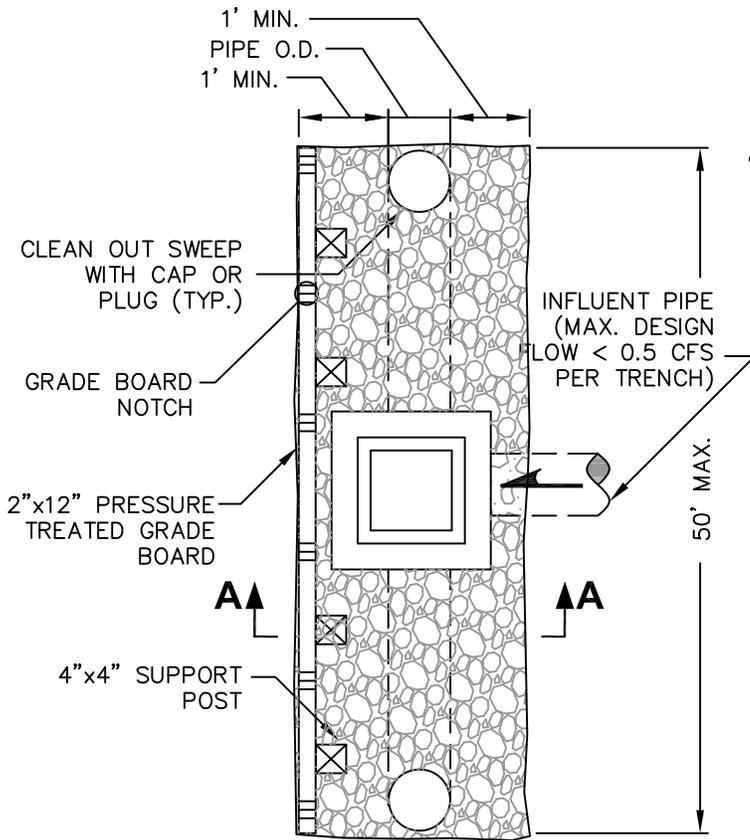


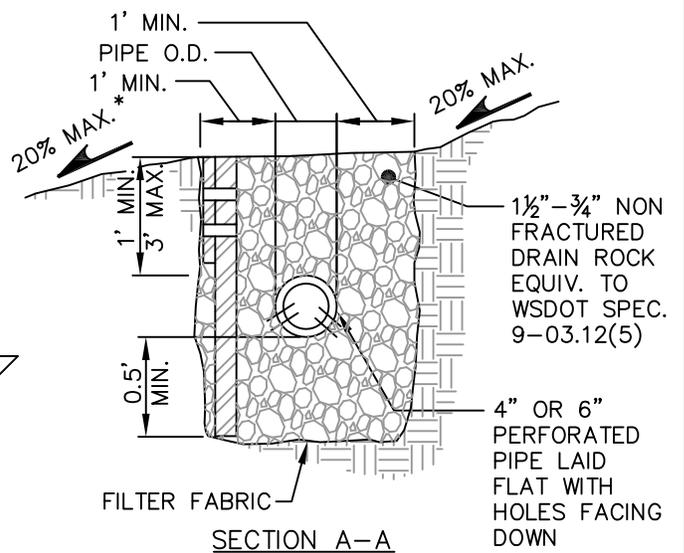
SECTION A

QUANTITY DESIGN DETAILS

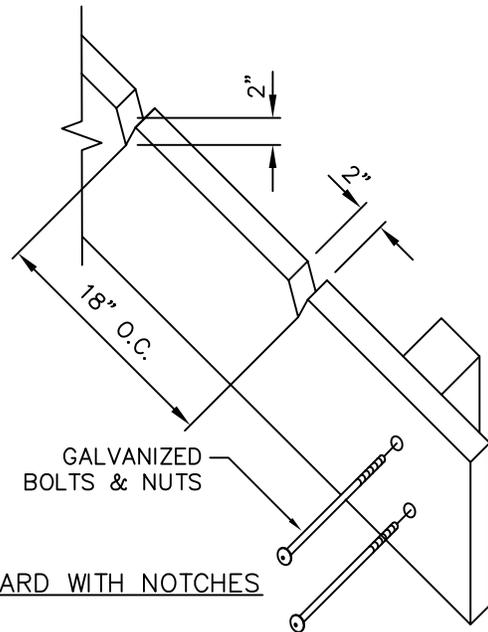
<u>DETAIL</u>	<u>HEADING</u>
1.0	Flow Dispersion Trench
2.0	Grass Buffer Infiltration Trench Schematic
3.0	Stormwater Infiltration Trench Section
4.0	Parking Lot Perimeter Trench Schematic
5.0	Infiltration Pond Schematic
6.0	Quarry Spall and Gravel Filter Window
7.0	Emergency Overflow Spillway
8.0	Rock Outfall (Culvert Discharge Protection)
9.0	Gabion Outfall
10.0	Grate Detail for Steep Slopes
11.0	Infiltration Trench Sump Structure (Commercial)
11.1	Residential Roof Downspout System
12.0	Control Structure
12.1	Oil Pollution Control Device
13.0	Orifices – Baffle
14.0	Standard Pierce County Drywell Detail
15.0	Observation Well
16.0	Overflow Structure with Debris Cage
17.0	Debris Barrier 1 & 2
17.1	Debris Barrier 3
18.0	Solid Locking Lid – Pierce County
19.0	Typical Detention Tank (dry/wet)
19.1	Typical Detention Vault (dry/wet)
19.2	Detention Tank/Vault Access Details
20.0	Pipe Anchor Details
21.0	Detention Pond Accesses Schematic
22.0	Catch Basin Stencil
23.0	Drywell and Trench Details
24.0	Chain Link Fence Type 1 (modified)
25.0	Crest Gage



TYPE 1 CB W/ SOLID COVER (LOCKING)
PLAN



SECTION A-A



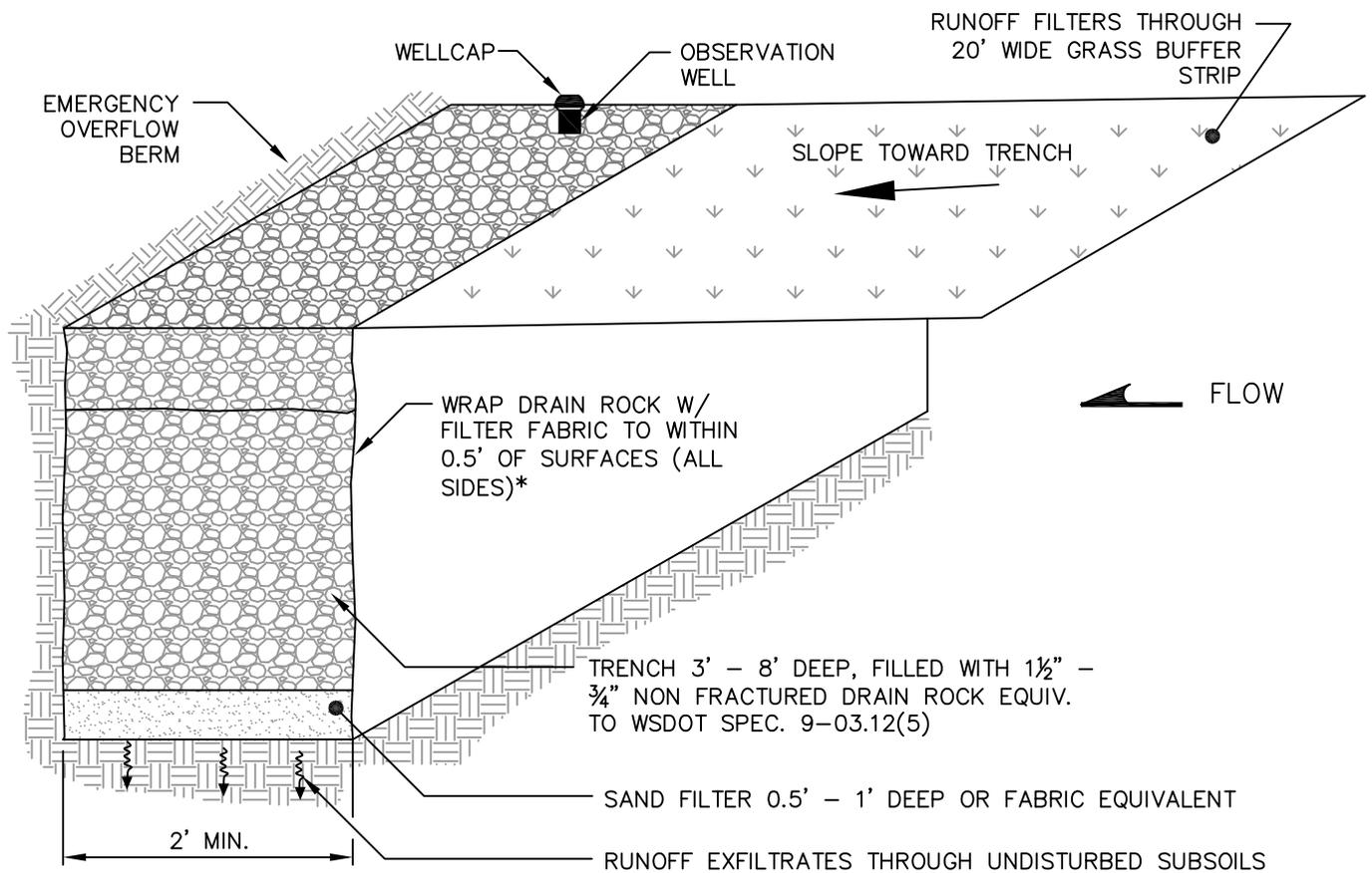
GRADE BOARD WITH NOTCHES

* 15% MAX. FOR FLOW CONTROL / WATER QUALITY TREATMENT

NOTES:

1. THIS TRENCH SHALL BE CONSTRUCTED SO AS TO PREVENT POINT DISCHARGE AND/OR EROSION.
2. TRENCHES MAY BE PLACED NO CLOSER THAN 50 FEET TO ONE ANOTHER. (100 FEET ALONG FLOW LINE.)
3. TRENCH AND GRADE BOARD MUST BE LEVEL. ALIGN TO FOLLOW CONTOURS OF SITE.
4. GRADE BOARD SUPPORT POST SPACING AS REQUIRED BY SOIL CONDITIONS.
5. THE END OF EACH PIPE RUN SHALL HAVE AN ACCESSABLE CLEAN OUT SWEEP. PIPE END SHOULD BE VISIBLE OR THE LOCATION STAKED.

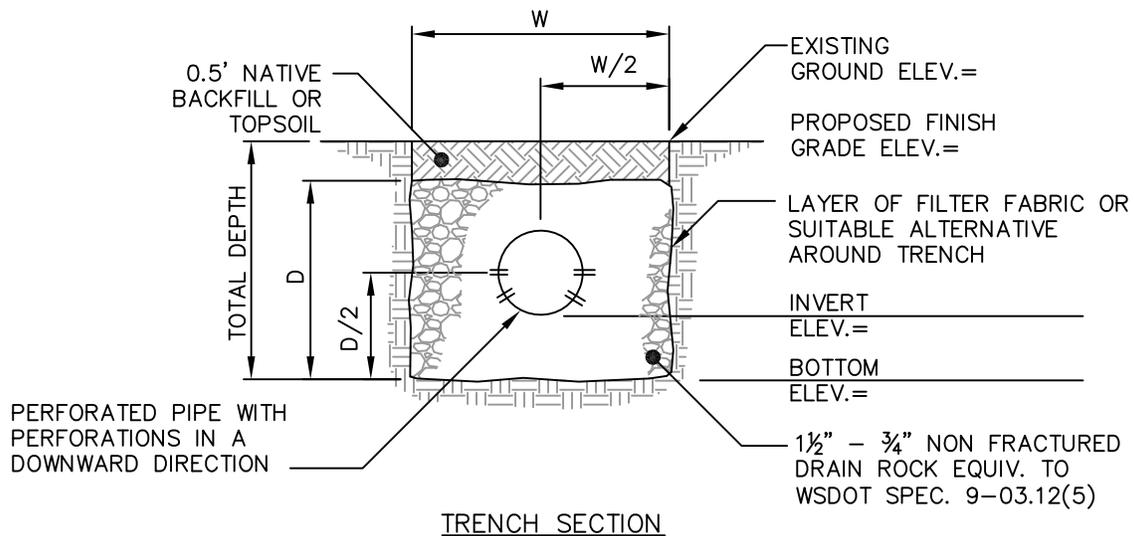
 GIG HARBOR <small>• THE MARINE CITY •</small>	ENGINEERING DIVISION	SECTION A DETAIL N.T.S. 1.0
	FLOW DISPERSION TRENCH	
APPROVED BY CITY ENGINEER <i>[Signature]</i>	DATE 1/1/13	



***NOTE:**

FILTER FABRIC NOT REQUIRED ON
BOTTOM IF 0.5' - 1' OF SAND IS USED.

	ENGINEERING DIVISION	SECTION A DETAIL N.T.S. 2.0
	GRASS BUFFER INFILTRATION TRENCH SCHEMATIC	
APPROVED BY CITY ENGINEER <i>hsh</i>	DATE	1/1/2014

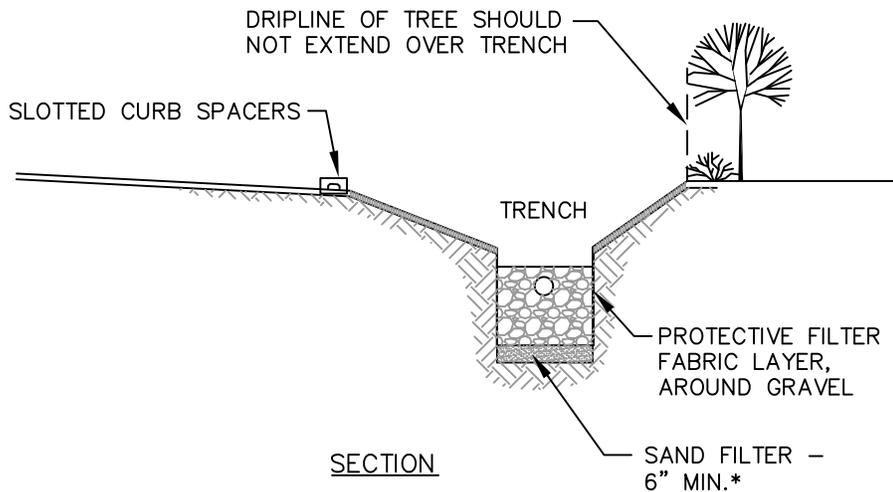
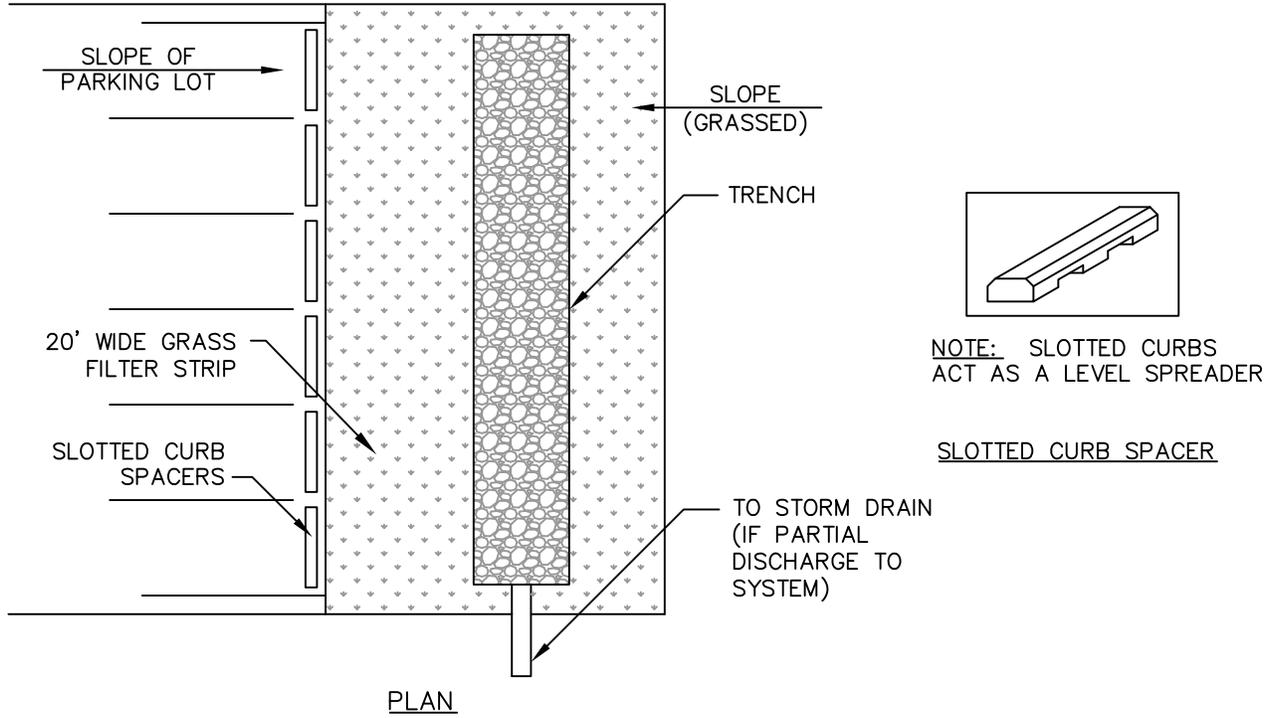


