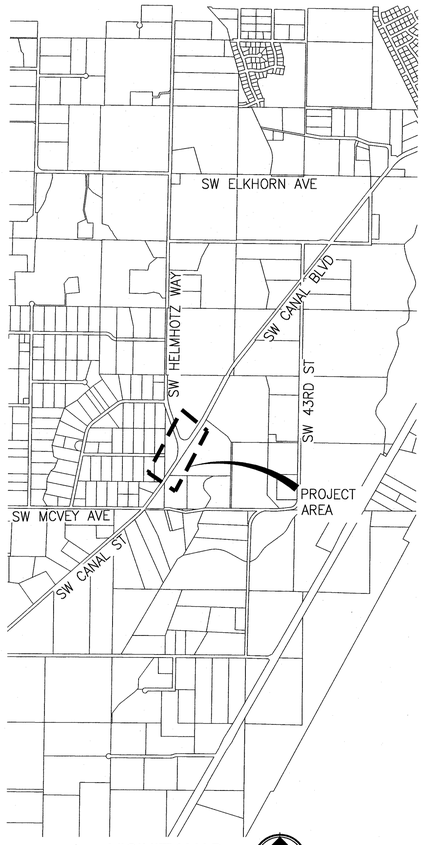
DESCHUTES COUNTY ROAD DEPARTMENT
SW CANAL BLVD/SW HELMHOLTZ WAY
INTERSECTION IMPROVEMENT

DESCHUTES COUNTY
DECEMBER 2019



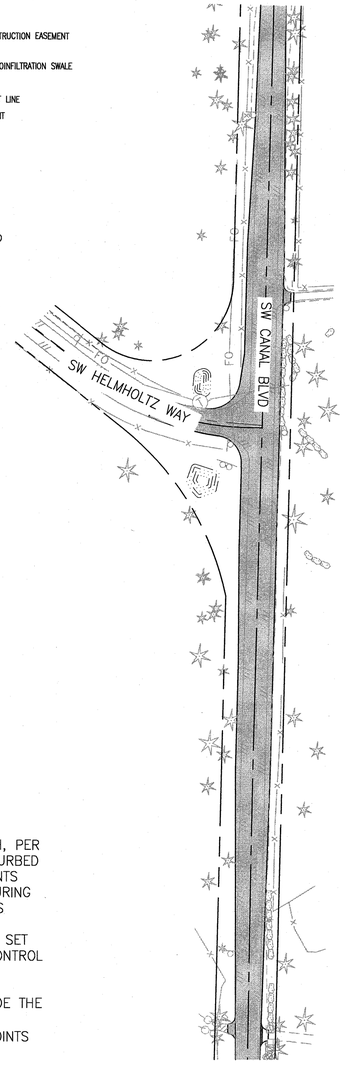
VICINITY MAP
SCALE: 1" = 1500'

EXISTING LEGEND:

- FOUND MONUMENT
- FOUND REBAR, NO CAP
- FOUND REBAR WITH CAP
- SET CONTROL POINT (SEE CONTROL TABLE)
- CABLE TV RISER
- TELEPHONE POLE
- POWER POLE WITH DROP LINE & TRANSFORMER
- POWER POLE GUY ANCHOR
- TELEPHONE JUNCTION BOX
- TELEPHONE RISER
- WATER METER
- WATER VALVE
- WATER IRRIGATION VALVE
- SIGN, AS NOTED
- JUNIPER TREE (TRUNK AND DRIPLINE DIAMETER NOTED)
- FOG LINE STRIPING
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- ROCKERY
- WOOD FENCE
- BARB WIRE FENCE
- P — POWER LOCATE MARKING
- OP — OVERHEAD UTILITY
- FO — FIBER OPTIC LOCATE MARKING
- T — TELEPHONE LOCATE MARKING
- W — WATER LOCATE MARKING
- RIGHT-OF-WAY LINE
- CENTER LINE RIGHT-OF-WAY
- LOT LINE

PROPOSED LEGEND:

- TEMPORARY CONSTRUCTION EASEMENT
- SLOPE EASEMENT
- WATER QUALITY BIOINFILTRATION SWALE
- SAWCUT
- SURFACE DAYLIGHT LINE
- EDGE OF PAVEMENT
- ROW
- FENCE
- SIGN, AS NOTED
- FENCE REMOVAL
- TREE TO BE REMOVED



INTERSECTION IMPROVEMENTS

AREA MAP

1"=100'

GENERAL NOTES:

ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED IN THIS CONTRACTS SPECIAL PROVISIONS, BE CONSTRUCTED IN ACCORDANCE WITH THE OREGON STATE "OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION," REVISED 2018

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT" UNDERGROUND LOCATE SERVICE" AT 1-800-332- 2344, PRIOR TO THE START OF CONSTRUCTION, TO LOCATE POWER, GAS, CABLE TV, AND TELEPHONE UNDERGROUND FACILITIES. THE ONE CALL CENTER BUSINESS HOURS ARE 8:00 AM TO 5:00 PM. ANY LOCATE REQUESTS PLACED AFTER 5:00 P.M., WILL BE TREATED AS IF THEY WERE SUBMITTED AT 8:00 A.M. THE FOLLOWING BUSINESS MORNING. THE 2 BUSINESS-DAY (48 BUSINESS HOURS) WAITING PERIOD BEGINS AT THAT TIME. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE PUBLIC AGENCY FOR THE LOCATION OF UNDERGROUND FACILITIES.

ATTENTION: OREGON LAW REQUIRES THAT YOU FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN O.A.R 952-001-0010 THROUGH 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER AT 503-232-1987

IT IS THE CONTRACTORS RESPONSIBILITY TO RE-ESTABLISH, PER OREGON REVISED STATUES, ALL SURVEY MONUMENTS DISTURBED OR DESTROYED BY THIS WORK. THIS INCLUDES MONUMENTS NOT SHOWN IN THESE PLANS, WHICH ARE DISCOVERED DURING THE COURSE OF CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ELEVATIONS OF SIDE SHOT MONUMENTS FOR USE AS TEMPORARY BENCH MARKS AND SET TEMPORARY BENCH MARKS OR ADDITIONAL HORIZONTAL CONTROL AS NEEDED.

UPON AWARD OF THE CONTRACT, PARAMETRIX WILL PROVIDE THE CONTRACTOR WITH AN "ASCII" POINT FILE CONTAINING ALL CONTROL POINTS ALONG WITH ALIGNMENT CENTER LINE POINTS AT 50' STATIONS.

OWNER

DESCHUTES COUNTY ROAD DEPARTMENT
61150 SE 27TH
BEND, OR 97702
CONTACT: CODY SMITH
PHONE: (541) 322-7113 (OFFICE)
EMAIL: cody.smith@deschutes.org

ENGINEER

PARAMETRIX
150 NW PACIFIC PARK LANE
BEND, OREGON 97701
CONTACT: DAVID RICO, P.E.
PHONE: (541) 508-7710
EMAIL: drico@parametrix.com

SURVEYOR

PARAMETRIX
150 NW PACIFIC PARK LANE
BEND, OR 97701
CONTACT: ANDREW HUSTON
PHONE: (541) 508-7710
EMAIL: ahuston@parametrix.com

BASIS OF BEARING

BASED ON THE OREGON REAL-TIME GPS NETWORK (ORGN)

DATUM

HORIZONTAL: NAD83 (2011) BASED ON OREGON REAL-TIME GPS NETWORK (ORGN)

VERTICAL: NGVD 29

PROJECTION IS CENTRAL OREGON COORDINATE SYSTEM (C.O.C.S), INTERNATIONAL FEET

BENCHMARK

BENCH MARK FOR THIS PROJECT IS POINT 1041, BEING FOUND AS SET PK NAIL ELEVATION 3116.04

FOUND MONUMENTS TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1156	446340.67	3314048.29	3111.01	FOUND 1/2 IN IRON ROD UP 0.2
1157	446895.78	3314079.88	3108.15	FOUND 3-1/4 IN ALUMINUM CAP MARKED DESCHUTES COUNTY SURVEYORS OFFICE DOWN 0.3 IN ASPHALT
1157	446895.78	3314079.88	3108.15	FOUND 3-1/4 IN ALUMINUM CAP MARKED DESCHUTES COUNTY SURVEYORS OFFICE DOWN 0.3 IN ASPHALT
1158	446210.12	3314154.43	3113.19	FOUND 1 IN IRON PIPE WITH THREADED TOP
1158	446210.12	3314154.43	3113.19	FOUND 1 IN IRON PIPE WITH THREADED TOP
1159	445964.14	3314758.05	3111.33	1 INCH IRON PIPE, THREADED TOP, BENT N20°E 0.9 FEET, SHOT POINT OF ENTRY

PARAMETRIX CONTROL TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1030	444244.44	3313956.86	3125.39	FOUND 2-1/2 IN ALUMINUM CAP MARKED DESCHUTES COUNTY GIS 0023 IN CONCRETE
1034	444416.33	3313832.95	3126.14	SET 5/8 IN IRON ROD WITH 1-1/2 IN ALUMINUM CAP MARKED PARAMETRIX CNTL 1034
1041	445472.90	3314516.04	3116.04	SET PK NAIL

SHEET LIST TABLE

SHEET #	SHEET TITLE
C1.0	COVER SHEET
C1.1	PROJECT DETAILS
C2.0	TYPICAL SECTIONS
C2.1	PAVING INDEX
C3.0	EXISTING CONDITIONS/DEMO PLAN
C4.0	PLAN & PROFILE, SW CANAL BLVD
C4.1	PLAN & PROFILE, SW CANAL BLVD SW HELMHOLTZ WAY
C5.0	CONSTRUCTION STAGING, STAGE 1
C5.1	CONSTRUCTION STAGING, STAGE 2
C5.2	CONSTRUCTION STAGING, STAGE 3
C5.3	CONSTRUCTION STAGING, STAGE 4
C5.4	CONSTRUCTION STAGING, STAGE 5
C6.0	EROSION CONTROL PLAN
SS1	SIGNING AND STRIPING LEGEND
SS2	RECESSED PAVEMENT MARKERS DETAIL
SS3	EXISTING SIGN DETAILS
SS4	PROPOSED SIGN DETAILS
SS5	SIGN & POST DATA TABLE
SS6	CURVE SIGN AND POST DATA TABLE
SS7	CURVE SIGN AND POST DATA TABLE
SS8	CURVE SIGN AND POST DATA TABLE
SS9	SIGNING & STRIPING PLAN CANAL BLVD
SS10	SIGNING & STRIPING PLAN CANAL BLVD
SS11	SIGNING & STRIPING PLAN CANAL BLVD
SS12	SIGNING & STRIPING PLAN HELMHOLTZ WAY
SS13	CURVE SIGNING PLAN
SS14	CURVE SIGNING PLAN
SS15	CURVE SIGNING PLAN
SS16	CURVE SIGNING PLAN
SS17	DETOUR PLAN
IL1	LEGEND
IL2	LIGHTING PLAN

CALL BEFORE YOU DIG

DESCHUTES COUNTY APPROVAL:

COUNTY ENGINEER

COUNTY ENGINEER

REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE-2509-005.2-C1.0-CS00
JOB No.
DATE 11/19/19

REGISTERED PROFESSIONAL ENGINEER — 93365PE — OREGON — SEPT. 11, 2018 — DAVID RICO
EXPIRES: 12/31/2020

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES
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P 541.508.7710
WWW.PARAMETRIX.COM

PROJECT NAME
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

COVER SHEET

DRAWING NO.
1 OF 32
C1.0

PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\HELMHOLTZ\CD'S
LAYOUT: C1.0 COVER SHEET
PLOTTED BY: rlcodov DATE: Tuesday, November 19, 2019 1:59:49 PM

FOUND MONUMENTS TABLE				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1140	444855.37	3314068.68	3126.40	FOUND 5/8 IN IRON ROD DOWN 0.2
1141	445675.71	3314352.10	3109.56	FOUND 1 IN PIPE WITH ROCK COLLAR
1142	445653.91	3314561.01	3112.26	FOUND 1-1/2 IN IRON PIPE
1143	445926.98	3314816.97	3109.27	FOUND 5/8 IN IRON ROD WITH YELLO PLASTIC CAP MARKED LS1020 BENT 0.5 N45W
1144	446033.05	3314881.20	3108.15	FOUND 5/8 IN IRON ROD YELLOW PLASTIC CAP MARKED LS1020 UP 1.40
1145	446804.16	3315205.40	3084.51	FOUND 1 IN IRON PIPE BENT
1146	446400.65	3314048.74	3110.72	FOUND 5/8 IN IRON ROD
1147	446146.72	3314943.32	3096.01	FOUND 5/8 IN IRON ROD WITH YELLOW PLASTIC CAP MARKED LS 1020 UP 0.4
1148	446771.76	3315267.42	3084.79	FOUND 3/4 IN IRON ROD BENT S25°W 0.50
1150	446538.34	3314096.75	3112.01	FOUND 1 IN IRON PIPE THREADED TOP
1150	446538.34	3314096.75	3112.01	FOUND 1 IN IRON PIPE THREADED TOP
1151	446896.01	3314099.14	3107.33	FOUND FIP 1 IN IRON PIPE THREADED TOP UP 0.2
1151	446896.01	3314099.14	3107.33	FOUND FIP 1 IN IRON PIPE THREADED TOP UP 0.2
1152	446895.70	3314049.99	3107.52	FOUND 1/2 IN IRON ROD DOWN 0.6
1152	446895.70	3314049.99	3107.52	FOUND 1/2 IN IRON ROD DOWN 0.6
1154	444920.75	3314178.64	3121.12	FOUND 5/8 IN IRON ROD WITH YELLOW PLASTIC CAP MARKED LS 1020
1154	444920.75	3314178.64	3121.12	FOUND 5/8 IN IRON ROD WITH YELLOW PLASTIC CAP MARKED LS 1020
1155	444920.57	3314167.38	3121.72	FOUND 1 IN IRON PIPE WITH THREADED TOP UP 0.3
1155	444920.57	3314167.38	3121.72	FOUND 1 IN IRON PIPE WITH THREADED TOP UP 0.3
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FOUND MONUMENTS

N.T.S

PARAMETRIX CONTROL TABLE				
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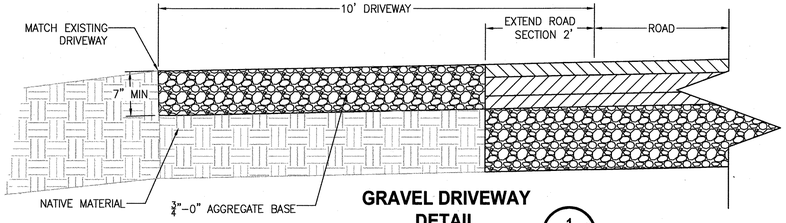
CONTROL TABLE

N.T.S

ODOT STD DWG INDEX	
RD 100	MAILBOX SUPPORT
RD 610	ASPHALT CONCRETE PAVEMENT (ACP) DETAILS
RD 810	BARBED AND WOVEN WIRE FENCE
RD 820	FENCE GATES
RD 1040	SEDIMENT FENCE
TM 200	SIGN INSTALLATION DETAILS
TM 201	MISCELLANEOUS SIGN PLACEMENT DETAILS
TM 500	PAVEMENT MARKING STANDARD DETAIL BLOCKS
TM 501	PAVEMENT MARKING STANDARD DETAIL BLOCKS
TM 503	PAVEMENT MARKING STANDARD DETAIL BLOCKS
TM 517	RECESSED PAVEMENT MARKERS
TM 530	INTERSECTION PAVEMENT MARKINGS (CROSSWALK, STOP BAR & BIKE LANE STENCIL)
TM 531	TURN ARROW MARKING DETAILS
TM 539	MEDIAN AND LEFT TURN CHANNELIZATION DETAILS
TM 560	ALIGNMENT LAYOUT: GENERAL
TM 561	ALIGNMENT LAYOUT: LEFT TURN LANE, CENTERLINE, & MEDIANS
TM 671	3 SECOND GUST WIND SPEED MAP
TM 676	SIGN ATTACHMENTS
TM 681	PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION
TM 688	PERFORATED STEEL SQUARE TUBE (PSST) SLIP BASE FOUNDATION
TM 800	TABLES, ABRUPT EDGE AND PCMS DETAILS
TM 820	TEMPORARY BARRICADES
TM 821	TEMPORARY SIGN SUPPORTS
TM 822	TEMPORARY SIGN SUPPORTS
TM 831	TEMPORARY IMPACT ATTENUATORS
TM 832	TEMPORARY IMPACT ATTENUATORS
TM 833	TEMPORARY IMPACT ATTENUATORS
TM 840	CLOSURE DETAILS
TM 841	INTERSECTION WORK ZONE DETAILS
TM 850	2-LANE, 2-WAY ROADWAYS

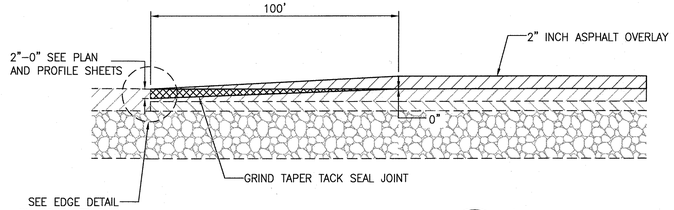
CONSTRUCTION NOTES:

1. ALL UTILITY SERVICES WILL BE FIELD STAKED IN ACCORDANCE WITH DESCHUTES COUNTY STANDARDS AND SPECIFICATIONS.
2. DURING THE COURSE OF THE WORK, CONTRACTOR SHALL COORDINATE AND ACCOMMODATE OTHER CONTRACTORS OR OPERATIONS OF THE COUNTY.
3. CONTRACTOR SHALL RESTRICT ALL OPERATIONS TO THE AREAS WITHIN THE PROJECT BOUNDARIES. ANY DISRUPTION TO NATIVE LANDSCAPES, OUTSIDE OF THE PROJECT AREA, SHALL BE RESTORED AT NO COST TO THE OWNER.
4. CABLE AND GAS UTILITY TRENCHING SHALL BE COMPLETED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS FROM APPLICABLE UTILITY COMPANIES. ALL CABLE AND GAS UTILITIES WILL BE INSTALLED BY THE APPLICABLE UTILITY COMPANY IN CONFORMANCE WITH THEIR JOINT TRENCH DETAIL. CONTRACTOR SHALL COORDINATE TRENCH EXCAVATIONS, BEDDING AND BACKFILL WITH POWER, PHONE, TELEVISION, AND GAS REPRESENTATIVES.
5. ALL FINAL CUT SLOPES SHALL NOT EXCEED A GRADE OF 2 HORIZONTAL TO 1 VERTICAL UNLESS OTHERWISE APPROVED. FILL SLOPES SHALL NOT EXCEED A GRADE OF 2 HORIZONTAL TO 1 VERTICAL UNLESS OTHERWISE APPROVED BY THE ENGINEER OR SHOWN ON THESE PLANS.
6. THE CONTRACTOR SHALL EMPLOY ALL LABOR, EQUIPMENT, AND METHODS REQUIRED TO PREVENT DUST IN AMOUNTS DAMAGING TO PROPERTY, CULTIVATED VEGETATION AND DOMESTIC ANIMALS OR CAUSING A NUISANCE TO PERSONS OCCUPYING BUILDINGS IN THE VICINITY OF THE JOB SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY DUST RESULTING FROM CONSTRUCTION.
7. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE INDUSTRIAL SAFETY REGULATIONS. DESCHUTES COUNTY AND THEIR OFFICIALS, THE ENGINEER, AND THE OWNER SHALL NOT BE RESPONSIBLE FOR ENFORCING SAFETY REGULATIONS.
8. MATERIAL QUANTITIES USED, NOTED, OR PROVIDED IN A SEPARATE ITEMIZED QUANTITY TAKE-OFF ARE AN ENGINEER'S OPINION OF PROBABLE MATERIAL REQUIREMENTS, AND IS AN ESTIMATE ONLY. CONTRACTORS HAVE THE SOLE RESPONSIBILITY OF MAKING THEIR OWN QUANTITY TAKE-OFF AND COST ESTIMATE.
9. COUNTY ROAD DEPARTMENT'S SIGNATURE DOES NOT CONSTITUTE APPROVAL OF FACILITIES PROPOSED ON PRIVATE PROPERTY.
10. ANY WORK WITHIN EXISTING PUBLIC RIGHT-OF-WAY OR DEDICATED EASEMENTS REQUIRES A PERMIT TO WORK IN THE PUBLIC RIGHT-OF-WAY OBTAINED FROM DESCHUTES COUNTY. WORK WITHIN THE RIGHT-OF-WAY OR EASEMENTS MAY OCCUR ONLY BETWEEN THE HOURS OF 7:00 AM AND 6:00 PM, UNLESS OTHERWISE PERMITTED, ANY AND EVERY CALENDAR DAY EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS.



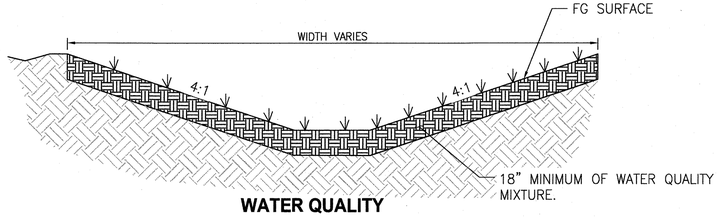
GRAVEL DRIVEWAY DETAIL 1 C1.1

N.T.S



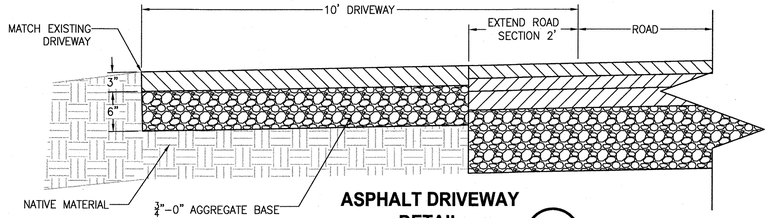
GRIND TAPER DETAIL 2 C1.1

N.T.S



WATER QUALITY SWALE SECTION DETAIL 3 C1.1

N.T.S



ASPHALT DRIVEWAY DETAIL 4 C1.1

N.T.S

REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE-2509-005.2-C1.1-NT00
JOB No.
DATE 11/19/19

REGISTERED PROFESSIONAL ENGINEER
14066PE
David Rico
OREGON
SEPT. 11, 2018
DAVID RICO
EXPIRES: 12/31/2020

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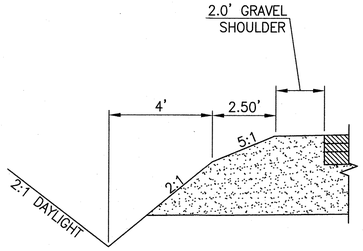
PROJECT NAME
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

PROJECT DETAILS

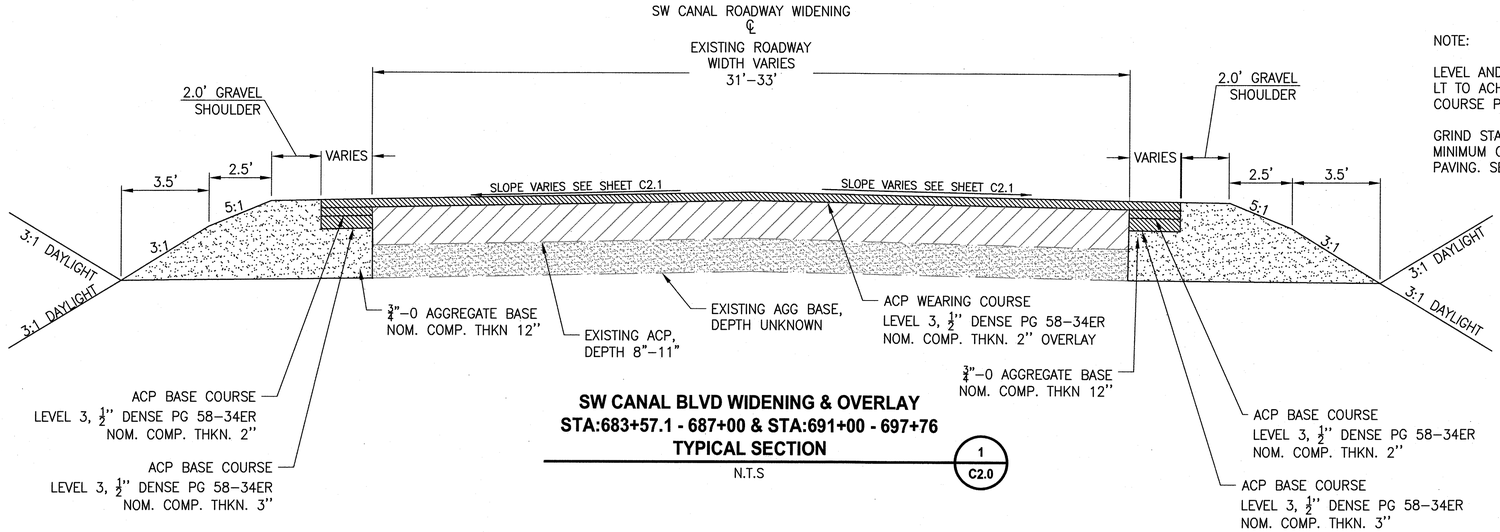
DRAWING NO. 2 OF 32

C1.1



STA: 691+00-691+50

N.T.S



SW CANAL BLVD WIDENING & OVERLAY
STA:683+57.1 - 687+00 & STA:691+00 - 697+76
TYPICAL SECTION

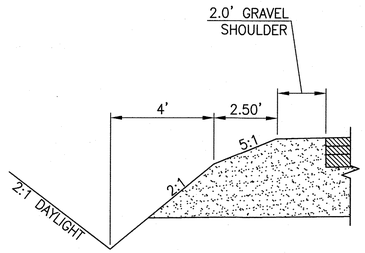
N.T.S

1 / C2.0

NOTE:

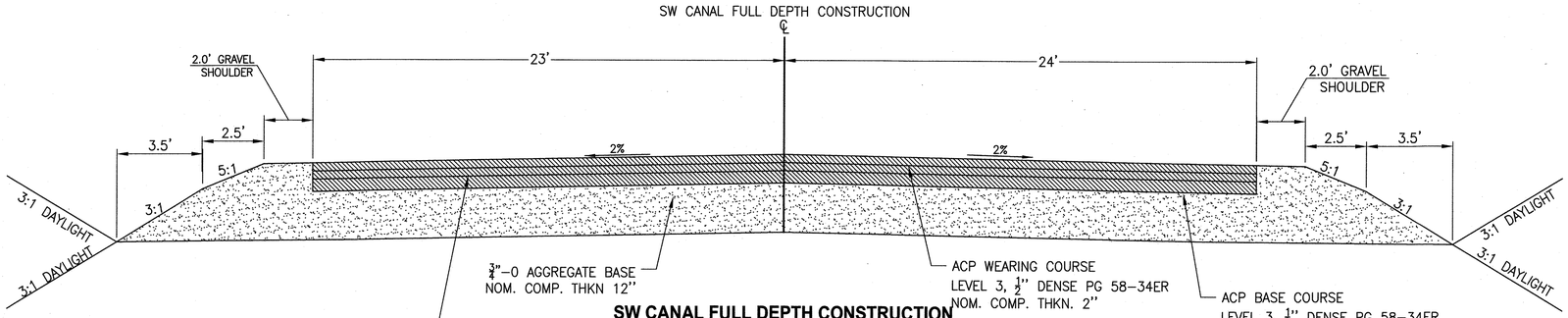
LEVEL AND GRIND PAVEMENT STA: 683+86.6–687+00 LT TO ACHIEVE 2% CROSS SLOPE, PRIOR TO WEARING COURSE PAVING. SEE SHEET C2.1

GRIND STA: 683+86.6–686+27.7 RT TO ACHIEVE 1% MINIMUM CROSS SLOPE, PRIOR TO WEARING COURSE PAVING. SEE SHEET C2.1



STA: 688+05-691+00

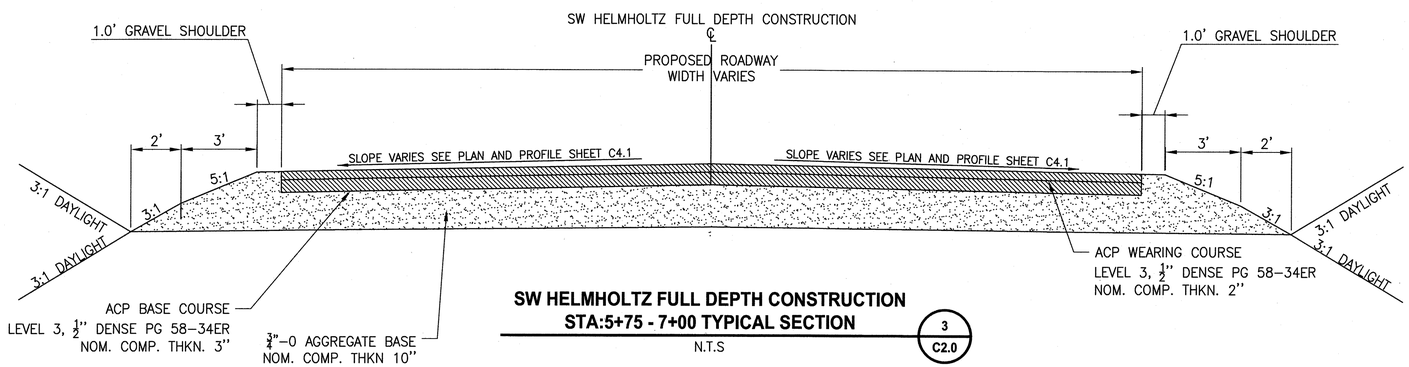
N.T.S



SW CANAL FULL DEPTH CONSTRUCTION
STA:687+00 - 691+00
TYPICAL SECTION

N.T.S

2 / C2.0



SW HELMHOLTZ FULL DEPTH CONSTRUCTION
STA:5+75 - 7+00 TYPICAL SECTION

N.T.S

3 / C2.0

REVISIONS	DATE	BY	DESIGNED DR
			DRAWN DR/LYF
			CHECKED
			APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME: BE–2509–005.2–C2.0–TS00

JOB No.

