

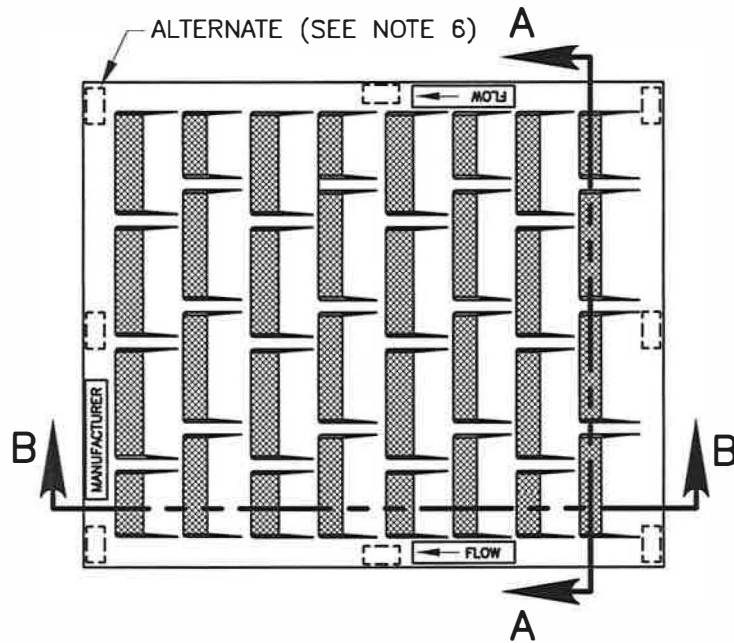
TABLE OF CONTENTS

CITY OF SPOKANE STANDARD PLANS – SECTION B

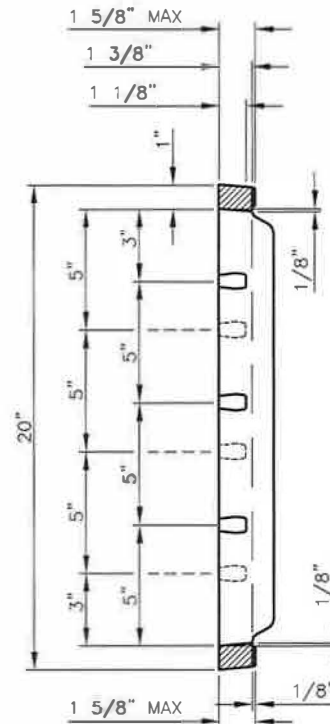
B-101B = Revised Standard Plan
 ***W-108A = New Standard Plan
 #A-1 = Renumbered Standard Plan

[Back to Main TOC](#)

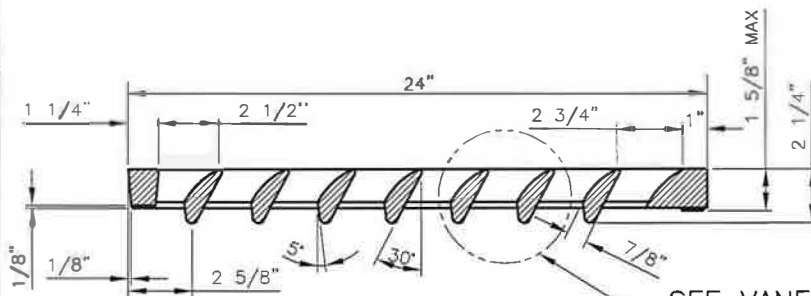
<u>Plan No.</u>	<u>Plan Title</u>	<u>Current Plan Date</u>
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B-2B	Bi-Directional Vaned Grate	5/07
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B-123	<i>See Std. Plan A-8</i>	



TOP VIEW



SECTION A-A



SECTION B-B

APPROVED BY

Eldon Brown

ACTING DIRECTOR,
ENGINEERING SERVICES

For SCOTT D. EGGER, P.E.

PRINCIPAL ENGINEER, DESIGN

GARY S. NELSON, P.E.

ADOPTED: 05/2007

REVISED:

SUPERSEDES:

CHECKED BY: JAG

SCALE: NTS

DWG/REV. BY: PCF

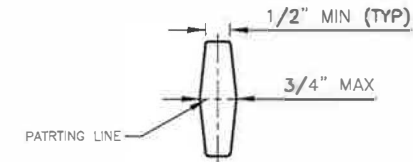
DIRECTIONAL VANED GRATE

ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

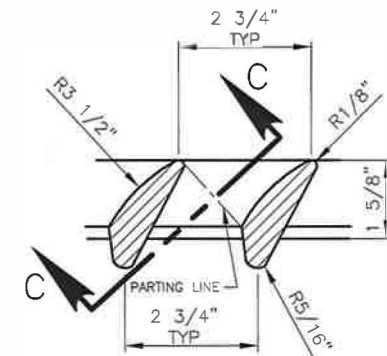
STANDARD
PLAN No.
B-2A

NOTES:

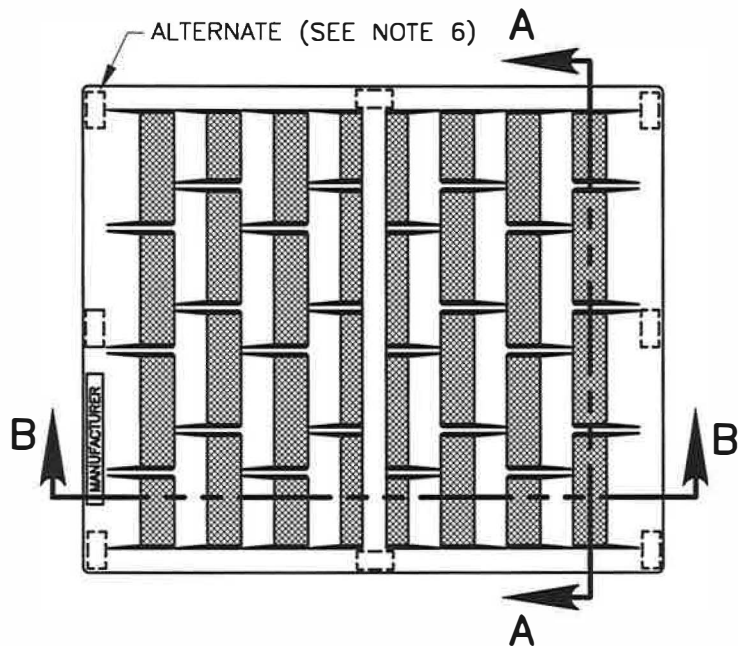
1. THE NAME OF THE MANUFACTURER SHALL BE EMBOSSED ON THE TOP SURFACE OF EACH GRATE. LETTERING TO BE RECESSED 1/16".
2. FRAME SHALL BE GRAY IRON CONFORMING TO A.S.T.M. A48-90, GRADE 30. THE GRATE SHALL BE DUCTILE IRON CONFORMING TO A.S.T.M. A536-84 GRADE 80-55-06.
3. DIMENSIONS SHALL HAVE $\pm 1/16"$ TOLERANCE, EXCEPT AS NOTED.
4. EDGES SHALL HAVE 1/8" RADIUS, 1/8" CHAMFER OR COMPLETE DEBURRING.
5. WELDING IS NOT PERMITTED.
6. AS AN ALTERNATE, EIGHT PADS $1\ 1/2" \times 3/4" \times 1/8"$, INTEGRALLY CAST WITH THE GRATE MAY BE USED.
7. WHEREVER PRACTICAL & FEASIBLE, USE GRATE SHOWN ON THIS SHEET IN CONTINUOUS GRADE CONDITIONS.



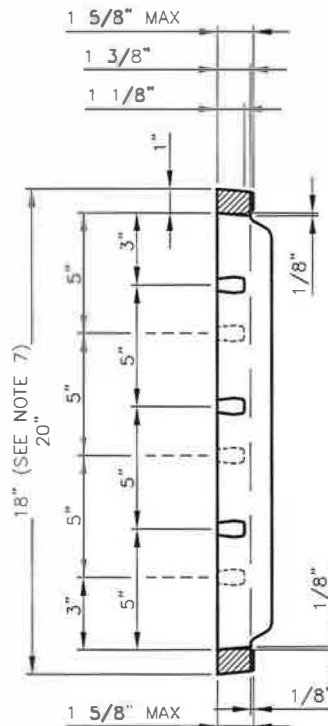
SECTION C-C



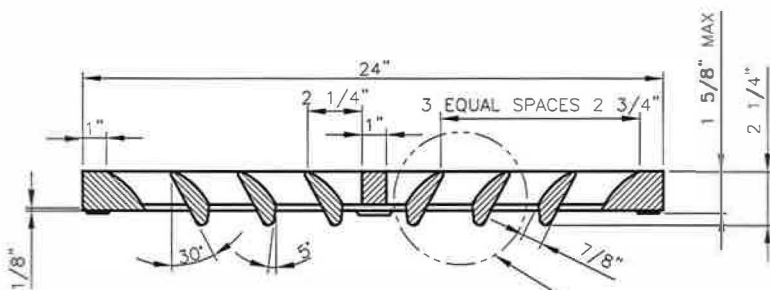
VANE DETAIL



TOP VIEW



SECTION A-A

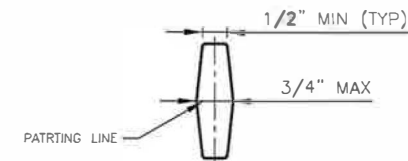


SECTION B-B

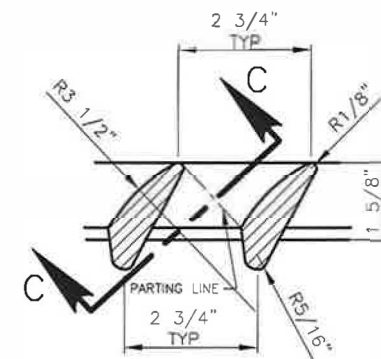
SEE VANE
DETAIL

NOTES:

1. THE NAME OF THE MANUFACTURER SHALL BE EMBOSSED ON THE TOP SURFACE OF EACH GRATE. LETTERING TO BE RECESSED 1/16".
2. FRAME SHALL BE GRAY IRON CONFORMING TO A.S.T.M. A48-90, GRADE 30. THE GRATE SHALL BE DUCTILE IRON CONFORMING TO A.S.T.M. A536-84 GRADE 80-55-06.
3. DIMENSIONS SHALL HAVE $\pm 1/16$ " TOLERANCE, EXCEPT AS NOTED.
4. EDGES SHALL HAVE 1/8" RADIUS, 1/8" CHAMFER OR COMPLETE DEBURRING.
5. WELDING IS NOT PERMITTED.
6. AS AN ALTERNATE, EIGHT PADS 1 1/2" x 3/4" x 1/8", INTEGRALLY CAST WITH THE GRATE MAY BE USED.
7. DIMENSION FOR THE GRATE ASSOCIATED WITH CATCH BASIN TYPE 3. OTHER DIMENSIONS, THE NUMBER & POSITION OF THE VANES WILL ALSO VARY.
8. WHEREVER PRACTICAL & FEASIBLE, USE GRATE SHOWN ON THIS SHEET IN SUMP CONDITIONS.



SECTION C-C



VANE DETAIL

APPROVED BY

Eldon Brown
ACTING DIRECTOR,
ENGINEERING SERVICES
Gary S. Nelson
PRINCIPAL ENGINEER, DESIGN

FOR SCOTT D. EGGER, P.E.

GARY S. NELSON, P.E.

ADOPTED: 05/2007

REVISED:

SUPERSEDES:

CHECKED BY: JAG

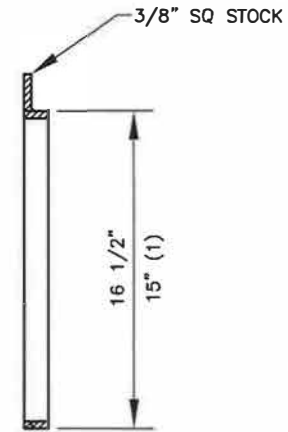
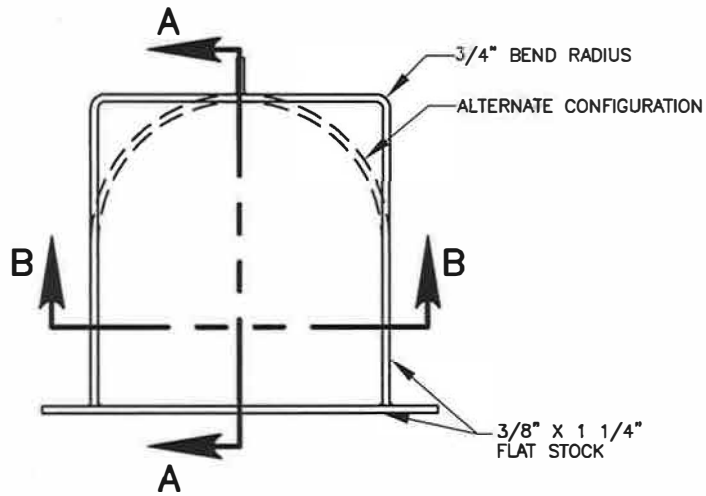
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DWG/REV. BY: PCF

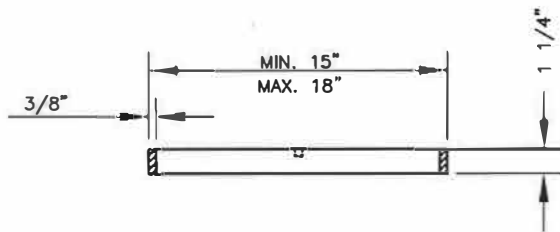
BI-DIRECTIONAL VANED GRATE

ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

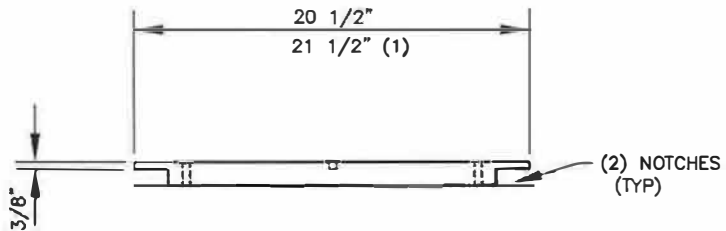
STANDARD
PLAN No.
B-2B



SECTION A-A



SECTION B-B



END VIEW

(1) DIMENSION FOR FRAME ASSOCIATED WITH CATCH BASIN TYPE 3

APPROVED BY

 DIRECTOR, ENGINEERING SERVICES TOM L. ARNOLD, P.E.