NOTE:

PERFORATED CONCRETE UNDERDRAIN PIPE MEETING WSDOT SPECIFICATIONS CHAPTER 9-05.2 (2) MAY BE USED WITH THE ADDITIONAL CONDITIONS:

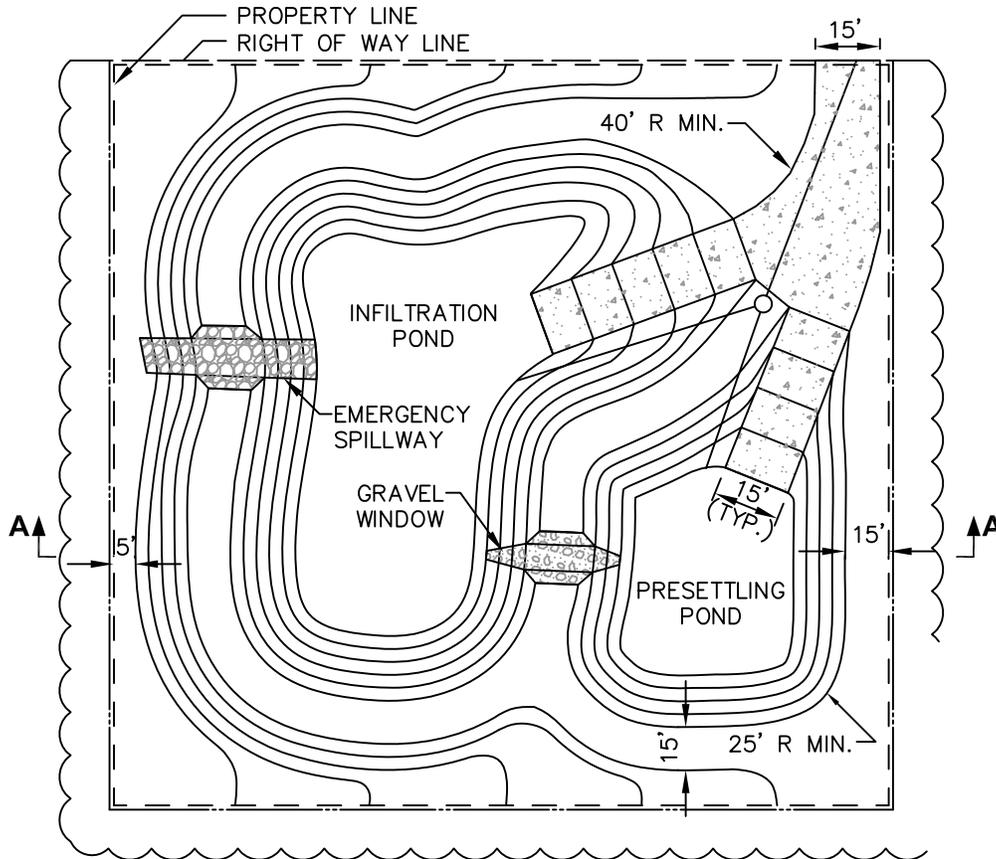
1. THE PERFORATIONS SHALL BE CIRCULAR AND A MINIMUM OF 1/2" DIAMETER.
2. THEY SHALL BE CLEANLY CUT AND BE SMOOTH AND UNIFORM WITH NO EXCESS CONCRETE LEFT FROM THE HOLE PERFORATIONS PROCESS.
3. THERE SHALL BE A MINIMUM OF 7 SETS OF PERFORATIONS WITH 2 HOLES PER SET OF PERFORATIONS FOR EACH 3.5' OF PIPE LENGTH.
4. RUBBER GASKETS OR GROUTING OF THE JOINTS FOR PERFORATED PIPE RUNS WILL NOT BE REQUIRED.
5. INSPECTION OF THE PERFORATED CONCRETE PIPE SHALL BE MADE BY THE MUNICIPALITY BEFORE INSTALLATION OF THE PIPE IN THE GROUND.

	ENGINEERING DIVISION
STORMWATER INFILTRATION TRENCH SECTION	
SECTION A DETAIL N.T.S. 3.0	
APPROVED BY CITY ENGINEER <i>hermann</i>	DATE 1/1/2014



*NOTE: SAND MAY BE USED IN-LIEU OF FILTER FABRIC ON BOTTOM.

 CITY OF HARBOR <small>•••••</small>	ENGINEERING DIVISION	SECTION A DETAIL N.T.S 4.0
	PARKING LOT PERIMETER TRENCH SCHEMATIC	
APPROVED BY <i>[Signature]</i> CITY ENGINEER	DATE 1/1/2014	

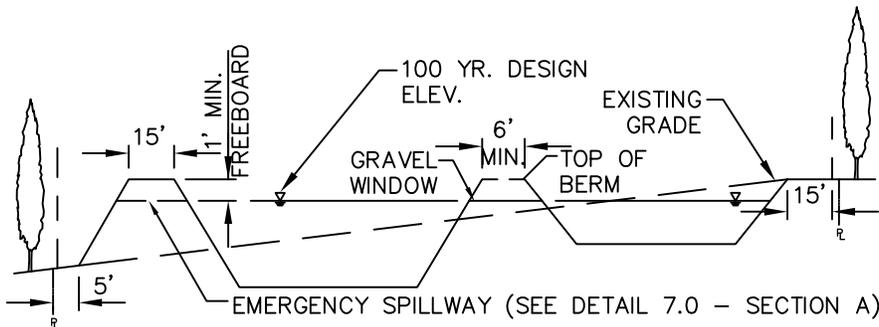


NOTES:

1. ALL ACCESS ROADS TO PONDS, CONTROL STRUCTURES, AND CATCH BASINS SHALL BE 15' MIN. WIDTH WITH 40' MIN. RADIUS TURNS. THE ACCESS RAMPS SHALL EITHER BE PAVED WITH A 15% MAX. GRADE OR GRAVEL WITH A 12% MAX. GRADE.
2. ACCESS AROUND PONDS (NOT SERVICING A RAMP, CATCH BASIN, OR CONTROL STRUCTURE) SHALL BE 15' MIN. WIDTH WITH 25' MIN. RADIUS TURNS.
3. PROPERTY SHALL BE FENCED 1' INSIDE OF PROPERTY/TRACT LINES.
4. PRIVATE VEGETATED BUFFER SHALL BE PLANTED OUTSIDE OF PROPERTY LINES.
5. POND BOTTOMS MAY BE VEGETATED.
6. EMERGENCY OVERFLOW SHALL FLOW TO A DEFINED WATER COURSE OR APPROVED LOCATION.
7. DETAIL IS A SCHEMATIC REPRESENTATION ONLY. ACTUAL CONFIGURATION WILL VARY DEPENDING ON SPECIFIC SITE CONSTRAINTS AND APPLICABLE DESIGN CRITERIA, OTHER TYPES OF PRETREATMENT BMP'S MAY BE ACCEPTABLE.

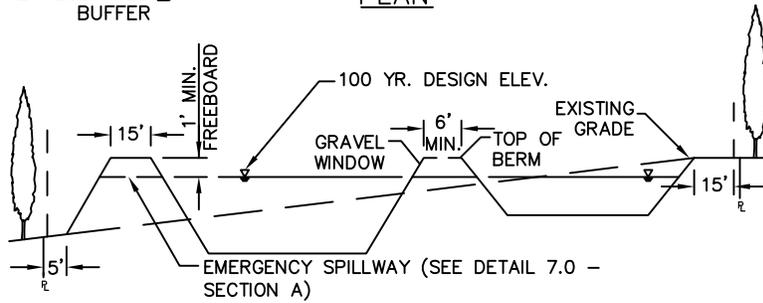
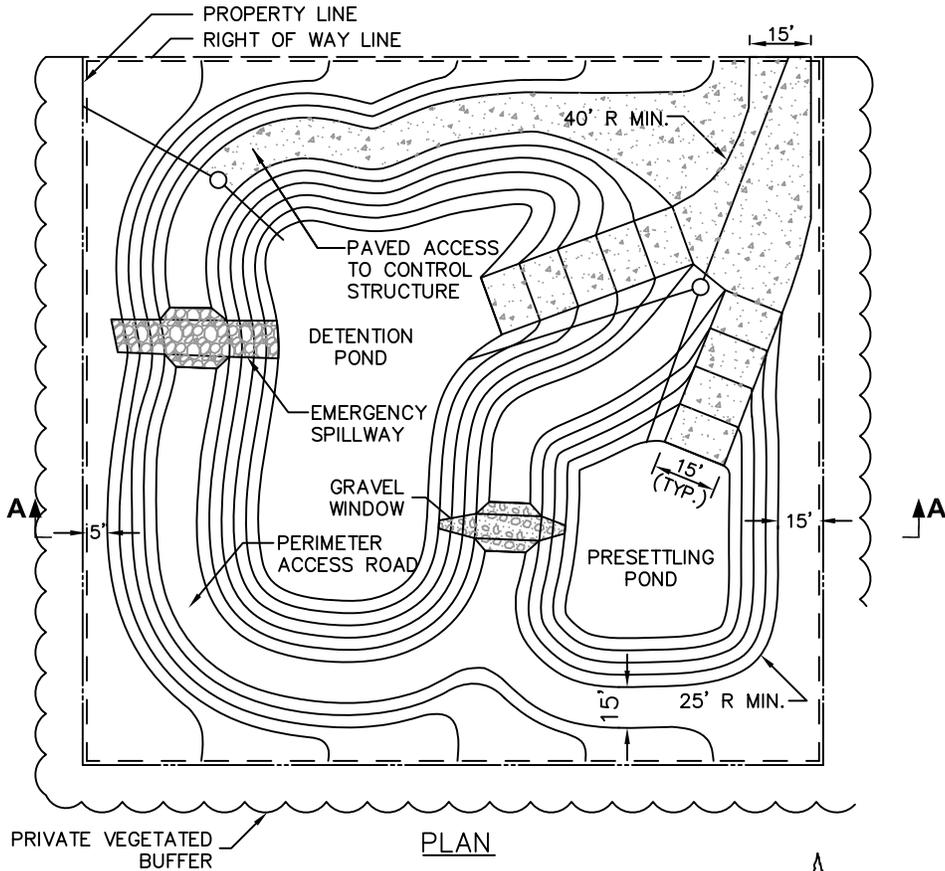
PRIVATE VEGETATED BUFFER PER TITLE 18J

PLAN



SECTION A-A

	ENGINEERING DIVISION
INFILTRATION POND SCHEMATIC	SECTION A DETAIL N.T.S. 5.0
APPROVED BY CITY ENGINEER <i>hermann</i>	DATE 1/1/2014



SECTION A-A

NOTES:

1. ALL ACCESS ROADS TO PONDS, CONTROL STRUCTURES, AND CATCH BASINS SHALL BE 15' MIN. PAVED WIDTH WITH 40' MIN. RADIUS TURNS. THE ACCESS RAMPS SHALL EITHER BE PAVED WITH A 15% MAX. GRADE OR GRAVEL WITH A 12% MAX. GRADE.
2. ACCESS AROUND PONDS (NOT SERVICING A RAMP, CONTROL STRUCTURE, OR CATCH BASIN) SHALL BE 15' MIN. WIDTH WITH 25' MIN. RADIUS TURNS.
3. PROPERTY SHALL BE FENCED 1' INSIDE OF PROPERTY/TRACT LINES.
4. PRIVATE VEGETATED BUFFER SHALL BE PLANTED OUTSIDE OF PROPERTY LINES.
5. POND BOTTOMS MAY BE VEGETATED.
6. EMERGENCY OVERFLOW SHALL FLOW TO A DEFINED WATER COURSE OR APPROVED LOCATION.
7. DETAIL IS A SCHEMATIC REPRESENTATION ONLY. ACTUAL CONFIGURATION WILL VARY DEPENDING ON SPECIFIC SITE CONSTRAINTS AND APPLICABLE DESIGN CRITERIA, OTHER TYPES OF PRETREATMENT BMP'S MAY BE ACCEPTABLE.
8. WHERE ACCESS TO CONTROL STRUCTURE EXCEEDS 75 FEET A VEHICLE TURN AROUND MUST BE PROVIDED OR CONTINUOUS PAVED LOOP AROUND PERIMETER ACCESS ROAD.



ENGINEERING DIVISION

DETENTION POND SCHEMATIC

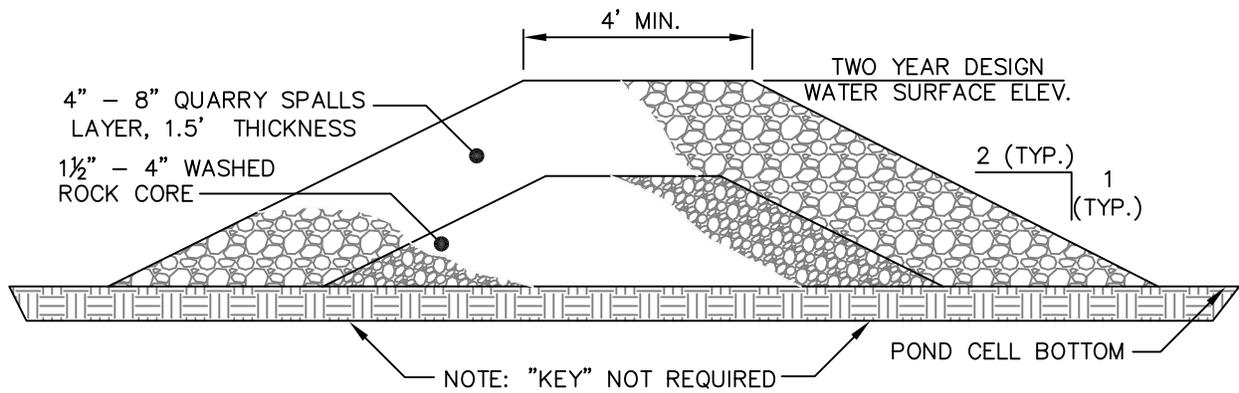
SECTION A
DETAIL N.T.S.

5.1

APPROVED BY
CITY ENGINEER

haldmann

DATE 1/1/2014



ENGINEERING DIVISION

**QUARRY SPALL
AND
GRAVEL FILTER WINDOW**

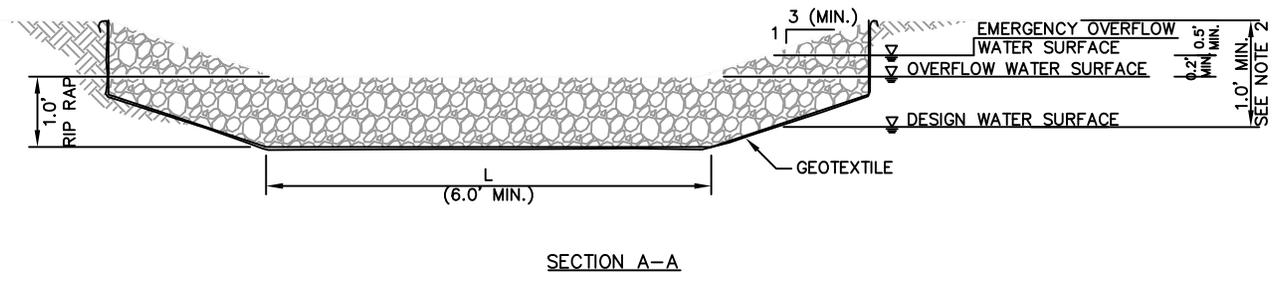
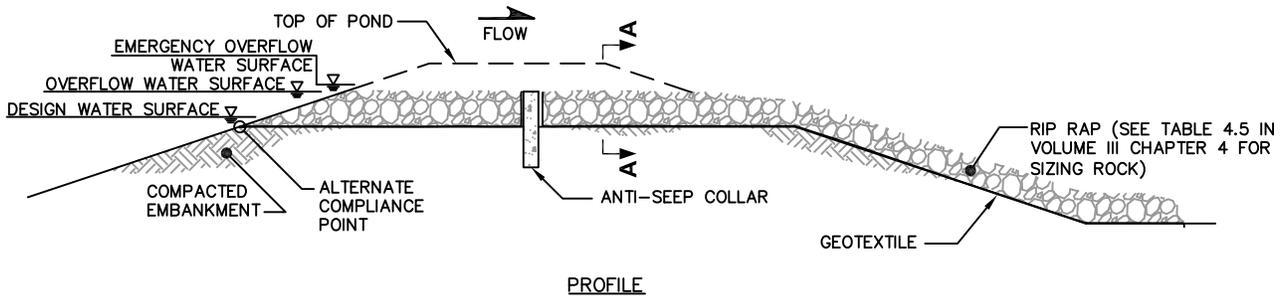
SECTION A
DETAIL N.T.S.

