CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
STANDARD DRAWINGS

TABLE OF CONTENTS

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS
STANDARD DRAWINGS

ITEM	TO BE BUILT	EXISTING
SANITARY SEWER	8"SAN	8"SAN
STORM DRAIN	10"SD	10"SD
WATER	6"W	6"W
N.W. NATURAL	4"G	
TELEPHONE	T	T 2 DUCT
ELECTRICITY	E	E 6 DUCT
TELEVISION	TV	TV
CURB, DRIVEWAY, P.C.C. SIDEWALK		
FENCE		
BARRICADE		
FIRE HYDRANT & VALVE		
STREET OR ALLEY RIGHT OF WAY	R/W	
PLATTED LOT LINE		
PLATTED LOT LINE (ABANDONED)		
OWNERSHIP LINE		
EASEMENT OR TEMPORARY RIGHT OF WAY		
IMPROVEMENT DISTRICT BOUNDARY		
PROJECT CENTERLINE AND STATIONING	1+ 2+ 3+ 4+	
CITY LIMITS LINE		
MAILBOX	(1 MAILBOX)	(3 MAILBOX)
POWER POLE & ANCHOR OR LIGHT		
WATER VALVE, WATER METER		
RAILROAD		OR
SIGN POST, LIGHT STANDARD		
FLOW LINE OR SHORELINE		
HEDGE OR BRUSH		
TREES	3–10" MAPLE, 15"WALNUT (BROADLEAF)	24"CEDAR, 3–6"PINE (EVERGREEN)

ITEM		SYMBOL
CONSTRUCT TYPE A B C & D CURB		(A) (B) (C) (D)
OBJECT TO BE RELOCATED	— BY CONTRACTOR	(L)
	— BY CITY	(L)
	— BY OTHERS	[L]
OBJECT TO BE REMOVED	— BY CONTRACTOR	(R)
	— BY CITY	(R)
	— BY OTHERS	[R]
TO BE ABANDONED	— BY CONTRACTOR	(A)
	— BY CITY	(A)
	— BY OTHERS	[A]
REMOVE & REPLACE	— BY CONTRACTOR	(RP)
	— BY CITY	(RP)
	— BY OTHERS	[RP]
TREES OR SHRUBS TO BE TRIMMED	— BY CONTRACTOR	(T)
	— BY CITY	(T)
	— BY OTHERS	[T]
TUNNELING LOCATION		T▲
BORING LOCATION (R.R., CREEK, HWY, ETC.)		B▲
MONUMENT OR OTHER HORIZONTAL CONTROL		◎
BENCH MARK (VERTICAL CONTROL)		△
BEGINNING OF CURB RADIUS.		BR
END OF CURB RADIUS		ER
RADIUS		R
LENGTH OF CURVE ALONG CIRCULAR ARC.		L
POINT OF CURVATURE		PC
POINT OF INTERSECTION OF BACK TANGENT AND FORWARD TANGENT		PI
POINT OF TANGENCY		PT
POINT OF REVERSE CURVE		PRC
VERTICAL CURVE		VC
POINT OF INTERSECTION OF BACK GRADE AND FORWARD GRADE		PIVC
INSTALL 3" DIAMETER DRAIN IN CURB, EXACT LOCATION TO BE DETERMINED IN FIELD.		▼
HOUSE NUMBER		
NOTE: NUMBERS TO BE POSITIONED PARALLEL TO THE STREET THE HOUSE IS NUMBERED TO		XXXX

1. SYMBOLS SHALL NORMALLY BE DRAWN TO SCALE BUT NOT SMALLER THAN SIZES SHOWN.
2. MANHOLE MAY BE ASSUMED 4FT. IN DIAMETER POWER POLES 18" IN DIAMETER AND CATCH BASINS 24"X36" IF ACTUAL DIMENSIONS ARE NOT SHOWN.
3. LEGEND SYMBOLS AND NOTES ON PROJECT PLANS WILL TAKE PRECEDENCE OVER THIS STANDARD LEGEND IN CASE OF CONFLICT.

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

No.	Description	Date	By	Appr
3	CHANGE TITLE BLOCK	9/99		
2	CONVERT TO CAD DWG.	1/97		
1	EXISTING CURB	1/97		

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
LEGEND

DRAWN BY GS
CHECKED BY D.W.

NO.003

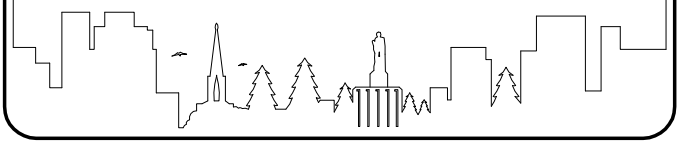
9-15-99

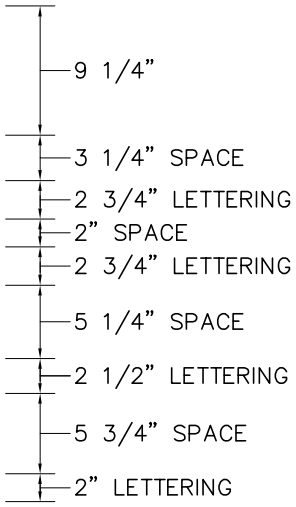
CITY OF Salem AT YOUR SERVICE

LINE 1 (SEE BELOW)
PROJECT:

LINE 2 (SEE BELOW)

Line 3 (See below)





LINE 1	LINE 2	LINE 3
SEWER SYSTEM	PIPELINE EXTENSION PIPELINE REPLACEMENT PIPELINE REHABILITATION PUMP STATION	*Your sewer rates at work* *Your sewer rates at work to reduce overflows to Salem creeks and streams* *Your SDC's at work*
STORM SYSTEM	PIPELINE EXTENSION PIPELINE REPLACEMENT	*Your sewer rates at work*
STREET SYSTEM	IMPROVEMENT WIDENING RESURFACING RECONSTRUCTION	*Your gas taxes at work* *Funds approved by voters in XXX.XXXX* *Your SDC's at work*
WATER SYSTEM	PIPELINE EXTENSION PIPELINE REPLACEMENT PUMP STATION RESERVOIR	*Your water rates at work* *Your SDC's at work*
OTHER	OTHER	*Other*

NOTES:

1. SIGN TO BE 48" x 48", 40 GAUGE, ALUMINUM WITH 2.25" ROUNDED CORNERS. LEGEND TO BE BLUE ON WHITE EXCEPT LINES 1 & 3 WHICH ARE BLACK ON WHITE. USE TYPE C FONT.
2. MOUNT SIGN ON 4" x 6" WOOD POST DRILLED WITH 2–2" HOLES AT GROUND LEVEL AT 90° ANGLES FOR BREAKAWAY PROTECTION (MINIMUM 14' LONG), 7' TO BOTTOM OF SIGN.
3. CONTRACTOR TO PICK UP SIGN AT CITY SHOPS, MOUNT SIGN, MAINTAIN SIGN DURING CONSTRUCTION, REMOVE SIGN AND POST AFTER CONSTRUCTION, RETURN SIGN TO CITY SHOPS.
4. ENGINEER TO SPECIFY CONTENTS OF LINES 1, 2, & 3.

Approved Karl O. Sprecher, City Engineer — 1-7-00, Date

No.	Description	Date	By	Appr

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

PROJECT NOTIFICATION SIGN

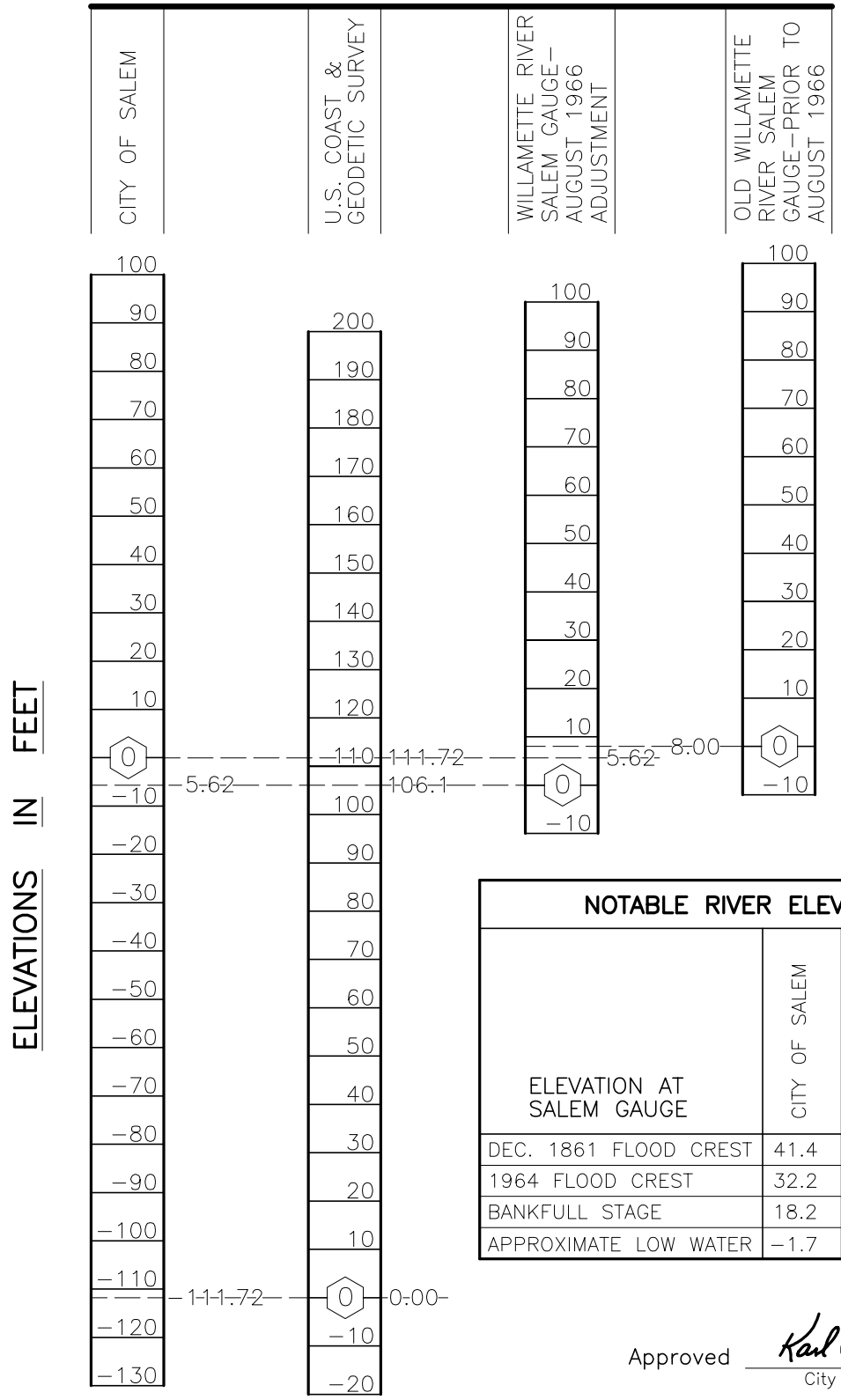
DRAWN BY I.D.F.

CHECKED BY R.W.L.

NO.004

1-10-00

DATUMS



NOTABLE RIVER ELEVATIONS

ELEVATION AT SALEM GAUGE	CITY OF SALEM	U.S. COAST & GEODETIC SURVEY	WILLAMETTE RIVER SALEM GAUGE– AUGUST 1966 ADJUSTMENT
DEC. 1861 FLOOD CREST	41.4	153.1	47.0
1964 FLOOD CREST	32.2	143.9	37.8
BANKFULL STAGE	18.2	129.9	23.8
APPROXIMATE LOW WATER	–1.7	110.0	3.9

Approved Karl O. Houston City Engineer 12–15–99 Date

NOTE:

WILLOW LAKE TREATMENT PLANT AND INTERCEPTOR SEWER PLANS ARE BASED ON ARBITRARY DATUM OF CITY OF SALEM DATUM PLUS 100.00 FEET.

No.	Description	Date	By	Appr
	CHANGE FORMAT–MINOR REVISION	12–99	I.D.F.	K.D.G.
	CONVERT TO CAD DWG.			

REVISION

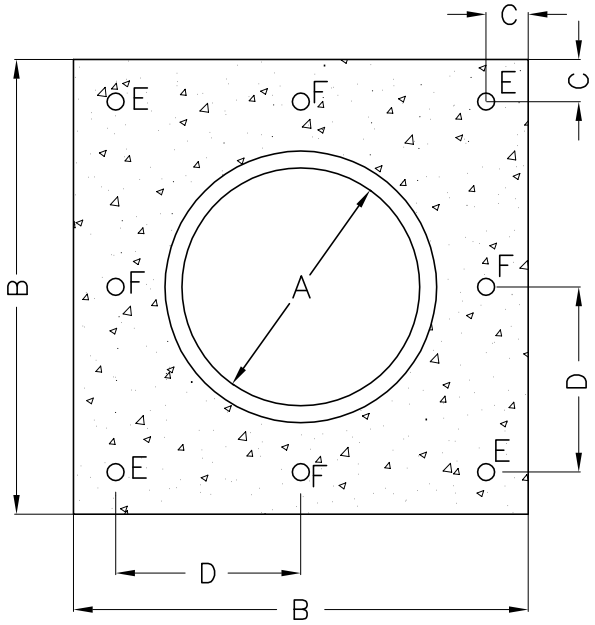
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
ELEVATIONS AND DATUMS

DRAWN BY GS
CHECKED BY D.W.

NO.005

12–2–99



NOTE:

1. CONCRETE SHALL BE 3000 P.S.I., 2" TO 4" SLUMP.
2. ALL REINFORCING STEEL SHALL BE NO. 5 DEFORMED BARS WITH 18" LAP SPLICES.

DIMENSIONS (INCHES)				BARS REQ'D	LBS. STEEL PER LIN. FT.
A	B	C	D		
6	16	3.5	–	E	4.17
8	18	3.5	–	E	4.17
10	20	3.5	–	E	4.17
12	22.5	3.5	–	E	4.17
15	26	3.5	–	E	4.17
18	30	3.5	–	E	4.17
21	38	3.5	15.5	E,F	8.34
24	42	3.5	17.5	E,F	8.34
27	50	3.5	21.5	E,F	8.34
21	36	3.5	14.5	E,F	8.34
24	41	3.5	17.5	E,F	8.34
27	46	3.5	19.5	E,F	8.34

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

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

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

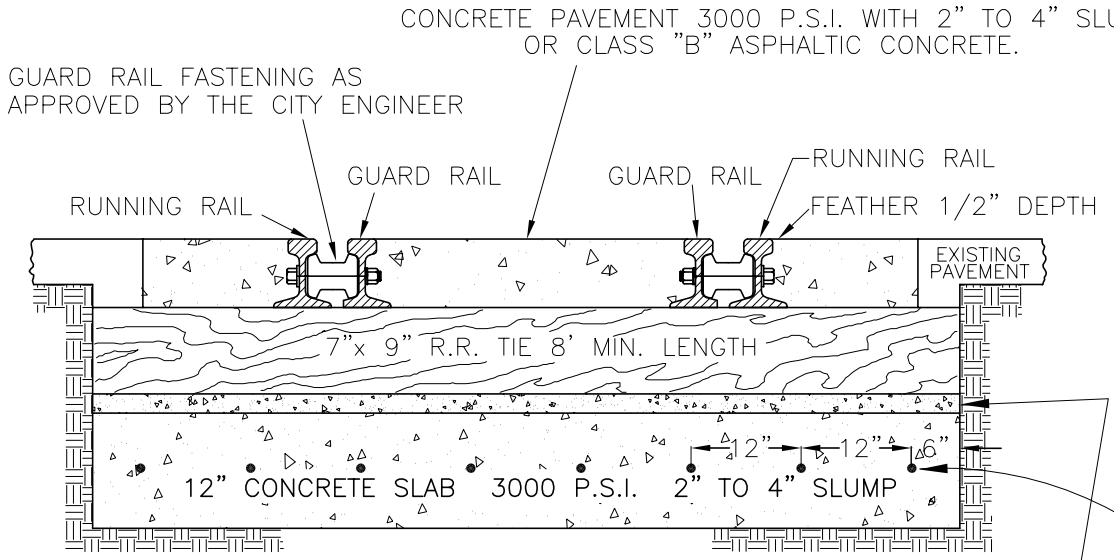
PIPE ENCASEMENT

DRAWN BY GS

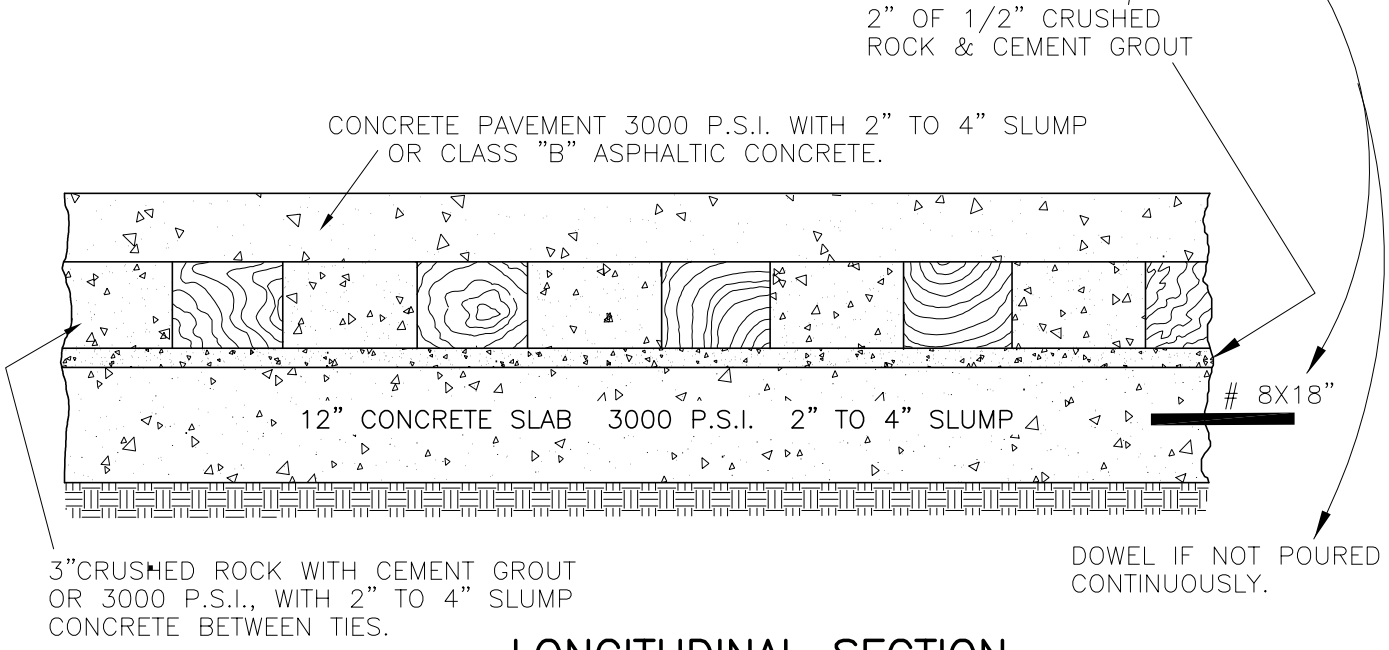
CHECKED BY D.W.

NO.006

1-15-99



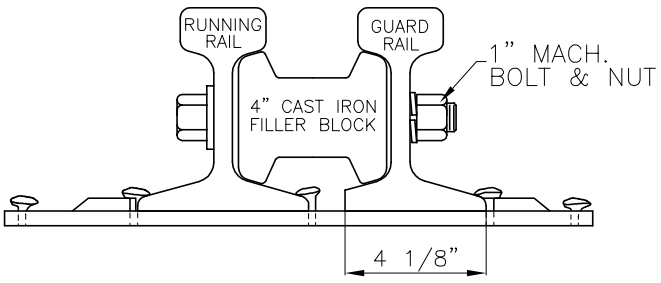
CROSS SECTION



LONGITUDINAL SECTION

NO WOOD SHALL BE USED FOR GUARD RAILS, AND HI-EARLY CEMENT SHALL BE USED IF DIRECTED BY THE CITY ENGINEER. GROUT SUBGRADE WHEN UNSTABLE.

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



GUARD RAIL ASSEMBLY

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

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

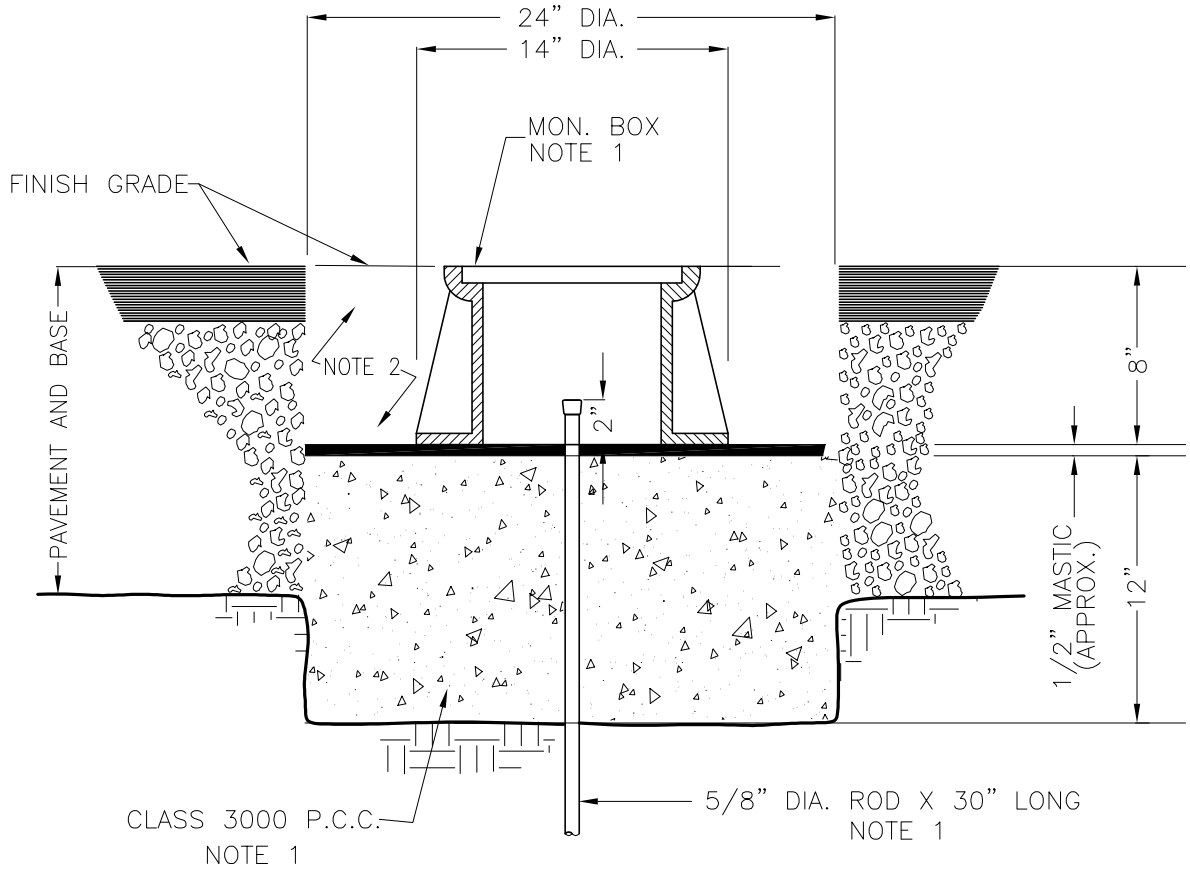
STANDARD PLAN

R.R. TRACK CROSSING

DRAWN BY GS
CHECKED BY D.W.

NO.007

9-15-99



SECTION

NOTES:

1. THE FOLLOWING MATERIALS AND ITEMS OF WORK WILL BE PROVIDED BY THE CITY OF SALEM: PROVIDE, DRIVE AND SET CAP ON 5/8" DIA ROD, PROVIDE P.C.C. BASE, PROVIDE CAST IRON MON. BOX AND COVER.
2. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE THE FOLLOWING MATERIALS AND ITEMS OF WORK: EXCAVATION, INCLUDING EXCAVATION BELOW NORMAL ROADWAY EXCAVATION PAYLINE, PLACING 1/2" MASTIC, SETTING AND ADJUSTING MONUMENT BOX TO FINISH GRADE, BACKFILLING AND PAVING. BACKFILL MAY CONSIST OF BASE ROCK AND PAVEMENT OF THE DEPTHS SHOWN ON THE PROJECT PLANS OR IT MAY BE COMPOSED ENTIRELY OF PAVEMENT AT THE CONTRACTORS OPTION.
3. LOCATIONS OF MONUMENTS SHOWN ON THE PROJECT PLANS ARE APPROXIMATE ONLY. EXACT LOCATION WILL BE DETERMINED AT THE TIME OF CONSTRUCTION.

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

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

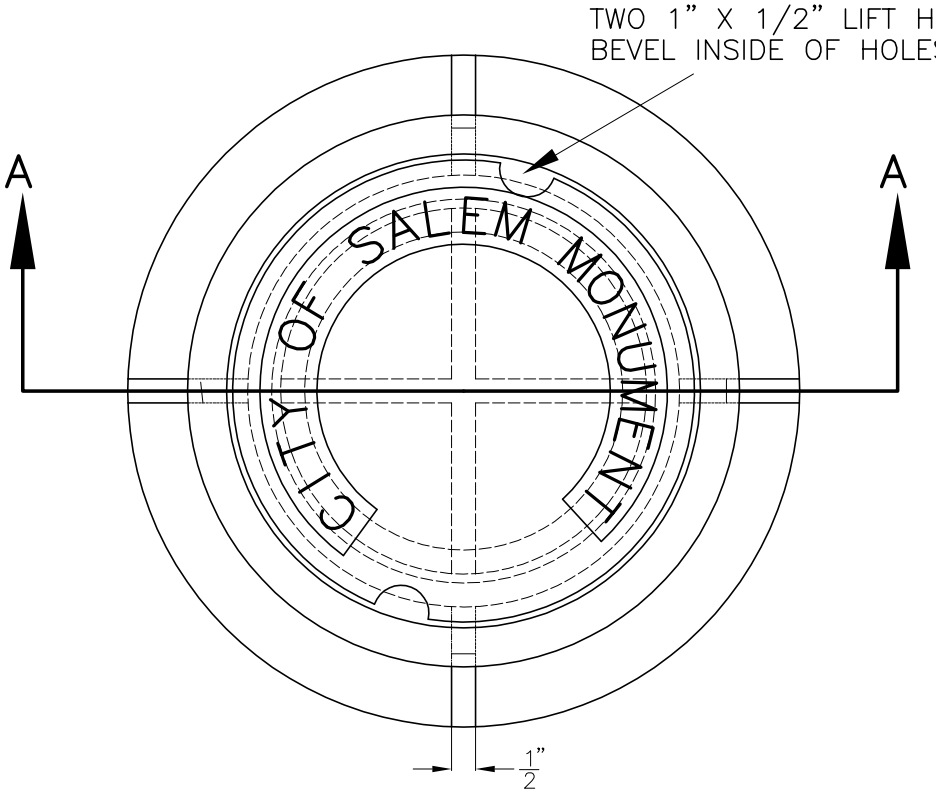
STANDARD PLAN
MONUMENT BOX INSTALLATION DETAIL

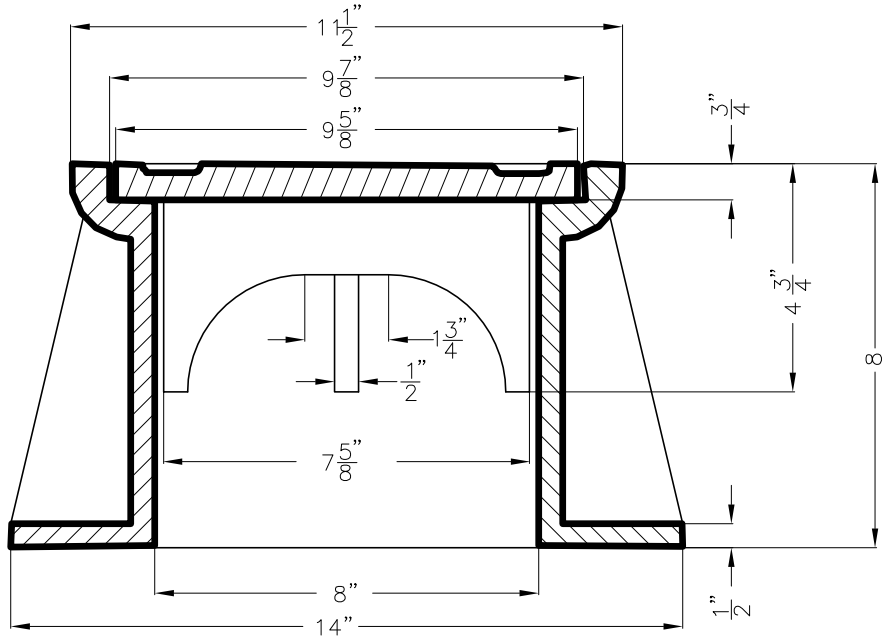
DRAWN BY GS

CHECKED BY D.W.

NO.008

9-15-99





SECTION A–A

NOTES:

1. MATERIAL SHALL BE A.S.T.M. A–48 GRAY CAST IRON, CLASS 30.
2. APPROX. WEIGHT: FRAME 56 LBS., COVER 20 LBS.

Approved Karl O. Houston City Engineer 9–15–99 Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

MONUMENT BOX CASTING DETAIL

DRAWN BY GS

CHECKED BY D.W.

NO.009

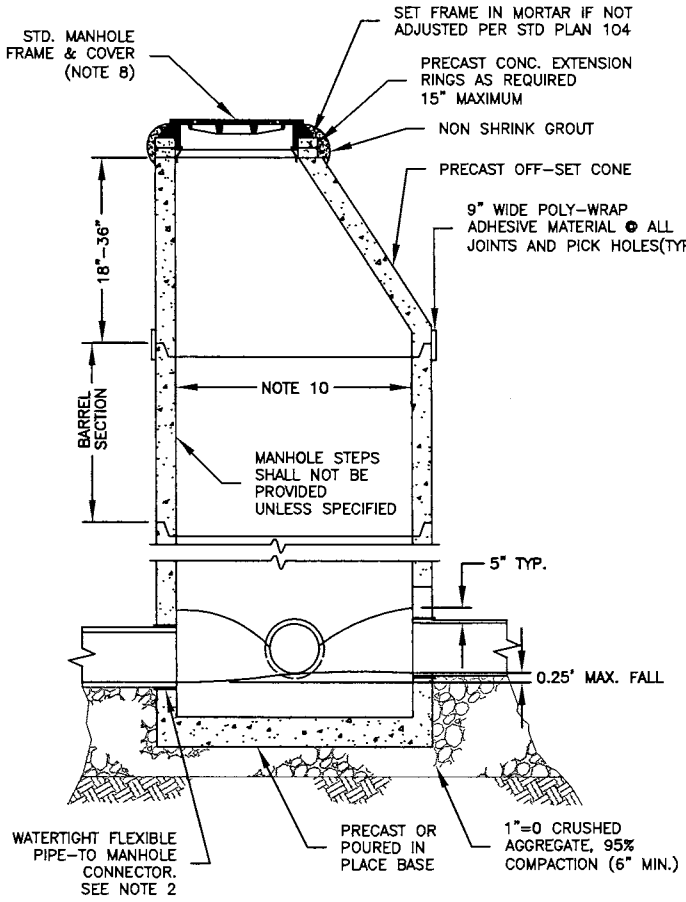
No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.	1/98		

REVISION

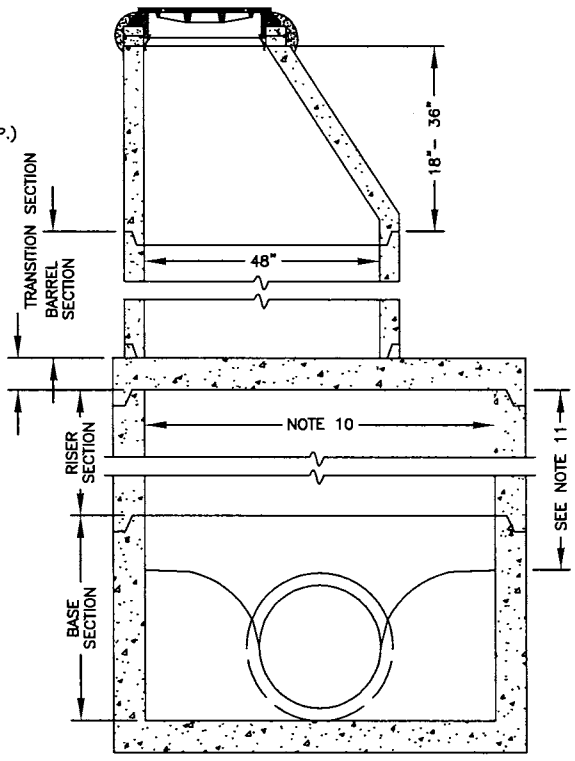
9–15–99

NOTES:

1. CONCENTRIC CONE ALLOWED ONLY WHEN SPECIFIED.
2. WATERTIGHT FLEXIBLE PIPE–TO–MANHOLE CONNECTIONS SHALL BE INSTALLED ACCORDING TO MANUFACTURES SPECIFICATIONS.
3. ADJUST MANHOLE FRAME AND LID PER STD PLAN 104.
4. WATER TIGHT JOINTS (GROUT JOINTS SMOOTH AT MANHOLE INTERIOR).
5. POSITION MANHOLE LID OVER OUTLET PIPE.
6. ALL SECTIONS MUST MEET OR EXCEED ASTM C 478.
7. FLAT–TOP MANHOLE ACCEPTABLE ALTERNATE (SEE STD. PLAN NO. 211)
8. SEE STD. PLAN No.107. LOCK–DOWN MANHOLE COVERS PER STD. PLAN No.117 REQUIRED WHEN MANHOLES ARE LOCATED OUTSIDE OF PUBLIC RIGHT–OF–WAY.
9. ALL MANHOLES SUBJECT TO VACUUM TESTING.
10. SEE PROJECT PLANS FOR MANHOLE SIZE.
11. FOR ALTERNATE MANHOLE CONFIGURATION, PROVIDE 8 FT OF HEAD ROOM WHENEVER POSSIBLE.



STANDARD MANHOLE CONFIGURATION



ALTERNATE MANHOLE CONFIGURATION

No.	Description	Date	By	Appr
4	Added external seals	2/15	JAP	
3	Removed table, changed max fall	12/13	KAK	
2	Changed note on alternate config.	8/99		
1	Allowed low profile cone section	8/99		

REVISION

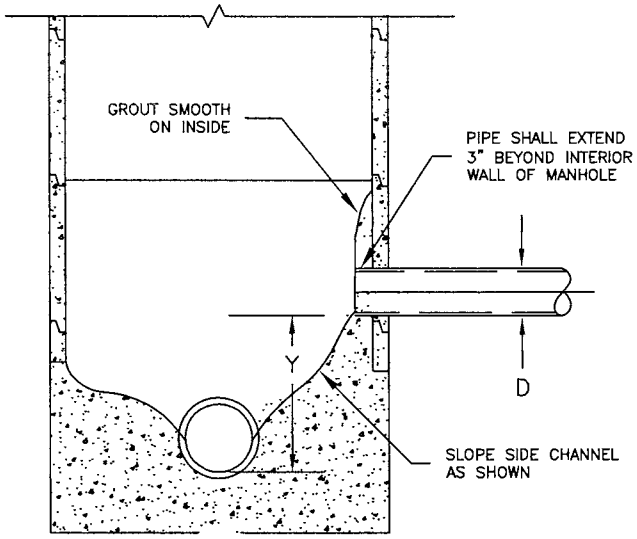
APPROVED — CITY ENGINEER — 4/2015

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
MANHOLE

DRAWN BY	JAP	5/2014
CHECKED BY	DEW	5/2014

NO. 101



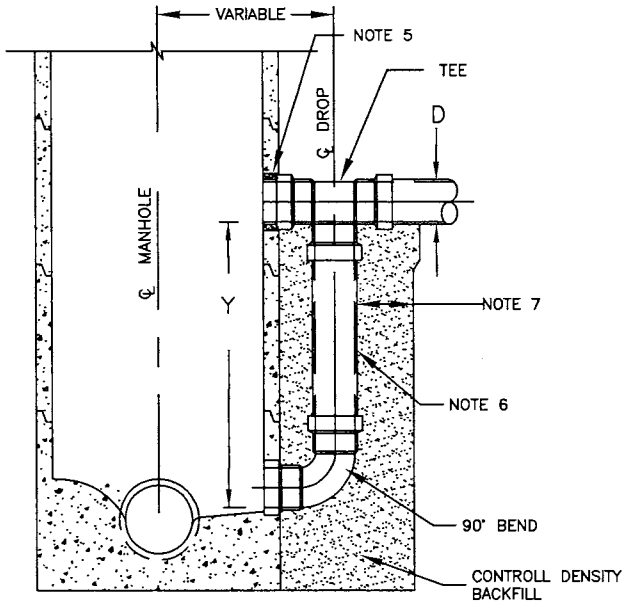
TYPE 'A'

TABLE

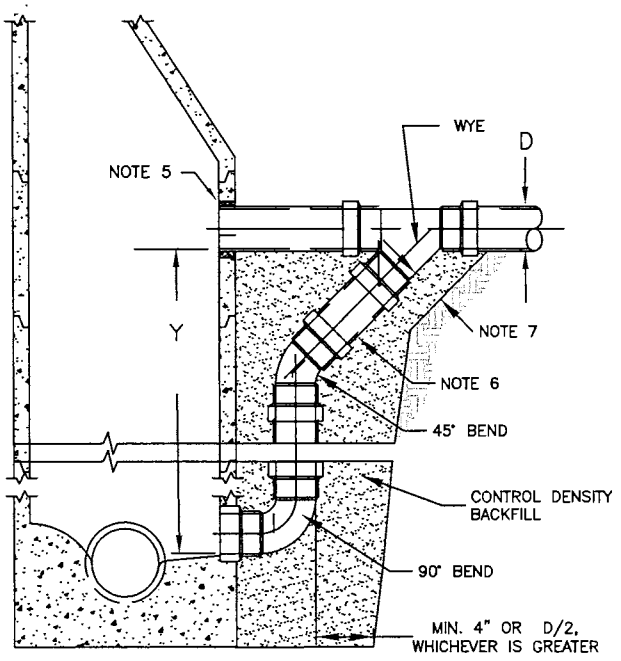
INLET PIPE 'D'		8"	10"	12"
TYPE 'A'	Y LIMITATIONS	Y ≤ 24"	Y ≤ 24"	Y ≤ 24"
TYPE 'B'		24" < Y ≤ 30"	24" < Y ≤ 57"	24" < Y ≤ 65"
TYPE 'C		Y < 30"	Y < 57"	Y < 65"

NOTES:

1. SEE STANDARD PLAN 101 FOR ADDITIONAL MANHOLE DETAILS.
2. TYPE 'C' DROP MAY BE REQUIRED IN LIEU OF TYPE 'B' IN LOCATIONS WHERE Q IS OVER ONE-HALF PIPE FULL OR VELOCITY EXCEEDS 5 fps (STEEP GRADE).
3. ALL PIPE IS P.V.C.
4. CONSTRUCTION OF ADDITIONAL MANHOLE IS REQUIRED WHEN COMBINATION OF INLET PIPE SIZE AND "Y" DIMENSIONS ARE OUTSIDE PARAMETERS OF ABOVE TABLE.
5. WATER TIGHT BOOT.
6. PIPE DIAMETER TO MATCH INLET PIPE DIAMETER.
7. 4" CLEAR MIN., 3 SIDES.



TYPE 'B'



TYPE 'C'

DETAILS SUBJECT TO PRIOR APPROVAL BY CITY ENGINEER

No.	Description	Date	By	Appr
5	Removed 15" from table	12/13	KAK	
4	Added note 4	10/01	IDF	
3	Corrected Y dimension	4/01	IDF	
2	Details revised significantly	8/99	JC	
1	Convert to CAD DWG.	8/99	JC	

REVISION

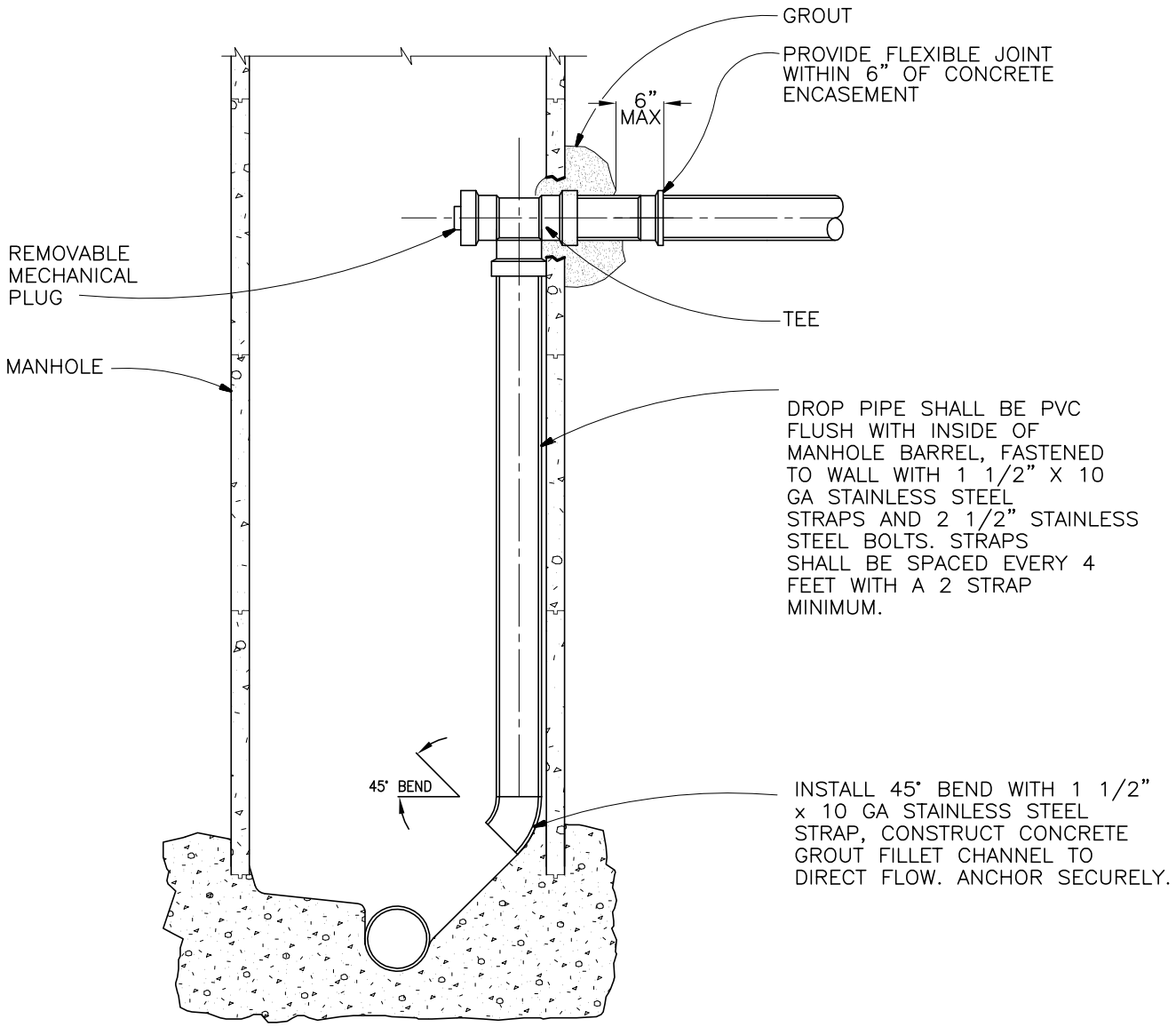
APPROVED — CITY ENGINEER — 3/2015

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
DROP MANHOLE DETAILS

DRAWN BY	KAK	05/14
CHECKED BY	CJS	05/14

NO. 102



NOTE:

1. ONLY ONE INSIDE DROP CONNECTION ALLOWED PER MANHOLE.
2. MINIMUM MANHOLE DIAMETER WITH DROP CONNECTION SHALL BE 48–INCHES.
3. MAXIMUM DROP PIPE DIAMETER SHALL BE 8–INCHES.
4. SEE STANDARD PLAN 101 FOR OTHER MANHOLE DETAILS.
5. POSITION MANHOLE LID TO MAXIMIZE THE HORIZONTAL CLEAR DISTANCE FOR MAINTENANCE PERSONNEL.

Approved Karl O. Braun City Engineer 9–15–99 Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

INSIDE DROP MANHOLE

No.	Description	Date	By	Appr
1	Convert to CAD DWG.	8/99	JC	
2	Details revised significantly	8/99	JC	

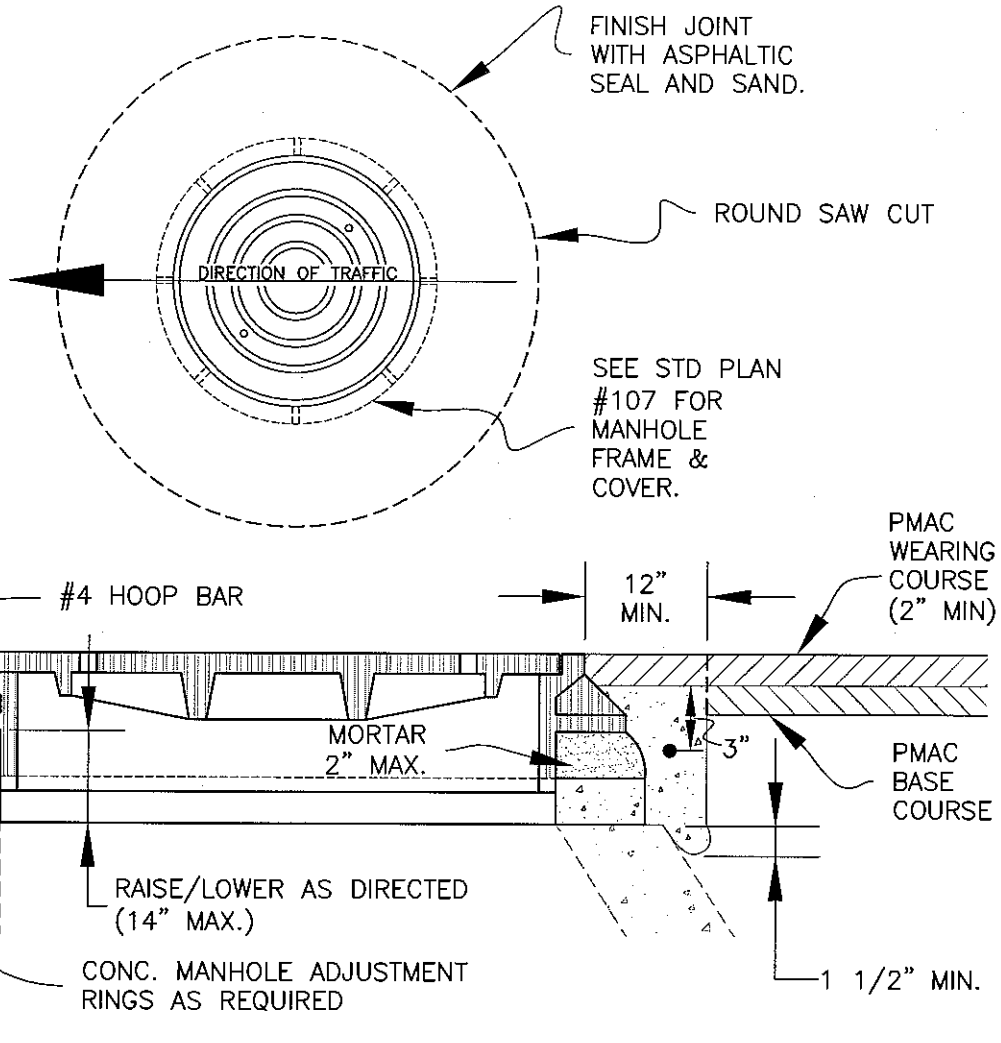
REVISION

DRAWN BY J.C.

CHECKED BY K.G.

NO. 103

9–15–99



1. PRIOR TO PAVING, LOWER MANHOLE BY REMOVING FRAME/COVER AND ADJUSTMENT RINGS (AS NECESSARY). PLACE STEEL PLATE OVER MANHOLE. STEEL PLATE SHALL BE CAPABLE OF H20 TRAFFIC LOADING.

2. ROUND SAW CUT EXCAVATION AROUND MANHOLE 12" MINIMUM FROM MANHOLE FRAME. SAW CUT SHALL BE CIRCULAR (NO SEGMENTAL CUTS).

3. RAISE MANHOLE FRAME AND COVER TO GRADE AND PROFILE BY INSTALLING CONCRETE RINGS AND LEVELING MORTAR.

4. BACKFILL WITH HIGH EARLY STRENGTH P.C.C. TO FINISH GRADE OF PMAC BASE COURSE. COMPACT SUBGRADE AS SPECIFIED PRIOR TO PLACEMENT OF P.C.C..

5. COVER MANHOLE WITH STEEL PLATE. STEEL PLATE SHALL OVERLAP SAW CUT 24" MINIMUM, AND SHALL BE CAPABLE OF H20 TRAFFIC LOADING.

6. APPLY TACK COAT TO EXPOSED CONCRETE SURFACES PRIOR TO PAVING.

7. AFTER P.C.C. HAS CURED (2500 PSI IN 24 HOURS), PLACE PMAC WEARING COURSE AS SHOWN.

APPROVED _____ 1/5/12
CITY ENGINEER DATE

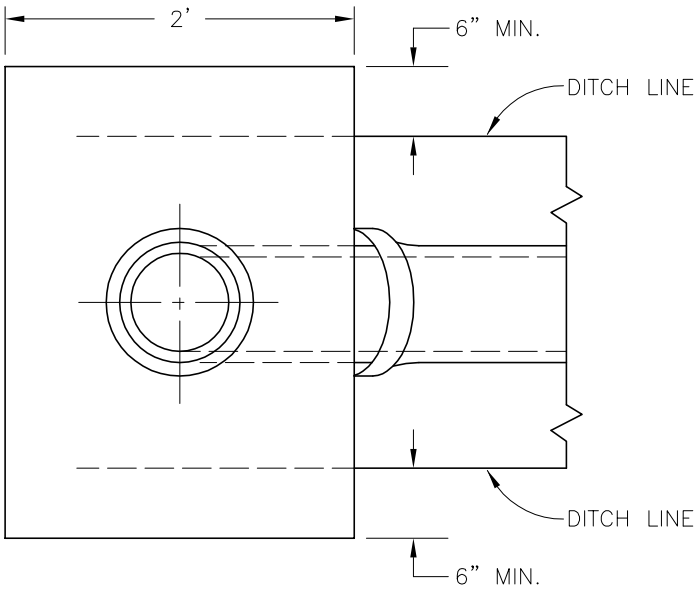
ROUND SAW CUT/P.C.C.	JAK	12/11
SQUARE OR ROUND SAW CUT	JHC	9/99
DESCRIPTION	BY	DATE
REVISION		

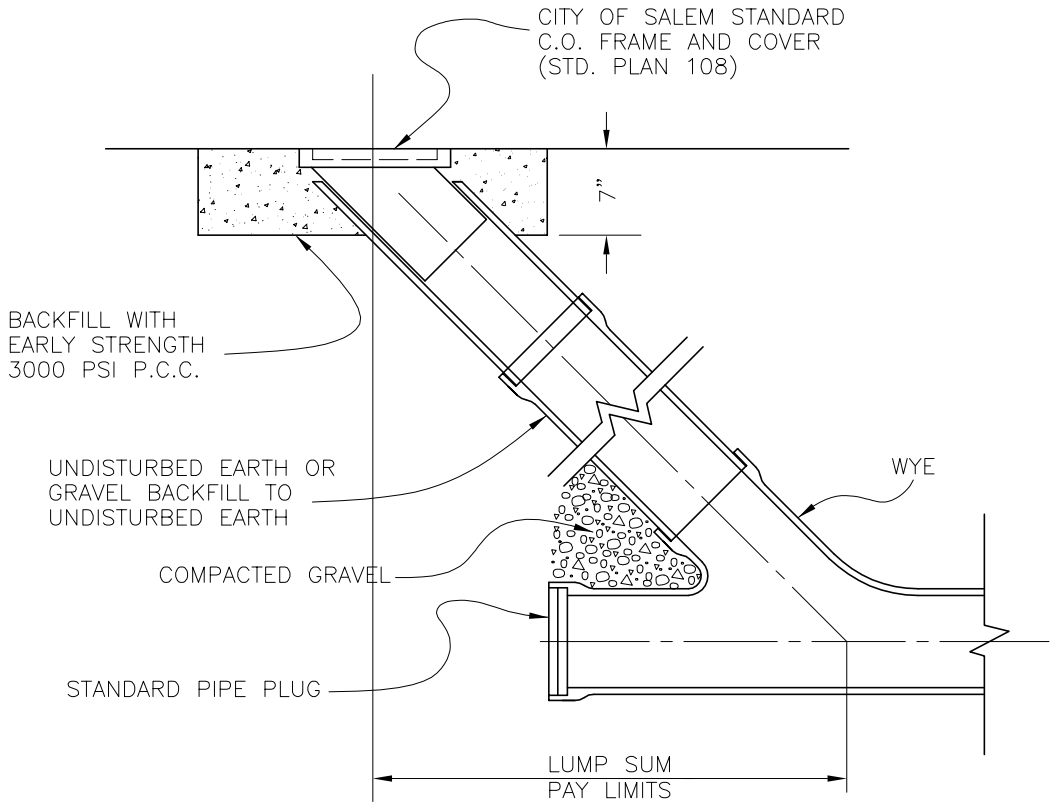
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
MANHOLE ADJUSTMENT SEQUENCE
(AFTER FINAL PAVING)

DRAWN BY	JAK	7/11
CHECKED BY	BAV	7/11

NO. 104





Approved Karl O. Houston 1-7-98
City Engineer Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

SANITARY SEWER CLEANOUT

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

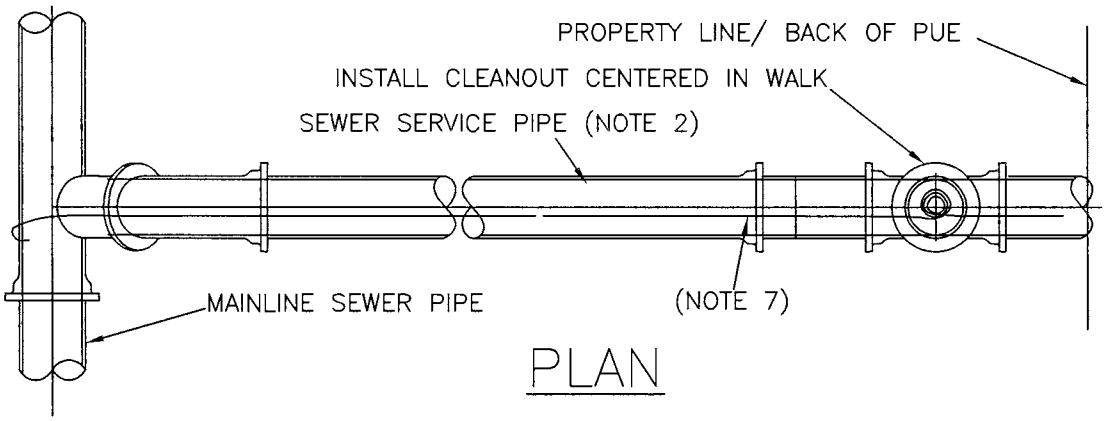
REVISION

DRAWN BY GS

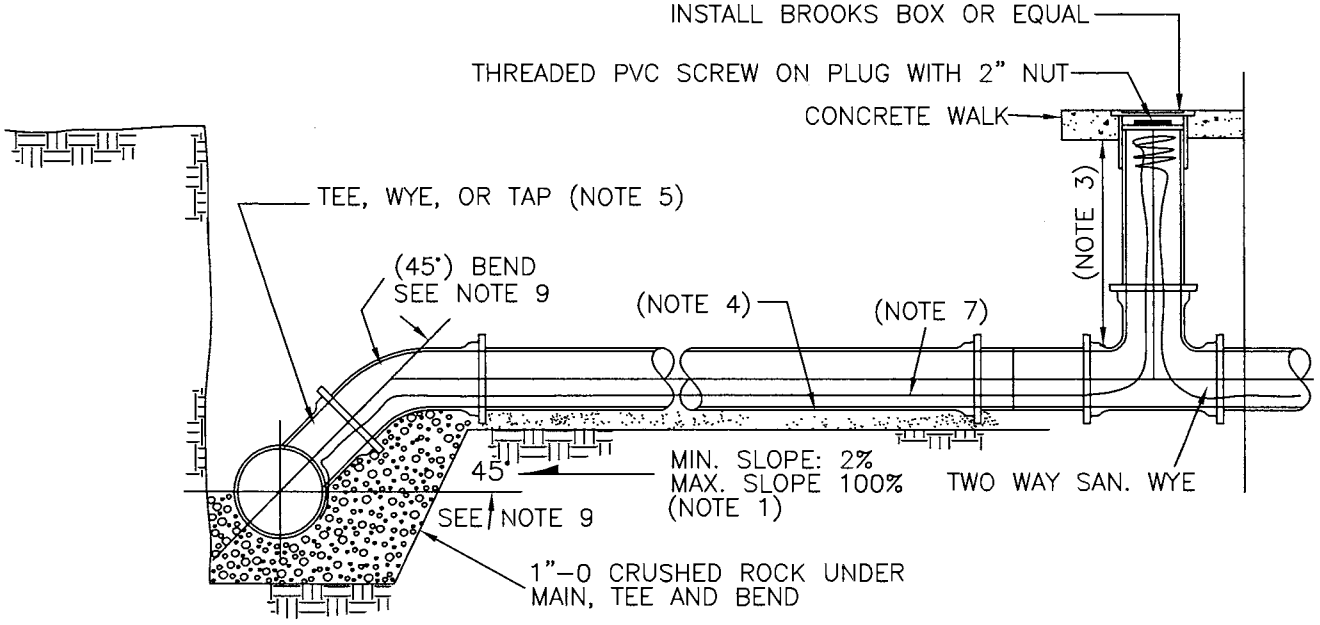
CHECKED BY D.W.

NO.105

1-7-98



PLAN



SECTION

1. WHEN SLOPE EXCEEDS 20% USE ANCHOR BLOCKS. WHEN SLOPE EXCEEDS 100%, AND WITH SPECIFIC APPROVAL OF THE ENGINEER, USE DEEP CONNECTION RISER PER STD. PLAN No.114. SLOPE MAY BE DECREASED TO 1% MINIMUM WITH SPECIFIC APPROVAL OF THE ENGINEER.
2. FOR APPROVED MATERIALS SEE SCS 402.
3. MINIMUM DEPTH AT PROPERTY LINE 4 FEET.
4. BEDDING FOR SERVICE LINES SHALL BE MIN. 4–INCHES OF 1"–0 CRUSHED ROCK.
5. TAPPING OF SEWER MAINS TO BE DONE BY CITY FORCES.
6. FOR UNUSED STUBS, MARK END OF SERVICE WITH WHITE PAINTED 2 x 4 STAKE. USING BLACK INDELIBLE MARKER, INDICATE DEPTH AND TYPE (SS FOR SANITARY), (SD FOR STORM DRAIN). (SEE SCS 402.3.07)
7. INSTALL A CONTINUOUS 12 GAUGE, GREEN, INSULATED COPPER TRACER WIRE ADJACENT TO BUILDING SEWER BETWEEN THE SEWER MAIN AND CLEANOUT AT BUILDING. COIL 5' OF TRACER WIRE INSIDE OF SIDEWALK CLEANOUT AND EXTEND TO END OF SERVICE.
8. ADJACENT SERVICE LINES TO HAVE 18" MINIMUM HORIZONTAL SEPARATION AT THE MAIN.
9. WITH SPECIFIC APPROVAL OF THE ENGINEER, ANGLE AND BEND MAY BE REDUCED TO 22 1/2°.

No.	DESCRIPTION	DATE	BY
2	REVISED NOTE 7	2/2015	
1	REVISED NOTE 1,2,4 & 6	5/2004	

REVISION

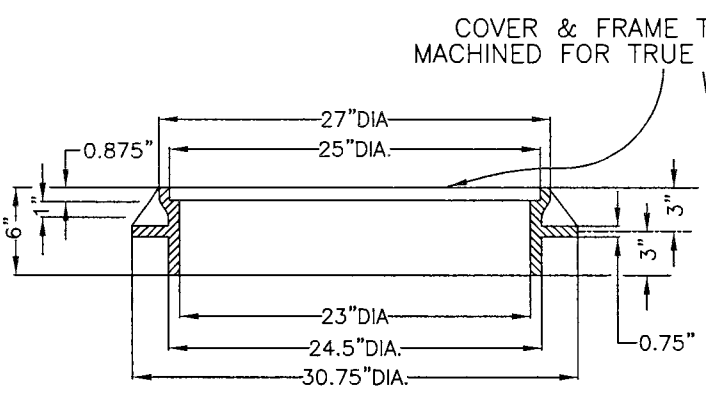
APPROVED _____ 4/2015
CITY ENGINEER — DATE

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

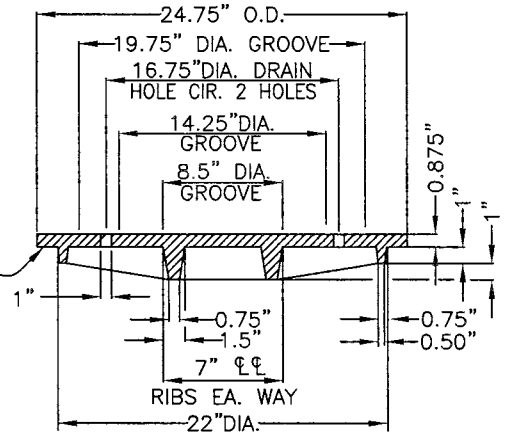
STANDARD PLAN

SANITARY SEWER SERVICE

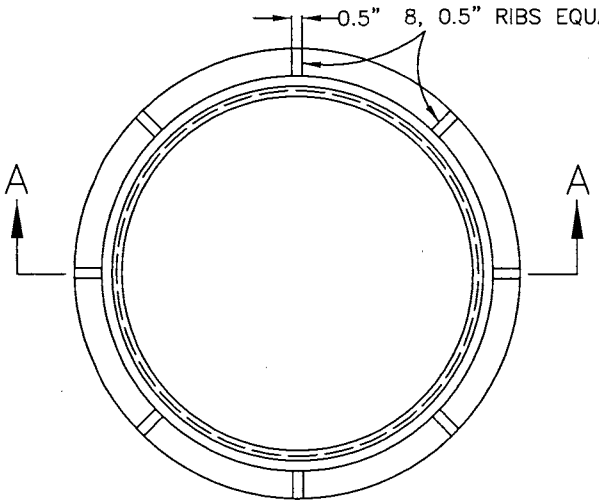
DRAWN BY	DTN	5/2004	**NO.106**
CHECKED BY	DEW	5/2004	



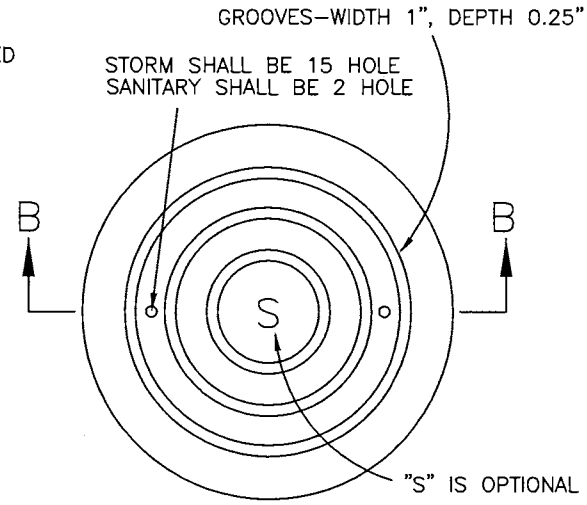
SECTION A–A



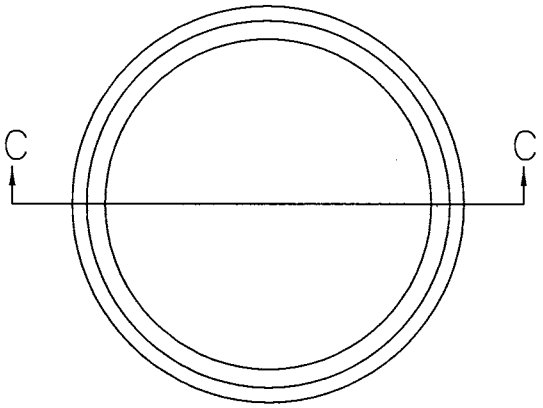
SECTION B–B



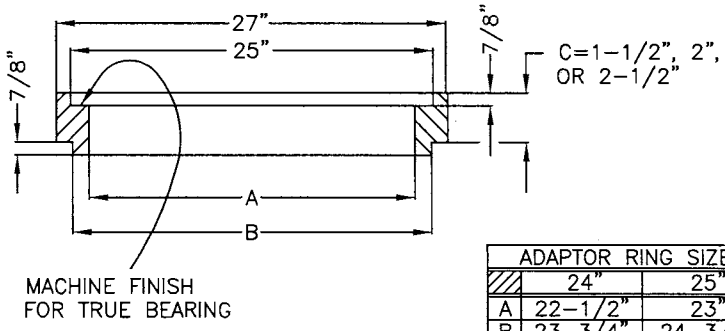
MANHOLE FRAME



MANHOLE COVER



ADAPTOR RING



SECTION C–C

ADAPTOR RING SIZES		
	24"	25"
A	22–1/2"	23"
B	23–3/4"	24–3/4"

1. MATERIAL: ASTM A–48B CLASS 30 CAST IRON
2. STEEL PIVOTED EXPANDABLE MANHOLE RISER BY AMERICAN HIGHWAY PRODUCTS OR APPROVED EQUAL IS ALSO ACCEPTABLE.

No.	DESCRIPTION	DATE	BY
3	ADDED NOTE FOR HOLES	07/14	JK
2	ADD PIVOTED EXPANDABLE RISER	10/01	IDF
1	CONVERT TO CAD DWG.		

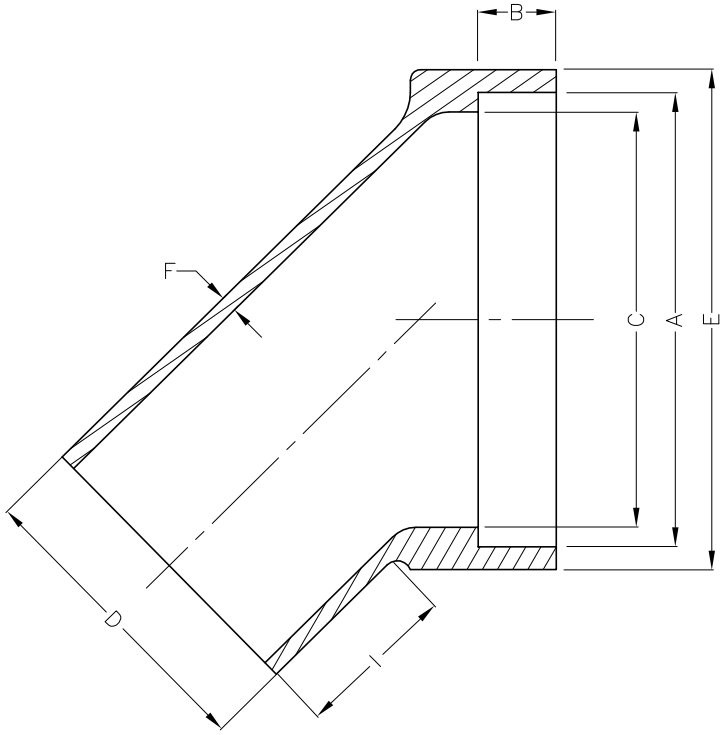
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

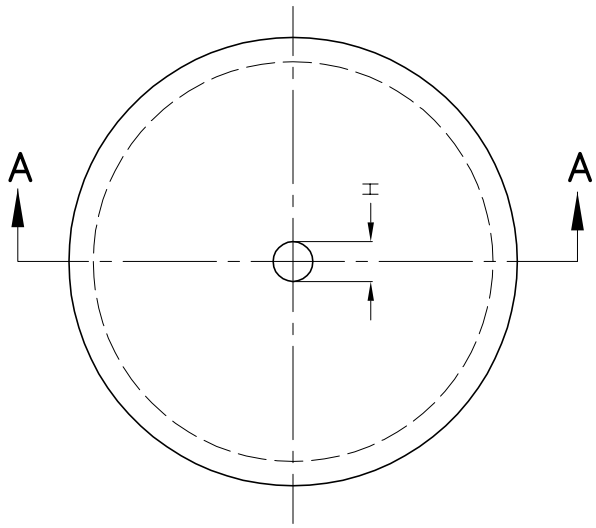
STANDARD PLAN

MANHOLE CASTING DETAIL

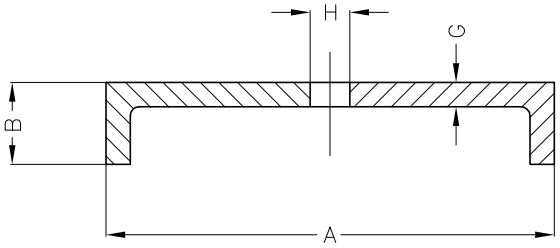
APPROVED	CITY ENGINEER	DATE	DRAWN BY	JAP	3/2002	NO.107
			CHECKED BY	DEW	3/2002	



FRAME



LID



SECTION A–A

LID DIMENSIONS				
SIZE	A	B	G	H
6"	8 9/16"	1 1/2"	1/2"	3/4"
8"	10 11/16"	1 1/2"	1/2"	3/4"

FRAME DIMENSIONS							
SIZE	A	B	C	D	E	F	I
6"	8 3/4"	1 1/2"	8"	5 7/8"	9 5/8"	5/16"	3 1/4"
8"	10 7/8"	1 1/2"	9 5/8"	7 7/8"	11 3/4"	5/16"	3 1/4"

MATERIAL: ASTM A–48 CLASS 30 CAST IRON.

Approved Karl O. Houston City Engineer 1-7-98 Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

45° CLEANOUT FRAME & LID

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

REVISION

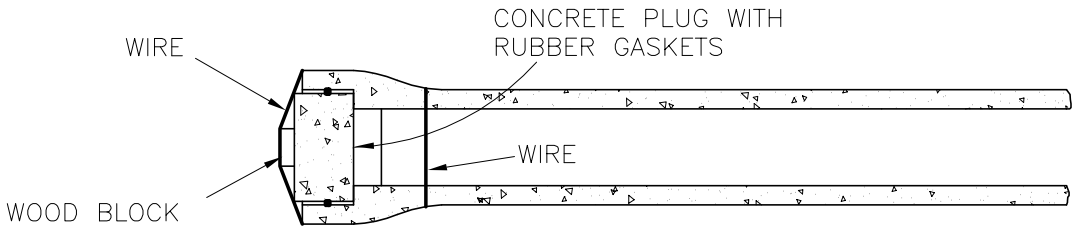
DRAWN BY GS

CHECKED BY D.W.

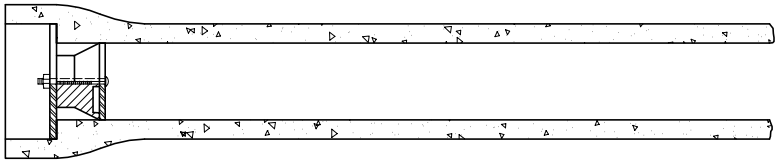
NO.108

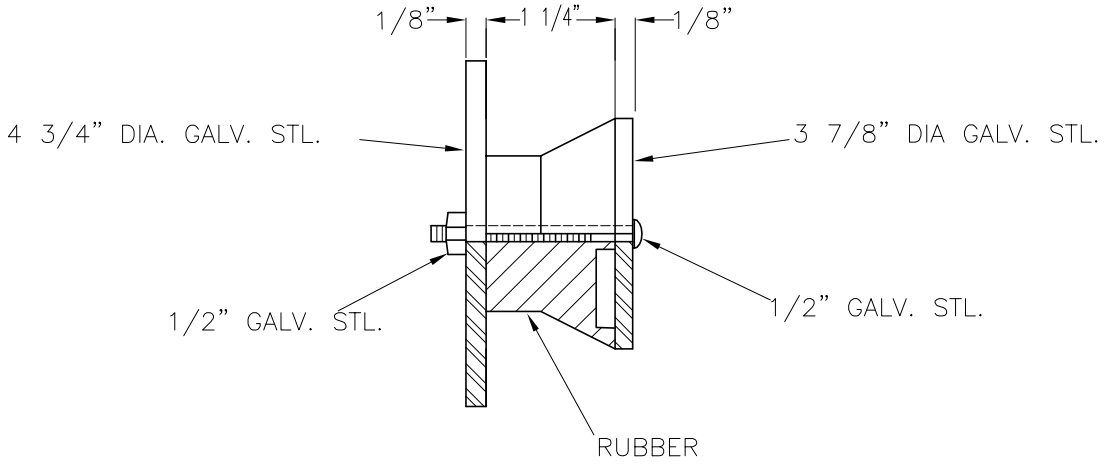
1-7-98

WIRED ON PLUG



MECHANICAL RUBBER PLUG





Approved Karl O. Krueger City Engineer 1-7-98 Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

PLUG FOR NEW SAN. SEWER

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

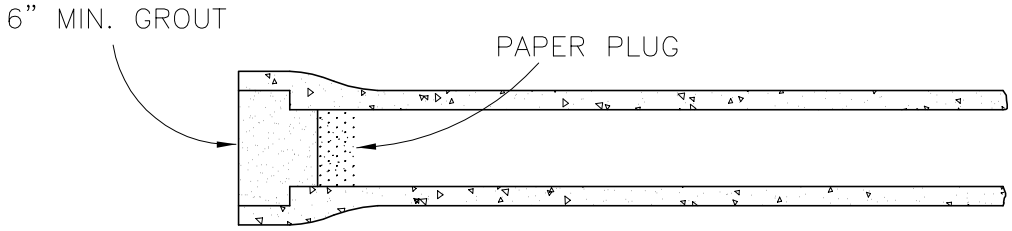
REVISION

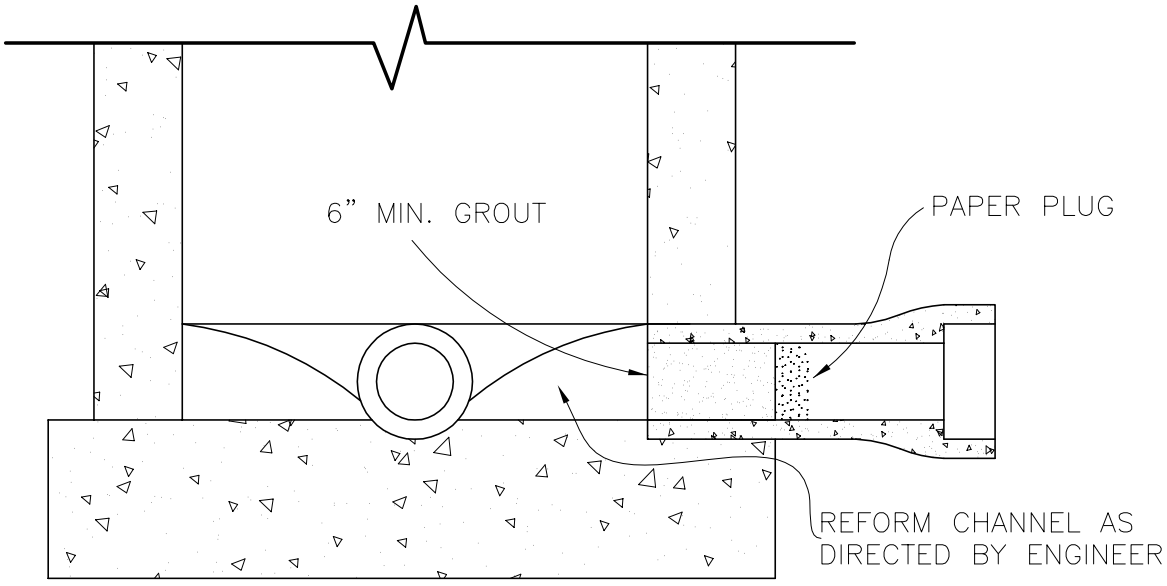
DRAWN BY GS

CHECKED BY D.W.

NO.109

1-7-98





NOTE:
THIS DRAWING DEPICTS CONCRETE PIPE.
USE MECHANICAL PLUGS WHEN ABANDONING PLASTIC PIPES.

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

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

PLUGS FOR ABANDONING SANITARY SEWER

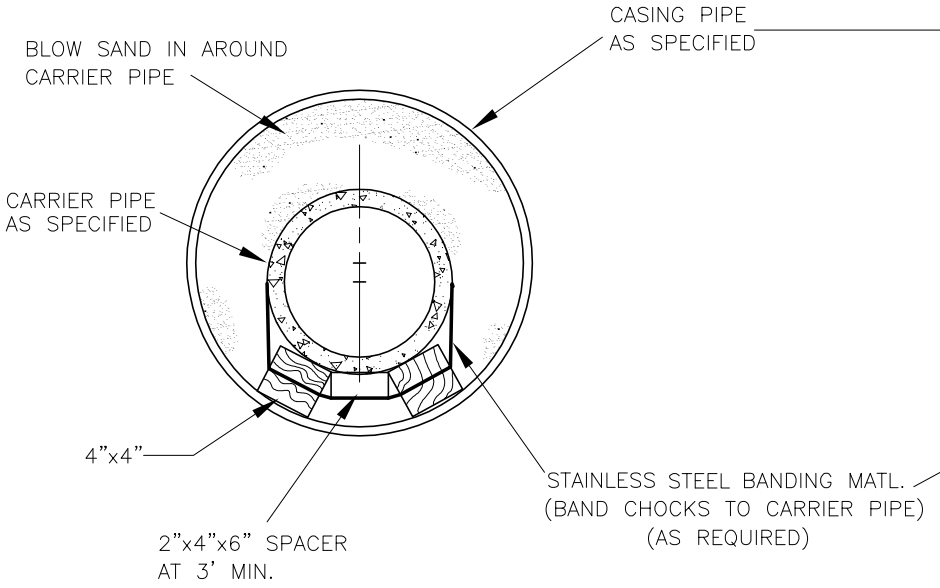
No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

REVISION

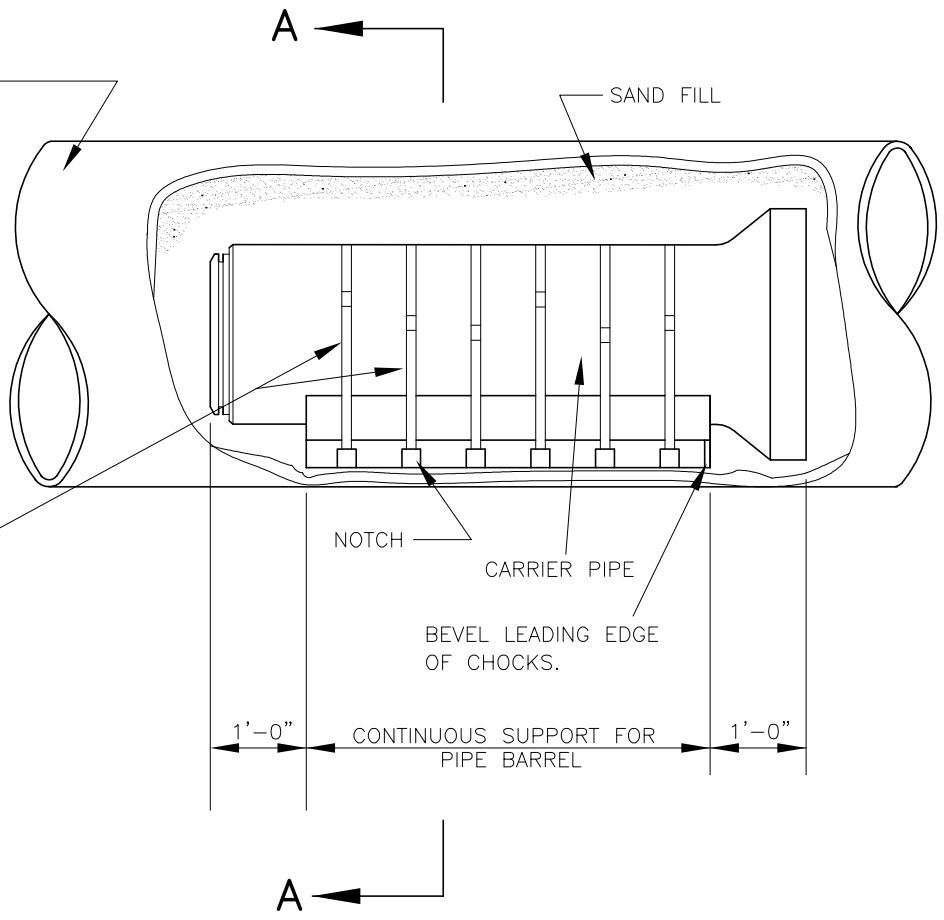
DRAWN BY GS
CHECKED BY D.W.

NO.110

9-15-99



SECTION A–A
NO SCALE



CASING DETAILS
NO SCALE

NOTE:

1. PRIOR TO FILLING CASING PIPE WITH SAND, FILL CARRIER PIPE WITH WATER TO PREVENT FLOATING.
2. STAINLESS STEEL BANDING MATERIAL SHALL BE A MIN. OF 20 GAUGE 1/2" WIDE
3. BLOCKING TO BE TREATED WOOD.

Approved Karl O. Goertzen City Engineer 9–15–99 Date

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

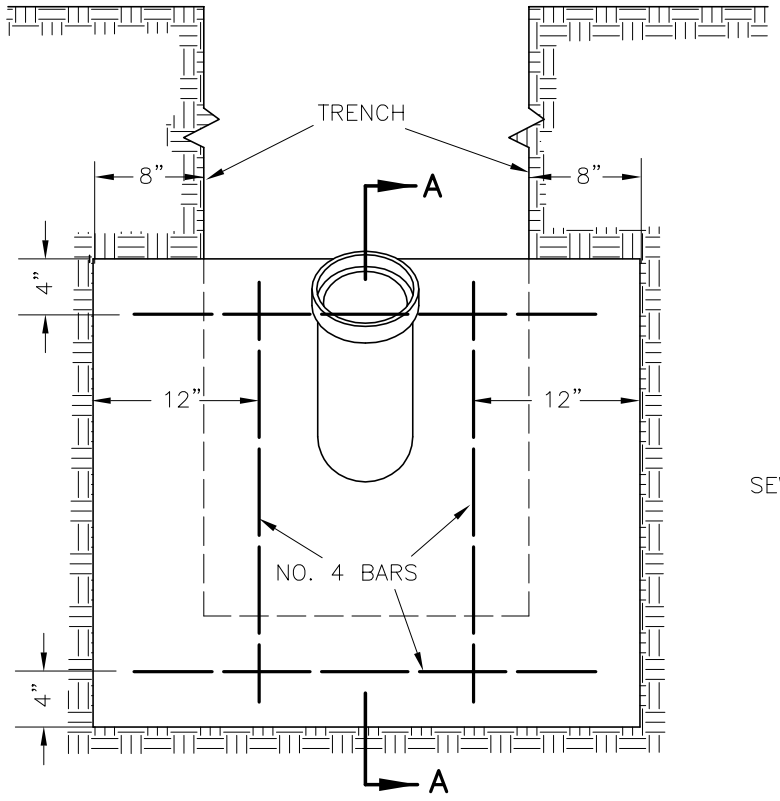
STANDARD PLAN
CASING DETAIL

DRAWN BY GS
CHECKED BY D.W.

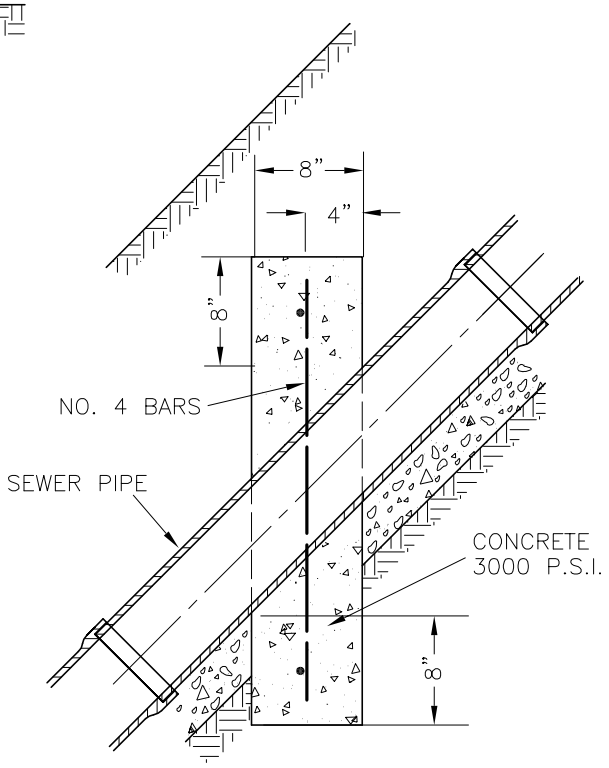
NO.112

9–15–99

FOR SEWER PIPE 8"–12" DIAMETER



ELEVATION



SECTION A–A

SPACING FOR ANCHOR BLOCK FOR ALL SIZES

SLOPE %	MINIMUM SPACING (FT)
0–19.99	NO ANCHOR REQUIRED
20–34.99	35
35–50.99	25
51–MORE	15' OR SPECIAL DESIGN

NOTE:
1. FOR 4" SEWER PIPE, ANCHOR BLOCK IS REQUIRED AS SHOWN EXCEPT NO REINFORCEMENT IS REQUIRED
2. FOR PIPE LARGER THAN 12", ANCHOR BLOCK SHALL BE OF SPECIAL DESIGN.
3. ANCHOR BLOCK SHALL ALWAYS BE LOCATED ALONG THE BARREL OF THE PIPE AND NOT AT THE JOINT.
4. OTHER PIPE SLOPE ANCHOR SYSTEMS WILL BE CONSIDERED FOR APPROVAL UPON REQUEST TO ENGINEER.

Approved Karl O. Sprecher, City Engineer — 9–15–99, Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
ANCHOR BLOCK DETAILS
SANITARY SEWER

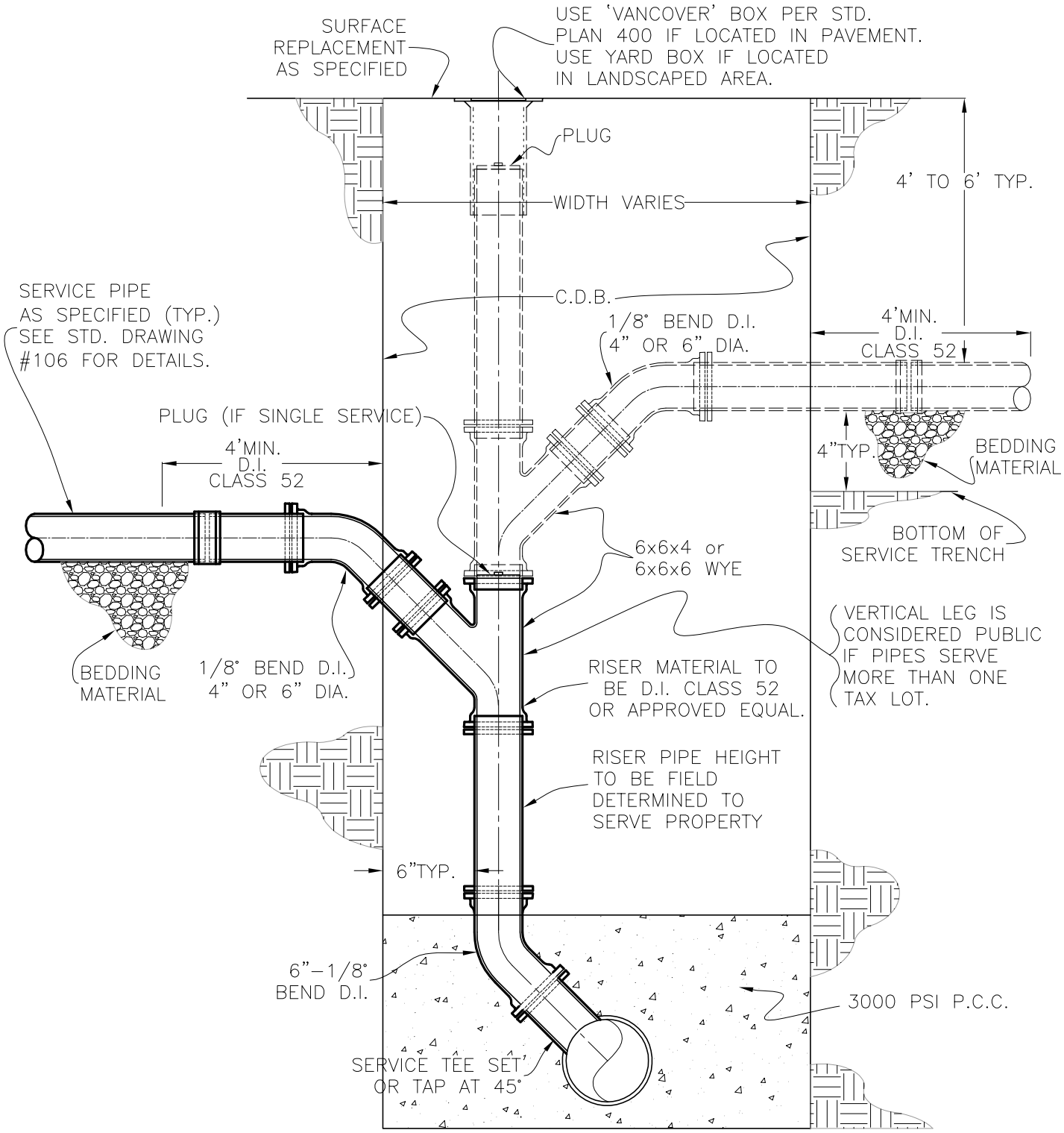
No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

REVISION

DRAWN BY GS
CHECKED BY D.W.

NO.113

9–15–99



NOTE:

1. THE DEEP CONNECTION RISER MAY ONLY BE USED WHEN THE SERVICE PIPE SLOPE WOULD BE OVER 100% SLOPE AND WITH SPECIFIC APPROVAL OF THE ENGINEER.
2. USE 6" RISER, MAX. 4 SERVICES.
3. CDB AND 3000 PSI P.C.C. SHALL EXTEND 2 FEET MINUMUM EACH WAY FROM RISER ALONG MAINLINE TRENCH.

Approved Karl O. Sweitzer City Engineer 9–15–99 Date

No.	Description	Date	By	Appr
1.	CONVERT TO CAD DWG.			
2.	CHANGE PIPE MATERIAL & CDB			

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

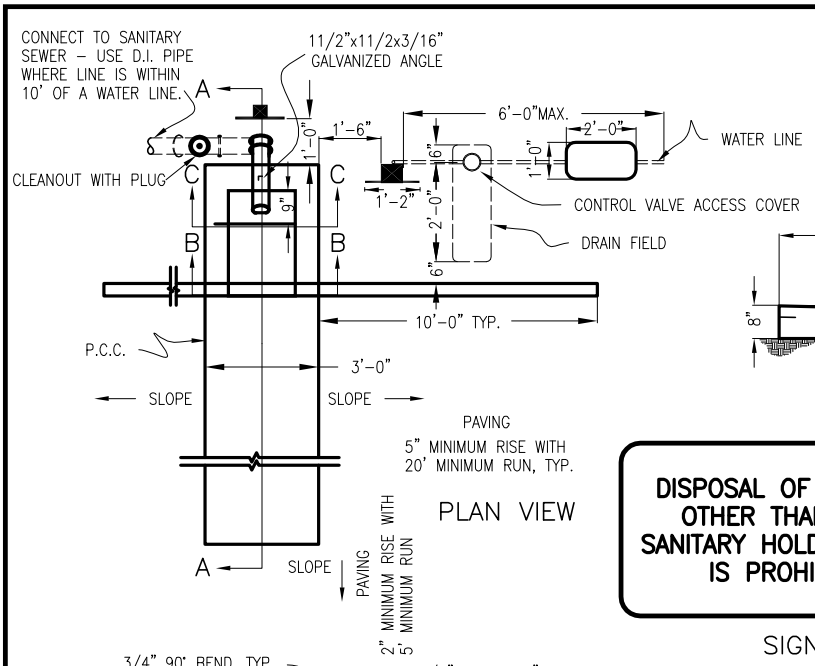
DEEP CONNECTION RISER (CHIMNEY)

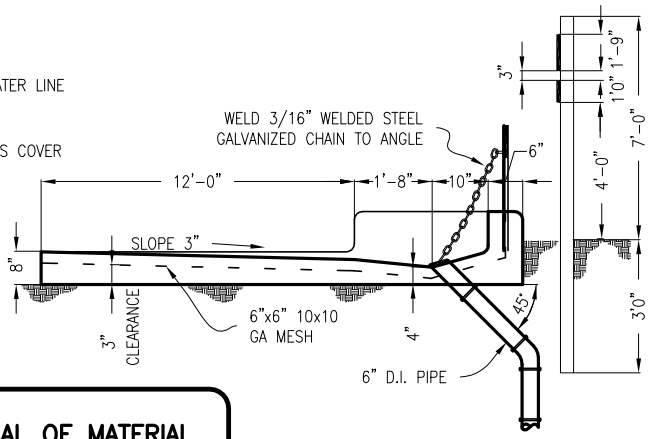
DRAWN BY J.C.

CHECKED BY K.G.

NO.114

9–15–99

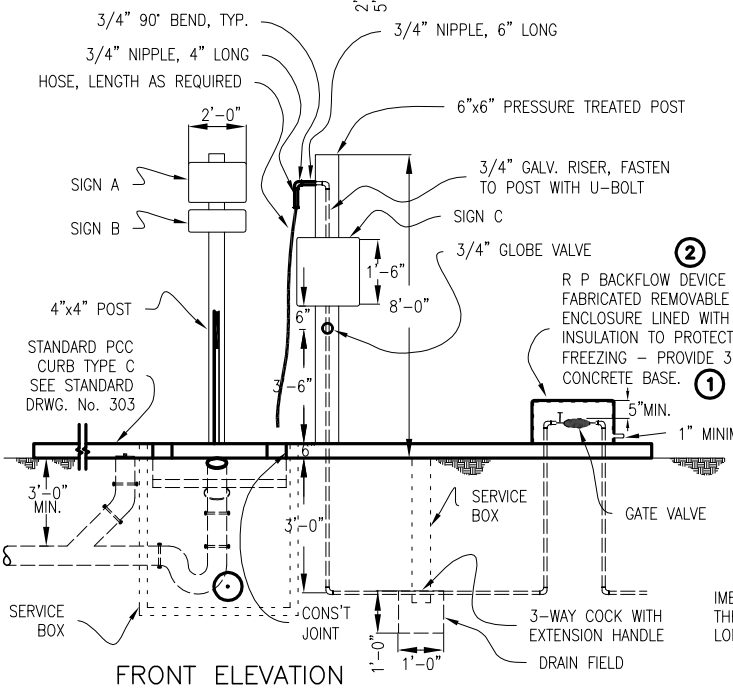




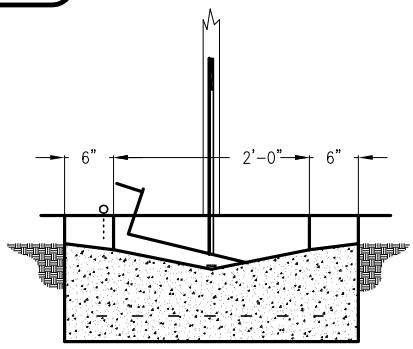
SECTION A–A

DISPOSAL OF MATERIAL OTHER THAN FROM SANITARY HOLDING TANKS IS PROHIBITED

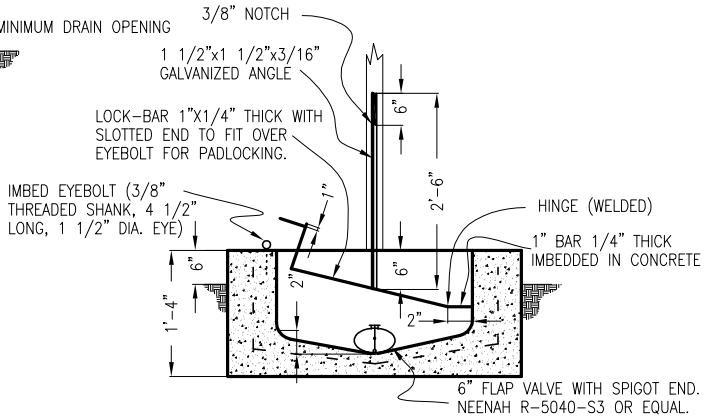
SIGN B



FRONT ELEVATION



SECTION B–B



SECTION C–C

HOLDING TANK DISPOSAL INSTRUCTIONS

1. CONNECT YOUR HOSE TO HOLDING TANK.
2. PLACE END SECURELY IN DRAIN OPENING AFTER LIFTING COVER.
3. OPEN TRAILER TANK DRAIN VALVE.
4. FLUSH AWAY ANY SPILLAGE ON CONCRETE INTO DRAIN.
5. CLOSE COVER.

SIGN A

DANGER

NON–POTABLE WATER

UNSAFE TO DRINK

SIGN C

⊙ PRIMED TRAP PER UPC.

② DEVICE SHALL BE TYPE APPROVED BY OREGON HEALTH DEPARTMENT.

① CENTER OF SLAB SHOULD BE LEFT OPEN TO ALLOW GROUND HEAT TO ENTER BOX.

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

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

TRAILER DUMP STATION

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

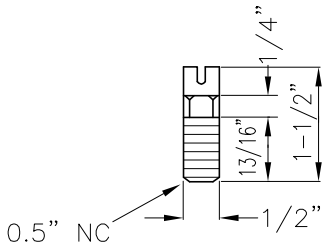
REVISION

DRAWN BY J.C.

CHECKED BY K.G.

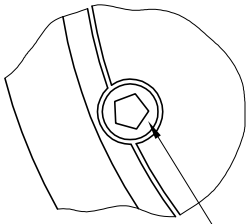
NO. 116

HEX FOR WRENCH OR SLOT
TOP FOR SCREWDRIVER



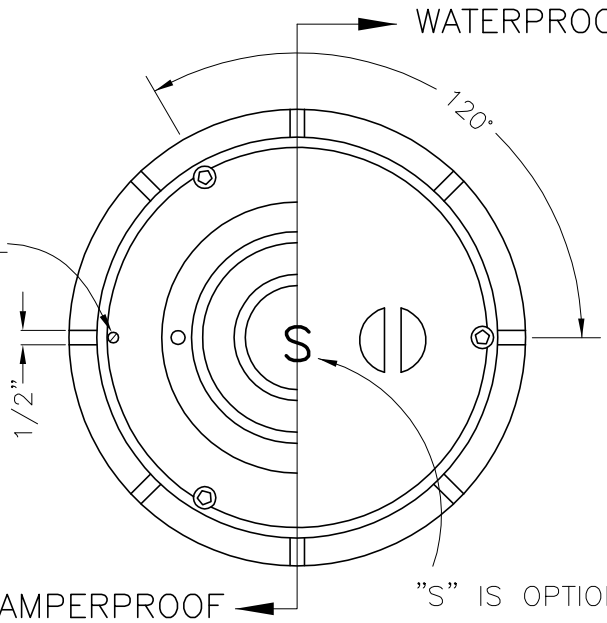
1 STUD REQUIRED PER COVER
STUD TO BE 60° COUNTER-
CLOCKWISE FROM A CAP SCREW.

STUD DETAIL

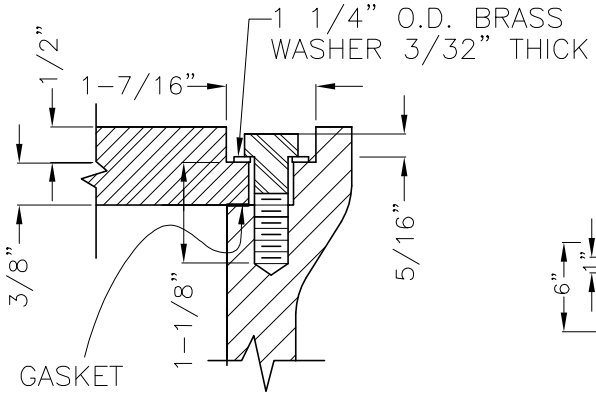


LOCATING STUD. DRILL
25/64" HOLE AND
TAP FOR 1/2" STUD
(SEE NOTE 3)

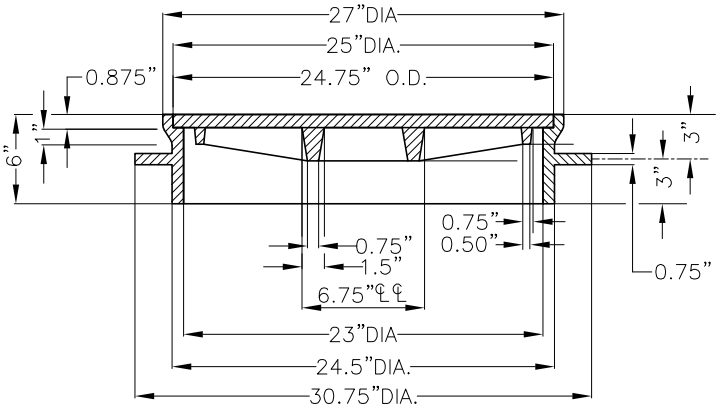
1/2"-13-1" LONG BRASS OR
BRONZE PENTAGON-HEAD CAP
SCREW



PLAN



X-SECTION



CAP SCREW DETAIL

NOTE:

1. BEARING SURFACES TO BE MACHINED.
2. COVER USED OUTSIDE VEHICLE TRAVELED AREAS SHALL BE ALUMINUM.
3. LOCATING STUD NOT REQUIRED WITH ALUMINUM LIDS.

Approved Karl O. Sprague 2-1-00
City Engineer Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

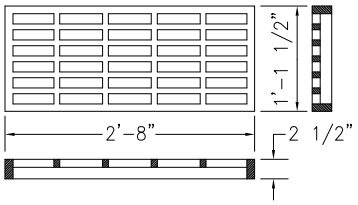
STANDARD PLAN
TAMPERPROOF/WATERPROOF MANHOLE FRAME AND COVER

DRAWN BY G.S.
CHECKED BY D.W.

NO.117

No.	Description	Date	By	Appr
	REVISED NOTES	1-00	I.D.F.	
	CONVERT TO CAD DWG.			

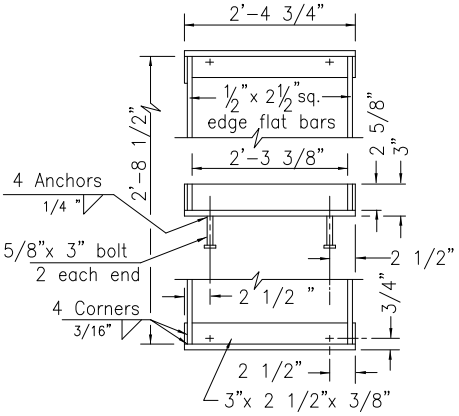
REVISION



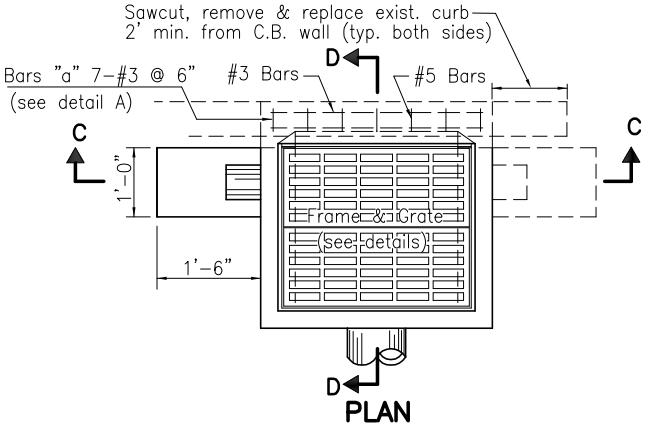
GRATE
NO SCALE

1.) Grates shall be ductile iron suitable for traffic loading as MFD. BY INLAND FOUNDRY.

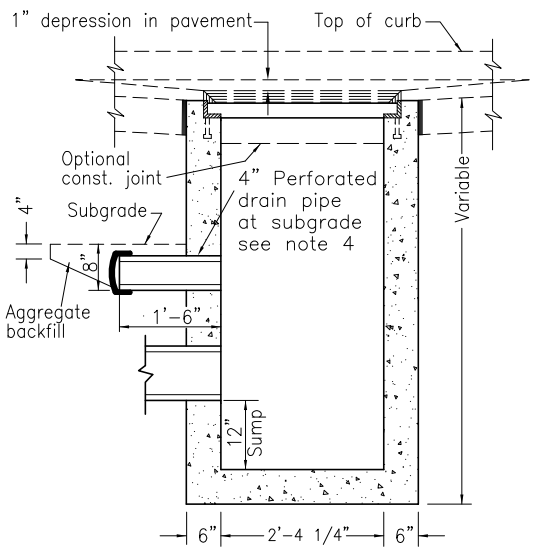
2.) 2 Grates required for each C.B.



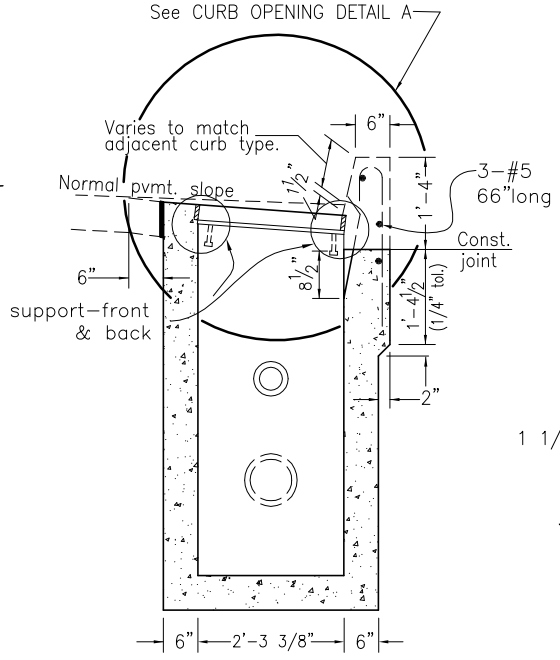
FRAME
NO SCALE



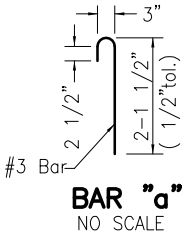
PLAN



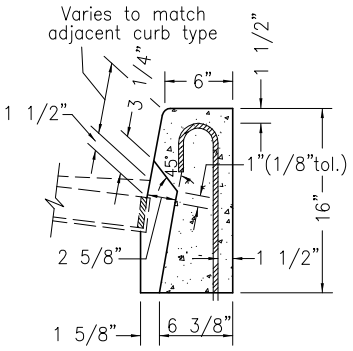
SECTION C-C



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. Brooks City Engineer 3-1-02 Date

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

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

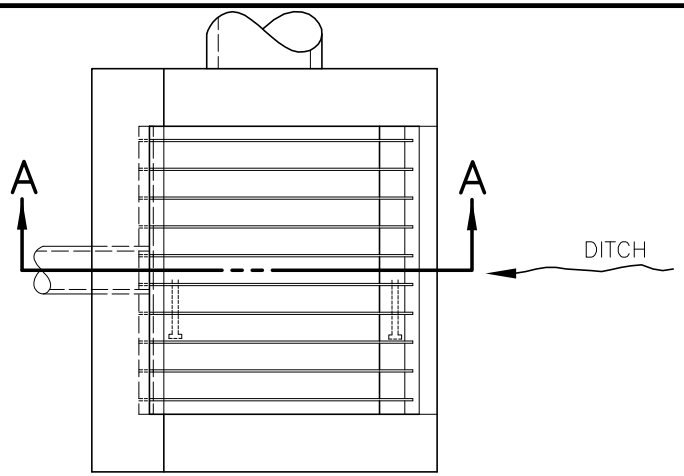
TYPE 2 CATCH BASIN

DRAWN BY GS

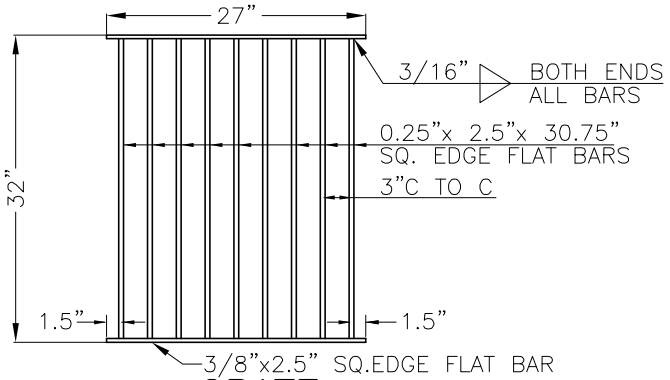
CHECKED BY D.W.

NO.201

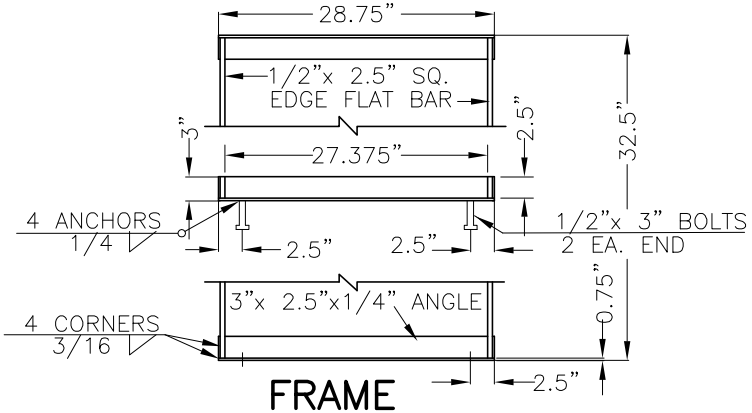
D:\IDF\STDPLANS\Std201.dwg 01/31/02 02:00:46 PM PST



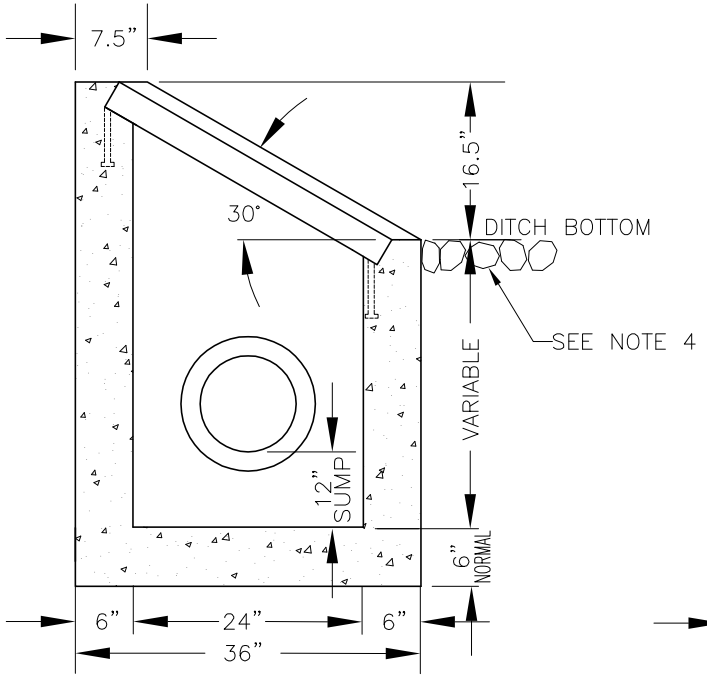
PLAN



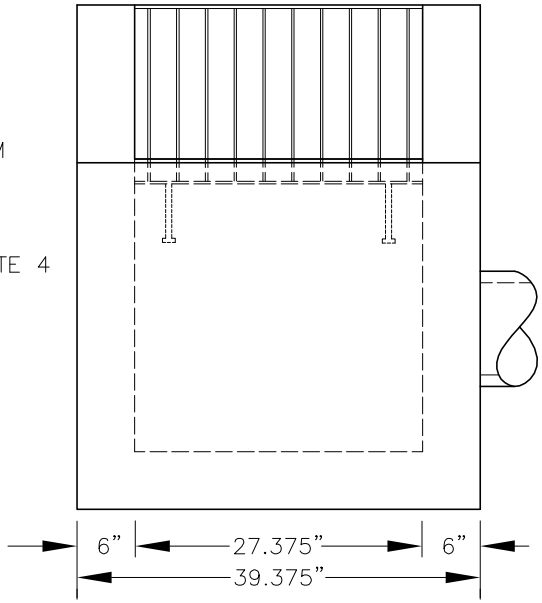
GRATE



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. Goetzinger 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

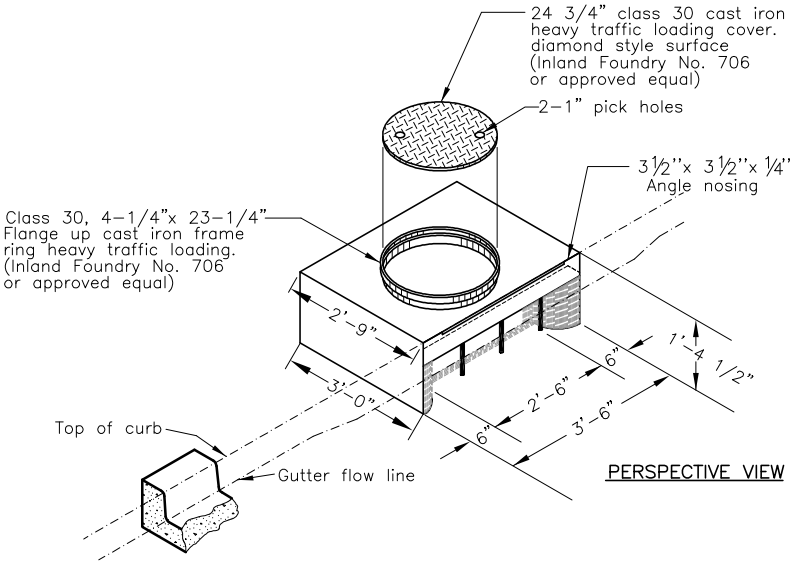
DRAWN BY GS

CHECKED BY D.W.

