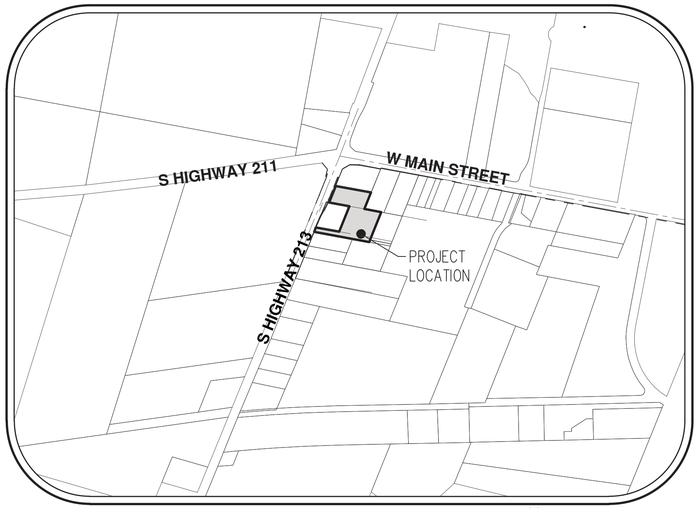
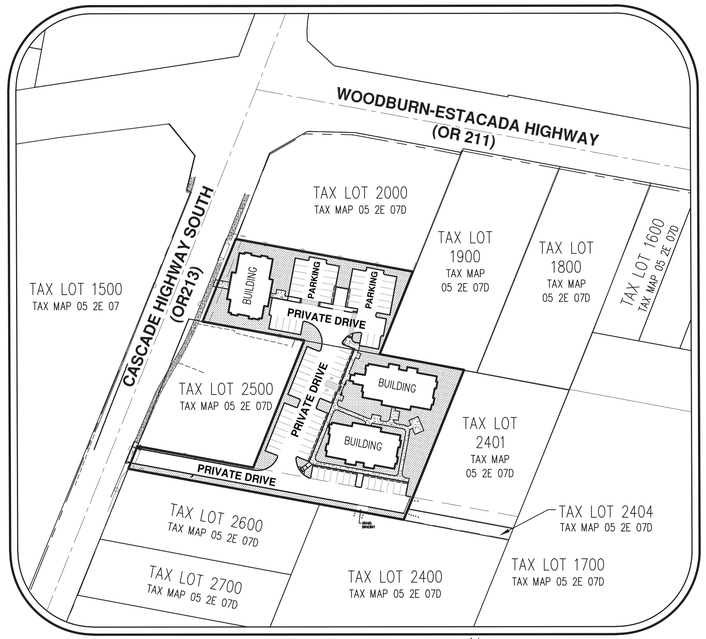
COLIMA APARTMENTS

OREGON DEPARTMENT OF TRANSPORATION: STATE HIGHWAY APPROACH CONSTRUCTION PLANS



VICINITY MAP
SCALE: 1"=500'



SITE MAP
SCALE: 1"=100'

LEGEND

	EXISTING	PROPOSED		EXISTING	PROPOSED
DECIDUOUS TREE			STORM DRAIN CLEAN OUT		
CONIFEROUS TREE			STORM DRAIN CATCH BASIN		
FIRE HYDRANT			STORM DRAIN AREA DRAIN		
WATER BLOWOFF			STORM DRAIN MANHOLE		
WATER METER			GAS METER		
WATER VALVE			GAS VALVE		
DOUBLE CHECK VALVE			GUY WIRE ANCHOR		
AIR RELEASE VALVE			UTILITY POLE		
SANITARY SEWER CLEAN OUT			POWER VAULT	P	P
SANITARY SEWER MANHOLE			POWER JUNCTION BOX		
SIGN			POWER PEDESTAL		
STREET LIGHT			COMMUNICATIONS VAULT	C	C
MAILBOX			COMMUNICATIONS JUNCTION BOX		
			COMMUNICATIONS RISER		

	EXISTING	PROPOSED
RIGHT-OF-WAY LINE		
BOUNDARY LINE		
PROPERTY LINE		
CENTERLINE		
DITCH		
CURB		
EDGE OF PAVEMENT		
EASEMENT		
FENCE LINE	XXX XXX XXX	
GRAVEL EDGE		
POWER LINE	PWR PWR	PWR PWR
OVERHEAD WIRE	OHW	OHW OHW
COMMUNICATIONS LINE	COM COM	COM COM
FIBER OPTIC LINE	CFO CFO	CFO CFO
GAS LINE	GAS GAS	GAS GAS GAS
STORM DRAIN LINE	STM STM	STM STM
SANITARY SEWER LINE	SAN SAN	SAN SAN
WATER LINE	WAT WAT	WAT WAT

APPLICANT:
ANGEL JIMENEZ
31514 S HIGHWAY 213
MOLALLA, OR 97038

LAND USE PLANNING, CIVIL ENGINEERING, AND SURVEYING FIRM:
AKS ENGINEERING & FORESTRY, LLC
CONTACT: JOHN RAUGUST
12965 SW HERMAN ROAD, SUITE 100
TUALATIN, OR 97062
PH: 503-563-6151

PROJECT LOCATION:
31514 S HIGHWAY 213
MOLALLA, OR 97038

PROPERTY DESCRIPTION:
TAX LOT 2300 AND 2402, CLACKAMAS COUNTY TAX MAP 5-2E-07D WILLAMETTE MERIDIAN, CLACKAMAS COUNTY, OREGON.

VERTICAL DATUM:
VERTICAL DATUM: ELEVATIONS ARE BASED ON NATIONAL GEODETIC SURVEY BENCHMARK PID: RD1508, LOCATED AT THE CORNER OF HIGHWAY 99E AND S BARLOW ROAD WITH AN ELEVATION OF 105.09 FEET (NAVD 88)

UTILITY CONTACTS

NATURAL GAS:
NW NATURAL
ATTN: BRIAN KELLEY
220 NW 2ND AVENUE
PORTLAND, OR 97209
PH: 503-220-2427

POWER:
PORTLAND GENERAL ELECTRIC
ATTN: SERVICE COORDINATORS
3700 SE 17TH AVENUE
PORTLAND, OR 97202
PH: 503-736-5450

COMMUNICATIONS
MOLALLA COMMUNICATIONS COMPANY
ATTN: DAPHNE LISAC
211 ROBBINS ST
MOLALLA, OR 97038
PH: 503-829-1108

WAVE BROADBAND
ATTN: TRAVIS EDGE & DEREK ANDERSON
669 RAY J. GLATT CIRCLE
WOODBURN, OR 97071
PH: 866-928-3123

WATER, SANITARY SEWER, STORM DRAINAGE:
CITY OF MOLALLA
ATTN: GERALD FISHER
117 N MOLALLA AVENUE
MOLALLA, OR 97038
PH: 503-829-6855 EXT.220

SHEET INDEX

Know what's below. Call before you dig.

NOTICE TO EXCAVATORS:
ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH ON OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING 503-232-1987.

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
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COLIMA APARTMENTS
MOLALLA OREGON
TAX LOTS 2300 AND 2402 CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

COVER SHEET WITH SITE AND VICINITY MAPS

DESIGNED BY: JDR
DRAWN BY: GSH/KJB
MANAGED BY: JDR
CHECKED BY: MBH
DATE: 06/16/2020

REGISTERED PROFESSIONAL ENGINEER — PRELIMINARY — NOT FOR CONSTRUCTION — OREGON — JOHN D. RAUGUST — RENEWAL DATE: 12/31/20

REVISIONS

JOB NUMBER 7435

SHEET C150

AKS DRAWING FILE: 7435 COVER.DWG | LAYOUT: C150

NOTES:

1. UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE MARKINGS AS PROVIDED BY OTHERS, PROVIDED PER UTILITY LOCATE TICKET NUMBERS 19267370, 19267373 AND 19267375. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND LOCATES REPRESENT THE ONLY UTILITIES IN THE AREA. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
2. FIELD WORK WAS CONDUCTED SEPTEMBER 30 – OCTOBER 4, 2019.
3. VERTICAL DATUM: ELEVATIONS ARE BASED ON NATIONAL GEODETIC SURVEY BENCHMARK PID: RD1508, LOCATED AT THE NE CORNER OF HIGHWAY 99E AND S BARLOW ROAD WITH AN ELEVATION OF 105.09 FEET (NAVD 88).
4. THIS IS NOT A BOUNDARY SURVEY TO BE RECORDED WITH THE COUNTY. BOUNDARIES ARE CONSIDERED PRELIMINARY AND SHOULD BE CONFIRMED WITH THE STAMPING SURVEYOR PRIOR TO RELYING ON FOR DETAILED DESIGN OR CONSTRUCTION.
5. BUILDING FOOTPRINTS ARE MEASURED TO SIDING UNLESS NOTED OTHERWISE. CONTACT SURVEYOR WITH QUESTIONS REGARDING BUILDING TIES.
6. CONTOUR INTERVAL IS 1 FOOT.
7. TREES WITH DIAMETER OF 6" AND GREATER ARE SHOWN. TREE DIAMETERS WERE DETERMINED BY UTILIZING A DIAMETER TAPE AT BREAST HEIGHT. TREE INFORMATION IS SUBJECT TO CHANGE UPON ARBORIST INSPECTION.

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
10779	DECIDUOUS	5,6,8
10788	DECIDUOUS	30
10877	CONIFEROUS	12
10922	DECIDUOUS	15
10923	DECIDUOUS	20
10924	DECIDUOUS	18

N

SCALE: 1" = 30 FEET

30 0 6 15 30

ORIGINAL PAGE SIZE: 22" x 34"

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COLIMA APARTMENTS

OREGON

MOLALLA
TAX LOTS 2300 AND 2402

CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

EXISTING CONDITIONS PLAN

DESIGNED BY: .
DRAWN BY: GSH/KOB
MANAGED BY: .
CHECKED BY: MBH
DATE: 06/16/2020

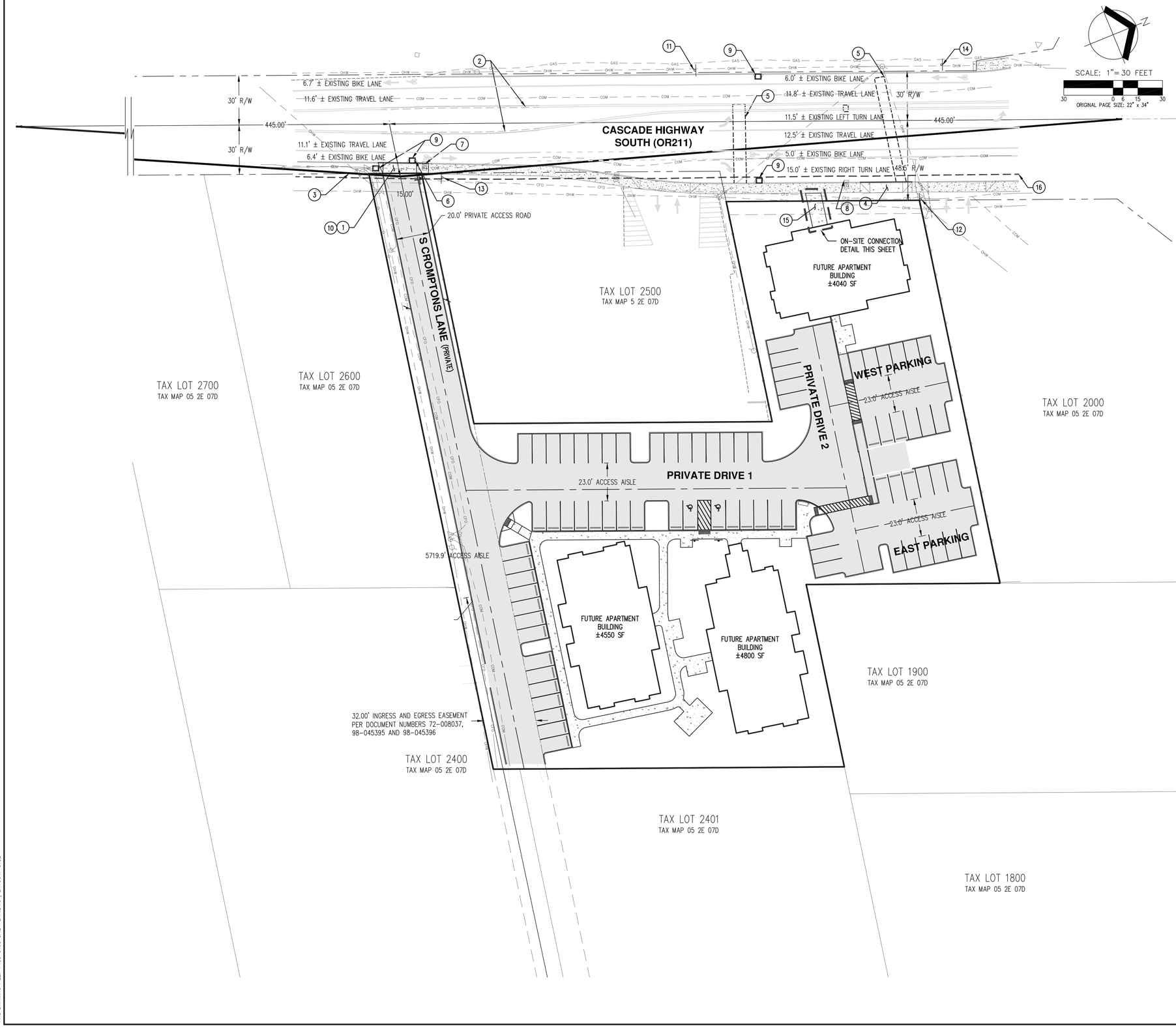
REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY
NOT FOR CONSTRUCTION
OREGON
JANUARY 14, 2017
BENJAMIN R HUFF
84738PLS
RENEWS: 6/30/21