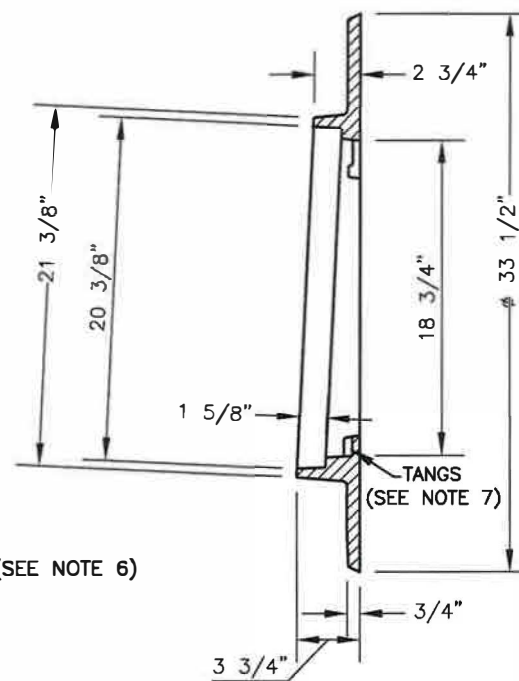
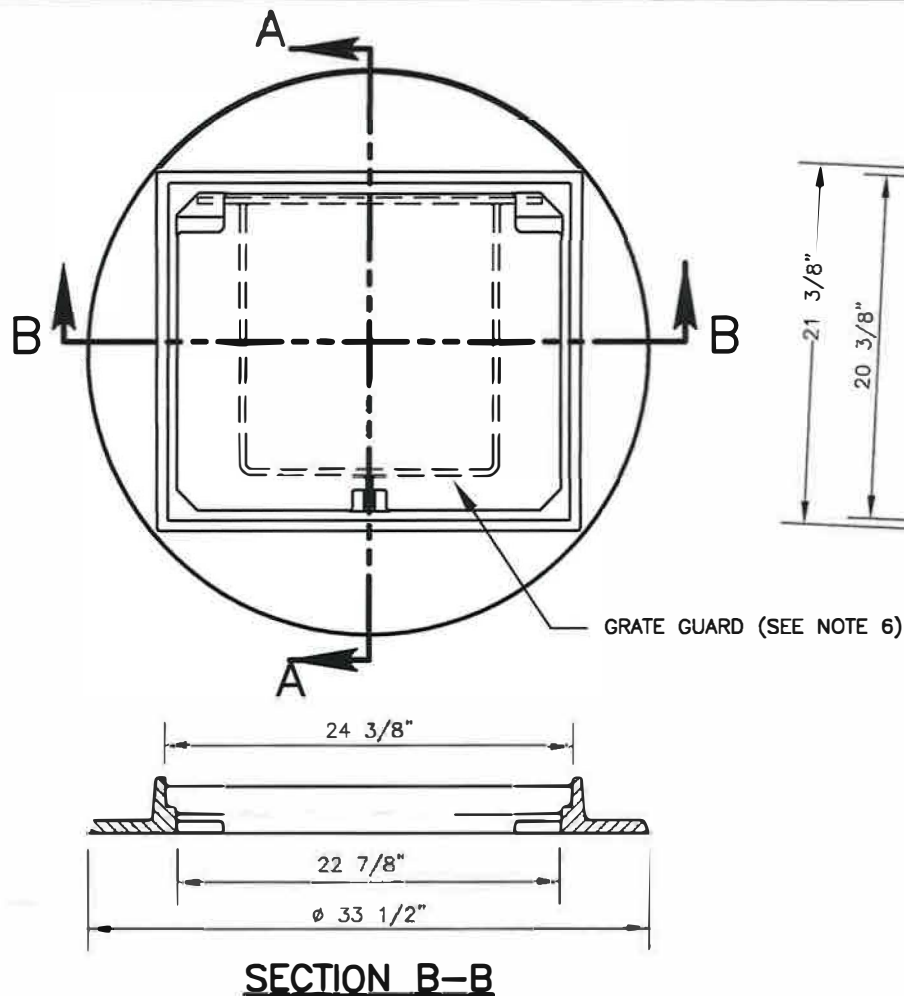
 PRINCIPAL ENGINEER, DESIGN GARY S. NELSON, P.E.

ADOPTED: 05/2007
 REVISED: _____
 SUPERSEDES: _____
 CHECKED BY: JAG
 SCALE: NTS
 DWG/REV. BY: PCF/RDC

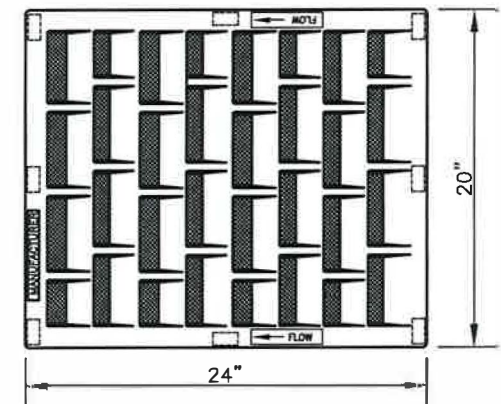
GRATE GUARD

ENGINEERING SERVICES
 CITY OF SPOKANE, WASHINGTON

STANDARD
 PLAN No.
 B-2C



SECTION A-A



DIRECTIONAL VANED GRATE
SEE CITY STANDARD PLAN B-2A

NOTES:

1. SEE SECTIONS 9-05.15(1) AND 9-05.15(2)
2. FRAME: GRAY IRON CASTING, SEE SECTION 9-06.9.
3. GRATE: DUCTILE IRON CASTING, SEE SECTION 9-06.14.
4. FOUNDRY NAME, DATE, HEAT NUMBER AND MATERIAL IN RAISED LETTERS ON INTERIOR OF EACH CASTING.
5. TOLERANCES ± 0.0625 ".
6. GRATE GUARD REQ'D. SEE CITY STD PLAN B-2C.
7. CONTINUOUS LIP ON BOTTOM OF TANGS TO REST GRATE GUARD TAB ON.
8. WHEREVER PRACTICAL & FEASIBLE, USE FRAME & GRATE W/HOOD SHOWN ON THIS SHEET IN SUMP CONDITIONS.

APPROVED BY: 
DIRECTOR, ENGINEERING SERVICES PERRY M. TAYLOR, P.E.

PRINCIPAL ENGINEER, CONST. KENNETH M. BROWN, P.E.

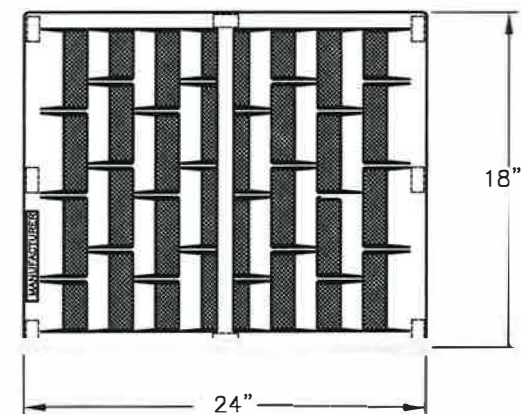
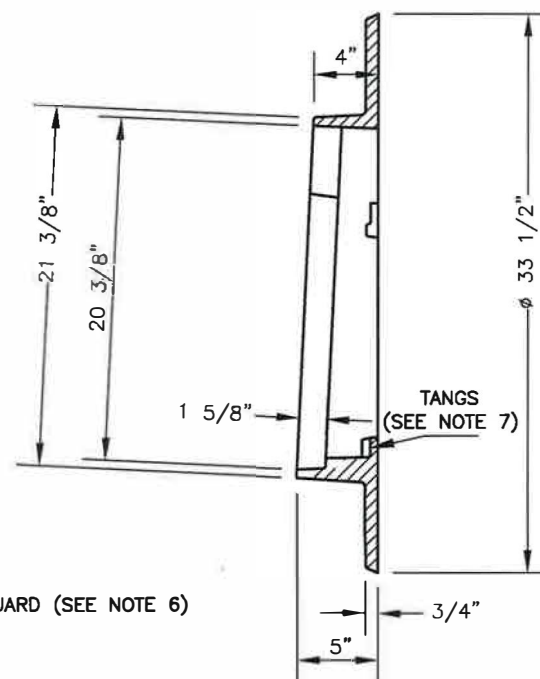
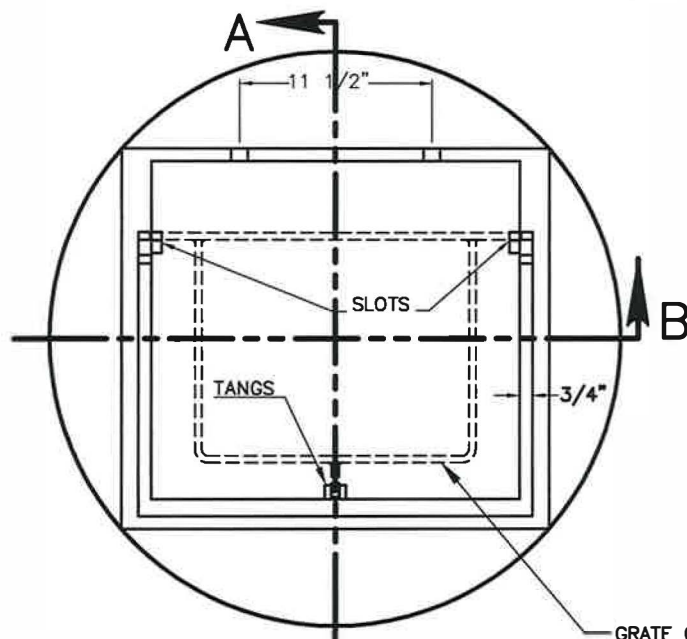
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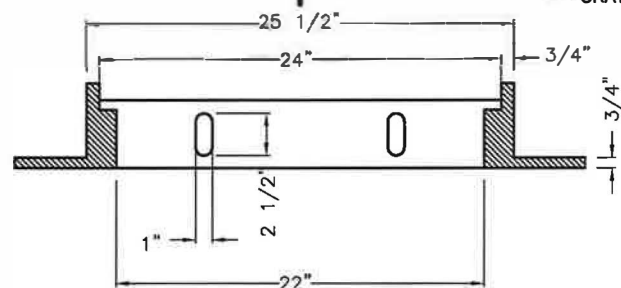
ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

STANDARD
PLAN No.
B-3A

FRAME AND GRATE
FOR CATCH BASIN TYPE 1



BI-DIRECTIONAL VANED GRATE
SEE CITY STANDARD PLAN B-2B



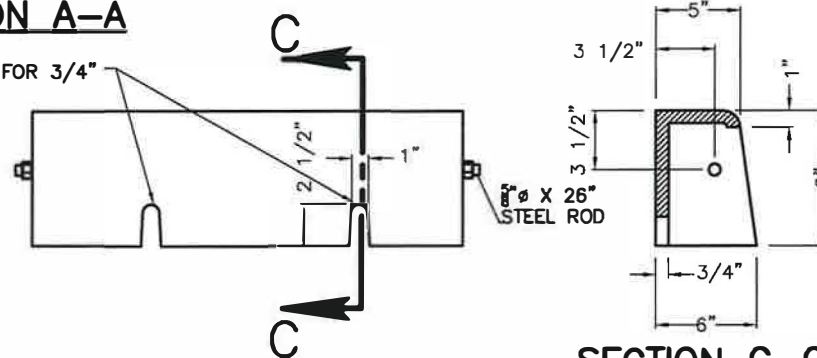
SECTION B-B

NOTES:

1. SEE SECTIONS 9-05.15(1) AND 9-05.15(2)
2. FRAME: GRAY IRON CASTING, SEE SECTION 9-06.9.
3. GRATE: DUCTILE IRON CASTING, SEE SECTION 9-06.14.
4. FOUNDRY NAME, DATE, HEAT NUMBER AND MATERIAL IN RAISED LETTERS ON INTERIOR OF EACH CASTING.
5. TOLERANCES ± 0.0625 ".
6. GRATE GUARD REQ'D. SEE CITY STD PLAN B-2C.
7. CONTINUOUS LIP ON BOTTOM OF TANGS TO REST GRATE GUARD TAB ON.
8. WHEREVER PRACTICAL & FEASIBLE, USE FRAME & GRATE W/HOOD SHOWN ON THIS SHEET IN SUMP CONDITIONS.

SECTION A-A

2 - 1" x 2-1/2" SLOTS FOR 3/4" BOLT, NUT & WASHER



SECTION C-C

CATCH BASIN HOOD

APPROVED BY

DIRECTOR, ENGINEERING SERVICES PERRY M. TAYLOR, P.E.

PRINCIPAL ENGINEER, CONST. KENNETH M. BROWN, P.E.

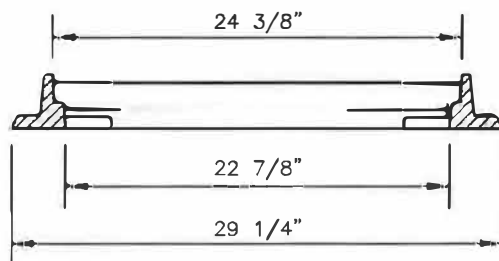
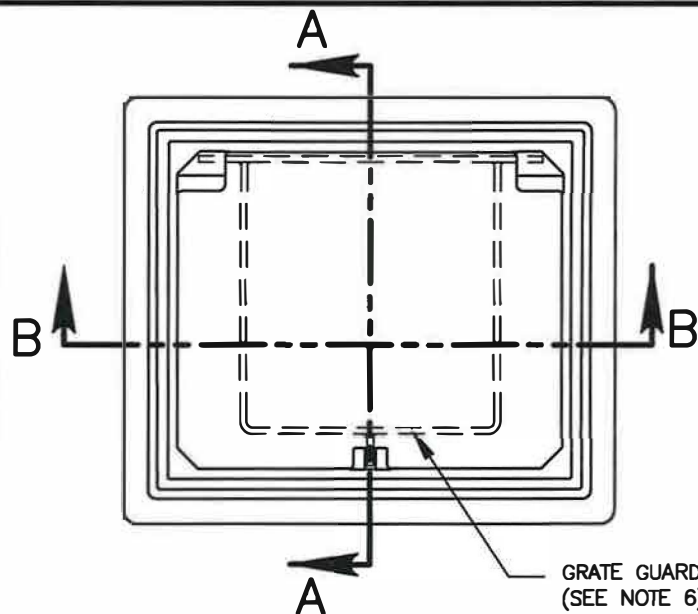
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REVISED: 04/2013
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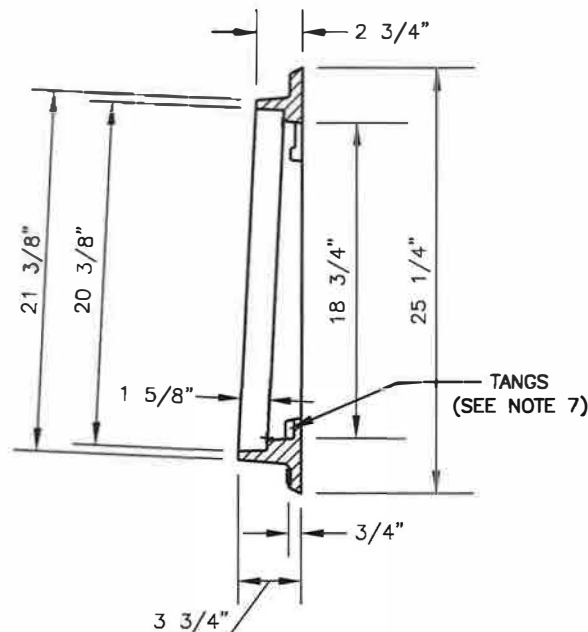
ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