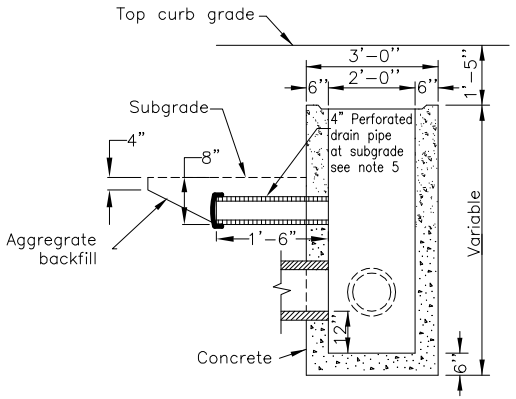
NO.202

NOTE:

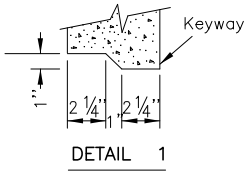
1. Concrete shall attain a strength of 3300 p.s.i. in 20 days.
2. Top shall be reinforced with 4''x4''–6–6 wire mesh.
3. All metal parts shall be hot dipped galvanized after fabrication.
4. Cover shall be ASTM A–48 Class 30 cast iron.
5. Drain shall be P.V.C. (Schedule 40) with cap. Drain Pipe shall 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.



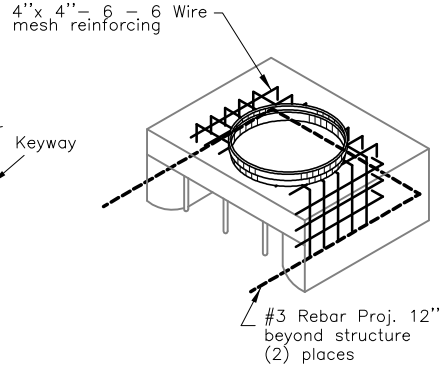
PERSPECTIVE VIEW



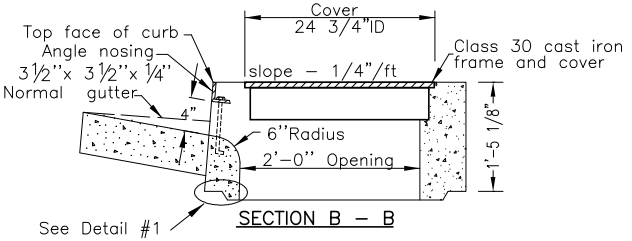
SECTION C – C



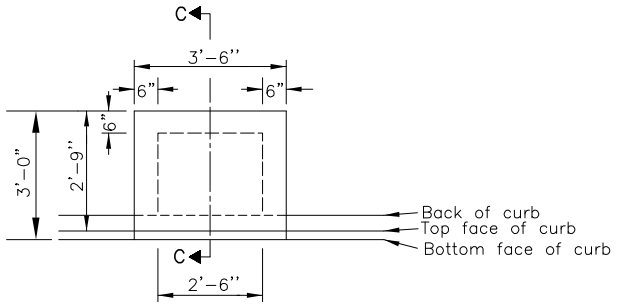
DETAIL 1



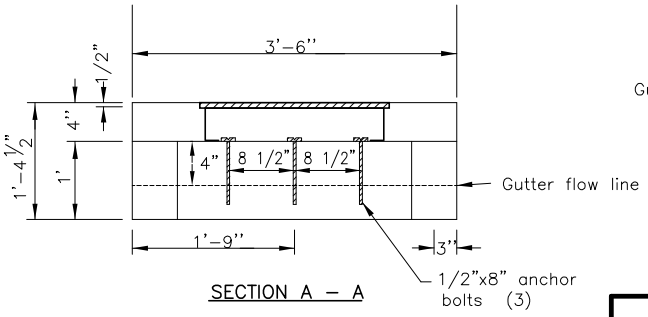
REINFORCING STEEL DETAIL



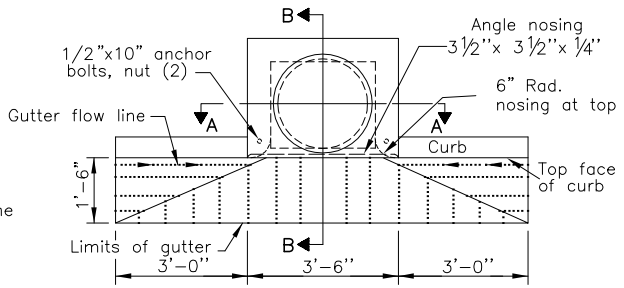
SECTION B – B



PLAN BASE SECTION



SECTION A – A



PLAN TOP SECTION

Approved Karl O. Boucher City Engineer 9–15–99 Date

NO SCALE

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

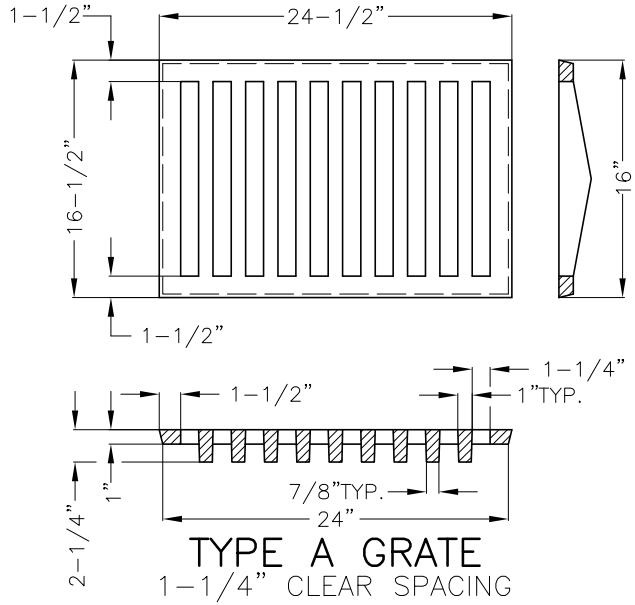
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

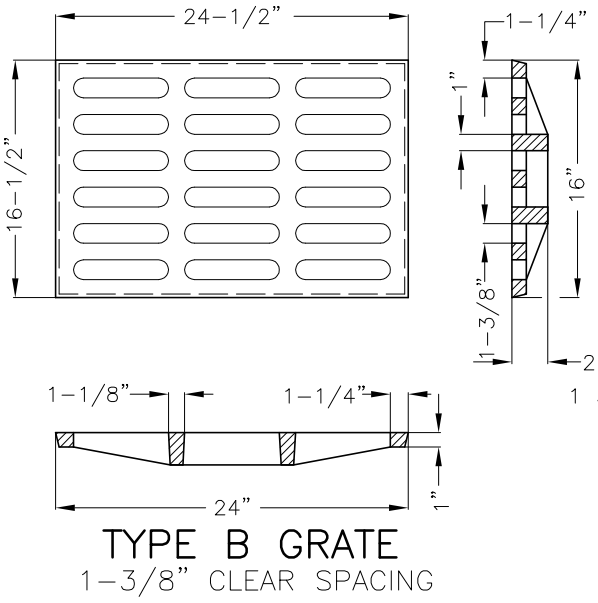
STANDARD PLAN
TYPE 4 CATCHBASIN

DRAWN BY GS
CHECKED BY D.W.

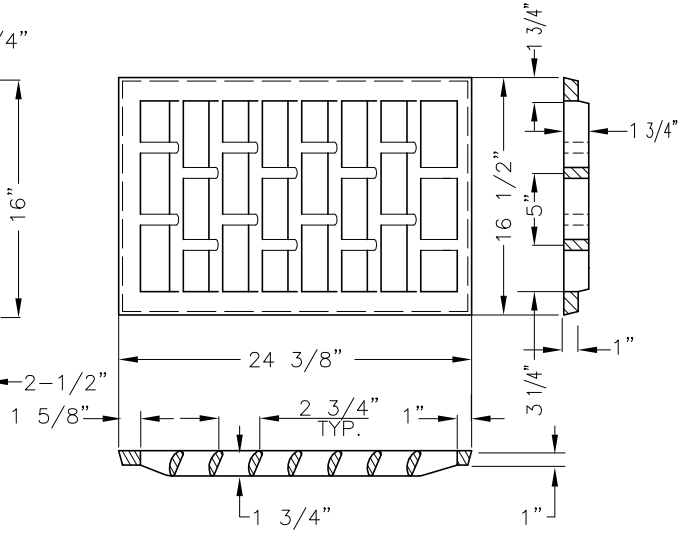
NO.203



TYPE A GRATE
1-1/4" CLEAR SPACING

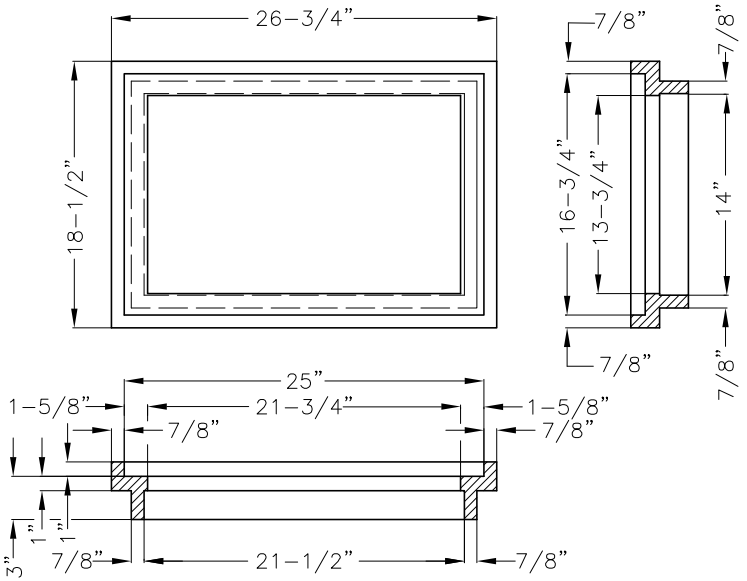


TYPE B GRATE
1-3/8" CLEAR SPACING



VANED GRATE
1-3/8" CLEAR SPACING

GRATE DETAILS



GRATE FRAME 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.

Approved Karl O. Gentzler, City Engineer — 9-15-99, Date

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

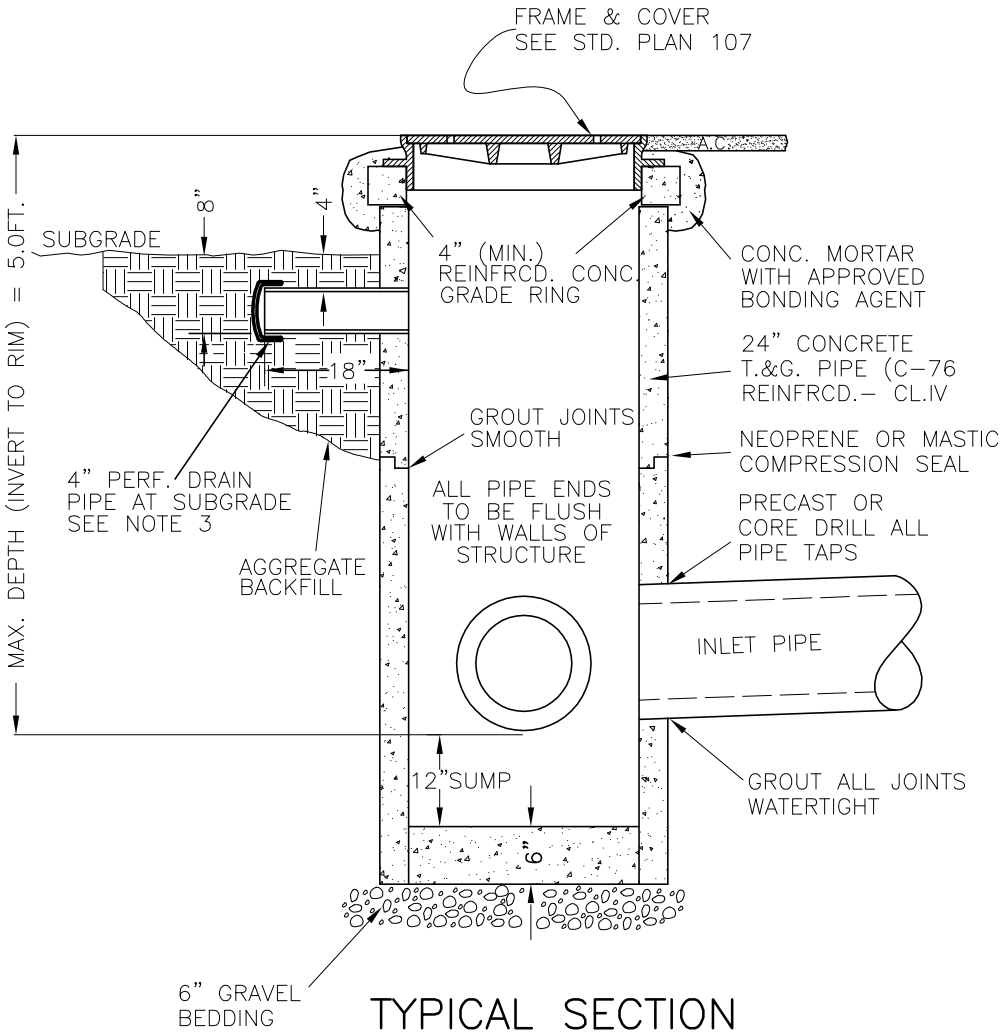
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

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

DRAWN BY GS, SP
CHECKED BY D.W.

NO.204



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. Gerber City Engineer 9-15-99 Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

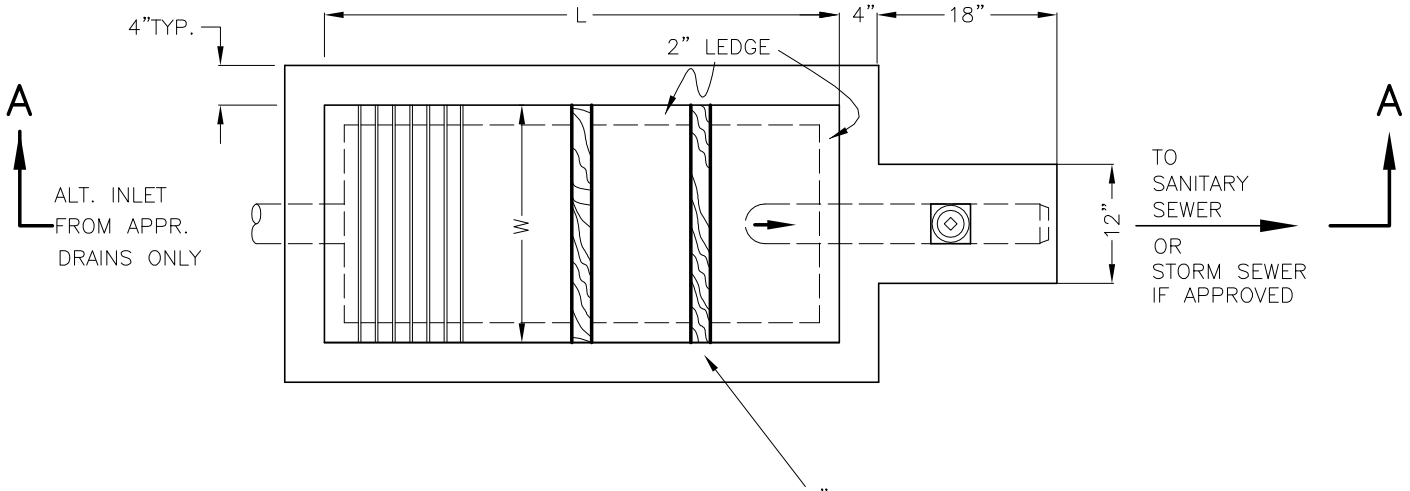
STANDARD PLAN
ROUND CLEANOUT

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

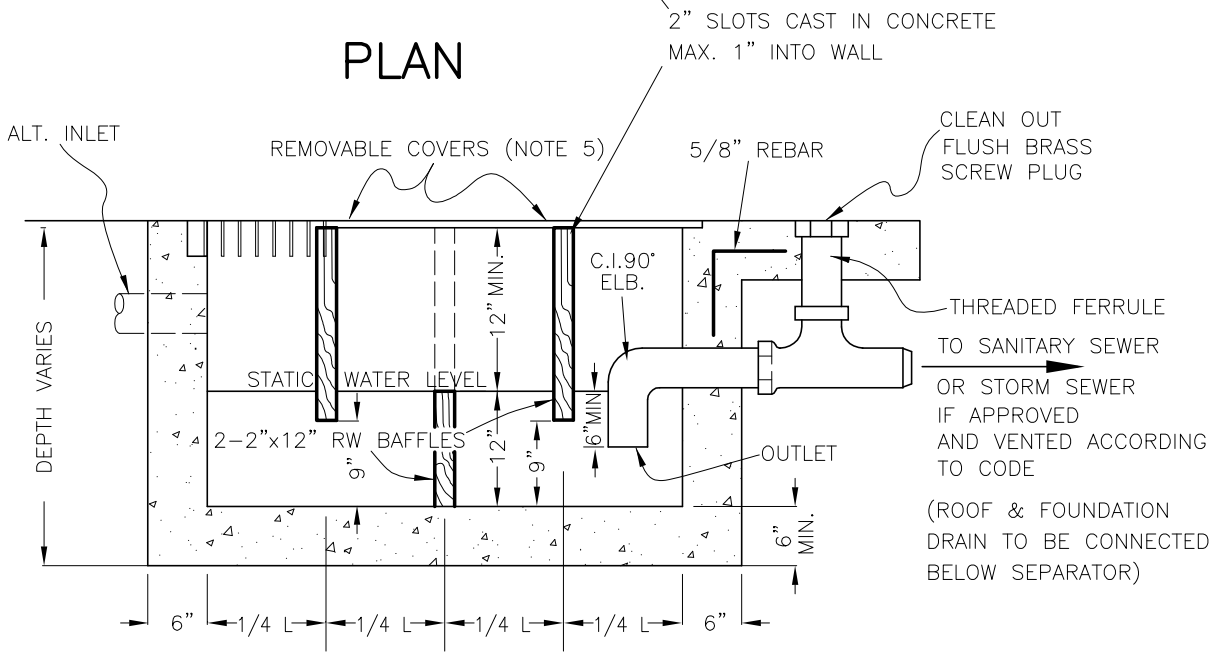
REVISION

DRAWN BY GS
CHECKED BY D.W.

NO.205



PLAN



SECTION A–A

TANK SIZE FOR
DIFFERENT INFLOWS
(GALLONS/DAY)

GPD	L	W	1" THICKNESS (NOTE #5) 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 COMMERCIALLY SUCH AS THE 'UTILITY VAULT' 660 SERIES, OR APPROVED EQUAL, MAY BE USED.

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

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

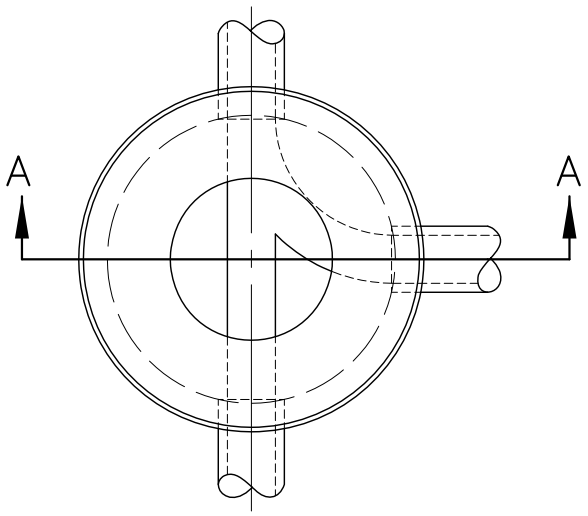
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
SAND AND OIL/WATER SEPARATOR

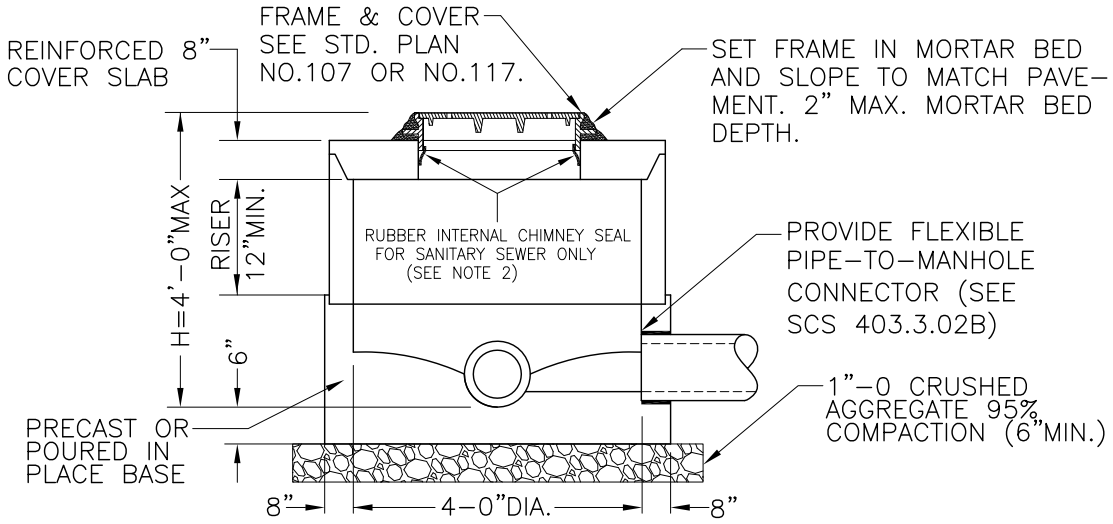
DRAWN BY GS
CHECKED BY KG

NO.209



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. Koerner, City Engineer — 3–1–02, Date

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		

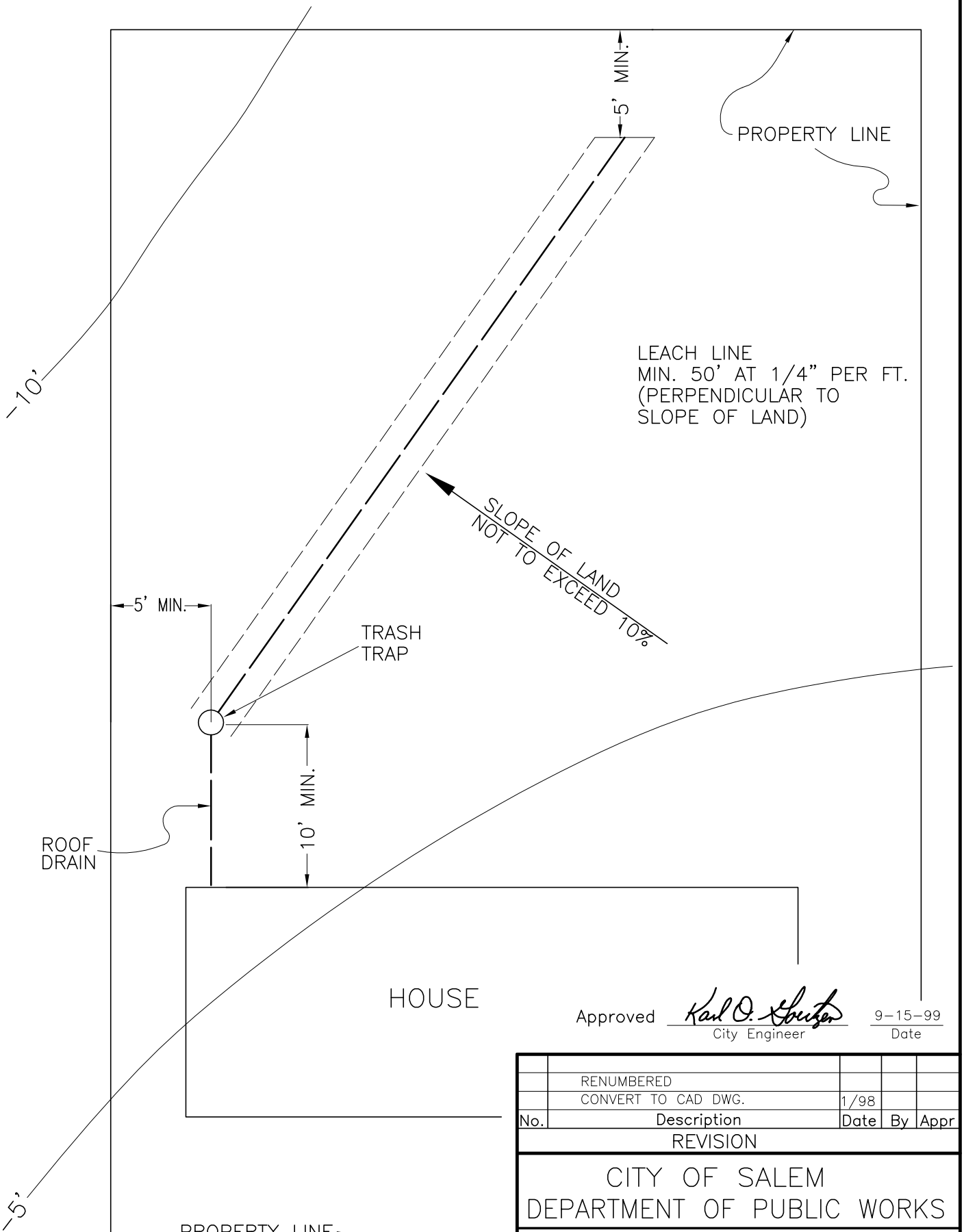
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

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

DRAWN BY GS
CHECKED BY D.W.

NO.211



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

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

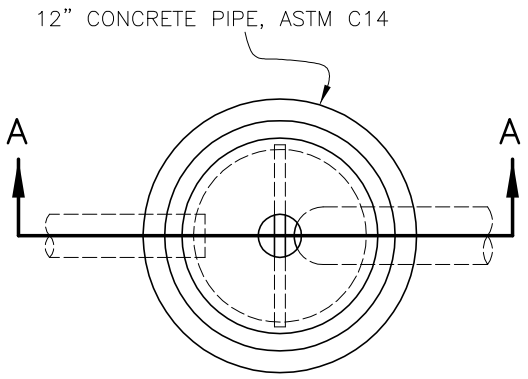
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

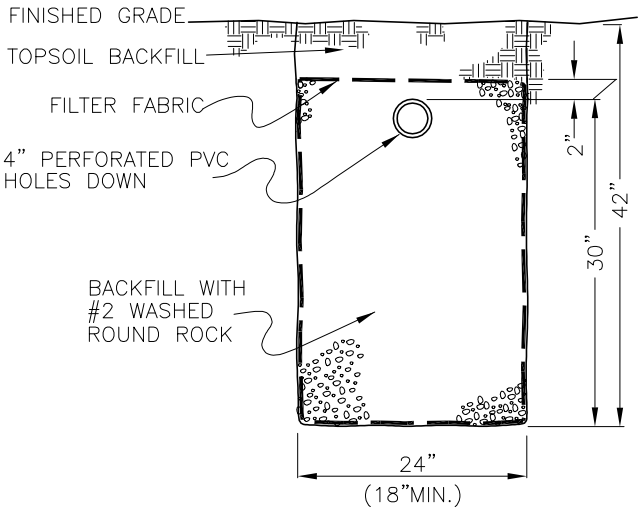
STANDARD PLAN
TRASH TRAP AND LEACH LINE PLAN

DRAWN BY GS
CHECKED BY D.W.

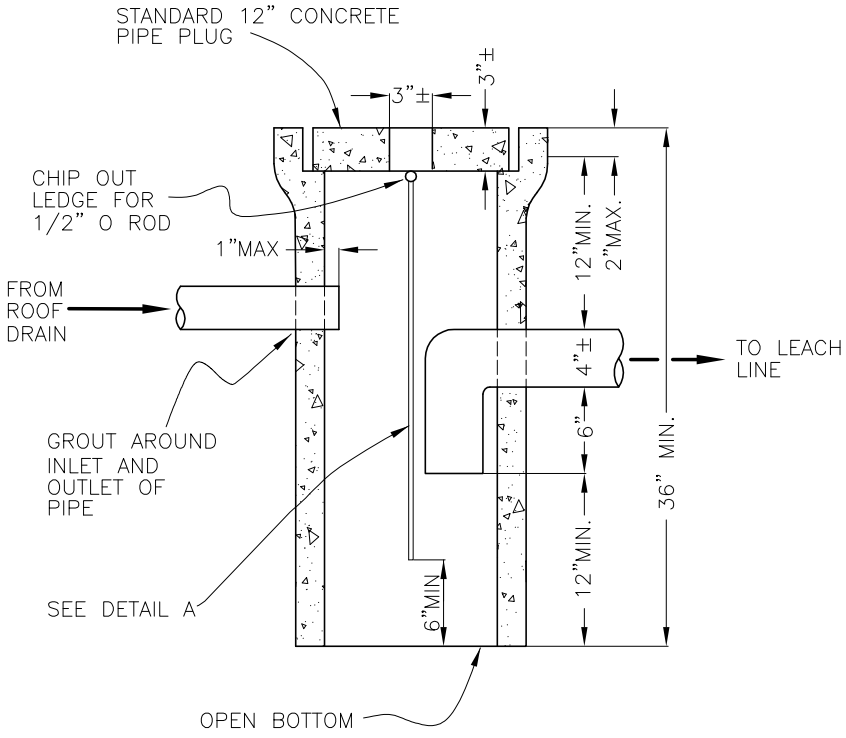
NO.212



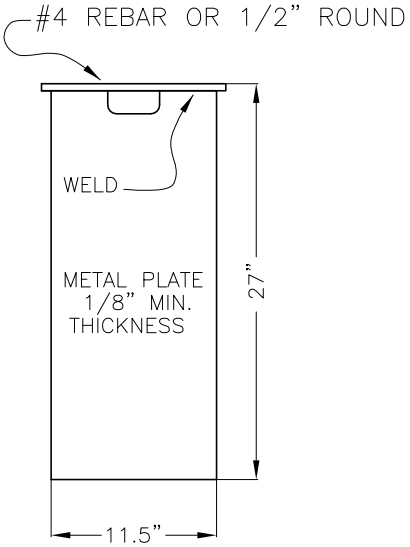
TRASH TRAP



TYPICAL SECTION LEACH LINE



SECTION A–A



DETAIL A

NOTES

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

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

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

REVISION

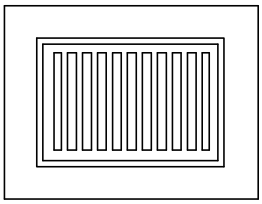
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TRASH TRAP AND
LEACH LINE DETAILS

DRAWN BY GS

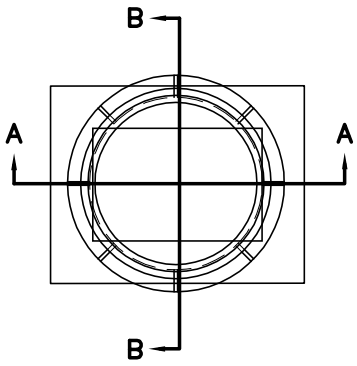
CHECKED BY D.W.

NO.213



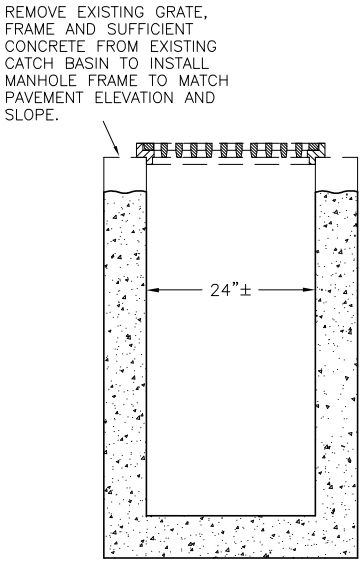
TOP VIEW

NO SCALE:



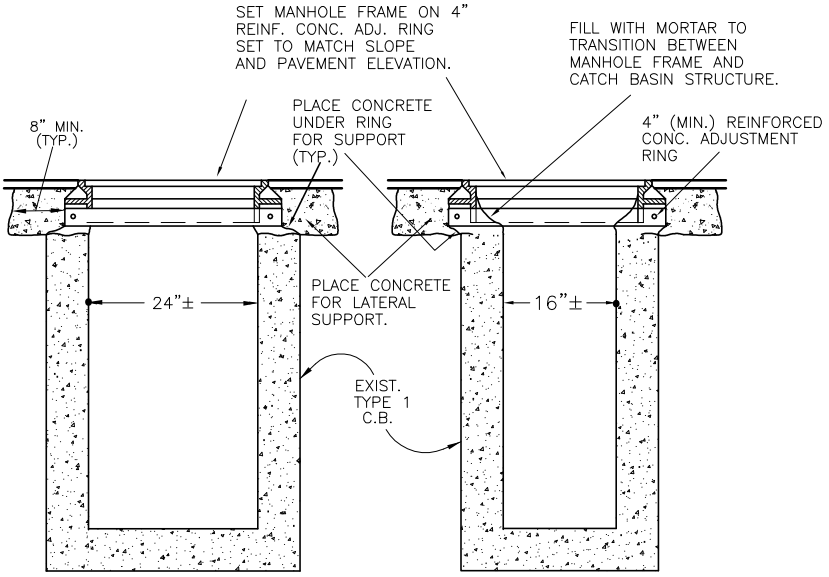
TOP VIEW

NO SCALE:



EXISTING CATCH BASIN TYPE I

NO SCALE:



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. Gruber 9-15-99

City Engineer Date

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

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

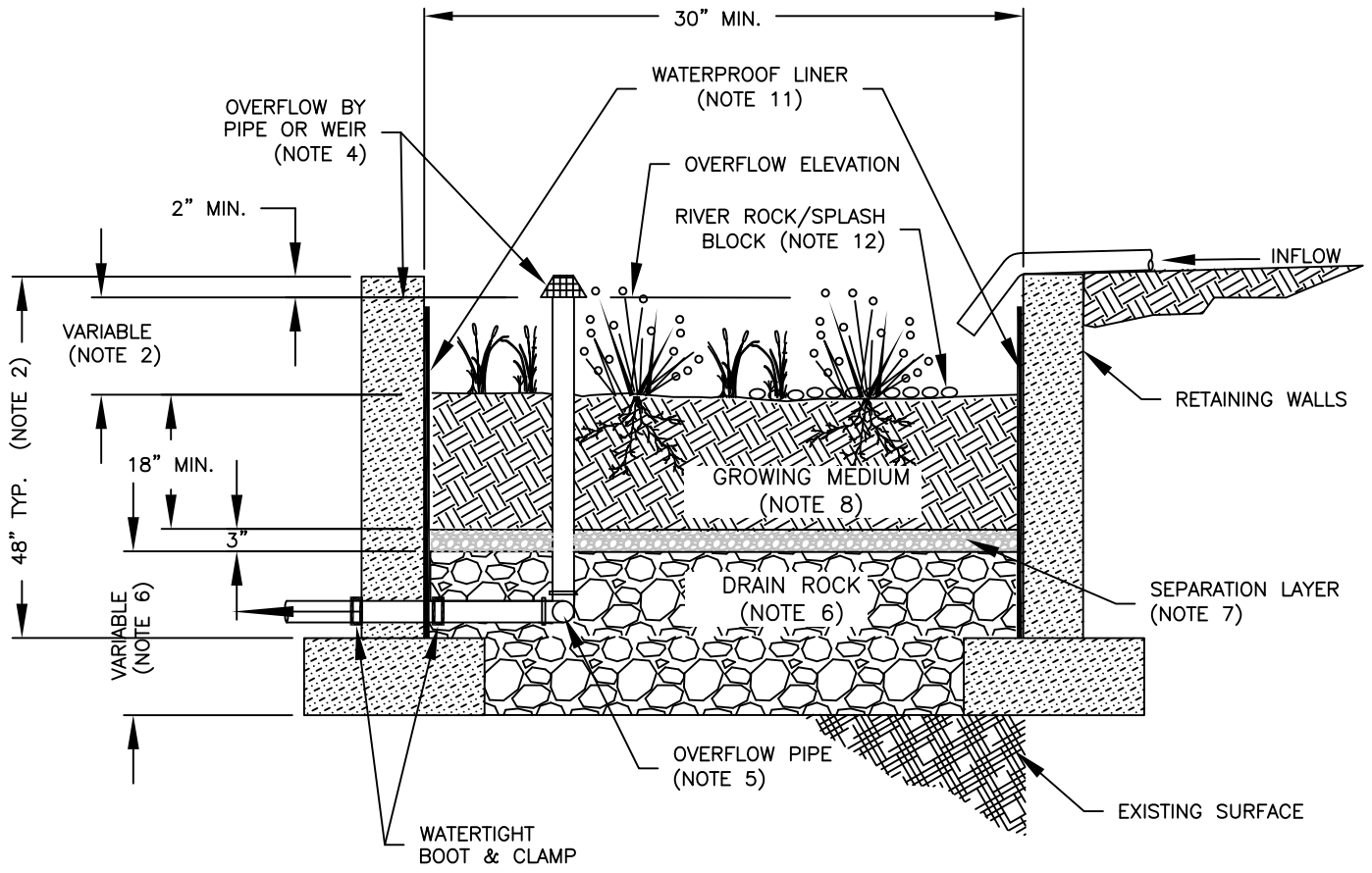
STANDARD PLAN

CLEANOUT
COVER CONVERSION

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. ½"–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 ¾"–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

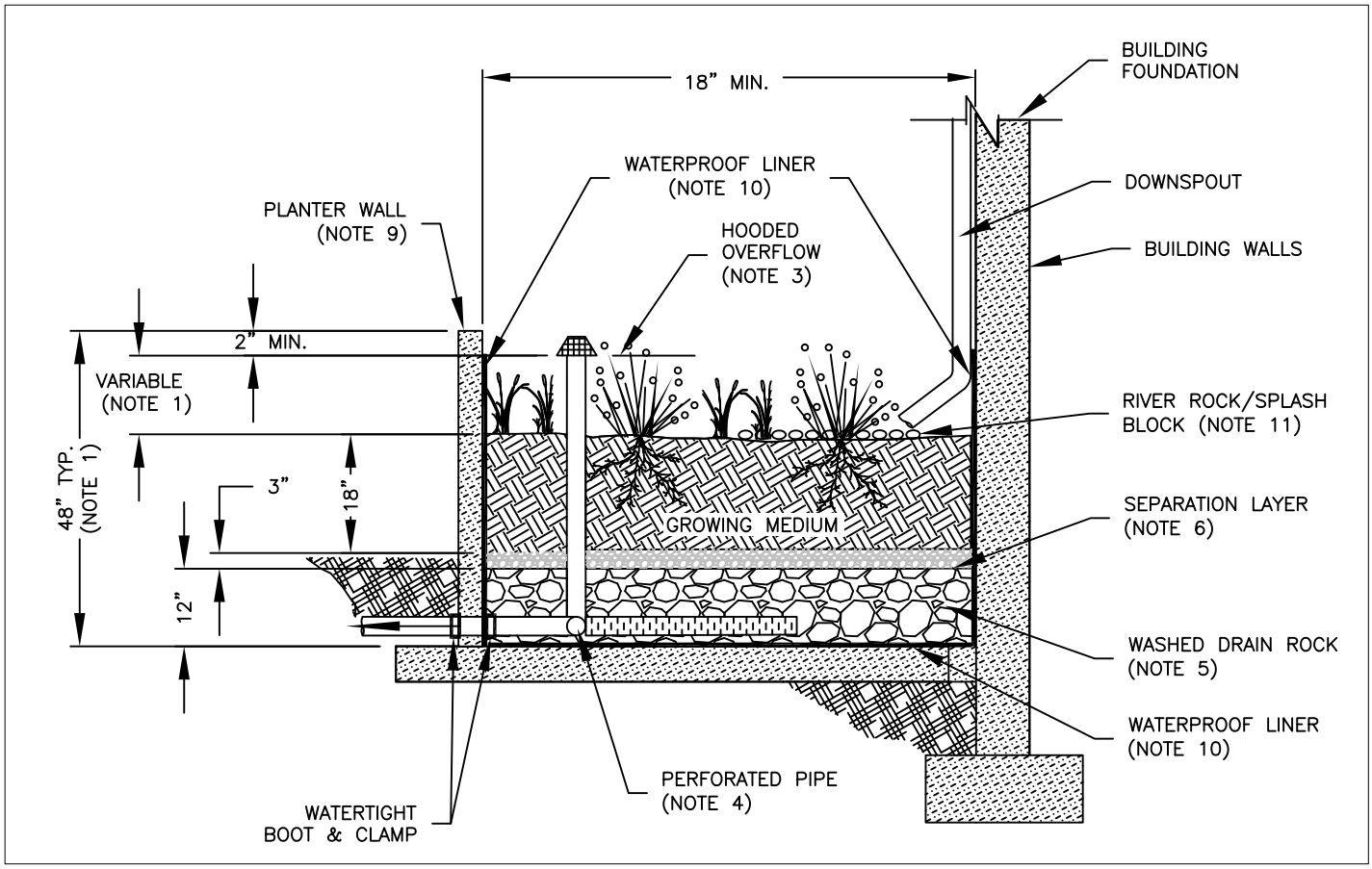
11. WATERPROOF LINER:
   A.WATERPROOF LINER SHALL BE 30 MIL PVC, HDPE OR EQUIVALENT
   B. A WATERPROOF LINER IS NOT REQUIRED IF THE FOUNDATION OR WALL MATERIAL IS WATERPROOF REINFORCED CONCRETE OR APPROVED EQUAL

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	James L. Sprent CITY ENGINEER	1/01/14 DATE	DRAWN BY	KAK	12/2013	NO. 215
			CHECKED BY	KLR	12/2013	



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 ½"–¾" WASHED AGGREGATE WITH 40% VOIDS
   B. DEPTH: 12 INCHES

6. SEPARATION BETWEEN DRAIN ROCK AND GROWING MEDIUM SHALL BE A 3" LAYER OF ¾"–¼" 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

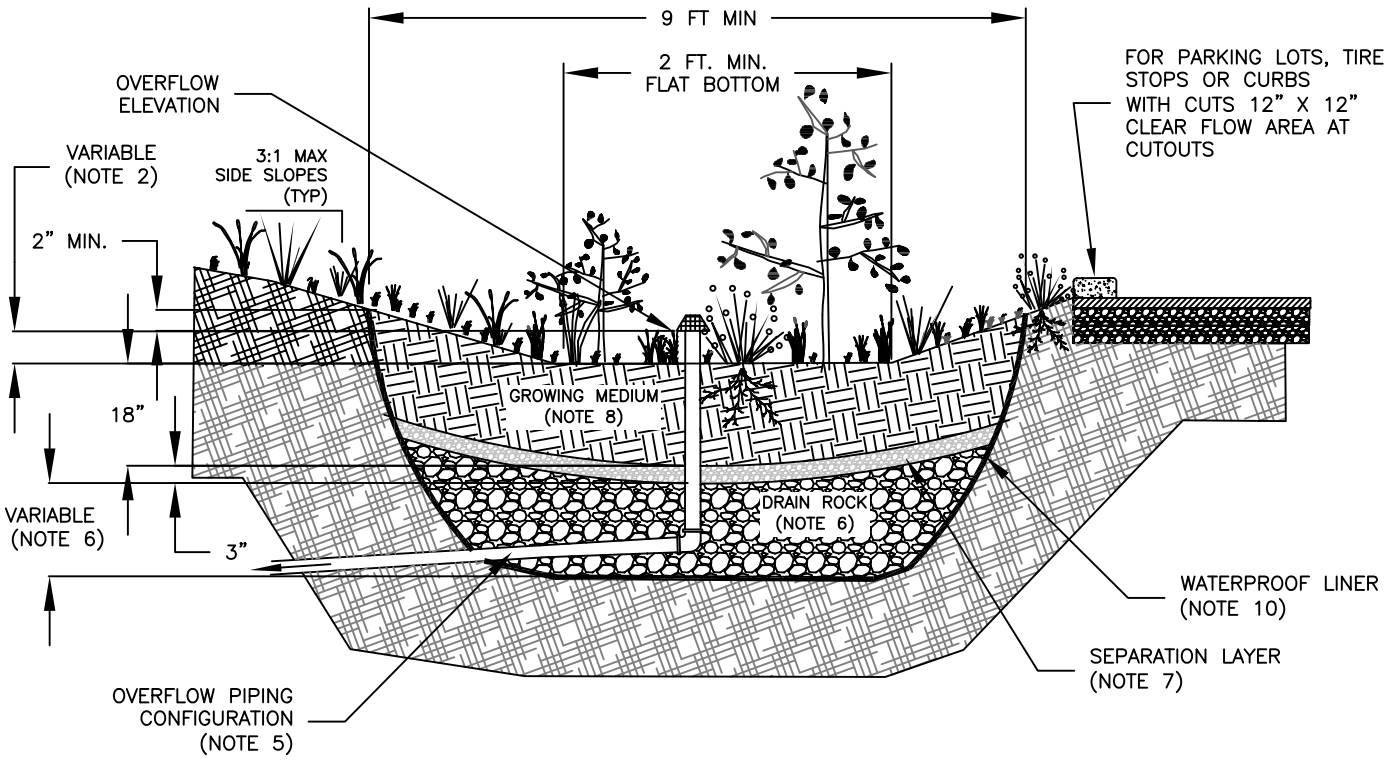
10. WATERPROOF LINER: WATERPROOF LINER SHALL BE 30 mil PVC, HDPE OR EQUIVALENT. WATERPROOF LINER IS NOT REQUIRED IF THE FOUNDATION AND WALL MATERIAL IS WATERPROOF REINFORCED CONCRETE OR APPROVED EQUAL

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	James L. Sprint	1/01/14	DRAWN BY	KAK	12/2013	NO. 216
	CITY ENGINEER	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 ½"–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 ¾"–¼" 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.

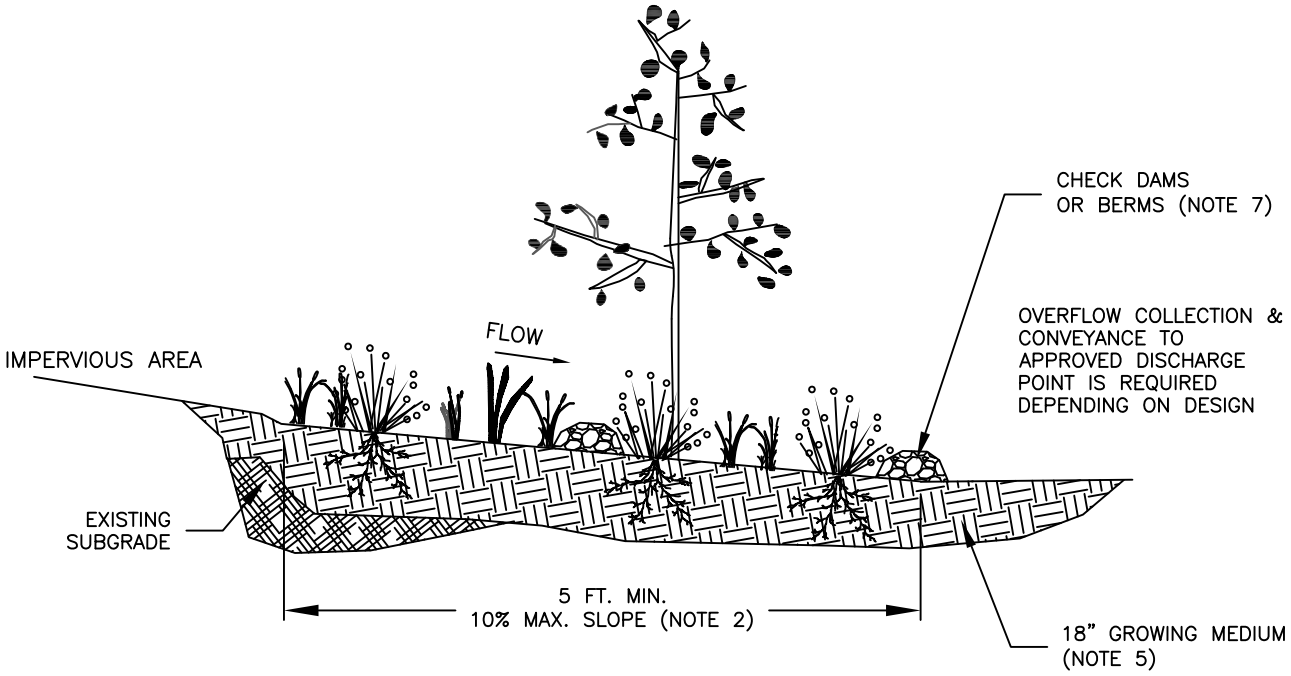
10. FOR FILTRATION RAIN GARDEN INSTALL 30 mil. PVC, HDPE OR EQUIVALENT WATERPROOF LINER(SEE STANDARD PLAN #221).

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	James L. Sprent	1/01/14	DRAWN BY	KAK	12/2013	**NO. 217**
	CITY ENGINEER	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. 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.

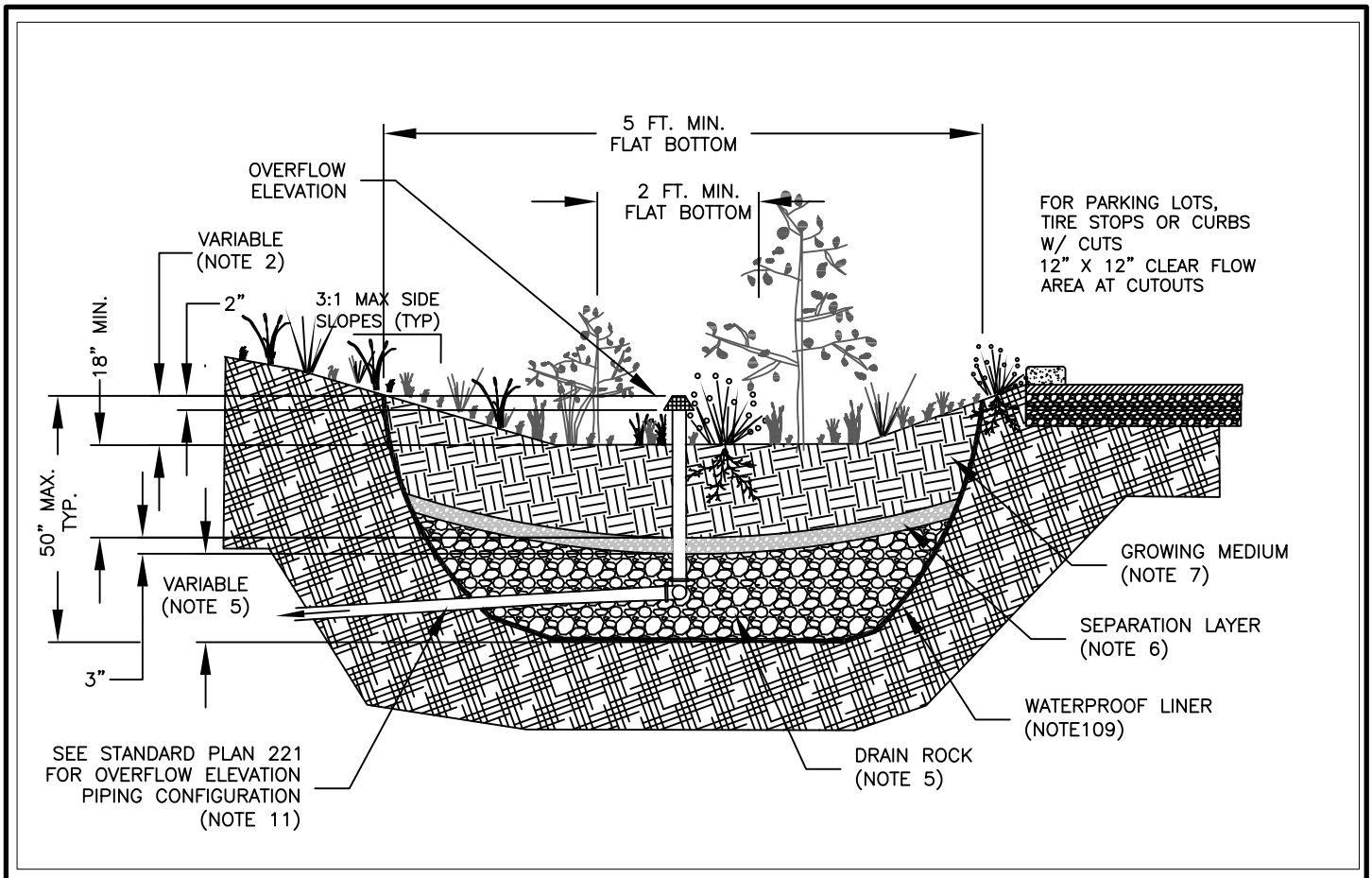
6. VEGETATION: PER PLANS OR SEE DESIGN STANDARDS FOR REQUIREMENTS.

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	James L. Sweet	1/01/14	DRAWN BY	KAK	12/2013	**NO. 218**
	CITY ENGINEER	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 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

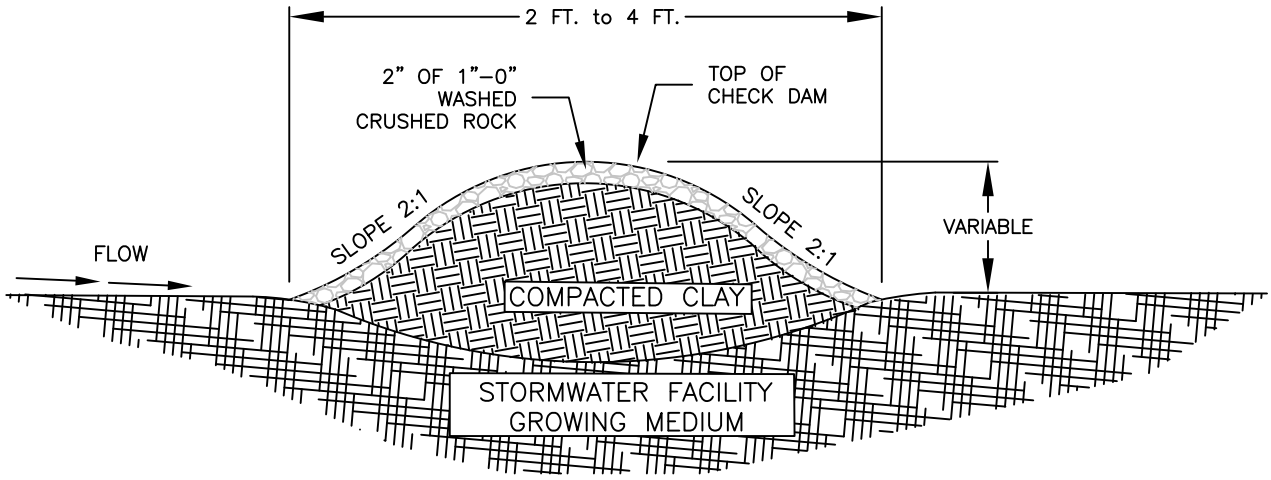
10. ALONG STREETS: PROTECT SUBGRADE WITHWATERPROOF LINER (30 mil. PVC OR EQUAL) ALONG STREET EDGE TO BOTTOM OF SWALE. SEE STANDARD PLAN 233

11. PIPING:
    SEE STANDARD PLAN 221

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
COMBINATION SWALE

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:

1. CHECK DAMS TO BE EVENLY SPACED BETWEEN INLET AND OUTLET. ADDITIONAL REQUIREMENTS MAY BE NECESSARY ON STEEP SLOPES

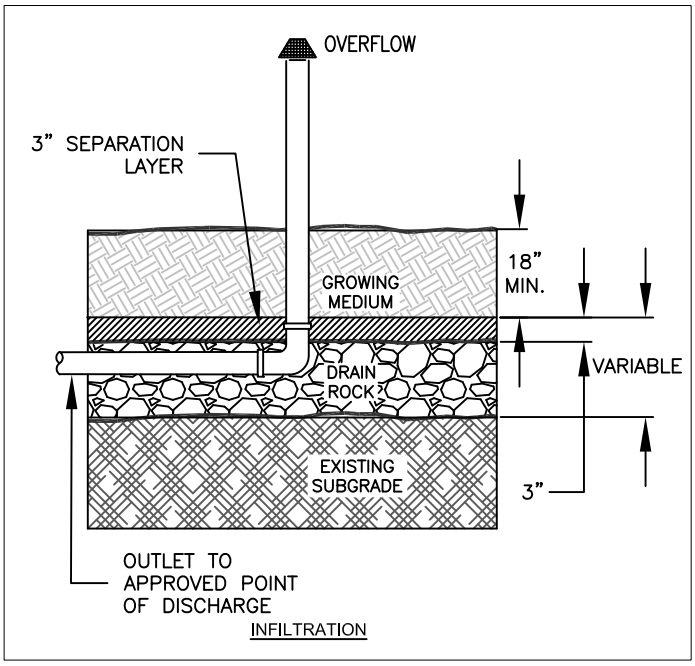
2. ADDITIONAL INLETS TO BE PLACED DIRECTLY DOWNSTREAM OF CHECK DAMS

3. TOP OF CHECK DAM TO BE 1" BELOW GUTTER ELEVATION AT INLET (AT CURB LINE) BUT NOT GREATER THAN 2" BELOW TOP OF CURB

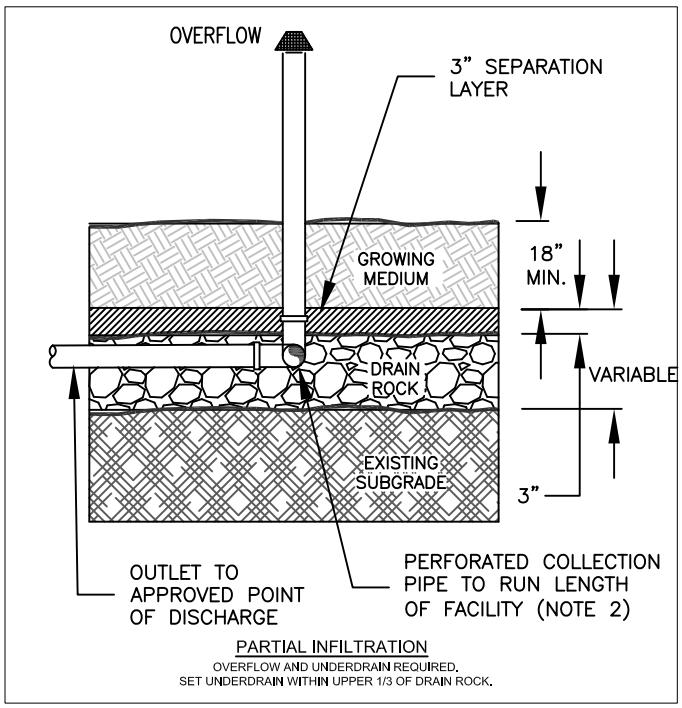
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
CHECK DAM DETAILS

APPROVED	CITY ENGINEER	1/01/14	DRAWN BY	KAK	12/2013	**NO. 220**
		DATE	CHECKED BY	KR	12/2013	

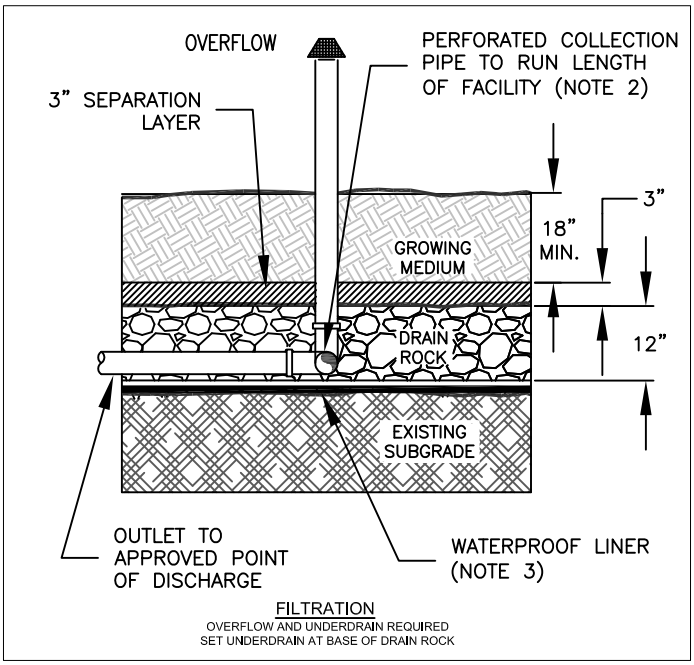


INFILTRATION



PARTIAL INFILTRATION

OVERFLOW AND UNDERDRAIN REQUIRED.
SET UNDERDRAIN WITHIN UPPER 1/3 OF DRAIN ROCK.



FILTRATION

OVERFLOW AND UNDERDRAIN REQUIRED
SET UNDERDRAIN AT BASE OF DRAIN ROCK

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

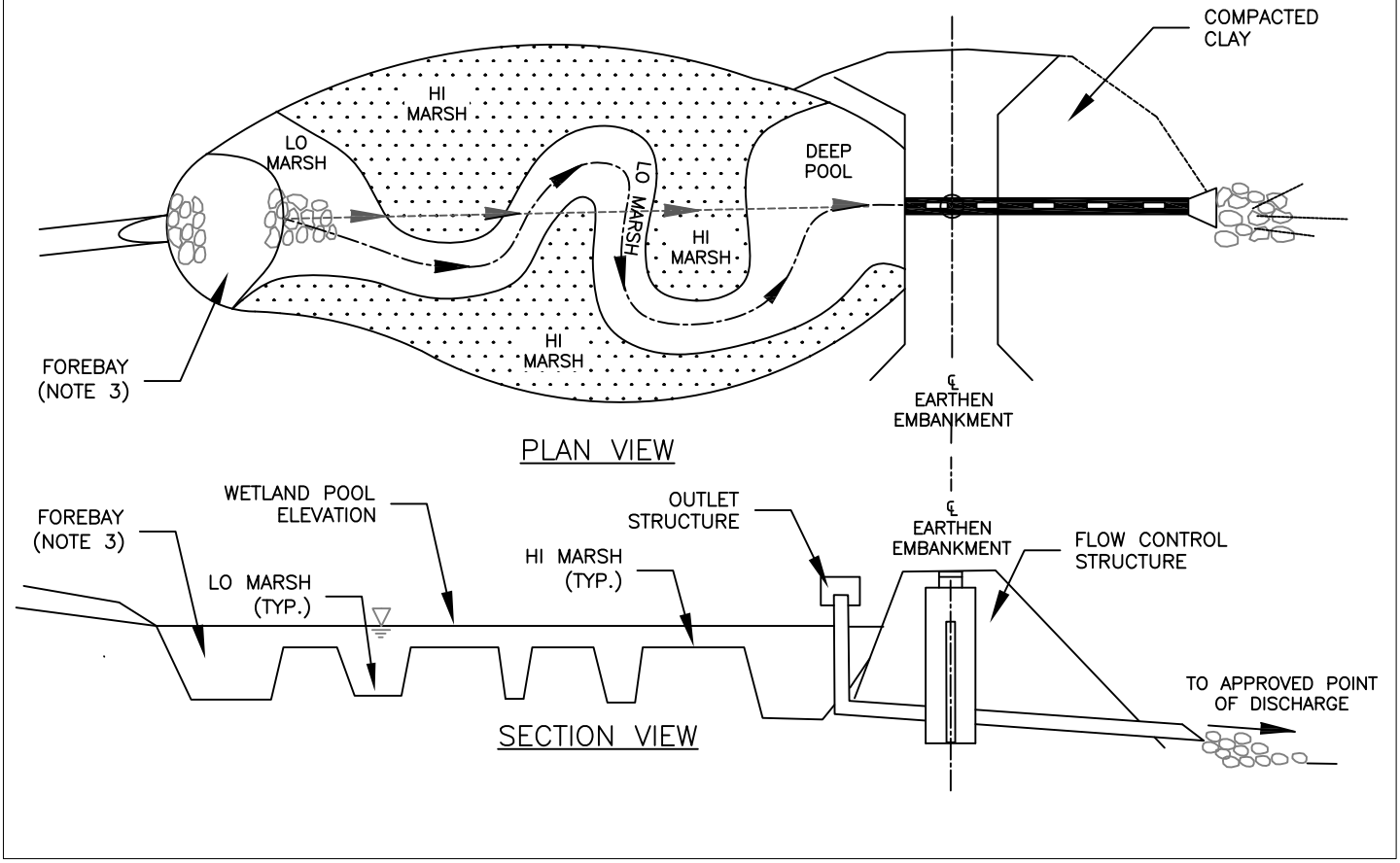
   B. OVERFLOW PIPING: SHALL BE ABS SCH. 40, CAST IRON, OR PVC SCH. 40 AND SHALL NOT BE PERFORATED. MINIMUM DIAMETER IS 6" FOR PRIVATE, AND 10" FOR PUBLIC MAINTAINED FACILITIES. PIPING MUST HAVE 1% GRADE AND FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND

3. WATERPROOF LINER: SHALL BE 30 mil. PVC OR EQUAL

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
FACILITY OVERFLOW CONFIGURATIONS

APPROVED	James L. Sprent	1/01/14	DRAWN BY	KAK	12/2013	**NO. 221**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



NOTES:

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

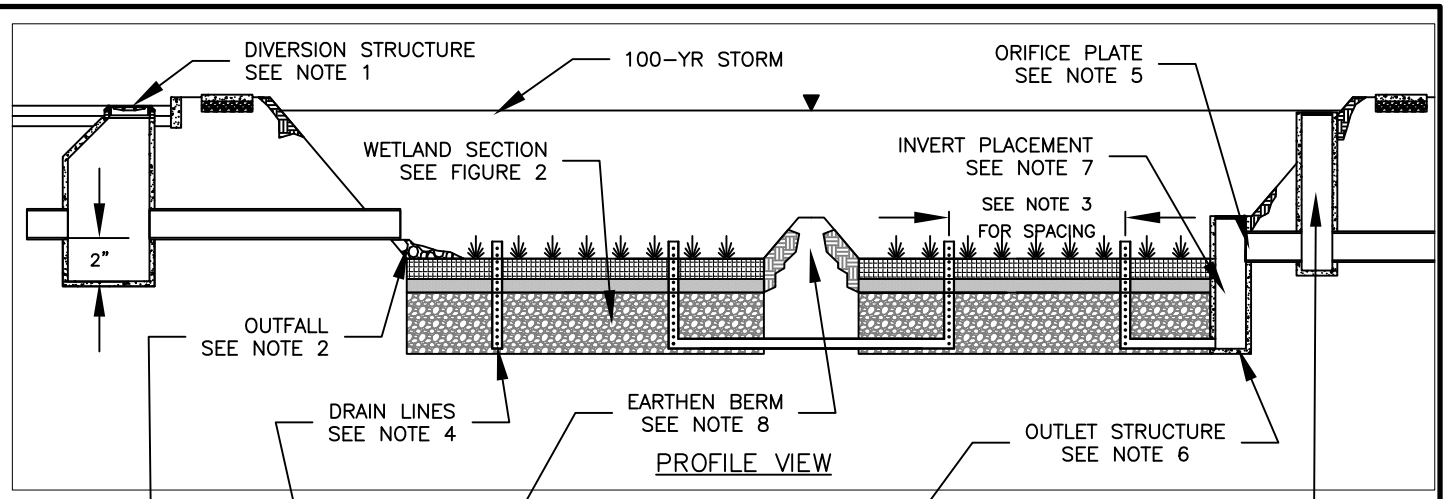
3. FOREBAY:
   A. THE FOREBAY AREA SHALL BE INSTALLED AT ALL POINTS TO CAPTURE SEDIMENT. THE FOREBAY SHALL HAVE A WATER DEPTH OF APPROXIMATELY 3 FEET AND HAVE AT LEAST 10% AND UP TO 25% OF THE TOTAL TREATMENT WETLAND VOLUME. AN ADDITIONAL 0.5 FEET OF DEPTH WILL BE PROVIDED FOR SEDIMENT ACCUMULATION

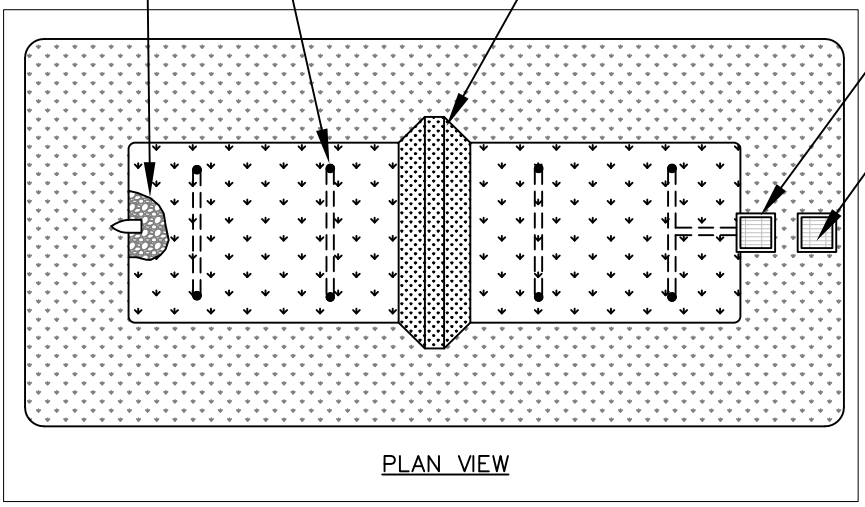
4. SETBACKS:
   A. FROM PROPERTY LINES PER DESIGN STANDARDS
   B. 10 FEET FROM BUILDING FOUNDATIONS
   C. FROM DOWNSTREAM SLOPES:
      1) MINIMUM OF 100 FEET FROM SLOPES OF 10%; ADD 5 FEET OF SETBACK FOR EACH ADDITIONAL PERCENT OF SLOPE UP TO 30%
      2) 200 FEET OF SETBACK FOR SLOPES OF 30%;
    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

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TREATMENT WETLAND

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





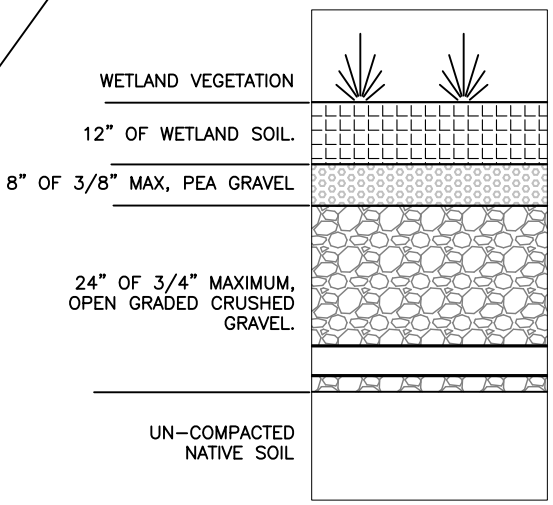


FIGURE 2

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

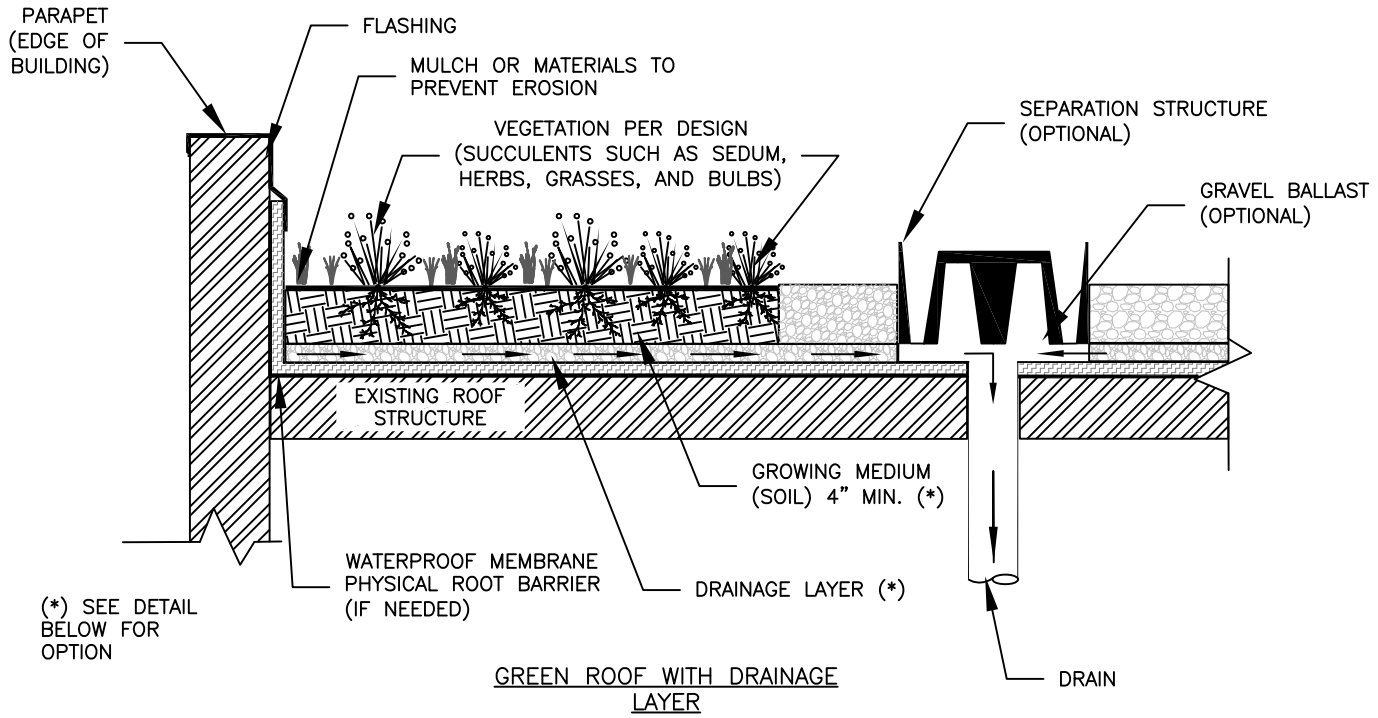
8. AN EARTHEN BERM SHALL BE CONSTRUCTED BETWEEN THE TWO BAYS. THE TOP OF THE EARTHEN BERM SHALL BE THE SAME ELEVATION AS THE ELEVATION OF THE FIRST OUTLET STRUCTURE'S GRATE ELEVATION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

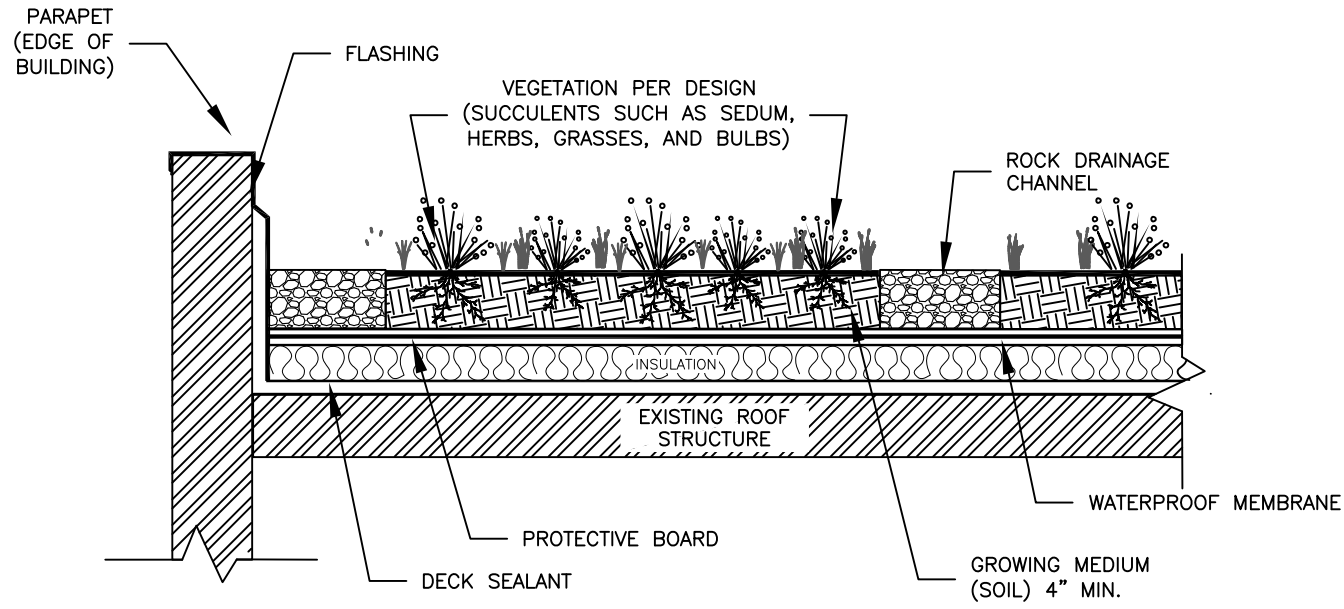
STANDARD PLAN

SUBSURFACE GRAVEL WETLAND

APPROVED	James L. Sweet	1/01/14	DRAWN BY	CL	12/2013	**NO. 223**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



GREEN ROOF WITH DRAINAGE LAYER

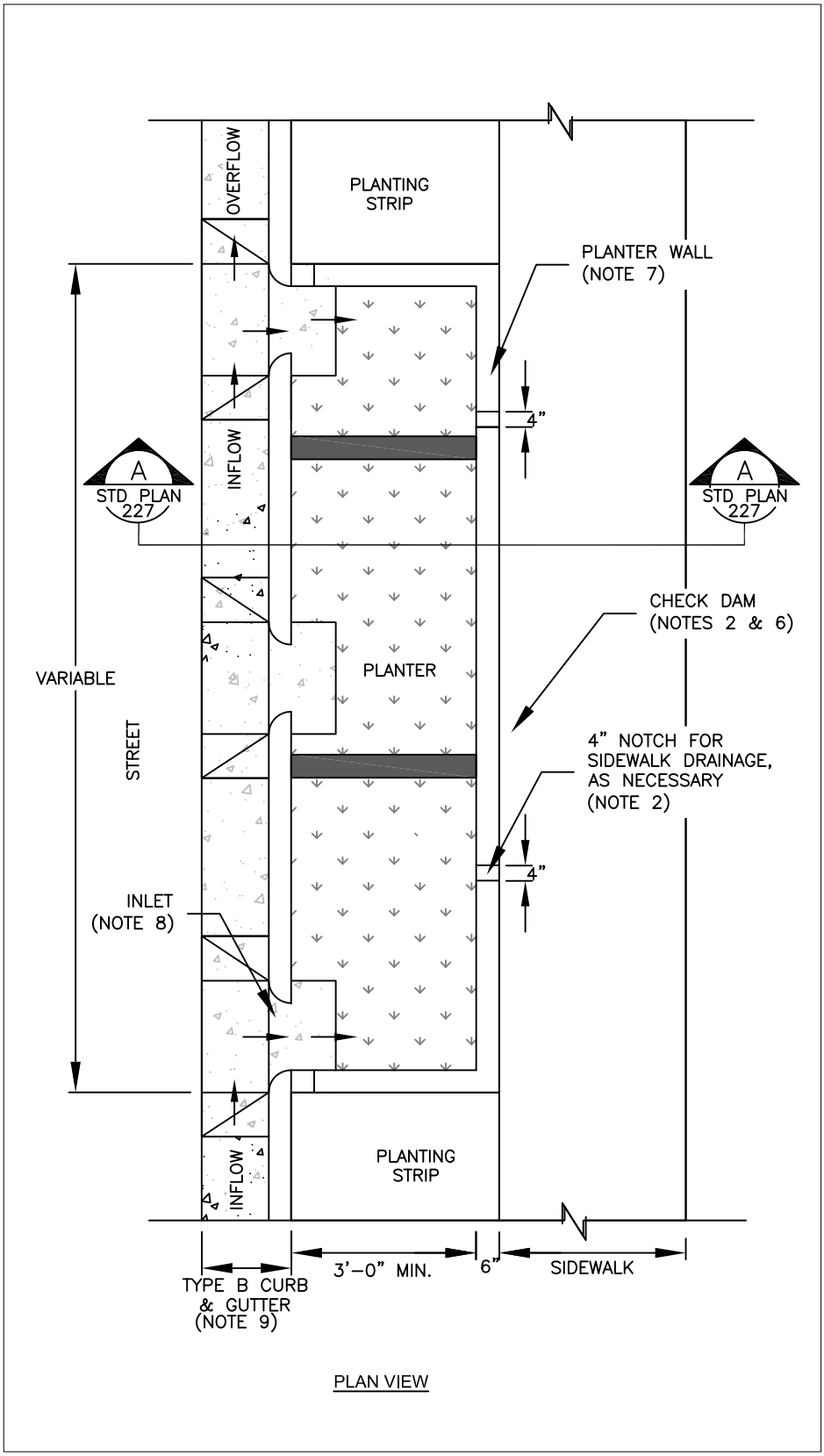


GREEN ROOF WITH DRAINAGE CHANNELS

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
GREEN ROOF

APPROVED	CITY ENGINEER	1/01/14	DRAWN BY	KAK	12/2013	**NO. 224**
		DATE	CHECKED BY	KR	12/2013	



PLAN VIEW

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

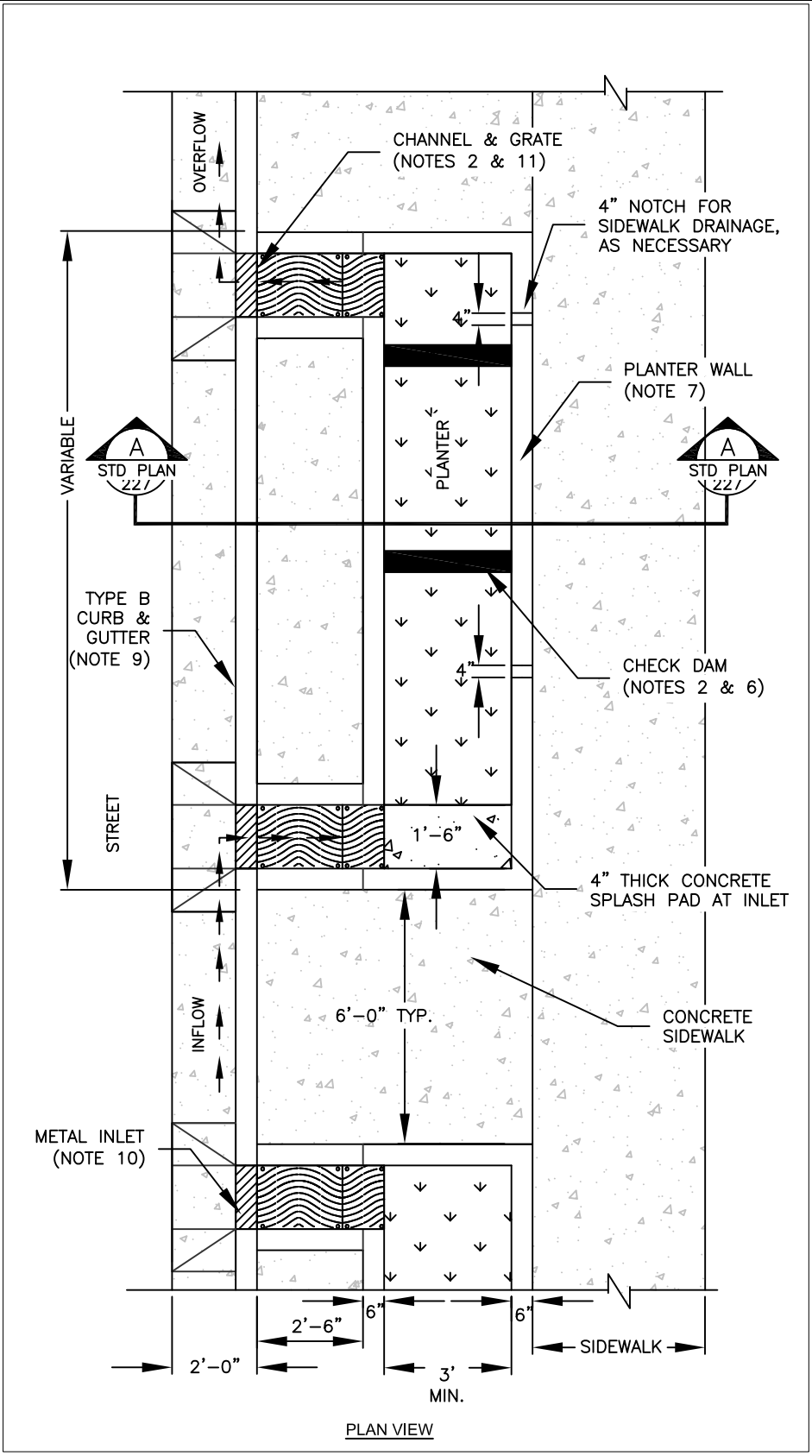
8. FOR INLET AND OUTLET DETAILS SEE STANDARD PLAN 235

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

APPROVED	CITY ENGINEER	1/01/14	DRAWN BY	KAK	12/2013	**NO. 225**
		DATE	CHECKED BY	KR	12/2013	



PLAN VIEW

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

10. FOR METAL INLET DETAIL SEE STANDARD PLAN 236

11. FOR CHANNEL AND GRATE DETAILS SEE STANDARD PLAN 239

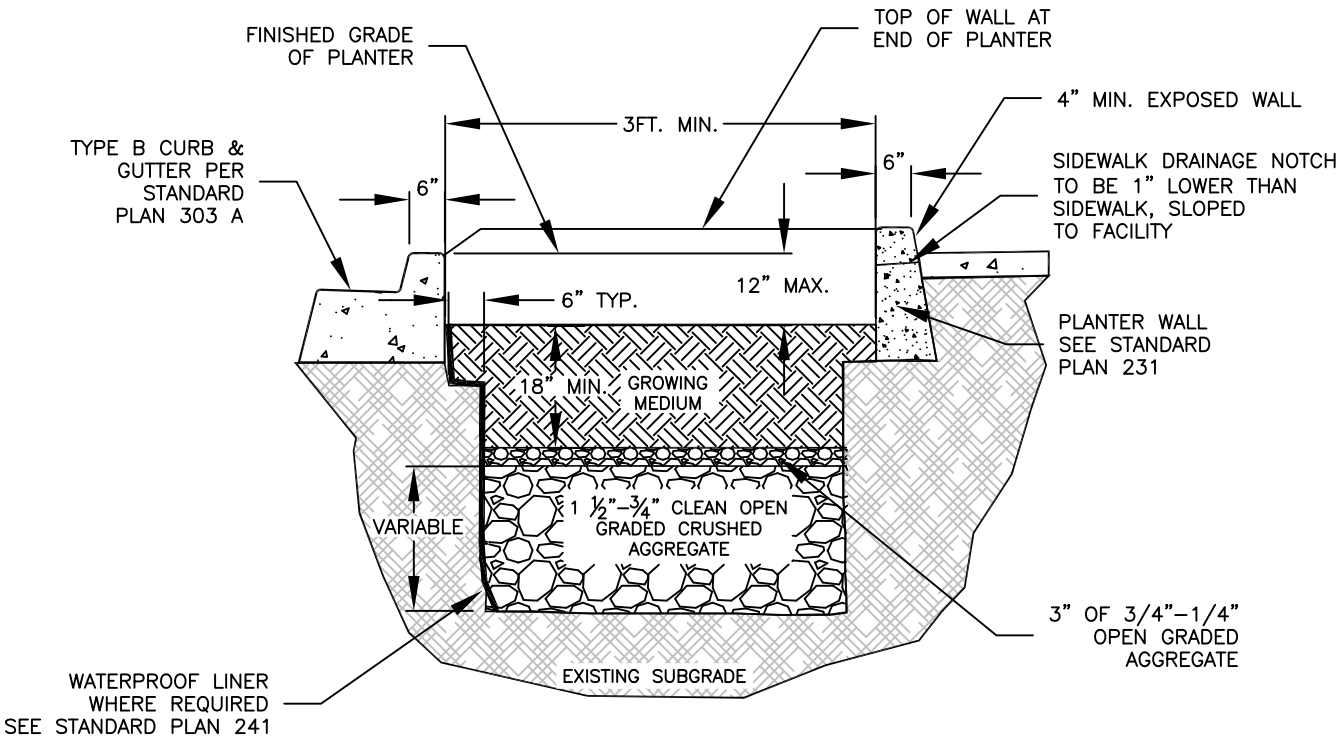
12. SCARIFY THE EXISTING SUBGRADE FOLLOWING THE INITIAL EXCAVATION AND BEFORE INSTALLING TOPSOIL OR ROCK

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

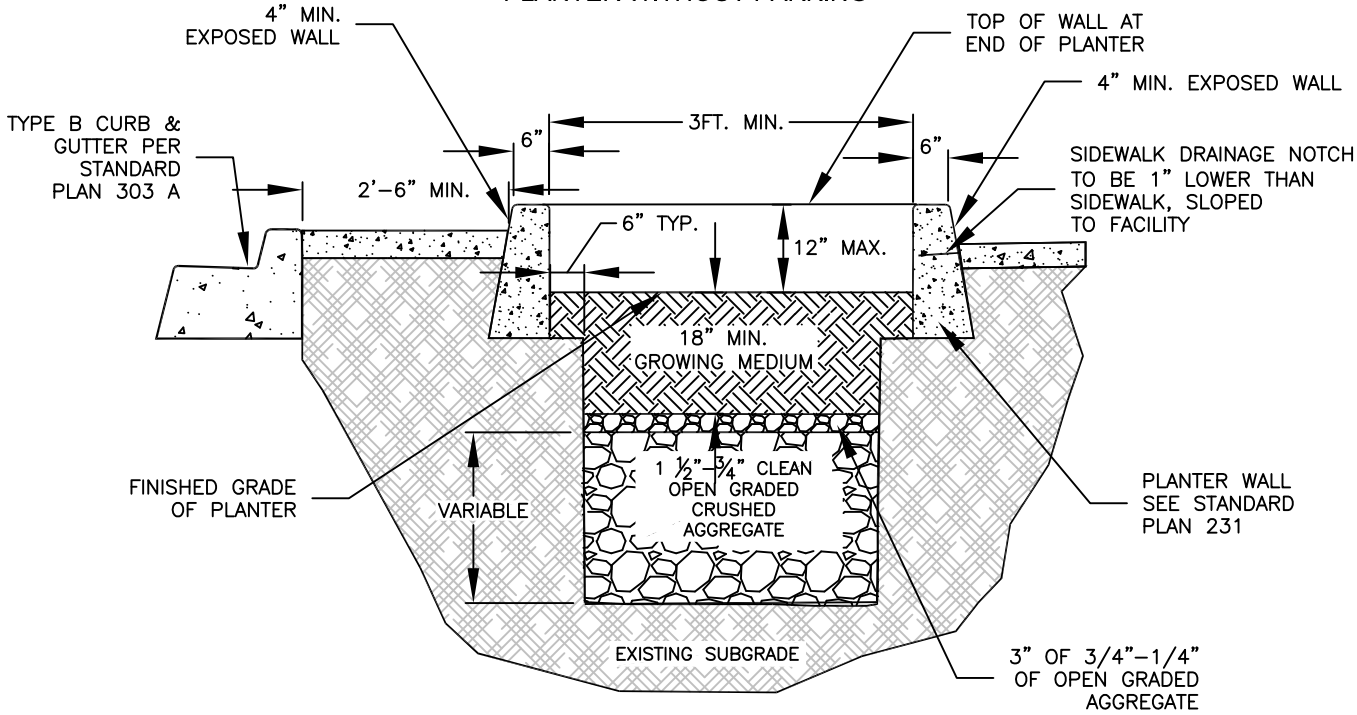
STANDARD PLAN

ROW PLANTERS with PARKING

APPROVED	CITY ENGINEER	1/01/14	DRAWN BY	KAK	12/2013	NO. 226
		DATE	CHECKED BY	KR	12/2013	



SECTION A-A
PLANTER WITHOUT PARKING



SECTION B-B
PLANTER WITH PARKING

NOTES:

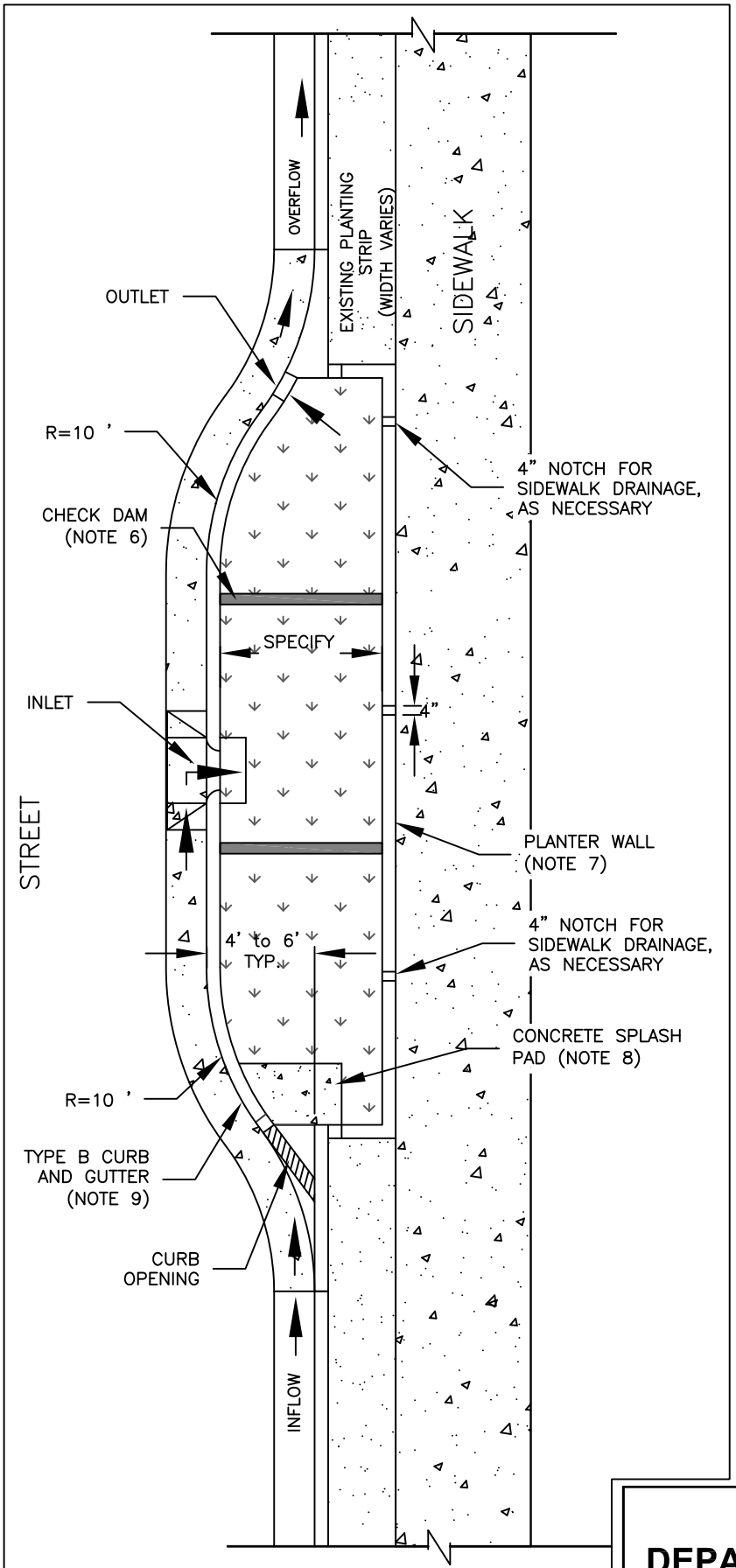
1. SCARIFY THE EXISTING SUBGRADE FOLLOWING THE INITIAL EXCAVATION AND BEFORE INSTALLING TOPSOIL OR ROCK

2. SEE STANDARD PLAN 239 FOR CHANNEL AND GRATE DETAILS

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
ROW PLANTER - SECTION VIEWS

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



PLAN VIEW

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

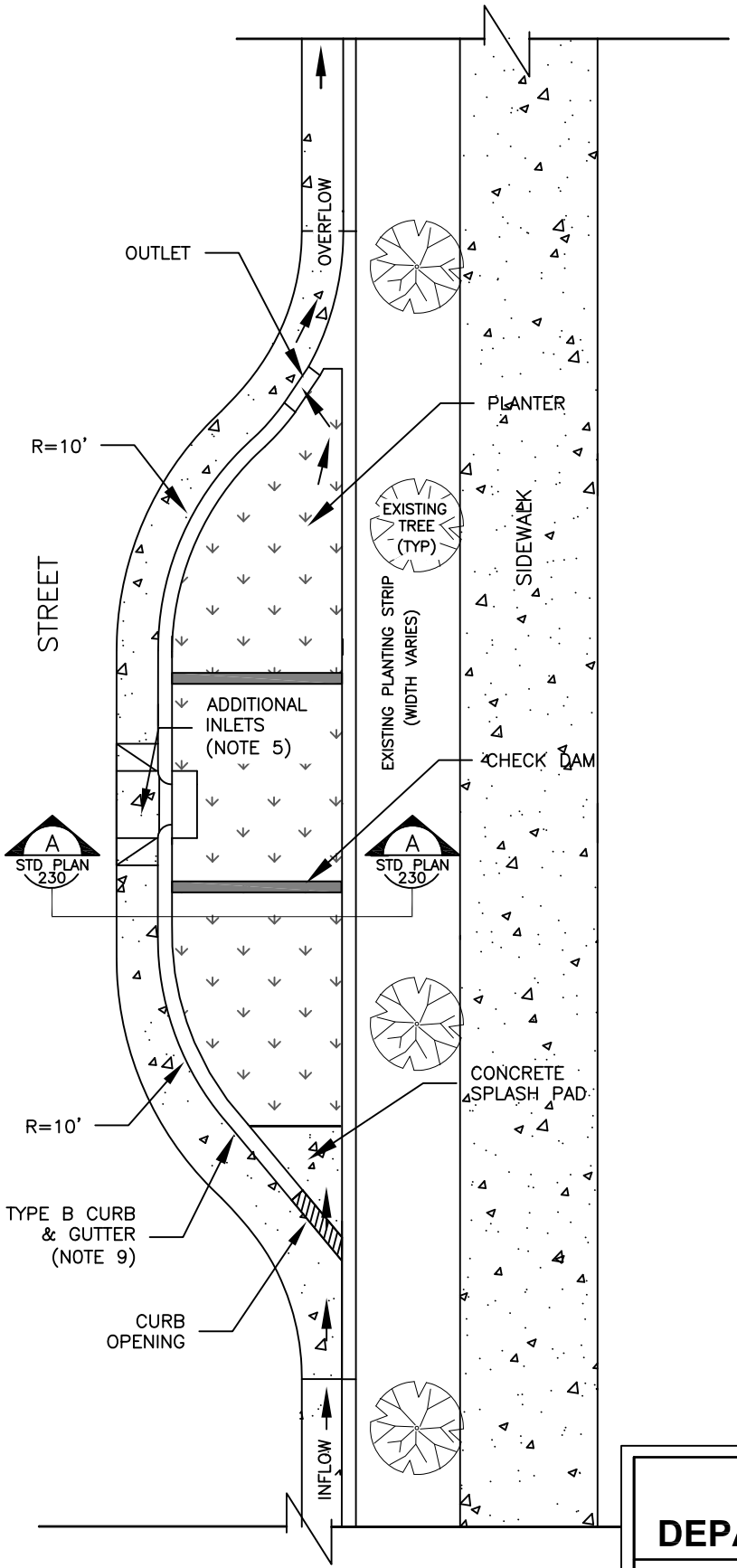
8. FOR INLET AND OUTLET DETAILS SEE STANDARD PLANS 235 AND 237

9. USE TYPE B CURB AND GUTTER ALONG THE LENGTH OF THE PLANTER, SEE STANDARD PLAN 303A

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
CURB EXTENSION PLANTER WITH CURBSIDE SIDEWALK

APPROVED	James J. Sonnet	1/01/14	DRAWN BY	KAK	12/2013	NO. 228
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



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

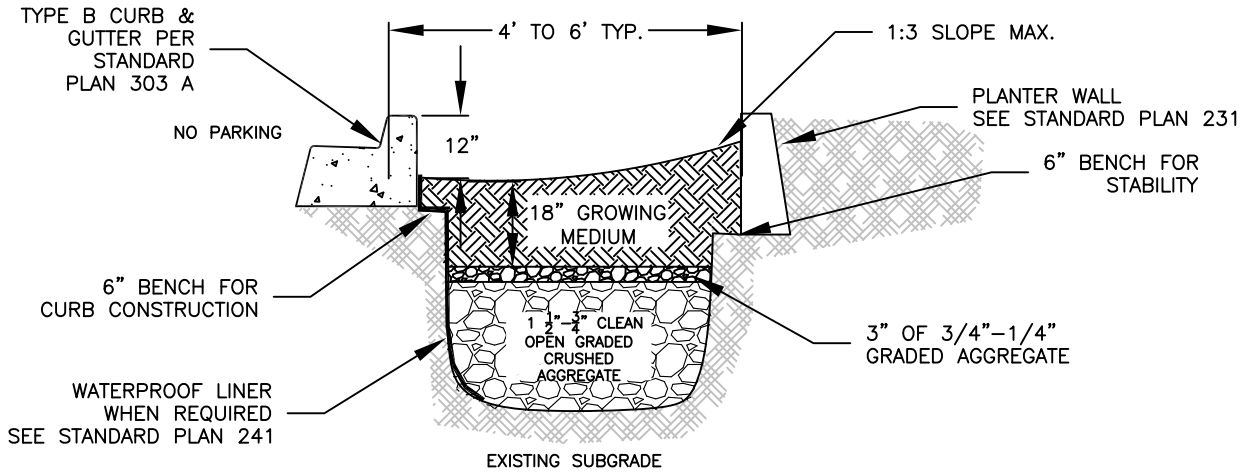
8. FOR INLET AND OUTLET DETAILS SEE STANDARD PLAN 237

9. USE TYPE B CURB AND GUTTER ALONG THE LENGTH OF THE PLANTER, SEE STANDARD PLAN 303A

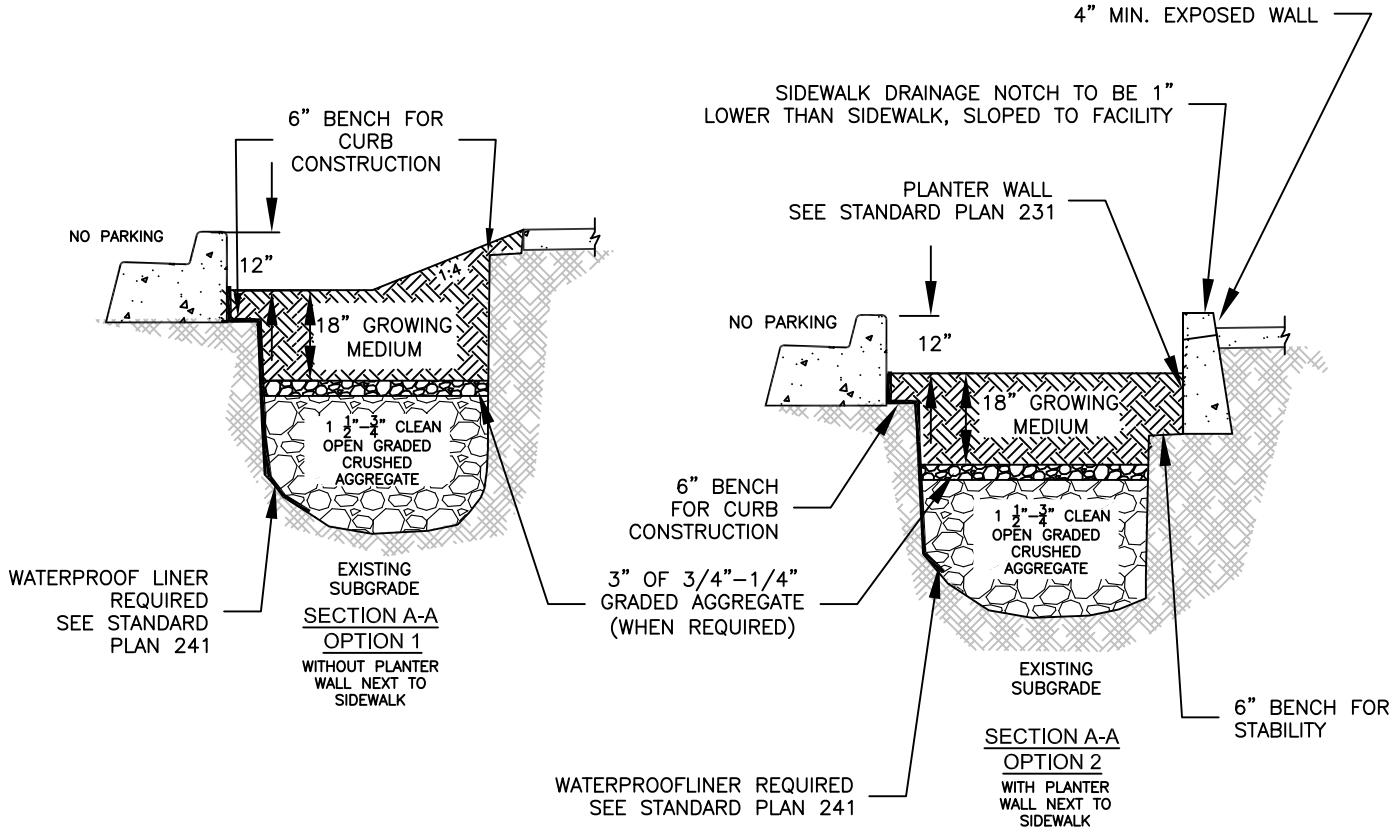
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
CURB EXTENSION PLANTER IN PLANTING STRIP

APPROVED	James L Sprent	1/01/14	DRAWN BY	KAK	12/2013	**NO. 229**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



SECTION A-A
AS SHOWN ON STANDARD PLAN 229



SECTION A-A
OPTION 1
WITHOUT PLANTER WALL NEXT TO SIDEWALK

SECTION A-A
OPTION 2
WITH PLANTER WALL NEXT TO SIDEWALK

FOR PLAN VIEW REFER TO STANDARD PLAN 229

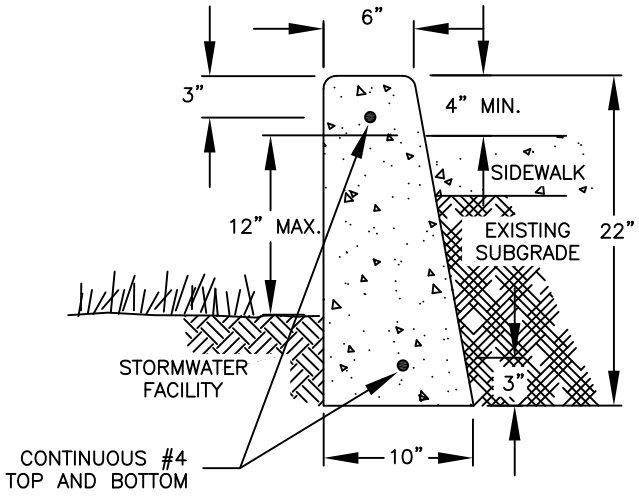
NOTE:

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

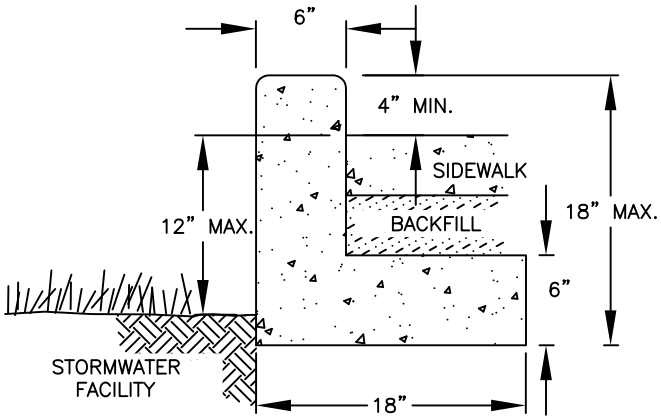
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
CURB EXTENSION PLANTER SECTIONS

APPROVED	CITY ENGINEER	1/01/14	DRAWN BY	KAK	12/2013	**NO. 230**
		DATE	CHECKED BY	KR	12/2013	



STANDARD WALL



L–SHAPE WALL

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

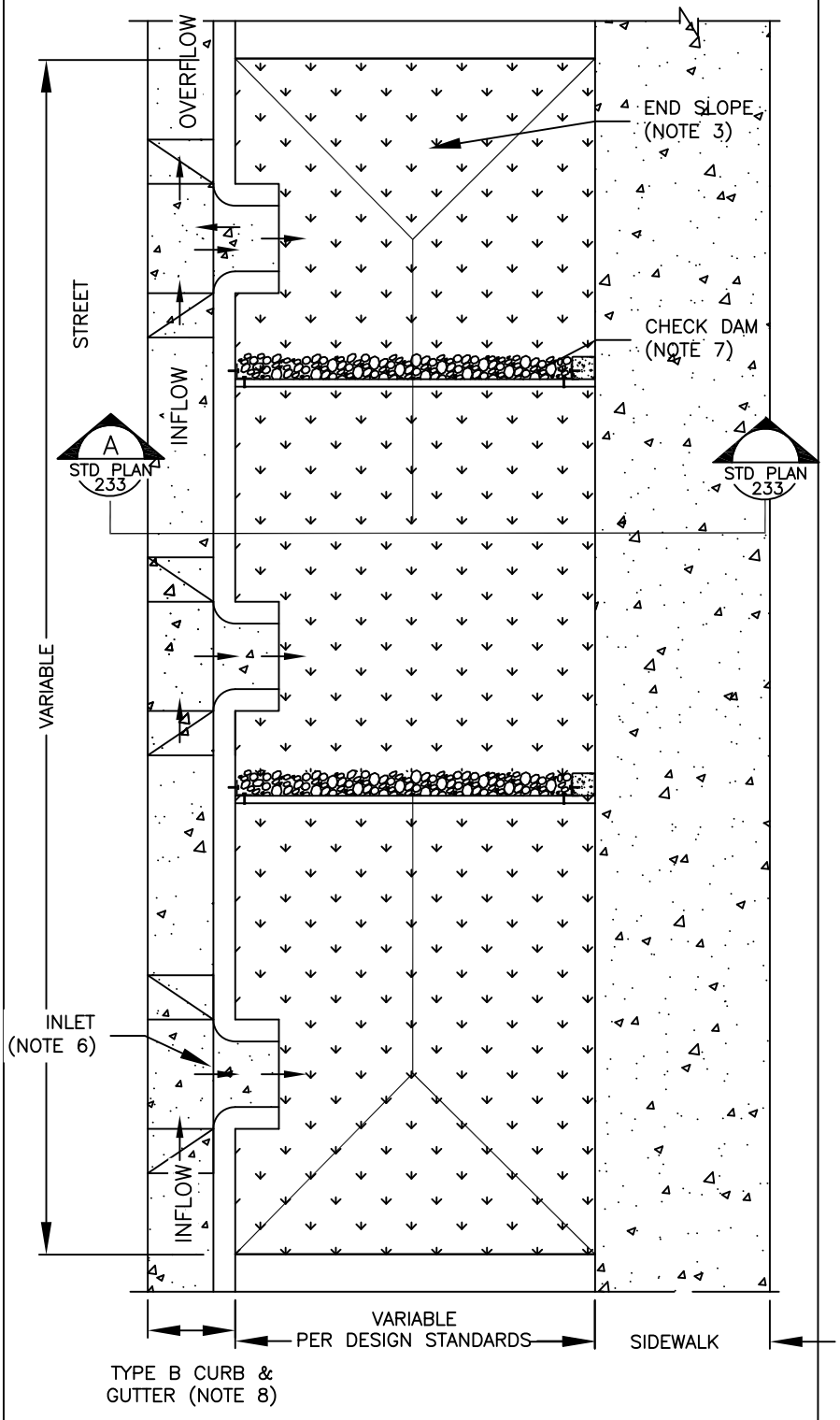
4. IF WATERPROOF LINER IS REQUIRED WITH L–SHAPED WALL, WALL HEIGHT MUST BE INCREASED. THREE INCHES OF CONCRETE REQUIRED ON ALL SIDES OF ATTACHMENT (SEE STANDARD PLAN 241)