REVISIONS

JOB NUMBER
7435

SHEET
C151

AKS DRAWING FILE: 7435 C000 EXCOND.DWG | LAYOUT: C151

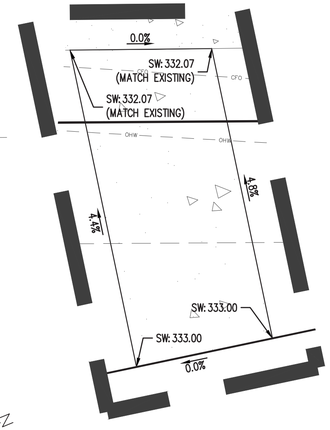


(#) SITE CONSTRUCTION KEYED NOTES:

1. INSTALL NEW RESIDENTIAL DRIVEWAY APPROACH PER DETAIL RD715, TYPE A, WITH 6" THICK CONCRETE AND 6"x6"x10 GA MESH, OVER 2" OF ¾"-0" BASE ROCK. SEE SHEET C153 FOR DETAILED SPOT ELEVATION INFORMATION. MAINTAIN EXISTING CURB IN CURRENT LOCATION AND PROTECT FROM DAMAGE THROUGHOUT CONSTRUCTION.
2. NEW TWO-WAY LEFT TURN LANE STRIPING. SEE SHEET C154 FOR DETAILED INFORMATION. REMOVE EXISTING STRIPING AS NEEDED. PROTECT ALL EXISTING STRIPING THROUGHOUT CONSTRUCTION.
3. INTERSECTION SIGHT DISTANCE LINE. TRIM VEGETATION IN RIGHT-OF-WAY PER ODOT REQUIREMENTS.
4. REPLACE EXISTING DRIVEWAY DROP WITH 6' WIDE MONOLITHIC CURB AND SIDEWALK PER DETAIL RD720 (MATCH EXISTING CURB EXPOSURE – 'E'). PROTECT EXISTING TRAFFIC SENSOR DURING CONSTRUCTION AND COORDINATE WITH ODOT WELL IN ADVANCE OF PLANNED WORK. CONTRACTOR SHALL PROTECT ANY CONDUITS ENCOUNTERED DURING CONSTRUCTION. SEE SHEET C153 FOR DETAILED SPOT ELEVATION INFORMATION.
5. SAWCUT AND TRENCH PATCH FOR NEW UTILITIES WITH 8" OF LEVEL 3, 1/2" DENSE GRADED ACP (2" WEAR COURSE OVER TWO 3" BASE COURSES) OVER 2" OF 3/4"-0" AGGREGATE BASE ROCK OVER 12" OF 1-1/2"-0" AGGREGATE SUB-BASE ROCK OVER 12" OF COMPACTED SUBGRADE. SAND AND SEAL JOINTS. SEE DISTRICT 3T CUT DIAGRAM AND DETAILS RD 300 AND RD 302 FOR ADDITIONAL INFORMATION.
6. MAINTAIN EXISTING CATCH BASIN IN CURRENT LOCATION.
7. REPLACE EXISTING MAILBOX PER DETAILS RD 100 AND RD 101.
8. REMOVE EXISTING MAILBOX.
9. INSTALL TYPE 3 AND TYPE 7 INLET PROTECTION PER DETAIL 1010 (PRIOR TO CONSTRUCTION).
10. INSTALL CONSTRUCTION ACCESS PER CITY REQUIREMENTS.
11. R2-1 (40 MPH SPEED SIGN). PROTECT SIGN THROUGHOUT CONSTRUCTION.
12. R3-7 (RIGHT LANE MUST TURN RIGHT) PROTECT SIGN THROUGHOUT CONSTRUCTION.
13. R4-4 (BEGIN RIGHT TURN LANE, YIELD TO BIKES) PROTECT SIGN THROUGHOUT CONSTRUCTION.
14. D2-3 (MARQUAM 7, SILVERTON – 14) AND D1-1 (ALEXELI VINEYARD AND WINERY – 5-1/2) PROTECT SIGN THROUGHOUT CONSTRUCTION.
15. CONNECTION TO ON-SITE PATHWAYS. SEE DETAIL THIS SHEET FOR ADDITIONAL INFORMATION.
16. CLEAR ZONE LIMIT LINE. CLEAR ZONE IS BASED ON AASHTO ROADSIDE DESIGN GUIDE CHAPTER 3 SECTION 3.1 OF THE 4TH EDITIONS (2011). CLEAR ZONE CALCULATED FOR A DESIGN SPEED OF 40MPH, DESIGN ADT OVER 6,000, AND 1V:6H OR FLATTER SLOPE.

GENERAL NOTE:

1. CONTRACTOR SHALL PROVIDE FLAGGING DURING WORK IN THE ODOT RIGHT-OF-WAY PER DETAIL TM850, 'TWO-LANE TWO-WAY ROAD – ONE LANE CLOSURE'.



ON-SITE CONNECTION DETAIL

SCALE: 1" = 5'

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COLIMA APARTMENTS

MOLALLA, OREGON
TAX LOTS 2300 AND 2402
CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

SITE PLAN

DESIGNED BY:	JDR
DRAWN BY:	GSH/KJB
MANAGED BY:	JDR
CHECKED BY:	MBH
DATE: 06/16/2020	

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 2017
CONN D. RAUGUST
PRELIMINARY NOT FOR CONSTRUCTION
RENEWAL DATE: 12/31/20

REVISIONS
12/04/2019

JOB NUMBER
7435

SHEET
C152

AKS DRAWING FILE: 7435 C100 SITE PLAN.DWG | LAYOUT: C152

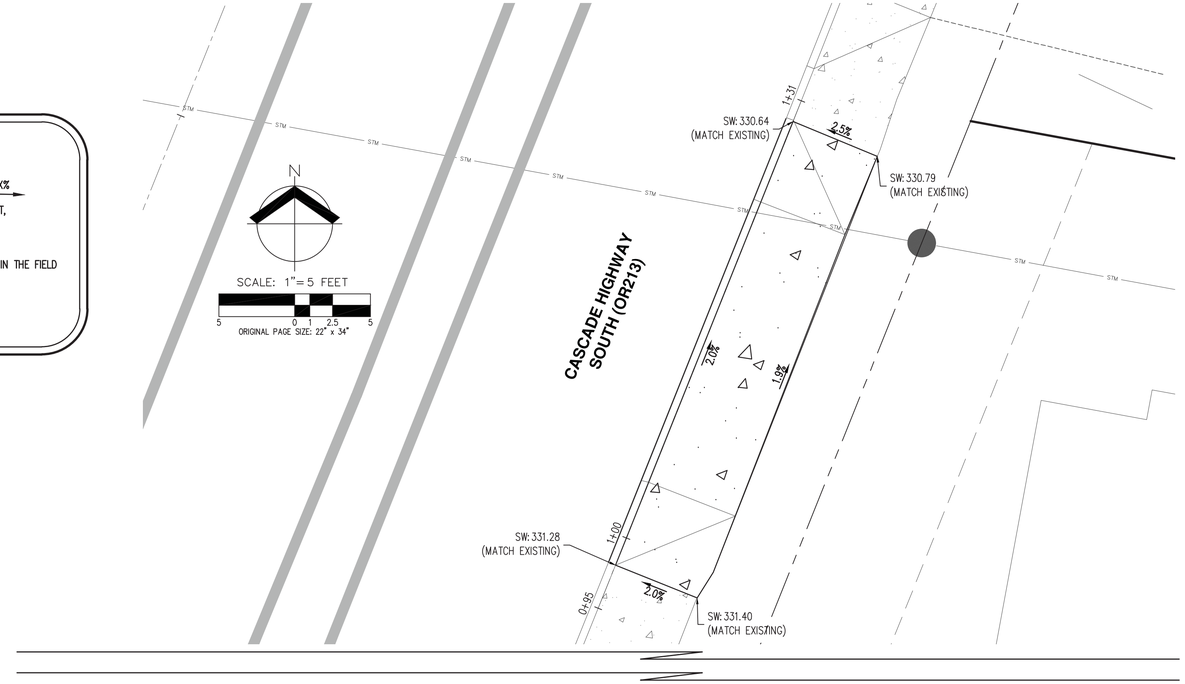
LEGEND

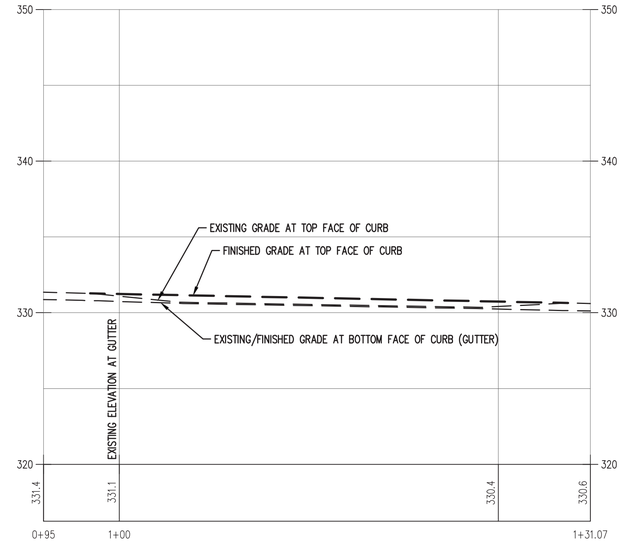
*DOWNWARD SLOPE DIRECTION X.X%

*SLOPES ARE APPROXIMATE. IF DISCREPANCIES EXIST, SPOT ELEVATIONS CONTROL.

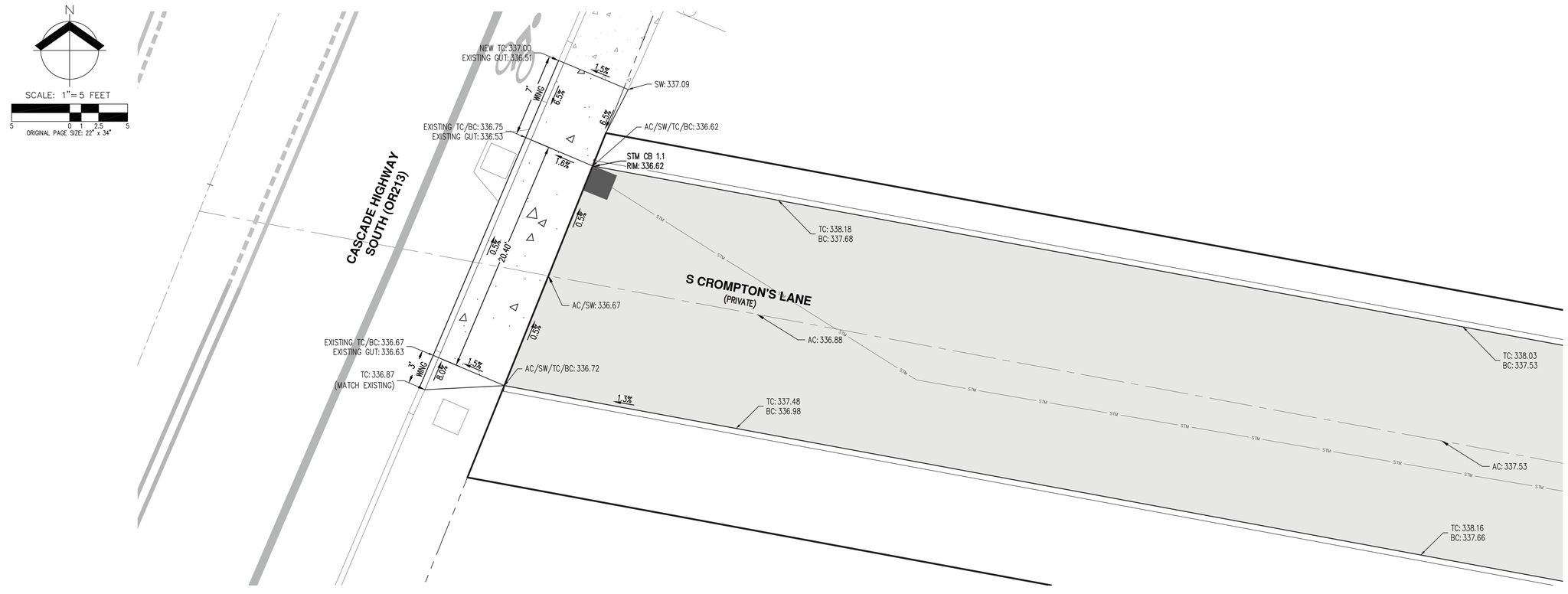
ABBREVIATIONS

EX – EXISTING GROUND ELEVATION AS SURVEYED IN THE FIELD
GUT – GUTTER ELEVATION
TC – TOP OF CURB ELEVATION
BC – BOTTOM OF CURB ELEVATION
BW – BACK OF SIDEWALK
RIM – STORM DRAIN RIM ELEVATION





TAX LOT 2300 EXISTING DRIVEWAY
Hor. Scale: 1"= 5'
Vert. Scale: 1"= 5'



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COLIMA APARTMENTS

MOLALLA OREGON
TAX LOTS 2300 AND 2402
CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

HIGHWAY 213 SPOT ELEVATION PLAN

DESIGNED BY:	JDR
DRAWN BY:	GSH/KJB
MANAGED BY:	JDR
CHECKED BY:	MBH
DATE: 06/16/2020	

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 2007
CONN D. RAUGUST
PRELIMINARY
NOT FOR CONSTRUCTION
RENEWAL DATE: 12/31/20

REVISIONS

JOB NUMBER
7435

SHEET
C153

AKS DRAWING FILE: 7435 C100 HWY APPROACH.DWG | LAYOUT: C153

SIGNAGE KEYED NOTES

(1 ST) **STOP**

STOP SIGN
36"X36" SIGN MOUNTED ON PERFORATED STEEL SQUARE TUBE (ST) PER DETAIL 300.
(R1-1) PER MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

(2) **S Cromptons Ln**

STREET NAME SIGN (D3-1) PER MUTCD. CONFIRM FINAL TYPE/SIZE WITH THE CITY PRIOR TO ORDERING.

