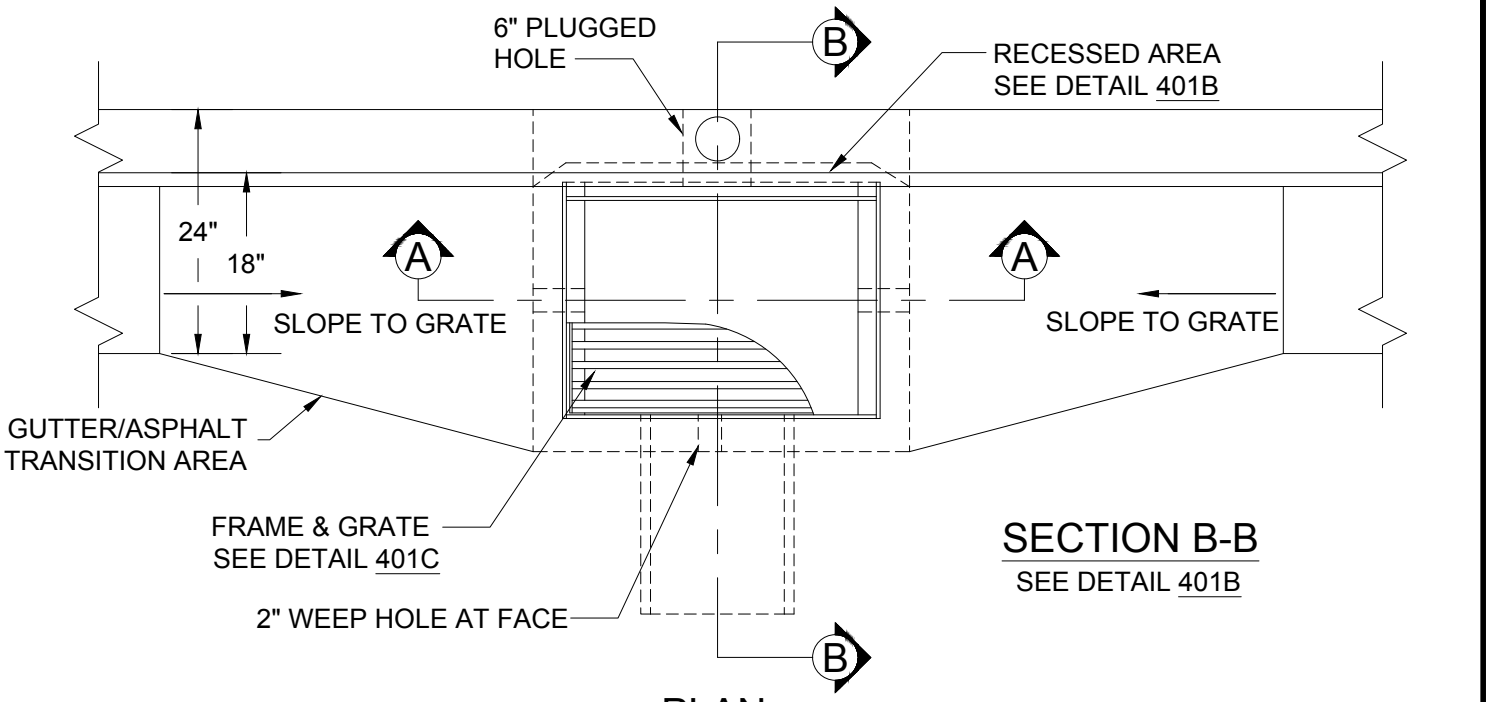
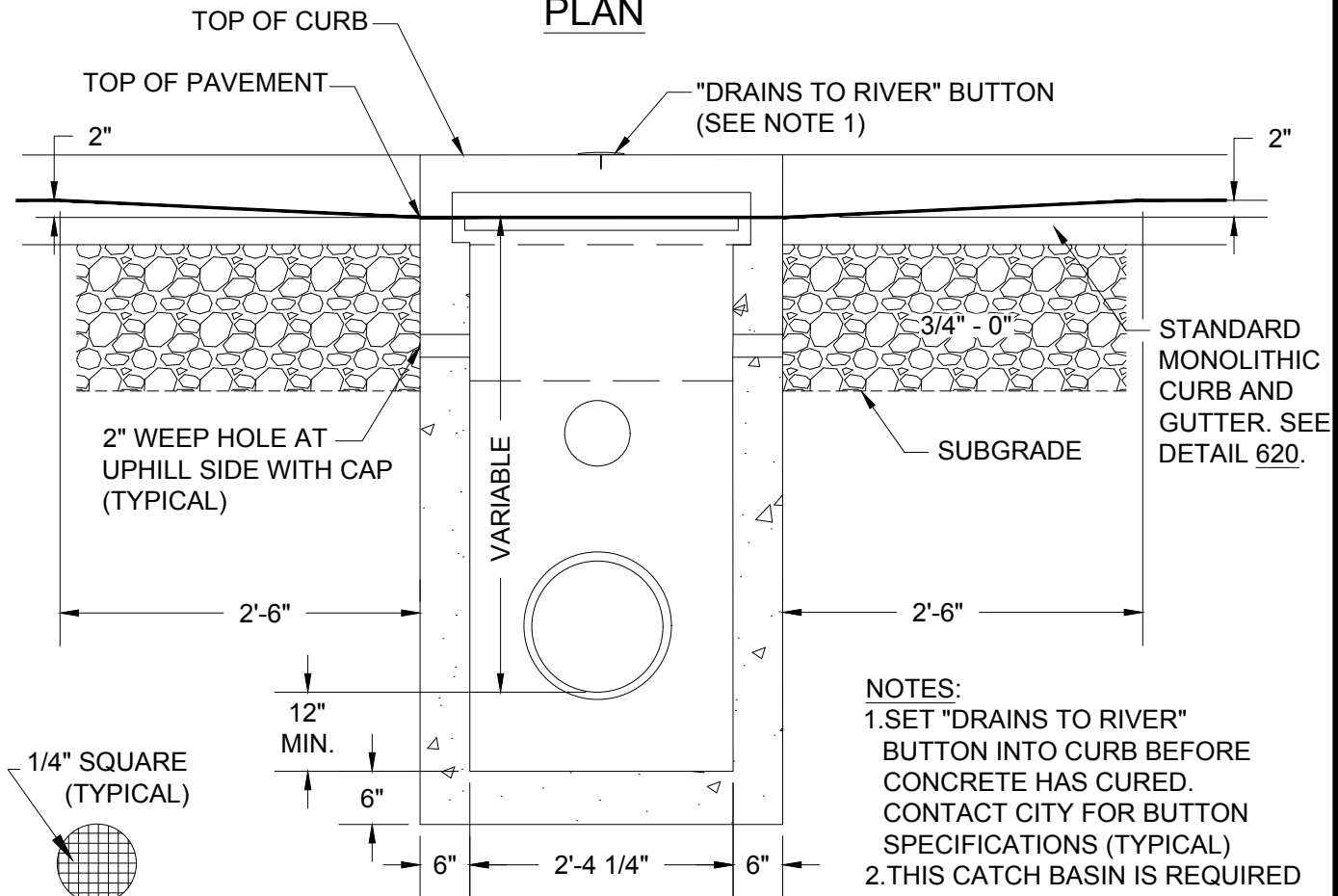


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PLAN



**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

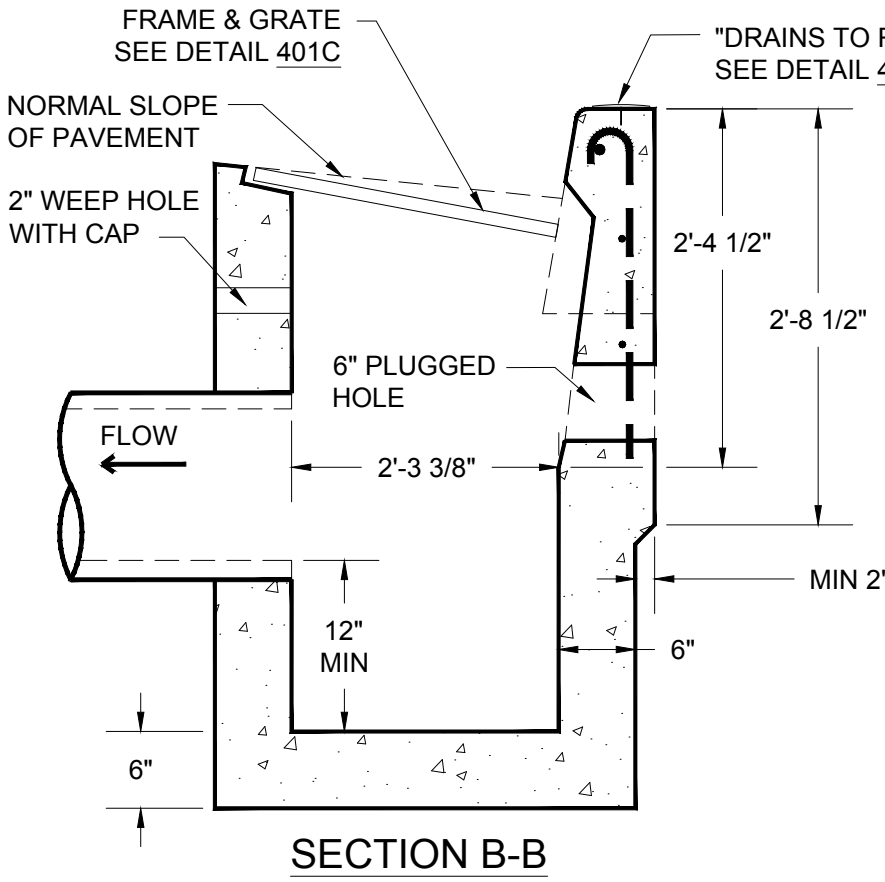
**CITY OF
GRESHAM**

CATCH BASIN

PWS VERSION: JULY 2026

DRAWN	CMC
REV. DATE	JULY 2025
APPR.	
DETAIL NO.	401A

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\cad - all\400_stormwater\401b.dwg, Plotted 4/20/2026 10:31 AM, By: Anthony Dollowitch, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



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.

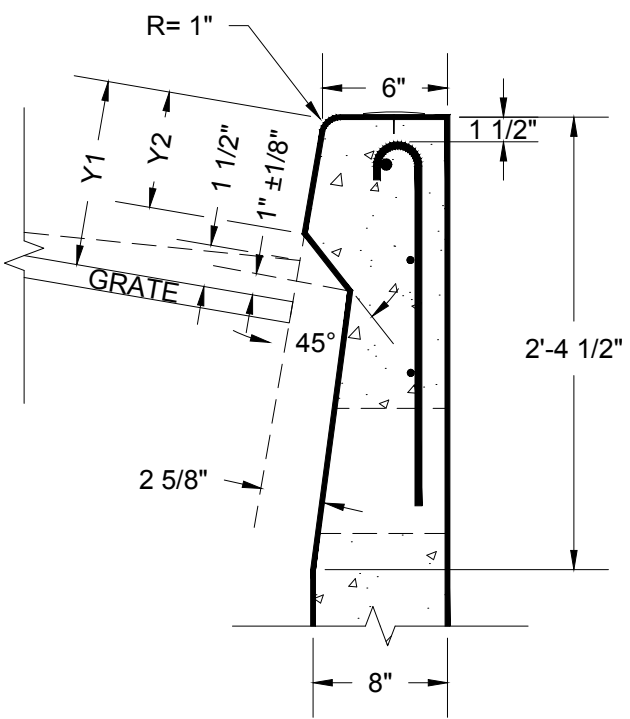
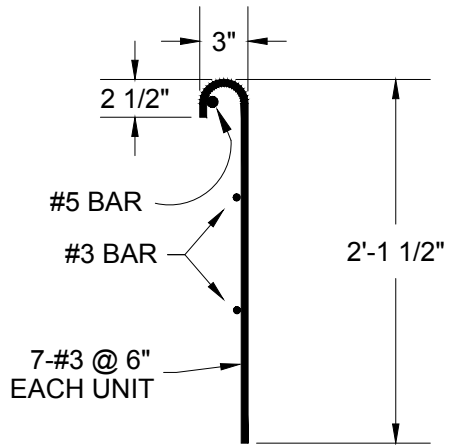


TABLE 601-C	CURB TYPE	
	TYPE 'C'	MONOLITHIC
Y1	8 1/2"	7 1/2"
Y2	5 3/4"±	4 3/4"±



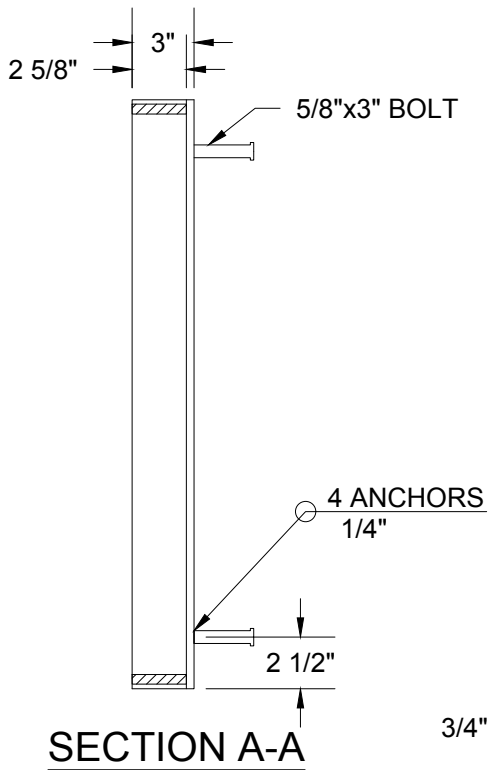
CITY OF GRESHAM

CATCH BASIN SECTION

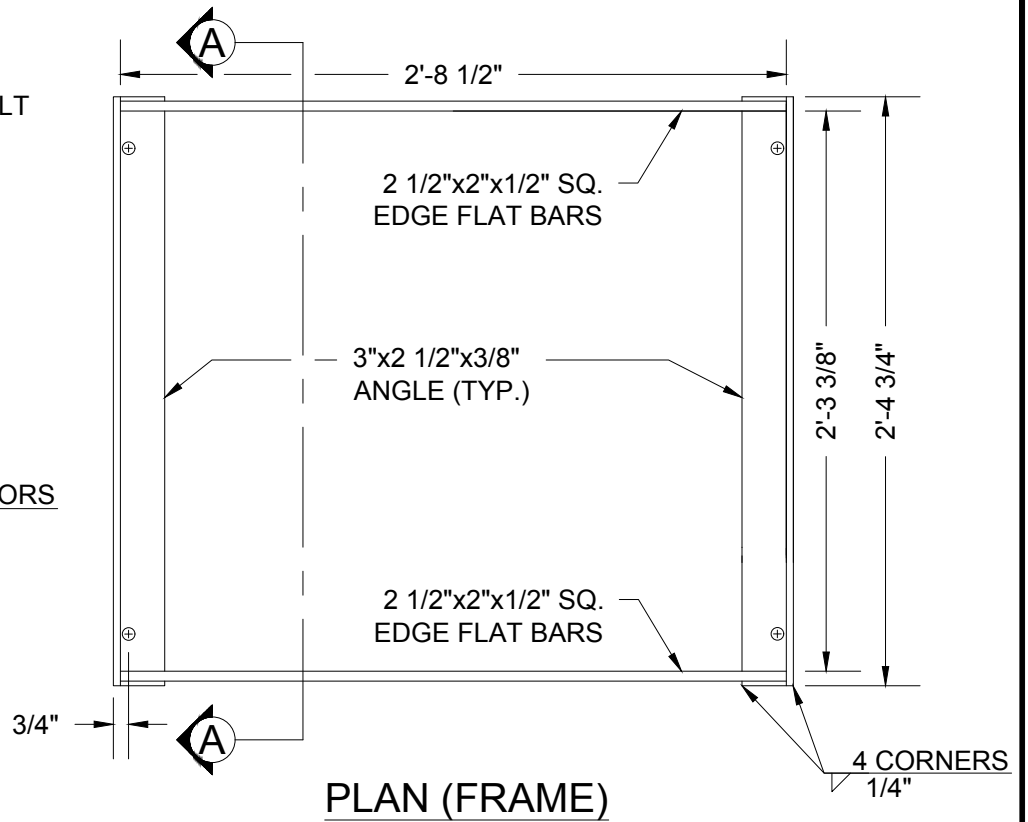
PWS VERSION: JULY 2026

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

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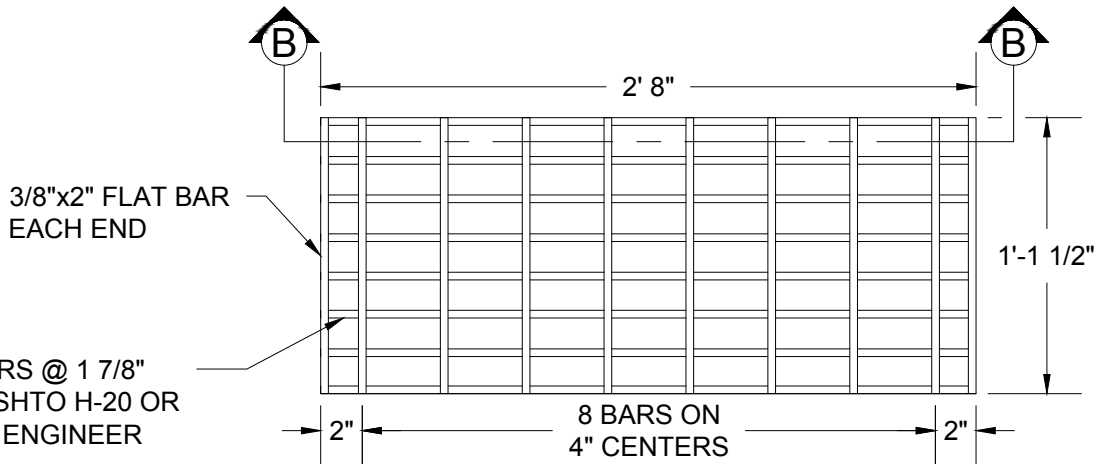


