

ENGINEERING SERVICES DEPARTMENT

P.O. Box 970 • 414 E. First Street • Newberg, Oregon 97132 • 503.537.1273 • www.newbergoregon.gov

Standard Drawings

City of Newberg Standard Drawings

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LIDA

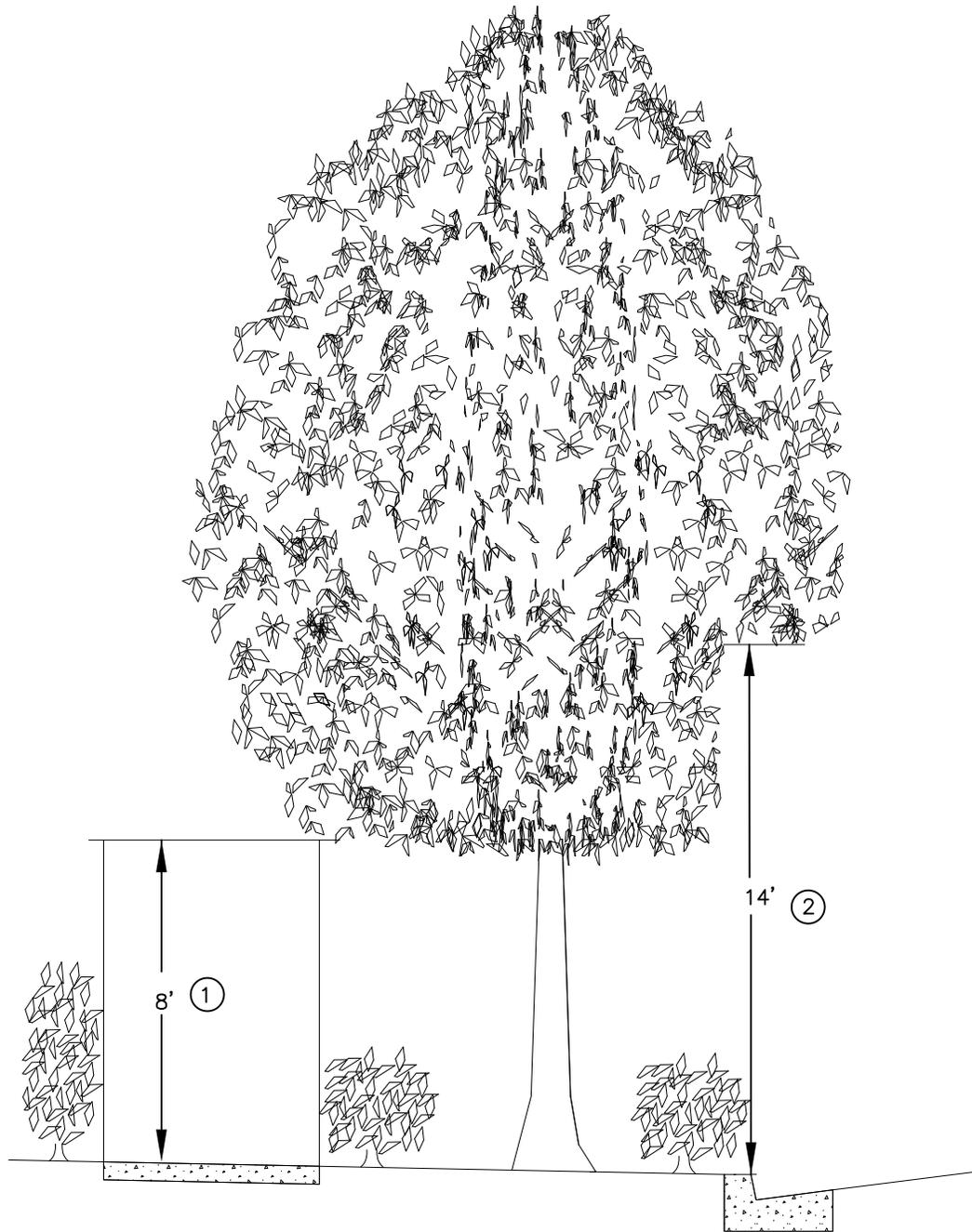
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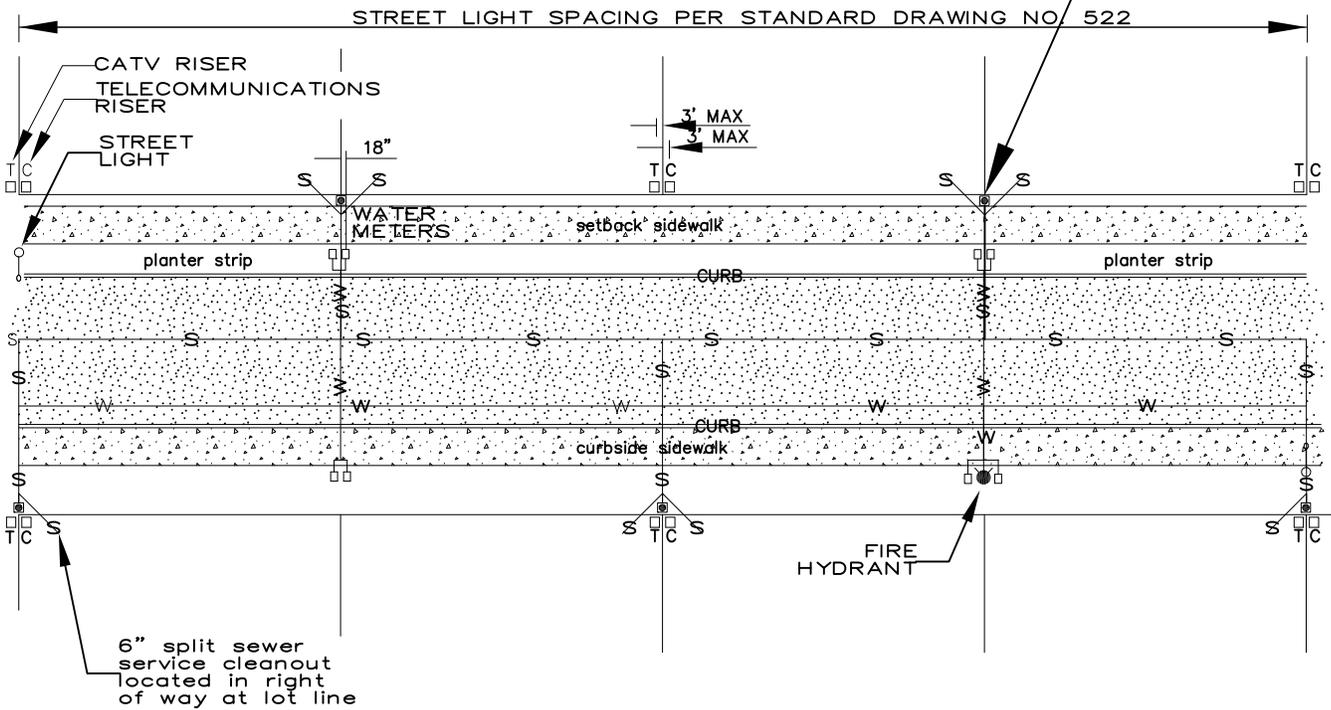
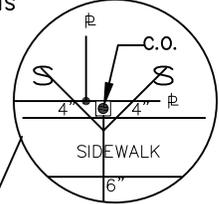
- ① MAINTAIN 8' OF CLEARANCE BETWEEN SIDEWALK AND TREE LIMBS. NO OBSTRUCTIONS MAY PROTRUDE INTO SIDEWALK TRAVEL AREA.
- ② MAINTAIN 14' OF CLEARANCE BETWEEN STREET GRADE AND TREE LIMBS.

REVISIONS:

TREE & SHRUB CLEARANCES

SCALE:	N.T.S.
DATE:	July 2013
APPROVED BY:	D. Danicic
STANDARD DRAWING	101

SAN LATERALS SHOULD BE OFFSET SO AS NOT TO CONFLICT WITH PROPERTY PINS BETWEEN LOTS



NOTES

1. ALL ABOVE GROUND FIXTURES ARE TO BE ALIGNED WITH PROPERTY LINE WITHIN TOLERANCES SHOWN.
2. VARIATION FROM THIS STANDARD ALLOWED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
3. THE LOCATION OF UNDERGROUND UTILITIES IS SHOWN ON STANDARD DRAWING 103, UTILITIES PLAN.



PUBLIC WORKS ENGINEERING DIVISION
 414 E. FIRST STREET NEWBERG, OR 97132
 PHONE: 503-537-1240
 FAX: 503-537-1277

REVISIONS:

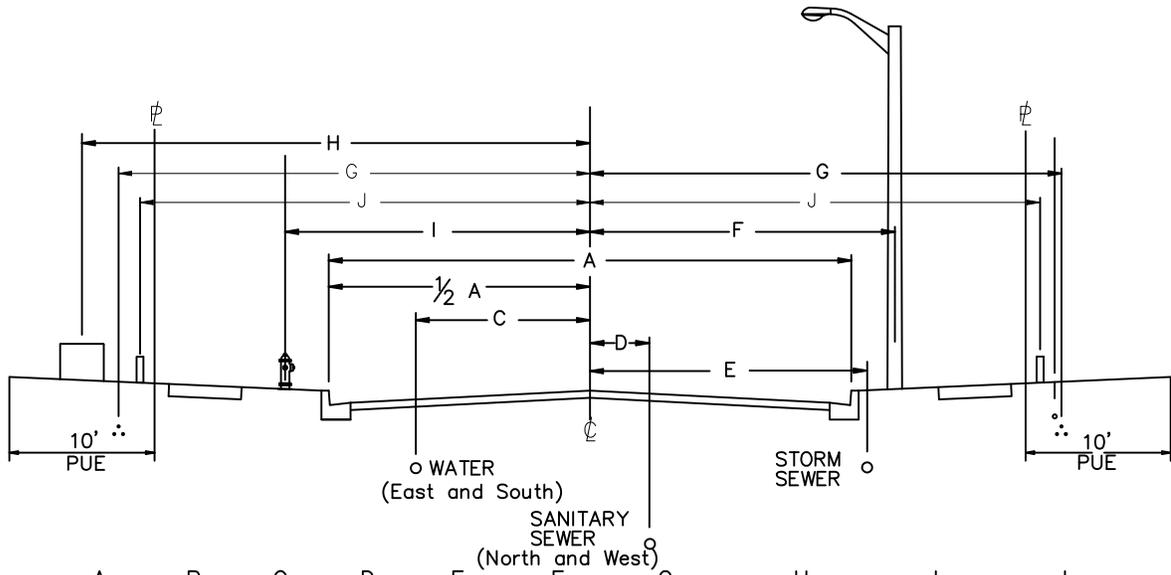
UTILITY SERVICE LOCATIONS

SCALE: N.T.S

DATE: July 2013

APPROVED BY: D. Danicic

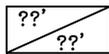
STANDARD DRAWING 102



	A	B	C	D	E	F	G	H	I	J
	STREET WIDTH	ROW WIDTH	WATER	SAN. SEWER	STORM SEWER	STREET LIGHT	PUBLIC UTIL'S.	TRANSFORMER	FIRE HYDRANT	PEDESTAL
1)	20'	38'-42'	6'	4'	*	18' 12.5'	23'	23'	18' 12.5'	22'
1)	24'	42'-46'	8'	4'	*	20' 14.5'	25'	25'	20' 14.5'	24'
1)	28'	46'-50'	10'	4'	*	22' 16.5'	27'	27'	22' 16.5'	26'
	32'	54'-60'	12'	4'	*	19'	32'	32'	19'	31'
	34'	60'	13'	4'	*	20'	32'	32'	20'	31'
	36'	60'	14'	4'	*	21'	32'	32'	21'	31'
	40'	70'	15'	4'	*	23'	37'	37'	23'	36'
	46'	80'	18'	4'	*	26'	42'	42'	26'	41'
	70'	100'	25'-30'	4'	*	38'	52'	52'	38'	51'

* STORM SEWER LOCATION TO MATCH PELICAN STYLE INLETS.
LOCATION VARIES WITH PIPE SIZE.

ALL PRIVATE UTILITY CONDUITS SHALL BE PLACED IN UTILITY EASEMENT. ONLY PERPENDICULAR CROSSINGS AND STREET LIGHT CONNECTIONS ALLOWED IN PUBLIC RIGHT-OF-WAY.



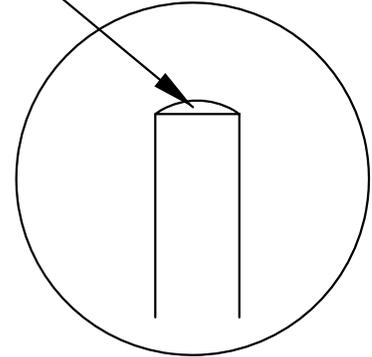
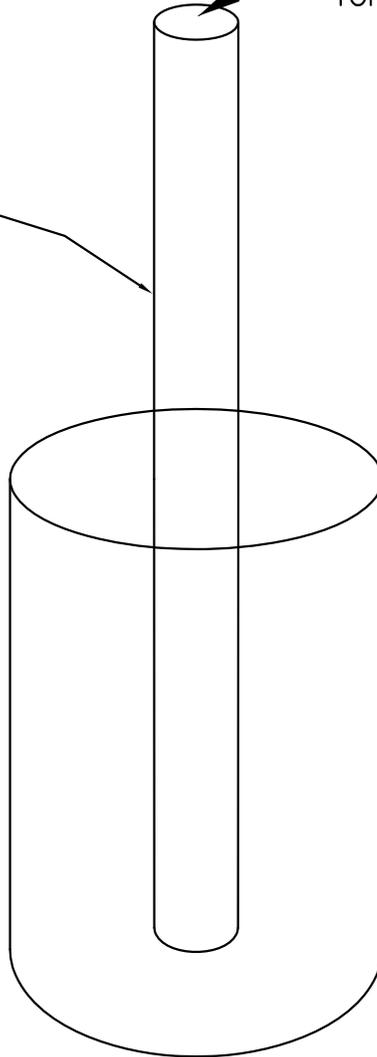
TOP NUMBER FOR CURB TIGHT SIDEWALK (TYPE "B")
BOTTOM NUMBER SETBACK SIDEWALK (TYPE "A")

1) SIDEWALK WIDTH SHALL BE 6' WHEN CURB SIDE FOR LIMITED RESIDENTIAL

PAINT WITH HIGH GLOSS
ENAMEL - CHROME YELLOW

FILL CENTER OF TUBING WITH
CONCRETE; 1/2" CROWN AT
TOP

3" MIN X 2 1/2" X 6'
STEEL TUBING
(4" DIP MUST BE
USED IN ALL CASES
WHERE BOLLARD IS
PROTECTING FIRE
HYDRANT)



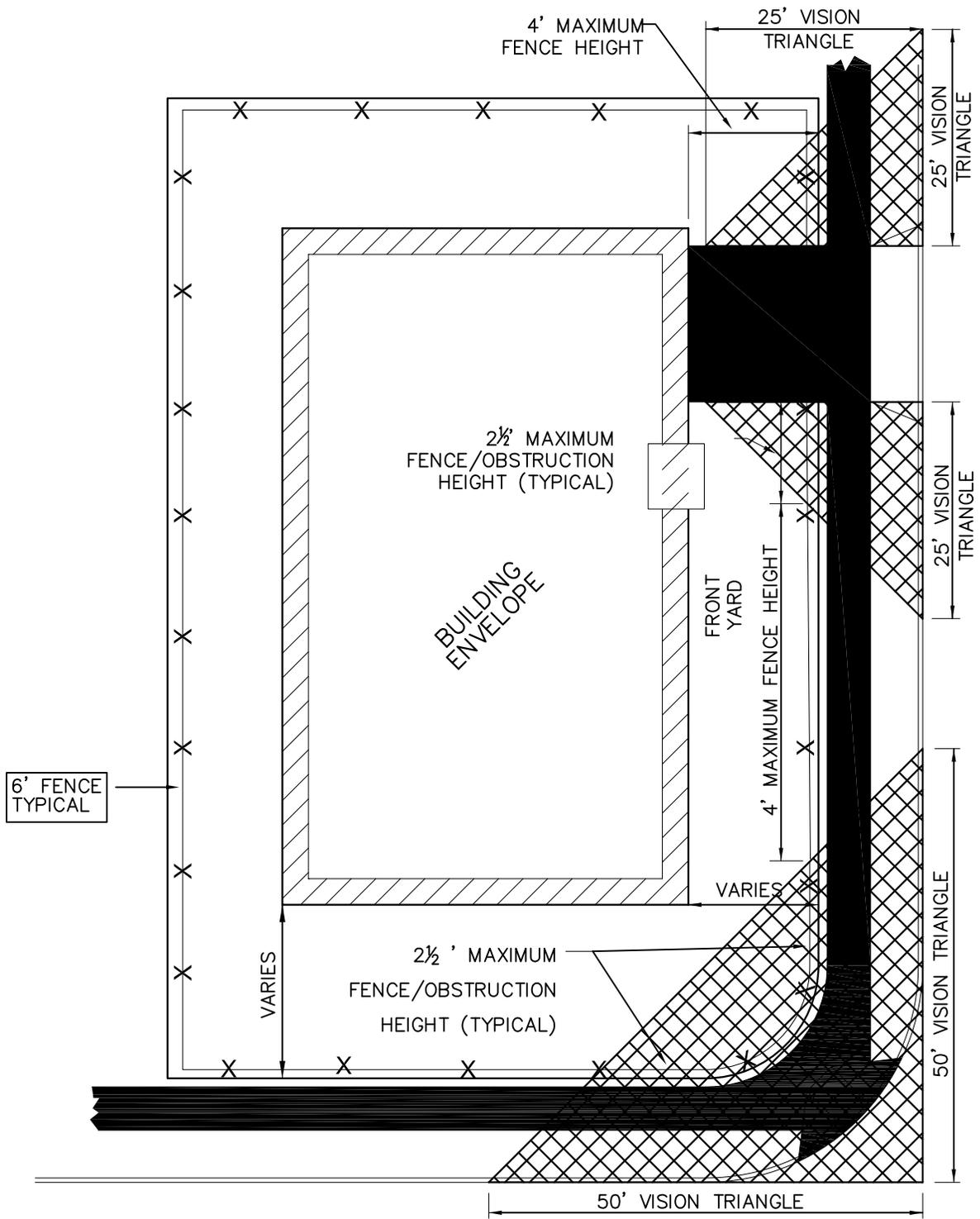
MINIMUM OF 12" ROUND
EXCAVATION

CONCRETE FILL AROUND TUBING
BURY 3'-0"

REVISIONS:

BOLLARD

SCALE:	N.T.S.
DATE:	July 2013
APPROVED BY:	D. Danicic
STANDARD DRAWING	104

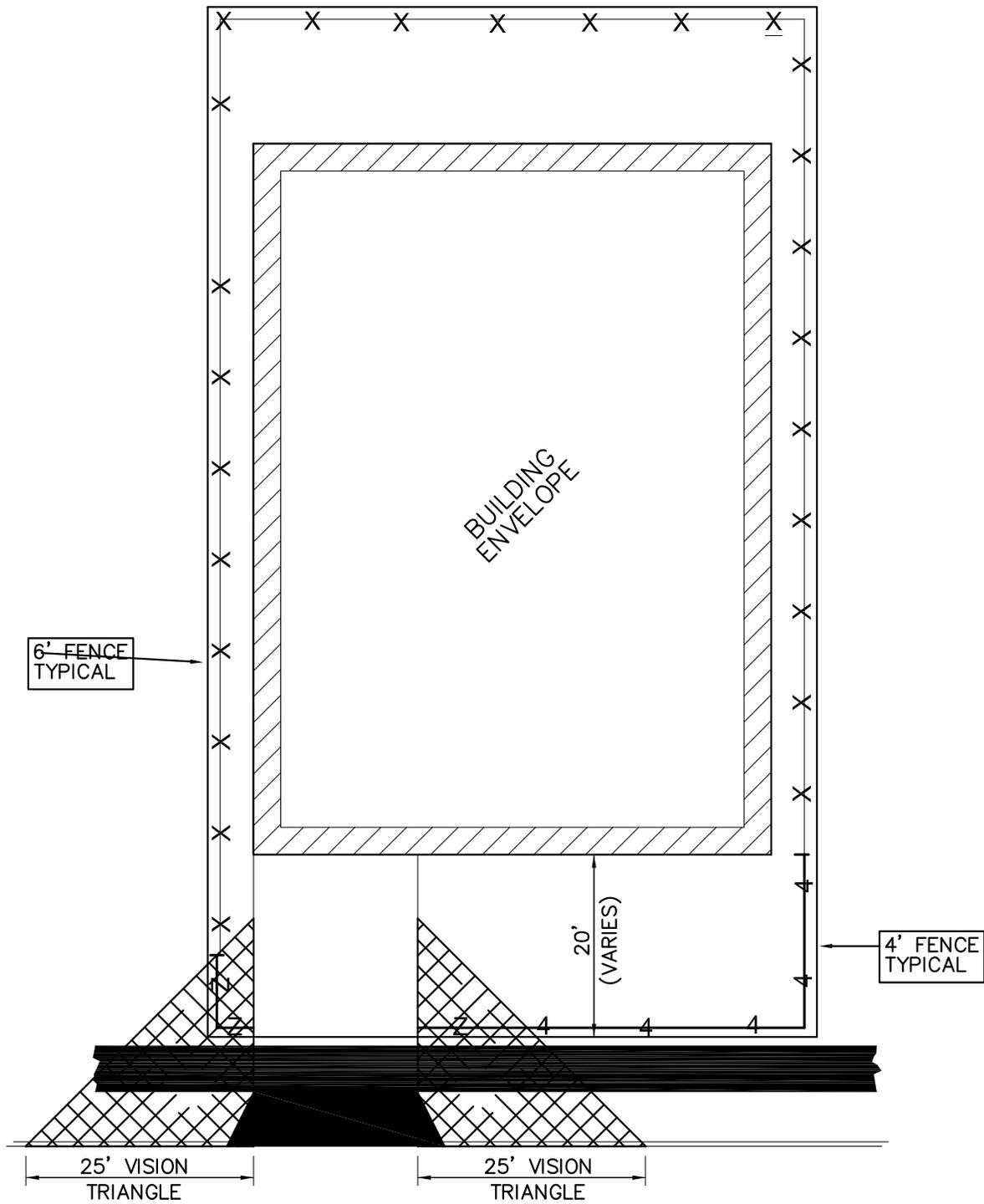


ALL FENCES AND/OR OBSTRUCTIONS WITHIN VISION TRIANGLES SHALL BE A MAXIMUM OF 30" (2 1/2') HIGH.

REVISIONS:

RESIDENTIAL FENCES WALLS AND VISION CLEARANCE AREAS

SCALE:	N.T.S.
DATE:	July 2013
APPROVED BY:	D.Danicic
STANDARD DRAWING	105

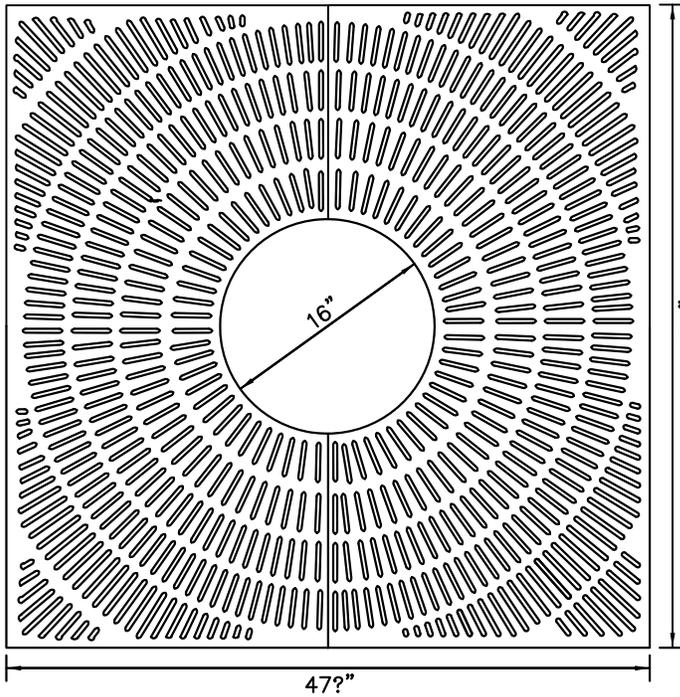


ALL FENCES WITHIN VISION TRIANGLES SHALL BE A MAXIMUM OF 30" (2'0") IN HEIGHT

REVISIONS:

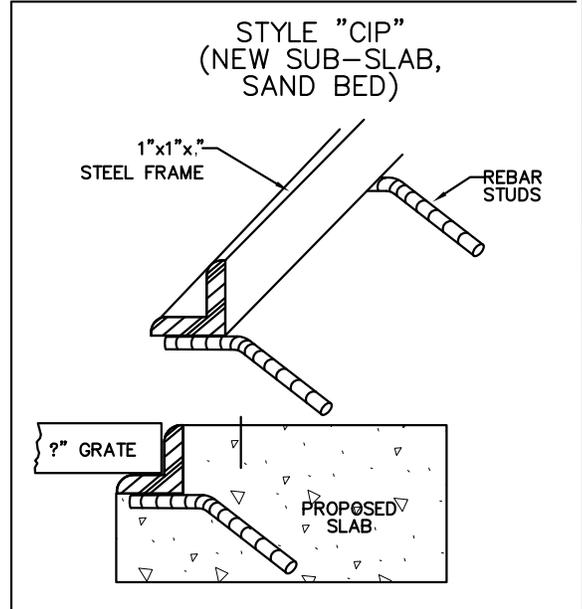
FENCES AND WALLS INTERIOR LOTS

SCALE:	N.T.S.
DATE:	July 2013
APPROVED BY:	D. Danicic
STANDARD DRAWING	106

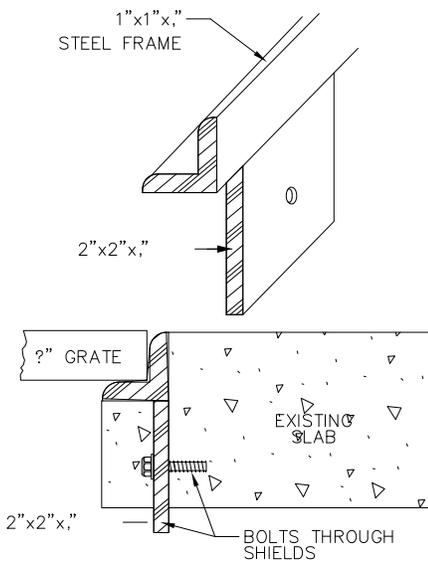


48" "STA" TREE GRATE:

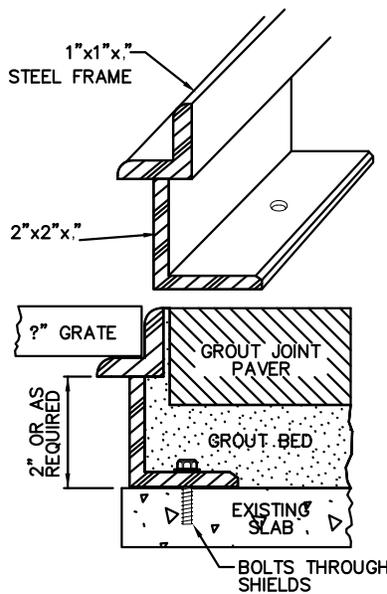
- ADA APPROVED, TWO PEICE SET
- DUCTILE CAST IRON ASTM, A536, CL80-55-06
- APPROXIMATE WEIGHT 226 lbs. PER SET
- OLYMPIC FOUNDRY PART NO. 80-2190 (OR EQUIVALENT)



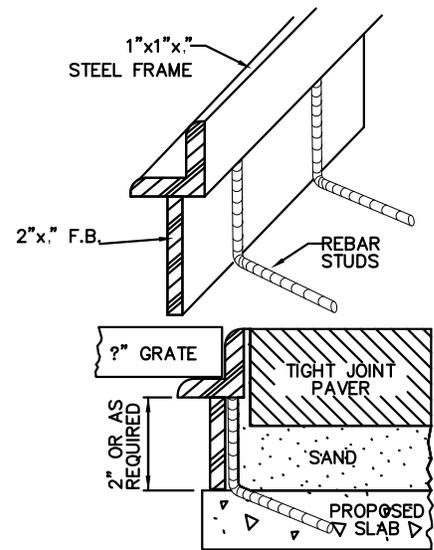
STYLE "RF" (EXTG. SLAB)



STYLE "AP" (EXTG. SUB-SLAB, GROUT BED)



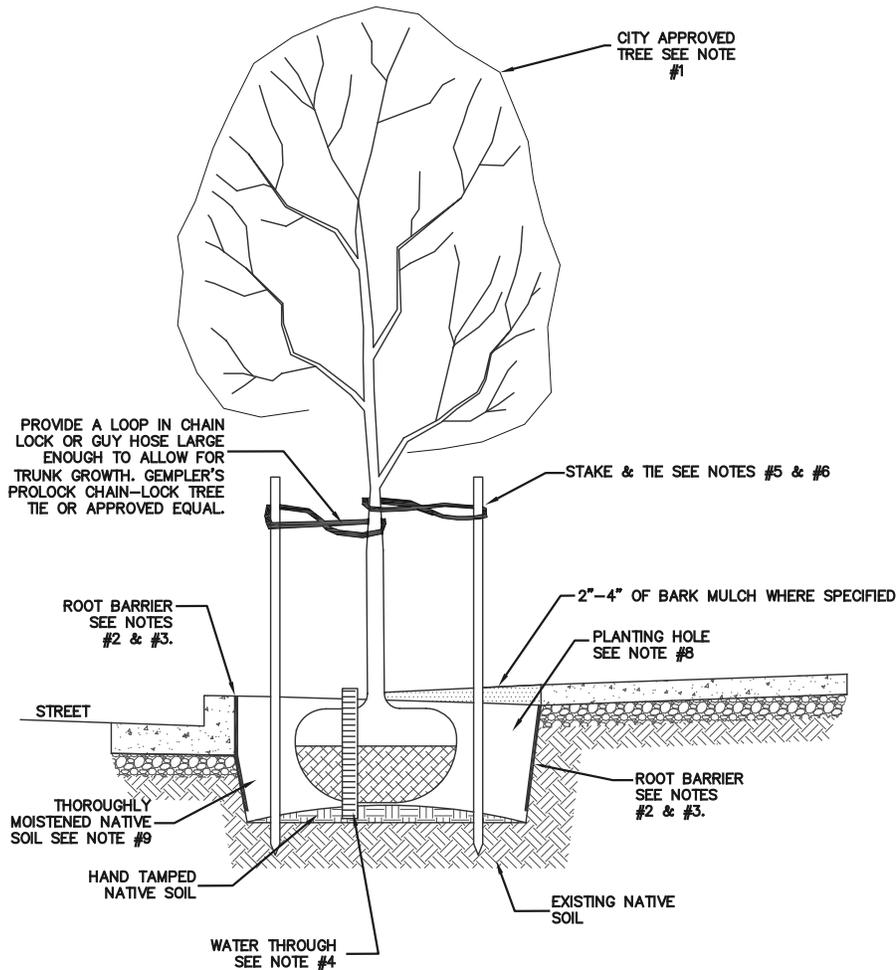
STYLE "CIP" (NEW SUB-SLAB, SAND BED)



REVISIONS:

TREE GRATE AND FRAME

SCALE:	N.T.S.
DATE:	July 2013
APPROVED BY:	D. Danicic
STANDARD DRAWING	107



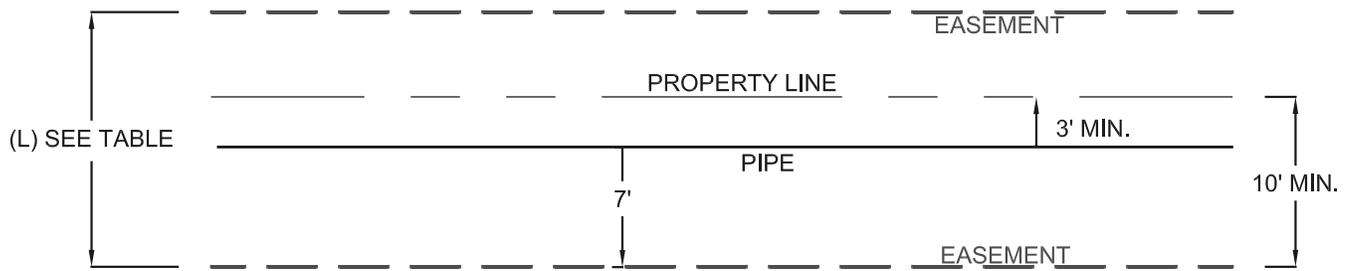
NOTES:

1. REFER TO THE CITY PLANNING DEPARTMENT APPROVED STREET TREE PLANTING LIST.
2. ROOT BARRIER REQUIRED WHEN HARDSCAPE OR STRUCTURE IS LOCATED WITHIN A 6' RADIUS FROM CENTER OF TREE. ROOT BARRIER TO BE 18" DEEP AND SHALL BE INSTALLED ALONG ALL BOUNDARIES WITH HARDSCAPE e.g. SIDEWALK & CURB.
3. LINEAR OR CIRCULAR APPLICATION OF ROOT BARRIER PERMITTED. ROOT BARRIER TO EXTENT AT MINIMUM 24" PAST CENTER OF TREE IN ALL DIRECTIONS OR HAVE A MINIMUM RADIUS OF 24" FOR CIRCULAR APPLICATION. USE CENTURY CP-SERIES ROOTBARRIER PANELS WITH INTERLOCKING JOINTS OR NDS RP SERIES ROOT BARRIER PANELS WITH INTERLOCKING JOINTS. ALL ROOT BARRIER INSTALLATIONS SHALL BE IN CONFORMANCE WITH MANUFACTURERS RECOMENDATIONS.
4. OPPOSITE TREE STAKES, PROVIDE TWO, 3" DIAMETER HDPE PERFORATED PIPE WATERING THROUGH, FILLED WITH CLEAN PEA GRAVEL.
5. REMOVE NURSERY STAKES & INSTALL 2" DIAMETER TREATED STAKES, SET OUTSIDE ROOTBALL AND DRIVE A MINIMUM OF 12" INTO UNDISTURBED SOIL BELOW PLANTING HOLE. TRIM STAKE 6" ABOVE HIGHEST TREE TIE TO AVOID INTERFERENCE WITH CANOPY.
6. FLEXIBLE NON-ABRASIVE TREE TIE SECURED TO STAKE WITH A NAIL. PLACE TIES 6" ABOVE THE LOWEST POINT ON THE TRUNK WHERE IT CAN BE HELD SUCH THAT THE TOP OF THE TREE SPRINGS BACK TO THE UPRIGHT POSITION WHEN BENT OR DEFLECTED.
7. SET CROWN OF ROOTBALL 1- $\frac{1}{2}$ " ABOVE FINISHED GRADE.
8. PLANTING HOLE TO BE TWICE THE DIAMETER OF ROOTBALL, WITH ROOTBALL RESTING ON FIRM SOIL. SCARIFY SIDES OF PLANTING HOLE.
9. BACKFILL WITH A MIXTURE OF $\frac{2}{3}$ NATIVE SOIL AN $\frac{1}{3}$ ORGANIC COMPOST. AREAS WITH POOR OR HEAVILY COMPACTED SOIL MAY REQUIRE ADDITIONAL AMENDMENT.

REVISIONS:
MAY 2014

STREET TREE & ROOT BARRIER

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	108



NOTES:

1. MAINLINES SHALL BE PLACED IN PUBLIC RIGHT OF WAY & MAY BE PLACED IN EASEMENTS WHEN NECESSARY & APPROVED BY THE CITY ENGINEER.

2. FOR MAINLINES PLACED IN EASEMENTS LOCATED OTHER THAN ALONG A PROPERTY LINE, THE MAINLINE SHALL BE PLACED IN CENTER OF EASEMENT.

3. LARGER EASEMENT WIDTHS MAY BE REQUIRED FOR SPECIAL CIRCUMSTANCES SUCH AS EXCESSIVELY DEEP PIPES, e.g. 1:1 SLOPE FROM BOTTOM OF FOUNDATION TO BOTTOM EDGE OF PIPE TRENCH.

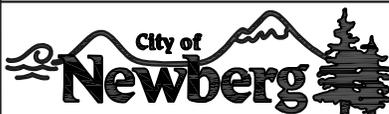
4. OPEN CHANNELS SHALL HAVE EASEMENT WIDTHS SUFFICIENT TO COVER THE 100 YEAR FLOOD PLAIN LINE WHEN A 100 YEAR DESIGN STORM IS REQUIRED, OR 15' FROM THE WATERWAY CENTERLINE, OR 10' FROM THE TOP OF THE RECOGNIZED BANK, WHICHEVER IS GREATER. A 15' WIDE ACCESS SHALL BE PROVIDED ON BOTH SIDES OF THE CHANNEL FOR CHANNEL WIDTHS GREATER THAN 14' AT THE TOP OF THE RECOGNIZED BANK.

5. EASEMENT LOCATIONS FOR PUBLIC STORM DRAINS SERVING A PLANNED UNIT DEVELOPMENT, APARTMENT COMPLEX, OR COMMERCIAL/ INDUSTRIAL DEVELOPMENT SHALL BE IN PARKING LOTS, PRIVATE DRIVES, OR SIMILAR OPEN AREAS WHICH WILL PERMIT UNOBSTRUCTED VEHICLE ACCESS FOR MAINTENANCE.

5. ALL EASEMENTS MUST BE FURNISHED ON CITY FORM, TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO RECORDING.

6. MULTIPLE PIPES IN A COMMON EASEMENT DETERMINED ON A CASE BY CASE BASIS.

MINIMUM EASEMENT WIDTH	
(L) EASEMENT WIDTH (ft.)	PIPE SIZE (in.)
15	18" OR LESS
20	OVER 18"
LARGER	WHEN REQUIRED



PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

EASEMENTS

SCALE:

DATE: 01/24/2014

APPROVED BY: JAY H.

STANDARD DRAWING

109

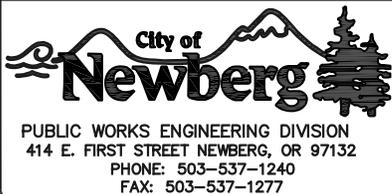
NOTES:

1. THE MINIMUM PIPE COVER SHALL BE ACCORDING TO TABLE 1, BELOW. WHEN CIRCUMSTANCES DICTATE, THEN A LESSER DESIGN COVER MAY BE CONSIDERED PER TABLE 2 BELOW.
2. PIPE COVER SHALL BE MEASURED FROM FINISHED GRADE TO THE UPPER MOST EXTERIOR SURFACE ELEVATION OF THE PIPE.
3. A PIPE UNDER A ROADWAY SHALL NOT INTRUDE INTO THE SUBGRADE AND SHALL BE PROTECTED DURING CONSTRUCTION.
4. SUFFICIENT DEPTH SHALL MEAN FROM THE TOP OF THE PIPE TO FINISHED GRADE. ALL STORM DRAINS SHALL BE LAID AT SUFFICIENT DEPTH TO PROTECT AGAINST DAMAGE FROM INTERIM CONSTRUCTION LOADS, FINAL TRAFFIC LOADS, AND TO DRAIN BUILDING FOOTINGS WHERE PRACTICAL. IN AREAS OF RELATIVELY FLAT TERRAIN, THE DESIGN ENGINEER MUST SHOW THAT SUFFICIENT DEPTH PROVIDED AT THE BOUNDARY OF THE DEVELOPMENT TO PROPERLY SERVE THE REMAINDER OF THE UPSTREAM BASIN AREA TRIBUTARY TO THE SITE.

TABLE 1 : MINIMUM COVER	
WATER	36 (in.)
STORM	48 (in.)
SEWER	8 (ft.)

TABLE 2: PIPE COVER		
TYPE OF PIPE	PAVED AREAS (in.)	UNPAVED AREAS (in.)
PVC C900	24	12
PVC 3034 SDR35	36	24
DUCTILE IRON	18	6
*RCP CLASS II	30	18
*RCP CLASS IV	24	12
*RCP CLASS V	18	6

* WHEN APPROVED



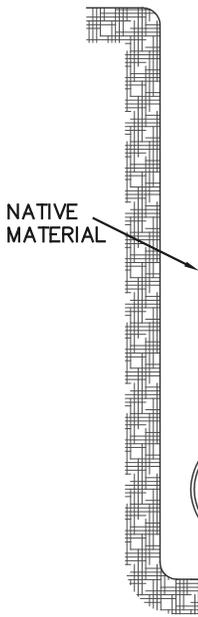
REVISIONS:

PIPE COVER

SCALE:
DATE: 01/24/2014
APPROVED BY: JAY H.
STANDARD DRAWING 110

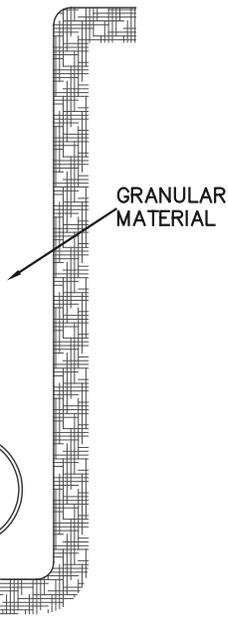
201A TRENCH BACKFILL

CLASS "A"



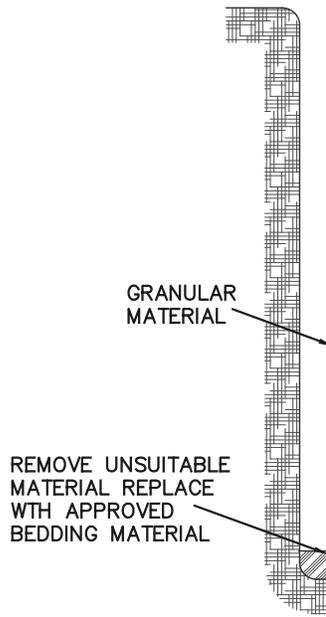
NATIVE MATERIAL

CLASS "B"



GRANULAR MATERIAL

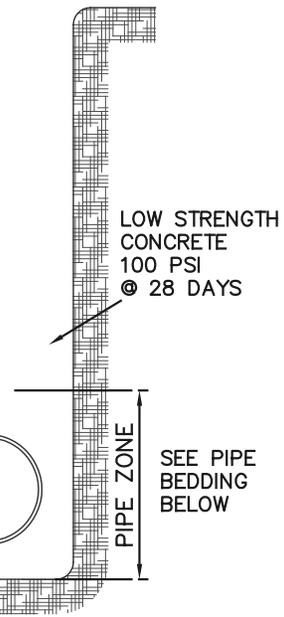
CLASS "D"



GRANULAR MATERIAL

REMOVE UNSUITABLE MATERIAL REPLACE WITH APPROVED BEDDING MATERIAL

CLASS "CDF"
CONTROLLED DENSITY FILL



LOW STRENGTH CONCRETE
100 PSI
@ 28 DAYS

PIPE ZONE
SEE PIPE BEDDING BELOW

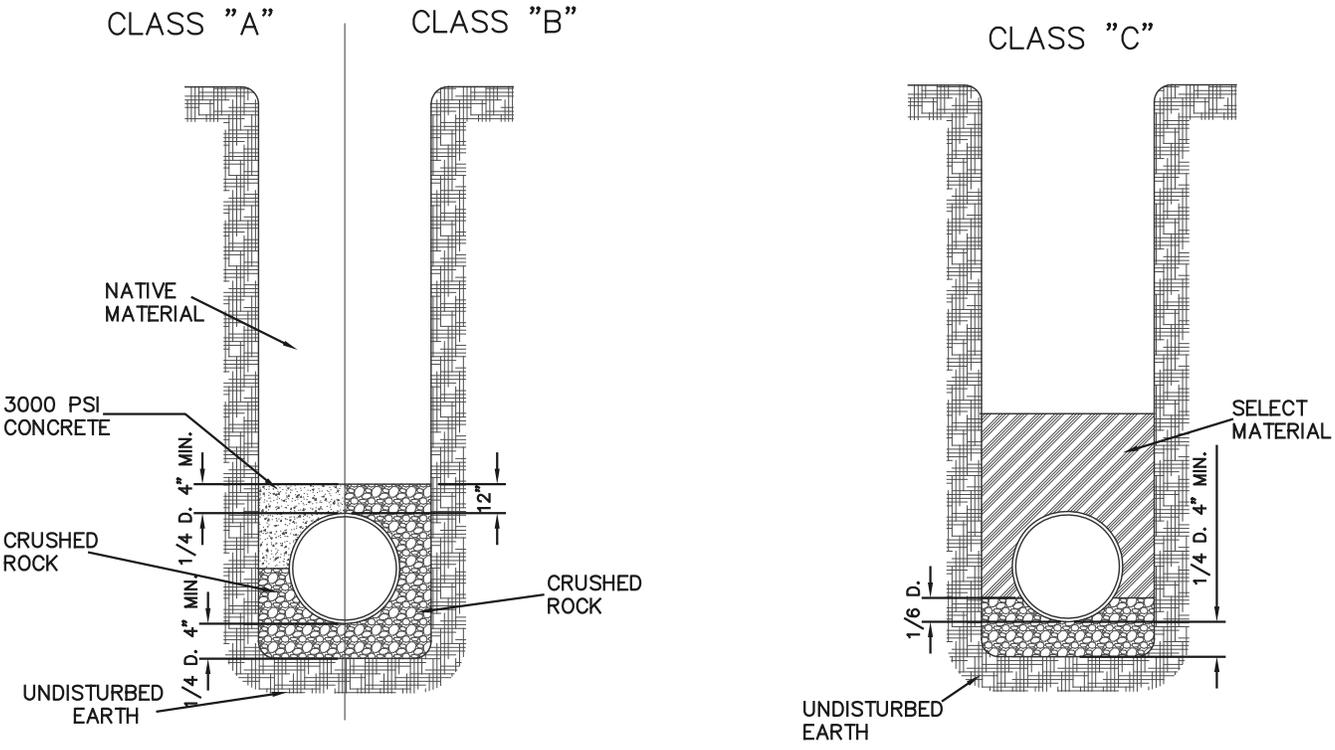
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:
SEPT 2013- JAY H.

TRENCH BACKFILL

SCALE:	N.T.S
DATE:	MAY 2007
APPROVED BY:	D. DANICI
STANDARD DRAWING	201A

201B PIPE BEDDING



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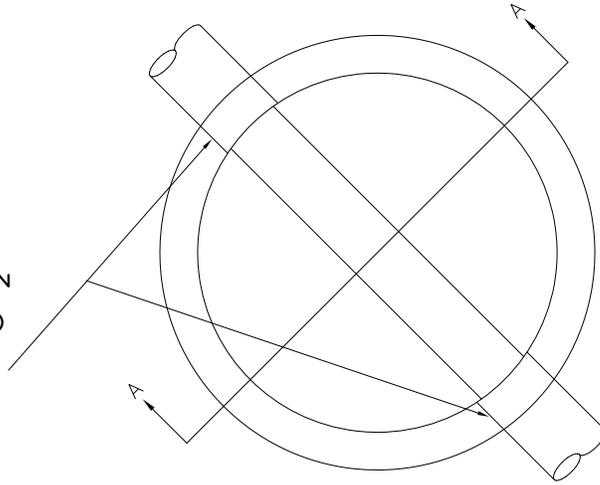
REVISIONS:
SEPT. 2013- JAY H.

PIPE BEDDING

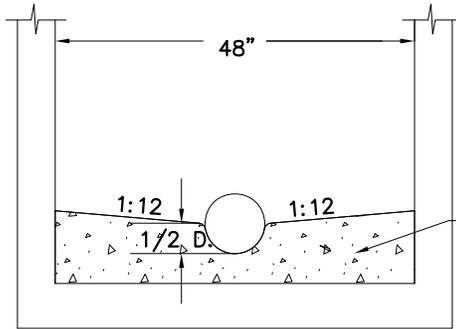
SCALE:	N.T.S
DATE:	MAY 2007
APPROVED BY:	D. DANICI
STANDARD DRAWING	201B

NOTE:
LAY PIPE THROUGH MANHOLE FOR CHANNEL
IF THE SLOPE IN AND OUT OF THE MANHOLE
ARE THE SAME.

- ALL PIPE PENETRATION MUST HAVE ADHESION COLLAR (SAND COLLAR) FOR POSITIVE SEAL TO CONCRETE.
- ADD "RUBBER BOOT".
- SAND COLOR AS APPROVED BY CITY ENGINEER.

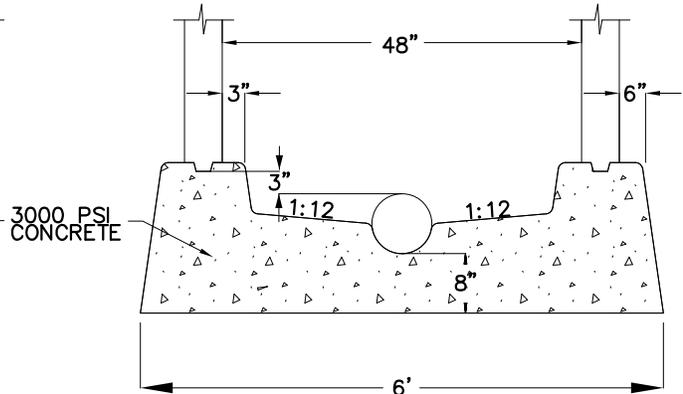


APPLY LIGHT BROOM
FINISH TO INSIDE OF BASE



6" COMPACTED 3/4"-0" CRUSHED
ROCK ON STABLE SUBGRADE

PRECAST BASE



6" COMPACTED 3/4"-0" CRUSHED
ROCK ON STABLE SUBGRADE

POURED IN PLACE BASE

REVISIONS:

MANHOLE BASE

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danilic
STANDARD DRAWING	203

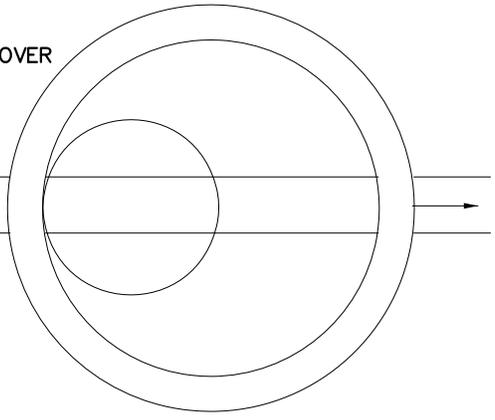
NOTES

1. STANDARD 48" MANHOLE TO BE USED FOR PIPES 24" AND LESS.
2. PRECAST CONCRETE STRUCTURES SHALL HAVE STRENGTH OF 4000 PSI.
3. STANDARD MANHOLE DEPTH = 8' TOP OF FRAME TO INVERT.
4. LATERAL LINES TO MATCH TOP OF INLET PIPE AT MANHOLE.
5. ALL INTERIOR JOINTS AND CONNECTIONS SHALL BE WATER TIGHT, AND GROUTED WITH NON-SHRINK GROUT.
6. ALL MANHOLES SHALL BE VACUUM TESTED PRIOR TO ACCEPTANCE.
7. IF END OF LINE MANHOLE, STEP SHALL BE LOCATED ON DOWNSTREAM SIDE AND CHANNEL SHALL BE CONSTRUCTED FULL WIDTH OF INTERIOR.

USE OF KEY-LOC TYPE MANHOLE SECTIONS REQUIRES SEALING OF EXTERIOR JOINTS WITH "RAPID SEAL"® OR INTERIOR COATING WITH "RAVEN COATING"®

LOCATE MANHOLE COVER OVER UPSTREAM OF MAIN LINE

FLOW DIRECTION



CAST IRON FRAME AND COVER SEE STD. DWGS. 209 & 411

STANDARD FRAME WITH COVER

FINISH GRADE

EXTERIOR GROUTING OF FRAME

RISER RINGS—MAX. 6"

18" MIN. 24" MAX.

PLACE STEPS UPSTREAM OVER MAIN CHANNEL

ECCENTRIC CONE SECTION

BOND ALL JOINTS WITH MASTIC SEAL WITH KEY-LOCK JOINTS

SECTION 1' TO 4'

48" DIA. SECTIONS RUBBER GASKETS OR KEY-LOCK SECTIONS ONLY

BASE SECTION 2' TO 4'

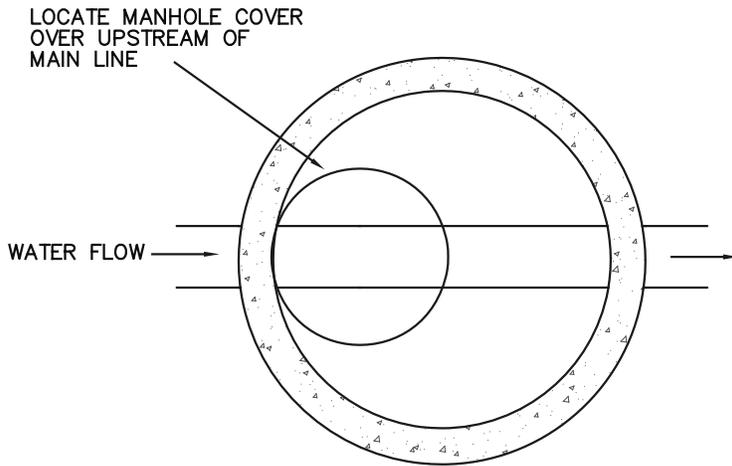
MANHOLE BASE SEE STD. DWG 203

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 PUBLIC WORKS ENGINEERING DIVISION
 414 E. FIRST STREET NEWBERG, OR 97132
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REVISIONS:
12/28/12
11/27/2013-CHIU

48"
STANDARD MANHOLE

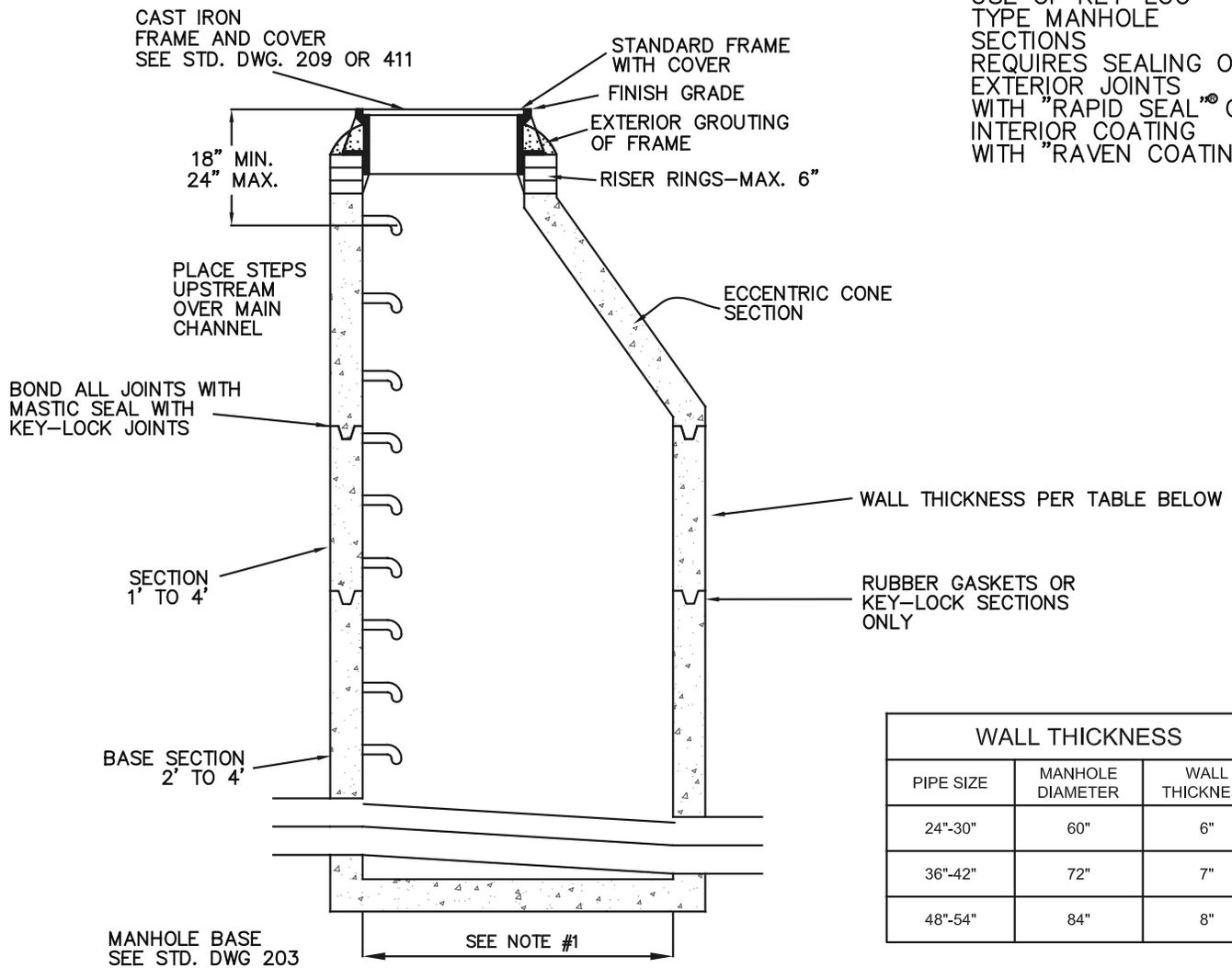
SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	204



NOTES

1. PER ENGINEERING APPROVAL OVERSIZED MANHOLE CAN BE 60", 72", OR 84" IN DIAMETER DESIGN NEEDS. SPECIFY SIZE ON CONSTRUCTION PLANS.
2. PRECAST CONCRETE STRUCTURES SHALL HAVE STRENGTH OF 4000 PSI.
3. STANDARD MANHOLE DEPTH = 8' TOP OF FRAME TO INVERT.
4. LATERAL LINES TO MATCH TOP OF INLET PIPE AT MANHOLE.
5. ALL INTERIOR JOINTS AND CONNECTIONS SHALL BE WATER TIGHT, AND GROUTED WITH NON-SHRINK GROUT.
6. ALL MANHOLES SHALL BE VACUUM TESTED PRIOR TO ACCEPTANCE.
7. IF END OF LINE MANHOLE, STEP SHALL BE LOCATED ON DOWNSTREAM SIDE AND CHANNEL SHALL BE CONSTRUCTED FULL WIDTH OF INTERIOR.

USE OF KEY-LOC TYPE MANHOLE SECTIONS REQUIRES SEALING OF EXTERIOR JOINTS WITH "RAPID SEAL"[®] OR INTERIOR COATING WITH "RAVEN COATING"[®]



WALL THICKNESS		
PIPE SIZE	MANHOLE DIAMETER	WALL THICKNESS
24"-30"	60"	6"
36"-42"	72"	7"
48"-54"	84"	8"

City of Newberg
 PUBLIC WORKS ENGINEERING DIVISION
 414 E. FIRST STREET NEWBERG, OR 97132
 PHONE: 503-537-1240
 FAX: 503-537-1277

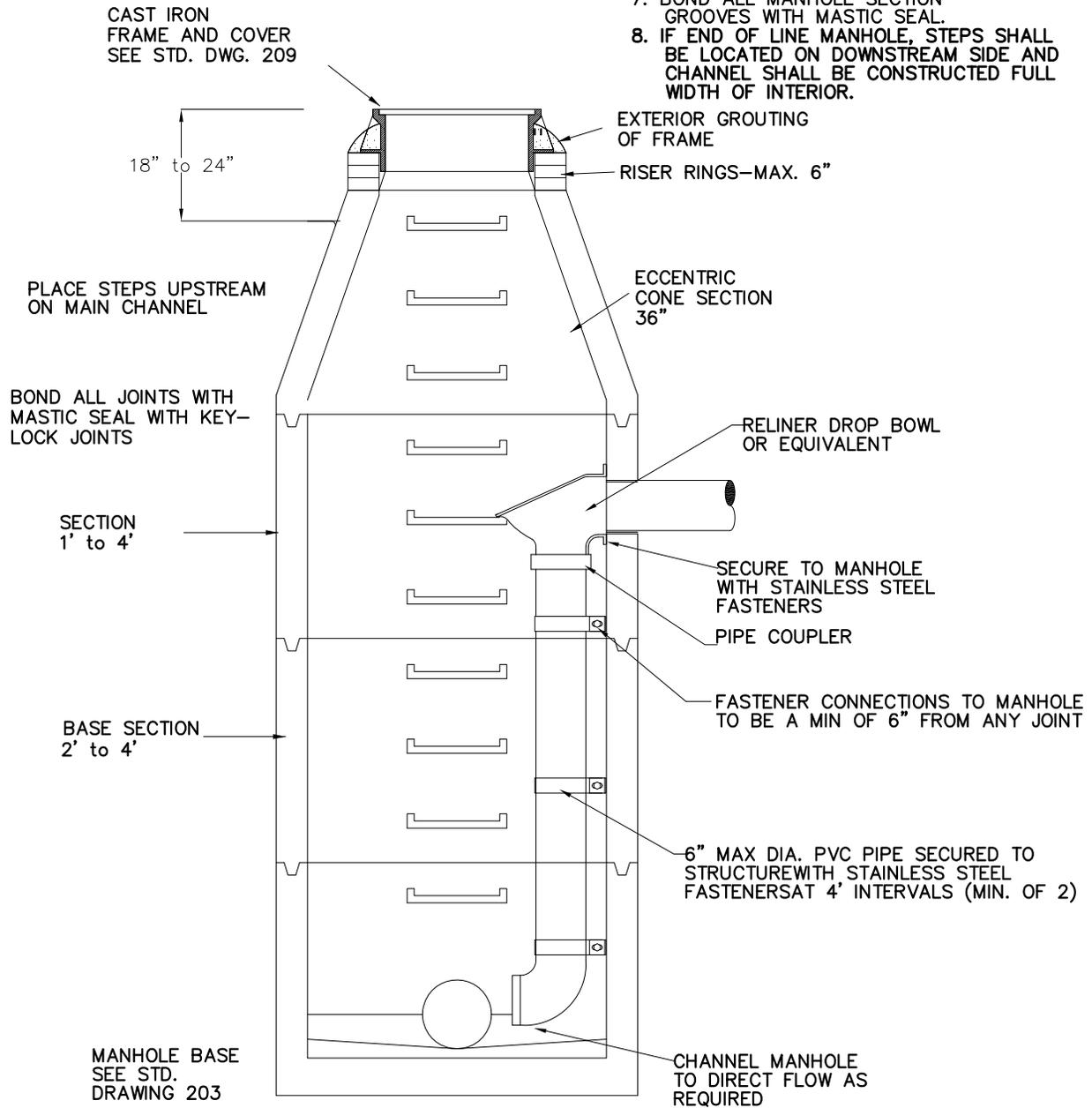
REVISIONS
NA

OVERSIZED MANHOLE

SCALE:	N.T.S
DATE:	DECEMBER 2013
APPROVED BY:	PAUL CHIU
STANDARD DRAWING	205

NOTES

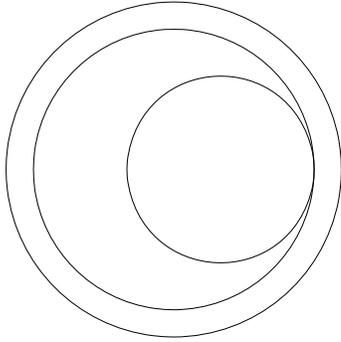
1. STANDARD MANHOLE TO BE USED FOR PIPES 24" AND LESS.
2. PRECAST CONCRETE STRUCTURES SHALL HAVE STRENGTH OF 4000 PSI.
3. STANDARD MANHOLE DEPTH = 8' TOP OF FRAME TO INVERT.
4. LATERAL LINES TO MATCH TOP OF INLET PIPE AT MANHOLE.
5. ALL INTERIOR JOINTS AND CONNECTIONS SHALL BE WATER TIGHT, AND GROUTED WITH NON-SHRINK GROUT.
6. ALL MANHOLES SHALL BE VACUUM TESTED PRIOR TO ACCEPTANCE.
7. BOND ALL MANHOLE SECTION GROOVES WITH MASTIC SEAL.
8. IF END OF LINE MANHOLE, STEPS SHALL BE LOCATED ON DOWNSTREAM SIDE AND CHANNEL SHALL BE CONSTRUCTED FULL WIDTH OF INTERIOR.



