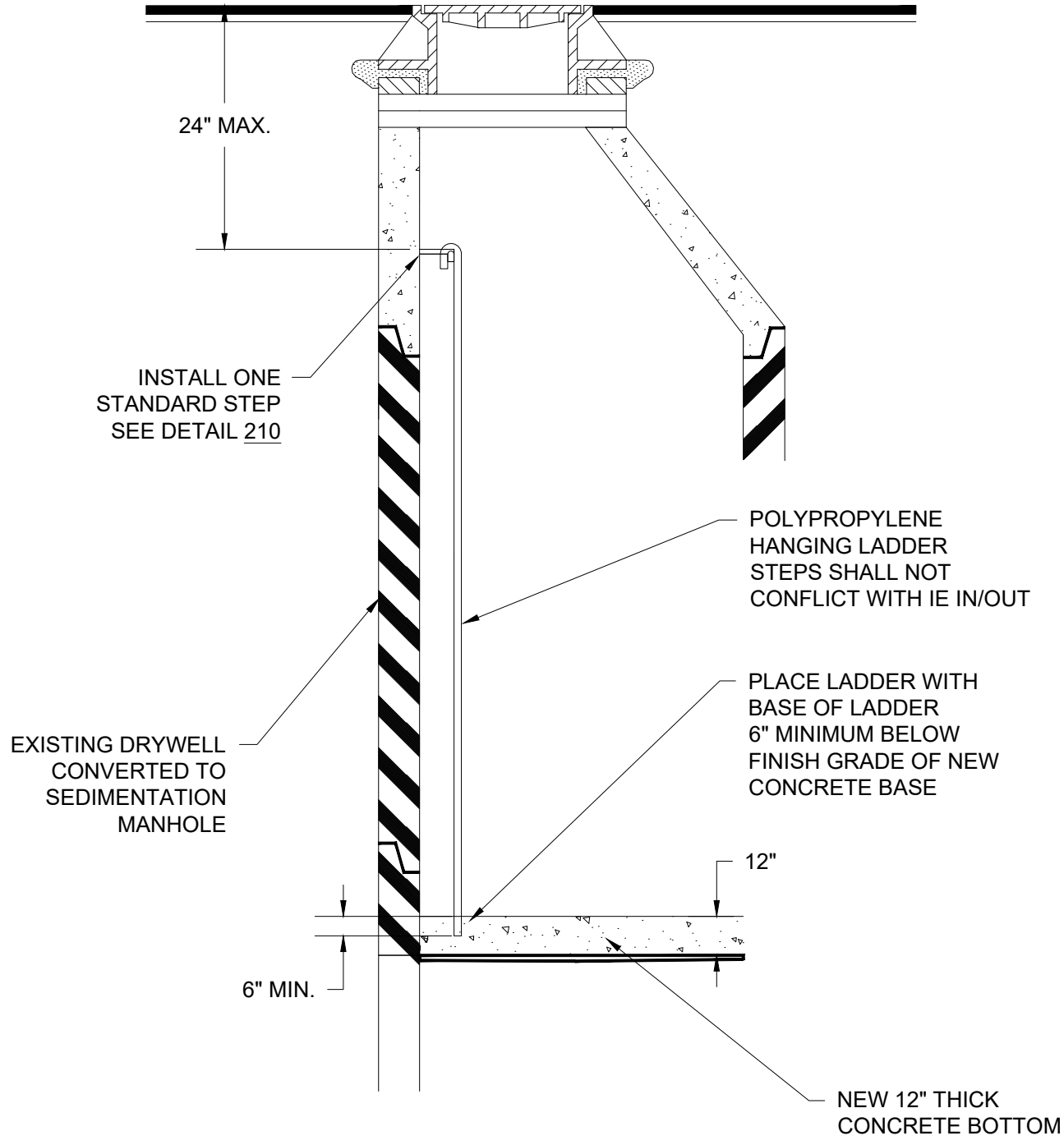
NOTES:

① HDPE WRAP AROUND THE OUTSIDE OF THE PERFORATED SECTIONS SHALL BE ADDED IF THE DRAIN ROCK IS SMALLER THAN 2"-4"

② 12" FABRICATED SOLID WALL HDPE 90° SHORT RADIUS ELBOW PER ASTM D1248 SDR 26. SLIGHT TAPER ON OUTLET PIPE BY MANUFACTURER TO MAKE WATERTIGHT CONNECTION BY SLIPPING INTO OUTLET PIPE. ELBOW SHALL BE ANCHORED TO MANHOLE WALL WITH STAINLESS STEEL BANDS AND 1/2" STAINLESS STEEL BOLT.

