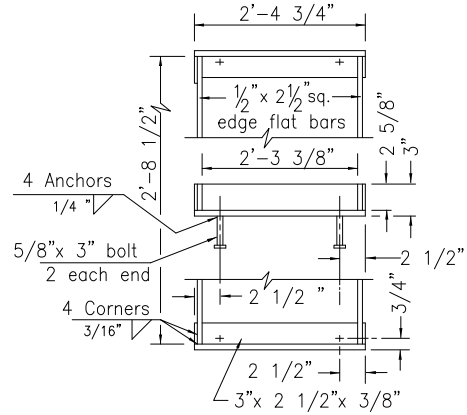
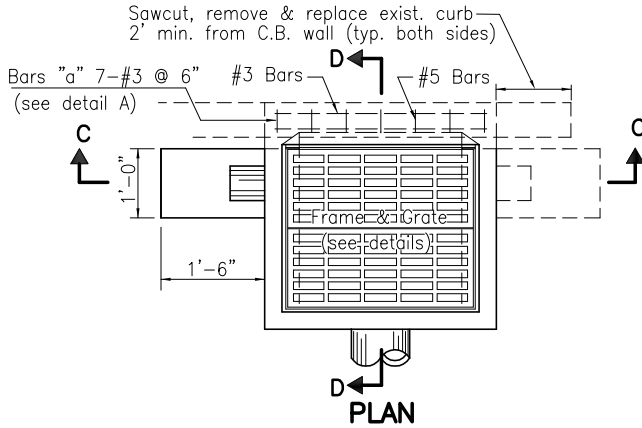


GRATE
NO SCALE

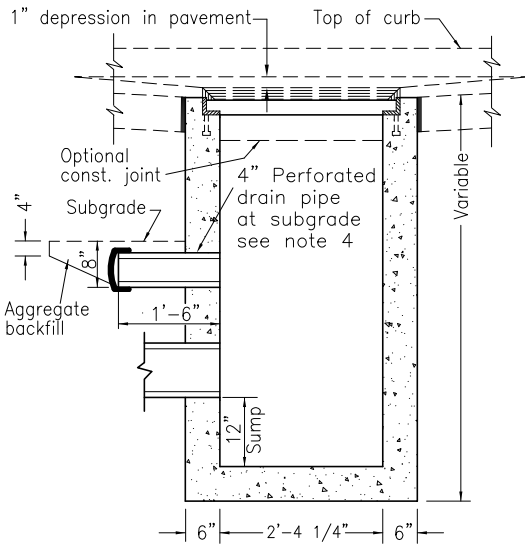
- 1.) Grates shall be ductile iron suitable for traffic loading as MFD. BY INLAND FOUNDRY.
- 2.) 2 Grates required for each C.B.



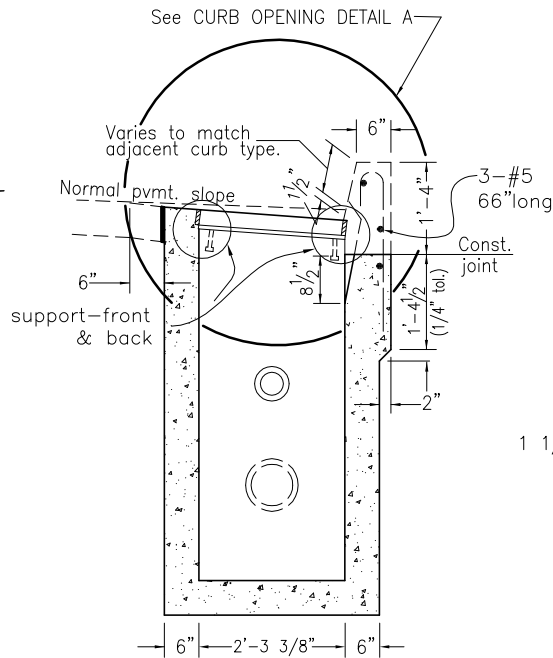
FRAME
NO SCALE



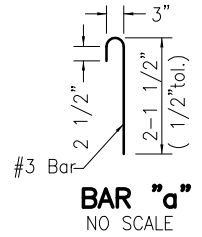
PLAN



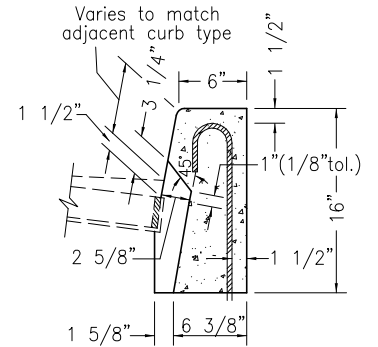
SECTION C-C



SECTION D-D



BAR "a"
NO SCALE



CURB OPENING DETAIL A
NO SCALE

NOTES:

1. Reinforcing steel
 - a.) As per Sec. 603 of S.C.S.
 - b.) No. 3 bars to be placed during curb construction.
 - c.) All bars to be placed 1/2" clear of nearest face of concrete unless shown or noted otherwise.
 - d.) All bar splices shall be 20 dia.
2. All concrete to be 3,000 p.s.i.
3. Materials for frames and grates shall conform to Sec. 02450 of Standard Specifications for Highway Construction by Oregon State highway division, 1991.
4. Drain shall be P.V.C. (Sch. 40) with cap. Drain pipe shall have 6-3/8" diameter holes in lower side. Cap shall have 4-3/8" diameter drill holes. Two drains required when C.B. located at sag vertical curve.
5. This detail not for use on private property.

Approved *Karl O. Sauter* 3-1-02
City Engineer Date

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

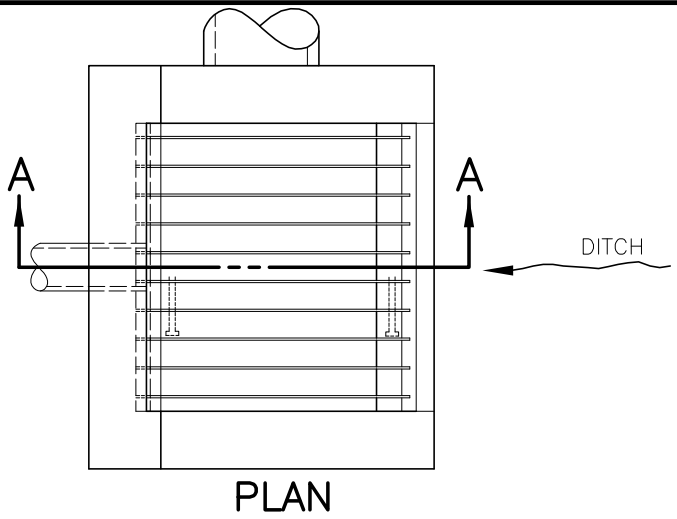
**STANDARD PLAN
TYPE 2 CATCH BASIN**

DRAWN BY GS

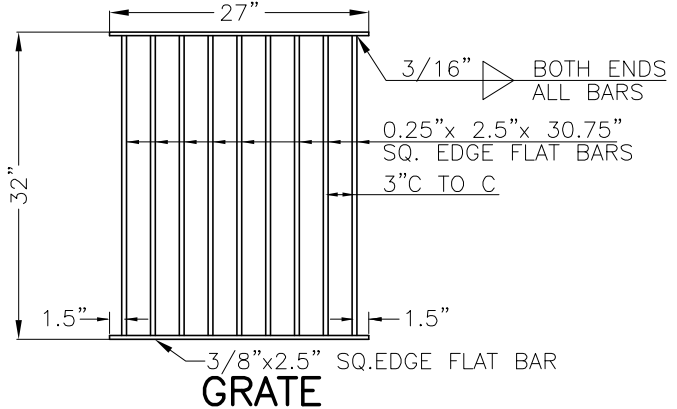
CHECKED BY D.W.

NO.201

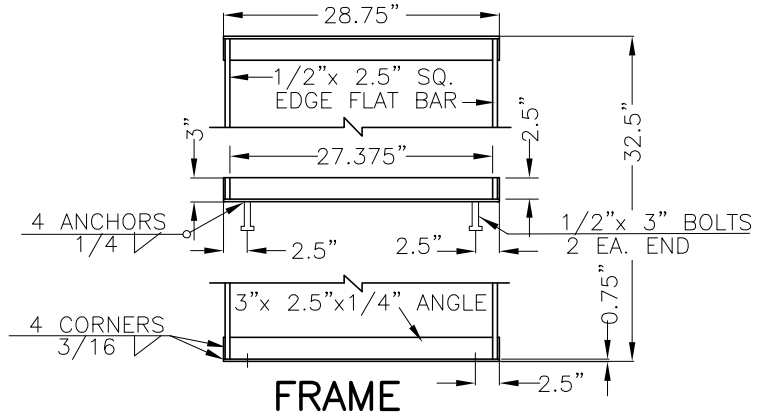
| No. | Description | Date | By | Appr |
|-----|--|-------|--------|--------|
| | CHANGED GRATE FROM STEEL TO DUCTILE IRON | 1-02 | I.D.F. | K.D.G. |
| | SEVERAL DIMENSION CORRECTIONS | 12-99 | I.D.F. | K.D.G. |
| | CONVERT TO CAD DWG. | | | |
| | REVISION | | | |



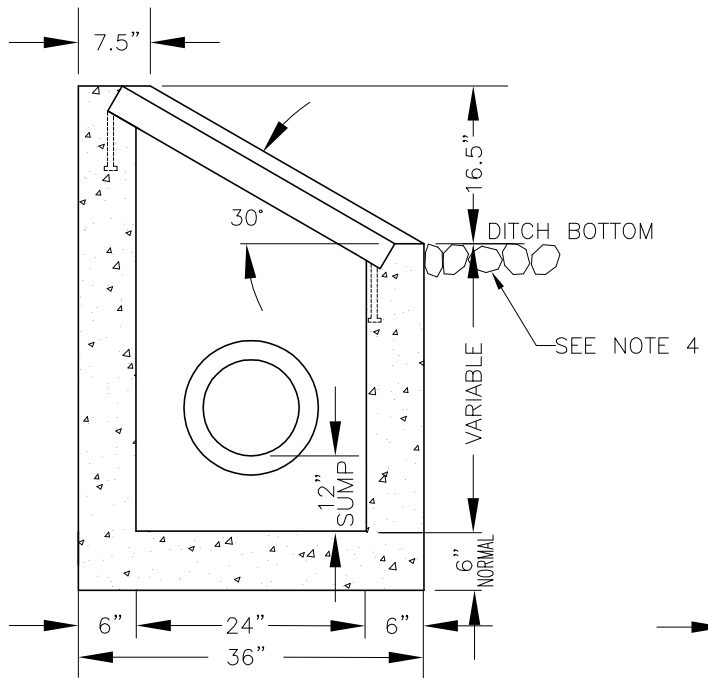
PLAN



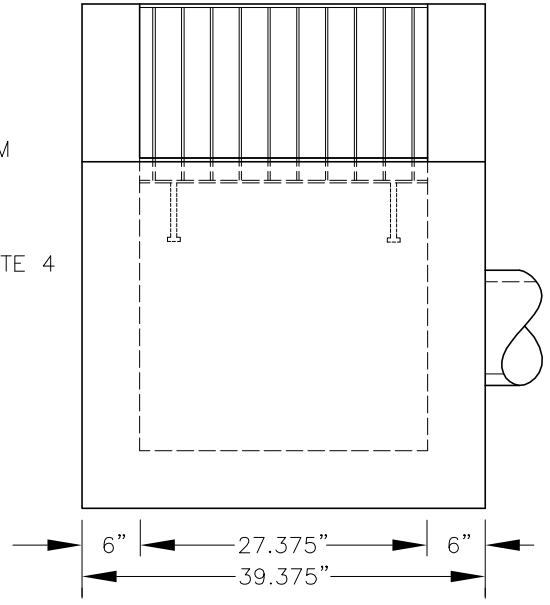
GRATE



FRAME



SECTION A-A



ELEVATION

NOTES:

1. FOR PIPE SIZE, INVERT ELEVATION AND LOCATION SEE PROJECT PLANS.
2. ALL CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE SPECIFICATIONS FOR 3000 P.S.I.
3. FRAME AND GRATE MATERIAL SHALL BE STEEL (A.S.T.M. A-36) AND BE GALVANIZED IN ACCORDANCE WITH (A.S.T.M. A-123).
4. PLACE CLASS 50 RIP RAP IN FRONT OF CATCHBASIN. 4'-5' LONG 1' DEPTH.

Approved *Karl O. Spitzer* City Engineer 9-15-99 Date

| No. | Description | Date | By | Appr |
|----------|---------------------|------|----|------|
| 1. | CONVERT TO CAD DWG. | | | |
| 2. | ADD RIP RAP | | | |
| 3. | DELETE 4" DRAIN | | | |
| REVISION | | | | |

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

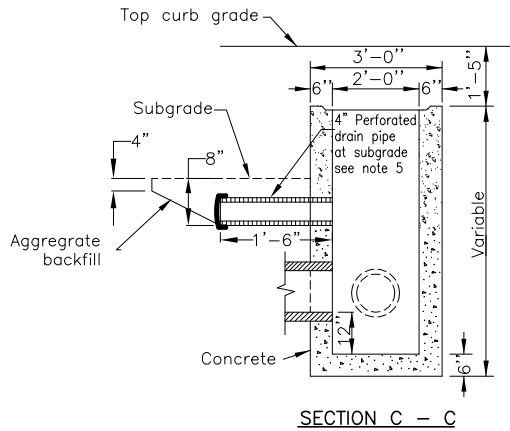
STANDARD PLAN
TYPE 3 CATCHBASIN

DRAWN BY GS
CHECKED BY D.W.

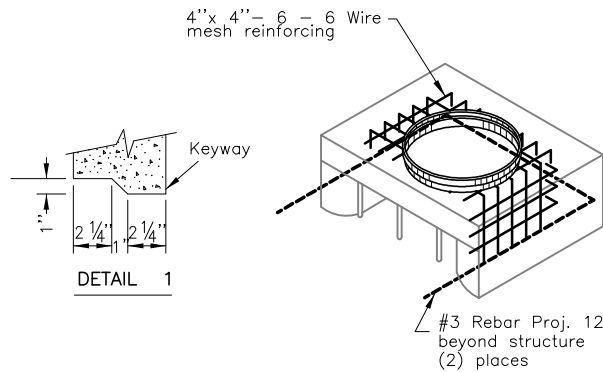
NO.202

NOTE:

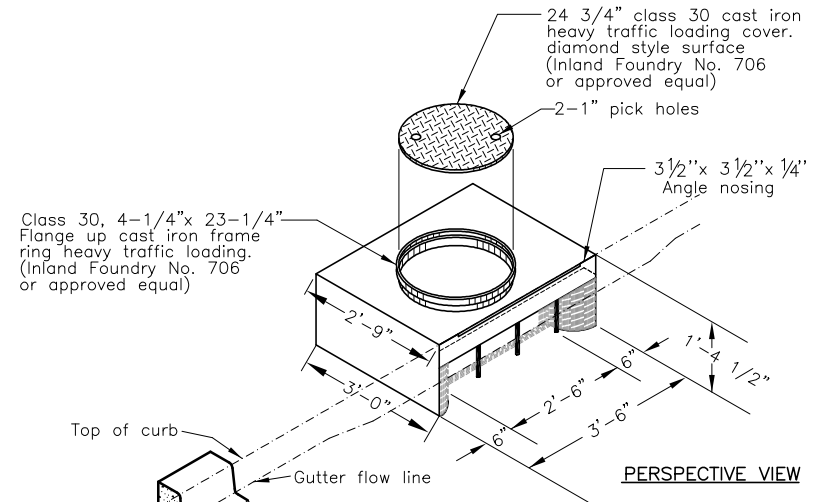
1. Concrete shall attain a strength of 3300 p.s.i. in 20 days.
2. Top shall be reinforced with 4''x4''-6-6 wire mesh.
3. All metal parts shall be hot dipped galvanized after fabrication.
4. Cover shall be ASTM A-48 Class 30 cast iron.
5. Drain shall be P.V.C. (Schedule 40) with cap. Drain Pipe shall have 6-3/8" diameter holes in lower side. Cap shall have 4-3/8" diameter drill holes. Two drains required when c.b. located at sag vertical curve.



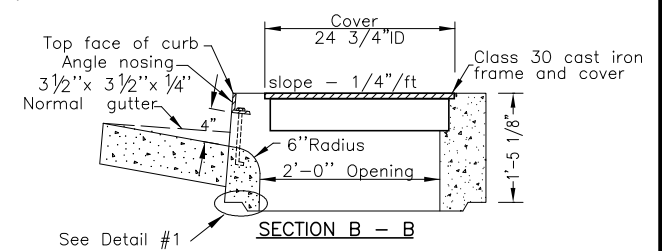
SECTION C - C



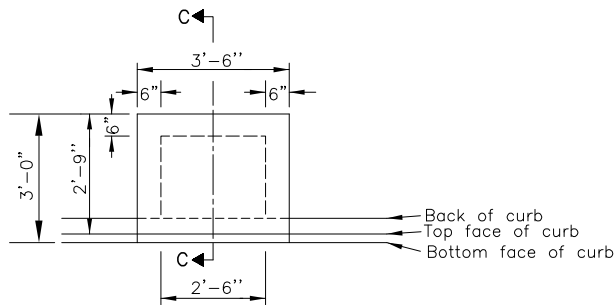
REINFORCING STEEL DETAIL



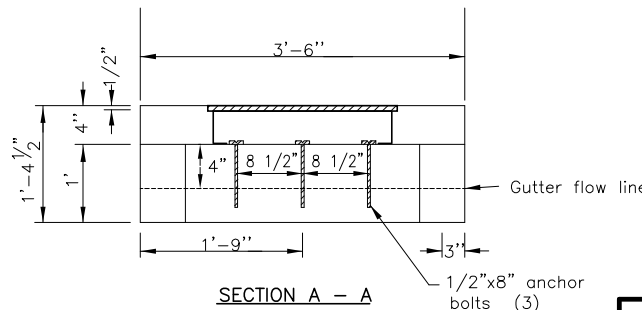
PERSPECTIVE VIEW



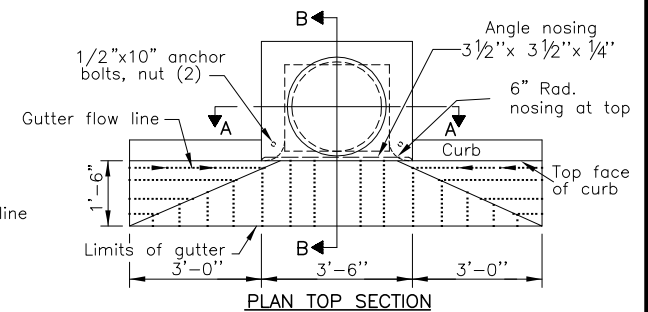
SECTION B - B



PLAN BASE SECTION



SECTION A - A



PLAN TOP SECTION

NO SCALE

Approved Karl O. Guter 9-15-99
City Engineer Date

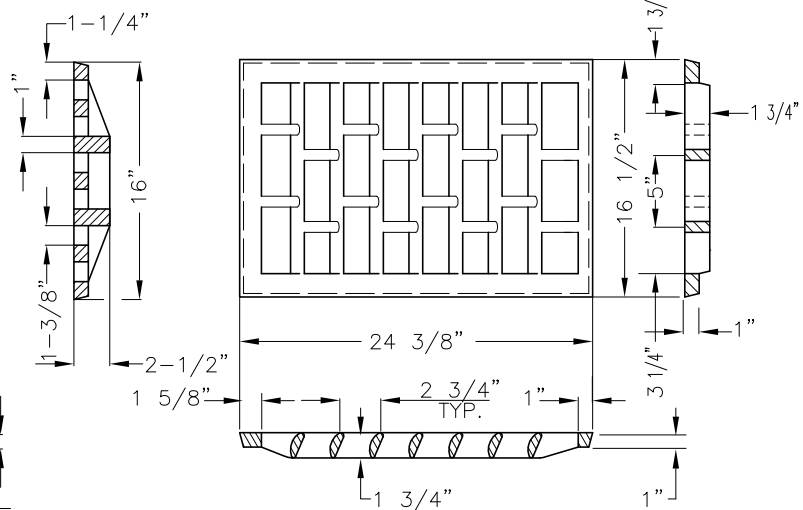
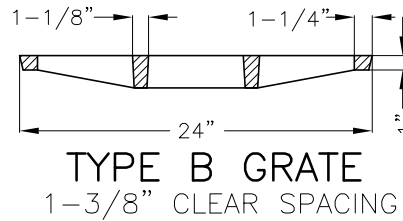
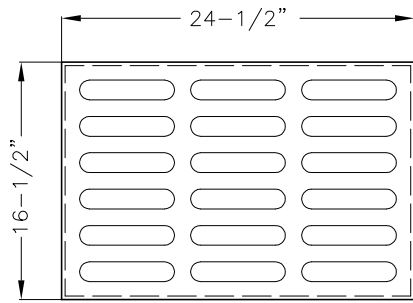
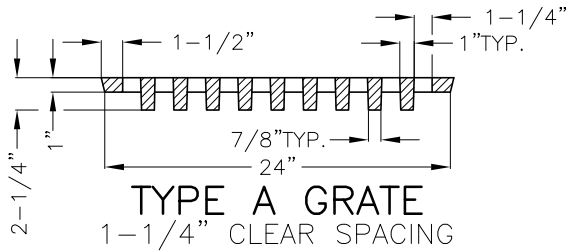
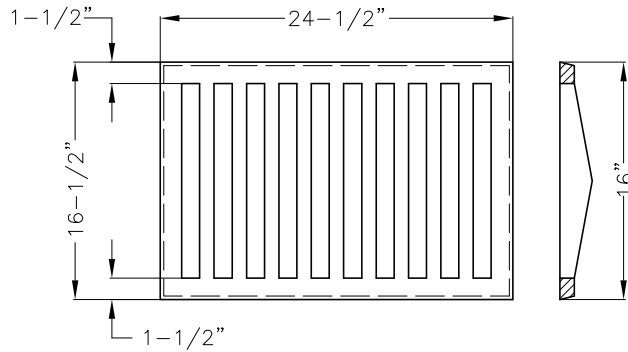
| No. | Description | Date | By | Appr |
|-----|---------------------|------|----|------|
| | CONVERT TO CAD DWG. | | | |
| | REVISION | | | |

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TYPE 4 CATCHBASIN

DRAWN BY GS
CHECKED BY D.W.

NO. 203

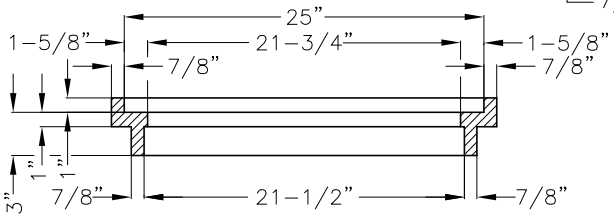
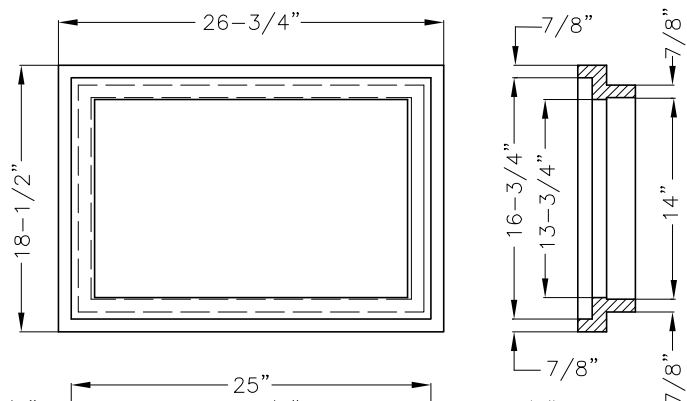


VANED GRATE
1-3/8" CLEAR SPACING

GRATE DETAILS

NOTES:

1. ALL GRATES AND FRAMES SHALL BE EITHER CAST IRON OR CAST STEEL.
2. ALL GRAY IRON CASTINGS SHALL CONFORM TO ASTM A 48, CLASS 30B OR ASSHTO M 105, CLASS 30B.
3. ALL STEEL CASTINGS SHALL CONFORM TO ASTM A 27, GRADE 65-35, OR TO AASHTO M 103, GRADE 65-35.
4. ROUNDS, FILLETS, TAPERS AND OTHER MINOR MODIFICATIONS TO THE DIMENSIONS SHOWN FOR CASTINGS MAY BE MADE TO CONFORM TO COMMON SHOP PRACTICES.



GRATE FRAME DETAILS

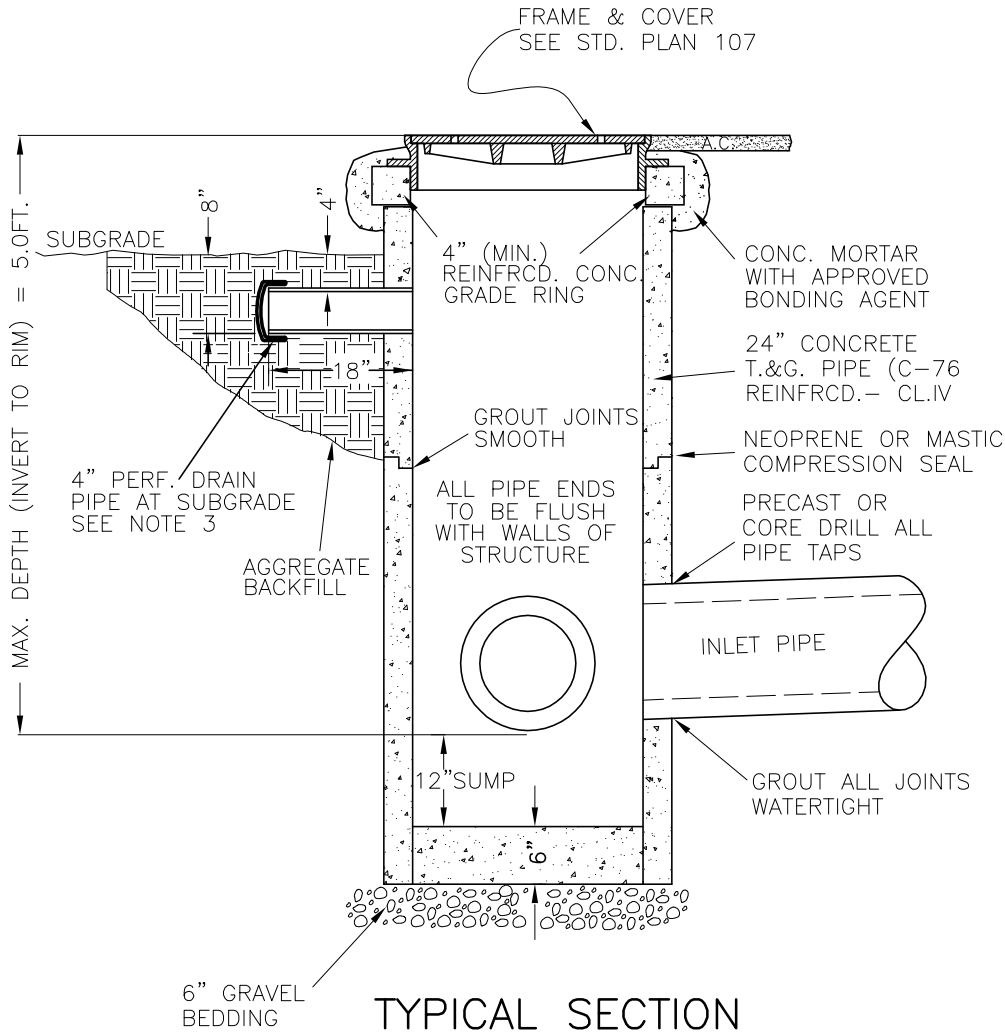
Approved Karl O. Guster 9-15-99
City Engineer Date

| No. | Description | Date | By | Appr |
|----------|---|------|------|------|
| 1 | CLARIFIED REFERENCE SPECIFICATIONS, ADDED VANED GRATE OPTION. | 5/99 | S.P. | D.W. |
| REVISION | | | | |

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
CATCH BASIN FRAMES AND GRATES
TYPE A, B AND VANED

| | |
|-----------------|--------|
| DRAWN BY GS, SP | NO.204 |
| CHECKED BY D.W. | |



TYPICAL SECTION

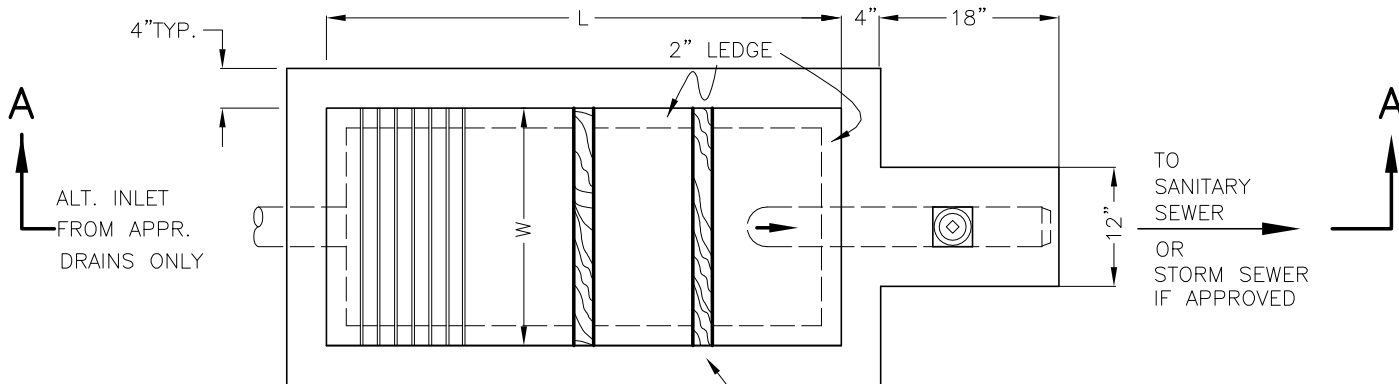
NOTES:

1. ALL CAST-IN PLACE CONCRETE SHALL BE 3,000 P.S.I. (MIN.)
2. 12" MAXIMUM PIPE SIZE. MAXIMUM 2 PIPE PENETRATIONS, 1 IN, 1 OUT.
3. DRAIN SHALL BE P.V.C. (SCH. 40) WITH CAP. DRAIN PIPE SHALL HAVE 6-3/8" DIAMETER HOLES IN LOWER SIDE. CAP SHALL HAVE 4-3/8" DIAMETER DRILL HOLES.

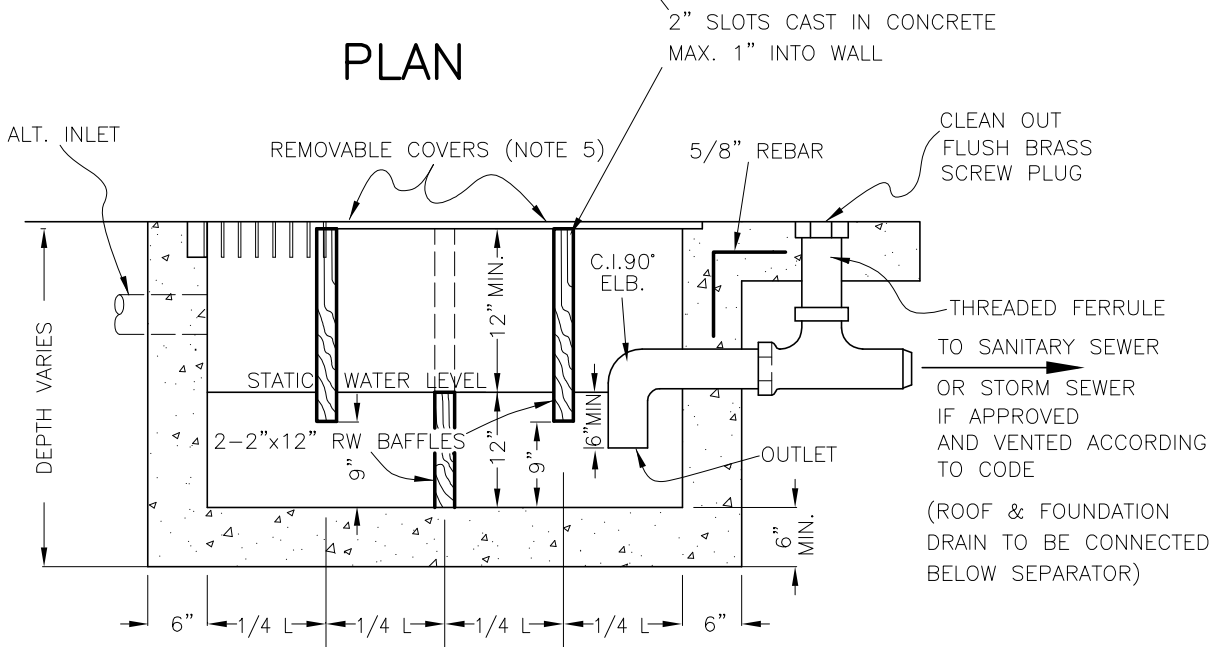
Approved Karl O. Sauter 9-15-99
 City Engineer Date

| | |
|---|--------|
| CITY OF SALEM DEPARTMENT OF PUBLIC WORKS | |
| STANDARD PLAN ROUND CLEANOUT | |
| DRAWN BY GS | NO.205 |
| CHECKED BY D.W. | |

| No. | Description | Date | By | Appr |
|-----|---------------------|------|----|------|
| | CONVERT TO CAD DWG. | 1/98 | | |
| | REVISION | | | |



PLAN



SECTION A-A

TANK SIZE FOR DIFFERENT INFLOWS (GALLONS/DAY) 1" THICKNESS (NOTE #5)

| GPD | L | W | GRATE | SOLID COVER |
|-----|----|-------|---------|-------------|
| 400 | 4' | 2' | 12"x24" | 24"x36" |
| 600 | 5' | 2'-6" | 15"x30" | 30"x45" |
| 800 | 6' | 3' | 18"x36" | 36"x54" |

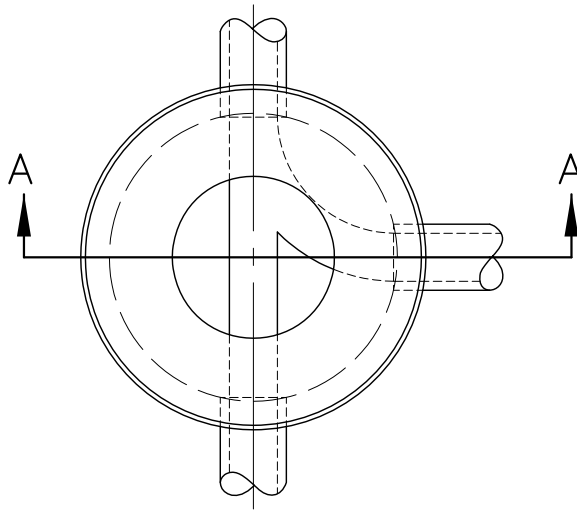
NOTES:

1. MIN. 2'x2' OPENING FOR CLEANING.
2. MIN. 1' DEPTH UNDER INVERT OF OUTLET PIPE.
3. INLET & OUTLET PIPE PIPE SHALL BE SAME SIZE, 3" MIN..
4. FOR MORE DETAILS SEE PLBG. CODE 1001,1008.
5. COVERS PER VALLEY IRON & STEEL CO. OR EQUAL.
6. FOR USE OUTSIDE OF BLDG. ONLY.
7. ALL BAFFLES SHALL BE 2"x12" REDWOOD.
8. IN LIEU OF DETAILS IN THIS DRAWING, PRECAST UNITS MANUFACTURED COMMERCIALY SUCH AS THE 'UTILITY VAULT' 660 SERIES, OR APPROVED EQUAL, MAY BE USED.

Approved *Karl O. Spitzer* 9-15-99
City Engineer Date

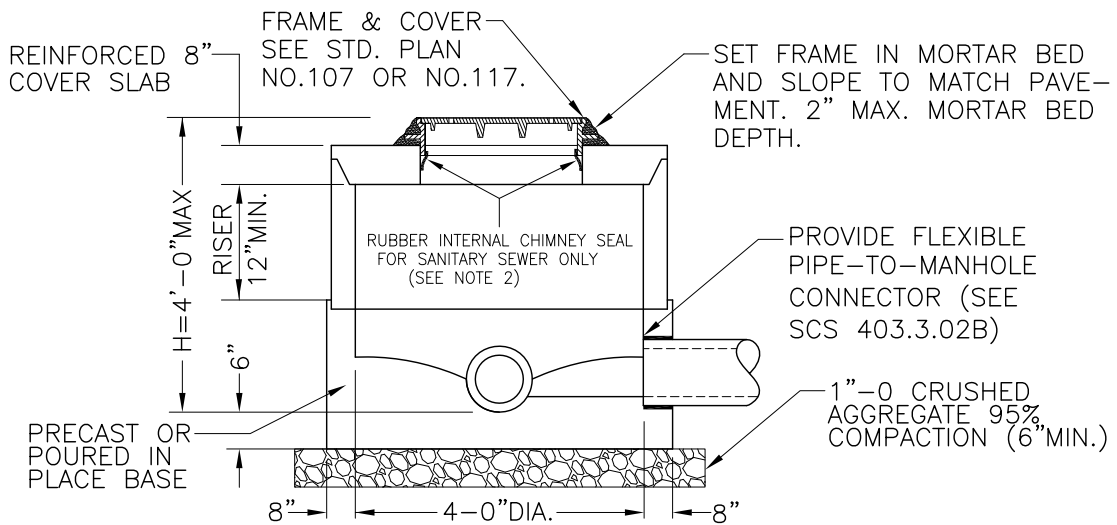
| No. | Description | Date | By | Appr |
|----------|---------------------|------|----|------|
| | CONVERT TO CAD DWG. | 1/98 | | |
| REVISION | | | | |

| | |
|--|--------|
| CITY OF SALEM DEPARTMENT OF PUBLIC WORKS | |
| STANDARD PLAN SAND AND OIL/WATER SEPARATOR | |
| DRAWN BY GS | NO.209 |
| CHECKED BY KG | |



PLAN

(FRAME & COVER NOT SHOWN)



SECTION A-A

NOTES:

1. FLEXIBLE PIPE-TO-MANHOLE CONNECTIONS SHALL BE INSTALLED ACCORDING TO MANUFACTURES SPECIFICATIONS.
2. INTERNAL RUBBER CHIMNEY SEAL SHALL BE FLEX-SEAL OR CRETEX OR APPROVED EQUAL. THE CHIMNEY SEAL MAY BE DELETED WHEN MANHOLE IS ADJUSTED AFTER PAVING USING CONCRETE EXTERNAL ENCASEMENT.
3. WATER TIGHT JOINTS (GROUT JOINTS SMOOTH AT MANHOLE INTERIOR).
4. ALL MANHOLE SECTIONS MUST MEET OR EXCEED ASTM C 478.