6. FINISH ALL EXPOSED CONCRETE SURFACES

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
PLANTER WALL DETAILS

APPROVED	James L Sprent	1/01/14	DRAWN BY	KAK	12/2013	**NO. 231**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



SWALE PLAN VIEW
NTS

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

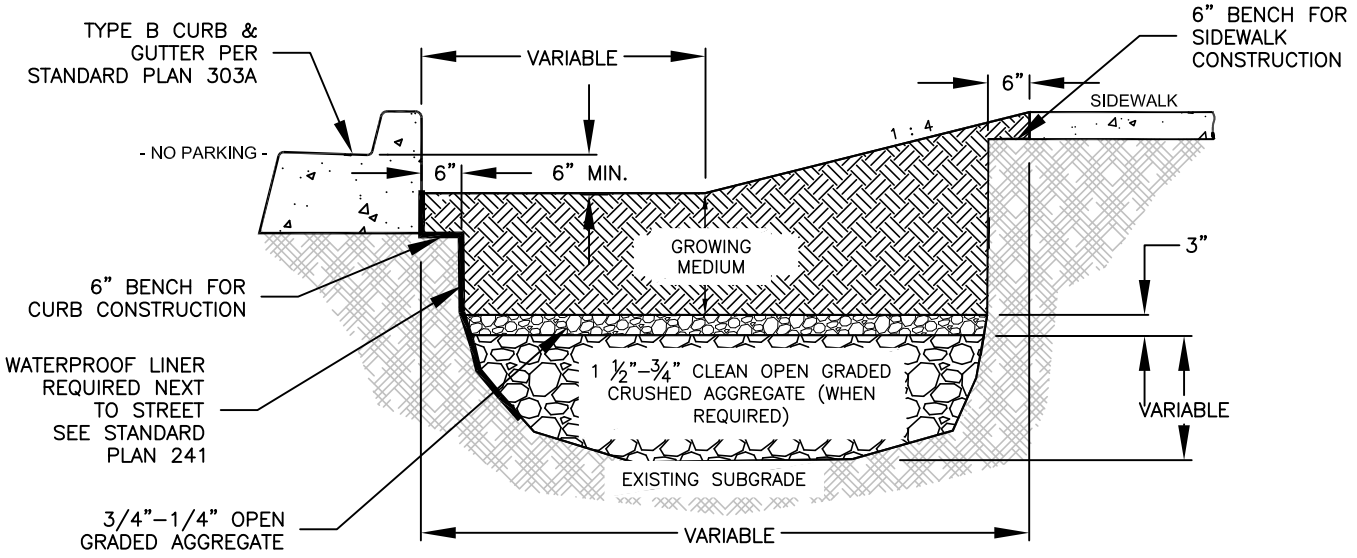
9. FOR SPECIAL REQUIREMENTS FOR WATER SERVICES CROSSING SWALE SEE STANDARD PLAN 247

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

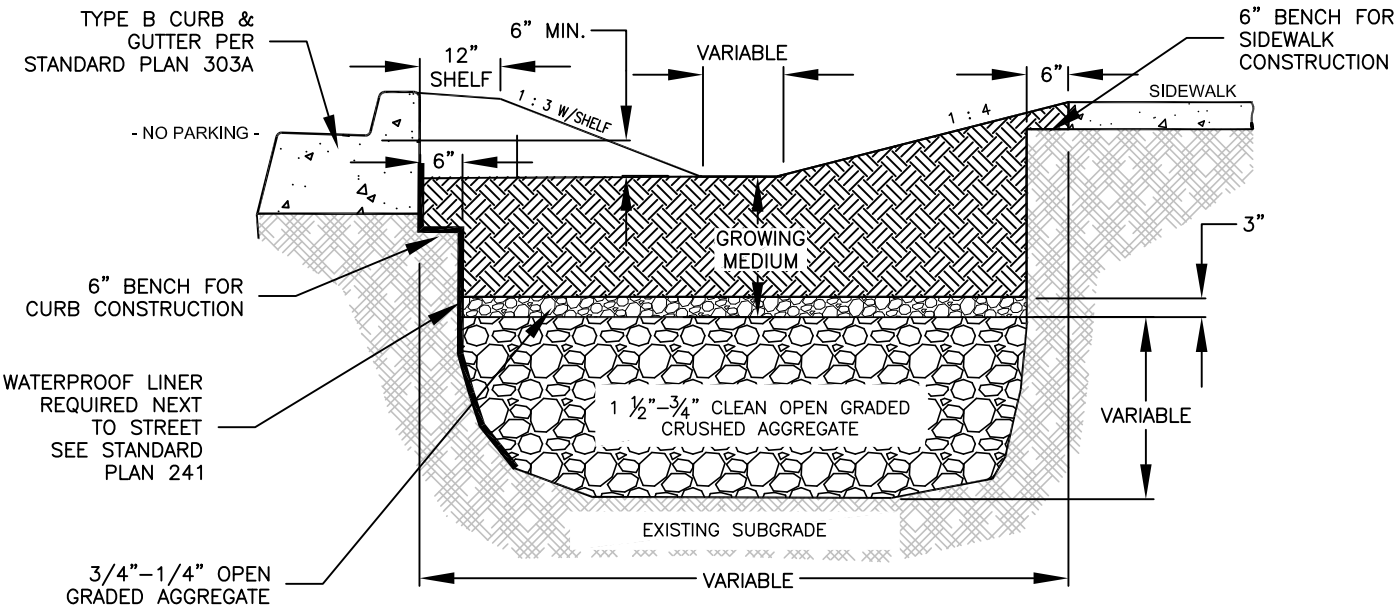
STANDARD PLAN

ROW SWALE - PLAN VIEW

APPROVED	CITY ENGINEER	1/01/14	DRAWN BY	KAK	12/2013	**NO. 232**
		DATE	CHECKED BY	KR	12/2013	



SWALE WITHOUT
ON STREET PARKING



SWALE WITH
ON STREET PARKING

NOTES:

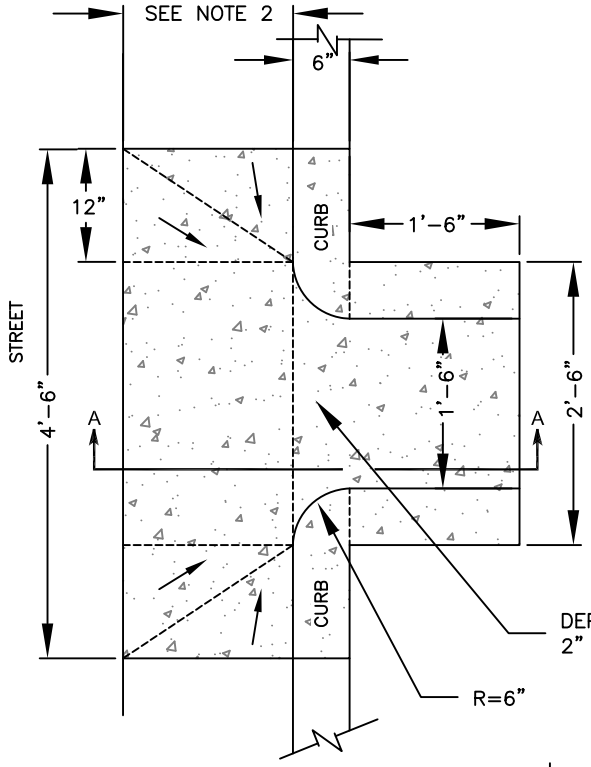
1. SCARIFY THE NATIVE SOIL FOLLOWING THE INITIAL EXCAVATION AND BEFORE INSTALLING TOPSOIL OR ROCK

2. SEE STANDARD PLAN 234 FOR INLET DETAILS

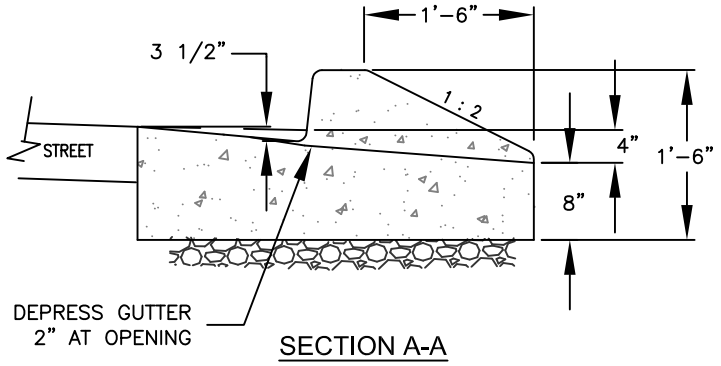
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
ROW SWALE - SECTION VIEWS

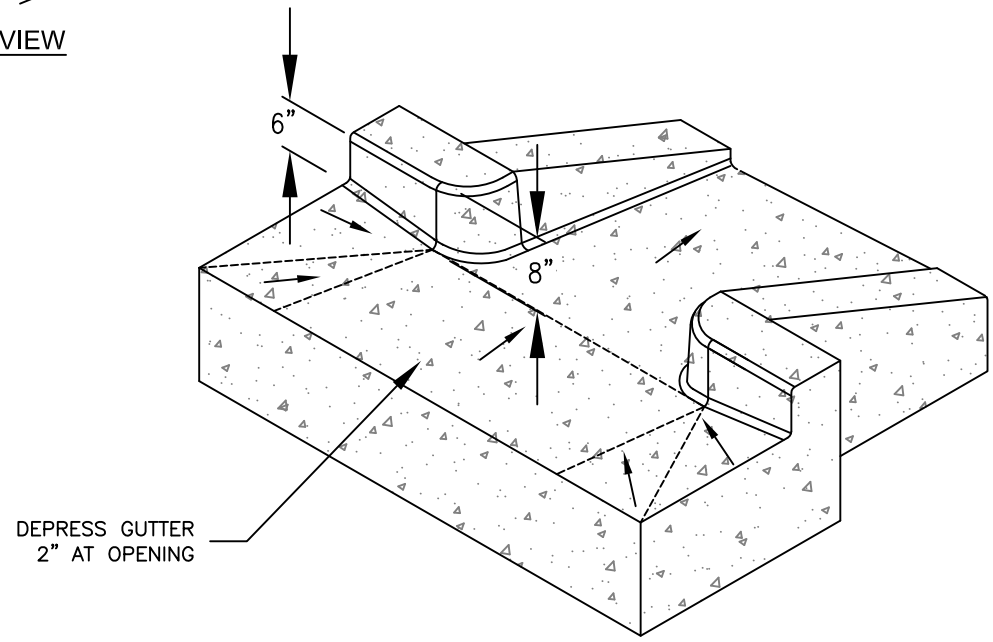
APPROVED	James J. Sweet	1/01/14	DRAWN BY	KAK	12/2013	**NO. 233**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



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

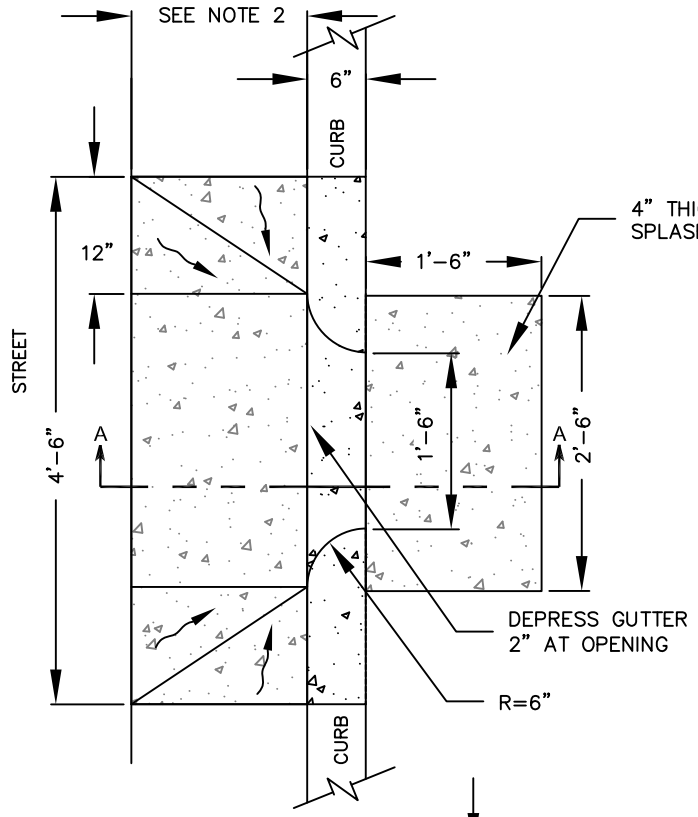
4. PLACE 4"–6" ROUND RIVER ROCK ALONG END OF CONCRETE WHERE IT MEETS GROWING MEDIUM. RIVER ROCK SHALL EXTEND ½"–1" ABOVE EDGE OF CONCRETE

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

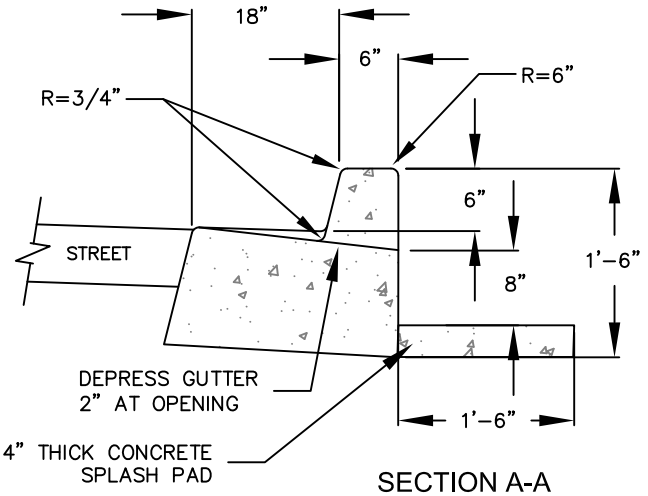
STANDARD PLAN

CONCRETE INLET TYPE A

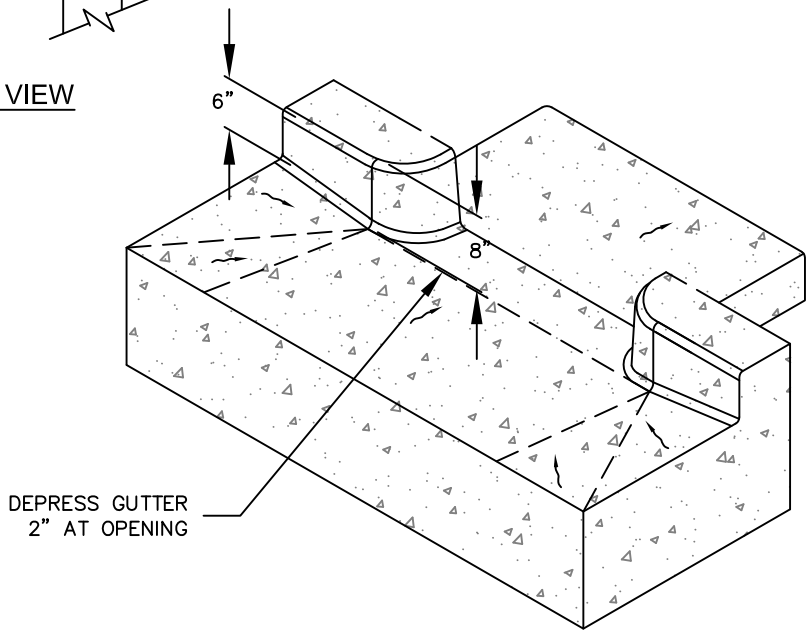
APPROVED	CITY ENGINEER	1/01/14	DRAWN BY	KAK	12/2013	**NO. 234**
		DATE	CHECKED BY	KR	12/2013	



PLAN VIEW



SECTION A-A



PERSPECTIVE VIEW

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

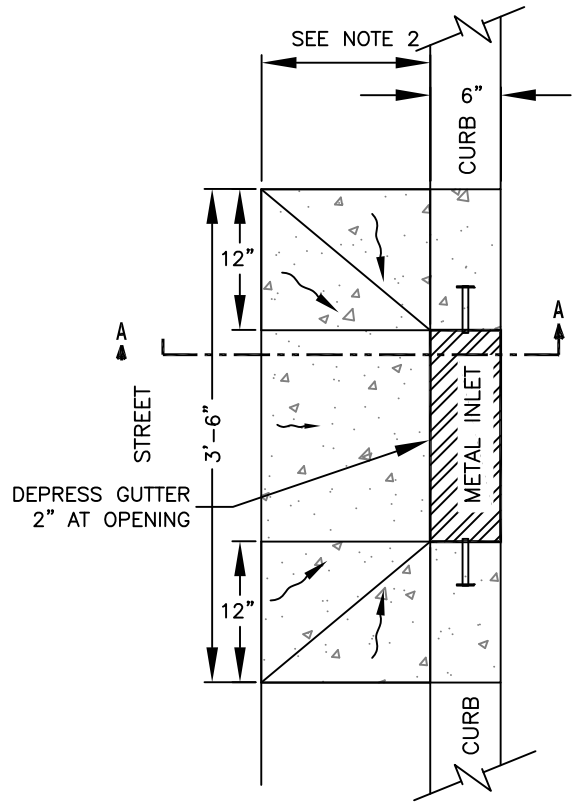
4. PLACE 4"–6" ROUND RIVER ROCK ALONG END OF CONCRETE WHERE IT MEETS GROWING MEDIUM. RIVER ROCK SHALL EXTEND ½"–1" ABOVE EDGE OF CONCRETE

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

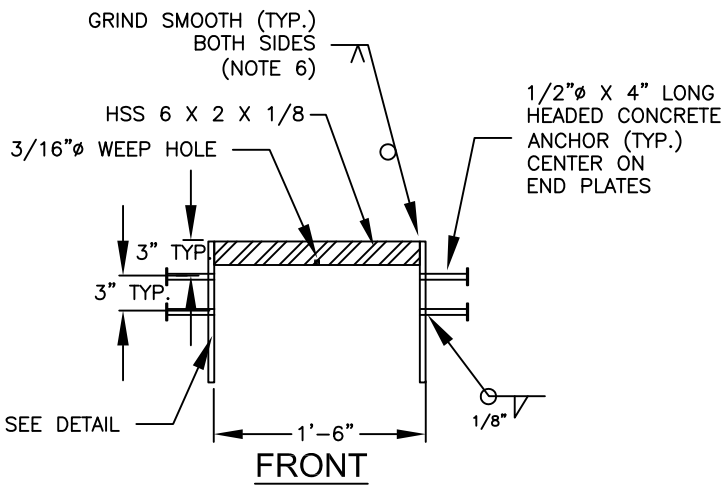
STANDARD PLAN

CONCRETE INLET TYPE B

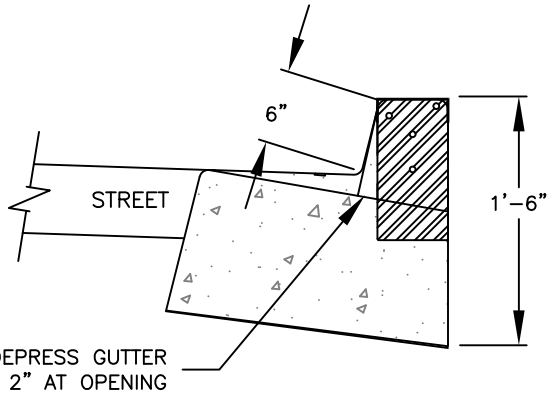
APPROVED	James Bennett	1/01/14	DRAWN BY	KAK	12/2013	**NO. 235**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



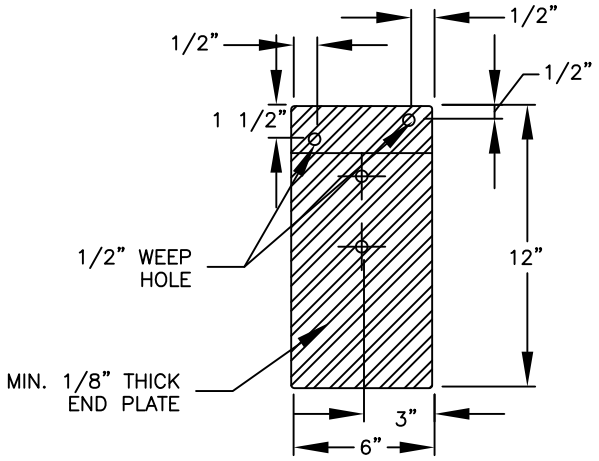
PLAN VIEW



FRONT



SECTION A-A



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

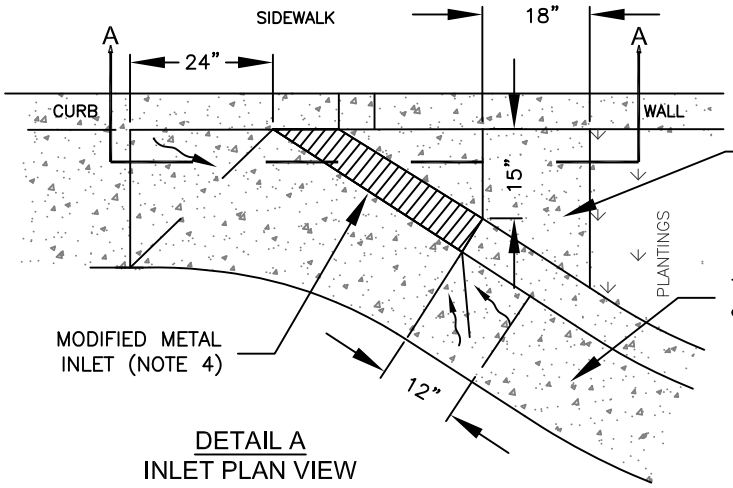
11. SINGLE BEVEL GROOVE WELD

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

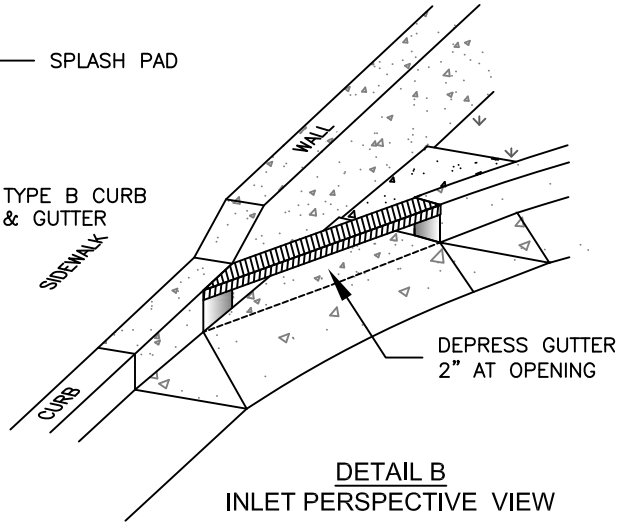
STANDARD PLAN

METAL INLET DETAILS

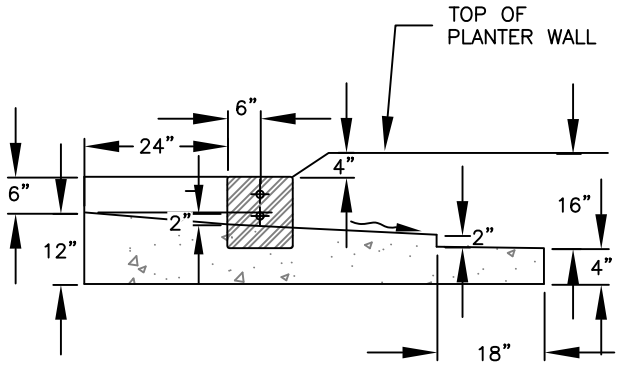
APPROVED	James L. Sorel	1/01/14	DRAWN BY	KAK	12/2013	**NO. 236**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



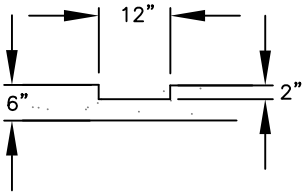
DETAIL A
INLET PLAN VIEW



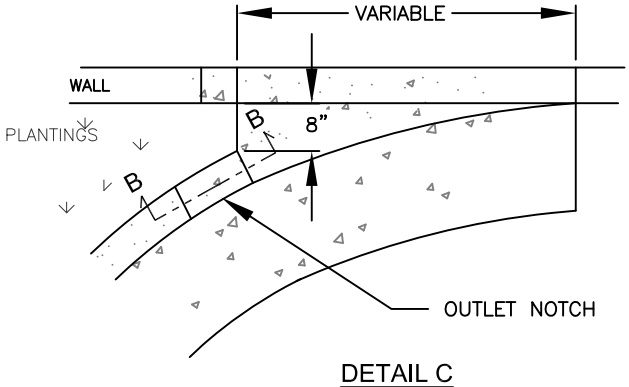
DETAIL B
INLET PERSPECTIVE VIEW



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

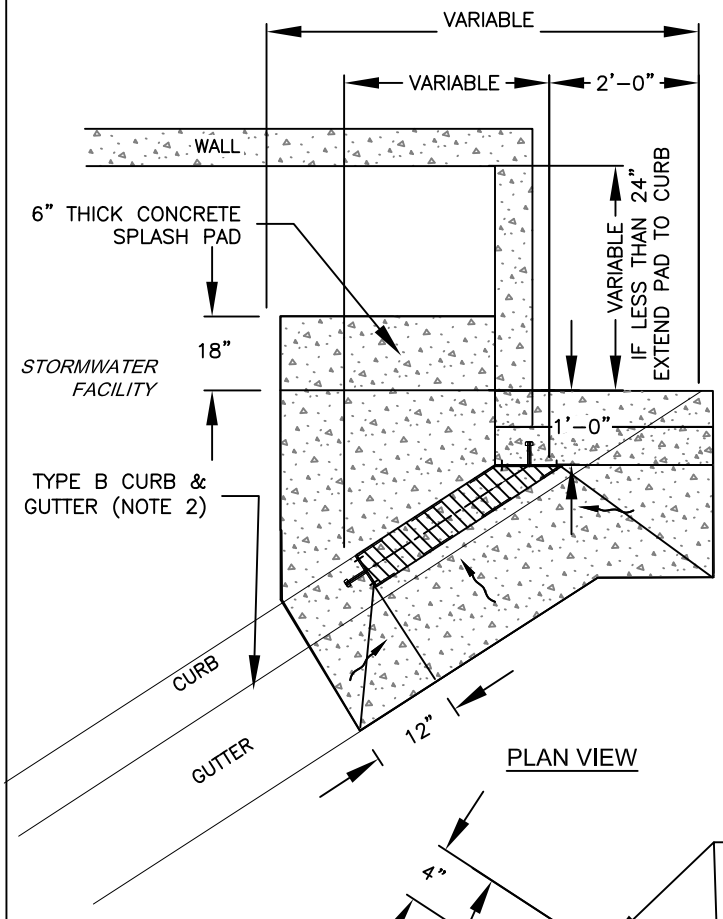
STANDARD PLAN

INLET & OUTLET FOR CURB EXTENSIONS

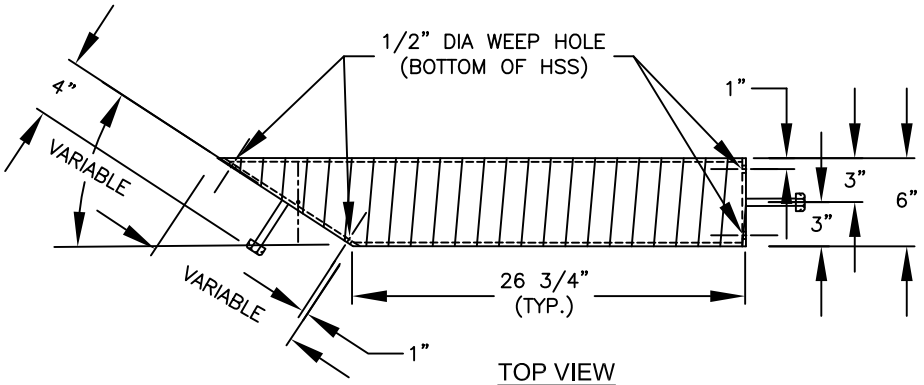
APPROVED	James L Sonnet	1/01/14	DRAWN BY	KAK	12/2013	**NO. 237**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	

NOTES:

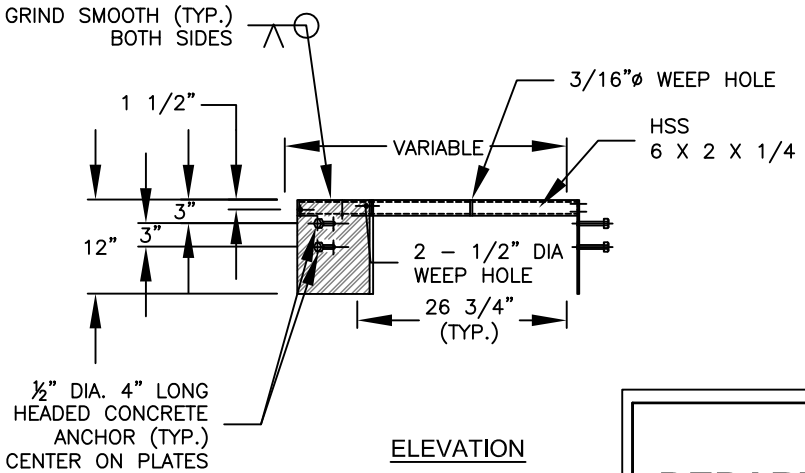
1. SPLASH PADS ARE REQUIRED AT ALL INLETS
2. REFER TO STANDARD PLAN 330A. MATCH GUTTER PAN OF ADJACENT CURB AND GUTTER
3. DESIGN VERTICAL LOAD IS 8.5 kips (1/2 OF FHWA-HOP-06-105)
4. HEADED CONCRETE ANCHORS SHALL MEET THE REQUIREMENTS OF ASTM A-108
5. HSS 6 X 2 X 1/4 CHANNEL SHALL MEET THE REQUIREMENTS 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



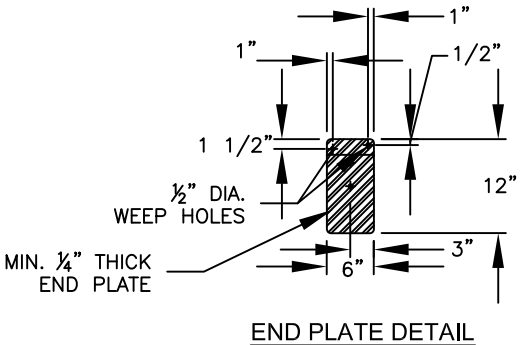
PLAN VIEW



TOP VIEW



ELEVATION



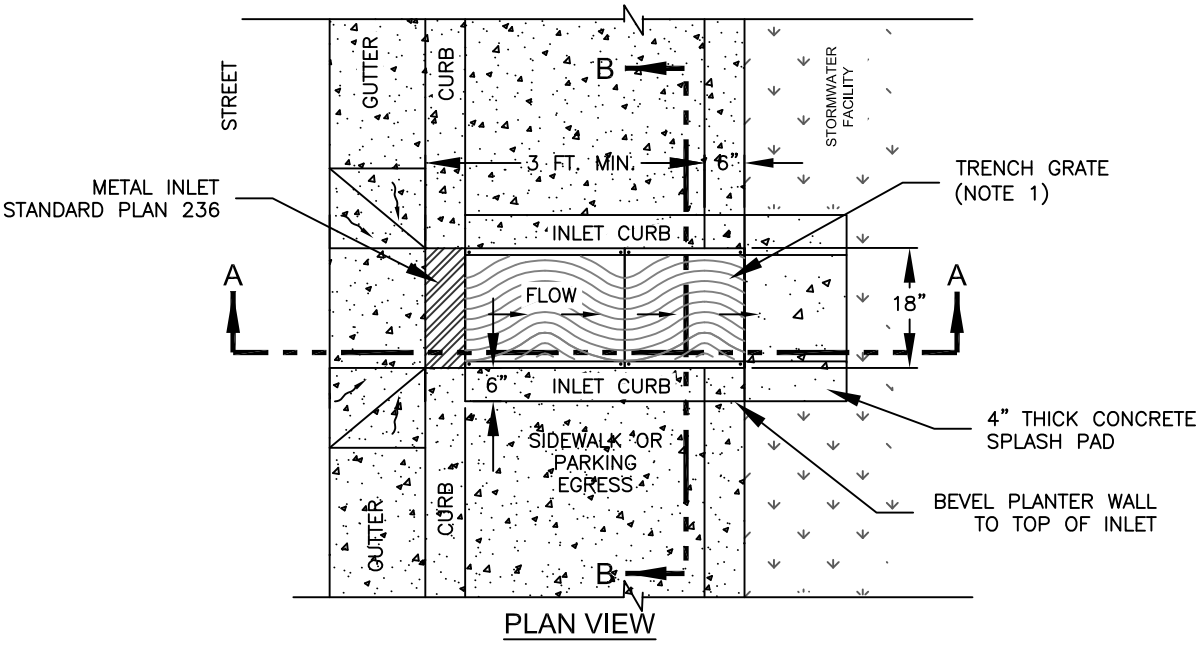
END PLATE DETAIL

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

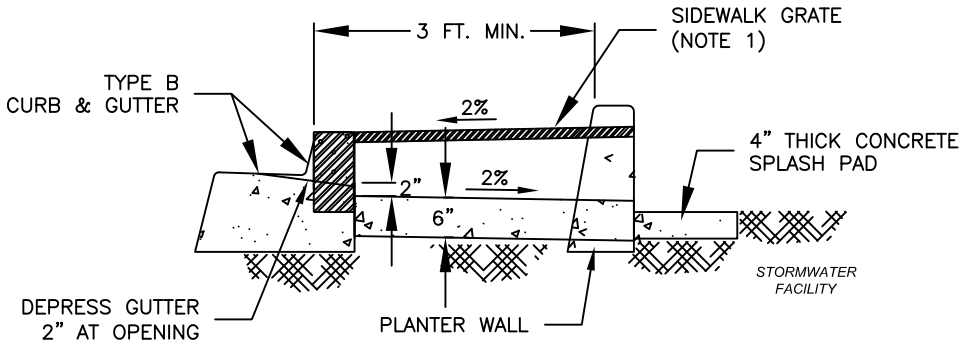
STANDARD PLAN

MODIFIED METAL INLET ASSEMBLY

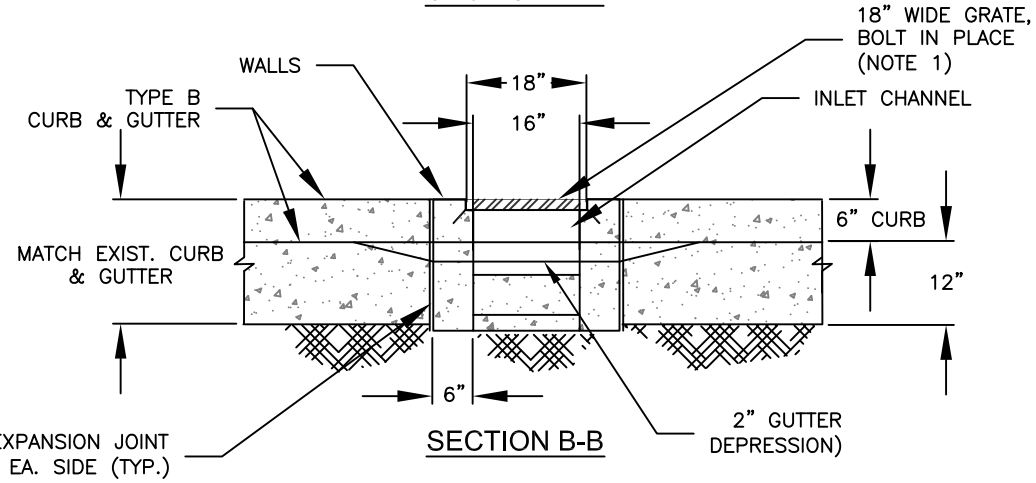
APPROVED	James Bennett	1/01/14	DRAWN BY	KAK	12/2013	**NO. 238**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



PLAN VIEW



SECTION A-A



SECTION B-B

NOTE:

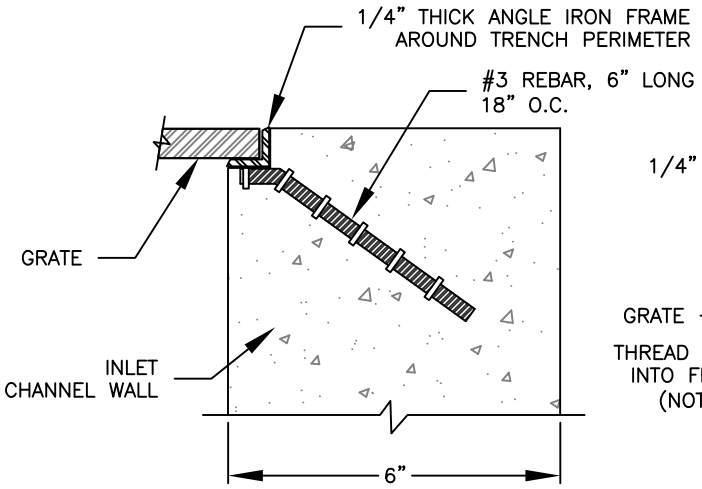
1. FOR GRATE AND FRAME DETAILS SEE STANDARD PLAN 240

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

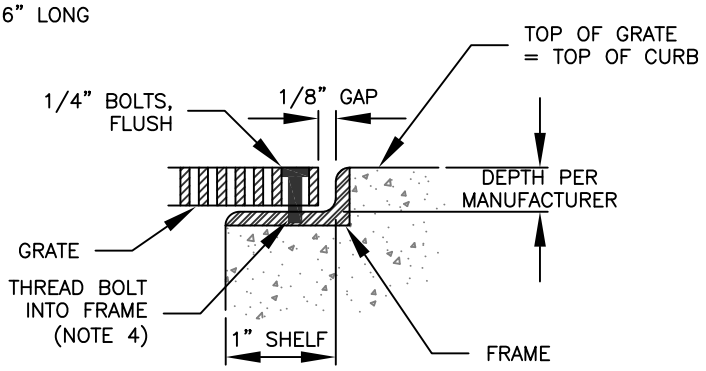
STANDARD PLAN

CHANNEL & GRATE DETAILS

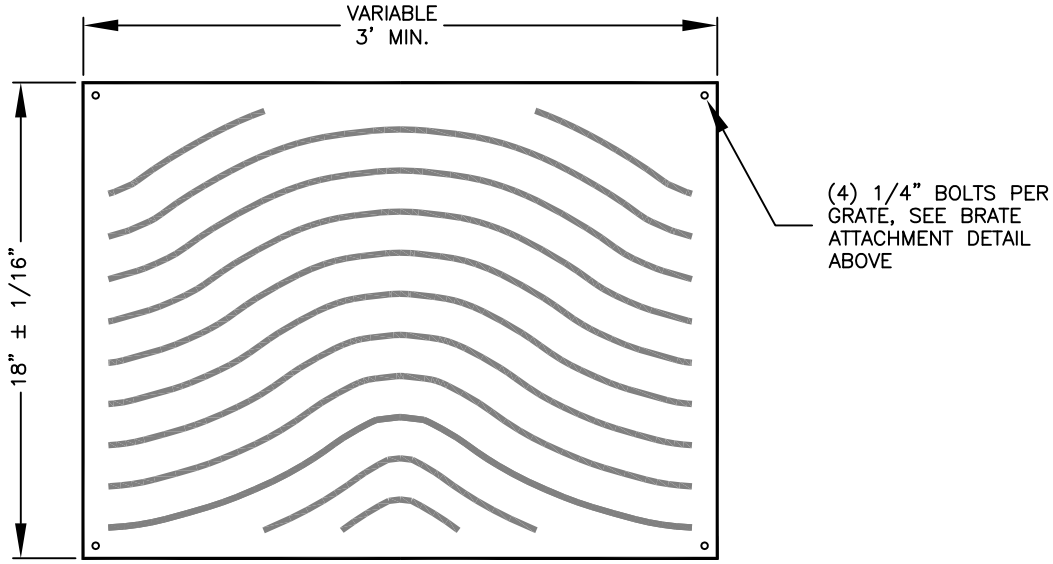
APPROVED	James L Sprint	1/01/14	DRAWN BY	KAK	12/2013	**NO. 239**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



FRAME DETAIL



GRATE ATTACHMENT DETAIL



TRENCH GRATE

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

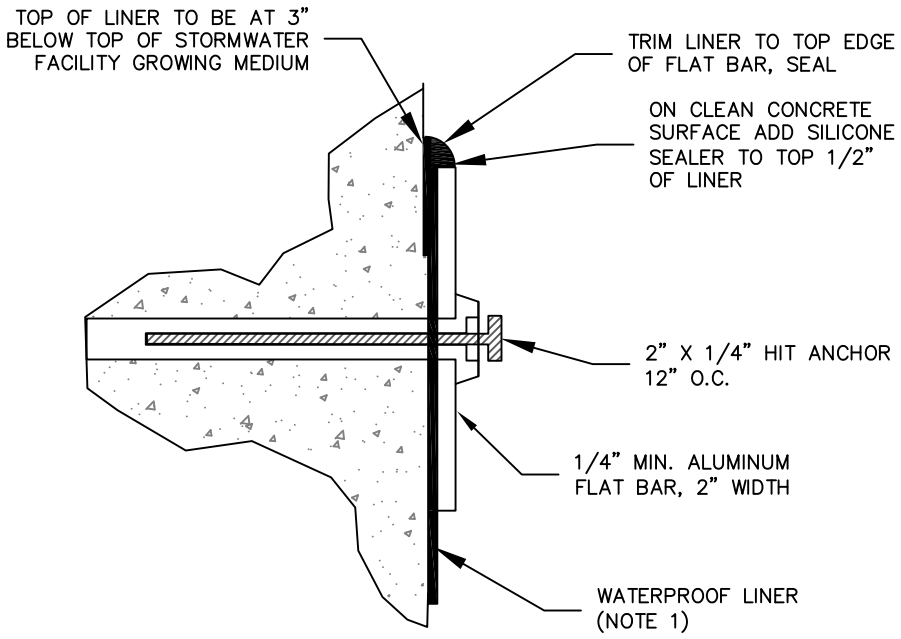
5. WAVY GRATE AS SHOWN OR APPROVED ADA COMPLIANT EQUIVALENT

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

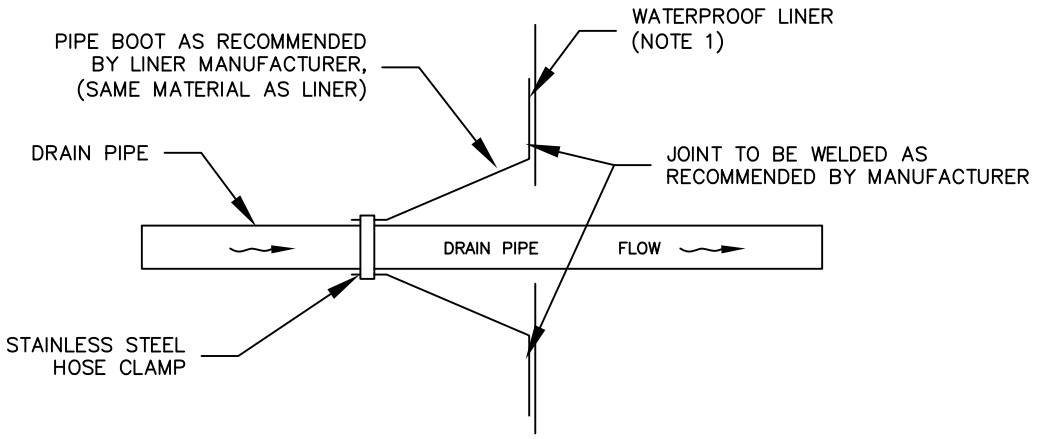
STANDARD PLAN

GRATE & FRAME DETAILS

APPROVED	CITY ENGINEER	1/01/14	DRAWN BY	KAK	12/2013	**NO. 240**
		DATE	CHECKED BY	KR	12/2013	



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

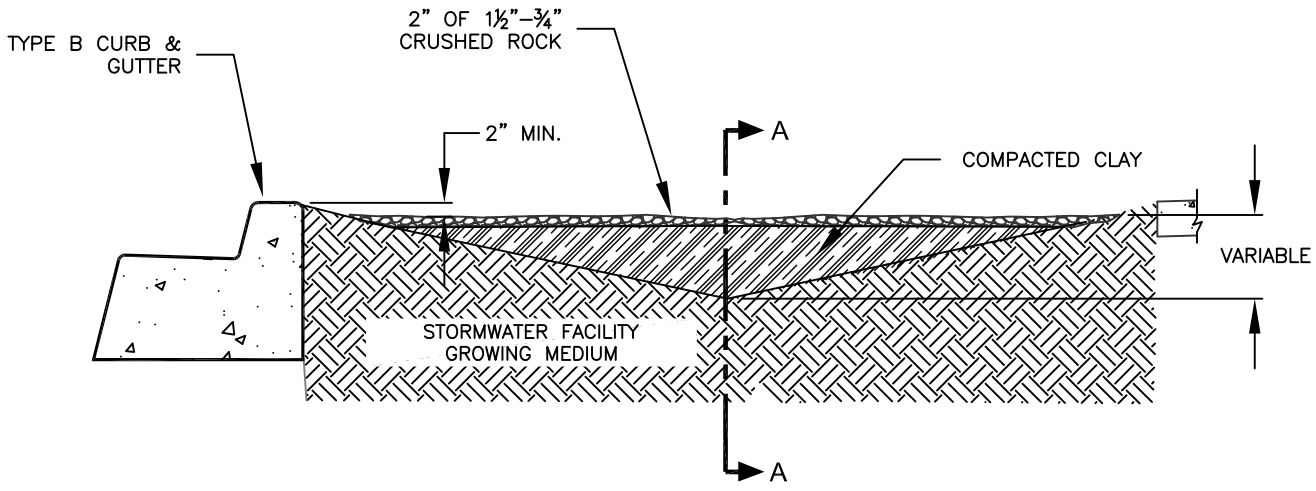
3. A FILTRATION FACILITY MUST BE COMPLETELY LINED WITH A WATERPROOF LINER UNLESS FACILITY'S BOTTOM AND SIDES ARE MONOLITHIC CONCRETE

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

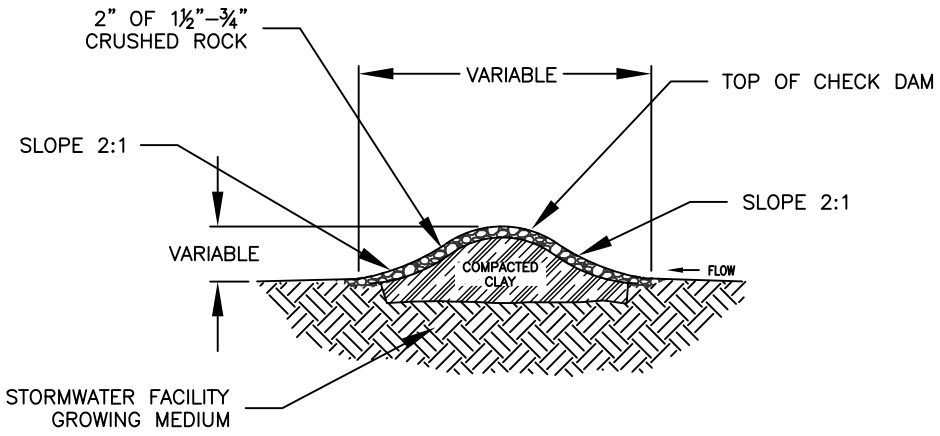
STANDARD PLAN

LINER ATTACHMENT & PIPE BOOT DETAILS

APPROVED	James Sorrell	1/01/14	DRAWN BY	KAK	12/2013	**NO. 241**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



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

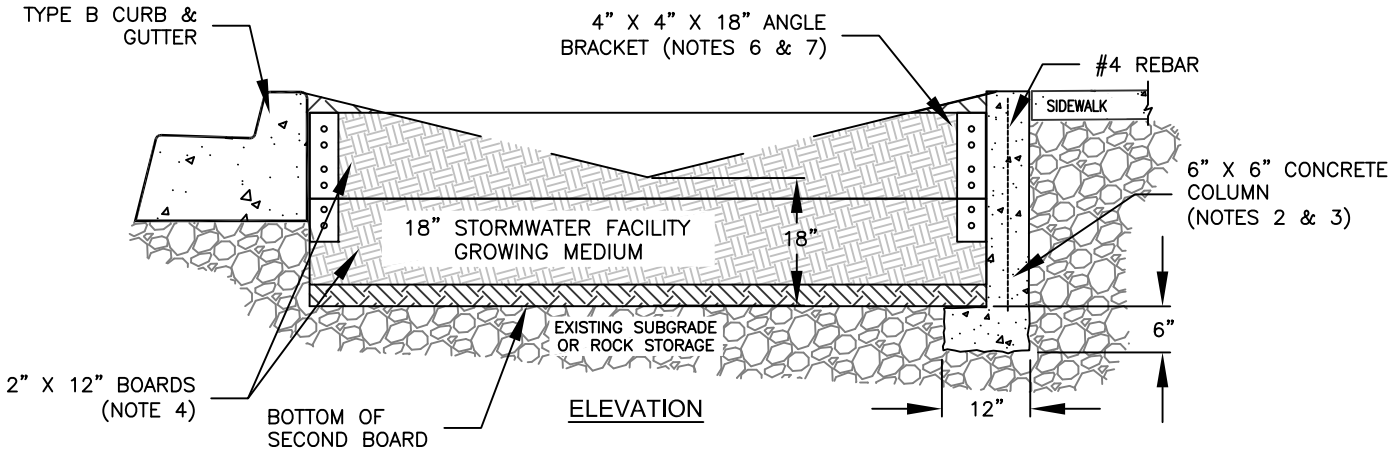
4. KEY CLAY CORE INTO STORMWATER FACILITY GROWING MEDIUM

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

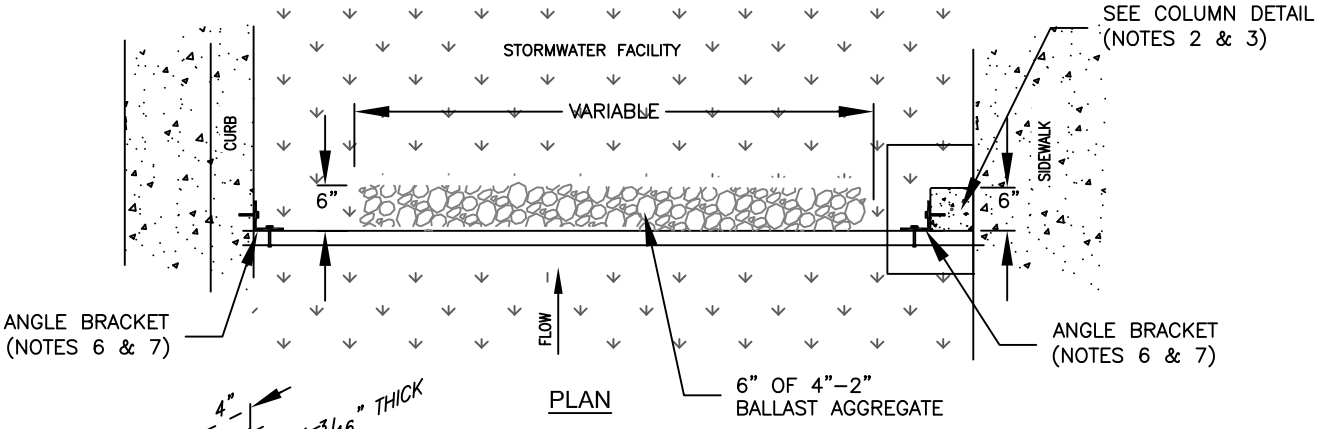
STANDARD PLAN

ROCK CHECK DAM FOR SWALES

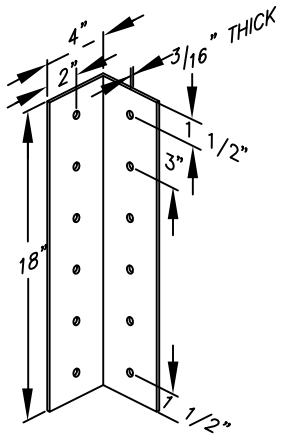
APPROVED	James J. Sorel	1/01/14	DRAWN BY	KAK	12/2013	**NO. 242**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



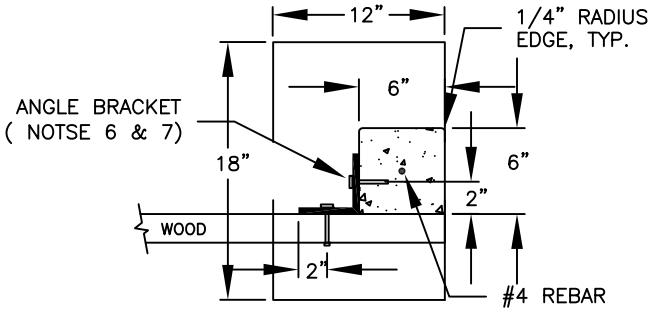
ELEVATION



PLAN



BRACKET DETAIL



COLUMN DETAIL

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

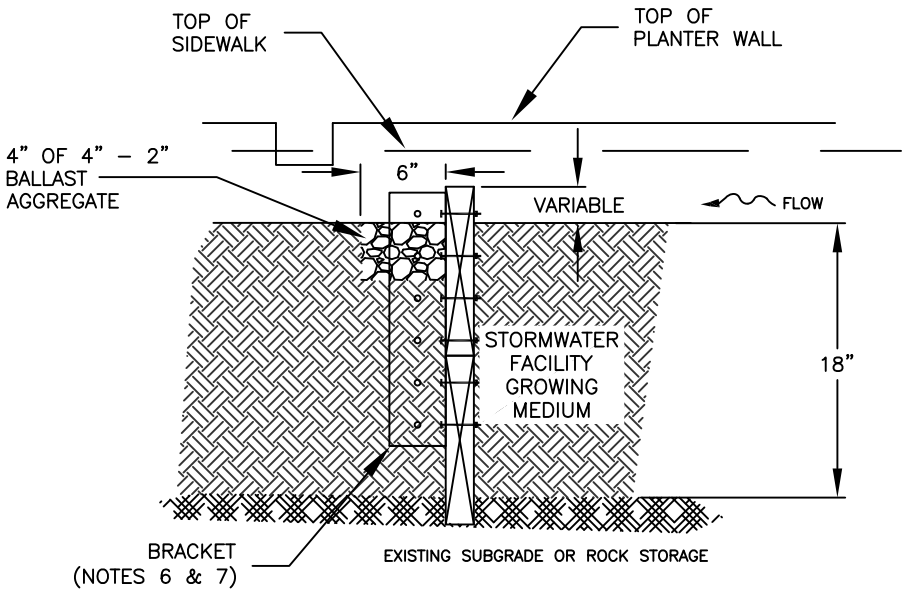
8. MIN. 3 BOLTS TO CONCRETE, MIN. 2 BOLTS PER BOARD, AND 5/16" DIA. BOLTS

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

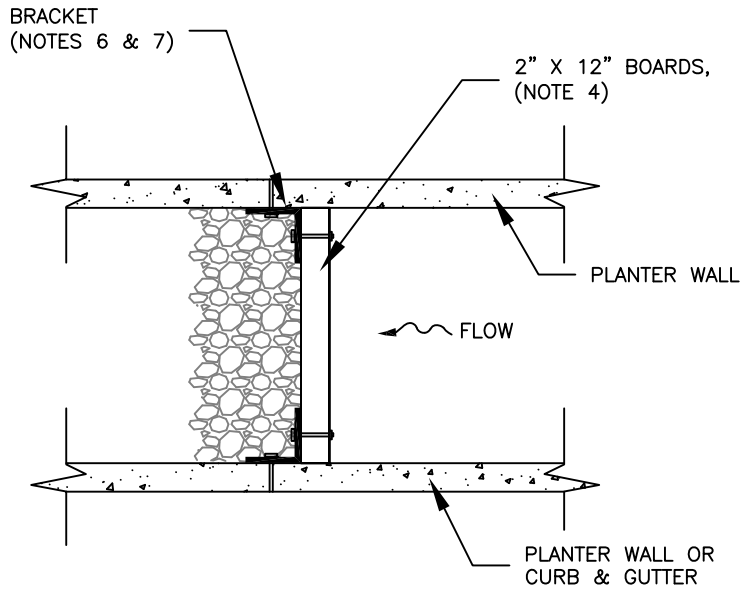
STANDARD PLAN

WOOD CHECK DAM FOR SWALES

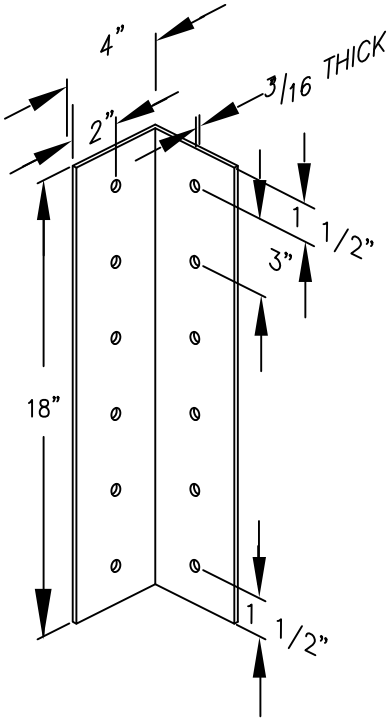
APPROVED	James L Sorte	1/01/14	DRAWN BY	KAK	12/2013	**NO. 243**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



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

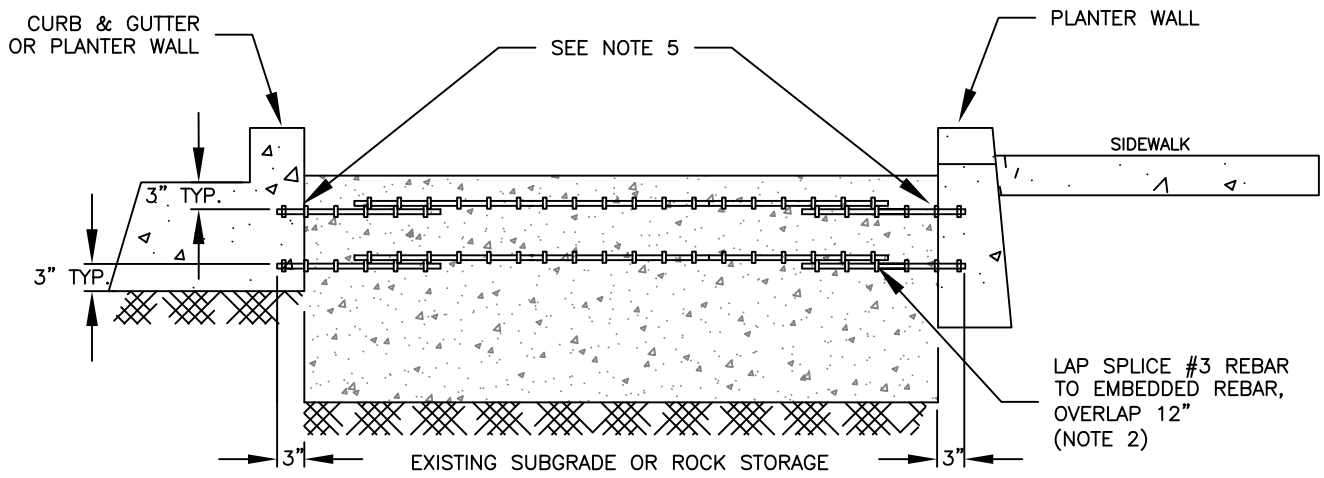
8. MIN. 3 BOLTS TO CONCRETE, MIN. 2 BOLTS PER BOARD, AND 5/16" DIA. BOLTS

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

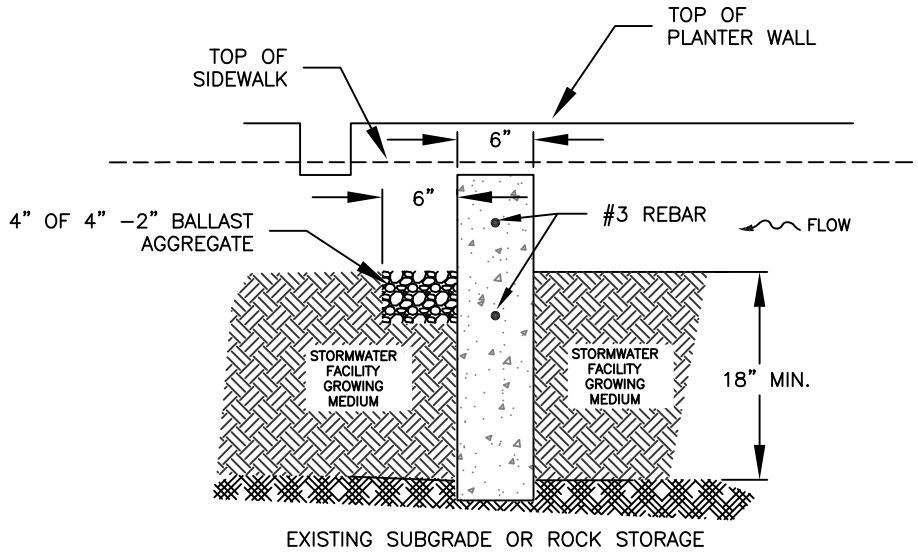
STANDARD PLAN

WOOD CHECK DAM FOR PLANTERS

APPROVED	James L Sorte	1/01/14	DRAWN BY	KAK	12/2013	**NO. 244**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



ELEVATION



SECTION

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

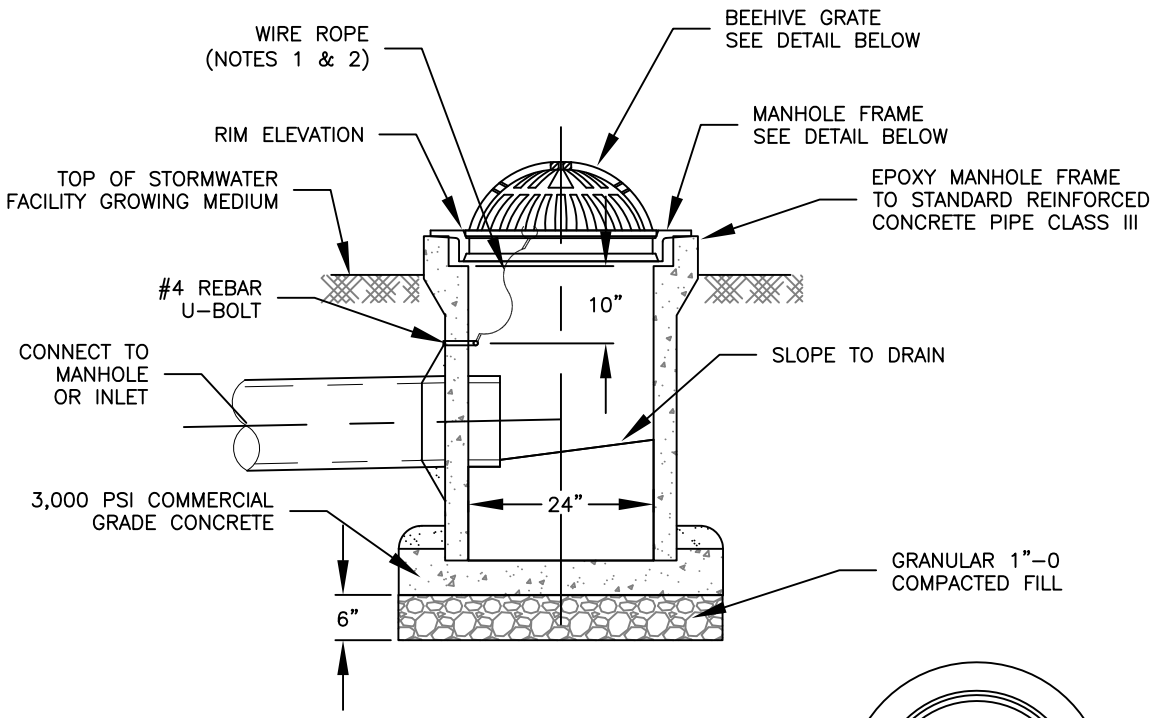
4. PLANTER WALL SHALL BE EMBEDDED IN EXISTING SUBGRADE OR DRAIN ROCK

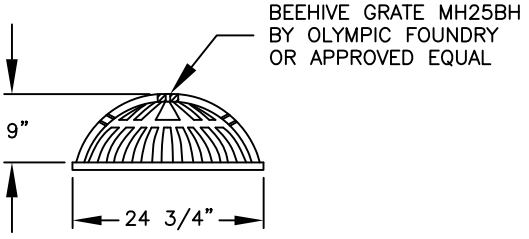
5. EMBED # 3 REBAR 3" INTO CURB AND PLANTER WALL

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

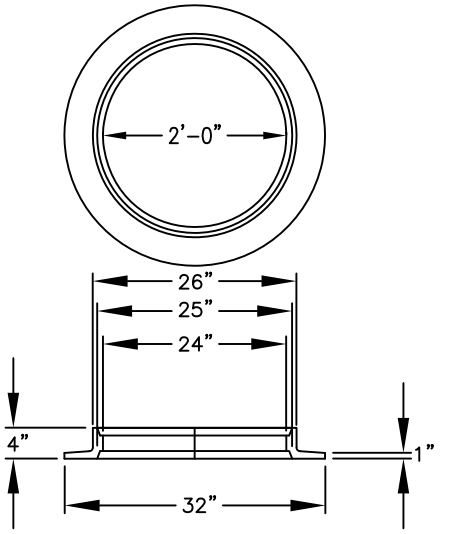
STANDARD PLAN
CONCRETE CHECK DAM FOR PLANTERS

APPROVED	James L. Sorel	1/01/14	DRAWN BY	KAK	12/2013	**NO. 245**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	





BEEHIVE GRATE



24"x4" REVERSIBLE MANHOLE FRAME

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

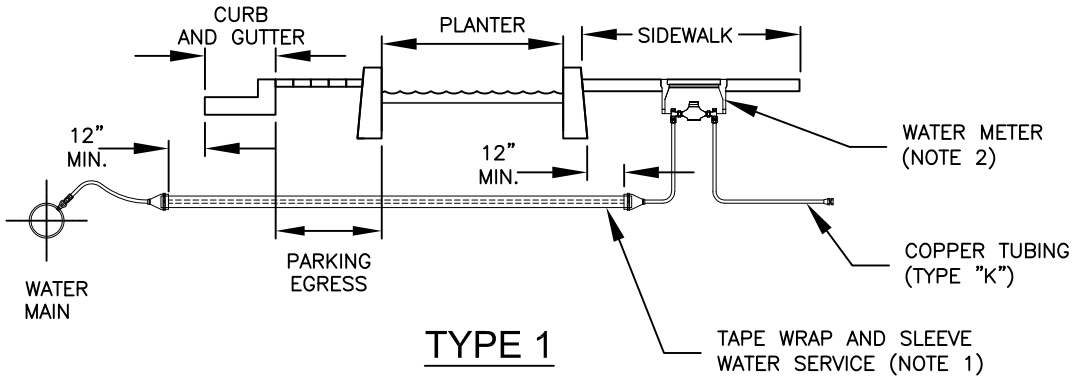
3. GRATE TO BE CAST IRON, ASTM A48 CL30

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

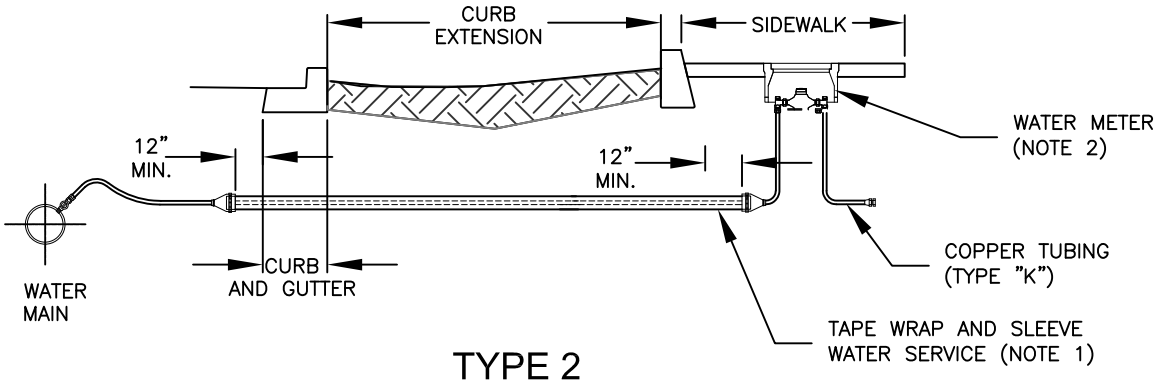
STANDARD PLAN

BEEHIVE INLET GRATE

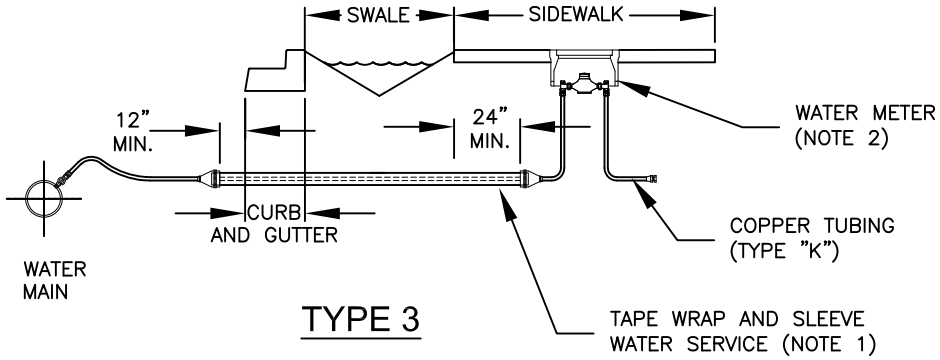
APPROVED	James L Sount	1/01/14	DRAWN BY	KAK	12/2013	**NO. 246**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



TYPE 1



TYPE 2



TYPE 3

NOTES:

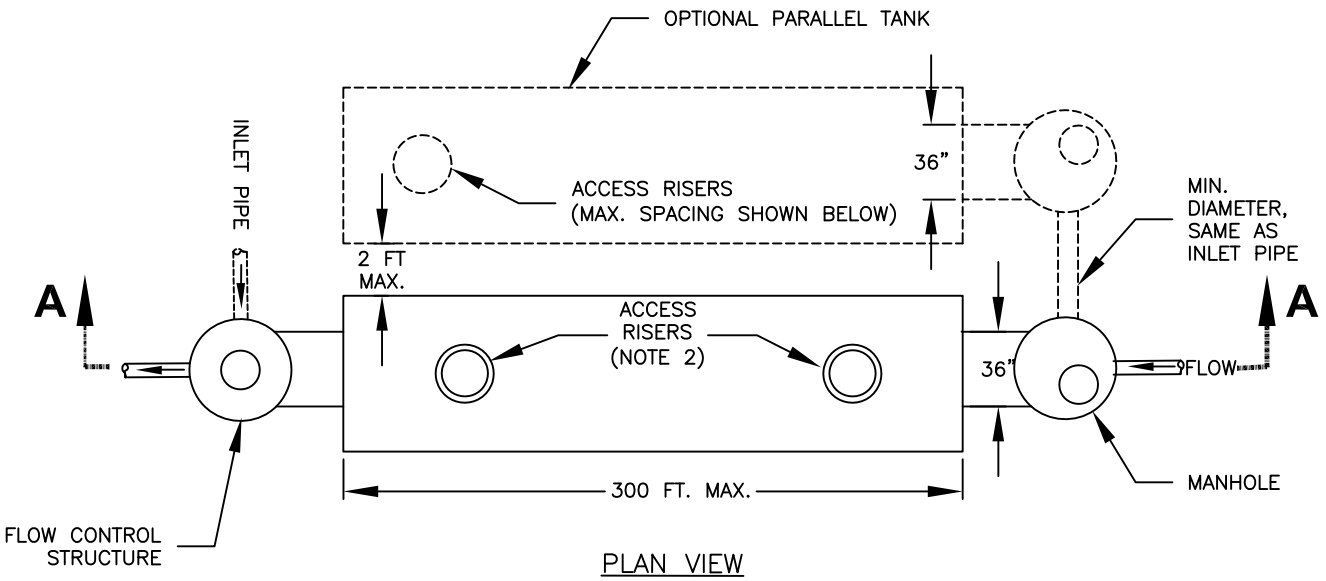
1. TAPE WRAP AND SLEEVE WATER SERVICES IN 4"PVC ASTM D1785 SCHEDULE 80 WITH MOLDED PIPE SLEEVE END SEALS. REFER TO STANDARD PLAN 422

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

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

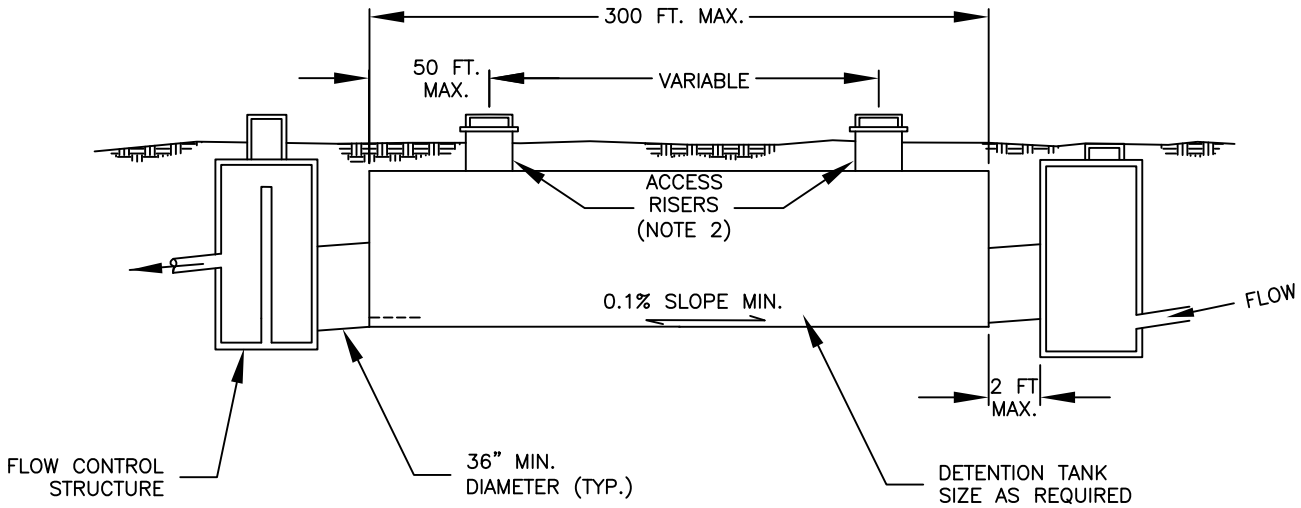
STANDARD PLAN
SLEEVE DETAIL FOR DOMESTIC WATER SERVICE

APPROVED	James J. Sonnet	1/01/14	DRAWN BY	KAK	12/2013	**NO. 247**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



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

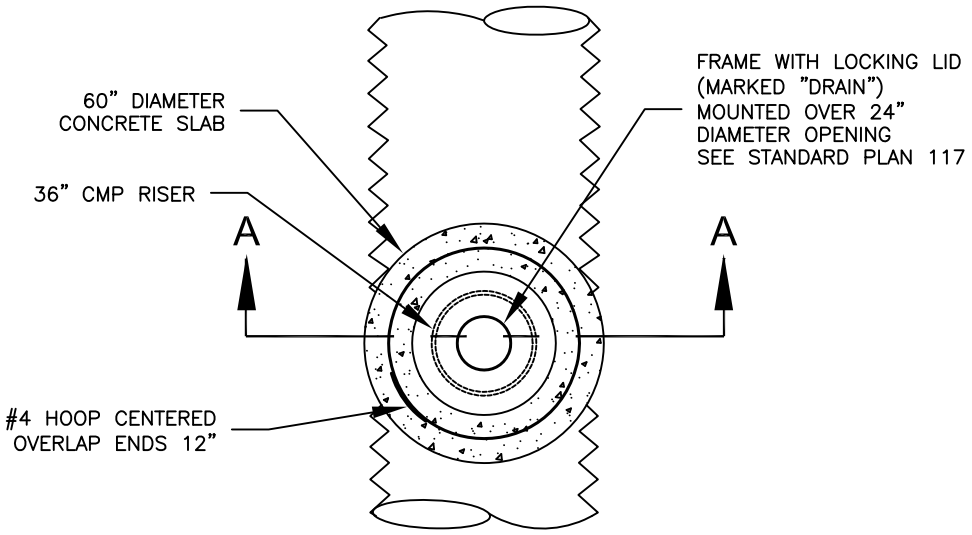
2. FOR ACCESS RISER DETAILS SEE STANDARD PLAN 248B

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

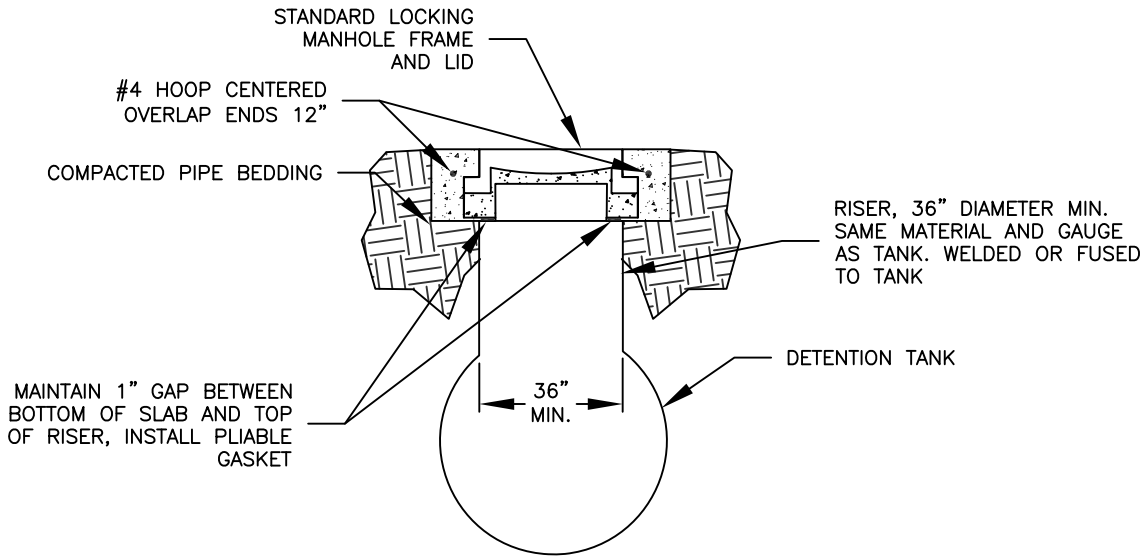
STANDARD PLAN

DETENTION TANK

APPROVED	James J. Speir	1/01/14	DRAWN BY	KAK	12/2013	**NO. 248 A**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



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

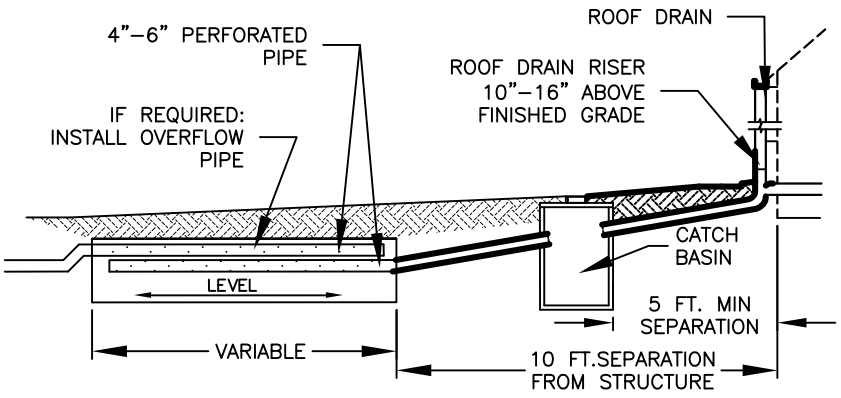
3. MUST BE LOCATED FOR ACCESS BY MAINTENANCE VEHICLES

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

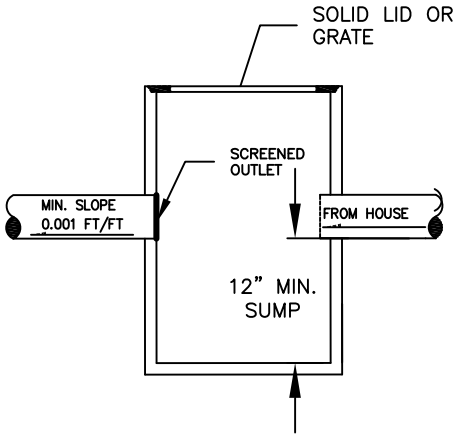
STANDARD PLAN

DETENTION TANK DETAILS

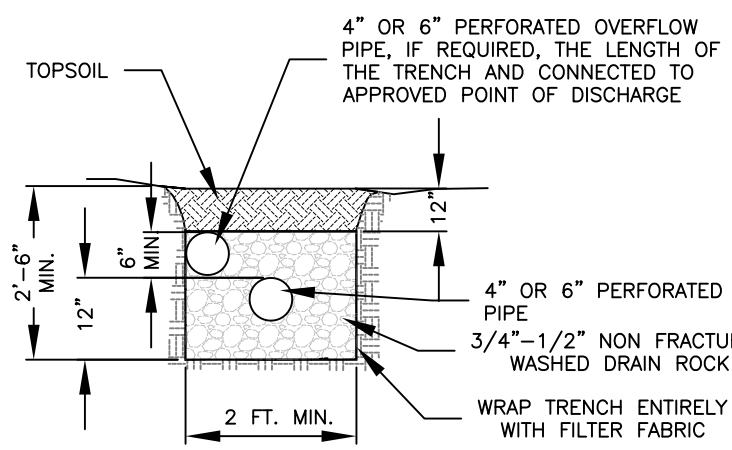
APPROVED	James Bennett	1/01/14	DRAWN BY	KAK	12/2013	**NO. 248 B**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



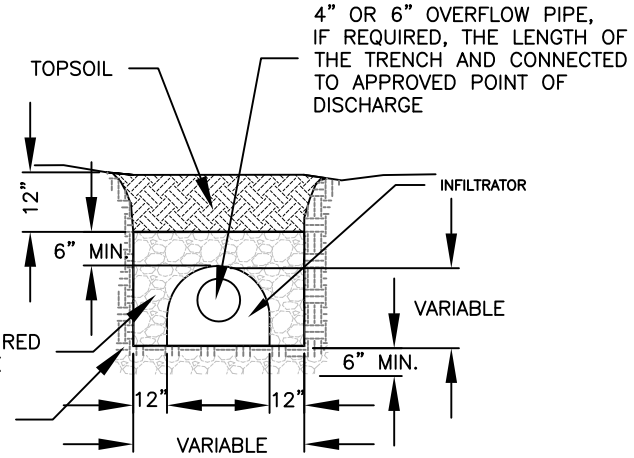
PROFILE



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

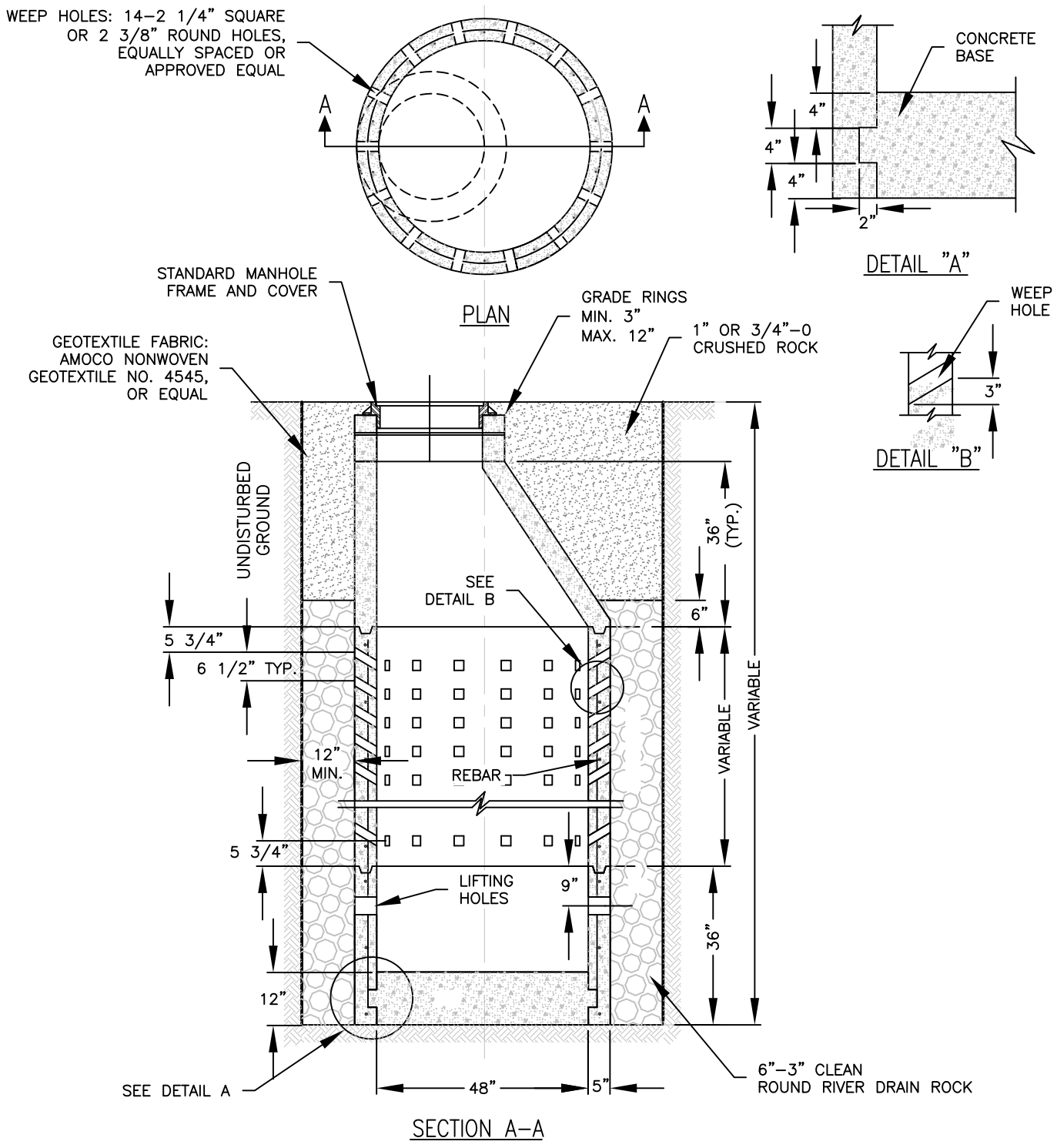
4. ALL PIPING SHALL MEET OREGON STATE PLUMBING CODE

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	James L. Sorte	1/01/14	DRAWN BY	KAK	12/2013	**NO. 249**	
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013		



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

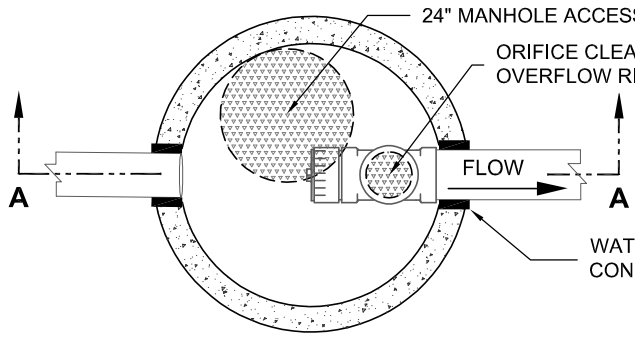
3. DRYWELL MUST BE REGISTERED AND/OR PERMITTED BY THE STATE OF OREGON AS AN UNDERGROUND INJECTION CONTROL DEVICE

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

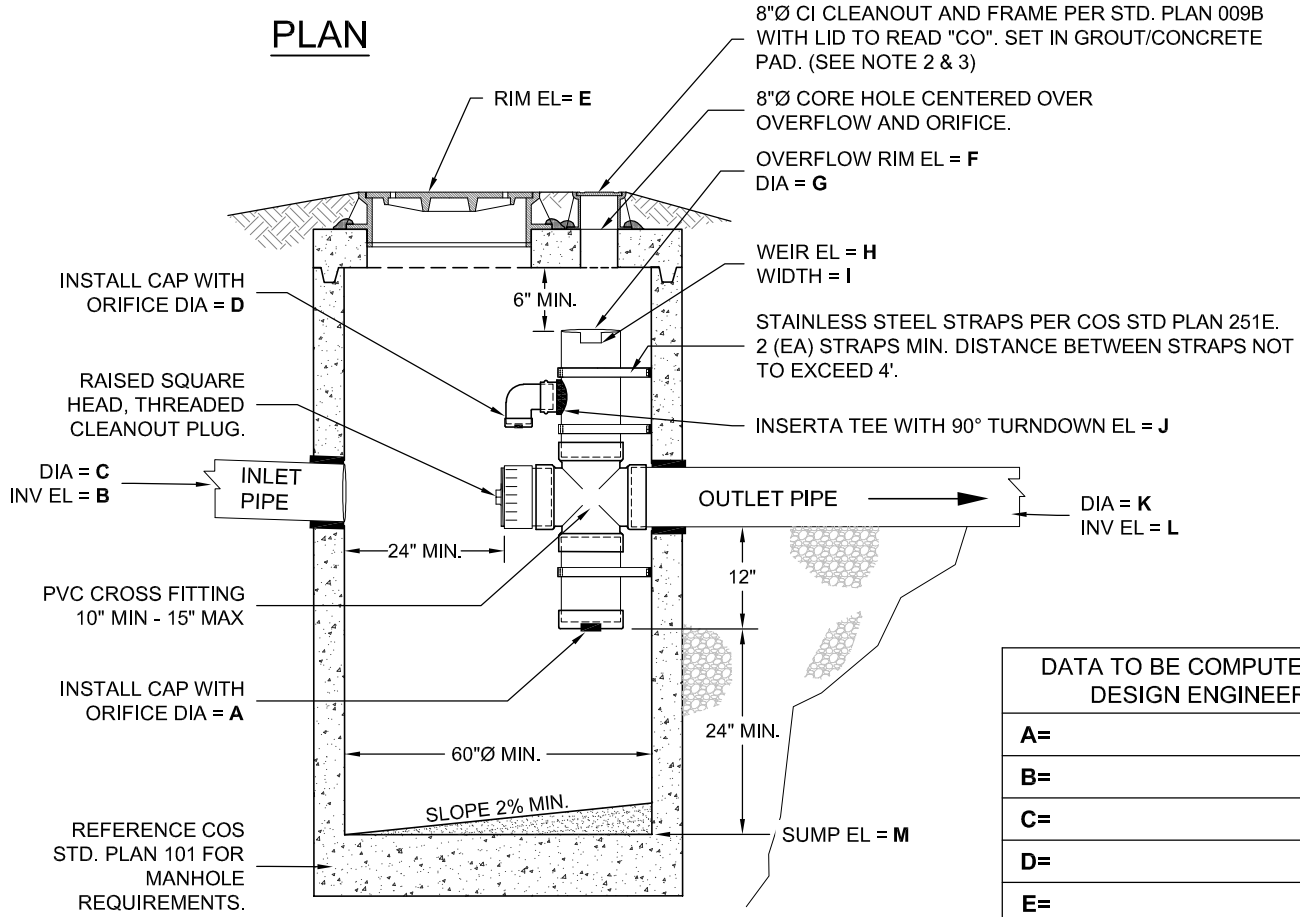
STANDARD PLAN

DRYWELL

APPROVED	James L. Sonnet	1/01/14	DRAWN BY	KAK	12/2013	**NO. 250**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



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

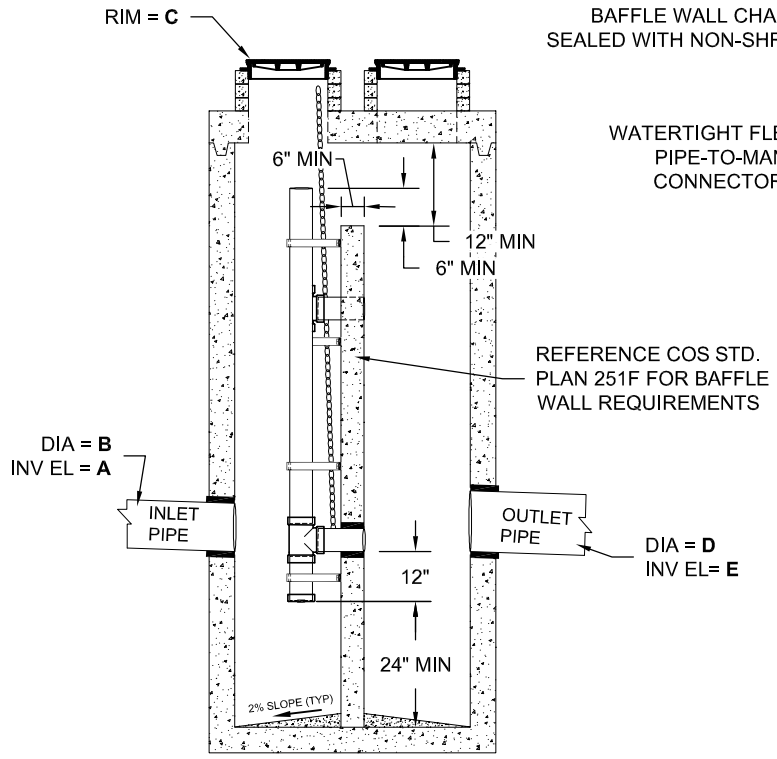
CHANGES				
ADDED ORIFICE SIZE RQMTS	4/2021	CLARIFIED MH LID AND CI FRAME	4/2021
REMOVED SLOTTED PIPE RESTRICTOR	4/2021		
ADDED ELEVATION DATA TABLE	4/2021		
ADJUSTED SUMP DEPTH RQMTS	4/2021		

STANDARD PLAN

FLOW CONTROL MANHOLE

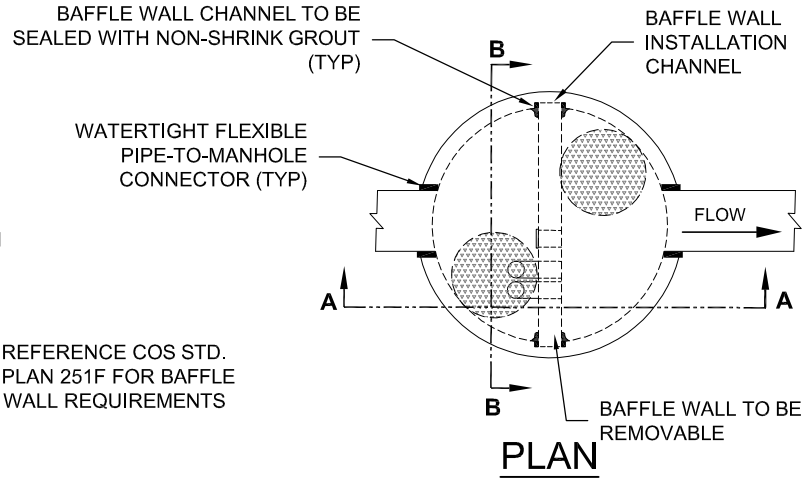
APPROVED	CITY ENGINEER	6/8/2021 DATE	DRAWN BY	KLA	4/2021	NO.251A
			CHECKED BY	JDL	4/2021	

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

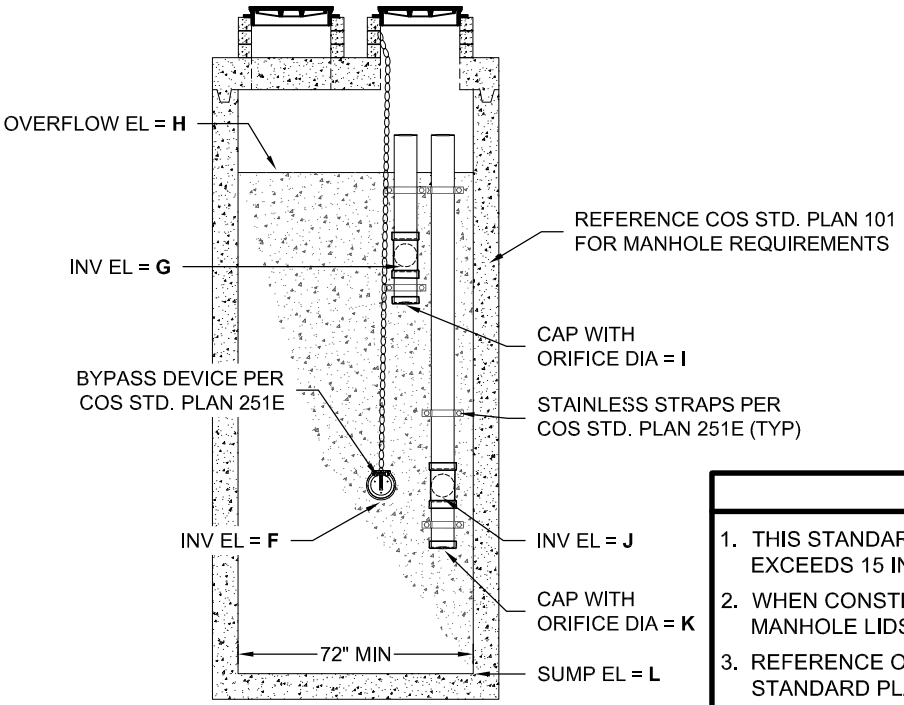


SECTION A-A

NTS



PLAN



SECTION B-B

NTS

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

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

CHANGES				
ADDED ORIFICE SIZE RQMTS	4/2021	ADDED ORIFICE RISERS	4/2021
REMOVED SLOTTED PIPE RESTRICTOR	4/2021		
ADDED ELEVATION DATA TABLE	4/2021		
ADJUSTED SUMP DEPTH RQMTS	4/2021		

STANDARD PLAN

FLOW CONTROL STRUCTURE-BAFFLE

APPROVED	CITY ENGINEER	6/8/2021 DATE	DRAWN BY	KLA	4/2021	NO.251B
			CHECKED BY	JDL	4/2021	

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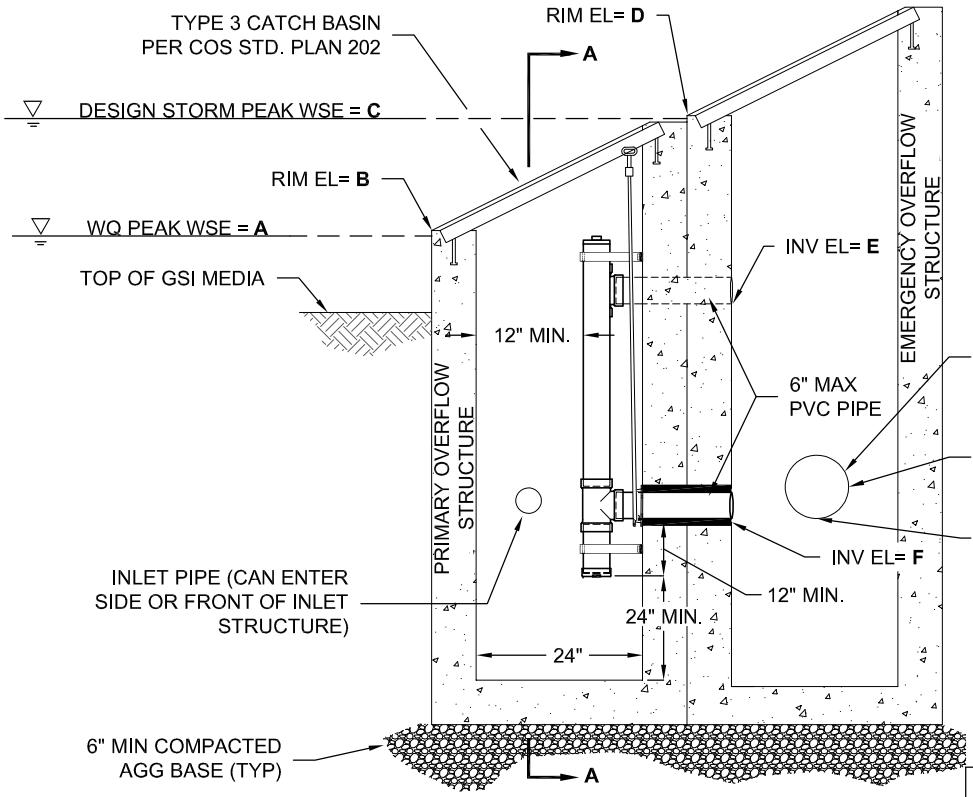
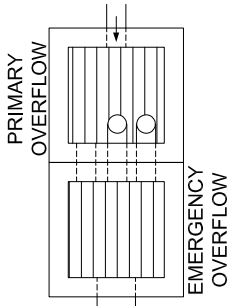
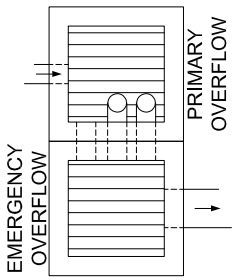


PROFILE VIEW

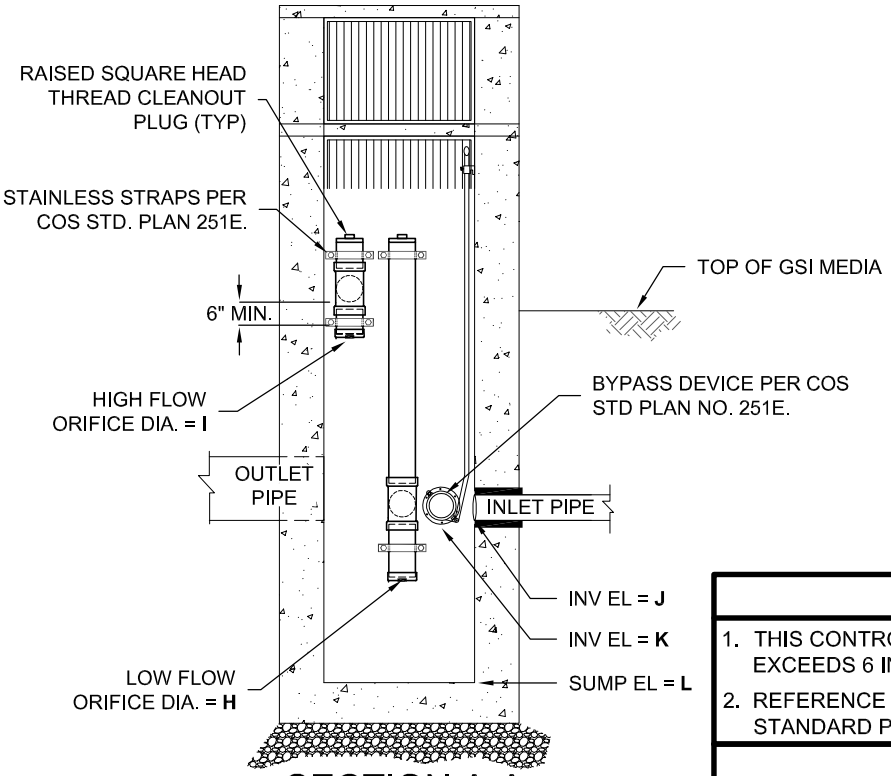
(Front/Back Orientation Shown)



FRONT/BACK ORIENTATION PLAN VIEW



SIDE/SIDE ORIENTATION PLAN VIEW



SECTION A-A

NTS

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

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			

APPROVED	CITY ENGINEER	6/8/2021 DATE	DRAWN BY	KLA	4/2021	**NO.251C**
			CHECKED BY	JDL	4/2021	

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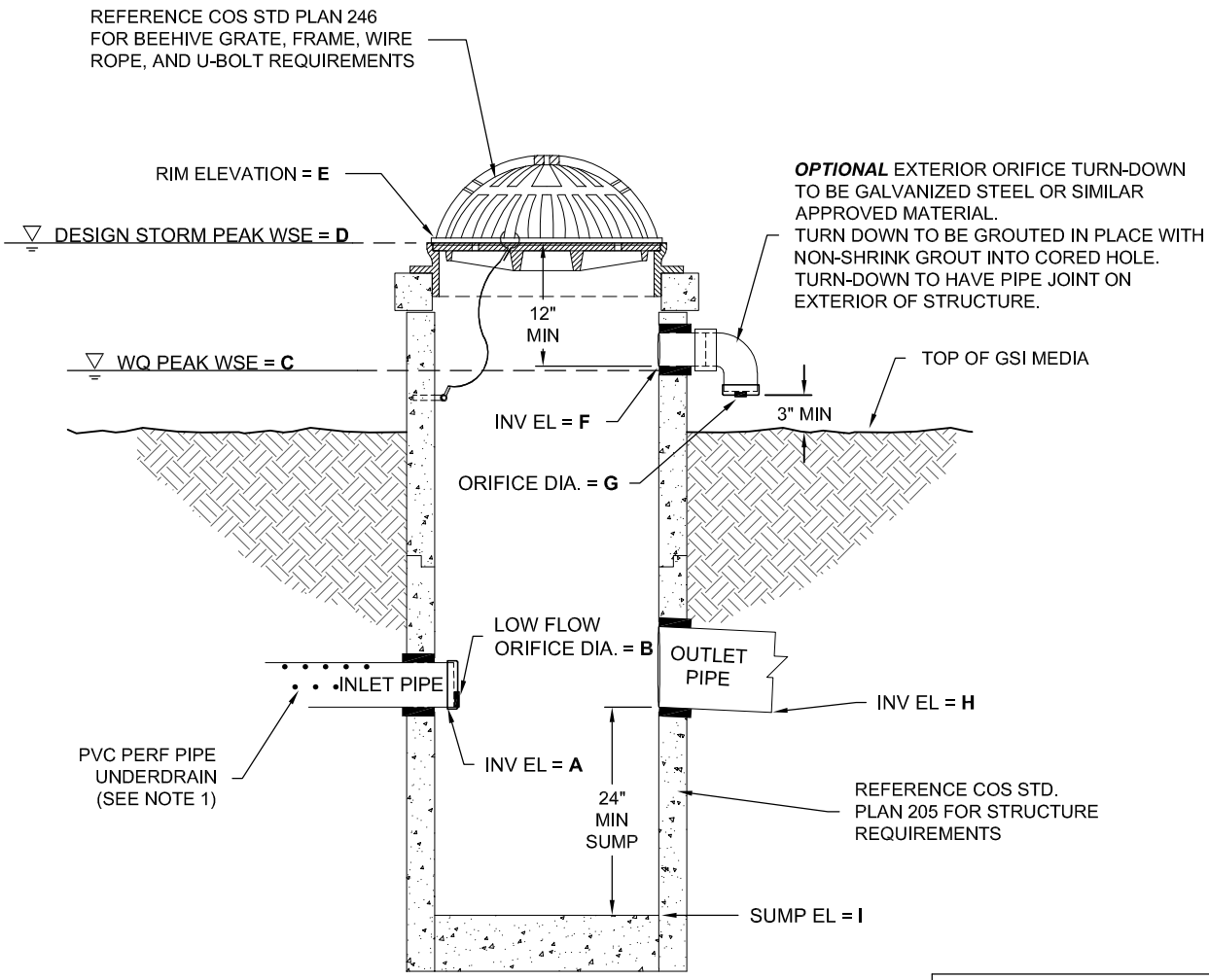


TYPICAL SECTION

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

CHANGES

STANDARD PLAN

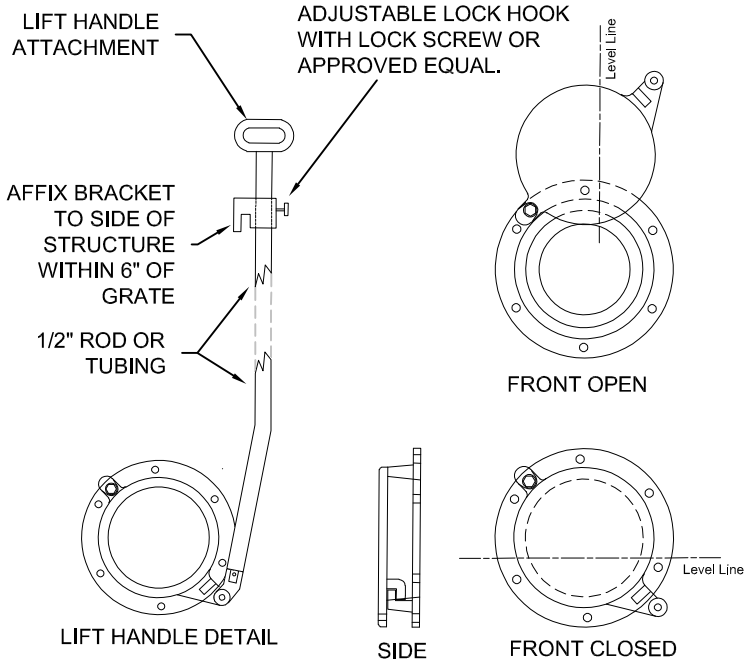
BEEHIVE INLET CONTROL

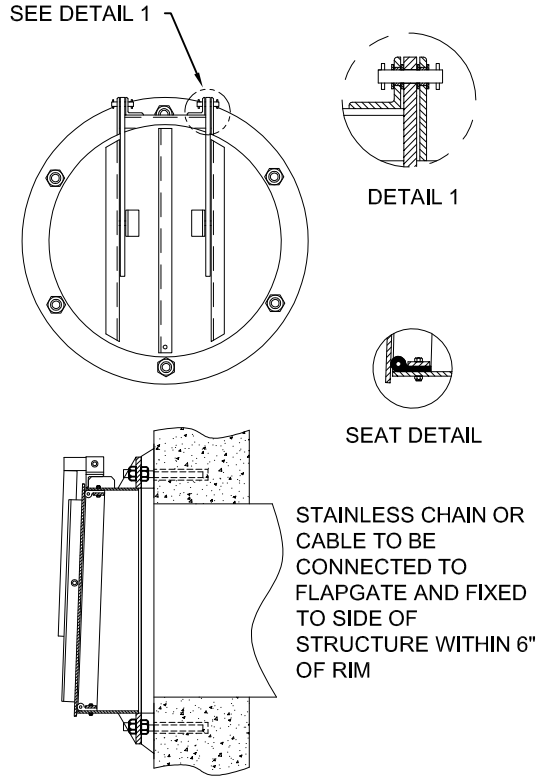
APPROVED	CITY ENGINEER	6/8/2021	DATE	DRAWN BY	KLA	4/2021
				CHECKED BY	JDL	4/2021

NO.251D

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

MAINTENANCE BYPASS DEVICE NTS:

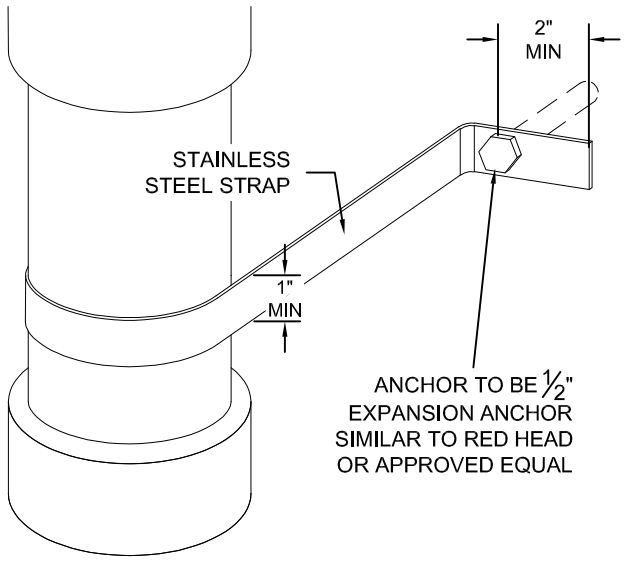




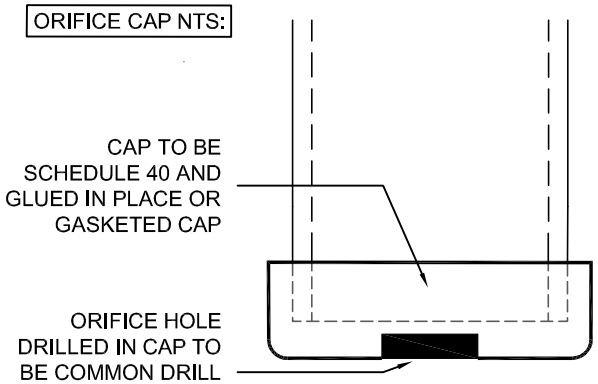
CAST ALUMINUM SHEAR GATE:
USE WHEN < 5FT FROM RIM TO BYPASS INVERT
MANUFACTURED BY OLYMPIC FOUNDRY OR APPROVED SIMILAR

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

STAINLESS STRAP NTS:



ORIFICE CAP NTS:



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

GENERAL NOTES

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

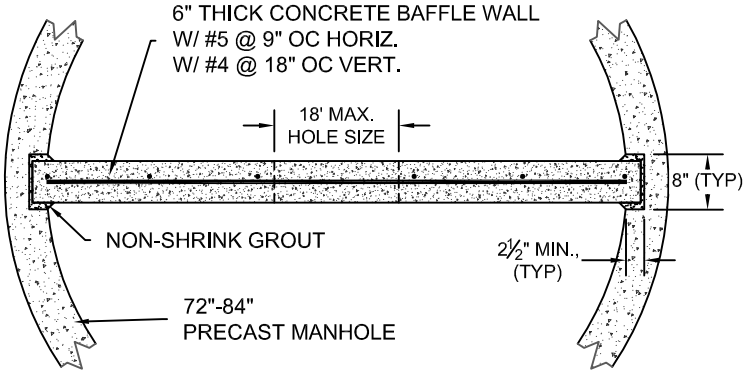
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

CHANGES

STANDARD PLAN
FLOW CONTROL COMPONENTS

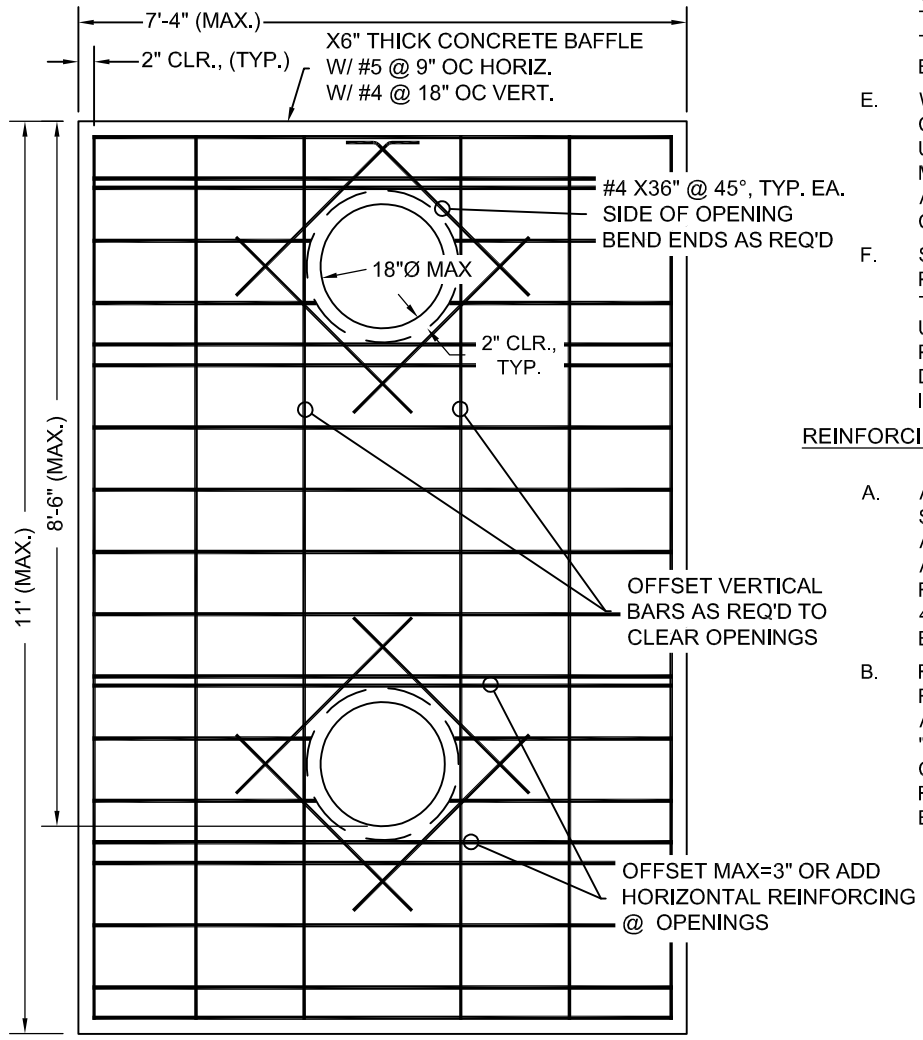
APPROVED	CITY ENGINEER	6/8/2021 DATE	DRAWN BY	KLA	4/2021	**NO.251E**
			CHECKED BY	JDL	4/2021	

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



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 ¾".

