CITY OF NEWBERG COUNCIL AGENDA
MARCH 21, 2011
7:00 P.M. MEETING
PUBLIC SAFETY BUILDING TRAINING ROOM (401 EAST THIRD STREET)

I. CALL MEETING TO ORDER*

II. ROLL CALL

III. PLEDGE OF ALLEGIANCE

IV. CITY MANAGER'S REPORT

V. PUBLIC COMMENTS
(30 minutes maximum, which may be extended at the Mayor's discretion, with an opportunity to speak for no more than 5 minutes per speaker allowed)

VI. CONSENT CALENDAR

Consider a motion approving **Resolution No. 2011-2936** adopting revised design standards for construction of public utilities.

VII. PUBLIC HEARINGS

1. Consider a motion approving **Resolution No. 2011-2937** approving Supplemental Budget #2 for fiscal year 2010-2011.
   (Legislative Hearing)

2. Consider a motion approving **Ordinance No. 2011-2736** amending the Development Code and Comprehensive Plan relating to street and access standards.
   (Legislative Hearing)

VIII. NEW BUSINESS

Consider a motion approving **Resolution No. 2011-2938** allowing deferral of System Development Charges payments during the year 2011.

IX. COUNCIL BUSINESS

X. ADJOURNMENT

*The Mayor reserves the right to change the order of items to be considered by the Council at their meeting. No new items will be heard after 11:00 p.m., unless approved by the Council.

INDEX OF ORDERS, ORDINANCES, AND/OR RESOLUTIONS:

ORDINANCE(S):
Ordinance No. 2011-2736 amending the Newberg Development Code and Comprehensive Plan relating to street and access standards.

RESOLUTION(S):
Resolution No. 2011-2936 adopting the revised standard design details for the construction of public utilities in the City of Newberg.
Resolution No. 2011-2937 adopting Supplemental Budget #2 for fiscal year 2010-2011 beginning July 1, 2010, and ending June 30, 2011.
Resolution No. 2011-2938 allowing an option for deferral of payments of SDCs for 90 days for new construction during 2011.

ACCOMMODATION OF PHYSICAL IMPAIRMENTS: In order to accommodate persons with physical impairments, please notify the City Manager's office of any special physical or language accommodations you may need as far in advance of the meeting as possible and no later than 48 hours prior to the meeting. To request these arrangements, please contact Norma Alley, City Recorder, at (503) 537-1283.

Council accepts comments on agenda items during the meeting. Fill out a form identifying the item you wish to speak on prior to the agenda item beginning and turn it into the City Recorder. The exception is land use hearings, which requires a specific public hearing process. The City Council asks written testimony be submitted to the City Recorder before 5:00 p.m. on the preceding Thursday. Written testimony submitted after that will be brought before the Council on the night of the meeting for consideration and a vote to accept or not accept it into the record.

City of Newberg Mission Statement:

The City of Newberg serves its citizens, promotes safety, and maintains a healthy community.

*The Mayor reserves the right to change the order of items to be considered by the Council at their meeting. No new items will be heard after 11:00 p.m., unless approved by the Council.

REQUEST FOR COUNCIL ACTION

DATE ACTION REQUESTED: March 21, 2011				
Order No. __	**Ordinance No.** __	**Resolution No. 2011-2936** XX	**Motion** ___	**Information** ___
SUBJECT: Adopt revised standard design details for the construction of public utilities in the City			**Contact Person (Preparer) for this Motion: Annette de Paz, City Surveyor** **Dept.: Public Works Engineering**	

RECOMMENDATION: Adopt **Resolution No. 2011-2936.**

EXECUTIVE SUMMARY: The Standard Design Details are drawings which show precise specifications for the construction of public improvements in the City of Newberg. These drawings are provided to private developers and their consultants and contractors for their construction plans and projects. All construction of public infrastructure in the City must conform to the specifications shown in the Standard Design Details except when deviation from the standard is approved by the Public Works Director under extenuating circumstances.

The City Council adopted Standard Drawings by Resolution No. 2000-2254 in July of 2000. The Resolution authorized the City Engineer to adapt and amend the drawings as he/she deems necessary and prudent, and required staff to request that the Council affirm the Standard Drawings if they are substantively changed, or when ten years have passed.

The Standard Drawings have been collectively modified and updated over the past decade such that:

- the Standard Drawings are now called Standard Design Details;
- the Details have been re-ordered and re-numbered;
- the Details have been re-drafted using industry-standard drafting software to improve appearance and clarity.

The Standard Drawings have been individually modified, updated, deleted, or created on an as-needed basis over the past decade:

- to reflect changing industry standards and available parts and materials;
- to improve clarity of requirements through the addition of text and labeling;
- to eliminate construction practices no longer needed or allowed;
- to provide specifications for new requirements or for existing requirements which had not been previously specified in the Design Details.

Staff is requesting that the Council affirm by Resolution the current set of Standard Design Details and that the Council authorize the Public Works Director to adapt and amend the Details as he/she deems prudent. Subsequently, staff shall request that the Council affirm the Standard Design Details if they are substantively changed, or when ten years have passed.

FISCAL IMPACT: None.

STRATEGIC ASSESSMENT: Under the authority provided by the City Council, the Public Works Director shall continue to maintain Standard Design Details which represent industry-standard best practices, and which provide clear guidance to private developers for meeting City requirements, for the construction of public infrastructure within the City of Newberg.

RESOLUTION NO. 2011-2936

A RESOLUTION ADOPTING THE REVISED STANDARD DESIGN DETAILS FOR THE CONSTRUCTION OF PUBLIC UTILITIES IN THE CITY OF NEWBERG

RECITALS:

1. Since their adoption by the City Council with Resolution No. 2000-2254 in July, 2000, the City's Engineering staff has utilized the City's Standard Drawings in the design of public infrastructure and has required private developers to utilize the drawings in the design and construction of public infrastructure in their projects.

2. As authorized by Resolution No. 2000-2254, the City Engineer's staff has updated continually the Standard Drawings to reflect the progression of the state of the art of engineering practice and to enhance the clarity of requirements for communication to private developers.

3. The Standard Drawings are currently referred to as the Standard Design Details.

4. The City Engineer, Public Works Director, or his/her designee has reviewed and approved each change at the time the change was made. The Standard Design Details are deemed by the current Public Works Director to be accurate, complete, and ready for use by staff and private developers constructing public improvements.

5. Resolution No. 2000-2254 requires staff to request the Council to affirm the standard drawings when they are substantively changed, or when ten (10) years have passed.

6. The differences between the Standard Design Details and the Standard Drawings are listed in Exhibit "A". The Standard Design Details are included as Exhibit "B". The Standard Drawings adopted by Resolution No. 2000-2254 are included as Exhibit "C". Exhibits "A", "B", and "C" are hereby attached and by this reference incorporated.

THE CITY OF NEWBERG RESOLVES AS FOLLOWS:

1. That the Standard Design Details included herein as Exhibit "B" are adopted as the current standards for the construction of public infrastructure in the City of Newberg. Exhibit "B" is hereby adopted and by this reference incorporated.

2. That future changes, amendments and new drawings may be authorized by the Public Works Director as he/she deems necessary and prudent.

3. That when the Standard Design Details are once again substantively changed, or when ten (10) years have passed, the staff will once again request the Council to affirm the Standard Design Details, as they are then constituted.

- **EFFECTIVE DATE** of this resolution is the day after the adoption date, which is: March 22, 2011.

ADOPTED by the City Council of the City of Newberg, Oregon, this 21st day of March 2011.

_____
Norma I. Alley, City Recorder

ATTEST by the Mayor this 24th day of March 2011.

_____
Bob Andrews, Mayor

LEGISLATIVE HISTORY

By and through _____ Committee at __/__/____ meeting. Or, _X_ None.
(committee name) *(date)* *(check if applicable)*

EXHIBIT "A" TO
RESOLUTION NO. 2011-2936

Differences between Standard Drawings (2000) and Standard Design Details (2011)

General Changes:

- Name changed from "Standard Drawings" to "Standard Design Details"
- Details have been re-ordered and re-numbered
- Details have been re-drafted using industry-standard drafting software
- Details have been re-drafted to improve appearance and clarity
- Some detail dimensions have been slightly adjusted to reflect currently available parts and materials
- More elaborate text and labeling has been added to clarify requirements

Specific Changes:

- Details which have been eliminated
  - 302 Thrust Blocking
  - 303 Vertical Thrust Blocking
  - 304 Straddle Block
  - 316 Reduced Pressure Backflow Device (Above Ground)
  - 317 Reduced Pressure Backflow Device (Below Ground)
  - 405 Valley Gutter Catch Basin
  - 519 Pavement Seal Coat
  - 526 Street Planting

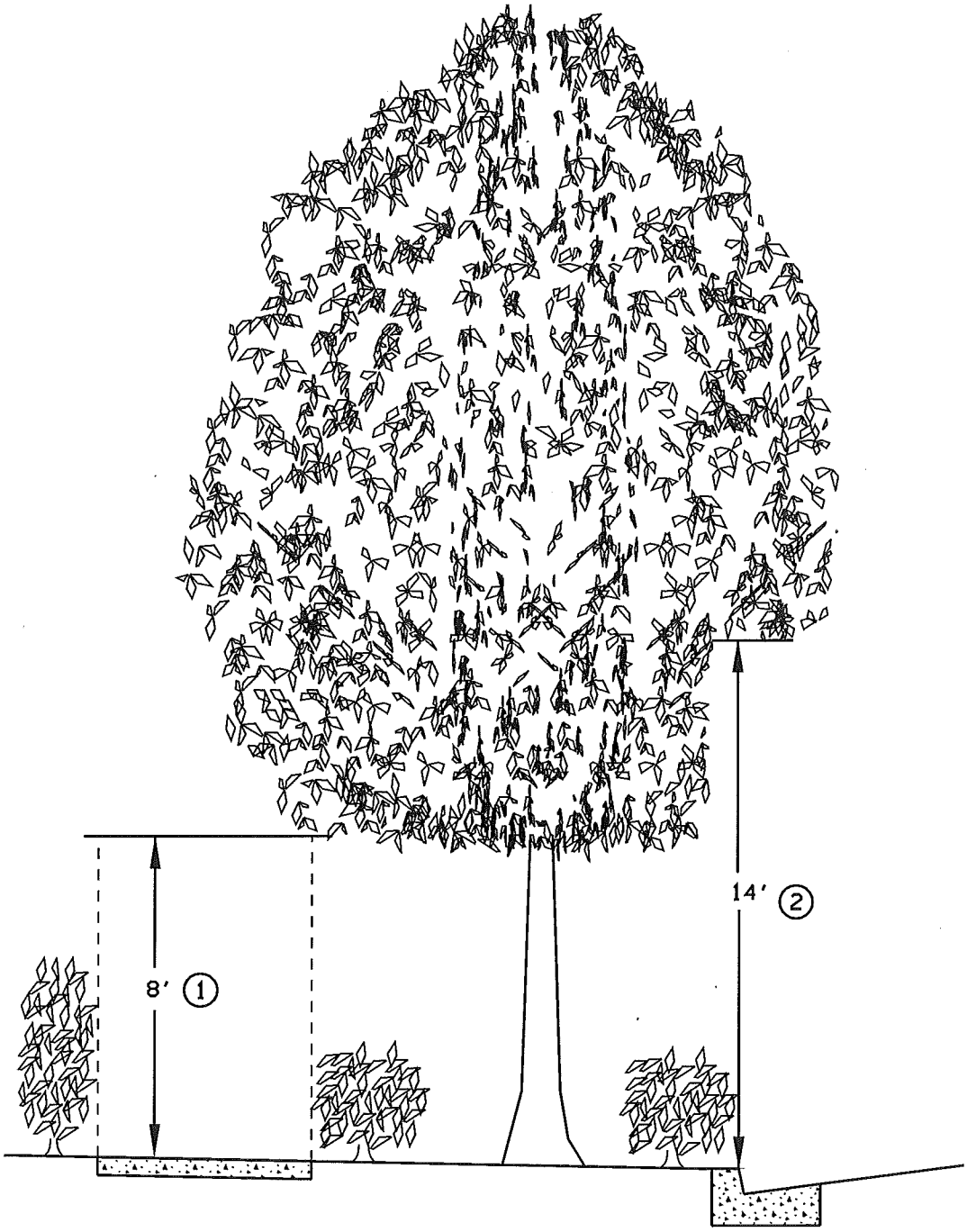
- New Details which have been added
  - 105 Residential Fences, Walls, and Vision Clearance Areas
  - 106 Fences and Walls Interior Lots
  - 107 Tree Grate and Frame
  - 212 Double WYE Service Branch
  - 306 Joint Restraint
  - 318 Water Service for 3" and Larger
  - 319 Trench Dam
  - 408 Alternate Catch Basin
  - 409 Oversized Pelican Catch Basin

410 Supersized Pelican Catch Basin
411 Storm Water Manhole Frame and Cover
516B Street Barricade Post Support Detail
524B Typical Sign Assembly
525B Standard Signpost Concrete Applications
529 Approved Fire Department Turnarounds
601 Construction Entrance
602 Silt Fence
603 Straw Bale Barrier
604 Field Inlet Protection
605 Inlet Protection

- Details which have been substantively changed to reflect current industry standards
  - 102 Utility Service Locations
  - 204 48" Standard Manhole
  - 205 Shallow Manhole
  - 206 Inside Drop Manhole
  - 302 Water Tapping Sleeves
  - 307 Standard ¾" and 1" Water Service
  - 308 Double Water Service
  - 309 Standard 1 ½" and 2" Water Service
  - 310 Water Line Crossing
  - 314 1" Combination Air-Vacuum Release Assembly
  - 505 Curb Ramp Locations
  - 506 Sidewalk Ramp Type "A" Sidewalk
  - 507 Sidewalk Ramp Type "B" Sidewalk
  - 516A Street Barricades
  - 517 Trench Paving
  - 523 Sign Clearances
  - 524A Street Sign and Post Locations

STANDARD DESIGN DETAILS 2011

City of Newberg
Standard Design Details



① MAINTAIN 8' OF CLEARANCE BETWEEN SIDEWALK AND TREE LIMBS. NO OBSTRUCTIONS MAY PROTRUDE INTO SIDEWALK TRAVEL AREA.

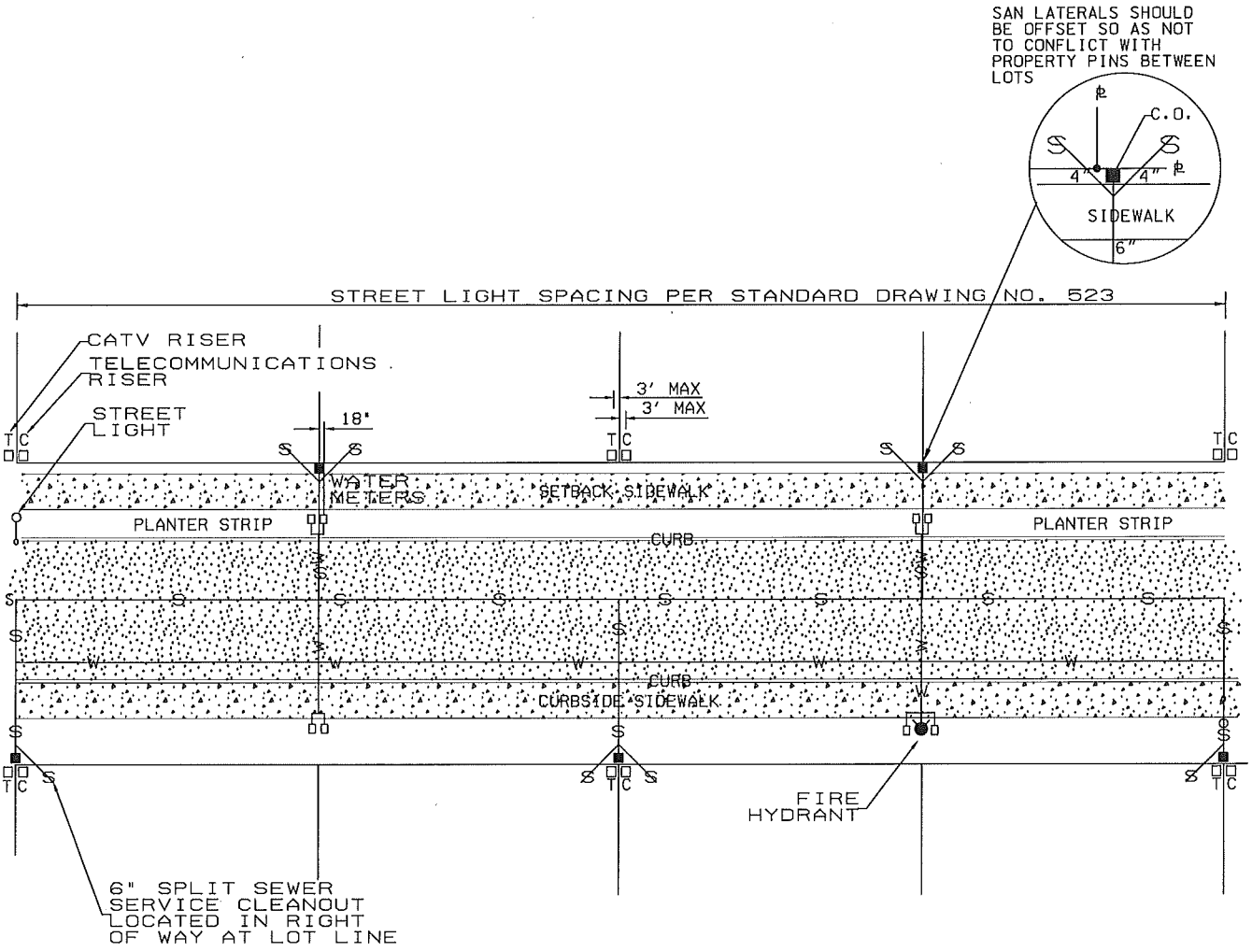
② MAINTAIN 14' OF CLEARANCE BETWEEN STREET GRADE AND TREE LIMBS.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

TREE & SHRUB CLEARANCES

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	101



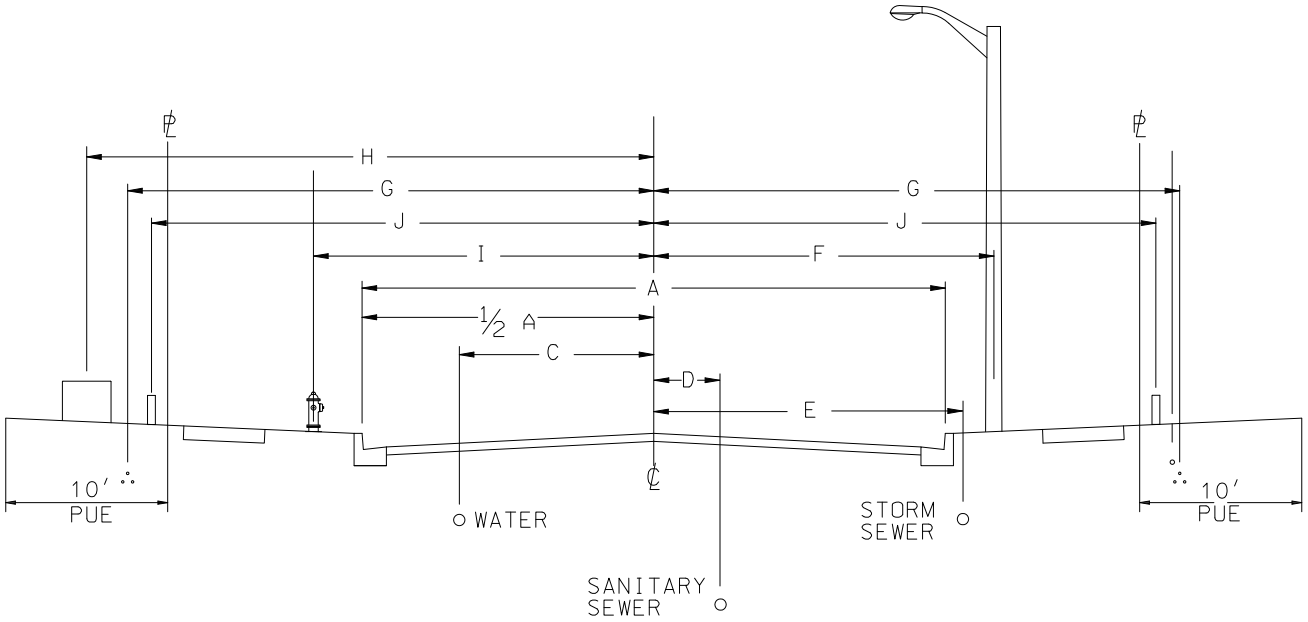
NOTES
1. ALL ABOVE GROUND FIXTURES ARE TO BE ALIGNED WITH PROPERTY LINE WITHIN TOLERANCES SHOWN.
2. VARIATION FROM THIS STANDARD ALLOWED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
3. THE LOCATION OF UNDERGROUND UTILITIES IS SHOWN ON STANDARD DRAWING 103, UTILITIES PLAN.

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

REVISIONS:
11-22-2010

UTILITY SERVICE LOCATIONS

SCALE:	N.T.S.
DATE:	May 2007
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
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′

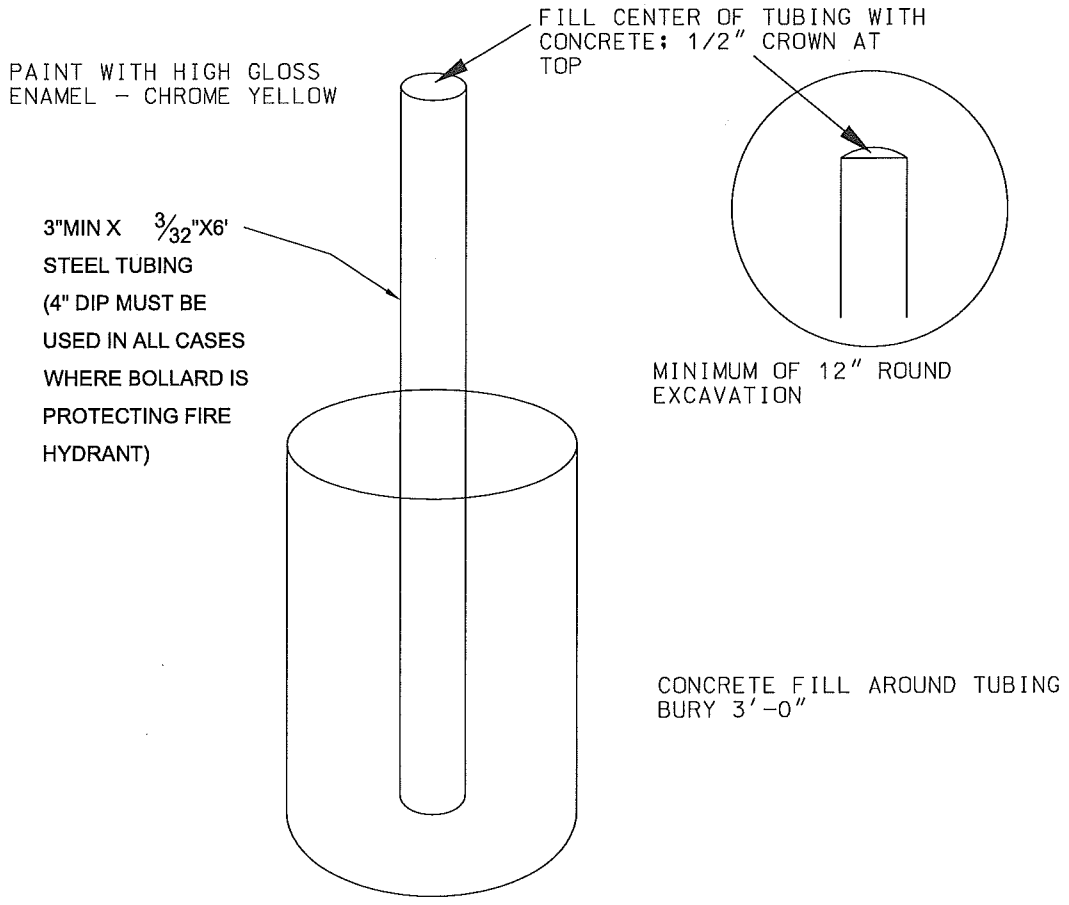
* STORM SEWER LOCATION TO MATCH PELICAN STYLE INLETS. LOCATION VARIES WITH PIPE SIZE.

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

REVISIONS:
11-22-2010
2-25-2011

UTILITIES PLAN

SCALE: N.T.S.
DATE: May 2007
APPROVED BY: D. Danlcle
STANDARD DRAWING 103

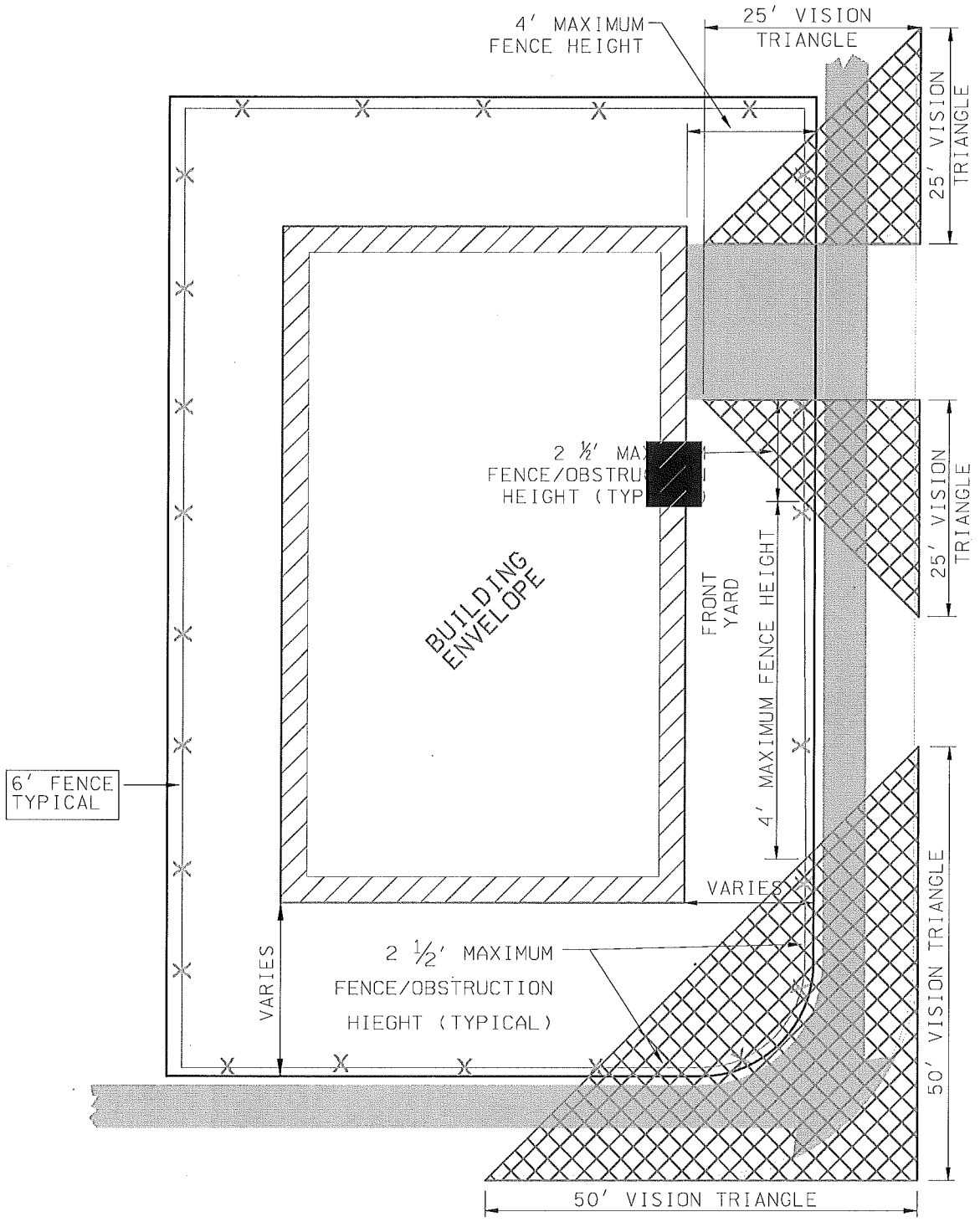


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132
PHONE 503-537-1240 - FAX 503-537-1277

REVISIONS:

BOLLARD

SCALE:	N.T.S.
DATE:	JULY 2004
APPROVED BY:	D. Danicic
STANDARD DRAWING	104



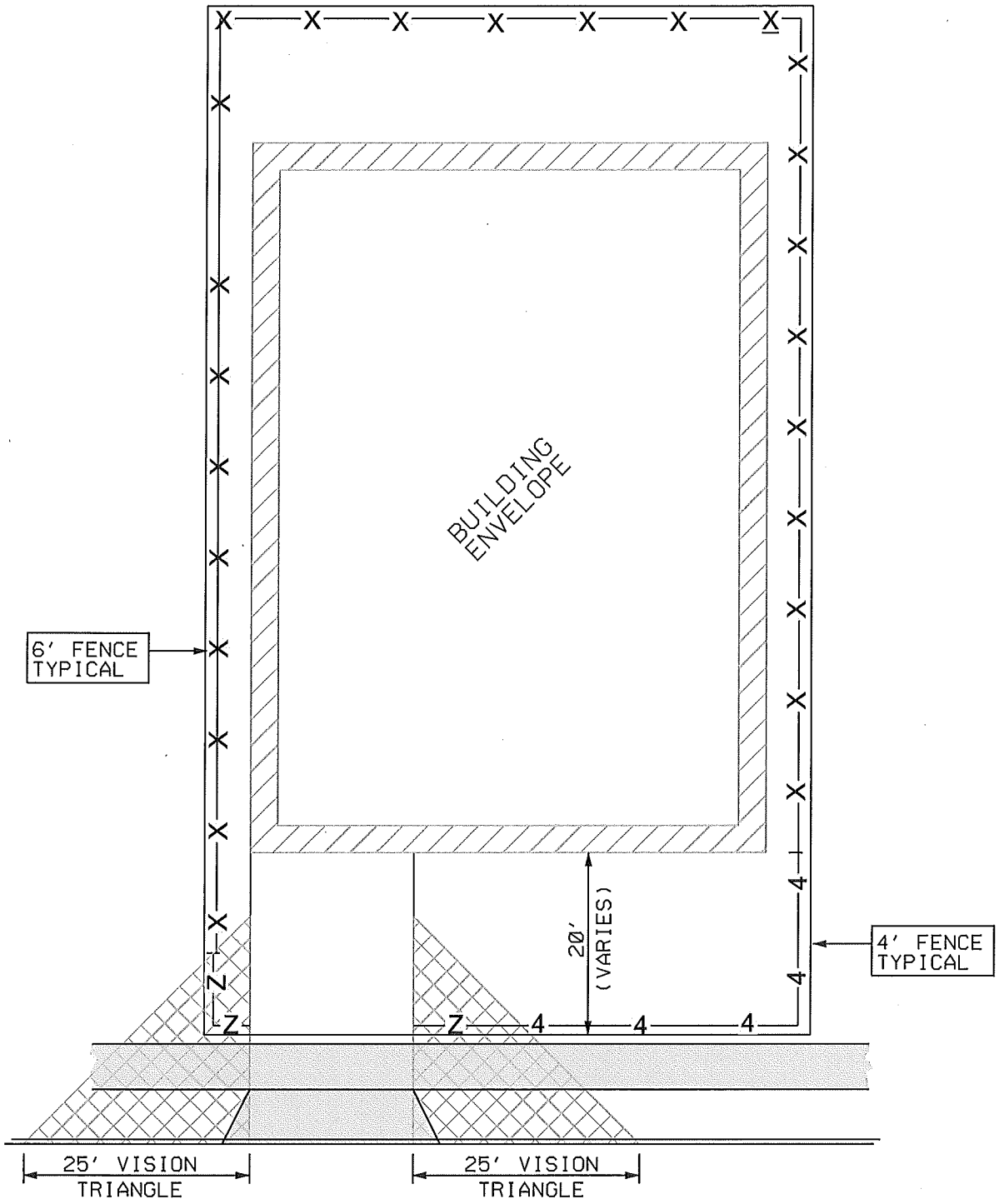
ALL FENCES AND/OR OBSTRUCTIONS WITHINVISION TRIANGLES SHALL BE A MAXIMUM OF 30" (2 ½')HIGH.

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

REVISIONS:

RESIDENTIAL FENCES WALLS AND VISION CLEARANCE AREAS

SCALE: N.T.S.
DATE: May 2007
APPROVED BY: D.Danicic
STANDARD DRAWING 105



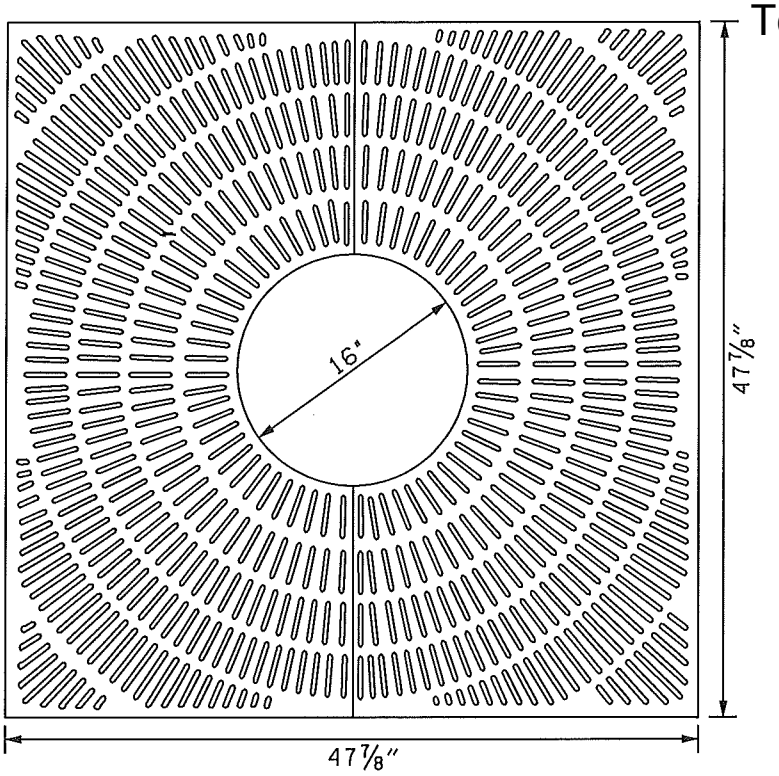
ALL FENCES WITHIN VISION TRIANGLES SHALL BE A MAXIMUM OF 30" (2½') IN HEIGHT

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

FENCES AND WALLS INTERIOR LOTS

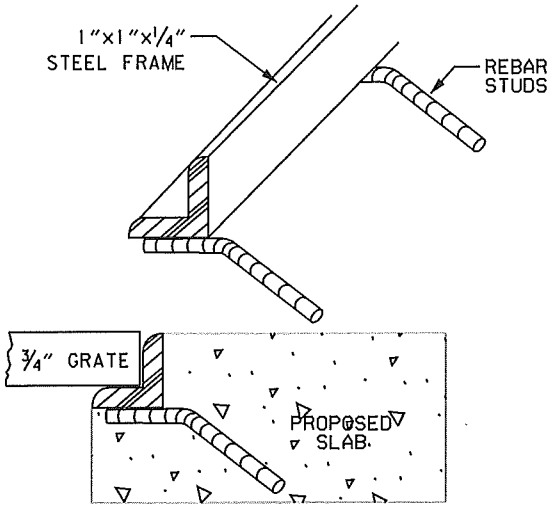
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	106



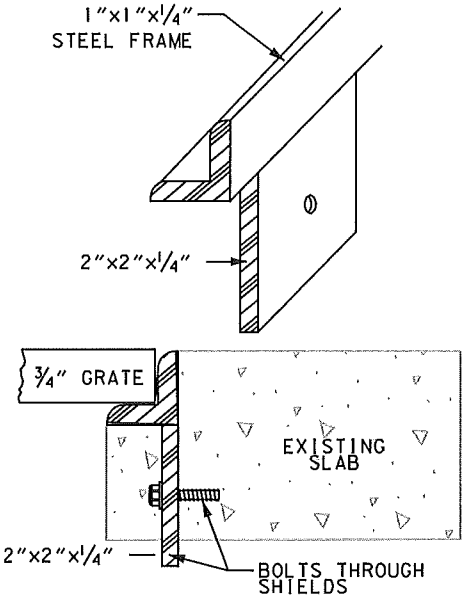
48" "STA" TREE GRATE:

- 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)

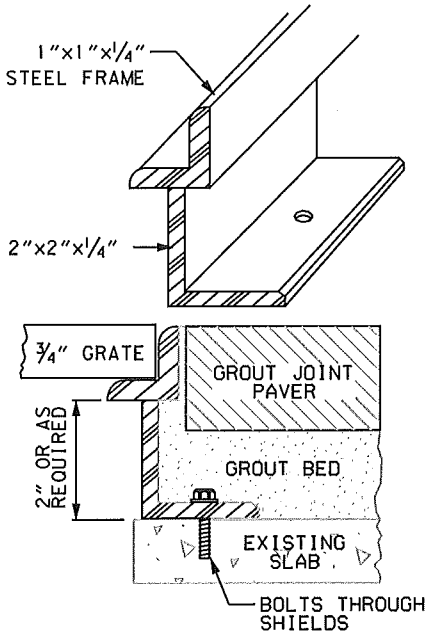
STYLE "CIP" (NEW SUB-SLAB, SAND BED)



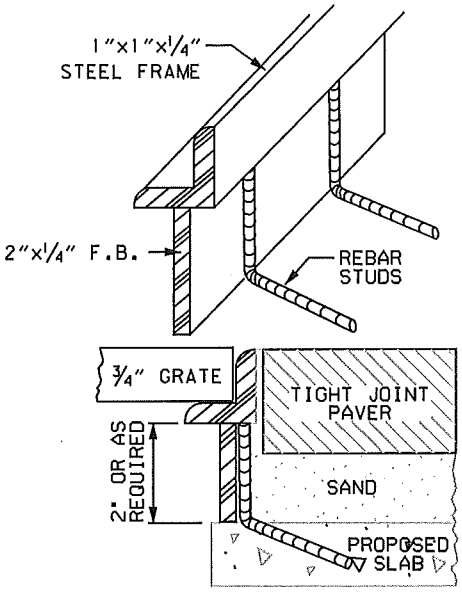
STYLE "RF" (EXTG. SLAB)



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



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



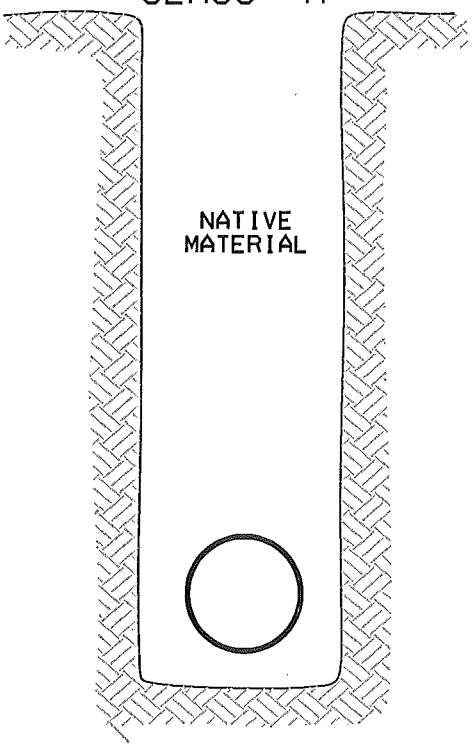
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

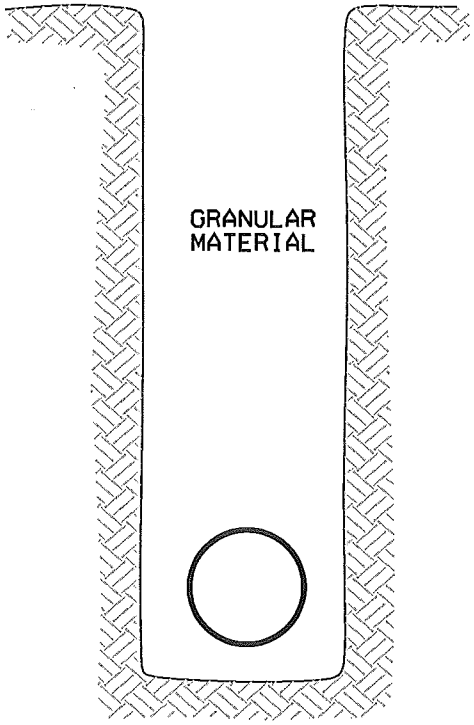
TREE GRATE AND FRAME

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	107

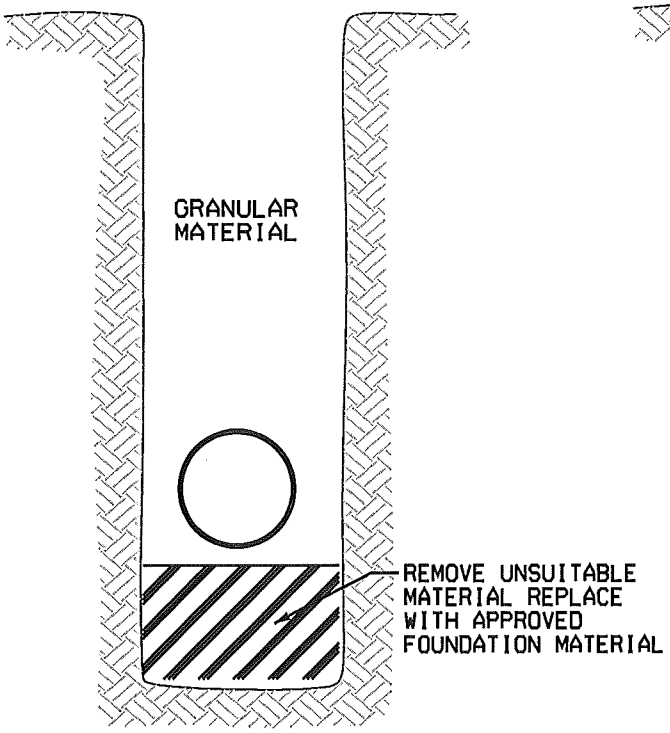
CLASS "A"



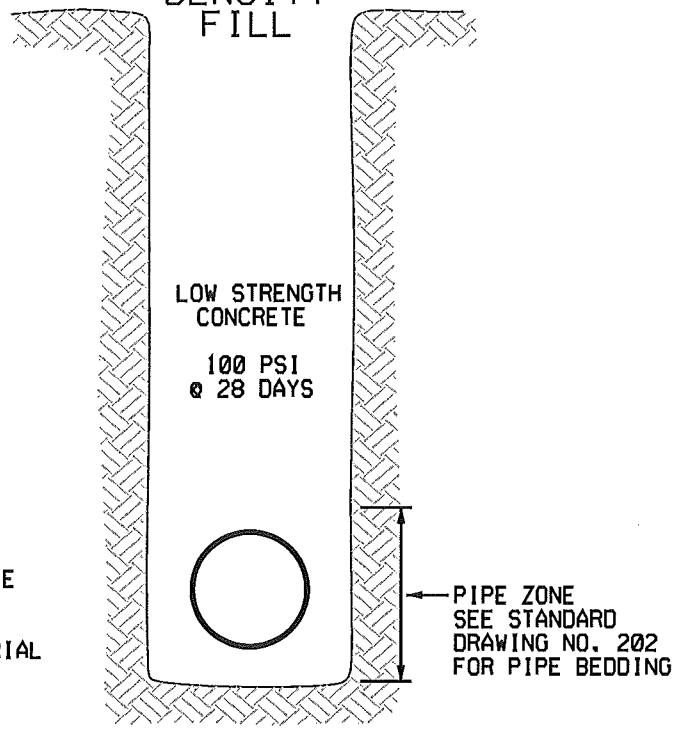
CLASS "B"



CLASS "D"



"CDF"
CONTROLLED
DENSITY
FILL



NOTES

1. COMPACT BACKFILL TO NOT LESS THAN 95% RELATIVE DENSITY.

2. INITIAL COMPACTION OF BACKFILL OVER P.V.C. PIPE, TO 3 FEET OVER TOP OF PIPE, SHALL BE 85% RELATIVE DENSITY.

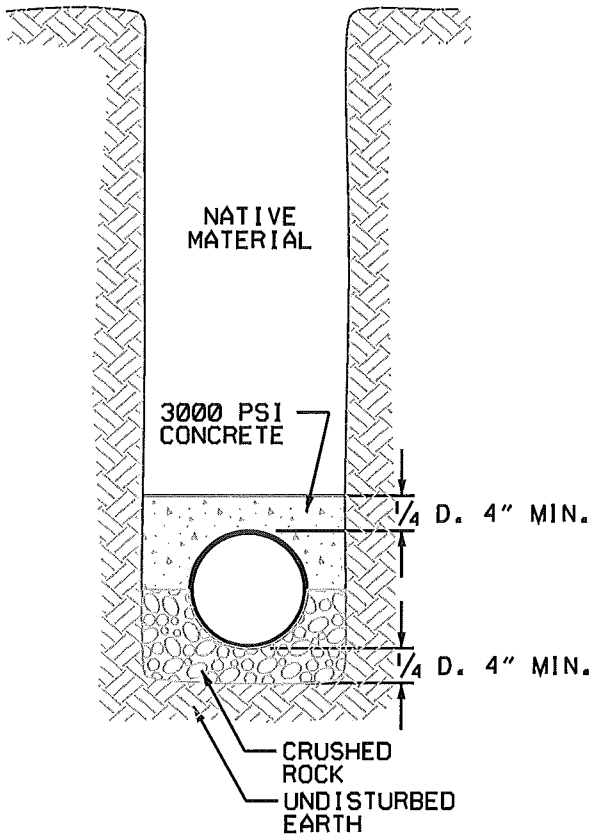
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

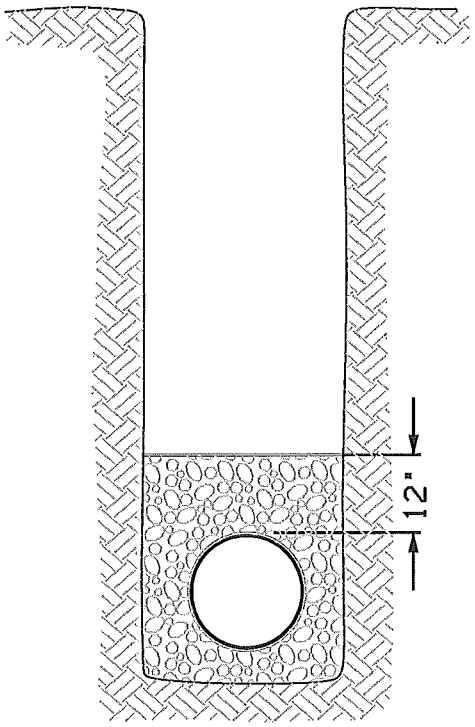
TRENCH BACKFILL

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	201

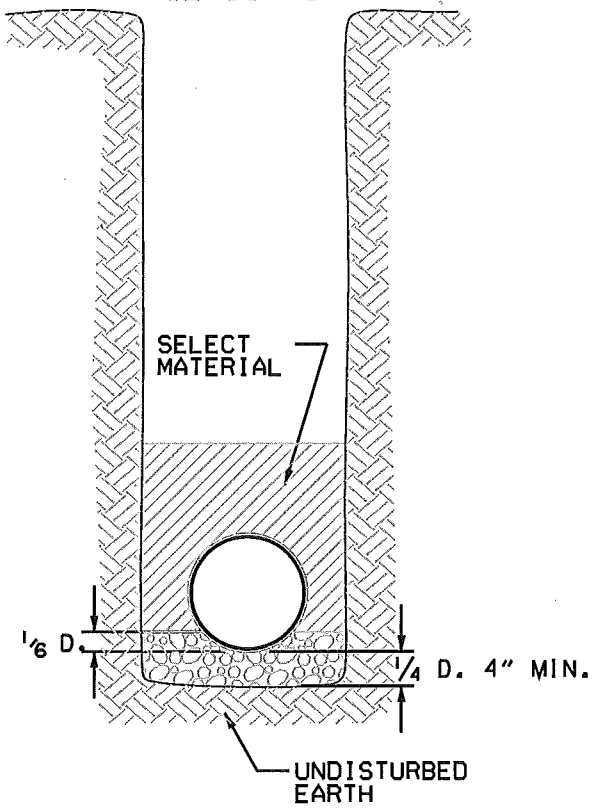
CLASS "A"



CLASS "B"



CLASS "C"



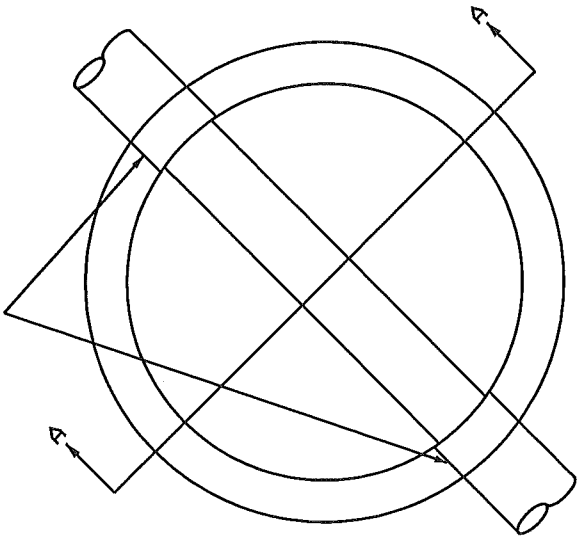
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

PIPE BEDDING

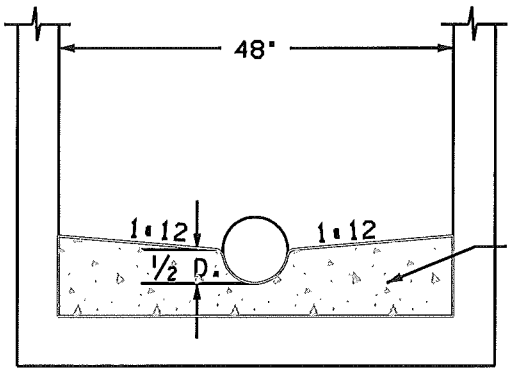
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	202

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

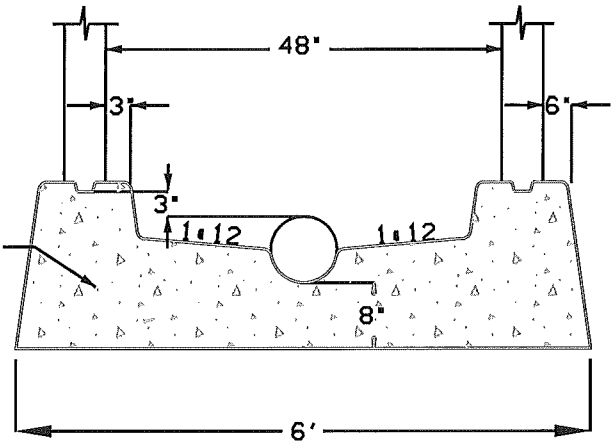
APPLY LIGHT BROOM FINISH TO INSIDE OF BASE



3000 PSI CONCRETE

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

PRECAST BASE



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

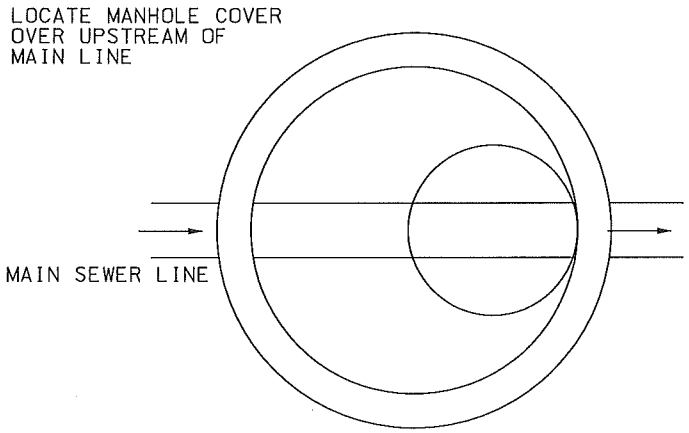
POURED IN PLACE BASE

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

MANHOLE BASE

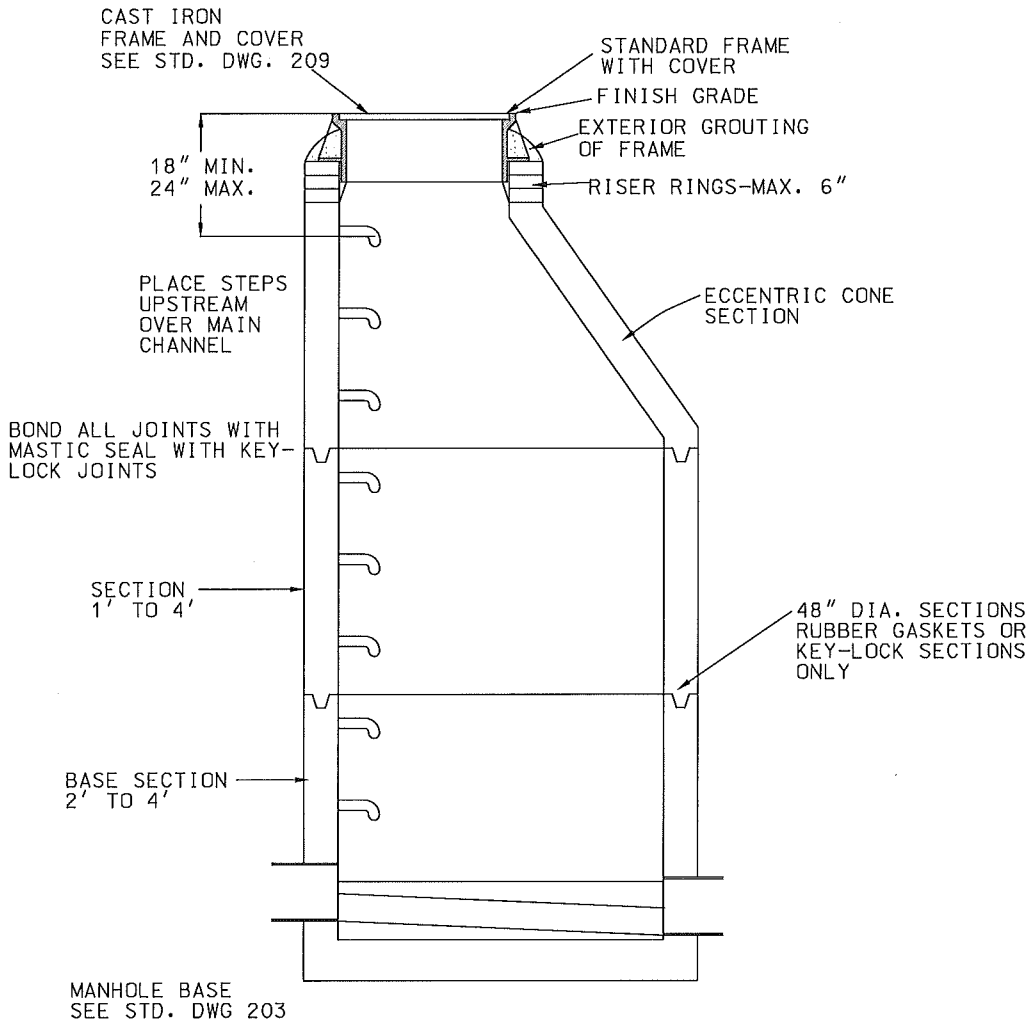
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	203



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 CONSRUCTED 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"



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

REVISIONS:
12/28/07

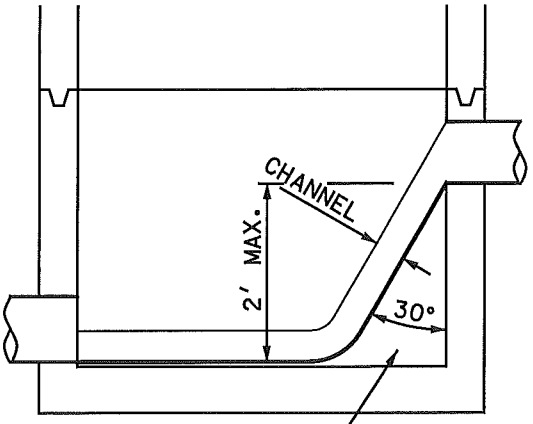
48" STANDARD MANHOLE

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

NOTES

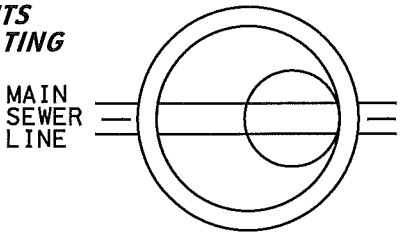
1. STANDARD MANHOLE TO BE USED FOR PIPES 18" AND LESS.
2. PRECAST CONCRETE STRUCTURES SHALL HAVE STRENGTH OF 4000 PSI.
3. STANDARD MANHOLE DEPTH = 8' FROM TOP OF FRAME TO INVERT.
4. LATERAL LINES TO MATCH TOP OF INLET PIPE AT MANHOLE.
5. ALL INTERIOR JOINTS AND CONNECTIONS SHALL BE WATER TIGHT, AND GROUTED WITH NON-SHRINK GROUT.
6. ALL MANHOLES SHALL BE VACUUM TESTED PRIOR TO ACCEPTANCE.
7. **IF END OF LINE MANHOLE, 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"

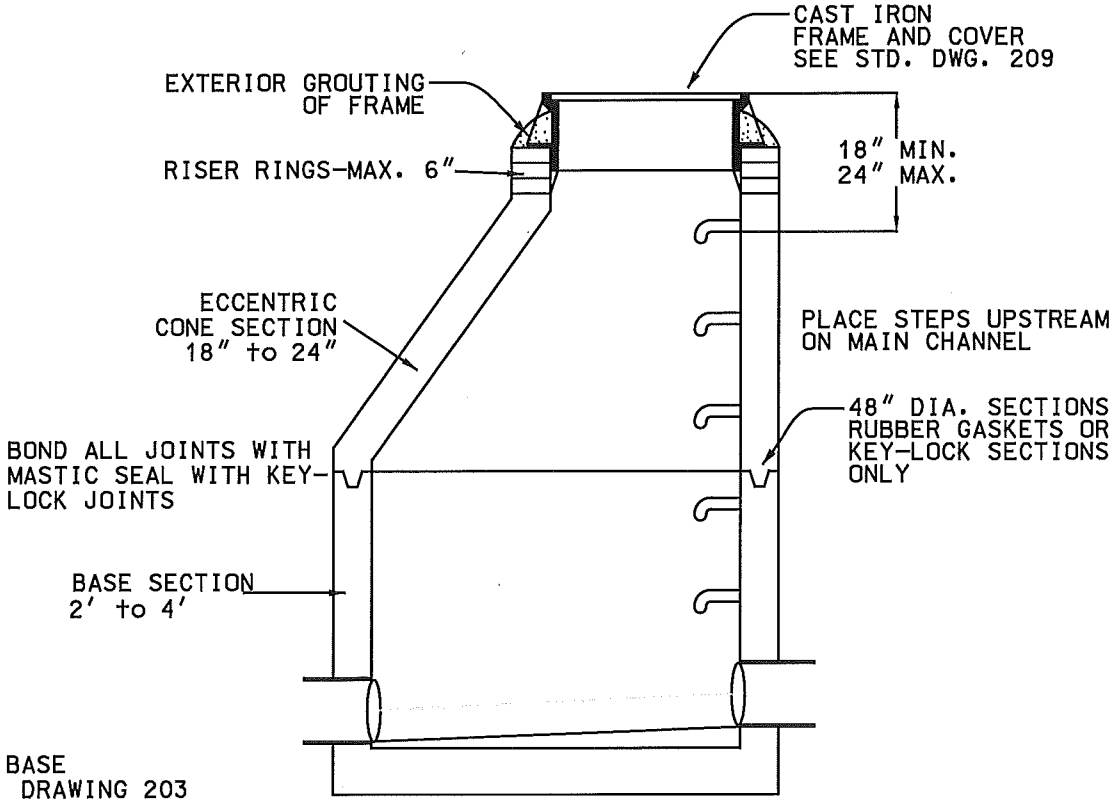


FORM CHANNEL AND SLIDE WITH GROUT. SMOOTH SURFACE FINISH SIMILAR TO CONCRETE PIPE.

BEAVER SLIDE



LOCATE MANHOLE COVER UPTREAM OVER MAIN LINE



MANHOLE BASE
SEE STD. DRAWING 203

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

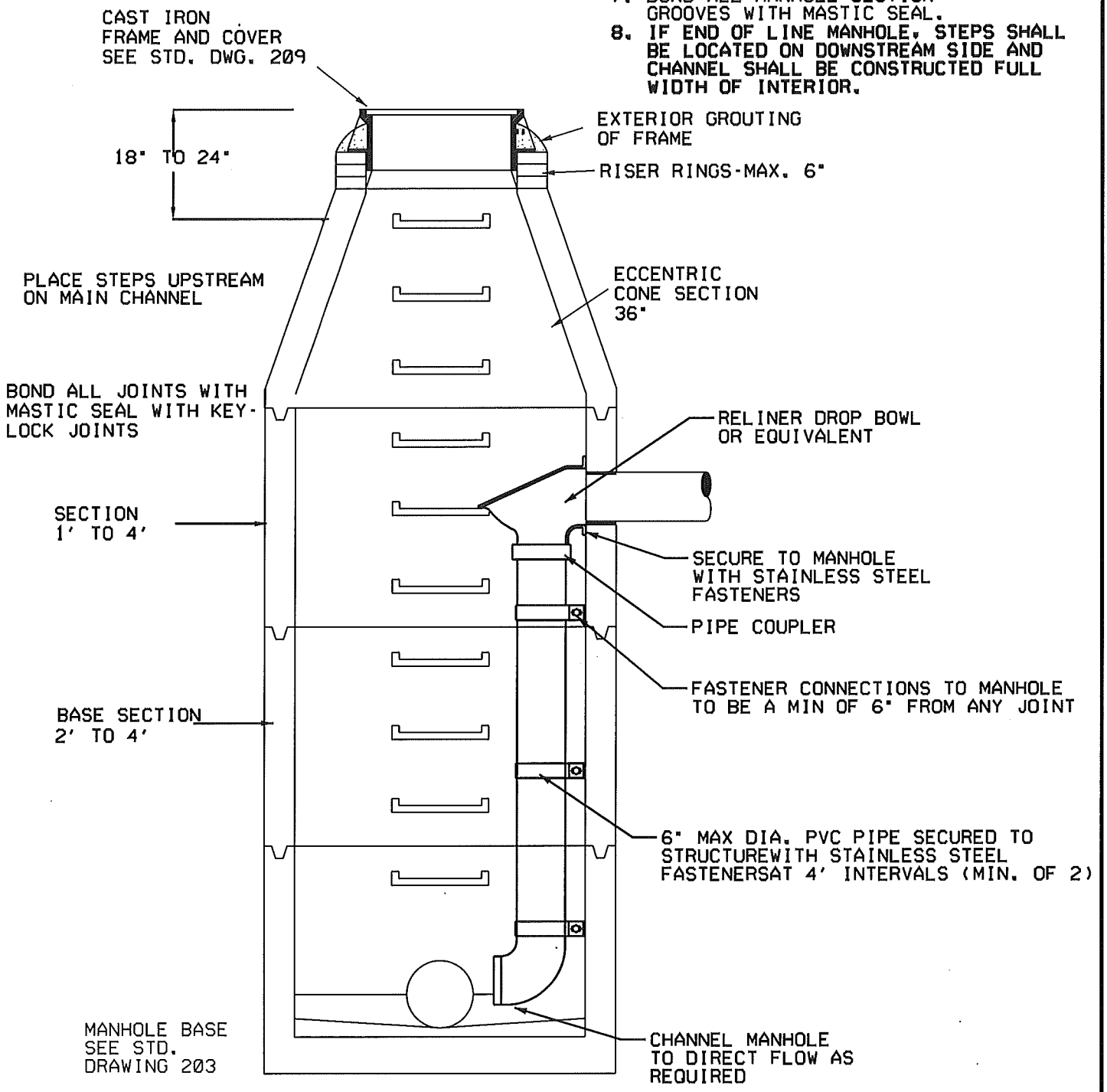
REVISIONS:
12/28/07

SHALLOW MANHOLE

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
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.**



City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

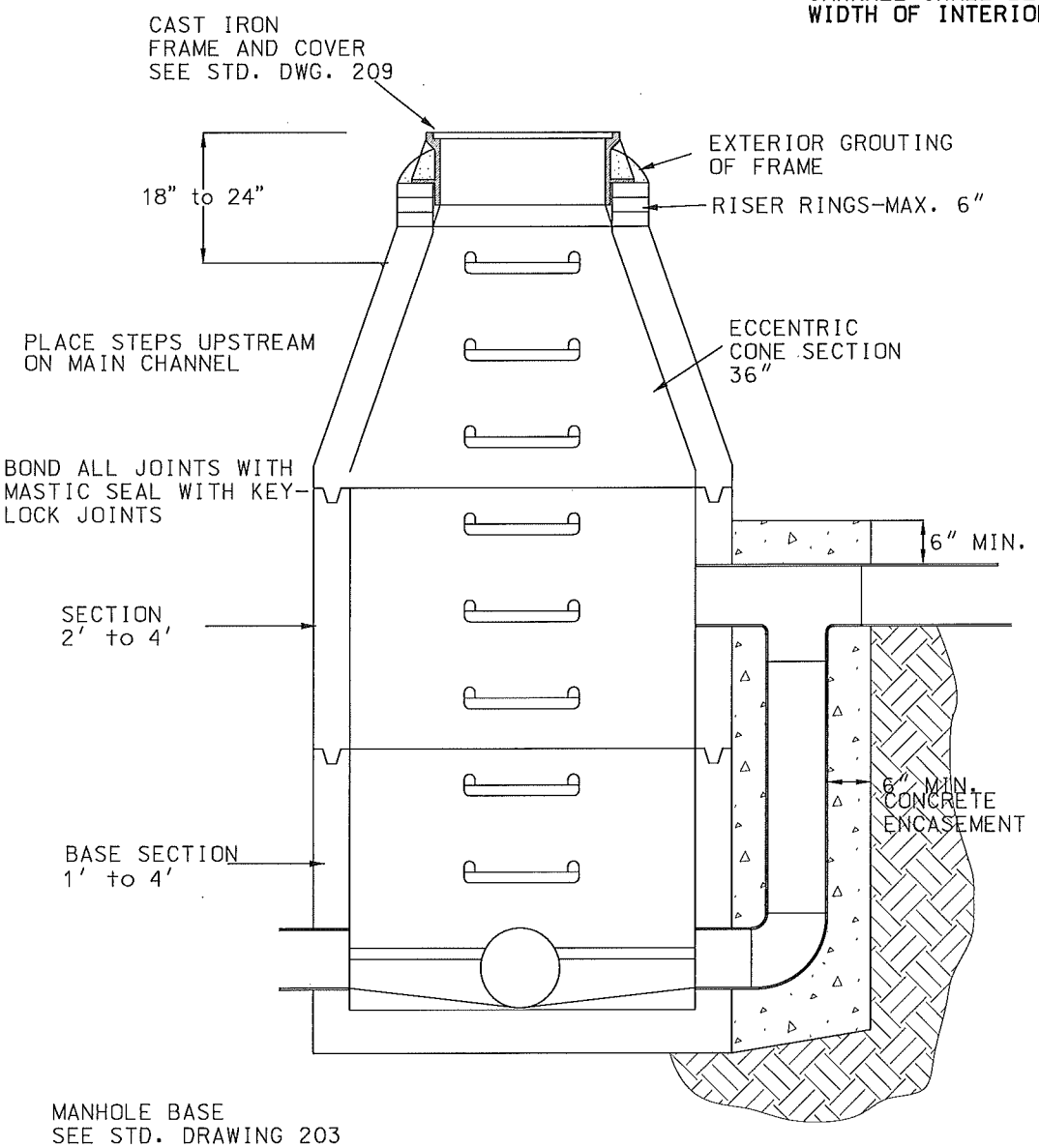
REVISIONS:

INSIDE DROP MANHOLE

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

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 CAHNNEL SHALL BE CONSTRUCTED FULL WIDTH OF INTERIOR.**



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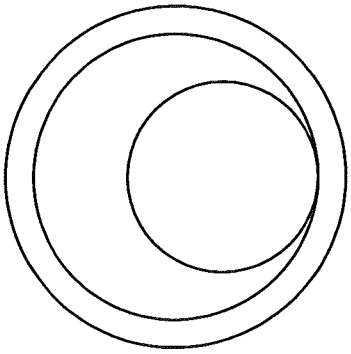
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132
PHONE 503-537-1240 - FAX 503-537-1277

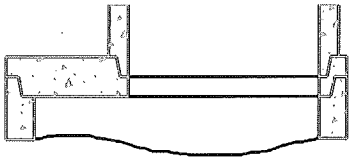
REVISIONS:

OUTSIDE DROP MANHOLE

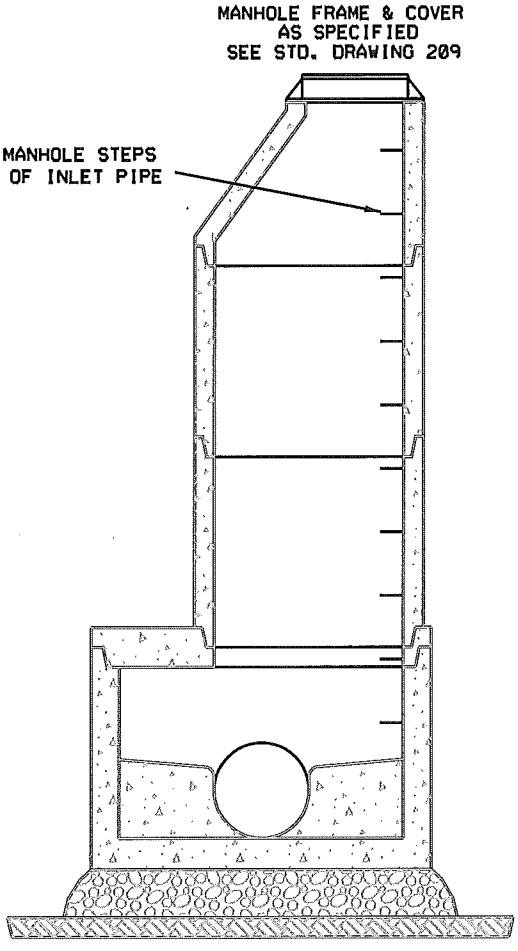
SCALE:
DATE:
APPROVED BY:
STANDARD DRAWING 207

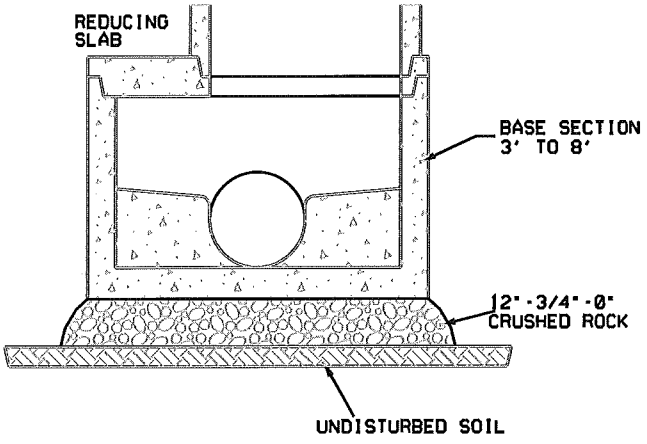


NOTES
1. ALL CONCRETE SHALL HAVE STRENGTH OF 3000 PSI AT 28 DAYS.
2. MANHOLE TO BE USED FOR PIPE SIZES 24" AND GREATER.



72" TO 48"
REDUCING SLAB





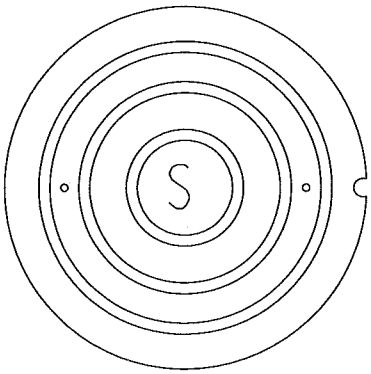
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

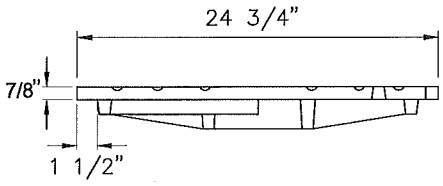
REVISIONS:

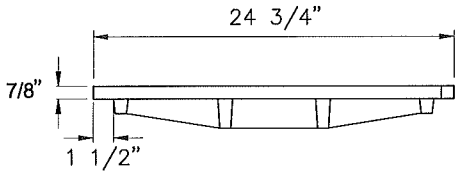
OFFSET MANHOLE

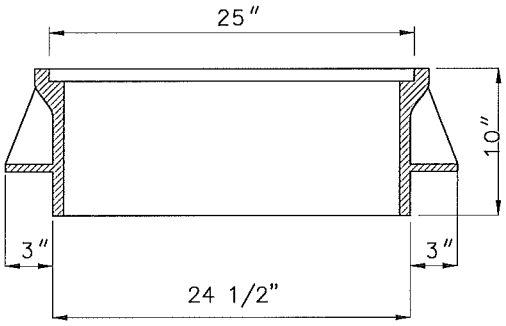
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	208

SANITARY

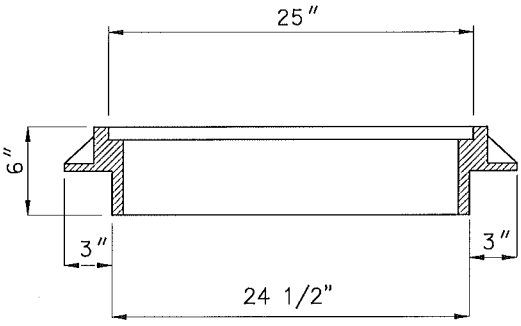








STANDARD FRAME



SUBURBAN FRAME

NOTES

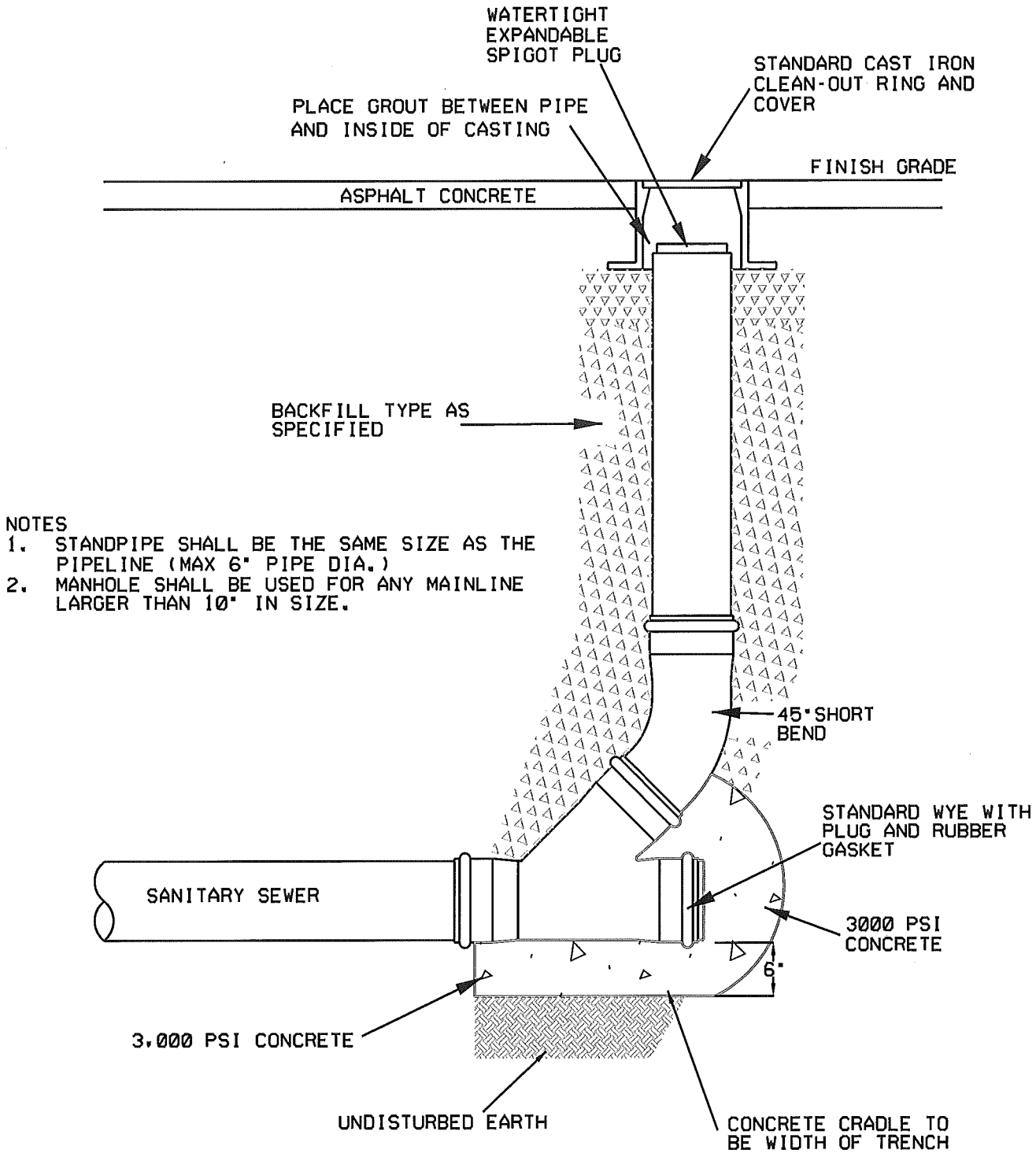
1. USE SUBURBAN TYPE FRAME IN NON-TRAFFIC AREAS ONLY.
2. COVER AND FRAME SHALL BE CAST IRON, ASTM A-48 CLASS 30 AND MEET H-20 LOAD RATING.
3. COVER AND FRAME TO HAVE TRUE BEARING ALL AROUND.

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

REVISIONS:
Sept. 2010

WASTEWATER MANHOLE FRAME AND COVER

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

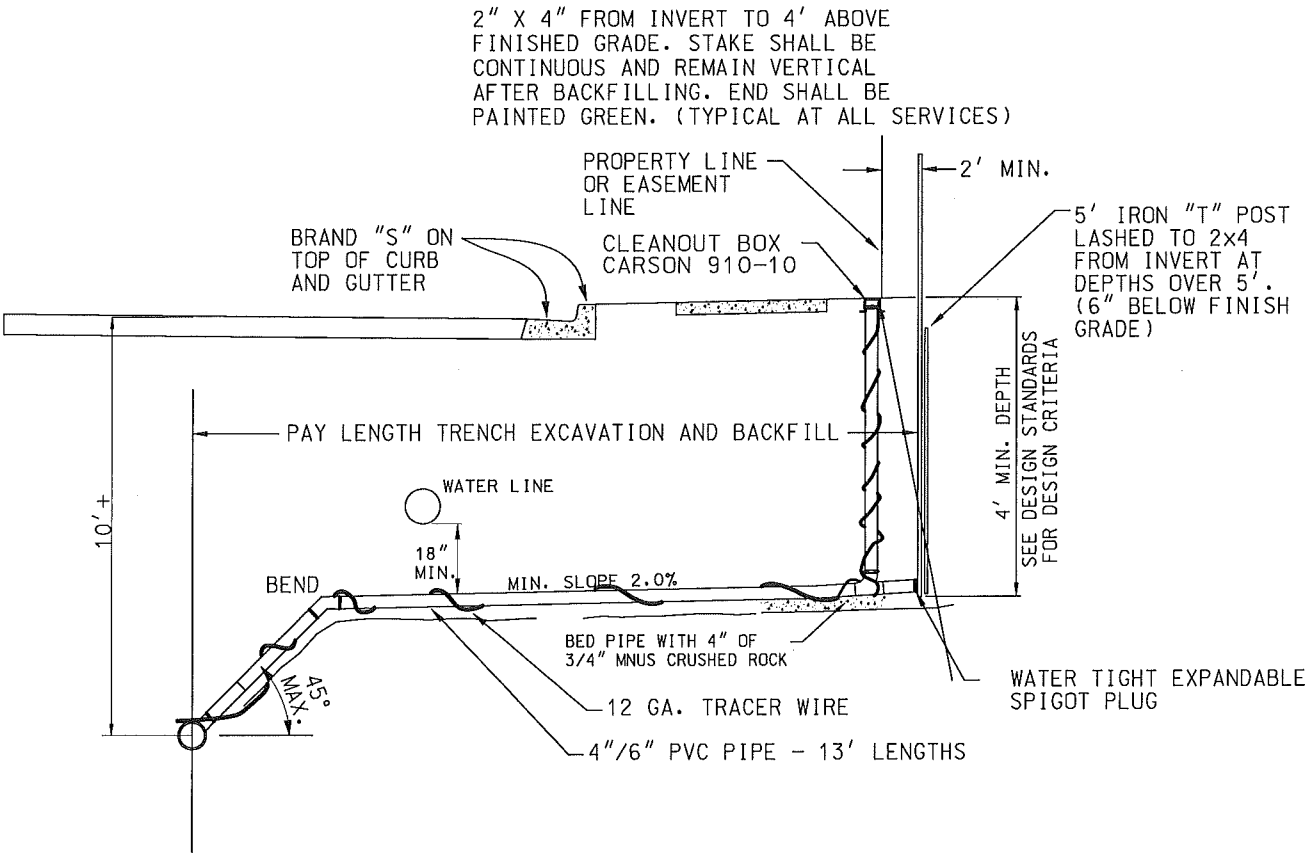


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

CLEAN OUT

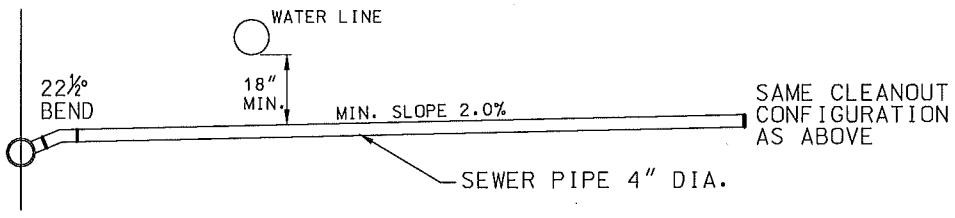
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	210



DEEP SEWER SERVICE

NOTES:

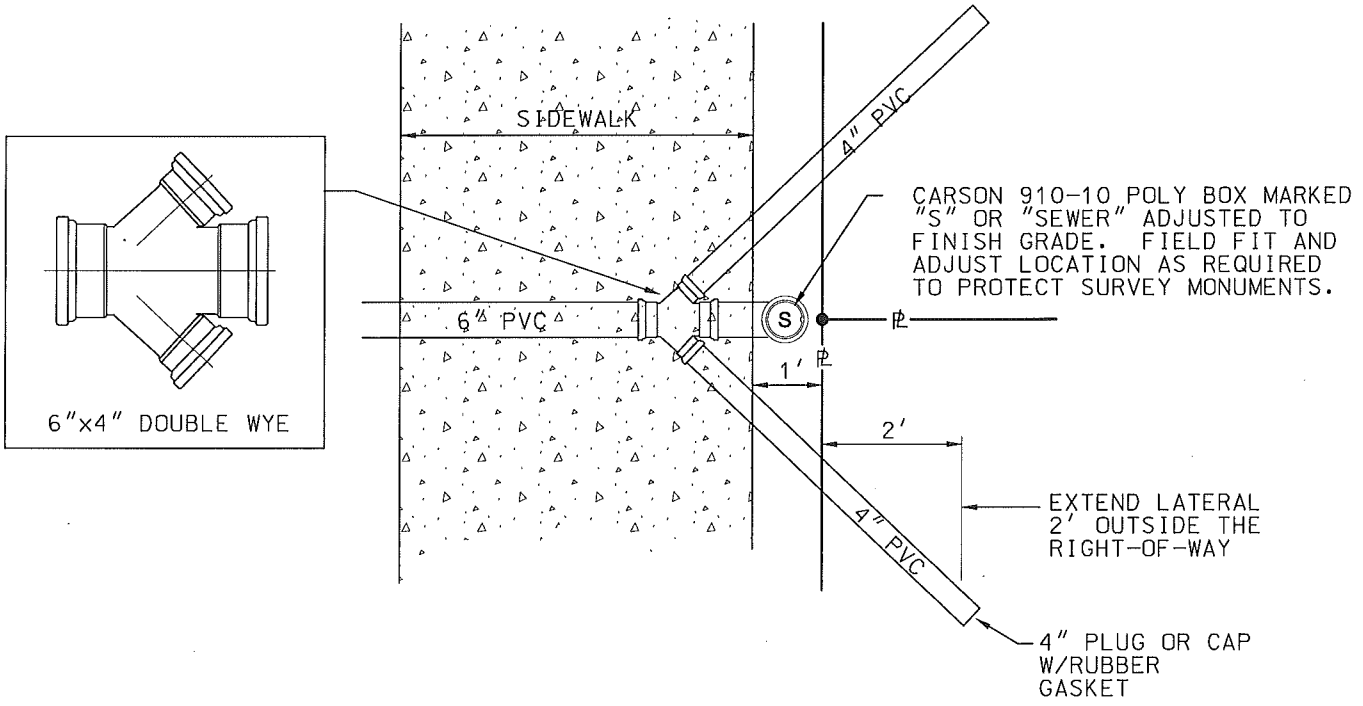
1. USES - SINGLE RESIDENTIAL SERVICE - 4" PIPE
   SPLIT RESIDENTIAL SERVICE WITH CLEAN OUT - 6" PIPE
   SPLIT RESIDENTIAL SERVICE WITH CLEAN OUT - 6" PIPE SEE STD. DWG 212
2. SCHEME FOR HOUSE SERVICE TO BE DETERMINED BY INSPECTOR IN FIELD IN CASE OF CONFLICT WITH PLANS.
3. SERVICE SHALL NOT BE BACKFILLED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

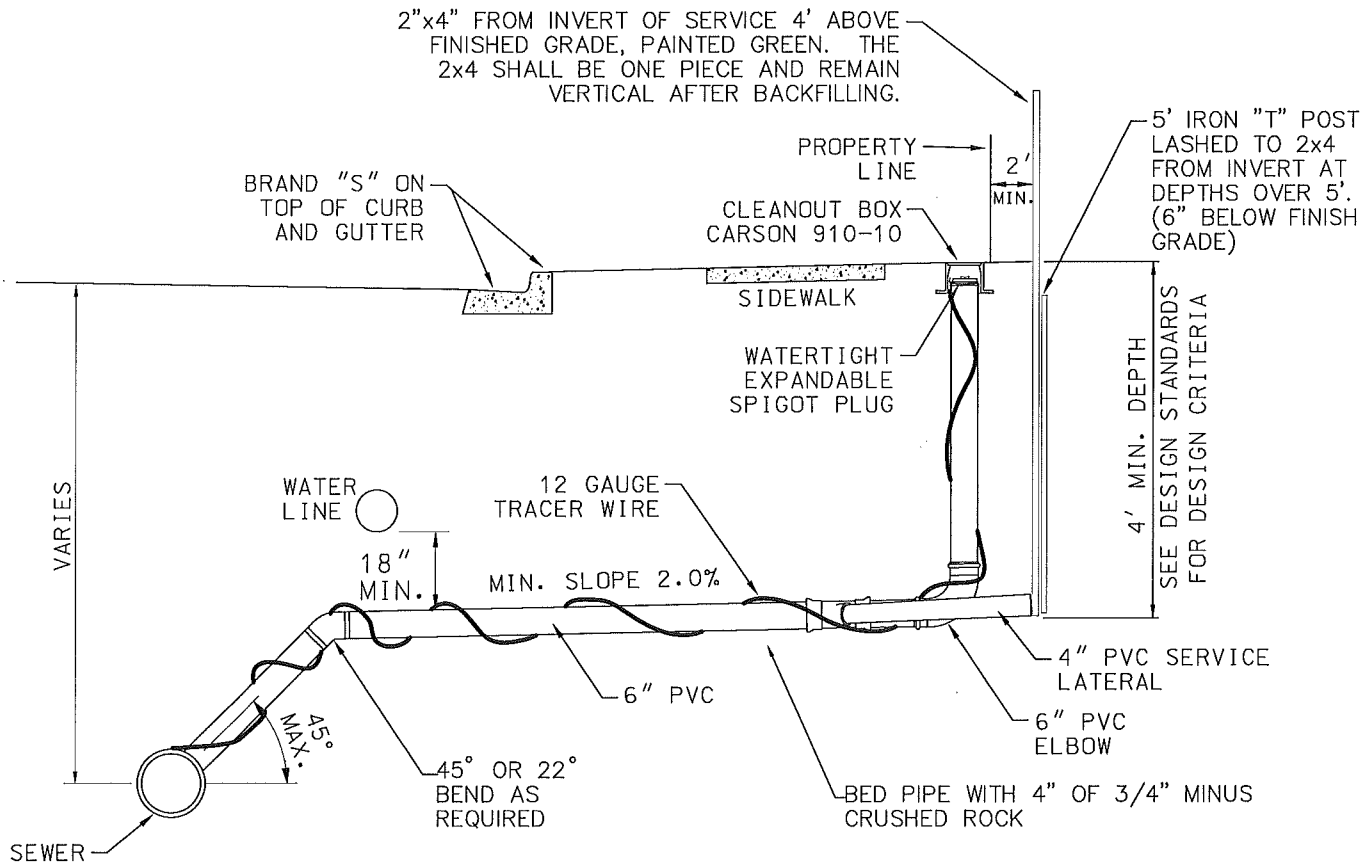


SHALLOW SEWER SERVICE

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

REVISIONS:	SERVICE BRANCH	SCALE: N.T.S.
07/29/08		DATE: JULY 2004
		APPROVED BY: D. Danicic
		STANDARD DRAWING 211





NOTES:

1. USES: SPLIT RESIDENTIAL SERVICE. SEE STD. DWG 210 FOR SINGLE SERVICE
2. SERVICE SHALL NOT BE BACKFILLED PRIOR TO INSPECTION.
3. MINIMUM PIPE SLOPE 2%.

City of Newberg
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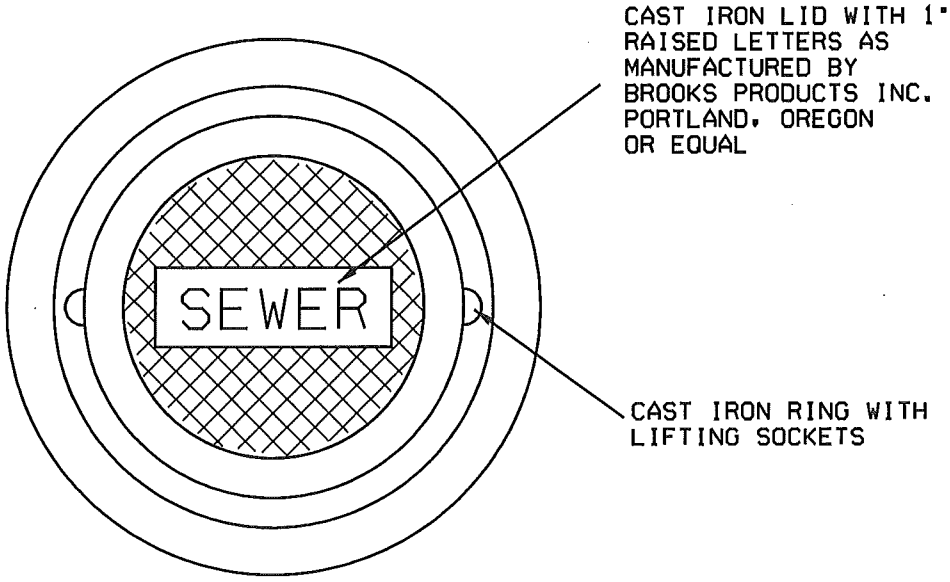
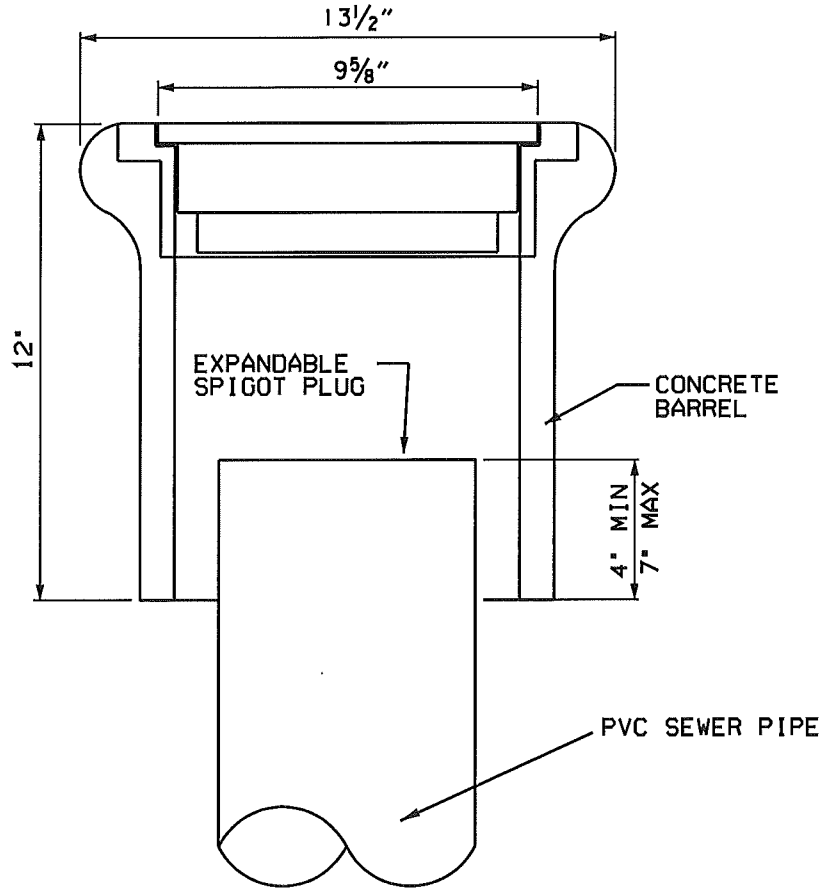
REVISIONS:
07/29/08

DOUBLE WYE SERVICE BRANCH

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

FOR USE IN PRIVATE AREAS ONLY



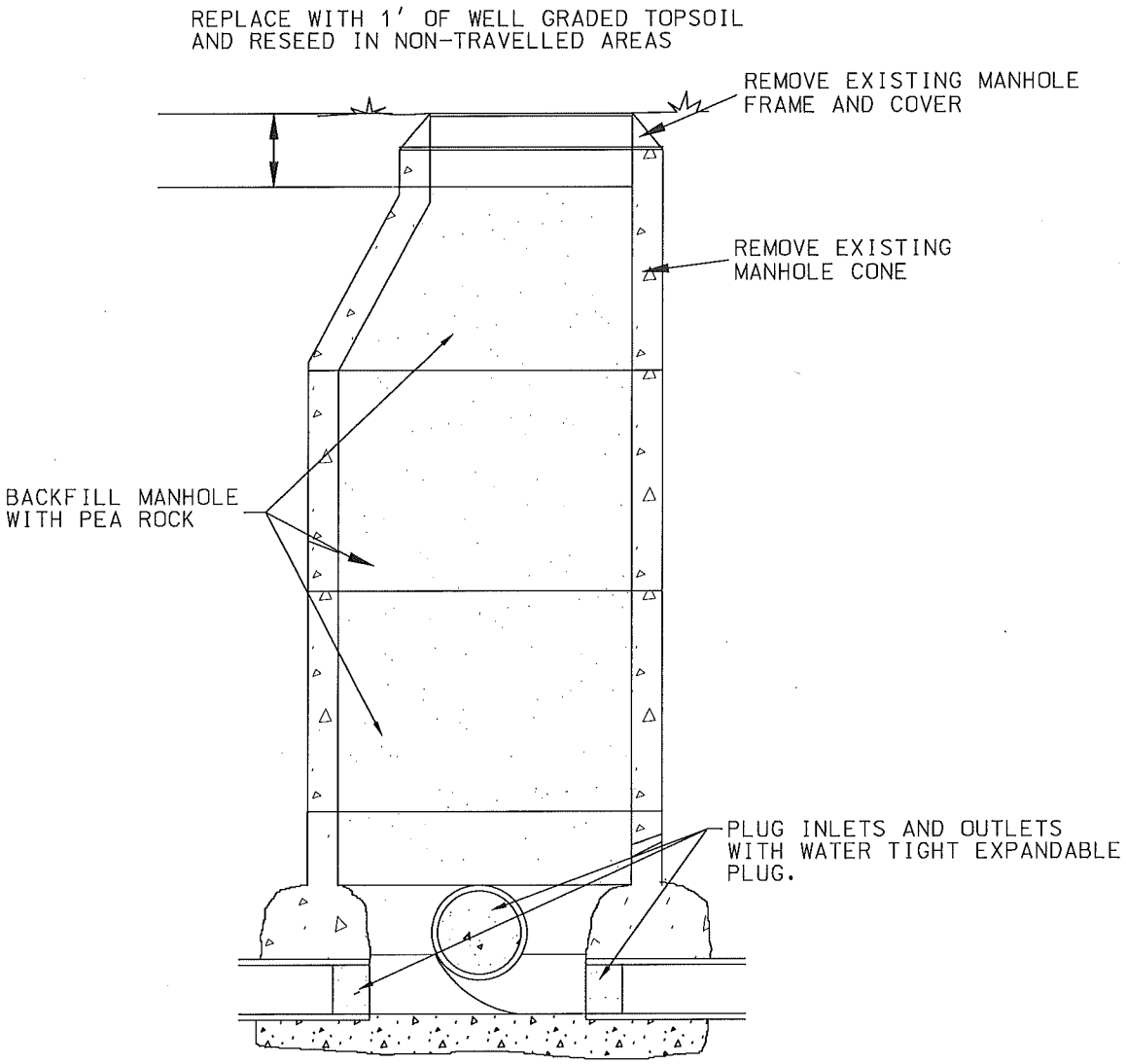


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

TRAFFIC BOX
PRIVATE AREAS ONLY

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



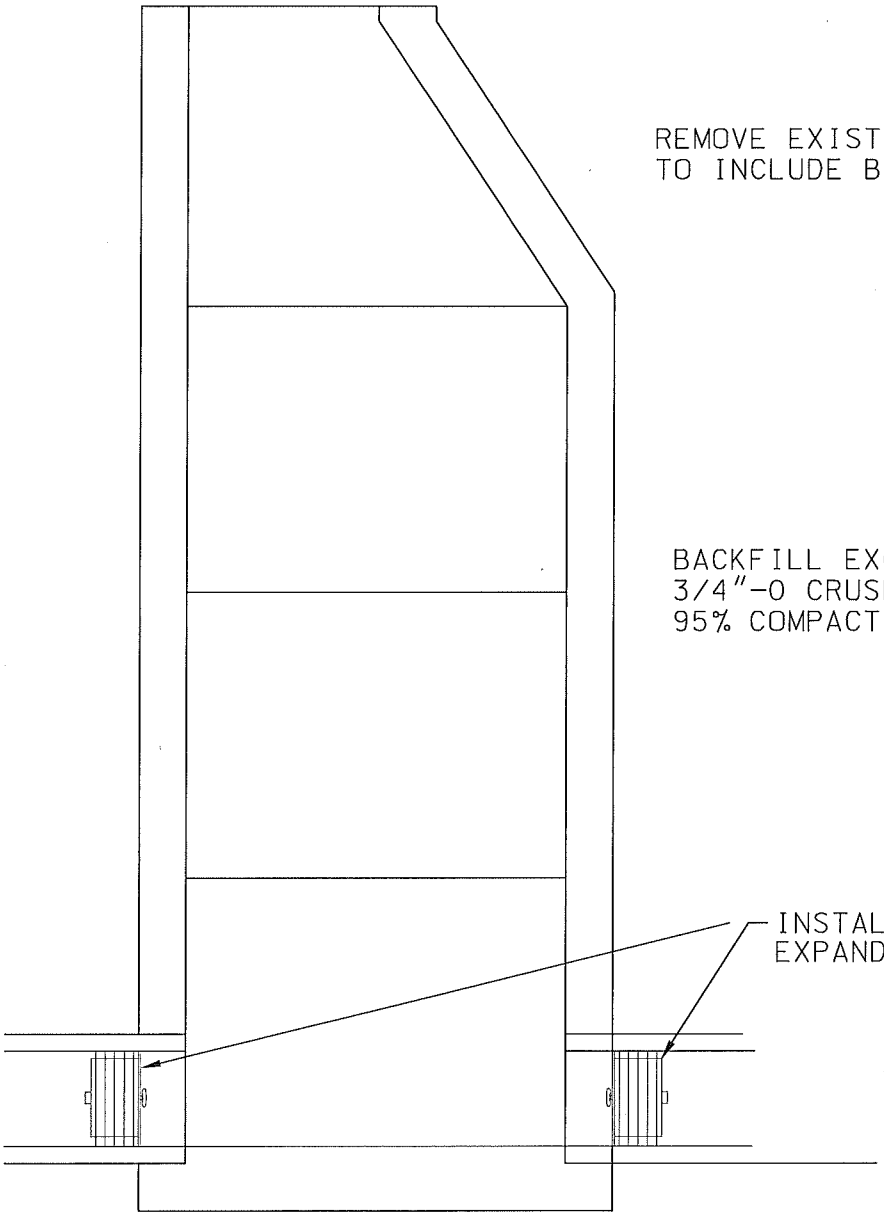
NOTES:
1. PRIOR TO ABANDONMENT OF MANHOLE VERIFY THAT ANY AND ALL SEWER SERVICES HAVE BEEN CONNECTED TO NEW SEWER MAIN.