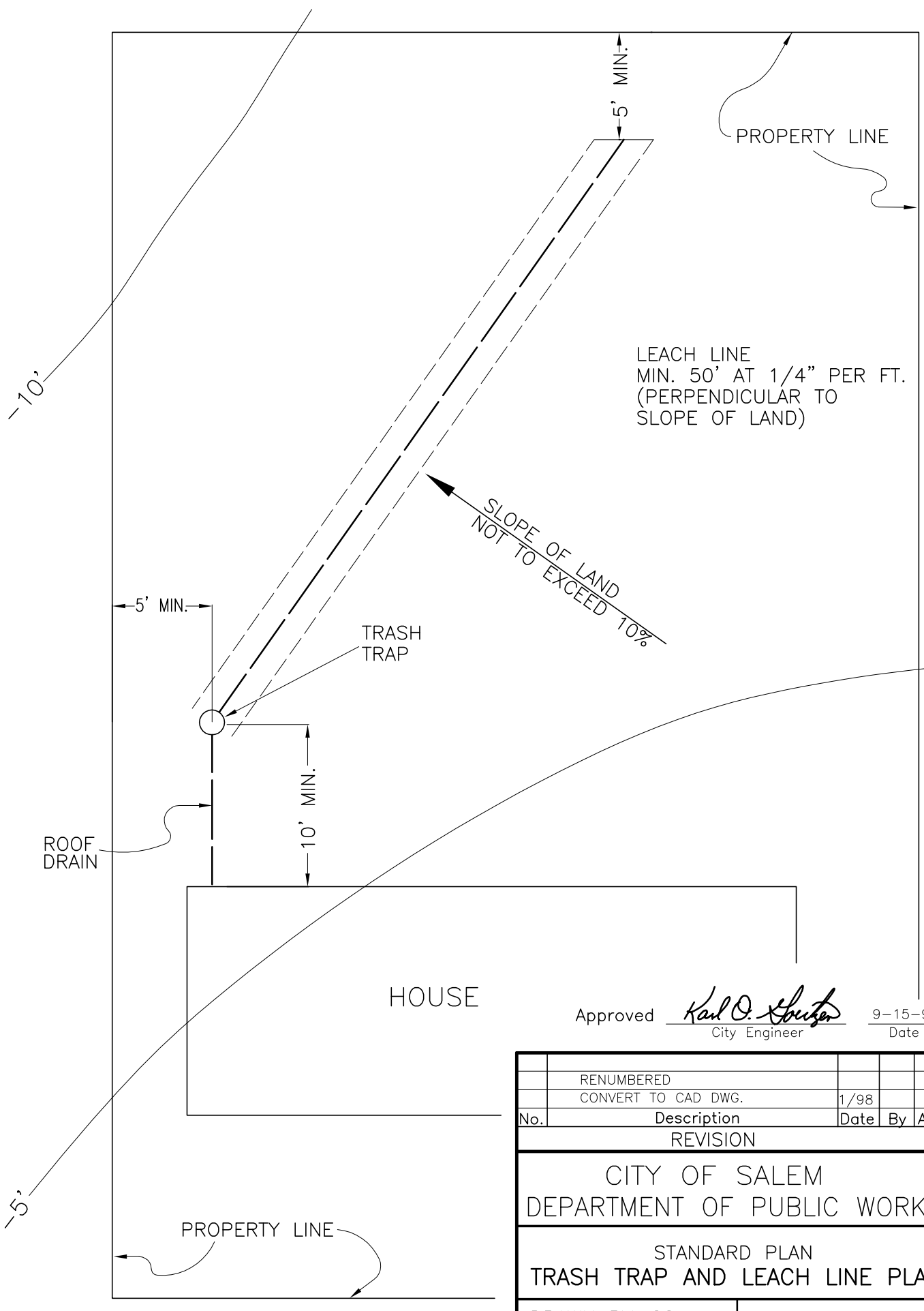
Approved *Karl O. Sauter* City Engineer 3-1-02 Date

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

| No. | Description | Date | By | Appr |
|----------|--|------|----|--------|
| 3 | CHANGE TO CONCENTRIC COVER | 4/01 | | I.D.F. |
| 2 | ADDED CHIMNEY SEAL & PIPE TO MANHOLE DETAILS | 7/99 | | |
| 1 | CONVERT TO CAD DWG. | 1/98 | | |
| REVISION | | | | |

STANDARD PLAN
SHALLOW PRECAST MANHOLE
(H LESS THAN 4'-0")

DRAWN BY GS CHECKED BY D.W. **NO.211**



LEACH LINE
 MIN. 50' AT 1/4" PER FT.
 (PERPENDICULAR TO
 SLOPE OF LAND)

SLOPE OF LAND
 NOT TO EXCEED 10%

Approved Karl O. Guster 9-15-99
 City Engineer Date

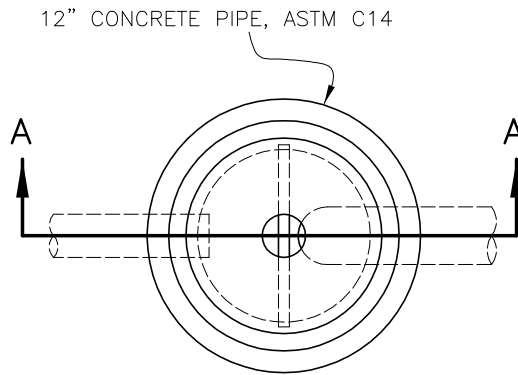
| No. | Description | Date | By | Appr |
|-----|---------------------|------|----|------|
| | RENUMBERED | | | |
| | CONVERT TO CAD DWG. | 1/98 | | |

REVISION

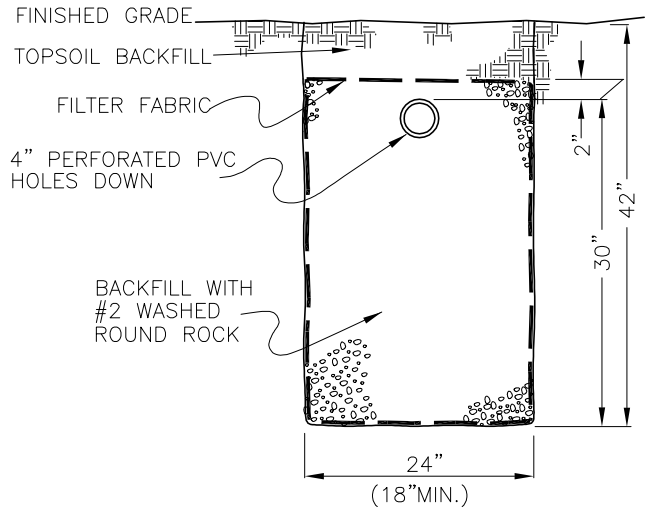
CITY OF SALEM
 DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
 TRASH TRAP AND LEACH LINE PLAN

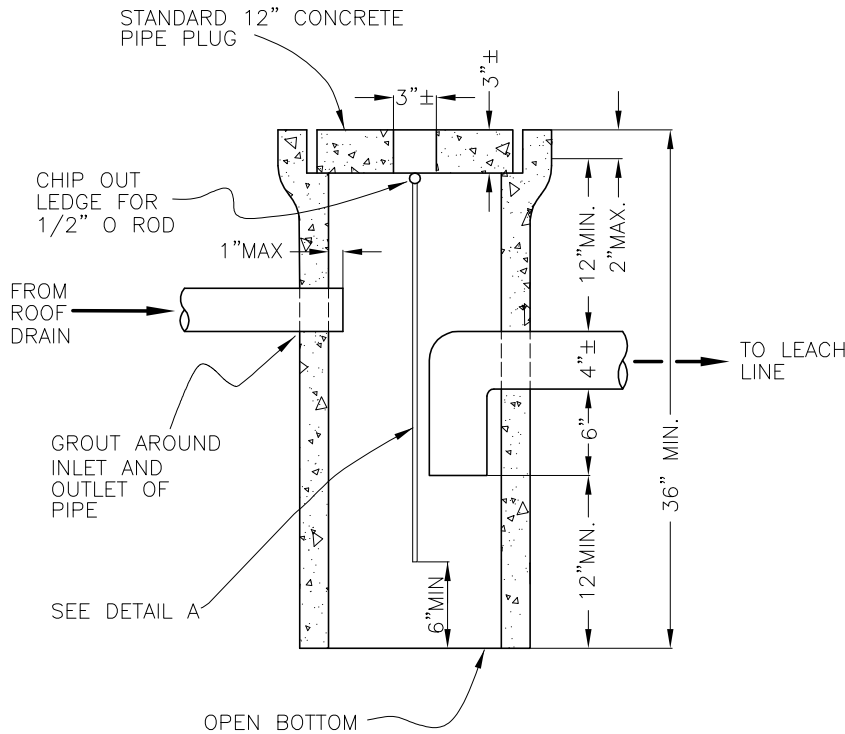
DRAWN BY GS
 CHECKED BY D.W. NO.212



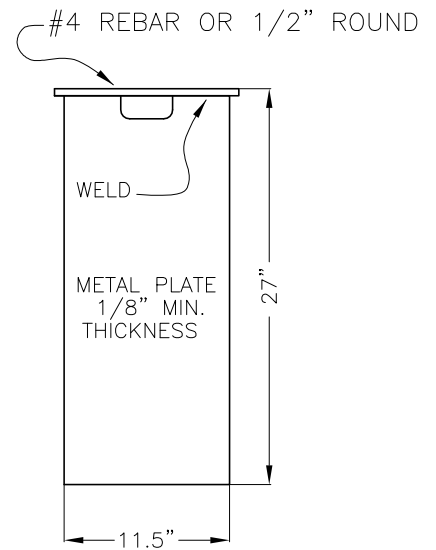
TRASH TRAP



TYPICAL SECTION
LEACH LINE



SECTION A-A



DETAIL A

NOTES

1. PLASTIC MAY BE USED AS AN ALTERNATE FOR METAL PLATE

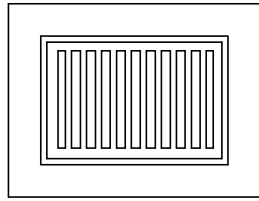
Approved *Karl O. Sauter* City Engineer Date 9-15-99

| No. | Description | Date | By | Appr |
|----------|---------------------|------|----|------|
| | CONVERT TO CAD DWG. | | | |
| REVISION | | | | |

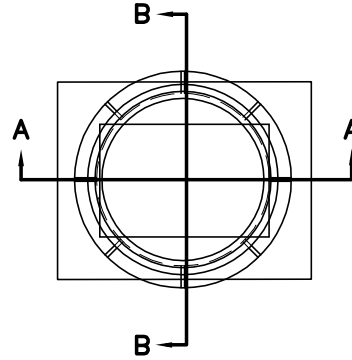
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TRASH TRAP AND
LEACH LINE DETAILS

| | |
|-----------------|--------|
| DRAWN BY GS | NO.213 |
| CHECKED BY D.W. | |

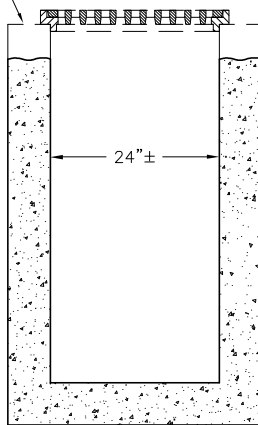


TOP VIEW
NO SCALE:



TOP VIEW
NO SCALE:

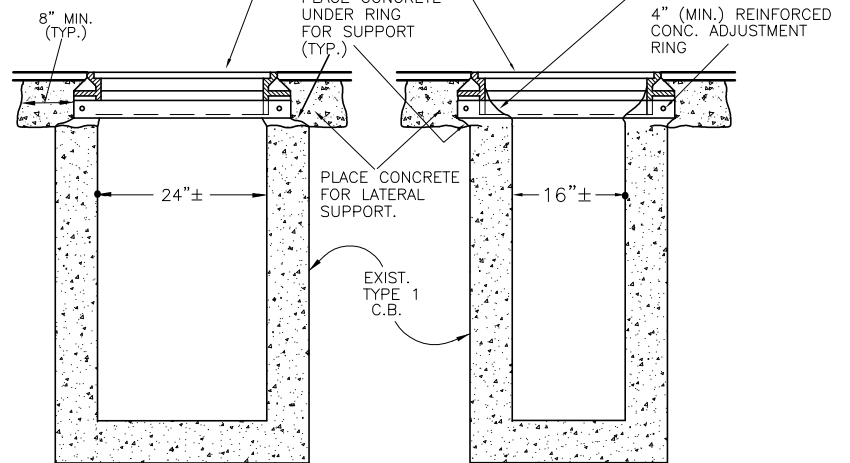
REMOVE EXISTING GRATE, FRAME AND SUFFICIENT CONCRETE FROM EXISTING CATCH BASIN TO INSTALL MANHOLE FRAME TO MATCH PAVEMENT ELEVATION AND SLOPE.



EXISTING CATCH BASIN TYPE 1
NO SCALE:

SET MANHOLE FRAME ON 4" REINF. CONC. ADJ. RING SET TO MATCH SLOPE AND PAVEMENT ELEVATION.

FILL WITH MORTAR TO TRANSITION BETWEEN MANHOLE FRAME AND CATCH BASIN STRUCTURE.



SECTION A-A
NO SCALE:

SECTION B-B
NO SCALE:

MANHOLE LID CONVERSION
(MODIFIED TYPE 1 C.B.)

NOTES:

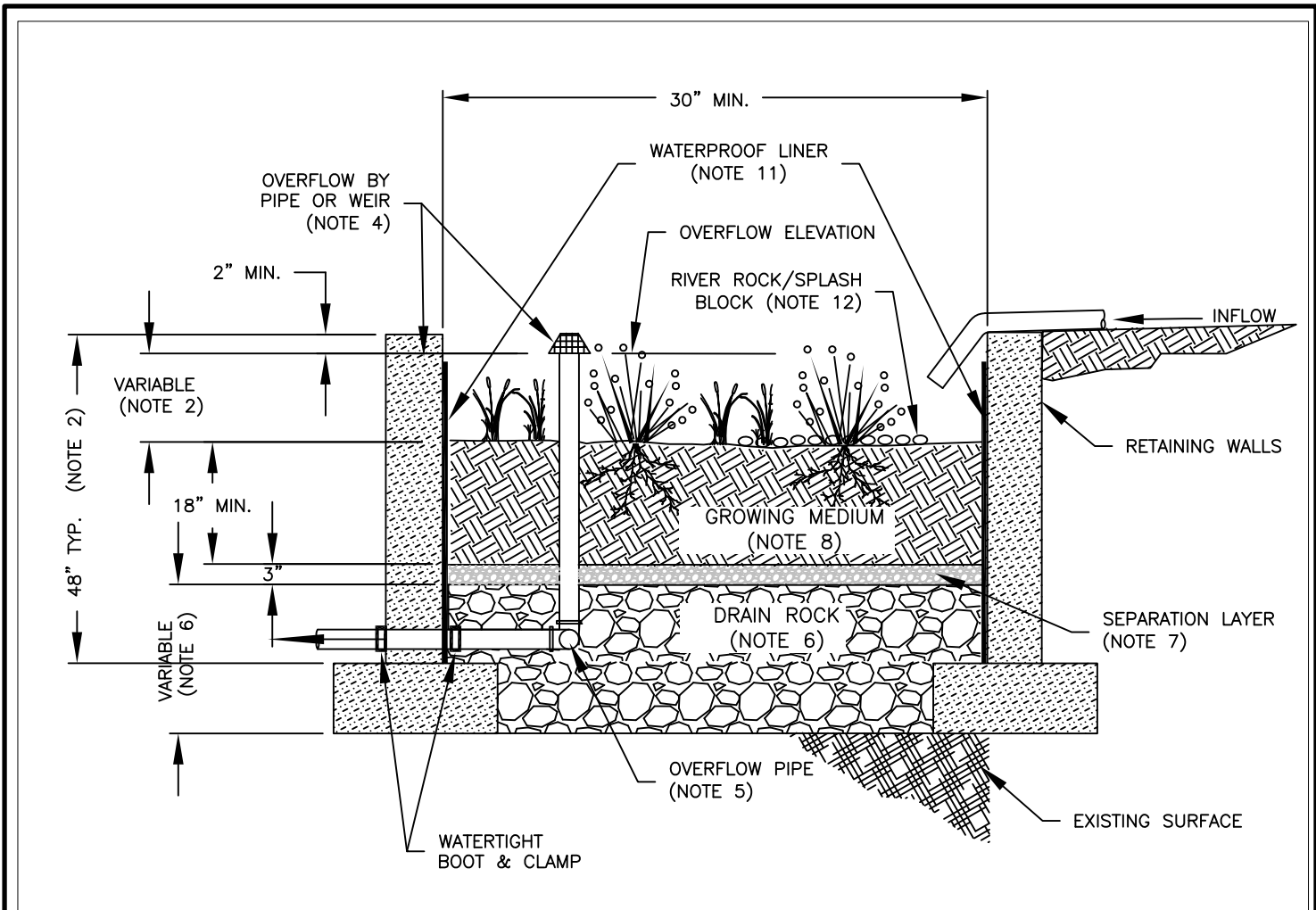
1. ALL SALVAGED FRAMES AND GRATES TO BE DELIVERED TO CITY SHOPS.
2. USE CITY OF SALEM STANDARD FRAME AND COVER AS PER CITY STANDARD PLAN NO.107

Approved Karl O. Gouton 9-15-99
City Engineer Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
STANDARD PLAN
CLEANOUT
COVER CONVERSION

| No. | Description | Date | By | Appr |
|-----|---------------------|------|----|------|
| | CONVERT TO CAD DWG. | 3/99 | | |
| | REVISION | | | |

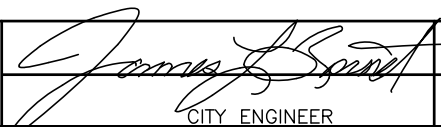
DRAWN BY GS
CHECKED BY D.W. **NO.214**



NOTES:

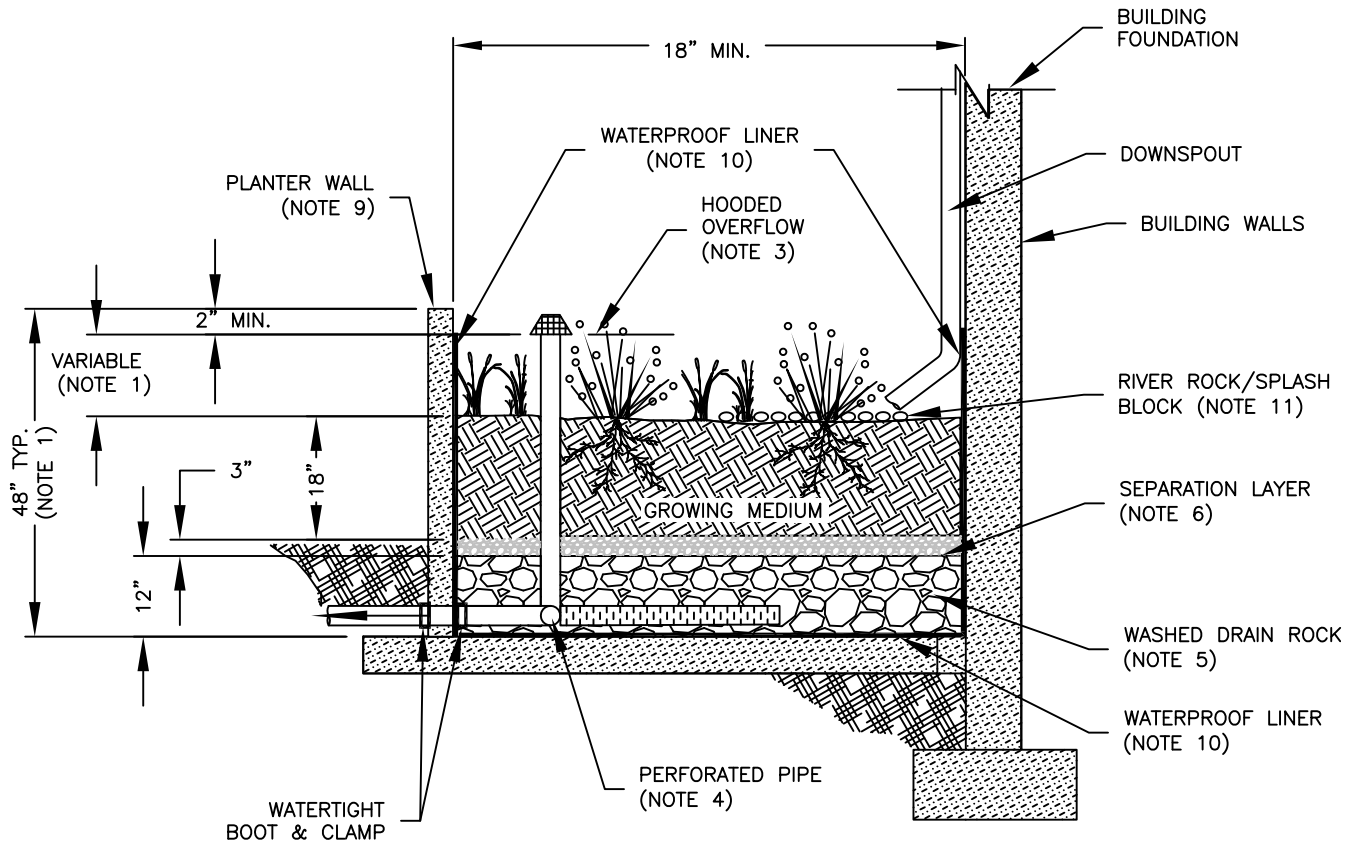
1. PROVIDE PROTECTION FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING, AND AFTER CONSTRUCTION.
2. DIMENSIONS:
 - A. WIDTH: 30" MINIMUM
 - B. DEPTH OF PLANTER (FROM TOP OF GROWING MEDIUM TO OVERFLOW ELEVATION):
SIMPLIFIED 12"
ENGINEERED 6"-18"
 - C. SLOPE OF PLANTER: 0.5% OR LESS
3. SETBACKS:
 - A. 10' FROM BUILDING FOUNDATIONS
 - B. SETBACKS FROM PROPERTY LINES VARY DEPENDING ON SITE CONDITIONS (SEE DESIGN STANDARDS)
4. OVERFLOW:
 - A. INLET ELEVATION MUST ALLOW FOR 2" OF FREEBOARD, MINIMUM
 - B. PROTECT FROM DEBRIS AND SEDIMENT WITH STRAINER OR GRATE
5. PIPING:
SEE STANDARD PLAN 221
6. DRAIN ROCK:
 - A. 1/2"-3/4" WASHED AGGREGATE
 - B. DEPTH:
SIMPLIFIED- 18" (IF ≤ 1.75 "/hr INFILTRATION RATE)
12" (IF > 1.75 "/hr INFILTRATION RATE)
ENGINEERED - 0"-48"
7. SEPARATION BETWEEN DRAIN ROCK AND GROWING MEDIUM: SHALL BE A 3" LAYER OF 3/4"-1/4" OPEN GRADED AGGREGATE.
8. GROWING MEDIUM:
 - A. DEPTH: 18" MINIMUM
 - B. SEE DESIGN STANDARDS FOR REQUIREMENTS
9. VEGETATION: FOLLOW LANDSCAPE PLANS OR REFER TO PLANTING REQUIREMENTS IN DESIGN STANDARDS.
10. PLANTER FOUNDATION AND WALLS:
 - A. MATERIAL SHALL BE 4" REINFORCED CONCRETE, STONE, BRICK, OR OTHER DURABLE MATERIAL
11. WATERPROOF LINER:
 - A. WATERPROOF LINER SHALL BE 30 MIL PVC, HDPE OR EQUIVALENT
 - B. A WATERPROOF LINER IS NOT REQUIRED IF THE FOUNDATION OR WALL MATERIAL IS WATERPROOF REINFORCED CONCRETE OR APPROVED EQUAL
12. INSTALL RIVER ROCK SPLASH PAD TO TRANSITION FROM INLET TO GROWING MEDIUM.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
INFILTRATION STORMWATER PLANTER

APPROVED  1/01/14
 CITY ENGINEER DATE

DRAWN BY KAK 12/2013
 CHECKED BY KLR 12/2013

NO. 215



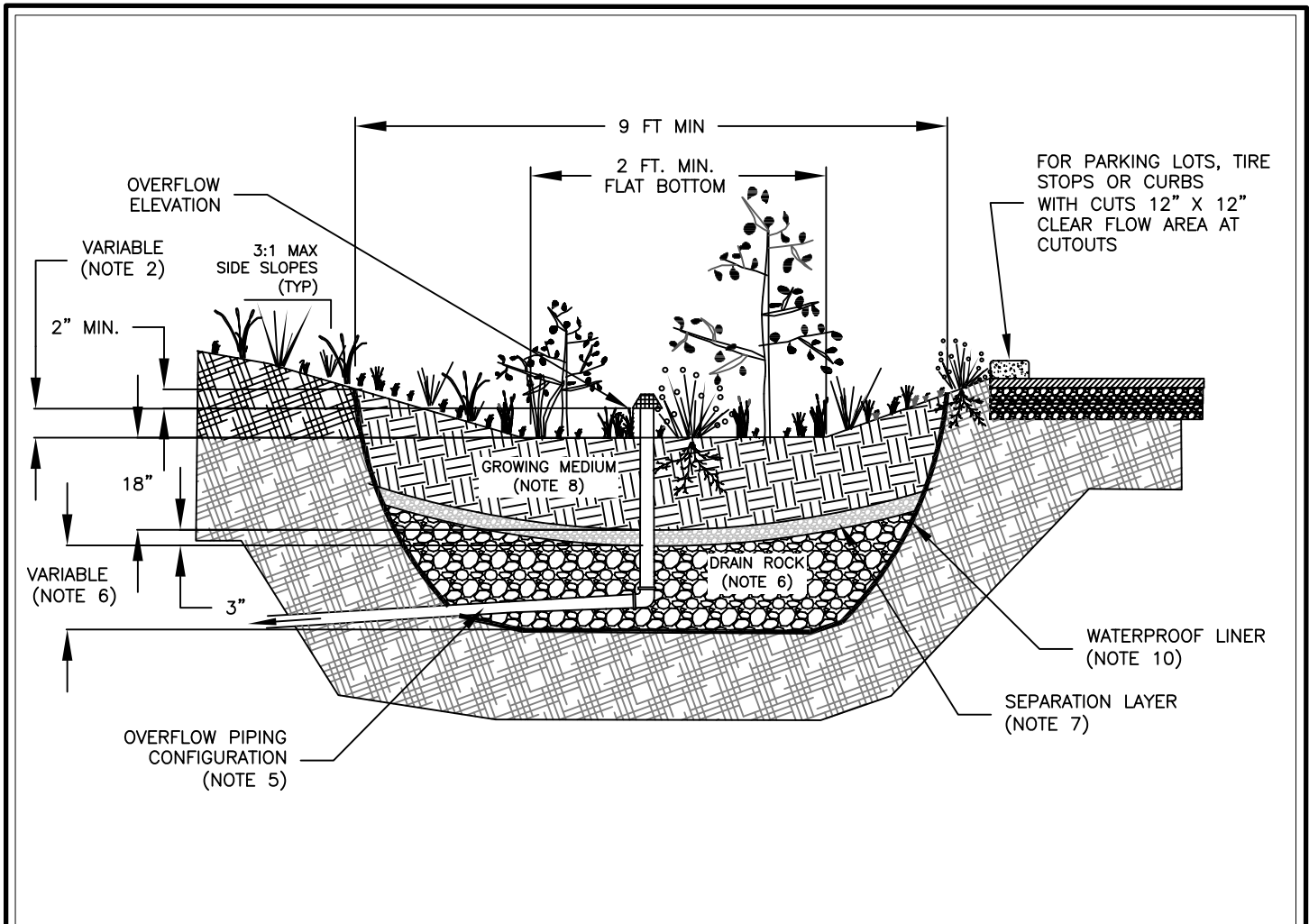
NOTES:

1. DIMENSIONS:
 - A. WIDTH: 18" MINIMUM
 - B. DEPTH OF PLANTER (FROM TOP OF GROWING MEDIUM TO OVERFLOW ELEVATION): SIMPLIFIED 12" ENGINEERED 6"-18"
 - C. SLOPE OF PLANTER: 0.5% OR LESS
 - D. PLANTERS MUST BE LESS THAN 30" IN HEIGHT ABOVE FINISHED GRADE
2. SETBACKS:
 - A. NO SETBACK FROM FOUNDATION REQUIRED
 - B. SETBACKS FROM PROPERTY LINES VARY DEPENDING ON SITE CONDITIONS (SEE DESIGN STANDARDS)
3. OVERFLOW:
 - A. INLET ELEVATION MUST ALLOW FOR 2" OF FREEBOARD, MINIMUM
 - B. PROTECT FROM DEBRIS AND SEDIMENT WITH STRAINER OR GRATE
4. PIPING:
 - SEE STANDARD PLAN 221
5. DRAIN ROCK:
 - A. 1 1/2"-3/4" WASHED AGGREGATE WITH 40% VOIDS
 - B. DEPTH: 12 INCHES
6. SEPARATION BETWEEN DRAIN ROCK AND GROWING MEDIUM SHALL BE A 3" LAYER OF 3/4"-1/4" OPEN GRADED AGGREGATE.
7. GROWING MEDIUM:
 - A. DEPTH: 18" MINIMUM
 - B. SEE DESIGN STANDARDS FOR REQUIREMENTS
8. VEGETATION: FOLLOW LANDSCAPE PLANS OR REFER TO PLANTING REQUIREMENTS IN DESIGN STANDARDS.
9. PLANTER FOUNDATION AND WALLS:
 - A. MATERIAL SHALL BE 4" REINFORCED CONCRETE, STONE, BRICK, OR OTHER DURABLE MATERIAL
 - B. PLANTER CONCRETE, BRICK, OR STONE WALLS SHALL BE INCLUDED IN FOUNDATION BUILDING PLANS
10. WATERPROOF LINER: WATERPROOF LINER SHALL BE 30 mil PVC, HDPE OR EQUIVALENT. WATERPROOF LINER IS NOT REQUIRED IF THE FOUNDATION AND WALL MATERIAL IS WATERPROOF REINFORCED CONCRETE OR APPROVED EQUAL
11. INSTALL RIVER ROCK SPLASH PAD TO TRANSITION FROM INLET TO GROWING MEDIUM

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

**STANDARD PLAN
FILTRATION PLANTER**

| | | | | | | |
|-----------------|--|---------|------------|-----|---------|----------------|
| APPROVED | <i>James J. Beart</i> CITY ENGINEER | 1/01/14 | DRAWN BY | KAK | 12/2013 | NO. 216 |
| | | DATE | CHECKED BY | KR | 12/2013 | |

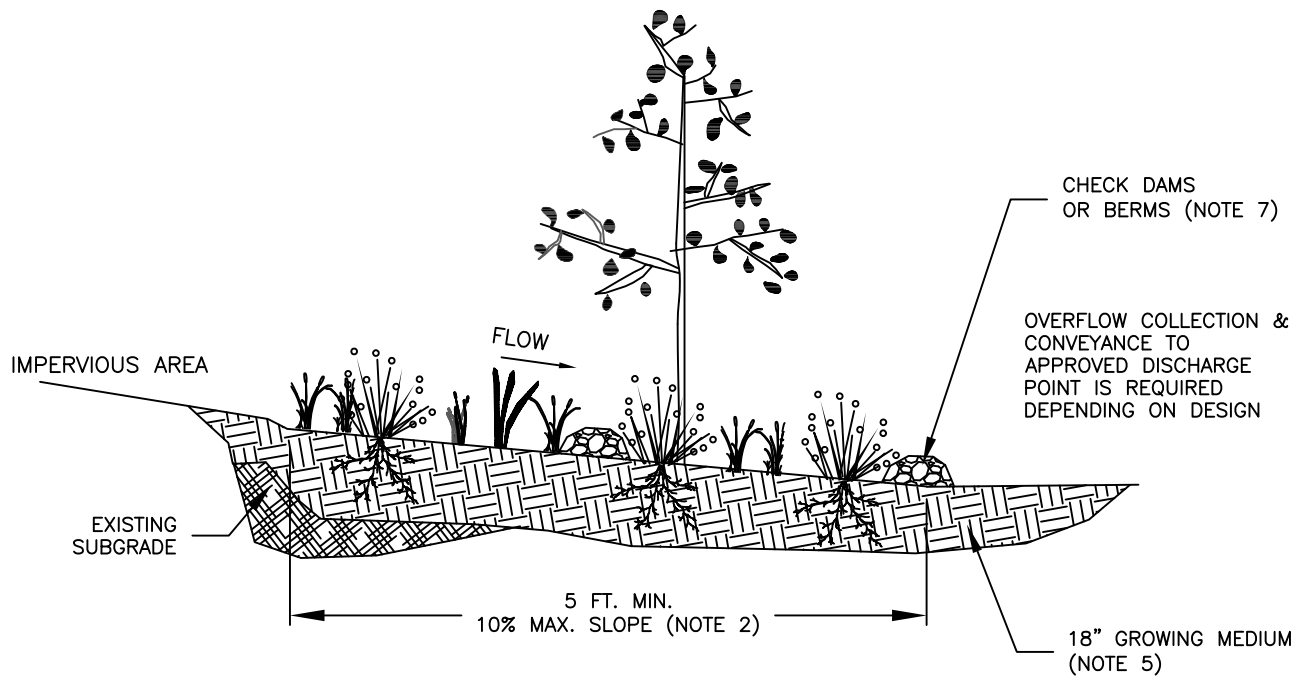


NOTES:

1. PROVIDE PROTECTION FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING, AND AFTER CONSTRUCTION.
2. DIMENSIONS:
 - A. WIDTH: 9 FT. MINIMUM.
 - B. DEPTH OF RAIN GARDEN (MEASURED FROM TOP OF GROWING MEDIUM TO OVERFLOW ELEVATION):
 - 1)SIMPLIFIED 12"
 - 2)ENGINEERED 6"-18"
 - C. SLOPE OF PLANTER: 0.5% OR LESS
3. SETBACKS (FROM NEAREST POINT AT FINISHED GRADE):
 - A. INFILTRATION-10 FT. FROM FOUNDATIONS
 - B. FILTRATION MUST BE LINED, NO SETBACK REQUIREMENT FROM FOUNDATIONS
 - C. SETBACKS FROM PROPERTY LINES VARY DEPENDING ON SITE CONDITIONS (SEE DESIGN STANDARDS)
4. OVERFLOW:
 - A. INLET ELEVATION MUST ALLOW FOR 2" OF FREEBOARD, MINIMUM
 - B. PROTECT FROM DEBRIS AND SEDIMENT WITH STRAINER OR GRATE
5. PIPING:
 - SEE STANDARD PLAN 221
6. DRAIN ROCK:
 - A. 1 1/2"-3/4" WASHED AGGREGATE WITH 40% VOIDS
 - B. DEPTH:
 - SIMPLIFIED- 18" (IF ≤ 1.75 "/hr INFILTRATION RATE)
 - 12" (IF > 1.75 "/hr INFILTRATION RATE)
 - ENGINEERED- 0"-48"
7. SEPARATION BETWEEN DRAIN ROCK AND GROWING MEDIUM SHALL BE A 3" LAYER OF 3/4"-1/4" OPEN GRADED AGGREGATE.
8. GROWING MEDIUM:
 - A. DEPTH: 18"
 - B. SEE DESIGN STANDARDS FOR REQUIREMENTS
9. VEGETATION: FOLLOW LANDSCAPE PLANS OR REFER TO PLANTING REQUIREMENTS IN DESIGN STANDARDS.
10. FOR FILTRATION RAIN GARDEN INSTALL 30 mil. PVC, HDPE OR EQUIVALENT WATERPROOF LINER(SEE STANDARD PLAN #221).
11. INSTALL RIVER ROCK SPLASH PAD TO TRANSITION FROM INLETS TO GROWING MEDIUM.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
RAIN GARDEN

| | | | | | | | |
|----------|-------------------|---------|------|------------|-----|---------|---------|
| APPROVED | CITY ENGINEER | 1/01/14 | DATE | DRAWN BY | KAK | 12/2013 | NO. 217 |
| | | | | CHECKED BY | KR | 12/2013 | |



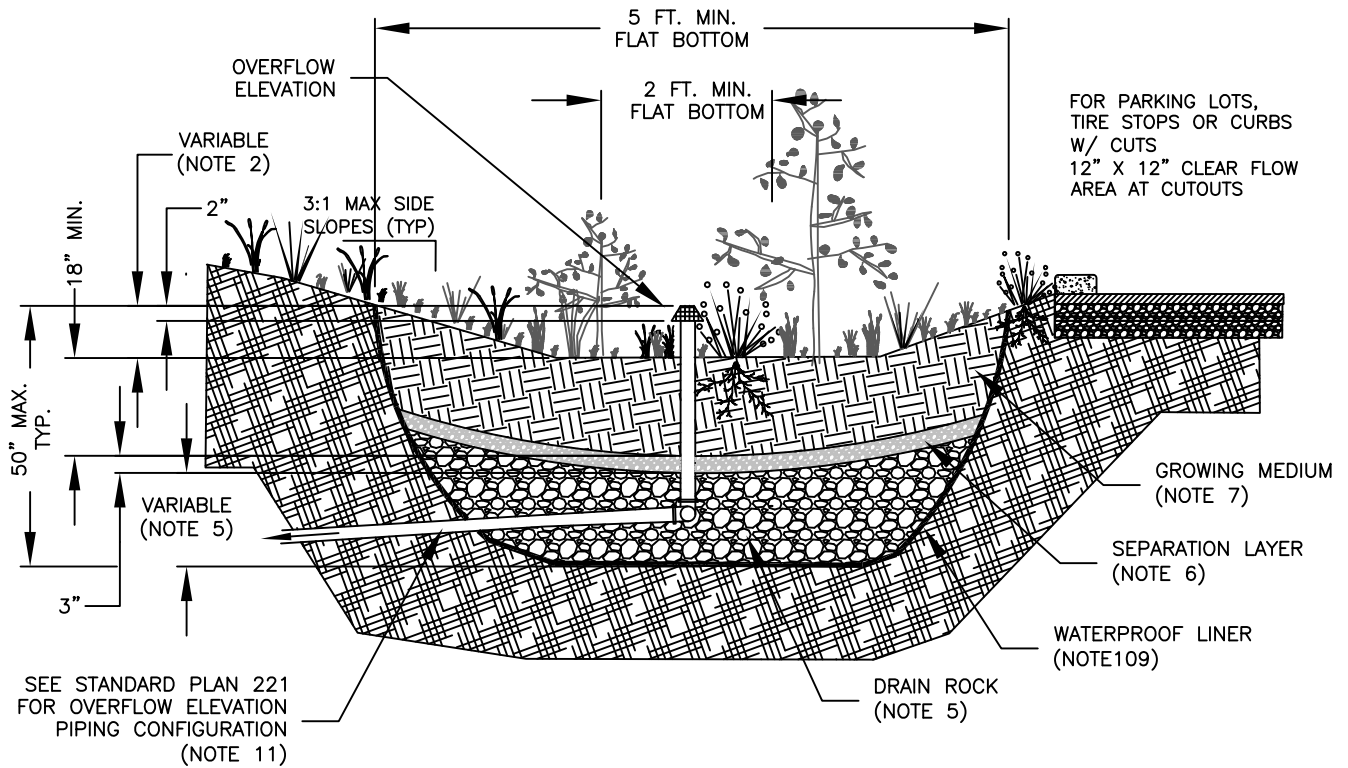
NOTES:

1. PROVIDE PROTECTION FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING, AND AFTER CONSTRUCTION.
2. DIMENSIONS:
 - A. FLOW LINE LENGTH: 5' MINIMUM.
 - B. SLOPES: 0.5-10%.
3. SETBACKS: (FROM EDGE OF FACILITY)
 - A. FROM PROPERTY LINE PER DESIGN STANDARDS.
 - B. 10' FROM BUILDINGS
4. OVERFLOW: COLLECTION FROM FILTER STRIP SHALL BE SPECIFIED ON PLANS AND DIVERTED TO AN APPROVED POINT OF DISCHARGE. NOT REQUIRED IF FILTER STRIP IS GREATER THAN 100 FT LONG AND USED AS DISPERSION AREA
5. GROWING MEDIUM: FILTER STRIP, GROWING MEDIUM SHALL BE USED WITHIN THE TOP 18". SEE STANDARD SPECIFICATIONS FOR REQUIREMENTS.
6. VEGETATION: PER PLANS OR SEE DESIGN STANDARDS FOR REQUIREMENTS.
7. CHECK DAMS: SHALL BE PLACED ACCORDING TO FACILITY DESIGN; OTHERWISE:
 - A. UTILIZE CROSS SECTION FOR CHECK DAM DETAILS STANDARD PLAN 220
 - B. EQUAL TO THE WIDTH OF FILTER STRIP
 - C. 3" TO 5" IN HEIGHT
 - D. EVERY 10' WHERE SLOPE EXCEEDS 5%