6.0

APPROVED BY
CITY ENGINEER

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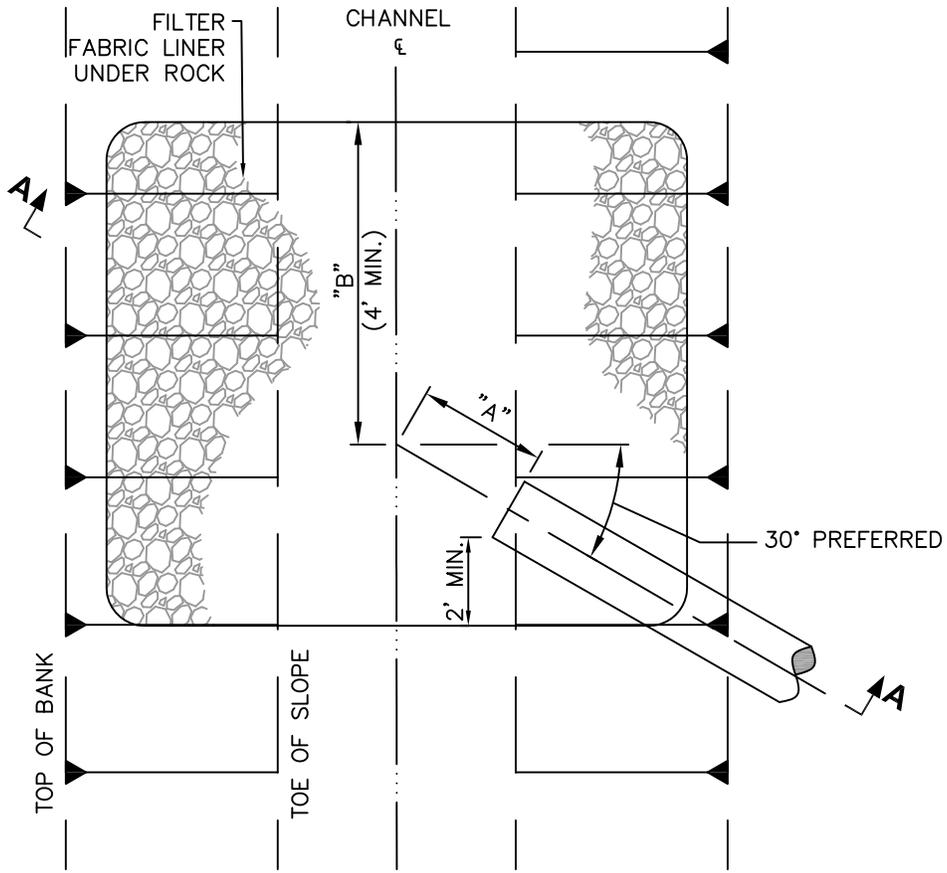
DATE 1/1/2014



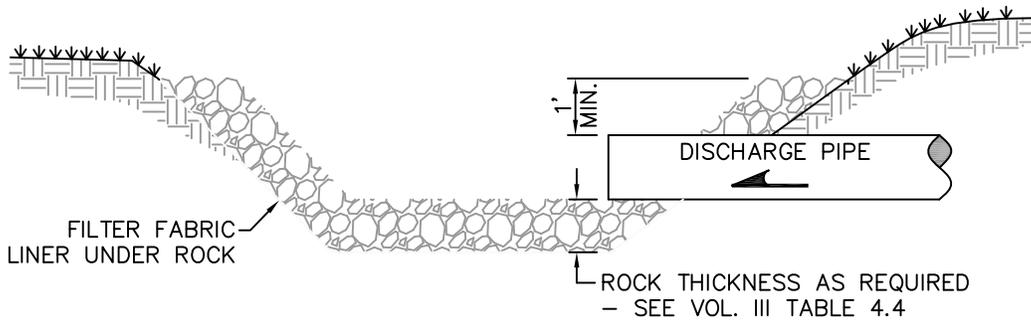
NOTES:

1. THE EMERGENCY OVERFLOW SPILLWAY SHALL BE DESIGNED TO PASS THE 100-YEAR, DESIGN STORM EVENT FOR DEVELOPED CONDITIONS SEE EQUATION AT VOLUME III CHAPTER 3. SPILLWAY SHOULD ONLY HAVE FLOW WHEN A COMPONENT OF THE CONTROL STRUCTURE HAS FAILED OR A STORM GREATER THAN THE DESIGN STORM HAS OCCURED.
2. SPILLWAY SHALL HAVE AN ANTI-SEEP COLLAR TO HOLD OVERFLOW WATER SURFACE ELEVATION OR THE OVERFLOW WATER SURFACE ELEVATION SHALL BE BELOW THE ALTERNATE COMPLIANCE POINT. ENGINEER WILL DESIGN THE ANTI-SEEP COLLAR AND WILL DEMONSTRATE ITS EFFECTIVENESS.
3. A CONCRETE LINED SPILLWAY IS AN ACCEPTABLE ALTERNATIVE TO AN ANTI-SEEP COLLAR.

 <small>GIG HARBOR • THE MARINE CLUB •</small>	ENGINEERING DIVISION
EMERGENCY OVERFLOW SPILLWAY	SECTION A DETAIL N.T.S. 7.0
APPROVED BY CITY ENGINEER <i>Richard</i>	DATE 1/1/2014



PLAN

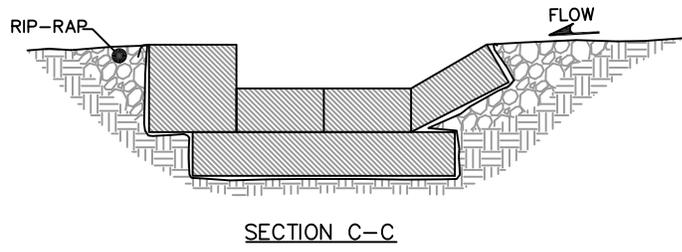
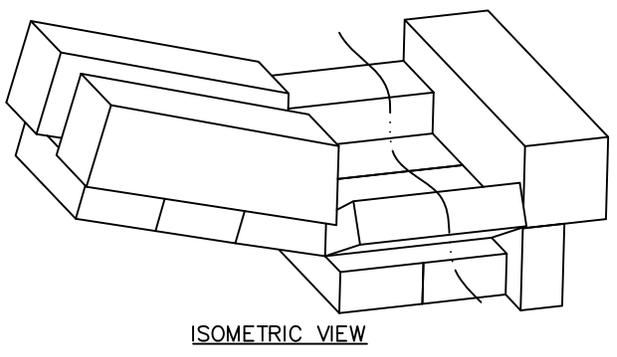
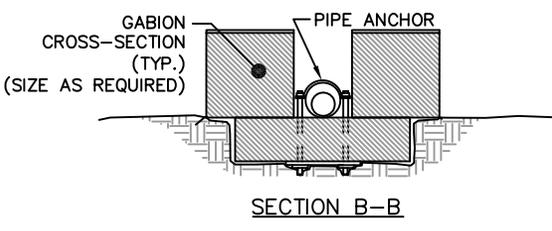
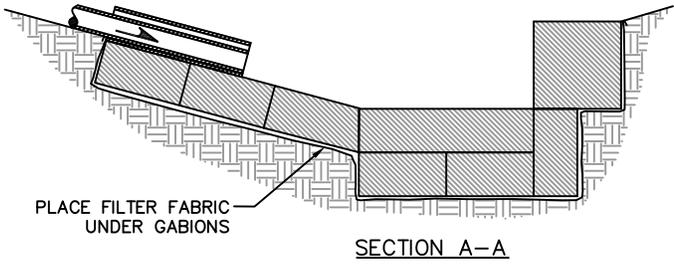
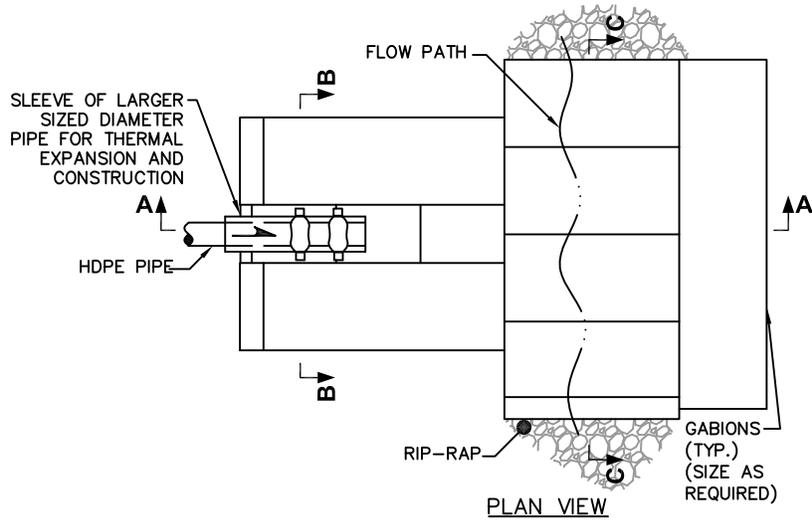


SECTION A-A

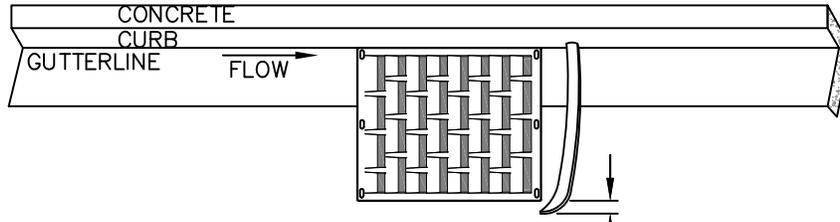
NOTES:

1. BASED ON DISCHARGE VELOCITIES FROM VOL. V TABLE 4.4. DIMENSIONS "A+B" WILL BE A MIN. OF 8' FOR ROCK LINING AND A MIN. OF 12' FOR RIP RAP.
2. IF DISTANCE "A" IS GREATER THAN 8' FOR ROCK LINING AND 12' FOR RIP RAP THEN ARMORING IS REQUIRED ONLY ON THE DISCHARGE SIDE OF THE CHANNEL.

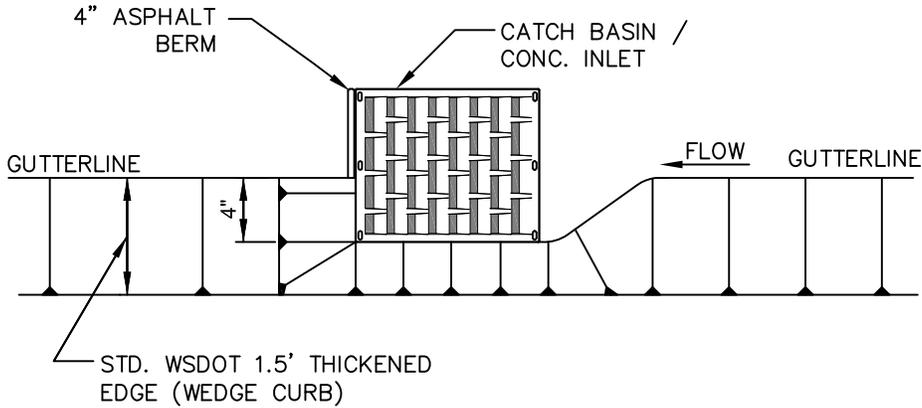
 GIG HARBOR <small>• OF WASHINGTON •</small>	ENGINEERING DIVISION	SECTION A DETAIL N.T.S. 8.0
	ROCK OUTFALL (CULVERT DISCHARGE PROTECTION)	
APPROVED BY CITY ENGINEER <i>[Signature]</i>	DATE 1/1/2014	



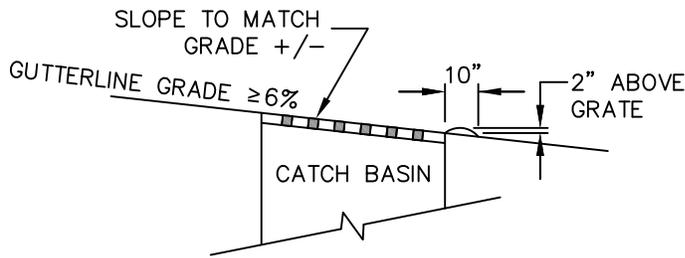
	ENGINEERING DIVISION	SECTION A DETAIL N.T.S.
	GABION OUTFALL	9.0
APPROVED BY CITY ENGINEER <i>ledmond</i>	DATE	1/1/2014



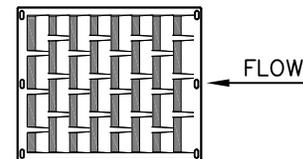
EXTEND 6" BEYOND GRATE ASPHALT
TAPER TO MATCH ROAD GRADE



ALPHALT CURB CATCH BASIN INLET DETAIL



CONCRETE CURB CATCH BASIN INLET DETAIL

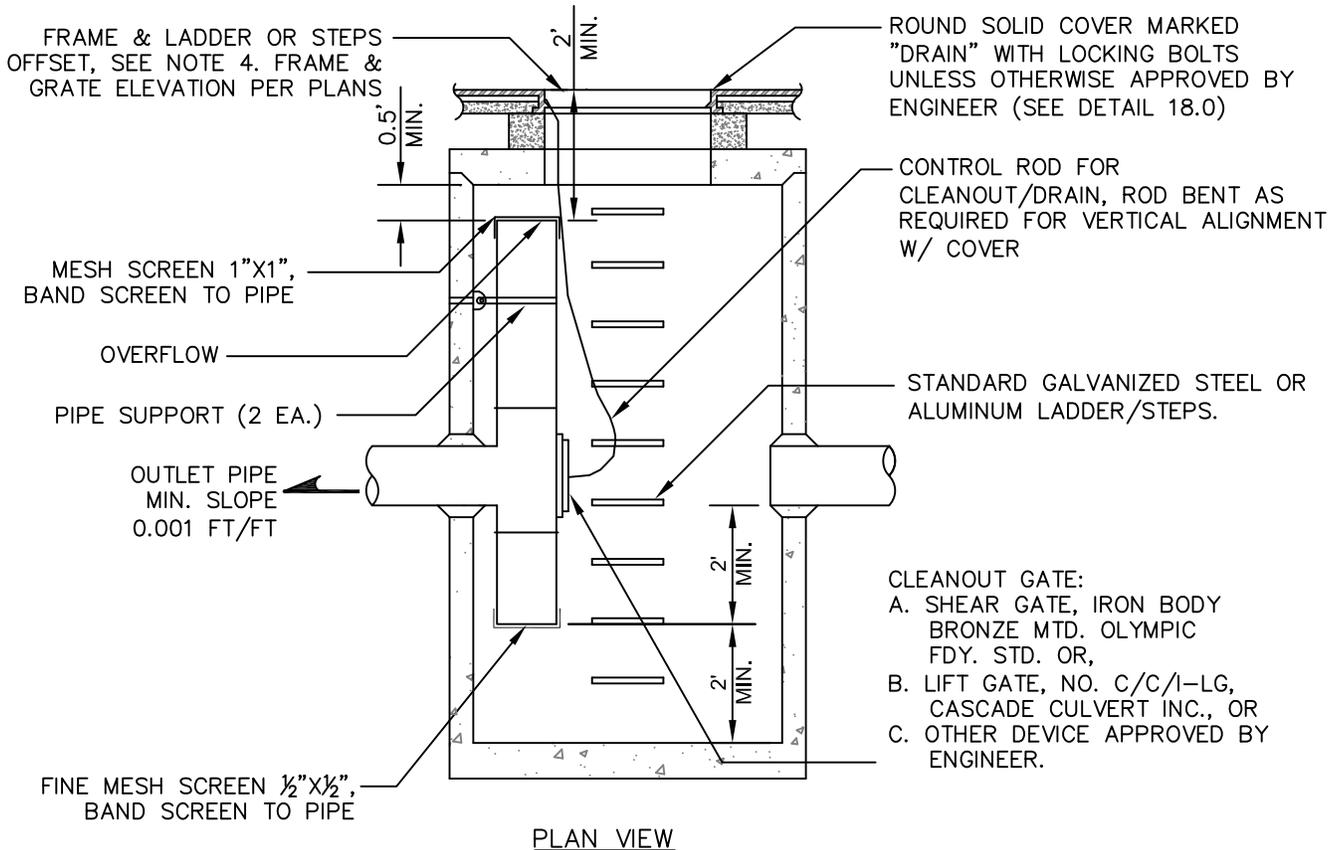


VANED GRATE

NOTE:

VANED GRATES SHALL BE PROVIDED FOR ALL CATCH BASINS WHEN PROFILE GRADE EQUALS OR EXCEEDS 6%.