C. NON-SHRINK GROUT DESIGN SHALL BE 6,000PSI MIN WITH W/C RATION 0.46, MAX AGG ⅜"

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

CHANGES

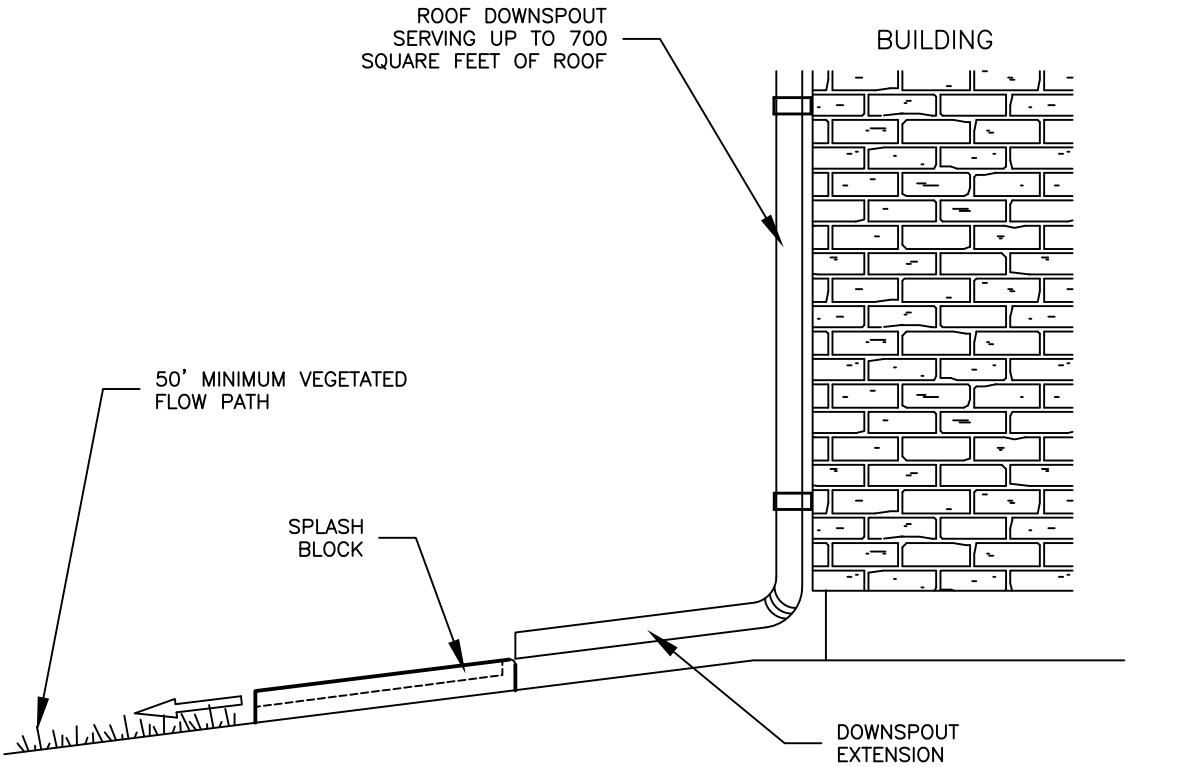
STANDARD PLAN

FLOW CONTROL BAFFLE WALL

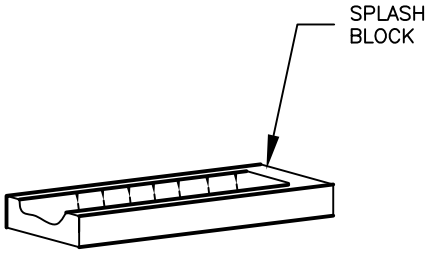
APPROVED	CITY ENGINEER	6/8/2021	DATE	DRAWN BY	KLA	4/2021
				CHECKED BY	JDL	4/2021

NO.251F

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



NTS



NOTES:

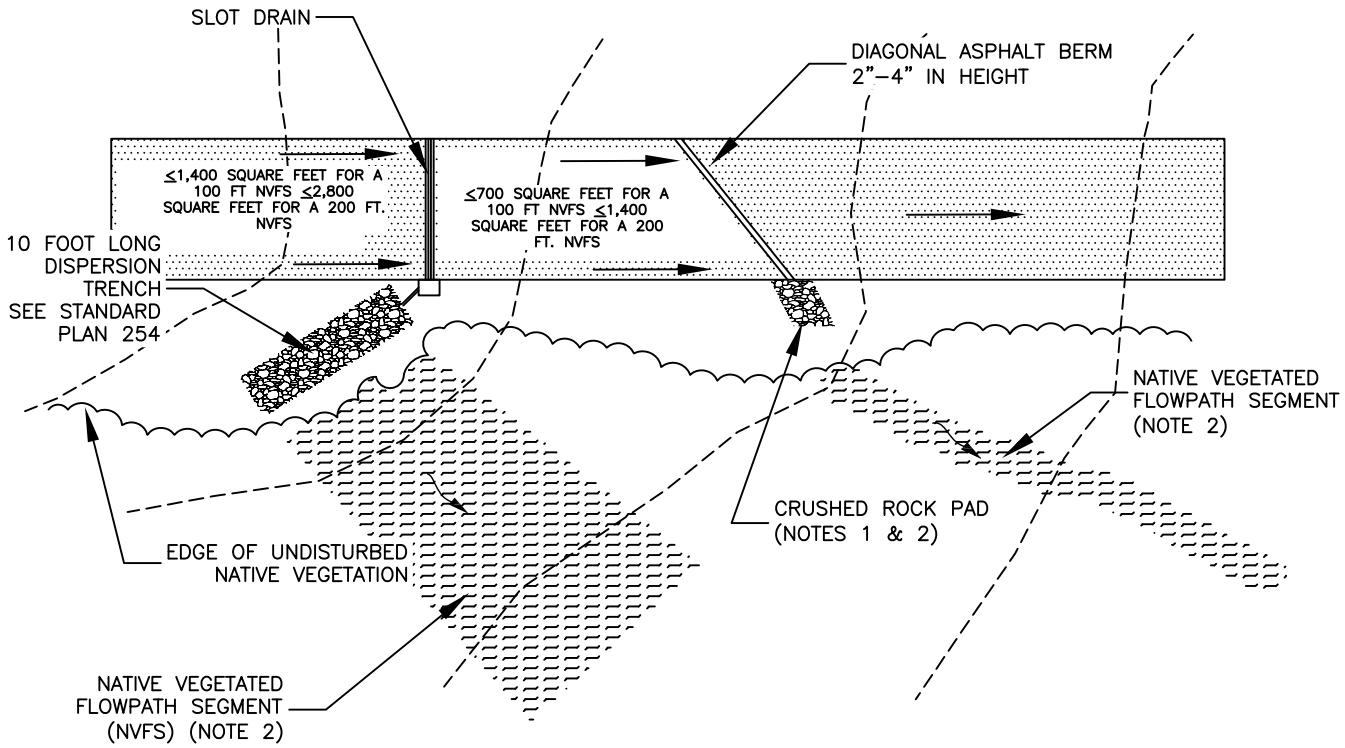
1. MINIMUM DISTANCE OF SPLASH BLOCK FROM BUILDING – 10 FEET

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

SPLASH BLOCK

APPROVED	CITY ENGINEER	1/01/14	DRAWN BY	KAK	12/2013	**NO. 252**
		DATE	CHECKED BY	KR	12/2013	



PLAN VIEW OF DRIVEWAY
NTS

NOTES:

1. ROCK PAD:
   2' WIDE (PERPENDICULAR TO FLOW)
   3' LONG
   6" DEEP

2 VEGETATED FLOWPATH MINIMUM LENGTH 100 FEET

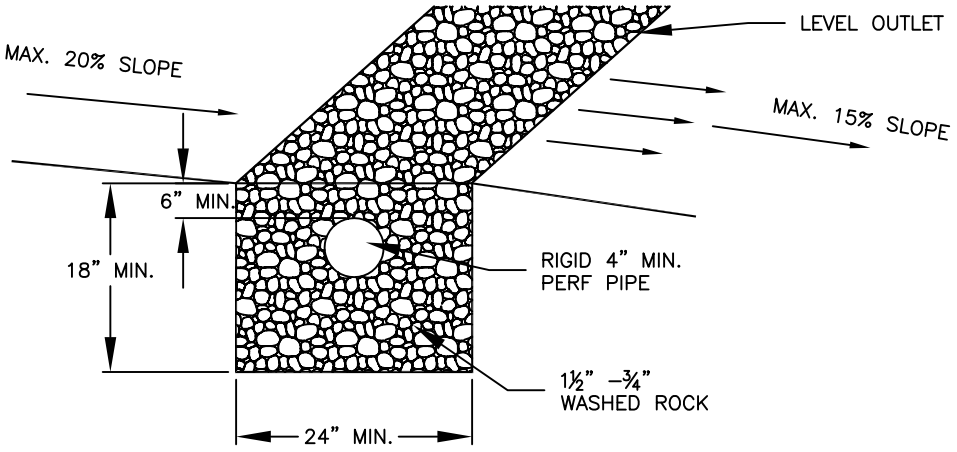
3. MINIMUM 50 FEET SEPARATION BETWEEN FLOWPATHS

4. VEGETATION SHALL BE PER DESIGN STANDARDS

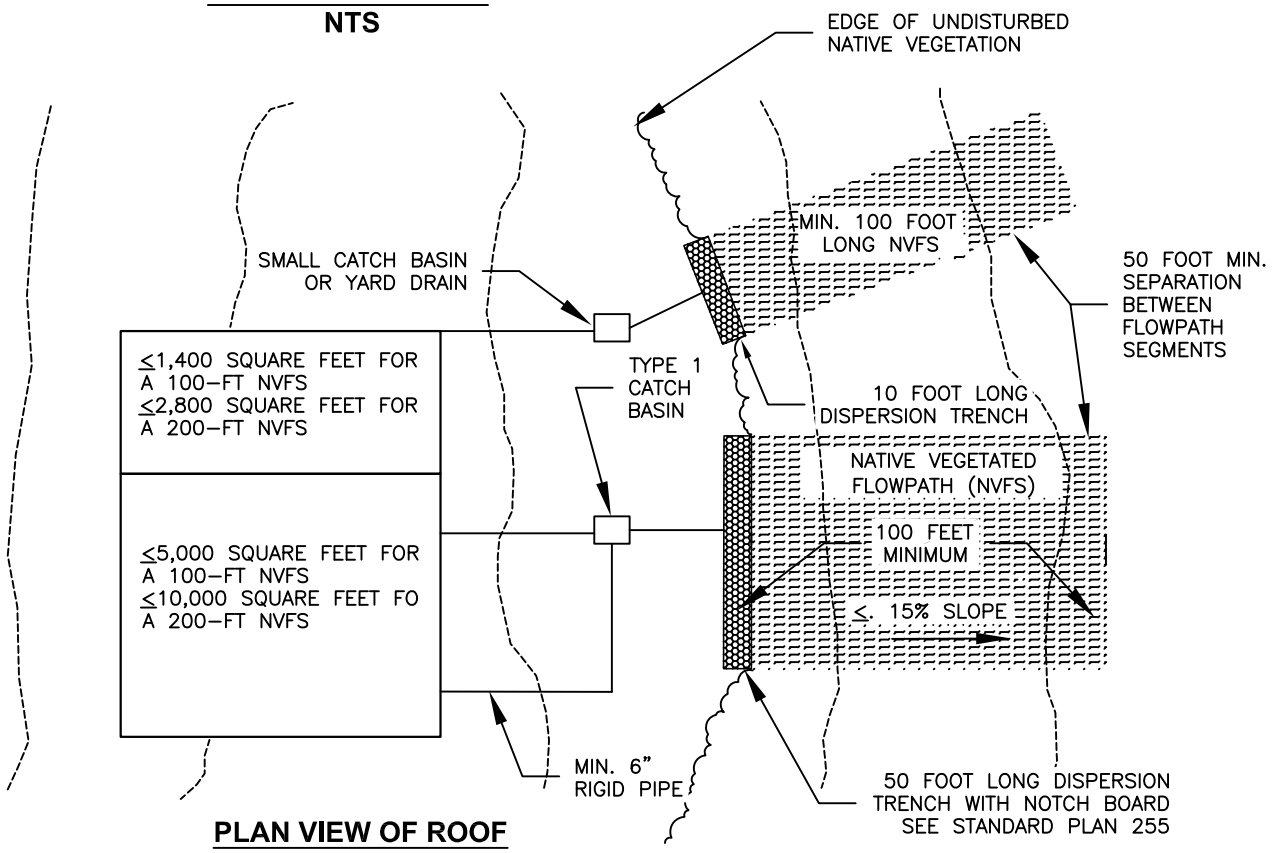
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
DRIVEWAY DISPERSION TRENCH AND ROCK PAD

APPROVED	James L. Sprent	1/01/14	DRAWN BY	KAK	12/2013	**NO. 253**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



TRENCH X-SECTION
NTS



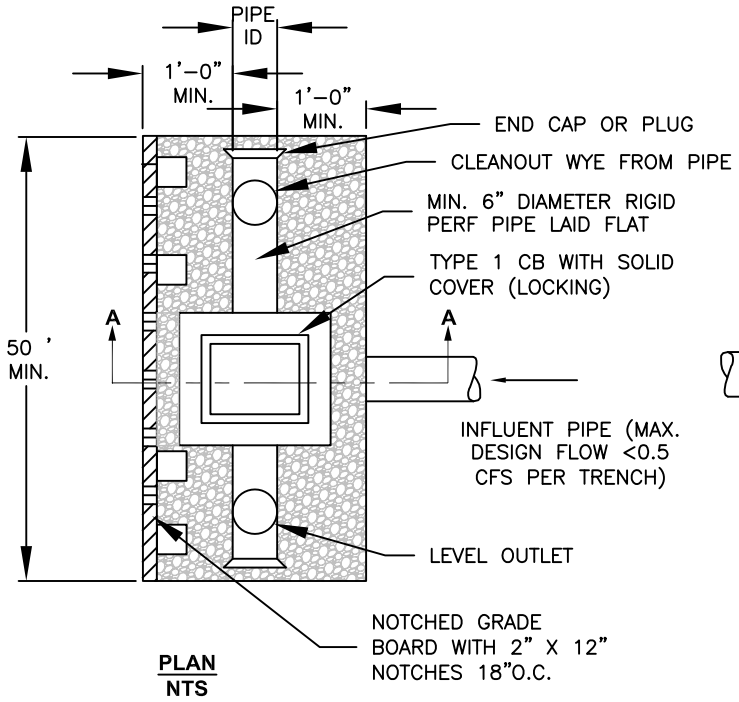
PLAN VIEW OF ROOF
NTS

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

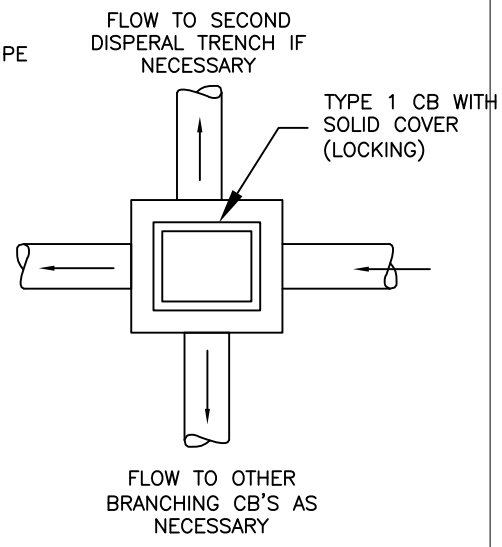
STANDARD PLAN

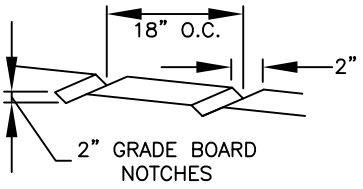
10-FOOT DISPERSION TRENCH

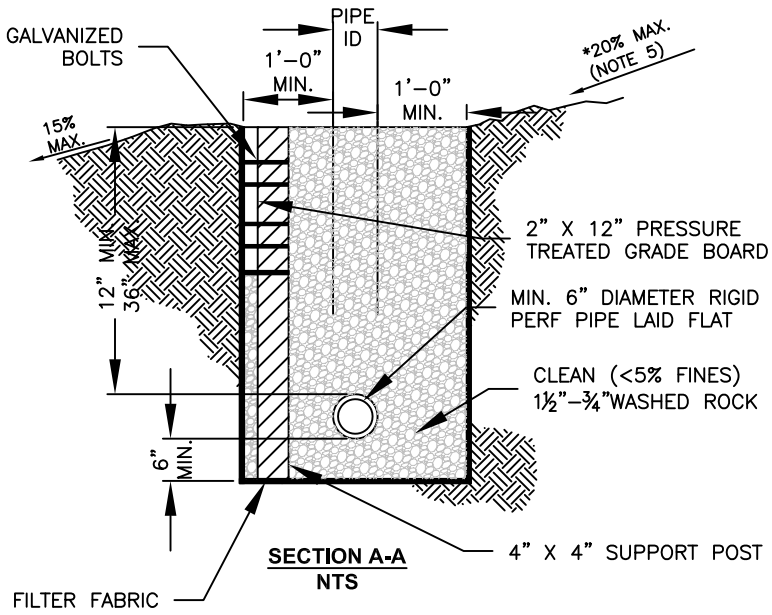
APPROVED	James Scott	1/01/14	DRAWN BY	KAK	12/2013	**NO. 254**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



PLAN
NTS







SECTION A-A
NTS

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

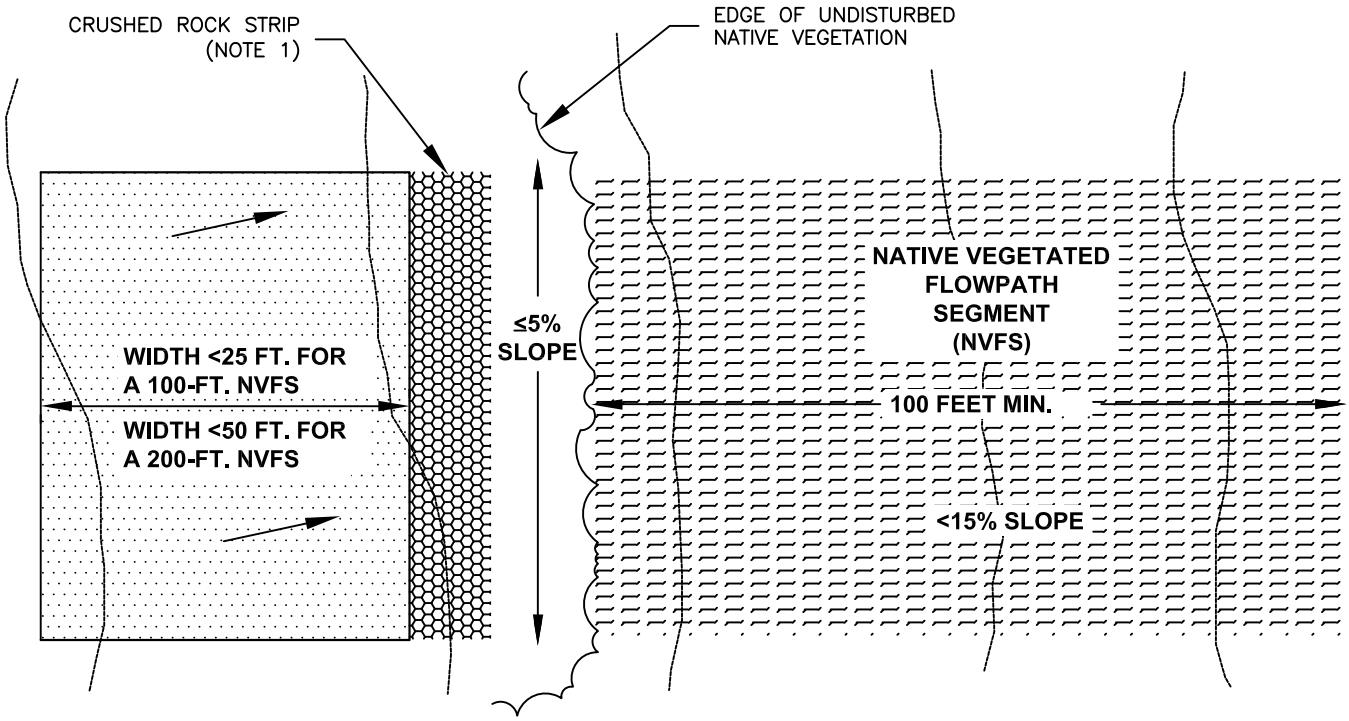
5. 15% MAXIMUM GRADE IF DESIGNED AS COMBINED FACILITY

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

50-FOOT DISPERSION TRENCH

APPROVED	James F. Sprent	1/01/14	DRAWN BY	KAK	12/2013	**NO. 255**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



PLAN VIEW
NTS

NOTES:

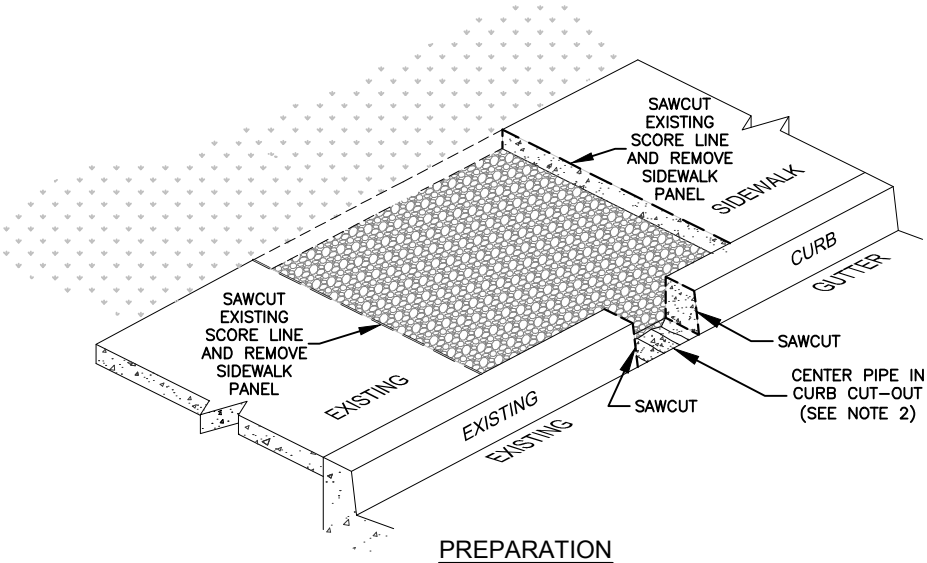
1. CRUSHED ROCK STRIP IS 2' WIDE X 6" DEEP OR EXTEND TO BASE COURSE OF IMPERVIOUS AREA. MUST EXTEND BASE COURSE TO AN ELEVATION AT OR BELOW THE IMPERVIOUS SURFACE

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

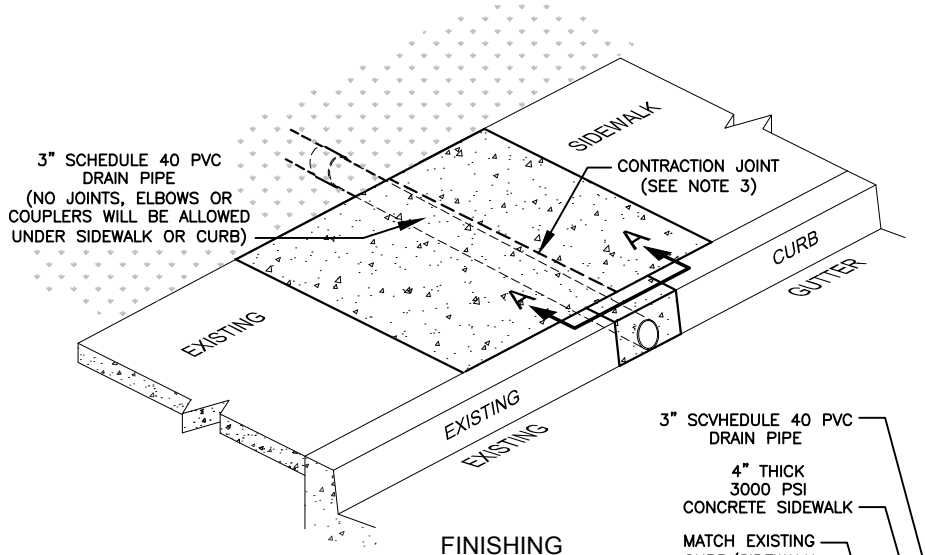
STANDARD PLAN

SHEET FLOW DISPERSION

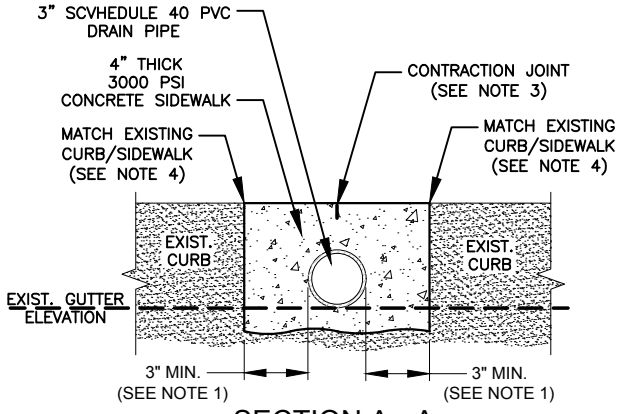
APPROVED	James Bennett	1/01/14	DRAWN BY	KAK	12/2013	**NO. 256**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



PREPARATION



FINISHING



SECTION A - A

NOTES:

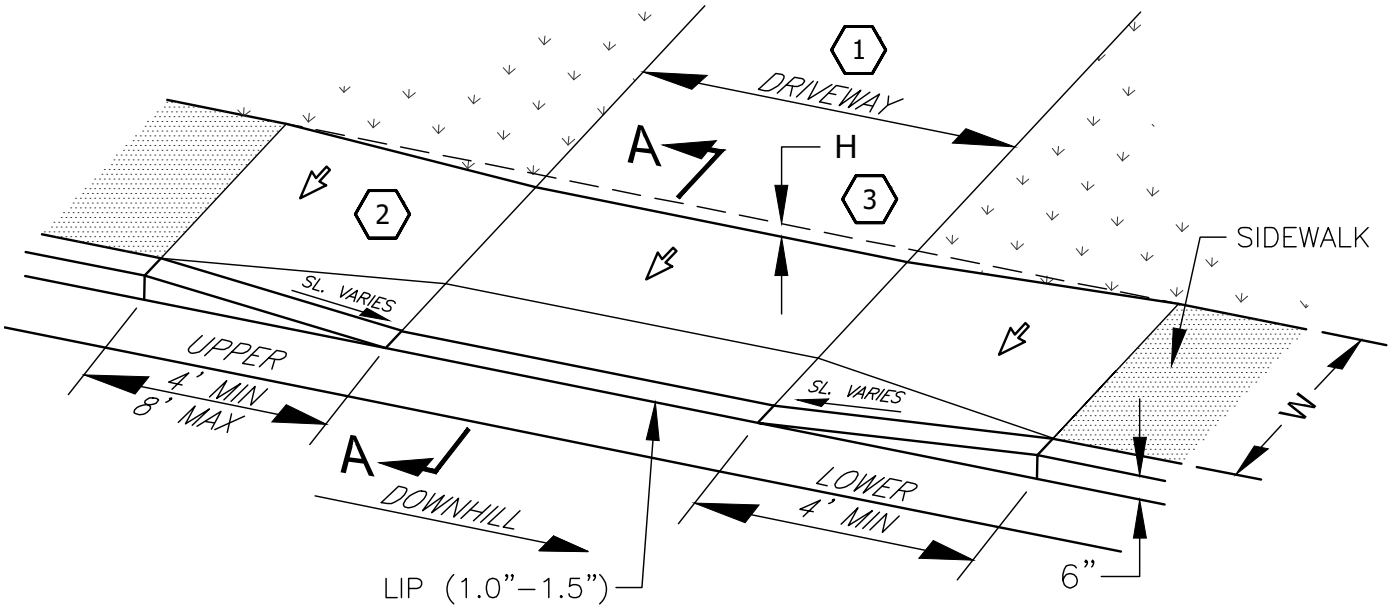
1. SAWCUT AND REMOVE EXISTING SIDEWALK PANEL. SAWCUT AND REMOVE ENOUGH CURB TO ACCOMMODATE THE DRAIN PIPE AND A MINIMUM OF 3 INCHES OF CONCRETE CURB/SIDEWALK TO BE POURED ON EACH SIDE OF PIPE.
2. DRAIN PIPE SHALL BE INSTALLED WITH A MINIMUM SLOPE OF 0.5% ON 2 INCHES (MIN.) OF COMPACTED CRUSHED AGGREGATE 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 FINSH NEW CONCRETE TO MATCH THE APPEARANCE OF EXISTING AS CLOSELY AS POSSIBLE. SEE STANDARD PLAN 306.

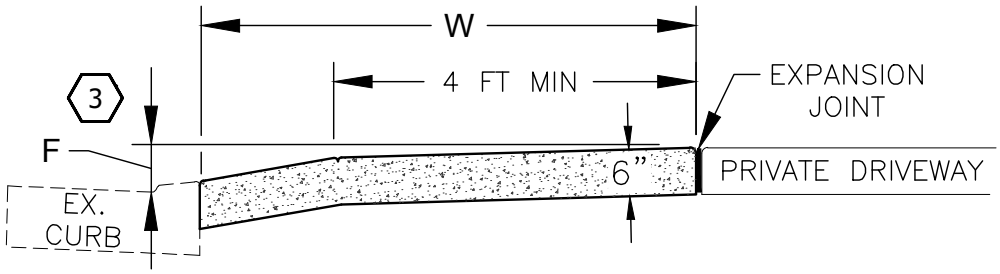
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

RAIN DRAIN INSTALLATION

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





SECTION A-A

KEYNOTES

1. DRIVEWAY WIDTH AS SPECIFIED ON PERMIT OR AS SHOWN ON PLANS.

2. 7.5% TYPICAL (8.3% MAXIMUM) SLOPE, BUT SHALL NOT REQUIRE THE LENGTH TO EXCEED 8–FEET. APPROXIMATE MINIMUM LENGTHS REQUIRED FOR VARIOUS STREET SLOPES ARE SHOWN IN TABLE BELOW:

STREET SLOPE %	UPPER TRANSITION MINIMUM LENGTH (W=5')
1.0	4.0'
2.0	4.5'
3.0	5.25'
4.0	6.5'
>5.0	8.0'

3. DIMENSIONS "F" AND "H" VARY WITH SIDEWALK WIDTH 'W'.

W (FT)	H (INCHES)	F (INCHES)
5	3.25	4.0
6	2.75	4.75
7	2.25	5.5
8		7.0

GENERAL NOTES

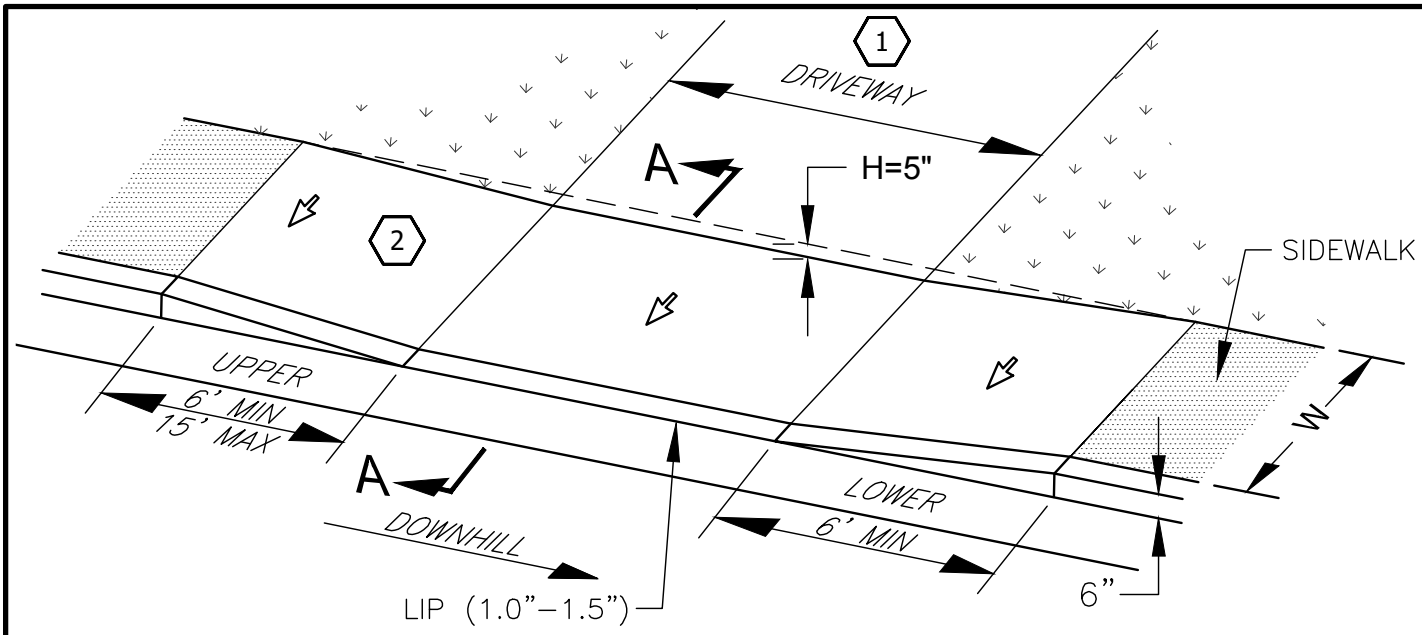
- ALL SLOPES ARE RELATIVE TO TRUE HORIZONTAL.
- DRIVEWAY APPROACH AND TRANSITIONS SHALL BE MINIMUM 6–INCH THICK COMMERCIAL GRADE CONCRETE.
- REFER TO SIDEWALK STANDARDS FOR BROOM FINISH; JOINTS; TOOLED EDGES.
- ALL MEASUREMENTS ARE BASED ON 6 INCH CURB REVEAL.
- ⇦ SLOPE = 1.5% TYPICAL (2.0% MAXIMUM)

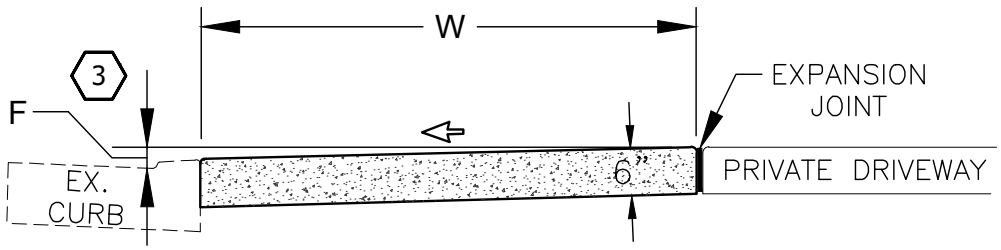
CHANGES	
	REVISED KEYNOTE 2
	CHANGED 2% MAX TO HOLLOW ARROW WITH GENERAL NOTE
	INCREASED GUTTER LIP

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
STANDARD DRIVEWAY APPROACH
CURBLINE SIDEWALK

APPROVED	CITY ENGINEER	12/27/19	DRAWN BY	JAK	10/2019	**NO.301A**
		DATE	CHECKED BY	DEW	10/2019	





SECTION A-A

KEYNOTES

1. DRIVEWAY WIDTH AS SPECIFIED ON PERMIT OR AS SHOWN ON PLANS.

2. 7.5% TYPICAL (8.3% MAXIMUM) SLOPE, BUT SHALL NOT REQUIRE THE LENGTH TO EXCEED 15–FEET. APPROXIMATE MINIMUM LENGTHS REQUIRED FOR VARIOUS STREET SLOPES ARE SHOWN IN TABLE BELOW:

STREET SLOPE %	UPPER TRANSITION MINIMUM LENGTH (FEET)
1.0	6.0
2.0	7.0
3.0	8.5
4.0	10.25
5.0	13.5
>5.5	15.0

3. DIMENSION "F" VARIES WITH SIDEWALK WIDTH "W".

W (FEET)	F (INCHES)
5	2.25
6	2.5
7	2.75
8	3.0

GENERAL NOTES

- CONSTRUCT THIS APPROACH TYPE FOR COMMERCIAL DRIVEWAYS ON HIGHER SPEED STREETS.
- ALL SLOPES ARE RELATIVE TO TRUE HORIZONTAL.
- DRIVEWAY APPROACH AND TRANSITIONS SHALL BE MINIMUM 6–INCH THICK COMMERCIAL GRADE CONCRETE.
- REFER TO SIDEWALK STANDARDS FOR BROOM FINISH; JOINTS; TOOLED EDGES.
- ALL MEASUREMENTS ARE BASED ON 6 INCH CURB REVEAL.
- ⇦ SLOPE = 1.5% TYPICAL (2.0% MAXIMUM)

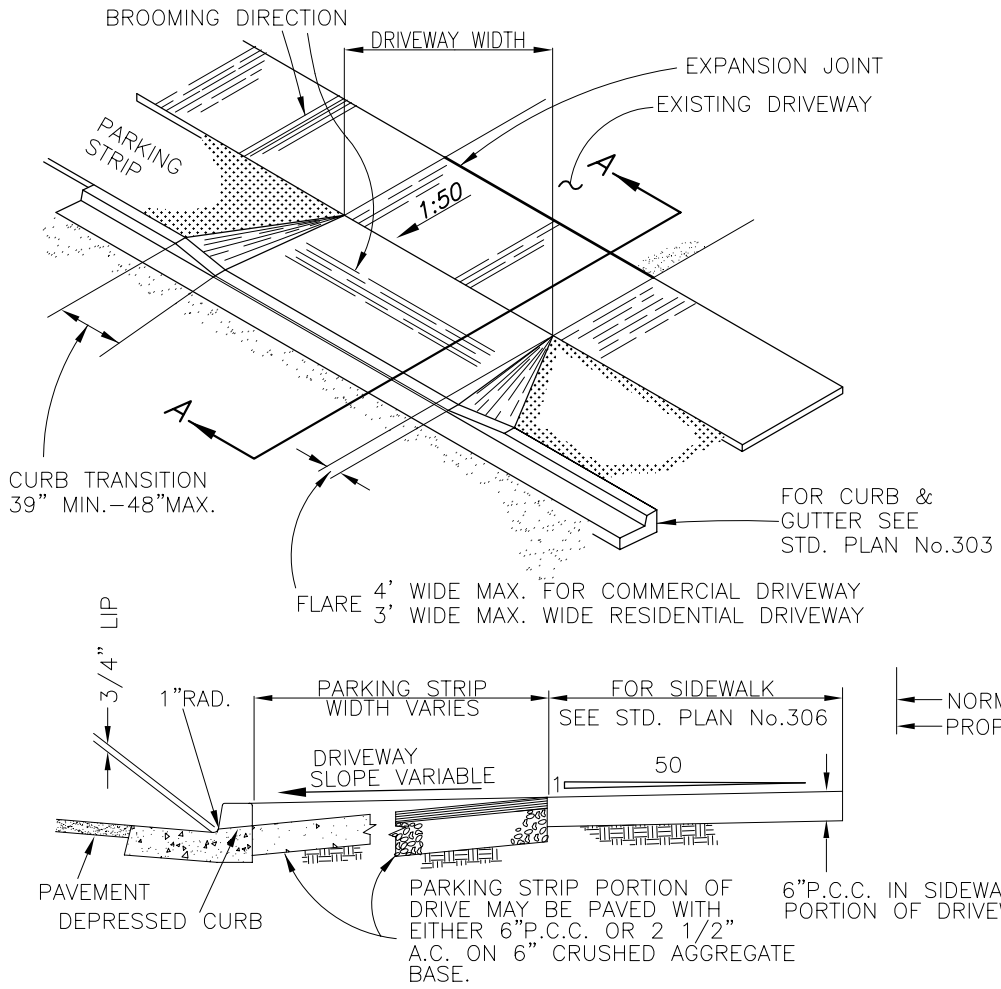
CHANGES	
	REVISED KEYNOTE 2
	CHANGED 2% MAX TO HOLLOW ARROW WITH GENERAL NOTE
	INCREASED GUTTER LIP

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

FULLY LOWERED DRIVEWAY APPROACH
CURBLINE SIDEWALK

APPROVED		12/27/19	DRAWN BY	JAK	10/2019	**NO.301B**
	CITY ENGINEER	DATE	CHECKED BY	DEW	10/2019	



SECTION A–A
NO SCALE

NOTES:

1. DRIVEWAY WIDTH WILL NORMALLY BE SHOWN ON PROJECT PLANS. WHEN NOT SHOWN, WIDTH SHALL BE AS DIRECTED BY THE ENGINEER. IN EITHER CASE, THE DRIVEWAY WIDTH SHALL NOT EXCEED THE LIMITS SET FORTH IN SALEM REVISED CODE CHAPTER 80.

2. SIDEWALKS, INCLUDING THAT PORTION CROSSING THE DRIVEWAY SHALL HAVE TRANSVERSE CONTRACTION JOINTS AT 5' INTERVALS AND TOOL ROUNDED BEFORE BROOMING. ALL EDGES SHALL BE TOOL ROUNDED AND SHINED (3") AFTER BROOMING.

3. WHEN EXISTING DRIVEWAY CANNOT BE MATCHED TO NEW DRIVEWAY WITHIN SLOPE LIMITATIONS SHOWN, ADJUST EXISTING DRIVEWAY–NOT CURB AND SIDEWALK GRADE.

4. EXPANSION JOINTS 1/2"X3 1/2" PREMOLDED JOINT MATERIAL AT LOCATIONS SHOWN.

5. THE DIMENSIONS OF DRIVEWAY APPROACH SHALL NOT BE ADJUSTED WITHOUT SPECIFIC PRIOR (BEFORE FORMING) APPROVAL OF THE INSPECTOR.

6. CONCRETE STRENGTH SHALL BE PER SCS 308.

7. THE 1:50 CROSS–SLOPE OF SIDEWALK IS MEASURED FROM HORIZONTAL.

8. SEE SIDEWALK DETAILS FOR RESTRICTIONS AND SPECIFICATIONS NOT SHOWN.

Approved Karl O. Sweitzer 5–18–04
City Engineer Date

Description	Date
DELETED ONE EXPANSION JOINT	5/04
CURBLINE DETAIL CONVERTED TO SEPARATE DRAWING	7/99

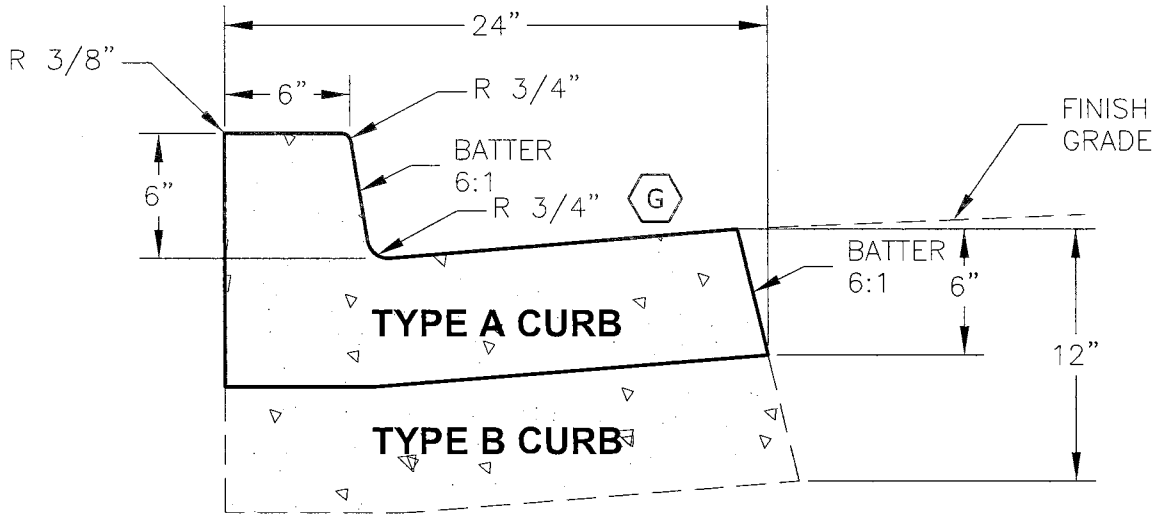
REVISION

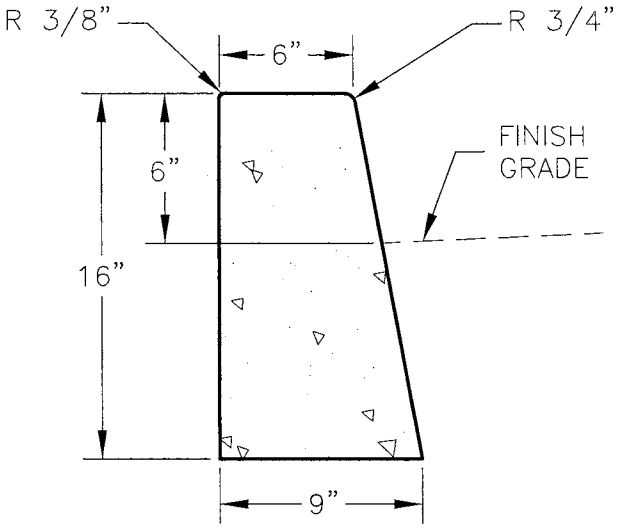
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
DRIVEWAY APPROACH
PROPERTY LINE SIDEWALK

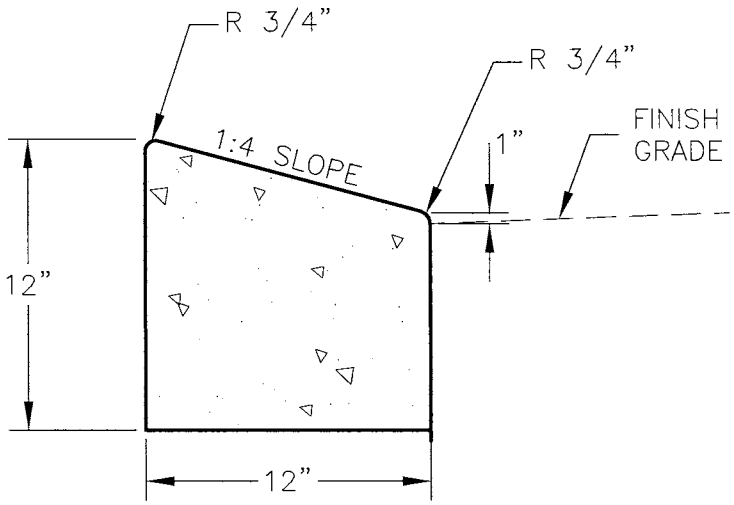
LAST REV. BY: DTN
CHECKED BY: DEW

NO.302





TYPE C CURB



TYPE D CURB

G GUTTER PAN NOTES

- SLOPE 5% NORMAL.
- SLOPE −5% MAX ON HIGH SIDE CURB ON STREETS HAVING SHED SECTION.

GENERAL NOTES

- CURB TYPE WILL BE SHOWN ON PLANS.
- CONSTRUCT EXPANSION JOINTS AT 200 FOOT MAXIMUM SPACING.
- CONSTRUCT CONTRACTION JOINTS AT 10 FOOT SPACING.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

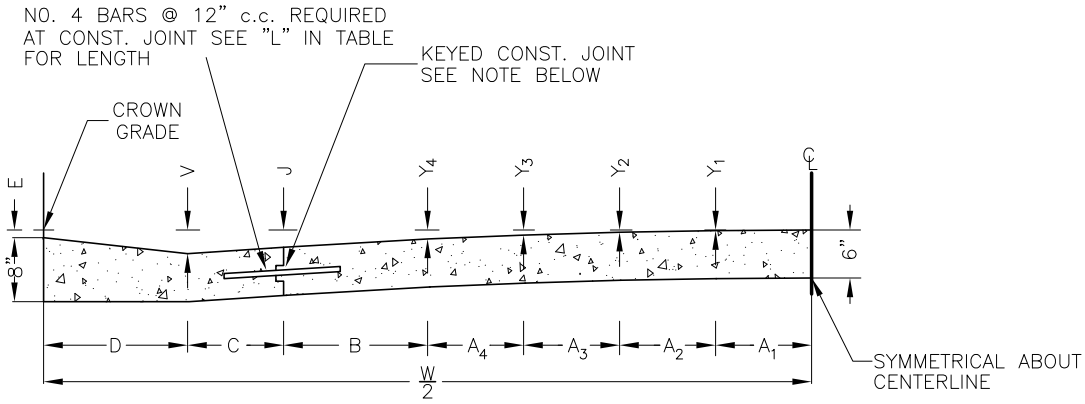
CHANGES		
	DELETE 303B STD. PLAN	CHANGE TITLE AND NUMBER
	CONSOLIDATE TYPE A&B DETAIL	
	ADD GUTTER PAN NOTES	
	ADD TYPE D MOUNTABLE CURB	

STANDARD PLAN

CURBS

APPROVED	CITY ENGINEER	12.15.15

DRAWN BY	JAK	2015	**NO.303**
CHECKED BY	DEW	2015	



HALF– SECTION OF P.C.C. ALLEY

ALLEY WIDTH – W	DIMENSIONS																		
	A_1	A_2	A_3	A_4	A_5	A_6	B	C	D	Y_1	Y_2	Y_3	Y_4	Y_5	Y_6	J	V	E	L
9'	1–0"	1–0"					1'–0"	8"	10"	0.012	0.047					0.107	0.160'	0.007	12"
12'	1–0"	1–0"	1–0"				1'–6"	8"	10"	0.006'	0.024'	0.053'				0.122'	0.160'	0.080'	12"
14'	1–0"	1–0"	1–0"	1–0"			1'–6"	8"	10"	0.005'	0.021'	0.048'	0.085'			0.160'	0.200'	0.120'	12"
16'	1–0"	1–0"	1–0"	1–0"			1'–6"	1–0"	1'–6"	0.006'	0.024'	0.053'	0.094'			0.180	0.250'	0.080'	16"
20'	1–0"	1–0"	1–0"	1–0"	1–0"	1–0"	1'–6"	1–0"	1'–6"	0.004'	0.018'	0.040'	0.071'	0.111'	0.160'	0.250'	0.320'	0.150'	16"

NOTES:

1. ALL CONC. SHALL BE CLASS 4000 P.S.I. MAX SLUMP 3" UNLESS OTHERWISE SPECIFIED BY THE ENGINEER
2. FOR FINISH, CURING AND OTHER REQUIREMENTS SEE SPECIFICATIONS.
3. ALLEY MAY BE POURED MONOLITHICLLY OR GUTTER SECTIONS MAY BE PLACED SEPARATELY AS SHOWN, IF THE SECTIONS ARE PLACED SEPARATELY THE CONSTRUCTION JOINT SHALL BE KEYED AND DOWELED

Approved Karl O. Houston City Engineer 9–15–99 Date

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

REVISION

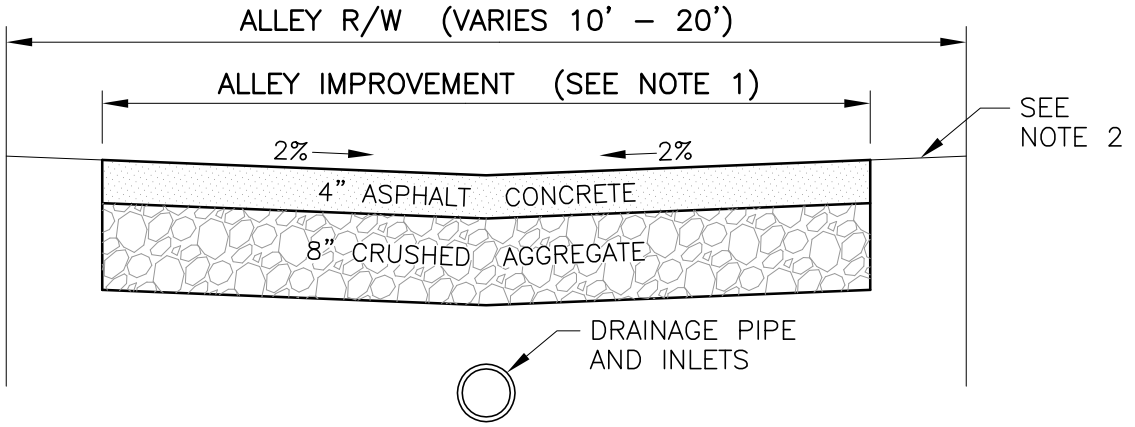
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

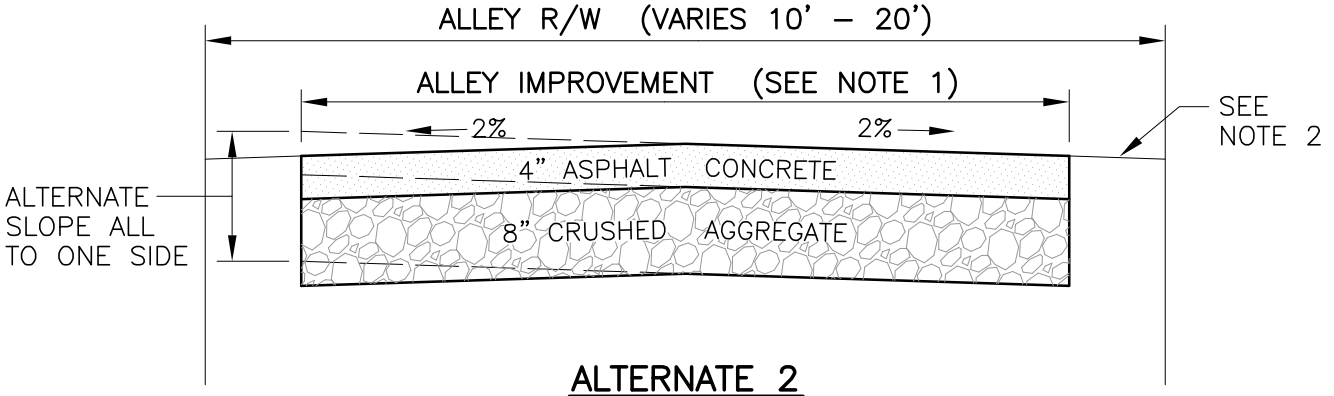
ALLEY DETAIL
PORTLAND CEMENT CONCRETE

DRAWN BY GS
CHECKED BY D.W.

NO.304



ALTERNATE 1



ALTERNATE 2

NOTES

1. ALLEY IMPROVEMENT WIDTH SHALL BE:
   FOR 10' R/W = 9' IMPROVEMENT
   FOR 12'–20' R/W = R/W WIDTH LESS 2'
2. EDGE BACKFILL MATERIAL TO MATCH ADJOINING A.C., P.C.C., ROCK, DIRT, ETC.
3. ROCK PORTION OF PAVEMENT STRUCTURAL SECTION MAY BE REDUCED IF DESIGNED PER CITY OF SALEM A.C. PAVEMENT DESIGN PROCEDURE.
4. A.C. ALLEY WITH NO DRAINAGE (ALTERNATE 2) ONLY ALLOWED WITH SPECIFIC APPROVAL OF DIRECTOR OF PUBLIC WORKS; AND WITH WRITTEN CONSENT OF ABUTTING PROPERTY OWNERS (HEIRS, SUCCESSORS AND ASSIGNS) TO ACCEPT WATER FROM CITY OF SALEM ALLEY. CONSENT TO BE RECORDED WITH APPROPRIATE COUNTY.

Approved Karl O. Kreutzer
City Engineer

9-15-99
Date

No.	Description	Date	By	Appr
	NEW PLAN	8/99	I.D.F.	

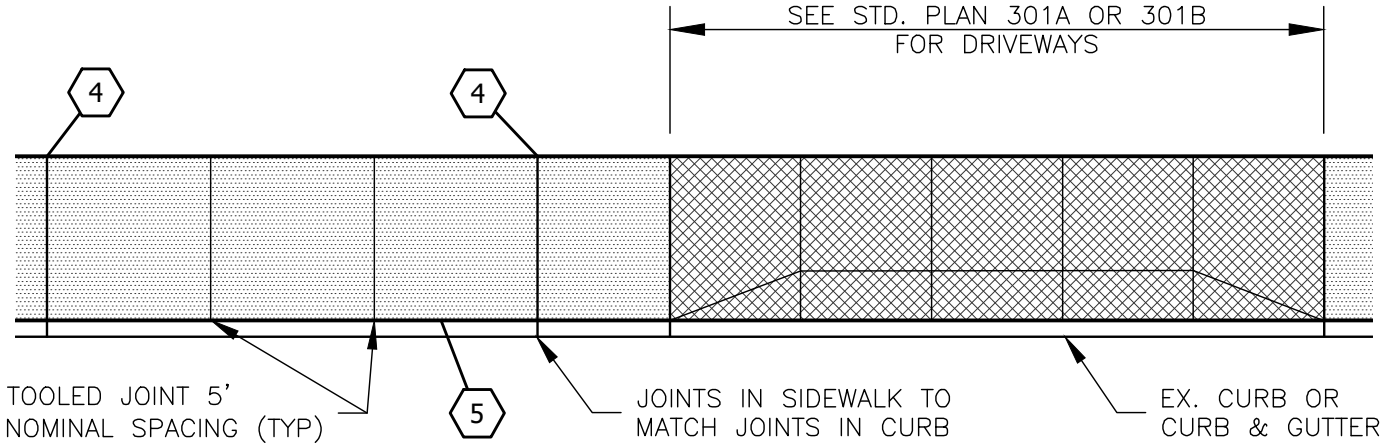
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

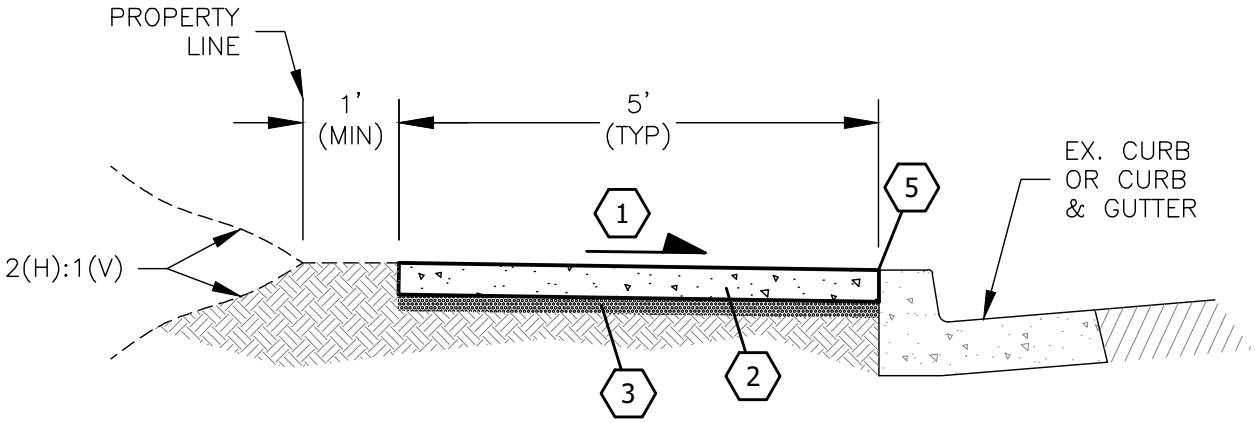
STANDARD PLAN
STANDARD ALLEY DETAILS
ASPHALT CONCRETE

DRAWN BY I.D.F.
CHECKED BY R.W.L.

NO.305



TYPICAL PLAN VIEW - CURB LINE SIDEWALK



TYPICAL SECTION VIEW - CURB LINE SIDEWALK

KEYNOTES

1. SLOPE 1.5% TYPICAL (2.0% MAXIMUM)
2. 4" MIN. THICK P.C.C. COMMERCIAL GRADE CONCRETE.
3. 2" MIN. COMPACTED CRUSHED AGGREGATE.
4. CONSTRUCT CONTRACTION JOINTS AT 15' FT MAX SPACING.
5. TOOLED COLD JOINT BETWEEN CURB AND SIDEWALK.

GENERAL NOTES

- SIDEWALK WIDTH SHALL BE 5' UNLESS OTHERWISE SHOWN ON PLANS.
- FINISH SIDEWALK WITH LIGHT TRAVERSE BROOMING. ALL EDGES SHALL BE TOOL ROUNDED AND SHINED (3") AFTER BROOMING.
- SIDEWALK SHALL HAVE MIN. 4FT UNOBSTRUCTED WIDTH ADJACENT TO FIXED FEATURES SUCH AS MAILBOXES.

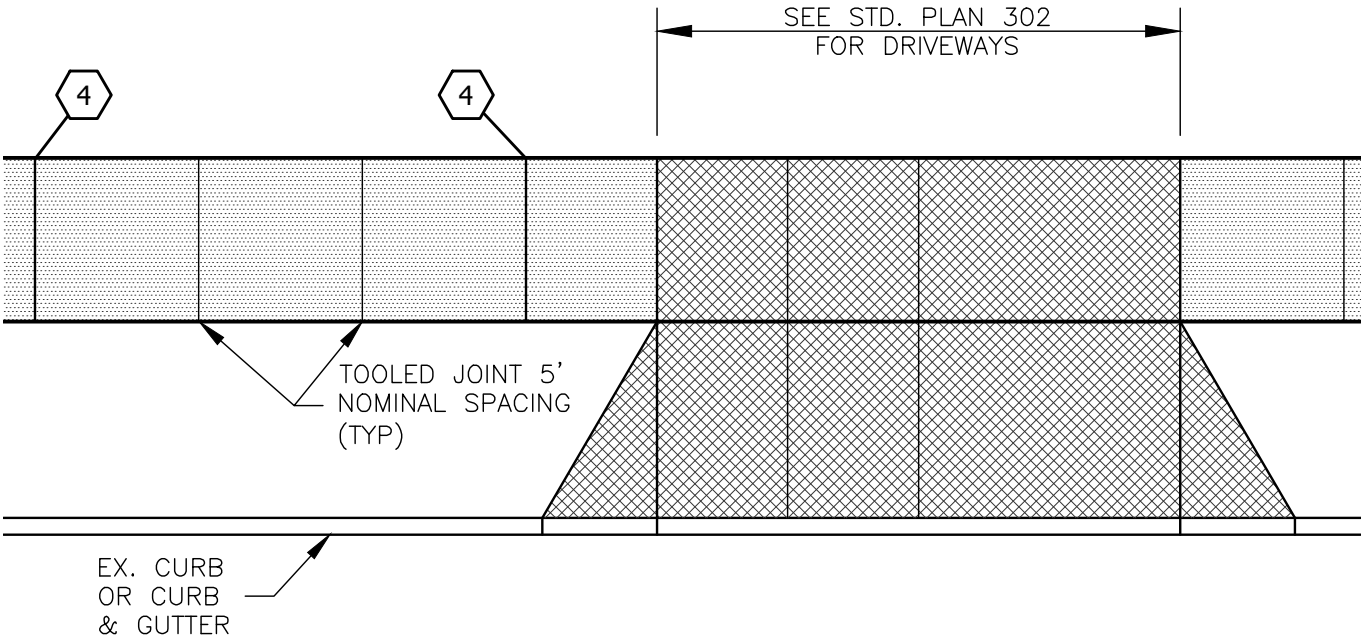
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

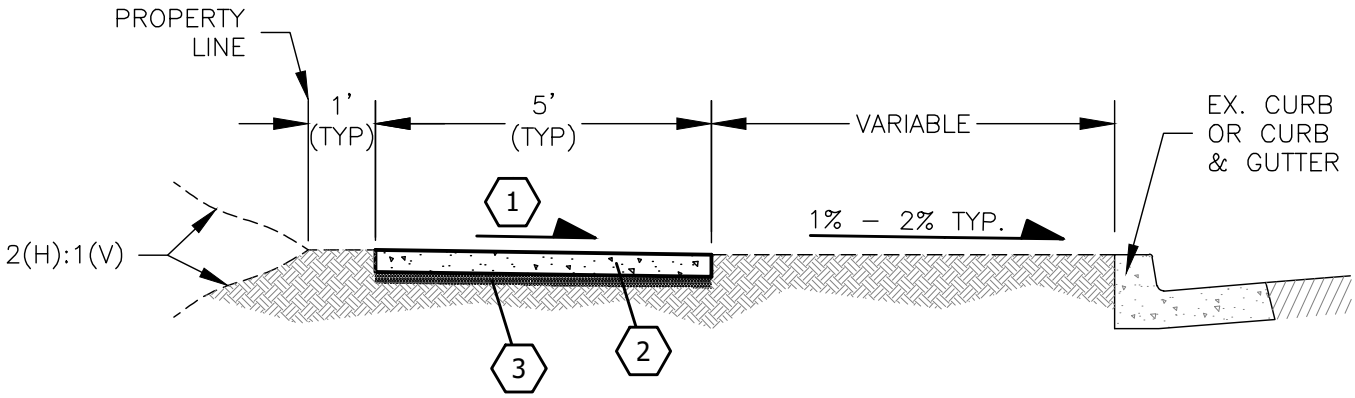
CURB LINE SIDEWALK

CHANGES	
	ALL NEW DRAWING

APPROVED	CITY ENGINEER	12/27/19 DATE	DRAWN BY	JAK	10/2019	**NO.306A**
			CHECKED BY	DEW	10/2019	



TYPICAL PLAN VIEW - PROPERTY LINE SIDEWALK



TYPICAL SECTION VIEW - PROPERTY LINE SIDEWALK

KEYNOTES

1. SLOPE 1.5% TYPICAL (2.0% MAXIMUM)
2. 4" MIN. THICK P.C.C. COMMERCIAL GRADE CONCRETE.
3. 2" MIN. COMPACTED CRUSHED AGGREGATE.
4. CONSTRUCT CONTRACTION JOINTS AT 15' FT MAX SPACING.

GENERAL NOTES

- SIDEWALK WIDTH SHALL BE 5' UNLESS OTHERWISE SHOWN ON PLANS.
- FINISH SIDEWALK WITH LIGHT TRAVERSE BROOMING. ALL EDGES SHALL BE TOOL ROUNDED AND SHINED (3") AFTER BROOMING.
- SET SIDEWALK 1FT FROM PROPERTY LINE UNLESS OTHERWISE SHOWN ON PLANS.

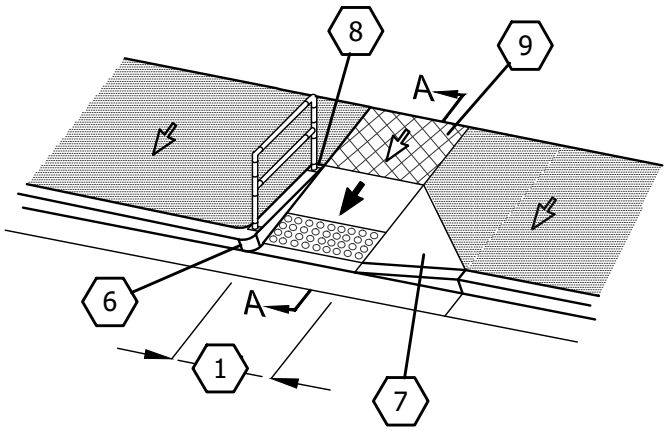
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

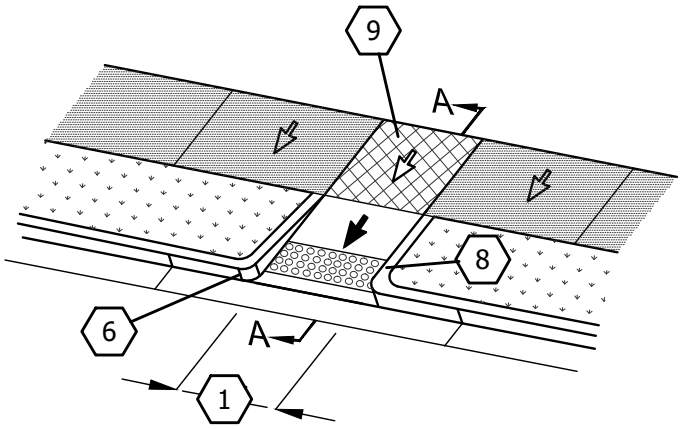
CHANGES: ALL NEW DRAWING

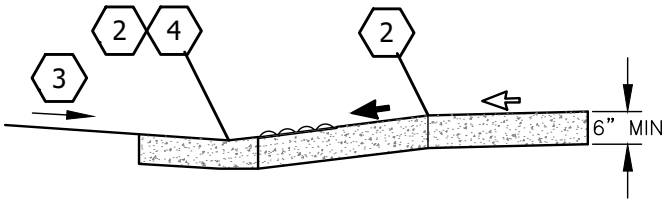
STANDARD PLAN

PROPERTY LINE SIDEWALK

APPROVED	CITY ENGINEER	12/27/19 DATE	DRAWN BY	JAK	10/2019	NO.306B
			CHECKED BY	DEW	10/2019	







SECTION A-A

KEYNOTES

1. STANDARD RAMP WIDTH EQUALS 5–FEET. WITH PRIOR CITY APPROVAL, WIDTH MAY BE REDUCED TO 4–FEET TO AVOID OBSTRUCTIONS.
2. GRADE BREAKS AT TOP AND BOTTOM OF RAMP RUNS SHALL BE PERPENDICULAR TO DIRECTION OF RAMP RUN.
3. THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE FOOT OF CURB RAMP RUNS, BLENDED TRANSITIONS, AND TURNING SPACES SHALL BE 5% MAX.
4. SURFACE SLOPES THAT MEET AT GRADE BREAKS SHALL BE FLUSH.
6. RETURNED CURBS SHALL HAVE 6–INCH MINIMUM RADIUS.
7. CONSTRUCT FLARED SIDES WITH SLOPE OF 10% MAX, MEASURED PARALLEL TO THE CURB LINE, WHEREVER THE SIDEWALK CROSSES THE CURB RAMP.
8. FLARED SIDES ARE PREFERRED, BUT RETURNED CURBS ARE PERMITTED PROVIDED THAT THEY ARE ALIGNED WITH PEDESTRIAN STREET CROSSING AND ARE PROTECTED FROM CROSS TRAVEL BY LANDSCAPING, STREET FURNITURE, RAILINGS, ETC.
9. A TURNING SPACE SHALL BE PROVIDED AT TOP OF PERPENDICULAR CURB RAMPS AND BOTTOM OF PARALLEL RAMPS.

LEGEND

- % — ALL SLOPE MEASUREMENTS ARE RELATIVE TO TRUE HORIZONTAL.
- SLOPE = 1.5% TYPICAL (2.0% MAXIMUM)
- THE RUNNING SLOPE OF THE CURB RAMP SHALL BE 7.5% TYPICAL (8.3% MAXIMUM), BUT SHALL NOT REQUIRE THE CURB RAMP LENGTH TO EXCEED 15–FEET. (SEE 307.D FOR SLOPES LESS THAN 5%.)
- SEE 307.E FOR DETECTABLE WARNING SURFACE REQUIREMENTS.
- THE TURNING SPACE SHALL BE 48"x48" MINIMUM. IF CONSTRAINED, IT SHALL BE 48"x60" MINIMUM WITH LONGER DIMENSION IN DIRECTION OF PEDESTRIAN STREET CROSSING.

GENERAL NOTES

- GRADE BREAKS ARE NOT PERMITTED ON SURFACE OF RAMP RUNS AND TURNING SPACES.
- ALL RAMPS AND TURNING SPACES SHALL BE MINIMUM 6–INCH THICK COMMERCIAL GRADE CONCRETE.

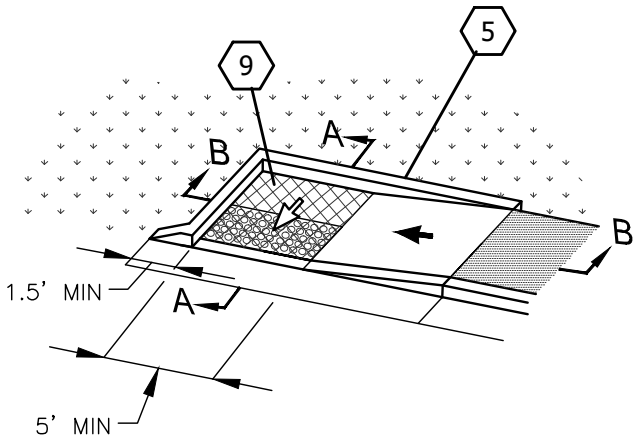
CHANGES	
	REVISED KEYNOTE 7
	REVISED TURNING SPACE DIMENSIONS
	REVISED LEGEND SLOPE ARROW DESCRIPTIONS

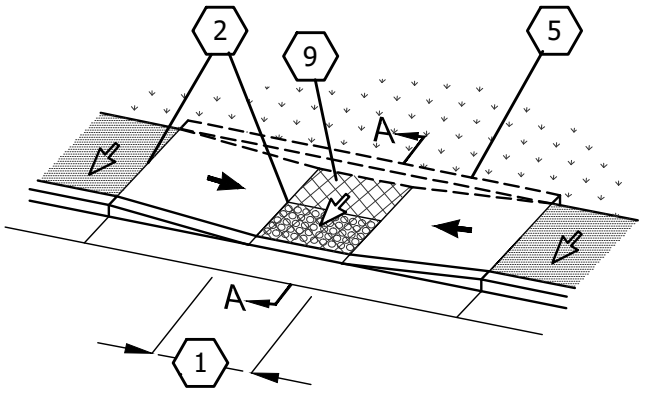
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

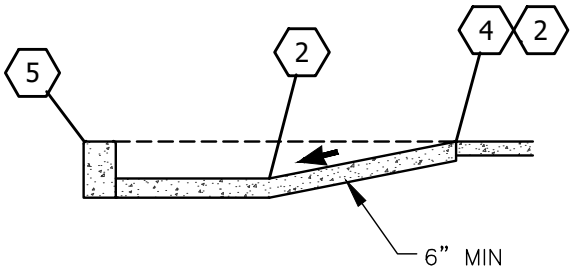
STANDARD PLAN

CURB RAMPS (PERPENDICULAR)

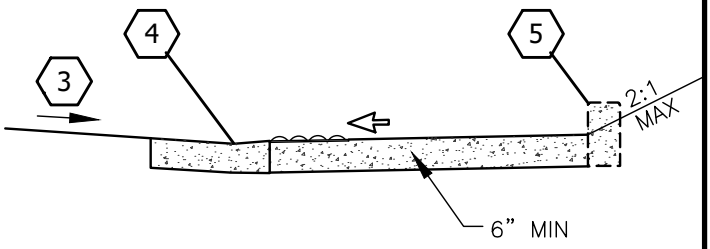
APPROVED		12/27/19	DRAWN BY	JAK	10/2019	NO.307A
	CITY ENGINEER	DATE	CHECKED BY	DEW	10/2019	







SECTION B-B



SECTION A-A

KEYNOTES

1. STANDARD RAMP WIDTH EQUALS 5–FEET. WITH PRIOR CITY APPROVAL, WIDTH MAY BE REDUCED TO 4–FEET TO AVOID OBSTRUCTIONS.
2. GRADE BREAKS AT TOP AND BOTTOM OF RAMP RUNS SHALL BE PERPENDICULAR TO DIRECTION OF RAMP RUN.
3. THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE FOOT OF CURB RAMP RUNS, BLENDED TRANSITIONS, AND TURNING SPACES SHALL BE 5% MAX.
4. SURFACE SLOPES THAT MEET AT GRADE BREAKS SHALL BE FLUSH.
5. LANDSCAPE CURB IS REQUIRED IF DRAWN WITH SOLID LINE, OPTIONAL IF DASHED LINE. VERIFY TURNING SPACE IS 60" MINIMUM IF BUILT.
9. A TURNING SPACE SHALL BE PROVIDED AT TOP OF PERPENDICULAR CURB RAMPS AND BOTTOM OF PARALLEL RAMPS.

LEGEND

- % — ALL SLOPE MEASUREMENTS ARE RELATIVE TO TRUE HORIZONTAL.
- SLOPE = 1.5% TYPICAL (2.0% MAXIMUM)
- THE RUNNING SLOPE OF THE CURB RAMP SHALL BE 7.5% TYPICAL (8.3% MAXIMUM), BUT SHALL NOT REQUIRE THE CURB RAMP LENGTH TO EXCEED 15–FEET. WHEN ON RADIUS MEASURE 15FT MIN. AT BACK OF SIDEWALK. (SEE 307.D FOR SLOPES LESS THAN 5%.)
- SEE 307.E FOR DETECTABLE WARNING SURFACE REQUIREMENTS.
- THE TURNING SPACE SHALL BE 48"x48" MINIMUM. IF CONSTRAINED, IT SHALL BE 48"x60" MINIMUM WITH LONGER DIMENSION IN DIRECTION OF PEDESTRIAN STREET CROSSING.

GENERAL NOTES

- GRADE BREAKS ARE NOT PERMITTED ON SURFACE OF RAMP RUNS AND TURNING SPACES.
- ALL RAMPS AND TURNING SPACES SHALL BE MINIMUM 6–INCH THICK COMMERCIAL GRADE CONCRETE.

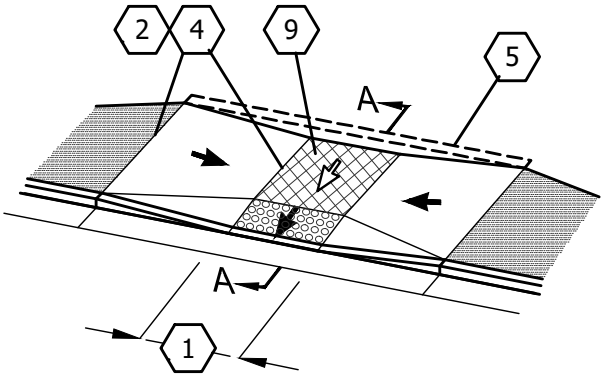
CHANGES
CLARIFIED 15FT MIN. MEASUREMENT
REVISED LEGEND SLOPE ARROW DESCRIPTIONS
REVISED TURNING SPACE DIMENSIONS

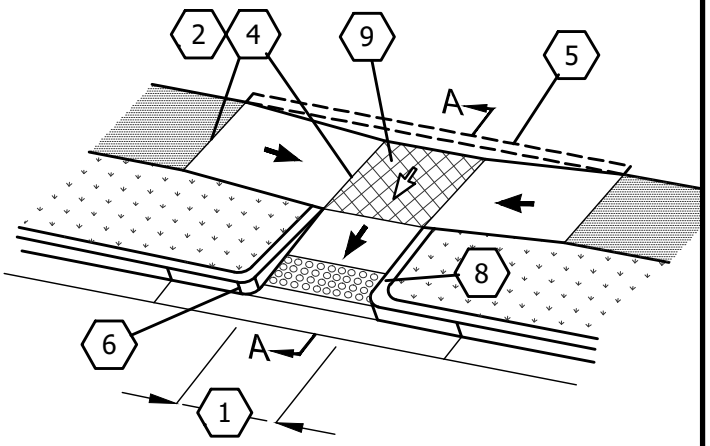
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

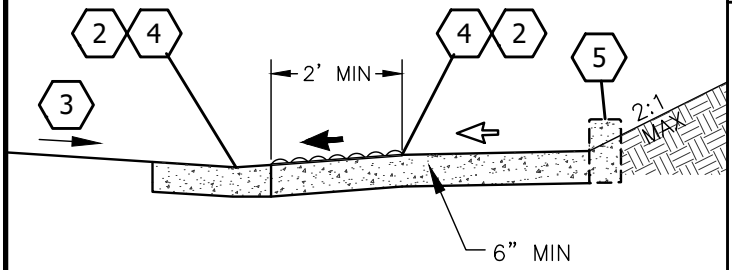
STANDARD PLAN

CURB RAMPS (PARALLEL)

APPROVED	CITY ENGINEER	12/27/19	DRAWN BY	JAK	10/2019	NO.307B
		DATE	CHECKED BY	DEW	10/2019	







SECTION A-A

KEYNOTES

1. STANDARD RAMP WIDTH EQUALS 5–FEET. WITH PRIOR CITY APPROVAL, WIDTH MAY BE REDUCED TO 4–FEET TO AVOID OBSTRUCTIONS.
2. GRADE BREAKS AT TOP AND BOTTOM OF RAMP RUNS SHALL BE PERPENDICULAR TO DIRECTION OF RAMP RUN.
3. THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE FOOT OF CURB RAMP RUNS, BLENDED TRANSITIONS, AND TURNING SPACES SHALL BE 5% MAX.
4. SURFACE SLOPES THAT MEET AT GRADE BREAKS SHALL BE FLUSH.
5. LANDSCAPE CURB IS REQUIRED IF DRAWN WITH SOLID LINE, OPTIONAL IF DASHED LINE. VERIFY TURNING SPACE IS 60" MINIMUM IF BUILT.
6. RETURNED CURBS SHALL HAVE 6–INCH MINIMUM RADIUS.
8. FLARED SIDES ARE PREFERRED, BUT RETURNED CURBS ARE PERMITTED PROVIDED THAT THEY ARE ALIGNED WITH PEDESTRIAN STREET CROSSING AND ARE PROTECTED FROM CROSS TRAVEL BY LANDSCAPING, STREET FURNITURE, RAILINGS, ETC.
9. A TURNING SPACE SHALL BE PROVIDED AT TOP OF PERPENDICULAR CURB RAMPS AND BOTTOM OF PARALLEL RAMPS.

LEGEND

- % — ALL SLOPE MEASUREMENTS ARE RELATIVE TO TRUE HORIZONTAL.
- SLOPE = 1.5% TYPICAL (2.0% MAXIMUM)
- THE RUNNING SLOPE OF THE CURB RAMP SHALL BE 7.5% TYPICAL (8.3% MAXIMUM), BUT SHALL NOT REQUIRE THE CURB RAMP LENGTH TO EXCEED 15–FEET. WHEN ON RADIUS MEASURE 15FT MIN. AT BACK OF SIDEWALK. (SEE 307.D FOR SLOPES LESS THAN 5%.)
- SEE 307.E FOR DETECTABLE WARNING SURFACE REQUIREMENTS.
- THE TURNING SPACE SHALL BE 48"x48" MINIMUM. IF CONSTRAINED, IT SHALL BE 48"x60" MINIMUM WITH LONGER DIMENSION IN DIRECTION OF PEDESTRIAN STREET CROSSING.

GENERAL NOTES

- GRADE BREAKS ARE NOT PERMITTED ON SURFACE OF RAMP RUNS AND TURNING SPACES.
- ALL RAMPS AND TURNING SPACES SHALL BE MINIMUM 6–INCH THICK COMMERCIAL GRADE CONCRETE.

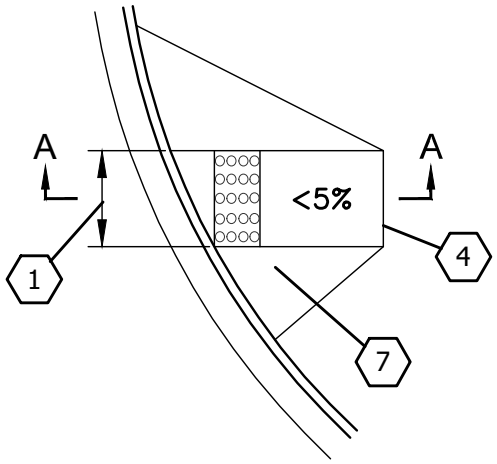
CHANGES	
	CLARIFIED 15FT MIN. MEASUREMENT
	REVISED LEGEND SLOPE ARROW DESCRIPTIONS
	REVISED TURNING SPACE DIMENSIONS

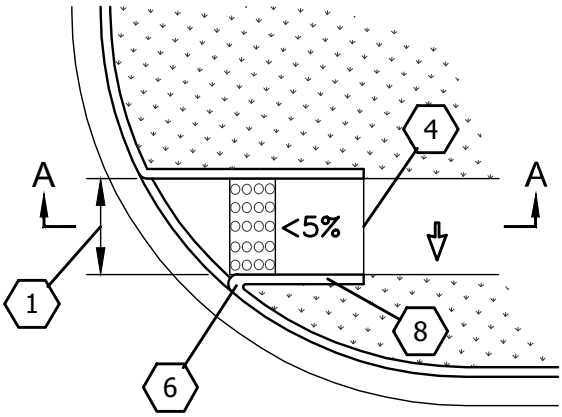
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

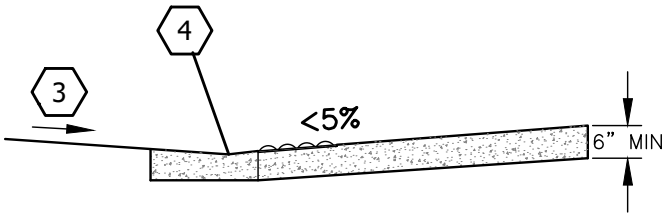
STANDARD PLAN

CURB RAMPS (COMBINATION)

APPROVED	CITY ENGINEER	12/27/19 DATE	DRAWN BY	JAK	10/2019	NO.307C
			CHECKED BY	DEW	10/2019	







SECTION A-A

KEYNOTES

1. STANDARD RAMP WIDTH EQUALS 5–FEET. WITH PRIOR CITY APPROVAL, WIDTH MAY BE REDUCED TO 4–FEET TO AVOID OBSTRUCTIONS.
3. THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE FOOT OF CURB RAMP RUNS, BLENDED TRANSITIONS, AND TURNING SPACES SHALL BE 5% MAX.
4. SURFACE SLOPES THAT MEET AT GRADE BREAKS SHALL BE FLUSH.
6. RETURNED CURBS SHALL HAVE 6–INCH MINIMUM RADIUS.
7. CONSTRUCT FLARED SIDES WITH SLOPE OF 10% MAX, MEASURED PARALLEL TO CURB, WHEREVER THE SIDEWALK CROSSES THE CURB RAMP.
8. FLARED SIDES ARE PREFERRED, BUT RETURNED CURBS ARE PERMITTED PROVIDED THAT THEY ARE ALIGNED WITH PEDESTRIAN STREET CROSSING AND ARE PROTECTED FROM CROSS TRAVEL BY LANDSCAPING, STREET FURNITURE, RAILINGS, ETC.

LEGEND

%	ALL SLOPE MEASUREMENTS ARE RELATIVE TO TRUE HORIZONTAL.
⇦	SLOPE = 1.5% TYPICAL (2.0% MAXIMUM)
<5%	THE RUNNING SLOPE OF A BLENDED TRANSITION SHALL BE LESS THAN 5%.
▦	SEE 307.E FOR DETECTABLE WARNING SURFACE REQUIREMENTS.

GENERAL NOTES

- PERPENDICULAR GRADE BREAKS AND TURNING SPACES ARE NOT REQUIRED WHEN RUNNING SLOPES ARE LESS THAN 5%.
- THIS DRAWING DEPICTS RUNNING SLOPE ALIGNMENTS CROSSING GUTTER GRADE BREAK ON A SKEWED ANGLE, A CONFIGURATION NOT PERMITTED WHEN RUNNING SLOPES EXCEED 5%.
- ALL RAMPS AND TURNING SPACES SHALL BE MINIMUM 6–INCH THICK COMMERCIAL GRADE CONCRETE.

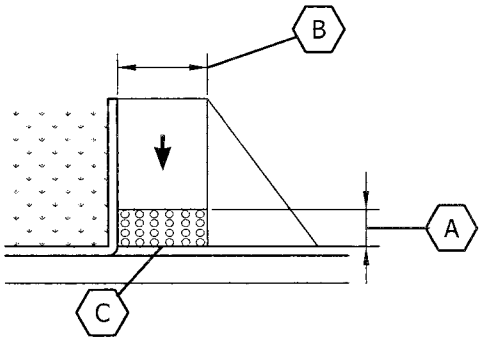
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

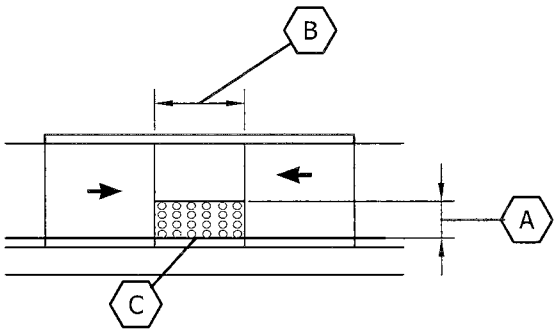
BLENDED TRANSITIONS

CHANGES	
	REVISED LEGEND SLOPE ARROW DESCRIPTIONS

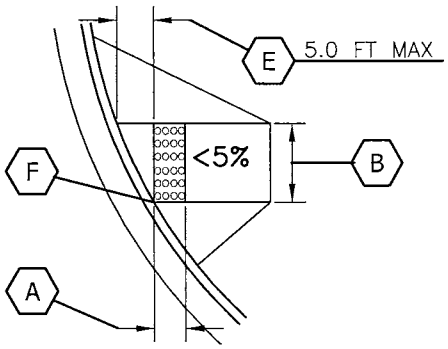
APPROVED	CITY ENGINEER	12/27/19 DATE	DRAWN BY	JAK	10/2019	NO.307D
			CHECKED BY	DEW	10/2019	



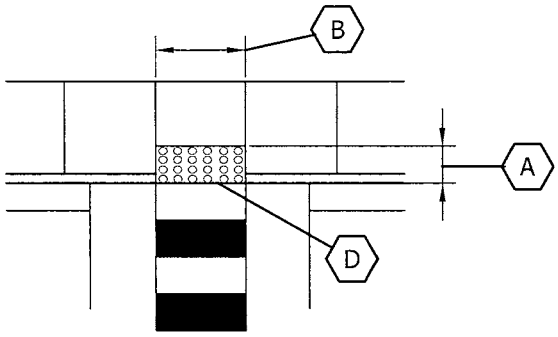
PERPENDICULAR RAMP



PARALLEL RAMP



BLENDED TRANSITION



RAISED PEDESTRIAN CROSSING

KEYNOTES

(A) DWS SHALL EXTEND 2.0 FT MIN IN THE DIRECTION OF TRAVEL.

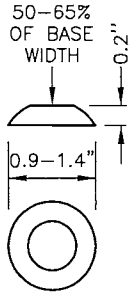
(B) AT CURB RAMPS AND BLENDED TRANSITIONS, DWS SHALL EXTEND THE FULL WIDTH OF THE RAMP RUN (EXCLUDING ANY FLARED SIDES), BLENDED TRANSITION, OR TURNING SPACE.

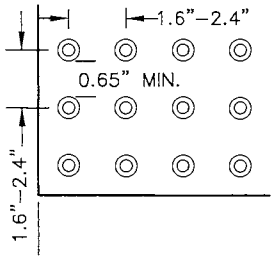
(C) ON PERPENDICULAR AND PARALLEL CURB RAMPS, PLACE DWS 2" MAX FROM THE BACK OF CURB.

(D) AT RAISED PEDESTRIAN STREET CROSSINGS, DEPRESSED CORNERS, OR AT OTHER LEVEL PEDESTRIAN STREET CROSSINGS, PLACE DWS 2" MAX FROM THE FLUSH TRANSITION BETWEEN THE STREET AND THE SIDEWALK.

(E) IF DIMENSION SHOWN MUST EXCEED 5.0 FT IN ORDER TO KEEP ROWS OF DOMES ALIGNED WITH PATH OF TRAVEL, THEN PLACE DWS PARALLEL TO, AND 2" MAX FROM, THE BACK OF CURB.

(F) AT BLENDED TRANSITIONS, PLACE DWS 2" MAX FROM THE BACK OF CURB.





GENERAL NOTES

- DETECTABLE WARNING SURFACES (DWS), SHALL CONSIST OF TRUNCATED DOMES ALIGNED IN A SQUARE OR RADIAL GRID PATTERN.
- ALIGN ROWS OF DOMES WITH INTENDED PATH OF TRAVEL.
- COLOR: BRICK RED (FED STD #20109)
- APPROVED PRODUCTS:
  1) MASCO CASTinTACT®
  2) ADA SOLUTIONS, INC.
  3) OR EQUAL, AS PER CITY ENGINEER

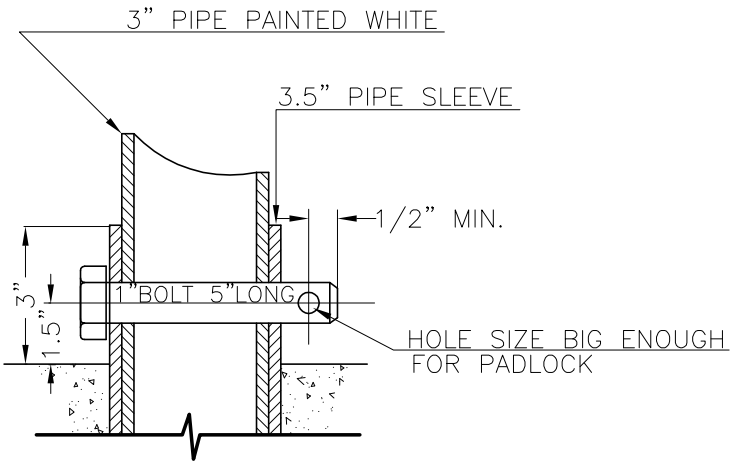
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

DETECTABLE WARNING SURFACE

APPROVED	CITY ENGINEER	5/2015	DRAWN BY	JAK	7/2012	NO.307.E
		DATE	CHECKED BY	DEW	7/2012	

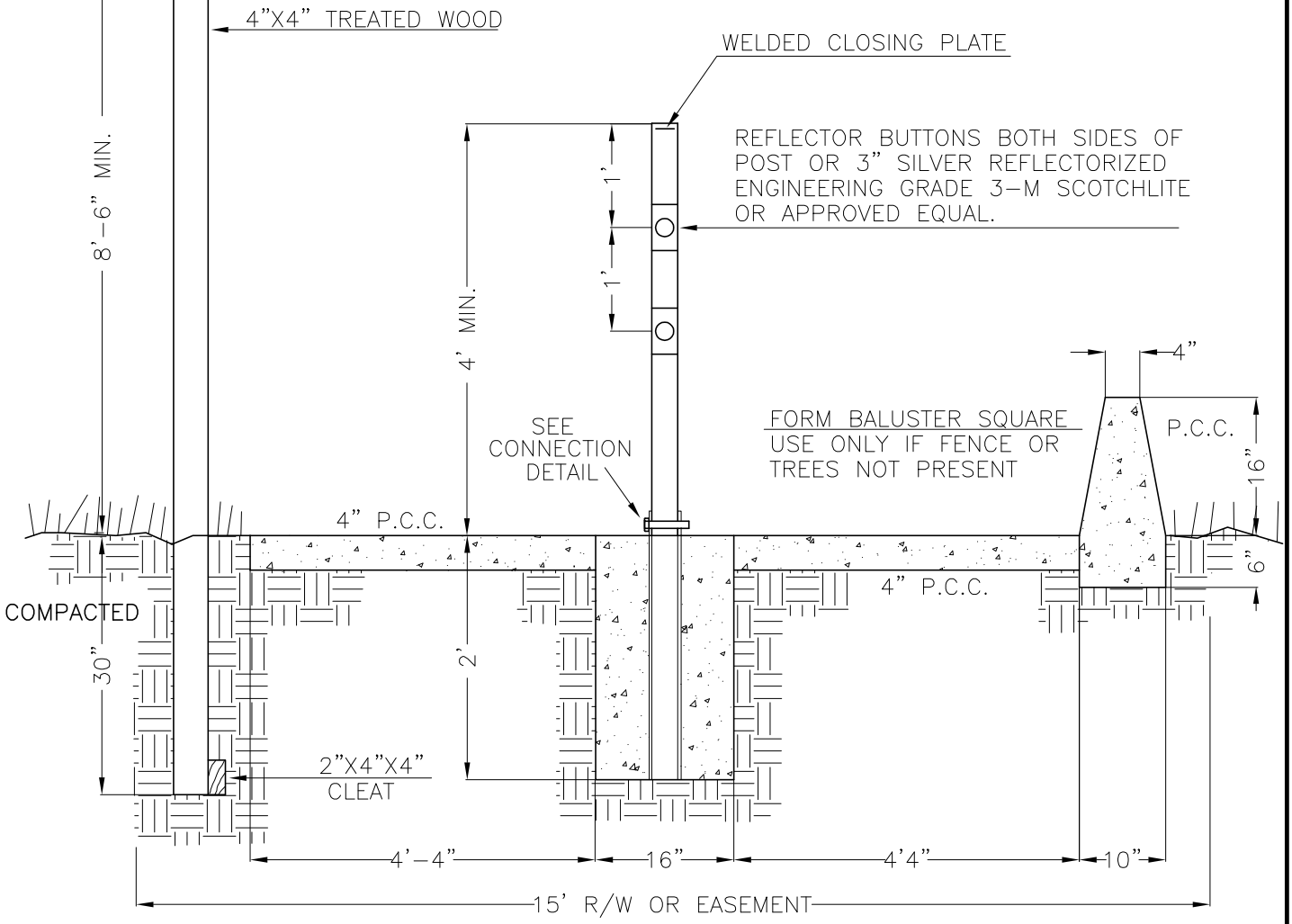
BLACK ON WHITE
REFLECTORIZED ENGINEERING
GRADE 3–M SCOTCHLITE OR
APPROVED EQUAL.



NO MOTOR VEHICLES

OBR–10–11–18
30"X18"

REFLECTOR POST CONNECTION DETAIL



Approved Karl O. Gruber 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

MID–BLOCK WALK ENTRANCE
TRAFFIC CONTROL

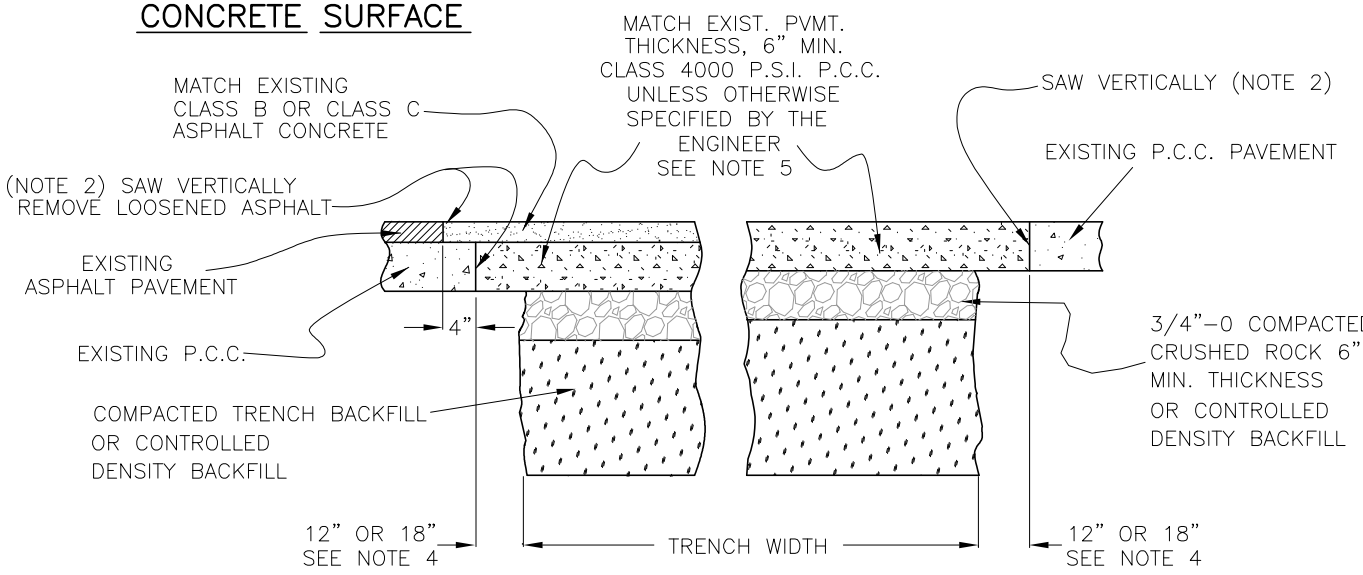
DRAWN BY GS

CHECKED BY RWL

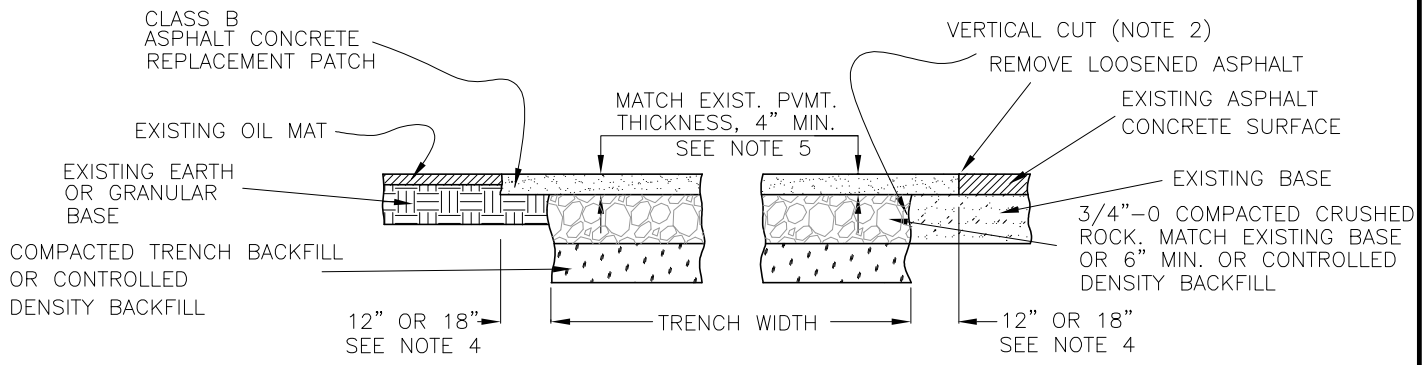
NO.308

HALF SECTION
RIGID PAVEMENT WITH ASPHALT CONCRETE SURFACE

HALF SECTION
P.C.C. PAVEMENT



TYPICAL PATCH FOR RIGID PAVEMENT



TYPICAL PATCH FOR FLEXIBLE PAVEMENT

NOTES

1. FINAL CUTS IN A.C. PAVEMENT SHALL BE MADE WITH A CONCRETE SAW, MORE THAN ONE CUT MAY BE REQUIRED IN AC PAVEMENTS.
2. CUTS IN P.C.C. PAVEMENT SHALL BE MADE WITH A CONCRETE SAW.
3. 1"-0 CRUSHED AGGREGATE MAY BE SUBSTITUTED FOR 3/4"-0.
4. PAVEMENT REPLACEMENT WIDTH SHALL BE: TRENCH WIDTH PLUS 12 INCHES ON EACH SIDE FOR CONTROLLED DENSITY BACKFILL, AND TRENCH WIDTH PLUS 18 INCHES ON EACH SIDE FOR ROCK BACKFILL.
5. PAVEMENT REPLACEMENT THICKNESS SHALL BE AS SHOWN ABOVE FOR ROCK TRENCH BACKFILL. FOR CONTROLLED DENSITY TRENCH BACKFILL, PAVEMENT REPLACEMENT THICKNESS SHALL BE AS FOLLOWS:

STREET CLASSIFICATION	ARTERIAL	COLLECTOR	LOCAL
PORTLAND CEMENT CONCRETE	8"P.C.C.	7"P.C.C.	6"P.C.C.
A.C. OVER P.C.C.	4"A.C.	4"A.C.	4"A.C.
ASPHALT CONCRETE	4"A.C.	4"A.C.	4"A.C.

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

No.	Description	Date	By	Appr
5	REVISED A.C. CUT NOTE.	4/99	JHC	
4	CONVERT TO CAD DWG.			
3	REVISE FOR C.D.B.	12-94		
2	NOTES	11/81	SDD	RLW
1	REVISED TITLE BLOCK	3/79	DLM	

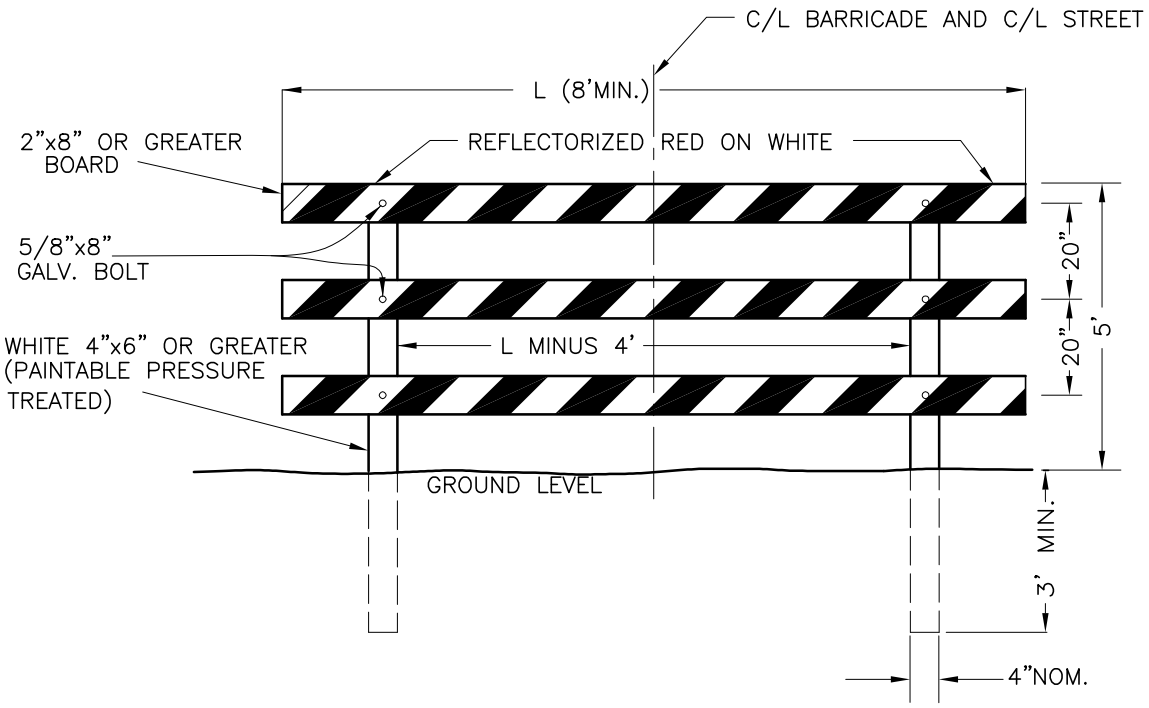
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
PAVEMENT PATCHING

DRAWN BY GS
CHECKED BY RWL

NO.309



ELEVATION SIDE VIEW

NOTES:

1. REFLECTORIZED SHEETING SHALL BE ENGINEERING GRADE REFLECTIVE SHEETING CONFORMING TO 1991 EDITION OF THE OREGON STATE HIGHWAY DIVISIONS "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 02910"
2. THE LENGTH OF THE BARRICADE UNIT "L" AND NUMBER AND POSITIONING OF UNITS WILL BE SHOWN ON PROJECT PLANS.