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
VEGETATED FILTER STRIP

| | | | | | |
|----------|--|---------|------------|-----|---------|
| APPROVED | <i>James B. Spent</i> CITY ENGINEER | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | | DATE | CHECKED BY | KR | 12/2013 |

NO. 218



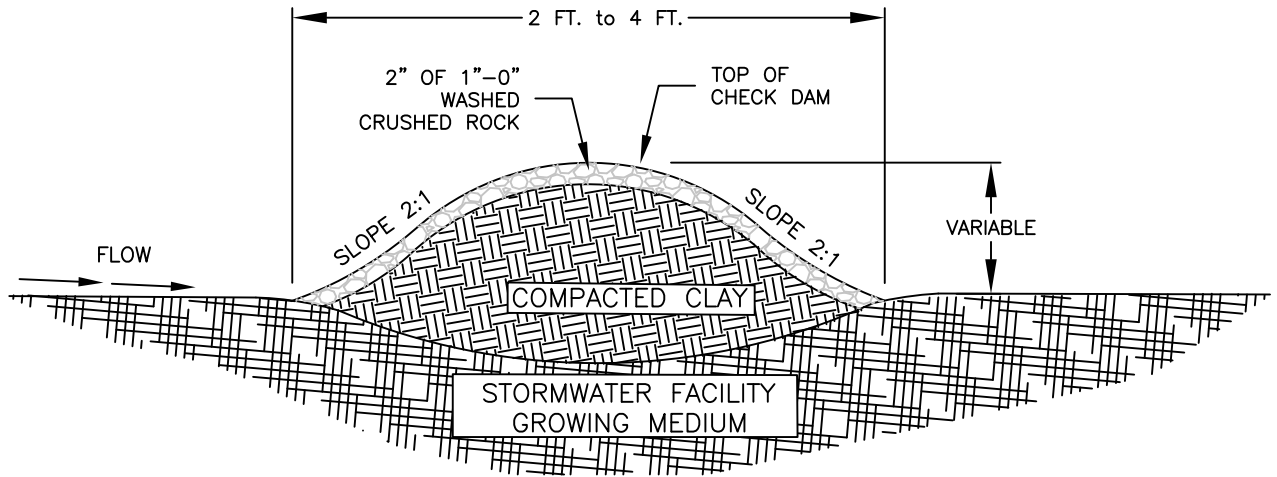
NOTES:

1. PROVIDE PROTECTION FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING, AND AFTER CONSTRUCTION.
2. DIMENSIONS:
 - A. WIDTH OF SWALE: 5 FT. – 12 FT.
 - B. DEPTH OF SWALE (FROM TOP OF GROWING MEDIUM TO OVERFLOW ELEVATION):
SIMPLIFIED 9"
ENGINEERED 6"–12"
 - C. LONGITUDINAL SLOPE OF SWALE: 6.0% OR LESS
 - D. FLAT BOTTOM WIDTH: 2 FT. MIN.
 - E. SIDE SLOPES OF SWALE: 3:1 MAXIMUM
3. LOCATION / SETBACK:
 - A. INFILTRATION VEGETATED SWALES MUST BE 10 FT. FROM FOUNDATION AND 5 FT. FROM PROPERTY LINES
4. OVERFLOW:
 - A. EMERGENCY OVERFLOW PATH SHALL BE IDENTIFIED ON THE STORMWATER MANAGEMENT PLAN
5. DRAIN ROCK:
 - A. SIZE: 1 1/2"–3/4" WASHED AGGREGATE
 - B. DEPTH: 0"–48"
6. SEPARATION BETWEEN DRAIN ROCK AND GROWING MEDIUM: SHALL BE A 3" LAYER OF 3/4"–1/4" OPEN GRADED AGGREGATE
7. GROWING MEDIUM:
 - A. DEPTH: 18" MINIMUM
 - B. SEE DESIGN STANDARDS FOR REQUIREMENTS
8. VEGETATION: SEE DESIGN STANDARDS FOR REQUIREMENTS
9. CHECK DAMS: SHALL BE PLACED ACCORDING TO FACILITY DESIGN. REFER TO STANDARD PLAN 220
10. ALONG STREETS: PROTECT SUBGRADE WITH WATERPROOF LINER (30 mil. PVC OR EQUAL) ALONG STREET EDGE TO BOTTOM OF SWALE. SEE STANDARD PLAN 233
11. PIPING: SEE STANDARD PLAN 221

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
COMBINATION SWALE

| | | | | | | |
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| APPROVED | CITY ENGINEER | 1/01/14 | DRAWN BY | KAK | 12/2013 | NO. 219 |
| | | DATE | CHECKED BY | KR | 12/2013 | |



CHECK DAM

| CHECK DAM SPACING | | | |
|----------------------|---------------------------|-----------------|-------------------|
| FACILITY LENGTH (FT) | LONGITUDINAL STREET SLOPE | # OF CHECK DAMS | ADDITIONAL INLETS |
| 30 | <=1% | 0 | NONE |
| | >=1% | 1 | NONE |
| 31 - 50 | <=1% | 1 | NONE |
| | >=1% | 2 | 1 |
| 51-70 | <=1% | 2 | 1 |
| | >=1% | 3 | 2 |
| 71-90 | <=1% | 3 | 2 |
| | >=1% | 4 | 3 |
| 91 + | <=1% | 4 | 3 |
| | >=1% | 5 | 4 |

NOTES:

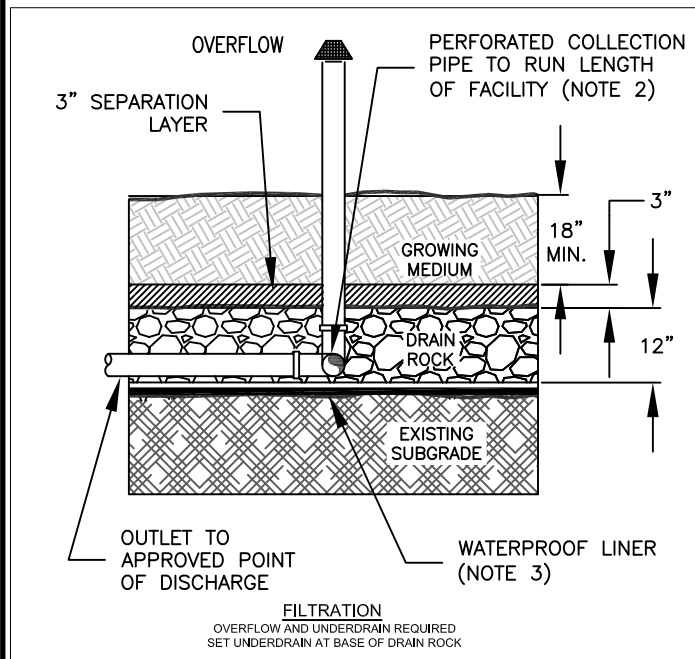
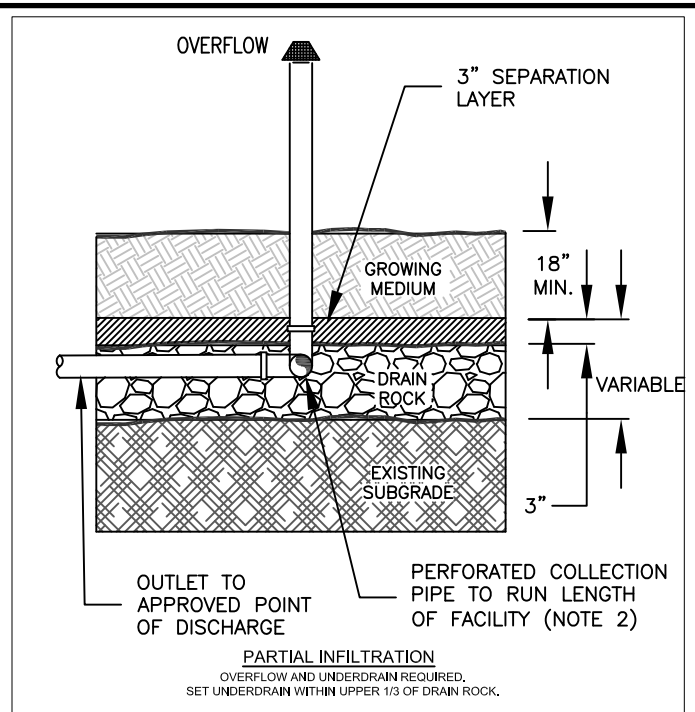
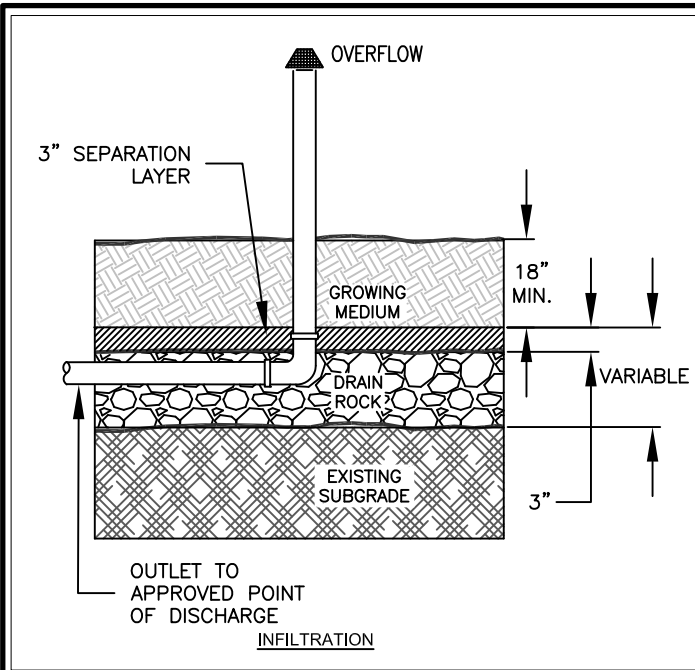
- CHECK DAMS TO BE EVENLY SPACED BETWEEN INLET AND OUTLET. ADDITIONAL REQUIREMENTS MAY BE NECESSARY ON STEEP SLOPES
- ADDITIONAL INLETS TO BE PLACED DIRECTLY DOWNSTREAM OF CHECK DAMS
- TOP OF CHECK DAM TO BE 1" BELOW GUTTER ELEVATION AT INLET (AT CURB LINE) BUT NOT GREATER THAN 2" BELOW TOP OF CURB

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

STANDARD PLAN
CHECK DAM DETAILS

| | | | | | |
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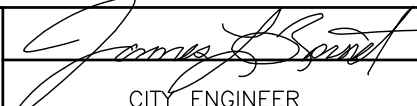
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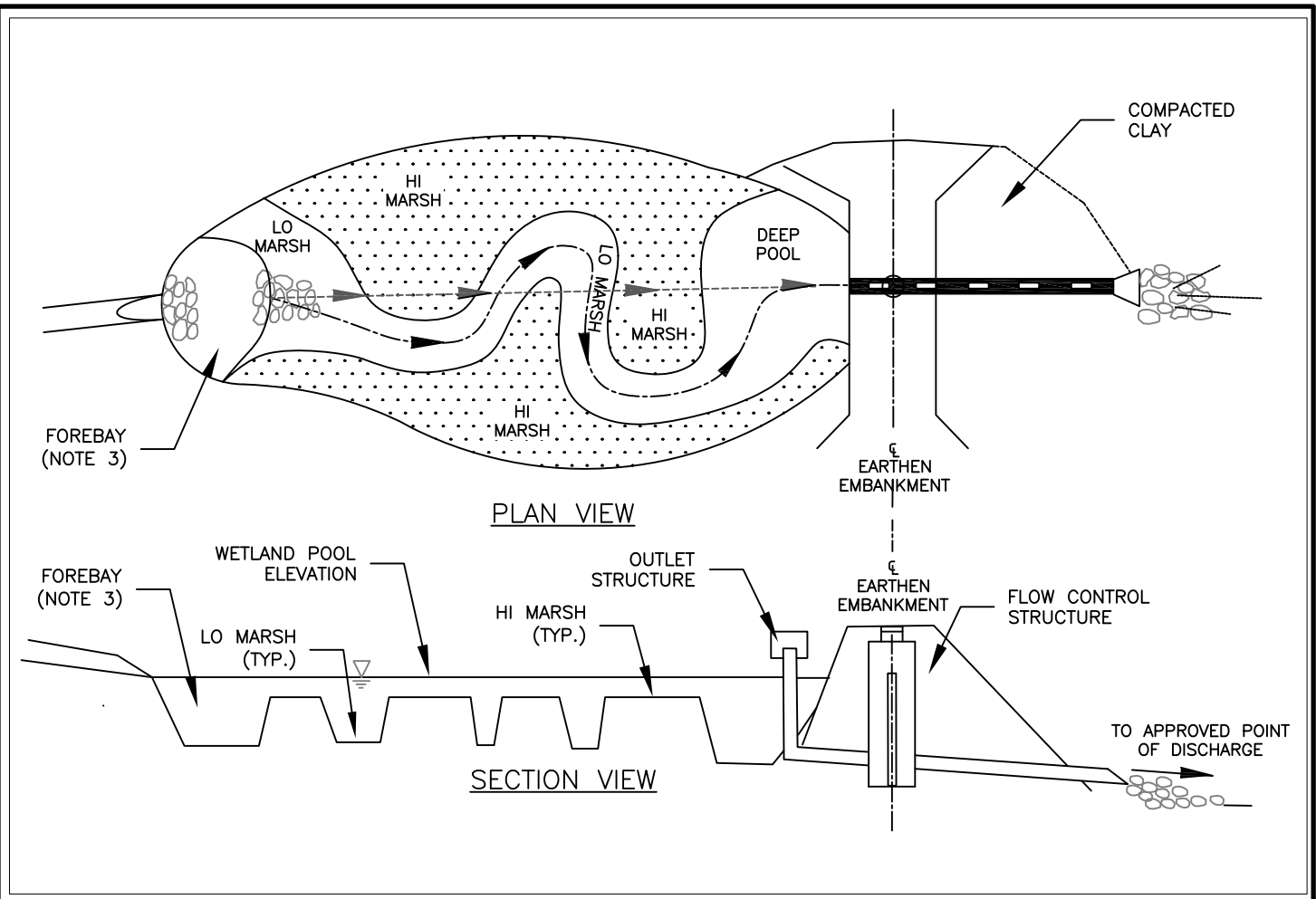


NOTES:

1. PERFORATED COLLECTION PIPE TO RUN THE LENGTH OF STORMWATER FACILITY FOR PARTIAL INFILTRATION OR FILTRATION FACILITIES, SEE DESIGN STANDARDS
2. PIPING:
 - A. PERFORATED UNDERDRAIN PIPING: SHALL BE ABS SCH. 40, CAST IRON, OR PVC SCH.40. 3" PIPE REQUIRED FOR UP TO 1,500 SQ FT OF IMPERVIOUS AREA, OTHERWISE 4" MIN. PIPING MUST HAVE 1% GRADE AND FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND
 - B. OVERFLOW PIPING: SHALL BE ABS SCH. 40, CAST IRON, OR PVC SCH. 40 AND SHALL NOT BE PERFORATED. MINIMUM DIAMETER IS 6" FOR PRIVATE, AND 10" FOR PUBLIC MAINTAINED FACILITIES. PIPING MUST HAVE 1% GRADE AND FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND
3. WATERPROOF LINER: SHALL BE 30 mil. PVC OR EQUAL

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
FACILITY OVERFLOW CONFIGURATIONS

| | | | | | | | |
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| APPROVED |  CITY ENGINEER | 1/01/14 | DATE | DRAWN BY | KAK | 12/2013 | NO. 221 |
| | | | | CHECKED BY | KR | 12/2013 | |



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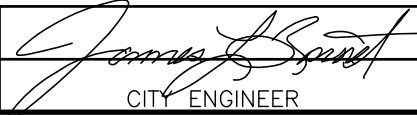
1. GEOMETRY:
 - A. MAXIMUM SLOPES WITHIN THE WETLAND AREA SHALL BE 20%
 - B. MAXIMUM SLOPES OF SURROUNDING LAND SHALL NOT EXCEED 10%
 - C. THE MINIMUM LENGTH-TO-WIDTH RATIO SHALL BE 3:1. IF AREA CONSTRAINTS MAKE THIS RATIO UNWORKABLE, BAFFLES, ISLANDS, OR PENINSULAS MAY BE INSTALLED TO INCREASE THE FLOW PATH AND PREVENT SHORT-CIRCUITING
 - D. WHERE WETLAND VEGETATION IS TO BE PLANTED, SIDE SLOPES SHALL BE NO STEEPER THAN 5:1. WETLAND PLANT SELECTION SHALL BE CONSISTENT WITH ANTICIPATED HYDROLOGY

2. FLOW:
 - A. FLOW VELOCITY THROUGH THE WETLAND SHALL AVERAGE LESS THAN 0.01 FEET PER SECOND FOR THE STORMWATER TREATMENT DESIGN STORM EVENT. IF NATURAL SLOPE DOES NOT ALLOW FOR THIS VELOCITY, BERMS SHALL BE USED TO CREATE PONDED BENCHES

3. FOREBAY:
 - A. THE FOREBAY AREA SHALL BE INSTALLED AT ALL POINTS TO CAPTURE SEDIMENT. THE FOREBAY SHALL HAVE A WATER DEPTH OF APPROXIMATELY 3 FEET AND HAVE AT LEAST 10% AND UP TO 25% OF THE TOTAL TREATMENT WETLAND VOLUME. AN ADDITIONAL 0.5 FEET OF DEPTH WILL BE PROVIDED FOR SEDIMENT ACCUMULATION

4. SETBACKS:
 - A. FROM PROPERTY LINES PER DESIGN STANDARDS
 - B. 10 FEET FROM BUILDING FOUNDATIONS
 - C. FROM DOWNSTREAM SLOPES:
 - 1) MINIMUM OF 100 FEET FROM SLOPES OF 10%; ADD 5 FEET OF SETBACK FOR EACH ADDITIONAL PERCENT OF SLOPE UP TO 30%
 - 2) 200 FEET OF SETBACK FOR SLOPES OF 30%;
 - 3) TREATMENT WETLANDS SHALL NOT BE USED WHERE DOWNSTREAM SLOPES EXCEED 30%

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
TREATMENT WETLAND

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| APPROVED |  CITY ENGINEER | 1/01/14 | DATE | DRAWN BY | KAK | 12/2013 | NO. 222 |
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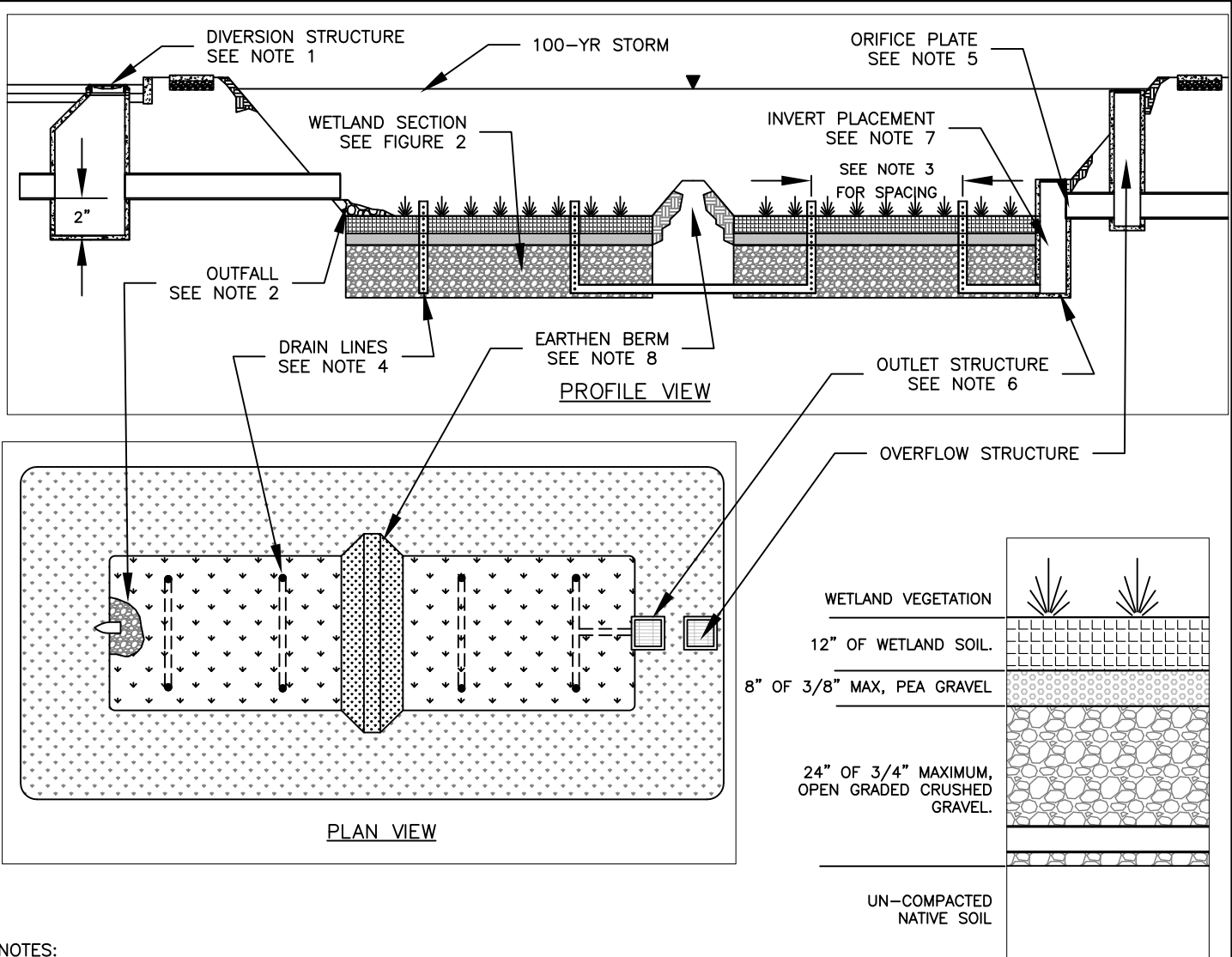


FIGURE 2

NOTES:

1. DIVERSION STRUCTURE TO BE CONSTRUCTED AS DESCRIBED IN CITY OF SALEM, STANDARD PLAN 101. STRUCTURE SHALL HAVE A 2 FT SETTLING SUMP.

2. OUTFALL SHALL BE CONSTRUCTED OF CLASS 50 RIP-RAP AND SHALL BE A MINIMUM OF 2 FT LONG BY 2 FT WIDE

3. STANDPIPES SHALL BE PERFORATED 6 INCH PVC WRAPPED IN FILTER FABRIC. STANDPIPES SHALL BE PLACED IN A PATTERN THAT HAS A MAXIMUM SPACING OF 15 FT IN ALL DIRECTIONS

4. DRAIN LINES SHALL BE PLACED IN THE BOTTOM OF THE ROCK LAYER. VERTICAL DRAIN PIPES SHALL BE FABRIC WRAPPED PERFORATED PVC. HORIZONTAL LINES SHALL BE SOLID PVC. CLEANOUTS SHALL BE PLACED IN A MANNER THAT ALLOWS FOR EVERY DRAIN LINE TO BE CLEANED

5. ORIFICE PLATE SHALL BE CONSTRUCTED OF STEEL. ORIFICE SHALL BE SIDED IN ACCORDANCE WITH THE CITY OF SALEM STORMWATER DESIGN STANDARDS PERTAINING TO ALLOWABLE DISCHARGE

6. THE OUTLET SHALL BE INSTALLED ADJACENT TO THE SECOND TREATMENT BAY AND SHALL BE CONNECTED TO THE UNDERDRAIN SYSTEM IN THE GRAVEL LAYER. THE GRATE ELEVATION SHALL BE SET TO ENSURE 100% OF THE TREATMENT DESIGN STORM VOLUME TRAVELS THROUGH THE GRAVEL LAYER. STRUCTURES SHALL CONFORM TO THE CITY OF SALEM STANDARD PLAN 201 OR 202

7. THE INVERT ELEVATION OF THE OUTLET PIPE SHALL BE INSTALLED A MINIMUM OF 1/2 INCH BELOW THE WETLAND SOIL SURFACE ELEVATION AND A MAXIMUM OF 4 INCHES BELOW THE WETLAND SOIL SURFACE ELEVATION

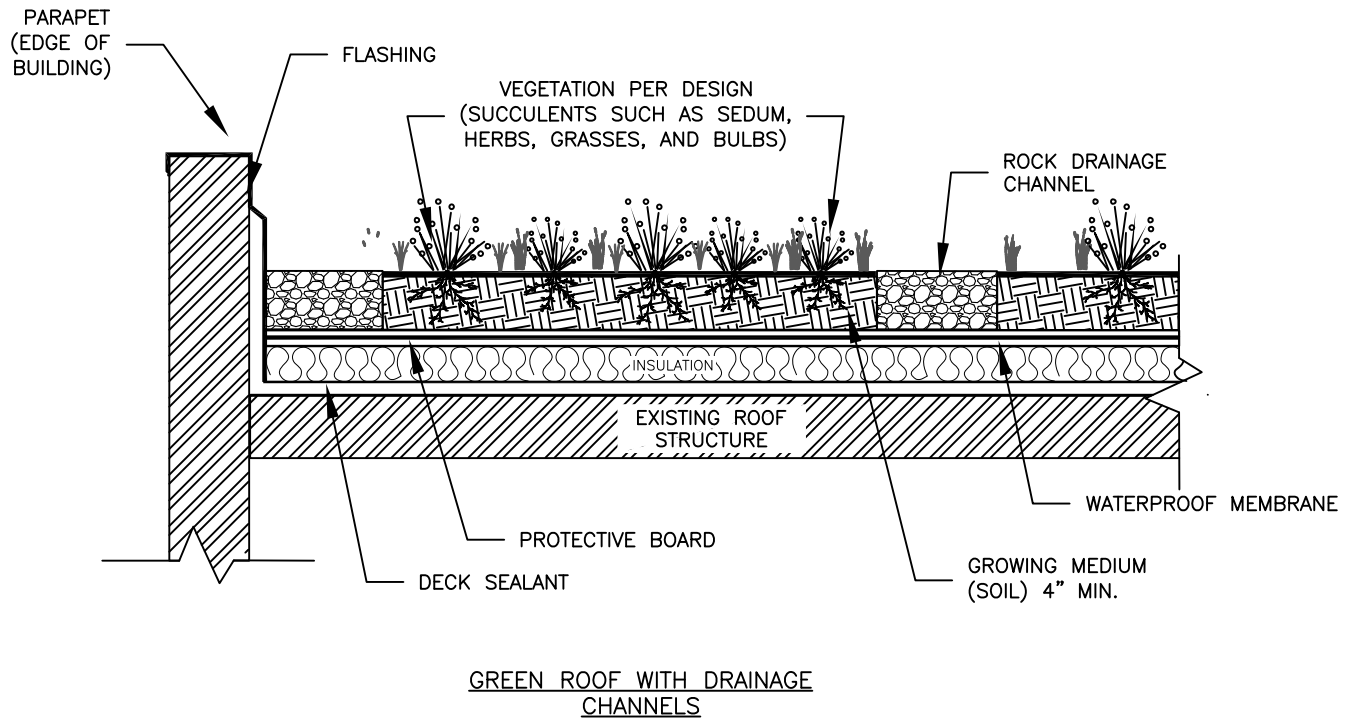
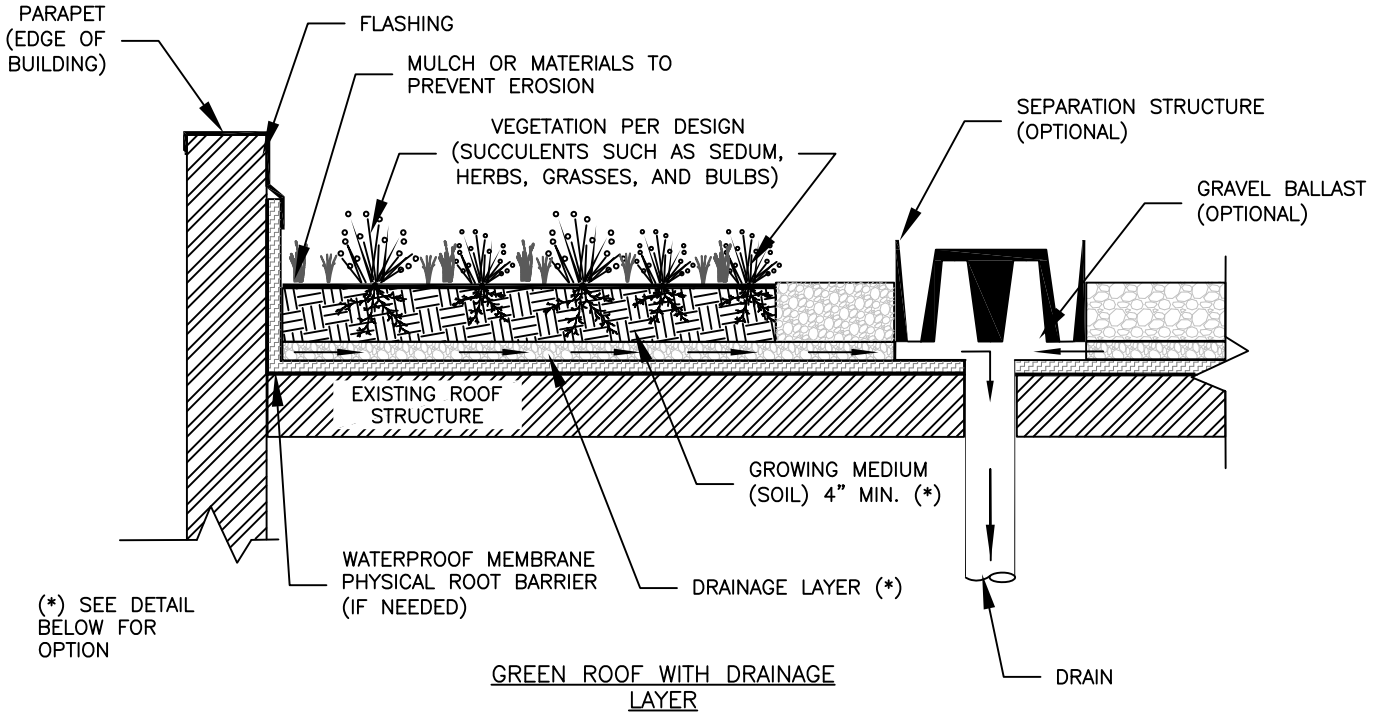
8. AN EARTHEN BERM SHALL BE CONSTRUCTED BETWEEN THE TWO BAYS. THE TOP OF THE EARTHEN BERM SHALL BE THE SAME ELEVATION AS THE ELEVATION OF THE FIRST OUTLET STRUCTURE'S GRATE ELEVATION

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

STANDARD PLAN
SUBSURFACE GRAVEL WETLAND

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| | | DATE | CHECKED BY | KR | 12/2013 |

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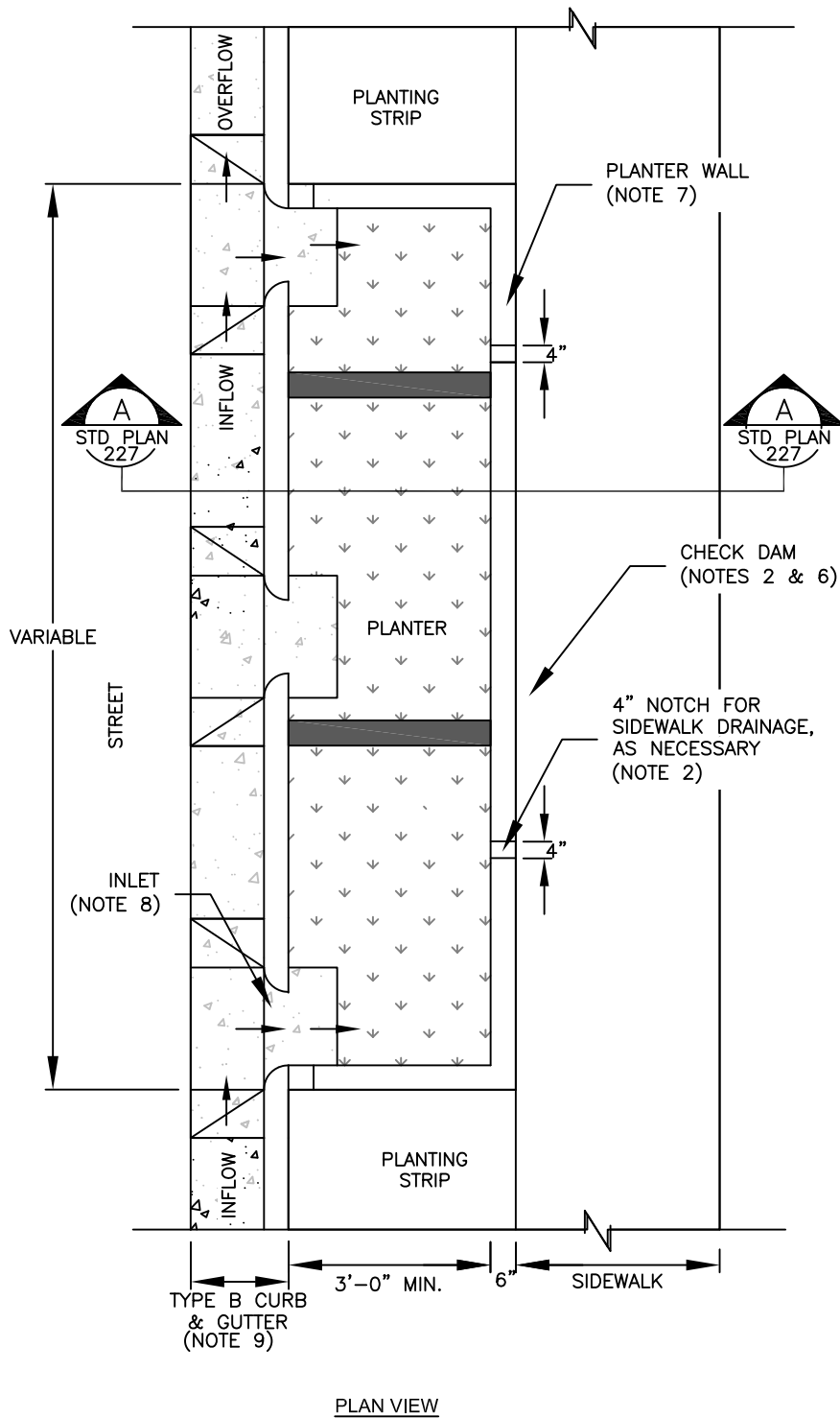


**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

STANDARD PLAN
GREEN ROOF

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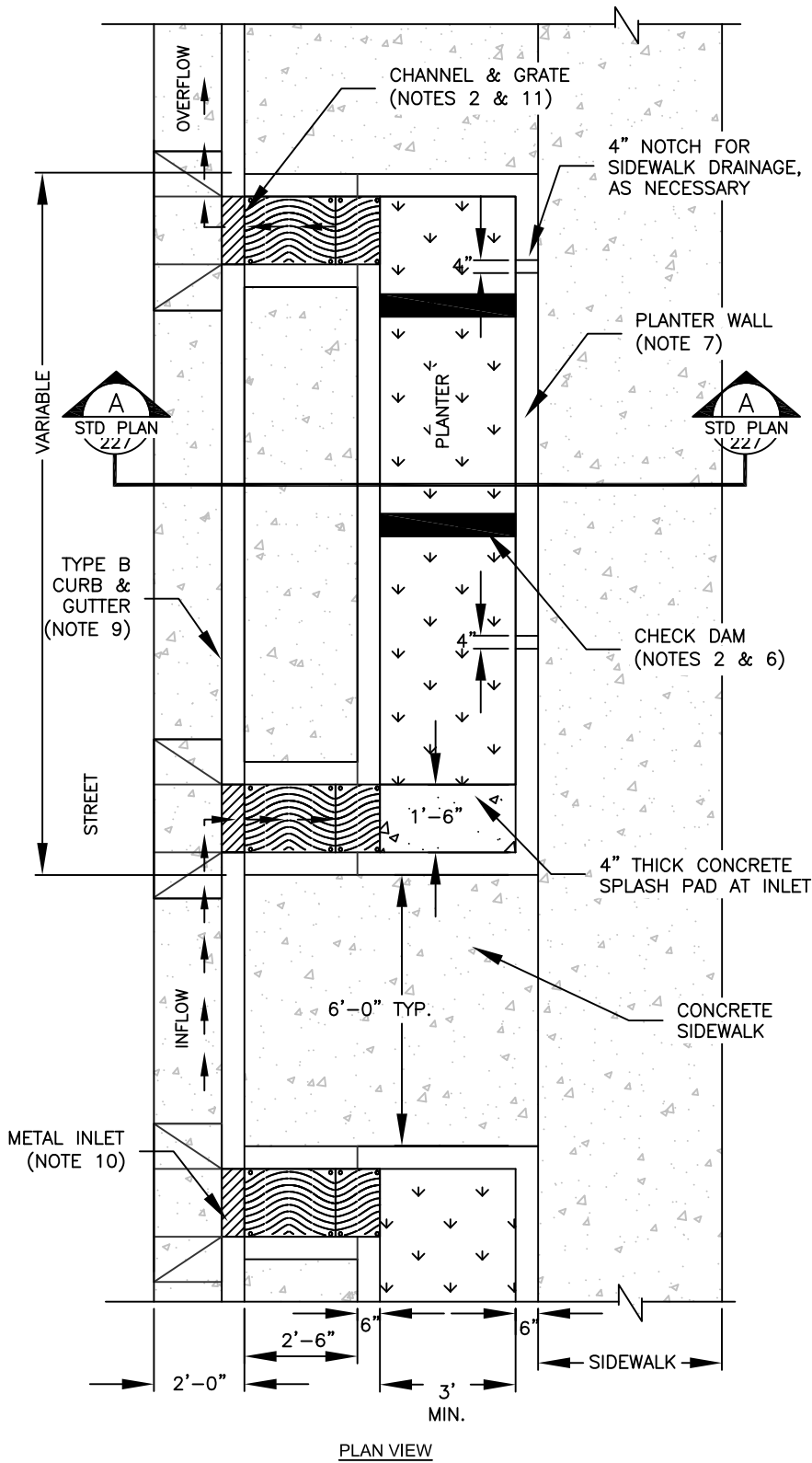
NOTES:

1. LONGITUDINAL SLOPE OF PLANTER MATCHES STREET
2. SIDEWALK ELEVATION SHALL BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET AND NOT SIDEWALK
3. MINIMUM INTERIOR PLANTER WIDTH IS 3 FEET. IF STREET TREES WILL BE PLACED IN PLANTER, MINIMUM WIDTH SHALL BE 4 FEET
4. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES SHALL BE LOCATED OUTSIDE OF STORMWATER FACILITY
5. AREA AND DEPTH OF FACILITY ARE BASED UPON ENGINEERING DESIGN AND ROW CONSTRAINTS. SEE CHAPTER 4 OF THE PUBLIC WORKS DESIGN STANDARDS
6. FOR CHECK DAM DETAILS SEE STANDARD PLANS 244 AND 245
7. FOR PLANTER WALL DETAILS SEE STANDARD PLAN 231
8. FOR INLET AND OUTLET DETAILS SEE STANDARD PLAN 235
9. USE TYPE B CURB & GUTTER ALONG THE LENGTH OF THE PLANTER. SEE STANDARD PLAN 303A

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
PLANTERS without PARKING

| | | | | | | |
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| APPROVED |  CITY ENGINEER | 1/01/14 | DATE | DRAWN BY | KAK | 12/2013 |
| | CITY ENGINEER | DATE | CHECKED BY | KR | 12/2013 | |

