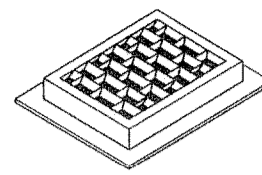
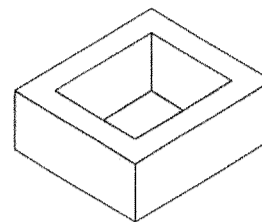


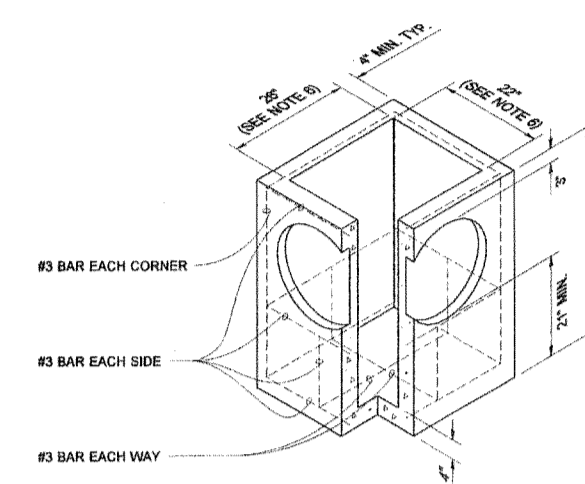
SEC. 20, T. 28 N., R. 4 E., W.M.



FRAME AND VANED GRATE



RECTANGULAR ADJUSTMENT SECTION



PRECAST BASE SECTION

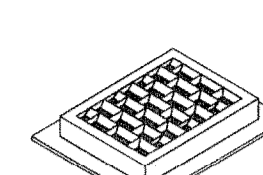
- NOTES:**
- As an acceptable alternate to rebar, wire mesh having a minimum area of 12 square inches per foot may be used. Wire mesh shall not be placed in knockouts.
  - The knockout diameter shall not be greater than 20". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with S&S Spec. 9-04.3.
  - The maximum depth from the finished grade to the pipe invert shall be 6'.
  - Frame and grate may be installed with flange down or cast into adjustment section.
  - The precast base section may have a rounded floor and the walls may be sloped at a rate of 1:24 or steeper.
  - Opening shall be measured at the top of the precast base section.

**PIPE ALLOWANCES**

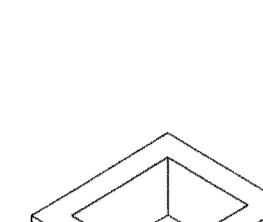
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CRSP#* (S&S Spec. 9-05.20)	12"
SOLID WALL PVC (S&S Spec. 9-05.12(1))	15"
PROFILE WALL PVC (S&S Spec. 9-05.12(2))	15"
* CORRUGATED POLYETHYLENE STORM SEWER PIPE	

**CATCH BASIN TYPE 1  
STANDARD PLAN B-1**

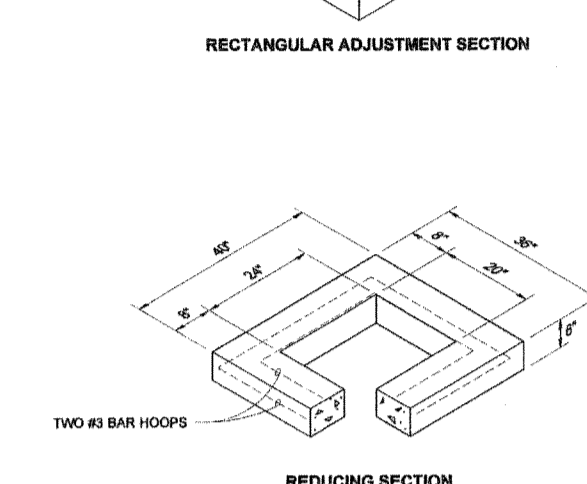
APPROVED FOR PUBLICATION  
**Clifford E. Mansfield 07-31-01**  
Washington State Department of Transportation