(3) **NO OUTLET →**

TWO (2) DEAD END SIGN, ONE (1) RIGHT AND ONE (1) LEFT
36"X8"
(W14-2A) PER MUTCD

(4) **PRIVATE DR**

INSTALL "PRIVATE DRIVE" SIGN.
36"X9"
(OW14-3) PER ODOT SIGN POLICY AND GUIDELINES

SIGN KEY

(N) INSTALL NEW SIGN (N)

(N M) INSTALL NEW SIGN (N) ON NEW SUPPORT (M)
M: MATERIAL OPTIONS
ST: PERFORATED STEEL SQUARE TUBE

SCALE: 1"=10 FEET
10 0 2 5 10
ORIGINAL PAGE SIZE: 22" x 34"

(#) STRIPING KEYED NOTES:

1. BEGIN TWO-WAY LEFT TURN LANE
2. END TWO-WAY LEFT TURN LANE
3. REMOVE EXISTING STRIPING
4. MAINTAIN EXISTING STRIPING

HATCH LEGEND

2" GRIND AND INLAY. USE ODOT APPROVED LEVEL 3 ½" DENSE PG 64-22 HMAC

GENERAL NOTES:

1. ALL WORK IN ODOT RIGHT OF WAY SHALL CONFORM TO ODOT 2018 SPECIFICATIONS.

STRIPING LEGEND

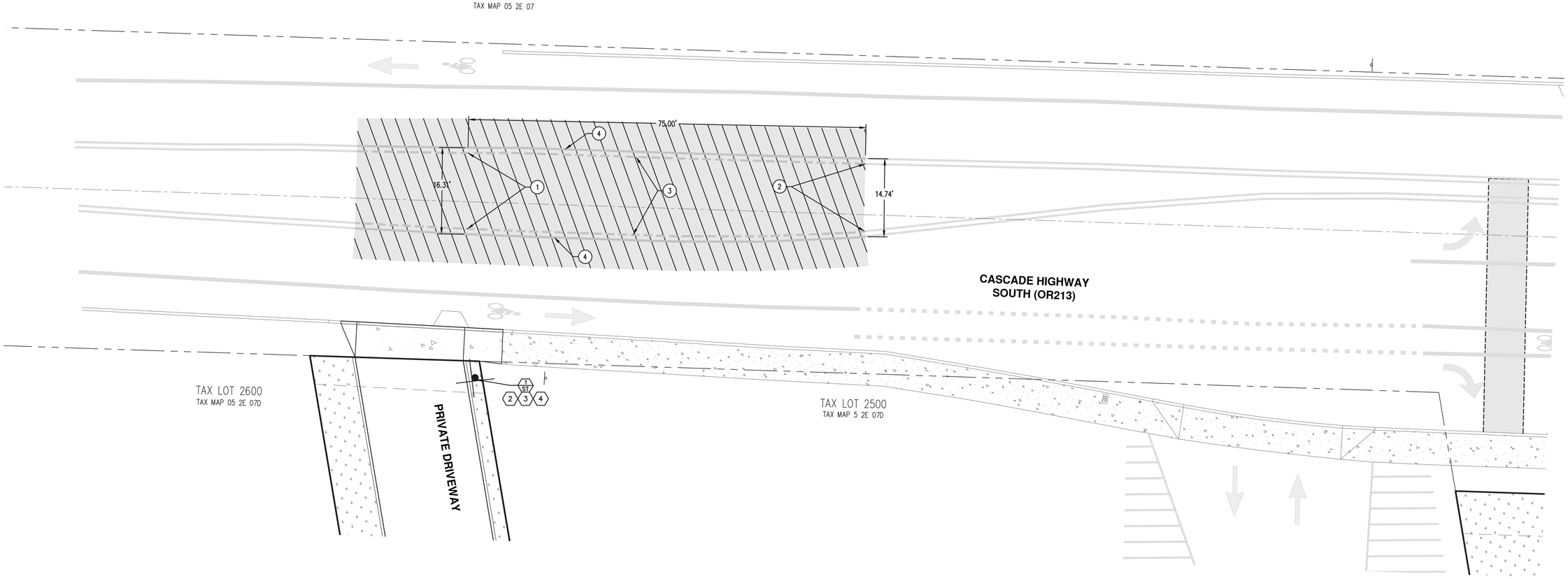
TWL = TWO WAY LEFT TURN, 4" YELLOW LINES

STRIPING NOTES

1) LONGITUDINAL LINE WORK SHALL BE METHOD A (EXTRUDED) THERMOPLASTIC SURFACE, PROFILED ON ODOT ROW PER REG.1 STRIPING PLAN.

3) PAVEMENT MARKINGS REMOVAL SHALL BE DONE BY HYDROBLASTING OR APPROVED EQUAL

4) ANY MARKINGS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO EXISTING OR BETTER CONDITION



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COLIMA APARTMENTS

MOLALLA OREGON
TAX LOTS 2300 AND 2402
CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

HIGHWAY 213 STRIPING AND SIGNAGE PLAN

DESIGNED BY:	JDR
DRAWN BY:	GSH/KJB
MANAGED BY:	JDR
CHECKED BY:	MBH

DATE: 06/16/2020

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 2017
CONN D. RAUGUST
PRELIMINARY NOT FOR CONSTRUCTION

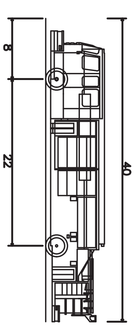
RENEWAL DATE: 12/31/20

REVISIONS

JOB NUMBER
7435

SHEET
C154

AKS DRAWING FILE: 7435 C100 HWY APPROACH STRIPING.DWG | LAYOUT: C154



Pumper Fire Truck	
Overall Length	40.000ft
Overall Width	8.167ft
Overall Body Height	7.455ft
Min Body Ground Clearance	0.655ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

FIRE TRUCK TURNING MOVEMENTS

COLIMA APARTMENTS

MOLALLA
TAX LOTS 2300 AND 2402

OREGON
CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

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REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY
NOT FOR CONSTRUCTION
OREGON
JULY 14, 2006
DAVID D. RAUGUSTON

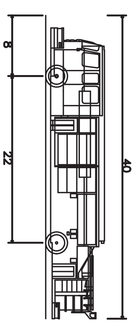
RENEWAL DATE 12/31/20

REVISIONS

DESIGNED BY: JDR
DRAWN BY: GSH/KJB
MANAGED BY: JDR
CHECKED BY: MRH
DATE: 06/16/2020

JOB NUMBER 7435

SHEET C155



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FIRE TRUCK TURNING MOVEMENTS

COLIMA APARTMENTS

MOLALLA
TAX LOTS 2300 AND 2402

OREGON
CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

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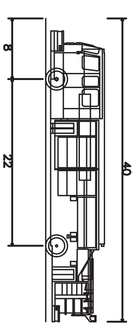
DESIGNED BY: JDR
DRAWN BY: GSH/KJB
MANAGED BY: JDR
CHECKED BY: MRH
DATE: 06/16/2020

REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY
NOT FOR CONSTRUCTION
OREGON
JULY 13, 2004
DAVID L. KAUGUSTAD
RENEWAL DATE 12/31/20

REVISIONS

12/04/2019
JOB NUMBER
7435
SHEET
C156



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FIRE TRUCK TURNING MOVEMENTS

COLIMA APARTMENTS

MOLALLA
TAX LOTS 2300 AND 2402

OREGON
CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

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DESIGNED BY: JDR
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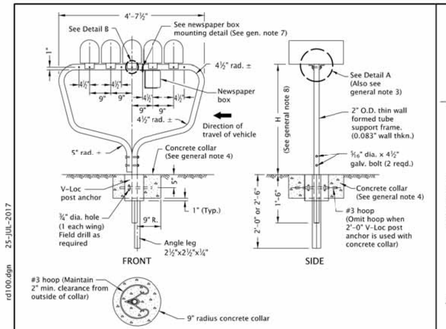
DATE: 06/16/2020

REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY
NOT FOR CONSTRUCTION
JOHN D. RAUGUSTON
RENEWAL DATE 12/31/20

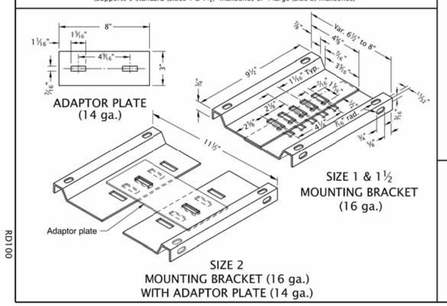
REVISIONS

JOB NUMBER 7435

SHEET C157



MULTIPLE SUPPORT
(Supports 5 standard (Sizes 1 & 1½) mailboxes or 4 large (Size 2) mailboxes)



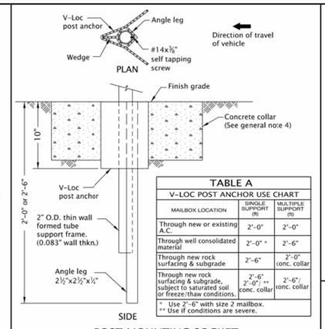
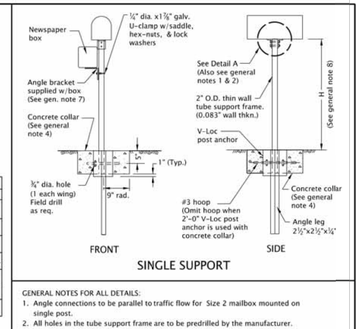


TABLE A
V-LOC POST ANCHOR USE CHART

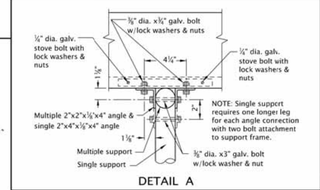
MAILBOX LOCATION	SINGLE SUPPORT (ft)	MULTIPLE SUPPORT (ft)
Through new or existing A.C.	2'-0"	2'-0"
Through well consolidated material	2'-0" *	2'-6"
Through new rock surfacing & subgrade	2'-6"	2'-0" (conc. collar
Through new rock surfacing & subgrade, subject to saturated soil or freeze/thaw conditions.	2'-6", 2'-0" ** (conc. collar)	2'-6") (conc. collar

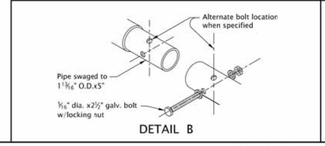
* Use 2'-6" with size 2 mailbox.
** Use if conditions are severe.

POST MOUNTING SOCKET



SINGLE SUPPORT





GENERAL NOTES FOR ALL DETAILS:

1. Angle connections to be parallel to traffic flow for Size 2 mailbox mounted on single post.
2. All holes in the tube support frame are to be predrilled by the manufacturer.
3. Size 2 mailbox mounted on a multiple support requires 2 each ¾" dia. x1½" galv. bolts with lock washers and nuts to attach the adaptor plate to the mounting bracket. The unit will then require 4 angle connections to attach to the formed tube support frame. See Detail A.
4. Provide concrete collar when any of the following conditions exist:
   a) when required in Table A
   b) when required by project plans
   c) as directed by the Engineer
   Concrete collar, when required, to be poured in place after V-Loc post anchor has been installed, level and plumb. Do not excavate below bottom of V-Loc post anchor. Care shall be taken that no concrete is placed within anchor.
5. Other proprietary products available as listed in ODOT's QPL.
6. For mailbox installation locations, see Std. Dwg. RD101 and project plans.
7. For Newspaper Box Mounting Detail, see Std. Dwg. RD101.
8. Mounting height (H) shall be 42" nominal, measured from vehicle driving surface.
9. See project plans for detail not shown.

CALL: BOOK NO. N/A | BASELINE REPORT DATE 25-JUL-2017

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

MAILBOX SUPPORT

2018

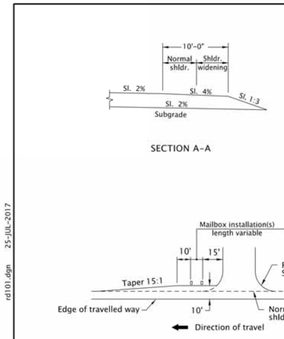
DATE	REVISION DESCRIPTION

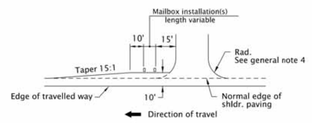
rd100.dgn 25-JUL-2017

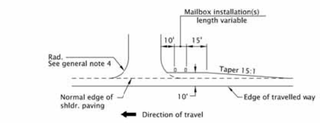
RD100

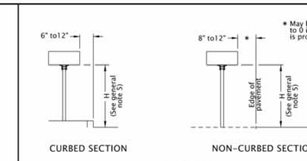
Effective Date: June 1, 2020 - November 30, 2020

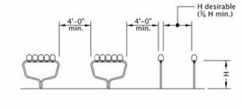
RD100

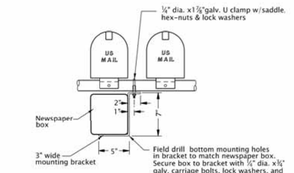


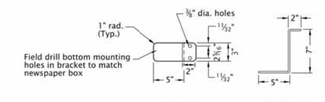












GENERAL NOTES FOR ALL DETAILS:

1. All holes in the tube support frame are to be predrilled by the manufacturer.
2. Other proprietary products available as listed in ODOT's QPL.
3. For mailbox support details, see Std. Dwg. RD100.
4. For approach details, see Std. Dwg. RD715.
5. Mounting height (H) shall be 42" nominal, measured from vehicle driving surface.
6. See project plans for details not shown.

