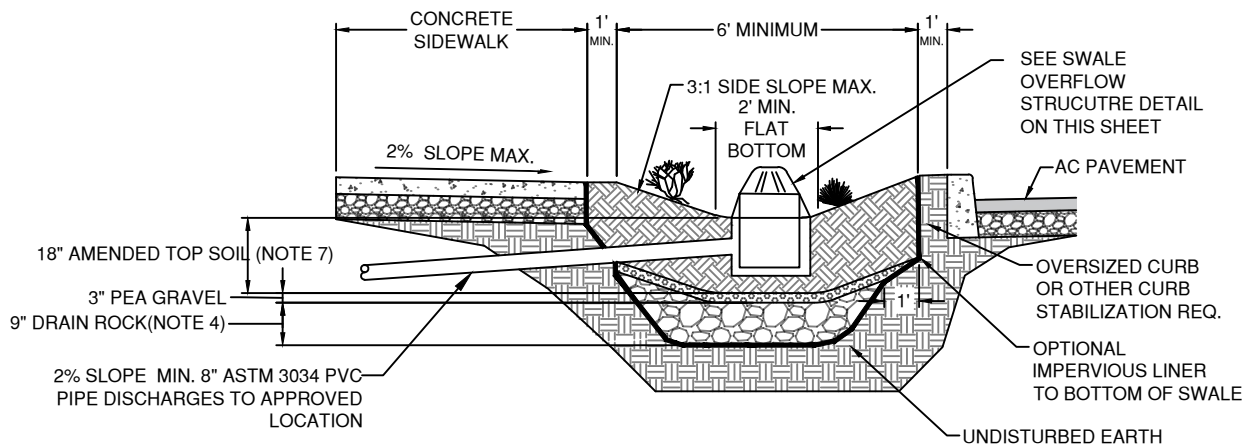


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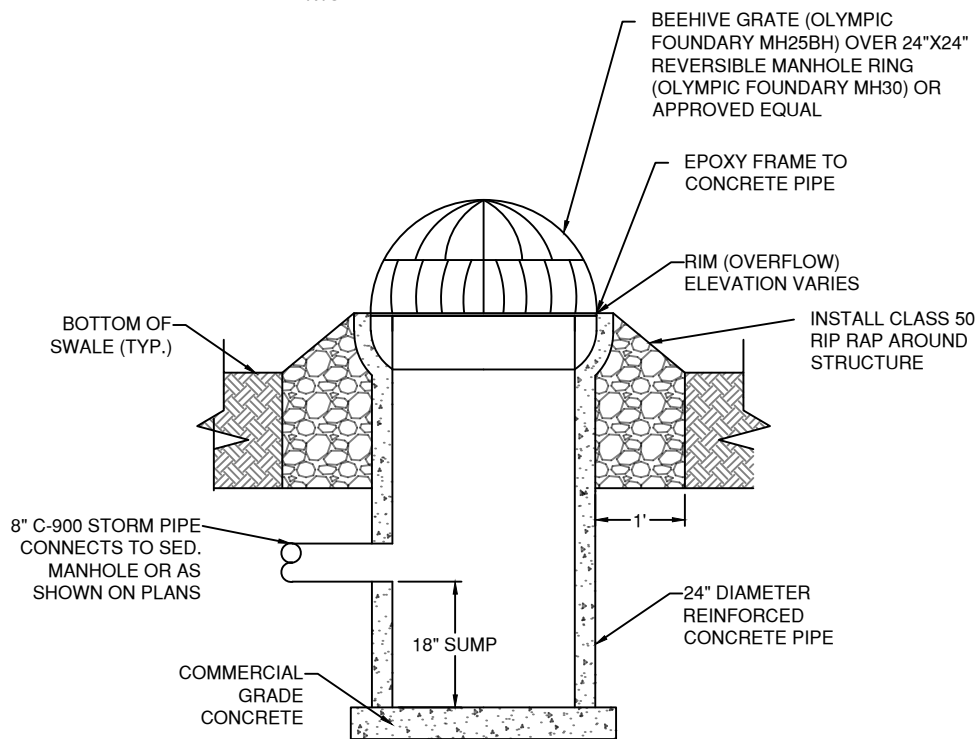
**CITY OF BEND STANDARD DRAWINGS**  
**Stormwater (STRM)**

---



**VEGETATED SWALE WITH OPTIONAL ROCK STORAGE RESERVOIR**

NTS



**SWALE OVERFLOW STRUCTURE**

NTS

**NOTES:**

1. AMENDED TOPSOIL SHALL CONTAIN 20-30% TOPSOIL, 50-65% CLEAN SAND AND 5-20% COMPOST OR PEAT MOSS.
2. VOLUME AND DEPTH TO BE DETERMINED BY ENGINEER.
3. DRAIN ROCK AS REQUIRED FOR DRAINAGE CAPACITY. PEA GRAVEL TO BE USED TO PREVENT SOIL MIGRATION INTO DRAINAGE LAYER.
4. OPTIONAL ROCK RESERVOIR TO BE CONSTRUCTED WITH WASHED DRAIN ROCK WITH 40% VOIDS. NOT TO BE USED IN TREE WELLS.
5. AVOID COMPACTING SWALE AREA DURING CONSTRUCTION.
6. ADD HIGH POINT FLOW BYPASS TO AN APPROVED DISPOSAL POINT AS NECESSARY. OVERFLOW SHOULD PASS THROUGH A SEDIMENTATION MANHOLE OR PRE-TREATMENT PRIOR TO DISCHARGING TO A DRYWELL OR UIC.
7. AMENDED TOP SOIL CAN BE REPLACED WITH DRAIN ROCK FOR ROCK SWALES. ROCK SWALES CANNOT BE USED TO MEET PRETREATMENT REQUIREMENTS.
8. INSTALL CHECK DAMS AS REQUIRED AND PER DWG STRM-4.

DRAWN **AJD**  
DIV **STORM**  
REV DATE



**CITY OF BEND**

**CITY OF BEND**  
STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

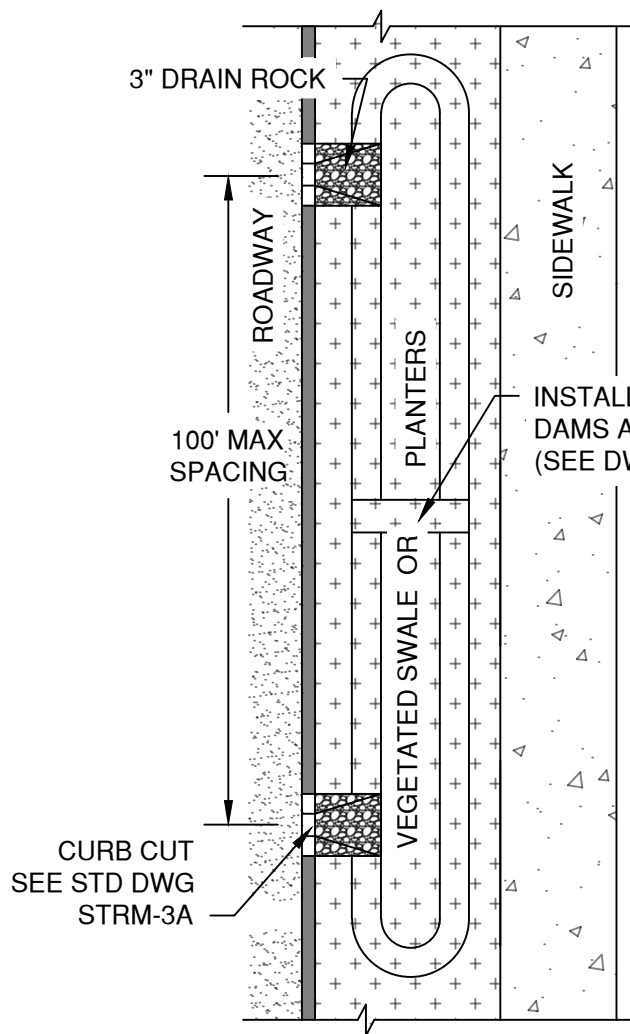
**VEGETATED SWALE DETAIL**

SCALE **NTS**

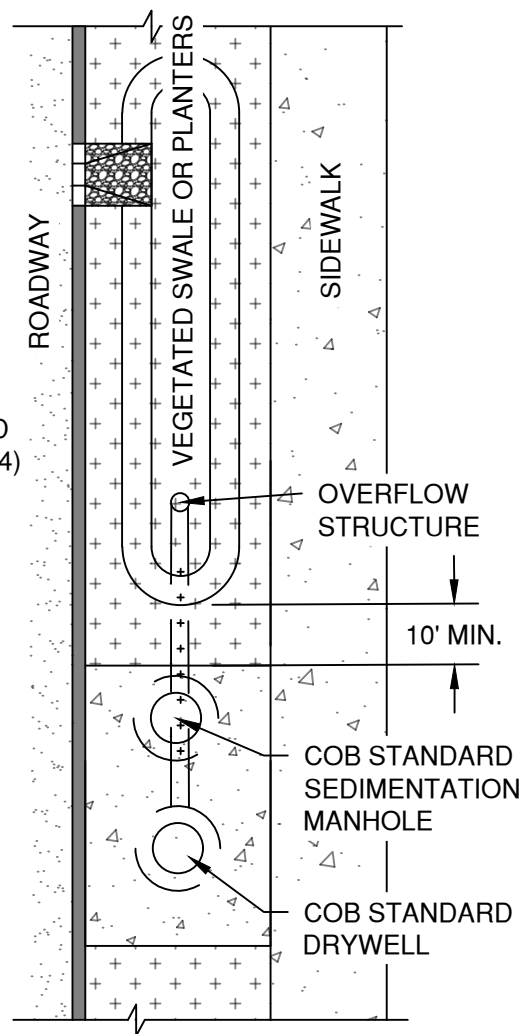
DATE **01/31/2022**

APPR

STD DWG **STRM-2**



VEGETATED SWALE/ PLANTER  
NTS



VEGETATED SWALE/ PLANTERS  
W/ DRYWELL OVERFLOW  
NTS

NOTES:

1. SWALE/SURFACE INFILTRATION FACILITIES NOT PERMITTED WITHIN PUES OR OVER FRANCHISE UTILITIES
2. VOLUME AND DEPTH TO BE DETERMINED BY ENGINEER.