FRAME AND VANED GRATE



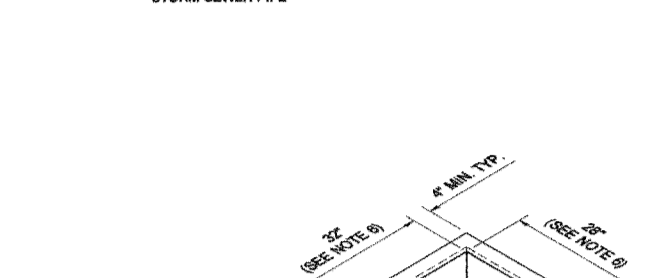
RECTANGULAR ADJUSTMENT SECTION



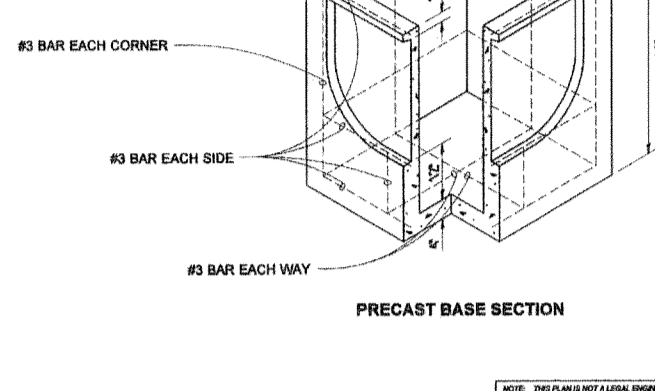
REDUCING SECTION

**PIPE ALLOWANCES**

PIPE MATERIAL	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE	15"
ALL METAL PIPE	21"
CRSP#* (S&S Spec. 9-05.20)	15"
SOLID WALL PVC (S&S Spec. 9-05.12(1))	21"
PROFILE WALL PVC (S&S Spec. 9-05.12(2))	21"
* CORRUGATED POLYETHYLENE STORM SEWER PIPE	