CALL: BOOK NO. N/A | BASELINE REPORT DATE 25-JUL-2017

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

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OREGON STANDARD DRAWINGS

MAILBOX INSTALLATION

2018

DATE	REVISION DESCRIPTION

rd101.dgn 25-JUL-2017

RD101

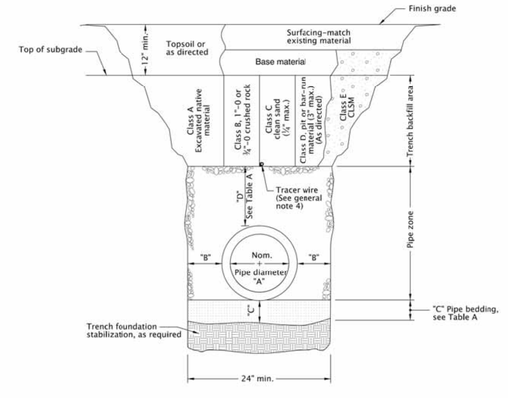
Effective Date: June 1, 2020 - November 30, 2020

RD101

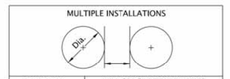
TABLE A

"A" (in)	"B" (in)	"C" (in)	"D" (in)
4	10	4	8
6	10	4	8
8	10	6	10
10	10	6	10
12	12	6	10
15	12	6	10
18	16	6	12
21	16	6	12
24	18	6	12
30	18	6	12
36	24	6	14
42	24	6	14
48	24	6	14
54	24	6	14
60	24	6	14
66	24	6	14
72	24	6	14

For pipes over 72" diameter, see general note 3.



MULTIPLE INSTALLATIONS



DIAMETER	MIN. SPACE BETWEEN PIPES
Up to 48"	24"
48" to 72"	One half (½) dia. of pipe

GENERAL NOTES FOR ALL DETAILS:

1. Surfacing of paved areas shall comply with street cut Std. Dwg. RD302.
2. For pipe installation in embankment areas where the trench method will not be used and the pipe is ≥ 36" diameter, increase dimension "B" to nominal pipe diameter.
3. Pipes over 72" diameter are structures, and are not applicable to this drawing.
4. See Std. Dwg. RD336 for tracer wire details (When required).

CALL: BOOK NO. N/A | BASELINE REPORT DATE 14-JUL-2014

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS

2018

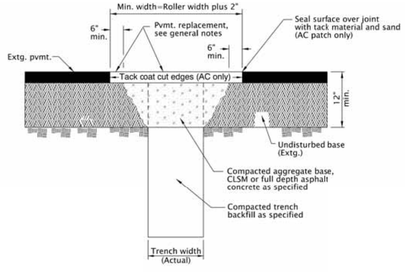
DATE	REVISION DESCRIPTION

rd300.dgn 25-JUL-2017

RD300

Effective Date: June 1, 2020 - November 30, 2020

RD300



GENERAL NOTES FOR ALL DETAILS:

1. All existing AC or PCC pavement shall be sawcut prior to repaving.
2. Concrete pavement shall be replaced with concrete to a minimum thickness of 6" or to the thickness of removed pavement, whichever is greater.
3. Place AC mix minimum thkn. of 4" or the thkn. of the removed pavement, whichever is greater. Compact as specified.

CALL: BOOK NO. N/A | BASELINE REPORT DATE 12-JUN-2008

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

STREET CUT

2018

DATE	REVISION DESCRIPTION

rd302.dgn 25-JUL-2017

RD302

Effective Date: June 1, 2020 - November 30, 2020

RD302

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

COLIMA APARTMENTS

OREGON

MOLALLA
TAX LOTS 2300 AND 2402

CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

DETAILS

DESIGNED BY: JDR
DRAWN BY: GSH/KJB
MANAGED BY: JDR
CHECKED BY: MBH
DATE: 06/16/2020

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 2017
JOHN D. RAUGUST
PRELIMINARY
NOT FOR CONSTRUCTION

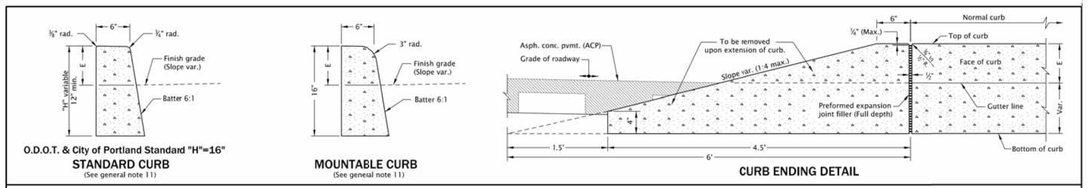
RENEWAL DATE: 12/31/20

REVISIONS

JOB NUMBER
7435

SHEET
C158

AKS DRAWING FILE: 7435 C000 DETAILS.DWG | LAYOUT: C158

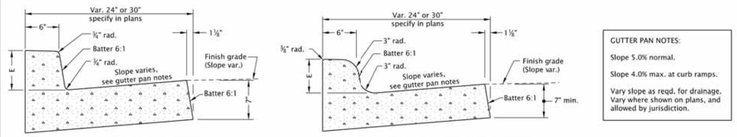


O.D.O.T. & City of Portland Standard "H"=16"

STANDARD CURB
(See general note 11)

MOUNTABLE CURB
(See geneal note 11)

CURB ENDING DETAIL



CURB AND GUTTER

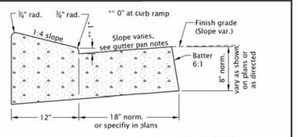
MOUNTABLE CURB AND GUTTER

GUTTER PAN NOTES:

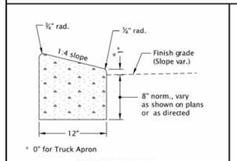
Slope 5.0% normal.

Slope 4.0% max. at curb ramps.

Vary slope as reqd. for drainage. Vary where shown on plans, and allowed by jurisdiction.

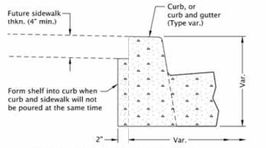


LOW PROFILE MOUNTABLE CURB AND GUTTER
(Where shown on plans)

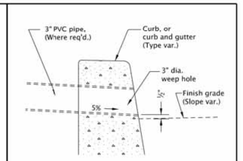


* 0" for Truck Apron

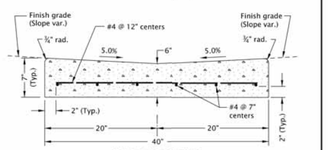
LOW PROFILE MOUNTABLE CURB
(See general note 11)



MODIFICATION FOR KEYWAY
(Where shown on plans)



WEEP HOLE DETAIL
(Where shown on plans, and allowed by jurisdiction)



VALLEY GUTTER

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb exposure "E" = 6" to 9", as measured vertically from flowline to highest point on curb. Vary as shown on plans or as directed. O.D.O.T standard "E"=7".
2. Const. curb expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveways.
3. Const. curb contraction joints at 15' maximum spacing, and at ends of each inlet and curb ramp.
4. Transitions shall be used to connect curbs of different exposures "E". ("E" Is the total vertical dimension of those curb surfaces having a slope of 1:1 or steeper). Minimum desirable transition length shall be 20' for each 1" difference in "E".
5. Tops of all curbs shall slope toward the roadway at 1.5% max. (Max. 2.0% finished surface slope), unless otherwise shown, or as directed.
6. Dimensions are nominal, vary to conform with curb machine approved by the engineer.
7. Dimensions adjacent to radii are measured to the point of intersection of curb surfaces.
8. For sidewalk details, and monolithic curb & sidewalk, see Std. Dwgs. RD720 & RD721.
9. For drainage curbs, see Std. Dwg. RD701.
10. For curb ramp details, see Std. Dwg. RD755.
11. On or along state highways, curb and gutter is required at curb ramp.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 13-JAN-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

CURBS

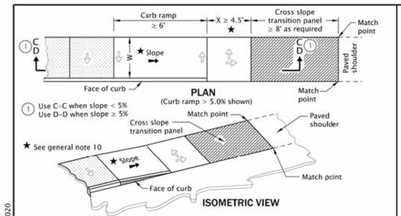
2018

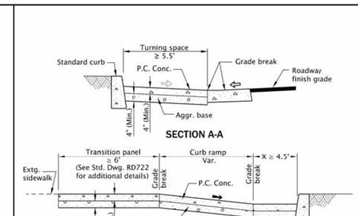
DATE	REVISION DESCRIPTION
01-2018	REVISED & ADDED NOTES
05-2018	REVISED NOTE
07-2018	ADDED DETAIL & REVISED NOTES
05-2019	REVISED NOTES
01-2020	REVISED DETAIL & NOTES

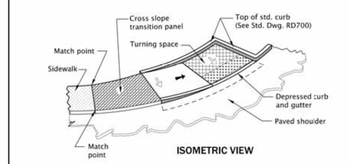
rd700.dgn 13-JAN-2020

RD700

Effective Date: June 1, 2020 - November 30, 2020 RD700







GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb ramp details are based on ODOT applicable Standards.
2. See project plans for details not shown. See Std. Dwgs. RD700 & RD701 for curbs. See Std. Dwgs. RD720 & RD721 for sidewalks. See Std. Dwgs. TM503 & TM530 for crosswalk markings, widths, etc. See Std. Dwg. RD755 for curb ramp details not shown. See Traffic Standard Drawings for signal pole and pedestrian pedestal details.
3. Tooled dummy joints are required at all curb ramp grade break lines.
4. Curb ramp slopes shown are relative to the true level horizon (Zero bubble).
5. Check the gutter flow depth to assure that the design flood does not overtop the back of sidewalk. If overtopping occurs place an inlet at upstream side or perform other approved design mitigation.
6. When a shared use path terminates, the curb ramp shall be the full width of the path and generally use taper or shoulder option. If curbed option is used, the turning space x-dimension should be minimum 8' wide to enable bicycles to ride from ramp to shoulder.
7. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
8. On or along state highways, curb and gutter is required at curb ramps.
9. All end of sidewalk options can be used for curved or tangent roadway sections.
10. When the slope of the curb ramp is greater than 5.0%, a min. landing space of 4.5' x 4.5' with a 1.5% max. slope (2.0% finished surface) is required at the bottom of the curb ramp. See section D-D.

LEGEND:

- Sidewalk
- Transition panel
- Turning space
  When not constrained 4.5' x 4.5' (4' x 4' min. finished surface).
  When constrained 4.5' x 5.5' (4' x 5' min. finished surface with longer dimension in direction of pedestrian street crossing). The landing area shall have a slope of 1.5% max. (Max. 2.0% finished surface slope).
- Detectable warning surface
- Slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Slope 7.5% max. (Max. 8.3% finished surface slope)
- Counter slope 4% max. ascending or descending, slope as required for drainage
- W New construction sidewalk width. See contract plans for dimension.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 13-JAN-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

CURB RAMP AND TURNING SPACE (FOR ENDS OF SIDEWALKS)

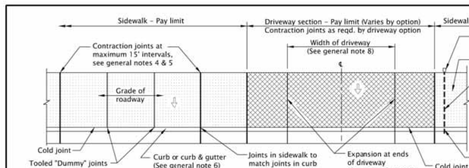
2018

DATE	REVISION DESCRIPTION
03-2018	ADDED SHOULDER OPTION DETAIL, REVISED DETAILS & NOTES
07-2018	REVISED DETAILS & NOTES
01-2019	REVISED DETAILS & NOTES
06-2019	REVISED DETAILS & NOTES
01-2020	REVISED NOTES

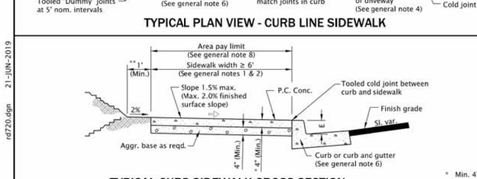
rd754.dgn 13-JAN-2020

RD754

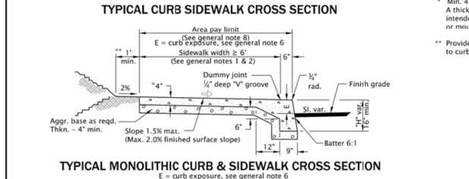
Effective Date: June 1, 2020 - November 30, 2020 RD754



TYPICAL PLAN VIEW - CURB LINE SIDEWALK



TYPICAL CURB SIDEWALK CROSS SECTION

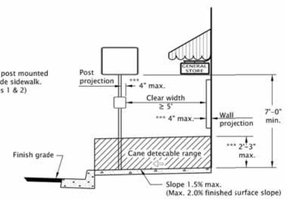


TYPICAL MONOLITHIC CURB & SIDEWALK CROSS SECTION
E = curb exposure, see general note 6

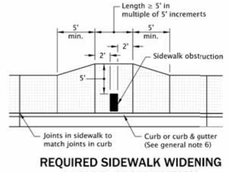
* Min. 4" or as specified in plans. A thickness ≥ 6" if sidewalk is intended as portion of a driveway or mountable curb is used.