SECTION A-A



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

3/8"x2 1/2" FLAT BARS @ 1 7/8" O.C. LOAD PER AASHTO H-20 OR AS APPROVED BY ENGINEER

TYPICAL BOTH ENDS, OUTER BARS & EVERY THIRD INNER BAR

TYPICAL ALL BARS

3/8" ROUND OR RECTANGULAR CROSS BARS SHALL BE FILLET WELDED, RESISTANCE WELDED OR ELECTROFORGED TO BEARING BARS

SECTION B-B

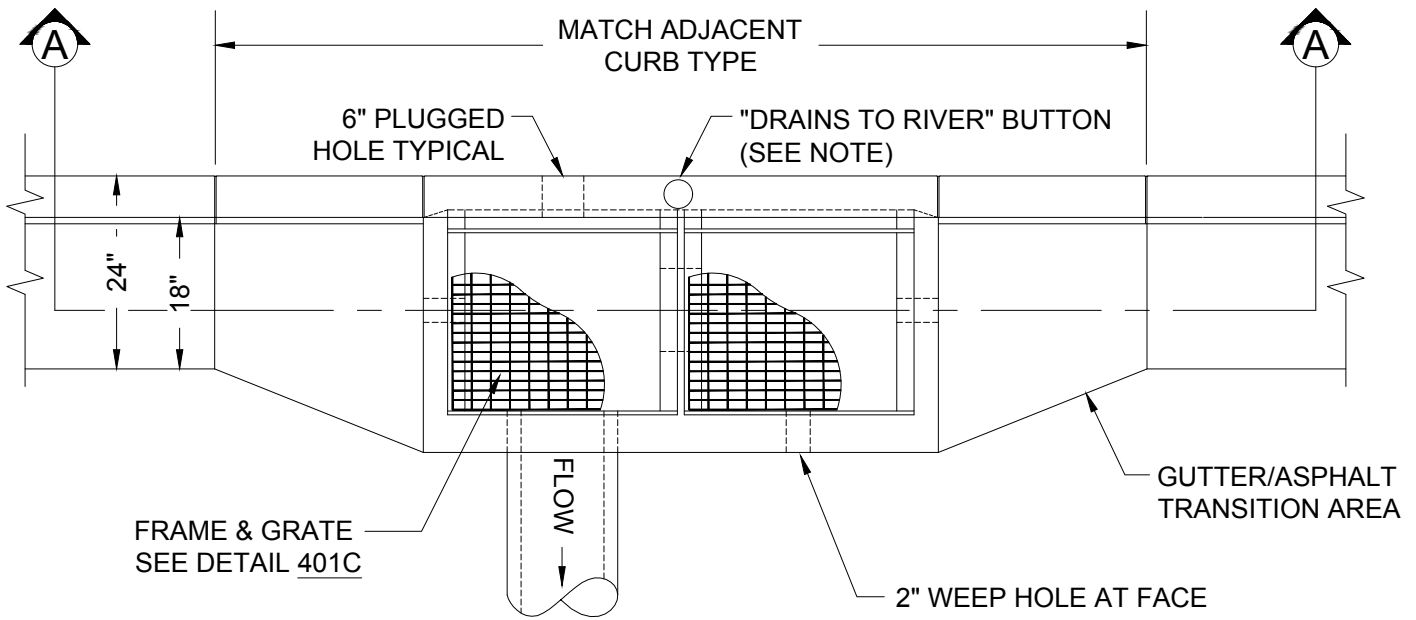
CITY OF GRESHAM

CATCH BASIN FRAME AND GRATE

PWS VERSION: JULY 2026

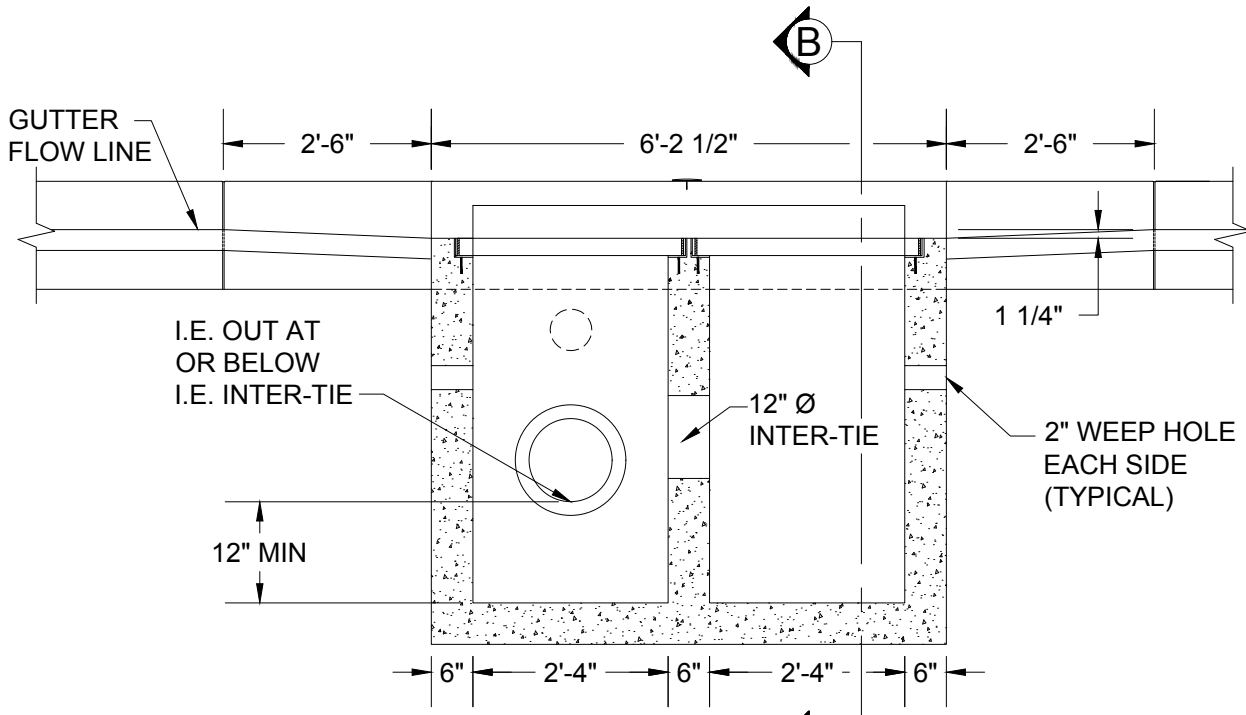
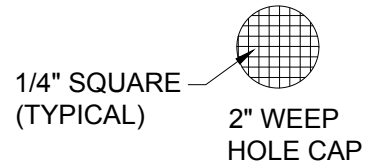
DRAWN	CMC
REV. DATE	JAN 2019
APPR.	
DETAIL NO.	401C

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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
 SEE DETAIL 401B

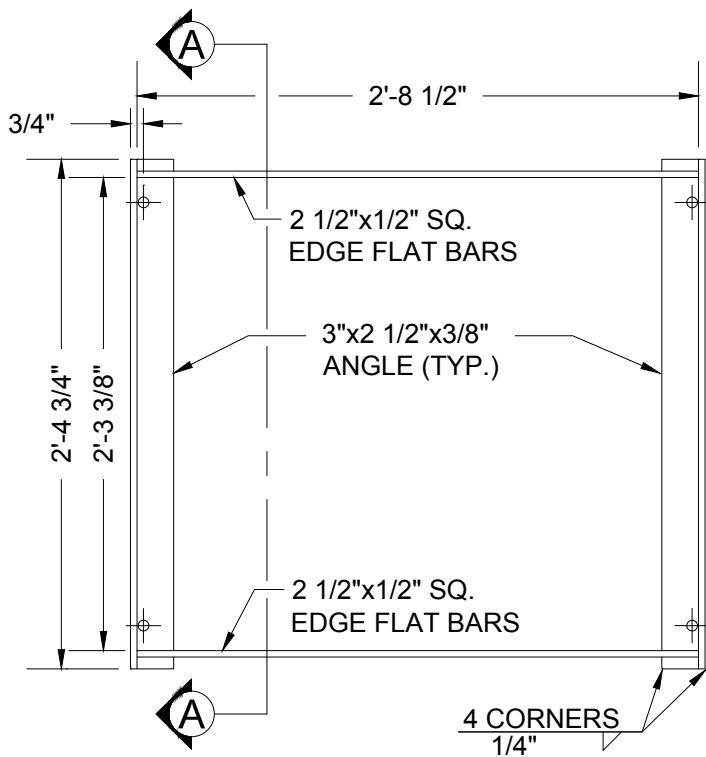
CITY OF GRESHAM

DOUBLE CATCH BASIN

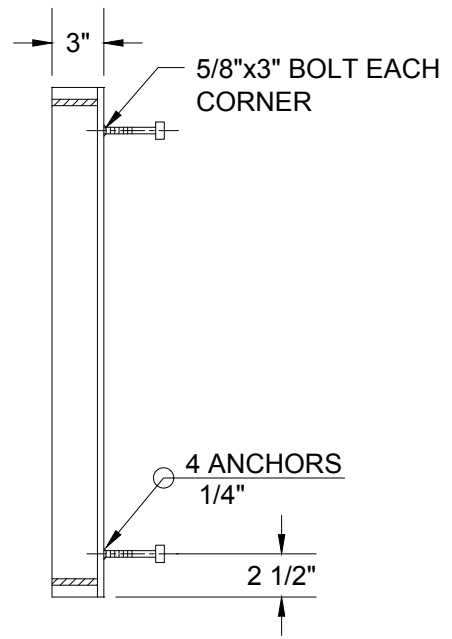
PWS VERSION: JULY 2026

DRAWN	CMC
REV. DATE	JULY 2025
APPR.	
DETAIL NO.	401D

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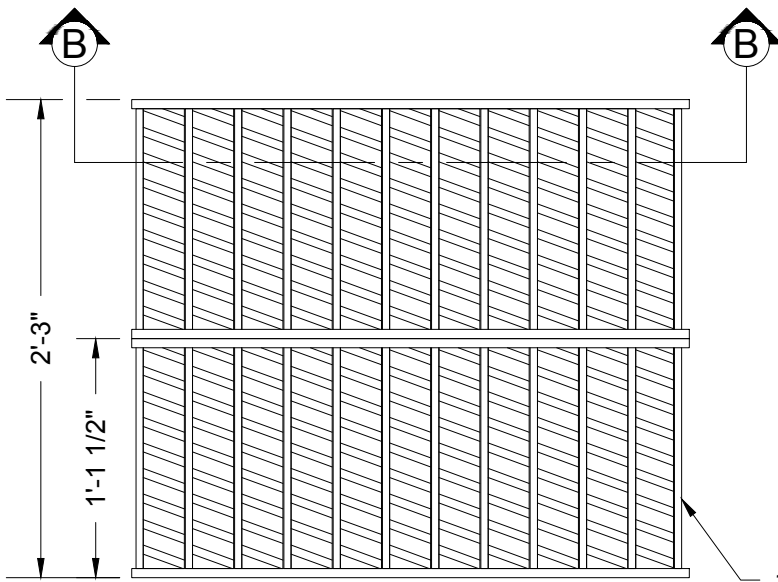


PLAN (FRAME)

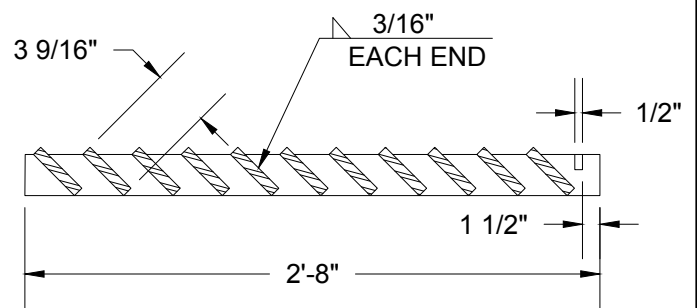


SECTION A-A

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.

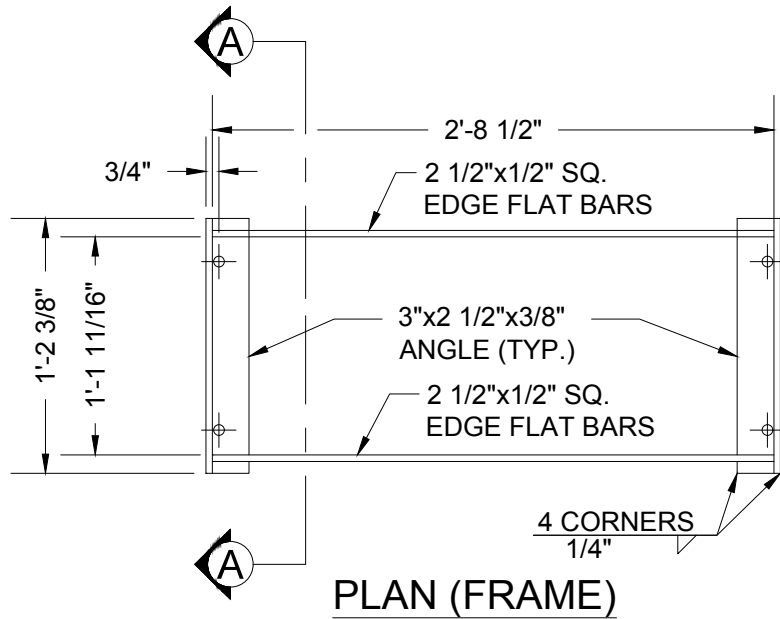
CITY OF GRESHAM

CATCH BASIN WITH P-45 GRATE

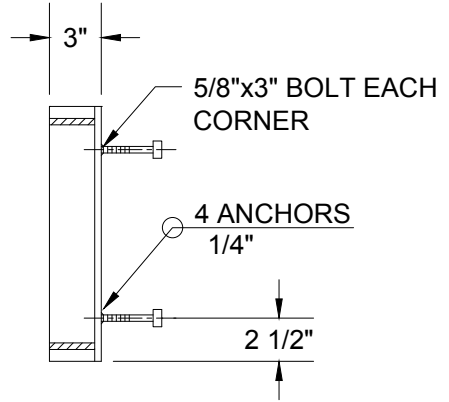
PWS VERSION: JULY 2026

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

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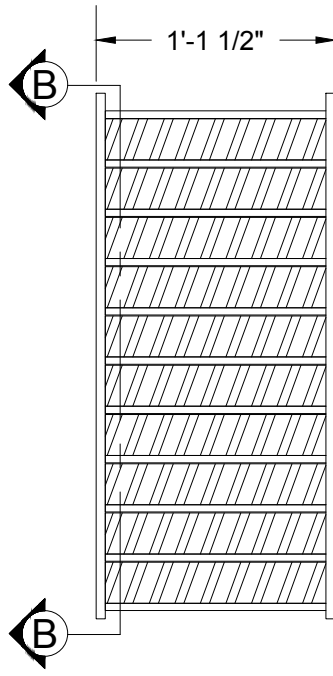


PLAN (FRAME)

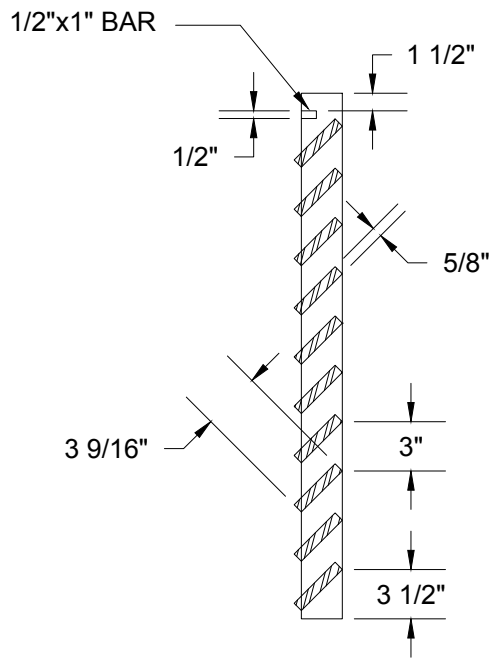


SECTION A-A

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.

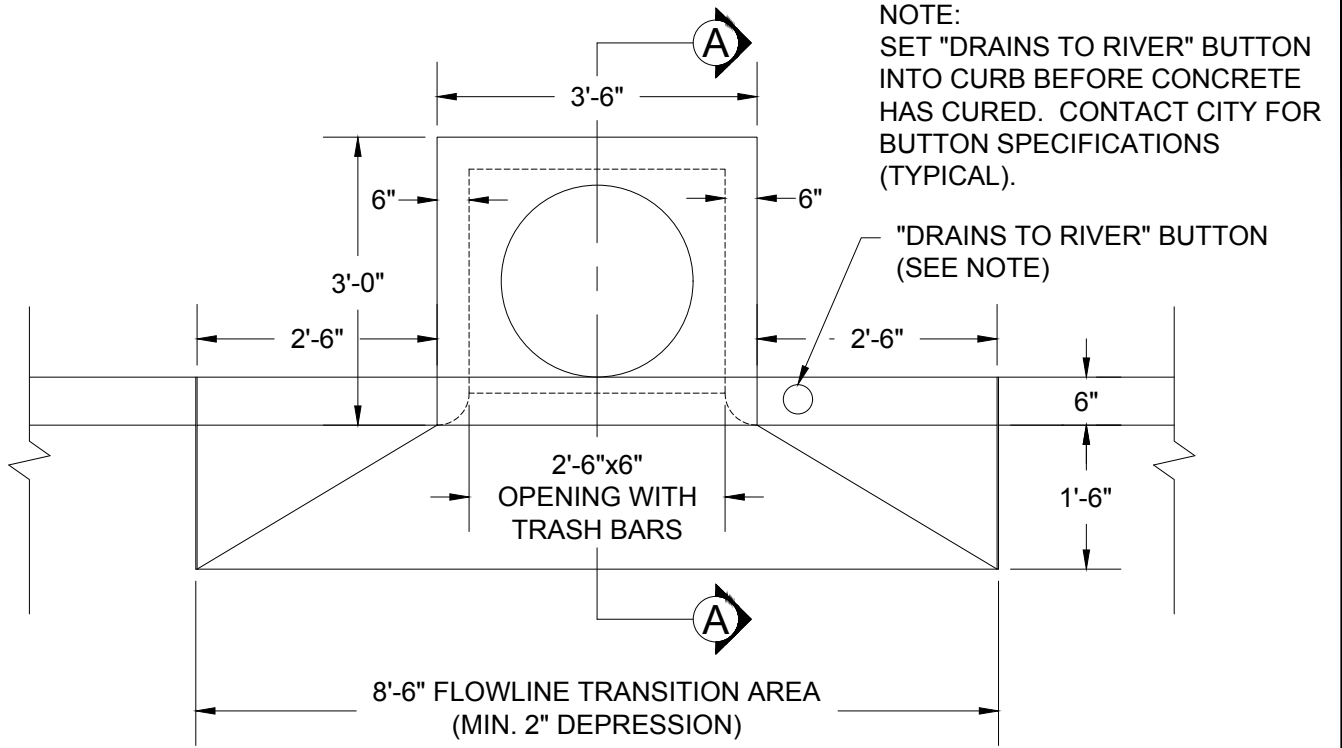


**MODIFIED CATCH BASIN FRAME
 WITH SINGLE P-45 GRATE**

PWS VERSION: JULY 2026

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

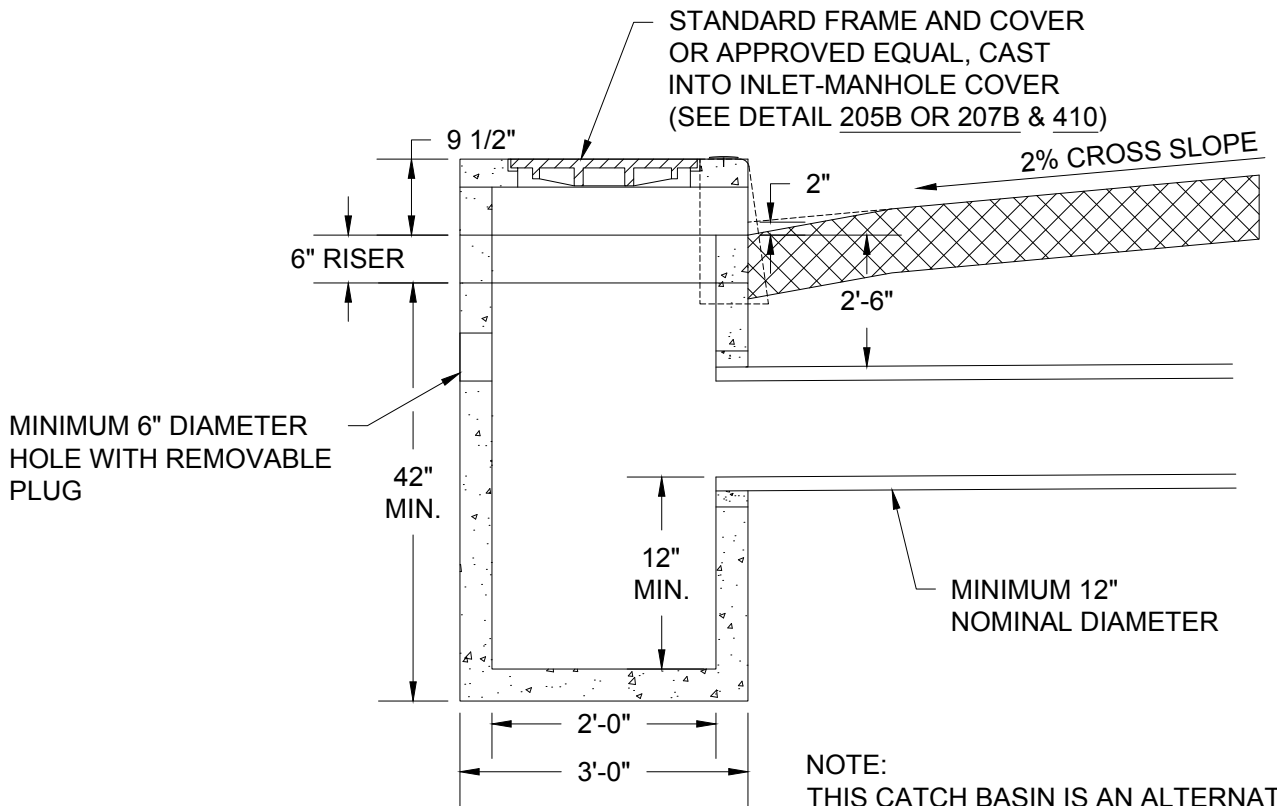
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NOTE:
SET "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS CURED. CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL).