	ENGINEERING DIVISION	SECTION A DETAIL N.T.S. 10.0
	GRATE DETAIL FOR STEEP SLOPES	
APPROVED BY CITY ENGINEER <i>Richard</i>	DATE 1/1/2014	

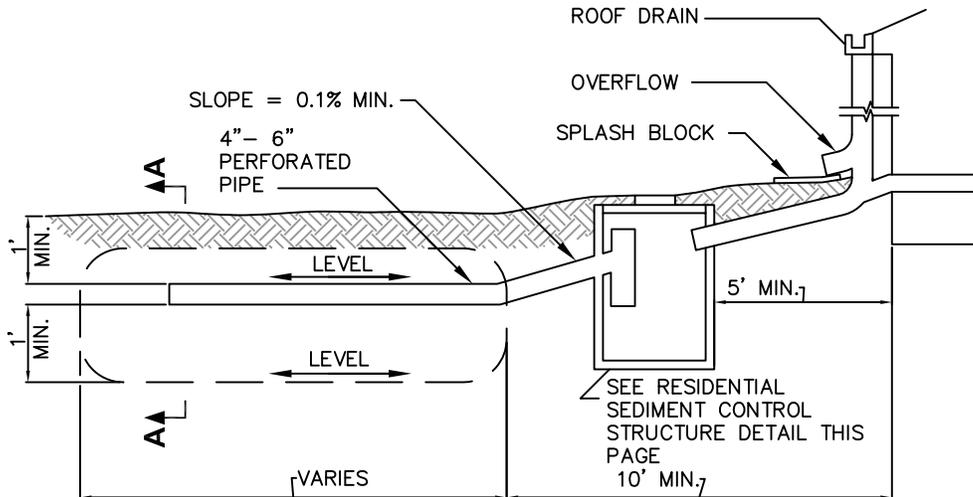


NOTES:

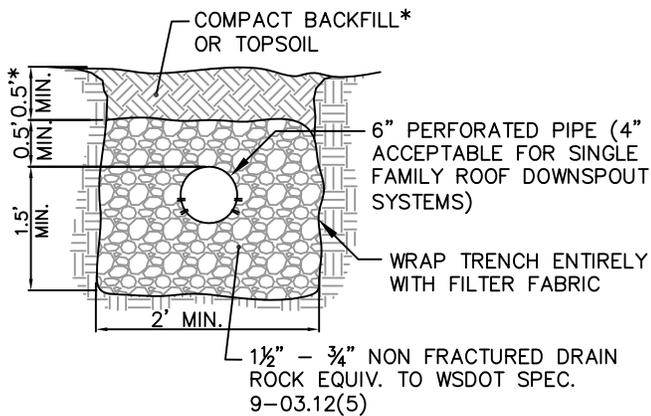
1. PIPE SIZED & SLOPES, PER PLANS.
2. OUTLET CAPACITY NOT LESS THAN COMBINED INLETS.
3. METAL PARTS:
 - A. CORROSION RESISTANT OR GALVANIZED OR ALLUMINUM TYPE 2.
 - B. IF GALVANIZED STEEL PIPE, HAVE ASPHALT TREATMENT 1.
4. FRAME & LADDER OR STEPS OFFSET SO:
 - A. CLEANOUT GATE IS VISIBLE FROM TOP.
 - B. CLIMB DOWN SPACE IS CLEAR OF RISER & CLEANOUT GATE.
 - C. FRAME IS CLEAR OF CURB.
5. STRUCTURE SHALL BE A TYPE 2 CATCH BASIN 4.5 DIAM. MIN.

COMMERCIAL SEDIMENT CONTROL STRUCTURE – PRIOR TO DISCHARGE TO INFILTRATION TRENCH

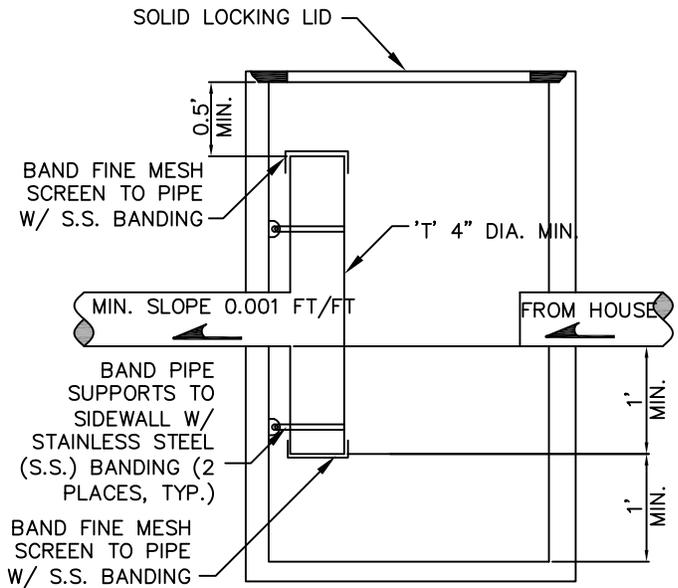
	ENGINEERING DIVISION
INFILTRATION TRENCH SUMP STRUCTURE (COMMERCIAL)	
SECTION A DETAIL N.T.S.	11.0
APPROVED BY CITY ENGINEER	
DATE 1/1/2014	



PROFILE



SECTION A-A

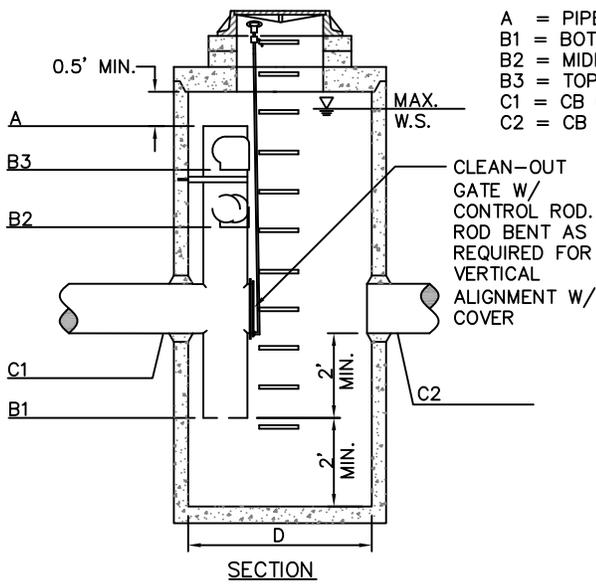


RESIDENTIAL SEDIMENT CONTROL STRUCTURE

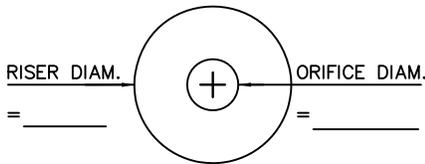
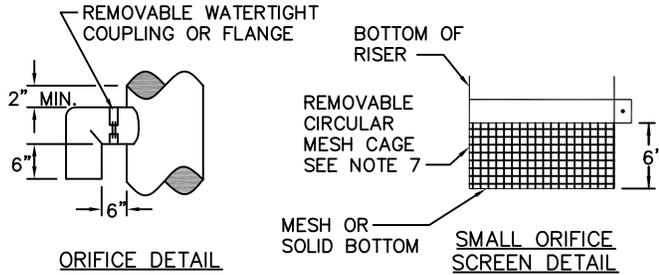
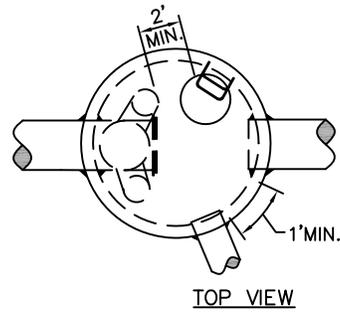
NOTE:

SEE TABLE A.2 IN VOLUME I FOR TRENCH LENGTH.

	ENGINEERING DIVISION	SECTION A DETAIL N.T.S.
	RESIDENTIAL ROOF DOWNSPOUT SYSTEM	11.1
APPROVED BY CITY ENGINEER <i>[Signature]</i>	DATE	1/1/2014



A = PIPE DIAM.
 B1 = BOTTOM ORIFICE
 B2 = MIDDLE ORIFICE
 B3 = TOP ORIFICE
 C1 = CB OUTLET I.E.
 C2 = CB INLET I.E.



RESTRICTOR PLATE (B1) DETAIL

ORIFICES - TEE RISER
 N.T.S.

NOTES:

1. CATCH BASIN TYPE 2 WITH FLOW RESTRICTOR AND OIL POLLUTION CONTROL DEVICE.
2. PROVIDE ACCESS TO BOTTOM WITH LADDER AND CLEARANCE.
3. THE EMERGENCY OVERFLOW SPILLWAY ELEVATION SHALL BE EQUAL OR HIGHER THAN MAX W.S. ELEV. SEE EMERGENCY OVERFLOW SPILLWAY DETAIL 7.0.
4. MAX W.S. ELEV. SHALL EQUAL 100 YEAR DESIGN FLOW.
5. LADDER / STEPS SHALL BE GALVANIZED STEEL OR THERMO PLASTIC EXTRUDED.
6. ORIFICE DIAMETER 0.5' MIN.
7. PROVIDE MESH CAGE PROTECTION FOR ORIFICE IF LESS THAN 1/2" DIAMETER. BOLT REMOVABLE MESH CAGE TO RISER WITH ATTACHED BOLT-ON BANDED COUPLING. CAGE TO BE MADE WITH 1/4" MESH SCREEN IN ALUMINUM OR STAINLESS STEEL.

CONTROL STRUCTURE DETAIL TABLE

LOCATION	A OVERFLOW		B1		B2		B3	
	ELEV.	DIAM.	ELEV.	DIAM.	ELEV.	DIAM.	ELEV.	DIAM.
	C1		C2		D (IN.)	MAX. WS ELEV. NOTE 4	EMER OVER FLOW NOTE 3	
	ELEV.	DIAM.	ELEV.	DIAM.				



ENGINEERING DIVISION

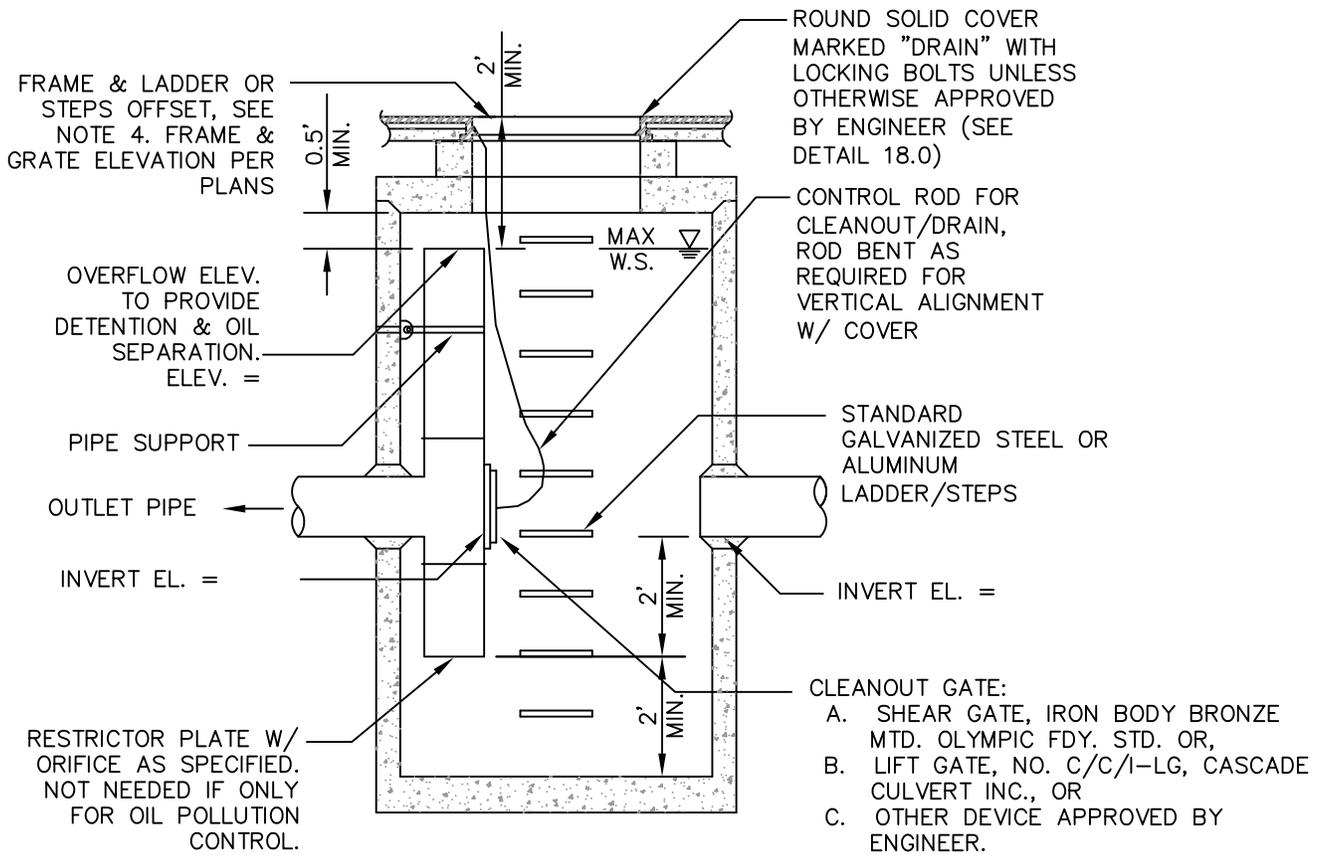
CONTROL STRUCTURE

SECTION A
 DETAIL N.T.S.