REVISIONS:

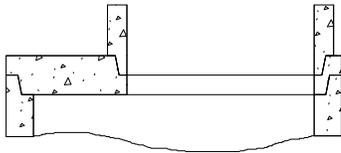
**INSIDE
DROP MANHOLE**

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	206



NOTES

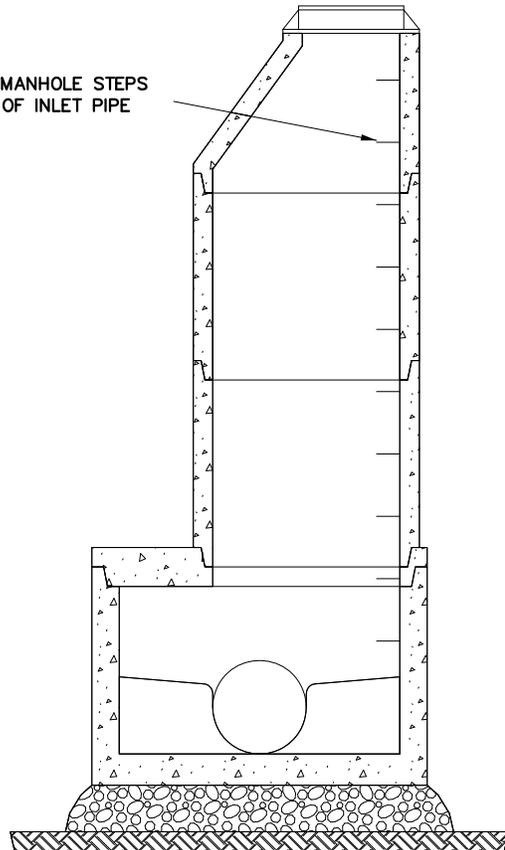
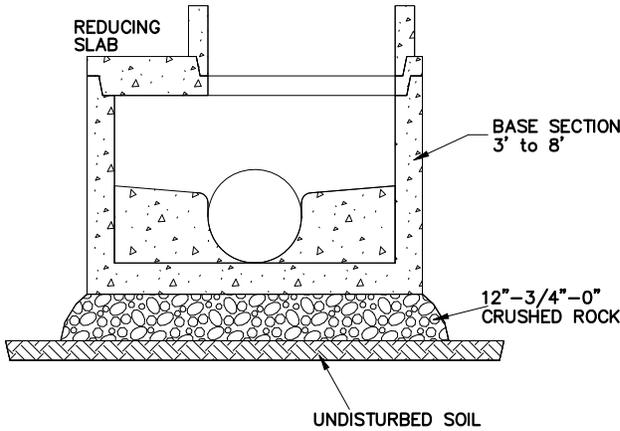
1. ALL CONCRETE SHALL HAVE STRENGTH OF 3000 PSI AT 28 DAYS.
2. MANHOLE TO BE USED FOR PIPE SIZES 24" AND GREATER.



72" to 48"
REDUCING SLAB

MANHOLE FRAME & COVER
AS SPECIFIED
SEE STD. DRAWING 209

LOCATE MANHOLE STEPS
TO LEFT OF INLET PIPE

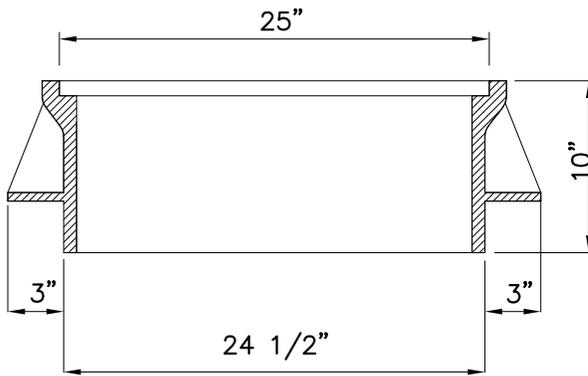
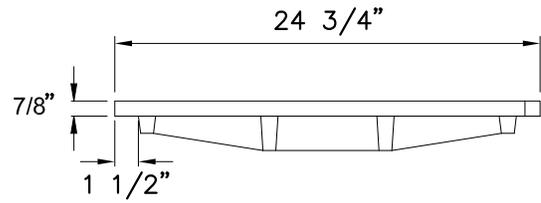
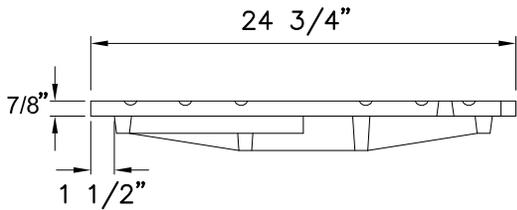
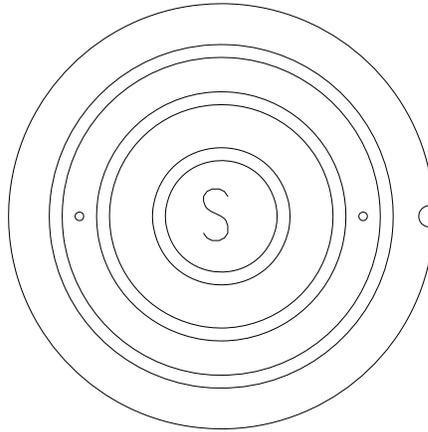


REVISIONS:

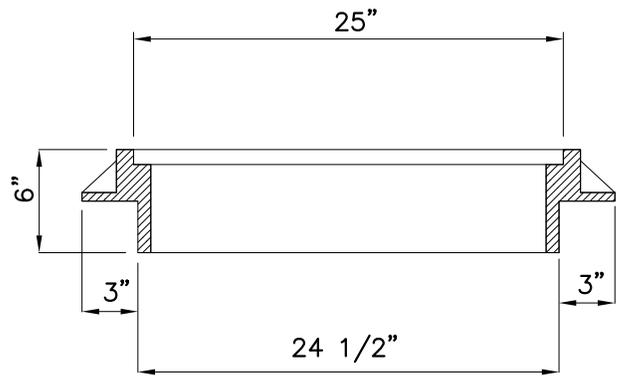
OFFSET MANHOLE

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	208

SANITARY



STANDARD FRAME



SUBURBAN FRAME

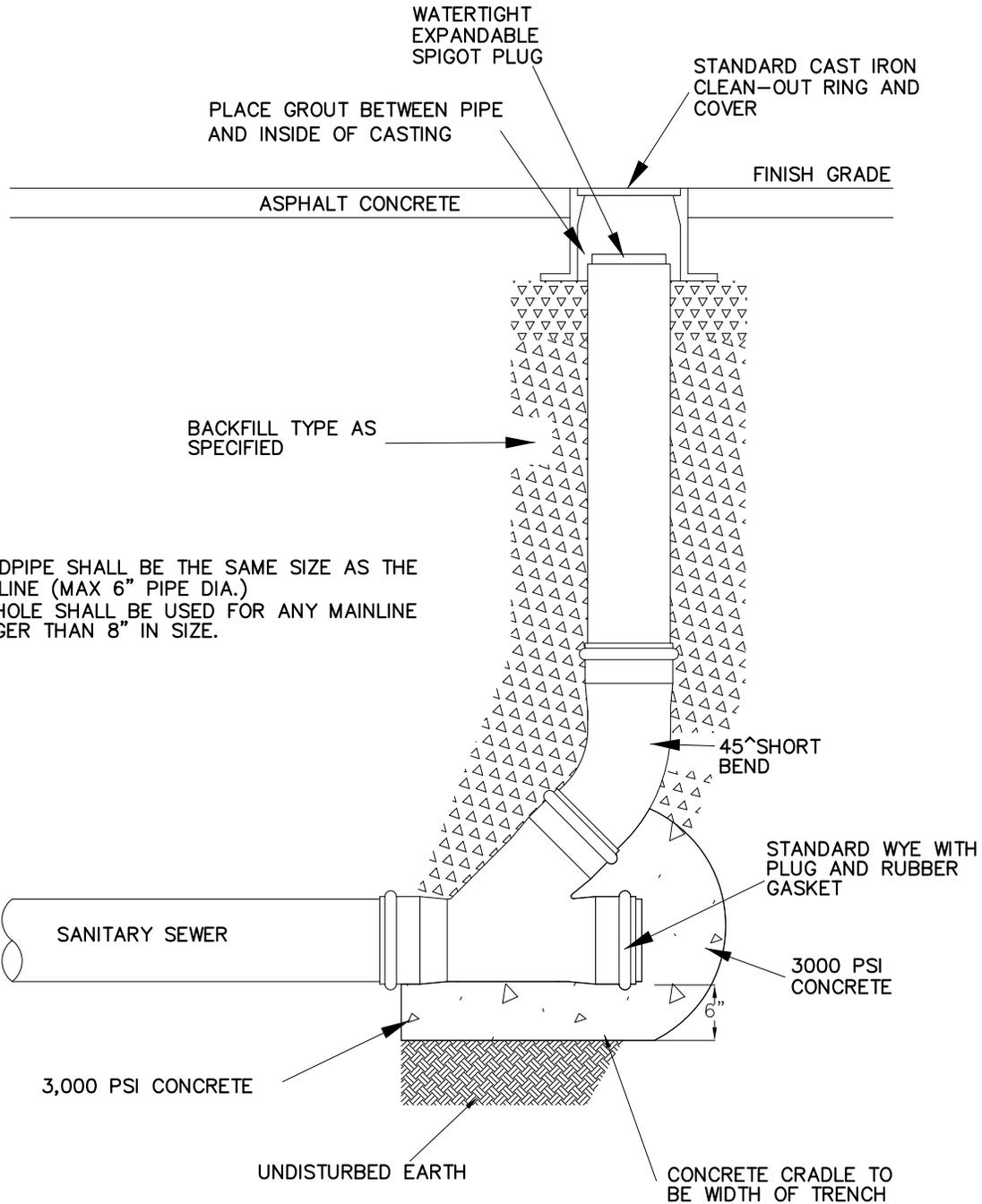
NOTES

1. USE SUBURBAN TYPE FRAME IN NON-TRAFFIC AREAS ONLY.
2. COVER AND FRAME SHALL BE CAST IRON, ASTM A-48 CLASS 30 AND MEET H-20 LOAD RATING.
3. COVER AND FRAME TO HAVE TRUE BEARING ALL AROUND.

REVISIONS:

**WASTEWATER
 MANHOLE FRAME
 AND COVER**

SCALE:	N.T.S
DATE:	July 2004
APPROVED BY:	D. Danicic
STANDARD DRAWING	209



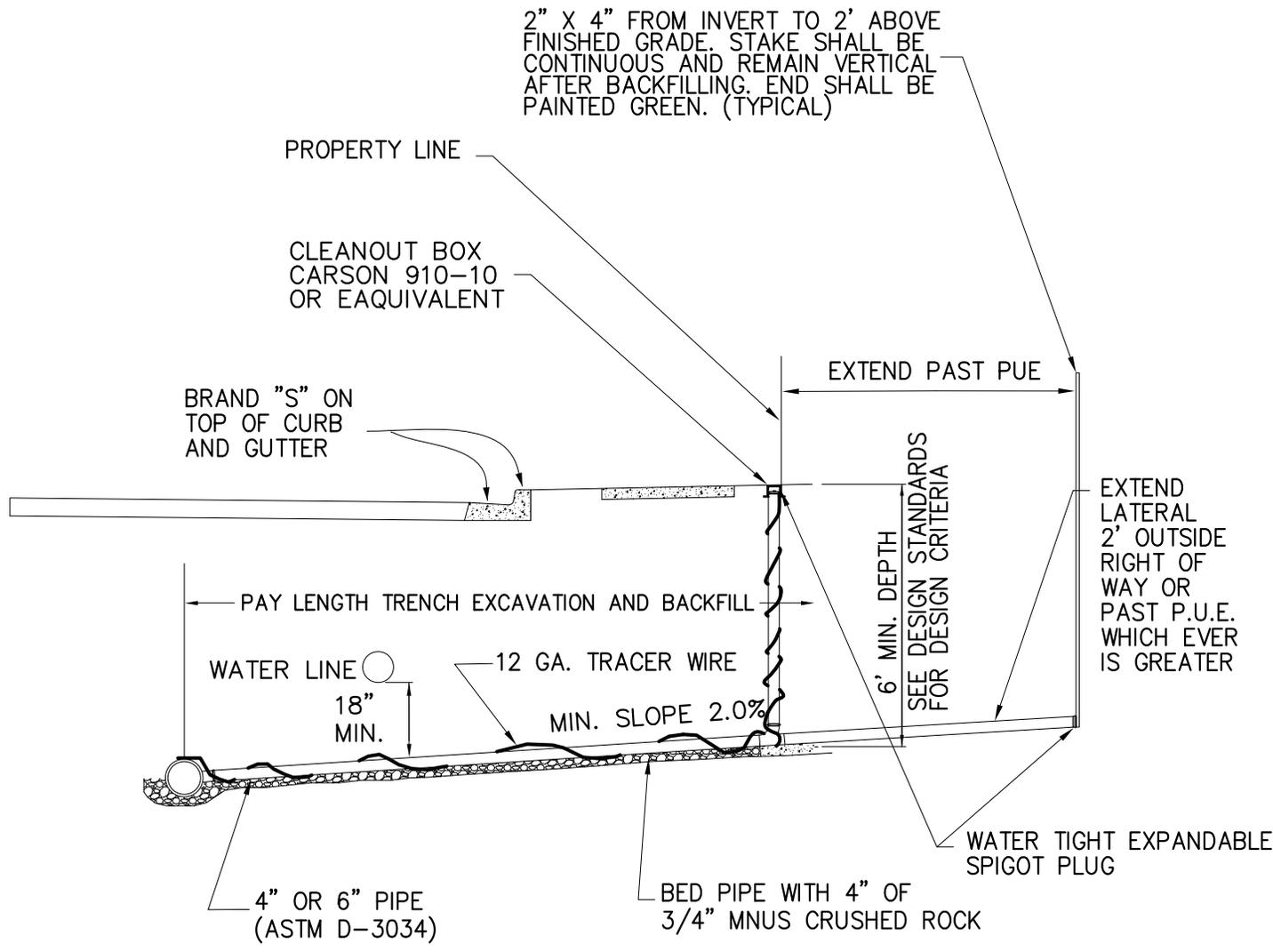
NOTES

1. STANDPIPE SHALL BE THE SAME SIZE AS THE PIPELINE (MAX 6" PIPE DIA.)
2. MANHOLE SHALL BE USED FOR ANY MAINLINE LARGER THAN 8" IN SIZE.

REVISIONS:

CLEAN OUT

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	210



NOTES:

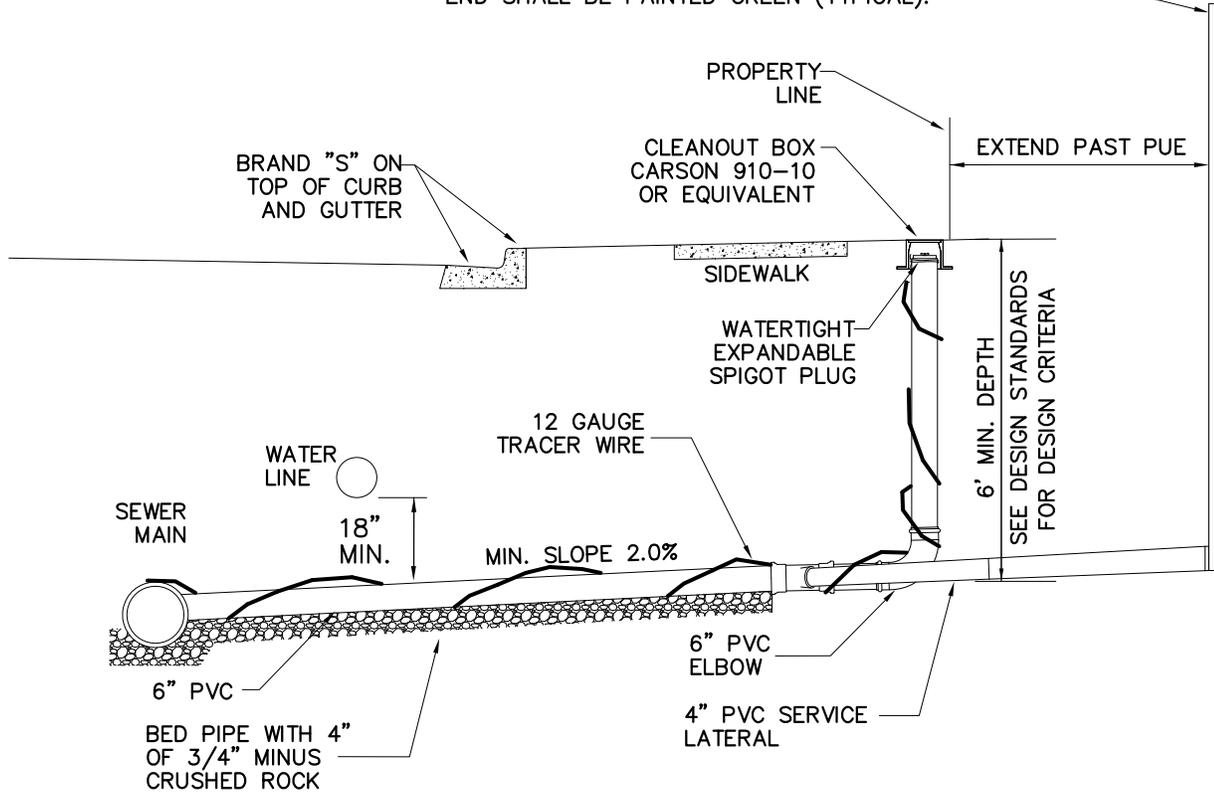
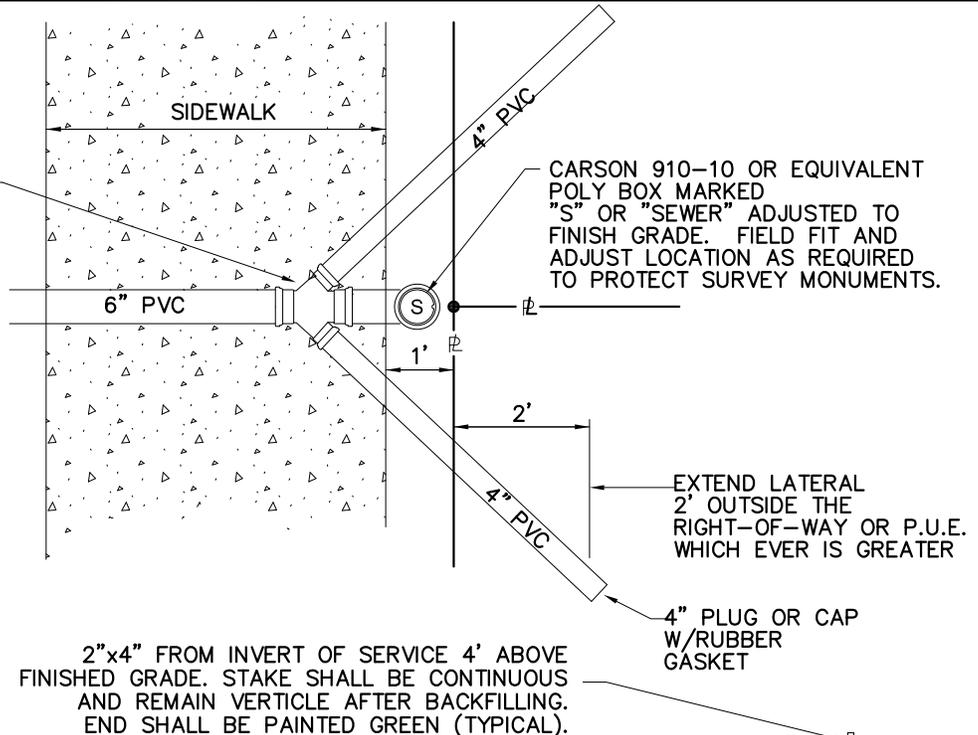
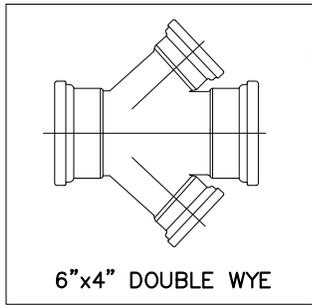
1. USES- SINGLE RESIDENTIAL SERVICE -4" PIPE
 SPLIT RESIDENTIAL SERVICE WITH CLEANOUT,
 -USE 6" PIPE SEE STD. DWG 212
2. SHEME FOR HOUSE SERVICE TO BE DETERMINED BY
 INSPECTOR IN FIELD IN CASE OF CONFLICT WITH PLANS.
3. SERVICE SHALL NOT BE BACKFILLED PRIOR TO INSPECTION.
4. MINIMUM SLOPE -2%.


City of Newberg
 PUBLIC WORKS ENGINEERING DIVISION
 414 E. FIRST STREET NEWBERG, OR 97132
 PHONE: 503-537-1240
 FAX: 503-537-1277

REVISIONS:
FEB 2014
MAY 2014

SEWER SERVICE BRANCH

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	211



NOTES:

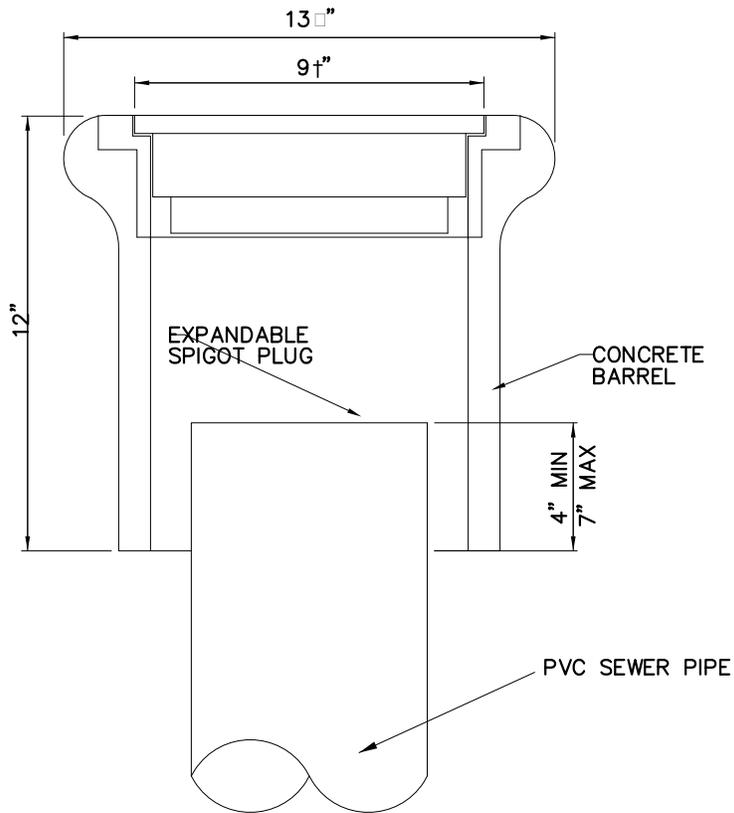
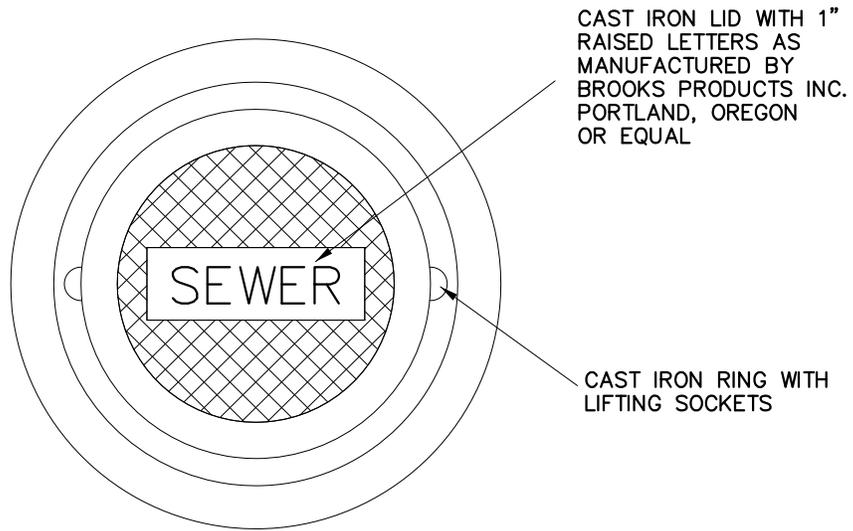
1. USES: SPLIT RESIDENTIAL SERVICE. SEE STD. DWG 211 FOR SINGLE SERVICE
2. SERVICE SHALL NOT BE BACKFILLED PRIOR TO INSPECTION.
3. MINIMUM PIPE SLOPE 2%.

REVISIONS:
07/29/08
FEB 2014
MAY 2014

DOUBLE WYE SERVICE BRANCH

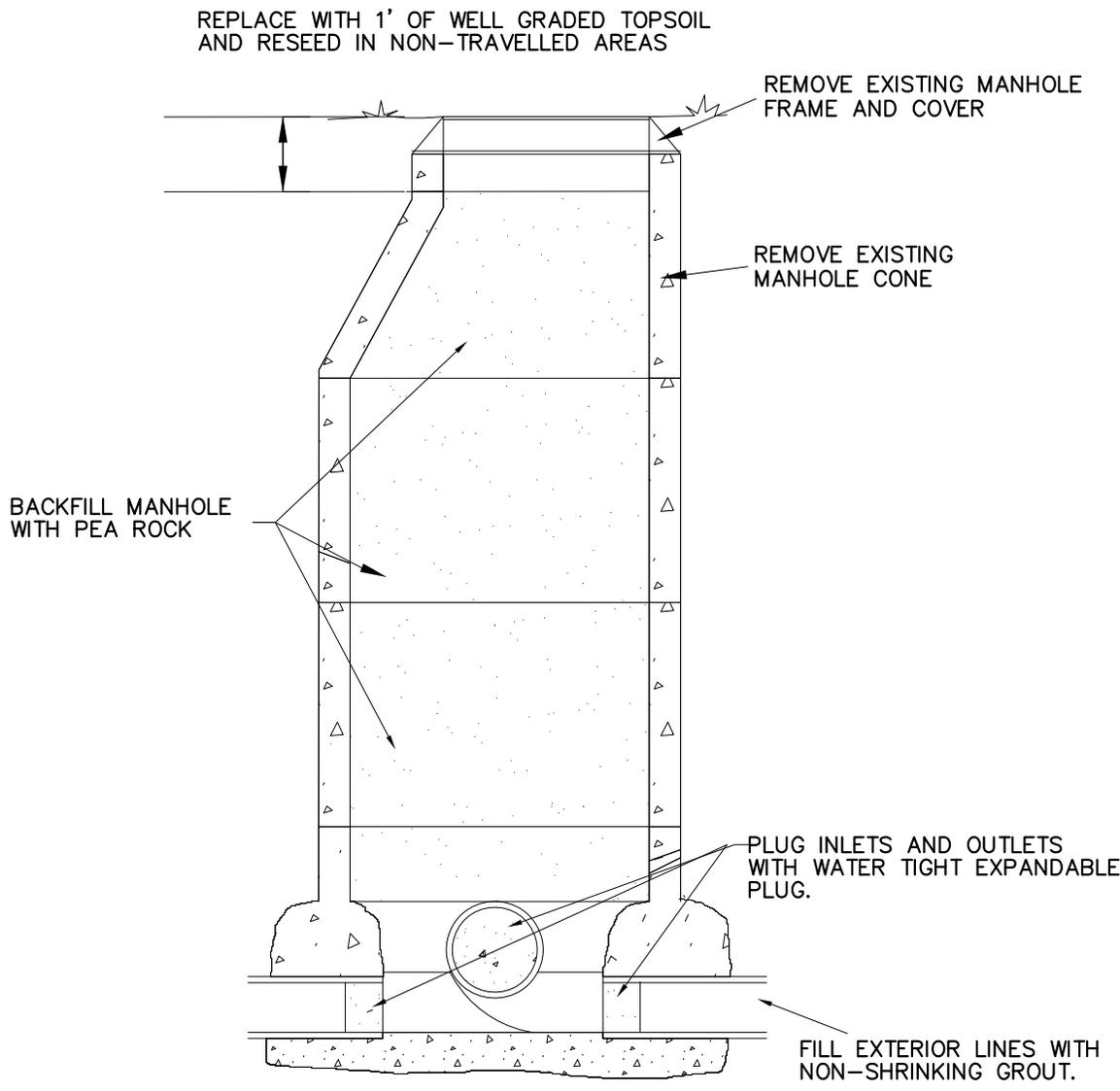
SCALE:	N.T.S.
DATE:	July 2004
APPROVED BY:	D. Danicic
STANDARD DRAWING	212

FOR USE IN PRIVATE AREAS ONLY



REVISIONS:

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	213

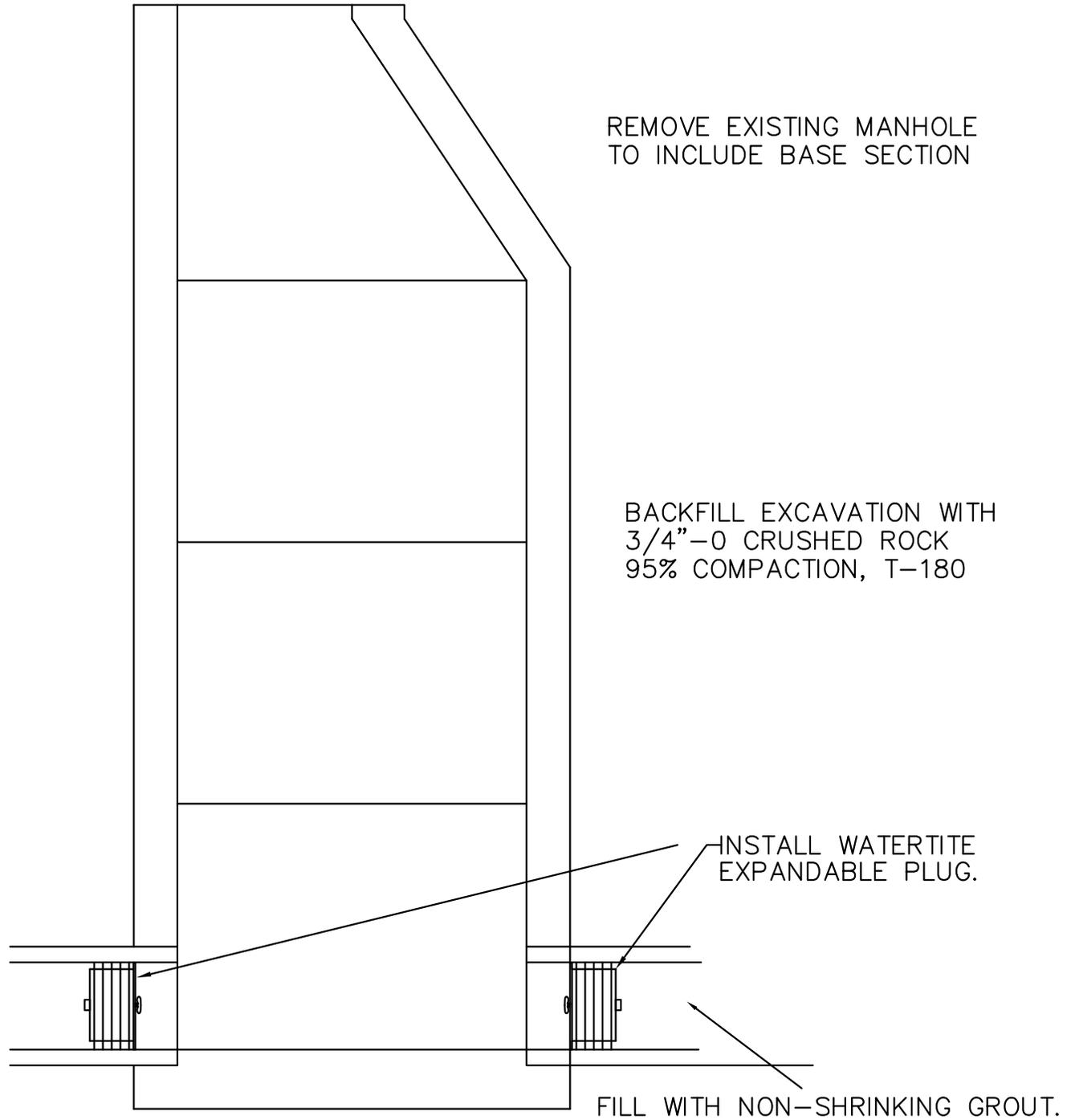


- NOTES:
 1. PRIOR TO ABANDONMENT OF MANHOLE VERIFY THAT ANY AND ALL SEWER SERVICES HAVE BEEN CONNECTED TO NEW SEWER MAIN.

REVISIONS:

MANHOLE ABANDONMENT

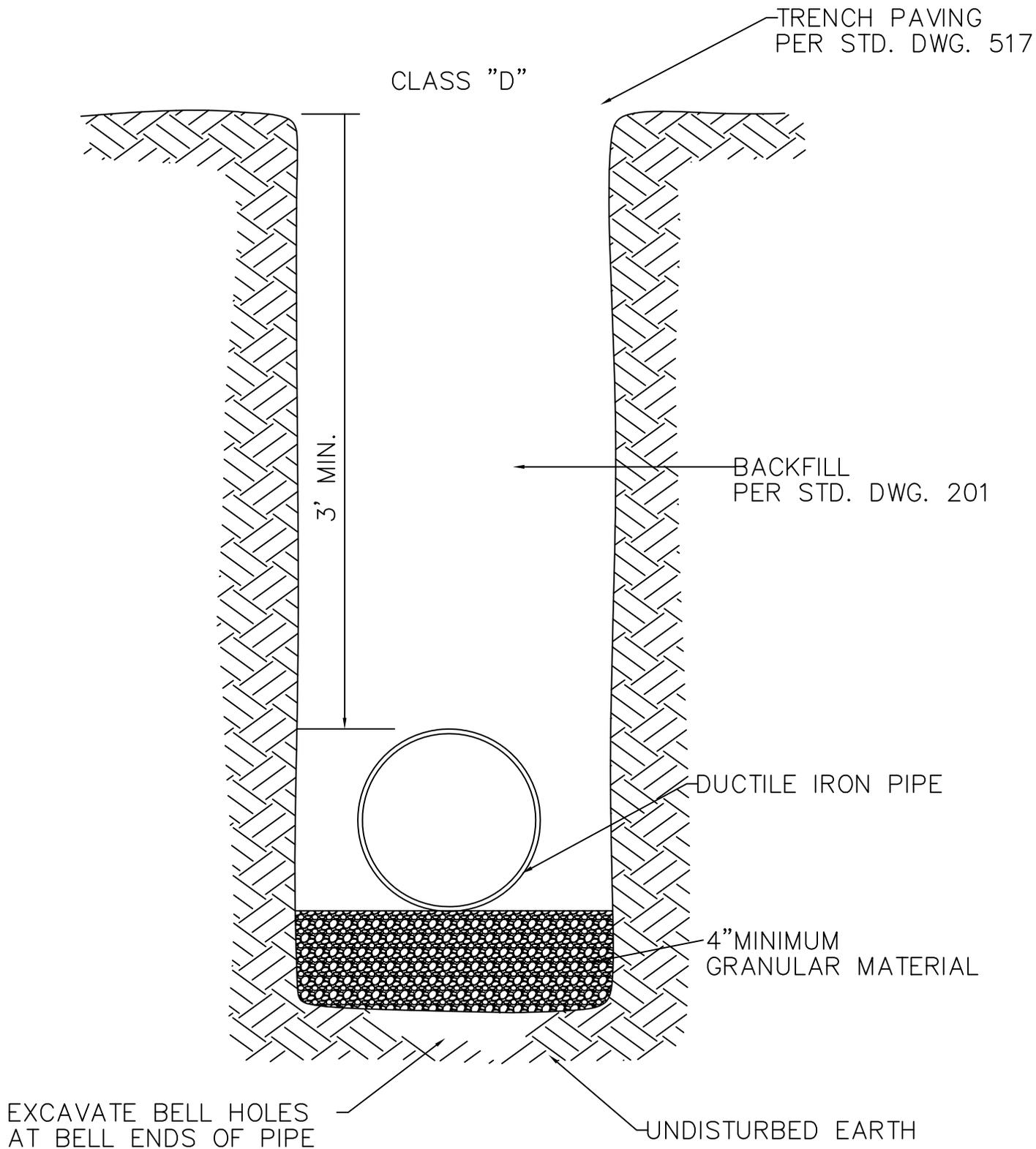
SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	214



REVISIONS:

MANHOLE REMOVAL

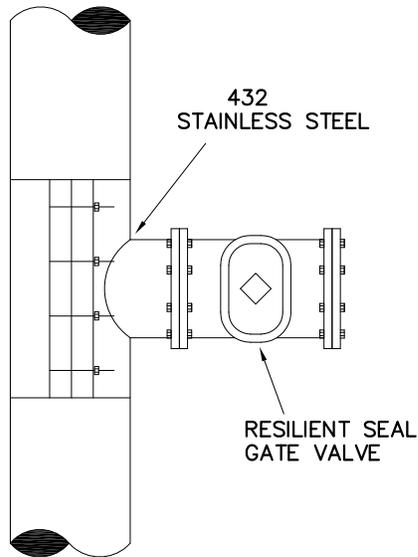
SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	215



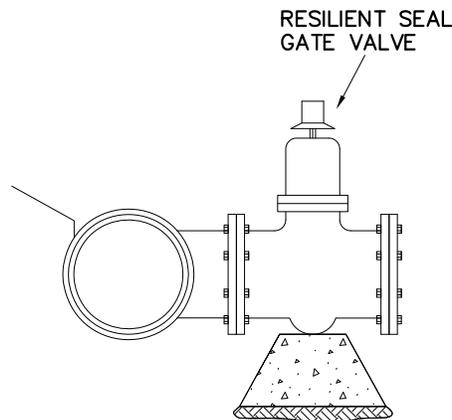
REVISIONS:
SEPTEMBER 2013- JAY H.

WATER PIPE BEDDING

SCALE:	N.T.S
DATE:	MAY 2007
APPROVED BY:	D. DANICIC
STANDARD DRAWING	301



FULL STAINLESS STEEL TAPPING SLEEVE



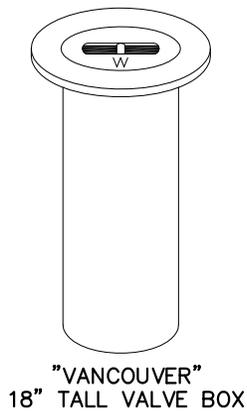
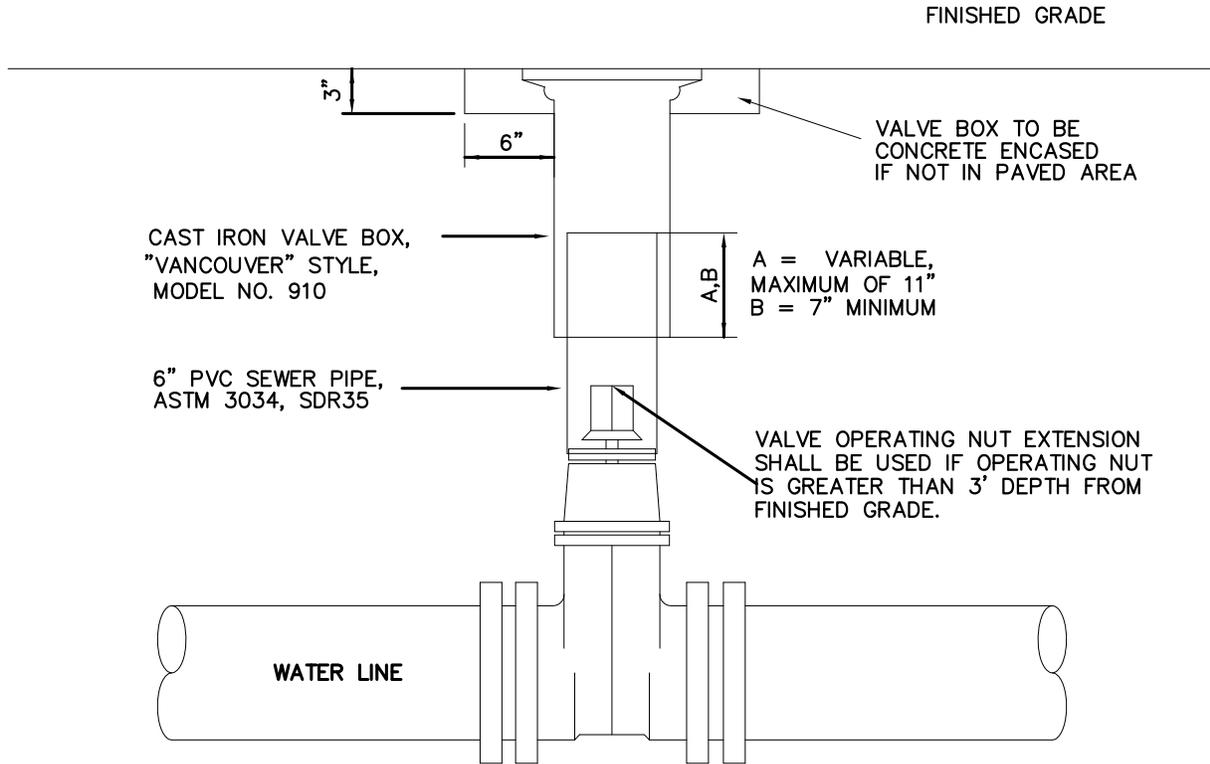
NOTES

1. WATER MAIN SHALL BE CLEANED BEFORE ATTACHING SLEEVE.
2. SLEEVE AND VALVE SHALL BE PRESSURE TESTED BEFORE MAKING TAP
3. PRESSURE TEST AND TAP SHALL BE MADE IN THE PRESENCE OF AN AUTHORIZED CITY REPRESENTATIVE BY A CONTRACTOR APPROVED BY THE ENGINEER.
4. 3/4"-0" CRUSHED ROCK SHALL BE PLACED AND COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
5. TAP SHALL BE MADE NO CLOSER THAN 18" FROM THE NEAREST JOINT.
6. SLEEVE AND VALVE SHALL BE WRAPPED AND SEALED WITH 8 MIL PLASTIC.
7. FLUSH ALL METAL SHAVINGS FROM THE TAPPING PROCESS.
8. STAINLESS STEEL TAPPING SLEEVE ON DUCTILE IRON PIPE
9. COUPON MUST BE RETAINED BY TAPPING BIT AND REMOVED FROM WATER MAIN.

REVISIONS:

**WATER TAPPING
SLEEVES**

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	302



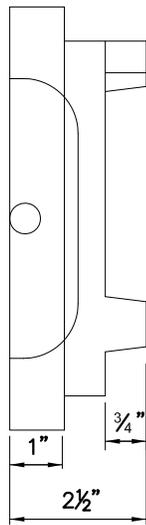
NOTES:

1. VALVE BOXES SHALL BE CENTERED DIRECTLY OVER THE NUT IN A VERTICAL POSITION.
2. VALVE BOX SHALL BE ADJUSTED TO MEET FINISHED GRADE.
3. PVC SHALL BE ONE CONTINUOUS PIECE – NO BELLS OR COUPLERS.
4. SEE STANDARD DRAWING NO. 304 VALVE BOX AND COVER.

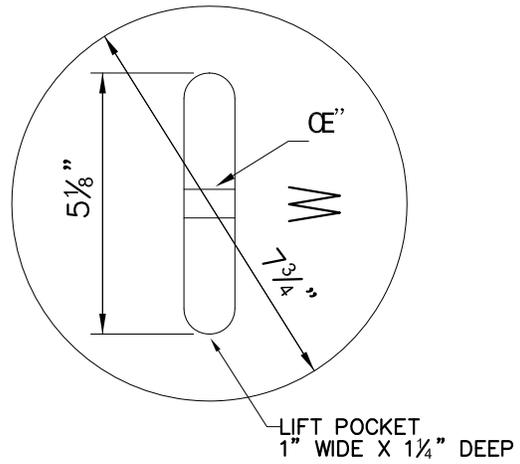
REVISIONS:
11/26/2010

**VALVE BOX
ASSEMBLY**

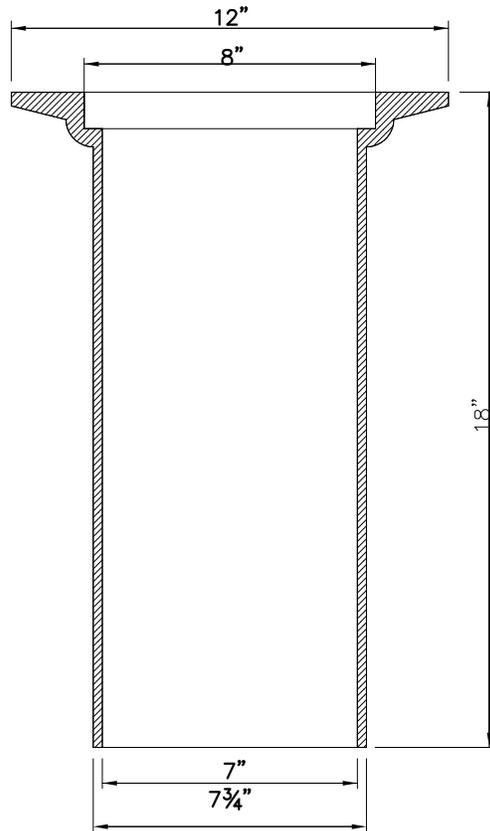
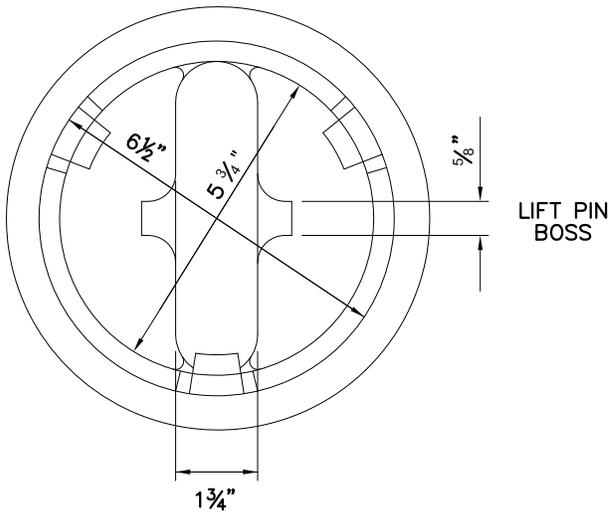
SCALE:	N.T.S
DATE:	July 2004
APPROVED BY:	D. Danilic
STANDARD DRAWING	303



TOP VIEW



BOTTOM VIEW

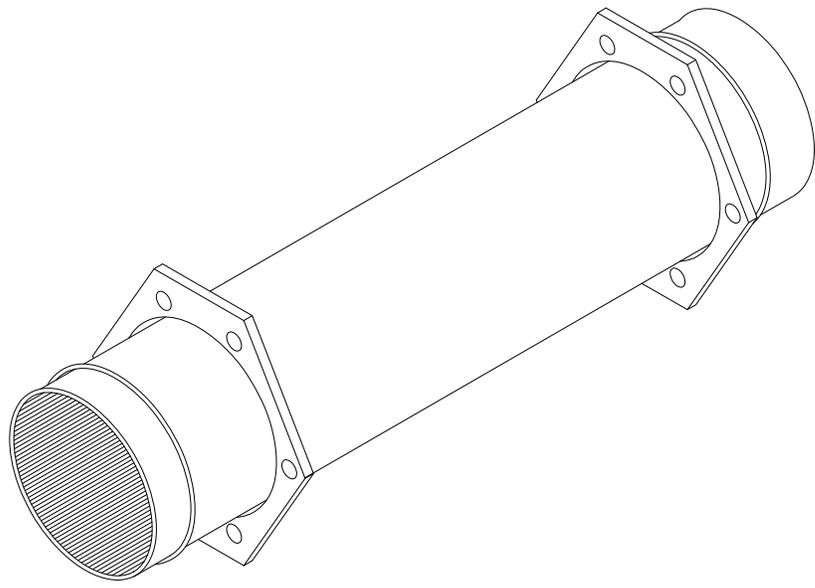
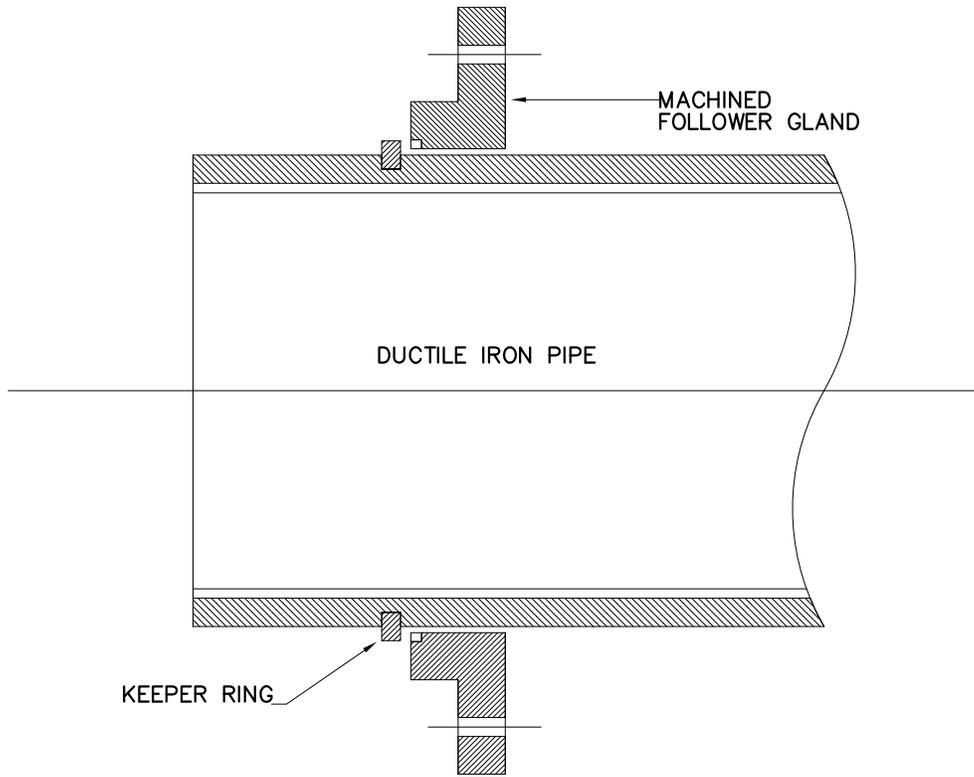


MATERIALS:
CAST IRON PER ASTM A48 CL30

REVISIONS:

VALVE BOX
AND COVER

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	304



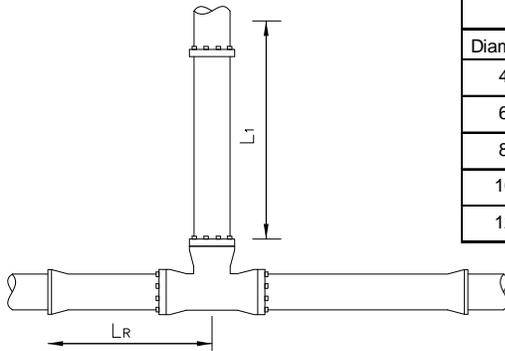
REVISIONS:

MJ HOLDING SPOOL

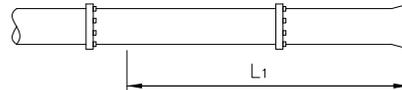
SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	305

LENGTH (L₁) OF PIPE REQUIRED FOR RESTRAINT (FEET)

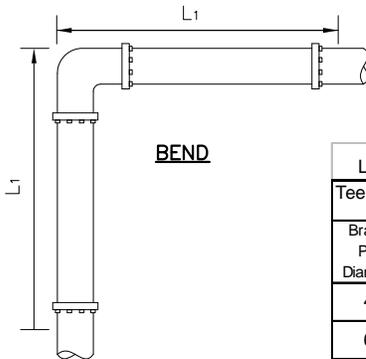
Diameter	Horizontal Bend				Dead End	Reducer (restrained length for large diameter side)				
	90°	45°	22 1/2°	11 1/4°		4"	6"	8"	10"	12"
4"	30	23	20	19	44	--	37	53	65	77
6"	35	25	21	20	55	--	--	38	53	67
8"	40	27	22	20	66	--	--	--	37	54
10"	44	29	23	21	76	--	--	--	--	51
12"	49	31	24	21	86	--	--	--	--	--



TEE CONFIGURATION



DEAD END



BEND



REDUCER

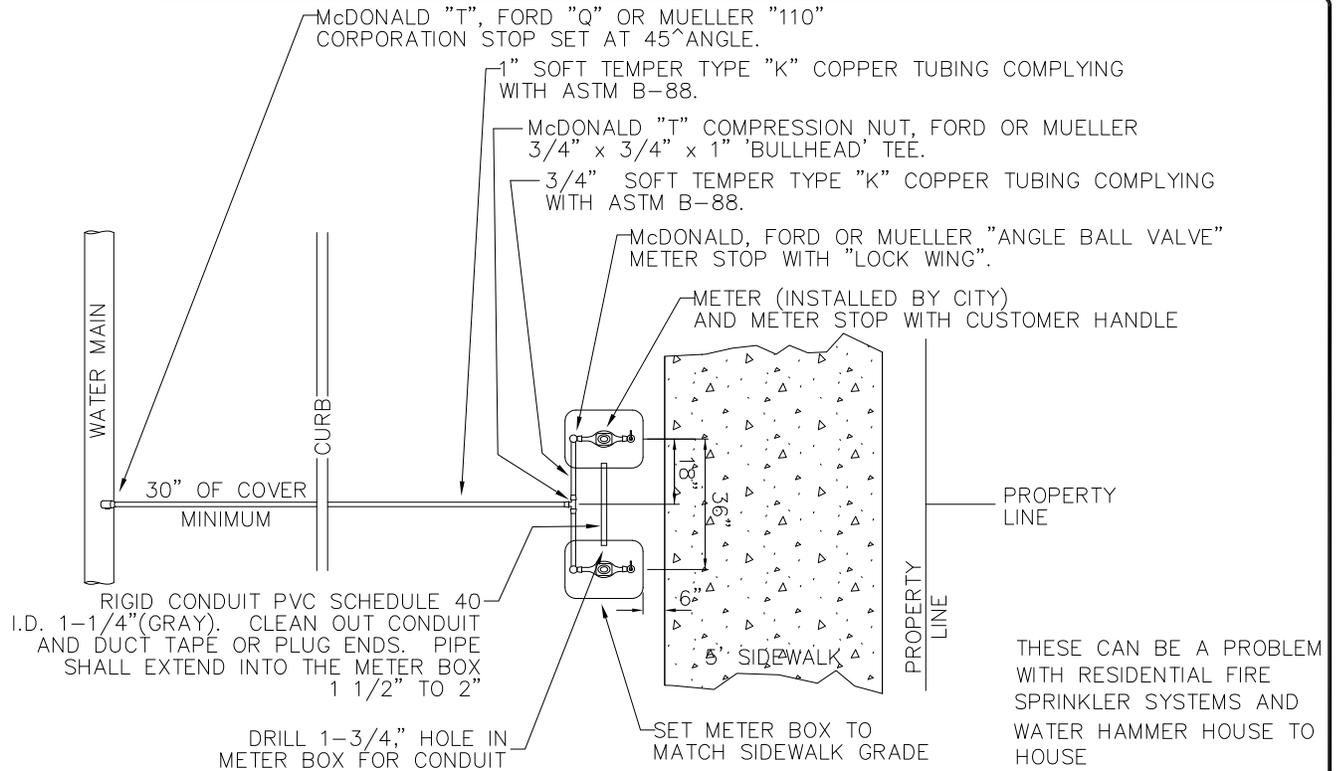
LENGTH (L₁) OF PIPE REQUIRED FOR RESTRAINT WHEN USING TEES (FEET)

Tee configurations (Restraint length for Branch)										
Branch Pipe Diameter	LR=0	LR=2	LR=4	LR=6	LR=8	LR=10	LR=12	LR=14	LR=16	LR=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

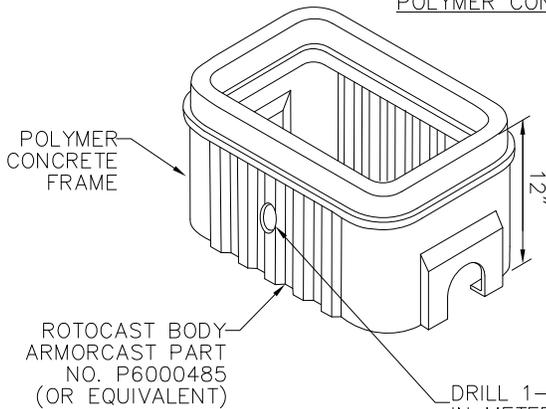
NOTES:

- ALL JOINTS WITHIN THE LENGTH "L₁" FROM THE ABOVE TABLE, SHALL BE RESTRAINED.
- 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.
- IF AN UNANTICIPATED NEED FOR JOINT RESTRAINT ARISES TO CHANGE THE SLOPE OF THE PIPE, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER.
- JOINT TYPES NOT COVERED IN ABOVE TABLE MUST BE DESIGNED INDIVIDUALLY ON ORDER TO DETERMINE APPROPRIATE RESTRAINED LENGTH.
- THE SMALL SIDE OF A REDUCER DOES NOT REQUIRE RESTRAINT IF THE LARGE DIAMETER SIDE IS PROPERLY RESTRAINED.
- ABOVE RESTRAINED LENGTHS ARE BASED ON:
 - TEST PRESSURE OF 150 PSI
 - MINIMUM OF 3 FEET COVER
 - CLASS "B" PIPE ZONE CONDITIONS
 - WHEN ORGANIC OR CLAY SOILS ARE BEING USED FOR BACKFILL, GRANULAR BACKFILL MUST BE USED FOR BEDDING AND BACKFILL TO A HEIGHT OF 6 9/32" OVER THE TOP OF THE PIPE BEFORE OTHER SOILS ARE PLACED.
 - UNCOATED PIPE, THIS TABLE DOES NOT APPLY TO 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.

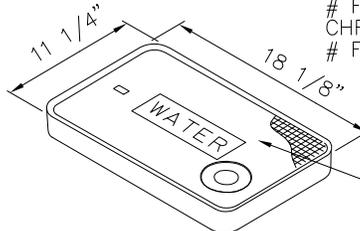


POLYMER CONCRETE METER BOX



APPROVED ALTERNATE METER BOXES

- NEWBASIS BOX WFB1220122A0C
- NEWBASIS LID WPC1220A02A0B17 (PIT LIT READER HOLE)
- CHRISTY FIBERLITE BOX 1220
- # FL12D
- CHRISTY FIBERLITE LID 1220
- # FL12DP



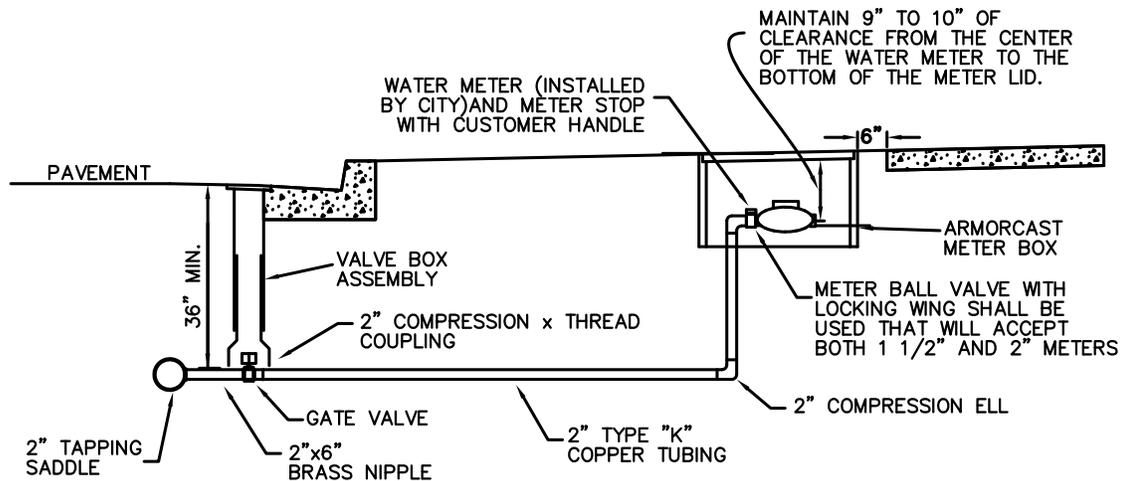
NOTES

1. SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED BY THE CITY.
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING *f* MINUS CRUSHED ROCK AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
3. WHEN AN ACTIVE CATHODIC PROTECTED SYSTEM IS ENCOUNTERED, SCHEDULE 40 PVC SHALL BE INSTALLED ACCORDING TO STANDARD DRAWING NO. 316.
4. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER ASSEMBLY.
5. METER BOX SHALL MATCH SIDEWALK GRADE (IF SIDEWALK EXISTS) OTHERWISE SET FLUSH WITH SURROUNDING GROUND SURFACE.
6. ALL FITTINGS SHALL BE COMPRESSION TYPE.
7. FOR LOCATION OF WATER MAIN, SEE STANDARD DRAWING NO. 103.

REVISIONS:
MARCH 2014

DOUBLE WATER SERVICE

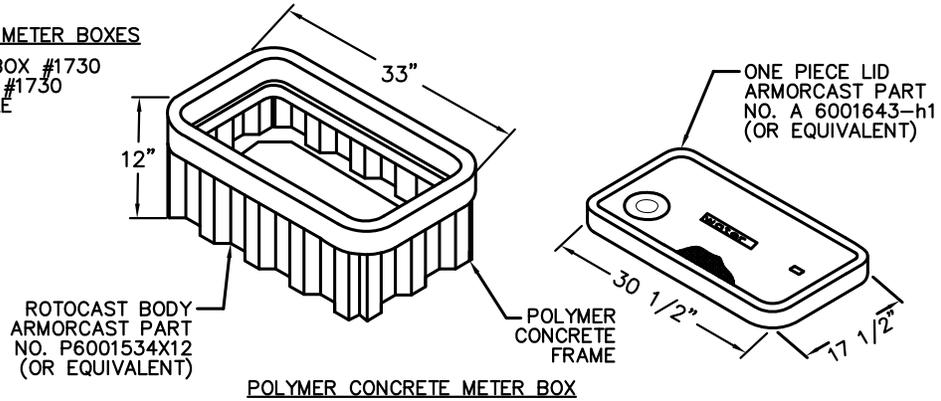
SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	308



**ALL FITTINGS MUST BE COMPRESSION TYPE
NO SOLDERED, FLARED OR JOINT FITTINGS**

APPROVED ALTERNATE METER BOXES

- CHRISTY FIBERLITE BOX #1730
CHRISTY FIBERLITE LID #1730
WITH TOUCH READ HOLE



MATERIALS

1. 2" CAST IRON BODY GATE VALVE WITH STANDARD 2" SQUARE OPERATING NUT.
2. SOFT TEMPER, TYPE "K" COPPER TUBING COMPLYING WITH ASTM B-88.
3. McDONALD "T" COMPRESSION NUT, FORD OR MUELLER METER STOP.
4. ALL FITTINGS ARE COMPRESSION TYPE.