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

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			
	GENERAL	5-97	G.S.	KDG
	BARRICADE LENGTH	9-93	G.S.	KDG
	GENERAL	4-93	G.S.	KDG

REVISION

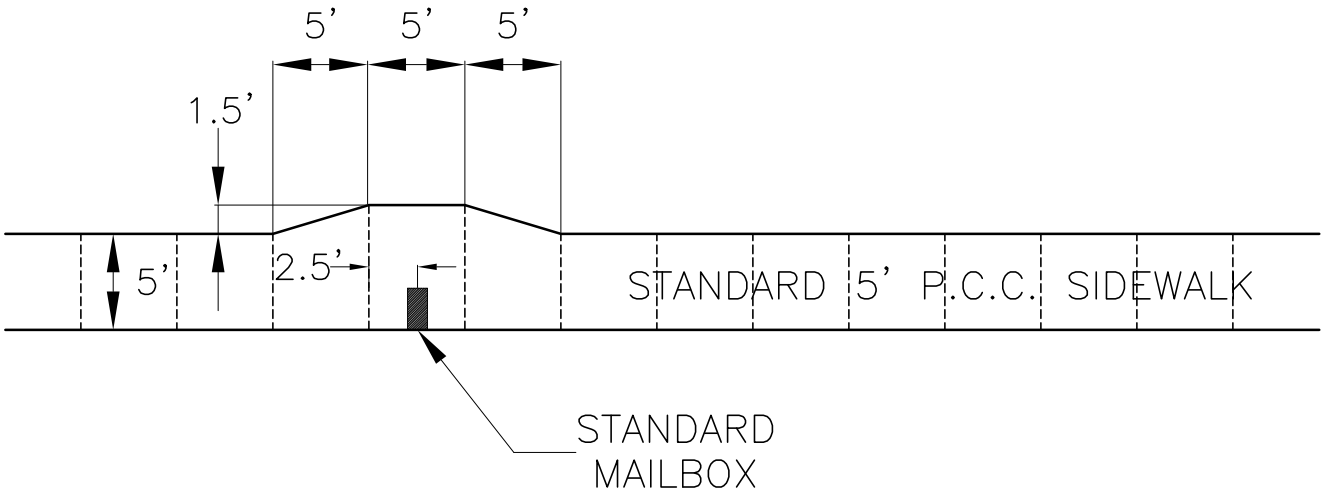
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
PERMANENT BARRICADE

DRAWN BY GS
CHECKED BY RWL

NO.310

9-15-99



NOTE

1. SEE STD. PLAN 306 FOR STANDARD SIDEWALK DETAILS.
2. CONSTRUCT WIDENED SIDEWALK AT ALL MAILBOX LOCATIONS.
3. MAILBOX PLACEMENT SPECIFICATIONS:
   - FRONT FACE OF MAILBOX TO BE SET BACK 6" FROM FACE OF CURB.
   - BASE OF MAILBOX TO BE BETWEEN 38" AND 40" ABOVE CURB, GUTTER OR PAVEMENT GRADE.

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

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

WIDENED SIDEWALK AT MAILBOX LOCATIONS

No.	Description	Date	By	Appr
1.	NEW DRAWING	9/99	JHC	KG

REVISION

DRAWN BY JHC

CHECKED BY GM

NO.311

NOTE:

BLACK LEGEND ON REFLECTORIZED WHITE (ENGINEERING GRADE) BACKGROUND ON ALUMINUM SHEETING (80 GAUGE). SIGN SHALL BE MOUNTED FLUSH WITH TOP RAIL OF TYPE III BARRICADE AT THE TERMINUS OF STUBBED STREETS.

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

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

FUTURE ST. EXTENSION SIGN

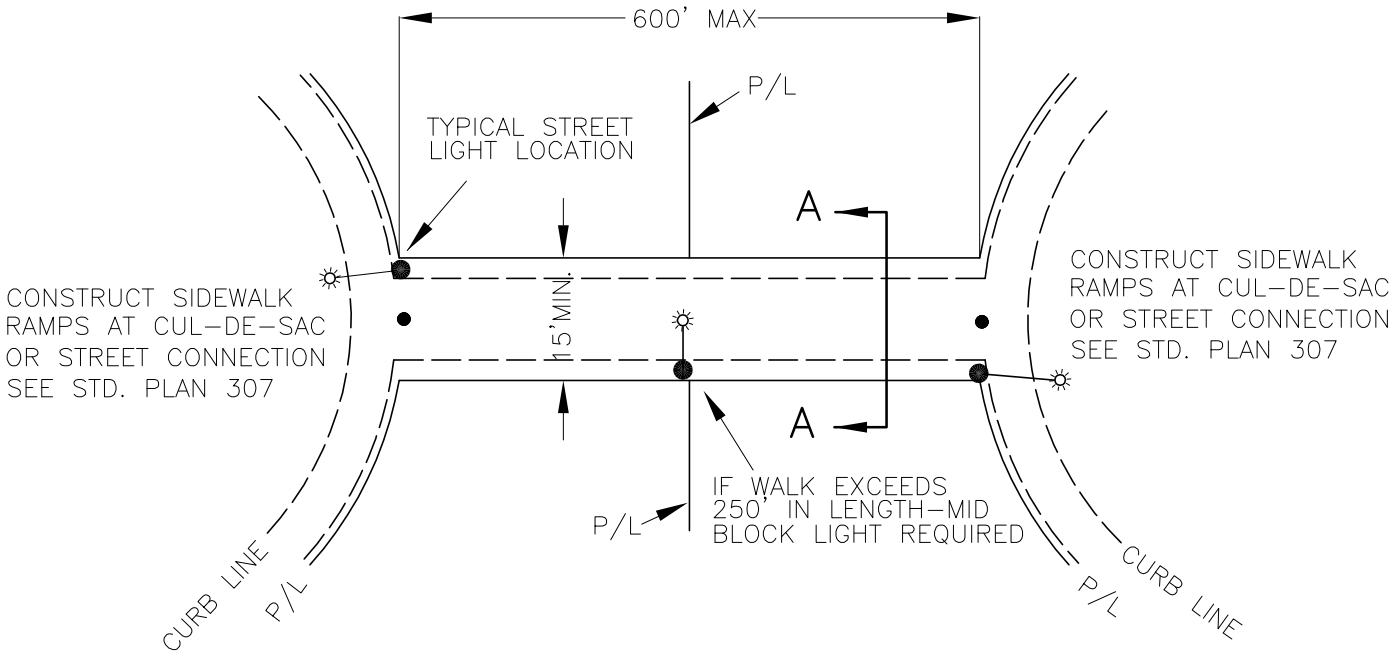
DRAWN BY GS

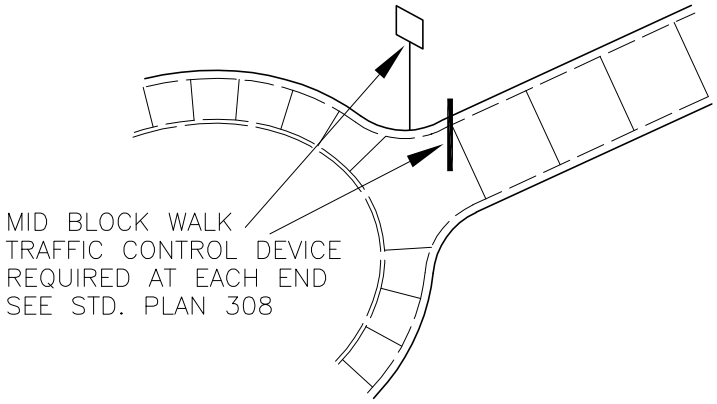
CHECKED BY RWL

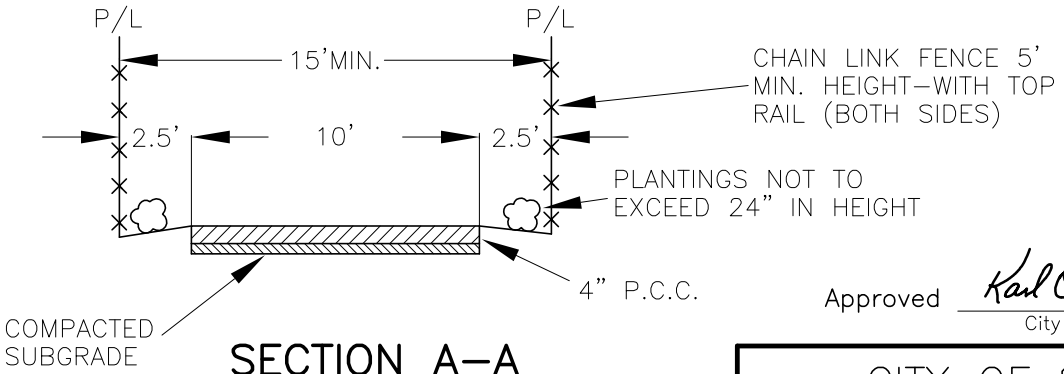
NO.313

No.	Description	Date	By	Appr
	PHONE NUMBER CHANGE			
	CONVERT TO CAD DWG.			

REVISION







SECTION A-A

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

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

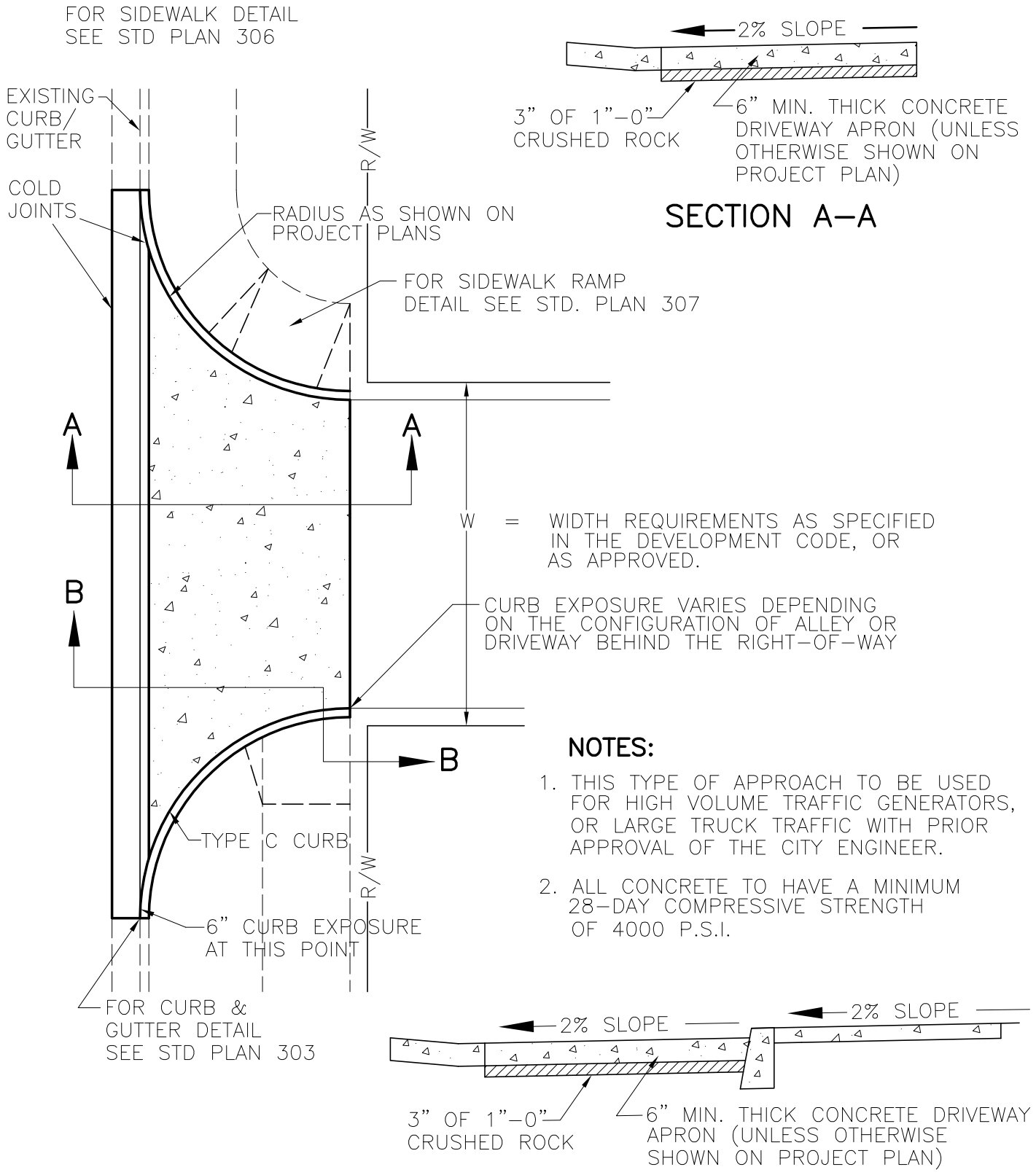
STANDARD PLAN
MID BLOCK BIKE/PEDESTRIAN WALKWAY

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

REVISION

DRAWN BY GS
CHECKED BY RWL

NO.314



NOTES:

1. THIS TYPE OF APPROACH TO BE USED FOR HIGH VOLUME TRAFFIC GENERATORS, OR LARGE TRUCK TRAFFIC WITH PRIOR APPROVAL OF THE CITY ENGINEER.
2. ALL CONCRETE TO HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 P.S.I.

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

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

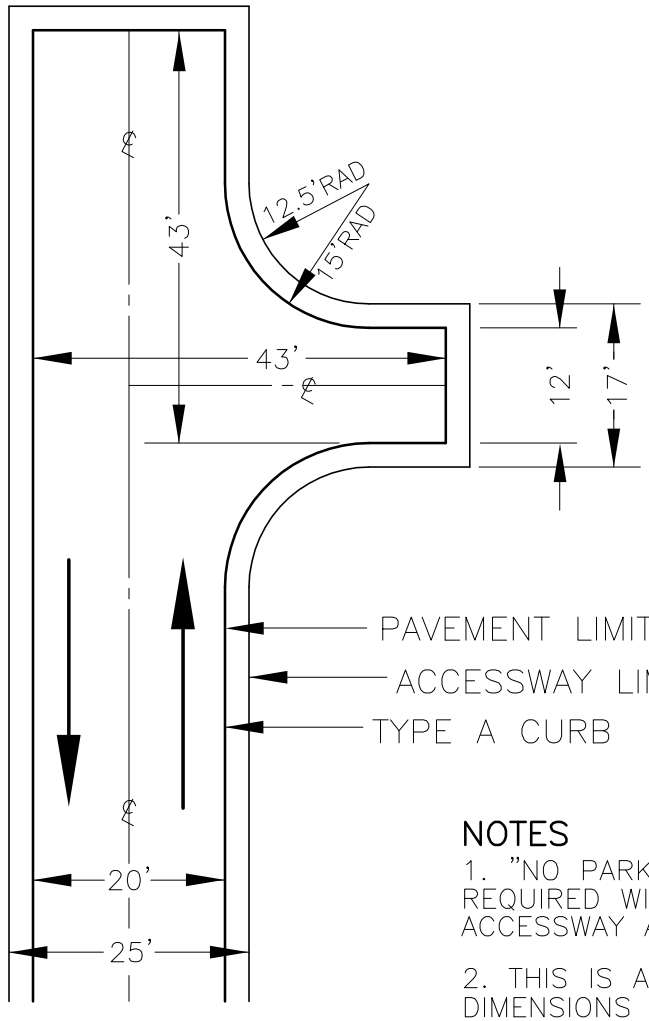
STANDARD PLAN

COMMERCIAL CURB RETURNS FOR DRIVEWAY AND ALLEY APPROACH

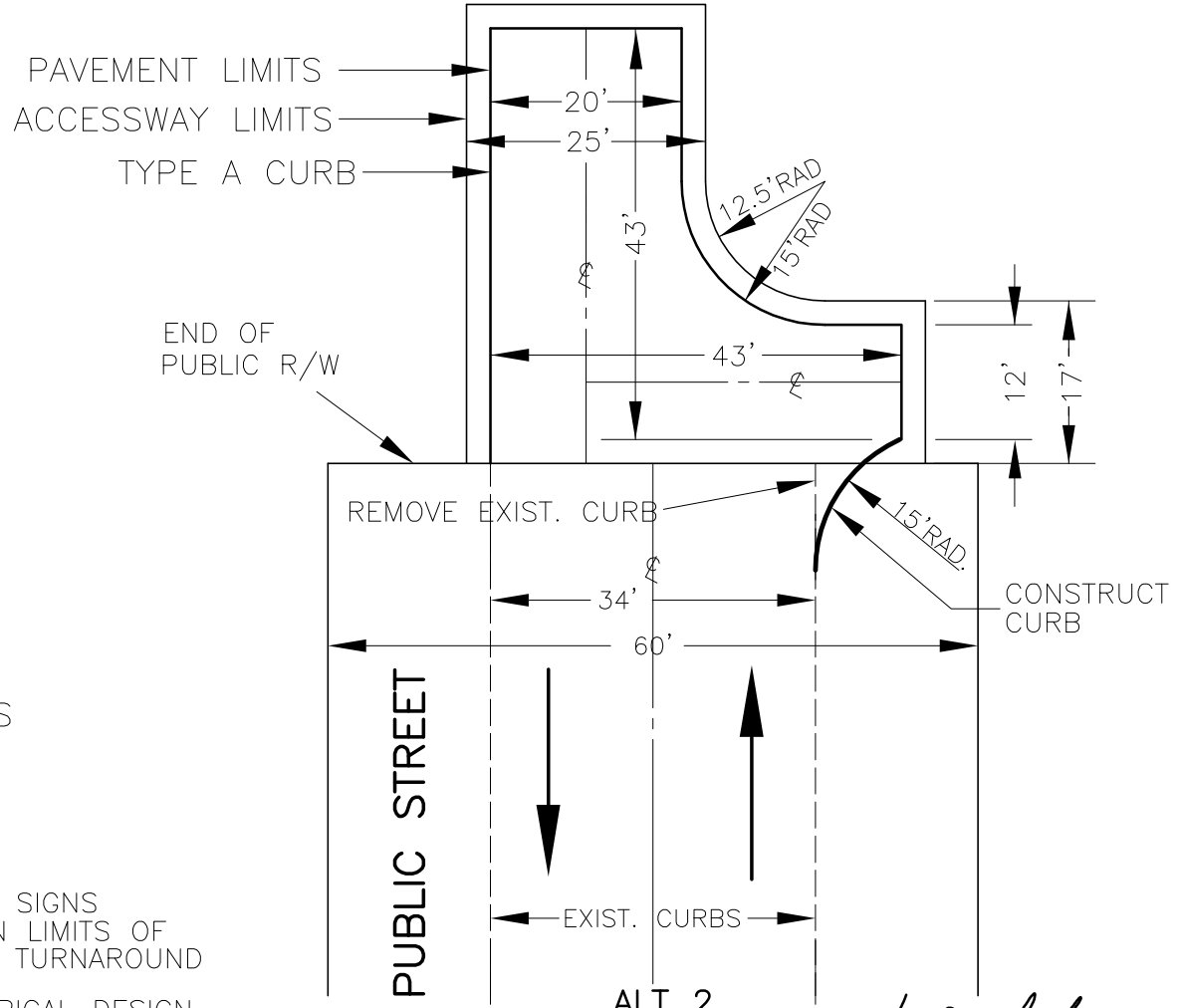
DRAWN BY GS

CHECKED BY RWL

NO.315



ALT 1



ALT 2

NOTES

1. "NO PARKING SIGNS REQUIRED WITHIN LIMITS OF ACCESSWAY AND TURNAROUND

2. THIS IS A TYPICAL DESIGN. DIMENSIONS SHALL STAY THE SAME BUT THE CONFIGURATION CAN VARY.

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

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

REVISION

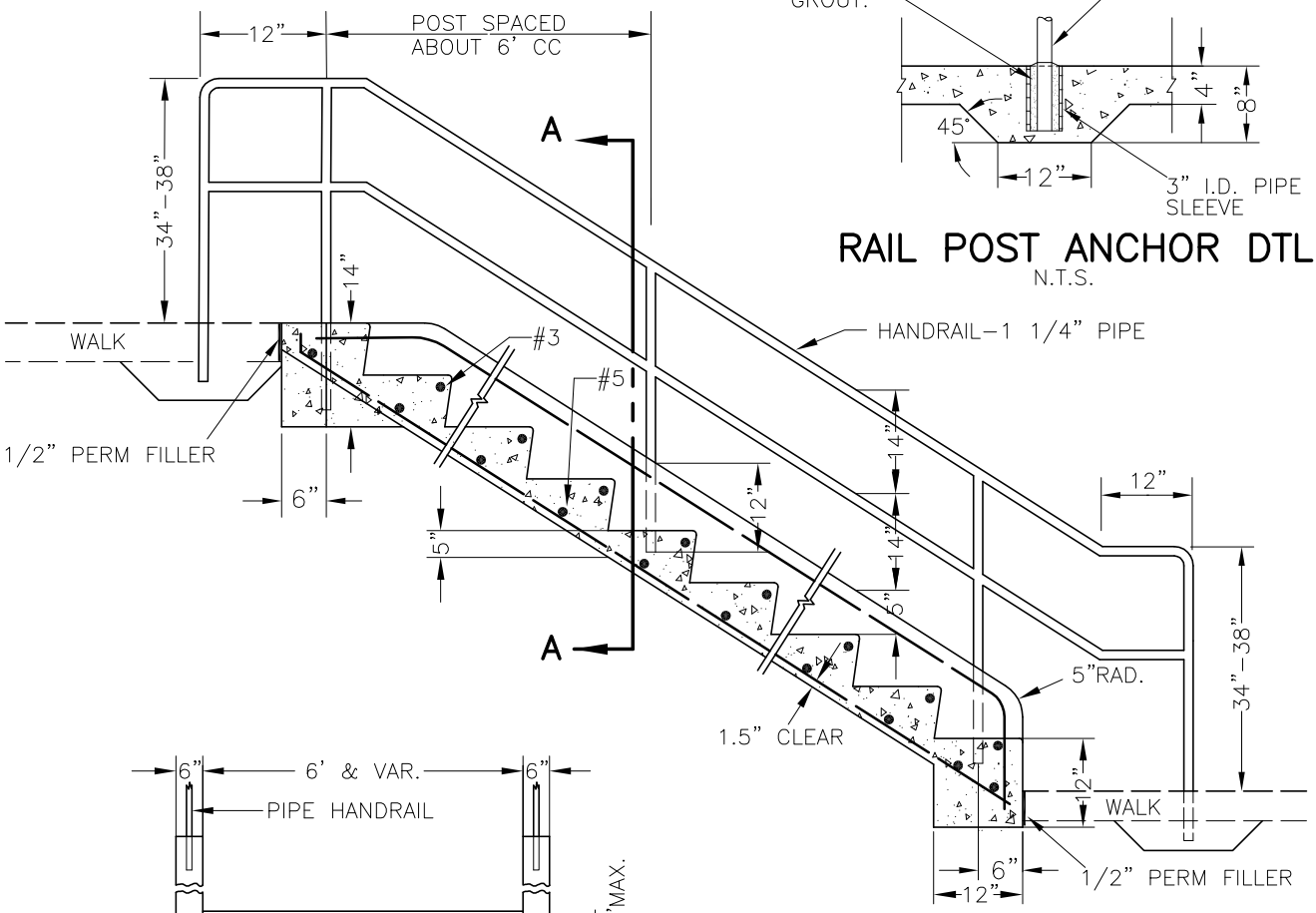
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
HAMMER-HEAD TURNAROUND

DRAWN BY GS
CHECKED BY RWL

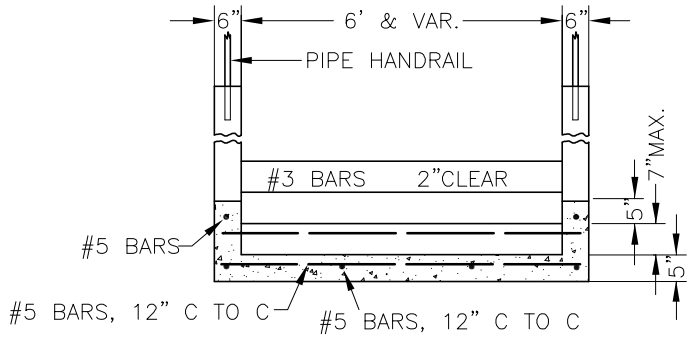
NO.316

CONCRETE STAIRWAY

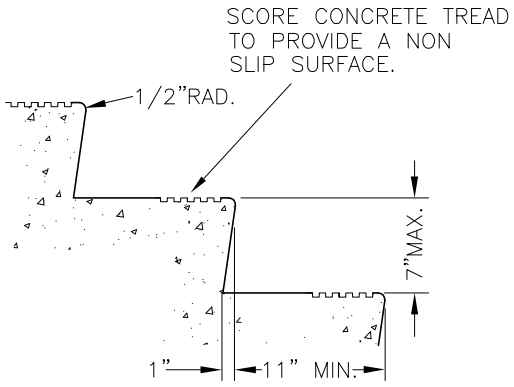


RAIL POST ANCHOR DTL.

N.T.S.



SECTION A-A



DETAILS OF TREADS

NOTES:

1. OPEN AND SIDES OF STAIRWAYS, LANDINGS AND RAMPS WHICH ARE MORE THAN 30" ABOVE GRADE SHALL BE PROTECTED BY GUARDRAILS PER UNIFORM BUILDING CODE REQUIREMENTS.
2. THE TOP OF HANDRAILS SHALL NOT BE LESS THAN 34" IN HEIGHT.
3. THE HAND RAIL PORTION OF HANDRAILS SHALL NOT BE LESS THAN 1.25" OR MORE THAN 2" IN DIAMETER, CODE ALL PARTS TO FIT. WELD AND GRIND SMOOTH, HOT GALV AFTER FABRICATION.
4. MAXIMUM VERTICAL RISE BETWEEN LANDINGS WILL BE 12 FEET. NUMBER OF STEPS VARIES. ROUND EDGES OF STEPS AND ALL OTHER EXPOSED EDGES TO 1/2" RAD..

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

No.	Description	Date	By	Appr
	UPDATE PER U.B.C.			
	CONVERT TO CAD DWG.			

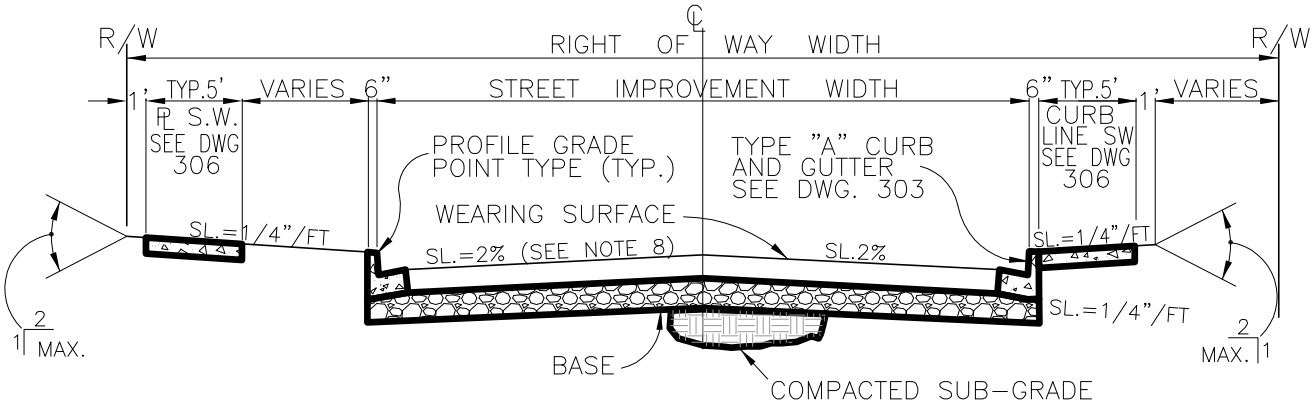
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

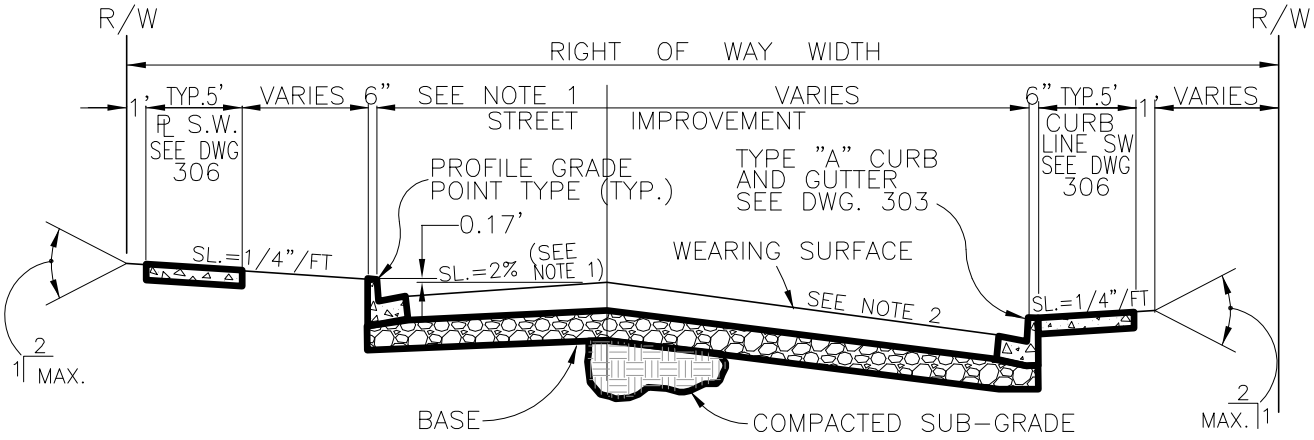
STANDARD PLAN
CONCRETE STAIRWAY

DRAWN BY GS
CHECKED BY RWL

NO.317



TYPICAL STREET SECTION
℄ SECTION



TYPICAL STREET SECTION
TILT SECTION

NOTES:

1. 0 TO 0.3' TILT HAS A ℄ CROWN. 0.3' TO 1' TILT, AS DRAWN, HAS A CROWN THAT IS 0.17 BELOW AND 12' FROM HIGH CURB.
2. MAXIMUM SLOPE: RESIDENTIAL STREET = 6% MAXIMUM SLOPE; COLLECTOR & ARTERIAL = 4%.
3. ALTERNATE DESIGNS TO BE APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
4. FOR STANDARD DRIVEWAY DETAILS SEE STD. PLAN NO.S 301 AND 302.
5. SIDEWALK LOCATION SHALL BE AS APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
6. FOR HIGH SPEED ARTERIAL & COLLECTOR STREETS, DESIGN CROWN TO CORRESPOND WITH LANE CONFIGURATION.
7. FOR CLASSIFICATION (LOCAL, COLLECTOR, ARTERIAL) SEE SALEM TRANSPORTATION SYSTEM PLAN OR ADOPTED SECTOR PLANS.
8. FOR STREET WIDTH IN EXCESS OF 34', CROSS SLOPE SHALL BE A MINIMUM OF 3%.

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

No.	Description	Date	By	Appr
2	REVISED NOTES	6-99	I.D.F.	
1	CONVERT TO CAD DWG.			

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

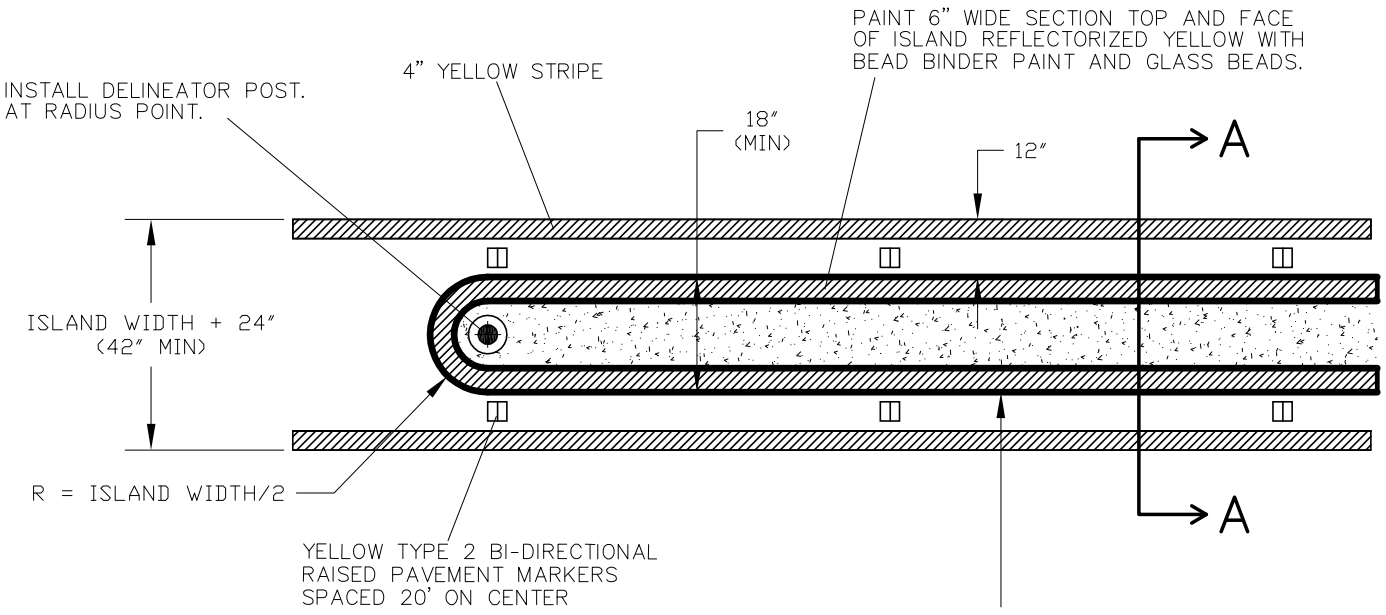
STANDARD PLAN

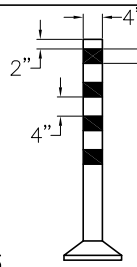
TYPICAL STREET SECTIONS

DRAWN BY GS

CHECKED BY RWL

NO.318



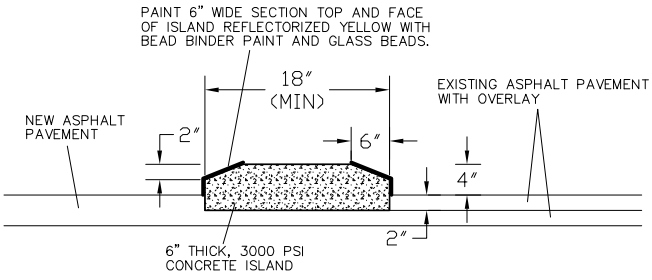


DELINEATORS

POSTS SHALL BE ROUND 42" TALL, BRIGHT YELLOW WITH FOUR 3M HIGH INTENSITY REFLECTIVE BANDS

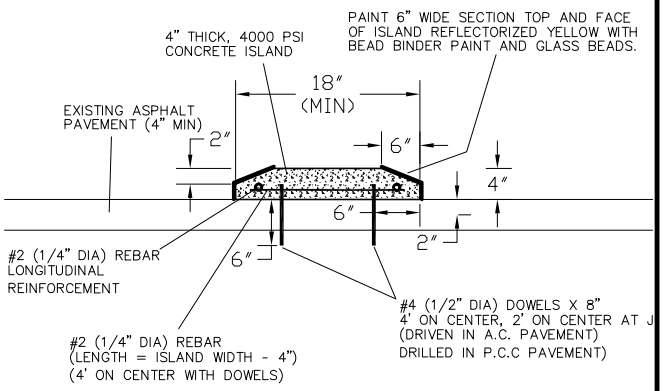
TRAFFIC ISLAND

DETAIL
NTS
18" TO 24" WIDE



SECTION A-A

CROSS SECTION
NTS
NEW A.C. OR EXISTING WITH OVERLAY



SECTION A-A

CROSS SECTION
NTS
EXISTING ASPHALT PAVEMENT

Approved Karl O. Houtzen
City Engineer
3-28-01
Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

TRAFFIC ISLAND INSTALLATION
18" TO 24" WIDE

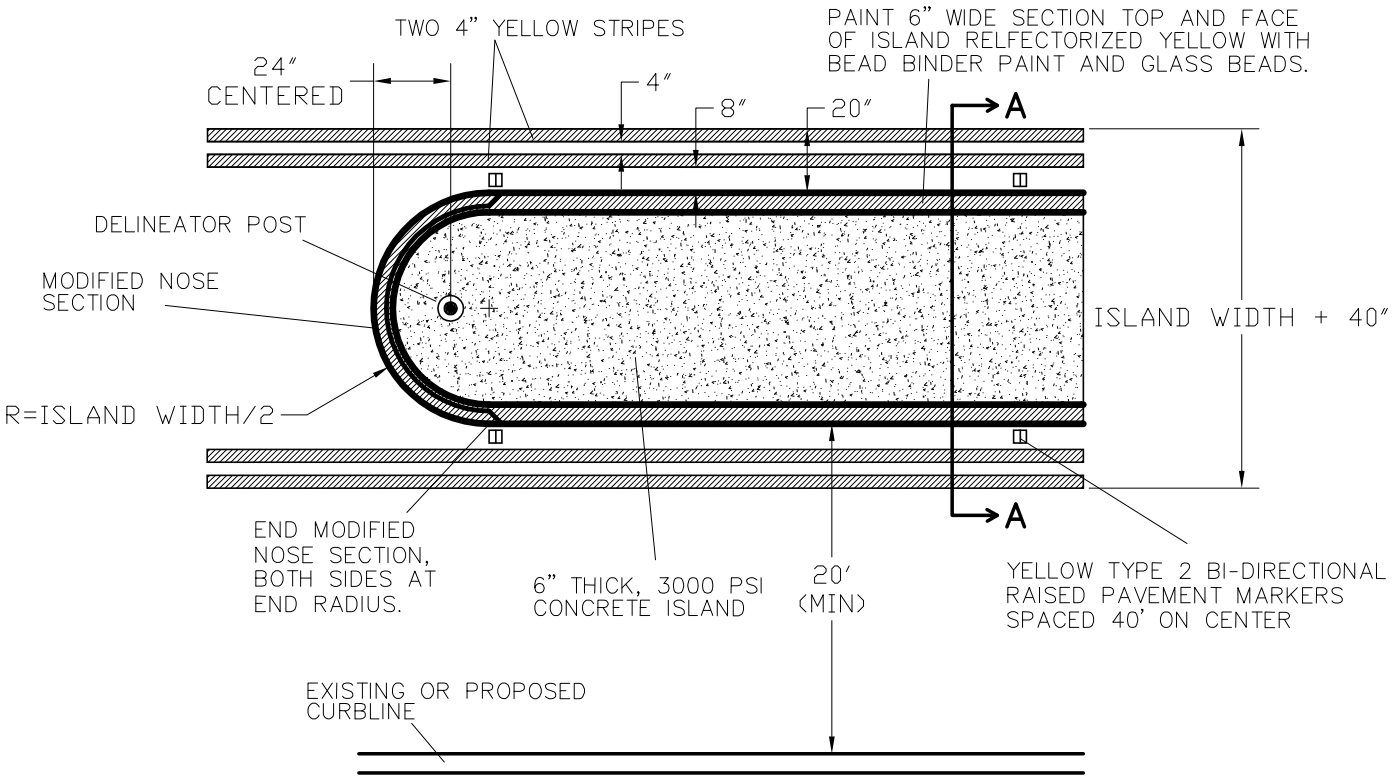
No.	Description	Date	By	Appr

REVISION

DRAWN BY R.L.B

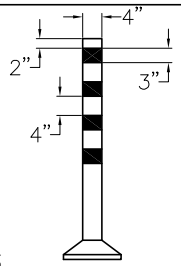
CHECKED BY L.H.G

NO.319

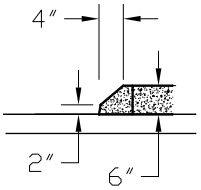


EXTRUDED TRAFFIC ISLAND

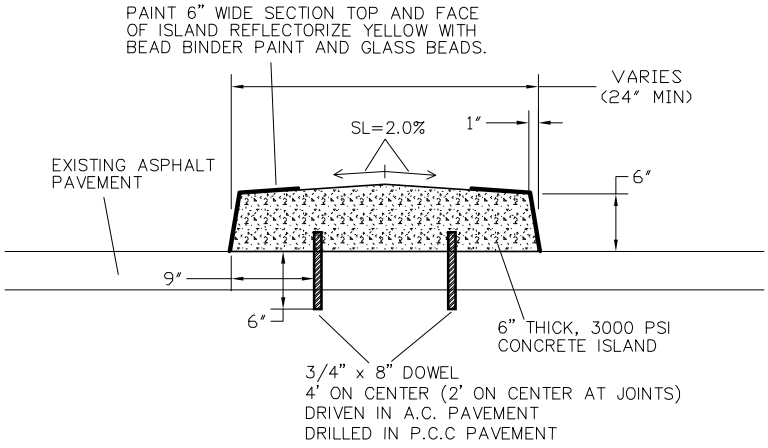
DETAIL
NTS
24" TO 60" WIDE



DELINEATORS
POSTS SHALL BE ROUND 42" TALL, BRIGHT YELLOW WITH FOUR 3M HIGH INTENSITY REFLECTIVE BANDS



MODIFIED NOSE
MODIFY THE **NOSE OF THE ISLAND** SECTION AS SHOWN FOR BOTH TYPE 'C' CURB AND EXTRUDED **ISLANDS GREATER THAN 24" WIDE.**



SECTION A-A

CROSS SECTION
NTS

Approved Karl O. Houston City Engineer 3-28-01 Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

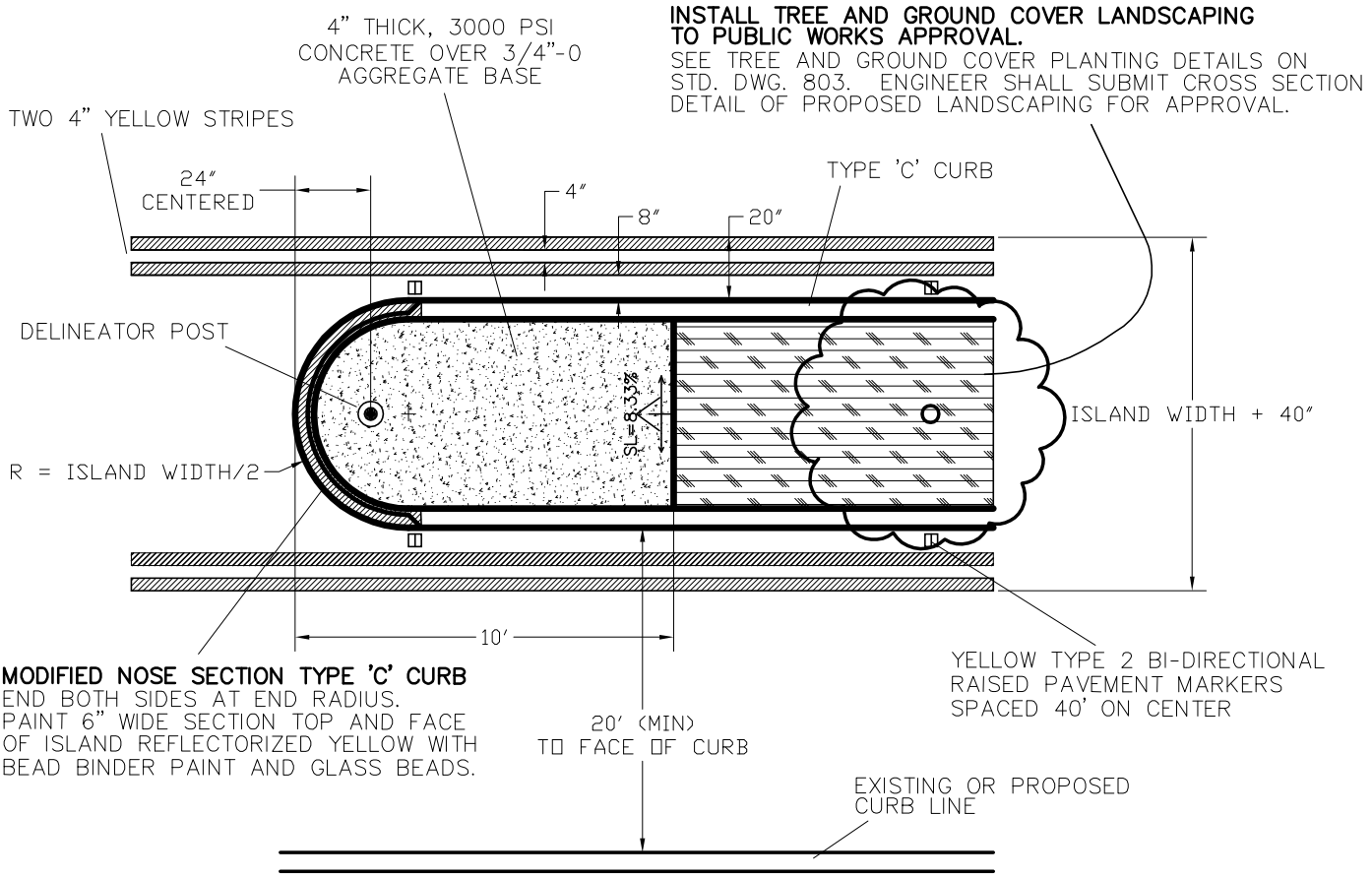
TRAFFIC ISLAND INSTALLATION
24" TO 60" WIDE

No.	Description	Date	By	Appr

REVISION

DRAWN BY R.L.B
CHECKED BY L.H.G

NO.320

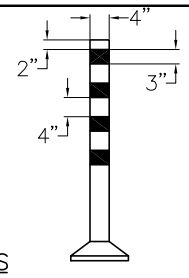


TRAFFIC ISLAND

DETAIL

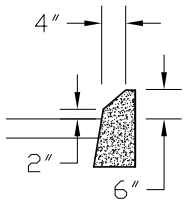
NTS

WIDER THAN 60"



DELINEATORS

POSTS SHALL BE ROUND 42" TALL, BRIGHT YELLOW WITH FOUR 3M HIGH INTENSITY REFLECTIVE BANDS



MODIFIED NOSE

MODIFY THE **NOSE OF THE ISLAND** SECTION AS SHOWN FOR BOTH TYPE 'C' CURB AND EXTRUDED **ISLANDS GREATER THAN 24" WIDE.**

NOTES:

1. Prior to construction the Engineer shall submit a proposed landscaping plan and cross section for approval by Public Works.
2. Ground cover landscaping requires a minimum of 8" of planting soil mix bedding above either natural subgrade or imported topsoil compacted at 80% over natural subgrade.
3. Tree landscaping requires a bedding of either natural subgrade or imported topsoil compacted at 80% over natural subgrade.
4. Match the existing cross slope of the roadway at each end of the island. Entire length of landscaped island section to be at 8.33% slope from top of curb grade.

Approved Karl O. Koerner City Engineer 3-28-01 Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

TRAFFIC ISLAND INSTALLATION
GREATER THAN 60" WIDE

No.	Description	Date	By	Appr

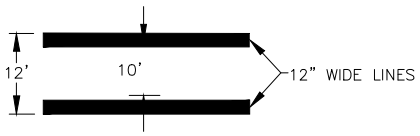
REVISION

DRAWN BY R.L.B

CHECKED BY L.H.G

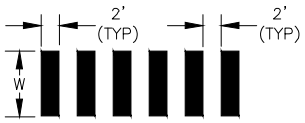
NO.321

Ⓐ



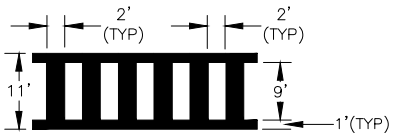
CROSSWALK –
TWO 12" WHITE, TYPE B–HS, PAVEMENT LINES.

Ⓑ



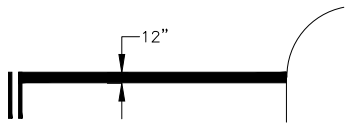
SCHOOL CROSSWALK –
24" WHITE, TYPE B–HS, PAVEMENT BARS.
W=12' (SIGNALIZED CROSSWALK)
W=9' (NON–SIGNALIZED CROSSWALK)

Ⓒ



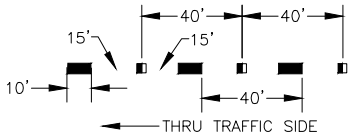
UNCONTROLLED CROSSWALK – 24" WHITE, WITH 12" WHITE, TYPE B–HS, PAVEMENT BARS.

Ⓓ



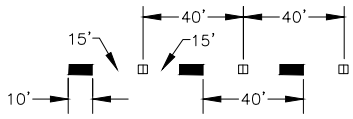
STOP BAR –
12" WHITE, TYPE B–HS, PAVEMENT BAR.

Ⓔ



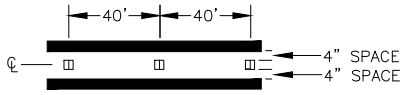
LANE LINE SKIP STRIPE – 4" WHITE, MMA PROFILE STRIPING LINE, WITH WHITE, TYPE I MONO–DIRECTIONAL, RAISED PAVEMENT MARKERS.

Ⓕ



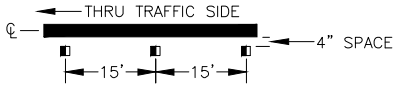
CENTER LINE SKIP STRIPE – 4" YELLOW, MMA PROFILE STRIPING LINE, WITH YELLOW, TYPE I BI–DIRECTIONAL, RAISED PAVEMENT MARKERS.

Ⓖ



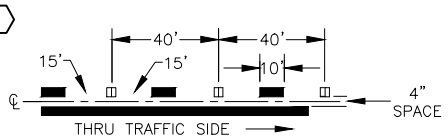
CENTER LINES – TWO 4" YELLOW, MMA PROFILE STRIPING LINES, WITH YELLOW, TYPE 1 BI–DIRECTIONAL, RAISED PAVEMENT MARKERS.

Ⓗ



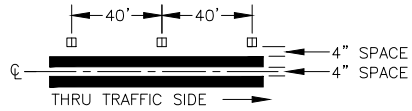
TURN LANE LINE – 8" WHITE, MMA PROFILE STRIPING LINE, WITH WHITE, TYPE 1 MONO–DIRECTIONAL RAISED PAVEMENT MARKERS.

Ⓘ



TWO WAY LEFT TURN STRIPE – TWO 4" YELLOW, MMA PROFILE STRIPING LINES, WITH YELLOW, TYPE 1 BI–DIRECTIONAL, RAISED PAVEMENT MARKERS. OUTSIDE LINE IS SOLID. INSIDE AT 10'/30' PATTERN.

Ⓙ

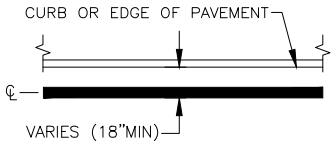


MEDIAN STRIPE – TWO 4" YELLOW, MMA PROFILE STRIPING LINES WITH YELLOW TYPE 1 BI–DIRECTIONAL, RAISED PAVEMENT MARKERS.

Ⓚ

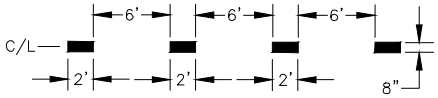
DOUBLE YELLOW LINE –
TWO 4" YELLOW, MMA PROFILE STRIPING LINES.

Ⓛ



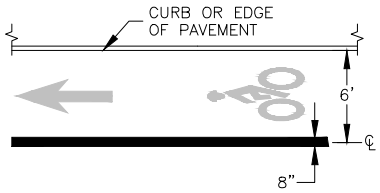
FOG LINE –
4" WHITE MMA NON–PROFILE STRIPING LINE.

Ⓜ



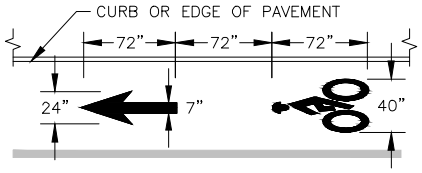
BIKE LANE LINE (MINI–SKIP STRIPE) – 8" WHITE, MMA NON–PROFILE STRIPING LINE.

Ⓝ



BIKE LANE LINE – 8" WHITE, MMA NON–PROFILED STRIPING LINE.

Ⓞ

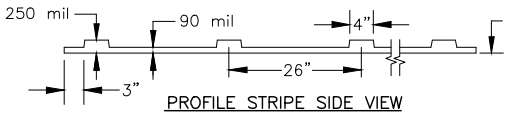


BICYCLE LANE MARKING –
WHITE, TYPE B–HS PAVEMENT LEGEND.
SEE MUTCD 9C–3 FOR DETAILS.

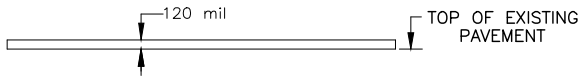
LEGEND

TYPE B–HS PAVEMENT MARKINGS –
PREFORMED, FUSED THERMOPLASTIC FILM THAT HAS INTERMIXED REFLECTIVE ELEMENTS WITH FACTORY INSTALLED CRUSHED GLASS OR AGGREGATE ON THE SURFACE.

MMA PAVEMENT MARKINGS –
METHYL METHACRYLATE BY GRAVITY AND EXTRUSION METHOD, TO FULL WIDTH SHOWN, IN A SINGLE APPLICATION. PAVEMENT MARKINGS SHALL BE INTERMIXED REFLECTIVE ELEMENTS AND PLACED TO APPLICABLE THICKNESS SHOWN BELOW.



PROFILE STRIPE SIDE VIEW



NON–PROFILE STRIPE SIDE VIEW

NOTE:

1. ALL PAVEMENT MARKING DESIGNS AND INSTALLATION SHALL MEET OR EXCEED THE SPECIFICATIONS CONTAINED IN THE LATEST EDITION OF THE OREGON DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION INCLUDING ANY SUPPLEMENTAL GUIDES REFERENCED OR SPECIFIED AND ALL SPECIAL PROVISIONS AND ADDENDUMS TO THESE SPECIFICATIONS.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

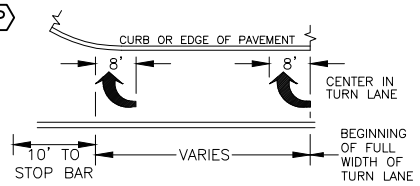
PAVEMENT MARKING DETAILS

CHANGES	
	UPDATE BICYCLE LANE MARKING & MINI SKIP STRIPE TO 2009 MUTCD. 9/2019

APPROVED	CITY ENGINEER	12/27/19	DATE	DRAWN BY	JAK	10/2019
				CHECKED BY	KDH	10/2019

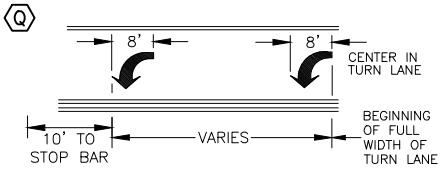
NO.322A

Ⓟ



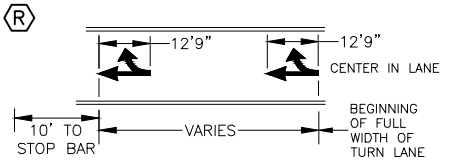
RIGHT TURN LANE MARKINGS – WHITE, TYPE B–HS PAVEMENT LEGENDS. SEE CURRENT EDITION OF FHWA STANDARD HIGHWAY SIGNS FOR ARROW PROPORTION.

Ⓠ



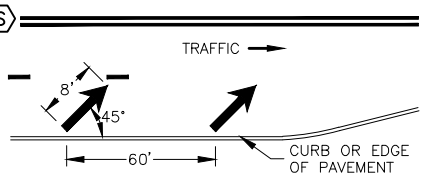
LEFT TURN LANE MARKINGS – WHITE, TYPE B–HS PAVEMENT LEGENDS. SEE CURRENT EDITION OF FHWA STANDARD HIGHWAY SIGNS FOR ARROW PROPORTION.

Ⓡ



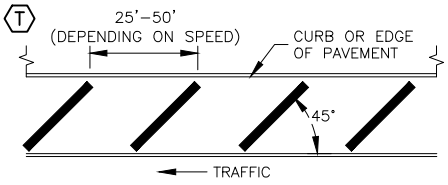
THRU AND TURN LANE MARKINGS – WHITE, TYPE B–HS PAVEMENT LEGENDS. SEE CURRENT EDITION OF FHWA STANDARD HIGHWAY SIGNS FOR ARROW PROPORTION.

Ⓢ



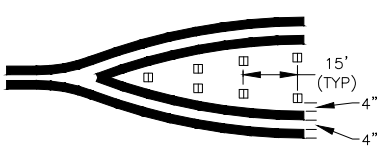
MERGE ARROWS – WHITE, TYPE B–HS PAVEMENT LEGENDS. SEE CURRENT EDITION OF FHWA STANDARD HIGHWAY SIGNS FOR ARROW PROPORTION.

Ⓣ



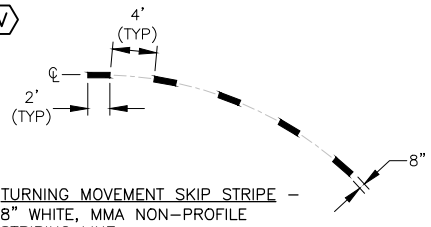
LANE CLOSURE – 12" WHITE OR YELLOW, TYPE B–HS, PAVEMENT BARS.

Ⓤ



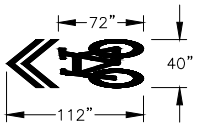
MEDIAN SEPARATION – TWO 4" YELLOW, MMA PROFILE STRIPING LINES, WITH YELLOW, TYPE 1 BI–DIRECTIONAL, RAISED PAVEMENT MARKERS.

Ⓥ



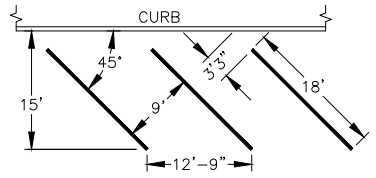
TURNING MOVEMENT SKIP STRIPE – 8" WHITE, MMA NON–PROFILE STRIPING LINE.

Ⓦ



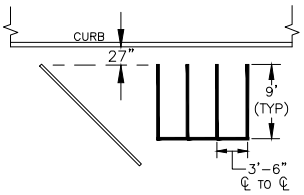
SHARED LANE MARKING – 4" WHITE, TYPE B–HS PAVEMENT LEGEND. 20' FROM CROSSWALK CENTERED IN LANE. SEE MUTCD 9C–9 FOR DETAILS.

Ⓧ



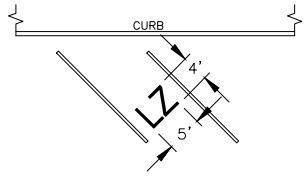
PARKING STALL STRIPING – 4" WHITE, TYPE B–HS PAVEMENT BARS.

Ⓨ



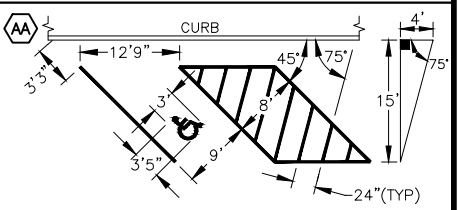
MOTORCYCLE STALL MARKINGS – 4" WHITE, TYPE B–HS PAVEMENT BARS.

Ⓩ



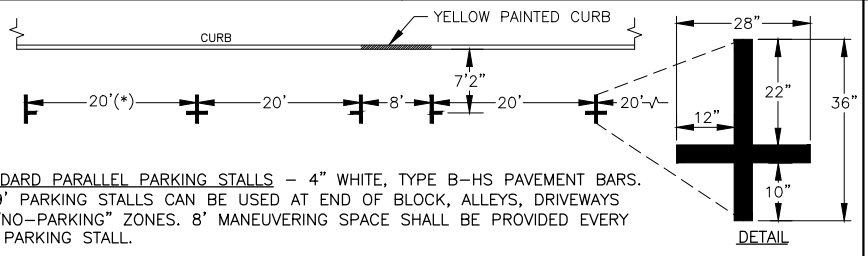
LOADING ZONE STALL MARKINGS – 4" WHITE, TYPE B–HS PAVEMENT LEGEND.

ⒶⒶ



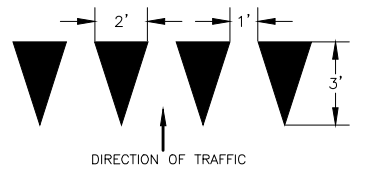
ACCESSIBILITY PARKING SPACE SYMBOL & MARKINGS 4" WHITE, TYPE B–HS PAVEMENT BARS AND LEGEND.

ⒷⒷ



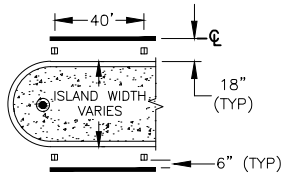
STANDARD PARALLEL PARKING STALLS – 4" WHITE, TYPE B–HS PAVEMENT BARS. (*)19' PARKING STALLS CAN BE USED AT END OF BLOCK, ALLEYS, DRIVEWAYS OR "NO–PARKING" ZONES. 8' MANEUVERING SPACE SHALL BE PROVIDED EVERY 2ND PARKING STALL.

ⒸⒸ



YIELD LINE – TRIANGLES SHALL BE WHITE, TYPE B–HS PAVEMENT LEGENDS.

ⒹⒹ



ISLAND/SEPARATOR STRIPING – 4" YELLOW, MMA PROFILE STRIPING LINE, WITH YELLOW, TYPE 1 BI–DIRECTIONAL, RAISED PAVEMENT MARKERS.

LEGEND

SEE SHEET 322A FOR STANDARD NOTES AND LEGEND.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

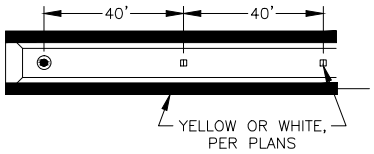
PAVEMENT MARKING DETAILS

CHANGES

NEW DRAWING

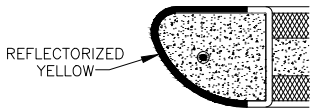
APPROVED	CITY ENGINEER	7/13/16	DRAWN BY	DTN	7/2016	NO.322B
		DATE	CHECKED BY	KDH	7/2016	

(EE)



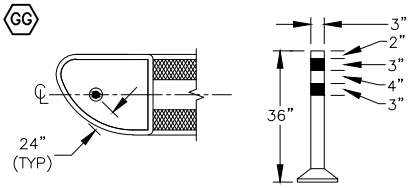
TRAFFIC SEPARATOR AND TRANSITIONS PAINTING – REFLECTORIZED PAINT LINES, WITH TYPE 1 BI–DIRECTIONAL, RAISED PAVEMENT MARKERS.

(FF)



ISLAND PAINTING
WHEN WIDTH IS GREATER THAN 24" – PAINT THE RAISED MEDIAN NOSE CURB REFLECTORIZED YELLOW.

(GG)



TUBULAR MARKERS – POSTS SHALL BE ROUND, TYPE 3 SURFACE MOUNTED, BRIGHT YELLOW WITH TWO HIGH INTENSITY REFLECTIVE BANDS.

LEGEND

SEE SHEET 322A FOR STANDARD NOTES AND LEGEND.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

PAVEMENT MARKING DETAILS

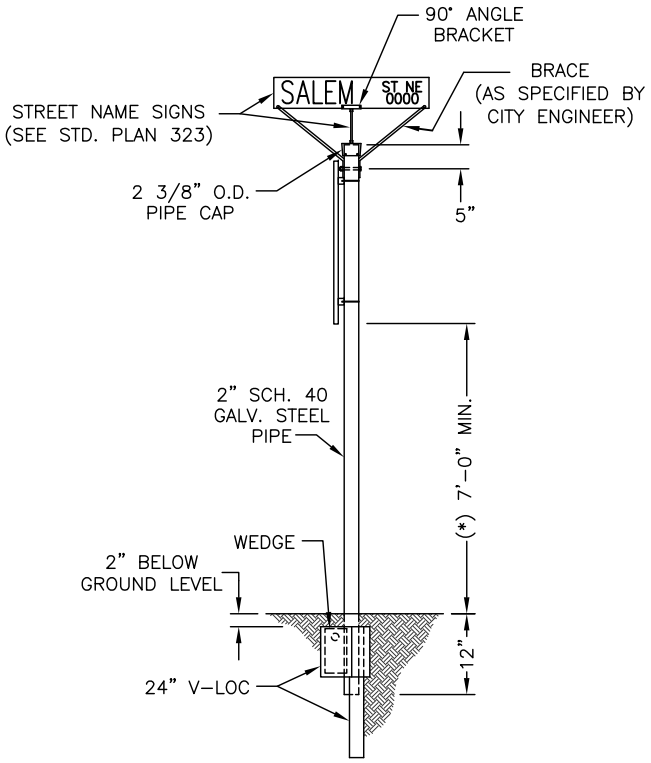
CHANGES
NEW DRAWING

APPROVED

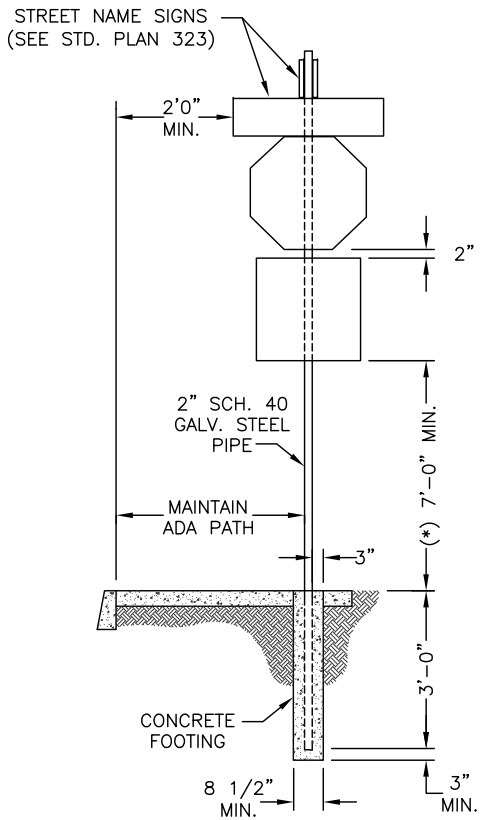
James L Sprint

CITY ENGINEER

7/13/16	DRAWN BY	DTN	7/2016	NO.322C
DATE	CHECKED BY	KDH	7/2016	



PIPE SIGN SUPPORT DETAIL (SOFTSCAPE)

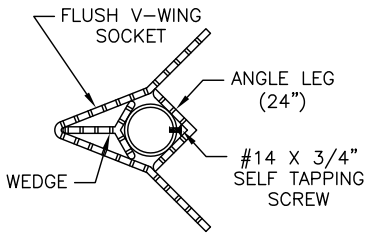


PIPE SIGN SUPPORT DETAIL (HARDSCAPE)

NOTES:

1. HOT DIP GALVANIZE AFTER FABRICATION STANDARD 2" WELDED STEEL PIPE CONFORM TO THE ASTM 'SPECIFICATIONS FOR WELDED STEEL PIPE' A120 AND A123 FOR GALVANIZING.
2. ALL PIPE SHALL BE CAPPED AS APPROVED BY ENGINEER WHEN STREET NAME SIGNS ARE NOT REQUIRED.
3. MOUNT PIPE IN V-LOC ANCHOR. (V-LOC IS A METAL SLEEVE ANCHOR SYSTEM TO SUPPORT THE POST).
4. INSTALL V-LOC WITH TOP 2" BELOW GROUND LEVEL.
5. V-LOC SHALL BE TAMPED IN FIRMLY FOR SUPPORT.
6. USE OF BOLTED FLANGE CONNECTION ONLY BY APPROVAL OF THE CITY ENGINEER.
7. BREAKAWAY DEVICES REQUIRED IN RAISED ISLAND AREAS.

* 7'-0" IS MINIMUM HEIGHT TO BOTTOM OF LOWER SIGN IN URBAN AREAS.
8'-0" IS MINIMUM HEIGHT WHEN SIGNS ARE PLACED ABOVE A BIKE PATH.



POST MOUNTING SOCKET

Approved Tommy D Sprunt City Engineer 9/12/11 Date

No.	Description	Date

REVISION

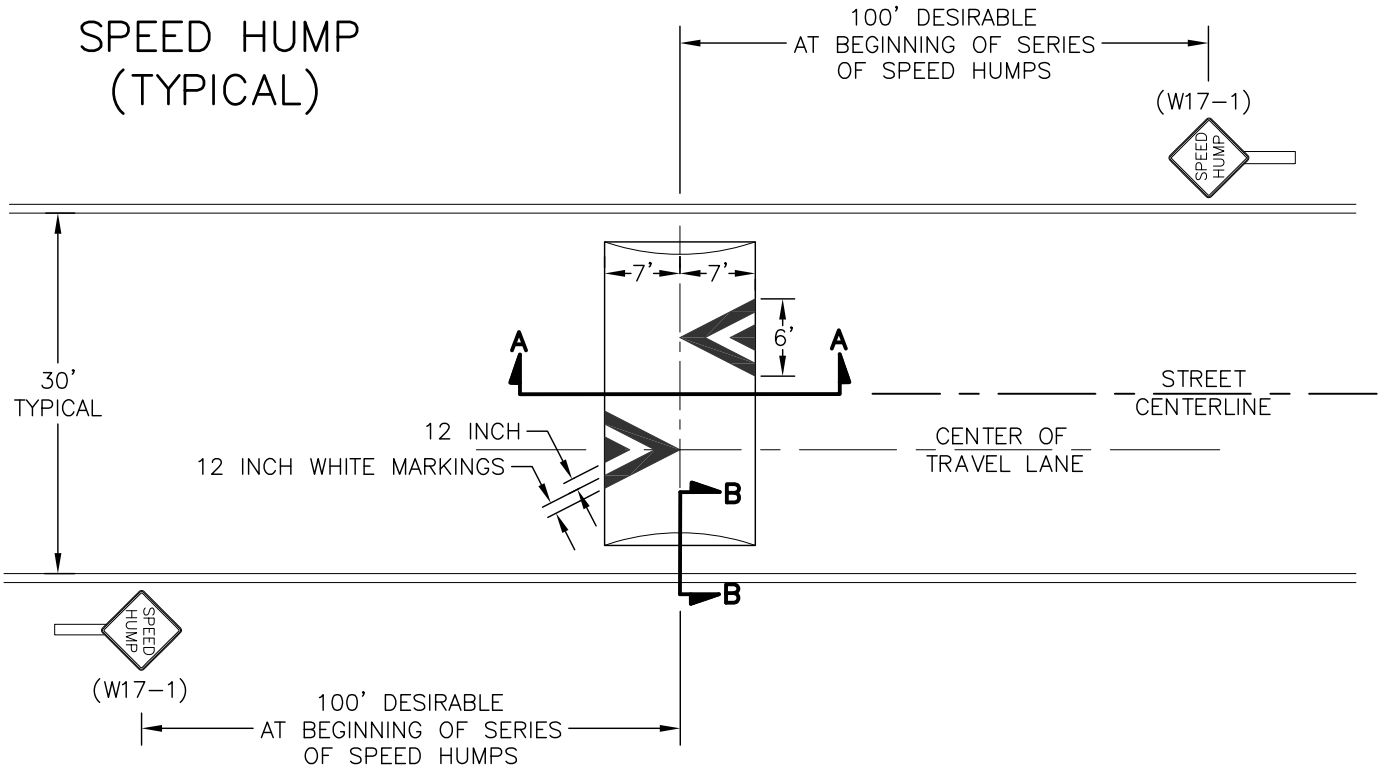
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
PIPE SIGN SUPPORT DETAIL

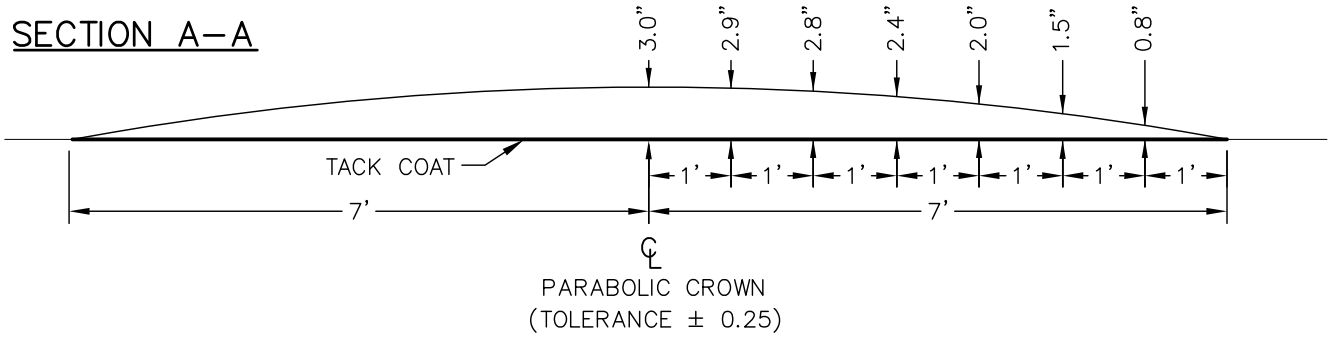
DRAWN BY DTN
CHECKED BY BAV

NO.323

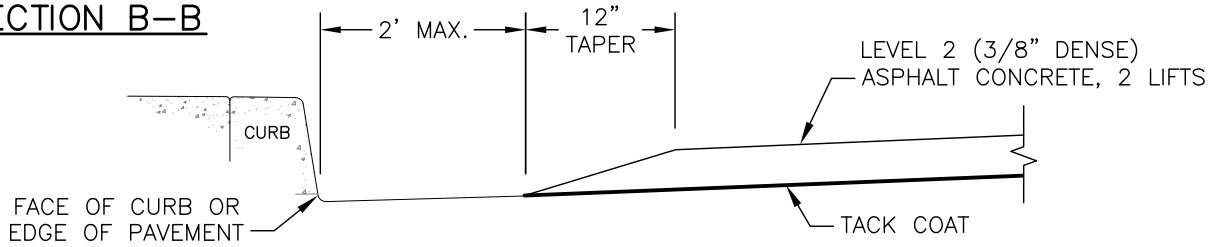
SPEED HUMP (TYPICAL)



SECTION A–A



SECTION B–B



NOTES:

1. WHITE PAVEMENT MARKINGS TO BE PREFORMED THERMOPLASTIC.
2. MAXIMUM STREET GRADE MUST BE LESS THAN 8%.
3. USE ONLY ON LOCAL STREETS THAT MEET NEIGHBORHOOD TRAFFIC MANAGEMENT PROGRAM REQUIREMENTS.
4. MINIMUM OF 2 SPEED HUMPS PER STREET.

Approved James L Sprunt 9/12/11
City Engineer Date

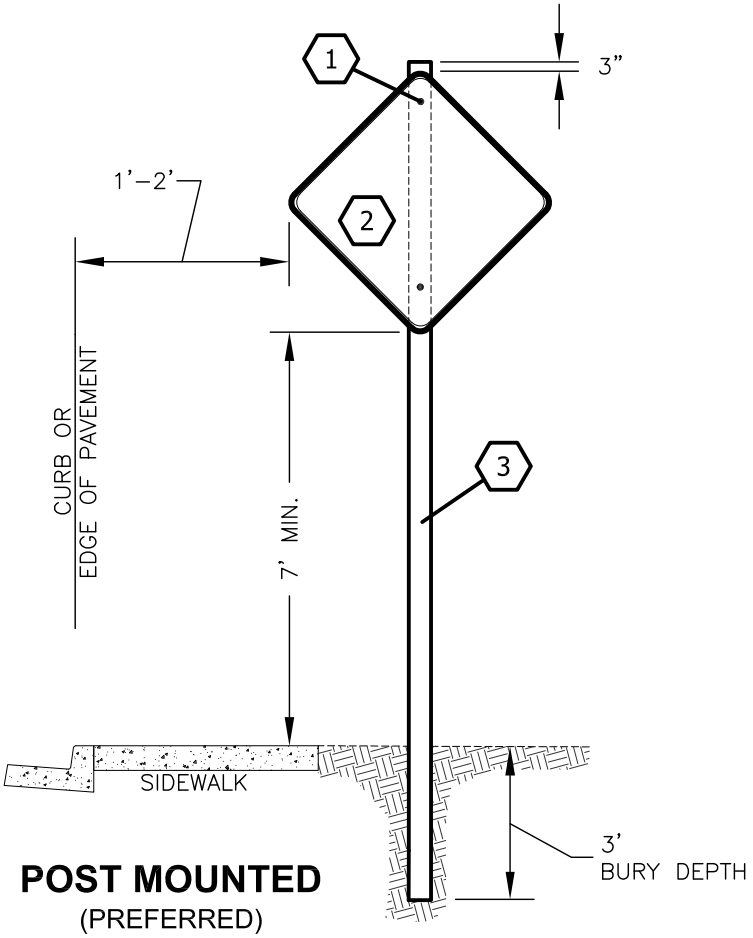
No.	Description	Date
	REVISION	

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

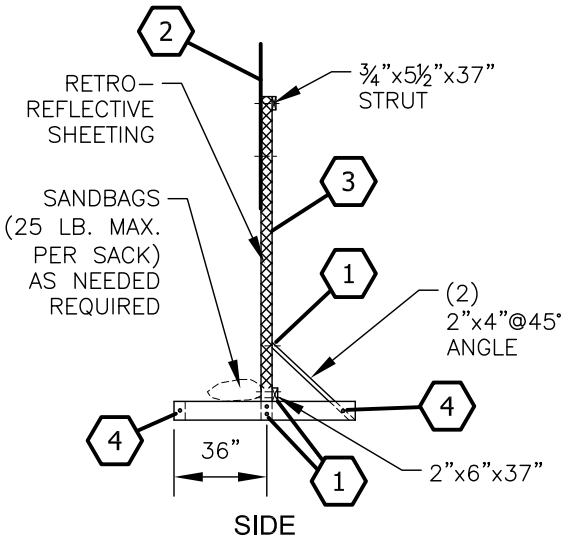
STANDARD PLAN
SPEED HUMP AND STRIPING

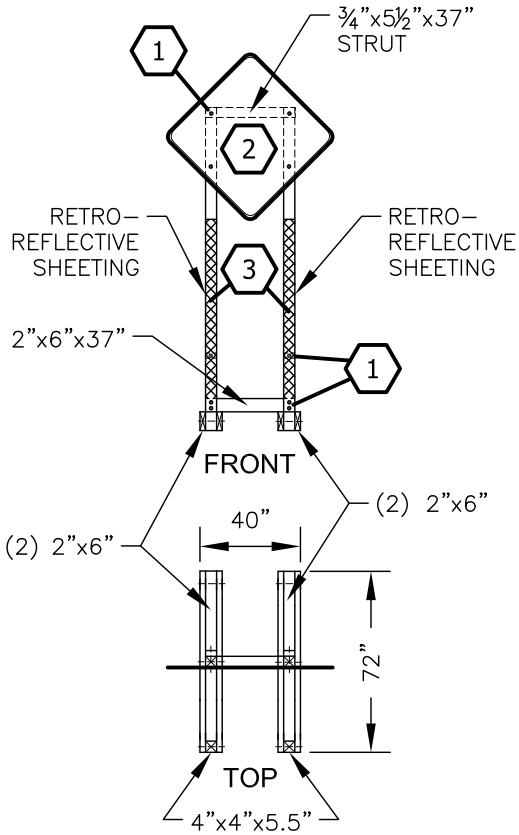
DRAWN BY DTN
CHECKED BY BAV

NO.325



POST MOUNTED
(PREFERRED)





DOUBLE POST (TSS)
(BY PERMISSION ONLY)

KEYNOTES

1. INSTALL WITH (2) 5/16"x2 ½" LAG BOLTS MINIMUM PER SIGN.
2. 30"x30" SIGN TYPICAL (CITY)
   36"x36" ARTERIAL COLLECTOR
3. 4"x4"X12'
4. (1) ⅜"x3 LAG SCREW PER SIDE

NOTES:

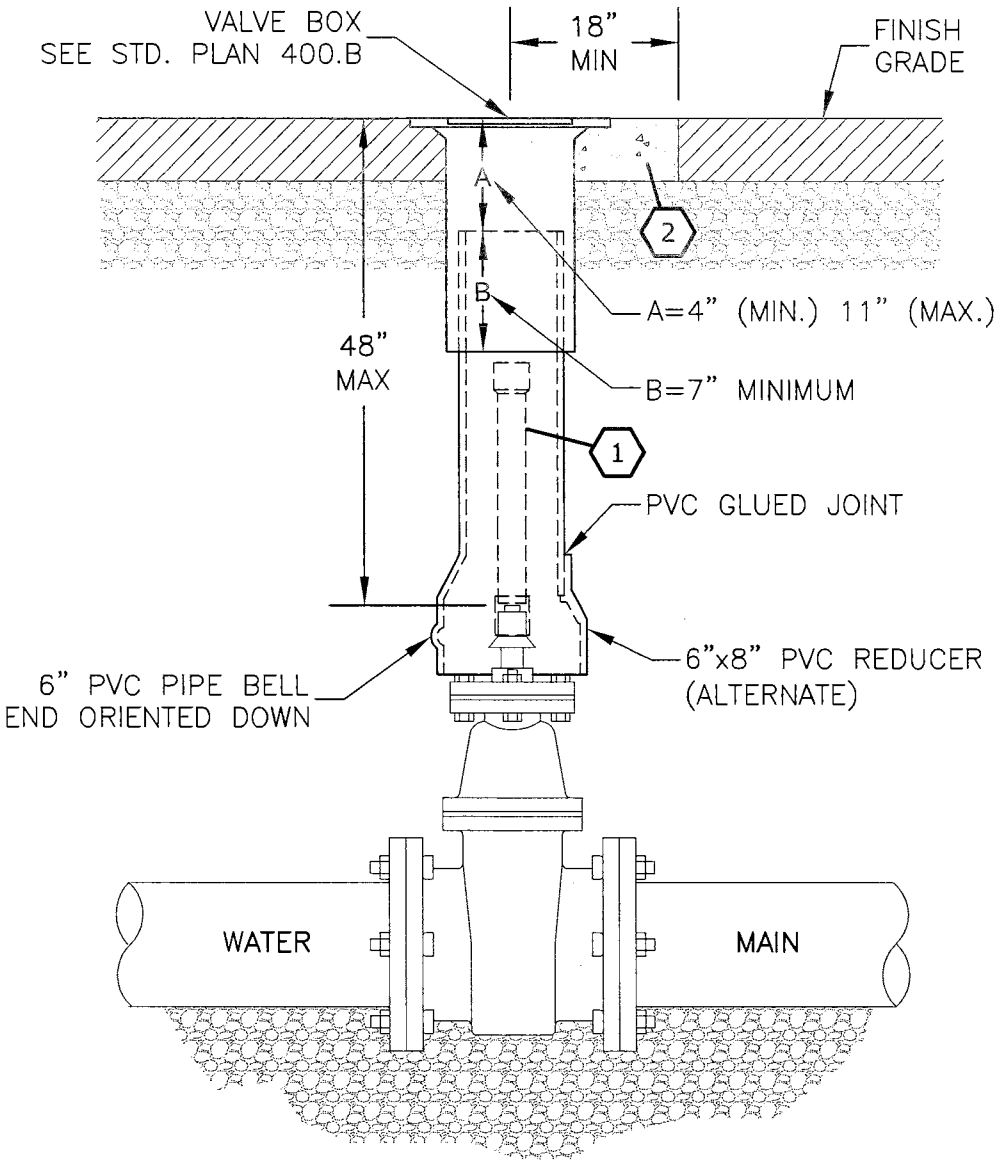
- DOUBLE POST (TSS) SHALL ONLY BE USED WITH PERMISSION OF THE PROJECT MANAGER.
- WHEN NOT IN USE DO NOT TIP OVER (TSS). TURN AWAY FROM TRAFFIC OR COVER SIGN.
- SIGNS SHALL COMPLY WITH AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION ATTSSA QUALITY GUIDELINES FOR TRAFFIC CONTROL DEVICES.
- DO NOT PLACE OR STACK SANDBAG MORE THAN 24" ABOVE THE GROUND.

GENERAL NOTE:
AVOID LOCATING SIGN SUPPORTS IN AREAS DESIGNATED FOR BICYCLE OR PEDESTRIAN TRAFFIC. WHEN (TSS)'S OR POST MOUNTED SIGNS ARE LOCATED ON A SIDEWALK OR BICYCLE FACILITY, INSTALL SECONDARY SIGN (RIDER) AT A MINIMUM HEIGHT OF 7' FROM TOP OF SIDEWALK OR BICYCLE FACILITY TO BOTTOM OF RIDER.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TEMPORARY SIGN SUPPORTS

APPROVED	Kenneth Kuenzi	8/16/17	DRAWN BY	JAK	8/2017	**NO.326**
	CITY ENGINEER AIC	DATE	CHECKED BY	JPK	8/2017	



GENERAL NOTES

- CENTER VALVE BOX ASSEMBLY AND ALIGN VERTICALLY OVER VALVE OPERATING NUT.
- ADJUST VALVE BOX TO FINISH PAVING GRADE.
- PVC PIPE SHALL BE ONE CONTINUOUS PIECE WITH BELL END ORIENTED DOWNWARD, OR ALTERNATIVELY, GLUE PVC REDUCER ON PLAIN END OF PIPE.

KEYNOTES

(1) PROVIDE VALVE OPERATOR EXTENSION WHEN OPERATING NUT DEPTH EXCEEDS 48-INCHES. SEE STD. PLAN 400.C

(2) CONSTRUCT 6-INCH THICK P.C.C. COLLAR IF VALVE IS IN UNPAVED AREA SUBJECT TO VEHICULAR TRAFFIC.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

CHANGES	
	ADDED PIPE BELL/REDUCER OPTION
	REMOVED DETAIL ON VALVE BOX
	ADDED WARRANT FOR OPERATOR EXTENSION

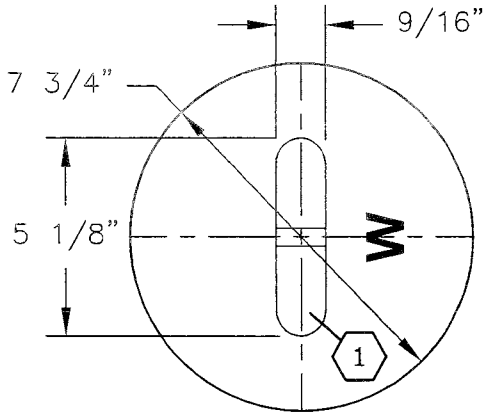
STANDARD PLAN

WATER VALVE BOX ASSEMBLY

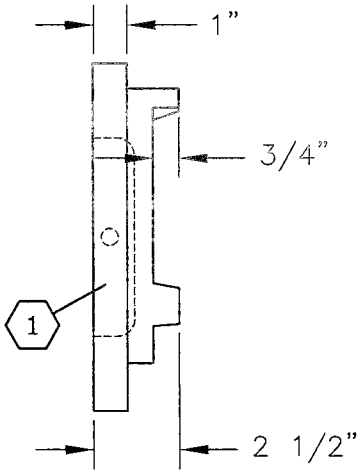
APPROVED	CITY ENGINEER

DRAWN BY	JAK	2016
CHECKED BY	DEW	2016

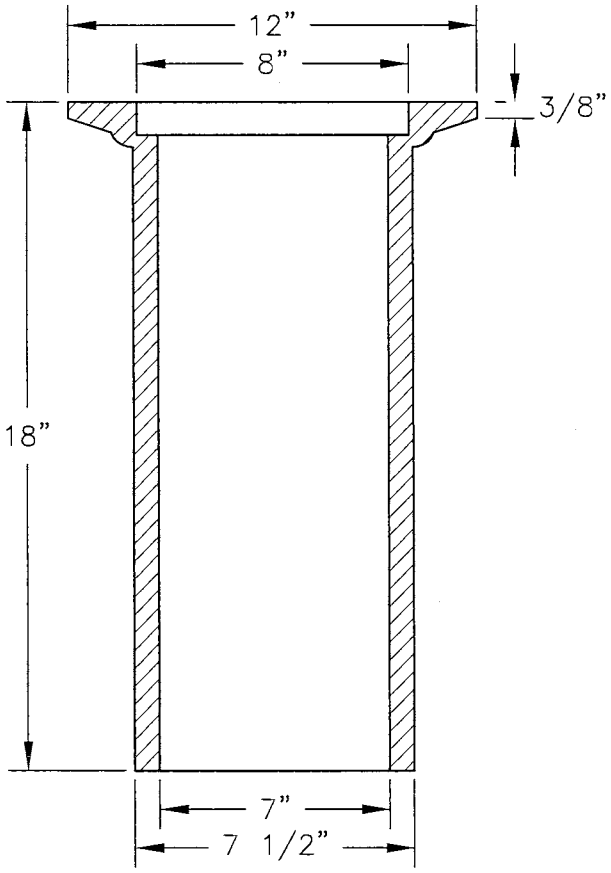
NO.400.A



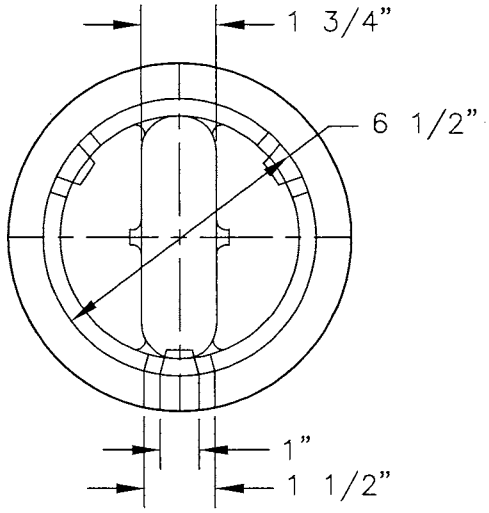
LID TOP



LID SIDE



BOX SECTION



LID BOTTOM

SPECIFICATION:
WATER VALVE BOX MATERIAL SHALL BE CAST IRON ASTM A48, CL35.

(1) LIFT POCKET 1" WIDE x 1 1/4" DEEP.

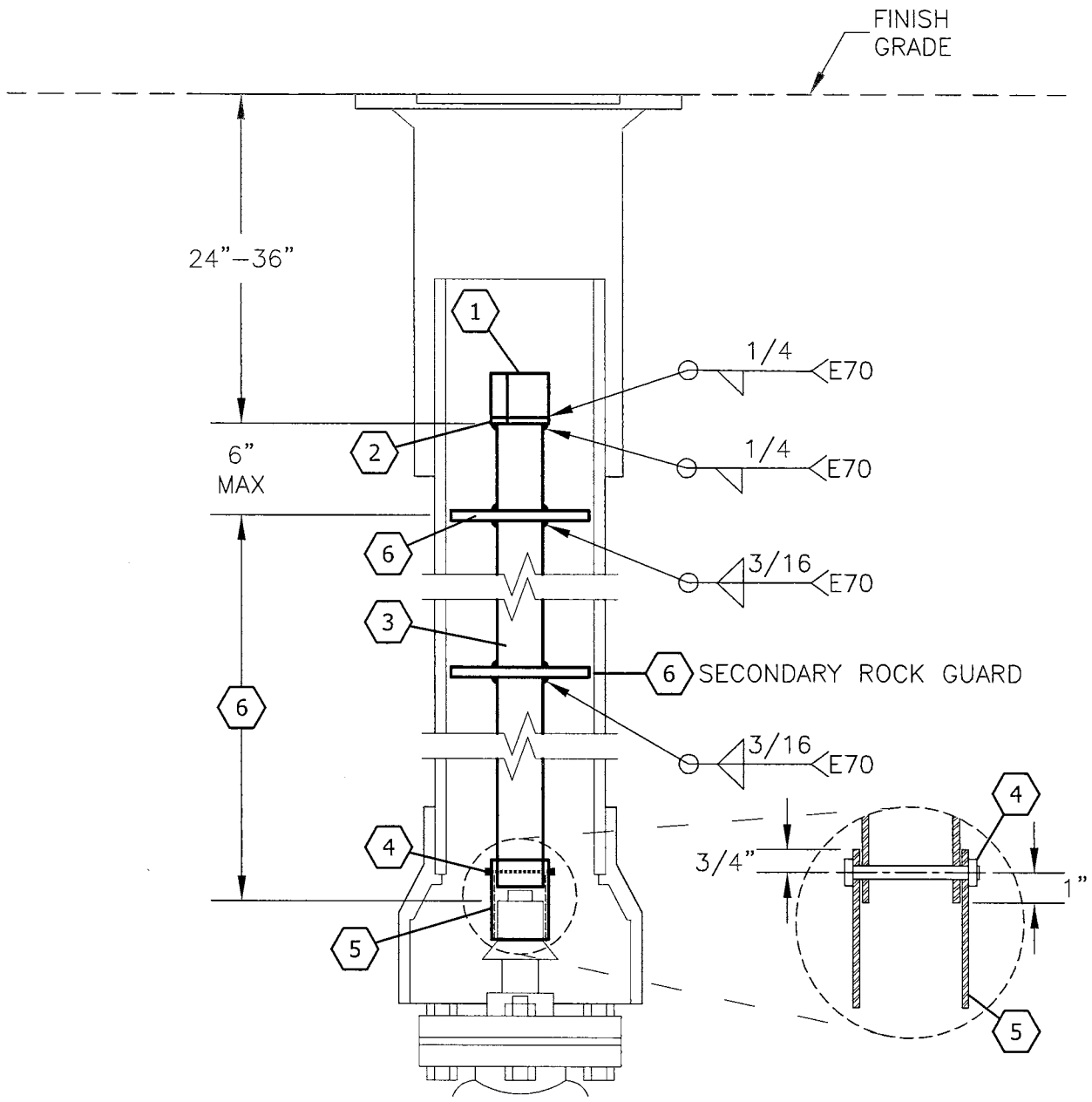
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

CHANGES	
	NEW DRAWING
	CHANGED TO CLASS 35 CAST IRON

STANDARD PLAN

WATER VALVE BOX

APPROVED	CITY ENGINEER		DRAWN BY	JAK	2016	NO.400.B
			CHECKED BY	DEW	2016	



KEYNOTES

1. 2"x2"x1/8"x2" LONG STEEL TUBE. EXTEND TO 24"–36" FROM FINISH GRADE.
2. 2"x2"x3/8" STEEL FLAT BAR.
3. 1 1/2" SCHEDULE 40 STEEL PIPE (1.90 OD x .145 WALL).
4. 3/8" BOLT WITH LOCK NUT.
5. 2 1/2"x2 1/2"x3/16"x3 1/2"" LONG STEEL TUBE.
6. ROCK GUARD. 1/8" STEEL PLATE WELDED TO STEEL PIPE. INSTALL 6" MAX BELOW OPERATOR NUT. ROCK GUARD DIAMETER SHALL BE 5 1/2". SECONDARY ROCK GUARD IS REQUIRED IF DISTANCE FROM UPPER ROCK GUARD TO VALVE NUT EXCEEDS 72". INSTALL SECONDARY ROCK GUARD HALFWAY BETWEEN UPPER GUARD AND VALVE NUT.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

CHANGES: NEW DRAWING

STANDARD PLAN

WATER VALVE OPERATOR EXTENSION

APPROVED

CITY ENGINEER

DRAWN BY	JAK	2016
CHECKED BY	DEW	2016

NO.400.C

(HORIZONTAL)
BEARING AREA OF THRUST BLOCKS
IN SQUARE FEET

FITTING SIZE	TEE, WYE, PLUGED CROSS	STRADDLE BLOCK	90° BEND PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22-1/2° BEND	11-1/4° BEND
				A-1	A-2			
4	1.0	1.6	2.0	1.9	1.4	1.0	---	---
6	2.1	3.7	4.0	4.3	3.0	1.6	1.0	---
8	3.8	6.5	6.8	7.6	5.4	2.9	1.5	1.0
10	5.9	10.2	10.3	11.8	8.4	4.6	2.4	1.2
12	8.5	14.7	14.5	17.0	12.0	6.6	3.4	1.7
14	11.5	---	19.5	23.0	16.3	8.9	4.6	2.3
16	15.0	26.1	25.3	30.0	21.3	13.7	7.0	3.5
18	19.0	---	31.7	38.0	27.0	17.2	8.8	4.4
20	23.5	40.8	38.9	47.0	33.3	21.1	10.8	5.4
24	34.0	58.8	55.5	68.0	48.0	26.2	13.6	6.8

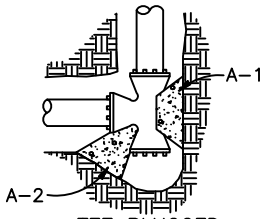
NOTES:

1. ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:

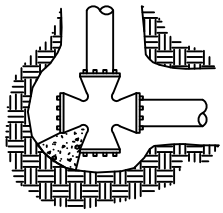
   BEARING AREA = (TEST PRESSURE / 150) x (2000 / SOIL BEARING STRESS) x (TABLE VALUE)

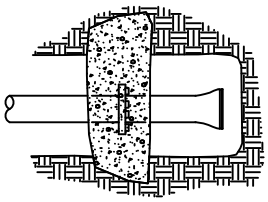
2. ABOVE VOLUMES BASED ON TEST PRESSURE OF 150 PSI AND THE WEIGHT OF CONCRETE = 4050 POUNDS PER CUBIC YARD. TO COMPUTE FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION:

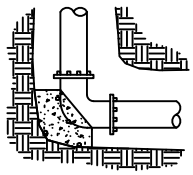
   VOLUME = (TEST PRESSURE / 150) x (TABLE VALUE)

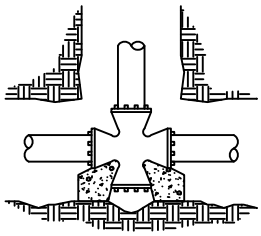


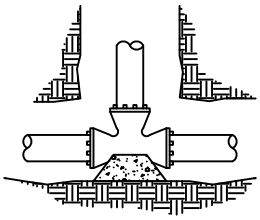
TEE PLUGGED ON RUN

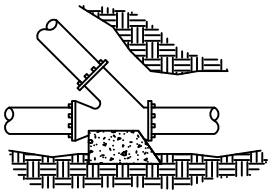

CROSS PLUGGED FOR 90° BEND SEE NOTE 7


STRADDLE BLOCK


BEND 90°, 45°, 22½°, 11¼°


CROSS PLUGGED FOR TEE SEE NOTE 7


TEE


WYE

NOTES:

1. CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. ALL CONCRETE TO BE CLASS 2400 MINIMUM.
3. INSTALL ISOLATION MATERIAL BETWEEN PIPE AND/OR FITTINGS BEFORE POURING CONCRETE BLOCKING.
4. CONCRETE SHALL BE KEPT CLEAR OF ALL JOINTS AND ACCESSORIES.
5. SEE STANDARD PLAN NO. 402 FOR VERTICAL BEND ANCHOR BLOCK DETAILS.
6. SEE STANDARD PLAN NO. 403 AND 404 FOR TIED BACK THRUST BLOCK DETAILS.
7. MAY NOT WORK OUT FOR ALL FITTING SIZES – CONFIRM USE OF THIS BLOCKING CONFIGURATION WITH ENGINEER.

Approved Karl O. Gerber — City Engineer — 9-15-99 Date

No.	Description	Date	By	Appr
2.	ADJUST SIZE OF SOME THRUST BLOCKS.	3/99	JHC	
1.	CONVERT TO CAD DWG.			

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

HORIZONTAL THRUST BLOCKING

DRAWN BY: I.D.F.

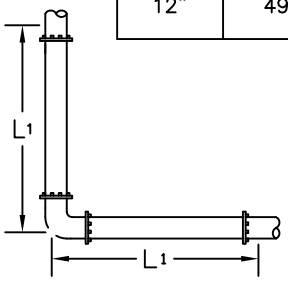
CHECKED BY: R.W.L.

NO. 401

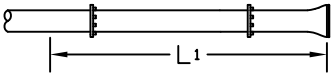
9-15-99

LENGTH (L_1) OF PIPE REQUIRED FOR RESTRAINT (FEET)

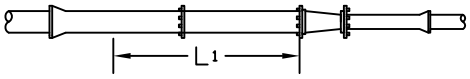
	Horizontal Bend				Dead End	Reducer (Restrained Length for Large Diameter Side)				
Diameter	90°	45°	22½°	11¼°		4"	6"	8"	10"	12"
4"	30	23	20	19	44	--	37	53	65	77
6"	35	25	21	20	55	--	--	38	53	67
8"	40	27	22	20	66	--	--	--	37	54
10"	44	29	23	21	76	--	--	--	--	51
12"	49	31	24	21	86	--	--	--	--	--



BEND
90°, 45°, 22½°, 11¼°



DEAD END

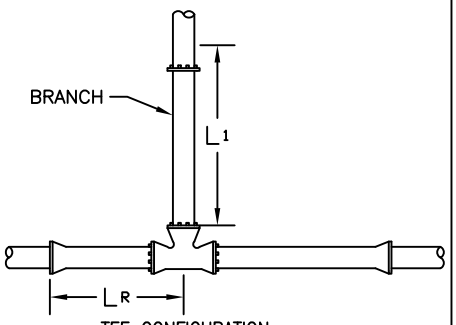


REDUCER

LENGTH (L_1) OF PIPE REQUIRED FOR RESTRAINT WHEN USING TEES (FEET)

Tee Configurations (Restrain Length for Branch)										
Branch Pipe Diameter	L_R=0	L_R=2	L_R=4	L_R=6	L_R=8	L_R=10	L_R=12	L_R=14	L_R=16	L_R=18
4"	44	30	19	19	19	19	19	19	19	19
6"	55	45	36	26	19	19	19	19	19	19
8"	66	59	52	44	37	30	23	19	19	19
10"	76	70	64	58	53	47	41	35	30	24
12"	86	81	76	71	67	62	57	52	47	43

L_R is the minimum length in either direction from tee to nearest adjacent joint



TEE CONFIGURATION

NOTES:

1. ALL JOINTS WITHIN THE LENGTH "L1" FROM THE ABOVE TABLE, SHALL BE RESTRAINED.
2. THE JOINT RESTRAINT LENGTHS CALCULATED ARE FOR FITTINGS USED TO CHANGE PIPE HORIZONTAL ALIGNMENT ONLY. FOR APPLICATIONS WHERE FITTINGS ARE USED TO CHANGE THE SLOPE OF THE PIPE, THE DESIGN ENGINEER SHALL INCLUDE THE JOINT RESTRAINT REQUIREMENTS ON THE PROJECT DRAWINGS.
3. IF AN UNANTICIPATED NEED FOR JOINT RESTRAINT ARISES TO CHANGE THE SLOPE OF THE PIPE, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER OR UTILIZE ANCHORS IN ACCORDANCE WITH STANDARD DRAWING NO. 402.
4. JOINT TYPES NOT COVERED ON ABOVE TABLE MUST BE DESIGNED INDIVIDUALLY IN ORDER TO DETERMINE APPROPRIATE RESTRAINED LENGTH. THIS LENGTH SHALL BE SHOWN ON THE PROJECT DRAWINGS.
5. THE SMALL DIAMETER SIDE OF A REDUCER DOES NOT REQUIRE RESTRAINT IF THE LARGE DIAMETER SIDE IS PROPERLY RESTRAINED.
6. ABOVE RESTRAINED LENGTHS ARE BASED ON:
   - TEST PRESSURE OF 150 POUNDS PER SQUARE INCH
   - MINIMUM OF 3 FEET COVER
   - CLASS B PIPE ZONE CONDITIONS
   - WHEN ORGANIC OR CLAY TYPE SOILS ARE BEING USED FOR BACKFILL, GRANULAR BACKFILL MUST BE USED FOR BEDDING AND BACKFILL TO A HEIGHT OF 6 INCHES OVER THE TOP OF THE PIPE BEFORE OTHER SOILS ARE PLACED.
   - UNCOATED PIPE, THIS TABLE IS NOT APPLICABLE FOR PIPE ENCASED IN POLYETHYLENE

ANY REDUCTION OF THESE VALUES AS A RESULT OF OTHER CONDITIONS ENCOUNTERED SHALL BE BASED ON THE APPROPRIATE EVALUATION AND RECOMMENDATION BY A QUALIFIED, REGISTERED ENGINEER AND WITH APPROVAL BY THE CITY.

Approved Karl O. Fowler — City Engineer — 2-1-00 — Date

No.	Description	Date	By	Appr

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

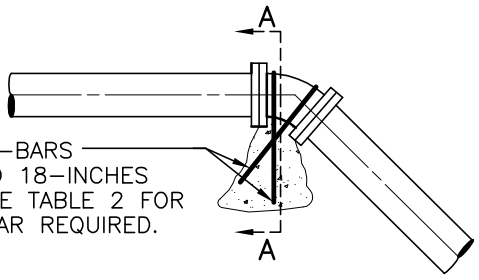
STANDARD PLAN

JOINT RESTRAINT

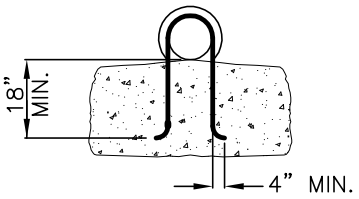
DRAWN BY: TAL

CHECKED BY: KW

NO. 401.5



GALV. OR EPOXY COATED RE–BARS OVER FITTING AND EMBEDDED 18–INCHES IN CONCRETE AS SHOWN. SEE TABLE 2 FOR NUMBER AND SIZE OF RE–BAR REQUIRED.



SECTION A–A

N.T.S.

1. KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES.
2. THE REQUIRED ANCHOR BLOCK VOLUMES FOR SPECIAL CONNECTIONS ARE SHOWN EN–CIRCLED ON THE PLAN E.G. ③ INDICATES 3 CUBIC YARDS OF CONCRETE ARE REQUIRED.
3. IF NOT SHOWN ON PLANS, REQUIRED VOLUMES AT FITTINGS SHALL BE AS INDICATED BELOW, ADJUST IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) STATED IN THE THE SPECIAL PROVISIONS.
4. VOLUMES AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER VOLUMES AND BLOCKING DETAIL SHOWN ON THIS STANDARD PLAN.
5. THRUST BLOCKS FOR VERTICAL UP BENDS SHALL BE THE SAME AS FOR HORIZONTAL BENDS.

TABLE 1

FITTING SIZE	VOLUME OF CONCRETE ANCHOR BLOCK IN CU. YD.			
	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	1.0	0.5	0.3	N.R
6	2.0	1.1	0.5	0.3
8	3.4	1.8	0.9	0.5
10	5.1	2.7	1.4	0.7
12	7.2	3.9	2.0	1.0
14	9.6	5.2	2.7	1.3
16	12.5	6.7	3.4	1.7
18	15.6	8.5	4.3	2.2
20	19.2	10.4	5.3	2.7
24	27.4	14.8	7.6	3.8

TABLE 2

FITTING SIZE	NUMBER & SIZE OF STEEL RE–BAR REQUIRED			
	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	2–#5	2–#5	2–#5	2–#5
6	2–#5	2–#5	2–#5	2–#5
8	2–#5	2–#5	2–#5	2–#5
10	3–#5	2–#5	2–#5	2–#5
12	4–#5	2–#5	2–#5	2–#5
14	4–#6	3–#5	2–#5	2–#5
16	4–#7	4–#5	2–#5	2–#5
18	4–#7	3–#6	3–#5	2–#5
20	4–#8	4–#6	3–#5	2–#5
24	6–#8	4–#7	2–#7	2–#5

NOTE:

1. THE VOLUMES SHOWN IN TABLE 1 ARE BASED ON TEST PRESSURES OF 150 PSI AND THE WEIGHT OF CONCRETE = 4050 LBS/CU.YD.. TO COMPUTE VOLUME FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION: VOLUME = (TEST PRESSURE/150) X (TABLE VALUE).
2. THE NUMBER AND SIZE OF RE–BAR REQUIRED SHOWN IN TABLE 2 ARE BASED UPON GRADE 40 RE–BAR WITH A TENSILE STRENGTH OF 20,000 PSI AND A FS=1.5.
3. ALTERNATE JOINT RESTRAINT METHODS SUCH AS MEGA–LUG, ETC., WILL BE ACCEPTED BY WRITTEN APPROVAL OF THE ENGINEER.

Approved Karl O. Houston, City Engineer 9–15–99 Date

No.	Description	Date	By	Appr
	SIGNIFICANT REVISION			
1	CONVERT TO CAD DWG.	12/98	IDF	KDG

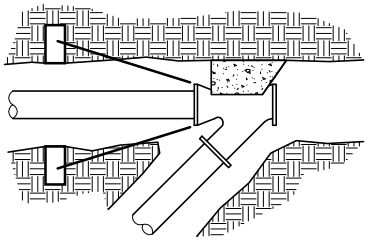
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

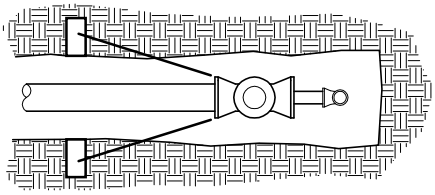
STANDARD PLAN
VERTICAL BEND ANCHOR BLOCK DETAIL

DRAWN BY SGP
CHECKED BY KDG

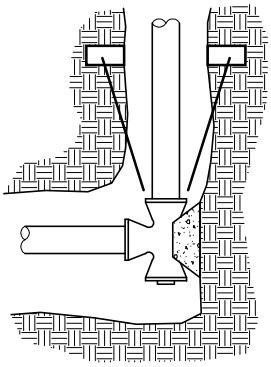
NO.402



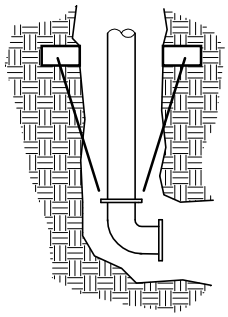
WYE W/STD THRUST BLOCK



BLOW–OFF OR DEAD END



TEE W/STD THRUST BLOCK



BEND

TABLE 1

BEARING AREA OF THRUST BLOCK

FITTING SIZE	1/2 BEARING AREA (SQ. FT.)(EACH SIDE)				
	DEAD END WYE OR TEE W/STD THRUST BLOCK	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
4	1.4	1.9	1.0	0.5	0.3
6	2.8	3.9	2.1	1.1	0.5
8	4.8	6.8	3.7	1.9	0.9
10	7.3	10.3	5.6	2.8	1.4
12	10.3	14.5	7.9	4.0	2.0
14	13.8	19.5	10.6	5.4	2.7
16	17.8	25.2	13.6	7.0	3.5

TABLE 2

NUMBER & SIZE OF STEEL TIE RODS REQ'D

SIZE	NO. OF FULL DIA. RODS WELDED TO PLATES			NO. OF THREADED RODS		
	5/8"	3/4"	1"	5/8"	3/4"	1"
4	2	WARNING–DUC–LUGS WILL NOT HOLD		2	WARNING–NO DUC–LUGS	
6	2			3	2	2
8	3	2	2	5	3	2
10	5	3	2	7	5	3
12	7	5	3	10	7	4
14	10	7	4	13	9	5
16	12	9	5	17	11	6

NOTES:

1. THE AREAS SHOWN IN TABLE 1 ARE BASED ON TEST PRESSURES OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2,000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION. BEARING AREA=(TEST PRESSURE/150) x (2,000/SOIL BEARING STRESS).
2. THE NUMBER AND SIZE OF TIE RODS REQUIRED SHOWN IN TABLE 2 ARE BASED UPON ASTM A307 STEEL BOLT STOCK WITH A TENSIL STRENGTH OF 20,000 PSI AND A FS=1.5, BASED ON TEST PRESSURE OF 150 P.S.I.
3. MAKE CONNECTIONS AS FOLLOWS:
   5/8" RODS – THRU BOLT HOLES, DUCTILE IRON LUGS, STARR TIE BOLTS, STEEL PLATES.
   3/4" RODS – THRU BOLT HOLES, STARR TIE BOLTS, STEEL PLATES.
   1" RODS – CONNECT TO STEEL PLATE, STRAPS OR "EARS".
4. CONSTRUCT TIED BACK THRUST BLOCK AS PER STANDARD PLAN NO. 404.
5. MULTIPLY THE AREAS LISTED IN TABLE 1 BY 2 IN ORDER TO DETERMINE THE TOTAL BEARING AREA REQUIRED.