** Provide compacted backfill adjacent to curb and sidewalk

*** Objects with base below 2'-3" may protrude any distance as long as the 5' circulation path is maintained. When an object with a base higher than 2'-3" protrudes further than 4" provide a detection below protrusion to delineate edge.



CLEAR CIRCULATION PATH



REQUIRED SIDEWALK WIDENING AROUND OBSTRUCTIONS

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Include additional paved or unpaved 2' shy distance to vertical faces higher than 5' such as retaining walls, sound walls, fences and buildings.
2. Curb type and sidewalk width as shown on plans or as directed. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint.
3. Install 3" pvc weep hole pipes in sidewalks where shown on plans, and allowed by jurisdiction. Place contraction joint over top of pipe. See Std. Dwg. RD700 for weep hole details.
4. Provide expansion joints around poles, posts, boxes, at ends of each driveway, and other fixtures which protrude through or against the structures. For sidewalk, monolithic curb & sidewalk, const. expansion joints at 45' maximum spacing. See Std. Dwg. RD722 for expansion joints details.
5. Const. contraction joints at 15' maximum spacing, and at ends of each curb ramp. See Std. Dwg. RD722 for contraction joints details.
6. For curb details, see Std. Dwgs. RD700 & RD701. ODOT standard E=7".
7. Sidewalk details are based on ODOT applicable standards.
8. Fully lowered sidewalk shown; see project plans for the diveway design specified. For driveway details not shown, see Std. Dwgs. RD725, RD730, RD735, RD740, RD745 & RD750.
9. See project plans for details not shown.

LEGEND

- Sidewalk pay limit.
- Driveway pay limit, varies by option, (See general note 8).
- Slope 1.5% max. (Max. 2.0% finished surface slope)

CALC. BOOK NO. N/A

BASELINE REPORT DATE 21-JUN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

CURB LINE SIDEWALKS

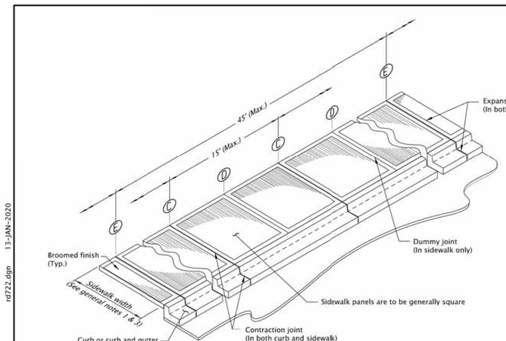
2018

DATE	REVISION DESCRIPTION
01-2018	REVISED NOTE
07-2019	REVISED DETAIL & NOTES
01-2019	REMOVED, REVISED DETAILS & NOTES
05-2019	ADDED & REVISED NOTES

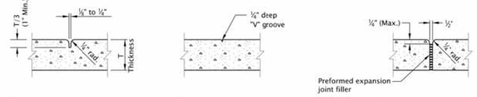
rd720.dgn 21-JUN-2019

RD720

Effective Date: June 1, 2020 - November 30, 2020 RD720



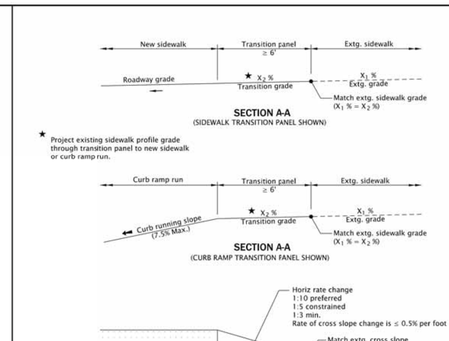
JOINT DETAIL
(Curb line sidewalk with curb and gutter shown)



Ⓒ **CONTRACTION JOINT** (See general note 6)

Ⓓ **DUMMY JOINT**

Ⓔ **EXPANSION JOINT** (See general notes 2 & 5)



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. See Std. Dwgs. RD720 & RD721 for concrete sidewalk details. see project plans for sidewalk width, placement and design specified.
2. Provide expansion joints around poles, boxes, at ends of each driveway and other fixtures which protrude through or against the structures. For sidewalk, monolithic curb and sidewalk, construction expansion joints at 45' max. spacing.
3. On sidewalks 8' and wider, provide a longitudinal joint at the midpoint of sidewalk panel.
4. See Std. Dwgs. RD700 & RD701 for concrete curb details. See project plans for the curb design specified.
5. For curb ramps, do not place expansion joints within the limits of curb ramps and between separate concrete pours.
6. Const. contraction joints at 15' max. spacing, and at each curb ramp, driveway, sidewalk and curb.

LEGEND:

- New sidewalk or ramp run
- Slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Slope 7.5% max. (Max. 8.3% finished surface slope)
- Zero exposure

CALC. BOOK NO. N/A

BASELINE REPORT DATE 13-JAN-2020

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

SIDEWALK JOINTS AND TRANSITION PANELS

2018

DATE	REVISION DESCRIPTION
06-2019	DRAWING CREATED
01-2020	TITLE CHANGED, REVISED DETAILS & NOTES

rd722.dgn 13-JAN-2020

RD722

Effective Date: June 1, 2020 - November 30, 2020 RD722

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ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

COLIMA APARTMENTS

OREGON
CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

MOLALLA
TAX LOTS 2300 AND 2402

DETAILS

DESIGNED BY: JDR
DRAWN BY: GSH/KJB
MANAGED BY: JDR
CHECKED BY: MBH
DATE: 06/16/2020

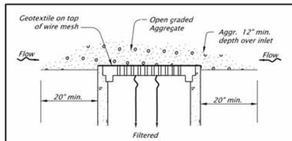
REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY
NOT FOR CONSTRUCTION
OREGON
JULY 14, 2017
JOHN D. RAUGUST
RENEWAL DATE: 12/31/20

REVISIONS

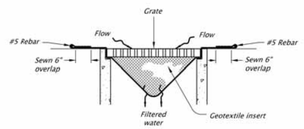
JOB NUMBER
7435

SHEET
C159

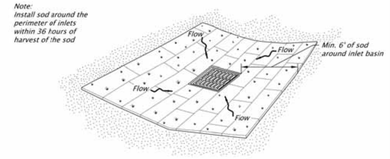
AKS DRAWING FILE: 7435 C000 DETAILS.DWG | LAYOUT: C159



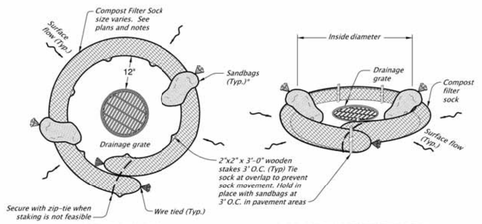
GEOTEXTILE/WIRE MESH/AGGREGATE - TYPE 2



PREFABRICATED FILTER INSERT - TYPE 3

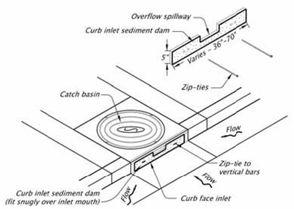


SOD PROTECTION - TYPE 6

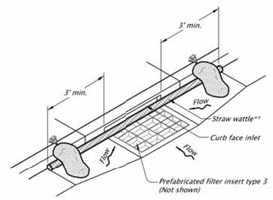


AREA DRAIN PLAN

AREA DRAIN PERSPECTIVE VIEW

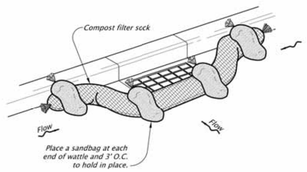


CURB INLET SEDIMENT DAM - TYPE 10



WATTLE BARRIER WITH FILTER INSERT - TYPE 11

** Straw wattle drawn NTS to show curb inlet opening



CURB INLET PERSPECTIVE VIEW

COMPOST FILTER SOCK OR WATTLE - TYPE 7

* Use sandbags to hold wattles in place. Sandbags are not necessary for compost filter socks

Notes:

Type 2 – Geotextile/wire mesh/aggregate
Place the wire mesh over the grate.
Place sediment fence geotextile over the wire mesh and perimeter area around structure.
Install aggregate over the geotextile fabric.

Type 3 – Prefabricated filter inserts
Install prefabricated filter inserts according to the plans, special provisions, and manufacturer recommendations.
Prefabricated inserts with provisions for overflow are allowed only when accompanied by additional BMP's to prevent the potential of sediments entering project storm systems.
Field fabricated inserts are not allowed.

Type 7 – Compost filter sock
Drive 2" X 2" wood stakes a minimum of 6" into ground and flush with the top of the sock.
Overlap ends of sock per manufacturers recommendations

Type 7 cont. – (1' min, 3' max).
Use 8" to 12" dia sock on curbside in traffic areas.
Use 12" to 18" dia sock in non-traffic areas or areas where the larger socks can be used safely.

Type 10 – Curb inlet sediment dam
Fit curb inlet sediment dam snugly into inlet mouth. Curb inlet sediment dam is required for use with inlet filter insert where at-grade inlet grate and curb inlet are combined at a catch basin.

Type 11 – Wattle barrier with filter insert
Install prefabricated filter insert per type 3 detail.
Install wattles over opening and 3' to each side of opening tight against curb. Adjust wattle to force storm water to flow through filter insert or wattle prior to leaving the site. Adjust, replace or modify the inlet protection as needed to prevent sediment laden water from entering the catch basin.

CALC. BOOK NO.: 6402, 6406, 6407	BASELINE REPORT DATE: October 2018
	NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

INLET PROTECTION TYPE 2, 3, 6, 7, 10 and 11

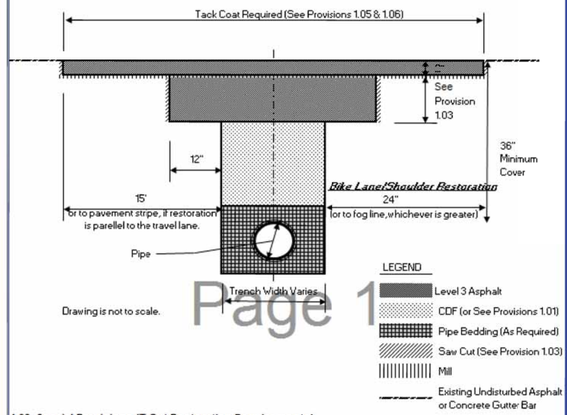
2018

DATE	REVISION DESCRIPTION
01/2018	Addendtype 10 and 11
10/2018	Corrected Sheet title to include added inlet protection details

Effective Date: June 1, 2020 - November 30, 2020 RD1010

RD1010 10-01-2018 rd1010.dgn

TYPICAL SECTION
EXHIBIT A
"T"-CUT RESTORATION IN THE TRAVEL LANE/SHOULDER



1.00 Special Provisions (T-Cut Restoration Requirements)

1.01 CDF (Controlled Density Fill) or backfill material shall be sand blend trench fill with 3/4" rock compacted to a minimum of 95% of the maximum density of the material placed in 6" lifts.

1.02 Joints in the travel lane are to be at the curb & gutter, centerline or skip line, and/or at the nearest logitudinal joint.

1.03 All cuts in pavement shall be full depth saw cuts. A minimum compacted thickness of 6" or the thickness of the removed pavement, whichever is greater. Pavement to be compacted in two 3" lifts.

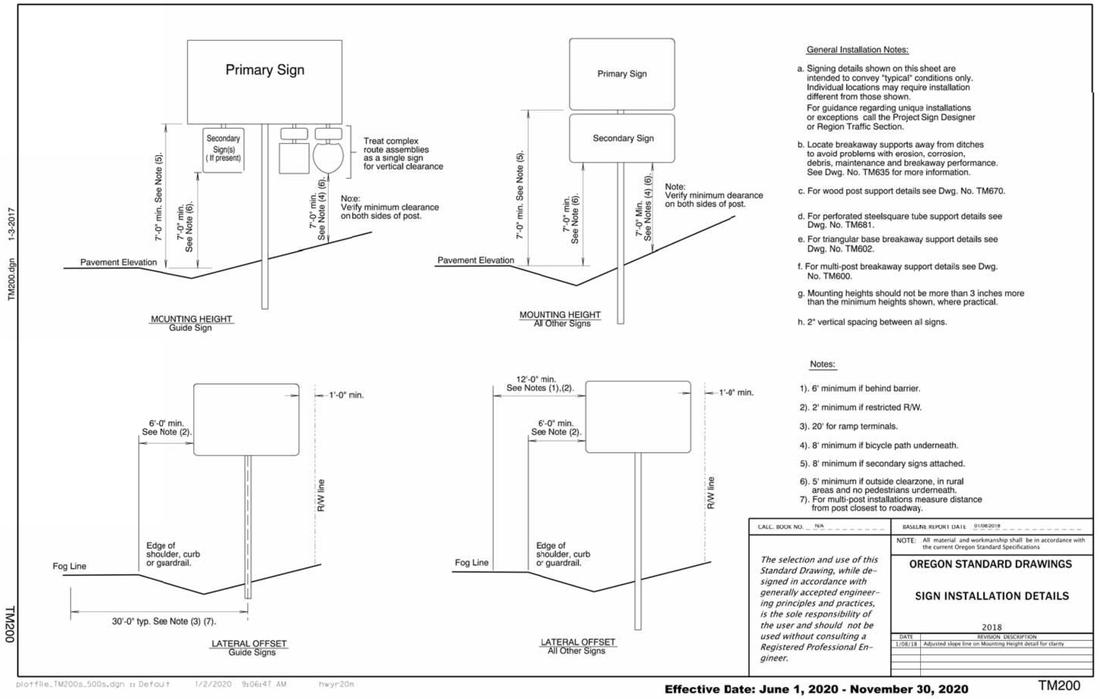
1.04 Cut areas shall be cold patched at the end of the workday and patch maintained. Cold patched areas shall be hot patched within 10 days. All cold patch material to be excavated prior to hot patch restoration.