|       |       |
|-------|-------|
| DRAWN | AJD   |
| DIV   | STORM |
| REV   | DATE  |



CITY OF BEND

CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

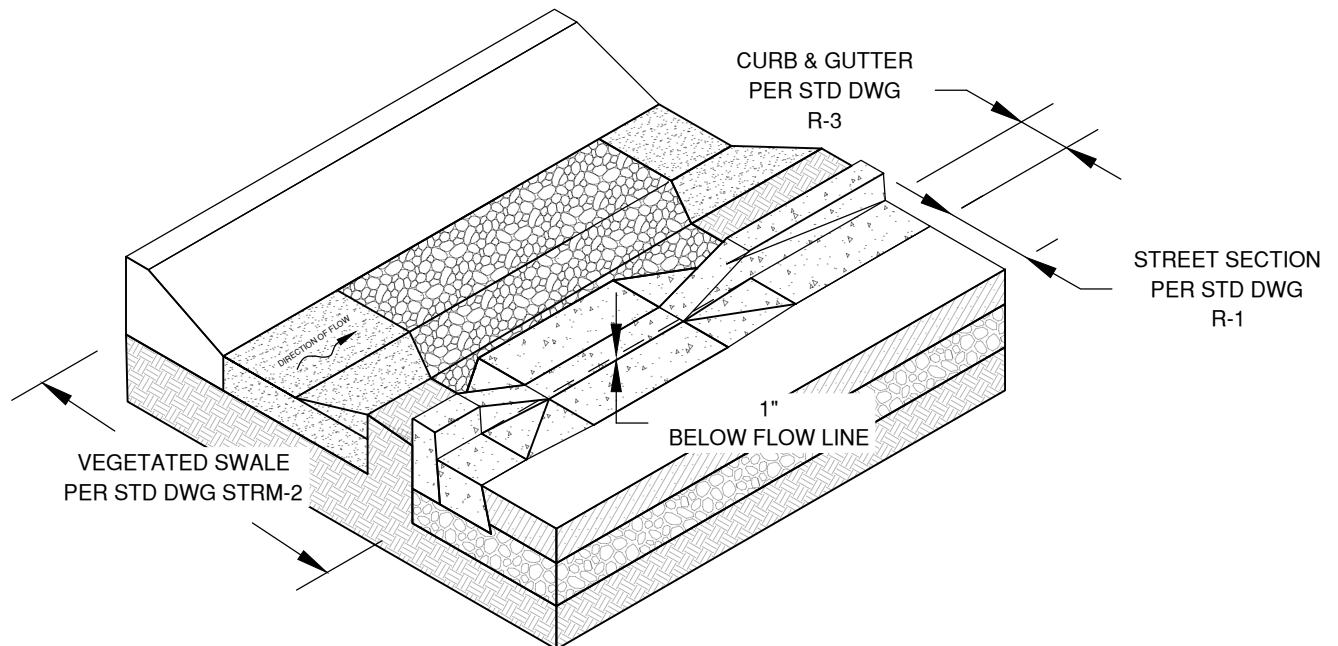
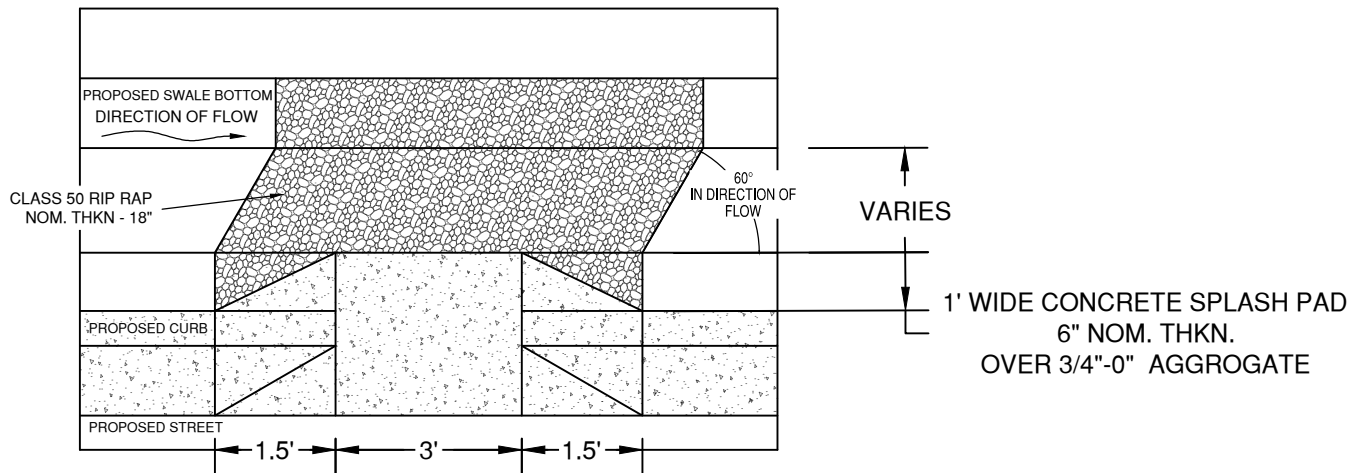
TYPICAL SWALE LAYOUT

SCALE NTS

DATE 01/31/2022

APPR

STD DWG STRM-3



DRAWN AJD

DIV STORM

REV DATE



CITY OF BEND

CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

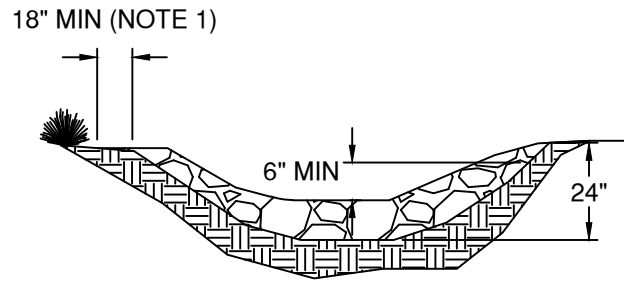
TYPICAL CURB CUT

SCALE NTS

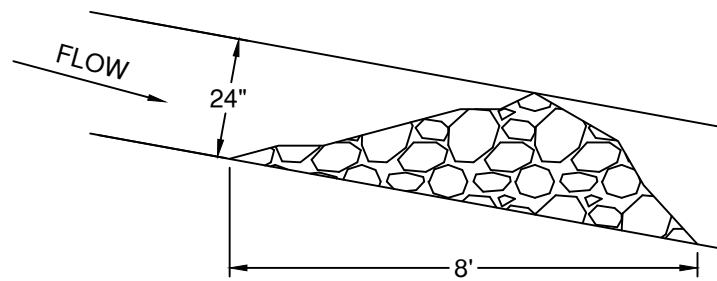
DATE 01/31/2022

APPR

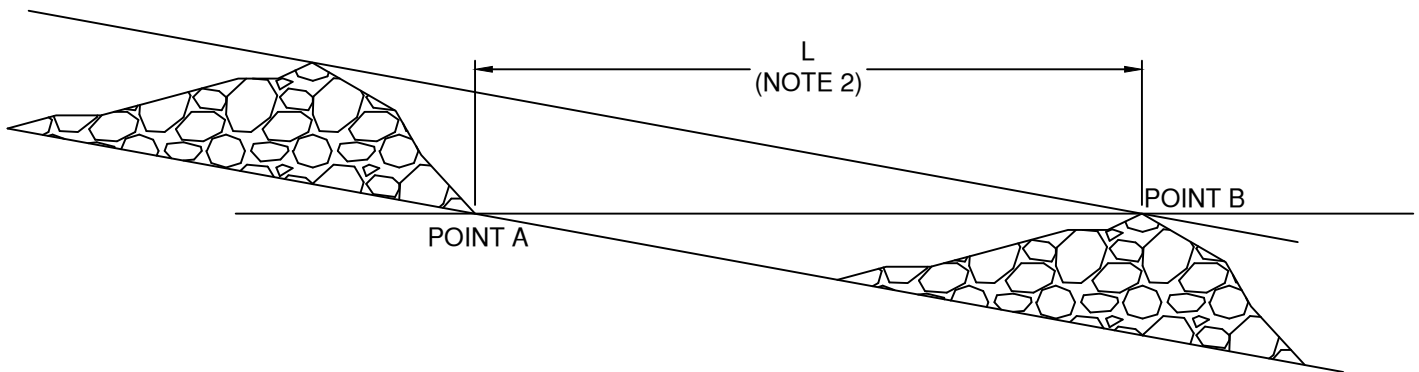
STD DWG STRM-3A



**CHANNEL CROSS SECTION**



**CHECK DAM PROFILE**



**SPACING BETWEEN CHECK DAMS**

**NOTES:**

1. KEY STONE INTO THE CHANNEL BANKS AND EXTEND DAM A MINIMUM OF 18" TO PREVENT FLOW AROUND DAM.
2. L IS EQUAL TO THE DISTANCE SUCH THAT 'POINT A' AND 'POINT B' ARE OF EQUAL ELEVATION.
3. CHECK DAMS SHALL BE INSTALLED PER CENTRAL OREGON STORMWATER MANUAL (COSM) REQUIREMENTS.

|           |      |
|-----------|------|
| DRAWN LJC |      |
| DIV STORM |      |
| REV       | DATE |



CITY OF BEND

**CITY OF BEND**

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

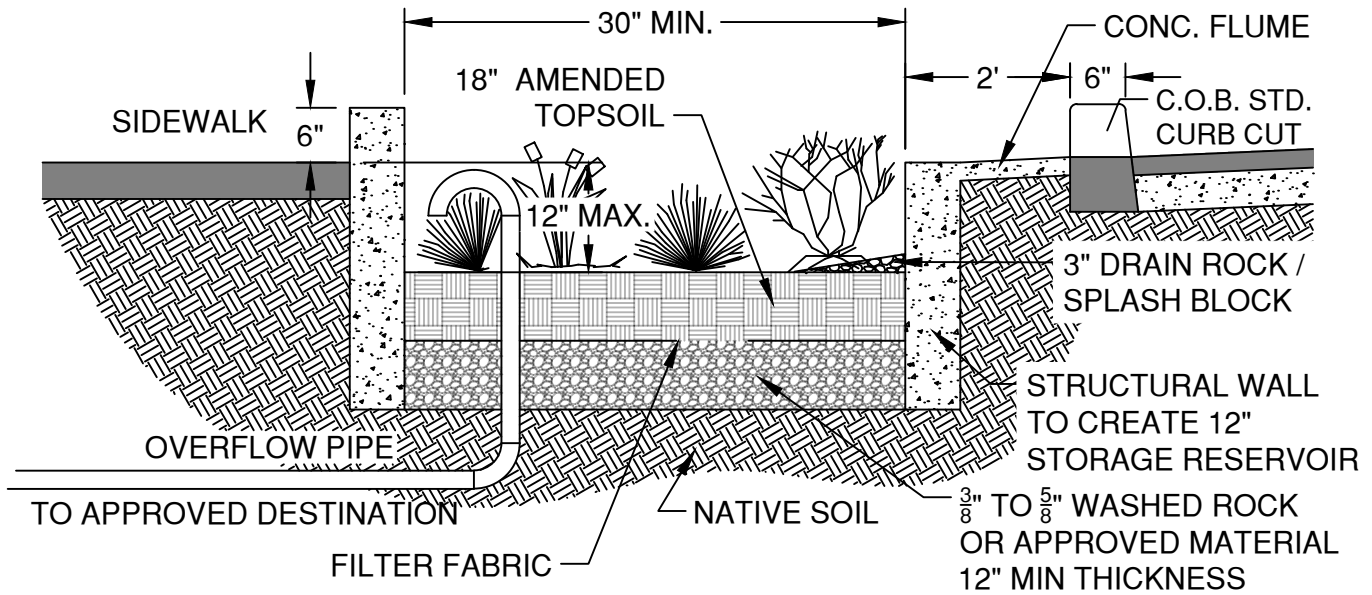
**CHECK DAM DETAIL**

SCALE NTS

DATE 12/1/17

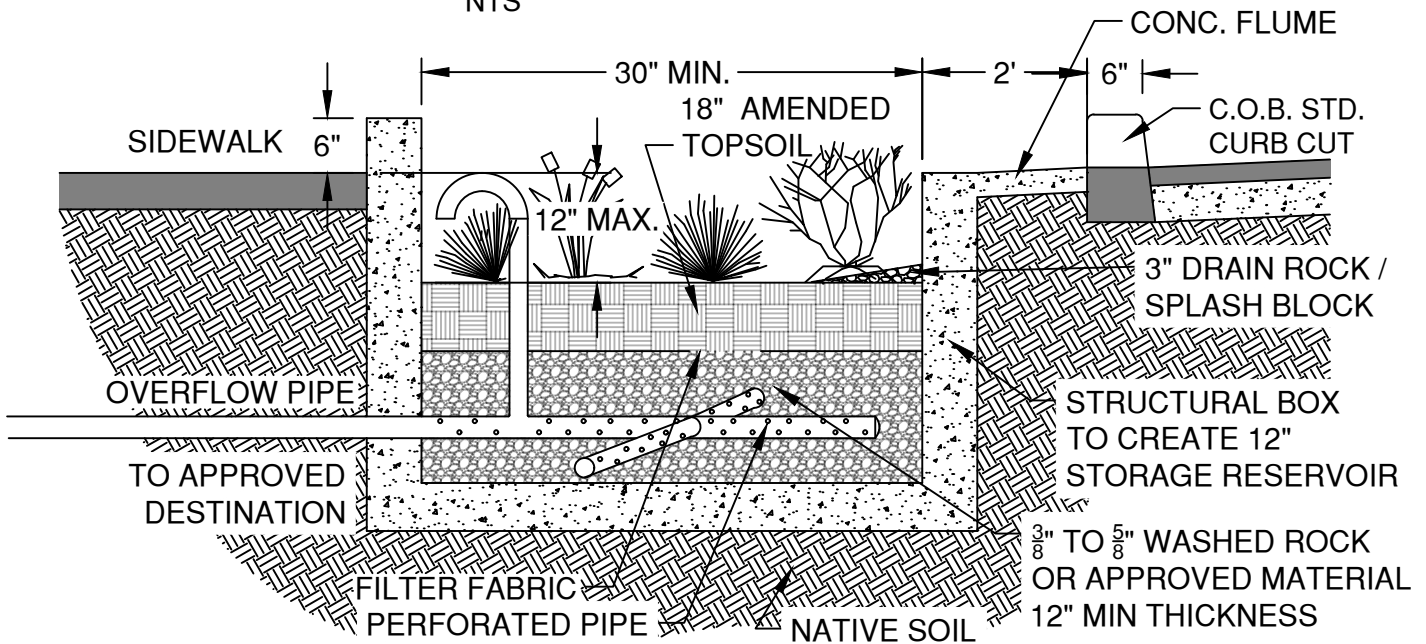
APPR

STD DWG STRM-4



INFILTRATION PLANTER TYPICAL SECTION

NTS



FLOW-THROUGH PLANTER TYPICAL SECTION

NTS

NOTE:

1. NOT FOR USE ALONG STREETS WITH POSTED SPEED ABOVE 25 MPH, UNLESS OUTSIDE THE CLEAR ZONE.
2. AMENDED TOPSOIL PER SPECIFICATION 01040
3. VOLUME AND DEPTH TO BE DETERMINED BY ENGINEER.
4. USE INFILTRATION PLANTER IF EXISTING SITE HAS AN INFILTRATION RATES  $> 0.5$  IN/HR.
5. PLACE OVERFLOW PIPE 2" BELOW TOP OF PLANTER.
6. TO AVOID UIC REGULATION DO NOT USE PERFORATED PIPE OUTSIDE OF THE FLOW-THROUGH PLANTER OR WITH THE INFILTRATION PLANTER.