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

REVISIONS:

MANHOLE ABANDONMENT

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

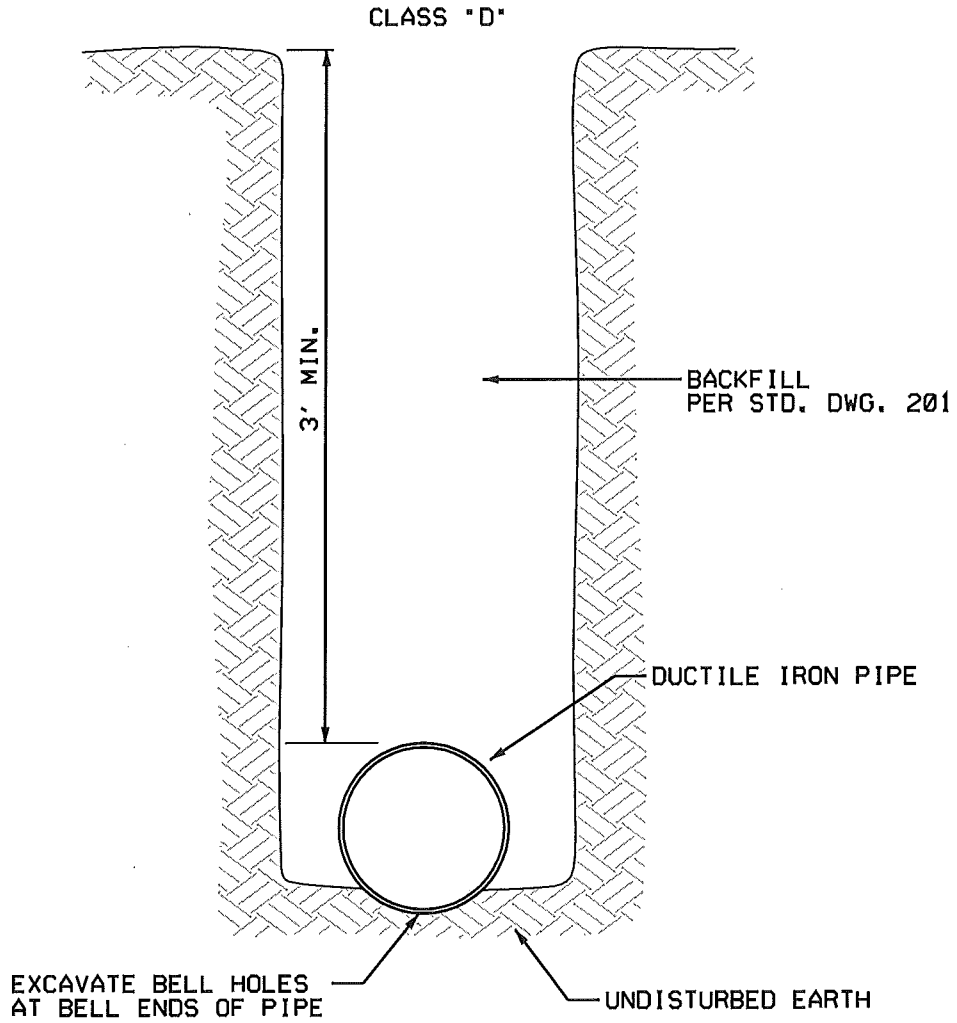


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132
PHONE 503-537-1240 - FAX 503-537-1277

REVISIONS:
Nov. 2010

MANHOLE REMOVAL

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

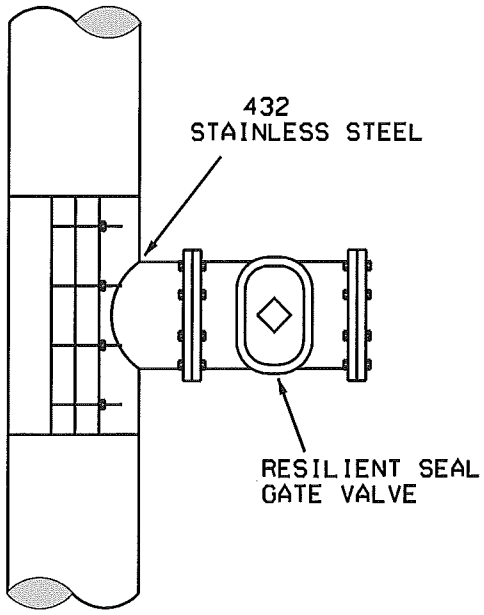


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

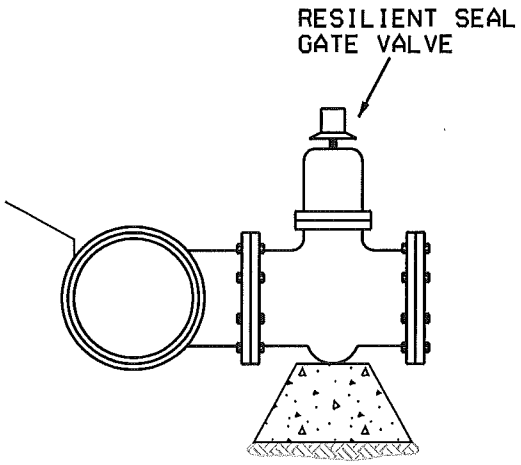
REVISIONS:

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.

City of Newberg
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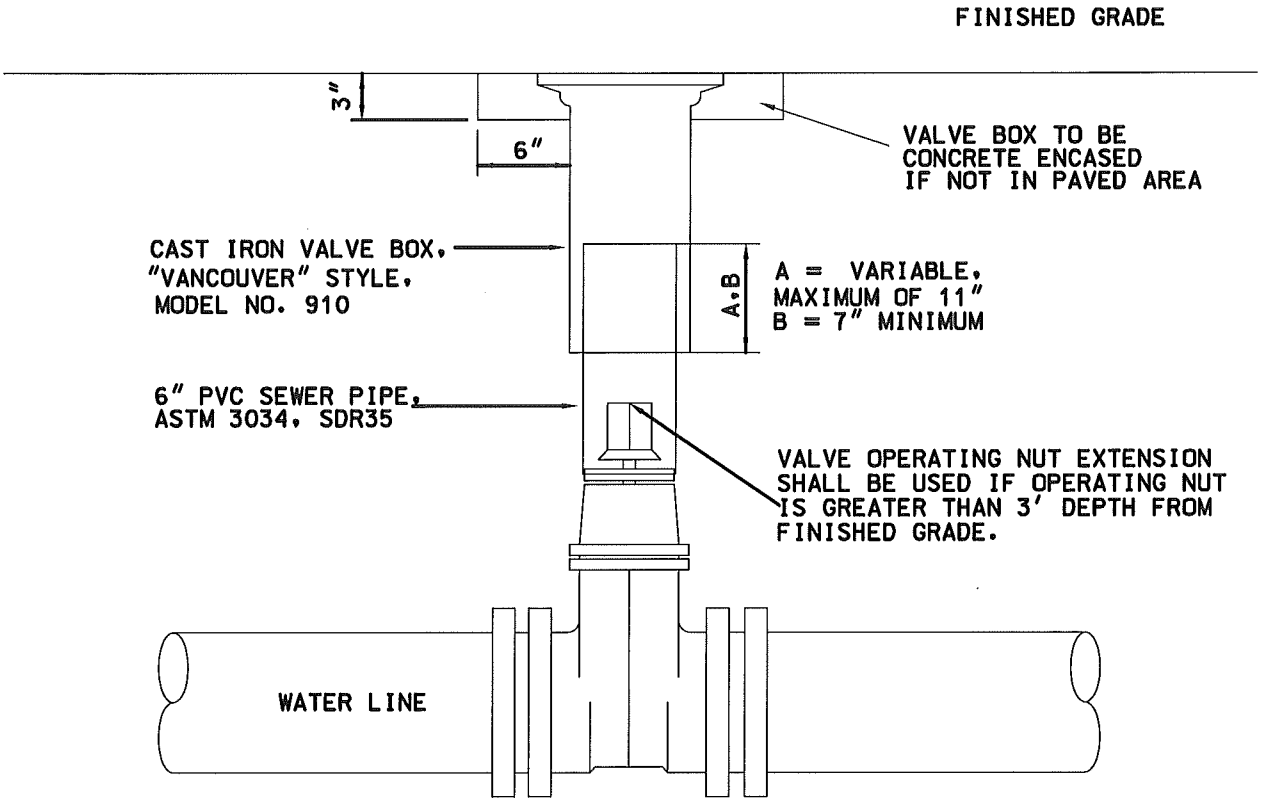
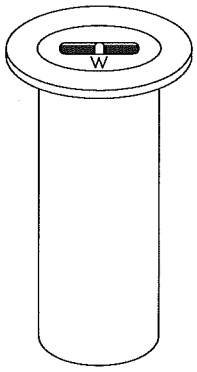
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

WATER TAPPING SLEEVES

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





"VANCOUVER"
18" TALL VALVE BOX

NOTES:

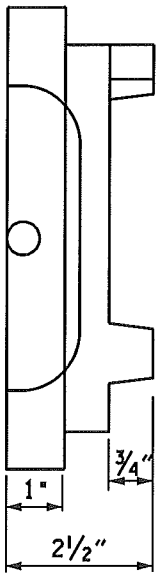
1. VALVE BOXES SHALL BE CENTERED DIRECTLY OVER THE NUT IN A VERTICAL POSITION.
2. VALVE BOX SHALL BE ADJUSTED TO MEET FINISHED GRADE.
3. PVC SHALL BE ONE CONTINUOUS PIECE - NO BELLS OR COUPLERS.
4. SEE STANDARD DRAWING NO. 304 VALVE BOX AND COVER.

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

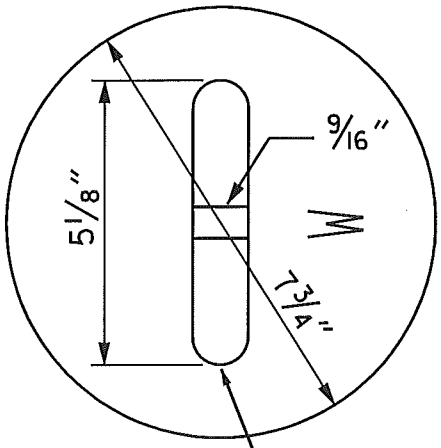
REVISIONS:
11-26-2010

VALVE BOX ASSEMBLY

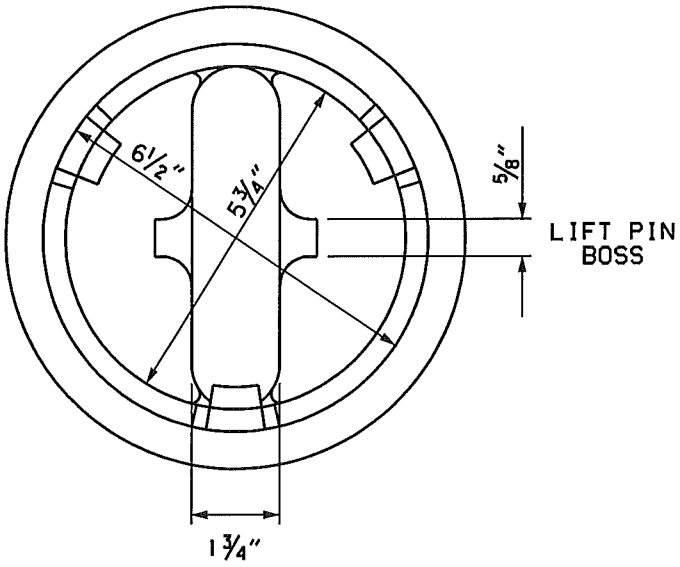
SCALE:	N.T.S.
DATE:	JULY 2004
APPROVED BY:	D. Danicic
STANDARD DRAWING	303

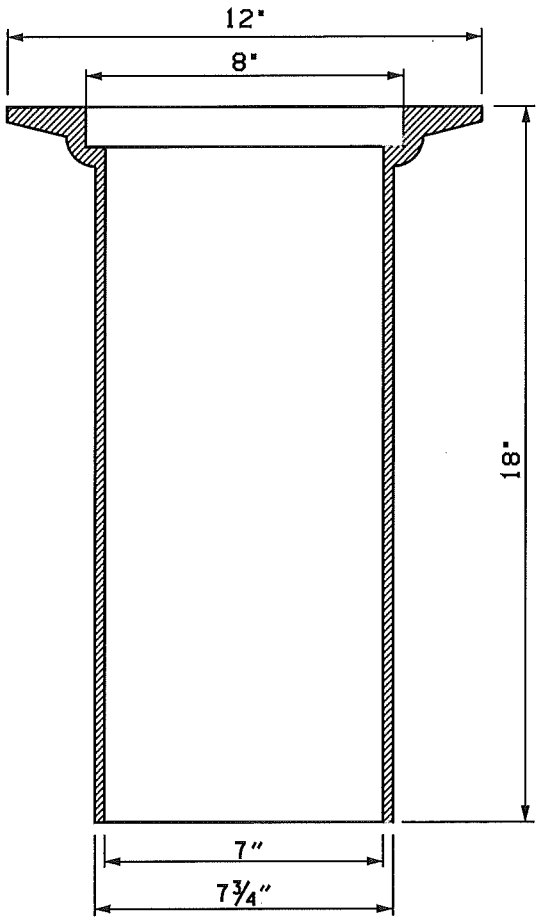


TOP VIEW



BOTTOM VIEW





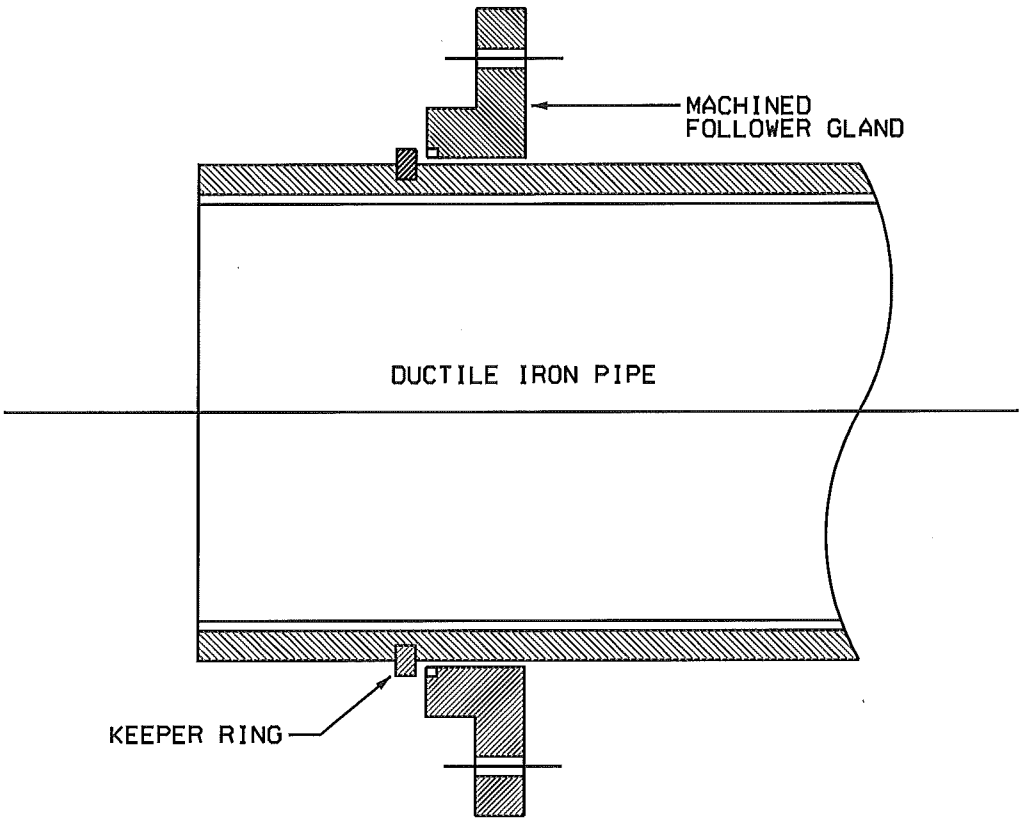
MATERIALS:
CAST IRON PER ASTM A48 CL30

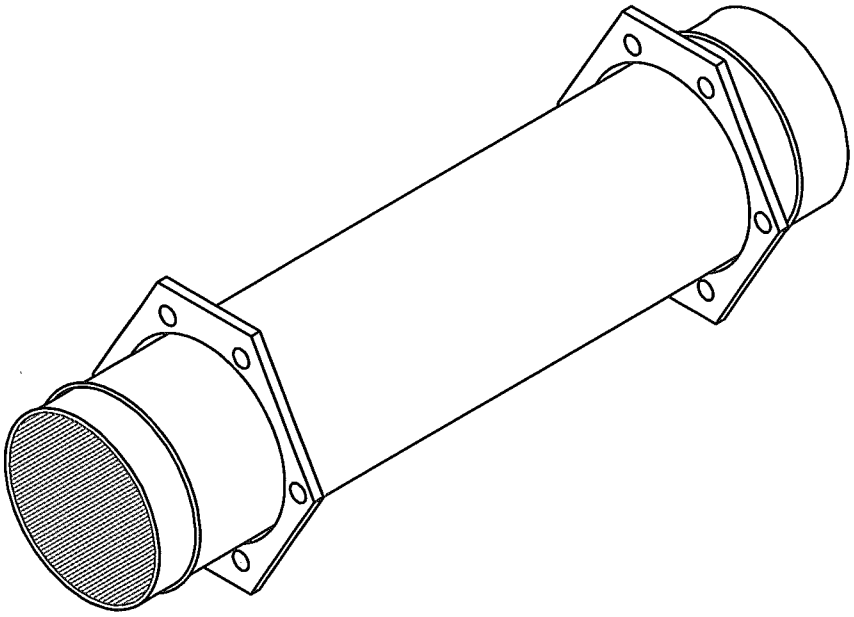
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

VALVE BOX AND COVER

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





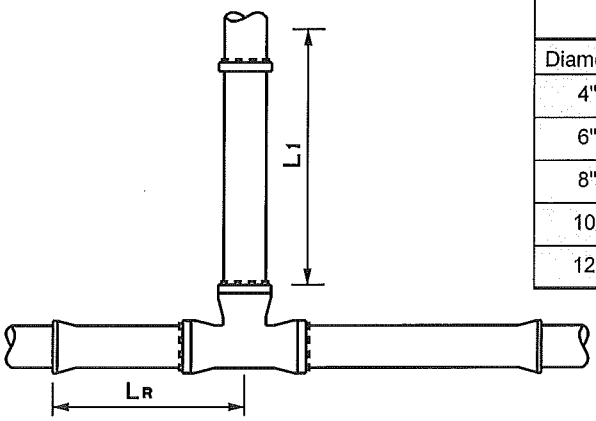
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

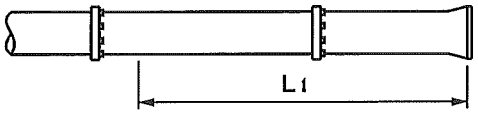
MJ HOLDING SPOOL

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

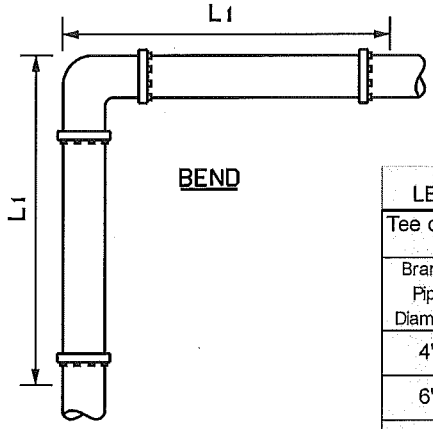
LENGTH (L1) OF PIPE REQUIRED FOR RESTRAINT (FEET)										
	Horizontal Bend				Dead End	Reducer (restrained length for large diamter side)				
Diameter	90°	45°	22 1/2°	11 1/4°		4"	6"	8"	10"	12"
4"	30	23	20	19	44	--	37	53	65	77
6"	35	25	21	20	55	--	--	38	53	67
8"	40	27	22	20	66	--	--	--	37	54
10"	44	29	23	21	76	--	--	--	--	51
12"	49	31	24	21	86	--	--	--	--	--



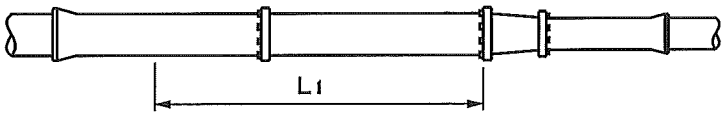
TEE CONFIGURATION



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:

1. ALL JOINTS WITHIN THE LENGTH "L1" FROM THE ABOVE TABLE, SHALL BE RESTRAINED.
2. THE JOINT RESTRAINT LENGTHS CALCULATED ARE FOR FITTINGS USED TO CHANGE PIPE HORIZONTAL ALIGNMENT ONLY. FOR APPLICATIONS WHERE FITTINGS ARE USED TO CHANGE THE SLOPE OF THE PIPE, THE DESIGN ENGINEER SHALL INCLUDE THE JOINT RESTRAINT REQUIREMENTS ON THE PROJECT DRAWINGS.
3. IF AN UNANTICIPATED NEED FOR JOINT RESTRAINT ARISES TO CHANGE THE SLOPE OF THE PIPE, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER.
4. JOINT TYPES NOT COVERED IN ABOVE TABLE MUST BE DESIGNED INDIVIDUALLY ON ORDER TO DETERMINE APPROPRIATE RESTRAINED LENGTH.
5. THE SMALL SIDE OF A REDUCER DOES NOT REQUIRE RESTRAINT IF THE LARGE DIAMETER SIDE IS PROPERLY RESTRAINED.
6. ABOVE RESTRAINED LENGTHS ARE BASED ON:
   A. TEST PRESSURE OF 150 PSI
   B. MINIMUM OF 3 FEET COVER
   C. CLASS "B" PIPE ZONE CONDITIONS
   D. 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.
   E. UNCOATED PIPE. THIS TABLE DOES NOT APPLY TO PIPE ENCASED IN POLYETHYLENE

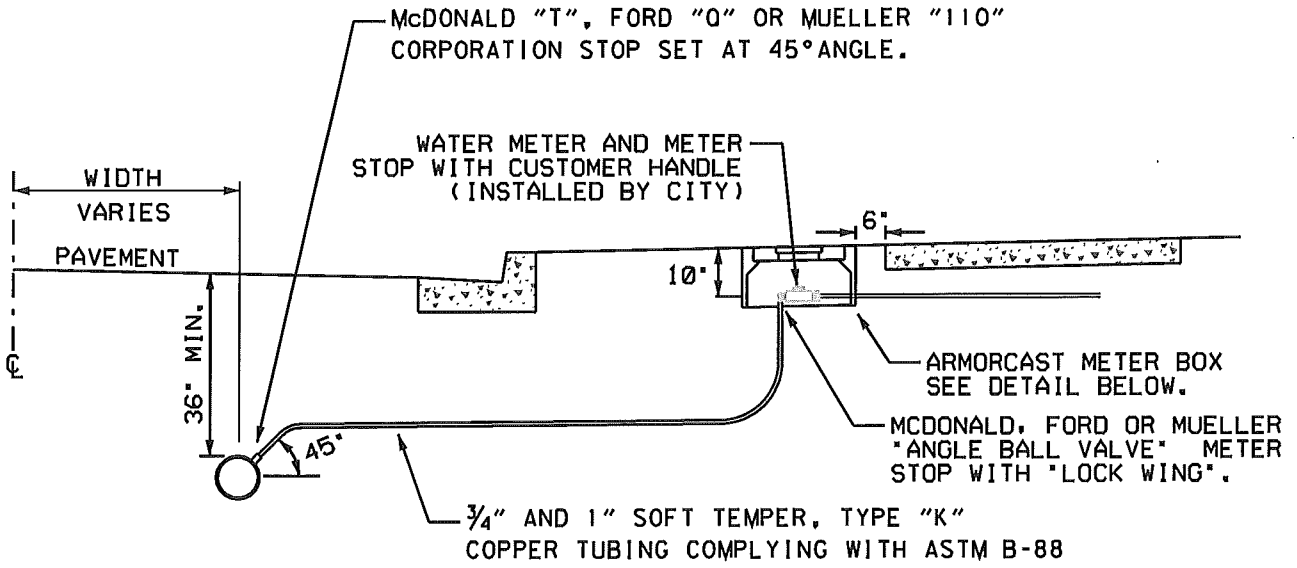
   ANY REDUCTION OF THESE VALUES AS A RESULT OF OTHER CONDITIONS ENCOUNTERED SHALL BE BASED ON THE APPROPRIATE EVALUATION AND RECOMMENDATION BY A QUALIFIED, REGISTERED ENGINEER AND WITH APPROVAL BY THE CITY.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

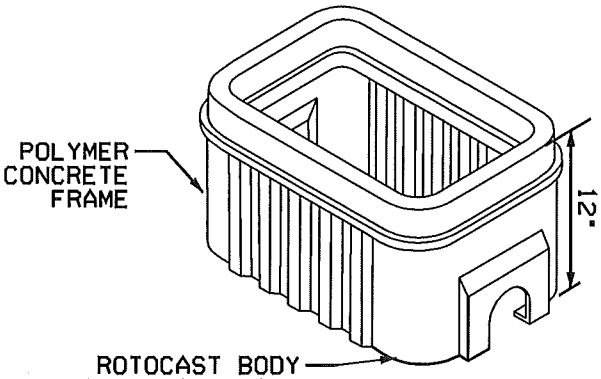
JOINT RESTRAINT

SCALE: N.T.S.
DATE: May 2007
APPROVED BY: D. Danicic
STANDARD DRAWING 306



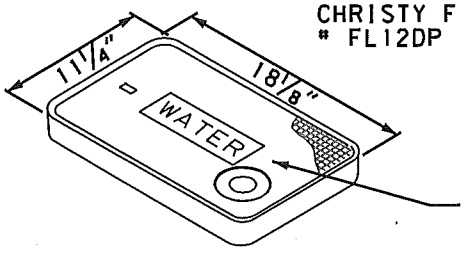
ALL FITTINGS MUST BE COMPRESSION TYPE
NO SOLDERED, FLARED OR JOINT FITTINGS

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

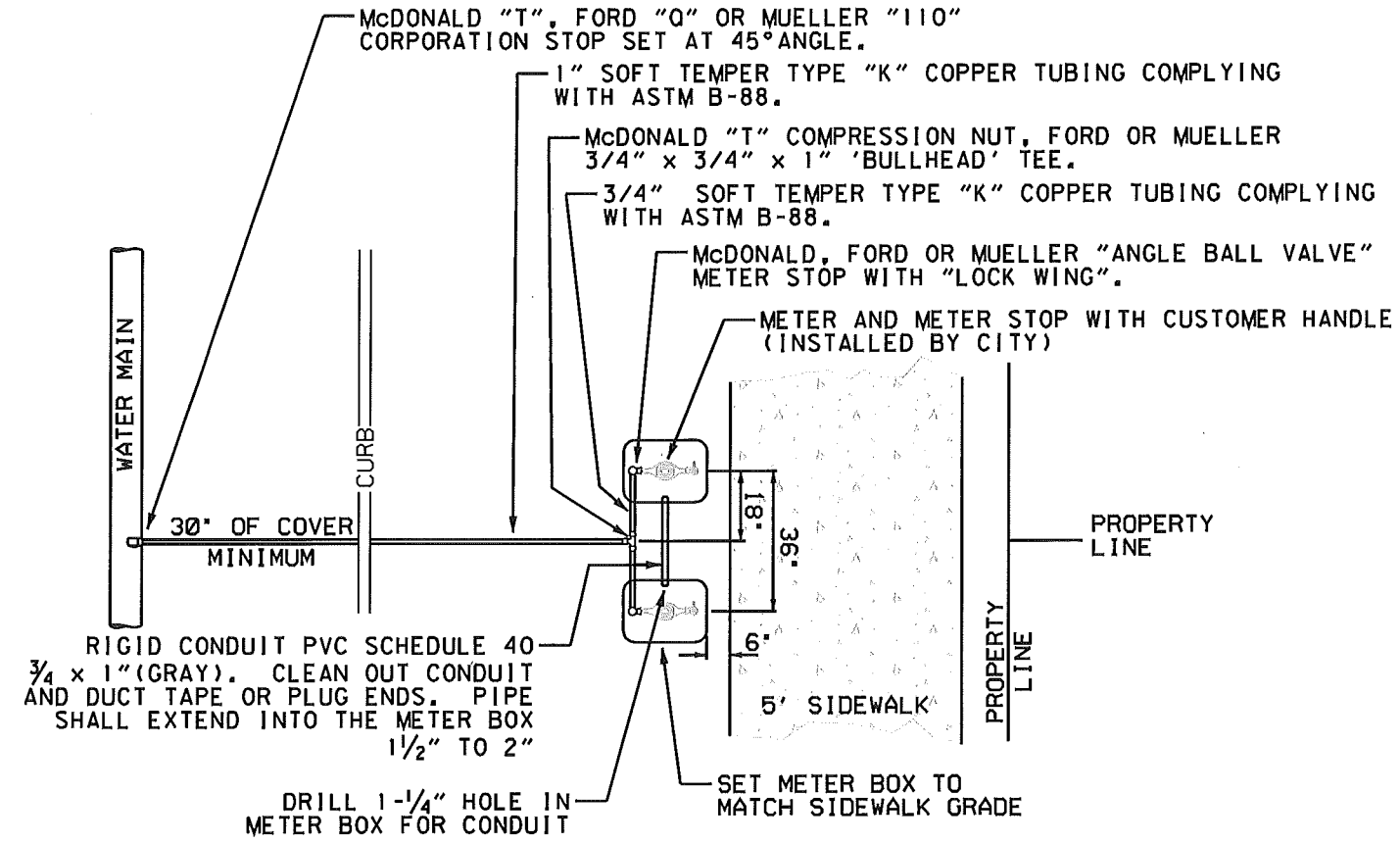
1. SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED BY THE CITY ENGINEER
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING ¾" MINUS CRUSHED ROCK AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180
3. WHEN AN ACTIVE CATHODIC PROTECTED SYSTEM IS ENCOUNTERED, SCHEDULE 40 PVC 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) OR BE SET FLUSH WITH GROUND SURFACE.
6. ALL FITTINGS SHALL BE COMPRESSION TYPE.
7. FOR LOCATION OF WATER MAIN, SEE STANDARD DRAWING NO. 103

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

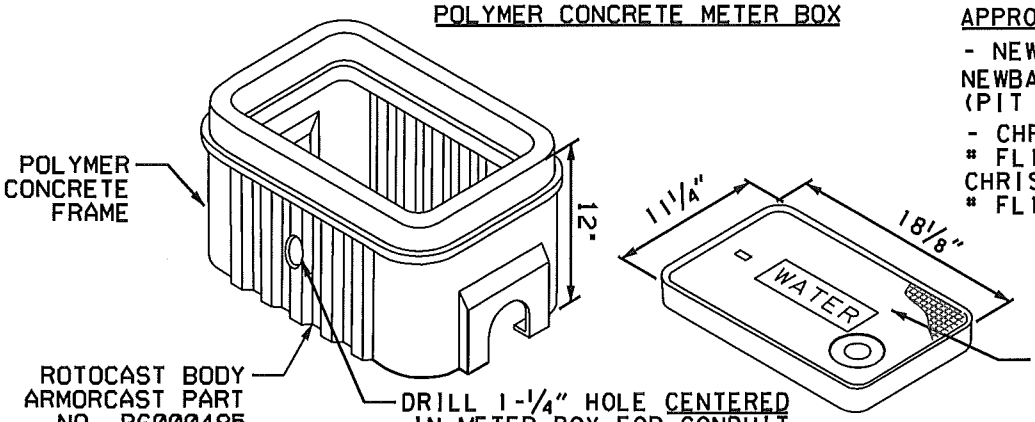
REVISIONS:

STANDARD 3/4" AND 1" WATER SERVICE

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	307



POLYMER CONCRETE METER BOX



APPROVED ALTERNATE METER BOXES

- NEWBASIS BOX WFB1220122AOC
  NEWBASIS LID WPC1220A02A0B17 (PIT LIT READER HOLE)
- CHRISTY FIBERLITE BOX 1220 # FL12D
  CHRISTY FIBERLITE LID 1220 # FL12DP

NOTES

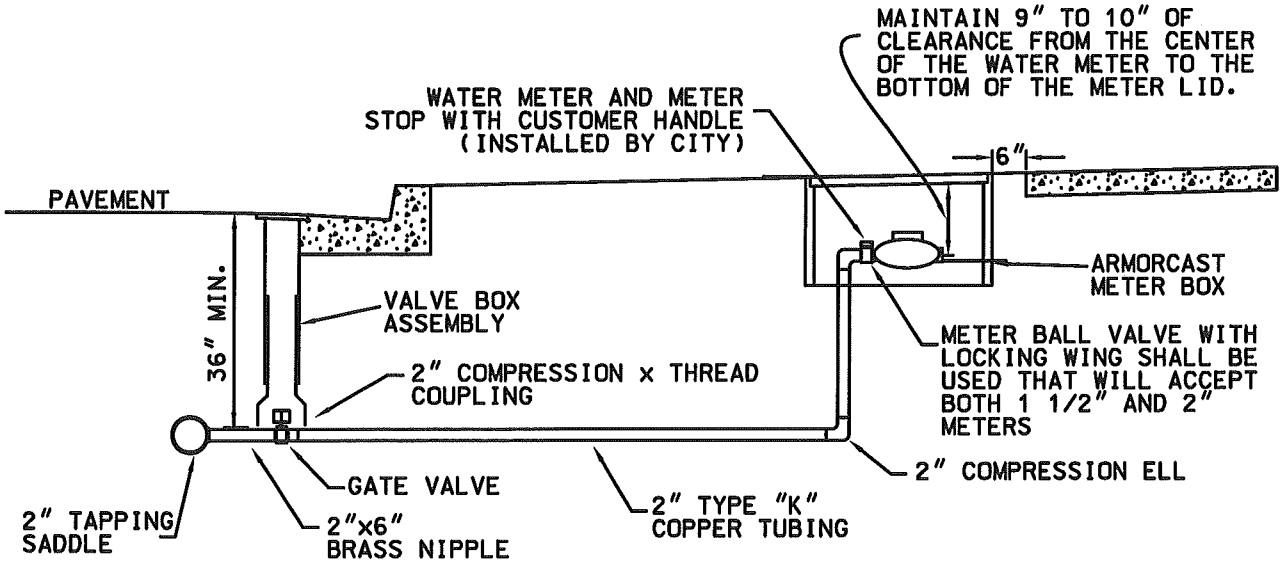
1. SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED BY THE CITY.
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4" MINUS CRUSHED ROCK AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
3. WHEN AN ACTIVE CATHODIC PROTECTED SYSTEM IS ENCOUNTERED, SCHEDULE 40 PVC SHALL 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.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

DOUBLE WATER SERVICE

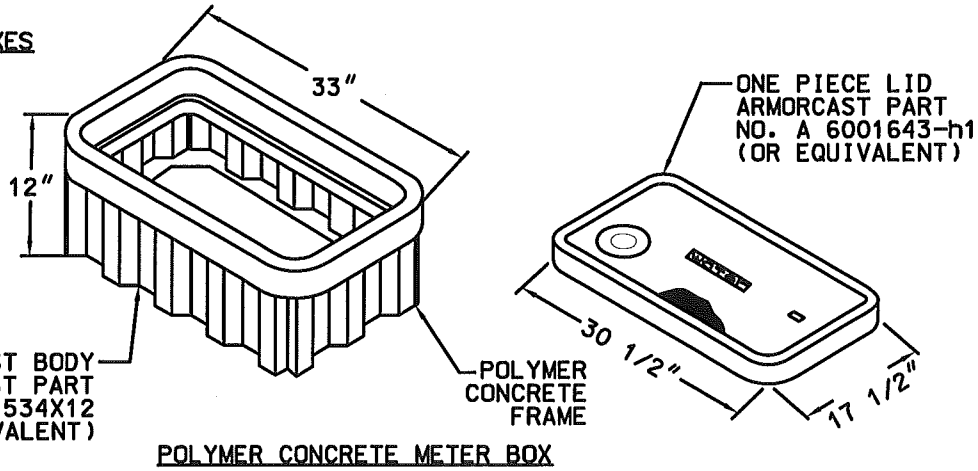
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	308



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



POLYMER CONCRETE METER BOX

MATERIALS

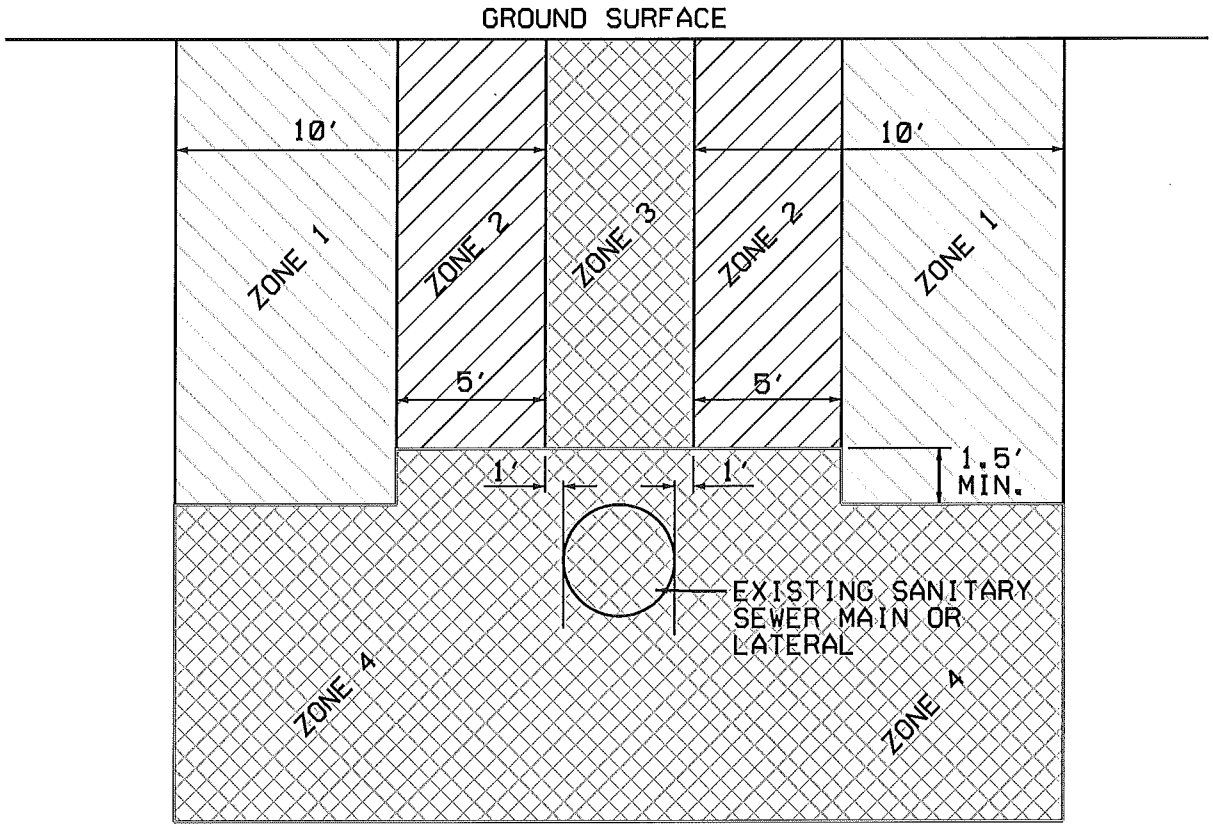
1. 2" CAST IRON BODY GATE VALVE WITH STANDARD 2" SQUARE OPERATING NUT.
2. SOFT TEMPER, TYPE "K" COPPER TUBING COMPLYING WITH ASTM B-88.
3. McDONALD "T" COMPRESSION NUT, FORD OR MUELLER METER STOP.
4. ALL FITTINGS ARE COMPRESSION TYPE.

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.

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

REVISIONS:		SCALE: N.T.S.
3-15-2010	STANDARD 1 1/2 " & 2" WATER SERVICE	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.

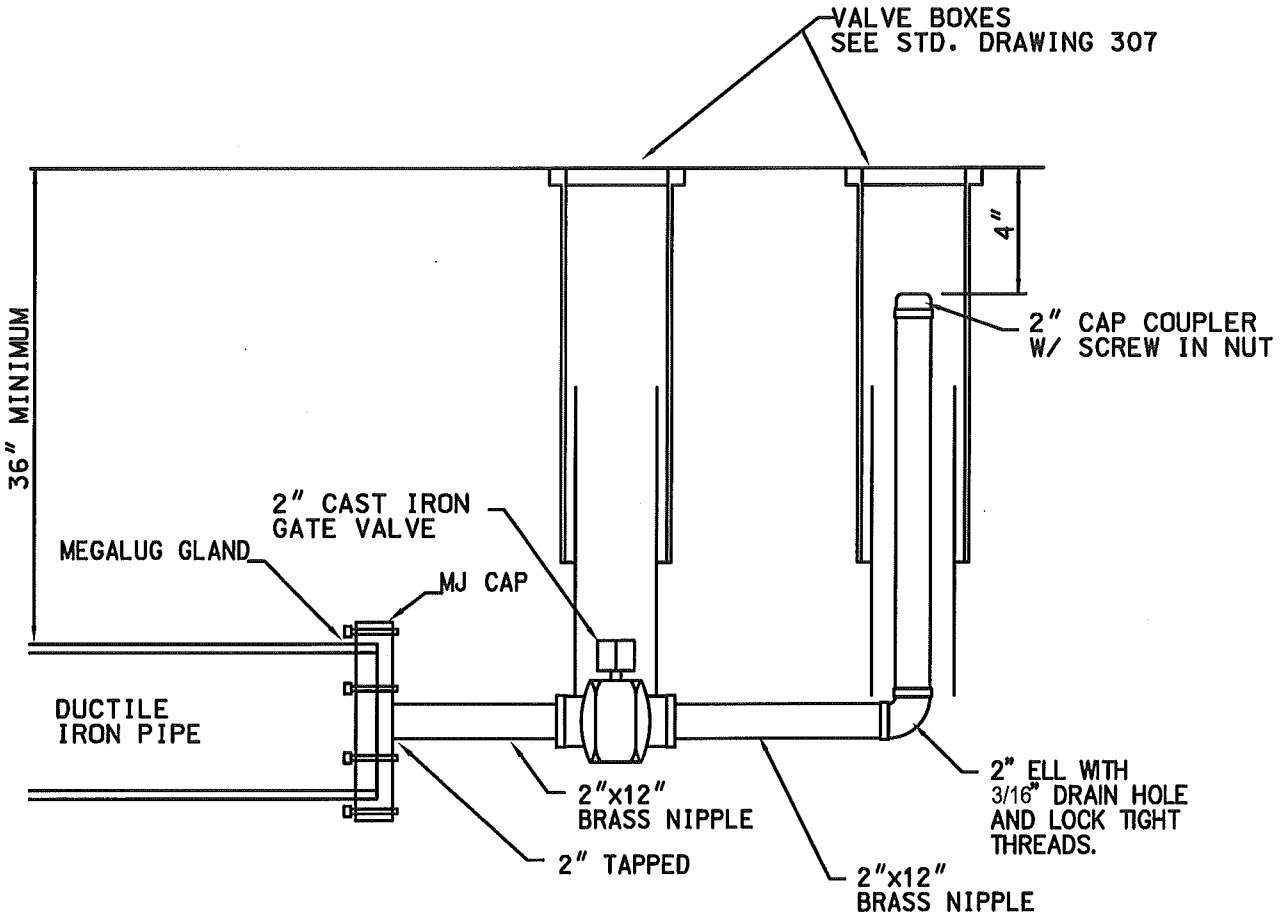
2. CROSSINGS
   A. WHEREVER POSSIBLE, THE BOTTOM OF THE WATERLINE SHALL BE 1.5 FEET ABOVE THE TOP OF THE SEWER LINE, AND ONE FULL LENGTH OF WATERLINE SHALL BE CENTERED AT THE CROSSING.
   B. WHERE IT IS NOT POSSIBLE FOR THE WATERLINE TO BE 1.5 FEET ABOVE THE SEWER LINE, OR THE WATERLINE PASSES UNDER 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

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

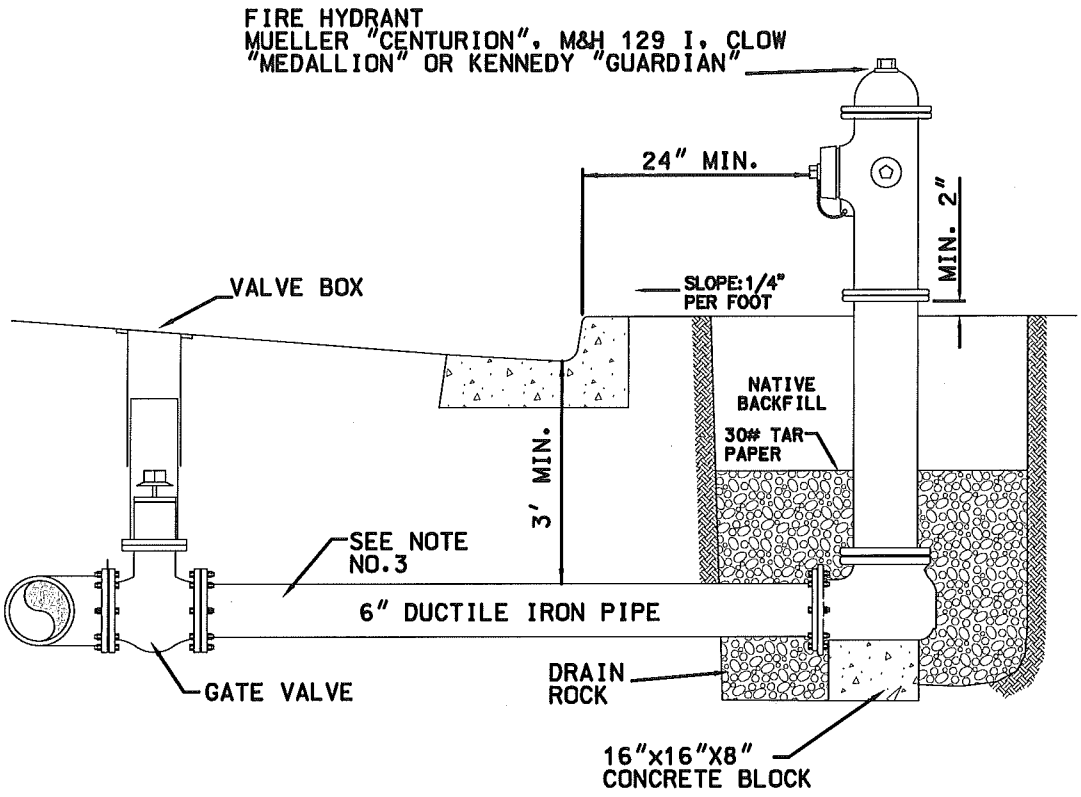
WATER LINE CROSSINGS

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	310



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.

City of Newberg PUBLIC WORKS ENGINEERING DIVISION 414 E. FIRST STREET NEWBERG, OREGON 97132 PHONE 503-537-1240 - FAX 503-537-1277	REVISIONS: 3-15-2010	BLOW-OFF ASSEMBLY	SCALE: N.T.S. DATE: May 2007 APPROVED BY: D. Danicic STANDARD DRAWING 311



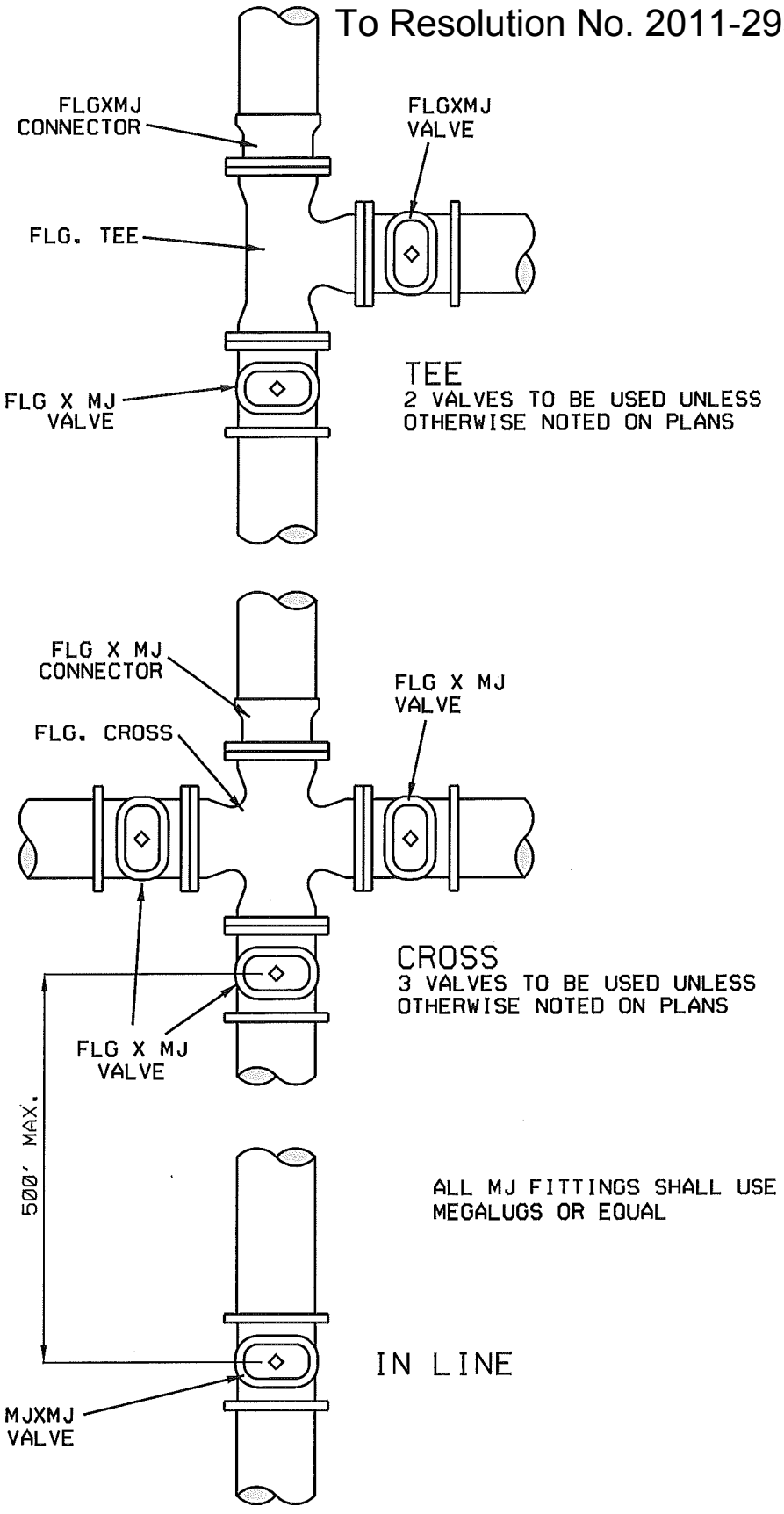
1. HYDRANT TO HAVE TWO 2 1/2" AND ONE 4 1/2" OPENING (ANSI STD.).
2. 6" MINIMUM PIPE SIZE SUPPLYING HYDRANT.
3. USE 6" MJ HOLDING SPOOL PER DWG. 305
4. ADJUSTING SPOOL NOT TO BE USED ON NEW CONSTRUCTION.
5. HYDRANTS SHALL BE INSTALLED UPON A PRE-FORMED CONCRETE BLOCK WITH CLEAN 2" DRAIN ROCK PLACED A 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.

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

REVISIONS:
3-15-2010

FIRE HYDRANT ASSEMBLY

SCALE:	N.T.S.
DATE:	JULY 2004
APPROVED BY:	D. Danicic
STANDARD DRAWING	312

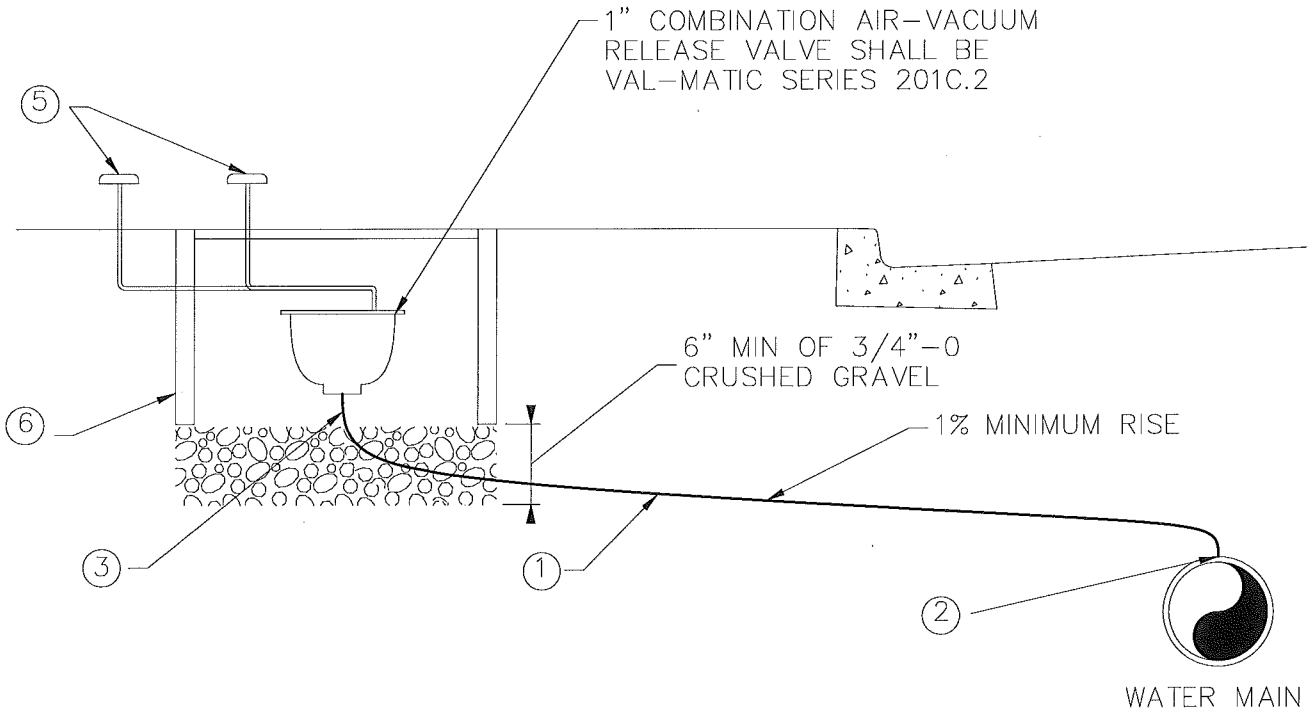


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

VALVE LOCATIONS AND SPACING

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



NOTES/MATERIALS

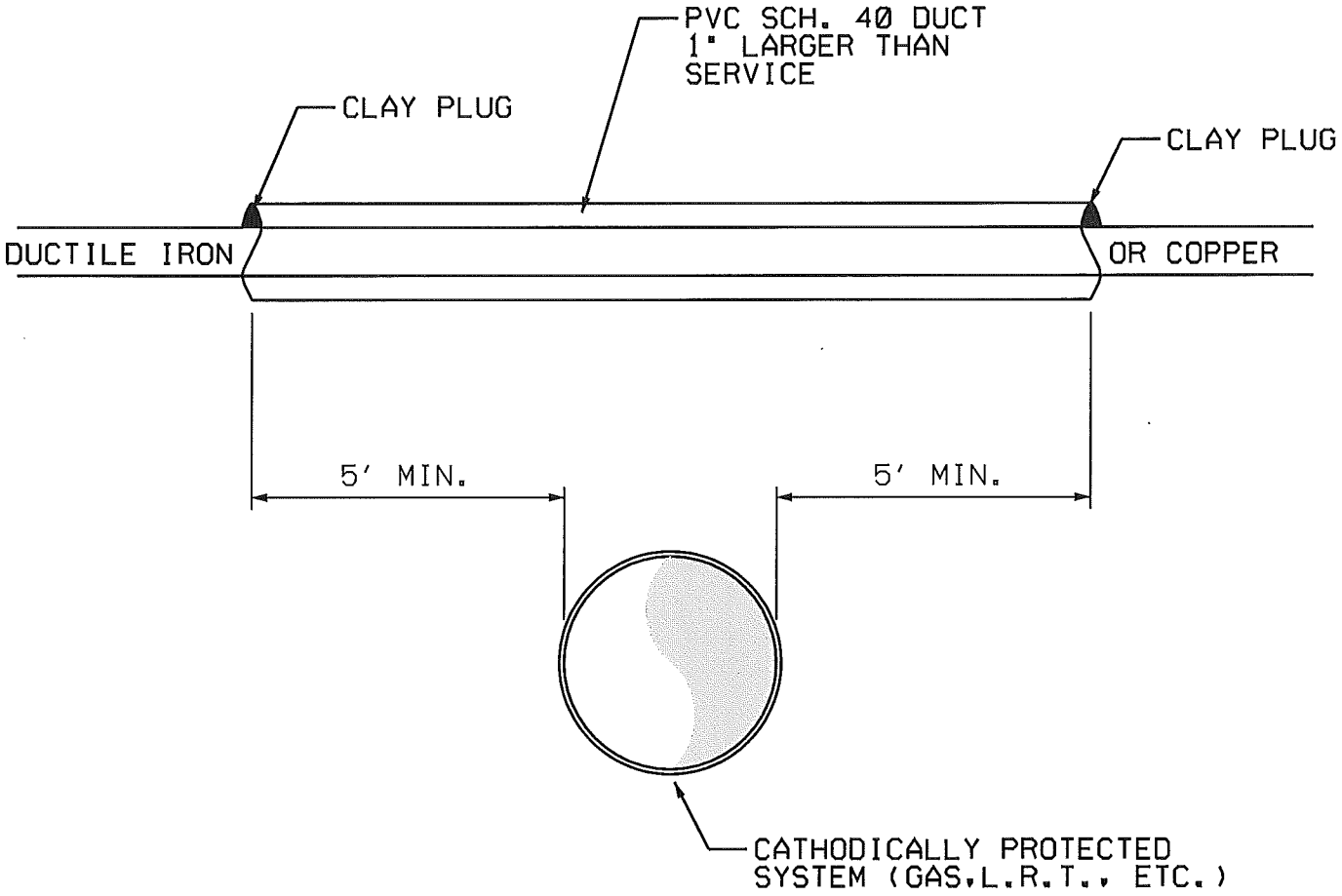
1. 1" SOFT TEMPER TYPE "K" COPPER TUBING COMPLYING WITH ASTM B-88.
2. McDONALD "T", FORD "Q" OR MUELLER "110" BALL CORPORATION STOP.
3. McDONALD, FORD OR MUELLER BALL VALVE WITH OPERATING HANDLE
4. ALL FITTINGS SHALL BE McDONALD "T", FORD "Q" OR MUELLER "110" COMPRESSION TYPE.
5. "TEE" STYLE GALVANIZED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

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

REVISIONS:
11/30/2010

1" COMBINATION AIR - VACUUM RELEASE ASSEMBLY

SCALE: N.T.S.
DATE: May 2007
APPROVED BY: D. Danicic
STANDARD DRAWING 314

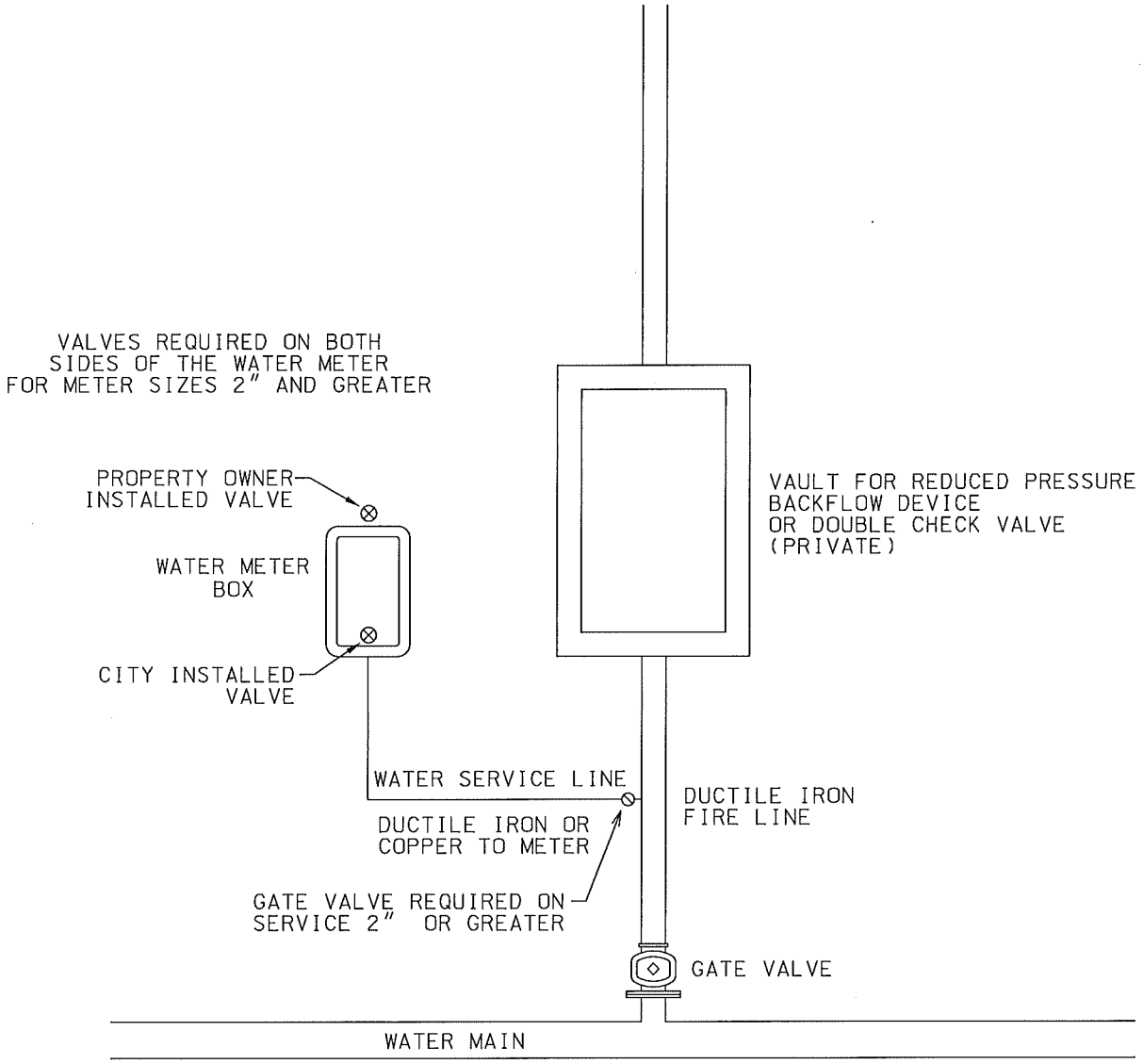


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

CATHODIC PROTECTION

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

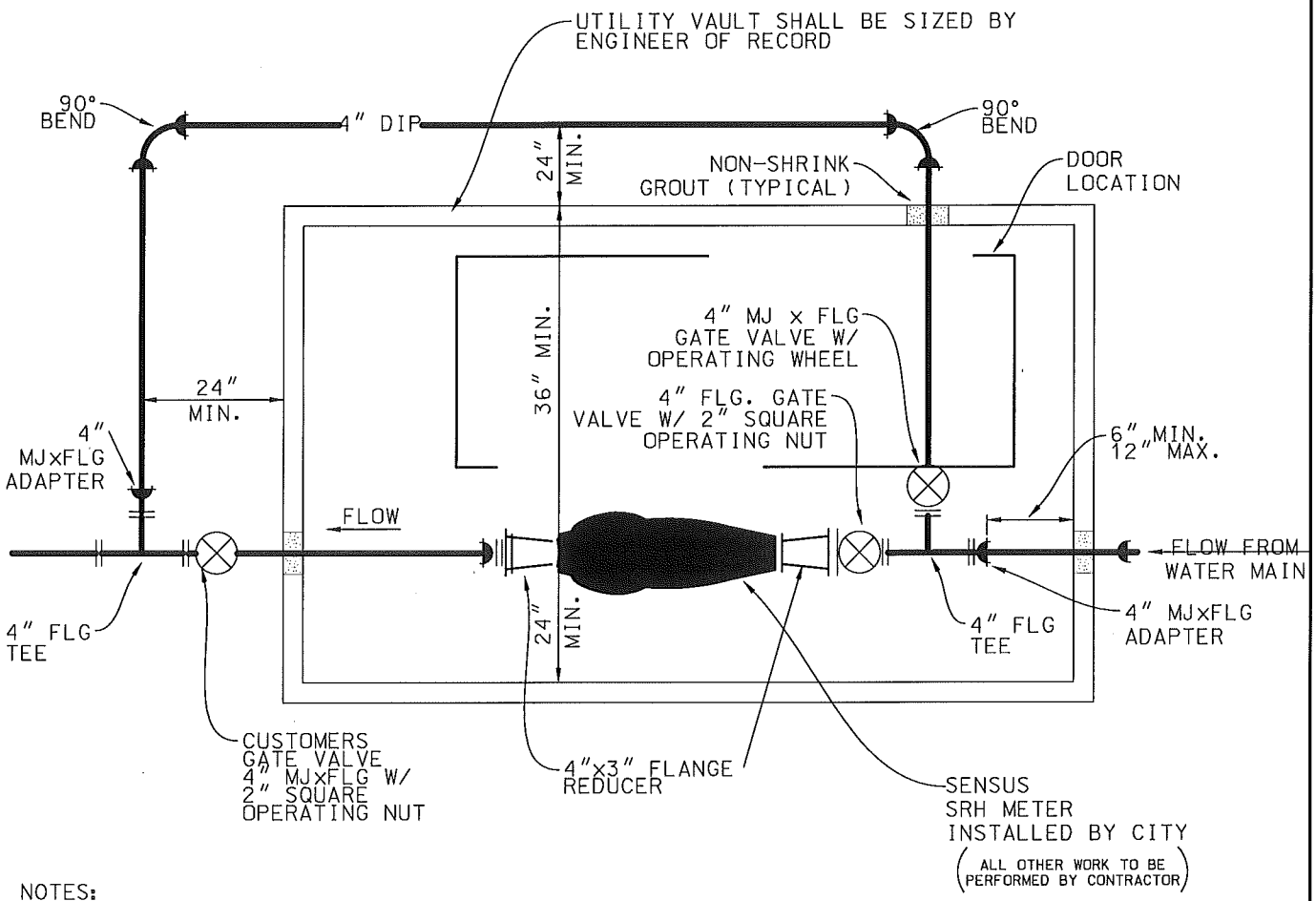


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132
PHONE 503-537-1240 - FAX 503-537-1277

REVISIONS:
11/30/2010

VAULT AND WATER SERVICE

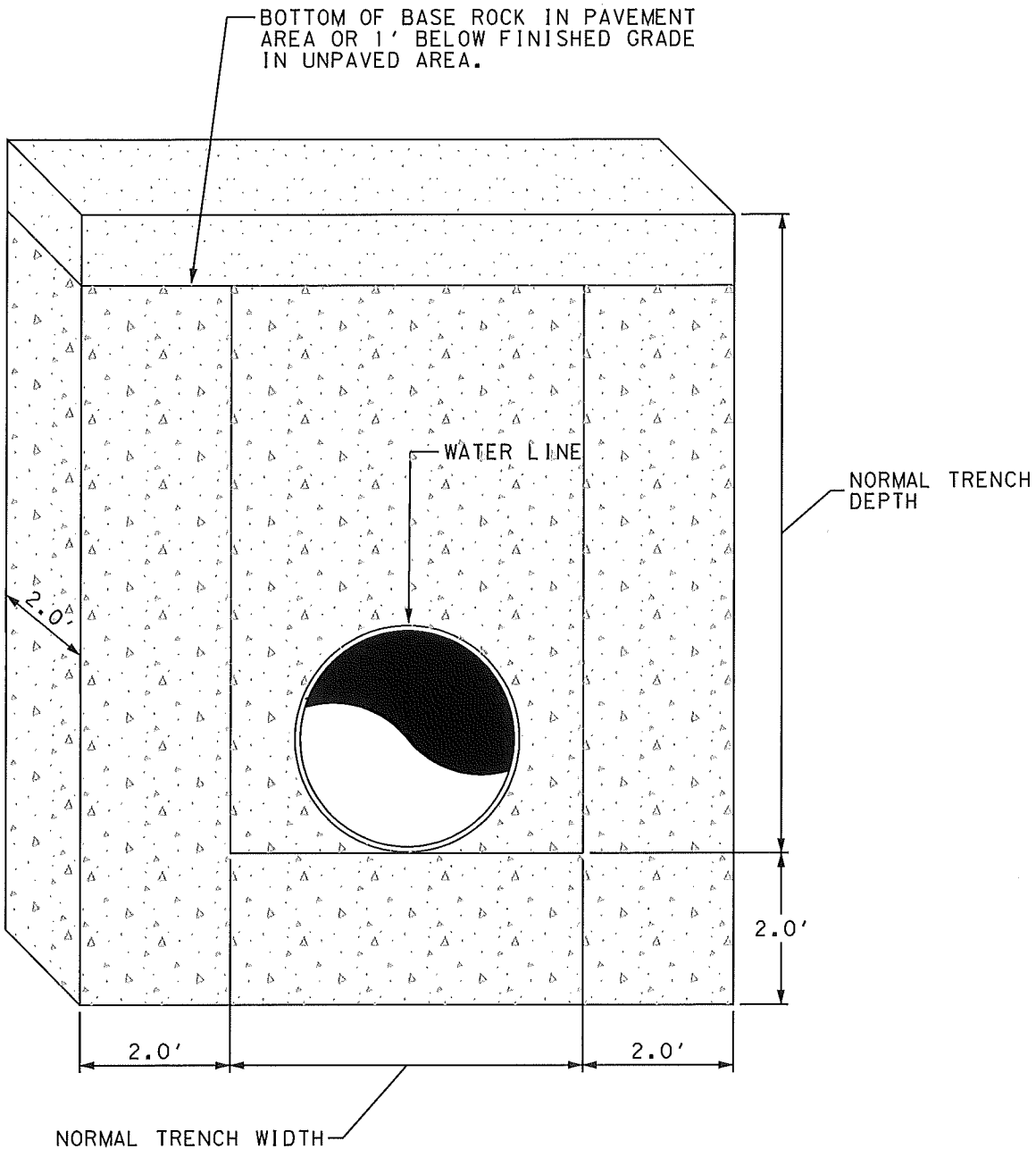
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	317



NOTES:

- METER AND DOWNSTREAM VALVE 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)

City of Newberg PUBLIC WORKS ENGINEERING DIVISION 414 E. FIRST STREET NEWBERG, OREGON 97132 PHONE 503-537-1240 - FAX 503-537-1277	REVISIONS: 10/28/08	WATER SERVICE FOR 3" AND LARGER	SCALE: N.T.S. DATE: JULY 2004 APPROVED BY: D. Danicic STANDARD DRAWING 318



NOTES;

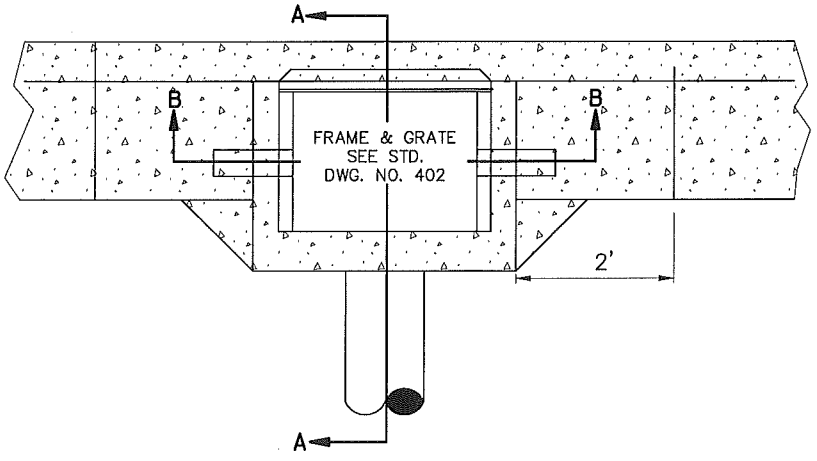
1. TRENCH DAM MATERIAL SHALL BE 100 PSI CDF.
2. BEARING AREA OF TRENCH DAM SHALL BE RESTING ON UNDISTURBED SOIL.
3. NO FITTINGS SHALL BE LOCATED WITHIN 5' OF TRENCH DAM.
4. REMOVE ALL ORGANIC MATERIAL PRIOR TO POURING CDF CONCRETE.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

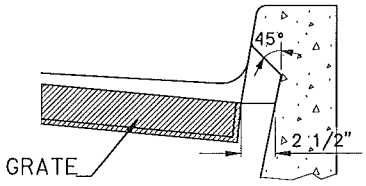
TRENCH DAM

SCALE: N.T.S.
DATE:
APPROVED BY: 12-15-2006
STANDARD DRAWING 319

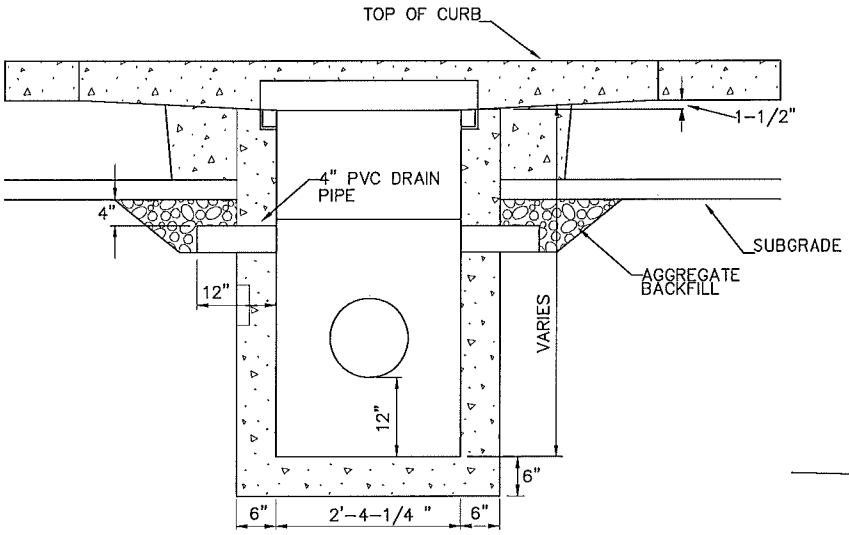


PLAN

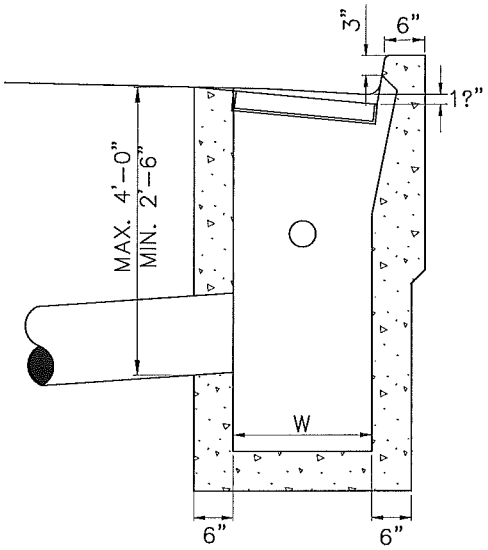
INLET TYPE	W
N-1, CN-1	1'-8?"
N-2, CN-2	2'-3?"



CURB OPENING
DETAIL



SECTION B-B



SECTION A-A

NOTES
1. CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI.
2. CATCH BASIN TO BE CAST IN PLACE.
3. FRAME TO BE SET FLUSH WITH FACE OF CURB.

PELICAN CATCH BASIN IS THE STANDARD BASIN. THIS DESIGN REQUIRES PRIOR APPROVAL FROM CITY FOR USAGE.

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

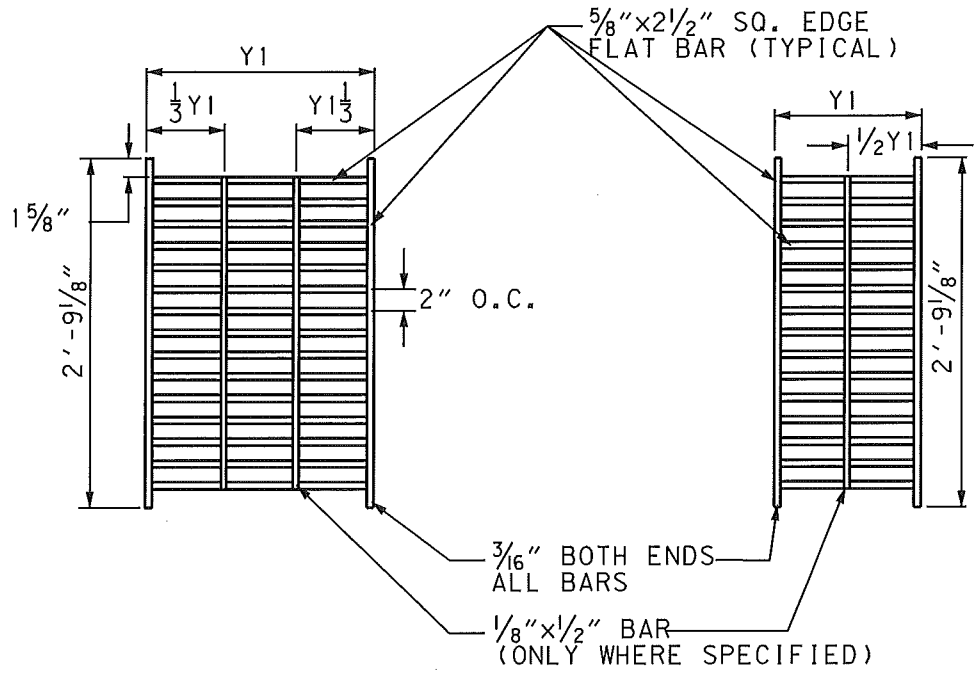
REVISIONS:
11-30-2010

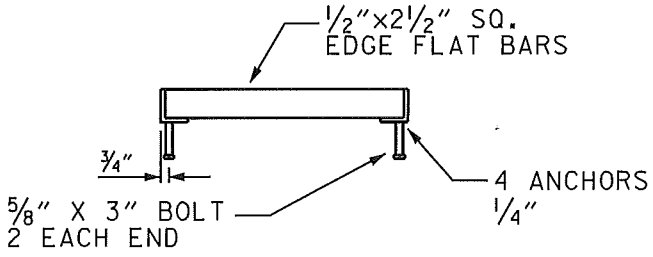
CATCH BASIN

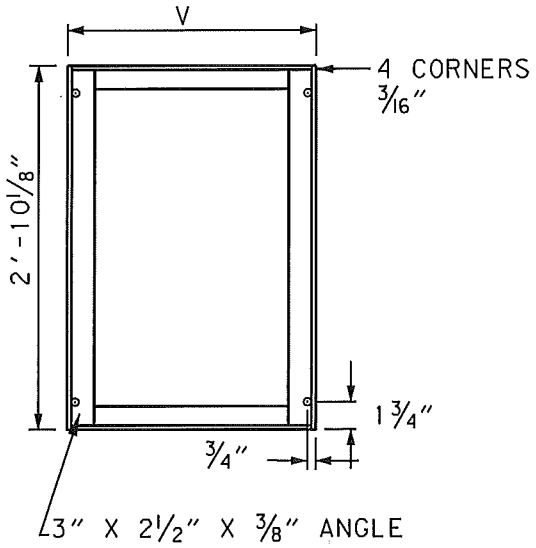
SCALE: N.T.S.
DATE: May 2007
APPROVED BY: D,Danicic
STANDARD DRAWING 401

GRATE - TYPE 1

GRATE - TYPE 2







FRAME

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

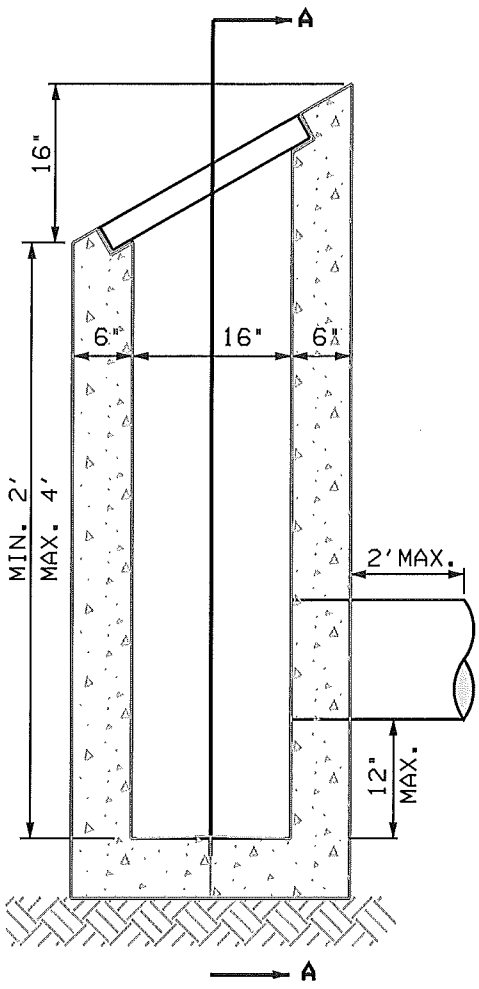
INLET TYPE	V	Y1	NO. OF BARS	TYPE	REMARKS
N-1, CN-1	2'-3 1/4"	2"-2 1/8"	17	1	
N-2, CN-2	2'-9 1/4"	1'-4"	17	2	2 GRATES

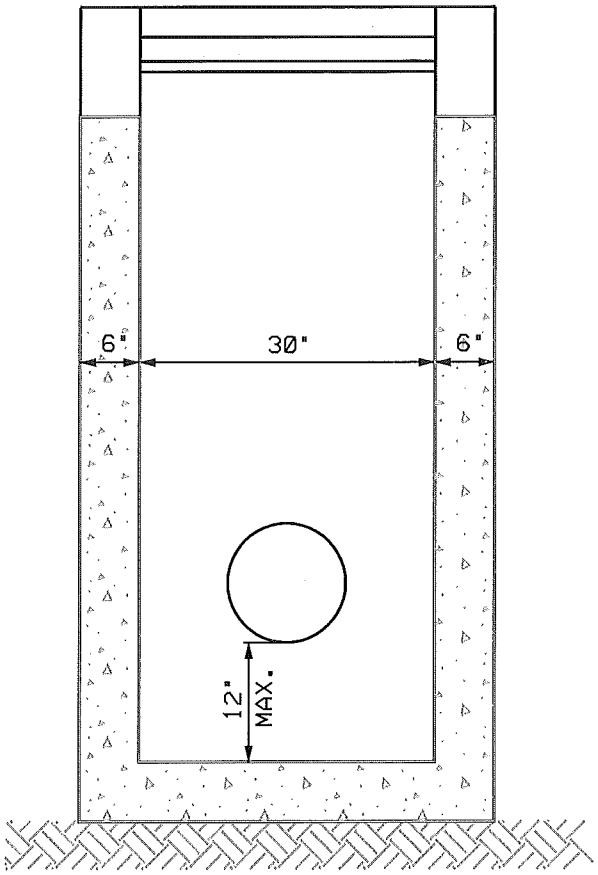
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

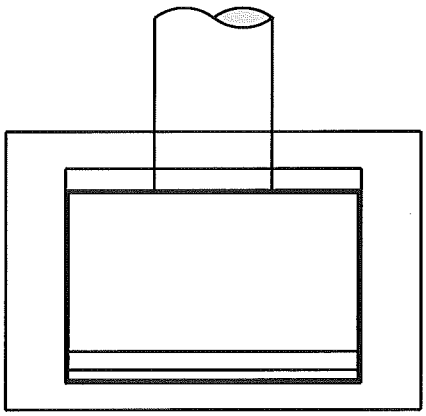
CATCH BASIN FRAME AND GRATE

SCALE: N.T.S.
DATE: May 2007
APPROVED BY: D. Danicic
STANDARD DRAWING 402





SECTION A-A



PLAN VIEW

NOTES:

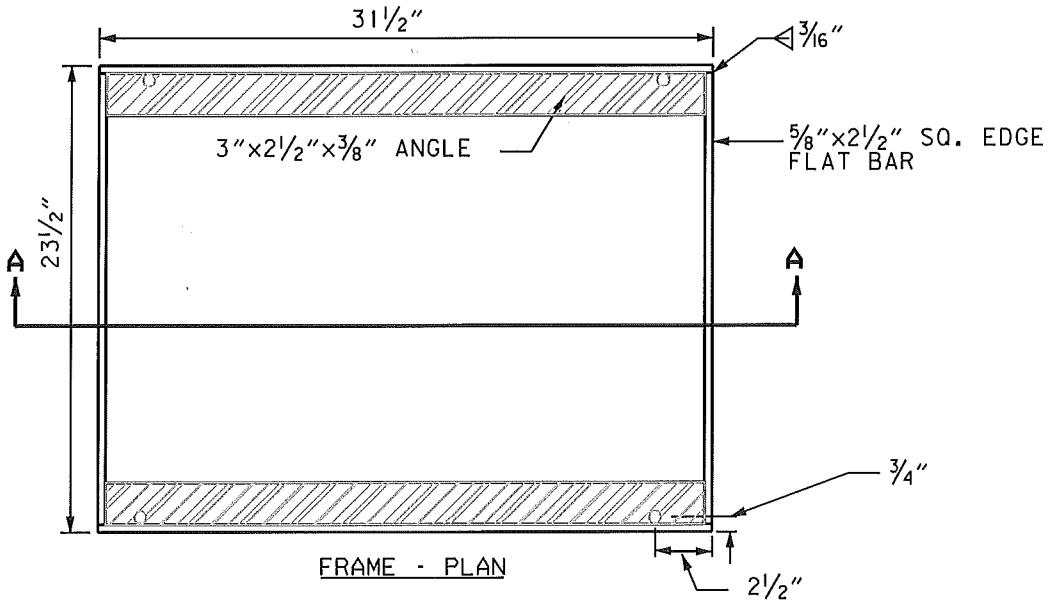
1. CONCRETE SHALL HAVE MIN. STRENGTH OF 3000 PSI AT 28 DAYS.
2. SEE STANDARD DRAWING NO. 404 FOR FRAME AND GRATE

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

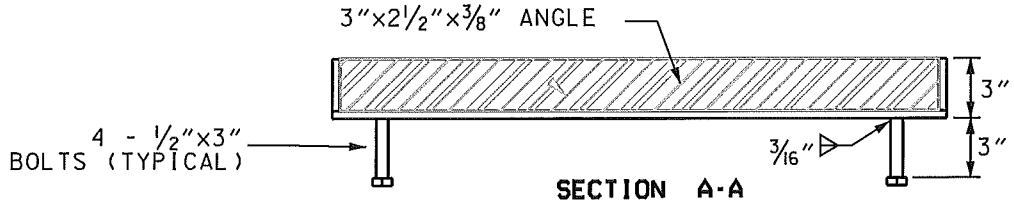
REVISIONS:

DITCH INTERCEPTOR TYPE A

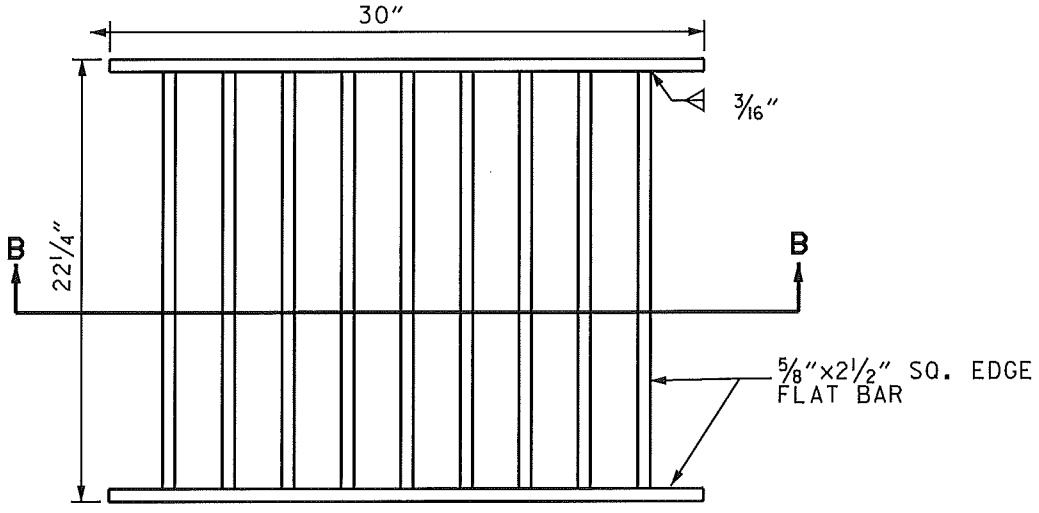
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	403



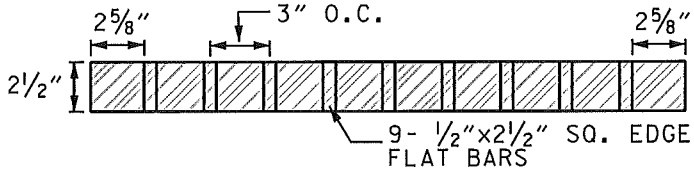
FRAME - PLAN



SECTION A-A



GRATE - PLAN



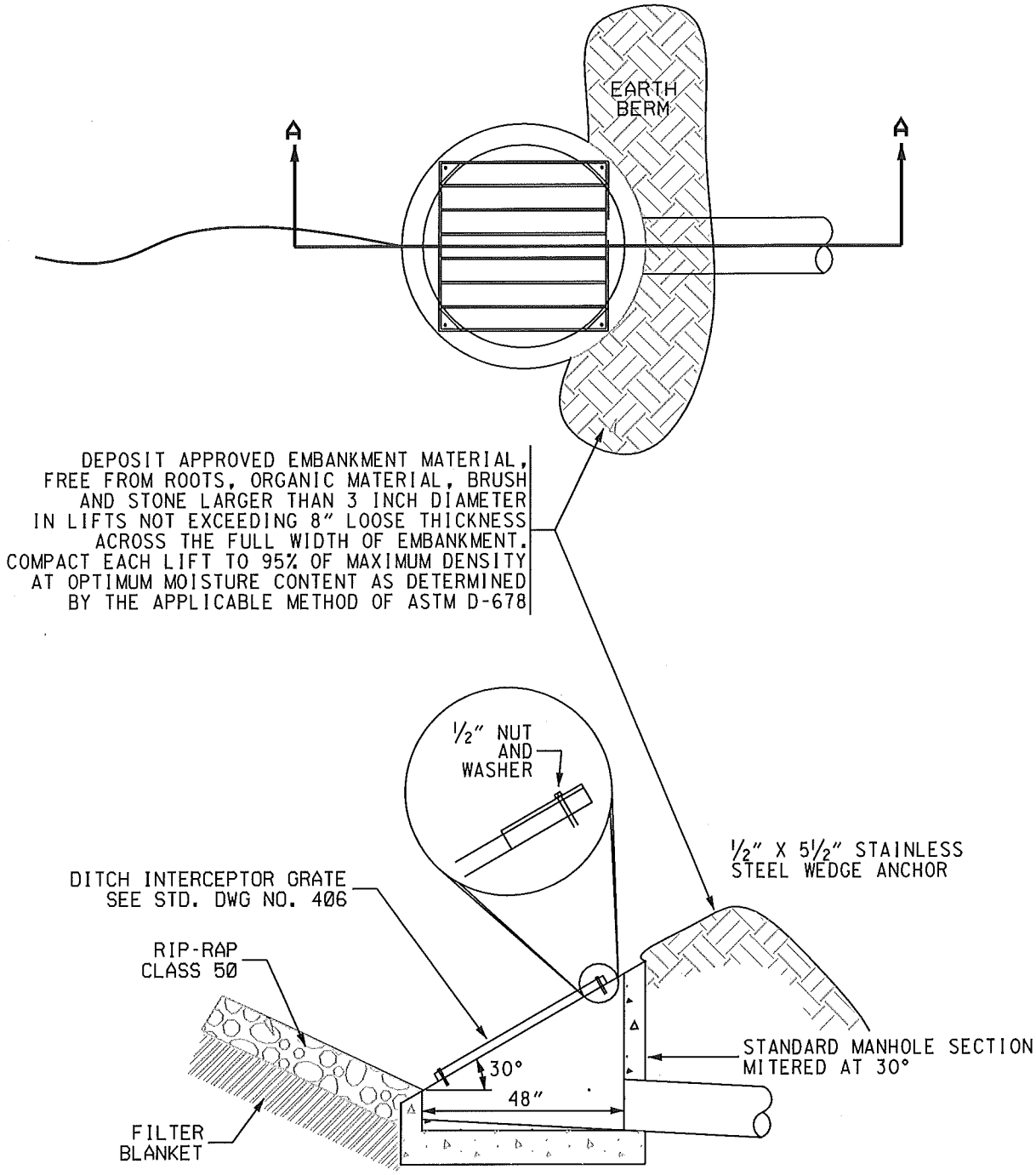
SECTION B-B

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

DITCH INTERCEPTOR FRAME AND GRATE TYPE A

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



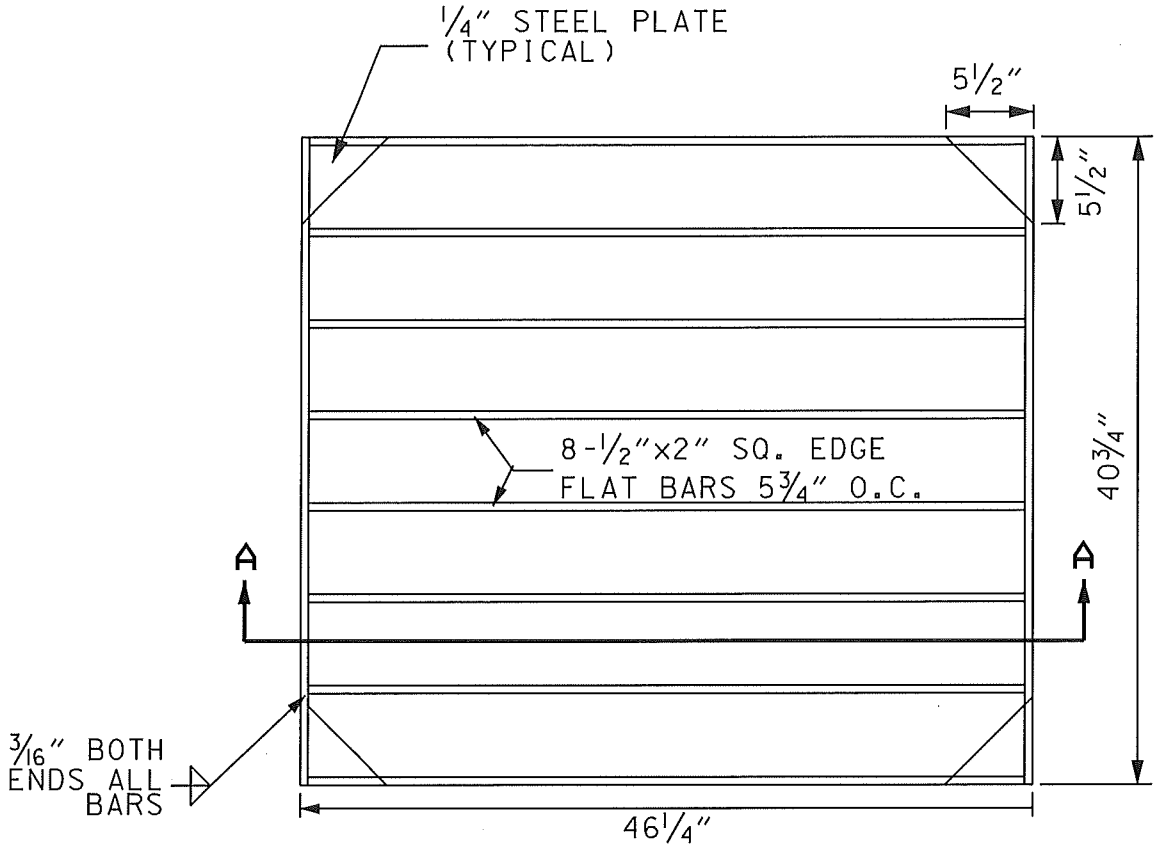
SECTION A-A

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

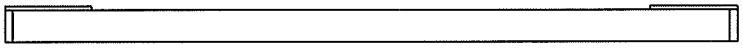
DITCH INTERCEPTOR TYPE "B"

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	405



PLAN

MATERIAL TO BE NEW STRUCTURAL STEEL, ASTM A-7, A-36 ØR A-373



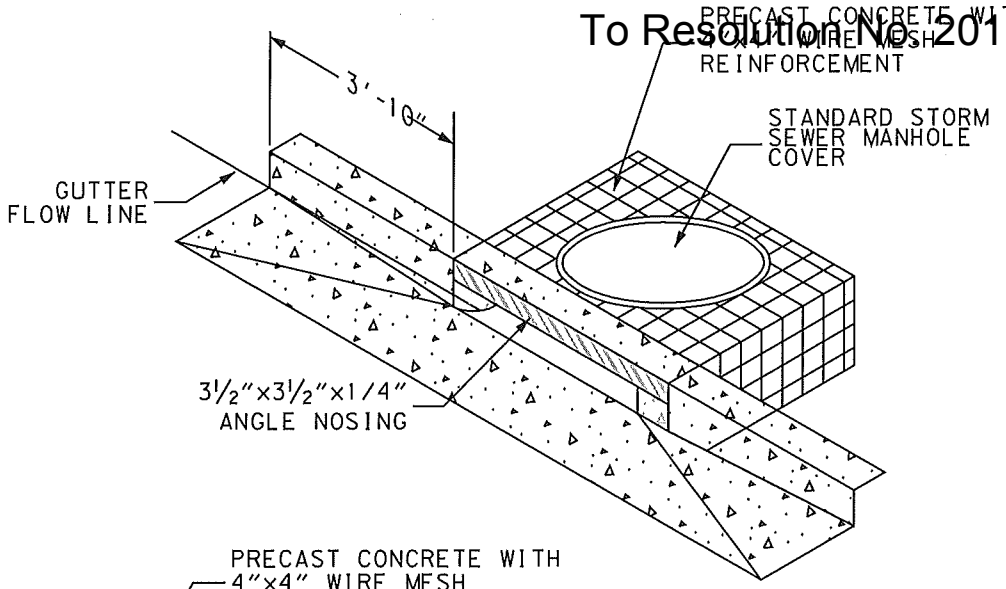
SECTION A-A

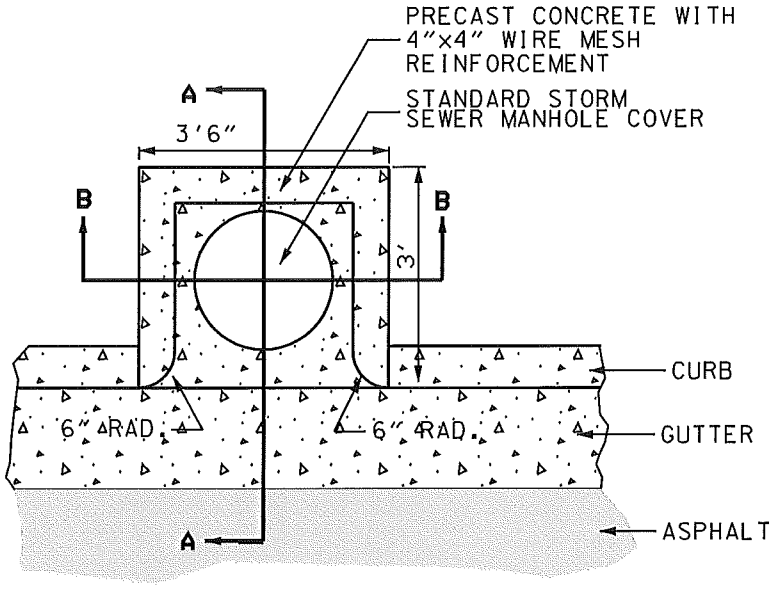
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

DITCH INTERCEPTOR TYPE "B" GRATE

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	406



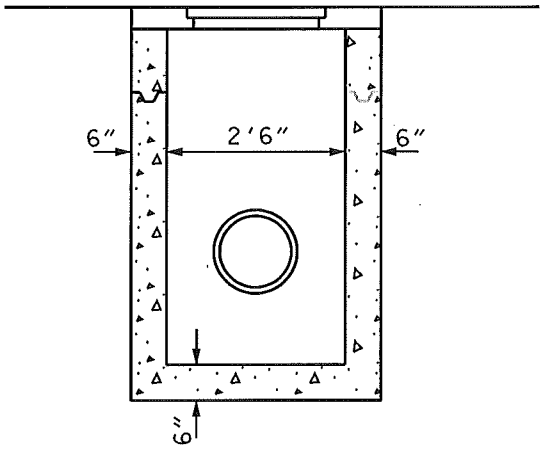


NOTES:

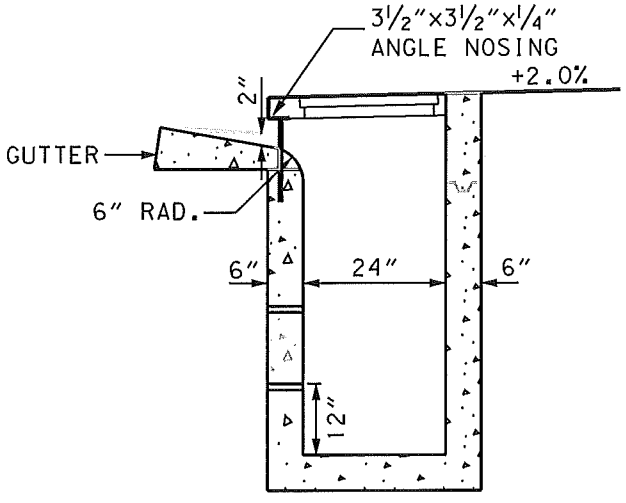
ALL METAL PARTS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.