③ ALL PIPE TO SEDIMENTATION MANHOLE & PRECAST DRYWELL SHALL HAVE CLASS "B" BEDDING & PIPE ZONE MATERIAL

DRAWN	REV. DATE	APPR.	DETAIL NO.
CMC	JAN 2024		408

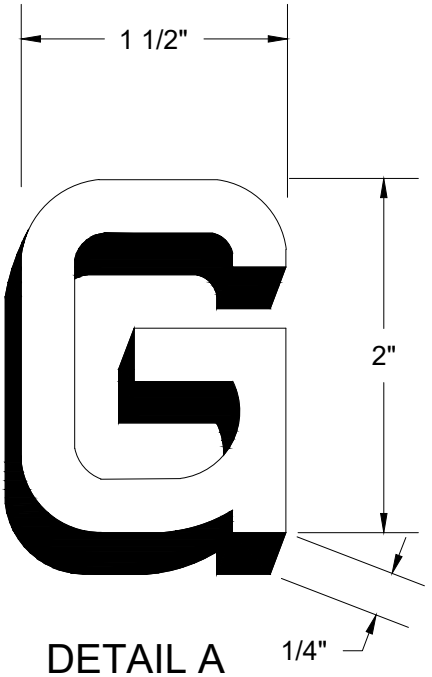


CITY OF GRESHAM

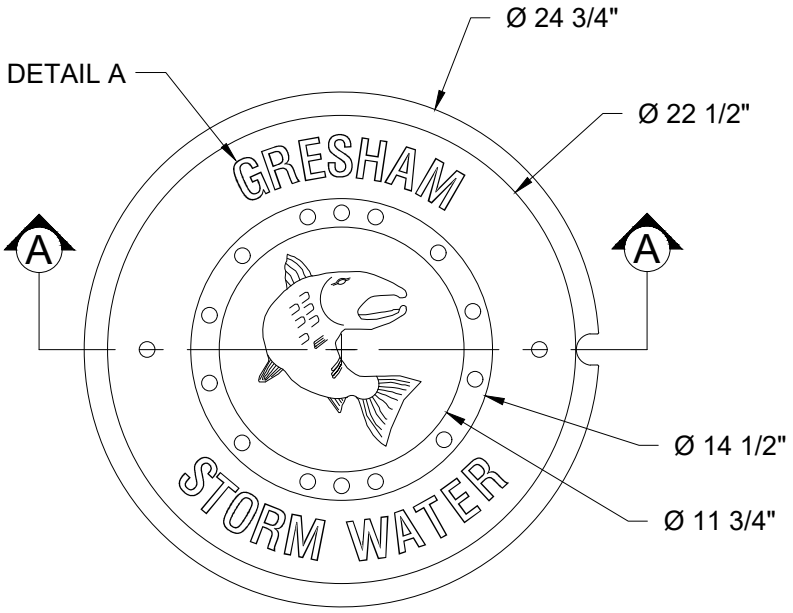
POLYPROPYLENE HANGING LADDER

PWS VERSION: JAN 2024

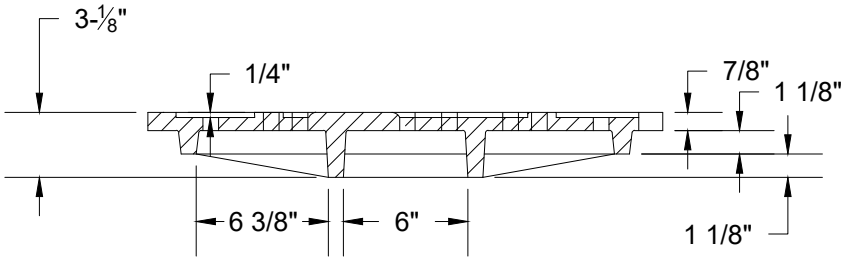
DRAWN	CMC
REV. DATE	JAN 2019
APPR.	
DETAIL NO.	409