DATE 11/19/19

REGISTERED PROFESSIONAL ENGINEER — 87056PE — OREGON — SEPT. 11, 2018 — DAVID RICO

EXPIRES: 12/31/2020

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P 541.508.7710
WWW.PARAMETRIX.COM

PROJECT NAME

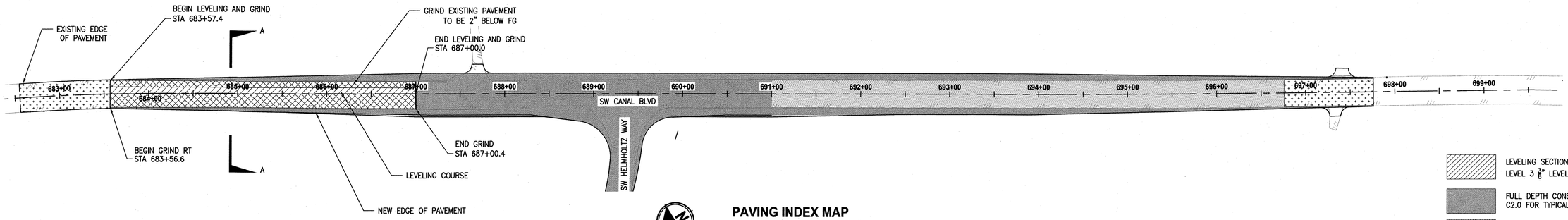
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

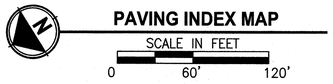
TYPICAL SECTIONS

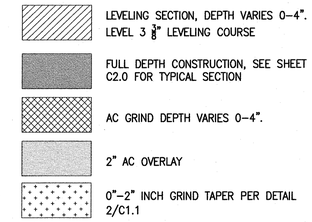
DRAWING NO. 3 OF 32

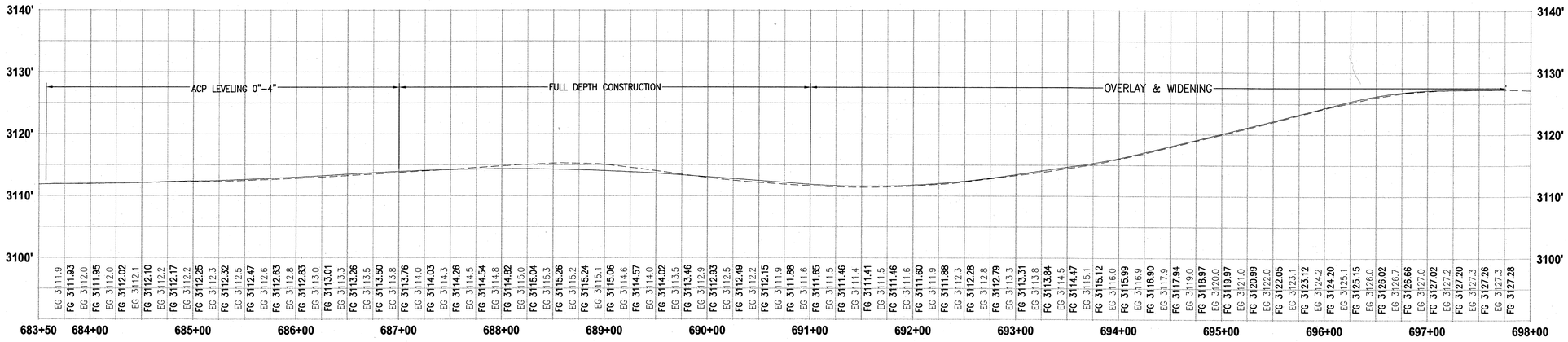
C2.0

LAYOUT: C2.0 TYPICAL SECTIONS PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\HELMHOLTZ\CD'S PLOTTED BY: rlcodov DATE: Tuesday, November 19, 2019 1:05:30 PM



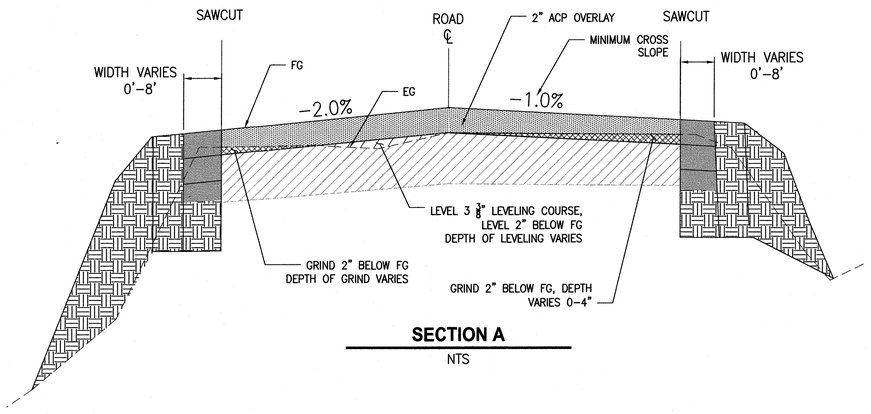






CENTERLINE PROFILE

H=60' V=10'



SECTION A

NTS

	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE-2509-005.2-C2.1-PI
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
14066PE
OREGON
SEPT. 11, 2018
DAVID RICO
EXPIRES:12/31/2020

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PROJECT NAME
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

2.1 PAVING INDEX

DRAWING NO.
4 OF 32
C2.1

LAYOUT: PI-Paving Index PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\HELMHOLTZ\CD'S PLOTTED BY: ricodav DATE: Tuesday, November 19, 2019 2:48:11 PM

REMOVE EXISTING FENCE AS NEEDED
EXISTING UTILITY POLE, PROTECT IN PLACE
TEMPORARY CONSTRUCTION EASEMENT
ROW
EXISTING OVERHEAD UTILITY LINE, LIMIT EQUIPMENT HEIGHT
EXISTING UTILITY POLE, PROTECT IN PLACE
EXISTING UTILITY POLE, PROTECT IN PLACE
EXISTING UTILITY POLE WITH UG, PROTECT IN PLACE
EXISTING TRANSFORMER, PROTECT IN PLACE
RELOCATE EXISTING ADDRESS SIGN, SEE SHEET C4.0
EXISTING ROCK OUTCROPPING TO BE REMOVED
EXISTING UTILITY POLE,TO BE RELOCATED BY OTHERS
CEC ANCHOR EASMENT
25'
EXISTING UTILITY POLE, PROTECT IN PLACE
EXISTING UTILITY POLE, PROTECT IN PLACE
REMOVE EXISTING FENCE
684+00
685+00
686+00
687+00
EXISTING MAILBOX AND NEWSPAPER BOX TO BE RELOCATED SEE SHEET C4.0
689+00
SW CANAL BLVD
690+00
691+00
692+00
RELOCATE EXISTING ROAD SIGN, ARROWS POINTING NE/SW, SEE SHEET C4.0
PROTECT EXISTING IRRIGATION AND SPRINKLER HEAD IN PLACE
PROTECT EXISTING IRRIGATION AND SPRINKLER HEAD IN PLACE
CLEAR ZONE
REMOVE EXISTING FENCE
SCHOOL BUS STOP AHEAD SIGN, TO BE RELOCATED
EXISTING UTILITY POLE, TO BE RELOCATED BY OTHERS
EXISTING EP, TYPICAL
TREE REMOVAL, TYPICAL
EXISTING OVERHEAD UTILITY LINE, LIMIT EQUIPTMENT HEIGHT
EXISTING UNDERGROUND FIBER, TO BE RELOCATED BY OTHERS
EXISTING PETERSON ROCK GARDEN SIGN, PROTECT IN PLACE
EXISTING STOP SIGN, TO BE RELOCATED
EXISTING UTILITY POLE, TO BE RELOCATED BY OTHERS

SW CANAL BLVD
SCALE IN FEET
0 30' 60'

EXISTING OVERHEAD UTILITY LINE, LIMIT EQUIPTMENT HEIGHT
EXISTING UTILITY POLE, PROTECT IN PLACE
REMOVE EXISTING FENCE, SEE SHEET C4.0
EXISTING LEFT TURN AHEAD SIGN, TO BE RELOCATED
EXISTING UTILITY POLE, PROTECT IN PLACE
EXISTING ROCK WALL, TO BE REMOVED
EXISTING ROCK WALL, TO BE REMOVED
EXISTING ADDRESS SIGN, PROTECT IN PLACE
EXISTING UTILITY POLE, PROTECT IN PLACE
EXISTING EDGE OF PAVEMENT
CLEAR ZONE
EXISTING UTILITY POLE, PROTECT IN PLACE
692+00
693+00
694+00
695+00
SW CANAL BLVD
696+00
697+00
698+00
EXISTING SCHOOL BUS AHEAD SIGN, PROTECT IN PLACE
EXISTING UTILITY POLE, PROTECT IN PLACE
REMOVE EXISTING FENCE
TREE REMOVAL, TYPICAL
EXISTING OVERHEAD UTILITY LINE, LIMIT EQUIPTMENT HEIGHT
EXISTING UTILITY POLE, TO BE RELOCATED BY OTHERS
EXISTING MILE MARKER SIGN, ADJUST TO FINISHED GRADE
EXISTING UTILITY POLE, PROTECT IN PLACE
REMOVE ALL TREES IN TCE
EXISTING MAILBOX AND NEWSPAPER BOX TO BE RELOCATED SEE SHEET C4.1

SW CANAL BLVD
SCALE IN FEET
0 30' 60'

EXISTING UTILITY POLE, PROTECT IN PLACE
EXISTING FIBER VAULT, PROTECT IN PLACE
SW HELMHOLTZ WAY
5+00
6+00
6+73
689+00
690+00
REMOVE EXISTING FENCE

SW HELMHOLTZ WAY
SCALE IN FEET
0 30' 60'

LEGEND

- REMOVE EXISTING TREE (LOCATED TREES ARE 6" DBH AND LARGER. SMALLER TREES NOT SHOWN MAY REQUIRE REMOVAL)
- REMOVAL OF EXISTING ROAD
- REMOVAL OF EXISTING FENCE
- TEMPORARY CONSTRUCTION EASEMENT TCE
- SLOPE EASEMENT

	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
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APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME BE-2509-005.2-C3.0-EC00
JOB No.
DATE 11/19/19

REGISTERED PROFESSIONAL ENGINEER
OREGON
SEPT. 11, 2018
DAVID RICO
EXPIRES: 12/31/2020

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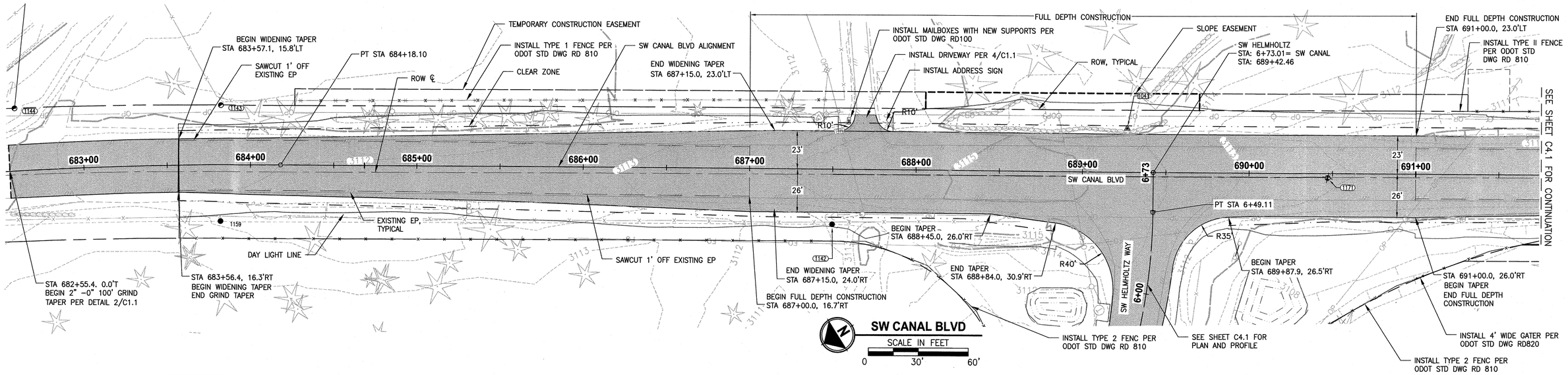
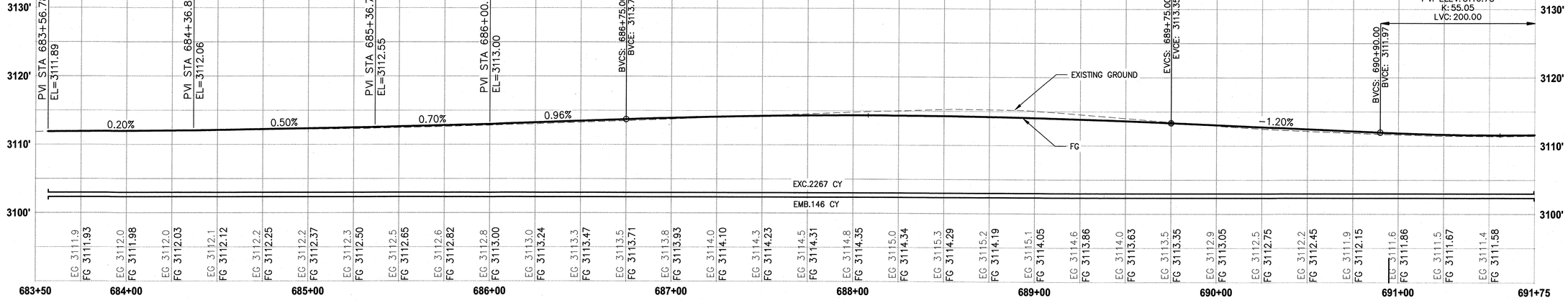
PROJECT NAME
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING NO.
5 OF 32
C3.0

LAYOUT: C3.0 EXISTING CONDITIONS PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\95xcs\CADD\DWG\HELMHOLTZ\C0'S PLOTTED BY: ricodov DATE: Tuesday, November 19, 2019 2:08:54 PM





SW CANAL BLVD PROFILE

HORIZ: 1"=30' VERT: 1"=8'

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DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY
FILE NAME BE-2509-005.2-C4.0-PP00
JOB No.
DATE 11/19/19

REGISTERED PROFESSIONAL ENGINEER
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DAVID RICO
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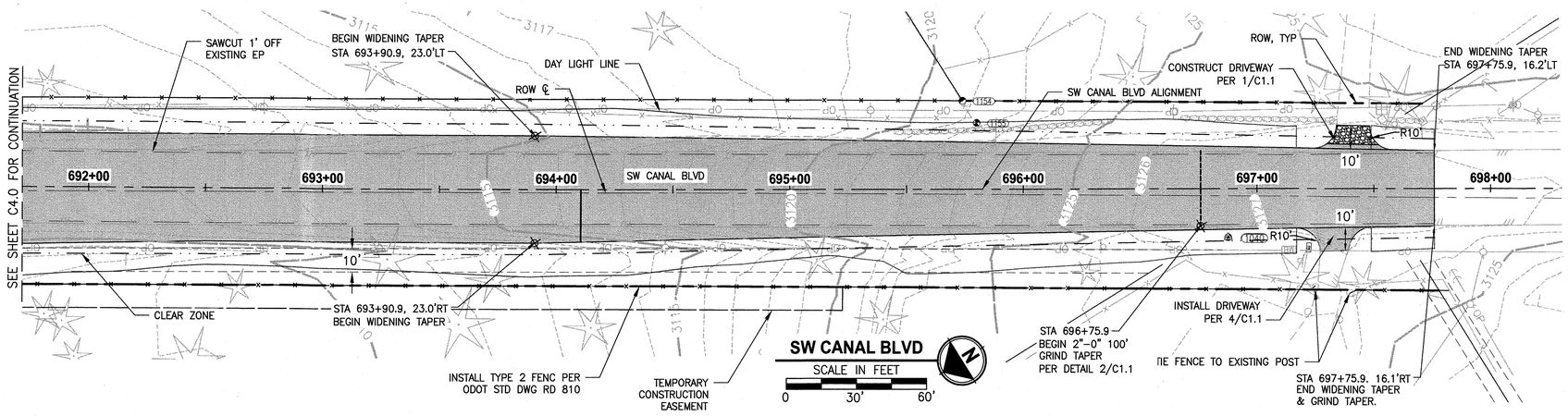
PROJECT NAME
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

PLAN AND PROFILE

DRAWING NO. 6 OF 32

C4.0

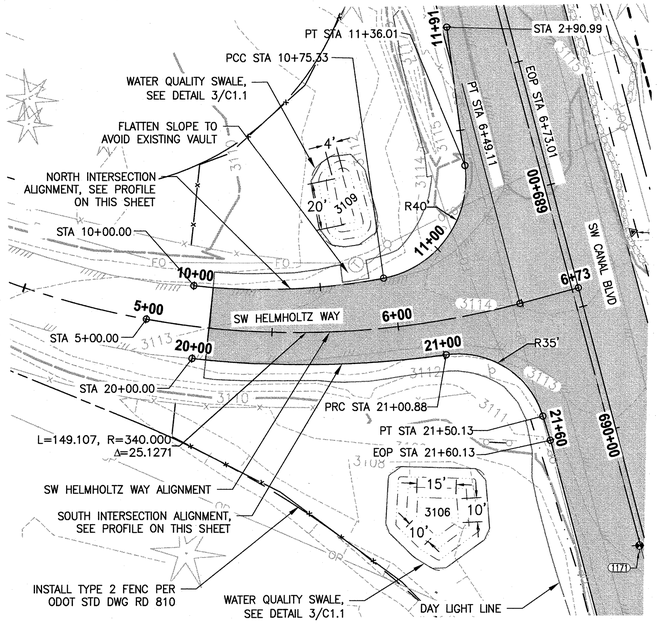
LAYOUT: C4.0 PLAN AND PROFILE PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\HELMHOLTZ\C0'S PLOTTED BY: ricodav DATE: Tuesday, November 19, 2019 1:12:44 PM



SW CANAL BLVD

SCALE IN FEET

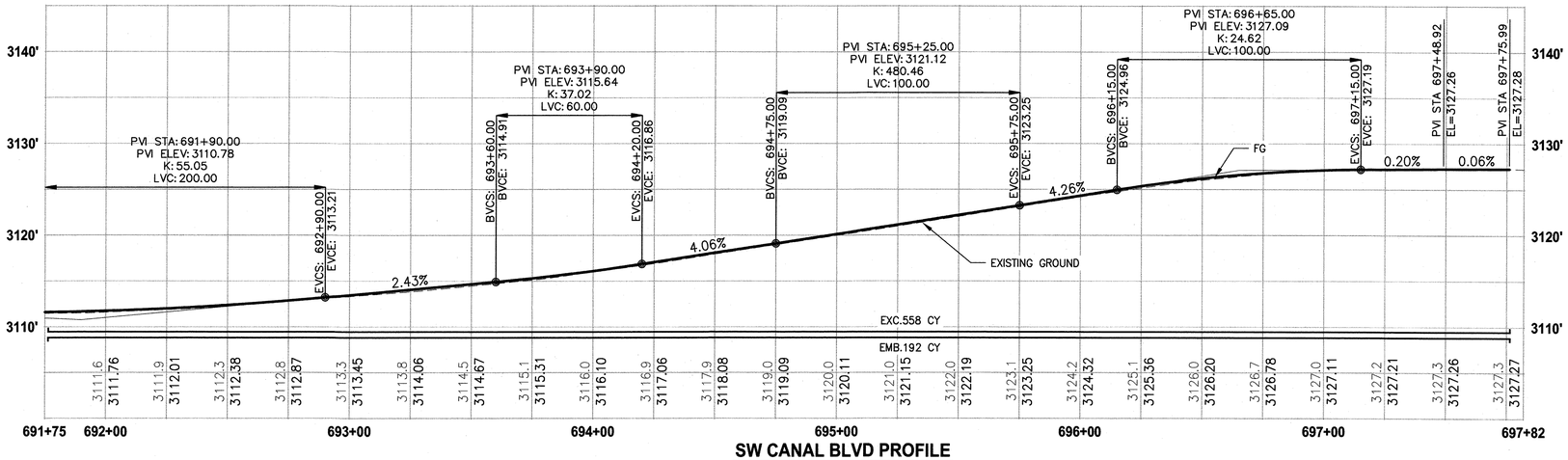
0 30' 60'



SW HELMHOLTZ WAY

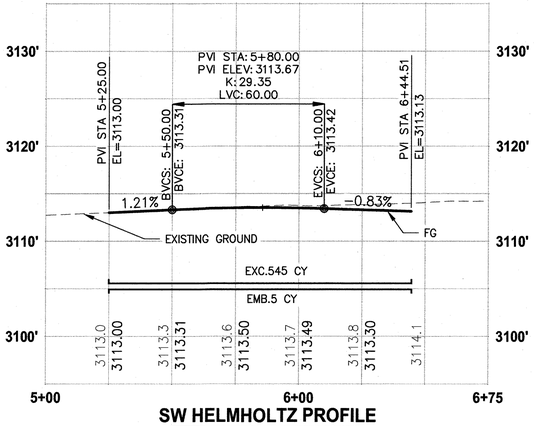
SCALE IN FEET

0 30' 60'



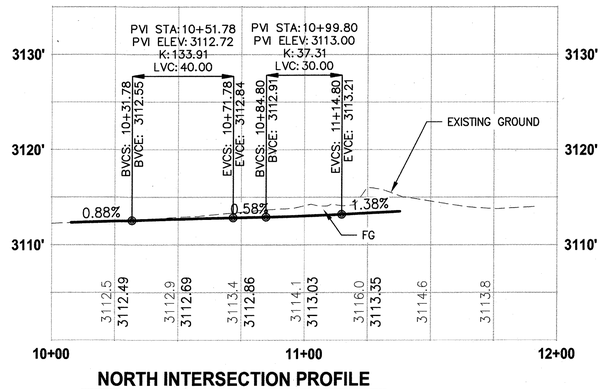
SW CANAL BLVD PROFILE

HORIZ: 1"=30' VERT: 1"=8'



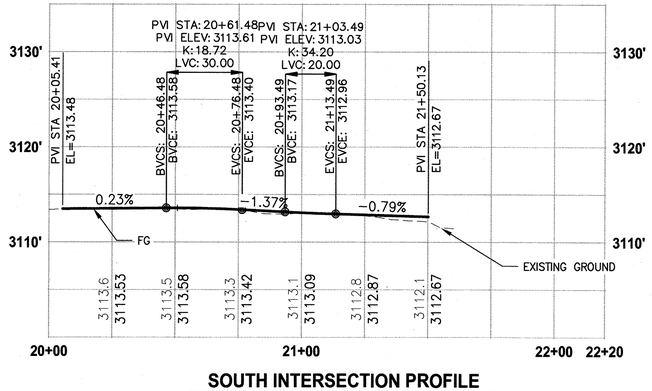
SW HELMHOLTZ PROFILE

HORIZ: 1"=30' VERT: 1"=8'



NORTH INTERSECTION PROFILE

HORIZ: 1"=30' VERT: 1"=8'



SOUTH INTERSECTION PROFILE

HORIZ: 1"=30' VERT: 1"=8'

REVISIONS	DATE	BY

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DRAWN DR/LYF
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APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE-2509-005.2-C4.1-PP00
JOB No.
DATE 11/19/19

REGISTERED PROFESSIONAL ENGINEER
84066PE
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SEPT. 11, 2018
DAVID RICO
EXPIRES: 12/31/2020

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PROJECT NAME

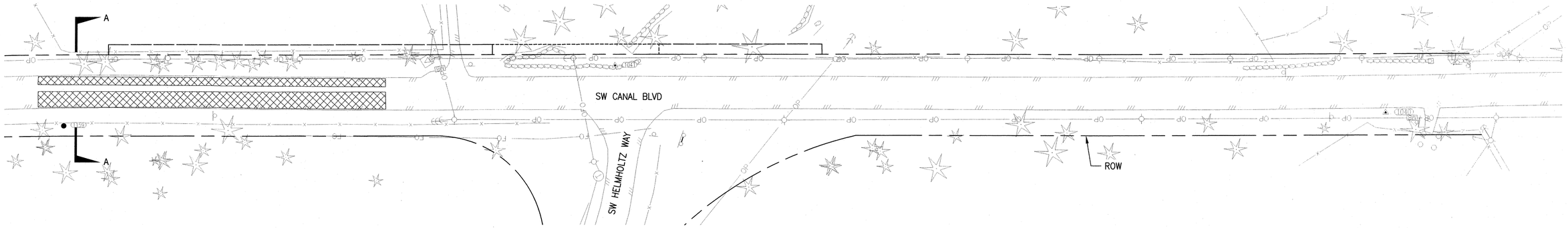
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

PLAN AND PROFILE

DRAWING NO. 7 OF 32

C4.1

LAYOUT: C4.1 PLAN AND PROFILE PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 ORH Design Phase\99Svcs\CADD\DWG\HELMHOLTZ\CD'S PLOTTED BY: rlcoday DATE: Tuesday, November 19, 2019 1:17:44 PM

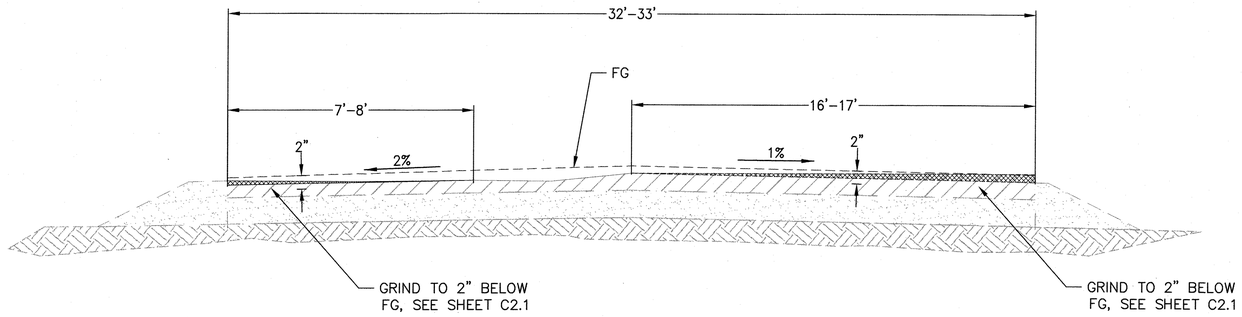


UNDER CONSTRUCTION
GRIND 2" BELOW FG

STAGE ONE GRIND

SCALE IN FEET

0 50' 100'



STAGE ONE GRIND (A / C5.0)

SCALE IN FEET

0 3' 6'

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DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE-2509-005.2-C5.0 TRST
JOB No.
DATE 11/19/19

REGISTERED PROFESSIONAL ENGINEER
14066PE
OREGON
SEPT. 11, 2018
DAVID RICO
EXPIRES: 12/31/2020

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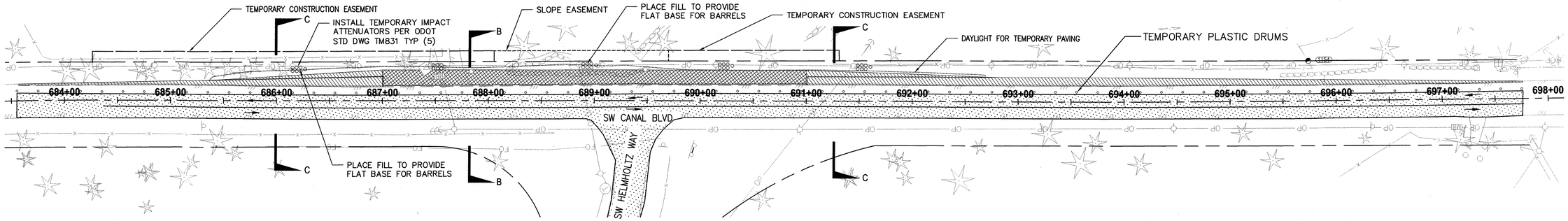
PROJECT NAME
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

CONSTRUCTION STAGING - STAGE 1

DRAWING NO. 8 OF 32

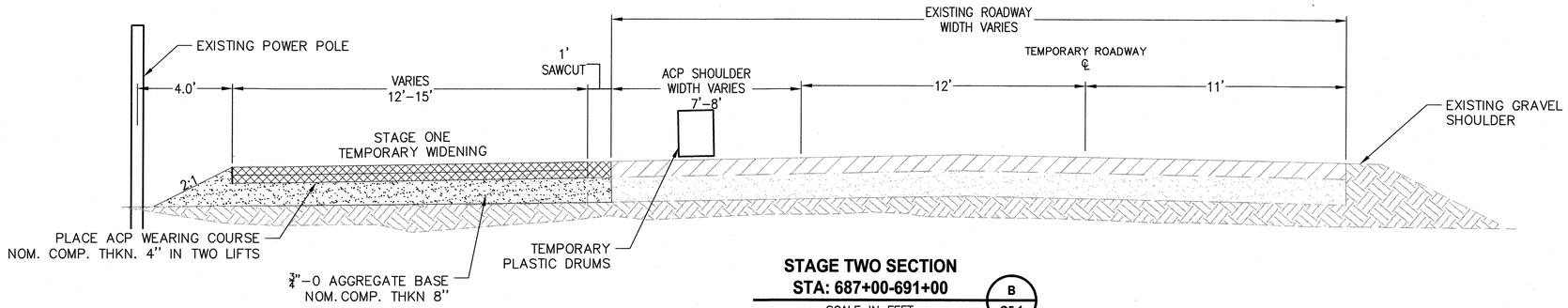
C5.0



STAGE TWO WIDENING

SCALE IN FEET

0 50' 100'



STAGE TWO SECTION
STA: 687+00-691+00

B
C5.1

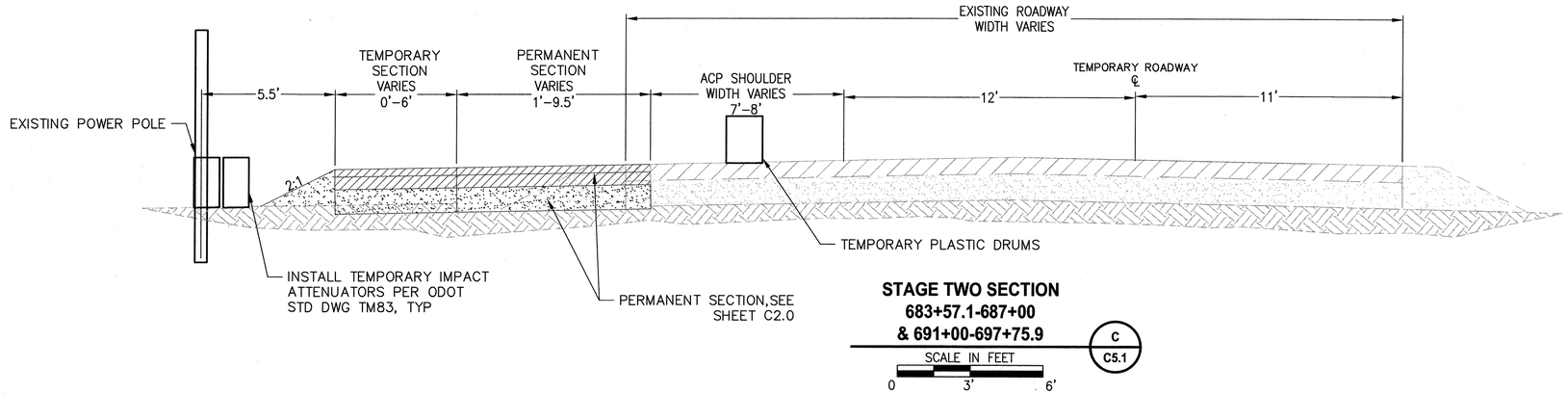
SCALE IN FEET

0 3' 6'

TEMPORARY PAVING

PERMANENT PAVING

UNDER TRAFFIC



STAGE TWO SECTION
683+57.1-687+00
& 691+00-697+75.9

C
C5.1

SCALE IN FEET

0 3' 6'

	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE–2509–005.2–C5.0 TRST

JOB No.

DATE 11/19/19

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SEPT. 11, 2018
DAVID RICO
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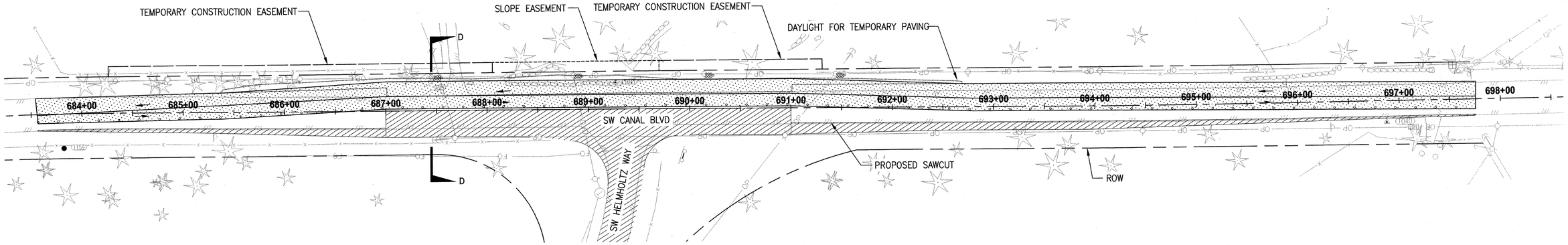
PROJECT NAME

SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

CONSTRUCTION STAGING - STAGE 2

DRAWING NO. 9 OF 32

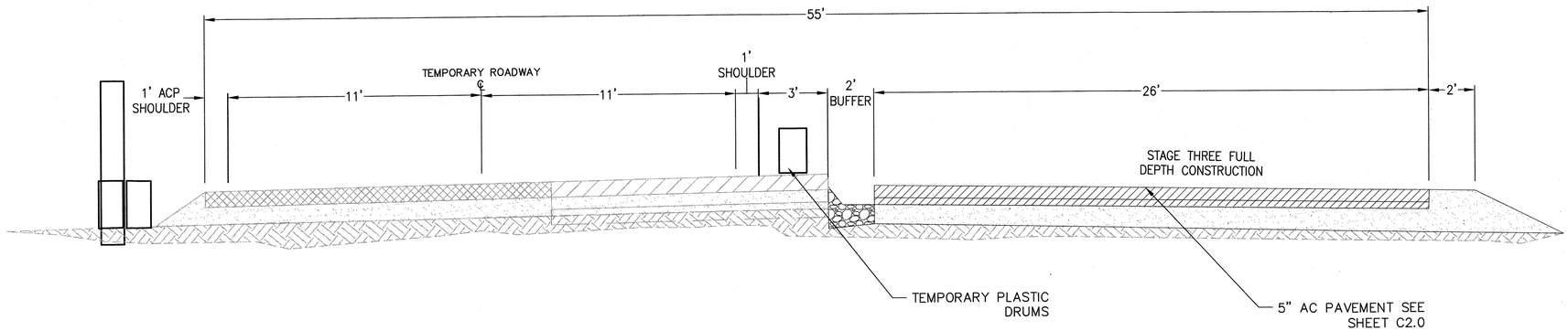
C5.1



STAGE THREE WIDENING & FULL DEPTH CONSTRUCTION PLAN

SCALE IN FEET
0 50' 100'

UNDER CONSTRUCTION
UNDER TRAFFIC



STAGE THREE FULL DEPTH CONSTRUCTION & WIDENING

D
C5.2

SCALE IN FEET
0 3' 6'

	REVISIONS	DATE	BY	DESIGNED DR / DRAWN DR/LYF / CHECKED / APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE-2509-005.2-C5.0 TRST
JOB No.
DATE 11/19/19

REGISTERED PROFESSIONAL ENGINEER
94066PE
OREGON
SEPT. 11, 2018
DAVID RICO
EXPIRES: 12/31/2020

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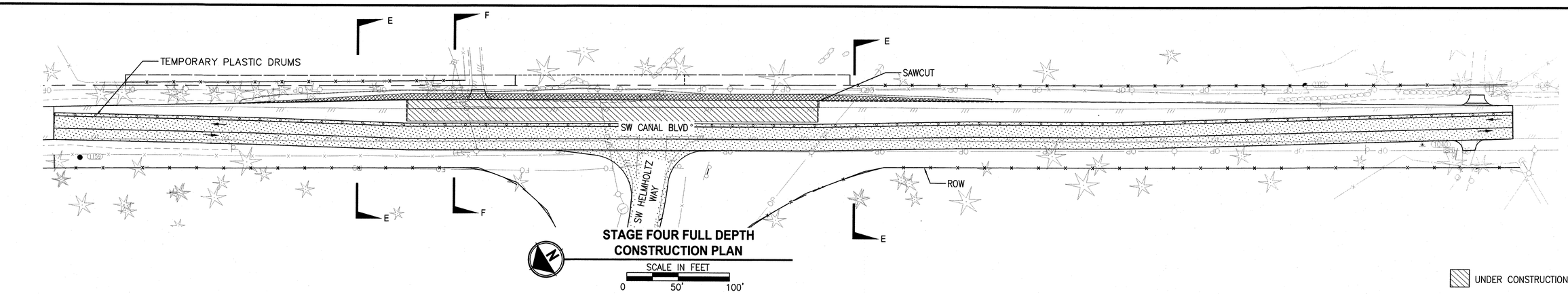
PROJECT NAME
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

CONSTRUCTION STAGING - STAGE 3

DRAWING NO.
10 OF 32
C5.2

LAYOUT: CONSTRUCTION STAGING - STAGE 3 PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRI Design Phase\99Svcs\CADD\DWG\HELMHOLTZ\C0'S PLOTTED BY: ricodav DATE: Tuesday, November 19, 2019 1:20:14 PM



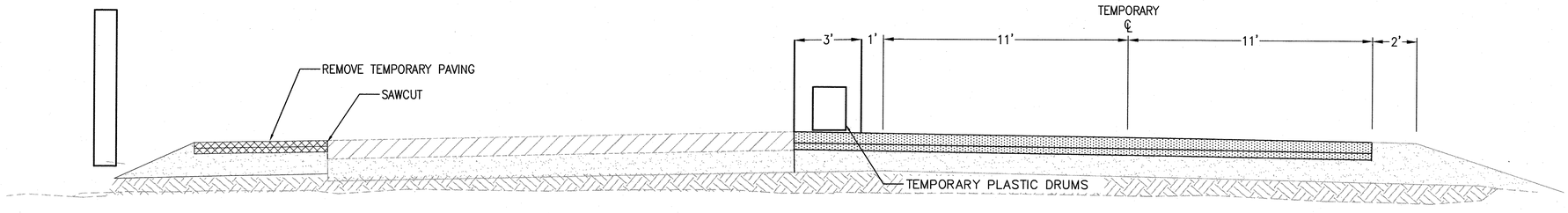
STAGE FOUR FULL DEPTH CONSTRUCTION PLAN

SCALE IN FEET

UNDER CONSTRUCTION

UNDER TRAFFIC

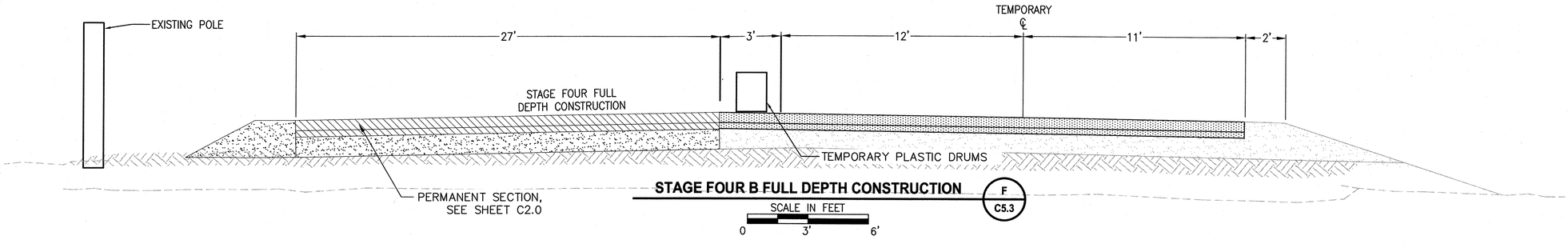
TEMPORARY WIDENING TO BE REMOVED



STAGE FOUR A TEMPORARY PAVEMENT REMOVAL — E / C5.3

SCALE IN FEET

0 3' 6'



STAGE FOUR B FULL DEPTH CONSTRUCTION — F / C5.3

SCALE IN FEET

0 3' 6'

LAYOUT: CONSTRUCTION STAGING – STAGE 4 PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\HELMHOLTZ\CD'S PLOTTED BY: ricodov DATE: Tuesday, November 19, 2019 1:22:08 PM

	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE-2509-005.2-C5.0 TRST
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
14056PE
OREGON
SEPT. 11, 2018
DAVID RICO
EXPIRES: 12/31/2020

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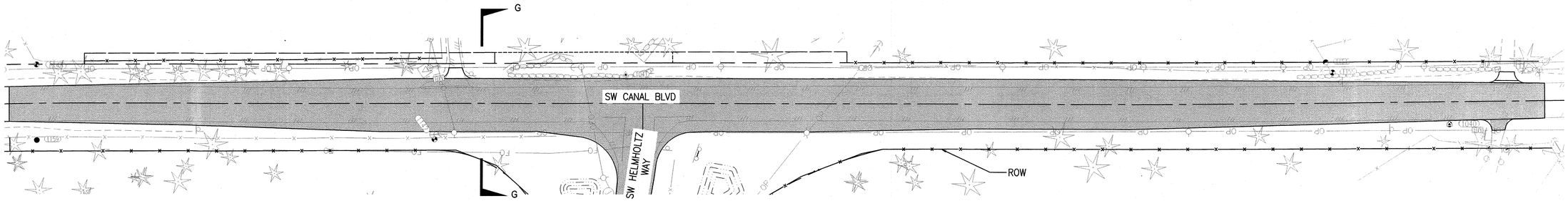
PROJECT NAME
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

CONSTRUCTION STAGING - STAGE 4

DRAWING NO. 11 OF 32

C5.3

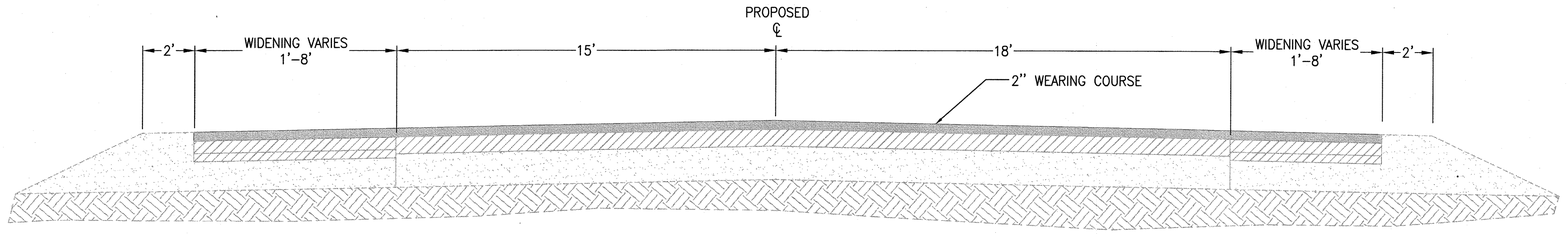


SW CANAL STAGE FIVE OVERLAY

SCALE IN FEET

0 50' 100'

2" OVERLAY



STAGE FIVE OVERLAY

SCALE IN FEET

0 3' 6'

G
C5.4

LAYOUT: CONSTRUCTION STAGING – STAGE 5 PATH: u:\Bend\Projects\Clients\2509–Deschutes County\297–2509–005 OBRH Design Phase\99Svcs\CADD\DWG\HELMHOLTZ\CD'S PLOTTED BY: rlcodov DATE: Tuesday, November 18, 2019 1:22:52 PM

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DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE–2509–005.2–C5.0 TRST
JOB No.
DATE 11/19/19

REGISTERED PROFESSIONAL ENGINEER
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SEPT. 11, 2018
DAVID RICO
EXPIRES: 12/31/2020

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PROJECT NAME
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

CONSTRUCTION STAGING - STAGE 5

DRAWING NO.
12 OF 32

C5.4

EROSION CONTROL NOTES:

1. HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS.

2. IDENTIFY, MARK, AND PROTECT (BY CONSTRUCTION/SEDIMENT FENCING OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (E.G., CANALS), AND OTHER AREAS TO BE PRESERVED.

3. PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE OPEN AREAS. RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED.

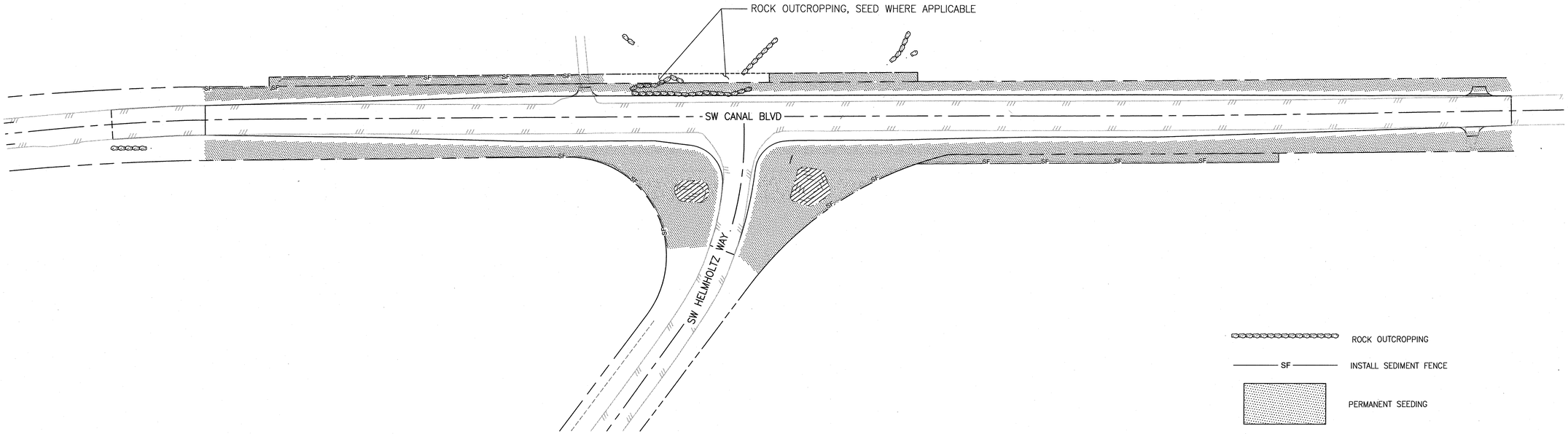
4. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: CONSTRUCTION ENTRANCE, GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL ALL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPS MUST BE IN PLACE PRIOR TO LAND-DISTURBING ACTIVITIES.

5. CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH-OUT, PAINT, AND CURING COMPOUNDS.

6. USE BMPS TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZER, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS.

7. USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL.

8. TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF THE YEAR.



EROSION CONTROL PLAN

SCALE IN FEET

0 60' 120'

ROCK OUTCROPPING

SF — INSTALL SEDIMENT FENCE

PERMANENT SEEDING

WATER QUALITY MIXTURE AND PERMANENT SEEDING

	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE-2509-005.2-C6.0-ESC00
JOB No.
DATE 11/19/19

REGISTERED PROFESSIONAL ENGINEER
94066PE
OREGON
SEPT. 11, 2018
DAVID RICO
EXPIRES: 12/31/2020

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES
150 NW PACIFIC PARK LANE, SUITE 110 | BEND, OR 97701
P 541.508.7710
WWW.PARAMETRIX.COM

PROJECT NAME
SW CANAL BLVD/SW HELMHOLTZ WAY INTERSECTION IMPROVEMENT

EROSION CONTROL PLAN

DRAWING NO.
13 OF 32

C6.0

LAYOUT: C6.0 EROSION CONTROL PLAN PATH: L:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\HELMHOLTZ\CD'S PLOTTED BY: rlcodov DATE: Tuesday, November 19, 2019 2:02:13 PM

SIGNING & STRIPING LEGEND
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS

SIGNING LEGEND

- N — *Install new sign (N).*
- RSN / M — *Remove and save existing sign (n) and remove (M) sign support.*
- RIN / M — *Reinstall existing sign (n) on new (M) sign support.*
- EXN / M — *Maintain and protect existing sign (N) and (M) support.*
- RXN / M — *Remove sign (N) and (M) support.*

GENERAL NOTES

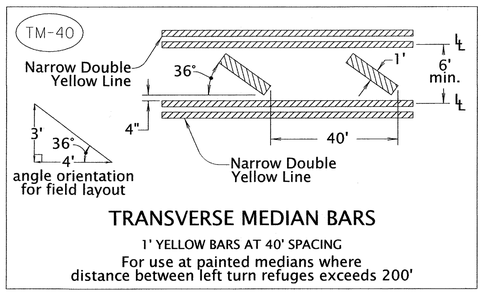
1. *All signage and pavement marking shall conform to the requirements and specifications of the Manual on Uniform Traffic Control Devices (M.U.T.C.D.) latest edition, the Oregon supplement to the M.U.T.C.D., the Oregon Standard Specifications for Construction, and the project special provisions.*
2. *All pre-markings for pavement markings and striping, as well as signs locations shall be approved by the Engineer prior to final placement.*
3. *All longitudinal pavement markings shall be thermoplastic, extruded or sprayed, non-profiled.*
4. *All transverse bar and legend pavement markings shall be "Thermoplastic, Type AB."*
5. *All signs and sign supports removed from the project shall be salvaged to Deschutes County.*

ABBREVIATIONS

N = Sign Number
M = Material
Material options:
W = Wood Post
ST = Perforated Steel Square Tube

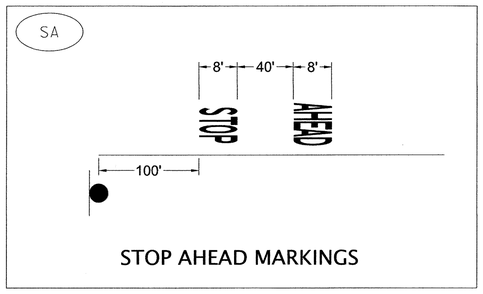
STRIPING LEGEND

- LA — *Inst. left turn arrow (white)*
- ND — *Inst. narrow double no-pass (yellow)*
- ND / R-20 — *Inst. narrow double yellow positioning guide. See SS2 for details*
- S — *Inst. 12" white stop bar*
- SA — *Inst. large "STOP AHEAD" (white)*
- TM-40 — *Inst. yellow transverse median bars at 40' spacing See detail on this sheet*
- W — *Inst. 4" white line*
- W-2 — *Inst. 8" white line*
- WD-2 — *Inst. 8" white dashed line*



TRANSVERSE MEDIAN BARS

1' YELLOW BARS AT 40' SPACING
For use at painted medians where distance between left turn refuges exceeds 200'



STOP AHEAD MARKINGS

	REVISIONS	DATE	BY	DESIGNED JDS
				DRAWN JDS
				CHECKED HJS
				APPROVED SGB

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
79204PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEARD
11/9/18
EXPIRES 12/31/19

KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

SIGNING & STRIPING LEGEND

DRAWING NO.
14 OF 32
SS1

EXISTING SIGN DETAILS
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS

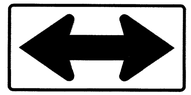
Sign 1

Sign 2

3a

3b

Sign 3



Sign 4

5a

5b

5c

Sign 5

6a

6b

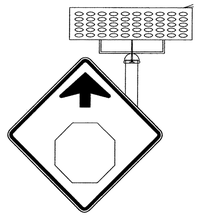
Sign 6

7a

7b

Sign 7

Sign 8



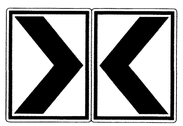
Sign 9

Sign 10

Sign 11

Sign 12

Sign 13



Sign 14

Sign 15

Sign 16

Sign 17

	REVISIONS	DATE	BY

DESIGNED JDS
DRAWN JDS
CHECKED HJS
APPROVED SGB

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME

JOB No.

DATE

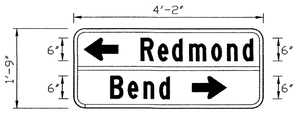
REGISTERED PROFESSIONAL ENGINEER
79204PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEARD
11/19/19
EXPIRES 12/31/19

KITTELSON & ASSOCIATES

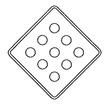
PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

EXISTING SIGN DETAILS

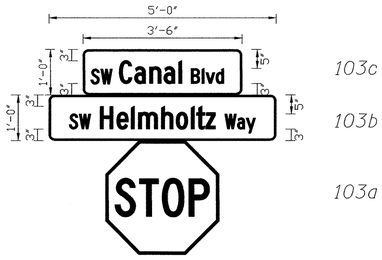
DRAWING NO.
16 OF 32
SS3



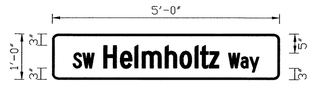
Sign 101



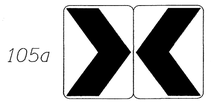
OM4-1
Sign 102



Sign 103



Sign 104



Sign 105

Sign 106

Sign 107

Sign 108

Sign 109

Sign 110

Sign 111

Sign 112

	REVISIONS	DATE	BY	DESIGNED JDS
				DRAWN JDS
				CHECKED HJS
				APPROVED SGB

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
79204PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEARD
11/19/19
EXPIRES 12/31/19

KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

PROPOSED SIGN DETAILS

DRAWING NO.
17 OF 32
SS4

SIGN & POST DATA TABLE
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS

SIGN NO.	SIGN LOCATION 4/	SIGN DIMENSIONS		BORDER WIDTH			RADIUS					ARROW SIZE	SIGN TYPE	SUB-STRATE			COLOR 1/					LEGEND TYPE		SIGN NO. 2/	TYPE OF SUPPORT																				POST		FOOTING		REFER TO DRAWING NUMBER										REMARKS
																	BACKGROUND		LEGEND																									SECONDARY SIGN MOUNT			SIZE	LENGTH	LOCATION 3/	MIN. DEPTH 5/											
		WIDTH	HEIGHT	1/2"	1"	2"	1 1/2"	3"	6"	9"	12"		(PER SEC. 2910 STD. SPECIFICATIONS)	PLYWOOD	SHEET ALUMINUM	EXTRUDED ALUMINUM	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	NON-REFLECTIVE	PERMANENT	REMOVABLE		WOOD POST	PERF. STEEL SQUARE TUBE	TRIANGULAR BASE BREAKAWAY	MULTI-POST BREAKAWAY	STAINLESS STEEL CLAMP (SSC)	SIGNAL POLE MOUNT	BRIDGE RAIL MOUNT	STRUCTURE MOUNT	CANTILEVER	SIGN BRIDGE	EXIT NUMBER SIGN MOUNT	"H" FRAME	ROUTE MARKER FRAME	MILEPOST MARKER POST	ADJUSTABLE SIGN MOUNT	MAST ARM STREEET NAME SIGN MOUNT	C 4 X 5.4	C 4 X 7.25	LENGTH	(BASED ON ESTIMATED LENGTH)	(MUST BE FIELD VERIFIED)			TM600 & 601	TM602	TM635	TM670	TM675	TM676 & 206	TM677 & 679	TM678	TM680	TM681, 687 & 688	TM200 & 201	TM220 & 225	TM221 & 222	
1	C 685+31.50												(EX)		X							X		1		X																			2 1/2" - 10 ga.	12' - 0"	27.1 RT	3' - 3 1/2"										X			Slip Base
3a	C 694+10.49												(EX)		X							X		3a		X																				2 1/2" - 10 ga.	13' - 0"	22.4 LT	3' - 3 1/2"										X			Above 104; Slip Base
6a	C 684+31.55												(EX)		X							X		6a		X																				2 1/2" - 10 ga.	13' - 0"	24.4 RT	3' - 3 1/2"										X			Above 104; Slip base
9	See SS11												(EX)		X							X		9	X																				4" x 4"	14' - 0"	See SS11'	4				X								Reinstall solar assembly
101	C 689+48.12	4' - 2"	1' - 9"					X					"G"		X		G		SW			X		101		X																				2 1/2" - 10 ga.	13' - 0"	29.4 LT	3' - 3 1/2"										X	X		Above 102; Slip Base
102	C 689+48.12	18"	18"										"R2"		X		SW		R			X		102		X																															X	X		Same post as 101 (below)
103a	H 6+32.98	30"	30"										"R"		X		R		SW			X		103a		X																				2 1/2" - 10 ga.	13' - 0"	27.7 RT	3' - 3 1/2"										X	X		Above 103b & 103c; Slip base
103b	H 6+32.98	5' - 0"	1' - 0"					X					"G"		X		G		SW			X		103b		X																														X	X		Above 103c, Below 103a, back of 103b
103b	H 6+32.98	5' - 0"	1' - 0"					X					"G"		X		G		SW			X		103b		X																														X	X		Back of 103b
103c	H 6+32.98	3.5"	1"										"G"		X		G		SW			X		103c		X																														X	X		Below 103a & 103b
104	C 684+31.55	5' - 0"	1' - 0"					X					"Y1"		X		Y				BK	X		104		X																														X	X		Same post as 6a (below)
104	C 694+10.49	5' - 0"	1' - 0"					X					"Y1"		X		Y				BK	X		104		X																														X	X		Same post as 3a (below)
105a	H 5+05.57	18"	24"										"Y1"		X		Y				BK	X		105a		X																				2 1/2" - 10 ga.	14' - 0"	20.0 LT	3' - 3 1/2"										X	X		Facing Canal; Slip Base
105a	H 5+52.79	18"	24"										"Y1"		X		Y				BK	X		105a		X																				2 1/2" - 10 ga.	14' - 0"	20.0 LT	3' - 3 1/2"										X	X		Facing Canal; Slip Base
105a	H 6+00.01	18"	24"										"Y1"		X		Y				BK	X		105a		X																				2 1/2" - 10 ga.	14' - 0"	20.0 LT	3' - 3 1/2"										X	X		Facing Canal; Slip Base
105b	H 5+05.57	18"	24"										"Y1"		X		Y				BK	X		105b		X																														X	X		Same post as 150a, Facing Helmholtz
105b	H 5+52.79	18"	24"										"Y1"		X		Y				BK	X		105b		X																														X	X		Same post as 105a, Facing Helmholtz
105b	H 6+00.01	18"	24"										"Y1"		X		Y				BK	X		105b		X																														X	X		Same post as 150a, Facing Helmholtz

1/ BK= BLACK
BL= BLUE
BR= BROWN
FY= FLUORESCENT YELLOW
G= GREEN
O= ORANGE
R= RED
RB= RED-BLUE
SW= SILVER-WHITE
W= WHITE
Y= YELLOW
YG= YELLOW-GREEN

2/ NOTE: L,C,R ARE LOCATIONS OF POSTS FACING THE SIGN.
L=LEFT POST
C=CENTER POST
R=RIGHT POST

3/ DISTANCE FROM EDGE OF TRAVEL LANE, FACE OF CURB, GUARDRAIL, OR BARRIER TO THE CENTERLINE OF FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601, TM602, AND TM635.

4/ NOTE: THE LOCATIONS SHOWN ARE APPROXIMATE EXCEPT FOR SPEED ZONES, SCHOOL ZONES, OBJECT MARKERS AND MILEPOST MARKERS. EXACT LOCATIONS ARE TO BE DETERMINED BY THE ENGINEER.

5/ MINIMUM DEPTH OF FOOTING FOR TRIANGULAR BASE BREAKAWAY AND MULTI-POST BREAKAWAY INSTALLATIONS IS FOR A 2' DIAMETER FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601 AND TM602.

REVISIONS	DATE	BY

DESIGNED JDS
DRAWN JDS
CHECKED HJS
APPROVED SGB

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER 79204PE OREGON JUNE 14, 2007 SCOTT GLENN BEARD 11/19/19
EXPIRES 12/31/19

KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

SIGN & POST DATA TABLE

DRAWING NO.
18 OF 32
SS5

CURVE SIGN & POST DATA TABLE
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS

SIGN NO.	SIGN LOCATION 4/	SIGN DIMENSIONS		BORDER WIDTH			RADIUS						ARROW SIZE	SIGN TYPE	SUB-STRATE			COLOR 1/				LEGEND TYPE		SIGN NO. 2/	TYPE OF SUPPORT																				POST		FOOTING		REFER TO DRAWING NUMBER											REMARKS
		WIDTH	HEIGHT	1/2"	1"	2"	1 1/2"	3"	6"	9"	12"		(PER SEC. 2910 STD. SPECIFICATIONS)	PLYWOOD	SHEET ALUMINUM	EXTRUDED ALUMINUM	BACKGROUND: ASTM TYPE III OR TYPE IV	BACKGROUND: ASTM TYPE IX	LEGEND: ASTM TYPE III OR TYPE IV	LEGEND: ASTM TYPE IX	LEGEND: NON-REFLECTIVE	PERMANENT	REMOVABLE		WOOD POST	PERF. STEEL SQUARE TUBE	TRIANGULAR BASE BREAKAWAY	MULTI-POST BREAKAWAY	STAINLESS STEEL CLAMP (SSC)	SIGNAL POLE MOUNT	BRIDGE RAIL MOUNT	STRUCTURE MOUNT	CANTILEVER	SIGN BRIDGE	EXIT NUMBER SIGN MOUNT	"H" FRAME	ROUTE MARKER FRAME	MILEPOST MARKER POST	ADJUSTABLE SIGN MOUNT	MAST ARM STREEET NAME SIGN MOUNT	SECONDARY SIGN MOUNT: C 4 X 5.4	SECONDARY SIGN MOUNT: C 4 X 7.25	SECONDARY SIGN MOUNT: LENGTH	SIZE (BASED ON ESTIMATED LENGTH)	LENGTH (MUST BE FIELD VERIFIED)	LOCATION 3/	MIN. DEPTH 5/	TM600 & 601	TM602	TM635	TM670	TM675	TM676 & 206	TM677 & 679	TM678	TM680	TM681, 687 & 688	TM200 & 201	TM220 & 226	TM221 & 222	
105a	HC 14+17.77	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 15+37.77	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 16+57.77	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 17+77.77	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 18+97.77	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 20+17.77	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 29+12.66	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 30+32.66	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 31+52.66	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 32+72.66	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 37+52.47	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 38+52.47	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 39+72.47	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 40+92.47	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 51+67.38	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 52+47.38	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 53+27.38	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 54+55.49	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 55+35.49	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 56+15.49	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 56+95.49	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 57+75.49	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 58+55.49	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 66+45.96	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 67+65.96	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 68+85.96	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	21' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 75+85.86	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 77+05.86	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 78+25.86	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' LT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 232+37.59	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 233+18.09	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 233+98.40	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 234+38+69	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 235+58.78	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	20' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base
105a	HC 236+38.96	18"	24"										"Y1"		X		Y			BK	X		105a		X																		2 1/2" - 10 ga.	12' - 0"	22' RT	3' - 3 1/2"										X	X		Back to Back, Slip Base

1/ BK= BLACK
BL= BLUE
BR= BROWN
FY= FLUORESCENT YELLOW
G= GREEN
O= ORANGE
R= RED
RB= RED-BLUE
SW= SILVER-WHITE
W= WHITE
Y= YELLOW
YG= YELLOW-GREEN

2/ NOTE: L,C,R ARE LOCATIONS OF POSTS FACING THE SIGN.
L=LEFT POST
C=CENTER POST
R=RIGHT POST

3/ DISTANCE FROM EDGE OF TRAVEL LANE, FACE OF CURB, GUARDRAIL, OR BARRIER TO THE CENTERLINE OF FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601, TM602, AND TM635.

4/ NOTE: THE LOCATIONS SHOWN ARE APPROXIMATE EXCEPT FOR SPEED ZONES, SCHOOL ZONES, OBJECT MARKERS AND MILEPOST MARKERS. EXACT LOCATIONS ARE TO BE DETERMINED BY THE ENGINEER.

5/ MINIMUM DEPTH OF FOOTING FOR TRIANGULAR BASE BREAKAWAY AND MULTI-POST BREAKAWAY INSTALLATIONS IS FOR A 2' DIAMETER FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601 AND TM602.

	REVISIONS	DATE	BY

DESIGNED JDS
DRAWN JDS
CHECKED HJS
APPROVED SGB

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
20204PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEARD
11/13/19
EXPIRES 12/31/19

KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

CURVE SIGN & POST DATA TABLE

DRAWING NO.
19 OF 32
SS6

CURVE SIGN & POST DATA TABLE
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS

SIGN NO.	SIGN LOCATION 4/	SIGN DIMENSIONS		BORDER WIDTH			RADIUS						ARROW SIZE	SIGN TYPE	SUB-STRATE			COLOR 1/				LEGEND TYPE		SIGN NO. 2/	TYPE OF SUPPORT																		POST		FOOTING		REFER TO DRAWING NUMBER										REMARKS
																		BACKGROUND		LEGEND																							SECONDARY SIGN MOUNT			SIZE	LENGTH	LOCATION 3/	MIN. DEPTH 5/										
		WIDTH	HEIGHT	1/2"	1"	2"	1 1/2"	3"	6"	9"	12"			(PER SEC. 2910 STD. SPECIFICATIONS)	PLYWOOD	SHEET ALUMINUM	EXTRUDED ALUMINUM	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	NON-REFLECTIVE	PERMANENT	REMOVABLE		WOOD POST	PERF. STEEL SQUARE TUBE	TRIANGULAR BASE BREAKAWAY	MULTI-POST BREAKAWAY	STAINLESS STEEL CLAMP (SSC)	SIGNAL POLE MOUNT	BRIDGE RAIL MOUNT	STRUCTURE MOUNT	CANTILEVER	SIGN BRIDGE	EXIT NUMBER SIGN MOUNT	"H" FRAME	ROUTE MARKER FRAME	MILEPOST MARKER POST	ADJUSTABLE SIGN MOUNT	MAST ARM STREEET NAME SIGN MOUNT	C 4 X 5.4	C 4 X 7.25	LENGTH	(BASED ON ESTIMATED LENGTH)	(MUST BE FIELD VERIFIED)			TM600 & 601	TM602	TM635	TM670	TM675	TM676 & 206	TM677 & 679	TM678	TM680	TM681, 687 & 688	TM200 & 201	TM220 & 225	TM221 & 222	
105b	HC 14+17.77	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 15+37.77	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 16+57.77	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 17+77.77	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 18+97.77	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 20+17.77	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 29+12.66	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 30+32.66	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 31+52.66	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 32+72.66	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 37+52.47	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 38+52.47	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 39+72.47	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 40+92.47	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 51+67.38	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 52+47.38	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 53+27.38	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 54+55.49	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 55+35.49	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 56+15.49	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 56+95.49	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 57+75.49	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 58+55.49	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 66+45.96	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 67+65.96	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 68+85.96	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 75+85.86	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 77+05.86	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 78+25.86	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 232+37.59	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 233+18.09	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 233+98.40	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 234+38+69	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 235+58.78	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a
105b	HC 236+38.96	18"	24"											"Y1"		X		Y				BK	X		105b	X																								X	X		Back to Back with 105a

1/ BK= BLACK
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FY= FLUORESCENT YELLOW
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RB= RED-BLUE
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W= WHITE
Y= YELLOW
YG= YELLOW-GREEN

2/ NOTE: L,C,R ARE LOCATIONS OF POSTS FACING THE SIGN.
L=LEFT POST
C=CENTER POST
R=RIGHT POST

3/ DISTANCE FROM EDGE OF TRAVEL LANE, FACE OF CURB, GUARDRAIL, OR BARRIER TO THE CENTERLINE OF FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601, TM602, AND TM635.

4/ NOTE: THE LOCATIONS SHOWN ARE APPROXIMATE EXCEPT FOR SPEED ZONES, SCHOOL ZONES, OBJECT MARKERS AND MILEPOST MARKERS. EXACT LOCATIONS ARE TO BE DETERMINED BY THE ENGINEER.

5/ MINIMUM DEPTH OF FOOTING FOR TRIANGULAR BASE BREAKAWAY AND MULTI-POST BREAKAWAY INSTALLATIONS IS FOR A 2' DIAMETER FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601 AND TM602.

	REVISIONS	DATE	BY

DESIGNED JDS
DRAWN JDS
CHECKED HJS
APPROVED SGB

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
79284PE
OREGON
JUNE 14, 2001
SCOTT GLENN BEARD
11/19/19
EXPIRES 12/31/19

KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

CURVE SIGN & POST DATA TABLE

DRAWING NO.
20 OF 32
SS7

CURVE SIGN & POST DATA TABLE
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS

SIGN NO.	SIGN LOCATION 4/	SIGN DIMENSIONS		BORDER WIDTH			RADIUS						ARROW SIZE	SIGN TYPE	SUB-STRATE			COLOR 1/					LEGEND TYPE		SIGN NO. 2/	TYPE OF SUPPORT																			POST		FOOTING		REFER TO DRAWING NUMBER										REMARKS
																		BACKGROUND		LEGEND																									SECONDARY SIGN MOUNT			SIZE	LENGTH	LOCATION 3/	MIN. DEPTH 5/											
		WIDTH	HEIGHT	1/2"	1"	2"	1 1/2"	3"	6"	9"	12"			(PER SEC. 2910 STD. SPECIFICATIONS)	PLYWOOD	SHEET ALUMINUM	EXTRUDED ALUMINUM	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	NON-REFLECTIVE	PERMANENT	REMOVABLE		WOOD POST	PERF. STEEL SQUARE TUBE	TRIANGULAR BASE BREAKAWAY	MULTI-POST BREAKAWAY	STAINLESS STEEL CLAMP (SSC)	SIGNAL POLE MOUNT	BRIDGE RAIL MOUNT	STRUCTURE MOUNT	CANTILEVER	SIGN BRIDGE	EXIT NUMBER SIGN MOUNT	"H" FRAME	ROUTE MARKER FRAME	MILEPOST MARKER POST	ADJUSTABLE SIGN MOUNT	MAST ARM STREEET NAME SIGN MOUNT	C 4 X 6.4	C 4 X 7.25	LENGTH	(BASED ON ESTIMATED LENGTH)	(MUST BE FIELD VERIFIED)			TM600 & 601	TM602	TM635	TM670	TM675	TM676 & 206	TM677 & 679	TM678	TM680	TM681, 687 & 688	TM200 & 201	TM220 & 226	TM221 & 222	
106	HC 11+72.77	24"	30"											"W2"		X		SW				BK	X		106		X																		2 1/2" - 10 ga.	12' - 0"	21' RT'	3' - 3 1/2"										X	X		Slip Base
107a	HC 12+92.77	30"	30"											"Y1"		X		Y				BK	X		107a		X																		2 1/2" - 10 ga.	14' - 0"	21' RT'	3' - 3 1/2"										X	X		Above 107b, Slip Base
107a	HC 42+17.47	30"	30"											"Y1"		X		Y				BK	X		107a		X																		2 1/2" - 10 ga.	14' - 0"	20' LT'	3' - 3 1/2"										X	X		Above 107b, Slip Base
107b	HC 12+92.77	18"	18"											"Y1"		X		Y				BK	X		107b		X																												X	X		Same post as 107a (below)
107b	HC 42+17.47	18"	18"											"Y1"		X		Y				BK	X		107b		X																												X	X		Same post as 107a (below)
108	HC 21+37.77	30"	30"											"Y1"		X		Y				BK	X		108		X																		2 1/2" - 10 ga.	12' - 0"	21' RT'	3' - 3 1/2"										X	X		Slip Base
109a	HC 50+67.38	30"	30"											"Y1"		X		Y				BK	X		109a		X																		2 1/2" - 10 ga.	14' - 0"	21' RT'	3' - 3 1/2"										X	X		Above 109b, Slip Base
109a	HC 59+55.18	30"	30"											"Y1"		X		Y				BK	X		109a		X																		2 1/2" - 10 ga.	14' - 0"	20' LT'	3' - 3 1/2"										X	X		Above 109b, Slip Base
109b	HC 50+67.38	18"	18"											"Y1"		X		Y				BK	X		109b		X																												X	X		Same post as 109a (below)
109b	HC 59+55.18	18"	18"											"Y1"		X		Y				BK	X		109b		X																												X	X		Same post as 109a (below)
110	HC 61+05.74	30"	30"											"Y5"		X		FY				BK	X		110		X																		2 1/2" - 10 ga.	12' - 0"	20' LT'	3' - 3 1/2"										X	X		Slip Base
111a	HC 69+85.96	30"	30"											"Y1"		X		Y				BK	X		111a		X																		2 1/2" - 10 ga.	14' - 0"	20' LT'	3' - 3 1/2"										X	X		Above 111b, Slip Base
111a	HC 74+85.86	30"	30"											"Y1"		X		Y				BK	X		111a		X																		2 1/2" - 10 ga.	14' - 0"	21' RT'	3' - 3 1/2"										X	X		Above 111b, Slip Base
111b	HC 69+85.96	18"	18"											"Y1"		X		Y				BK	X		111b		X																												X	X		Same post as 111a (below)
111b	HC 74+85.86	18"	18"											"Y1"		X		Y				BK	X		111b		X																												X	X		Same post as 111a (below)
112a	HC 65+45.96	30"	30"											"Y1"		X		Y				BK	X		112a		X																		2 1/2" - 10 ga.	14' - 0"	21' RT'	3' - 3 1/2"										X	X		Above 112b, Slip Base
112a	HC 79+25.86	30"	30"											"Y1"		X		Y				BK	X		112a		X																		2 1/2" - 10 ga.	14' - 0"	20' LT'	3' - 3 1/2"										X	X		Above 112b, Slip Base
112b	HC 65+45.96	18"	18"											"Y1"		X		Y				BK	X		112b		X																												X	X		Same post as 112a (below)
112b	HC 79+25.86	18"	18"											"Y1"		X		Y				BK	X		112b		X																												X	X		Same post as 112a (below)

1/ BK= BLACK
BL= BLUE
BR= BROWN
FY= FLUORESCENT YELLOW
G= GREEN
O= ORANGE
R= RED
RB= RED-BLUE
SW= SILVER-WHITE
W= WHITE
Y= YELLOW
YG= YELLOW-GREEN

2/ NOTE: L,C,R ARE LOCATIONS OF POSTS FACING THE SIGN.
L=LEFT POST
C=CENTER POST
R=RIGHT POST

3/ DISTANCE FROM EDGE OF TRAVEL LANE, FACE OF CURB, GUARDRAIL, OR BARRIER TO THE CENTERLINE OF FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601, TM602, AND TM635.

4/ NOTE: THE LOCATIONS SHOWN ARE APPROXIMATE EXCEPT FOR SPEED ZONES, SCHOOL ZONES, OBJECT MARKERS AND MILEPOST MARKERS. EXACT LOCATIONS ARE TO BE DETERMINED BY THE ENGINEER.

5/ MINIMUM DEPTH OF FOOTING FOR TRIANGULAR BASE BREAKAWAY AND MULTI-POST BREAKAWAY INSTALLATIONS IS FOR A 2' DIAMETER FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601 AND TM602.