PRECAST BASE SECTION

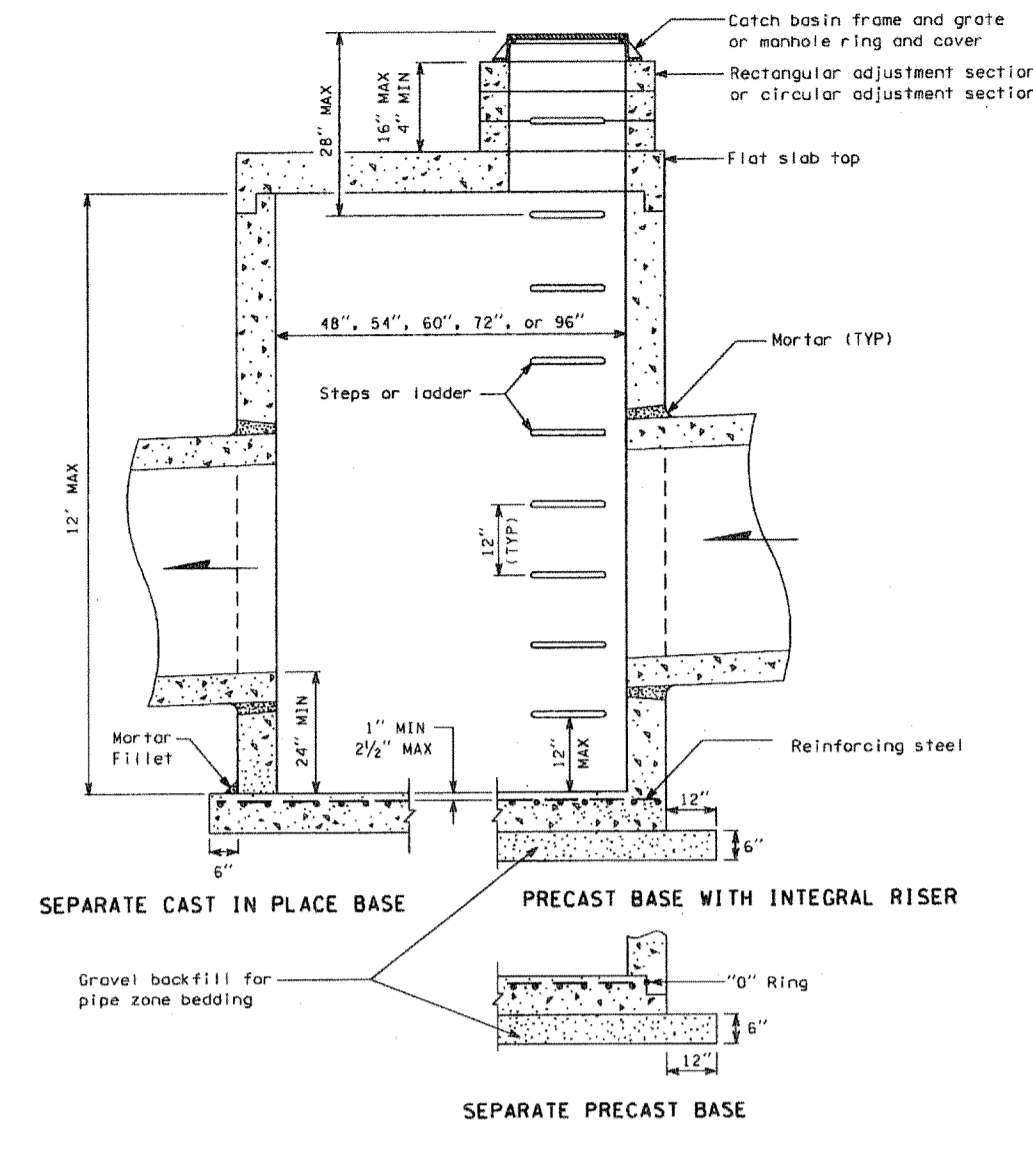


PRECAST BASE SECTION

- NOTES:**
- As an acceptable alternate to rebar, wire mesh having a minimum area of 12 square inches per foot may be used. Wire mesh shall not be placed in knockouts.
  - The knockout diameter shall not be greater than 20". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with S&S Spec. 9-04.3.
  - The maximum depth from the finished grade to the pipe invert shall be 6'.
  - Frame and grate may be installed with flange down or cast into adjustment section.
  - The precast base section may have a rounded floor and the walls may be sloped at a rate of 1:24 or steeper.
  - Opening shall be measured at the top of the precast base section.

**CATCH BASIN TYPE 1L  
STANDARD PLAN B-1a**

APPROVED FOR PUBLICATION  
**Clifford E. Mansfield 07-31-01**  
Washington State Department of Transportation



**CATCH BASIN DIMENSION TABLE**

DIA	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL IN EACH DIRECTION	INTEGRAL BASE	SEPARATE BASE
48"	4"	6"	36"	8"	0.15	0.23	
54"	4 1/2"	8"	42"	8"	0.19	0.19	
60"	5"	8"	48"	8"	0.25	0.25	
72"	6"	8"	60"	12"	0.24	0.35	
96"	8"	12"	84"	12"	0.29	0.39	

- NOTES:**
- No steps are required when height is 4' or less.
  - The bottom of the precast catch basin may be rounded.
  - Frame and grate may be installed with flange down or cast into adjustment section.
  - Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum.

**CATCH BASIN TYPE 2**

**TYPE I CATCH BASIN**

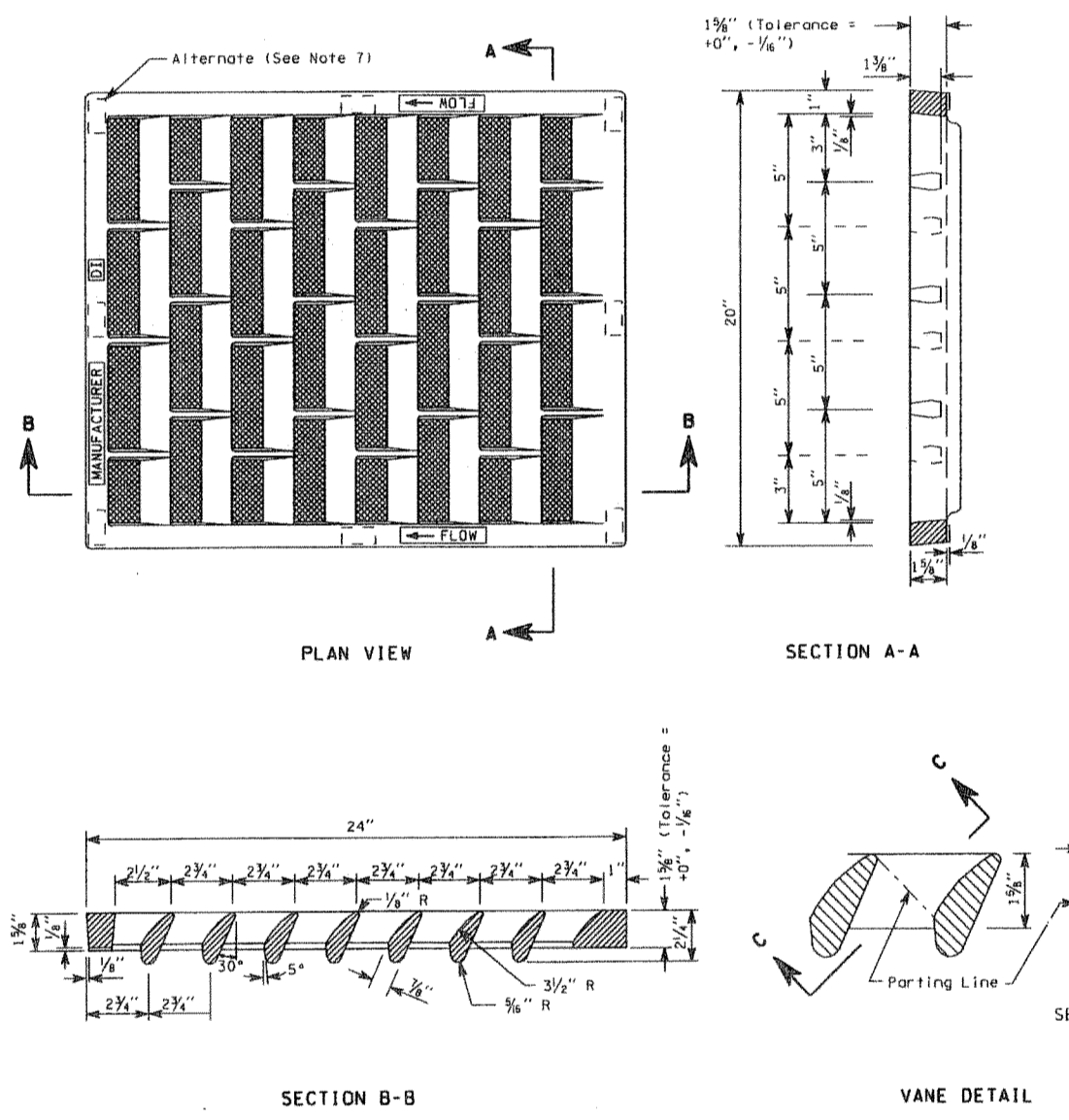
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**TYPE I-L CATCH BASIN**