DRAWN AJD  
DIV STORM  
REV DATE



CITY OF BEND

CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

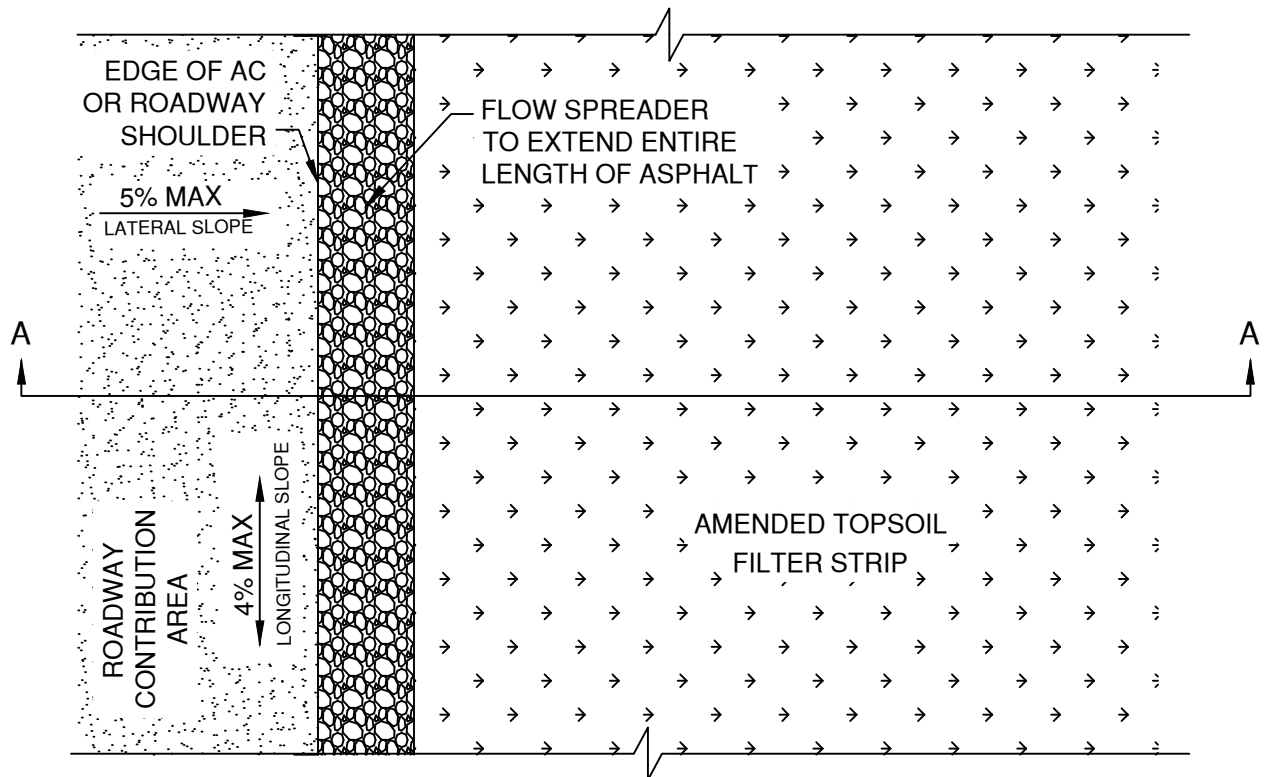
STORMWATER PLANTER DETAIL

SCALE NTS

DATE 01/31/2022

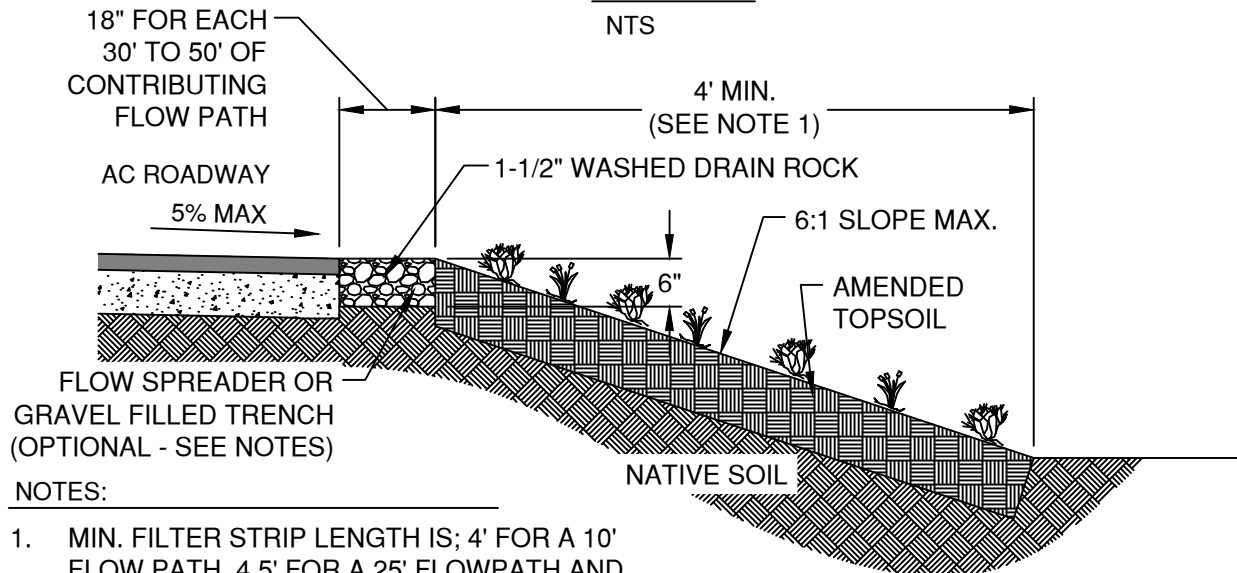
APPR

STD DWG STRM-5



PLAN VIEW

NTS



SECTION A-A

NTS

NOTES:

1. MIN. FILTER STRIP LENGTH IS; 4' FOR A 10' FLOW PATH, 4.5' FOR A 25' FLOWPATH AND 5.5' FOR A 30' FLOWPATH
2. AMENDED TOPSOIL PER SPECIFICATION 01040
3. FLOW SPREADER IS OPTIONAL. IF USED THE GRAVEL MUST BE WIDER THAN DEEP TO AVOID UIC REGULATIONS.

DRAWN AJD  
DIV STORM  
REV DATE



CITY OF BEND

CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

STORMWATER FILTER DETAIL

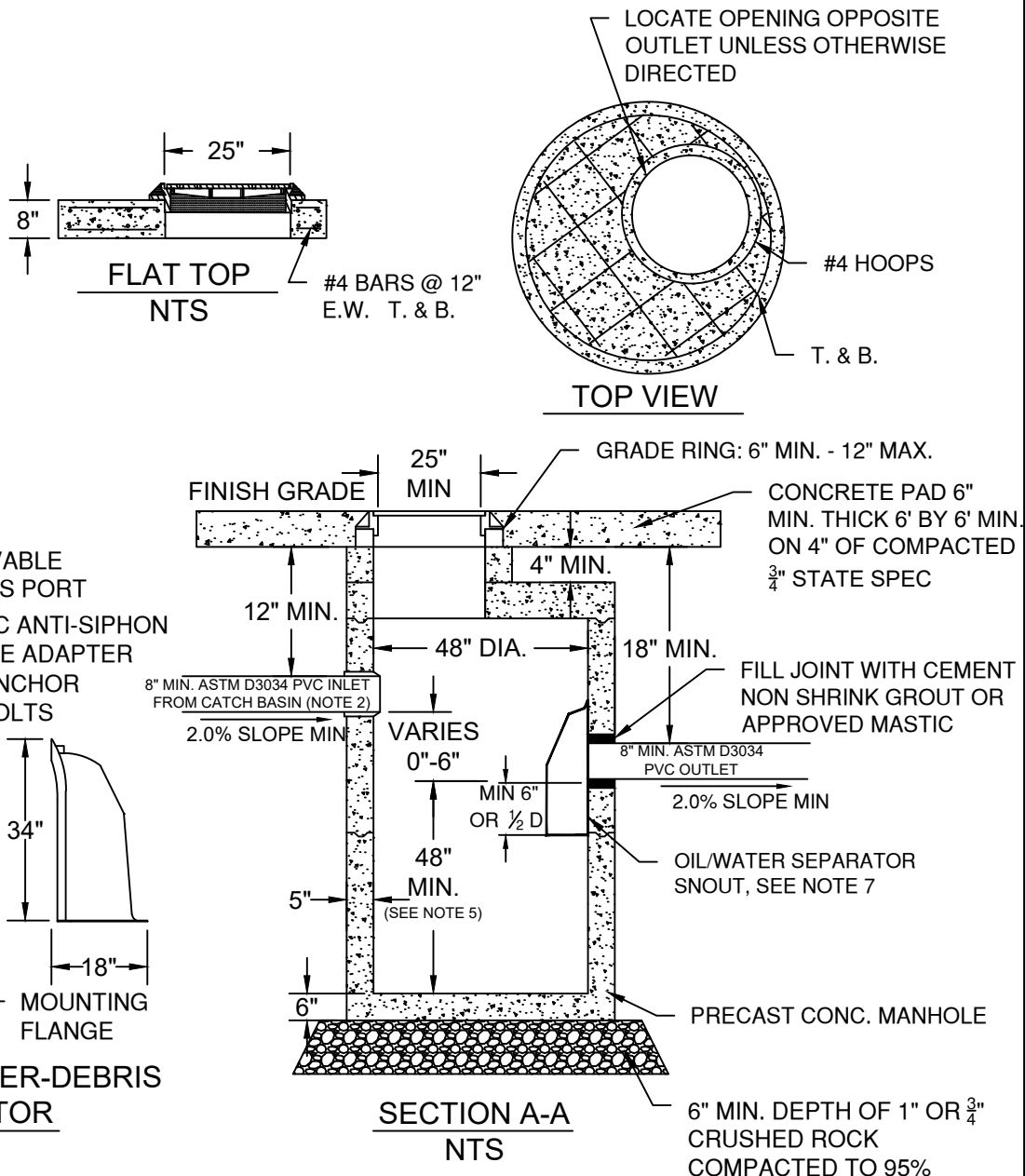
SCALE NTS

DATE 01/31/2022

APPR

STD DWG STRM-6





**NOTES:**

1. ALL PRE-CAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C-478.
2. AWWA C900 PIPE SHALL BE USED WITHIN TRAVEL AREAS. ASTM D3034 PIPE WHERE STORM PIPE WILL BE INSTALLED PER SANITARY SEWER REQUIREMENTS OR OUTSIDE OF TRAVEL AREAS.
3. MANHOLES SHALL BE PLACED OUTSIDE SIDEWALK, APRONS & STREET SURFACES UNLESS APPROVED BY THE CITY ENGINEER.
4. A 3 POINT MECHANICAL ADJUSTMENT SYSTEM SUCH AS RAD'S OR APPROVED EQUAL SHALL BE USED TO ADJUST MANHOLE FRAME AND COVER TO FINISH GRADE.
5. SUMP SIZE TO BE DESIGNED IN ACCORDANCE WITH COSM - 20 CF OF SUMP VOLUME FOR EACH 1.0 CFS DESIGN FLOW - NOT LESS THAN 48" DEPTH.
6. MANHOLES WITH MORE THAN 3 CONNECTIONS, OR PIPES 12" OR LARGER TO BE 60" MANHOLES
7. OIL/WATER SEPARATOR SNOUT BMP 24R, OR APPROVED EQUAL. SECURE TO MANHOLE WITH FIVE (5) 5/8"x1-12" STAINLESS STEEL RED HEAD BOLTS, WASHERS AND NUTS, OR AS APPROVED BY MANUFACTURER.