"DRAINS TO RIVER" BUTTON (SEE NOTE)

PLAN



STANDARD FRAME AND COVER OR APPROVED EQUAL, CAST INTO INLET-MANHOLE COVER (SEE DETAIL 205B OR 207B & 410)

2% CROSS SLOPE

MINIMUM 6" DIAMETER HOLE WITH REMOVABLE PLUG

MINIMUM 12" NOMINAL DIAMETER

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

SECTION A-A

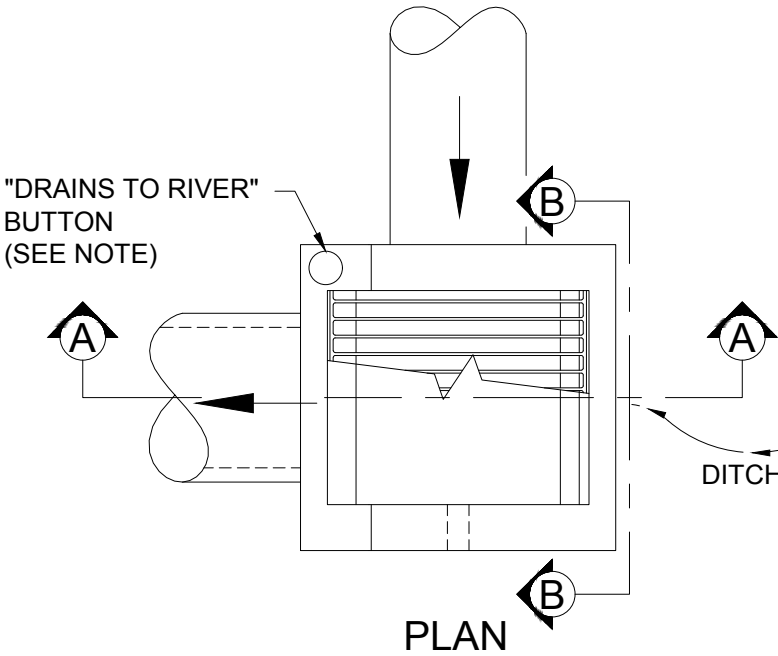
CITY OF GRESHAM

NON-GRATED CATCH BASIN

PWS VERSION: JULY 2026

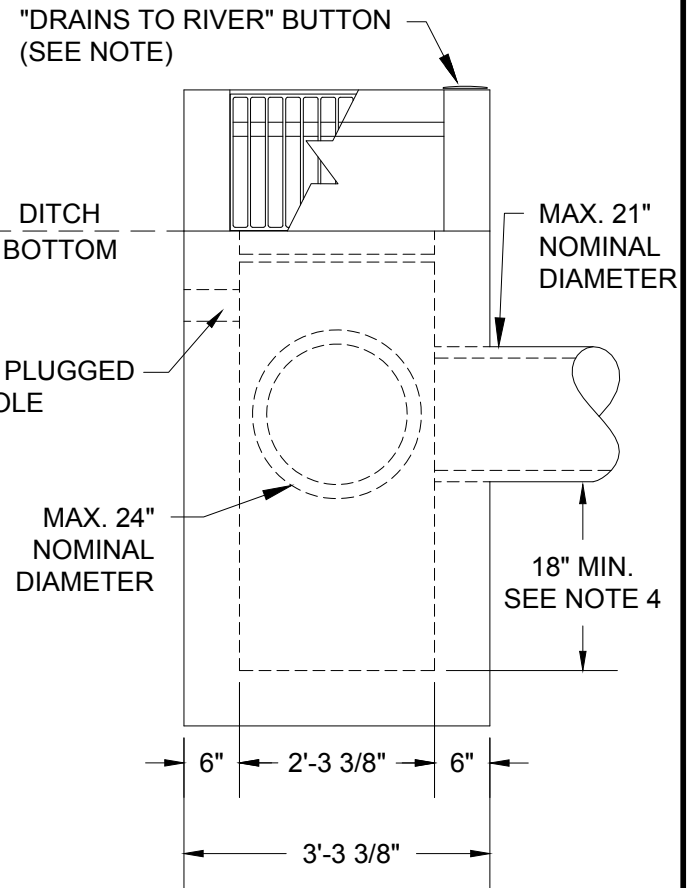
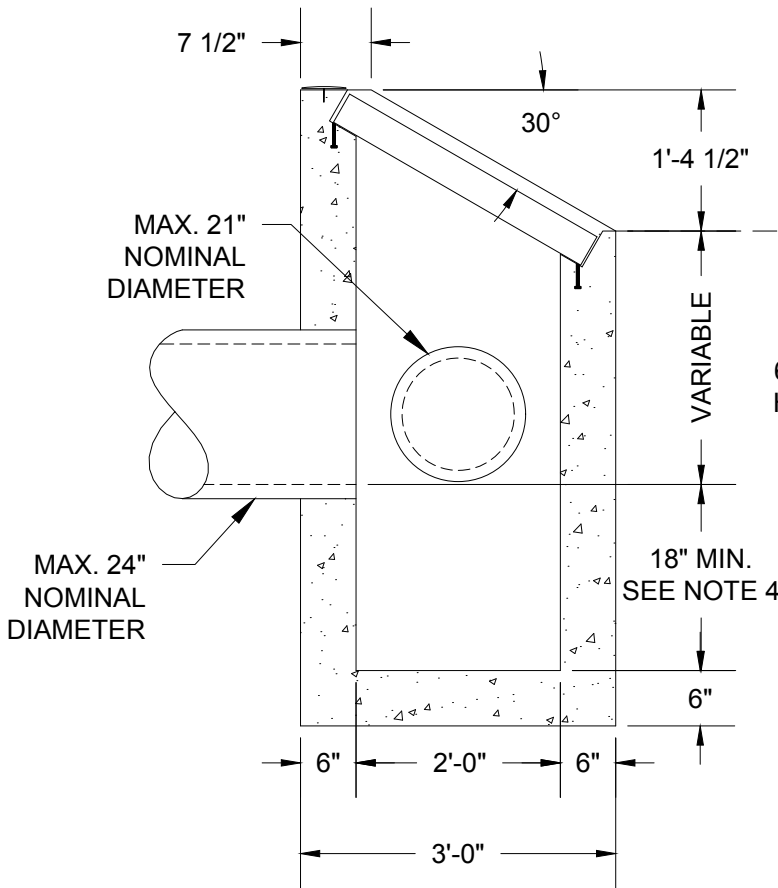
DRAWN	CMC
REV. DATE	AUG 2025
APPR.	
DETAIL NO.	402

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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.

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: JULY 2026

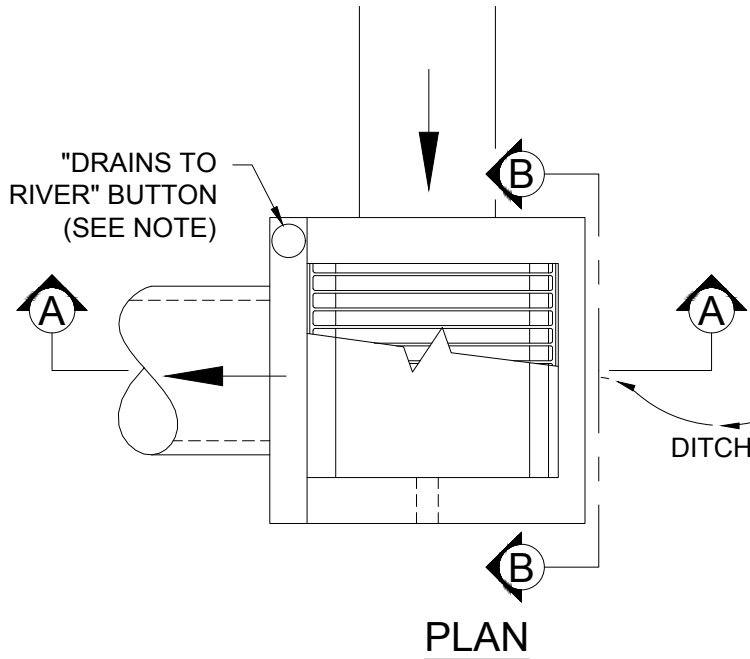
DRAWN	CMC
REV. DATE	MAR 2021
APPR.	
DETAIL NO.	403A

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\cad - all\400_stormwater\403b.dwg, Plotted 4/20/2026 10:32 AM, By: Anthony Dollowitch, ANSI FULL BLEED A (8.50 X 11.00 INCHES)

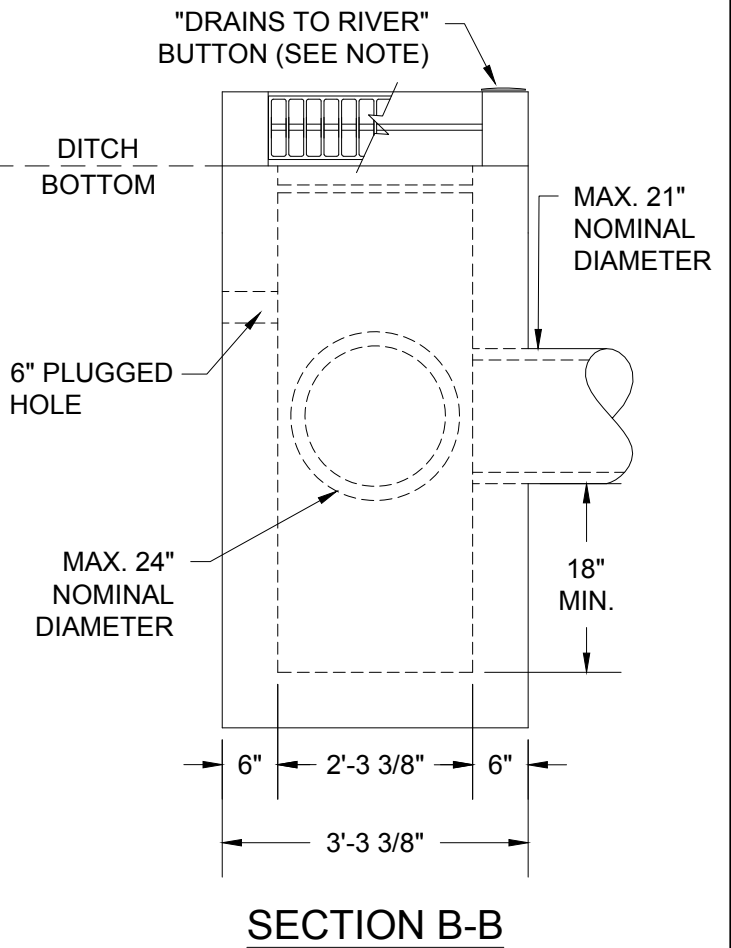
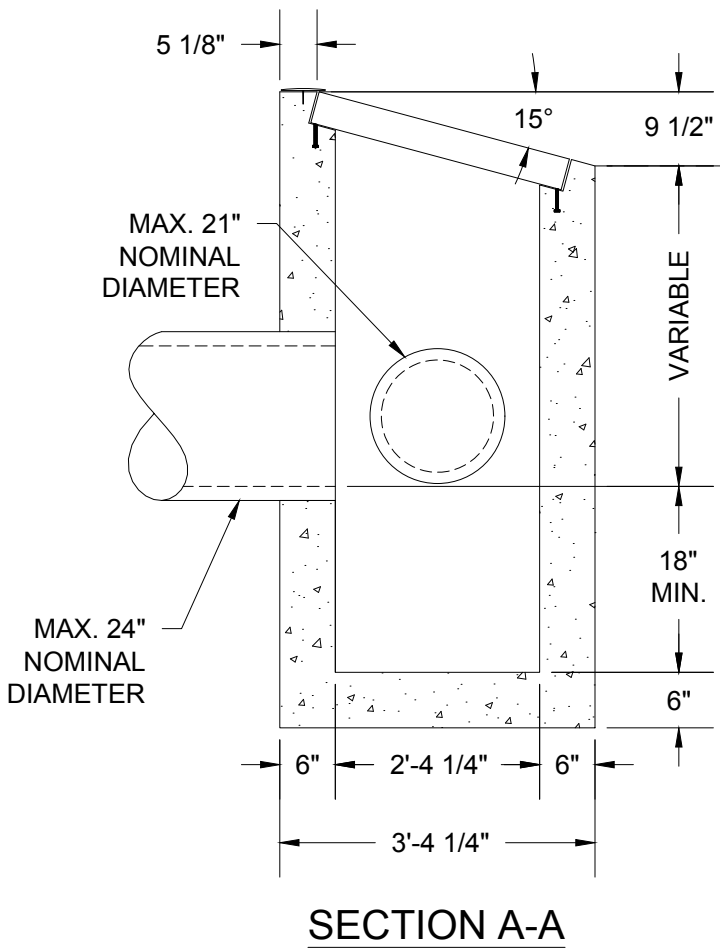
1. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4,000 P.S.I. IN 28 DAYS

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



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



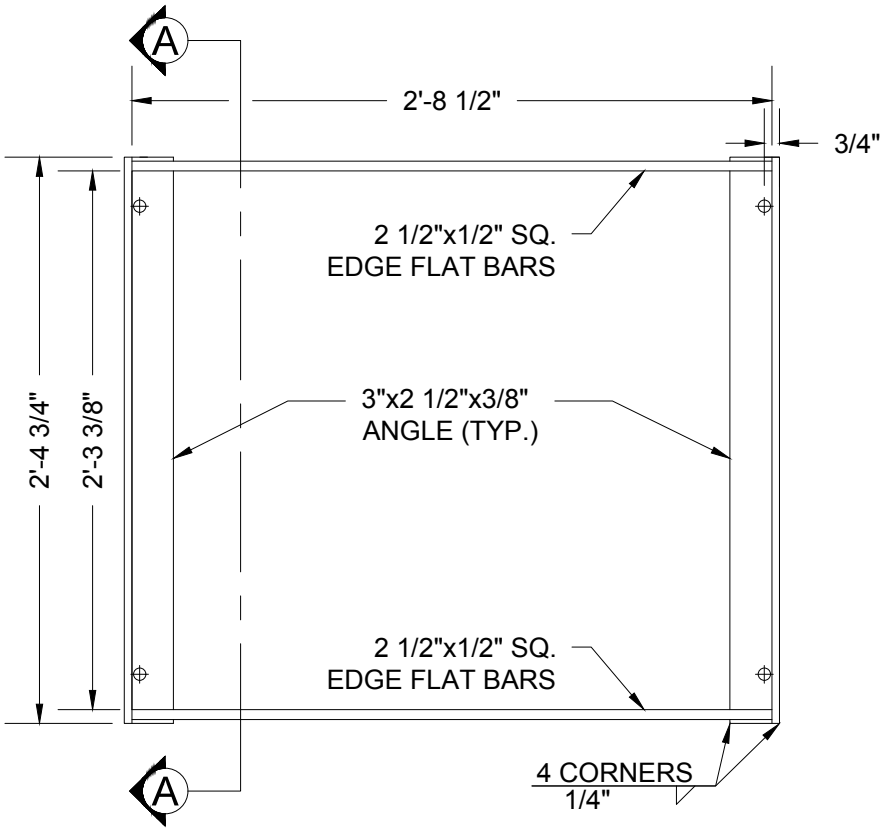
CITY OF GRESHAM

DITCH INLET
TYPE D - 15°

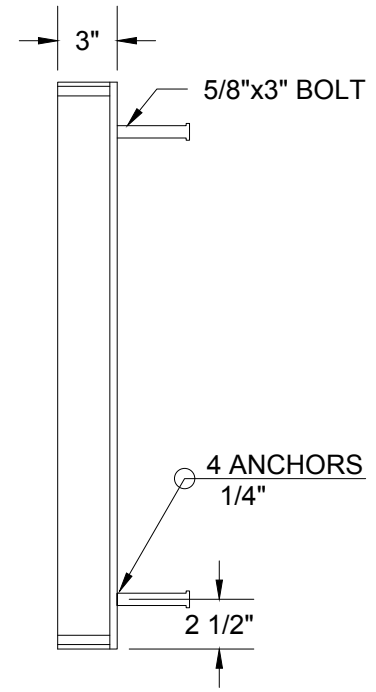
PWS VERSION: JULY 2026

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

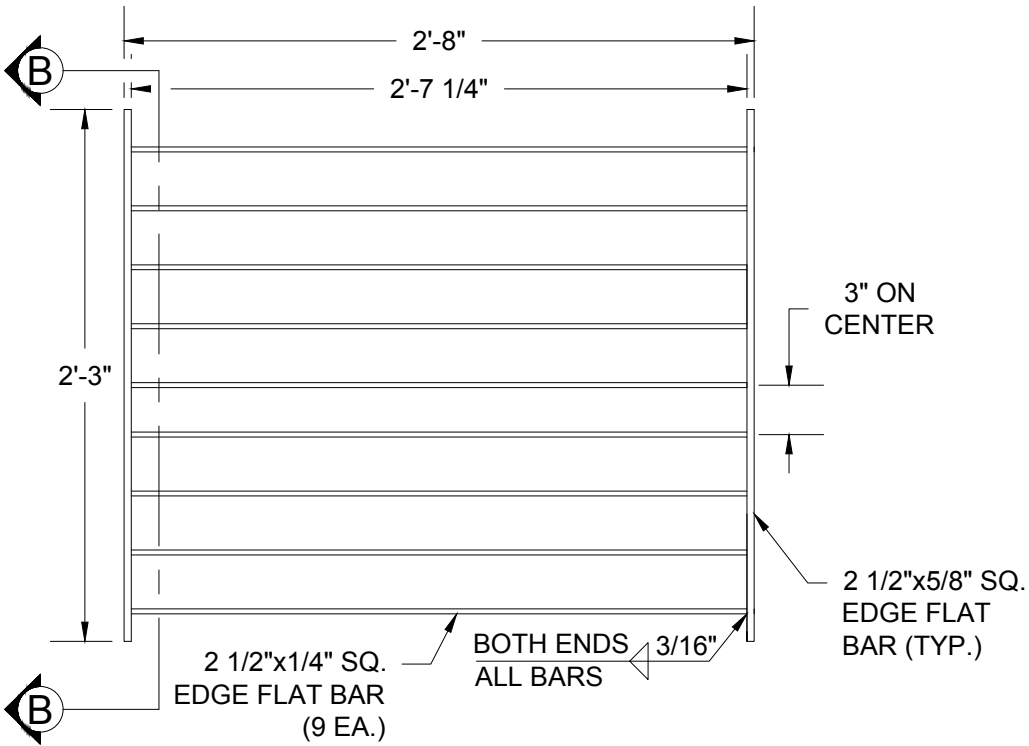
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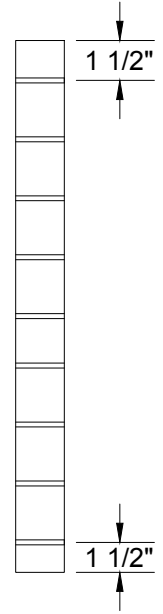
PLAN (FRAME)