1.05 Pavement grinding shall conform to Standard Specifications for Highway Construction, section 00620, Cold Plane Pavement Removal. Pavement surface shall be uniformly milled using equipment that is capable of accurately establishing profile grades within a tolerance of 1/4" (or 6mm) by reference from either the existing pavement or independent grade control. Parallel trench restoration will start/stop 5' before and beyond trench.

1.06 Asphalt emulsion tack coat shall be used to seal the ground area to the edges of the existing asphalt. All cut areas shall be sealed with an ODOT approved polymer asphalt sealant.

1.07 All existing pavement markings and legends are to be restored with like kind.

1.08 Applicant shall accept responsibility for pavement stress or settlement of the "T"-Cut restoration section for a period of 2 years.



General Installation Notes:

a. Signing details shown on this sheet are intended to convey "typical" conditions only. Individual locations may require installation different from those shown.
For guidance regarding unique installations or exceptions call the Project Sign Designer or Region Traffic Section.

b. Locate breakaway supports away from ditches to avoid problems with erosion, corrosion, debris, maintenance and breakaway performance. See Dwg. No. TM635 for more information.

c. For wood post support details see Dwg. No. TM670.

d. For perforated steelsquare tube support details see Dwg. No. TM681.

e. For triangular base breakaway support details see Dwg. No. TM602.

f. For multi-post breakaway support details see Dwg. No. TM600.

g. Mounting heights should not be more than 3 inches more than the minimum heights shown, where practical.

h. 2" vertical spacing between al signs.

Notes:

1). 6' minimum if behind barrier.

2). 2' minimum if restricted R/W.

3). 20' for ramp terminals.

4). 8' minimum if bicycle path underneath.

5). 8' minimum if secondary signs attached.

6). 5' minimum if outside clearzone, in rural areas and no pedestrians underneath.

7). For multi-post installations measure distance from post closest to roadway.

CALC. BOOK NO.: N/A	BASELINE REPORT DATE: 01/08/2018
	NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

SIGN INSTALLATION DETAILS

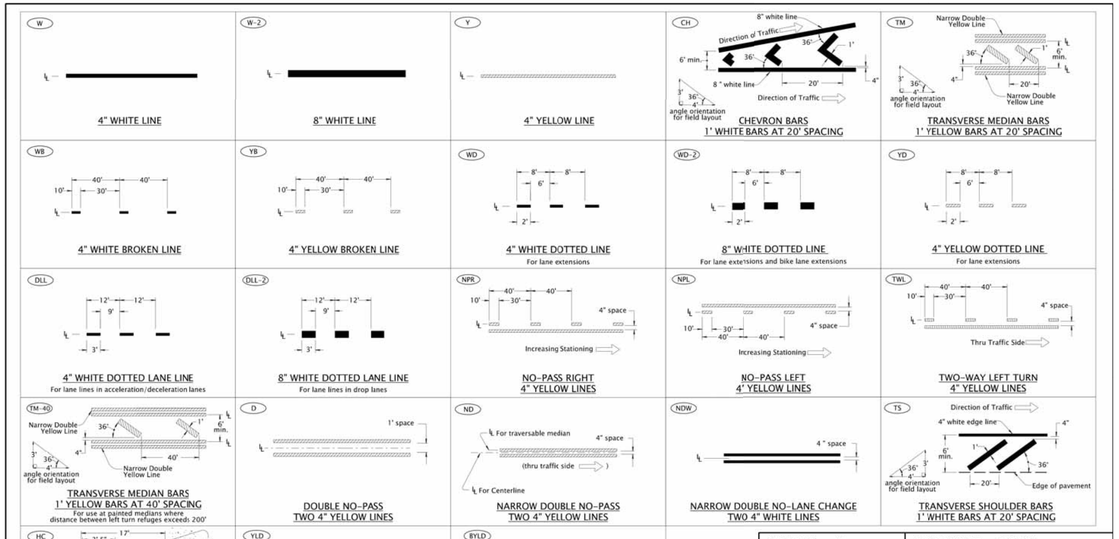
2018

DATE	REVISION DESCRIPTION
1/08/18	Adjusted slope line on Mounting Height detail for clarity

Effective Date: June 1, 2020 - November 30, 2020 TM200

TM200.dgn 1-3-2017

proffile_TM200s_500s.dgn :: Default 1/2/2020 9:06:47 AM hwyr20n



LEGEND

Direction Of Traffic, Increasing Stationing Or Thru Traffic Side

Lane line dimensions are shown on the striping plans

CALC. BOOK NO.: N/A	BASELINE REPORT DATE: 07/01/2015
	NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2018

DATE	REVISION DESCRIPTION

Effective Date: June 01, 2020 - November 30, 2020 TM500

AKS DRAWING FILE: 7435 COOD DETAILS.DWG | LAYOUT: C160

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ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

COLIMA APARTMENTS

MOLALLA
TAX LOTS 2300 AND 2402

OREGON
CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

DETAILS

DESIGNED BY:	JDR
DRAWN BY:	GSH/KJB
MANAGED BY:	JDR
CHECKED BY:	MBH

DATE: 06/16/2020

REGISTERED PROFESSIONAL ENGINEER OREGON JULY 14, 2017 COWN D. RAUGUST

PRELIMINARY NOT FOR CONSTRUCTION

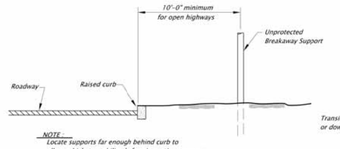
RENEWAL DATE: 12/31/20

REVISIONS

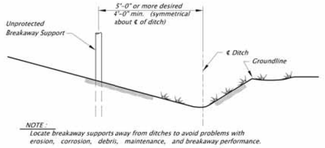
JOB NUMBER 7435

SHEET C160

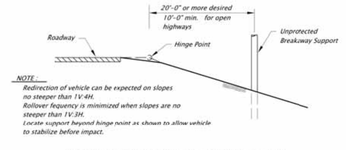
tm635.dgn 10-JUL-2017



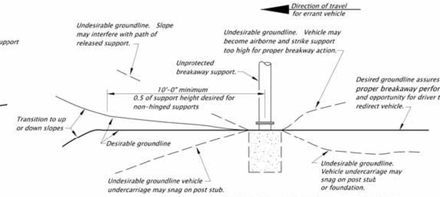
BREAKAWAY SUPPORTS BEHIND RAISED CURBS



BREAKAWAY SUPPORTS NEAR DITCHES

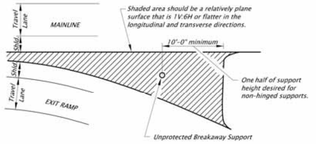


BREAKAWAY SUPPORT ON FILL SLOPE

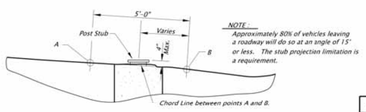


BREAKAWAY SUPPORT – PARTIAL ELEVATION

(Along possible paths of errant vehicles)



GORE AREA BREAKAWAY SUPPORT LOCATION



UNPROTECTED BREAKAWAY SUPPORT CLEARANCE DIAGRAM

Section perpendicular to assumed path of errant vehicle. (Most likely path is a 15° angle from adjacent traffic flow)

PLACEMENT OF UNPROTECTED BREAKAWAY SUPPORTS:

The location of unprotected breakaway supports with respect to the travel lane(s) and the roadside terrain and other geometric conditions over which the vehicle travels before impacting the support will affect the support's breakaway performance.

Breakaway supports located in gore areas are particularly vulnerable to vehicle impacts. Breakaway supports located across tee intersections, at the end of lane drop or on the outside of horizontal curves are also likely to be struck. Locating breakaway supports in these areas should be avoided if possible. If the breakaway support must be located in these areas, locate them to produce an impact situation that is as forgiving as possible while assuring adequate recovery space beyond the support(s).

Breakaway supports placed up on cut slopes generally result in a safer impact situation than for those placed down on fill slopes. The support placed on a cut slope will be lighter than a support placed on fill slope. The momentum of a vehicle traversing a cut slope will generally be less than that for a vehicle traversing a fill slope. A vehicle going up a cut slope is generally more stable and more easily redirected than a vehicle going down a fill slope.

Placement of breakaway supports in or near ditches should be avoided. Breakaway supports should not be located near raised curbs or near the hinge point ot the fill slope.

Where possible, supports should be located behind established barriers.

The guidelines contained herein should be used if possible. However, adjustments to the guidelines may be necessary because of right-of-way and/or other constraints.

See TM200 requirements when signs are mounted on unprotected Breakaway Supports.

CALC. BOOK NO. _____ BASELINE REPORT DATE 06-JUL-2015

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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OREGON STANDARD DRAWINGS

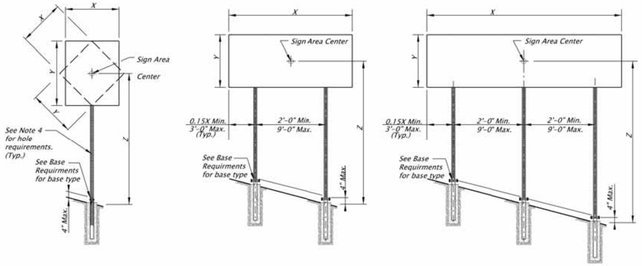
BREAKAWAY SIGN & LUMINAIRE SUPPORTS - SUPPORT LOCATION GUIDELINES

2018

DATE	REVISION DESCRIPTION

Effective Date: June 1, 2020 - November 30, 2020 TM635

tm681.dgn 10-JUL-2017



SINGLE POST ELEVATION

No scale

TWO POST ELEVATION

No scale

THREE POST ELEVATION

No scale

GENERAL NOTES:

1. *Perforated Steel Square Supports are designed in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals 4th Edition, 2001, 2002, 2003, and 2006 interim revisions.*
2. *The design basic wind speed (3 second gust) shall be according to the wind map shown on TM671.*
3. *Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crast testing.*
4. *Use 7/16" diameter holes at 1" spacing on each of the 4 sides.*
5. *Steel post shall have a minimum yield stress of 50 ksi.*
6. *Steel shall be galvanized according to ASTM A653 with coating designation G90.*
7. *General design parameters are Kz = 0.87, Cd (sign) = 1.20, and G = 1.14.*
8. *Permanent signing uses an Ir = 0.71 for a recurrence interval of 10 years.*
9. *Temporary signing uses an Ir = 0.45 for a recurrence interval of 1.5 years.*
10. *The sign width to sign height or sign height to sign width ratio shall not exceed 5.0.*
11. *For horizontal and vertical clearances of permanent signs refer to TM200 and of temporary signs refer to TM822.*
12. *Posts protected by barrier or guardrail do not require slip bases.*

(X ' Y ' Z) in ft³ - Maximum
3 Second Gust Wind Speed (TM671)

	85 MPH			95 MPH			105 or 110 MPH		
	Number of Posts			Number of Posts			Number of Posts		
Square Tube Size	1	2	3	1	2	3	1	2	3
2"-12 ga.	79	158	237	63	126	189	57	114	171
2½"-12 ga.	136	272	408	109	218	327	98	196	294
2½"-10 ga.	165	330	495	132	264	396	119	238	357
2¼" & 2½"-12 ga.	231	462	693	185	370	551	167	334	501

PERMANENT PERFORATED STEEL SQUARE TUBE TABLE

(X ' Y ' Z) in ft³ - Maximum
3 Second Gust Wind Speed (TM671)

	85 MPH			95 MPH			105 or 110 MPH		
	Number of Posts			Number of Posts			Number of Posts		
Square Tube Size	1	2	3	1	2	3	1	2	3
2"-12 ga.	125	250	375	100	200	300	90	180	270
2½"-12 ga.	215	430	645	172	344	516	155	310	465
2½"-10 ga.	261	522	783	209	418	627	189	378	567
2¼" & 2½"-12 ga.	364	728	1092	292	584	876	263	526	789

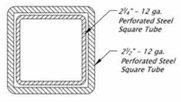
TEMPORARY PERFORATED STEEL SQUARE TUBE TABLE

* - See 2¼" & 2½" - 12 ga. detail.

	Number of Posts		
Square Tube Size	1	2	3
2"-12 ga.	Anchor	Anchor	N/A
2½"-12 ga.	Anchor	Slip	Slip
2½"-10 ga.	Slip	Slip	Slip
2¼" & 2½"-12 ga.	Slip	Slip	Slip

1. *Anchor - See Drawing TM687 for PSST anchor foundation details.*
2. *Slip - See Drawing TM688 for PSST slip base foundation details.*
3. *N/A - Do not use this option.*

BASE REQUIREMENTS



2¼" - 12 ga. PSST to extend entire length inside of the 2½" - 12 ga. PSST.

2¼" & 2½" - 12 GA. DETAIL

No scale

Accompanied by dwgs. TM200, TM671, TM687, TM688, TM689, TM822

CALC. BOOK NO. 5752 BASELINE REPORT DATE 10-JUL-2017

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION

2018

DATE	REVISION DESCRIPTION
07/17	Changed C140 to C90.