DRAWN A.JD  
DIV STORM  
REV DATE



**CITY OF BEND**

**CITY OF BEND**

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

**STORMWATER SEDIMENTATION MANHOLE**

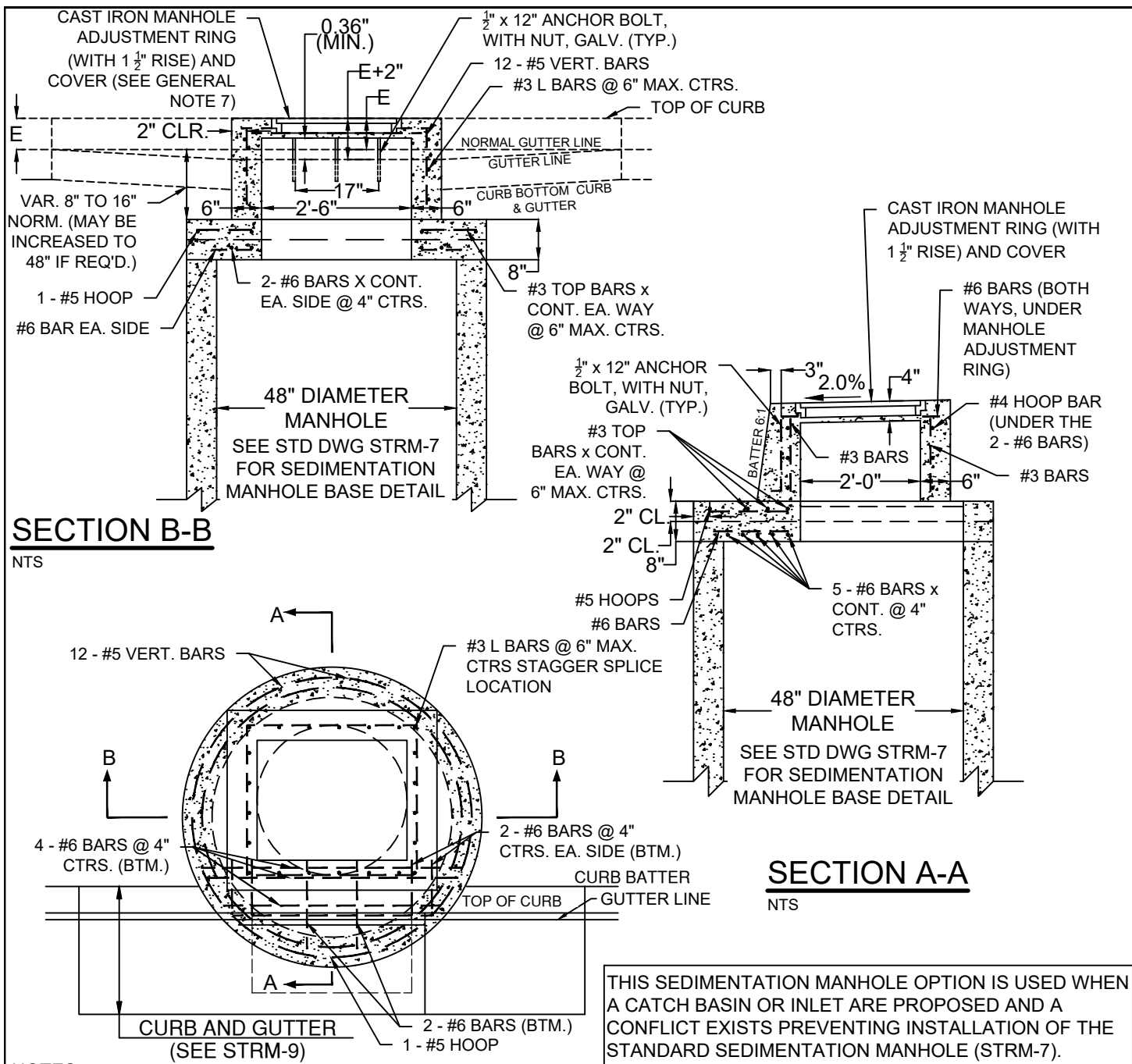
SCALE NTS

DATE 11/01/2024

APPR

STD DWG STRM-7





|       |       |
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| DRAWN | AJD   |
| DIV   | STORM |
| REV   | DATE  |
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**CITY OF BEND**

**CITY OF BEND**

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

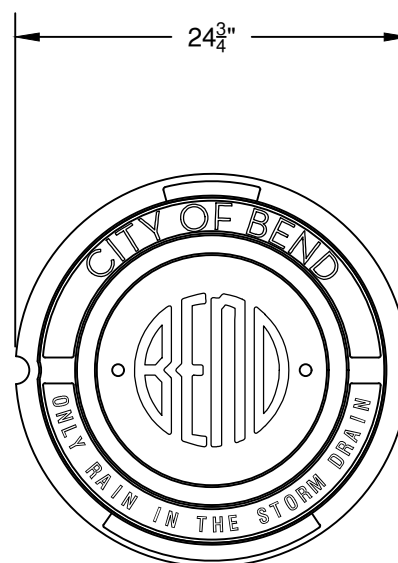
**STORMWATER SEDIMENTATION MANHOLE - ALTERNATE**

SCALE NTS

DATE 11/01/2024

APPR

STD DWG STRM-7A



NTS

24 3/4"

2 1/2"

2"

3 3/4"

3/4"

3/4"

1"

7/8"

1 1/4"

3/4"

6"

2"

1 1/2"

25"

23"

7/8"

1"

1 1/2"


3"

3 1/4"

6"

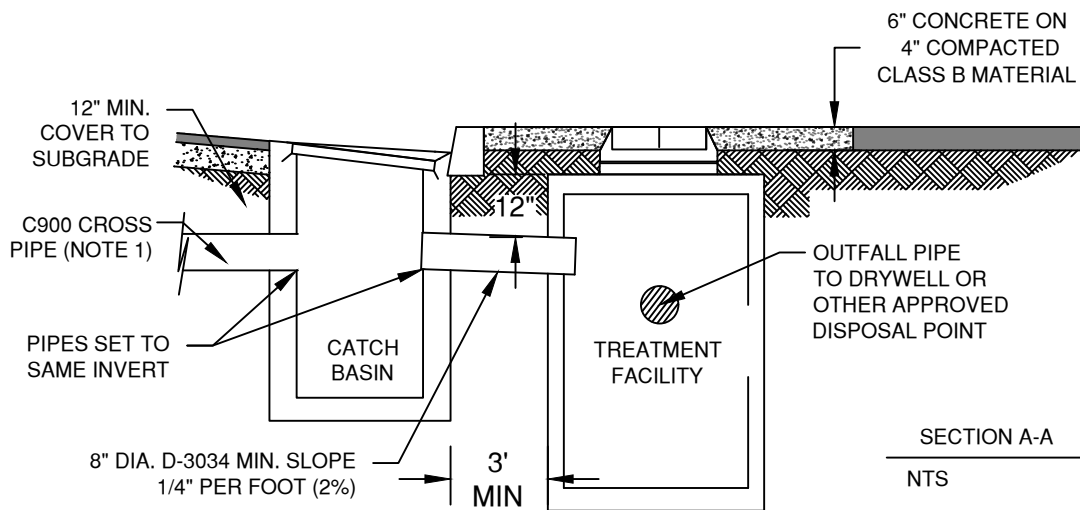
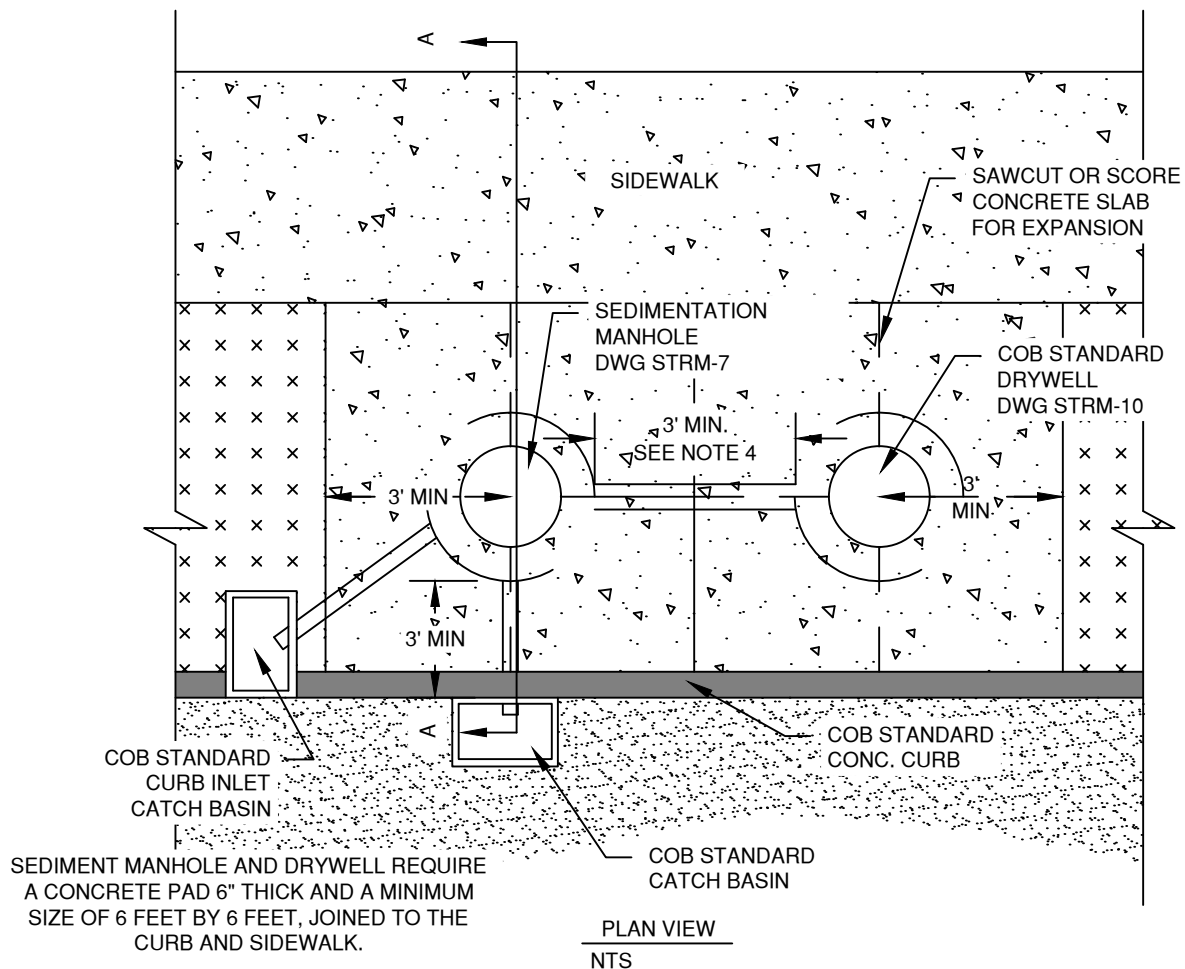
3/4"