STANDARD
PLAN No.
B-3B

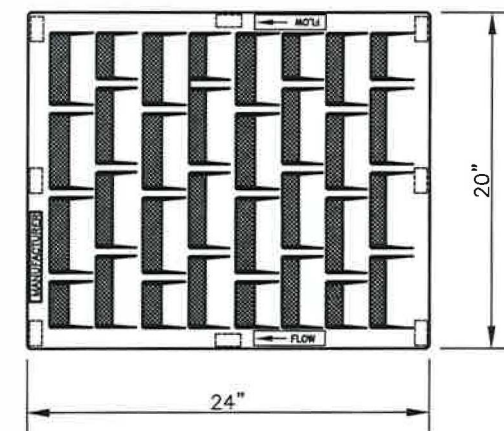
FRAME AND GRATE
FOR CATCH BASIN TYPE 3



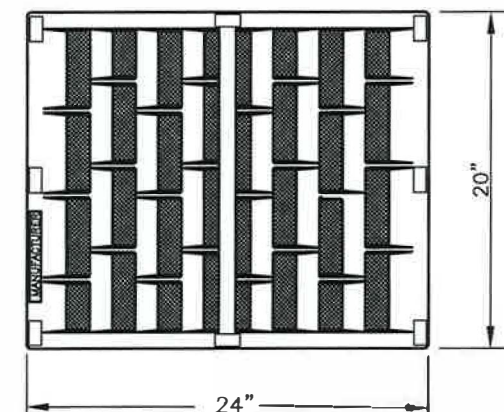
SECTION B-B



SECTION A-A



DIRECTIONAL VANED GRATE
SEE CITY STANDARD PLAN B-2A



BI-DIRECTIONAL VANED GRATE
SEE CITY STANDARD PLAN B-2B

NOTES:

1. SEE SECTIONS 9-05.15(1) AND 9-05.15(2)
2. FRAME: GRAY IRON CASTING, SEE SECTION 9-06.9.
3. GRATE: DUCTILE IRON CASTING, SEE SECTION 9-06.14.
4. FOUNDRY NAME, DATE, HEAT NUMBER AND MATERIAL IN RAISED LETTERS ON INTERIOR OF EACH CASTING.
5. TOLERANCES ± 0.0625 ".
6. GRATE GUARD REQ'D. SEE CITY STD PLAN B-2C.
7. CONTINUOUS LIP ON BOTTOM OF TANGS TO REST GRATE GUARD TAB ON.
8. USE DIRECTIONAL VANED GRATE (B-2A) IN CONTINUOUS GRADE CONDITIONS & BI-DIRECTIONAL VANED GRATE (B-2B) IN SUMP CONDITIONS

APPROVED BY

[Signature]
DIRECTOR, ENGINEERING SERVICES PERRY M. TAYLOR, P.E.
[Signature]
PRINCIPAL ENGINEER, CONST. KENNETH M. BROWN, P.E.

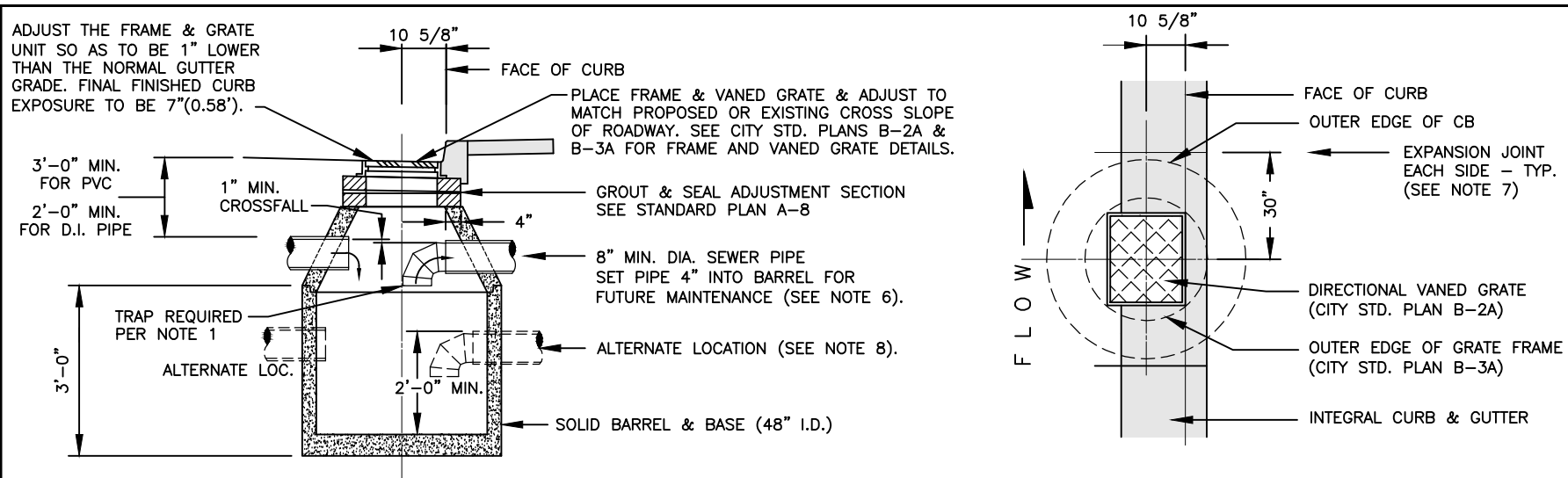
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FRAME AND GRATE
FOR INLET, TYPE 3



ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

STANDARD
PLAN No.
B-3C



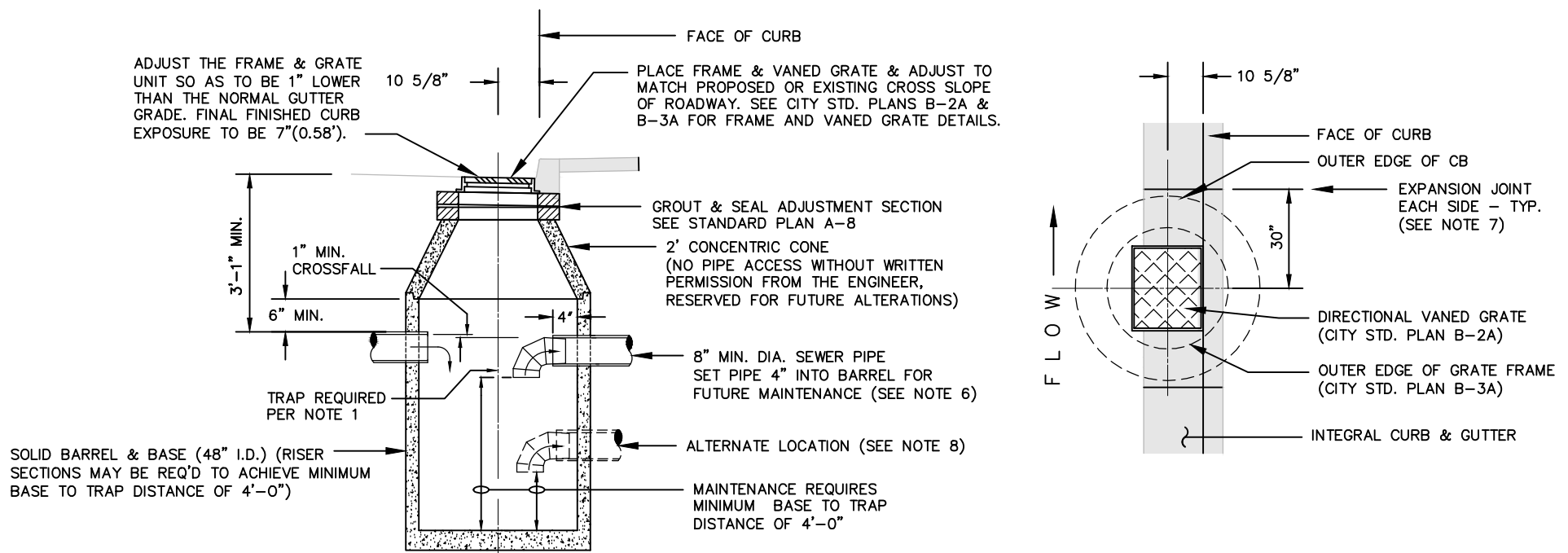
FRAME & VANED GRATE: NORMAL INSTALLATION

FOR USE IN CONTINUOUS GRADE SITUATIONS

NOTES:

- SEE STD. PLAN B-120 FOR OUTLET TRAP. TRAP REQUIRED WHEN CATCH BASIN CONNECTED TO CITY STORM SYSTEM, DRYWELL, ABSORPTION TRENCH, OR OTHER U/G INJECTION STRUCTURE/FACILITY. TRAP TO REMAIN REMOVABLE FOR MAINTENANCE THEREFORE NO MECHANICAL CONNECTION BETWEEN TRAP & OUTLET ALLOWED. VERTICAL PROJECTION OF TRAP NOT TO EXTEND BEYOND C/L OF ACCESS OPENING.
- IF AN INLET PIPE IS PRESENT, THE INVERT SHALL BE HIGHER IN ELEVATION THAN THE OUTLET PIPE INVERT. A C.B. WITH AN INLET PIPE IS UTILIZED ONLY WHEN CONNECTING ADDITIONAL C.B.'s AT AN INTERSECTION OR WHEN ADDING GRATE INLET TYPE 3. A C.B. WITH INLET PIPE(S) IS NOT ALLOWED AS A SUBSTITUTE FOR A M.H.
- SEE SEC. 9-12 FOR PRECAST CONCRETE CATCH BASINS.
- SEE STD. PLAN Z-118 FOR BASE SLAB & FOUNDATION DETAILS.
- CONE & BARREL JOINTS MAY BE EITHER TONGUE & GROOVE OR REVERSE TONGUE & GROOVE.
- ADJUSTMENT SECTION, CONE, BARREL, & PIPE OPENINGS TO BE SEALED PER SECTION 7-05.
- CONCRETE CURB & GUTTER SHALL BE BLOCKED OUT FOR A 5-FT LENGTH CENTERED @ THE C.B. TO ALLOW FOR LOCATING CB ADJACENT TO CURB.
- USE ALTERNATE LOCATION FOR INLET/OUTLET PIPES ONLY IF INLET PIPE REQUIRES ADDITIONAL DEPTH FOR SLOPING.
- SEE STANDARD PLAN A-8 FOR ADJUSTMENT SECTION REQUIREMENTS.
- A DESIGN VARIANCE IS REQUIRED BEFORE A CATCH BASIN - TYPE 0 IS INSTALLED.

APPROVED BY  ENGINEERING SERVICES DIRECTOR KYLE TWOHIG CITY ENGINEER DAN BULLER, P.E.	ADOPTED: _____ REVISED: 10/2019 SUPERSEDES: 01/2017 CHECKED BY: GSN SCALE: NTS DWG./REV BY: SRM/MLD	CATCH BASIN-TYPE 0 ENGINEERING SERVICES CITY OF SPOKANE, WASHINGTON STANDARD PLAN No. B-101B
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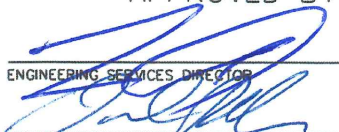


FRAME & VANED GRATE: NORMAL INSTALLATION

FOR USE IN CONTINUOUS GRADE SITUATIONS

NOTES:

1. SEE STD. PLAN B-120 FOR OUTLET TRAP. A TRAP IS REQUIRED ON ANY OUTLET PIPE. TRAP TO REMAIN REMOVABLE FOR MAINTENANCE THEREFORE NO MECHANICAL CONNECTION BETWEEN TRAP & OUTLET ALLOWED. VERTICAL PROJECTION OF TRAP NOT TO EXTEND BEYOND C/L OF ACCESS OPENING.
2. IF AN INLET PIPE IS PRESENT, THE INVERT SHALL BE HIGHER IN ELEVATION THAN THE OUTLET PIPE INVERT. A C.B. WITH AN INLET PIPE IS UTILIZED ONLY WHEN CONNECTING ADDITIONAL C.B.'s AT AN INTERSECTION OR WHEN ADDING GRATE INLET TYPE 3. A C.B. WITH INLET PIPE(S) IS NOT ALLOWED AS A SUBSTITUTE FOR A M.H.
3. SEE SEC. 9-12 FOR PRECAST CONCRETE CATCH BASINS.
4. SEE STD. PLAN Z118 FOR BASE SLAB & FOUNDATION DETAILS.
5. CONE & BARREL JOINTS MAY BE EITHER TONGUE & GROOVE OR REVERSE TONGUE & GROOVE.
6. ADJUSTMENT SECTION, CONE, BARREL, RISER SECTIONS (IF USED), & PIPE OPENINGS TO BE SEALED PER SECTION 7-05.
7. CONCRETE CURB & GUTTER SHALL BE BLOCKED OUT FOR A 5-FT LENGTH CENTERED @ THE C.B. TO ALLOW FOR LOCATING CB ADJACENT TO CURB.
8. USE ALTERNATE LOCATION FOR INLET/OUTLET PIPES ONLY IF INLET PIPE REQUIRES ADDITIONAL DEPTH FOR SLOPING. PROVIDE 4-FT DEPTH UNDER TRAP.
9. SEE STANDARD PLAN A-8 FOR ADJUSTMENT SECTION REQUIREMENTS.