2

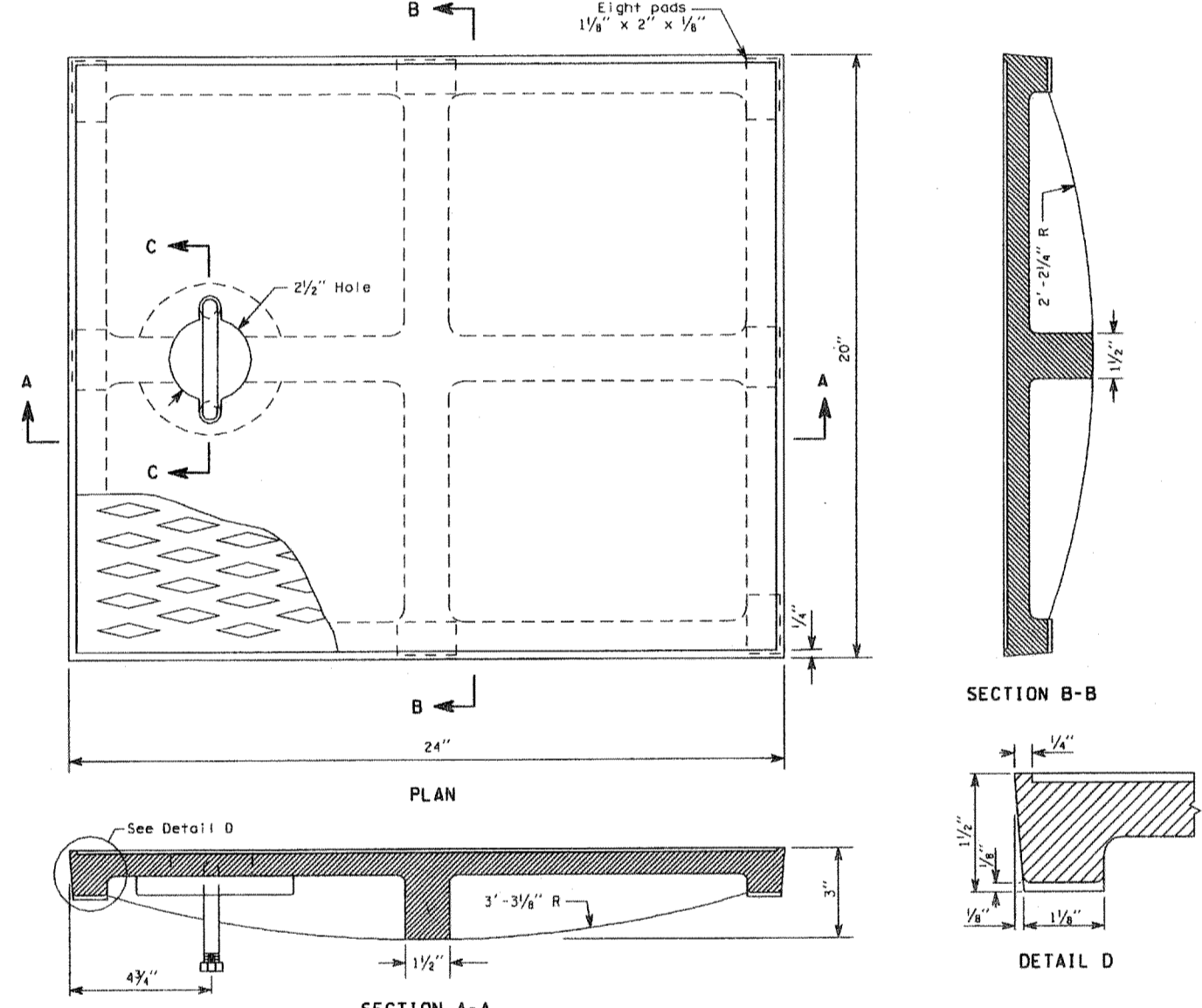
**TYPE II CATCH BASIN (48"Ø, 54"Ø, 60"Ø)**