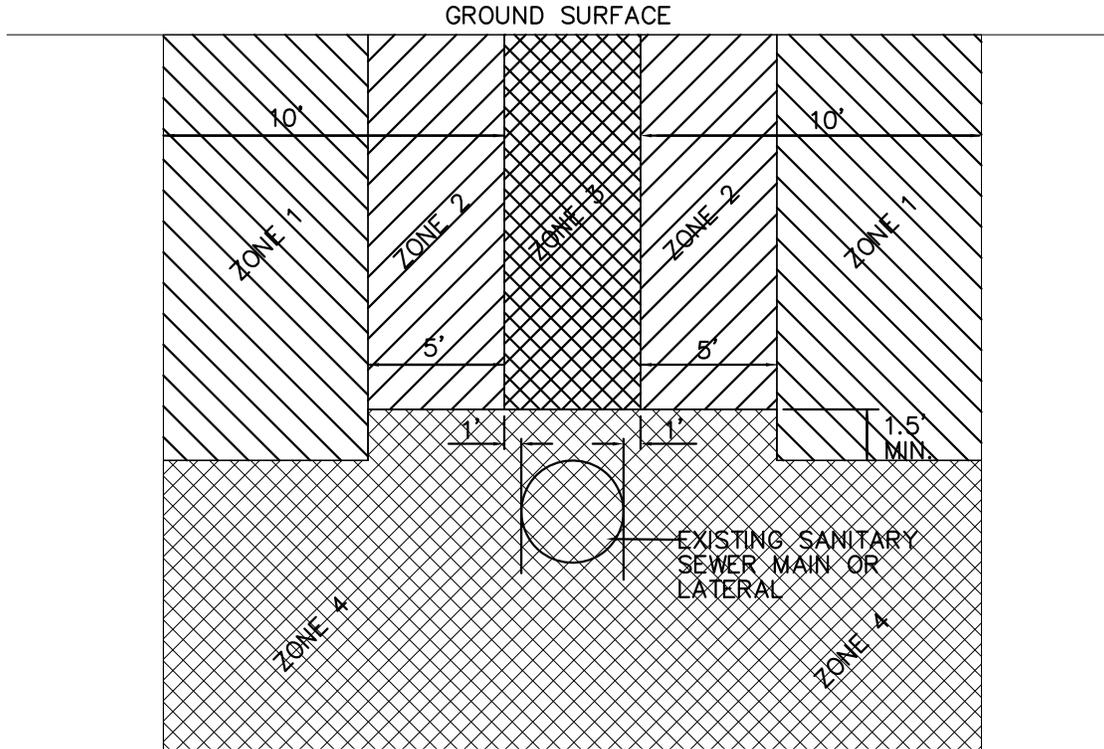
NOTES

1. SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED BY THE CITY ENGINEER.
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4"-0 CRUSHED AGGREGATE AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
3. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER ASSEMBLY.
4. VALVE OPERATING NUT EXTENSION SHALL BE USED IF OPERATING NUT IS GREATER THAN 3' DEPTH FROM FINISH GRADE.

REVISIONS:
3/15/2010
3/09/2011

**STANDARD 1 1/2 " & 2"
WATER SERVICE**

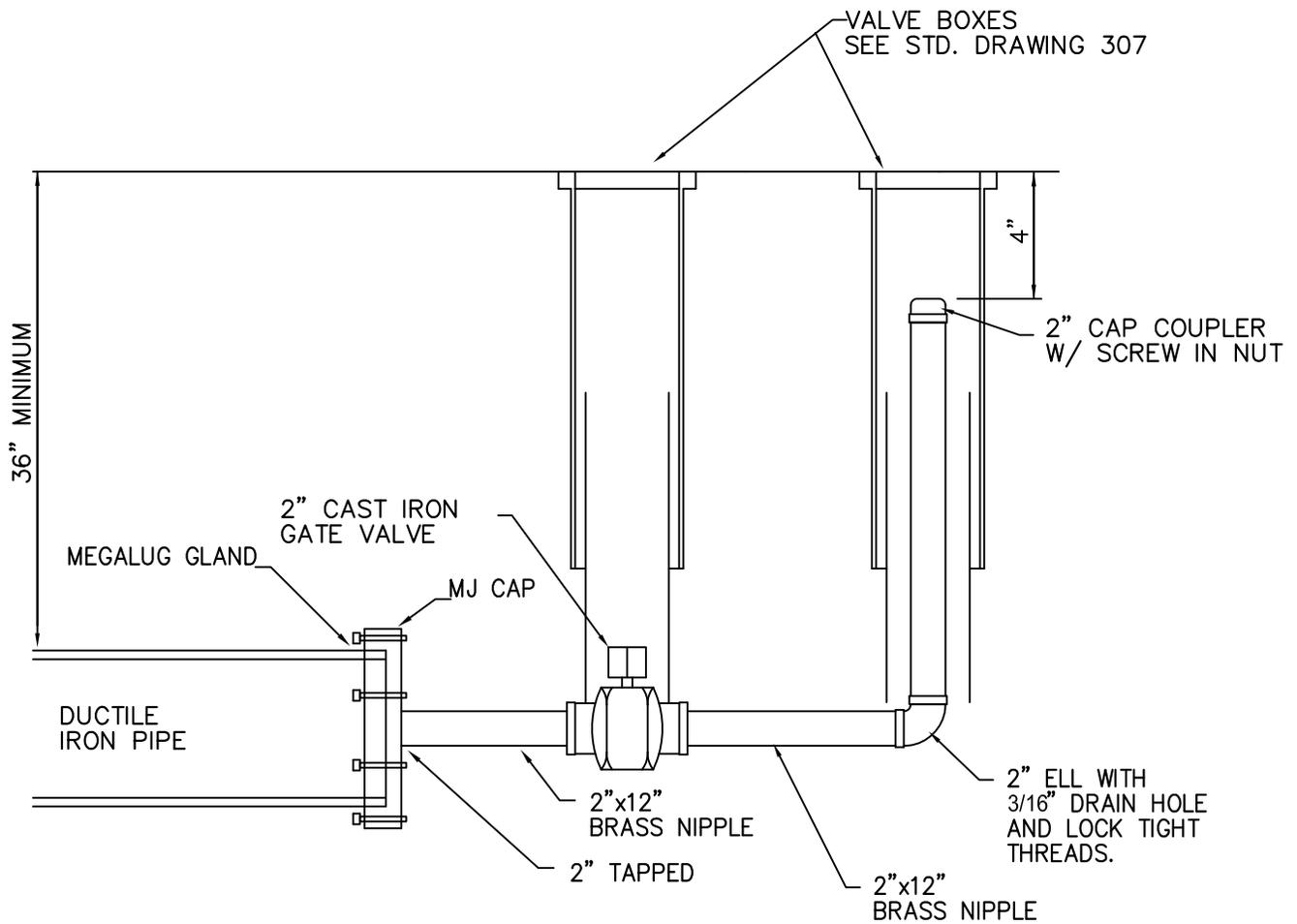
SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	309



-  ZONE 1: ONLY CROSSING RESTRICTIONS APPLY
-  ZONE 2: CASE BY CASE DETERMINATION
-  ZONE 3: PARALLEL WATERLINE PROHIBITED
-  ZONE 4: PARALLEL WATERLINE PROHIBITED

NOTES:

1. WHERE THE PROPOSED WATERLINE WILL BE INSTALLED PARALLEL TO AN EXISTING GRAVITY SEWER MAIN OR LATERAL LINE, THE SEPARATION BETWEEN THE TWO SHALL BE AS INDICATED ABOVE.
2. CROSSINGS
 - a. WHEREVER POSSIBLE, THE BOTTOM OF THE WATERLINE SHALL BE 1.5 FEET ABOVE THE TOP OF THE SEWER LINE, AND ONE FULL LENGTH OF WATERLINE SHALL BE CENTERED AT THE CROSSING.
 - b. WHERE IT IS NOT POSSIBLE FOR THE WATERLINE TO BE 1.5 FEET ABOVE THE SEWER LINE, OR THE WATERLINE PASSES UNDER THE SEWER LINE, THE EXISTING SEWER LINE SHALL BE EXPOSED FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING AND THE EXISTING PIPELINE SHALL BE REPLACED WITH C-900 PVC, DR-18, DR-25 OR CLASS 50 DUCTILE IRON PIPE AS APPROVED BY THE ENGINEER, AND THE FULL LENGTH OF WATER PIPE SHALL BE CENTERED AT THE CROSSING OR AS APPROVED BY THE ENGINEER. A DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING

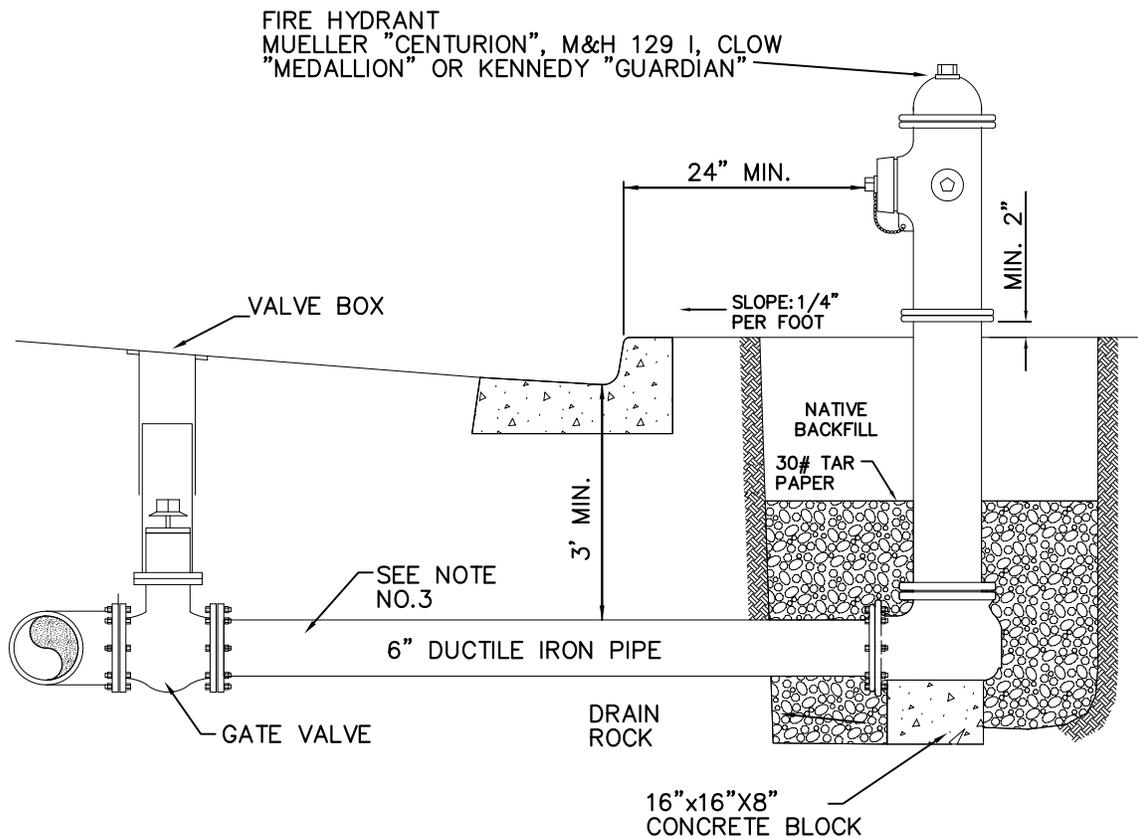


1. COAT ALL GALVANIZED PIPE OR EXPOSED STEEL WITH PROTECTIVE COATING CONFORMING TO AWWA C 203
2. RESTRAIN TYTON JOINT PLUG TO PIPE
3. THIS STANDARD APPLICABLE FOR PIPE SIZES THROUGH 8"
4. VALVE OPERATING NUT EXTENSION SHALL BE USED IF OPERATING NUT IS GREATER THAN 3' DEPTH FROM FINISH GRADE.

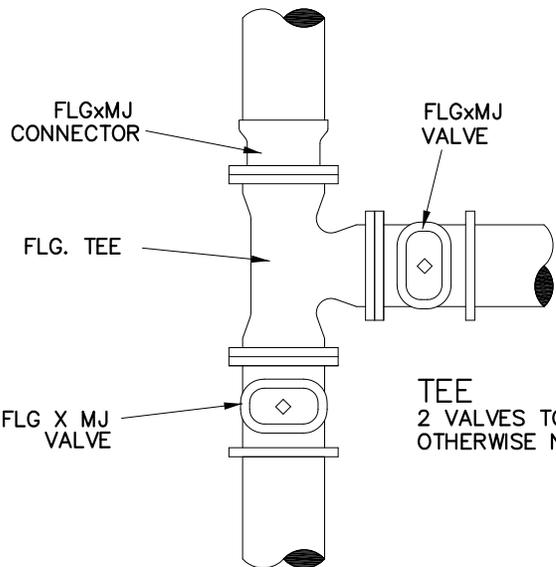
REVISIONS:
3/15/2010

BLOW-OFF ASSEMBLY

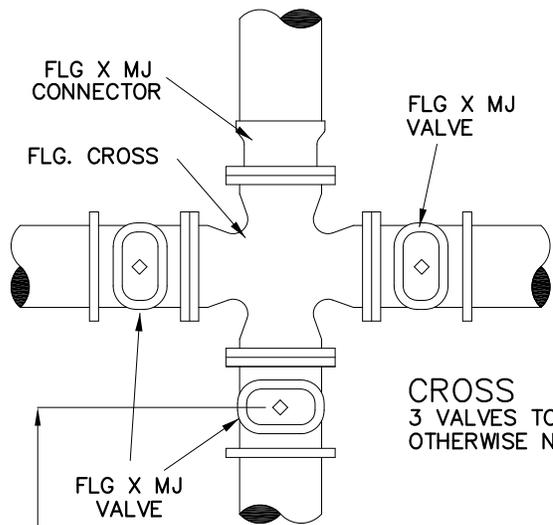
SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	311



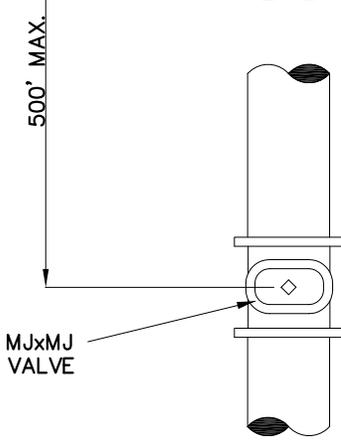
1. HYDRANT TO HAVE TWO 2 1/2" AND ONE 4 1/2" OPENING (ANSI STD.).
2. 6" MINIMUM PIPE SIZE SUPPLYING HYDRANT.
3. USE 6" MJ HOLDING SPOOL PER DWG. 305
4. ADJUSTING SPOOL NOT TO BE USED ON NEW CONSTRUCTION.
5. HYDRANTS SHALL BE INSTALLED UPON A PRE-FORMED CONCRETE BLOCK WITH CLEAN 2" DRAIN ROCK PLACED A MINIMUM OF 6" ABOVE DRAIN HOLES.
6. 30# TAR PAPER SHALL BE PLACED ON TOP OF THE DRAIN ROCK TO SEPARATE ROCK FROM NATIVE MATERIAL.
7. ENTIRE FIRE HYDRANT SPOOL SHALL BE RESTRAINED WITH FIELD-LOK GASKETS/MEGALUGS
8. VALVE OPERATING NUT EXTENSION SHALL BE USED IF OPERATING NUT IS GREATER THAN 3' DEPTH FROM FINISH GRADE.



TEE
 2 VALVES TO BE USED UNLESS
 OTHERWISE NOTED ON PLANS



CROSS
 3 VALVES TO BE USED UNLESS
 OTHERWISE NOTED ON PLANS



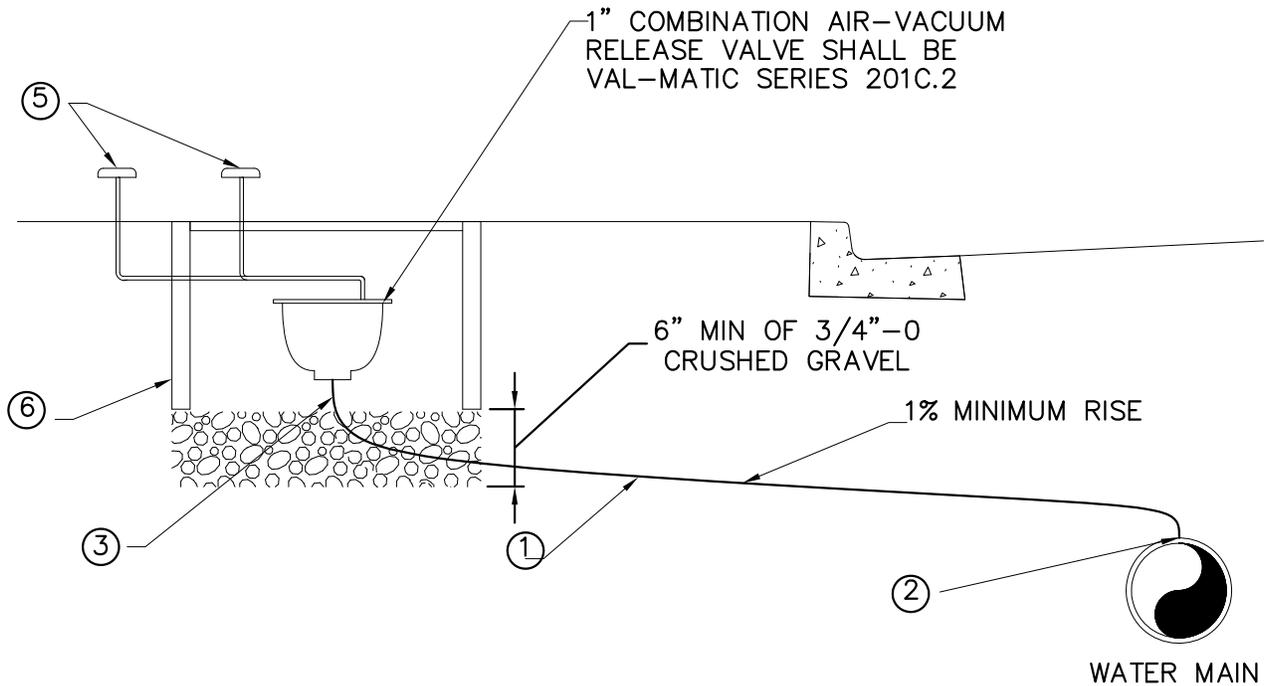
ALL MJ FITTINGS SHALL USE
 MEGALUGS OR EQUAL

IN LINE

REVISIONS:

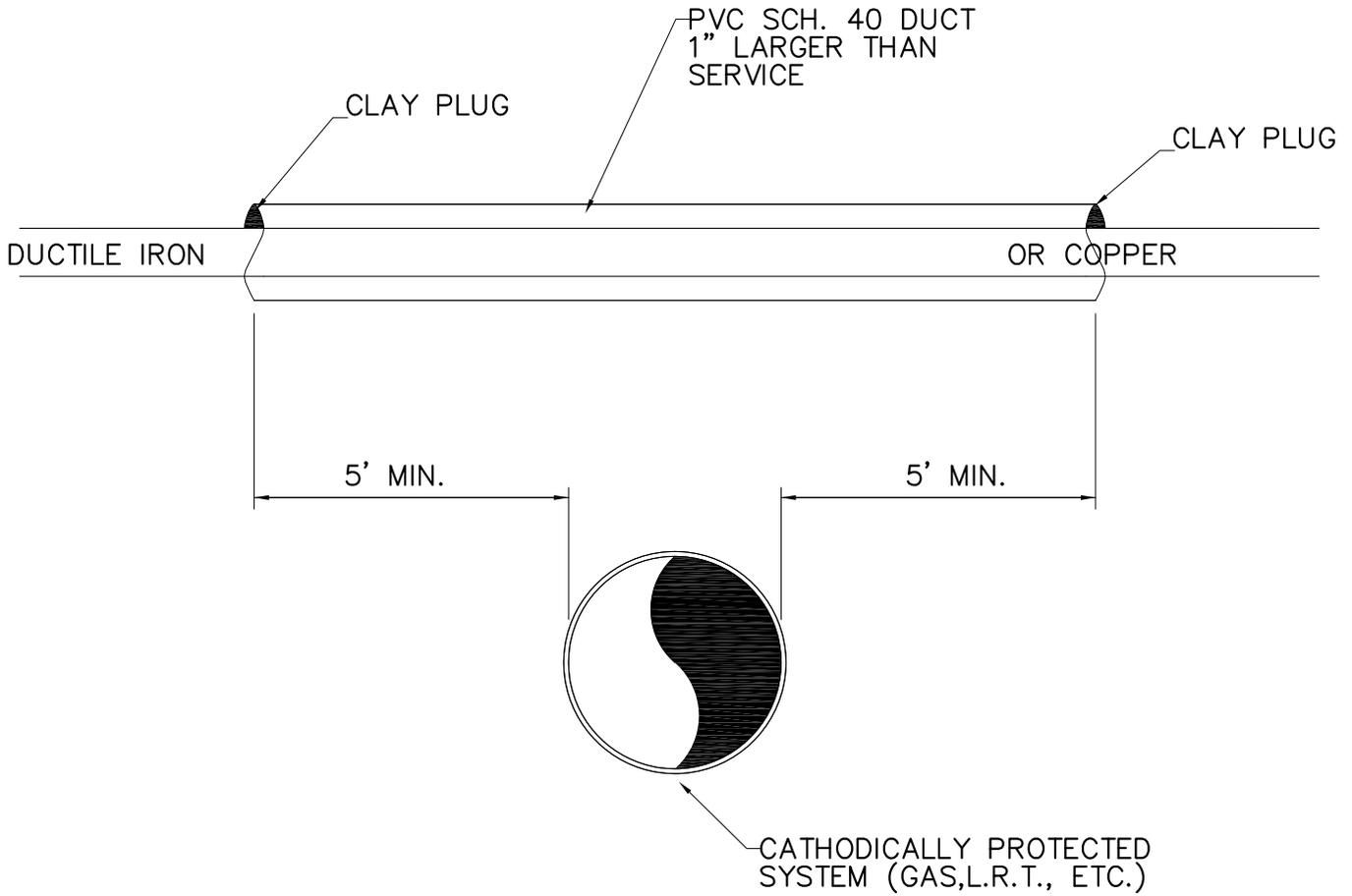
**VALVE LOCATIONS
 AND SPACING**

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	313



NOTES/MATERIALS

1. 1" SOFT TEMPER TYPE "K" COPPER TUBING COMPLYING WITH ASTM B-88.
2. McDONALD "T", FORD "Q" OR MUELLER "110" BALL CORPORATION STOP.
3. McDONALD, FORD OR MUELLER BALL VALVE WITH OPERATING HANDLE
4. ALL FITTINGS SHALL BE McDONALD "T", FORD "Q" OR MUELLER "110" COMPRESSION TYPE.
5. "TEE" STYLE GALVANIZED BLOW OFF (MINIMUM 6" ABOVE FINISHED GRADE.)
6. ARMORCAST METER BOX, PART NO. P6001534X22 WITH ONE PIECE POLYMER CONCRETE LID. BOX MUST BE VENTED.

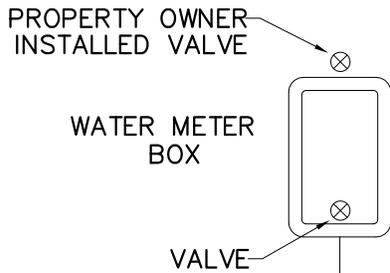


REVISIONS:

CATHODIC PROTECTION

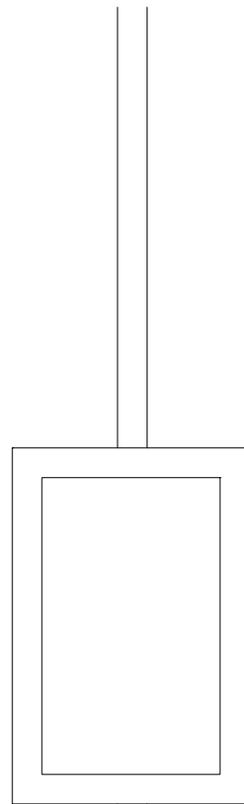
SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	316

VALVES REQUIRED ON BOTH SIDES OF THE WATER METER FOR METER SIZES 2" AND GREATER



WATER METER BOX

VALVE



VAULT FOR REDUCED PRESSURE BACKFLOW DEVICE OR DOUBLE CHECK VALVE (PRIVATE)

WATER SERVICE LINE

DUCTILE IRON OR COPPER TO METER

DUCTILE IRON FIRE LINE

GATE VALVE REQUIRED ON SERVICE 2" OR GREATER



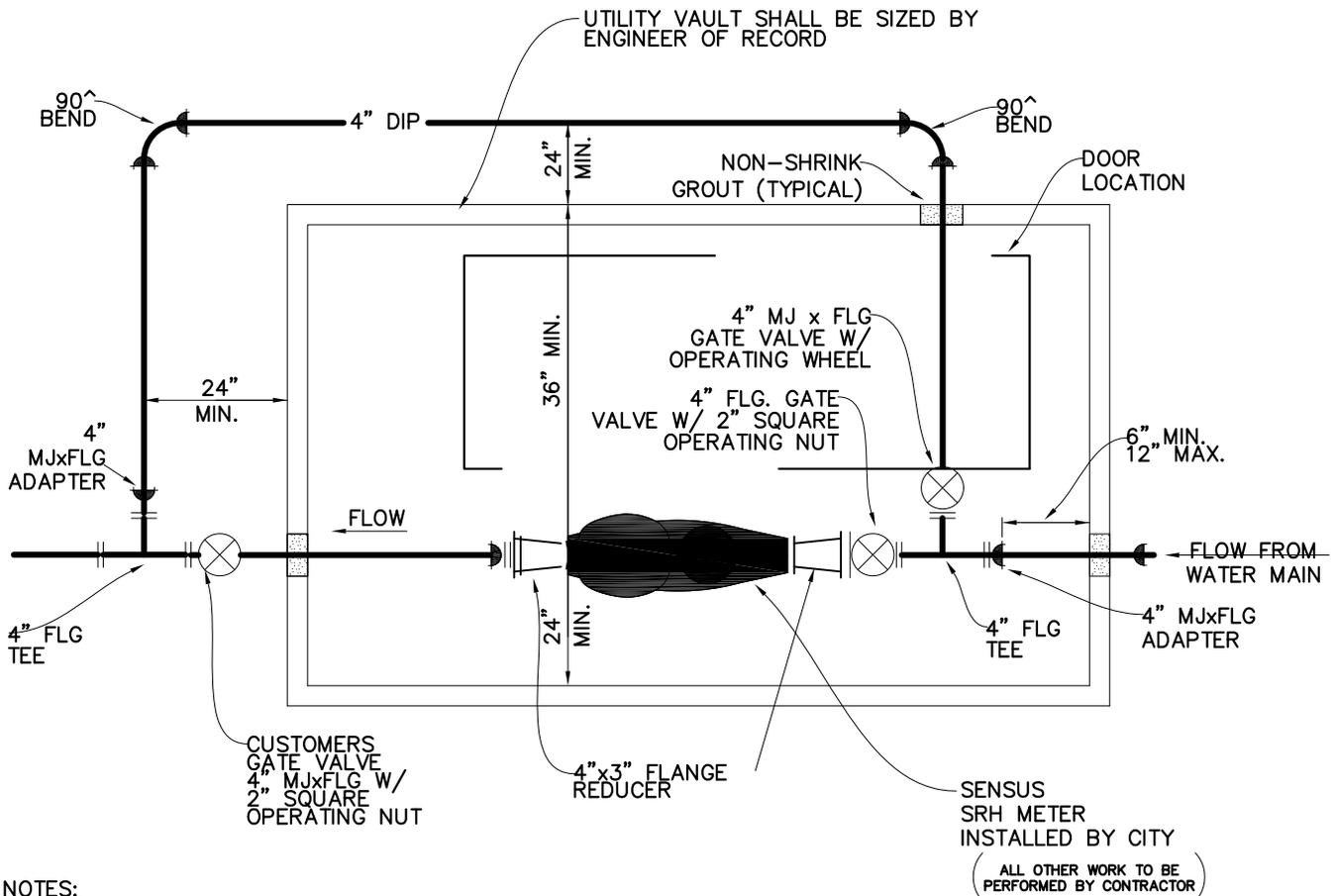
GATE VALVE

WATER MAIN

REVISIONS:
11/30/2010
3/09/2011

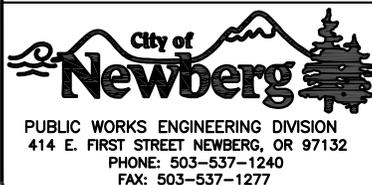
VAULT AND WATER SERVICE

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	317



NOTES:

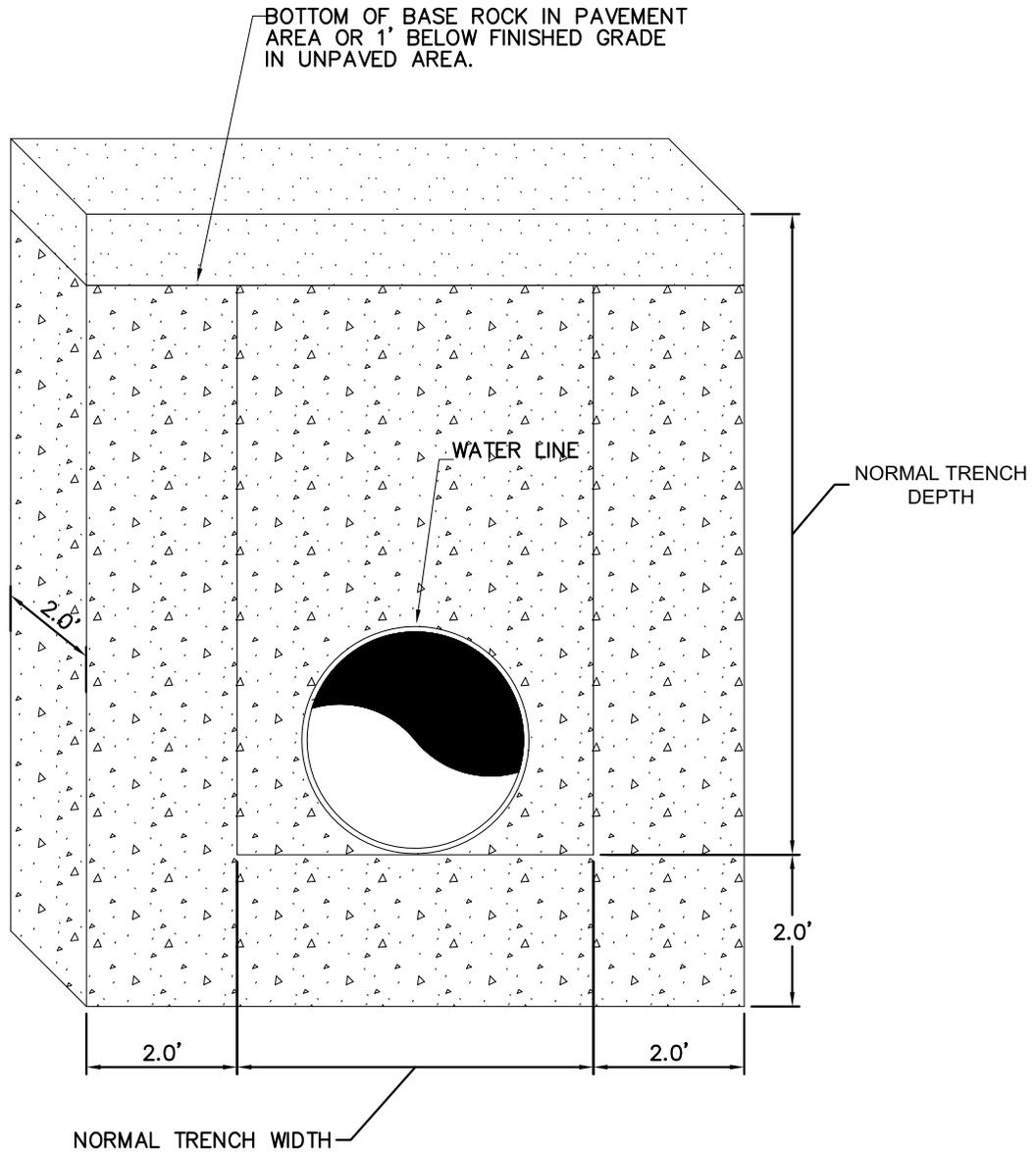
- METER TO BE INSTALLED BY THE CITY ONCE NEW PIPING AND FITTINGS HAVE BEEN TESTED AND ACCEPTED.
- ALL VAULT WALL OPENINGS SHALL BE CORE DRILLED AND SEALED WITH LINK-SEAL BRAND PIPE SEAL OR APPROVED EQUAL.
- TOP OF VAULT SHALL BE A MINIMUM OF 12" ABOVE FINISHED GRADE.
- INSTALL 4" DRAIN FROM BOTTOM OF VAULT FLOOR TO DAYLIGHT, TO BACKFLOW ASSEMBLY VAULT, TO STORM DRAIN SYSTEM OR TO APPROVED SUMP WITH SUMP PUMP. IN NO CASE SHALL BACKFLOW ASSEMBLY VAULT DRAIN INTO METER VAULT.
- INSTALL 4" BACKWATER VALVE, MDL. NO. 7022 AND SMITH 4" FLOOR DRAIN MDL. NO. 2210 OR APPROVED EQUAL ON FLOOR DRAIN.
- VAULT SHALL BE CLEAN, DRY AND FREE OF DEBRIS PRIOR TO METER INSTALLATION
- ALL MECHANICAL JOINTS SHALL BE RESTRAINED WITH "MEGALUG" RETAINER GLANDS, OR EQUAL.
- SERVICE LINE INTO VAULT SHALL BE MECHANICALLY RESTRAINED FROM MAINLINE THROUGH VAULT.
- ALL PIPING TO BE BACKFILLED WITH GRANULAR MATERIAL.
- INSTALL A MIN. OF 3 PIPE SUPPORTS IN VAULT (GRINNELL NO. 264, ELCEN NO. 50 OR APPROVED EQUAL).
- ALL PIPING AND FITTINGS IN VAULT SHALL BE LEVEL AND A MINIMUM OF 12" AND A MAX. OF 48" ABOVE THE FLOOR OF VAULT.
- ONLY APPROVED RESILIENT WEDGE VALVES ARE ALLOWED.
- ALL VAULT LIDS SHALL BE EQUIPPED WITH 1 TRPL METER HOLE IN DOORS. DOORS SHALL BE LOCATED NEAREST METER, CLOSEST TO STREET OR PUBLIC R-O-W.
- VAULT SHALL BE EQUIPPED WITH AN OSHA APPROVED LADDER. IF VAULT DEPTH IS GREATER THAN 6', AN OSHA APPROVED EXTENSION LADDER SHALL BE INSTALLED.
- ALL PIPE UP TO THE CUSTOMERS GATE VALVE SHALL BE CLASS 52 DUCTILE IRON AND INSTALLED LEVEL.
- ALL FITTINGS, VALVES AND PIPING THROUGH ENTIRE VAULT SHALL BE LEVEL AT COMPLETION OF INSTALLATION.
- VAULT SHALL BE SEALED WITH "CRYSTAL SEAL" AT MANUFACTURER.
- ADJUST PIPE SIZE ACCORDING TO METER SIZE.(4" MINIMUM)



REVISIONS:
10/28/2008
3/09/2011

**WATER SERVICE
FOR 3" AND LARGER**

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	318



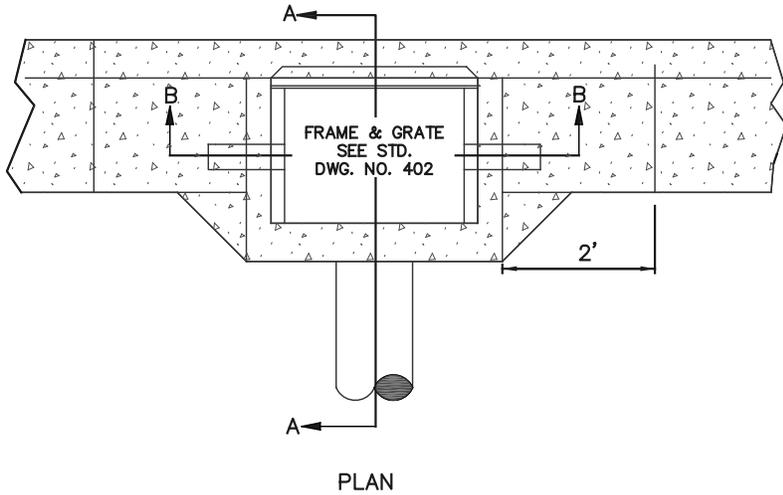
NOTES:

1. TRENCH DAM MATERIAL SHALL BE 100 PSI CDF.
2. BEARING AREA OF TRENCH DAM SHALL BE RESTING ON UNDISTURBED SOIL.
3. NO FITTINGS SHALL BE LOCATED WITHIN 5' OF TRENCH DAM.
4. REMOVE ALL ORGANIC MATERIAL PRIOR TO POURING CDF CONCRETE.

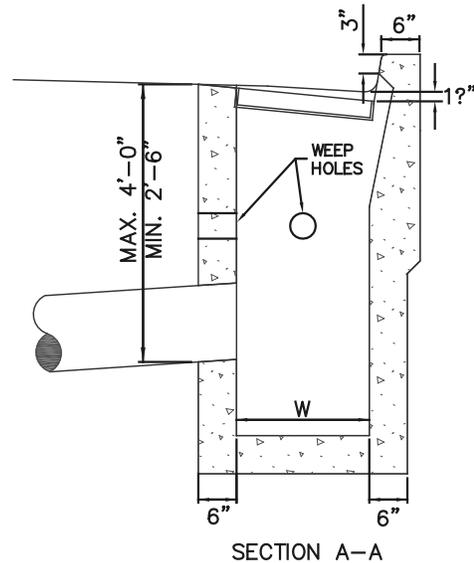
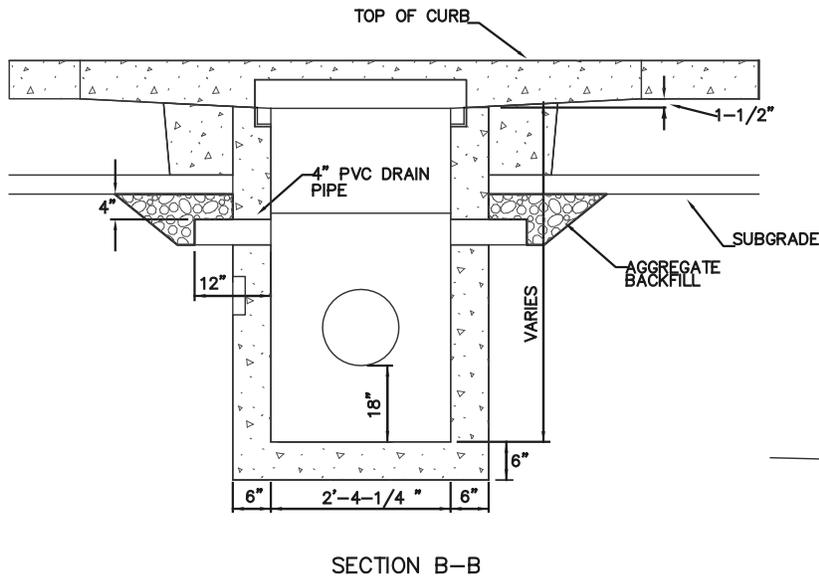
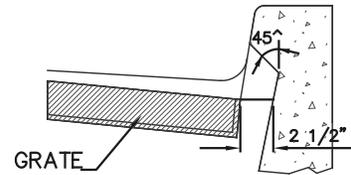
REVISIONS:
NA

TRENCH DAM

SCALE:	N.T.S
DATE:	Dec, 2006
APPROVED BY:	
STANDARD DRAWING	319



INLET TYPE	W
N-1, CN-1	1'-8"
N-2, CN-2	2'-3"



1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
2. CATCH BASIN TO BE CAST IN PLACE.
3. FRAME TO BE SET FLUSH WITH FACE OF CURB.
4. 4" WEEP HOLES REQUIRED AT SUBGRADE ON STREET AND UPHILL SIDES OF BASIN.
5. STANDARD INLET MANHOLE IS THE STANDARD; THIS DETAIL REQUIRES APPROVAL FROM THE CITY FOR USAGE.

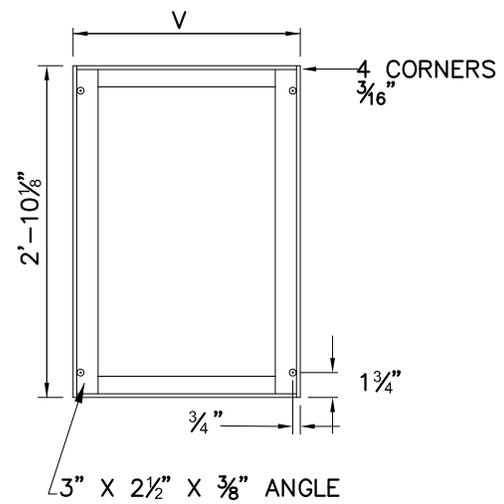
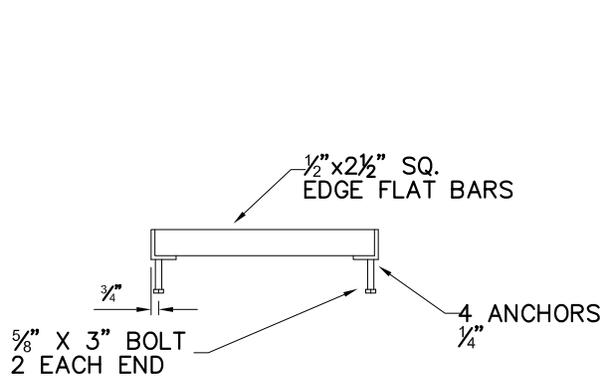
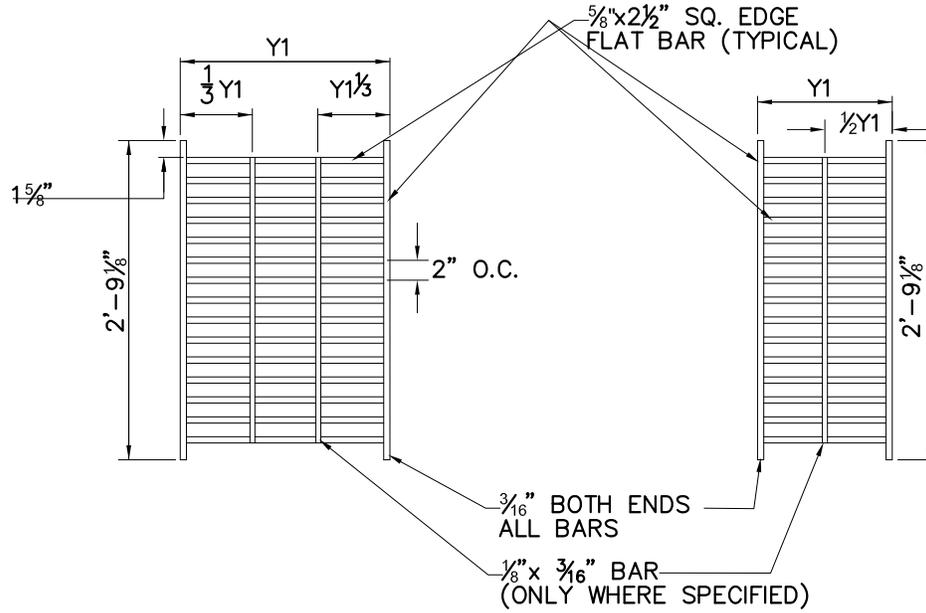
REVISIONS:

CATCH BASIN

SCALE:	N.T.S
DATE:	MARCH 2014
APPROVED BY:	J. HARRIS
STANDARD DRAWING	401

GRATE-TYPE 1

GRATE-TYPE 2



FRAME

- NOTES
1. ALL MATERIAL TO BE A-36 STEEL.
 2. CROSS BARS TO BE FLUSH WITH SURFACE AND MAY BE FILLET WELDED.

INLET TYPE	V	Y1	NO. OF BARS	TYPE	REMARKS
N-1, CN-1	2'-3 1/4"	2'-2 1/8"	17	1	
N-2, N-2	2'-9 1/4"	1'-4"	17	2	2 GRATES

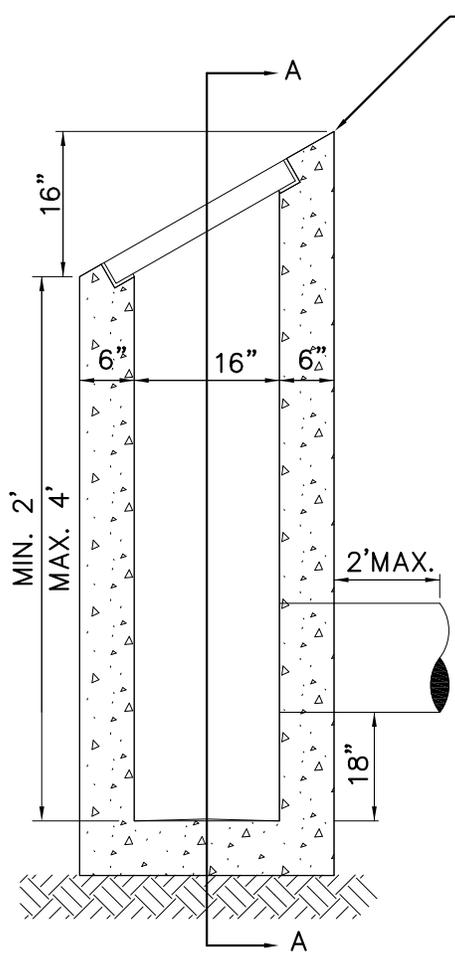
City of
Newberg

PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

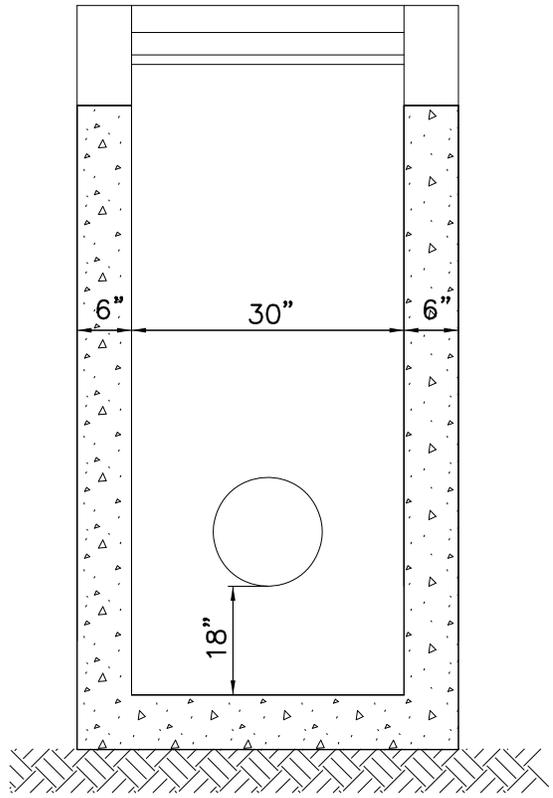
REVISIONS:

CATCH BASIN
FRAME AND GRATE

SCALE:	N.T.S
DATE:	MARCH 2014
APPROVED BY:	J. HARRIS
STANDARD DRAWING	402



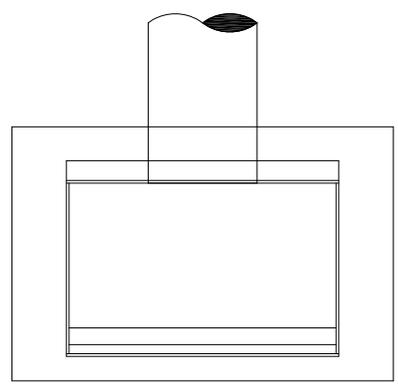
SEE NOTE 3 FOR RIPRAP



SECTION A-A

NOTES:

1. CONCRETE SHALL HAVE A MINIMUM STRENGTH OF 3000 PSI AT 28 DAYS.
2. SEE STANDARD DRAWING NO. 404 FOR FRAME AND GRATE.
3. 4 TO 6 INCHES OF ANGULAR RIPRAP, 6 INCHES IN DEPTH, SHALL EXTEND A MINIMUM OF 2 FEET AROUND ALL SIDES OF THE INLET.



PLAN VIEW

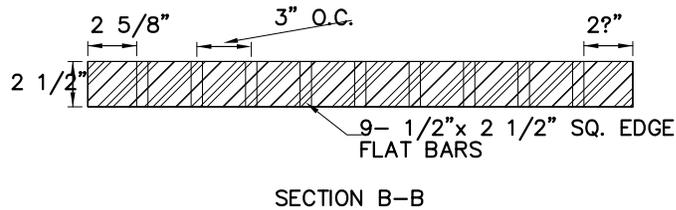
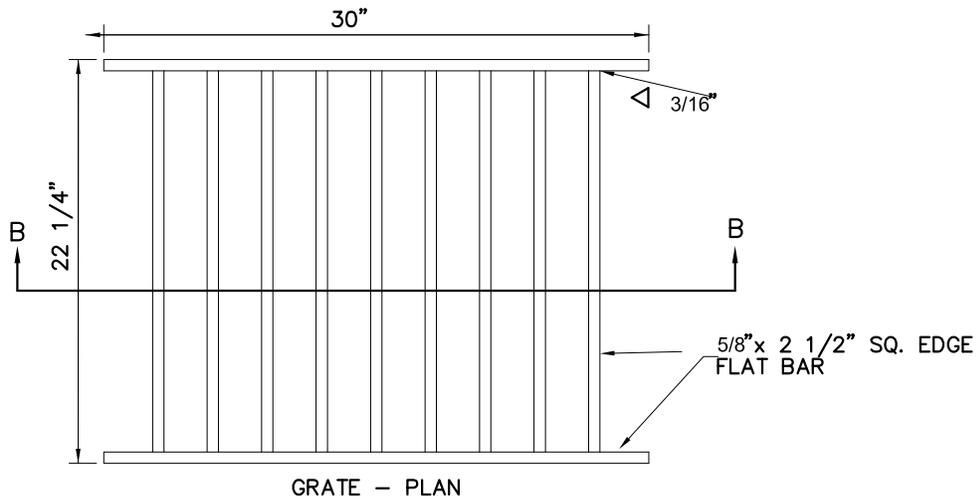
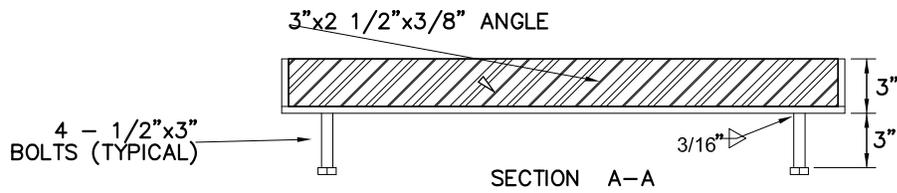
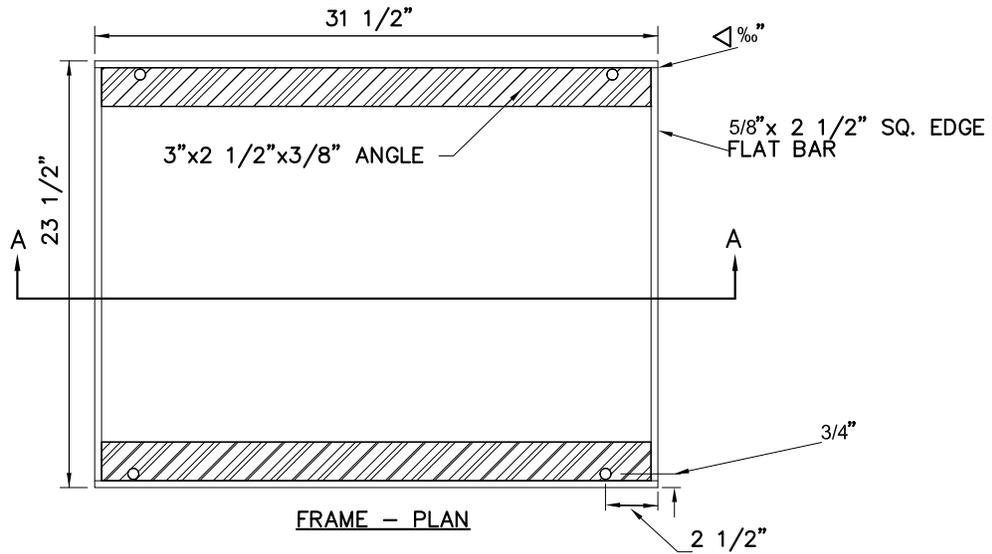
City of
Newberg

PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

DITCH INLET

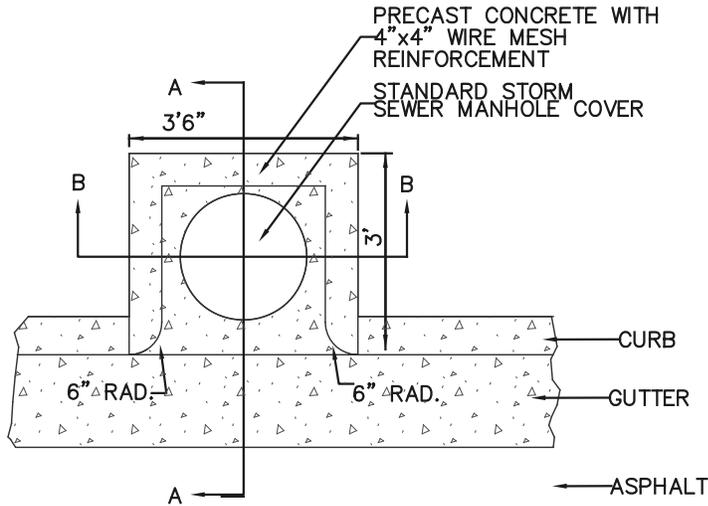
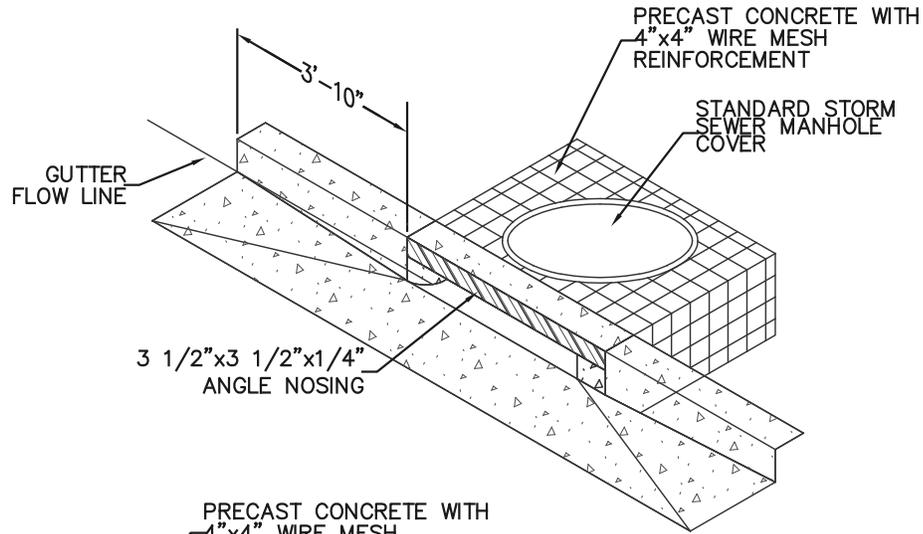
SCALE:	N.T.S
DATE:	MARCH 2014
APPROVED BY:	J. HARRIS
STANDARD DRAWING	403



REVISIONS:	
	NA

**DITCH INTERCEPTOR
FRAME AND GRATE
TYPE A**

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	404

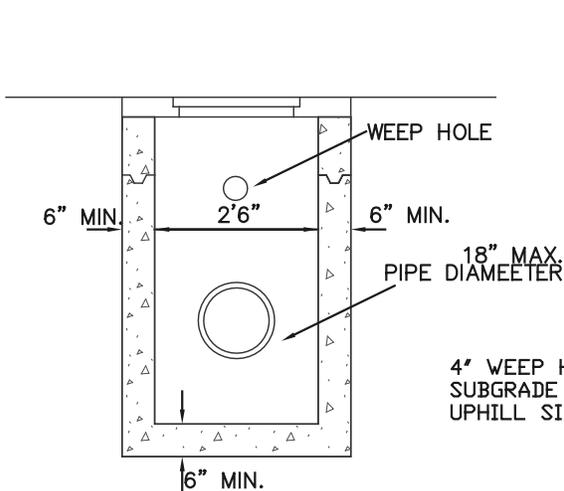


NOTES:

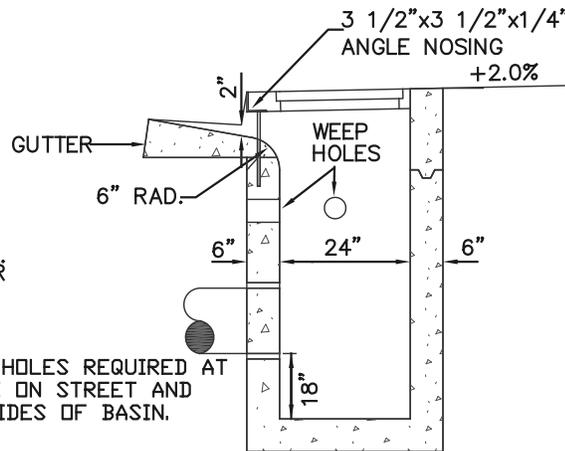
ALL METAL PARTS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.

TOP AND COVER SHALL BE REINFORCED WITH 4" X 4" #6 WIRE MESH REINFORCING.

CONCRETE SHALL ATTAIN A STRENGTH OF 3000 PSI AT 28 DAYS



BASE SECTION PRE-CAST OR CAST IN PLACE SECTION B-B



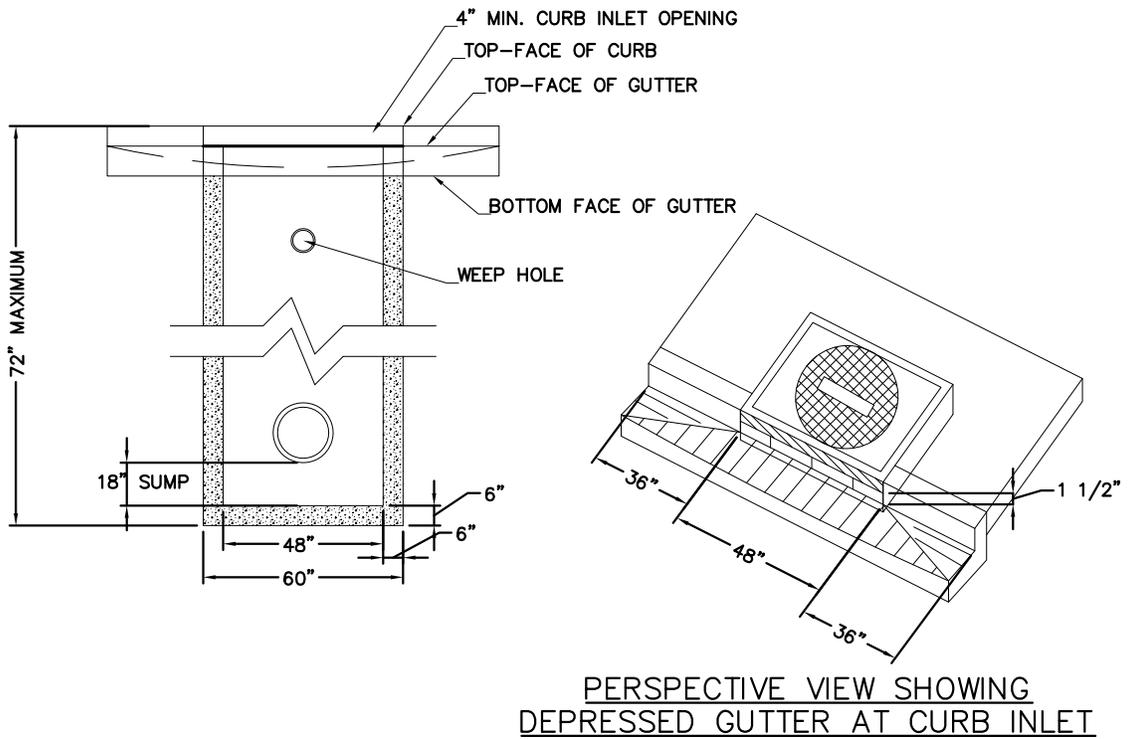
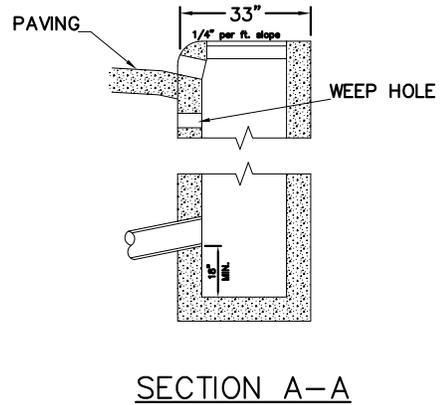
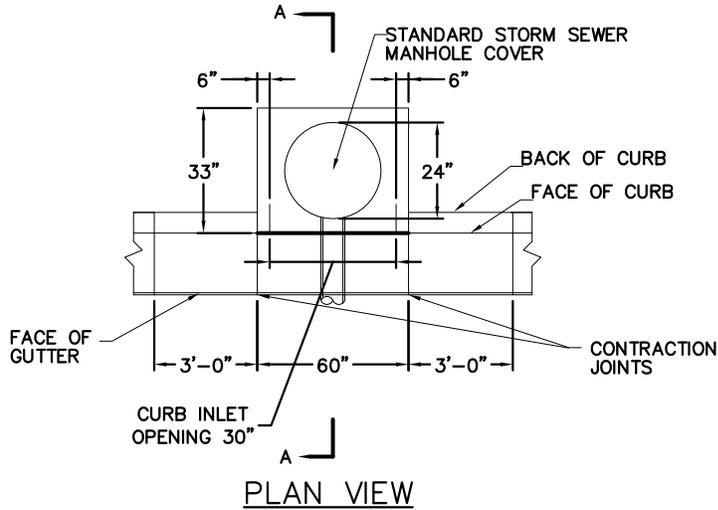
BASE SECTION PRE-CAST OR CAST IN PLACE SECTION A-A

4" WEEP HOLES REQUIRED AT SUBGRADE ON STREET AND UPHILL SIDES OF BASIN.