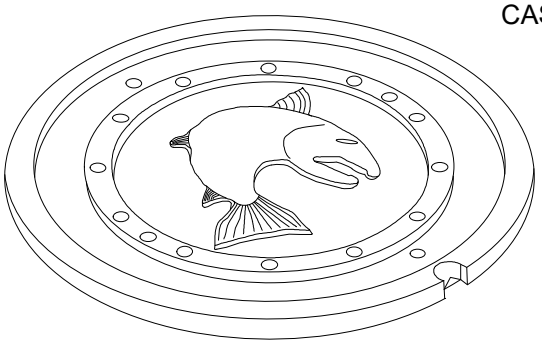
DETAIL A
RAISED TEXT



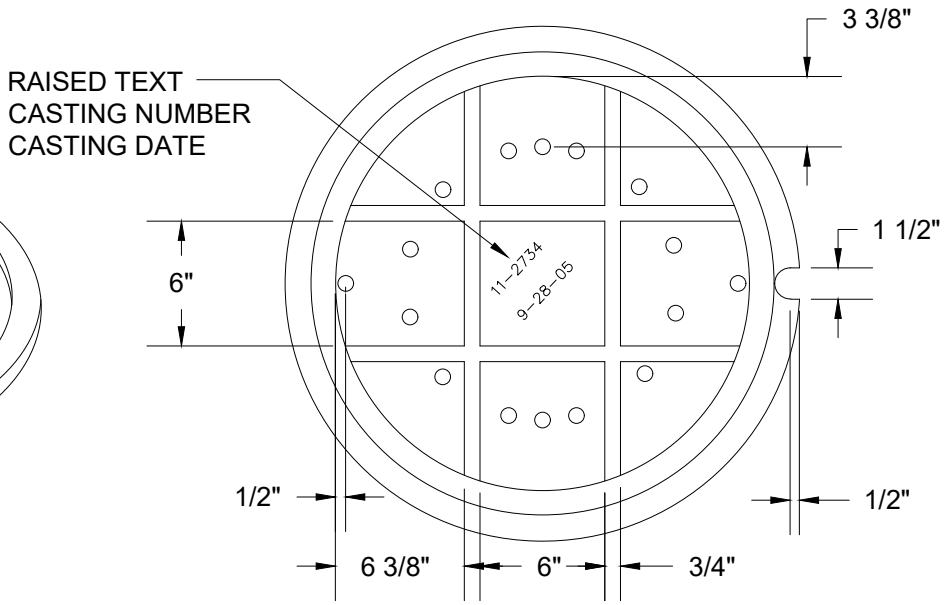
TOP VIEW



SECTION A-A



RAISED TEXT NOT SHOWN



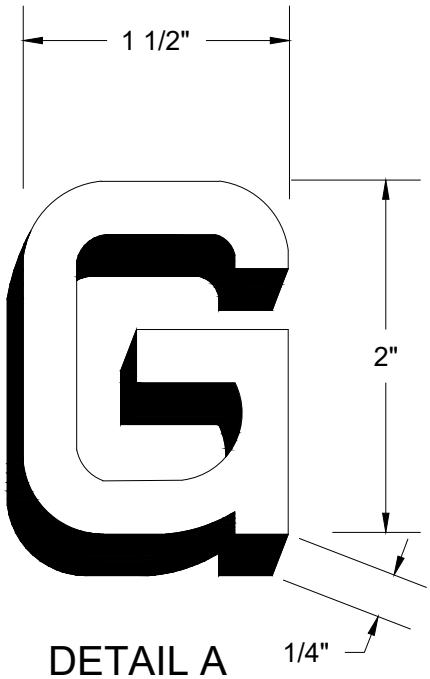
BOTTOM VIEW

CITY OF GRESHAM

STANDARD STORMWATER MANHOLE COVER

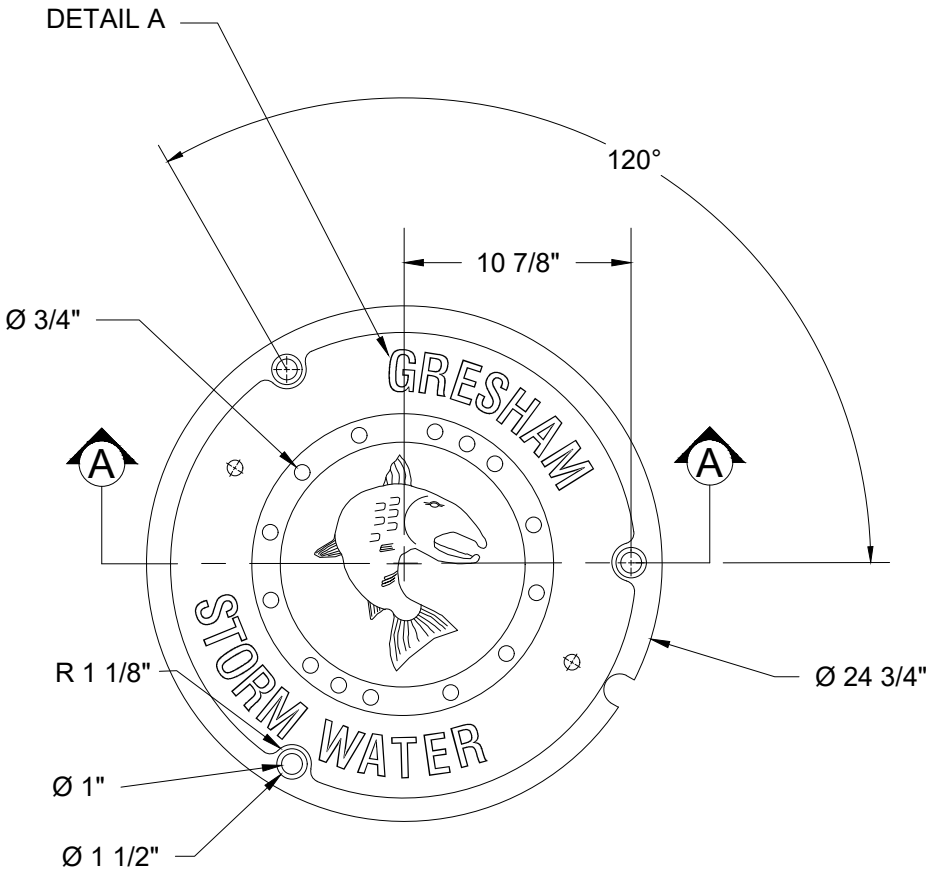
PWS VERSION: JAN 2024