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

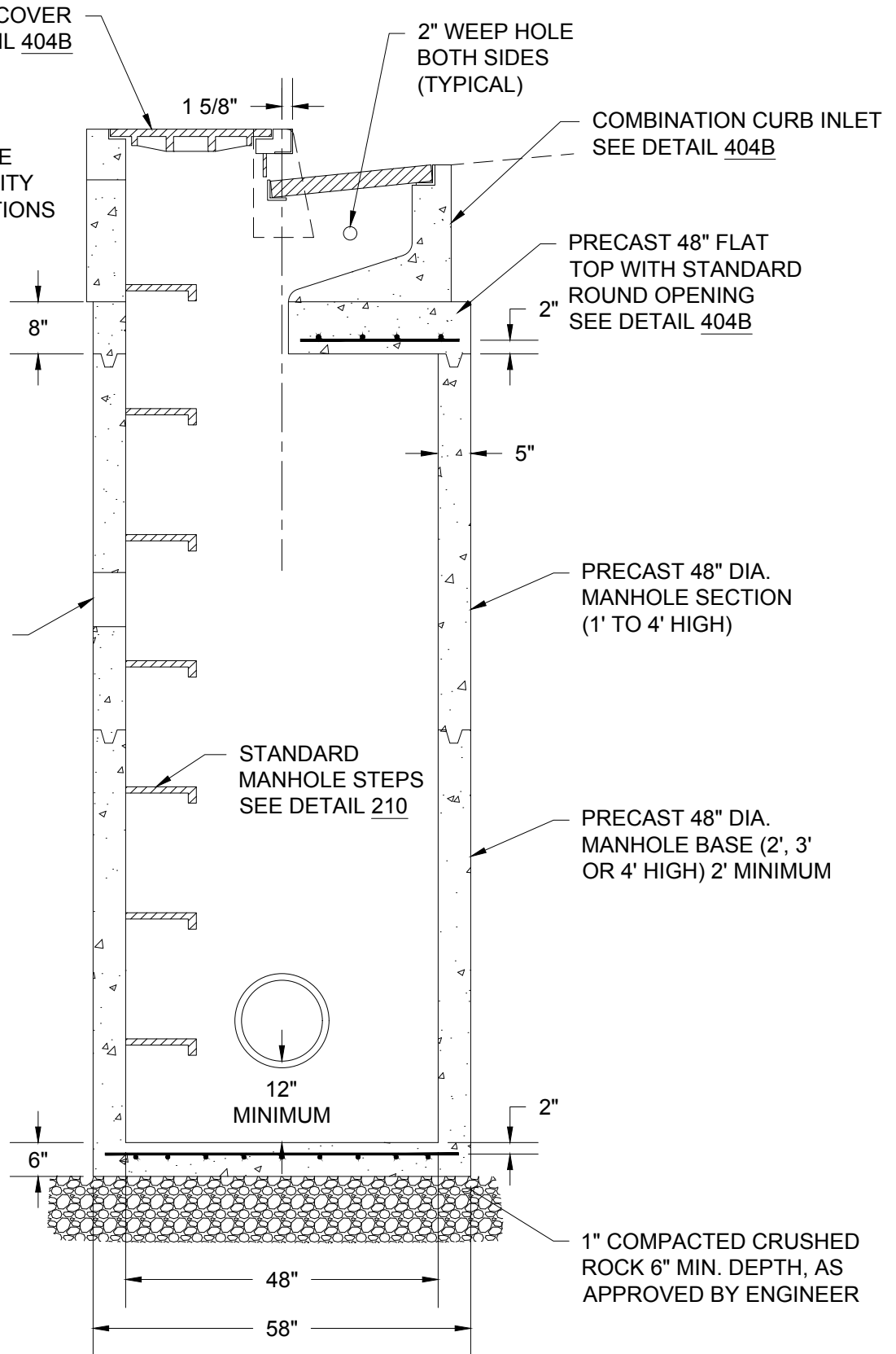
PWS VERSION: JULY 2026

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

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

MIN. 6" DIA. HOLE WITH
 REMOVABLE PLUG



PROFILE

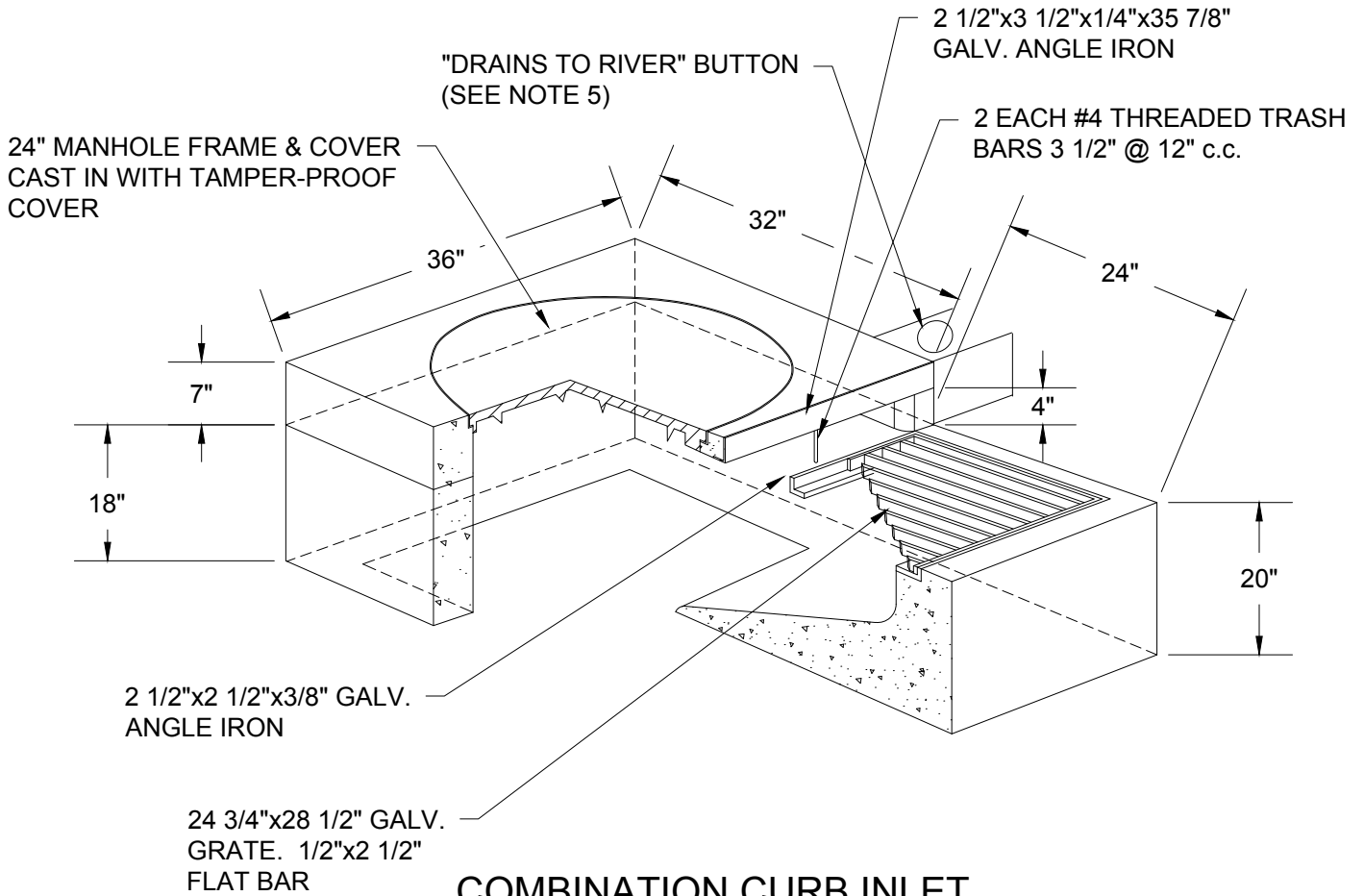
**CITY OF
 GRESHAM**

INLET-MANHOLE STANDARD

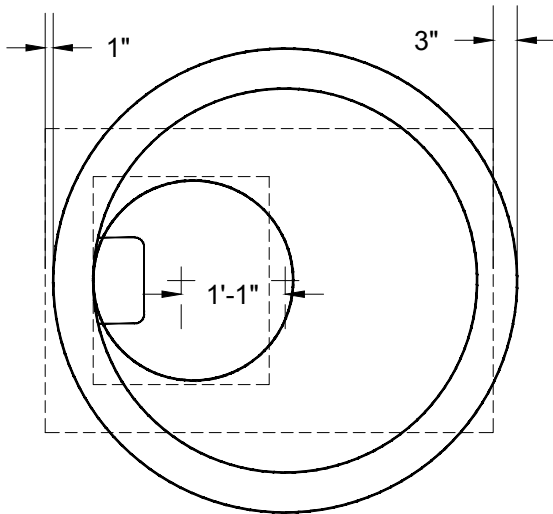
PWS VERSION: JULY 2026

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

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\cad - all\400_stormwater\404b.dwg, Plotted 4/20/2026 10:32 AM, By: Anthony Dollowitch, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



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).

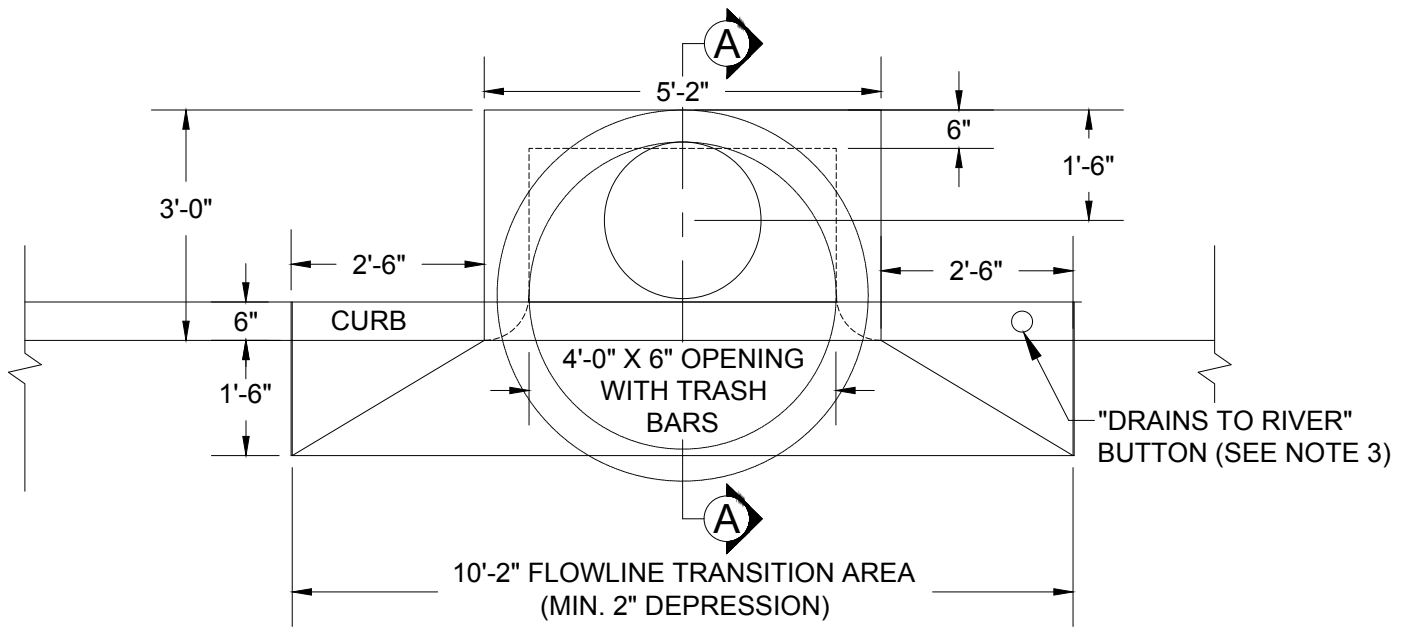
**CITY OF
GRESHAM**

**INLET-MANHOLE
COMBINATION CURB INLET**

PWS VERSION: JULY 2026

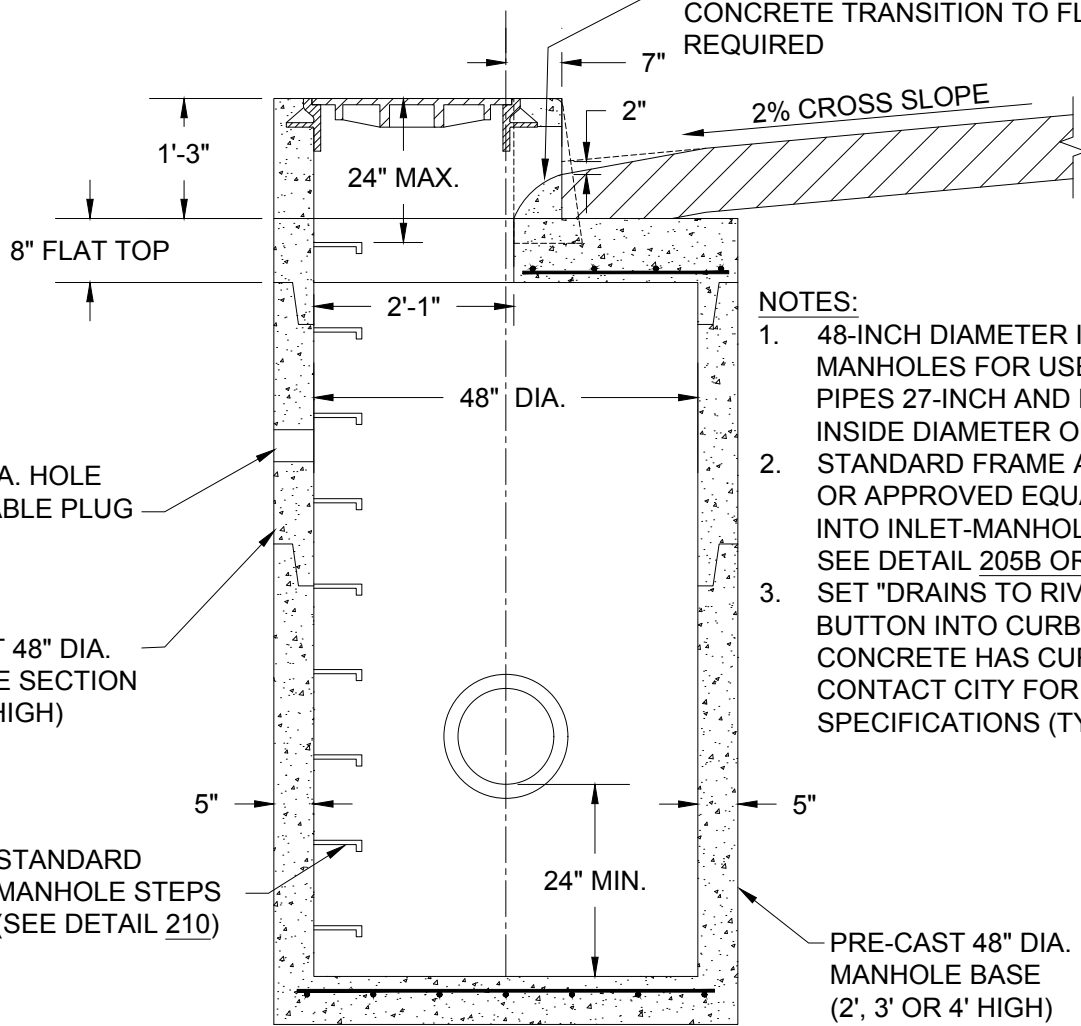
DRAWN	CMC
REV. DATE	JULY 2025
APPR.	
DETAIL NO.	404B

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PLAN

FIELD FORM AND POUR ADDITIONAL CONCRETE TRANSITION TO FLAT TOP AS REQUIRED



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 205B OR 207B & 410
3. SET "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS CURED. CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL).

SECTION A-A

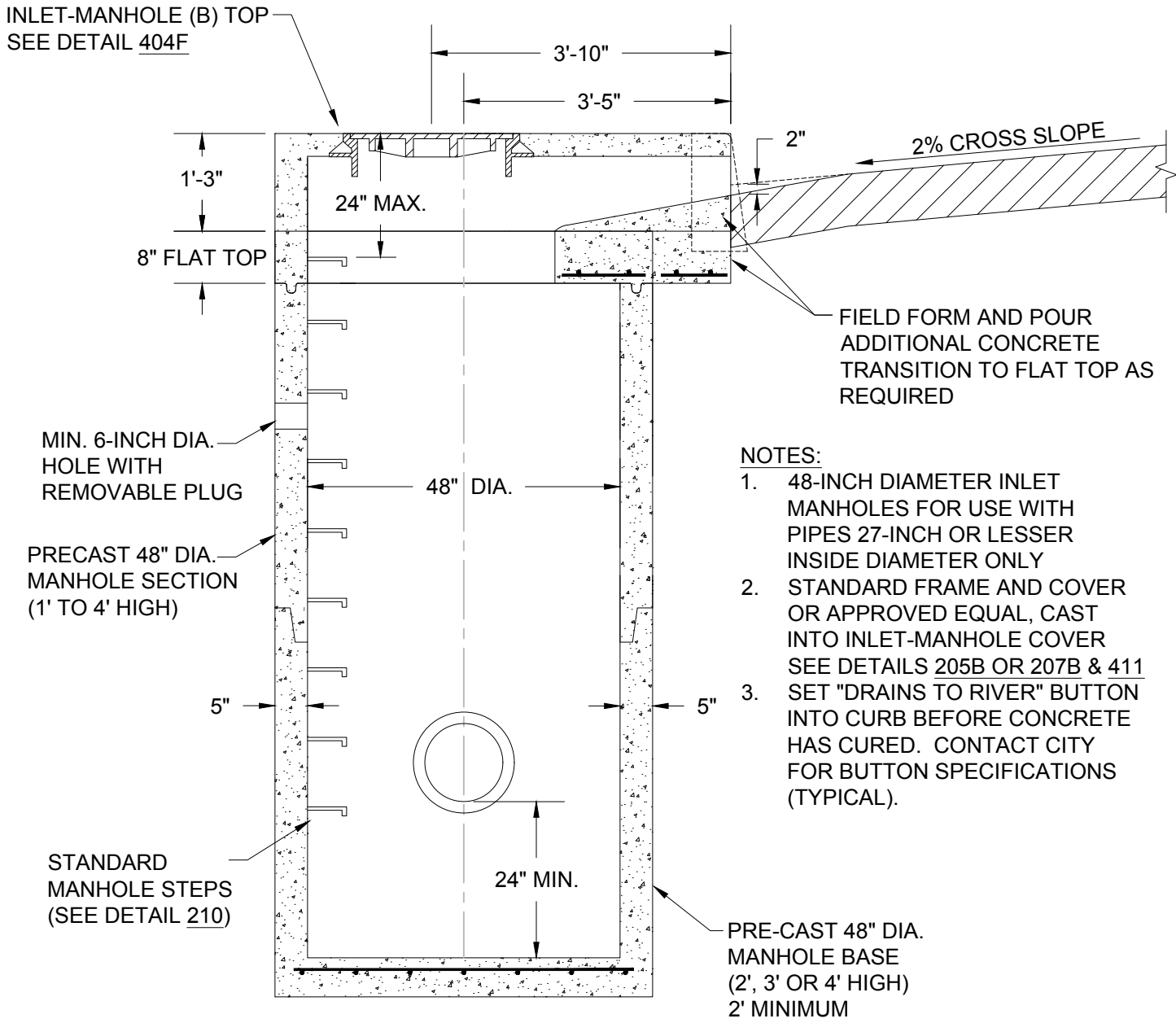
CITY OF GRESHAM

NON-GRATED INLET-MANHOLE (A)

PWS VERSION: JULY 2026

DRAWN	CMC
REV. DATE	AUG 2025
APPR.	
DETAIL NO.	404D

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\cad - all\400_stormwater\404e.dwg, Plotted 4/20/2026 10:32 AM, By: Anthony Dollowitch, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



- 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 205B OR 207B & 411
 3. SET "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS CURED. CONTACT CITY FOR BUTTON SPECIFICATIONS (TYPICAL).

PROFILE

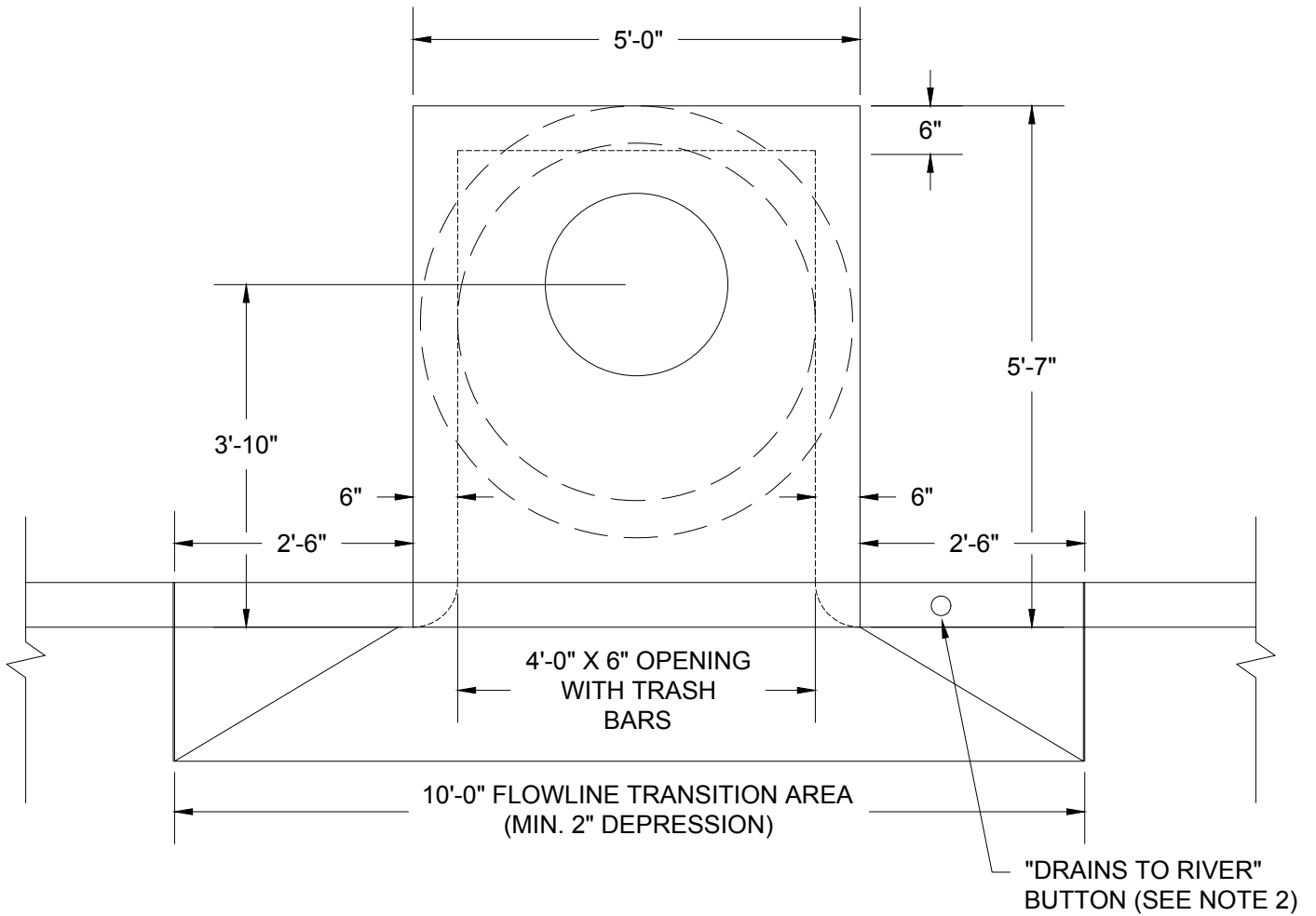
CITY OF GRESHAM

NON-GRATED INLET-MANHOLE (B)

PWS VERSION: JULY 2026

DRAWN	CMC
REV. DATE	AUG 2025
APPR.	
DETAIL NO.	404E

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\cad - all\400_stormwater\404f.dwg, Plotted 4/20/2026 10:32 AM, By: Anthony Dollowitch, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