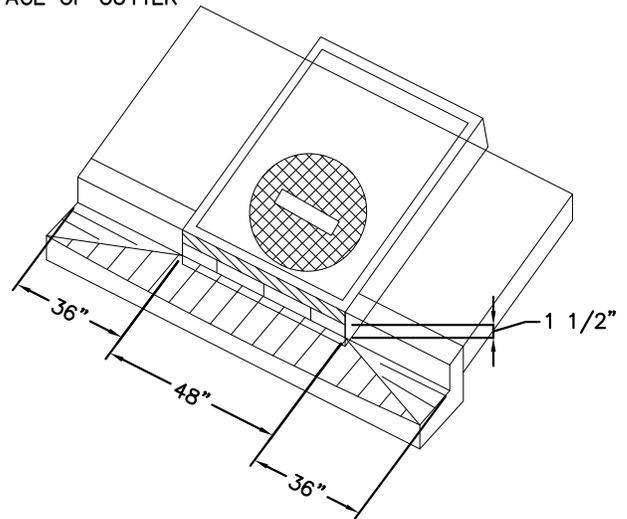
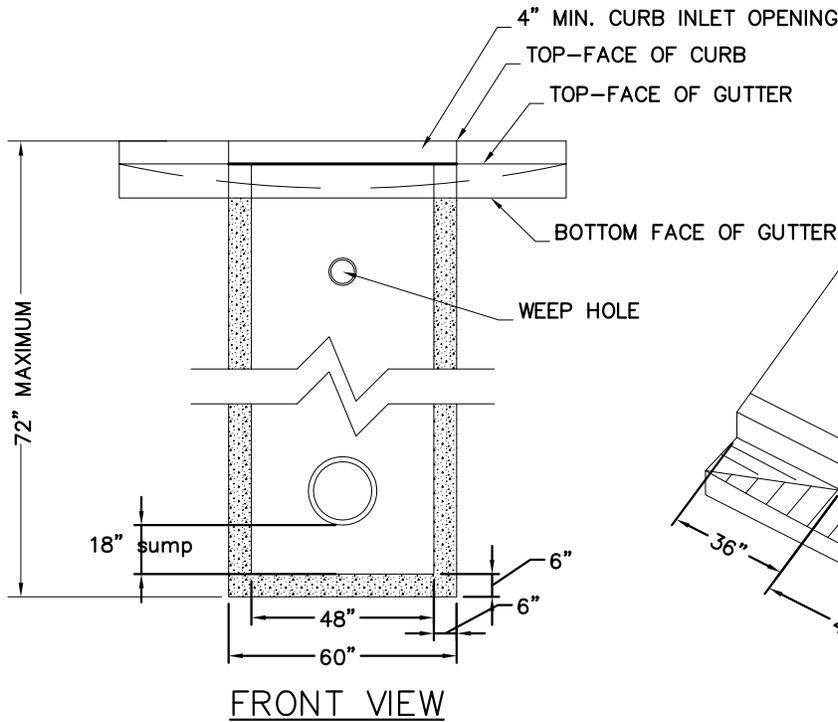
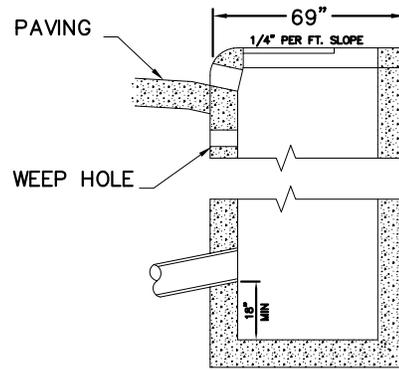
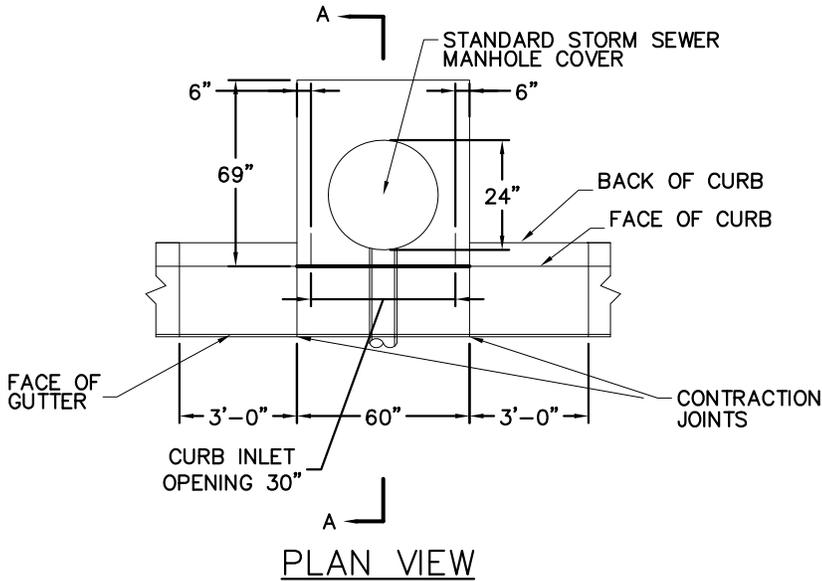
REVISIONS:

STANDARD INLET MANHOLE

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	407

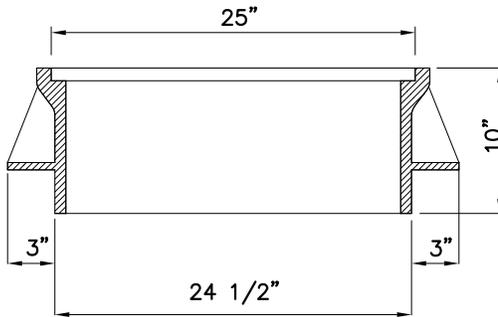
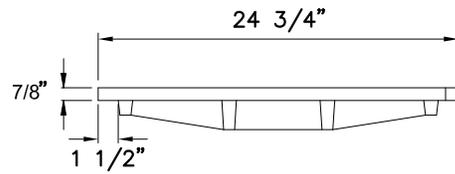
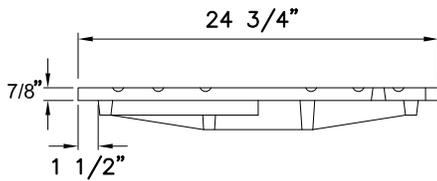


4" WEEP HOLES REQUIRED AT SUBGRADE ON STREET AND UPHILL SIDES OF BASIN

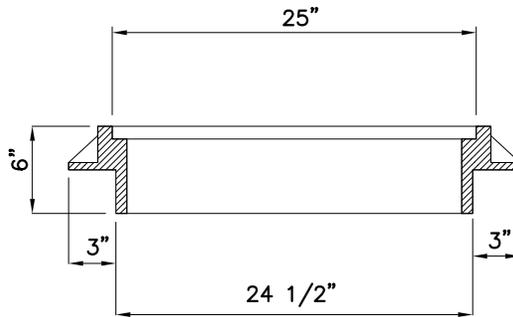


4" WEEP HOLES REQUIRED AT SUBGRADE ON STREET AND UPHILL SIDES OF BASIN

STORM



STANDARD FRAME



SUBURBAN FRAME

NOTES

1. USE SUBURBAN TYPE FRAME IN NON-TRAFFIC AREAS ONLY.
2. COVER AND FRAME SHALL BE CAST IRON, ASTM A-48 CLASS 30 AND MEET H-20 LOAD RATING.
3. COVER AND FRAME TO HAVE TRUE BEARING ALL AROUND.

REVISIONS:

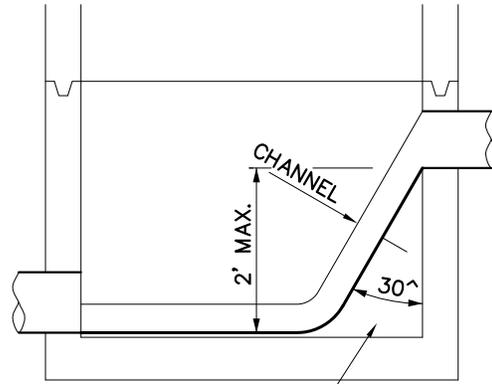
**STORM WATER
 MANHOLE FRAME
 AND COVER**

SCALE:	N.T.S
DATE:	MARCH 2014
APPROVED BY:	J. HARRIS
STANDARD DRAWING	411

NOTES

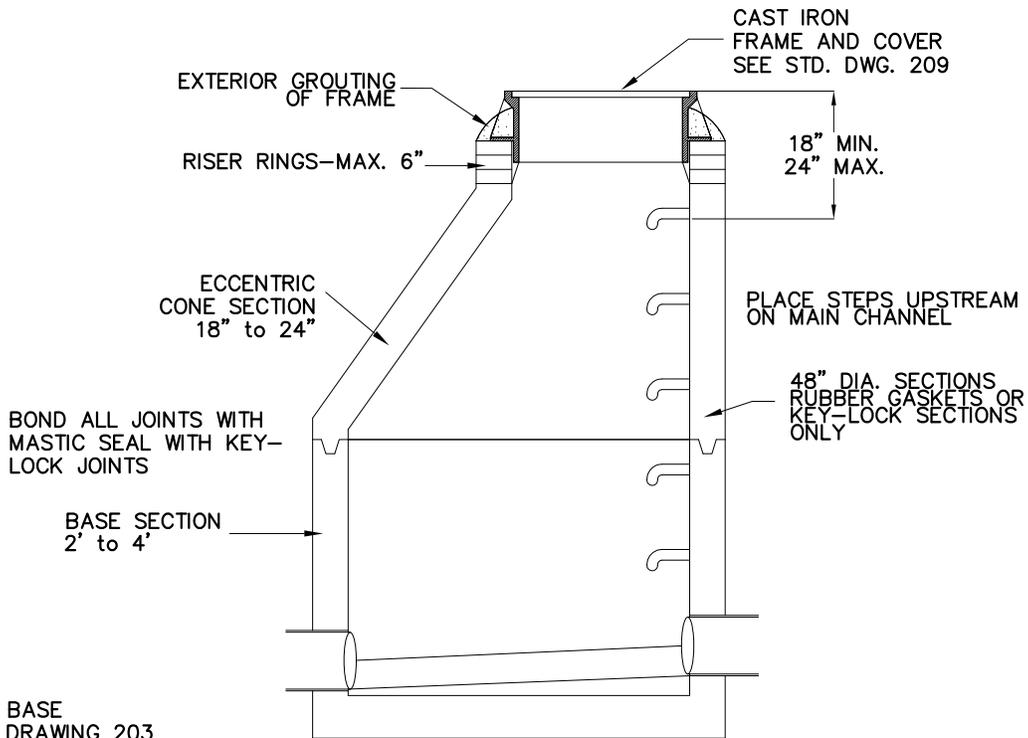
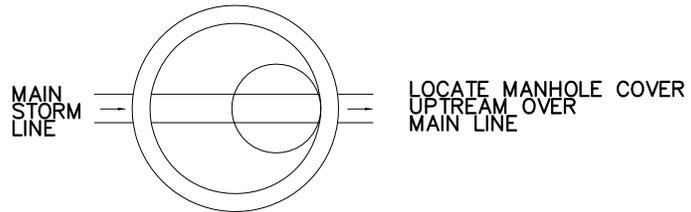
1. STANDARD MANHOLE TO BE USED FOR PIPES 18" AND LESS.
2. PRECAST CONCRETE STRUCTURES SHALL HAVE STRENGTH OF 4000 PSI.
3. LATERAL LINES TO MATCH TOP OF INLET PIPE AT MANHOLE.
4. ALL INTERIOR JOINTS AND CONNECTIONS SHALL BE WATER TIGHT, AND GROUTED WITH NON-SHRINK GROUT.
7. IF END OF LINE MANHOLE, STEPS SHALL BE LOCATED ON DOWNSTREAM SIDE AND CHANNEL SHALL BE CONSTRUCTED FULL WIDTH OF INTERIOR.

USE OF KEY-LOC TYPE MANHOLE SECTIONS REQUIRES SEALING OF EXTERIOR JOINTS WITH "RAPID SEAL" OR INTERIOR COATING WITH "RAVIN COATING"



FORM CHANNEL AND SLIDE WITH GROUT. SMOOTH SURFACE FINISH SIMILAR TO CONCRETE PIPE.

BEAVER SLIDE

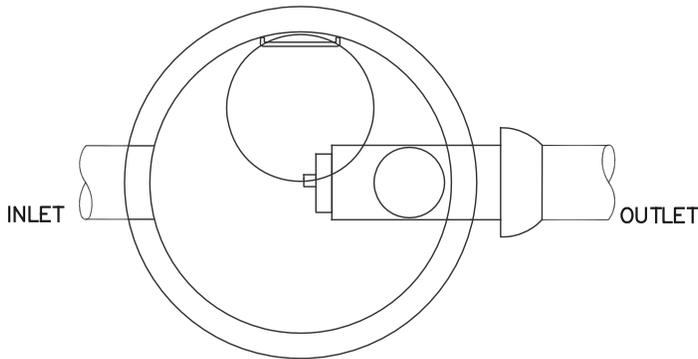


MANHOLE BASE
SEE STD. DRAWING 203

REVISIONS:

SHALLOW MANHOLE

SCALE:	N.T.S
DATE:	MARCH 2014
APPROVED BY:	J. HARRIS
STANDARD DRAWING	412



PLAN

NOTES:

1. ALL MANHOLE SECTIONS SHALL CONFORM TO THE REQ. OF ASTM C-478 AND APPLICABLE PROVISIONS OF STD. MANHOLE DRAWING NO. 204 & 205.
2. INLET AND OUTLET PIPE NOT TO EXCEED 18" DIAMETER.
3. PROVIDE SPECIAL DETAIL FOR OUTLET FLOW CONTROL EXCEEDING 18" DIA.
4. ALL OUTLETS SHALL HAVE FLOW CONTROL DEVICE.

SUMP VOLUME AVAILABLE

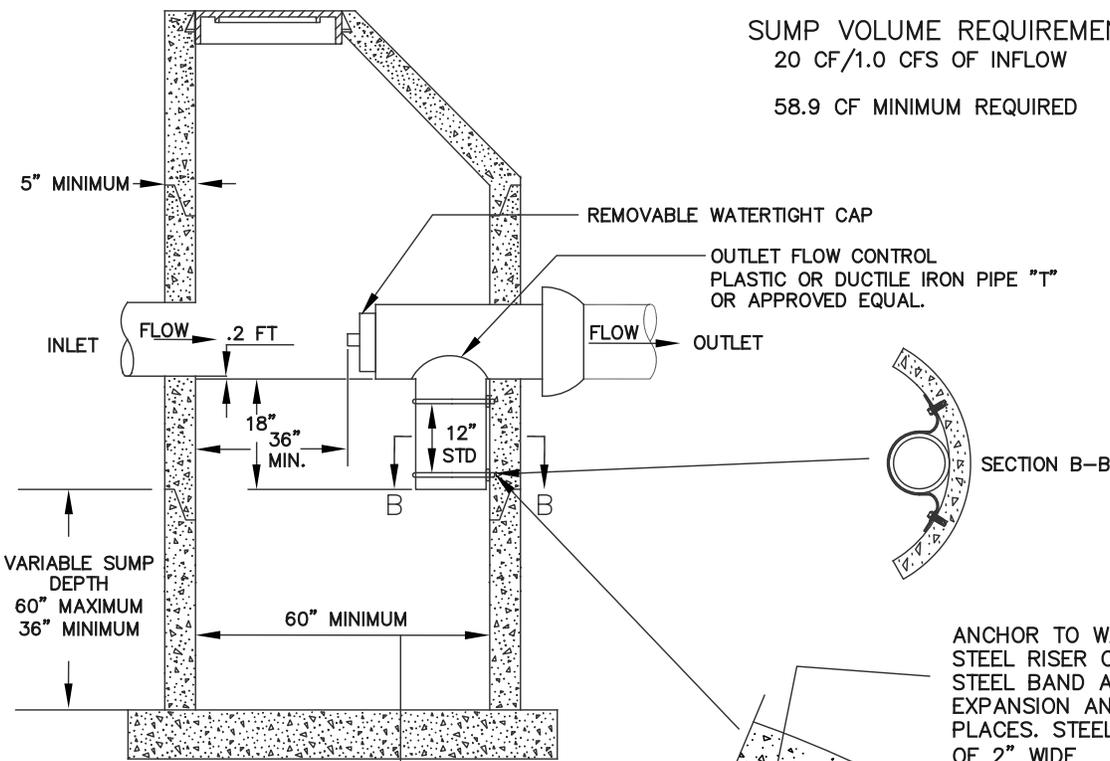
M.H. SIZE	MIN. (CF)	MAX (CF)
60"	58.9	98.1
72"	84.8	141.3
84"	115.4	192.3

*PROVIDE SPECIAL DETAIL FOR VOLUME REQUIRMENTS EXCEEDING 192.3 CFS

SUMP VOLUME REQUIREMENTS

20 CF/1.0 CFS OF INFLOW

58.9 CF MINIMUM REQUIRED



ANCHOR TO WALL WITH STAINLESS STEEL RISER CLAMP OR STAINLESS STEEL BAND AND STAINLESS STEEL EXPANSION ANCHORS MIN. 2 PLACES. STEEL BAND TO BE MIN. OF 2" WIDE

1/2" SELF TAPPING CONCRETE ANCHOR
PHILLIPS 5-12 OR EQUAL.
1/2"X1 1/2" STAINLESS STEEL BOLT.

CLAMP DETAIL (SECTION A-A)

MANHOLE DIAMETER TO BE DETERMINED BY:
1. SUMP VOLUME REQUIREMENTS.

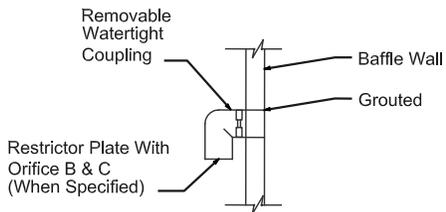


PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
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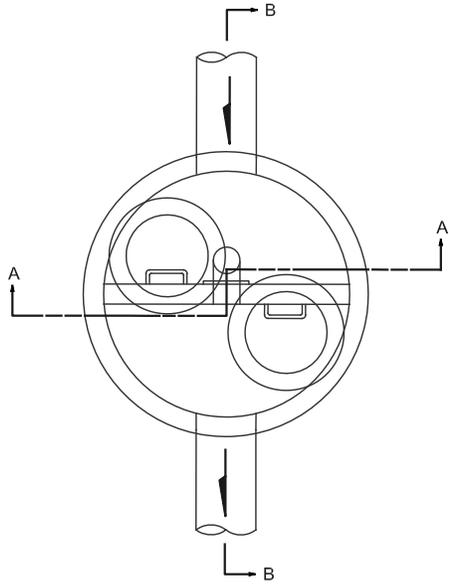
REVISIONS:

WATER QUALITY
MANHOLE

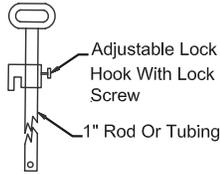
SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	413



ELBOW DETAIL



PLAN



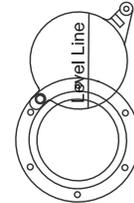
LIFT HANDLE DETAIL



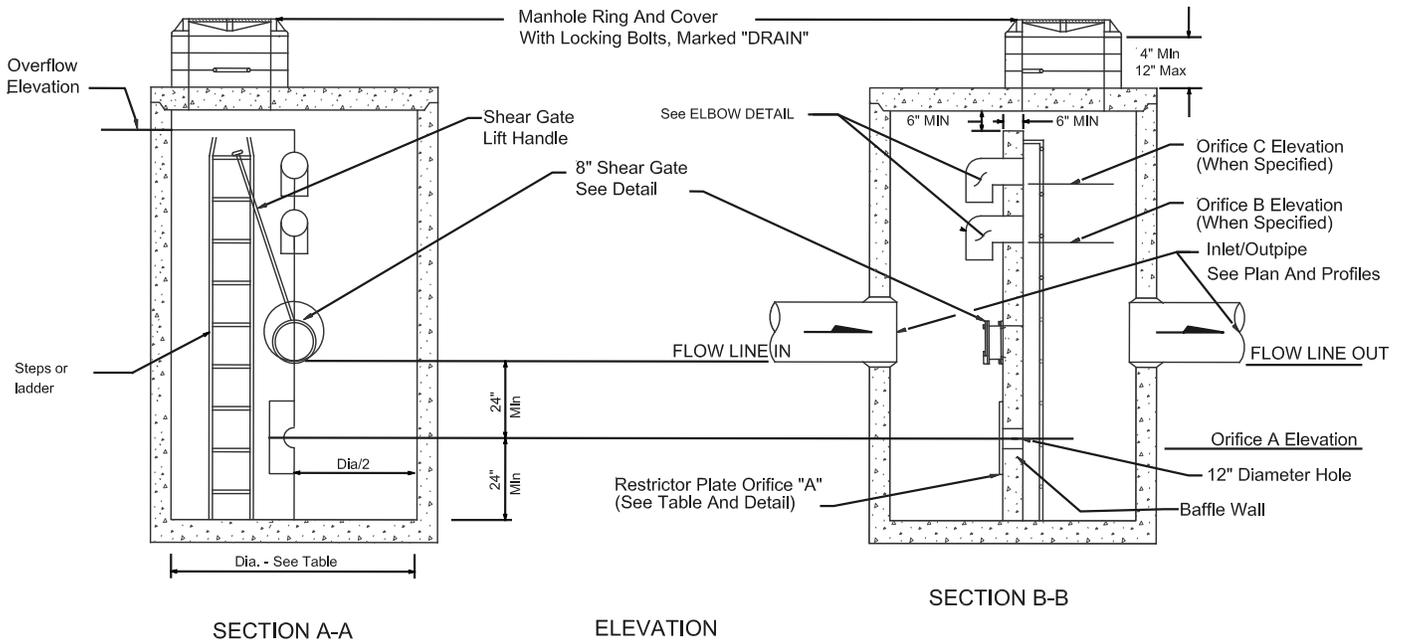
FRONT



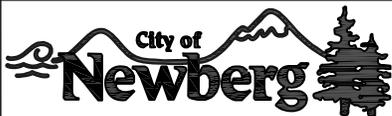
SHEAR GATE
AS MANUFACTURED BY KENNEDY VALVE OR EQUAL



MAXIMUM OPENING OF GATE DETAIL



FLOW CONTROL STRUCTURE DETAIL
NTS



PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

FLOW CONTROL STRUCTURE

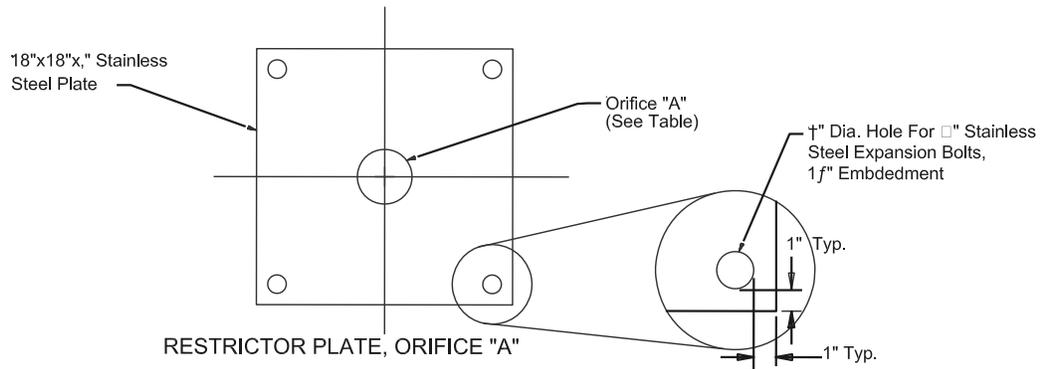
SCALE: N.T.S.

DATE: MARCH 2014

APPROVED BY: JAY H.

STANDARD DRAWING

416A

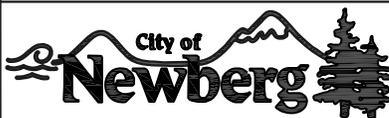


FLOW CONTROL STRUCTURE TABLE-
DESIGN ENGINEER TO SPECIFY

Diameter Of Manhole (In.)	
FLOW LINE (In)	
FLOW LINE (Out)	
Outlet Pipe Diameter (In.)	
Number Of Orifice	
Orifice A Elevation	
Diameter Of Orifice A (In.)	
Orifice B Elevation	
Diameter Of Orifice B (In.)	
Orifice C Elevation	
Diameter Of Orifice C (In)	
Overflow Elevation	
Rim Elevation	
Riser Diameter (In.)	

NOTES:

1. BAFFLE WALL SHALL HAVE #4 BAR AT 12" SPACING EACH WAY.
2. PRECAST BAFFLE SHALL BE KEYED AND GROUTED IN PLACE. JOINT BETWEEN CONCRETE BAFFLE AND MANHOLE WALL SHALL BE WATERTIGHT.
3. UPPER FLOW ORIFICE SHALL BE STAINLESS STEEL OR ALUMINUM.
4. FRAME AND LADDER OR STEPS ARE TO BE OFFSET SO THAT: SHEAR GATE IS VISIBLE FROM THE TOP; CLIMB-DOWN SPACE IS CLEAR OF RISER AND GATE; FRAME IS CLEAR OF CURB.
5. MULTI-ORIFICE ELBOWS SHALL BE PREINSTALLED TO INSURE LADDER CLEARANCE.
6. RESTRICTOR PLATE WITH ORIFICE AS SPECIFIED IN THE CONTRACT. OPENING IS TO BE CUT ROUND AND SMOOTH. NEOPRENE GASKET SHALL BE INSTALLED BETWEEN THE ORIFICE PLATE AND CONCRETE BAFFLE TO PROVIDE A WATERTIGHT SEAL.
7. SHEAR GATE SHALL BE MADE OF ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 26M AND ASTM B 275, DESIGNATION Zg32A OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B. LIFT HANDLE MAY BE SOLID ROD OR HOLLOW TUBING WITH ADJUSTABLE HOOK AS REQUIRED. NEOPRENE RUBBER GASKET REQUIRED BETWEEN RISER MOUNTING FLANGE AND GATE FLANGE. MATING SURFACES OF LID AND BODY SHALL BE MACHINED FOR PROPER FIT. FLANGE MOUNTING BOLTS SHALL BE....."DIAMETER STAINLESS STEEL.
8. SHEAR GATE MAXIMUM OPENING SHALL BE CONTROLLED BY LIMITED HINGE MOVEMENT, STOP TAB OR SOME OTHER DEVICE.



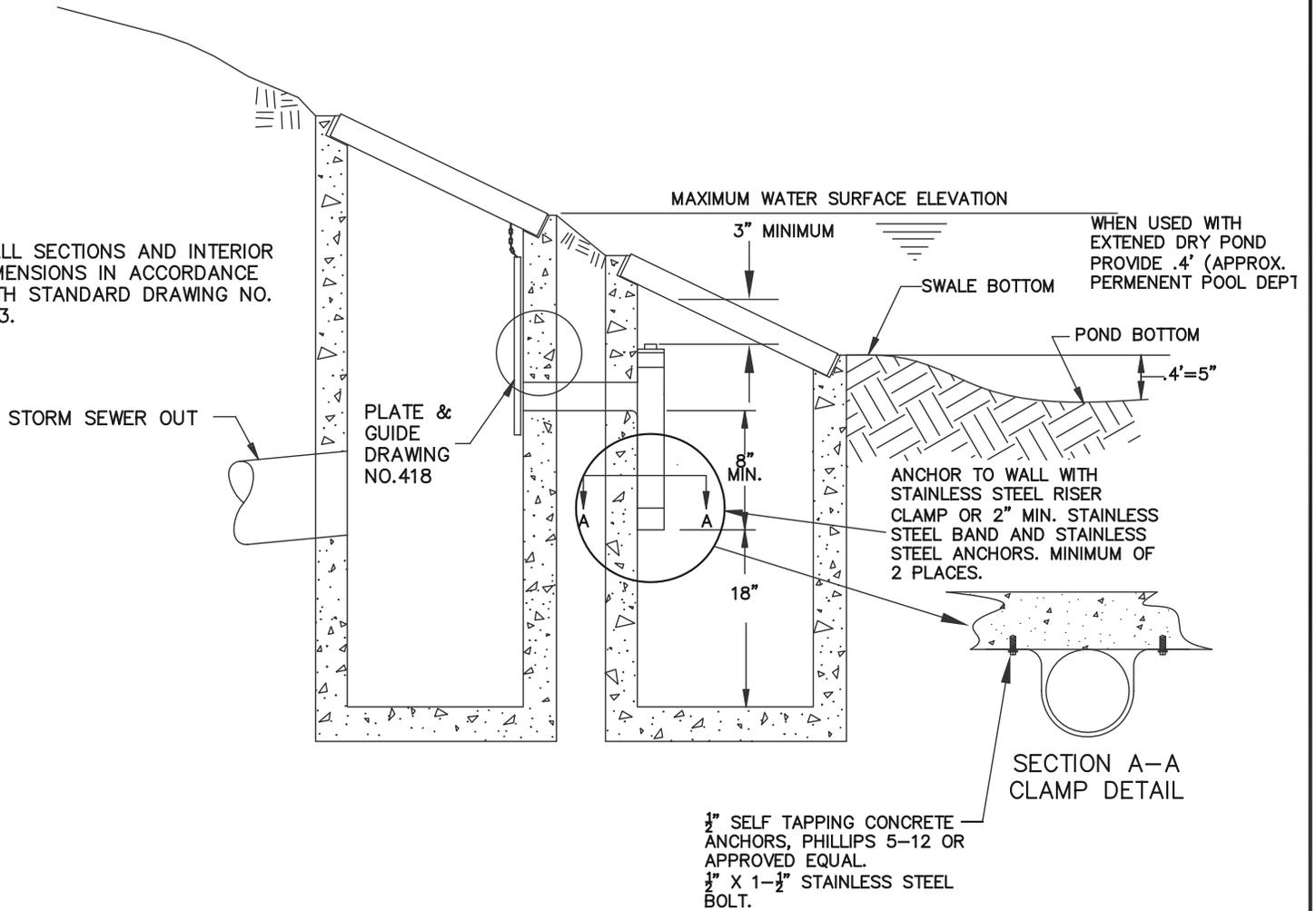
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PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

**FLOW CONTROL
STRUCTURE NOTES &
ORIFICE**

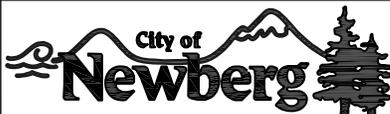
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DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	416B

WALL SECTIONS AND INTERIOR DIMENSIONS IN ACCORDANCE WITH STANDARD DRAWING NO. 403.



NOTES:

1. CONNECTING PIPE AND TEE SHALL BE 4", 6", OR 8" AWWA C-900 OR ASTM 3034 PVC, AND ONE SIZE LARGER THAN THE ORIFICE OPENING.
2. MAXIMUM ORIFICE OPENING SHALL BE 6" DIAMETER.
3. STRUCTURES SHALL CONFORM TO STANDARD DRAWING NO. 390 DITCH INLET.
4. FRAME AND GRATE SHALL CONFORM TO STANDARD DRAWING NO. 403, DITCH INLET FRAME AND GRATE.
5. PLATE AND GUIDE SHALL BE SECURED FLUSH AGAINST WALL OF STRUCTURE AS APPROVED.
6. MAINTAINANCE ACCESS REQUIRED TO WITHIN 10' OF CENTER OF BOTH STRUCTURES.



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REVISIONS:

OUTFLOW CONTROL
STRUCTURE

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	417

SLOT SHALL BE
1"X5" CENTERED

$\frac{3}{16}$ " STAINLESS STEEL CHAIN OR CABLE
ATTACHED TO ORIFICE PLATE AND
STRUCTURE AS APPROVED. CHAIN OR CABLE
SHALL BE SMALL ENOUGH TO ALLOW ORIFICE
PLATE TO BE REMOVED FROM GUIDE. ORIFICE
PLATE AND GUIDE TO BE MANUFACTURED
FROM $\frac{1}{2}$ " HDPE OR $\frac{1}{4}$ " STAINLESS STEEL.

DESIGN ENGINEER TO SPECIFY:

ORIFICE SIZE _____
ORIFICE ELEVATION _____

ALIGN INVERT OF ORIFICE TO
INVERT OF PIPE.

SPACER REQUIRED FOR
MULTIPLE ORIFICES

1 1/2" MIN.

3"

6" (TYP.)

2" MIN.

2"

3"

3 1/2"

PLATE THICKNESS +1/4"

TOP OF GUIDE
 ± 3 " BELOW GRATE

2" MIN.

10" MINIMUM

12" MIN.

2" MIN.

$\frac{1}{2}$ " DIA. WEEPHOLES

ORIFICE PLATE GUIDE SHALL FIT STOP
GATE AND INCLUDE BOTTOM CHANNEL
ORIFICE PLATE GUIDE.

$\frac{1}{2}$ " SELF TAPPING CONCRETE
ANCHORS, PHILLIPS 5-12 OR
APPROVED EQUAL.
 $\frac{1}{2}$ " X 1- $\frac{1}{2}$ " STAINLESS STEEL
BOLT.

NOTE:

FOR MULTIPLE ORIFICE APPLICATION
A 3" MIN. SPACER IS REQUIRED AS
SHOWN. SPACER TO MATCH PLATE GUIDE
DIMENSIONS, WIDTH, MATERIAL
WITH A WATER TIGHT SEAL.



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REVISIONS:

**ORIFACE PLATE
AND GUIDE**

SCALE: N.T.S.

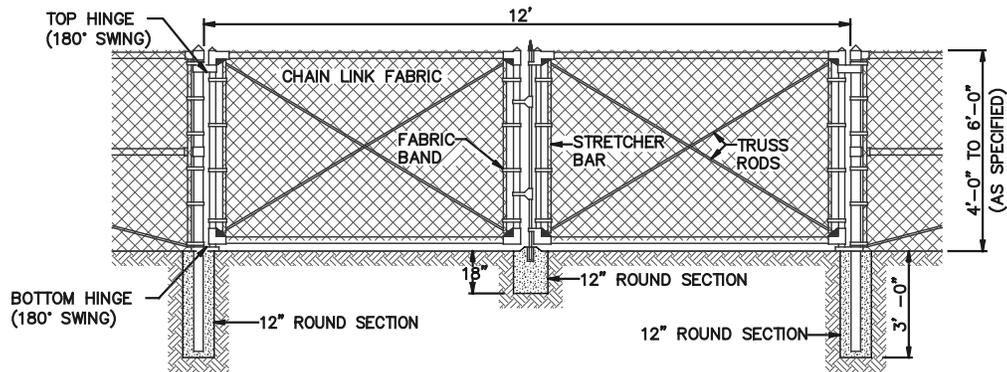
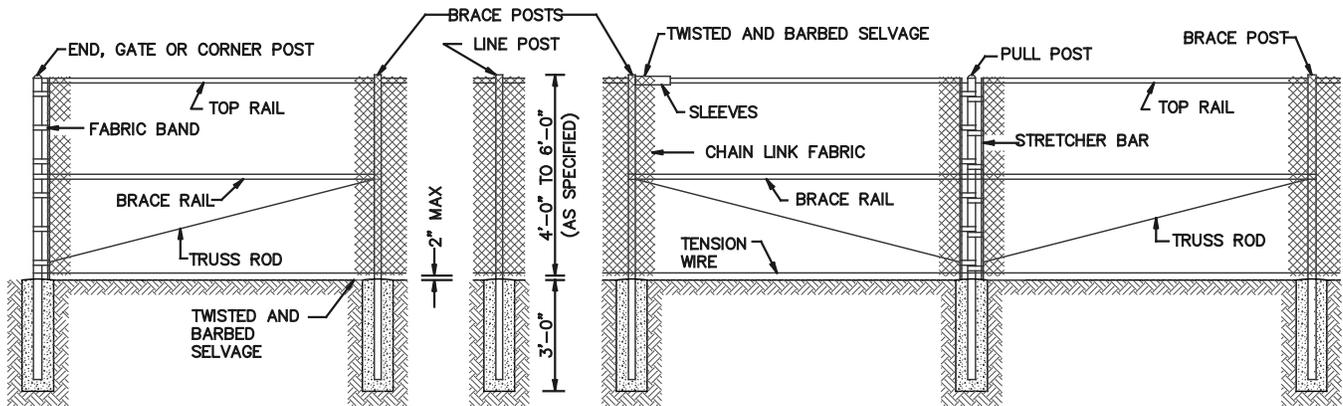
DATE: MARCH 2014

APPROVED
BY: JAY H.

STANDARD
DRAWING

418

MEMBER	NOMINAL DIA (IN)	MATERIAL	
BRACE RAIL	1.660	GALV TUBULAR STL	
GATE FRAME	2.00	GALV TUBULAR STL	
LINE POSTS	2.375	GALV TUBULAR STL	
END & CORNER POST	2.875	GALV TUBULAR STL	
CHAIN LINK FABRIC		9 GA. W/GREEN OR BLACK PVC COATING.	
	GATE OPENING (ft)	NOMINAL DIA (IN)	MATERIAL
GATE POST	12' OR 15'	4	GALV TUBULAR STL



NOTES:

1. ALL FITTINGS, FASTENERS, OR FABRIC TIES SHALL BE BLACK OR BROWN VINYL FENCING.
2. CONCRETE SHALL BE MIN. 2500 PSI @ 28 DAYS.
3. PROVIDE BRACE RAIL BETWEEN END POSTS AND LINE POSTS. LENGTHS AS REQUIRED.
4. PROVIDE GATE STOPS AND DROP RECEIVERS SET IN CONCRETE, EACH GATE.
5. PROVIDE EXTENSION ARMS ON LINE, END AND CORNER POSTS & GATE POSTS AS REQUIRED.
6. PROVIDE SIGHT OBSCURING SLATS WITH ALL WASTEWATER PUMP STATIONS.
7. CENTER BRACE RAIL NOT REQUIRED WITH FENCE HEIGHT OF 5' OR LESS.
8. ALL POSTS AND RAILS TO MATCH FENCE COLOR.

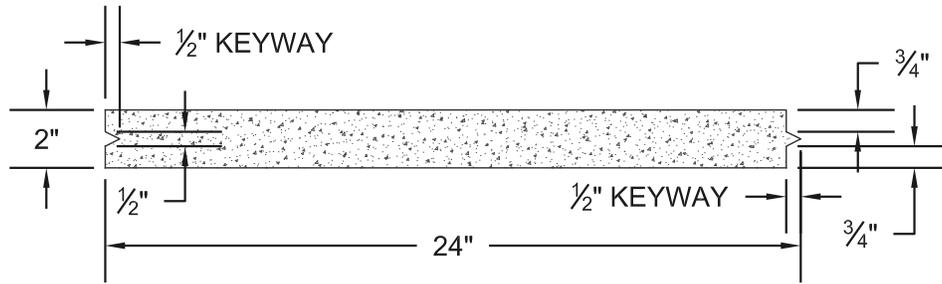


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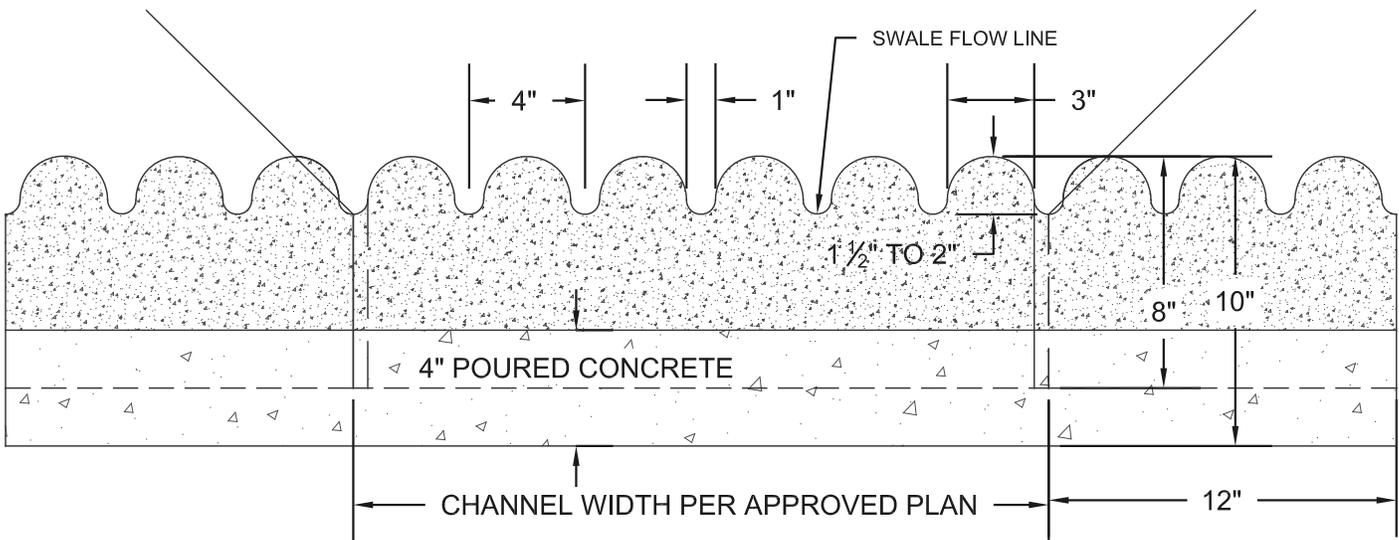
REVISIONS:

CHAIN LINK FENCE AND GATE

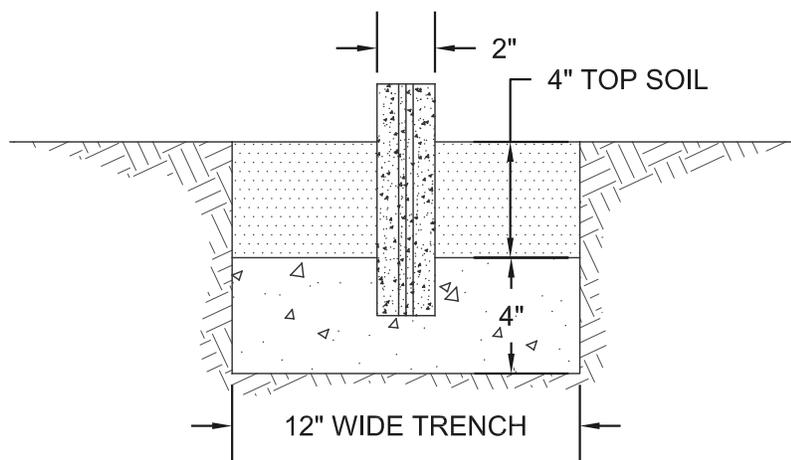
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DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	419



TOP VIEW



FRONT VIEW



SIDE VIEW

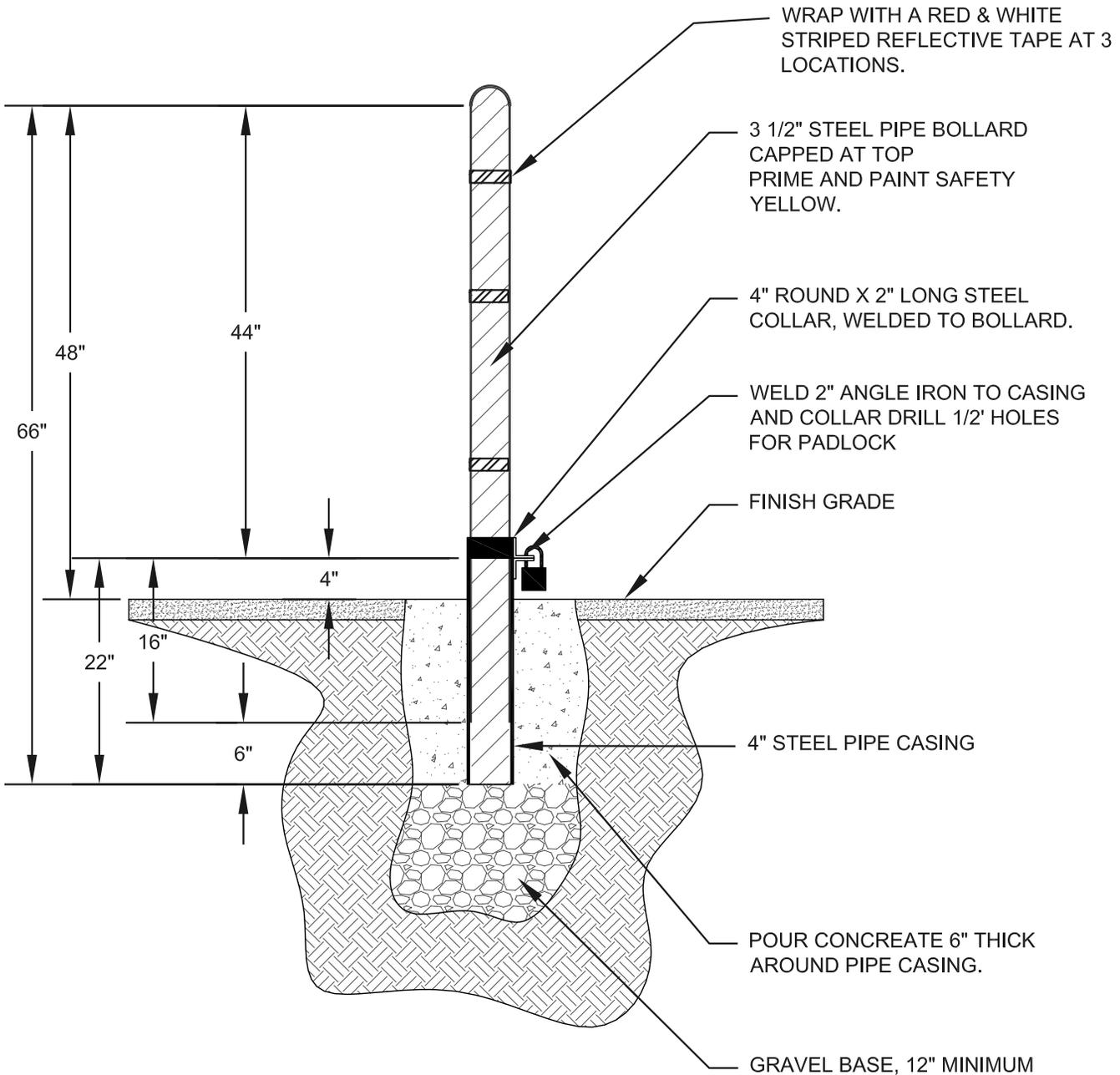


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REVISIONS:

**CONCRETE
SPREADER DETAIL**

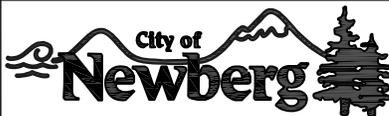
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DATE:	MARCH 2014
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STANDARD DRAWING	420



STEEL PIPE SPECIFICATIONS

ASTM A-53 STEEL, SCHEDULE 40, BLACK, HOT DIPPED, ZINC-COATED, WELDED, SEAMLESS

4-INCH STEEL PIPE	O.D. = 4.500"	I.D. = 4.026	THICKNESS = 0.237
3 1/2-INCH STEEL PIPE	O.D. = 4.000"	I.D. = 3.549"	THICKNESS = 0.226"



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REVISIONS:

REMOVABLE
BOLLARD

SCALE: N.T.S.

DATE: MARCH 2014

APPROVED BY: JAY H.

STANDARD
DRAWING

421

RIPRAP:

- ROCK FOR RIPRAP SHALL BE ANGULAR IN SHAPE.
- THICKNESS OF A SINGLE ROCK SHALL NOT BE LESS THAN ONE-THIRD ITS LENGTH.

RIPRAP INSTALLATION:

- EXCAVATE BELOW FINISH GRADE TO DEPTH & DIMENSIONS SHOWN ON APPROVED PLANS.
- INSTALL WOVEN GEOTEXTILE FABRIC.
- PLACE RIP RAP TO FINISH GRADE.

- GRADE RIPRAP SHALL BE THE CLASS AND SIZE OF ROCK ACCORDING TO THE FOLLOWING:

CLASS	CLASS	CLASS	CLASS	CLASS	
50	100	200	700	2000	
					PERCENT
					(BY WEIGHT)
WEIGHT OF ROCK (LBS)					
50-30	100-60	200-140	700-500	2000-1400	20
30-15	60-25	140-80	500-200	1400-700	30
15-2	25-2	80-8	200-20	700-40	40
2-0	2-0	8-0	20-0	40-0	10



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REVISIONS:

RIPRAP

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	422

DESIGN STEPS FOR LIDA FACILITIES:

1. DETERMINE THE IMPERVIOUS AREA REQUIRING TREATMENT. REFER TO CHAPTER 4 OF THE STANDARD DESIGN MANUAL FOR ASSISTANCE IN DETERMINING OR CALCULATING THE IMPERVIOUS AREA REQUIRING TREATMENT.
2. DEDUCT IMPERVIOUS AREA LIDA CREDITS. DEDUCT THE SITE AREAS DESIGNED WITH POROUS PAVEMENT OR GREEN ROOFS FROM THE IMPERVIOUS AREA CALCULATED IN STEP 1.
3. IF NEEDED, DESIGN WATER QUALITY/ QUANTITY FACILITIES FOR REMAINING UNTREATED IMPERVIOUS AREA. SIZING FACTORS FOR INFILTRATION BASED LIDA'S ASSUME EXISTING SOIL UNFACTORED INFILTRATION RATE OF GREATER THAN 2 INCHES PER HOUR. EACH FACILITY MUST BE SIZED FOR THE AMOUNT OF IMPERVIOUS AREA DRAINING ONTO IT.
4. THE SIZING FACTORS NOTED IN THIS SECTION ARE TO BE USED TO SIZE EACH LIDA FACILITY TREATING RUNOFF FROM A MAXIMUM OF 15,000 SQUARE FEET OF IMPERVIOUS AREA IN EACH FACILITY. FOR LARGE DEVELOPMENT SITES AND IMPERVIOUS AREAS, A REGIONAL WATER QUALITY/ QUANTITY FACILITY (VEGETATED SWALE, EXTENDED DRY BASIN OR CONSTRUCTED WATER QUALITY WETLAND) OR PROPRIETARY FACILITY MAY BE APPROPRIATE, AS DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER.

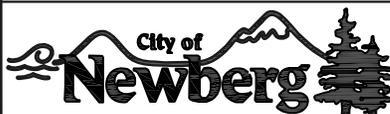
GENERAL NOTES:

1. FOR PLANTING REQUIREMENTS REFERENCE APPENDIX A OF THE STANDARD DESIGN MANUAL.
2. FOR FACILITY SIZING REFERENCE STANDARD DRAWING NO. 451, LIDA SIZING FORM.
3. ENERGY DISSIPATORS REQUIRED AT ALL DISCHARGE POINTS INTO THE FACILITY, MINIMUM OF 18"X18"X 6" DEEP, 4" TO 6" CLEAN ANGULAR RIPRAP.
4. DISCHARGES INTO NATIVE SOILS WILL REQUIRE INFILTRATION TESTING COMPLETED BY A REGISTERED DESIGN PROFESSIONAL.

GROWING MEDIUM NOTES:

THE GROWING MEDIUM SHALL BE ONE THIRD ORGANIC COMPOST, ONE THIRD GRAVELY SAND AND ONE THIRD TOP SOIL.

1. ORGANIC COMPOST SHALL BE THE RESULT OF BIOLOGICAL DEGRADATION AND TRANSFORMATION OF PLANT DERIVED MATERIALS UNDER CONDITIONS DESIGNED TO PROMOTE AEROBIC DECOMPOSITION, FREE OF VIABLE WEED SEEDS AND STABLE WITH REGARD TO OXYGEN CONSUMPTION AND CARBON DIOXIDE GENERATION, AND OTHERWISE CONFORMING TO THE US COMPOSTING COUNCIL STA COMPOST TECHNICAL DATA SHEET; WWW.COMPOSTINGCOUNCIL.ORG.
2. GRAVELY SAND SHALL BE 1" MINUS IN CONFORMANCE WITH ASTM C117/C136 (AASHTO T11/T27) STANDARDS WITH A COEFFICIENT OF UNIFORMITY (D60/D10) EQUAL TO OR GREATER THAN 6.
3. TOP SOIL SHALL BE FREE OF WOOD PIECES, PLASTIC, AND OTHER FOREIGN MATTER, CHEMICAL AND BIOLOGICAL POLLUTANTS, AND CONTAIN NO VISIBLE FREE WATER.



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 FAX: 503-537-1277

REVISIONS:

**DESIGN STEPS,
 GENERAL NOTES, AND
 GROWING MEDIUM**

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	450

City of Newberg LIDA Sizing Form

(Include this form with plan submittal)

Project Title: _____

Project Address: _____

Project Taxlot/ Taxmap#: _____

Project Location: _____

Contact Name/Title/Company: _____

Phone/e-mail: _____

STEP 1: Determine Impervious Area Requiring Treatment

Total Gross Site Area (acres): Pre. Dev. Impervious Area (ft): (X)

Proposed Net New Impervious Area (ft): (PA) Post Dev. Impervious Area (ft): (Y)
 (PA)= (Y) - (X)

STEP 2: Deduct Impervious Area LIDA Credits

Porous Pavement (sq. ft.): (P)

Green Roof (sq. ft.): (G)

Other Credits as approved (sq. ft.): (O)

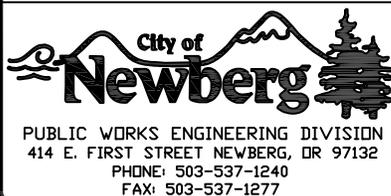
Total Credits (sq. ft.): (C)
 (C)= (P)+(G)+(O)

Impervious Area Requiring Treatment (sq. ft.): (IA)
 (IA)= (PA) - (C)

STEP 3: Size LIDA Facilities for Remaining Impervious Area

	Impervious Area Treated (sq. ft.)	SF, Sizing Factor	LIDA Facility Size (sq. ft.)
Infiltration Planters/ Rain Garden		0.045	
Flow-through Planter		0.060	
Public Flow-through Planter		0.060	

Total Impervious Area Treated (sq. ft.) MUST BE EQUAL TO (IA)

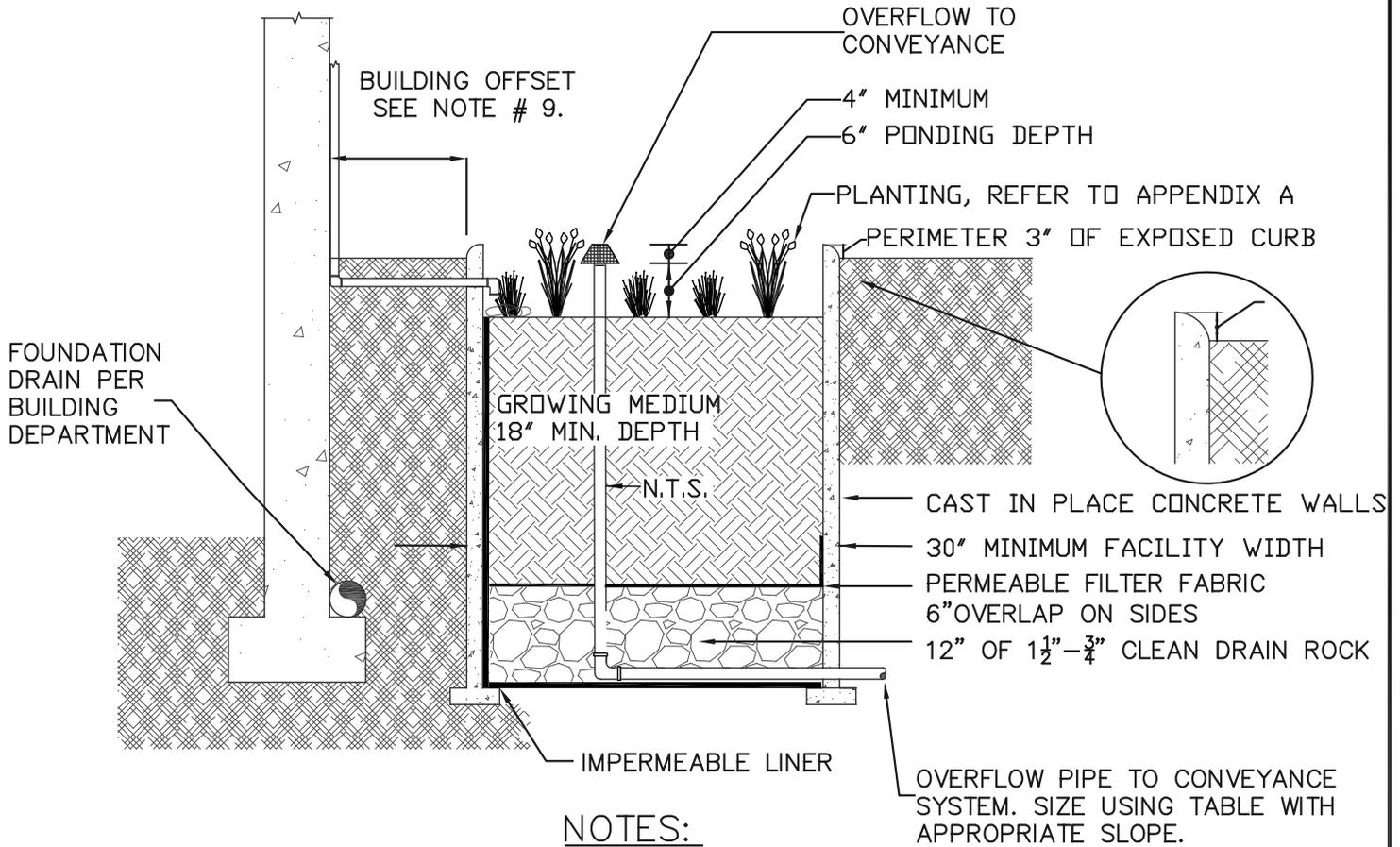


REVISIONS:

LIDA SIZING FORM

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	451

PRIVATE/ PUBLIC WATER QUALITY & QUANTITY TREATMENT



NOTES:

1. MAXIMUM SLOPE OF PLANTER 0.5%.
2. NO TREES OR DEEP ROOTED VEGETATION OVER PIPING IS ALLOWED IN FACILITY.
3. STORM PIPING TO FACILITY THROUGH WALL CORE HOLES, MAINTAIN MAXIMUM DISTANCE FROM THE OVERFLOW PIPE AS POSSIBLE.
4. PRIVATE OVERFLOW PIPE TO BE MINIMUM SPECIFIED IN PLUMBING CODE, SEE TABLE. PUBLIC FACILITIES SHALL BE SIZED TO CONVEY THE 25 YEAR STORM.
5. ENERGY DISSIPATERS REQUIRED AT WATER ENTRANCES MINIMUM 18"X18"X6" OF 4 TO 6 INCH ANGULAR RIPRAP.
6. PERMEABLE FILTER FABRIC REQUIRED BETWEEN LAYERS
7. IMPERMEABLE LINER REQUIRED AT FACILITY BOTTOM AND ON WALLS ADJACENT TO STRUCTURES (AS SHOWN).
8. "PARTIAL" INFILTRATION FACILITIES ARE ENCOURAGED. IMPERMEABLE LINER LOCATED AT FACILITY BOTTOM, MAY BE REMOVED FOR "PARTIAL" INFILTRATION, APPROVAL BY DESIGN PROFESSIONAL AND BUILDING DEPARTMENT REQUIRED.
9. BUILDING OFFSET REQUIRED ONLY WHEN INFILTRATING, 10 FT MINIMUM.
10. MUST BE LOCATED A MINIMUM OF 3 FT FROM ADJACENT PROPERTY LINE.

OVERFLOW PIPE SIZE (1/8 in./ft. SLOPE)	
MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
822	3
1,880	4
3,340	6

OVERFLOW PIPE SIZE (1/4 in./ft. SLOPE)	
MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
1,160	3
2,650	4
4,720	6

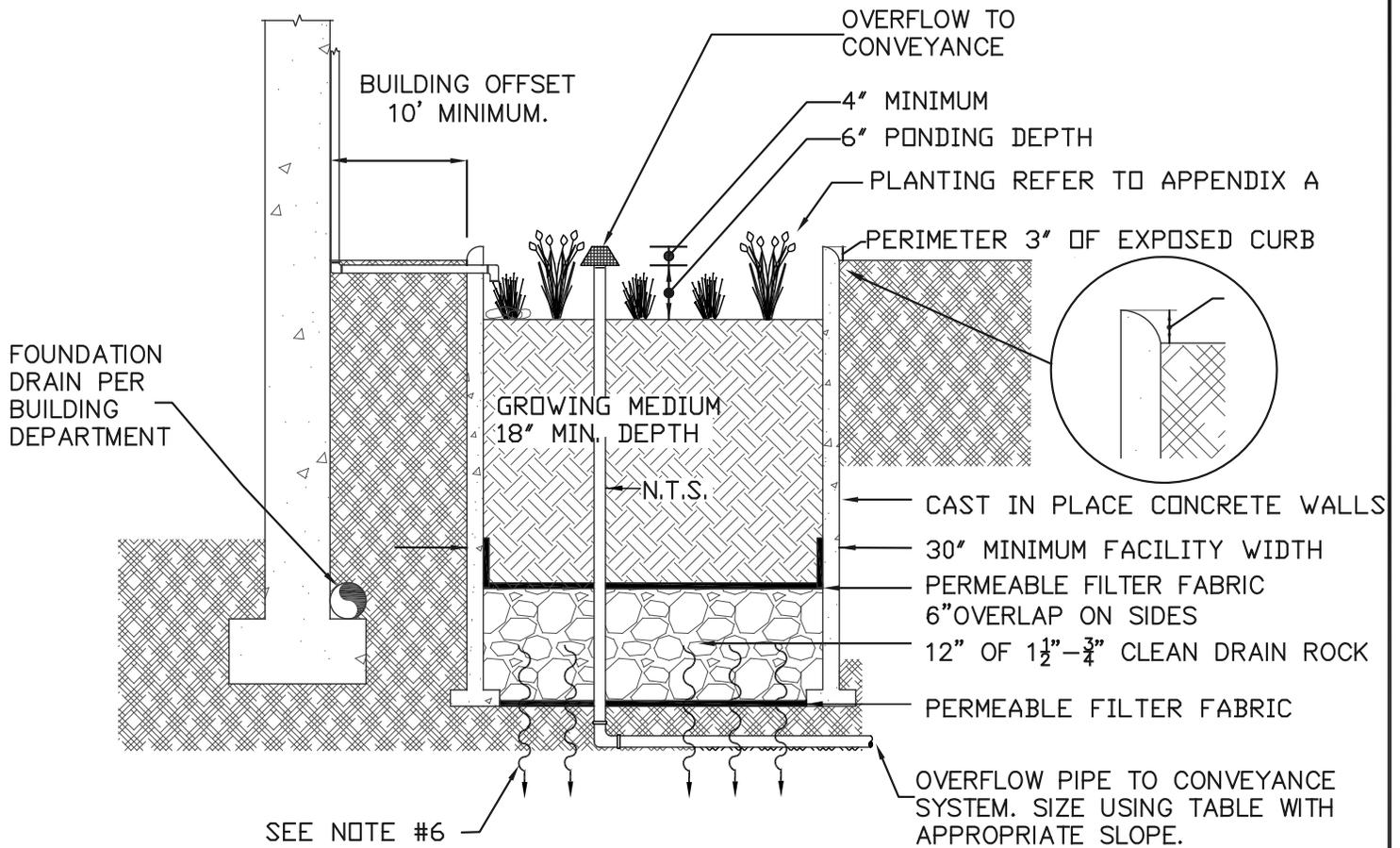
City of Newberg
 PUBLIC WORKS ENGINEERING DIVISION
 414 E. FIRST STREET NEWBERG, OR 97132
 PHONE: 503-537-1240
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REVISIONS:

FLOW THROUGH PLANTER

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	452

PRIVATE/ PUBLIC WATER QUALITY & QUANTITY TREATMENT

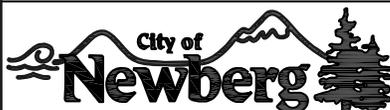


OVERFLOW PIPE SIZE (1/8 in./ft. SLOPE)	
MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
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MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
1,160	3
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NOTES:

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2. NO TREES OR DEEP ROOTED VEGETATION OVER PIPING IS ALLOWED IN FACILITY.
3. STORM FLOW INLETS THROUGH WALL CUT OUTS, BOTH TO MAINTAIN MAXIMUM LINEAR DISTANCE FROM THE OVERFLOW PIPE.
4. PRIVATE OVERFLOW PIPE TO BE MINIMUM SPECIFIED IN THE PLUMBING CODE, SEE TABLE. PUBLIC FACILITIES SHALL BE SIZED TO CONVEY THE 25 YEAR STORM.
5. ENERGY DISSIPATERS REQUIRED AT WATER ENTRANCES MINIMUM 18"X18"X6" OF 4 TO 6 INCH ANGULAR RIPRAP.
6. SIZING FACTORS, FOR INFILTRATION FACILITIES ASSUME AN UNFACTORED INFILTRATION RATE GREATER THAN 2 IN PER HOUR.
7. MUST BE LOCATED 3' MINIMUM FROM ADJACENT PROPERTY LINE.