Effective Date: June 1, 2020 - November 30, 2020 TM681

tm800.dgn 01-JAN-2019

TAPER TYPES & FORMULAS	
TAPER	FORMULA
Merging (Lane Closure)	"L"
Shifting	"L"/2 or ½"L"
Shoulder Closure	"L"/3 or ½"L"
Flagging (See Drg. TM850)	50' - 100'
Downstream (Termination)	Varies (See Drawings)

★ Use Pre-Construction Posted Speed to select the Speed from the Tables below:

CONCRETE BARRIER FLARE RATE TABLE	
★SPEED (mph)	MINIMUM FLARE RATE
≤ 30	8:1
35	9:1
40	10:1
45	12:1
50	14:1
55	16:1
60	18:1
65	19:1
70	20:1

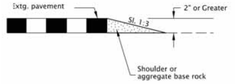
MINIMUM LENGTHS TABLE					
"L" VALUE FOR TAPERS (ft)					BUFFER "B" (ft)
★ SPEED (mph)	W = Lane or Shoulder Width being closed or shifted				
	W ≤ 10	W = 12	W = 14	W = 16	
25	105	125	145	165	75
30	150	180	210	240	100
35	205	245	285	325	125
40	265	320	375	430	150
45	450	540	630	720	180
50	500	600	700	800	210
55	550	660	770	880	250
60	600	720	840	960	285
65	650	780	910	1000	325
70	700	840	980	1000	365
FREEWAYS					
55	1000	1000	1000	1000	250
60	1000	1000	1000	1000	285
65	1000	1000	1000	1000	325
70	1000	1000	1000	1000	365

NOTES:
- For Lane closures where W < 10', use "L" value for W = 10'.
- For Shoulder closures where W < 10', use "L" value for W = 10' or calculate "L" using formula, for Speeds ≥ 45: L = WS, Speeds < 45: L = S²W/60, S = Speed, W=Width

TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE				
★ SPEED (mph)	Sign Spacing (ft)			Max. Channelizing Device Spacing (ft)
	A	B	C	
20 - 30	100	100	100	20
35 - 40	350	350	350	20
45 - 55	500	500	500	40
60 - 70	700	700	700	40
Freeway	1000	1500	2640	40

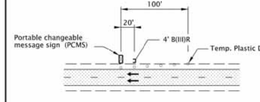
NOTES:
- Place traffic control devices on 10 ft. spacing for intersection and access radii.
- When necessary, sign spacing may be adjusted to fit site conditions. Limit spacing adjustments to 30% of the "A" dimension for all speeds.

NOTES:
- When paved shoulders adjacent to excavations are less than four feet wide protect longitudinal abrupt edge as shown.
- Use aggregate wedge when abrupt edge is 2 inches or greater.



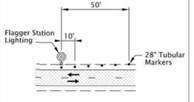
EXCAVATION ABRUPT EDGE

NOTES:
- Install PCMS beyond the outside shoulder, when possible.
- Use the appropriate type of barricade panels for PCMS location. Right shoulder, use Type BIIIR Left shoulder, use Type BIIIL
- Use six drums in shoulder taper on 20' spacing. The drums and barricade may be omitted when PCMS is placed behind a roadside barrier.
- Detail as shown is used for trailered and non-crashworthy components of:
  - Portable Traffic Signals
  - Smart Work Zone Systems



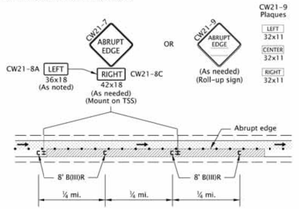
PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) INSTALLATION

NOTES:
- Install Flagger Station Lighting beyond the outside shoulder, where practical.
- Use six tubular markers in shoulder taper on 1C spacing.
- Place cart / generator / power supply off of the shoulder, as far as practical.



FLAGGER STATION LIGHTING DELINEATION

NOTES:
- Abrupt edges may be created by paving, operations, excavations or other roadway work. Use abrupt edge signing for longitudinal abrupt edges of 1 inch or greater.
- If the excavation is located on left side of traffic, replace the 8' BIIIR barricades with 8' BIIIL barricades and replace the "RIGHT" (CW21-8C) riders with "LEFT" (CW21-8A) riders.
- Continue signing and other traffic control devices throughout excavation area at spacings shown.
- If roll-up signs are used, attach the correct (CW21-9) plaques to the sign face using hook and loop fasteners. Place roll-up signs in advance of barricades.



TYPICAL ABRUPT EDGE DELINEATION

GENERAL NOTES FOR ALL TCP DRAWINGS:
- Signs and other Traffic Control Devices (TCD) shown are the minimum required.
- Place a barricade approx. 20' ahead of all sequential arrow boards.
- Arrows shown in roadway are directional arrows to indicate traffic movements.
- All signs are 48" x 48" unless otherwise shown. Use flourescent orange sheeting for the background of all temporary warning signs.
- All diamond shaped warning signs mounted on barrier sign supports shall be 36" by 36". All other signs mounted on barrier sign supports shall not exceed 12 sq. ft. in total sign area.
- Low speed highways have a pre-construction posted speed of 40 mph or less. High speed highways have a pre-construction posted speed of > 40 mph.
- Do not locate sign supports in locations designated for bicycle or pedestrian traffic.
- Combine drawing details to complete temporary traffic control for each work activity.
- To be accompanied by Drg. Nos. TM820 & TM821.

Temp. Plastic Drums
See TCD Spacing Table
for max. spacing.

28" Tubular Markers
See TCD Spacing Table
for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

CALC. BOOK NO. TM09-01 BASELINE REPORT DATE 01-JAN-2019.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

TABLES, ABRUBT EDGE AND PCMS DETAILS

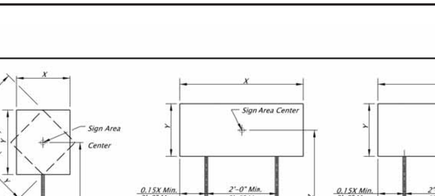
2018

DATE	REVISION DESCRIPTION

Effective Date: June 1, 2020 - November 30, 2020 TM800

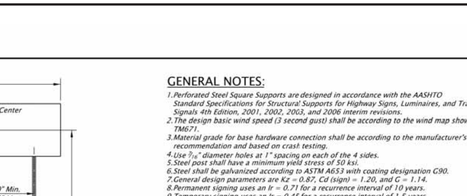
tm850.dgn 01-JAN-2020

NOTE:
- Continue "LOOSE GRAVEL" (CW8-7a) and "DO NOT PASS" (R4-1) signing throughout the area at spacing shown.
- Use advisory speed "XX", 15 mph less than the pre-construction posted speed, or as directed. "XX MPH" placard shall not exceed a posted speed of 35 mph.



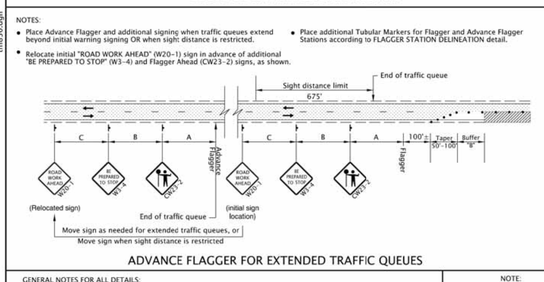
2-LANE, 2-WAY ROADWAY
LOOSE GRAVEL IN ROADWAY SIGNING

NOTE:
- Continue "ABRUPT EDGE" (CW21-(7.9)) and "DO NOT PASS"(R4-1) signing throughout the area at spacing shown.

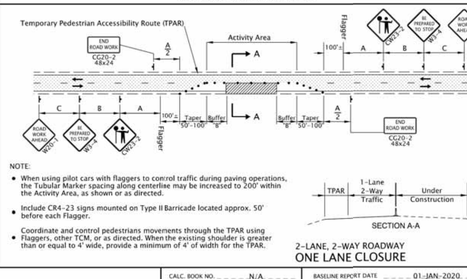


2-LANE, 2-WAY ROADWAY
OVERLAY AREA SIGNING

NOTES:
- Place Advance Flagger and additional signing when traffic queues extend beyond initial warning signing OR when sight distance is restricted.
- Relocate initial "ROAD WORK AHEAD" (W20-1) sign in advance of additional "BE PREPARED TO STOP" (W3-4) and Flagger Ahead (CW23-2) signs, as shown.
- Place additional Tubular Markers for Flagger and Advance Flagger Stations according to FLAGGER STATION DELINEATION detail.



ADVANCE FLAGGER FOR EXTENDED TRAFFIC QUEUES



2-LANE, 2-WAY ROADWAY
ONE LANE CLOSURE

GENERAL NOTES FOR ALL DETAILS:
- The "FLAGGER" (CW23-2) symbol sign shall be used only in conjunction with the "BE PREPARED TO STOP" (W3-4) sign.
- Cover existing passing zone signing, as directed.
- Install temporary striping as required.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" shown on Drg. No. TM800.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Drg. No. TM800.
- Install a "BICYCLES ON ROADWAY" (CW11-1) sign in advance of the closure when a bike lane is closed, or when the shoulder is closed and bikes are expected.
- To be accompanied by Drg. Nos. TM821.

28" Tubular Markers on 20' max. spacing for flagger tapers and stations

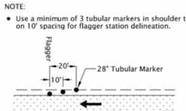
28" Tubular Markers
See TCD Spacing Table on TM800 for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

CONSTRUCTION UNDER TRAFFIC

NOTE:
- Use a minimum of 3 tubular markers in shoulder taper on 10' spacing for flagger station delineation.



FLAGGER STATION DELINEATION

CALC. BOOK NO. N/A BASELINE REPORT DATE 01-JAN-2020.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

2-LANE, 2-WAY ROADWAYS

2018

DATE	REVISION DESCRIPTION
01-2018	REVISED DRAWING AND NOTES
01-2020	REVISED NOTES

Effective Date: June 1, 2020 - November 30, 2020 TM850

NOTES:

1. ALL LANES AND SHOULDERS HAVE TO BE OPEN BY THE END OF THE WORKSHIFT.
2. INSTALL "TRUCKS" (W11-10) SIGN WITH AN 18-INCH "500 FEET" (W16-4P) PLAQUE, APPROXIMATELY 500 FEET IN ADVANCE OF ACCESS POINTS TO WORK ZONE SITES.

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
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WWW.AKS-ENG.COM

AKS

ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

COLIMA APARTMENTS

OREGON

MOLALLA

TAX LOTS 2300 AND 2402

CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

DETAILS

DESIGNED BY:	JDR
DRAWN BY:	GSH/KJB
MANAGED BY:	JDR
CHECKED BY:	MBH

DATE: 06/16/2020

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 2017
JON D. RAUGUST
PRELIMINARY
NOT FOR CONSTRUCTION

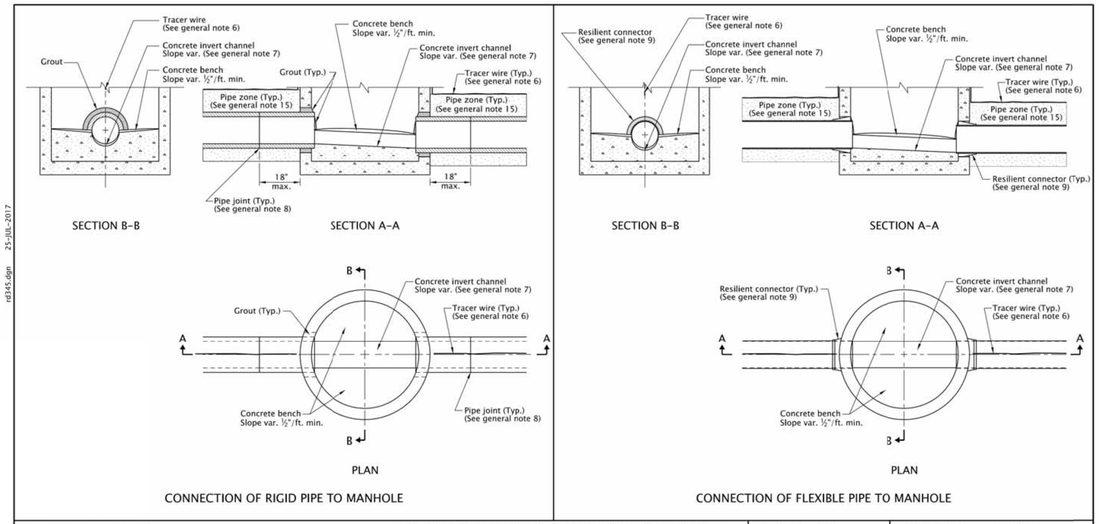
RENEWAL DATE: 12/31/20

REVISIONS

JOB NUMBER
7435

SHEET
C161

AKS DRAWING FILE: 7435 C000 DETAILS.DWG | LAYOUT: C161



rd345.dgn 25-JUL-2017

RD345

GENERAL NOTES FOR ALL DETAILS:

1. All precast sections shall conform to requirements of ASTM C478.
2. Manhole base sections may be precast or cast-in-place.
3. All concrete shall be commercial grade concrete.
4. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
5. Max. pipe diameter varies with pipe material.
6. All connecting pipes shall have a tracer wire, or approved alternate. See Std. Dwg. RD336 for tracer wire details.
7. Invert channels shall be constructed to provide smooth slopes and radii to outlet pipe.
8. When rigid pipe is used, the connecting pipe shall have a flexible, gasketted and unrestrained joint within 18" of manhole wall. Joint type varies with manufacturer.
9. When flexible pipe is used, install resilient connectors conforming to requirements of ASTM C923.
10. See Std. Dwgs. RD335, RD336, and RD338 for details not shown.
11. See Std. Dwg. RD336 for manhole steps details.
12. See Std. Dwg. RD342 for shallow manholes.
13. See Std. Dwg. RD344 for manhole base section.
14. See Std. Dwg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
15. Pipe zone varies, see Std. Dwg. RD300.