Approved Karl O. Sweitzer, City Engineer — 9–15–99, Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

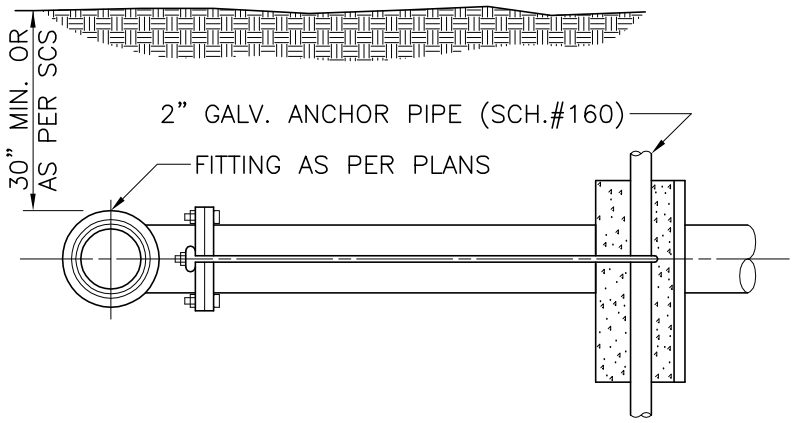
STANDARD PLAN

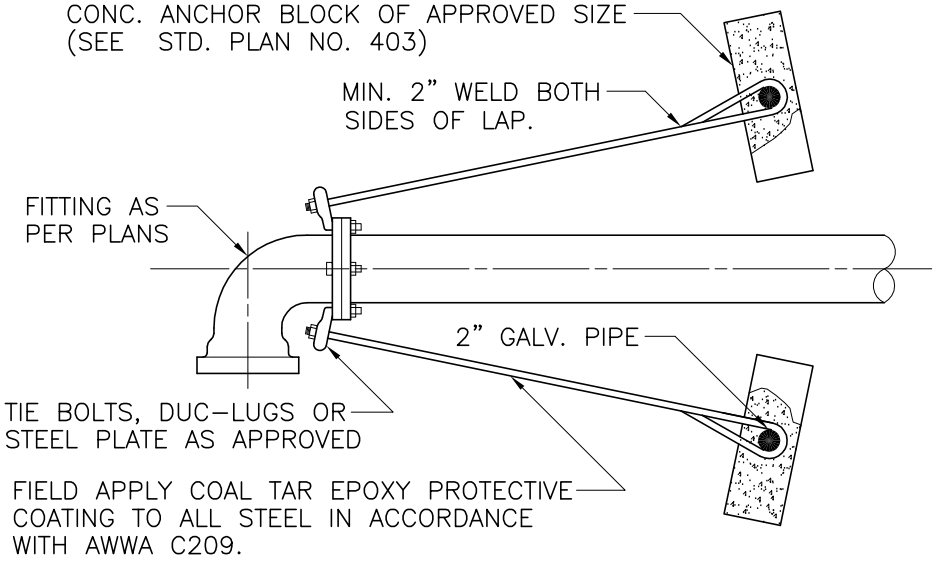
4" TO 16" TIED BACK THRUST BLOCK SCHEMATIC AND DIMENSIONS

No.	Description	Date	By	Appr
	SIGNIFICANT REVISIONS			
	REVISION			

DRAWN BY IDF
CHECKED BY KDG

NO.403





NOTES:

1. CONCRETE THRUST BLOCK TO BE POURED AGAINST UNDISTURBED EARTH.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. THE REQUIRED THRUST BLOCK BEARING AREAS FOR SPECIAL CONNECTIONS ARE SHOWN ENCIRCLED ON THE PLANS: E.G. (15) INDICATES 15 SQUARE FEET BEARING AREA REQUIRED.
4. IF NOT SHOWN ON PLANS REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED HEREIN OR ON SUPPLEMENTAL STD PLAN NO. 403, ADJUSTED IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS(ES) STATED IN THE SPECIAL PROVISIONS.
5. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS PLAN AND STANDARD PLAN NO. 403.
6. CONSTRUCT STANDARD (STD) THRUST BLOCKS AS PER SCS PLAN NO. 403.
7. TIE RODS, NUTS & WASHERS USED FOR THRUST RESTRAINT SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM A307.

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

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

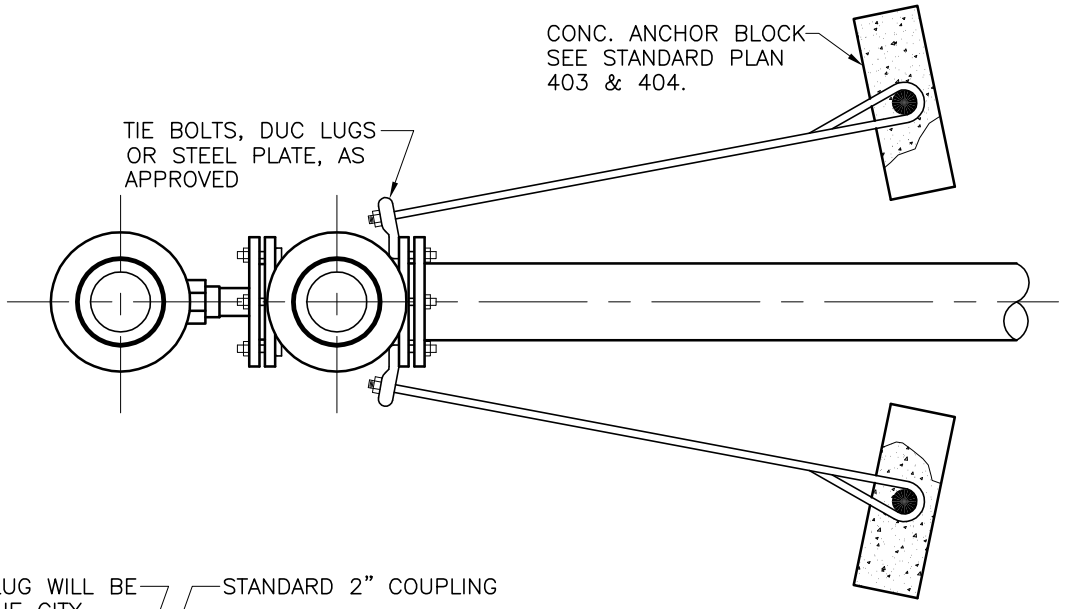
STANDARD PLAN

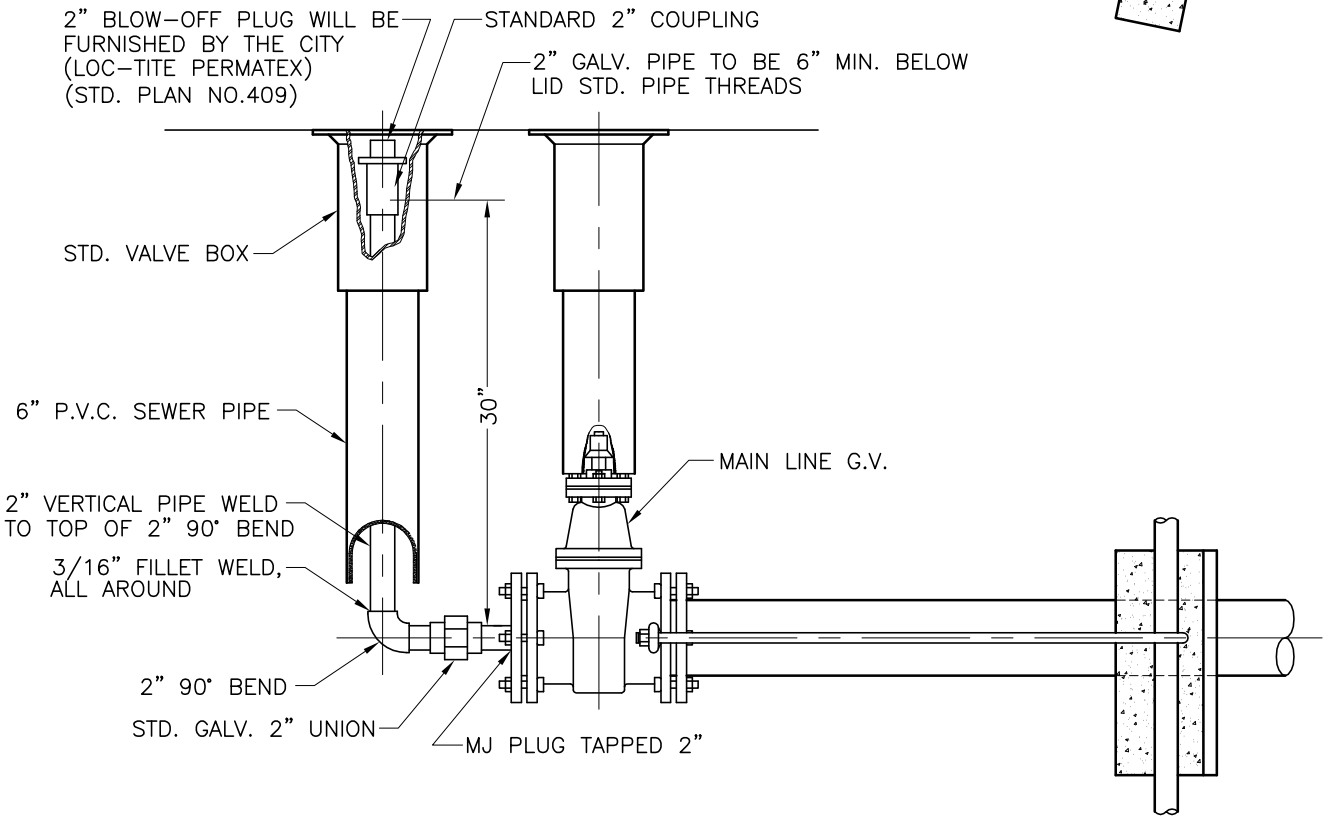
4" TO 16" TIED BACK THRUST BLOCK CONSTRUCTION DETAILS

	SIGNIFICANT REVISIONS			
No.	Description	Date	By	Appr
	REVISION			

DRAWN BY IDF
CHECKED BY KDG

NO.404





NOTES:

1. 8" MAXIMUM PIPE SIZE ALLOWED FOR 2" BLOW-OFF.

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

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

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

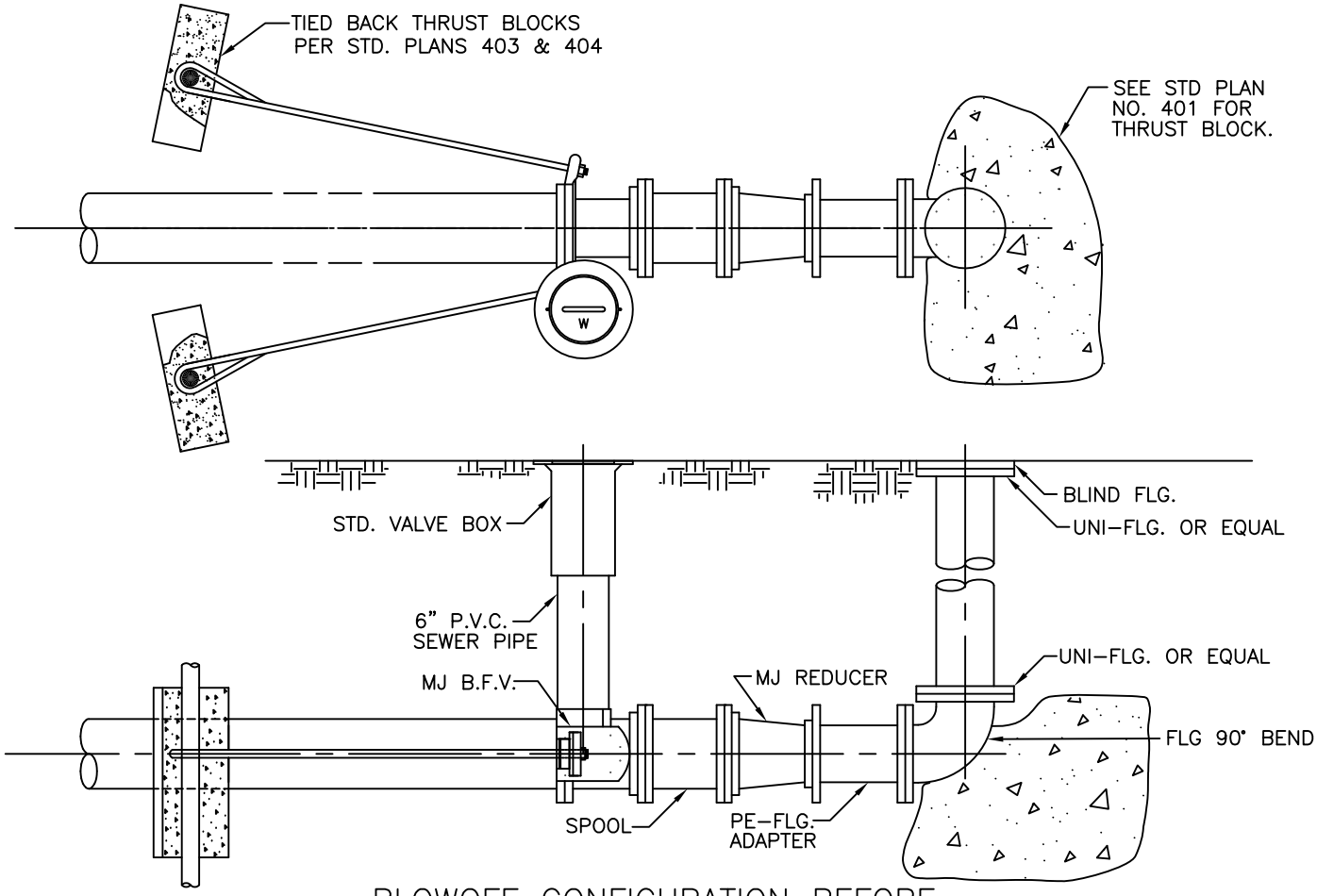
STANDARD PLAN

BLOWOFF WITH IN-LINE VALVE

DRAWN BY GS

CHECKED BY D.W.

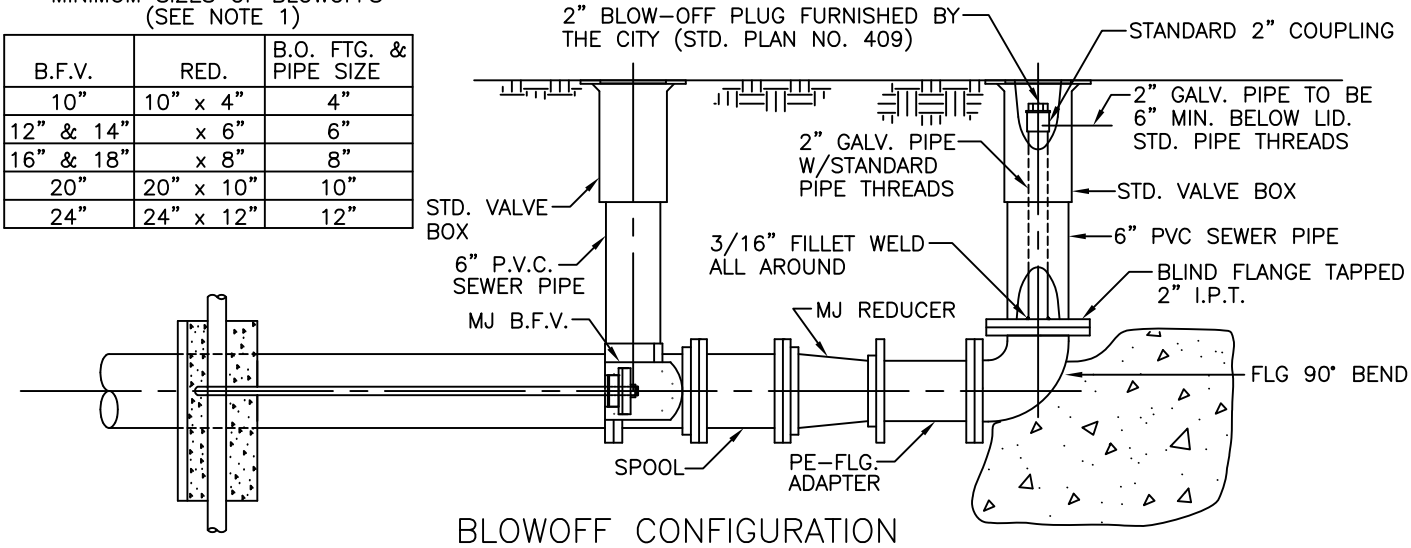
NO.405



BLOWOFF CONFIGURATION BEFORE FIRST FLUSHING OF MAIN LINE

MINIMUM SIZES OF BLOWOFFS
(SEE NOTE 1)

B.F.V.	RED.	B.O. FTG. & PIPE SIZE
10"	10" x 4"	4"
12" & 14"	x 6"	6"
16" & 18"	x 8"	8"
20"	20" x 10"	10"
24"	24" x 12"	12"



BLOWOFF CONFIGURATION BEFORE CHLORINATION

NOTES:

1. SIZE OF B.O. & VALVE SHALL BE USED IN ABSENCE OF MORE SPECIFIC INFORMATION SHOWN ON PLANS.
2. FITTINGS MAY BE SUBSTITUTED AS APPROVED BY ENGINEER.

Approved Karl O. Sprecher, City Engineer — 3-1-02, Date

No.	Description	Date	By	Appr
1	SUGGEST ENGINEER DESIGN REDUCER, VALVE & B.O. SIZES TO ACHIEVE REQUIRED FLUSHING VELOCITY.	5/99	SP	DW
2	ADDED BLOW-OFF ASSEMBLY BEFORE AND AFTER FIRST FLUSHING OF MAIN LINE	4/01	IDF	

REVISION

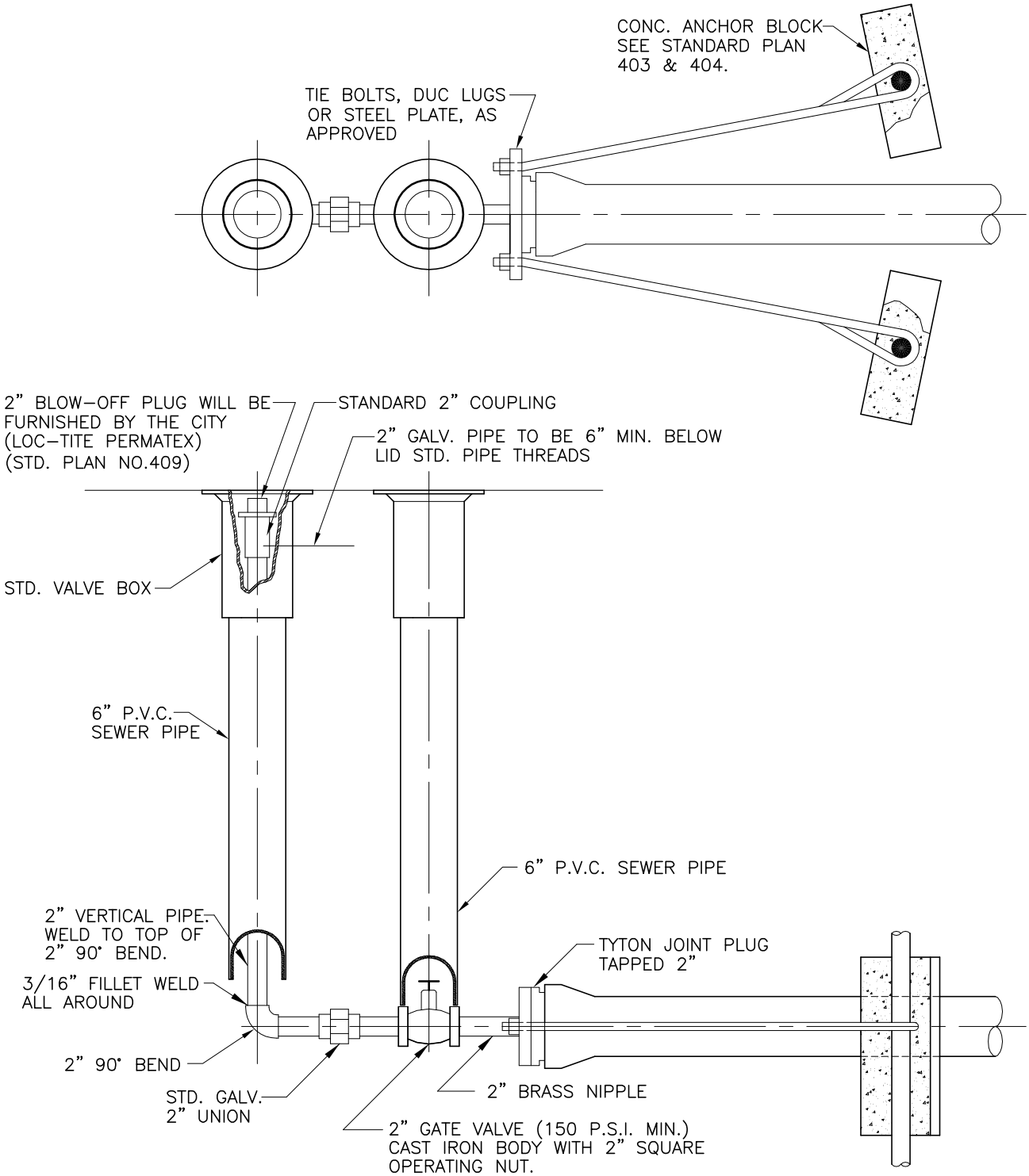
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

BLOWOFF WITH IN LINE VALVE
FOR 10" DIA. PIPE & LARGER

DRAWN BY GS, SP
CHECKED BY D.W.

NO. 406



NOTES:

1. 8" MAXIMUM PIPE SIZE FOR 2" BLOW-OFF.

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

No.	Description	Date	By	Appr
1	CONVERT TO CAD DWG.	12/98	IDF	KDG

REVISION

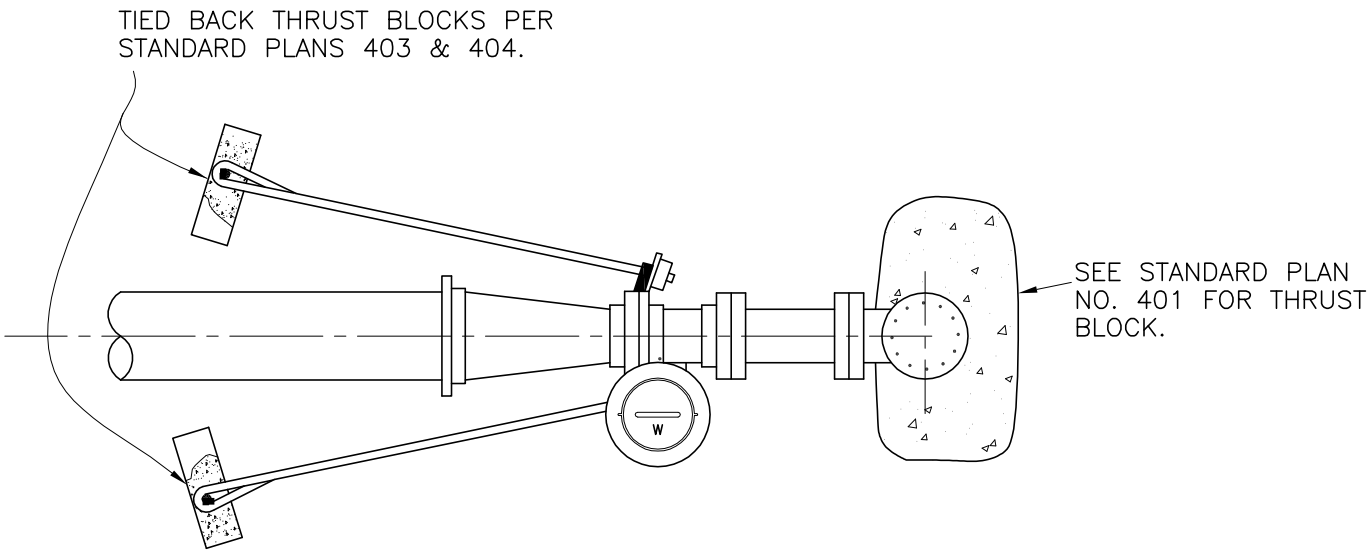
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

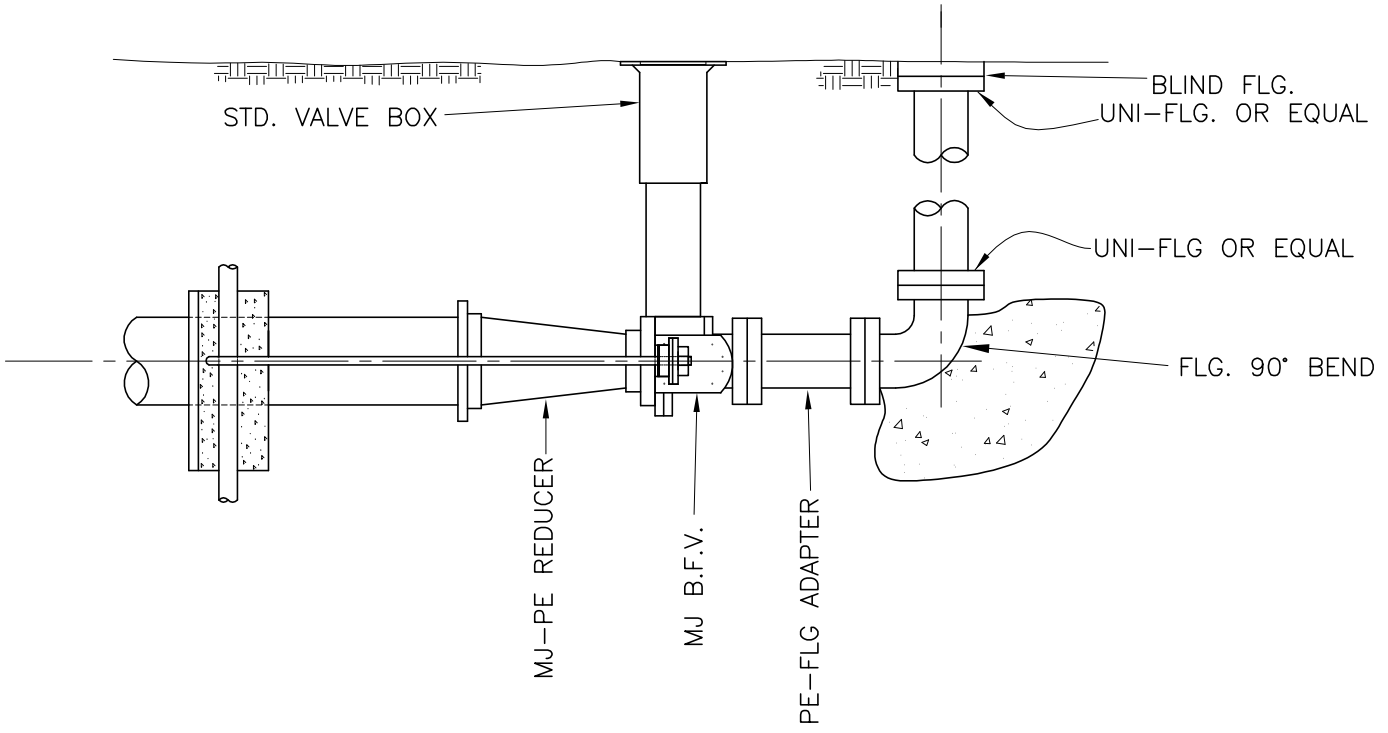
STANDARD PLAN
BLOWOFF WITH
PLUGGED END

DRAWN BY S.G.P.

CHECKED BY D.W.

NO.407





MINIMUM SIZES OF BLOWOFFS SEE NOTE 1

MAIN SIZE	RED.	B.O. FTG. & PIPE SIZE & VALVE, TYPE
10"	10"x4"	4" G.V.
12" & 14"	x6"	6" G.V.
16" & 18"	x8"	8" B.F.V.
20"	20"x10"	10" B.F.V.
24"	24"x12"	12" B.F.V.

NOTES:

1. SIZE OF B.O. & VALVE SHALL BE USED IN ABSENCE OF MORE SPECIFIC INFORMATION ON PLANS.
2. FITTINGS MAY BE SUBSTITUTED AS APPROVED BY THE ENGINEER.

Approved Karl O. Sprecher, City Engineer — 9–15–99, Date

No.	Description	Date	By	Appr
1	SUGGEST ENGINEER DESIGN REDUCER, VALVE & B.O. SIZES TO ACHIEVE REQUIRED FLUSHING VELOCITY.	5/99	SP	DW

REVISION

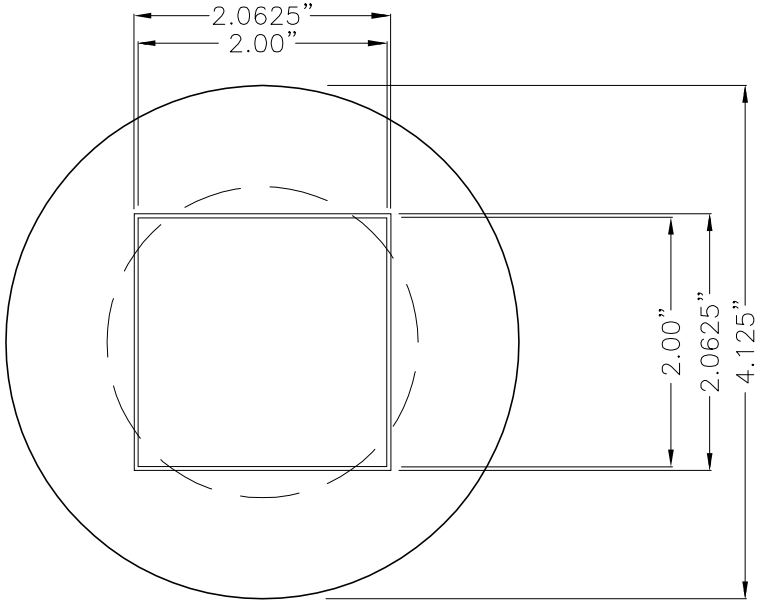
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

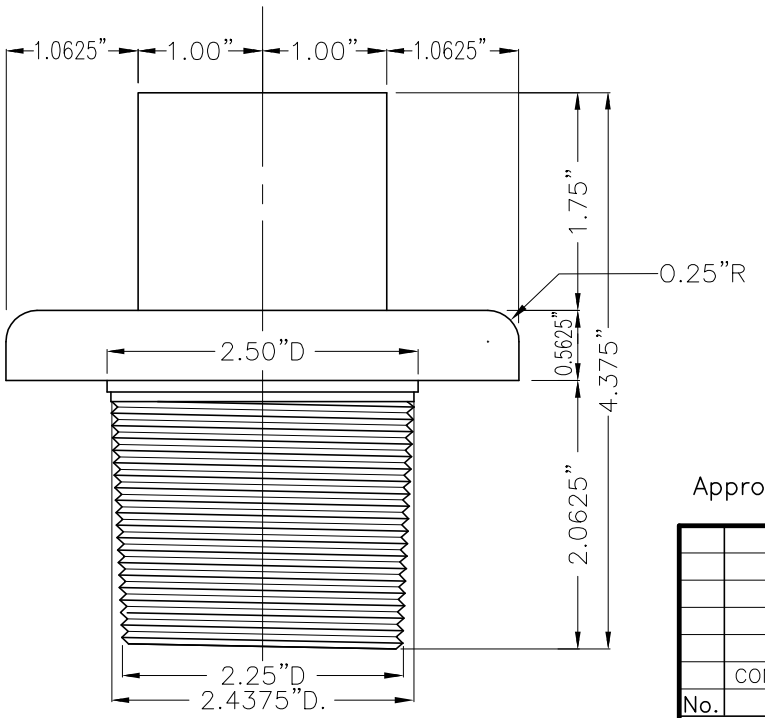
STANDARD PLAN

BLOWOFF WITH REDUCED SIZE VALVE FOR 10" DIA. PIPE & LARGER

DRAWN BY GS, SP
CHECKED BY D.W.

NO.408





NOTES:

1. MATERIAL SHALL BE A.S.T.M. A-48 GRAY CAST IRON, CLASS 30.
2. APPROX. WEIGHT 5 LBS 15 OZ.
3. THREADS SHALL BE STANDARD PIPE THREAD TO MATCH 2" I.D. COUPLING.
4. REFER TO STD. DRAWING NOS. 405 AND 407 FOR LOCATION OF PLUG IN BLOW-OFF.

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

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

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

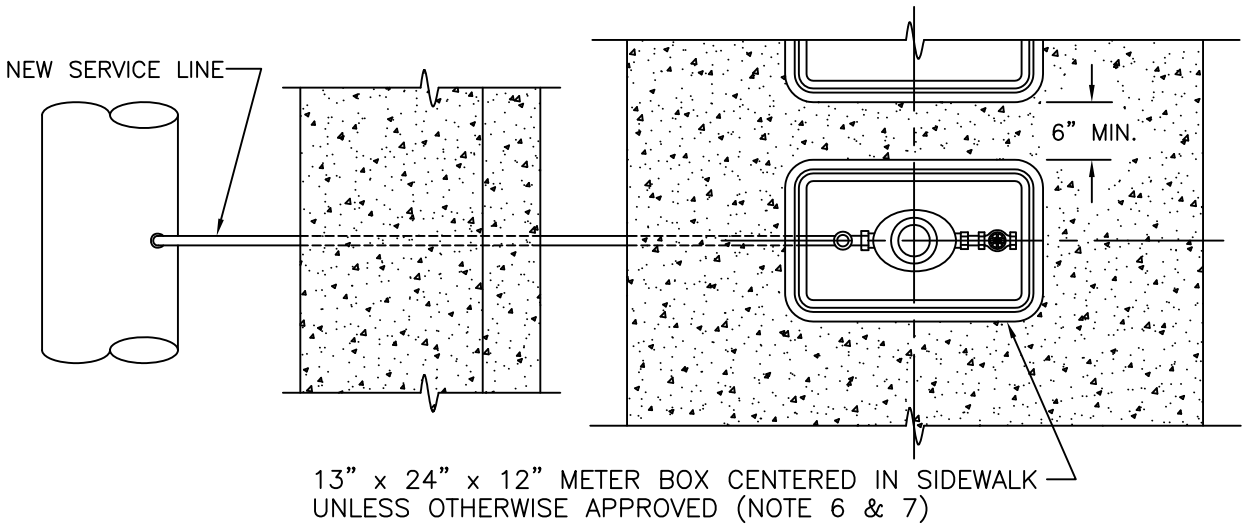
STANDARD PLAN

2" BLOW-OFF PLUG

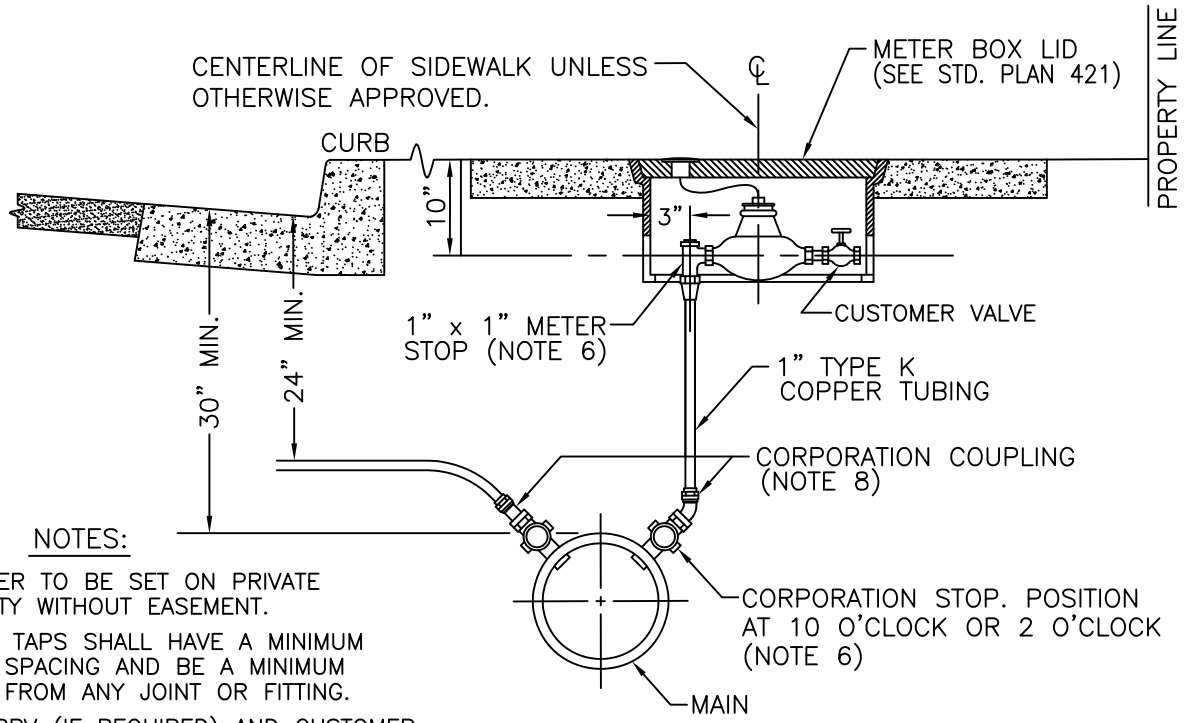
DRAWN BY GS

CHECKED BY D.W.

NO.409



PLAN



PROFILE

NOTES:

1. NO METER TO BE SET ON PRIVATE PROPERTY WITHOUT EASEMENT.
2. SERVICE TAPS SHALL HAVE A MINIMUM OF 18" SPACING AND BE A MINIMUM OF 18" FROM ANY JOINT OR FITTING.
3. METER PRV (IF REQUIRED) AND CUSTOMER VALVE TO BE INSTALLED BY CITY FORCES.
4. MAINTAIN MINIMUM 6" SPACING BETWEEN ANY TWO METER BOXES.
5. ALL NEW SERVICE TAPS ON EXISTING MAINS MUST BE DONE BY CITY FORCES.
6. SEE SCS 504 FOR SPECIFICATIONS.
7. WHEN P.R.V. IS SPECIFIED USE 17" x 30" x 12" METER BOX.
8. CORPORATION COUPLING IS A REQUIRED FITTING. USE 0°–90° BEND AS SITUATION REQUIRES. SEE SCS 504 FOR SPECIFICATIONS.

Approved: Karl O. Goetzinger — City Engineer — 3-1-02 — Date

REVISION DESCRIPTION
ADDED CORPORATION COUPLING
CHANGED METER BOX SPEC.
1" METER STOP ONLY. ADD PLAN VIEW.
ADDED CUSTOMER VALVE

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

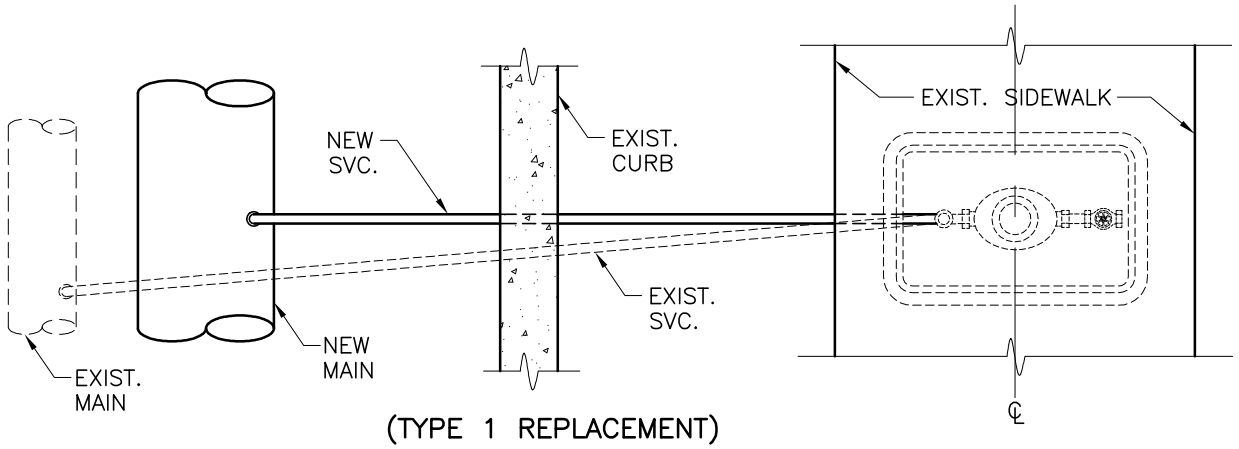
STANDARD PLAN

1" WATER SERVICE INSTALLATION

DRAWN BY I.D.F.

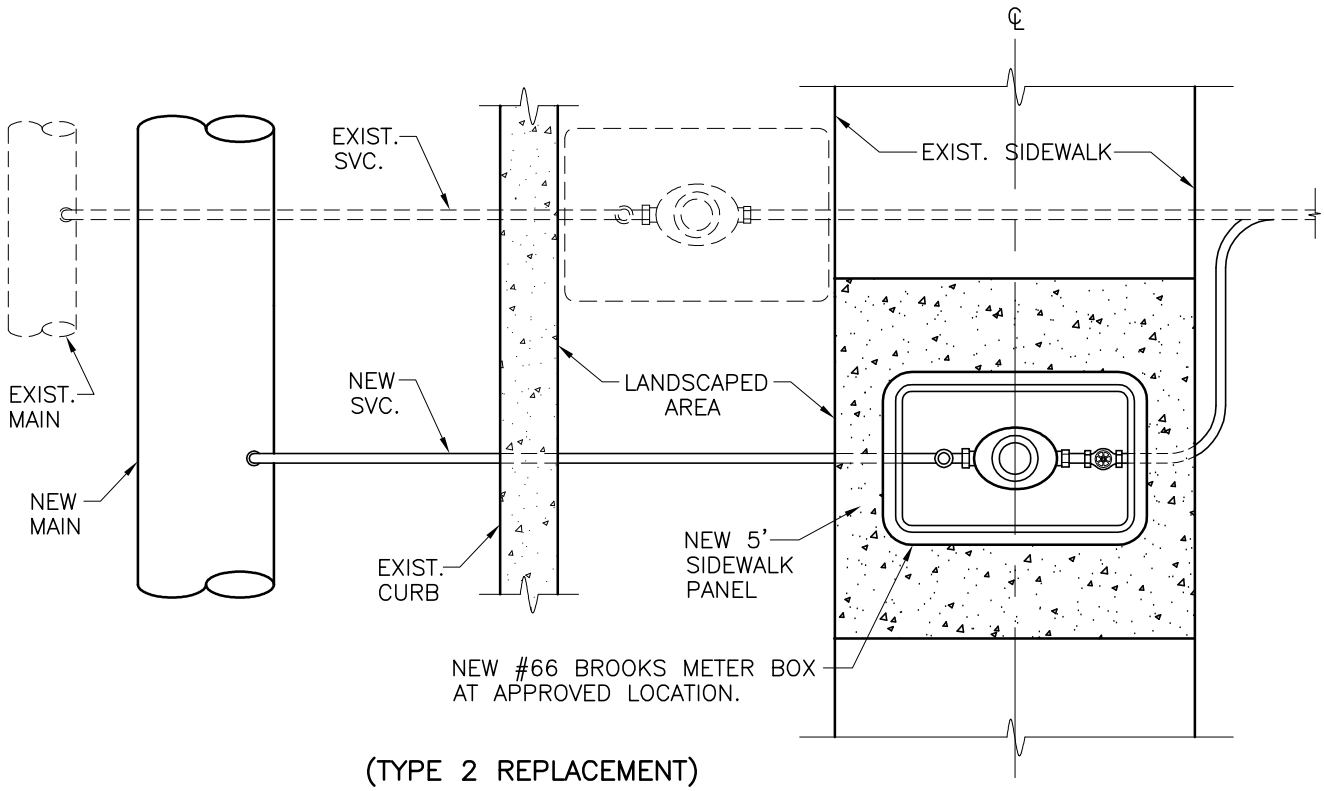
CHECKED BY D.W.

NO. 410



(TYPE 1 REPLACEMENT)

NOTES: 1. USE TYPE 1 WHEN EXISTING METER IS LOCATED WITHIN EXISTING SIDEWALK AND WATER METER/METER BOX IS NOT DESIGNATED TO BE REPLACED.
2. NEW LOCK–WING ANGLE METER STOP SHALL BE SIZED TO MATCH EXIST. METER.
3. NEW SERVICE LINE CONNECTION AT EXISTING METER SHALL BE MADE ONLY BY A LICENSED PLUMBER.
4. SEE STD. PLAN 410 FOR ADDITIONAL INFORMATION AND NOTES.



(TYPE 2 REPLACEMENT)

NOTES: 1. USE TYPE 2 WHEN EXISTING METER IS NOT LOCATED IN AN EXISTING SIDEWALK WITHIN RIGHT–OF–WAY.
2. NEW METER AND CUSTOMER VALVE TO BE INSTALLED BY CITY FORCES.
3. CONTRACTOR TO REMOVE AND REPLACE SIDEWALK PANEL.
4. REPLUMBING OF SERVICE ON CUSTOMER SIDE OF METER SHALL BE DONE IN ACCORDANCE WITH UNIFORM PLUMBING CODE.
5. SEE STD. PLAN 410 FOR ADDITIONAL INFORMATION AND NOTES.

Approved: Karl O. Gerstner
City Engineer

9–15–99
Date

REVISION DESCRIPTION

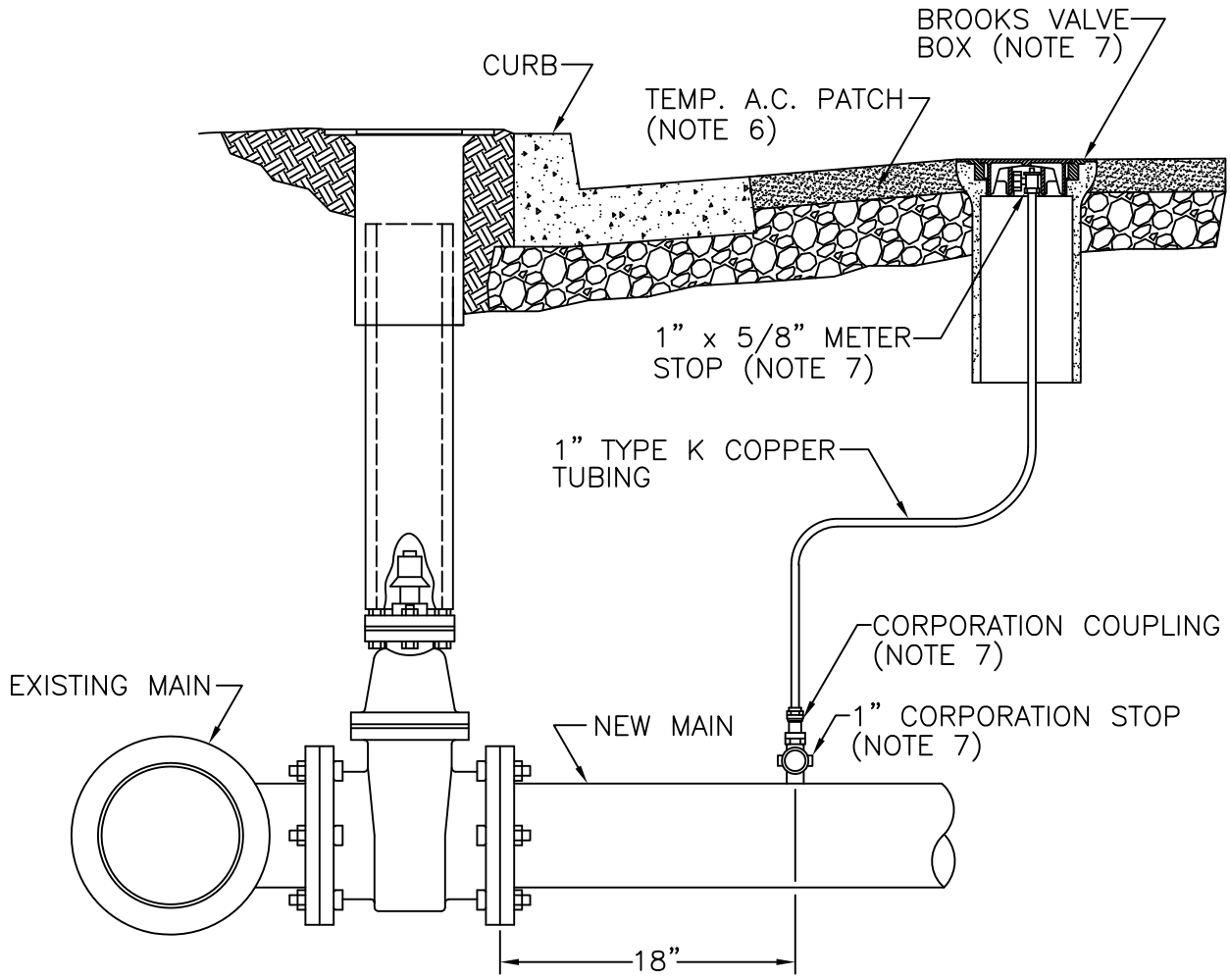
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

1" WATER SERVICE REPLACEMENT

DRAWN BY I.D.F.
CHECKED BY D.W.

NO.411



NOTES:

1. VALVE BOX OVER 1" CHLORINE LINE DOES NOT NEED TO BE INSTALLED IF CHLORINE LINE IS BEHIND THE CURB. VALVEBOX IS TO BE INSTALLED ONLY WHEN CHLORINE LINE IS IN AREA COVERED BY TRAFFIC.
2. CHLORINE LINE PLACED IN AN AREA NOT COVERED BY TRAFFIC WILL BE 6" ABOVE NATURAL GROUND LEVEL.
3. DISTANCE FROM GATE VALVE TO CHLORINE TAP WILL BE 18".
4. CHLORINATION PROCESS WILL BE CONDUCTED BY CITY FORCES ONLY, IN ACCORDANCE WITH APPROVED SPECIFICATIONS.
5. CITY WILL REMOVE CHLORINATION ASSEMBLY AFTER RECEIVING NOTICE OF NEGATIVE BACTERIOLOGICAL TEST. CONTRACTOR TO PROVIDE EXCAVATION, BACKFILL, AND FINAL SURFACE RESTORATION.
6. TEMPORARY ASPHALT SURFACE REQUIRED IN AREAS COVERED BY TRAFFIC.
7. SEE SCS DIVISION 5 FOR SPECIFICATIONS.

Approved Karl O. Gerber, City Engineer 3-1-02 Date

No.	Description	Date	By	Appr
6	TEMPORARY A.C. REQUIRED	12-14-01	I.D.F.	
5	CHANGED TO BROOKS BOX IN PAVED AREA	4-18-01	I.D.F.	
4	REVISED NOTES AND ADDED LABELS	2-23-01	I.D.F.	
3	REMOVED "MIN." FROM 18-INCH DIMENSION	2-23-01	I.D.F.	
	CHLORINE LINE CHANGED TO 1-INCH FROM 3/4"			
	DIST. FROM TAP TO VALVE CHANGED TO 18-INCHES			

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

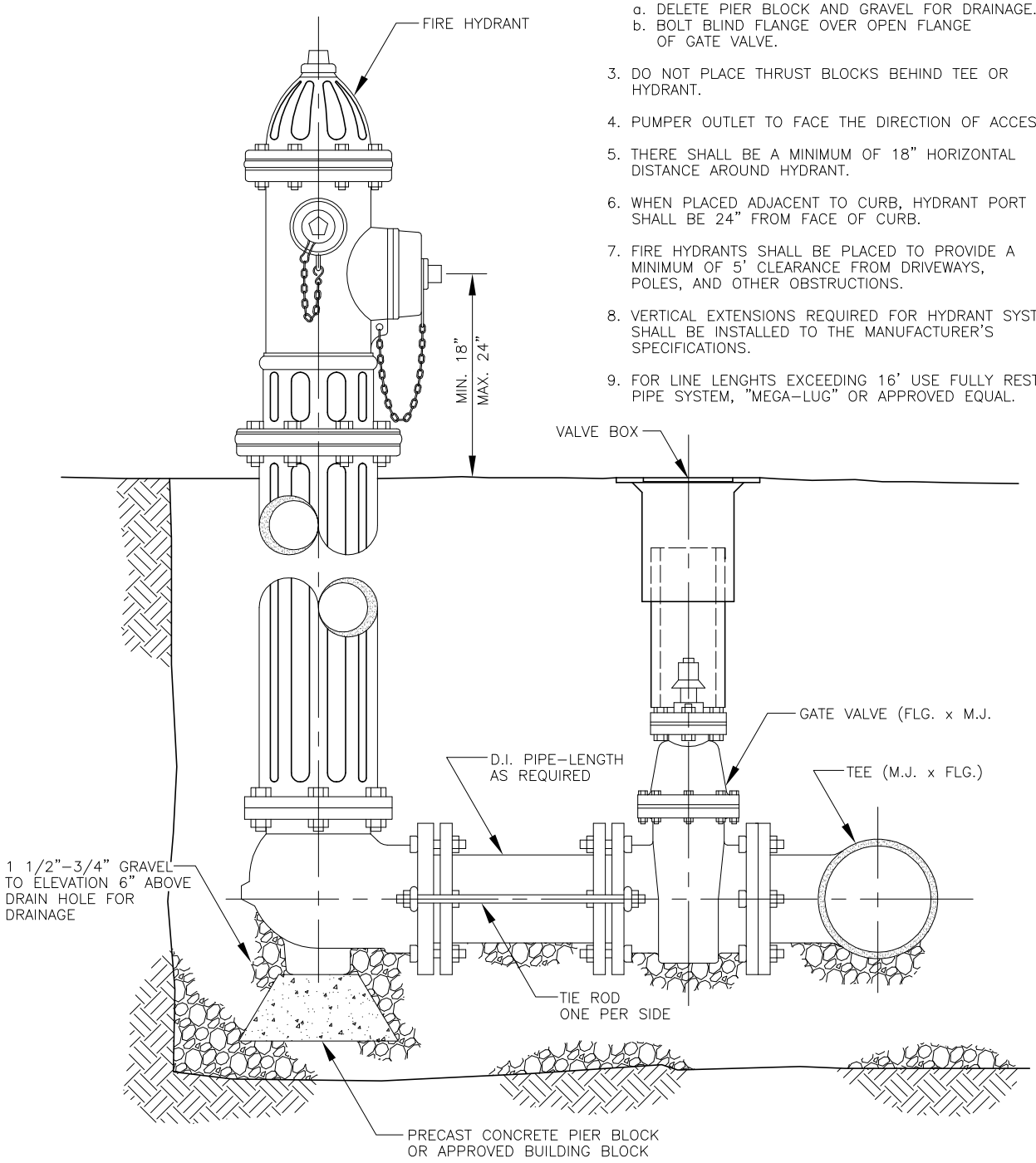
STANDARD PLAN
MAIN LINE CHLORINATION ASSEMBLY

DRAWN BY I.D.F.
CHECKED BY D.W.

NO. 412

NOTES

1. TIE RODS TO BE 5/8" A307 STEEL BOLT STOCK WITH 14,000 PSI TENSILE STRENGTH OR APPROVED EQUAL. ONE TIE ROD PER SIDE.
2. IF HYDRANT IS NOT INSTALLED ON STUB.
   a. DELETE PIER BLOCK AND GRAVEL FOR DRAINAGE.
   b. BOLT BLIND FLANGE OVER OPEN FLANGE OF GATE VALVE.
3. DO NOT PLACE THRUST BLOCKS BEHIND TEE OR HYDRANT.
4. PUMPER OUTLET TO FACE THE DIRECTION OF ACCESS.
5. THERE SHALL BE A MINIMUM OF 18" HORIZONTAL DISTANCE AROUND HYDRANT.
6. WHEN PLACED ADJACENT TO CURB, HYDRANT PORT SHALL BE 24" FROM FACE OF CURB.
7. FIRE HYDRANTS SHALL BE PLACED TO PROVIDE A MINIMUM OF 5' CLEARANCE FROM DRIVEWAYS, POLES, AND OTHER OBSTRUCTIONS.
8. VERTICAL EXTENSIONS REQUIRED FOR HYDRANT SYSTEMS SHALL BE INSTALLED TO THE MANUFACTURER'S SPECIFICATIONS.
9. FOR LINE LENGHTS EXCEEDING 16' USE FULLY RESTRAINED PIPE SYSTEM, "MEGA-LUG" OR APPROVED EQUAL.



Approved Karl O. Houtz
City Engineer

1-7-00
Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

FIRE HYDRANT INSTALLATION

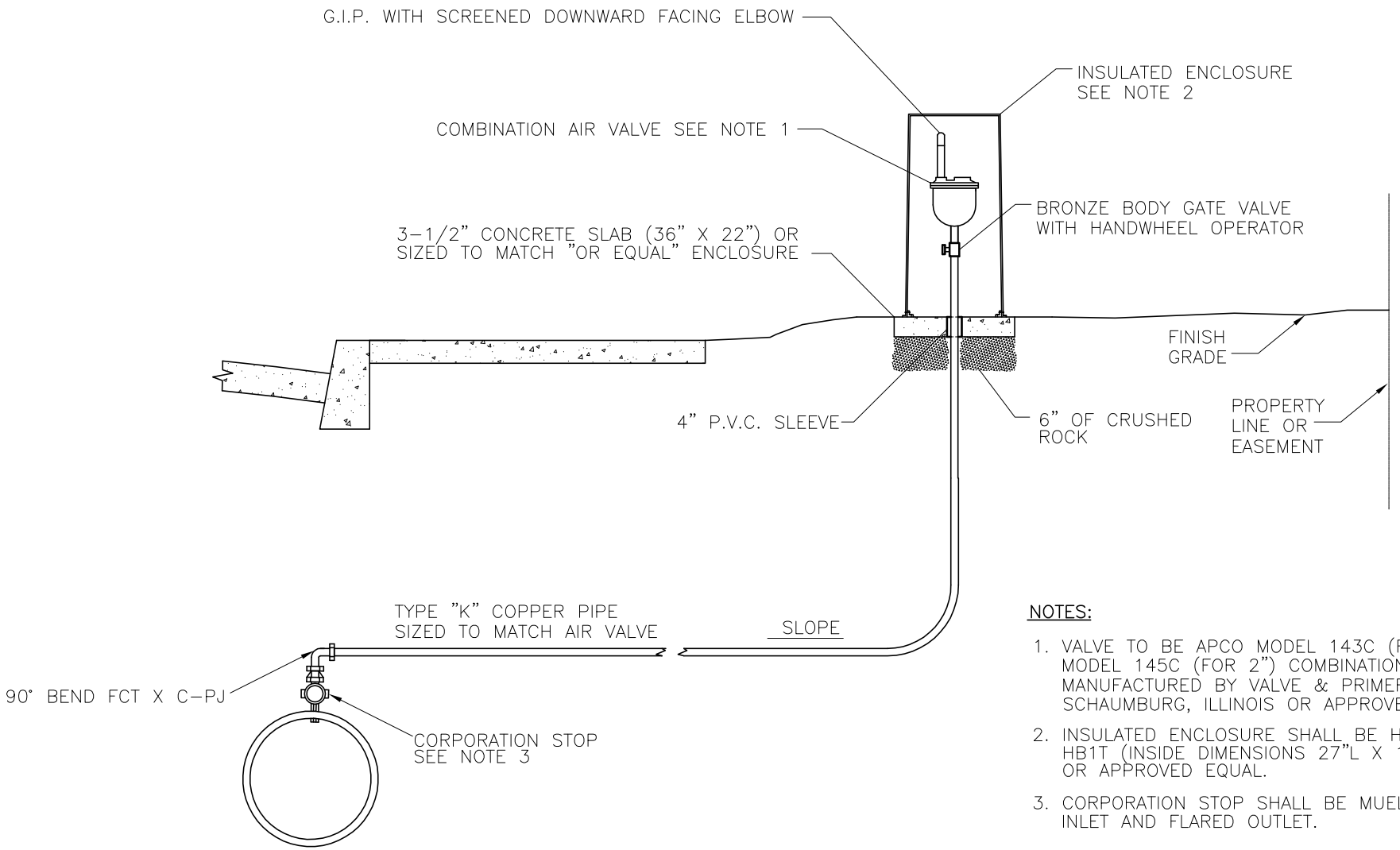
No.	Description	Date	By	Appr
2	REVISE VALVE BOX	1-00	I.D.F.	KDG
1	CONVERT TO CAD DWG.	12-98	I.D.F.	KDG

REVISION

DRAWN BY IDF

CHECKED BY D.W.

NO.413



NOTES:

1. VALVE TO BE APCO MODEL 143C (FOR 1") OR MODEL 145C (FOR 2") COMBINATION AIR VALVE AS MANUFACTURED BY VALVE & PRIMER CORPORATION SCHAUMBURG, ILLINOIS OR APPROVED EQUAL.
2. INSULATED ENCLOSURE SHALL BE HOT BOX MODEL HB1T (INSIDE DIMENSIONS 27"L X 13"W X 35"H) OR APPROVED EQUAL.
3. CORPORATION STOP SHALL BE MUELLER (CC) MALE INLET AND FLARED OUTLET.

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

No.	Description	Date	By	Appr
	ALL NEW DESIGN			

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

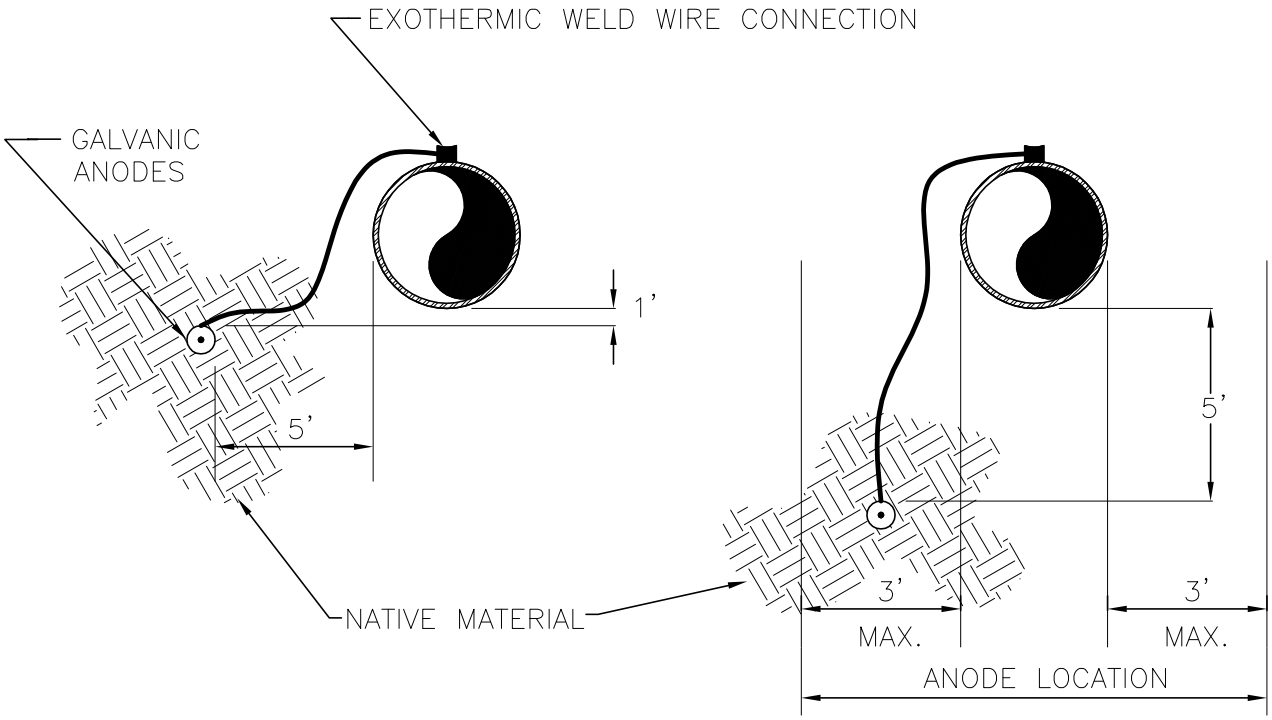
STANDARD PLAN

COMBINATION AIR-RELEASE AND VALVE ASSEMBLY 2" AND SMALLER

DRAWN BY S.G.P.

CHECKED BY D.W.

NO.414



TYPE 1 INSTALLATION

TYPE 2 INSTALLATION

NOTES:

1. PLACE GALVANIC ANODE IN CLEAN NATIVE BACKFILL AND COMPACT TO 95% DENSITY TO 1 FT. ABOVE ANODE.

2. FOR ANODES DISTRIBUTED ALONG THE PIPELINE, ALTERNATE PERPEN-DICULAR OFFSET FROM ONE SIDE OF PIPE TO THE OTHER.

3. ANODES CAN BE PLACED UPRIGHT OR HORIZONTAL. HORIZONTAL SHOWN.

4. INSULATING JOINTS, JOINT BONDS, TEST STATIONS, ETC. WILL BE AS DETAILED BY THE ENGINEER.

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

No.	Description	Date	By	Appr

REVISION

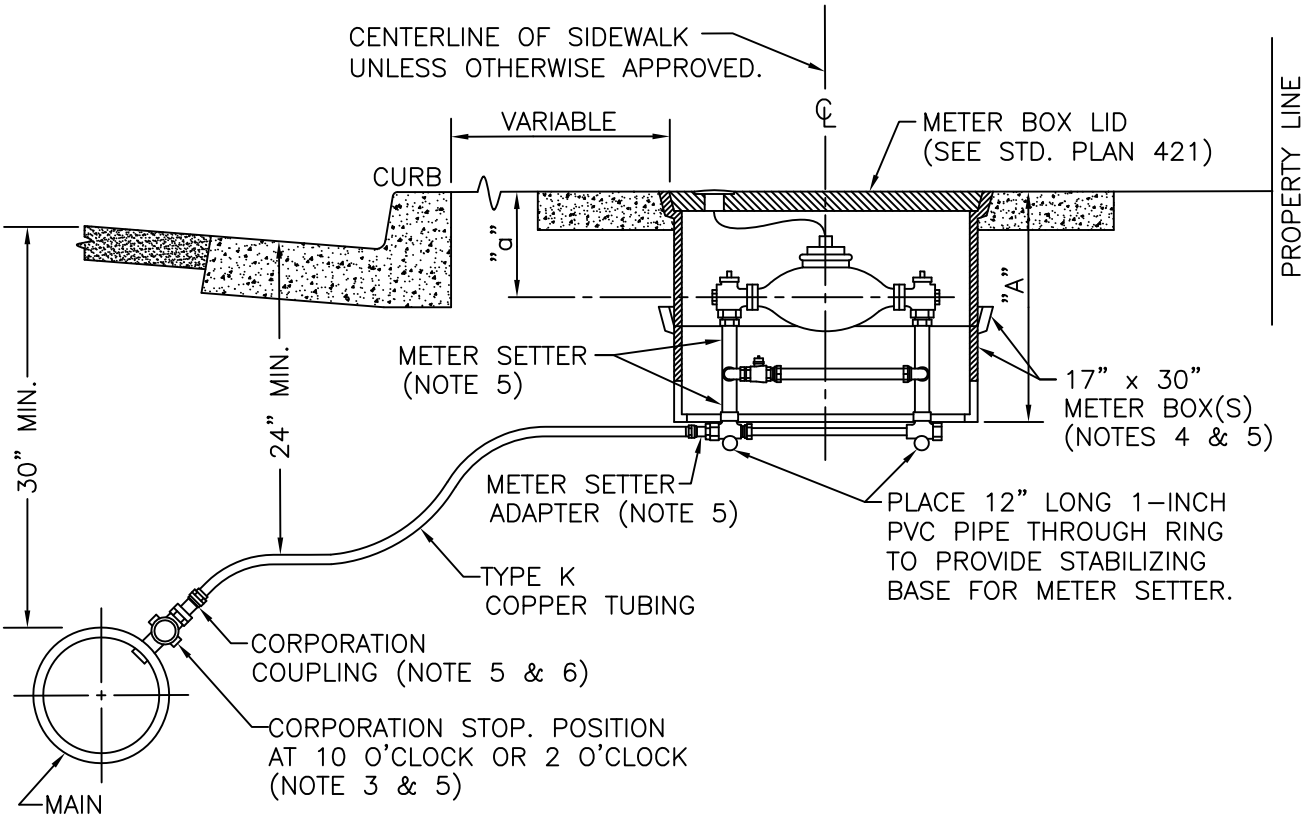
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
CATHODIC PROTECTION DETAIL

DRAWN BY GS
CHECKED BY D.W.

NO.418

SVC. SIZE	DIM "a"	DIM "A"
1½"	10"	18"
2"	15"	24"(MIN)



NOTES

1. NO METER ON PRIVATE PROPERTY WITHOUT EASEMENT.
2. METER TO BE INSTALLED BY CITY FORCES.
3. SERVICE TAPS TO HAVE A MINIMUM OF 18" SPACING AND BE A MINIMUM OF 18" FROM ANY JOINT OR FITTING.
4. TWO STACKED BOXES ARE ACCEPTABLE. IF TWO BOXES ARE STACKED, THE UPPER BOX SHALL NOT HAVE PIPE ENTRY PORTS CUT OUT.
5. SEE SCS 504 FOR SPECIFICATIONS.
6. CORPORATION COUPLING IS A REQUIRED FITTING. USE 0°–90° BEND AS FIELD CONDITIONS REQUIRE.

Approved Karl O. Fowler City Engineer 3-1-02 Date

No.	Description	Date	By	Appr
	ADDED CORP. COUPLING & METER SETTER ADAPTER	1-02	I.D.F.	
	CHANGED METER BOX/LID SPECIFICATION	1-02	I.D.F.	

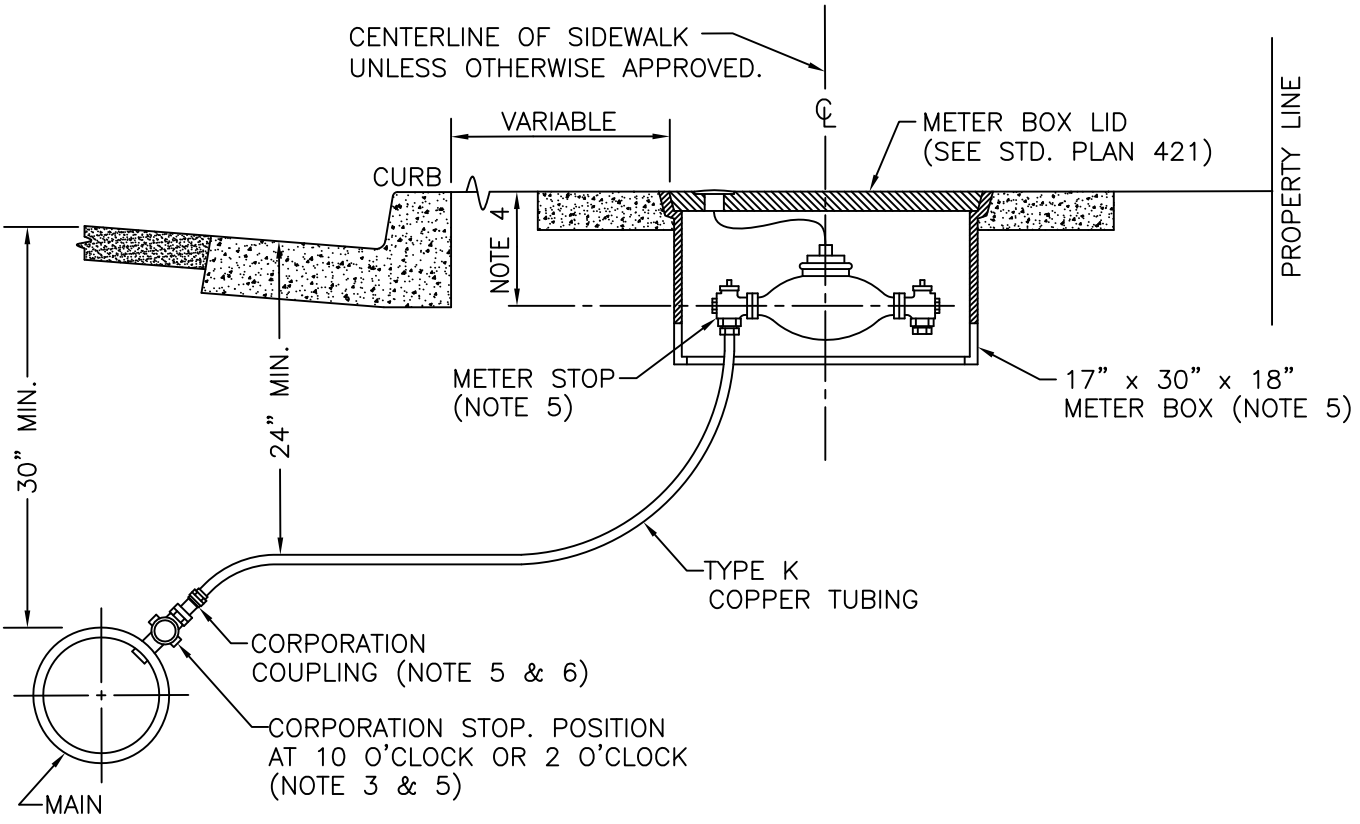
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
1 1/2" & 2" DOMESTIC
WATER SERVICE INSTALLATION

DRAWN BY I.D.F.
CHECKED BY D.W.

NO. 419



NOTES

1. NO METER ON PRIVATE PROPERTY WITHOUT EASEMENT
2. METER TO BE INSTALLED BY CITY FORCES.
3. SERVICE TAPS TO HAVE A MINIMUM OF 18" SPACING AND BE A MINIMUM OF 18" FROM ANY JOINT OR FITTING.
4. DIMENSION EQUALS 10" FOR 1 1/2" SERVICE, OR 15" FOR 2" SERVICE.
5. SEE SCS 504 FOR SPECIFICATIONS.
6. CORPORATION COUPLING IS A REQUIRED FITTING. USE 0°–90° BEND AS FIELD CONDITIONS REQUIRE.

Approved Karl O. Fowler City Engineer 3-1-02 Date

No.	Description	Date	By	Appr
	ADDED CORP. COUPLING			
	CHANGED METER BOX/LID SPECIFICATION			

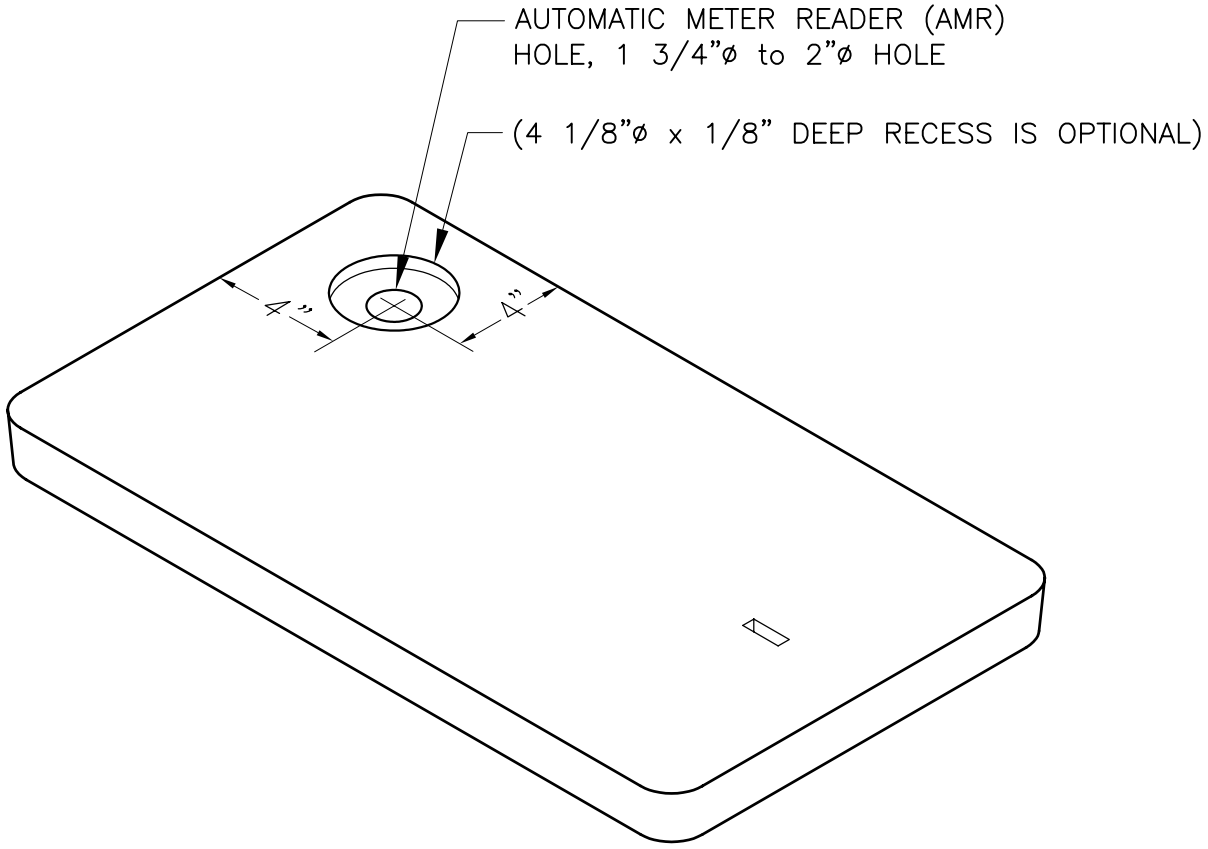
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
1 1/2" & 2" IRRIGATION
WATER SERVICE INSTALLATION

DRAWN BY I.D.F.
CHECKED BY D.W.

NO.420



NOTES

1. SEE SCS 504 FOR LID SPECIFICATIONS.

Approved: Karl O. Goetzer
City Engineer

5-18-04
Date

REVISION DESCRIPTION	
RECESS MADE OPTIONAL	5/04

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

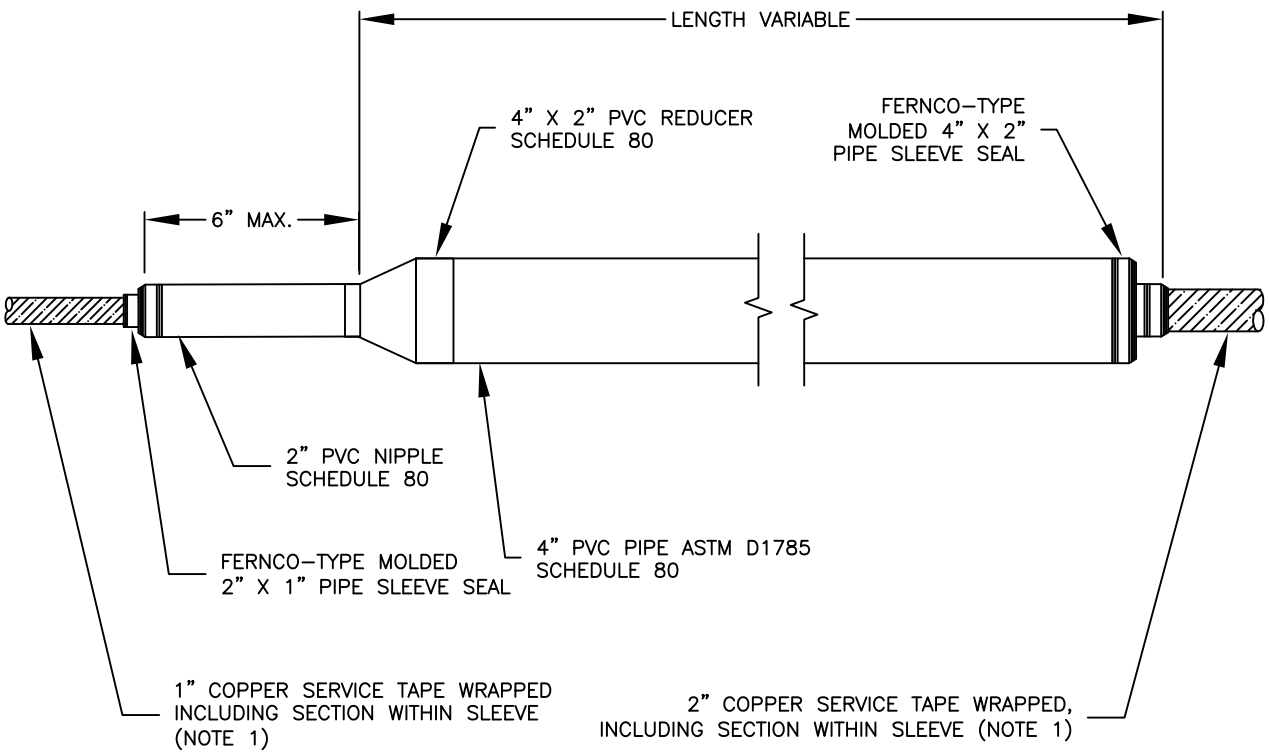
STANDARD PLAN

AUTOMATIC METER READER LID

LAST REV. BY: DTN

CHECKED BY: DEW

NO. 421



NOTES:

1. COPPER PIPE SHALL BE WRAPPED WITH 20mil. PVC TAPE, 50% OVERLAP, 40 mil. TOTAL, INSIDE AND OUTSIDE PVC SLEEVE

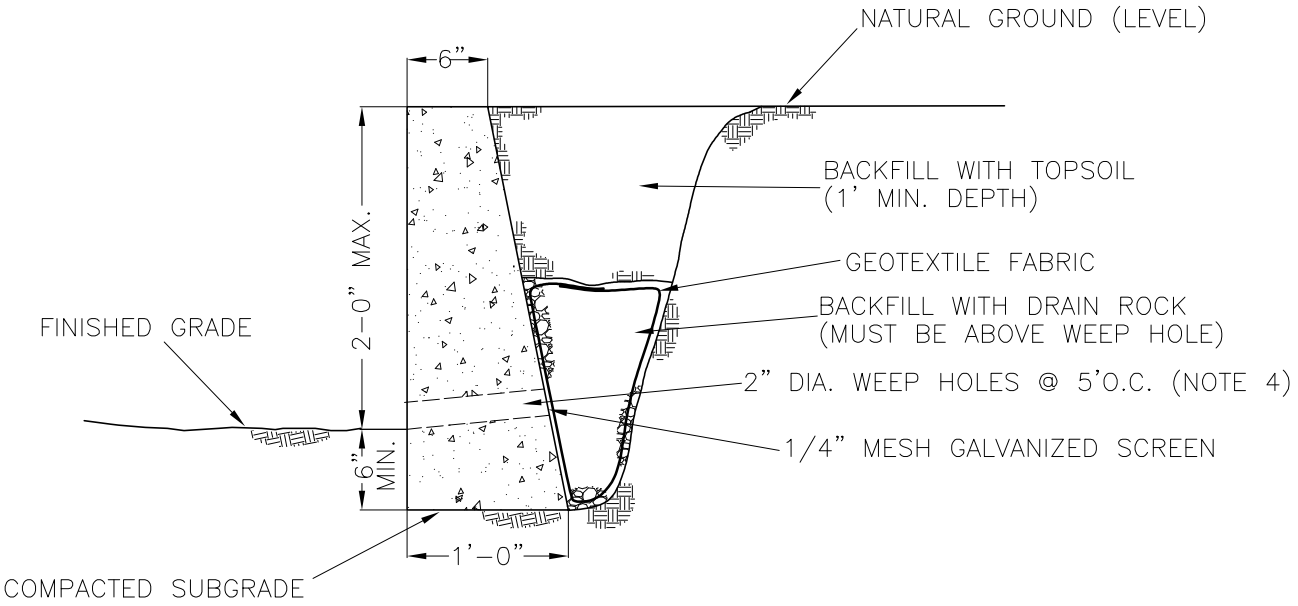
2. SLEEVES SHALL BE DRY AND MOISTURE FREE BEFORE SEALING

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

DOMESTIC WATER SERVICE SLEEVE

APPROVED	James L Sprent	1/01/14	DRAWN BY	KAK	12/2013	**NO. 422**
	CITY ENGINEER	DATE	CHECKED BY	KR	12/2013	



DESIGN NOTES

LEVEL BACKFILL
γ = 100 P.C.F.
Kγ = E.F.W.=40 P.C.F.
f'c = 3000 P.S.I. CONC.

CONSTRUCTION NOTES

1. CONTRACTION JOINT: SCORE A 3/4" DEEP "V" NOTCHED GROOVE THE FULL HEIGHT OF THE EXPOSED FACE, ACROSS THE TOP, AND 6" DOWN THE BACK OF THE WALL. INSTALL "TEE BAR" CONTRACTION JOINTS TO SEPARATE THE LARGE AGGREGATE IN THE TOP 6" OF THE WALL AT THE "V" NOTCHED GROOVE. JOINTS SHALL BE UNIFORMLY SPACED AT 10' TO 15' CENTERS.
2. CONSTRUCTION JOINT: IF WALL IS TO BE POURED IN SECTIONS, USE 2-24", NO.4 REINFORCING BARS EXTENDED 12" INTO EACH SECTION.
3. WHEN EXPOSED WALL HEIGHT IS LESS THAN 2 FEET MAINTAIN 6" TOP DIMENSION AND REDUCE BASE DIMENSION TO MAINTAIN 1:5 BATTER ON BACK OF WALL.
4. AS ALTERNATE TO WEEPHOLES, USE CONTINUOUS 3-INCH DIA. PERFORATED PIPE WITH OUTLET TO APPROVED POINT OF DISPOSAL.

Approved Karl O. Houston City Engineer 1-7-00 Date

No.	Description	Date	By	Appr
3	REVISED FABRIC	1-00	I.D.F.	
2	ADDED GEOTEXTILE FABRIC AND			
1	PERF. PIPE ALTERNATE	3/99		

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
RETAINING WALL
HEIGHT OF WALL 2'-0" or LESS

DRAWN BY GS & SP
CHECKED BY D.W.

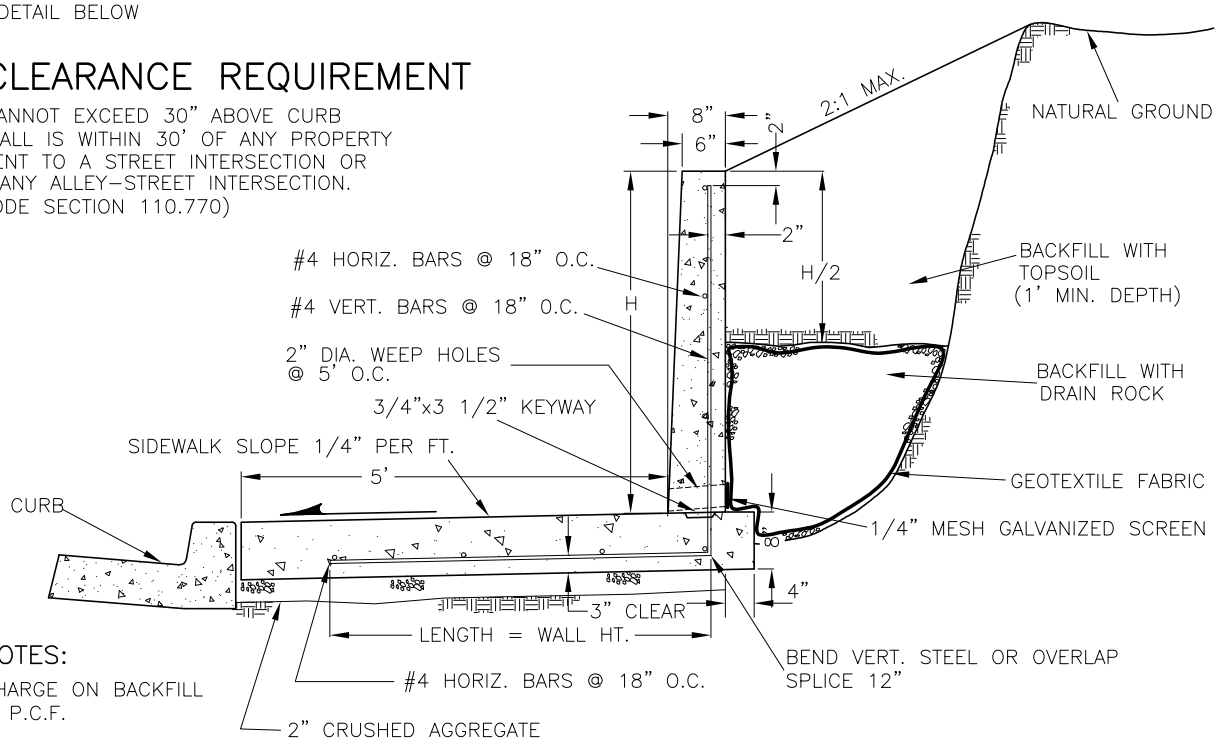
NO.501

CONSTRUCTION NOTES:

1. OVERLAP ALL BAR SPLICES 12"
2. SEE JOINT DETAIL BELOW

VISION CLEARANCE REQUIREMENT

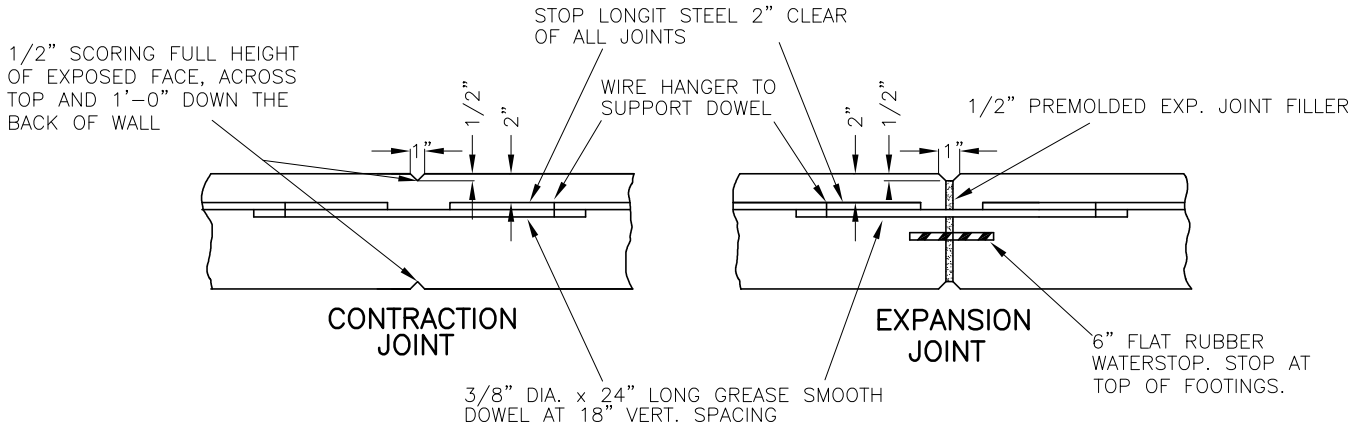
WALL HEIGHT CANNOT EXCEED 30" ABOVE CURB GRADE WHEN WALL IS WITHIN 30' OF ANY PROPERTY CORNER ADJACENT TO A STREET INTERSECTION OR WITHIN 10' OF ANY ALLEY–STREET INTERSECTION. (SALEM CITY CODE SECTION 110.770)



DESIGN NOTES:

2:1 MAX. SURCHARGE ON BACKFILL
Kγ = E.F.W.=40 P.C.F.
γ=100 P.C.F.
f'c = 3,000 P.S.I. CONC.'
fs = 40,000 P.S.I.

NOTE: AS ALTERNATE TO 2" WEEPHOLES USE CONTINUOUS 3–INCH DIA. PERFORATED PIPE WITH OUTLET TO APPROVED POINT OF DISPOSAL.



NOTE:

PLACE EXPANSION JOINTS AT APPROXIMATELY 90' CENTERS THROUGH WALL AND SIDEWALK PORTION OF WALL, AND CONTRACTION JOINTS AT APPROXIMATELY 30' CENTERS IN WALL ONLY.

JOINT DETAIL

Approved Karl O. Houston City Engineer 9–15–99 Date

No.	Description	Date	By	Appr
	DRAIN ROCK IN LIEU OF PEA GRAVEL			
	ALLOWED PERF. PIPE IN LIEU OF WEEP HOLES			
	ADDED GEOTEXTILE FABRIC			

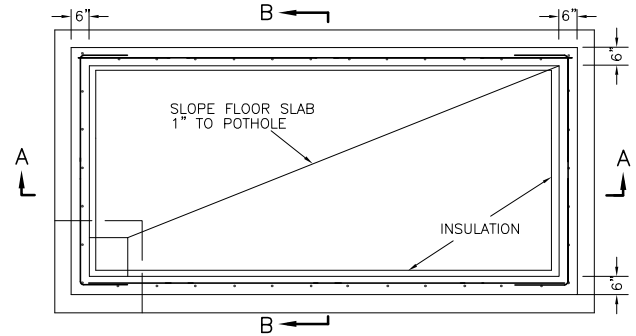
REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

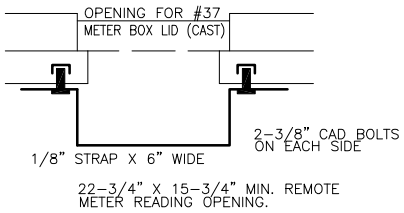
STANDARD PLAN
RETAINING WALL
HEIGHT OF WALL 2'–0" to 4'–0"

DRAWN BY GS
CHECKED BY D.W.

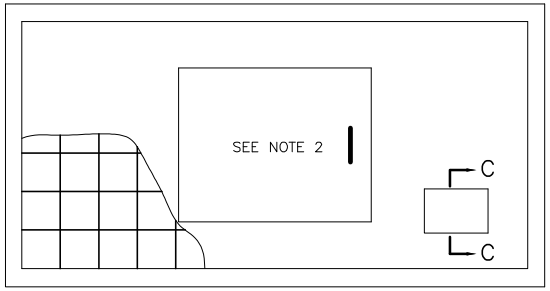
NO.502



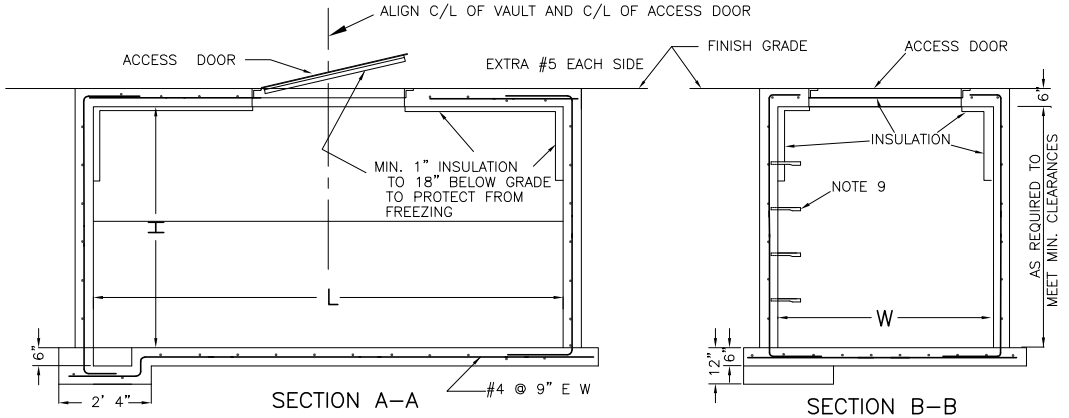
PLAN
(TOP SLAB NOT SHOWN)



SECTION C–C



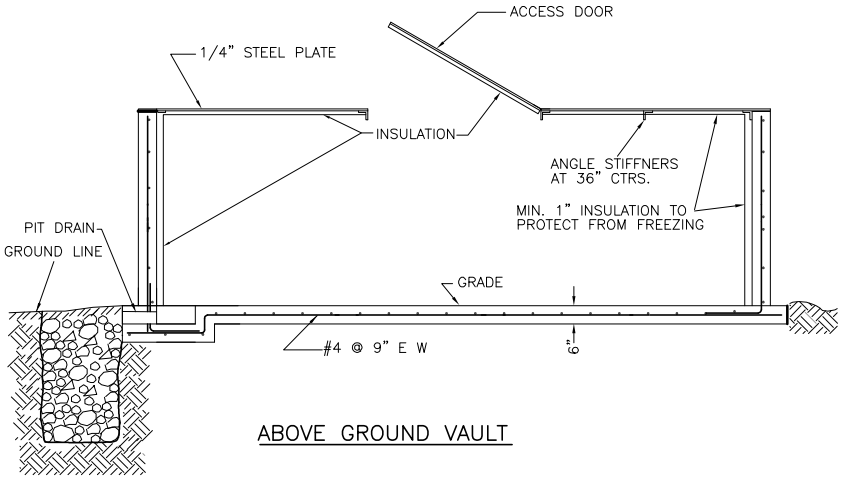
TOP



SECTION A–A

SECTION B–B

BELOW GROUND VAULT



ABOVE GROUND VAULT

NOTE: ALL REINFORCING BARS SHALL BE #4 @ 12" EW EXCEPT AS NOTED.

NOTES:

1. ALL REINFORCING BARS SHALL BE #4 @ 12" EW EXCEPT AS NOTED.
2. REFER TO STD PLAN NO. 506 FOR PIPE LOCATION IN VAULT DETAIL AND METER AND VAULT SIZE SPECIFICATIONS..
3. VAULT INSTALLATION IS NOT TO BE SUBJECT TO VEHICULAR LOADING: MAXIMUM ALLOWABLE LIVE LOAD IS 75 P.S.F.
4. CONCRETE SHALL HAVE 3,000 P.S.I. MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS.
5. REINFORCING STEEL SHALL HAVE 40,000 P.S.I. GRADE DEFORMED BARS IN ACCORDANCE WITH CURRENT ASTM SPECIFICATIONS.
6. INSTALLATIONS SHOULD BE LOCATED IN A PROTECTED AREA OR PROTECTION SUCH AS CHAIN LINK FENCING, TRAFFIC BARRIER POSTS, ETC. BY THE CONTRACTOR.
7. VAULT SHALL BE WATERTIGHT TO PREVENT GROUND WATER INTRUSION.
8. PROVIDE ACCESS DOOR, OF SIZE SHOWN ON DRAWING 506, PROVIDE ADDITIONAL REMOVABLE TOP SECTION, AS REQUIRED TO PERMIT BACK FLOW DEVICE OR METER REMOVAL, ACCESS DOOR AND TOP SECTION SHALL BE GASKETED TO CONTROL SURFACE WATER INFILTRATION.
9. ACCESS LADDER SHALL BE OREGON OCCUPATIONAL SAFETY AND HEALTH DIVISION APPROVED.
10. PRECAST VAULT WILL BE APPROVED ON A SUBMITTED PROPOSAL BASIS.

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

No.	Description	Date	By	Appr
1	REVISED TO CONTINUOUS REBAR	5/99	S.P.	D.W.
	REMOVED REF. TO PIPE LOCAT–			
	ION. MOVED DOOR TO ℄ OF			
	VAULT.			

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

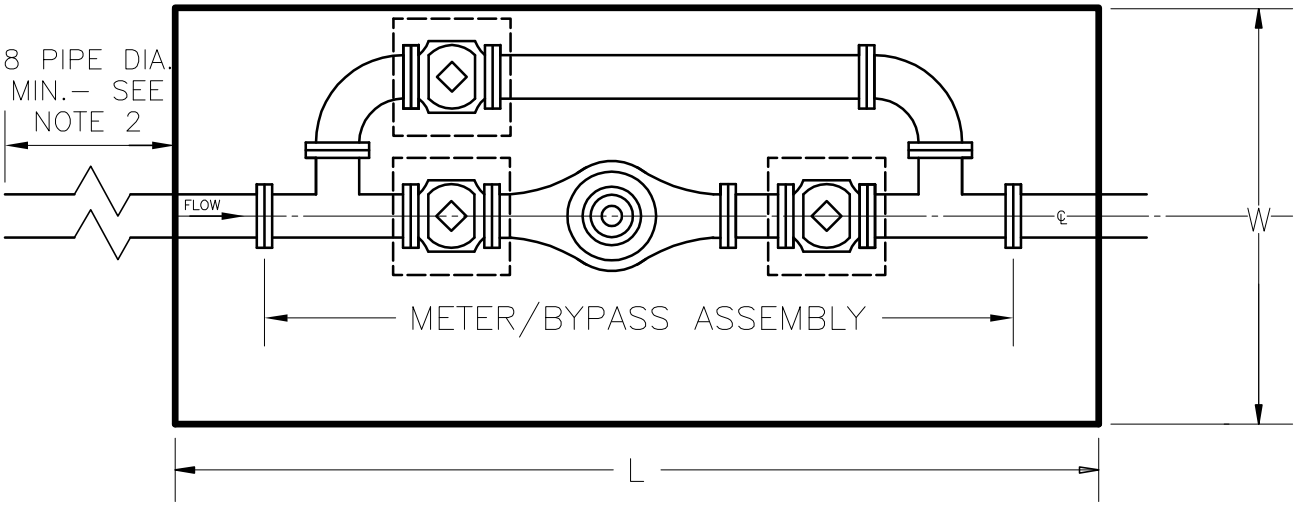
STANDARD PLAN

UTILITY VAULT (CAST IN PLACE)

DRAWN BY GS

CHECKED BY D.W.

NO.505



METER SIZE	INSIDE DIMENSIONS (MIN) VAULT SIZE L	W	H
3" OR 4" COMPOUND / FIRELINE	8'	6'	7'
6" OR 8" COMPOUND / FIRELINE	10'	8'	7'

NOTES:

1. VAULT SIZING IS FOR METER INSTALLATION ONLY.
2. CONTRACTOR TO INSTALL VAULT AND STRAIGHT RUN OF PIPE WITHOUT JOINTS THROUGH IT. CITY FORCES TO INSTALL METER/BYPASS ASSEMBLY. PIPE SHALL EXTEND IN A STRAIGHT LINE (FROM INSIDE VAULT WALL ON DELIVERY SIDE) AT LEAST THE EQUIVALENT OF 8 PIPE DIAMETERS.
3. VAULT SHALL BE PLACED WITHIN RIGHT–OF–WAY UNLESS OTHERWISE APPROVED.
4. BENDS, CROSSES, AND TEES SHALL BE A MINIMUM OF 5 FEET FROM THE OUTSIDE WALL OF THE VAULT.
5. CENTERLINE OF WATERLINE SHALL BE 24 INCHES ABOVE THE VAULT FLOOR AND RUNNING THROUGH THE CENTERLINE OF THE VAULT.
6. VAULT SHALL HAVE AN 11" X 17" READER LID AND OPENING.
7. MINIMUM ACCESS DOOR SIZE:
   A. 3–INCH AND 4–INCH METERS–3 FEET BY 3 FEET.
   B. 6–INCH AND 8–INCH METERS–2 EACH, 3 FEET 6 INCHES WIDE BY 3 FEET LONG.
8. REFER TO STANDARD PLAN NUMBER 505 FOR ADDITIONAL VAULT REQUIREMENTS.

Approved Karl O. Gruber 9–15–99
City Engineer Date

No.	Description	Date	By	Appr
	WATER MAIN TO GO THROUGH CENTERLINE OF VAULT			

REVISION

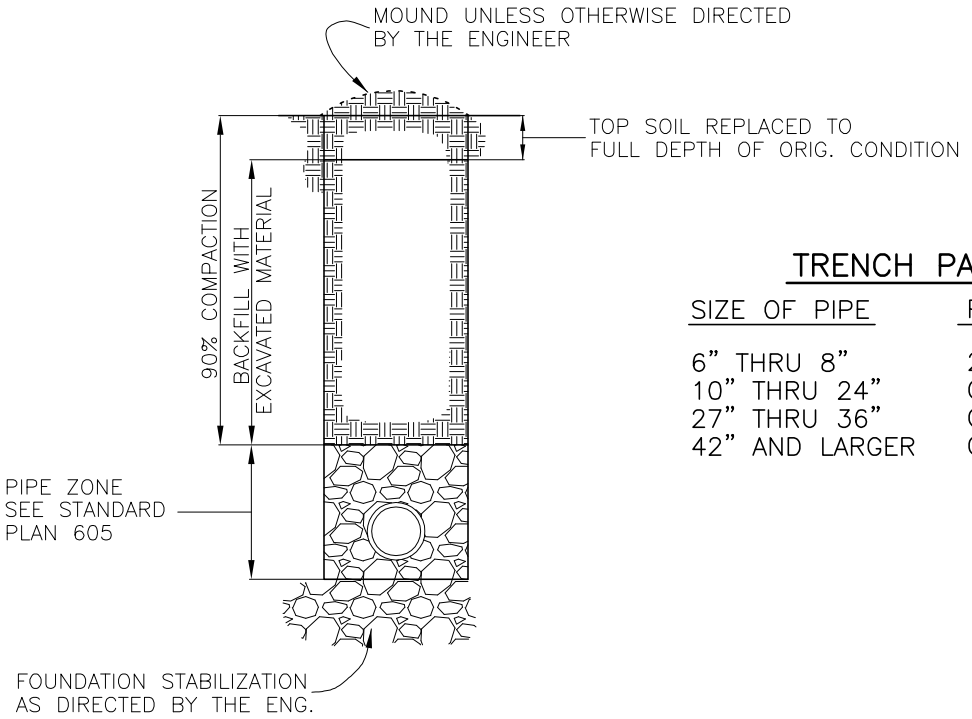
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
METER AND VAULT
SIZE AND SPECIFICATIONS

DRAWN BY S.G.P.
CHECKED BY D.W.

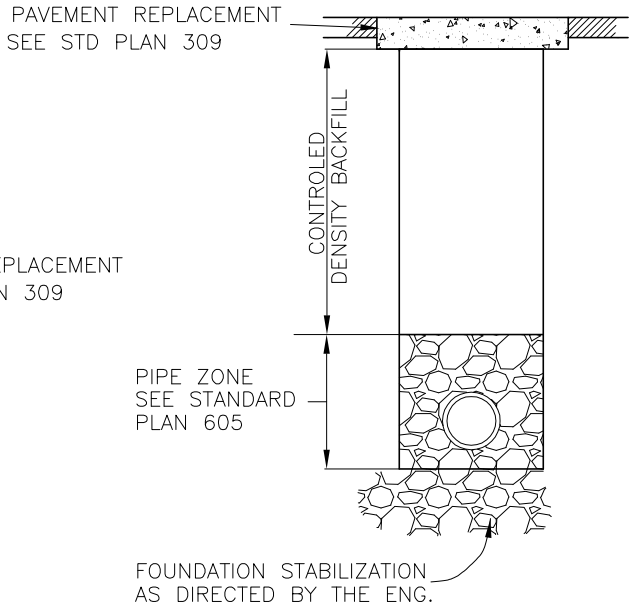
NO.506

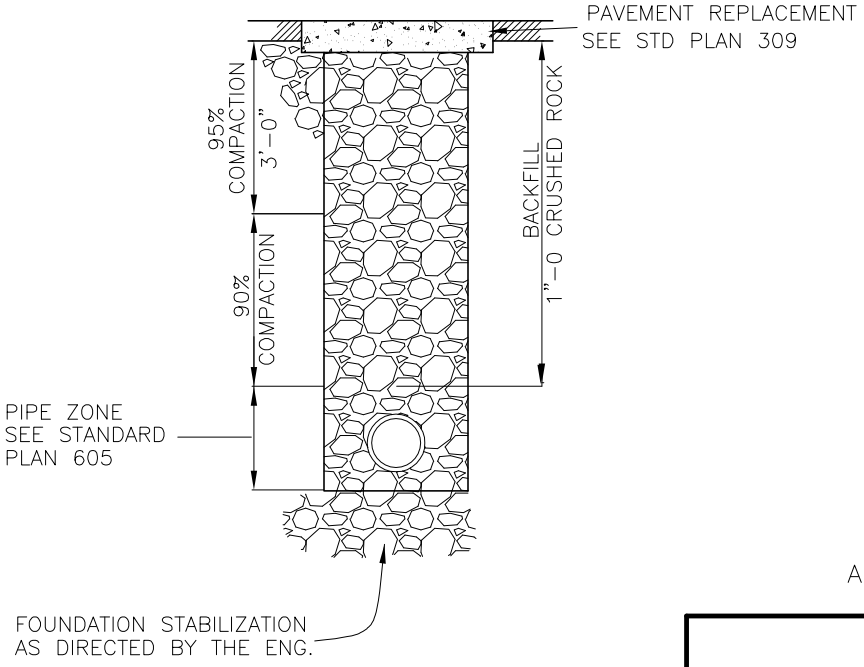
9–15–99



TRENCH PAY WIDTH

SIZE OF PIPE	PAY WIDTH OF TRENCH
6" THRU 8"	2.5 FT.
10" THRU 24"	OUTSIDE DIAMETER PLUS 18"
27" THRU 36"	OUTSIDE DIAMETER PLUS 24"
42" AND LARGER	OUTSIDE DIAMETER PLUS 30"





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

No.	Description	Date	By	Appr
1	CONVERTED TO CAD DWG.	3/99		

REVISION

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

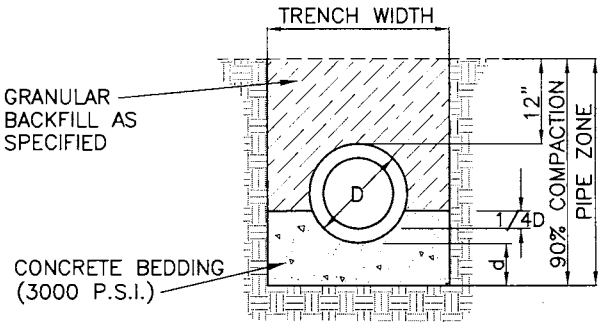
STANDARD PLAN

PIPE TRENCH

DRAWN BY GS

CHECKED BY D.W.

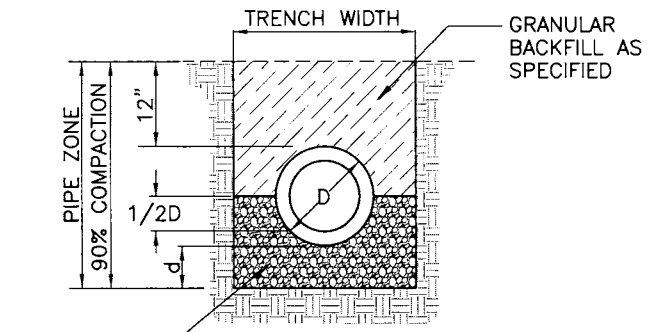
NO.601



CONCRETE CRADLE

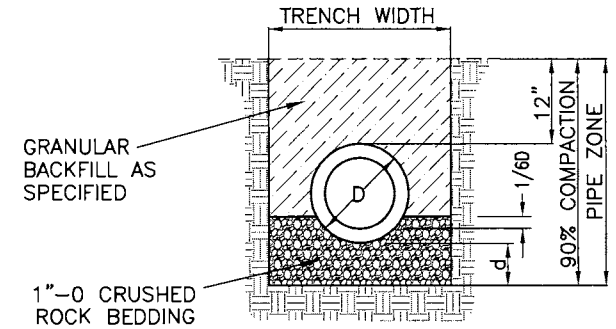
CLASS A

B_f =2.8



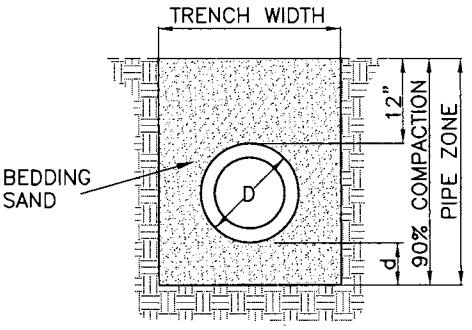
CLASS B

B_f =1.9



CLASS C

B_f =1.5



CLASS D

GENERAL NOTES

1. WHERE DIRECTED BY THE ENGINEER GRANULAR TRENCH STABILIZATION SHALL BE PLACED PRIOR TO PLACEMENT OF THE BEDDING. SIZE AND DEPTH ARE DEPENDENT ON SOIL CONDITIONS.