NOTES:

1. STANDARD FRAME AND COVER OR APPROVED EQUAL, CAST INTO INLET-MANHOLE TOP. SEE DETAILS 205B OR 207B & 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: JULY 2026

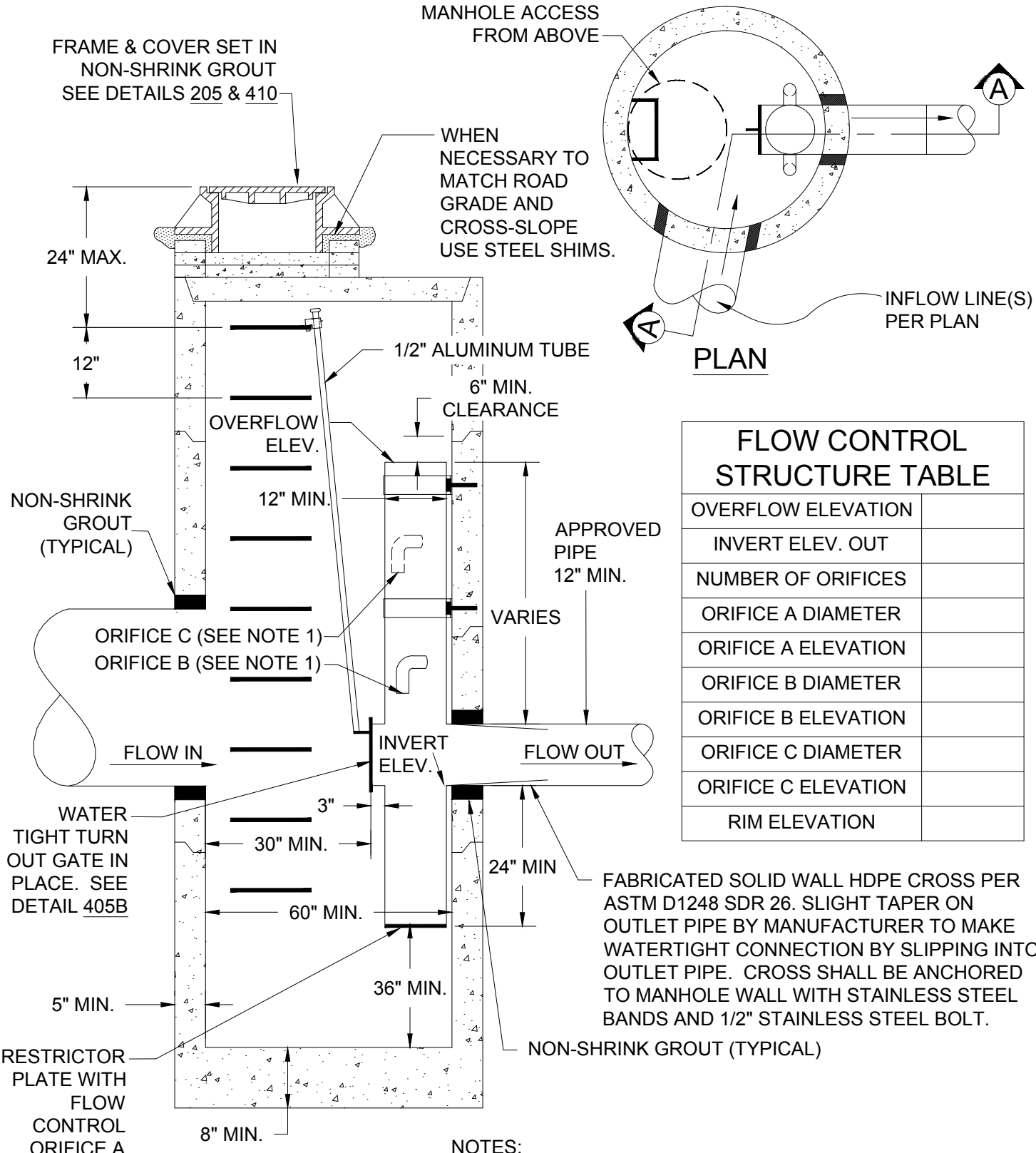
DRAWN CMC

REV. DATE AUG 2025

APPR.

DETAIL NO. 404F

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\cad - all\400_stormwater\405a.dwg, Plotted 4/20/2026 10:32 AM, By: Anthony Dolowitch, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



FLOW CONTROL STRUCTURE TABLE

OVERFLOW ELEVATION	
INVERT ELEV. OUT	
NUMBER OF ORIFICES	
ORIFICE A DIAMETER	
ORIFICE A ELEVATION	
ORIFICE B DIAMETER	
ORIFICE B ELEVATION	
ORIFICE C DIAMETER	
ORIFICE C ELEVATION	
RIM ELEVATION	

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

SECTION A-A

NOTES:
 1. MULTI-ORIFICE ELBOWS TO BE LOCATED TO ASSURE LADDER CLEARANCE. ORIFICE SHALL BE MOUNTED ON BOTTOM OF ELBOWS. ELBOWS SHALL BE SHORT RADIUS AND SHALL NOT EXTEND MORE THAN 8" FROM OVERFLOW PIPE.

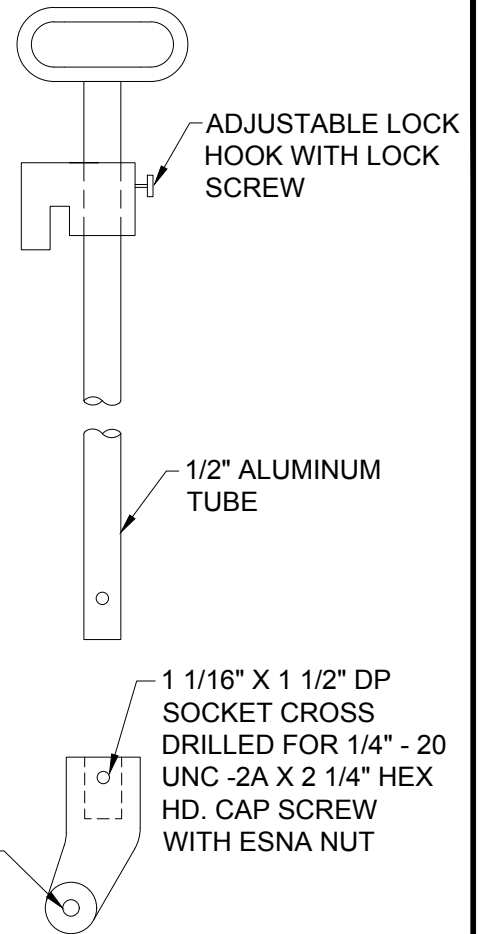
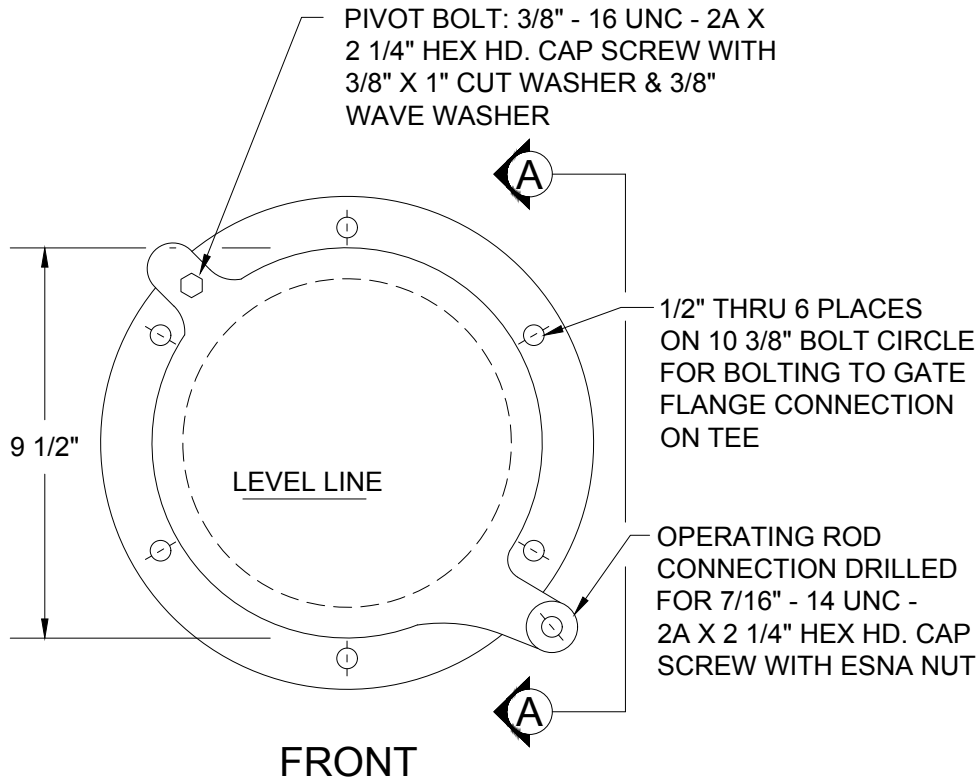
CITY OF GRESHAM

FLOW CONTROL MANHOLE

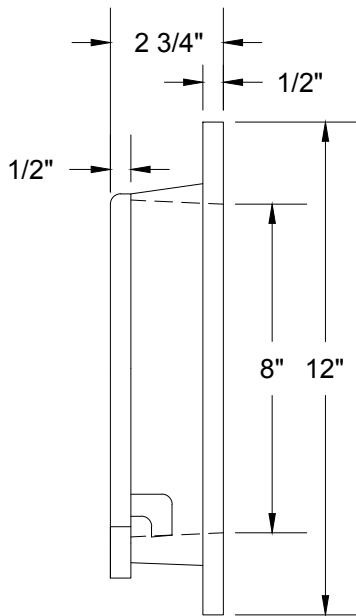
PWS VERSION: JULY 2026

DRAWN	TH
REV. DATE	MARCH 2026
APPR.	
DETAIL NO.	405A

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\cad - all\400_stormwater\405b.dwg, Plotted 4/20/2026 10:32 AM, By: Anthony Dollowitch, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



**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**

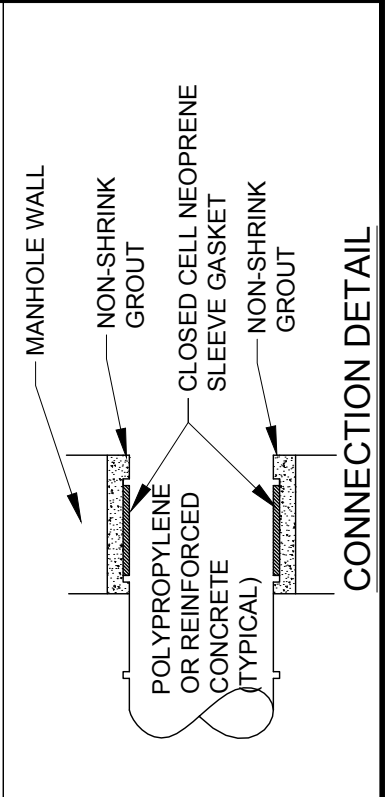
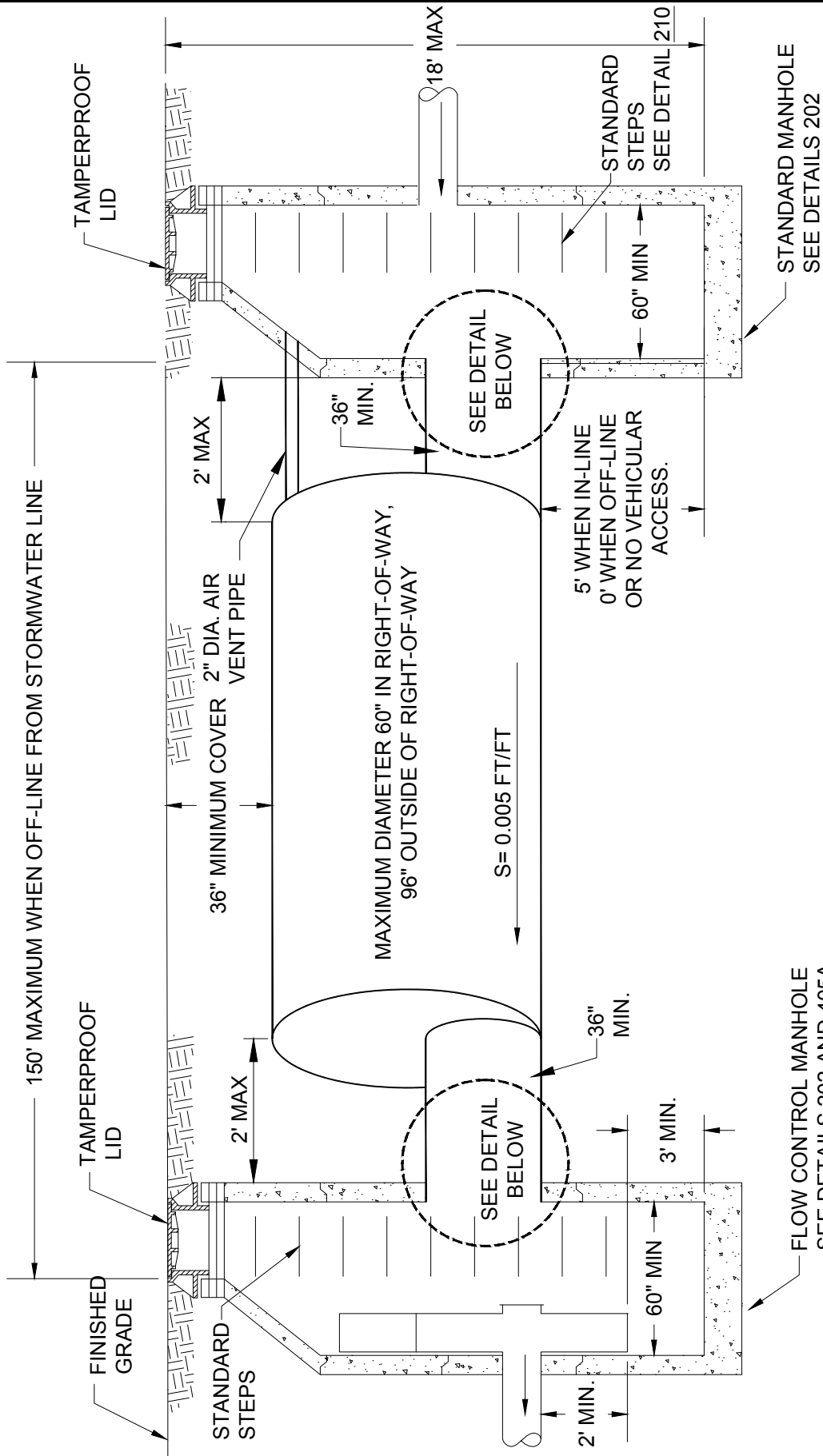
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DRAWN CMC

REV. DATE JAN 2019

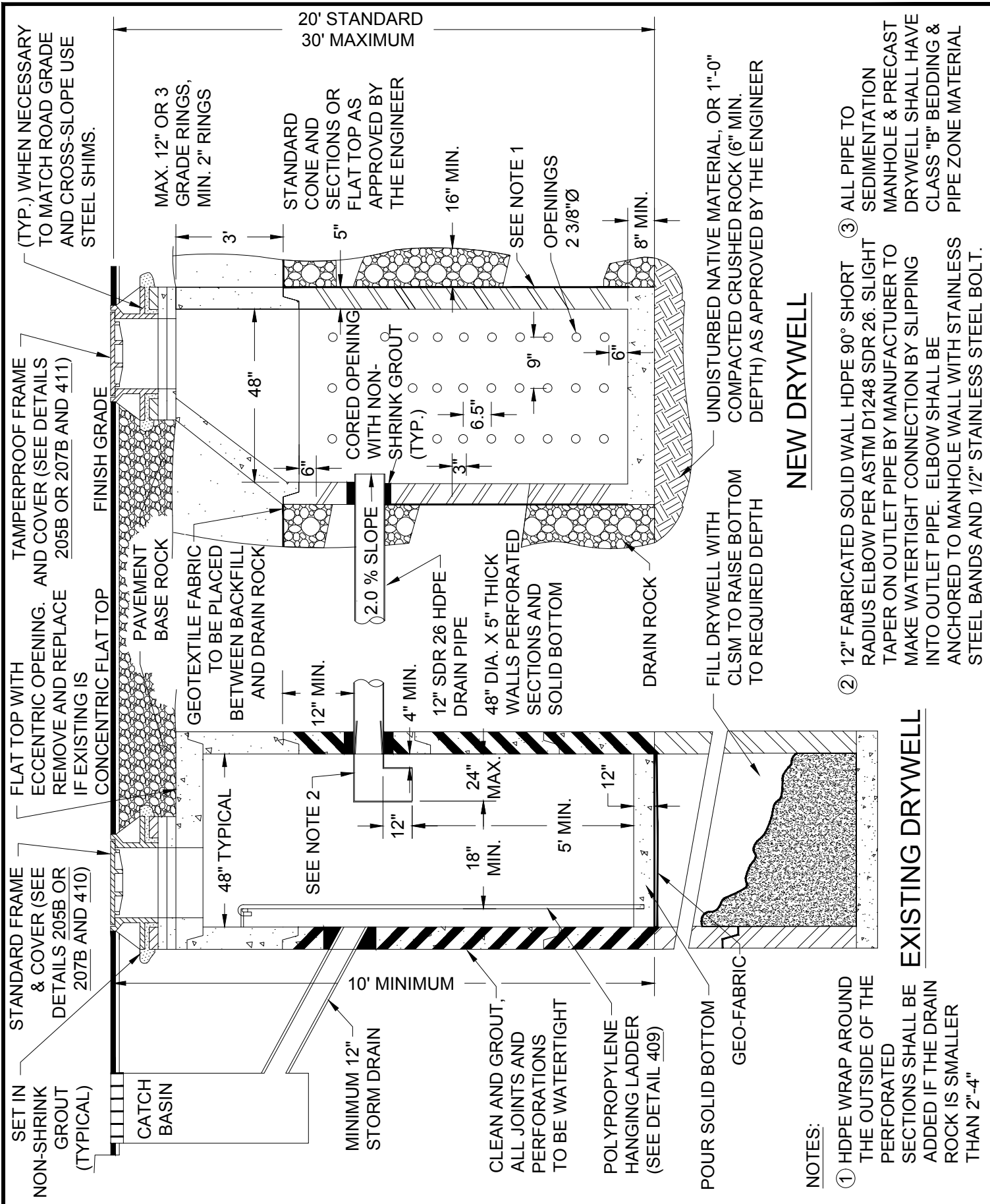
APPR.

DETAIL NO. 405B



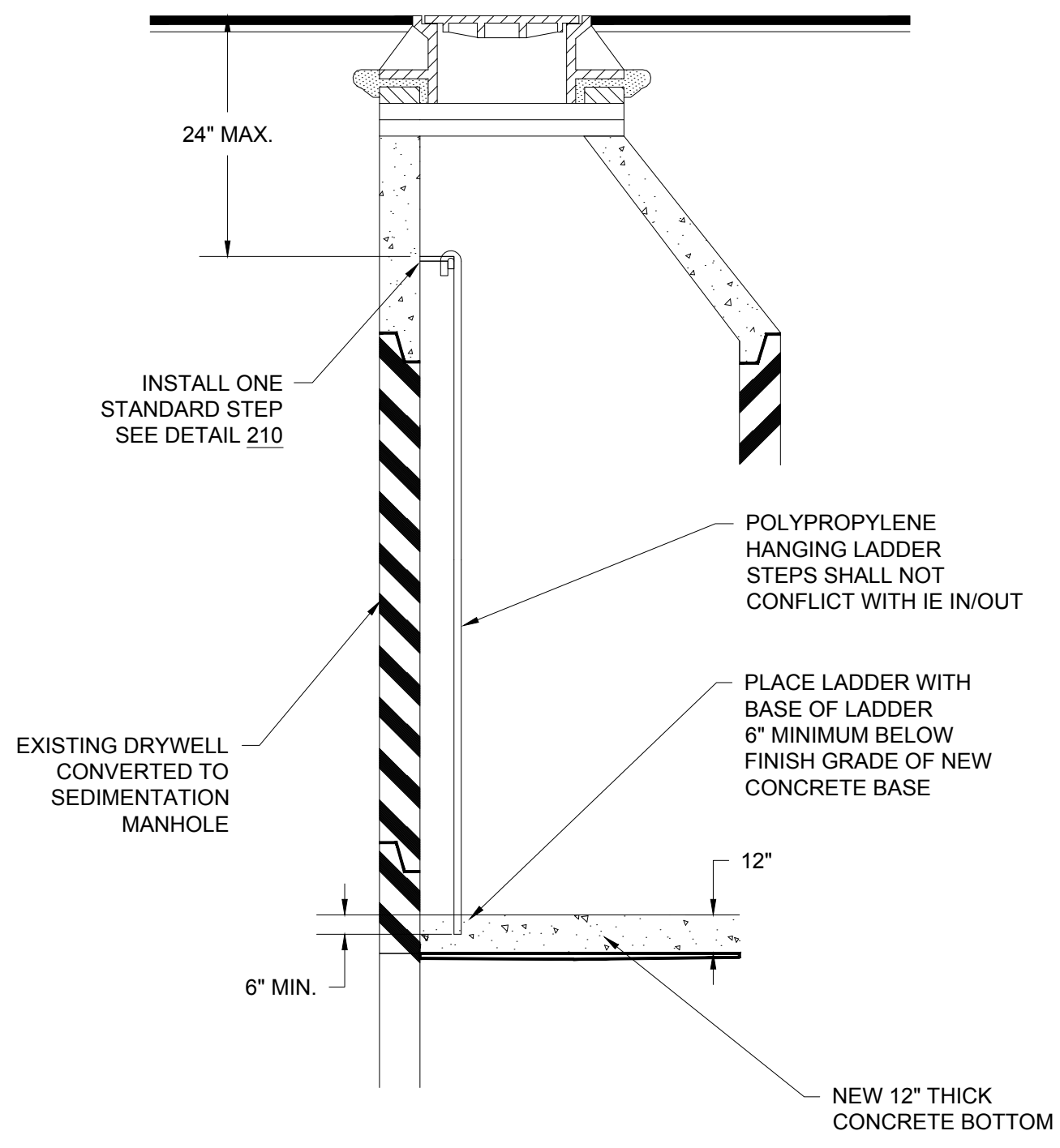
NOTES:
1. DETENTION PIPE AND ALL CONNECTIONS SHALL BE WATERTIGHT.