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



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

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

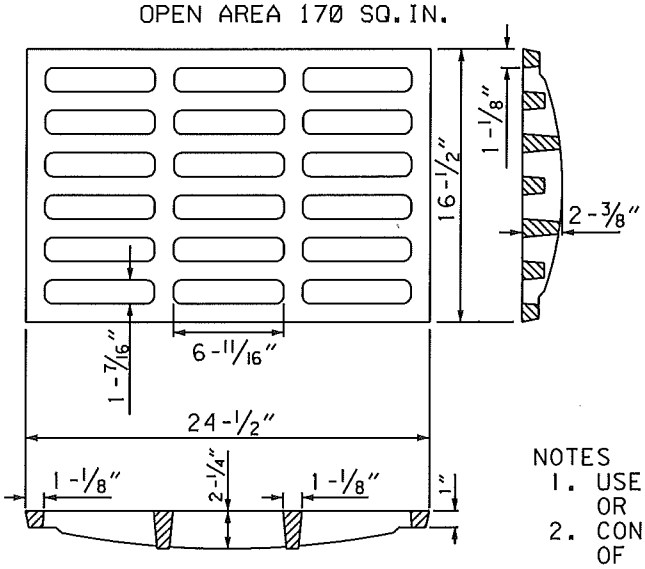
REVISIONS:

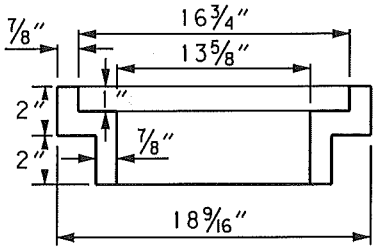
PELICAN CATCH BASIN

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	407

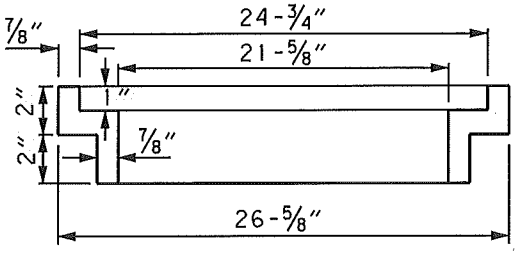
GRATE

ESTIMATED WEIGHT OF GRATE: 64 LBS
OPEN AREA 170 SQ.IN.





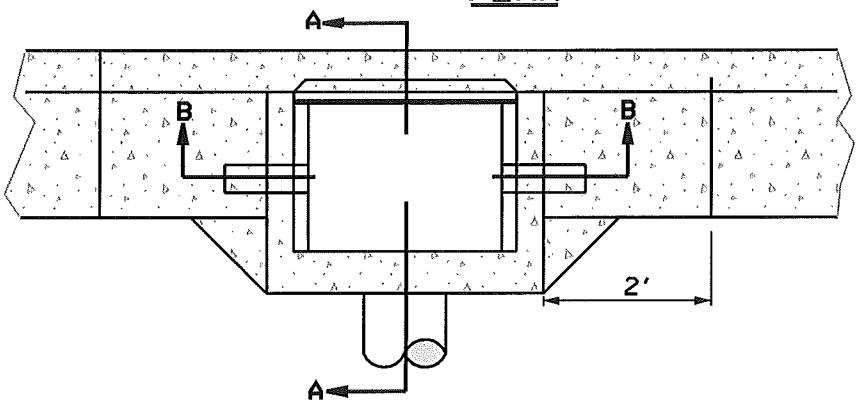
FRAME WIDTH



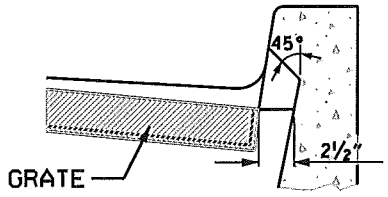
FRAME LENGTH

NOTES
1. USE EAST JORDAN IRON WORKS CATCH BASIN #307 OR EQUIVALENT.
2. CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI.
3. CATCH BASIN TO BE CAST IN PLACE.

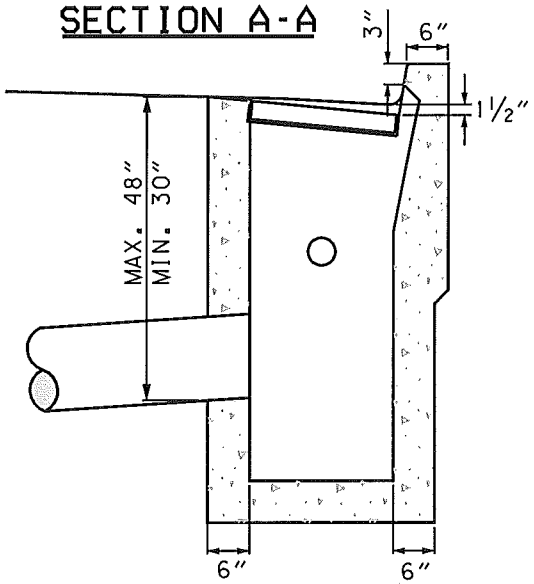
PLAN



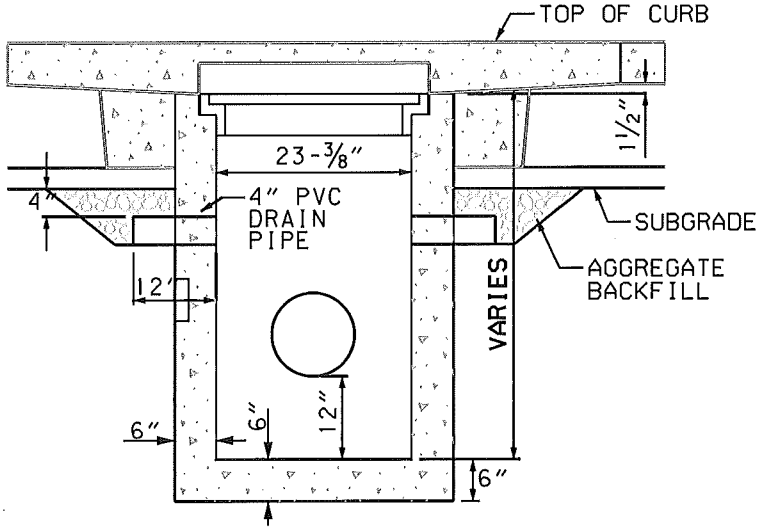
CURB OPENING



SECTION A-A



SECTION B-B



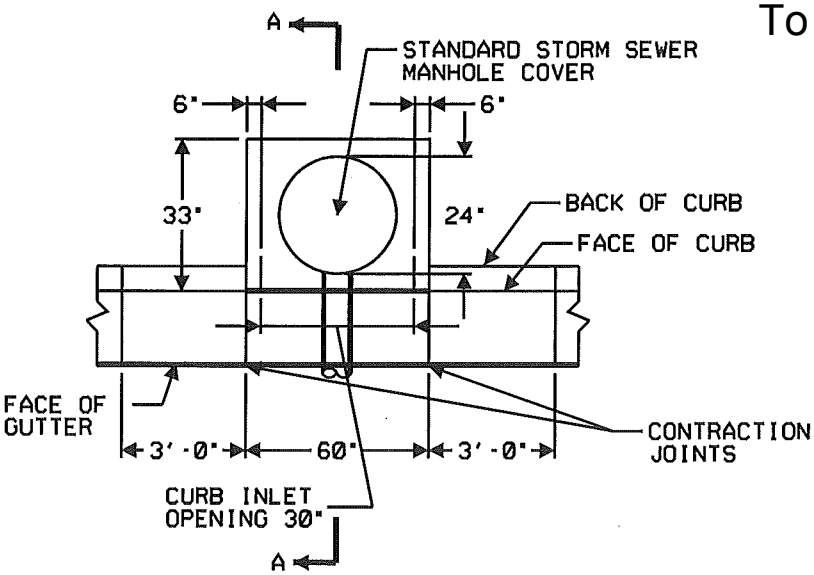
THIS CATCH BASIN SHALL BE USED ON A CASE BY CASE BASIS, AND REQUIRES PRIOR APPROVAL BY THE CITY OF NEWBERG.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

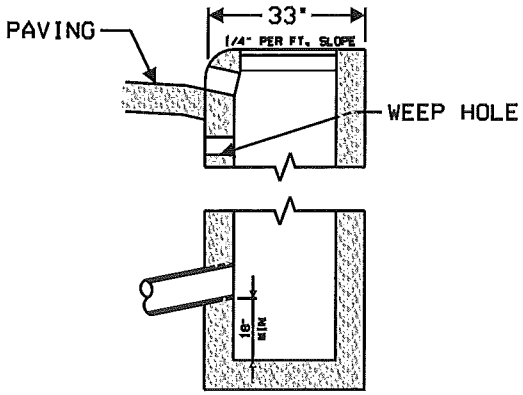
REVISIONS:

ALTERNATE CATCH BASIN

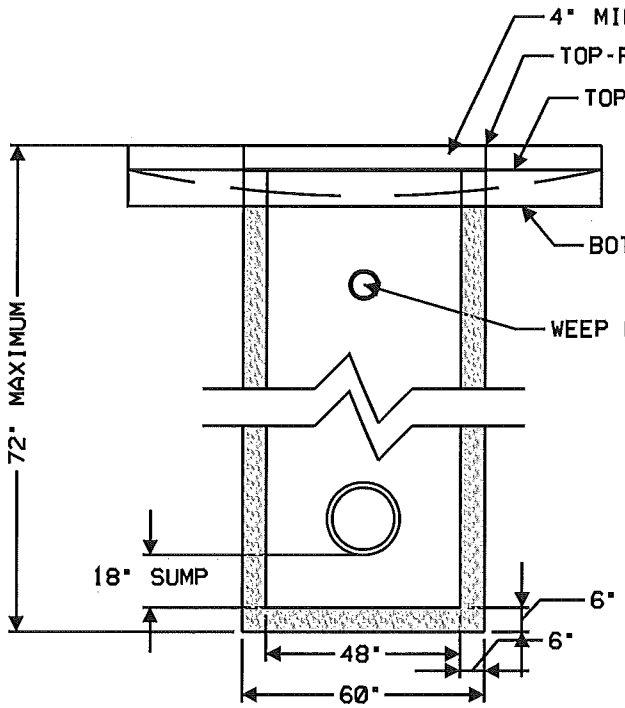
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	408



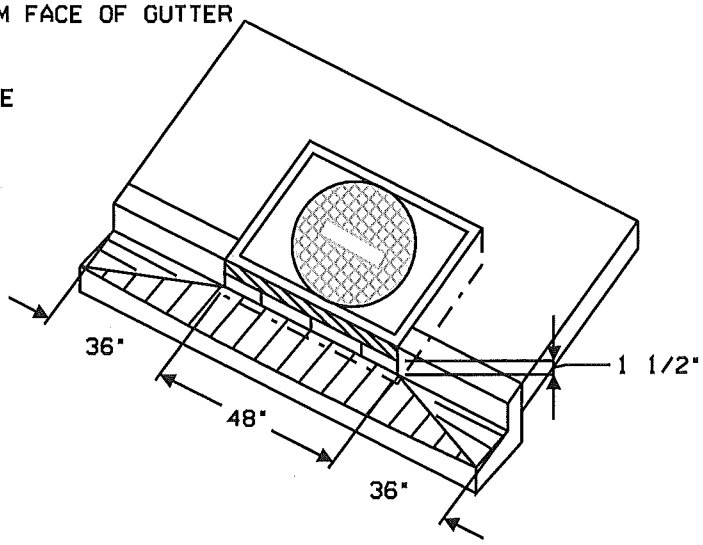
PLAN VIEW



SECTION A-A



FRONT VIEW



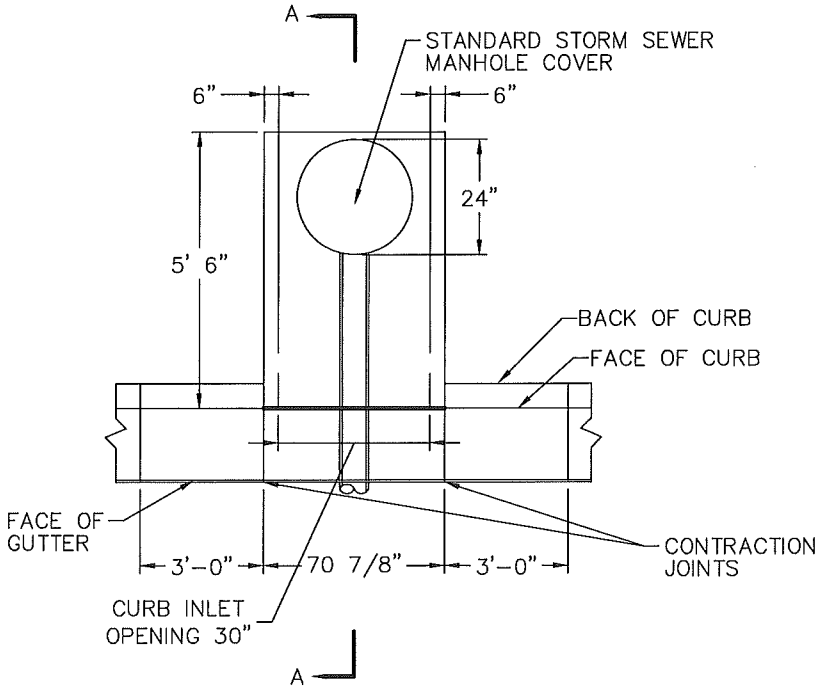
PERSPECTIVE VIEW SHOWING
DEPRESSED GUTTER AT CURB INLET

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

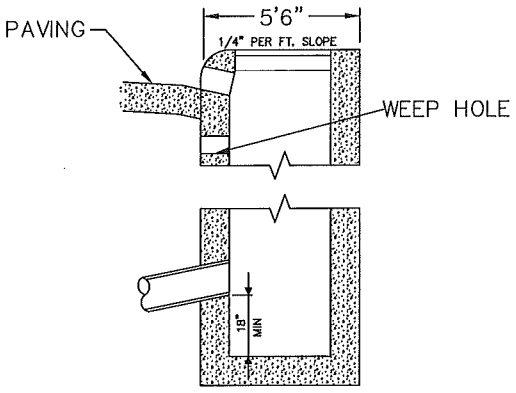
REVISIONS:

OVERSIZED PELICAN CATCH BASIN

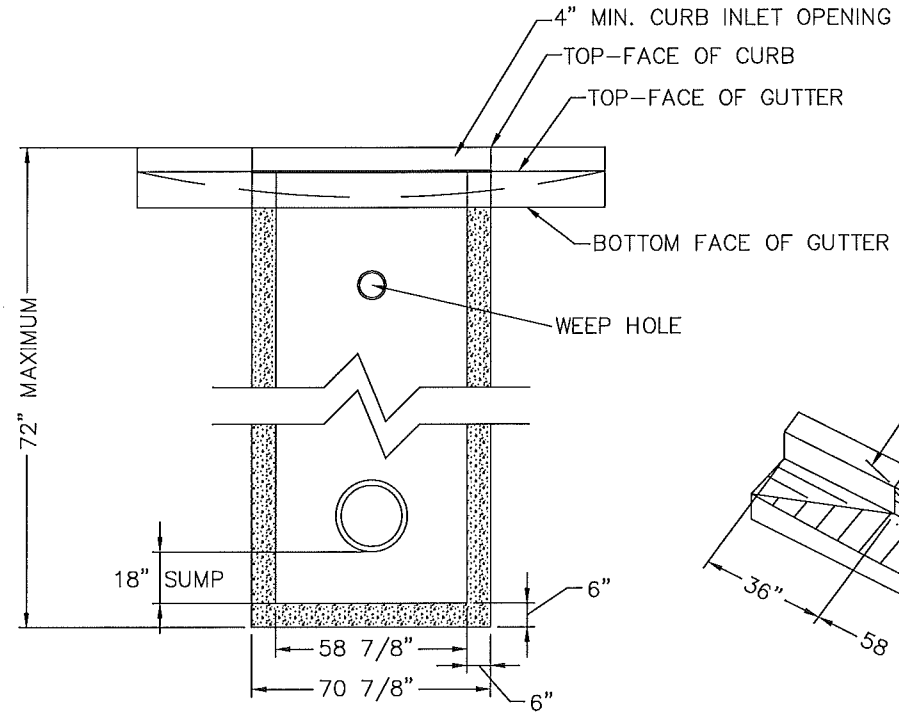
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	409



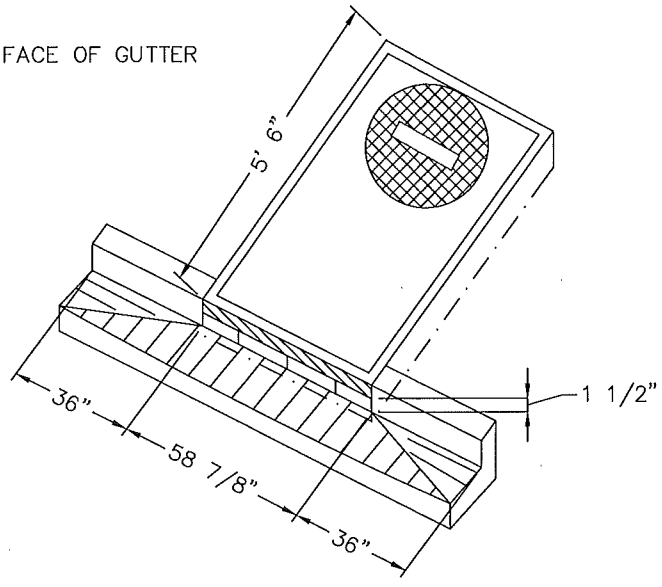
PLAN VIEW



SECTION A-A



FRONT VIEW



PERSPECTIVE VIEW SHOWING DEPRESSED GUTTER AT CURB INLET

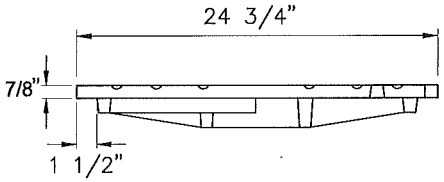
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132
PHONE 503-537-1240 - FAX 503-537-1277

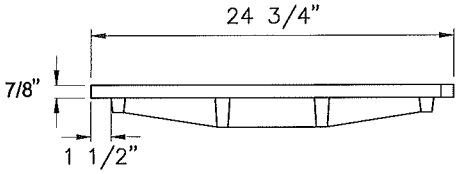
REVISIONS:

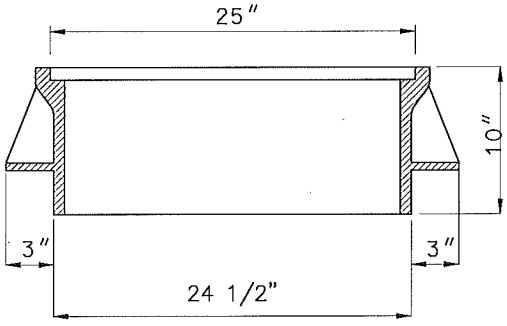
SUPERSIZED PELICAN CATCH BASIN

SCALE:	N.T.S.
DATE:	July 2009
APPROVED BY:	P. Chiu
STANDARD DRAWING	410

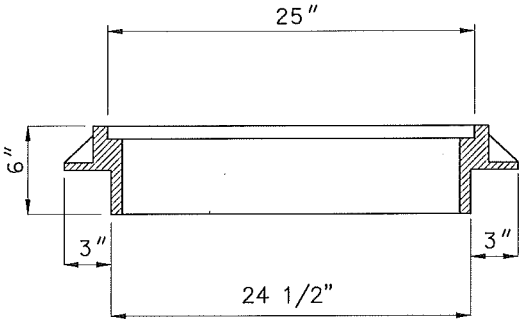
STORM







STANDARD FRAME



SUBURBAN FRAME

NOTES

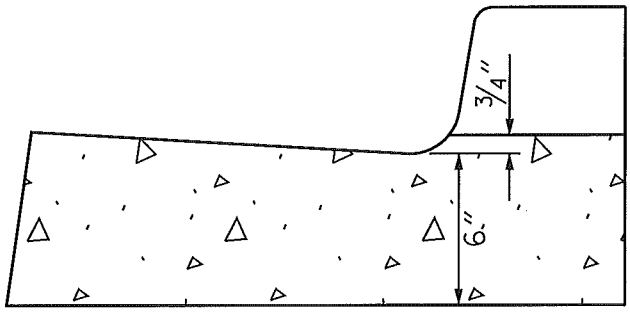
1. USE SUBURBAN TYPE FRAME IN NON-TRAFFIC AREAS ONLY.
2. COVER AND FRAME SHALL BE CAST IRON, ASTM A-48 CLASS 30 AND MEET H-20 LOAD RATING.
3. COVER AND FRAME TO HAVE TRUE BEARING ALL AROUND.

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

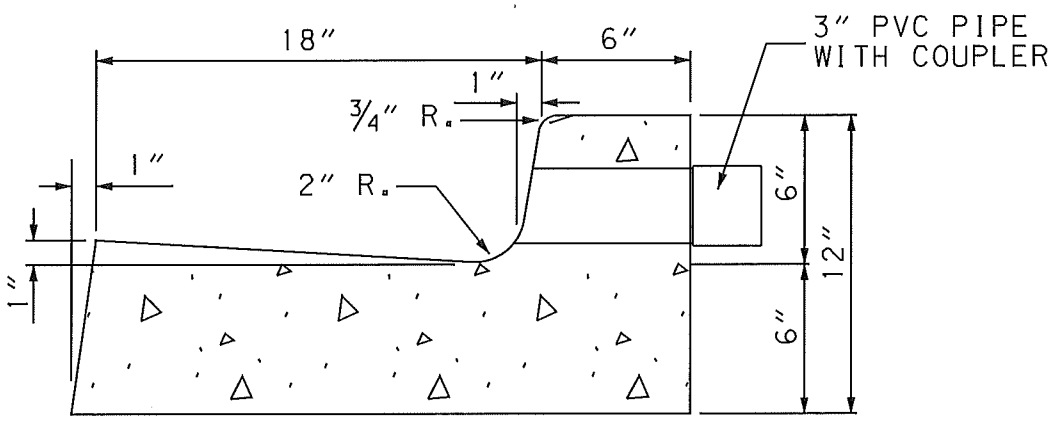
REVISIONS:

STORM WATER MANHOLE FRAME AND COVER

SCALE:	N.T.S.
DATE:	SEPT 2010
APPROVED BY:	D. Danicic
STANDARD DRAWING	411



CURB AND GUTTER AT DRIVEWAY APPROACH



CURB AND GUTTER

NOTES

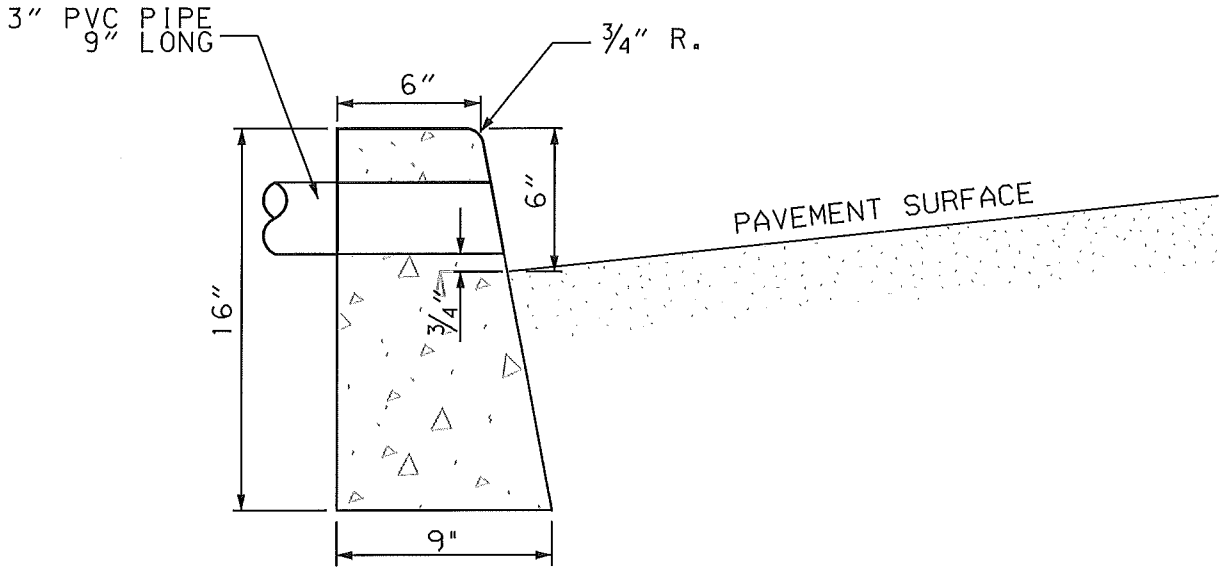
1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. TRANSVERSE CONTRACTION JOINTS - MAKE 1/8" X 1 1/2" DEEP CUT; SPACED AT 15'. PROVIDE CONTRACTION JOINTS AT CURB RETURN POINTS, CATCH BASINS AND DRIVEWAYS.
3. SCORE CURB OVER WEEP HOLE BLOCK OUT.
4. EXPANSION JOINTS SHALL NOT BE USED.
5. APPLY 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.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

CURB AND GUTTER

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	501



NOTES:

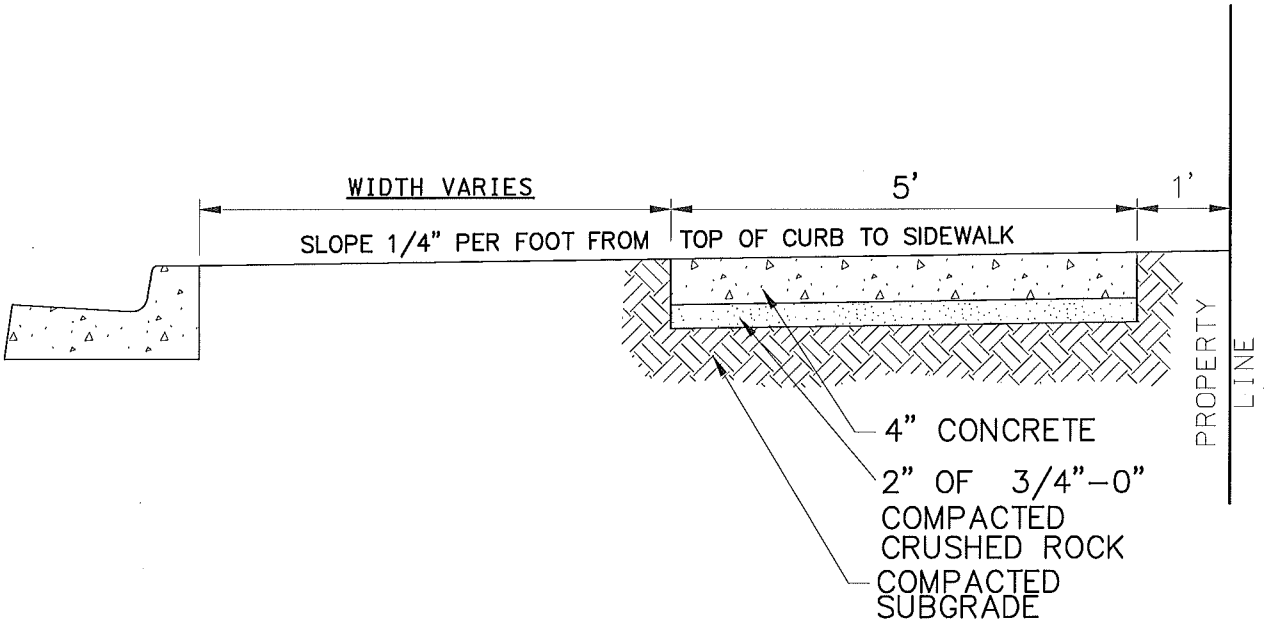
1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. TRANSVERSE CONTRACTION JOINTS -1/8"x1 1/2" DEEP CUT SPACED AT 15' INTERVALS.
3. THIS TYPE OF CURB TO BE USED ONLY WHERE SPECIFIED.
4. APPLY CURING COMPOUND (PETROLEUM BASE) TO FRESH CONCRETE TO RETAIN MOISTURE.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

CURB - TYPE "C"

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

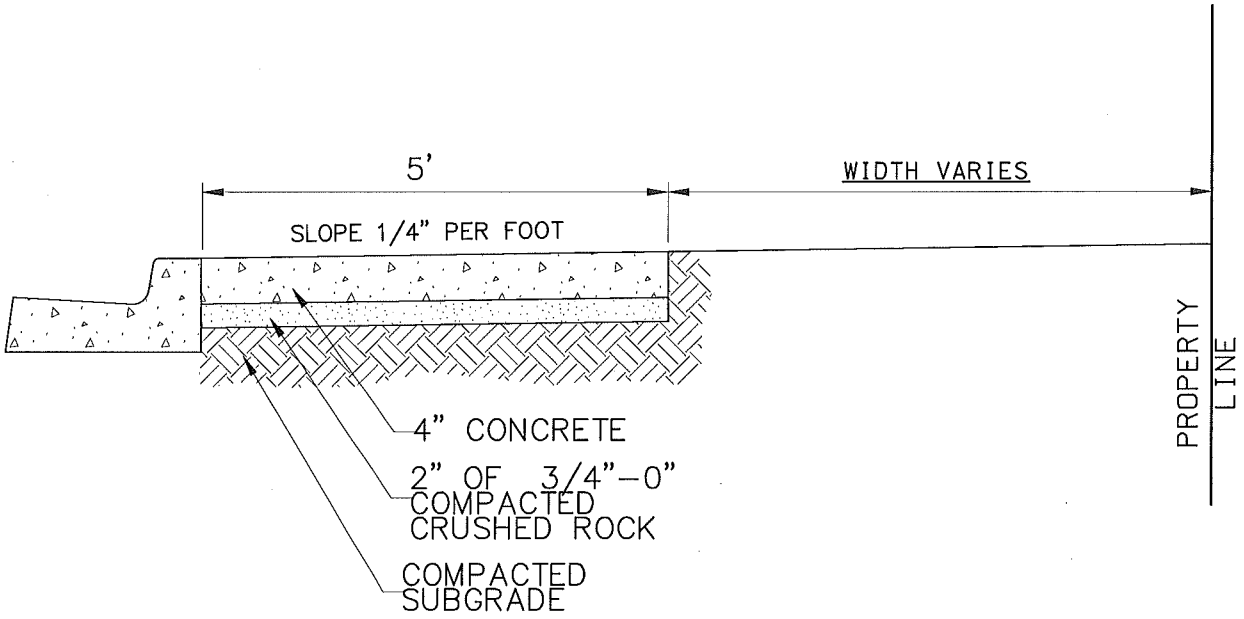


NOTES:

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.

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

REVISIONS:	SIDEWALK TYPE "A"	SCALE: N.T.S.
Jan. 2010		DATE: JAN. 2010
		APPROVED BY: P. Chlu
		STANDARD DRAWING 503

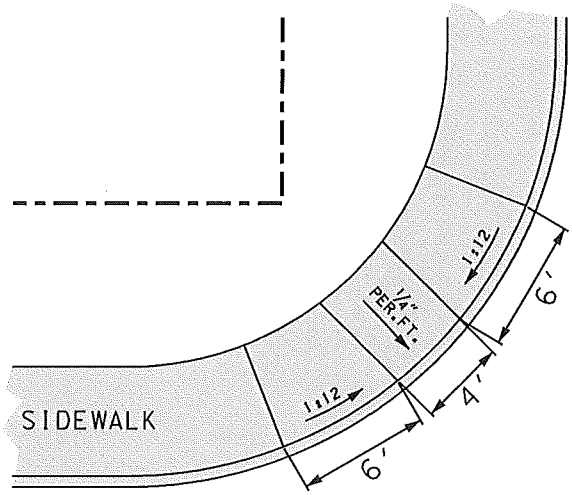


NOTES:

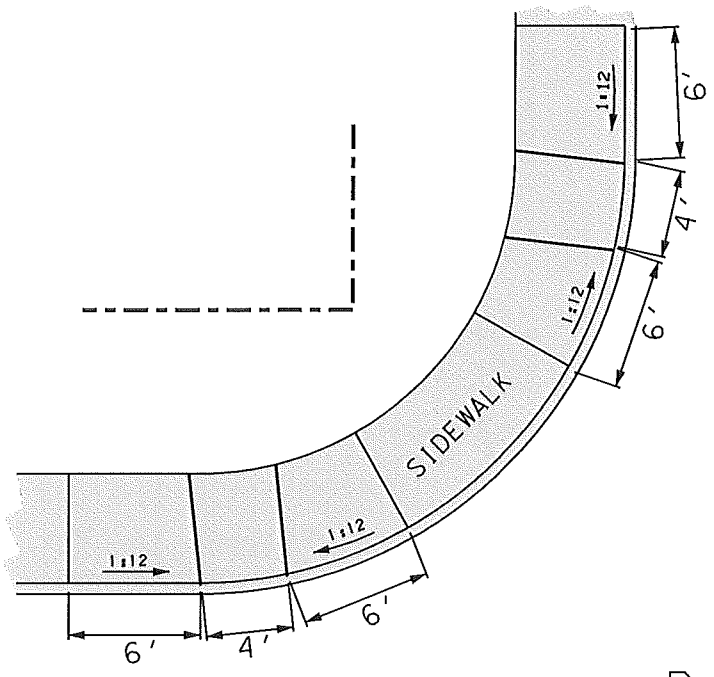
1. SLOPE FROM THE PROPERTY LINE TO THE STREET AT 2%.
2. WORK AGGREGATE INTO CONCRETE PRIOR TO FINISHING CONCRETE.
3. FINISHING DETAILS.
   - -EDGE CONCRETE WITH 3" EDGING TROWEL.
   - -SCORE CONCRETE AT 5' INTERVALS.
   - -INSTALL 1/8"x1 1/2" CONTRACTION JOINTS EVERY 15'.
   - -FABRIC TYPE EXPANSION 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.

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

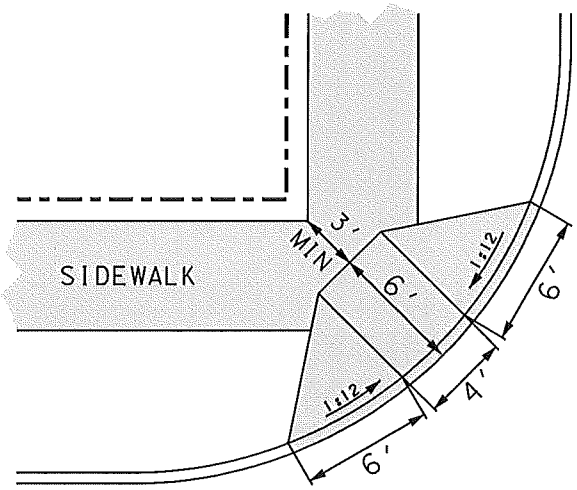
REVISIONS:	SIDEWALK TYPE "B"	SCALE: N.T.S.
JAN. 2010		DATE: JAN. 2010
		APPROVED BY: P. CHIU
		STANDARD DRAWING 504



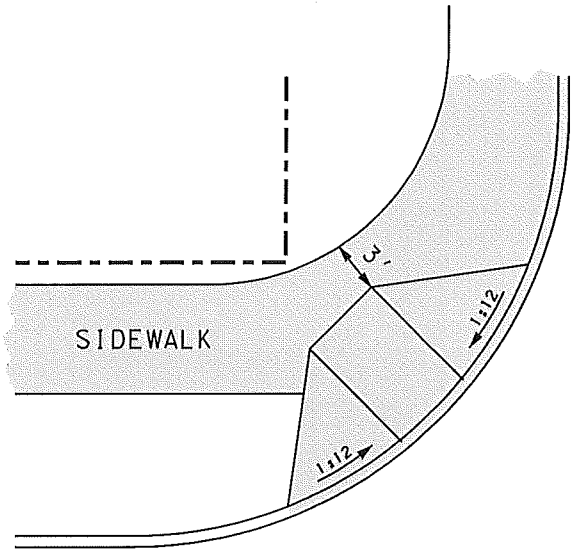
A



B



C



D

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

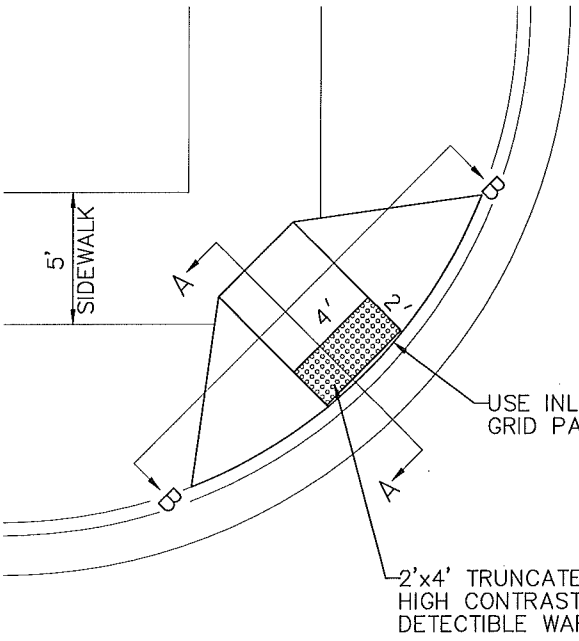
City of Newberg

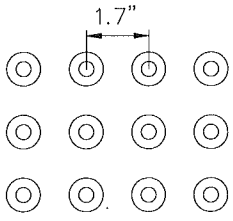
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

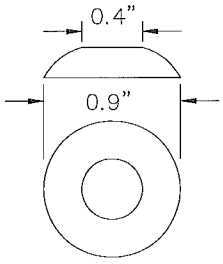
CURB RAMP LOCATIONS

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

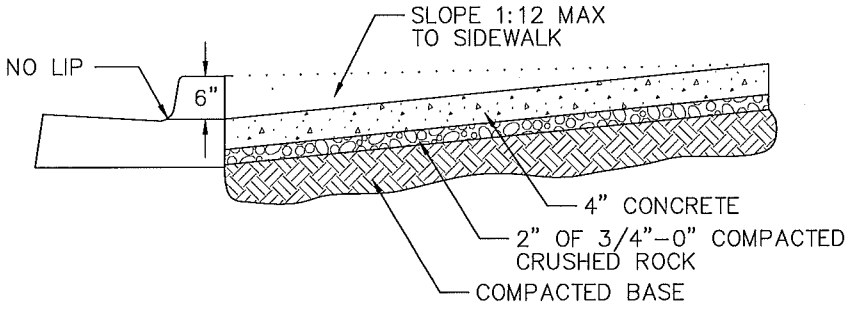




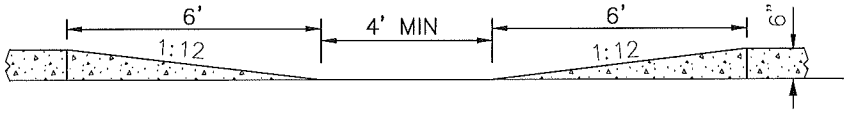
RAMP TEXTURE
PATTERN DETAIL



TRUNCATED
DOME DETAIL



SECTION A–A



SECTION B–B

NOTES:

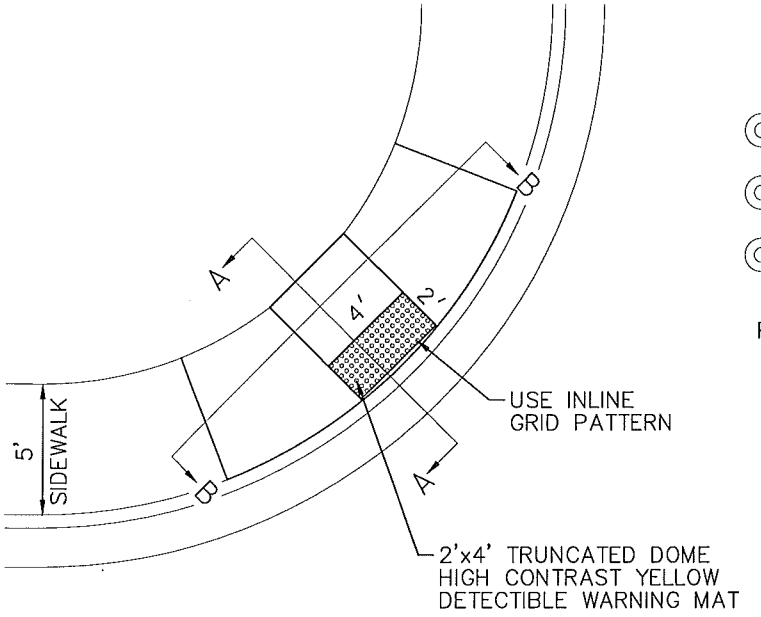
1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. SIDEWALK RAMPS ARE REQUIRED AT ALL NEW INTERSECTIONS.
3. REPLACEMENT CURBS MUST BE POURED AGAINST A VERTICAL EDGE OF EXISTING CURB.
4. CONCRETE IN A REPLACEMENT CURB SHALL NOT PROTRUDE PAST THE FACE OF THE CURB IN THE ASPHALT REPLACEMENT AREA.
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. TRUCNACTED 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.

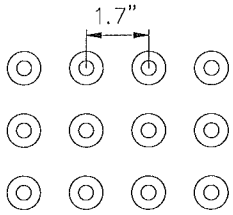
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132
PHONE 503-537-1240 - FAX 503-537-1277

REVISIONS:
4-6-2010

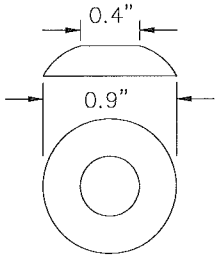
SIDEWALK RAMP
TYPE "A" SIDEWALK

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

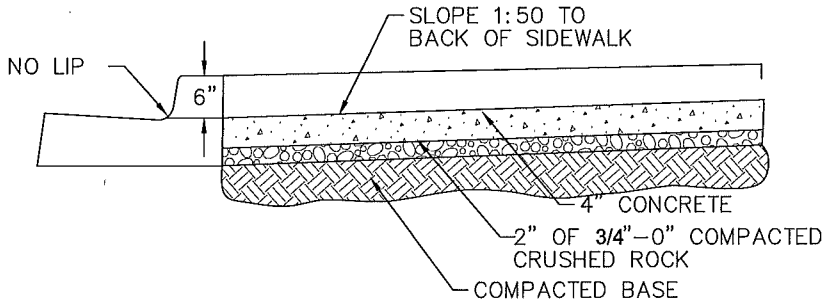




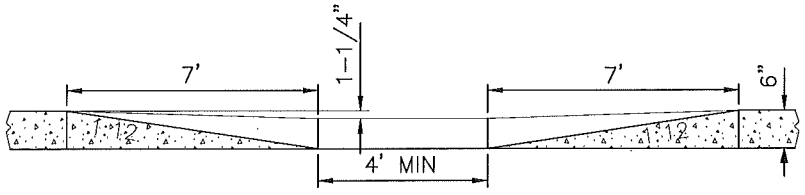
RAMP TEXTURE
PATTERN DETAIL



TRUNCATED
DOME DETAIL



SECTION A-A



SECTION B-B

NOTES:

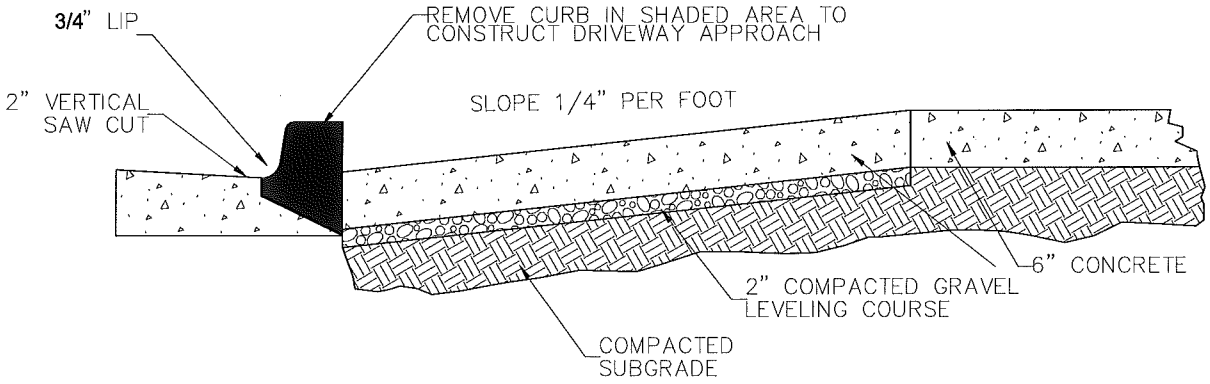
1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. SIDEWALK RAMPS ARE REQUIRED AT ALL NEW INTERSECTIONS.
3. REPLACEMENT CURBS MUST BE POURED AGAINST A VERTICAL EDGE OF EXISTING CURB.
4. CONCRETE IN A REPLACEMENT CURB SHALL NOT PROTRUDE PAST THE FACE OF THE CURB IN THE ASPHALT REPLACEMENT AREA.
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. TRUCNACTED 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.

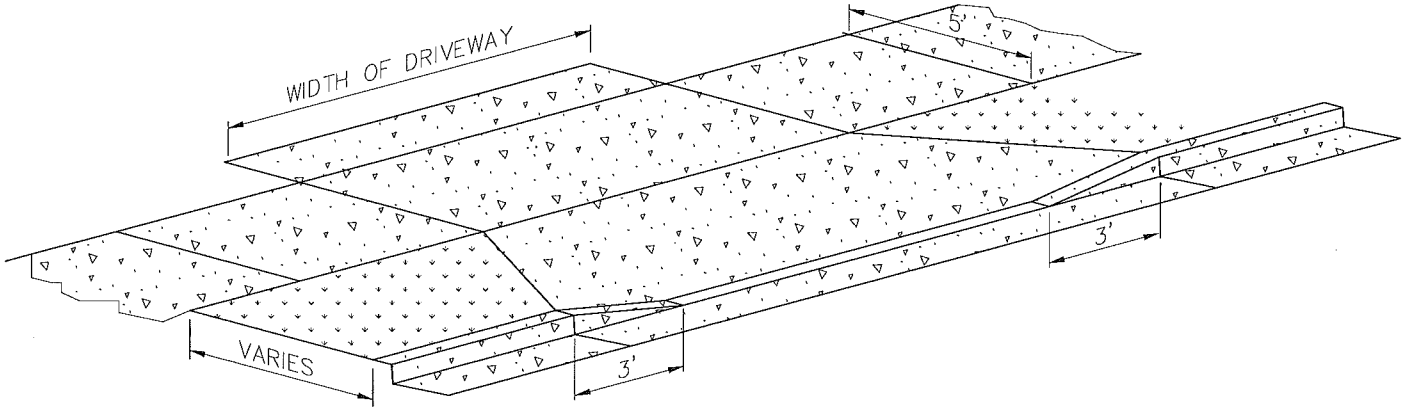
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132
PHONE 503-537-1240 - FAX 503-537-1277

REVISIONS:
4-8-2010

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''

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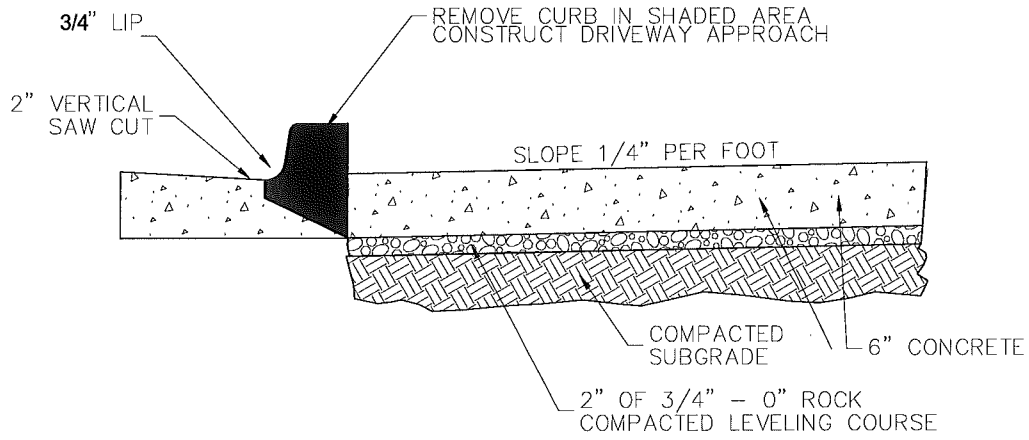
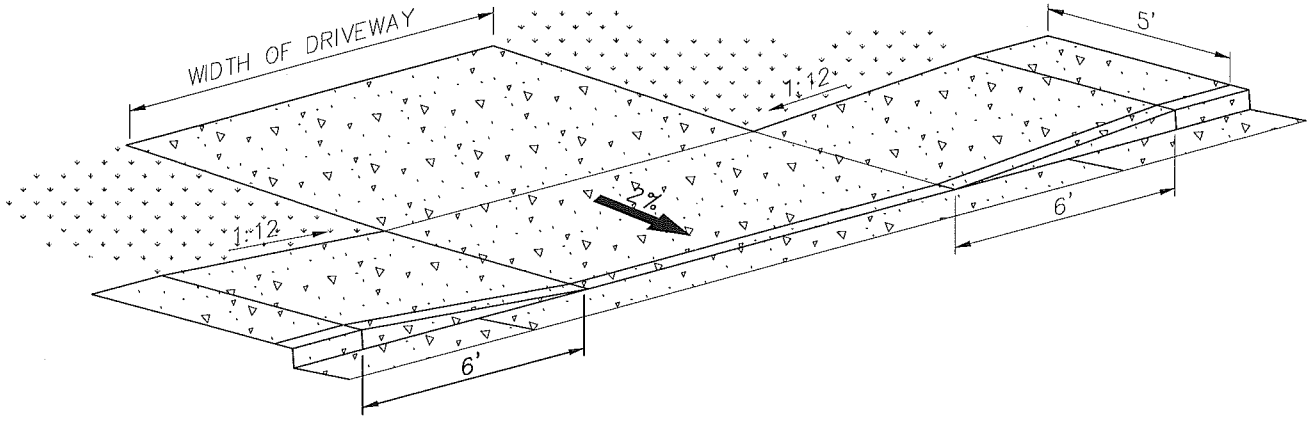
PHONE 503-537-1240 - FAX 503-537-1277

REVISIONS:
4-8-2010

DRIVEWAY APRON CURB CUT TYPE "A" SIDEWALK

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	508





NOTES:

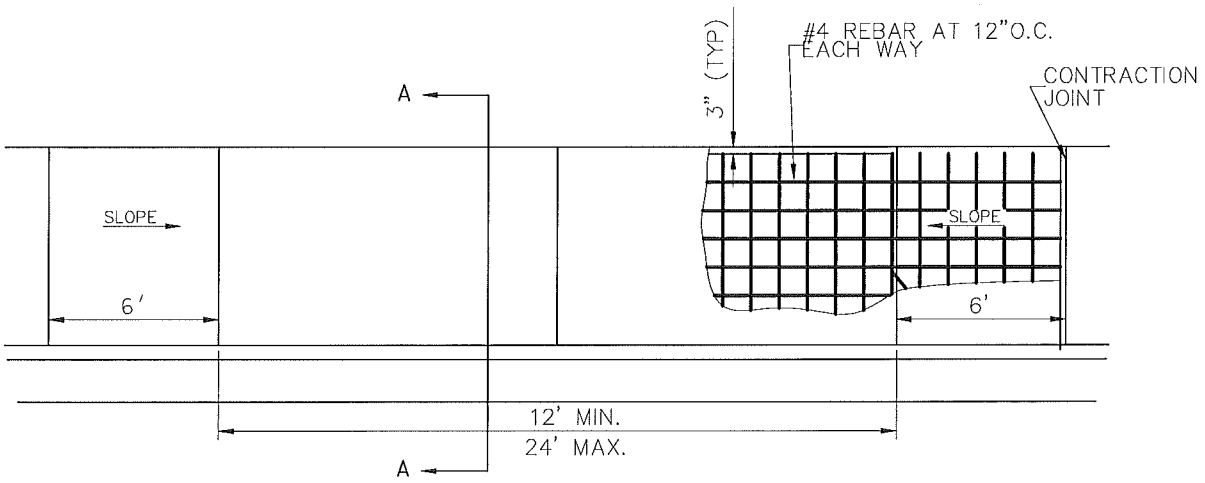
1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. LIMITS OF DRIVEWAY SHALL BE SAW CUT.
3. APPLY LIGHT BROOM FINISH TRANSVERSE TO THE SIDEWALK.
4. CURB AND APPROACH SHALL BE POURED MONOLITHICALLY.
5. IF WIDTH IS GREATER THAN 15 FEET, INSTALL CONTRACTION JOINT IN CENTER OF THE DRIVEWAY.
6. 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'

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

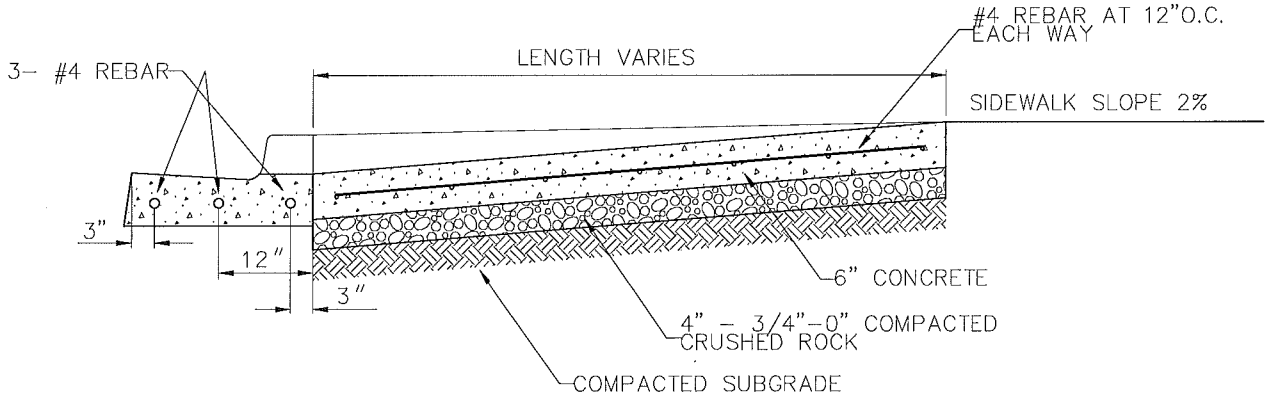
REVISIONS:
4-8-2010

DRIVEWAY APRON CURB CUT TYPE "B" SIDEWALK

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



PLAN



SECTION A-A

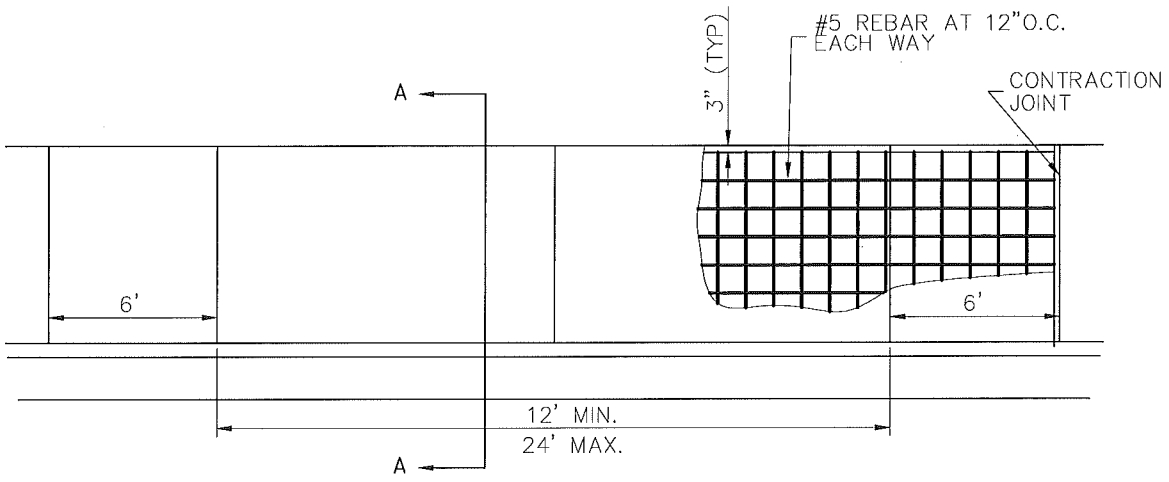
NOTES
1. SEE STANDARD DRAWING 501 & 509 FOR ADDITIONAL DETAILS.

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

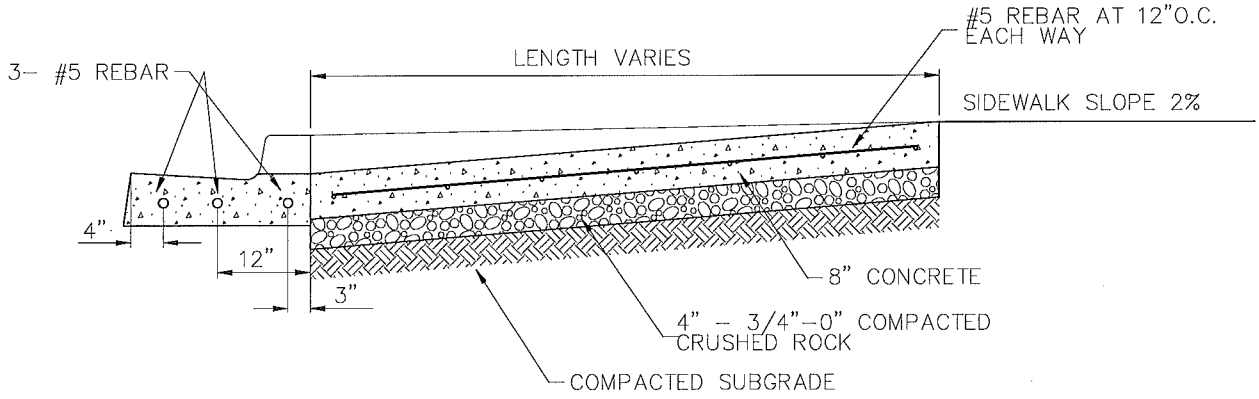
REVISIONS:
Jan 2011

COMMERCIAL DRIVEWAY

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



PLAN



SECTION A-A

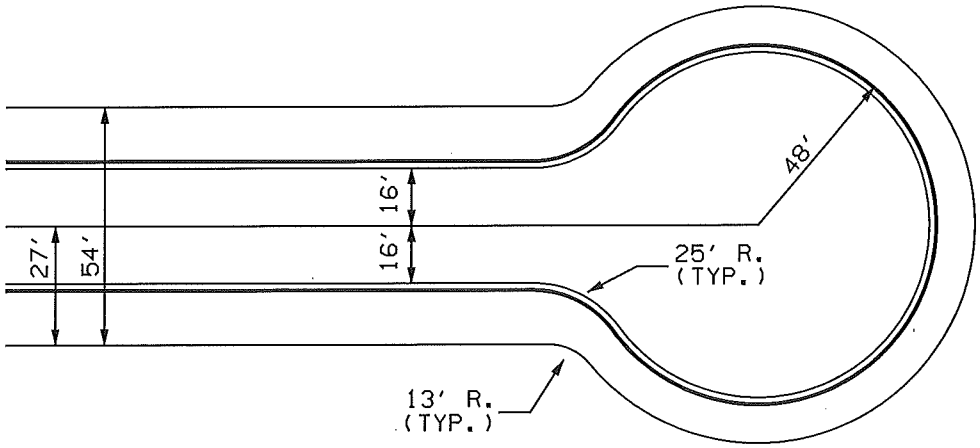
NOTES
1. SEE STANDARD DRAWING 501 AND 509 FOR ADDITIONAL DETAILS.

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

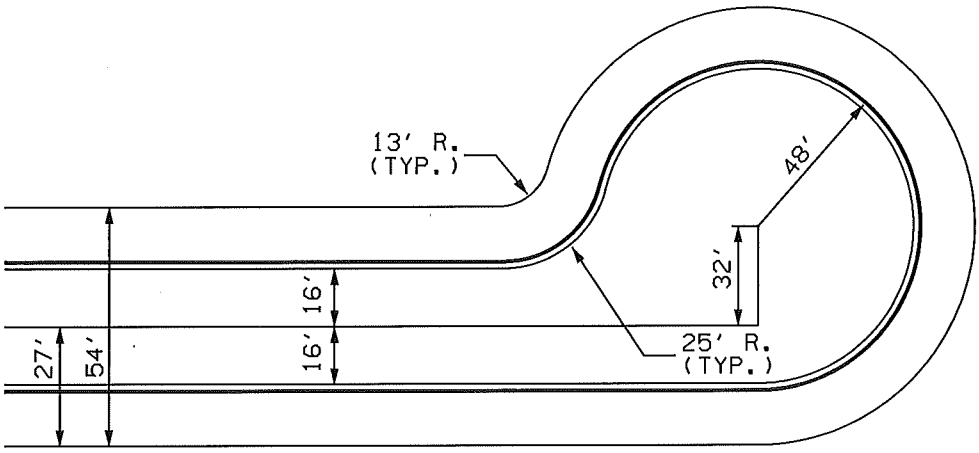
REVISIONS:

INDUSTRIAL DRIVEWAY

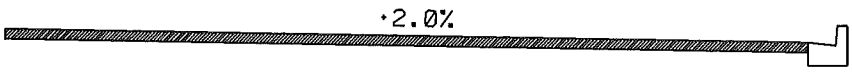
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	511



STANDARD



OFFSET



PROFILE
NTS

NOTES:

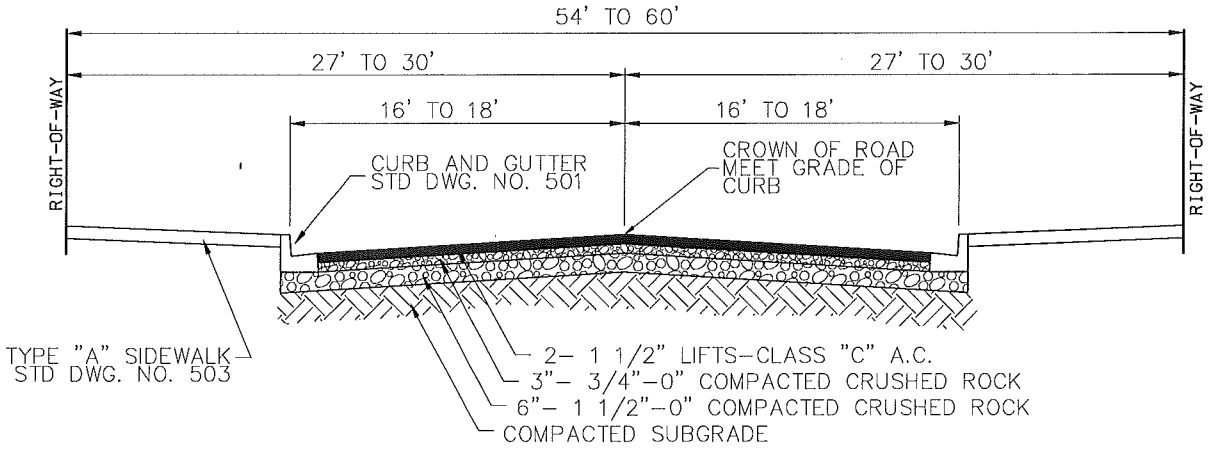
1. MINIMUM SLOPES
   0.5% AT CURB AROUND BULB
   2.0% CROSS SLOPE TO CURB

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

CUL-DE-SAC

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

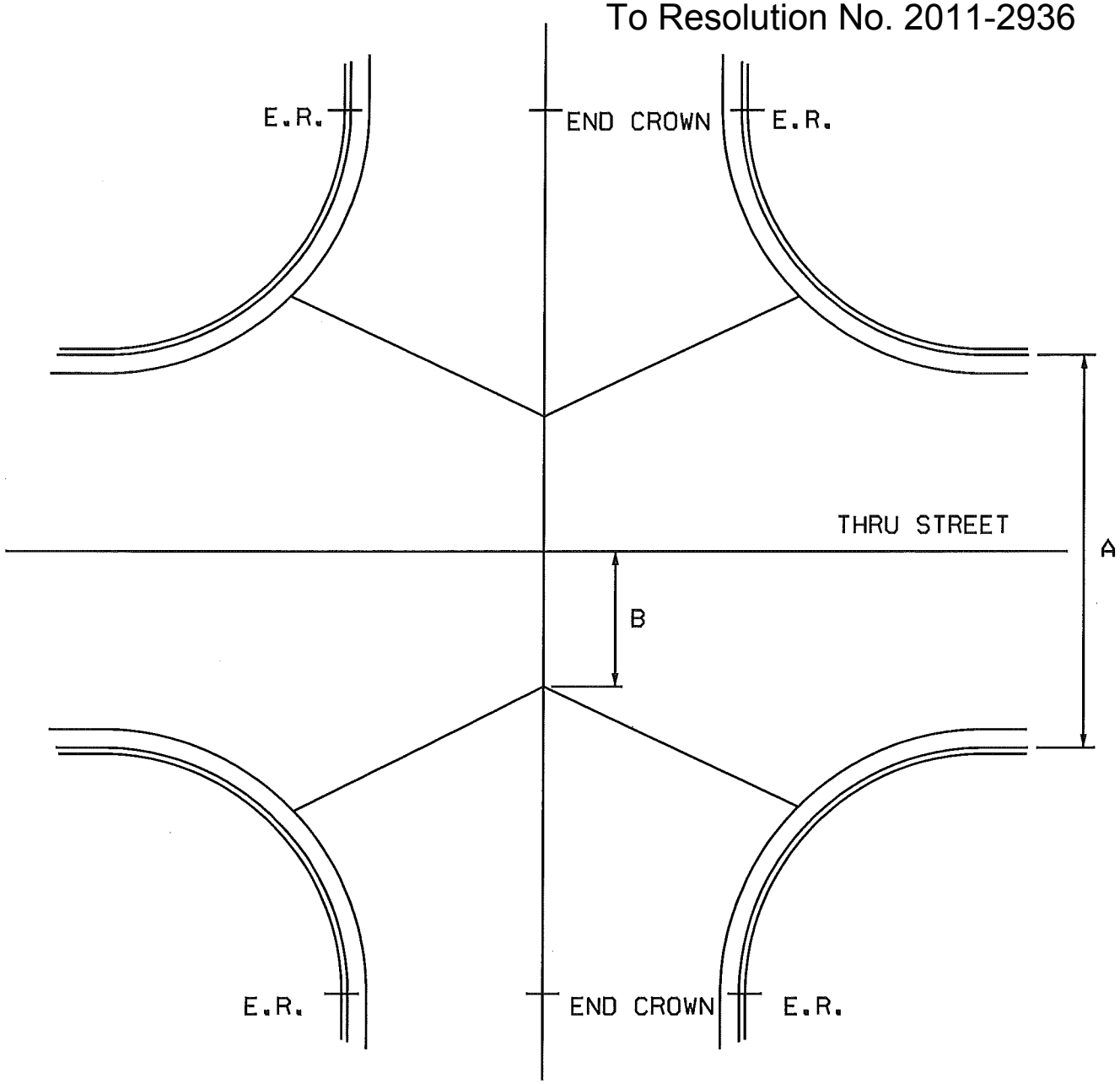


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132
PHONE 503-537-1240 - FAX 503-537-1277

REVISIONS:
4-8-2010

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'

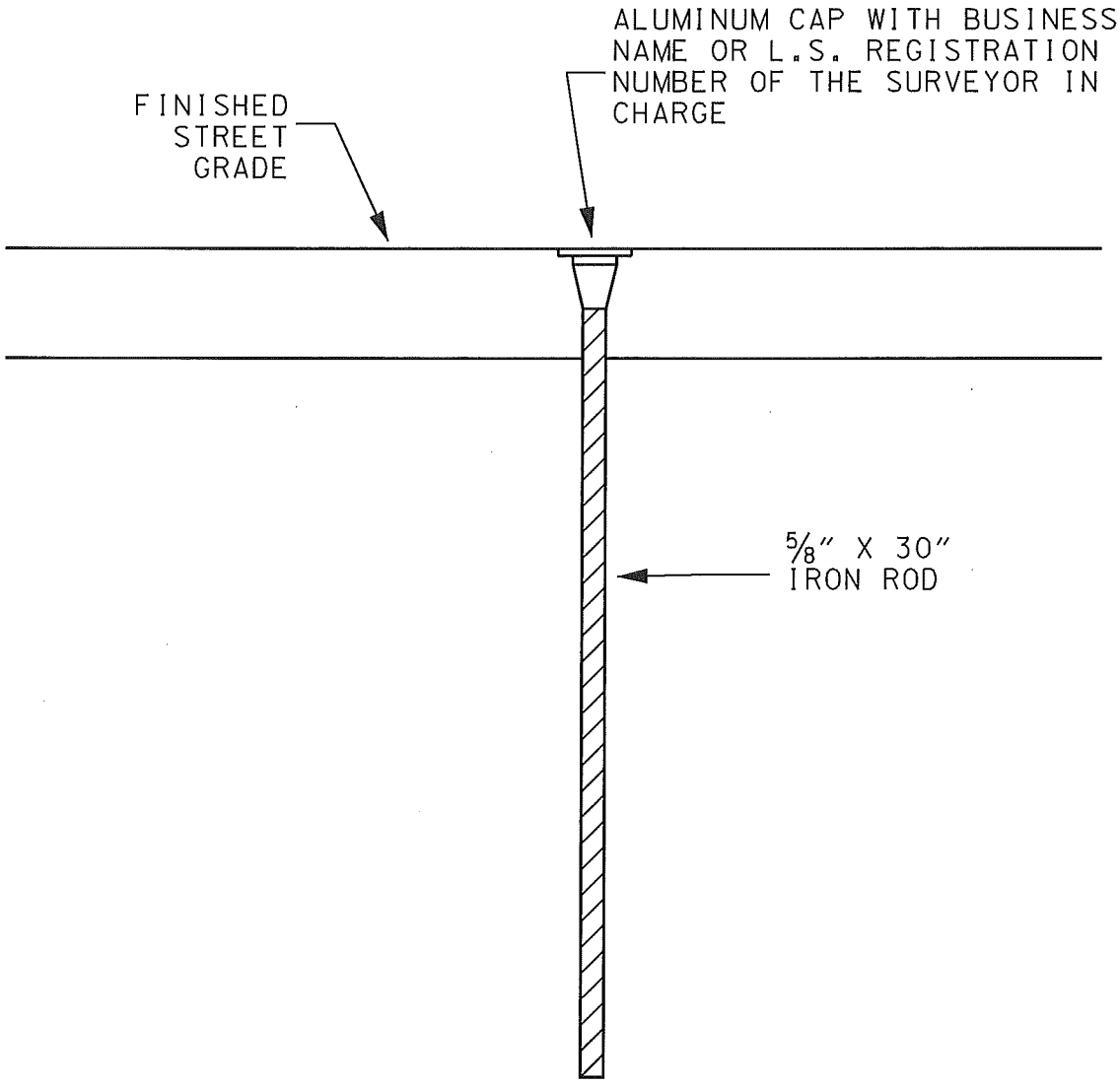
NOTE:
THIS PAVING PATTERN NOT TO BE USED WHEN INTERSECTING GRADES ARE LESS THAN .50%.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

INTERSECTION PAVING PLAN

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



NOTES

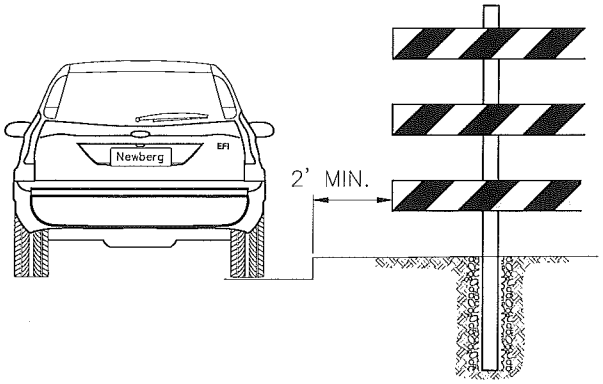
1. MONUMENTS TO BE SET AT ALL STREET INTERSECTIONS, POINTS OF CURVATURE AND POINTS OF TANGENCY.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

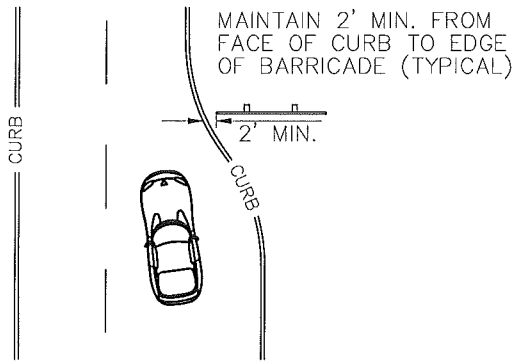
REVISIONS:

STREET MONUMENTATION

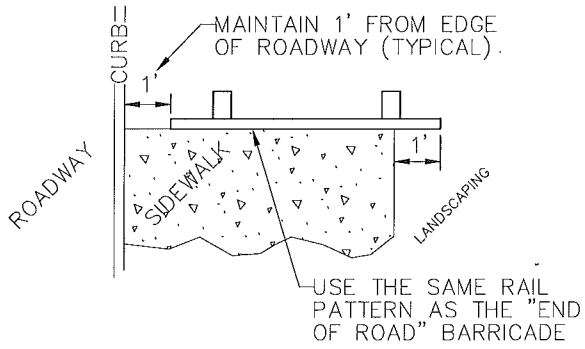
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	515



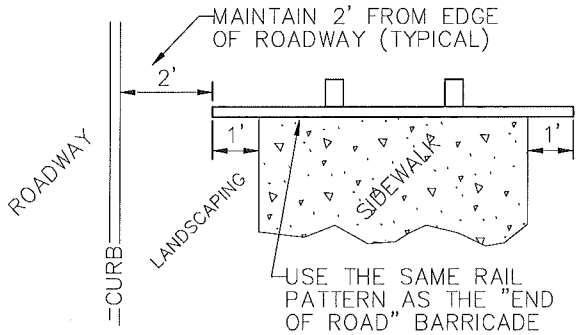
TYPICAL NARROWING OF DRIVING AREA BARRICADE (USE DIMENSIONS BELOW) ORIENT DIAGOINAL BARS TO CHANNEL TRAFFIC AS SHOWN



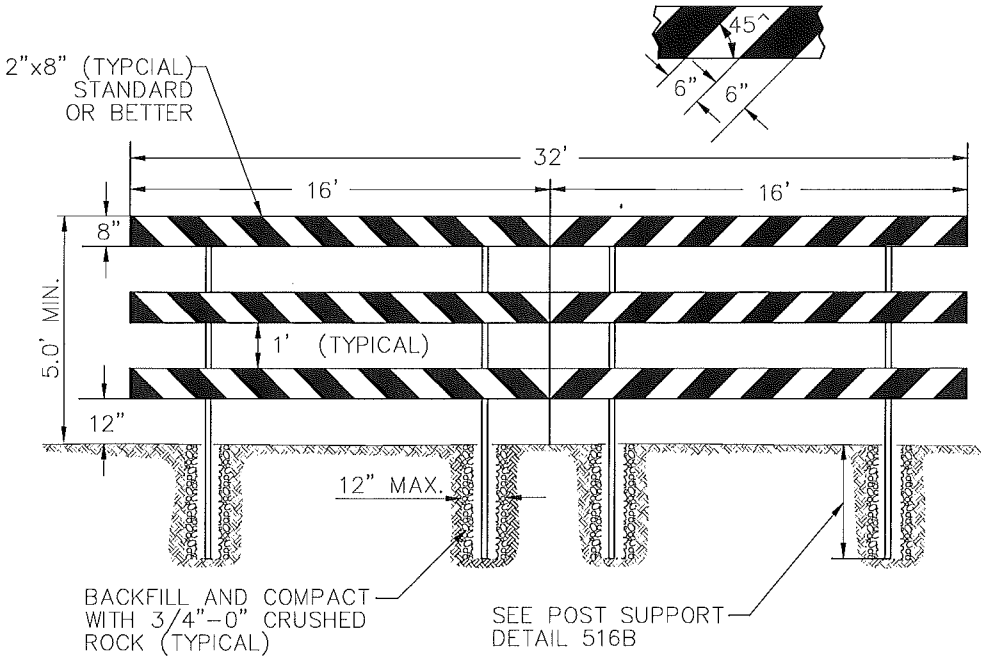
NARROWING OF DRIVING AREA



END OF SIDEWALK ('TYPE B')



END OF SIDEWALK ('TYPE A')



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)

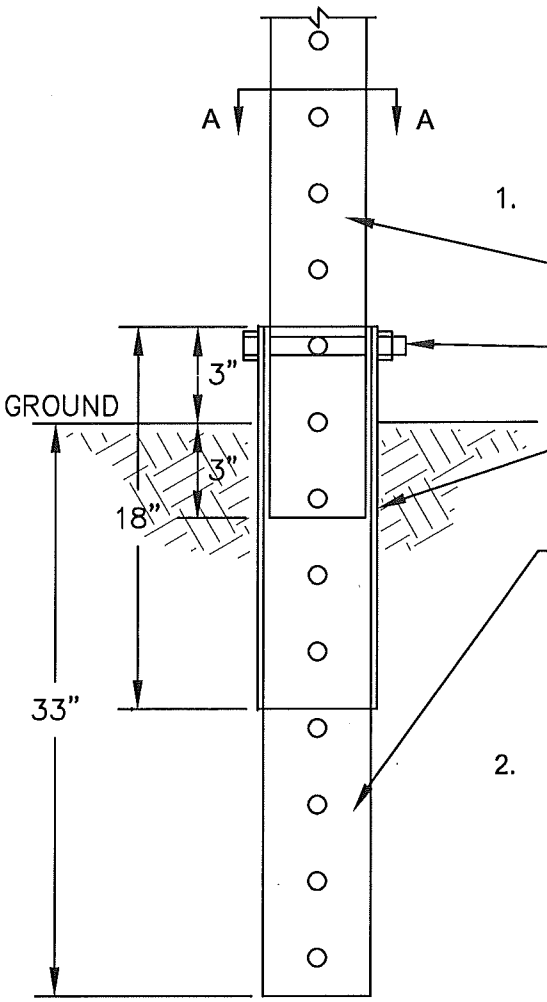
USE $\frac{7}{16}$"X5" GALVANIZED CARRIAGE WITH FLAT AND LOCK WASHER, 2 BOLTS PER RAIL PER POST

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

REVISIONS:

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.

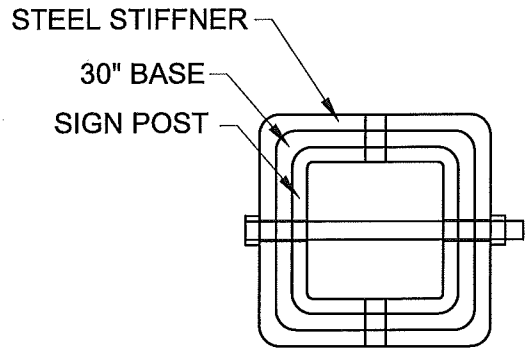
3/8" X 3 1/2", GALVANIZED HEX HEAD BOLT WITH LOCK WASHER.

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.

City of Newberg
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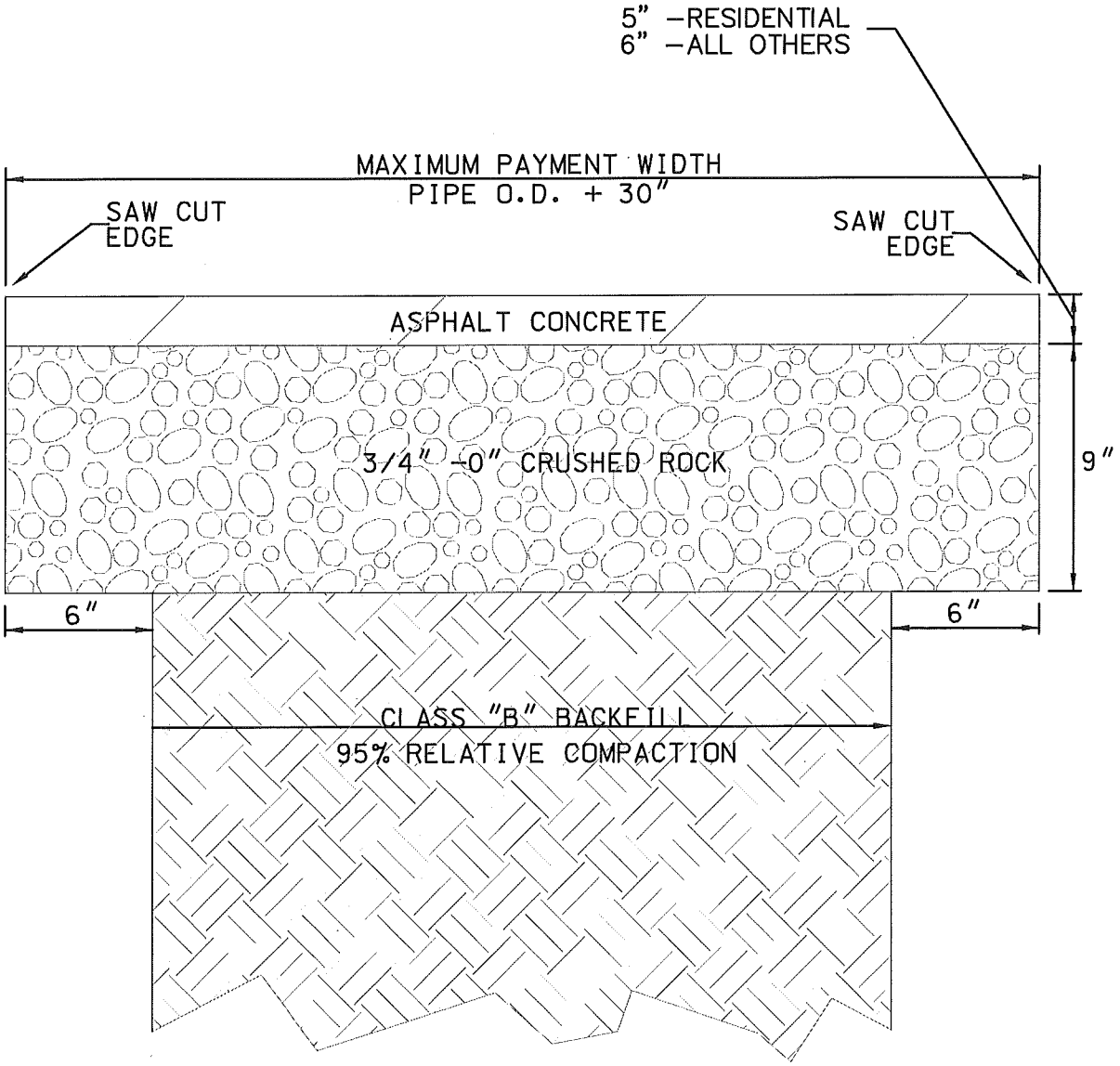
PHONE 503-537-1240 - FAX 503-537-1277

REVISIONS:

STREET BARRICADE POST SUPPORT DETAIL

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

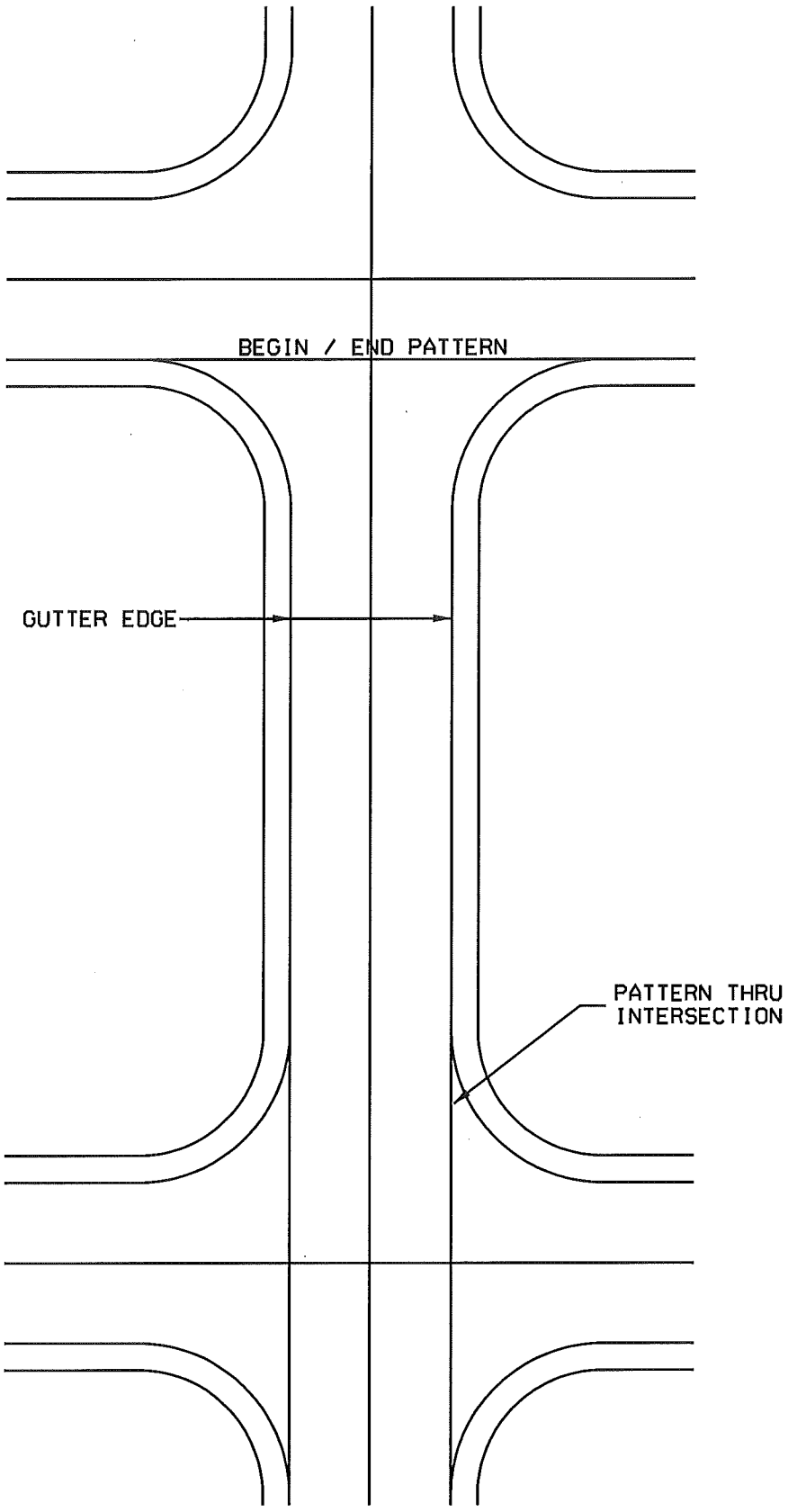


NOTES:

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.