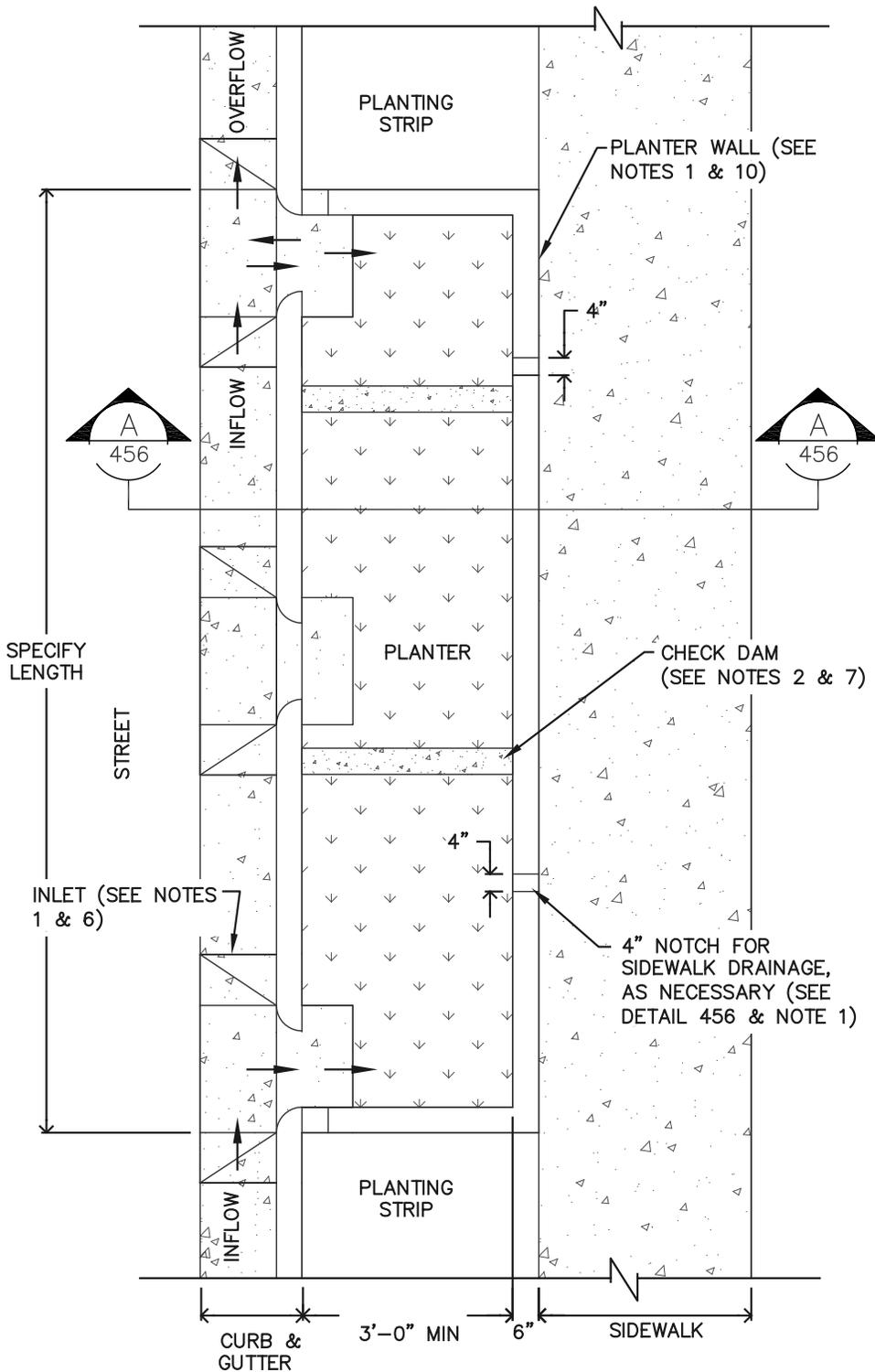


PUBLIC WORKS ENGINEERING DIVISION
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REVISIONS:

INFILTRATION PLANTER

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	453

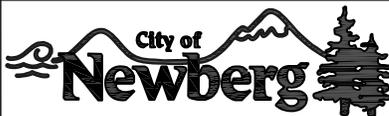


DESIGN NOTES:

1. PROVIDE BEGINNING AND END STATION FOR EACH FACILITY. PROVIDE STATIONING AND/ OR DIMENSIONS AND ELEVATIONS AT EACH INLET, OUTLET, CHECK DAM, PLANTER CORNER AND SIDEWALK NOTCHES.
2. SIDEWALK ELEVATION MUST BE SET ABOVE CHECK DAM AND INLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
3. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES TO BE LOCATED OUT OF FACILITY.
4. LONGITUDINAL SLOPE OF PLANTER TO MATCH ROAD.
5. MINIMUM INTERIOR PLANTER WIDTH IS 3 FEET. A MINIMUM OF 4 FEET IS REQUIRED FOR PLANTERS WITH STREET TREES.

RELATED DETAILS:

6. CONCRETE INLET, STANDARD DRAWING NO. 462- CURB CUT.
7. CHECK DAM, STANDARD DRAWING NO. 465, CONCRETE CHECK DAM.
8. REQUIRMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS REFERENCE STANDARD DRAWING NO. 468, METER & HYDRANT LOCATIONS.
9. FACILITY SIZING AND TOPSOIL PER STANDARD DRAWING NO. 450, GENERAL REQUIRMENTS.
10. PLANTER WALL, STANDARD DRAWING NO. 466, PUBLIC PLANTER WALLS.

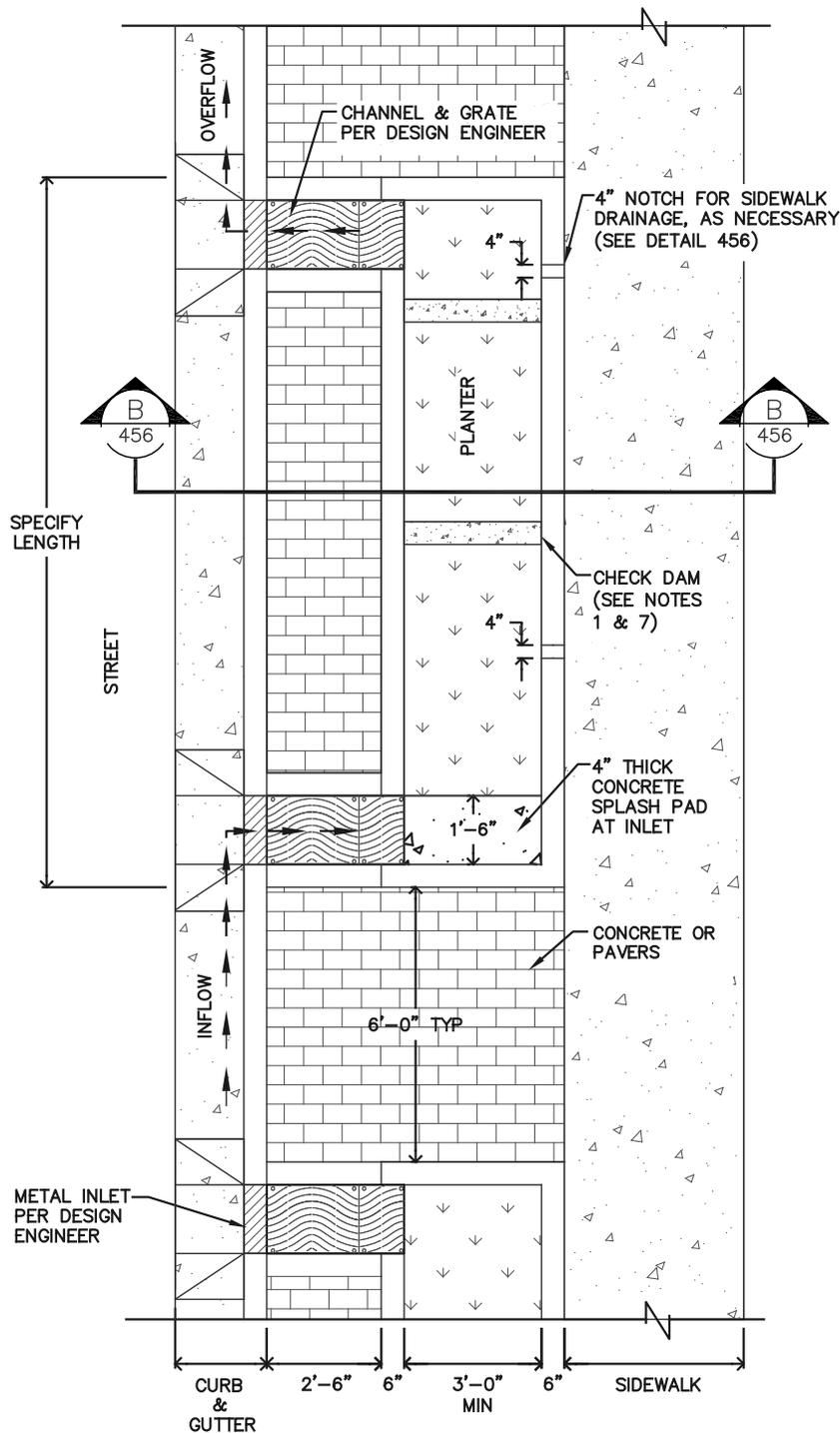


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REVISIONS:

**PUBLIC PLANTER
 PLAN VIEW NO PARKING**

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	454

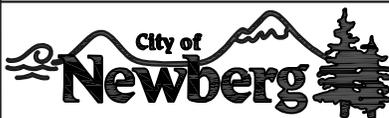


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7. CHECK DAM, STANDARD DRAWING NO. 465, CONCRETE CHECK DAM.
8. REQUIRMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS REFERENCE STANDARD DRAWING NO. 468, METER & HYDRANT LOCATIONS..
9. FACILITY SIZING AND TOPSOIL PER STANDARD DRAWING NO. 451, GENERAL REQUIRMENTS.
10. PLANTER WALL, STANDARD DRAWING NO. 466, PLANTER WALLS.

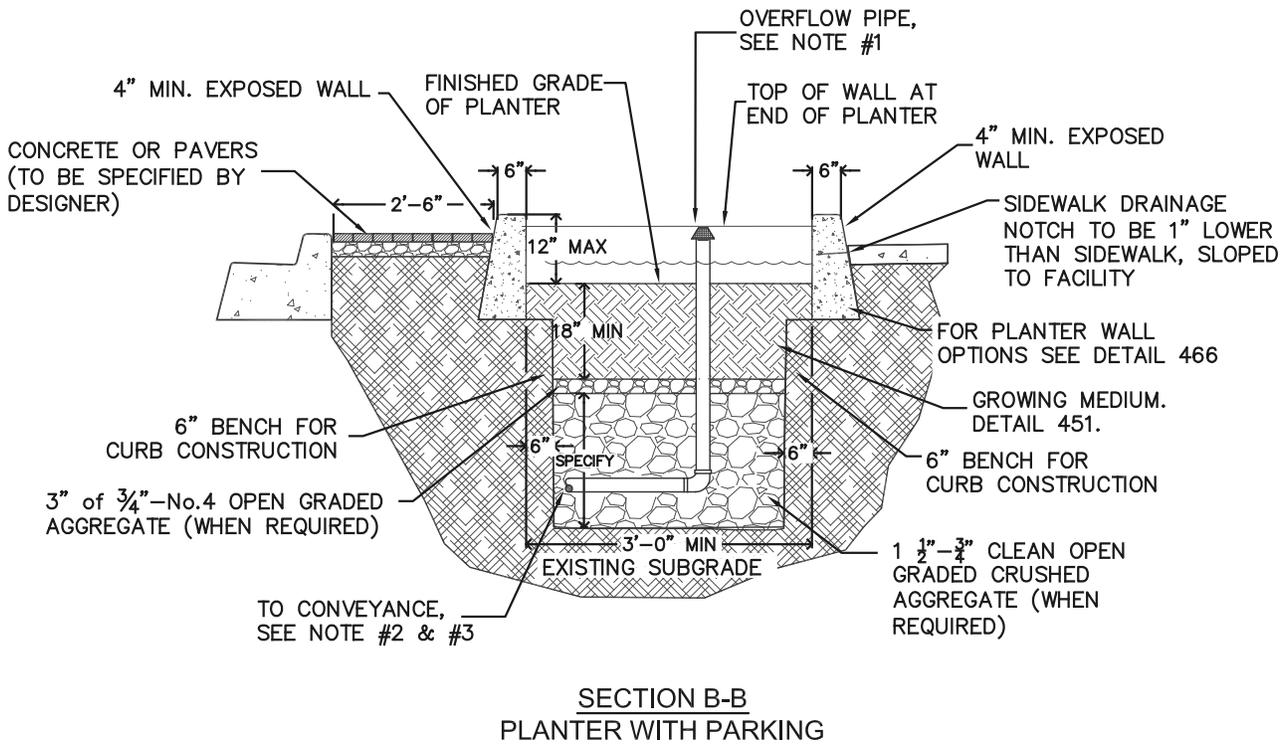
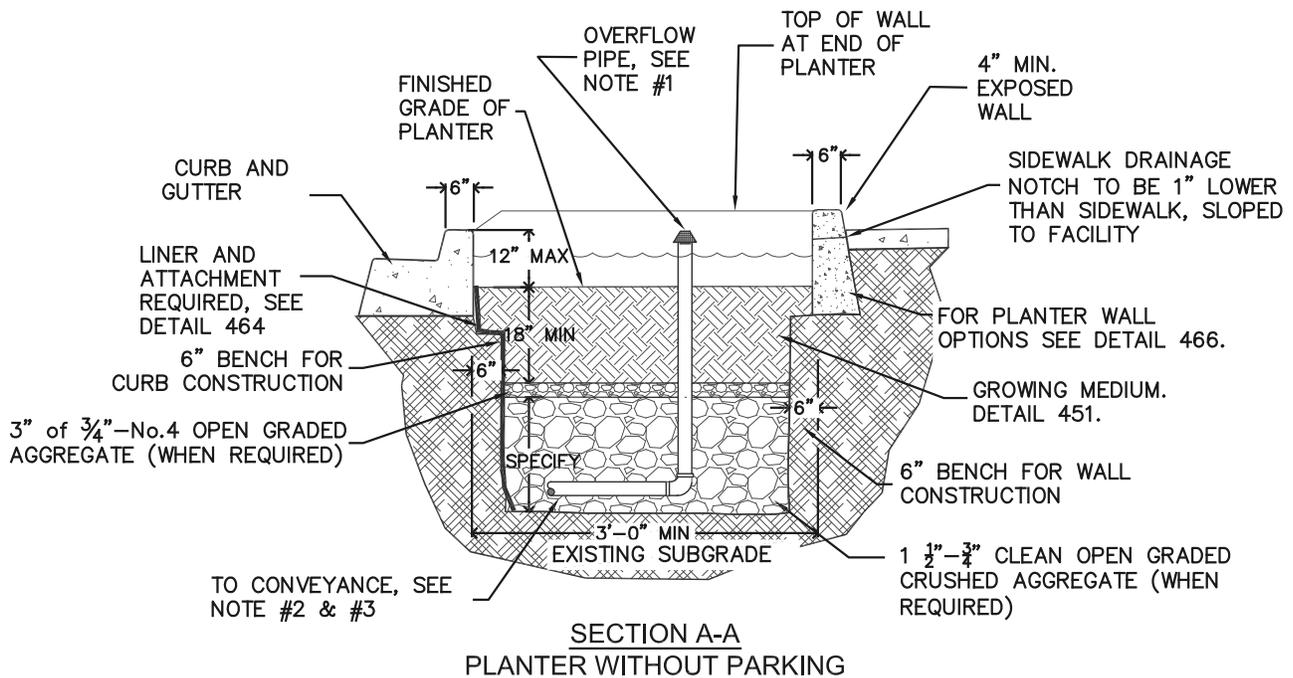


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REVISIONS:

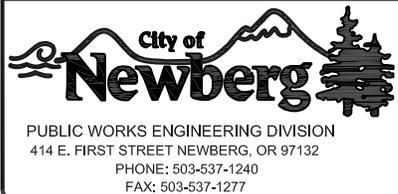
**PUBLIC PLANTER
 PLAN VIEW WITH PARKING**

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	455



NOTES:

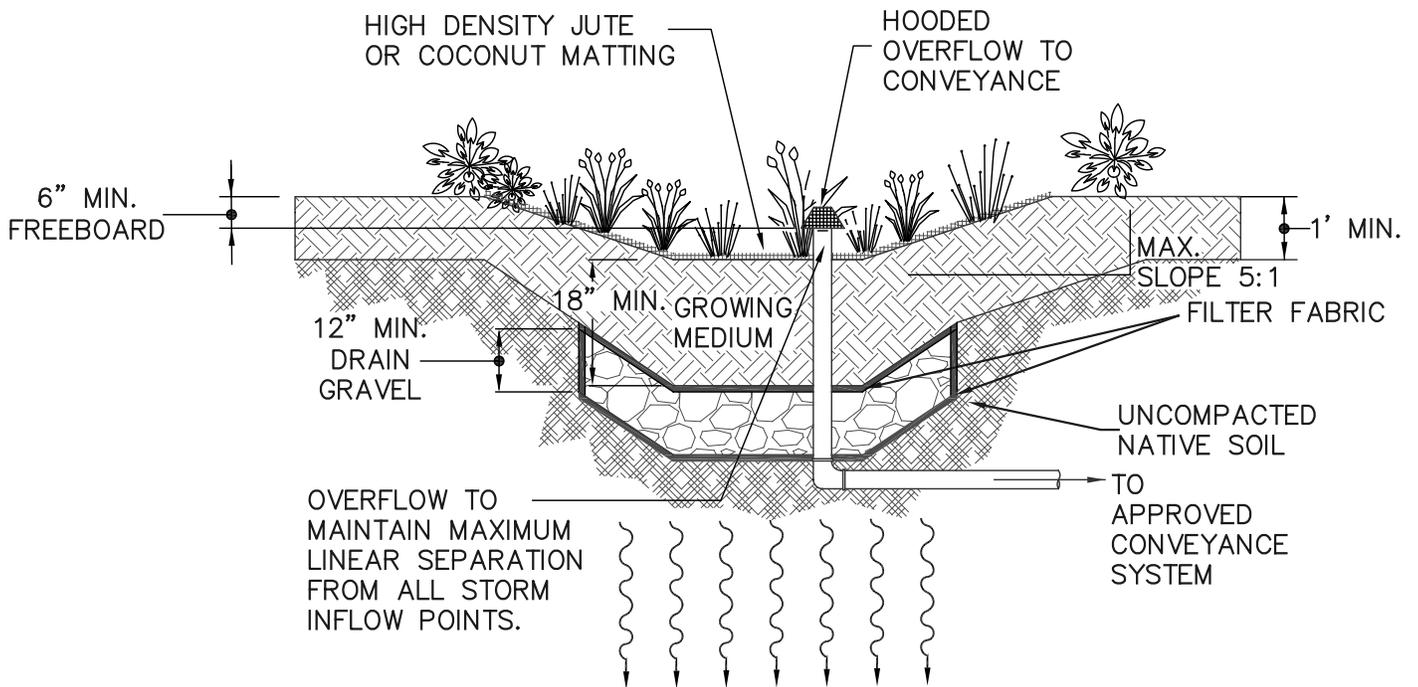
1. TOP OF OVERFLOW PIPE TO BE FLUSH WITH CHECK DAM HEIGHT.
2. PUBLIC OVERFLOW PIPE SHALL BE SIZED TO CONVEY THE 25 YEAR DESIGN STORM EVENT.
3. PERFORATED PIPE SHALL RUN LENGTHWISE OF FACILITY AND SHALL BE LOCATED 6" ABOVE EXISTING SUBGRADE. REFERENCE STANDARD DRAWING NO. 463, PERFORATED PIPE.



REVISIONS:

PUBLIC PLANTER
SECTION VIEW

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	456



NOTES:

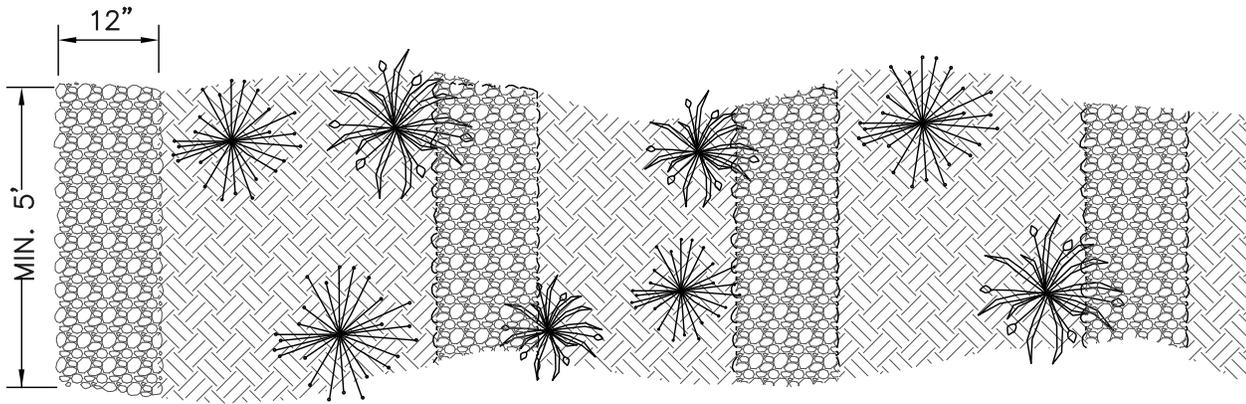
1. PROVIDE OVERFLOW CONVEYANCE SYSTEM, OVERFLOW CONVEYANCE HEIGHT TO ALLOW 6" MAXIMUM PONDING, PIPING TO A MINIMUM OF THE PLUMBING CODE OR CONVEY THE 25 YEAR STORM.
2. FLOW DISSIPATORS SHOULD BE USED IF ENTRY SLOPE TO THE BASIN IS GREATER THAN 5:1.
3. SEPARATION BETWEEN DRAIN GRAVEL AND GROWING MEDIUM SHALL BE PERMEABLE FILTER FABRIC.
4. TREATMENT AREA SHALL HAVE HIGH DENSITY JUTE OR COCONUT MATTING OVER 18" MINIMUM OF GROWING MEDIUM OR BASE STABILIZATION METHOD AS APPROVED BY THE CITY.
5. REFER TO APPENDIX A OF THE STANDARDS DESIGN MANUAL FOR PLANTING REQUIREMENTS.
6. TOP OF BANK OF FACILITY MUST BE LOCATED 10' FROM ANY STRUCTURE AND 3' FROM ADJACENT PROPERTY LINES.

REVISIONS:

RAIN GARDEN

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	457

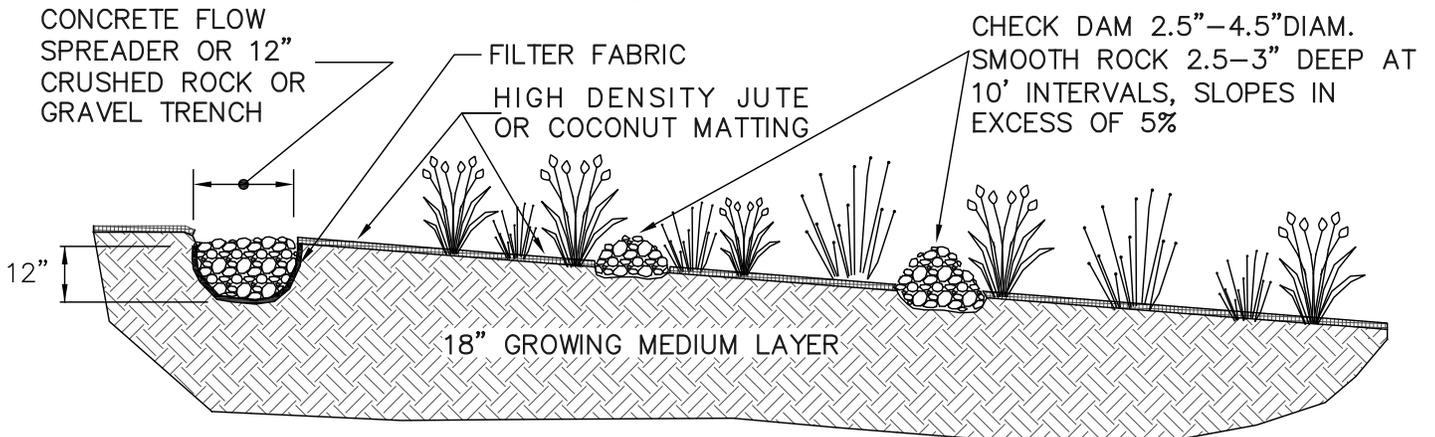
PLAN



OVER FLOW
COLLECTOR.
SEE NOTES

6% MAX SLOPE
0.5% MIN SLOPE

PROFILE



NOTES:

1. COLLECTION AND CONVEYANCE OF OVERFLOW FROM FILTER STRIP SHALL BE SPECIFIED ON PLANS TO APPROVED PUBLIC CONVEYANCE SYSTEM.
2. ENTIRE FILTER STRIP MUST HAVE 100% COVERAGE BY APPROVED, NATIVE GRASSES, WILDFLOWER BLENDS, GROUND COVERS, OR ANY COMBINATION THEREOF.
3. A GRADE BOARD, SPREADER, OR SAND/GRAVEL TRENCH MAY BE REQUIRED TO DISPERSE THE RUNOFF EVENLY ACROSS THE FILTER STRIP TO PREVENT POINT OF DISCHARGE/CHANNELIZATION. THE TOP OF THE LEVEL SPREADER MUST BE HORIZONTAL AND AT AN APPROPRIATE HEIGHT TO PROVIDE SHEETFLOW DIRECTLY TO THE SOIL WITHOUT SCOUR. LEVEL SPREADERS SHALL NOT HOLD A PERMANENT VOLUME OF RUNOFF. SPREADERS MAY BE CONCRETE PER STANDARD DRAWING NO. 420. TRENCHES USED AS LEVEL SPREADERS CAN BE FILLED WITH WASHED CRUSHED ROCK, PEA GRAVEL OR SAND.
4. CHECK DAMS SHALL BE PLACED ACCORDING TO FACILITY DESIGN OTHERWISE:
 - A. EQUAL TO THE WIDTH OF THE FILTER
 - B. PLACED EVERY 10' WHERE SLOPE EXCEEDS 5%, 2.5" TO 3" DEEP.
5. FILTER STRIP IS FOR WATER QUALITY ONLY, SIZING FACTOR OF 0.06.

REVISIONS:

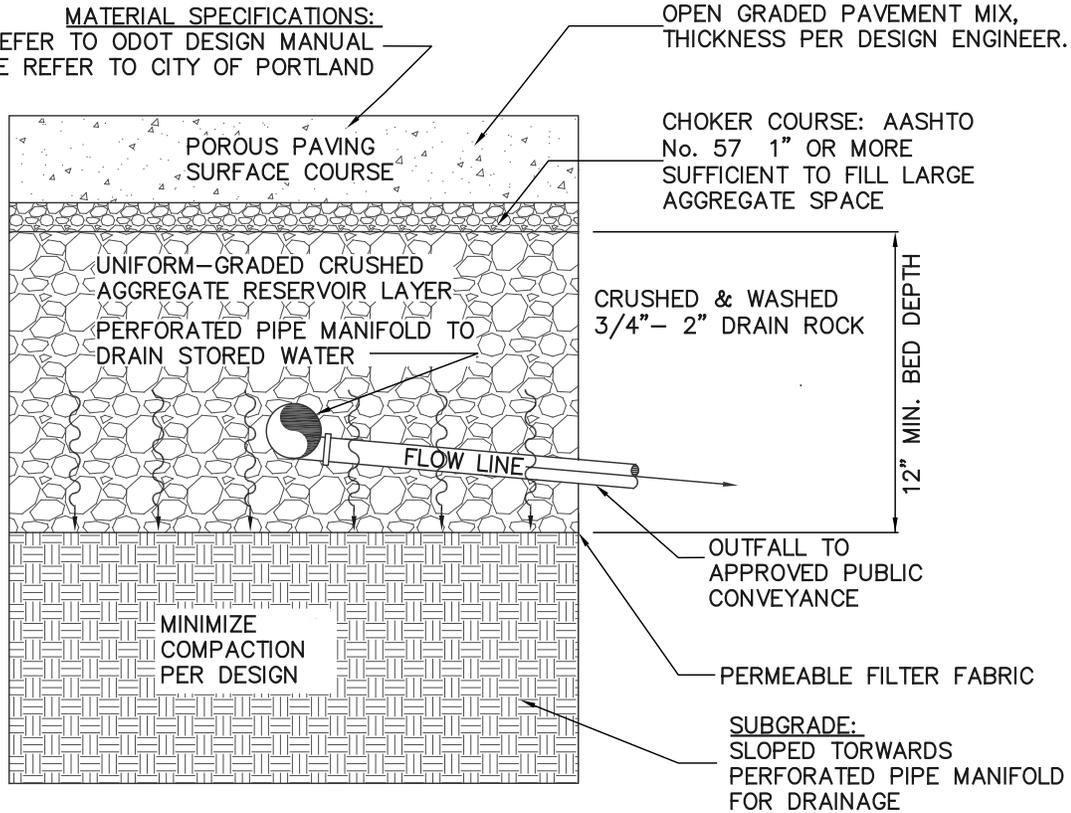
VEGETATED FILTER STRIP

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	458

POROUS PAVEMENT

1:1 IMPERVIOUS AREA DEDUCTION

MATERIAL SPECIFICATIONS:
 ASPHALT REFER TO ODOT DESIGN MANUAL
 CONCRETE REFER TO CITY OF PORTLAND



NOTES:

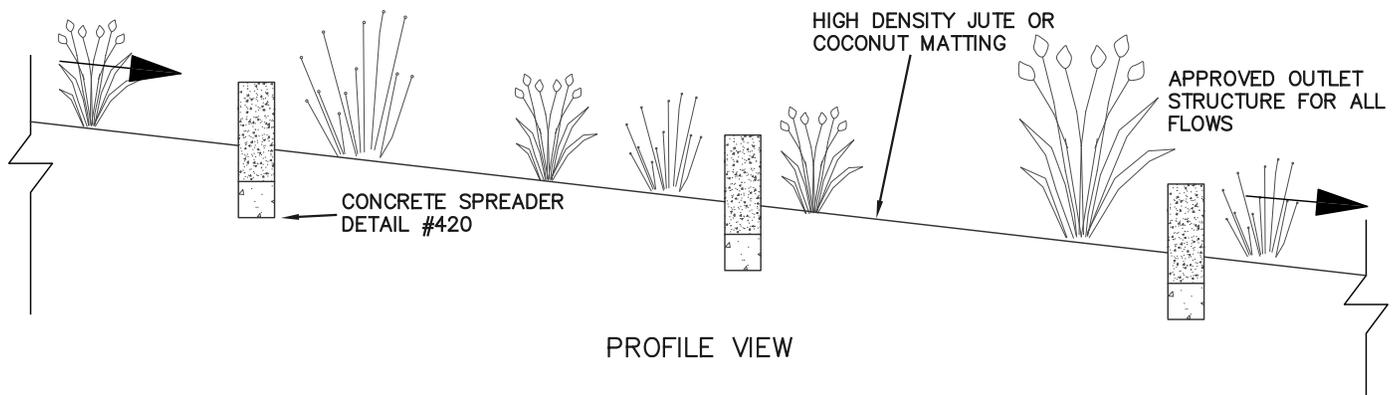
1. PAVEMENT SURFACE TO BE CONSTRUCTED WITH HIGH PERMEABILITY (> 8" PER HR).
2. UNIFORM-GRADED CRUSHED DRAIN ROCK BED WITH MINIMUM 40% VOID SPACE
3. PROVIDE PERFORATED PIPE MANIFOLD IN RESERVOIR LAYER FOR CONVEYANCE, IF UNFACTORED SOIL INFILTRATION RATES LESS THAN 2"/HOUR. SEE PERFORATED PIPE DRAWING NO. 463.
4. NOT RECOMMENDED FOR TRAFFIC SURFACES WITH SLOPE > 5%.
5. DO NOT PLACE DRAIN ROCK BED ON COMPACTED FILL AREAS.
6. HIGHEST SEASONAL WATER TABLE MUST BE AT LEAST 5' BELOW RESERVOIR LAYER. STRUCTURE MUST BE 100' AWAY FROM DRINKING WATER WELL. MINIMUM OF 100' AWAY UP SLOPE & 10' AWAY DOWN SLOPE FROM STRUCTURE FOUNDATIONS. A WRITTEN REPORT IS REQUIRED.
7. FLOWS FROM OTHER IMPERVIOUS AREAS SHALL NOT DRAIN TO POROUS PAVEMENT.
8. ONSITE INFILTRATION TESTING REQUIRED BEFORE AND DURING CONSTRUCTION BY A DESIGN PROFESSIONAL.

REVISIONS:

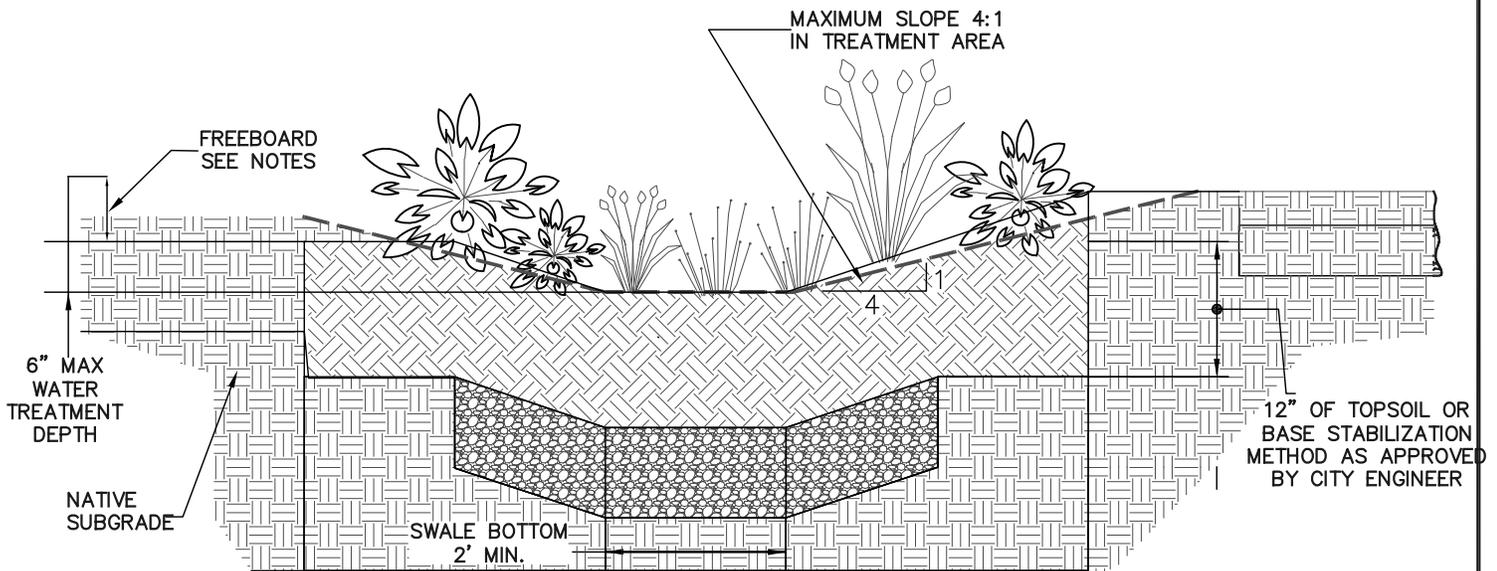
POROUS PAVEMENT

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	459

LENGTH PER DESIGN 100' MINIMUM, 0.5% MIN SLOPE.



PROFILE VIEW



CROSS-SECTIONAL VIEW WITH ON STREET PARKING

HYDRAULIC DESIGN CRITERIA:

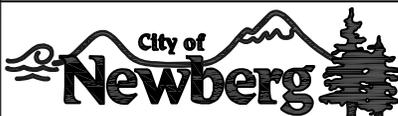
1. DESIGN FLOW: WATER QUALITY FLOW
2. MIN. HYDRAULIC RESIDENCE TIME: 9 MINUTES
3. MAXIMUM WATER DESIGN DEPTH: 0.5 FEET
4. MINIMUM FREE BOARD: 1.0 FOOT (FOR FACILITIES NOT NOT PROTECTED FROM HIGH FLOWS)
5. MANNING "n" VALUE: 0.24
6. MAXIMUM VELOCITY: 2.0 fps BASED ON 25-YEAR FLOW

FACILITY DESIGN CRITERIA:

1. UP UNTIL THE MAX WATER SURFACE, INTERIOR SIDE SLOPES, MAX SLOPE IS 4H:1V
2. ABOVE MAX WATER SURFACE, INTERIOR SIDE SLOPES, MAX SLOPE IS 2H:1V
3. IF INTERIOR SIDE SLOPES MUST BE MOWED SIDE SLOPE THEN THE MAX SLOPE IS 4H:1V
4. EXTERIOR SIDE SLOPES MAX 2H:1V
5. MINIMUM FREEBOARD 1 FOOT FROM 25 YEAR DESIGN WATER SURFACE ELEVATION
6. PROVIDE AN ENERGY DISSIPATER AT THE ENTRANCE OF SWALE, WITH A MINIMUM LENGTH OF 4 FEET. IT WILL BE DESIGNED TO REDUCE VELOCITIES AND SPREAD THE FLOW ACROSS THE TREATMENT CROSS SECTION.

FACILITY DESIGN CRITERIA:

7. THE USE OF INTERMEDIATE FLOW SPREADERS IS REQUIRED, SPACING FOR CONCRETE SPREADERS TO BE DETERMINED BY DESIGN ENGINEER.
8. EXTEND RIVER ROCK, TOPSOIL, AND HIGH DENSITY JUTE OR COCONUT MATTING TO TOP OF TREATMENT AREA (OR WQV LEVEL). EXTEND TOPSOIL AND LOW DENSITY JUTE MATTING TO THE EDGE OF WATER QUALITY TRACT.
9. WHERE SWALES WRAP 180-DEGREES FORMING PARALLEL CHANNELS, FREEBOARD SHALL BE PROVIDED BETWEEN EACH OF THE PARALLEL CHANNELS. A 1 FOOT WALL ABOVE GROUND SURFACE MAY ALSO BE USED. ALTERNATIVE: A SOIL BASED BERM WITH A MIN. TOP WIDTH OF 1 FOOT & MAX 2.5H:1V SIDE SLOPES MAY BE USED.
10. WHERE SWALES ARE DESIGNED WITH DITCH INLETS & OUTLET STRUCTURES & DESIGN OF MAINTENANCE ACCESS TO SUCH STRUCTURES MAY BE DIFFICULT DUE TO SWALE LOCATION, SWALES MAYBE DESIGNED AS FLOW THROUGH FACILITIES WITH UNSUMPED STRUCTURES. MAINTENANCE ACCESS TO STRUCTURE END OF THE FACILITY IS REQUIRED.

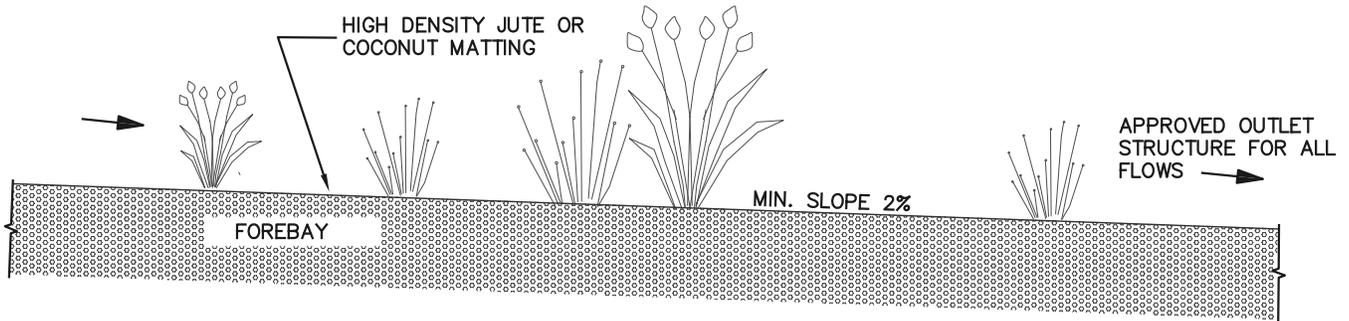


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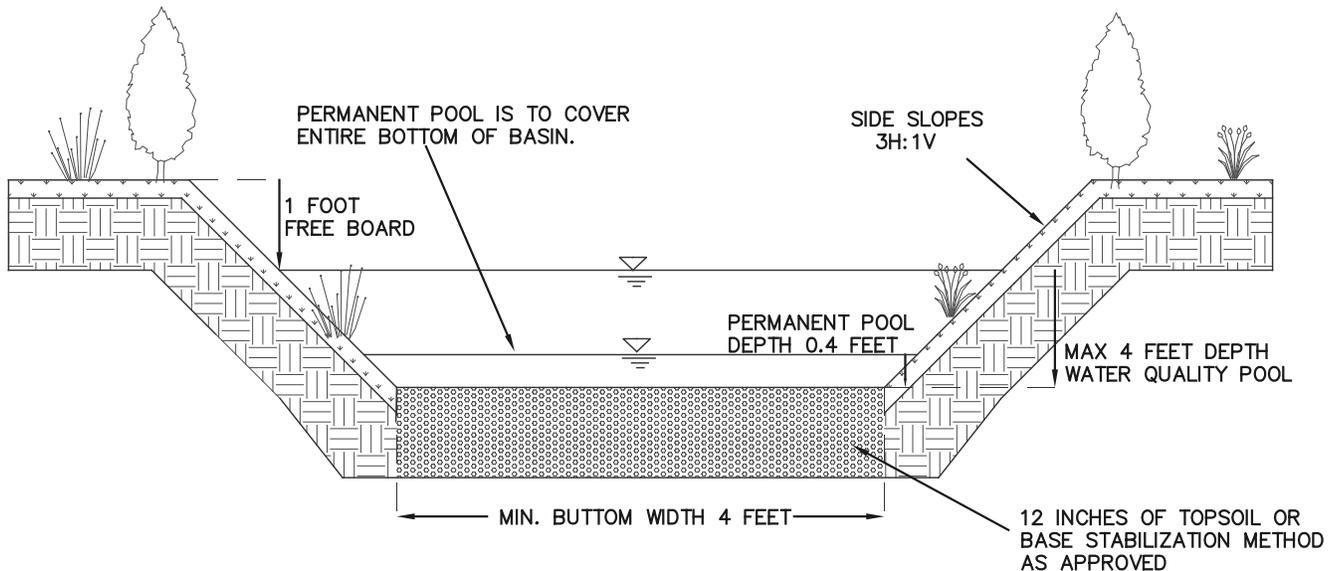
REVISIONS:

VEGETATED SWALE

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	460



PROFILE VIEW



CROSS-SECTIONAL VIEW

HYDRAULIC DESIGN CRITERIA:

1. MIN. WATER QUALITY DETENTION VOLUME:
1.0 X WATER QUALITY VOLUME (WQV)
2. 48 HOURS WATER QUALITY DRAWDOWN TIME
3. FOR ORIFICE SIZE USE:
 $D = 24 * [(Q / (C * [2gH]^{0.5}) / \pi)^{0.5}]$ WHERE:
 D(in) = DIAMETER OF ORIFICE
 $Q(\text{cfs}) = WQV(\text{cf}) / (48 * 60 * 60)$
 C = 0.62
 $H(\text{ft}) = \frac{2}{3} * (\text{TEMPORARY WATER QUALITY DETENTION HEIGHT TO CENTERLINE OF ORIFICE})$

FACILITY DESIGN CRITERIA:

1. UP UNTILL THE MAX WATER SURFACE, INTERIOR SIDE SLOPES, MAX SLOPE IS 3H:1V
2. ABOVE MAX WATER SURFACE, INTERIOR SIDE SLOPES, MAX SLOPE IS 2H:1V
3. IF INTERIOR SIDE SLOPES MUST BE MOWED SIDE SLOPE THEN THE MAX SLOPE IS 4H:1V
4. EXTERIOR SIDE SLOPES MAX 2H:1V, UNLESS ANALYZED FOR STABILITY BY A GEOTECHNICAL ENGINEER
5. MINIMUM FREEBOARD 1 FOOT FROM 25 YEAR DESIGN WATER SURFACE ELEVATION

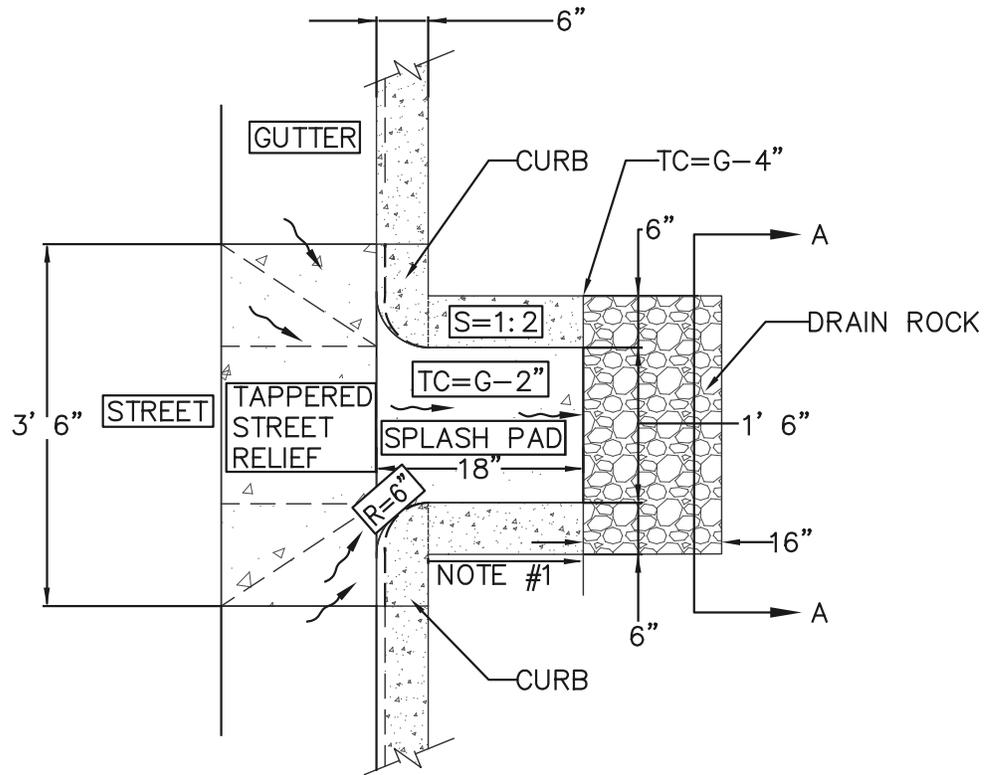
FACILITY DESIGN CRITERIA:

6. MINIMUM OF 2 CELLS, WITH THE FIRST CELL (FOREBAY) AT LEAST 10% OF SURFACE AREA. THE FOREBAY SHALL ALSO CONSTITUTE 20-PERCENT OF THE TREATMENT VOLUME. WHERE SPACE LIMITS MULTI-CELL DESIGN, USE ONE CELL WITH A FOREBAY AT THE INLET TO SETTLE SEDIMENTS AND DISTRIBUTE FLOW ACROSS THE WET POND.
7. INLET AND OUTLET STRUCTURES SHALL BE DESIGNED TO AVOID DIRECT FLOW BETWEEN STRUCTURES WITHOUT RECEIVING TREATMENT (ie SHORT CIRCUITING OF FLOW)
8. MINIMUM FREEBOARD: 1 FOOT FROM 25 YEAR DESIGN WATER SURFACE ELEVATION.
9. EXTEND RIVER ROCK, TOPSOIL, AND HIGH DENSITY JUTE OR COCONUT MATTING TO TOP OF TREATMENT AREA (OR WQV LEVEL). EXTEND TOPSOIL AND LOW DENSITY JUTE MATTING TO THE EDGE OF WATER QUALITY TRACT OR EASEMENT AREA.
10. THE ENGINEER SHALL CERTIFY THAT THE POND STORM SEWER DESIGN WILL PASS THE 25 AND 100 YEAR STORM EVENTS AND THAT AT NORMAL DESIGN WATER SURFACE THAT THE UPSTREAM STORM SEWER WILL NOT BE IN A SURCHARGED CONDITION FOR LONGER THAN 24 HOURS.

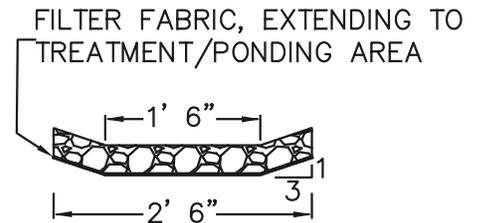
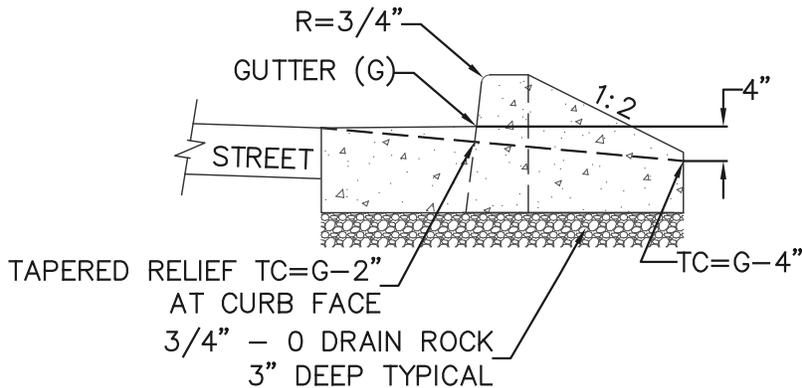
REVISIONS:

EXTENDED DRY
BASIN

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	461



CURB CUT-OUT



SECTION A-A

NOTES:

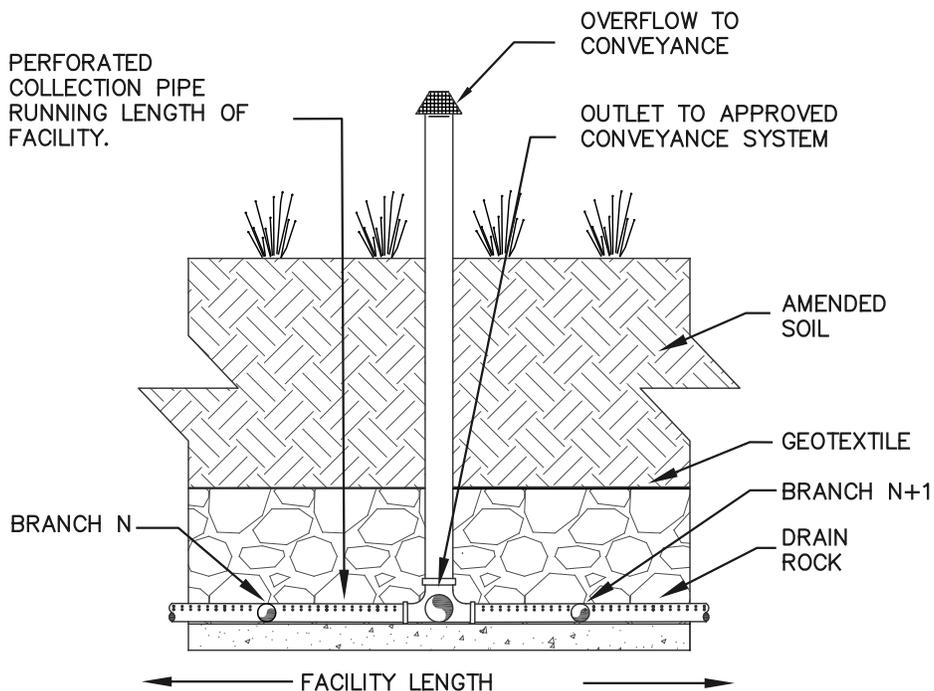
1. SPLASH PAD LENGTH TO BE 12 INCHES FROM BACK OF CURB
2. INFLOW STRUCTURE – CURB CUTOUT SHALL HAVE MINIMUM 2” DROP AT THE FLOW LINE LEADING TO THE SPLASH PAD, SEE DETAIL.
3. SPLASH PAD DRAIN ROCK MINIMUM SIZE 2” TO 4” CLEAN ANGULAR ROCK OR SIZED BY DESIGN INFLOW. ROCK TO BE PLACED 2.5” TO 3” DEEP BEHIND CONCRETE SPLASH PAD.

REVISIONS:

CURB CUT

SCALE:	N.T.S.
DATE:	MARCH 2014
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STANDARD DRAWING	462

PERFORATED PIPE MANIFOLD PROFILE



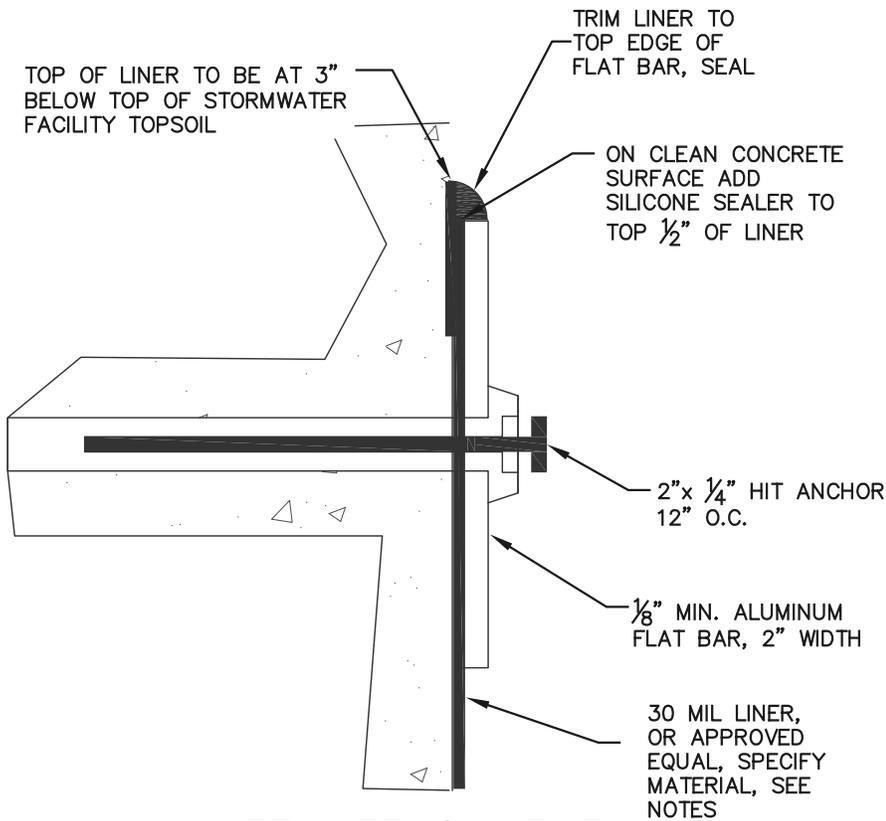
NOTES:

1. BRANCH SPACING AND NUMBER OF BRANCHES TO BE CALCULATED BASED ON STORM FLOWS FROM IMPERVIOUS AREA BEING TREATED.
2. WRAP PERFORATED PIPE WITH GEOTEXTILE TO PREVENT INFILTRATION OF FINES.
3. NO TREES OR DEEP ROOTED VEGETATION OVER PIPING.
4. GRADE SUBGRADE TO PROVIDE MANIFOLD WITH POSITIVE DRAINAGE.
5. CONVEYANCE SIZED AT MINIMUM FOR 25 YEAR EVENT STORM FLOWS.
6. DETENTION (IF REQUIRED) VOLUME BASED ON DEPTH OF DRAIN ROCK RESERVOIR LAYER AND POSITION OF MANIFOLD WITHIN THE DRAIN ROCK LAYER.
7. FITTINGS TO BE SAME MATERIAL AS PERFORATED PIPE.
8. PIPE SECTIONS EXPOSED TO SUNLIGHT SHALL BE OF MATERIAL NOT SUBJECT TO DEGRADATION FROM THE EFFECTS OF SUNLIGHT.

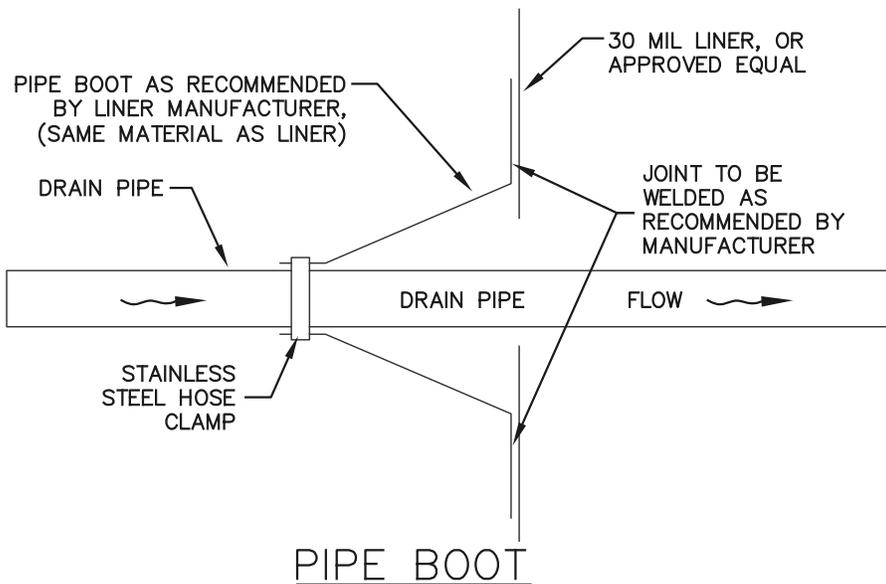
REVISIONS:

PERFORATED PIPE

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	463



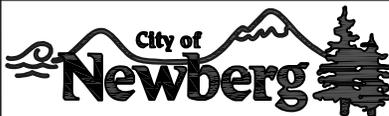
LINER ATTACHMENT



PIPE BOOT

NOTES:

1. LINER MATERIALS TO BE HDPE OR PVC. LINER TO EXTEND FROM TOP OF TOPSOIL TO THE BOTTOM OF EXCAVATION.
2. 3" OF CONCRETE IS REQUIRED ON ALL SIDES OF ATTACHEMENT. ADJUST SIDEWALK DEPTH AS NECESSARY.
3. LINER REQUIRED WHEN FACE OF NEW CURB IS LESS THAN 2' FROM OD OF ADJACENT WATER MAIN.
4. LINER REQUIRED ON NEIGHBORHOOD COLLECTORS AND HIGH STREET CLASSIFICATIONS.
5. LINER REQUIRED ON NEIGHBORHOOD COLLECTORS AND HIGH STREET CLASSIFICATIONS. LINER MAY BE REQUIRED ON LOCAL STREETS WITH TRANSIT ROUTES, HIGHER TRAFFIC VOLUMES, OR WHEN A FACILITY IS ADJACENT TO TRAVEL LANE AT THE DISCRETION OF THE CITY ENGINEER.
6. IN AREAS WITH CONTAMINATED SOILS THE FACILITY MUST BE COMPLETELY LINED WITH A 40 MIL LINER UNLESS FACILITY'S BOTTOM AND SIDES ARE MONOLITHIC CONCRETE.
7. ADHERE 30 MIL LINER TO CONCRETE WITH TOP COAT TC MOLDABLE SEALANT, OR APPROVED EQUAL.
8. SECURE LINER TO CONCRETE WITH 2" ALUMINUM FLAT BAR, PLACED AS DIRECTED (CURB SIDE OR ENTIRE FACILITY).
9. ATTACH FLAT BAR WITH CONCRETE HIT ANCHORS, 24" O.C.
10. TRIM EXCESS LINER TO THE TOP OF FLAT BAR.

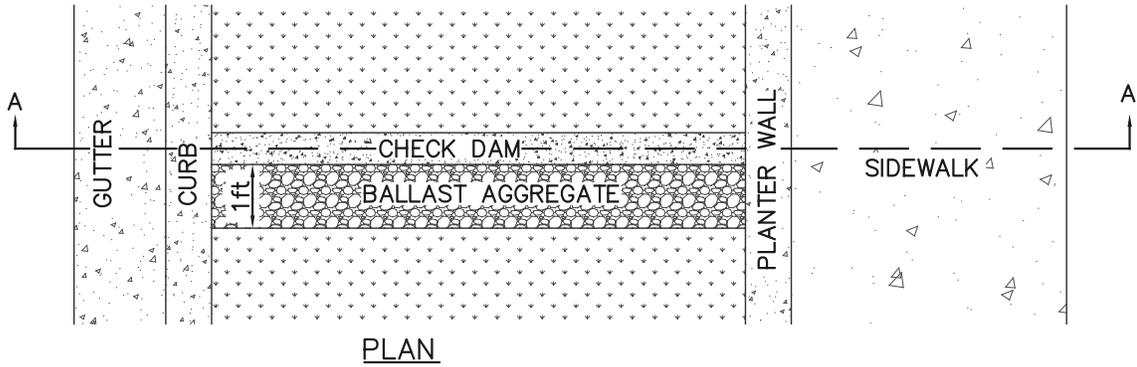


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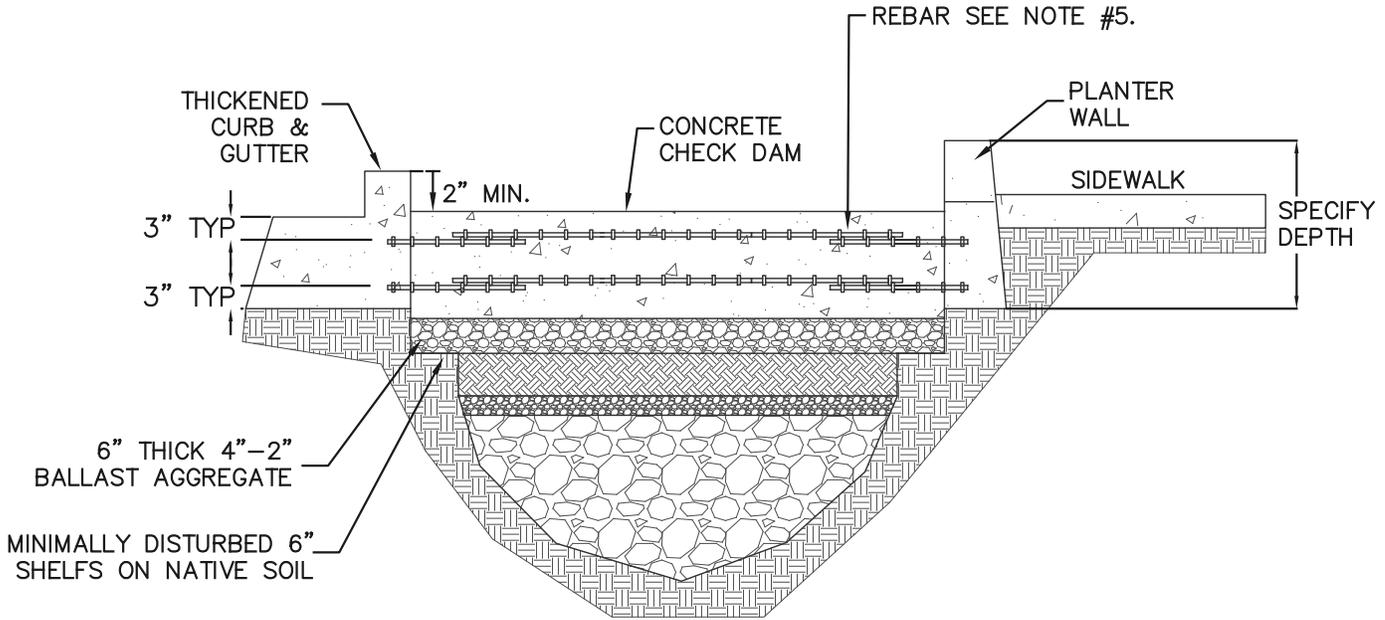
REVISIONS:

LINER ATTACHMENT &
 PIPE BOOT

SCALE:	N.T.S.
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STANDARD DRAWING	464



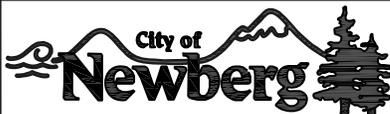
PLAN



SECTION A-A

NOTES:

1. PROVIDE ELEVATIONS AND STATIONING AND/ OR DIMENSIONING FOR CHECK DAMS.
2. ENSURE THAT CHECK DAMELEVATIONS DO NOT CAUSE STORMWATER TO OVERFLOW TO SIDEWALK.
3. FOR USE IN PUBLIC STREET PLANTERS.
4. FOR CHECK DAMS THAT SPAN LONGER THAN 12' SPECIFY REBAR OVERLAP LENGTH.
5. EMBED #3 REBAR 3" INTO CURB AND 3" INTO PLANTER WALL. 12" MINIMUM OVERLAP REQUIRED FOR REBAR LAP SPLICE.