DRAWN	AAD
REV. DATE	MARCH 2026
APPR.	
DETAIL NO.	406



	DRYWELL SYSTEM AND SEDIMENTATION MANHOLE (TYPICAL RETROFIT INSTALLATION)		DRAWN CMC
	PWS VERSION: JULY 2026		REV. DATE MARCH 2026
			APPR.
			DETAIL NO. 408

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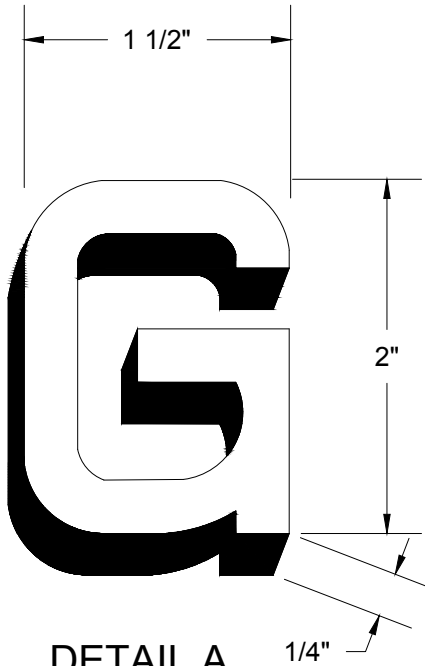
CITY OF GRESHAM

POLYPROPYLENE HANGING LADDER

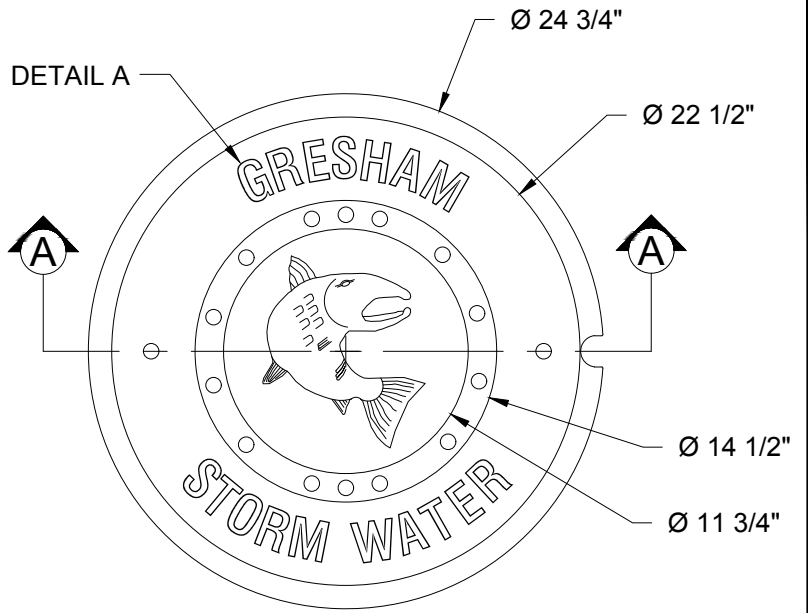
PWS VERSION: JULY 2026

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

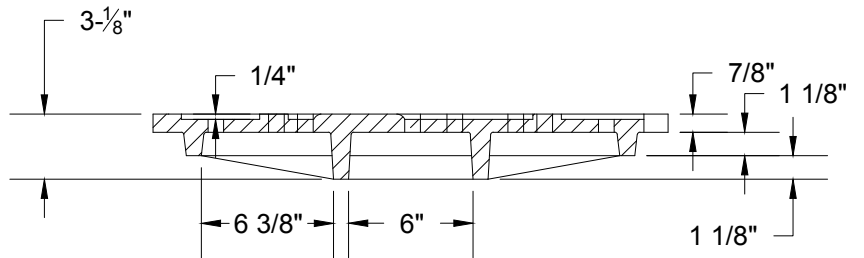
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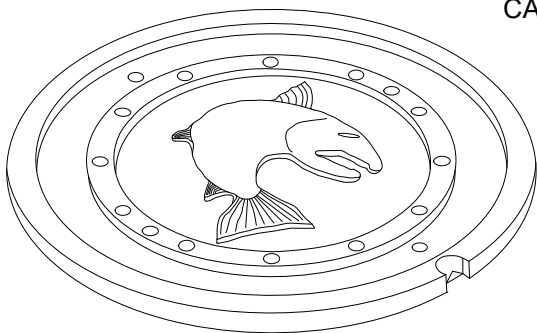
DETAIL A
RAISED TEXT



TOP VIEW

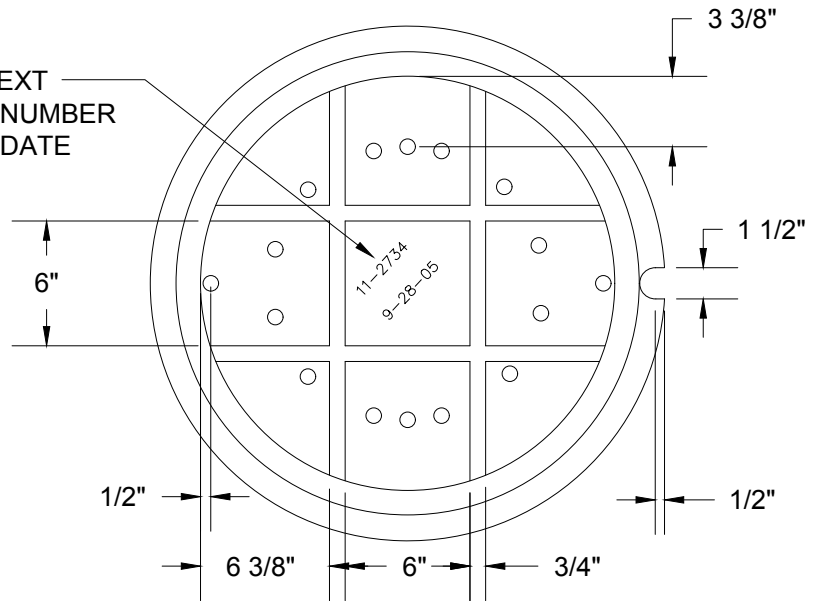


SECTION A-A



RAISED TEXT NOT SHOWN

RAISED TEXT
CASTING NUMBER
CASTING DATE



BOTTOM VIEW

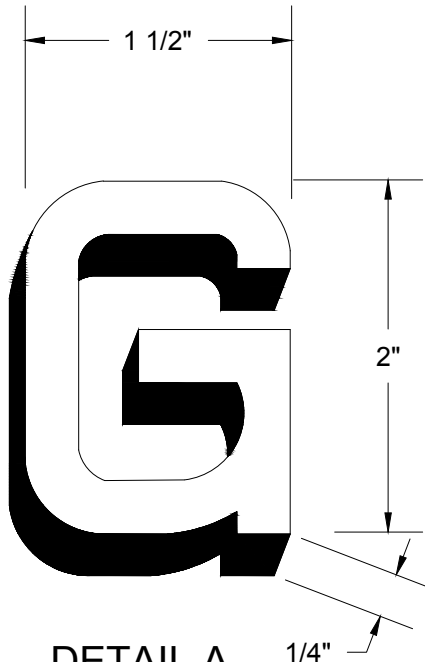
CITY OF GRESHAM

STANDARD STORMWATER MANHOLE COVER

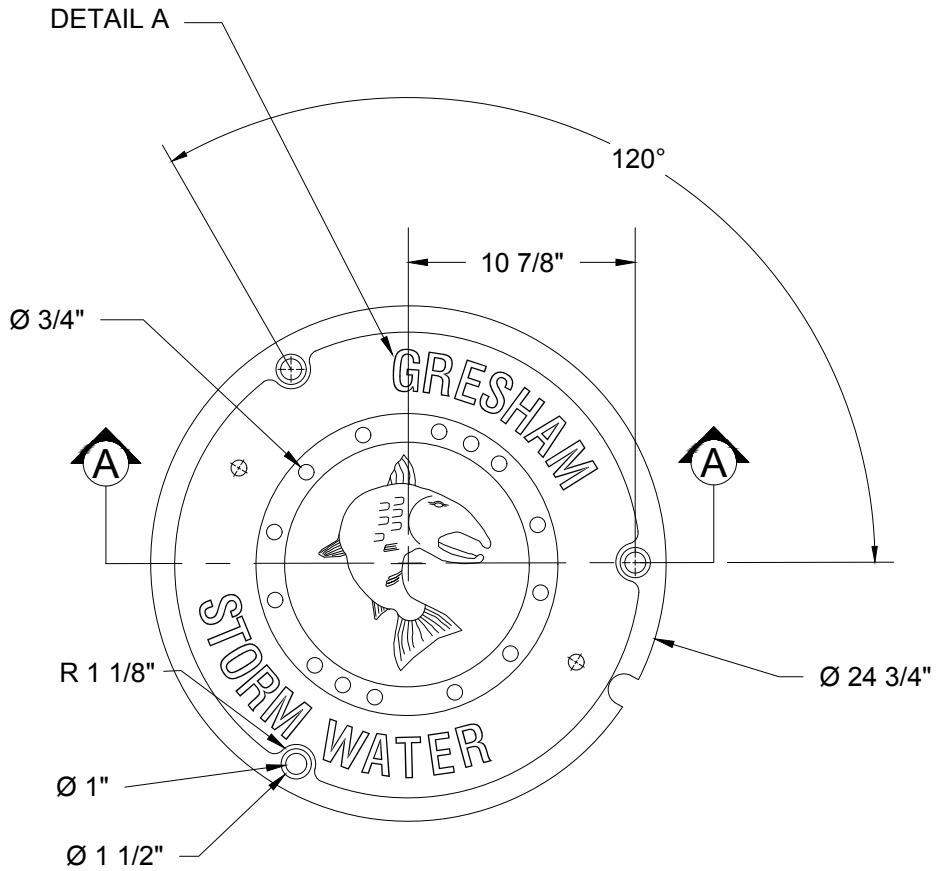
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DRAWN	CMC
REV. DATE	JAN 2019
APPR.	
DETAIL NO.	410

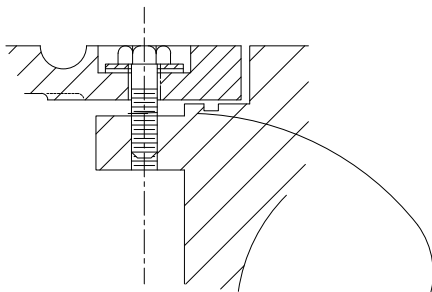
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DETAIL A
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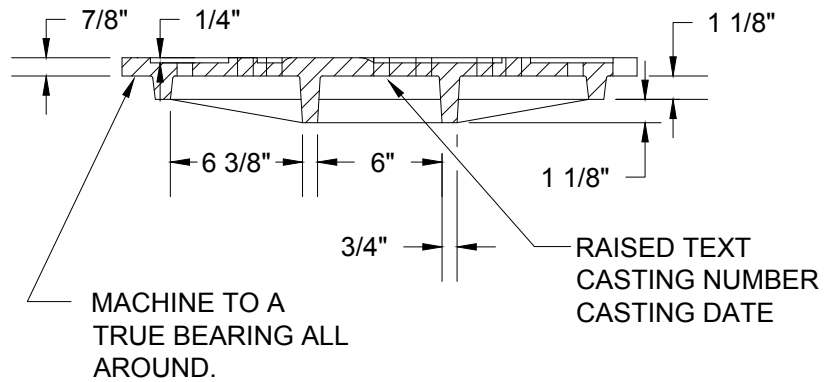


TOP VIEW



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



MACHINE TO A
TRUE BEARING ALL
AROUND.

RAISED TEXT
CASTING NUMBER
CASTING DATE

SECTION A-A

**CITY OF
GRESHAM**

**STORMWATER TAMPERPROOF
MANHOLE COVER**

PWS VERSION: JULY 2026

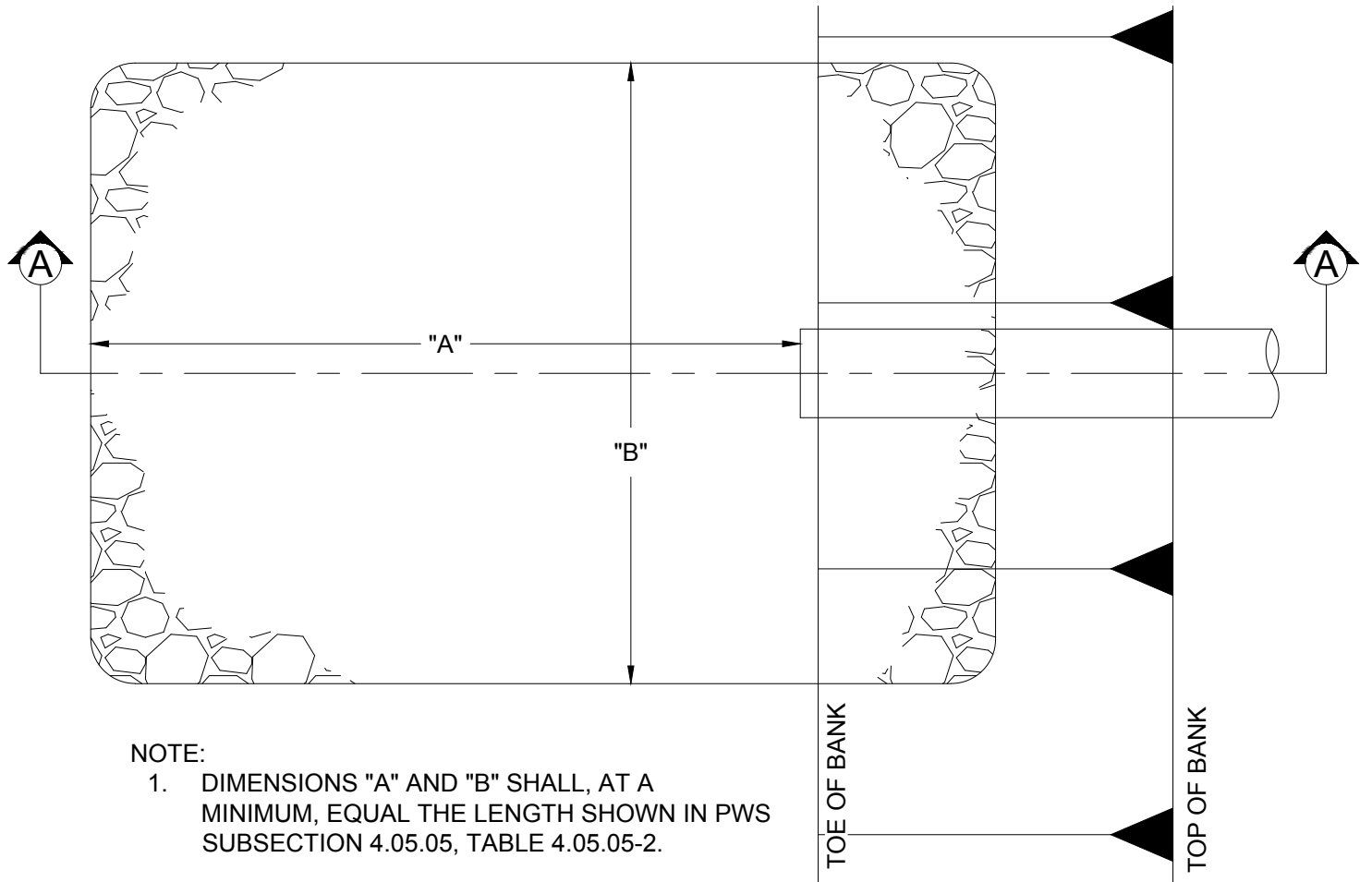
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REV. DATE JAN 2019

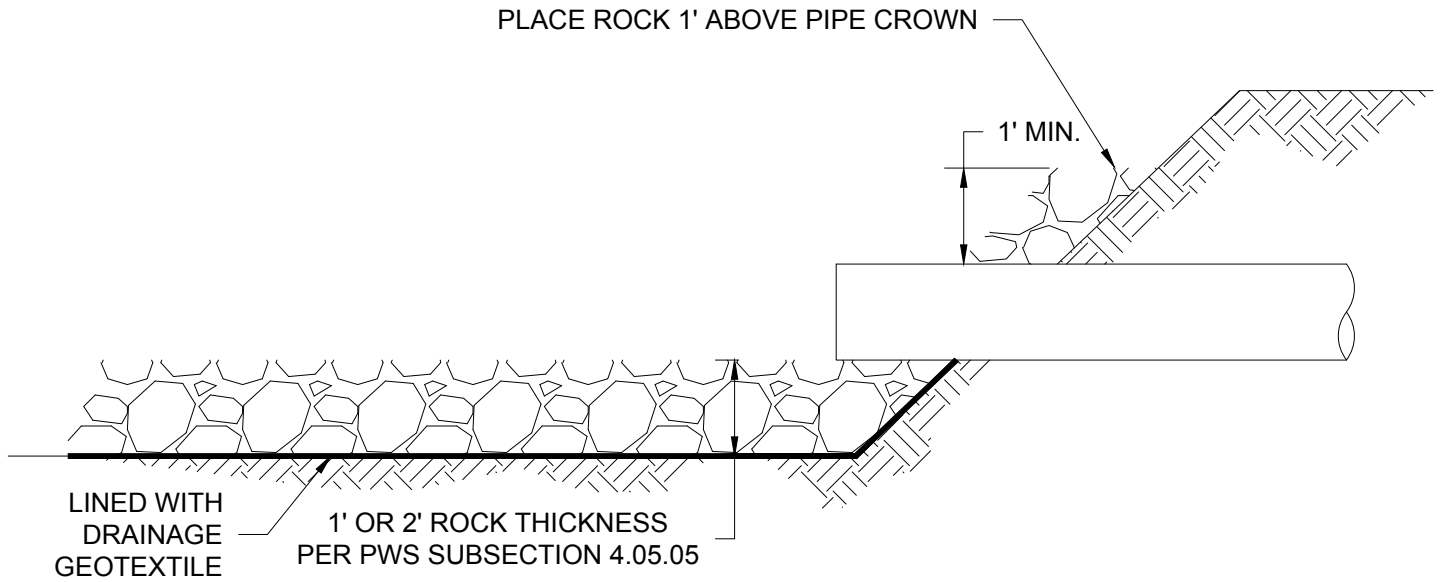
APPR.