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

REVISIONS:	TRENCH PAVING	SCALE: N.T.S.
Jan 2011		DATE: May 2007
		APPROVED BY: D,Danicic
		STANDARD DRAWING 517

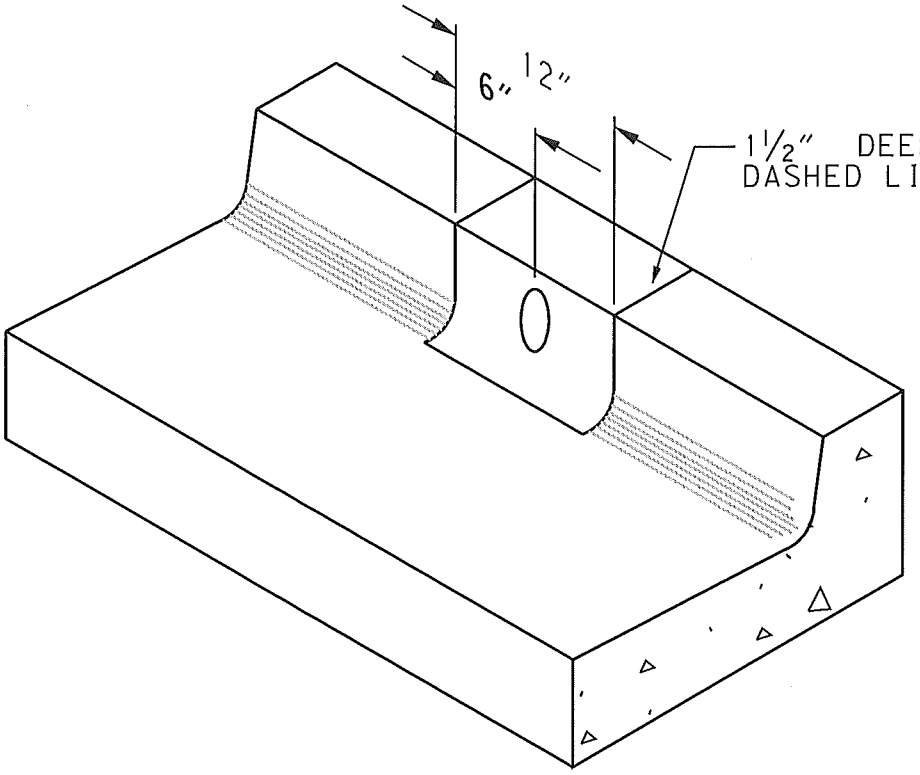


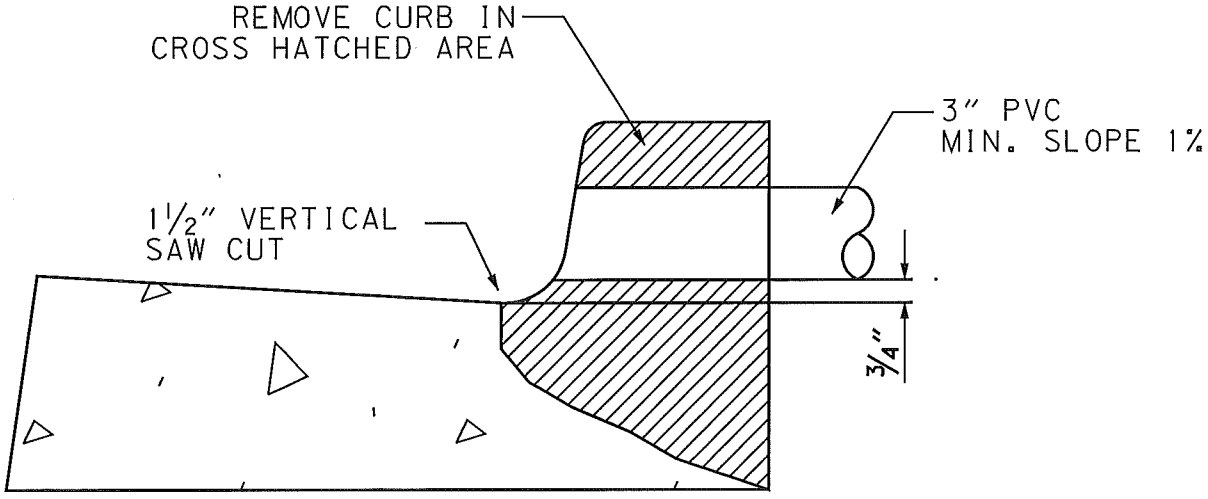
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

PAVEMENT SEAL COAT PATTERN

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





City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

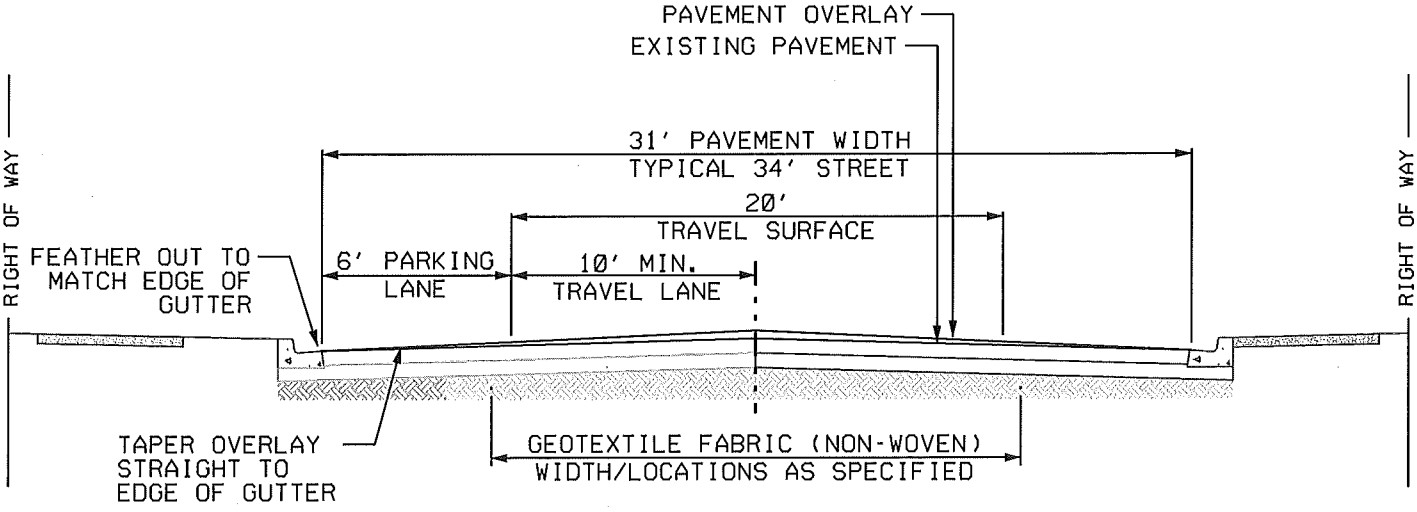
REVISIONS:

RAIN DRAIN CURB CUT

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	519

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



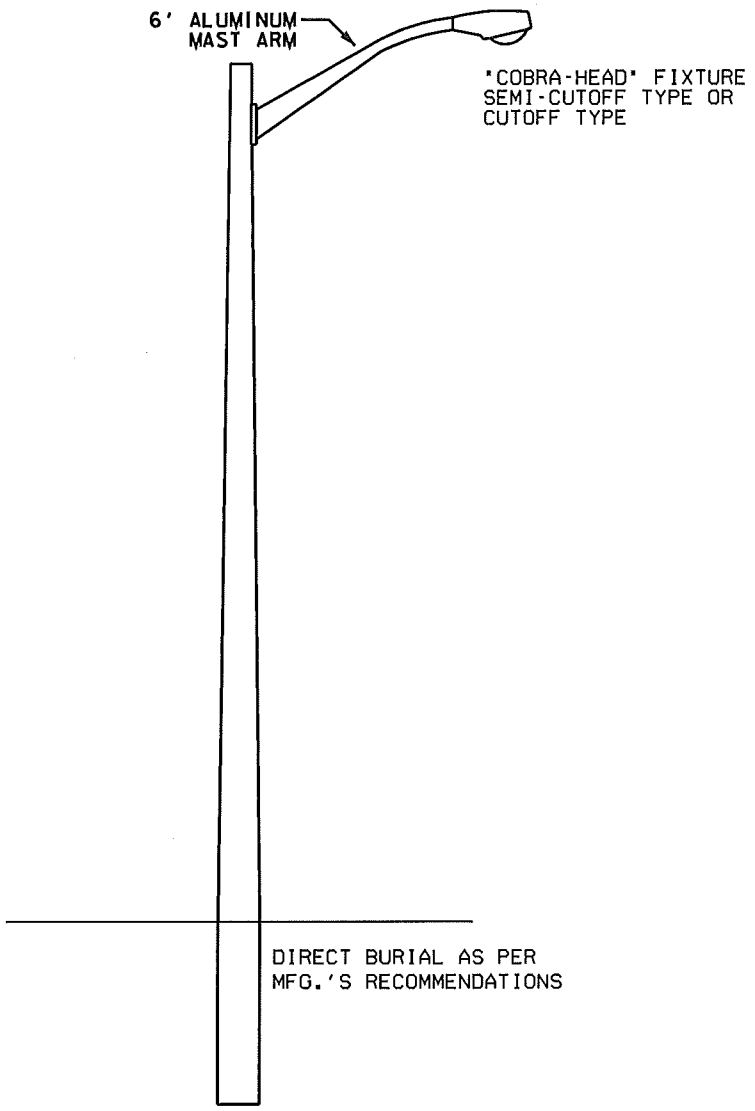
NOTES
1. OVERLAY PATTERN FOR DIFFERENT WIDTH STREETS WILL BE SIMILAR.
2. OFFSET PAVING PANELS 12" MIN. FROM JOINTS OF EXISTING PAVEMENT.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

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

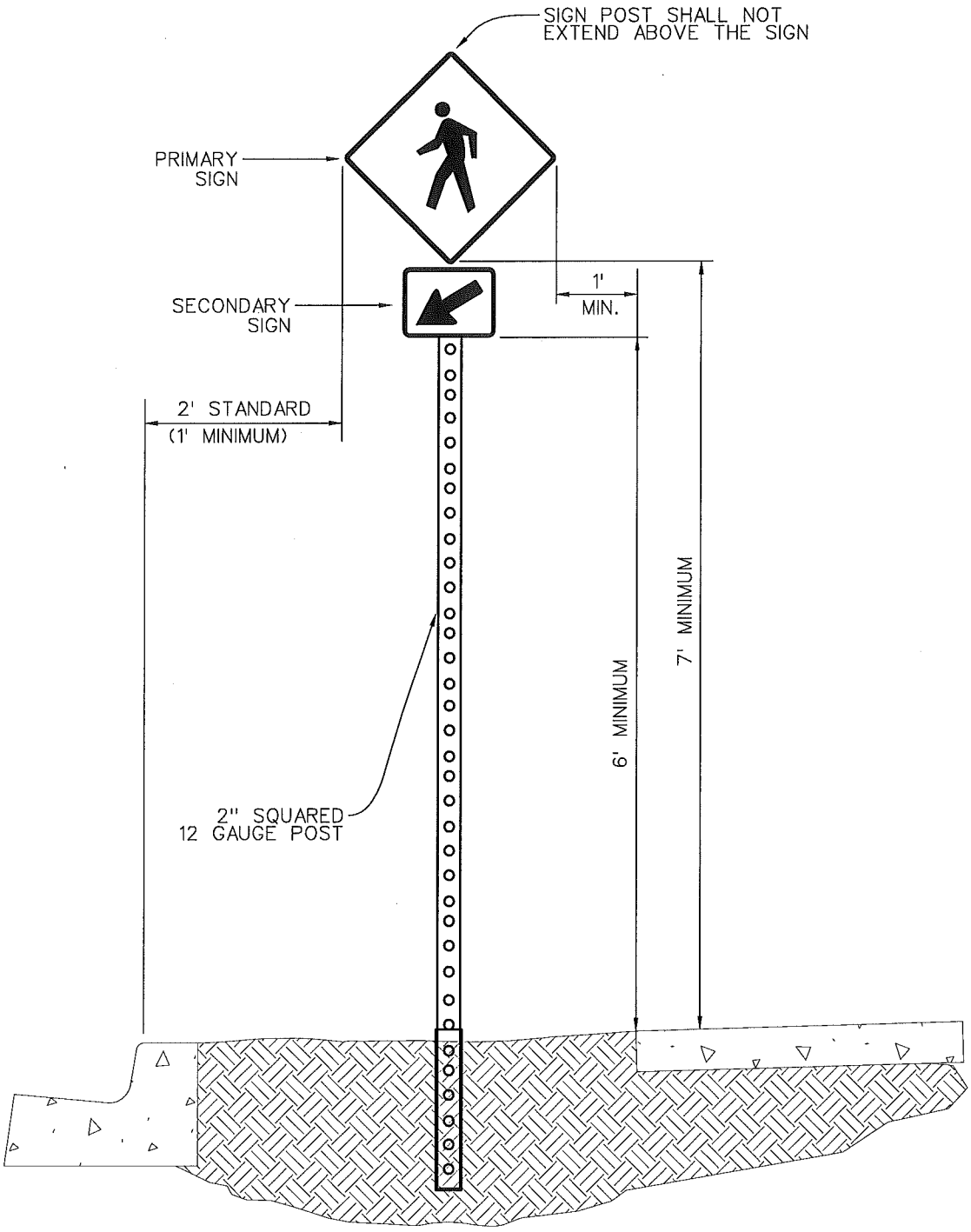
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

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

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

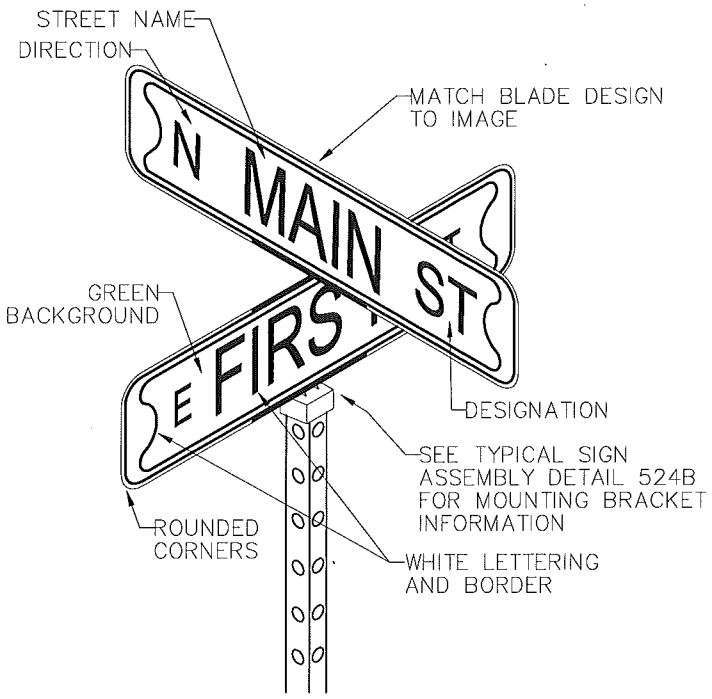
REVISIONS:
DECEMBER 2007
OCTOBER 2010

SIGN CLEARANCES

SCALE:	N.T.S.
DATE:	JULY 2004
APPROVED BY:	D. Danicic
STANDARD DRAWING	523

BLADE AND LETTERING SIZE REQUIREMENTS

SPEED (MPH)	BLADE SIZE	DIRECTION (N,S,E,W)	LETTER HEIGHT	LETTER SPACING	DESIGNATION (ST,DR,ETC..)
25 OR LESS	6" HIGH	2"	4"	1/2"	2"
26 OR MORE	9" HIGH	.3"	6"	3/4"	3"
ADJUST BLADE LENGTH TO ACCOMMODATE LENGTH OF STREET NAME					



TYPE:

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

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

NOTES:

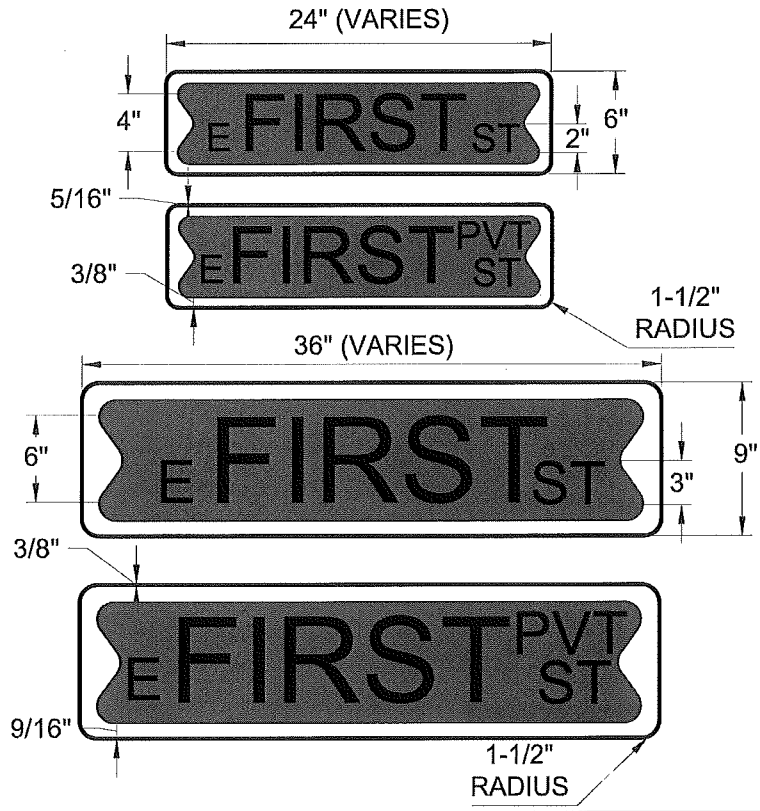
MAINTAIN 9'6" OF CLEARANCE FROM THE BOTTOM OF THE LOWEST STREET SIGN TO FINISH GRADE

SLEEVE SHALL BE 30" – 12GA X 2¼" SQ. TUBE POST SHALL BE 12GA X 2" SQ. TUBE

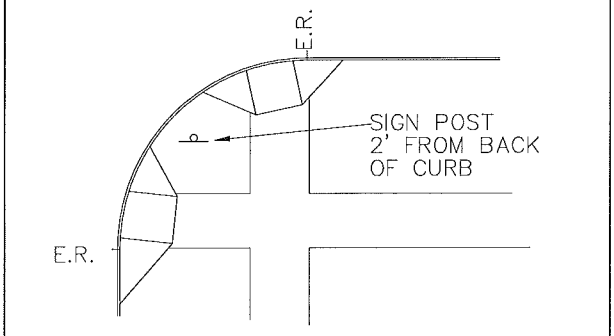
LOCATE POSTS SO TRAFFIC CONTROL SIGNS CAN BE PLACED ON THE SAME POST WITH PROPER CLEARANCE

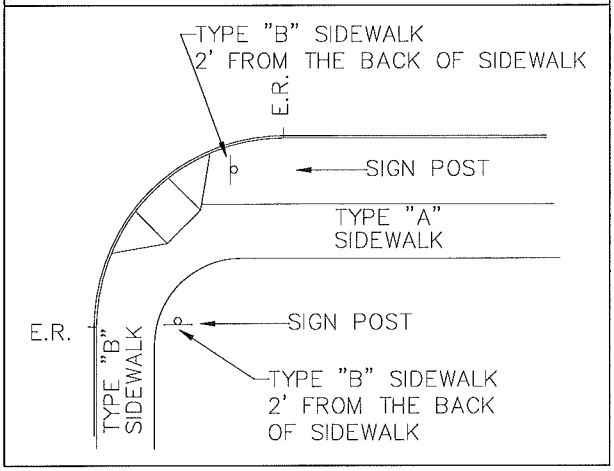
DO NOT USE ABBREVIATIONS FOR STREET NAMES (MT. VIEW vs. MOUNTAINVIEW)

ALL SIGNS SHALL BE HIGH INTENSITY PRISMATIC GRADE SHEETING



SIGN POST LOCATIONS



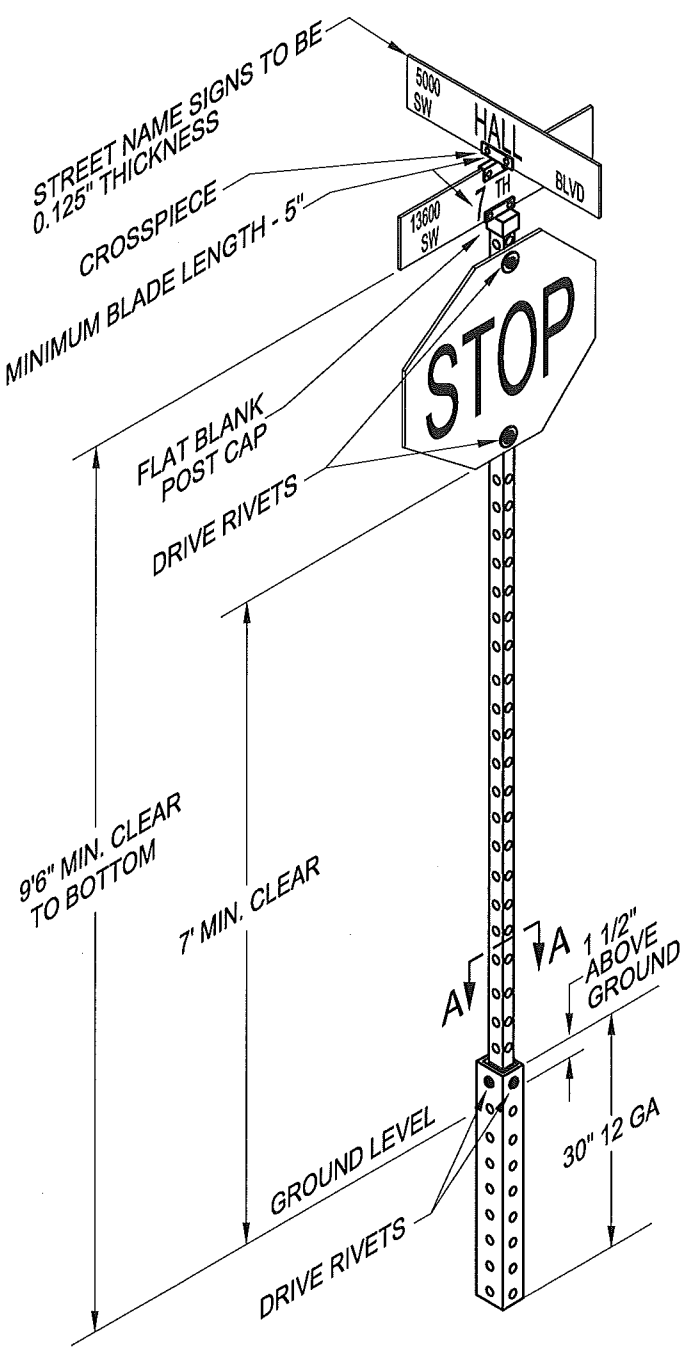


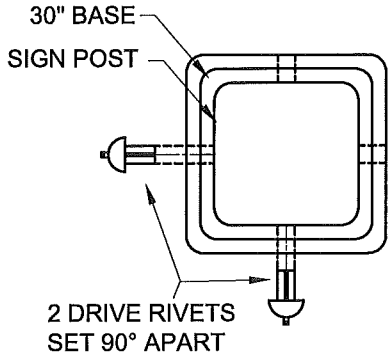
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132
PHONE 503-537-1240 - FAX 503-537-1277

REVISIONS:

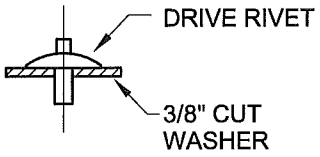
STREET SIGN AND POST LOCATION

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



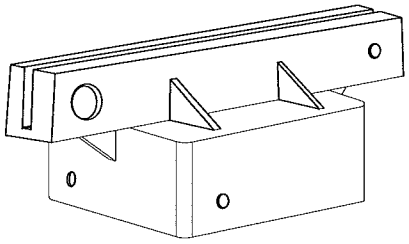


SECTION A - A

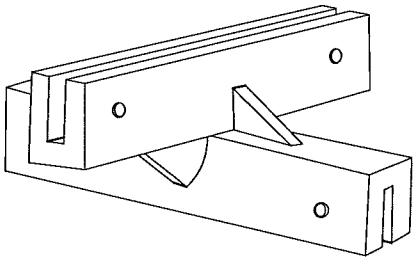


DRIVE RIVET DETAIL

FOR MOUNTING SIGN



VULCAN INC. VS-4 CAP 5 1/4" BLADE HOLDER (OR EQUIVALENT)



VULCAN INC. VS-4 CROSS 5 1/4" BLADE HOLDER (OR EQUIVALENT)

STREET NAME BLADE HOLDERS

NOTES:

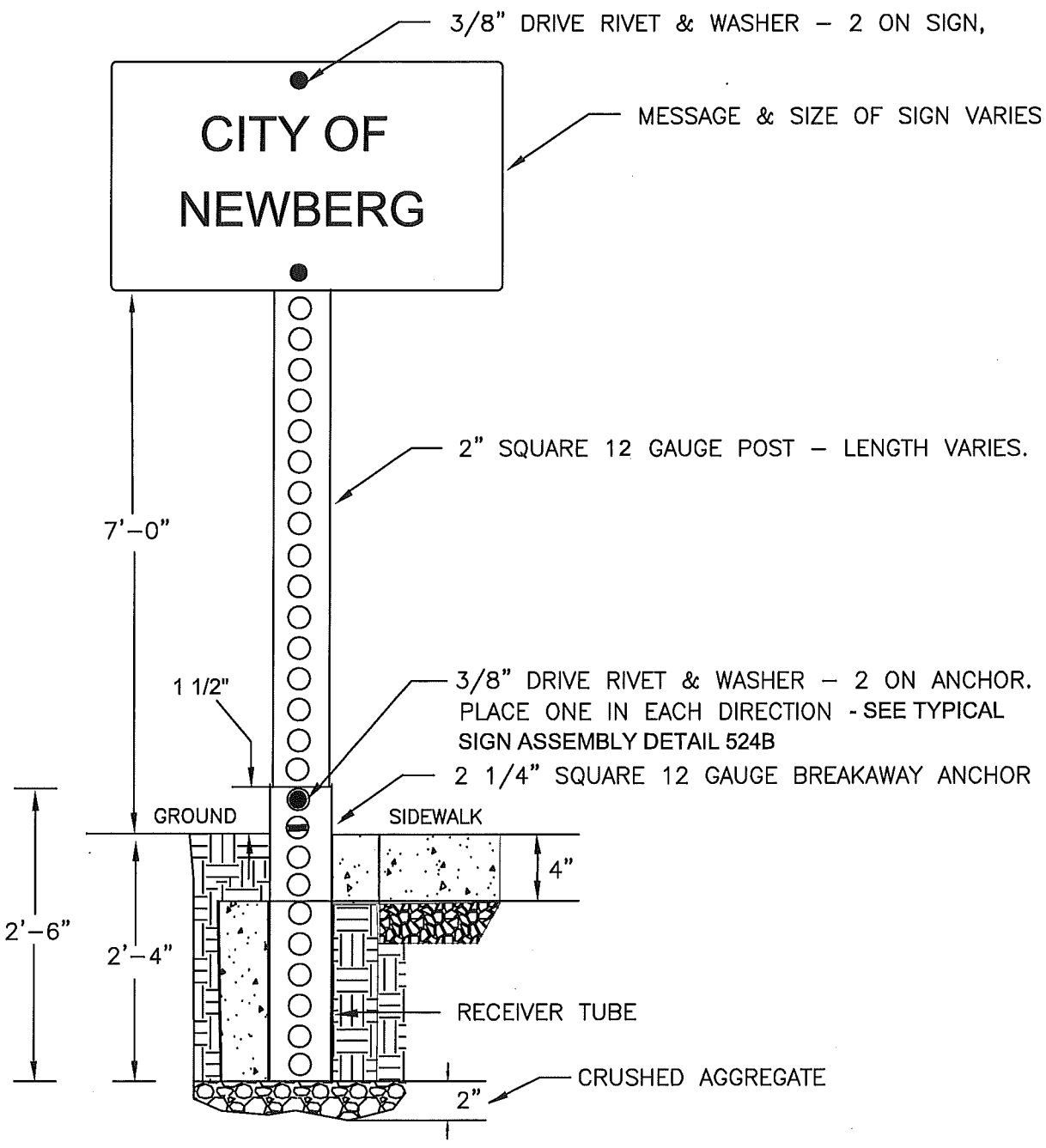
1. **Sign post shall be inserted a minimum of 12" into the 30" base.**
2. **Sleeve shall be 30" 12 guage x 2 $\frac{1}{4}$" - Post shall be 12GA x 2".**
3. **Cap and crosspiece to be the same style, 5" blade minimum.**

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

REVISIONS:
Nov. 2010

TYPICAL SIGN ASSEMBLY

SCALE: NTS
DATE: July 2009
APPROVED BY: P.Chiu
STANDARD DRAWING 524B



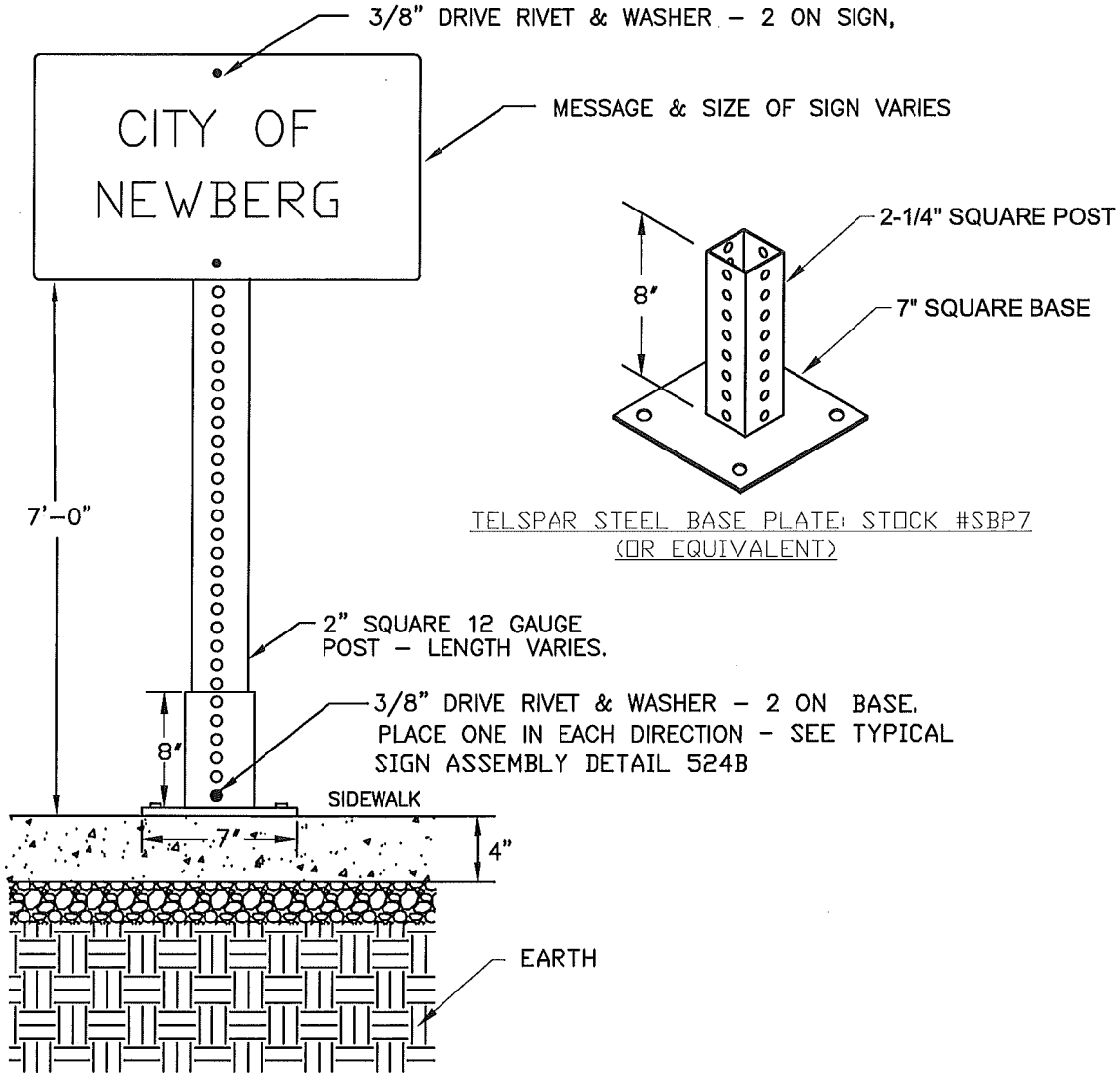
1. SIGN PLACEMENT IN DIRT SHALL BE A MINIMUM OF 24" FROM CURB FACE - VARIES BY SIGN SIZE.
2. POST SHALL BE SPRAYED WITH ANTI-SEIZE ON THE BOTTOM 2'-6".
3. SIGN POST SHALL BE INSERTED A MINIMUM OF 12" INTO THE 30" BASE.

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

REVISIONS:

STANDARD SIGNPOST GROUND APPLICATIONS

SCALE:	N.T.S.
DATE:	July 2009
APPROVED BY:	P. Chiu
STANDARD DRAWING	525A



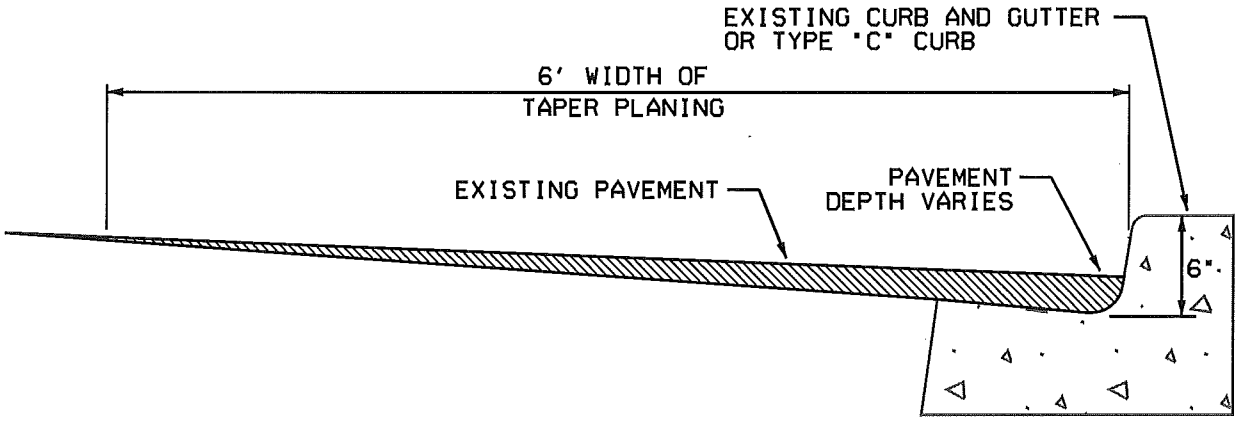
1. STEEL BASE SHALL BE A 2 1/4" SQUARE 12 GAUGE POST
2. SIGN POST PLACEMENT IN CONCRETE SHALL BE A MINIMUM OF 24" FROM CURB FACE - VARIES BY SIGN SIZE.
3. USE 1/2" X 4-1/4" RED HEAD FASTENERS FOR STEEL BASE PLATE
4. STEEL BASE PLATE APPLICATION FOR EXISTING CONCRETE ONLY
5. FOR EXISTING SIDEWALK, WITH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

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

REVISIONS:
OCT. 2010

STANDARD SIGNPOST CONCRETE APPLICATIONS

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



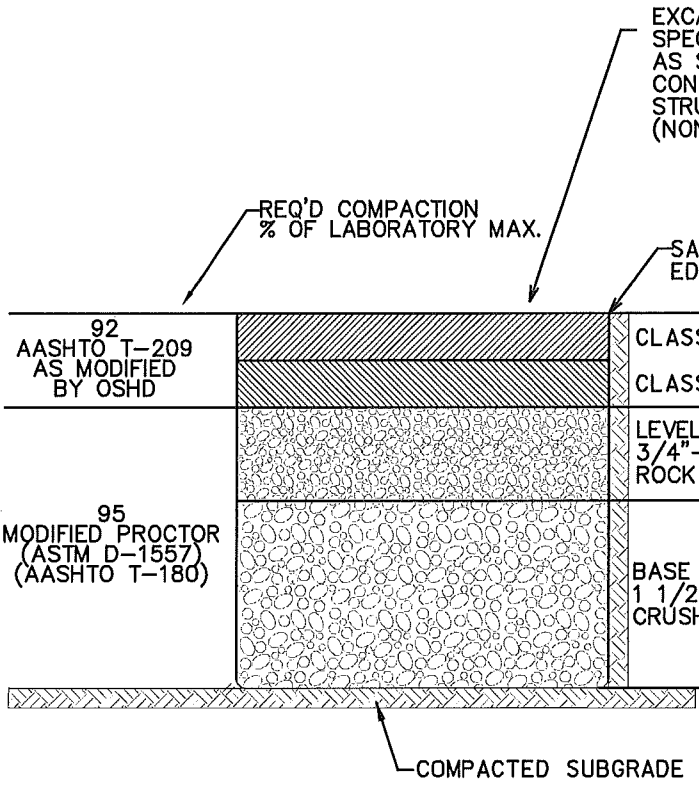
NOTES
1. PLANE FLUSH TO CURB FACE.
2. PLANE TO SURFACE OF CONCRETE GUTTER OR TO 6" EXPOSURE OF TYPE "C" CURB.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

PAVEMENT MILLING

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	526



	STREET TYPE					
	✳ LOCAL		COLLECTOR		ARTERIAL	
	DEPTH	LIFTS	DEPTH	LIFTS	DEPTH	LIFTS
CLASS C A.C. / CLASS C A.C.	3″	1	4″	2	6″	3
LEVELING COURSE 3/4"-0" CRUSHED ROCK	3″	1	3″	1	3″	1
BASE COURSE 1 1/2"-0"or 3/4"-0" CRUSHED ROCK	6″	1	9″	2	12″	2
TOTAL DEPTH	12″		16″		21″	

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

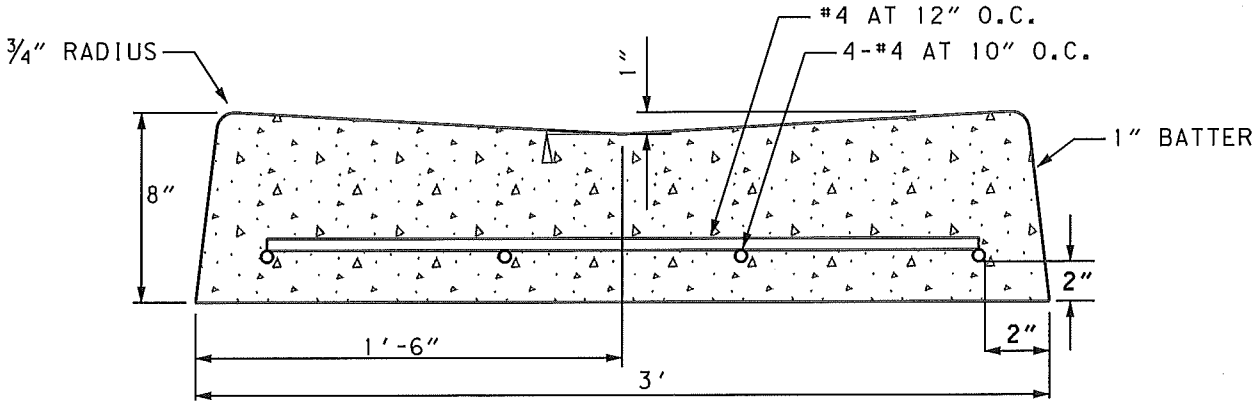
✳ LOCAL STREET TYPE = INTERIOR RESIDENTIAL SINGLE FAMILY DETACHED ZONES

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

REVISIONS:
Jan 2011

STRUCTURAL STREET SECTIONS

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



NOTES

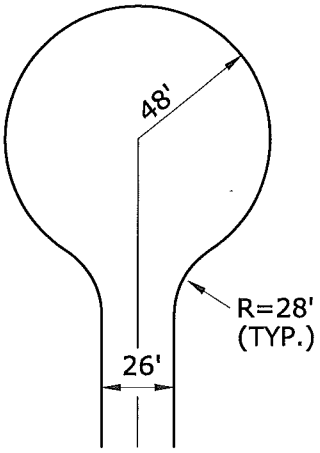
1. CONCRETE MIX: 4,000 PSI AT 28 DAYS WITH 6% ENTRAINED AIR.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

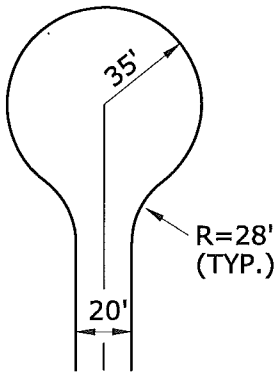
REVISIONS:

VALLEY GUTTER

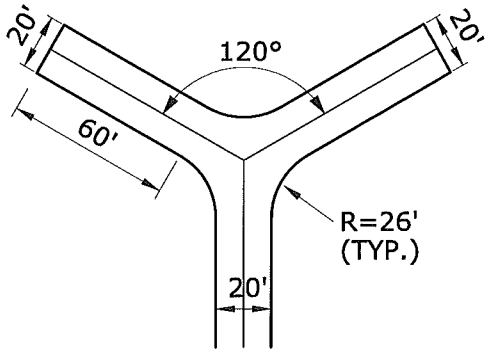
SCALE: N.T.S.
DATE: May 2007
APPROVED BY: D. Danicic
STANDARD DRAWING 528



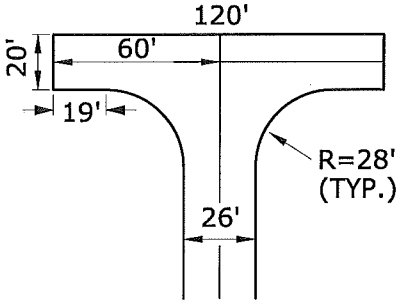
96' DIAMETER
CUL-DE-SAC



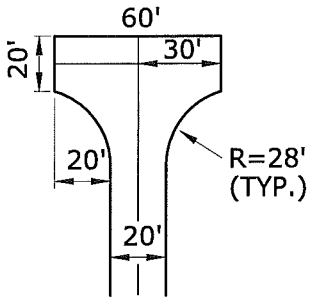
70' DIAMETER
CUL-DE-SAC



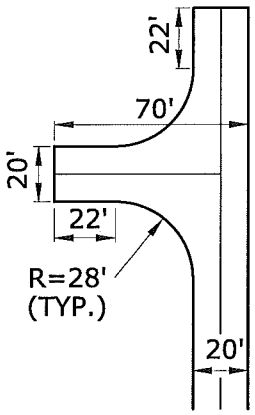
ACCEPTABLE ALTERNATIVE
TO 120' HAMMERHEAD



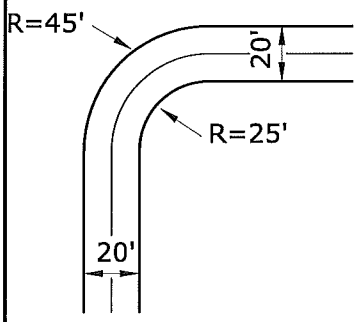
120' HAMMERHEAD



60' HAMMERHEAD



ACCEPTABLE ALTERNATIVE
TO 120' HAMMERHEAD



INSIDE AND OUTSIDE
TURN RADIUS

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	

FIRE MARSHAL APPROVAL
OF CONSTRUCTION
PLANS 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.

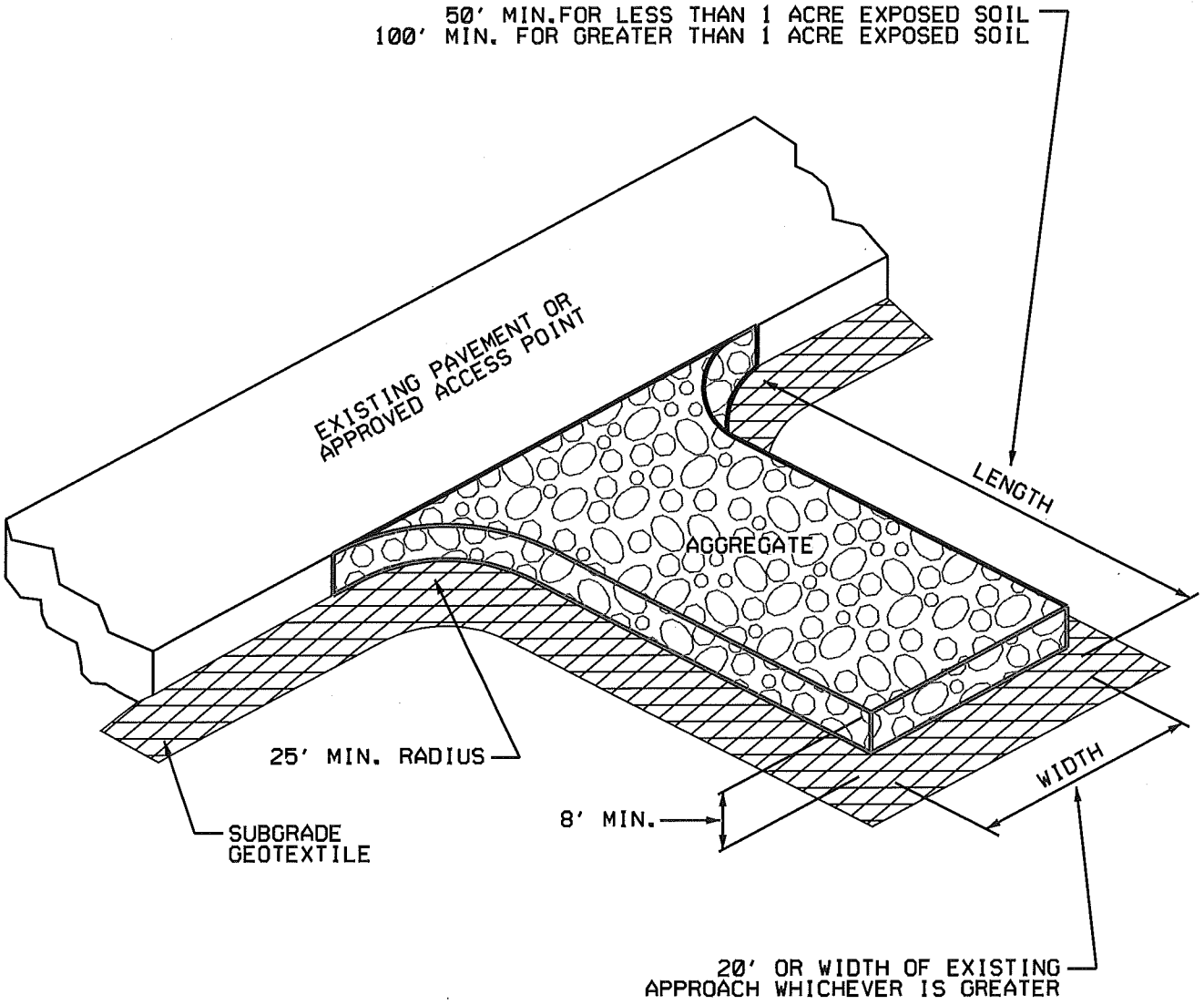
Fire apparatus access roads shall not exceed ten percent in grade. Grades steeper than ten percent must be approved by the Fire Marshal.

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

REVISIONS:

APPROVED FIRE DEPARTMENT TURN AROUNDS

SCALE:	N.T.S.
DATE:	JULY 2004
APPROVED BY:	D. Danicic
STANDARD DRAWING	529

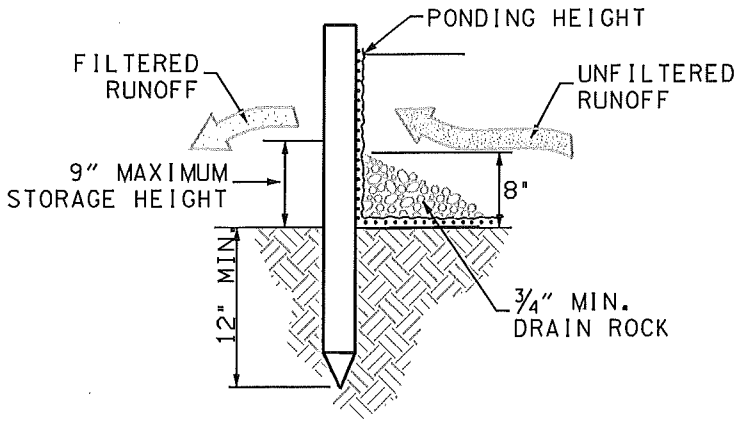


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

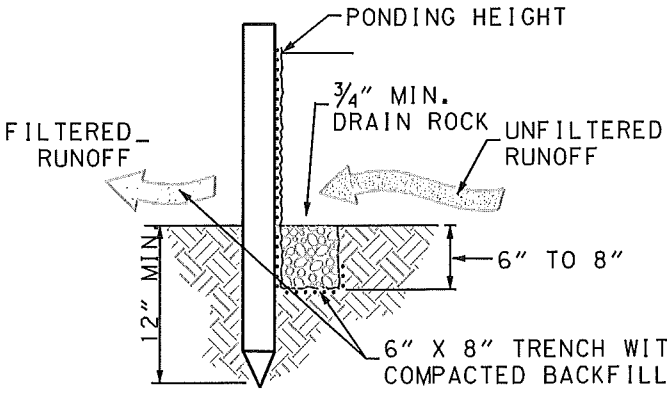
REVISIONS:

CONSTRUCTION ENTRANCE

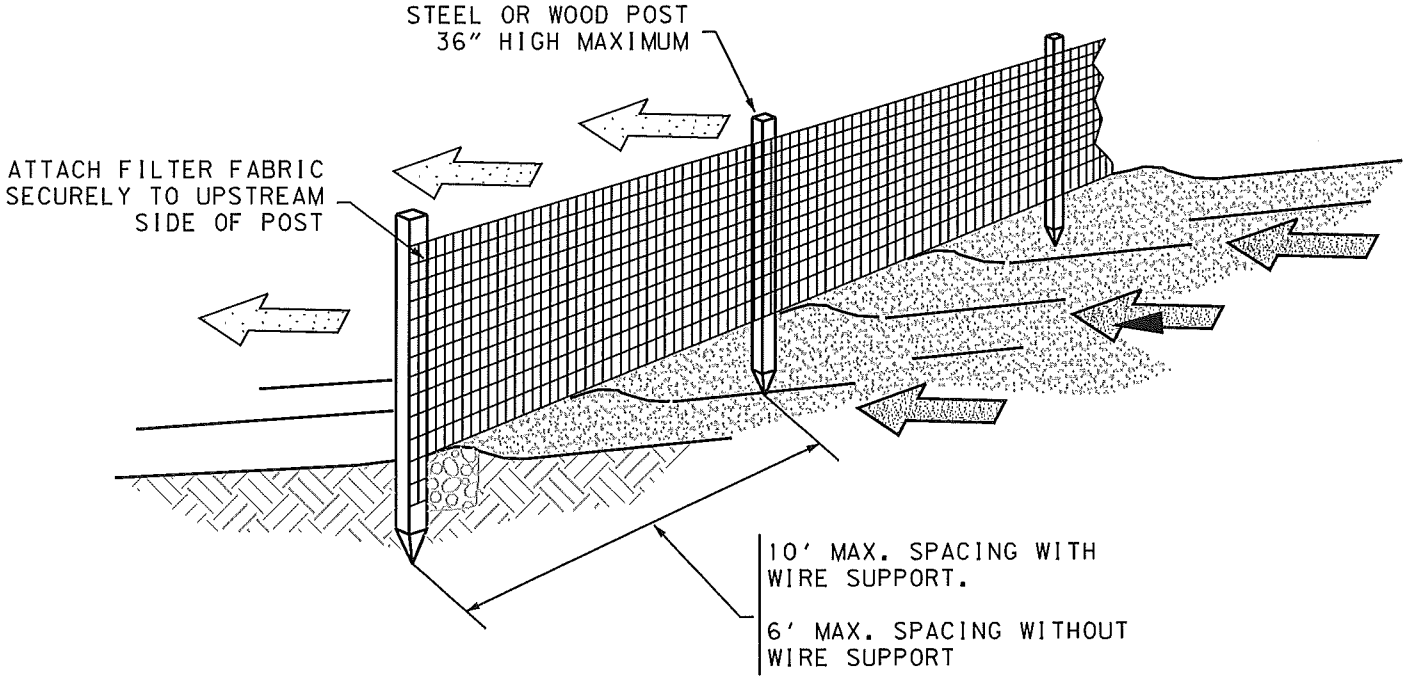
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	601



INSTALLATION WITHOUT TRENCHING



INSTALLATION WITH TRENCHING

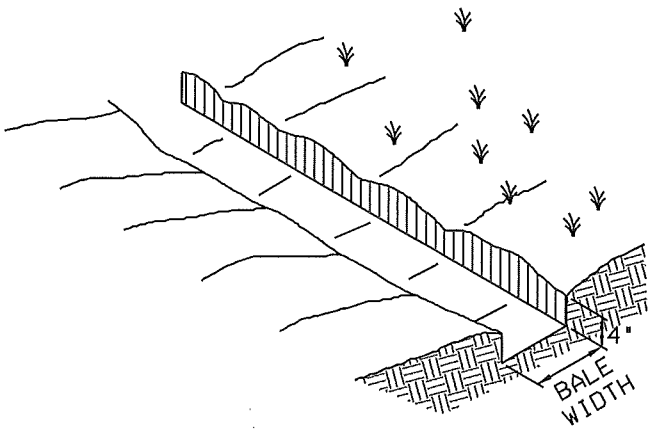


City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

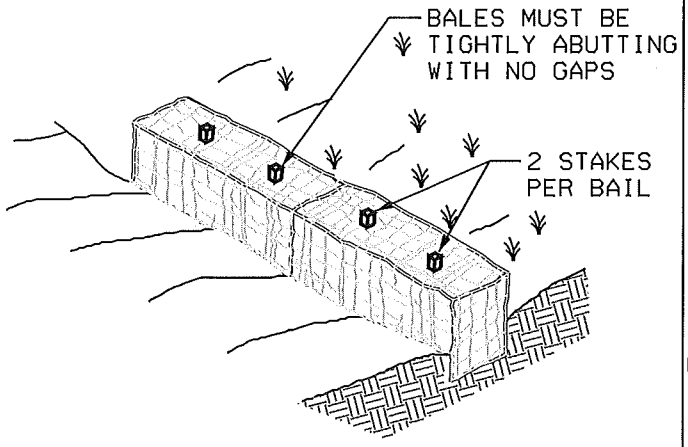
REVISIONS:

SILT FENCE

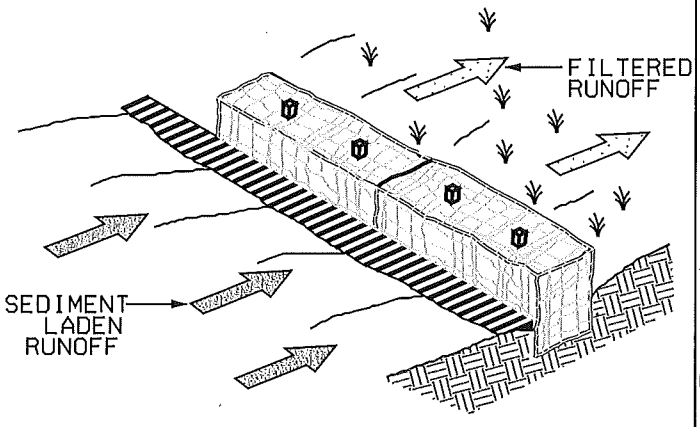
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	602



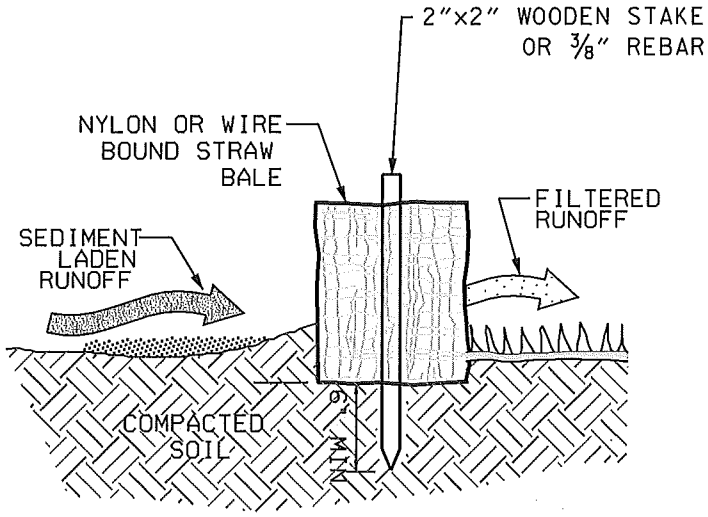
1. EXCAVATE TRENCH



2. PLACE AND STAKE STRAW BALES



3. BACKFILL AND COMPACT THE EXCAVATED SOIL



PROPERLY INSTALLED STRAW BALE

GENERAL NOTES:

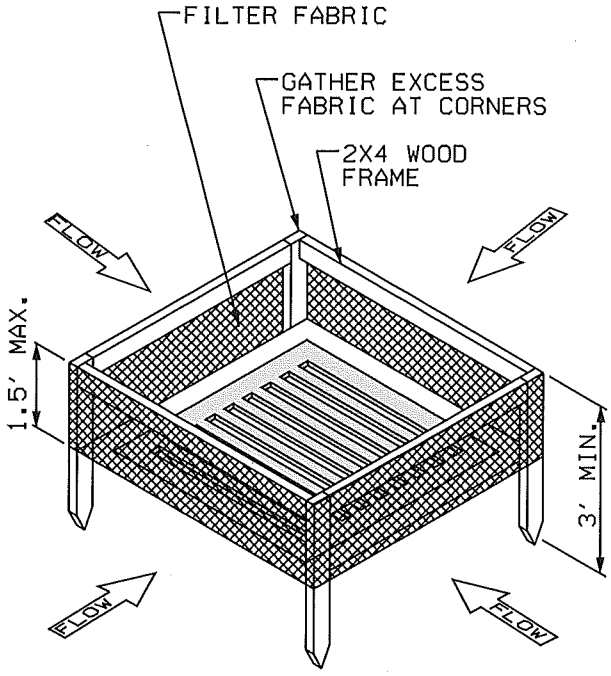
1. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4''.
2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY *'' REBAR OR 2"X2" WOODEN STAKES DRIVEN THROUGH THE BALES.
3. INSPECTION SHALL BE PERFORMED WEEKLY OR AFTER EACH RAINFALL EVENT. REPAIR AND OR REPLACEMENT SHALL BE MADE AS NEEDED BY THE CONTRACTOR, 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.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

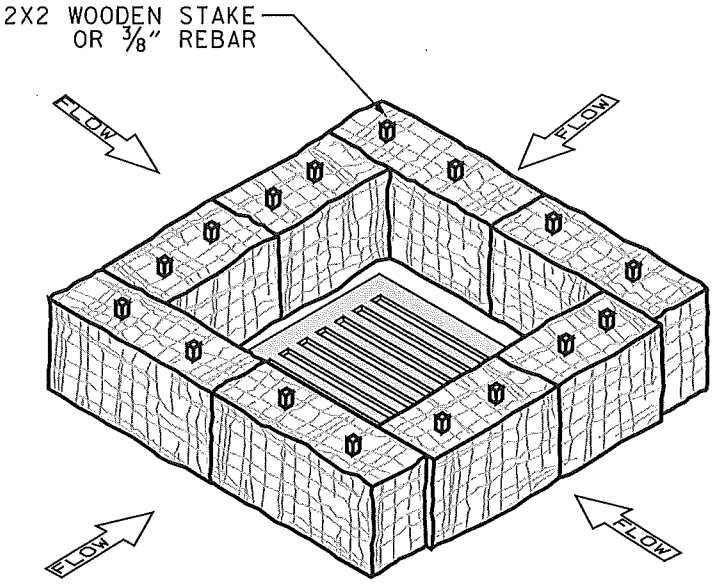
REVISIONS:

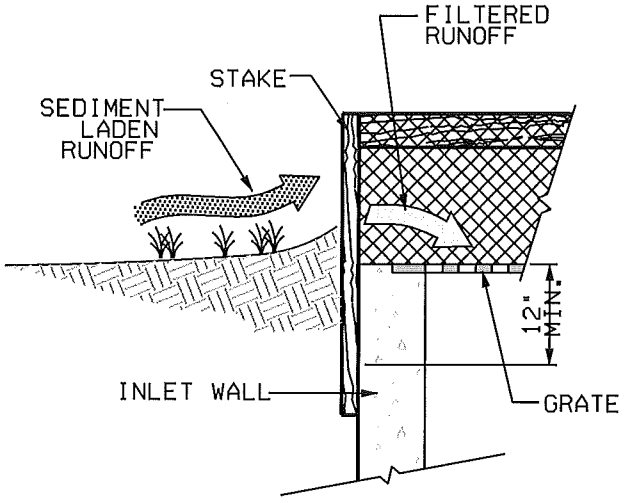
STRAW BALE BARRIER

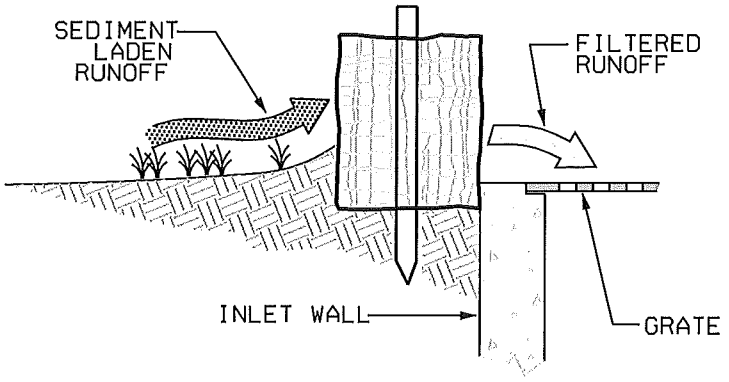
SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	603



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







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

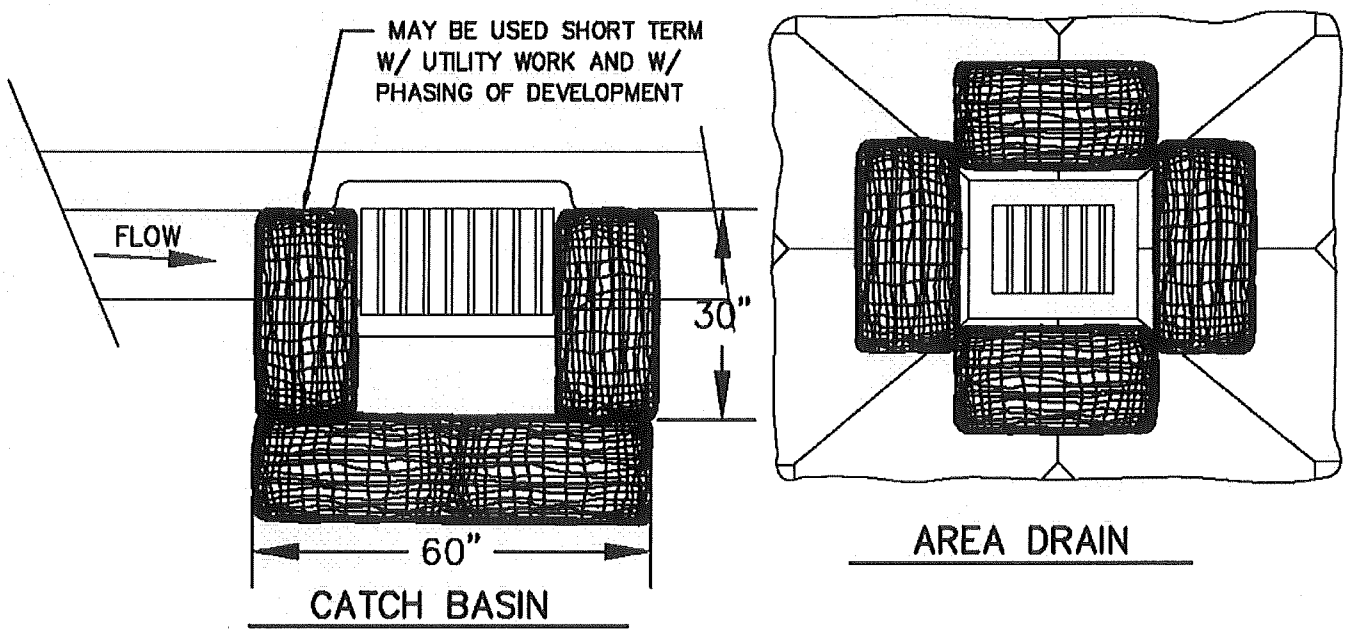
THIS METHOD OF INLET PROTECTION SHALL NOT BE USED IN STREETS, TRAVELED AREAS, OR AREAS OF CONCENTRATED FLOW (DITCHES).

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OREGON 97132

REVISIONS:

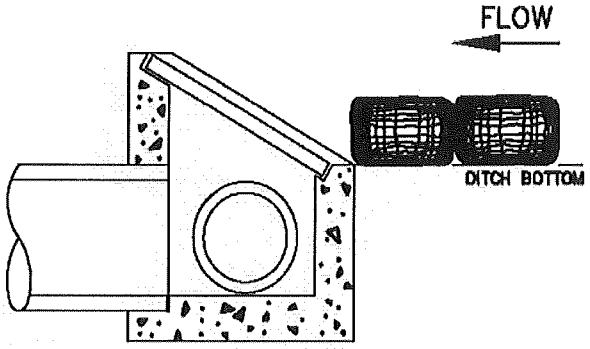
FIELD DRAIN INLET PROTECTION

SCALE:	N.T.S.
DATE:	May 2007
APPROVED BY:	D. Danicic
STANDARD DRAWING	604

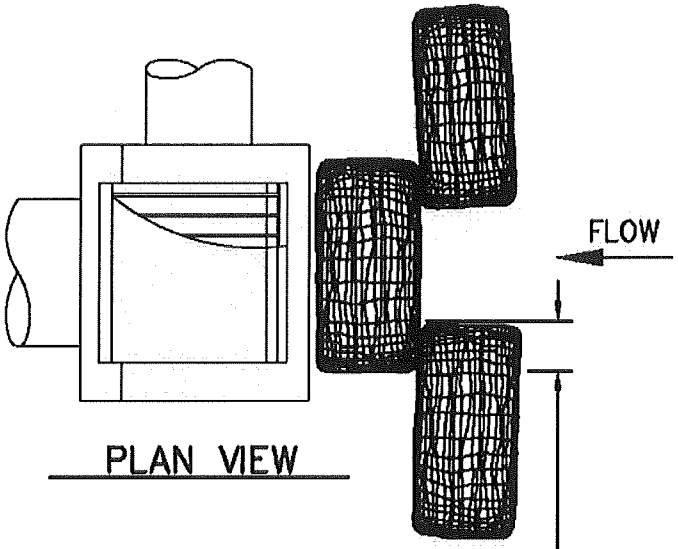


CATCH BASIN

AREA DRAIN



DITCH INLET



PLAN VIEW

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".

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

REVISIONS:

INLET PROTECTION

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

City of Newberg

STANDARD DRAWINGS

ENGINEERING DIVISION
JUNE 2000

PE
City Engineer

City of Newberg
Standard Drawings

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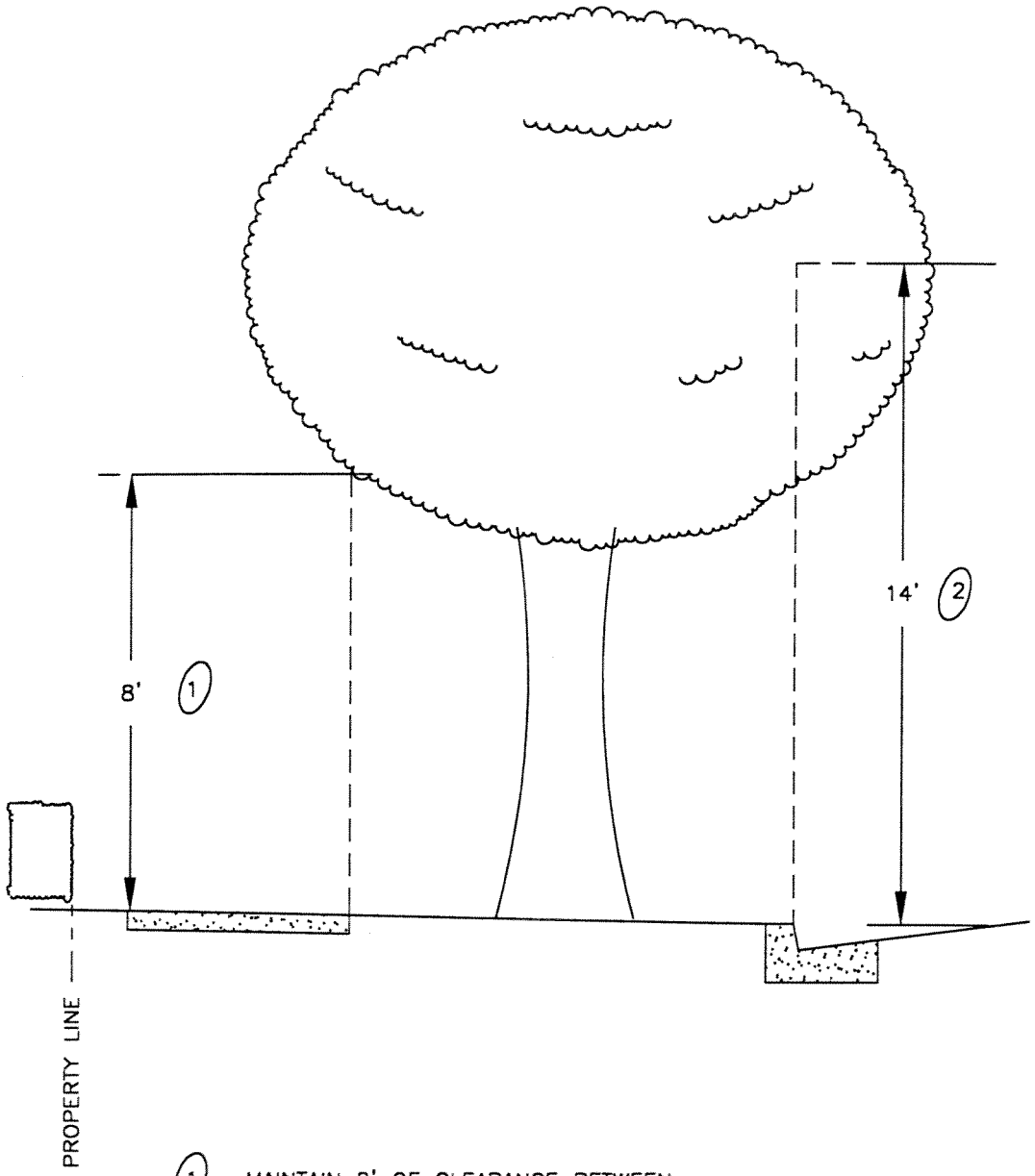
Forms

Manhole Vacuum Test Nomograph
Sanitary Sewer Air Test Nomograph
Water Main Pressure Test Report

STDDRAW.WPS



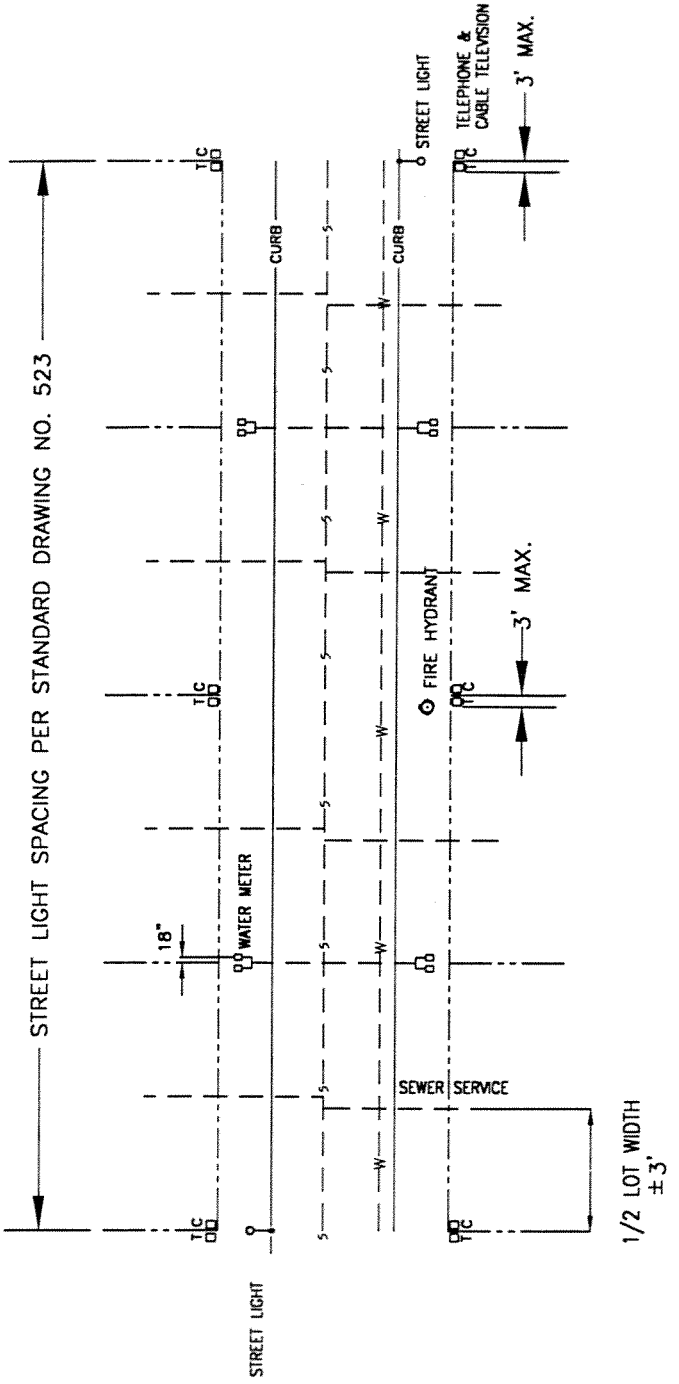
1. MAINTAIN 8' OF CLEARANCE BETWEEN SIDEWALK AND TREE LIMBS.

2. MAINTAIN 14' OF CLEARANCE BETWEEN STREET GRADE AND TREE LIMBS.

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

TREE & SHRUB CLEARANCES

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	103



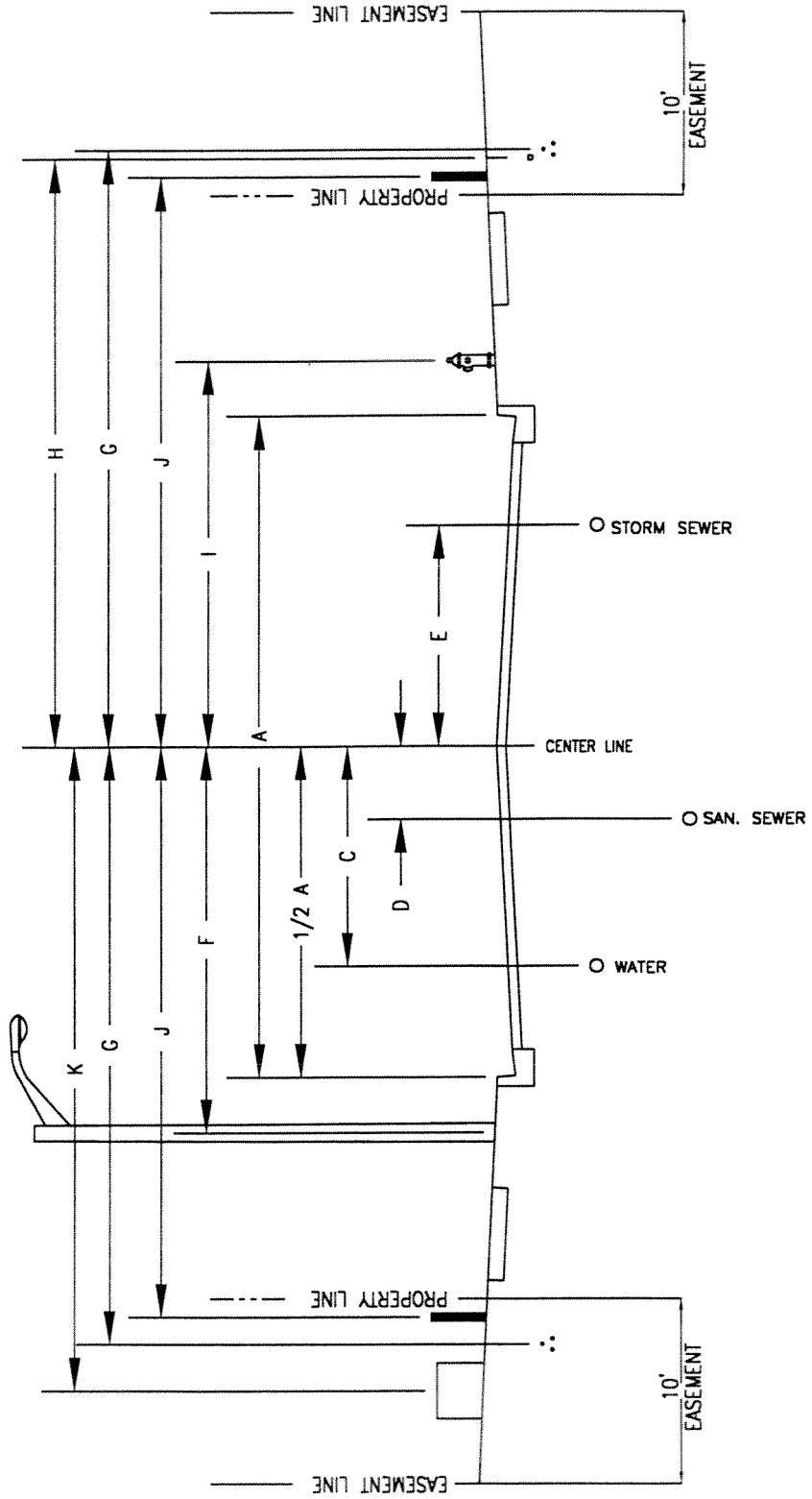
NOTES
1. ALL ABOVE GROUND FIXTURES ARE TO BE ALIGNED WITH PROPERTY LINE WITHIN TOLERANCES SHOWN.
2. VARIATION FROM THIS STANDARD ALLOWED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
3. THE LOCATION OF UNDERGROUND UTILITIES IS SHOWN ON STANDARD DRAWING 105, UTILITIES PLAN.

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

UTILITY SERVICE LOCATIONS

SCALE: N.T.S.	
DATE: JUNE 2000	
APP. BY: L. ANDERSON	
STANDARD DRAWING	104

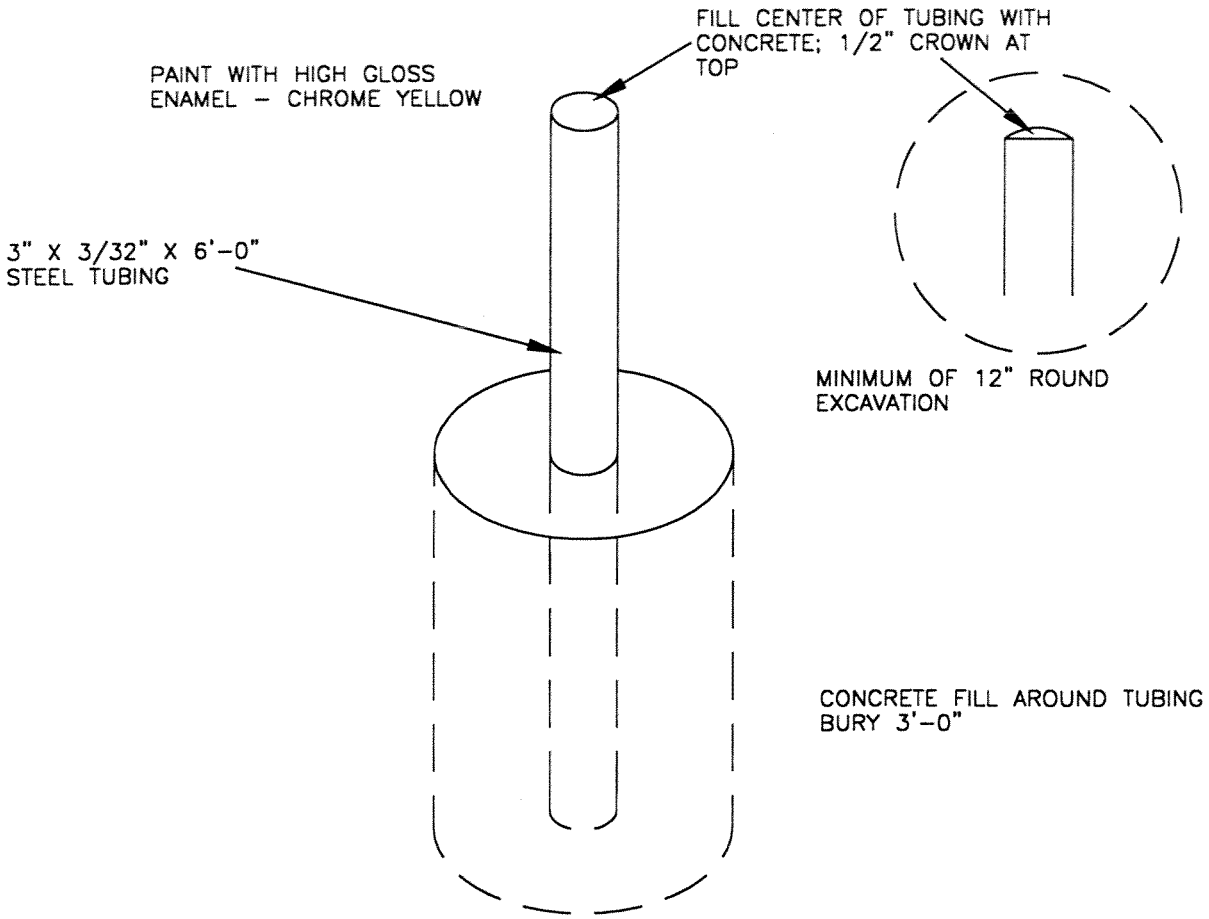
A	B	C	D	E	F	G	H	I	J	K
STREET WIDTH	ROW WIDTH	WATER	SANITARY SEWER	STORM SEWER	STREET LIGHT	UNDERGROUND UTILITIES	GAS	FIRE HYDRANT	PEDESTALS	TRANSFORMER
32'	54'-60'	12'	4'	11'	19'	32'	32'	19'	31'	32'
34'	60'	13'	4'	12'	20'	32'	32'	20'	31'	32'
36'	60'	12'	4'	13'	21'	32'	32'	21'	31'	32'
40'	70'	15'	4'	15'	23'	32'	37'	23'	36'	32'
46'	80'	18'	4'	18'	26'	42'	42'	26'	41'	32'
70'	100'	25'-30'	4'	30'	38'	52'	52'	38'	32'	32'



City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

UTILITIES PLAN

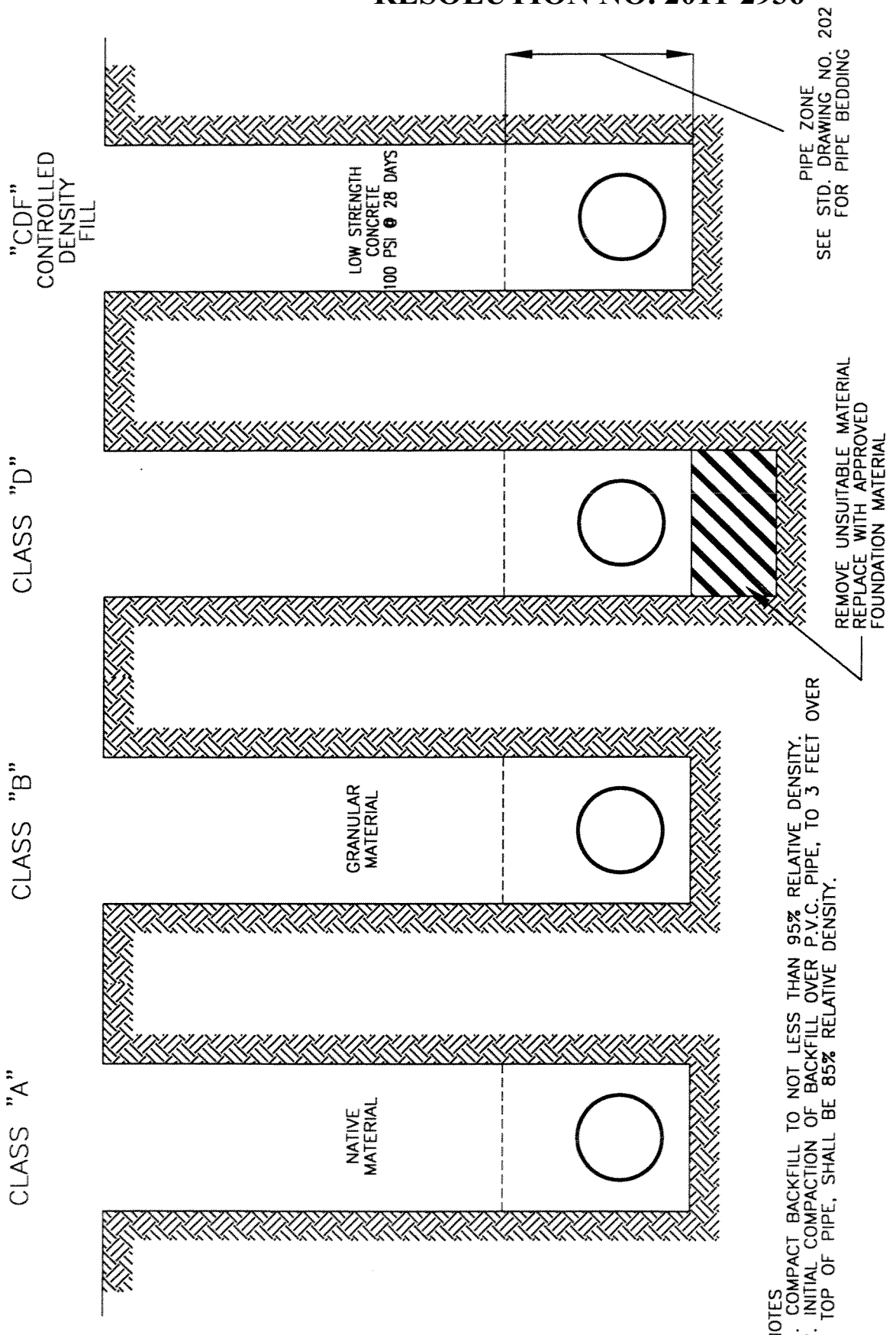
SCALE: N.T.S.
DATE: JUNE 2000
APP. BY: L. ANDERSON
STANDARD DRAWING 105



City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

BOLLARD

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	106



NOTES
1. COMPACT BACKFILL TO NOT LESS THAN 95% RELATIVE DENSITY.
2. INITIAL COMPACTION OF BACKFILL OVER P.V.C. PIPE, TO 3 FEET OVER TOP OF PIPE, SHALL BE 85% RELATIVE DENSITY.

City of Newberg
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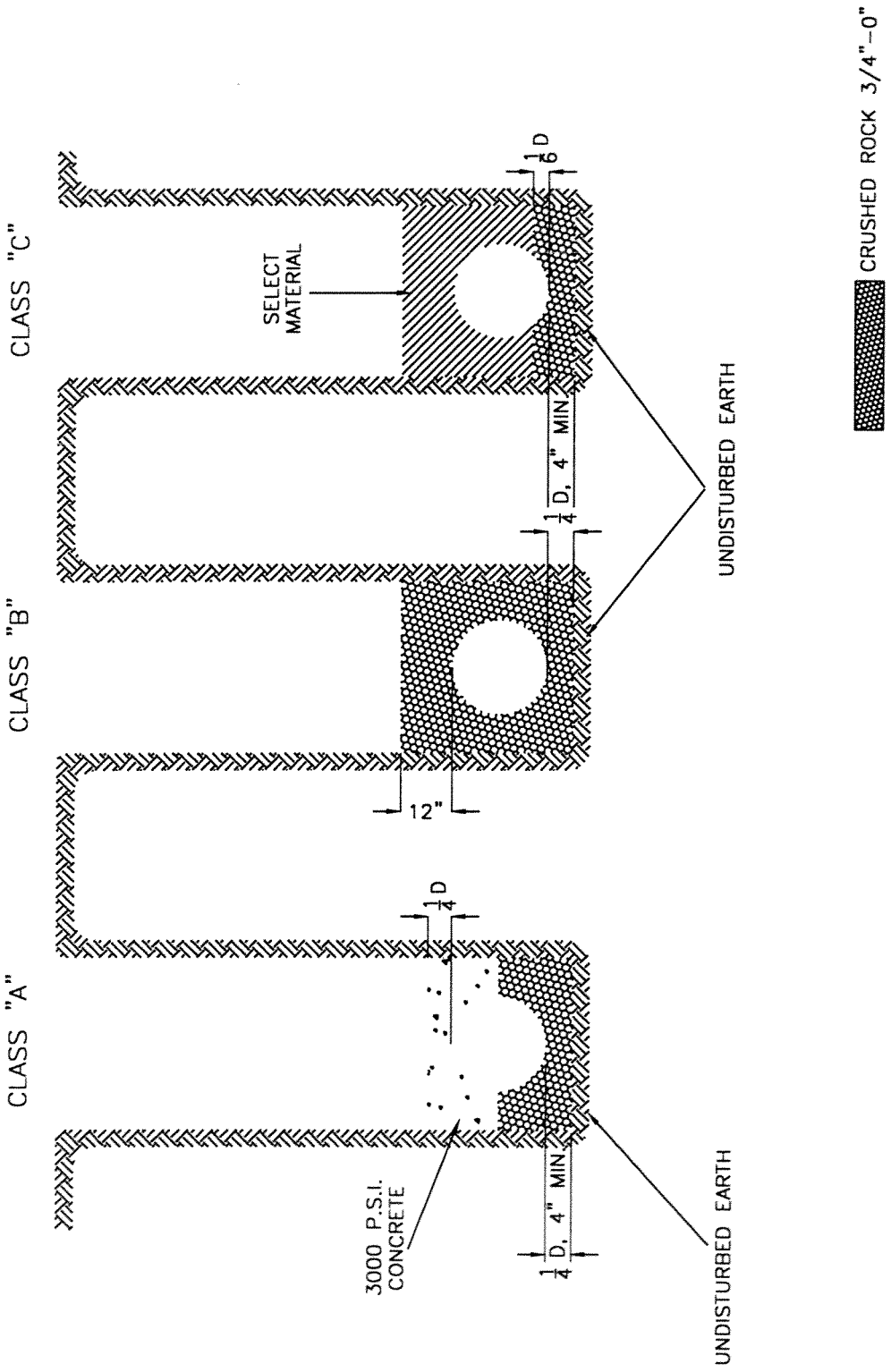
TRENCH BACKFILL

SCALE: N.T.S.	
DATE: JUNE 2000	
APP. BY: L. ANDERSON	
STANDARD DRAWING	201

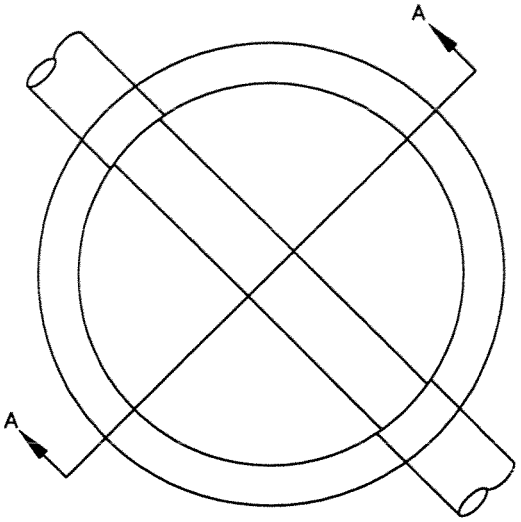


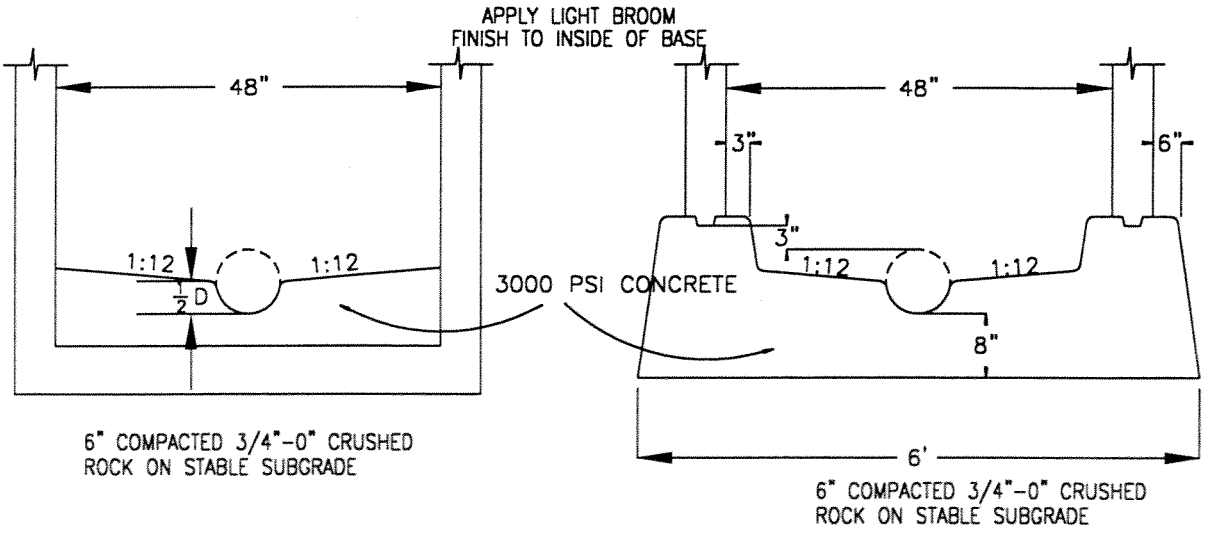
City of Newberg, OR

414 E. FIRST STREET
NEWBERG, OREGON 97132

PIPE BEDDING

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	202





PRECAST BASE

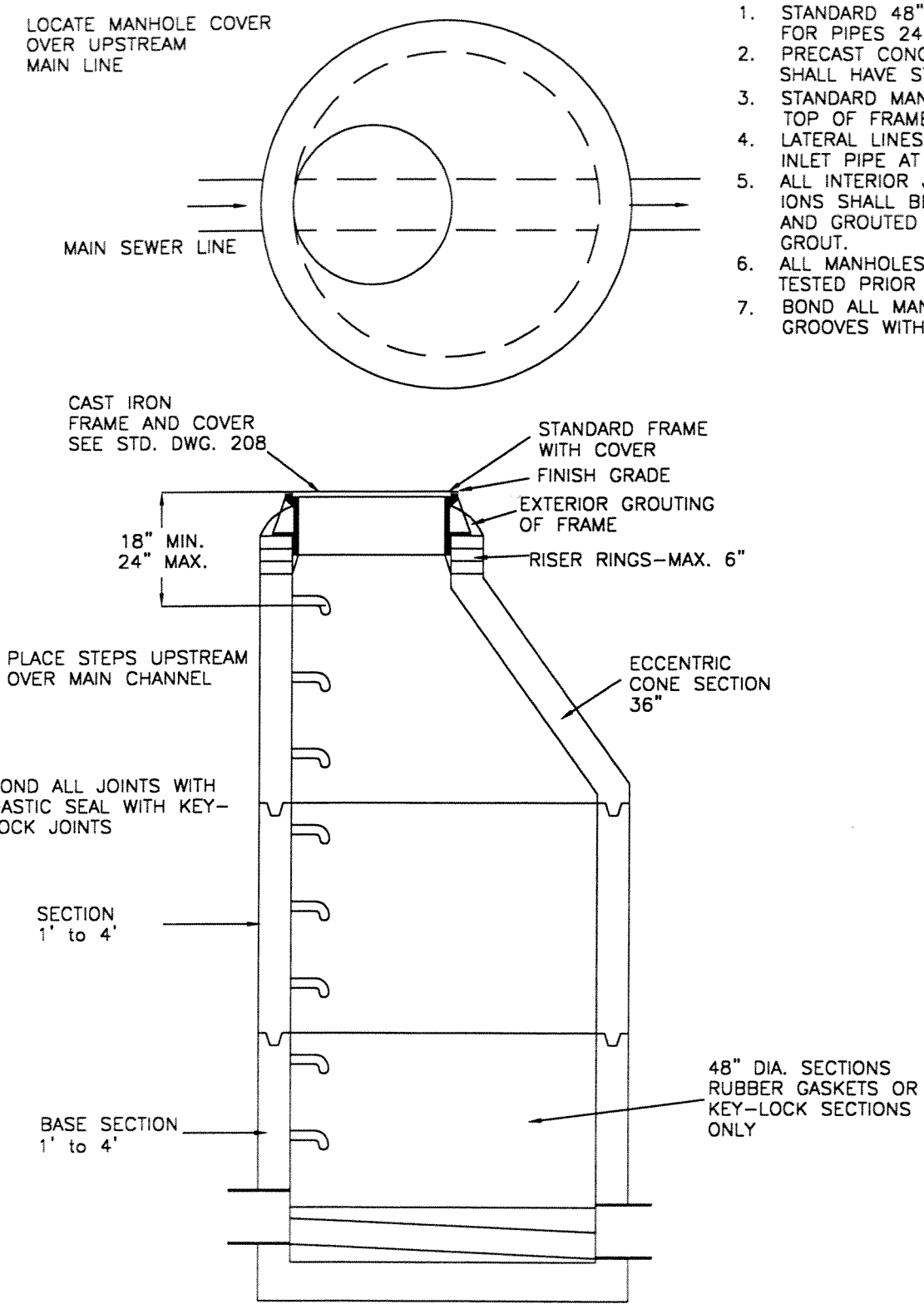
POURED IN PLACE BASE

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

MANHOLE BASE

SCALE: N.T.S.	
DATE:	
APP. BY:	L. ANDERSON
STANDARD DRAWING	203

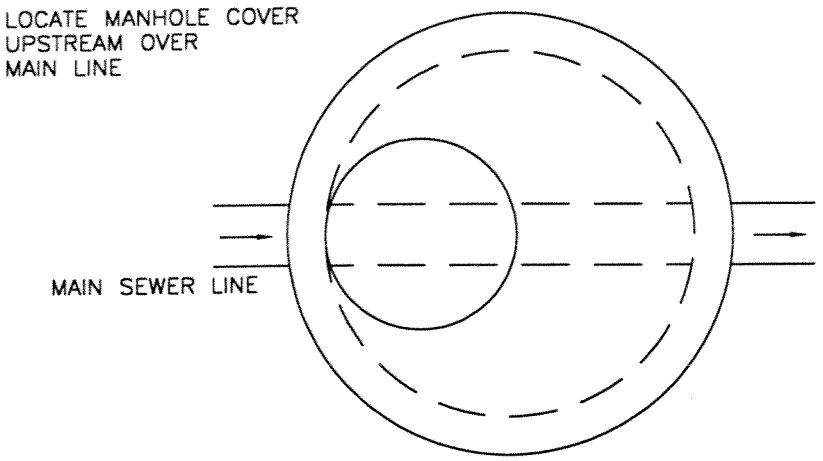
NOTES
1. STANDARD 48" MANHOLE TO BE USED FOR PIPES 24" AND LESS.
2. PRECAST CONCRETE STRUCTURES SHALL HAVE STRENGTH OF 4000 PSI.
3. STANDARD MANHOLE DEPTH = 8' TOP OF FRAME TO INVERT.
4. LATERAL LINES TO MATCH TOP OF INLET PIPE AT MANHOLE.
5. ALL INTERIOR JOINTS AND CONNECT-IONS SHALL BE WATER TIGHT, 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.