1. MANHOLE LID ONLY TO BE USED ON CITY OF BEND PUBLIC DRYWELLS AND SEDIMENTATION MANHOLES. PRIVATELY OWNED DRYWELLS AND SEDIMENT MANHOLES SHALL NOT USE A CITY OF BEND MANHOLE LID.
2. HINGED MANHOLE LIDS ARE NOT PERMITTED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
3. ALL MANHOLE LIDS SHALL BE PLACED OUTSIDE THE PATH OF TRAVEL OF SIDEWALKS AND DRIVEWAY APRONS.

|           |      |   |   |                 |
|-----------|------|---|---|-----------------|
| DRAWN AJD |      |  | <p align="center">CITY OF BEND</p> <p align="center">STANDARD DRAWING</p> <p align="center">710 NW WALL ST., BEND, OREGON 97701</p> | SCALE NTS       |
| DIV STORM |      |   |   | DATE 01/31/2022 |
| REV       | DATE |   |   | APPR            |
|           |      | CITY OF BEND  | STORMWATER MANHOLE LID DETAIL   | STD DWG STRM-8  |

STD DWG STRM-9





NOTES:

1. CROSS PIPE ELEV MAY REQUIRE OTHER UTILITIES (SEWER, WATER, ETC) TO BE LOWERED TO PROVIDE MINIMUM SEPARATIONS
2. ALL PIPE PENETRATIONS ARE TO BE GROUTED OR WATER TIGHT SEALED.
3. DRYWELL AND TREATMENT FACILITY NOT TO BE PLACED IN DRIVEWAY OR SIDEWALK UNLESS APPROVED BY THE CITY ENGINEER.
4. WHEN DRY UTILITIES WILL BE INSTALLED BETWEEN STRUCTURES, PROVIDE MINIMUM 5' SEPARATION.

DRAWN AJD  
DIV STORM  
REV DATE



CITY OF BEND

CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

DRYWELL W/ MANUFACTURED TREATMENT LAYOUT

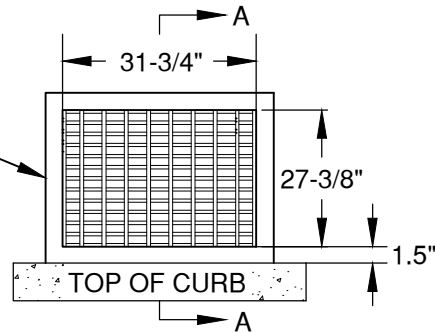
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DATE 01/31/2022

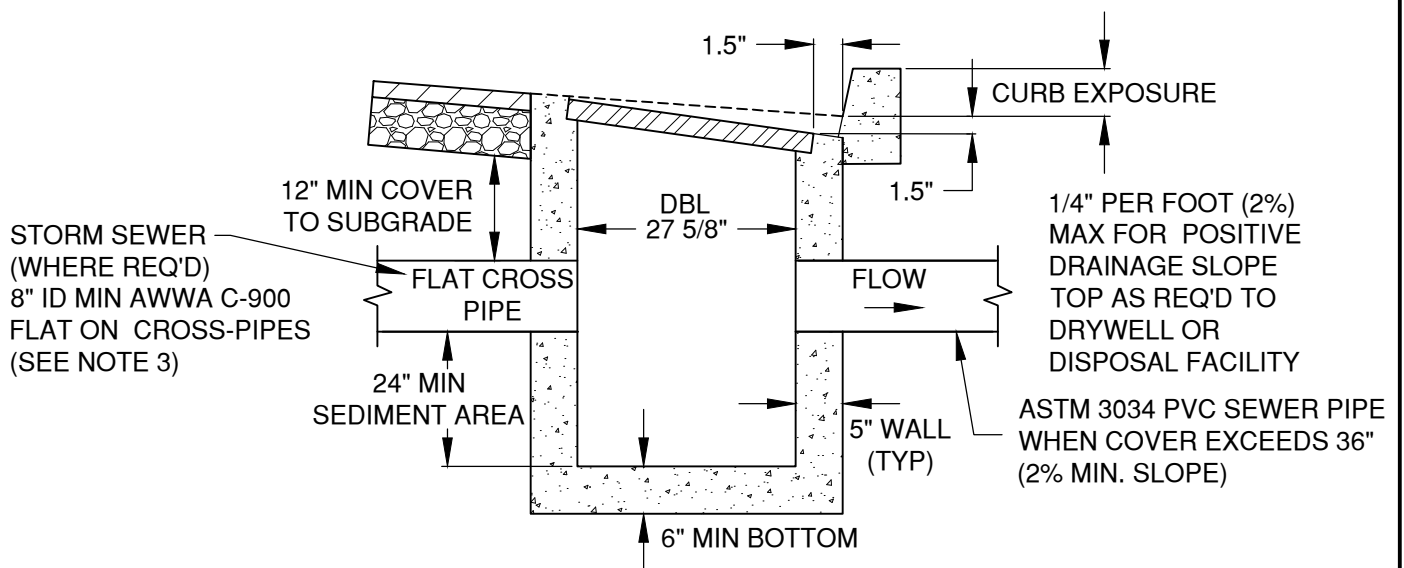
APPR

STD DWG STRM-11

DETAIL SHOWING  
GRATE ORIENTATION  
TO CURB LINE. SEE  
STD DWG STRM-13A  
FOR GRATE DETAIL



**PLAN VIEW**



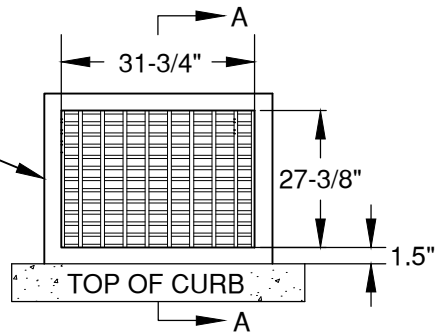
**SECTION A-A**

**NOTES:**

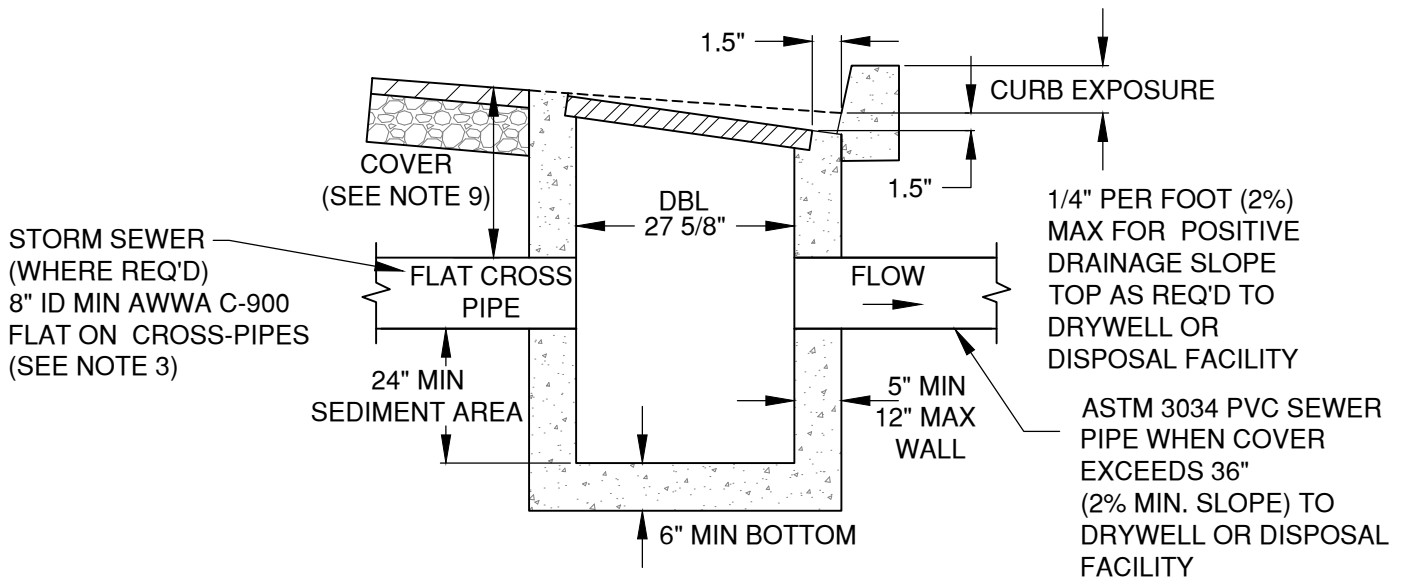
1. UNLESS OTHERWISE SPECIFIED, ALL CATCH BASINS TO BE DOUBLE CATCH BASIN
2. BACKFILL TO BE COMPACTED TO 95% OF OPTIMUM PER SPECIFICATION SECTION 00330.43
3. CROSS PIPE ELEV MAY REQUIRE OTHER UTILITIES (SEWER, WATER, ETC) TO BE LOWERED TO PROVIDE MINIMUM SEPARATIONS
4. ALL PIPE CONNECTIONS TO BE GROUTED PER SPECIFICATION SECTION 00470.40
5. CONTRACTOR IS RESPONSIBLE TO KEEP CATCH BASIN CLEAN AND FREE OF SEDIMENT DURING CONSTRUCTION
6. CONTRACTOR IS RESPONSIBLE TO COVER AND BARRICADE ALL CATCH BASINS UNTIL GRATE IS INSTALLED
7. STANDARD CATCH BASINS ARE LIMITED TO LOCAL STREETS AND SHALL NOT BE USED ON ARTERIAL & COLLECTOR ROADWAYS. CURB INLETS ARE TO BE USED ON ARTERIAL & COLLECTOR ROADWAYS.
8. SEE DRG R-11 FOR PAVEMENT RESURFACING

|       |       |   |         |            |
|-------|-------|---|---------|------------|
| DRAWN | AJD   | CITY OF BEND<br>STANDARD DRAWING<br>710 NW WALL ST., BEND, OREGON 97701 | SCALE   | NTS        |
| DIV   | STORM |   | DATE    | 03/22/2023 |
| REV   | DATE  |   | APPR    |            |
|       |       | STANDARD CATCH BASIN  | STD DWG | STRM-12    |

DETAIL SHOWING  
GRATE ORIENTATION  
TO CURB LINE. SEE  
STD DWG STRM-13A  
FOR GRATE DETAIL



**PLAN VIEW**



**SECTION A-A**

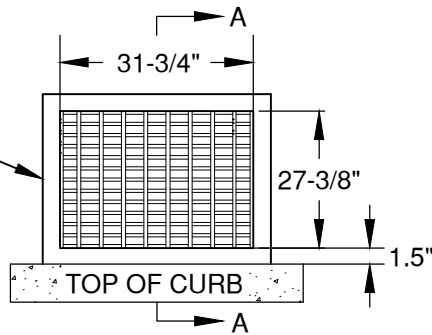
**NOTES:**

1. UNLESS OTHERWISE SPECIFIED, ALL CATCH BASINS TO BE DOUBLE CATCH BASIN
2. BACKFILL TO BE COMPACTED TO 95% OF OPTIMUM PER SPECIFICATION SECTION 00330.43
3. CROSS PIPE ELEVATE MAY REQUIRE OTHER UTILITIES (SEWER, WATER, ETC) TO BE LOWERED TO PROVIDE MINIMUM SEPARATIONS.
4. ALL PIPE CONNECTIONS TO BE GROUTED PER SPECIFICATION SECTION 00470.40. GROUT SHOULD BE LEVELED TO ALIGN FLUSH WITH THE INTERIOR WALL WITH NO EXTENSION OF GROUT ONTO THE INTERNAL SURFACE AREA OF THE CATCH BASIN.
5. CONTRACTOR IS RESPONSIBLE TO KEEP CATCH BASIN CLEAN AND FREE OF SEDIMENT DURING CONSTRUCTION
6. CONTRACTOR IS RESPONSIBLE TO COVER AND BARRICADE ALL CATCH BASINS UNTIL GRATE IS INSTALLED
7. STANDARD CATCH BASINS ARE LIMITED TO LOCAL STREETS AND SHALL NOT BE USED ON ARTERIAL & COLLECTOR ROADWAYS. CURB INLETS ARE TO BE USED ON ARTERIAL & COLLECTOR ROADWAYS.
8. SEE DRG R-11 FOR PAVEMENT RESURFACING
9. ON LOCAL ROADS, PIPE COVER IS TO BE 22-INCH FROM FINISHED GRADE TO TOP OF PIPE. ON COLLECTORS AND ARTERIAL STREET SECTIONS (STD DWG R-1), MAINTAIN MIN COVER OF 24-INCHES FROM GUTTER FINISHED GRADE.