3



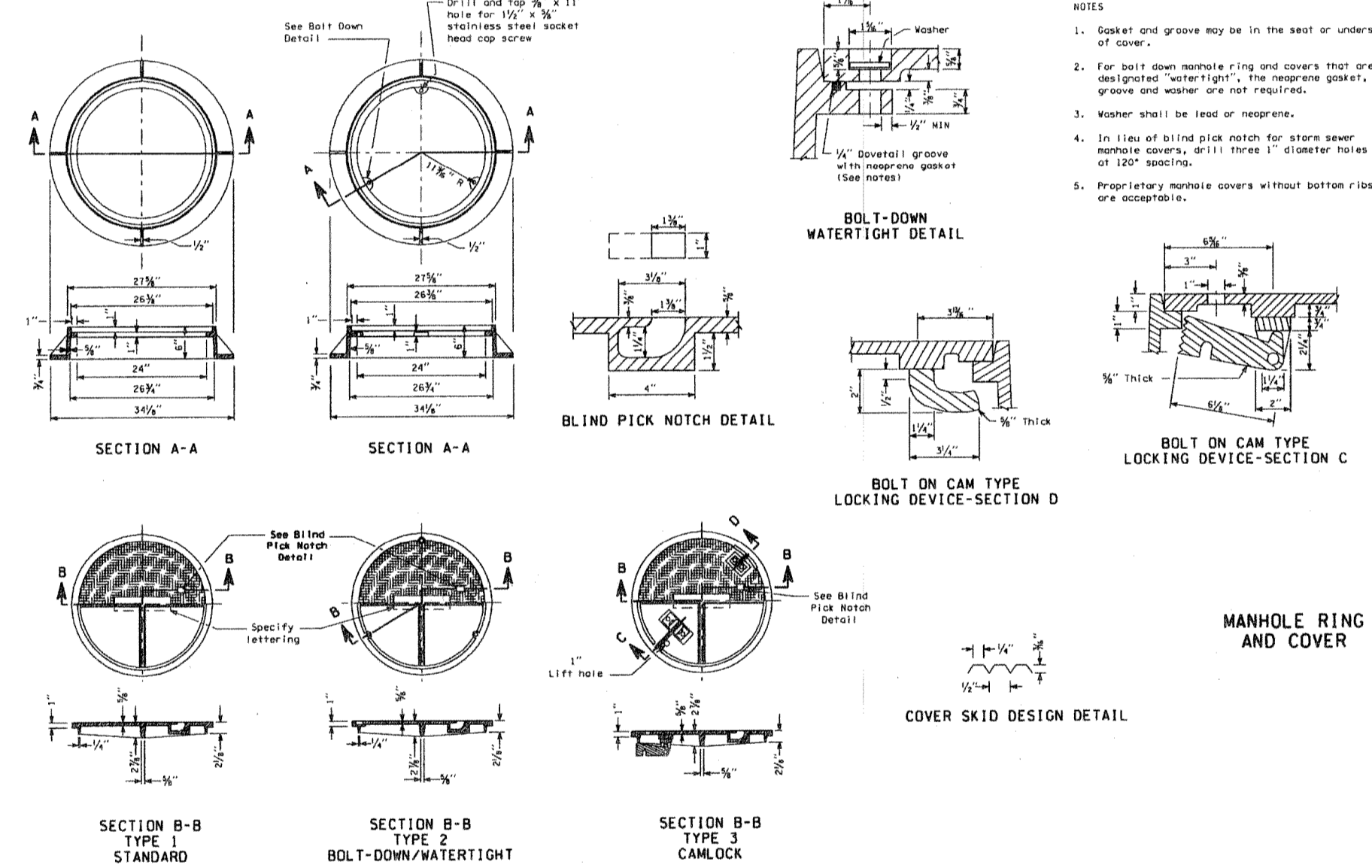
- NOTES:**
- The name of the manufacturer and direction of flow shall be embossed on the top surface of van grate. Lettering to be recessed 1/8".
  - Dimensions shall have a ± 1/16" tolerance, except as noted.
  - Edges shall have 1/4" radius, 3/8" chamfer or complete deburring.
  - As an alternate, eight pods 1 1/2" x 3/4" x 3/8" integrally cast with the grate may be used.

**VANED GRATE FOR  
CATCH BASIN  
AND INLET**



- NOTES:**
- Raised designs other than the diamond design shown may be used if approved by the Engineer.

**SOLID METAL COVER  
FOR CATCH BASIN**



- NOTES:**
- Socket and groove may be in the seat or underside of cover.
  - For bolt down manhole ring and covers that are not designed "water tight", the manhole gasket, ground and water are not required.
  - Water shall be lead or neoprene.
  - In lieu of blind pick notch for stem sewer manhole covers, drill three 1" diameter holes of 120° bevel.
  - Proprietary manhole covers without bottom ring are acceptable.