APPROVED BY  ENGINEERING SERVICES DIRECTOR KYLE TWOHIG CITY ENGINEER DAN BULLER, P.E.	ADOPTED: _____ REVISED: 10/2019 SUPERSEDES: 04/2018 CHECKED BY: JAG/GSN SCALE: NTS DWG/REV. BY: RJS/MLD	CATCH BASIN - TYPE 1 ENGINEERING SERVICES CITY OF SPOKANE, WASHINGTON STANDARD PLAN No. B-101C
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ENGINEERING SERVICES DIRECTOR KYLE TWOHIG

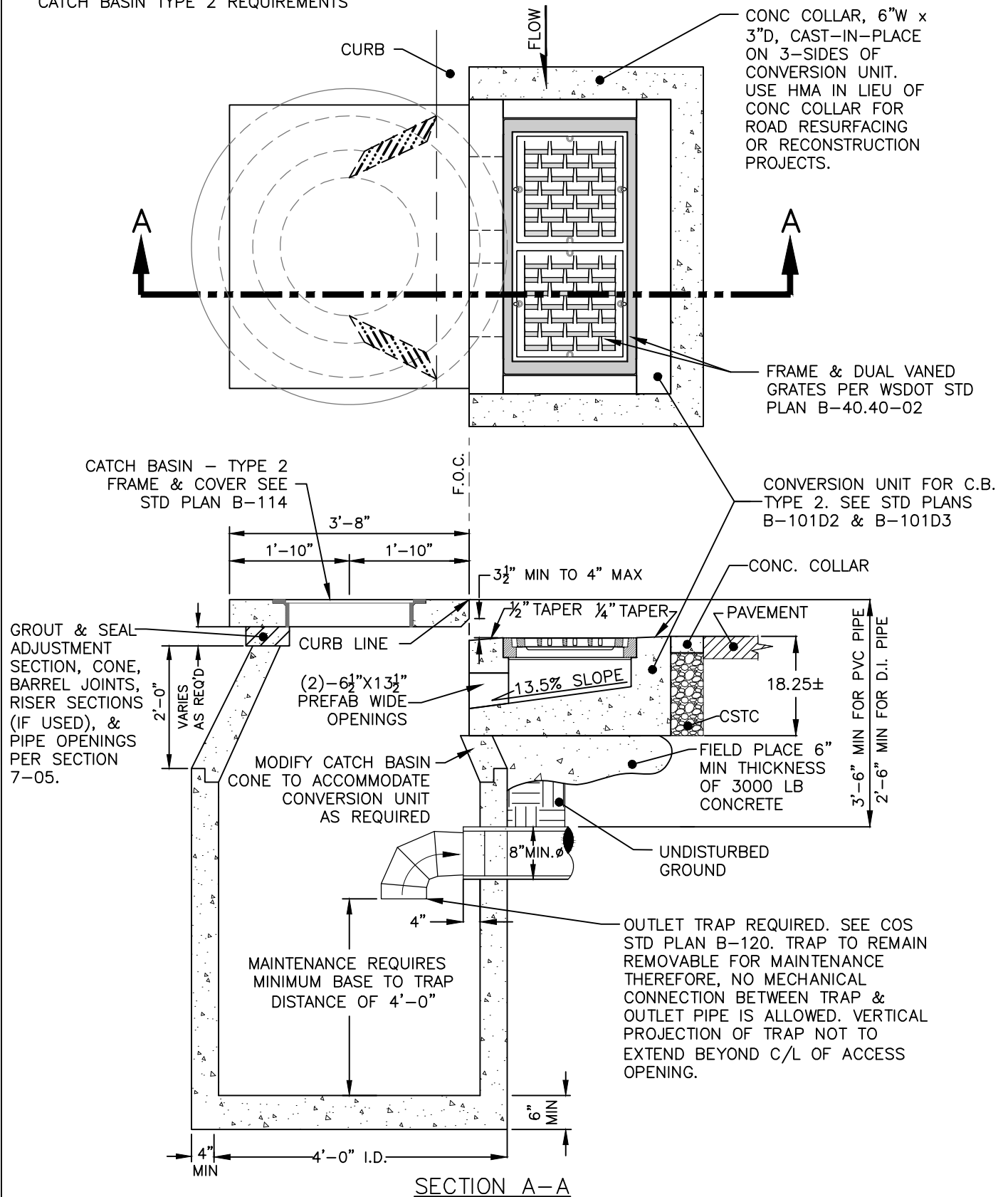
CITY ENGINEER DAN BULLER, P.E.

ADOPTED: _____
 REVISED: 10/2019
 SUPERSEDES: 01/2017
 CHECKED BY: JAG
 SCALE: NTS
 DWG/REV. BY: TSS/MLD

ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

STANDARD
PLAN No.
B-101D

* SEE STANDARD PLAN B-101D FOR
CATCH BASIN TYPE 2 REQUIREMENTS



APPROVED BY

ENGINEERING SERVICES DIRECTOR
KYLE TWOHIG
CITY ENGINEER
DAN BULLER, P.E.

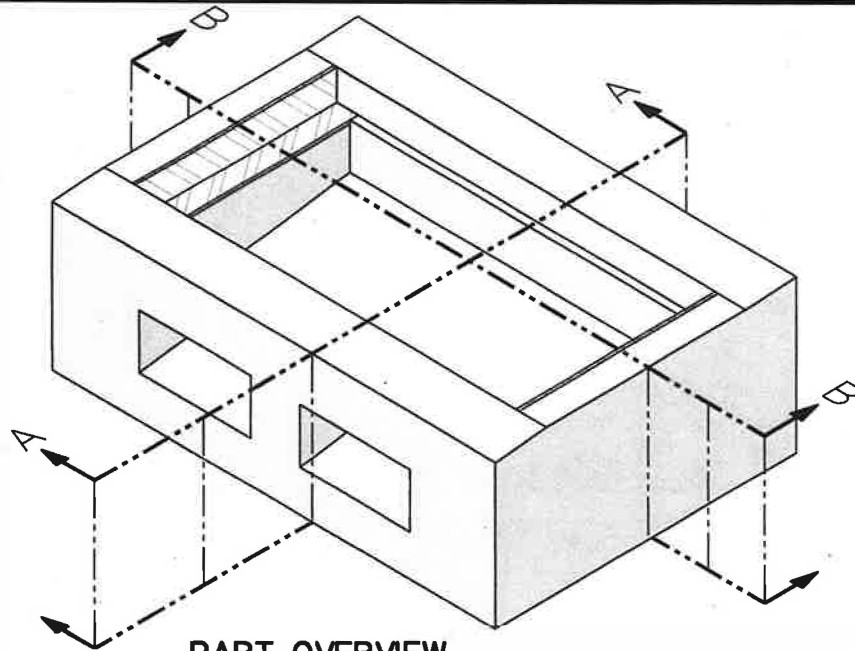
ADOPTED: _____
REVISED: 05/2021
SUPERSEDES: 01/2017
CHECKED BY: JAG
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CATCH BASIN - TYPE 2
W/ CONVERSION UNIT FOR WSDOT VANED GRATES

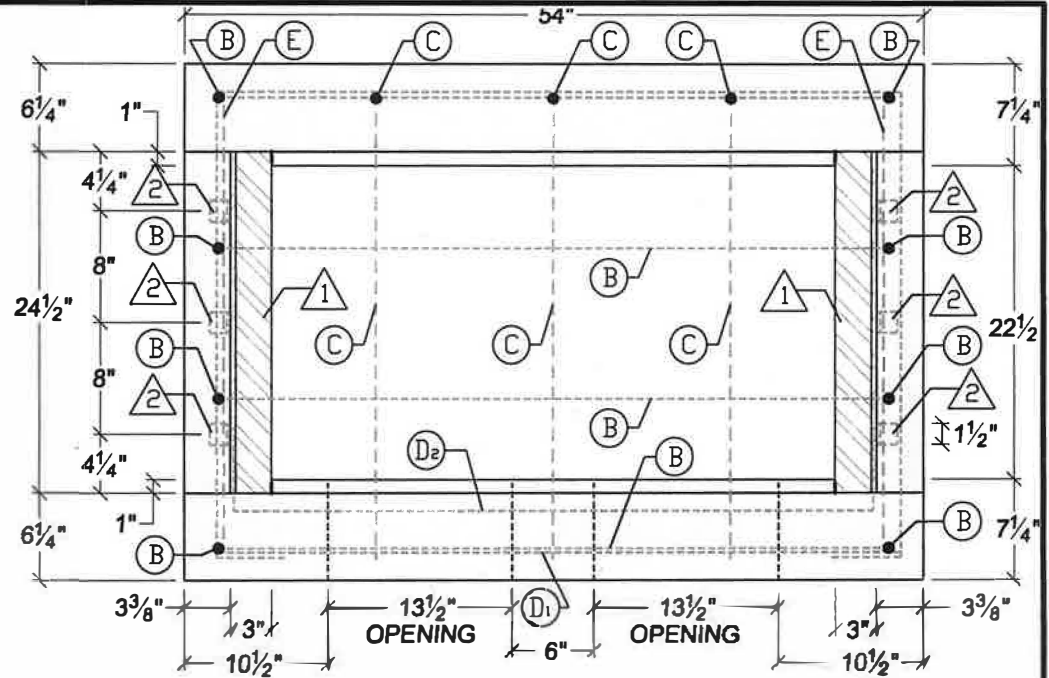


ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

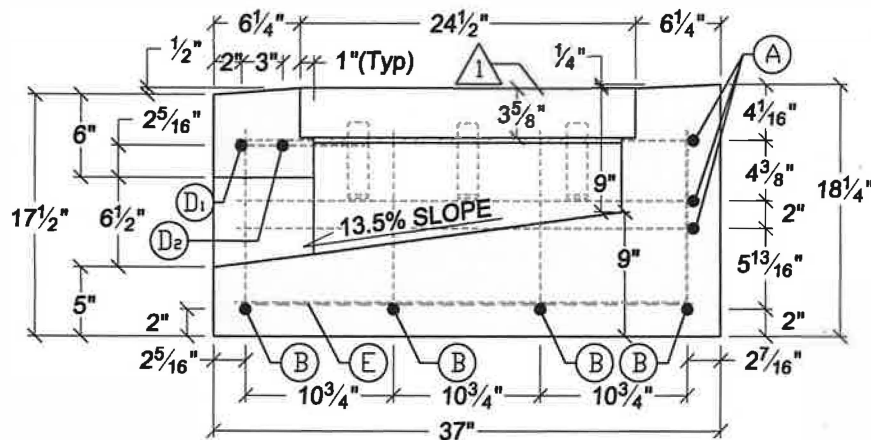
STANDARD
PLAN No.
B-101D1



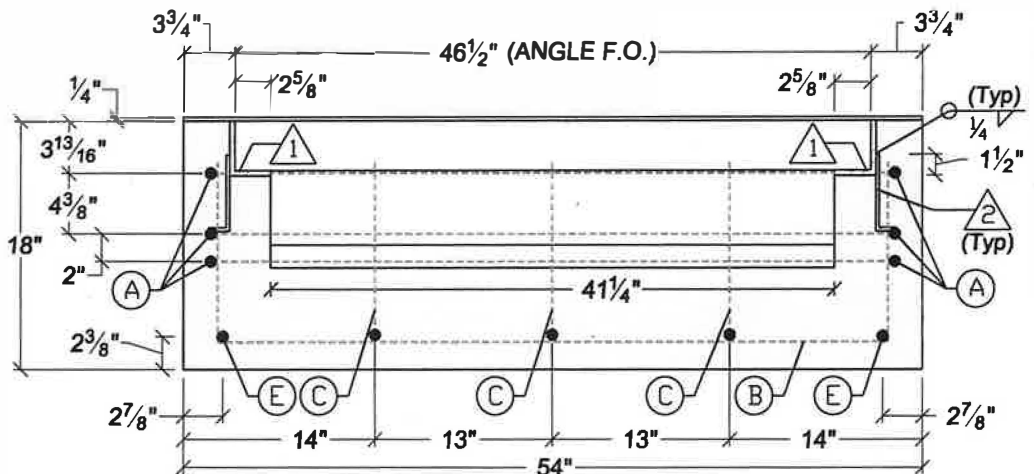
PART OVERVIEW



TOP VIEW



SECTION A-A



SECTION B-B

DETAIL NOTES:

- ① 4"x3"x3/8" L=24 1/2" STEEL ANGLE (ONE BOTH ENDS)
- ② 5 1/2"x1 1/2"x1/4" L=1 1/2" STEEL ANGLES (3 BOTH ENDS)
- ③ SEE PLAN B-101D3 FOR REBAR IDENTIFICATION & BENDING

APPROVED BY

 DIRECTOR, ENGINEERING SERVICES P. MIKE TAYLOR, P.E.

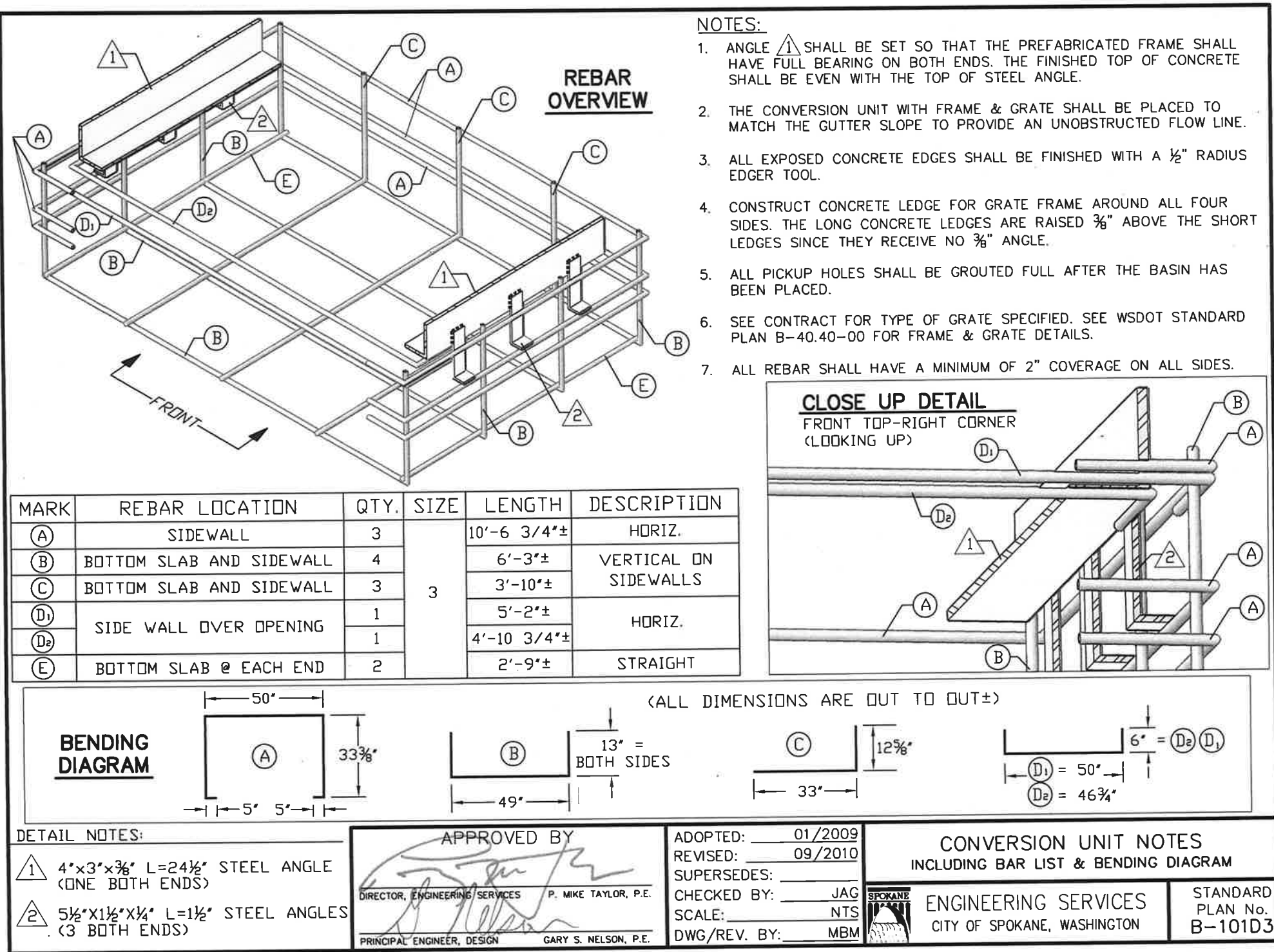
 PRINCIPAL ENGINEER, DESIGN GARY S. NELSON, P.E.