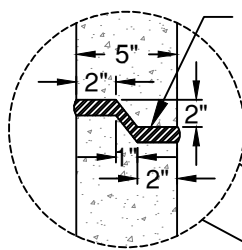
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| DRAWN AJD |      | CITY OF BEND                        | SCALE NTS        |
| DIV STORM |      | STANDARD DRAWING                    | DATE 11/01/2024  |
| REV       | DATE | 710 NW WALL ST., BEND, OREGON 97701 | APPR             |
|           |      | STANDARD CATCH BASIN                | STD DWG STRM-12A |



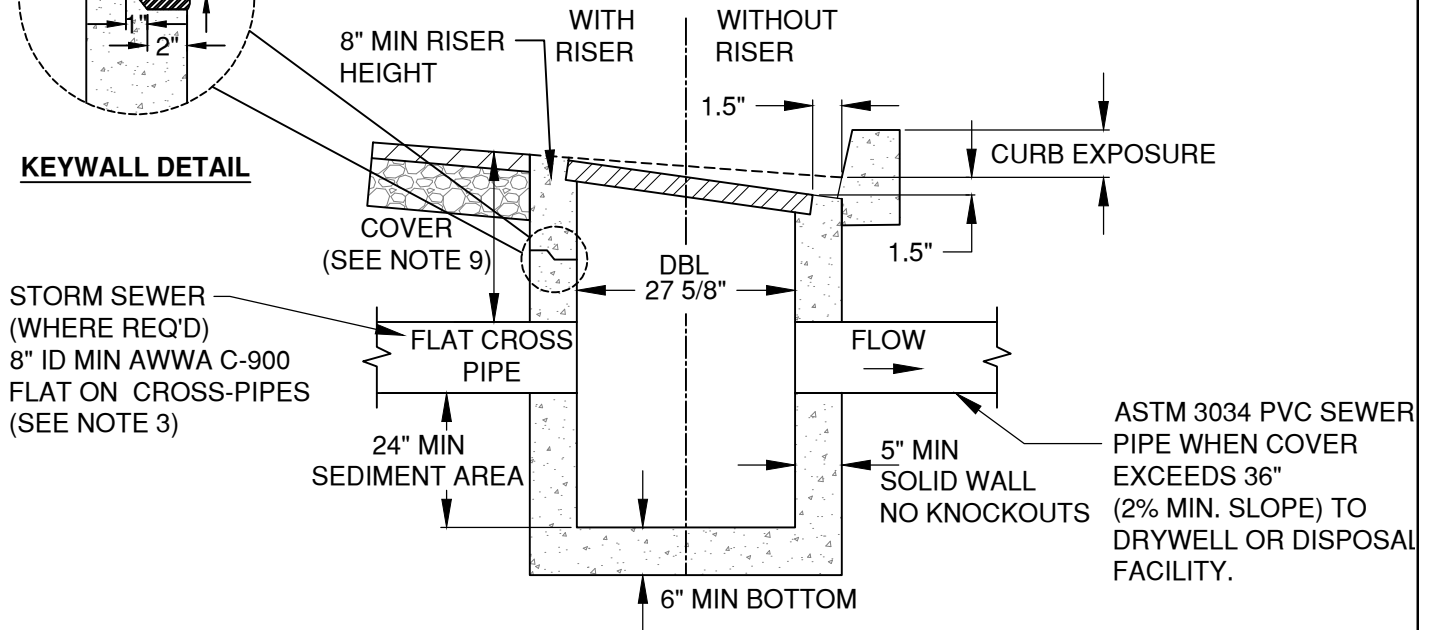
DETAIL SHOWING  
GRATE ORIENTATION  
TO CURB LINE. SEE  
STD DWG STRM-13A  
FOR GRATE DETAIL



**PLAN VIEW**



**KEYWALL DETAIL**

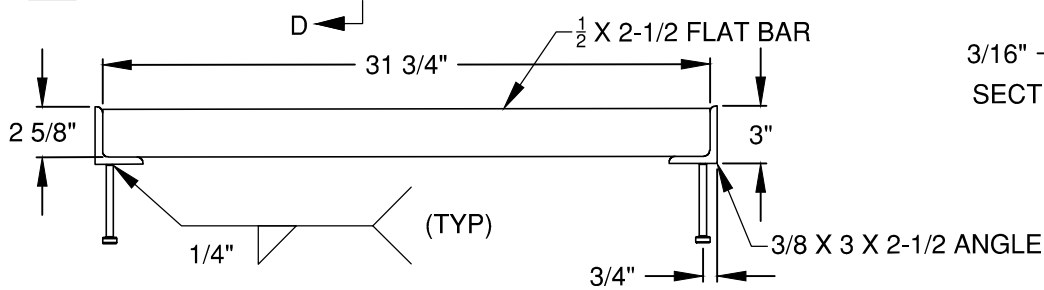
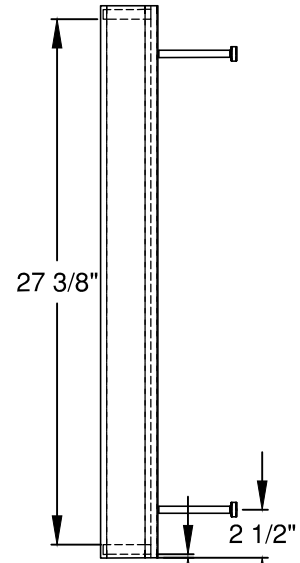
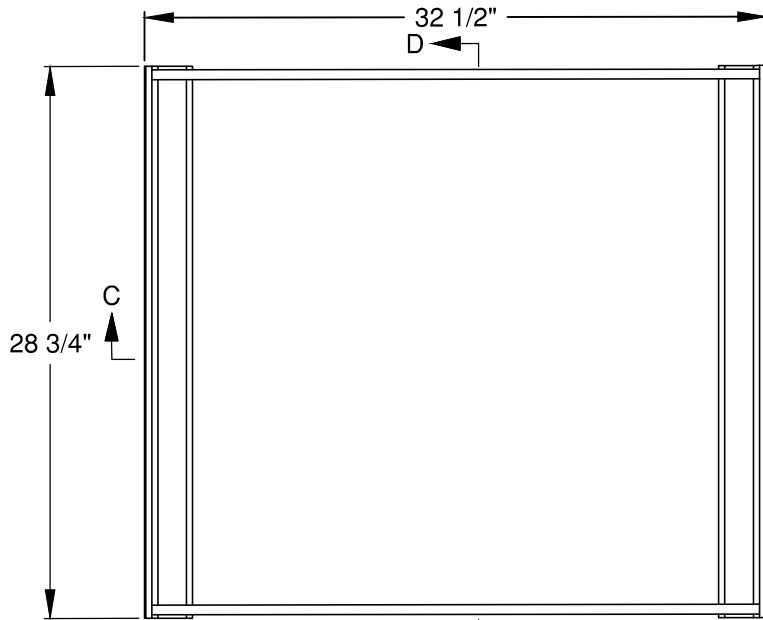


**SECTION A-A**

**NOTES:**

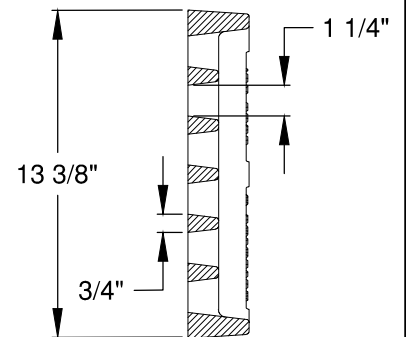
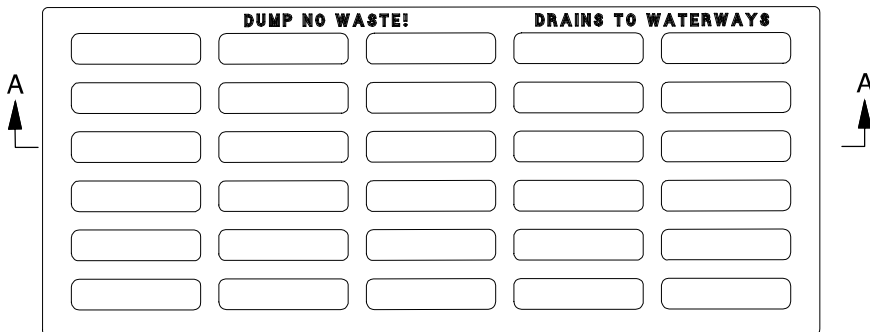
1. UNLESS OTHERWISE SPECIFIED, ALL CATCH BASINS TO BE DOUBLE CATCH BASIN
2. BACKFILL TO BE COMPACTED TO 95% OF OPTIMUM PER SPECIFICATION SECTION 00330.43
3. CROSS PIPE ELEVATE MAY REQUIRE OTHER UTILITIES (SEWER, WATER, ETC) TO BE LOWERED TO PROVIDE MINIMUM SEPARATIONS.
4. CONTRACTOR IS RESPONSIBLE TO KEEP CATCH BASIN CLEAN AND FREE OF SEDIMENT DURING CONSTRUCTION
5. CONTRACTOR IS RESPONSIBLE TO COVER AND BARRICADE ALL CATCH BASINS UNTIL GRATE IS INSTALLED
6. STANDARD CATCH BASINS ARE LIMITED TO LOCAL STREETS AND SHALL NOT BE USED ON ARTERIAL & COLLECTOR ROADWAYS. CURB INLETS ARE TO BE USED ON ARTERIAL & COLLECTOR ROADWAYS.
7. SEE DRG R-11 FOR PAVEMENT RESURFACING.
8. PRE-CAST BASINS SHALL NOT CONTAIN KNOCKOUTS. SAW-CUT OR CORE DRILL ALL PIPE PENETRATIONS AND GROUT PER SPECIFICATION SECTION 00470.40. GROUT SHOULD BE LEVELLED TO ALIGN FLUSH WITH THE INTERIOR WALL WITH NO EXTENSION OF GROUT ONTO THE INTERNAL SURFACE AREA OF THE CATCH BASIN.
9. ON LOCAL ROADS, PIPE COVER IS TO BE 22-INCH FROM FINISHED GRADE TO TOP OF PIPE. ON COLLECTORS AND ARTERIAL STREET SECTIONS (STD DWG R-1), MAINTAIN MIN COVER OF 24-INCHES FROM GUTTER FINISHED GRADE.

|            |  |   |                  |
|------------|--|---|------------------|
| DRAWN C.JH |  | CITY OF BEND<br>STANDARD DRAWING<br>710 NW WALL ST., BEND, OREGON 97701 | SCALE NTS        |
| DIV STORM  |  |   | DATE 11/01/2024  |
| REV DATE   |  |   | APPR             |
|            |  | STANDARD CATCH BASIN (PRE-CAST)   | STD DWG STRM-12B |