**MANHOLE FRAMES AND COVERS**

6

**LOCKING VANED GRATE**

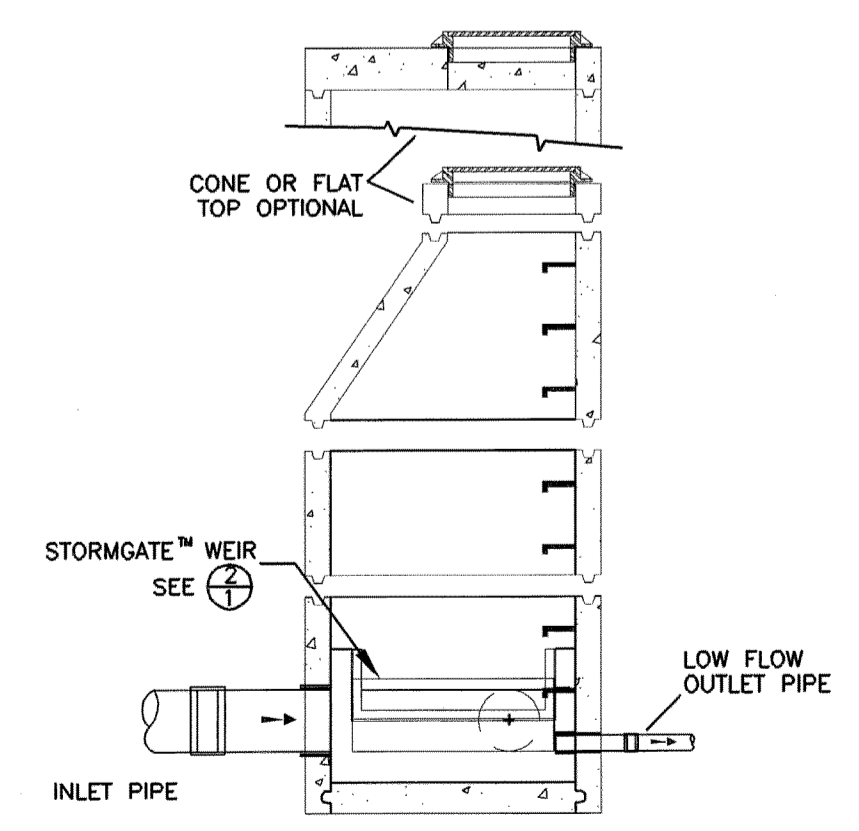
4

**SOLID, LOCKING LID**

5

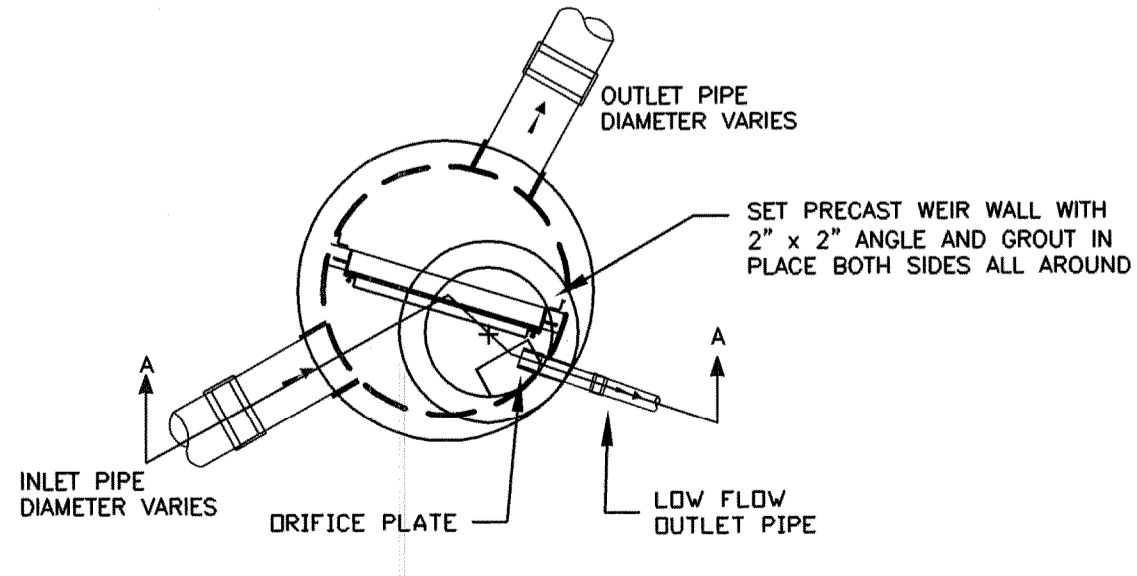
**GENERAL NOTES:**

- STORMGATE BY STORMWATER MANAGEMENT, INC., PORTLAND, OREGON (800-548-4667).
- ALL WATER QUALITY FACILITIES REQUIRE REGULAR MAINTENANCE. MINIMUM ANNUAL MAINTENANCE INCLUDES INSPECTION OF COMPONENTS AND REMOVAL OF SEDIMENTS. FOLLOW ALL LOCAL, STATE, & FEDERAL SAFETY GUIDELINES.
- PRECAST CONCRETE MANHOLE CONSTRUCTED IN ACCORDANCE WITH ASTM C858.