DRAWN	CMC
REV. DATE	JAN 2019
APPR.	
DETAIL NO.	410

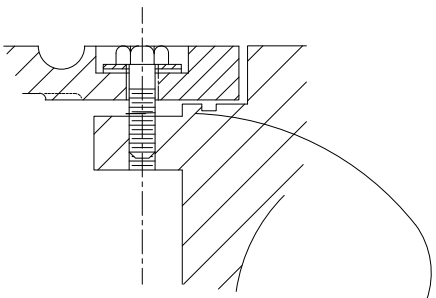


DETAIL A

RAISED TEXT

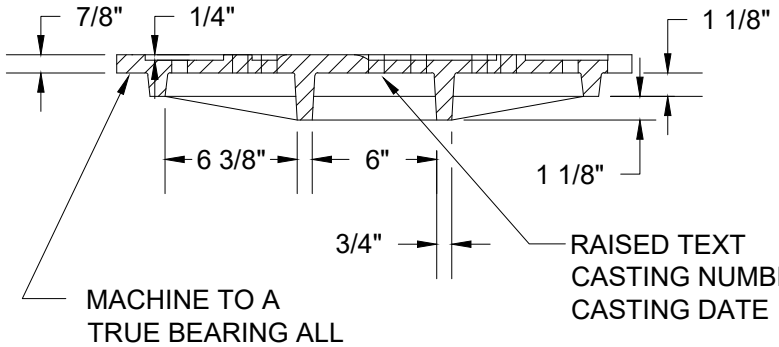


TOP VIEW



1/2"-13 NC X 1 1/4" STAINLESS STEEL HEX HEAD CAP SCREW W/ 1 1/4" Ø OD X 3/32" THK. 8-18 STAINLESS STEEL WASHER & 3/32" NEOPRENE WASHER, (3) EA. REQUIRED.