NO. 225



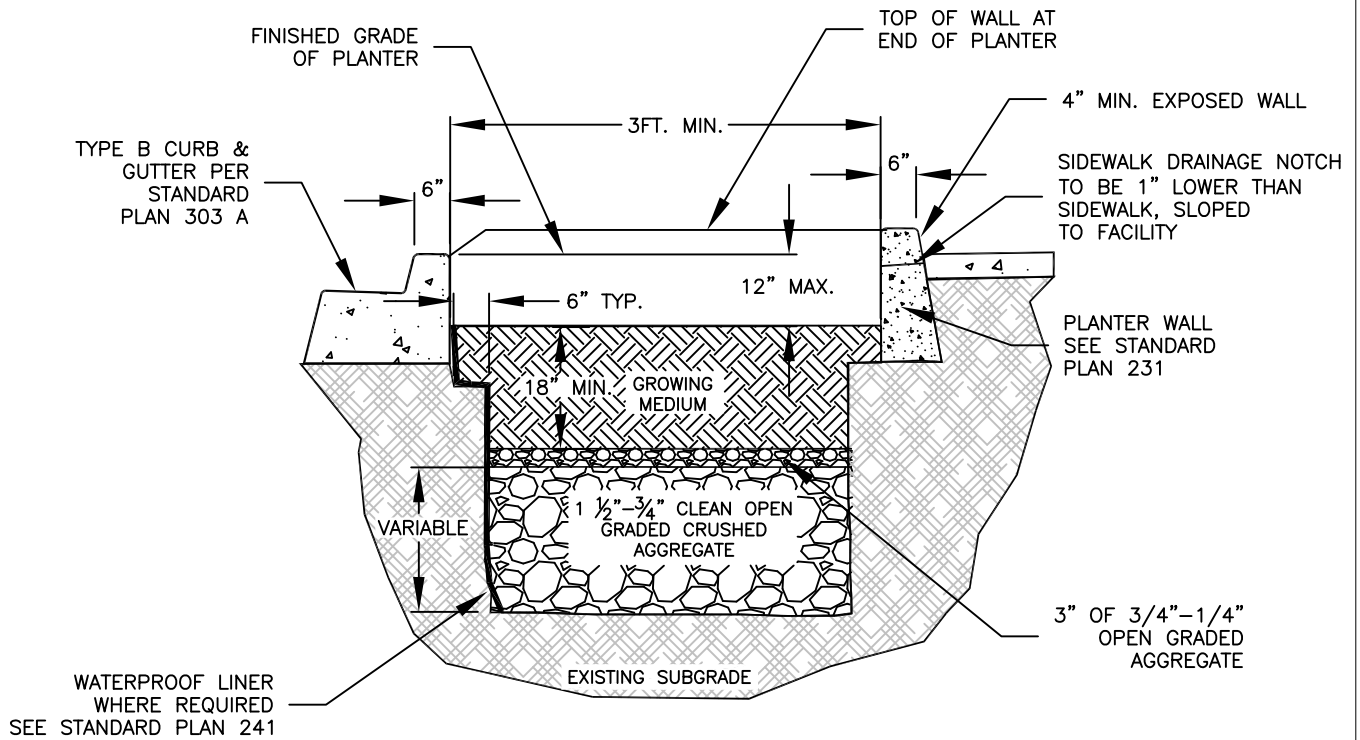
NOTES:

1. LONGITUDINAL SLOPE OF PLANTER MATCHES STREET
2. SIDEWALK ELEVATION SHALL BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET AND NOT SIDEWALK
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4. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES SHALL BE LOCATED OUTSIDE OF STORMWATER FACILITY
5. AREA AND DEPTH OF FACILITY ARE BASED UPON ENGINEERING DESIGN AND ROW CONSTRAINTS. SEE CHAPTER 4 OF THE PUBLIC WORKS DESIGN STANDARDS
6. FOR CHECK DAM DETAILS SEE STANDARD PLANS 244 AND 245
7. FOR PLANTER WALL DETAILS SEE STANDARD PLAN 231
8. FOR INLET AND OUTLET DETAILS SEE STANDARD PLAN 235
9. USE TYPE B CURB & GUTTER ALONG THE LENGTH OF THE PLANTER. SEE STANDARD PLAN 303A
10. FOR METAL INLET DETAIL SEE STANDARD PLAN 236
11. FOR CHANNEL AND GRATE DETAILS SEE STANDARD PLAN 239
12. SCARIFY THE EXISTING SUBGRADE FOLLOWING THE INITIAL EXCAVATION AND BEFORE INSTALLING TOPSOIL OR ROCK

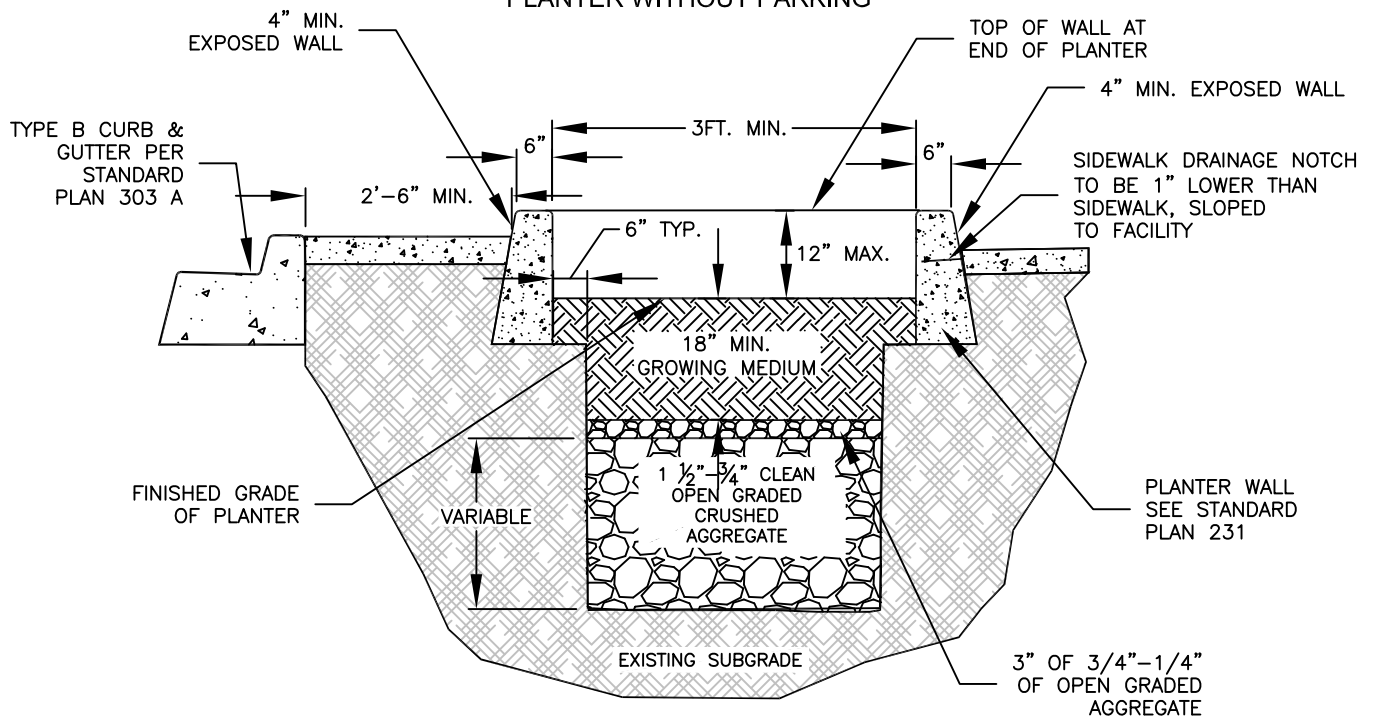
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
ROW PLANTERS with PARKING

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NO. 226



SECTION A-A
PLANTER WITHOUT PARKING



SECTION B-B
PLANTER WITH PARKING

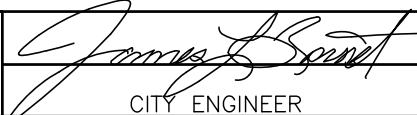
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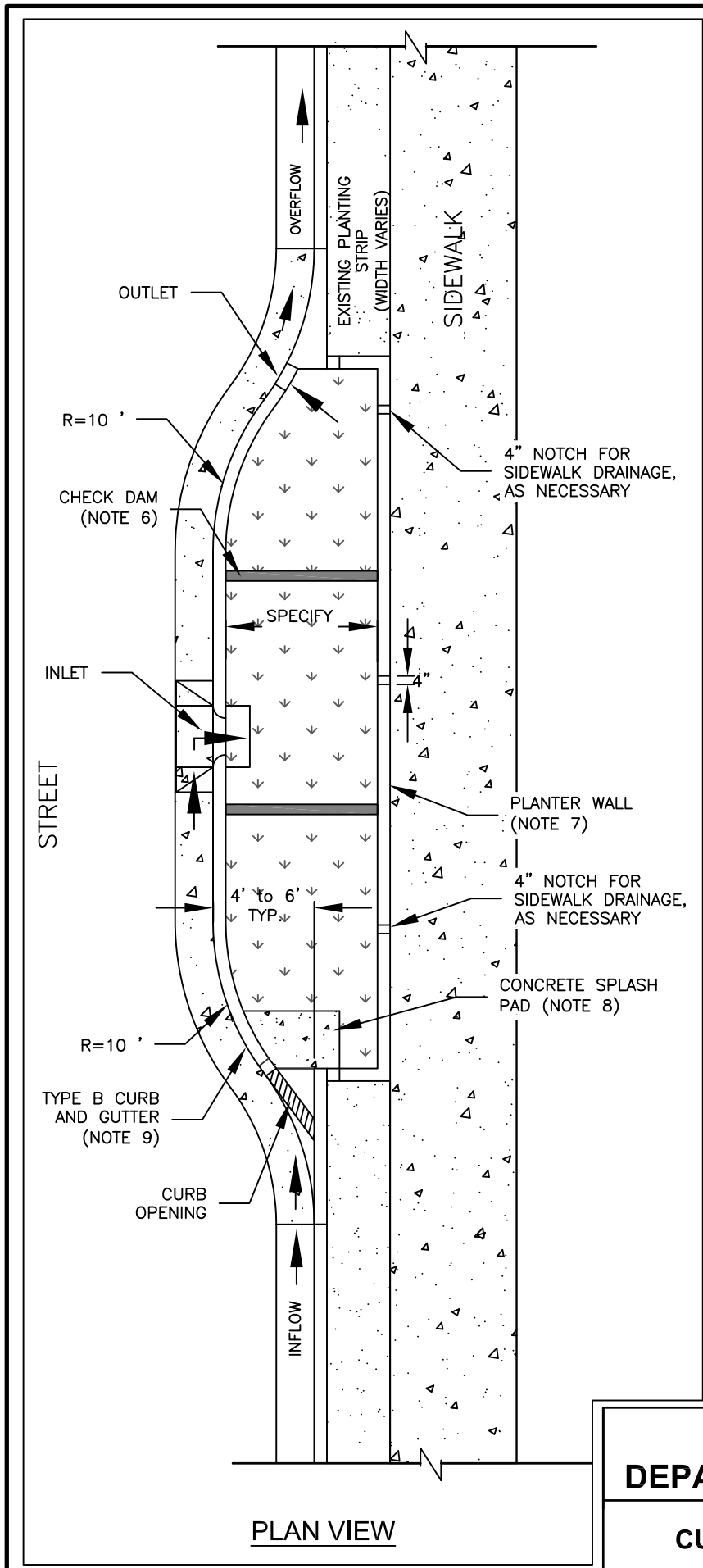
1. SCARIFY THE EXISTING SUBGRADE FOLLOWING THE INITIAL EXCAVATION AND BEFORE INSTALLING TOPSOIL OR ROCK

2. SEE STANDARD PLAN 239 FOR CHANNEL AND GRATE DETAILS

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
ROW PLANTER - SECTION VIEWS

| | | | | | | |
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| APPROVED |  | 1/01/14 | DRAWN BY | KAK | 12/2013 | NO. 227 |
| | | DATE | CHECKED BY | KR | 12/2013 | |
| | CITY ENGINEER | | | | | |



NOTES:

1. LONGITUDINAL SLOPE OF CURB EXTENSION SHALL MATCH STREET
2. SIDEWALK ELEVATION SHALL BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET AND NOT SIDEWALK
3. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES SHALL BE LOCATED OUTSIDE OF STORMWATER FACILITY
4. AREA AND DEPTH OF FACILITY ARE BASED UPON ENGINEERING DESIGN AND ROW CONSTRAINTS. SEE CHAPTER 4 OF THE PUBLIC WORKS DESIGN STANDARDS
5. ADDITIONAL INLETS REQUIRED FOR FACILITIES OVER 25 FEET IN LENGTH, PER DESIGN OR SITE SPECIFIC NEEDS
6. FOR CHECK DAM DETAILS SEE STANDARD PLANS 244 AND 245
7. FOR PLANTER WALL DETAILS SEE STANDARD PLAN 231
8. FOR INLET AND OUTLET DETAILS SEE STANDARD PLANS 235 AND 237
9. USE TYPE B CURB AND GUTTER ALONG THE LENGTH OF THE PLANTER, SEE STANDARD PLAN 303A

PLAN VIEW

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
STANDARD PLAN
CURB EXTENSION PLANTER WITH
CURBSIDE SIDEWALK**

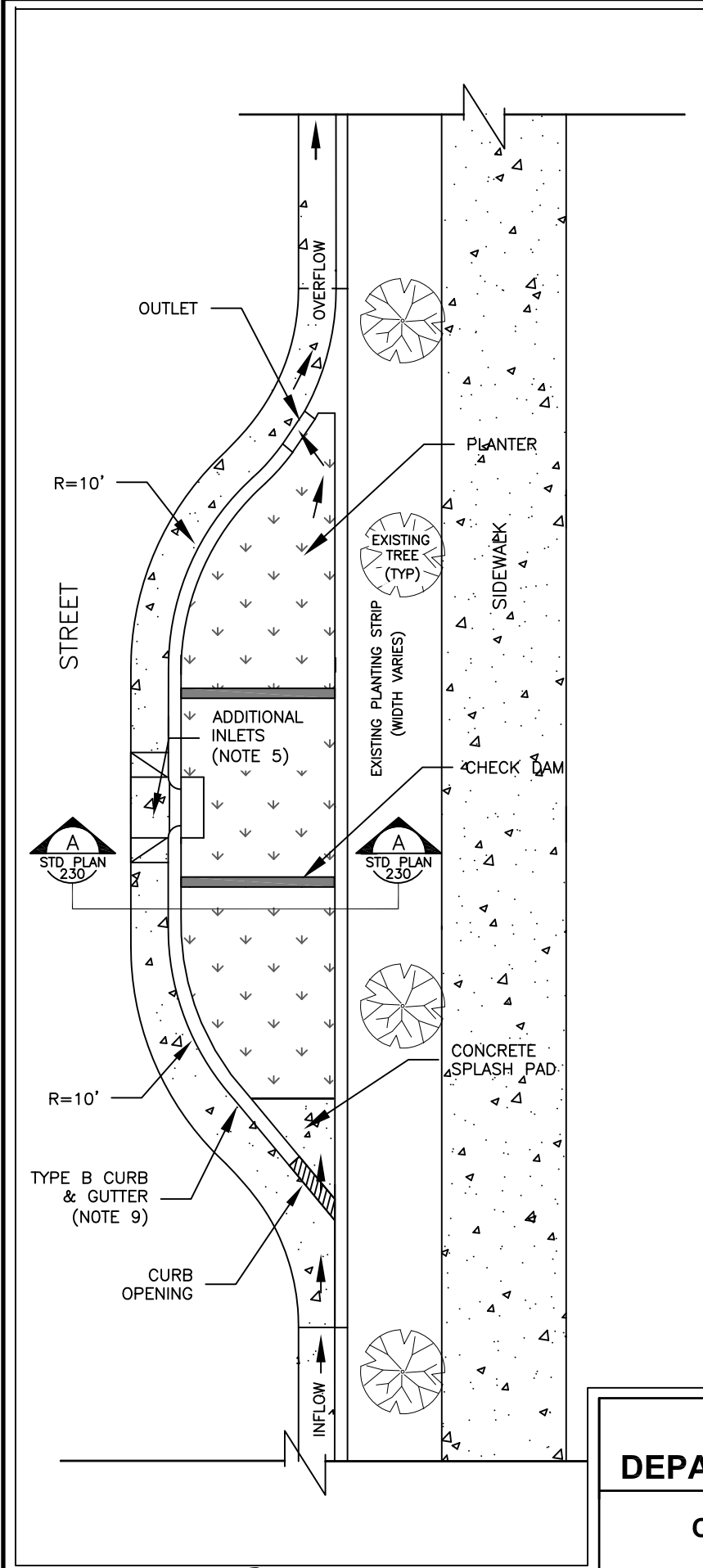
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CITY ENGINEER DATE

DRAWN BY KAK 12/2013
CHECKED BY KR 12/2013

NO. 228

NOTES:

1. LONGITUDINAL SLOPE OF CURB EXTENSION SHALL MATCH STREET
2. SIDEWALK ELEVATION SHALL BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET AND NOT SIDEWALK
3. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES SHALL BE LOCATED OUTSIDE OF STORMWATER FACILITY
4. AREA AND DEPTH OF FACILITY ARE BASED UPON ENGINEERING DESIGN AND ROW CONSTRAINTS. SEE CHAPTER 4 OF THE PUBLIC WORKS DESIGN STANDARDS
5. ADDITIONAL INLETS REQUIRED FOR FACILITIES OVER 25 FEET IN LENGTH, PER DESIGN OR SITE SPECIFIC NEEDS
6. FOR CHECK DAM DETAILS SEE STANDARD PLANS 244 AND 245
7. FOR PLANTER WALL DETAILS SEE STANDARD PLAN 231
8. FOR INLET AND OUTLET DETAILS SEE STANDARD PLAN 237
9. USE TYPE B CURB AND GUTTER ALONG THE LENGTH OF THE PLANTER, SEE STANDARD PLAN 303A

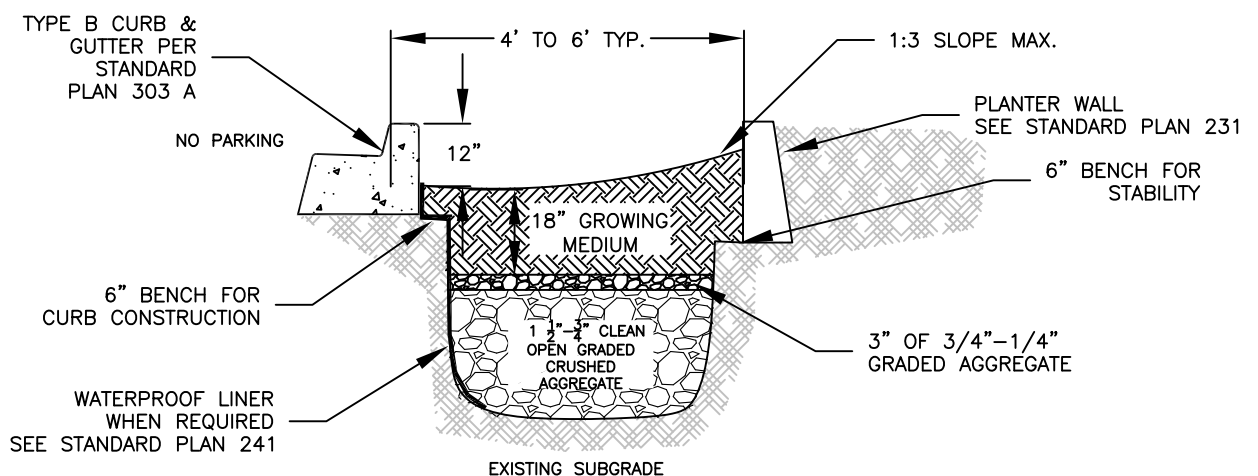


CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
CURB EXTENSION PLANTER IN
PLANTING STRIP

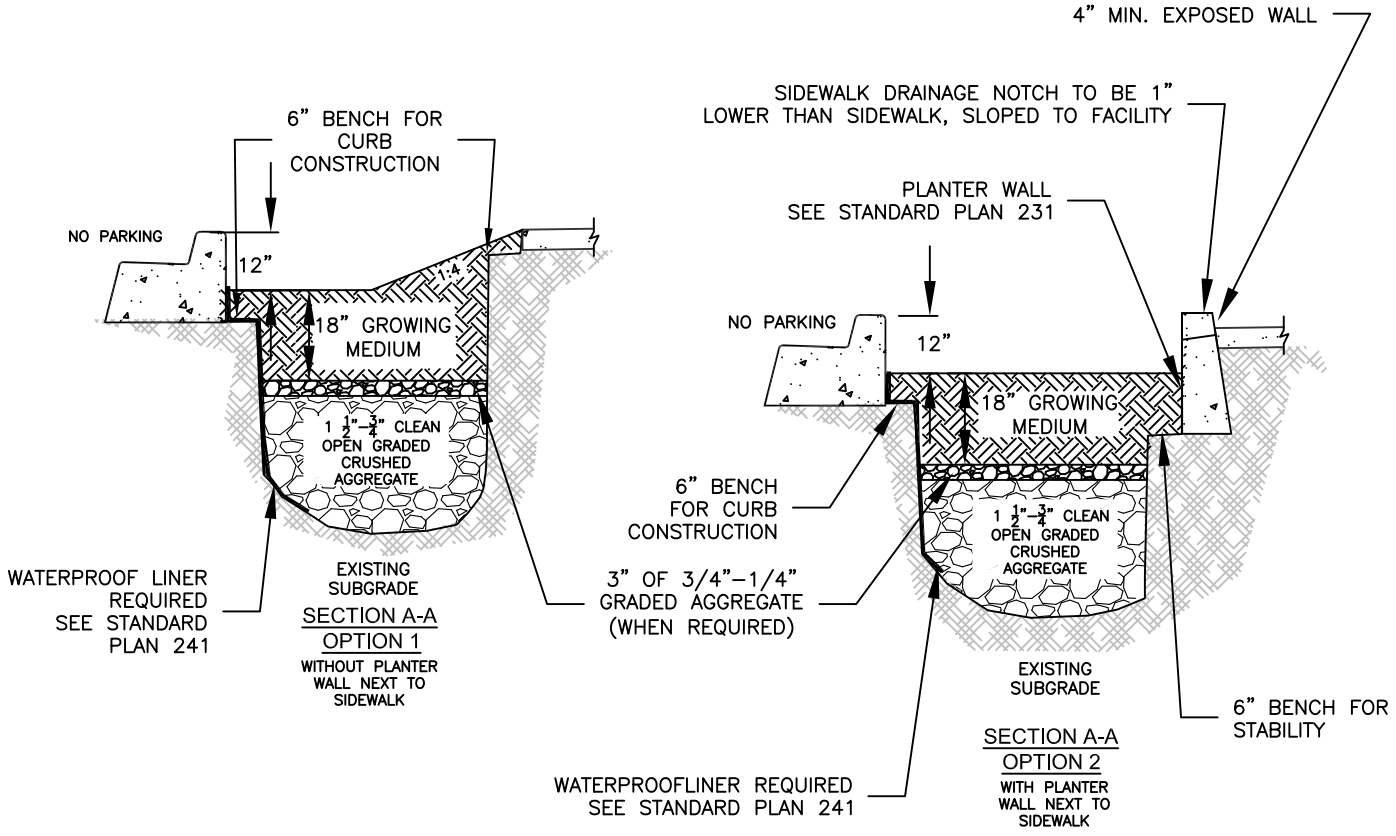
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 CITY ENGINEER DATE

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NO. 229



SECTION A-A
AS SHOWN ON STANDARD PLAN 229



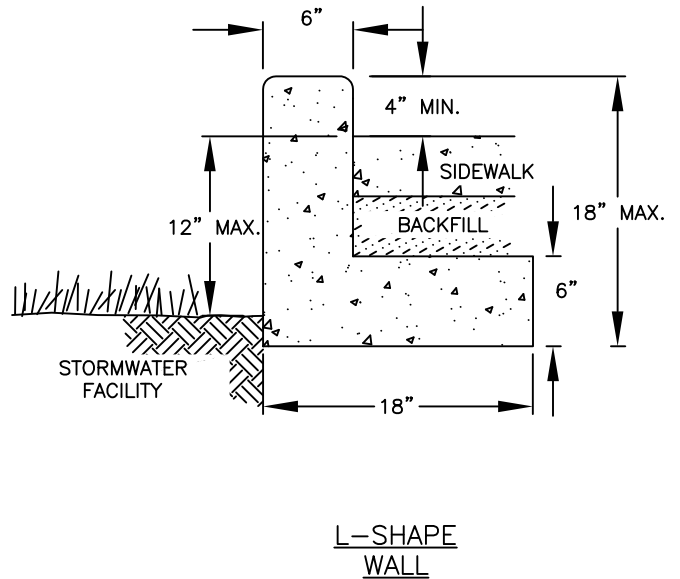
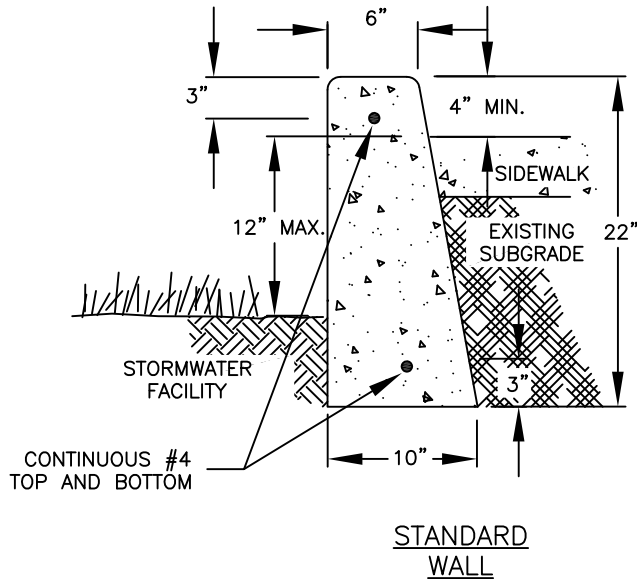
FOR PLAN VIEW REFER TO
STANDARD PLAN 229

NOTE:
1. SCARIFY THE NATIVE SOIL FOLLOWING THE INITIAL
EXCAVATION AND BEFORE INSTALLING TOPSOIL OR ROCK

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
STANDARD PLAN
CURB EXTENSION PLANTER SECTIONS

| | | | | | |
|----------|---|---------|------------|-----|---------|
| APPROVED |  | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | | DATE | CHECKED BY | KR | 12/2013 |
| | CITY ENGINEER | | | | |

NO. 230




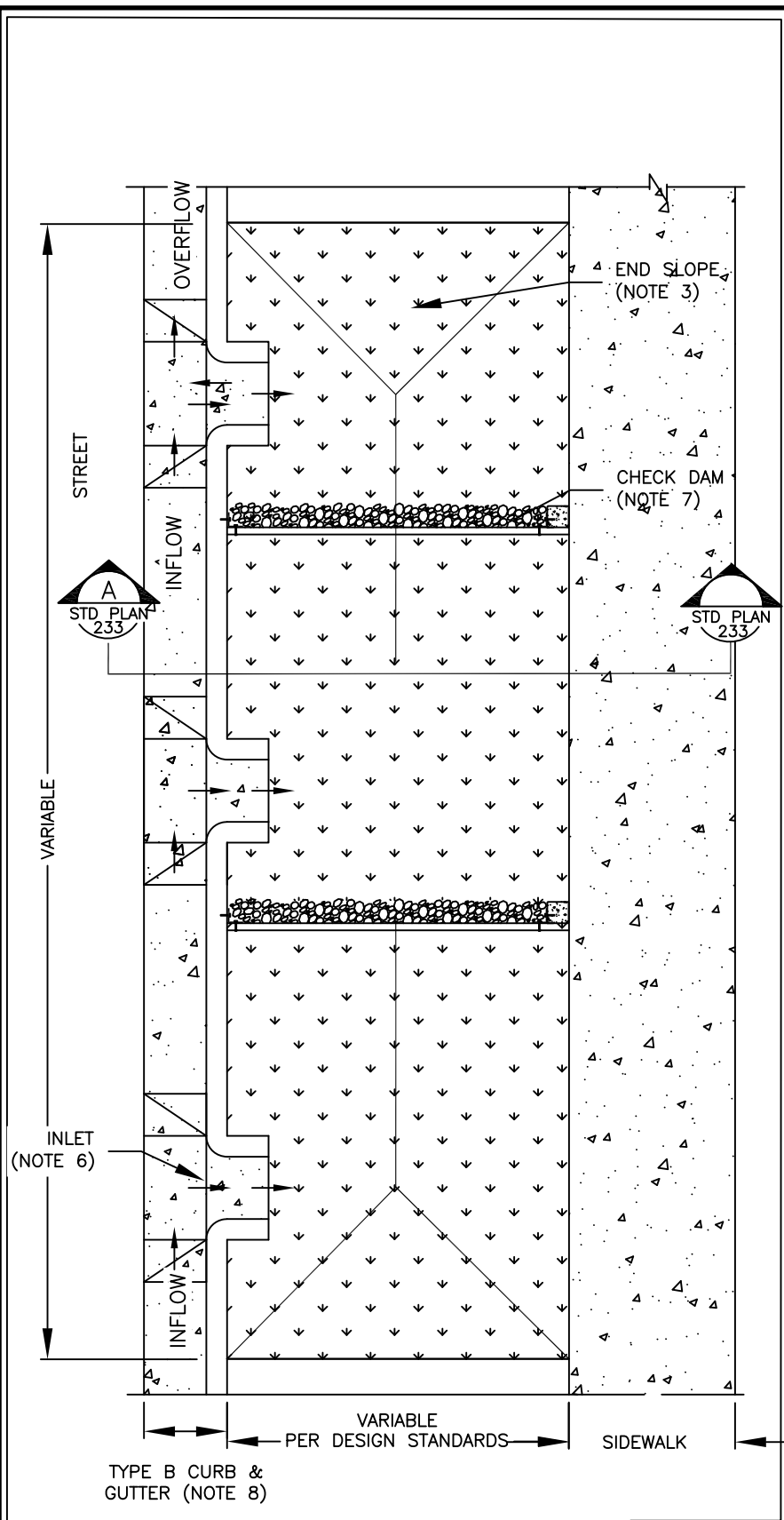
NOTES:

1. SPECIAL DESIGN CONSIDERATIONS OR STRUCTURAL REVIEW MAY BE REQUIRED FOR PLANTER WALL SPANS LONGER THAN 50 FT. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED
2. RETAINING WALL DESIGN WILL BE REQUIRED FOR WALLS TALLER THAN 22 INCHES
3. USE OF THE ABOVE PLANTER WALL OPTIONS BASED ON SITE CONDITIONS
4. MAINTAIN 1:6 BATTER FOR WALLS AND 4" MINIMUM TO TOP OF CURB
4. IF WATERPROOF LINER IS REQUIRED WITH L-SHAPED WALL, WALL HEIGHT MUST BE INCREASED. THREE INCHES OF CONCRETE REQUIRED ON ALL SIDES OF ATTACHMENT (SEE STANDARD PLAN 241)
6. FINISH ALL EXPOSED CONCRETE SURFACES

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

**STANDARD PLAN
PLANTER WALL DETAILS**

| | | | | | | | |
|----------|--|---------|------|------------|-----|---------|----------------|
| APPROVED |  CITY ENGINEER | 1/01/14 | DATE | DRAWN BY | KAK | 12/2013 | NO. 231 |
| | | | | CHECKED BY | KR | 12/2013 | |



NOTES:

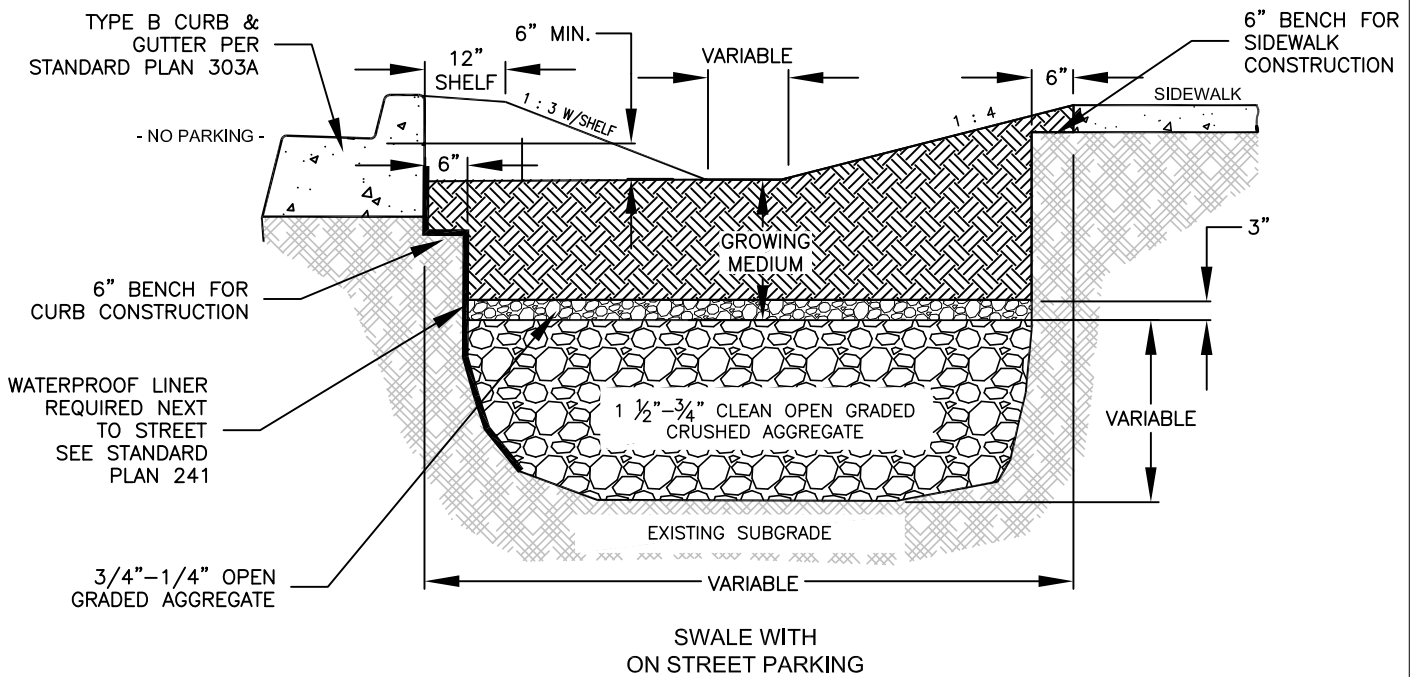
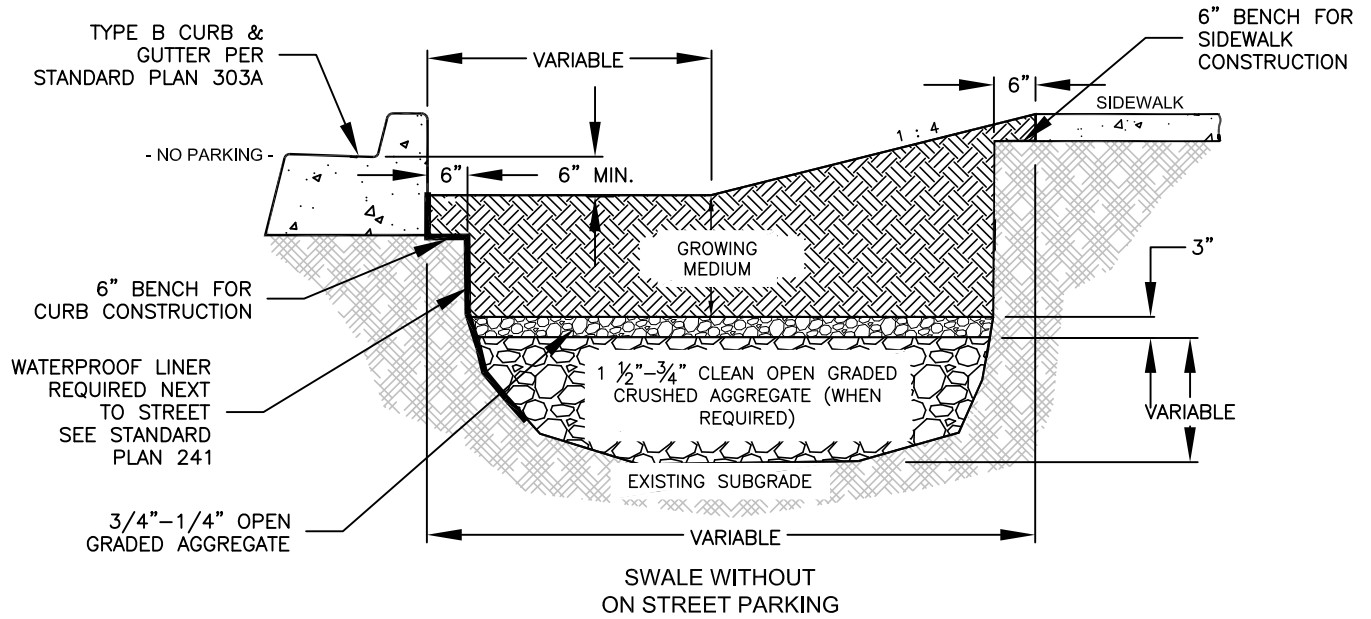
1. SIDEWALK ELEVATION SHALL BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET AND NOT SIDEWALK
2. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES SHALL BE LOCATED OUTSIDE OF STORMWATER FACILITY
3. END SLOPES 1:4. SEE SWALE SECTIONS ON STANDARD PLAN 233 FOR SIDE SLOPES
4. LONGITUDINAL SLOPE OF SWALE MATCHES STREET
5. AREA AND DEPTH OF FACILITY ARE BASED UPON ENGINEERING DESIGN AND ROW CONSTRAINTS. SEE CHAPTER 4 OF THE PUBLIC WORKS DESIGN STANDARDS
6. FOR CONCRETE INLET DETAIL SEE STANDARD PLAN 234
7. FOR CHECK DAM DETAILS SEE STANDARD PLANS 242 AND 243
8. USE TYPE B CURB AND GUTTER ALONG THE LENGTH OF THE SWALE, SEE STANDARD PLAN 303A
9. FOR SPECIAL REQUIREMENTS FOR WATER SERVICES CROSSING SWALE SEE STANDARD PLAN 247

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
ROW SWALE - PLAN VIEW

APPROVED *James B. Smith* 1/01/14
 CITY ENGINEER DATE

DRAWN BY KAK 12/2013
 CHECKED BY KR 12/2013

NO. 232



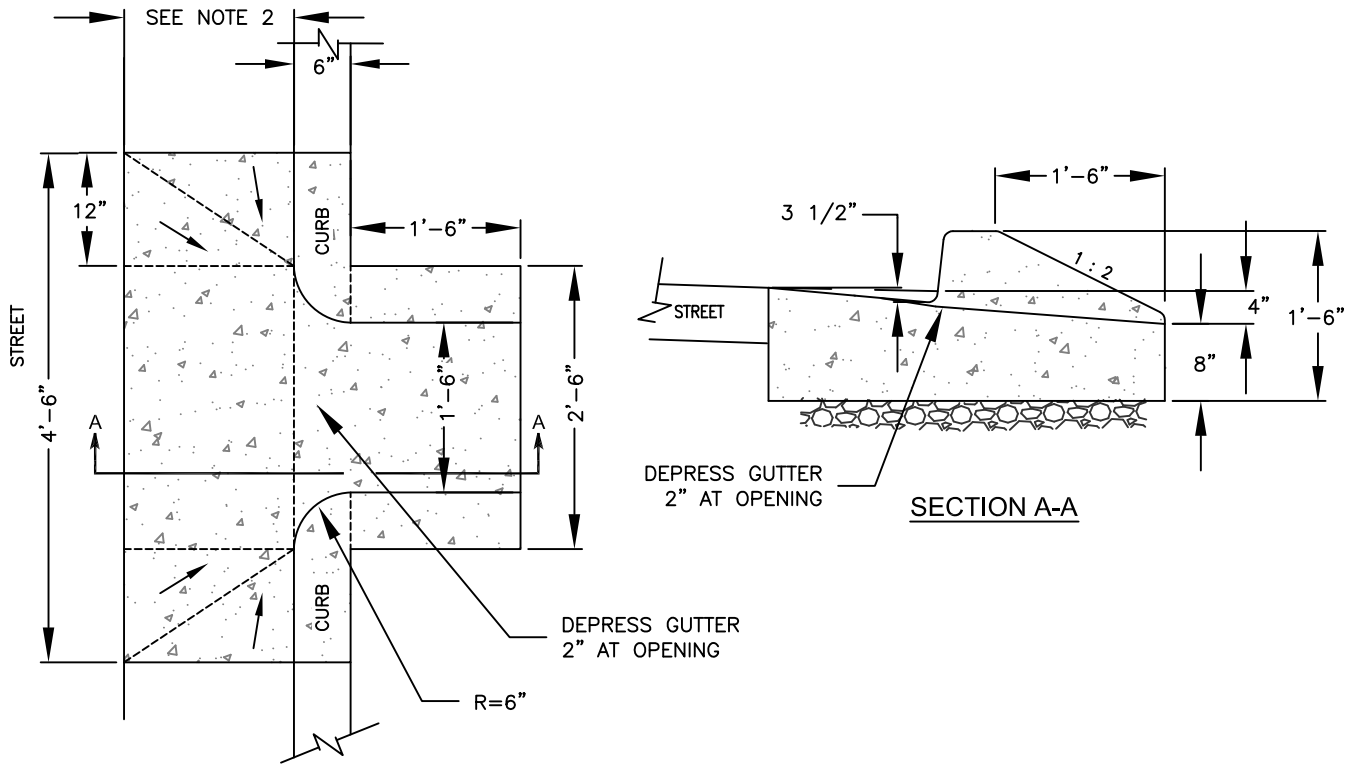
NOTES:

1. SCARIFY THE NATIVE SOIL FOLLOWING THE INITIAL EXCAVATION AND BEFORE INSTALLING TOPSOIL OR ROCK
2. SEE STANDARD PLAN 234 FOR INLET DETAILS

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

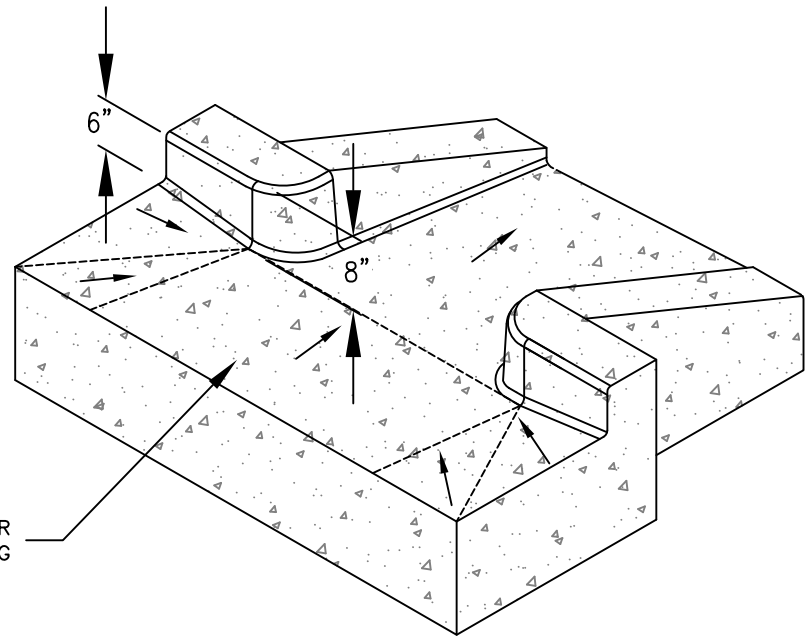
STANDARD PLAN
ROW SWALE - SECTION VIEWS

| | | | | | | | |
|----------|-------------------|---------|------|------------|-----|---------|---------|
| APPROVED | CITY ENGINEER | 1/01/14 | DATE | DRAWN BY | KAK | 12/2013 | NO. 233 |
| | | | | CHECKED BY | KR | 12/2013 | |



PLAN VIEW

SECTION A-A




PERSPECTIVE VIEW

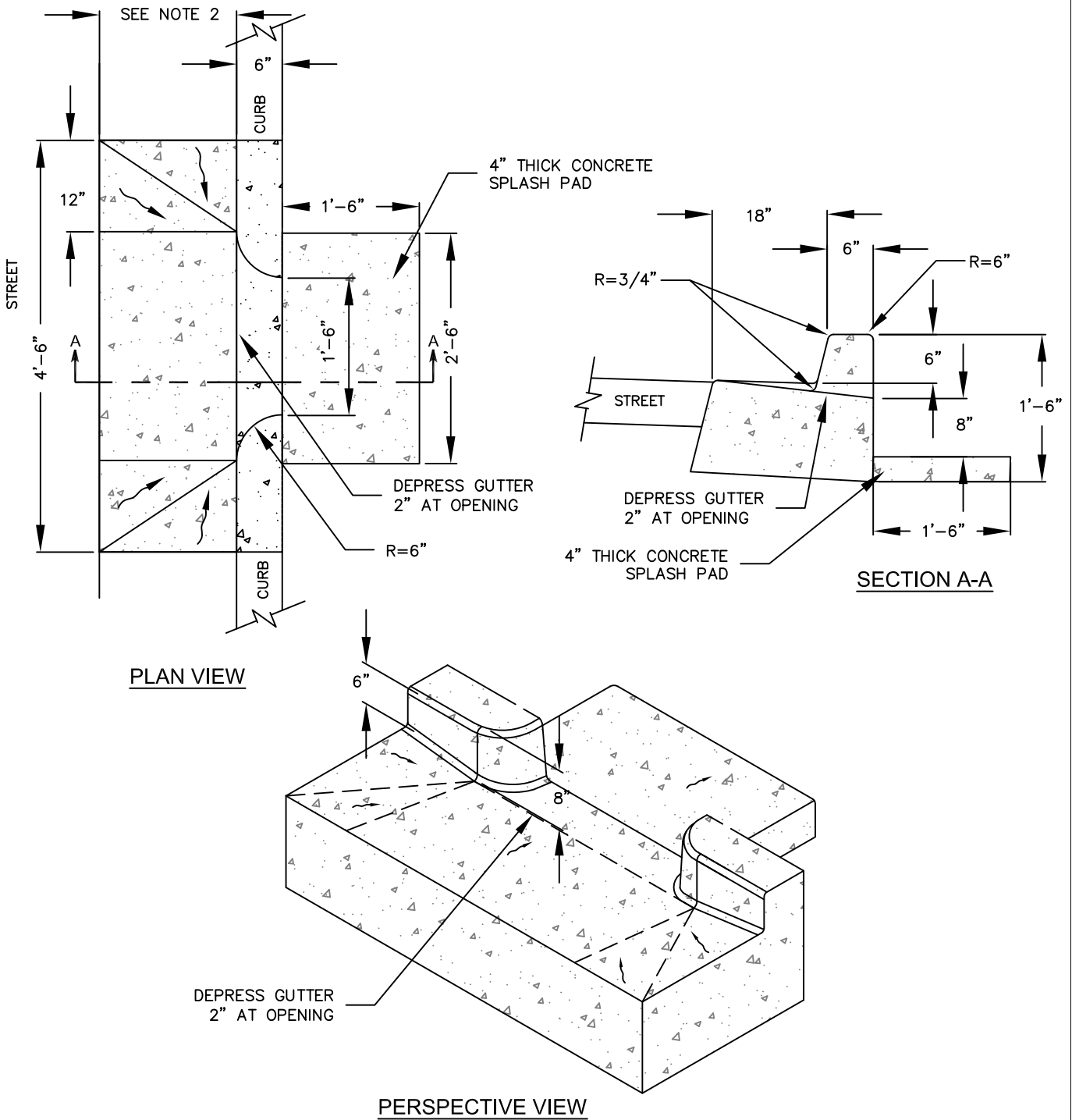
NOTES:

1. FOR USE WITH STORMWATER FACILITIES WITH SIDE SLOPES
2. USE TYPE B CURB AND GUTTER SECTION. REFER TO STANDARD PLAN 303A
3. METAL INLET ASSEMBLY REQUIRED ON ARTERIAL AND COLLECTOR STREETS. SEE STANDARD PLAN 236
4. PLACE 4"-6" ROUND RIVER ROCK ALONG END OF CONCRETE WHERE IT MEETS GROWING MEDIUM. RIVER ROCK SHALL EXTEND 1/2"-1" ABOVE EDGE OF CONCRETE

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

STANDARD PLAN
CONCRETE INLET TYPE A

| | | | | | | |
|----------|---|---------|------------|-----|---------|----------------|
| APPROVED |  | 1/01/14 | DRAWN BY | KAK | 12/2013 | NO. 234 |
| | CITY ENGINEER | DATE | CHECKED BY | KR | 12/2013 | |



NOTES:

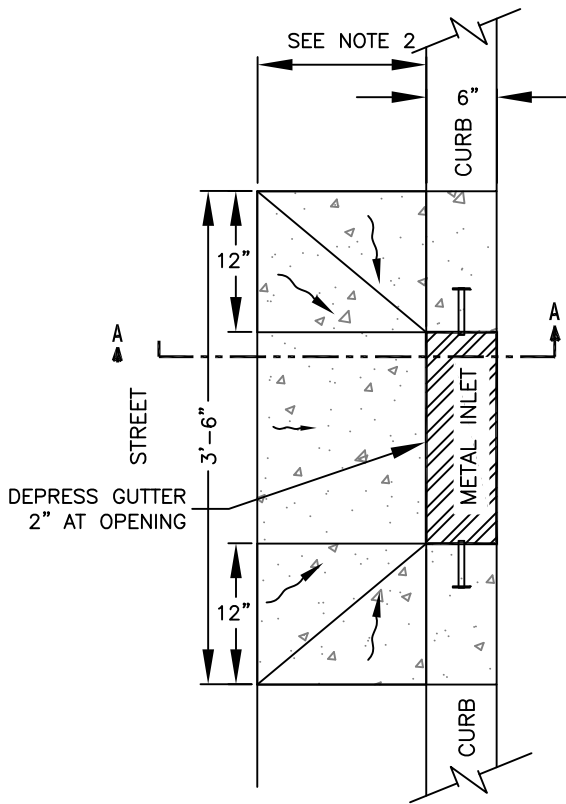
1. FOR USE WITH PLANTERS. IF PLANTER INLET IS ADJACENT TO PLANTER WALL, THEN INCLUDE WALL IN DETAIL
2. USE TYPE B CURB AND GUTTER IN STANDARD PLAN 303A. MATCH GUTTER PAN OF ADJACENT CURB AND GUTTER
3. METAL INLET ASSEMBLY REQUIRED ON ARTERIAL AND COLLECTOR STREETS. SEE STANDARD PLAN 236
4. PLACE 4"-6" ROUND RIVER ROCK ALONG END OF CONCRETE WHERE IT MEETS GROWING MEDIUM. RIVER ROCK SHALL EXTEND 1/2"-1" ABOVE EDGE OF CONCRETE

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

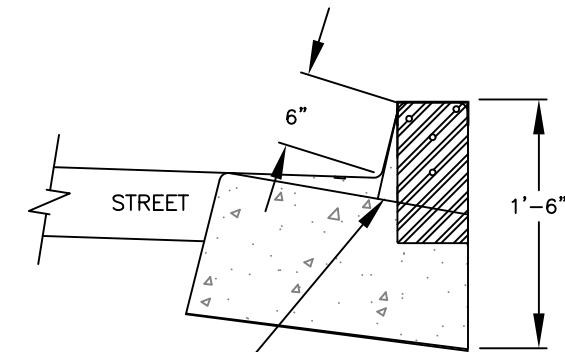
STANDARD PLAN
CONCRETE INLET TYPE B

| | | | | | |
|----------|-----------------------|---------|------------|-----|---------|
| APPROVED | <i>James J. Spunt</i> | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | CITY ENGINEER | DATE | CHECKED BY | KR | 12/2013 |

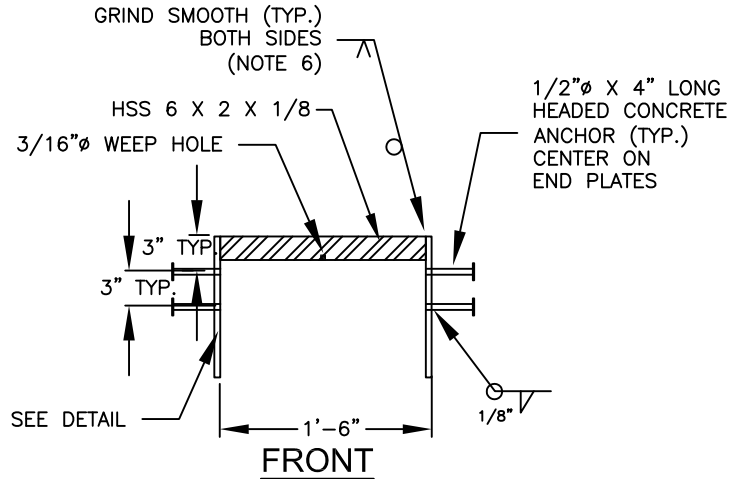
NO. 235



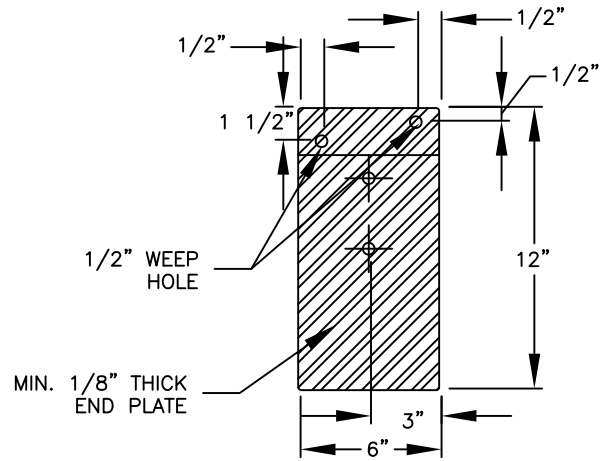
PLAN VIEW



SECTION A-A



FRONT



SIDE
-METAL INLET ASSEMBLY-

NOTES:

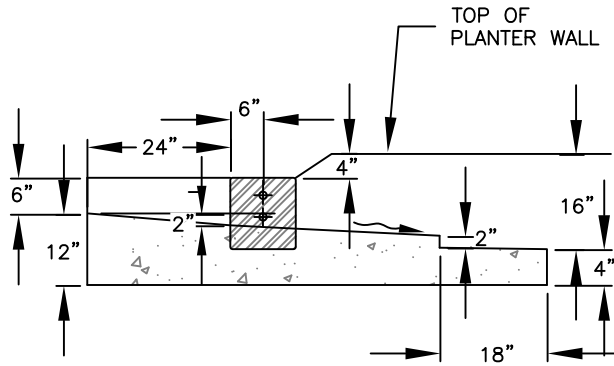
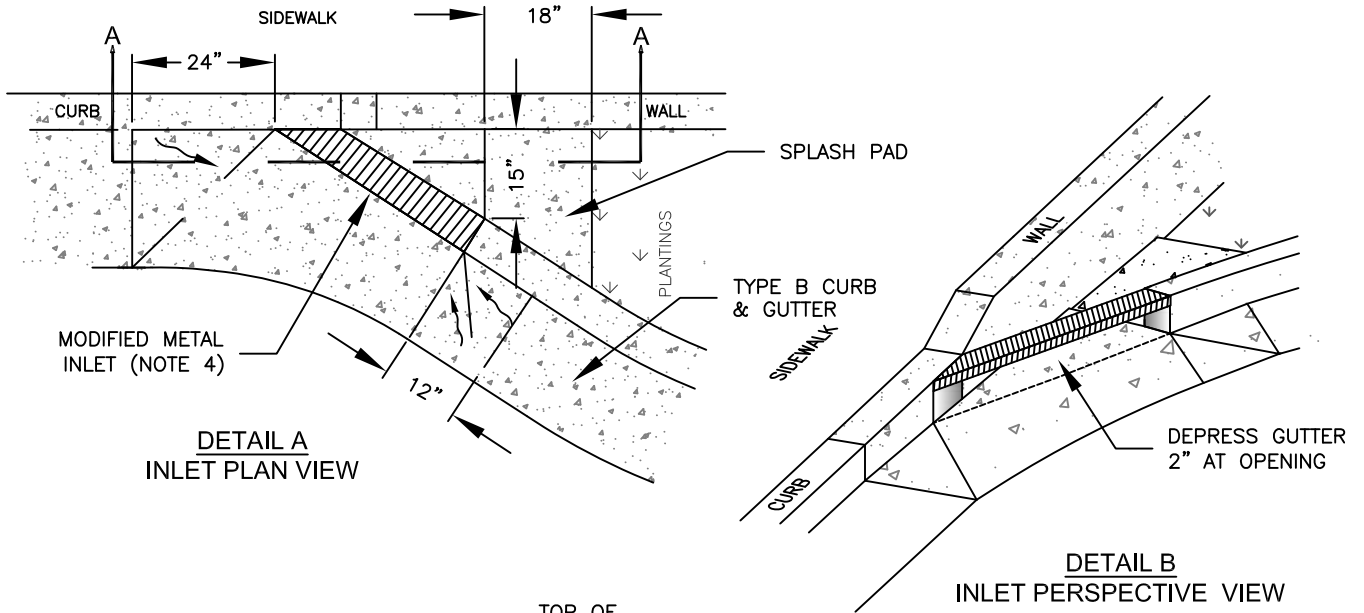
1. METAL INLETS REQUIRED ON ARTERIAL AND COLLECTOR STREETS
2. TYPE B CURB AND GUTTER. USE STANDARD PLAN 303
3. METAL INLET ASSEMBLY TO BE USED WITH STANDARD PLAN 234, 235, AND 239 WHERE REQUIRED
4. WHEN USING WITH STANDARD PLAN 234, OR 235 MODIFY CURB FOR METAL INLET ASSEMBLY
5. DESIGN VERTICAL WHEEL LOAD IS 8.5 kips (1/2 OF FHWA-HOP-06-105)
6. METAL INLET WIDTH CAN BE MODIFIED TO 2 FT. IF SITE CONDITIONS REQUIRE A 2 FT. INTERIOR INLET WIDTH
7. HEADED CONCRETE ANCHORS SHALL MEET THE REQUIREMENTS OF ASTM A-108
8. HSS 6 X 2 X 1/8 CHANNEL SHALL MEET THE REQUIREMENTS OF ASTM A-500 GRADE B
9. END PLATES SHALL MEET THE REQUIREMENTS OF ASTM A-36
10. ENTIRE ASSEMBLY SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A-123
11. SINGLE BEVEL GROOVE WELD

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

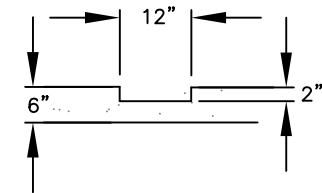
STANDARD PLAN
METAL INLET DETAILS

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| APPROVED |  | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | | DATE | CHECKED BY | KR | 12/2013 |

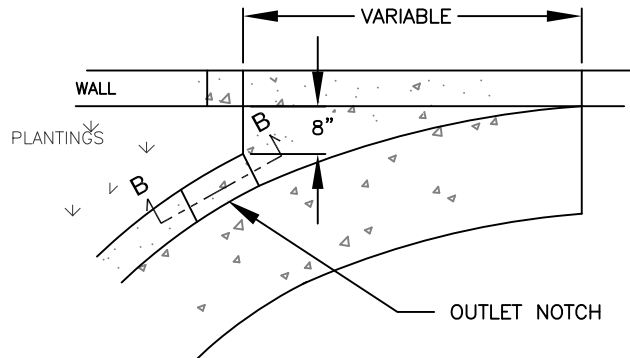
NO. 236



SECTION A-A



SECTION B-B
OUTLET NOTCH PROFILE



DETAIL C
OUTLET NOTCH PLAN

NOTES:

1. ADDITIONAL INLETS CAN BE ADDED IF NECESSARY (PREFERABLY IMMEDIATELY DOWNSTREAM OF EACH CHECK DAM TO MINIMIZE POTENTIAL BACK FLOW)
2. SAWCUT BEYOND FACILITY AND TRANSITION EXISTING CURB TO NEW CURB AND GUTTER AT 1" PER FOOT AS NECESSARY
3. INLET MAY BE MODIFIED TO MAXIMIZE FLOW ENTRY TO STORMWATER FACILITY
4. FOR MODIFIED METAL INLET SEE STANDARD PLAN 238

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
INLET & OUTLET FOR CURB EXTENSIONS

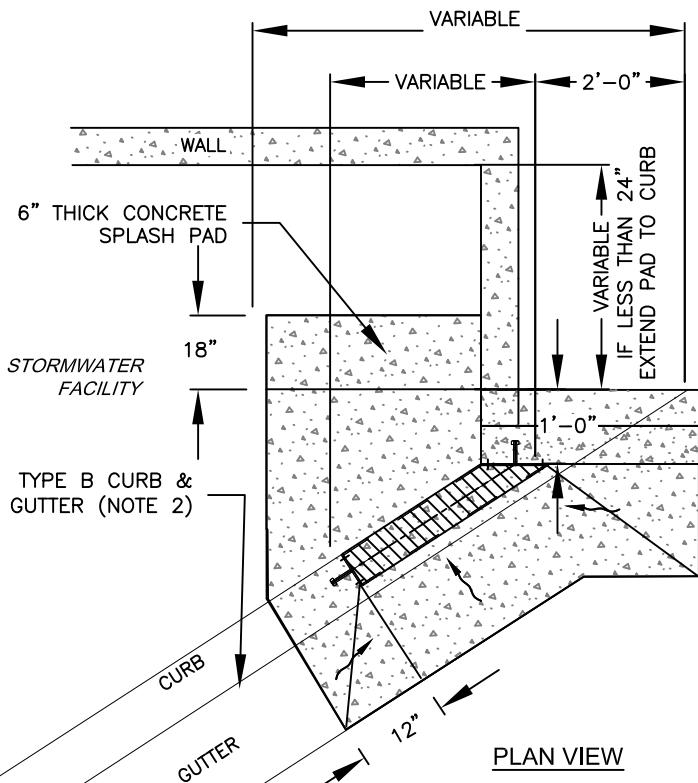
APPROVED *James B. Smith* 1/01/14
 CITY ENGINEER DATE

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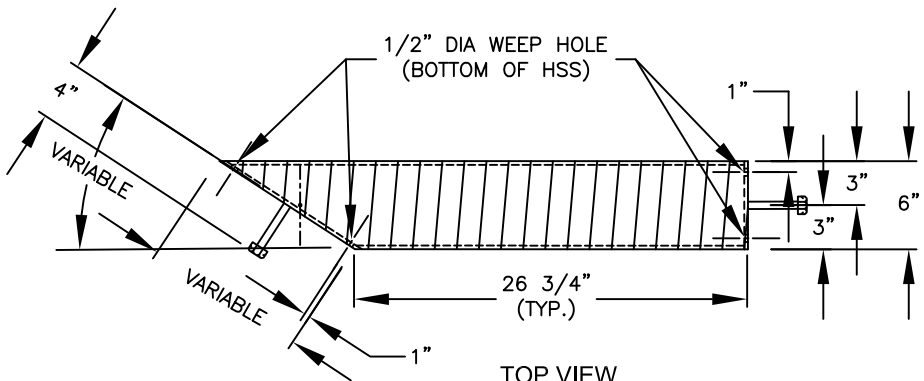
NO. 237

NOTES:

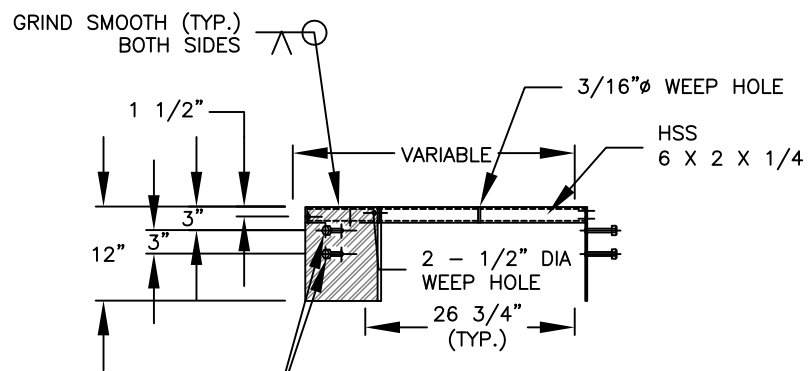
1. SPLASH PADS ARE REQUIRED AT ALL INLETS
2. REFER TO STANDARD PLAN 330A. MATCH GUTTER PAN OF ADJACENT CURB AND GUTTER
3. DESIGN VERTICAL LOAD IS 8.5 kips (1/2 OF FHWA-HOP-06-105)
4. HEADED CONCRETE ANCHORS SHALL MEET THE REQUIREMENTS OF ASTM A-108
5. HSS 6 X 2 X 1/4 CHANNEL SHALL MEET THE REQUIREMENTS OF ASTM A-500 GRADE B
6. END PLATES SHALL MEET THE REQUIREMENTS OF ASTM A-36
7. ENTIRE ASSEMBLY SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A-123
8. SINGLE BEVEL GROOVE WELD



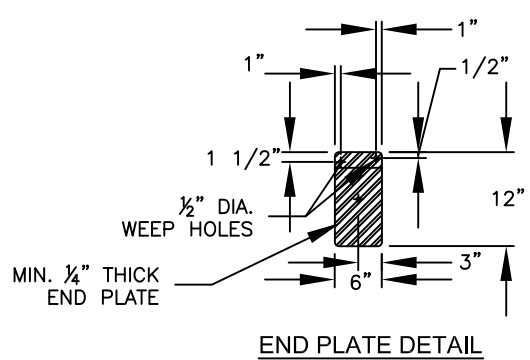
PLAN VIEW



TOP VIEW



ELEVATION



END PLATE DETAIL

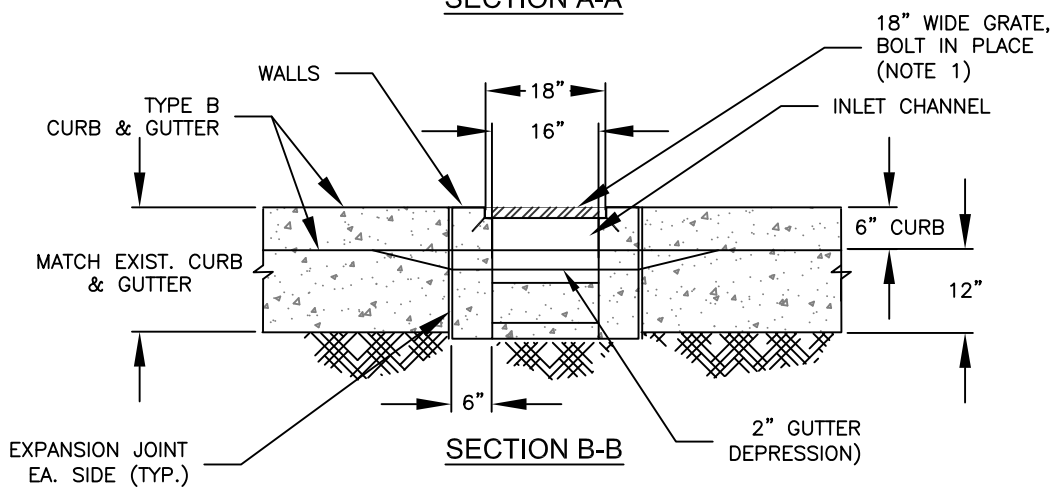
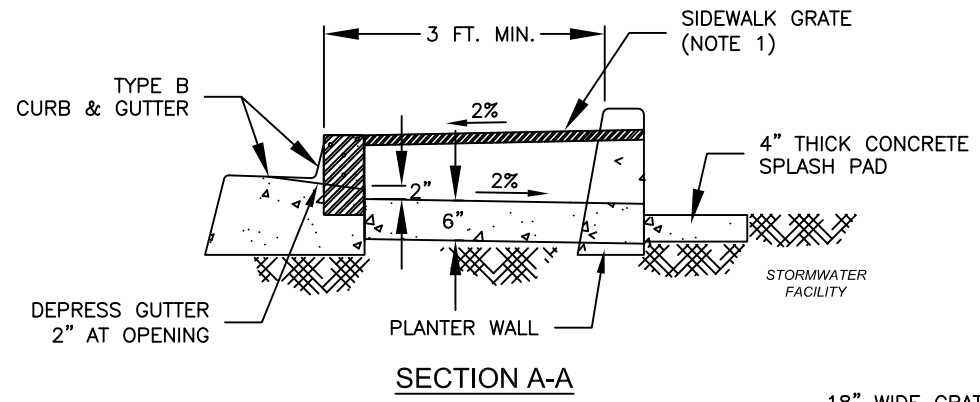
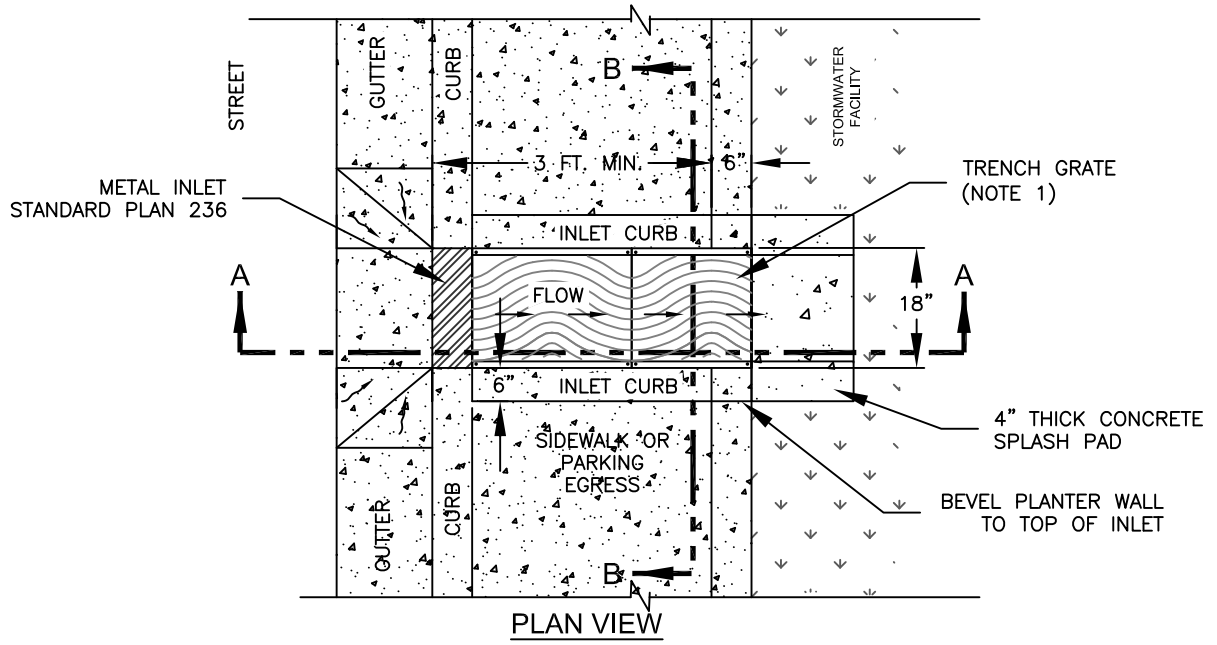
**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

STANDARD PLAN
MODIFIED METAL INLET ASSEMBLY

APPROVED *James J. Spivey* 1/01/14
CITY ENGINEER DATE

DRAWN BY KAK 12/2013
CHECKED BY KR 12/2013

NO. 238

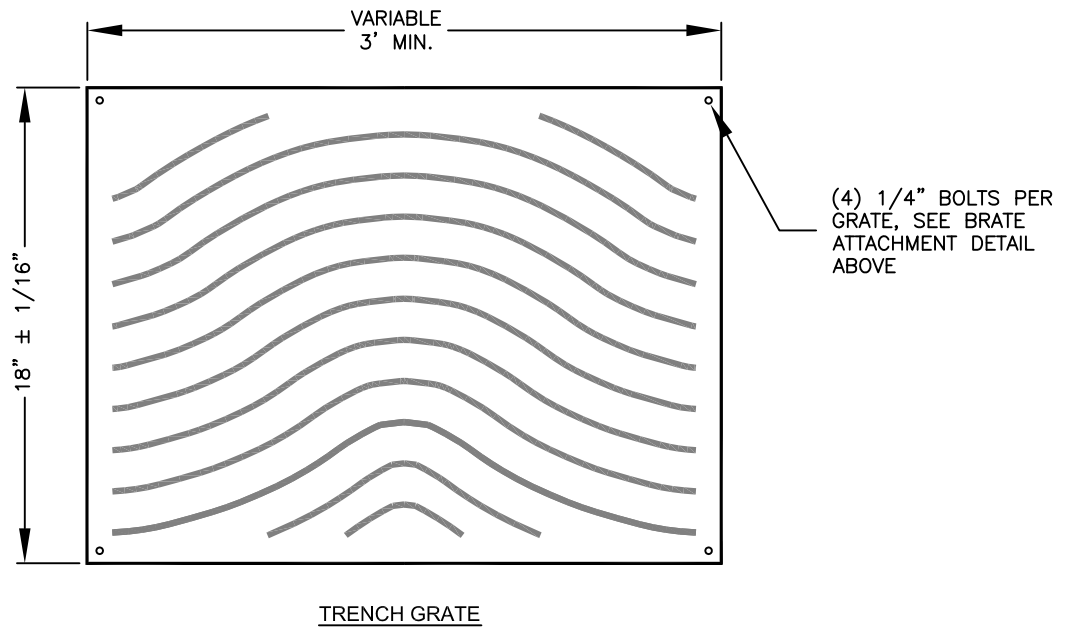
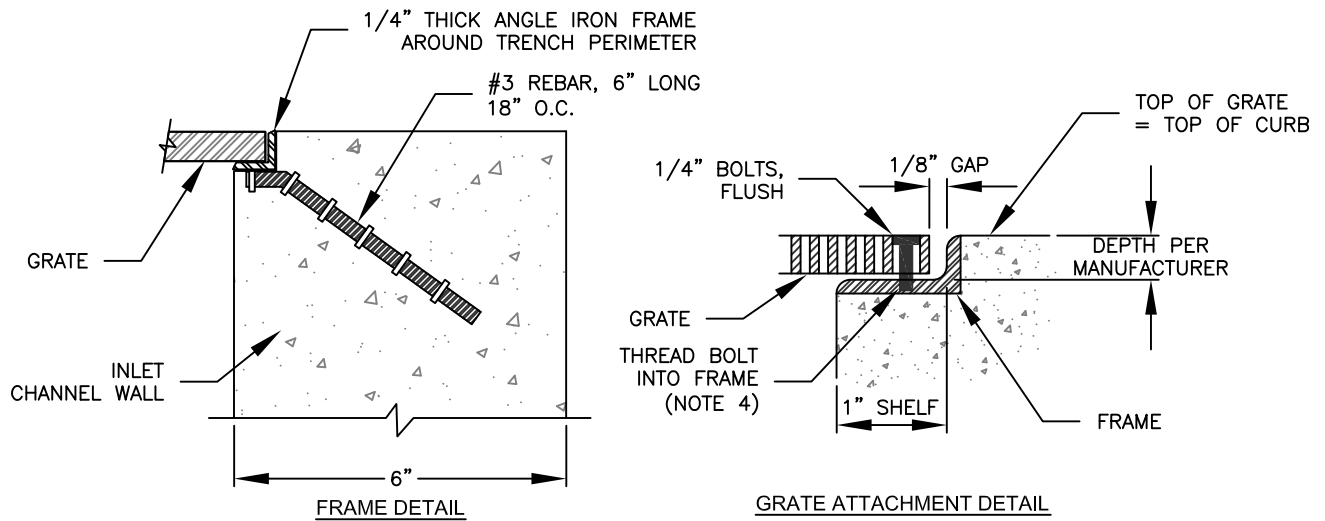


NOTE:
 1. FOR GRATE AND FRAME DETAILS SEE
 STANDARD PLAN 240

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
CHANNEL & GRATE DETAILS

| | | | | | |
|----------|---|---------------|----------|------------|------------|
| APPROVED |  | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | | CITY ENGINEER | DATE | CHECKED BY | KR 12/2013 |

NO. 239



NOTES:

1. CAST IRON, NATURAL FINISH
2. NO OPENING GREATER THAN 3/8"
3. PROTECT THREADED HOLES IN FRAME FROM CLOGGING DURING FRAME INSTALLATION
4. GRATE TO BE RATED FOR H-20 LOADING, WITH A NON-SLIP SURFACE HAVING A STATIC COEFFICIENT OF FRICTION 0.60 AND 1.0 PER ASTM C1020. GRATES ON INCLINES GREATER THAN 4% SHALL HAVE A COEFFICIENT OF 0.80 TO 1.0
5. WAVY GRATE AS SHOWN OR APPROVED ADA COMPLIANT EQUIVALENT

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| CITY OF SALEM | |
| DEPARTMENT OF PUBLIC WORKS | |
| STANDARD PLAN | |
| GRATE & FRAME DETAILS | |

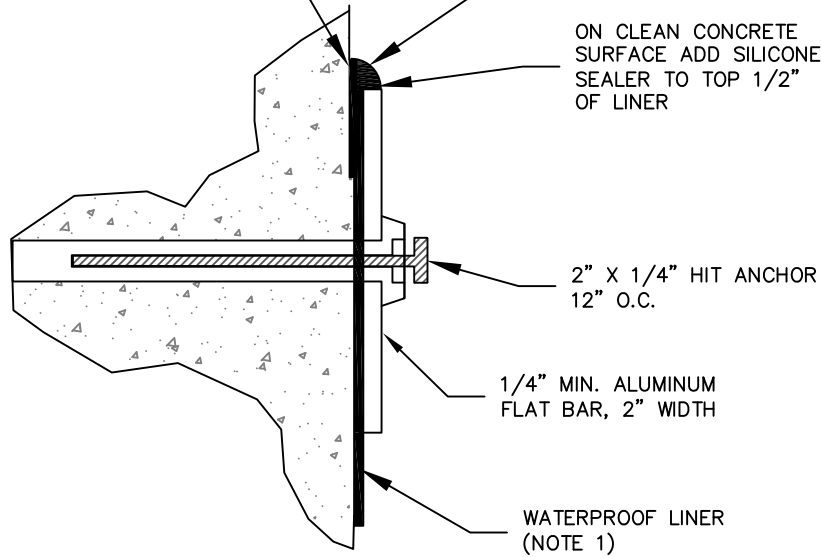
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| APPROVED | CITY ENGINEER | 1/01/14 | DATE | DRAWN BY | KAK | 12/2013 |
| | CHECKED BY | KR | 12/2013 | | | |

NO. 240

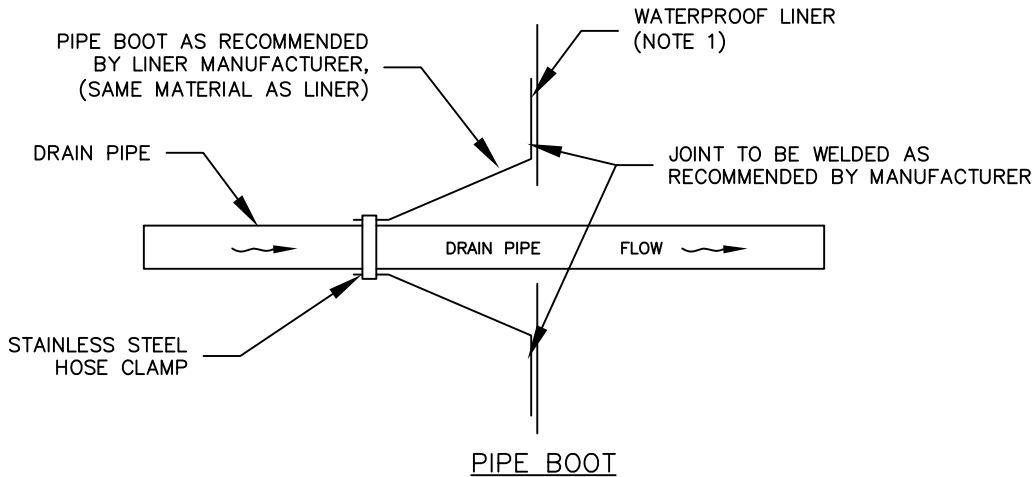
TOP OF LINER TO BE AT 3"
BELOW TOP OF STORMWATER
FACILITY GROWING MEDIUM

TRIM LINER TO TOP EDGE
OF FLAT BAR, SEAL

ON CLEAN CONCRETE
SURFACE ADD SILICONE
SEALER TO TOP 1/2"
OF LINER



LINER ATTACHMENT



PIPE BOOT

NOTES:

1. LINER MATERIALS TO BE 30 mil. PVC, HDPE OR EQUIVALENT. LINER TO EXTEND FROM TOP OF GROWING MEDIUM TO THE BOTTOM OF EXCAVATION

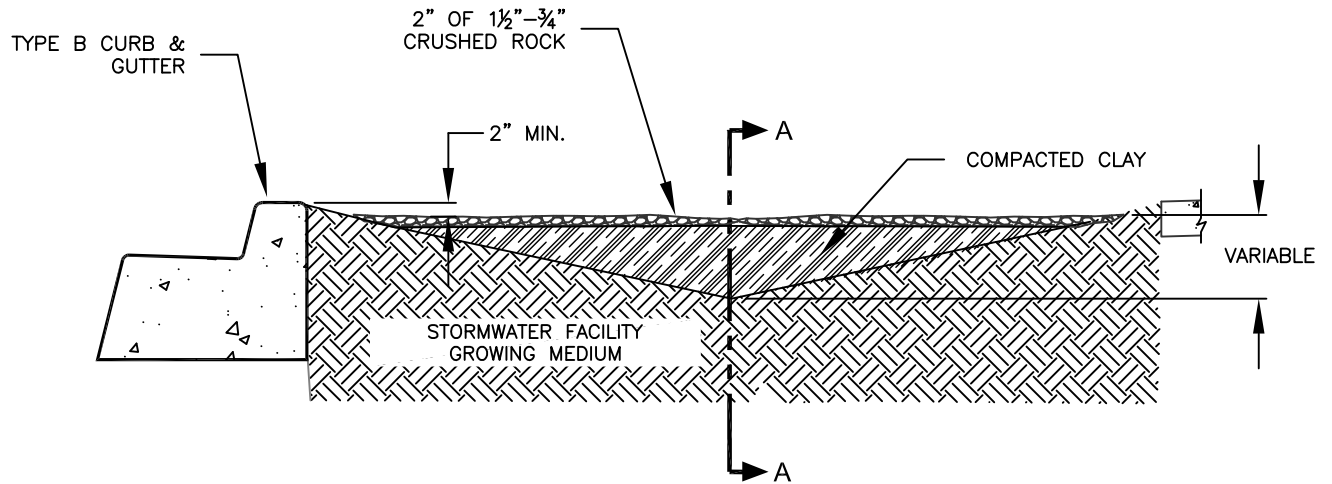
2. 3 INCHES OF CONCRETE IS REQUIRED ON ALL SIDES OF ATTACHMENT

3. A FILTRATION FACILITY MUST BE COMPLETELY LINED WITH A WATERPROOF LINER UNLESS FACILITY'S BOTTOM AND SIDES ARE MONOLITHIC CONCRETE

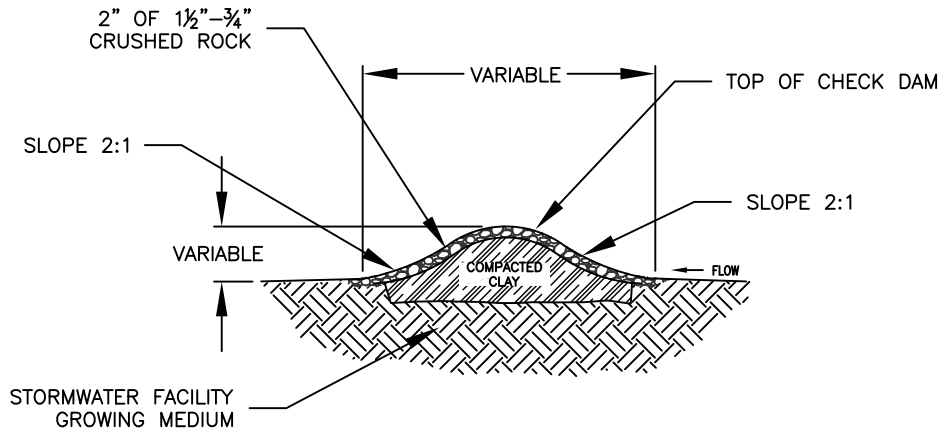
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| CITY OF SALEM | |
| DEPARTMENT OF PUBLIC WORKS | |
| STANDARD PLAN | |
| LINER ATTACHMENT & PIPE BOOT DETAILS | |

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|----------|-----------------------|---------|------------|-----|---------|
| APPROVED | <i>James J. Spunt</i> | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | CITY ENGINEER | DATE | CHECKED BY | KR | 12/2013 |

NO. 241



ELEVATION



SECTION A-A

NOTES:

ROCK CHECK DAM USE MAY BE IN SWALES AND CURB EXTENSIONS WITH SIDE SLOPES

2. CHECK DAM ELEVATION AND WIDTH AS SPECIFIED IN DESIGN

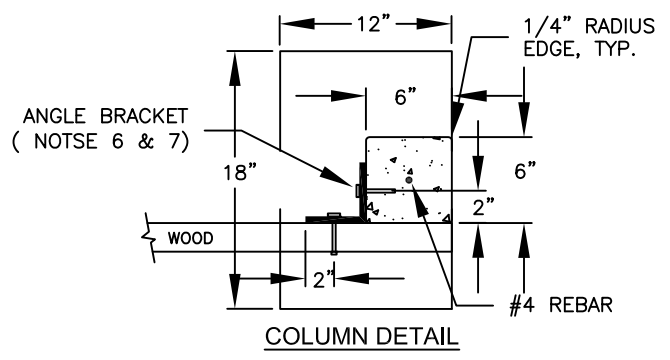
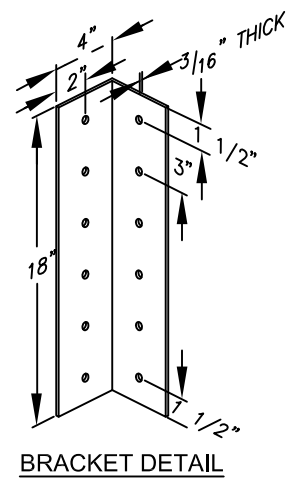
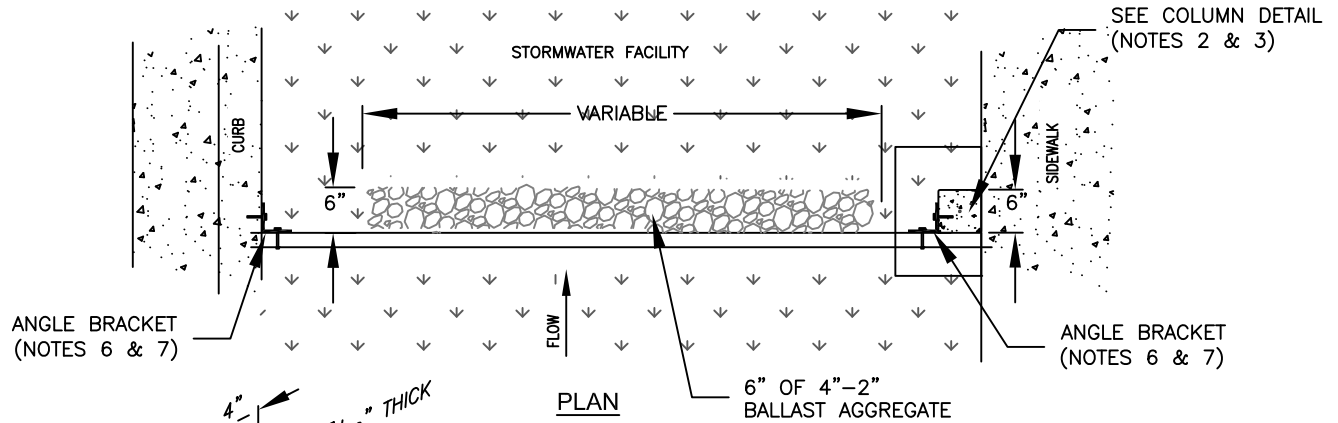
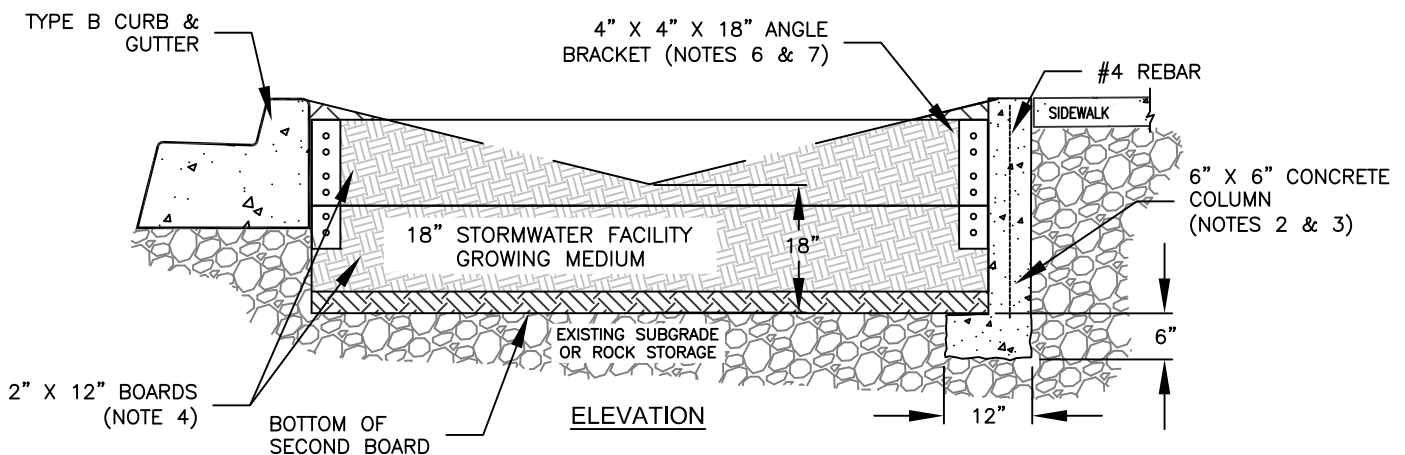
3. HAND TAMP GROWING MEDIUM DIRECTLY UNDER CHECK DAM

4. KEY CLAY CORE INTO STORMWATER FACILITY GROWING MEDIUM

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| CITY OF SALEM | |
| DEPARTMENT OF PUBLIC WORKS | |
| STANDARD PLAN | |
| ROCK CHECK DAM FOR SWALES | |

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| APPROVED | | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | CITY ENGINEER | DATE | CHECKED BY | KR | 12/2013 |

NO. 242



NOTES:

- 1. ENSURE THAT CHECK DAM ELEVATIONS DO NOT CAUSE STORMWATER TO OVERFLOW TO SIDEWALK
- 2. CONSTRUCTION GRADE CONCRETE TO BE 3000 psi
- 3. BASE OF COLUMN IS 12" X 18" AND 6" THICK
- 4. LUMBER TO BE A NATURALLY ROT-RESISTANT WOOD (e.g. CEDAR etc.)
- 5. ALL FASTENERS TO BE STAINLESS STEEL OR ALUMINUM

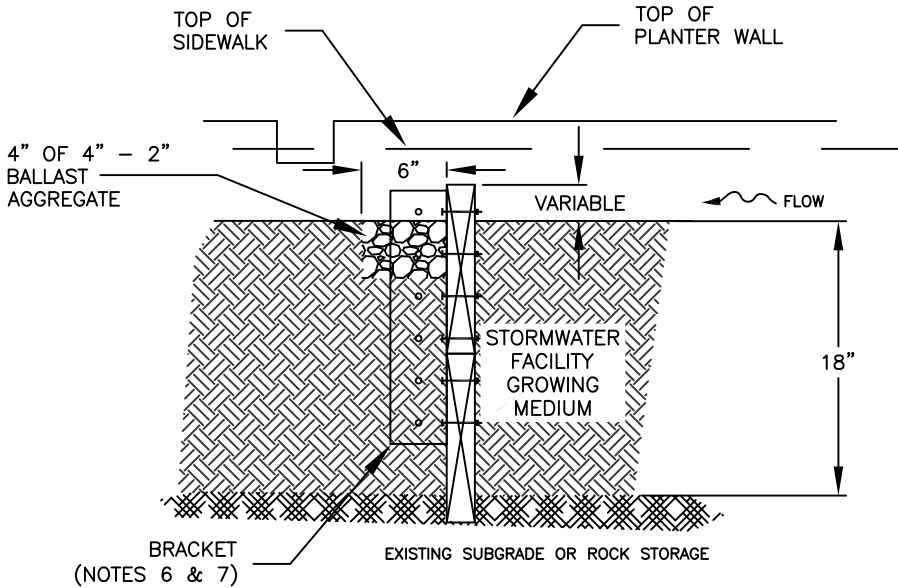
- 6. 4" X 4" X 18" ANGLE BRACKET TO BE MADE OF MIN. 3/16" STAINLESS STEEL, OR ALUMINUM
- 7. TOP OF BRACKET TO BE NO HIGHER THAN TOP OF CHECK DAM
- 8. MIN. 3 BOLTS TO CONCRETE, MIN. 2 BOLTS PER BOARD, AND 5/16" DIA. BOLTS

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
WOOD CHECK DAM FOR SWALES

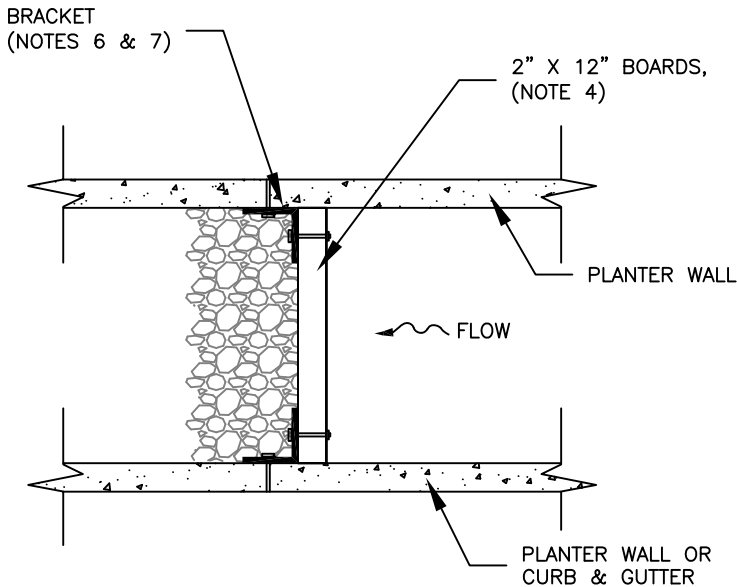
APPROVED *James B. Smith* 1/01/14
 CITY ENGINEER DATE

DRAWN BY KAK 12/2013
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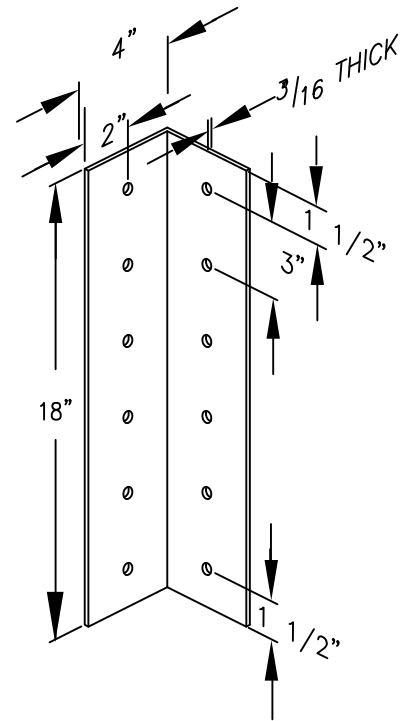
NO. 243



ELEVATION



PLAN



BRACKET DETAIL

NOTES:

- 1. FOR USE IN PLANTERS AND CURB EXTENSION PLANTERS
- 2. ENSURE THAT CHECK DAM ELEVATIONS DO NOT CAUSE STORMWATER TO OVERFLOW TO SIDEWALK
- 3. CANNOT BE USED WITH "L-SHAPED" PLANTER WALL
- 4. LUMBER TO BE A NATURALLY ROT-RESISTANT WOOD (e.g. CEDAR, etc.). MANUFACTURED PRODUCTS CAN BE USED, (SEE SCS)
- 5. ALL FASTENERS TO BE STAINLESS STEEL OR ALUMINUM
- 6. 4" X 4" X 18" ANGLE BRACKET TO BE MADE OF MIN. 3/16" STAINLESS STEEL, OR ALUMINUM
- 7. TOP OF BRACKET TO BE NO HIGHER THAN TOP OF CHECK DAM
- 8. MIN. 3 BOLTS TO CONCRETE, MIN. 2 BOLTS PER BOARD, AND 5/16" DIA. BOLTS

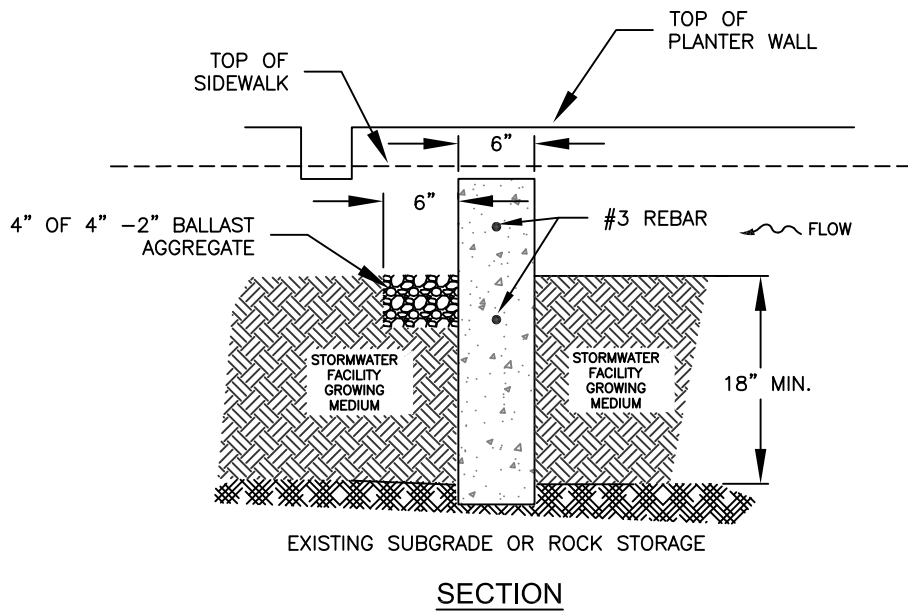
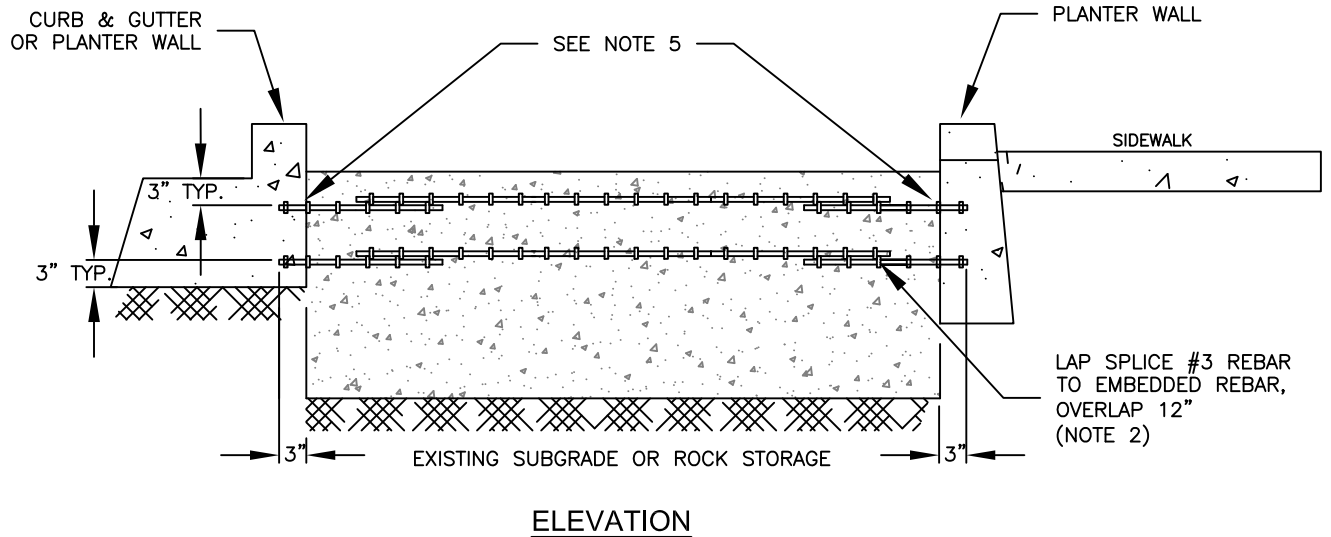
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
WOOD CHECK DAM FOR PLANTERS

APPROVED *James L. Bond* 1/01/14
 CITY ENGINEER DATE

DRAWN BY KAK 12/2013
 CHECKED BY KR 12/2013

NO. 244



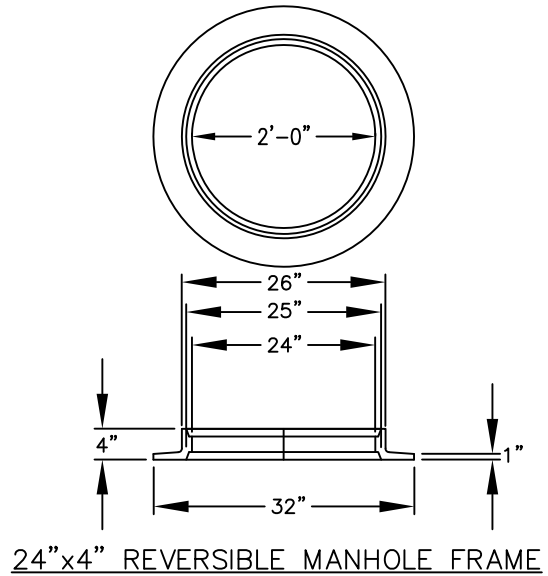
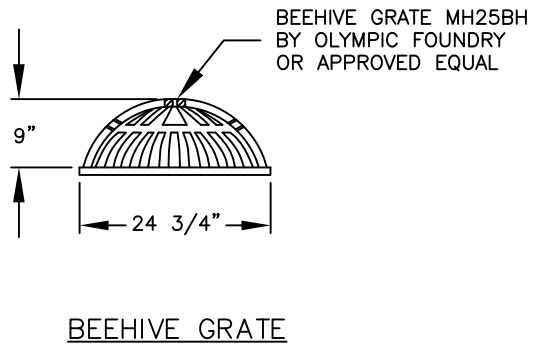
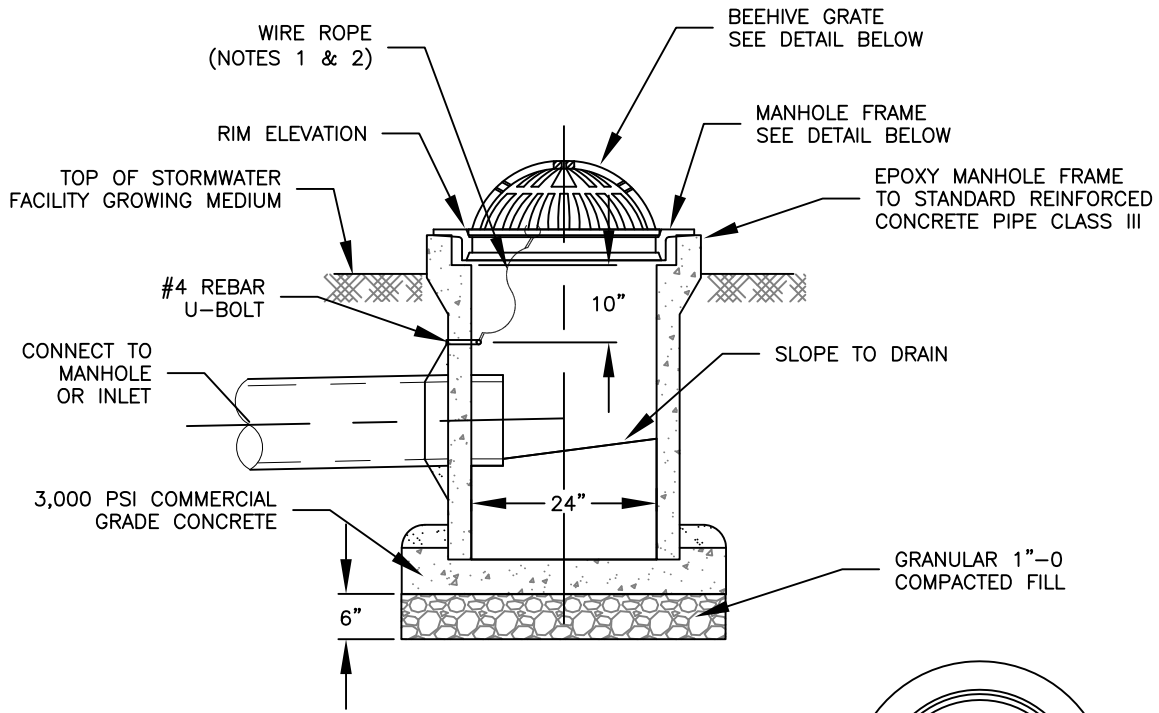
NOTES:

1. CONCRETE CHECK DAM FOR USE IN PLANTERS AND CURB EXTENSION PLANTERS
2. PROVIDE STATIONING AND/OR DIMENSIONING FOR CHECK DAMS
3. CHECK DAM ELEVATIONS SHALL NOT CAUSE STORMWATER TO OVERFLOW TO SIDEWALK
4. PLANTER WALL SHALL BE EMBEDDED IN EXISTING SUBGRADE OR DRAIN ROCK
5. EMBED # 3 REBAR 3" INTO CURB AND PLANTER WALL

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
CONCRETE CHECK DAM FOR PLANTERS

| | | | | | |
|----------|---|---------|------------|-----|---------|
| APPROVED |  | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | | DATE | CHECKED BY | KR | 12/2013 |
| | CITY ENGINEER | | | | |


NO. 245



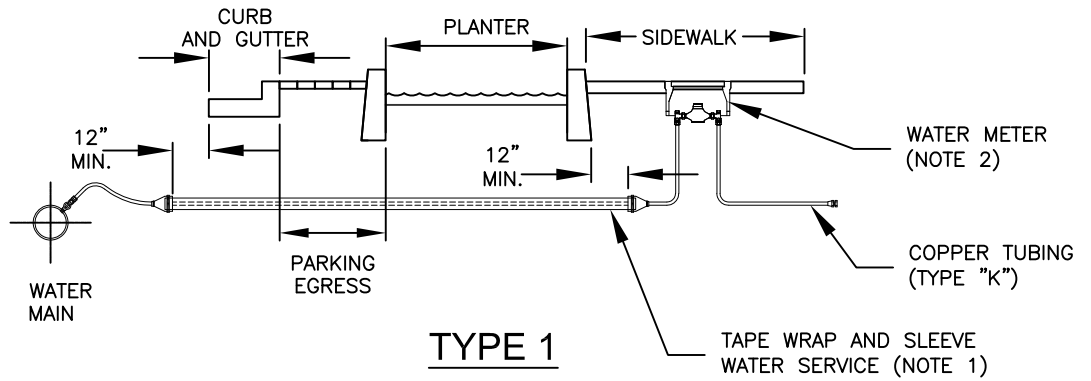
NOTES:

1. SECURE GRATE IN PLACE WITH 54 INCHES OF WIRE ROPE. LOOP ENDS OF WIRE ROPE AROUND U-BOLT AND GRATE. CRIMP EACH END OF WIRE ROPE WITH 3" OVERLAP. WIRE ROPE TO BE 1/8" - 3/16" STAINLESS STEEL, 7 STRANDS OF 19 WIRES
2. DRILL 2" DEEP HOLES INTO PIPE AND EPOXY #4 REBAR U-BOLT (2" X 4") IN HOLES
3. GRATE TO BE CAST IRON, ASTM A48 CL30

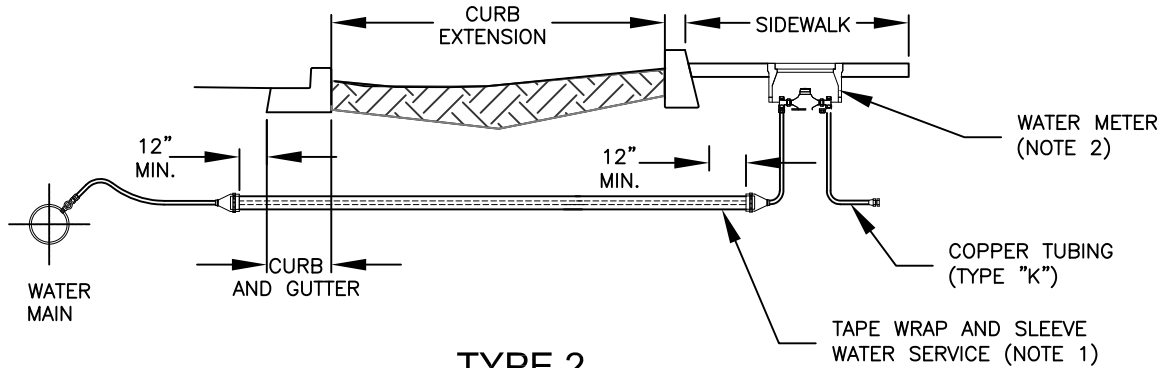
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
BEEHIVE INLET GRATE

| | | | | | | | | | |
|----------|--|---------|------|----------|-----|---------|------------|----|---------|
| APPROVED |  CITY ENGINEER | 1/01/14 | DATE | DRAWN BY | KAK | 12/2013 | CHECKED BY | KR | 12/2013 |
|----------|--|---------|------|----------|-----|---------|------------|----|---------|

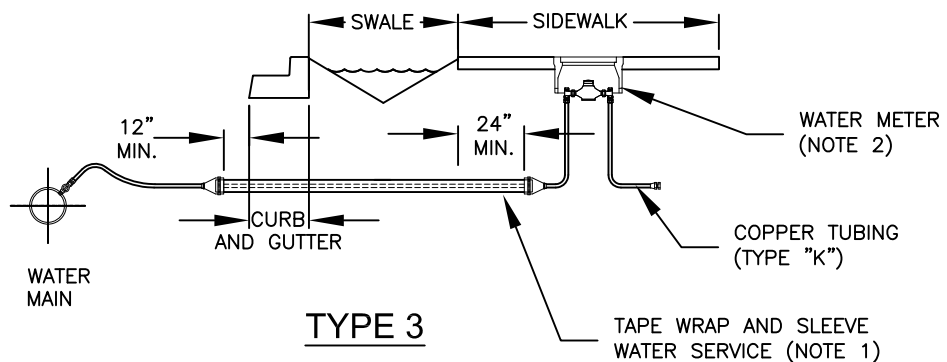
NO. 246



TYPE 1



TYPE 2



TYPE 3


NOTES:

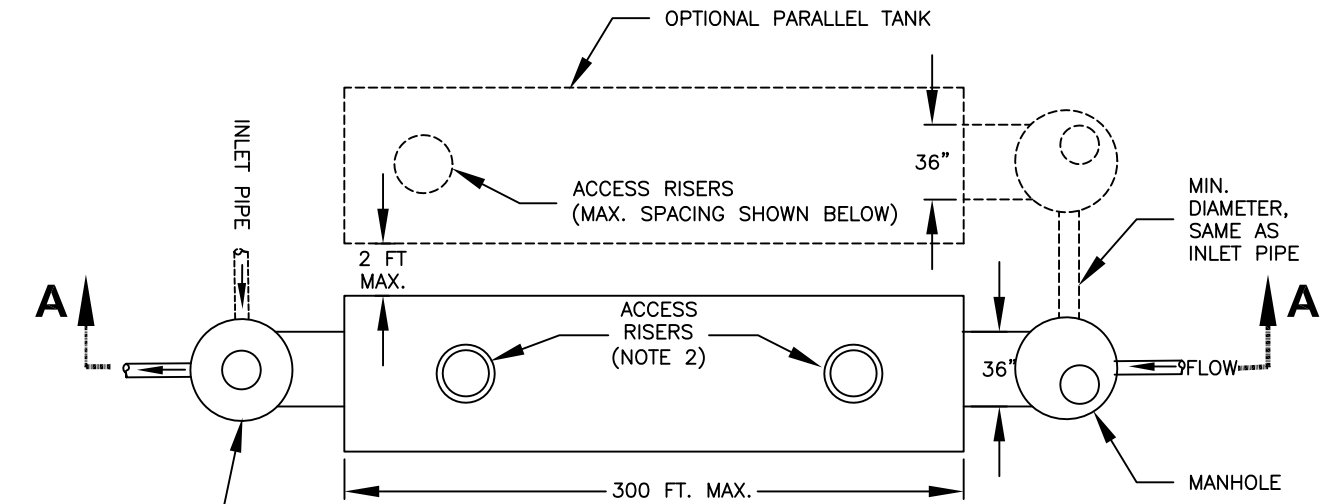
1. TAPE WRAP AND SLEEVE WATER SERVICES IN 4" PVC ASTM D1785 SCHEDULE 80 WITH MOLDED PIPE SLEEVE END SEALS. REFER TO STANDARD PLAN 422

2. FOR WATER METER INSTALLATION SEE STANDARD PLANS 410, 419, AND 420

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

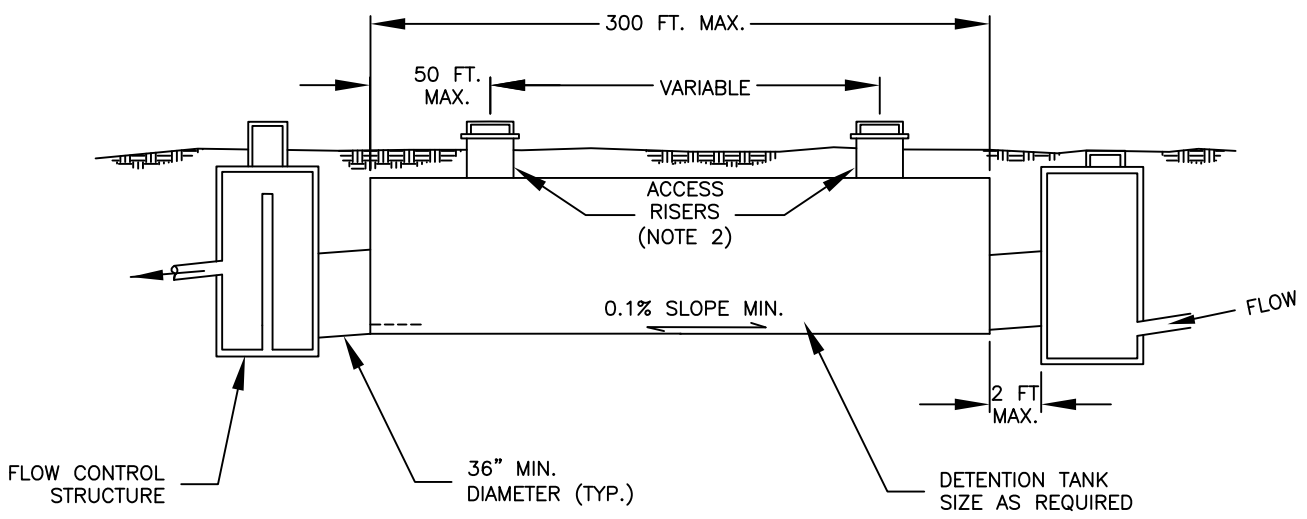
**STANDARD PLAN
SLEEVE DETAIL FOR DOMESTIC
WATER SERVICE**

| | | | | | | |
|----------|---|---------|------------|-----|---------|----------------|
| APPROVED |  | 1/01/14 | DRAWN BY | KAK | 12/2013 | NO. 247 |
| | | DATE | CHECKED BY | KR | 12/2013 | |
| | CITY ENGINEER | | | | | |



PLAN VIEW
NTS

"FLOW-THROUGH" SYSTEM SHOWN WITH SOLID LINES.
DESIGNS FOR "FLOW BACKUP" SYSTEM
AND PARALLEL TANKS SHOWN WITH DASHED LINES.



SECTION A-A
NTS

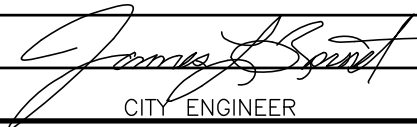
"FLOW-THROUGH" SYSTEM SHOWN WITH SOLID LINES.