- EXTERNAL PIPING AND COUPLINGS PROVIDED BY OTHERS.
- FLEXIBLE COUPLINGS TO BE SET 18" OUTSIDE FACE OF WALL. FERNOCO OR ENGINEER APPROVED.
- SEE PRECAST STORMGATE DATA BLOCK FOR MANHOLE SIZE AND WEIR SETTING.
- CONTRACTOR TO ADJUST WEIR TO DESIGN ELEVATION.
- WHEN SETTING SCREWS ON WEIR PLATE DO NOT EXCEED 5.0 FT-LBS TORQUE.
- SEAL WEIR WITH SILICONE SEALANT AFTER FINAL ADJUSTMENT.



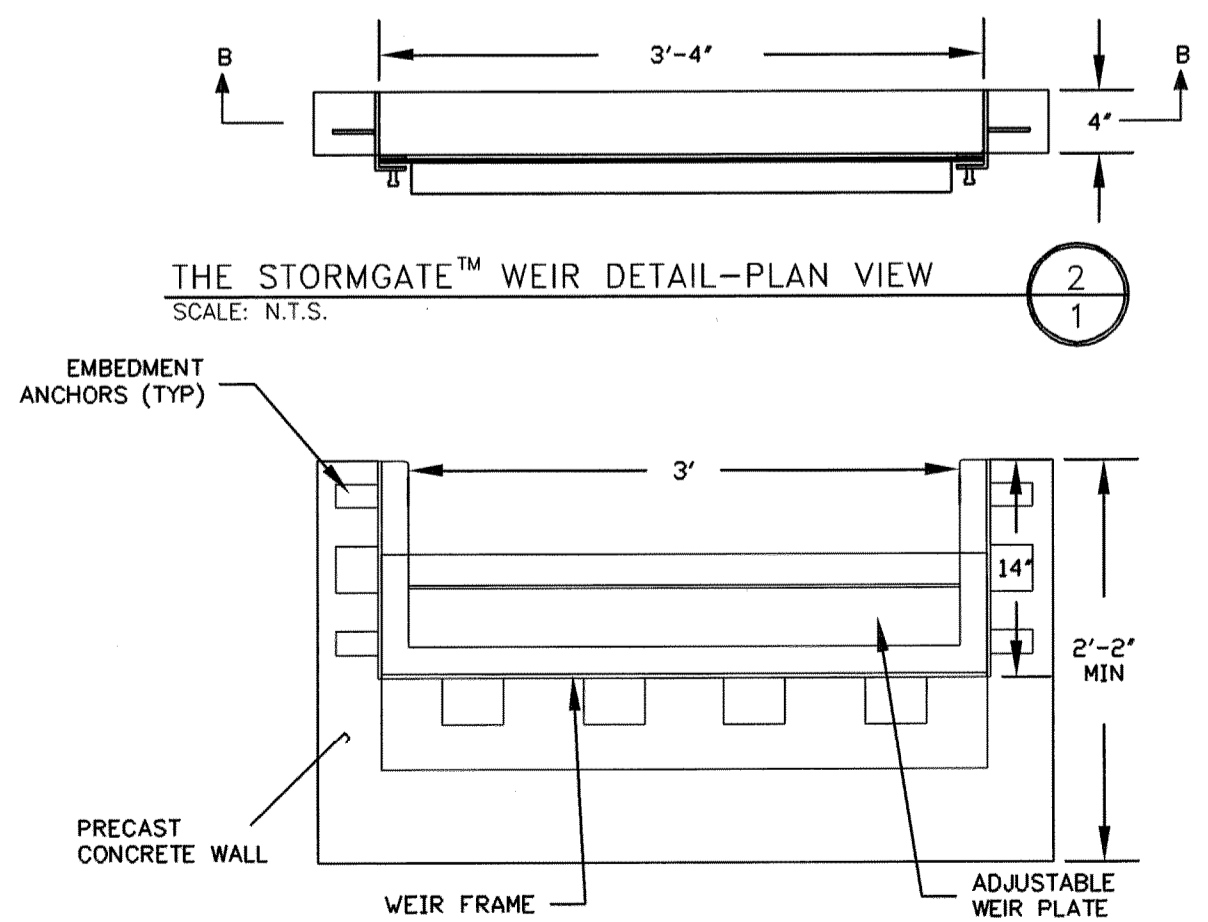
**THE STORMGATE™ - SECTION VIEW**  
SCALE: N.T.S.