DETAIL NO. 411

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PLAN



SECTION A-A

NTS

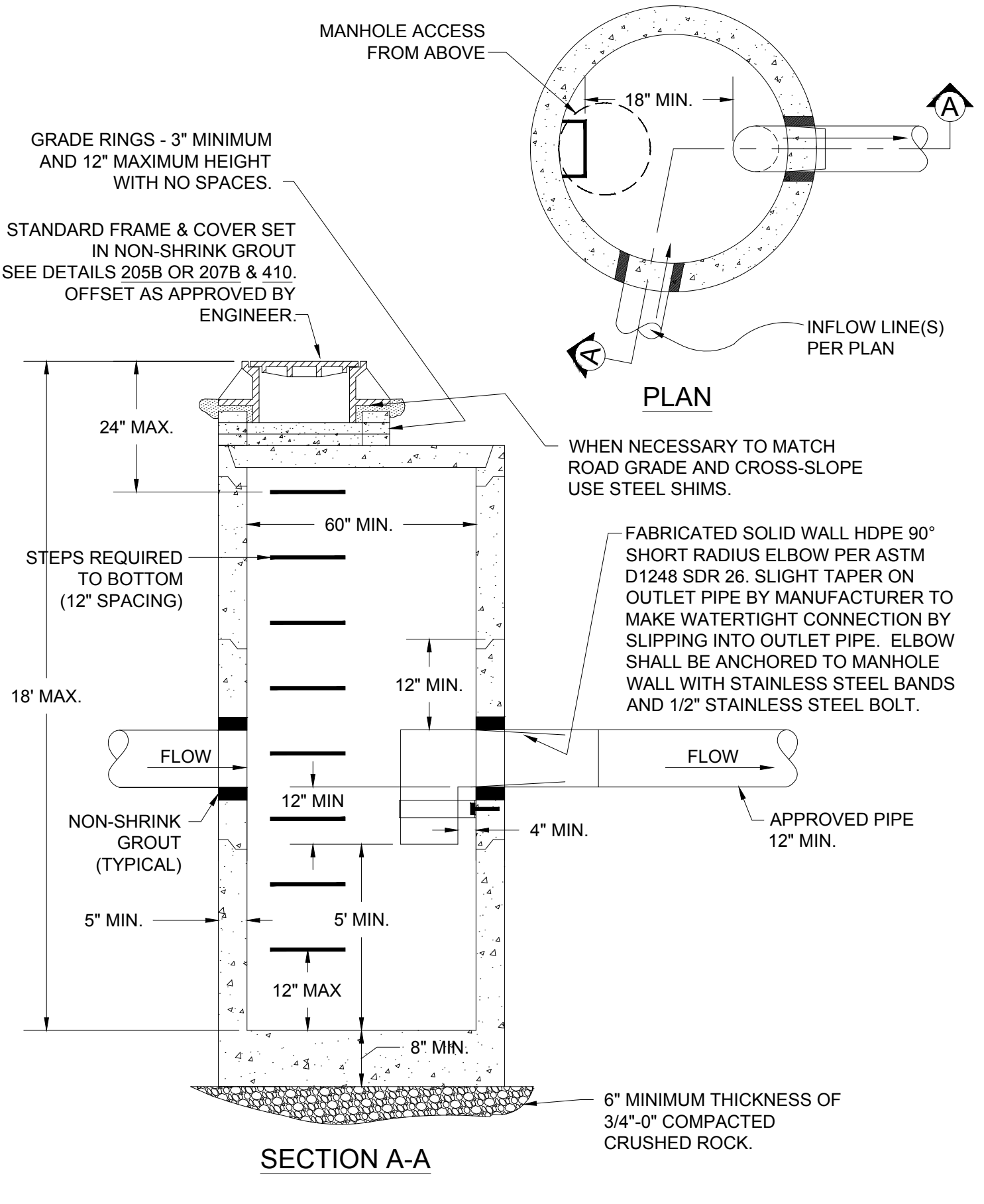
CITY OF GRESHAM

OUTFALL PROTECTION

PWS VERSION: JULY 2026

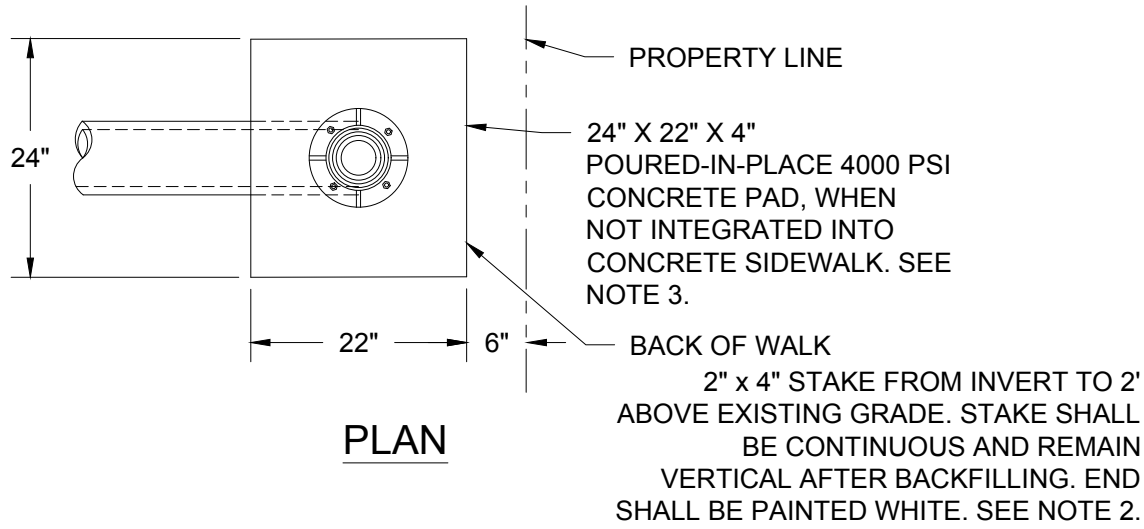
DRAWN	KRB
REV. DATE	JAN 2024
APPR.	
DETAIL NO.	412

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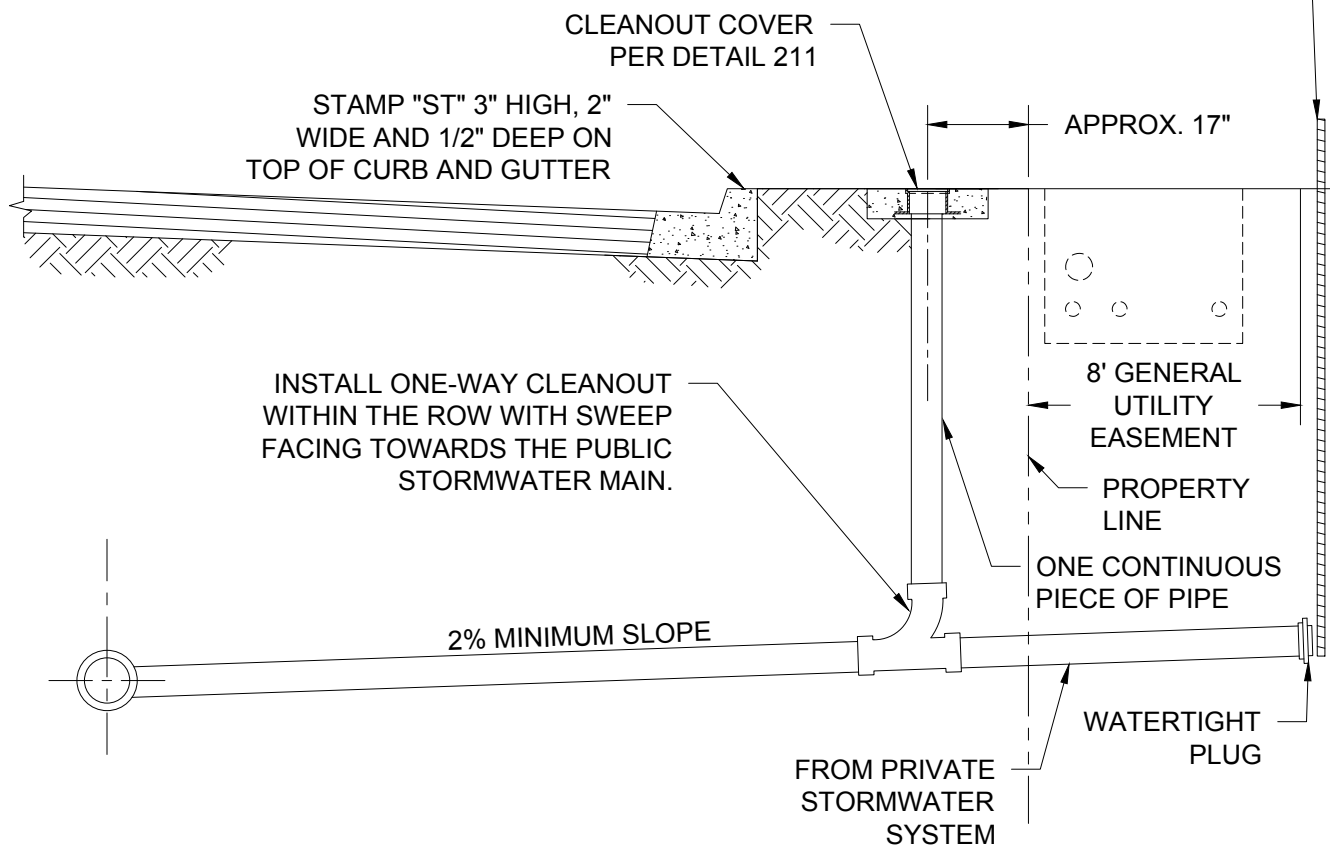


<p>CITY OF GRESHAM</p>	<p>SEDIMENTATION MANHOLE</p>	<p>DRAWN RMS</p>
		<p>REV. DATE MARCH 2026</p>
		<p>APPR.</p>
		<p>DETAIL NO. 413</p>
<p>PWS VERSION: JULY 2026</p>		

FILENAME: y:\inter-departmental\development\engineering\projects\public works standards\2.0 pws revision copy\details\cad - all\400_stormwater\414.dwg, Plotted 4/20/2026 10:32 AM, By: Anthony Dollowitch, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



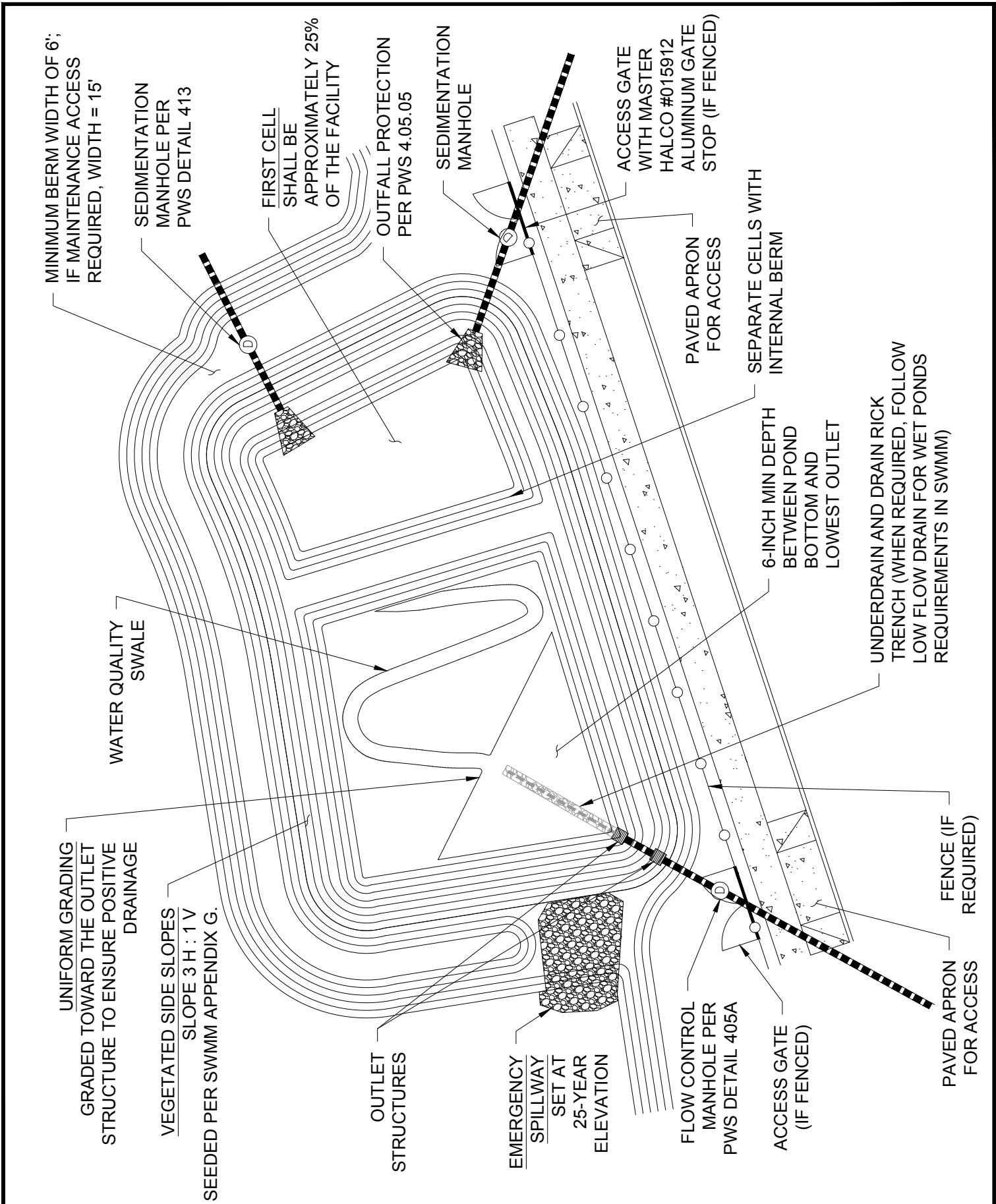
PLAN



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.
6. GREEN MAGNETIC TAPE WITH "CAUTION STORM DRAIN BURIED BELOW" IN RED LETTERS SHALL BE LAID 1' ABOVE THE TOP OF THE STORMWATER LATERAL FROM THE MAIN LINE THEN WRAPPED AROUND THE PLUG AT THE END OF THE SERVICE AND BROUGHT TO THE SURFACE WRAPPED AROUND THE 2" X 4" MARKER.

	<p>STORMWATER LATERAL</p> <p>PWS VERSION: JULY 2026</p>	<p>DRAWN AAD</p>
		<p>REV. DATE OCT 2025</p>
		<p>APPR.</p>
		<p>DETAIL NO. 414</p>

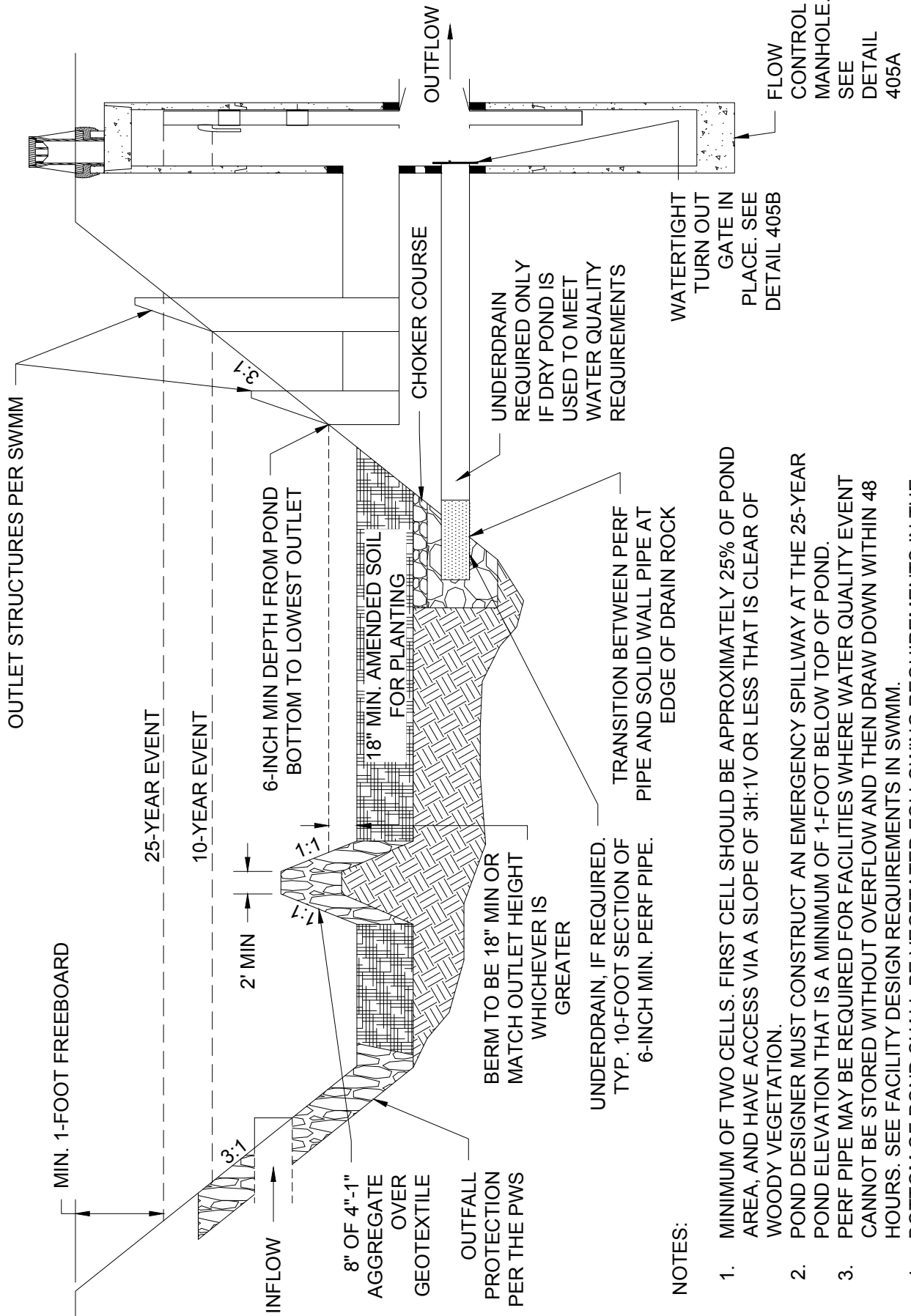


CITY OF GRESHAM

DRY POND PLAN VIEW

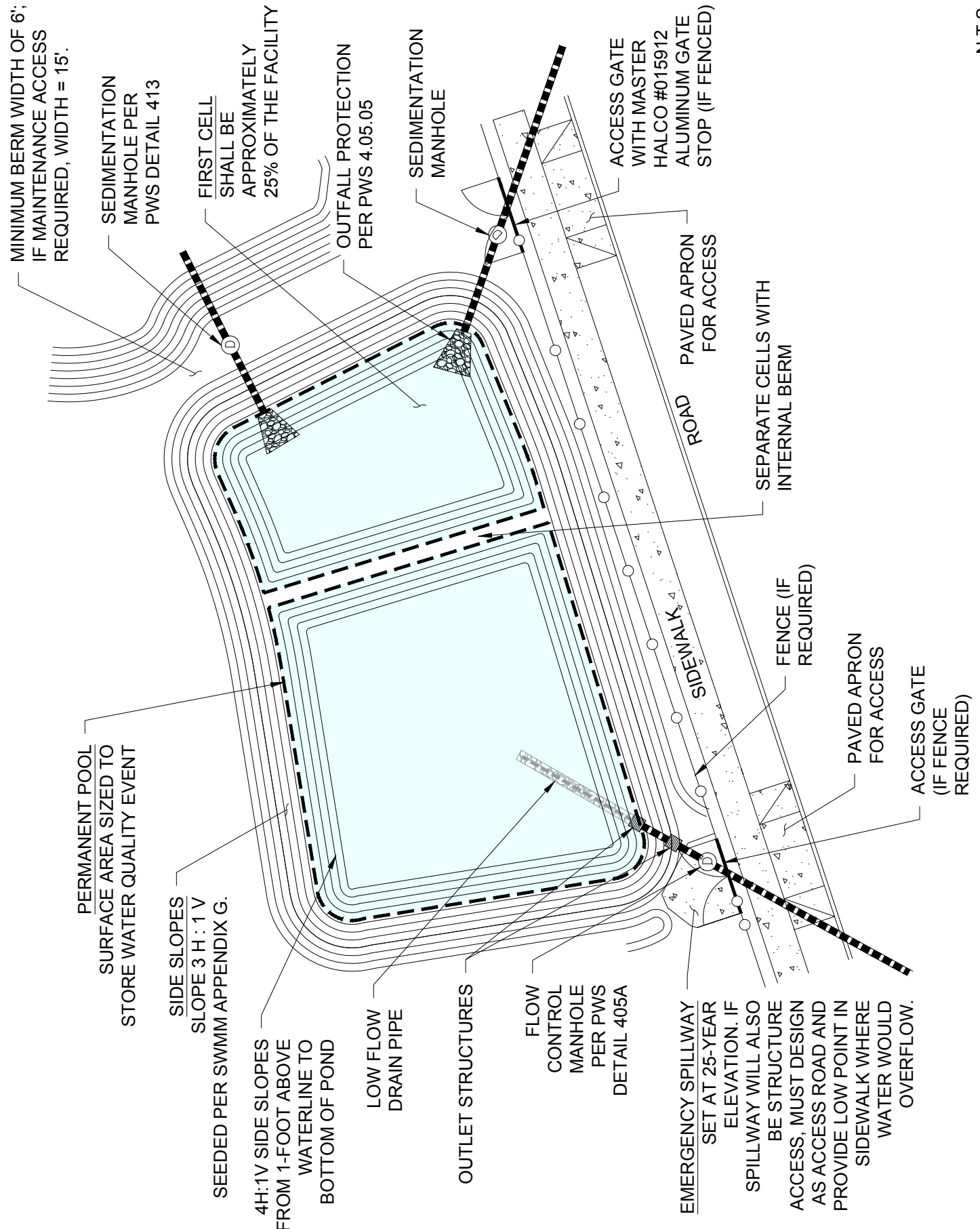
PWS VERSION: JULY 2026

DRAWN	AAD
REV. DATE	APRIL 2026
APPR.	
DETAIL NO.	415



1. MINIMUM OF TWO CELLS. FIRST CELL SHOULD BE APPROXIMATELY 25% OF POND AREA, AND HAVE ACCESS VIA A SLOPE OF 3H:1V OR LESS THAT IS CLEAR OF WOODY VEGETATION.
2. POND DESIGNER MUST CONSTRUCT AN EMERGENCY SPILLWAY AT THE 25-YEAR POND ELEVATION THAT IS A MINIMUM OF 1-FOOT BELOW TOP OF POND.
3. PERF PIPE MAY BE REQUIRED FOR FACILITIES WHERE WATER QUALITY EVENT CANNOT BE STORED WITHOUT OVERFLOW AND THEN DRAW DOWN WITHIN 48 HOURS. SEE FACILITY DESIGN REQUIREMENTS IN SWMM.
4. BOTTOM OF POND SHALL BE VEGETATED FOLLOWING REQUIREMENTS IN THE SWMM APPENDIX G.