REVISIONS	DATE	BY	DESIGNED JDS
			DRAWN JDS
			CHECKED HJS
			APPROVED SGB

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
79204PE
OREGON
JUNE 14, 2001
SCOTT GLENN BEARD
11/1/19
EXPIRES 12/31/19

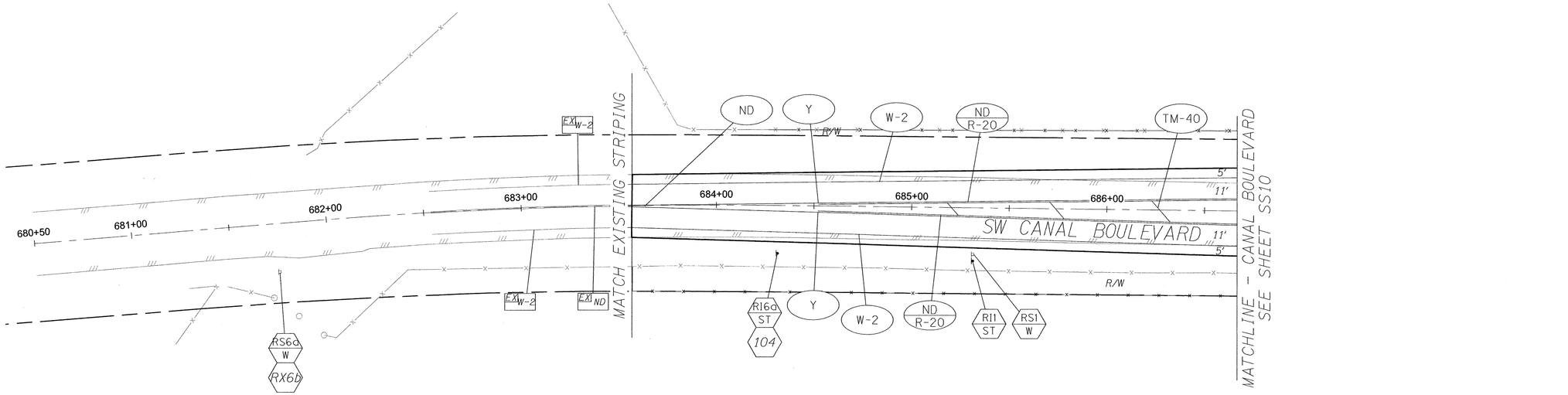
KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

CURVE SIGN & POST DATA TABLE

DRAWING NO.
21 OF 32
SS8

SIGNING & STRIPING PLAN SW CANAL BLVD
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS



SCALE
0 30 60

	REVISIONS	DATE	BY	DESIGNED JDS
				DRAWN JDS
				CHECKED HJS
				APPROVED SGB

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME

JOB No.

DATE

REGISTERED PROFESSIONAL ENGINEER
79204PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEARD
11/19/19
EXPIRES 12/31/19

KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS

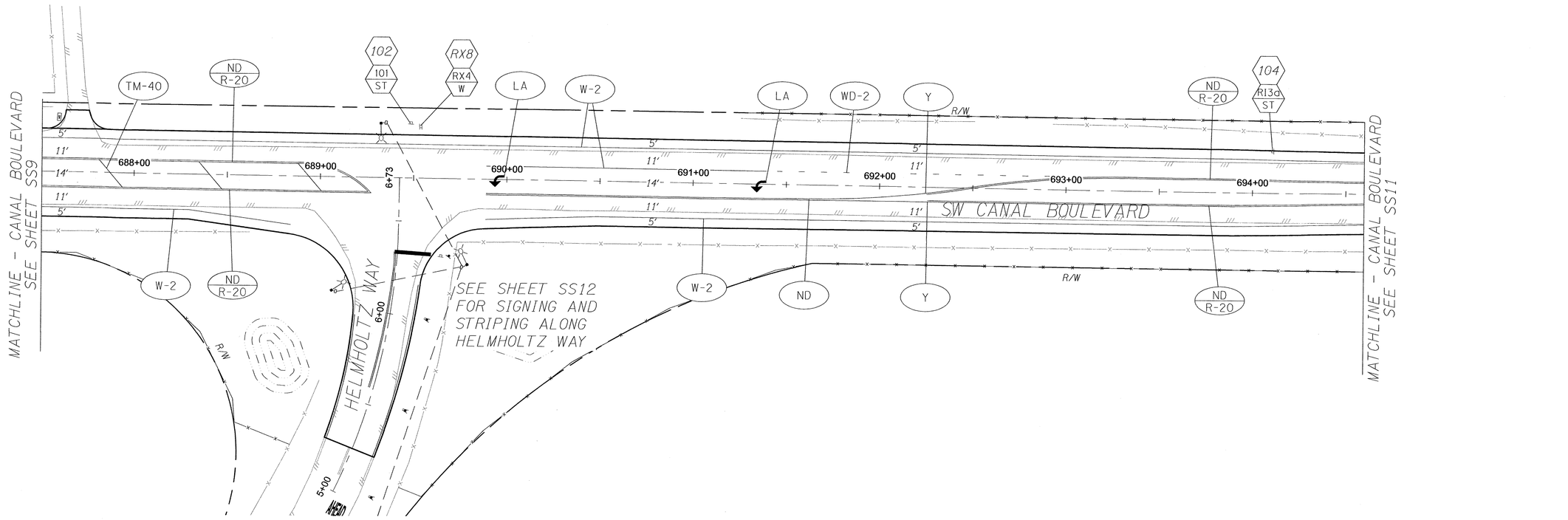
DESCHUTES COUNTY

SIGNING & STRIPING PLAN
SW CANAL BLVD

DRAWING NO.
22 OF 32

SS9

SIGNING & STRIPING PLAN SW CANAL BLVD
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS



SCALE
0 30 60

	REVISIONS	DATE	BY	DESIGNED JDS
				DRAWN JDS
				CHECKED HJS
				APPROVED SGB

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME

JOB No.

DATE

REGISTERED PROFESSIONAL ENGINEER
79204PE
OREGON
JUNE 14, 2002
SCOTT GLENN BEARD
11/27/19
EXPIRES 12/31/19

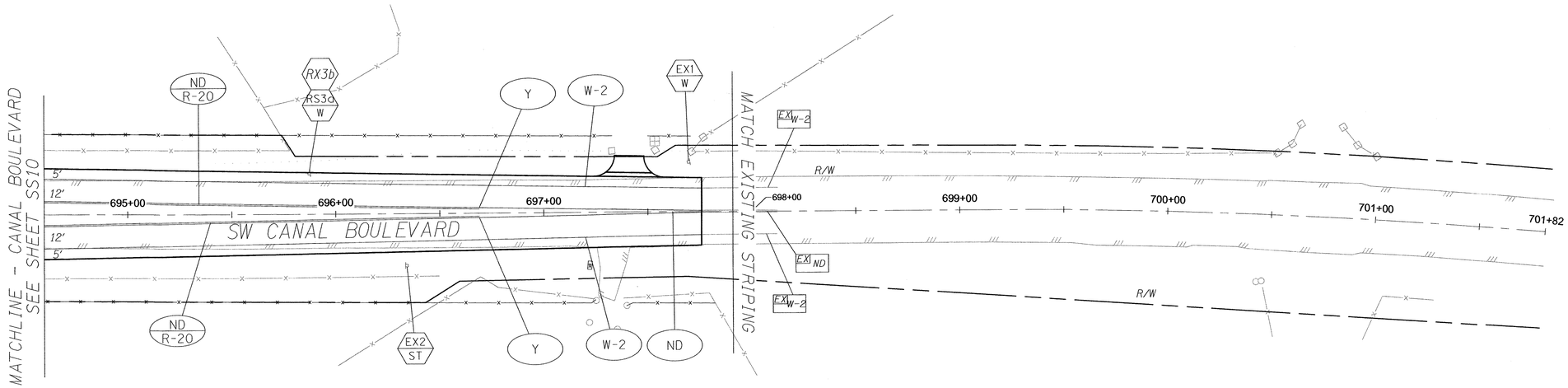
KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

SIGNING & STRIPING PLAN
SW CANAL BLVD

DRAWING NO.
23 OF 32
SS10

SIGNING & STRIPING PLAN SW CANAL BLVD
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS



SCALE
0 30 60

	REVISIONS	DATE	BY	DESIGNED JDS
				DRAWN JDS
				CHECKED HJS
				APPROVED SGB

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
SCOTT GLENN BEARD
OREGON
JUNE 14, 2007
11/9/19
EXPIRES 12/31/19

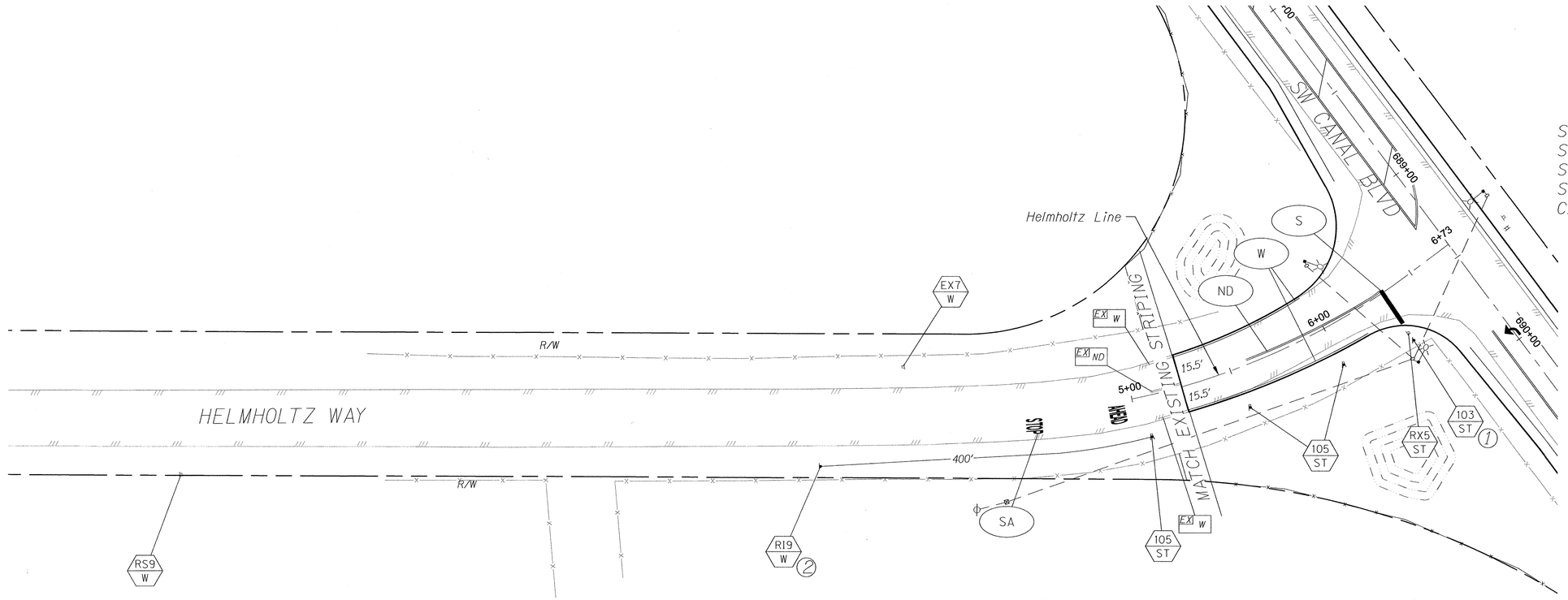
KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

SIGNING & STRIPING PLAN
SW CANAL BLVD

DRAWING NO.
24 OF 32
SS11

SIGNING & STRIPING PLAN HELMHOLTZ WAY
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS



SEE SHEETS SS9-SS11 FOR SIGNING AND STRIPING ALONG CANAL BLVD

CONSTRUCTION NOTES

1. Install reflective sign post panels facing oncoming traffic from Helmholtz Way
2. Reinstall existing solar assembly. 10' from edge of existing pavement.

SCALE
0 30 60

	REVISIONS	DATE	BY

DESIGNED JDS
DRAWN JDS
CHECKED HJS
APPROVED SGB

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
79204PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEARD
11/2/19
EXPIRES 12/31/19

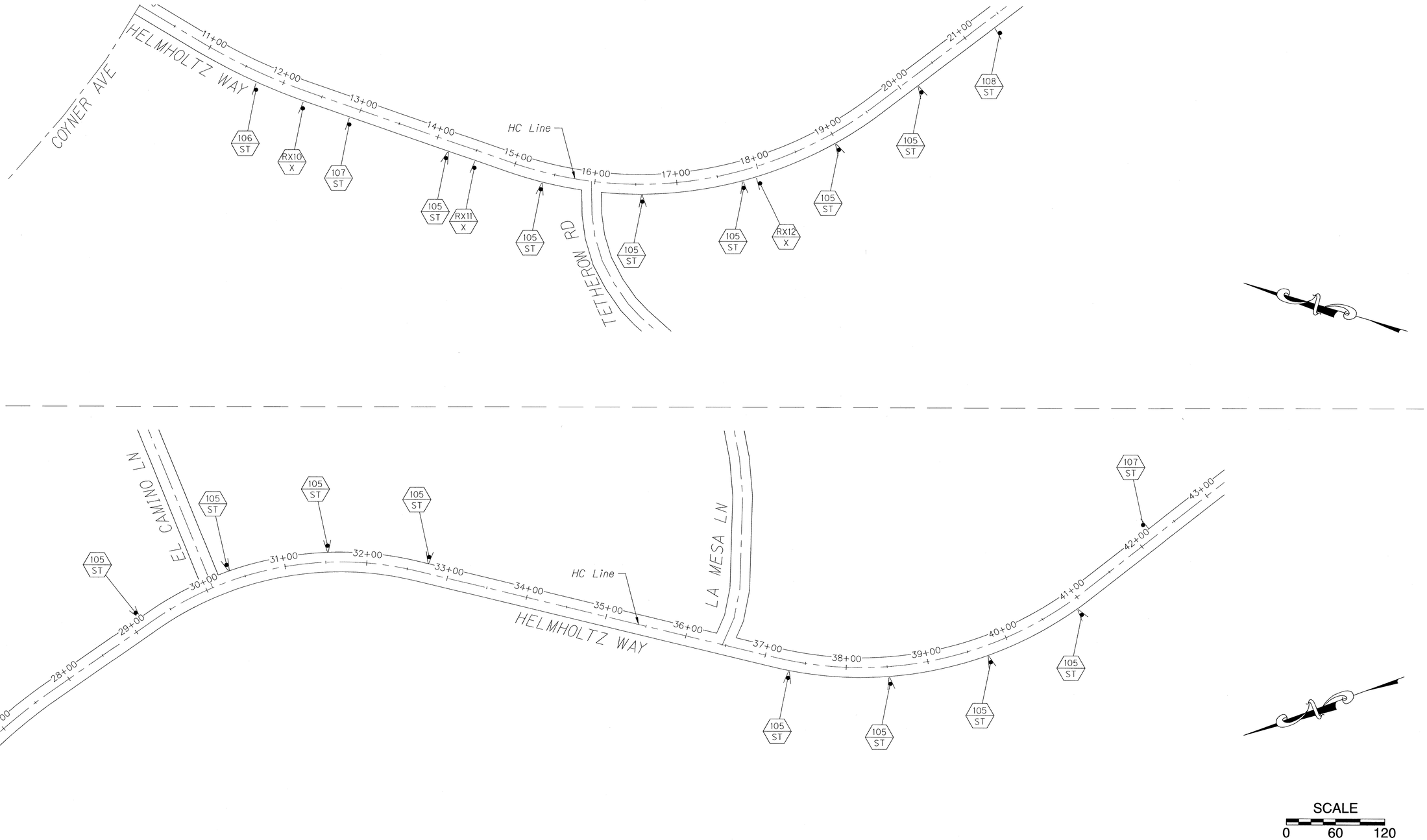
KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

SIGNING & STRIPING PLAN HELMHOLTZ WAY

DRAWING NO.
25 OF 32
SS12

CURVE SIGNING PLAN
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS



SCALE
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	REVISIONS	DATE	BY

DESIGNED JDS
DRAWN JDS
CHECKED HJS
APPROVED SGB

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
79344RE
OREGON
JUNE 14, 2007
SCOTT GLENN BEALD
12/31/19
EXPIRES 12/31/19

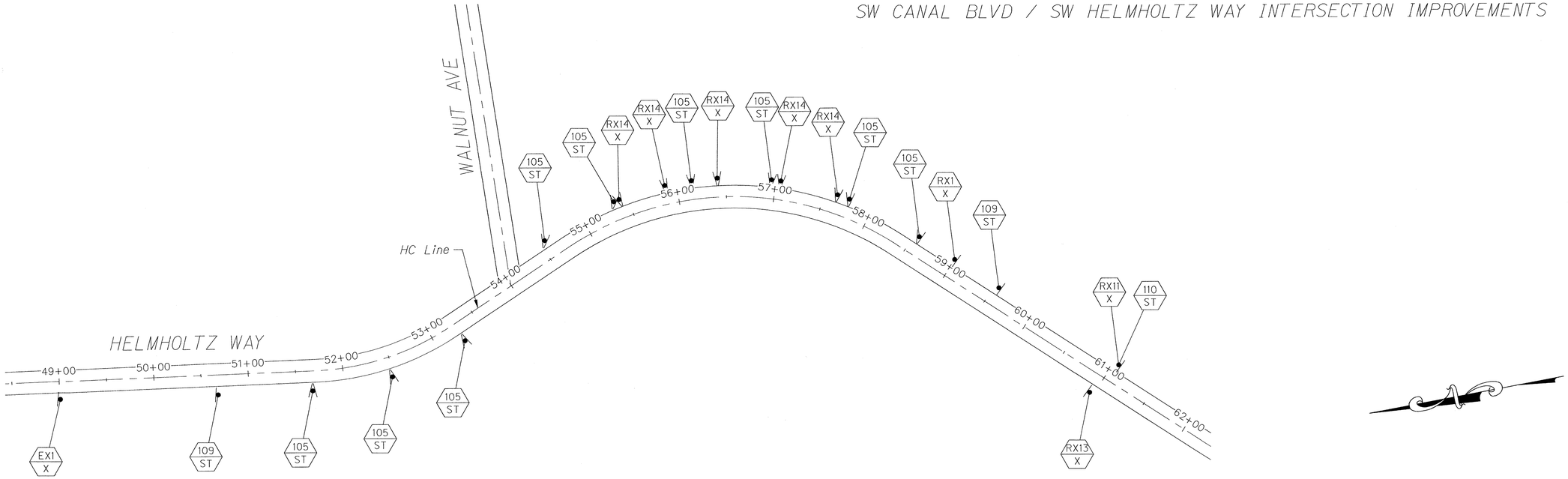
KITTELSON & ASSOCIATES

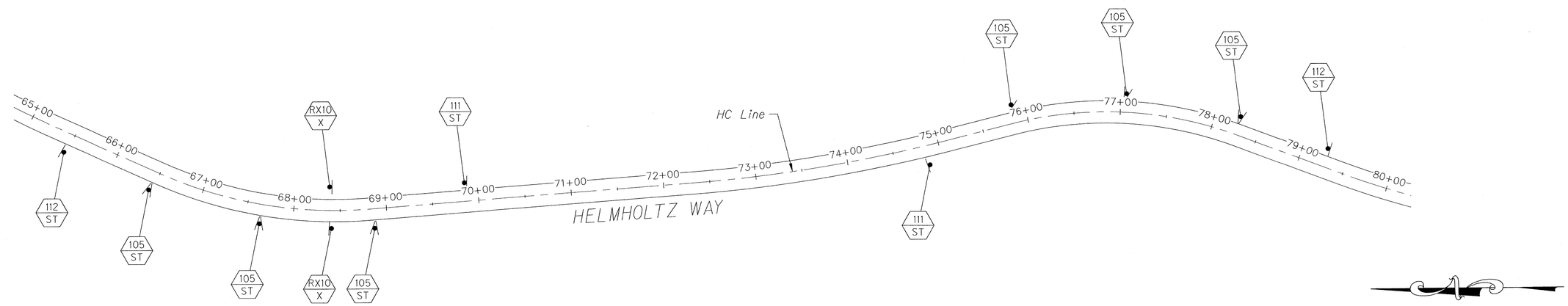
PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

CURVE SIGNING PLAN

DRAWING NO.
26 OF 32
SS13

CURVE SIGNING PLAN
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS





SCALE
0 60 120

	REVISIONS	DATE	BY

DESIGNED JDS
DRAWN JDS
CHECKED HJS
APPROVED SGB

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
78204PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEARD
11/12/19
EXPIRES 12/31/19

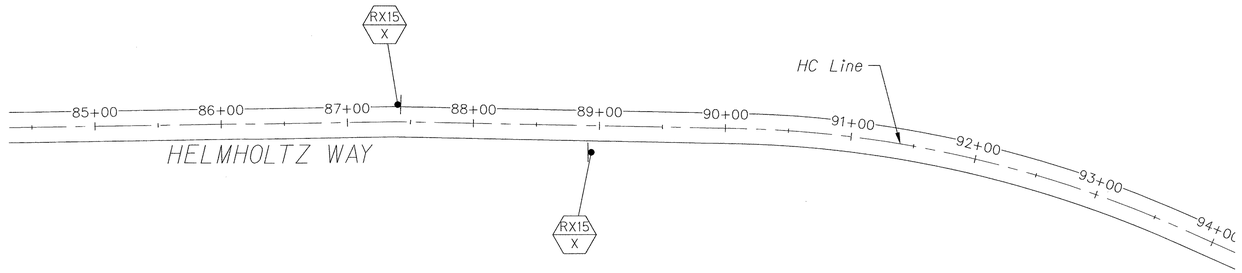
KITTELSON & ASSOCIATES

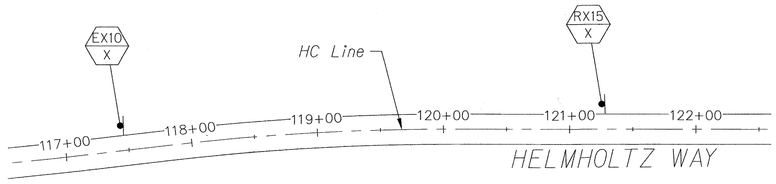
PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

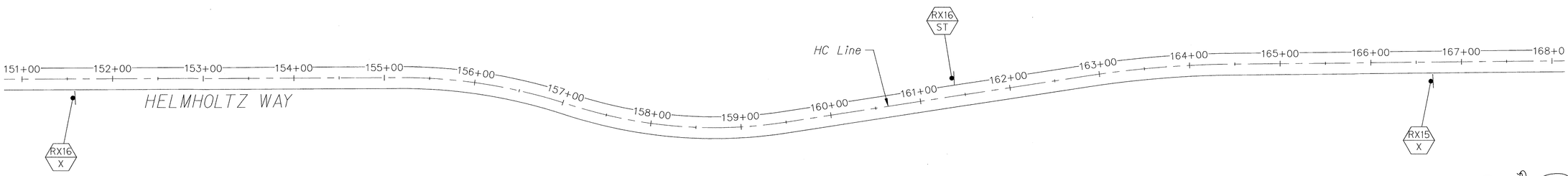
CURVE SIGNING PLAN

DRAWING NO.
27 OF 32
SS14

CURVE SIGNING PLAN
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS







SCALE
0 60 120

	REVISIONS	DATE	BY	
				DESIGNED JDS
				DRAWN JDS
				CHECKED HJS
				APPROVED SGB

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME

JOB No.

DATE

REGISTERED PROFESSIONAL ENGINEER
79204PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEAIRD
11/19/19
EXPIRES 12/31/19

KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS

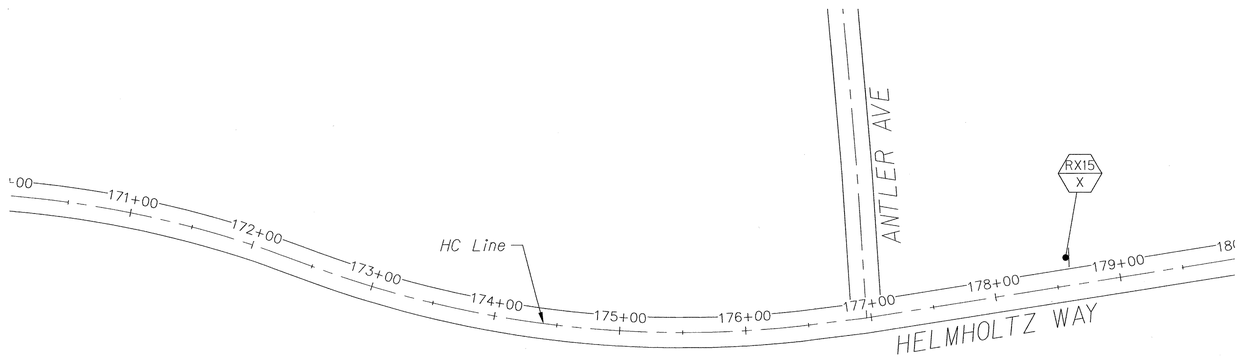
DESCHUTES COUNTY

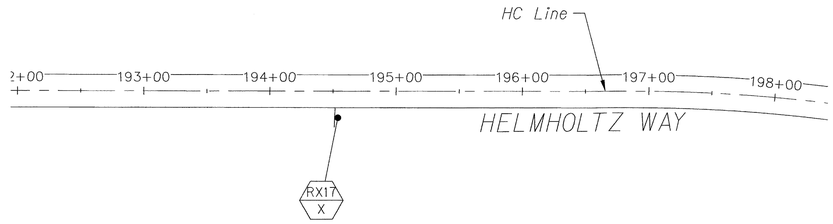
CURVE SIGNING PLAN

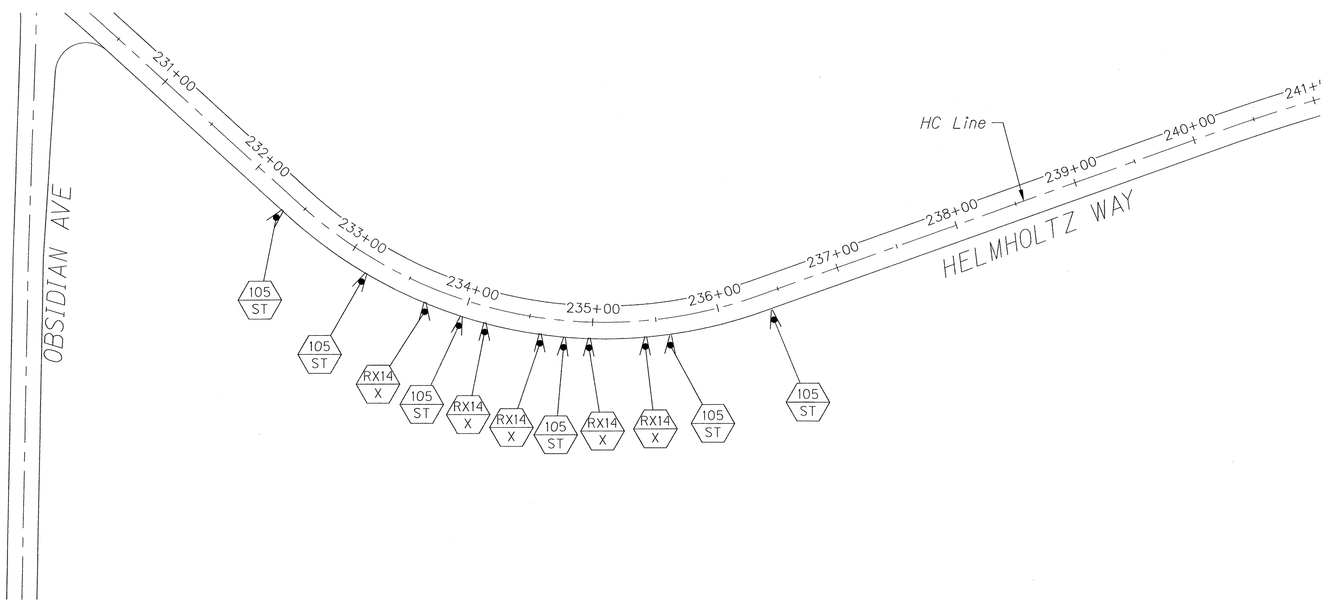
DRAWING NO.
28 OF 32

SS15

CURVE SIGNING PLAN
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS







SCALE
0 60 120

	REVISIONS	DATE	BY	DESIGNED JDS
				DRAWN JDS
				CHECKED HJS
				APPROVED SGB

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME

JOB No.

DATE

REGISTERED PROFESSIONAL ENGINEER
79904PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEARD
EXPIRES 12/31/19
12/19/19

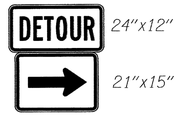
KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

CURVE SIGNING PLAN

DRAWING NO.
29 OF 32
SS16

DETOUR PLAN
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS



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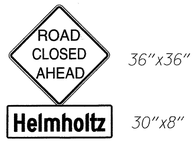

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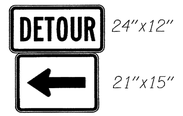

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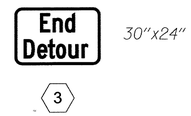

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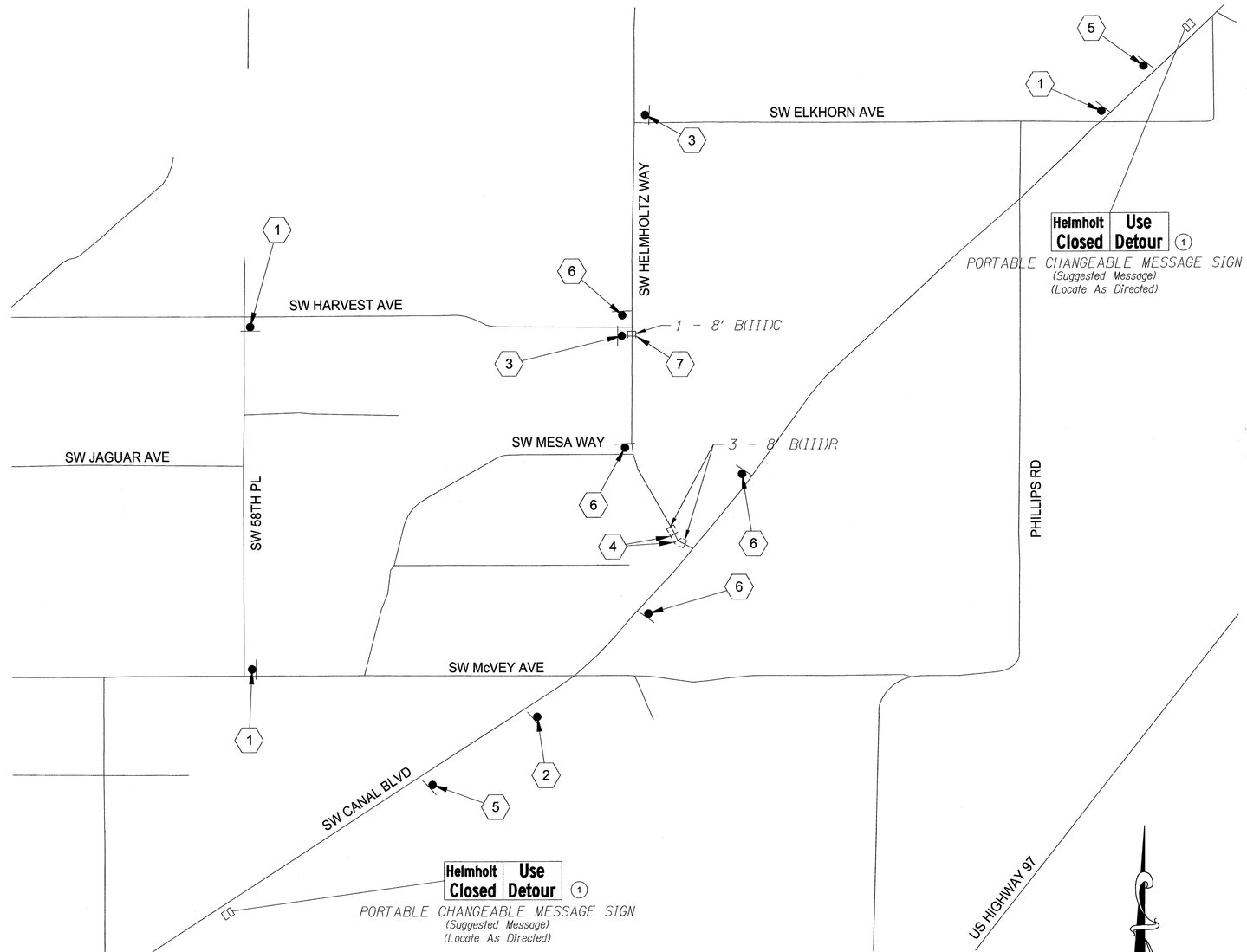
4

5



GENERAL NOTES

1. All sign dimensions listed in inches unless otherwise notes.
2. Maintain and protect existing signs.
3. Ensure a minimum of 100' spacing between existing and temporary signs.

LEGEND

[Type III Barricade

I TSS Sign Support As Shown On ODOT Standard Dwg. TM821

● Post Mounted Detour Sign

CONSTRUCTION NOTES

(1) Portable changeable message signs to remain on project throughout construction and be located as directed.

SCALE
0 2000 4000

REVISIONS	DATE	BY

DESIGNED JDS
DRAWN JDS
CHECKED HJS
APPROVED SGB

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER
OREGON
JUNE 14, 2001
SCOTT GLENN BENARD
EXPIRES 12/31/19
1/9/19

KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

DETOUR PLAN

DRAWING NO.
30 OF 32
SS17

ILLUMINATION LEGEND
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS

L E G E N D

- (JB 1A) Install 10"W x 17"L x 12"H precast junction box with concrete apron. Cover to be marked "STREET LIGHTS."
- (JB 2A) Install 12"W x 22"L x 12"H (min. dimension) precast concrete junction box with concrete apron. Cover to be marked "STREET LIGHTS."
- (N) Install street light pole (N). Shall be HAPCO embedded aluminum alloy light pole (Model No. RTA25C7BEM18) or approved equal. Install street light Cree (Model: BXSP C HT 3ME E 40K-UL SV N with backlight shield) or approved equal. See "Street Light Pole Schedule".
- (S) Install (S) inch electrical grade schedule 40 PVC conduit.
- (W) Install conduit as required by power company. Central Electric Cooperative to install wire from meter to power source.
- (FDN) Install Central Electric Cooperative approved street light sleeve for embedded street light pole. See Central Electric Cooperative drawing number SR_210. Sleeve shall be 14" diameter PVC or galvanized steel. Use 3/4"-0 gravel to level sleeve as necessary.
- (PS 2) Power source for 120/240 volt, single phase.
- (BMC) Install base mounted service cabinet, 120/240 volt metered. Central Electric Cooperative to install meter.
- (2 / 8) Install (N=number) No. (G=AWG wire size) XHHW wires.
- G / S Install one No (S=AWG wire size) bare copper ground.

G E N E R A L N O T E S

1. Foundations, junction boxes, and conduit shall be installed at locations shown on plans. If conflicts arise, foundation, junction box, and conduit locations may be modified in the field per the engineer's approval. All lighting equipment must be placed within the right-of-way. Place conduit in same trench as other conduits whenever possible.
2. Location of existing utilities shall be verified. Coordinate all work with utility companies to eliminate conflicts.
3. Final light pole locations shall be approved in the field by the engineer prior to foundation installation.
4. This illumination plans set is accompanied by Oregon Standard Drawing TM472.
5. All conduit elbows shall be factory made and be long radius 36". For conduit runs longer than 150' or containing more than 270 degrees of bends, elbows shall be fiberglass.
6. Contractor to coordinate with Central Electric Cooperative (Cody Smith, 541.312.7752) ten (10) business days in advance of commencing illumination work.
7. Conduit trenches crossing new roadway alignments shall be backfilled prior to paving according to "Trench Detail" (this sheet).