A-A  
1



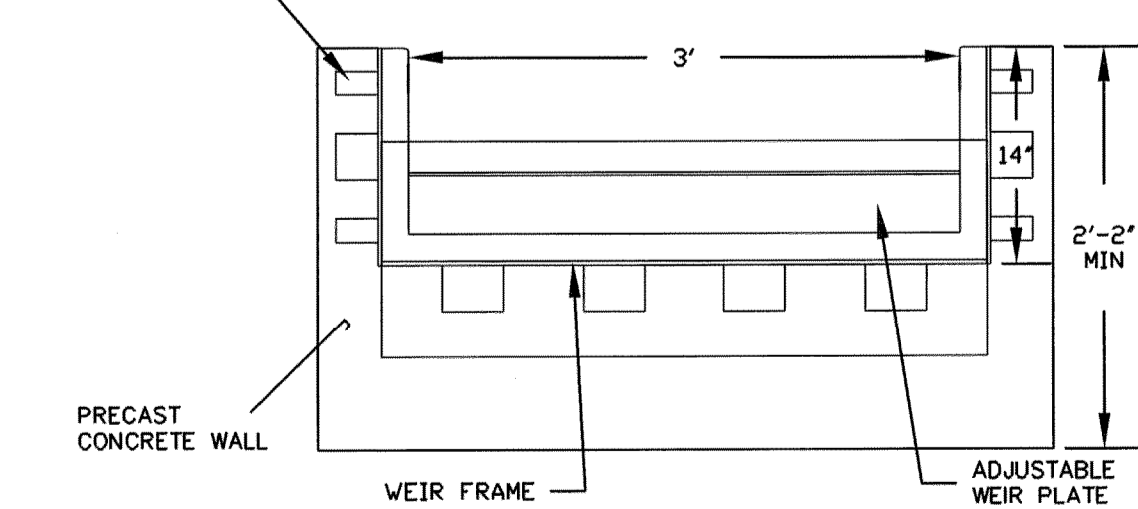
**THE STORMGATE™ - PLAN VIEW**  
SCALE: N.T.S.

1  
1



**THE STORMGATE™ WEIR DETAIL-PLAN VIEW**  
SCALE: N.T.S.

2  
1



**THE STORMGATE™ WEIR DETAIL-SECTION VIEW**  
SCALE: N.T.S.

B-B  
1

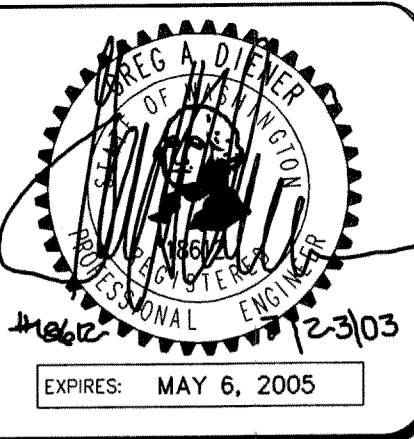
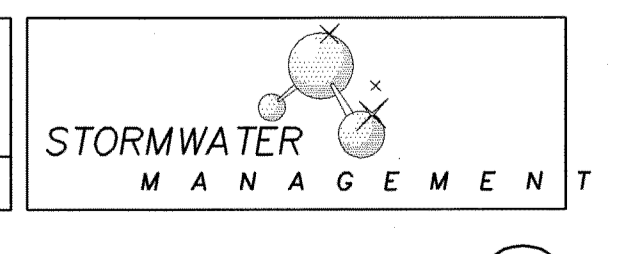
**THE STORMGATE HIGH FLOW BYPASS**

**SHEET**

DESIGNED BY: ARG	CHECKED BY:	CHECK DATE:
DRAWN BY: ARG	APPROVED BY:	APPR. DATE:
DATE: 6/07/01	REVISION:	DATE:
ARG	ARG UPDATED DRAWING	

**THE STORMGATE™  
HIGH FLOW BYPASS DETAIL**

SCALE: AS SHOWN PROJECT NO. DRAWING FILE NAME: StormGate.DWG



4180 LIND AVE. S.W.  
RENTON, WA 98055  
PHONE: (425) 251-8811  
FAX: (425) 251-8880  
WEB SITE: PACENG.COM

**Pacific  
Engineering  
Design, LLC**  
Civil Engineering and  
Planning Consultants

**WESTRIDGE (SECTOR 11 PHASE II)**  
MUKILTEO, WA.

FOR:  
THE BURNSTEADS  
1215 120TH AVENUE N.E. SUITE 201  
BELLUVE, WA 98055-2195  
PHONE: (425) 454-1800 FAX: (425) 454-4543

PROJECT NO.: 03002  
DRAWN BY: DJW  
ISSUE DATE: 02-28-03  
SHEET REV.: 06-26-03

**DETAILS**

03002D01.dwg  
**C11**

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