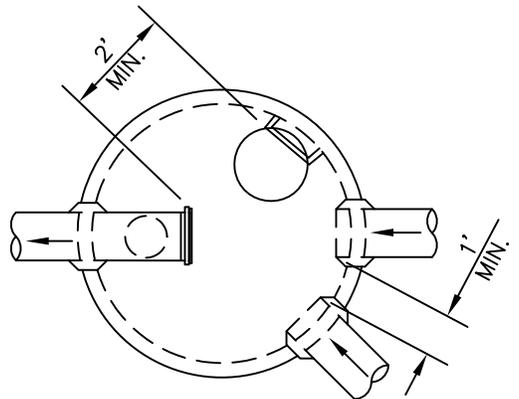
12.0

APPROVED BY *John Munn*
 CITY ENGINEER

DATE 1/1/2014



PLAN VIEW

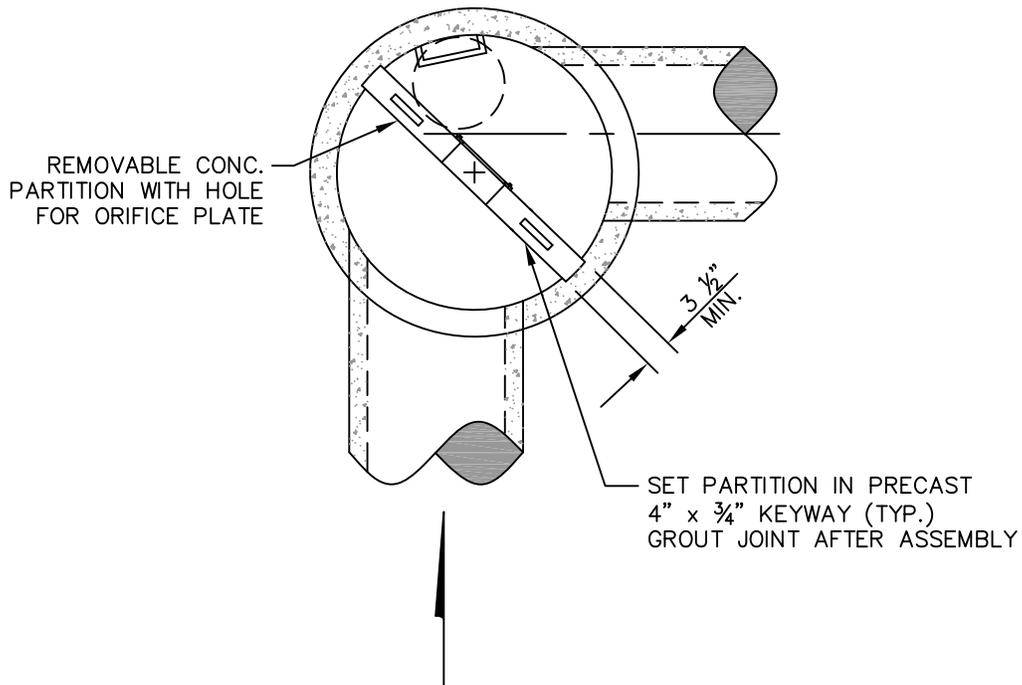
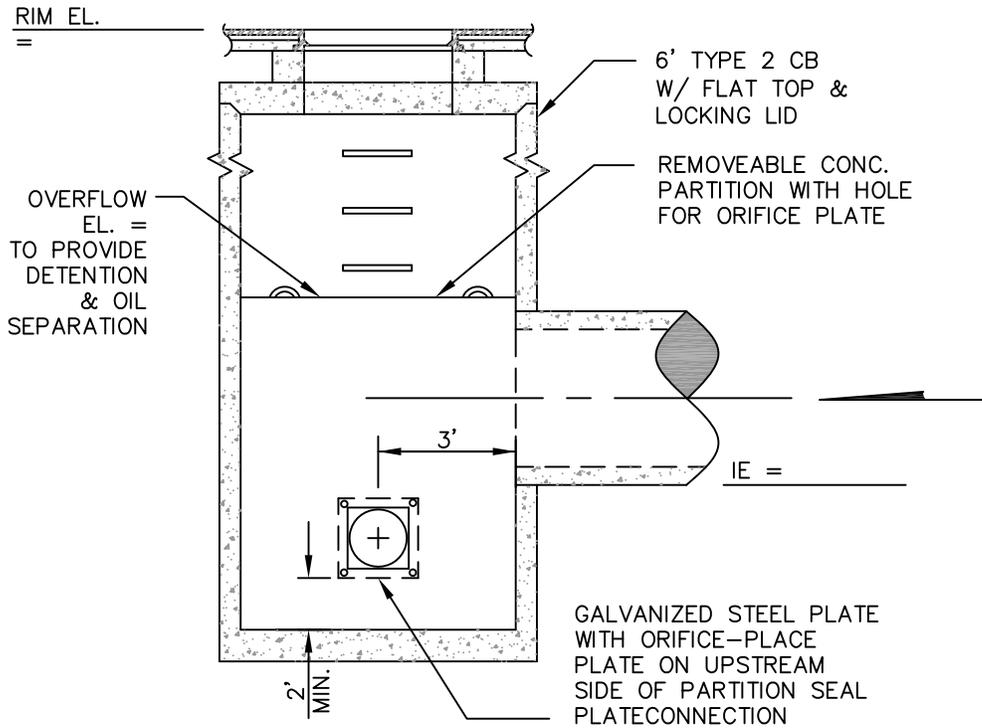


TOP VIEW

NOTES:

1. PIPE SIZES & SLOPES, PER PLAN
2. OUTLET CAPACITY NOT LESS THAN COMBINED INLETS.
3. METALS PARTS:
 - A. CORROSION RESISTANT OR GALVANIZED OR ALLUMINUM TYPE 2.
 - B. IF GALVANIZED STEEL PIPE, HAVE ASPHALT TREATMENT 1.
4. FRAME & LADDER OR STEPS OFFSET SO:
 - A. CLEANOUT GATE IS VISIBLE FROM TOP.
 - B. CLIMB DOWN SPACE IS CLEAR OF RISER & CLEANOUT GATE.
 - C. FRAME IS CLEAR OF CURB.
5. STRUCTURE SHALL BE A TYPE 2 CATCH BASIN 54" MINIMUM DIAMETER.

	ENGINEERING DIVISION
OIL POLLUTION CONTROL DEVICE	SECTION A DETAIL N.T.S. 12.1
APPROVED BY CITY ENGINEER <i>[Signature]</i>	DATE 1/1/2014



ENGINEERING DIVISION

ORIFICES - BAFFLE

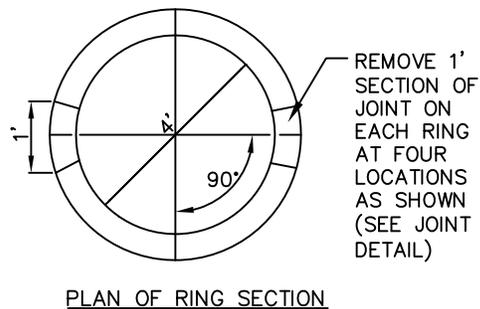
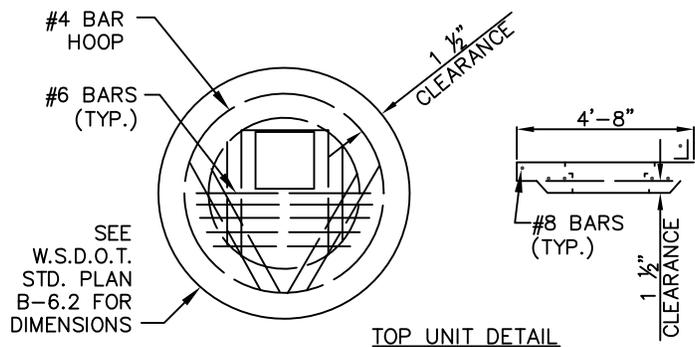
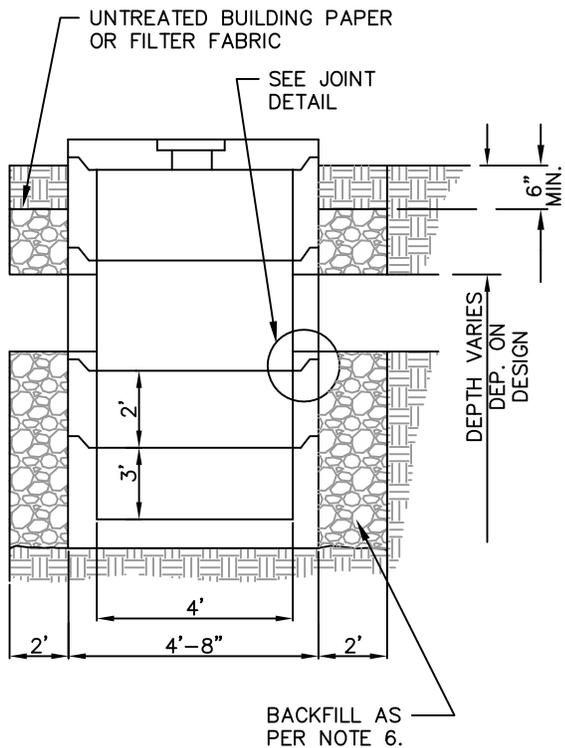
SECTION A
DETAIL N.T.S.

13.0

APPROVED BY
CITY ENGINEER

Richard

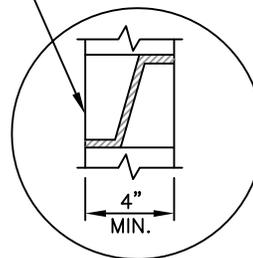
DATE 1/1/2014



NOTES:

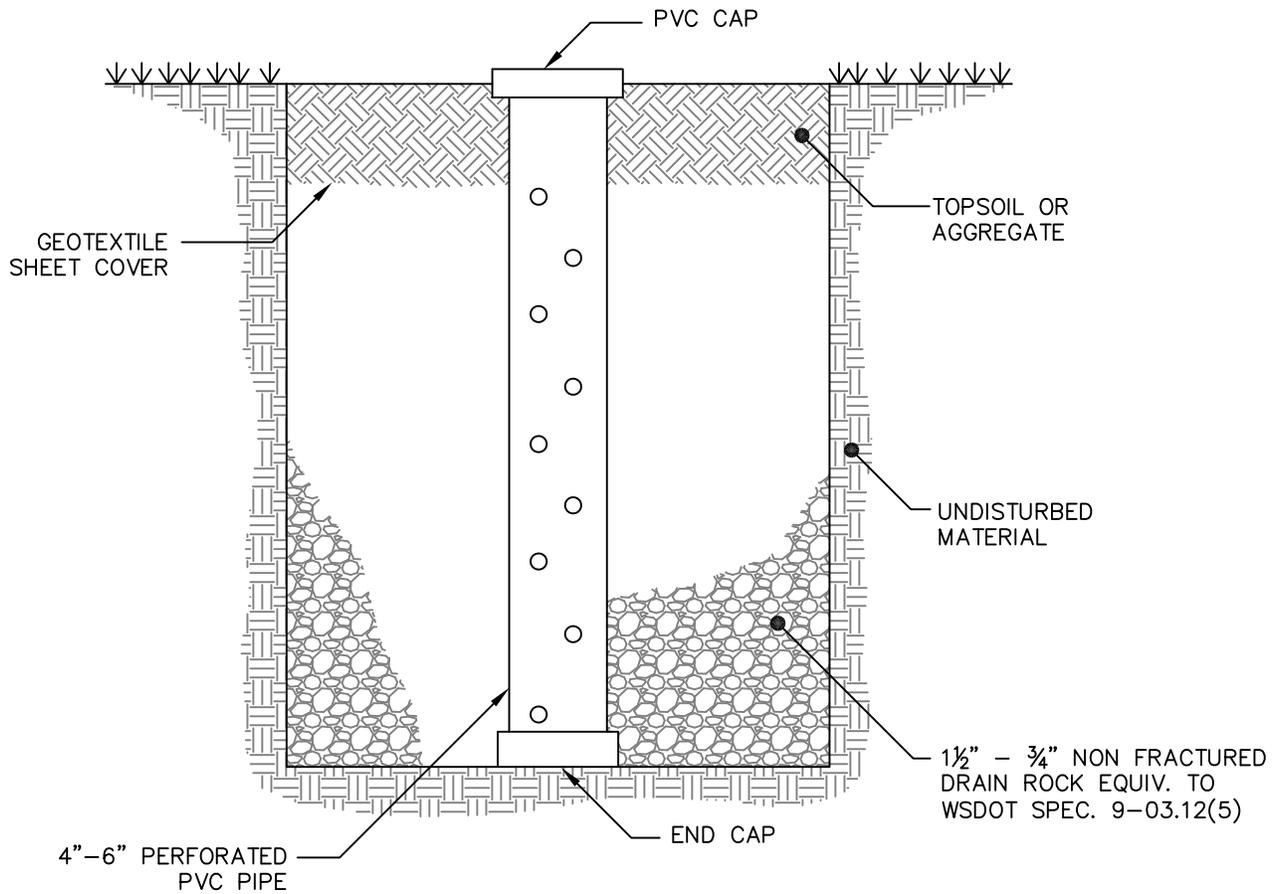
1. DRYWELL IS A TYPE II CATCH BASIN & MODIFIED AS SHOWN.
2. DRYWELL TO BE BUILT IN 1' OR 2' SECTIONS ONLY. EXCEPT FOR BASE WHICH SHALL BE A 3' SECTION.
3. BASE SECTION TO BE PLACED ON STABLE GROUND.
4. EACH DRYWELL SYSTEM SHALL HAVE AN OVERFLOW SYSTEM. SIZE TO BE DEPENDENT ON DESIGN CALCULATIONS.
5. TOP UNIT SHALL MEET W.S.D.O.T. SPEC. FOR A TYPE 2 CATCH BASIN.
6. BACKFILL SHALL BE 3/4" - 2 1/2" WASHED GRAVEL. MATERIAL PASSING THE #40 SIEVE SHALL NOT EXCEED 2% BY WEIGHT.
7. IF DRYWELL SYSTEM USES PIPES, SEE DETAIL 3.0.

REMOVE BELL & LIP FOR 1' @ 4 LOCATIONS TO PROVIDE FOR SEEPAGE AT EACH JOINT SECTION



JOINT DETAIL

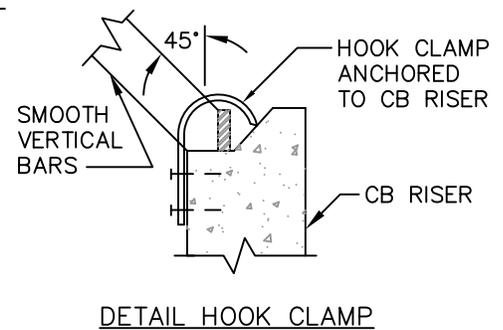
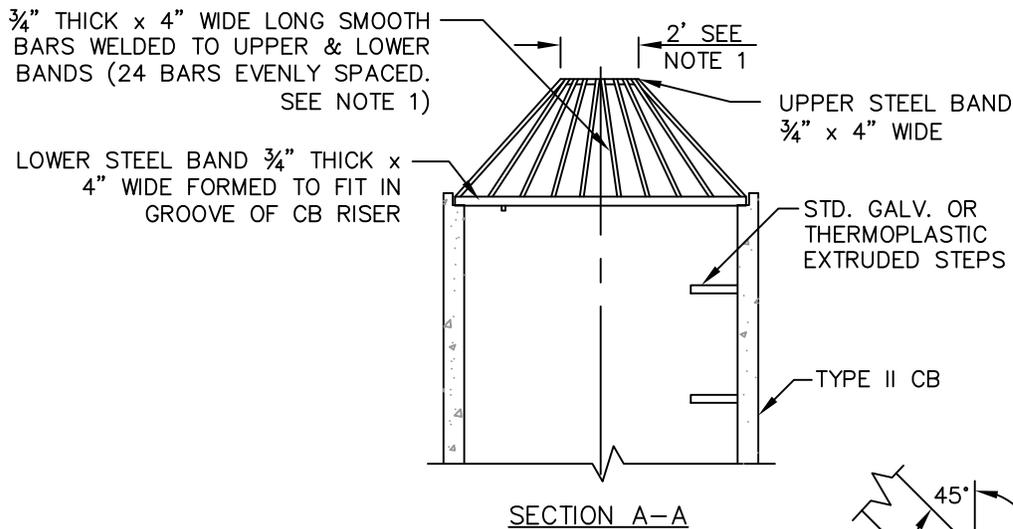
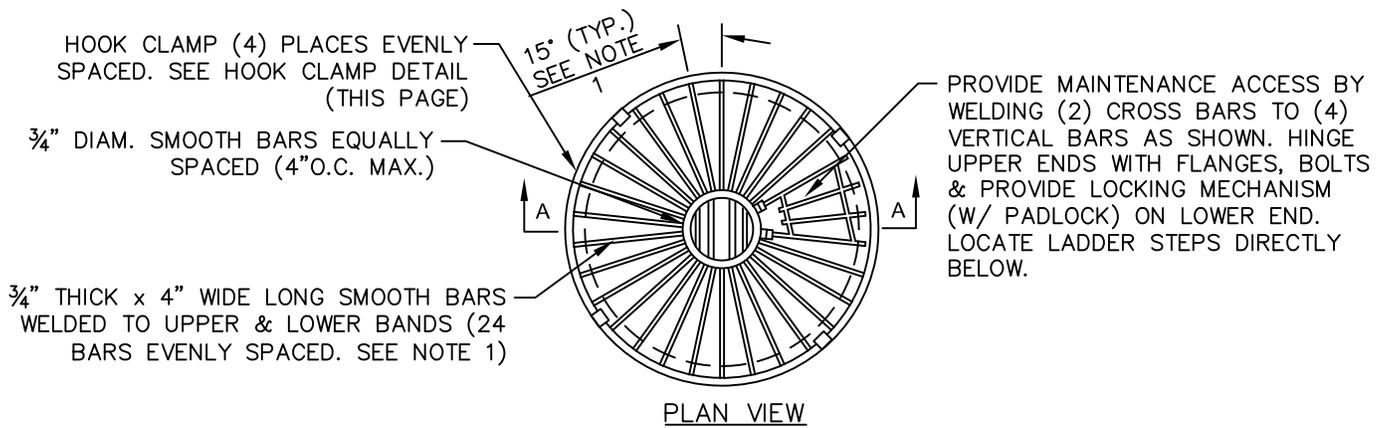
	ENGINEERING DIVISION
<h1 style="margin: 0;">DRYWELL</h1>	
SECTION A DETAIL N.T.S. 14.0	
APPROVED BY CITY ENGINEER <i>[Signature]</i>	DATE 1/1/2014



NOTE:

TRACE WIRE WILL BE PLACED UNDER CAP FOR LOCATION PURPOSES.