LOCK DOWN DETAIL



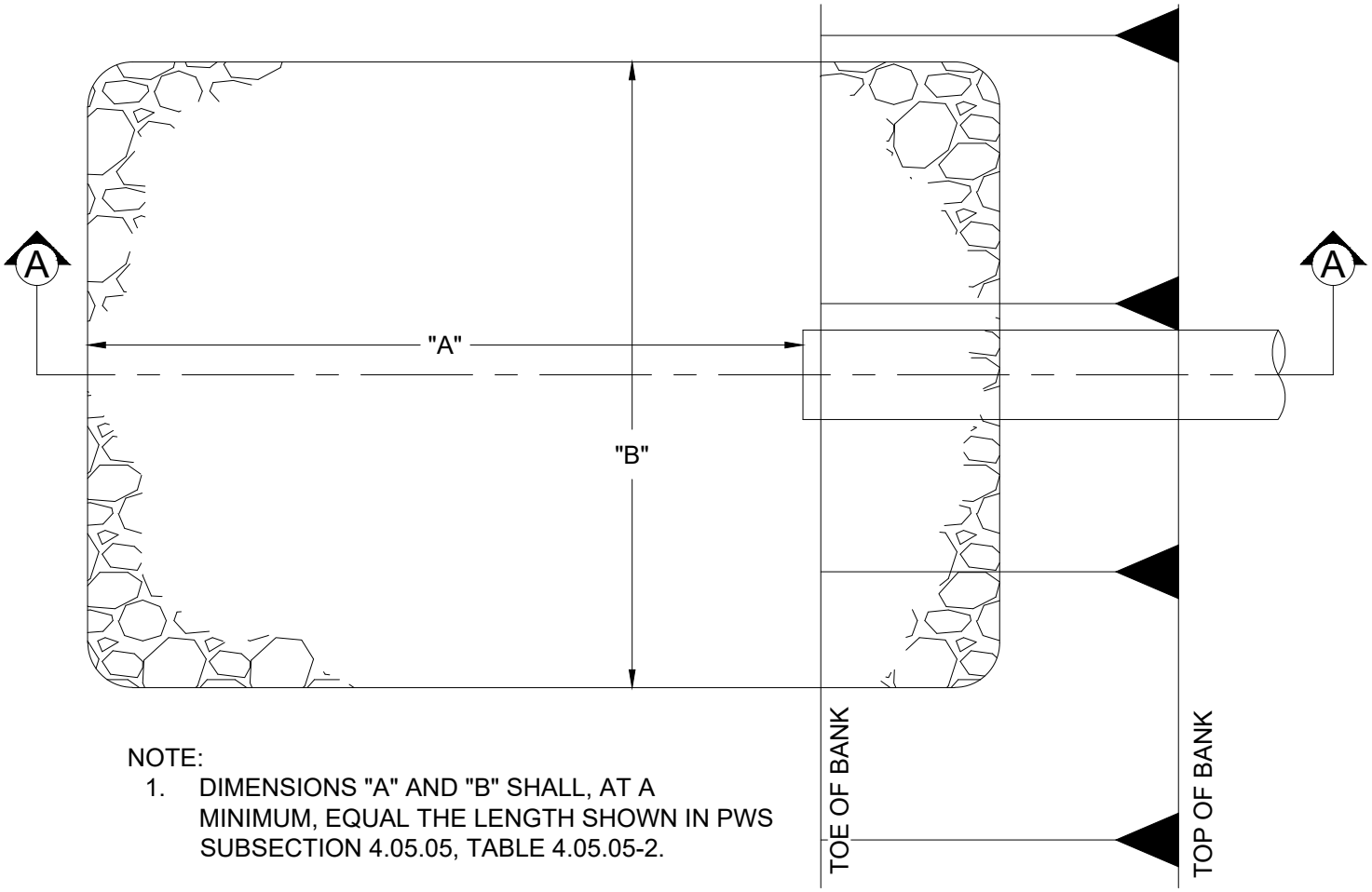
SECTION A-A

CITY OF GRESHAM

STORMWATER TAMPERPROOF MANHOLE COVER

PWS VERSION: JAN 2024

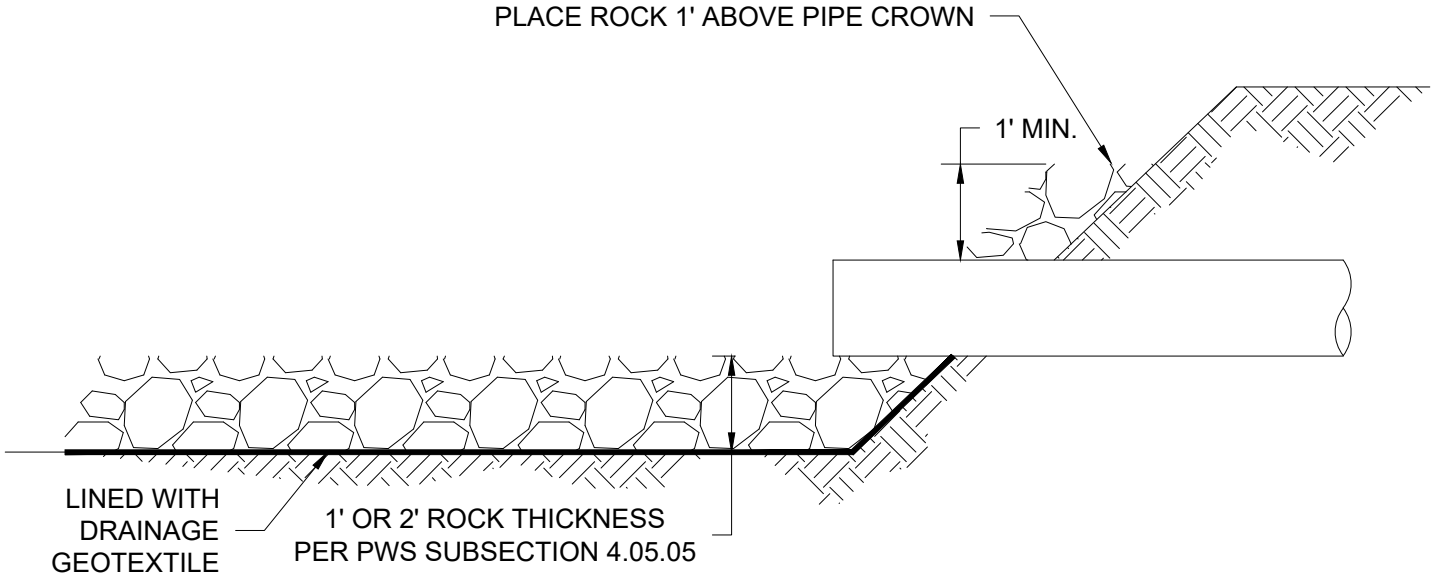
DRAWN	CMC
REV. DATE	JAN 2019
APPR.	
DETAIL NO.	411