City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

48" STANDARD MANHOLE

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	204



NOTES
1. STANDARD MANHOLE TO BE USED FOR PIPES 24" AND LESS.
2. PRECAST CONCRETE STRUCTURES SHALL HAVE STRENGTH OF 4000 PSI.
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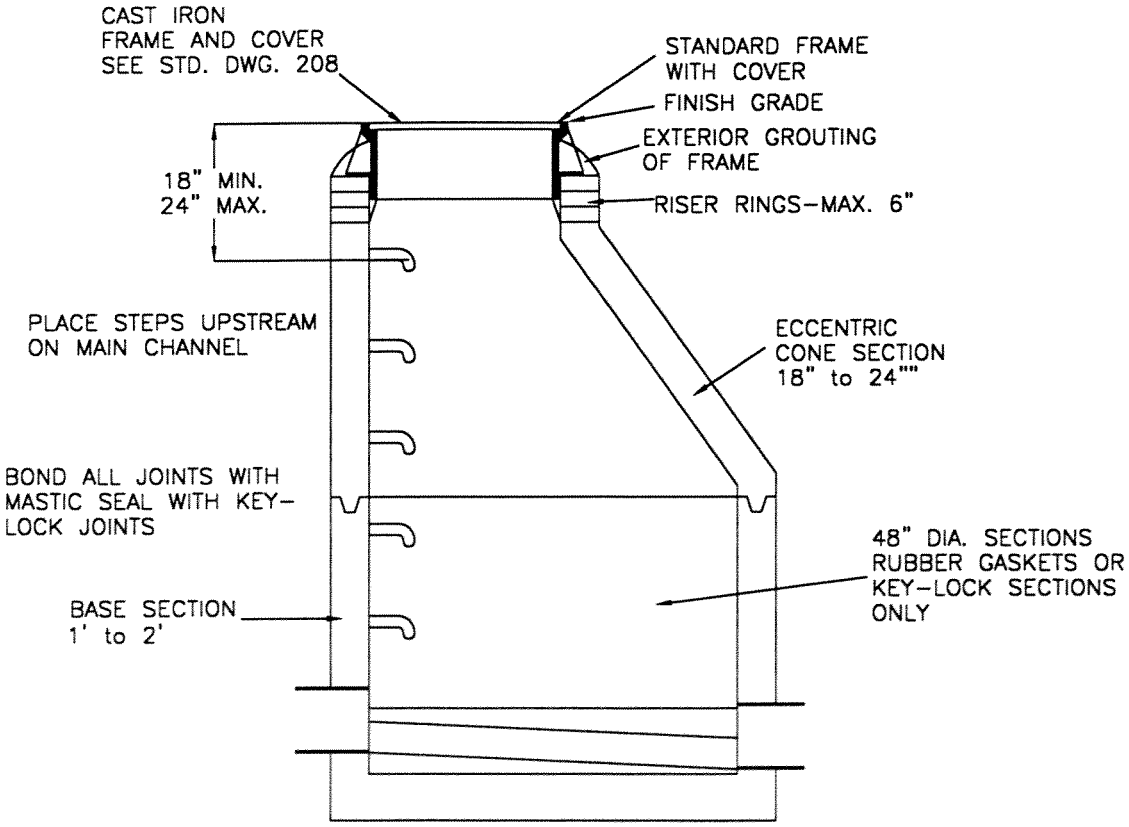
7. BOND ALL MANHOLE SECTION GROOVES WITH MASTIC SEAL.

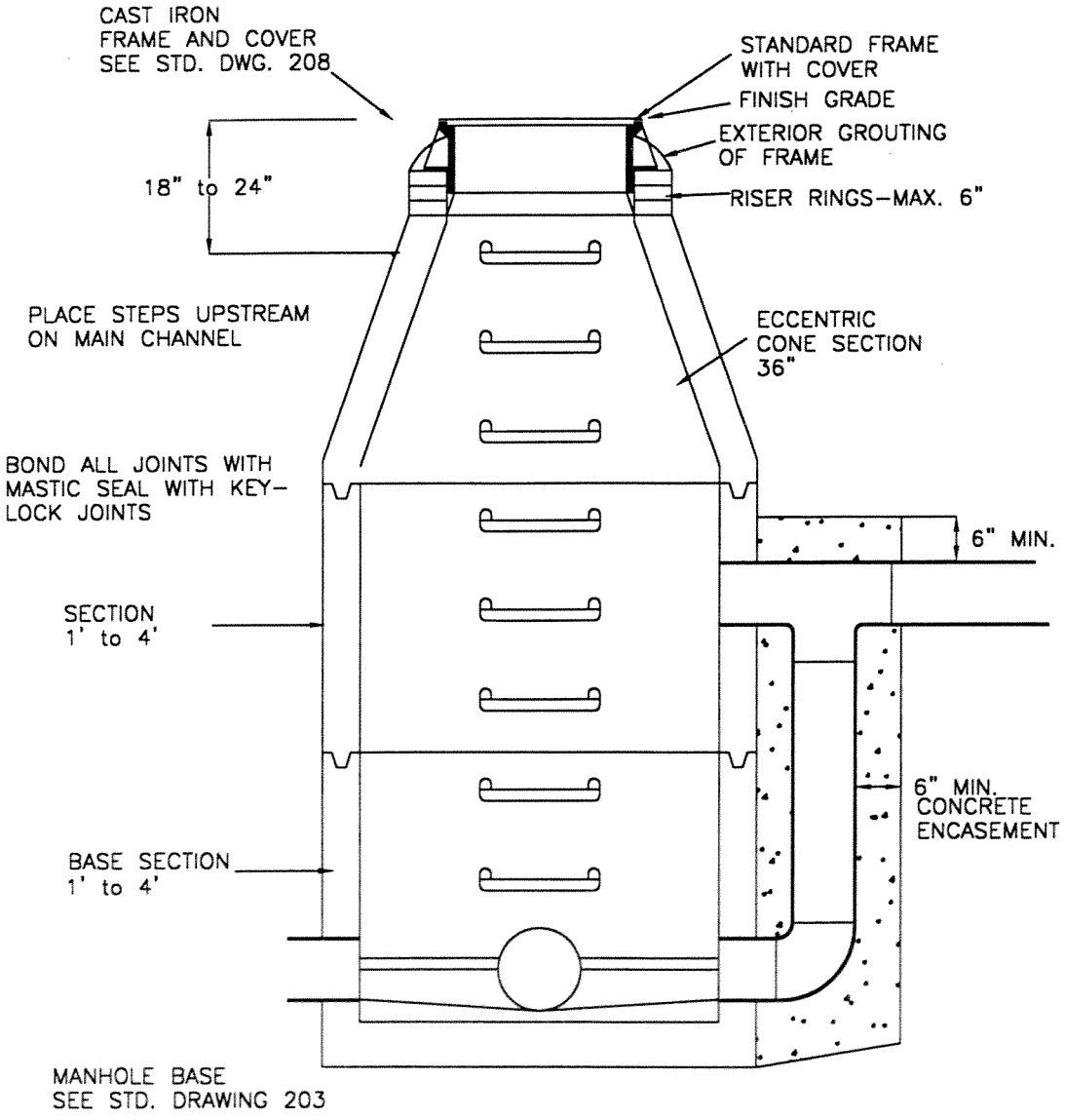


City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

SHALLOW MANHOLE

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	205

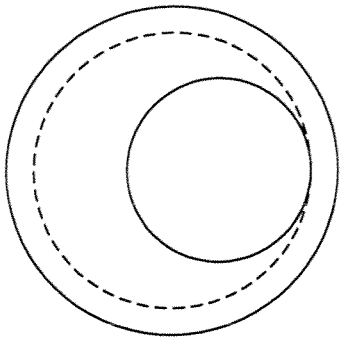
NOTES
1. STANDARD MANHOLE TO BE USED FOR PIPES 24" AND LESS.
2. PRECAST CONCRETE STRUCTURES SHALL HAVE STRENGTH OF 4000 PSI.
3. STANDARD MANHOLE DEPTH = 8' TOP OF FRAME TO INVERT.
4. LATERAL LINES TO MATCH TOP OF INLET PIPE AT MANHOLE.
5. ALL INTERIOR JOINTS AND CONNECTIONS SHALL BE WATER TIGHT, AND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



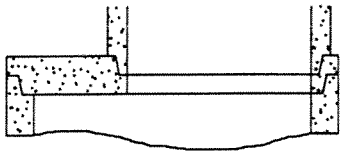
City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

DROP MANHOLE

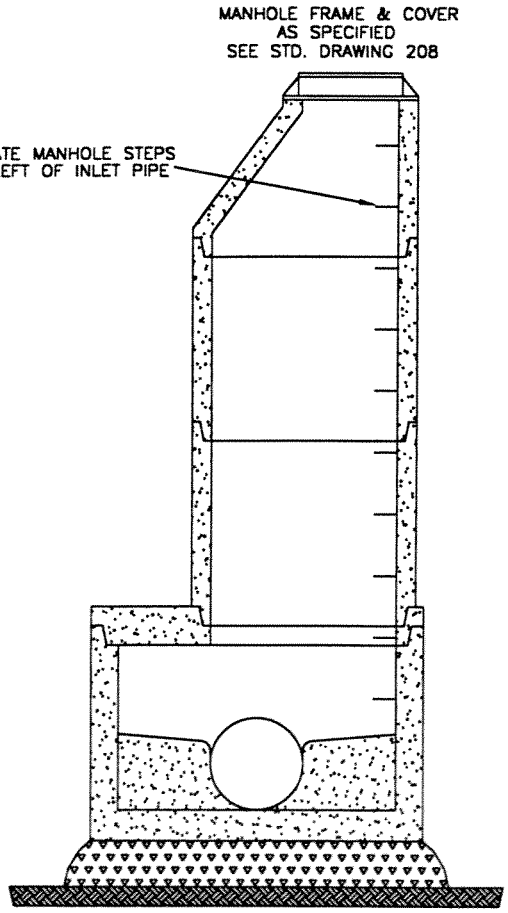
SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	206

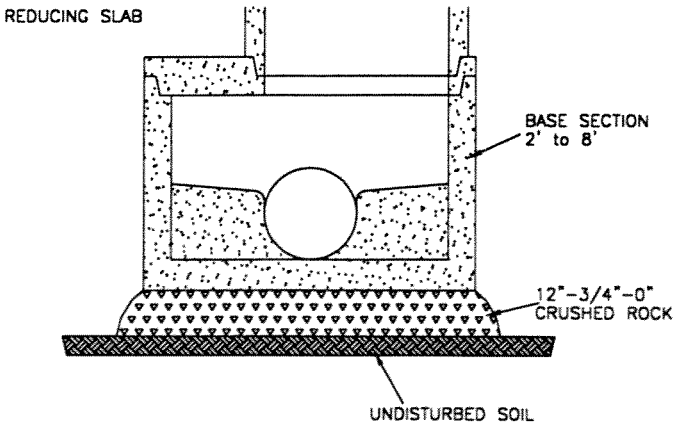


NOTES
1. ALL CONCRETE SHALL HAVE STRENGTH OF 3000 PSI AT 28 DAYS.
2. MANHOLE TO BE USED FOR PIPE SIZES 24" AND GREATER.



72" to 48"
REDUCING SLAB



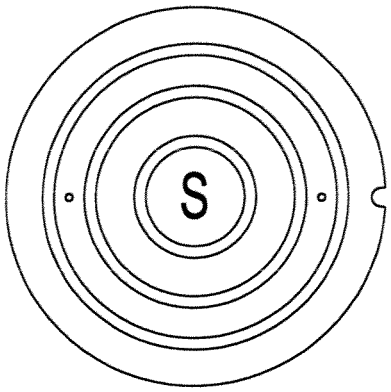


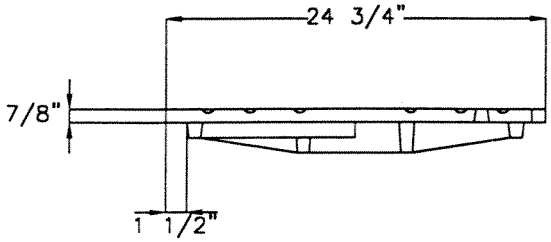
City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

OFFSET MANHOLE

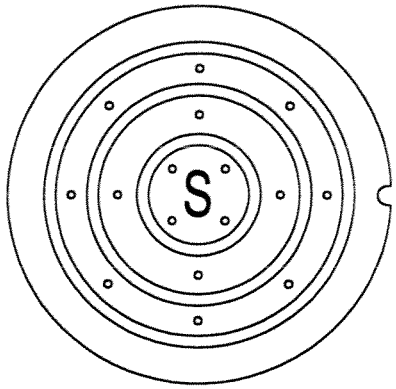
SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	207

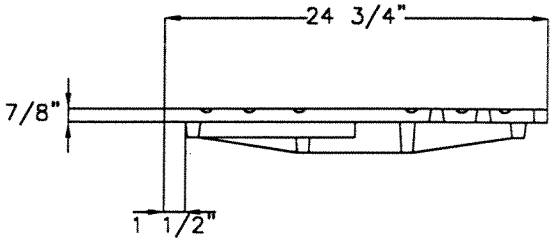
SANITARY

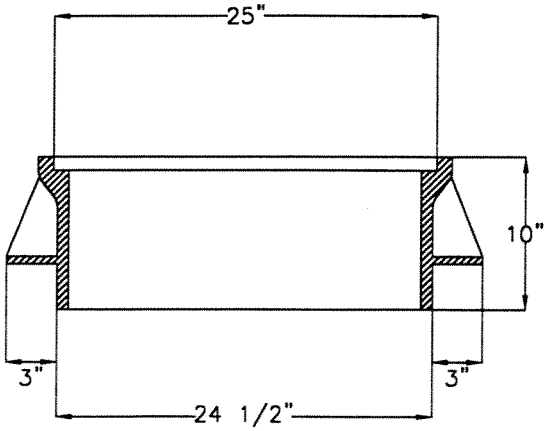




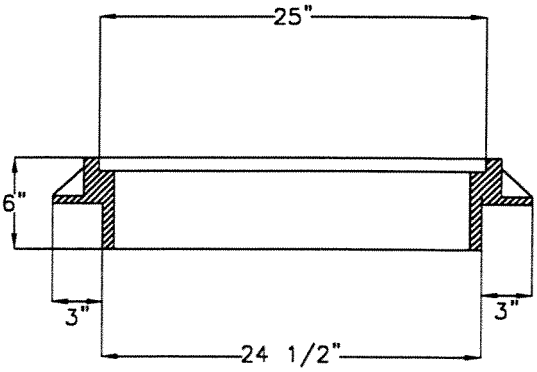
STORM







STANDARD FRAME



SUBURBAN FRAME

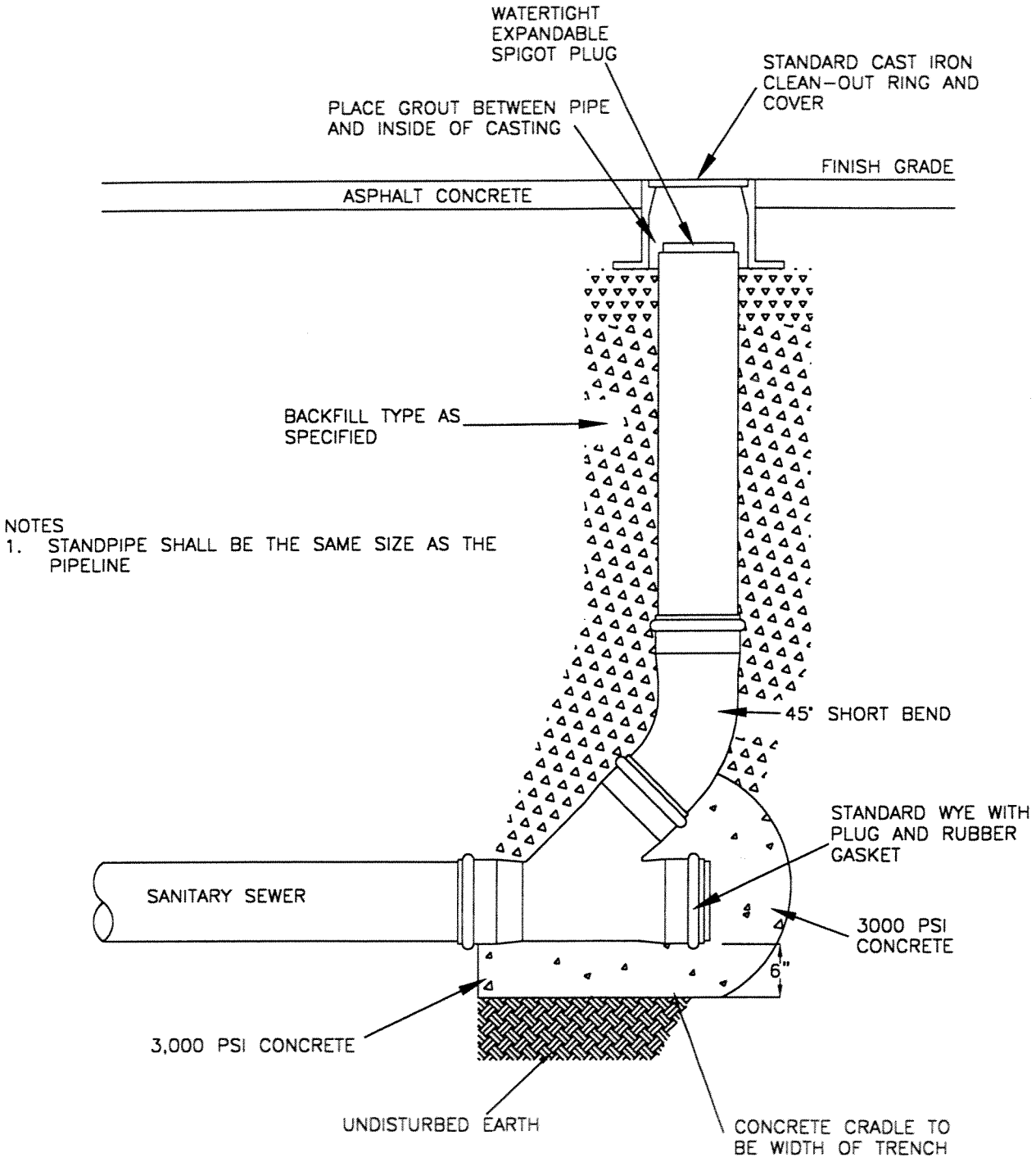
NOTES

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.

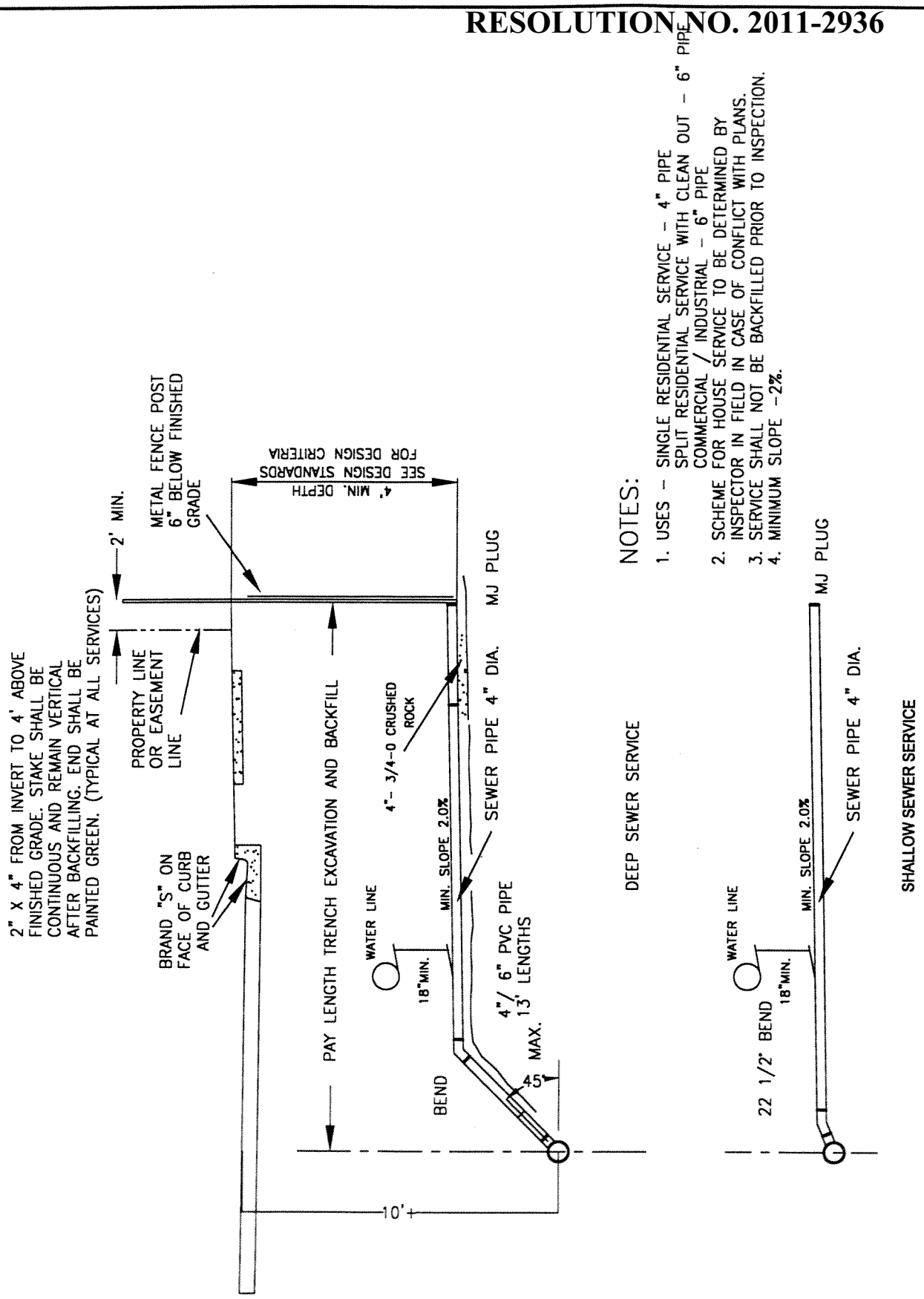
City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

MANHOLE FRAME AND COVER

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	208



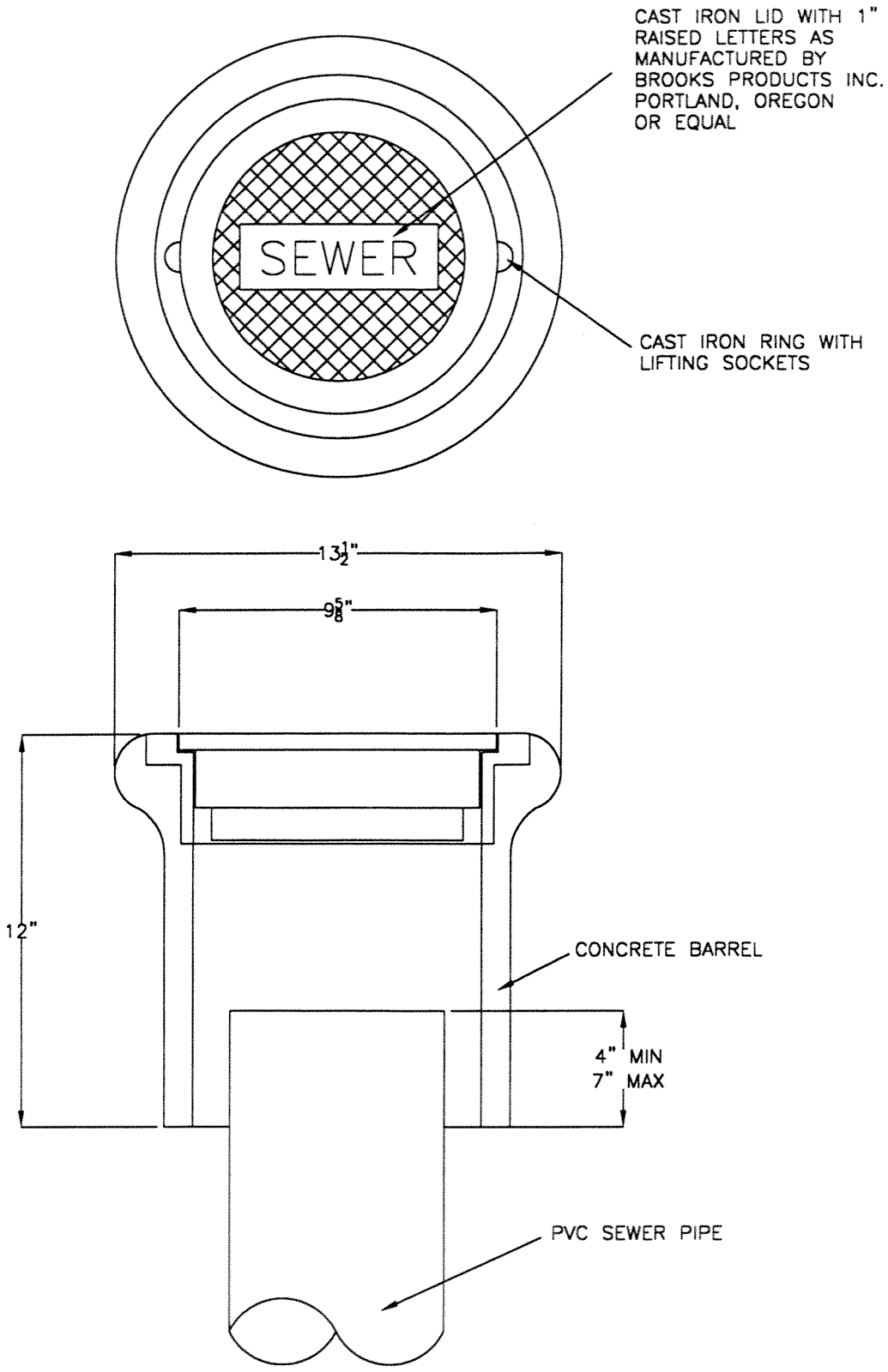
City of Newberg 414 E. FIRST STREET NEWBERG, OREGON 97132	CLEAN OUT	SCALE: N.T.S. DATE: JUNE 2000 APP. BY: L. ANDERSON STANDARD DRAWING 209



City of Newberg, OR
414 E. FIRST STREET
NEWBERG, OREGON 97132

SERVICE BRANCH

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	210



City of Newberg
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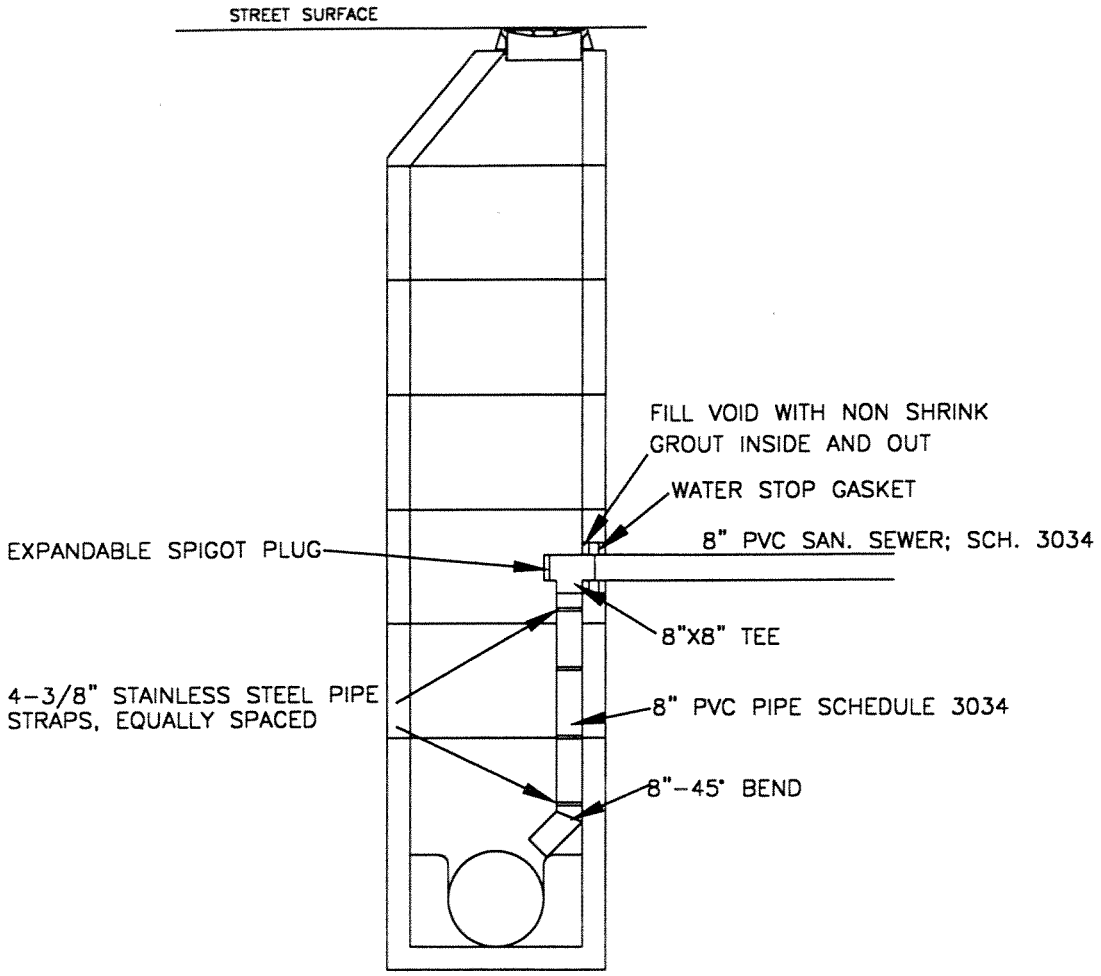
NEWBERG, OREGON 97132

TRAFFIC BOX

PRIVATE AREAS ONLY

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	211

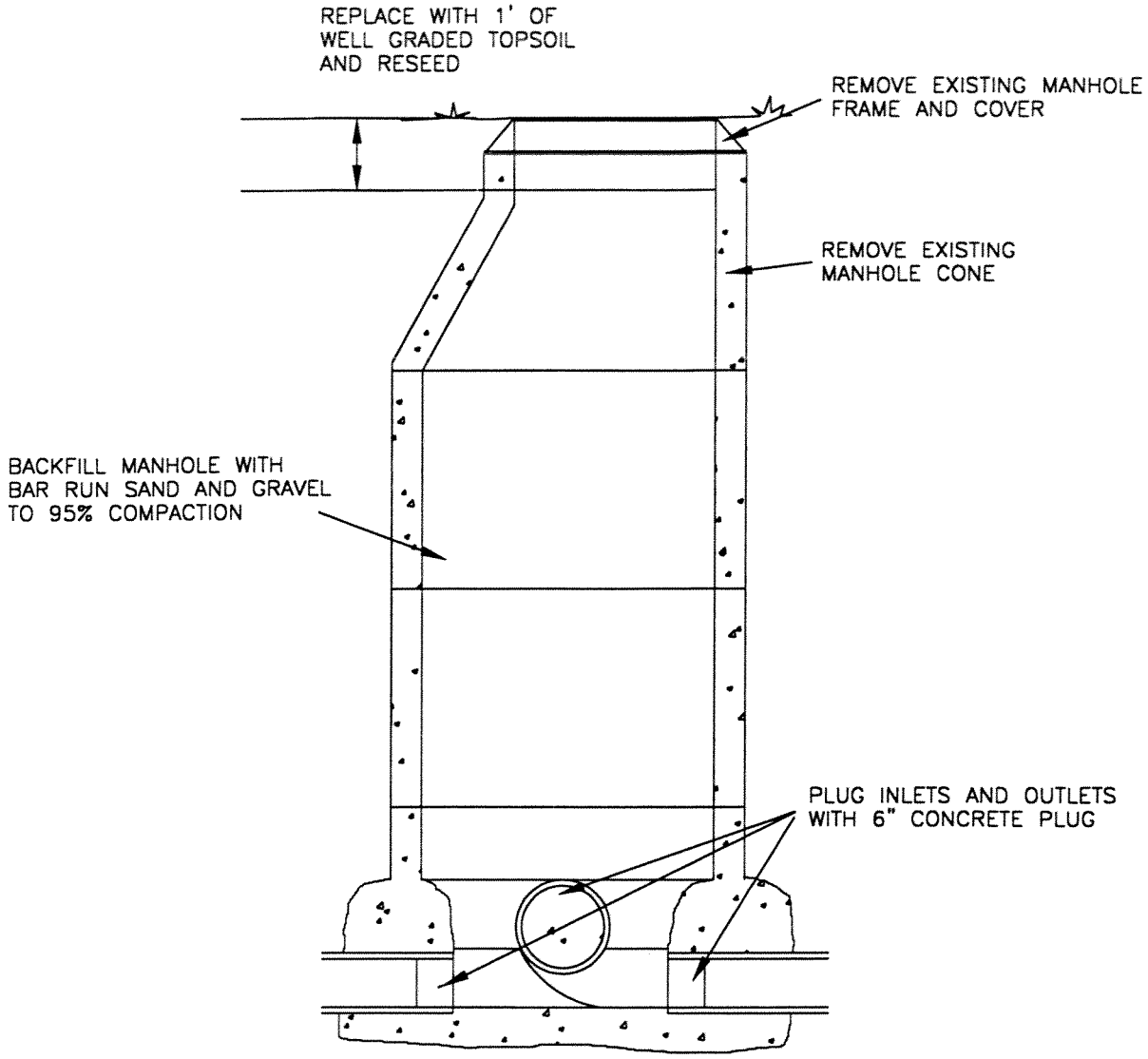


City of Newberg

414 E. FIRST STREET
NEWBERG, OREGON 97132

INSIDE DROP MANHOLE DETAIL

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	212

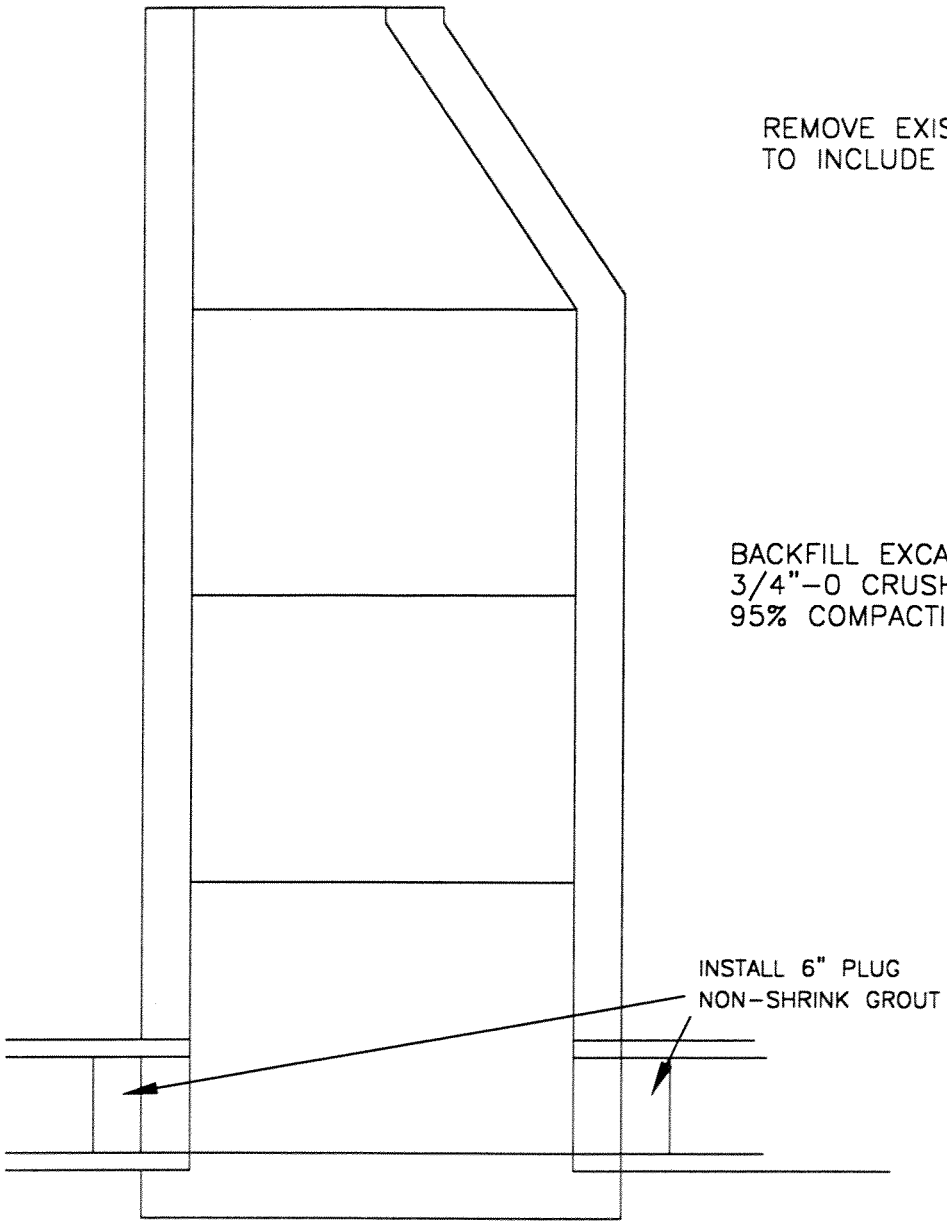


NOTES:
1. PRIOR TO ABANDONMENT OF MANHOLE VERIFY THAT ANY AND ALL SEWER SERVICES HAVE BEEN CONNECTED TO NEW SEWER MAIN.

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

MANHOLE ABANDONMENT

SCALE:	N.T.S.
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	213

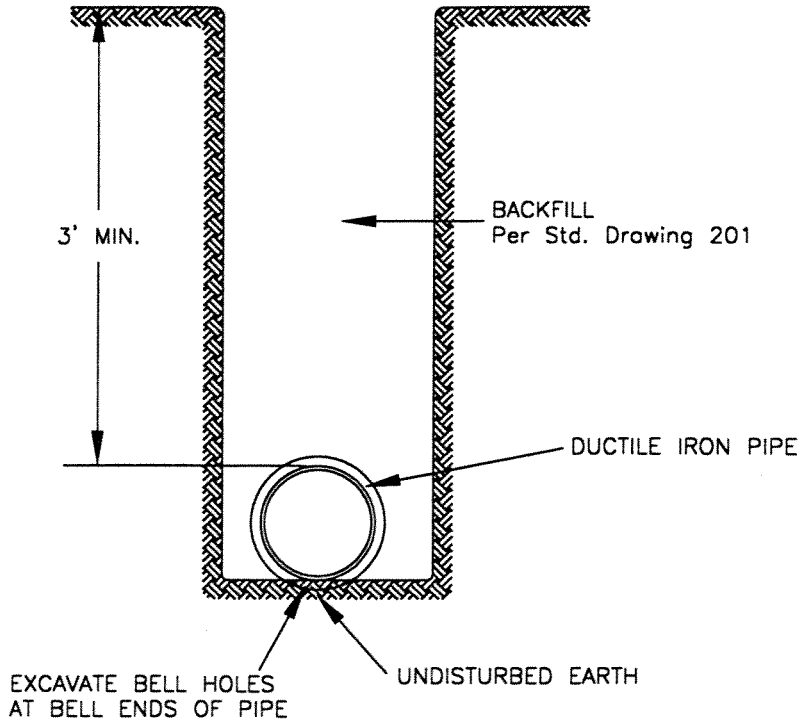


City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

MANHOLE REMOVAL

SCALE: N.T.S.	
DATE: JUNE 2000	
APP. BY: L. ANDERSON	
STANDARD DRAWING	214

CLASS "D"



City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

WATER PIPE BEDDING

SCALE:	N.T.S.
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	301

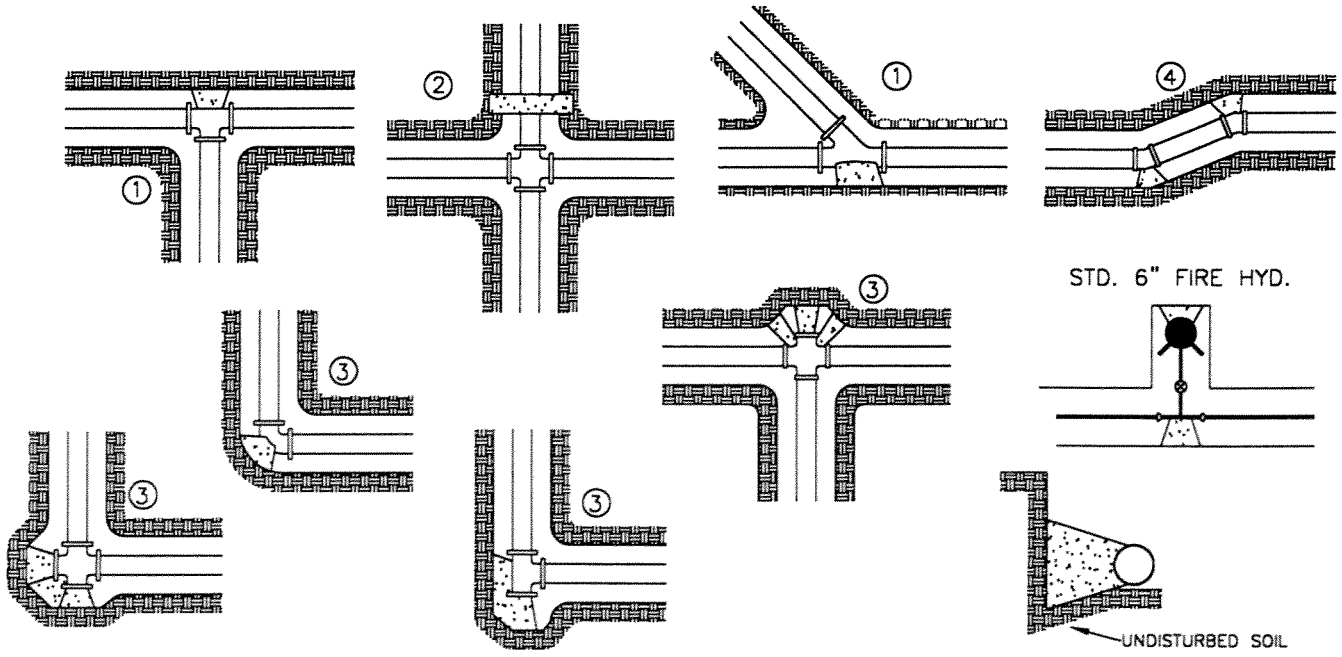
FITTING SIZE (Inches)	TEE, WYE & ① HYDRANTS	STRADDLE BLOCK ②	90° BEND ③ PLUGGED CROSS TEE PLUGGED – RUNS	45° BEND ④	22 1/2° BEND ④	11 1/4° BEND ④
2	*	*	*	*	*	*
4	1.3	1.6	1.9	1.3	*	*
6	2.8	3.7	4.0	2.1	1.3	*
8	5.1	6.5	7.1	3.9	2.0	1.3
10	7.9	10.2	11.2	6.1	3.2	1.6
12	11.3	14.7	16.0	8.8	4.5	2.3
14	15.3	20.0	21.7	11.9	6.1	3.1
16	20.0	26.1	28.4	15.5	8.0	4.0
18	25.3	33.0	36	19.5	10.1	5.1
LARGER	* *	* *	* *	* *	* *	* *
BEARING AREA OF THRUST BLOCKS (SQ. FT.)						

1. ALL VALUES ARE BASED ON THE FOLLOWING ASSUMPTIONS: AVERAGE TEST PRESSURE = 150 PSI; 1500 PSF SOIL BEARING CAPACITY; NORMAL DISTRIBUTION DESIGN VELOCITY NOT TO EXCEED 5 FEET PER SECOND.
2. ALL FITTINGS SHALL BE WRAPPED IN PLASTIC PRIOR TO PLACEMENT OF CONCRETE.
3. BEARING SURFACE OF THRUST BLOCKING SHALL BE AGAINST UNDISTURBED SOIL.
4. ALL CONCRETE SHALL HAVE A MIN. 28 DAY STRENGTH OF 3000 PSI.
5. ALL PIPE ZONES SHALL BE GRAVEL FILLED AND COMPACTED.
6. THRUST BLOCK FOR PLUGGED CROSS AND PLUGGED TEE SHALL HAVE #4 REBAR LIFTING LOOPS INSTALLED AS SHOWN ON PLANS.
7. VERTICAL THRUST DETAILS–SEE STD. DWG. 303
8. STRADDLE BLOCK DETAILS–SEE STD. DWG. 304
9. ABOVE BEARING AREAS ARE BASED ON A TEST PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 1500 LBS./SQ. FT.. TO COMPUTE BEARING AREAS OF DIFFERENT TEST PRESSURES AND SOIL BERAING STRESSES, USE THE FOLLOWING EQUATION:

$$\text{BEARING AREA} = \text{TABLE VALUE} \times \frac{\text{TEST PRESSURE}}{150} \times \frac{2000}{\text{SOIL BEARING STRESS}}$$

* BLOCK TO UNDISTURBED TRENCH WALLS

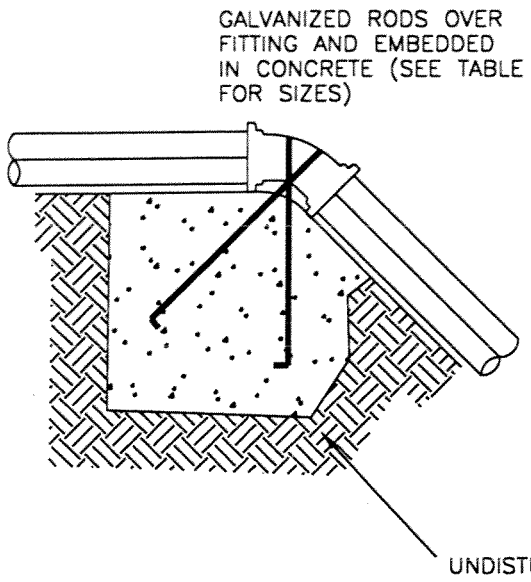
* * THRUST BLOCKS FOR PIPES LARGER THAN 18" WILL BE INDIVIDUALLY DESIGNED BY THE ENGINEER



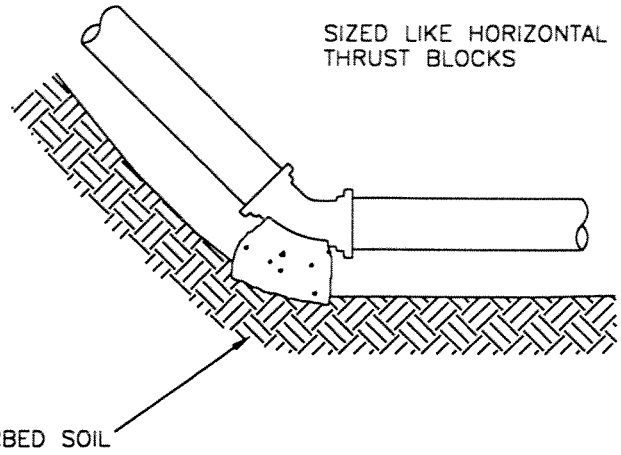
City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

THRUST BLOCKING

SCALE: N.T.S.
DATE: JUNE 2000
APP. BY: L. ANDERSON
STANDARD DRAWING 302



GRAVITY VERTICAL THRUST BLOCK



NORMAL VERTICAL THRUST BLOCK

VOLUME OF THRUST BLOCK IN CUBIC YARDS (VERTICAL BENDS)			
FITTING SIZE	BEND ANGLE		
	45°	22 1/2°	11 1/4°
4"	1.1	0.4	0.2
6"	2.7	1.0	0.4
8"	4.0	1.5	0.6
10"	6.0	2.3	0.9
12"	8.5	3.2	1.3
14"	11.5	4.3	1.8
16"	14.8	5.6	2.3

FITTING SIZE	ROD SIZE	EMBED-MENT
12" AND LESS	#6	30"
14" – 16"	#8	36"

NOTES
1. GRAVITY VERTICAL THRUST BLOCKS SHALL BE DESIGNED BY THE ENGINEER.
2. KEEP CONCRETE CLEAR OF JOINTS AND JOINT ACCESSORIES. FITTINGS SHALL BE WRAPPED IN PLASTIC PRIOR TO PLACEMENT OF CONCRETE.
3. CONCRETE THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED EARTH.
4. CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI.
5. THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 PSIG AND THE WEIGHT OF CONCRETE OF 4050 LBS./C.Y..
6. VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 5 CUBIC YARDS REQUIRE SPECIAL BLOCKING DETAILS. SEE PLANS FOR VOLUMES SHOWN INSIDE HEAVY LINE IN TABLE.
7. PAYMENT SHALL BE THE SAME AS FOR HORIZONTAL THRUST BLOCKS.
8. ALL REBAR SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM–123 (MIN. 3.4 MIL). REBAR SHALL BE BENT BEFORE GALVANIZATION, AND LAST 4" OF BAR SHALL BE BENT 90° WITH A 1/2" RADIUS BEND. REBAR SHALL BE TIGHTLY FIT TO RESTRAINED FITTING.
9. FOR HORIZIONTAL THRUST BLOCK DETAILS SEE STANDARD DRAWING NO. 302.

City of Newberg
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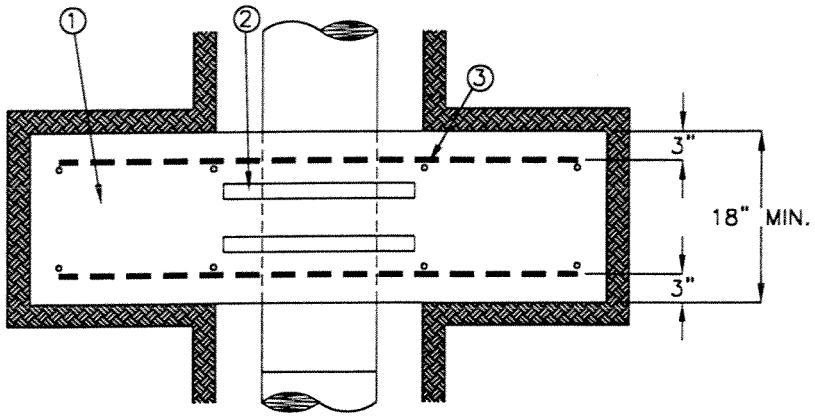
VERTICAL THRUST BLOCKING

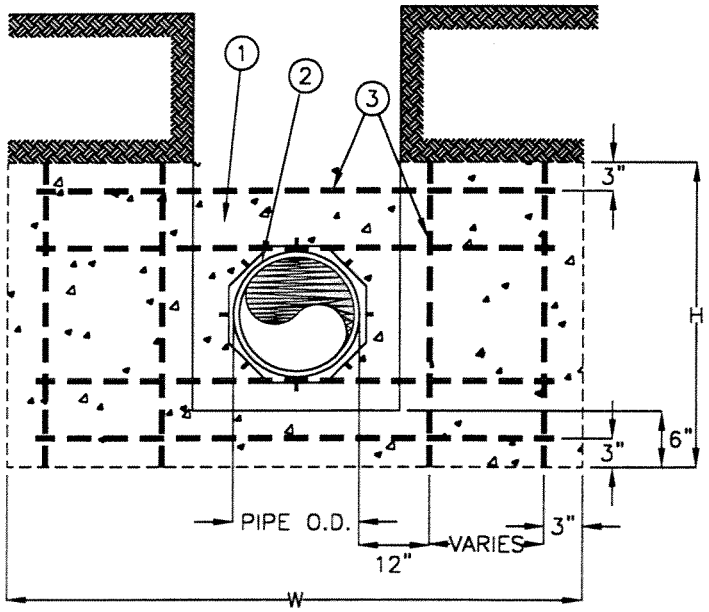
SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	303



TOP VIEW

MATERIALS

1. CONCRETE STRADDLE BLOCK
2. MECHANICAL JOINT RETAINER GLAND
3. RE-BAR VERTICAL AND HORIZIONTAL



FRONT VIEW

NOTES

1. STRADDLE BLOCKS SHALL BE DESIGNED BY THE ENGINEER AND BASED ON THE FOLLOWING:
   a.) 150 PSI WATER PRESSURE
   b.) SOIL BEARING CAPACITY, STEEL SIZE AND SPACING BY THE ENGINEER
2. BEARING AREA OF BLOCK SHALL BE AGAINST UNDISTURBED SOIL
3. STRADDLE BLOCK SHALL HAVE A MINIMUM COVER OF 18"
4. CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI
5. ALL FITTINGS WITHIN THE CONCRETE SHALL BE WRAPPED IN PLASTIC
6. STRADDLE BLOCK HEIGHT (H) AND WIDTH (W) SHALL BE DETERMINED BY THE ENGINEER

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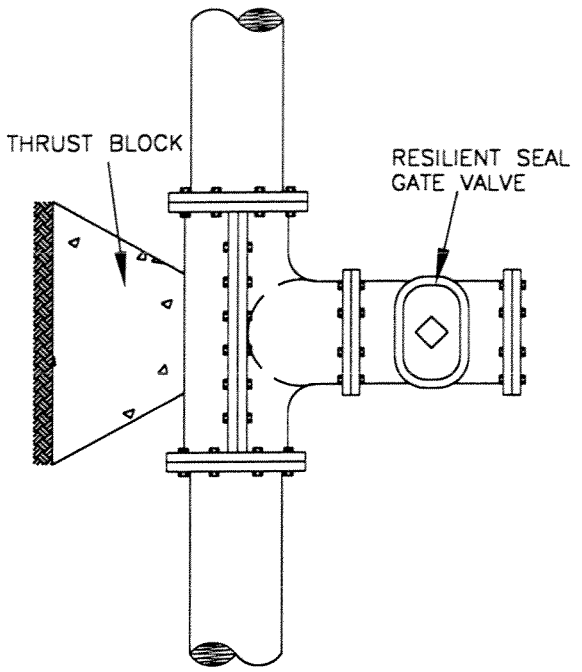
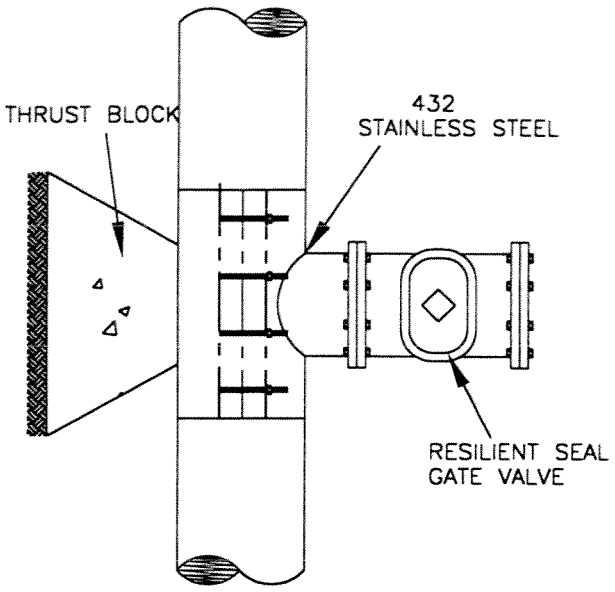
STRADDLE BLOCK

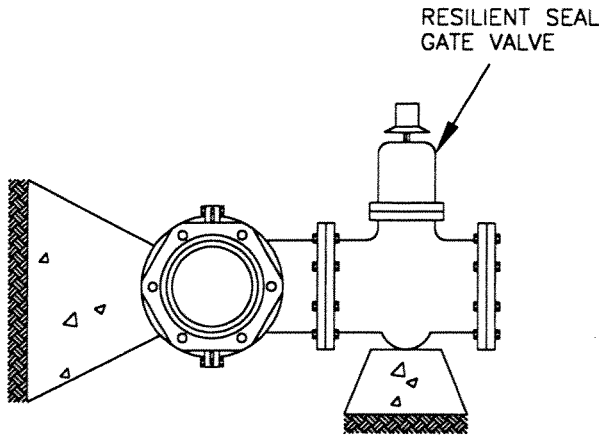
SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	304

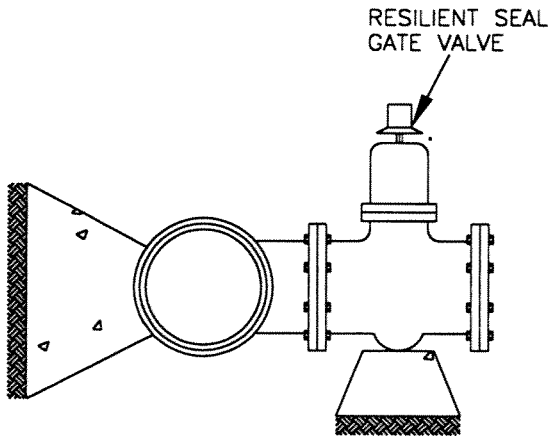


MUELLER / CLOW OR APPROVED EQUAL
FULL MJ TAPPING SLEEVE



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. THRUST BLOCKING REQUIREMENTS SHALL BE DETERMINED BY THE ENGINEER AS PER STANDARD DRAWING NO. 302.
6. TAP SHALL BE MADE NO CLOSER THAN 18" FROM THE NEAREST JOINT.
7. SLEEVE AND VALVE SHALL BE WRAPPED AND SEALED WITH 8 MIL PLASTIC.
8. FLUSH ALL METAL SHAVINGS FROM THE TAPPING PROCESS.
9. STAINLESS STEEL TAPPING SLEEVE ON DUCTILE IRON PIPE DUCTILE IRON, FULL MECHANICAL JOINT TAPPING SLEEVE ON CAST IRON PIPE.

City of Newberg
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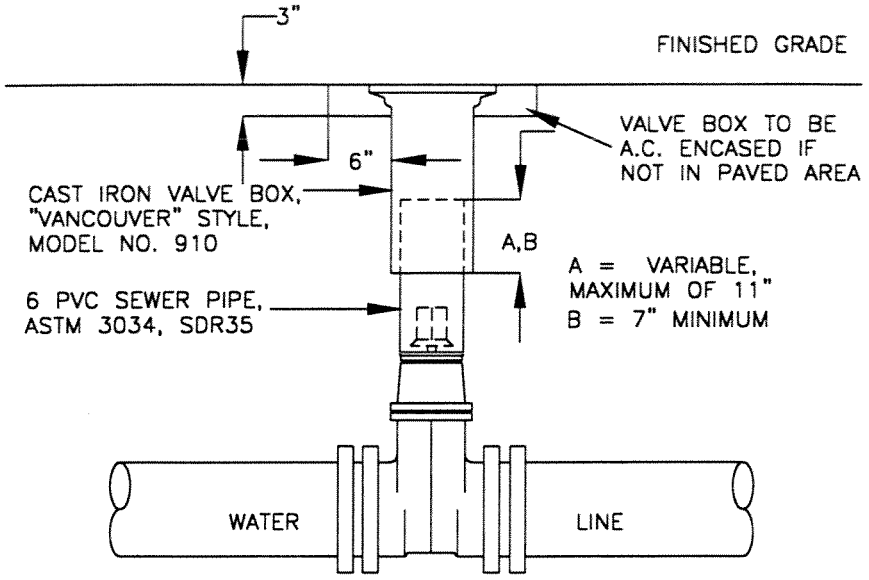
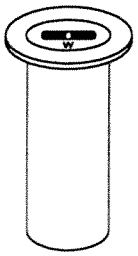
WATER TAPPING SLEEVES

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	305





"VANCOUVER"
18" TALL VALVE BOX

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. 307 VALVE BOX AND COVER.

City of Newberg
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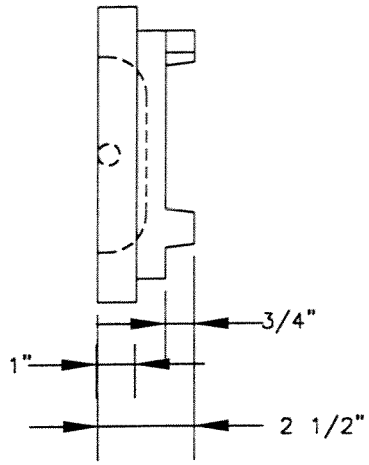
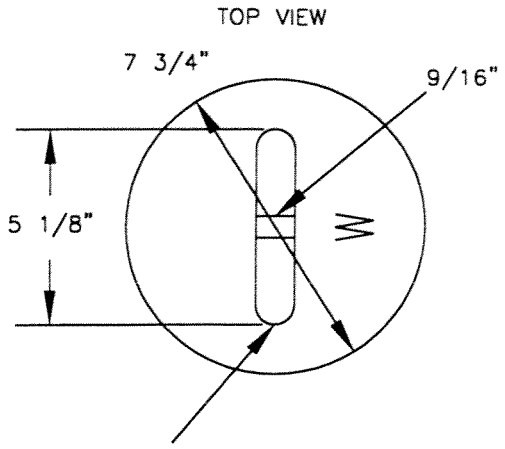
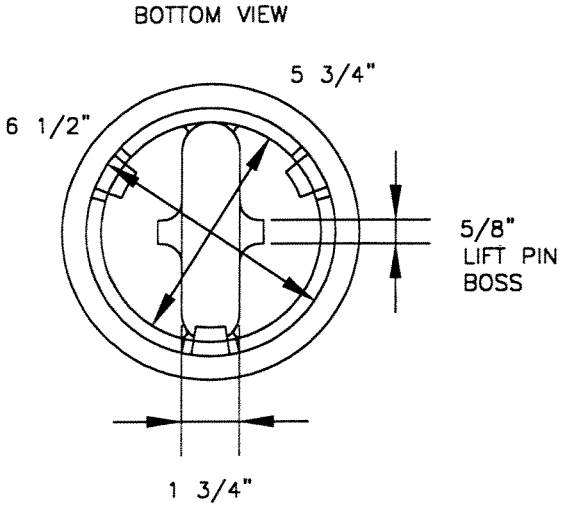
NEWBERG, OREGON 97132

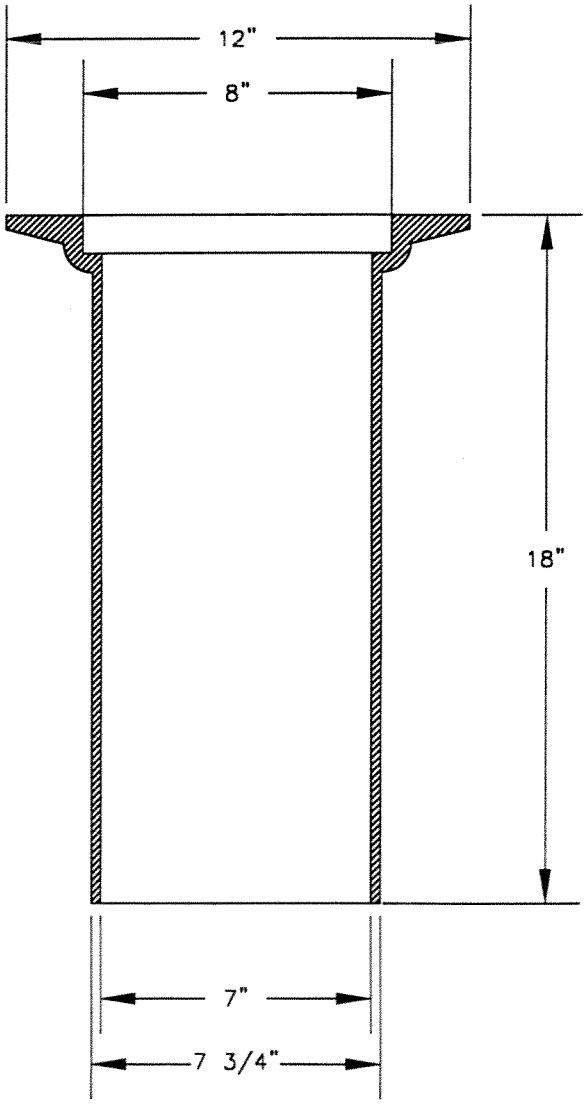
VALVE BOX ASSEMBLY

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	306







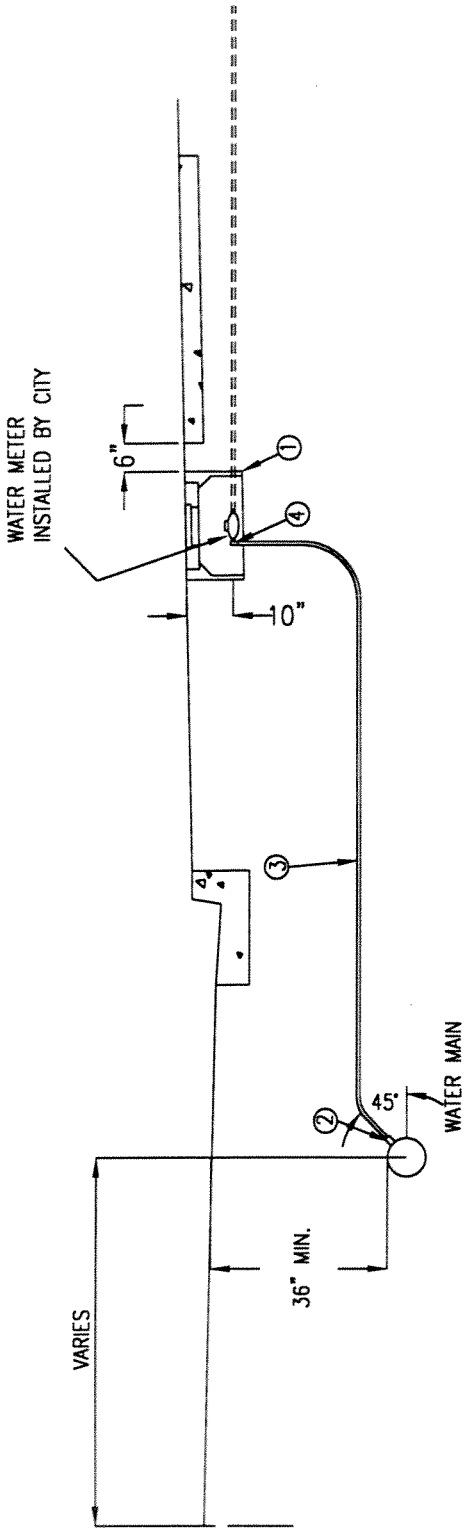


MATERIALS:
CAST IRON PER ASTM A48 CL30

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

VALVE BOX
AND COVER

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	307



MATERIALS
1. BROOKS METER BOX, BODY NO. 37 SERIES (1"), WITH "S" COVER AND TOUCH READ LID
2. McDONALD, FORD OR MUELLER CORPORATION STOP
3. 3/4" AND 1" SOFT TEMPER, TYPE "K" COPPER TUBING COMPLYING WITH ASTM B-88
4. McDONALD, FORD OR MUELLER METER STOP
5. 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" 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. 318
4. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER ASSEMBLY
5. FOR LOCATION OF WATER MAIN, SEE STANDARD DRAWING NO. 105

City of Newberg
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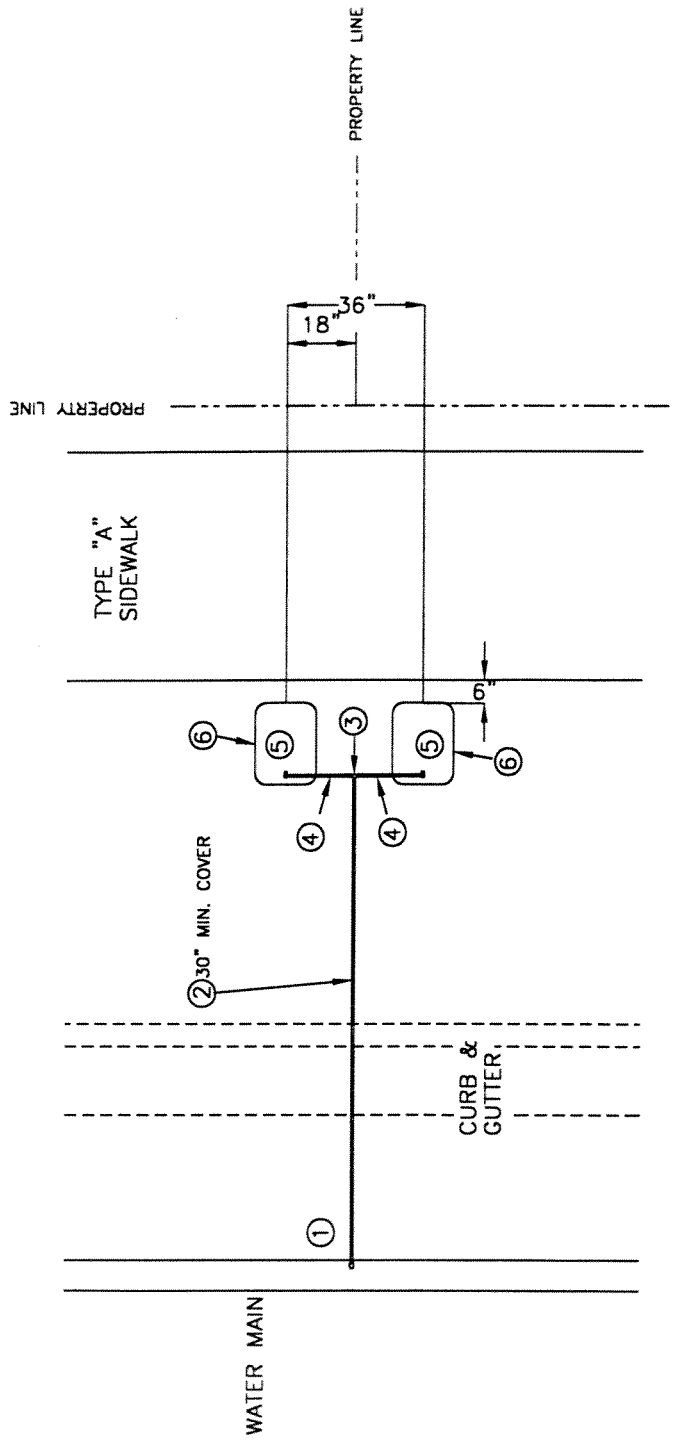
NEWBERG, OREGON 97132

STANDARD 3/4" AND 1" WATER SERVICE

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	308



MATERIALS

1. FORD OR MUELLER CORPORATION STOP SET AT 45° ANGLE.
2. 1" SOFT TEMPER TYPE "K" COPPER TUBING COMPLYING WITH ASTM B-88.
3. McDONALD "T" COMPRESSION NUT, FORD OR MUELLER 3/4" X 3/4" X 1" 'BULLHEAD' TEE.
4. 3/4" SOFT TEMPER TYPE "K" COPPER TUBING COMPLYING WITH ASTM B-88.
5. McDONALD, FORD OR MUELLER METER STOP.
6. BROOKS METER BOX, BODY NO. 37 (1"), WITH S-COVER AND TOUCH READ LID.
7. ALL FITTINGS ARE COMPRESSION TYPE.

NOTES

1. SUBSTITUTES FOR ANY MATERIALS SHALL BE APPROVED BY THE CITY ENGINEER.
2. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4" MINUS CRUSHED ROCK AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
3. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER ASSEMBLY.
4. SEE STANDARD DRAWING 308 FOR ADDITIONAL DETAILS.

City of Newberg
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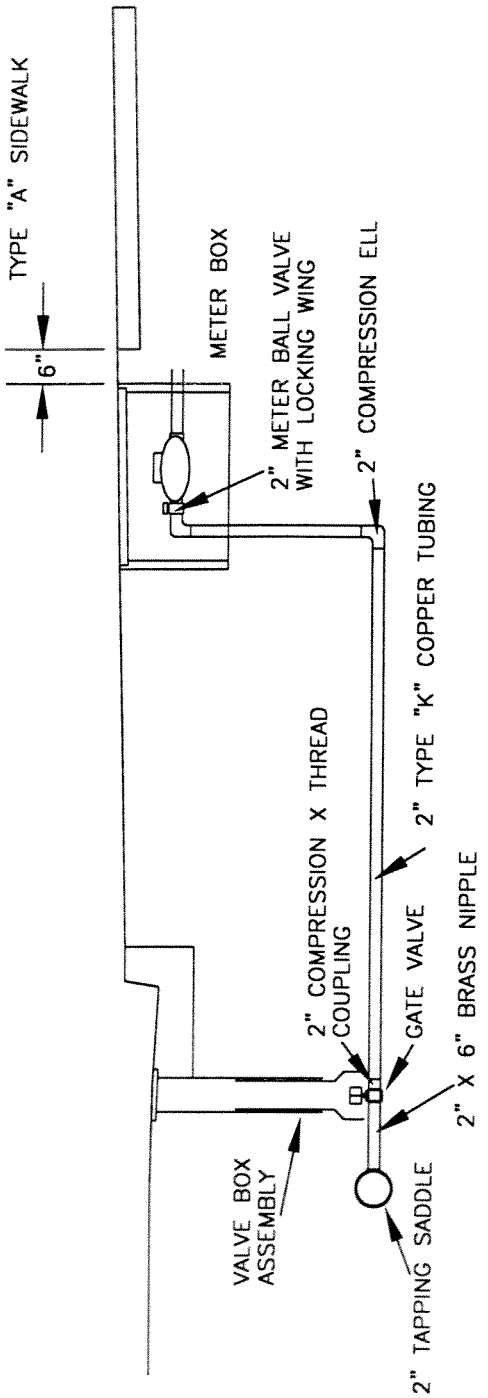
NEWBERG, OREGON 97132

DOUBLE WATER SERVICE

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	309



MATERIALS

1. BROOKS METER BOX, BODY NO. 65 (2"), WITH S-COVER AND TOUCH READ LID.
2. 2" CAST IRON BODY GATE VALVE WITH STANDARD 2" SQUARE OPERATING NUT.
3. SOFT TEMPER, TYPE "K" COPPER TUBING COMPLYING WITH ASTM B-88.
4. McDONALD "T" COMPRESSION NUT, FORD OR MUELLER METER STOP.
5. ALL FITTINGS ARE COMPRESSION TYPE.

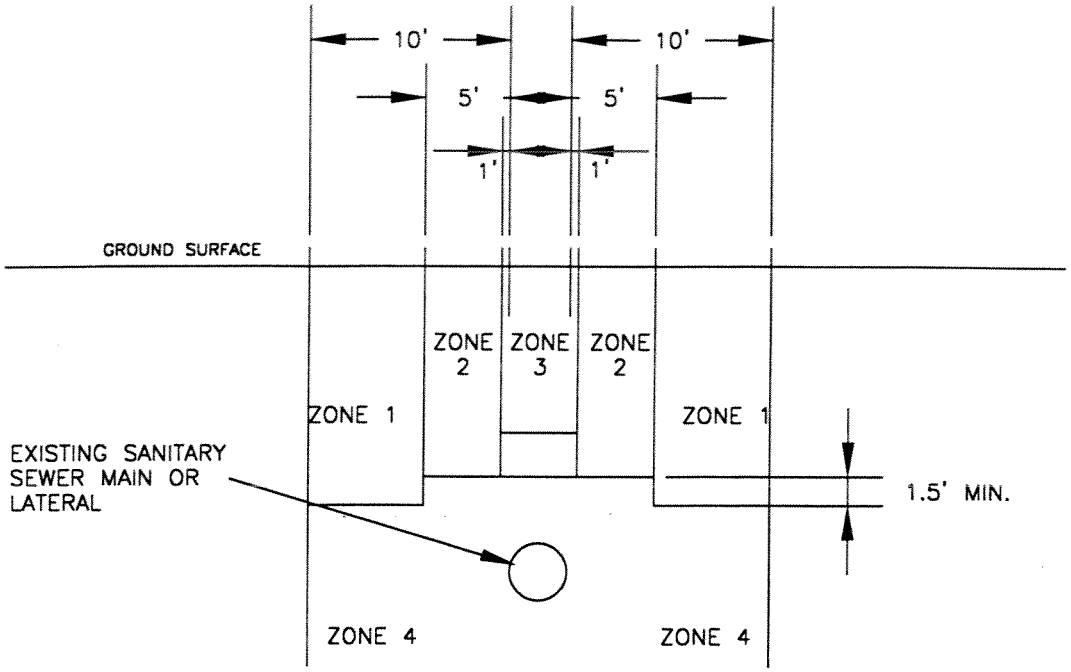
NOTES

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.

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

STANDARD 1 1/2 " & 2" WATER SERVICE

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	310



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 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.

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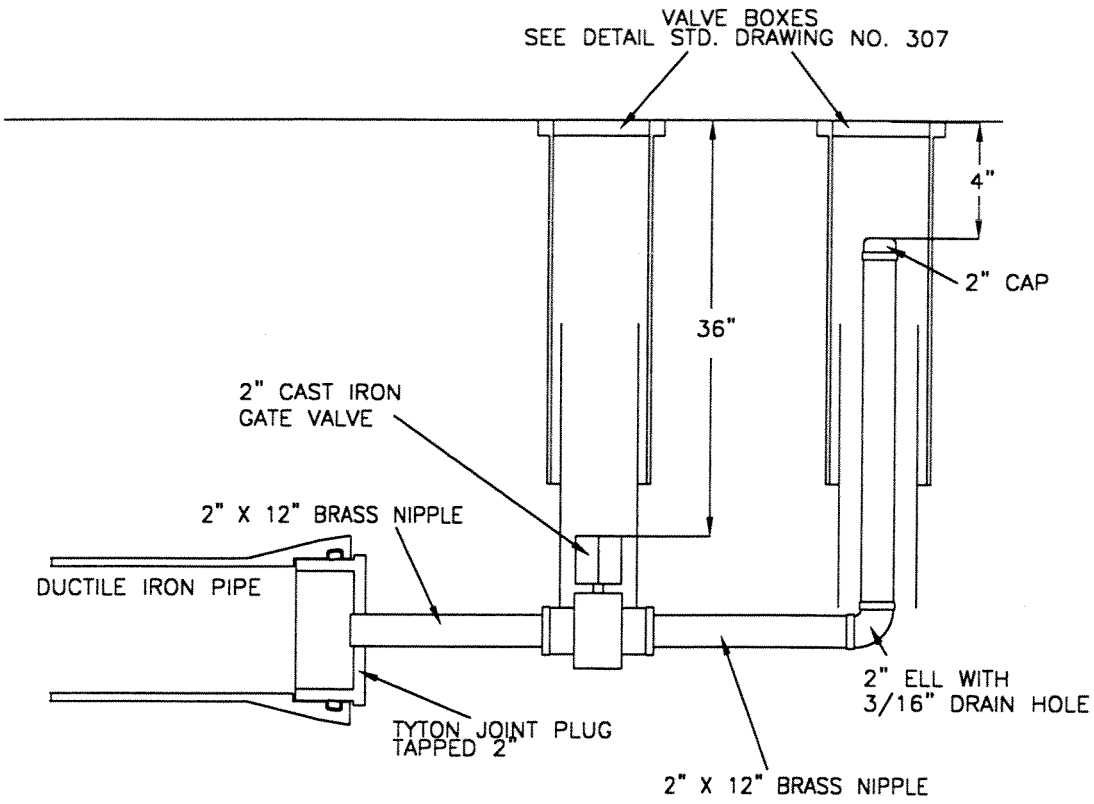
WATER LINE CROSSINGS

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	311



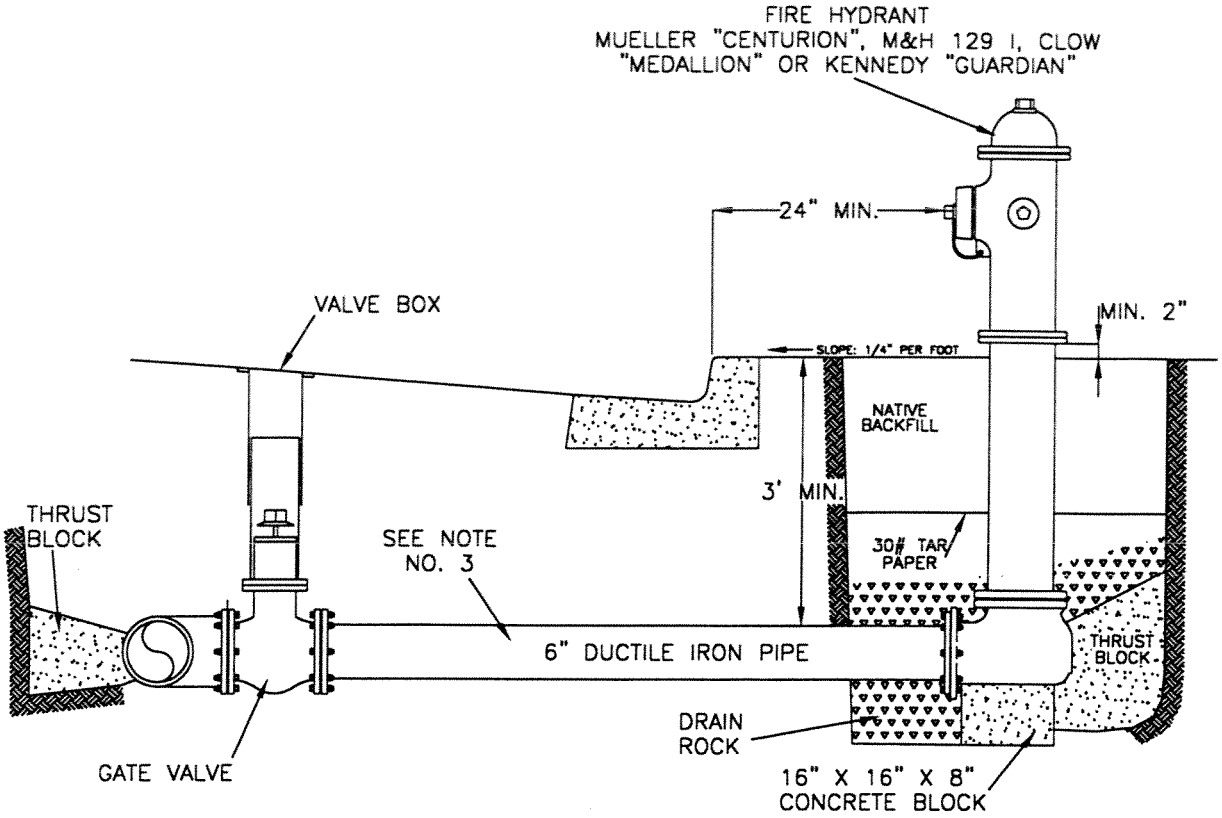
NOTES

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"

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

BLOW-OFF ASSEMBLY

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	312



1. HYDRANT TO HAVE 2–2 1"/2 AND 1–4 1"/2 OPENINGS (ANSI STD.).
2. 6" MINIMUM PIPE SIZE SUPPLYING HYDRANT.
3. 6" M.J. HOLDING SPOOL AS PER STANDARD DRAWING NO. 320, FLANGED FITTINGS OR MEGA LUG RESTRAINERS.
4. ADJUSTING SPOOL NOT TO BE USED ON NEW CONSTRUCTION.
5. HYDRANTS SHALL BE INSTALLED UPON A PRE–FORMED CONCRETE BLOCK WITH CLEAN 1 1/2" 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. THRUST BLOCK REQUIREMENTS AS PER STANDARD DRAWING NO. 302.