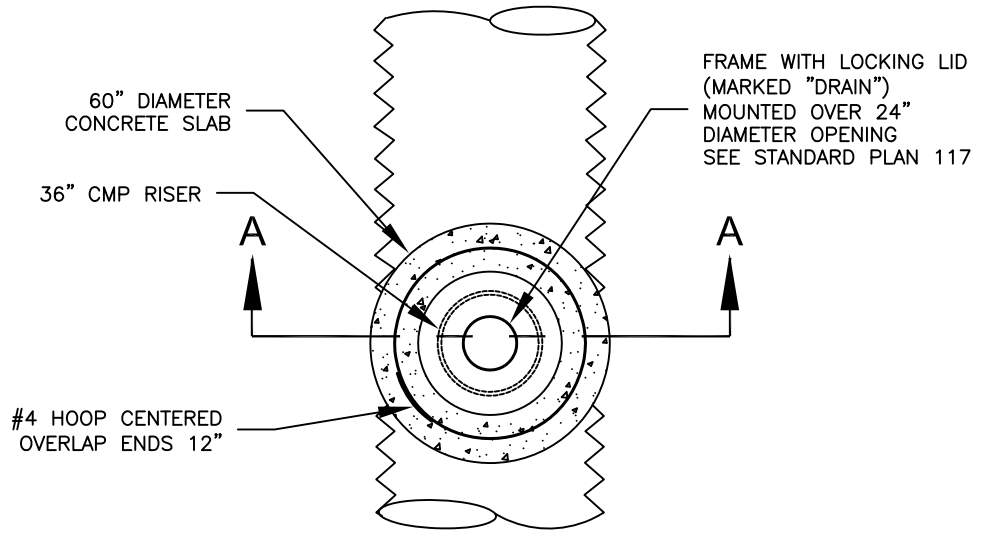
NOTES:

- 1. ALL METAL PARTS CORROSION RESISTANT. STEEL PARTS GALVANIZED AND ASPHALT COATED
- 2. FOR ACCESS RISER DETAILS SEE STANDARD PLAN 248B

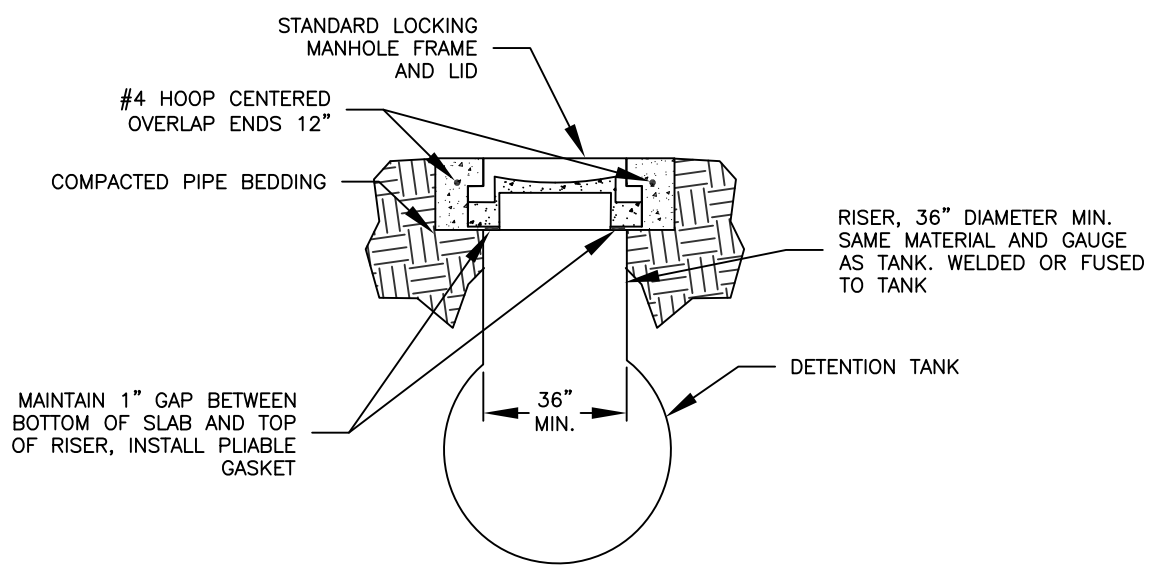
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
DETENTION TANK

| | | | | | | |
|----------|---|---------|------------|-----|---------|------------------|
| APPROVED |  | 1/01/14 | DRAWN BY | KAK | 12/2013 | NO. 248 A |
| | | DATE | CHECKED BY | KR | 12/2013 | |
| | CITY ENGINEER | | | | | |



PLAN VIEW
NTS



SECTION A-A
NTS

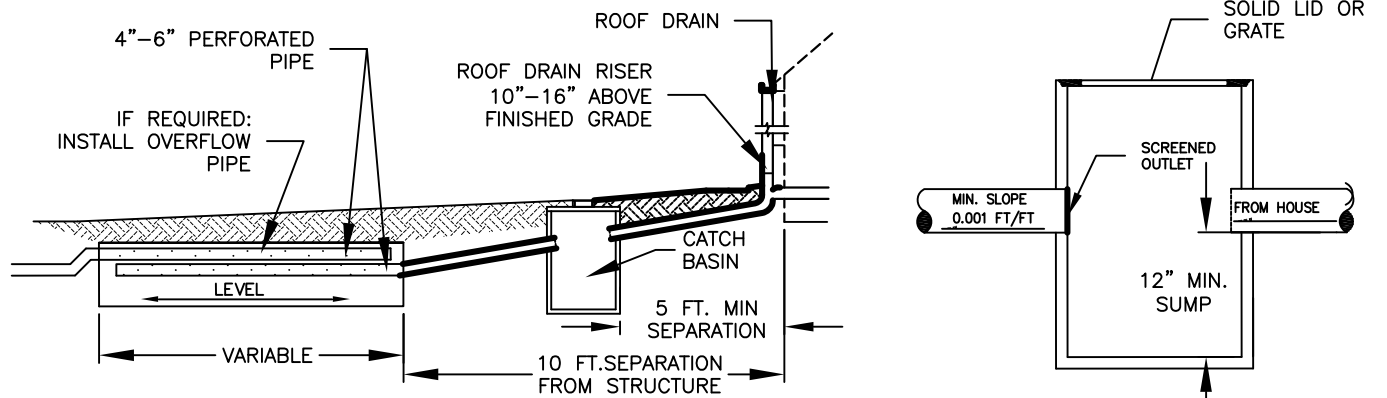
NOTES:

1. USE ADJUSTING BLOCKS AS REQUIRED TO BRING FRAME TO GRADE
2. ALL METAL MATERIALS TO BE ALUMINUM OR GALVANIZED AND ASPHALT COATED
3. MUST BE LOCATED FOR ACCESS BY MAINTENANCE VEHICLES

| | |
|-----------------------------------|--|
| CITY OF SALEM | |
| DEPARTMENT OF PUBLIC WORKS | |
| STANDARD PLAN | |
| DETENTION TANK DETAILS | |

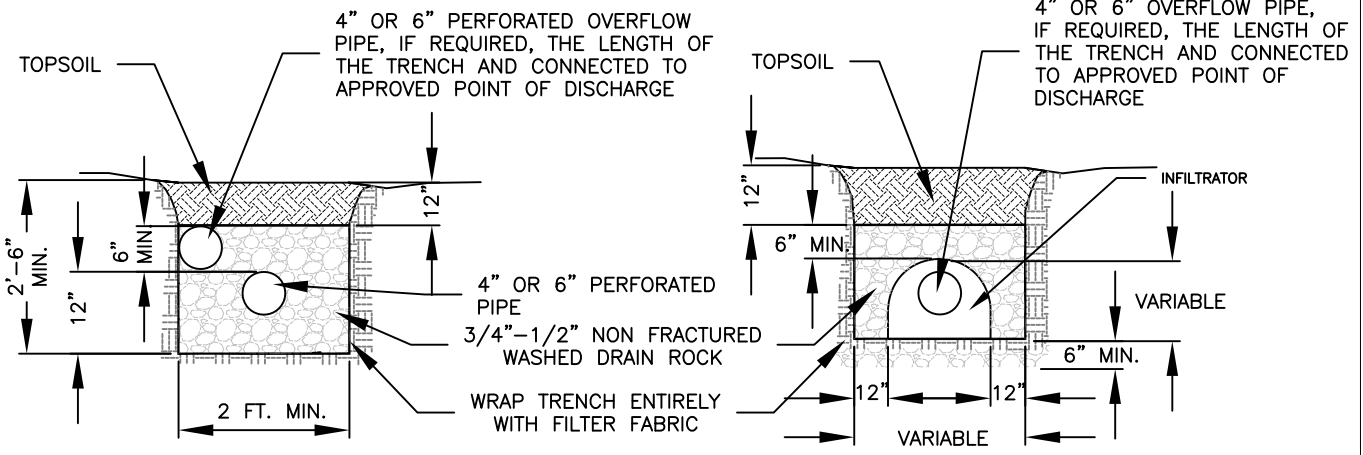
| | | | | | |
|----------|---------------|---------|------------|-----|---------|
| APPROVED | | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | CITY ENGINEER | DATE | CHECKED BY | KR | 12/2013 |

NO. 248 B



PROFILE

9" MIN. SQUARE CATCH BASIN WITH SUMP



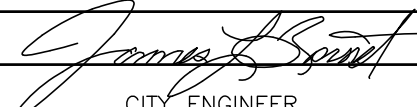
SOAKAGE TRENCH

STORM CHAMBER

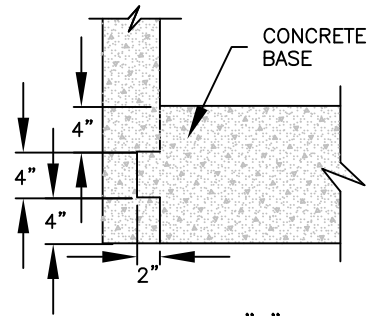
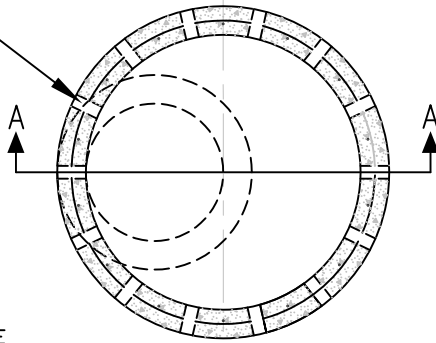
NOTES:

1. SOAKAGE AND STORM CHAMBER SYSTEMS ONLY PERMITTED ON PRIVATELY OWNED AND MAINTAINED FACILITIES
2. RUNOFF FROM PUBLIC ROW IS NOT PERMITTED TO DRAIN TO SOAKAGE OR STORM CHAMBER SYSTEMS
3. THESE SYSTEMS MUST BE REGISTERED AS A UIC WITH OREGON DEQ
4. ALL PIPING SHALL MEET OREGON STATE PLUMBING CODE
5. MINIMUM TRENCH SETBACKS:
 - A) 10 FT. SEPARATION FROM STRUCTURES
 - B) SEPARATION PER DESIGN STANDARDS

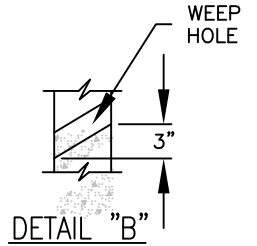
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
SOAKAGE AND STORM CHAMBER
RETENTION

| | | | | | | | |
|----------|--|---------|------|------------|-----|---------|----------------|
| APPROVED |  CITY ENGINEER | 1/01/14 | DATE | DRAWN BY | KAK | 12/2013 | NO. 249 |
| | | | | CHECKED BY | KR | 12/2013 | |

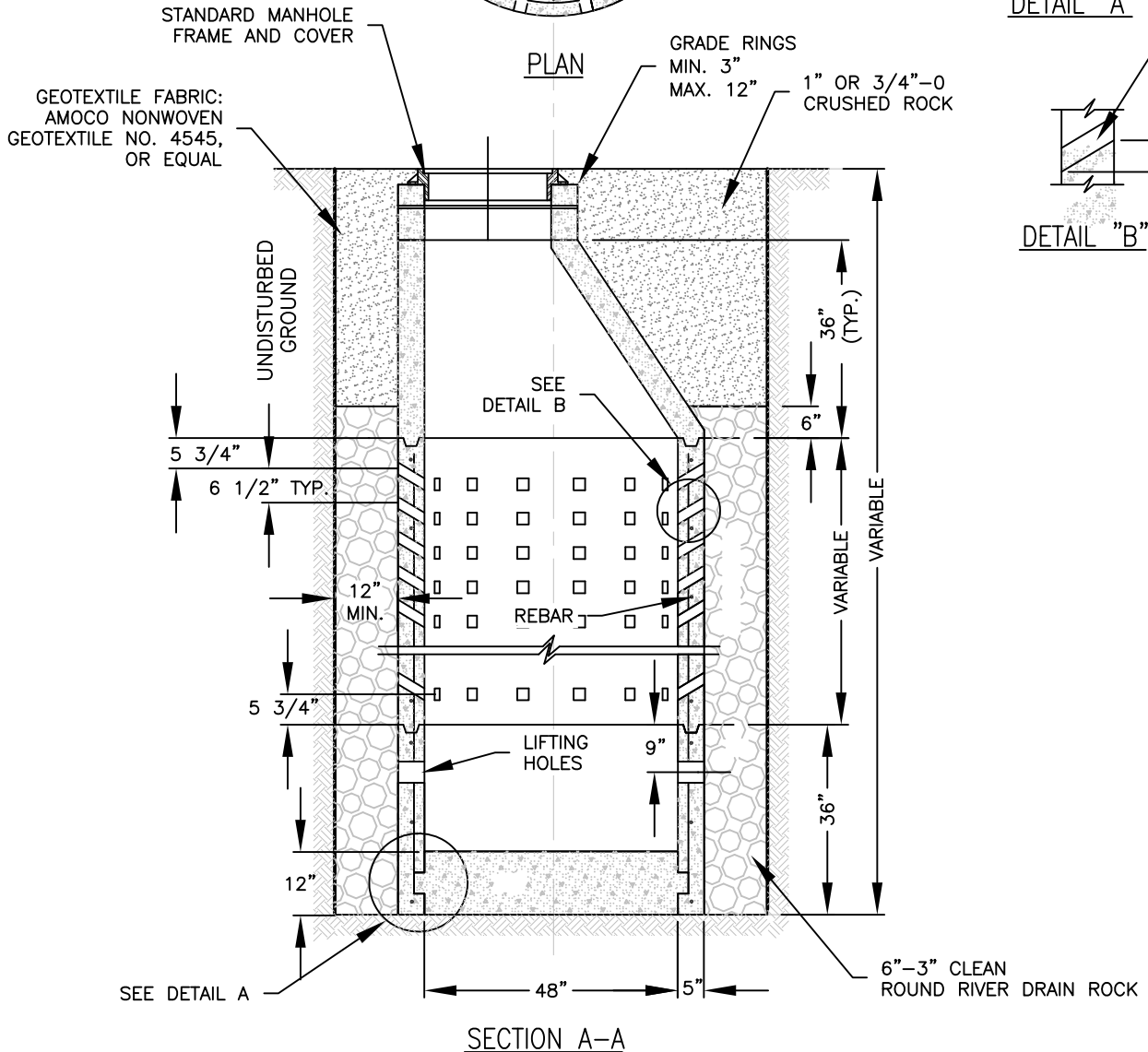
WEEP HOLES: 14-2 1/4" SQUARE
OR 2 3/8" ROUND HOLES,
EQUALLY SPACED OR
APPROVED EQUAL



DETAIL "A"



DETAIL "B"



SECTION A-A

NOTES:

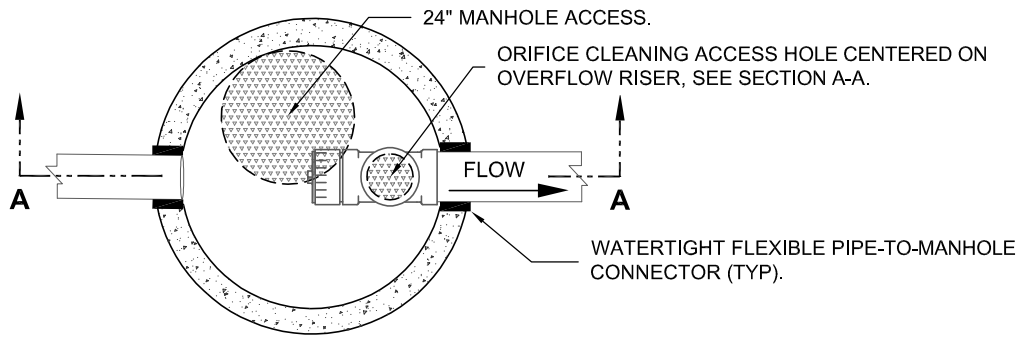
1. USE OF DRYWELL IS ONLY PERMITTED ON PRIVATELY OWNED AND MAINTAINED FACILITIES
2. RUNOFF FROM PUBLIC ROW IS NOT PERMITTED TO DRAIN TO DRYWELLS
3. DRYWELL MUST BE REGISTERED AND/OR PERMITTED BY THE STATE OF OREGON AS AN UNDERGROUND INJECTION CONTROL DEVICE

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

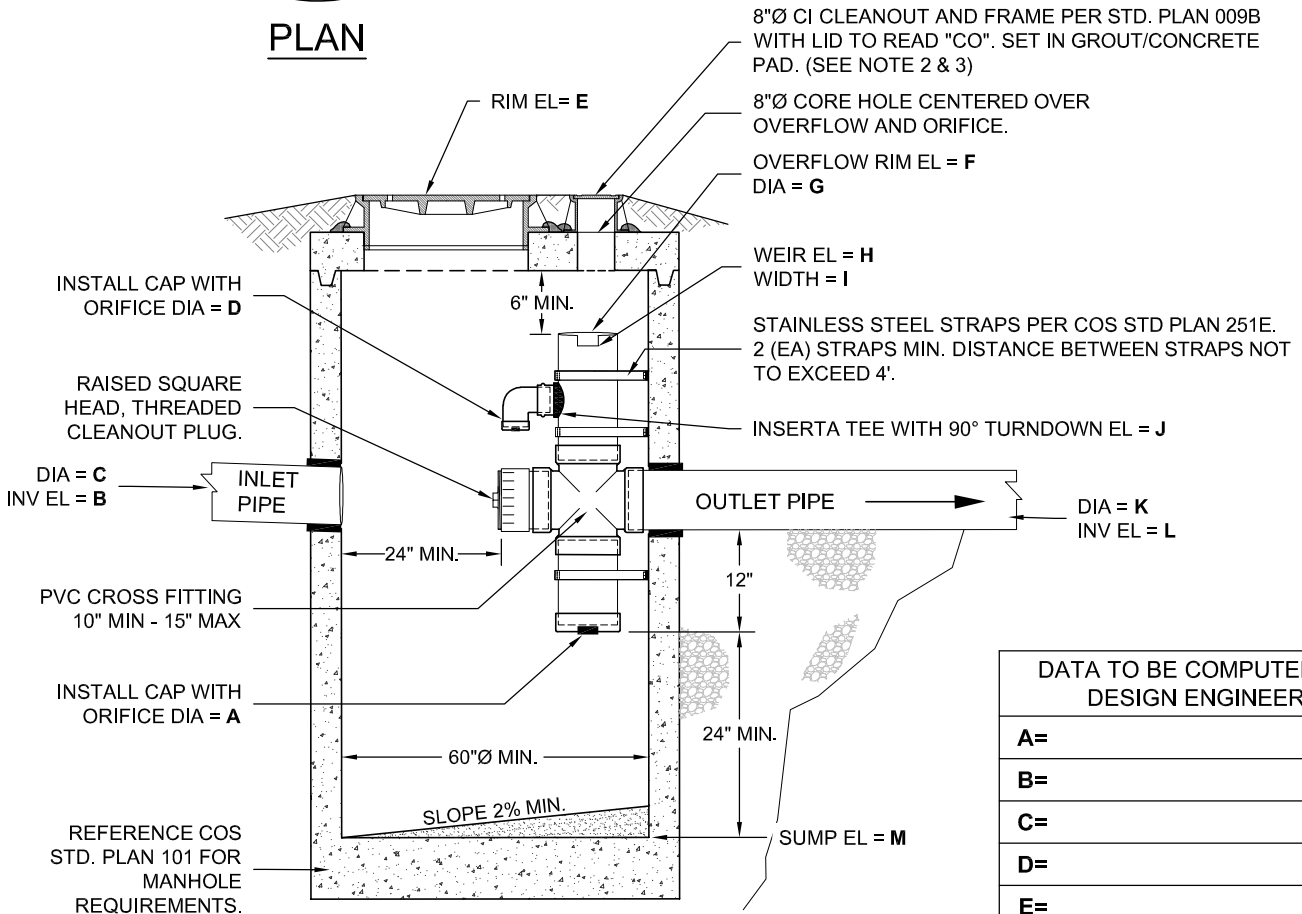
STANDARD PLAN
DRYWELL

| | | | | | |
|----------|---|---------|------------|-----|---------|
| APPROVED |  | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | CITY ENGINEER | DATE | CHECKED BY | KR | 12/2013 |

NO. 250



PLAN



SECTION A-A

NTS

| DATA TO BE COMPUTED BY DESIGN ENGINEER | |
|--|--|
| A= | |
| B= | |
| C= | |
| D= | |
| E= | |
| F= | |
| G= | |
| H= | |
| I= | |
| J= | |
| K= | |
| L= | |
| M= | |

GENERAL NOTES

1. THIS CONTROL STRUCTURE ONLY TO BE USED WITH OUTLET PIPE UP TO 15 INCHES IN DIAMETER. IF GREATER THAN 15 INCHES USE COS STANDARD PLAN 251B.
2. ORIFICE CLEANING ACCESS TO BE AN 8 INCH CORE HOLE THROUGH FLAT-TOP (CENTERED ON OVERFLOW) WITH CAST IRON CLEANOUT BOX GROUTED TO SLAB.
3. WHEN CONSTRUCTING WITHIN PAVED SURFACE, CONSTRUCT MANHOLE LID AND CLEANOUT PER COS STANDARD PLAN 104 AND 400B RESPECTIVELY.
4. REFERENCE ORIFICE MEASUREMENT TABLE ON COS STANDARD PLAN 251E FOR ORIFICE SIZE REQUIREMENTS.

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

**STANDARD PLAN
FLOW CONTROL MANHOLE**

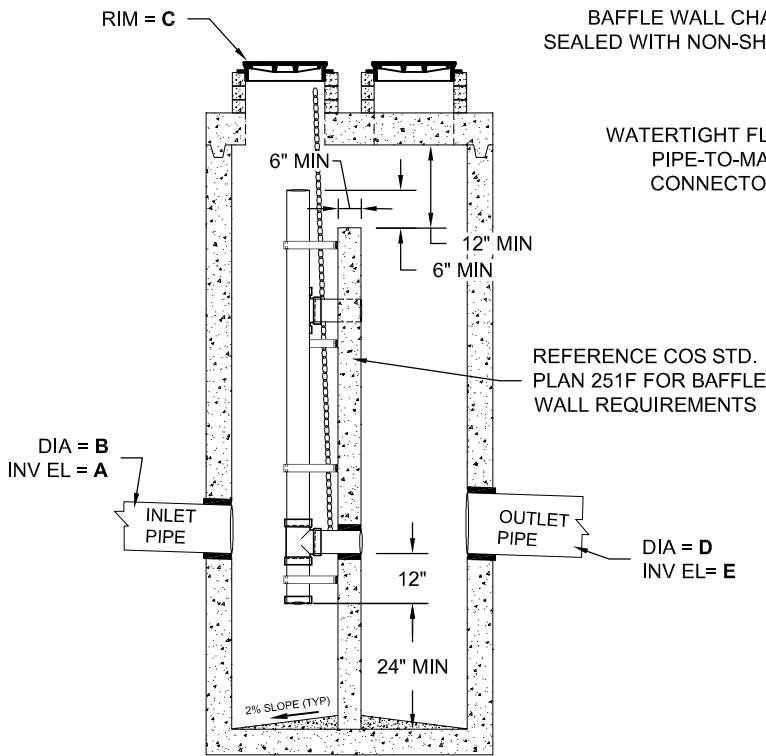
| CHANGES | DESCRIPTION | DATE | REVISION |
|---------|---------------------------------|--------|-------------------------------|
| 1 | ADDED ORIFICE SIZE REQMS | 4/2021 | CLARIFIED MH LID AND CI FRAME |
| 2 | REMOVED SLOTTED PIPE RESTRICTOR | 4/2021 | |
| 3 | ADDED ELEVATION DATA TABLE | 4/2021 | |
| 4 | ADJUSTED SUMP DEPTH REQMS | 4/2021 | |

| | | |
|----------|---|----------|
| APPROVED |  | 6/8/2021 |
| | CITY ENGINEER | DATE |

| | | |
|------------|-----|--------|
| DRAWN BY | KLA | 4/2021 |
| CHECKED BY | JDL | 4/2021 |

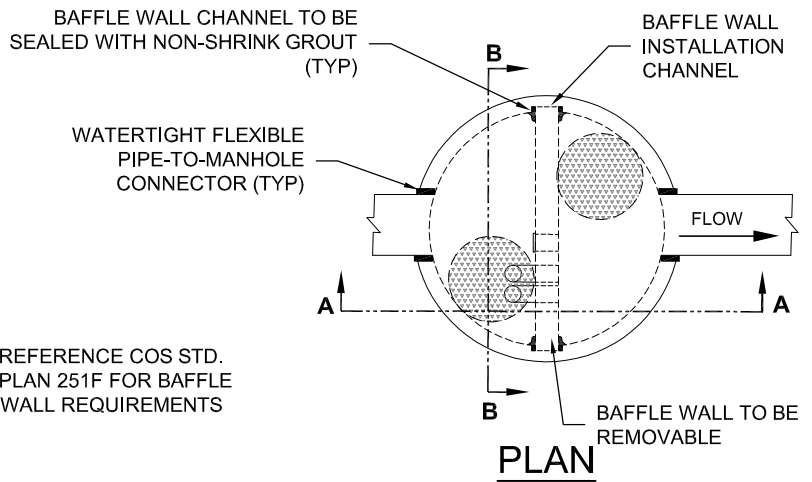
NO.251A

G:\Group\techpool\Std_plans\Working dwgs\Control Structures\STD 251A_Kyle 04212021.dwg



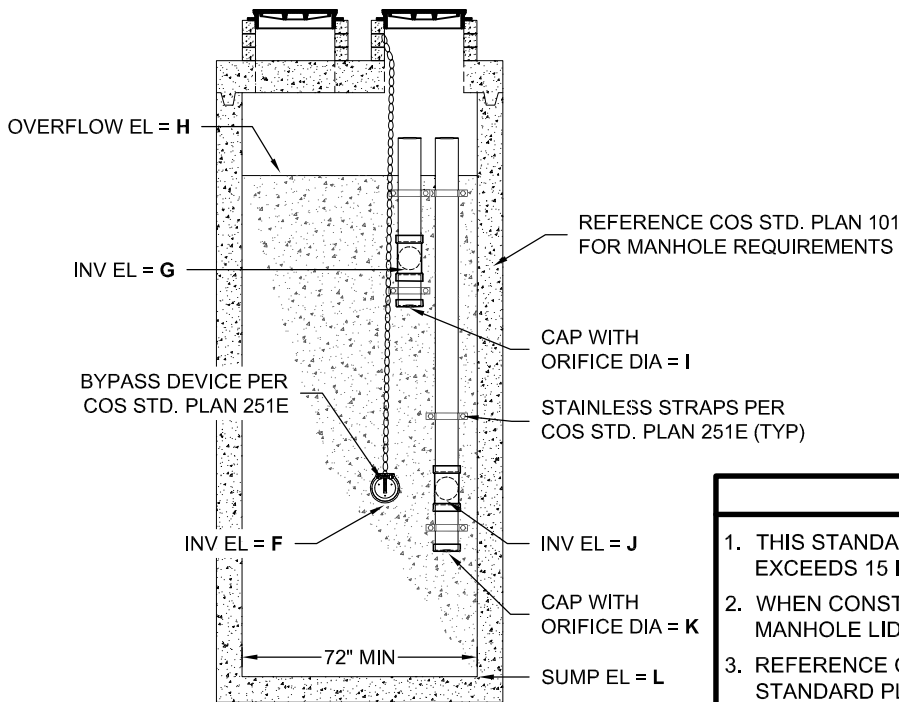
SECTION A-A

NTS



PLAN

| DATA TO BE COMPUTED BY DESIGN ENGINEER | |
|--|--|
| A= | |
| B= | |
| C= | |
| D= | |
| E= | |
| F= | |
| G= | |
| H= | |
| I= | |
| J= | |
| K= | |
| L= | |



SECTION B-B

NTS

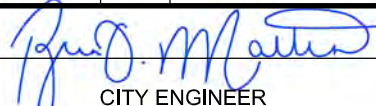
GENERAL NOTES

1. THIS STANDARD PLAN TO BE USED WHEN OUTLET PIPE EXCEEDS 15 INCHES IN DIAMETER.
2. WHEN CONSTRUCTING WITHIN PAVED SURFACE, CONSTRUCT MANHOLE LIDS PER COS STANDARD PLAN 104.
3. REFERENCE ORIFICE MEASUREMENT TABLE ON COS STANDARD PLAN 251E FOR ORIFICE SIZE REQUIREMENTS.

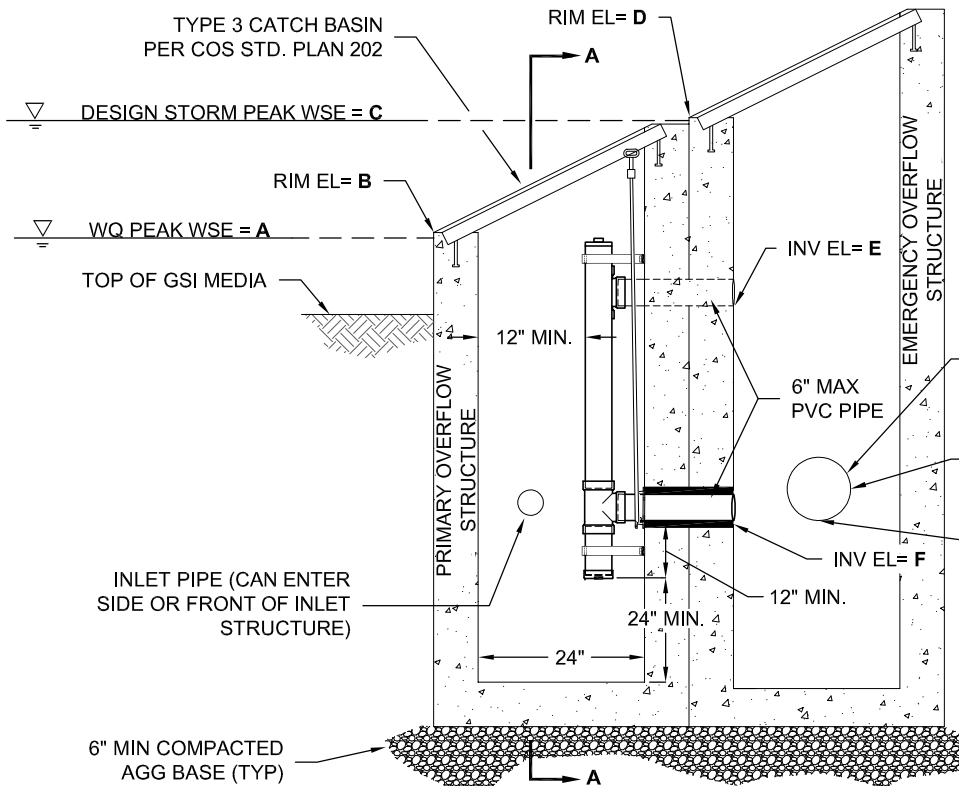
**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

**STANDARD PLAN
FLOW CONTROL STRUCTURE-BAFFLE**

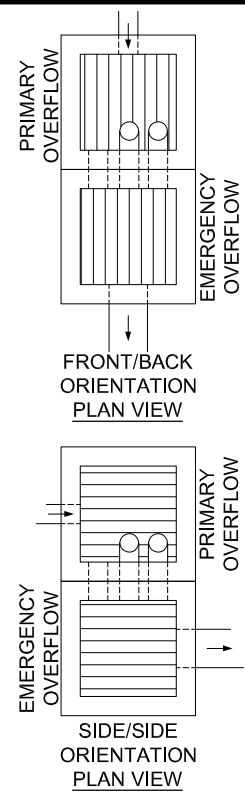
| CHANGES | DESCRIPTION | DATE | DESCRIPTION | DATE |
|---------|---------------------------------|--------|----------------------|--------|
| | ADDED ORIFICE SIZE REQMS | 4/2021 | ADDED ORIFICE RISERS | 4/2021 |
| | REMOVED SLOTTED PIPE RESTRICTOR | 4/2021 | | |
| | ADDED ELEVATION DATA TABLE | 4/2021 | | |
| | ADJUSTED SUMP DEPTH REQMS | 4/2021 | | |

| | | | | | |
|---------------|---|----------|------------|-----|--------|
| APPROVED |  | 6/8/2021 | DRAWN BY | KLA | 4/2021 |
| | | DATE | CHECKED BY | JDL | 4/2021 |
| CITY ENGINEER | | | | | |

NO.251B



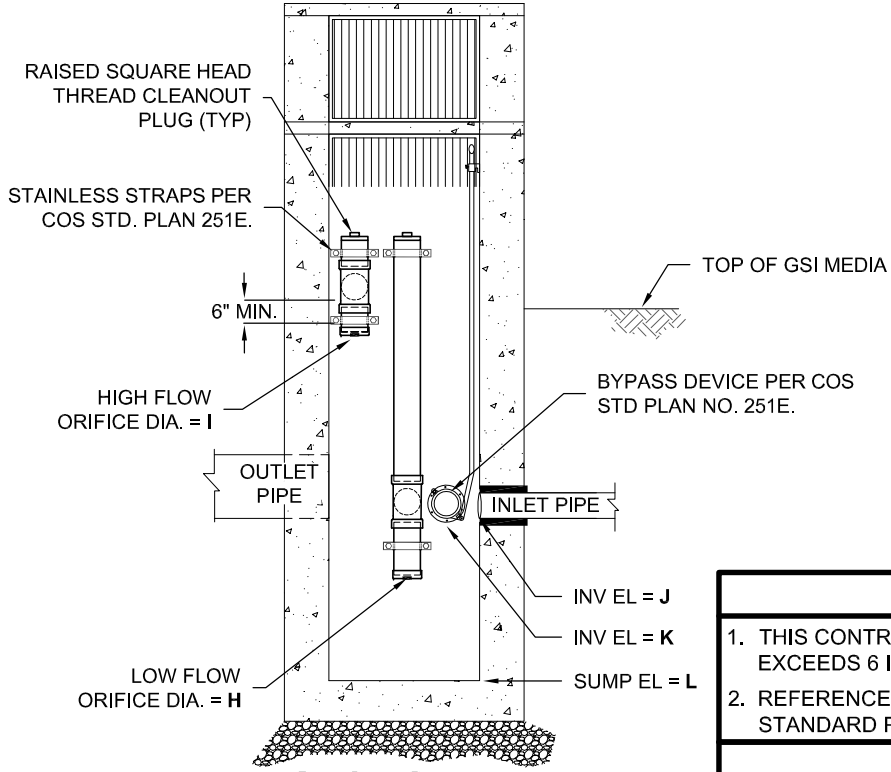
PROFILE VIEW
(Front/Back Orientation Shown)



WATERTIGHT (SAND COLLAR) CONNECTION
OUTLET PIPE (CAN EXIT SIDE OR BACK OF STRUCTURE)
INV EL = G

6" MIN COMPACTED AGG BASE (TYP)

| DATA TO BE COMPUTED BY DESIGN ENGINEER | |
|--|--|
| A= | |
| B= | |
| C= | |
| D= | |
| E= | |
| F= | |
| G= | |
| H= | |
| I= | |
| J= | |
| K= | |
| L= | |



SECTION A-A
NTS

GENERAL NOTES

1. THIS CONTROL STRUCTURE NOT FOR USE WHEN ORIFICE SIZE EXCEEDS 6 INCHES.
2. REFERENCE ORIFICE MEASUREMENT TABLE ON COS STANDARD PLAN 251E FOR ORIFICE SIZE REQUIREMENTS.

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

STANDARD PLAN
FLOW CONTROL STRUCTURE-TYPE 3

| CHANGES | DATE | DESCRIPTION |
|---------|------|-------------|
| | | |
| | | |
| | | |

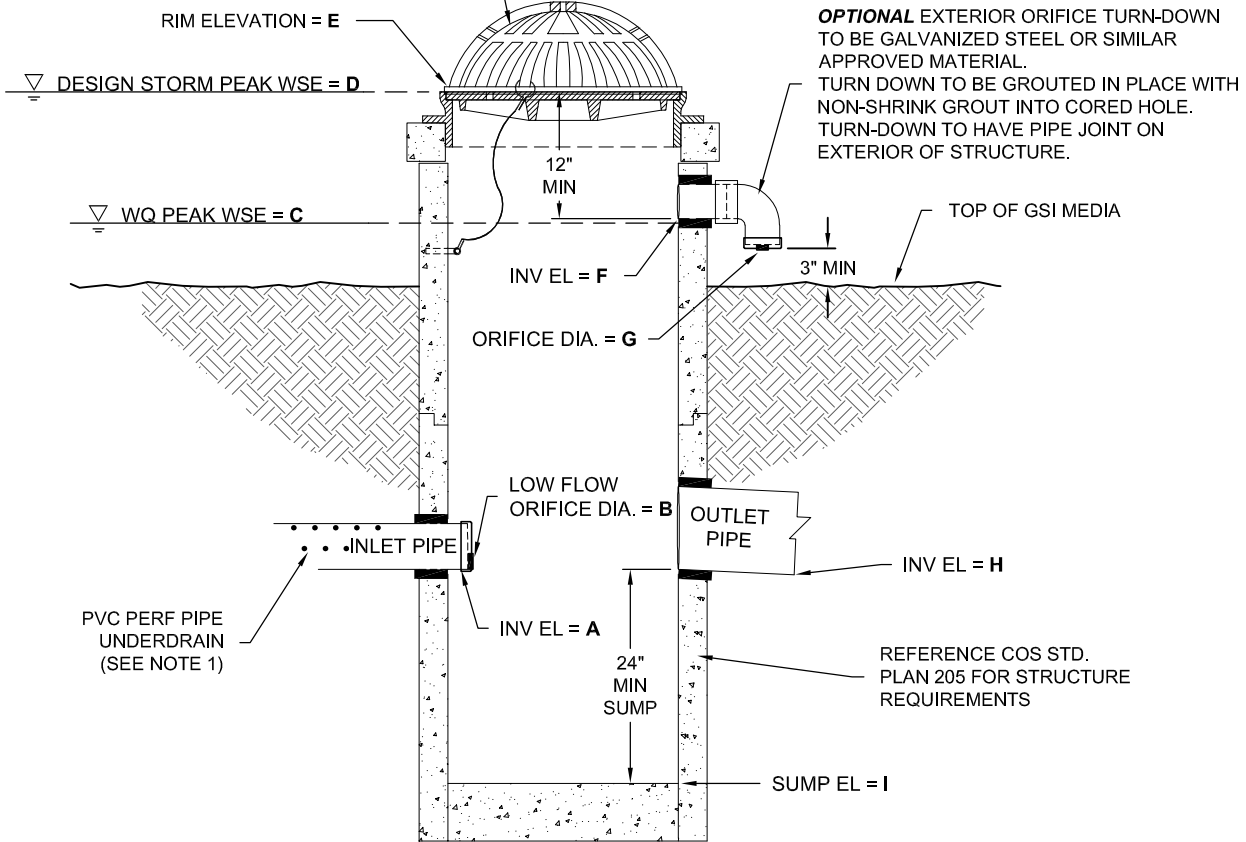
| | | |
|----------|--------------------|----------|
| APPROVED | <i>[Signature]</i> | 6/8/2021 |
| | CITY ENGINEER | DATE |

| | | |
|------------|-----|--------|
| DRAWN BY | KLA | 4/2021 |
| CHECKED BY | JDL | 4/2021 |

NO.251C

G:\Group\techpool\Std_plans\Working dwgs\Control Structures\STD 251C_Kyle 04212021.dwg

REFERENCE COS STD PLAN 246
FOR BEEHIVE GRATE, FRAME, WIRE
ROPE, AND U-BOLT REQUIREMENTS



TYPICAL SECTION
NTS

| DATA TO BE COMPUTED BY DESIGN ENGINEER | |
|---|--|
| A= | |
| B= | |
| C= | |
| D= | |
| E= | |
| F= | |
| G= | |
| H= | |
| I= | |


GENERAL NOTES

1. A CAPPED, SOLID WALL, PVC CLEANOUT SHALL BE PLACED AT THE END OF THE UNDERDRAIN. OVERFLOWS SHALL NOT DRAIN VIA THE UNDERDRAIN.
2. REFERENCE ORIFICE MEASUREMENT TABLE ON COS STANDARD PLAN 251E FOR ORIFICE SIZE REQUIREMENTS.