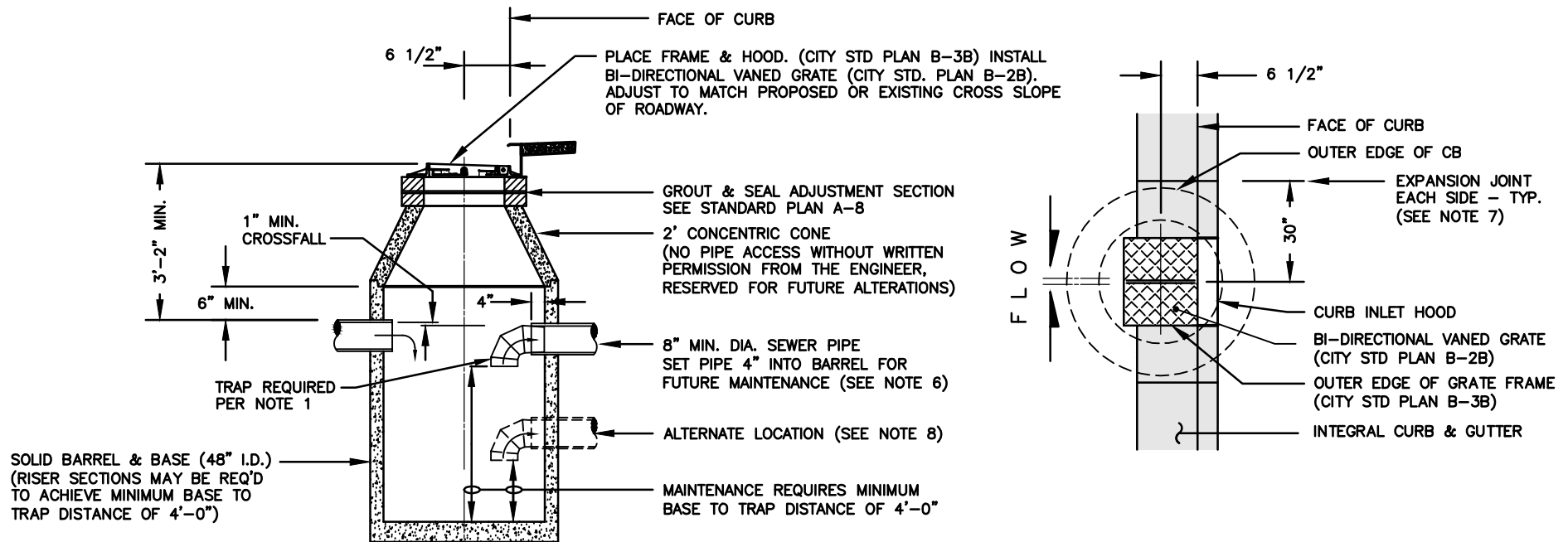
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 REVISED: 09/2010
 SUPERSEDES:
 CHECKED BY: JAG
 SCALE: NTS
 DWG/REV. BY: MBM



CONVERSION UNIT
 RETRO-FIT FOR CATCH BASIN TYPE 2
 ENGINEERING SERVICES
 CITY OF SPOKANE, WASHINGTON

STANDARD
 PLAN No.
 B-101D2





CURB & GUTTER INLET FRAME & BI-DIRECTIONAL GRATE

FOR USE IN SUMP SITUATIONS

NOTES:

1. SEE STD. PLAN B-120 FOR OUTLET TRAP. A TRAP IS REQUIRED ON ANY OUTLET PIPE. TRAP TO REMAIN REMOVABLE FOR MAINTENANCE THEREFORE NO MECHANICAL CONNECTION BETWEEN TRAP & OUTLET ALLOWED. VERTICAL PROJECTION OF TRAP NOT TO EXTEND BEYOND C/L OF ACCESS OPENING.
2. IF AN INLET PIPE IS PRESENT, THE INVERT SHALL BE HIGHER IN ELEVATION THAN THE OUTLET PIPE INVERT. A C.B. WITH AN INLET PIPE IS UTILIZED ONLY WHEN CONNECTING ADDITIONAL C.B.'S AT AN INTERSECTION OR WHEN ADDING GRATE INLET TYPE 3. A C.B. WITH INLET PIPE(S) IS NOT ALLOWED AS A SUBSTITUTE FOR A M.H.
3. SEE SEC. 9-12 FOR PRECAST CONCRETE CATCH BASINS.
4. SEE STD. PLAN Z-118 FOR BASE SLAB & FOUNDATION DETAILS.
5. CONE & BARREL JOINTS MAY BE EITHER TONGUE & GROOVE OR REVERSE TONGUE & GROOVE.
6. ADJUSTMENT SECTION, CONE, BARREL, RISER SECTIONS (IF USED), & PIPE OPENINGS TO BE SEALED PER SECTION 7-05.
7. CONCRETE CURB & GUTTER SHALL BE BLOCKED OUT FOR A 5-FT LENGTH CENTERED @ THE C.B. TO ALLOW FOR LOCATING C.B. ADJACENT TO CURB.
8. USE ALTERNATE LOCATION FOR INLET/OUTLET PIPES ONLY IF INLET PIPE REQUIRES ADDITIONAL DEPTH FOR SLOPING. PROVIDE 4-FT DEPTH UNDER TRAP.
9. SEE STANDARD PLAN A-8 FOR ADJUSTMENT SECTION REQUIREMENTS.

APPROVED BY



ENGINEERING SERVICES DIRECTOR KYLE TWOHIG

CITY ENGINEER DAN BULLER, P.E.

ADOPTED: _____

REVISED: 10/2019

SUPERSEDES: 04/2018

CHECKED BY: JAG, GSN

SCALE: NTS

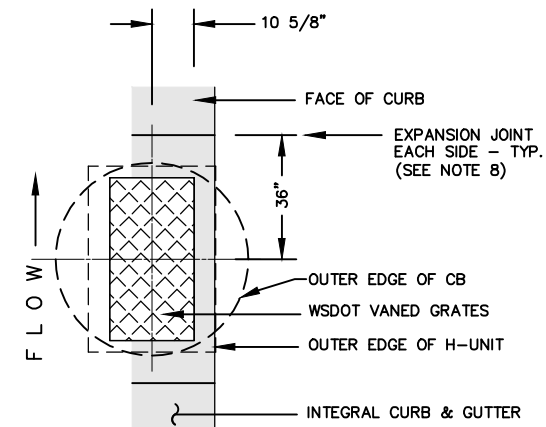
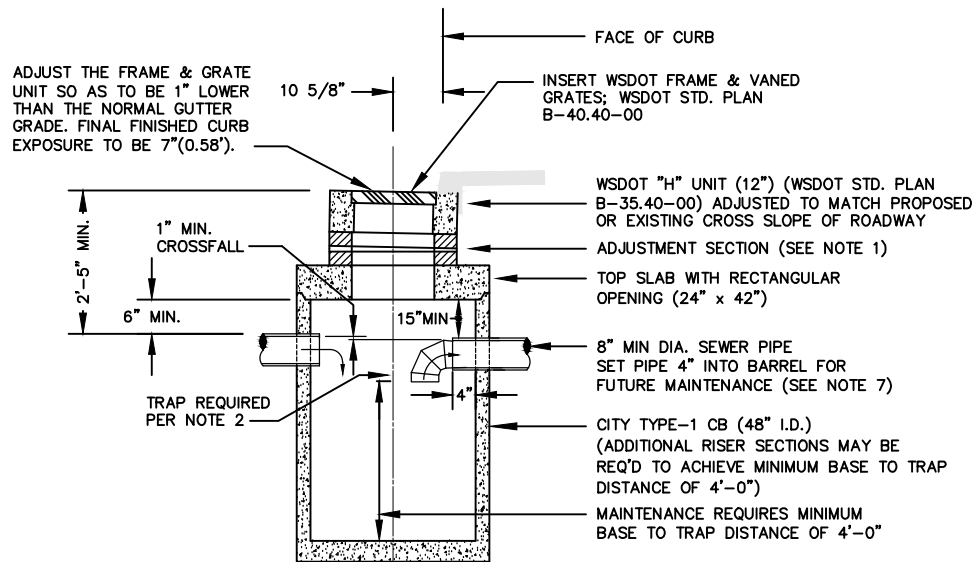
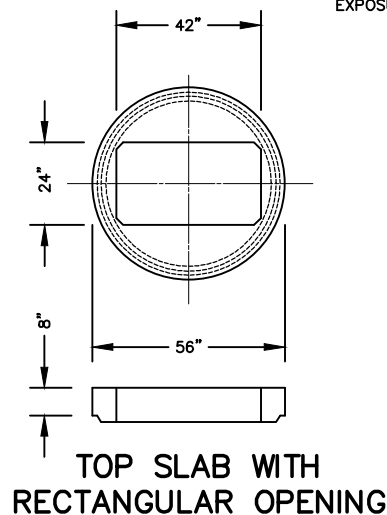
DWG./REV BY: RJS/MLD

CATCH BASIN-TYPE 3



ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

STANDARD
PLAN No.
B-101E

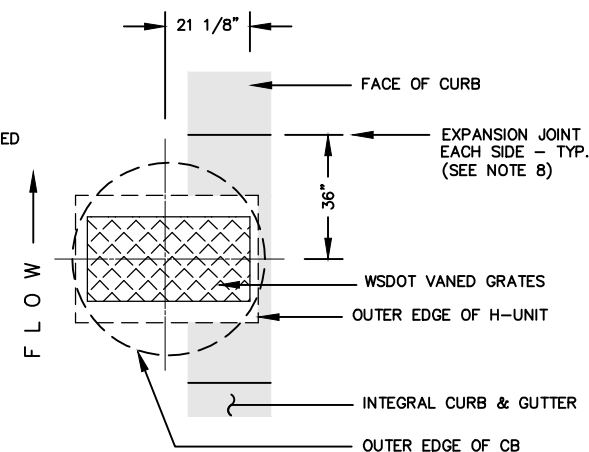
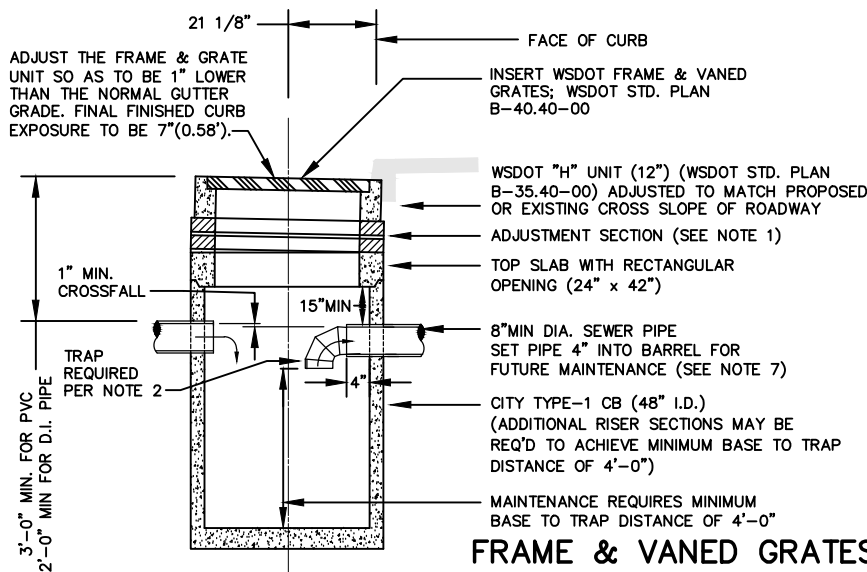


FRAME & VANED GRATES: NORMAL INSTALLATION

FOR USE IN CONTINUOUS GRADE SITUATIONS

NOTES:

1. GROUT & SEAL ADJUSTMENT SECTION. ADJUSTMENT SECTION FOR EXISTING STRUCTURES TO MATCH FIELD CONDITIONS AS REQUIRED (3" MIN-12" MAX). SEE STANDARD PLAN A-8 FOR ADJUSTMENT SECTION REQUIREMENTS.
2. SEE STD. PLAN B-120 FOR OUTLET TRAP. A TRAP IS REQUIRED ON ANY OUTLET PIPE. TRAP TO REMAIN REMOVABLE FOR MAINTENANCE THEREFORE NO MECHANICAL CONNECTION BETWEEN TRAP & OUTLET ALLOWED. VERTICAL PROJECTION OF TRAP NOT TO EXTEND BEYOND C/L OF ACCESS OPENING.
3. IF AN INLET PIPE IS PRESENT, THE INVERT SHALL BE HIGHER IN ELEVATION THAN THE OUTLET PIPE INVERT. A C.B. WITH AN INLET PIPE IS UTILIZED ONLY WHEN CONNECTING ADDITIONAL C.B.'s AT AN INTERSECTION OR WHEN ADDING GRATE INLET TYPE 3. A C.B. WITH INLET PIPE(S) IS NOT ALLOWED AS A SUBSTITUTE FOR A M.H.
4. SEE SEC. 9-12 FOR PRECAST CONCRETE CATCH BASINS.
5. SEE STD. PLAN Z-118 FOR BASE SLAB & FOUNDATION DETAILS.
6. TOP SLAB & BARREL JOINTS MAY BE EITHER TONGUE & GROOVE OR REVERSE TONGUE & GROOVE.
7. ADJUSTMENT SECTION, TOP SLAB, BARREL, RISER SECTIONS (IF USED), & PIPE OPENINGS TO BE SEALED PER SECTION 7-05.
8. CONCRETE CURB & GUTTER SHALL BE BLOCKED OUT FOR A 6-FT LENGTH CENTERED @ THE C.B. TO ALLOW FOR LOCATING CB ADJACENT TO CURB.



FRAME & VANED GRATES: ROTATED INSTALLATION

FOR USE IN CONTINUOUS GRADE SITUATIONS

APPROVED BY

ENGINEERING SERVICES DIRECTOR

KYLE TWOHIG

CITY ENGINEER

DAN BULLER, P.E.