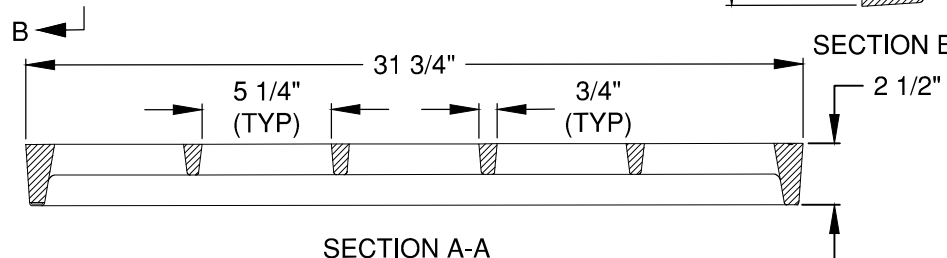


SECTION C-C

### STEEL FRAME



SECTION B-B



SECTION A-A

### DUCTILE IRON GRATE

DRAWN AJD  
DIV STORM  
REV DATE



CITY OF BEND

CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

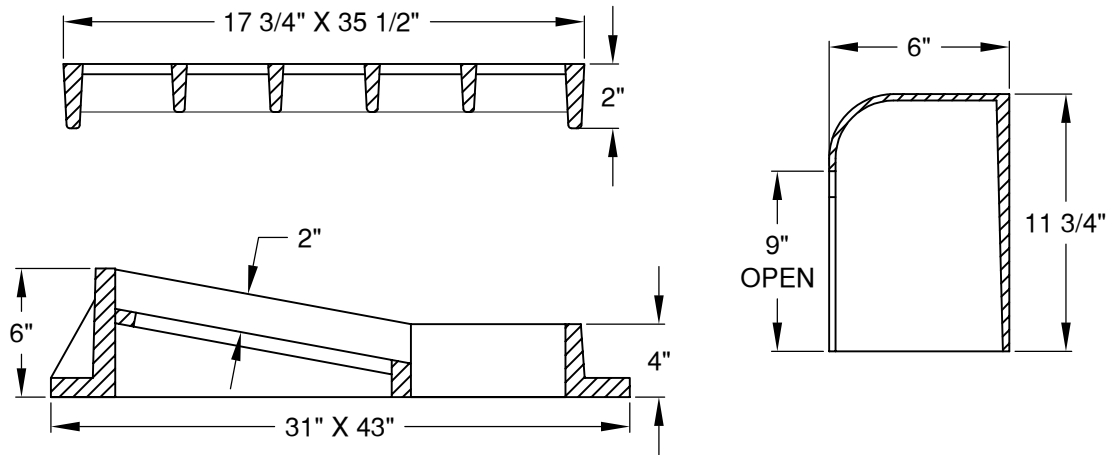
STORMWATER GRATE

SCALE NTS

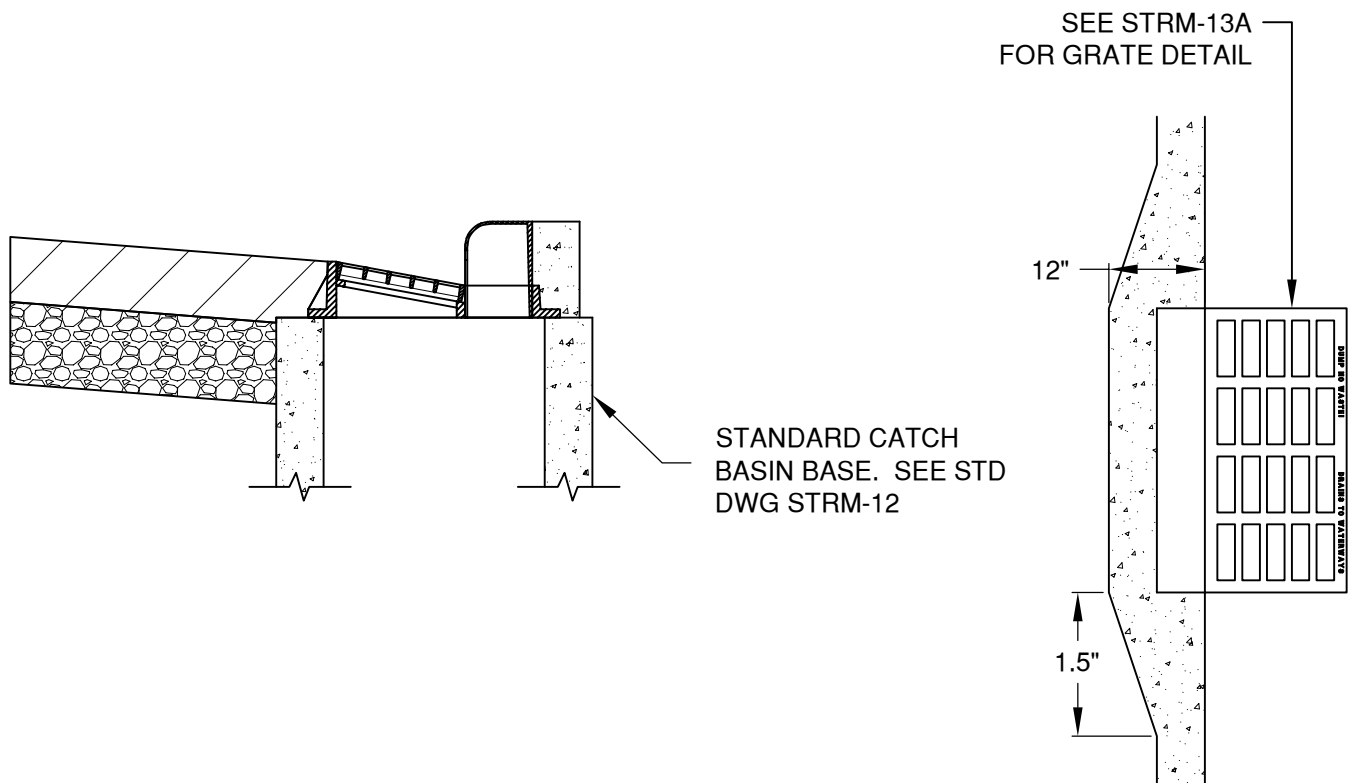
DATE 01/31/2022

APPR

STD DWG STRM-13A




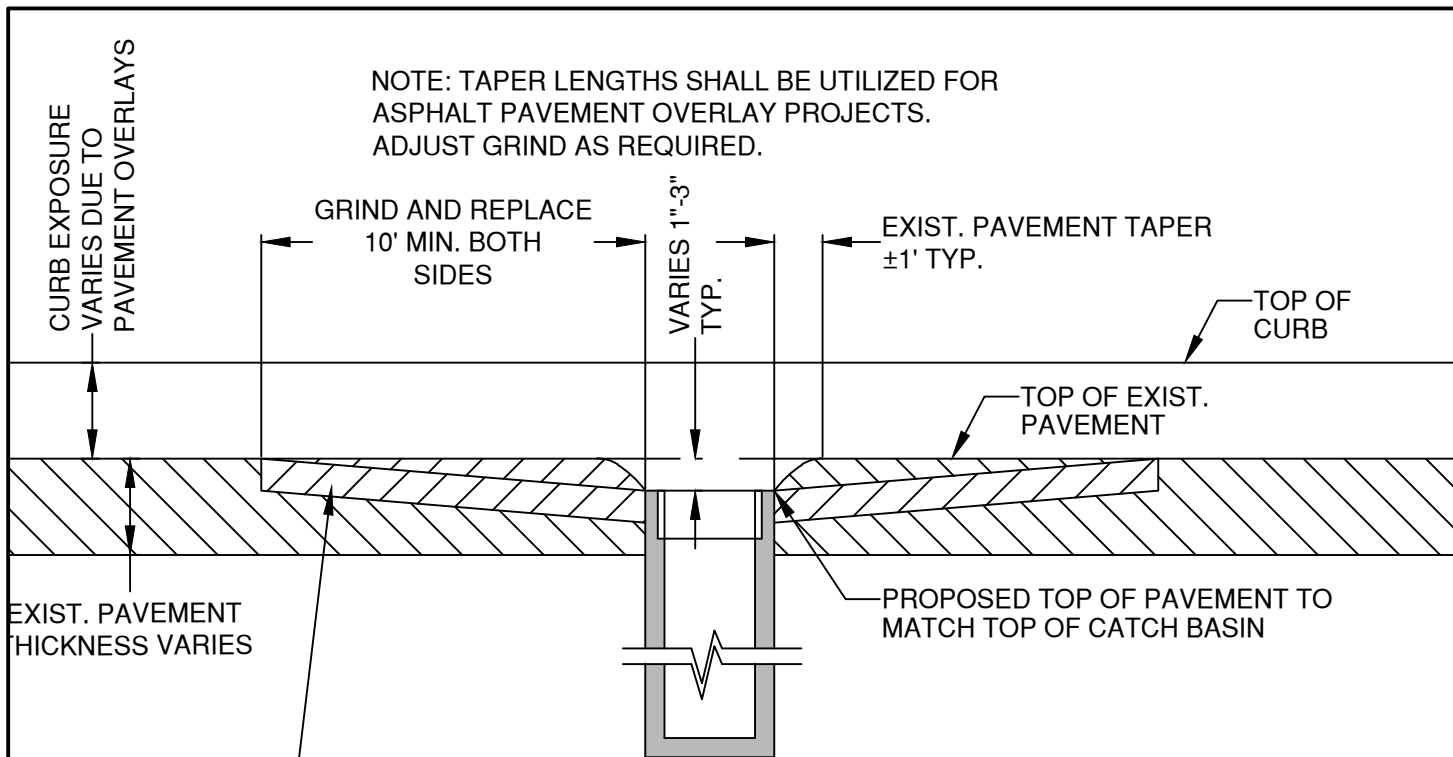
## CAST IRON COMBINATION CATCH BASIN INLET



### NOTES:

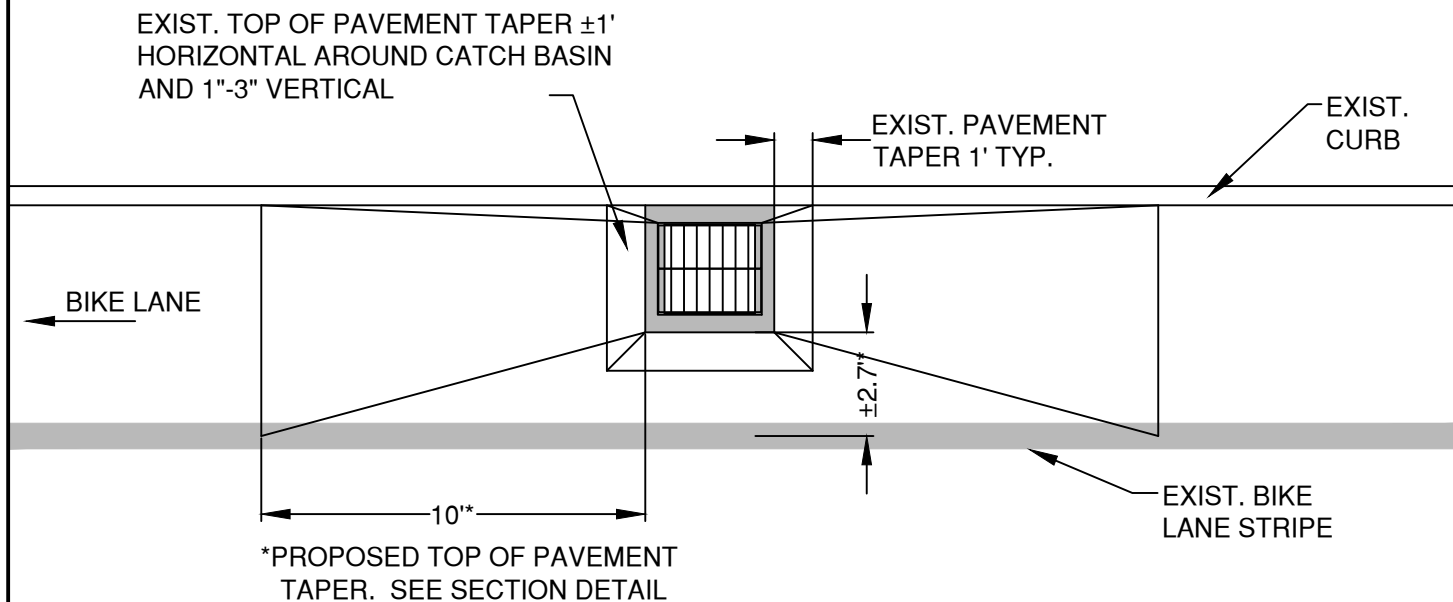
1. SEE NOTES ON STD DWG STRM-12
2. COMBINATION CATCH BASIN INLET TO BE USED ON COLLECTOR AND LOCAL STREETS WHEN THE ROAD GRADE EXCEED 6%

|                                      |   |   |                  |
|--------------------------------------|---|---|------------------|
| DRAWN AJD                            |  | <b>CITY OF BEND</b><br>STANDARD DRAWING | SCALE NTS        |
| DIV STORM                            |   |   | DATE 11/01/2024  |
| REV DATE                             |   | 710 NW WALL ST., BEND, OREGON 97701     | APPR             |
|                                      | CITY OF BEND  |   | STD DWG STRM-13B |
| <b>COMBINATION CATCH BASIN INLET</b> |   |   |                  |