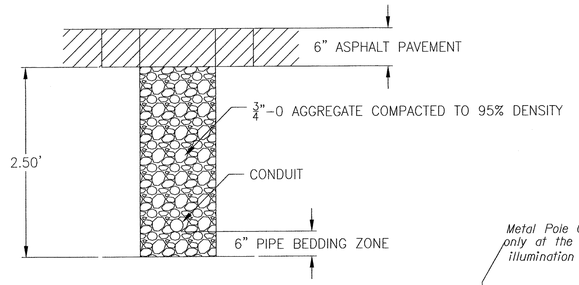
STREET LIGHT POLE SCHEDULE

POLE NO.	STREET	STATION	OFFSET*	LUMINAIRE ARM LENGTH	LAMP	LUMINAIRE MOUNTING HEIGHT (FT)	TYPE	NOTES
1A	Helmholtz Way	6+29.32	37.8' Rt.	8'	LED	25'	III	100 Watts
2A	Helmholtz Way	6+08.08	33.1' Lt.	8'	LED	25'	III	100 Watts
3A	Canal Blvd	689+31.95	29.0' Lt.	8'	LED	25'	III	100 Watts

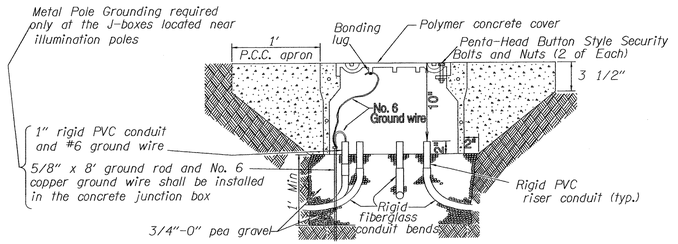
* - Offset measured from roadway centerline.

LIGHT LEVEL SUMMARY TABLE

ROADWAY/INTERSECTION	CLASSIFICATION		LIGHT LEVEL	UNIFORMITY	LIGHT LOSS FACTOR	BUG RATING
Helmholtz/Canal	Rural Arterial	TARGET	≥ 0.9 fc	≤ 3 : 1	0.85	B1 UI G1
		DESIGN	1.3 fc	2.5 : 1		



TRENCH DETAIL



NOTE
1. Illumination circuit wires are not shown. See Illumination Plans.
2. Illumination Circuits shall be spliced according to Section 02920.25
3. Polymer concrete junction box cover, if used, is not required to be bonded.
4. Metallic conduit, if used, shall be bonded and connected to circuit ground wires

CONCRETE JUNCTION BOX INSTALLATION WITH APRON (NEAR ILLUM. POLE)

REVISIONS	DATE	BY

DESIGNED JDS
DRAWN JDS
CHECKED HJS
APPROVED SGB

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
DATE

REGISTERED PROFESSIONAL ENGINEER 79204PE OREGON JUNE 14, 2007 SCOTT GLENN BEARD 11/2/19
EXPIRES 12/31/19

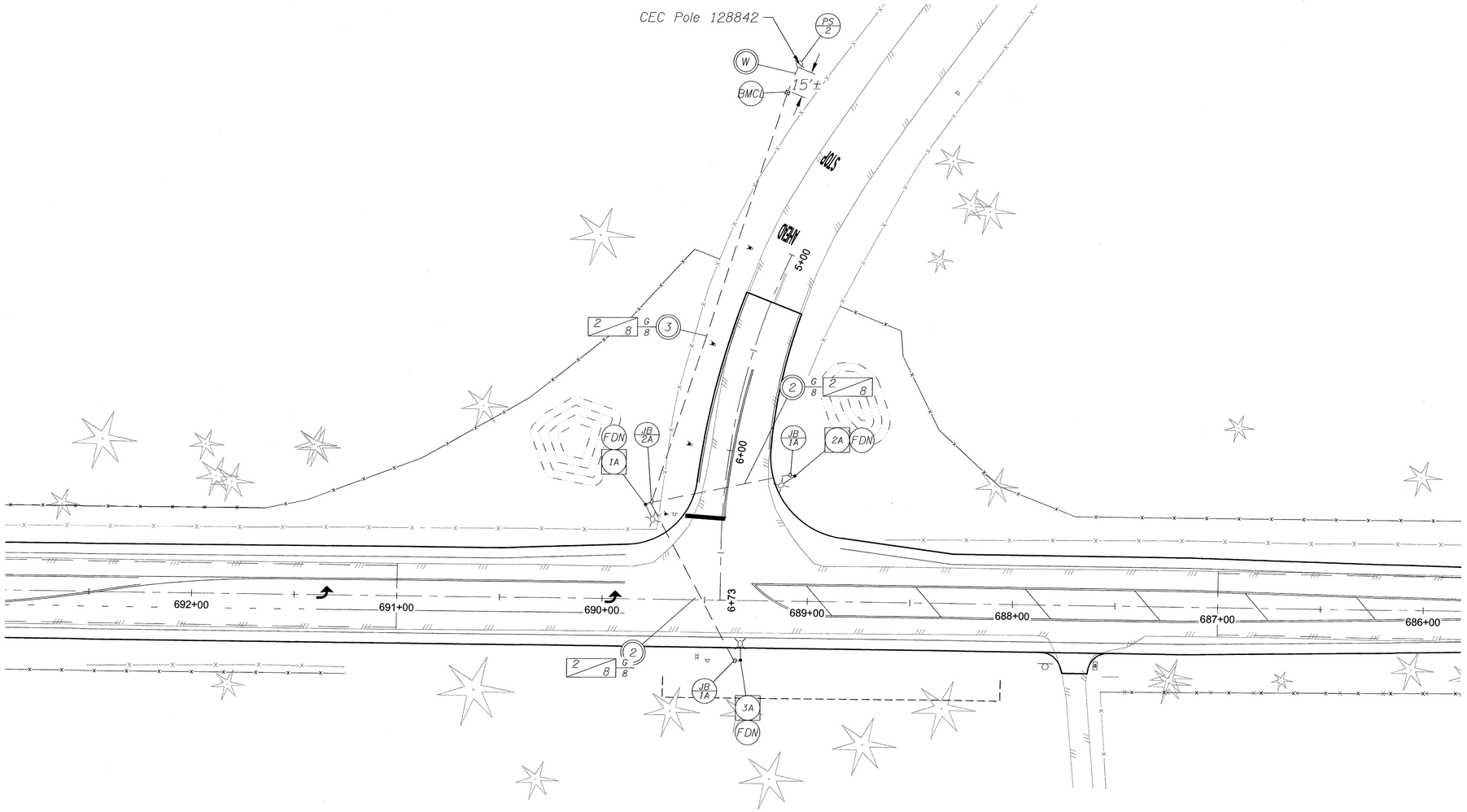
KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

ILLUMINATION LEGEND

DRAWING NO.
31 OF 32
IL1

ILLUMINATION PLAN
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS



SCALE
0 30 60

	REVISIONS	DATE	BY

DESIGNED JDS
DRAWN JDS
CHECKED HJS
APPROVED SGB

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME
JOB No.
DATE

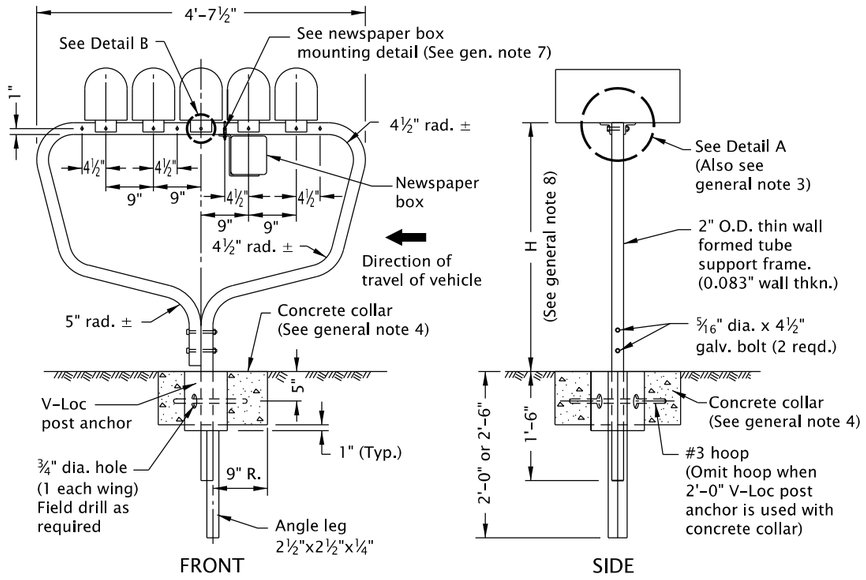
REGISTERED PROFESSIONAL ENGINEER
79904PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEARD
EXPIRES 12/31/19
12/9/19

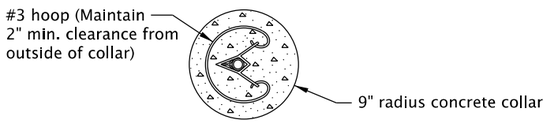
KITTELSON & ASSOCIATES

PROJECT NAME
SW CANAL BLVD / SW HELMHOLTZ WAY INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

ILLUMINATION PLAN

DRAWING NO.
32 OF 32
IL2

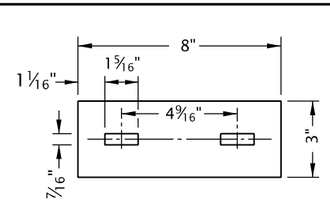




CONCRETE COLLAR
(See general note 4)

MULTIPLE SUPPORT

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



ADAPTOR PLATE
(14 ga.)

SIZE 1 & 1½
MOUNTING BRACKET
(16 ga.)

SIZE 2
MOUNTING BRACKET (16 ga.)
WITH ADAPTOR PLATE (14 ga.)

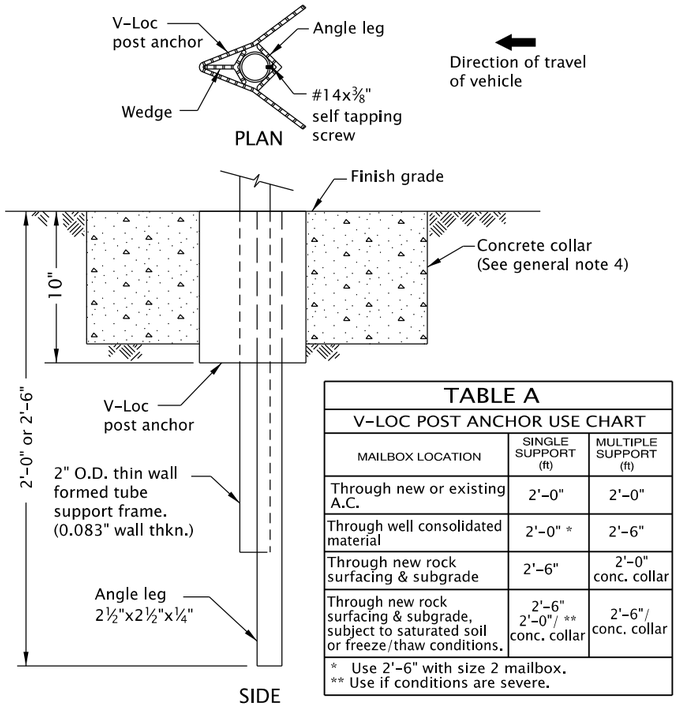
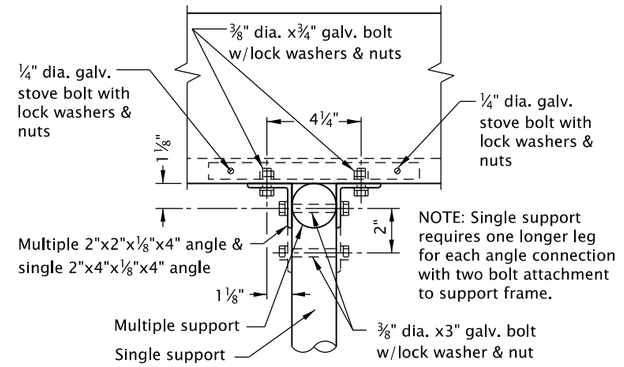


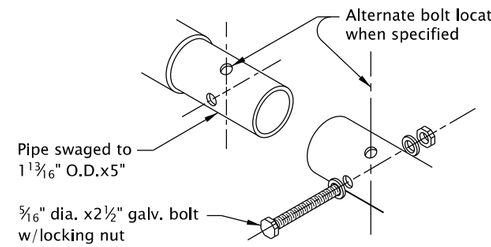
TABLE A V-LOC POST ANCHOR USE CHART		
MAILBOX LOCATION	SINGLE SUPPORT (ft)	MULTIPLE SUPPORT (ft)
Through new or existing A.C.	2'-0"	2'-0"
Through well consolidated material	2'-0" *	2'-6"
Through new rock surfacing & subgrade	2'-6"	2'-0" conc. collar
Through new rock surfacing & subgrade, subject to saturated 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.

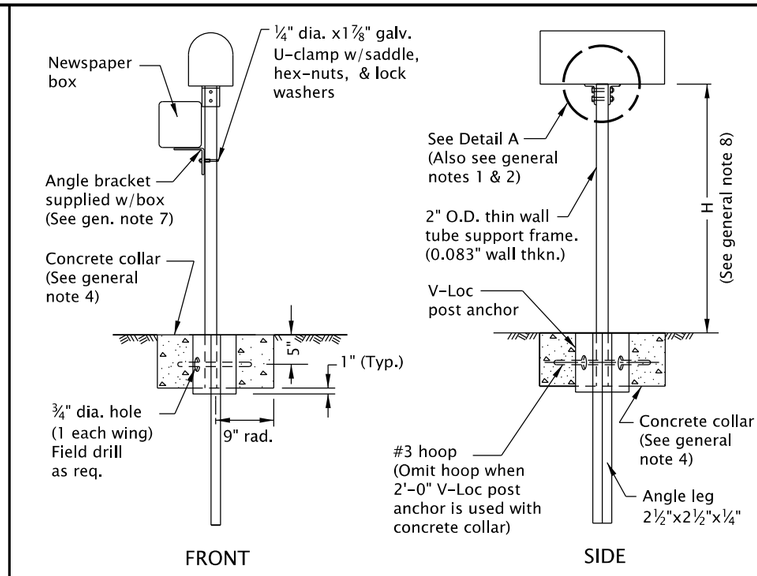
POST MOUNTING SOCKET



DETAIL A



DETAIL B



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 ⅜" dia. x⅝" 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.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 25-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

MAILBOX SUPPORT

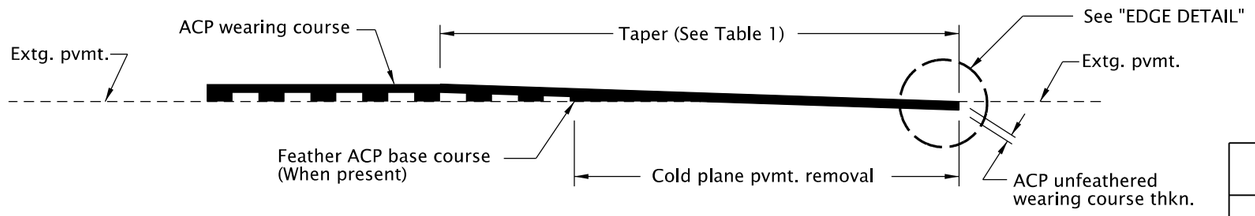
2018

DATE	REVISION DESCRIPTION

rd100.dgn 25-JUL-2017

RD100

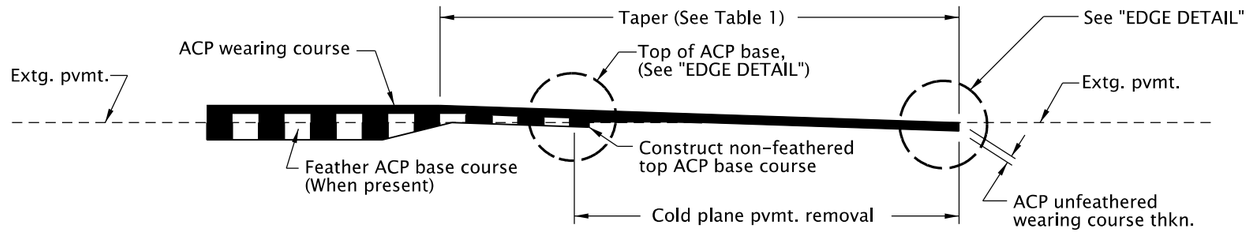
Effective Date: June 1, 2019 - November 30, 2019



METHOD A *

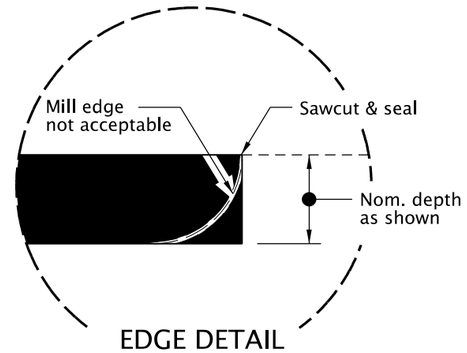
* See project plans for method.

TABLE 1	
TAPER LENGTHS	
Posted Speed	Taper Length
< 45 mph	1" per 50'
≥ 45 mph	1" per 100'

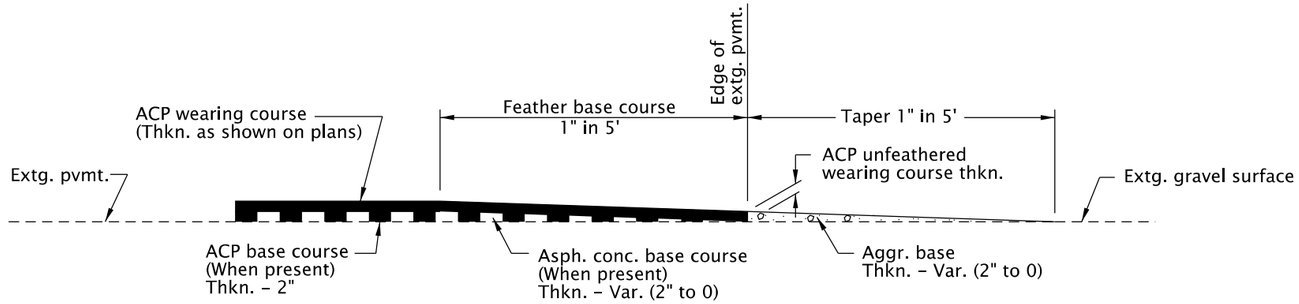


METHOD B *

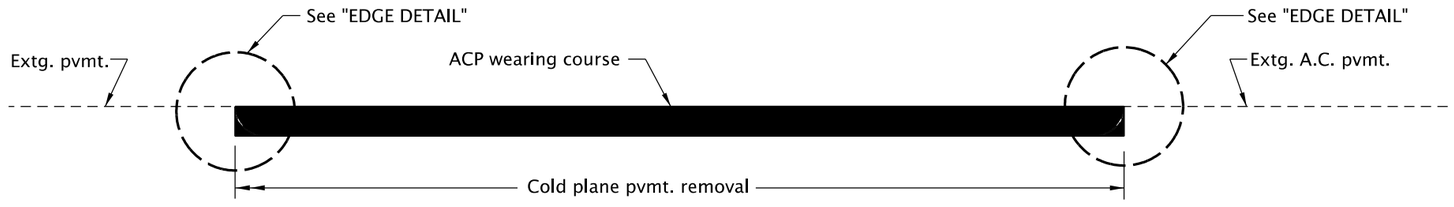
ACP PAVEMENT MATCH AT PROJECT ENDS OR BRIDGE ENDS WHEN NOT OVERLAYING THE BRIDGE



EDGE DETAIL



METHOD OF FEATHERING ACP PAVEMENT AT GRAVEL APPROACHES



METHOD OF MATCHING EXTG. ACP INLAY SURFACING

(Inlay to extg. asphalt conc. pvmt.)

CALC. BOOK NO. N/A

BASELINE REPORT DATE 25-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.

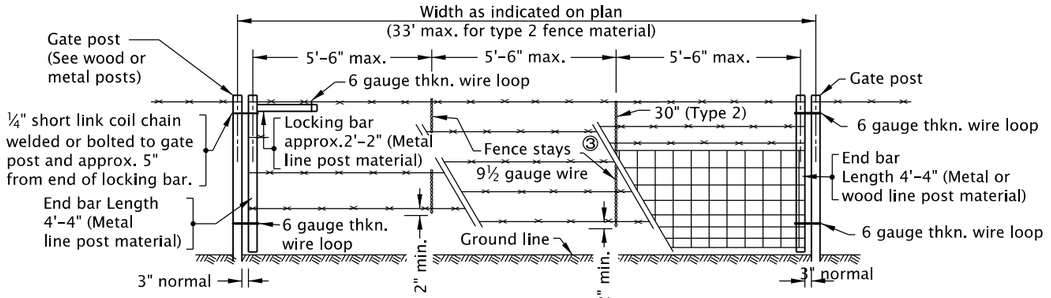
OREGON STANDARD DRAWINGS

2018

DATE	REVISION DESCRIPTION

rd610.dgn 25-JUL-2017

RD610



TYPE 1 — Fence material ①②

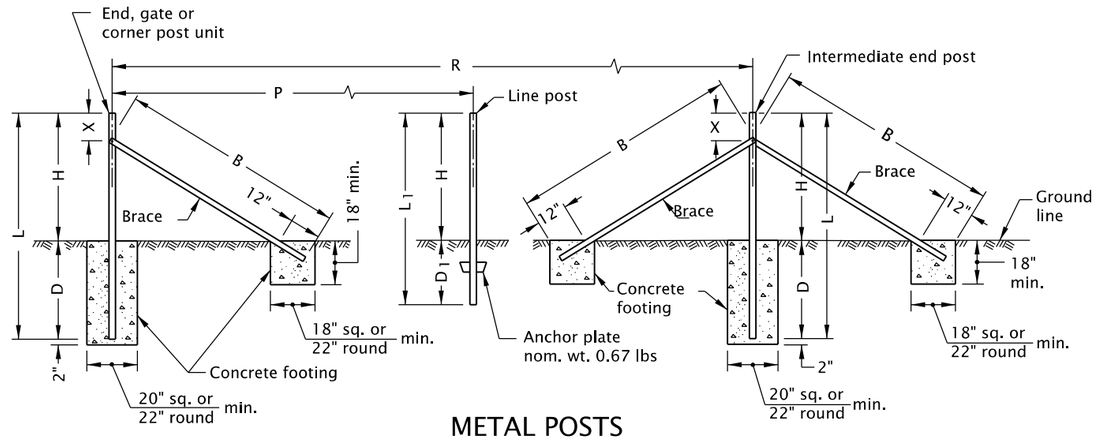
TYPE 1-5W — Fence material ①②

TYPE 2 — Fence material ①②

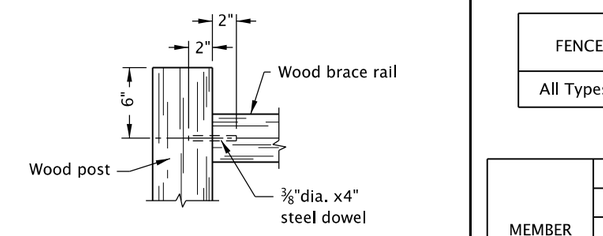
NOTES:

① Match adjointing fence type.
② For details not shown see fence type.
③ For wooden stays, see Type 1 fence details.

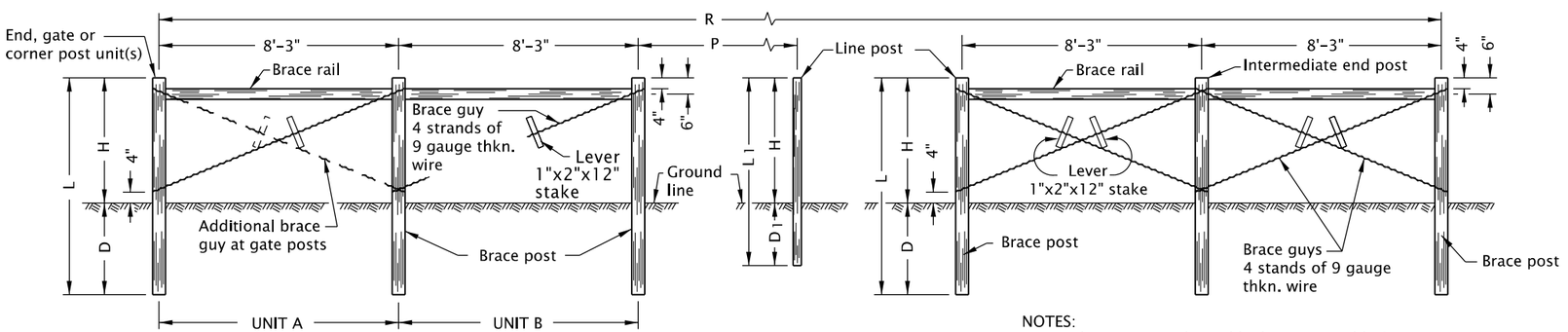
GATEWAY



METAL POSTS



BRACE RAIL CONNECTION



For units required see Table 1

WOOD POSTS

NOTES:
1. For dimensions indicated by letter see Table 2.
2. Line post spacing same as dimension P.
3. For cross sectional dimensions of members see Table 3.

GENERAL NOTES FOR ALL DETAILS:

1. For dimensions indicated by letter see Table 2.
2. Line post spacing same as dimension P.
3. For shapes, weights and dimensions of members see Table 3.
4. All concrete shall be commercial grade concrete.
5. See Std. Dwg. RD820 for fence gates.
6. See project plans for details not shown.

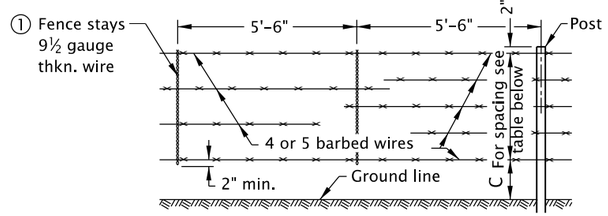


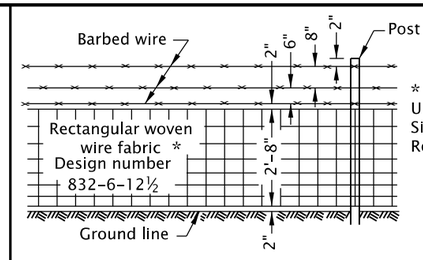
TABLE OF DIMENSIONS

FENCE	C	SPACING	NO. OF WIRES
Type 1	14"	12"	4
Type 1-5W	10"	10"	5

① NOTE:

Wooden Stays to be used in areas of heavy snowfall or snow drifts over 36". Stays to be 2"x2"x52" min. length, sound, untreated Douglas Fir, Western Hemlock or Western Pine, spaced as shown for wire stays and to rest firmly on the ground.
Horizontal wires to be stapled are: single wires and a minimum of 4 wires for woven wire fabric.

TYPES 1 , & 1-5W



* U.S. Dept. of Commerce Simplified Practice Recommendation R9-47.

② NOTE:
For wooden stays, see Type 1 fence details

② TYPE 2

TABLE 1 (For wood posts)

FENCE	R (ft)	UNITS REQUIRED
Types 1, 1-5W & 2	20 or Less	* None
	20-330	A
	Over 330	A & B

* Unit A required at gate post.

Either Unit A or Units A & B are required in existing fence line at intersection with new fence line.

TABLE 2

FENCE	R max.	P	L min.	L1 min.	H	D min.	D1 min.	B min.	X min.-max.
All Types	660'	16'-6"	7'-6"	6'-6"	4'-4"	3'-2"	2'-2"	7'-8"	9"-22"

TABLE 3

MEMBER	WOOD			METAL		
	* ROUND		SQUARE	SHAPE	WEIGHT PER (ft) nominal	SIZE nominal
	DIAMETER OF SMALL END (in)		SIZE nominal (in)			
	min.-max.	min. avg.				
Line Post	3" to 4"	3"	† 3"x3"	Tee Channel ⓐ or U-bar	1.33 lb	ASTM A-702
Brace or Brace Rail	3½" to 5½"	4"	4"x4"	Tubular	ⓑ	1½" +/- O.D.
				ⓐ Angle	3.19 lb	2"x2"x¼"
Other Post	4" to 7"	5"	† 5"x5"	Tubular	b	2⅜" O.D.
				ⓐ Angle	4.1 lb	2½"x2½"x¼"

* Max. taper 1":48".

† Max. allowable size 1" additional in each dimension.

ⓐ In accordance with ASTM A 702.

ⓑ In accordance with AASHTO M 181.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 25-JUL-2017

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

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OREGON STANDARD DRAWINGS

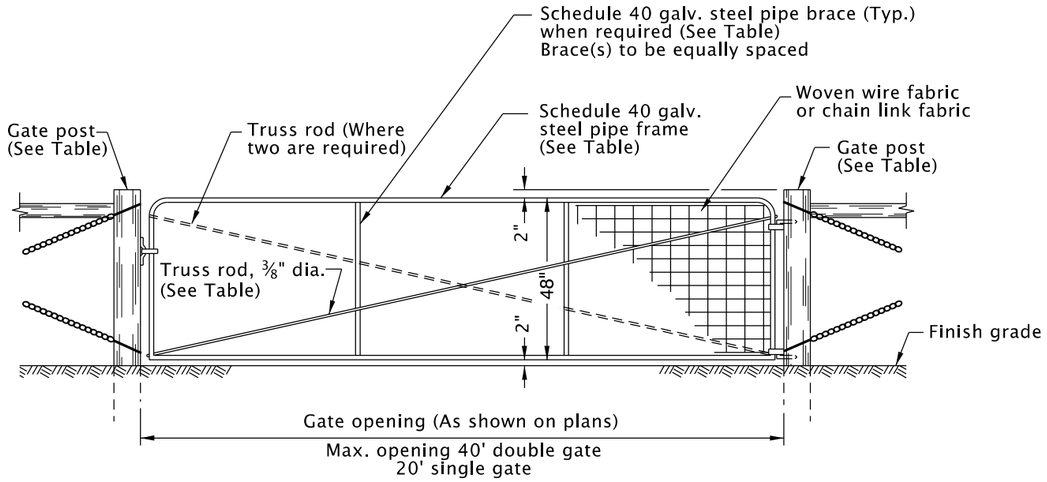
BARBED AND WOVEN WIRE FENCES

2018

DATE	REVISION DESCRIPTION

rd810.dgn 25-JUL-2017

RD810



GATE COMPONENTS								GATE POSTS ①②					
								WOOD				STEEL	
GATE OPENING (ft)		SCHEDULE 40 GALV. STEEL PIPE FRAME		SCHEDULE 40 GALV. STEEL PIPE BRACE			TRUSS RODS	* ROUND			SQUARE	SCHEDULE 40 GALV. STEEL PIPE	
								DIA. OF SMALL END (in)			NOM. SIZE (in)	NOM. DIA. (in)	MIN. WT. (lb/ft)
SINGLE GATE	DOUBLE GATE	NOM. DIA. (in)	MIN. WT. (lb/ft)	NUMBER	NOM. DIA. (in)	MIN. WT. (lb/ft)		Min.	Max.	Min. Avg.			
UP thru 6	UP thru 12	1	1.68	–	–	–	–	5	7	6	6x6	2½	5.79
7 thru 11	13 thru 22	1¼	2.27	1	1	1.68	1	5	7	6	6x6	3½	9.11
12 thru 16	23 thru 32	1½	2.72	2	1¼	2.27	2	7	9	8	8x8	6	18.97
17 thru 20	33 thru 40	2	3.65	2	1¼	2.27	2	9	11	10	10x10	6	18.97

① Gate posts on each side of a gate opening to be the same size. At a double gate installation with unequal width gates, size of both posts to be as indicated for single gate installation of the wider gate width.

② For length, setting and bracing details see end posts, Std. Dwg. RD810.

* Max. taper 1" in 4'

GENERAL NOTES FOR ALL DETAILS:

1. Gates shown are for use with Fence Types 1, 1-5W and 2.
2. See Std. Dwg. RD810 for details not shown.
3. See project plans for details not shown.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 25-JUL-2017

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OREGON STANDARD DRAWINGS

FENCE GATES

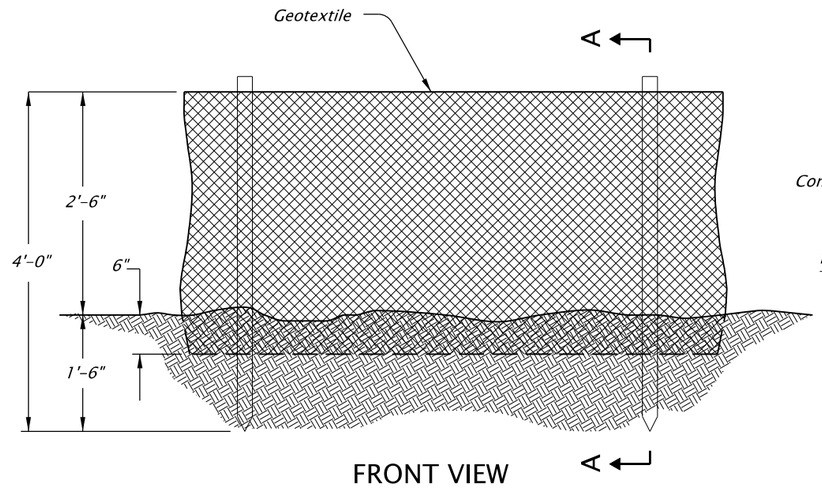
2018

DATE	REVISION DESCRIPTION

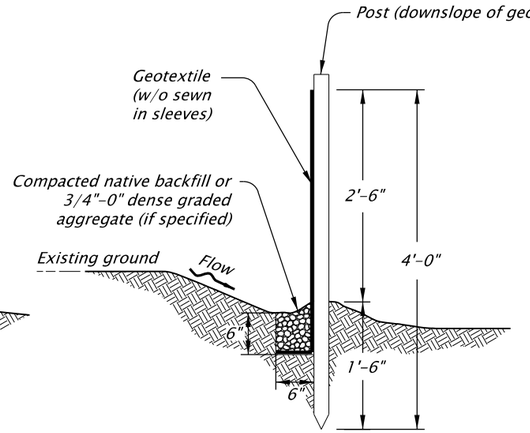
rd820.dgn 25-JUL-2017

RD820

rd1040.dgn 11-08-2017

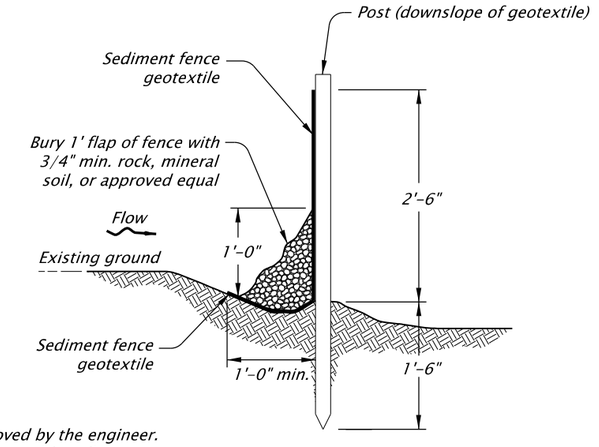


FRONT VIEW



SECTION A-A

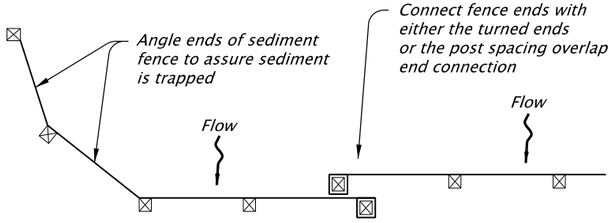
SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1



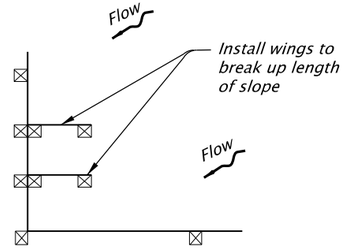
NOTES:

1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

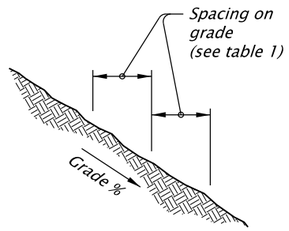
ALTERNATE SEDIMENT FENCE W/O TRENCHING - TYPE 2



PLAN VIEW



TERMINATION AT CORNER OR PROPERTY LINE

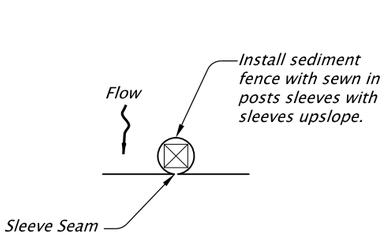


NOTES:

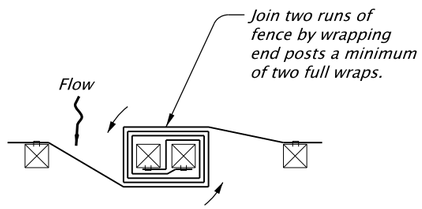
1. Use 2" X 2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with table 1.