CALC. BOOK NO.: N/A

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

BASELINE REPORT DATE: 14-JUL-2014

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

PIPE TO MANHOLE CONNECTIONS

2018

DATE	REVISION DESCRIPTION

Effective Date: June 1, 2020 - November 30, 2020

RD345

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FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

COLIMA APARTMENTS

OREGON

MOLALLA
TAX LOTS 2300 AND 2402

CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

DETAILS

DESIGNED BY: JDR
DRAWN BY: GSH/KJB
MANAGED BY: JDR
CHECKED BY: MBH
DATE: 06/16/2020

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 2017
CONN D. RAUGUST
PRELIMINARY
NOT FOR CONSTRUCTION

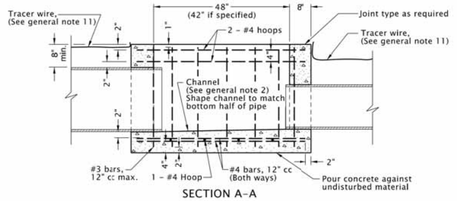
RENEWAL DATE: 12/31/20

REVISIONS

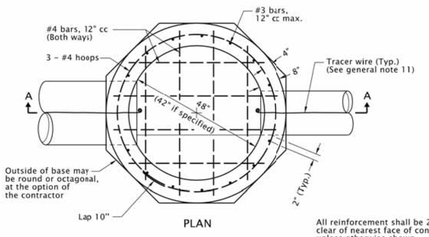
JOB NUMBER
7435

SHEET
C162

AKS DRAWING FILE: 7435 C000 DETAILS.DWG | LAYOUT: C162



SECTION A-A

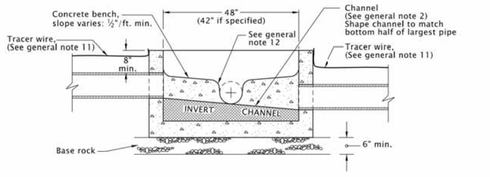


PLAN

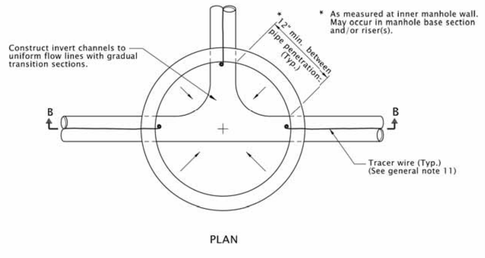
All reinforcement shall be 2" clear of nearest face of conc., unless otherwise shown.

CAST IN PLACE MANHOLE BASE

(For invert channel details, see precast option at right)



SECTION B-B



* As measured at inner manhole wall. May occur in manhole base section and/or riser(s).

PLAN

PRECAST MANHOLE BASE

GENERAL NOTES FOR ALL DETAILS:

1. All concrete shall be commercial grade concrete.
2. Channels shall be constructed to provide smooth slopes and radii to outlet pipe.
3. Bases may be precast or cast in place.
4. Max. pipe diameter varies with pipe material.
5. Use on 42" and 48" diameter manhole.
6. Extend pipe into manhole and grout smooth. Pipe(s) may extend 2" max. beyond the interior manhole wall.
7. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
8. All precast products shall conform to the requirements of ASTM C478.
9. See Std. Dwg. RD345 for pipe to manhole connections.
10. See Std. Dwg. RD336 for manhole steps details.
11. See Std. Dwg. RD336 for tracer wire details.
12. At spring line of pipe, extend channel up to crown line on 12:1 batter.

CALC. BOOK NO.: N/A

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

BASELINE REPORT DATE: 14-JUL-2014

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

STANDARD MANHOLE BASE SECTION

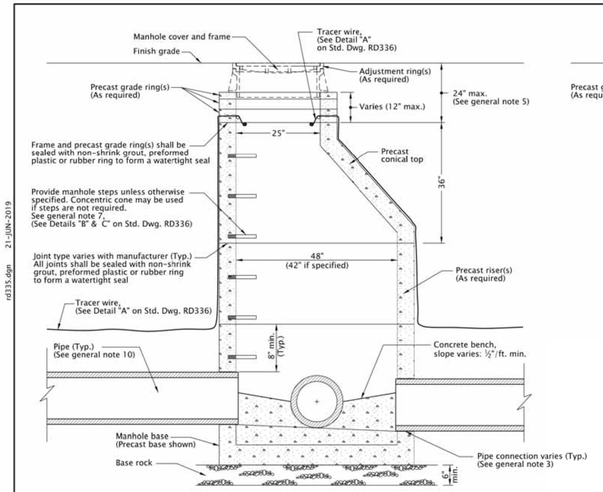
2018

DATE	REVISION DESCRIPTION

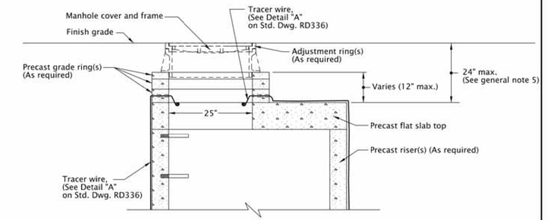
RD344

rd344.dgn 25-JUL-2017

Effective Date: June 1, 2020 - November 30, 2020 RD344



MANHOLE WITH PRECAST CONICAL TOP



MANHOLE WITH PRECAST FLAT SLAB TOP

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All precast products shall conform to requirements of ASTM C478.
2. Standard precast manhole section diameter shall be 48". Use 42" if specified by the Engineer.
3. See Std. Dwg. RD345 for pipe to manhole connections.
4. See Std. Dwg. RD344 for manhole base section.
5. Adjust 24" maximum.
6. All connecting pipes shall have a tracer wire, or approved alternate.
7. See Std. Dwg. RD336 for manhole steps.
8. See Std. Dwg. RD336 for details not shown.
9. See Std. Dwg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
10. Max. pipe diameter varies with pipe material.
11. See Std. Dwg. RD342 for shallow manholes.
12. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.

CALC. BOOK NO.: N/A

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

BASELINE REPORT DATE: 21-JUN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

STANDARD STORM SEWER MANHOLE

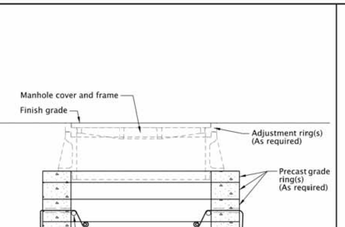
2018

DATE	REVISION DESCRIPTION
01-2019	REVISED NOTE
06-2019	ADDED DETAIL TITLES

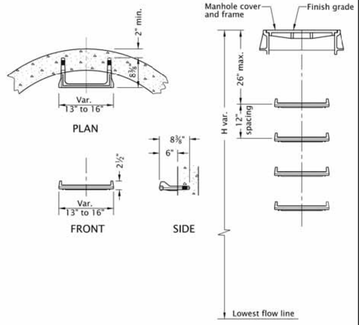
RD335

rd335.dgn 21-JUN-2019

Effective Date: June 1, 2020 - November 30, 2020 RD335

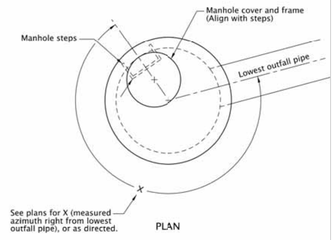


DETAIL "A"
TRACER WIRE
(See general note 6)



See ODOT's QPL for acceptable alternate manhole steps.
NOTE: No conflict with pipe align with available shelf.

DETAIL "B"
MANHOLE STEPS
(See general note 7)



DETAIL "C"
PRECAST CONICAL TOP
OR
PRECAST FLAT SLAB TOP
AND MANHOLE STEPS ORIENTATION
(See general note 7)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All precast products shall conform to requirements of ASTM C478.
2. Standard precast manhole section diameter shall be 48". Use 42" if specified by the Engineer.
3. See Std. Dwg. RD345 for pipe to manhole connections.
4. See Std. Dwg. RD344 for manhole base section.
5. Adjust 24" maximum.
6. All connecting pipes shall have a tracer wire, or approved alternate.
7. Steps shall conform to requirements of ASTM C478. When H=42" or less omit steps. See Detail "C" for alignment of steps, and manhole cover and frame.
8. See Std. Dwg. RD335 for details not shown.
9. See Std. Dwg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
10. Max. pipe diameter varies with pipe material.
11. See Std. Dwg. RD342 for shallow manholes.
12. See project plans for details not shown.

CALC. BOOK NO.: N/A

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

BASELINE REPORT DATE: 16-JAN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

STANDARD MANHOLE DETAILS

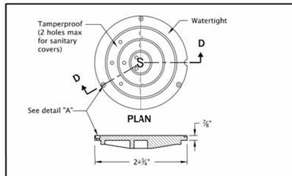
2018

DATE	REVISION DESCRIPTION
01-2019	REVISED NOTES

RD336

rd336.dgn 16-JAN-2018

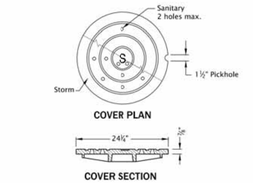
Effective Date: June 1, 2020 - November 30, 2020 RD336



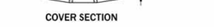
SECTION D-D

CAST IRON TAMPERPROOF & WATERTIGHT COVER

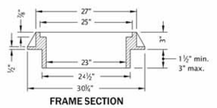
(Frames available in standard or suburban pattern)



COVER PLAN



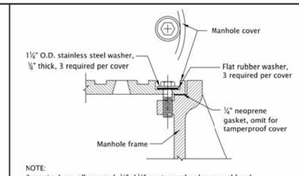
COVER SECTION



FRAME SECTION

CAST IRON SUBURBAN MANHOLE COVER & FRAME

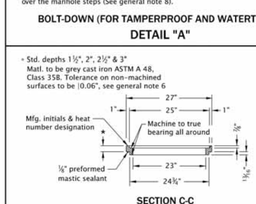
For use on local streets only, as specified



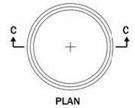
NOTE:
3 required, equally spaced, ½"x1½" pentagonal or hexagonal head, bronze or stainless steel. Install frame so that one bolt boss is located over the manhole steps (See general note 8).

BOLT-DOWN (FOR TAMPERPROOF AND WATERTIGHT)

DETAIL "A"



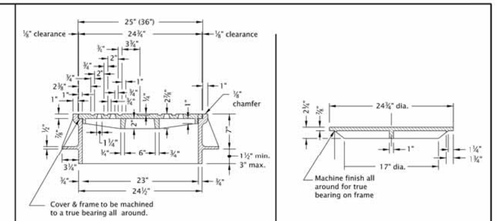
SECTION C-C



PLAN

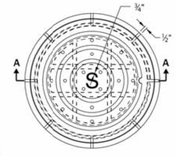
MANHOLE ADJUSTMENT RING

For use with Standard Manhole Frame



SECTION A-A

36" min. diameter cover is required for manholes with depths of 20' or greater. (See general note 4)

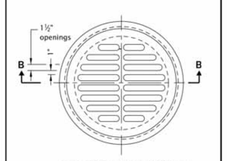


NOTE:
Coat outside of frame with asphalt, where frame is to be placed in conc. pvmt., conc. gutter, or walk.

PLAN

STANDARD MANHOLE COVER & FRAME

SECTION B-B



For use with Standard Manhole Frame (See general note 7)

PLAN

STANDARD MANHOLE GRATE

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Tamperproof covers required on sanitary or storm drain manhole where located in pedestrian ways or easement areas. Covers for sanitary manholes shall have 2 holes maximum.
2. Watertight covers required if located where cover may be submerged (no holes).
3. Covers and frames shall be stamped with manufacturer's initials, heat number and point of origin.
4. See Std. Dwg. RD336 for manhole steps.
5. See Std. Dwg. RD360 for manhole frame adjustment.
6. See ODOT's QPL for alternate manhole adjustment rings.
7. Manhole grate allowed only in locations not subject to bicycle or pedestrian use.
8. See ODOT's QPL for alternate bolt-down products.

CALC. BOOK NO.: N/A

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

BASELINE REPORT DATE: 21-JUN-2019

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

MANHOLE COVERS AND FRAMES

2018

DATE	REVISION DESCRIPTION
06-2019	REVISED DETAIL & NOTES

RD356

rd356.dgn 21-JUN-2019

Effective Date: June 1, 2020 - November 30, 2020 RD356

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
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AKS ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

COLIMA APARTMENTS

OREGON
CLACKAMAS COUNTY TAX ASSESSOR'S MAP 5 2E 07D

MOLALLA
TAX LOTS 2300 AND 2402

DETAILS

DESIGNED BY:	JDR
DRAWN BY:	GSH/KJB
MANAGED BY:	JDR
CHECKED BY:	MBH

DATE: 06/16/2020

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 2017
JOHN D. RAUGUST
PRELIMINARY
NOT FOR CONSTRUCTION
RENEWAL DATE: 12/31/20

REVISIONS

JOB NUMBER
7435

SHEET
C163

AKS DRAWING FILE: 7435 CODD DETAILS.DWG | LAYOUT: C163