2. FOR ROCK OR OTHER INCOMPRESSIBLE MATERIALS, THE TRENCH SHALL BE OVEREXCAVATED A MINIMUM OF 6" AND REFILLED WITH GRANULAR MATERIAL AS DIRECTED BY THE ENGINEER.

3. BEDDING AND BACKFILL MATERIALS IN THE PIPE ZONE SHALL BE COMPACTED AS SPECIFIED PRIOR TO BACKFILLING THE REMAINDER OF THE TRENCH.

4. WHERE DIRECTED BY THE ENGINEER USE 1"–0 CRUSHED ROCK FOR ENTIRE PIPE ZONE. (SEE SCS 204.3.18)

LEGEND

D = OUTSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE

DEPTH OF BEDDING MATERIAL BELOW PIPE	
D	d(min).
12" & SMALLER	6"
15" to 36"	8"
42" & LARGER	10"

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

CHANGES				
	REMOVED COMMON BACKFILL AS OPTION	1/2016		

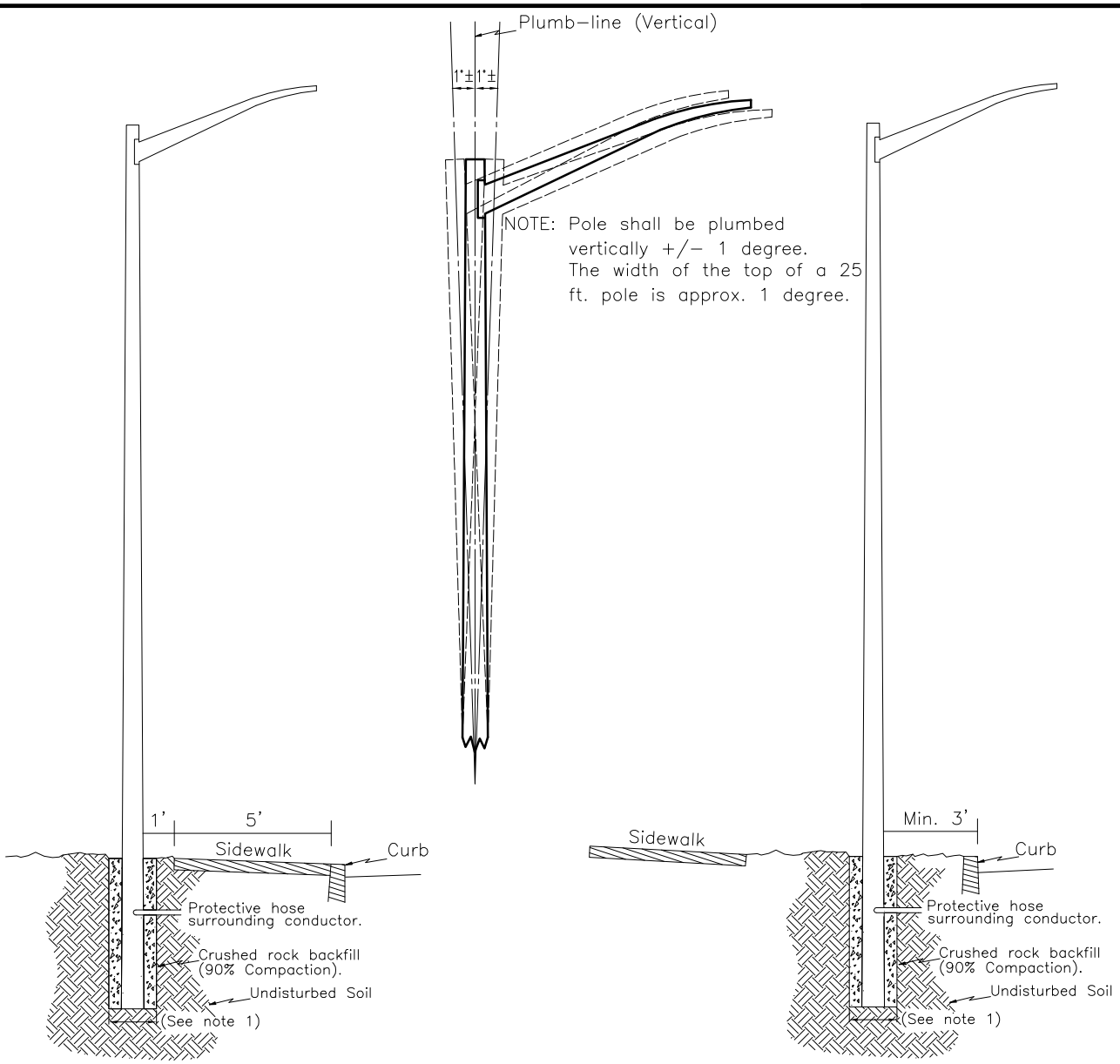
STANDARD PLAN

PIPE ZONE

APPROVED [signature] CITY ENGINEER 2-23-16

DRAWN BY	JAK	1/2016
CHECKED BY	JPK	1/2016

NO.605



Typical Lamp Post Cross Section (Type One)

Typical Lamp Post Cross Section (Type Two)

NOTES:

1. MINIMUM DIMENSION EQUAL TO TWICE POLE BASE DIAMETER. IF POLE IS SET IN DISTURBED SOIL, MINIMUM HOLE DIAMETER EQUAL TO 4 TIMES POLE BASE DIAMETER.
2. LUMINAIRE WATTAGE, MOUNTING HEIGHT, AND ARM LENGTH AS DETAILED BY ENGINEER.
3. MINIMUM DIRECT BURIAL DEPTH EQUAL TO 5' OR GREATER AS PER MANUFACTURER SPECIFICATIONS.

Approved Karl O. Sturgeon City Engineer 9–15–99 Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

TYPICAL LAMP POST INSTALLATION

No.	Description	Date	By	Appr
	ADDED SPECIFICATION FOR MIN. HOLE DIA.			
	ADDED PROTECTIVE HOSE AROUND CONDUCTOR			

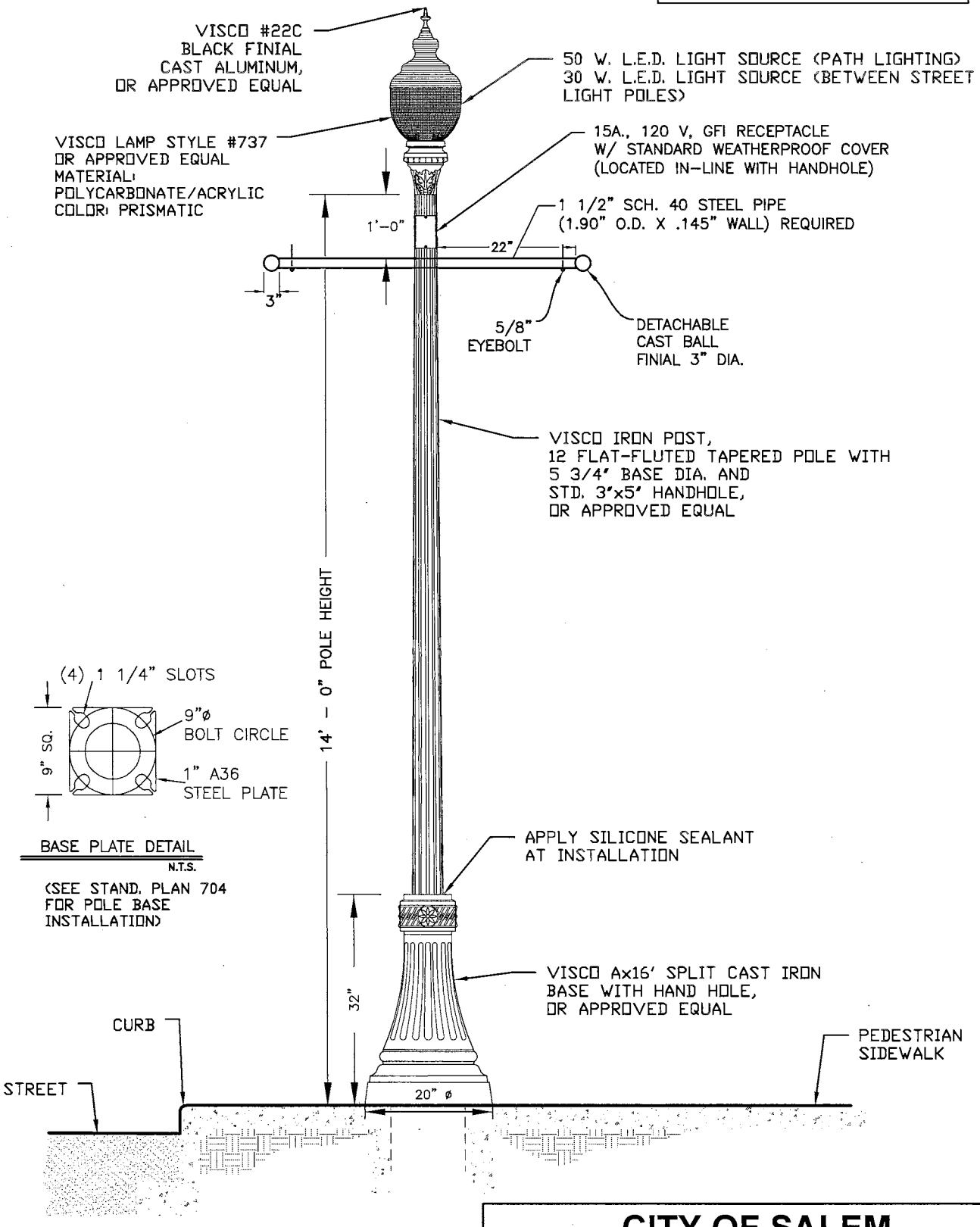
REVISION

DRAWN BY KPB, SGP

CHECKED BY D.W.

NO.701

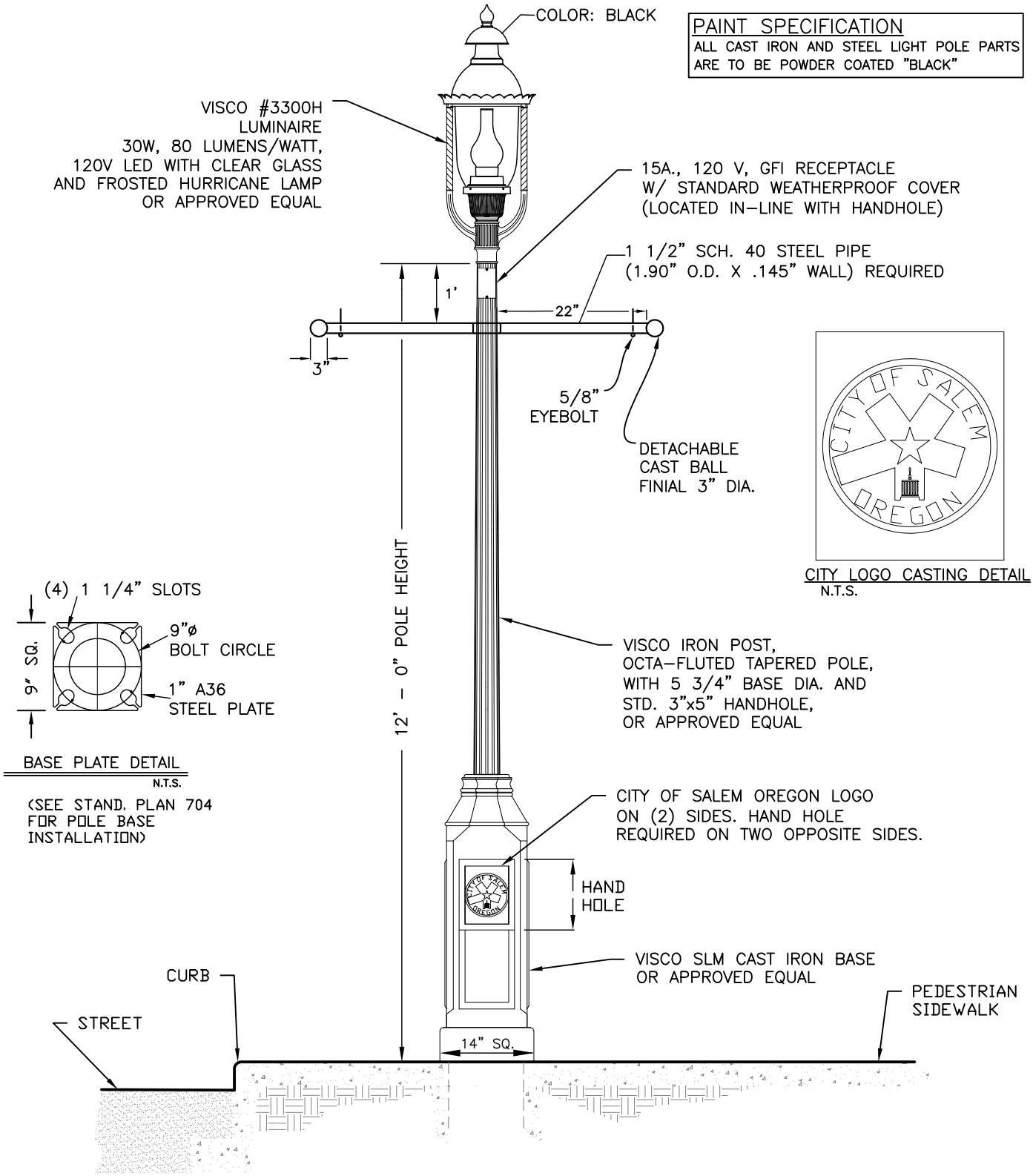
PAINT SPECIFICATION
ALL CAST IRON AND STEEL LIGHT POLE PARTS ARE TO BE POWDER COATED "BLACK"



CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
STREETSCAPE LAMP POST DETAIL
ACORN LAMP STYLE

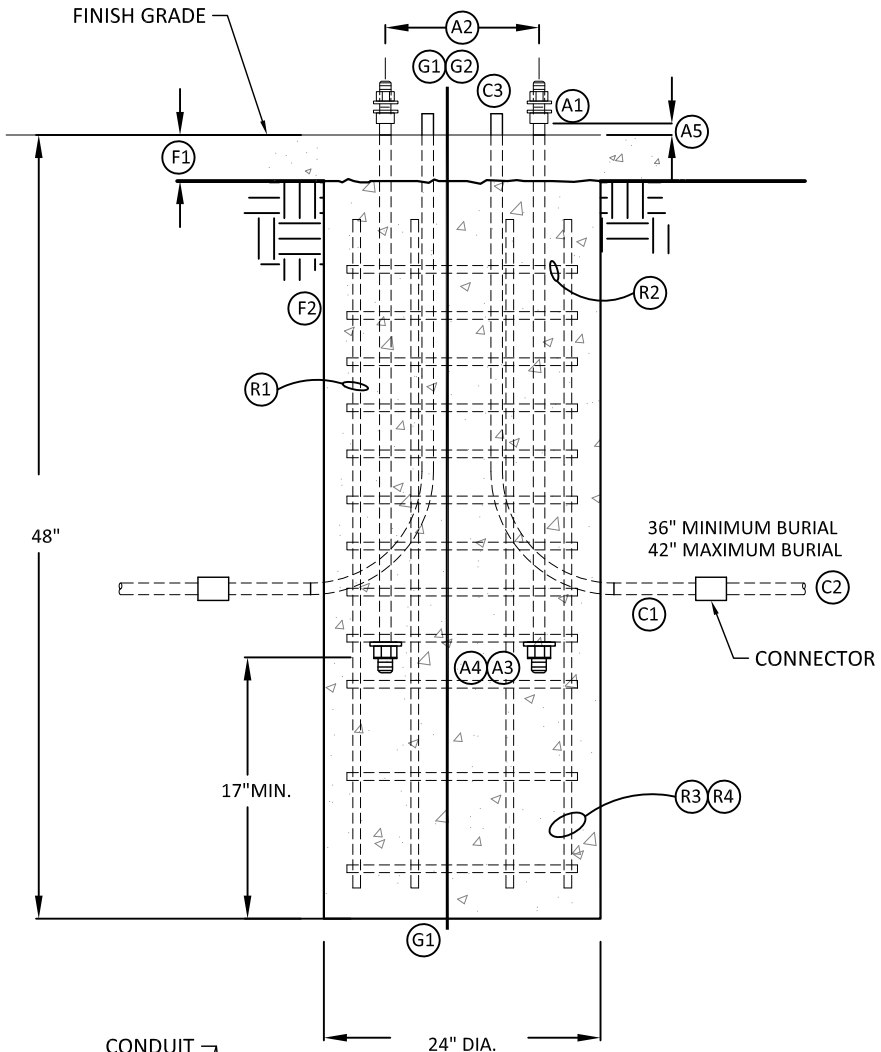
APPROVED	CITY ENGINEER	DATE	DRAWN BY	ALT	04/2015	**NO. 702**
			CHECKED BY	KLR	04/2015	

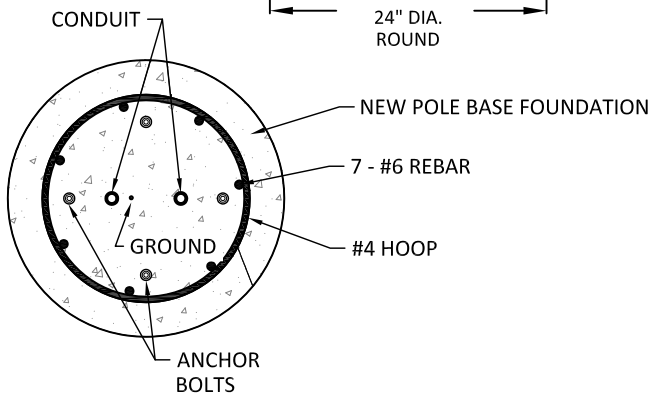


CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
STREETSCAPE LAMP POST DETAIL
GAS LAMP STYLE

APPROVED	CITY ENGINEER	1/1/14	DATE	DRAWN BY	ALT	07/2013	**NO. 703**
				CHECKED BY	CJS	07/2013	





ANCHOR BOLTS:

A1. (4) ASTM F 1554 GRADE 36 ANCHOR BOLTS. BOLT DIAMETER AS RECOMMENDED BY POLE MANUFACTURER.

A2. BOLT CIRCLE DIAMETER TO MATCH POLE BASEPLATE.

A3. ANCHOR BOLTS SHALL HAVE HEADS, OR NUTS WITH THE THREADS STAKED AT TWO PLACES BELOW THE NUT OR TACK WELDED, EMBEDDED IN FOUNDATION.

A4. ANCHOR BOLTS SHALL BE 39" LONG WITH 33" EMBENDMENT IN CONCRETE.

A5. BOLT PROJECTION AS RECOMMENDED BY THE MANUFACTURER.

CONDUIT:

C1. CONDUIT SHALL BE COATED RIGID GALVANIZED STEEL IN CONCRETE WITH 6" MINIMUM STUB-OUT.

C2. SERVICE AND FEED CONDUITS SHALL BE SCH. 80 PVC.

C3. STUB UP TO WITHIN 4" FROM HAND HOLE.

FOUNDATION:

F1. THE TOP 3.5" OF ROUND FOUNDATIONS SHALL BE INTEGRATED INTO SIDEWALK OR POURED AS A SQUARE PAD, LARGE ENOUGH TO FULLY SUPPORT THE POLE BASE PLATE AND NUT COVERS.

F2. THE FOUNDATION SHALL CURE A MIN. OF FOURTEEN (14) DAYS PRIOR TO POLE INSTALLATION OR TORQUING OF THE ANCHOR BOLTS.

GROUND ROD:

G1. GROUND ROD SHALL BE MIN. 5/8" DIA. x 8 FT. LONG, COPPER CLAD.

G2. STUB UP WITHIN 4" FROM HAND HOLE. MIN. 3" EXPOSURE AT TOP OF FOUNDATION, WITHIN BOLT CIRCLE.

REINFORCEMENT:

R1. VERTICAL REBAR SHALL BE 7 #6 EQUALLY SPACED INSIDE OF HOOPS.

R2. HOOPS SHALL BE #4 x 18" O.D., SPACED 4" O.C.FROM TOP OF FOUNDATION TO END OF ANCHOR BOLTS.

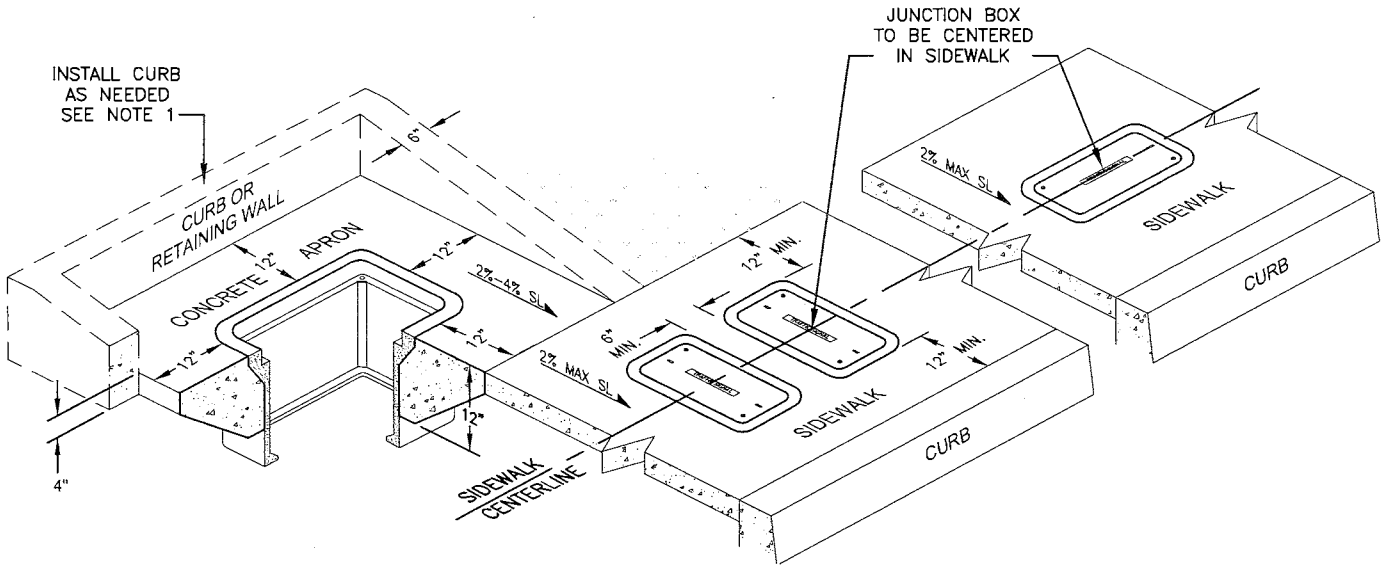
R3. HOOPS SHALL BE #4 x 18" O.D., SPACED 12" MIN. FROM THE ANCHOR BOLTS TO BOTTOM OF FOUNDATION.

R4. ALL REBAR SHALL HAVE 3" MIN. COVERING.

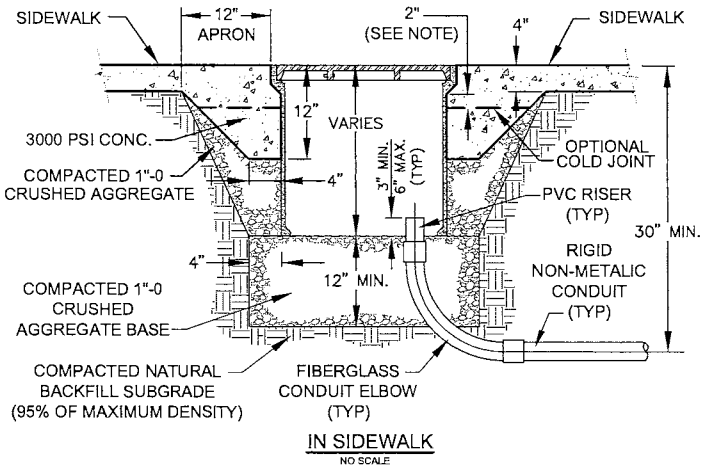
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
POLE BASE DETAIL

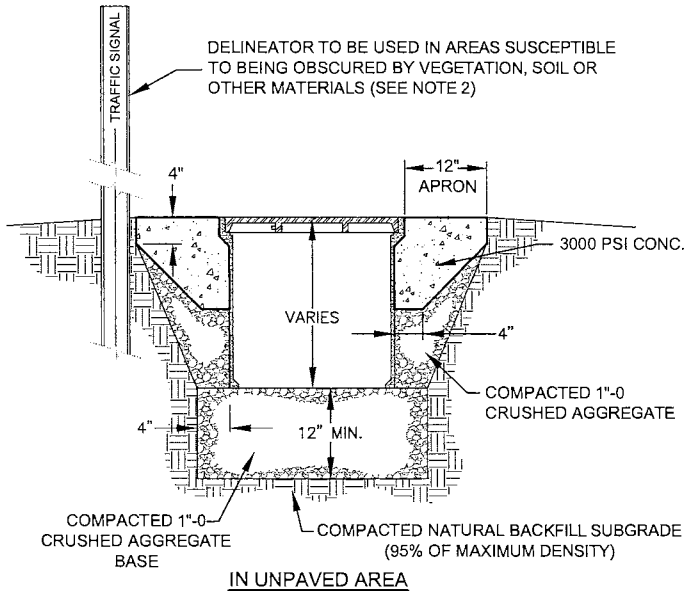
APPROVED	Jeremy Bent	1/1/14	DRAWN BY	ALT	11/2013	**NO. 704**
	CITY ENGINEER	DATE	CHECKED BY	CJS	11/2013	



NOTE: SIDEWALK MAY BE POURED EITHER MONOLITHICALLY WITH APRON, OR SEPARATELY, AS LONG AS COLD JOINT IS LOW ENOUGH TO PROVIDE A MINIMUM OF 2" BELOW TAPERED PORTION OF UNDERGROUND ENCLOSURE IN A CONTINUOUS POUR WITH THE SIDEWALK AS INDICATED BY DASHED LINE.



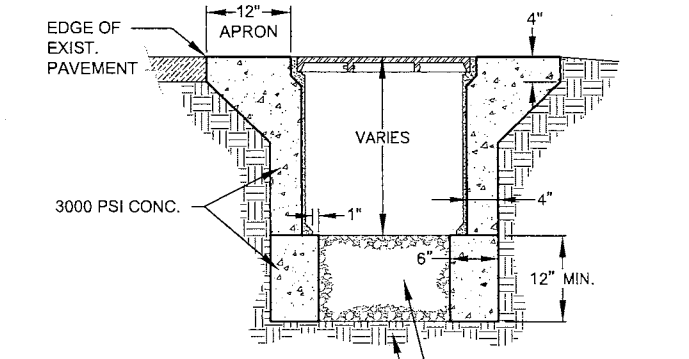
IN SIDEWALK
NO SCALE



IN UNPAVED AREA
NO SCALE

NOTES:

1. UNDERGROUND ENCLOSURES INSTALLED IN PAVED AREAS SHALL MATCH THE SLOPE AND ELEVATION OF THE SURROUNDING SIDEWALK OR PAVEMENT IN ALL DIRECTIONS. UNDERGROUND ENCLOSURES LOCATED OUTSIDE PAVED AREAS HAVING A SLOPE EXCEEDING 4% SHALL HAVE A MIN. 6" WIDE CURB OR APPROVED BLOCK RETAINING WALL BEYOND THE 12" WIDE CONCRETE APRON TO PREVENT ENCROACHMENT OF THE SURROUNDING SOILS OR GROUND COVER. BOTTOM OF CURB OR RETAINING WALL SHALL EXTEND A MINIMUM OF 4" BELOW FINISH GRADE OF THE APRON. THE TOP OF CURB OR RETAINING WALL SHALL FOLLOW THE CONTOUR OF THE ADJACENT GROUND. CURBS EXTENDING LESS THAN 6" ABOVE THE FINISH GRADE OF THE APRON MAY BE REDUCED TO 4" WIDE.
2. UTILITY MARKERS SHALL BE USED IN AREAS WHERE UNDERGROUND ENCLOSURES ARE PRONE TO BEING OBSCURED BY SURROUNDING SOILS, GROUNDCOVERS, MULCH OR VEGETATION. MARKER SHALL BE MADE OF WHITE FIBERGLASS OR FIBERGLASS/PLASTIC HYBRID AND CLEARLY IDENTIFIED ON BOTH SIDES WITH BLUE REFLECTIVE DECALS STATING THE APPROPRIATE UTILITY, "STREET LIGHT" OR "TRAFFIC SIGNAL".
3. ALL UNDERGROUND ENCLOSURES TO BE POLYMER CONCRETE (PREFERRED) OR FIBERGLASS POLYMER CONCRETE AND HAVE A HEAVY DUTY COVER WITH THE APPROPRIATE LOGO, "STREET LIGHT" OR "TRAFFIC SIGNAL".



ON HIGHWAY SHOULDER
NO SCALE

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

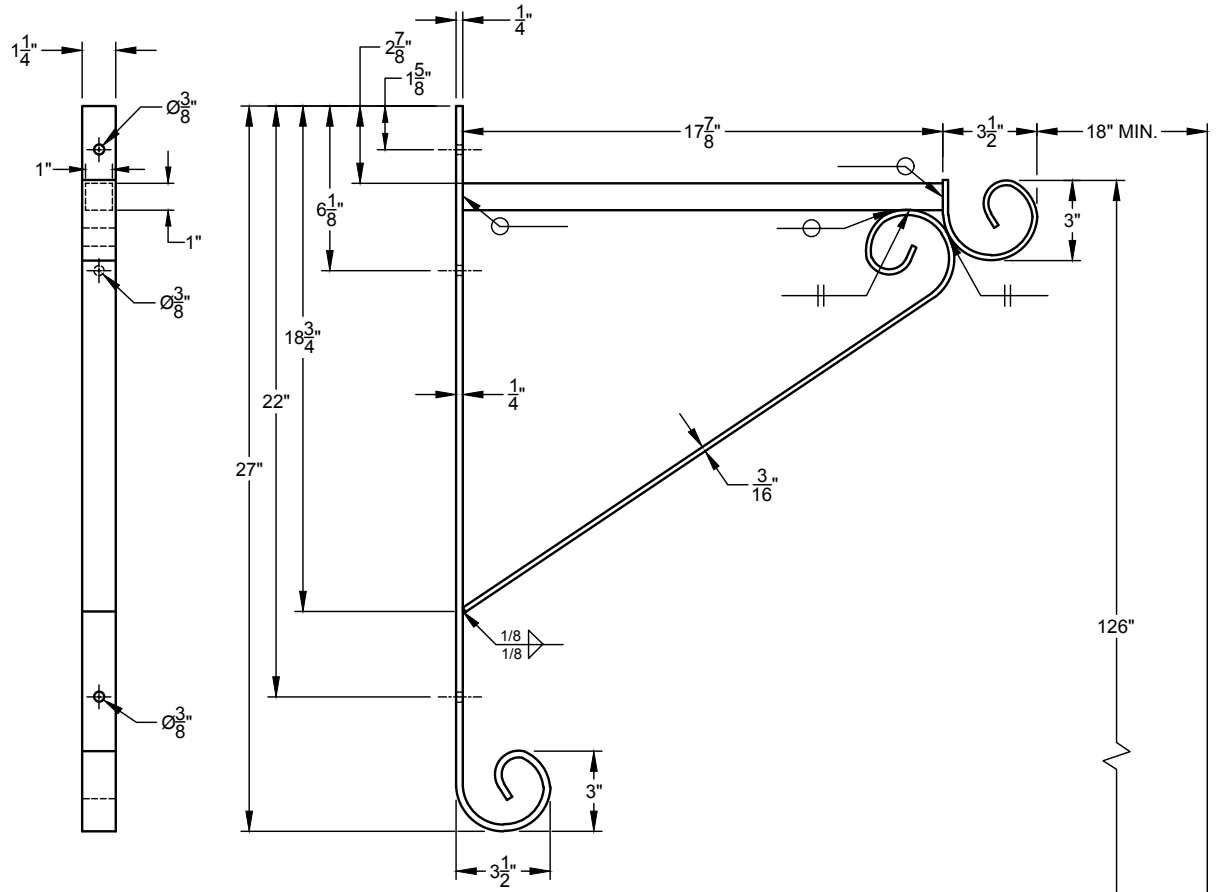
STANDARD PLAN

JUNCTION BOX DETAILS

APPROVED	CITY ENGINEER	4/23/2015	DATE	DRAWN BY	DTN	1/2014	NO.705
				CHECKED BY	RLB	1/2014	

MATERIALS LIST

QUANTITY	MATERIAL
17 7/8"	1" X 1" X .109" (12 GAUGE) SQUARE TUBE (ASTM A513)
30 3/4"	3/16" X 1 1/4" FLAT BAR (ASTM A569)
10 7/8"	3/16" X 1 1/4" FLAT BAR (ASTM A569)
35 1/4"	1/4" X 1 1/4" FLAT BAR (ASTM A36)



FRONT VIEW **SIDE VIEW**

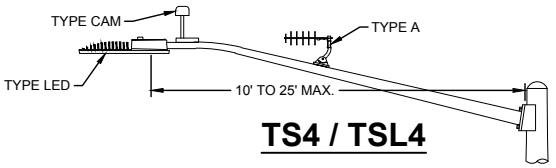
NOTES:

1. ALL WELDS SHALL OCCUR PRIOR TO POWDER COATING.
2. HANGER SHALL BE BLACK PER AAMA 2604-98.
3. HANGERS SHALL BE MOUNTED USING 3/4" BAND-IT® AT THE LOCATION OF EACH OF THE THREE HOLES. THE BANDS AND BUCKLES SHALL BE STAINLESS STEEL.
4. HANGER SHALL BE ORIENTED TOWARD THE STREET AND BE ROTATED TO AVOID ANY OTHER POLE APPURTENANCE. WHEN CLEARANCE TO THE CURB IS LESS THAN 18", ROTATE AS NECESSARY TO ACHIVE CLEARANCE.

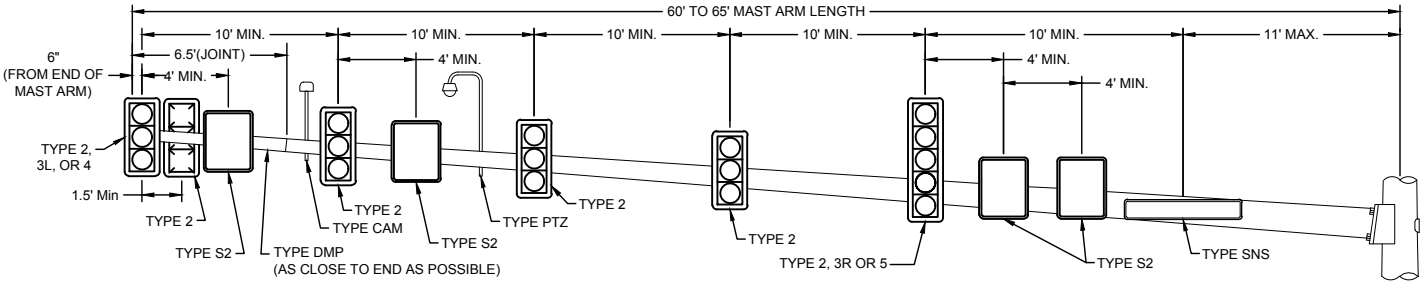
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

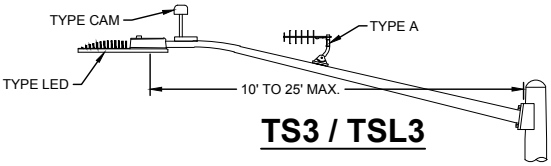
STANDARD PLAN
STREETSCAPE LAMP POST
FLOWER HANGER DETAIL

APPROVED		12/16/19	DRAWN BY	DTN	11/2019	**NO.706**	
	CITY ENGINEER	DATE	CHECKED BY	AAE	11/2019		

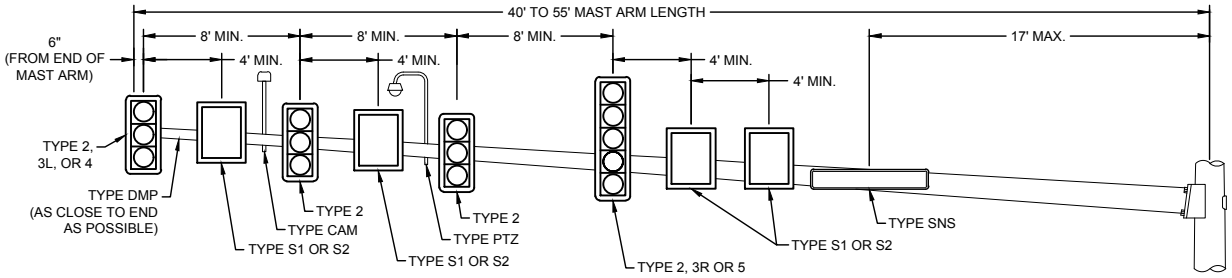


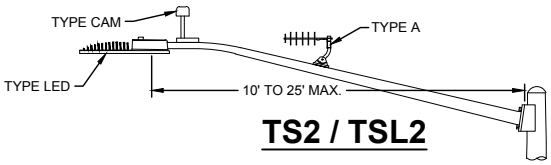
TS4 / TSL4



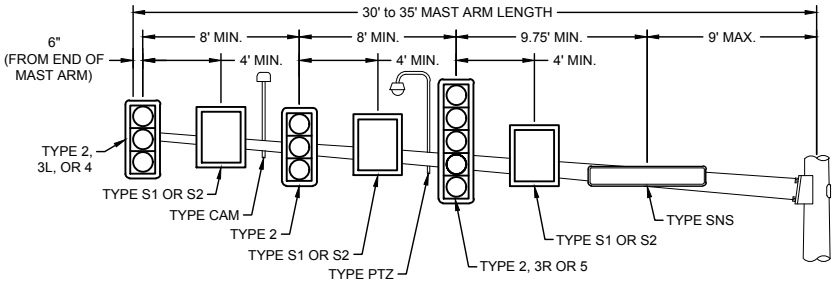


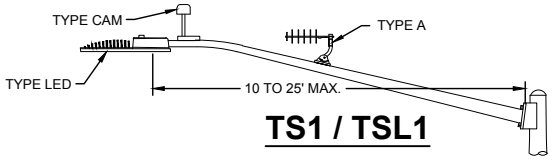
TS3 / TSL3



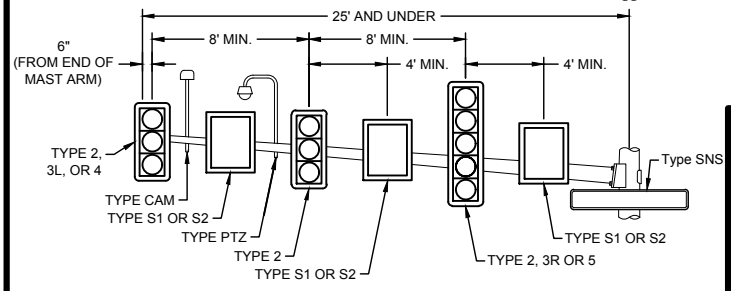


TS2 / TSL2





TS1 / TSL1



NOTES:

1. VEHICLE DETECTION CAMERA (CAM) MOUNTED ON 6 FT (MAX.) GUSSETED TUBE PLACED AT ANY LOCATION ON MAST ARM.
2. VEHICLE DETECTION CAMERA (CAM) MOUNTED ON 20-1/2" FABRICATED BRACKET NEXT TO LUMINAIRE.
3. FIRE PRE-EMPTION UNIT (F) MAY BE PLACED AT ANY LOCATION ALONG THE MAST ARM.
4. TRAFFIC MONITORING CAMERA (PTZ) MAY BE PLACED AT ANY LOCATION ALONG MAST ARM OR JUST BELOW LUMINAIRE ARM ATTACHMENT POINT ON MAST POLE.
5. WIFI ANTENNA (A) PLACED AT ANY LOCATION ON LUMINAIRE ARM, MAST ARM OR POLE SHAFT.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

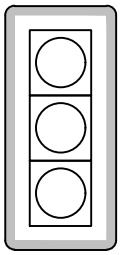
STANDARD PLAN

TRAFFIC SIGNAL APPURTENANCE SPACING FOR STANDARD LOADING CALCULATIONS

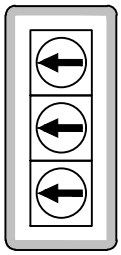
APPROVED	CITY ENGINEER	1/17/2020	DRAWN BY	JAK	1/2020	**NO.751**
		DATE	CHECKED BY	AAE	1/2020	

APPURTENANCE LOADS							
TYPE	**DESCRIPTION**	**HEIGHT (FT)**	**WEIGHT (LBS)**	**ICE AREA (FT^2)**	**FACE AREA (FT^2)**	**SIDE AREA (FT^2)**	**BOTTOM AREA (FT^2)**
2	3 - SECTION SIGNAL HEAD	3.75	55	25	8.67	4	1
3L	3 - SECTION SIGNAL HEAD	3.75	55	25	8.67	4	1
3R	3 - SECTION SIGNAL HEAD	3.75	55	25	8.67	4	1
4	4 - SECTION SIGNAL HEAD	5	73	30	9.9	5	1
4L	5 - SECTION SIGNAL HEAD, "DOGHOUSE"	3.75	92	35	11.97	4	2
5	5 - SECTION SIGNAL HEAD	6.25	92	35	11.97	6	1
6L	4 - SECTION SIGNAL HEAD	5	73	30	9.9	5	1
7	4 - SECTION SIGNAL HEAD	5	73	30	9.9	5	1
S1(OS)	30" X 36" INTERIOR ILLUMINATED SIGN	3	60	20	7.5	2	1.67
S2(AL)	30" X 36" ALUMINUM SIGN (2.5 LB / FT^2)	3	18.75	7.5	7.5	0	0
SNS	STREET NAME SIGN (2.5 LB / FT^2)	1	15	6	6	0	0
-	SIGN CLUSTER ON SHAFT	8	120	48	48	0	0
DMP	30" X 36" ALUM. SIGN BLANK, HORIZ. (2.5 LB / FT^2)	0	18.75	7.5	0	0	7.5
LED	LIGHT EMITTING DIODE LUMINAIRE	0.4	10.8	2.97	0.54	0.36	1.18
F	FIRE PREEMPTION DET. (2.75" DIA x 3.375" TALL)	0.25	1	0.24	0.2	0.06	0.04
A	ANTENNA (2' LONG, 1.5" TALL, 3" WIDE)	0.5	5	1.0625	0.25	0.03125	0.5
CAM	VIDEO DETECTION CAMERA	1	5	1.6	0.36	0.36	0.14
PTZ	TRAFFIC MONITORING CAMERA	11	8	3.4	0.7	0.7	0.6

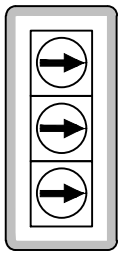
SIGNAL HEAD TYPES



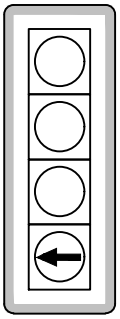
TYPE 2
"IN LINE" STANDARD VEHICLE SIGNAL
12" R
12" Y
12" G



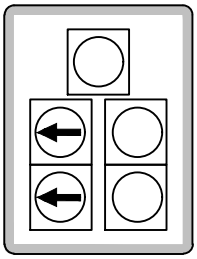
TYPE 3L
"IN LINE" PROTECTED LEFT TURN SIGNAL
12" RLTA
12" YLTA
12" GLTA



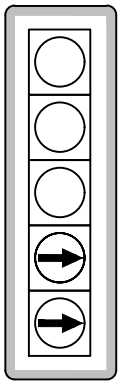
TYPE 3R
"IN LINE" PROTECTED RIGHT TURN SIGNAL
12" RRTA
12" YRTA
12" GRTA



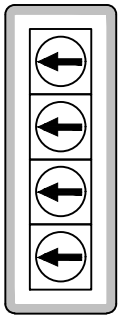
TYPE 4
"IN LINE"
LEFT TURN / THROUGH (USED FOR SPLIT PHASE)
12" R
12" Y
12" G
12" GLTA



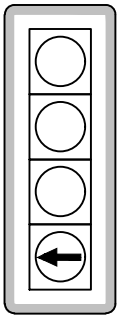
TYPE 4L
"DOGHOUSE" LEFT TURN PROTECTED / PERMITTED
12" R
12" YLTA 12" Y
12" GLTA 12" G



TYPE 5
"IN LINE" RIGHT TURN PROTECTED / PERMITTED
12" R
12" Y
12" G
12" YRTA
12" GRTA

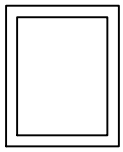


TYPE 6L
"IN LINE" LEFT TURN PROTECTED / PERMITTED
12" RLTA
12" YLTA
12" FYLTA
12" GLTA

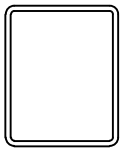


TYPE 7
"IN LINE"
LEFT TURN / THROUGH (USED FOR RAIL PREEMPTION ONLY)
12" R
12" Y
12" G
12" GLTA

SIGN TYPES



TYPE S1(OS)
(30"X36" INTERIOR ILLUMINATED SIGN)



TYPE S2(AL)
(30"X36" ALUMINUM SIGN)

TYPE SNS1
(12" X 72" ALUMINUM)

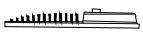
TYPE SNS2
(12" X 72" ALUMINUM)

TYPE DMP (VIBRATION DAMPER)
HORIZONTAL 30"X36" ALUMINUM SIGN BLANK

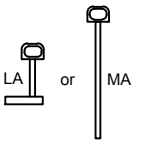
MISC.

TYPE F
(FIRE PREEMPTION DETECTOR)

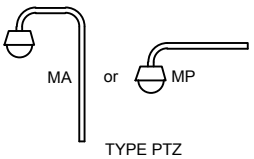
TYPE A
(WIFI ANTENNA)



TYPE LED
(LIGHT EMITTING DIODE LUMINAIRE)



TYPE CAM
(VIDEO DETECTION CAMERA)



TYPE PTZ
(TRAFFIC MONITORING CAMERA)

NOTES:

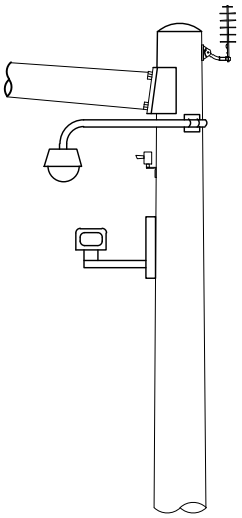
1. VEHICLE DETECTION CAMERA (CAM) MOUNTED ON 6 FT (MAX.) GUSSETED TUBE PLACED AT ANY LOCATION ON MAST ARM.
2. VEHICLE DETECTION CAMERA (CAM) MOUNTED ON 20-1/2" FABRICATED BRACKET NEXT TO LUMINAIRE.
3. FIRE PRE-EMPTION UNIT (F) MAY BE PLACED AT ANY LOCATION ALONG THE MAST ARM.
4. TRAFFIC MONITORING CAMERA (PTZ) MAY BE PLACED AT ANY LOCATION ALONG MAST ARM OR JUST BELOW LUMINAIRE ARM ATTACHMENT POINT ON MAST POLE.
5. WIFI ANTENNA (A) PLACED AT ANY LOCATION ON LUMINAIRE ARM, MAST ARM OR POLE SHAFT.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

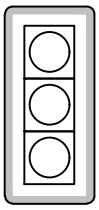
STANDARD PLAN
TRAFFIC SIGNAL MAST ARM APPURTENANCE LOADS

APPROVED	CITY ENGINEER	1/17/2020	DATE	DRAWN BY	JAK	1/2020	**NO.752**
				CHECKED BY	AAE	1/2020	

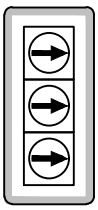
APPURTENANCE LOADS						
TYPE	**HEIGHT (FT)**	**WEIGHT (LBS)**	**ICE AREA (FT^2)**	**FACE AREA (FT^2)**	**SIDE AREA (FT^2)**	**BOTTOM AREA (FT^2)**
2	3.75	55	25	8.67	4	1
3R	3.75	55	25	8.67	4	1
5	6.25	92	35	11.97	6	1
S1(OS)	3	60	20	7.5	2	1.67
S2(AL)	3	18.75	7.5	7.5	0	0
F	0.25	1	0.24	0.2	0.06	0.04
A	0.5	5	1.0625	0.25	0.03125	0.5
CAM	1	5	1.6	0.36	0.36	0.14
PTZ	11	8	3.4	0.7	0.7	0.6
SIGN CLUSTER (2.5 LB / FT²)	8	120	48	48	0	0



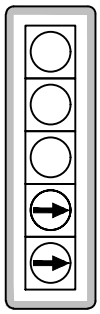
SIGNAL HEAD TYPES



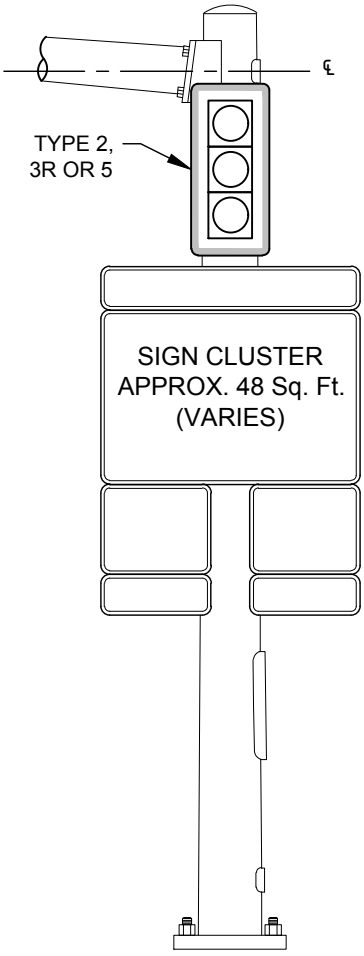
TYPE 2
"IN LINE" STANDARD
VEHICLE SIGNAL
12" R
12" Y
12" G



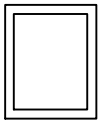
TYPE 3R
"IN LINE" PROTECTED
RIGHT TURN SIGNAL
12" RRTA
12" YRTA
12" GRTA



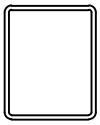
TYPE 5
"IN LINE" RIGHT TURN
PROTECTED / PERMITTED
12" R
12" Y
12" G
12" YRTA
12" GRTA



SIGN TYPES



TYPE S1(OS)
(30"X36" INTERIOR
ILLUMINATED SIGN)



TYPE S2(AL)
(30"X36" ALUMINUM SIGN)

TYPE SNS1
(12" X 72" ALUMINUM)

TYPE SNS2
(12" X 72" ALUMINUM)

MISC.

TYPE F
(FIRE PREEMPTION DETECTOR)

TYPE A
(WIFI ANTENNA)

TYPE LED
(LIGHT EMITTING DIODE LUMINAIRE)

TYPE CAM
(VIDEO DETECTION CAMERA)

TYPE PTZ
(TRAFFIC MONITORING CAMERA)

NOTES:

1. REFER TO PROJECT PLANS FOR ACTUAL APPURTENANCE LOCATIONS.
2. VEHICLE DETECTION CAMERA (CAM) MOUNTED ON 20-1/2" FABRICATED BRACKET ON POLE SHAFT.
3. FIRE PRE-EMPTION UNIT (F) MAY BE PLACED ON POLE SHAFT.
4. TRAFFIC MONITORING CAMERA (PTZ) MAY BE PLACED JUST BELOW LUMINAIRE ARM ATTACHMENT POINT ON MAST POLE.
5. WIFI ANTENNA (A) PLACED AT ANY LOCATION ON POLE SHAFT.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TRAFFIC SIGNAL MAST POLE APPURTENANCE LOADS

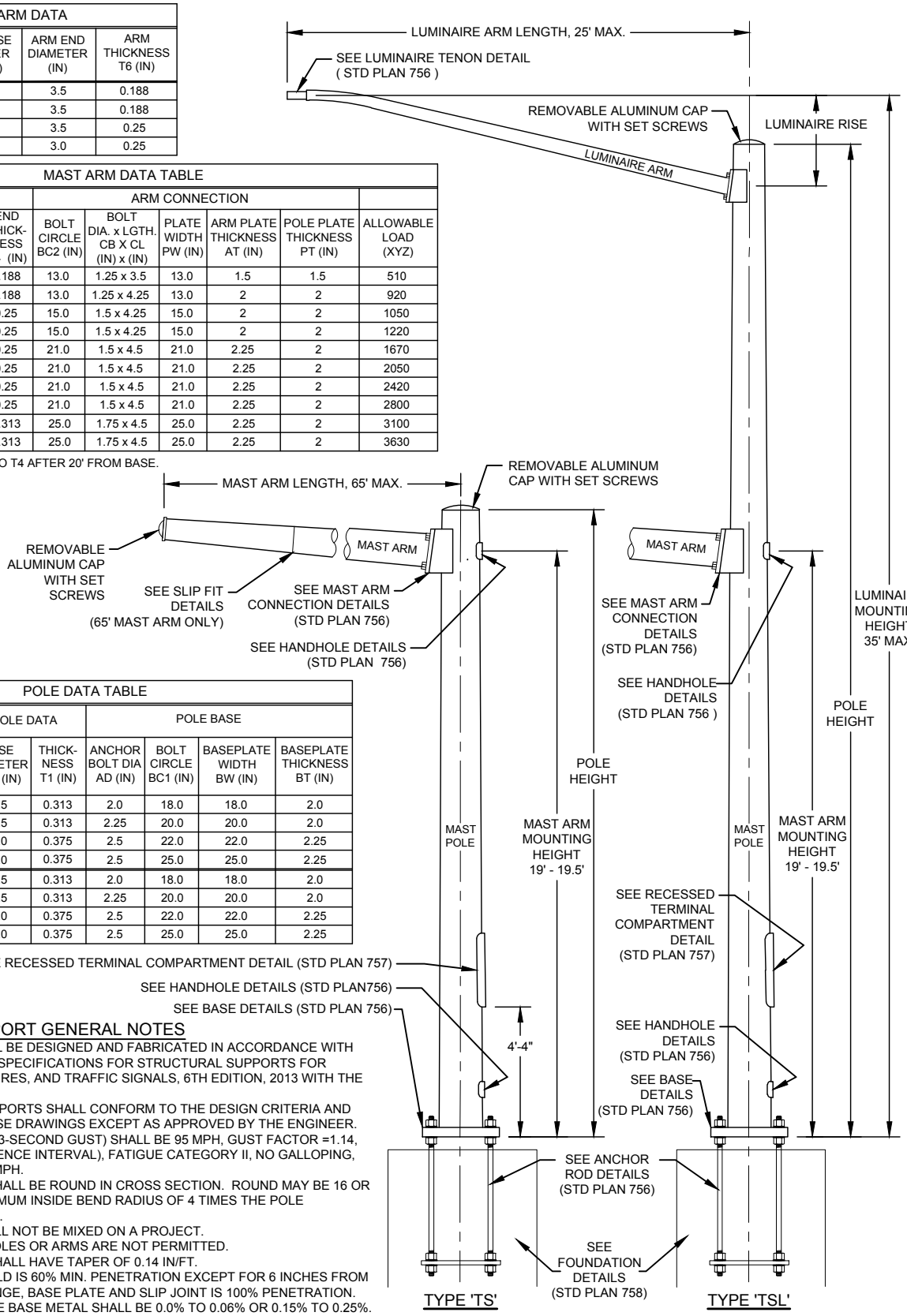
APPROVED	CITY ENGINEER	1/17/2020	DATE	DRAWN BY	JAK	1/2020	**NO.753**
				CHECKED BY	AAE	1/2020	

LUMINAIRE ARM DATA				
ARM LENGTH (FT)	RISE (IN)	ARM BASE DIAMETER BD6 (IN)	ARM END DIAMETER (IN)	ARM THICKNESS T6 (IN)
10	41	4.9	3.5	0.188
15	60	5.6	3.5	0.188
20	60	6.3	3.5	0.25
25	60	6.5	3.0	0.25

MAST ARM DATA TABLE									
ARM LENGTH (FT)	MAST ARM DATA			ARM CONNECTION					
	BASE DIAMETER BD3 (IN)	BASE THICK-NESS T3 (IN)	END THICK-NESS T4 (IN)	BOLT CIRCLE BC2 (IN)	BOLT DIA. x LGTH. CB X CL (IN) x (IN)	PLATE WIDTH PW (IN)	ARM PLATE THICKNESS AT (IN)	POLE PLATE THICKNESS PT (IN)	ALLOWABLE LOAD (XYZ)
20	8.0	0.188	0.188	13.0	1.25 x 3.5	13.0	1.5	1.5	510
25	9.0	0.188	0.188	13.0	1.25 x 4.25	13.0	2	2	920
30	10.0	0.25	0.25	15.0	1.5 x 4.25	15.0	2	2	1050
35	11.0	0.25	0.25	15.0	1.5 x 4.25	15.0	2	2	1220
40	11.0	0.375(1)	0.25	21.0	1.5 x 4.5	21.0	2.25	2	1670
45	12.0	0.375(1)	0.25	21.0	1.5 x 4.5	21.0	2.25	2	2050
50	13.0	0.375(1)	0.25	21.0	1.5 x 4.5	21.0	2.25	2	2420
55	14.0	0.375(1)	0.25	21.0	1.5 x 4.5	21.0	2.25	2	2800
60	14.0	0.375(1)	0.313	25.0	1.75 x 4.5	25.0	2.25	2	3100
65	15.0	0.375(1)	0.313	25.0	1.75 x 4.5	25.0	2.25	2	3630

(1) ARM THICKNESS REDUCED TO T4 AFTER 20' FROM BASE.

POLE DATA TABLE							
POLE DESIGNATION	MAX ARM LENGTH (FT)	POLE DATA		POLE BASE			
		BASE DIAMETER BD1 (IN)	THICK-NESS T1 (IN)	ANCHOR BOLT DIA AD (IN)	BOLT CIRCLE BC1 (IN)	BASEPLATE WIDTH BW (IN)	BASEPLATE THICKNESS BT (IN)
TS1	25.0	12.5	0.313	2.0	18.0	18.0	2.0
TS2	35.0	13.5	0.313	2.25	20.0	20.0	2.0
TS3	55.0	16.0	0.375	2.5	22.0	22.0	2.25
TS4	65.0	18.0	0.375	2.5	25.0	25.0	2.25
TSL1	25.0	12.5	0.313	2.0	18.0	18.0	2.0
TSL2	35.0	13.5	0.313	2.25	20.0	20.0	2.0
TSL3	55.0	16.0	0.375	2.5	22.0	22.0	2.25
TSL4	65.0	18.0	0.375	2.5	25.0	25.0	2.25



TRAFFIC SIGNAL SUPPORT GENERAL NOTES

- SIGNAL SUPPORTS SHALL BE DESIGNED AND FABRICATED IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 6TH EDITION, 2013 WITH THE INTERIM 2015 REVISIONS.
- ALL TRAFFIC SIGNAL SUPPORTS SHALL CONFORM TO THE DESIGN CRITERIA AND DETAILS SHOWN ON THESE DRAWINGS EXCEPT AS APPROVED BY THE ENGINEER.
- THE BASIC WIND SPEED (3-SECOND GUST) SHALL BE 95 MPH, GUST FACTOR =1.14, Ir = 1.0 (50 YEAR RECURRENCE INTERVAL), FATIGUE CATEGORY II, NO GALLOPING, AND TRUCK SPEED = 55 MPH.
- POLE AND MAST ARMS SHALL BE ROUND IN CROSS SECTION. ROUND MAY BE 16 OR MORE SIDES WITH A MINIMUM INSIDE BEND RADIUS OF 4 TIMES THE POLE THICKNESS OR GREATER.
- DIFFERENT SHAPES SHALL NOT BE MIXED ON A PROJECT.
- TWO PLY AND FLUTED POLES OR ARMS ARE NOT PERMITTED.
- POLE AND MAST ARMS SHALL HAVE TAPER OF 0.14 IN/FT.
- LONGITUDINAL SEAM WELD IS 60% MIN. PENETRATION EXCEPT FOR 6 INCHES FROM END OF SECTION AT FLANGE, BASE PLATE AND SLIP JOINT IS 100% PENETRATION.
- SILICON CONTENT OF THE BASE METAL SHALL BE 0.0% TO 0.06% OR 0.15% TO 0.25%.
- HUBS SHALL BE 3000# THREAD FORGED STEEL.
- ALL STRUCTURAL STEEL INCLUDING FASTENERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
- POLES AND MAST ARMS SHALL BE OF ONE PIECE CONSTRUCTION, 5' SLIP-FIT CONNECTIONS ARE PERMITTED FOR 65' MAST ARMS ONLY.
- TIGHTENING OF BOLTS WITH TAPPED HOLES SHALL CONFORM TO THE OREGON DEPARTMENT OF TRANSPORTATION'S 2018 STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 962.46(j)(2).
- ALL FASTENERS SHALL BE STAINLESS STEEL, UNLESS OTHERWISE SPECIFIED.
- REFER TO STANDARD PLAN 755 FOR MAST POLE, MAST ARM AND LUMINAIRE ARM IDENTIFICATION TAG LOCATIONS.

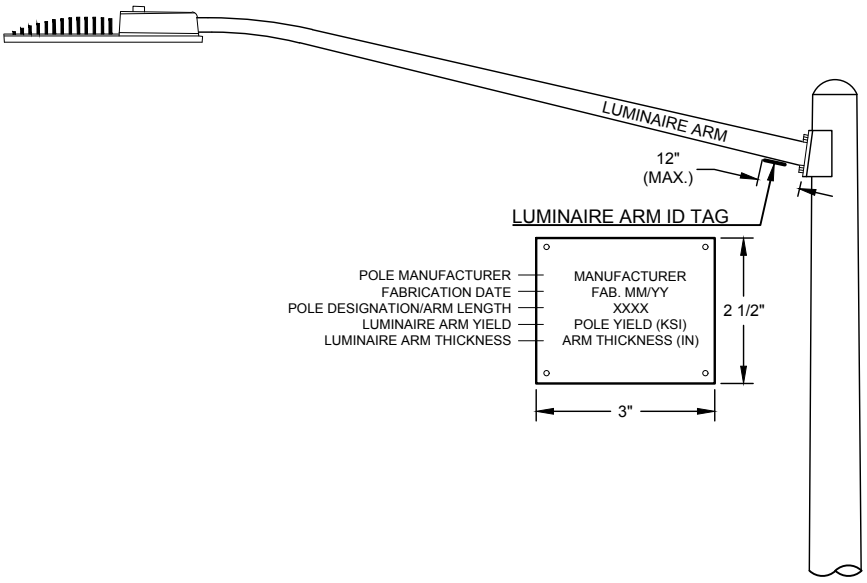
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

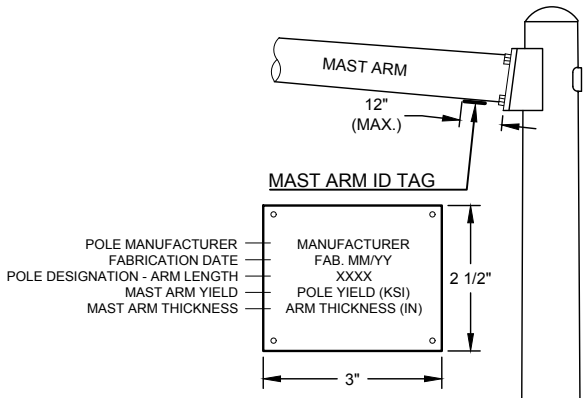
STANDARD PLAN

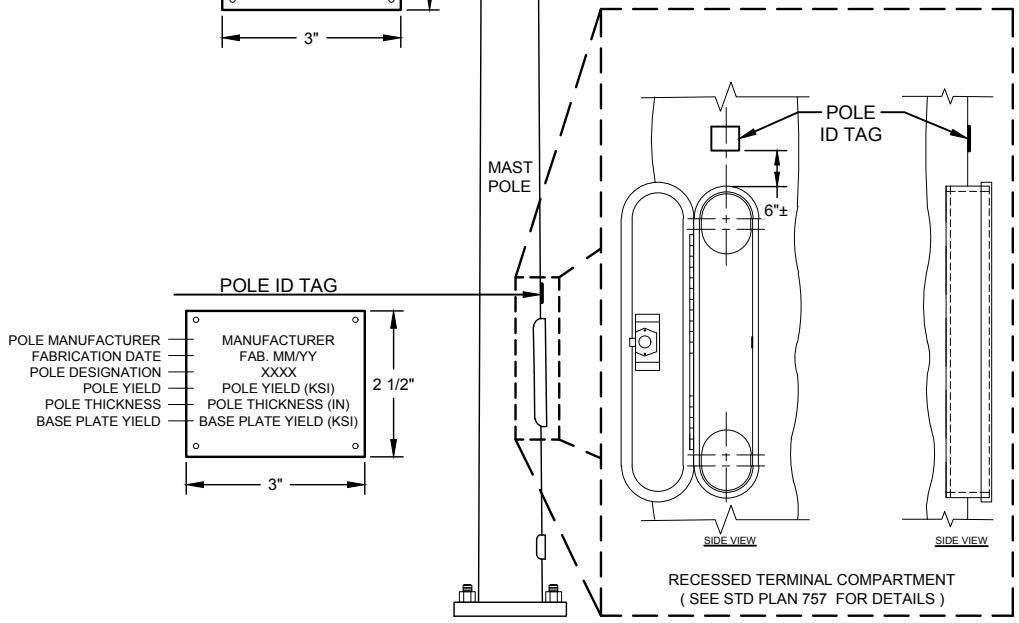
TRAFFIC SIGNAL SUPPORTS ASSEMBLY DETAILS

APPROVED		1/17/2020	DRAWN BY	JAK	1/2020	**NO.754**	
	CITY ENGINEER	DATE	CHECKED BY	AAE	1/2020		

- TAGS SHALL BE ATTACHED WITH (4) STAINLESS #6 U-DRIVE SCREWS.
- TAGS SHALL BE 1/16" THICK STAINLESS STEEL.
- TEXT HEIGHT SHALL BE 1/4".



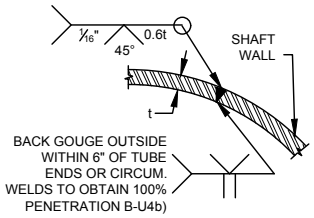




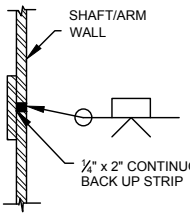
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TRAFFIC SIGNAL EQUIPMENT IDENTIFICATION TAGS

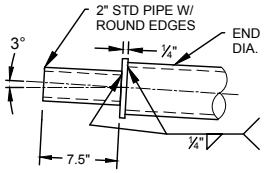
APPROVED		1/17/2020	DRAWN BY	JAK	1/2020	**NO.755**
	CITY ENGINEER	DATE	CHECKED BY	AAE	1/2020	



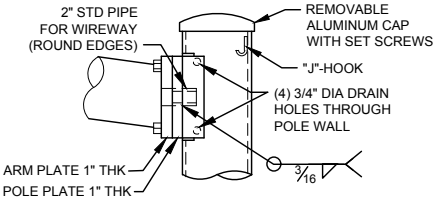
LONGITUDINAL WELD DETAIL



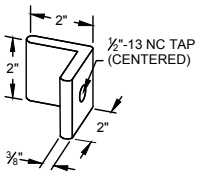
CIRCUMFERENTIAL WELD DETAIL



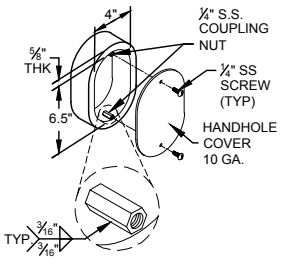
LUMINAIRE TENON DETAIL



LUMINAIRE ARM CONNECTION DETAIL 1

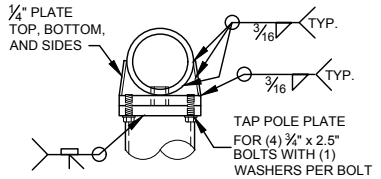


POLE GROUNDING ANGLE DETAIL

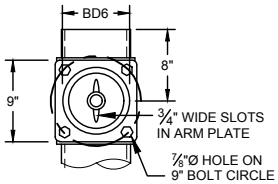


HANDHOLE DETAIL

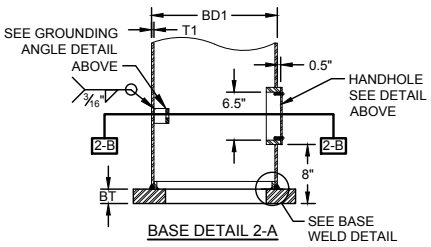
MATERIAL DATA	
COMPONET	GRADE
STEEL TUBES	ASTM A572 GR. 50 OR A595 GR A
BASE PLATES	ASTM A572 GR. 50
FLANGE PLATES	ASTM A572 GR. 50
GUSSET PLATES	ASTM A572 GR. 50
HANDHOLE FRAMES	ASTM A572 GR. 50
HANDHOLE COVERS	ASTM A1011
ANCHOR BOLTS	ASTM F1554 GR. 55
NUTS	ASTM A563 GR. DH
WASHERS	ASTM F436 TYPE 1
ANCHOR PLATE / TEMPLATE	ASTM A36
CONNECTION BOLTS	ASTM A325 OR A449
GALVANIZING	ASTM A123, A153, & F2329
PIPE	ASTM A53 GR. B OR ASTM A500 GR. B



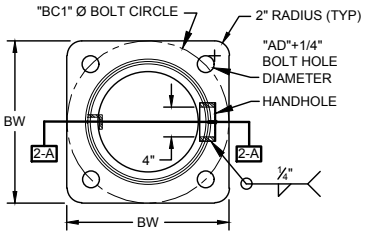
LUMINAIRE ARM CONNECTION DETAIL 2



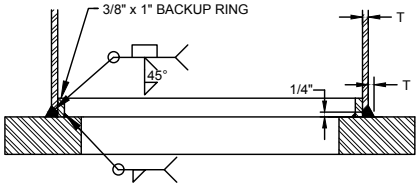
LUMINAIRE ARM CONNECTION DETAIL 3



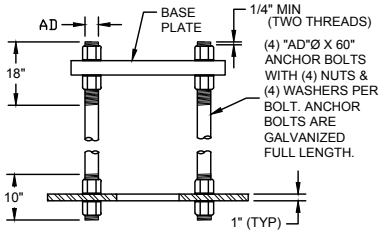
BASE DETAIL 2-A

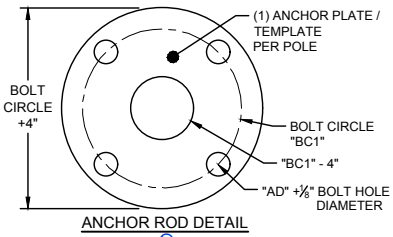


BASE DETAIL 2-B

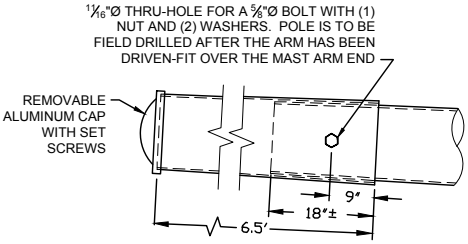


BASE WELD DETAIL
(MAIN SHAFT, MAST ARMS & LUMINAIRE)

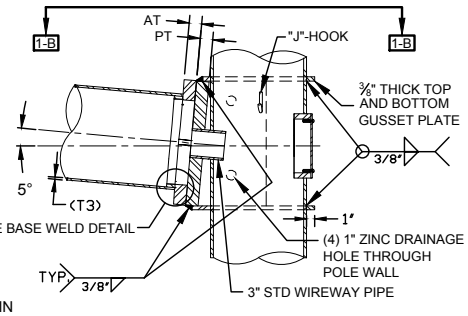




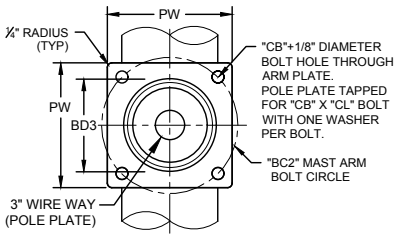
ANCHOR ROD DETAIL



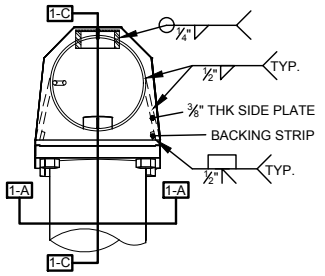
SLIP FIT MAST ARM EXTENSION DETAIL
(65' MA ONLY)



MAST ARM CONNECTION DETAIL 1-C



MAST ARM CONNECTION DETAIL 1-A



MAST ARM CONNECTION DETAIL 1-B

TRAFFIC SIGNAL SUPPORT GENERAL NOTES

- SIGNAL SUPPORTS SHALL BE DESIGNED AND FABRICATED IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 6TH EDITION, 2013 WITH THE INTERIM 2015 REVISIONS.
- ALL TRAFFIC SIGNAL SUPPORTS SHALL CONFORM TO THE DESIGN CRITERIA AND DETAILS SHOWN ON THESE DRAWINGS EXCEPT AS APPROVED BY THE ENGINEER.
- THE BASIC WIND SPEED (3-SECOND GUST) SHALL BE 95 MPH, GUST FACTOR G=1.14, Ir = 1.0 (50 YEAR RECURRENCE INTERVAL), FATIGUE CATEGORY II, NO GALLOPING, AND TRUCK SPEED = 55 MPH.
- POLE AND MAST ARMS SHALL BE ROUND IN CROSS SECTION. ROUND MAY BE 16 OR MORE SIDES WITH A MINIMUM INSIDE BEND RADIUS OF 4 TIMES THE POLE THICKNESS OR GREATER.
- DIFFERENT SHAPES SHALL NOT BE MIXED ON A PROJECT.
- TWO PLY AND FLUTED POLES OR ARMS ARE NOT PERMITTED.
- POLE AND MAST ARMS SHALL HAVE TAPER OF 0.14 IN/FT.
- LONGITUDINAL SEAM WELD IS 60% MIN. PENETRATION EXCEPT FOR 6 INCHES FROM END OF SECTION AT FLANGE, BASE PLATE AND SLIP JOINT IS 100% PENETRATION.
- SILICON CONTENT OF THE BASE METAL SHALL BE 0.0% TO 0.06% OR 0.15% TO 0.25%.
- HUBS SHALL BE 3000# THREAD FORGED STEEL.
- ALL STRUCTURAL STEEL INCLUDING FASTENERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
- POLES AND MAST ARMS SHALL BE OF ONE PIECE CONSTRUCTION, 5' SLIP-FIT CONNECTIONS ARE PERMITTED FOR 65' MAST ARMS ONLY.
- TIGHTENING OF BOLTS WITH TAPPED HOLES SHALL CONFORM TO THE OREGON DEPARTMENT OF TRANSPORTATION'S 2018 STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 962.46(j)(2).
- ALL FASTENERS SHALL BE STAINLESS STEEL, UNLESS OTHERWISE SPECIFIED.
- POLE AND MAST ARM CAPS SHALL BE CAST ALUMINUM.
- PREINSTALLED "J"-HOOKS FOR WIRE STRAIN RELIEF AT ALL ACCESS ENTRANCES FOR LUMINAIRE AND SIGNAL ARMS.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

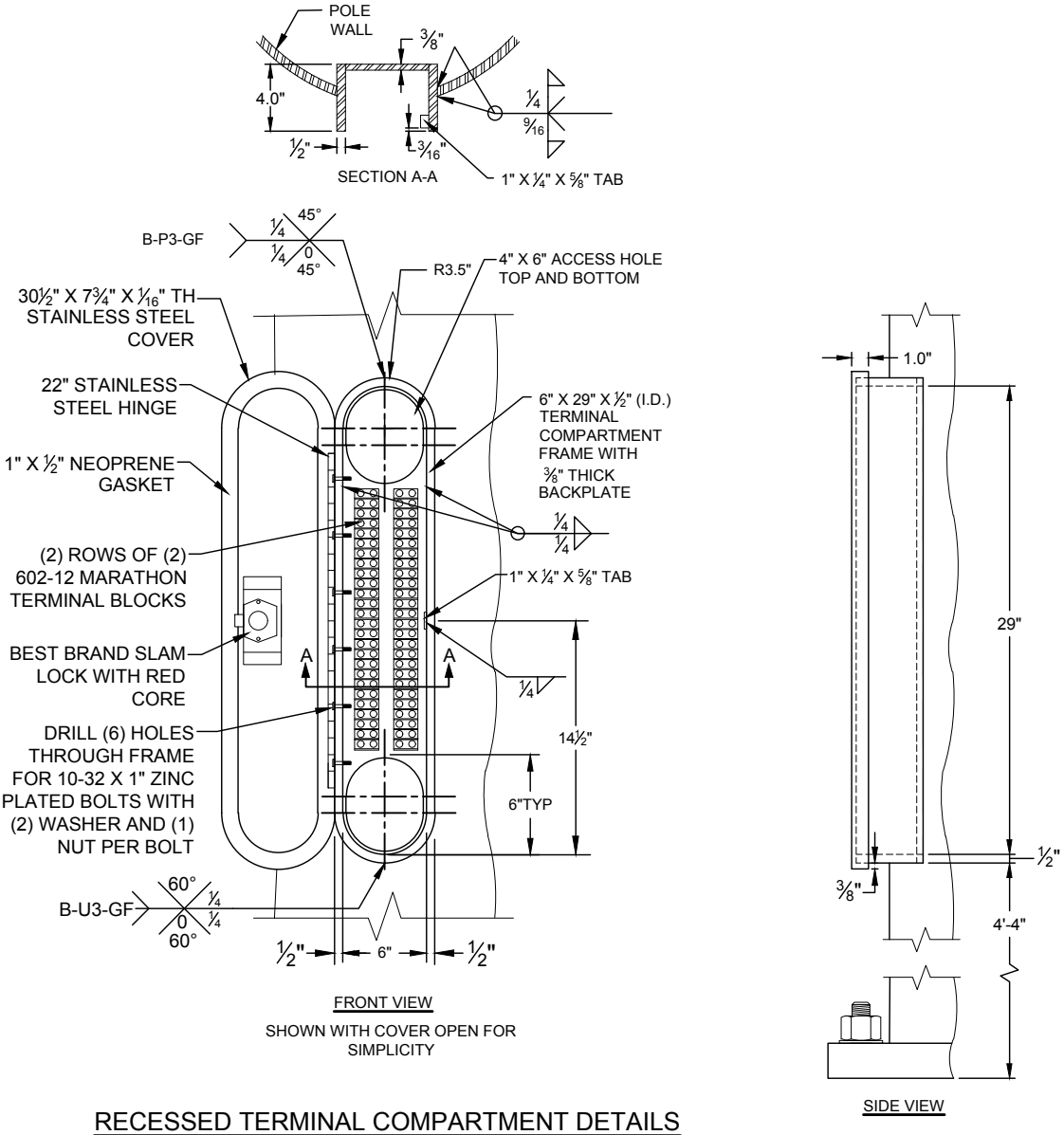
STANDARD PLAN

TRAFFIC SIGNAL MAST POLE FABRICATION DETAILS

APPROVED	CITY ENGINEER	1/17/2020	DRAWN BY	JAK	1/2020	NO.756
		DATE	CHECKED BY	AAE	1/2020	

NOTES:

- ROUND AND SMOOTH ALL EDGES ALONG ELECTRICAL WAY.
- ALL FASTENERS SHALL BE STAINLESS STEEL.



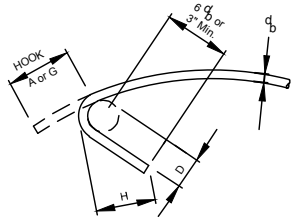
RECESSED TERMINAL COMPARTMENT DETAILS

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

TRAFFIC SIGNAL RECESSED TERMINAL COMPARTMENT DETAILS

APPROVED	CITY ENGINEER	1/17/2020	DRAWN BY	JAK	1/2020	**NO.757**
		DATE	CHECKED BY	AAE	1/2020	



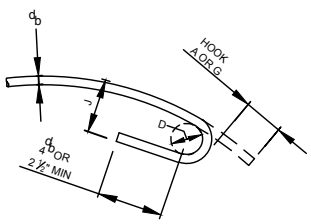
SEISMIC STIRRUP / TIE

BAR SIZE	135° SEISMIC HOOK		
	D	A or G	H*
#5	2 1/2"	5 1/2"	3 3/4"

*H DIMENSION IS MINIMUM

d_b= BAR DIAMETER

D = FINISHED INSIDE BEND DIAMETER



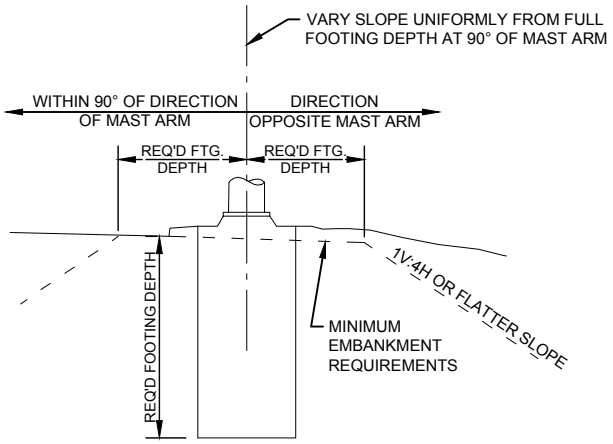
STANDARD STIRRUP / TIE

BAR SIZE	180° STANDARD HOOK		
	D	A or G	J
#5	3 3/4"	7"	5"

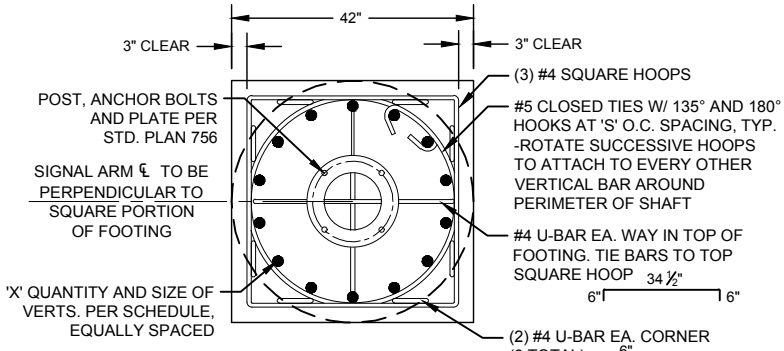
d_b = BAR DIAMETER

D = FINISHED INSIDE BEND DIAMETER

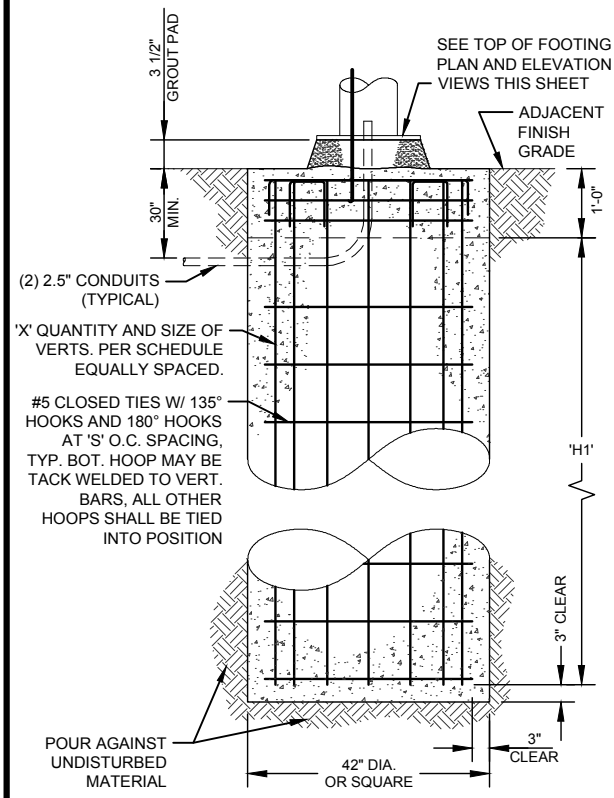
NOTE:
135 DEGREE AND 180 DEGREE HOOKS ARE TO BE DETAILS AS RECOMMENDED PER THE REQUIREMENTS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).



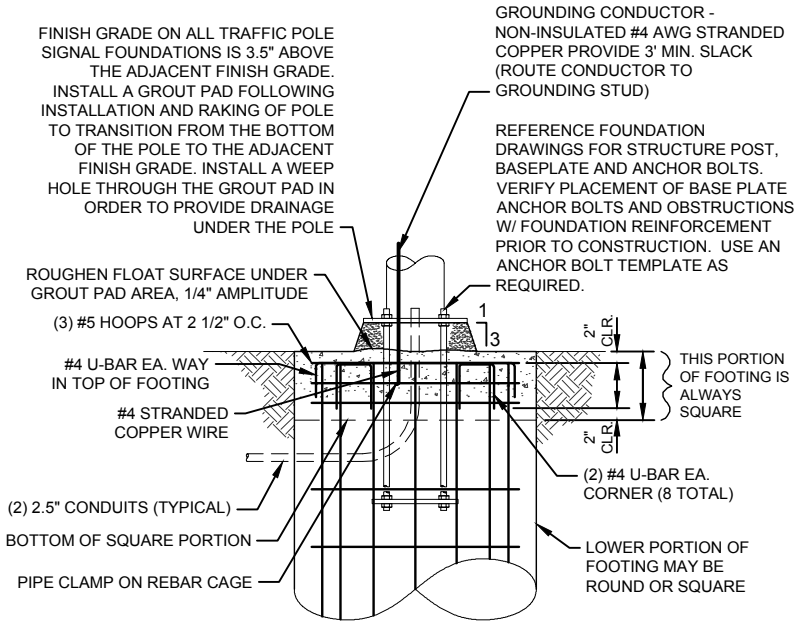
MINIMUM EMBANKMENT REQUIREMENTS



PLAN - TOP OF FOOTING



FOOTING ELEVATION



ELEVATION TOP OF FOOTING

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TRAFFIC SIGNAL SUPPORT FOUNDATION DETAILS

APPROVED		1/17/2020	DRAWN BY	JAK	1/2020	**NO.758**
	CITY ENGINEER	DATE	CHECKED BY	AAE	1/2020	

FOUNDATION SCHEDULE					
POLE No.	SOIL TYPE	DEPTH 'H1'*	VERT. BARS 'X'	#5 CLOSED TIES	
				MAX. 'S' O.C. SPACING WITHIN 'H1'	MIN. NUMBER OF TIES
TS1 / TSL1	1	11'-6"	(14) #9 BARS	12"	12
TS1 / TSL1	2	8'-6"	(14) #9 BARS	12"	9
TS1 / TSL1	3	8'-0"	(14) #9 BARS	12"	9
TS2 / TSL2	1	11'-6"	(14) #9 BARS	12"	12
TS2 / TSL2	2	8'-6"	(14) #9 BARS	12"	9
TS2 / TSL2	3	8'-0"	(14) #9 BARS	12"	9
TS3 / TSL3	1	15'-6"	(14) #9 BARS	8"	24
TS3 / TSL3	2	12'-6"	(14) #9 BARS	8"	19
TS3 / TSL3	3	9'-0"	(14) #9 BARS	8"	14
TS4 / TSL4	1	21'-0"	(14) #9 BARS	6"	43
TS4 / TSL4	2	17'-0"	(14) #9 BARS	6"	35
TS4 / TSL4	3	11'-6"	(14) #9 BARS	6"	24

*H1 DEPTH ASSUMES NATIVE/UNDISTURBED SOILS. EXTEND FOUNDATION DEPTH AS NECESSARY FOR DISTURBED SOILS. TOTAL FOUNDATION DEPTH SHALL BE H1+1' PER STD. PLAN 758 (+ ANY ADDITIONAL DEPTH FOR DISTURBED SOILS).

NOTES:

1. MINIMUM CONCRETE COMPRESSIVE STRENGTH = 3000 PSI AT 28 DAYS. A CONCRETE MIX DESIGN SHALL BE FURNISHED BY THE CONTRACTOR FOR REVIEW AND VERIFICATION PRIOR TO CONSTRUCTION.
2. STEEL TO BE 60 KSI YIELD STRENGTH FOR ALL REINFORCING BARS
3. DESIGN LOADS (SERVICE):
   AXIAL: SEE SCHEDULE
   SHEAR: SEE SCHEDULE (RESULTANT)
   MOMENT: SEE SCHEDULE (RESULTANT)
   TORSION: SEE SCHEDULE
   (LOADS APPLIED AT TOP OF PILE)
4. DESIGN ASSUMPTIONS:
   - c = 0 = 0.01
   - E 50
   - L-PILE PLUS VERSION 5.0 UTILIZED FOR DESIGN
5. SIGNAL POLE FOUNDATION DRILLING IS TO BE MONITORED BY THE CITY OF SALEM TO VERIFY SUB-SURFACE CONDITIONS ENCOUNTERED MATCH DESIGN ASSUMPTIONS OR IF APPROPRIATE RECOMMEND CHANGES TO DESIGN OR CONSTRUCTION PROCEDURES, BASED ON SPECIFIC CONDITIONS AT DRILLING SITE. NO PERMANENT CASING IS ALLOWED TO REMAIN AROUND SHAFT.
6. POLE MANUFACTURER SHALL PROVIDE CALCULATIONS AND A RESULTS SUMMARY FOR BOTH STANDARD DESIGN LOADS AND PROJECT SPECIFIC LOADS.

	DESIGN LOADS					
POLE No.	AXIAL (lbs)	SHEAR-y (lbs)	SHEAR-z (lbs)	TORQUE (in-lbs)	MOMENT-y (in-lbs)	MOMENT-z (in-lbs)
TS1 / TSL1	2,736	996	4,980	422,400	1,088,400	417,600
TS2 / TSL2	3,360	1,020	5,100	699,600	1,138,800	694,800
TS3 / TSL3	4,632	1,200	6,000	1,425,600	1,410,000	1,107,600
TS4 / TSL4	6,300	1,380	6,840	1,936,800	1,644,000	1,624,800

GOOD SOIL TYPES	SOIL FRICTION ANGLE (ϕ)	SOIL UNIT WEIGHT ABOVE WATER TABLE (γ) (pcf)	SOIL UNIT WEIGHT BELOW WATER TABLE (γ) (pcf)	FRICTION CAPACITY (psf)	p-y MODULUS (K) (pci)	SOIL BEARING PRESSURE (PSF)
TYPE 1: MEDIUM STIFF TO STIFF CLAY, SILT OR SILT W/ SAND	28°	105	42	400	100	1500
TYPE 2: MEDIUM DENSE COHESIONLESS SOIL	34°	120	57	500	100	1500
TYPE 3: DENSE COHESIONLESS SOIL	36°	125	62	750	100	1500

1. SOIL PARAMETERS AND TYPES DESCRIBED ARE FOR "GOOD SOIL CONDITIONS" THAT INCLUDE:
   - MEDIUM STIFF TO STIFF CLAY, SILT, OR SILT WITH SAND (TYPE 1) - MEDIUM TO HIGH PLASTICITY CLAY WITH VARYING AMOUNTS OF SILT AND FINE SAND, OR SILT WITH VARYING AMOUNTS OF CLAY AND FINE SAND.
   - MEDIUM DENSE COHESIONLESS SOIL (TYPE 2) - FINE TO COARSE SAND OR GRAVEL, OR SANDY GRAVEL WITH VARYING AMOUNTS OF SILT OR CLAY.
   - DENSE COHESIONLESS SOIL (TYPE 3) - FINE TO COARSE GRAVEL THAT IS GENERALLY DENSELY CONSOLIDATED OR CEMENTED.
2. "POOR SOIL CONDITIONS" ARE SOFT, SOFT TO MEDIUM STIFF, OR LOOSE SOILS, OR SOILS WITH ORGANICS, OR SITES WHERE SIGNAL FOUNDATIONS WILL BE LOCATED WITHIN A HORIZONTAL DISTANCE LESS THAN THE MINIMUM EMBANKMENT REQUIREMENT. POOR SOIL OR NEAR-SLOPE CONDITIONS SHOULD BE DESIGNED BASED ON A SITE-SPECIFIC SOIL INVESTIGATION.

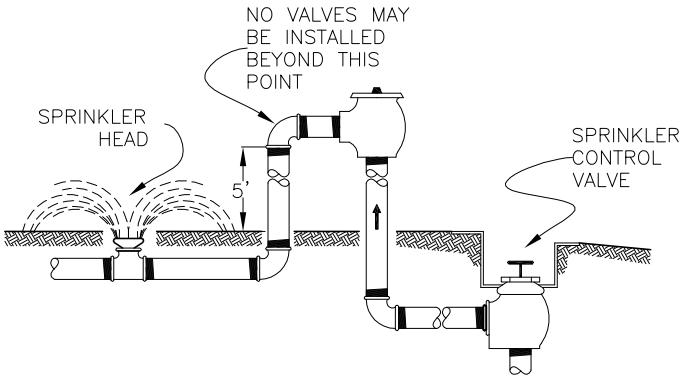
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

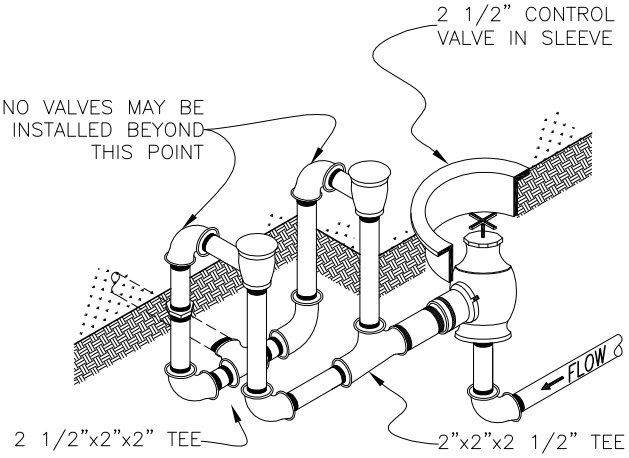
STANDARD PLAN
TRAFFIC SIGNAL SUPPORT DESIGN SPECIFICATIONS

APPROVED	CITY ENGINEER	1/17/2020	DATE	DRAWN BY	JAK	1/2020	NO.759
				CHECKED BY	AAE	1/2020	

ATMOSPHERIC VACUUM BREAKER TYPICAL INSTALLATIONS

(PROTECTION ON EACH SEPARATE ZONE)



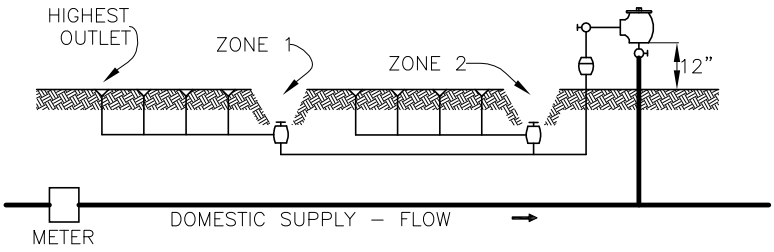


MANIFOLD OF TWO–2" REQUIRED TO SUPPLY 2 1/2" LAWN SPRINKLER LINES.

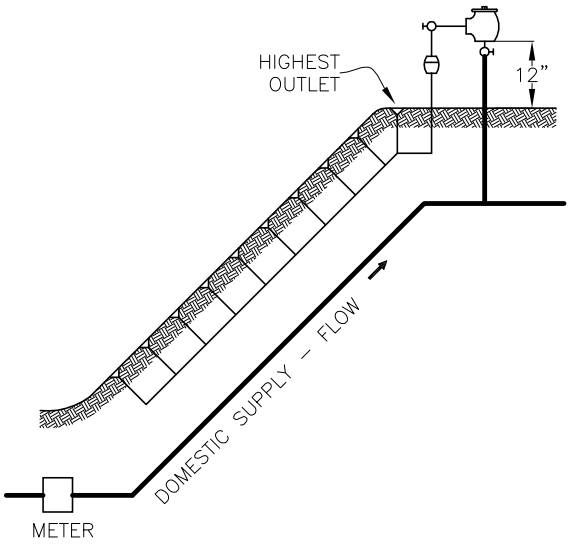
PRESSURE TYPE VACUUM BREAKER TYPICAL INSTALLATIONS

(ONE PRESSURE TYPE VACUUM BREAKER USED TO PROTECT A MULTIPLE ZONE SYSTEM)
DEVICE MUST BE TESTED BY A STATE CERTIFIED TESTER EVERY 12 MONTHS WHEN INSTALLED OR REPAIRED

PROTECTING DOMESTIC SYSTEM FROM POSSIBLE BACK FLOW IN FLAT TERRAIN.



PROTECTING DOMESTIC SYSTEM FROM POSSIBLE BACK FLOW IN HILLY TERRAIN.



IMPORTANT

DEVICE MUST BE TYPE APPROVED BY THE OREGON STATE HEALTH DEPT.

BOTH ATMOSPHERIC AND PRESSURE TYPE VACUUM BREAKERS MUST BE INSTALLED IN A POSITION ABOVE THE HIGHEST OUTLET BEING SERVED IN ORDER TO PREVENT BACK SIPHONAGE. BREAKERS SHOULD NOT BE INSTALLED IN A PIT OR VAULT WHERE THEY MAY BECOME FLOODED. APPROVED TYPE REDUCED PRESSURE PRINCIPLE OR DOUBLE CHECK ASSEMBLIES MAYBE USED UNDER CERTAIN CONDITIONS WHERE IT IS NOT POSSIBLE TO INSTALL VACUUM BREAKERS ABOVE THE POINT OF HIGHEST USE.

THESE DEVICES (VACUUM BREAKERS) ARE NOT APPROVED FOR SYSTEMS USING CHEMICAL OR PRODUCT INJECTION OR MIXING SYSTEMS.

CONTRACT CITY UTILITY INSPECTOR, P.W. WATER DEPT. FOR ADDITIONAL INFORMATION OR APPROVAL OF INSTALLATIONS.

Approved Karl O. Gerig — City Engineer — 10–84 — Date

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

IRRIGATION SYSTEM
BACK FLOW PROTECTION

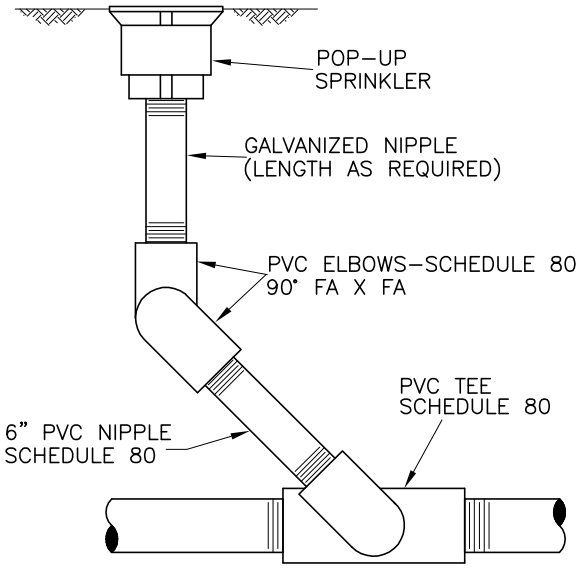
No.	Description	Date	By	Appr

REVISION

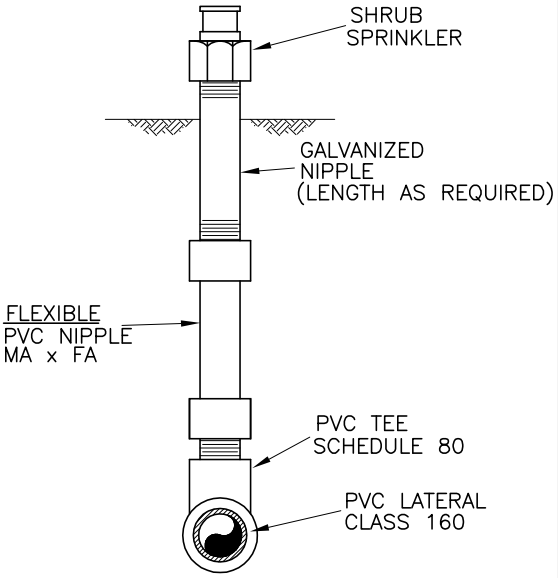
DRAWN BY JHC

CHECKED BY KG

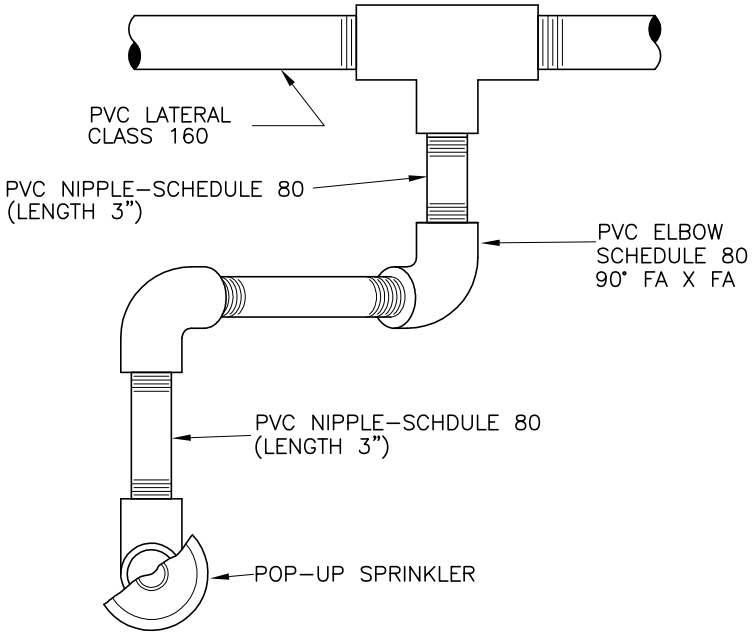
NO.801



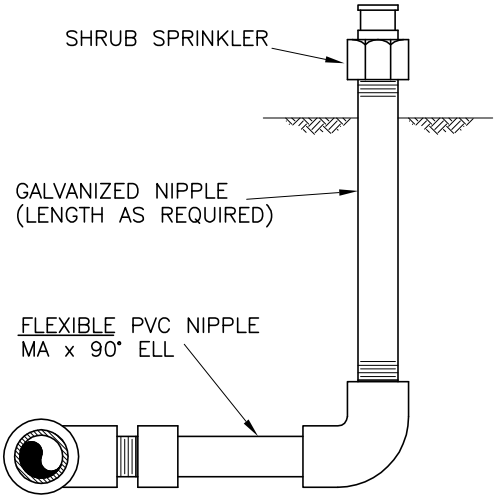
SIDE VIEW



END VIEW



TOP VIEW



END VIEW

FLEXIBLE NIPPLE ASSEMBLY

TO BE USED IN PLACE OF A SWING JOINT ASSEMBLY WHEN SPECIFIED

NOTES:

1. ALL PVC NIPPLES SHALL BE THREADED TYPE.
2. USE TEFLON TAPE ON ALL THREADED CONNECTIONS.
3. ON SOME APPLICATIONS NIPPLE WITH ELBOW ARRANGEMENT MAY BE REPLACED WITH PVC ELBOW HAVING MA X FA THREADS.

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

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

SWING JOINT RISER ASSEMBLY

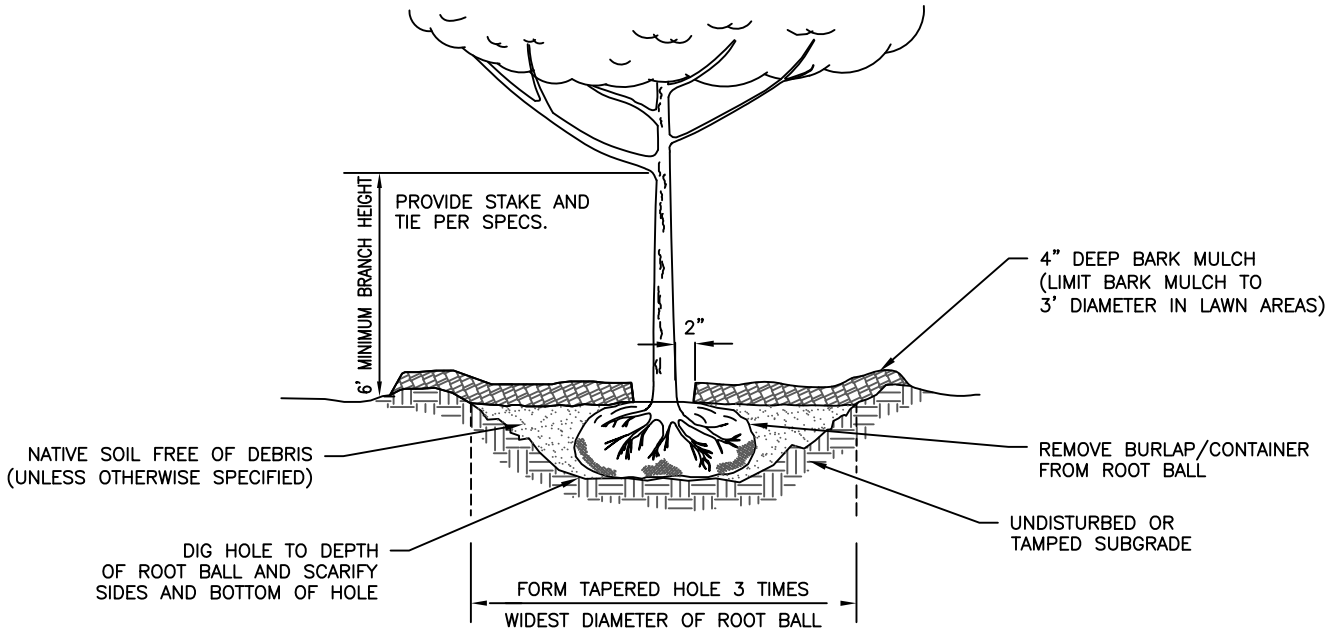
DRAWN BY GS

CHECKED BY D.W.

NO.802

No.	Description	Date	By	Appr
	CONVERT TO CAD DWG.			

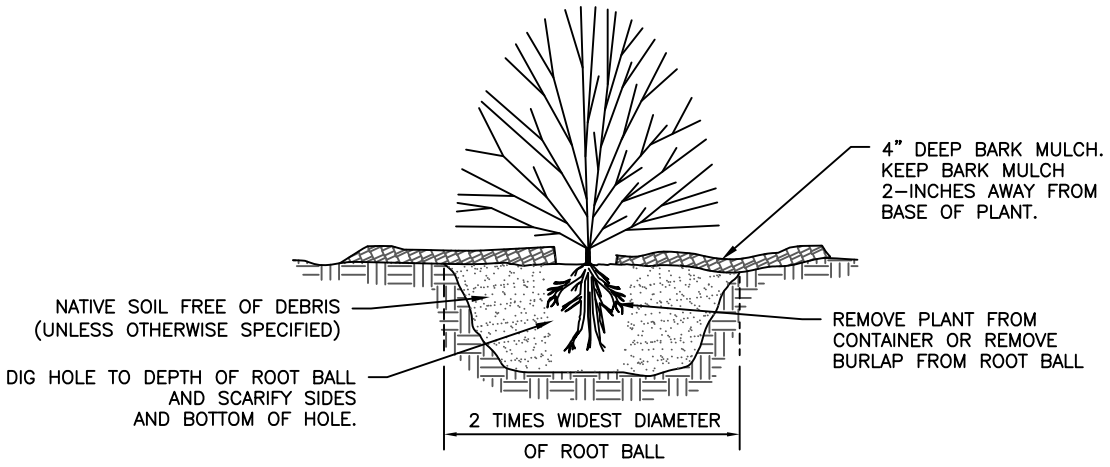
REVISION



TREE PLANTING DETAIL

NOT TO SCALE

NOTE:
FORM A 3' DIAMETER SAUCER OR DEPRESSED AREA AROUND TRUNK. UNDER NO CONDITIONS SHOULD FILL OR MULCH BE PLACED IN CONTACT WITH TRUNK OR TOP OF BALL BE EXPOSED



SHRUB AND GROUND COVER PLANTING DETAIL

NOT TO SCALE

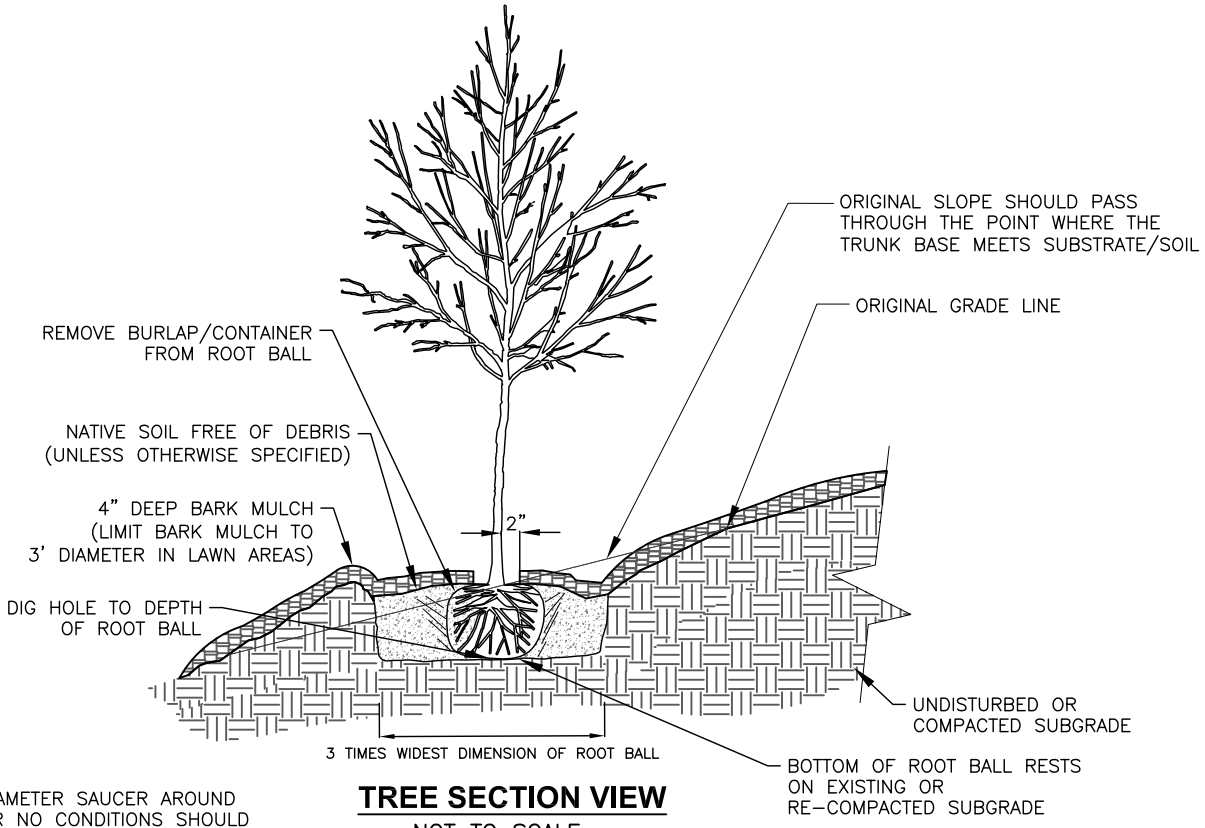
NOTE:
FORM A 3' DIAMETER SAUCER OR DEPRESSED AREA AROUND TRUNK. UNDER NO CONDITIONS SHOULD FILL OR MULCH BE PLACED IN CONTACT WITH TRUNK OR TOP OF BALL BE EXPOSED

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TREE-SHRUB PLANTING DETAIL

CHANGES
CHANGED NOTE ABOUT PLANTING HOLE DIAMETER.
DELETED NOTE ABOUT POOR DRAINAGE. ADD 2" SPACE BETWEEN PLANT AND BARK MULCH.
BARK MULCH DEPTH INCREASED TO 4", CHANGE "PLANTING MIXTURE" TO "NATIVE SOIL".