NOTE:

1. DIMENSIONS "A" AND "B" SHALL, AT A MINIMUM, EQUAL THE LENGTH SHOWN IN PWS SUBSECTION 4.05.05, TABLE 4.05.05-2.

PLAN



SECTION A-A

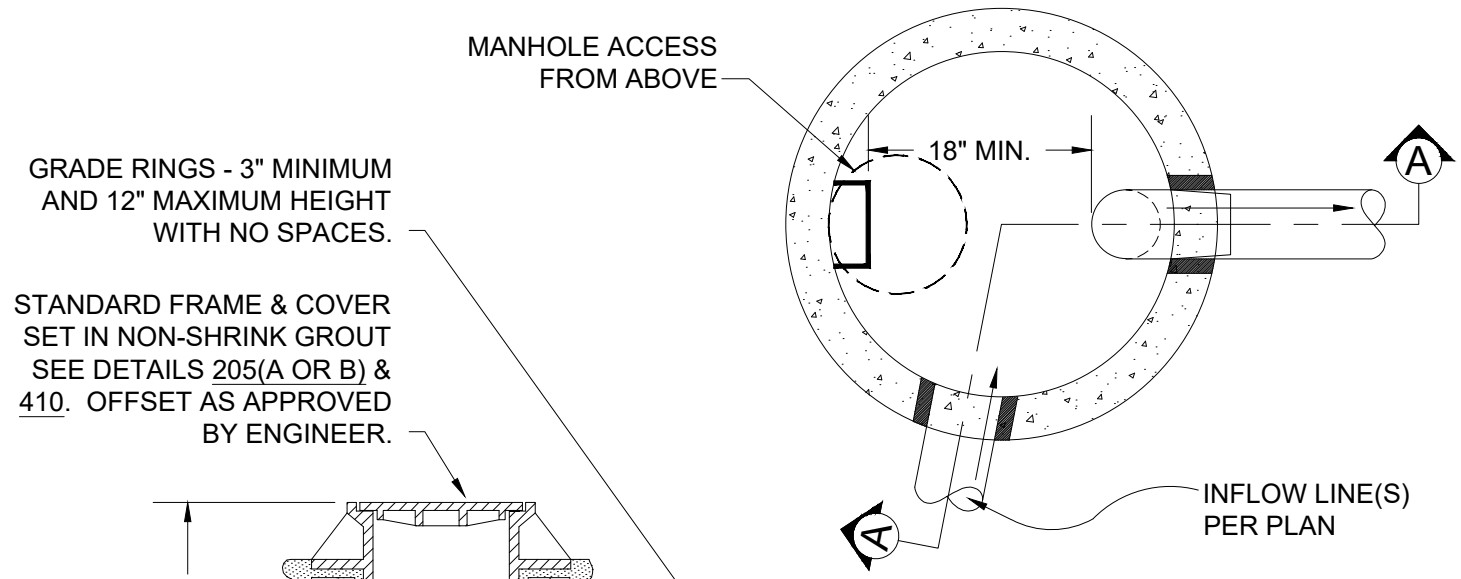
NTS

CITY OF GRESHAM

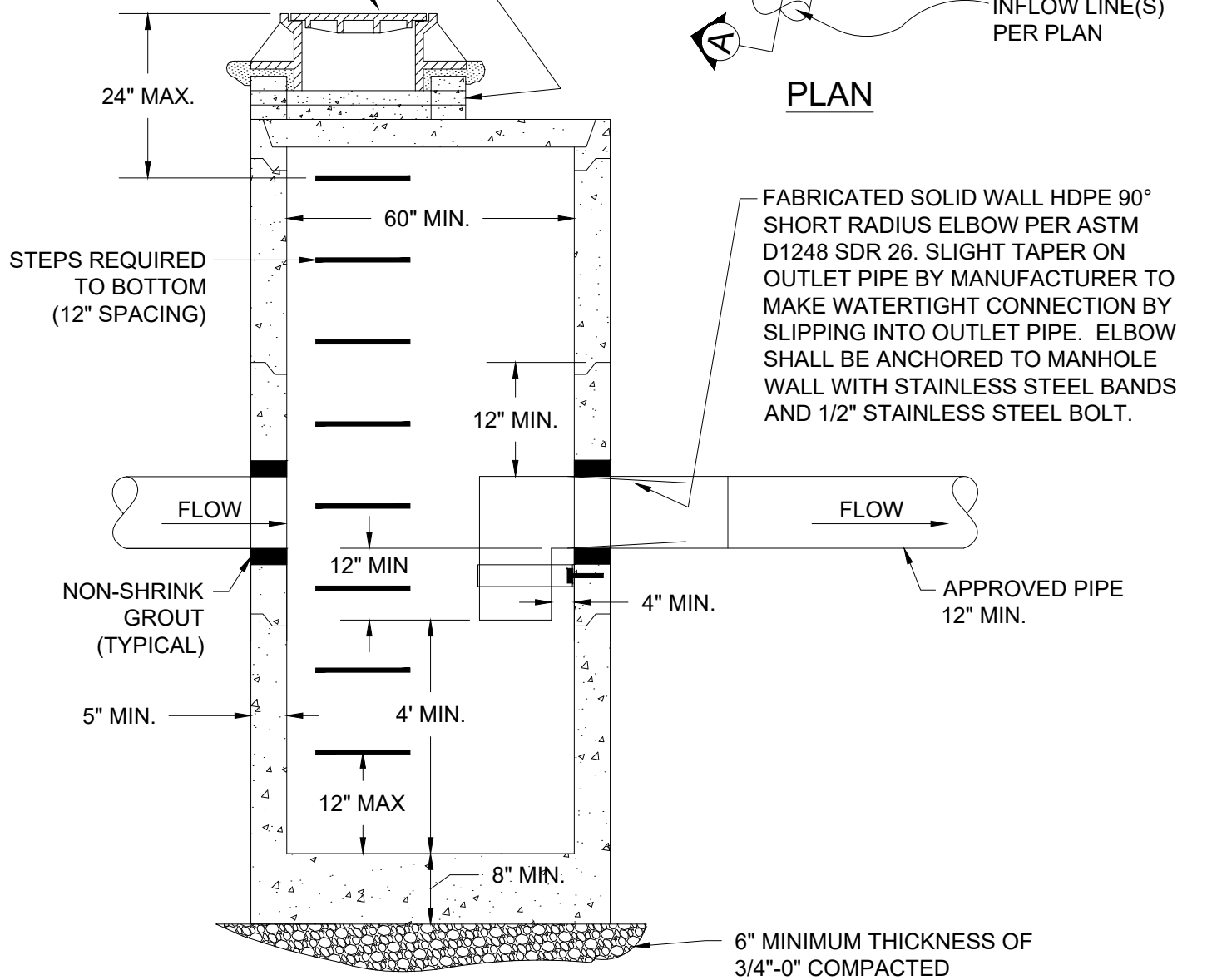
OUTFALL PROTECTION

PWS VERSION: JAN 2024

DRAWN	KRB
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	412



PLAN