City of Newberg
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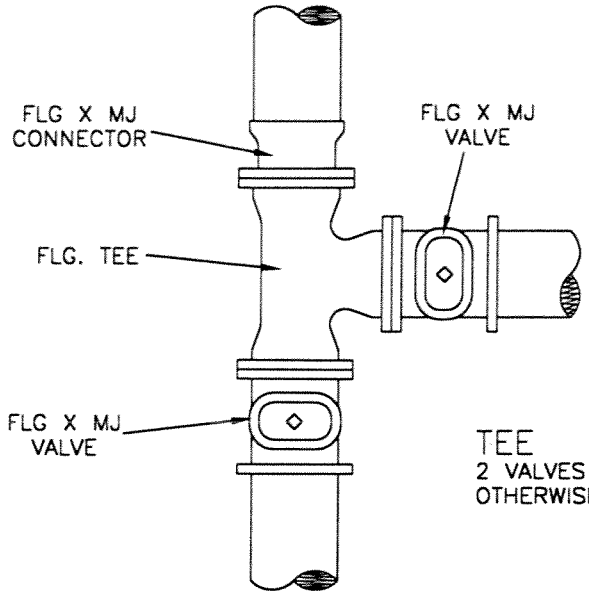
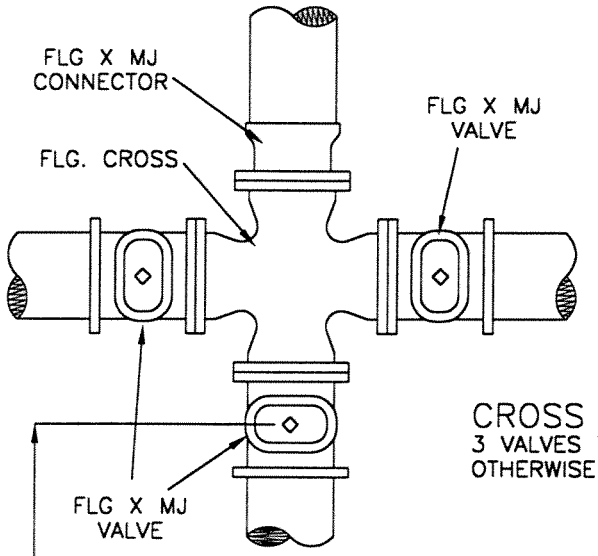
NEWBERG, OREGON 97132

FIRE HYDRANT ASSEMBLY

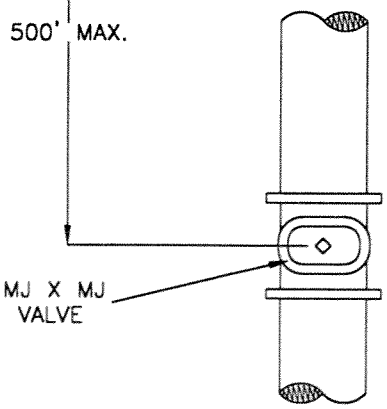
SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	313



TEE
2 VALVES TO BE USED UNLESS
OTHERWISE NOTED ON PLANS



CROSS
3 VALVES TO BE USED UNLESS
OTHERWISE NOTED ON PLANS



IN LINE

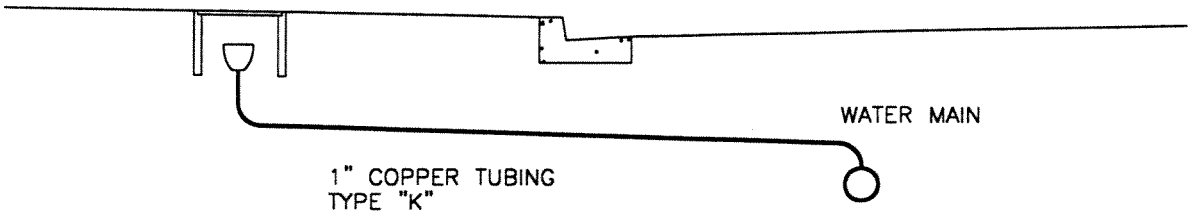
City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

VALVE LOCATIONS AND SPACING

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	314

1½" METER BOX
LOCATION AS PER
STANDARD DRAWING NO. 104

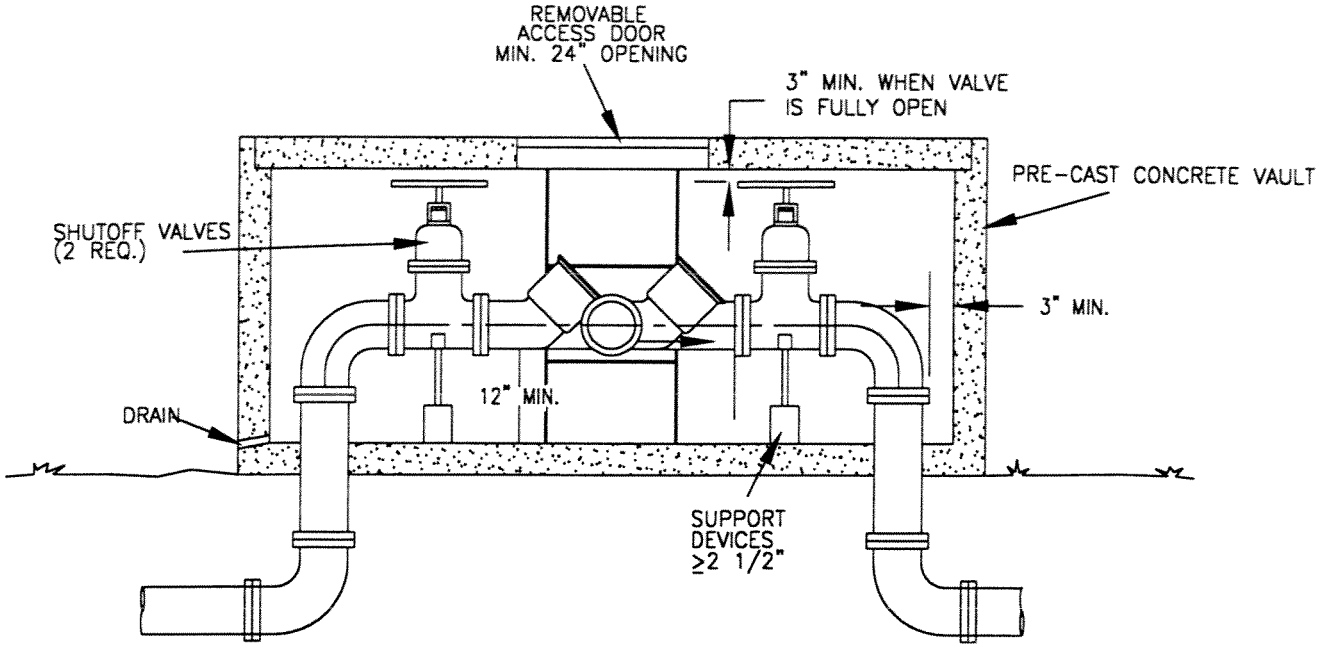
1" COMBINATION AIR–VACUUM
RELEASE VALVE
CLOW 5403 OR EQUAL

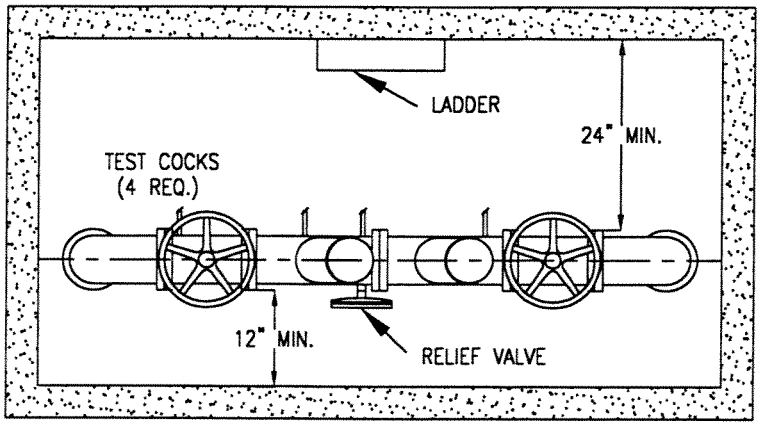


City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

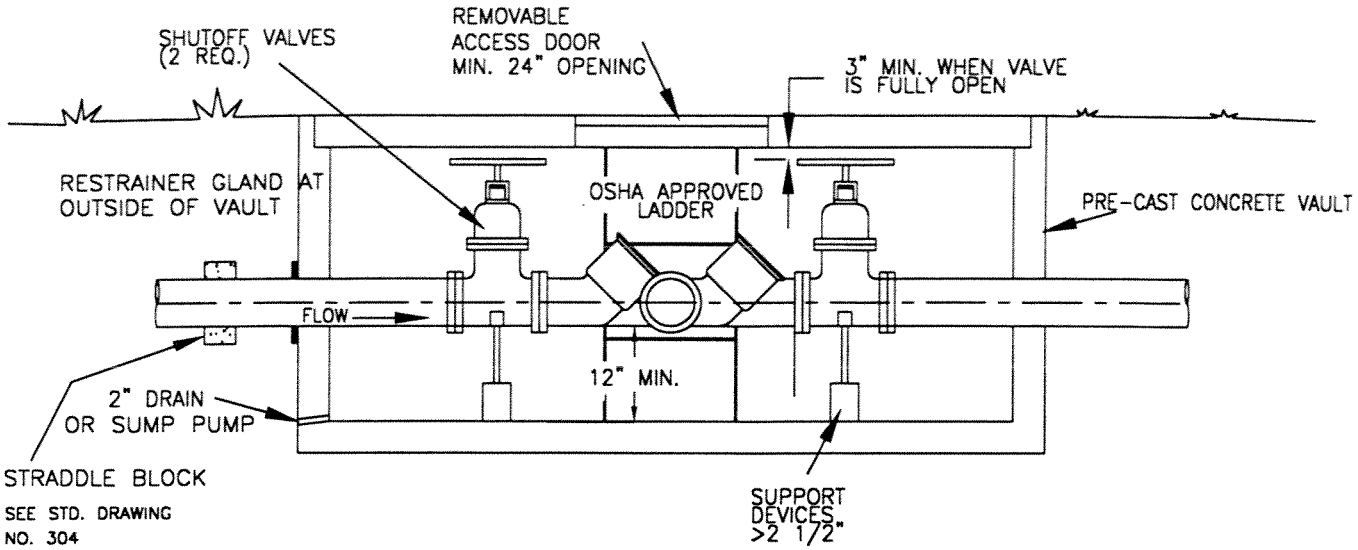
COMBINATION AIR - VACUUM RELEASE ASSEMBLY

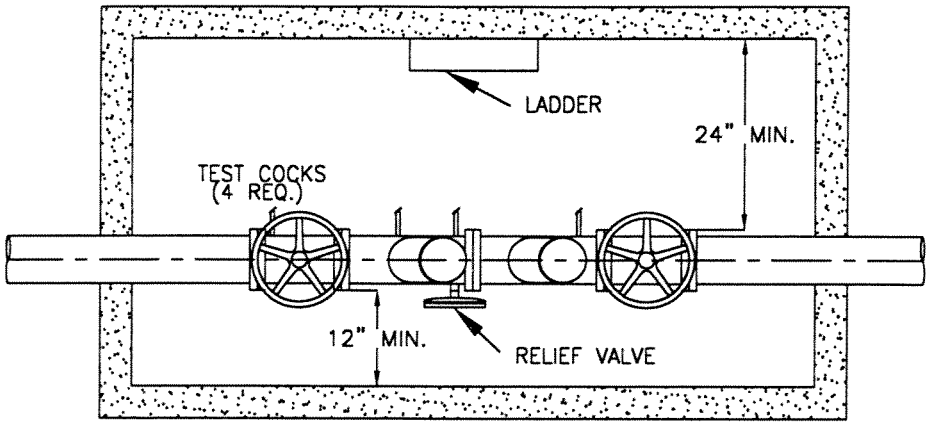
SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	315



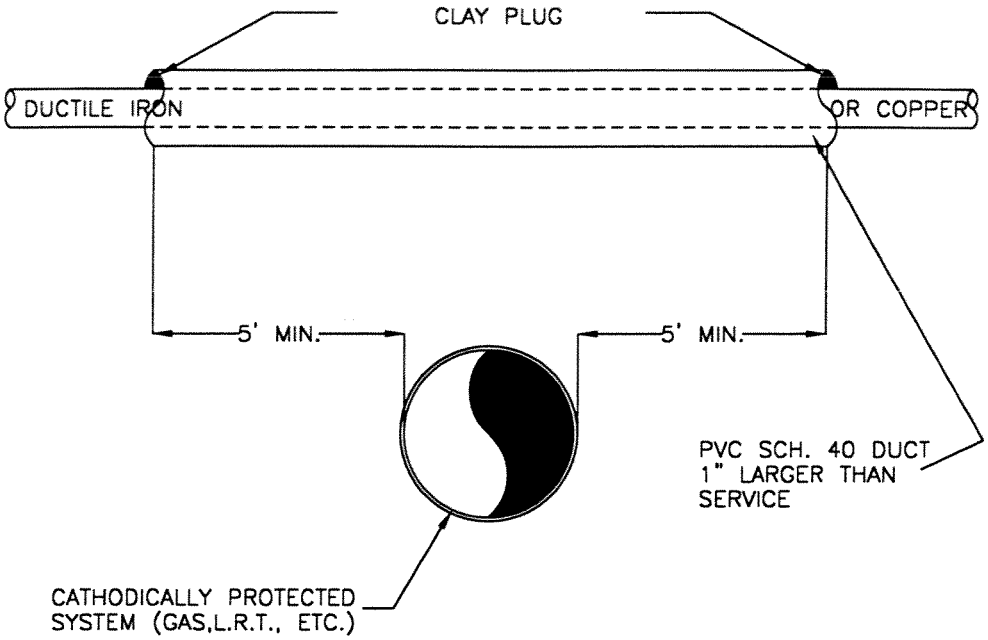


City of Newberg 414 E. FIRST STREET NEWBERG, OREGON 97132	REDUCED PRESSURE BACKFLOW DEVICE OR DOUBLE CHECK VALVE ASSEMBLY (ABOVE GROUND)	SCALE: N.T.S. DATE: JUNE 2000 APP. BY: L. ANDERSON STANDARD DRAWING 316





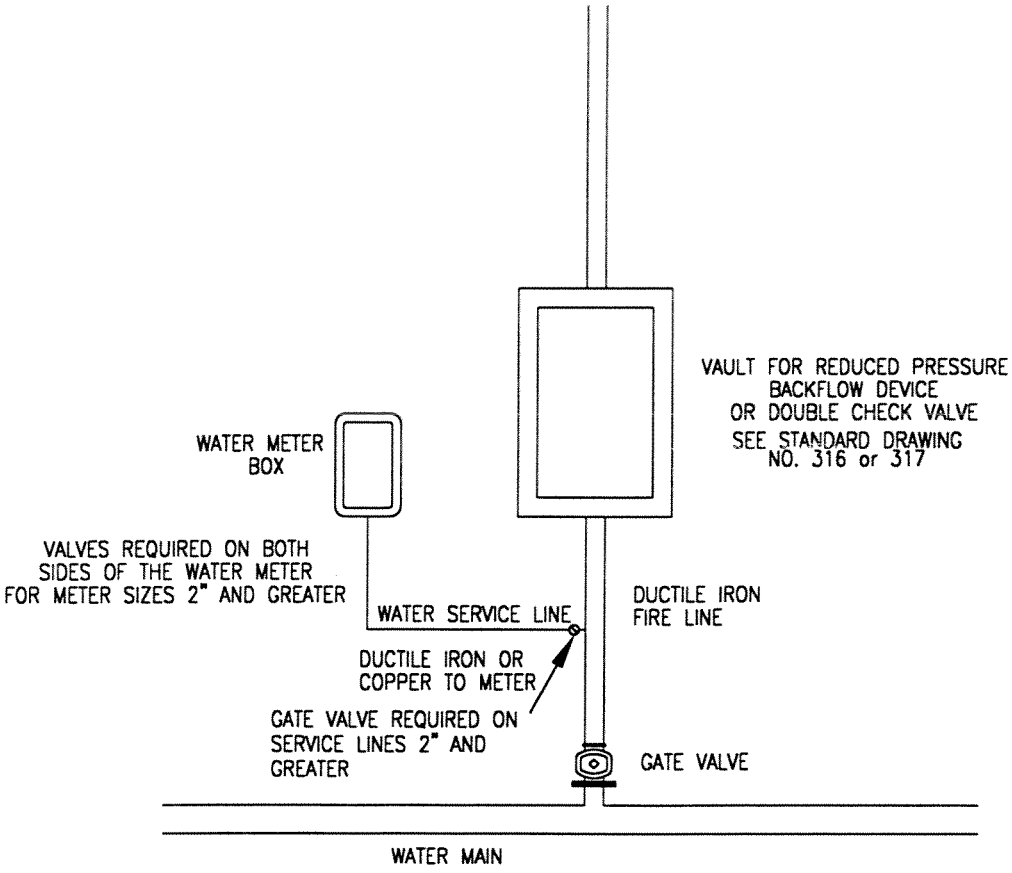
City of Newberg 414 E. FIRST STREET NEWBERG, OREGON 97132	REDUCED PRESSURE BACKFLOW DEVICE OR DOUBLE CHECK VALVE ASSEMBLY (BELOW GROUND)	SCALE: N.T.S. DATE: JUNE 2000 APP. BY: L. ANDERSON STANDARD DRAWING 317



City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

CATHODIC PROTECTION

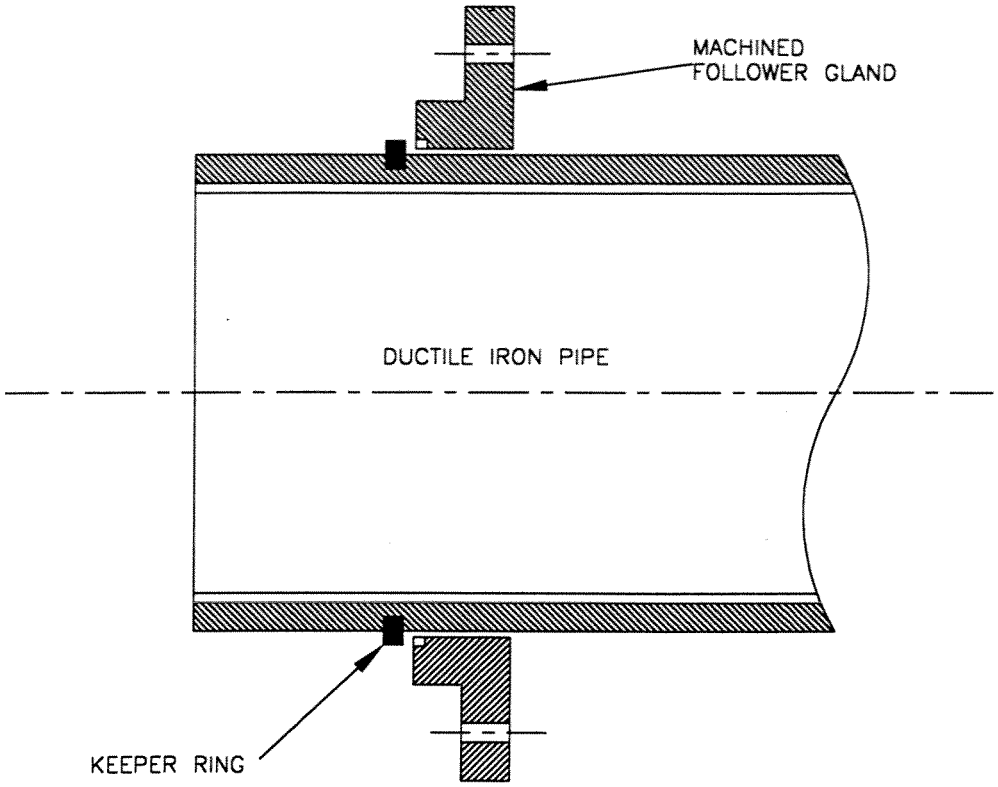
SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	318

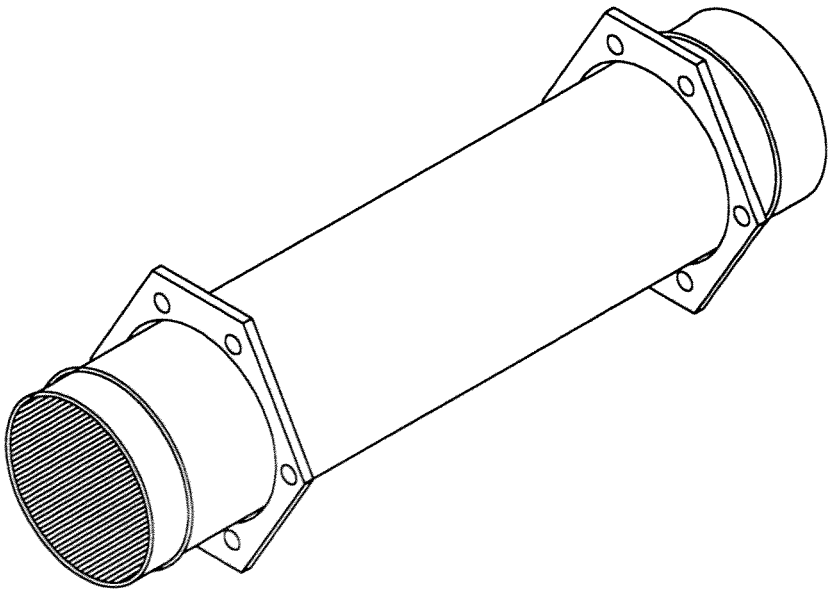


City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

VAULT AND WATER SERVICE

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	319

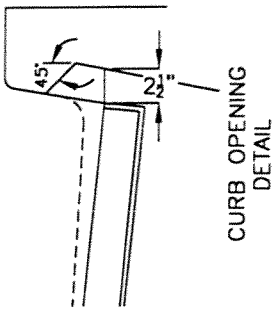




City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

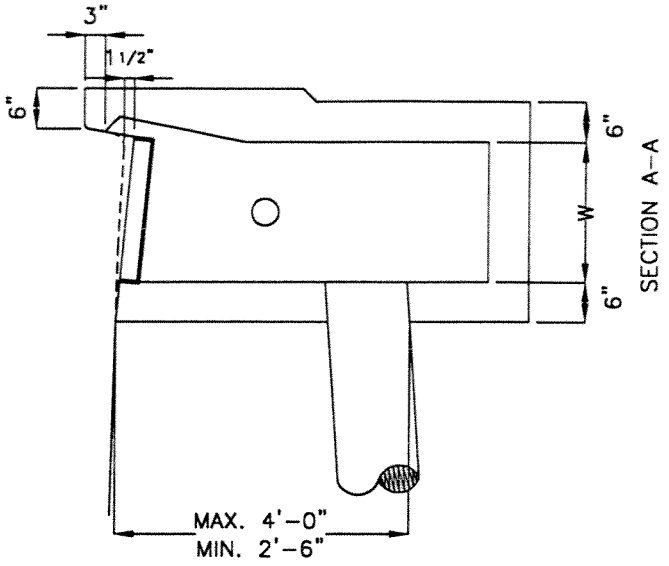
MJ HOLDING SPOOL

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	320

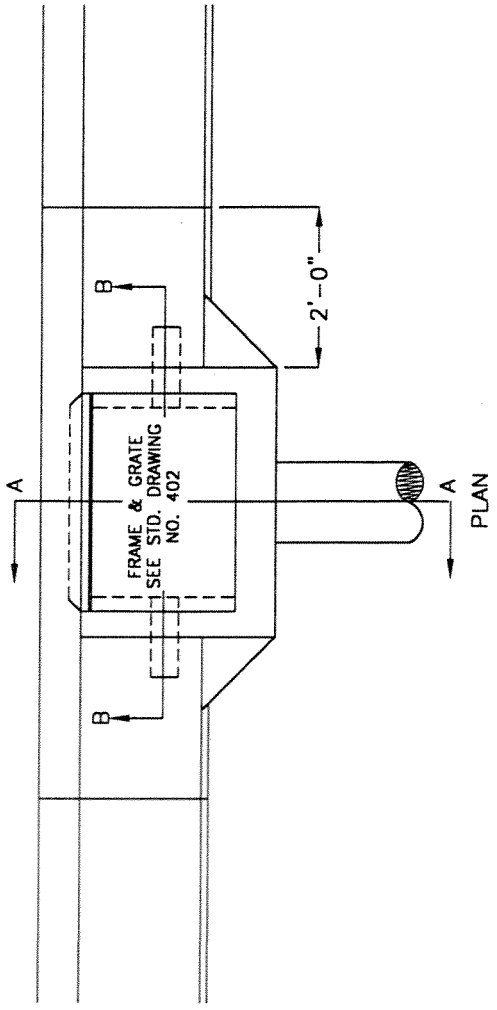


CURB OPENING DETAIL

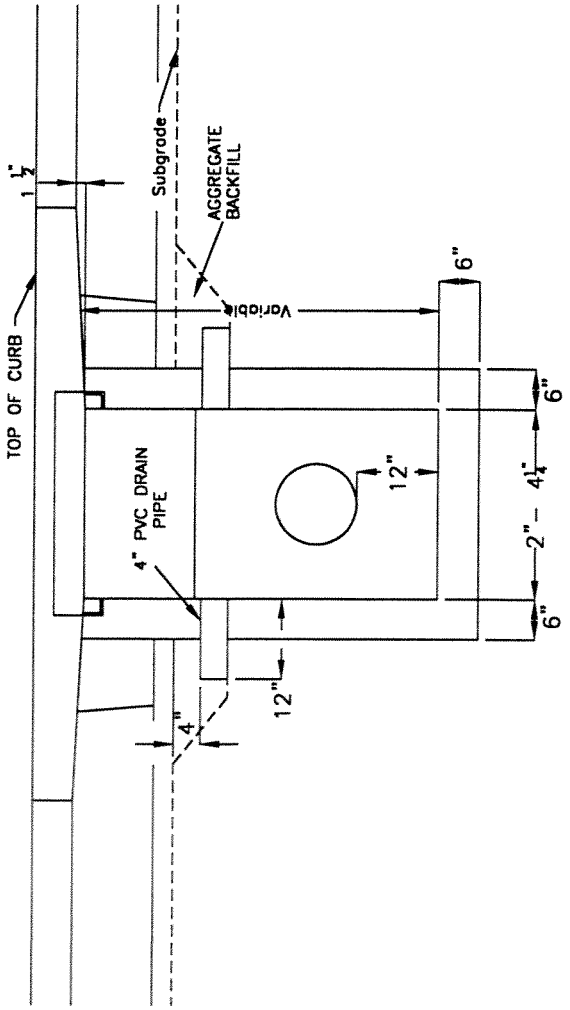
INLET TYPE	W
N-1, CN-1	1'-8 7/8"
N-2, CN-2	2'-3 3/8"



SECTION A-A



PLAN



SECTION B-B

NOTES
1. CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI.
2. CATCH BASIN TO BE CAST IN PLACE.
3. FRAME TO BE SET FLUSH WITH FACE OF CURB.

City of Newberg
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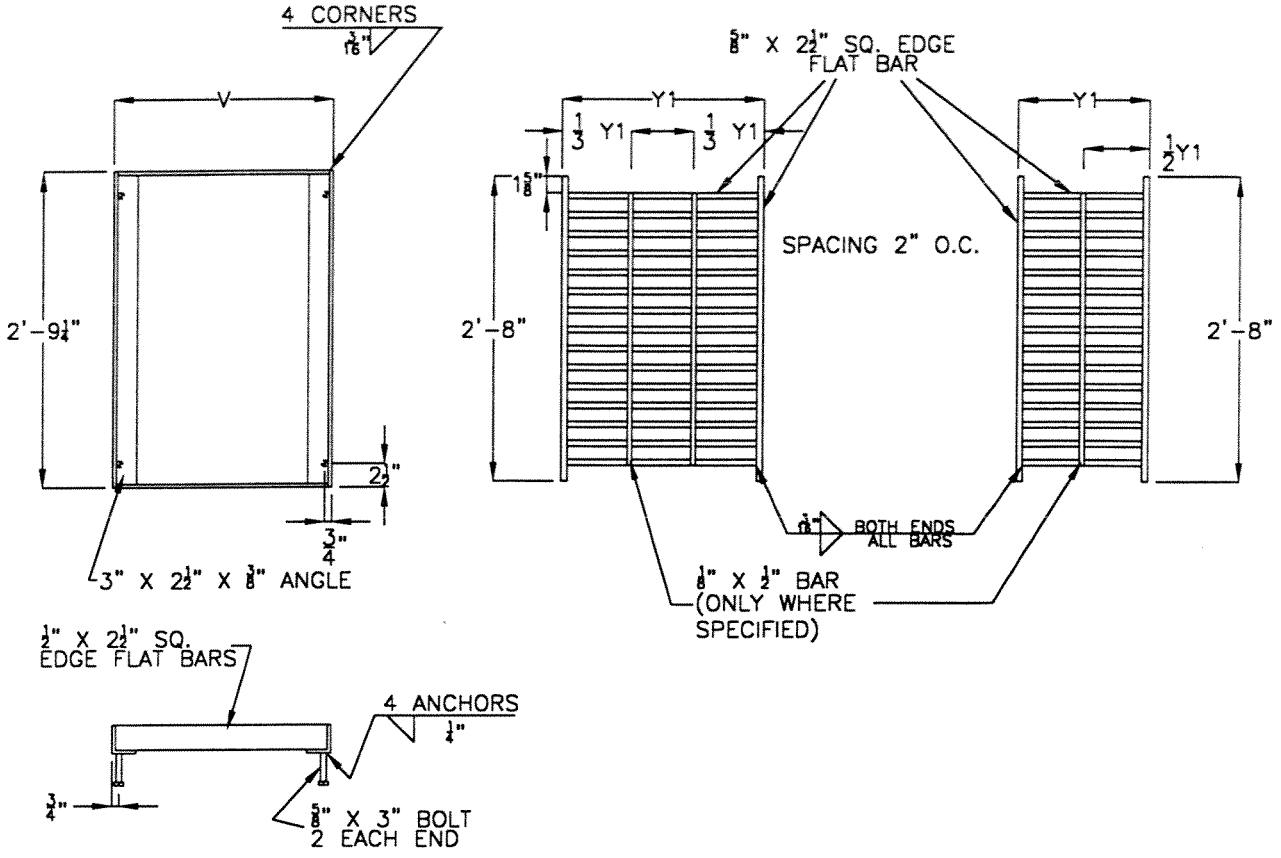
CATCH BASIN

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	401

FRAME GRATE–TYPE 1 GRATE–TYPE 2



INLET TYPE	V	Y1	NO. OF BARS	TYPE	REMARKS
N–1, CN–1	1'10¾"	1'9⅜"	15	1	
N–2, CN–2	2'4¾"	1'1⅝"	15	2	2 GRATES

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

City of Newberg
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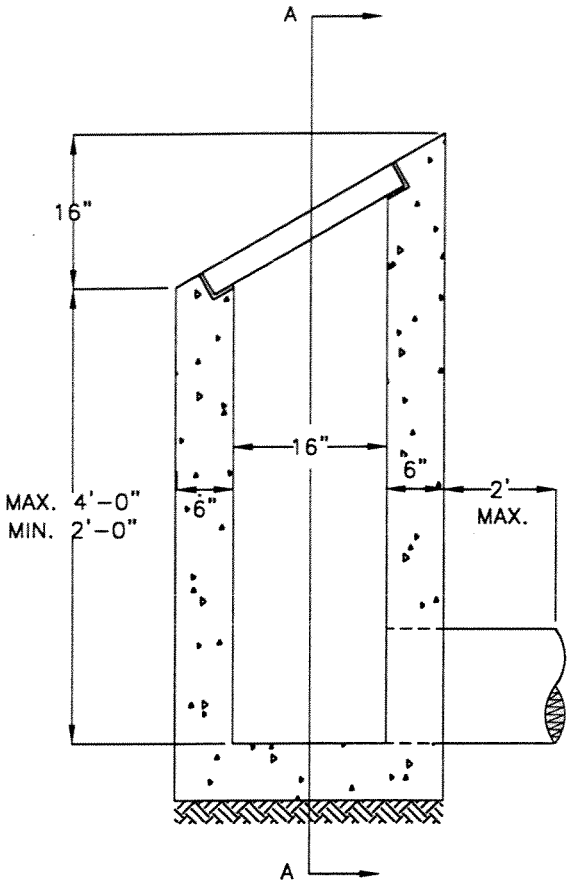
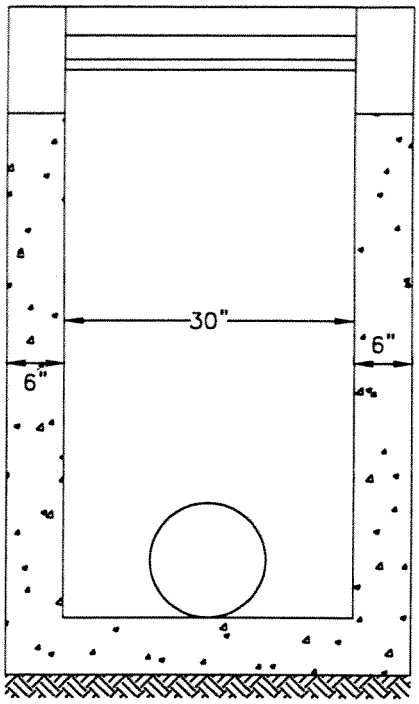
CATCH BASIN FRAME AND GRATE

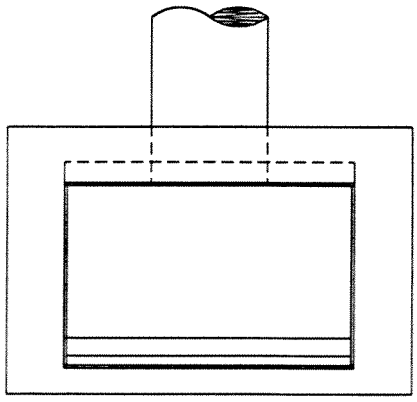
SCALE: N.T.S.
DATE: JUNE 2000
APP. BY: L. ANDERSON
STANDARD DRAWING 402





SECTION A–A

NOTES
1. CONCRETE SHALL HAVE MIN. STRENGTH OF 3000 PSI AT 28 DAYS.
2. SEE STANDARD DRAWING NO. 404 FOR FRAME AND GRATE.

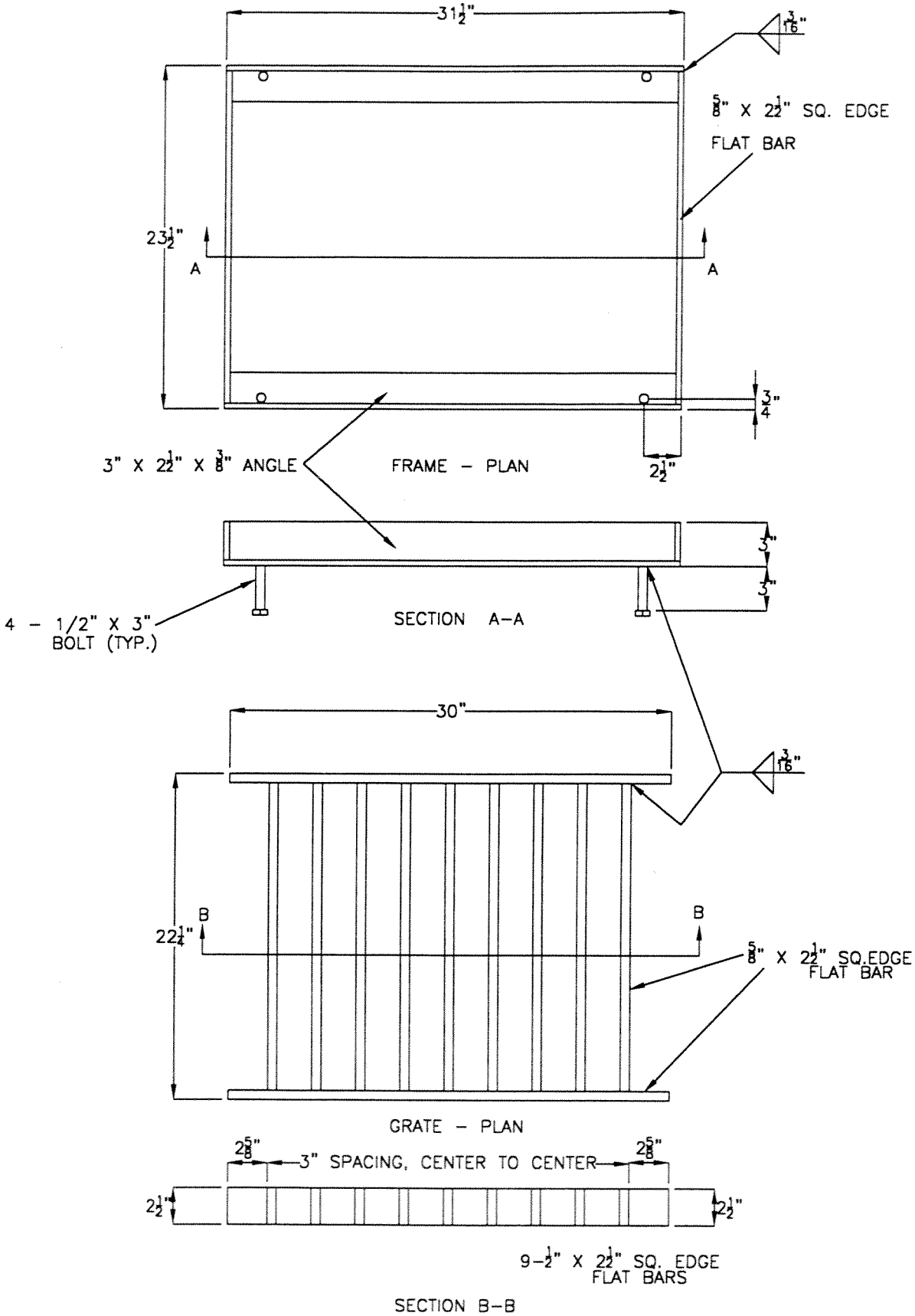


PLAN VIEW

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

DITCH INTERCEPTOR

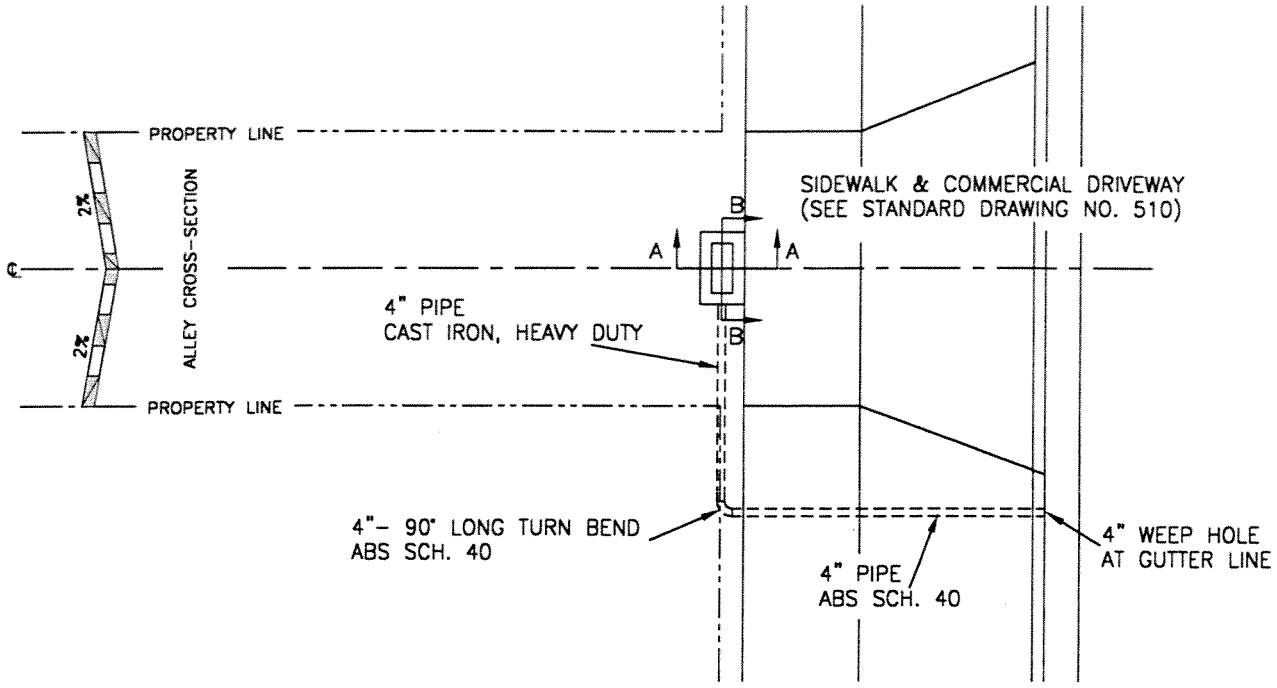
SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	403

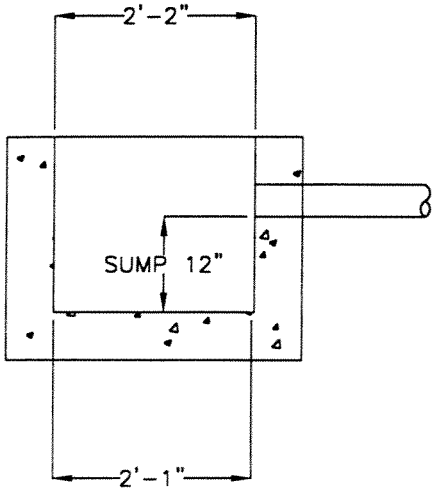


City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

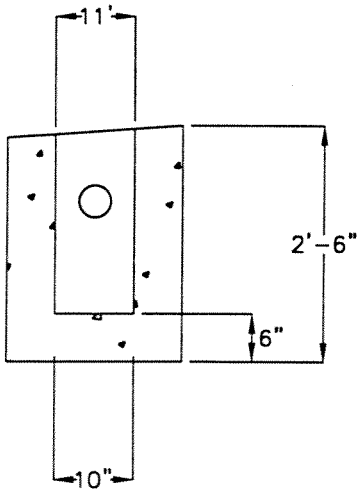
DITCH INTERCEPTOR
FRAME AND GRATE

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	404





SECTION B-B



SECTION A-A

NOTES
1. USE ONLY FOR LOCATIONS WITH NO STORM SEWER IN ADJACENT STREET.
2. MINIMUM PIPE SLOPE 1% OR 1/8" PER FOOT.
3. CATCH BASIN TO BE CAST IN PLACE.
4. CONCRETE SHALL OBTAIN 3000 PSI STRENGTH AT 28 DAYS.

City of Newberg
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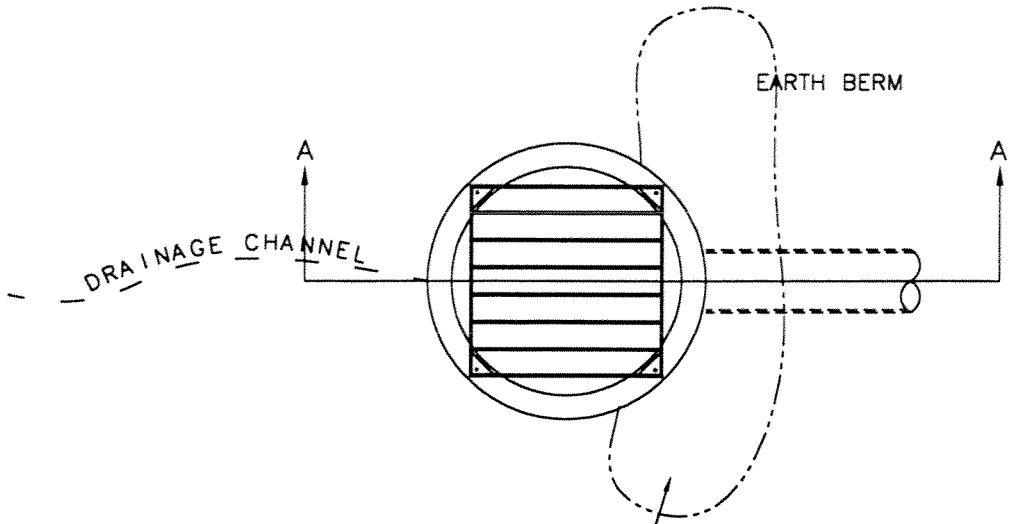
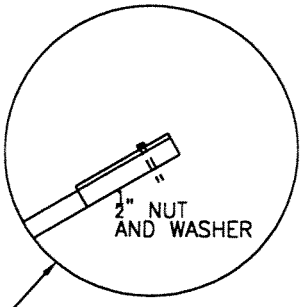
VALLEY GUTTER CATCH BASIN

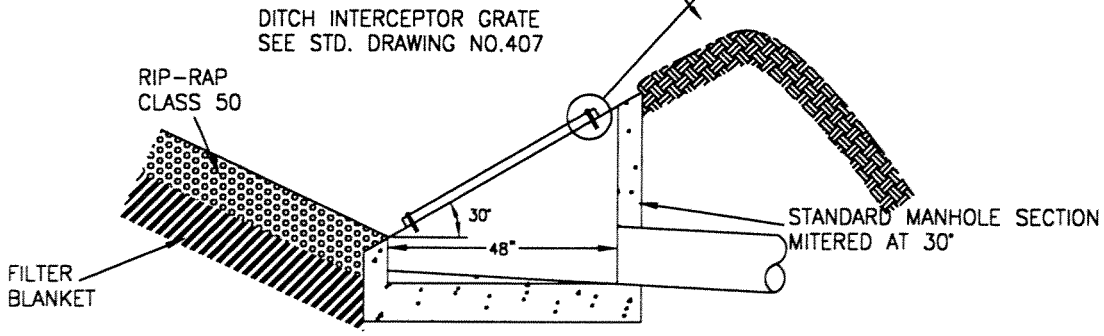
SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	405



DEPOSIT APPROVED EMBANKMENT MATERIAL, FREE FROM ROOTS, ORGANIC MATERIAL, BRUSH AND STONE LARGER THAN 3 INCH DIAMETER IN LIFTS NOT EXCEEDING 8" LOOSE THICKNESS ACROSS THE FULL WIDTH OF EMBANKMENT. COMPACT EACH LIFT TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE APPLICABLE METHOD OF ASTM D-678



½" X 5½" STAINLESS STEEL WEDGE ANCHOR

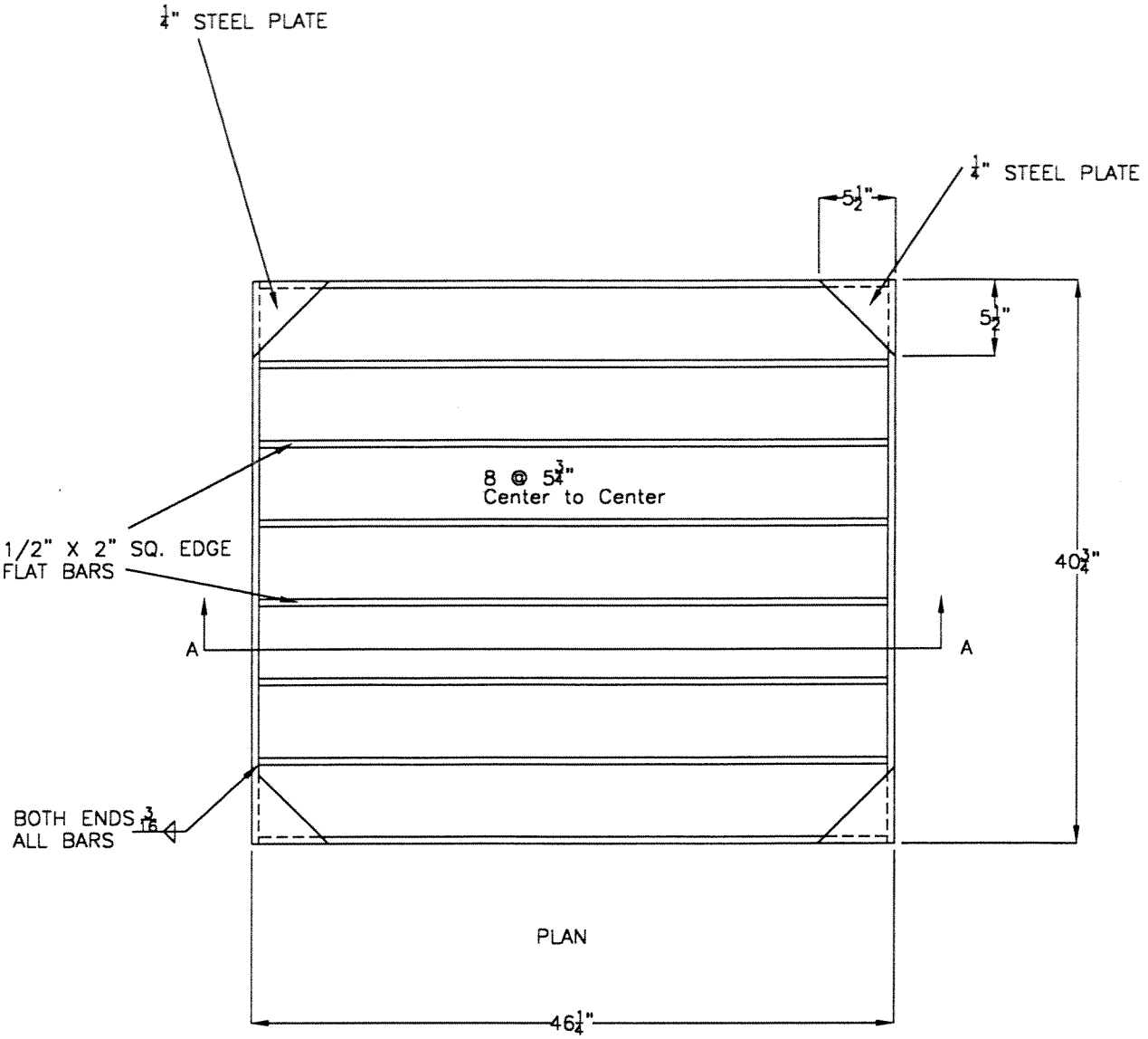


SECTION A-A

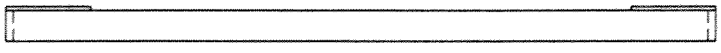
City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

DITCH INTERCEPTOR TYPE "B"

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	406



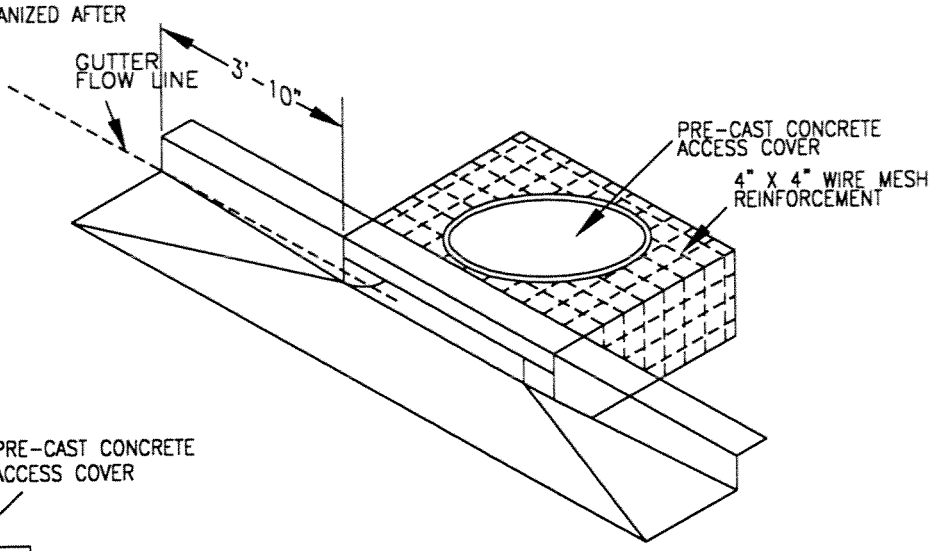
MATERIAL TO BE NEW STRUCTURAL STEEL, ASTM A-7, A-36 OR A-373

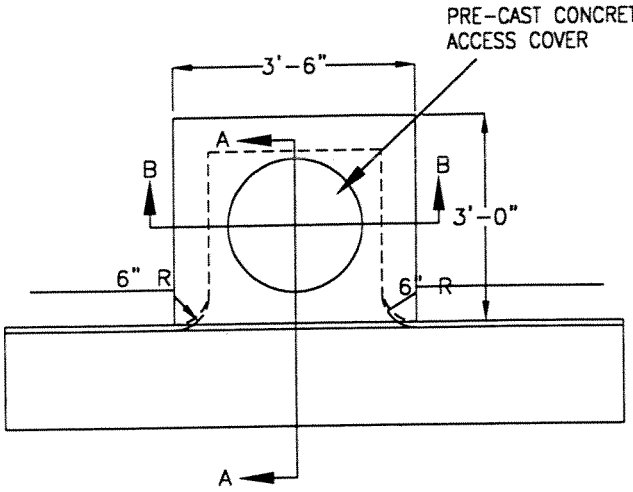


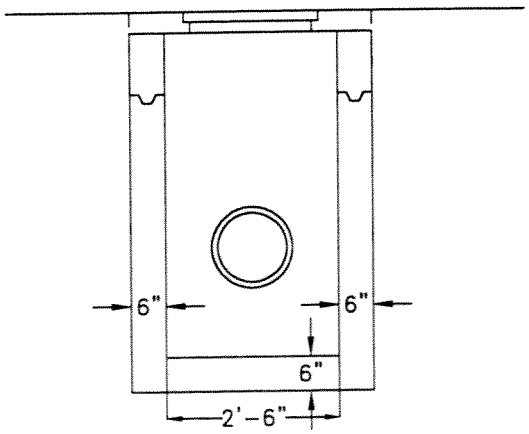
SECTION A-A

City of Newberg 414 E. FIRST STREET NEWBERG, OREGON 97132	DITCH INTERCEPTOR TYPE "B" GRATE	SCALE: N.T.S. DATE: JUNE 2000 APP. BY: L. ANDERSON STANDARD DRAWING 407

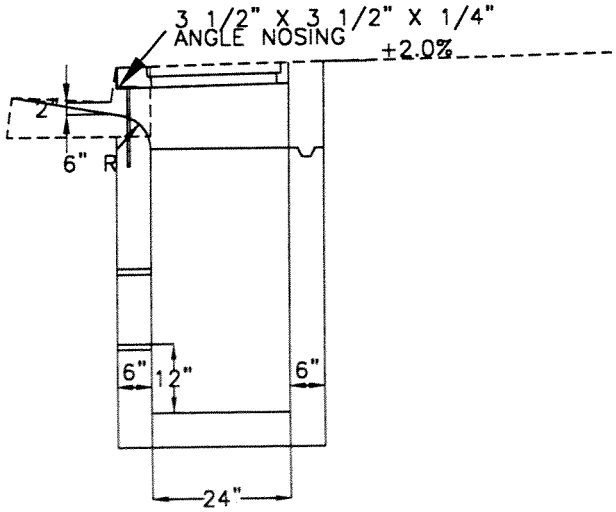
NOTES:
CONCRETE SHALL ATTAIN A STRENGTH OF 3000 PSI AT 28 DAYS
TOP AND COVER SHALL BE REINFORCED WITH 4" X 4" #6 WIRE MESH REINFORCING.
ALL METAL PARTS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.







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

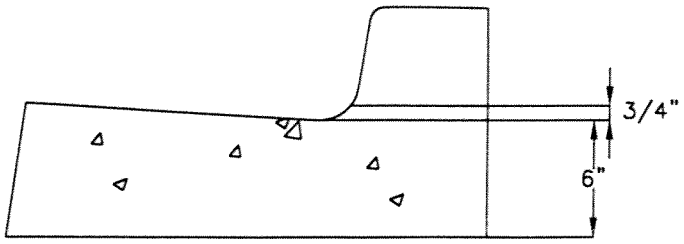


BASE SECTION
BASE MAY BE PRE-CAST OR CAST IN PLACE
SECTION A-A

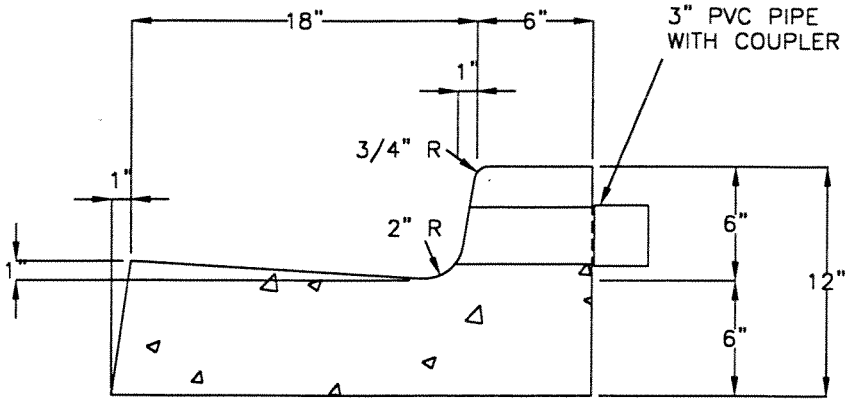
City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

PELICAN CATCH BASIN

SCALE: N.T.S.
DATE: JUNE 2000
APP. BY: L. ANDERSON
STANDARD DRAWING 408



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.

City of Newberg
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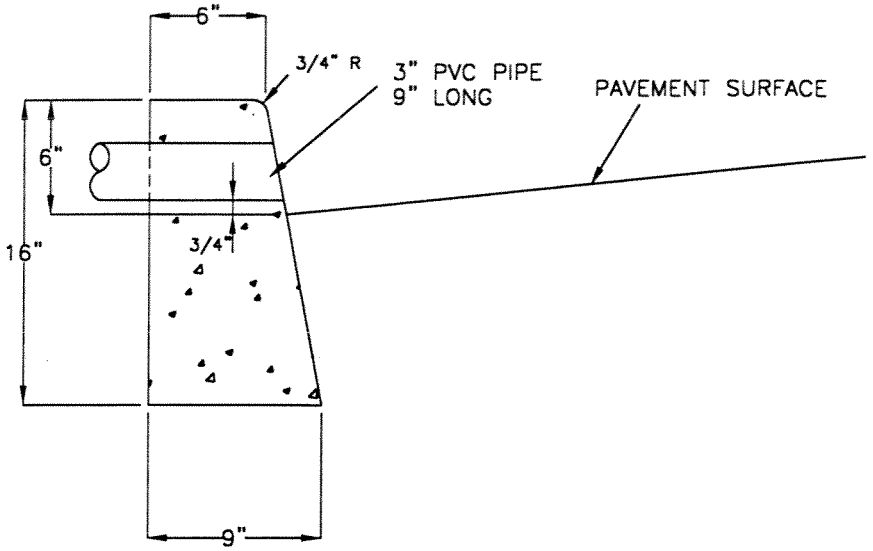
CURB AND GUTTER

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	501



NOTES
1. CONCRETE SHALL HAVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. TRANSVERSE CONTRACTION JOINTS – 1/8" X 1 1/2" 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.

City of Newberg
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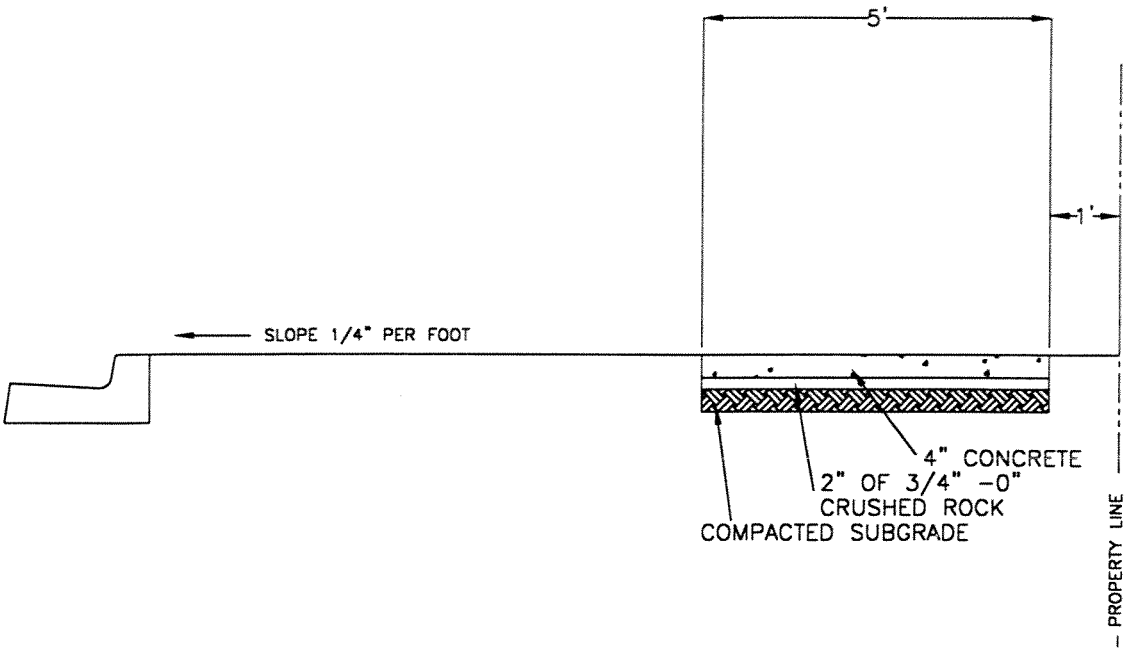
CURB - TYPE "C"

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	502



NOTES
1. SLOPE FROM THE PROPERTY LINE TO THE STREET AT 2.00%.
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.

City of Newberg
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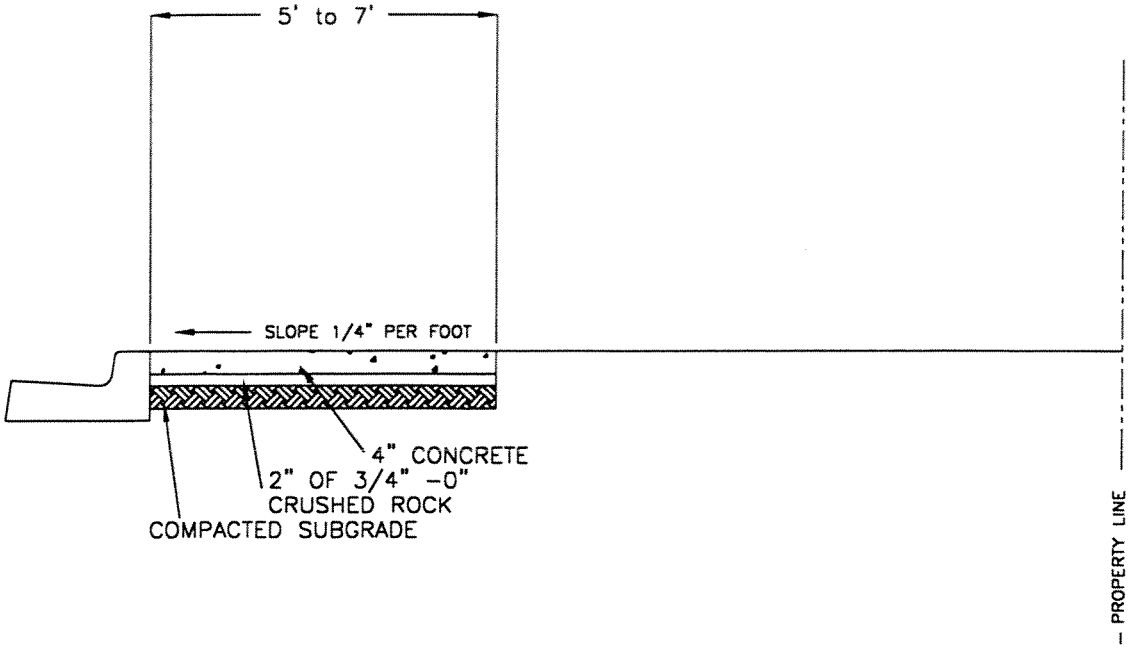
SIDEWALK TYPE "A"

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	503



NOTES
1. SLOPE FROM THE PROPERTY LINE TO THE STREET AT 2.00%.
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.

City of Newberg
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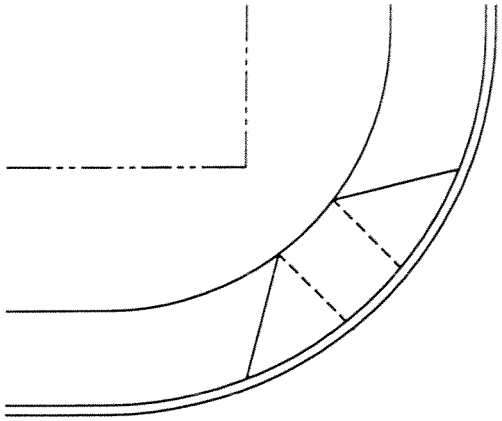
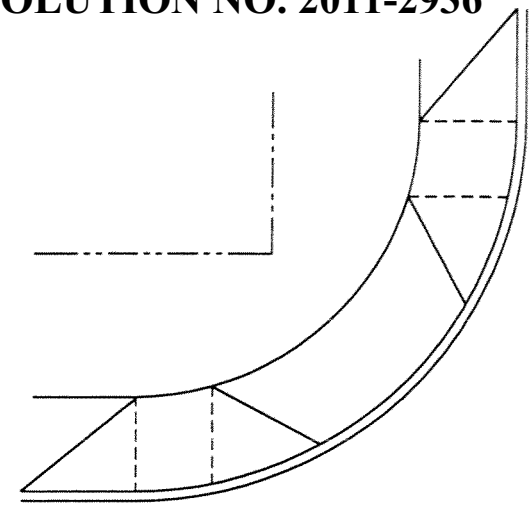
SIDEWALK TYPE "B"

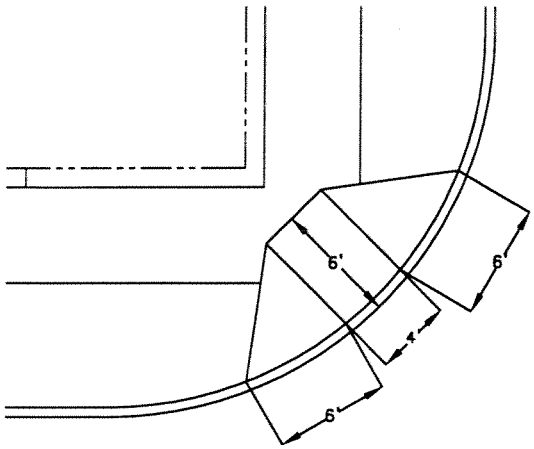
SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	504



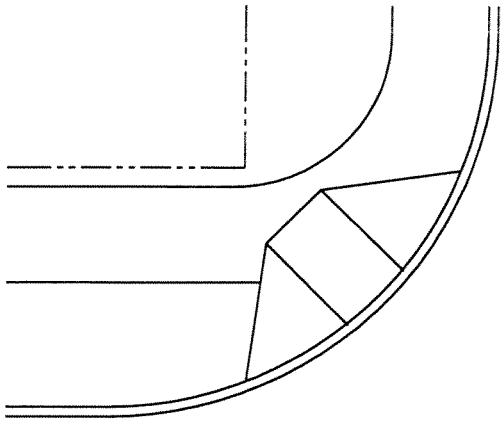
A



B



C



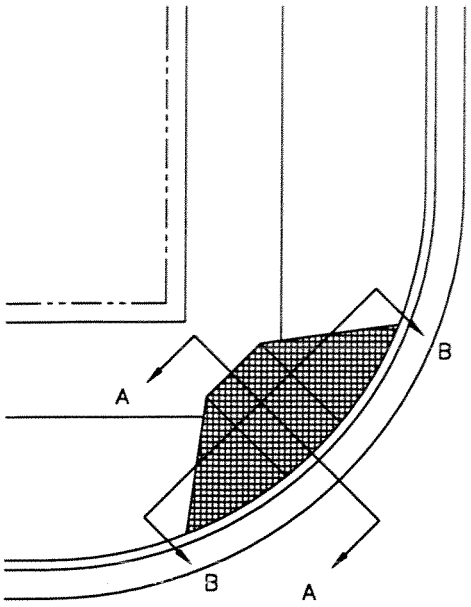
D

City of Newberg

414 E. FIRST STREET
NEWBERG, OREGON 97132

CURB RAMP LOCATIONS

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	505



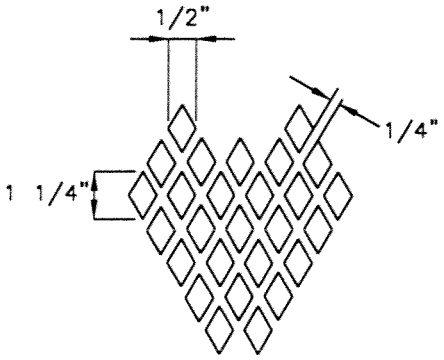
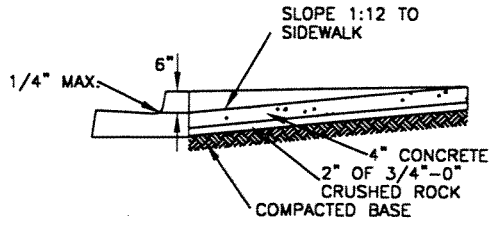
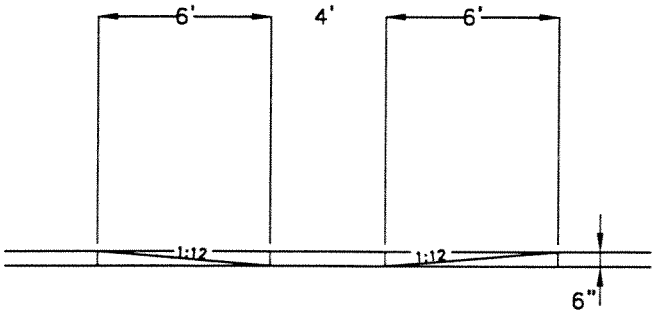


FIGURE A
RAMP TEXTURE DETAIL



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 REMAINING 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'.

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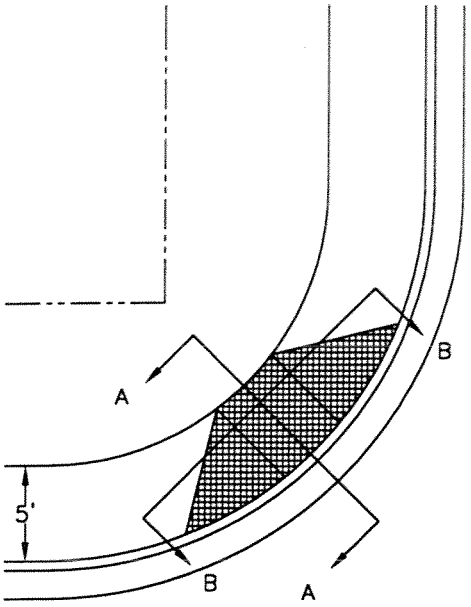
SIDEWALK RAMP
TYPE "A" SIDEWALK

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	506



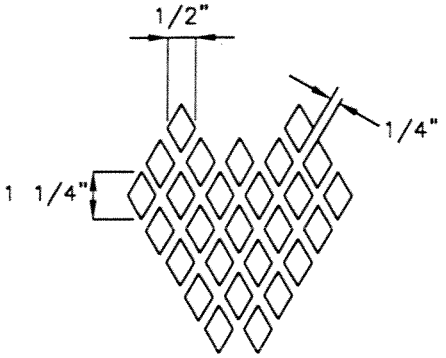
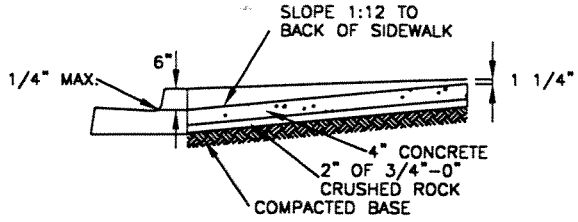
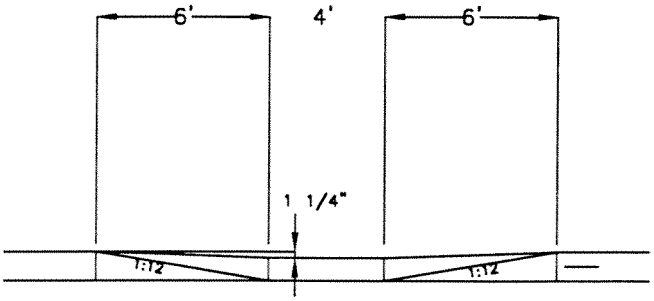


FIGURE A
RAMP TEXTURE DETAIL



SECTION A-A



SECTION A-A

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 REMAINING 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'.

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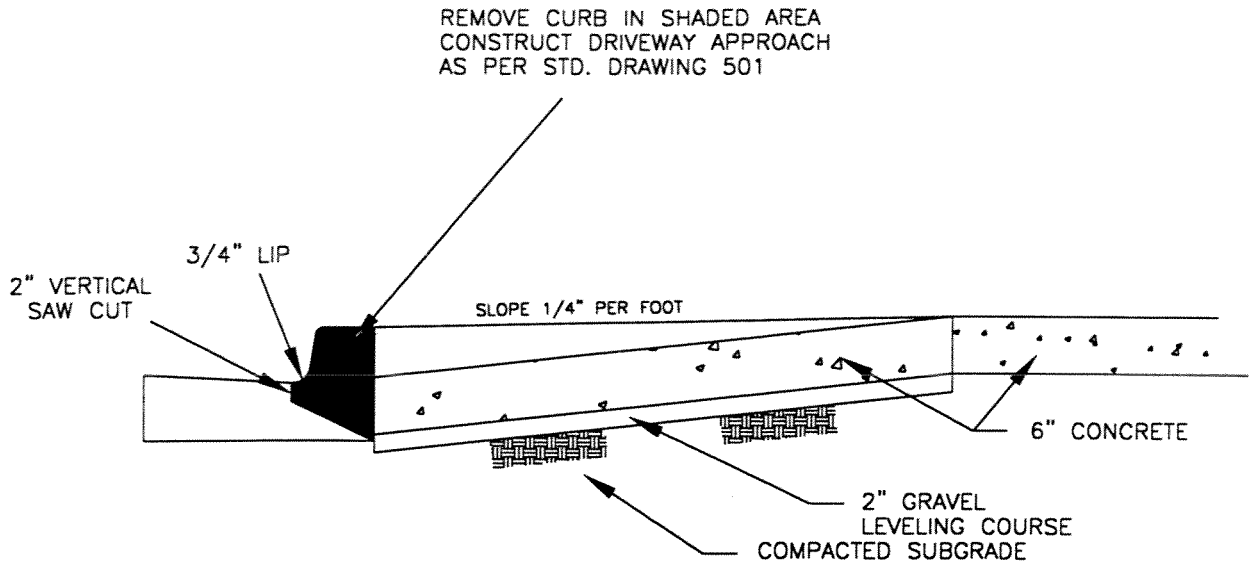
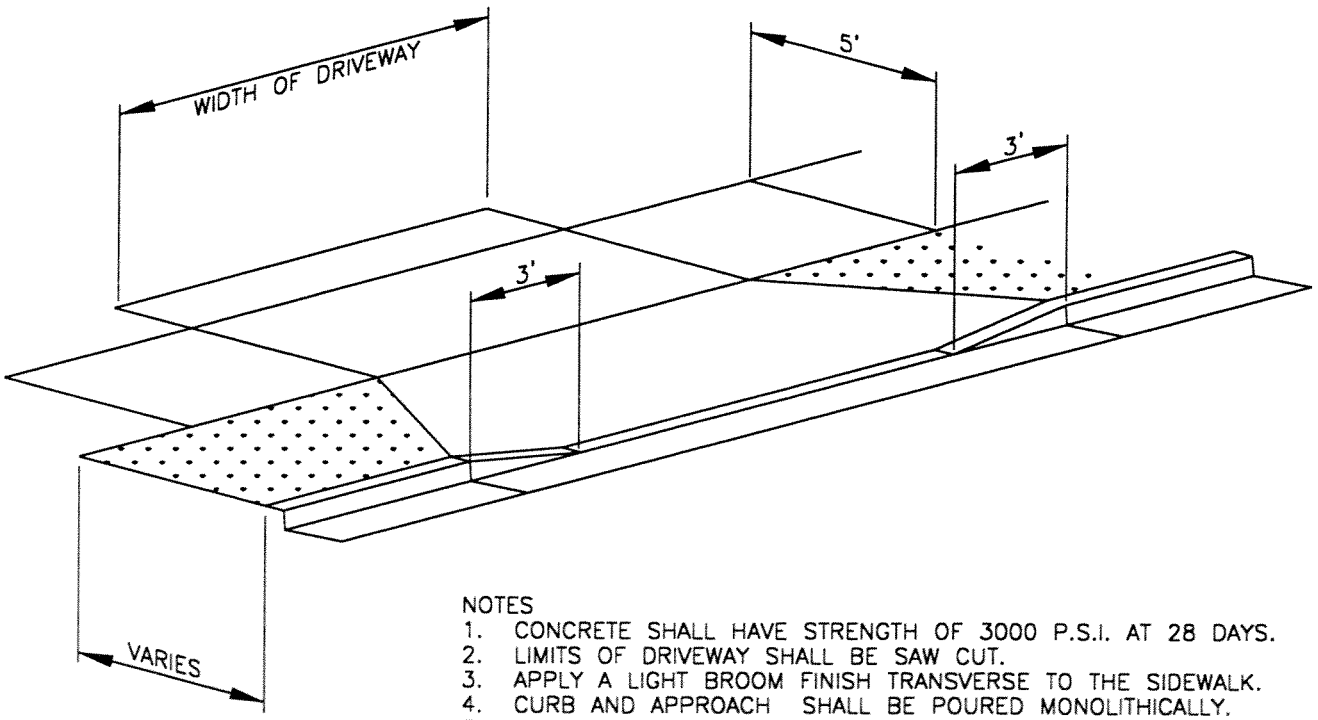
SIDEWALK RAMP
TYPE "B" SIDEWALK

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
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.

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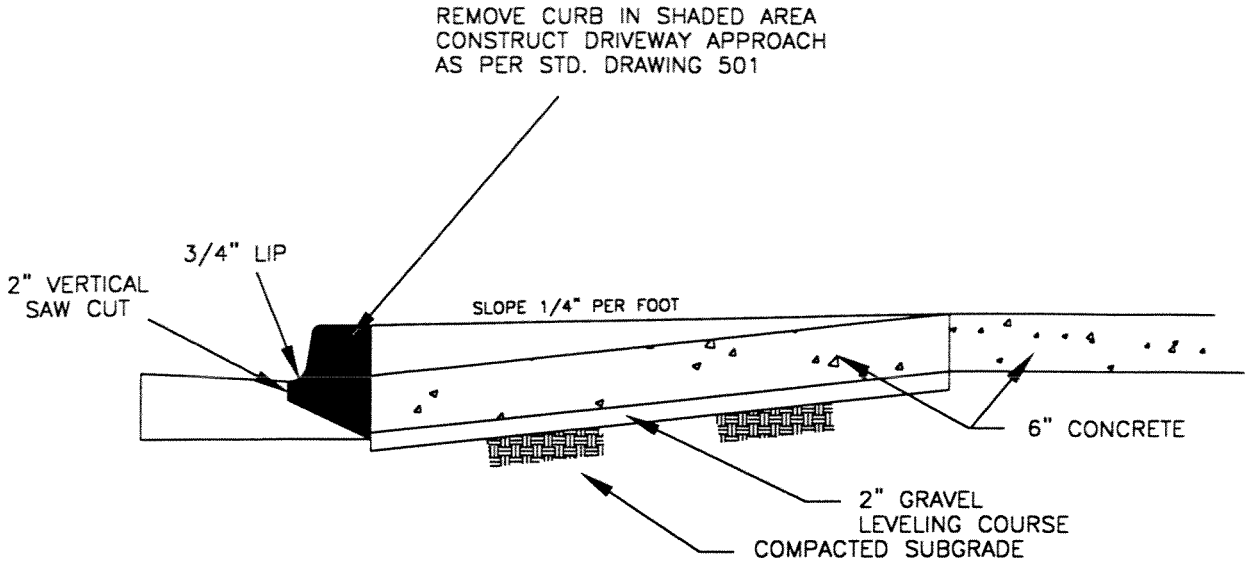
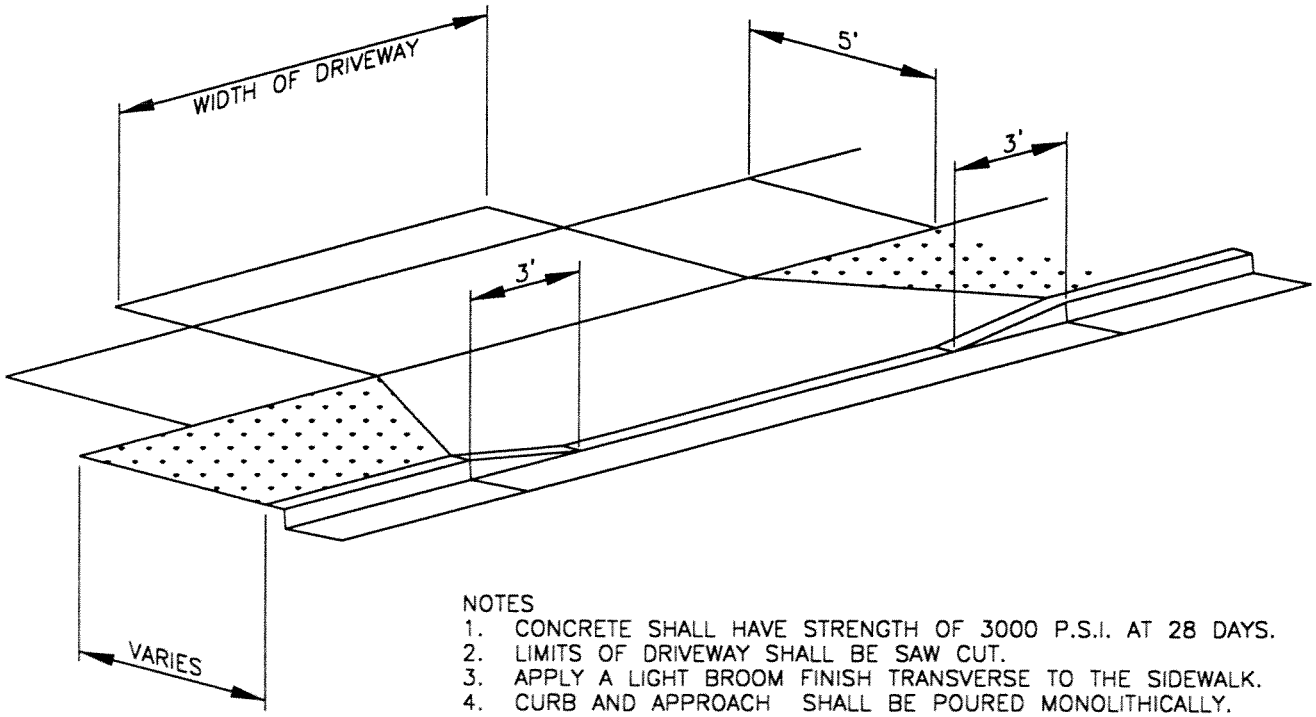
NEWBERG, OREGON 97132

DRIVEWAY APRON
CURB CUT
TYPE "A" SIDEWALK

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	508





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.

City of Newberg
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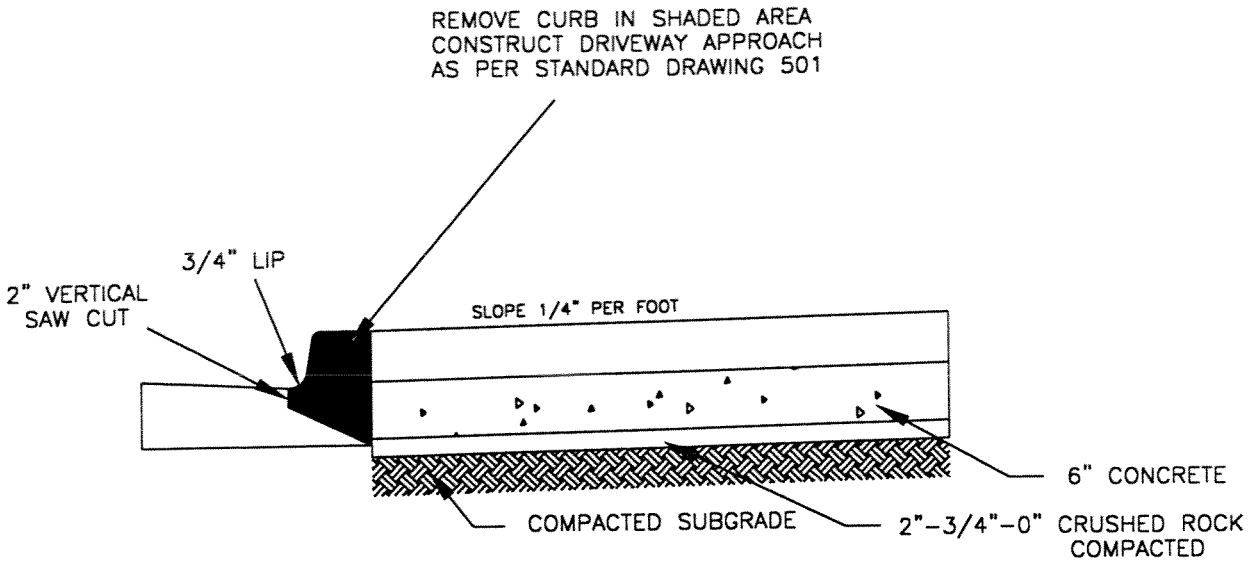
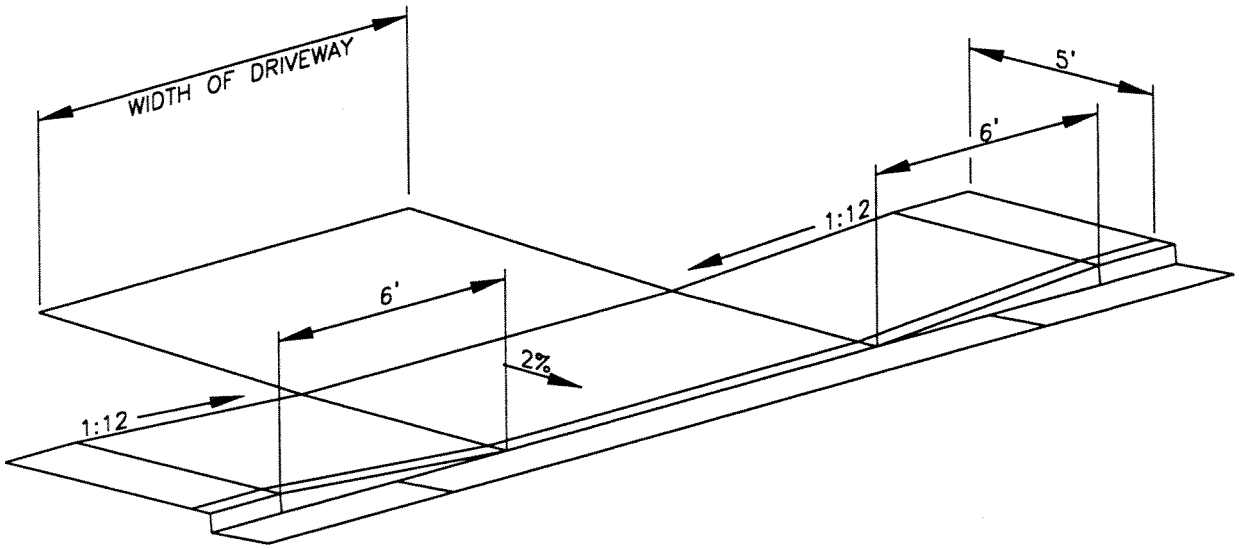
DRIVEWAY APRON
CURB CUT
TYPE "A" SIDEWALK

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	508





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.

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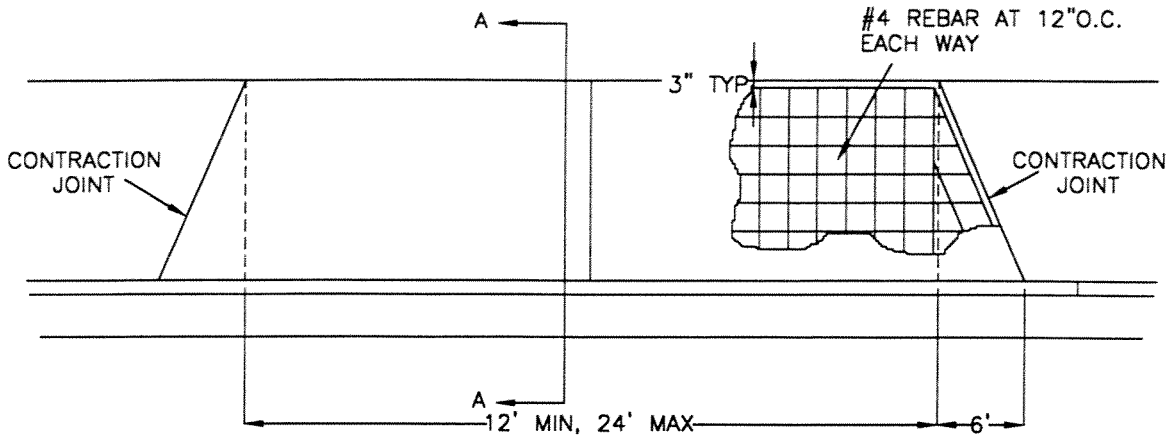
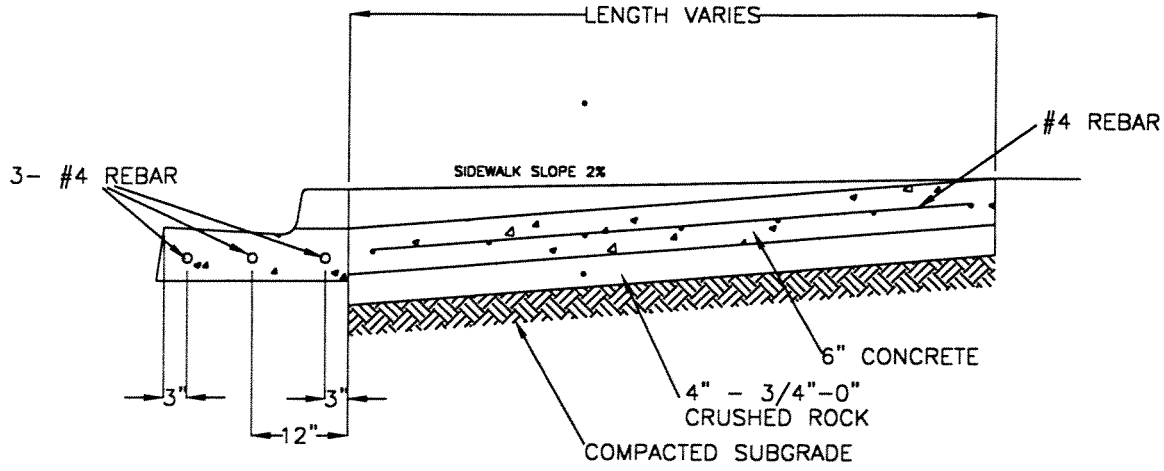
DRIVEWAY APRON
CURB CUT
TYPE "B" SIDEWALK

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	509



PLAN



SECTION A-A

NOTES
1. SEE STANDARD DRAWING 501 FOR ADDITIONAL DETAILS.

City of Newberg
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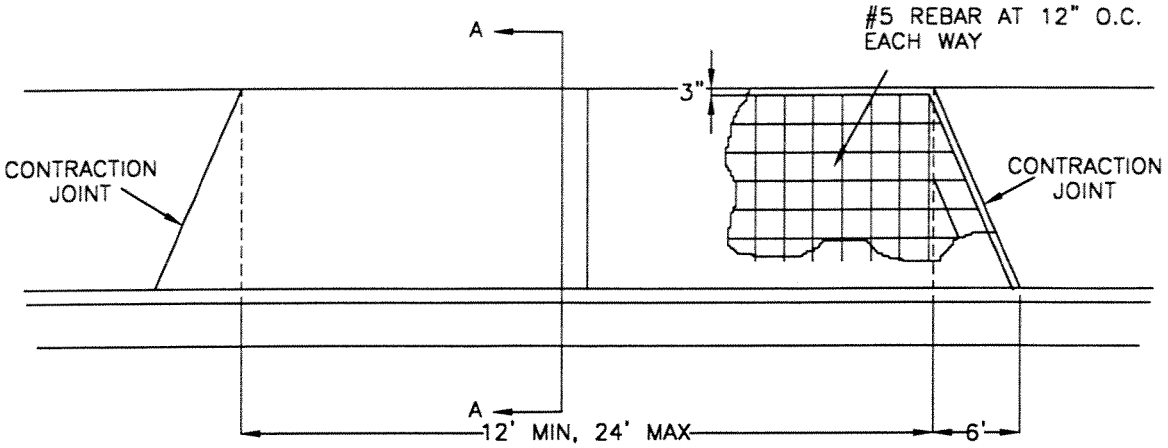
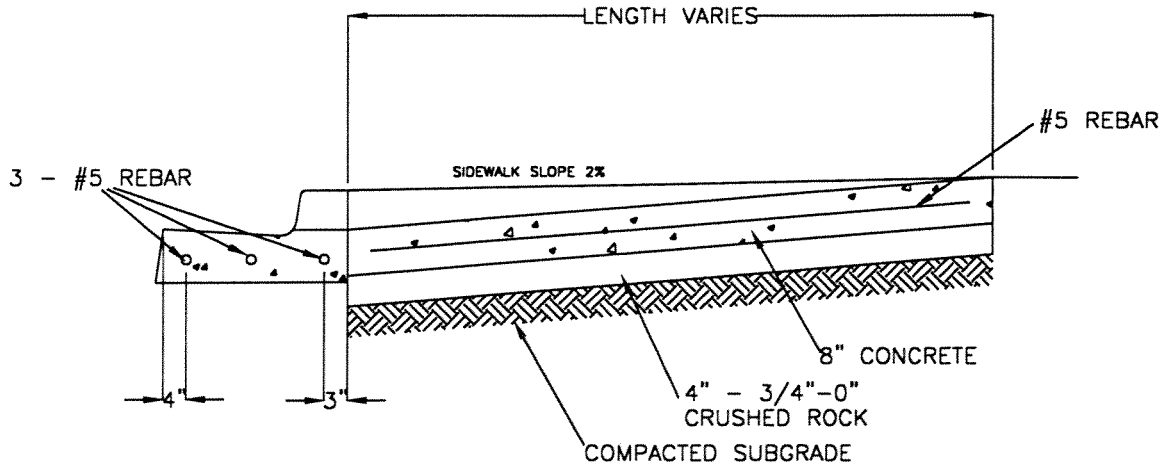
COMMERCIAL DRIVEWAY

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	510



PLAN



SECTION A–A

NOTES
1. SEE STANDARD DRAWINGS 501 AND 509 FOR ADDITIONAL DETAILS.

City of Newberg
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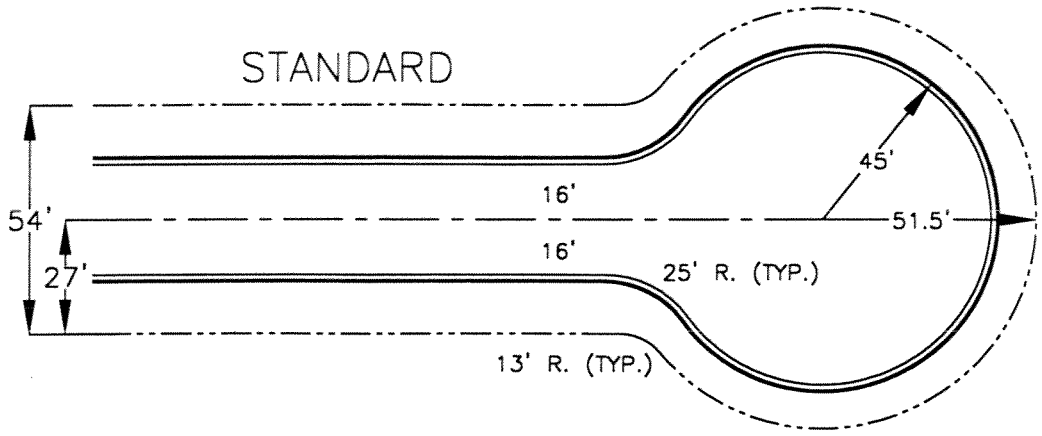
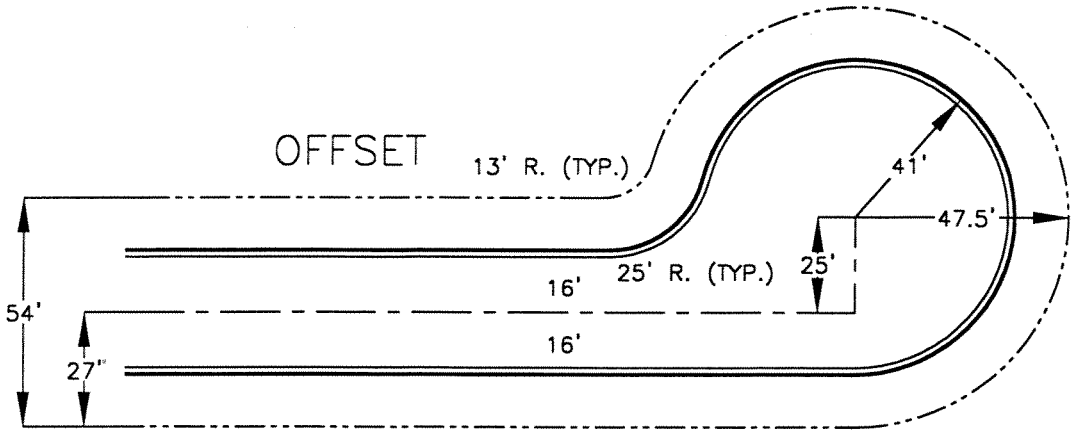
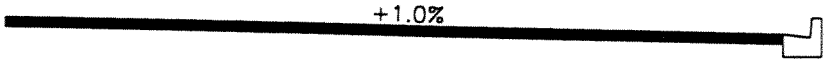
NEWBERG, OREGON 97132

INDUSTRIAL DRIVEWAY

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	511







PROFILE
NTS

NOTES:
1. MINIMUM SLOPES
   .5% AT CURB AROUND BULB
   1.0% CROSS SLOPE TO CURB
2. TRANSITION FROM 2% TO 1%
   CROSS SLOPE IN FIRST QUARTER
   OF BULB IN OFFSET CUL-DE-SAC.

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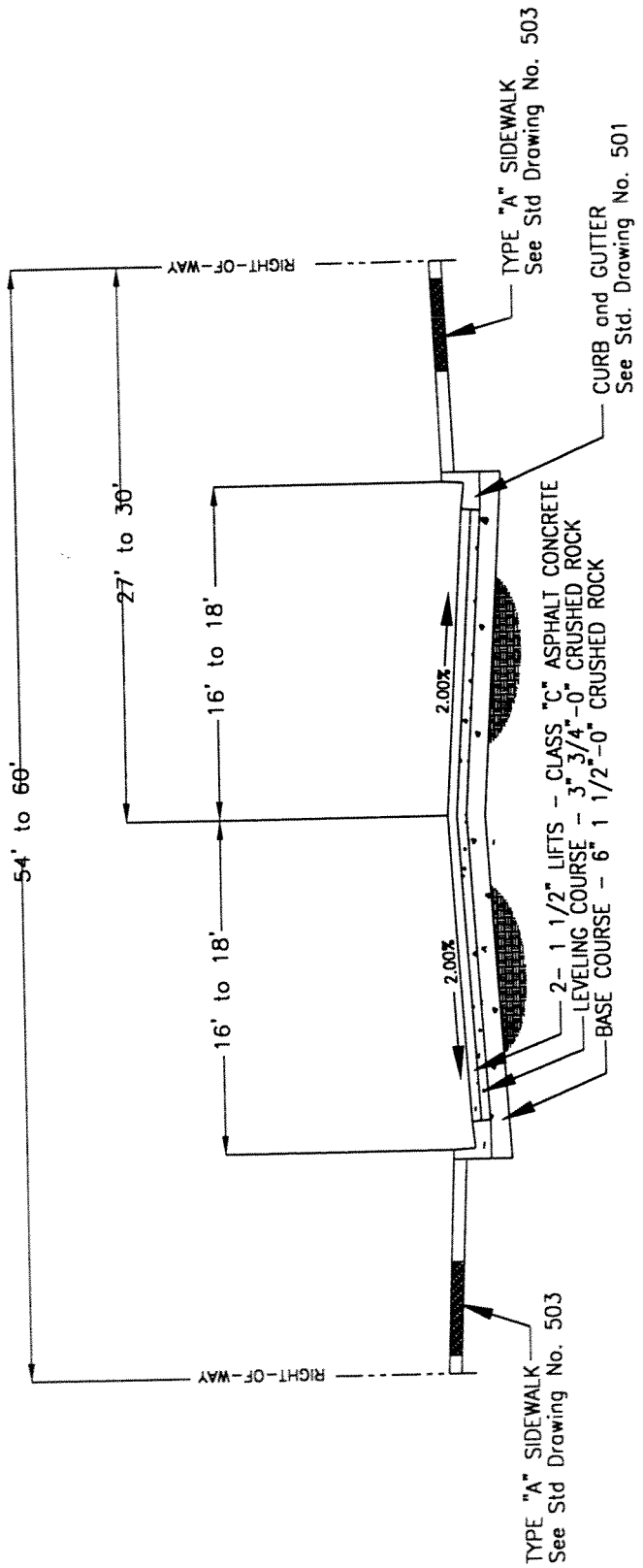
CUL-DE-SAC

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	512



City of Newberg
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NEWBERG, OREGON 97132

RESIDENTIAL STREET CROSS SECTION

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	513

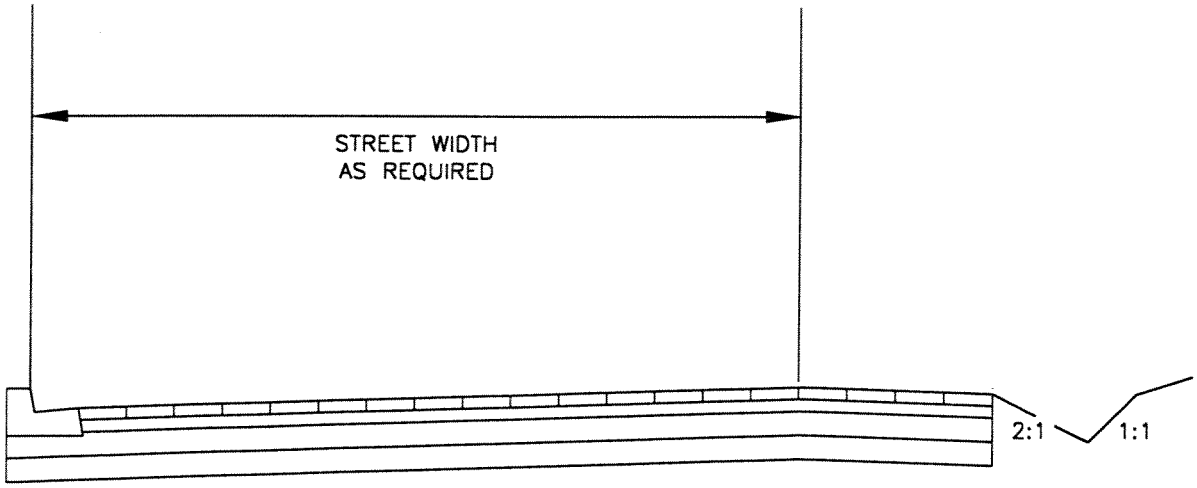

TABLE OF STREET WIDTHS

PLANNED STREET WIDTH	STREET WIDTH
32'	28'
34'	29'
36'	30'

City of Newberg
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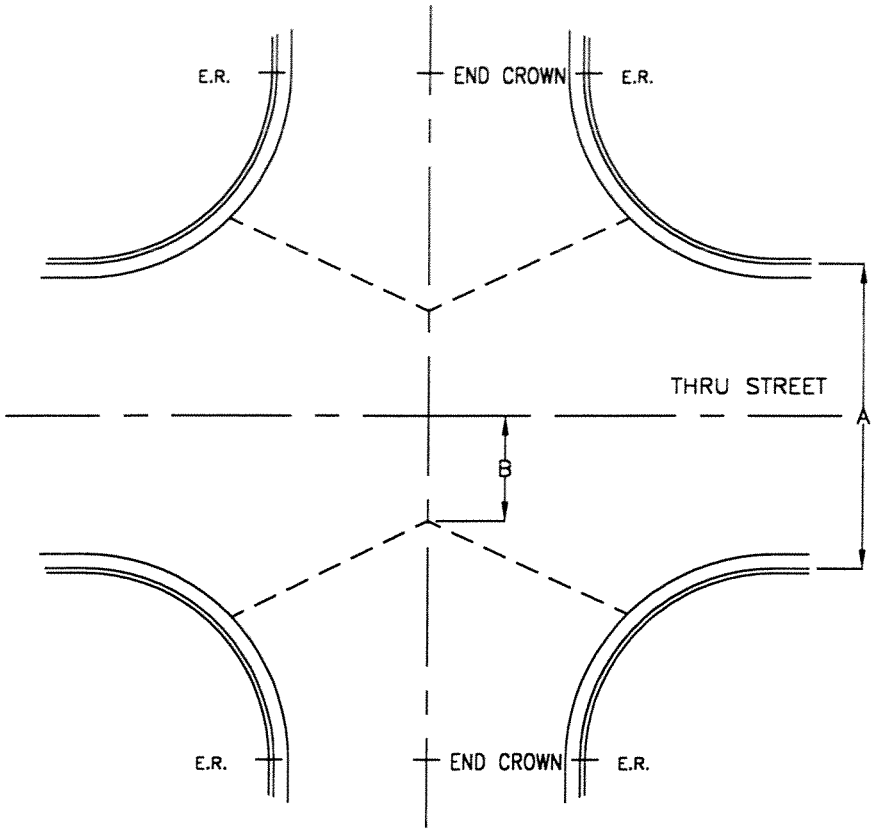
NEWBERG, OREGON 97132

INTERIM STREET

SCALE: N.T.S.	
DATE: JUNE 2000	
APP. BY: L. ANDERSON	
STANDARD DRAWING	514



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%.