ADOPTED:

REVISED: 10/2019

SUPERSEDES: 04/2018

CHECKED BY: JAG, GSN

SCALE: NTS

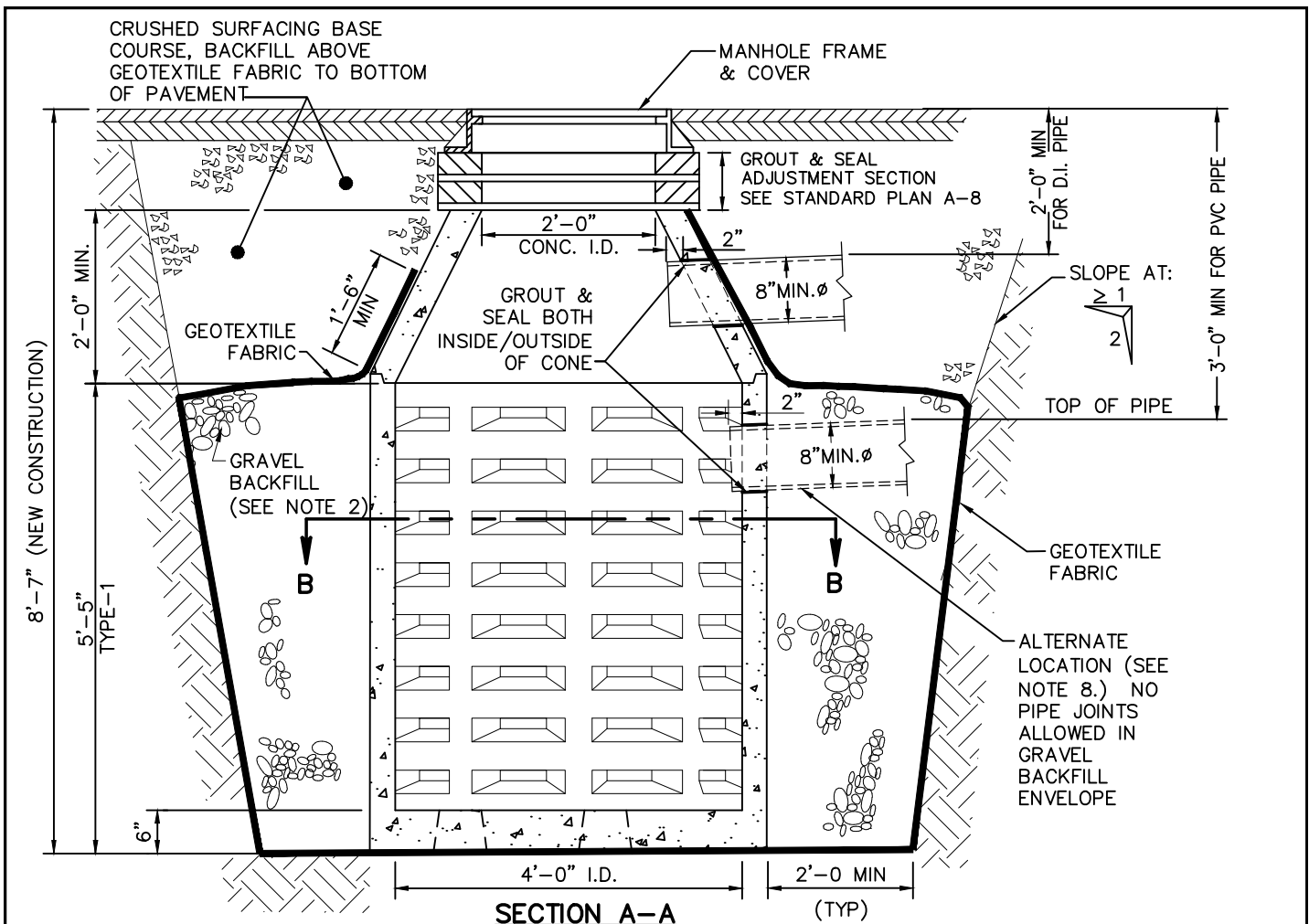
DWG./REV BY: RJS/MLD

CATCH BASIN TYPE 4



ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

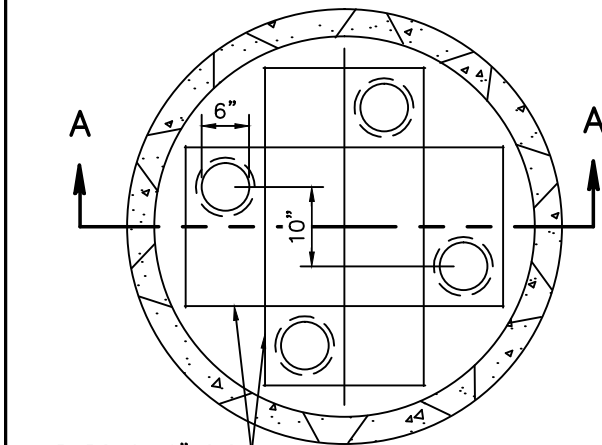
STANDARD
PLAN No.
B-101F



SECTION A-A

NOTES:

1. SEE SEC 9-12 FOR PRECAST CONCRETE DRYWELLS.
2. SEE SEC 9-03.12(5) FOR GRAVEL BACKFILL FOR DRYWELLS.
3. SEE SEC 9-33 FOR WOVEN GEOTEXTILE FABRIC (MODERATE SURVIVABILITY CLASS A). OVERLAP ALL FABRIC JOINTS 1'-6" MIN. WRAP & SECURE FABRIC AROUND PIPE TO PREVENT MIGRATION OF FINES INTO GRAVEL ENVELOPE.
4. SEE STD PLANS A-12 & A-13 FOR MANHOLE FRAME & COVER.
5. SEE STD PLAN Z-118 FOR BASE & FOUNDATION DETAILS.
6. CONE & BARREL JOINTS MAY BE EITHER TONGUE & GROOVE OR REVERSE TONGUE & GROOVE.
7. ADJUSTMENT SECTION, CONE & BARREL JOINTS TO BE SEALED PER SEC 7-05.
8. USE ALTERNATE PIPE LOCATION ONLY IF PIPE REQUIRES ADDITIONAL DEPTH FOR SLOPING, DEPTH OF COVER, OR OTHER RESTRICTIVE FIELD CONDITION.
9. SEE STANDARD PLAN A-8 FOR ADJUSTMENT SECTION REQUIREMENTS.
10. SEE STANDARD PLAN W-103 FOR CRUSHED ROCK REQUIREMENTS.



SECTION B-B

#4 BARS @ 10" O.C.
EA WAY. (TYP)
FOR STD PLANS
B-102D & B-102F

APPROVED BY

[Signature]
ENGINEERING SERVICES DIRECTOR
KYLE TWOHIG
CITY ENGINEER
DAN BULLER, P.E.

ADOPTED: _____
REVISED: 10/2019
SUPERSEDES: 01/2017
CHECKED BY: JAG
SCALE: NTS
DWG./REV. BY: SRM/MLD

DRYWELL - TYPE I



ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

STANDARD
PLAN No.
B-102C

NOTES:

1. SEE SEC 9-12 FOR PRECAST CONCRETE DRYWELLS.
2. SEE SEC 9-03.12(5) FOR GRAVEL BACKFILL FOR DRYWELLS.
3. SEE SEC 9-33 FOR WOVEN GEOTEXTILE FABRIC (MODERATE SURVIVABILITY, CLASS A). OVERLAP ALL FABRIC JOINTS 1'-6" MIN. WRAP & SECURE FABRIC AROUND PIPE TO PREVENT MIGRATION OF FINES INTO GRAVEL ENVELOPE..
4. SEE STD PLANS A-12 & A-13 FOR MANHOLE FRAME & COVER.
5. SEE STD PLANS B-102C & Z-118 FOR BASE & FOUNDATION DETAILS.
6. CONE & BARREL JOINTS MAY BE EITHER TONGUE & GROOVE OR REVERSE TONGUE & GROOVE.
7. ADJUSTMENT SECTION, CONE & BARREL JOINTS TO BE SEALED PER SEC 7-05.
8. USE ALTERNATE PIPE LOCATION ONLY IF PIPE REQUIRES ADDITIONAL DEPTH FOR SLOPING, DEPTH OF COVER, OR OTHER RESTRICTIVE FIELD CONDITION.
9. SEE STANDARD PLAN A-8 FOR ADJUSTMENT SECTION REQUIREMENTS.
10. SEE STANDARD PLAN W-102 FOR CRUSHED ROCK REQUIREMENTS.

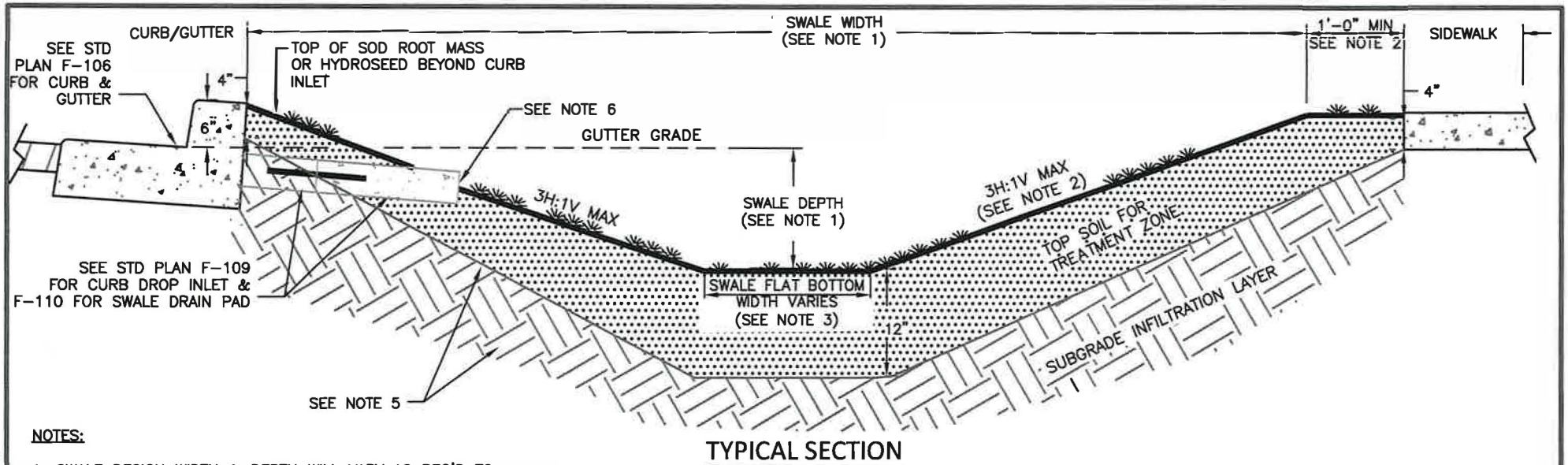
ENGINEERING SERVICES DIRECTOR KYLE TWOHIG

CITY ENGINEER DAN BULLER, P.E.

ADOPTED: _____
 REVISED: 10/2019
 SUPERSEDES: 01/2017
 CHECKED BY: JAG
 SCALE: NTS
 DWG/REV. BY: SRM/RDC

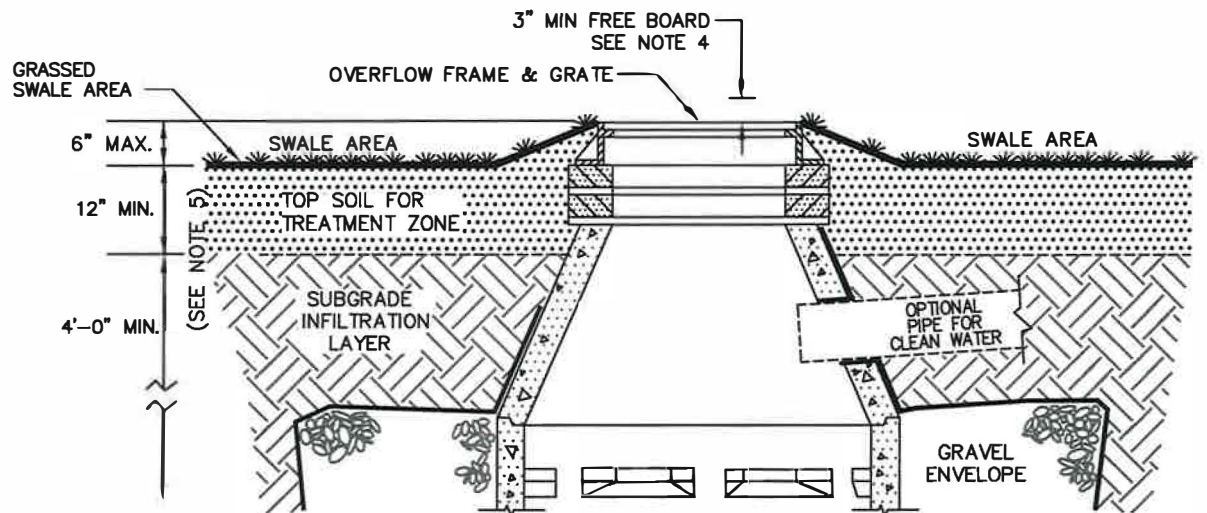
ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

STANDARD
PLAN No.
B-102D



NOTES:

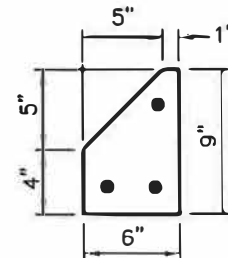
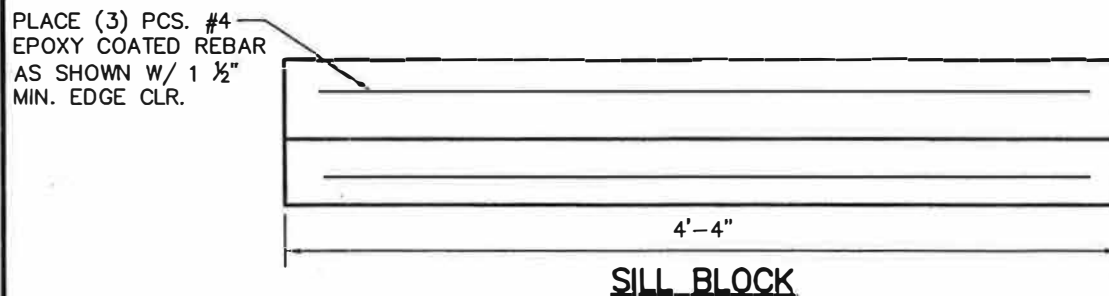
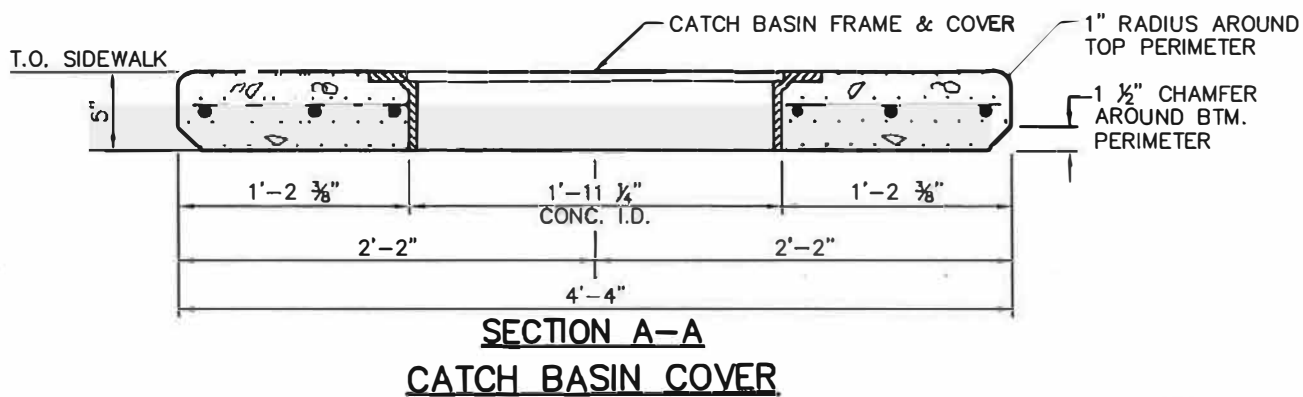
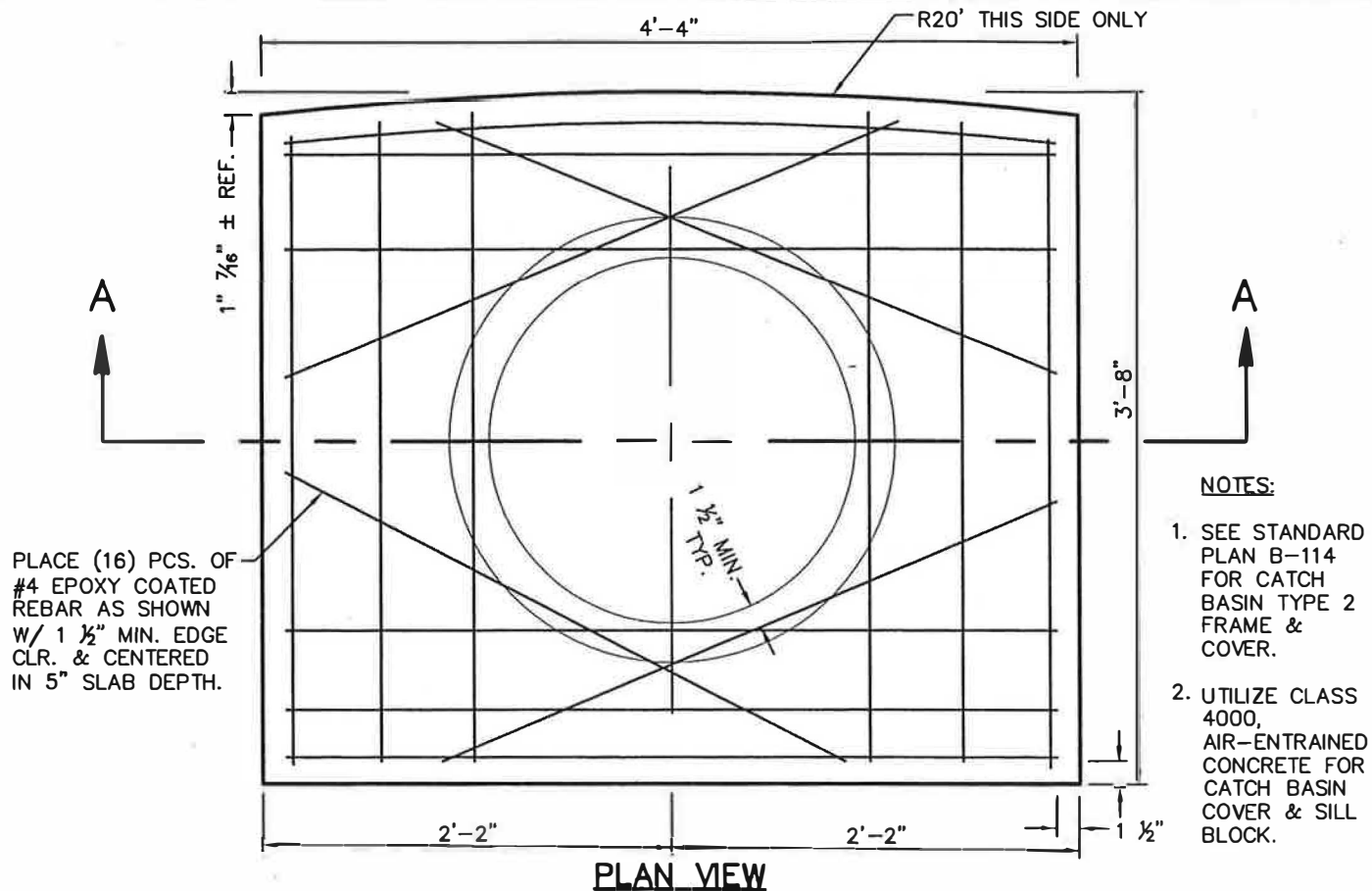
1. SWALE DESIGN WIDTH & DEPTH WILL VARY AS REQ'D TO PROVIDE ADEQUATE TREATMENT STORAGE FOR THE GIVEN STORM VOLUME.
2. PROVIDE A 1'-0" MIN. FLAT & FLUSH AREA ADJACENT TO SIDEWALK WHEN USING A SIDE-SLOPE NO STEEPER THAN 3:1. IF FLAT AREA IS NOT PROVIDED ADJACENT TO SIDEWALK, THEN USE A SIDE-SLOPE NO STEEPER THAN 4:1. SEE DES. STD. 6.4-2.
3. WHEN SWALE WIDTH IS ADEQUATE, PROVIDE A PRACTICAL FLAT BOTTOM. OTHERWISE, A "V" BOTTOM IS ACCEPTABLE.
4. DRYWELL SHALL BE INSTALLED AT A 10 FT MIN DISTANCE FROM LOWEST INLET TO PREVENT DIRECT INFLOW INTO THE OVERFLOW GRATE. DRYWELL MUST BE LOCATED WITHIN 8' OF ROADWAY FOR ACCESS & MAINTENANCE. PROVIDE A 3" MIN FREEBOARD BETWEEN LOWEST SWALE INLET & TOP OF DRYWELL GRATE OR OVERFLOW BERM.
5. SEE THE SPOKANE REGIONAL STORMWATER MANUAL (SRSM) INCLUDING TABLE 6-1 FOR INFILTRATION & OTHER DESIGN CRITERIA FOR TREATMENT ZONE & SUBGRADE INFILTRATION LAYER.
6. 2" EXPOSURE BETWEEN TOP OF CURB INLET & SWALE DRAIN PAD TO TOP OF SOD ROOT MASS OR HYDROSEED WITH A DRYLAND GRASS MIX.
7. SWALE OVERFLOW GRASS BERMS SHALL HAVE A 2-FT MIN FLAT TOP WIDTH (IN THE DIRECTION OF FLOW) & A SIDE-SLOPE NO STEEPER THAN 3:1.



DRYWELL IN SWALE

SEE STD PLANS B-102C & B-102D FOR DRYWELL REQ'MTS

APPROVED BY <i>[Signature]</i> DIRECTOR, ENGINEERING SERVICES PERRY M. TAYLOR, P.E.		ADOPTED: 06/1994 REVISED: 04/2012 SUPERSEDES: 09/2010		BIO-INFILTRATION SWALE W/ OVERFLOW STRUCTURE	
PRINCIPAL ENGINEER, CONST. <i>[Signature]</i> KENNETH M. BROWN, P.E.		CHECKED BY: SJS SCALE: NTS REVISED BY: DSH		ENGINEERING SERVICES CITY OF SPOKANE, WASHINGTON	
		STANDARD PLAN No. B-102F			



APPROVED BY

DIRECTOR, ENGINEERING SERVICES DAVE NAKAGAWARA, P.E.

PRINCIPAL ENGINEER, DESIGN

KEN BROWN, P.E.

ADOPTED: 2/86

REVISÉD: 7/02

SUPERSEDES: 2/90

SCALE: 1"=1'-0"

DWG. BY: DGB/MDH

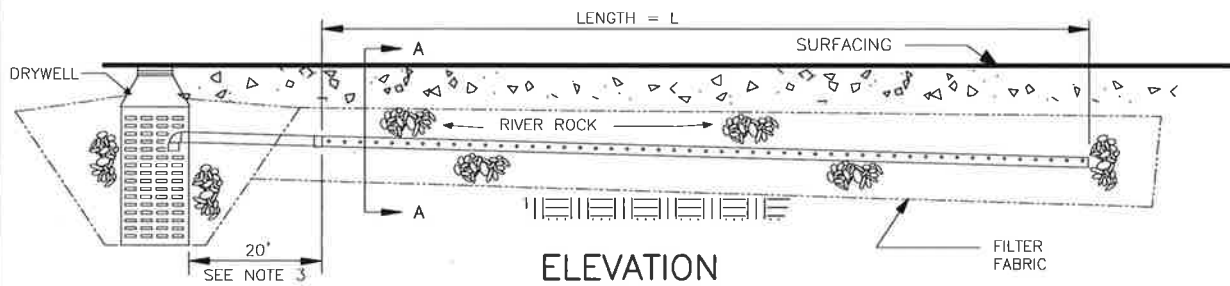
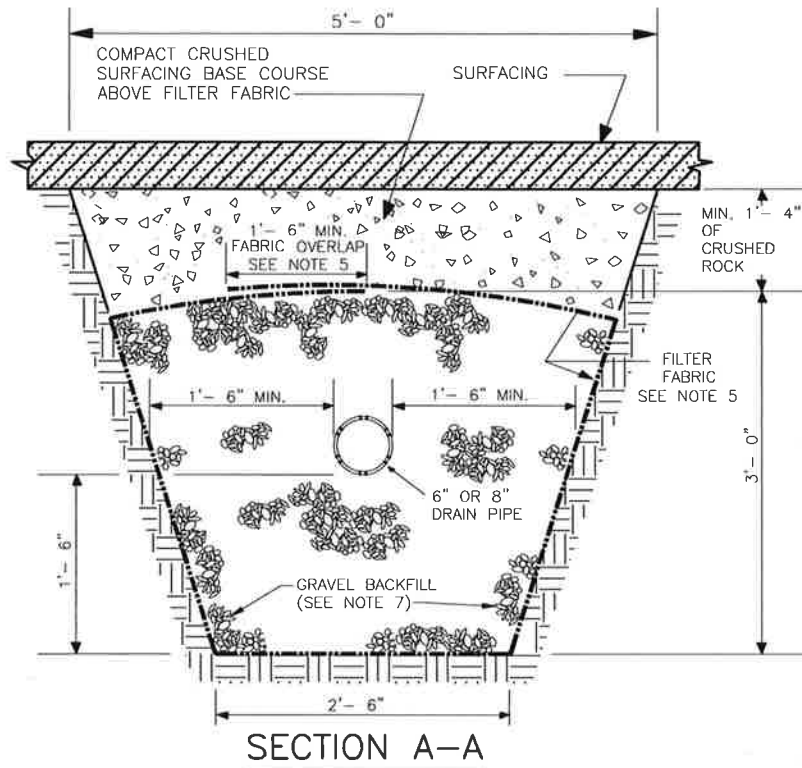
CATCH BASIN COVER TYPE 2

WITH SILL BLOCK



ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

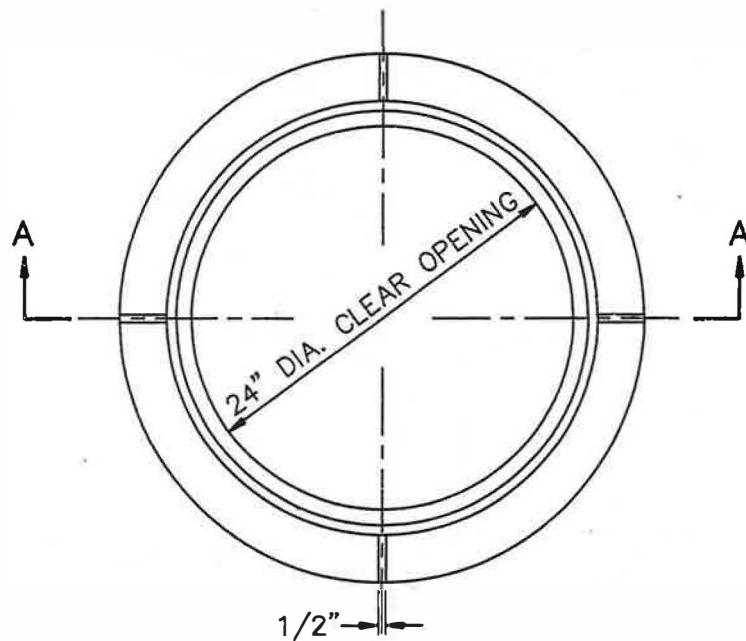
STANDARD
PLAN No.
B-105



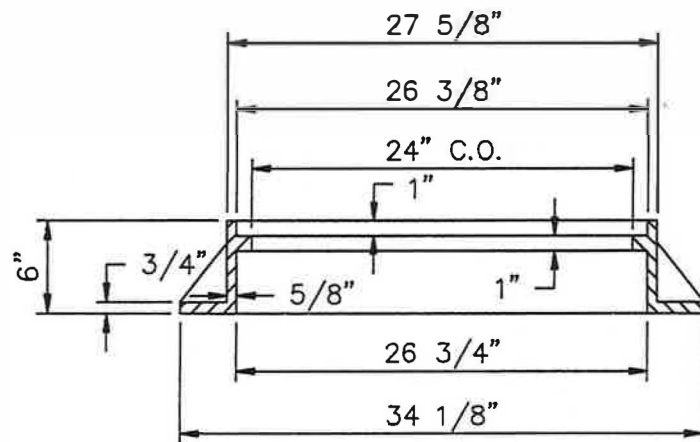
NOTES:

1. USE ABSORPTION TRENCH WHERE CALLED FOR IN THE PLANS OR AS DIRECTED BY THE ENGINEER & IN ACCORDANCE W/ SECTION 7-05.3(101).
2. DRAIN PIPE TO BE LAID ON A -0.5% TO -1.0% GRADE AWAY FROM THE DRYWELL.
3. DRAIN PIPE TO BE SOLID WALL FOR 1ST 20-FT FROM DRYWELL. REMAINDER OF DRAIN PIPE TO BE PERFORATED PER SECTION 9-05.
4. OUTLET TRAP PER STANDARD PLAN B-120 TO BE INSTALLED ON DRYWELL EXIT PIPE. SEAL PIPE COLLAR TO DRYWELL.
5. OVERLAP FABRIC A MINIMUM OF 1'-6". SEE SECTION 9-33 FOR WOVEN GEOTEXTILE FABRIC (MODERATE SURVIVABILITY CLASS A).
6. SEE STANDARD PLANS B-102C, & D FOR DRYWELL DETAILS.
7. SEE SECTION 9-03.12(5) FOR GRAVEL BACKFILL FOR DRYWELLS.