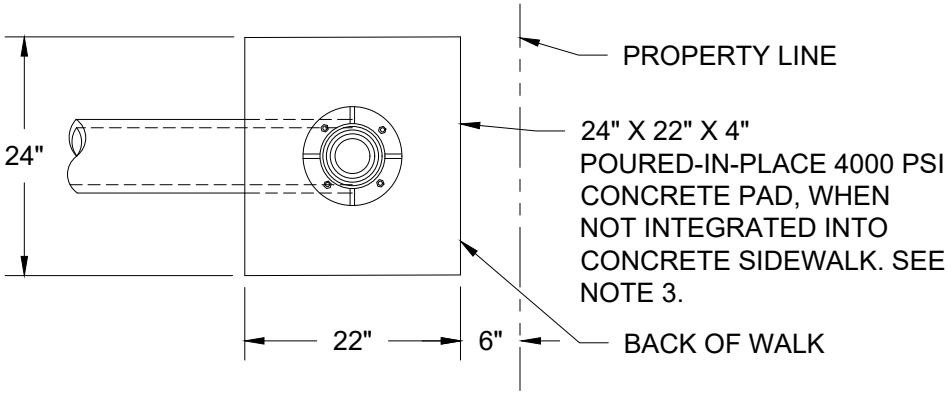
SECTION A-A

CITY OF GRESHAM

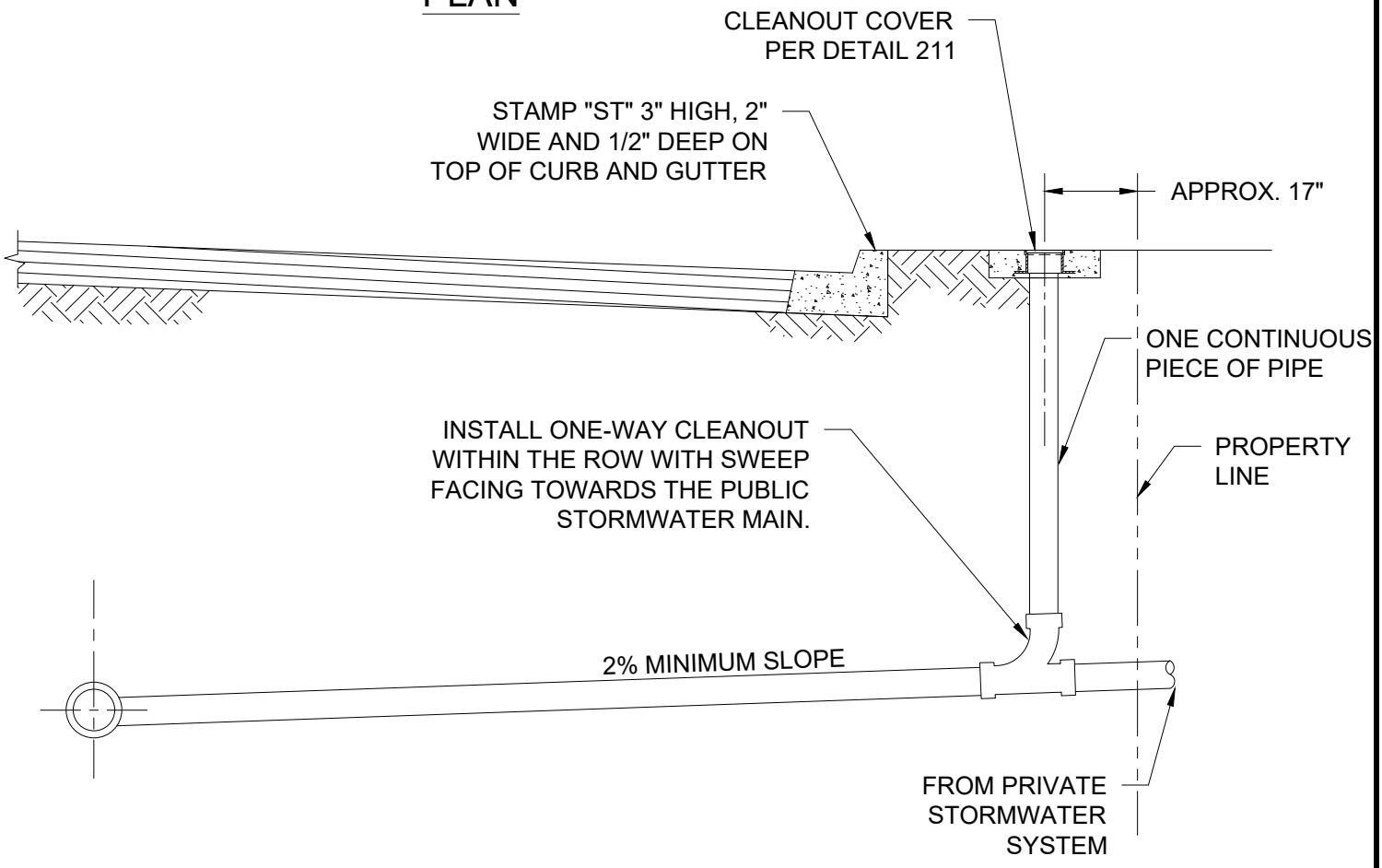
SEDIMENTATION MANHOLE

PWS VERSION: JAN 2024

DRAWN	RMS
REV. DATE	MAR 2024
APPR.	
DETAIL NO.	413



PLAN



NOTES:

1. SERVICE SHALL NOT BE BACKFILLED PRIOR TO INSPECTION.
2. INSTALL TRACER WIRE ALONG THE ENTIRE PORTION OF THE LATERAL IN THE RIGHT-OF-WAY.
3. IF THE SIDEWALK WILL BE INSTALLED DURING FUTURE CONSTRUCTION, INSTALL THE PIPE RISER 2" ABOVE GRADE AND DO NOT INSTALL A CONCRETE PAD.
4. THE STORMWATER SYSTEM LOCATED UPSTREAM OF THE CLEANOUT IS TO BE OWNED AND MAINTAINED BY THE PROPERTY OWNER.
5. MINIMUM BURY DEPTH TO BE PER PWS 4.03.02.

CITY OF GRESHAM

STORMWATER LATERAL

PWS VERSION: JAN 2024

DRAWN	KRB
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	414