TABLE 1
FENCE SPACING
FOR GENERAL APPLICATION

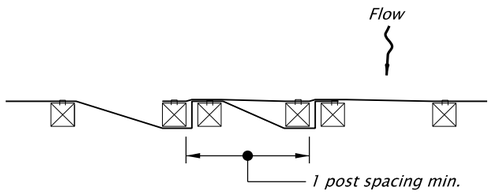
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS

TABLE 2

POST SPACING	
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more

CALC. BOOK NO. 6403, 6404, 6405

BASELINE REPORT DATE November 2017

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

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OREGON STANDARD DRAWINGS

SEDIMENT FENCE

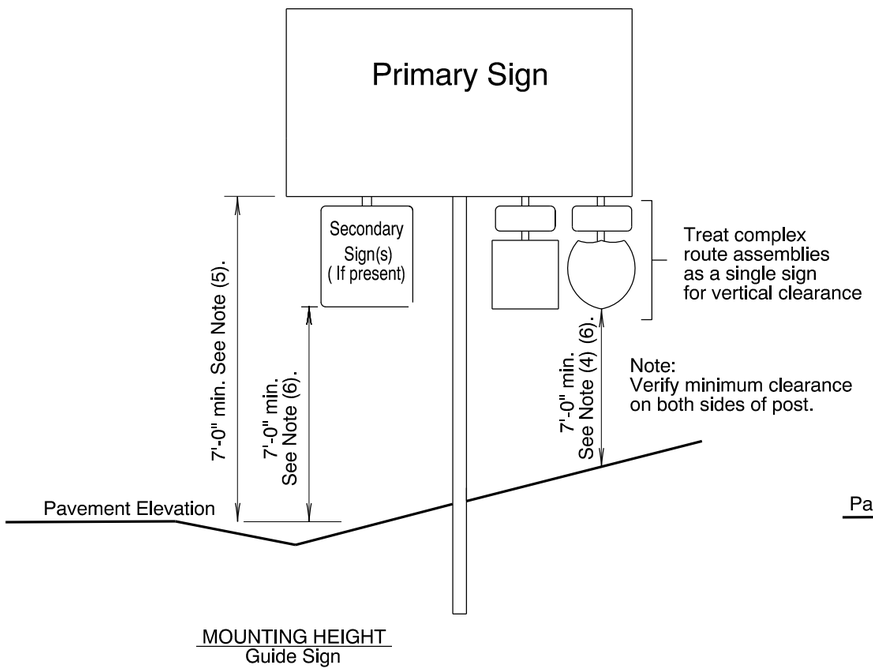
2018

DATE	REVISION DESCRIPTION

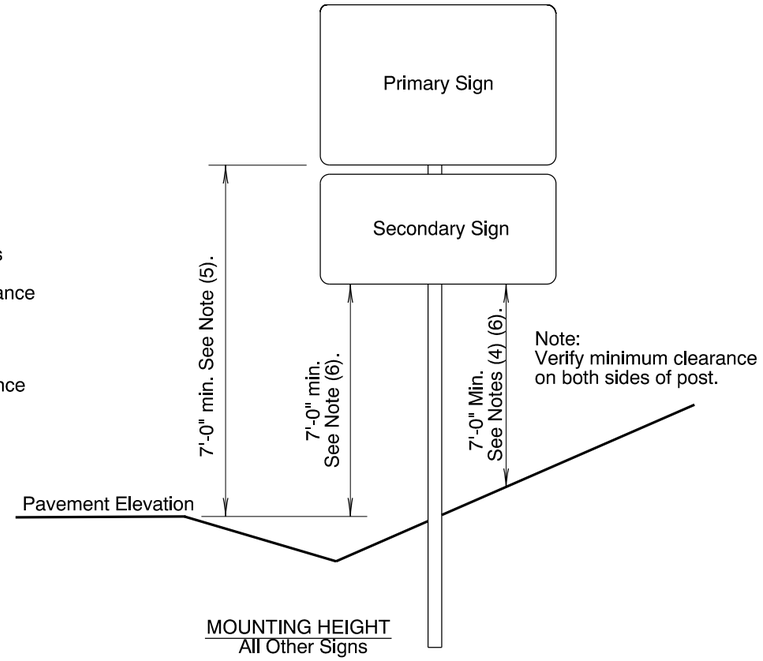
RD1040

Effective Date: June 1, 2019 - November 30, 2019

RD1040



MOUNTING HEIGHT
Guide Sign



MOUNTING HEIGHT
All Other Signs

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.

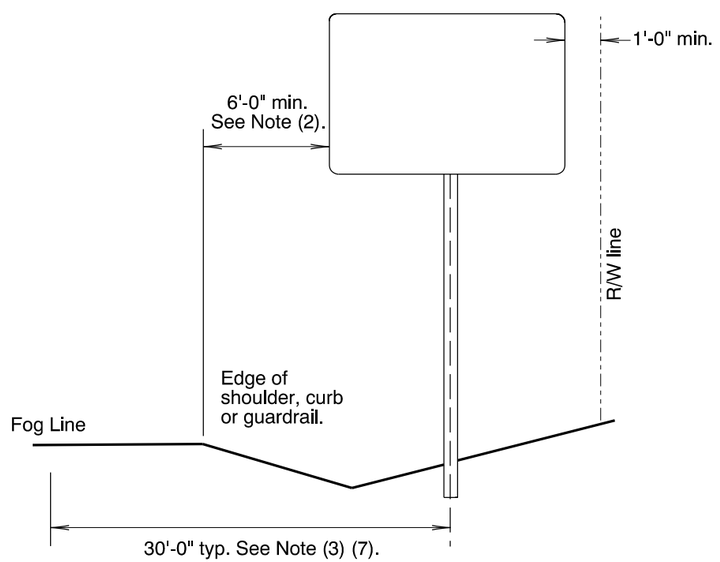
d. For perforated steelsquare tube support details see Dwg. No. TM681.

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

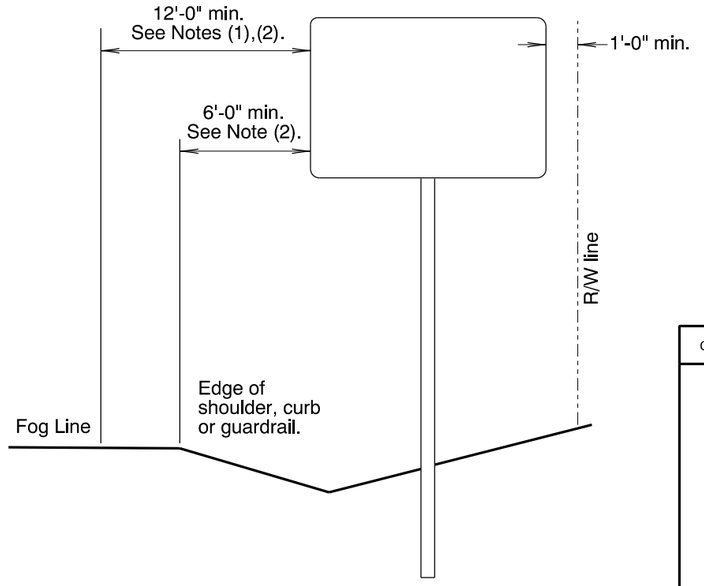
f. For multi-post breakaway support details see Dwg. No. TM600.

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

h. 2" vertical spacing between all signs.



LATERAL OFFSET
Guide Signs



LATERAL OFFSET
All Other 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

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OREGON STANDARD DRAWINGS

SIGN INSTALLATION DETAILS

2018

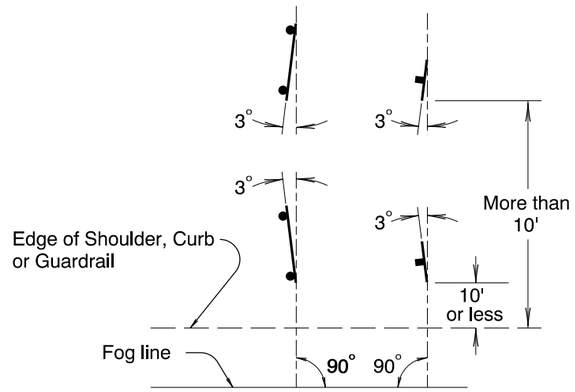
DATE	REVISION DESCRIPTION
1/08/18	Adjusted slope line on Mounting Height detail for clarity

TM200.dgn 1-3-2017

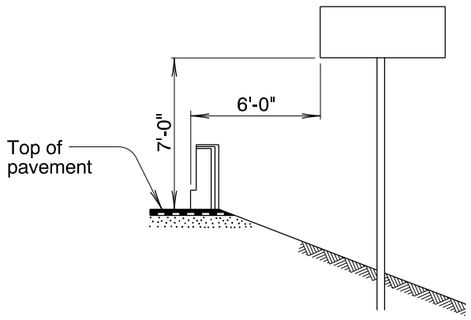
TM200

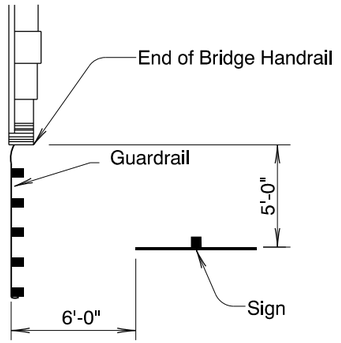
plotfile_TM200s_500s.dgn :: Default 1/4/2019 9:35:36 AM hwyr20m

Effective Date: June 1, 2019 - November 30, 2019



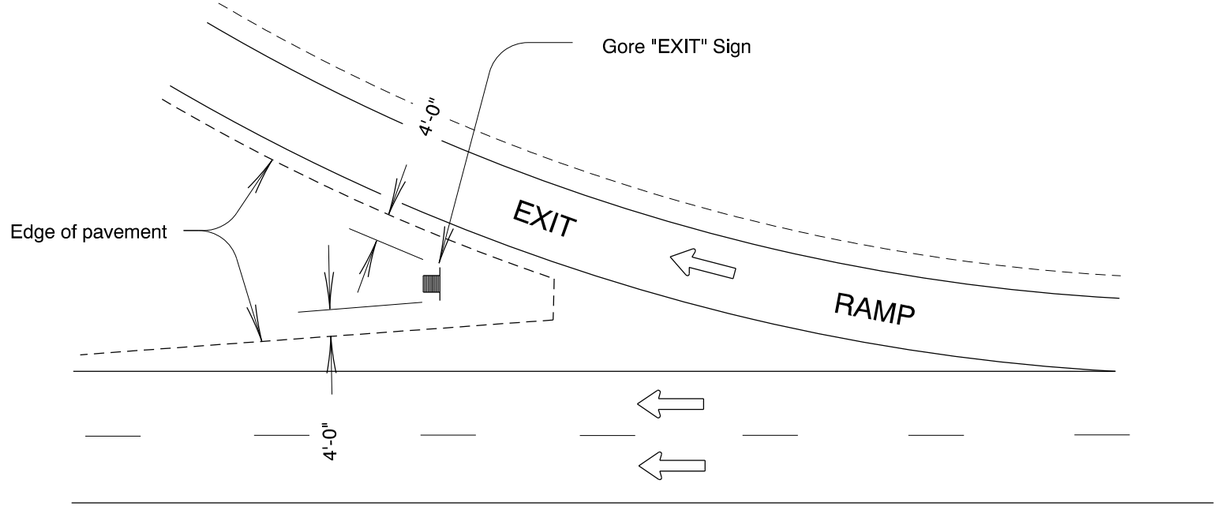
SIGN PLACEMENT





ELEVATION PLAN

SIGN LOCATION FOR FREEWAY OVERCROSSING
(MINIMUM VALUES)



TYPICAL "EXIT" SIGN INSTALLATION

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-10-09

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

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OREGON STANDARD DRAWINGS

MISCELLANEOUS SIGN PLACEMENT DETAILS

2018

DATE	REVISION DESCRIPTION

TM201.dgn 1-3-2017

TM201

plotfile_TM200s_500s.dgn :: Default 1/4/2019 9:35:38 AM hwyr20m

Effective Date: June 1, 2019 - November 30, 2019

tm500.dgn 07-09-2018

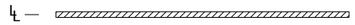
W

4" WHITE LINE

W-2

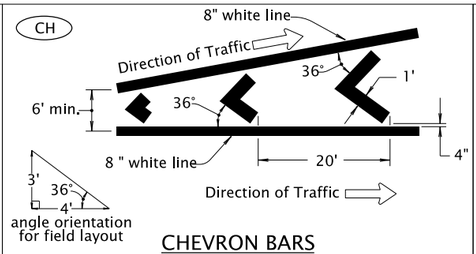
8" WHITE LINE

Y



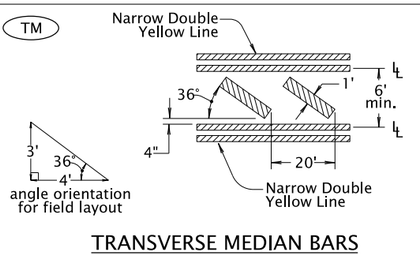
4" YELLOW LINE

CH



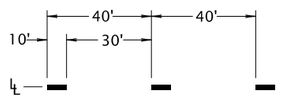
CHEVRON BARS
1' WHITE BARS AT 20' SPACING

TM



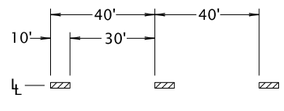
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 20' SPACING

WB



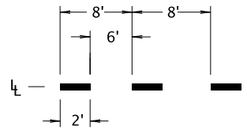
4" WHITE BROKEN LINE

YB



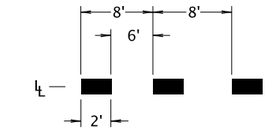
4" YELLOW BROKEN LINE

WD



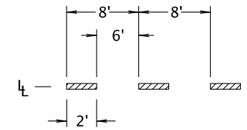
4" WHITE DOTTED LINE
For lane extensions

WD-2



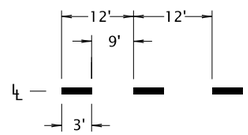
8" WHITE DOTTED LINE
For lane extensions and bike lane extensions

YD



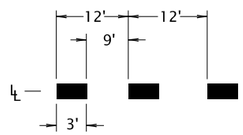
4" YELLOW DOTTED LINE
For lane extensions

DLL



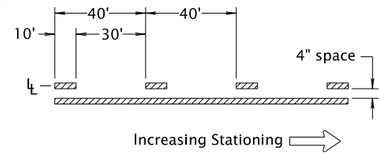
4" WHITE DOTTED LANE LINE
For lane lines in acceleration/deceleration lanes

DLL-2



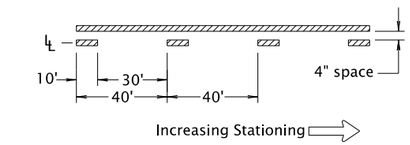
8" WHITE DOTTED LANE LINE
For lane lines in drop lanes

NPR



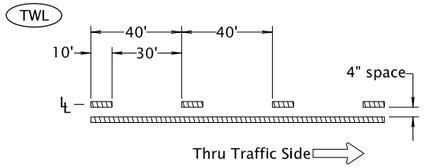
NO-PASS RIGHT
4" YELLOW LINES

NPL



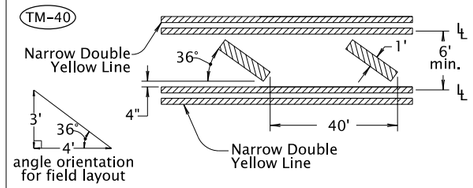
NO-PASS LEFT
4" YELLOW LINES

TWL



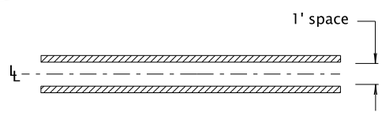
TWO-WAY LEFT TURN
4" YELLOW LINES

TM-40



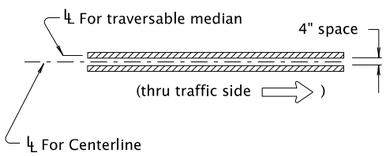
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 40' SPACING
For use at painted medians where
distance between left turn refuges exceeds 200'

D



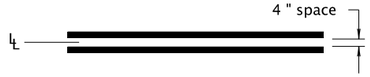
DOUBLE NO-PASS
TWO 4" YELLOW LINES

ND



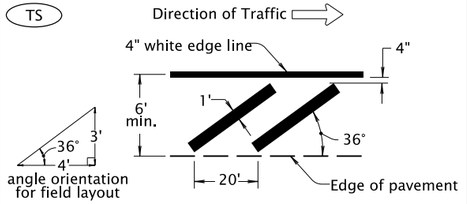
NARROW DOUBLE NO-PASS
TWO 4" YELLOW LINES

NDW



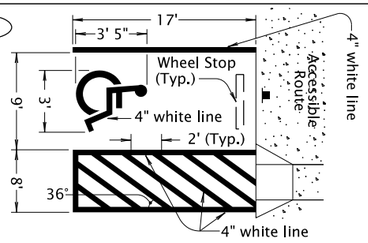
NARROW DOUBLE NO-LANE CHANGE
TWO 4" WHITE LINES

TS



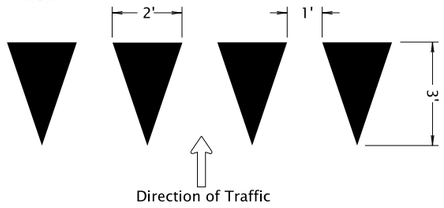
TRANSVERSE SHOULDER BARS
1' WHITE BARS AT 20' SPACING

HC



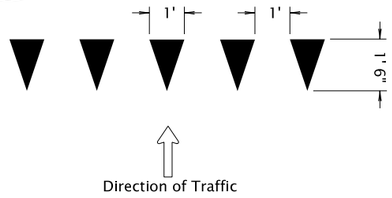
DISABLED PARKING DETAIL (white)

YLD



YIELD LINE (white)

BYLD



BICYCLE YIELD LINE (white)

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

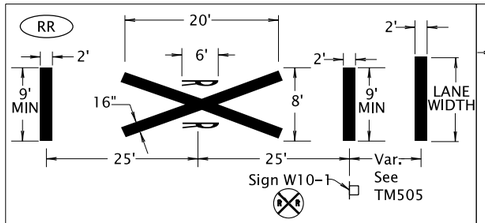
DATE	REVISION DESCRIPTION

TM500

Effective Date: June 01, 2019 - November 30, 2019

tm501.dgn 07-09-2018

RR

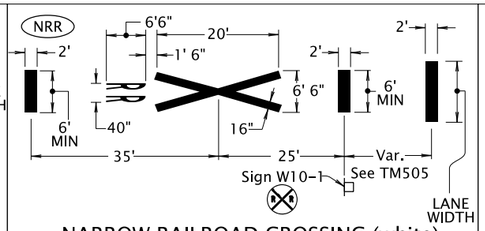


RAILROAD CROSSING (white)

Install per ODOT Rail Crossing Order or as shown.

For letter proportion details, see current version of Standard Highway Signs

NRR

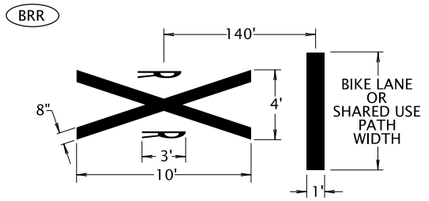


NARROW RAILROAD CROSSING (white)

Install per ODOT Rail Crossing Order or as shown.

For letter proportion details, see current version of Standard Highway Signs

BRR

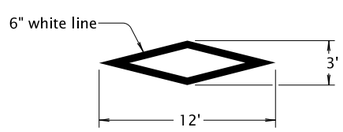


BICYCLE RAILROAD CROSSING (white)

Install per ODOT Rail Crossing Order or as shown.

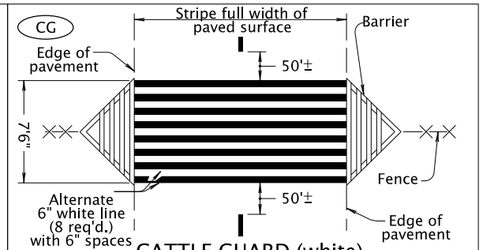
For letter proportion details, see current version of Standard Highway Signs

HOV



HIGH-OCCUPANCY VEHICLE DIAMOND DETAIL (white)

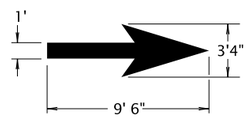
CG



CATTLE GUARD (white)

For barrier and fence details, see Std. Dwg. RD110

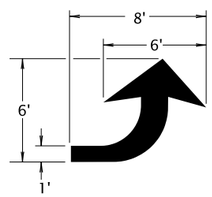
SA



STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

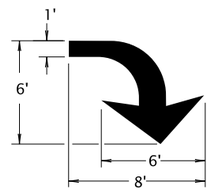
LA



LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

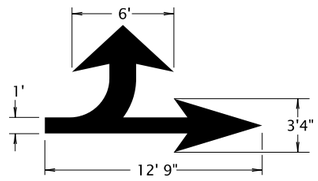
RA



RIGHT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

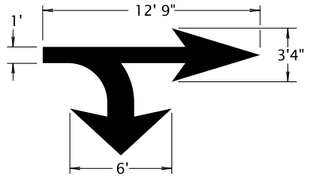
LSA



LEFT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

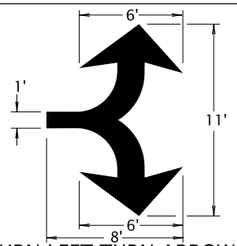
RSA



RIGHT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

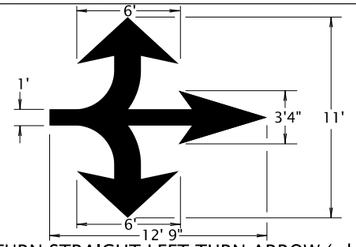
RALA



RIGHT TURN LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

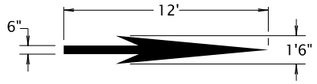
RSLA



RIGHT TURN STRAIGHT LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

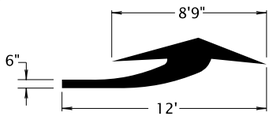
E-SA



ELONGATED STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

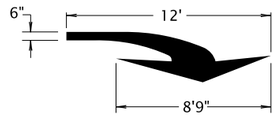
E-LA



ELONGATED LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

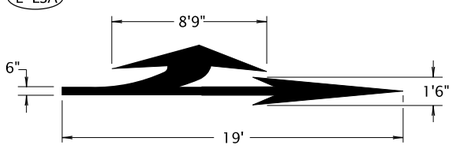
E-RA



ELONGATED RIGHT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

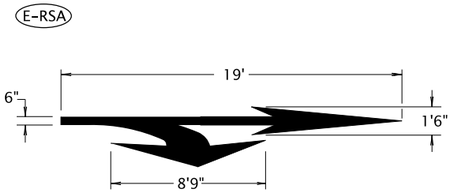
E-LSA



ELONGATED LEFT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

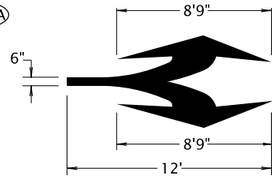
E-RSA



ELONGATED RIGHT TURN STRAIGHT ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

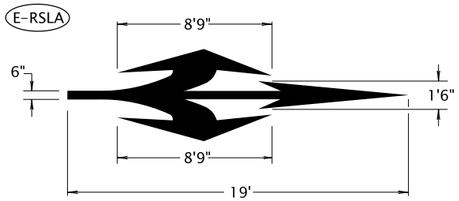
E-RALA



ELONGATED RIGHT TURN LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

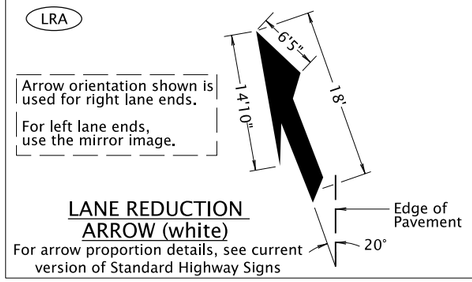
E-RSLA



ELONGATED RIGHT TURN STRAIGHT LEFT TURN ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

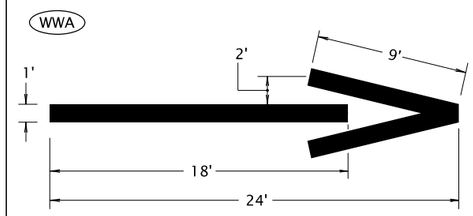
LRA



LANE REDUCTION ARROW (white)

For arrow proportion details, see current version of Standard Highway Signs

WWA



WRONG-WAY ARROW (white)

General Note:

1. Center pavement markings within the lane width.
2. Arrow and letter dimensions nominal, excluding WWA.

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.

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OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

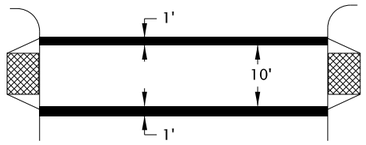
2018

DATE	REVISION DESCRIPTION

TM501

Effective Date: June 01, 2019 - November 30, 2019

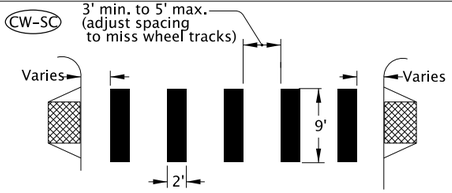
CW



STANDARD CROSSWALK
TWO 1' WHITE BARS

Install per Standard Drawing TM530

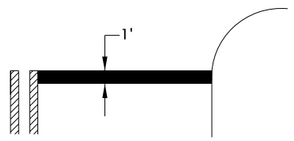
CW-SC



STAGGERED CONTINENTAL CROSSWALK
2' WHITE BARS

Install per Standard Drawing TM530

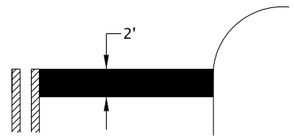
S



STOP BAR
1' WHITE BAR

Install per Standard Drawing TM530

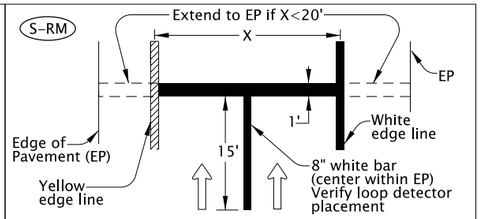
S-2



STOP BAR - LARGE
2' WHITE BAR

Install per Standard Drawing TM530

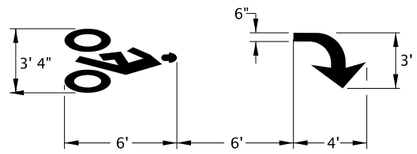
S-RM



RAMP METER STOP BAR
1' & 8" WHITE BARS

For multi-lane ramp meter applications

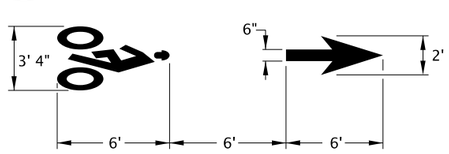
BR



BIKE RIGHT TURN STENCIL (white)

Center marking within lane width
For proportion details, see current version of Standard Highway Signs

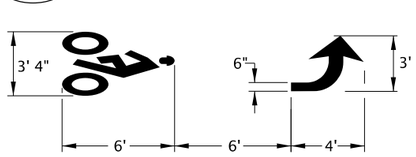
BS



BIKE LANE STANDARD STENCIL (white)

Center marking within lane width
For proportion details, see current version of Standard Highway Signs

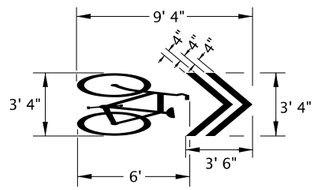
BL



BIKE LEFT TURN STENCIL (white)

Center marking within lane width
For proportion details, see current version of Standard Highway Signs

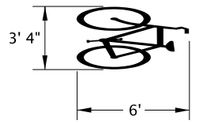
SLM



SHARED LANE MARKING (white)

Center marking within lane width or as shown
For proportion details, see current version of Standard Highway Signs

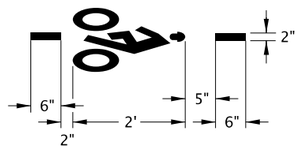
B



BIKE STENCIL (white)

Used for Intersection Bicycle Box applications.
See Section 414 of Traffic Line Manual

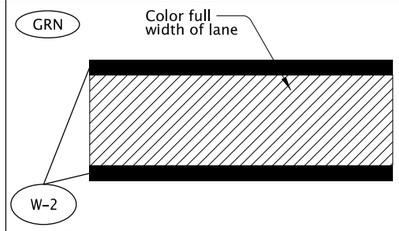
BD



BICYCLE DETECTOR MARKING (white)

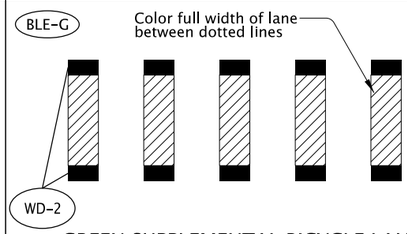
For placement location with loops, see Section 416 of Traffic Line Manual

GRN



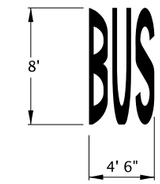
GREEN SUPPLEMENTAL BICYCLE LANE
SOLID LINE (green)

BLE-G



GREEN SUPPLEMENTAL BICYCLE LANE
DOTTED LINE EXTENSION (green)

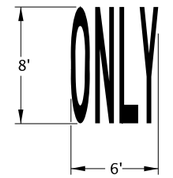
BUS



BUS (white)

Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

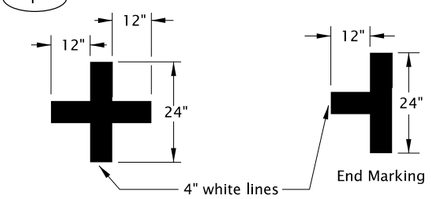
ON



ONLY (white)

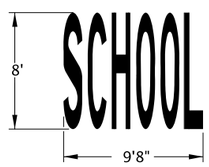
Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

P



ON-STREET PARKING DETAIL (white)

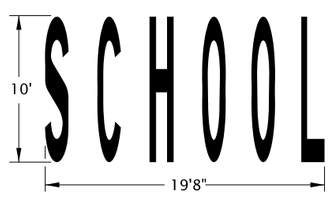
SCH



SCHOOL (white)

Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

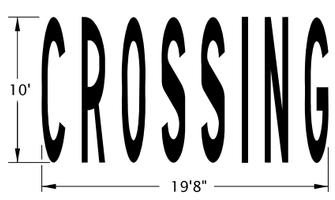
SCH-LG



SCHOOL - LARGE (white)

Center marking within width of two lanes
For letter proportion details, see current version of Standard Highway Signs

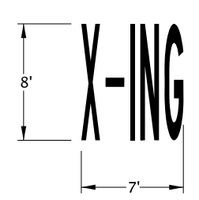
CRS-LG



CROSSING - LARGE (white)

Center marking within width of two lanes
For letter proportion details, see current version of Standard Highway Signs

XNG



X-ING (white)

Center marking within lane width
For letter proportion details, see current version of Standard Highway Signs

General Note:

1. Arrow, letter, and bike symbol dimensions nominal.

LEGEND

Direction of Travel

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

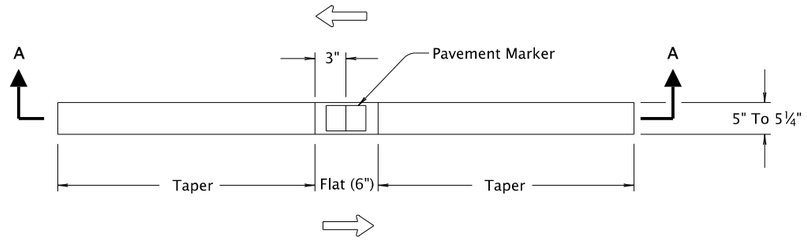
PAVEMENT MARKING STANDARD DETAIL BLOCKS

2018

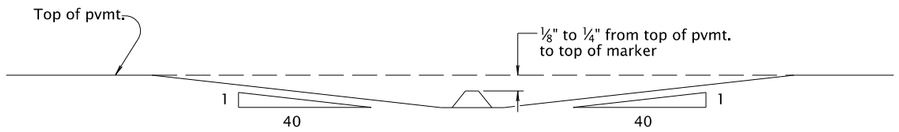
DATE	REVISION DESCRIPTION

TM503

Effective Date: June 01, 2019 - November 30, 2019

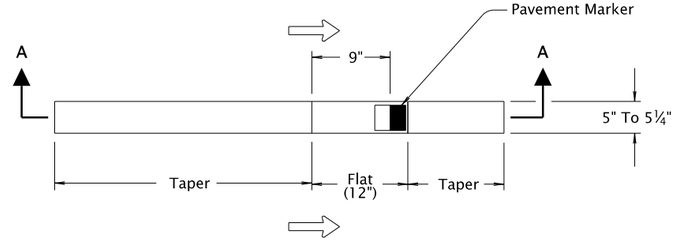


PLAN VIEW



SECTION A – A

BI–DIRECTIONAL RECESSED PAVEMENT MARKER DETAIL



PLAN VIEW

SECTION A – A

MONO–DIRECTIONAL RECESSED PAVEMENT MARKER DETAIL

LEGEND

Direction of Travel

Bi–directional yellow marker reflects yellow both left and right in this symbol

Mono–directional crystal white marker reflects white to the left in this symbol

To be accompanied by Standard Dwg. Nos. TM502 and TM515

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.