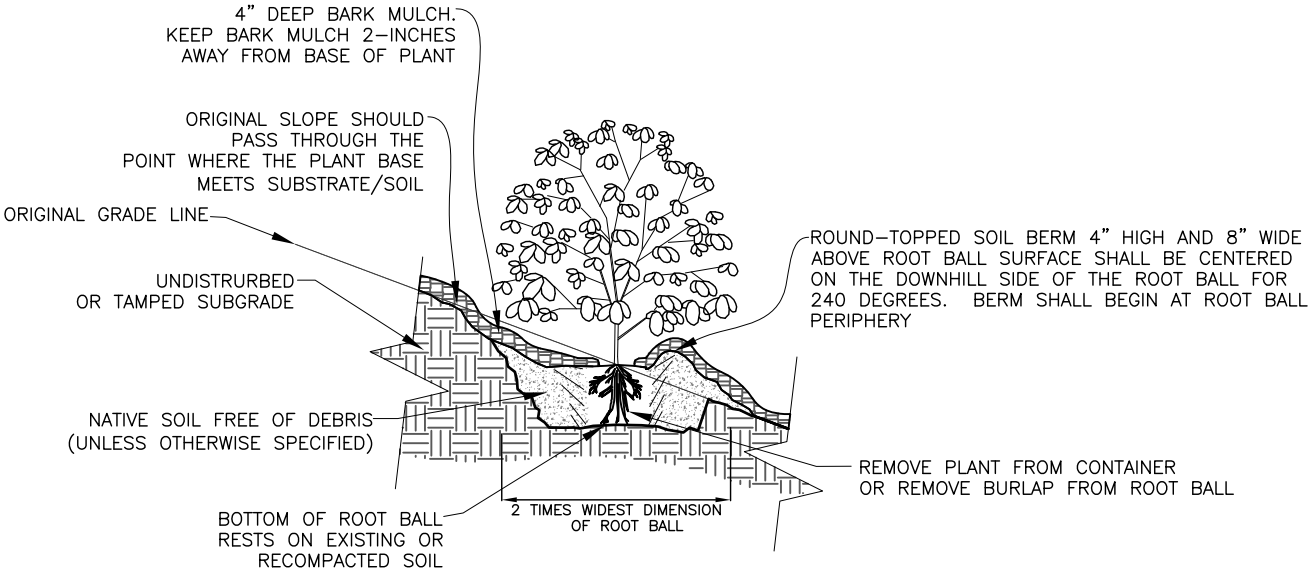
APPROVED	James L Sprent	5/5/2017	DRAWN BY		ALT	11/2016	NO.803
	CITY ENGINEER	DATE	CHECKED BY		KLR	11/2016	



NOTE:
FORM A 3' DIAMETER SAUCER AROUND TRUNK. UNDER NO CONDITIONS SHOULD FILL OR MULCH BE PLACED IN CONTACT WITH TRUNK OR TOP OF BALL BE EXPOSED.

TREE SECTION VIEW

NOT TO SCALE



SHRUB AND GROUND COVER SECTION VIEW

NOT TO SCALE

NOTES:
1. SHRUBS SHALL BE OF QUALITY AS PRESCRIBED IN THE SPECIFICATIONS.
2. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS RELATED TO THIS DETAIL.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

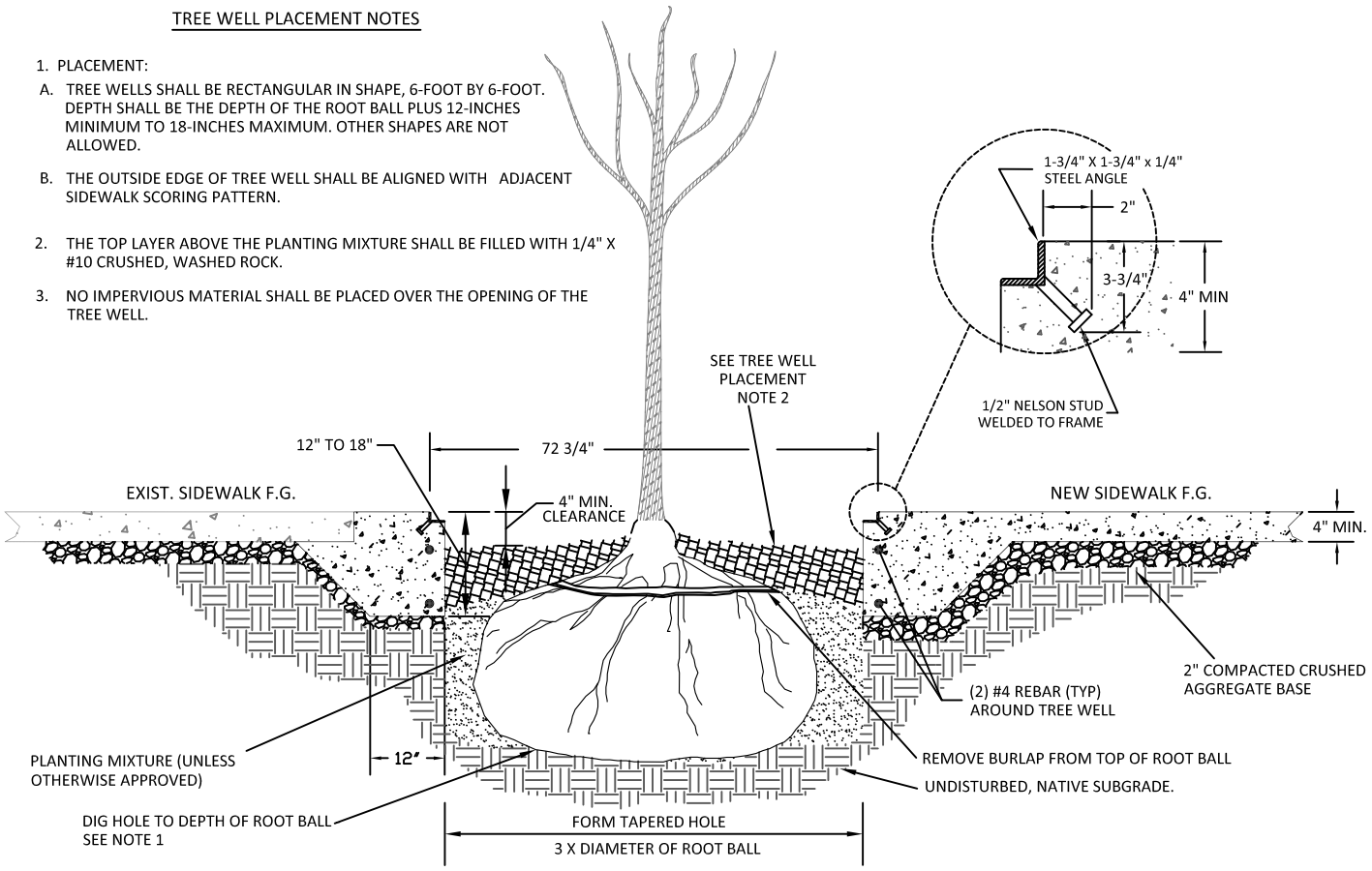
STANDARD PLAN
TREE AND SHRUB PLANTING DETAIL ON SLOPE
5% (20:1) TO 50% (2:1)

CHANGES	
	NEW DRAWING

APPROVED	James L Sonnet	5/5/2017	DRAWN BY	ALT	11/2016	**NO.809**
	CITY ENGINEER	DATE	CHECKED BY	KLR	11/2016	

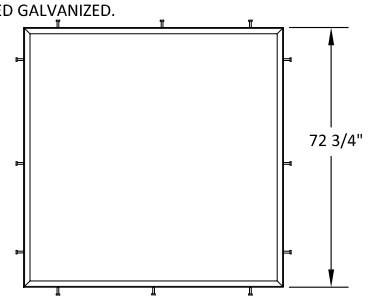
TREE WELL PLACEMENT NOTES

1. PLACEMENT:
   A. TREE WELLS SHALL BE RECTANGULAR IN SHAPE, 6-FOOT BY 6-FOOT. DEPTH SHALL BE THE DEPTH OF THE ROOT BALL PLUS 12-INCHES MINIMUM TO 18-INCHES MAXIMUM. OTHER SHAPES ARE NOT ALLOWED.
   B. THE OUTSIDE EDGE OF TREE WELL SHALL BE ALIGNED WITH ADJACENT SIDEWALK SCORING PATTERN.
2. THE TOP LAYER ABOVE THE PLANTING MIXTURE SHALL BE FILLED WITH 1/4" X #10 CRUSHED, WASHED ROCK.
3. NO IMPERVIOUS MATERIAL SHALL BE PLACED OVER THE OPENING OF THE TREE WELL.



TREE GRATE FRAME NOTES

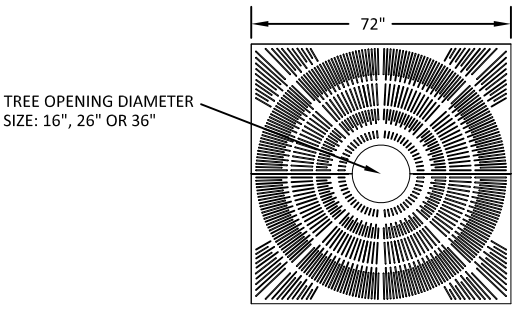
1. IRONSMITH TREE GRATE FRAME MODEL 7200F OR APPROVED EQUAL SQUARE TREE GRATE FRAME WITH STANDARD CONCRETE ANCHORS.
2. FRAME JIG WELDED FROM 1-3/4" x1-3/4" x 1/4" STEEL ANGLE PER ASTM A36. ANCHORS 1/2" NELSON.
3. ANCHORS MACHINE WELDED TO FRAME. FRAME TO BE HOT DIPPED GALVANIZED.



TREE WELL GRATE FRAME DETAIL, N.T.S.

TREE GRATE NOTES

1. IRONSMITH STARBURST TREE GRATE MODEL 7206-2 OR APPROVED EQUAL.
2. SLOT WIDTH IS 3/8" MAXIMUM, MEETS ADA COMPLIANCE.
3. GRATE CAST FROM GRAY IRON. STEEL ANGLE FRAME REQUIRED, SEE TREE WELL FRAME DETAIL.
4. OUTER FRAME DIMENSION IS 3/4" ± 1/8" GREATER THAN GRATE.

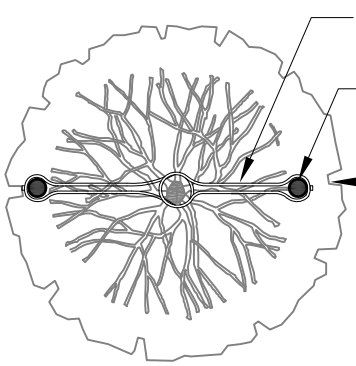


TREE WELL GRATE DETAIL, N.T.S.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

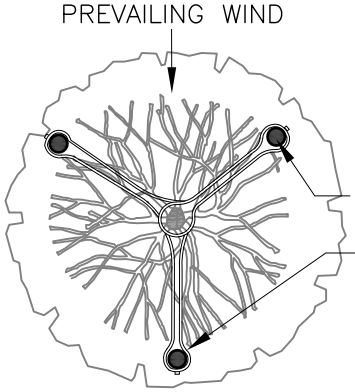
STANDARD PLAN
STREETSCAPE TREE PLANTING DETAILS

APPROVED	CITY ENGINEER	1/1/14	DATE	DRAWN BY	ALT	08/2013	**NO. 810**
				CHECKED BY	CJS	08/2013	



PLAN VIEW
TWO STAKES
NOT TO SCALE

SECTION VIEW
NOT TO SCALE



PLAN VIEW
THREE STAKES
NOT TO SCALE

CHANGES
NEW DRAWING

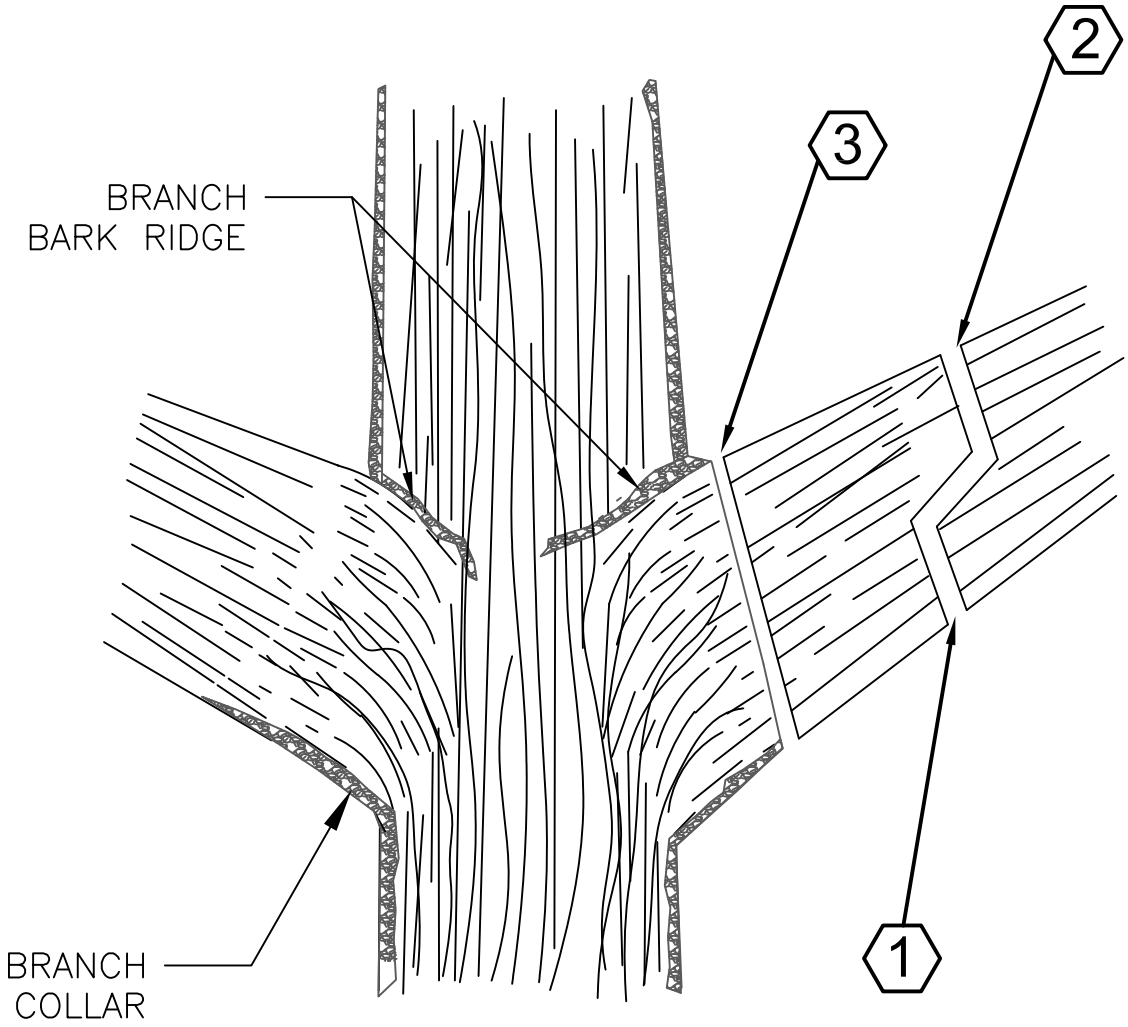
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

TREE STAKING - DOUGLAS FIR

TWO STAKES AND THREE STAKES

APPROVED	James L. Sprint	5/5/2017	DRAWN BY		ALT	10/2016	NO.812
	CITY ENGINEER	DATE	CHECKED BY		KLR	10/2016	



NOTES:

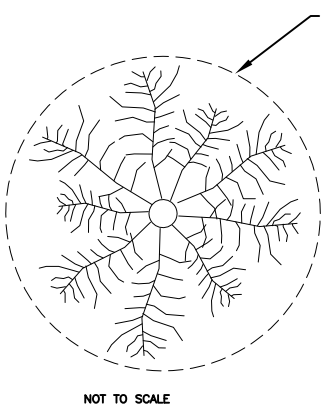
1. MAKE A PARTIAL CUT FROM BENEATH, AT A POINT SEVERAL INCHES AWAY FROM THE TRUNK.
2. MAKE A SECOND CUT FROM ABOVE SEVERAL INCHES OUT FROM THE FIRST CUT, TO ALLOW THE LIMB TO FALL SAFELY.
3. COMPLETE THE JOB WITH A FINAL CUT JUST OUTSIDE THE BRANCH COLLAR, THE RAISED AREA THAT SURROUNDS THE BRANCH WHERE IT JOINS THE TRUNK.
4. CLIMBING AND PRUNING PRACTICES SHALL NOT INJURE THE TREE EXCEPT FOR THE PRUNING CUTS. EQUIPMENT THAT WILL DAMAGE THE BARK AND CAMBRIUM LAYER SHALL NOT BE USED ON OR IN ANY TREE.
5. SPIKES OR CLIMBING SPURS SHALL NOT BE USED FOR CLIMBING TREES DURING PRUNING OPERATIONS.

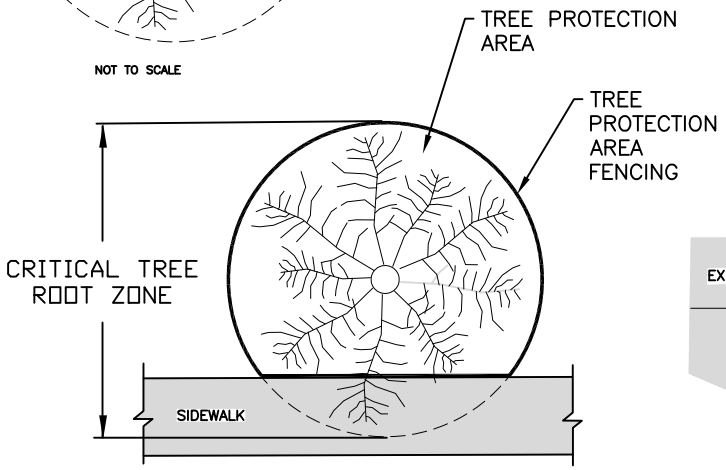
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TREE PRUNING METHOD

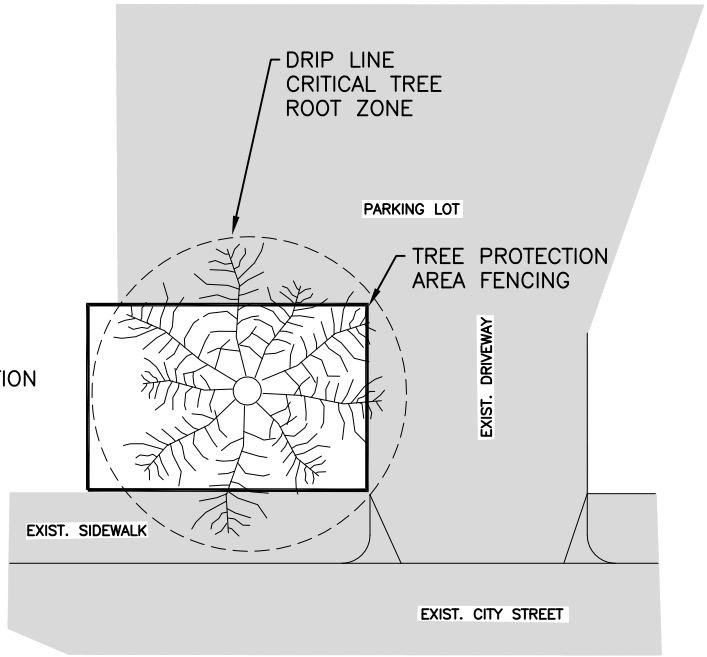
CHANGES	
	NEW DRAWING

APPROVED	James L Sprinkel	5/5/2017	DRAWN BY	ALT	10/2016	**NO.814**
	CITY ENGINEER	DATE	CHECKED BY	KLR	10/2016	

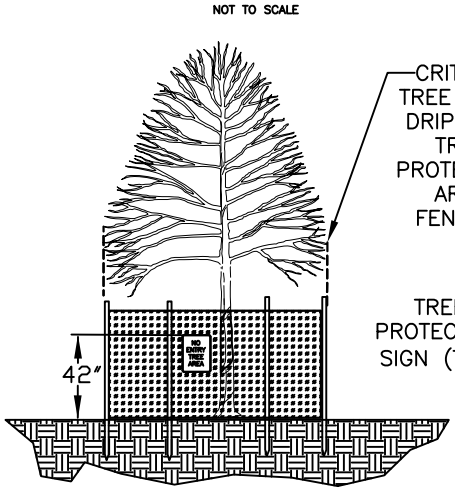




EXAMPLE 1
NOT TO SCALE



EXAMPLE 2
NOT TO SCALE



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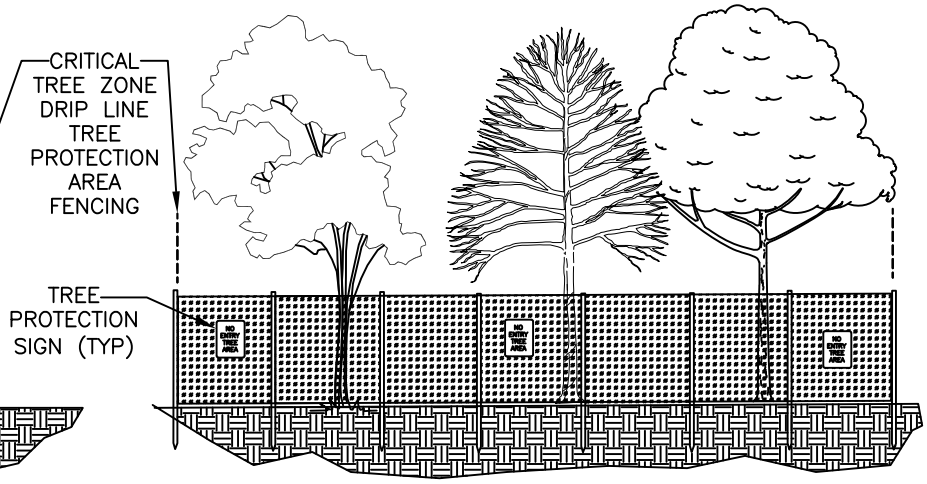


NOT TO SCALE

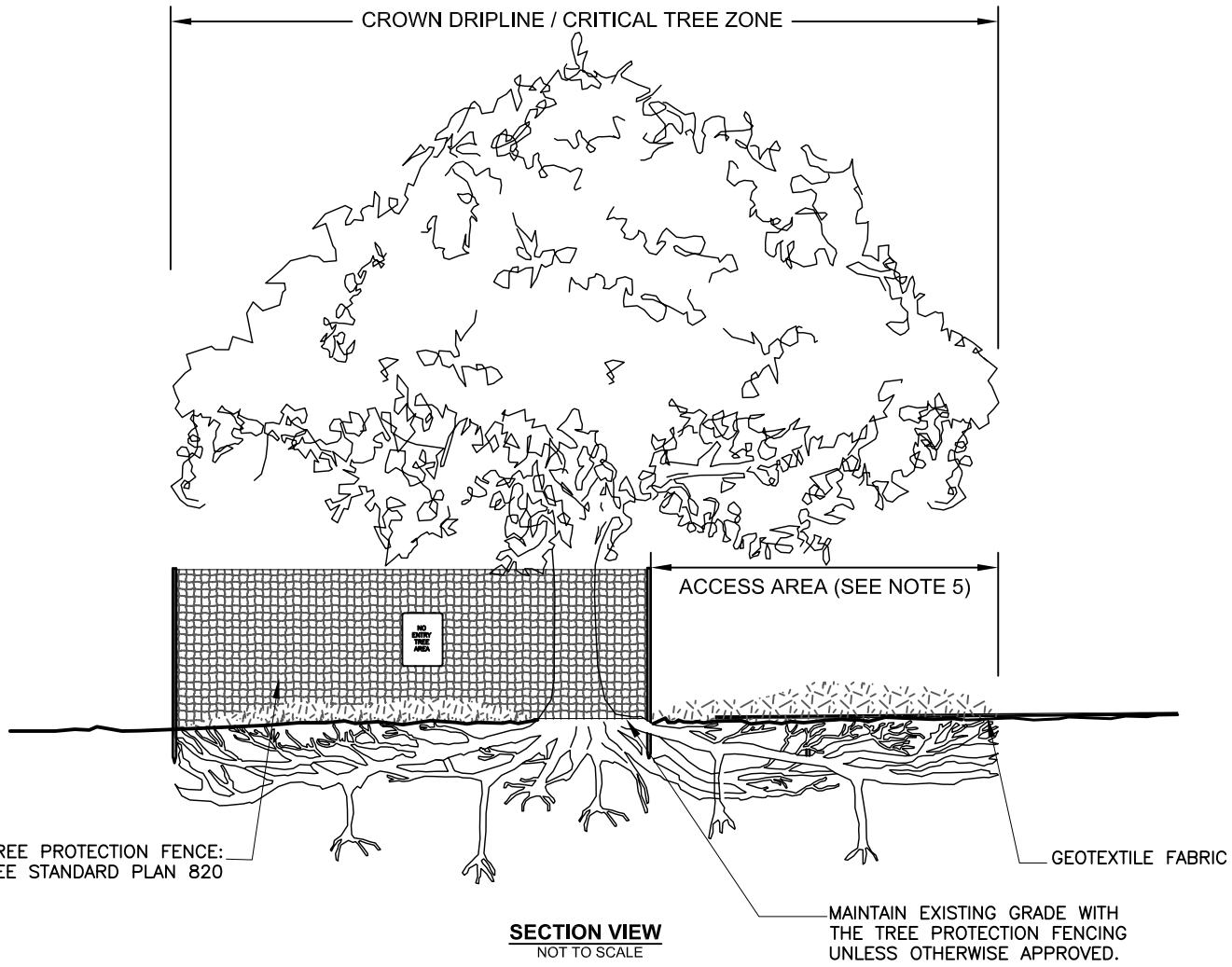
NOTES:

1. FENCE SHALL BE 4 TO 6 FT. IN HEIGHT AND SET AT TREE DRIP LINE, OR EDGE OF HARDSCAPE AS INDICATED ABOVE, OR AS DIRECTED BY CITY'S URBAN FORESTER.
2. FENCE MATERIALS SHALL CONSIST OF A 4 FT. HIGH, HIGH DENSITY POLYETHYLENE FENCING WITH 3.5" X 1.5" OPENINGS ORANGE COLOR, AND 1.25" X 6' "T" POSTS, OR APPROVED EQUAL.
3. POSTS SHALL BE SPACED 8 FEET APART AND SHALL BE DRIVEN TO SUCH A DEPTH TO SECURELY ANCHOR THE POSTS, TYPICALLY 18" DEEP.
4. FENCE SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF ADJACENT CONSTRUCTION ACTIVITIES. MOVEMENT OR REMOVAL OF FENCE REQUIRES APPROVAL BY CITY'S AUTHORIZED REPRESENTATIVE.
5. NO EQUIPMENT SHALL OPERATE INSIDE THE TREE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL UNLESS APPROVED BY THE URBAN FORESTER.
6. PLACE TREE PROTECTION SIGNS (STANDARD PLAN 822) SECURELY ON TREE PROTECTION FENCING WITH WIRE TIES OR PLASTIC "ZIP" TIES. SIGN SHALL BE PLACED 42 INCHES ABOVE GROUND ON 50 FT. SPACING, O.C. AND MUST BE CLEARLY VISIBLE TO CONTRACTORS AND PUBLIC.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TREE PROTECTION FENCING

APPROVED	James L. Sprenger	6/03/16	DRAWN BY	ALT	6/2016	NO.820
	CITY ENGINEER	DATE	CHECKED BY	KLR	6/2016	



SECTION VIEW
NOT TO SCALE

NOTES:

1. SEE SPECIFICATIONS FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.
2. IF THERE IS NO EXISTING IRRIGATION, SEE SPECIFICATIONS FOR WATERING REQUIREMENTS.
3. TREE PRUNING SHALL BE PREPARED BY A CERTIFIED ARBORIST.
4. NO EQUIPMENT SHALL OPERATE INSIDE THE TREE PROTECTION FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL, UNLESS OTHERWISE APPROVED BY THE URBAN FORESTER.
5. FOR ACCESS WITHIN THE CRITICAL TREE ZONE WHERE MATERIALS WILL BE STORED TEMPORARILY OR WHERE OPERATING OR MOVING EQUIPMENT IS PERMITTED, PLACE GEOTEXTILE FABRIC ON GROUND SURFACE WHERE THE ACCESS AREA IS LOCATED WITHIN THE CRITICAL TREE ZONE. PROVIDE ONE OF THE SURFACE PROTECTION MEASURES LISTED BELOW OVER THE GEOTEXTILE FABRIC:

   A. APPLY 6–INCHES TO 12–INCHES OF WOOD MULCH.
   B. PLACE 3/4–INCH PLYWOOD OR 4" x 4" WOODEN BEAMS OVER A MINIMUM 4–INCHES OF WOOD CHIP MULCH.
   C. APPLICATION OF 4–INCHES TO 6–INCHES OF 3" OPEN GRADED ROCK.
   D. PLACEMENT OF STEEL PLATES ON TOP OF A MINIMUM 4–INCH LAYER OF WOOD MULCH.
   E. PLACEMENT OF COMMERCIAL OR LOGGING ROAD MATS ON TOP OF A MINIMUM 4–INCH LAYER OF WOOD CHIP MULCH.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
MITIGATION MEASURES FOR WORK IN CRITICAL TREE AREA

APPROVED	James L. Sonnet	6/03/16	DRAWN BY		ALT	12/2015	**NO.821**
	CITY ENGINEER	DATE	CHECKED BY		KLR	12/2015	

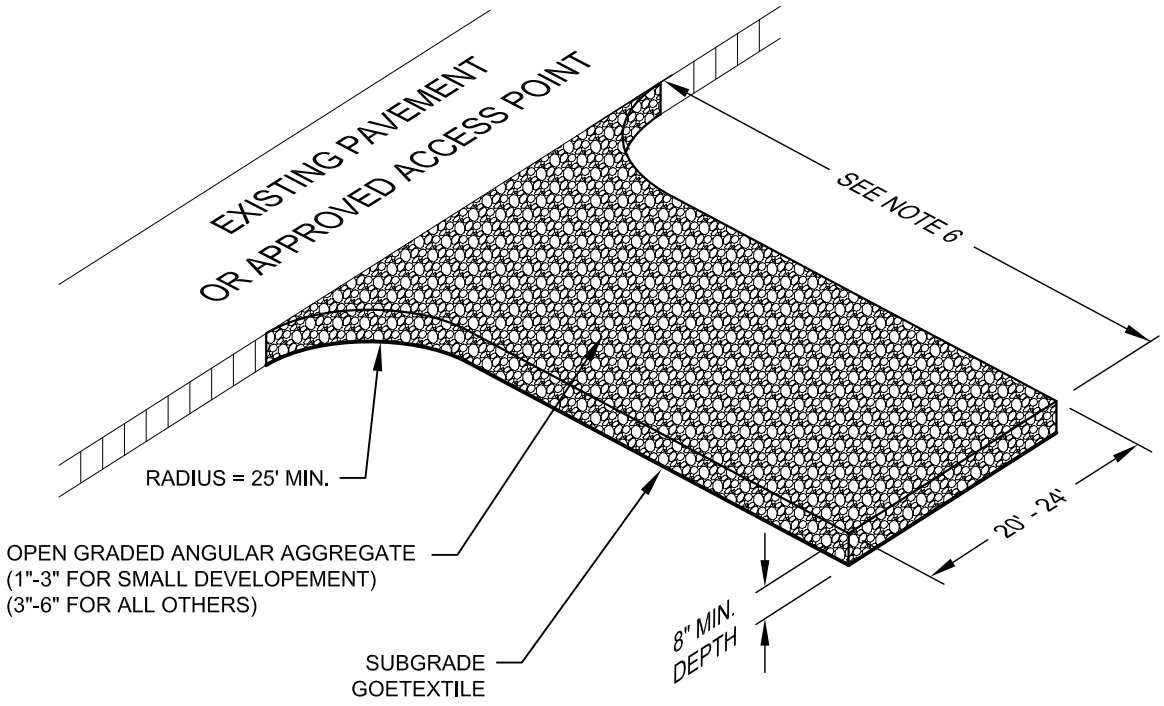
NOTES:

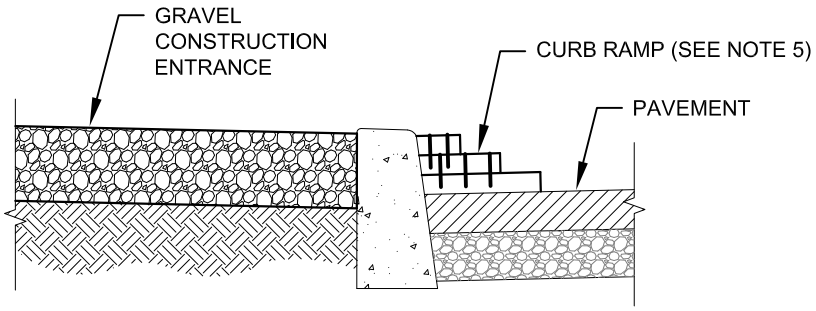
1. SIGN SHALL BE A MIN. OF 8 1/2" X 11" IN SIZE.
2. SIGN MAY BE LAMINATED IN PLASTIC OR PLACED ON ALUMINUM SHEETING (80 GAUGE).

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
TREE PROTECTION SIGN

APPROVED	James L. Sorret	6/03/16	DRAWN BY	ALT	4/2016	**NO.822**
	CITY ENGINEER	DATE	CHECKED BY	KLR	4/2016	





NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.

2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

4. WHERE RUNOFF CONTAINING SEDIMENT LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM.

5. WHEN THE CURB HAS BEEN REMOVED FOR A NEW DRIVEWAY, WOOD CURB RAMP ARE NOT NEEDED. ADJUST GRAVEL DEPTH AS NEEDED TO PROVIDE MINIMUM DEPTH SHOWN.

6. DIMENSIONS:

   SINGLE FAMILY = 20' LONG X 20' WIDE X 8" DEEP

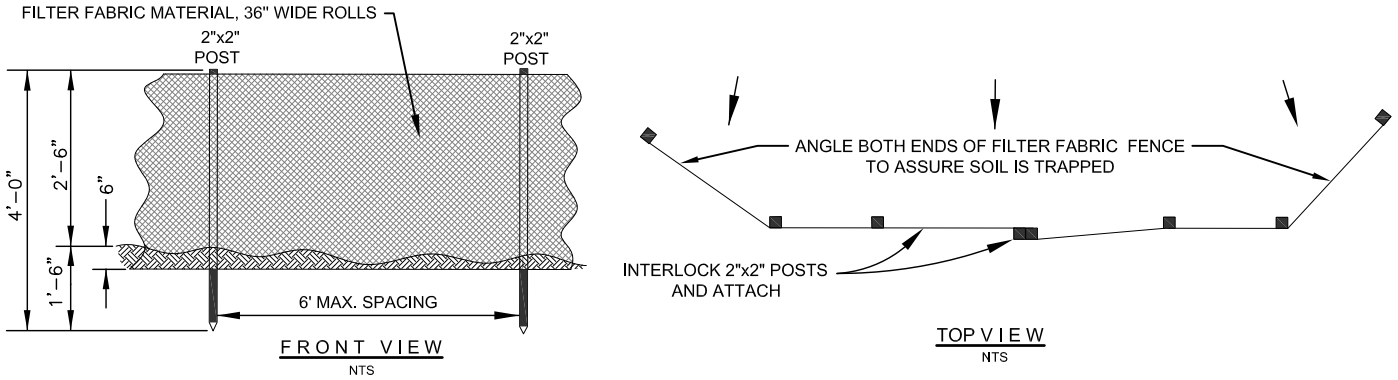
   COMMERCIAL = 50' LONG X 24' WIDE X 8" DEEP

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

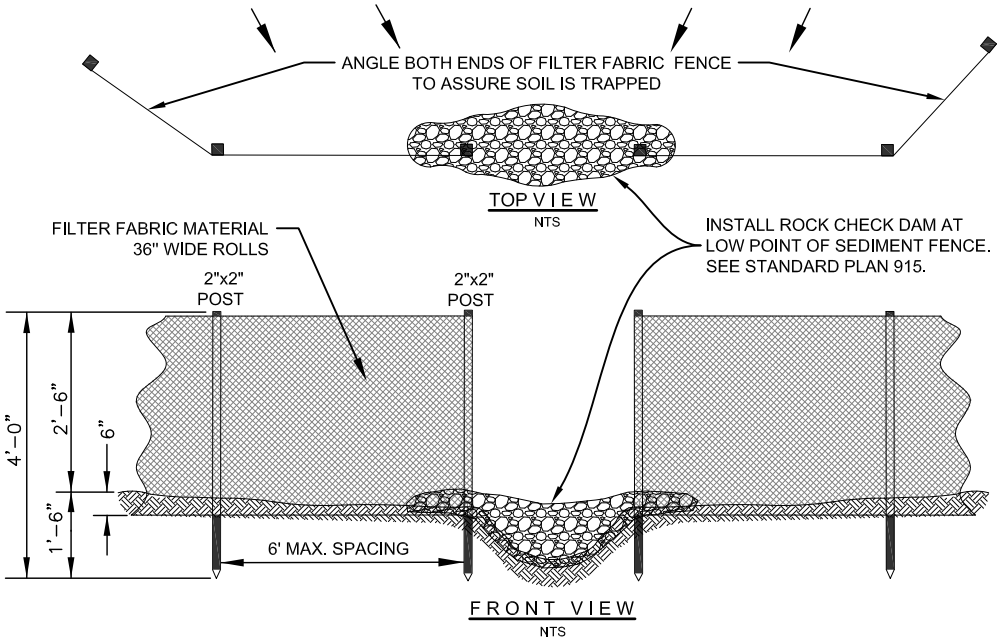
STANDARD PLAN

GRAVEL CONSTRUCTION ENTRANCE

APPROVED	James L Sonnet	3/10/14	DRAWN BY	DTN	1/2014	NO.901	
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014		



STANDARD SEDIMENT FENCE



SEDIMENT FENCE WITH ROCK CHECK DAM

NOTES:

1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST., WITH A MINIMUM 6-INCH OVERLAP. BOTH ENDS SHALL BE SECURELY FASTENED TO THE POST OR OVERLAPPED AS SHOWN.

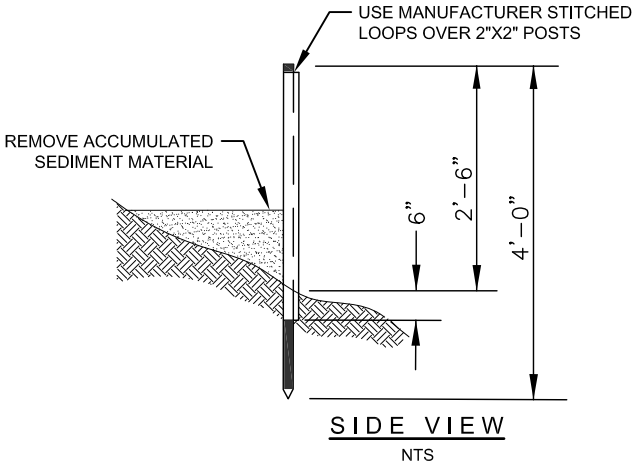
2. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN INTO THE THE GROUND A MINIMUM OF 18 INCHES.

3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6 INCHES. ALL EXCAVATED MATERIAL FROM THE FENCE INSTALLATION SHALL BE BACKFILLED AND COMPACTED ALONG THE ENTIRE UPHILL SIDE OF THE DISTURBED AREA

4. STANDARD HEAVY DUTY FILTER FABRIC FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2"X2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP-HILL SIDE OF THE SLOPED AREA.

5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED, STABILIZED, AND APPROVED BY THE CITY.

6. REMOVE ACCUMULATED SEDIMENT MATERIAL ONCE IT HAS REACHED WITHIN 18 INCHES OF THE TOP OF THE SEDIMENT FENCE.

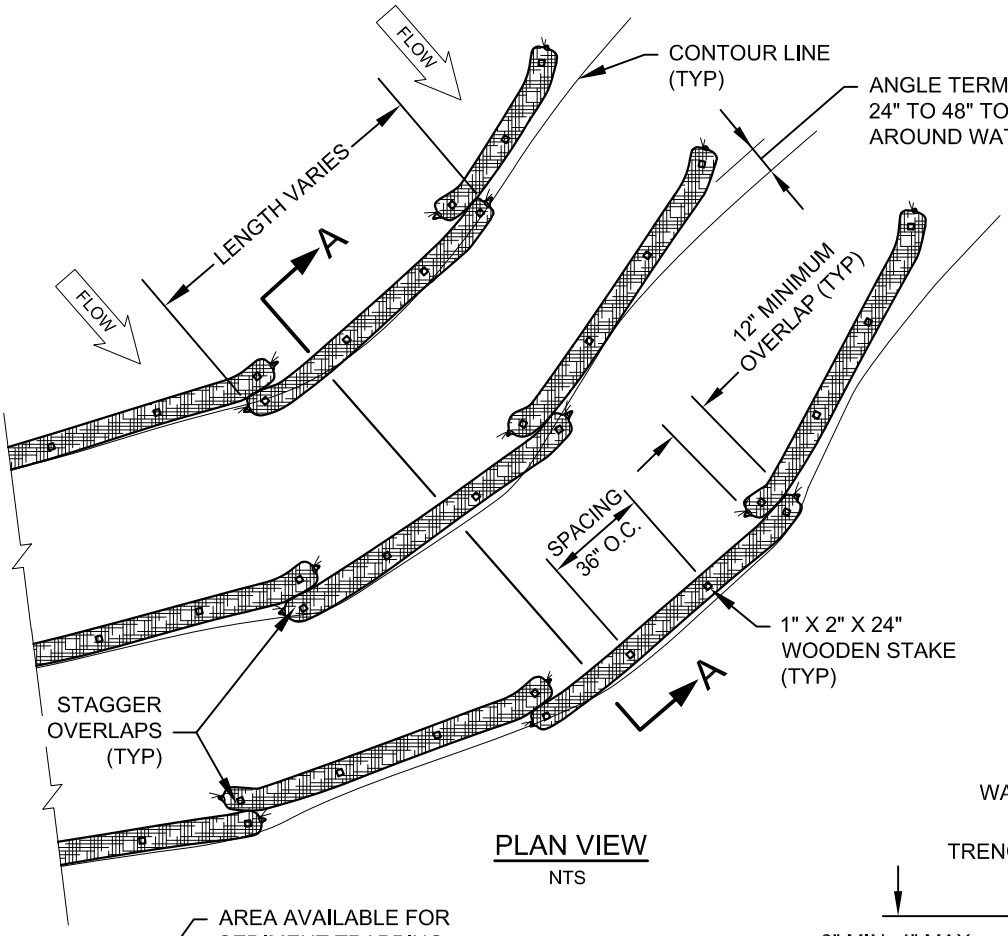


CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

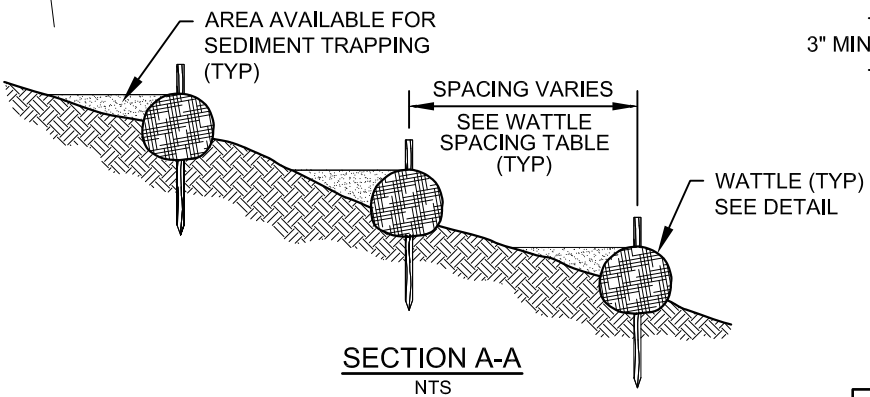
STANDARD PLAN

SEDIMENT FENCE

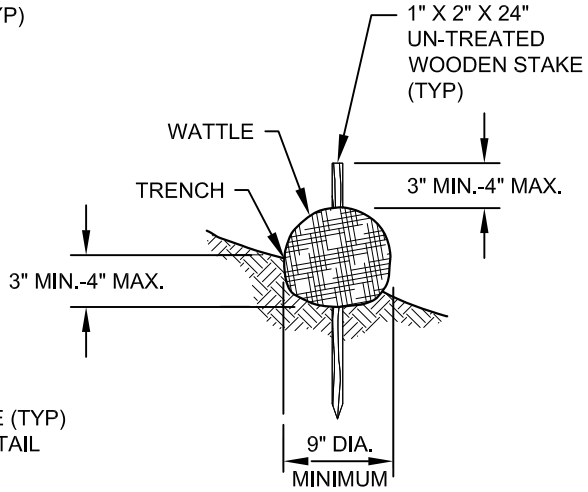
APPROVED	James L Sorrell	3/10/14	DRAWN BY	DTN	1/2014	**NO.902**
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



PLAN VIEW
NTS



SECTION A-A
NTS



WATTLE DETAIL
NTS

NOTES:

1. SECURELY KNOT EACH END OF WATTLE. OVERLAP ADJACENT WATTLE ENDS 12" BEHIND ONE ANOTHER AND SECURELY TIE TOGETHER.
2. COMPACT EXCAVATED SOIL AND TRENCHES TO PREVENT UNDERCUTTING. ADDITIONAL STAKING MAY BE NECESSARY TO PREVENT UNDERCUTTING.
3. INSTALL WATTLE PERPENDICULAR TO FLOW ALONG CONTOURS.
4. WATTLES SHALL BE INSPECTED REGULARLY, AND IMMEDIATELY AFTER A RAINFALL PRODUCES RUNOFF, TO ENSURE THEY REMAIN THOROUGHLY ENTRENCHED AND IN CONTACT WITH THE SOIL.

9" DIAMETER WATTLE SPACING TABLE

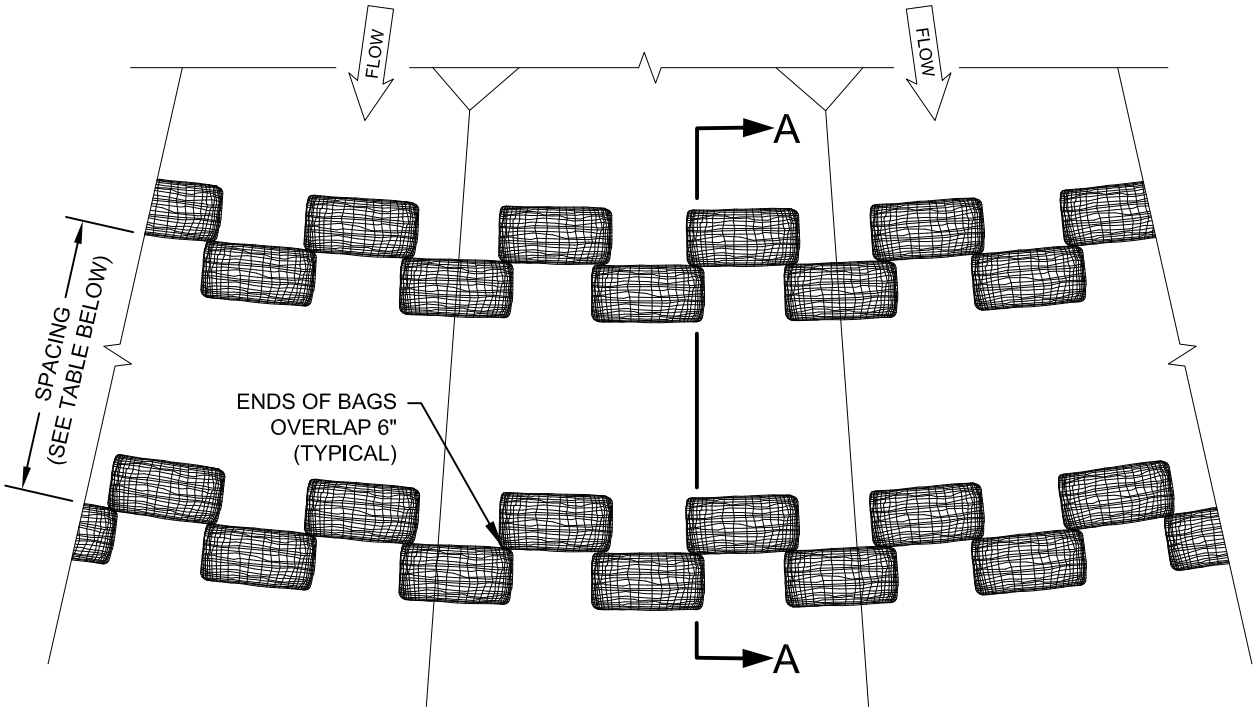
SLOPE	MAXIMUM SPACING
1H : 1V	10' - 0"
2H : 1V	20' - 0"
3H : 1V	30' - 0"
4H : 1V	40' - 0"

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

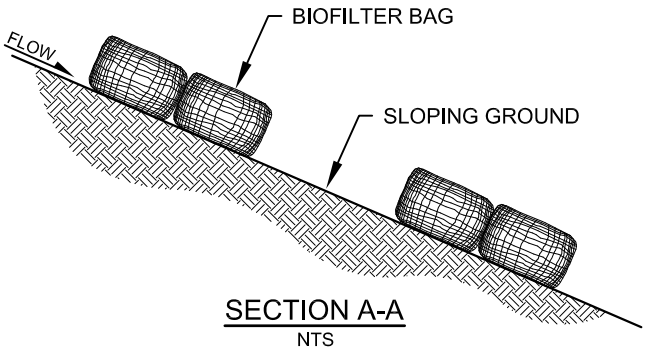
STANDARD PLAN

WATTLES OVERLAND FLOW

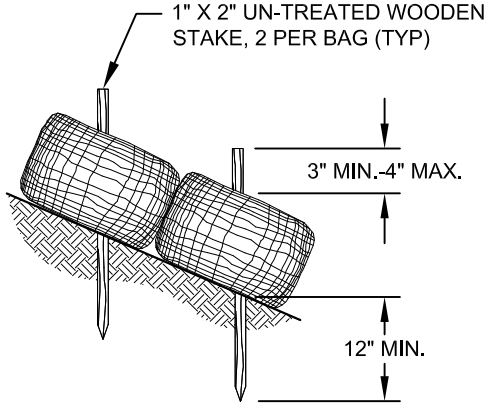
APPROVED	James L Sonnet	3/10/14	DRAWN BY	DTN	1/2014	NO.903
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



PLAN VIEW
NTS



SECTION A-A
NTS



STAKING DETAIL
NTS

NOTES:

1. COMPACT EXCAVATED SOIL TO PREVENT UNDERCUTTING. ADDITIONAL STAKING MAY BE NECESSARY TO PREVENT UNDERCUTTING.
2. INSTALL BIOFILTER BAGS PERPENDICULAR TO FLOW ALONG CONTOURS.
3. BIOFILTER BAGS SHALL BE INSPECTED REGULARLY, AND IMMEDIATELY AFTER A RAINFALL PRODUCES RUNOFF, TO ENSURE THEY REMAIN STABLE AND IN CONTACT WITH THE SOIL.

BIOFILTER BAG SPACING TABLE

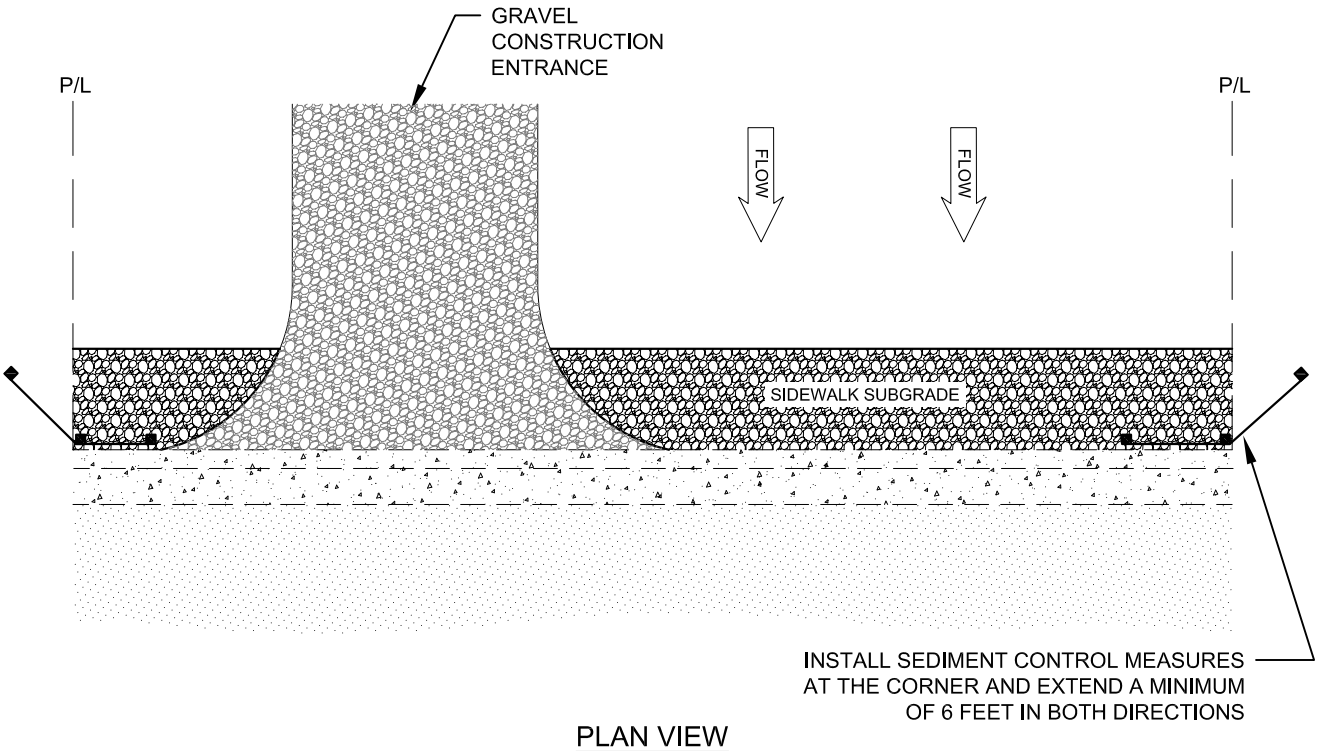
SLOPE	MAXIMUM SPACING
1H : 1V	10' - 0"
2H : 1V	20' - 0"
3H : 1V	30' - 0"
4H : 1V	40' - 0"

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

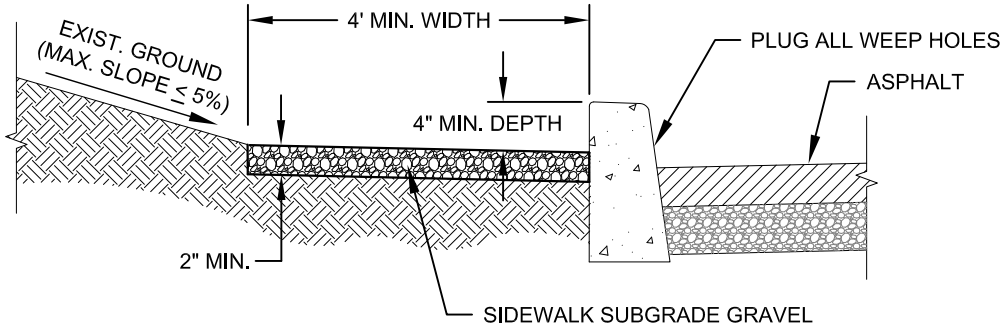
STANDARD PLAN

BIOFILTER BAG OVERLAND FLOW

APPROVED	James L Sprinkel	3/10/14	DRAWN BY	DTN	1/2014	NO.904
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



PLAN VIEW
NTS



PROFILE
NTS

NOTES:

1. SITE SLOPES GREATER THAN 5% TOWARDS THE SIDEWALK SUBGRADE BARRIER REQUIRE ADDITIONAL SEDIMENT CONTROL BMPS (SEDIMENT FENCE, STRAW WATTLE, ETC.).

2. SIDEWALK SUBGRADE GRAVEL CONSISTS OF A MINIMUM 2 INCH LAYER OF APPROVED ANGULAR AGGREGATE MATERIAL.

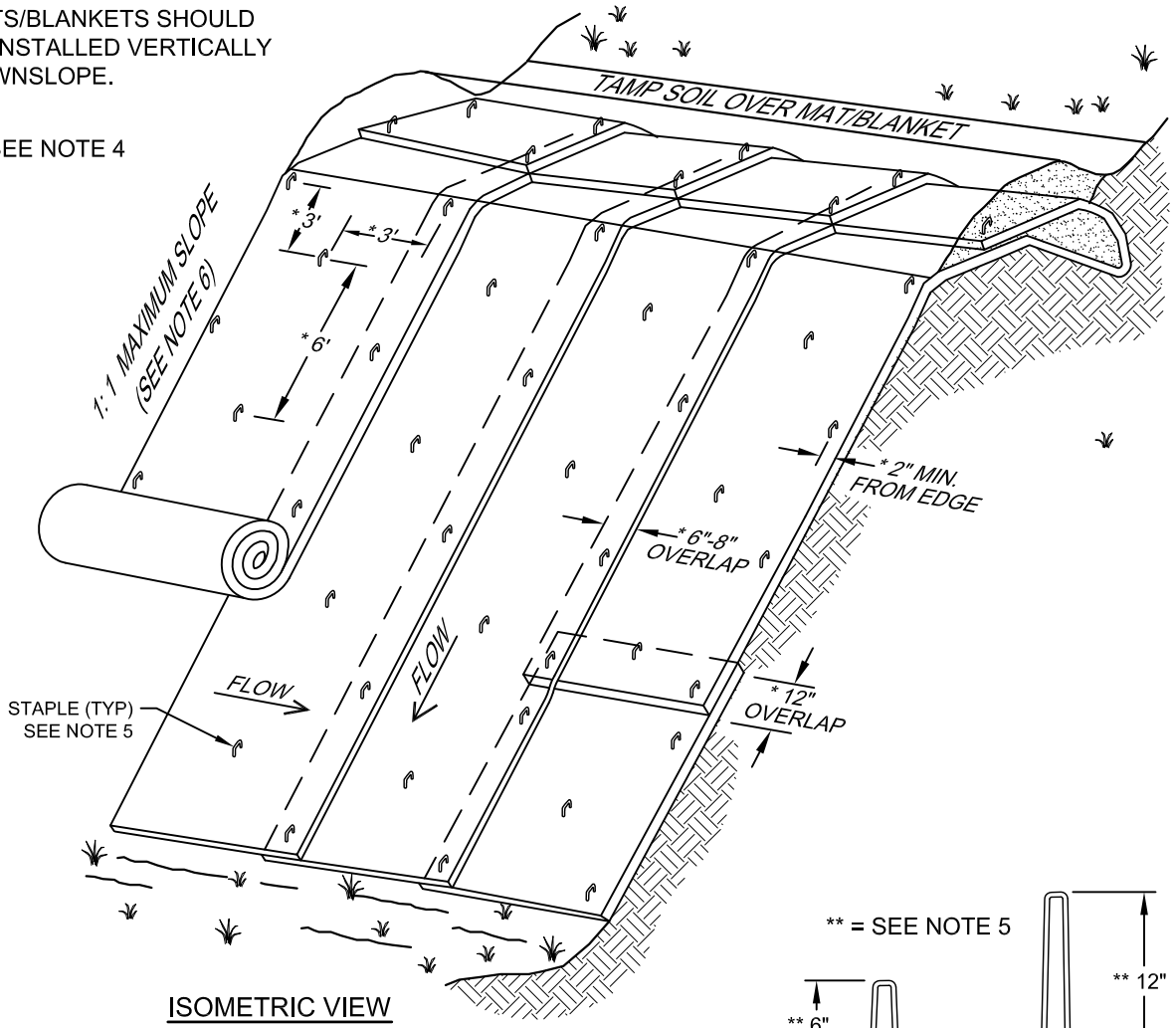
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
SIDEWALK SUBGRADE GRAVEL BARRIER

APPROVED	James L Sprinkel	3/10/14	DRAWN BY	DTN	1/2014	**NO.905**
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	

MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.

* = SEE NOTE 4



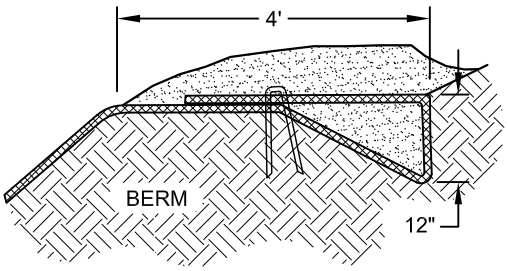
ISOMETRIC VIEW

TYPICAL SLOPE SOIL STABILIZATION

STAPLES
NTS

NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. MINIMUM STAKING OR STAPLING LAYOUT PATTERN. SEE MANUFACTURERS SPECIFICATIONS.
5. STAPLE LENGTH AND QUANTITY VARIES DEPENDING ON SOIL DENSITY. USE 6" STAPLES ON COMPACTED SOILS. USE 12" STAPLES ON LOOSE SOILS. SEE MANUFACTURERS RECOMMENDATIONS.
6. ROLLED EROSION CONTROL MATTING/BLANKET SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. JUTE MATTING LIMITED TO 2:1 SLOPEOR LESS. COIR FIBER MAY BE USED UP TO 1:1 SLOPE.

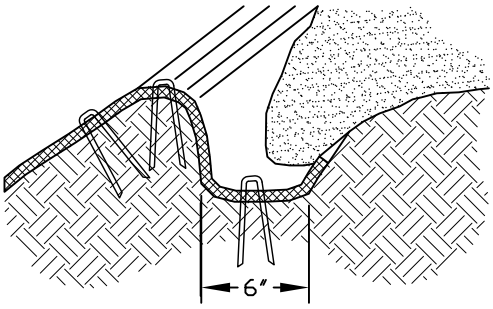


ANCHOR TRENCH DETAIL
NTS

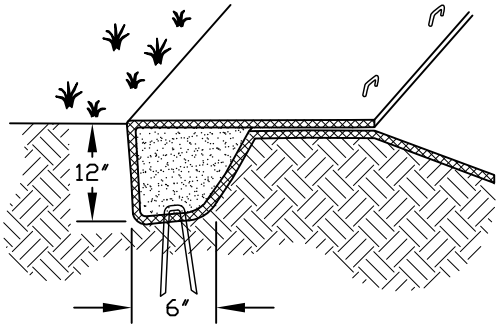
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN
EROSION MATTING / BLANKET SLOPE INSTALLATION

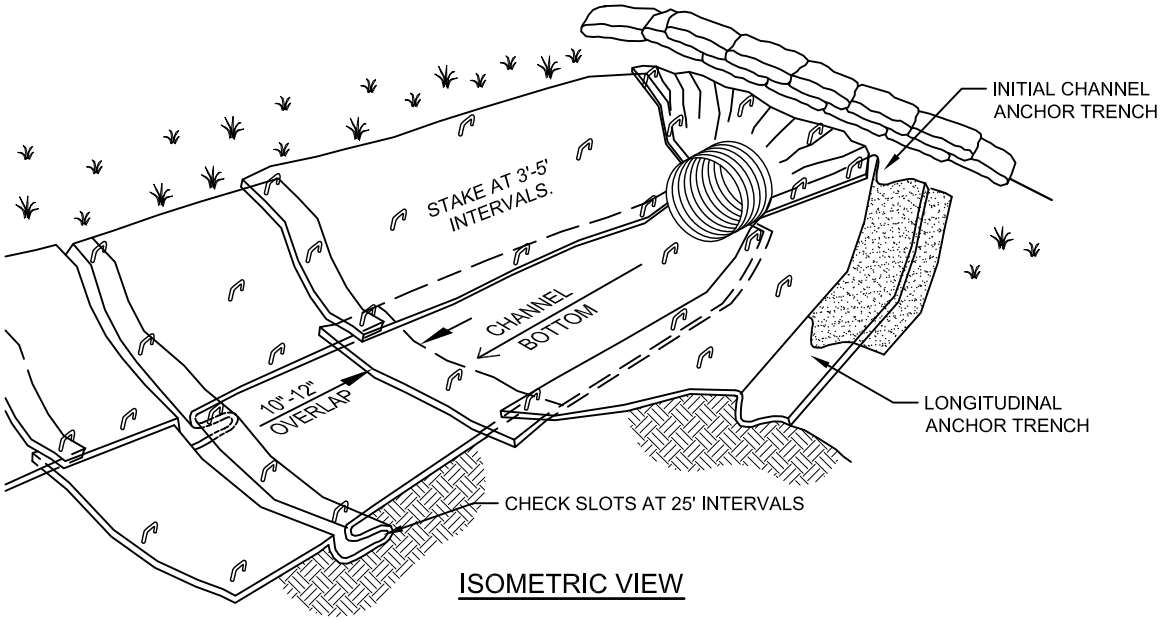
APPROVED	James L Sonnet	3/10/14	DRAWN BY	DTN	1/2014	**NO.906**
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



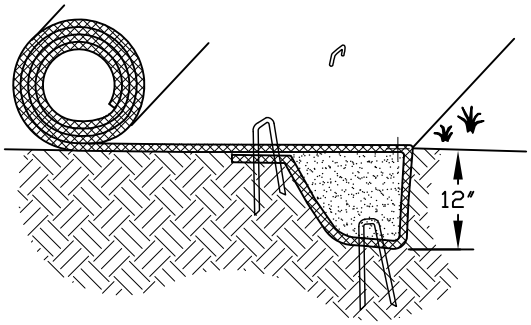
LONGITUDINAL ANCHOR TRENCH DETAIL



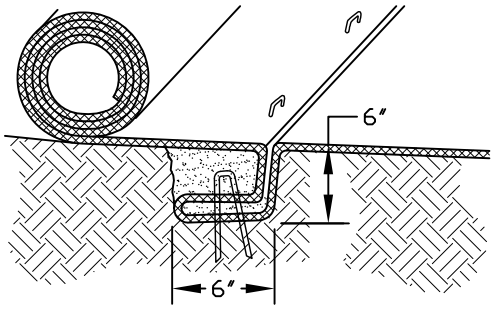
TERMINAL SLOPE AND CHANNEL ANCHOR TRENCH DETAIL



ISOMETRIC VIEW



INITIAL CHANNEL ANCHOR TRENCH DETAIL



INTERMITTENT CHECK SLOT DETAIL

NOTES:

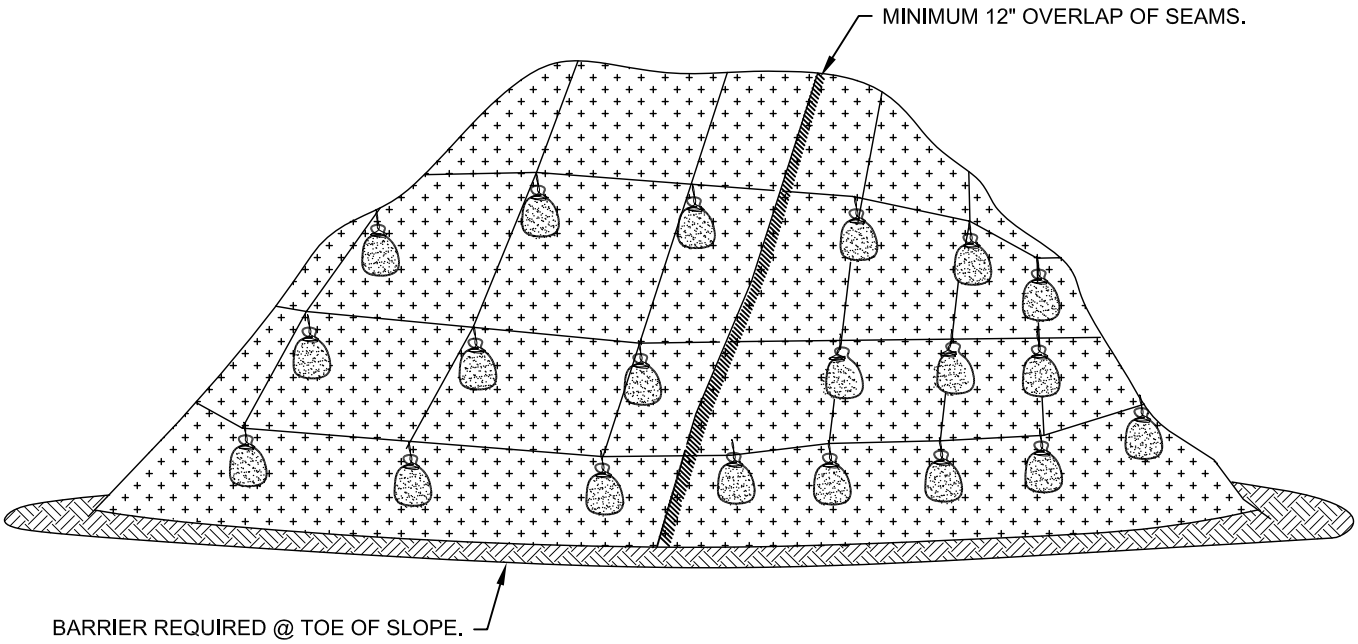
1. CHECK SLOTS TO BE CONSTRUCTED PER MANUFACTURERS SPECIFICATIONS.
2. STAKING OR STAPLING LAYOUT PER MANUFACTURERS SPECIFICATIONS.
3. FOR OUTLET APPLICATIONS, INSTALL MATTING PRIOR TO RIP RAP PLACEMENT.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

EROSION MATTING / BLANKET CHANNEL INSTALLATION

APPROVED	James L Sprinkel	3/10/14	DRAWN BY	DTN	1/2014	**NO.907**
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



PLASTIC SHEETING

NOTES:

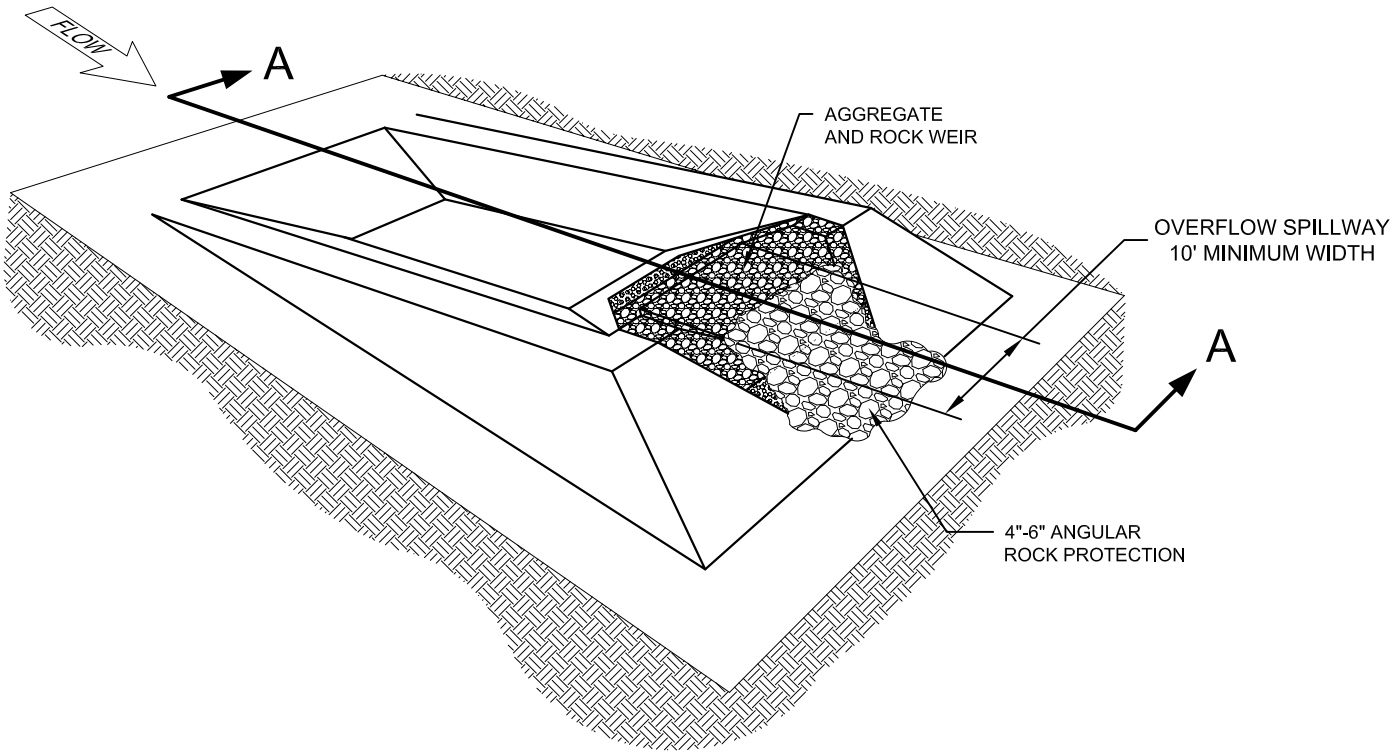
1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. BARRIER REQUIRED @ TOE OF STOCK PILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

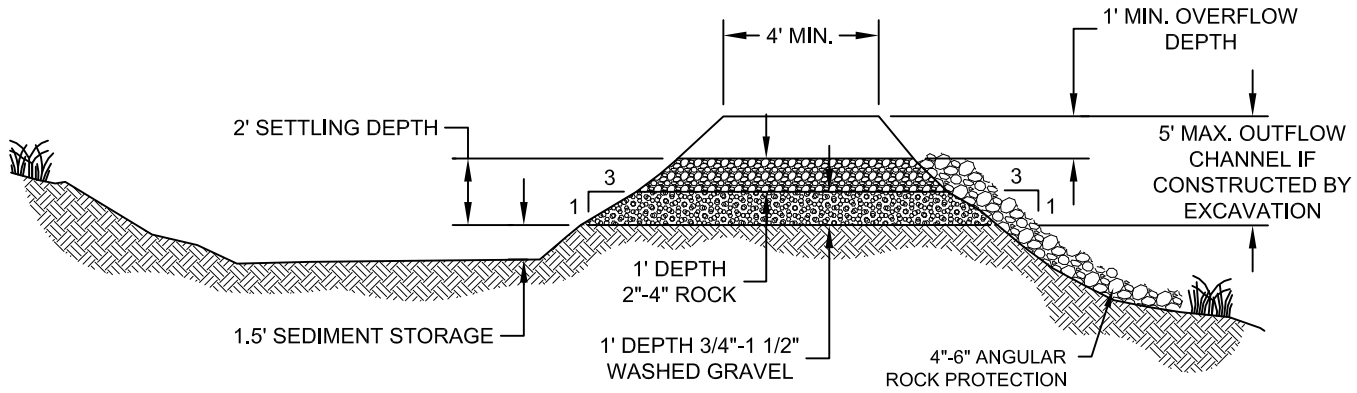
STANDARD PLAN

PLASTIC SHEET COVERING

APPROVED	James L Sonnet	3/10/14	DRAWN BY	DTN	1/2014	**NO.908**
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



SEDIMENT TRAP OUTLET
NTS



SECTION A-A
NTS

NOTE:

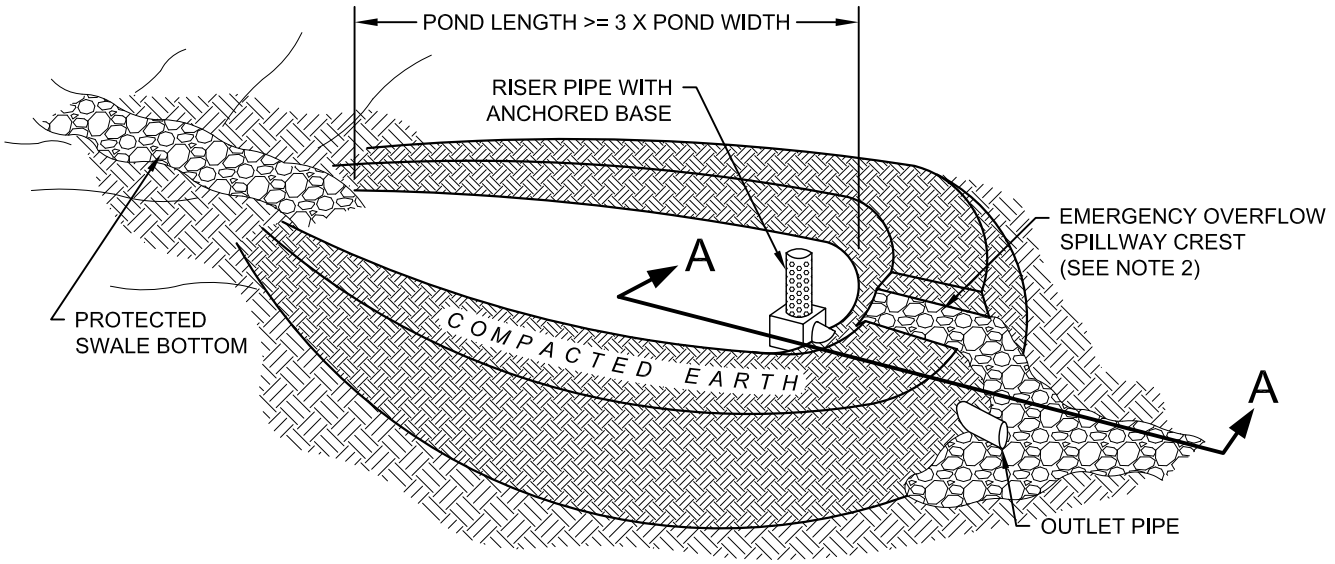
1. MAY BE CONSTRUCTED BY EXCAVATION OR BY BUILDING A BERM.
2. A FILTER FABRIC FENCE OR SIMILAR FILTER MUST BE CONSTRUCTED TO FILTER RUNOFF FROM THE SEDIMENT TRAP PRIOR TO DISCHARGE FROM THE CONSTRUCTION SITE.
3. UTILIZE A SEDIMENT TRAP AT THE LOW POINT DISCHARGES OF SEDIMENT FENCE BARRIERS.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

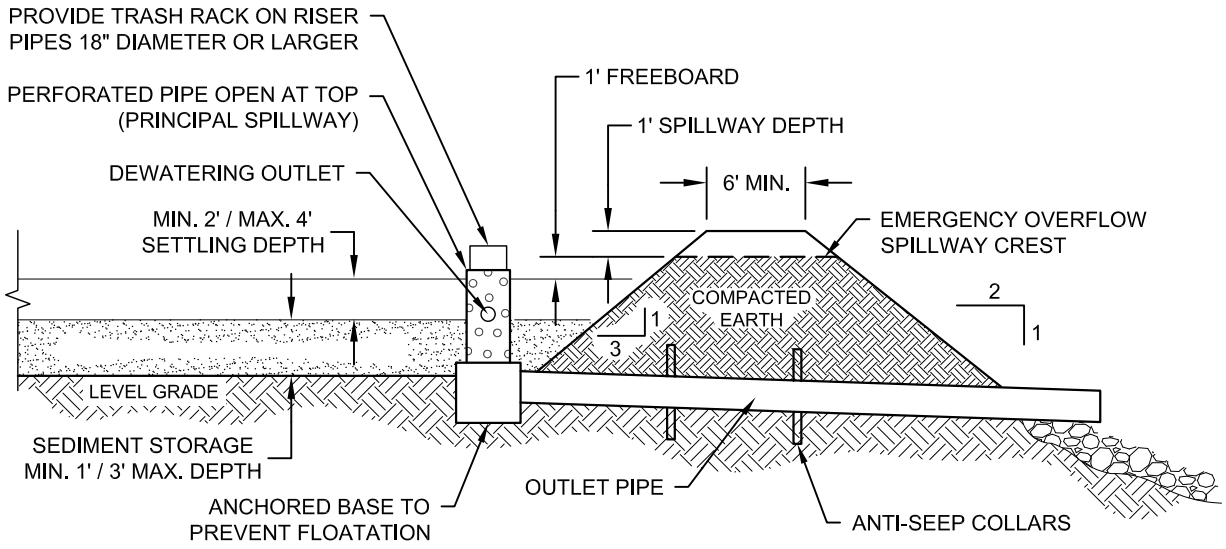
STANDARD PLAN

SEDIMENT TRAP

APPROVED	James L Sprinkel	3/10/14	DRAWN BY	DTN	1/2014	NO.909
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



ISOMETRIC VIEW
NTS



SECTION A-A
NTS

NOTES:

1. USE ADDITIONAL BMPs SUCH AS, 50' MINIMUM OF HIGHLY VEGETATED AREA AND / OR SEDIMENT FENCE IS REQUIRED TO CONTROL SEDIMENT PRIOR TO DISCHARGING TO STREAM OR WETLAND.

2. PROTECT SPILLWAY AND OUTLET AREA WITH A MINIMUM OF 12" OF 4"- 6" OPEN GRADED ANGULAR ROCK.

3. COMPACTED EARTH SHALL BE CONSTRUCTED TO SCS STANDARDS FOR EMBANKMENT.

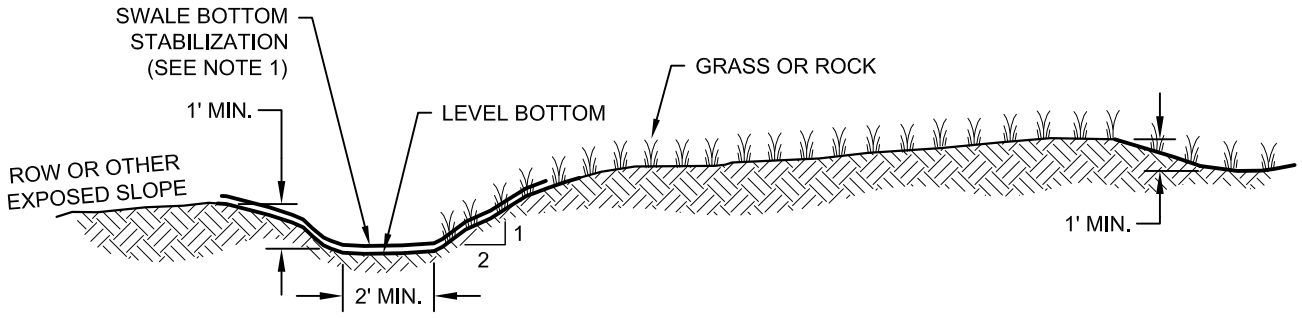
CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

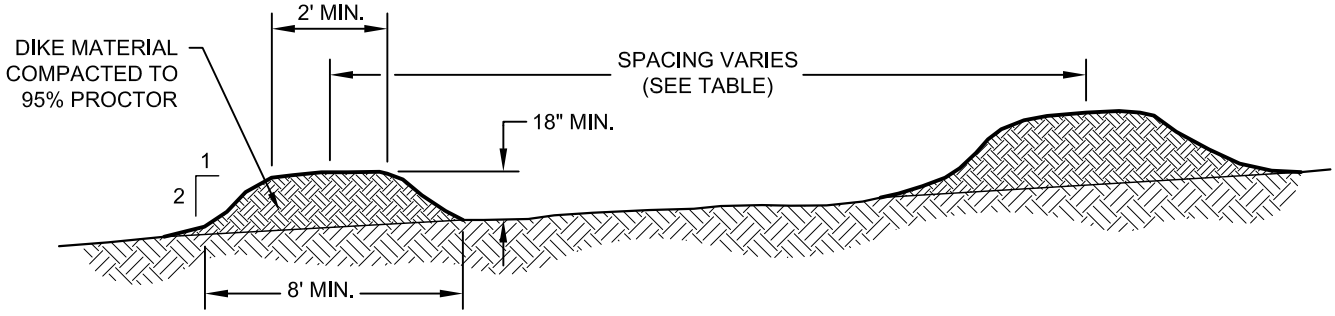
SEDIMENT POND

APPROVED	James L Sonnet	3/10/14	DRAWN BY	DTN	1/2014	**NO.910**
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	

SWALE PROPERTIES TABLE	
FEATURE	**CONSTRAINTS**
BOTTOM WIDTH	2 FEET (MIN.)
DEPTH	1 FOOT (MIN.)
SIDE SLOPE	2H:1V OR FLATTER
SWALE GRADE	MAX. 5% (SEE NOTE 2)



DIVERSION SWALE
NTS



TEMPORARY DIVERSION DIKE
NTS

NOTES:

1. STABILIZE SWALE BOTTOMS WITH ESTABLISHED VEGETATION OR EROSION CONTROL BLANKETS PRIOR TO USE.
2. CONSTRUCT WITH POSITIVE DRAINAGE TO AN APPROVED OUTLET, SUCH AS SEDIMENTATION POND / TRAP.

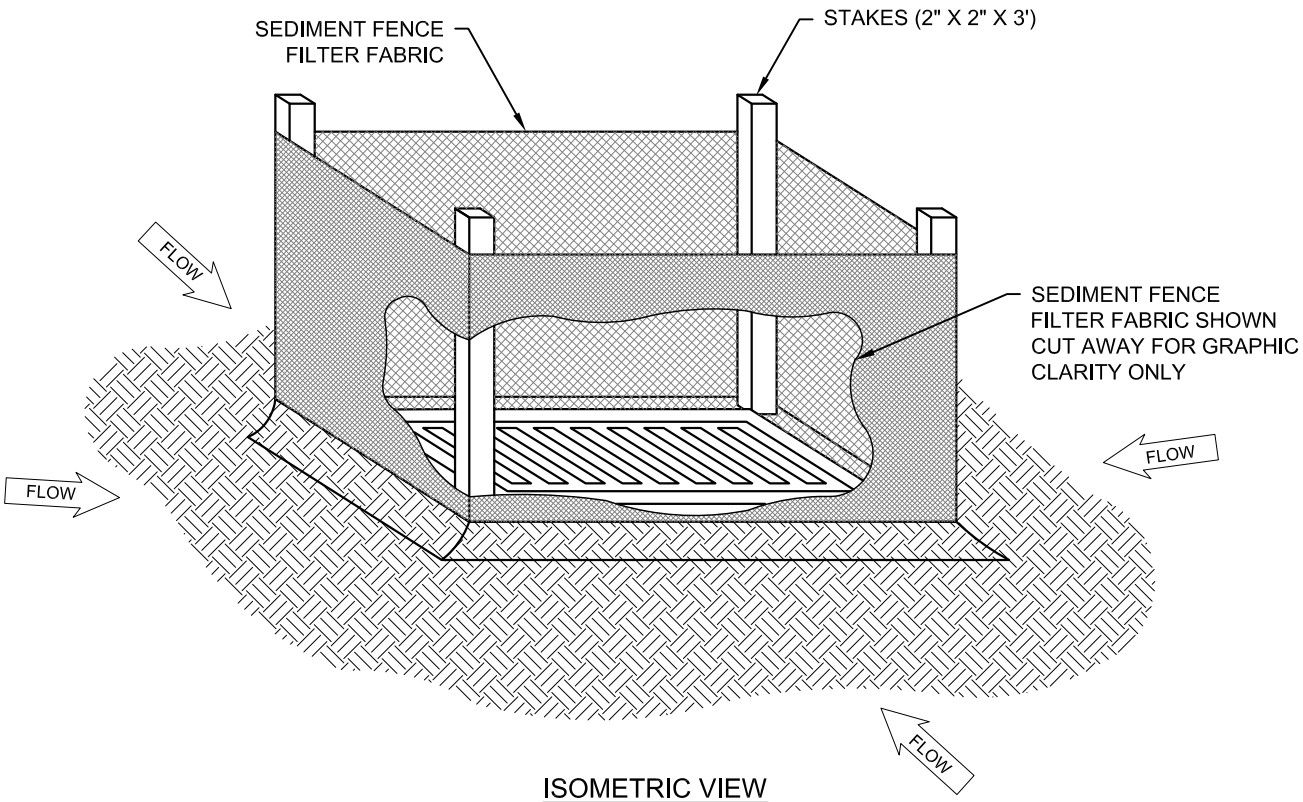
DIVERSION DIKE SPACING	
SLOPE	**SPACING**
< 5%	300 FEET
5 - 10%	200 FEET
10 - 40%	100 FEET

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

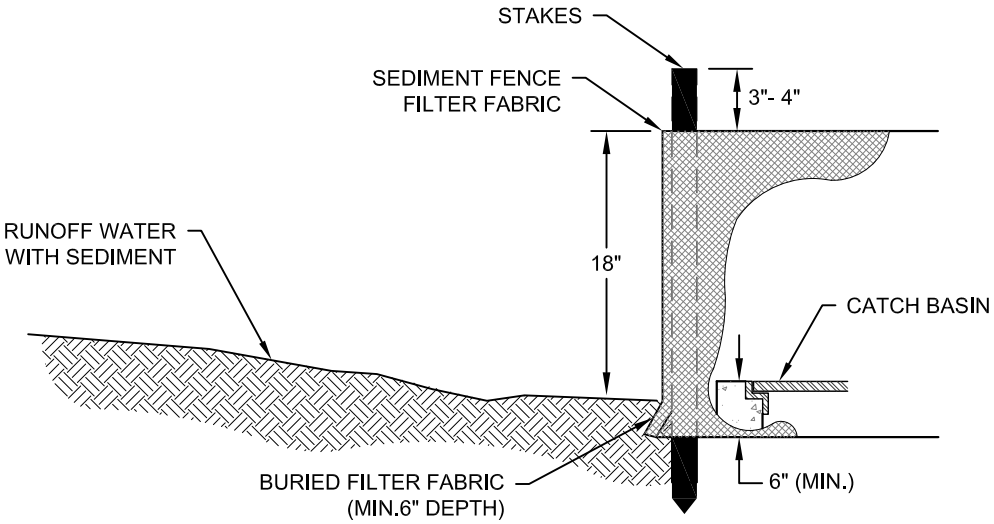
STANDARD PLAN

INTERCEPTOR SWALES AND DIKES

APPROVED	James L Sonnet	3/10/14	DRAWN BY	DTN	1/2014	**NO.911**
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



ISOMETRIC VIEW
NTS



SECTION A-A
NTS

NOTES:

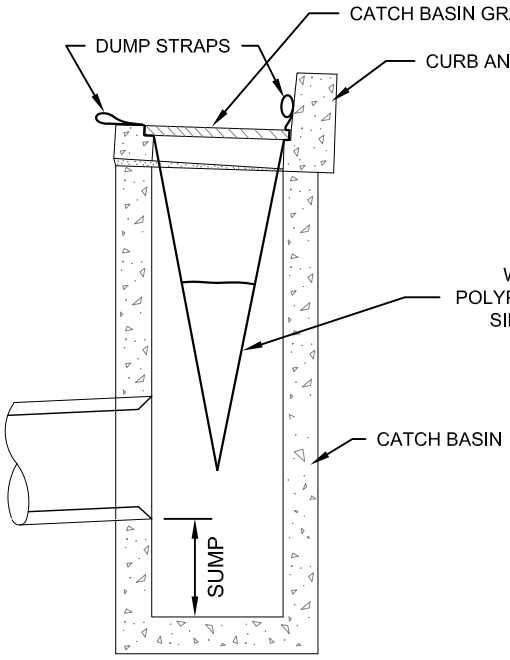
1. ATTACH FILTER FABRIC TO WOOD STAKES WITH OVERLAPPED FABRIC AT JOINT. MINIMUM 4" OF OVERLAP.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

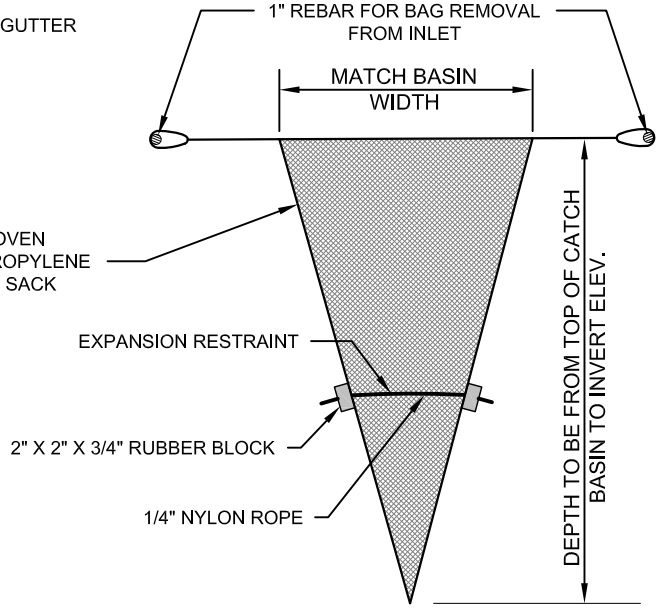
STANDARD PLAN

FILTER FABRIC INLET BARRIER

APPROVED	James L Sprinkel	3/10/14	DRAWN BY	DTN	1/2014	NO.912
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



INSTALLATION DETAIL
NTS



BAG DETAIL
NTS

NOTES:

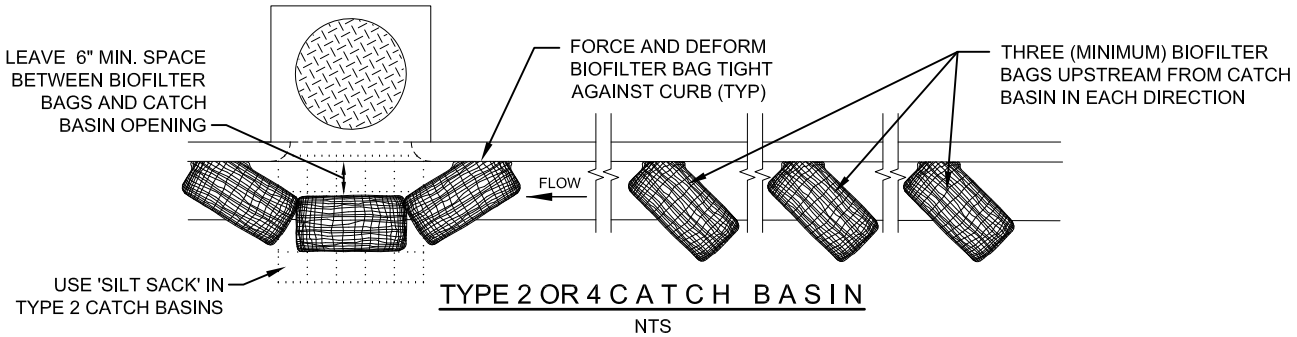
1. EMPTY SILT SACK WHEN ACCUMULATED SEDIMENT HAS FILLED OVER 1/2 OF THE DEPTH OF SACK.
2. SILTSACK SEDIMENT CONTROL DEVICE AS MANUFACTURED BY ACF ENVIRONMENTAL AND SUPPLIED BY ACF WEST (503-771-5115) OR APPROVED EQUAL.
3. RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS. SIZE OF FILTER FABRIC INLET SACKS TO BE DETERMINED BY MANUFACTURER.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

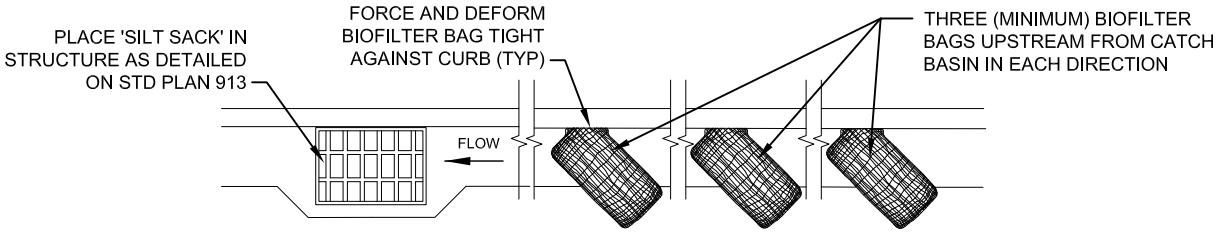
SILT SACK

APPROVED	James L Sonnet	3/10/14	DRAWN BY	DTN	1/2014	NO.913
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



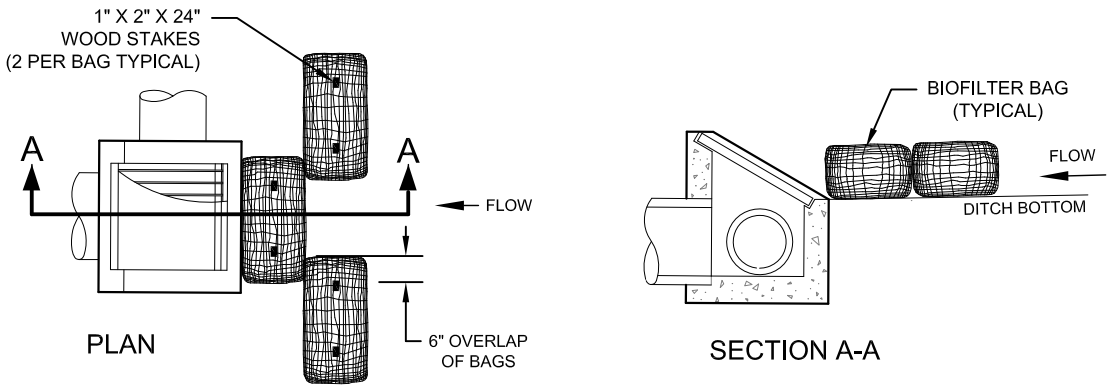
TYPE 2 OR 4 CATCH BASIN

NTS



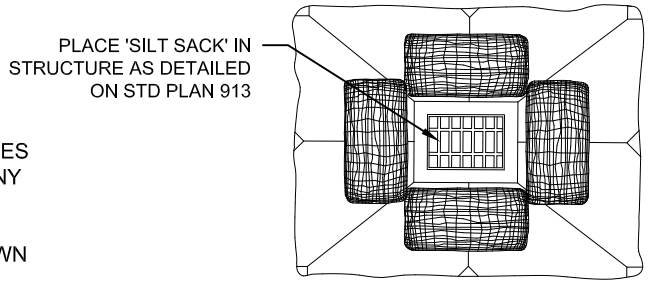
TYPE 1 CATCH BASIN

NTS



DITCH INLET

NTS



AREA DRAIN

NTS

NOTES:

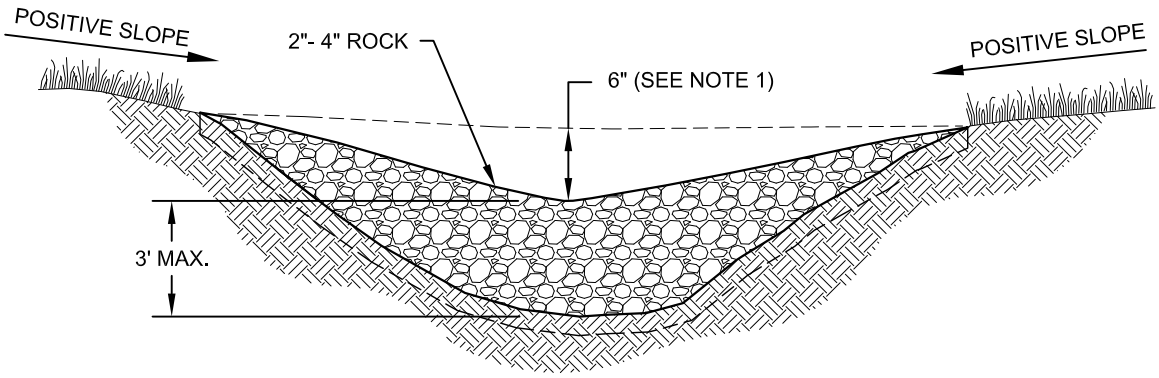
1. LOCATION OF INDIVIDUAL PROTECTION DEVICES TO BE FIELD LOCATED PRIOR TO START OF ANY CONSTRUCTION.
2. IF FLOW IS IN THE OPPOSITE DIRECTION SHOWN OR FROM BOTH DIRECTIONS, MIRROR THE PLACEMENT OF THE BIOFILTER BAGS TO THE UPHILL SIDE (OR BOTH SIDES) OF CATCH BASIN.
3. OVERLAP BIOFILTER BAGS A MINIMUM OF 6" IN ALL CASES WHERE OVERLAP IS SHOWN.
4. STAKE BIOFILTER BAGS WHEN INSTALLED ON NON HARD SURFACE AREAS. ANCHOR ON HARD SURFACES WITH SANDBAGS OR OTHER APPROVED METHODS.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

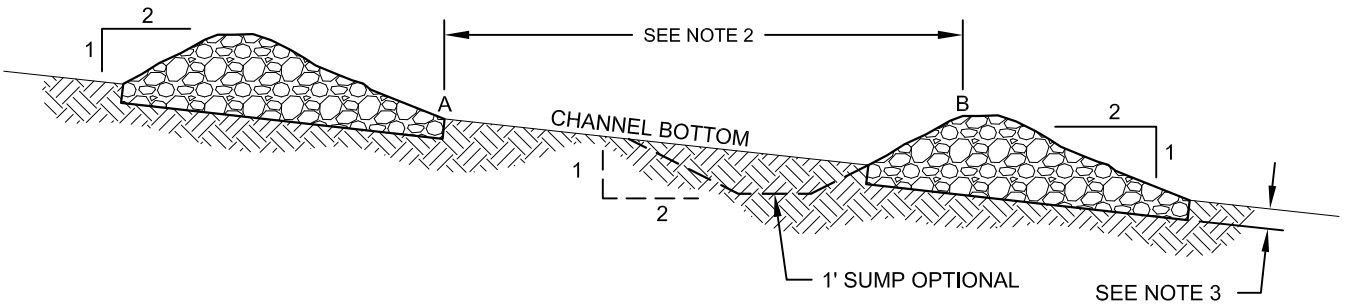
STANDARD PLAN

BIOFILTER BAG INLET PROTECTION

APPROVED	James L Sonnet	3/10/14	DRAWN BY	DTN	1/2014	NO.914	
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014		



CHANNEL CROSS SECTION
NTS



PROFILE
NTS

NOTES:

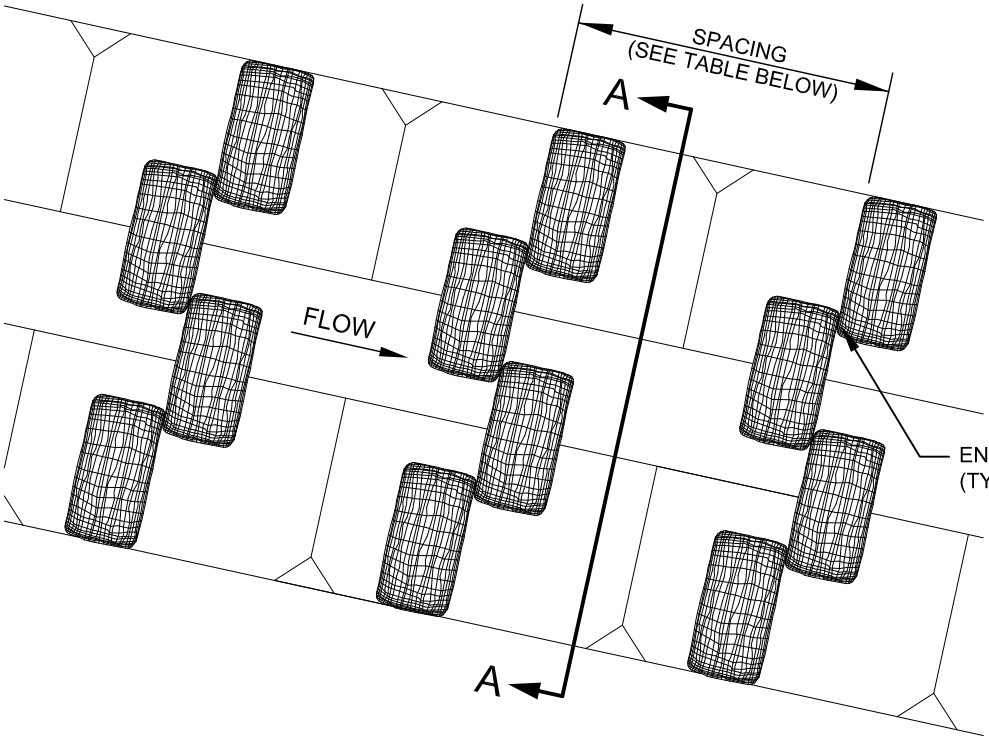
1. LOWER CENTER SECTION 6 INCHES MINIMUM TO CAUSE FLOW OVER, NOT AROUND CHECK DAM.
2. THE DISTANCE BETWEEN DAMS SHALL BE SUCH THAT THE TOE (A) OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP (B) OF THE DOWNSTREAM DAM.
3. THE BASE OF THE CHECK DAM SHALL BE ENTRENCHED APPROXIMATELY 6 TO 12 INCHES DEPENDING UPON SOIL CONDITIONS AND HEIGHT OF CHECK DAM.
4. ROCK SHALL COMPLETELY COVER CHANNEL BOTTOM AND SIDES.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

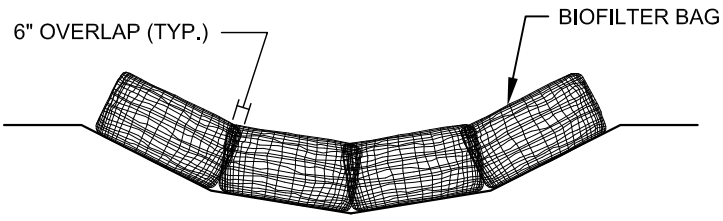
STANDARD PLAN

ROCK CHECK DAM

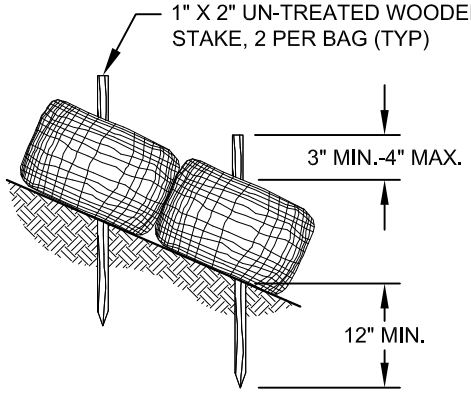
APPROVED	James L Sonnet	3/10/14	DRAWN BY	DTN	1/2014	NO.915
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



PLAN
NTS



SECTION A-A
NTS



STAKING DETAIL
NTS

NOTES:

1. STAKING OF BAGS REQUIRED USING (2) 1"X2" WOOD STAKES OR APPROVED EQUAL PER BAG.
2. SURFACE MUST BE SMOOTH BEFORE APPLICATION.
3. CHECK DAMS MAY BE CONSTRUCTED USING STRAW WATTLES OR OTHER MATERIALS AS APPROVED.

BIOFILTER BAG SPACING TABLE

SLOPE	MAXIMUM SPACING
10H : 1V (10%)	7' *
20H : 1V (5%)	14' *
40H : 1V (2.5%)	28' *

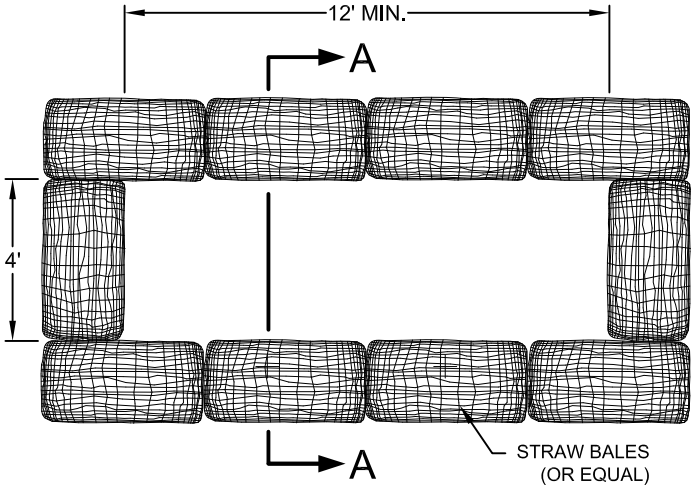
* NOTE: SPACING CALCULATED USING A STANDARD 10" BIOBAG COMPRESSED TO AN EFFECTIVE 8" WORKING HEIGHT.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

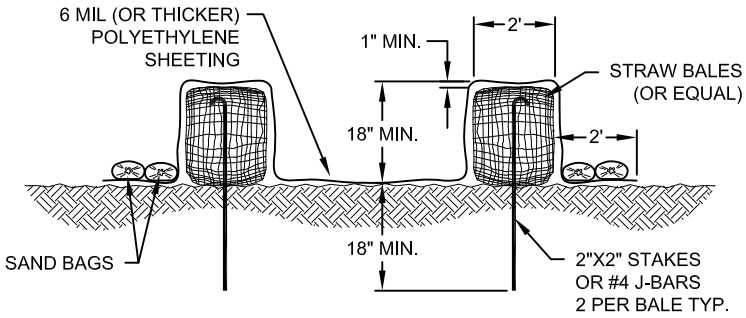
STANDARD PLAN

BIOFILTER BAG CHECK DAM

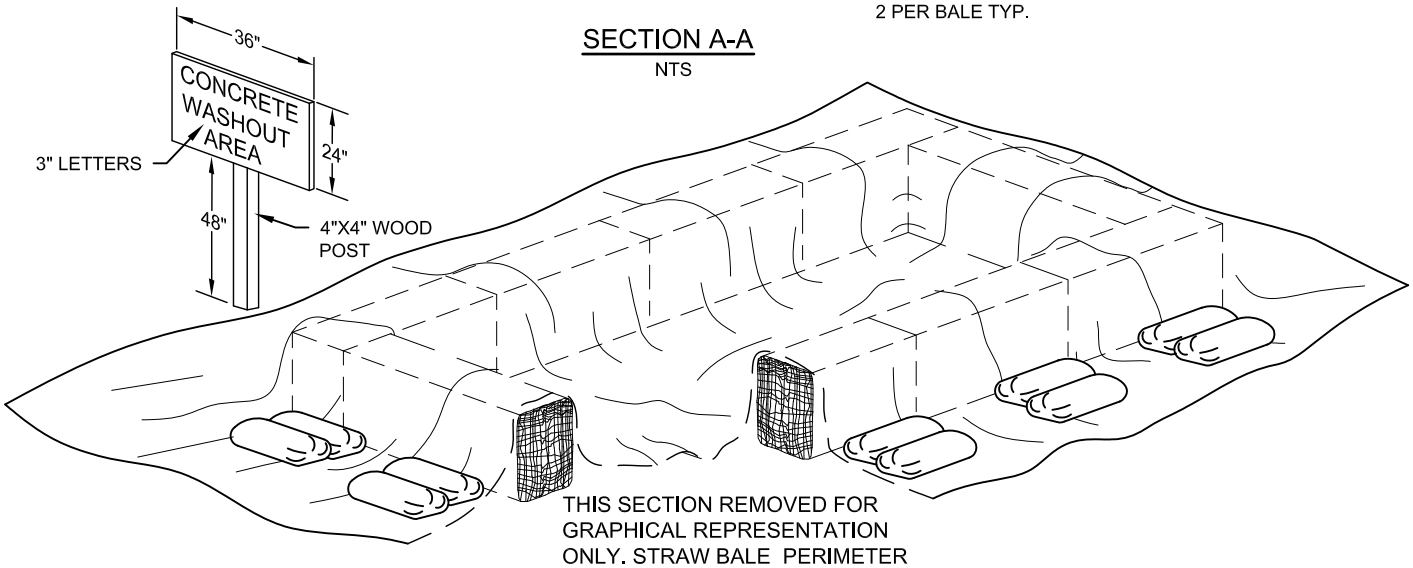
APPROVED	James L Sonnet	3/10/14	DRAWN BY	DTN	1/2014	NO.916
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	



BALE CONFIGURATION
NTS



SECTION A-A
NTS



NOTES:

1. PROVIDE "CONCRETE WASHOUT AREA" SIGN AS SHOWN OR AS APPROVED.
2. INSTALL CONCRETE WASHOUT SIGN ADJACENT TO CONCRETE MANAGEMENT FACILITIES. FACE SIGN TOWARD NEAREST STREET OR ACCESS POINT.
3. CONCRETE WASHOUT SHALL BE LOCATED BEHIND CURB AND 50 FT. MINIMUM FROM DRAINAGE INLETS OR WATERCOURSES.

CITY OF SALEM
DEPARTMENT OF PUBLIC WORKS

STANDARD PLAN

CONCRETE MANAGEMENT FACILITY

APPROVED	James L Sprinkel	3/10/14	DRAWN BY	DTN	1/2014	NO.917
	CITY ENGINEER	DATE	CHECKED BY	RLB	1/2014	