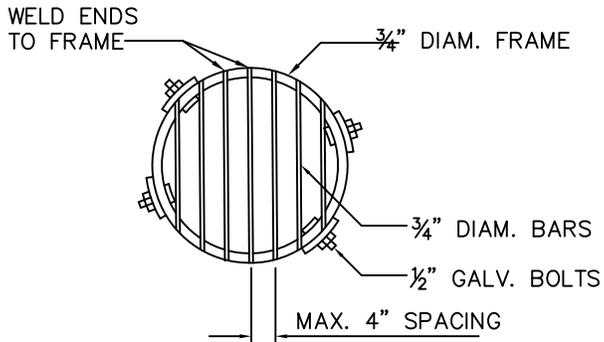
	ENGINEERING DIVISION
	<p>OBSERVATION WELL</p> <p>SECTION A DETAIL N.T.S. 15.0</p>
APPROVED BY CITY ENGINEER <i>John Murrell</i>	DATE 1/1/2014



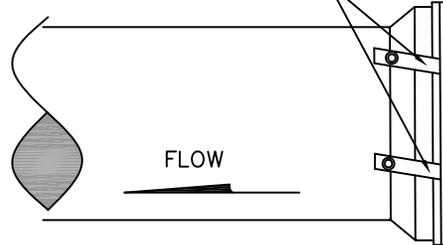
NOTES:

1. DIMENSIONS ARE FOR INSTALLATION ON 54" DIAM. CB. FOR DIFFERENT DIAM. CB'S ADJUST DIMENSIONS TO MAINTAIN 45° ANGLE ON "VERTICAL" BARS & 4" O.C. MAX. SPACING OF BARS AROUND LOWER STEEL BAND. WHEN VERTICAL BAR SPACING EXCEEDS 4" O.C., PROVIDE HORIZONTAL RINGS 4" O.C.
2. METAL PARTS: CORROSION RESISTANT (STEEL PARTS GALVANIZED OR STAINLESS STEEL).
3. THIS DEBRIS BARRIER IS ALSO RECOMMENDED FOR USE ON THE INLET TO ROADWAY CROSS-CULVERTS WITH HIGH POTENTIAL FOR DEBRIS COLLECTION (EXCEPT ON CLASS 2 STREAMS).

 GIG HARBOR <small>THE MARINE CITY</small>	ENGINEERING DIVISION
OVERFLOW STRUCTURE WITH DEBRIS CAGE	
SECTION A DETAIL N.T.S. 16.0	
APPROVED BY CITY ENGINEER <i>Richard</i>	DATE 1/1/2014

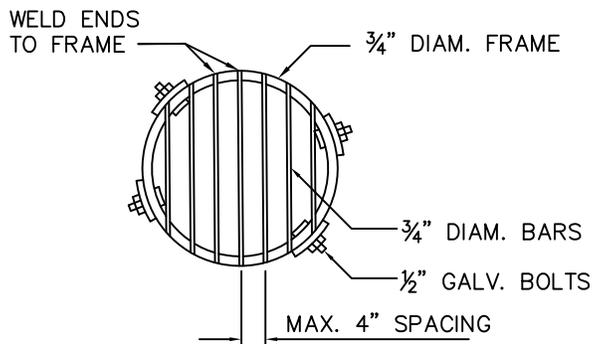


4 EA. 1/4"x2"x5" STRIPS
UNIFORMLY SPACED AND WELDED
TO 3/4" FRAME

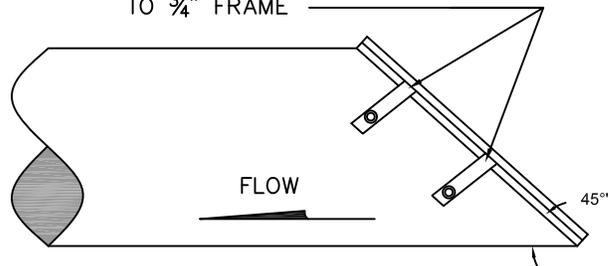


NOTE: ALL STEEL PARTS TO BE GALVANIZED AND ASPHALT COATED (TREATMENT 1 OR BETTER).

DEBRIS BARRIER 1 (90°)



4 EA. 1/4"x2"x5" STRIPS
UNIFORMLY SPACED AND WELDED
TO 3/4" FRAME



NOTE: ALL STEEL PARTS TO BE GALVANIZED AND ASPHALT COATED (TREATMENT 1 OR BETTER).

DEBRIS BARRIER 2 (45°)



ENGINEERING DIVISION

DEBRIS BARRIER
1 & 2

SECTION A
DETAIL N.T.S.

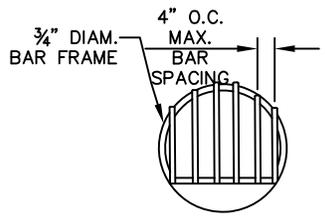
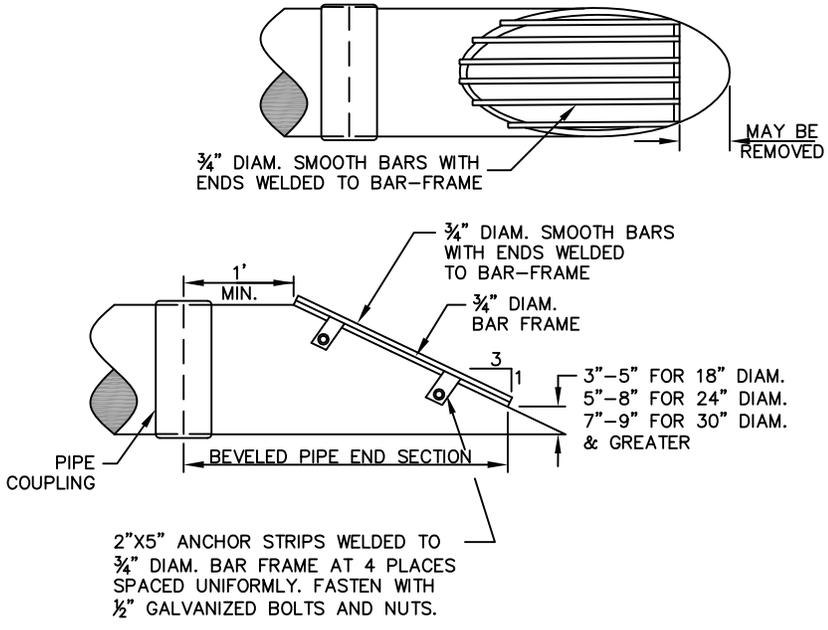
17.0

APPROVED BY
CITY ENGINEER

Handwritten signature

DATE

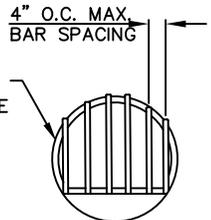
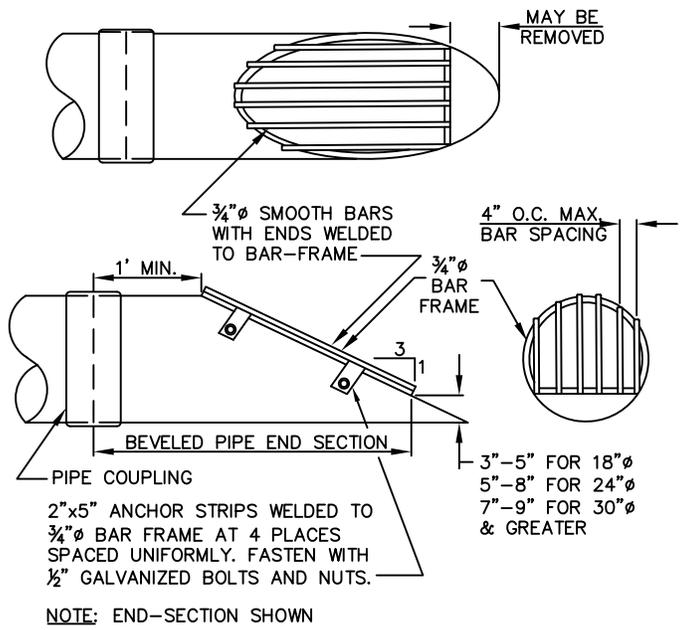
1/1/2014



NOTES:

1. CPEP -- SMOOTH INTERIOR PIPE REQUIRES BOLTS TO SECURE DEBRIS BARRIER TO PIPE.
2. ALL STEEL PARTS TO BE GALVANIZED AND ASPHALT COATED (TREATMENT 1 OR BETTER).

NOTE: END-SECTION SHOWN



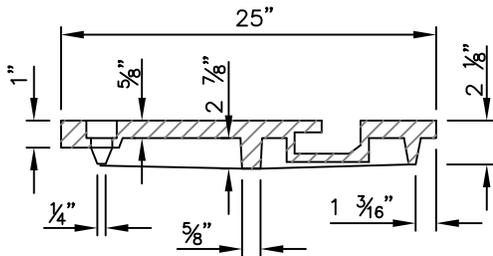
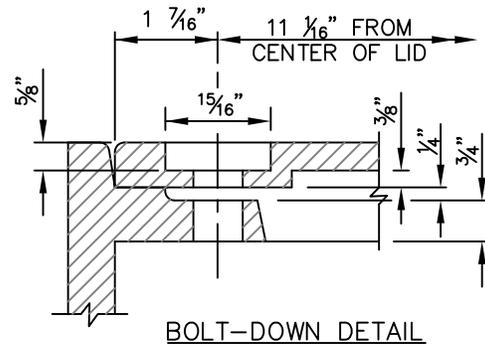
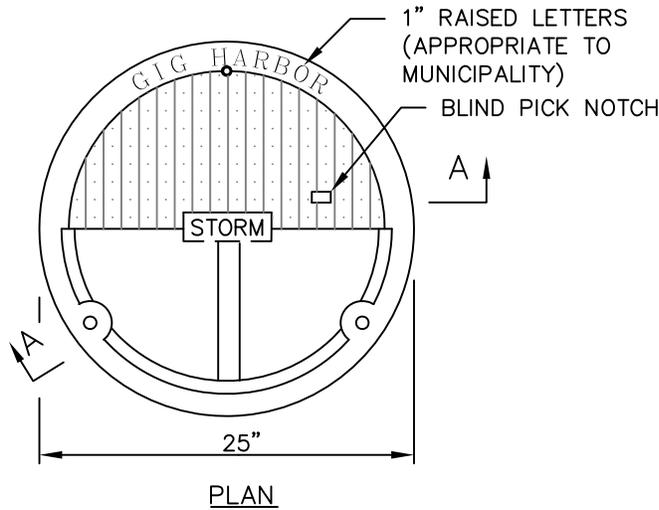
3"-5" FOR 18"
5"-8" FOR 24"
7"-9" FOR 30"
& GREATER

NOTE: END-SECTION SHOWN

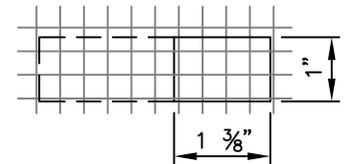
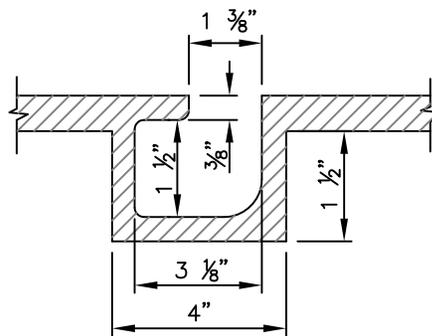
NOTES:

1. CPEP-SMOOTH INTERIOR PIPE REQUIRES BOLTS TO SECURE DEBRIS BARRIER TO PIPE.
2. ALL STEEL PARTS TO BE GALVANIZED AND ASPHALT COATED (TREATMENT 1 OR BETTER).

	ENGINEERING DIVISION
<h2 style="margin: 0;">DEBRIS BARRIER 3</h2>	SECTION A DETAIL N.T.S. <h1 style="margin: 0;">17.1</h1>
APPROVED BY CITY ENGINEER <i>h.d. Roman</i>	DATE 1/1/2014



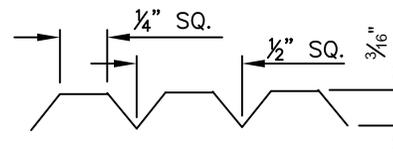
NOTE: DIMENSIONS BASED
FROM TOP OF SKID DESIGN



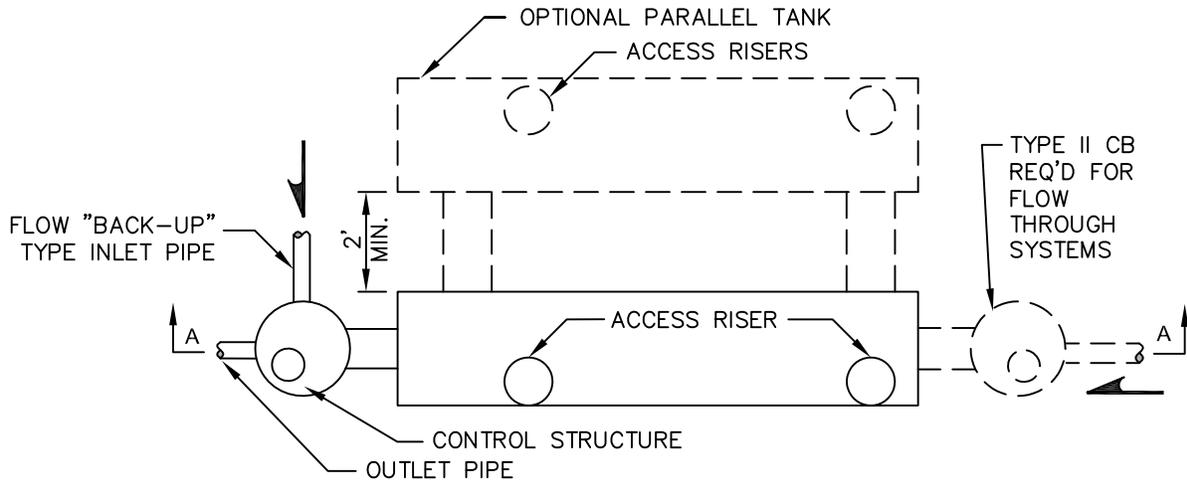
BLIND PICK NOTCH DETAIL

NOTES:

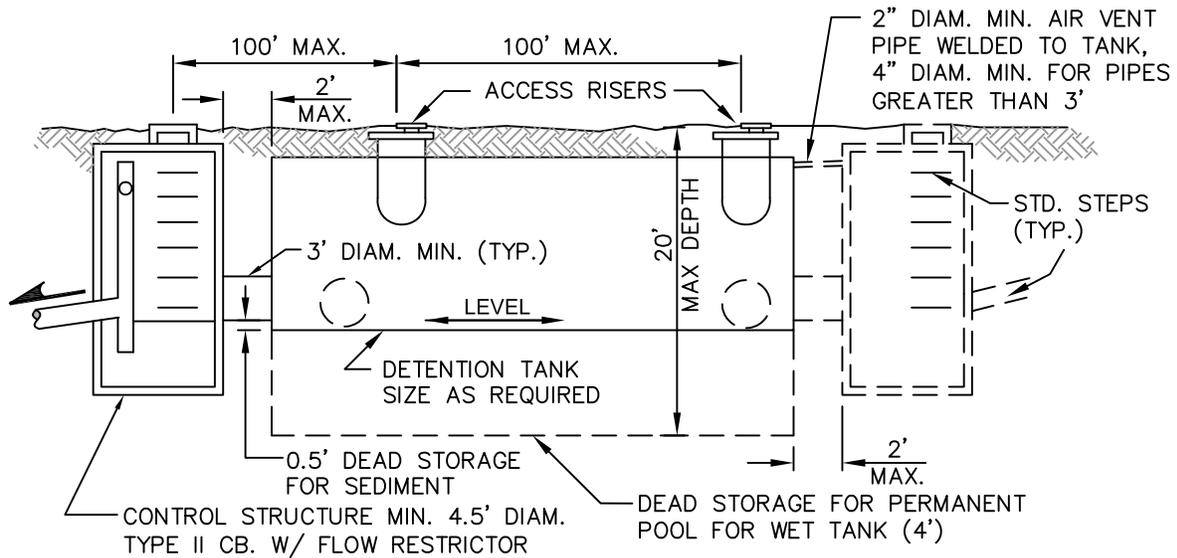
1. USE WITH THREE LOCKING BOLTS 3/8" - 11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) CAP SCREWS 2" LONG. DRILL HOLES SPACED 120° @ 11 1/16" RADIUS
2. MATERIAL IS DUCTILE IRON ASTM A 536 GRADE 80-55-06.