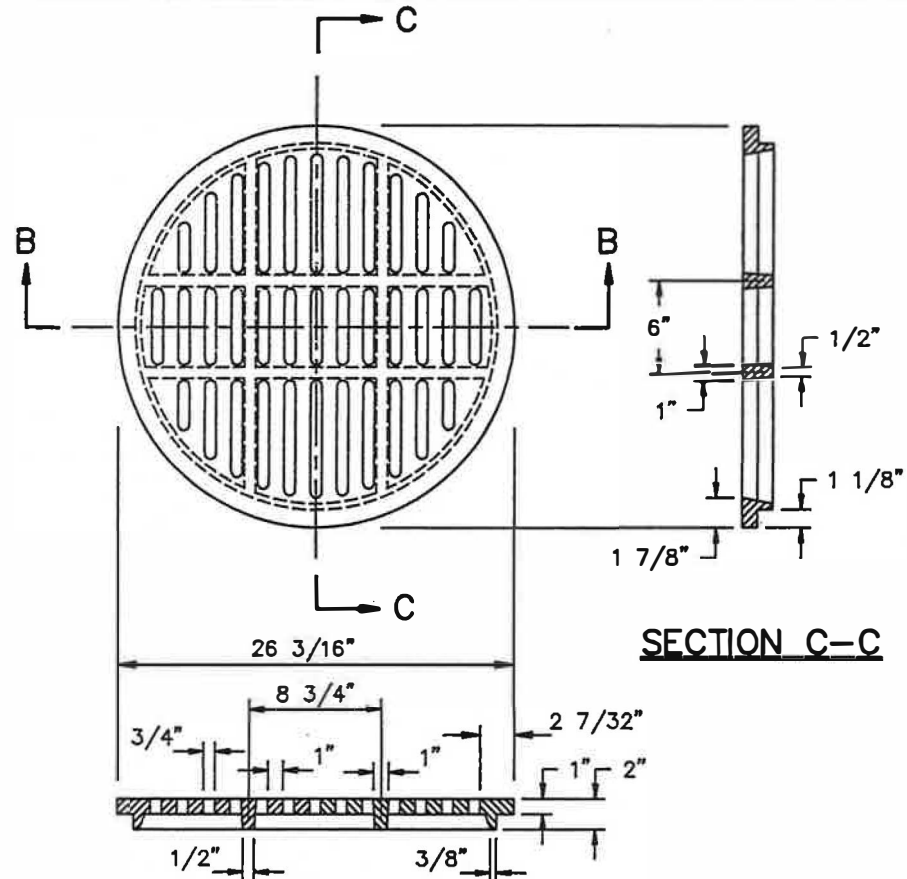
APPROVED BY ENGINEERING OPERATIONS MANAGER KYLE TWOHIG		ADOPTED: 6/1994 REVISED: 01/2017 SUPERSEDES: 05/2007 CHECKED BY: JAG SCALE: NTS DWG/REV. BY: REP/RLB		ABSORPTION TRENCH DETAILS FOR STORM DRAINAGE	
CITY ENGINEER DANIEL ALBERT BULLER, P.E.		SPokane 		ENGINEERING SERVICES CITY OF SPOKANE, WASHINGTON	
				STANDARD PLAN No. B-111	



CAST IRON FRAME MIN. WEIGHT 168 LBS.



SECTION A-A



SECTION B-B

SECTION C-C

DRAWING NOTES:

1. See Section 9-05.15 (2).
2. Frame: ASTM A48 Class 30 Gray Iron.
3. Grate: ASTM A536 Class 80-55-06 Ductile Iron.
4. Foundry Name, Date, Material and Heat Number In Raised Letters on Interior Face of Each Casting.
5. Fit Tolerance 1/8" (+/-).

APPROVED BY

CITY ENGR.

CH. DESIGN ENGR.

SCALE NIS

ADOPTED 2/90

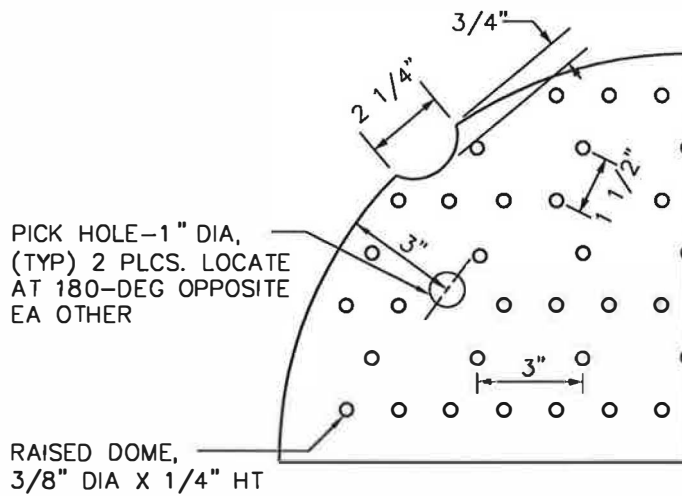
REVISED ---

SUPERSEDES ---

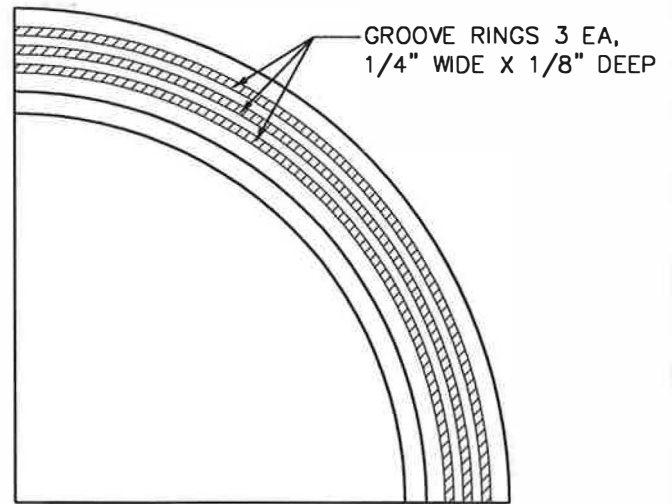
CATCH BASIN FRAME & GRATE

DEPT. OF PUBLIC WORKS
ENGR. DIVISION SPOKANE, WA

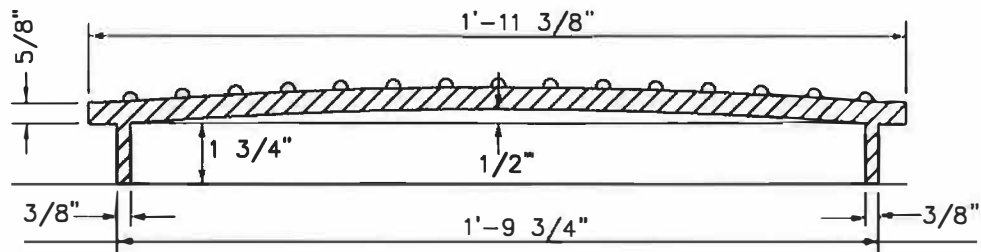
STANDARD
PLAN No.
B-113



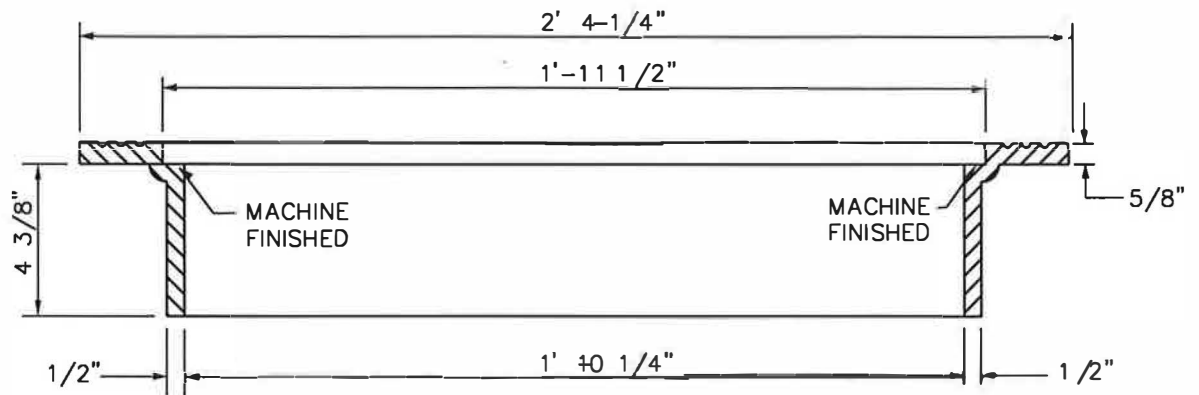
1/4 PLAN OF COVER



1/4 PLAN OF FRAME



SECTION - COVER

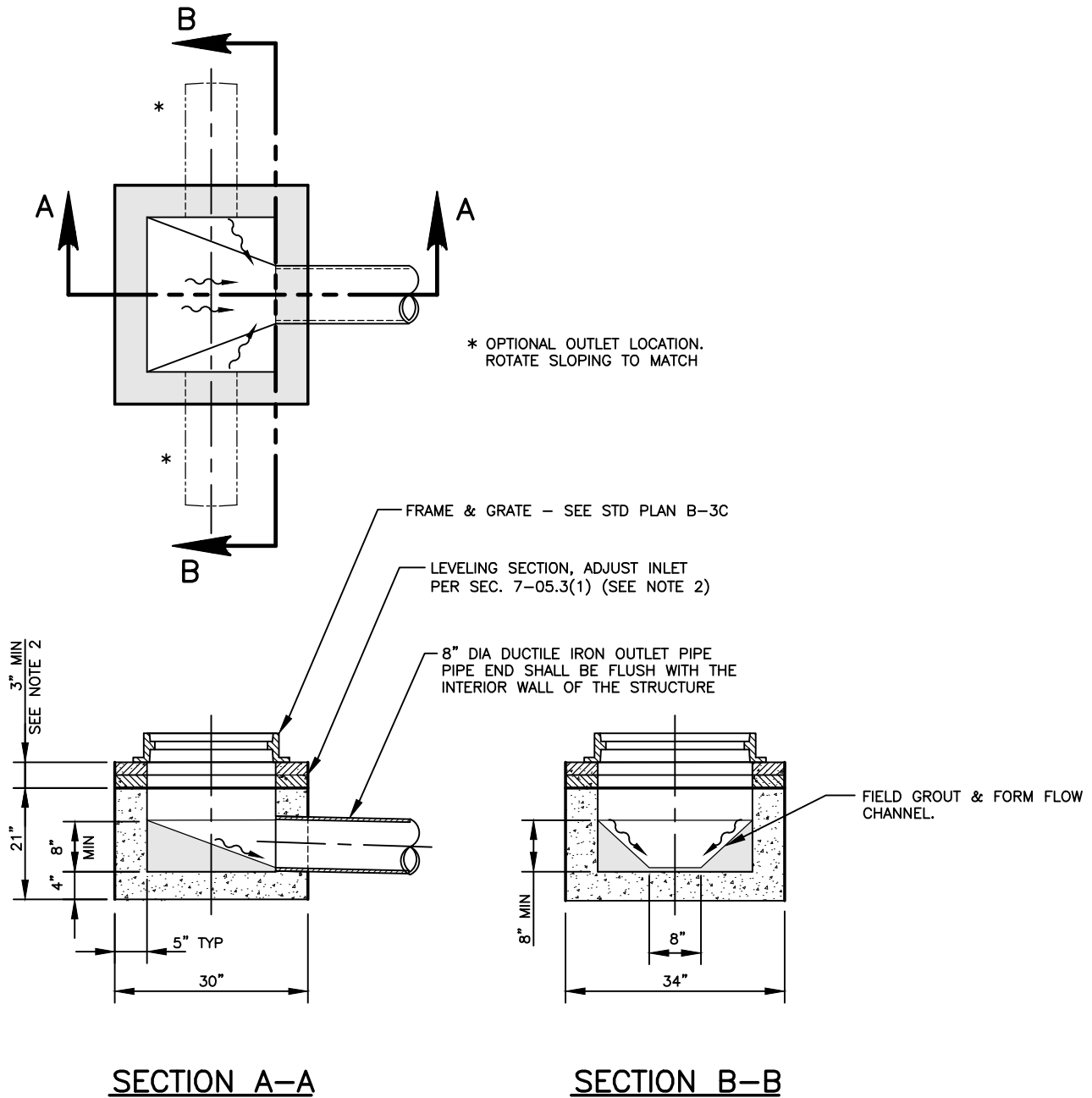


SECTION - FRAME

NOTES:

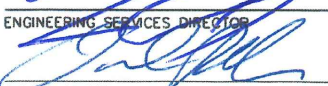
1. SEE SEC 9 -05. 15 FOR METAL CASTINGS.
2. ALL MATING SURFACES SHALL BE MACHINE FINISHED TO ENSURE A NON-ROCKING FIT.

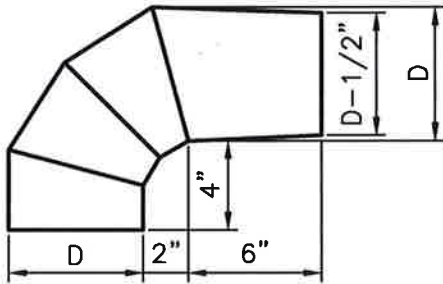
APPROVED BY DIRECTOR, ENGINEERING SERVICES TOM L. ARNOLD, P.E.		ADOPTED: 2/86 REVISED: 4/2004 SUPERSEDES: 7/02		CATCH BASIN FRAME & COVER TYPE 2	
PRINCIPAL ENGINEER, DESIGN KEN M. BROWN, P.E.		SCALE: NTS DWG/REV. BY: TSS		ENGINEERING SERVICES CITY OF SPOKANE, WASHINGTON	
				STANDARD PLAN No. B-114	



NOTES:

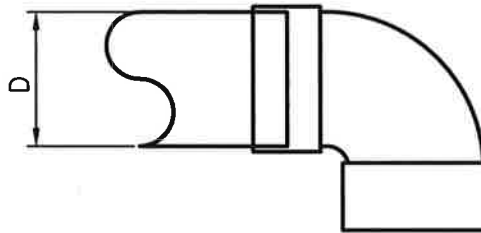
1. CONCRETE USED IN CONSTRUCTION OF THIS BOX SHALL BE CLASS 4000 AS SPECIFIED IN SECTION 6-02 OF STANDARD SPECIFICATIONS.
2. GROUT & SEAL ADJUSTMENT SECTION. SEE STANDARD PLAN A-8.

APPROVED BY  ENGINEERING SERVICES DIRECTOR KYLE TWOHIG  CITY ENGINEER DAN BULLER, P.E.	ADOPTED: _____ REVISED: 10/2019 SUPERSEDES: 01/2017 CHECKED BY: JAG SCALE: NTS DWG/REV. BY: DGB/MLD	GRATE INLET STRUCTURE TYPE 3  ENGINEERING SERVICES CITY OF SPOKANE, WASHINGTON STANDARD PLAN No. B-119
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TYPE 60A TRAP

1. TRAP TO BE MADE OF GALVANIZED SHEET METAL. MINIMUM THICKNESS 18 GA.
2. ALL JOINTS TO BE SEAMED, SPOT WELDED, AND SOLDERED OR CONTINUOUSLY BUTT-WELDED.
3. EXTERIOR WELDS SHALL BE GROUND SMOOTH.



PVC BELL ELBOW TRAP

1. 6" OR 8" WITH GASKETS REMOVED.

NOTES:

1. DIMENSION "D" IS NOMINAL DIAMETER OF OUTLET PIPE.

APPROVED BY


ENGINEERING OPERATIONS MANAGER KYLE TWOHIG

CITY ENGINEER DANIEL ALBERT BULLER, P.E.

ADOPTED: PRE-1986
REVISED: 01/2017
SUPERSEDES: 05/2007
CHECKED BY: JAG
SCALE: NTS
DWG/REV. BY: REP/MLD

OUTLET TRAP



ENGINEERING SERVICES
CITY OF SPOKANE, WASHINGTON

STANDARD
PLAN No.
B-120