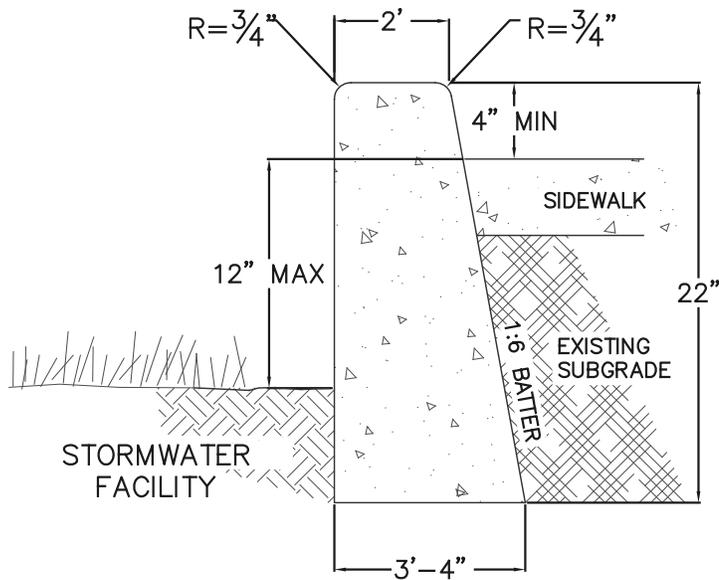


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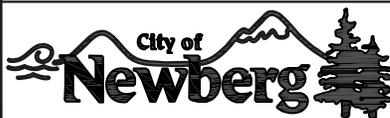
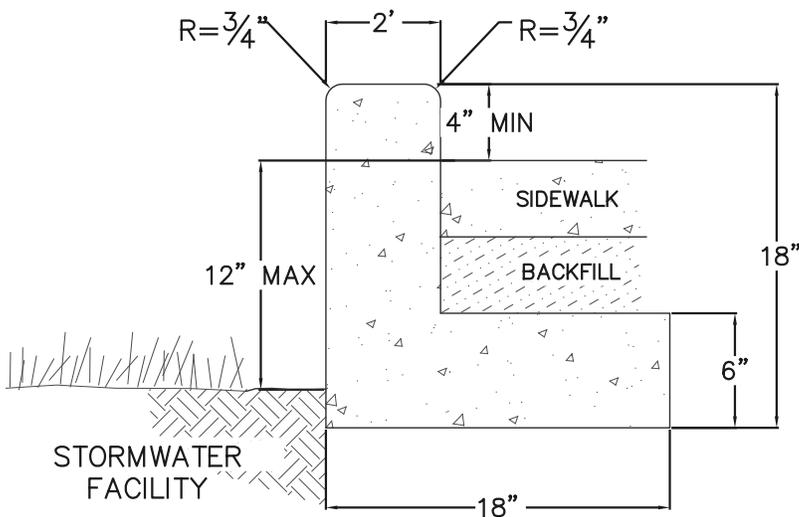
**CONCRETE CHECK DAM
 FOR PLANTERS**

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	465



NOTES:

1. SPECIAL DESIGN CONSIDERATIONS OR STRUCTURAL REVIEW MAY BE REQUIRED FOR LONGER PLANTER WALL SPANS. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED FOR STABILITY.
2. SPECIFY ONE OF THE ABOVE PLANTER WALL OPTIONS BASED ON SITE CONDITIONS.
3. MAINTAIN 1:6 BATTER FOR WALLS AND 4" MINIMUM TO TOP OF CURB.
4. IF A LINER IS USED WITH AN L-SHAPED WALL, THE WALL HEIGHT MUST BE INCREASED. THREE INCHES OF CONCRETE IS REQUIRED ON ALL SIDES OF THE LINER ATTACHMENT (STANDARD DRAWING NO. 464)
5. FINISH ALL EXPOSED CONCRETE SURFACES.



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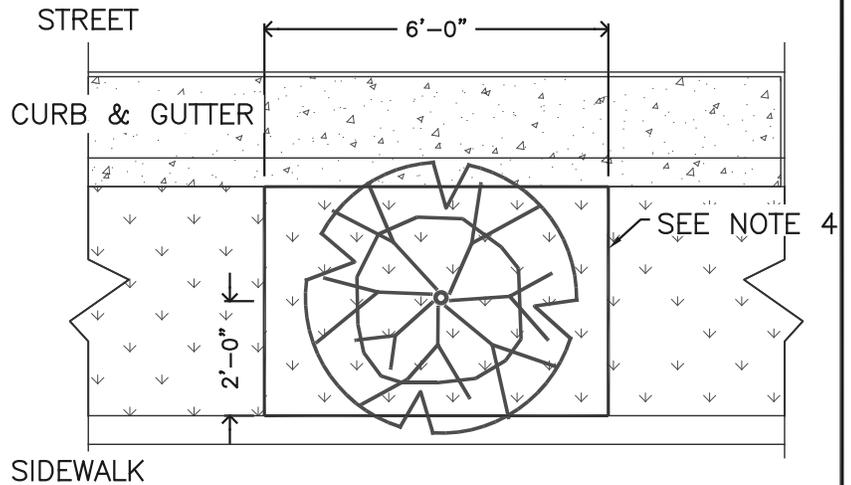
REVISIONS:

PUBLIC PLANTER WALLS

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	466

NOTES:

1. SPACING BETWEEN TREES VARIES— 20' TO 30' ON CENTER.
2. REFER TO STANDARD DRAWING NO 450 FOR GROWING MEDIUM.
3. STREET TREE LIST PROVIDED FOR REFERENCE DO NOT INCLUDE ON PLANS.
4. INCLUDE TREE WELL AND STREET TREE VIEWS ON PLANS.
5. DIMENSION TOPSOIL AND ROCK LAYERS ON NON-TREE SIDE TO CORRESPOND TO PLANTER SECTION.
6. INCLUDE LINER AND CALL-OUT IF USED, FOR TREE LINER REFERENCE DRAWING NO 108.
7. REMOVE WIRE AND BURLAPO FROM ROOT BALL PRIOR TO BACKFILLING.
8. SET TOP OF ROOT BALL 1" TO 2" ABOVE TOPSOIL FACILITY.
9. DEEPEN SOIL SECTION MINIMUM, 4' X 6' X 4' DEEP.
10. OTHER SPECIES OF STREET TREES MAY BE PERMITTED WITH APPROVAL FROM PLANNING DEPARTMENT.



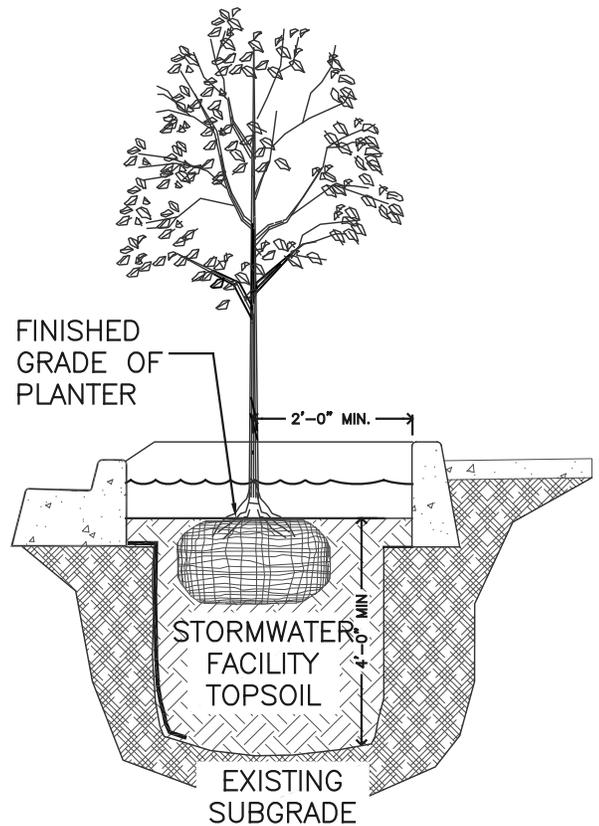
ALL TREE TYPES AND LOCATIONS TO BE APPROVED BY CITY PLANNING DIVISION.

STREET TREES WITH POWER LINES

BOTANICAL NAME	COMMON NAME
CARPINUS CAROLINIANA	AMERICAN HORNBEAM
FRAXINUS PENNSYLVANICA 'JOHNSON'	LEPRECHAUN ASH
GLEDTISIA TRIACANTHOS 'IMPCOLE'	IMPERIAL HONEYLOCUST
KOELREUTERIA PANICULATA	GOLDENRAIN TREE
PRUNUS VIRGINIANA 'CANADA RED'	CANADA RED CHOKECHERRY

STREET TREES WITH-OUT POWER LINES

BOTANICAL NAME	COMMON NAME
NYSSA SYLVATICA	BLACK TUPELO
CELTIS OCCIDENTALIS	HACKBERRY
QUERCUS SHUMARDII	SHUMARD OAK
BETULA JACQUEMONTII	JACQUEMONTII BIRCH
ACER CAMPESTRE 'EVELYN'	QUEEN ELIZABETH HEDGE MAPLE
GLEDTISIA TRIACANTHOS 'SKYCOLE'	SKYLINE HONEYLOCUST



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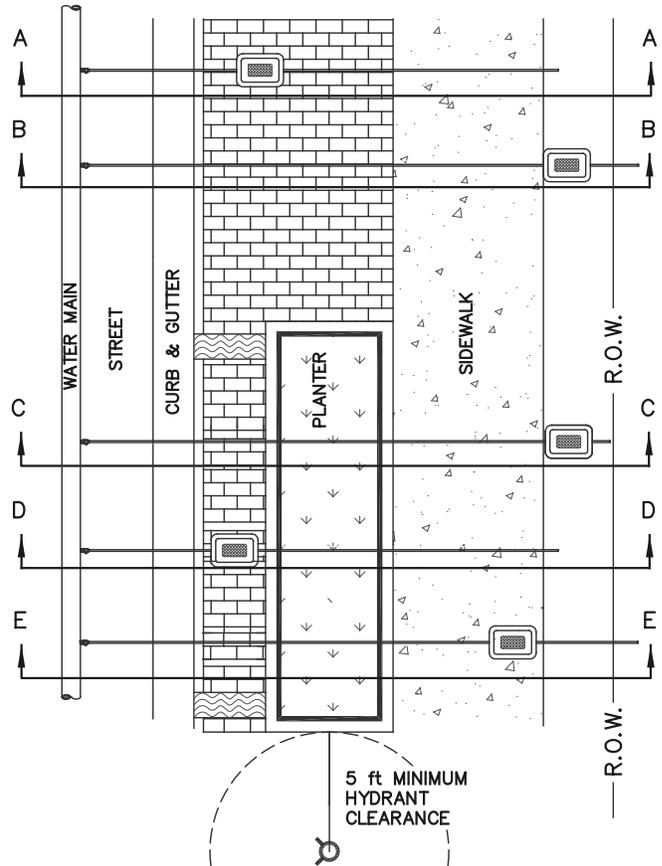
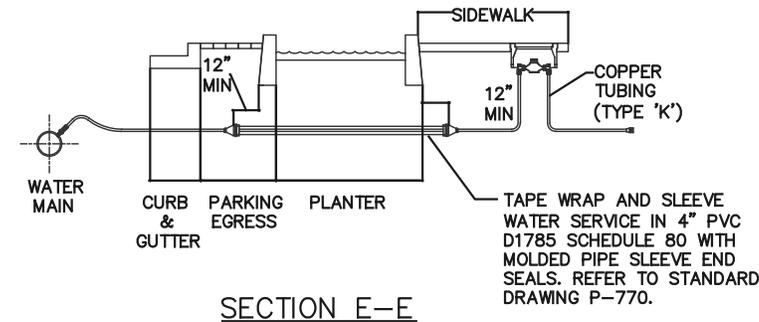
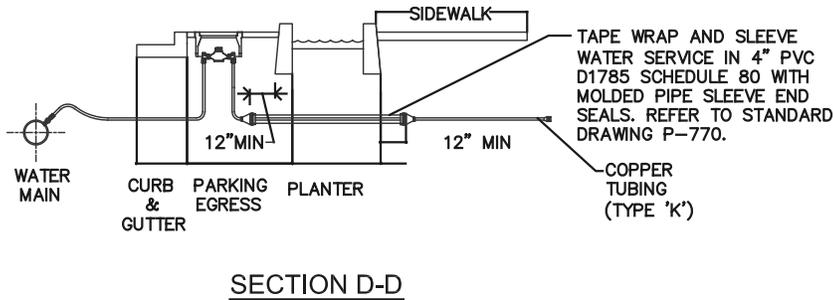
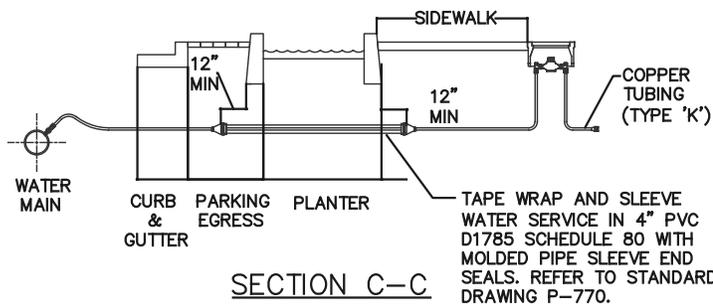
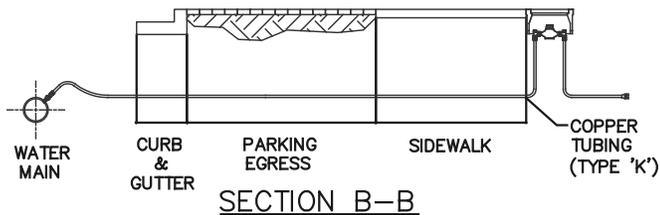
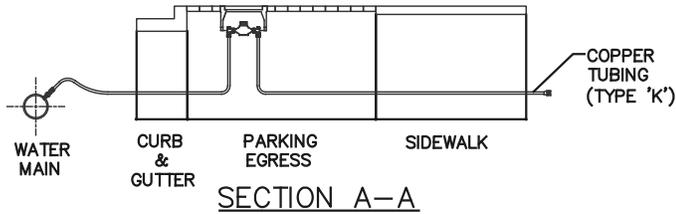
**STORMWATER FACILITY
STREET TREE**

SCALE: N.T.S.

DATE: MARCH 2014

APPROVED BY: JAY H.

STANDARD DRAWING 467



NOTES:

1. REFER TO FIRE HYDRANT ASSEMBLY STANDARD DRAWING NO. 312. CENTER OF FIRE HYDRANT MUST HAVE A MINIMUM CLEARANCE OF 5' FROM OUTSIDE EDGE OF STORMWATER FACILITY.
2. STANDARD METER LOCATION IS OPTION A. OPTION B OR C CAN BE USED ONLY IF THE METER BOX IS FULLY WITHIN THE RIGHT-OF-WAY.
3. REFER TO STANDARD 3/4" AND 1" WATER SERVICE, STANDARD DRAWING NO. 307. FOR LARGER SERVICES CONTACT THE ENGINEERING DEPARTMENT.
4. MAINTAIN 2 FT SKIN-TO-SKIN SEPARATION DISTANCE BETWEEN FACE OF GUTTER PAN AND THE WATER MAIN. IF WATER MAIN IS < 2 FT FROM FACE OF GUTTER PAN, THE WATER MAIN MUST BE RELOCATED UNLESS OTHERWISE APPROVED BY THE CITY. VERIFICATION OF WATER MAIN DEPTH IS REQUIRED PRIOR TO CITY APPROVAL.
5. CROSS-SECTION VIEWS ARE NOT REQUIRED ON CONSTRUCTION PLANS.

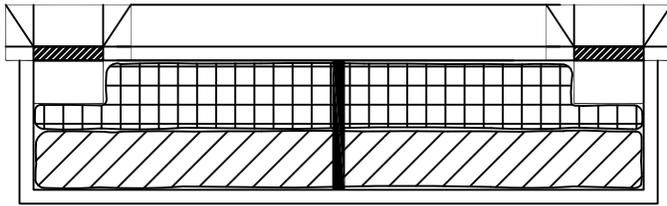


PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

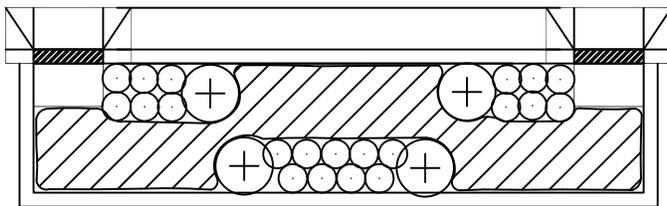
REVISIONS:

METER & HYDRANT LOCATIONS

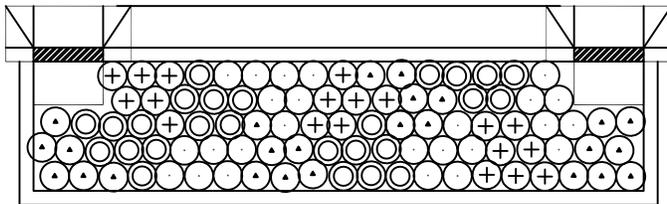
SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	468



TEMPLATE 1



TEMPLATE 2

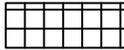


TEMPLATE 3

NOTES:

1. THE ABOVE ARE APPROVED SAMPLE TEMPLATES..
2. AN APPROVED PLANT LIST AND QUANTITY REQUIREMENTS IS AVAILABLE IN APPENDIX A OF THE STANDARDS DESIGN MANUAL.
3. PLANTING TABLE REQUIRED. STATE PLANT SPECIES, SPACING, AND QUANTITIES PER PLANTER. INCLUDE THE SQUARE FOOTAGE OF PLANTER.

PLANT LEGEND 1

Symbol	Botanical Name
	Common Name
	<i>Carex obnupta</i>
	Slough sedge
	<i>Juncus patens</i>
	Spreading rush
	<i>w/Camassia leichtlinii</i>
	Great camas- interspersed for accent

PLANT LEGEND 2

Symbol	Botanical Name
	Common Name
	<i>Carex obnupta</i>
	Slough sedge
	<i>Deschampsia cespitosa</i>
	Tufted hair grass
	<i>Cornus sericea 'Kelsey'</i>
	Kelsey dogwood
	<i>w/Iris douglasii</i>
	Douglas' Iris- interspersed for accent

PLANT LEGEND 3

Symbol	Botanical Name
	Common Name
	<i>Carex obnupta</i>
	Slough sedge
	<i>Deschampsia cespitosa</i>
	Tufted hair grass
	<i>Juncus patens</i>
	Spreading rush
	<i>Carex morrowii 'Ice Dance'</i>
	Ice Dance Sedge
	<i>w/Camassia leichtlinii</i>
	Great camas- interspersed for accent

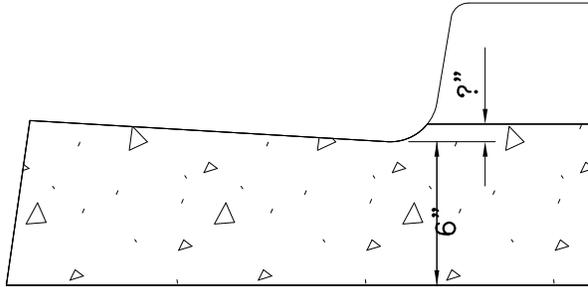


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PHONE: 503-537-1240
FAX: 503-537-1277

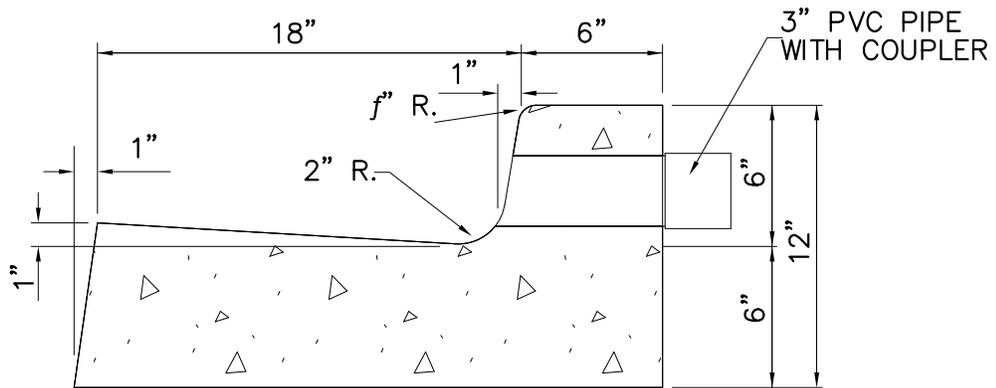
REVISIONS:

PLANTING
PLANTER LANDSCAPE TEMPLATES

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	469



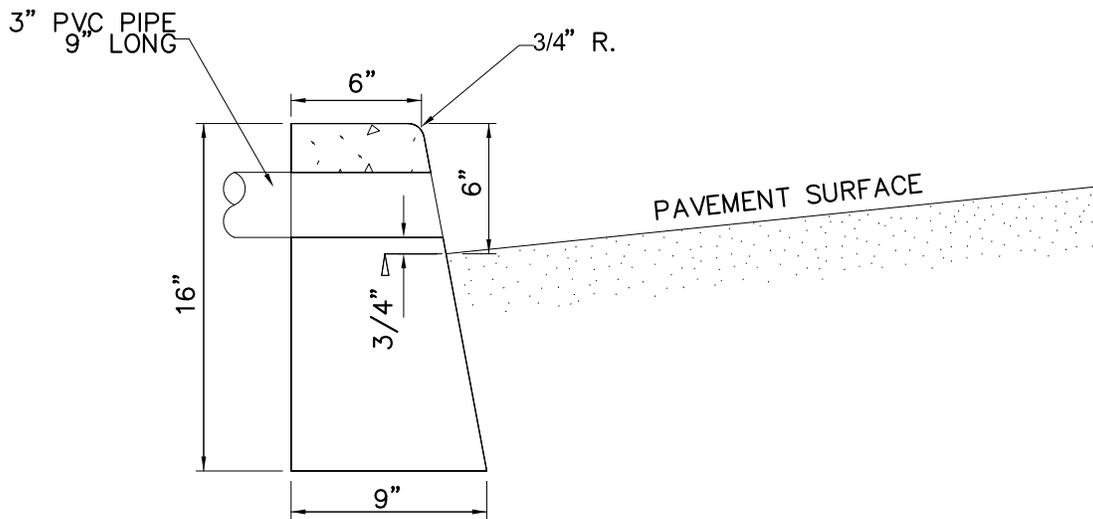
CURB AND GUTTER AT DRIVEWAY APPROACH



CURB AND GUTTER

NOTES

1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. TRANSVERSE CONTRACTION JOINTS – MAKE 1/8" X 1 1/2" DEEP CUT; SPACED AT 15'. PROVIDE CONTRACTION JOINTS AT CURB RETURN POINTS, CATCH BASINS AND DRIVEWAYS.
3. SCORE CURB OVER WEEP HOLE BLOCK OUT.
4. EXPANSION JOINTS SHALL NOT BE USED.
5. APPLY CURING COMPOUND (PETROLEUM BASED) TO FRESH CONCRETE TO RETAIN MOISTURE.
6. TOP OF CURB BRANDED WITH "S" OR "W", 2" MIN. HEIGHT FOR SEWER AND WATER LOCATIONS. HAND SCRIBING NOT ALLOWED.



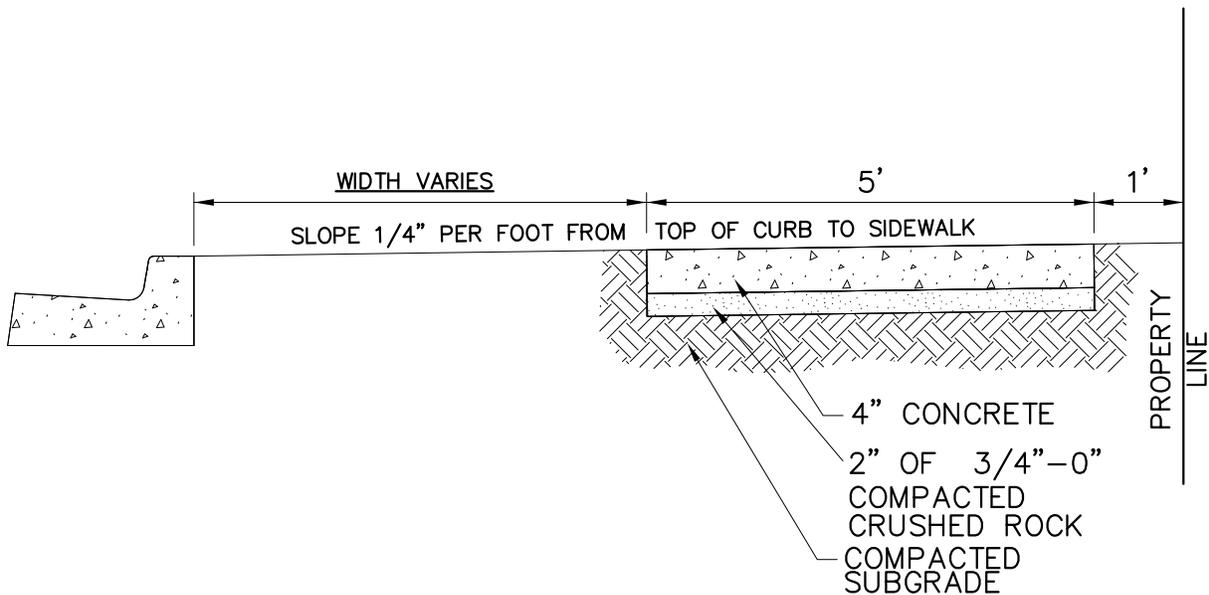
NOTES:

1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. TRANSVERSE CONTRACTION JOINTS $\frac{1}{8}$ "x1" DEEP CUT SPACED AT 15' INTERVALS.
3. THIS TYPE OF CURB TO BE USED ONLY WHERE SPECIFIED.
4. APPLY CURING COMPOUND (PETROLEUM BASE) TO FRESH CONCRETE TO RETAIN MOISTURE.

REVISIONS:

CURB - TYPE "C"

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	502



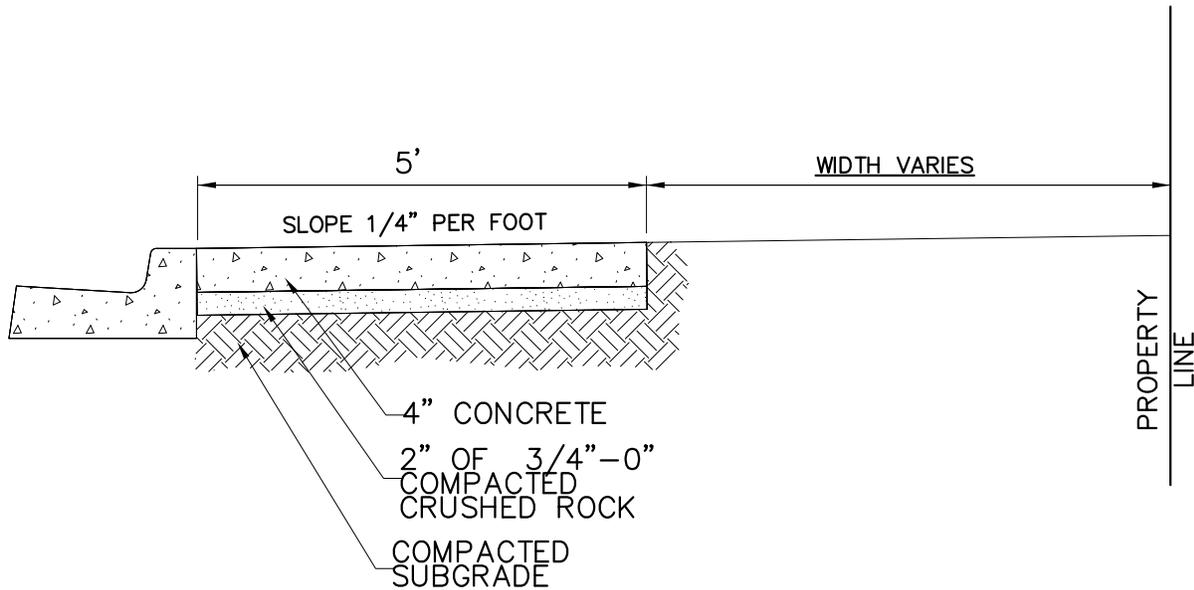
NOTES:

1. SLOPE FROM THE PROPERTY LINE TO THE STREET AT 2%.
2. WORK AGGREGATE INTO CONCRETE PRIOR TO FINISHING CONCRETE.
3. FINISHING DETAILS
 - EDGE CONCRETE WITH 3" EDGING TROWEL.
 - SCORE CONCRETE AT 5' INTERVALS.
 - INSTALL 1/8" X 1 1/2" CONTRACTION JOINTS EVERY 15'.
 - FABRIC TYPE EXPANSION JOINT NOT TO BE USED
 - APPLY LIGHT BROOM FINISH TRANSVERSE TO THE SIDEWALK.
4. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
5. APPLY CURING COMPOUND (PETROLEUM BASE) TO FRESH CONCRETE TO RETAIN MOISTURE.
6. TOLERANCES
 - SURFACE SHALL NOT VARY MORE THAN 1/4" FROM A 10' STRAIGHT EDGE.
 - ALIGNMENT SHALL BE WITHIN 1/4" OF TRUE LINE.

REVISIONS:

**SIDEWALK
TYPE "A"**

SCALE:	N.T.S.
DATE:	Jan. 2010
APPROVED BY:	P. Chiu
STANDARD DRAWING	503



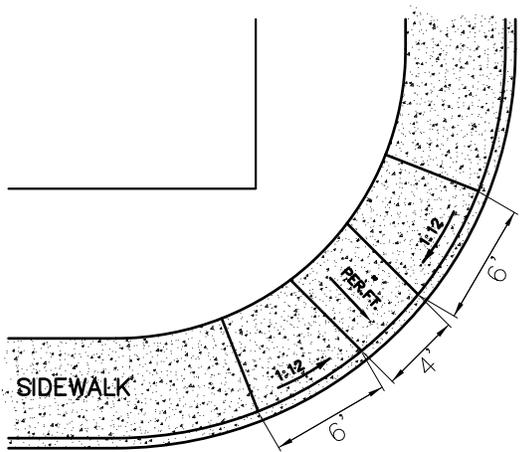
NOTES:

1. SLOPE FROM THE PROPERTY LINE TO THE STREET AT 2%.
2. WORK AGGREGATE INTO CONCRETE PRIOR TO FINISHING CONCRETE.
3. FINISHING DETAILS.
 - EDGE CONCRETE WITH 3" EDGING TROWEL.
 - SCORE CONCRETE AT 5' INTERVALS.
 - INSTALL 1/8"x1 1/2" CONTRACTION JOINTS EVERY 15'.
 - FABRIC TYPE EXPANSION JOINT NOT TO BE USED.
 - APPLY LIGHT BROOM FINISH TRANSVERSE TO THE SIDEWALK
4. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
5. APPLY CURING COMPOUND (PETROLEUM BASE) TO FRESH CONCRETE TO RETAIN MOISTURE.
6. TOLERANCES
 - SURFACE SHALL NOT VARY MORE THAN 1/4" FROM A 10' STRAIGHT EDGE.
 - ALIGNMENT SHALL BE WITHIN 1/4" OF TRUE LINE.

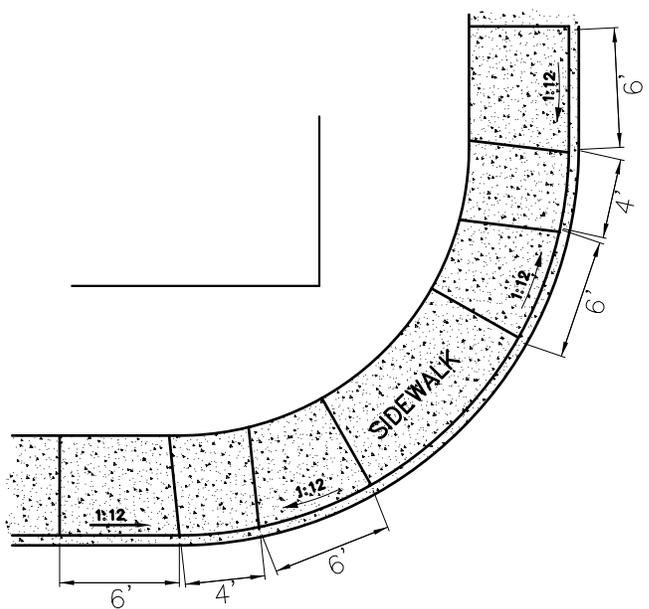
REVISIONS:

**SIDEWALK
TYPE "B"**

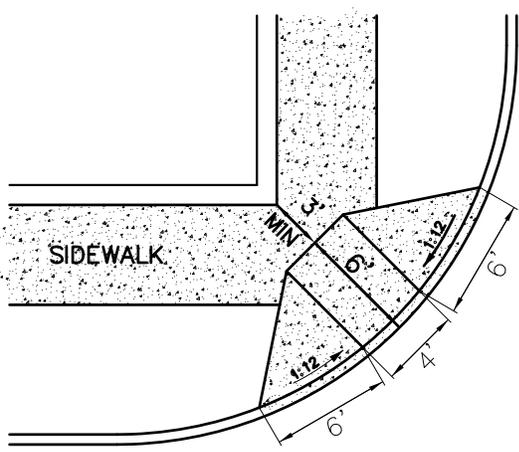
SCALE:	N.T.S.
DATE:	Jan. 2010
APPROVED BY:	P. Chiu
STANDARD DRAWING	504



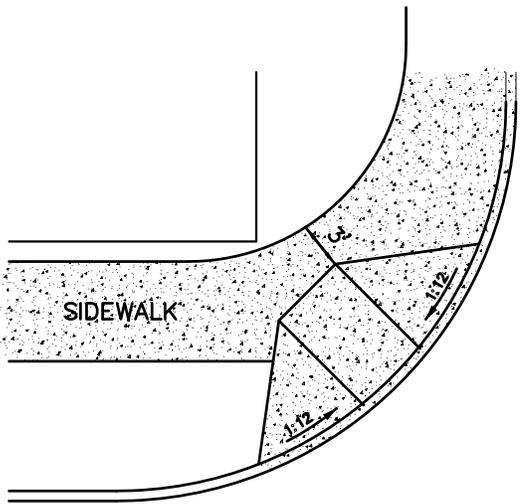
A



B



C



D

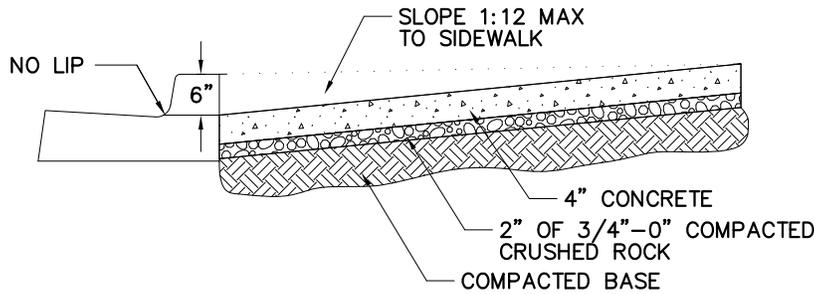
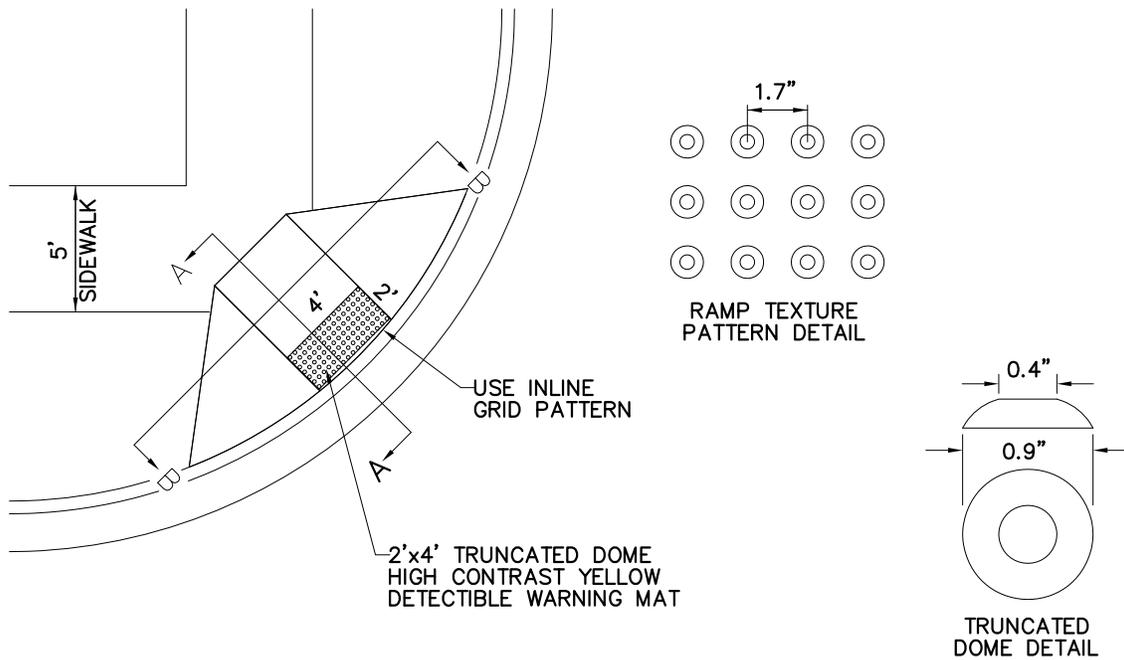
ALL CURB RAMP INSTALLATIONS REQUIRE DETECTIBLE/TACTILE WARNING MATS SEE STANDARD DRAWINGS 506&507.

City of Newberg
 PUBLIC WORKS ENGINEERING DIVISION
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 PHONE: 503-537-1240
 FAX: 503-537-1277

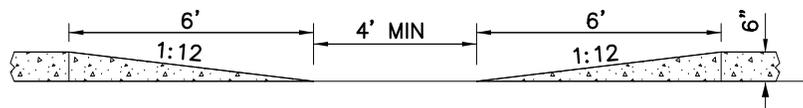
REVISIONS:

CURB RAMP LOCATIONS

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	505



SECTION A-A



SECTION B-B

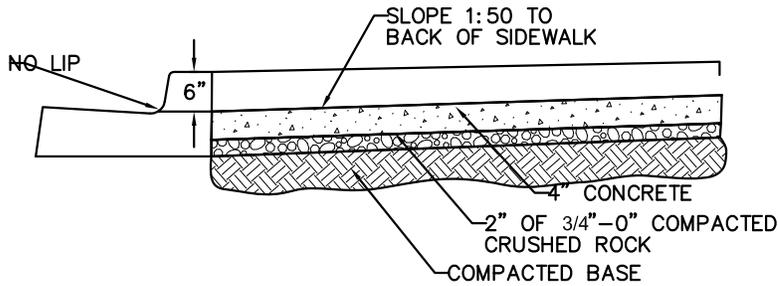
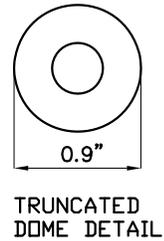
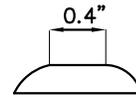
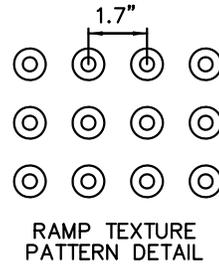
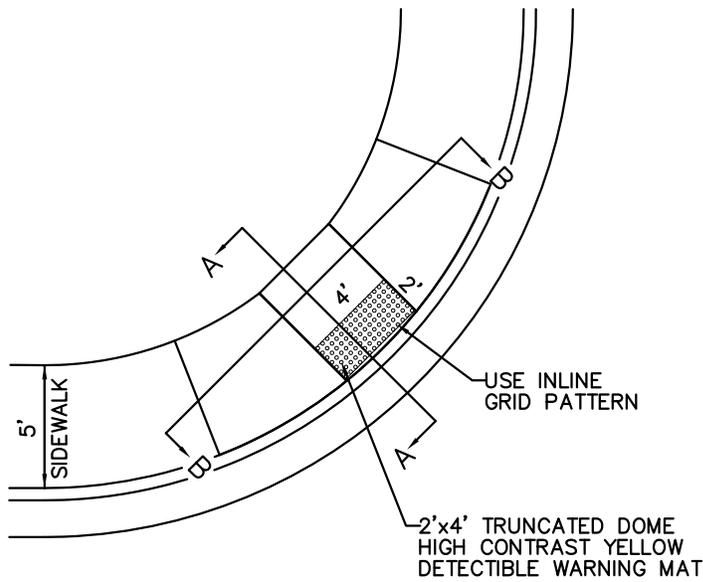
NOTES:

1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. SIDEWALK RAMPS ARE REQUIRED AT ALL NEW INTERSECTIONS.
3. REPLACEMENT CURBS MUST BE POURED AGAINST A VERTICAL EDGE OF EXISTING CURB.
4. CONCRETE IN A REPLACEMENT CURB SHALL NOT PROTRUDE PAST THE FACE OF THE CURB IN THE ASPHALT REPLACEMENT AREA.
5. HORIZONTAL AND VERTICAL ALIGNMENT SHALL BE WITHIN 1/8" IN 10'.
6. DETECTIBLE SURFACE SHALL BE CONSTRUCTED WITH PREFABRICATED UNITS. TEXTURE SHALL NOT BE WET IMPRINTED. TRUNCATED DOME PATTERN SHALL BE INLINE, ALIGNED IN THE DIRECTION OF THE RAMP.
7. DETECTIBLE SURFACE SHALL BE YELLOW (FEDERAL COLOR #33538).
8. THIS DETAIL IS APPROVED FOR USE IN THE PUBLIC RIGHT OF WAY ONLY.

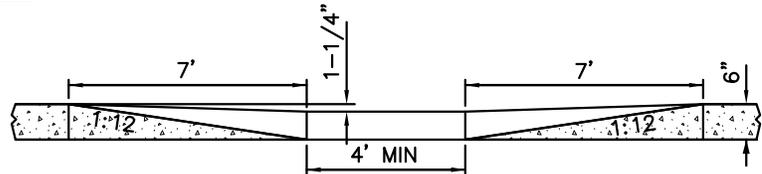
REVISIONS:
04/06/10

**SIDEWALK RAMP
 TYPE "A" SIDEWALK**

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	506



SECTION A-A



SECTION B-B

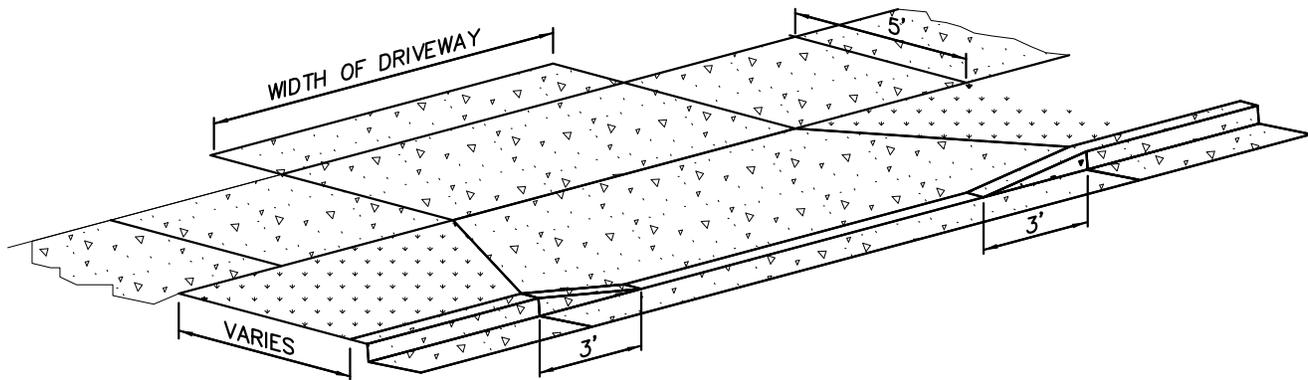
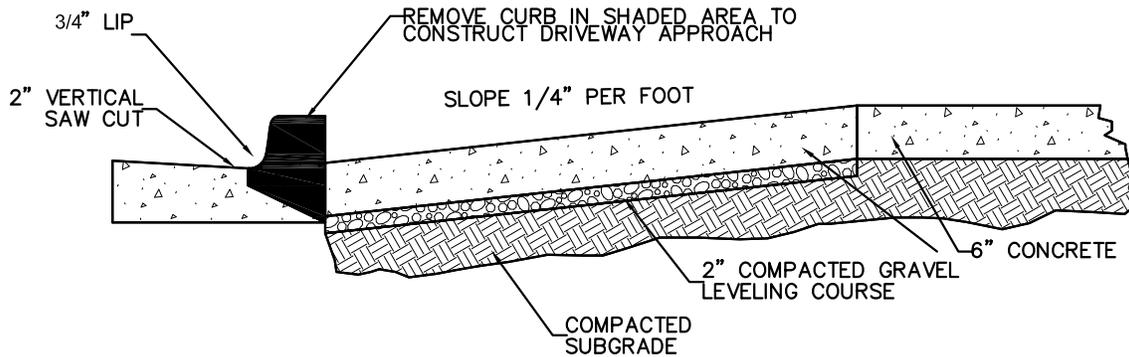
NOTES:

1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. SIDEWALK RAMPs ARE REQUIRED AT ALL NEW INTERSECTIONS.
3. REPLACEMENT CURBS MUST BE POURED AGAINST A VERTICAL EDGE OF EXISTING CURB.
4. CONCRETE IN A REPLACEMENT CURB SHALL NOT PROTRUDE PAST THE FACE OF THE CURB IN THE ASPHALT REPLACEMENT AREA.
5. HORIZONTAL AND VERTICAL ALIGNMENT SHALL BE WITHIN 1/8" IN 10'.
6. DETECTIBLE SURFACE SHALL BE CONSTRUCTED WITH PREFABRICATED UNITS. TEXTURE SHALL NOT BE WET IMPRINTED. TRUNCATED DOME PATTERN SHALL BE INLINE, ALIGNED IN THE DIRECTION OF THE RAMP.
7. DETECTIBLE SURFACE SHALL BE YELLOW (FEDERAL COLOR #33538).
8. THIS DETAIL IS APPROVED FOR USE IN THE PUBLIC RIGHT OF WAY ONLY.

REVISIONS:
04/08/2010

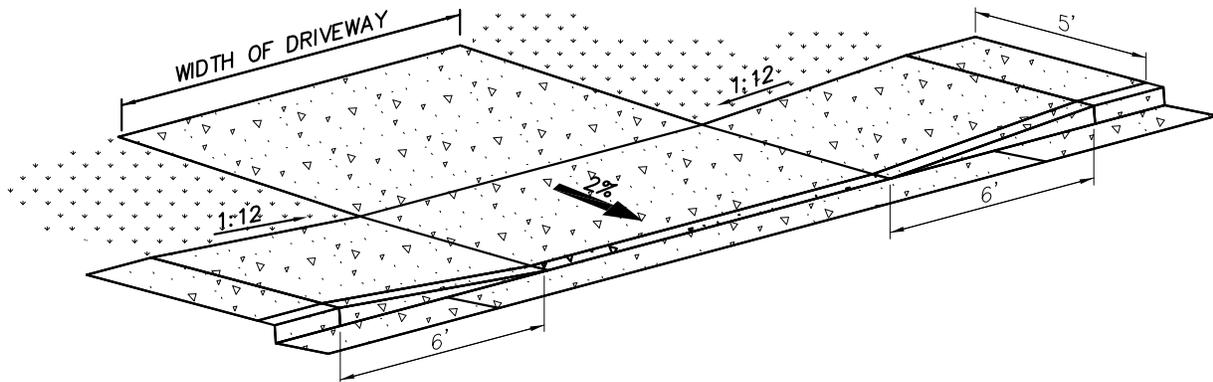
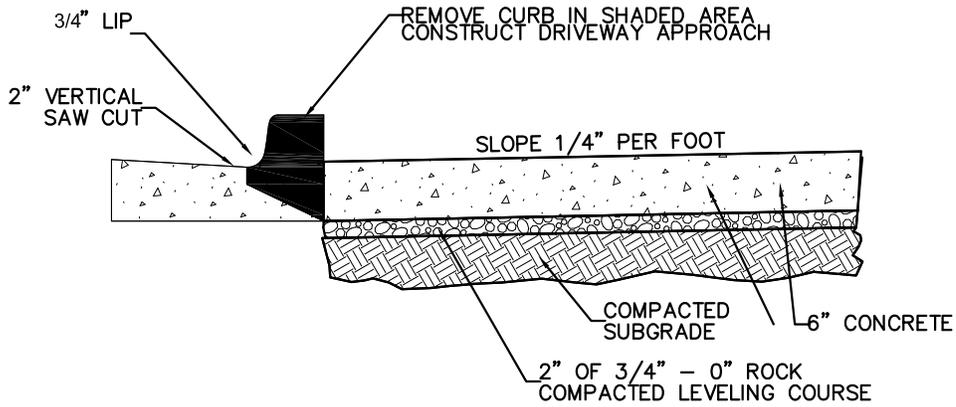
SIDEWALK RAMP
TYPE "B" SIDEWALK

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	507



NOTES

1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. LIMITS OF DRIVEWAY SHALL BE SAW CUT.
3. APPLY A LIGHT BROOM FINISH TRANSVERSE TO THE SIDEWALK.
4. CURB AND APPROACH SHALL BE POURED MONOLITHICALLY.
5. IF WIDTH IS GREATER THAN 15 FEET, INSTALL CONTRACTION JOINT IN CENTER OF THE DRIVEWAY.
6. FABRIC EXPANSION JOINT SHALL NOT BE USED.
7. WORK AGGREGATE INTO CONCRETE PRIOR TO FINISHING CONCRETE.
8. APPLY CURING COMPOUND TO FRESH CONCRETE TO RETAIN MOISTURE.
9. MINIMUM DRIVEWAY WIDTH OF 12' AND MAXIMUM WIDTH OF 24'
3 CAR GARAGE MAXIMUM WIDTH OF 28"



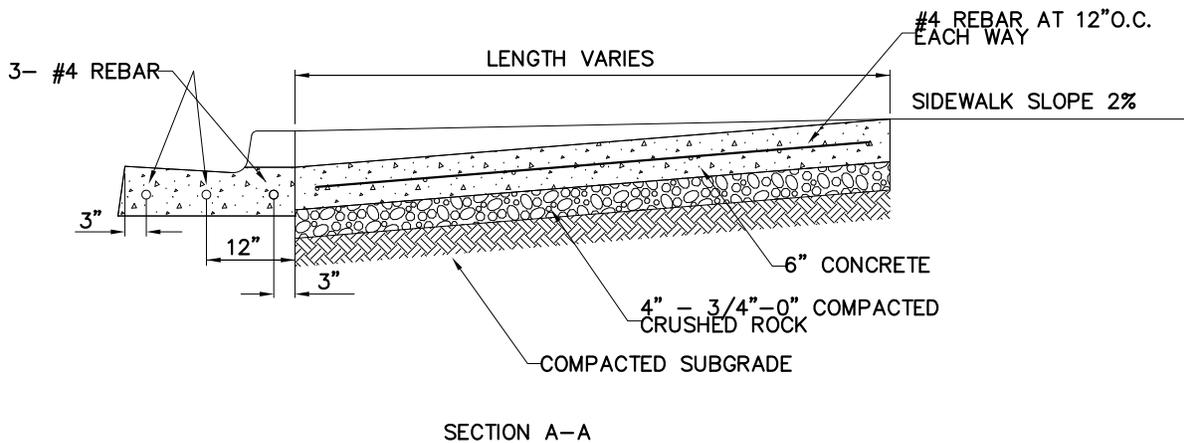
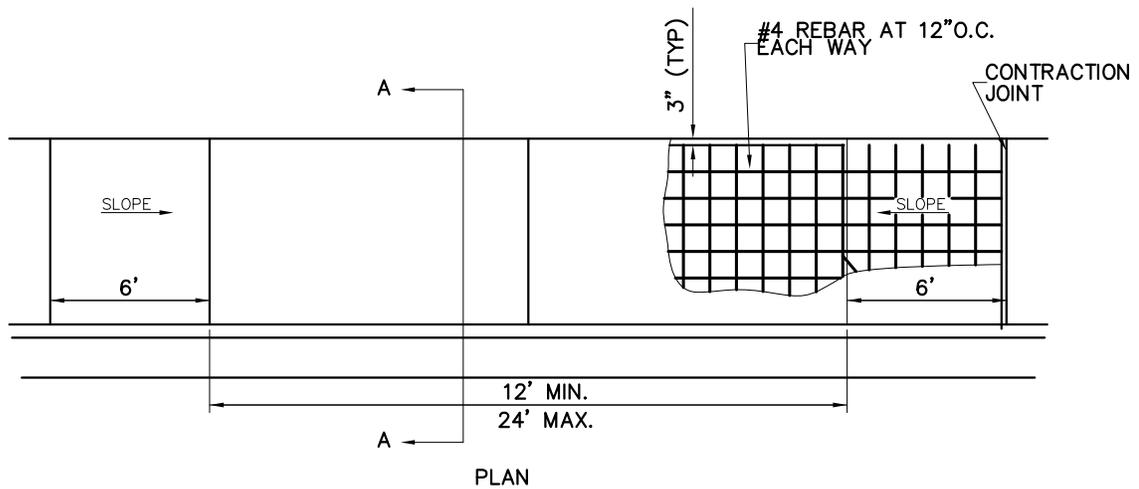
NOTES:

1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. LIMITS OF DRIVEWAY SHALL BE SAW CUT.
3. APPLY LIGHT BROOM FINISH TRANSVERSE TO THE SIDEWALK.
4. CURB AND APPROACH SHALL BE POURED MONOLITHICALLY.
5. IF WIDTH IS GREATER THAN 15 FEET, INSTALL CONTRACTION JOINT IN CENTER OF THE DRIVEWAY.
6. FABRIC EXPANSION JOINT SHALL NOT BE USED.
7. WORK AGGREGATE INTO CONCRETE PRIOR TO FINISHING CONCRETE.
8. APPLY CURING COMPOUND TO FRESH CONCRETE TO RETAIN MOISTURE.
9. MINIMUM DRIVEWAY WIDTH OF 12' AND MAXIMUM WIDTH OF 24'
3 CAR GARAGE MAXIMUM WIDTH OF 28'

REVISIONS:
04/08/10

**DRIVEWAY APRON
 CURB CUT
 TYPE "B" SIDEWALK**

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	509

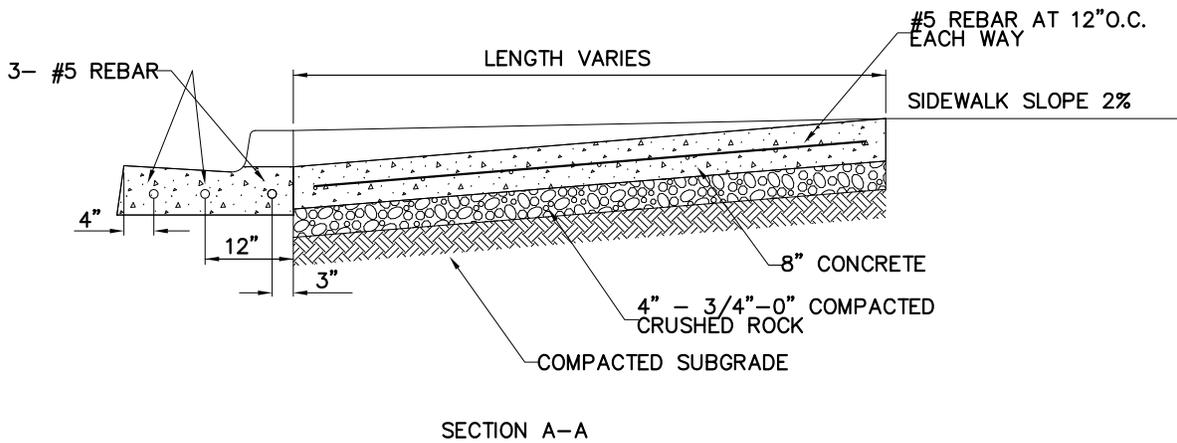
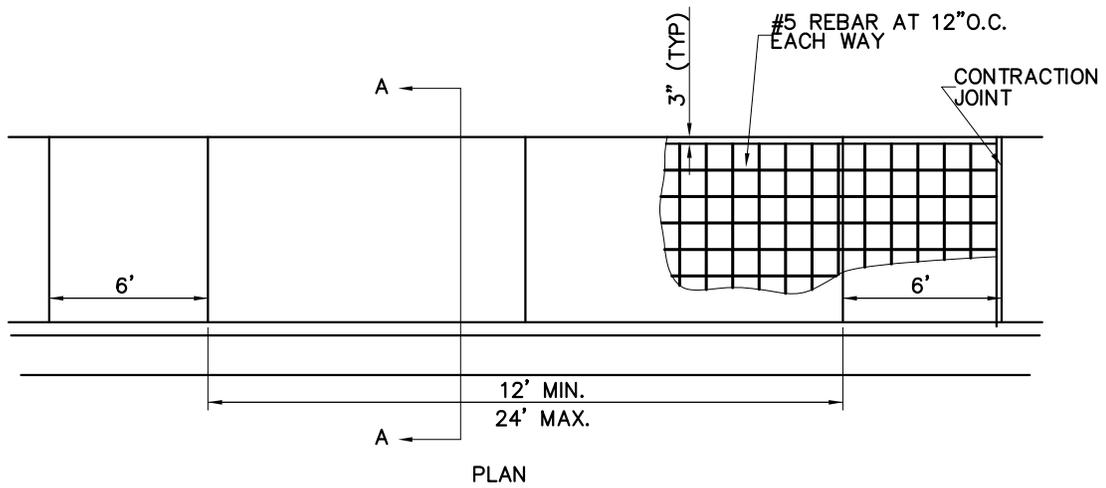


- NOTES
1. SEE STANDARD DRAWING 501 FOR ADDITIONAL DETAILS.

REVISIONS:
Jan. 2011

COMMERCIAL DRIVEWAY

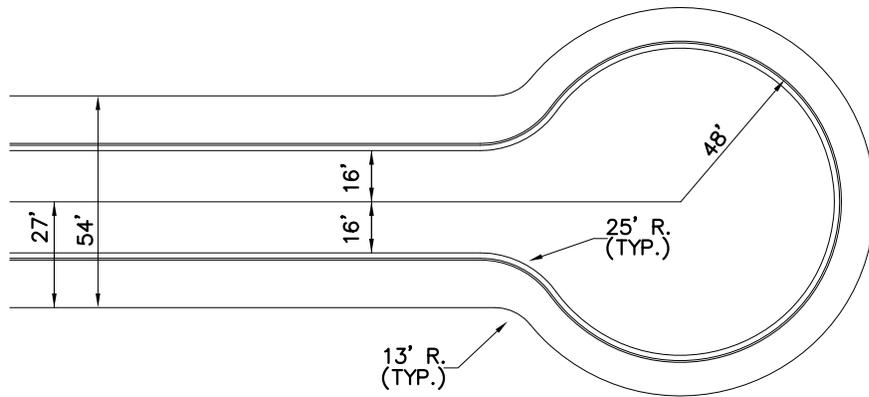
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	510



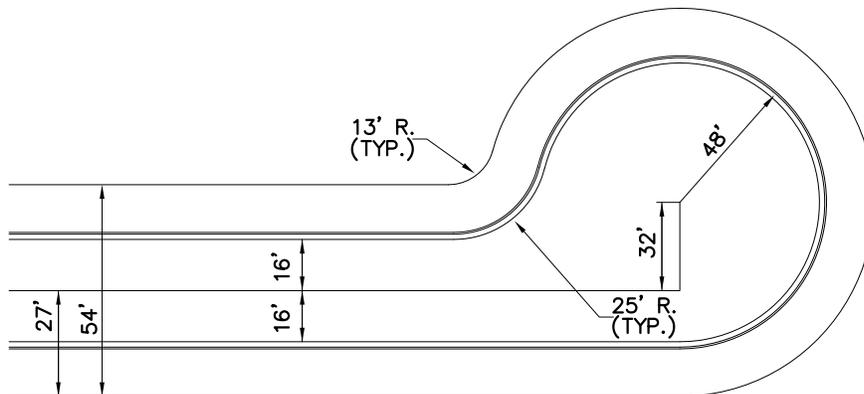
NOTES

1. SEE STANDARD DRAWING 501 AND 509 FOR ADDITIONAL DETAILS.

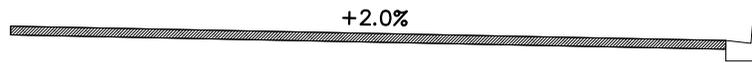
REVISIONS:



STANDARD



OFFSET



PROFILE
NTS

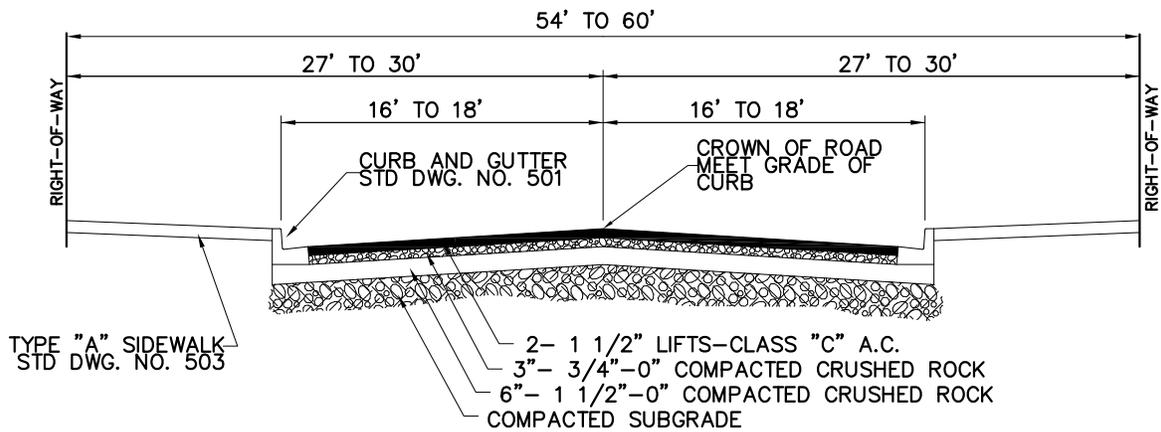
NOTES:

1. MINIMUM SLOPES
0.5% AT CURB AROUND BULB
2.0% CROSS SLOPE TO CURB

REVISIONS:

CUL-DE-SAC

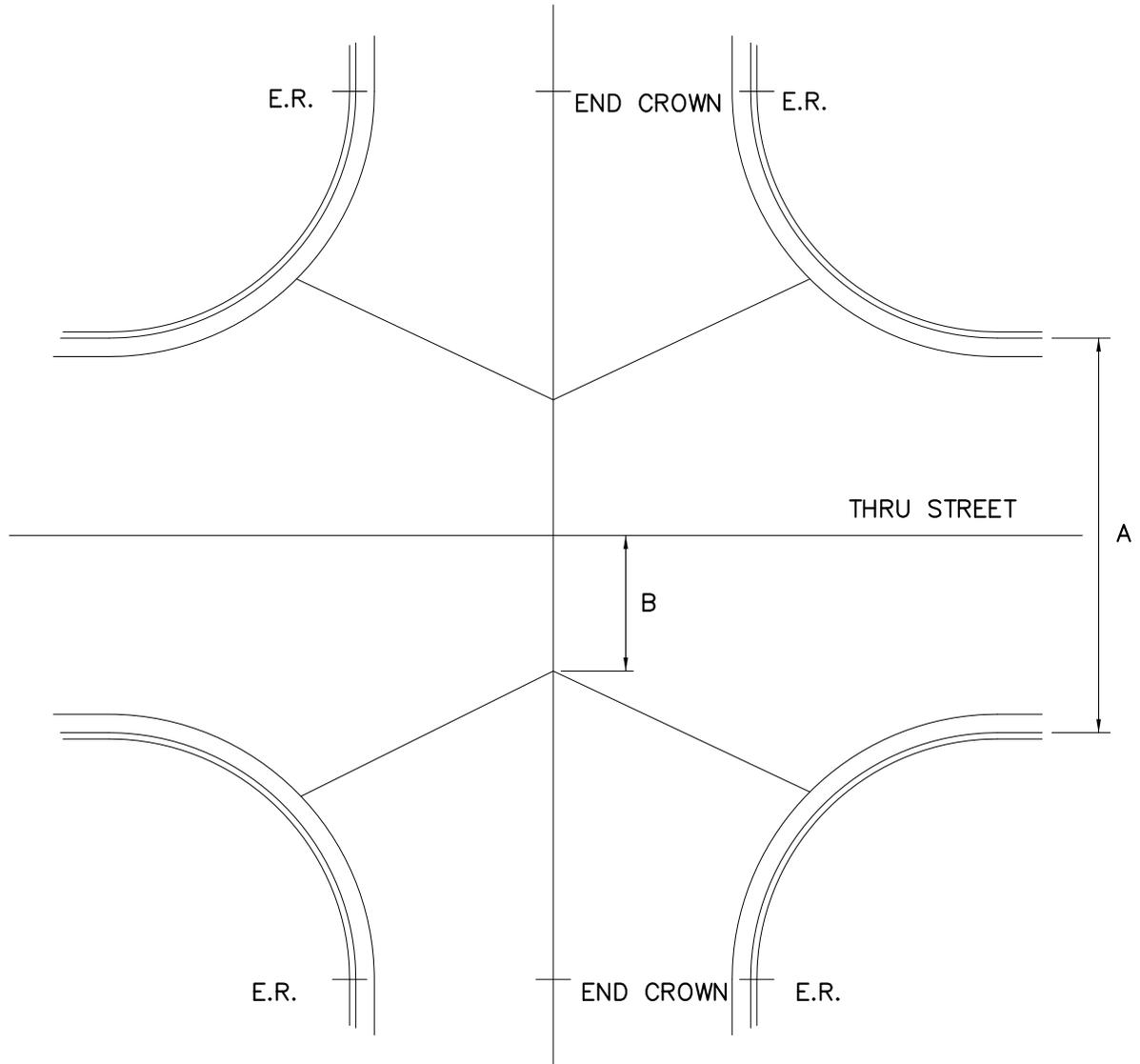
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	512



REVISIONS:
04/08/10

**RESIDENTIAL STREET
CROSS SECTION**

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	513



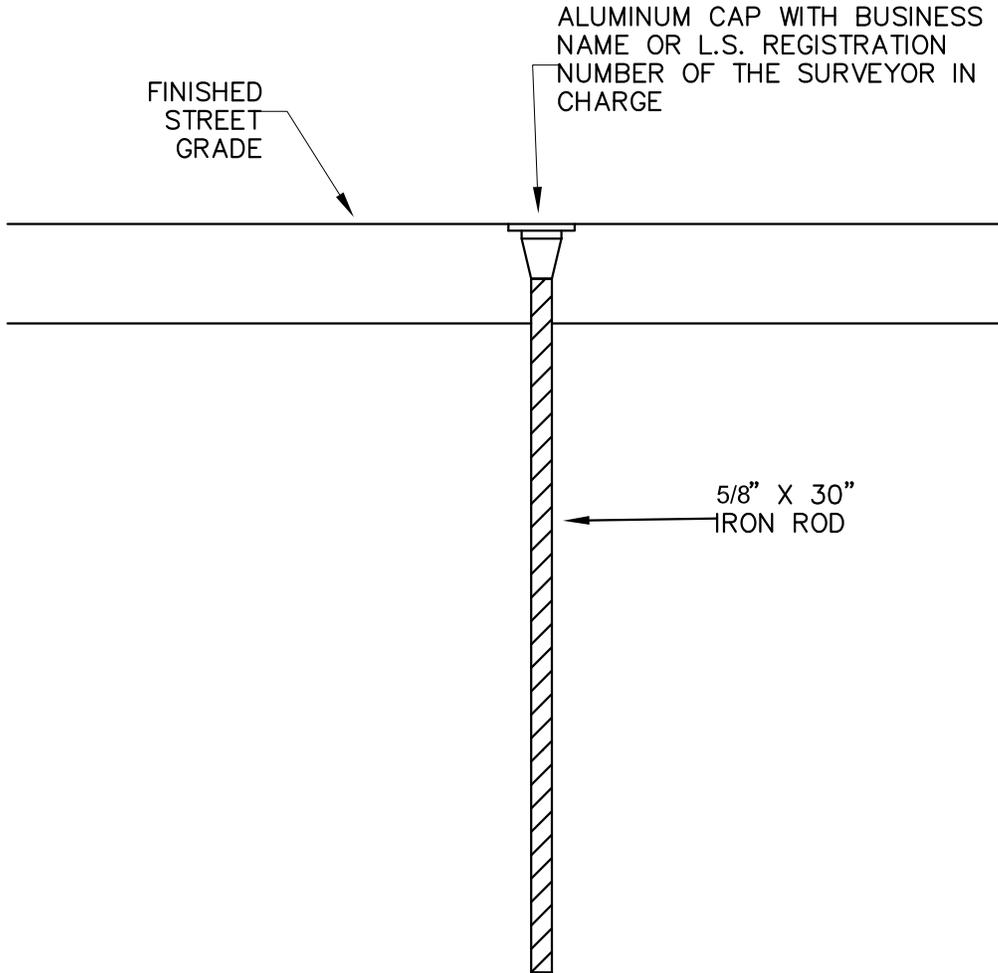
STREET WIDTH "A"	TRAFFIC LANE WIDTH "B"
32'	11'
34'	12'
36'	13'
40'	15'
46'	18'

NOTE:
THIS PAVING PATTERN NOT TO
BE USED WHEN INTERSECTING
GRADES ARE LESS THAN .50%.