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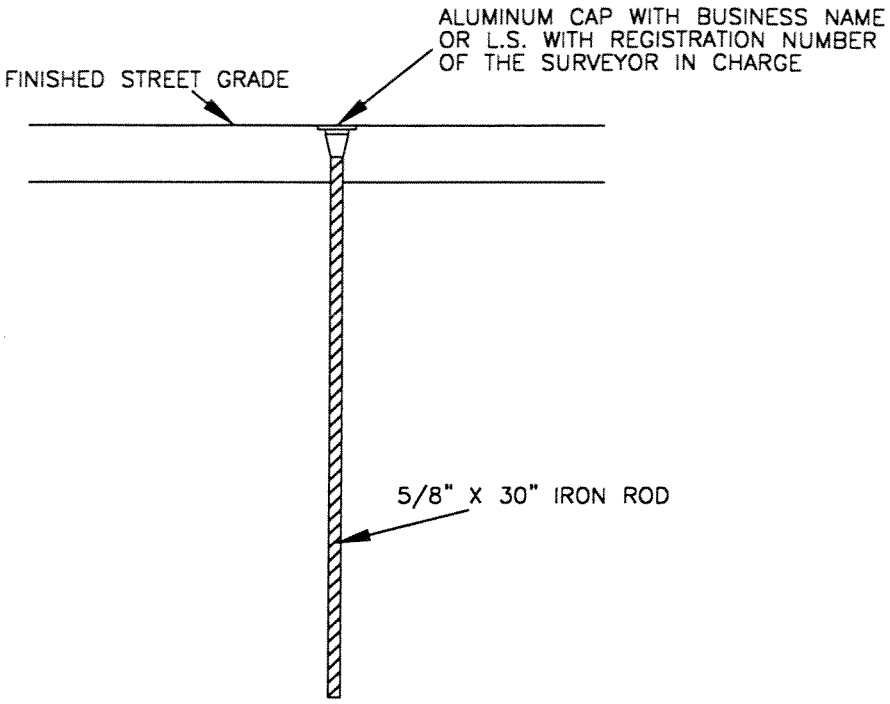
INTERSECTION PAVING PLAN

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	515



NOTES

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

City of Newberg
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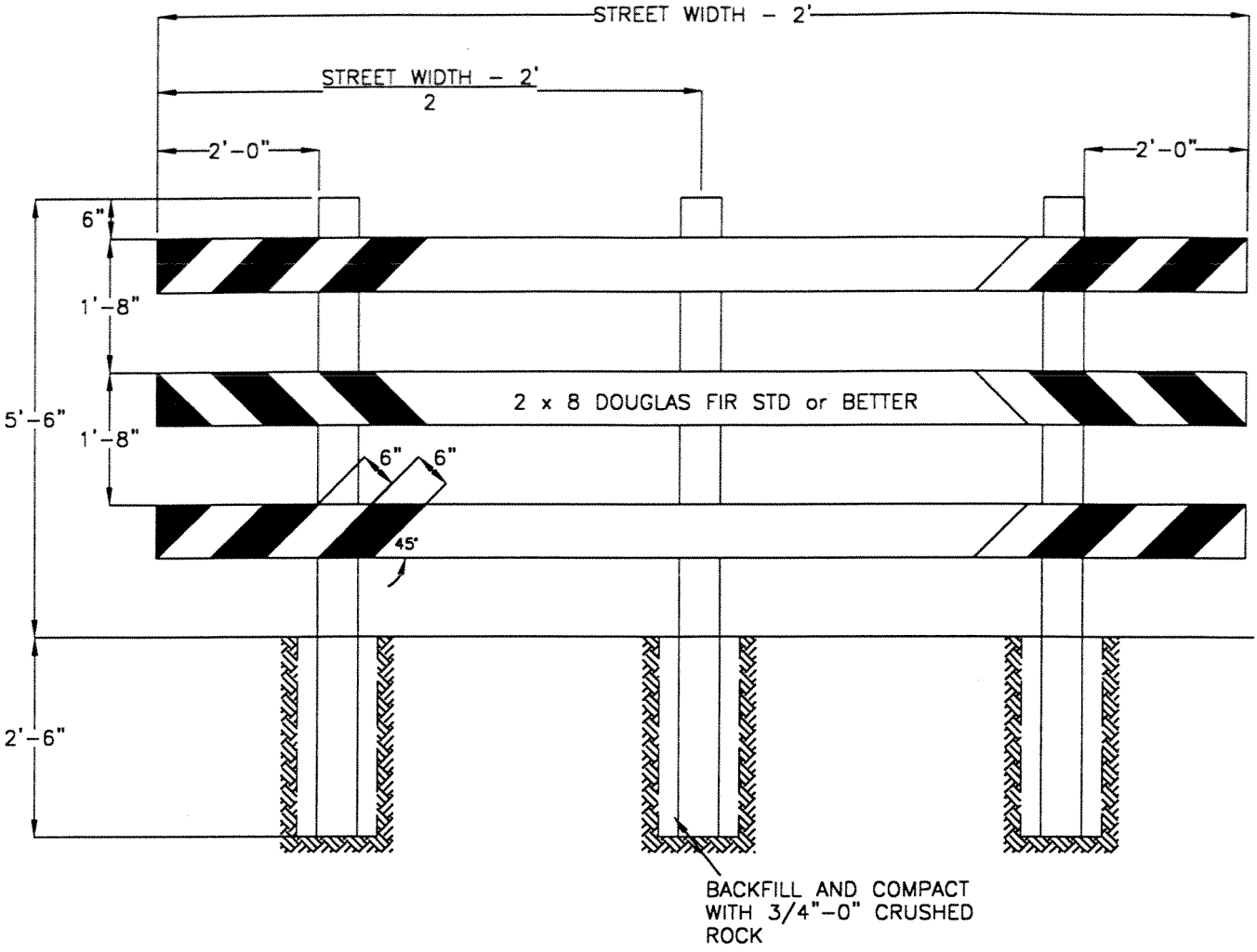
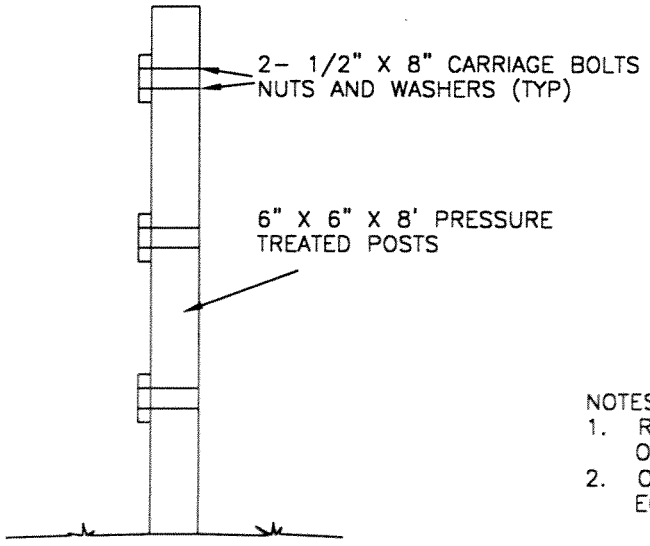
STREET MONUMENTATION

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	516





NOTES
1. RAILS TO BE PAINTED ALTERNATING REFLECTORIZED ORANGE AND WHITE.
2. ON STREETS WIDER THAN 36 FEET USE 4 POSTS EQUALLY SPACED.

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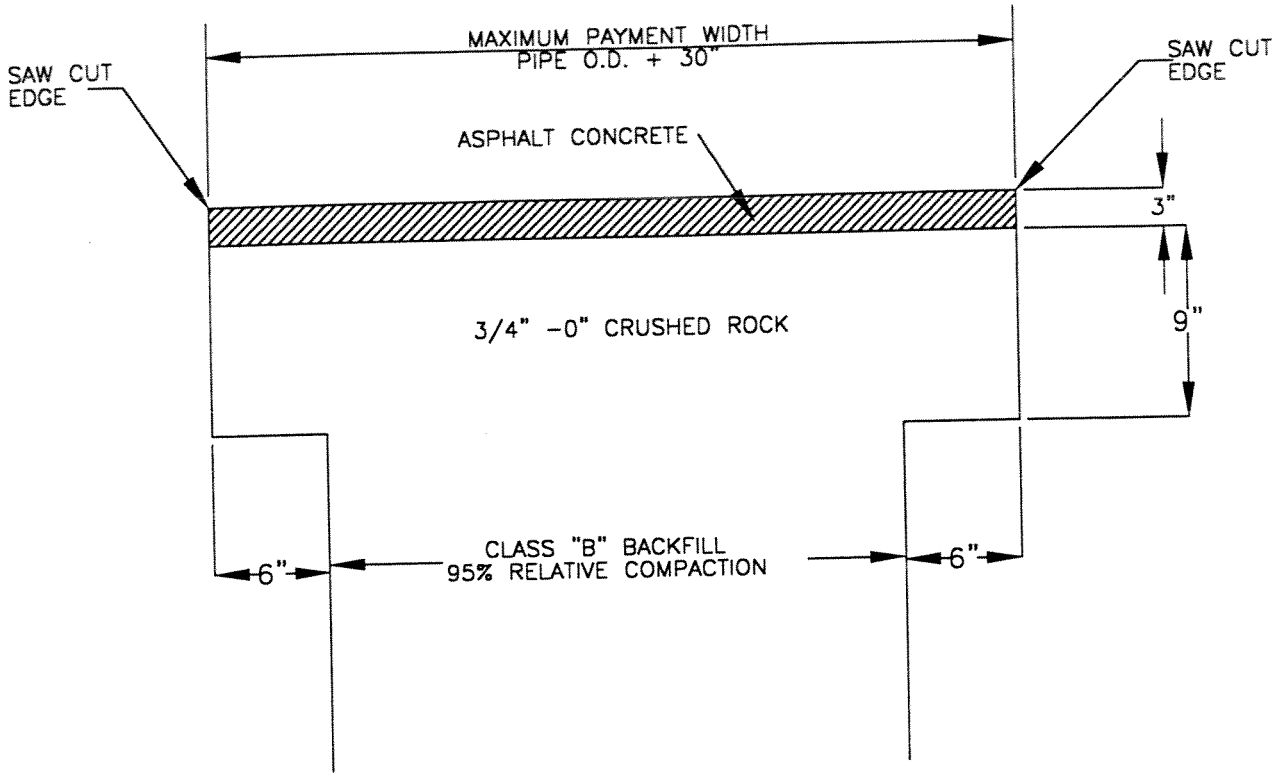
STREET BARRICADE

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	517



NOTES

1. SAW CUT ASPHALT TO NEAT STRAIGHT LINES.
2. ASPHALT – CLASS "C" MIX PLACED IN 2 LIFTS.
3. OIL AND SAND ALL JOINTS.
4. ACTUAL PAYMENT WIDTH TO BE DETERMINED AT SITE PRIOR TO PAVING.

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TRENCH PAVING

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	518

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MANHOLE ADJUSTMENT

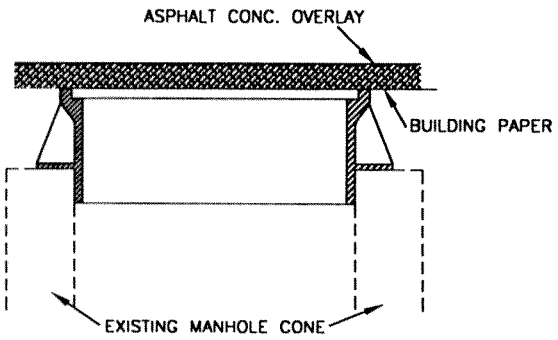
CONSTRUCTION SEQUENCE

STEP 1 COVER MANHOLE WITH BUILDING PAPER AND CONSTRUCT OVERLAY ACROSS EXISTING MANHOLES.

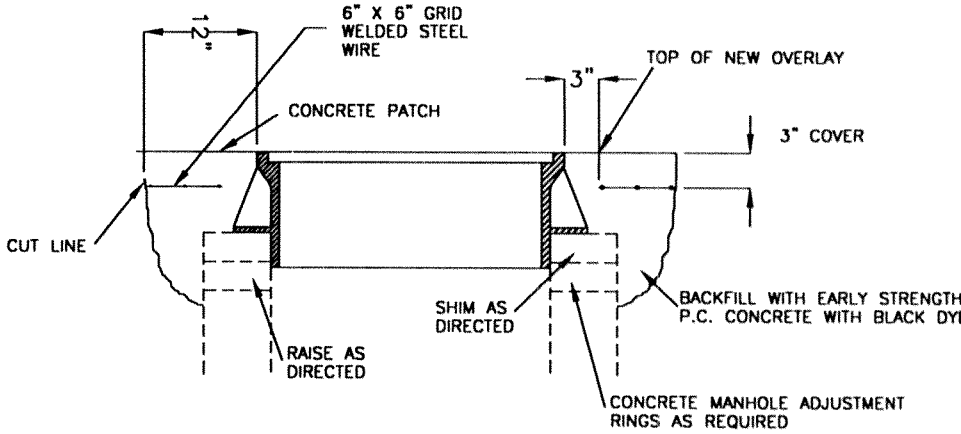
STEP 2 CUT RECTANGULAR EXCAVATION AROUND MANHOLE 12" MIN. FROM MANHOLE FRAME.

STEP 3 RAISE MANHOLE FRAME AND INSTALL CONCRETE RINGS AND SHIM TO FINISH PAVEMENT PROFILE AND CROSS SLOPE.

STEP 4 BACKFILL WITH EARLY STRENGTH CONCRETE AND ASPHALT CONCRETE TO DEPTHS AS DIRECTED.



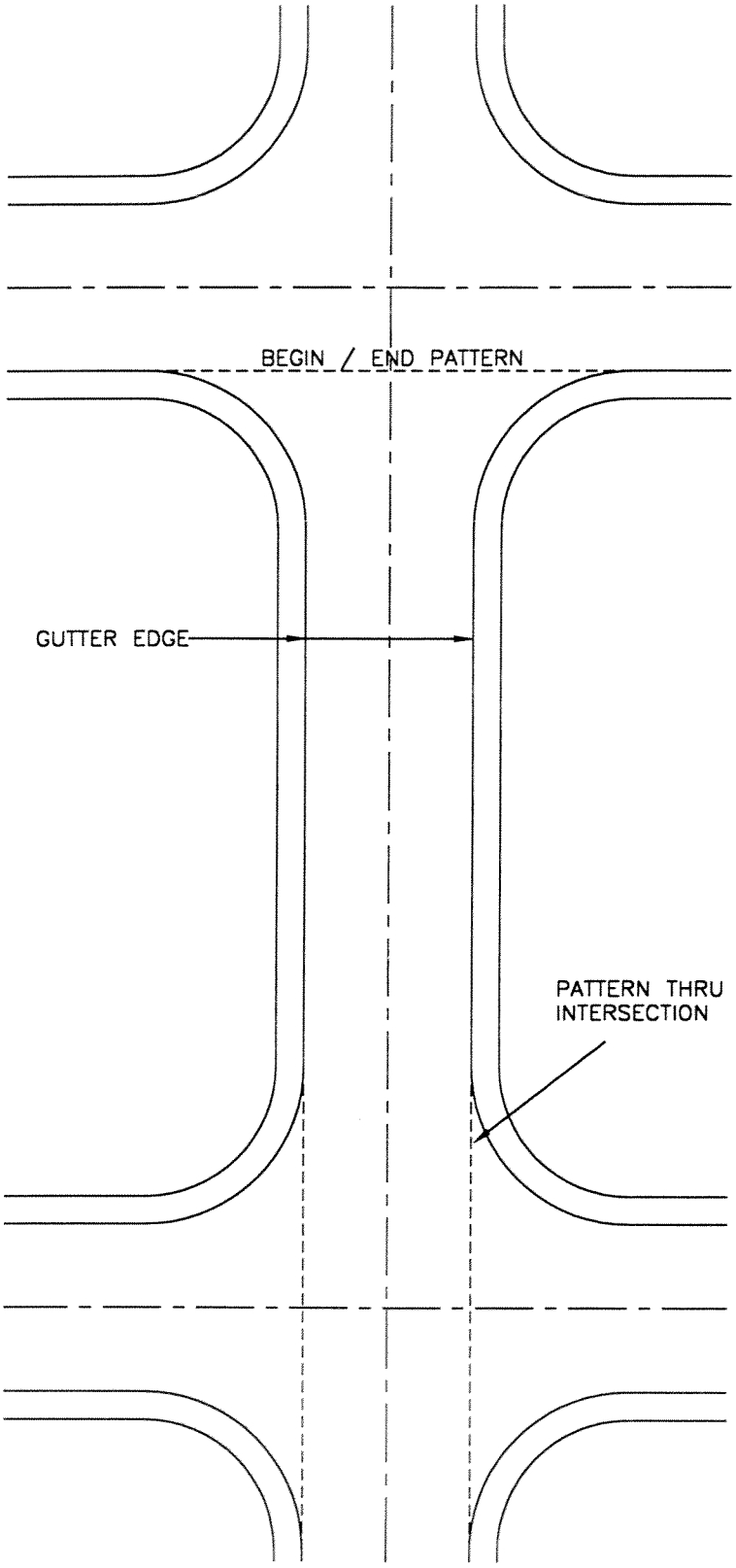
STEP 1



STEPS 2, 3 AND 4

NOTES:
1. SAWCUT A 6 FOOT SQUARE DIAMOND PATTERN EXCAVATION AROUND MANHOLE
2. APPLY CURING COMPOUND TO FINISHED CONCRETE
3. SEAL PAVING JOINT WITH APPROVED MATERIAL AND METHOD.

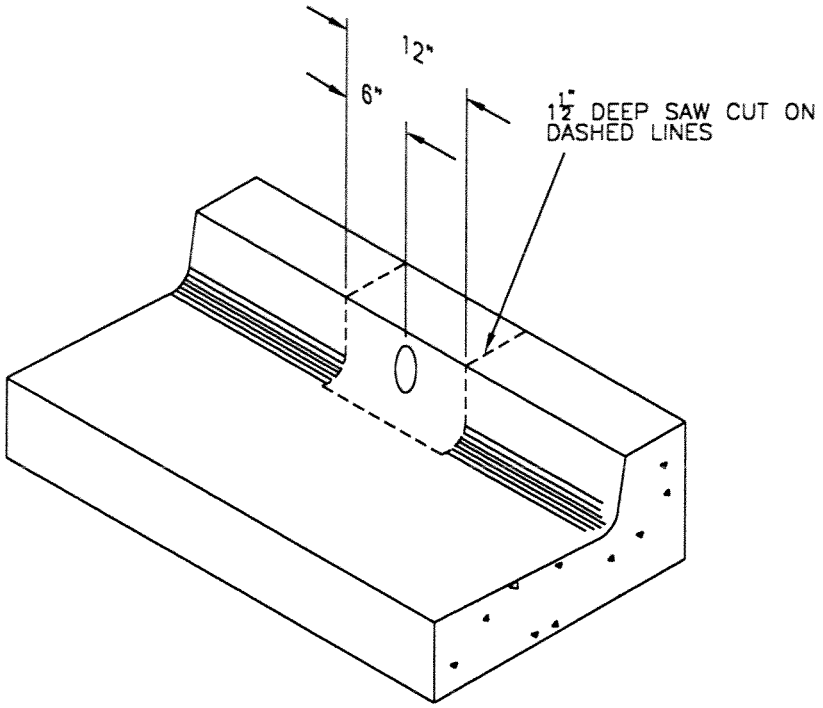
SCALE: N.T.S.
DATE: JUNE 2000
APP. BY: L. ANDERSON
STANDARD DRAWING 519

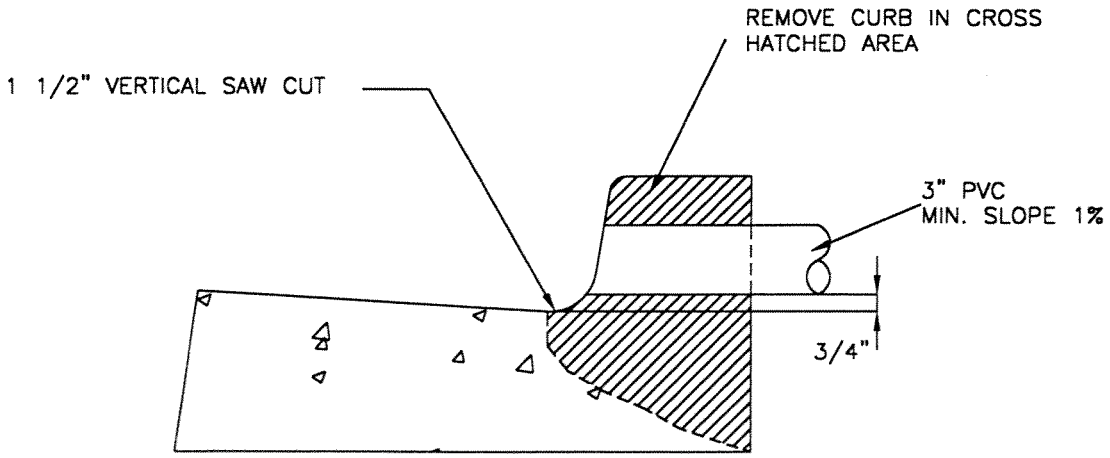


City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

PAVEMENT SEAL COAT PATTERN

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	520





City of Newberg
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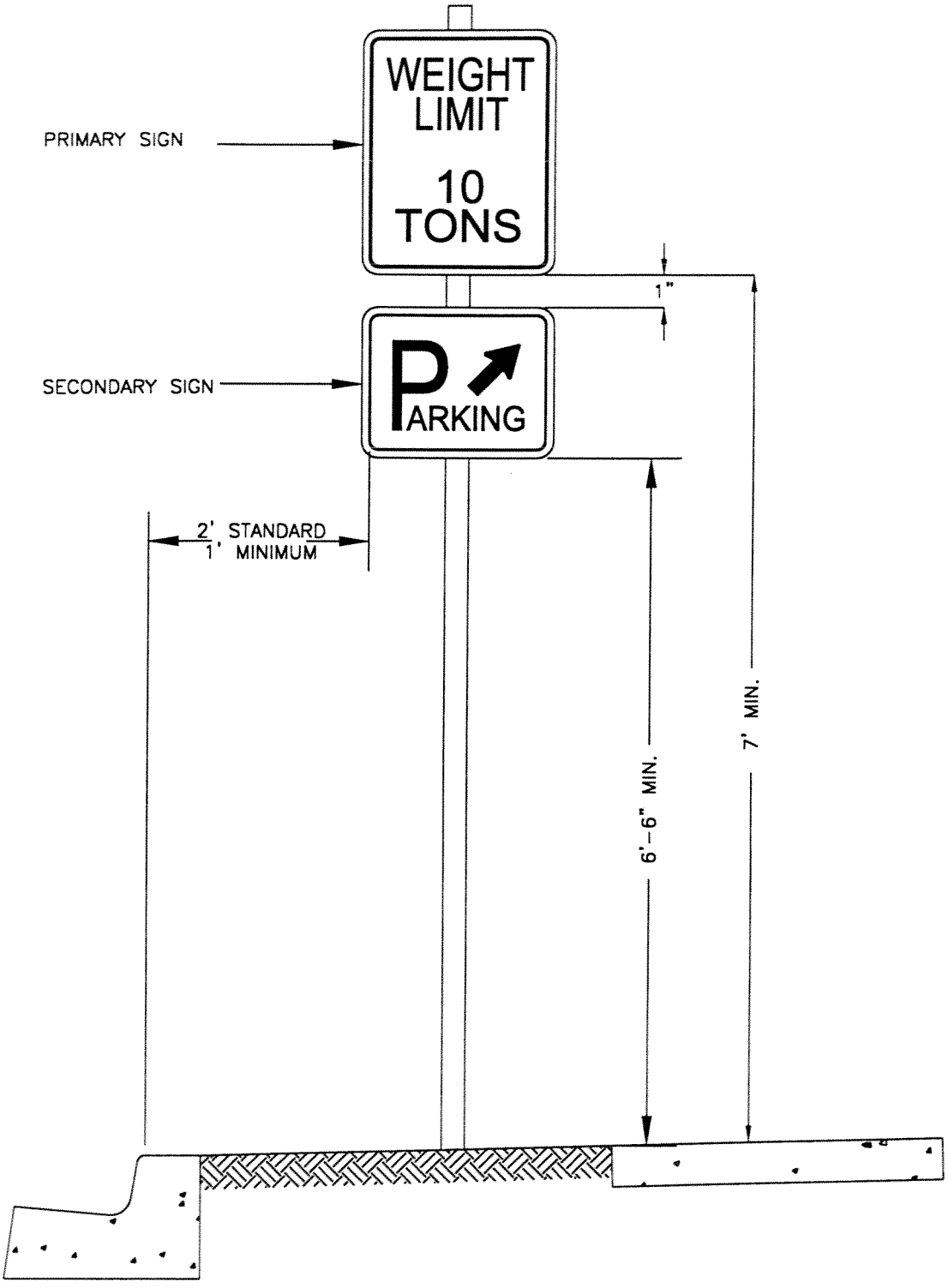
NEWBERG, OREGON 97132

RAIN DRAIN CURB CUT

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	521



REFERENCE: MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
SECTION 2A-23, 24

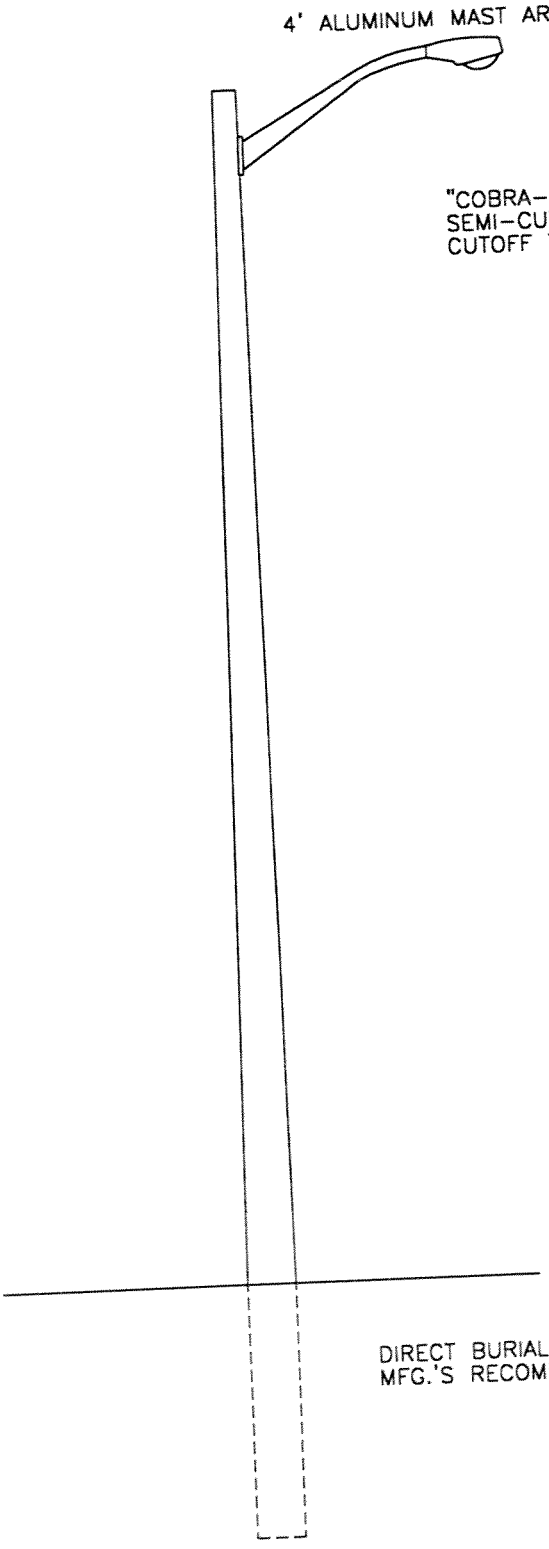
City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

SIGN CLEARANCES

SCALE: N.T.S.
DATE: JUNE 2000
APP. BY: L. ANDERSON
STANDARD DRAWING 522

NOTES:
1. LOCATION OF STREET LIGHT IS SHOWN ON STANDARD DRAWING NO. 104

2. STREET LIGHT HIGH PRESSURE SODIUM LUMINAIRE.



STREET WIDTH (ft.)	SERVICE TYPE	WATTAGE	LUMENS	POLE HT. (ft.)	ARM TYPE	VOLTAGE	SPACING (ft.)	TYPE
32'	RESIDENTIAL "A" SIDEWALK	100	9500	25	4' MAST	120	210	FIBERGLASS
34'	RESIDENTIAL "A" SIDEWALK	100	9500	25	4' 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

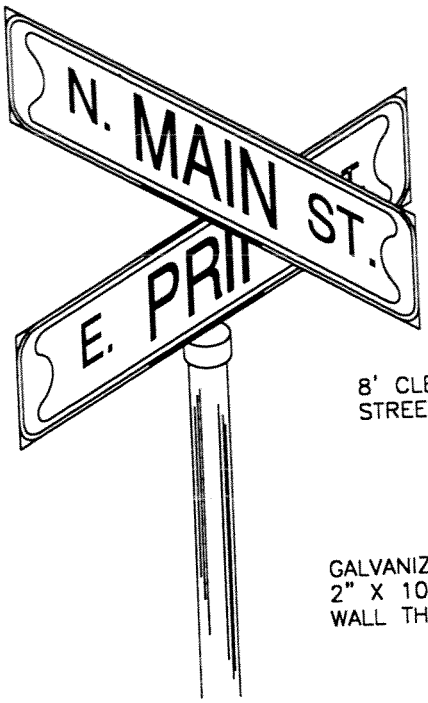
City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

STREET LIGHT

SCALE: N.T.S.
DATE: JUNE 2000
APP. BY: L. ANDERSON
STANDARD DRAWING 523

TYPE:
SN-4
FLAT DOUBLE FACED, .080 ALUMINUM
STREET NAME SIGN. TOTALLY REFLECTIVE
6" HIGH X NECESSARY LENGTH
BRACKETS:
VS-4 CAP FOR ROUND POSTS
VS-4 CROSS FOR SIGNS

COLOR:
WHITE ON GREEN WITH WHITE BORDER

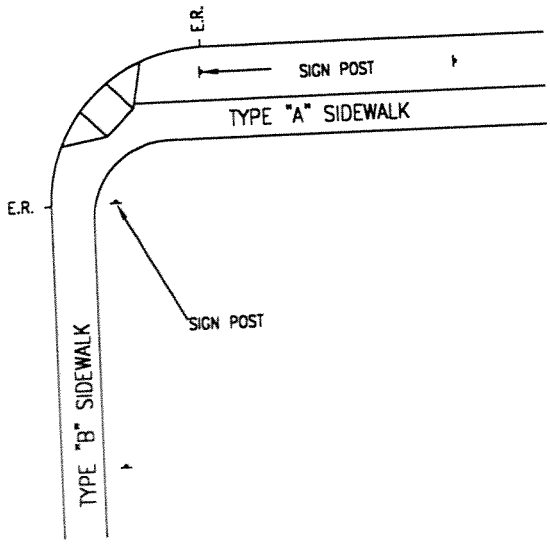


8' CLEARANCE FROM
STREET SIGN TO GRADE

GALVANIZED STEEL PIPE POST
2" X 10'-6" LENGTH
WALL THICKNESS .095"

SIGN DATA

STREET TYPE	BLADE SIZE	DIRECTION	NAME	DESIGNATION
LOCAL	6"	2"	4"	2"
COLLECTOR	9"	3"	6"	2"



SIGN POST LOCATIONS

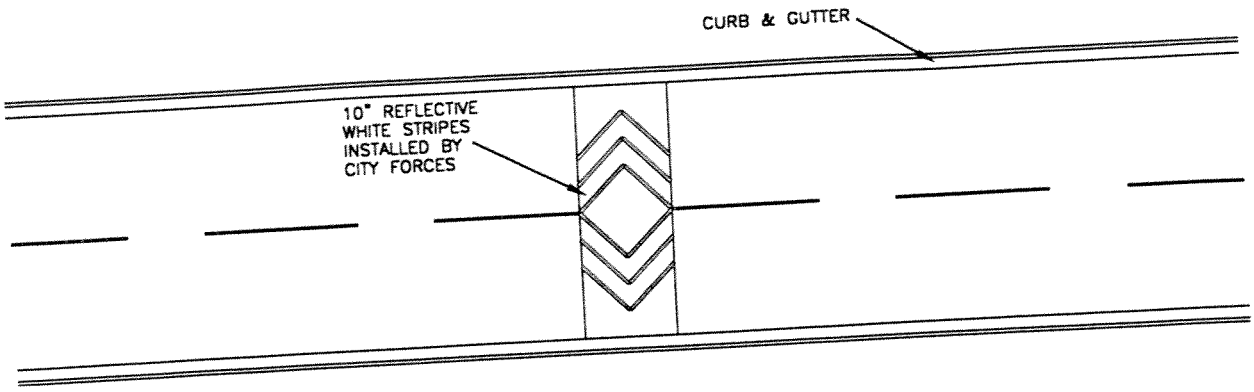
SIDEWALK	DISTANCE FROM FACE OF CURB	
	50' R.O.W.	60' R.O.W.
TYPE "A"	2'	4'
TYPE "B"	7'	7'

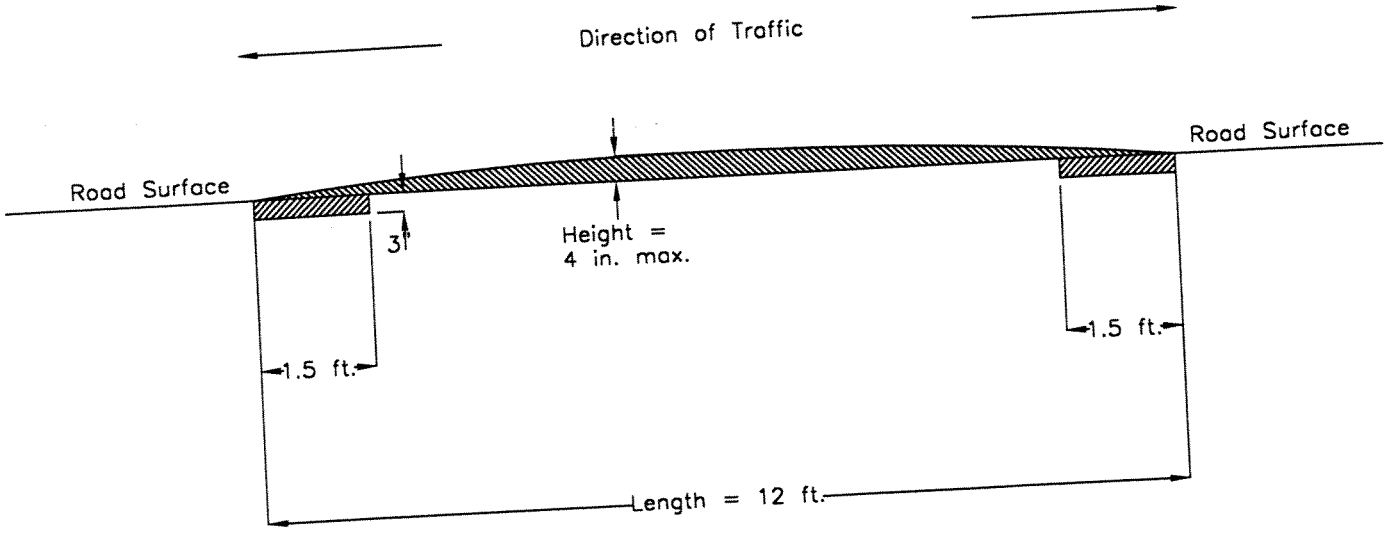
NOTE:
LOCATE POSTS SO THAT TRAFFIC CONTROL SIGNS
CAN BE PLACED ON THE SAME POST.

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

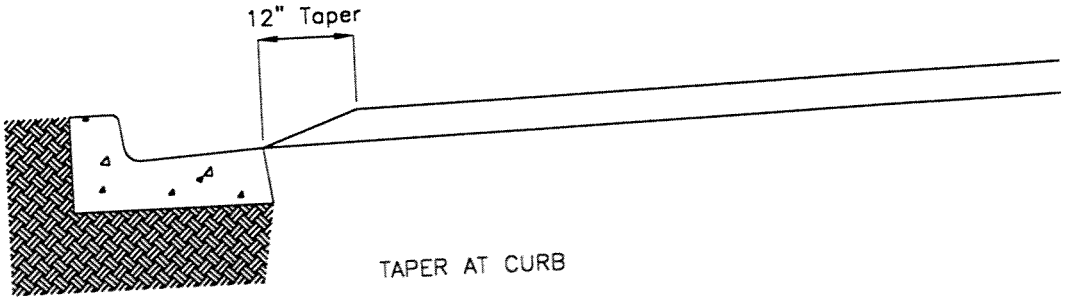
STREET SIGN AND POST LOCATION

SCALE: N.T.S.
DATE: JUNE 2000
APP. BY: L. ANDERSO
STANDARD DRAWING 524





CROSS SECTION AND HUMP DIMENSIONS



TAPER AT CURB

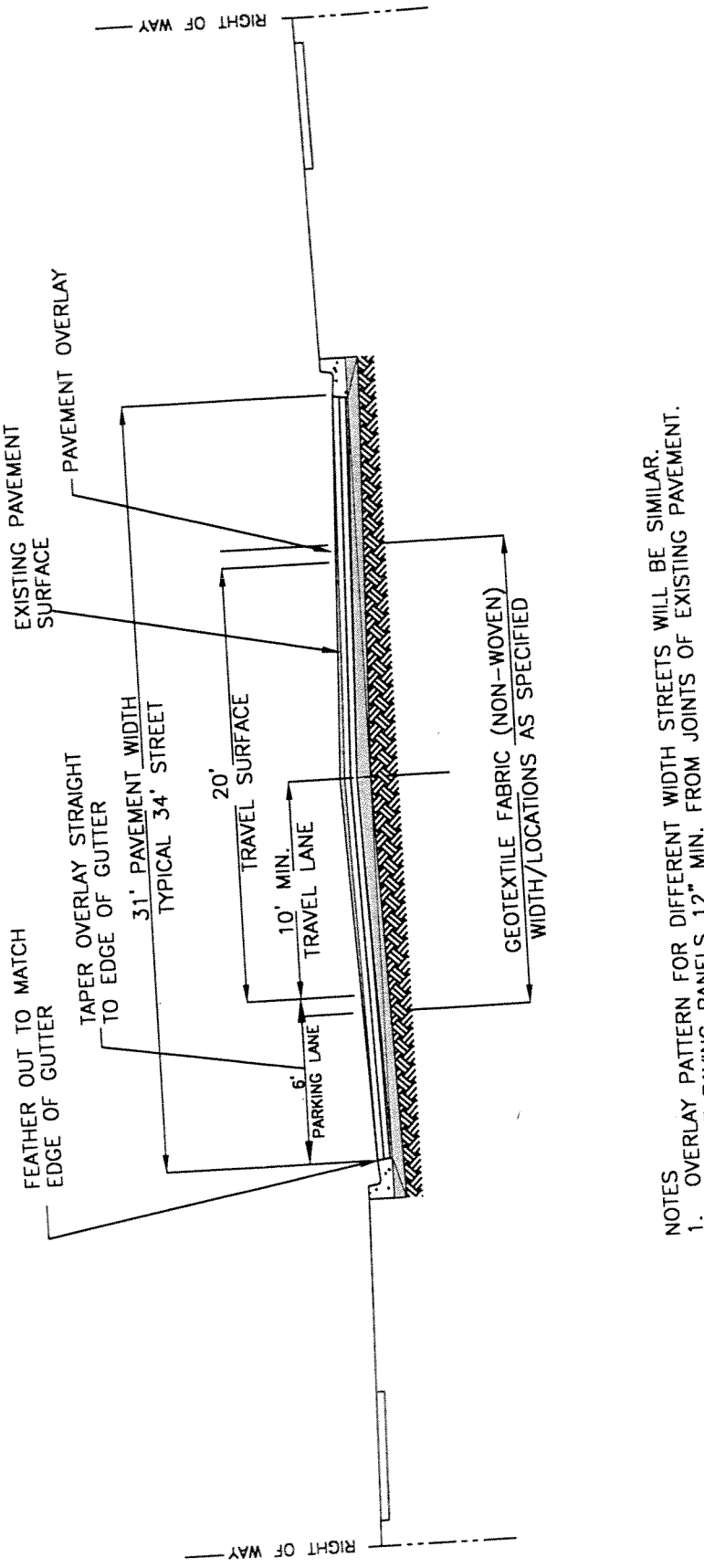
City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

STREET HUMP

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	525

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

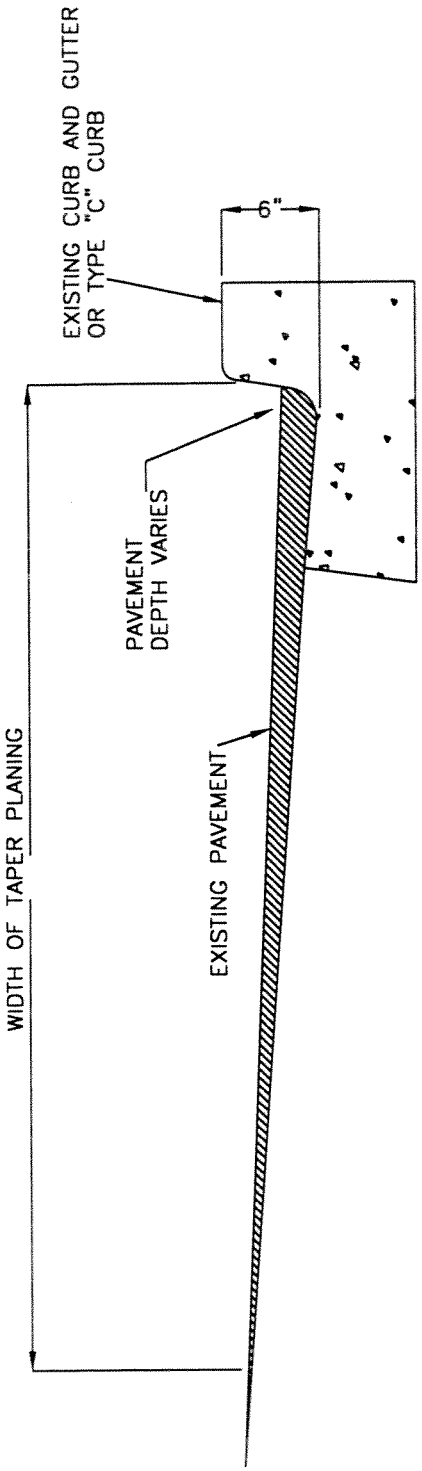


NOTES
1. OVERLAY PATTERN FOR DIFFERENT WIDTH STREETS WILL BE SIMILAR.
2. OFFSET PAVING PANELS 12" MIN. FROM JOINTS OF EXISTING PAVEMENT.

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

ASPHALT OVERLAY TYPICAL SECTION

SCALE: N.T.S.
DATE: JUNE 2000
APP. BY: L. ANDERSON
STANDARD DRAWING 526



NOTES
1. PLANE FLUSH TO CURB FACE.
2. PLANE TO SURFACE OF CONCRETE GUTTER OR TO 6" EXPOSURE OF TYPE "C" CURB.

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

PAVEMENT MILLING

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	527

STREET TYPE							
LOCAL		COLLECTOR		ARTERIAL			
DEPTH	LIFTS	DEPTH	LIFTS	DEPTH	LIFTS		
3"	2	4"	2	6"	3		
3"	1	3"	1	3"	1		
6"	1	9"	2	12"	2		
12"		16"		21"			

GEOTEXTILE SPECIFICATIONS

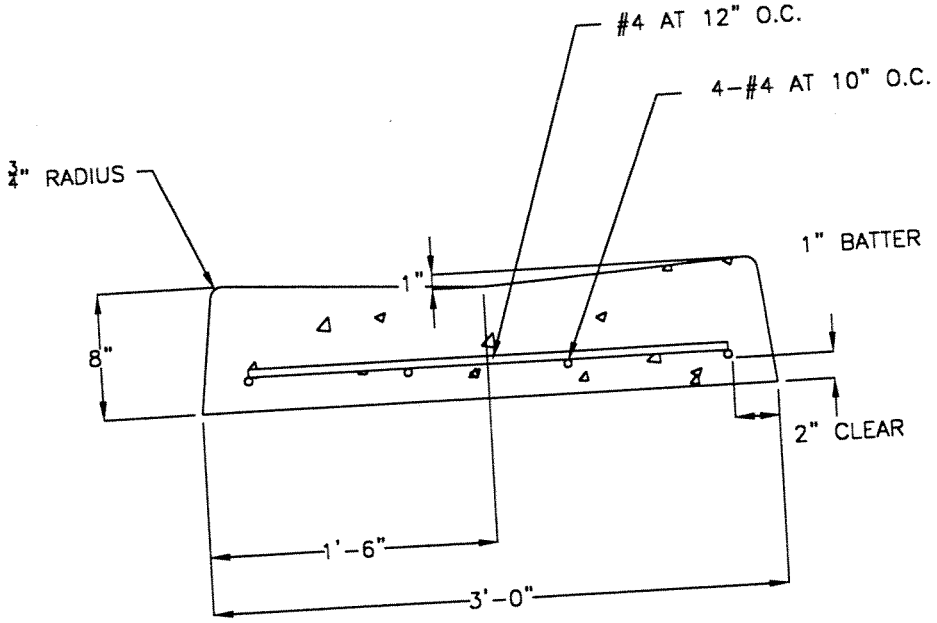
PROPERTY	TEST	MIN. VALUE
TENSILE STRENGTH, lbs	ASTM D-4632	120
ELONGATION, WET %	ASTM D-4632	40
COEFFICIENT OF WATER PERMEABILITY, cm/sec	ASTM D-4491	0.10
PUNCTURE STRENGTH, lbs	ASTM D-4833	80
MULLEN BURST STRENGTH, psi	ASTM D-3786	250

City of Newberg OR

414 E. FIRST STREET
NEWBERG, OREGON 97132

ASPHALT PAVEMENT REPAIR

SCALE: N.T.S.
DATE: JUNE 2000
APP. BY: L. ANDERSON
STANDARD DRAWING 528



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

City of Newberg
414 E. FIRST STREET
NEWBERG, OREGON 97132

VALLEY GUTTER

SCALE: N.T.S.	
DATE:	JUNE 2000
APP. BY:	L. ANDERSON
STANDARD DRAWING	529

CITY OF NEWBERG
MANHOLE VACUUM TEST NOMOGRAPH

PROJECT NAME: _____

TEST DATE: _____

TEST CONDUCTED BY: _____

MANHOLE	DEPTH	DIAMETER	TEST TIME	PASS	FAIL

NOTES: _____

INSPECTOR: _____

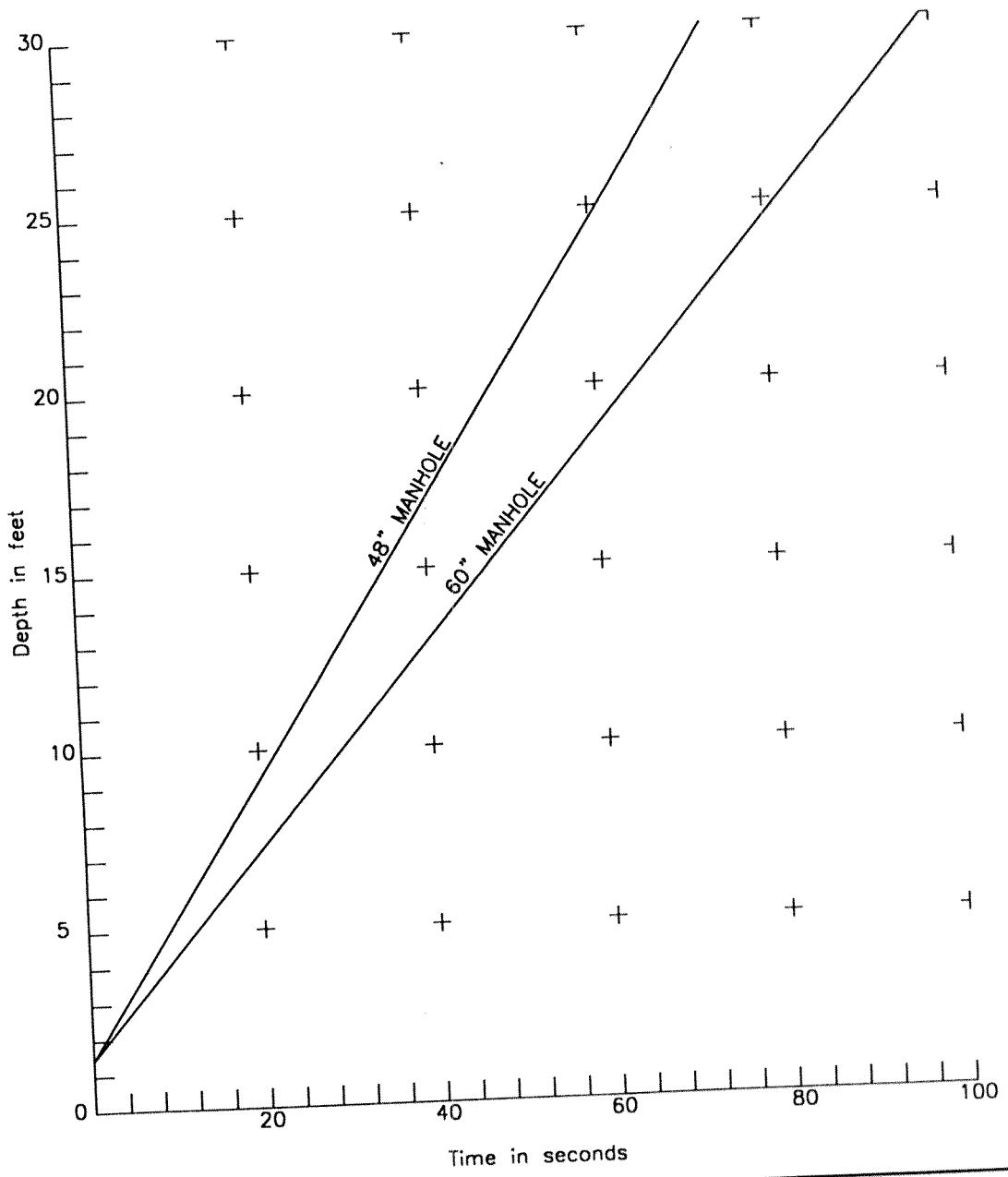


EXHIBIT "C" TO
RESOLUTION NO. 2011-2936

CITY OF NEWBERG
SANITARY SEWER AIR TEST NOMOGRAPH

LOCATION: _____

TEST DATE: _____

TEST CONDUCTED BY: _____

TEST SECTION: FROM _____ TO _____

DIAMETER (d)	LENGTH (L)	$K = 0.011d^2L$	$C=0.0003882\ d\ L$
	TOTALS		

(tq) TIME REQUIRED IN SECONDS _____

LOSS IN OUNCES _____

☐ ACCEPTED

☐ NOT ACCEPTED

NOTES: _____

_____

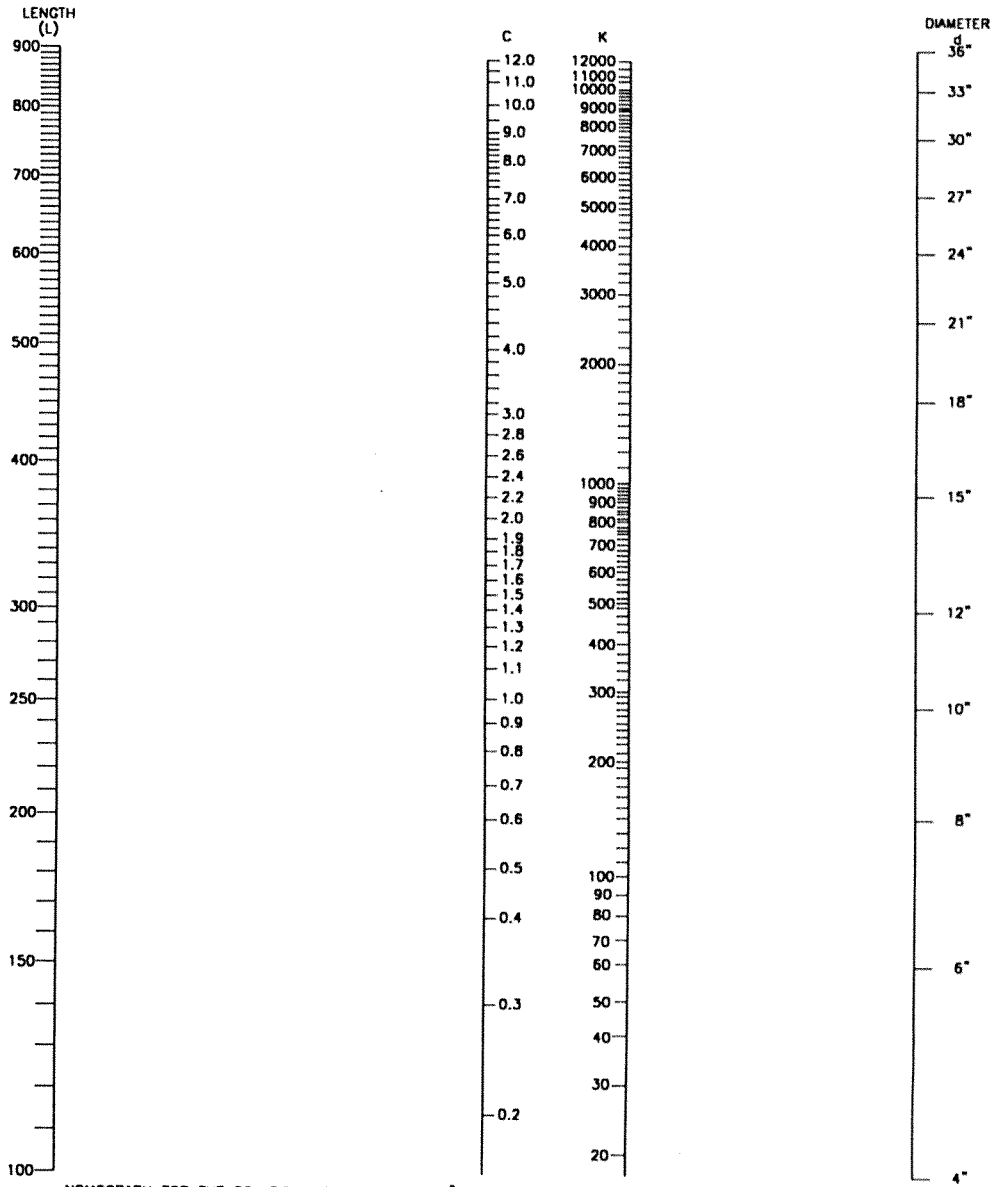
_____

_____

_____

_____

INSPECTOR: _____



NOMOGRAPH FOR THE SOLUTION OF $K = 0.011d^2L$, $C = 0.0003882\ dL$, $tq = K/C$

EXHIBIT "C" TO RESOLUTION NO. 2011-2936

REQUEST FOR COUNCIL ACTION

DATE ACTION REQUESTED: March 4, 2011	
Order No. ____ Ordinance No. ____ Resolution No. XX Motion ___ Information ___	
SUBJECT: Request for approval of Supplemental Budget #2 for fiscal year 2010-2011 as described in Exhibit "A".	**Contact Person (Preparer) for this Resolution: Janelle Nordyke** **Dept.: Finance** **File No.:** *(if applicable)*

HEARING TYPE: ☒ **LEGISLATIVE** ☐ **QUASI-JUDICIAL**

RECOMMENDATION:

Adopt **Resolution No. 2011-2937**

EXECUTIVE SUMMARY:

In June 2010, the City of Newberg Council adopted the 2010-2011 fiscal budget, appropriating funds for specific needs and purposes for adequate operations of the City's functions.

In November 2010, the City of Newberg Council adopted Supplemental Budget #1 for the 2010-2011 fiscal budget, appropriating funds for unexpected expenses.

Staff continues to review the City's budget and on occasion, additional revenues may be recognized and unexpected expenditures may be appropriated. The following adjustments are required to supplement the adopted budget appropriations to comply with Oregon Budget Law. Refer to Exhibit "A" for a detail accounting summary.

The Police and Communications departments have had to postpone certain expenditures due to budget constraints and software timing. The current video recording system for the booking room, holding cells and public safety building has failed twice; The Information Technologies department provided temporary repair of the system both times. The IT department has recommended that the recording system be replaced before it fails completely. Also, current software programs that run computer-aided Dispatch, Police records management, and emergency communications are outdated and must be upgraded. The costs for these replacements ($88,000) are being funded from a variety of sources. The balance of $43,000 will be transferred from General Fund Contingency to help fund the Capital Outlay contributions from Police and Communications.

Grant from OJJDP (Fund 01)	$ 5,000
Wastewater contribution (Fund 06)	$ 2,500
Water contribution (Fund 07)	$ 2,500
Police Equipment Replacement (Fund 32)	$10,000
Communications Equip Replace (Fund 32)	$15,000
Police Capital Outlay (Fund 01)	$40,000
Communications Capital Outlay (Fund 01)	$13,000
Total Contributions needed:	$88,000

The Capital Projects Fund for Street (Fund 18) is where street capital projects are appropriated. The City

has received grants for two projects that were slated to be capital projects in future fiscal years. The College Street sidewalks, East ($42,000) and West ($40,000), will be mostly funded by ODOT grants, with the City participating in matching funding. The funding for these projects will come from the Street SDC Fund (Fund 42) in the amount of $82,000.

The Equipment Replacement and Reserve Fund (Fund 32) is where the City's departments hold reserved funds for equipment and computer replacements. The Police ($5,100) department must appropriate additional expenditures for unexpected computer replacements and recording equipment replacement mentioned previously. The additional amount to be appropriated comes from the Equipment Replacement and Reserve Contingency in the amount of $5,100.

The supplemental budget will recognize Federal Exchange funds as revenues in the Street SDC Fund (Fund 42) in the amount of $237,306. These funds will go towards the Sheridan Street CPRD project, instead of borrowing from the EDRLF fund, as originally budgeted. Total transfers to the Street Capital Projects Fund (Fund 18) are needed in the amount of $82,000, with a net increase to Street SDC Contingency of $155,306.

FISCAL IMPACT: The annual budget appropriation increase requested is $344,081 for a total budget of $68,837,856.

STRATEGIC ASSESSMENT:

The adoption of this supplemental budget will accurately reflect the activity of the City. The public hearing for the supplemental budget was noticed in the paper of record, the Newberg Graphic, the week of March 7th, 2011.

RESOLUTION NO. 2011-2937

A RESOLUTION ADOPTING SUPPLEMENTAL BUDGET #2 FOR FISCAL YEAR 2010-2011 BEGINNING JULY 1, 2010 AND ENDING JUNE 30, 2011

RECITALS:

1. The 2010-2011 Budget was adopted by Resolution No. 2010-2898, June 21, 2010, by the City Council.

2. A Supplemental Budget #1 was adopted by Resolution No. 2010-2922, November 2, 2010 by the City Council.

3. Since then circumstances require additional changes to the budget. See Exhibit "A".

THE CITY OF NEWBERG RESOLVES AS FOLLOWS:

To recognize additional revenues, expenditures and changes in contingencies as shown in Exhibit "A", which is hereby attached and by this reference adopted.

- **EFFECTIVE DATE** of this resolution is the day after the adoption date, which is: March 22, 2011.

ADOPTED by the City Council of the City of Newberg, Oregon, this 21st day of March, 2011.

_____
Norma I. Alley, City Recorder

ATTEST by the Mayor this 24th day of March, 2011.

_____
Bob Andrews, Mayor

LEGISLATIVE HISTORY

By and through _____ Committee at __/__/2010 meeting. Or, ___ None.
(committee name) *(date)* *(check if applicable)*

City of Newberg
Supplemental Budget #2
Fiscal Year 2010-2011

FUND 01 - GENERAL FUND		BUDGET	CHANGE	REVISED
OJJDP Grant	*Increase*	-	5,000	5,000
Transfer In - Wastewater	*Increase*	-	2,500	2,500
Transfer In - Water	*Increase*	-	2,500	2,500
Police Capital Outlay	*Increase*	14,000	40,000	54,000
Dispatch Capital Outlay	*Increase*	-	13,000	13,000
Contingency	Decrease	634,839	(43,000)	591,839

To recognize and appropriate revenues and expenditures for an OJJDP grant, recognize transfers in for security needs at the Water and Wastewater Treatment Plants through dispatched communications, and unexpected increased equipment replacement needs for Police and Communications.

FUND 06 - WASTEWATER FUND		BUDGET	CHANGE	REVISED
Transfer Out - General Fund	*Increase*	-	2,500	2,500
Capital Outlay - Operations	Decrease	35,000	(2,500)	32,500

To appropriate expenditures for unexpected equipment replacement needs for security at the Wastewater Treatment Plant through dispatched communications.

FUND 07 - WATER FUND		BUDGET	CHANGE	REVISED
Transfer Out - General Fund	*Increase*	-	2,500	2,500
Capital Outlay - Operations	Decrease	75,000	(2,500)	72,500

To appropriate expenditures for unexpected equipment replacement needs for security at the Water Treatment Plant through dispatched communications.

FUND 13 - 9-1-1 FUND		BUDGET	CHANGE	REVISED
Miscellaneous Revenues	*Increase*	-	14,775	14,775
Capital Outlay	*Increase*	25,815	14,775	40,590

To recognize reimbursement from OEM and appropriate the unexpected increased equipment replacement needs for Communications.

FUND 18 - STREET CAPITAL PROJECTS FUND		BUDGET	CHANGE	REVISED
Transfer In - Street SDC Fund	*Increase*	450,000	82,000	532,000
College St - RR Crossing & E. Sidewalk Grant	*Increase*	-	42,000	42,000
College St - Bike Lanes & W. Sidewalk Grant	*Increase*	-	40,000	40,000

To appropriate additional unexpected matching expenditures for grants received and expenditures for projects that were planned for future years.

FUND 32 - EQUIPMENT REPLACEMENT FUND		BUDGET	CHANGE	REVISED
Capital Outlay - Computers - Police	*Increase*	12,000	4,600	16,600
Capital Outlay - Equipment - Police	*Increase*	15,000	500	15,500
Contingency	Decrease	1,288,918	(5,100)	1,283,818

To appropriate the unexpected increased equipment replacement needs for Police and Communications.

FUND 42 - STREET SDC		BUDGET	CHANGE	REVISED
Grant - Federal Exchange Funds	*Increase*	-	237,306	237,306
Transfer Out - Street Cap Projects	*Increase*	450,000	82,000	532,000
Contingency	*Increase*	2,010,822	155,306	2,166,128

To recognize Federal Exchange funds and appropriate increased transfer needs for Fund 18 Street Capital Projects.

REQUEST FOR COUNCIL ACTION

DATE ACTION REQUESTED: March 21, 2011

Order No.	**Ordinance No. 2011- 2736**	**Resolution No.**	**Motion**	**Information**
___	XX	___	___	___

SUBJECT: Ordinance modifying street and access standards	**Contact Person (Preparer) for this Motion: Barton Brierley, AICP** **Dept.: Planning and Building** **File No.: DCA-10-001** ***(if applicable)***

HEARING TYPE: ☒☐**LEGISLATIVE** ☐☐**QUASI-JUDICIAL**

RECOMMENDATION:

The Planning Commission and staff recommend the Council adopt Ordinance No. 2011-2736, amending certain street and access standards in the Newberg Development Code.

The proposed amendments would:

(1) Create a limited residential street standard for certain low volume streets. The standard would allow these streets to be 28-feet wide (curb to curb) with parking allowed on both sides. The standard residential street width is 32 feet. This standard only could be used in limited circumstances, such as where on-street parking usage is estimated to be low, where blocks are short, or where streets are not dead-end. The proposal also would allow streets with parking one-side (24-feet width) or no parking (20-feet width) in very limited circumstances where providing parking is not feasible.
(2) Allow three lots to share one common driveway. The current limit is two lots per driveway.
(3) Allow alleys as access to lot in limited circumstances
(4) Increase block length standards.

EXECUTIVE SUMMARY:

The City Council requested that the Planning Commission review and make recommendations on potential modifications to street and access standards as part of the last update of the Transportation System Plan. That plan recommended the following studies:

1. A study and public process to consider local street width standards, with the objective of considering whether the current standards should be retained or should be replaced with a narrower width standard. This study should include consideration of the recommendations of the Neighborhood Street Design Guidelines: An Oregon Guide for Reducing Street Widths.

2. A study and public process to consider private street/common driveway standards. The objective should be to consider whether the current standards should be retained or should allow greater use of common driveways, such as to allow a common driveway to serve up to four lots.

4. A study to consider allowing expanding the allowable use of cul-de-sacs.

In addition, the Affordable Housing Action Plan, adopted by the City Council, recommends the following actions:

Action 4.2N Allow 28 foot local street widths and narrower right-of-ways. Explore narrower street widths and rights-of-way where emergency access and adequate parking can be maintained.

Narrower street widths may result in less land, money, and resources being used for streets, and potentially allow construction of more affordable housing. In determining appropriate street widths, the City should follow the process outlined in Neighborhood Street Design Guidelines: An Oregon Guide for Reducing Street Widths. *City officials, including the Public Works Director, Fire Chief, Police Chief, Planning and Building Director, Building Official, should be consulted in recommending the standards. In addition, the City should convene a community stakeholders group, including a representative of the Affordable Housing Ad Hoc Committee, large vehicle users such as Newberg Garbage Service, engineers, and other groups suggested in the guide, to review and make recommendations. Recommendations for changes should undergo broad public review*.

Action 4.2L Modify driveway standard to allow more than two lots per driveway.

To implement these directives, the Affordable Housing Action Committee held a series of meeting to consider the recommended standards in the *Neighborhood Street Design Guidelines* and other design ideas. They solicited input from the Newberg Fire Department, Newberg Police Department, Newberg Public Works Department, Newberg Garbage Service, and various citizens. They also held a tour of streets in the community to visualize different street widths. Based on this research, the committee recommended approval of the attached draft.

The Planning Commission heard the proposal on January 13, 2011, and recommended approval of the proposed standards.

Summary of Changes

Street Standards

The draft would adopt the recommended standards from *Neighborhood Street Design Guidelines:* a 28-foot wide street, or options for a 24-foot wide street with parking one side or 20-feet with no parking. The draft would call these "limited residential streets," and would allow them only under certain circumstances: low-volume streets, low parking usage, short blocks, and so forth.

The draft also would allow curb-side sidewalks on these streets, with some caveats.

Access Standards for shared driveways/private streets

This recommendation comes from Action 4.2L of the *Newberg Affordable Housing Action Plan*. Prior to 1999, the City allowed 6 lots per driveway. The current standard was established because the Planning Commission felt that driveways connecting multiple lots often experienced issues with cars parking on the relatively narrow driveways. They felt that this situation created a safety issue by limiting the access width of the driveway for public safety vehicles to reach homes in need. By limiting the number of houses per driveway to two, rectification of any parking problem on with the driveway became much simpler: you only were dealing with one person and his neighbor. In addition to lowering the number lots allowed on a driveway, the City also eliminated the ability of developers to create new private streets. The Planning Commission felt that private streets projected exclusivity and did not promote a sense of community in

Newberg.

However, the current standard has brought its own set of issues. Access to a piece of property can produce multiple parallel driveways, taking up additional land and therefore driving up cost of housing. Also, multiple parallel driveways require additional landscaping between them, taking up additional valuable land. In addition, these landscaped areas may be difficult to maintain.

Planning staff has solicited comments from the Police and Fire Departments regarding expanding the use of shared driveways. They expressed concerns in two areas. First, the Fire Department's main concern is maintaining adequate access for emergencies. Where multiple lots share common driveways, that driveway may be the only access for fire trucks, ambulances, and other emergency vehicles to reach the house. Fire access standards require a minimum 20 feet wide clear access where a home is more than 150 feet from the main street. While providing a 20-foot wide access is not usually an issue, keeping that access clear can be. Residents may see this fire access driveway as convenient place to park boats, RVs, or other equipment. When this occurs, emergency vehicles may be unable to immediately reach the location of the emergency, and those in the residence may have difficulty exiting the area. Second, the Police Department has expressed concerns that allowing shared driveways to access greater than two lots may potentially create more neighbor conflicts that would require police intervention. How shared driveways are to be used and maintained are not always fully understood or agreed upon by those using the driveway, creating the possibility of conflicts. In addition, police actions may be required to insure that designated fire lanes remain clear.

Driveways are often used where access to developable land is not large enough to accommodate a public street (private streets are no longer allowed in Newberg.) The use of driveways instead of public streets is one way to support affordable housing, as driveways are much cheaper to construct than public streets. In addition, private driveways do not have to be maintained by the city, funds that can be put to better use in the community.

The Affordable Housing Action Committee recommended increasing the standards to allow 3 lots to share one driveway instead of two. They also recommended allowing alley access as the sole access is certain limited circumstances with conditions, as spelled out in the draft.

Block Length Standards

The draft also would modify block length standards. Short block lengths are desirable in residential neighborhoods to promote walking, biking, and even short car trips within the neighborhood. Johnny shouldn't have to walk a mile around the neighborhood to play with the kid in the house over the back fence. On the other hand, requirements for short blocks require more street construction, which increases housing costs and limits the number of dwellings that can be in an area.

Newberg current block length standards area a strong "one-size fits all" approach. They require 500 foot maximum block lengths and 1500 foot maximum block perimeters. While these are good average numbers for typical single family developments, these maximums are inflexible for many developments that don't fit the mold: multi-family developments, institutional developments, commercial and industrial developments, and even single family developments that don't fit a perfect world.

The committee's recommendation would expand the maximum block length and perimeter standards. By raising the "maximum" block length to 800 feet and the "maximum" perimeter to 2,000 feet for single family, you will still end up with an "average" block length of no more than 500 feet. However, there will

be much more flexibility to deal with real world situations.

FISCAL IMPACT: The proposed amendment would reduce future street maintenance costs by limiting to some degree the amount of pavement required for new street construction.

STRATEGIC ASSESSMENT: The proposal implements strategies recommended in the Affordable Housing Action Plan to reduce housing costs. The proposal also maintains safe access to properties, and reduces some future costs for street maintenance.

Attachments:

- Ordinance 2011-2736 with
  - Exhibit A: Development Code and Comprehensive Plan Amendments
  - Exhibit B: Findings
- Planning Commission Resolution 2011-286 (exhibits by reference)
- Planning Commission Minutes 1/3/2011
- *Neighborhood Street Design Guidelines: An Oregon Guide for Reducing Street Widths*
- Fire Access Road Standards
- Access standards illustration
- Driveway examples
- Block length examples
- Public Comment

ORDINANCE NO. 2011-2736

AN ORDINANCE AMENDING THE NEWBERG DEVELOPMENT CODE AND COMPREHENSIVE PLAN RELATING TO STREET AND ACCESS STANDARDS

RECITALS:

1. The Newberg Transportation System Plan recommended "A study and public process to consider local street width standards, with the objective of considering whether the current standards should be retained or should be replaced with a narrower width standard. This study should include consideration of the recommendations of the *Neighborhood Street Design Guidelines: An Oregon Guide for Reducing Street Widths.*

2. The Newberg Transportation System Plan also recommended "A study and public process to consider private street/common driveway standards. The objective should be to consider whether the current standards should be retained or should allow greater use of common driveways, such as to allow a common driveway to serve up to four lots."

3. The Newberg Affordable Housing Action Plan recommended, "Narrower street widths may result in less land, money, and resources being used for streets, and potentially allow construction of more affordable housing. In determining appropriate street widths, the City should follow the process outlined in *Neighborhood Street Design Guidelines: An Oregon Guide for Reducing Street Widths*. City officials, including the Public Works Director, Fire Chief, Police Chief, Planning and Building Director, Building Official, should be consulted in recommending the standards. In addition, the City should convene a community stakeholders group, including a representative of the Affordable Housing Ad Hoc Committee, large vehicle users such as Newberg Garbage Service, engineers, and other groups suggested in the guide, to review and make recommendations. Recommendations for changes should undergo broad public review."

4. The Newberg Affordable Housing Action Committee considered the proposed changes in consultation with those groups identified above. The Committee recommended adoption of the proposed changes.

5. On January 13, 2011, the Newberg Planning Commission held a hearing to consider the proposed amendments, and recommended their adoption.

6. The street and access standards contained herein provide for reasonable levels of access and safe travel on public streets, while reducing overall costs in terms of land costs, construction costs, and long term maintenance costs of the transportation system.

7. The Code of Newberg is amended and shown in Exhibit "A." Exhibit "A" is hereby attached and by this reference incorporated.

THE CITY OF NEWBERG ORDAINS AS FOLLOWS:

1. The Code of Newberg is amended and shown in Exhibit "A," which is attached. Exhibit "A" is hereby adopted and by this reference incorporated.

2. The Newberg Comprehensive Plan is amended and shown in Section 5 of Exhibit "A," which is attached. Exhibit "A" is hereby adopted and by this reference incorporated.

3. The findings shown in Exhibit "B" are hereby adopted and by this reference incorporated.

- **EFFECTIVE DATE** of this ordinance is 30 days after the adoption date, which is: April 20, 2011.

ADOPTED by the City Council of the City of Newberg, Oregon, this 21st day of March, 2011, by the following votes: **AYE:** **NAY:** **ABSENT:** **ABSTAIN:**

_____
Norma I. Alley, City Recorder

ATTEST by the Mayor this 24th day of March, 2011.

_____
Bob Andrews, Mayor

LEGISLATIVE HISTORY

By and through Newberg Planning Commission *(committee name)* at 1/13/2011 *(date)* meeting. Or, ___ None. *(check if applicable)*

Exhibit "A" to Ordinance 2011-2736
Development Code and Comprehensive Plan Amendments

Note: Added text is shown in double underline
Deleted text is shown in ~~strikeout~~

SECTION 1: Newberg Development Code Section 15.505.060 shall be amended as follows:

15.5050.060 STREET WIDTH AND DESIGN STANDARDS.

A. Design standards. All streets shall conform with the standards contained in Table 15.505.060. Where a range of values is listed, the Director shall determine the width based on a consideration of the total street section width needed, existing street widths, and existing development patterns. Preference shall be given to the higher value. Where values may be modified by the Director, the overall width shall be determined using the standards under divisions (B) through ~~(E)~~(I).

Table 151.685.CSTREET DESIGN STANDARDS

Type of Street	Right of Way Width	Curb to Curb Pavement Width	Motor Vehicle Travel Lanes	Center Turn Lane	Striped Bike Lane (both sides)	On-Street Parking
Arterial Streets						
Expressway	**	**	**	**	**	**
Major Arterial	85-100 feet	74 feet	4 lanes	Yes	Yes	No*
Minor Arterial	60-80 feet	46 feet	2 lanes	Yes*	Yes	No*
Collectors						
Major	60-80 feet	34 feet	2 lanes	No*	Yes	No*
Minor	56-65 feet	34 feet	2 lanes	No*	No*	Yes*
Local Streets						
Local Residential	54-60 feet	32 feet	2 lanes	No	No*	Yes
Limited Residential Parking both sides	44 - 50 feet	28 feet	2 lanes	No	No	Yes
Limited Residential, Parking one side	40-46 feet	24 feet	2 lanes	No	No	One side

Limited Residential, No Parking	36 – 42 feet	20 feet	2 lanes	No	No	No
Local Commercial/Industrial	56-65 feet	34 feet	2 lanes	No*	No*	No*
* May be modified with approval of the Director. Modification will change overall curb-to-curb and ROW width.						
** All standards shall be per ODOT Expressway standards.						

B. Motor Vehicle Travel Lanes. Collector and arterial streets shall have a minimum width of 12 feet. Where circumstances warrant, the Director may allow a reduction of this width to 11 feet.

C. Bike Lanes. Striped bike lanes shall be a minimum of five feet wide. Where circumstances warrant, the Director may allow a reduction of this width to four feet. Bike lanes shall be provided where shown in the Newberg Transportation System Plan.

D. Parking Lanes. Where on-street parking is allowed on collector and arterial streets, the parking lane shall be a minimum of eight feet wide. Where circumstances warrant, the Director may allow a reduction of this width to seven feet.

E. Center Turn Lanes. Where a center turn lane is provided, it shall be a minimum of 12 feet wide.

F. Limited Residential Streets. Limited residential streets shall be allowed only at the discretion of the review body, and only in consideration of the following factors:

(1) The requirements of the fire marshal shall be followed.

(2) The estimated traffic volume on the street is low, and in no case more than 600 average daily trips.

(3) Use for through streets or looped streets is preferred over cul-de-sac streets.

(4) Use for short blocks (under 400 feet) is preferred over longer blocks.

(5) The total number of residences or other uses accessing the street in that block is small, and in no case more than 30 residences.

(6) On-street parking usage is limited, such as by providing ample off-street parking, or by staggering driveways so there are few areas where parking is allowable on both sides.

(7) Streets with no on-street parking or parking on one side will be allowed only where providing parking both sides is not feasible, and where there is a strong likelihood the no parking area will be self-enforcing, such as where the street abuts the back sides of houses that access a different street. For parking one-side streets, the plans shall designate which side of the street is designated no-parking.

G~~F~~. Sidewalks. Sidewalks shall be provided on both sides of all public streets. Minimum width is five feet.

H~~G~~. Planter Strips. Except where infeasible, a ~~A~~ planter strip shall be provided between the sidewalk and the curb line. This strip shall be landscaped in accordance with the standards in NMC 15.420.020. Curb-side sidewalks may be allowed on limited residential streets. Where curb-side sidewalks are allowed, the following shall be provided where possible:

(1) Additional reinforcement is done to the sidewalk section at corners.

(2) Sidewalk width is six feet.

(I~~H~~) Slope easements. Slope easement shall be provided adjacent to the street where required to maintain the stability of the street.

SECTION 2: The definitions in Newberg Development Code Section 151.003 shall be amended as follows:

ALLEY. A public way not over 30 feet wide providing a secondary means of access for vehicular or service access to properties otherwise abutting on a street, except as otherwise allowed.

PRIVATE DRIVE. A private way which affords principal means of access to ~~two~~ three or fewer lots (see also service drive).

PRIVATE STREET. A private way which affords principal means of access to ~~three~~ four or more lots (see also service drive).

SECTION 3: Newberg Development Code Section 15.404.200 D. and F., Vehicular Access Standards, shall be amended as follows:

D. Alley access. Where a property has frontage on an alley and the only other frontages are on collector or arterial streets, access shall be taken from the alley only. The review body may allow creation of an alley for access to lots that do not otherwise have frontage on a public street provided all of the following are met:

1. The review body finds that creating a public street frontage is not feasible.
2. The alley access is for no more than six dwellings and no more than six lots
3. The alley has through access to streets on both ends.
4. One additional parking space over those otherwise required is provided for each dwelling. Where feasible, this shall be provided as a public use parking space adjacent to the alley.

F. Shared driveways.

1. The number of driveways onto arterial streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The city shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes ~~in accordance with the following standards:~~

~~(1)~~ . Where there is an abutting developable property, a shared driveway shall be provided. When shared driveways are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway temporarily ends at the property line, but may be accessed or extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).

2. Access easements (i.e., for the benefit of affected properties) and maintenance agreements shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.

3. No more than ~~two~~ three lots may access one shared driveway.

4. Shared driveways shall be posted as no-parking fire lanes where required by the fire marshal.

5. Where three lots or three dwellings share one driveway, one additional parking space over those otherwise required shall be provided for each dwelling. Where feasible, this shall be provided as a common use parking space adjacent to the driveway.

SECTION 4: Newberg Development Code Section 15.505.160, Platting standards for Blocks, shall be amended as follows:

~~Block length and perimeter. Block length shall not exceed 500 feet. The average perimeter of blocks formed by streets shall not exceed 1,500 feet. Exceptions to the block length and perimeter standards shall only be granted where street location and design are restricted by controlled access streets, railroads, steep slopes, wetlands, water bodies, or similar circumstances.~~

A. Purpose. Streets and walkways can provide convenient travel within a neighborhood and can serve to connect people and land uses. Large, uninterrupted blocks can serve as a barrier to travel, especially walking and biking. Large blocks also can divide rather than unite neighborhoods. To promote connected neighborhoods and to shorten travel distances, these following minimum standards for block lengths are established.

B. Maximum Block Length and Perimeter. The maximum length and perimeters of blocks in the zones listed below shall be according to the following table. The review body for a subdivision, partition, conditional use permit, or a Type II design review may require installation of streets or walkways as necessary to meet the standards below.

Zone (s)	Maximum Block Length	Maximum Block Perimeter
R-1	800 feet	2000 feet
R-2, R-3, RP, I,	1200 feet	3000 feet

C. Exceptions.

1. If a public walkway is installed mid-block, the maximum block length and perimeter may be increased by 25 percent.

2. Where a proposed street divides a block, one of the resulting blocks may exceed the maximum block length and perimeter standards provided the average block length and perimeter of the two resulting blocks does not exceed these standards.

3. Blocks in excess of the above standards are allowed where access controlled streets, street access spacing standards, railroads, steep slopes, wetlands, water bodies, pre-existing development, ownership patterns or similar circumstances restrict street and walkway location and design. In these cases, block length and perimeter shall be as small as practical. Where a street cannot be provided because of these circumstances but a public walkway is still feasible, a public walkway shall be provided.

4. Institutional campuses located in an R-1 zone may apply the standards for the Institutional zone.

5. Where a block is in more than one zone, the standards of the majority of land in the proposed block shall apply.

6. Where a local street plan, concept master site development plan, or specific plan has been approved for an area, the block standards shall follow those approved in the plan. In approving such a plan, the review body shall follow the block standards listed above to the extent appropriate for the plan area.

SECTION 5: Newberg Comprehensive Plan Policy K.9.c.6. shall be amended as follows:

6) Local Streets. Local streets provide direct access to adjoining properties and connect to collector streets. The system design criteria for local streets include:

- 54-65 feet of right-of-way with 10 foot public utility easements.
- For standard residential streets, standard 32 feet curb to curb with parking on both sides.
- A minimum four and one half foot wide planting strip and five foot wide sidewalk on both sides of the street.
- Where approved, limited residential streets may have narrower dimensions.

Exhibit "B" to Ordinance 2011-2736
Findings

Statewide Planning Goal 12: *To provide and encourage a safe, convenient and economic transportation system.*

Finding: The proposed amendments address all three parts of the Goal 12. The amendments encourage a *safe* transportation system by reducing excessive street widths on low volume residential streets, thus discouraging excessive speeds. The amendments keep a *convenient* transportation system by creating appropriate street widths, creating realistic block length standards, and making the cost of street construction more economical by reducing the total width and length of street construction needed.

OAR 660-012-0045 (3):

(3) Local governments shall adopt land use or subdivision regulations for urban areas and rural communities as set forth below. The purposes of this section are to provide for safe and convenient pedestrian, bicycle and vehicular circulation consistent with access management standards and the function of affected streets, to ensure that new development provides on-site streets and accessways that provide reasonably direct routes for pedestrian and bicycle travel in areas where pedestrian and bicycle travel is likely if connections are provided, and which avoids wherever possible levels of automobile traffic which might interfere with or discourage pedestrian or bicycle travel.

* * *

(c) Where off-site road improvements are otherwise required as a condition of development approval, they shall include facilities accommodating convenient pedestrian and bicycle travel, including bicycle ways along arterials and major collectors;
(d) For purposes of subsection (b) "safe and convenient" means bicycle and pedestrian routes, facilities and improvements which:
(A) Are reasonably free from hazards, particularly types or levels of automobile traffic which would interfere with or discourage pedestrian or cycle travel for short trips;
(B) Provide a reasonably direct route of travel between destinations such as between a transit stop and a store; and
(C) Meet travel needs of cyclists and pedestrians considering destination and length of trip; and considering that the optimum trip length of pedestrians is generally 1/4 to 1/2 mile.
(e) Internal pedestrian circulation within new office parks and commercial developments shall be provided through clustering of buildings, construction of accessways, walkways and similar techniques.

OAR 660-012-0045 (6):

(6) In developing a bicycle and pedestrian circulation plan as required by 660-012-0020(2)(d), local governments shall identify improvements to facilitate bicycle and pedestrian trips to meet local travel needs in developed areas. Appropriate improvements should provide for more direct, convenient and safer bicycle or pedestrian travel within and between residential areas and neighborhood activity centers (i.e., schools, shopping, transit stops). Specific measures include,

for example, constructing walkways between cul-de-sacs and adjacent roads, providing walkways between buildings, and providing direct access between adjacent uses.

OAR 660-012-0045 (7):

Local governments shall establish standards for local streets and accessways that minimize pavement width and total right-of-way consistent with the operational needs of the facility. The intent of this requirement is that local governments consider and reduce excessive standards for local streets and accessways in order to reduce the cost of construction, provide for more efficient use of urban land, provide for emergency vehicle access while discouraging inappropriate traffic volumes and speeds, and which accommodate convenient pedestrian and bicycle circulation. Notwithstanding section (1) or (3) of this rule, local street standards adopted to meet this requirement need not be adopted as land use regulations.

Finding: The proposed amendments do address all of the above rules. The proposal does minimize pavement width and total right-of-way needed by reducing the street width, the right-of-way width, and the total block length standards. This reduces the costs of construction and provides for more efficient use of urban land. It also discourages inappropriate traffic volumes and speeds on local residential streets. Emergency vehicle access has been carefully considered in cooperation with the Newberg Fire Department. The proposal does keep safe and convenient access for pedestrians and bicycles by requiring, where appropriate, walkways between cul-de-sacs and short block lengths. The proposal does increase block lengths, but not to the extent that pedestrian or bicycle trips would be inordinately long. The prior standards were appropriate more as average block lengths than as maximums. The block lengths still would be significantly shorter than the lengths of many existing blocks in Newberg.

Newberg Comprehensive Plan Policy K.5.a

The City shall provide safe, convenient and well-maintained bicycle and pedestrian transportation systems that connect neighborhoods with identified community destinations, such as schools, parks, neighborhood commercial centers, and employment centers.

Newberg Comprehensive Plan Policy K.9.b.1

Enhance existing and add alternative routes for local travel. 1) The City development code shall encourage the development of a continuous interconnected street pattern that connects adjacent developments and minimizes the use of cul-de-sacs.

Newberg Comprehensive Plan Policy K.9.b.1

The City shall coordinate the development of an integrated bike and pedestrian system that provides for connections between and through adjacent development and that provides convenient links to community destinations.

Finding: The proposed amendments maintain an integrated and connected street and bike/pedestrian system. The amendments require shorter block lengths than exist in many

current Newberg neighborhoods that were constructed in the latter part of the 20th century. This minimizes the use of cul-de-sacs. This will enhance walking and bicycling as alternatives to vehicle travel.

PLANNING COMMISSION RESOLUTION NO. 2011-286

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF NEWBERG RECOMMENDING THAT THE CITY COUNCIL AMEND STREET AND ACCESS STANDARDS IN THE NEWBERG DEVELOPMENT CODE

RECITALS:

1. The Newberg City Council, through Ordinance 2005-2619, which adopted the Newberg Transportation System Plan and initiated amendments to the Newberg Development Code to consider changes to various street and access standards.

2. The Newberg City Council also adopted Resolution 2843, which accepted the Newberg Affordable Housing Action Plan and directed the Affordable Housing Action Committee to consider amendments to the street and access standards.

3. The Newberg Affordable Housing Action Committee considered various changes and recommended the amendments substantially as attached.

4. The proposed amendments would provide for safe streets and access, while providing more economical standards.

5. After proper notice, the Planning Commission held a hearing on January 13, 2011, and considered testimony.

NOW THEREFORE, BE IT RESOLVED by the Planning Commission of the City of Newberg that it recommends that the City Council approve the amendments to the Newberg Development Code as shown in Exhibit A. This recommendation is based on the staff report and the findings in Exhibit B.

Adopted by the Newberg Planning Commission this 13th day of January, 2011.

AYES: NAYS: ABSTAIN: ABSENT:

ATTEST:

_____ _____

Planning Commission Secretary Planning Commission Chair

Exhibit A: Development Code Text Amendments
Exhibit B: Findings

PLANNING COMMISSION MINUTES
Thursday, January 13, 2011
7:00 p.m. Regular Meeting
Newberg Public Safety Building
401 E. Third Street

TO BE APPROVED AT THE FEBRUARY 10, 2011 PLANNING COMMISSION MEETING

I. OATH OF OFFICES FOR NEW COMMISSIONERS

II. ROLL CALL:

Members Present:	Philip Smith, Chair	Thomas Barnes, Vice-Chair	Gary Bliss	Allyn Edwards
	Art Smith	Cathy Stuhr	Lon Wall	Kale Rogers, Student
PC Staff Present:	Barton Brierley, Building & Planning Director		Steve Olson, Associate Planner Jennifer Nelson, Recording Secretary	

III. OPEN MEETING:

Vice Chair Smith opened the meeting at 7:04 PM and asked for the roll call.

IV. CONSENT CALENDAR:

1. Election of Chair and Vice Chair for one year. If the Planning Commissioners continued their previous practice of rotating the chair then Phil Smith would be Chair and Tom Barnes would be Vice Chair.

MOTION #1: Barnes/Stuhr to continue the previous practice of rotating the Chair and elect Phil Smith Chair and Tom Barnes Vice-Chair. (7 Yes/0 No) Motion carried.

2. Approval of December 9, 2010 Planning Commission Meeting Minutes

MOTION #2: Stuhr/Wall to approve the minutes from the Planning Commission meeting of December 9, 2010. (7 Yes/0 No) Motion carried.

V. NOMINATION OF NUAMC ALTERNATE REPRESENTATIVE:

It was discussed that Commissioner Barnes was the previous Planning Commission (PC) alternate and Citizen Advisory Alternate on the Newberg Urban Area Management Commission (NUAMC) and his term expired December 31, 2010. Commissioner Barnes stated he never had to attend any NUAMC meetings as an alternate as the regular PC representative was always able to attend. This decision will be a recommendation to the Mayor, who will appoint the Planning Commission and Citizen Advisory alternate representative on NUAMC.

MOTION #3: Stuhr/A. Smith to nominate Commissioner Thomas Barnes for a second term as the Planning Commission alternate and Citizen Advisory Alternate on NUAMC. (7 Yes/0 No) Motion carried.

VI. COMMUNICATIONS FROM THE FLOOR:

Chair Smith offered an opportunity for non-agenda items to be brought forth. None appeared.

VII. LEGISLATIVE PUBLIC HEARING:

1. **APPLICANT: City of Newberg**
   REQUEST: Consider changing the Newberg Development Code street and access standards as recommended by the Affordable Housing Action Committee. The changes would allow a narrower local residential street in certain limited low-traffic circumstances, increase the number of lots that can share a common driveway from two to three, allow alleys as access to lots in limited circumstances, and increase block length standards.
   RESOLUTION NO.: 2011-286
   File no. DCA-10-002

Chair Smith opened the public hearing.

Mr. Barton Brierley, Planning and Building Director, presented the staff report with the use of a PowerPoint (see official meeting packet for full report). The proposed standard is for 28 foot curb to curb width streets with parking on both sides applying only to local residential streets with low traffic volumes, few homes, and limited on-street parking; through or looped streets and short blocks are preferred.

Commissioner Lon Wall asked who will make the decision on preferences when a proposal is submitted. Staff replied it is at the discretion of the reviewing body to allow situations that may not be preferred by looking at the sum of all the criteria.

Chair Smith asked about the process for a developer who wants 28' streets and has some but not all of the criteria, and if this is a staff or Planning Commission (PC) decision. Staff replied 80% of subdivisions are approved with a type 2 review, which is a staff level decision with notice to neighbors; 20% come to the PC due to specific situations triggering a PC review.

Mr. Brierley continued with the report by showing various street designs with different widths and parking scenarios using diagrams; comparing current lot access standards (no more than two lots may share one driveway) with the proposed (allowing three lots to share one driveway); and alley access standards.

Commissioner Allyn Edwards asked about the current regulations for alley width. Staff replied it must be at least 20 feet wide for fire access.

Commissioner Cathy Stuhr commented that a through alley seems just like a street and asked what the difference is. Staff replied just that there are no sidewalks or curbs, so the right-of-way is much narrower. Staff described the proposed standards, which would only allow alleys as the main access if street access was not feasible, the alley has access on both ends, there are no more than six houses, and one additional parking space was provided per lot.

Chair Smith asked if there are any regulations for speed on alleys. Staff replied state law allows a standard of 15 mph for alleys.

Mr. Brierley completed the staff report and recommended approval of the resolution, which would recommend that the City Council adopt the proposed amendments. He added that two thousand notices were sent about the proposed amendments and an ad was placed in a newsletter; no public appeared and only one comment was received.

Commissioner Gary Bliss asked staff about some inconsistencies within the diagrams used in the PowerPoint vs. what was in the packet; staff replied the recommendation is based on the standards in the table the Commissioners have in their packets. Commissioner Bliss continued with questions about how the Fire Chief and Fire Marshall felt about these proposed standards meeting fire codes. Staff replied they were both at the meetings and they felt satisfied these standards would meet fire code requirements.

Chair Smith stated he liked the idea of staggered driveways and spoke of there being few areas where parking is allowable on both sides; he asked staff why this is not made as a requirement. Staff replied that could be done, but they were thinking of circumstances where there could be long lots and narrow driveways and they did not want to require wide driveways everywhere.