	ENGINEERING DIVISION	SECTION A DETAIL N.T.S.
	CATCH BASIN SOLID LOCKING LID	18.0
APPROVED BY CITY ENGINEER <i>[Signature]</i>	DATE	1/1/2014



PLAN VIEW



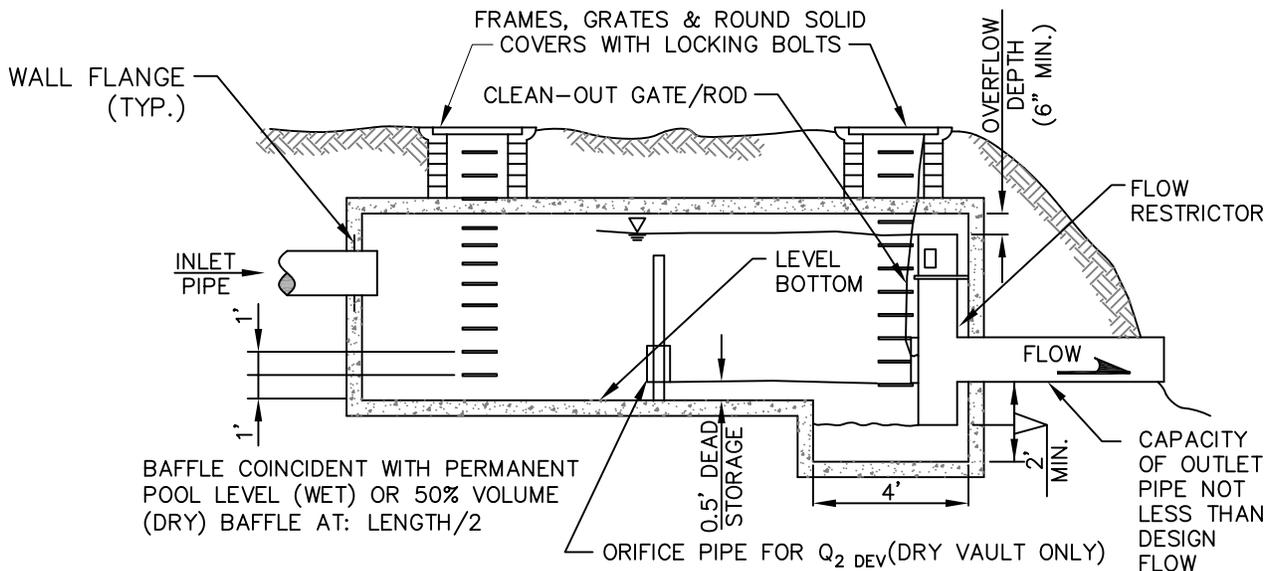
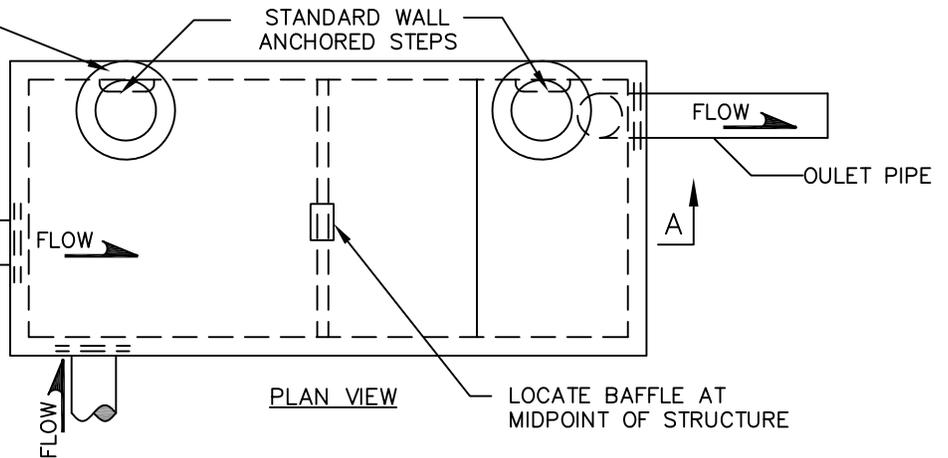
SECTION A-A

NOTES:

1. ALL METAL PARTS
CORROSION RESISTANT.
STEEL PART GALV. &
ASPH. COATED.
(TREATMENT 1 OR BETTER)
2. TANK MUST MEET H-20
LOADING

	ENGINEERING DIVISION
DETENTION TANK (DRY/WET) TYPICAL	
SECTION A DETAIL N.T.S.	19.0
APPROVED BY CITY ENGINEER <i>hslm</i>	DATE 1/1/2014

SECOND MH REQUIRED ONLY IF LENGTH OF DETENTION CHAMBER IS > 50' OR ONE PER CELL FOR MULTI-CELLED VAULTS. PROVIDE PARTITIONS AS REQUIRED WITH ADEQUATE FLOW-THROUGH AT BOTTOM (LEAVING 0.5' DEAD STORAGE) & AIR VENT AT TOP.



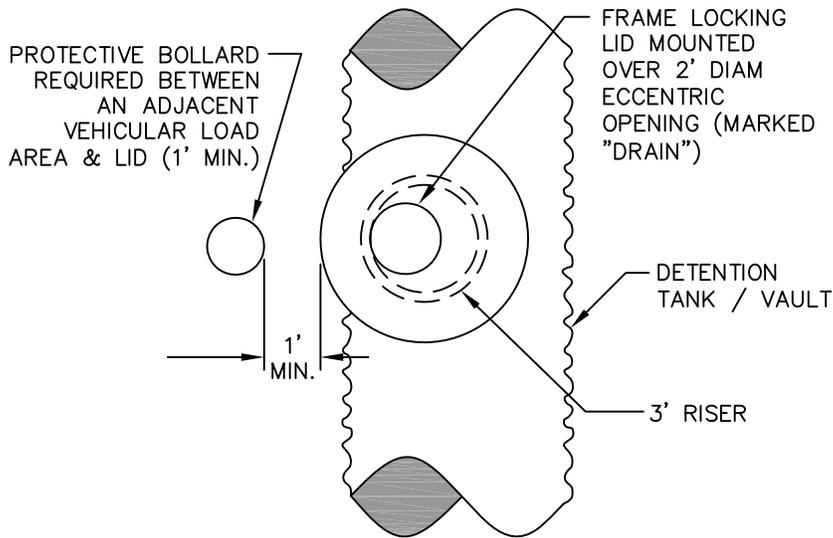
NOTES:

1. PLANS MUST BE DESIGNED & STAMPED BY A REGISTERED PROFESSIONAL STRUCTURAL ENGINEER.
2. ALL METAL PARTS SHALL BE CORROSION RESISTANT AND ASPHALT COATED (TREATMENT 1 OR BETTER)
3. PROVIDE WATER STOP AT ALL CAST-IN-PLACE CONSTRUCTION JOINTS. PRECAST VAULTS SHALL HAVE APPROVED RUBBER GASKET SYSTEM.

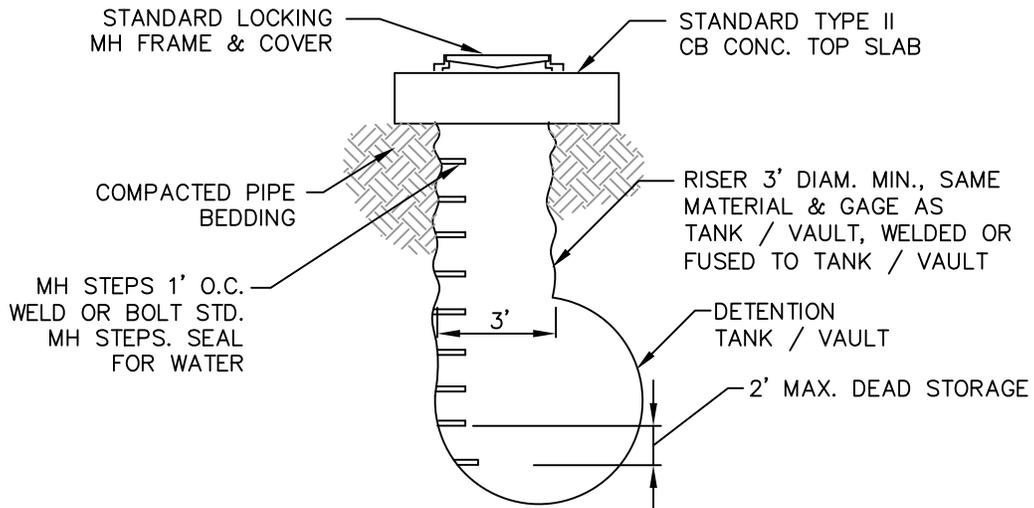
 GIG HARBOR <small>*THE MARSHMALLOW CITY*</small>	ENGINEERING DIVISION
	DETENTION VAULT (DRY/WET) TYPICAL
	SECTION A DETAIL N.T.S. 19.1
APPROVED BY CITY ENGINEER <i>h.d. Marshall</i>	DATE 1/1/2014

RESTRICTIONS FOR APPLICATION:

USE ONLY FOR ACCESS TO DETENTION TANKS / VAULTS. NOT ALLOWED FOR USE IN ROADWAYS, DRIVEWAYS, PARKING STALLS OR WHERE VEHICULAR LOADS WOULD OCCUR.



PLAN VIEW



SECTION

NOTES:

1. USE ADJUSTING BLOCKS AS REQUIRED TO BRING FRAME TO GRADE.
2. ALL METAL PARTS SHALL BE CORROSION RESISTANT. STEEL PARTS GALVANIZED AND ASPHALT COATED. (TREATMENT 1 OR BETTER).
3. MUST BE CONVENIENTLY LOCATED FOR MAINTENANCE VEHICLE ACCESS.



ENGINEERING DIVISION

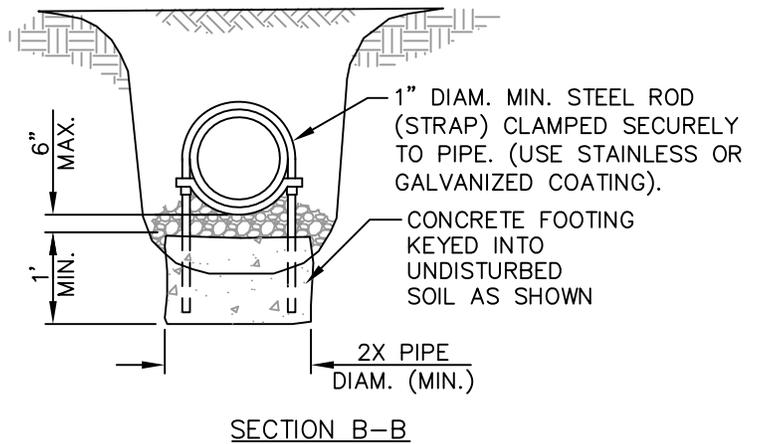
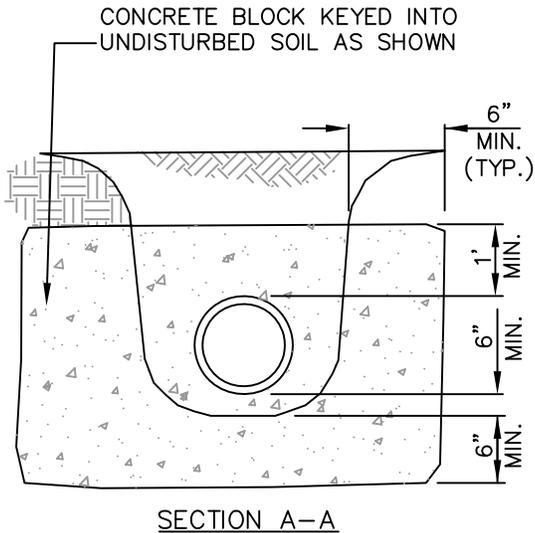
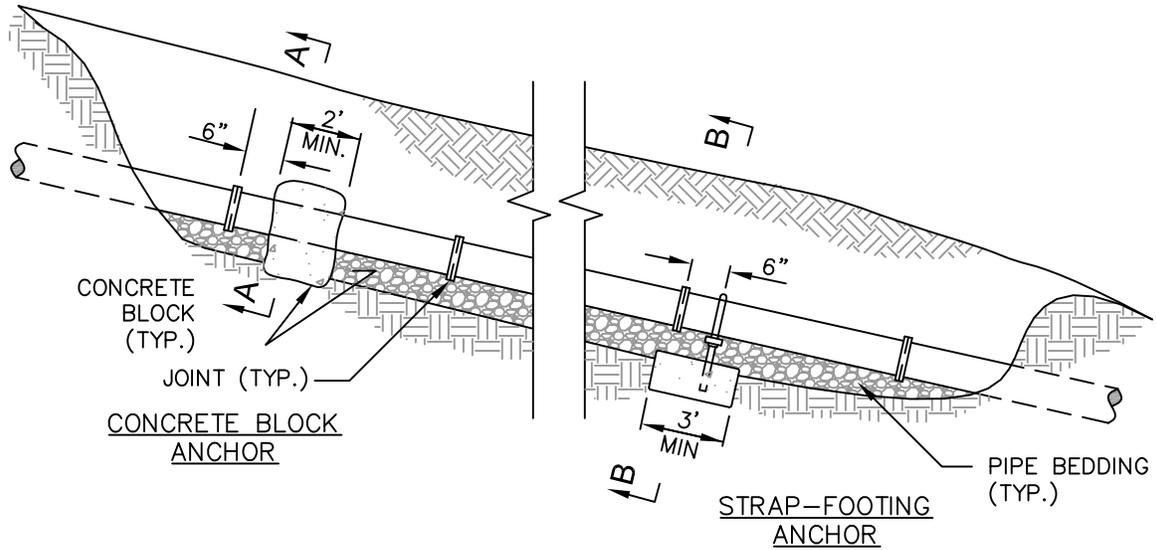
**DETENTION
TANK/VAULT
ACCESS DETAILS**

SECTION A
DETAIL N.T.S.

19.2

APPROVED BY
CITY ENGINEER

DATE 1/1/2014



NOTES:

1. SPACING FOR PIPE ANCHORS TO BE @ MAX. 20' INTERVALS.
2. IF USING HDPE PIPES, ADDITIONAL BANDS FOR CONCRETE POUR MAY BE NEEDED.



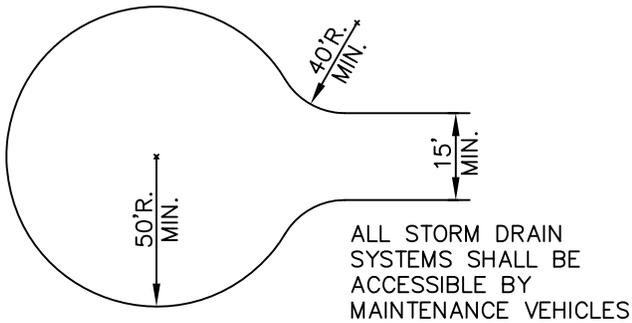
ENGINEERING DIVISION

PIPE ANCHOR DETAILS - EXAMPLE

SECTION A
DETAIL N.T.S.
20.0

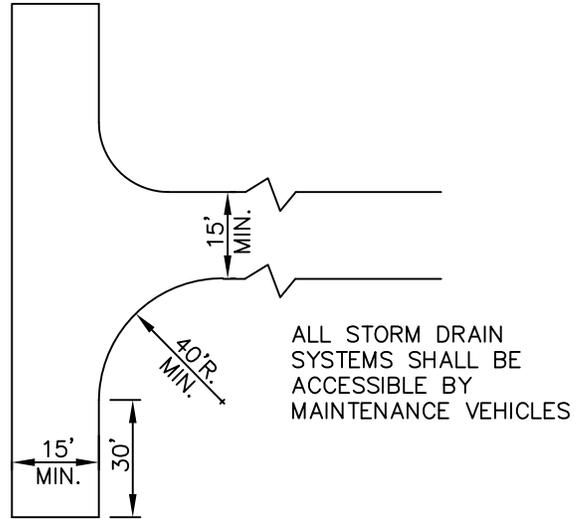
APPROVED BY
CITY ENGINEER

DATE 1/1/2014



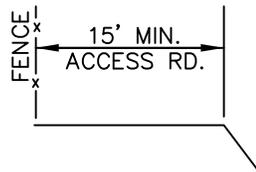
BULB TURN-AROUND

TO BE USED WHEN ACCESS ROAD LENGTH EXCEEDS 75'

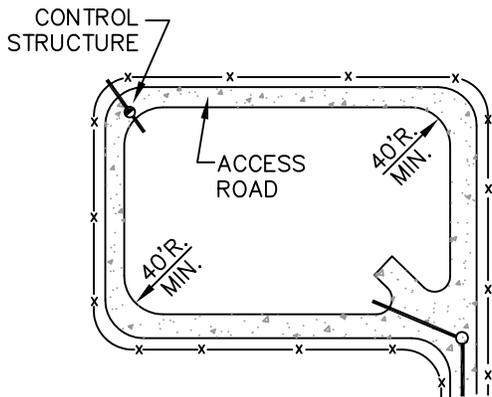


HAMMERHEAD TURN-AROUND

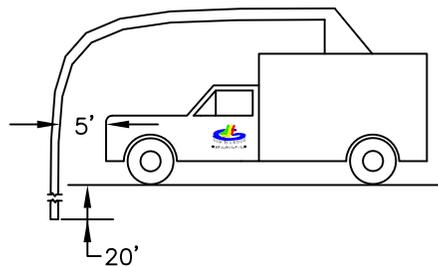
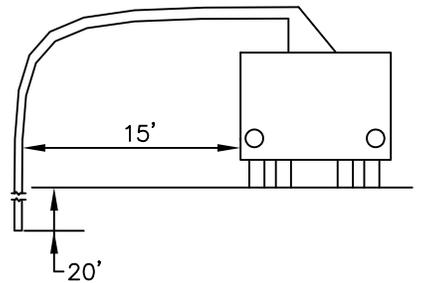
TO BE USED WHEN ACCESS ROAD LENGTH EXCEEDS 75'



ACCESS ROAD DETAIL



FULL POND ACCESS



**CITY OF GIG HARBOR
MAINTENANCE EQUIPMENT
ACCESS CAPABILITIES**

	ENGINEERING DIVISION	
	DETENTION POND ACCESSSES	
	SECTION A DETAIL N.T.S. 21.0	
APPROVED BY CITY ENGINEER <i>[Signature]</i>	DATE 1/1/2014	



NOTE:
CONTRACTOR TO OBTAIN CATCH
BASIN MARKERS FROM THE CITY
OF GIG HARBOR AND INSTALL PRIOR
TO FINAL INSPECTION.