REVISIONS:

INTERSECTION PAVING PLAN

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	514



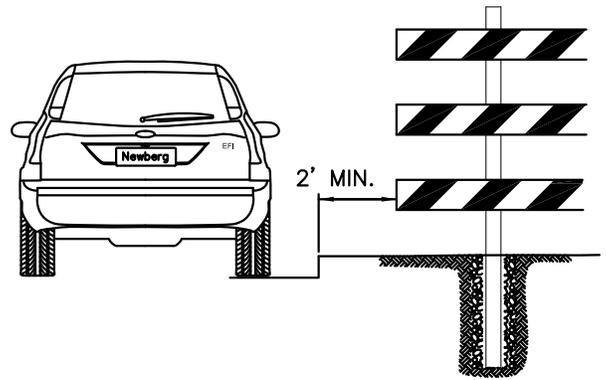
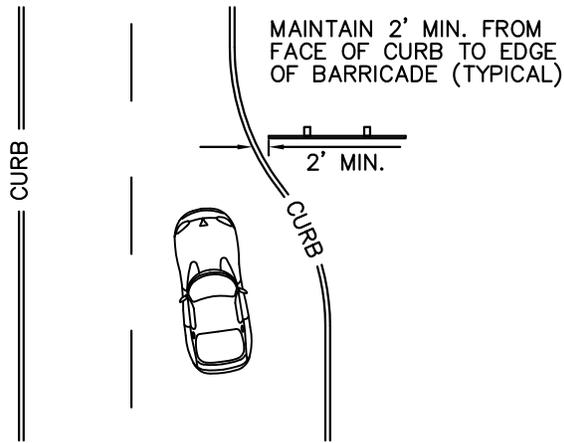
NOTES

1. MONUMENTS TO BE SET AT ALL STREET INTERSECTIONS, POINTS OF CURVATURE AND POINTS OF TANGENCY.

REVISIONS:

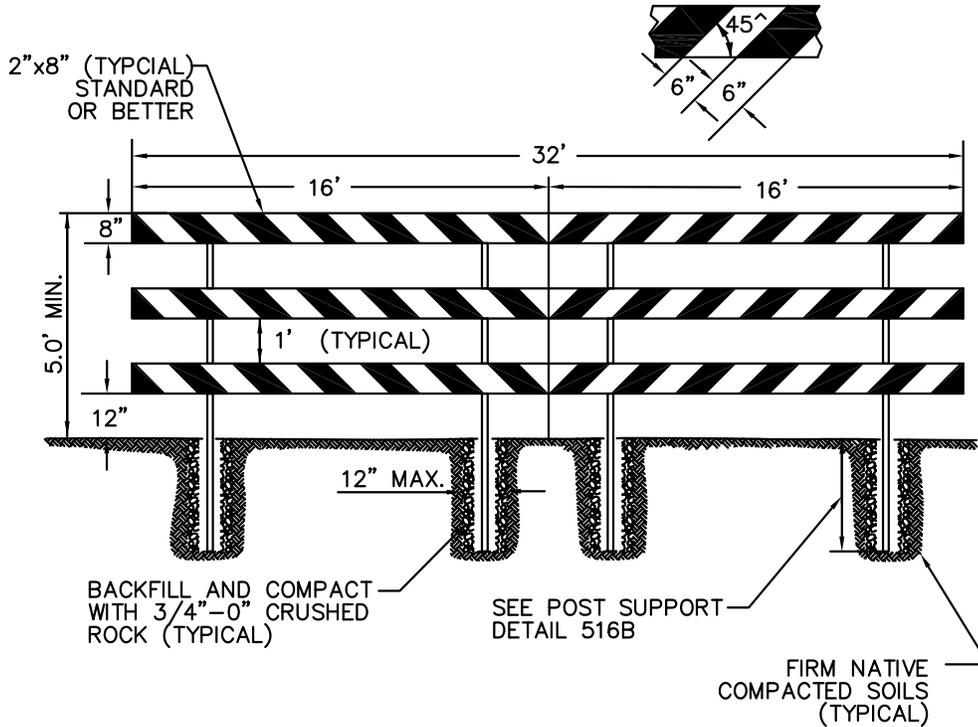
STREET MONUMENTATION

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	515



TYPICAL NARROWING OF DRIVING AREA BARRICADE (USE DIMENSIONS BELOW) ORIENT DIAGONAL BARS TO CHANNEL TRAFFIC AS SHOWN

NARROWING OF DRIVING AREA



END OF ROAD BARRICADE
(TYPICAL DIMENSIONS AND LAYOUT)

NOTES:

ALTERNATING RED & WHITE HIGH INTENSITY PRISMATIC 0.080 ALUMINUM SHEATING SHALL BE SCREWED TO THE HORIZONTAL RAILS - MINIMUM 1" SCREWS

ALL FASTENERS TO BE STAINLESS STEEL OR RUST PROOF HEAVY GALVANIZED

FOR STREET BARRICADES HORIZONTAL RAIL LENGTH SHALL EQUAL THE DISTANCE BETWEEN THE FACE OF CURB PLUS 2'. (EG. 34' CURB TO CURB= 36' RAILS)

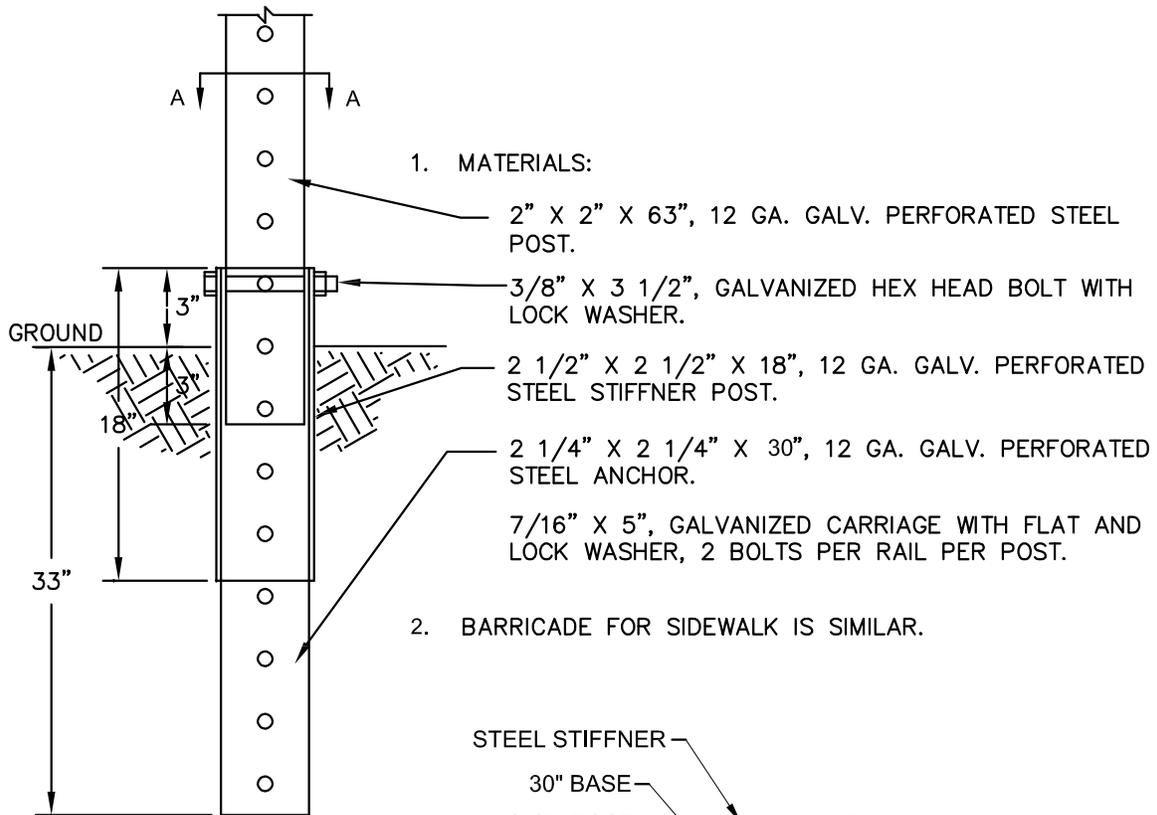
HORIZONTAL WOOD RAILS TO BE PRESSURE TREATED AND PAINTED WHITE

USE 7/8"x5" GALVANIZED CARRIAGE WITH FLAT AND LOCK WASHER, 2 BOLTS PER RAIL PER POST

REVISIONS:
MAY 2014

STREET BARRICADES

SCALE:	N.T.S.
DATE:	July 2009
APPROVED BY:	P. Chiu
STANDARD DRAWING	516A



1. MATERIALS:

2" X 2" X 63", 12 GA. GALV. PERFORATED STEEL POST.

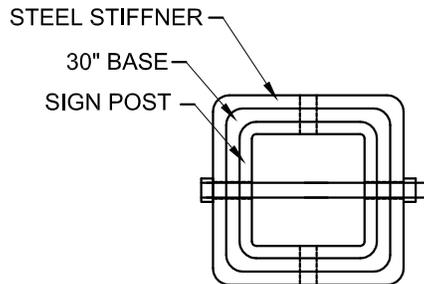
3/8" X 3 1/2", GALVANIZED HEX HEAD BOLT WITH LOCK WASHER.

2 1/2" X 2 1/2" X 18", 12 GA. GALV. PERFORATED STEEL STIFFNER POST.

2 1/4" X 2 1/4" X 30", 12 GA. GALV. PERFORATED STEEL ANCHOR.

7/16" X 5", GALVANIZED CARRIAGE WITH FLAT AND LOCK WASHER, 2 BOLTS PER RAIL PER POST.

2. BARRICADE FOR SIDEWALK IS SIMILAR.



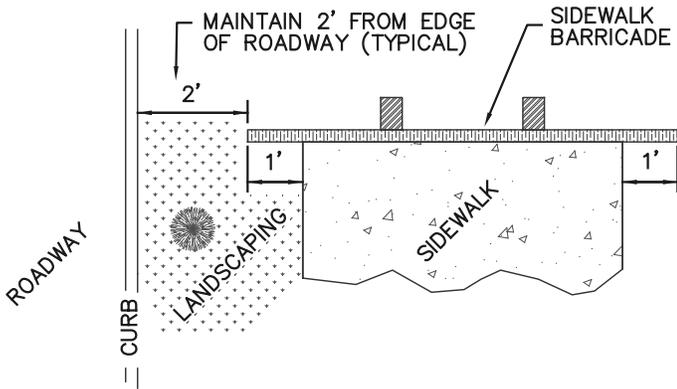
SECTION A - A

1. FOR APPLICATION OF BARRICADE ON EXISTING CONCRETE, USE TELSPAR STEEL BASE PLATE PER DETAIL ON STANDARD DRAWING #525B, STANDARD SIGNPOST CONCRETE APPLICATIONS DETAIL.

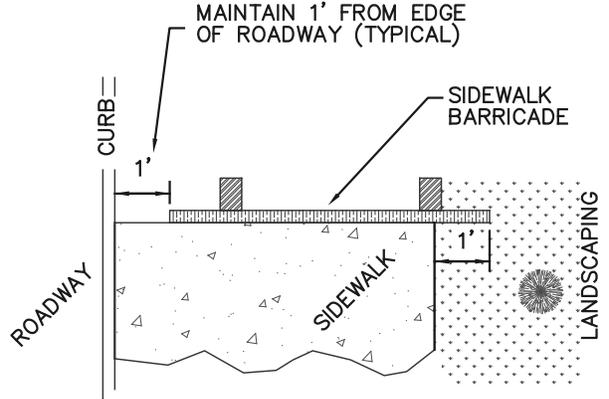
REVISIONS:

STREET BARRICADE
POST SUPPORT DETAIL

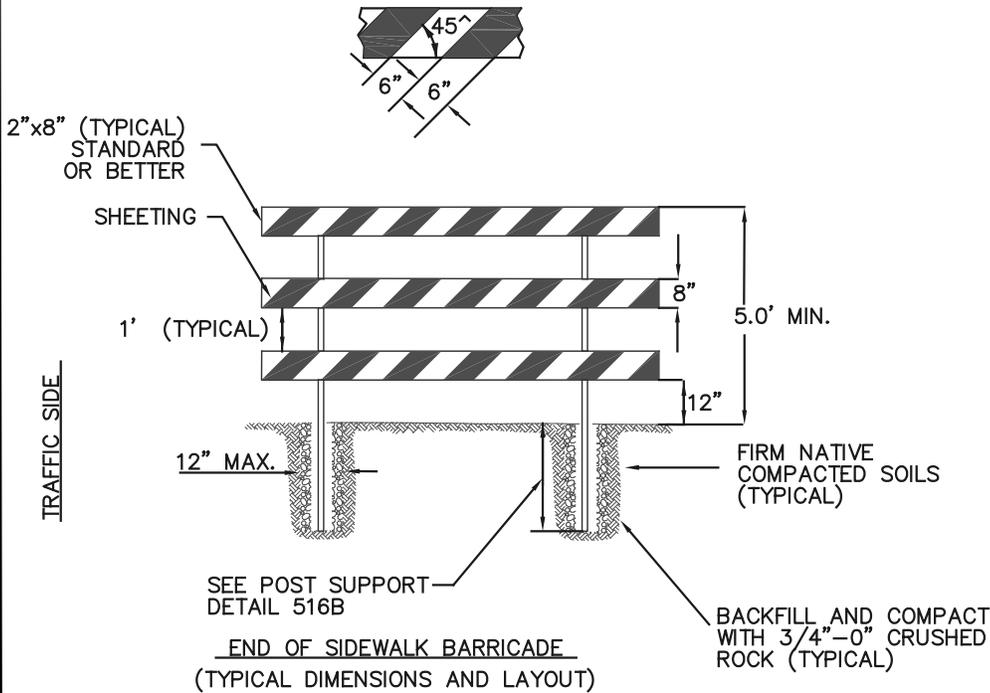
SCALE:	N.T.S.
DATE:	July 2009
APPROVED BY:	P.Chiu
STANDARD DRAWING	516B



END OF SIDEWALK ('TYPE A')



END OF SIDEWALK ('TYPE B')



NOTES:

ALTERNATING RED & WHITE HIGH INTENSITY PRISMATIC 0.080 ALUMINUM SHEETING SHALL BE SCREWED TO THE HORIZONTAL RAILS - MINIMUM 1" SCREWS

HORIZONTAL WOOD RAILS TO BE PRESSURE TREATED AND PAINTED WHITE

ALL FASTENERS TO BE STAINLESS STEEL OR RUST PROOF HEAVY GALVANIZED

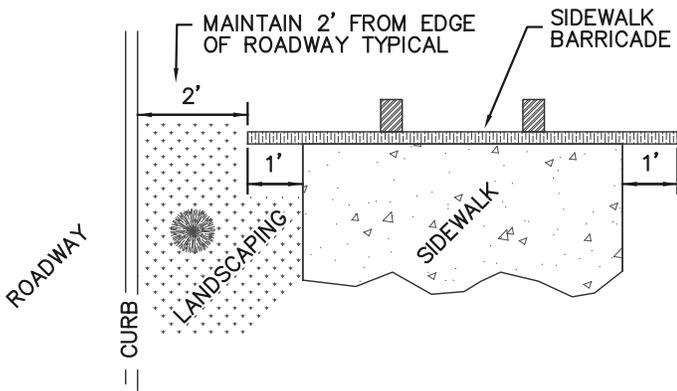
USE 7/16"x5" GALVANIZED CARRIAGE WITH FLAT AND LOCK WASHER, 2 BOLTS PER RAIL PER POST

SHEETING TO ANGLE TOWARDS THE ROADWAY

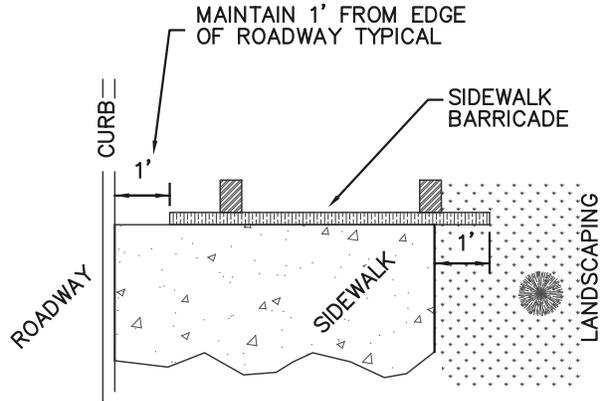
REVISIONS:

END OF SIDEWALK BARRICADES

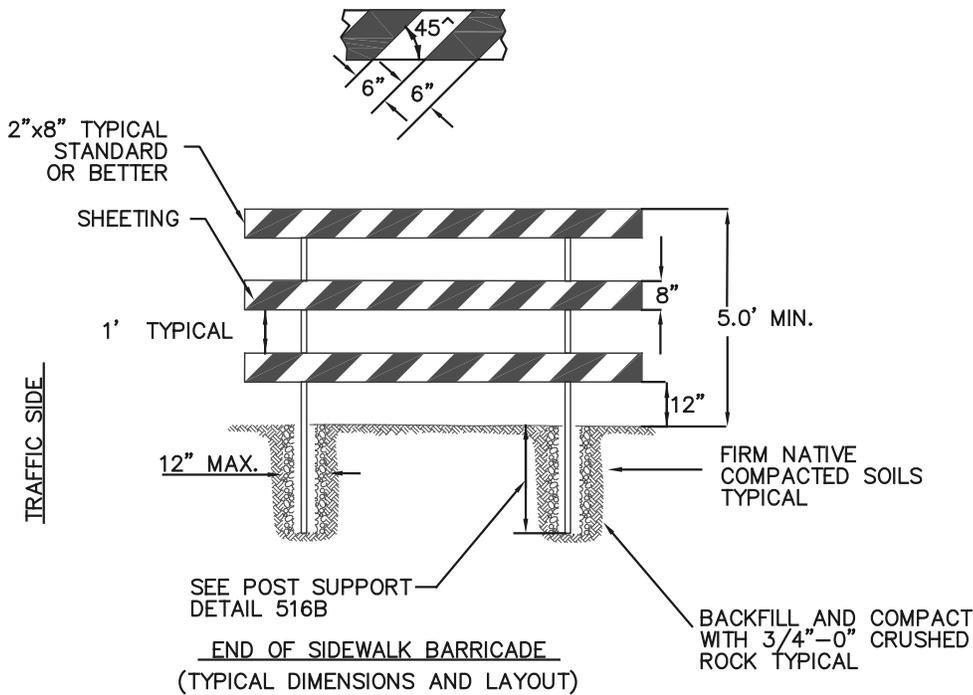
SCALE:	N.T.S.
DATE:	MAY 2014
APPROVED BY:	J. HARRIS
STANDARD DRAWING	516C



END OF SIDEWALK ('TYPE A')



END OF SIDEWALK ('TYPE B')



NOTES:

ALTERNATING RED & WHITE HIGH INTENSITY PRISMATIC 0.080 ALUMINUM SHEATING SHALL BE SCREWED TO THE HORIZONTAL RAILS - MINIMUM 1" SCREWS

ALL FASTENERS TO BE STAINLESS STEEL OR RUST PROOF HEAVY GALVANIZED

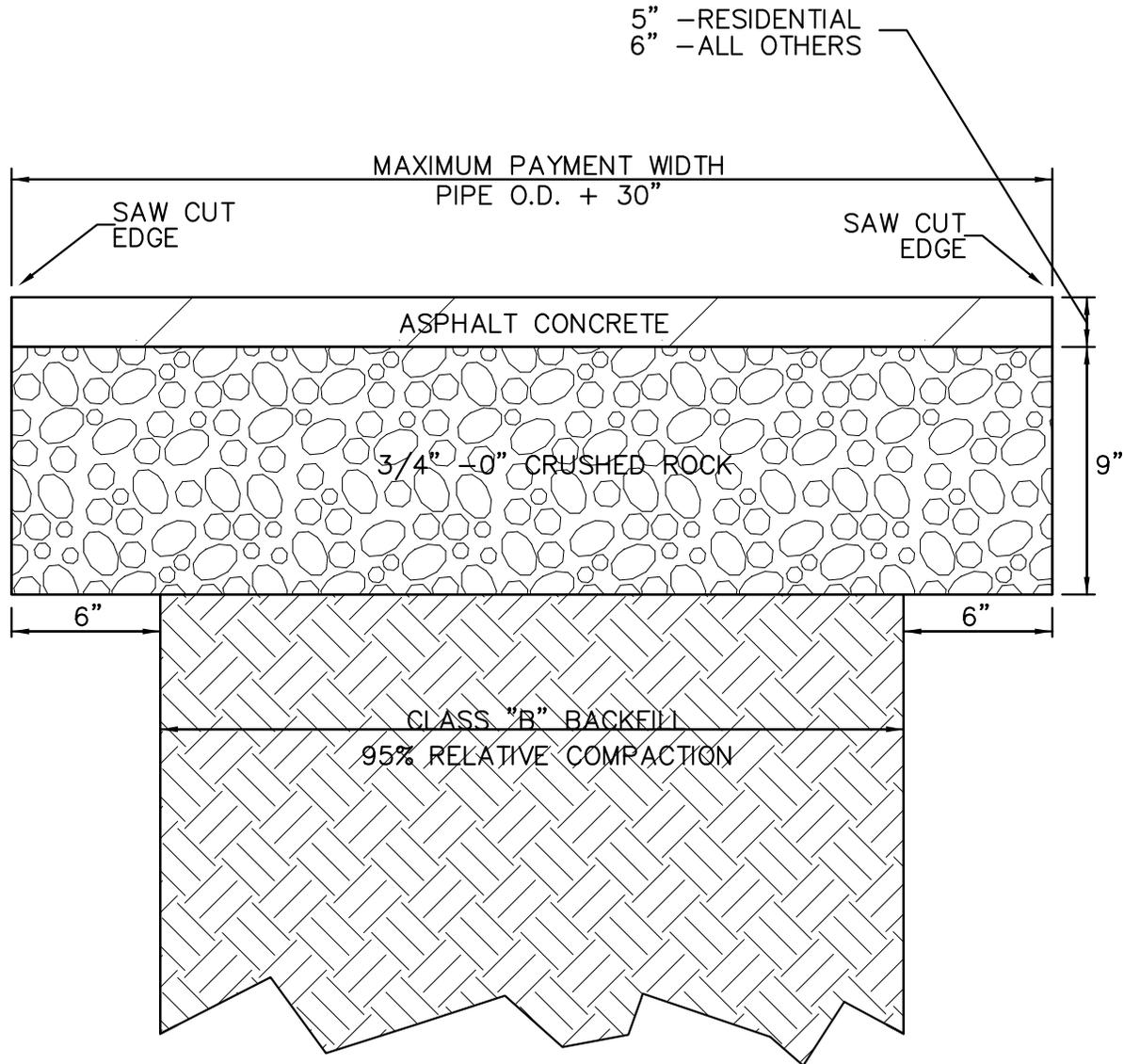
USE 7/16"x5" GALVANIZED CARRIAGE WITH FLAT AND LOCK WASHER, 2 BOLTS PER RAIL PER POST

SHEATING TO ANGLE TOWARDS THE ROADWAY

REVISIONS:

END OF SIDEWALK BARRICADES

SCALE:	N.T.S.
DATE:	MAY 2014
APPROVED BY:	J. HARRIS
STANDARD DRAWING	516C



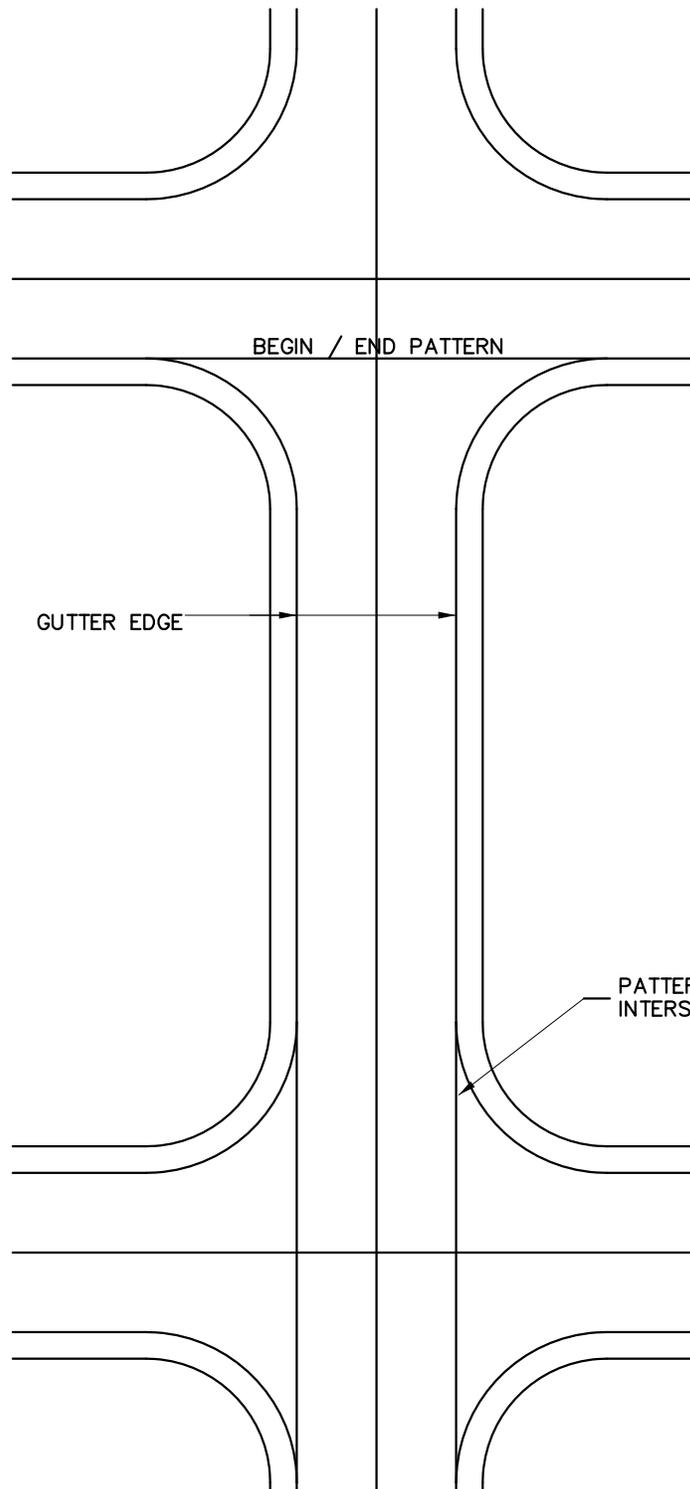
NOTES:

- 1.SAW CUT ASPHALT TO NEAT STRAIGHT LINES.
- 2.ASPHALT - CLASS "C" MIX PLACED IN 2 LIFTS.
- 3.ALL JOINTS SHALL BE SEALED WITH RUBBERIZED ASPHALT EMULSION (HOT OR COLD) AND DE-TACKED WITH SAND IF IMMEDIATE TRAFFIC IS NEEDED AT ALL JOINTS.
- 4.ACTUAL PAYMENT WIDTH TO BE DETERMINED AT SITE PRIOR TO PAVING.

REVISIONS:
Jan. 2011

TRENCH PAVING

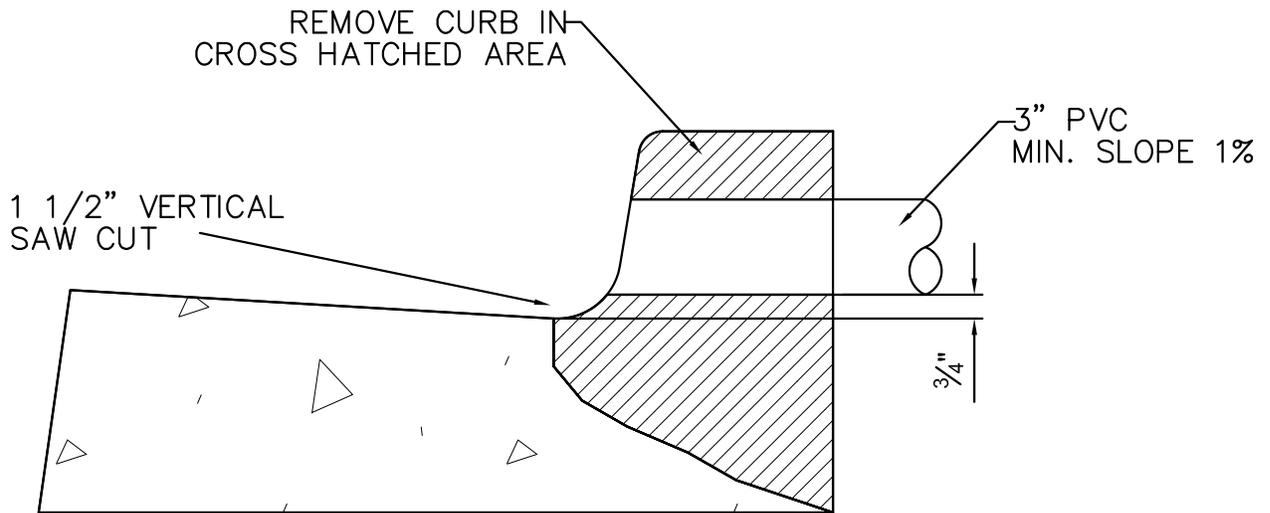
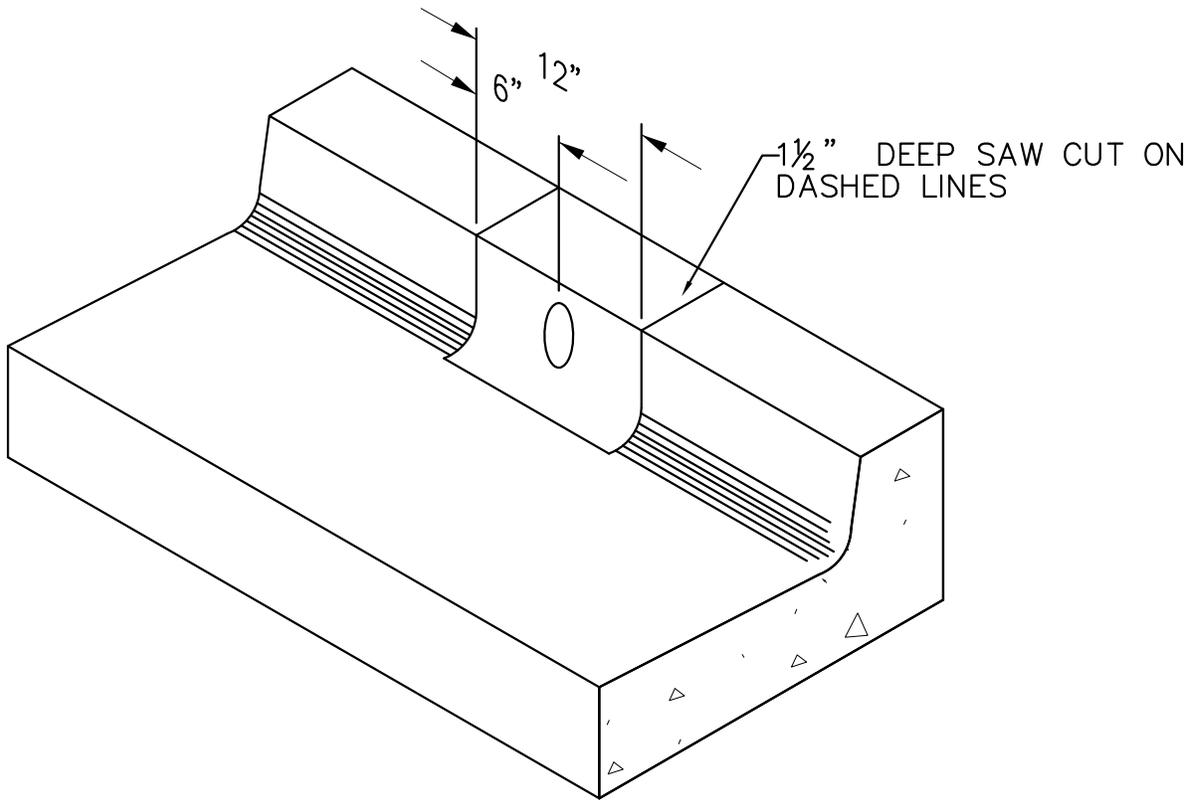
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	517



REVISIONS:

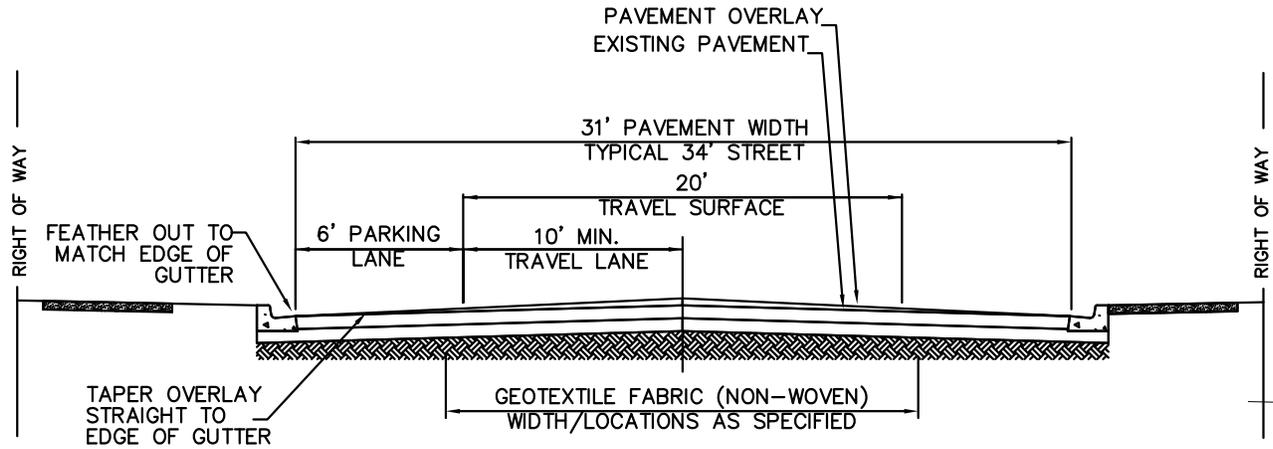
**PAVEMENT SEAL COAT
PATTERN**

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Donicic
STANDARD DRAWING	518



GEOTEXTILE SPECIFICATIONS

PROPERTY	TEST	MIN. VALUE
TENSILE STRENGTH, lbs	ASTM D-4632	80
ELONGATION, %	ASTM D-4632	50
ASPHALT RETENTION, gal/sy	OSHD TM-817	0.20
MELTING POINT, ^F	ASTM D-276	300



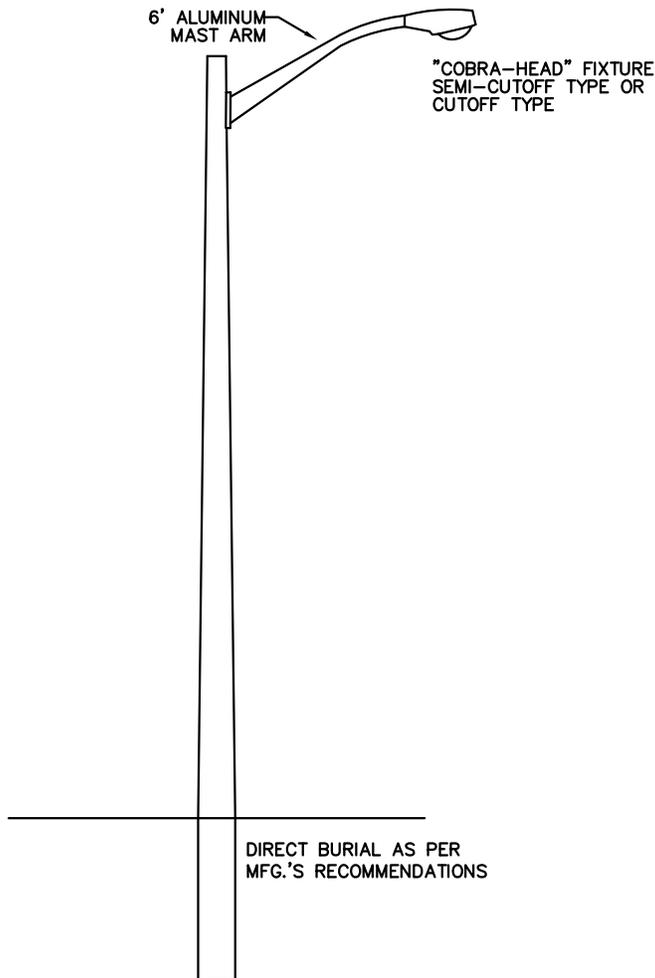
NOTES

1. OVERLAY PATTERN FOR DIFFERENT WIDTH STREETS WILL BE SIMILAR.
2. OFFSET PAVING PANELS 12" MIN. FROM JOINTS OF EXISTING PAVEMENT.

REVISIONS:

ASPHALT OVERLAY
TYPICAL SECTION

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	520



NOTES:

- 1.LOCATION OF STREET LIGHT IS SHOWN ON STANDARD DRAWING NO. 103
- 2.STREET LIGHT HIGH PRESSURE SODIUM LUMINAIRE.
- 3.ALL FIBERGLASS POLES SHALL BE GRAY.
- 4.FOR CURBSIDE SIDEWALK (TYPE'B') THE STREET LIGHT SHALL BE 2' FROM THE BACK OF THE SIDEWALK.
- 5.FOR SETBACK SIDEWALK (TYPE'A') THE STREET LIGHT SHALL BE 2' FROM THE FRONT OF THE SIDEWALK.

STREET WIDTH (ft.)	SERVICE TYPE	WATTAGE	LUMENS	POLE HT. (ft.)	ARM TYPE	VOLTAGE	SPACING (ft.)	TYPE
32'	RESIDENTIAL "A" SIDEWALK	100	9500	25	6' MAST	120	210	FIBERGLASS
34'	RESIDENTIAL "A" SIDEWALK	100	9500	25	6' MAST	120	210	FIBERGLASS
40'	COMMERCIAL COLLECTOR STREET	150	16000	30	6' MAST	240	155	FIBERGLASS
46'	COMMERCIAL ARTERIAL STREET	200	22000	30	6' MAST	240	180	FIBERGLASS

City of Newberg

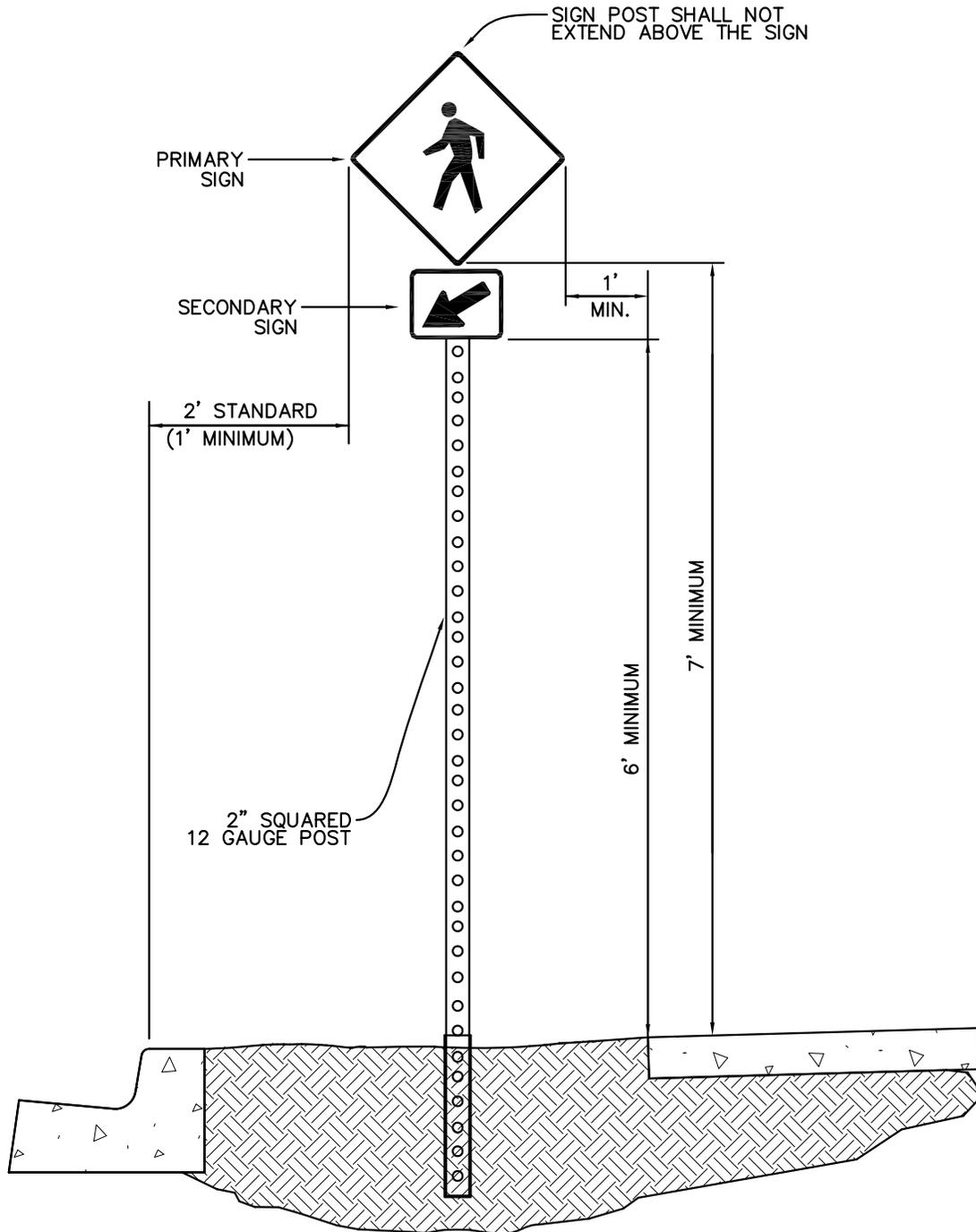
PUBLIC WORKS ENGINEERING DIVISION
 414 E. FIRST STREET NEWBERG, OR 97132
 PHONE: 503-537-1240
 FAX: 503-537-1277

REVISIONS:

STREET LIGHT

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	522

ALL SIGNS SHALL BE HIGH INTENSITY REFLECTIVE PRISMATIC GRADE SHEETING AT MINIMUM



REFERENCE: MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES SECTION 2

REVISIONS:
Dec. 2007
Oct. 2010

SIGN CLEARANCES

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	523

BLADE AND LETTERING SIZE REQUIREMENTS

POSTED SPEED (MPH)	BLADE SIZE	UPPER CASE LETTER HEIGHT	LOWER CASE LETTER HEIGHT	DIRECTION (N,S,E,W)	DESIGNATION (ST,DR,ETC..)	LETTER SPACING
25 OR LESS	8" HIGH	4"	3"	2 1/2"	1/2" SMALLER THAN LOWER CASE LETTER	1/2"
30 OR HIGHER	9" HIGH	5"	3 3/4"	3 1/4"		3/4"

PRIVATE STREETS SHALL BE AS SHOWN BELOW WITH A BLUE BACKGROUND IN PLACE OF GREEN

ADJUST BLADE LENGTH TO ACCOMMODATE LENGTH OF STREET NAME

TYPE:

FLAT DOUBLE FACED, .125 ALUMINUM
STREET NAME SIGN: HIGH INTENSITY REFLECTIVE
PRISMATIC GRADE SHEETING

COLOR/DESIGN:
WHITE LETTERING ON GREEN WITH WHITE BORDER
AS SHOWN.

NOTES:

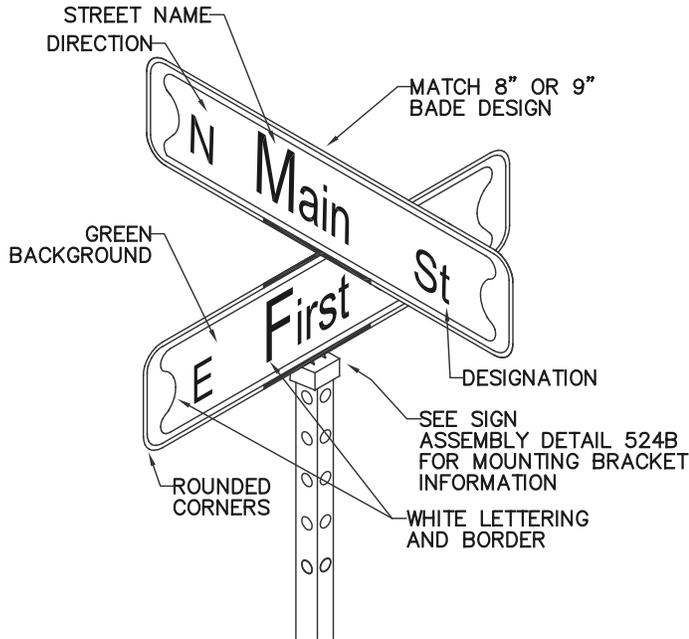
MAINTAIN 9'6" OF CLEARANCE FROM THE BOTTOM OF THE LOWEST STREET SIGN TO FINISH GRADE

SLEEVE SHALL BE 30" - 12GA X 2 1/2" SQ. TUBE
POST SHALL BE 12GA X 2" SQ. TUBE

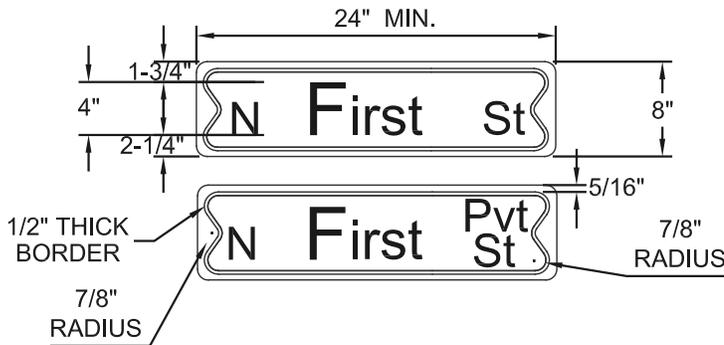
LOCATE POSTS SO TRAFFIC CONTROL SIGNS CAN BE PLACED ON THE SAME POST WITH PROPER CLEARANCE

DO NOT USE ABBREVIATIONS FOR STREET NAMES (MT. VIEW vs. MOUNTAINVIEW)

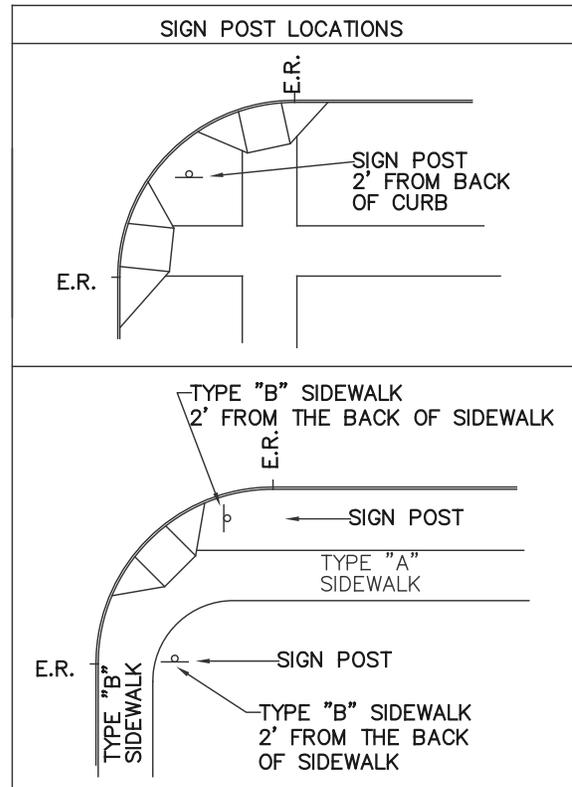
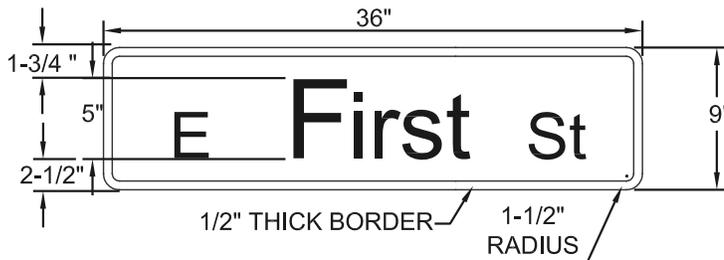
ALL SIGNS SHALL BE HIGH INTENSITY PRISMATIC GRADE SHEETING



25 MPH OR LESS



30 MPH & HIGHER

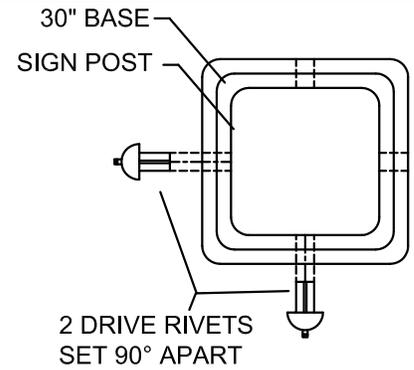
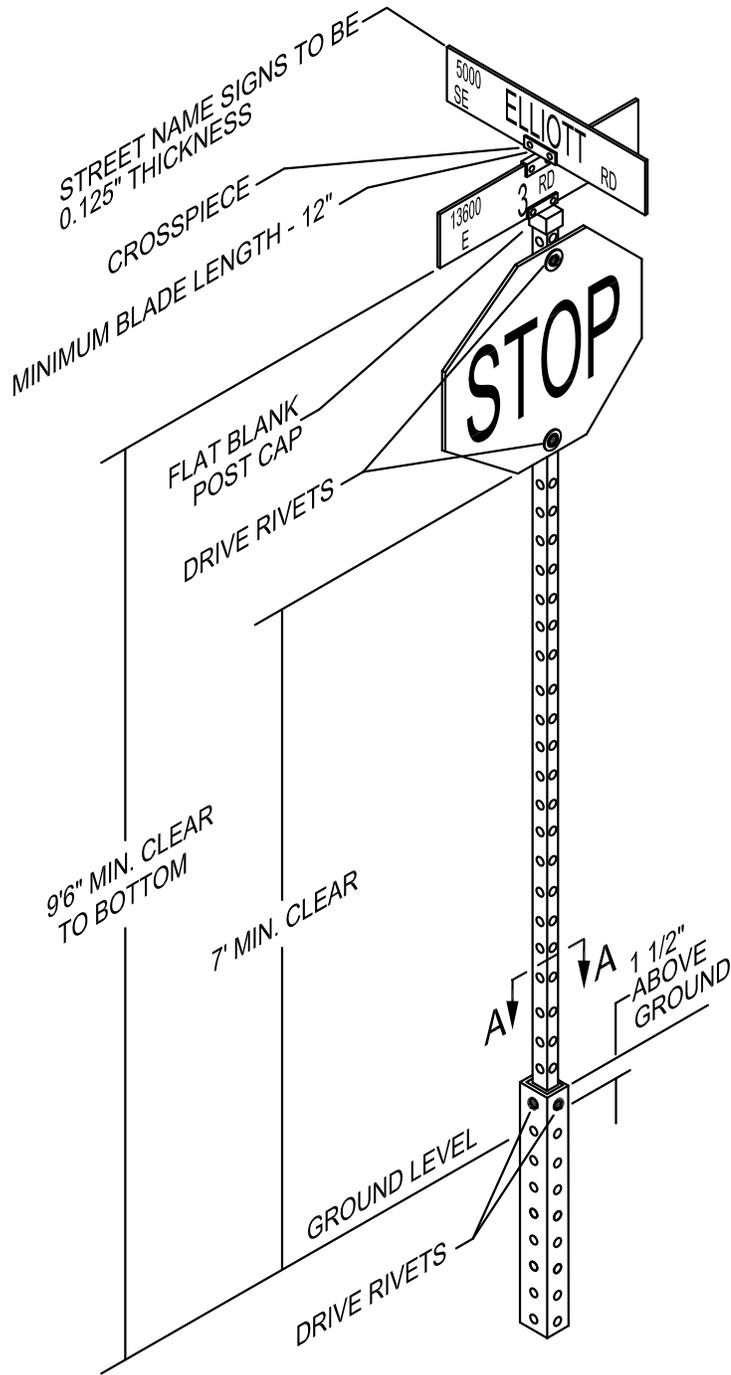


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

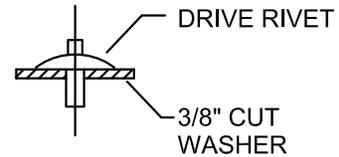
REVISIONS:
AUG. 2013
MAR. 2014

STREET SIGN AND POST LOCATION

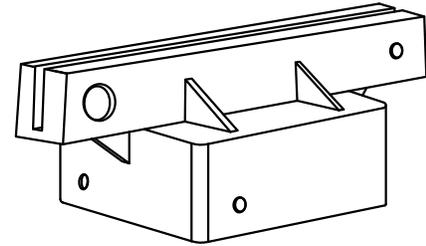
SCALE:	N.T.S
DATE:	July 2004
APPROVED BY:	P. Chiu
STANDARD DRAWING	524A



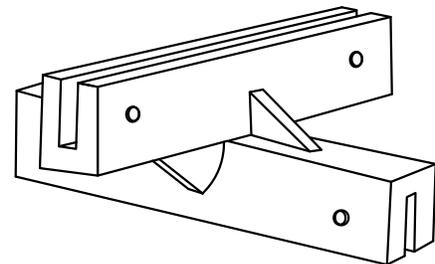
SECTION A - A



**DRIVE RIVET DETAIL
FOR MOUNTING SIGN**



**HOLDER (OR EQUIVALENT)
VULCAN INC. VS-4 CAP 12" BLADE**



**VULCAN INC. VS-4 CROSS 12" BLADE
HOLDER (OR EQUIVALENT)**

STREET NAME BLADE HOLDERS

NOTES:

1. SIGN POST SHALL BE INSERTED A MINIMUM OF 12" INTO THE 30" BASE.
2. SLEEVE SHALL BE 30" 12 GAUGE x 2 1/4" - POST SHALL BE 12GA x 2".
3. CAP AND CROSSPIECE TO BE THE SAME STYLE, 12" BLADE MINIMUM.
4. SEE DETAILS 525A & 525B FOR GROUND & CONCRETE SIGN APPLICATIONS
5. SEE CHAPTER 5 IN THE ENGINEERING DESIGN MANUAL FOR THE MATERIAL SPECIFICATIONS.

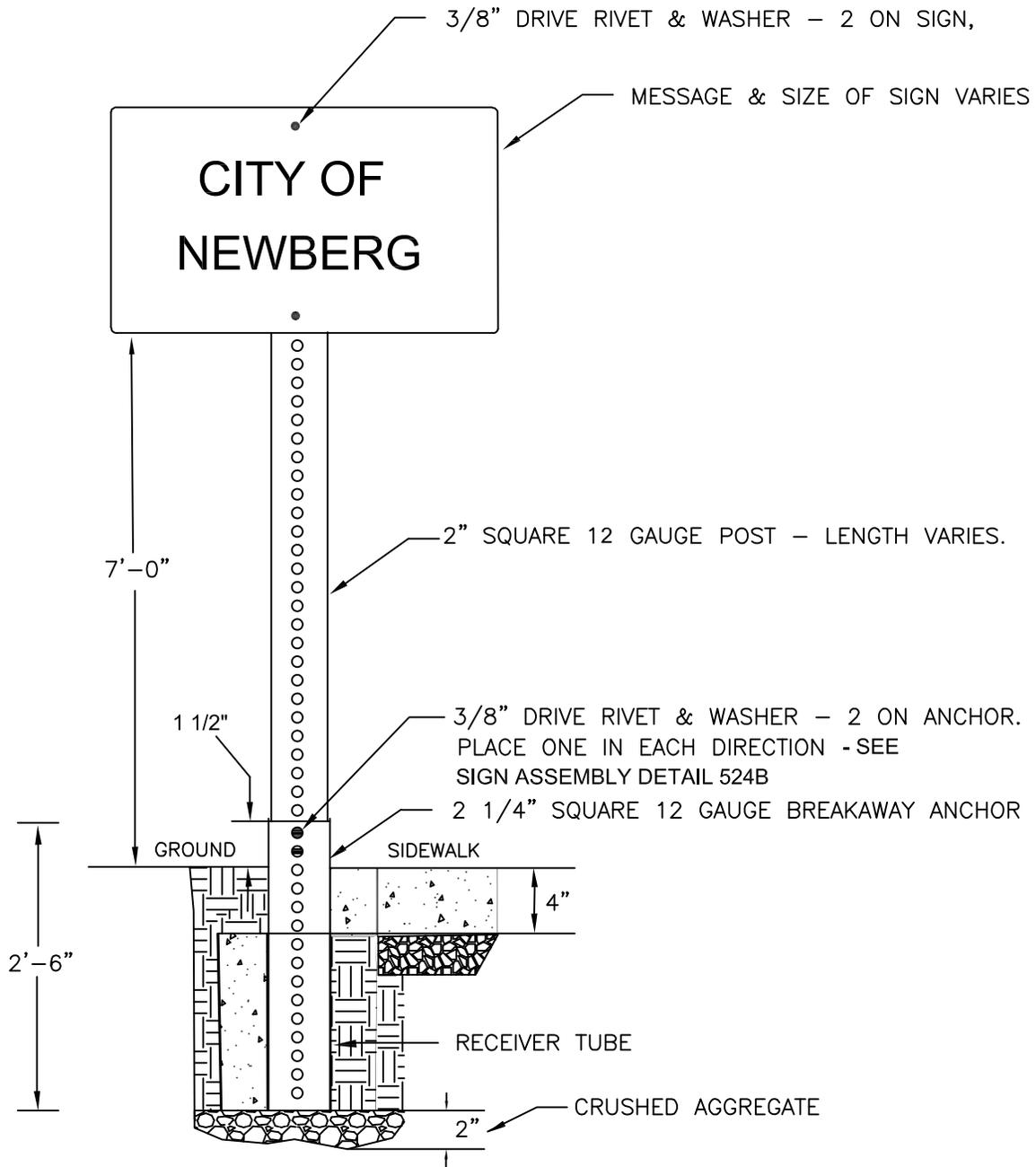
**City of
Newberg**

PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

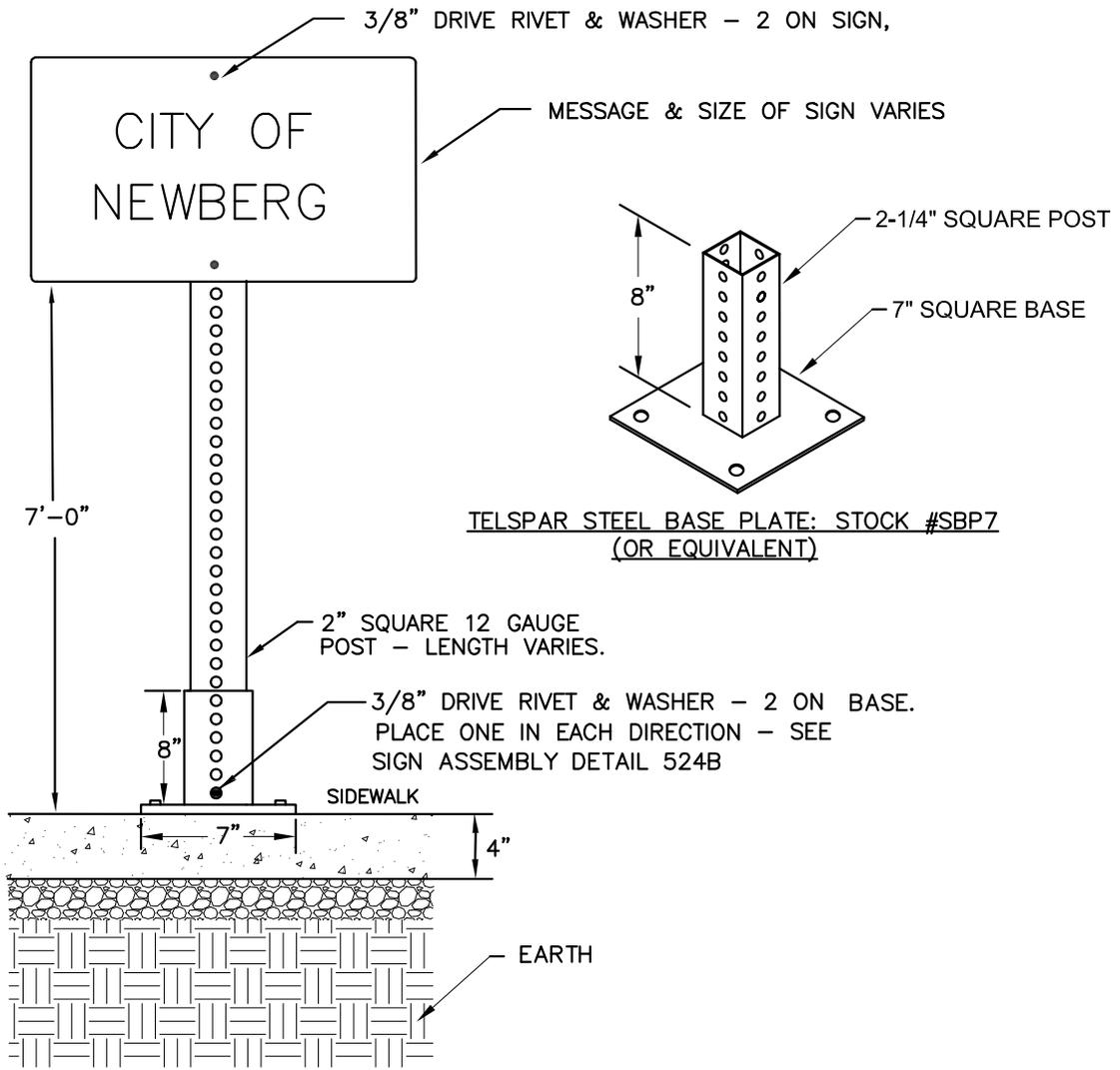
REVISIONS:	
	Aug. 2013
	Dec. 2013

SIGN ASSEMBLY

SCALE:	N.T.S
DATE:	July 2009
APPROVED BY:	P. Chiu
STANDARD DRAWING	524B



1. SIGN PLACEMENT IN DIRT SHALL BE A MINIMUM OF 24" FROM CURB FACE - VARIES BY SIGN SIZE.
2. POST SHALL BE SPRAYED WITH ANTI-SEIZE ON THE BOTTOM 2'-6".
3. SIGN POST SHALL BE INSERTED A MINIMUM OF 12" INTO THE 30" BASE.