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

STANDARD PLAN
BEEHIVE INLET CONTROL

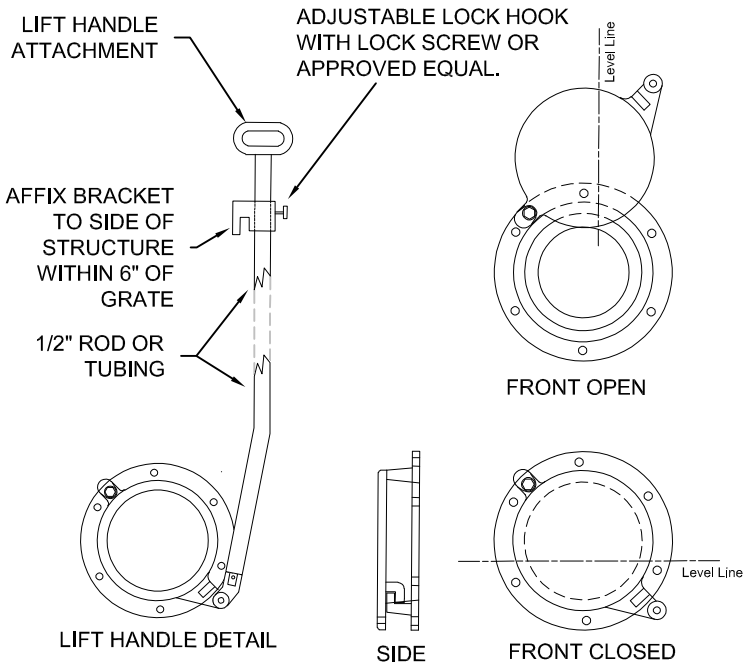
| CHANGES | | | |
|---------|--|--|--|
| | | | |
| | | | |
| | | | |

APPROVED  6/8/2021
CITY ENGINEER DATE

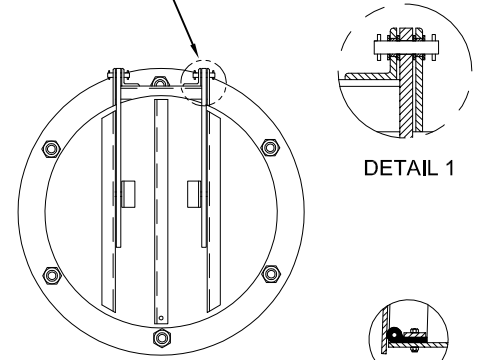
DRAWN BY KLA 4/2021
CHECKED BY JDL 4/2021

NO.251D

MAINTENANCE BYPASS DEVICE NTS:



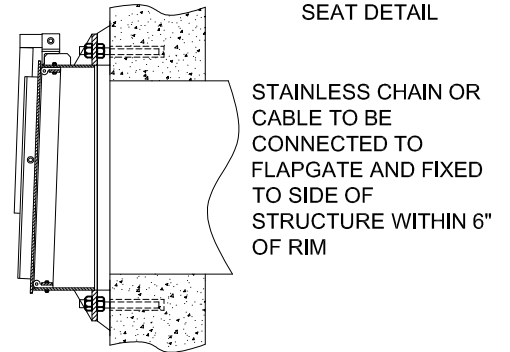
SEE DETAIL 1



DETAIL 1



SEAT DETAIL



STAINLESS CHAIN OR CABLE TO BE CONNECTED TO FLAPGATE AND FIXED TO SIDE OF STRUCTURE WITHIN 6" OF RIM

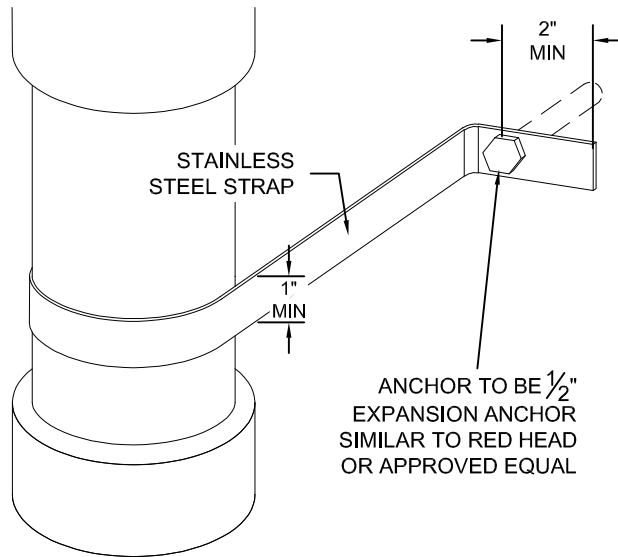
CAST ALUMINUM SHEAR GATE:

USE WHEN < 5FT FROM RIM TO BYPASS INVERT
MANUFACTURED BY OLYMPIC FOUNDRY OR APPROVED SIMILAR

STAINLESS FLAPGATE:

USE WHEN > 5FT FROM RIM TO BYPASS INVERT
MANUFACTURED BY WATERMAN OR APPROVED SIMILAR

STAINLESS STRAP NTS:

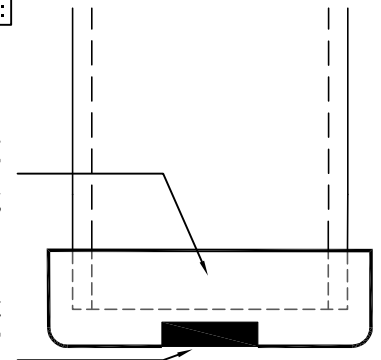


ANCHOR TO BE 1/2" EXPANSION ANCHOR SIMILAR TO RED HEAD OR APPROVED EQUAL

ORIFICE CAP NTS:

CAP TO BE SCHEDULE 40 AND GLUED IN PLACE OR GASKETED CAP

ORIFICE HOLE DRILLED IN CAP TO BE COMMON DRILL BIT MEASUREMENT PER BELOW TABLE.



| ORIFICE TABLE MEASUREMENT | |
|---------------------------|-----------|
| CALCULATED SIZE | INCREMENT |
| 1/4" - 1" | 1/8" |
| 1" - 3" | 1/4" |
| > 3" | 1/2" |

GENERAL NOTES

- REFERENCE CONTROL STRUCTURE STANDARD PLAN FOR NUMBER OF STRAPS TO BE USED.

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

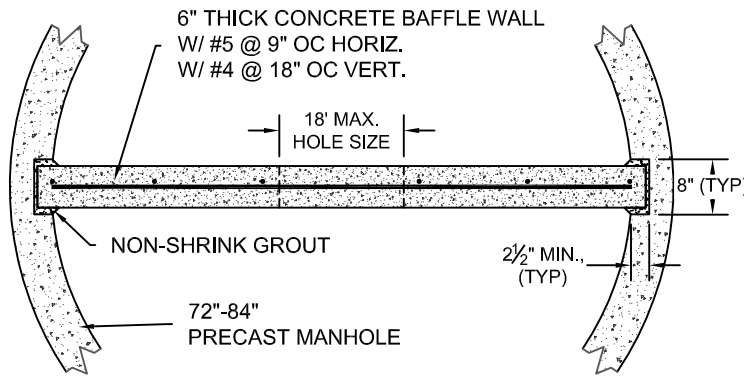
STANDARD PLAN
FLOW CONTROL COMPONENTS

| | | | | |
|---------|--|--|--|--|
| CHANGES | | | | |
| | | | | |
| | | | | |
| | | | | |

| | | |
|----------|---|----------|
| APPROVED |  | 6/8/2021 |
| | CITY ENGINEER | DATE |

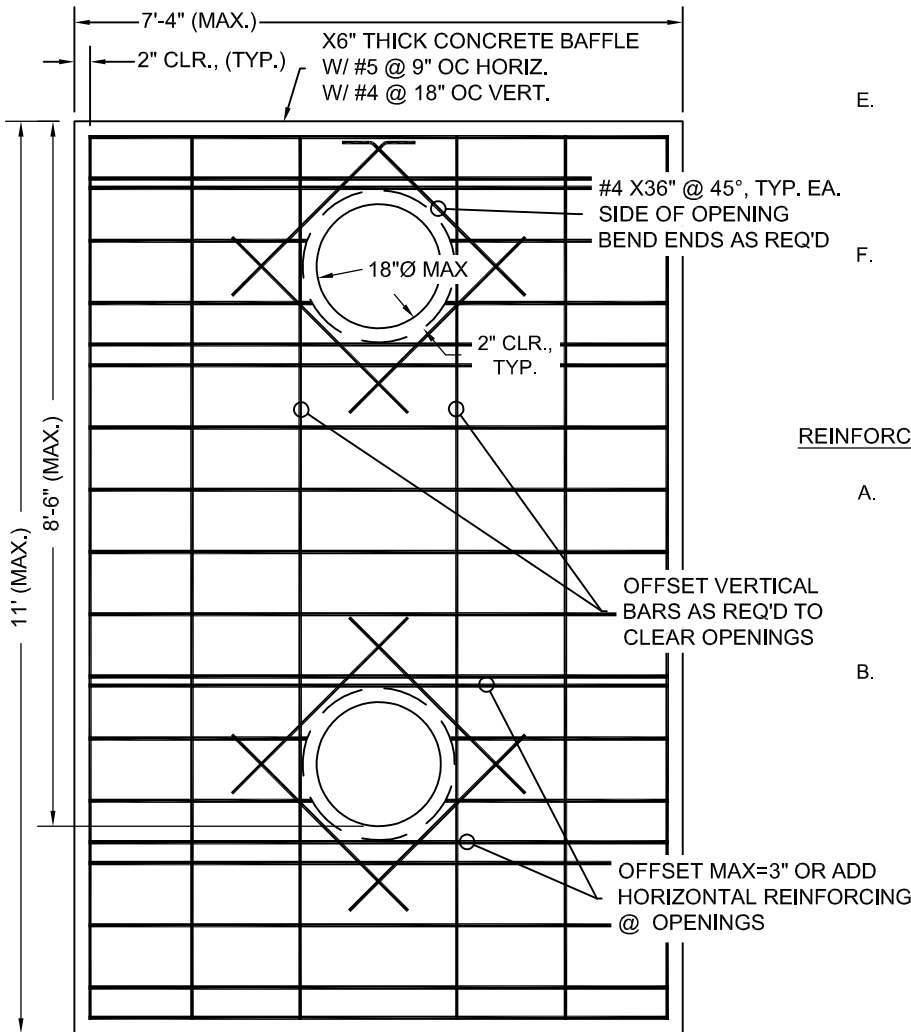
| | | |
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| DRAWN BY | KLA | 4/2021 |
| CHECKED BY | JDL | 4/2021 |

NO.251E



BAFFLE WALL PLAN VIEW

NTS



BAFFLE WALL PROFILE

NTS

CONCRETE:

- A. ALL CONCRETE WORK SHALL CONFORM TO OSSC CHAPTER 19, "CONCRETE," ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE," ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE," ACI 117, "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS."
- B. CONCRETE MIX DESIGNS SHALL BE 3,300PSI MIN. WITH W/C RATIO 0.46, MAX AGG 3/4".
- C. NON-SHRINK GROUT DESIGN SHALL BE 6,000PSI MIN WITH W/C RATION 0.46, MAX AGG 3/8".
- D. PORTLAND CEMENT CONTENT MAY BE REPLACED WITH UP TO 25% FLY ASH CONFORMING TO ASTM C618 (INCLUDING TABLE 2A) TYPE F OR TYPE C, PROVIDED THAT MIX STRENGTH IS SUBSTANTIATED BY TEST DATA.
- E. WATER REDUCING ADMIXTURES CONFORMING TO ASTM C494 MAY BE USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL BE INCORPORATED IN THE CONCRETE MIX DESIGN SUBMITTAL.
- F. SLUMP REQUIRED FOR PROPER PLACEMENT SHALL BE DETERMINED BY THE CONTRACTOR AND SUPPLIER BASE UPON DELIVERY TIME AND METHOD OF PLACEMENT AND INCLUDED IN THE MIX DESIGN SUBMITTAL INCLUDING INFLUENCE OF ADDITIVES.

REINFORCING STEEL:

- A. ALL REINFORCING STEEL SHALL BE BILLET STEEL DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60, EXCEPT USE ASTM A706, GRADE 60 BARS WHERE WELDING IS REQUIRED. (NO. 3 BARS MAY BE GRADE 40). SUBMIT MILL CERTIFICATES FOR ALL BARS REQUIRING WELDING.
- B. FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CRSI MSP-1-16 "MANUAL OF STANDARD PRACTICE" AND CHAPTER 25 OF ACI 318 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".

GENERAL NOTES

1. REFERENCE STANDARD PLAN 251B FOR BAFFLE WALL LOCATION

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

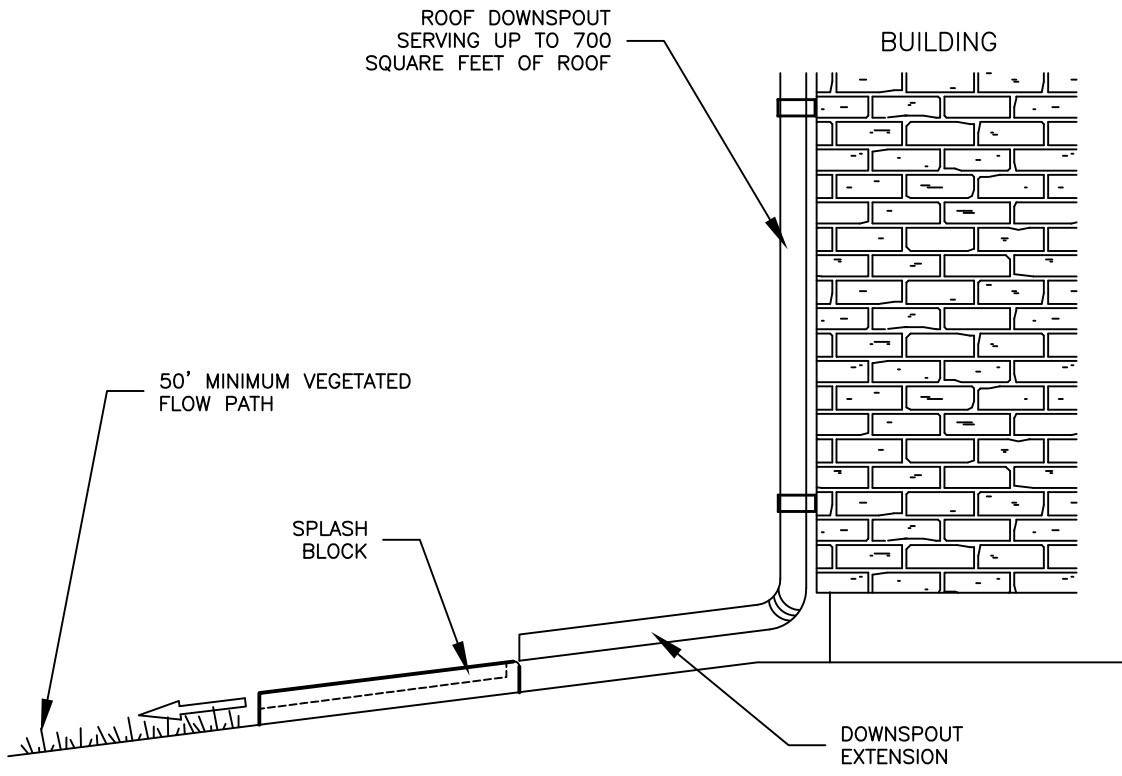
STANDARD PLAN
FLOW CONTROL BAFFLE WALL

| | | | | |
|---------|--|--|--|--|
| CHANGES | | | | |
| | | | | |
| | | | | |
| | | | | |

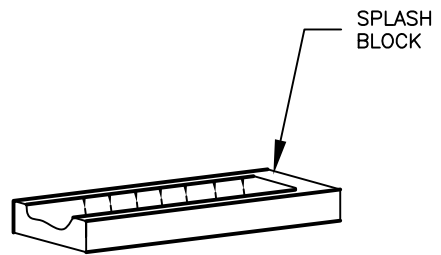
| | | |
|----------|---|----------|
| APPROVED |  | 6/8/2021 |
| | | DATE |

| | | |
|------------|-----|--------|
| DRAWN BY | KLA | 4/2021 |
| CHECKED BY | JDL | 4/2021 |

NO.251F



NTS



NOTES:

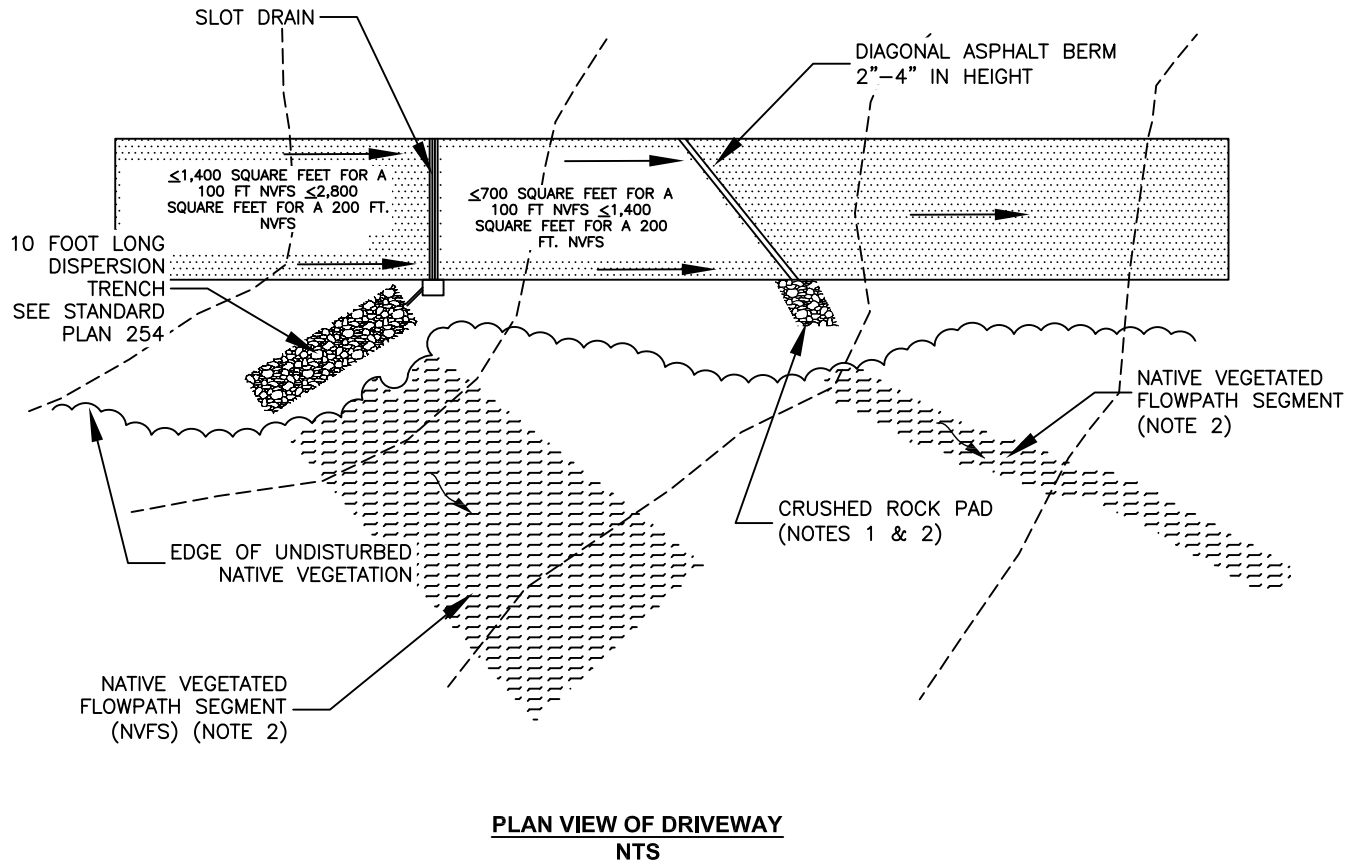
- 1. MINIMUM DISTANCE OF SPLASH BLOCK FROM BUILDING - 10 FEET

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

STANDARD PLAN
SPLASH BLOCK

| | | | | | |
|----------|-----------------------|---------|------------|-----|---------|
| APPROVED | <i>James J. Spent</i> | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | CITY ENGINEER | DATE | CHECKED BY | KR | 12/2013 |

NO. 252



NOTES:

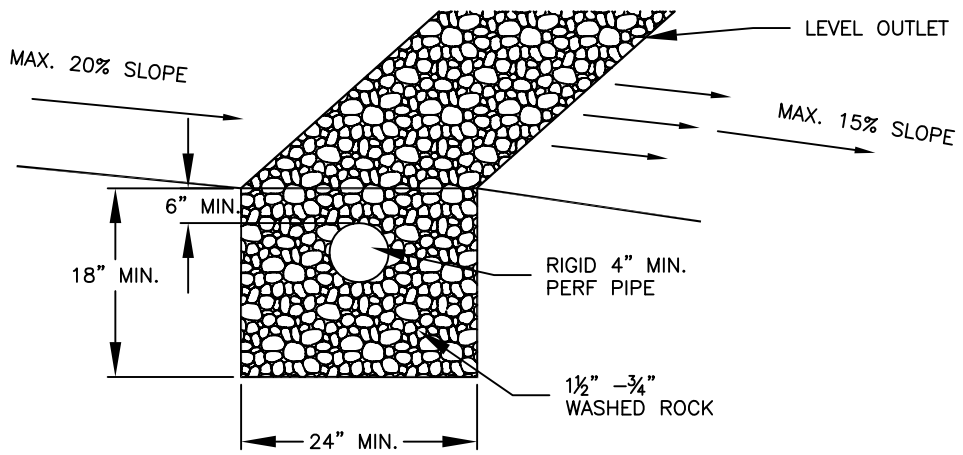
1. ROCK PAD:
2' WIDE (PERPENDICULAR TO FLOW)
3' LONG
6" DEEP
2. VEGETATED FLOWPATH MINIMUM LENGTH 100 FEET
3. MINIMUM 50 FEET SEPARATION BETWEEN FLOWPATHS
4. VEGETATION SHALL BE PER DESIGN STANDARDS

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

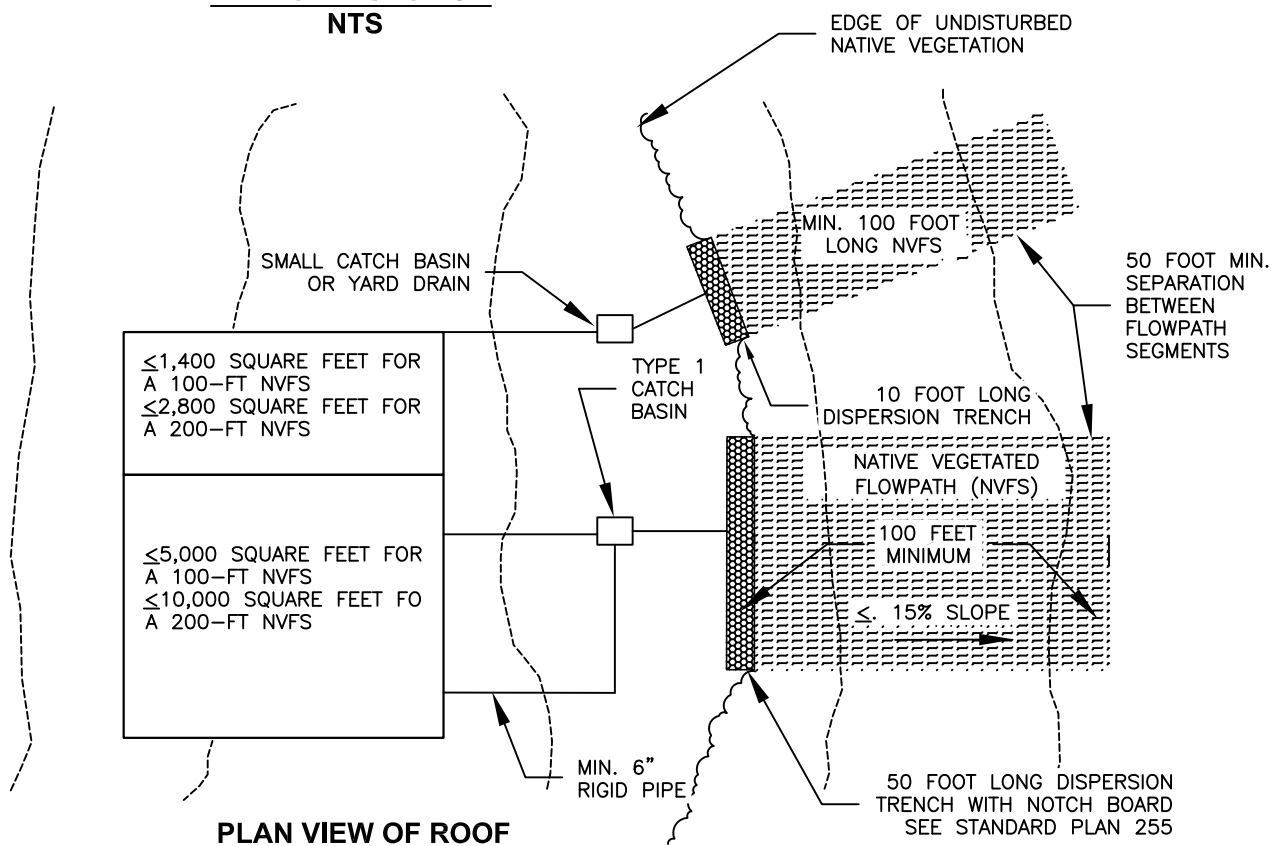
STANDARD PLAN
**DRIVEWAY DISPERSION
TRENCH AND ROCK PAD**

| | | | | | |
|----------|---|---------|------------|-----|---------|
| APPROVED | <i>James L. Spauld</i> CITY ENGINEER | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | | DATE | CHECKED BY | KR | 12/2013 |

NO. 253



**TRENCH X-SECTION
NTS**

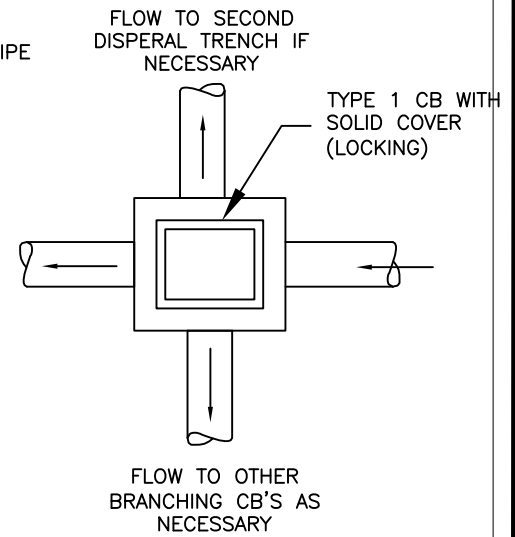
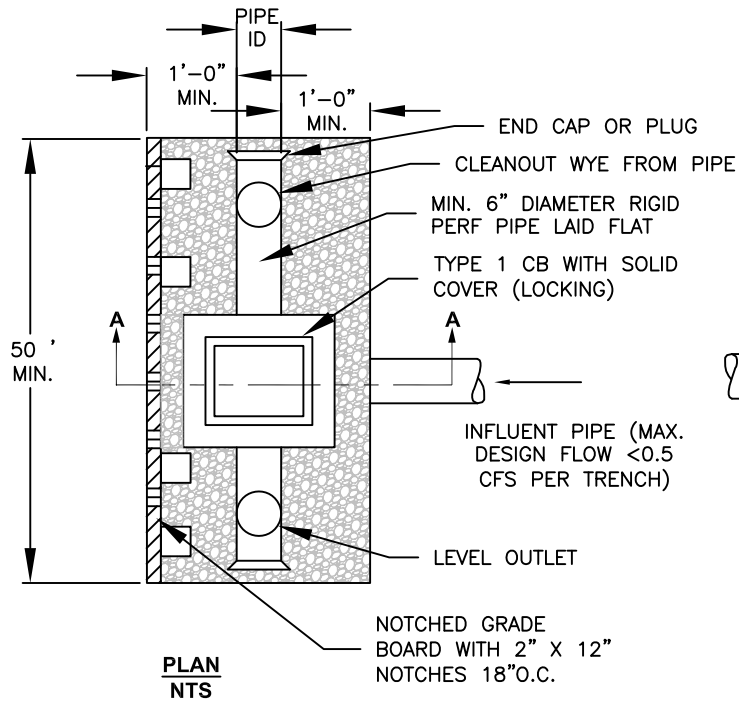


**PLAN VIEW OF ROOF
NTS**

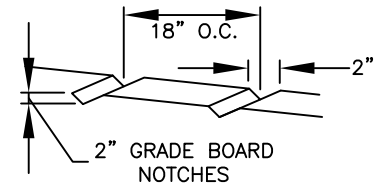
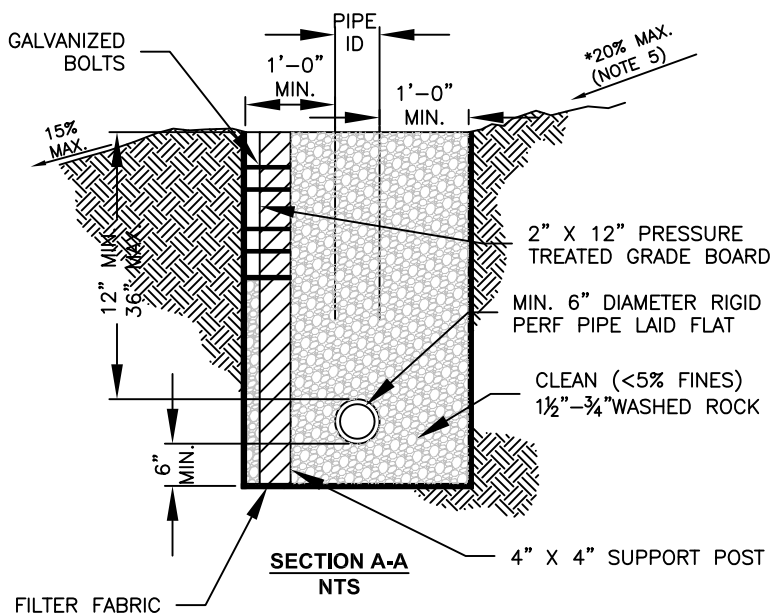
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
 STANDARD PLAN
10-FOOT DISPERSION TRENCH

| | | | | | |
|----------|------------------------|---------|------------|-----|---------|
| APPROVED | <i>James J. Spivey</i> | 1/01/14 | DRAWN BY | KAK | 12/2013 |
| | CITY ENGINEER | DATE | CHECKED BY | KR | 12/2013 |

NO. 254



FLOW TO OTHER BRANCHING CB'S AS NECESSARY



NOTES:

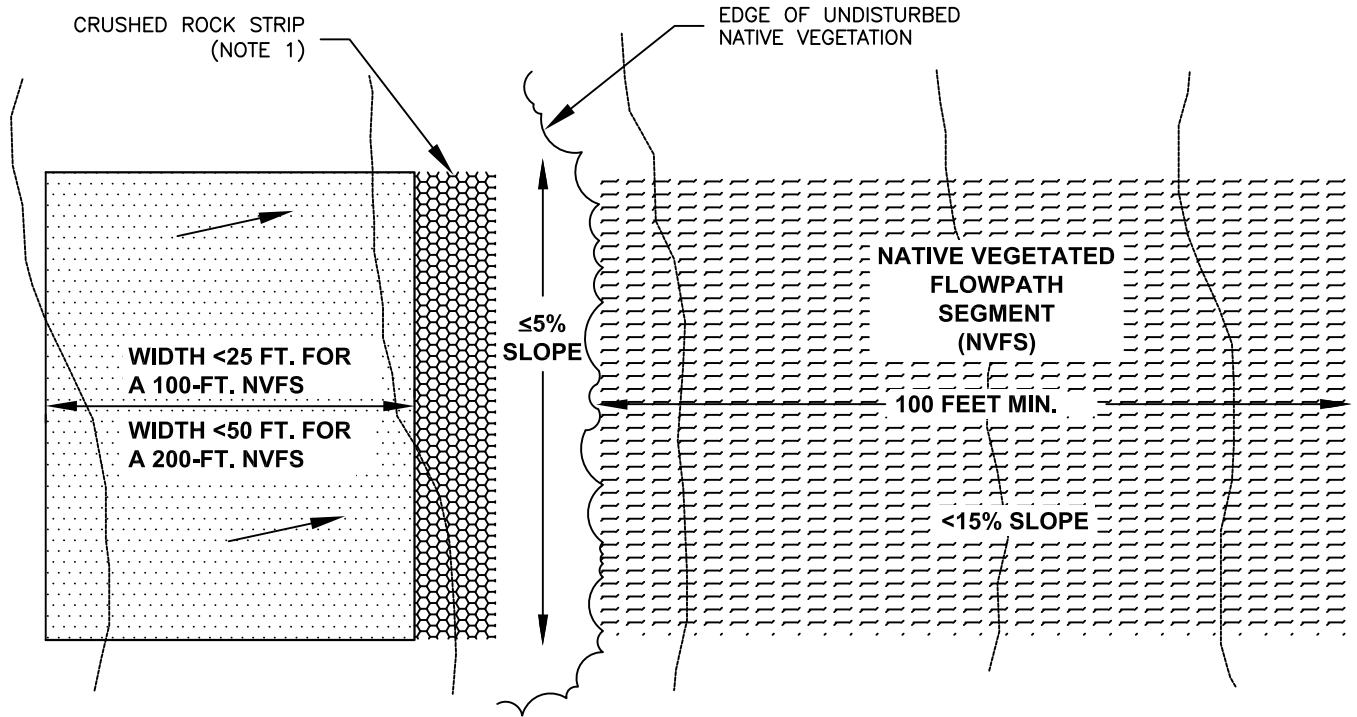
1. THIS TRENCH SHALL BE CONSTRUCTED TO PREVENT POINT DISCHARGES AND/OR EROSION
2. TRENCHES MAY BE PLACED NO CLOSER THAN 50 FEET TO ONE ANOTHER (100 FEET ALONG FLOW LINE)
3. TRENCH AND GRADE BOARD MUST BE LEVEL. ALIGN TO FOLLOW CONTOURS OF SITE
4. SUPPORT POST SPACING AS REQUIRED BY SOIL CONDITIONS TO ENSURE GRADE BOARD REMAINS LEVEL
5. 15% MAXIMUM GRADE IF DESIGNED AS COMBINED FACILITY

**CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS**

STANDARD PLAN
50-FOOT DISPERSION TRENCH

| | | | | | | | | | |
|----------|--|---------|------|----------|-----|---------|------------|----|---------|
| APPROVED |  CITY ENGINEER | 1/01/14 | DATE | DRAWN BY | KAK | 12/2013 | CHECKED BY | KR | 12/2013 |
|----------|--|---------|------|----------|-----|---------|------------|----|---------|

NO. 255




PLAN VIEW
NTS

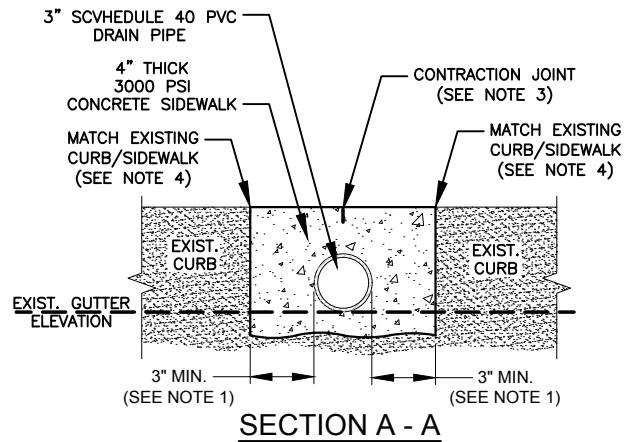
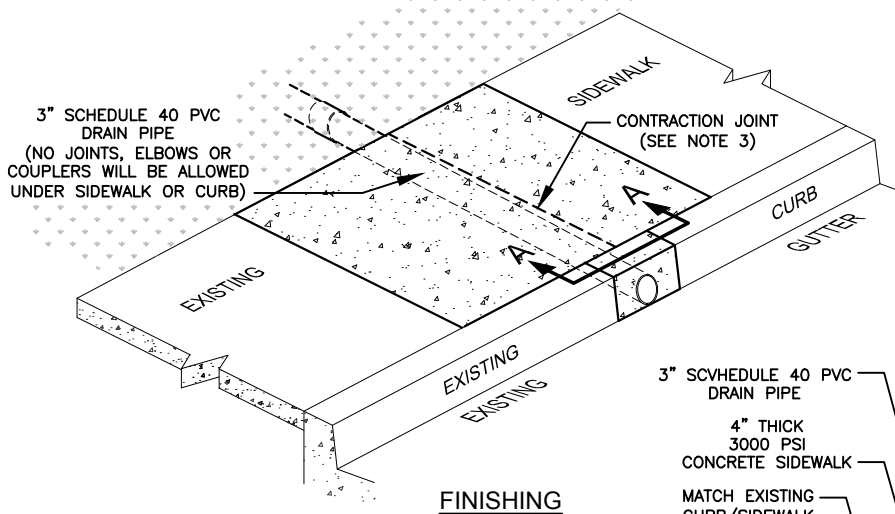
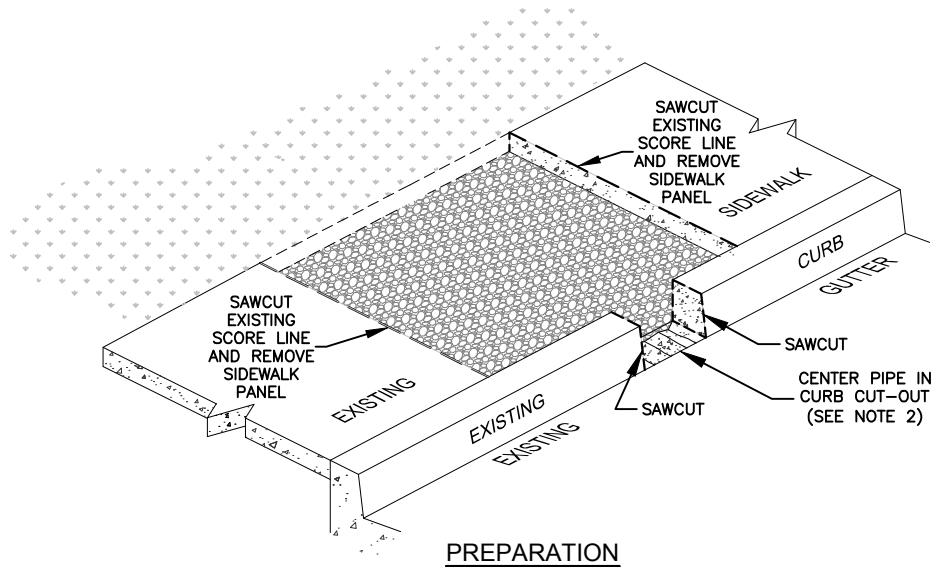
NOTES:

1. CRUSHED ROCK STRIP IS 2' WIDE X 6" DEEP OR EXTEND TO BASE COURSE OF IMPERVIOUS AREA. MUST EXTEND BASE COURSE TO AN ELEVATION AT OR BELOW THE IMPERVIOUS SURFACE

CITY OF SALEM
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STANDARD PLAN
SHEET FLOW DISPERSION

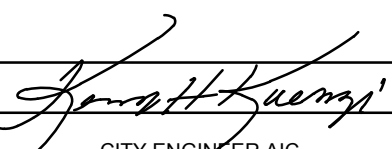
| | | | | | | |
|----------|---|---------|------------|-----|---------|----------------|
| APPROVED |  | 1/01/14 | DRAWN BY | KAK | 12/2013 | NO. 256 |
| | | DATE | CHECKED BY | KR | 12/2013 | |
| | CITY ENGINEER | | | | | |



NOTES:

1. SAWCUT AND REMOVE EXISTING SIDEWALK PANEL. SAWCUT AND REMOVE ENOUGH CURB TO ACCOMMODATE THE DRAIN PIPE AND A MINIMUM OF 3 INCHES OF CONCRETE CURB/SIDEWALK TO BE POURED ON EACH SIDE OF PIPE.
2. DRAIN PIPE SHALL BE INSTALLED WITH A MINIMUM SLOPE OF 0.5% ON 2 INCHES (MIN.) OF COMPACTED CRUSHED AGGREGATE BED, PERPENDICULAR TO THE SIDEWALK AND CENTERED IN CURB CUT-OUT, WITH THE BOTTOM OF PIPE FLUSH WITH GUTTER GRADE.
3. TOOL IN CONTRACTION JOINT DIRECTLY OVER THE CENTERLINE OF DRAIN PIPE.
4. MATCH NEW CONCRETE TO EXISTING SIDEWALK AND CURB GRADES. SCORE, BROOM OR OTHERWISE FINISH NEW CONCRETE TO MATCH THE APPEARANCE OF EXISTING AS CLOSELY AS POSSIBLE. SEE STANDARD PLAN 306.

CITY OF SALEM
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 STANDARD PLAN
RAIN DRAIN INSTALLATION

| | | | | | | |
|----------|--|-------------------|------------------------|------------|------------------|--------|
| APPROVED |  CITY ENGINEER AIC | 7/24/2017 DATE | DRAWN BY CHECKED BY | DTN JPK | 7/2017 7/2017 | NO.257 |
|----------|--|-------------------|------------------------|------------|------------------|--------|