ENGINEERING DIVISION

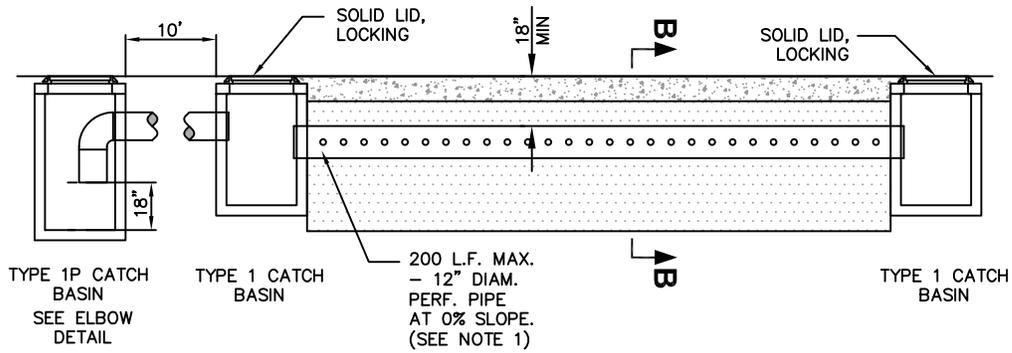
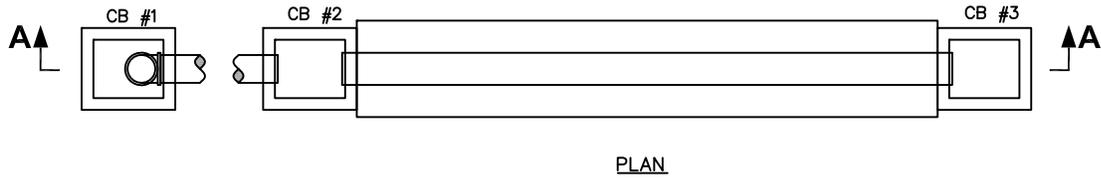
CATCH BASIN
MARKER

SECTION A
DETAIL N.T.S.

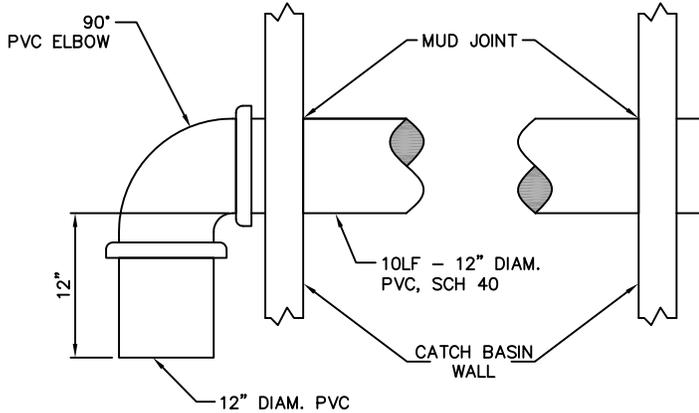
22.0

APPROVED BY
CITY ENGINEER

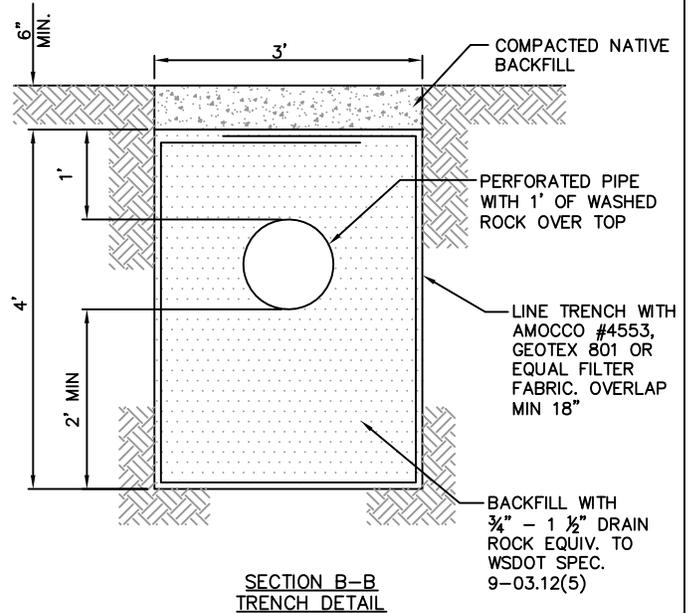
DATE 1/1/2014



SECTION A-A
TYPICAL STANDARD DRYWELL
DETAIL



ELBOW DETAIL



SECTION B-B
TRENCH DETAIL

NOTES:

1. APPROVED PERF. PIPE MATERIAL SHALL BE: HDPE, CPSSP, OR APPROVED EQUAL.
2. PERFORATIONS MUST BE DOWNWARD FACING.
3. IF SYSTEM IS WHOLLY LOCATED WITHIN RIGHT-OF-WAY AND THE PERF. PIPE LENGTH IS LESS THAN 100 L.F., THEN CB #3 (END OF DRAIN FIELD) MAY BE REPLACED WITH AN END CAP.
4. IF CATCH BASIN RIMS ARE LOCATED WITHIN A VEHICLE TRAVEL SURFACE, THEN THE RIM ELEVATION SHALL BE SAME ELEVATION AS FINISH GRADE, OTHERWISE RIM ELEVATION SHALL BE 0.33' HIGHER THAN FINISH GRADE.



ENGINEERING DIVISION

DRYWELL & TRENCH
DETAILS

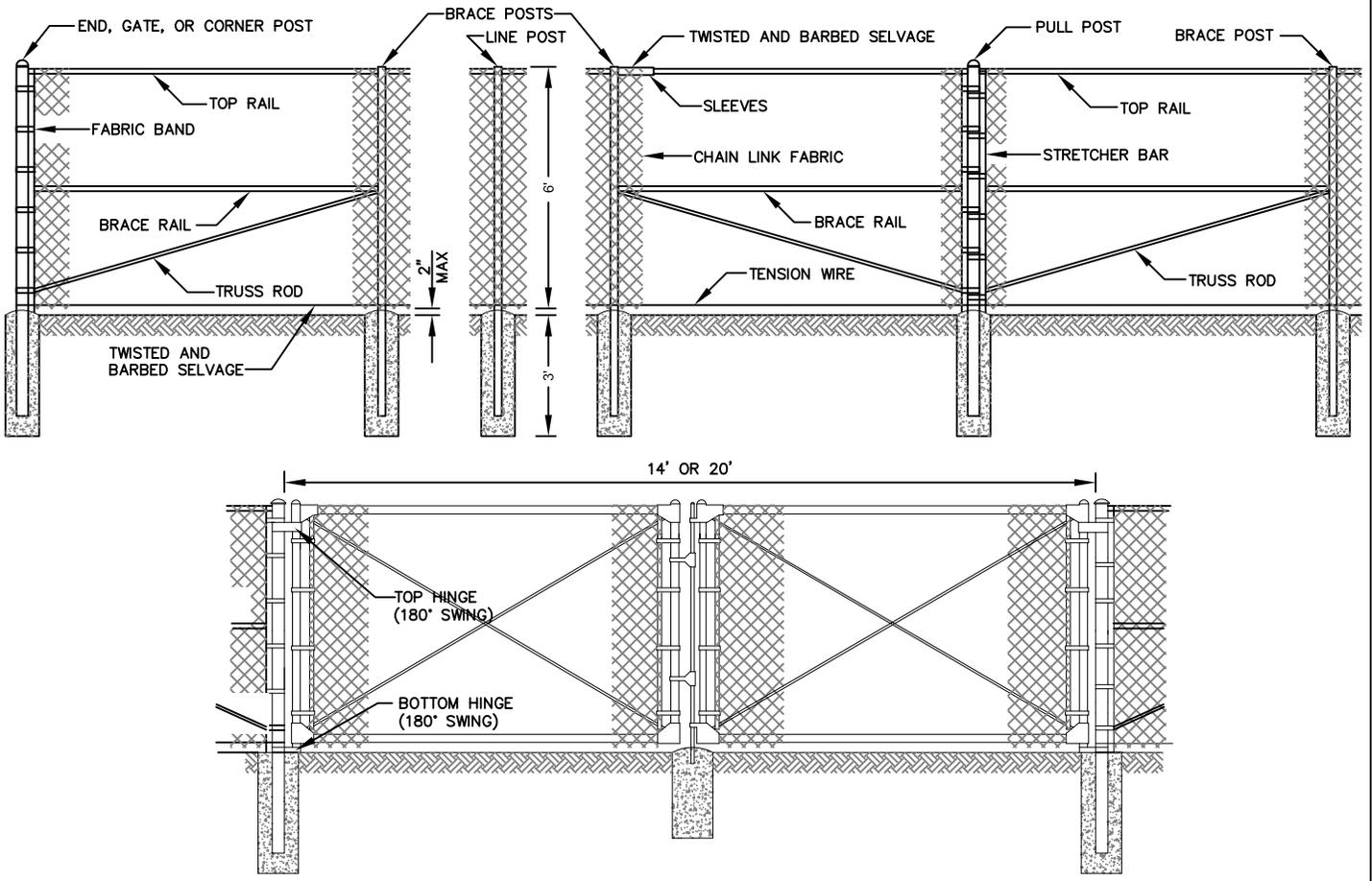
SECTION A
DETAIL N.T.S.

23.0

APPROVED BY
CITY ENGINEER

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DATE 1/1/2014



BRACE RAIL & TOP RAIL		
I.D. PIPE (INCHES)	WEIGHT PER FOOT (LBS)	WALL THICKNESS (IN)
1 1/4	2.27	0.133

LINE & BRACE POST		
I.D. PIPE (INCHES)	WEIGHT PER FOOT (LBS)	WALL THICKNESS (IN)
2	3.65	0.154

END, CORNER, & PULL POST		
I.D. PIPE (INCHES)	WEIGHT PER FOOT (LBS)	WALL THICKNESS (IN)
2 1/2	5.79	0.203

GATE POST		
I.D. PIPE (INCHES)	WEIGHT PER FOOT (LBS)	WALL THICKNESS (IN)
3 1/2	9.12	0.226

NOTES:

- 1) ALL CONCRETE POST BASES SHALL BE 12" MIN. DIAMETER.
- 2) ALL POSTS SHALL BE SPACED AT 10' MAX. INTERVALS UNLESS APPROVED BY COUNTY.
- 3) TOP OR BOTTOM TENSION WIRES SHALL BE PLACED WITHIN THE LIMITS OF THE FIRST FULL FABRIC WEAVE.
- 4) ALL POSTS ARE ROUND.
- 5) ALL POSTS ARE MIN. 8' - 8" IN LENGTH.
- 6) DETAIL BASED ON 1997 WSDOT STANDARD PLANS L-2 CHAIN LINK FENCE TYPE 1, WITH MODIFICATIONS MADE BY PIERCE COUNTY.
- 7) 9 GAUGE FABRIC VINYL COATED GREEN / BLACK.
- 8) TOLERANCE FOR WALL THICKNESS IS 12.5%.



ENGINEERING DIVISION

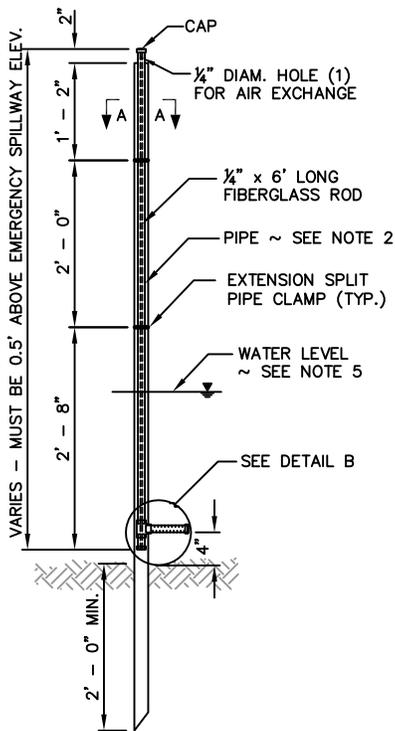
**CHAIN LINK FENCE
TYPE 1
(MODIFIED)**

SECTION A
DETAIL N.T.S.

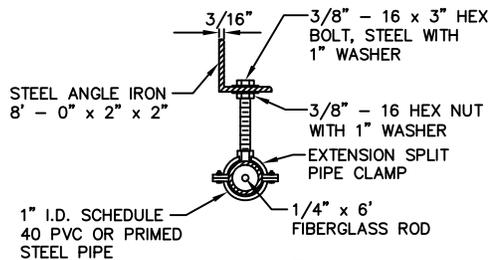
24.0

APPROVED BY
CITY ENGINEER *[Signature]*

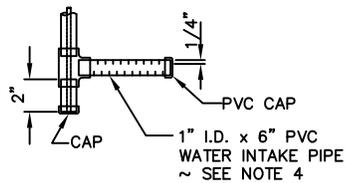
DATE **1/1/2014**



CREST GAGE

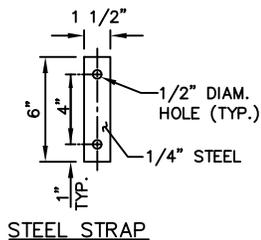


SECTION A

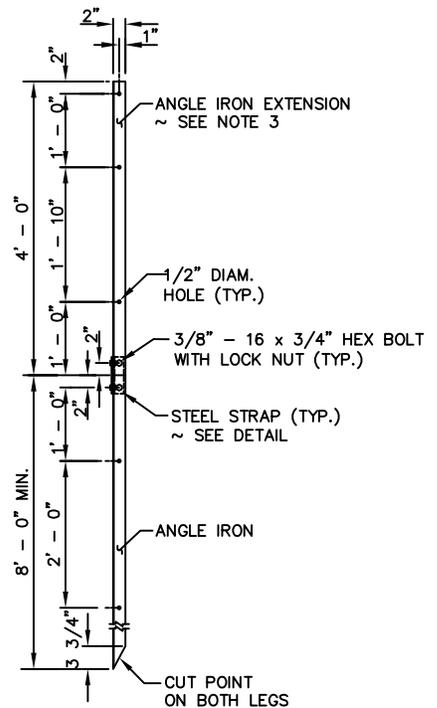


WATER INTAKE AND CLEANOUT ASSEMBLY

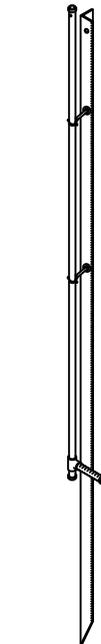
DETAIL B



STEEL STRAP



ANGLE IRON DETAIL (SHOWN WITH EXTENSION)



ISOMETRIC VIEW

 <p>ENGINEERING DIVISION</p>	
<p>CREST GAGE</p>	
<p>SECTION A DETAIL N.T.S. 25.0</p>	
<p>APPROVED BY <i>[Signature]</i> DATE 1/1/2014</p>	
<p>CITY ENGINEER _____ DATE _____</p>	