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OREGON STANDARD DRAWINGS

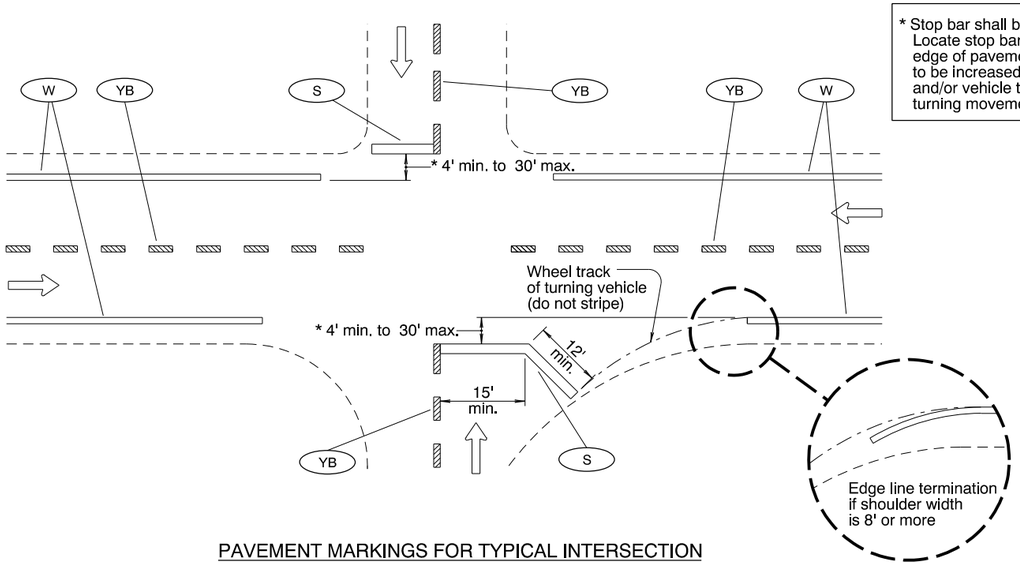
RECESSED PAVEMENT MARKERS

2018

DATE	REVISION DESCRIPTION

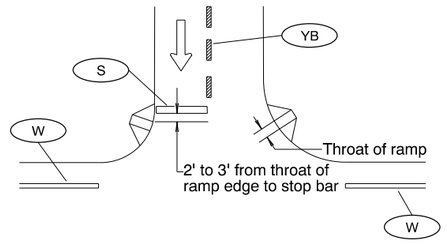
TM517

TM530.dgn 1-3-2017

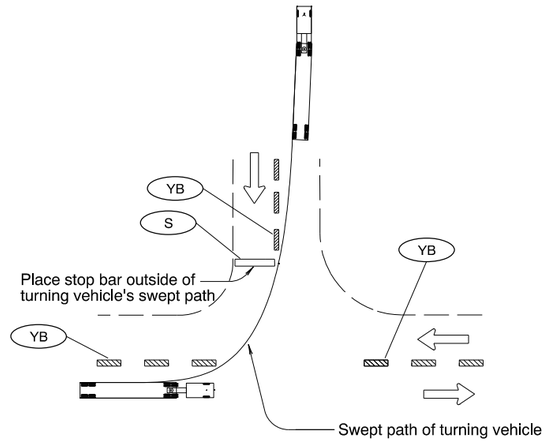


PAVEMENT MARKINGS FOR TYPICAL INTERSECTION

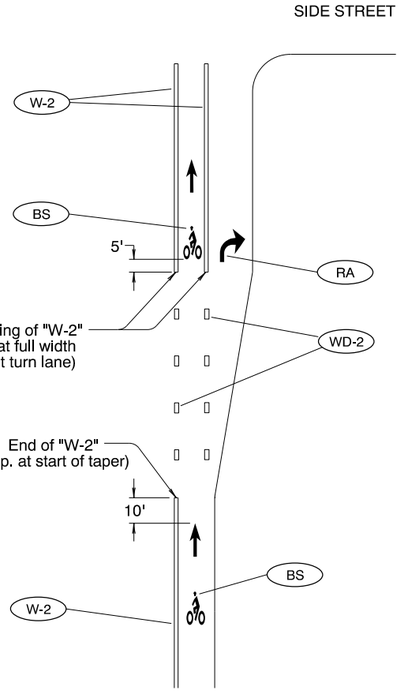
* Stop bar shall be placed as near as possible to the intersecting traveled way. Locate stop bar 4' min. to 30' max. in advance of the extended fog line, edge of pavement, or curb face. Minimum stop bar distance may need to be increased, depending on location of pedestrian ramps (see Detail "A") and/or vehicle turn radii (see Detail "B"). Field verify sight distance and truck turning movements.



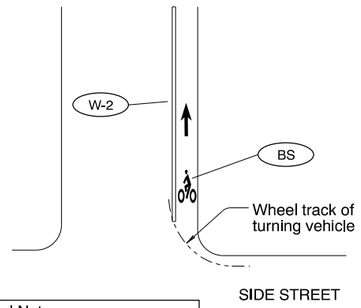
Detail "A"
STOP BAR PLACEMENT WITH
RESPECT TO PEDESTRIAN RAMPS



Detail "B"
STOP BAR PLACEMENT WITH
RESPECT TO TURN RADII



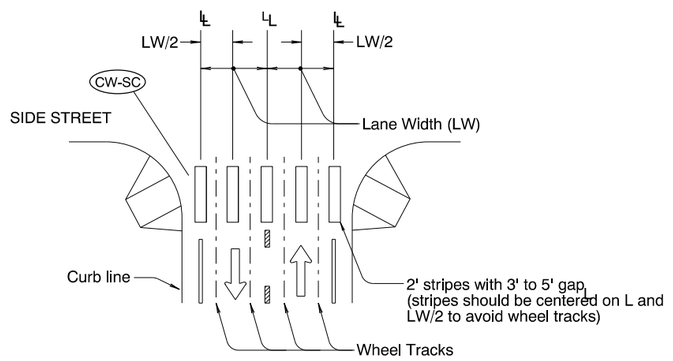
INSTALLATION OF BIKE LANE STENCILS
FOR BIKE LANE SEPARATED BY RIGHT TURN LANE



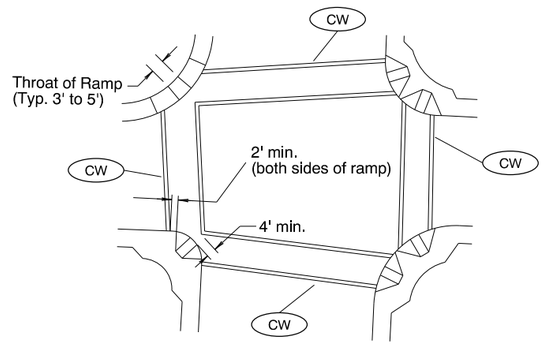
General Note:

Install bike lane stencil to avoid right turning vehicle wheel tracks.

INSTALLATION OF BIKE LANE STENCILS
FOLLOWING INTERSECTIONS



STAGGERED CONTINENTAL LAYOUT



STANDARD CROSSWALK BARS
AT INTERSECTION

General Note:

1. Install crosswalk bars such that the throat of the ADA ramp is entirely within crosswalk markings, or 5' back of extended fog line, edge of pavement, or curb face.

LEGEND

Direction of Travel

L - Lane line dimensions are shown on the striping plans

To be accompanied by Standard Dwg. Nos. TM500 thru TM503

CALC. BOOK NO. N/A

BASELINE REPORT DATE July 8, 2016

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
INTERSECTION PAVEMENT MARKINGS (CROSSWALK, STOP BAR & BIKE LANE STENCIL)

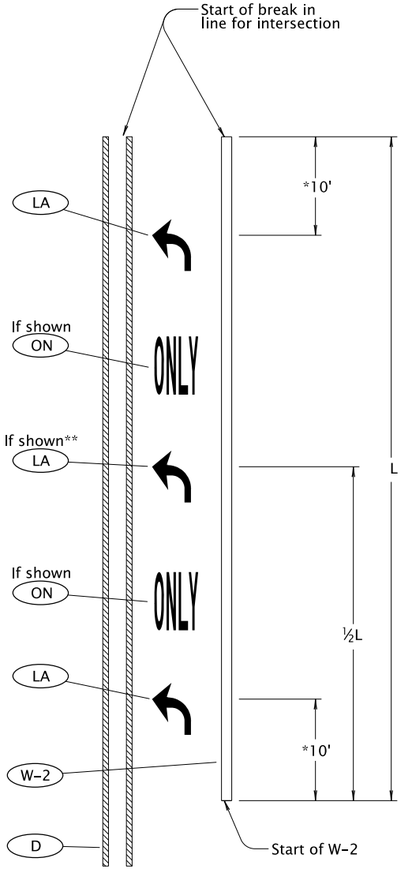
2018

DATE	REVISION DESCRIPTION

TM530

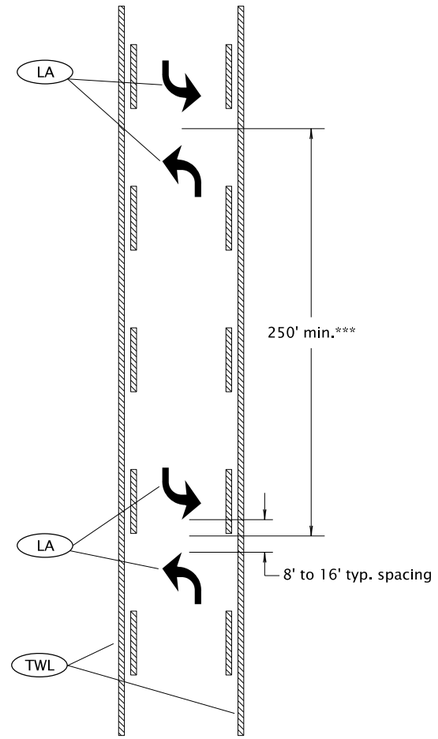
plotfile_TM200s_500s.dgn :: Default 1/4/2019 9:35:44 AM hwyr20m

Effective Date: June 1, 2019 - November 30, 2019



LANE USE ARROW PLACEMENT FOR TURN LANE

DETAIL "A"



TWO-WAY LEFT TURN LANE ARROW PLACEMENT

DETAIL "B"

General Notes:

1) Center pavement marking legends within the lane.

2) Placement of lane use arrows with respect to the 8" wide white line (W-2) channelization shown in Detail "A" applies to both left and right turn lanes.

3) Center "ONLY" markings between lane use arrows.

* 15' when installing elongated arrows.

** When L is greater than 400', install 3rd lane use arrow at ½ L as shown in Detail "A".

*** Double arrows to be placed at even intervals, proportioned within block or as shown.

To be accompanied by Standard Dwg. Nos. TM500 thru TM503

CALC. BOOK NO. _ _ _N/A_ _ _ _ _ _ _ _

BASELINE REPORT DATE _ _12/16/2011_ _ _ _ _ _ _ _ _

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.

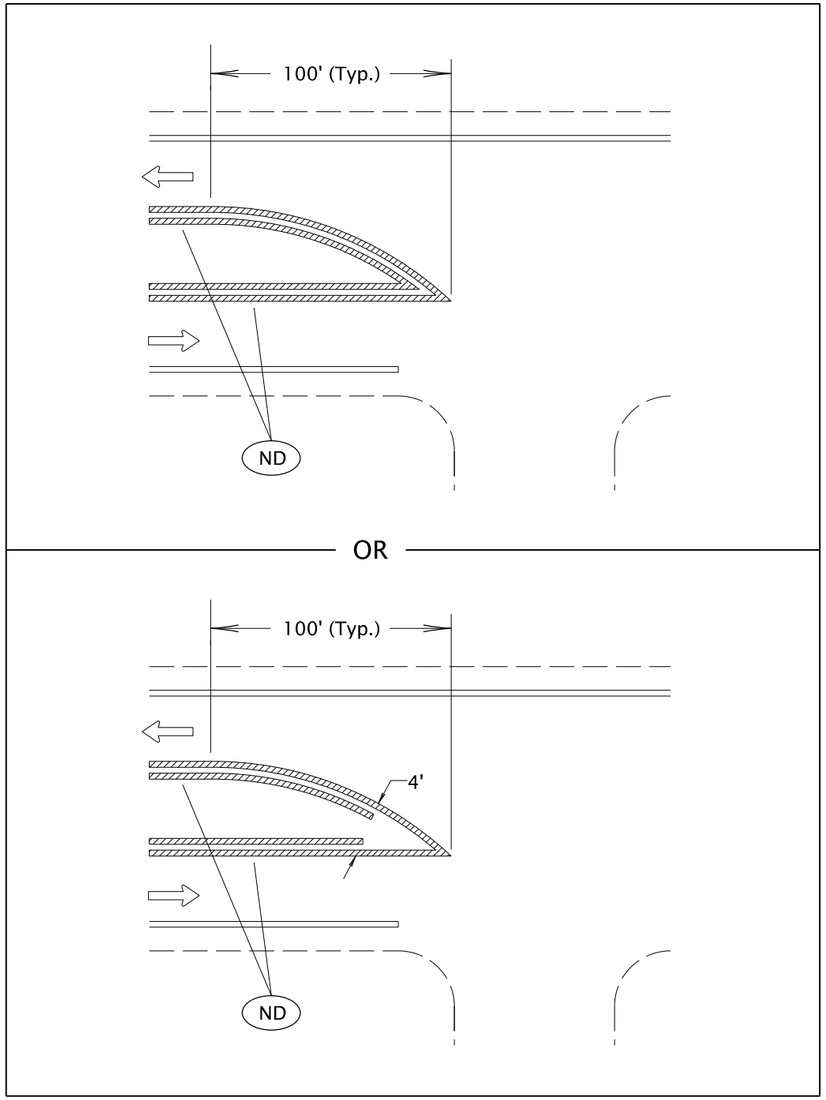
OREGON STANDARD DRAWINGS

TURN ARROW MARKING DETAILS

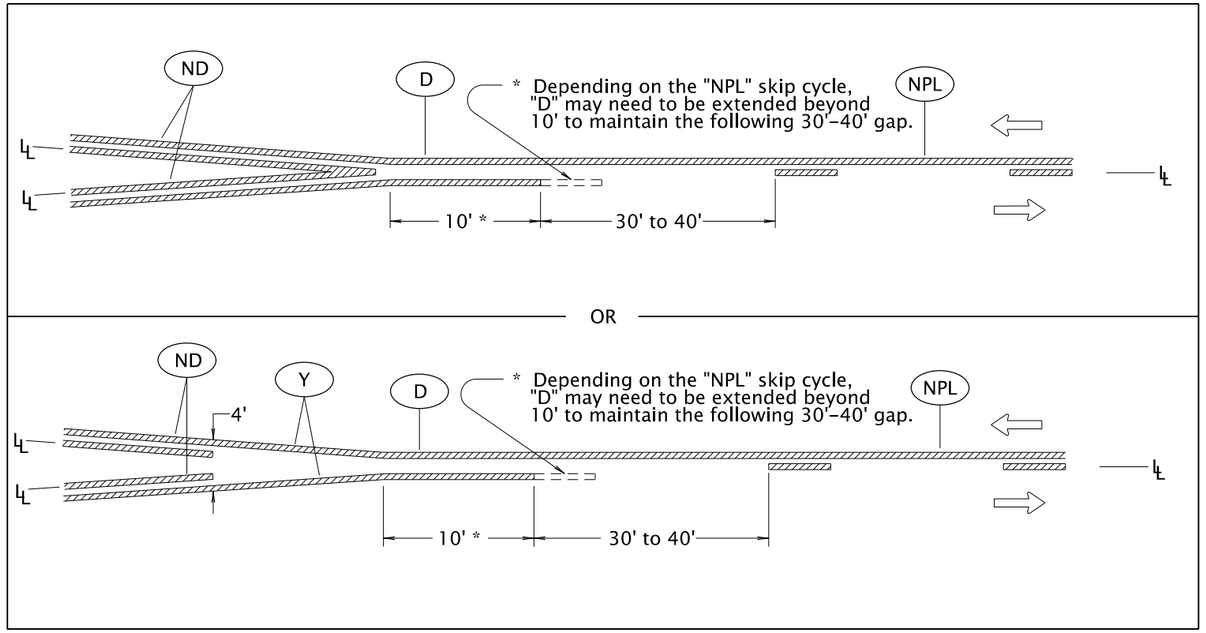
2018

DATE	REVISION DESCRIPTION

TM531



MEDIAN BULLNOSE DETAIL



MEDIAN WIDTH TRANSITION
(TWO NARROW DOUBLE YELLOW LINES TO ONE-DIRECTION NO-PASSING LINE)

To be accompanied by Standard Dwg. Nos. TM500 thru TM503

LEGEND

Increasing stationing from left to right

Direction of Travel

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

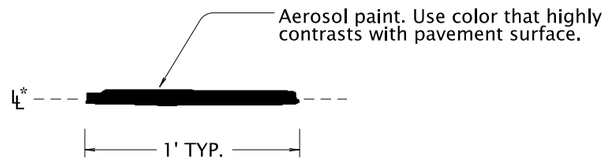
MEDIAN AND LEFT TURN CHANNELIZATION DETAILS

2018

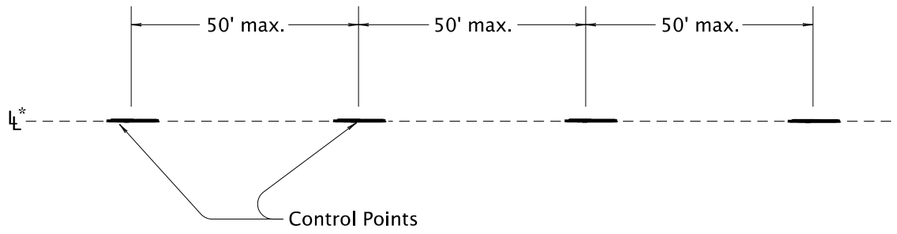
DATE	REVISION DESCRIPTION

tm539.dgn 07-09-2018

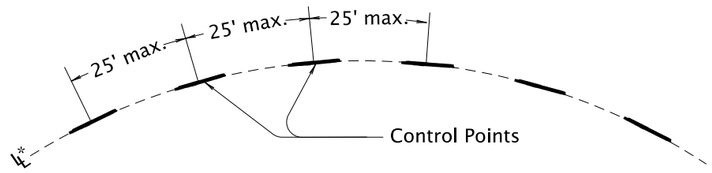
TM539



CONTROL POINT



CONTROL POINT LAYOUT - TANGENT SECTIONS



CONTROL POINT LAYOUT - CURVE SECTIONS

General note:

1.) Use control points to make continous narrow guideline as specified.

* Control points are placed along the lane line for all longitudinal lines except the following:

ND For center lines only	A control point layout 4" offset from the lane line is required for a ND line when used as a center line.

To be accompanied by Standard Dwg. Nos. TM500 thru TM503

LEGEND

℄ — 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.

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OREGON STANDARD DRAWINGS

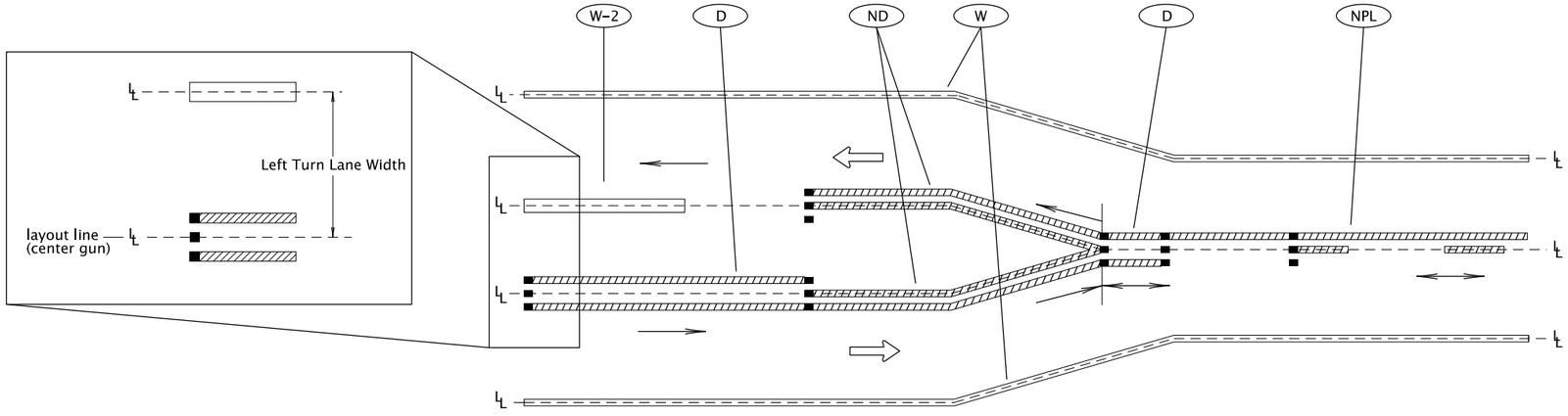
ALIGNMENT LAYOUT: GENERAL

2018

DATE	REVISION DESCRIPTION

tm560.dgn 07-09-2018

TM560



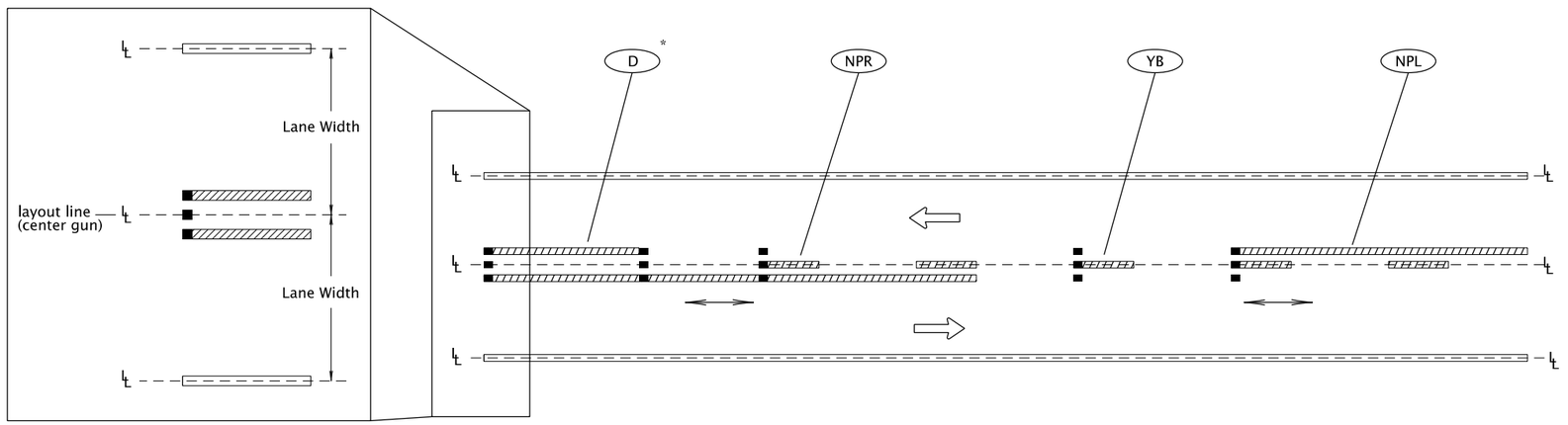
LEFT TURN LANE ALIGNMENT LAYOUT

General note:

1) Install control points for pavement marking alignment layout along the center gun location.
2) Increasing stationing from left to right

LEGEND

- Direction Of Travel and Thru Traffic Side.
- Lane line dimensions are shown on the striping plans.
- Direction of striping truck (may go either direction)
- Direction of striping truck (may go one direction only)
- Three gun installation system (center dot represents center gun)



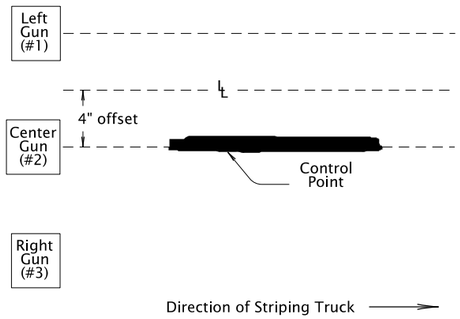
CENTERLINE ALIGNMENT LAYOUT

*When ND is used as centerline markings, a control point layout 4" offset from the lane line is required.

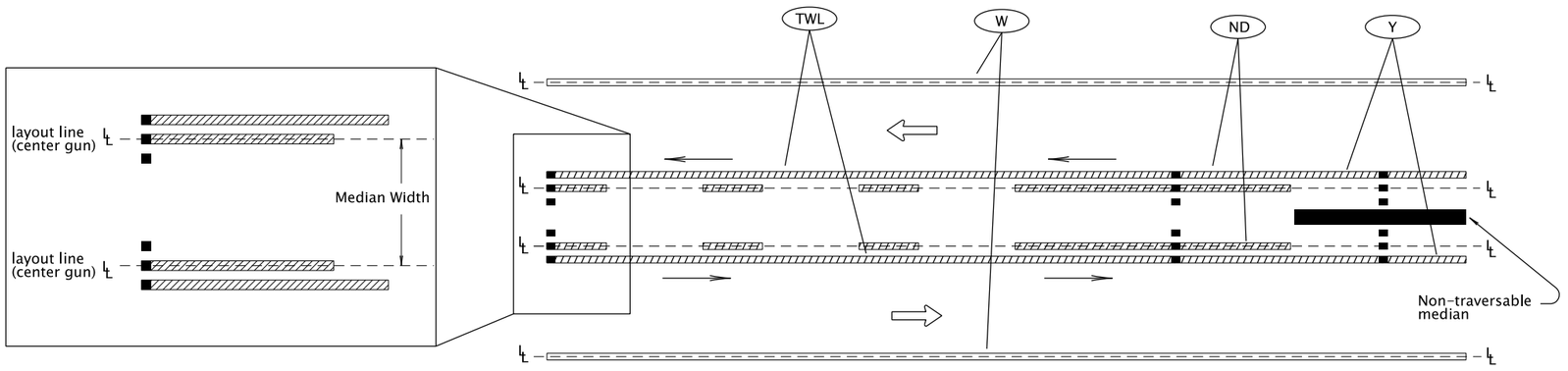
Line Types requiring control points to be 4" offset from lane line:

ND

For centerlines only



4" Offset of Lane Line and Center Gun



MEDIAN ALIGNMENT LAYOUT

To be accompanied by Standard Dwg. Nos. TM500 thru TM503

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.

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OREGON STANDARD DRAWINGS

ALIGNMENT LAYOUT: LEFT TURN LANE, CENTERLINE & MEDIANS

2018

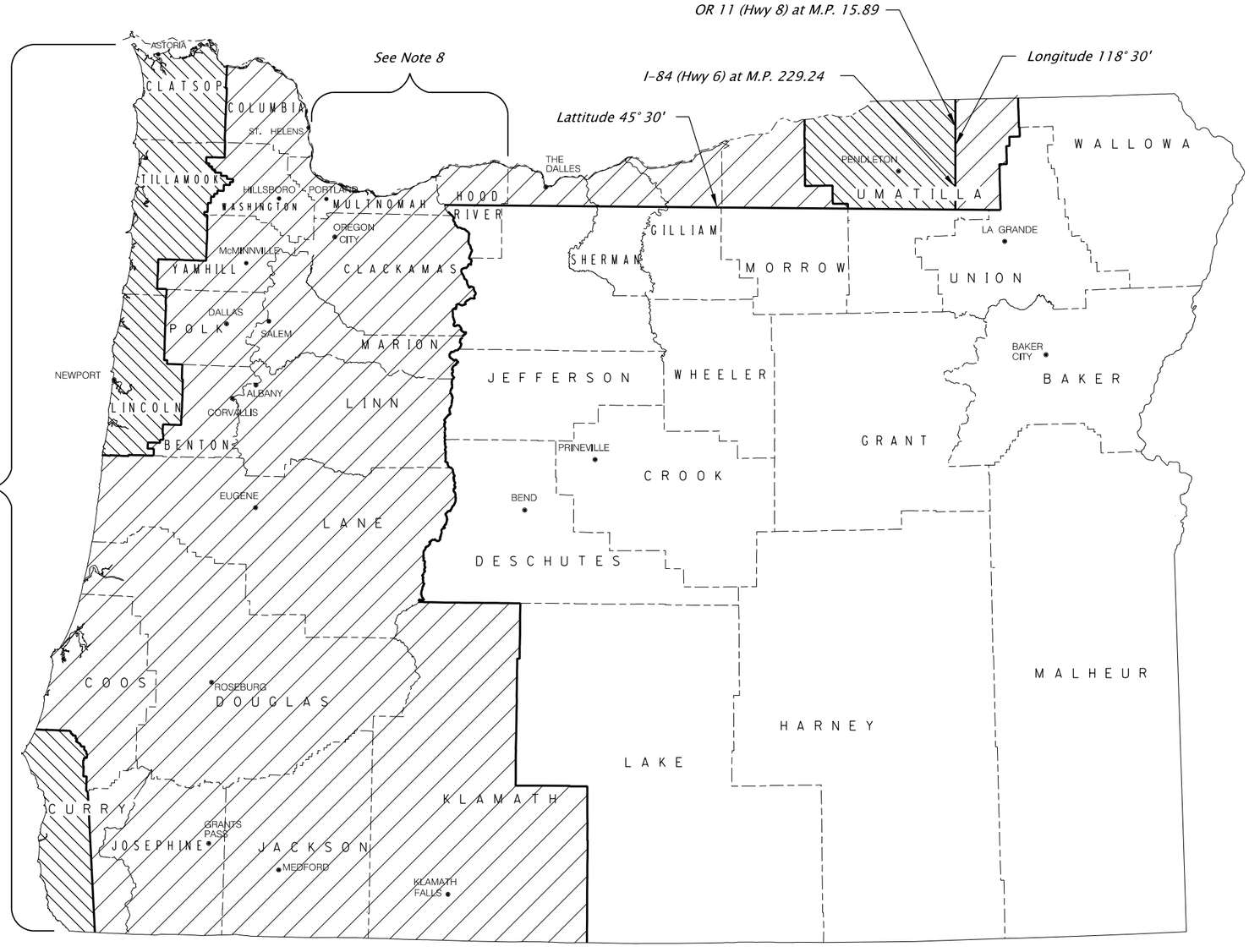
DATE	REVISION DESCRIPTION

tm561.dgn 07-09-2018

TM561

Effective Date: June 01, 2019 - November 30, 2019

TM561



NOTES:

1. *The wind velocity map as shown is adapted from AASHTO 2001 4th Edition - "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", Appendix C, Figure C-3 and Section 3, Figure 3-2. It uses the wind speed map shown in Figure 1609 of the 2007 Oregon Structural Code to account for locations in the State with special wind regions.*
2. *The wind velocities shown above are 3-Second Gust wind velocities.*
3. *The Exposure Catagory is C.*
4. *The mean recurrence interval is 50-Years.*
5. *Mountanious terrain, gorges, and ocean promontories are classified as special wind regions and shall be examined for unusual wind conditions.*
6. *The Interval Height (Kz) is 30 ft.*
7. *All areas with full exposure to ocean winds shall be designated 110 mph areas.*
8. *Areas in Multnomah and Hood River counties with full exposure to Columbia River Gorge winds shall be designated 110 mph areas.*
9. *Localities may have adopted wind speed higher that shown on this map. Those higher wind speed shall be used.*

CALC. BOOK NO. _____

BASELINE REPORT DATE 06-JAN-2012

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

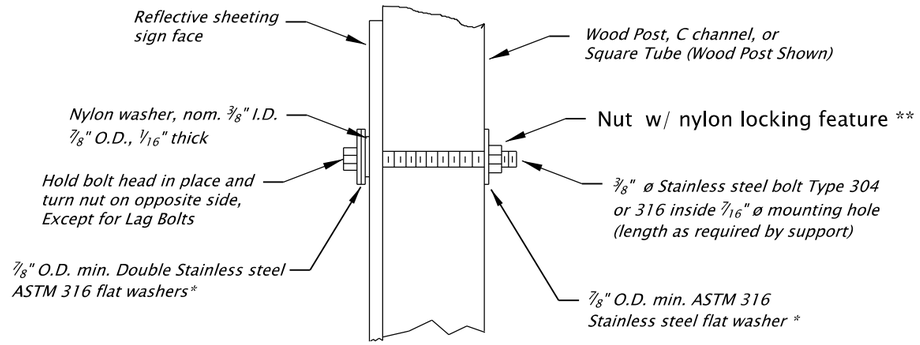
3 SECOND GUST WIND SPEED MAP

2018

DATE	REVISION DESCRIPTION

TM671.dgn 10-JUL-2017

TM671



Note:
1)When signs are placed on opposing sides of post, 3/8" x 3" lag bolts can be used instead of through bolt.
2) Use nylon and stainless steel washers when signs are placed on both sides of post.
3) Burr threads at junction with nut when locknuts are not used.
4) Post bolts to extend beyond the tightened nuts within the limits of 1/4" to 1".