DRAWN	AAD
REV. DATE	APRIL 2026
APPR.	
DETAIL NO.	416



N.T.S.

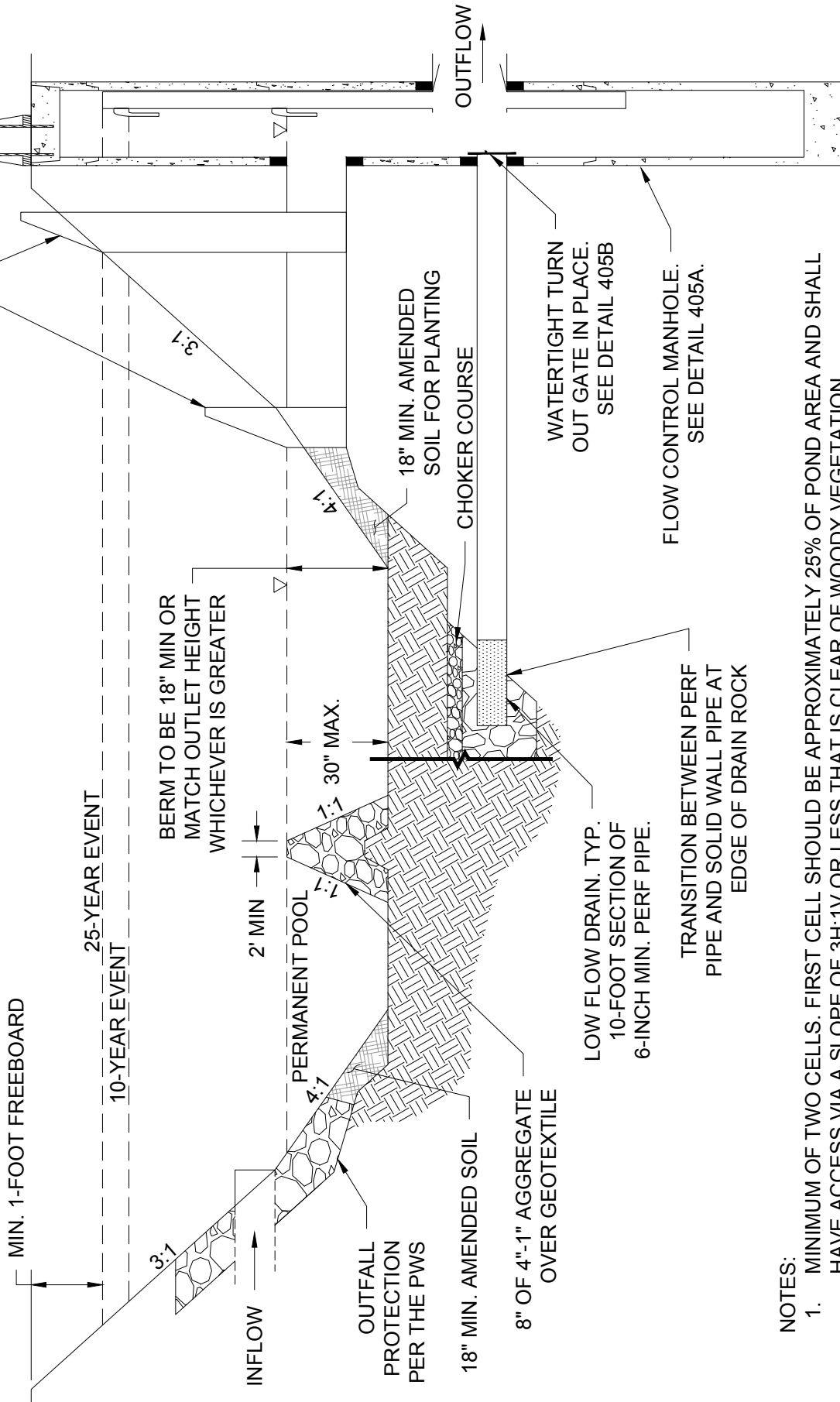
CITY OF GRESHAM

WET POND PLAN VIEW

PWS VERSION: JULY 2026

DRAWN	AAD
REV. DATE	APRIL 2026
APPR.	
DETAIL NO.	417

OUTLET STRUCTURES
(SEE NOTE 2 AND SWMM)



NOTES:

1. MINIMUM OF TWO CELLS. FIRST CELL SHOULD BE APPROXIMATELY 25% OF POND AREA AND SHALL HAVE ACCESS VIA A SLOPE OF 3H:1V OR LESS THAT IS CLEAR OF WOODY VEGETATION.
2. LOWEST OUTLET STRUCTURE SHALL BE LOCATED AT LEVEL OF PERMANENT POOL, AND PROVIDE MAINTENANCE ACCESS THAT IS CLEAR OF WOODY VEGETATION.
3. POND DESIGNER MUST CONSTRUCT AN EMERGENCY SPILLWAY AT THE 25-YEAR POND ELEVATION THAT IS A MINIMUM OF 1-FOOT BELOW TOP OF POND.
4. IF PERMANENT POOL IS 18" OR SHALLOWER, TOPSOIL SHALL BE PLACED AND BOTTOM OF POND SHALL BE VEGETATED FOLLOWING REQUIREMENTS IN SWMM APPENDIX G.

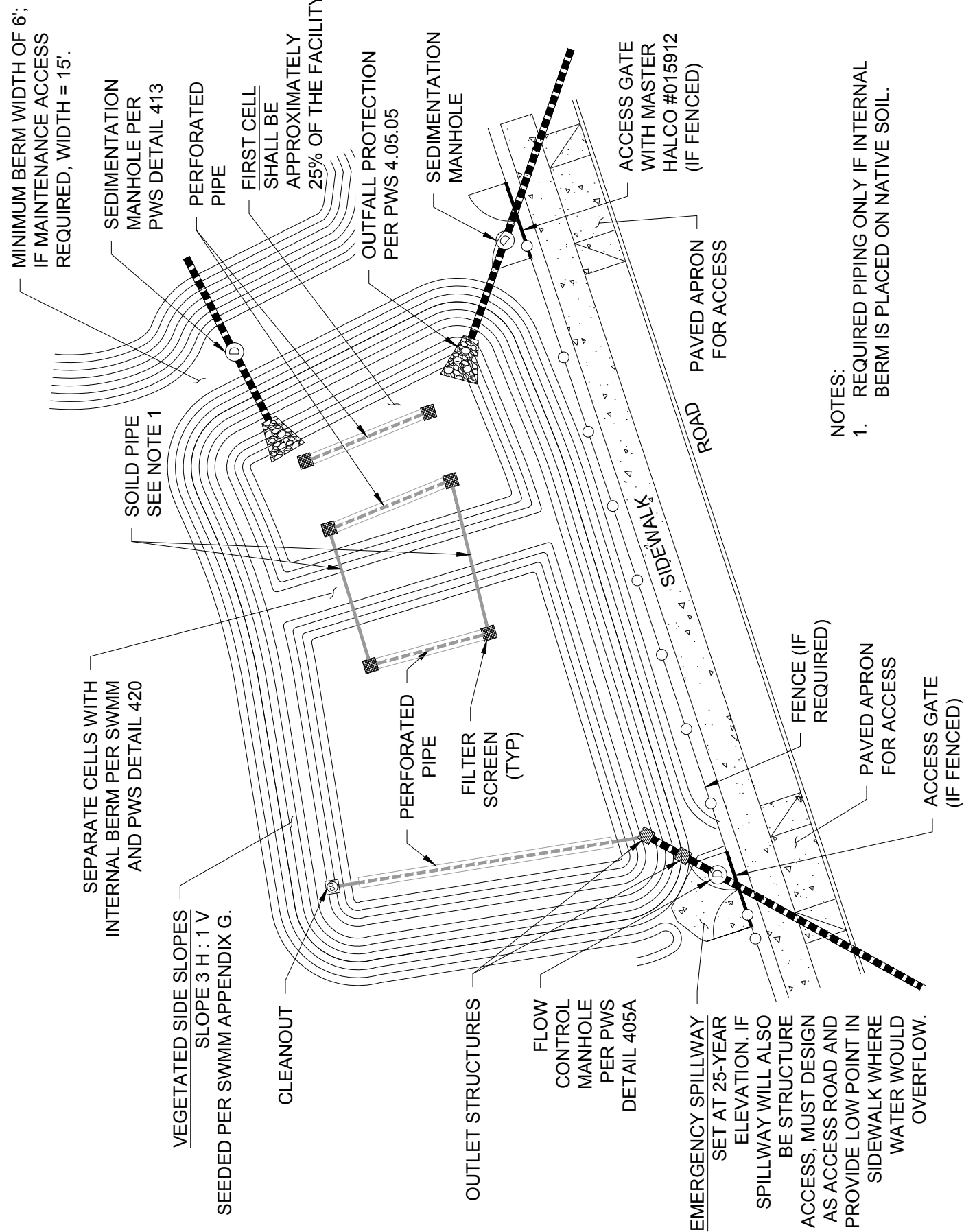
N.T.S.

CITY OF
GRESHAM

WET POND PROFILE VIEW

PWS VERSION: JULY 2026

DRAWN	AAD
REV. DATE	APRIL 2026
APPR.	
DETAIL NO.	418



NOTES:
 1. REQUIRED PIPING ONLY IF INTERNAL BERM IS PLACED ON NATIVE SOIL.

N.T.S.

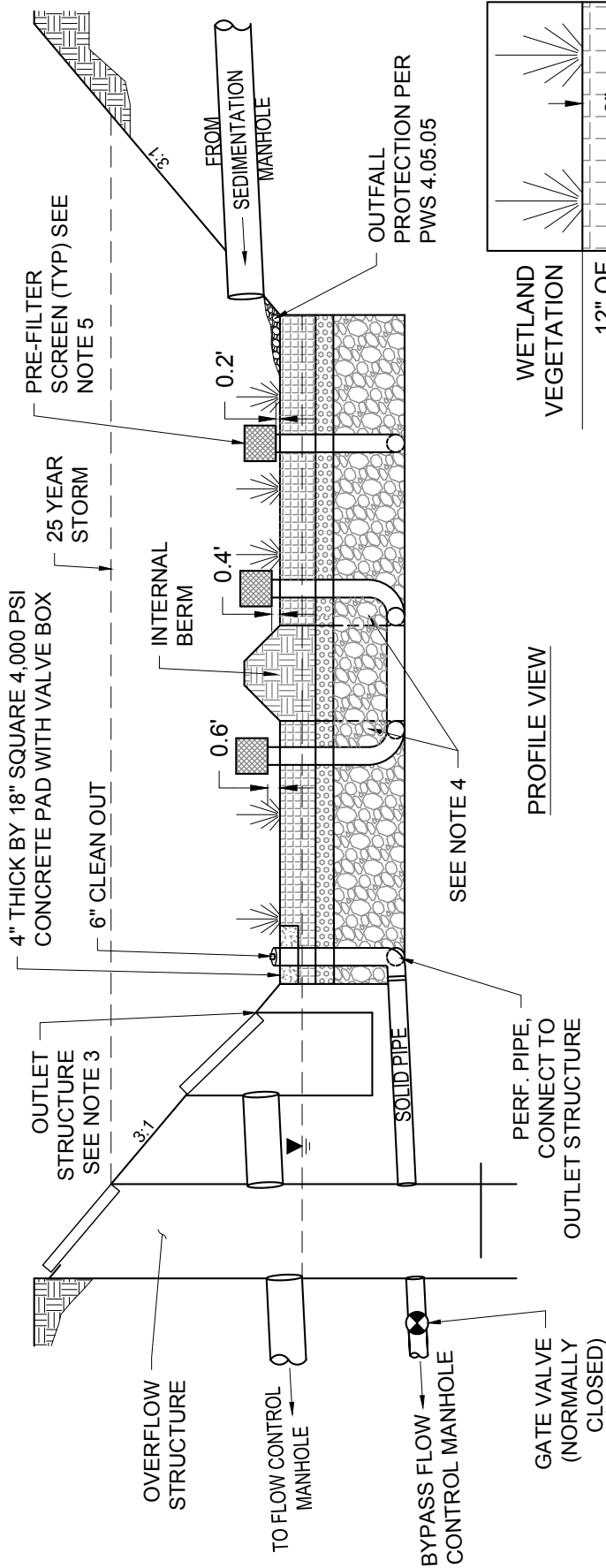


SUBSURFACE GRAVEL POND PLAN VIEW

PWS VERSION: JULY 2026

DRAWN	AAD
REV. DATE	MARCH 2026
APPR.	
DETAIL NO.	419

DRAWN	AAD
REV. DATE	APRIL 2026
APPR.	
DETAIL NO.	420



PROFILE VIEW

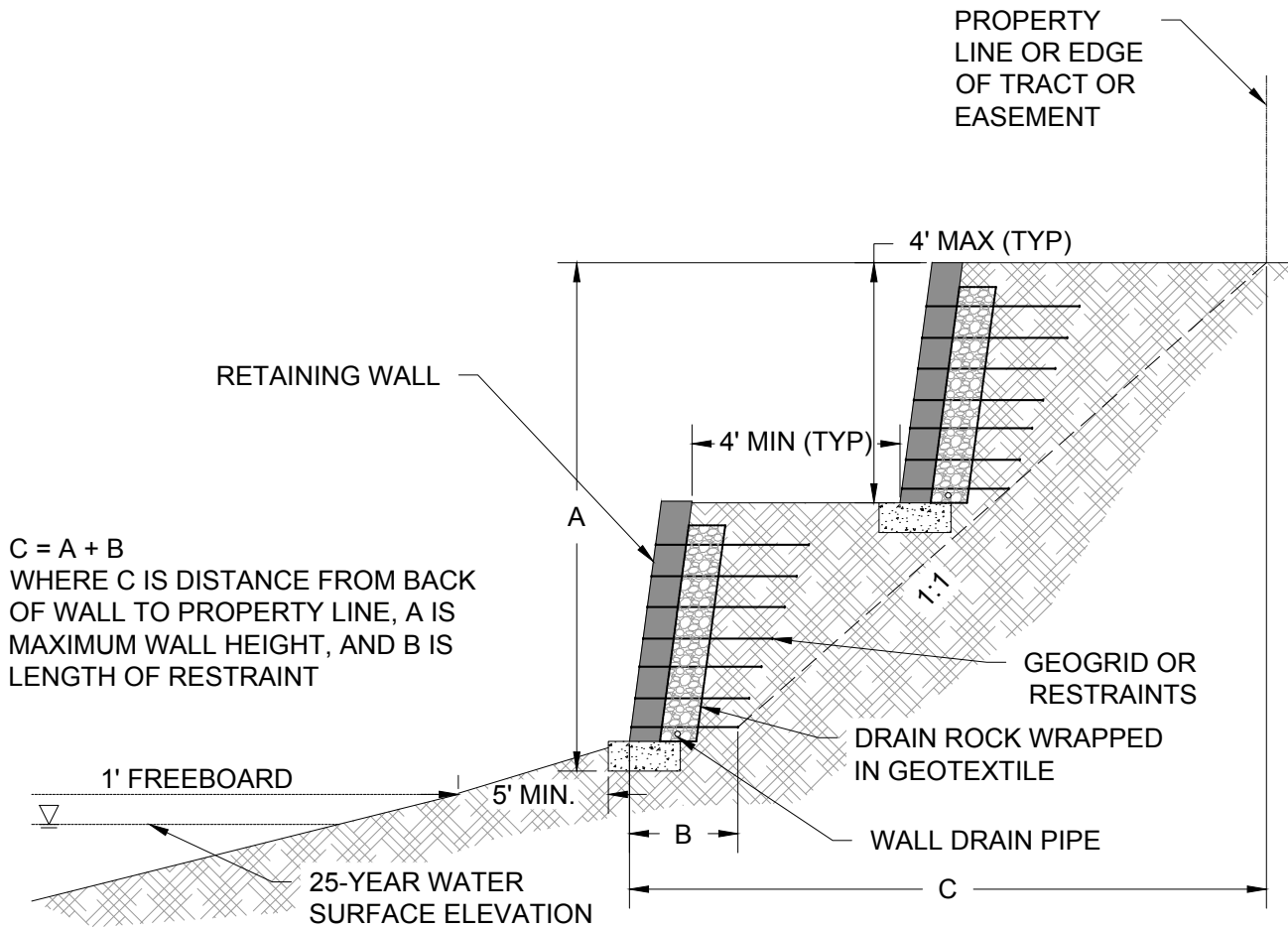
SEE NOTE 4

NOTES:

1. ALL PIPING SHALL BE 6" DIAMETER SCHEDULE 40 PVC. ALL 90° BENDS SHALL BE LONG SWEEP ELBOWS
2. PERFORATED PIPES SHALL BE PLACED IN THE BOTTOM OF THE ROCK LAYER. AND SHALL BE FABRIC WRAPPED PERFORMED PVC. VERTICAL PIPES SHALL BE SOLID PVC
3. THE INVERT ELEVATION SHALL BE SET AT THE WATER SURFACE ELEVATION OF THE WATER QUALITY STORM
4. INTERNAL BERMS SHALL BE BUILT PER WET POND SPECIFICATIONS, EXCEPT THAT INTERNAL BERMS FOR SUBSURFACE GRAVEL PONDS MAY BE PLACED ON TOP OF THE GRAVEL LAYERS. IF THE BERM IS PLACED ON GRAVEL IT MUST BE ENTIRELY WRAPPED IN GEOTEXTILE FABRIC
5. FILTER SHALL BE FABCO 10235-2 OR SCS6-2 OR APPROVED EQUAL
6. BOTTOM OF POND SHALL BE VEGETATED FOLLOWING REQUIREMENTS IN SWMM APPENDIX G

WETLAND VEGETATION	12" OF
STORMWATER FACILITY SOIL	3" OF 1/4" - #10 AGGREGATE
	24" OF 1- 1/2" - 3/4" OPEN GRADED AGGREGATE
	UN-COMPACTED NATIVE SOIL
SUBSURFACE GRAVEL POND SECTION	

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1. RETAINING WALLS ARE NOT ALLOWED WITHIN THE ACTIVE POND AREA. ALL PARTS OF THE WALL MUST BE A MINIMUM DISTANCE OF 5 FEET AWAY FROM THE BOUNDARY DEFINED BY THE FREEBOARD ELEVATION.
2. GRAVITY WALLS SHALL BE SET BACK FROM THE NEAREST PROPERTY LINE OR EDGE OF TRACT OR EASEMENT BY AT LEAST THE DISTANCE EQUAL TO THE WALL HEIGHT.
3. REINFORCED RETAINING WALLS SHALL BE SET BACK FROM THE NEAREST PROPERTY LINE OR EDGE OF TRACT OR EASEMENT BY AT LEAST THE DISTANCE EQUAL TO THE MAXIMUM WALL HEIGHT PLUS THE LENGTH OF THE RESTRAINT CONTROLLING THE 1:1 ZONE OF INFLUENCE.
4. DRAIN ROCK WRAPPED IN GEOTEXTILE SHALL BE INCLUDED BEHIND WALLS.
5. NO PERFORATIONS FOR PRIVATE STORM LINES SHALL PASS THROUGH RETAINING WALLS.
6. STRUCTURAL DESIGN CALCULATIONS MUST BE SUBMITTED WITH EVERY RETAINING WALL PROPOSAL.
7. WALLS SHALL NOT INHIBIT MAINTENANCE ACCESS INTO THE FACILITY.
8. SLOPES WITHIN CITY TRACT OR EASEMENT SHALL BE A MAXIMUM OF 3H:1V.

CITY OF GRESHAM

RETAINING WALLS ADJACENT TO PONDS

PWS VERSION: JULY 2026

DRAWN	AAD
REV. DATE	MARCH 2026
APPR.	
DETAIL NO.	421