## SECTION VIEW

SCALE:  
HORIZONTAL: 1"=5'  
VERTICAL: 1"=1'



## PLAN VIEW

SCALE:  
HORIZONTAL: 1"=5'

|       |       |
|-------|-------|
| DRAWN | LJC   |
| DIV   | STORM |
| REV   | DATE  |



CITY OF BEND

## CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

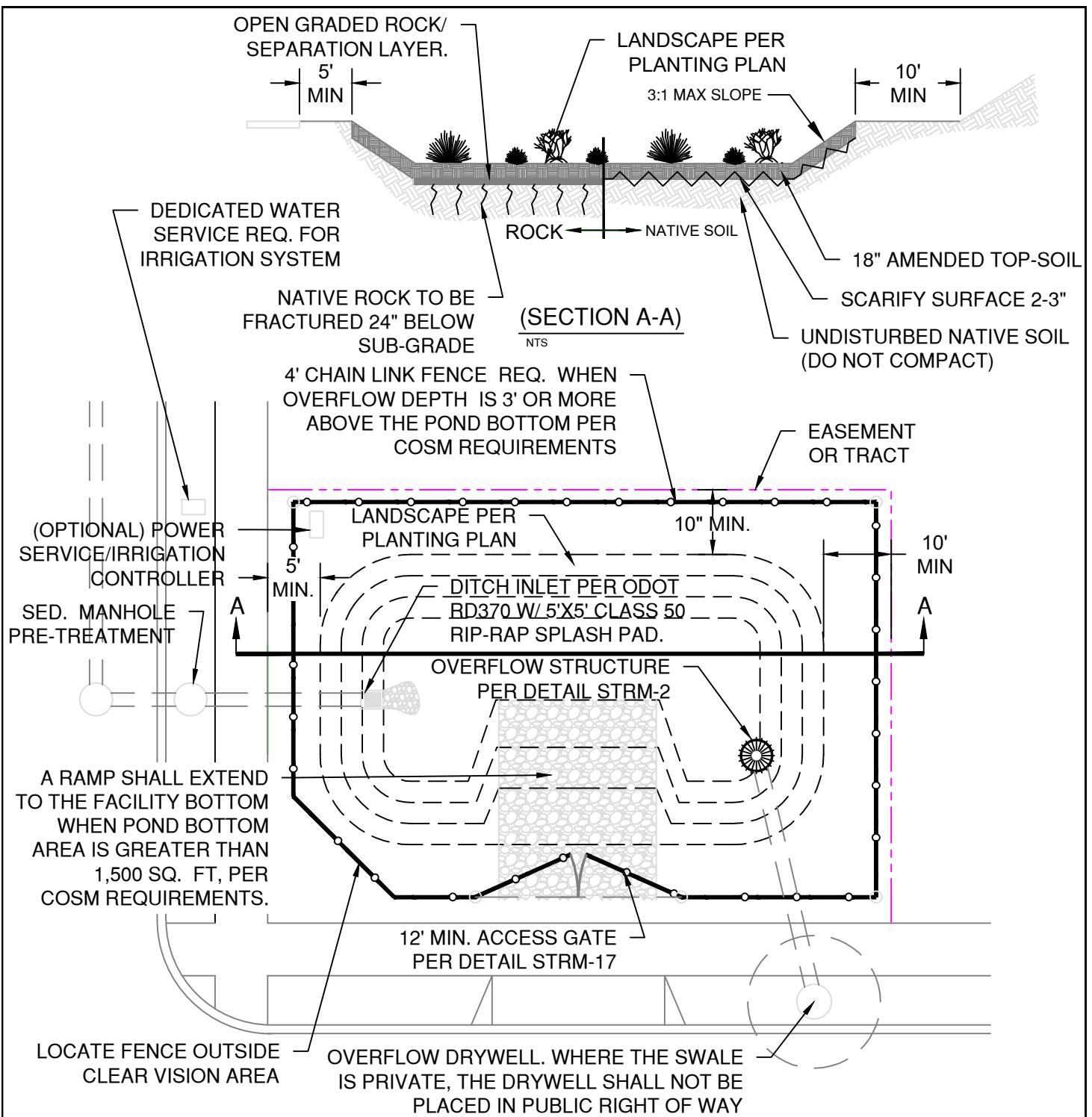
## EXISTING CATCH BASIN PAVEMENT RESURFACING

SCALE NTS

DATE 3/31/19

APPR

STD DWG STRM-14



### EXTENDED DETENTION DRY POND (PLAN VIEW)

NTS

#### NOTE:

THE WATER QUALITY TREATMENT STORM SHOULD DRAIN WITHIN 48 HOURS. IF ADDITIONAL STORAGE IS INCLUDED IN THE POND FOR LARGER STORM EVENTS, THE TOTAL FACILITY SHOULD DRAIN WITHIN 72 HOURS FOLLOWING THE PEAK DESIGN STORM EVENT.

DRAWN CJH

DIV STORM

REV DATE



CITY OF BEND

CITY OF BEND

STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

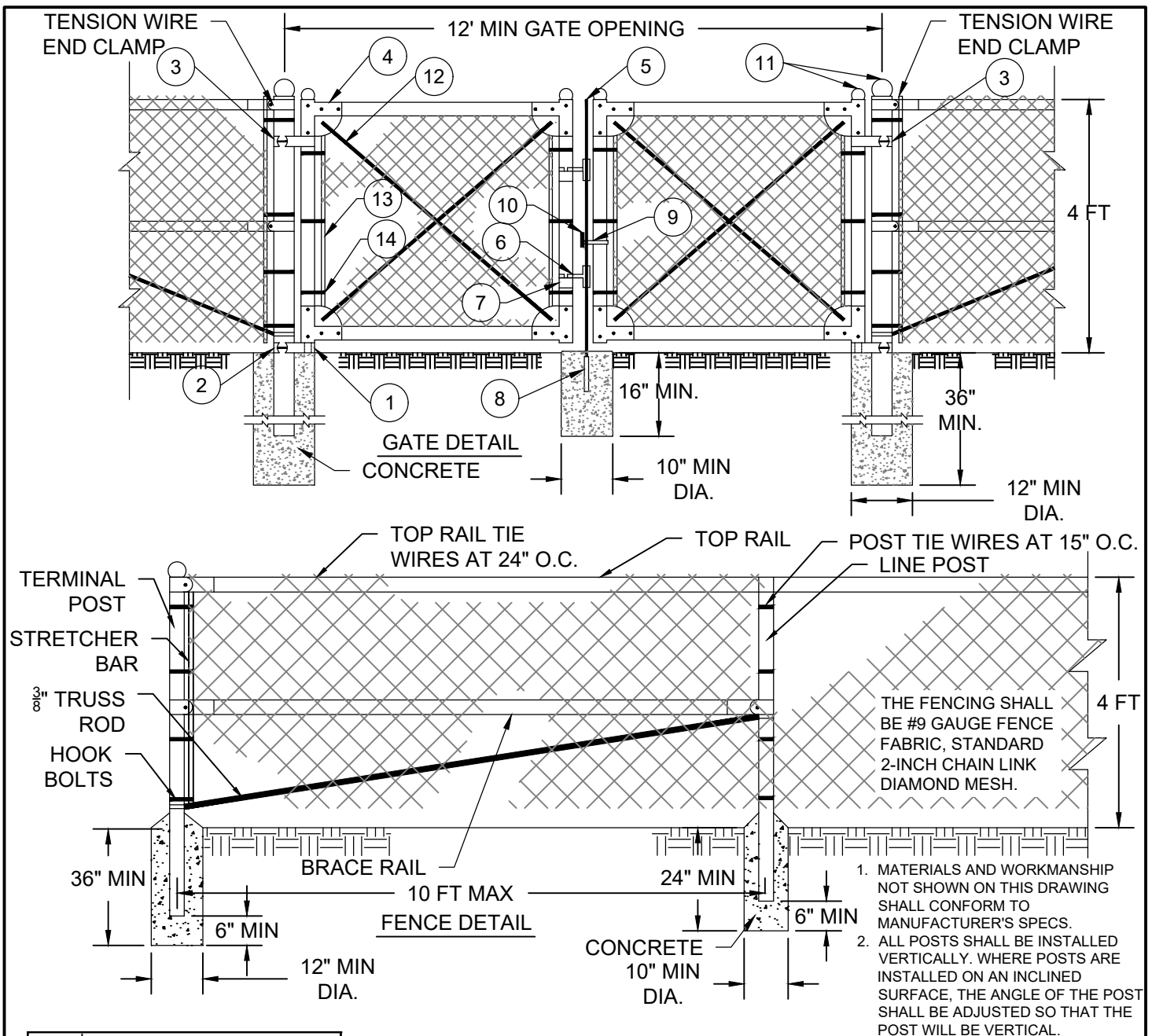
INFILTRATION POND DETAIL

SCALE NTS

DATE 1/2021

APPR

STD DWG STRM-16



| PART NO. | DESCRIPTION              |
|----------|--------------------------|
| 1        | STRAIGHT PLUG            |
| 2        | BOTTOM HINGE             |
| 3        | TOP HINGE                |
| 4        | CORNER ELBOW             |
| 5        | PLUNGER ROD              |
| 6        | LATCH FORK               |
| 7        | FORK CATCH               |
| 8        | PLUNGER ROD CATCH        |
| 9        | LOCK KEEPER GUIDE        |
| 10       | LOCK KEEPER W/ CITY LOCK |
| 11       | ORNAMENTAL TOPS          |
| 12       | TRUSS RODS               |
| 13       | STRETCHER BAR            |
| 14       | HOOK BOLTS               |

| GATE FRAME MEMBERS SIZE & WEIGHT |                           |               |  |
|----------------------------------|---------------------------|---------------|--|
| GATE LEAF WIDTH OF 6 FT OR LESS  | OUTSIDE DIMENSIONS INCHES | WEIGHT LBS/FT |  |
| ROUND                            | 1.66                      | 2.27          |  |
| *ROUND                           | 1.66                      | 1.84          |  |
| * GRADE B HIGH STRENGTH STEEL    |                           |               |  |

| GATE POST SIZE AND WEIGHT       |                           |               |  |
|---------------------------------|---------------------------|---------------|--|
| GATE LEAF WIDTH OF 6 FT OR LESS | OUTSIDE DIMENSIONS INCHES | WEIGHT LBS/FT |  |
| ROUND                           | 2.875                     | 5.79          |  |
| *ROUND                          | 2.875                     | 4.64          |  |
| * GRADE B HIGH STRENGTH STEEL   |                           |               |  |

| SHAPE, SIZE AND WEIGHT REQUIREMENTS FOR FENCE POSTS AND RAILS              |        |                           |                |
|--|--------|---------------------------|----------------|
| ITEM   | SHAPE  | OUTSIDE DIMENSIONS INCHES | WEIGHT LBS/FT. |
| **   |        |                           |                |
| TERMINAL POST  | ROUND  | 2.375                     | 3.65           |
| LINE POSTS   | *ROUND | 2.375                     | 3.12           |
|  | ROUND  | 1.90                      | 2.72           |
|  | *ROUND | 1.90                      | 2.28           |
| TOP & BRACE RAILS  | ROUND  | 1.66                      | 2.27           |
|  | *ROUND | 1.66                      | 1.84           |
| * GRADE B HIGH STRENGTH STEEL  |        |                           |                |
| ** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS |        |                           |                |

DRAWN A.J.D.

DIV STORM

REV DATE



CITY OF BEND

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STANDARD DRAWING

710 NW WALL ST., BEND, OREGON 97701

CHAINLINK FENCE DETAIL

SCALE NTS

DATE 01/31/2022

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