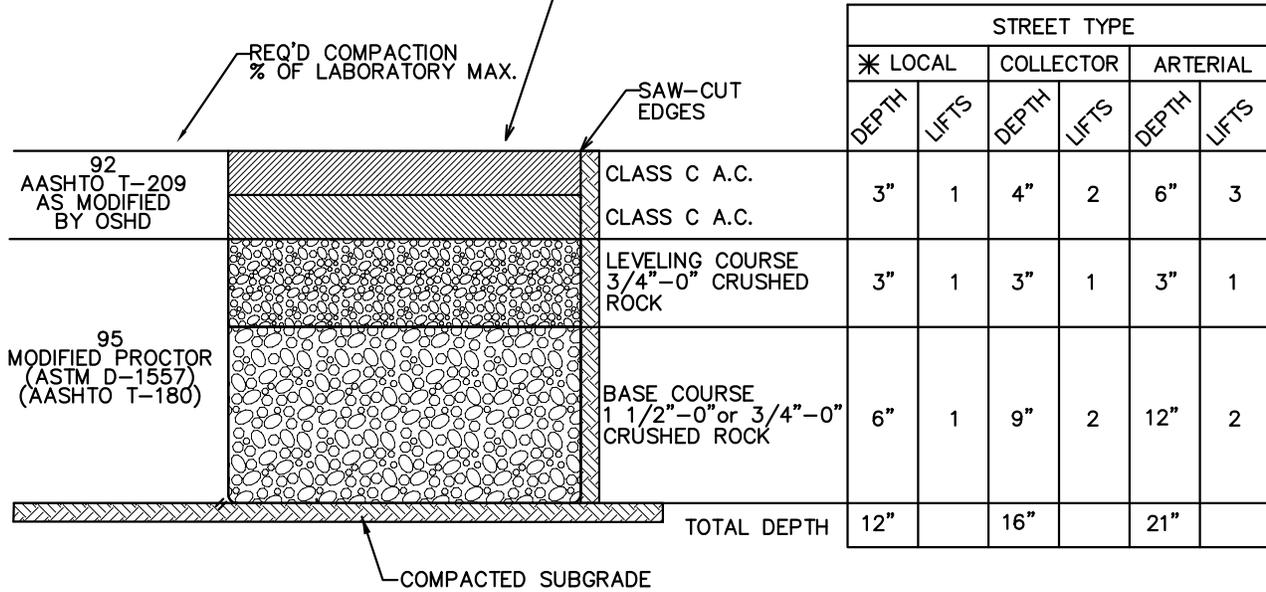
1. STEEL BASE SHALL BE A 2 1/4" SQUARE 12 GAUGE POST
2. SIGN POST PLACEMENT IN CONCRETE SHALL BE A MINIMUM OF 24" FROM CURB FACE - VARIES BY SIGN SIZE.
3. USE 1/2" X 4-1/4" RED HEAD FASTENERS FOR STEEL BASE PLATE
4. STEEL BASE PLATE APPLICATION FOR EXISTING CONCRETE ONLY
5. FOR EXISTING SIDEWALK, WITH CITY OF NEWBERG ENGINEERING DIVISION APPROVAL ONLY.

REVISIONS:
OCT. 2010

STANDARD SIGNPOST
CONCRETE APPLICATIONS

SCALE:	N.T.S.
DATE:	JULY 2004
APPROVED BY:	D. Danicic
STANDARD DRAWING	525B

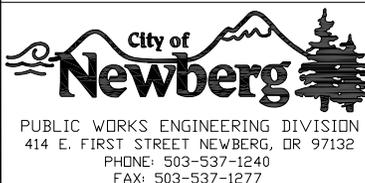
EXCAVATE STREET TO MINIMAL DEPTH SPECIFIED IN TABLE. CONSTRUCT MATERIAL AS SHOWN BELOW. SITE SOILS AND WEATHER CONDITIONS MAY REQUIRE GREATER STRUCTURAL SECTIONS AND GEOTEXTILE (NON-WOVEN) PER CITY ENGINEER.



GEOTEXTILE SPECIFICATIONS

PROPERTY	TEST	MIN. VALUE
TENSILE STRENGTH, lbs	ASTM D-4632	120
ELONGATION, WET %	ASTM D-4632	40
COEFFICIENT OF WATER PERMEABILITY, cm/sec	ASTM D-4491	0.10
PUNCTURE STRENGTH, lbs	ASTM D-4833	80
MULLEN BURST STRENGTH, psi	ASTM D-3786	250

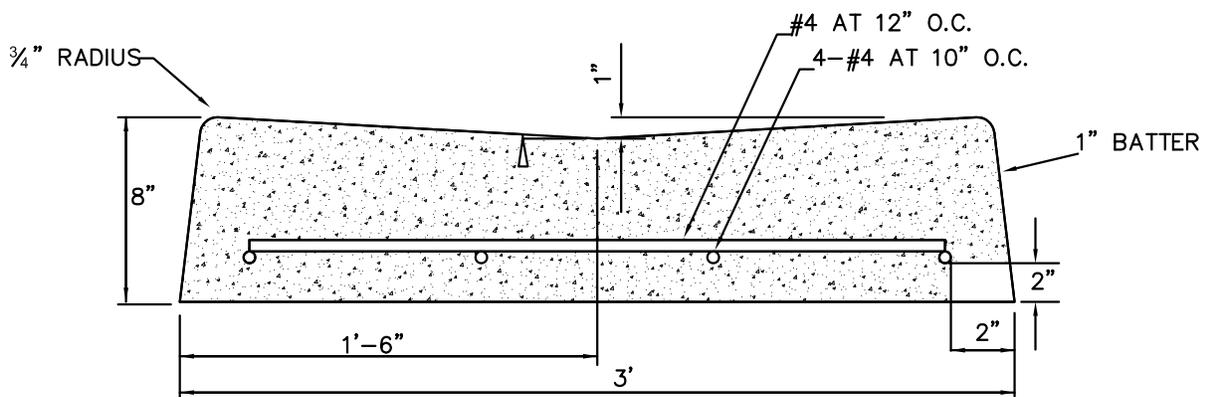
* LOCAL STREET TYPE = INTERIOR RESIDENTIAL SINGLE FAMILY DETACHED ZONES



REVISIONS:

STRUCTURAL STREET SECTIONS

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	527



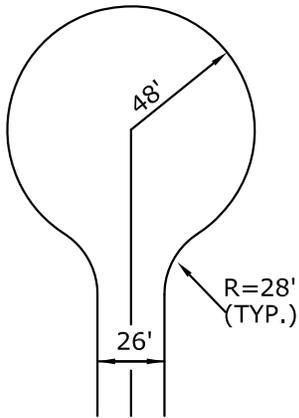
NOTES

1. CONCRETE MIX: 4,000 PSI AT 28 DAYS
WITH 6% ENTRAINED AIR.

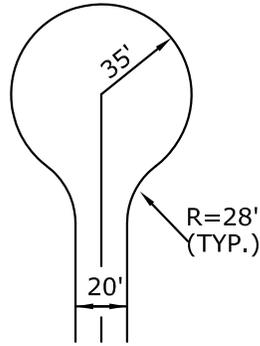
REVISIONS:

VALLEY GUTTER

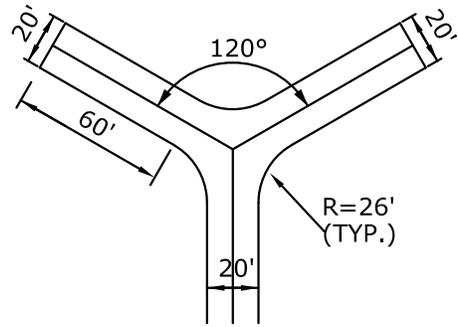
SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	528



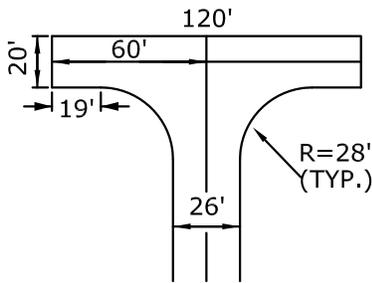
96' DIAMETER
CUL-DE-SAC



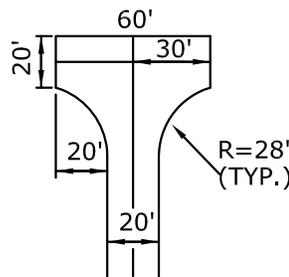
70' DIAMETER
CUL-DE-SAC



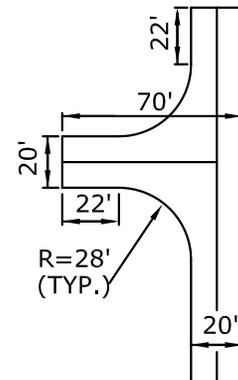
ACCEPTABLE ALTERNATIVE
TO 120' HAMMERHEAD



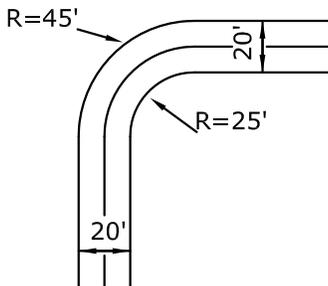
120' HAMMERHEAD



60' HAMMERHEAD



ACCEPTABLE ALTERNATIVE
TO 120' HAMMERHEAD



INSIDE AND OUTSIDE
TURN RADIUS

FIRE MARSHAL APPROVAL
OF CONSTRUCTION
PLANS REQUIRED

Requirements for dead end fire access roads

Length (feet)	Width (feet)	Turnarounds Required
0-150'	20'	None Required
151'-500'	20'	120' hammerhead, 60' "Y", or 96' diameter cul-de-sac
501'-750'	26'	120' hammerhead, 60' "Y", or 96' diameter cul-de-sac
OVER 750'		SPECIAL APPROVAL REQUIRED

NOTES:

Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet.

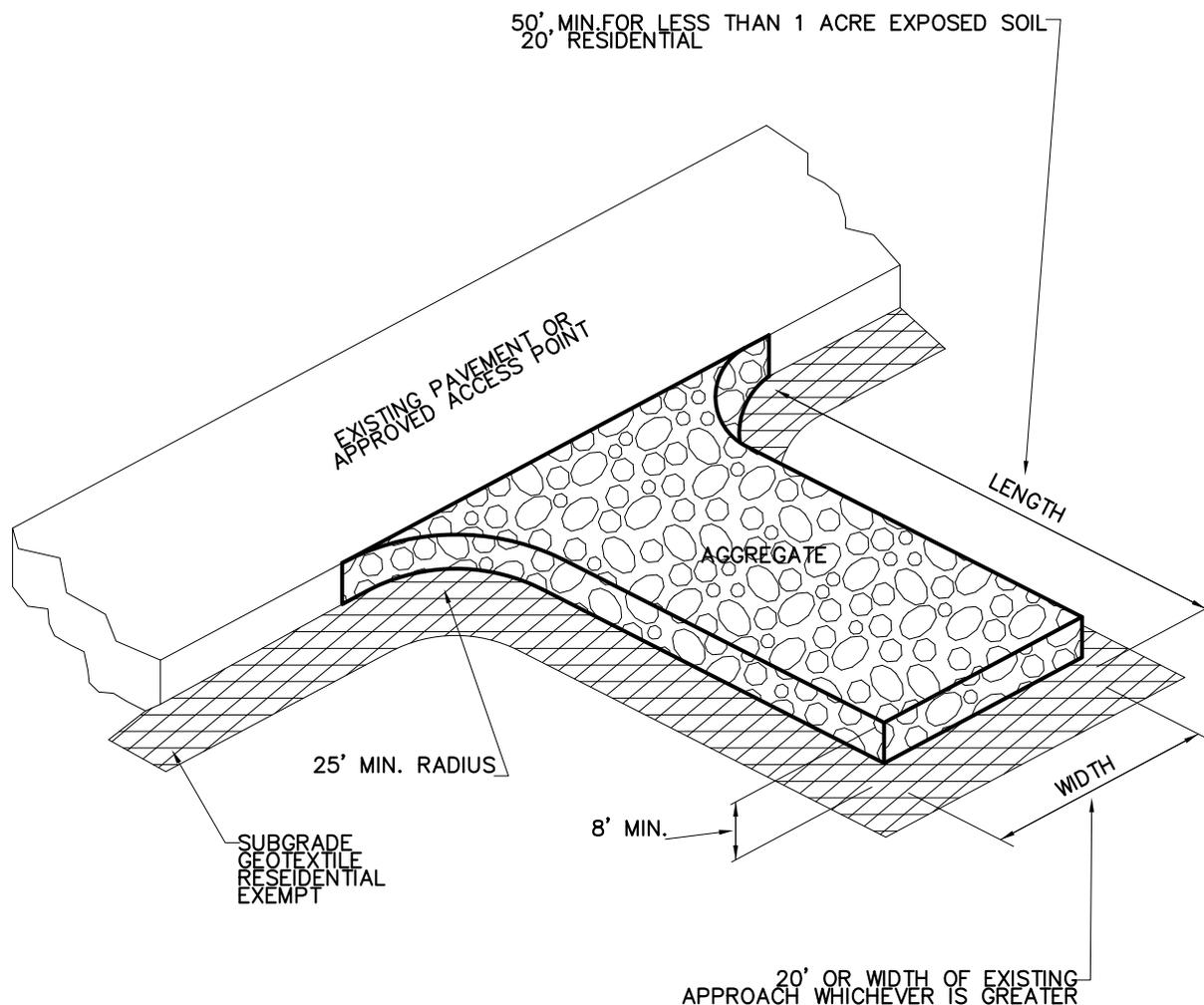
Road surfaces must be capable of supporting the imposed load of fire apparatus weighing at the least 75,000 pounds.

Fire apparatus access roads shall not exceed ten percent in grade. Grades steeper than ten percent must be approved by the Fire Marshal.

City of Newberg

Standard Design Details

Erosion Control	600 Series
Construction Entrance	601
Silt Fence	602
Straw Bale Barrier	603
Field Drain Inlet Protection	604
Inlet Protection	605
Outlet Protection	606
Concrete Waste Management	607
Surface Roughening	608
Matting Trench Installation	609
Matting-Slope Installation	610
Wattles	611



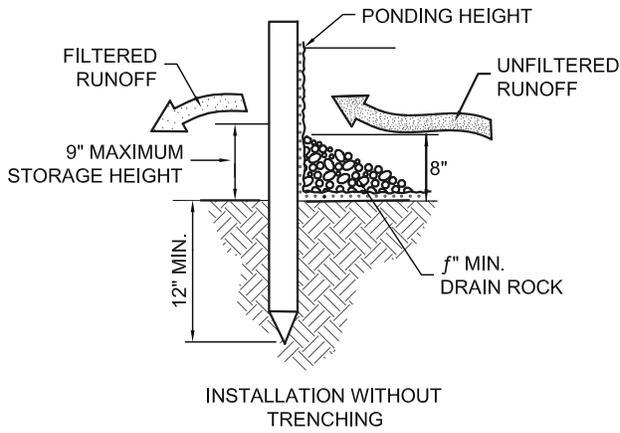
NOTES:

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. DIMENSIONS
SINGLE FAMILY AND DUPLEX
 20' LONG BY 20' WIDE, 8" DEEP OF 3/4" MINUS CLEAN ROCK.
COMMERCIAL
 50' LONG BY 20' WIDE, 3-6" DEEP CLEAN ROCK.
 GOVERNING AUTHORITY MAY REQUIRE GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.

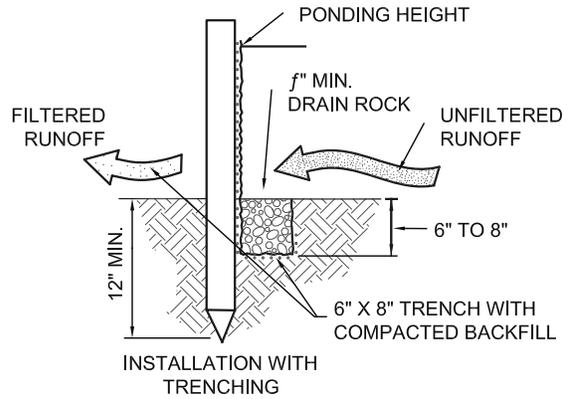
REVISIONS:

**CONSTRUCTION
ENTRANCE**

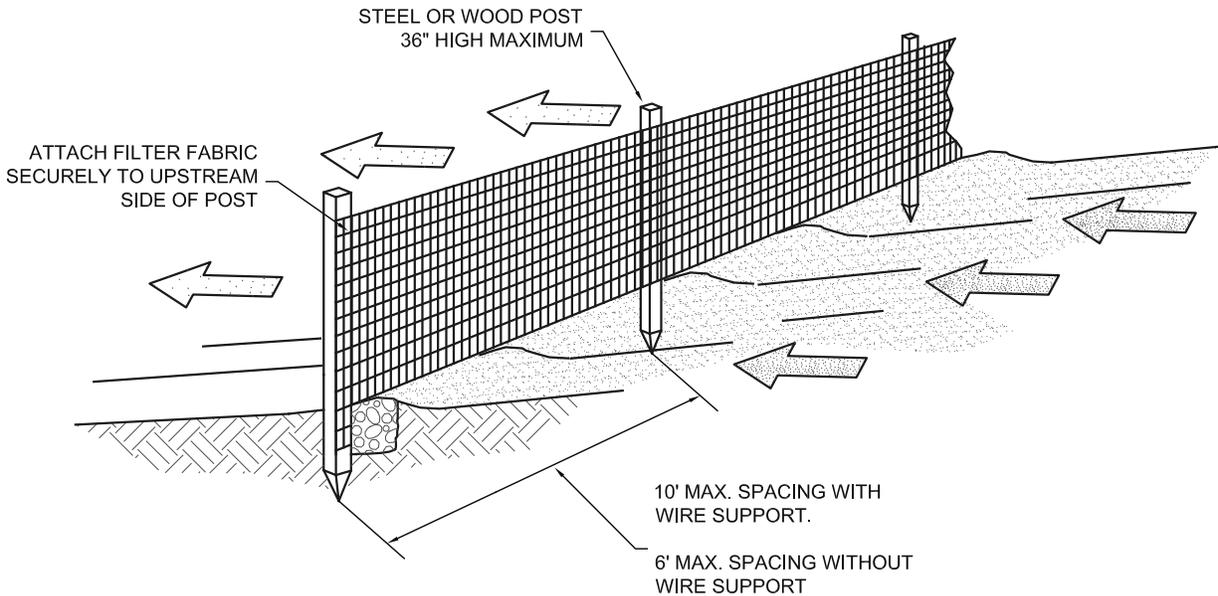
SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	601



INSTALLATION WITHOUT TRENCHING



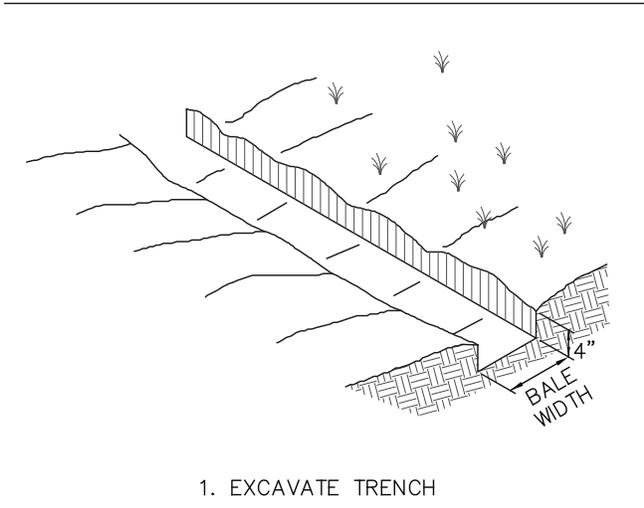
INSTALLATION WITH TRENCHING



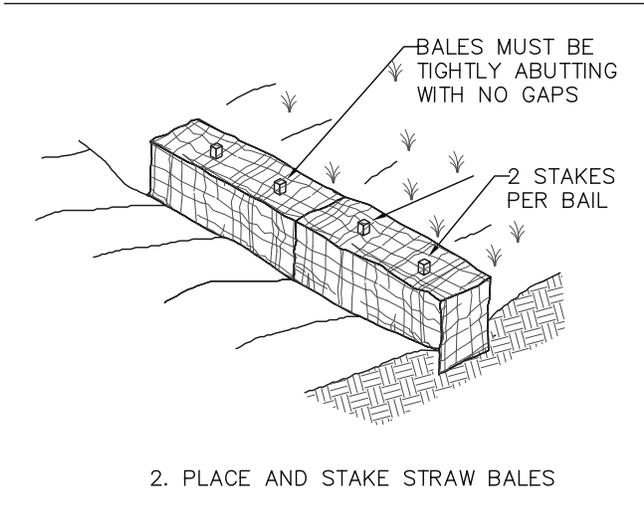
REVISIONS:

SILT FENCE

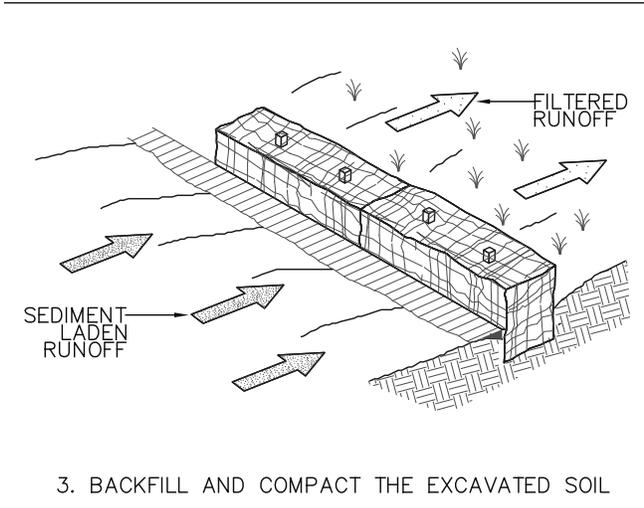
SCALE:	N.T.S.
DATE:	MAY 2007
APPROVED BY:	D. DANICIC
STANDARD DRAWING	602



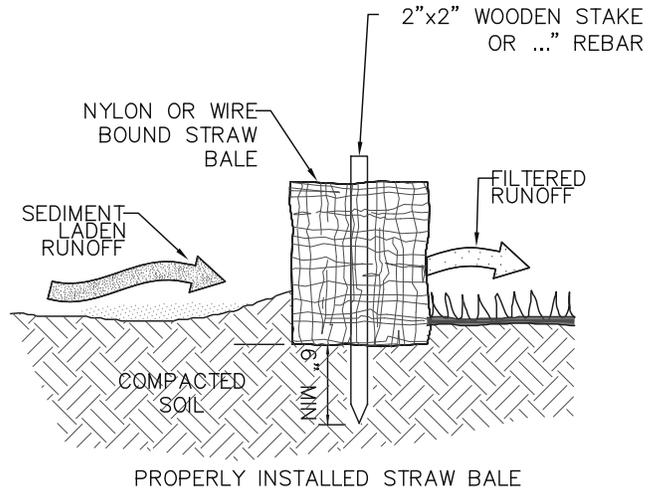
1. EXCAVATE TRENCH



2. PLACE AND STAKE STRAW BALES



3. BACKFILL AND COMPACT THE EXCAVATED SOIL



GENERAL NOTES:

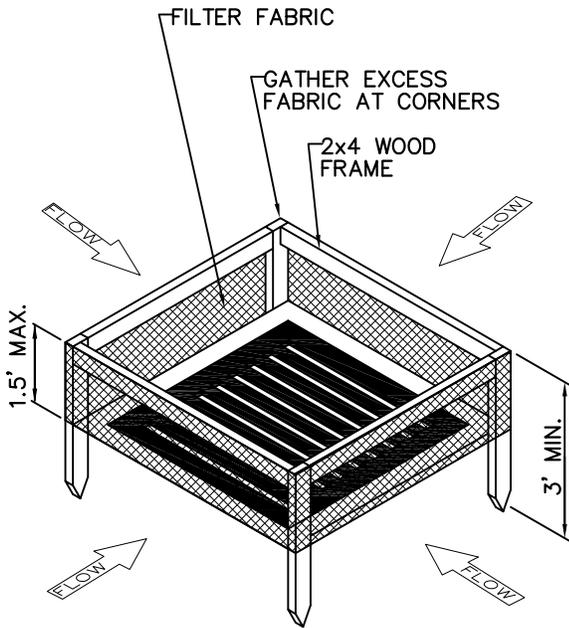
1. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY $\frac{3}{8}$ " REBAR OR 2"x2" WOODEN STAKES DRIVEN THROUGH THE BALES.
3. INSPECTION SHALL BE PERFORMED WEEKLY OR AFTER EACH RAINFALL EVENT. REPAIR AND OR REPLACEMENT SHALL BE MADE AS NEEDED BY THE CONTRACTOR, OR AS DIRECTED BY THE INSPECTOR.
4. WHEN SILT REACHES A DEPTH OF 6", IT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE.
5. AFTER THE SITE IS COMPLETELY STABILIZED, THE BALE AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL SITE.

REVISIONS:

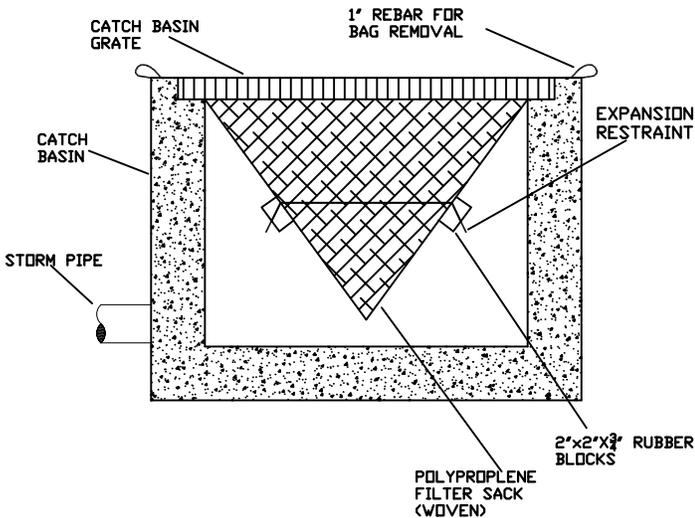
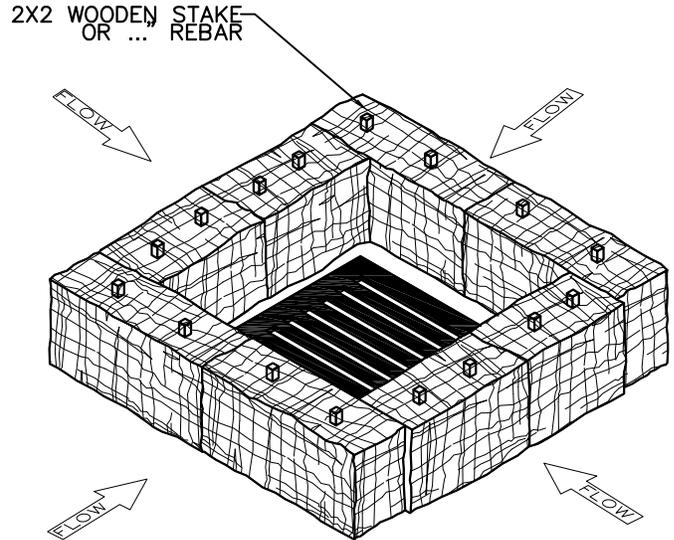
STRAW BALE BARRIER

SCALE:	N.T.S
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	603

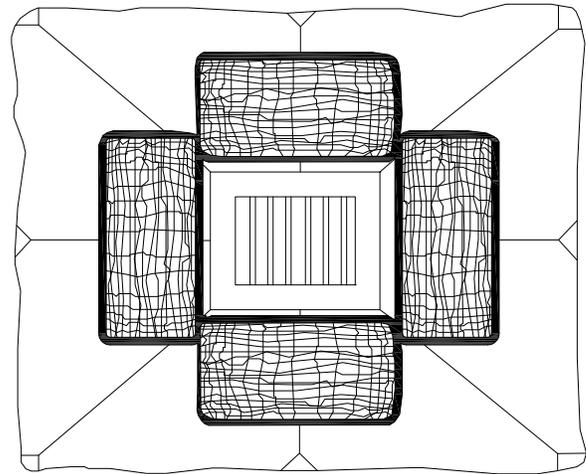
SILT FENCING
INSTALLATION PER
STANDARD DETAIL #602



STRAW BALES ARE TO BE PLACED 4 INCHES INTO THE SOIL, TIGHTLY ABUTTING WITH NO GAP. STAKE AND BACKFILL AROUND THE ENTIRE OUTSIDE PERIMETER.



WOVEN POLYPROPELENE SACK



BID BAG FILTER

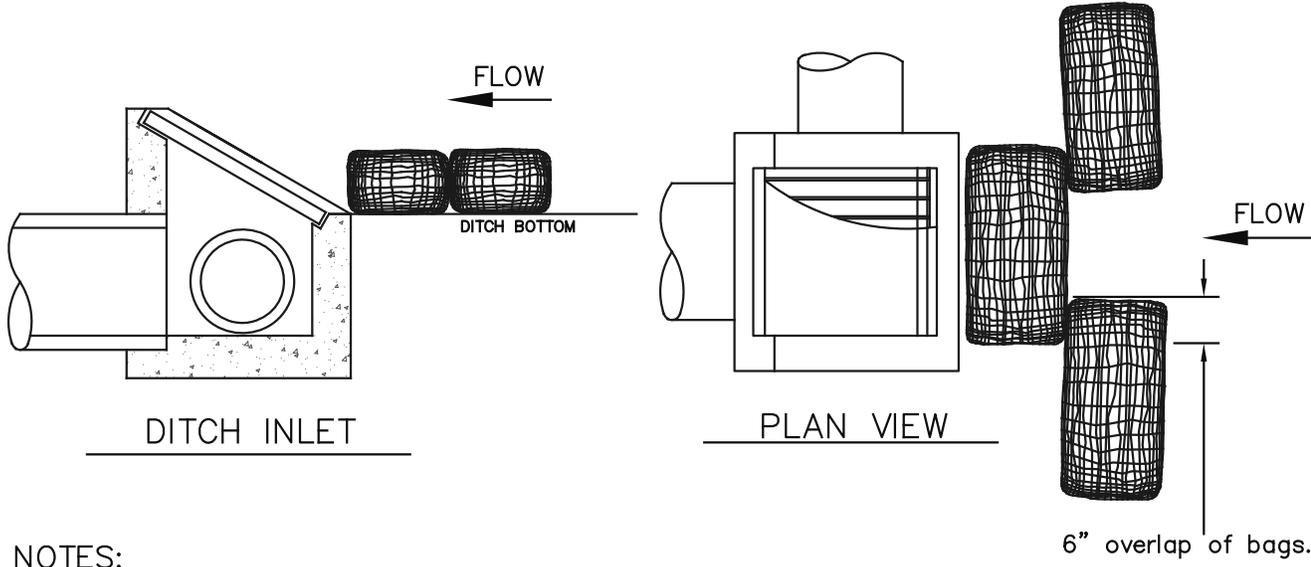
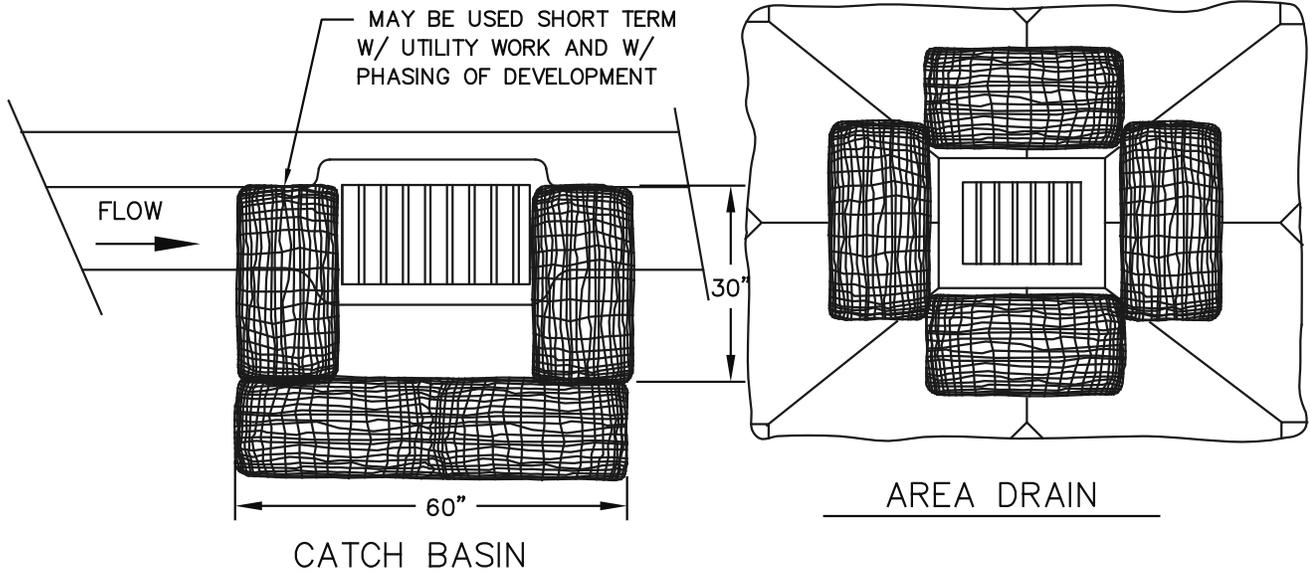
THIS METHOD OF INLET PROTECTION IS TO BE USED WHERE THE INLET DRAIN IS LOCATED IN A RELATIVELY FLAT UNPAVED AREA (SLOPE <5%).

THIS METHOD OF INLET PROTECTION SHALL NOT BE USED IN STREETS, TRAVELED AREAS, OR AREAS OF CONCENTRATED FLOW (DITCHES).

REVISIONS:
12/10/2013

FIELD DRAIN INLET PROTECTION

SCALE:	N.T.S.
DATE:	12/10/2013
APPROVED BY:	PAUL CHIU
STANDARD DRAWING	604



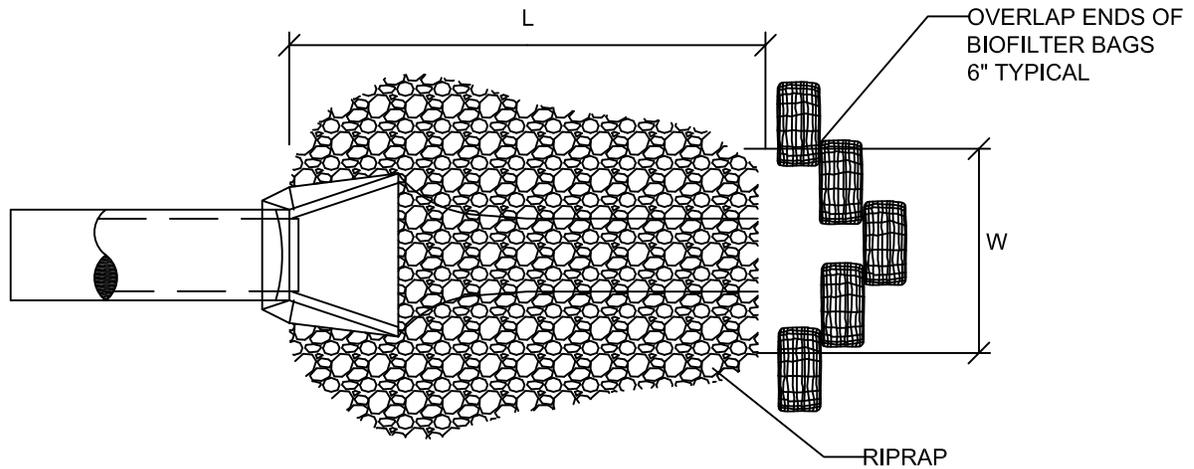
NOTES:

1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPES.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. WHEN USING 30" BIO-BAGS TO PROTECT A CATCH BASIN YOU MUST HAVE 4 BAGS AND THEY SHALL BE OVERLAPPED BY 6".

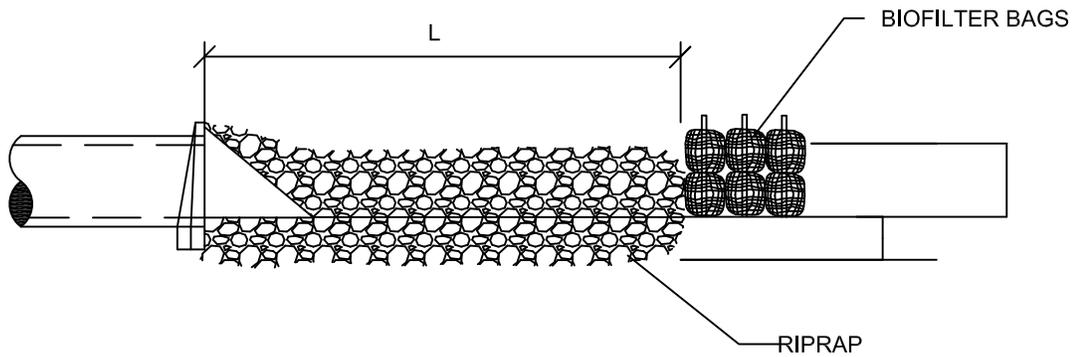
REVISIONS:
12/10/2013

INLET PROTECTION

SCALE:	N.T.S.
DATE:	04/04/2009
APPROVED BY:	PAUL CHIU
STANDARD DRAWING	605



PLAN VIEW



PROFILE

W = GREATER OF: DIAMETER + 6' OR 3x DIAMETER

L = GREATER OF: 12' OR 4x DIAMETER

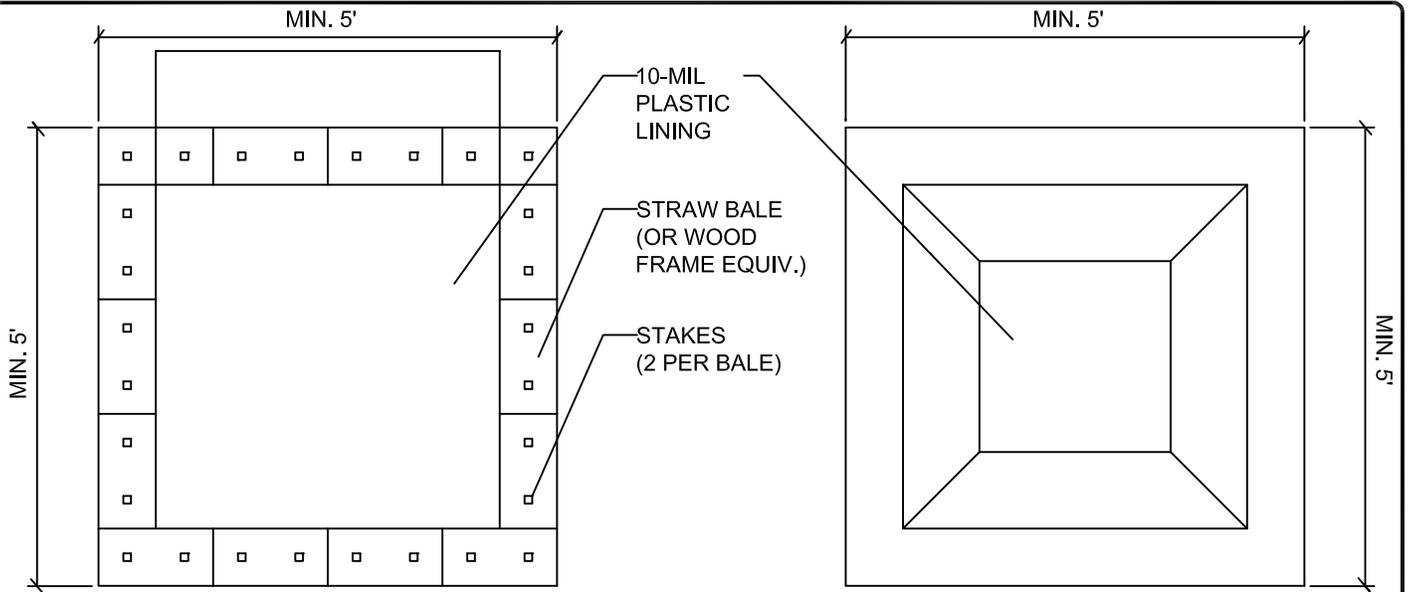
NOTES:

1. BIOFILTER BAGS REQUIRED ONLY WHEN DISCHARGING SEDIMENT-LADEN WATER.
2. STAKING OF BIOFILTER BAGS REQUIRED USING (2) 1"x2" WOOD STAKES OR APPROVED EQUAL PER BAG.

REVISIONS:

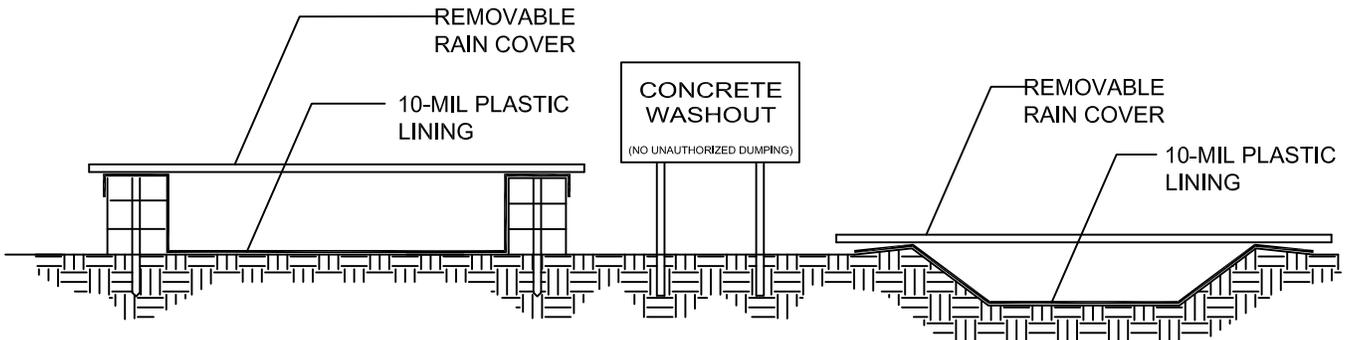
OUTLET PROTECTION

SCALE:	N.T.S
DATE:	01/10/2014
APPROVED BY:	
STANDARD DRAWING	606



**ABOVE-GROUND BASIN
PLAN VIEW**

**BELOW-GROUND BASIN
PLAN VIEW**



**ABOVE-GROUND BASIN
SECTION**

**BELOW-GROUND BASIN
SECTION**

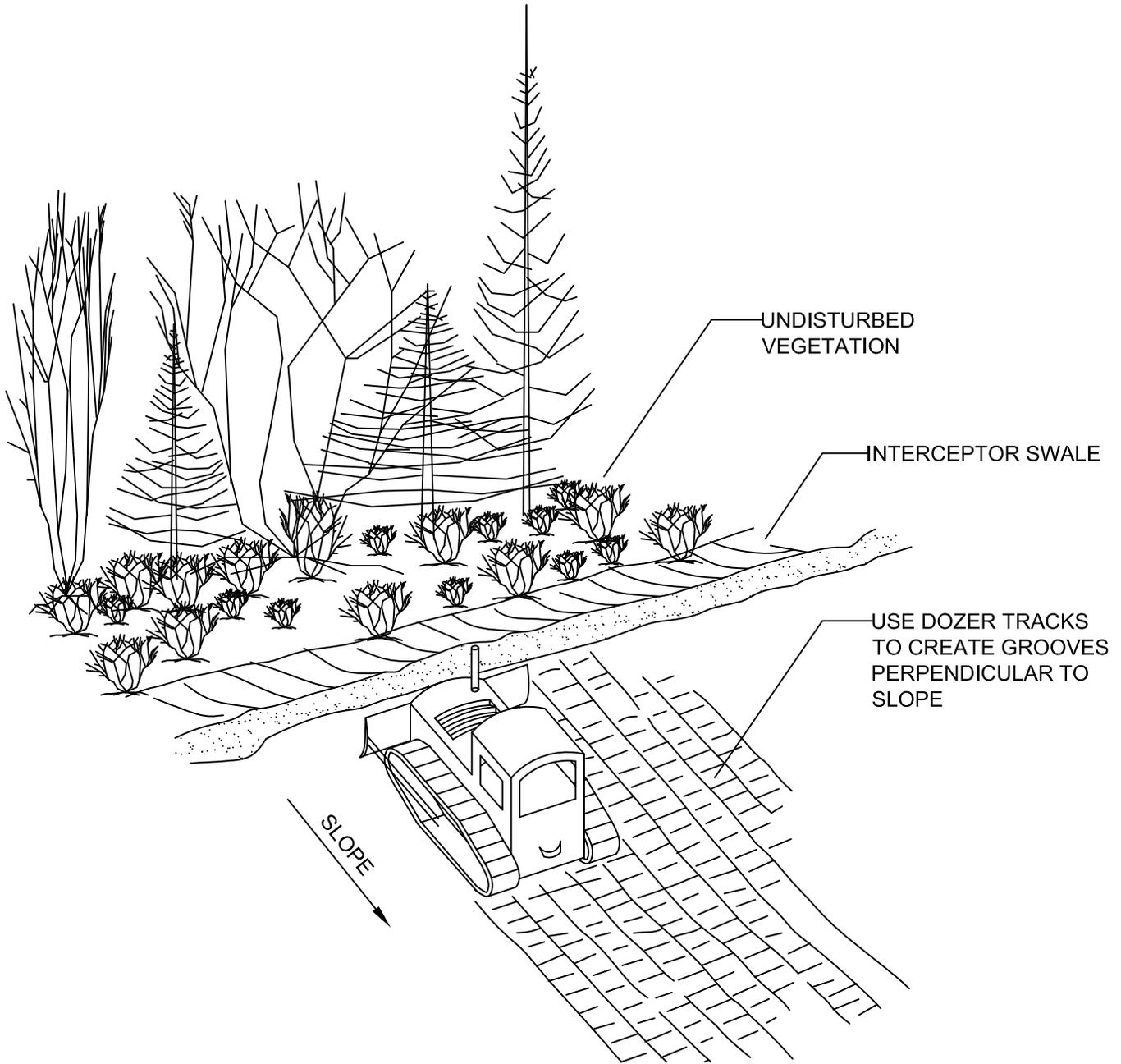
- NOTES:**
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
 2. "CONCRETE WASHOUT" SIGN TO BE LOCATED ADJACENT TO WASHOUT FACILITY.
 3. REMOVABLE RAIN COVER REQUIRED DURING WET WEATHER SEASON.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
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FAX: 503-537-1277

REVISIONS:	
	NA

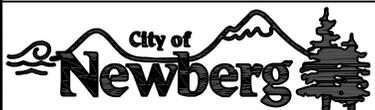
**CONCRETE WASTE
MANAGEMENT**

SCALE:	N.T.S
DATE:	01/10/2014
APPROVED BY:	
STANDARD DRAWING	607



BMP NEEDED AT MIN. AT TOE OF SLOPE

ALL SLOPES TO BE SEEDED



 PUBLIC WORKS ENGINEERING DIVISION

 414 E. FIRST STREET NEWBERG, OR 97132

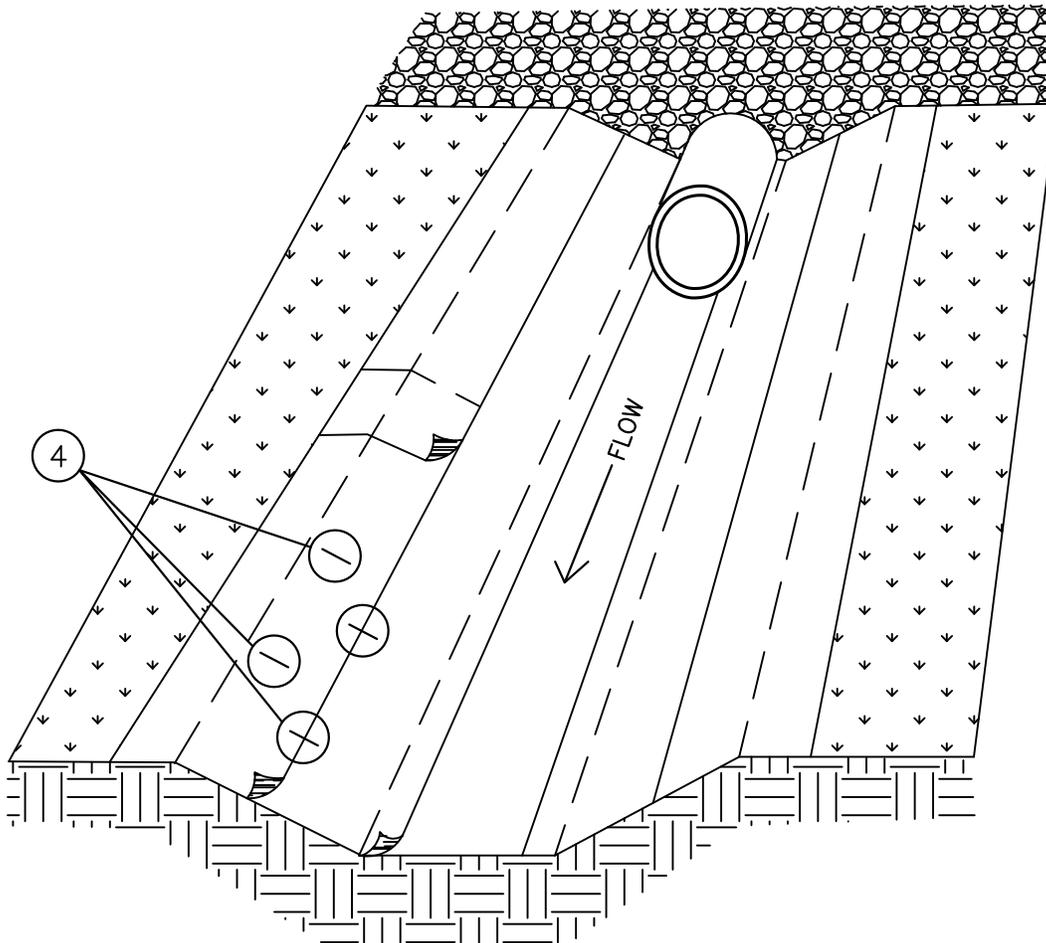
 PHONE: 503-537-1240

 FAX: 503-537-1277

REVISIONS:
NA

SURFACE ROUGHENING
CAT TRACKING

SCALE:	N.T.S
DATE:	01/10/2014
APPROVED BY:	
STANDARD DRAWING	608



CHANNEL INSTALLATION

NOTES:

1. INFORMATION PROVIDED IS MINIMUM REQUIREMENTS. MANUFACTURES REQUIREMENTS WHICH ARE MORE STRINGENT SHALL BE USED.
2. INSTALL MAT PARALLEL IN CENTER OF CHANNEL IN THE DIRECTION OF FLOW. FOR CULVERT OUTFALLS, PLACE MAT UNDER CULVERT OR RIP RAP A MINIMUM OF 12 INCHES.
3. IN CHANNEL BOTTOM, OVERLAP LENGTH ENDS A MINIMUM OF 12 INCHES.
4. LENGTH OF STAPLES SHALL BE DETERMINDED BY SOIL TYPE—COHESIVE SOIL USE 6 INCH, NON-COHESIVE SOILS 8-12 INCH.

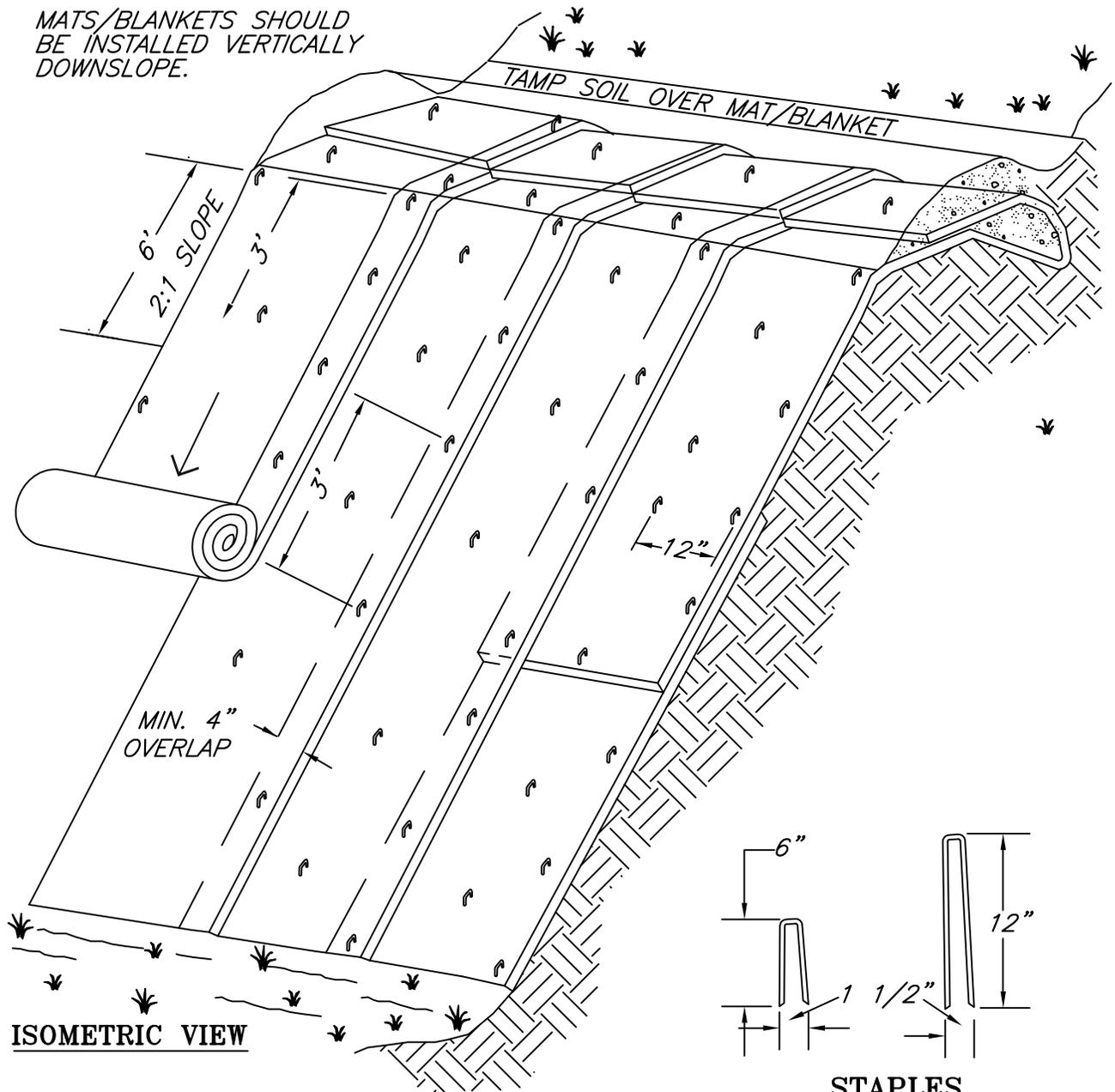
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 PUBLIC WORKS ENGINEERING DIVISION
 414 E. FIRST STREET NEWBERG, OR 97132
 PHONE: 503-537-1240
 FAX: 503-537-1277

REVISIONS:
NA

MATTING TRENCH
INSTALLATION

SCALE:	N.T.S
DATE:	01/10/2014
APPROVED BY:	
STANDARD DRAWING	609

MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.



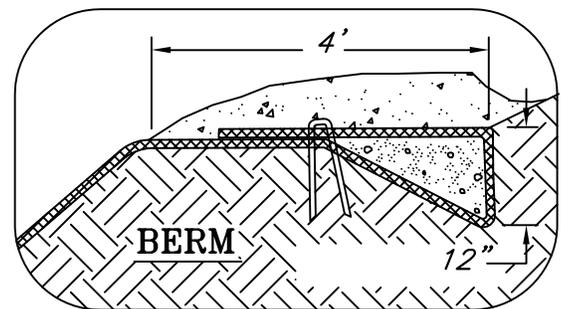
ISOMETRIC VIEW

STAPLES

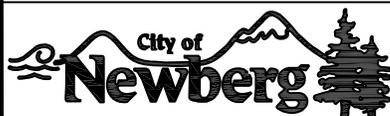
**TYPICAL SLOPE
SOIL STABILIZATION**

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. STAKING OR STAPLING LAYOUT PER MANUFACTURERS SPECIFICATIONS.



NOT TO SCALE



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REVISIONS:

NA

**MATTING-
SLOPE INSTALLATION**

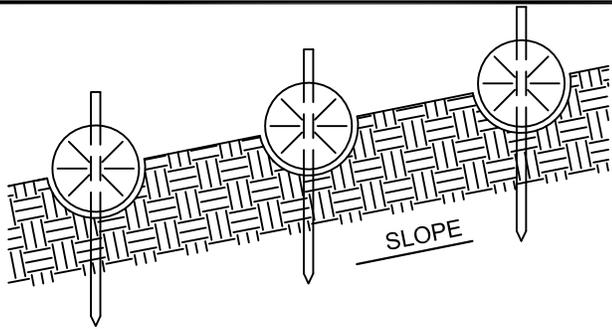
SCALE: N.T.S

DATE: 01/10/2014

APPROVED BY:

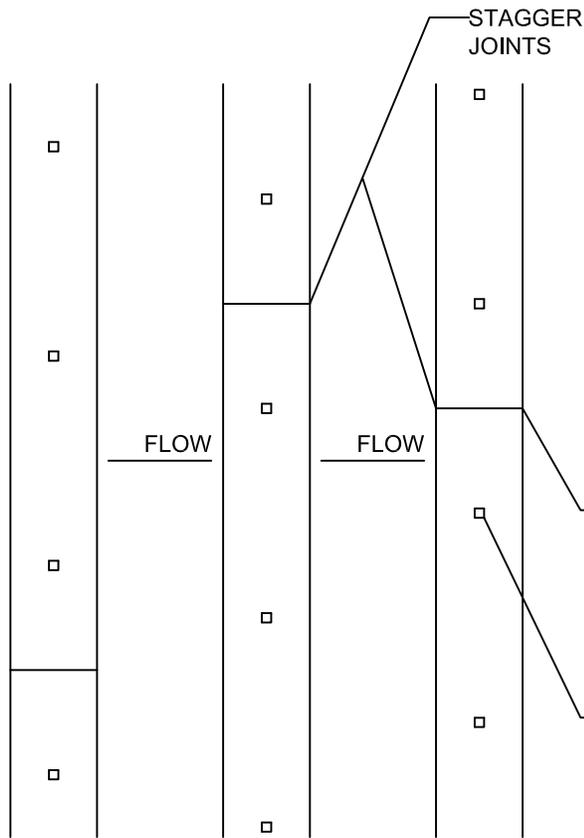
STANDARD DRAWING

610



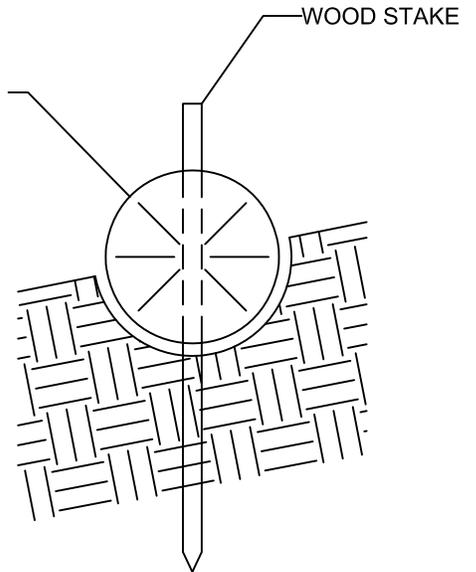
PLACE WATTLES ALONG SLOPE CONTOURS

PROFILE



PLAN VIEW

RICE STRAW, COCONUT FIBER (COIR), OR EXCELSIOR WATTLES



SECTION

TIGHTLY ABUT ADJACENT WATTLES

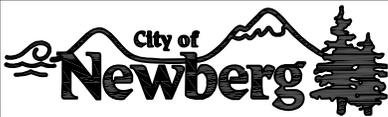
STAKE SPACING 4' O.C.

TABLE 3-12 BARRIER SPACING FOR GENERAL APPLICATION

% SLOPE	SLOPE	MAX SPACING ON SLOPE
<10%	<10:1	300 ft
10-15%	10:1 to 7.5:1	150 ft
15-20%	7.5:1 to 5:1	100 ft
20-30%	5:1 to 3.5:1	50 ft
30-50%	3.5:1 to 2:1	25 ft

NOTES:

1. STAKING SPECIFICATIONS:
 - A. 1"x2" WOODEN STAKES.
 - B. ADDITIONAL STAKES MAY BE INSTALLED ON DOWNHILL SIDE OF WATTLES ON STEEP SLOPES OR HIGHLY EROSIIVE SOILS.
2. SPACING IN ACCORDANCE WITH TABLE 3-12.



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REVISIONS:

NA

WATTLES/STRAW BALE

SCALE: N.T.S

DATE: 01/10/2014

APPROVED BY:

STANDARD DRAWING

611