Student Commissioner Kale Rogers added if there was pre-existing development it could be difficult to stagger driveways to work with that.

Commissioner Bliss asked if abutting driveways were not allowed. Staff replied it can occur, typically with one parking space in between, but there are areas where only a rock strip is used as a division because of the current rule of only two lots sharing one driveway.

Commissioner Art Smith asked if the city attempted to make similar recommendations years ago and if the Oregon Department of Transportation (ODOT) had been against it. Staff clarified this was the case concerning the block length standard, and the City was asked to look at this as a condition of some state grant funding.

Commissioner Thomas Barnes asked about sidewalks being required on both sides if they are trying to conserve the amount of paved area. Staff replied it was to encourage walking and to allow for a space to place trash cans; if a developer is building affordable housing they can apply to have a sidewalk on only one side, however.

Commissioner Wall asked staff to explain the philosophy behind having smaller block lengths in low-density residential (R-1) zones vs. those lengths for medium (R-2) and high (R-3) density residential. Staff noted that R-2 and R-3 areas are often developed as complexes with internal driveways, play areas, and more houses on the same amount of land. It is an advantage for the city and the property owner for the complex to have enough units to support an onsite manager. In order to justify this they have to have fifty units or so; if there is a street running through the development they may end up with not enough land to reach critical mass to develop. That is why the larger block lengths are needed for multifamily housing, not single family.

Chair Smith recessed 8:17 PM and reconvened at 8:21 PM.

Deliberations:

Commissioner Bliss stated this proposal complies with State goal twelve, and the concerns he had were addressed by staff with the conversations with the fire department. He likes the narrow streets and parking on both sides, and if the fire chief and marshal are not concerned for emergency access then he is satisfied.

Commissioner Wall said he was involved with developing the standards we have now and at that time the only concern was from the fire chief, since there is a different chief now that makes the difference. The only thing he does not like is adding the third lot on private driveways.

Commissioner Edwards had concerns for pipe stem driveways, but if the fire chief is okay with it not being a safety issue then it is fine with him.

Student Commissioner Rogers felt the standards were good because the rivers of asphalt do not need to be there. He said longer blocks may be more appealing to the eye with trees and such, but this will help with creating more affordable housing which is severely deficient.

Commissioner Stuhr shared some concerns and thought that staff did a good job of addressing the issues raised at the workshop.

Commissioner Barnes felt the less amount of earth that gets paved over the better. He only disagreed with sidewalks on both sides and that parking should be on one side.

Chair Smith spoke of serving on the affordable housing committee and that he liked the idea of having some motivation to provide cheaper options. He also shares Commissioner Barnes concerns for sidewalks on both sides and felt this could be something held out to developers in order for the city to get their desires met.

MOTION #4: Stuhr/Bliss to approve **Resolution 2011-286** recommending the City Council adopt the proposed Development Code amendments.

MOTION #5: Barnes/ to amend **Resolution 2011-286** to vary from the given recommendations to have 28 foot wide streets with parking on one side and to allow sidewalks on one side. Motion failed for lack of a second.

Student Commissioner Kale felt there would be little difference then going from 32 foot widths to 28 foot, and that the street would almost be bigger is there were no sidewalks or parking on one side of a 28 foot wide street.

Commissioner Barnes said it eliminates queuing.

Commissioner Stuhr said there is a traffic calming effect to navigating parking on both sides and having alternating driveways.

Commissioner Art Smith said he was supportive for more sidewalks to encourage more walking in the community and he likes sidewalk on both sides wherever possible.

Commissioner Wall said sidewalks are only needed on one side or the other, but he was concerned more for the third house on a driveway because it could soon go to four and then private streets will come back; he said it is hard to know where to draw the line.

Commissioner Bliss liked having sidewalks on both sides because of children playing in front of houses where there is no longer room for large back yards, and did not think it would be safe for them to cross the street to play.

Chair Smith spoke of a time when wider streets were wanted because the City was listening to the drivers and ignoring the concerns of pedestrians. The benefits of narrower streets will be slower traffic, which is safer.

VOTE #4: To approve **Resolution 2011-286** recommending the City Council adopt the proposed Development Code amendments. (7 Yes/0 No) Motion carried.

VIII. ITEMS FROM STAFF:

Update on Council items:

Mr. Brierley gave updates on Council items and stated the item approved tonight will go the City Council on March 21, 2011, according to agenda availability. The Meridian Street zone change has been delayed until February 7, 2011, to allow time for the applicants and neighbors to find a compromise. The City Council adopted a new mission statement for the city. The Fred Meyer design review for the gas station has been appealed to the State Land Use Board of Appeals. The next PC meeting will be hearing proposed amendments to the Comprehensive Plan regarding ODOT's latest bypass decision in order to make everything mesh.

The next Planning Commission meeting is scheduled for Thursday, February 10, 2011.

IX. ITEMS FROM COMMISSIONERS:

Chair Smith suggested introductions occur for the sake of the new commissioners. The commissioners each briefly described their backgrounds.

Commissioner Barnes asked for an Alice Way update regarding a non-conforming use, and it was discussed that a code enforcement letter will go out tomorrow.

Commissioner Stuhr asked for an update on the UGB/URA. Staff gave a summary of the process so far and gave approximate decision dates anticipated from the various appeals and remands that have occurred.

X. ADJOURN:

Chair Tri adjourned the meeting at 9:04 PM.

Approved by the Planning Commission on this 10th day of February, 2011.

AYES: 6 **NO:** ∅ **ABSENT:** 1 (A. Edwards) **ABSTAIN:** ∅

Planning Recording Secretary *Planning Commission Chair*

NEIGHBORHOOD STREET DESIGN GUIDELINES

An Oregon Guide for Reducing Street Widths

A Consensus Agreement by the Stakeholder Design Team

November 2000

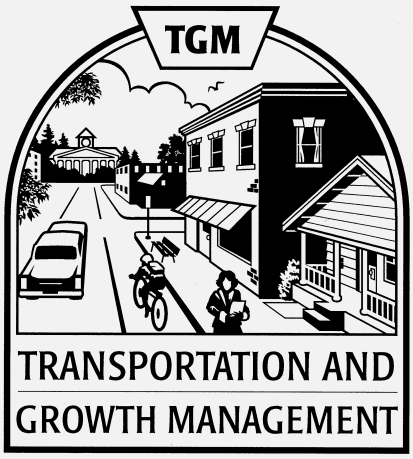
Prepared by the Neighborhood Streets Project Stakeholders

This guidebook is dedicated to the memory of

Joy Schetter

who passed away before she could see the remarkable success of this project.

Joy's leadership, hard work, calm manner, and ability to work with all of the stakeholders were key factors in that success.



Funding for this project was provided from two State of Oregon programs:

the Public Policy Dispute Resolution Program
and
the Transportation and Growth Management
(TGM) Program.

TGM is a joint program between the
Oregon Department of Transportation and the
Department of Land Conservation and Development.

The TGM Program relies on funding from the
Federal Transportation Efficiency Act
for the Twenty-First Century (TEA –21)
and the State of Oregon.

2nd Printing - June 2001
Includes minor clarifications to the sections on residential fire sprinklers (pages 9 and 16.)

JOHN A. KITZHABER, M.D.
GOVERNOR

February 16, 2001

To the Citizens of Oregon:

I am pleased to present to Oregon's communities a new publication called *Neighborhood Street Design Guidelines*. This handbook is a valuable tool for local governments. In workbook style, it recommends a process for development of street standards, provides important information to help communities consider and decide on the standards, and includes model designs as a starting point.

Street design, in particular street width, has been an important issue in Oregon for the past decade. Oregon's award-winning Transportation Planning Rule, adopted in 1991, requires local governments to minimize street width considering the operational needs of the streets. Also, citizens and planners in many Oregon communities, as well as towns across the country, have advocated for narrower streets as part of a larger movement to build more livable neighborhoods.

The desire to reduce the standards for street widths raises concerns about large vehicle access, especially emergency service providers who need to reach their destinations fast. The issue has resulted in heated debate in some communities and among state agencies and statewide organizations.

This document is the result of hard work and commitment of individuals who joined in a collaborative process to reconcile the multiple uses of our neighborhood streets. Many thanks to the Neighborhood Streets Project Stakeholders, Design Team members, and reviewers for the time and expertise they contributed to this effort.

John A. Kitzhaber, M.D.
Governor

STATE CAPITOL, SALEM 97310-0370 (503) 378-3111 FAX (503) 378-4863 TTY (503) 378-4859

PROJECT STAKEHOLDERS

These Guidelines have been endorsed by . . .

- **Office of the State Fire Marshal**
- **Oregon Fire Chiefs Assoc.**
- **Oregon Fire Marshal's Assoc.**
- **Oregon Chiefs of Police Assoc.**
- **Oregon Refuse and Recycling Assoc.**
- **Oregon Building Industry Assoc.**
- **Oregon Chapter of the American Planning Assoc.**
- **Oregon Chapter of the American Public Works Assoc.**
- **Assoc. of Oregon City Planning Directors**
- **Livable Oregon, Inc.**
- **1000 Friends of Oregon**
- **Oregon Department of Land Conservation & Development**
- **Oregon Department of Transportation**

- **Metro also supports the guidelines and has adopted a specific set of guidelines for the Portland metropolitan region.**

*** Design Team Members**

The Design Team was responsible for the overall collaborative process with assistance from a facilitator and DLCD staff. The Design Team vested themselves with responsibility for negotiating the issues and guiding the development of this agreement.

Fire/Emergency Response

* Bob Garrison (Office of State Fire Marshal)
* Jeff Grunewald (Tualatin Valley Fire & Rescue)
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Jan Fritz (City Councilor of Sublimity)
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Many thanks to the
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Table of Contents

I. Introduction

The standards for the design of local streets, in particular the width of streets, has been one of the most contentious issues in local jurisdictions in Oregon for the past decade. The disagreements have also been fought at the state level among state agencies and advisory, advocacy, and professional groups that have sought to influence decisions made at the local level. Previous efforts of these groups to provide guidance have failed because of lack of consensus.

This document is the result of the hard work of a group of diverse stakeholders that finally developed that consensus. *Neighborhood Street Design Guidelines* was developed to help local governments consider and select neighborhood street standards appropriate for their communities. As the title attests, the handbook provides guidelines and is not prescriptive. The authors hope that the consideration of the guidelines and examples will stimulate creative ideas for street designs in local communities.

This guidebook explains the issues surrounding the width of neighborhood streets with respect to livability and access for emergency and other large vehicles. It recommends a community process for developing neighborhood street width standards, a checklist of factors that should be addressed in that process, street cross-sections, and a list of resources that provide additional information. The guidelines are intended for *local* jurisdiction streets that carry limited traffic, not collectors or arterials. They are not intended, nor are they to be used on state highways.

II. The Issues

Why Narrow Streets?

Streets are key determinants of neighborhood livability. They provide access to homes and neighborhood destinations for pedestrians and a variety of vehicle types, from bicycles and passenger cars to moving vans and fire apparatus. They provide a place for human interaction: a place where children play, neighbors meet, and residents go for walks and bicycle rides. The design of residential streets, together with the amount and speed of traffic they carry, contributes significantly to a sense of community, neighborhood feeling, and perceptions of safety and comfort. The fact that these may be intangible values makes them no less real, and this is often reflected in property values.

The width of streets also affects other aspects of livability. Narrow streets are less costly to develop and maintain and they present less impervious surface, reducing runoff and water quality problems.

The topic of automobile speeds on neighborhood streets probably tops the list of issues. Where streets are wide and traffic moves fast, cities often get requests from citizens to install traffic calming devices, such as speed humps. However, these can slow response times of emergency service vehicles creating the same, or worse, emergency response concerns than narrow streets.

Oregon's Land Conservation and Development Commission recognized the values associated with narrow street widths when it adopted the Transportation Planning Rule. The rule requires local governments to establish standards for local streets and accessways that minimize pavement width and right-of-way. The rule requires that the standards provide for the operational needs of streets, including pedestrian and bicycle circulation and emergency vehicle access.

Why Are Emergency Service Providers Concerned?

Street width affects the ability of emergency service vehicles to quickly reach a fire or medical emergency. Emergency service providers and residents alike have an expectation that neighborhood streets provide adequate space for emergency vehicles to promptly reach their destination and for firefighters to efficiently set up and use their equipment.

Fire equipment is large and local fire departments do not have full discretion to simply "downsize" their vehicles. Efforts by some departments to do this have generally not been successful, since these smaller vehicles did not carry adequate supplies for many typical emergency events.

The size of fire apparatus is driven, in part, by federal Occupational Health and Safety Administration (OSHA) requirements and local service needs. The regulations require that fire trucks carry considerable equipment and that firefighters ride completely enclosed in the vehicle. In addition, to save money, fire departments buy multi-purpose vehicles that can respond to an emergency like a heart attack or a traffic accident, as well as a fire. These vehicles typically provide the

first response to an emergency. An ambulance will then provide transport to a hospital, if needed. To accommodate the need to move the vehicles and access equipment on them quickly, the Uniform Fire Code calls for a 20-foot wide clear passage.

The risk of liability also raises concerns about response time and the amount of equipment carried on trucks. A successful lawsuit in West Linn, Oregon found that a response time of eight minutes was inadequate. The National Fire Protection Association, which is the national standard-setting body for the fire service, is proposing new rules that would require a maximum four-minute response time for initial crews and eight-minute response for full crews and equipment for 90% of calls. Fire departments have also been sued for not having the proper equipment at the scene of an accident. This puts pressure on departments to load all possible equipment onto a vehicle and increases the need to use large vehicles.

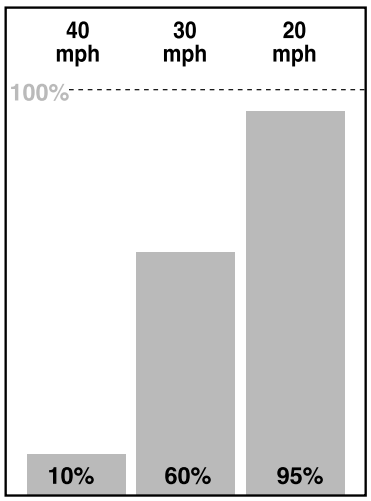
III. Background

Residential streets are complex places that serve multiple and, at times, competing needs. Residents expect a place that is relatively quiet, that connects rather than divides their neighborhood, where they can walk along and cross the street relatively easily and safely, and where vehicles move slowly. Other street users, including emergency service providers, solid waste collectors, and delivery trucks, expect a place that they can safely and efficiently access and maneuver to perform their jobs. Clearly, balancing the needs of these different users is not an easy task.

Oregon's cities reflect a variety of residential street types. In many older and historic neighborhoods built between 1900 and 1940, residential streets typically vary in width in relation to the length and function of the street. In many cases, a typical residential street may be 24 feet to 28 feet in width with parking on both sides. However, it is not uncommon to find streets ranging from 20 feet to 32 feet in width within the same neighborhood. Newer subdivisions and neighborhood streets built since 1950 tend to reflect a more uniform design, with residential streets typically 32 feet to 36 feet in width with parking on both sides and little or no variation within a neighborhood.

Designs For Livability. Over the last decade, citizens, planners, and public officials throughout the United States have expressed increased interest in development of compact, pedestrian-friendly neighborhoods. The design of neighborhood streets is a key component in this effort. Nationally, the appropriate width and design of neighborhood streets has been the subject of numerous books and articles targeted not just to the planning and development community, but also the general population. In May 1995, *Newsweek* magazine featured an article on neotraditional planning that listed reducing the width of neighborhood streets as one of the "top 15 ways to fix the suburbs." In addition, developments such as Kentlands in Maryland and Celebration in Florida have gained fame by incorporating many of the features of traditional, walkable neighborhoods and towns, including narrow neighborhood streets.

Chances of a Pedestrian Surviving a Traffic Collision



Survival Rates

Graphic adapted from "Best Management Practices," Reid Ewing, 1996; data from "Traffic Management and Road Safety," Durkin & Pheby, 1992.

Safe and Livable. There is growing appreciation for the relationship between street width, vehicle speed, the number of crashes, and resulting fatalities. Deaths and injuries to pedestrians increase significantly as the speed of motor vehicles goes up. In 1999, planner Peter Swift studied approximately 20,000 police accident reports in Longmont, Colorado to determine which of 13 physical characteristics at each accident location (e.g., width, curvature, sidewalk type, etc.) accounts for the crash. The results are not entirely surprising: the highest correlation was between collisions and the width of the street. A typical 36-foot wide residential street has 1.21 collisions/mile/year as opposed to 0.32 for a 24 foot wide street. The safest streets were narrow, slow, 24-foot wide streets.

Award-Winning Neighborhoods. In Oregon, citizens, nonprofit organizations, transportation advocates, and state agencies interested in the livability of our communities have advocated reducing the width of neighborhood streets. Several new developments that include narrow neighborhood streets such as Fairview Village in Fairview, West Bend Village in Bend, and Orenco Station in Hillsboro have received *Governor's Livability Awards (See Appendix A for contact*

information). Although cited as models of livable communities, the narrow street widths included in these developments are not allowed in many of Oregon's cities, often because of concerns about emergency service access.

Emergency Response. The movement to reduce street standard widths raised concerns with emergency service providers. Thus, the most controversial issue facing Oregon's fire departments in the past decade has been street width. Fire departments must move large trucks, on average, 10 feet wide mirror-to-mirror.

Response times can be slowed depending upon the amount of on-street parking and traffic encountered. Narrow streets lined with parked cars may not provide adequate space for firefighters to access and use their equipment once they have reached the scene of an emergency. In addition, emergency vehicle access can be completely blocked on streets that provide less than 10 feet of clear travel width.

Authority to Establish Standards. Prior to 1997, there had been some confusion over who had the authority to establish street standards. Oregon's land use laws grant local governments the authority to establish local subdivision standards, which include street widths (ORS 92.044). However, the *Uniform Fire Code*, which was adopted by the State Fire Marshal and is used by many local governments to establish standards for the prevention of and protection from fires, includes standards which affect the width and design of streets. The *Uniform Fire Code* is published by the Western Fire Chiefs and the International Congress of Building Officials as partners.

This question of authority was clarified in 1997 when ORS 92.044 was amended to state that standards for the width of streets established by local governments shall *"supersede and prevail over any specifications and standards for roads and streets set forth in a uniform fire code adopted by the State Fire Marshal, a municipal fire department or a county firefighting agency."* ORS 92.044 was also amended to establish a consultation requirement for the local governments to *"consider the needs of the fire department or fire-fighting agency when adopting the final specifications and standards."*

IV. Collaborative Process

This project was undertaken to:

> *"Develop consensus and endorsement by stakeholders on a set of flexible guidelines for neighborhood street designs for new developments that result in reduced street widths."*

The collaborative process relied on two groups of stakeholders. A larger group was comprised of a broad cross-section of interest groups and numbered about thirty people from around the state. A core team of nine members, a subset of the larger group, was convened to guide the collaborative problem-solving process, working in conjunction with the consultant and staff. This "Design Team" consisted of representatives from these groups: special districts, fire service, state fire marshal, non-profit advocacy, traffic engineering, builder/developer, city planner, public works, and a representative from the Department of Land Conservation and Development.

The Design Team's responsibilities were to recommend participants for the larger collaborative working group, determine the priority interests, recommend a statewide endorsement and implementation process, and provide input on technical presentations required. At the Design Team's first meeting, they decided to assign themselves the task of creating the draft street design guidelines. They would take their products to the larger group for input, recommendations, and eventual endorsement. Consensus would be sought within the Design Team before going to the large group. Likewise, consensus at the large group would be fundamental to achieving the project's goals.

The large group was instrumental in providing actual scenarios of community experiences to the Design Team. They also helped enlarge the scope of affected parties and corresponding issues by including other service providers that use large vehicles, such as school busses and solid waste haulers. Members of the large group provided valuable reference materials to the Design Team. They provided substance that had been over-looked on more than one occasion. Large group members were pleased to know that a core team of well-respected stakeholders was representing their interests. The Design Team engaged the large group at significant junctures in its work.

V. A Community Process for Adopting Standards

Unique issues will arise in each community, whether related to hills, higher density neighborhoods, or existing street patterns. Close collaboration with fire and emergency service providers, public works agencies, refuse haulers, and other neighborhood street users must be maintained throughout the process. This will ensure that the standards developed to meet the general goals of the community will also meet the specific needs of different stakeholder groups.

> *Through broad-based involvement, educational efforts, and sensitive interaction with stakeholders, a community can adopt new street standards that will meet the transportation needs of the citizens, while providing and encouraging a very livable residential environment.*

The following steps reflect a realistic process development and local government adoption of standards for narrow neighborhood streets.

Steps for Local Government Consideration and Adoption of Neighborhood Street Standards

1. Determine stakeholders
2. Inform/Educate: What is the value of narrow residential street standards?
3. Ensure dialogue among stakeholders
4. Identify specific issues, such as seasonal needs and natural features
5. Prepare draft standards
6. Review draft with stakeholders/officials /public
7. Revise, conduct public review, and adopt standards
8. Implement and ensure periodic evaluation

Determine stakeholders. There are many benefits to a community adopting narrow street standards. Many stakeholders share an interest in residential transportation issues. These stakeholders must be included from the outset of any new street standard adoption process.

Inform and Educate. A community or jurisdiction considering the adoption of narrow residential street standards must conduct an open and information-intensive process. Narrow streets have many advantages for a community, including slower traffic speeds and increased neighborhood livability. But there are some access trade-offs. A strong educational component involving city council members, planning commissioners, community groups, developers and emergency service providers must be conducted at the beginning of the process. Agreement about the value of narrow streets, i.e., slow speeds, safer pedestrian environments, and more livable neighborhoods must be understood and agreed to prior to beginning to develop specific standards. There are many educational resources available including printed materials, videos, and professional speakers willing to share their experience.

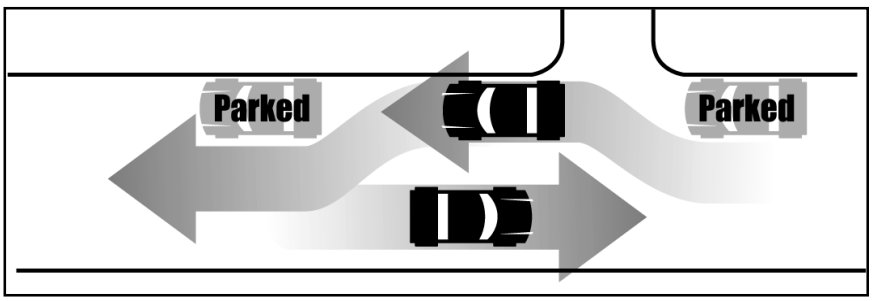
Develop standards that reflect local concerns. Once a jurisdiction has determined that more narrow street standards will be beneficial, the development of specific standards, unique to the community where they will be implemented, is the next step. Many cities and counties have adopted narrow street standards, and their efforts can provide a model for the initial drafts. Review and input from stakeholders, the public, and community officials will help identify local issues and provide the opportunity to tailor standards to local needs.

VI. Checklist for Neighborhood Streets

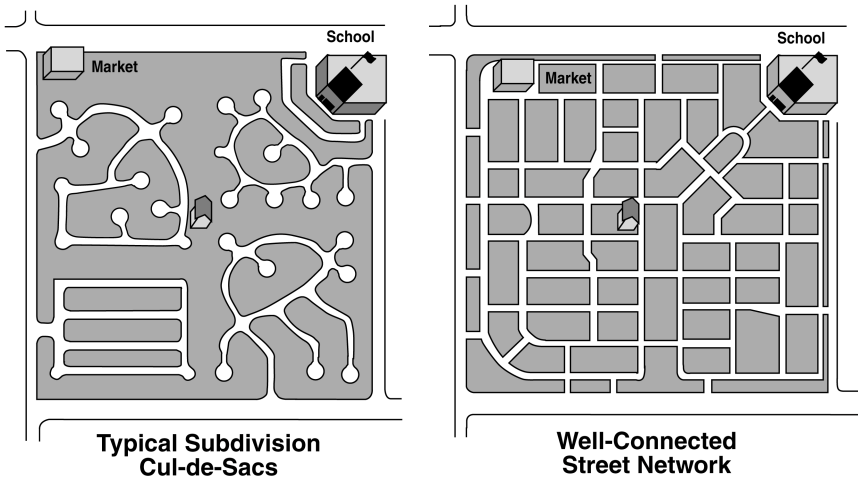
Key Factors

The checklist is based on five key factors listed below:

√ ***Queuing.*** Designing streets so that moving cars must occasionally yield between parked cars before moving forward, as shown below, permits development of narrow streets, encourages vehicles to move slower, and allows for periodic areas where a 20-foot wide clear area is available for parking of fire apparatus.



√ ***Connected Street Networks.*** Connected street networks provide multiple ways for emergency response vehicles to access a particular location and multiple evacuation routes. In addition, a connected street system encourages slow, cautious driving since drivers encounter cross traffic at frequent intervals.



Typical Subdivision
Cul-de-Sacs

Well-Connected
Street Network

√ ***Adequate Parking.*** When parking opportunities are inadequate, people are more likely to park illegally in locations that may block access by emergency service vehicles. Communities need to review their parking standards when they consider adopting narrow street standards to make sure that adequate on-street and off-street parking opportunities will be available.

√ ***Parking Enforcement.*** The guidelines are dependent on strict enforcement of parking restrictions. Communities must assure an on-going commitment to timely and effective parking enforcement by an appropriate agency. In the absence of such a commitment, these narrow street standards should not be adopted.

√ ***Sprinklers Not Required.*** The checklist and model cross-sections provided in this guidebook do not depend upon having fire sprinklers installed in residences. More flexibility in street design may be possible when sprinklers are provided. However, narrow streets still need to accommodate fire apparatus that respond to non-fire, medical emergencies. Other types of vehicles (such as moving vans, public works machinery, and garbage/recycling trucks) also need to be able to serve the neighborhood.

The Checklist

√

Community stakeholder groups should systematically proceed through the checklist below as part of their decision making process. Also, your community may wish to add to this checklist. The format of the checklist includes room for comments: encourage stakeholders to make notes regarding their concerns and record decisions about how the items in the checklist have been addressed.

The factors are interrelated and are best considered together. The items are grouped by category in a logical order, but are not weighted.

Community Process/Decision-Making

Notes

☐ **Good City Department Working Relations**

Develop good, close working relationships between the fire/emergency response professionals, public works, building officials, land use and transportation planners, engineers, and other large vehicle operators. The goal is to achieve trusting working relationships that lead to effective accommodation of each other's needs related to agreements about neighborhood street standards.

☐ **Consistency of Ordinances**

Review all applicable codes and ordinances and make them consistent with the narrow neighborhood street standards you are adopting. Consider performance-based codes and ordinances to address the larger development issues, of which street design is just one part. Amend ordinances only when you have the concurrence of emergency and large service vehicle providers.

☐ **Uniformly Allowed**

Uniformly allow narrow neighborhood streets by code and ordinance rather than requiring a special process, such as a variance or planned unit development. Or consider a modification process similar to the City of Beaverton's that uses a multi-disciplinary committee review and approval process during the development review process. *See Appendix A for more info.*

☐ **Community Process**

Determine what your community process will be for developing and adopting neighborhood street standards including following legal requirements, gaining political support, and encouraging public education and involvement. Teamwork and involvement of all large vehicle service providers is a critical component for success. Consider the potential benefits of narrow streets, such as slower traffic, less stormwater runoff, and lower costs. Look for ways to minimize the risk that fire apparatus will not be able to quickly access an emergency and minimize possible inconvenience for other large vehicles. *For more information see Chapter V, "A Community Process for Adopting Standards."*

Users of the Street

Notes

☐ **Use of Street**
Recognize the needs of all of the "everyday" users of the street, including autos, pedestrians, and bicycles. Street standards typically provide for easy maneuverability by autos. It is very important that neighborhood streets also provide a comfortable and safe environment for pedestrians. Consideration should be given to pedestrians both moving along and crossing the street.

☐ **Fire/Emergency Response and Large Service Vehicle Access**
Provide access to the street for Fire/Emergency Response and large service vehicles to meet their main objectives. Consider the maneuvering needs of all large vehicles such as fire/emergency response, refuse/recycling trucks, school buses, city buses, delivery vehicles, and moving trucks. Fire trucks are generally 10-feet wide from mirror to mirror and room adjacent to a truck is necessary to access equipment from the truck. Recognize that for some service providers, the federal government has requirements that affect vehicle size such as fire trucks, school buses, and ambulances.

☐ **Utility Access**
Provide utility access locations regardless of whether utilities are in the street, the right-of-way adjacent to the street, utility easements, or some combination thereof. Consider utility maintenance requirements.

Street Design

☐ **Traffic Volume and Type**
Relate street design to the traffic that will actually use the street and the expected demand for on-street parking. Generally, on streets that carry less than 1,000 vehicles per day, a clear lane width of 12 to 14 feet is adequate for two-way traffic, if there are frequent pull-outs to allow vehicles to pass. Where there is on-street parking, driveways typically provide gaps in parking adequate to serve as pull-outs. If there is a high percentage of trucks or buses, wider streets or longer pull-outs may be needed. For street design, consider both the current traffic volume and the projected long-term traffic volume.

☐ **Provision for Parking**
Make sure that adequate parking is provided so that on-street parking is not the typical primary source of parking. The objective is to have space between parked cars so that there are queuing opportunities. Also, parking near intersections on narrow streets should not be permitted because it can interfere with the turning movements of large vehicles *(see illustration at the end of the checklist)*. This can be accomplished by a lack of demand for on-street parking or by design. The design option requires place-

ment of no-parking locations (i.e., driveways, fire hydrants, mailboxes) at appropriate intervals to provide the needed gaps.

Notes

☐ **Parking (con't)**

When determining the number of parking spaces required, consider adjoining land uses and the availability of off-street parking. Parking demand is likely to be less where an adjoining land use is one that will create little or no parking demand (e.g., wetlands, parks, floodplains) or if adjoining development will provide off-street parking adequate for residents and guests. On-street parking demand may be affected by recreational vehicle/equipment if parking of such equipment is allowed. Parking availability will be affected by whether a neighborhood has alleys, if parking is allowed in the alley, or if visitor parking bays are provided in the area.

☐ **Self-Enforcing Design*....perceptions count!***

The design of the street should encourage the desired speed, traffic flow, parking, and use of the street. When this is the case, a design is said to be self-enforcing. This means that a driver would discern an implied prohibition against parking by the visual appearance of the street. A self-enforcing design intended to reduce speed might, for example, use trees in parkrows or strategically placed curb extensions.

- Unless traffic volumes are very low, 21 to 22-foot streets with parking on one side can be problematic for large vehicles.
- 21 to 24-foot streets with no on-street parking should not be considered because they invite parking violations.
- 26 and 27-foot streets where parking is permitted on one side can result in chronic violations because the street will look wide enough for parking on both sides.

☐ **Parking Enforcement**

With adequate parking and proper street design, enforcement should not be a problem. Where parking is prohibited, provide signs that clearly indicate this, even on streets with a self-enforcing design. Enforcement is essential and can be done in a variety of ways. Consider tow zones or using volunteers to write parking tickets. (The City of Hillsboro allows both police and fire personnel to write traffic tickets.)

☐ **Public and Private Streets**

Build public and private streets to the same standard. The need for access by emergency and other large vehicles is the same on private streets as for public. (In addition, private streets not built to the same construction standards may end up being a maintenance problem later if the local jurisdiction is forced to assume maintenance because homeowners do not fulfill their responsibilities.)

Notes

Hierarchy of Residential Streets
Provide a hierarchy of neighborhood streets by function including a range of streets such as residential boulevard, residential collectors with parking on one or both sides, local residential streets with parking on one or both sides, access lanes, and alleys.

Connected Street System
Provide a connected street system with relatively short blocks. Blocks should be no longer than 600 feet. (Make sure also that each phase of a subdivision provides connectivity). This provides at least two means of access to a residence. Also, frequent intersections encourage slow, cautious driving since drivers encounter cross-traffic at regular intervals. In case of the need to evacuate a neighborhood, a grid system of interconnected streets will provide many routes that help residents leave the area safely.

Include alleys where appropriate. Alleys can provide access to the rear of homes, and an evacuation route. Require and protect street stub-outs and discourage road closures to ensure future street connections. Cul-de-sacs should be avoided both from a connectivity and public safety point-of-view. If a cul-de-sac is used and it is longer than 150 feet, it may need to be wider in order to assure there is adequate space for access and maneuverability of large vehicles, including fire apparatus.

Right-of-way
Address not only pavement width, but what happens from the curb to the property line and utility easements. Consider what will happen to the extra land that is no longer needed for the street or right of way; should it go to extra residential lots, neighborhood amenities or both? Consider balancing extra land required for the right-of-way from the developer (for park rows, for example) with a reduction of other requirements such as building setback, or lot size.

Streetscape (Landscaping and Hardscape)
Design the street to be a neighborhood amenity that will increase livability. Landscaping with trees and parkrows considerably improves the appearance of a street and the comfort of pedestrians. (Make sure that tree species and location do not interfere with large vehicle access). Sidewalks/trails, curb extensions, textured crosswalks, some traffic calming features, and the preservation of natural features can reinforce optimal function of the narrow neighborhood street. Consider that curb design and the amount of impervious surface affect water quality and infiltration rates for the surrounding area. The *street cross-section designs provided* are intended to function with or without raised curbs, given an appropriate, compatible drainage system or adequate infiltration.

☐ **Block Length**

Design block length to enhance street connectivity. Block lengths should generally not exceed 600 feet. As block lengths increase from 300 feet, attention to street width and other design features becomes more important. This is because fire apparatus preconnected hoses are 150 feet in length. With a connected street system and 300-foot block lengths, the fire apparatus can be parked at the end of the block where a fire is located and the hose can reach the fire.

Coordinate block length requirements with spacing requirements for connection to arterial streets. Preserve integrity, capacity, and function of the neighborhood's surrounding arterials and collectors by adhering to access management standards.

Notes

Local Issues

☐ **Evacuation Routes for Wildfire Hazard and Tsunami Zones**

Designated wildfire hazard or tsunami zones may need wider streets to provide for designated evacuation routes, including 20 feet of clear and unobstructed width. Different communities may have different street standards depending on whether a neighborhood is located in one of these zones or is in a designated evacuation route.

☐ **Agricultural Equipment**

If your community is a regional agricultural center, consider adequate passage for agricultural equipment. Discourage passage on residential streets.

☐ **Preserving Natural Features**

If your community has sensitive natural features, such as steep slopes, waterways, or wetlands, locate streets in a manner that preserves them to the greatest extent feasible. Care should be taken to preserve the natural drainage features on the landscape. Street alignments should follow natural contours and features, whenever possible, so that visual and physical access to the natural feature is provided as appropriate.

☐ **Snow**

If snow removal and storage is an issue in your community, consider snow storage locations, and whether temporary parking restrictions for snow plowing or storage will be required. Some communities may consider providing auxiliary winter parking inside neighborhoods (though not on residential collectors). Work with your public works and engineering departments to see if any adjustments may be made in terms of operations or street design that would make narrow neighborhood streets work better for your community (wider parkrows to store snow, for instance).

Notes

☐ **Ice**

If maneuvering on icy roads is an issue in your community, consider parking restrictions near street corners, auxiliary winter parking at the base of hills, wider street cross-sections on hills, or seasonal parking restrictions on hills.

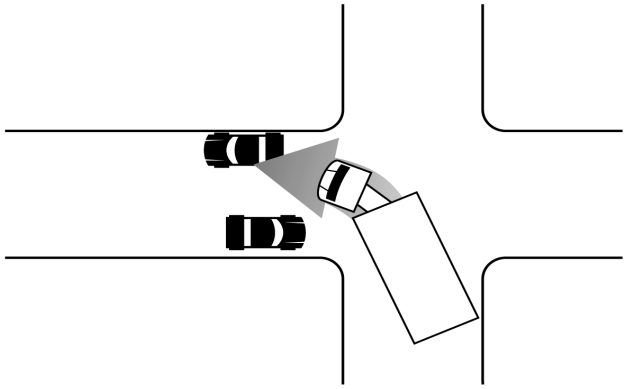
☐ **Sloping or Hilly Terrain**

If your community has steep slopes, make special design provisions. This can be done through utility placement, connected streets, sidewalk placement, provision of one-way streets, property access, and minimizing cut and fill slopes.

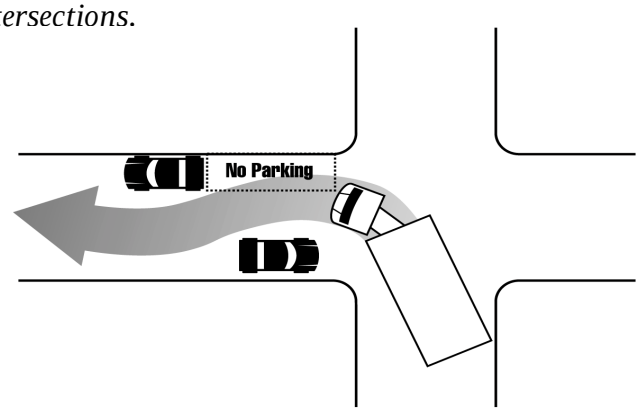
☐ ***Other Community Concerns?***

No Parking At Interections

On narrow streets, parked cars near the intersection can interfere with the turning movements of large vehicles.



The solution is to prohibit on-street parking within 20 - 50 feet of intersections.



VII. Model Cross-Sections

The following three scenarios are presented as "model standards." However, ***they do not represent the full range of possible solutions.*** Communities are encouraged to use these as a starting point; innovative solutions can be designed for local situations. Here are a few key points to keep in mind:

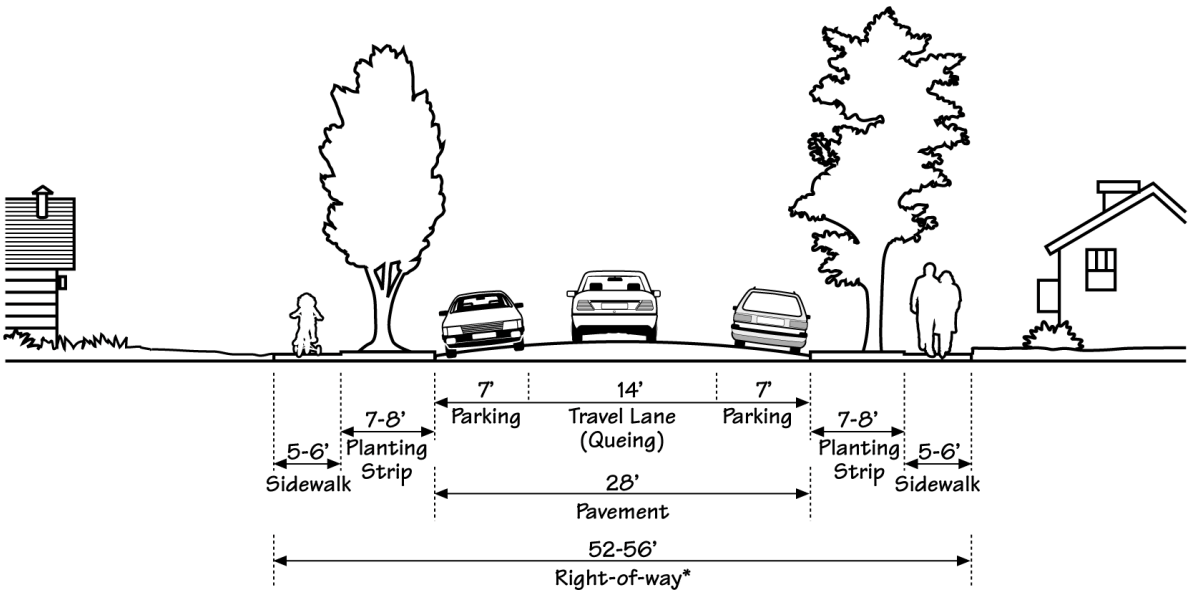
√ Streets **wider than 28 feet** are NOT, by definition, a "narrow street."

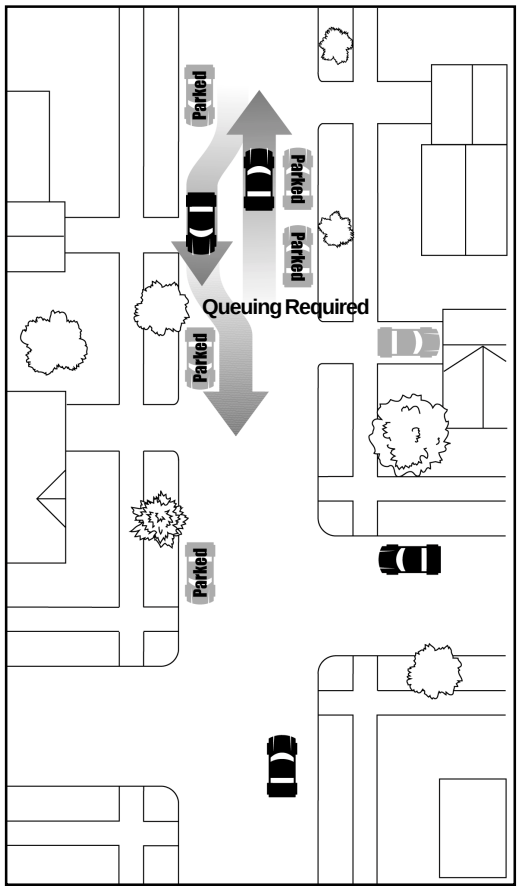
√ **Two-way streets under 20 feet** are NOT recommended. If, in a special circumstance, a community allows a street **less than 20 feet**, safety measures such as residential sprinklers*, one-way street designations, and block lengths less than 300 feet may be needed.

** Fire sprinklers in one and two family structures must be approved by the local building department in accordance with standards adopted by the Building Codes Division under ORS 455.610.*

Scenario 1

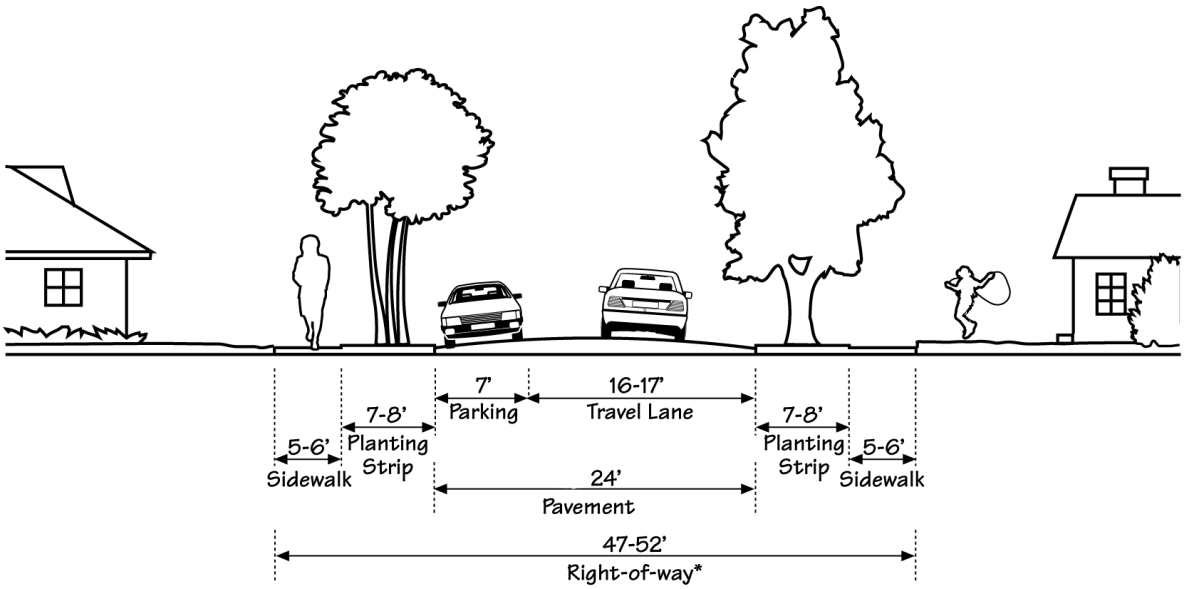
28 Ft. Streets
Parking on both sides

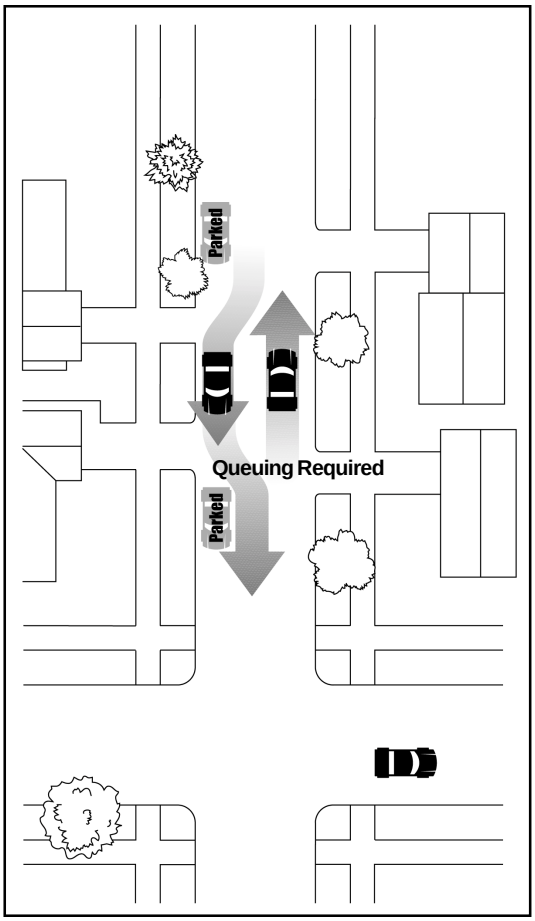




Scenario 2

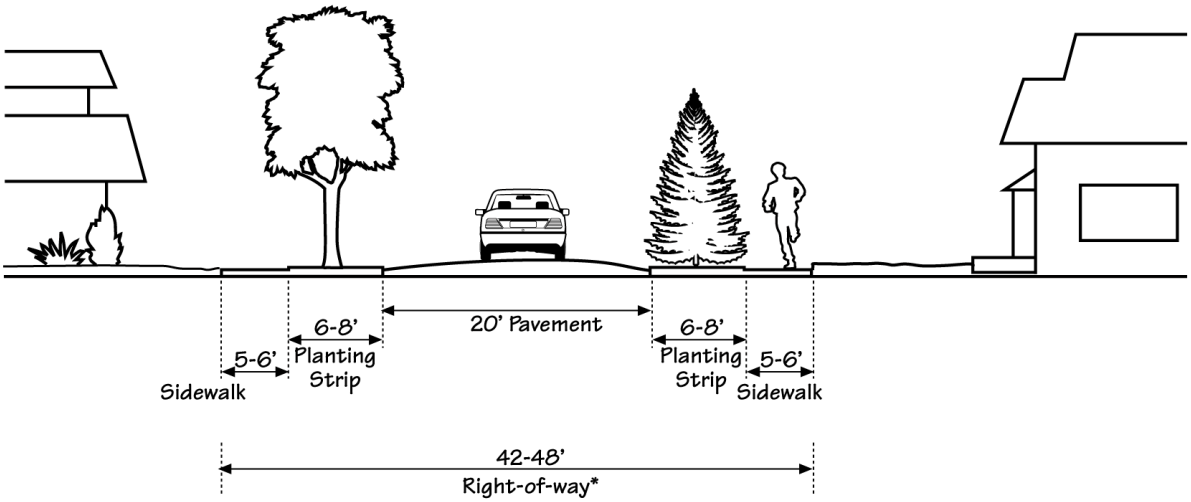
24 Ft. Streets
Parking on one side only

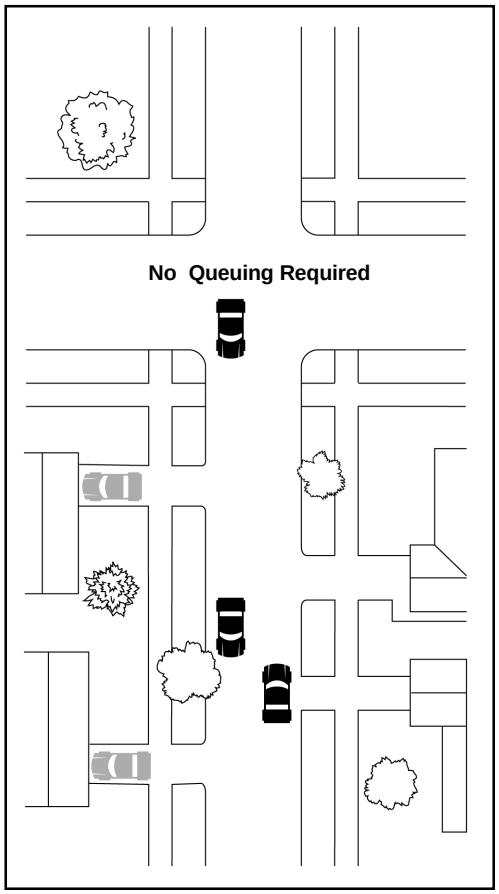




Scenario 3

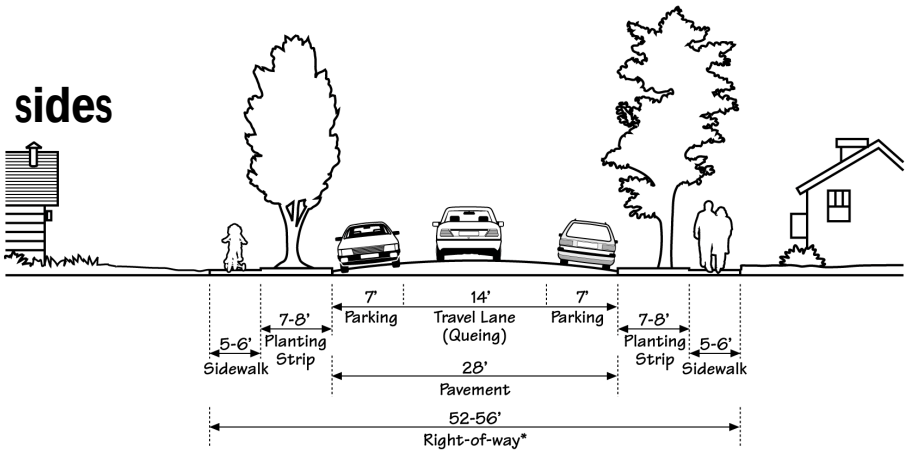
20 Ft. Streets
No parking allowed



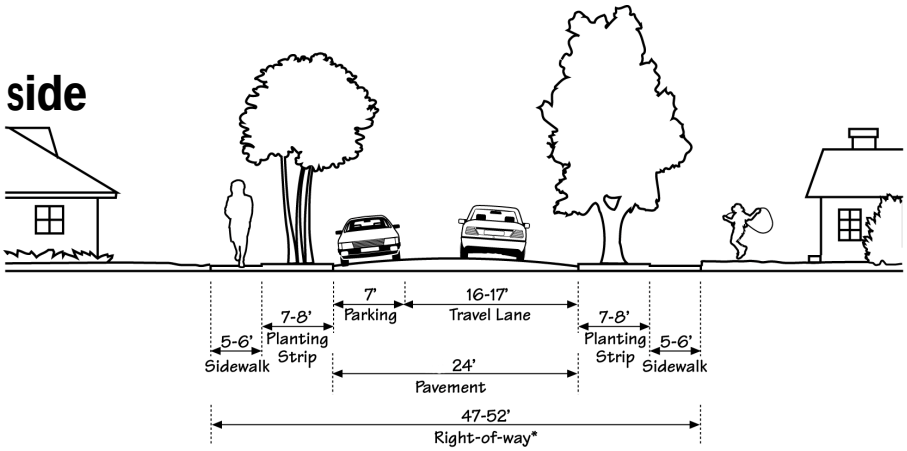


Summary of Three Potential Scenarios

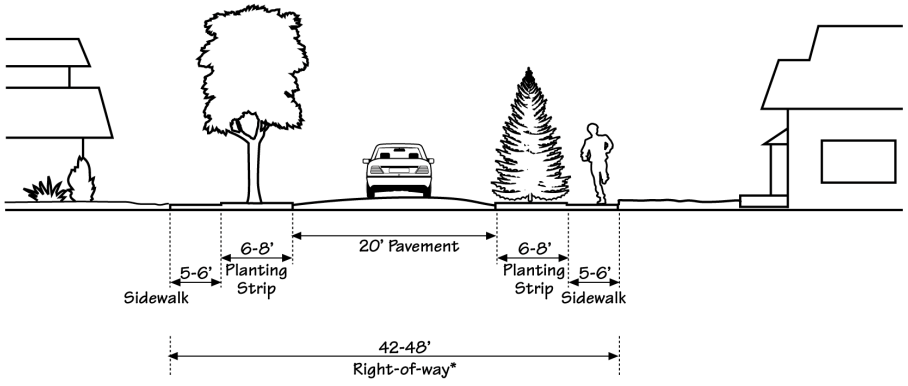
28 Ft Street
Parking on both sides



24 Ft Street
Parking on one side



20 Ft Street
No on-street parking allowed



Appendix A - References and Resources

Annotated References

AASHTO - The *Policy on Geometric Design of Highways and Streets*, also known as the "*Green Book*," is published by the American Association of State Highway and Transportation Officials (AASHTO) and is considered to be the principle authority on street geometrics. Narrow streets are sometimes cited as being contrary to traffic engineering practices because they may hinder the free-flowing movement of vehicular traffic. However, the *Green Book* supports the notion of using narrow residential streets. For example, the *Green Book* states: "On residential streets in areas where the primary function is to provide land service and foster a safe and pleasant environment, at least one unobstructed moving lane must be ensured even where parking occurs on both sides. The level of user inconvenience occasioned by the lack of two moving lanes is remarkably low in areas where single-family units prevail…In many residential areas a 26-ft.-wide roadway is typical. This curb-face-to-curb-face width provides for a 12-ft. center travel lane and two 7-ft. parking lanes. Opposing conflicting traffic will yield and pause on the parking lane area until there is sufficient width to pass."

Residential Streets – *Residential Streets* is published jointly by the American Society of Civil Engineers, the National Association of Homebuilders, and the Urban Land Institute. This book was published to encourage a flexible approach to designing residential streets to respond to the street's function in the transportation system as well as part of the community's living environment. *Residential Streets* is a hierarchy of residential streets, including 22'-24' access streets with parking on both sides, 26' subcollector street with parking on both sides, and a 28' subcollector with parking on both sides where "on-street parking lines both sides of the street continuously."

ITE – The Institute of Transportation Engineers (ITE) has published several documents that refer to the recommended width of neighborhood streets. The 1993 publication *Guidelines for Residential Subdivision Street Design* states that a 28-foot curbed street with parking on both sides is an acceptable standard "based upon the assumption that the community has required adequate off-street parking at each dwelling unit." In addition, the 1994 publication *Traffic Engineering for Neo-Traditional Neighborhood Design, (NTND),* states that the recommended width of a basic NTND residential street "may be as narrow as 28 to 30 feet."

Street Design Guidelines for Healthy Neighborhoods – Published by the Local Government Commission's Center for Livable Communities, *Street Design Guidelines for Healthy Neighborhoods* was developed by a multi-disciplinary team based upon field visits to over 80 traditional and 16 neo-traditional neighborhoods. When combined with other features of traditional neighborhoods, the guidelines recommend neighborhood streets ranging from 16-26 feet in width. The team found 26-foot-wide roadways to be the most desirable, but also "measured numerous 24-foot and even 22-foot wide roadways, which had parking on both sides of the street and allowed delivery, sanitation and fire trucks to pass through unobstructed."

Oregon Resources

Fairview Village. Holt & Haugh, Inc., phone: 503-222-5522, fax: 503-222-6649, www.fairviewvillage.com

West Bend Village. Tennant Developments, 516 SW 13th St., Suite A, Bend, Oregon 97702, phone: 541-388-0086

Orenco Station. Mike Mehaffy, Pac Trust, 15350 SW Sequoia Pkwy, Suite 300, Portland, Oregon 97224, 503-624-6300, www.orencostation.com

Street Standard Modification Process. The City of Beaverton has a modification process similar to an administrative variance procedure. If you would like information on this process contact: Margaret Middleton, City of Beaverton, Engineering Department, P.O. Box 4755, Beaverton, Oregon 97076-4755, 503-526-2424, mmiddleton@ci.beaverton.or.us

Additional References

Street Design Guidelines for Healthy Neighborhoods. Dan Burden with Michael Wallwork, P.E., Ken Sides, P.E., and Harrison Bright Rue for Local Government Commission Center for Livable Communities, 1999.

A Policy on Geometric Design of Highways and Streets. American Association of State Highway and Transportation Officials (ASSHTO), 1994.

Guidelines for Residential Subdivision Street Design. Institute of Transportation Engineers (ITE), 1993.

Traffic Engineering for Neo-Traditional Neighborhood Design. Institute of Transportation Engineers (ITE), 1994.

Residential Streets. American Society of Civil Engineers (ASCE), National Association of Home Builders (NAHB), Urban Land Institute (ULI), 1990.

A Handbook for Planning and Designing Streets. City of Ashland, 1999.

Eugene Local Street Plan. City of Eugene, 1996.

Skinny Streets, Better Streets for Livable Communities. Livable Oregon, Inc. and the Transportation and Growth Management Program, 1996.

The Technique of Town Planning, Operating System of the New Urbanism. Duany Plater-Zyberk & Company, 1997.

Narrow Streets Database. A Congress for the New Urbanism. Alan B. Cohen AIA, CNU, Updated 1998.

Washington County Local Street Standards. Revision Project No. 2455. McKeever/Morris, Inc., Kittleson & Associates, Inc. and Kurahashi & Associates, Inc., 1995.

Washington County Uniform Road Improvement Design Standards. Washington County Department of Land Use and Transportation, 1998.

Livable Neighborhoods Community Design Code. A Western Australian Government Sustainable Cities Initiative. Ministry for Planning.

Woonerf. Royal Dutch Touring Club, 1980.

Creating Livable Streets: Street Design Guidelines for 2040. Prepared by Fehr & Peers Associates, Inc. Calthorpe Associates, Kurahashi & Associates, Julia Lundy & Associates for Metro, 1997.

Model Development Code & User's Guide for Small Cities. Transportation and Growth Management Program by Otak, 1999.

APA Recommendations for Pedestrians, Bicycle and Transit Friendly Development Ordinances. TPR Working Group Oregon Chapter APA, 1993.

Residential Street Typology and Injury Accident Frequency. Swift & Associates, Longmont, CO, Peter Swift, Swift and Associates, Longmont, CO., 1998.

Appendix B

Oregon Community Street Widths

City/County	No Parking	Parking One Side	Parking Both Sides	Contact Information
Ashland		22'	25'-28'	Maria Harris, Associate Planner, 541-552-2045
Albany		28'		Rich Catlin, Senior Planner, Albany Community Development, 541-917-7564
Beaverton	20'	25.5' "infill option," with rolled curb on other	28'	Margaret Middleton, Engineering Department, 503-526-2424
Brookings			30'	John Bischoff, Planning Director, 541-469-2163,x237
Clackamas County			28'	Joe Marek, County Engineer, 503-650-3452
Coburg			28'	Harriet Wagner, City Planner, 541-682-7858
Corvallis			28'	Kelly Schlesener, Planning Manager - Community Development, 541-766-6908
Eugene		24'	28'	Allen Lowe, Eugene Planning, 541-682-5113
Forest Grove			26'	Jon Holan, Community Dev. Director, 503-992-3224
Gresham			26'	Brian Shetterly, Long Range Planner, 503-618-2529; Ronald Papsdorf, Lead Transportation Planner, 503-618-2806
Happy Valley			26'	Jim Crumley, Planning Director, 503-760-3325
Lincoln City			28'	Richard Townsend, Planning Director 541-996-2153
McMinnville			26'	Doug Montgomery, Planning Director, 503-434-7311
Milton-Freewater		28'		Gina Hartzheim, City Planner, 503-938-5531
Portland		20'	26'	Steve Dotterrer, Portland Department of Transportation, 503-823-7731
Redmond			28'	Bob Quitmeier, Community Development Director, 541-923-7716
Seaside		20'	26'	Kevin Cupples, Planning Director, 503-738-7100
Sherwood			28'	John Morgan, City Manager, 503-625-5522
Washington County		24'	28’	Tom Tushner, Principal Engineer, 503-846-7920
Wilsonville		28'		Stephan Lashbrook, Planning Director, 503-682-1011.

Source: February 2000, Livable Oregon, Inc.

APPENDIX D
FIRE APPARATUS ACCESS ROADS

The provisions contained in this appendix are adopted by the State of Oregon.

SECTION D101
GENERAL

D101.1 Scope. Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the *International Fire Code*. The fire code official may be guided by the Oregon Department of Land Conservation and Development's Neighborhood Street Design Guidelines, June 2001.

SECTION D102
REQUIRED ACCESS

D102.1 Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an approved fire apparatus access road with an asphalt, concrete or other approved driving surface capable of supporting the imposed load of fire apparatus weighing at least 60,000 pounds (27 240 kg).

Exception: The minimum weight specified in Section D102.1 may be increased by the fire code official based upon the actual weight of fire apparatus vehicles serving the jurisdiction which provides structural fire protection services to the location, including fire apparatus vehicles that respond under automatic and mutual aid agreements.

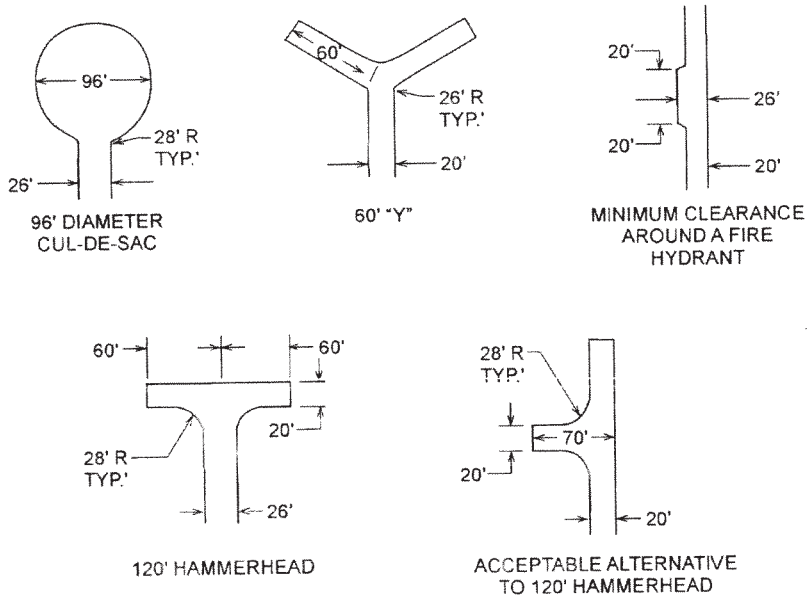
D102.1.1 Access in urban-wildland interface areas. For egress and access concerns in urban-wildland interface locations, the fire code official may be guided by the *International Wildland-Urban Interface Code*.

SECTION D103
MINIMUM SPECIFICATIONS

D103.1 Access road width with a hydrant. Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm). See Figure D103.1.

Exceptions: The fire code official is authorized to modify the provisions of Section D103.1 when:

1. In accordance with OAR 918-480-0100, all buildings are completely protected with an approved automatic fire sprinkler system; or
2. Provisions are made for the emergency use of side-walks by such means as rolled or mountable curbs capable of supporting the fire department's apparatus; or
3. Streets or roadways are identified for one-way circulating flow of traffic or pullouts are provided every 150 feet (45 720 mm) on streets or roadways identified for two-way traffic; or



For SI: 1 foot = 304.8 mm.

FIGURE D103.1
DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND

4. A grid system for traffic flow is provided and streets or roadways in the grid do not exceed 300 feet (91 400 mm) in length, but are accessible at each end from approved access roadways or streets.

D103.2 Grade. Fire apparatus access roads shall not exceed 10 percent in grade.

Exception: Grades steeper than 10 percent as approved by the fire chief.

D103.3 Turning radius. The minimum turning radius shall be determined by the fire code official.

D103.3.1 Angles of approach. The angles of approach and departure for any fire apparatus access roads shall not be less than the design limitations of the fire apparatus of the fire department, subject to the approval of the fire code official.

D103.3.2 Drainage. When subject to run-off damage, the fire code official is authorized to require approved drainage.

D103.4 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) shall be provided with width and turnaround provisions in accordance with Table D103.4.

TABLE D103.4
REQUIREMENTS FOR DEAD-END FIRE APPARATUS ACCESS ROADS

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0–150	20	None required
151–500	20	120-foot Hammerhead, 60-foot "Y" or 96-foot-diameter cul-de-sac in accordance with Figure D103.1
501–750	26	120-foot Hammerhead, 60-foot "Y" or 96-foot-diameter cul-de-sac in accordance with Figure D103.1
Over 750	Special approval required	

For SI: 1 foot = 304.8 mm.

D103.5 Fire apparatus access road gates. Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. The minimum gate width shall be 20 feet (6096 mm).
2. Gates shall be of the swinging or sliding type.
3. Construction of gates shall be of materials that allow manual operation by one person.
4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.
6. Manual opening gates shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools or when a key box containing the key(s) to the lock is installed at the gate location.
7. Locking device specifications shall be submitted for approval by the fire code official.

D103.6 Signs. Where required by the fire code official, fire apparatus access roads shall be marked with permanent NO PARKING—FIRE LANE signs complying with Figure D103.6. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted on one or both sides of the fire apparatus road as required by Section D103.6.1 or D103.6.2.

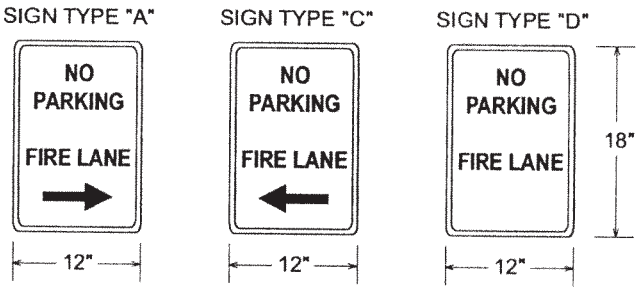


FIGURE D103.6
FIRE LANE SIGNS

D103.6.1 Roads 20 to 26 feet in width. Fire apparatus access roads 20 to 26 feet wide (6096 to 7925 mm) shall be posted on both sides as a fire lane.

D103.6.2 Roads more than 26 feet in width. Fire apparatus access roads more than 26 feet wide (7925 mm) to 32 feet wide (9754 mm) shall be posted on one side of the road as a fire lane.

SECTION D104
COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

D104.1 Buildings exceeding three stories or 30 feet in height. Buildings or facilities exceeding 30 feet (9144 mm) or three stories in height shall have at least three means of fire apparatus access for each structure.

D104.2 Buildings exceeding 62,000 square feet in area. Buildings or facilities having a gross building area of more than 62,000 square feet (5760 m²) shall be provided with two separate and approved fire apparatus access roads.

Exception: Projects having a gross building area of up to 124,000 square feet (11 520 m²) that have a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems.

D104.3 Remoteness. Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

SECTION D105
AERIAL FIRE APPARATUS ACCESS ROADS

D105.1 Where required. Buildings or portions of buildings or facilities exceeding 30 feet (9144 mm) in height above the lowest level of fire department vehicle access shall be provided with approved fire apparatus access roads capable of accommodating fire department aerial apparatus. Overhead utility and power lines shall not be located within the aerial fire apparatus access roadway.

D105.2 Width. Fire apparatus access roads shall have a minimum unobstructed width of 26 feet (7925 mm) in the immediate vicinity of any building or portion of building more than 30 feet (9144 mm) in height.

D105.3 Proximity to building. At least one of the required access routes meeting this condition shall be located within a minimum of 15 feet (4572 mm) and a maximum of 30 feet (9144 mm) from the building, and shall be positioned parallel to one entire side of the building.

SECTION D106
MULTIPLE-FAMILY RESIDENTIAL DEVELOPMENTS

D106.1 Projects having more than 100 dwelling units. Multiple-family residential projects having more than 100 dwelling units shall be equipped throughout with two separate and approved fire apparatus access roads.

Exception: Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with approved automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2.

D106.2 Projects having more than 200 dwelling units. Multiple-family residential projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus access roads regardless of whether they are equipped with an approved automatic sprinkler system.

SECTION D107
ONE- OR TWO-FAMILY RESIDENTIAL DEVELOPMENTS

D107.1 One- or two-family dwelling residential developments. Developments of one- or two-family dwellings where the number of dwelling units exceeds 30 shall be provided with separate and approved fire apparatus access roads and shall meet the requirements of Section D104.3.

Exceptions:

1. Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3 1.1, 903.3.1.2 or 903.3.1.3, access from two directions shall not be required.
2. The number of dwelling units on a single fire apparatus access road shall not be increased unless fire apparatus access roads will connect with future development, as determined by the fire code official.

CHAPTER 5
FIRE SERVICE FEATURES

SECTION 501
GENERAL

501.1 Scope. Fire service features for buildings, structures and premises shall comply with this chapter. See also ORS 92.044, 203, 221, 195.065, 368.039, 478.920, OAR 918-480-0100 and Oregon State Fire Marshal Interpretation #94-02.

ORS Chapters 92.044, 203, 221, 368.039, 195.065 and 478.920 and OAR Chapter 918 are not a part of this code but are reproduced or paraphrased here for the reader's convenience.

ORS 92.044 is the adoption of standards and procedures governing approval of plats and plans; delegation to planning commission; fees.

ORS 203 is the county bodies; county home rule.

ORS 221 is the organization and government of cities.

ORS 368.039 allows road standards adopted by local government to supercede standards in fire codes and requires consultation with local fire agency.

ORS 195.065 requires local governments and special districts that provide urban service to enter into urban service agreements. For the purpose of this statute, "urban service" means: sanitary sewers, water, fire protection, parks, open space, recreation and streets, roads and mass transit.

ORS 478.920 describes elements that may be included in the scope of a fire prevention code adopted by a rural fire protection district, including but not limited to mobile fire apparatus means of approach to buildings and structures, and providing fire-fighting water supplies and fire detection and suppression apparatus adequate for the protection of buildings and structures.

OAR 918-480-0100 describes the procedure for approving the installation of automatic fire sprinklers where fire apparatus access or fire-fighting water supply do not meet local standards.

ORS 479.200 regulates water supply requirements for certain public buildings erected after July 1, 1967, as defined in ORS 479.010(1)(1).

OSFM Interpretation #94-02 recommends methods for calculating water supply requirements based on local conditions or ISO grading using Appendix B or NFPA 1142.

501.2 Permits. A permit shall be required as set forth in Sections 105.6 and 105.7.

501.3 Construction documents. Construction documents for proposed fire apparatus access, location of fire lanes and construction documents and hydraulic calculations for fire hydrant systems shall be submitted to the fire department for review and approval prior to construction.

501.4 Timing of installation. When fire apparatus access roads or a water supply for fire protection is required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except when approved alternative methods of protection are provided. Temporary street signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles in accordance with Section 505.2.

SECTION 502
DEFINITIONS

502.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

FIRE APPARATUS ACCESS ROAD. A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane, public street, private street, parking lot lane and access roadway.

NOTE: Specifications and standards for public streets are regulated by county or city governing bodies in accordance with ORS 368.039, wherein input from the fire service is required during planning for community development projects.

FIRE COMMAND CENTER. The principal attended or unattended location where the status of the detection, alarm communications and control systems is displayed, and from which the system(s) can be manually controlled.

FIRE DEPARTMENT MASTER KEY. A limited issue key of special or controlled design to be carried by fire department officials in command which will open key boxes on specified properties.

FIRE LANE. A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.

KEY BOX. A secure device with a lock operable only by a fire department master key, and containing building entry keys and other keys that may be required for access in an emergency.

SECTION 503
FIRE APPARATUS ACCESS ROADS

503.1 Where required. Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3 (see Appendix D).

503.1.1 Buildings and facilities. Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or

within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

Exception: The fire code official is authorized to modify Sections 503.1 and 503.2 where any of the following applies:

1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
3. There are not more than two Group R-3 or Group U occupancies.

503.1.2 Additional access. The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

503.1.3 High-piled storage. Fire department vehicle access to buildings used for high-piled combustible storage shall comply with the applicable provisions of Chapter 23.

503.2 Specifications. Fire apparatus access roads shall be installed and arranged in accordance with Sections 503.2.1 through 503.2.7.

503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).

503.2.2 Authority. The fire code official shall have the authority to modify the dimension specified in Section 503.2.1.

503.2.3 Surface. Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities.

503.2.4 Turning radius. The required turning radius of a fire apparatus access road shall be determined by the fire code official.

503.2.5 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) in length shall be provided with an approved area for turning around fire apparatus.

503.2.6 Bridges and elevated surfaces. Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO HB-17. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required by the fire code official. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, approved barriers, approved signs or both shall be installed and maintained when required by the fire code official.

503.2.7 Grade. The grade of the fire apparatus access road shall be within the limits established by the fire code official based on the fire department's apparatus.

503.3 Marking. Where required by the fire code official, approved signs or other approved notices shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. Signs or notices shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

503.4 Obstruction of fire apparatus access roads. Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Section 503.2.1 shall be maintained at all times.

503.5 Required gates or barricades. The fire code official is authorized to require the installation and maintenance of gates or other approved barricades across fire apparatus access roads, trails or other accessways, not including public streets, alleys or highways.

503.5.1 Secured gates and barricades. When required, gates and barricades shall be secured in an approved manner. Roads, trails and other accessways that have been closed and obstructed in the manner prescribed by Section 503.5 shall not be trespassed on or used unless authorized by the owner and the fire code official.

Exception: The restriction on use shall not apply to public officers acting within the scope of duty.

503.6 Security gates. The installation of security gates across a fire apparatus access road shall be approved by the fire chief. Where security gates are installed, they shall have an approved means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times.

SECTION 504
ACCESS TO BUILDING OPENINGS AND ROOFS

504.1 Required access. Exterior doors and openings required by this code or the *International Building Code* shall be maintained readily accessible for emergency access by the fire department. An approved access walkway leading from fire apparatus access roads to exterior openings shall be provided when required by the fire code official.

504.2 Maintenance of exterior doors and openings. Exterior doors and their function shall not be eliminated without prior approval. Exterior doors that have been rendered nonfunctional and that retain a functional door exterior appearance shall have a sign affixed to the exterior side of the door with the words THIS DOOR BLOCKED. The sign shall consist of letters having a principal stroke of not less than 0.75 inch (19.1 mm) wide and at least 6 inches (152 mm) high on a contrasting


Main street access, higher traffic volumes, high parking usage - poor candidate for limited street width
Three houses on one access
Five houses on one access
No access on south side, good candidate for parking one-side
Short block, through street, good candidate for limited street width
Short block, through street, good candidate for limited street width
© 2010 Google
© 2010 Europa Technologies
©2009 Google
Imagery Date: Nov 9, 2007
47°28'48.87" N 122°10'47.95" W elev 0 ft
Eye alt 1402 ft

0 15 30 60
Feet

E. Edgewood Drive

0 15 30 60
Feet

Edgewood Drive

0 15 30 60
Feet

Illinois St.

0 15 30 60
Feet

N. Main St.

0 15 30 60
Feet

Paradise Dr.

0 15 30 60
Feet

Trestle View Ct.

Block Length Standards

Discussion of Examples
June 4, 2003 - Newberg Planning Staff

The attached examples were intended to illustrate how the proposed block length and perimeter standards could be modified. There is no intention to retrofit these existing blocks, they are being used for illustration purposes only. They show how current block patterns would or would not meet the proposed standards, and also show suggestions on how they could have been platted to meet the standards.

Example 1: Haworth/Hulet/Oak/Sitka
This block exceeds both the proposed block length standard (890 feet as opposed to 800 feet) and the proposed block perimeter standard (2230 feet as opposed to 2000 feet).

This block could meet the standards if Cherry Street were extended through the block, or if a public walkway were extended at Cherry Street.

Note that this is one of the smallest blocks in the neighborhood. Also note that this neighborhood is very poorly connected.

Example 2: Crestview/Hoskins/Sierra Vista/Meridian
This block exceeds both the proposed block length standard (1516 feet as opposed to 800 feet) and the proposed block perimeter standard (3885 feet as opposed to 2000 feet).

This block would have to have at least two through connections to meet the standards. For example, if Aldercrest were extended through the block and Pinehurst was extended to Arabian Court/Pennington Drive, it would meet the standards.

Example 3: Edgewood/College/Oxford/Cambridge/Princeton
This block exceeds both the proposed block length standard of the R-1 zone (875 feet as opposed to 800 feet) and the proposed block perimeter standard (2650 feet as opposed to 2000 feet).

However, because the of church campus, in the block, it would be allowed to use the Institutional zone standards of 1200 feet block length and 3000 feet block perimeter. Thus it would meet the standards.

Example 4: Douglas/Cedar/Springbrook/Haworth/Deborah
This block exceeds both the proposed block length standard of the R-2 zone (1675 feet as opposed to 1200 feet) and the proposed block perimeter standard (4840 feet as opposed to 3000 feet). To meet the standard would require two public street connections through the block, such as providing a public street through the mobile home park, and extending Aquarius through the apartment complex. Note that Haworth and Springbrook are major collector streets, both with access issues.

Example 5:Crestview/Meridian/Aldercrest/Collge
This block meets the proposed block length standard of the R-1 zone (667 feet, which is less than 800 feet), but does not meet the proposed block perimeter standard (2310 feet as opposed to 2000 feet).

Because College Street is a State Highway, access spacing standards would not allow another street connection. The standard could be met by providing a public walkway from the end of Fircrest Drive to College Street.

P100

Block Length Example #1

Zone: R-1
Block Length
(Longest)
890 feet
Block Perimeter
2230 feet

Scale
1 in : 300 ft.

N
W E
S

V1-30

Block Length Example #2

Zone: R-1
Block Length
(Longest)
1516 feet
Block Perimeter
3885 feet

Scale
1 in : 300 ft.

N
W E
S

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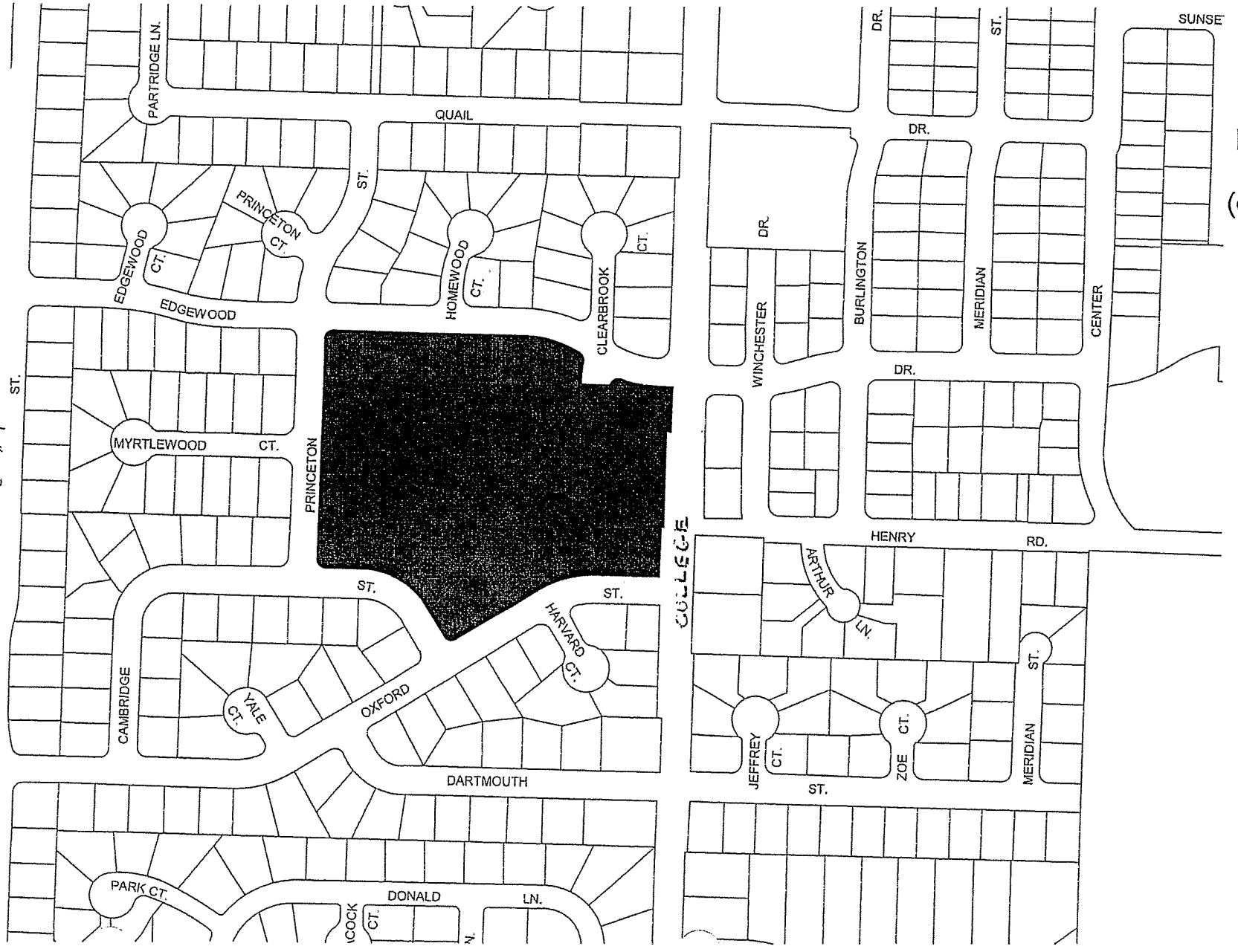
Block Length Example #3



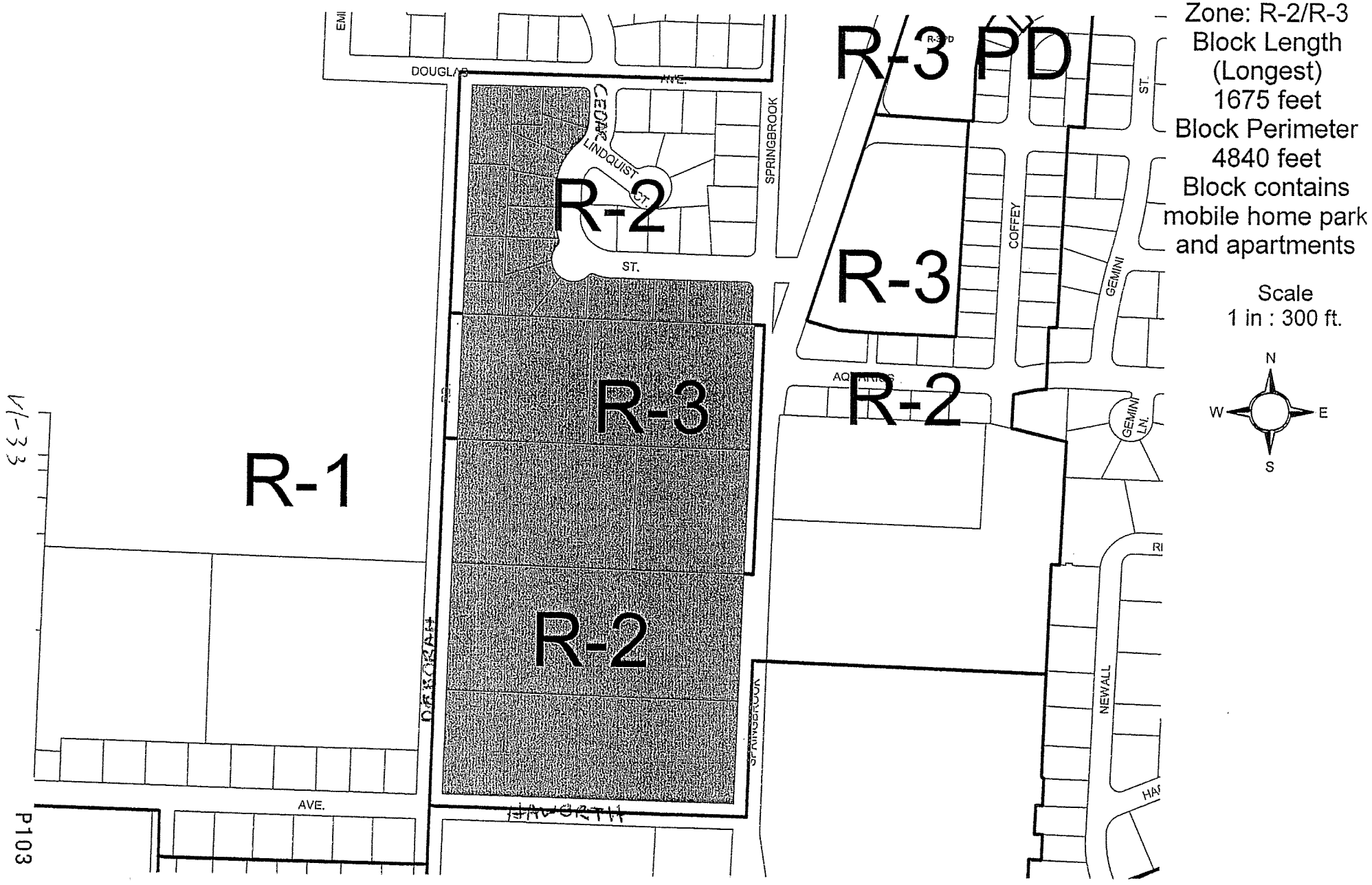
Zone: R-1
Block Length
(Longest)
875 feet
Block Perimeter
2650 feet
(contains church)

Scale
1 in : 300 ft.

N
W E
S

11-32

Block Length Example #4



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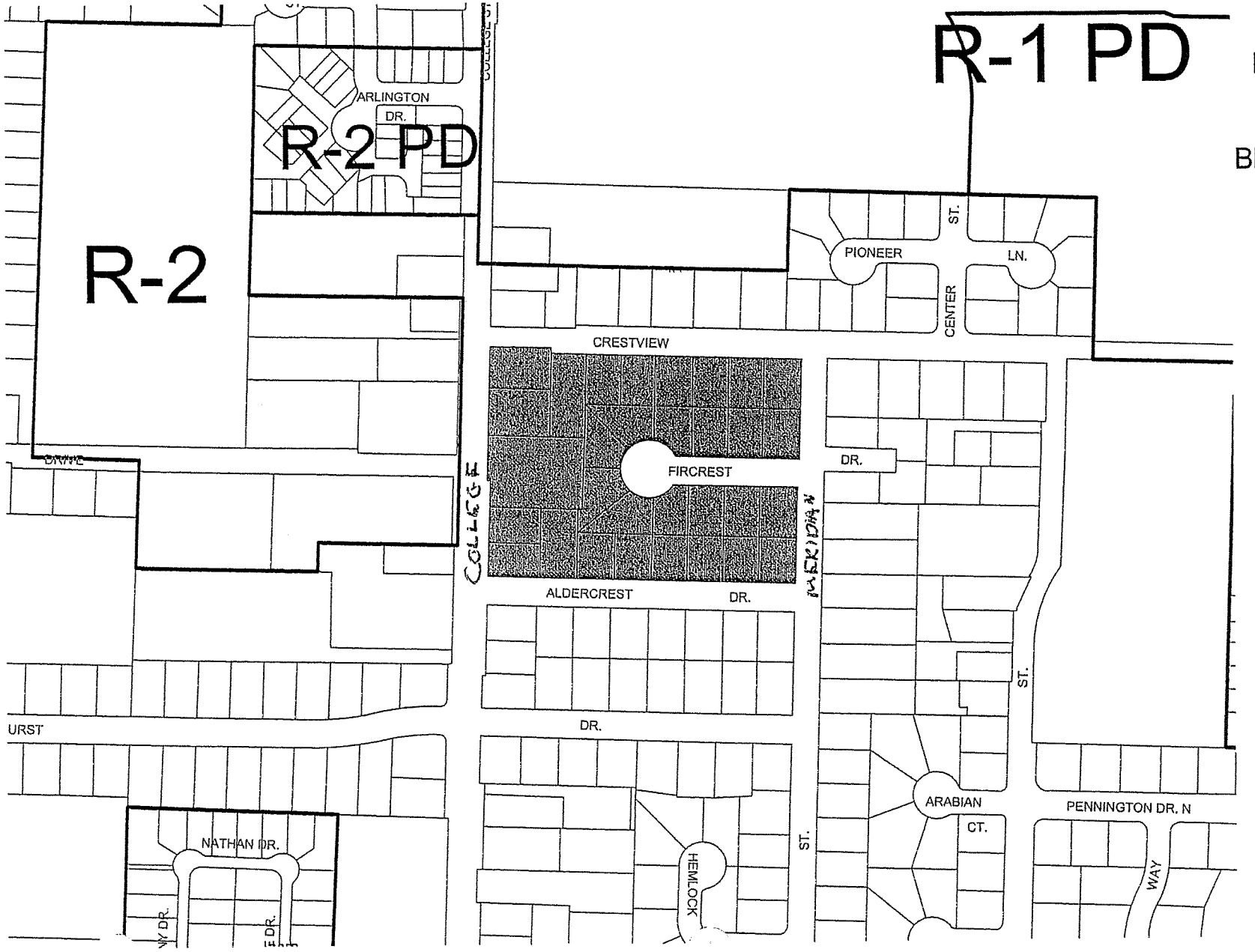
Block Length Example #5



Zone: R-1
Block Length
(Longest)
667 feet
Block Perimeter
2310 feet

Scale
1 in : 300 ft.

1000 friends of Oregon

534 SW Third Avenue, Suite 300 • Portland, OR 97204 • (503) 497-1000 • fax (503) 223-0073 • www.friends.org
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December 20, 2010

Mayor Bob Andrews
Newberg City Council
414 E. First Street
Newberg OR 97132

Re: Proposed street, access and block standards, File DCA 10-002

Dear Mayor Andrews and Council members:

Thank you for the opportunity to provide comments on the proposed changes to street width standards, alley and common driveway access, and new block standards.

The proposed changes will allow more efficient use of Newberg's lands, while reducing the costs to provide public services such as storm water management and street repair. Narrow streets are widely considered more livable and pedestrian-friendly, and should increase Newberg's attractiveness to prospective new residents. Alley and shared driveway accesses create new opportunities for infill, while facilitating more efficient new development.

Narrower streets also increase safety by slowing cars through residential neighborhoods. The 2000 Oregon TGM publication *Neighborhood Street Design Guidelines* notes "[t]here is growing appreciation for the relationship between street width, vehicle speed, the number of crashes, and resulting fatalities. Deaths and injuries to pedestrians increase significantly as the speed of motor vehicles goes up. * * * A typical 36-foot wide residential street has 1.21 collisions/mile/year as opposed to 0.32 for a 24-foot wide street. The safest streets were narrow, slow, 24-foot wide streets."

We commend your foresight in considering these improvements to your land use code. Please include this letter in the official record of these proceedings and notify us of any decisions in this matter.

Sincerely,

Mia Nelson
1000 Friends of Oregon
220 East 11th, Suite 5
Eugene, OR 97401

REQUEST FOR COUNCIL ACTION

DATE ACTION REQUESTED: March 21, 2011				
Order No. __	**Ordinance No.** __	**Resolution No. 2011-2938** XX	**Motion** ___	**Information** ___
SUBJECT: Resolution Allowing Deferral Of Payment Of System Development Charges For 90 Days After Issuance Of A Building Permit During 2011 Only.			**Contact Person (Preparer) for this Motion: Barton Brierley, AICP** **Dept.: Planning and Building** **File No.:** *(if applicable)*	

RECOMMENDATION:

Adopt **Resolution No. 2011-2938**, allowing deferral of payment of system development charges for new construction for 90 days after issuance of building permit during 2011.

EXECUTIVE SUMMARY:

One home developer, Pacific Northwest Land Development, is proposing to construct about 20 new homes within the platted Terrace Heights Subdivision. They have requested the ability to defer payment of SDCs for the new homes for 60 days after issuance of building permit. This is due to current challenges in the mortgage industry in obtaining construction loans.

Newberg ordinances require payment of SDCs upon issuance of building permit. The attached resolution would allow deferral of payment of the SDCs for 90 days after issuance of building permit for new construction. This would be valid for the current year only, during the current recession. This would be open to any developers of any project.

FISCAL IMPACT:

Deferring payment of the SDCs will result in marginal loss of interest revenue on the funds during the time the SDCs are deferred.

STRATEGIC ASSESSMENT:

The current recession has made all construction projects problematic. Facilitating construction will promote local and regional development, economic growth, and employment during these difficult times. Deferring the SDCs is a small step the city can take to help facilitate this happening. Facilitating construction also will have a benefit to the building funds, general fund planning revenues, and utility funds.

RESOLUTION NO. 2011-2938

A RESOLUTION ALLOWING AN OPTION FOR DEFERRAL OF PAYMENTS OF SDCS FOR 90 DAYS FOR NEW CONSTRUCTION DURING 2011

RECITALS:

1. Newberg Municipal Code 13.05.090 requires payment of system development charges upon issuance of a building permit.

2. The current recession and mortgage crisis has slowed construction significantly and has made it challenging to finance development projects.

3. Pacific Northwest Land Development is planning on constructing a number of homes this year, and is requesting to be able to defer payment of system development charges to allow financing of the homes.

   Stimulating construction during this recession would have a number of positive benefits to the city and the community.

THE CITY OF NEWBERG RESOLVES AS FOLLOWS:

1. The City Manager is authorized to defer payment of system development charges applicable to construction of new construction for a period not to exceed 90 days after the issuance of a building permit.

2. No final inspections will be performed on any development constructed under this provision until the applicable charges are paid in full.

3. The applicant shall provide written confirmation that they will pay all system development charges due in accordance with the schedule above.

4. This authorization shall remain in force until December 30, 2011.

- **EFFECTIVE DATE** of this resolution is the day after the adoption date, which is: March 22 , 2011.

ADOPTED by the City Council of the City of Newberg, Oregon, this 21st day of March, 2011.

_____
Norma I. Alley, City Recorder

ATTEST by the Mayor this 24th day of March, 2011.

_____
Bob Andrews, Mayor

March, 8, 2011

Dear Mr. Barton Brierley,

As per your request, I am sending you this letter to explain why we are asking for deferments on the SDC fees along with reductions of these fees that are attached to the building permits in Newberg.
Our plan to build 10 to 20 Homes in your city this year is moving forward very well. We currently have 4 homes that are sold and 2 submitted for permit. Because of the high financial impact to us in the beginning stages on the cost of the SDC fees, in this tough housing market, this project could fail. Therefore, we are requesting your consideration of deferment and or reductions in these fees.

As I stated above, the housing market is very tough right now. Money is very hard to come by and banks do not want to lend on new projects because they are holding so much inventory and they want that gone first. The Terrace Heights project is no different. This subdivision has been sitting idle with no sales for over a year and has only 2 homes built on 24 lots. But, since we have taken over the project in November 2010, we have sold 2 open lots and 4 pre-sold homes. One of the open lots is under construction and the other is in design and will move forward in early April. This is a total of six new homes in as little as 3 months. That is more than a 1/3 of the total new home starts you as a city had last year.

We are just getting started in Newberg and our goal is to build between 10 and 20 homes this year alone. But I want to stress to you and your city that our investors are very nervous about working in your city because of your reluctance to assist us in a deferment or reduction in the high costs of SDC fees. They are coming in with good faith to generate revenue for the City of Newberg to list just a few below:

10 houses in permit fees will bring in over $250,000.00 to your building department;
10 houses will bring in over $1.6 million in lumber and other products to your local businesses;
10 houses will bring in jobs as well help to the small businesses in your area;
10 houses will bring in over $200,000.00 in added tax revenue to your city each year

These are only a few items that a project of this size could generate new revenue to your city. If you look at the project as a whole, not just the onset, this total project will be in the area of 6.6 million. For that reason my investors along with some strong business folks have asked that I work with you on deferring some of the high costs up front.

To me it does not matter if I am building in Newberg, Portland or any other city in this area. My goal is to provide return to my investment group. The Terrace Heights project is a good project only because we can, with your help make the numbers work. I have spoken to the principle partners of the project and they have given me instruction to work with the City of Newberg to negotiate some type of arrangement with the SDC fees that would be fair to both parties in the current economy.

I understand I am on the agenda to speak with the City Council about this matter on March 21st, in the meantime, thank you for your time and consideration.

Sincerely,

Doug Lanz

(503)-890-5269