** Stainless steel bonded sealing washer with neoprene layer is an acceptable substitue*

*** Acceptable substitute for nylon locking nuts:*
ANCO PIN-LOC
TRI-LOC® Top Lock Locknut

SIGN ATTACHMENT DETAIL

CALC. BOOK NO. _ _ _ _ _ _ _ _ _ _ _ _

BASELINE REPORT DATE 06-JUL-2015

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

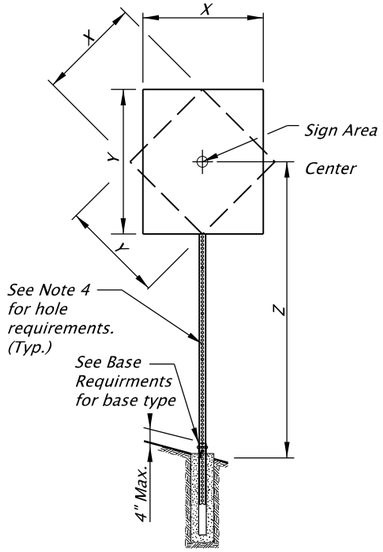
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

SIGN ATTACHMENTS

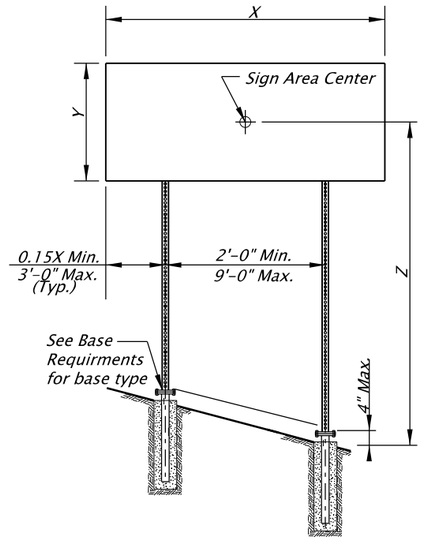
2018

DATE	REVISION DESCRIPTION



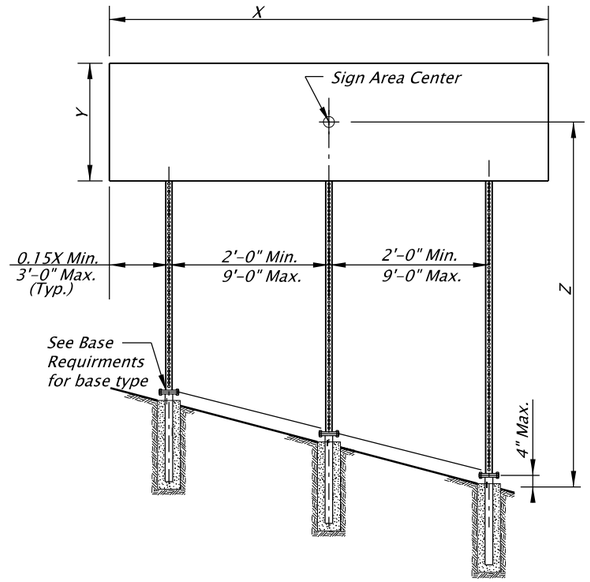
SINGLE POST ELEVATION

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 crash 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	555	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

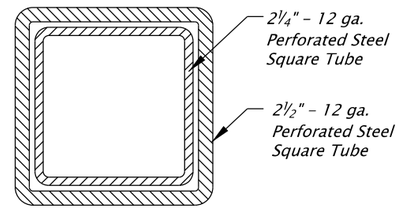
TEMPORARY PERFORATED STEEL SQUARE TUBE TABLE

* - 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

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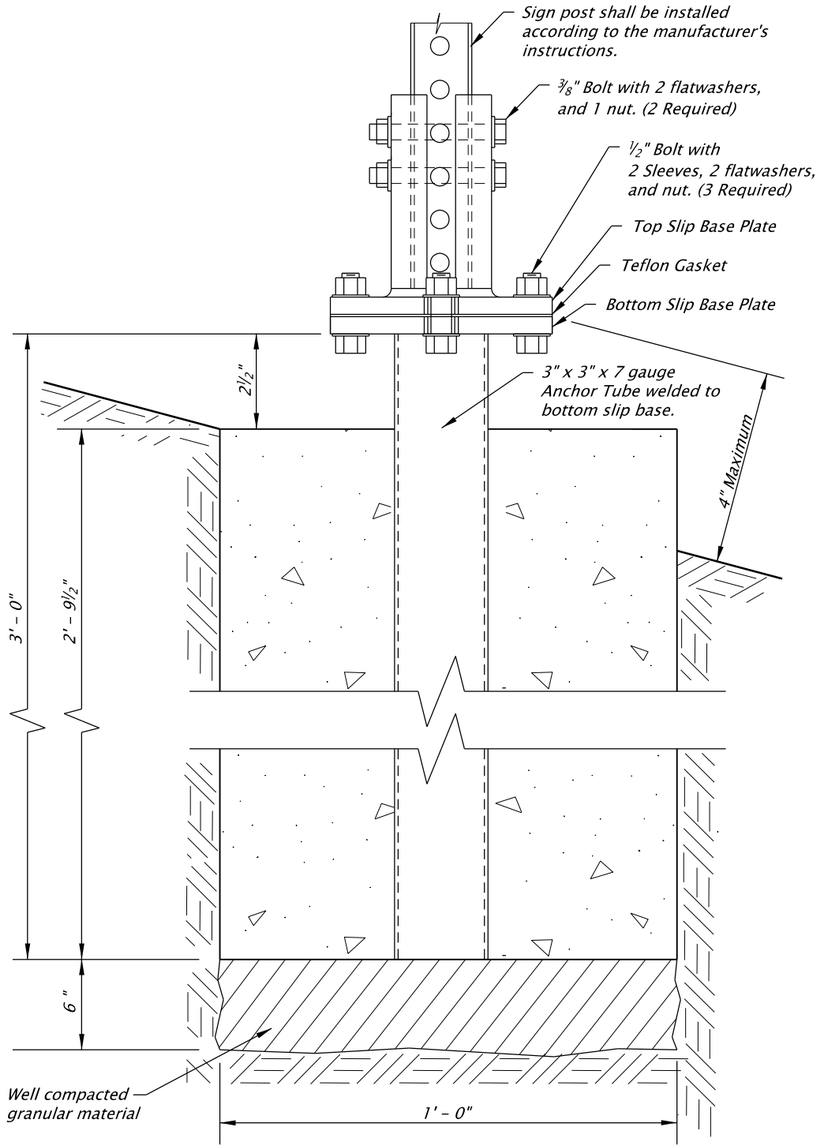
OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION

2018

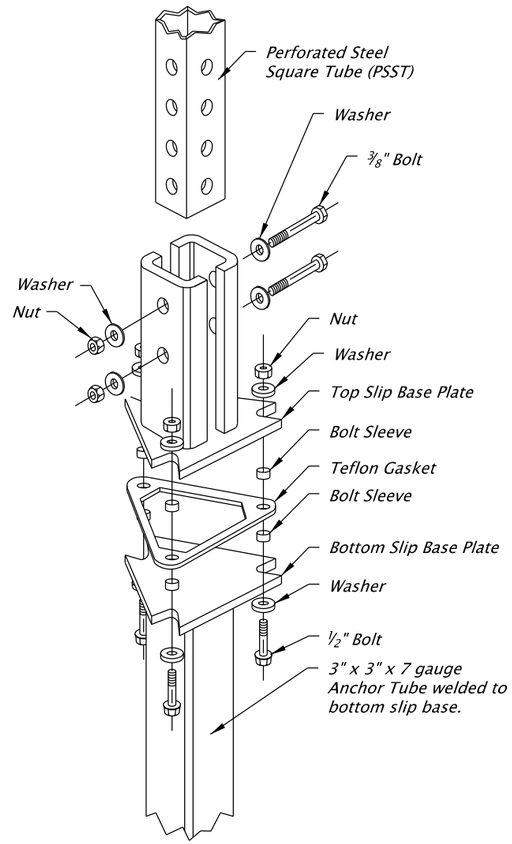
DATE	REVISION DESCRIPTION
07/17	Changed G140 to G90.

tm688.dgn 10-JUL-2017



SLIP BASE ELEVATION

No scale

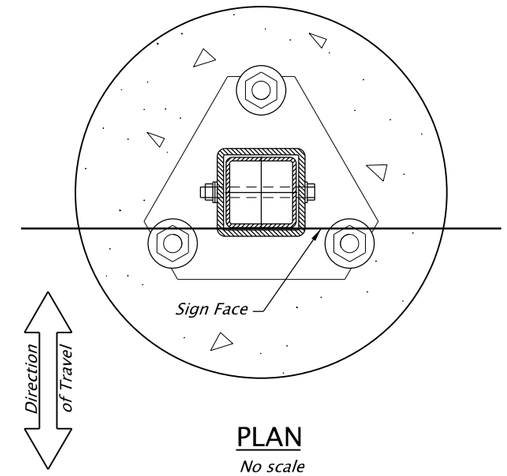


SLIP BASE EXPLODED VIEW

No scale

General Notes:

1. *Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.*
2. *Slip base steel shall be hot dipped galvanized or approved equal.*
3. *Footing concrete shall be Commercial Grade Concrete (fc = 3000 psi) per Specification 00440. The CGC mixture may be accepted at the site of placement according to 00440.14.*
4. *Material grade for base hardware connection shall be according to the manufacturer's recommendation and based on crash testing.*
5. *All slip bases shall be pre-assembled by the manufacturer and shall be installed according to the manufacturer's instructions.*
6. *Use slip bases listed on the ODOT Qualified products list or submit crash testing data, installation instructions, and unstamped working drawings according to 00150.35.*
7. *Slip base details shown are not for a specific manufacturer and are only shown to convey general pieces of a slip base system. Specific slip base material will be acccording to the manufacturer's documentation.*



PLAN

No scale

Accompanied by dwgs. TM681, TM687

CALC. BOOK NO. 5752

BASELINE REPORT DATE 06-JAN-2012

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

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OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SLIP BASE FOUNDATION

2018

DATE	REVISION DESCRIPTION

Effective Date: June 1, 2019 - November 30, 2019

TM688

TM688

TAPER TYPES & FORMULAS	
TAPER	FORMULA
Merging (Lane Closure)	"L"
Shifting	"L"/2 or ½"L"
Shoulder Closure	"L"/3 or ⅓"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

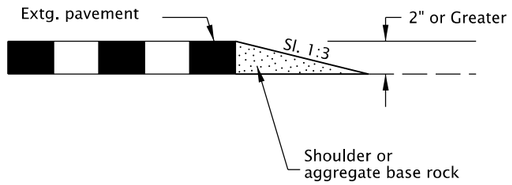
MINIMUM LENGTHS TABLE					
"L" VALUE FOR TAPERS (ft)					BUFFER "B" (ft)
★ SPEED (mph)	W = Lane or Shoulder Width being closed or shifted				
	W ≤ 10	W = 12	W = 14	W = 16	
25	105	125	145	165	75
30	150	180	210	240	100
35	205	245	285	325	125
40	265	320	375	430	150
45	450	540	630	720	180
50	500	600	700	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 = $S^2W/60$, 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

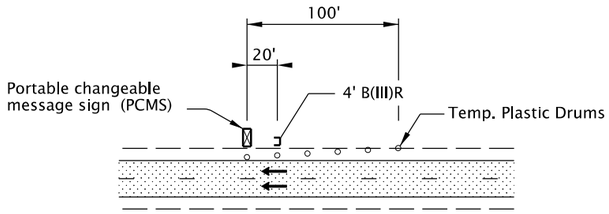
NOTES:
- Place traffic control devices on 10 ft. spacing for intersection and access radii.
- When necessary, sign spacing may be adjusted to fit site conditions. Limit spacing adjustments to 30% of the "A" dimension for all speeds.

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.



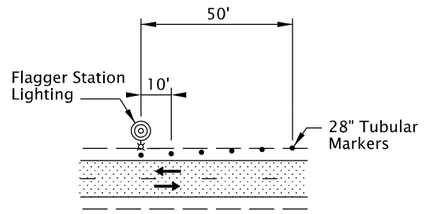
EXCAVATION ABRUPT EDGE

NOTES:
- Install PCMS beyond the outside shoulder, when possible.
- Use the appropriate type of barricade panels for PCMS location. Right shoulder, use Type B(III)R Left shoulder, use Type B(III)L
- 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



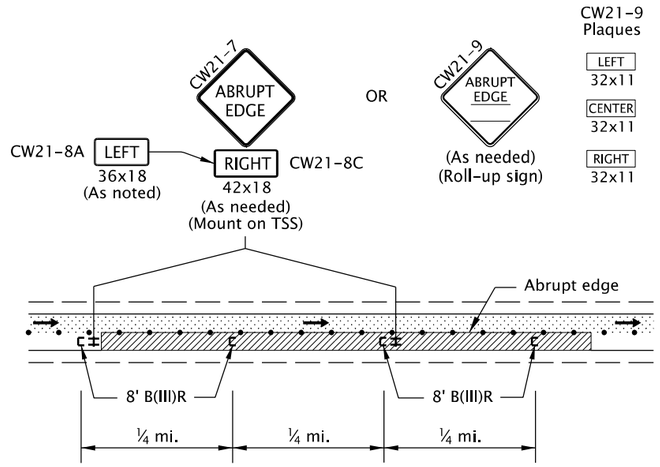
PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) INSTALLATION

NOTES:
- Install Flagger Station Lighting beyond the outside shoulder, where practical.
- Use six tubular markers in shoulder taper on 10' 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' B(III)R barricades with 8' B(III)L 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.

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

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

UNDER TRAFFIC

UNDER CONSTRUCTION

- 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.

CALC. BOOK NO. TM09-01

BASELINE REPORT DATE 01-JAN-2019

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OREGON STANDARD DRAWINGS

TABLES, ABRUBT EDGE AND PCMS DETAILS

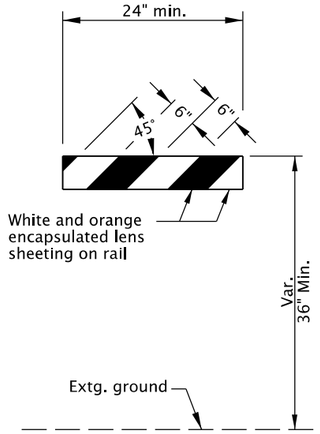
2018

DATE	REVISION DESCRIPTION

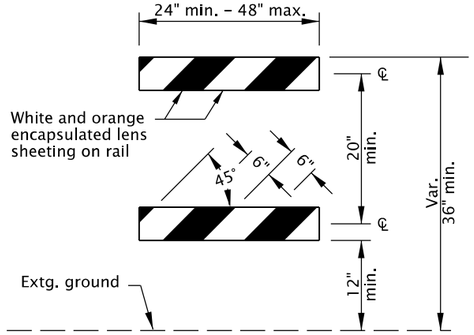
tm800.dgn 01-JAN-2019

TM800

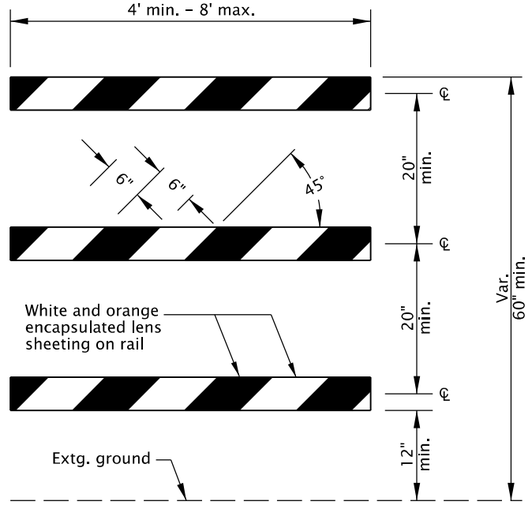
Effective Date: June 1, 2019 - November 30, 2019



TYPE I



TYPE II



TYPE III

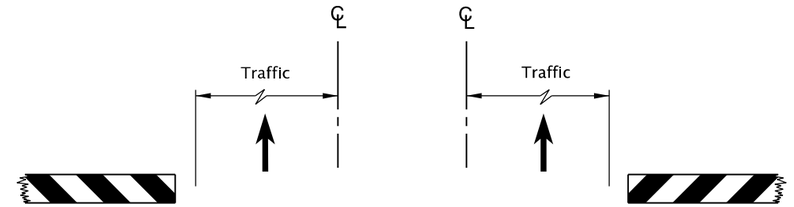
BARRICADE RAIL LAYOUT

GENERAL NOTES FOR ALL DETAILS:

- Sandbags (approximately 25 lb sack filled with sand) may be placed on lower frame to provide additional ballast.
- Ballast shall not extend above bottom rail or be suspended from barricade.
- For rails less than 36" long, 4" wide stripes shall be used.
- Rails must be 8" min. to 12" max. in height.
- Use barricades from ODOT Qualified Products List (QPL).
- Use 4' Type III barricades where horizontal space is limited.
- Do not block bike lanes or shoulders unless the facility is properly closed and signed.
- Do not place barricades in sidewalks unless sidewalk is closed and a temporary pedestrian accessible route (TPAR) is signed according to the TCP. See Dwg. No. TM 844.

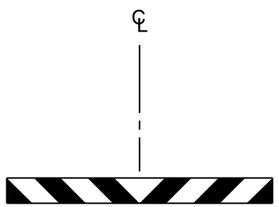
NOTES:

- Markings for barricade rails shall slope downward at an angle of 45° in the direction traffic is to pass.
- Where a barricade extends entirely across a roadway, it is desirable that the stripes slope downward in the direction toward which traffic must turn in detouring.
- Where both right and left turns are provided for, slope the chevron striping downward in both directions from the center of the barricade.
- For full roadway closures, the C or LR barricade may be used. Extend barricades completely across roadway unless access is required for local road users.

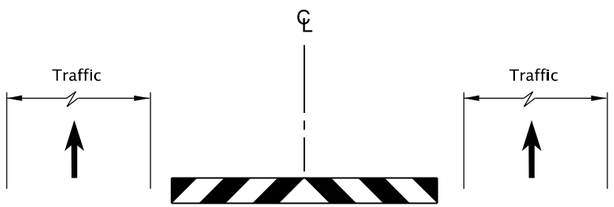


LT. SIDE – L
(For approaching traffic)

RT. SIDE – R
(For approaching traffic)

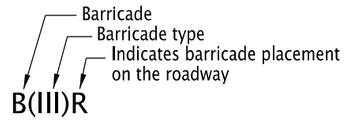


CLOSED – C
(For approaching traffic)



LT. / RT. – LR
(For approaching traffic)

DIAGRAM FOR BARRICADE PLACEMENT AND SLOPE MARKING



BARRICADE NOTATION

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2019

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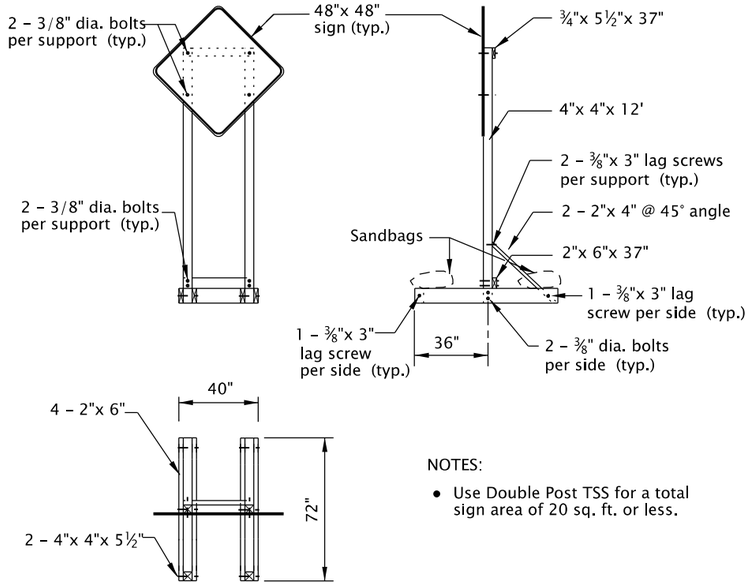
OREGON STANDARD DRAWINGS

TEMPORARY BARRICADES

2018

DATE	REVISION DESCRIPTION
01-2019	REVISED NOTES

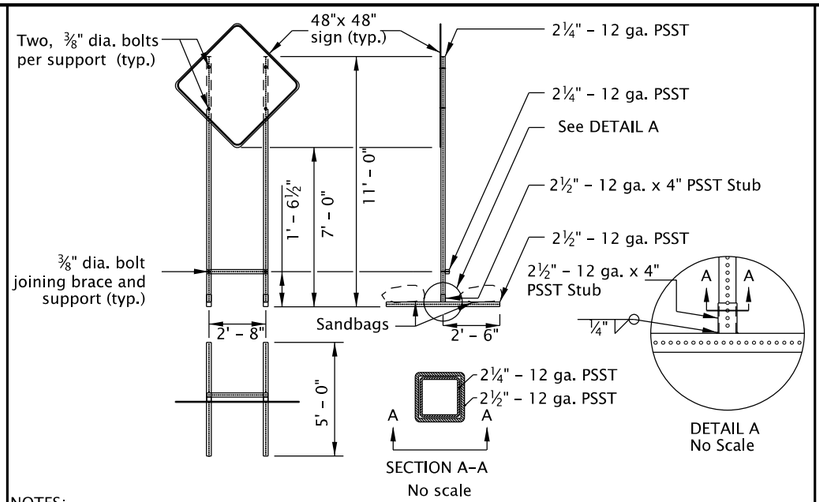
TM820



NOTES:

- Use Double Post TSS for a total sign area of 20 sq. ft. or less.

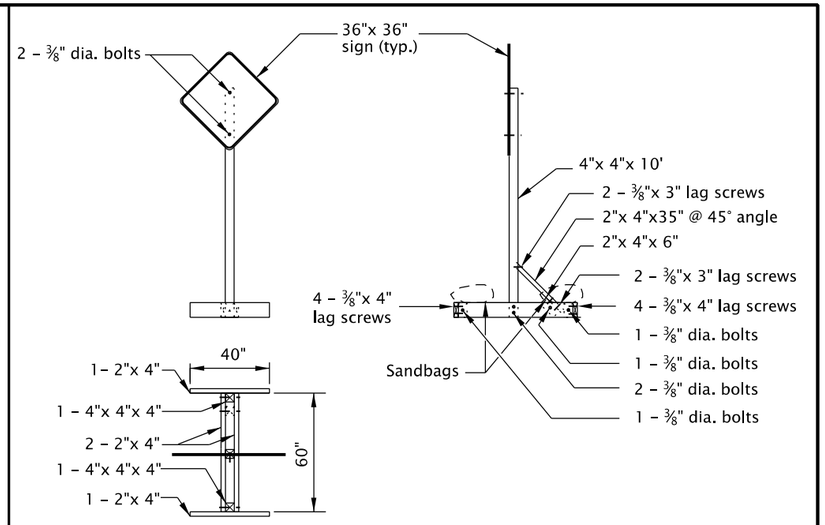
DOUBLE POST
TEMPORARY SIGN SUPPORT (TSS)



NOTES:

- Use PSST TSS's for a total sign area of 16 sq. ft. or less.
- All members shall have a minimum yield stress of 50 ksi.
- Galvanize steel according to ASTM A653 with coating designation G90. Remove Galvanizing from steel before welding. Repair Galvanizing according to ASTM A780.
- Use A325 Bolts or equivalent.
- 2¼" – 12 ga. PSST to extend entire length inside of the 2½" – 12 ga. x 4" PSST Stub.
- Do not use bolt to secure 2¼" PSST inside of the 2½" – 12 ga. x 4" PSST Stub.
- Weld steel according to AWS D.1.1.

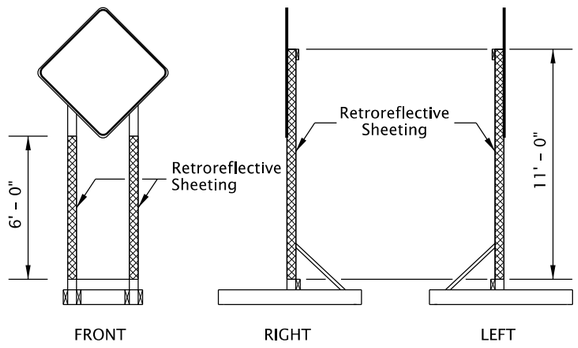
PERFORATED STEEL SQUARE TUBE (PSST)
TEMPORARY SIGN SUPPORT (TSS)



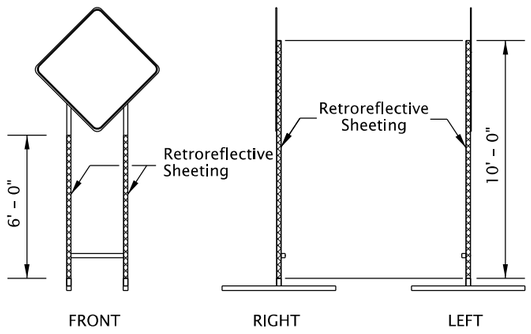
NOTES:

- Use Single Post TSS for a total sign area of 12 sq. ft. or less.
- Use Single Post TSS for mounting "Business Access" (CG20–11) signs. Do not mount signs on Type II or III Barricades.

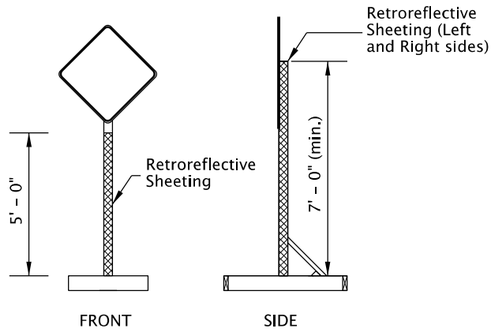
SINGLE POST
TEMPORARY SIGN SUPPORT (TSS)



DOUBLE POST
TEMPORARY SIGN SUPPORT (TSS)



PERFORATED STEEL SQUARE TUBE (PSST)
TEMPORARY SIGN SUPPORT (TSS)



SINGLE POST
TEMPORARY SIGN SUPPORT (TSS)

TEMPORARY SIGN SUPPORT GENERAL NOTES:

- DO NOT TIP OVER TSS AT ANY TIME.
- Do not locate TSS's in locations that block pedestrian/bicycle traffic.
- For wooden TSS's, use either Douglas Fir or Hem Fir, which is surfaced four sides (S4S) and free of heart center (FOHC).
- See "Temporary Sign Placement" detail on TM822 for sign installation heights.
- Do not place or stack ballast more than 24" above the ground.
- When sign is inconsistent with current work zone conditions, cover sign: or turn sign 90 degrees away from approaching traffic. Remove TSS from roadway when signing is not needed for more than 3 days.
- Place a minimum of 50 lbs of sandbags on each of the four TSS supports legs. (25 lb. max per bag) (min. 100 lbs per side of each TSS).

NOTES:

- Apply flourescent orange, ANSI Type VIII or IX retroreflective sheeting to TSS posts, as shown, for all temporary signs, except "STOP" and "DO NOT ENTER". For "STOP" and "DO NOT ENTER" signs, used red ANSI Type III or IV retroreflective sheeting on the TSS posts.
- Apply sign post retroreflectivity to each TSS post facing front; and to the left and right sides of the TSS, as shown. Use 3" wide sheeting for wood post TSS's. Use 2" wide sheeting for PSST TSS's.
- Sheeting may be applied directly to post material; or applied to a rigid, lightweight substrate, then securely attached to the posts.

SIGN POST REFLECTIVE SHEETING PLACEMENT

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01–JAN–2019

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OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

2018

DATE	REVISION DESCRIPTION
01–2019	REVISED NOTES

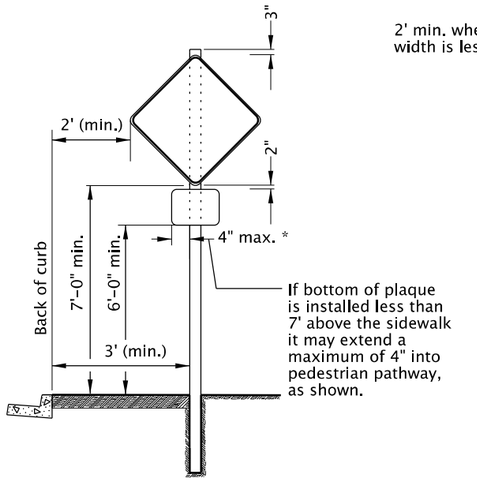
Effective Date: June 1, 2019 - November 30, 2019

TM821

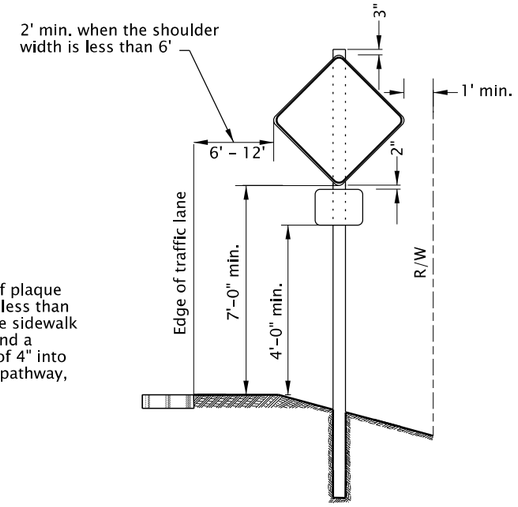
tm821.dgn 01–JAN–2019

NOTES:

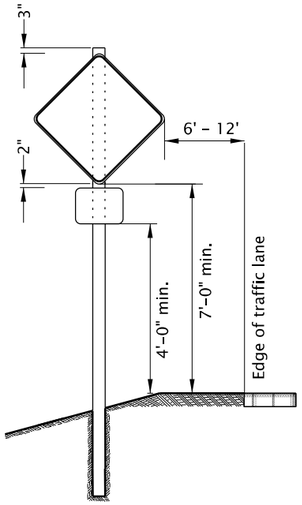
- Do not block bicycle lanes, sidewalks, or TPAR's with sign supports. Maintain minimum widths for these facilities according TCP Design Manual, MUTCD, ADA, or as directed.
- To be accompanied by Drg. Nos. TM670, TM671, TM687, TM688 & TM689.



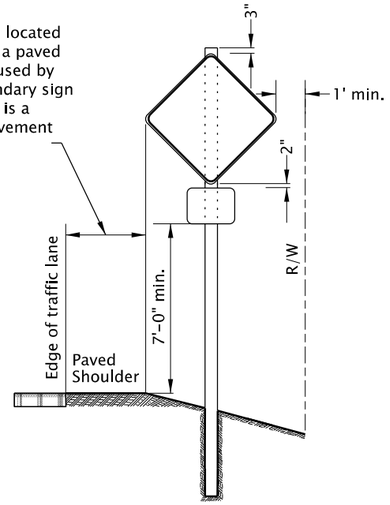
URBAN AREAS WITH CURB/SIDEWALK



RURAL AREAS



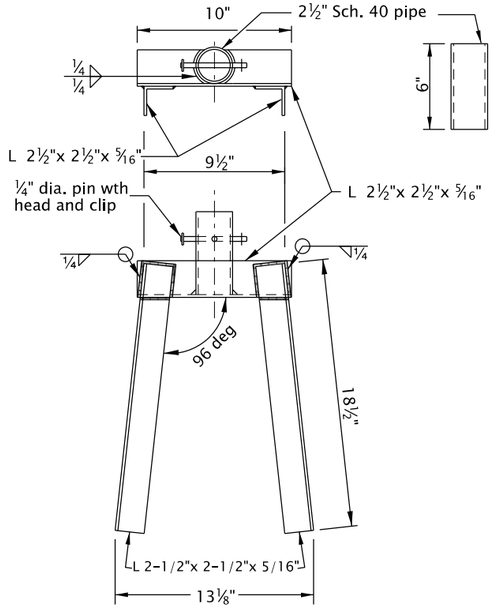
Where temporary signs are located adjacent to or intrude into a paved shoulder or other surface used by bicycle traffic, install secondary sign (plaque) so bottom of sign is a minimum of 7'0" above pavement surface, as shown.

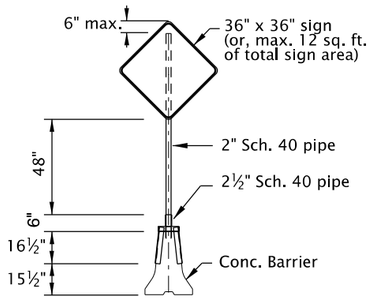


DIVIDED HIGHWAY/FREEWAY MEDIANS
NO CURB/SIDEWALK

RURAL OR URBAN AREAS - CURB OR NO CURB
BICYCLES ON SHOULDER

TEMPORARY SIGN PLACEMENT





NOTES:

- Drill additional holes so sign can be rotated 90 degrees and pinned when not in use.
- All structural steel shall conform to ASTM A36.
- Support fits both 32" and 42" tall "F" barrier.
- Use for supporting a maximum 12 sq. ft. of total sign area.
- Place support at connection between two concrete barrier sections.
- Weld steel according to American Welding Society (AWS) D.1.1.
- Do not use clipped signs.

CONCRETE BARRIER SIGN SUPPORT

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2019

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OREGON STANDARD DRAWINGS

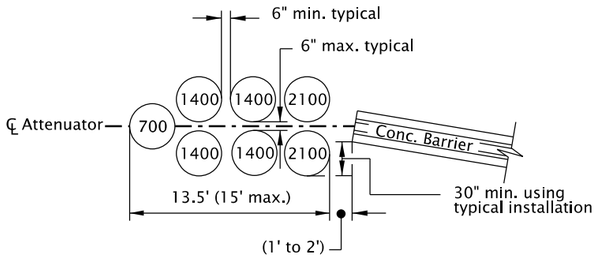
TEMPORARY SIGN SUPPORTS

2018

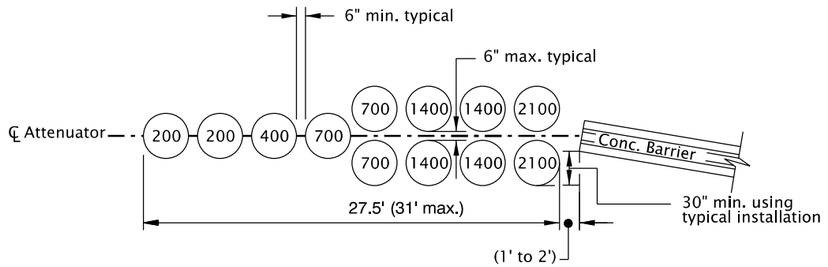
DATE	REVISION DESCRIPTION
01-2018	REVISED DRAWING
01-2019	REVISED NOTES

TM822

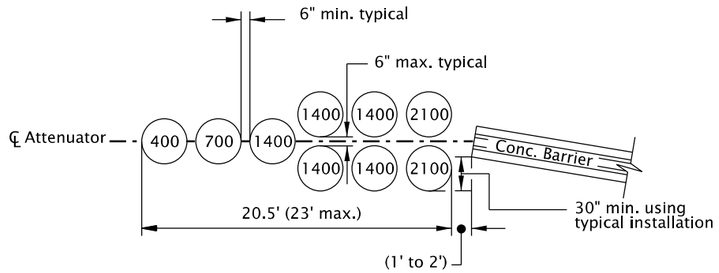
Effective Date: June 1, 2019 - November 30, 2019



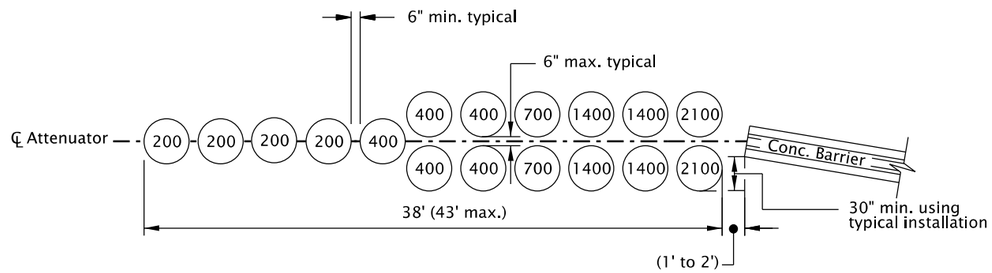
35 mph LAYOUT



55 mph LAYOUT

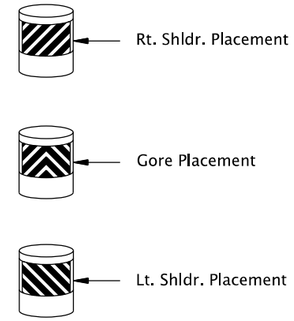


45 mph LAYOUT



70 mph LAYOUT

(Single Barrier)
TEMPORARY IMPACT ATTENUATOR LAYOUTS



OBJECT MARKERS

GENERAL NOTES FOR ALL DETAILS:

- Use the appropriate layout configuration based on the pre-construction posted speed, as approved by the Engineer.
- For posted speeds not shown, use the next higher speed for attenuator selection.
- Use Temporary Impact Attenuator from the QPL. Typical outside diameter of each module is 36".
- Typical attenuator layouts shown. Layouts may vary by both speed and manufacturer. Number shown within each module is mass of dry sand in pounds.
- Final alignment of attenuator will be established in the field, as directed. At locations where vibrations and surface slopes may cause modules to shift, modules shall be anchored to prevent movement according to manufacturer's instructions and as approved by the engineer.
- The leading module of each attenuator shall be delineated with the appropriate object marker, as shown above.
- The object marker shall be 1/16" thick aluminum sheeting approx. 24" wide, 30" deep, and covered with yellow encapsulated lens sheeting. Black stripes 5" wide shall be silk-screened on the sheeting at a 45° slope and with 4" space between stripes.
- In cold climates, mix sand with 5% rock salt by weight to prevent freezing.
- To be accompanied by Drg. No. TM833.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2019

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OREGON STANDARD DRAWINGS

TEMPORARY IMPACT ATTENUATORS

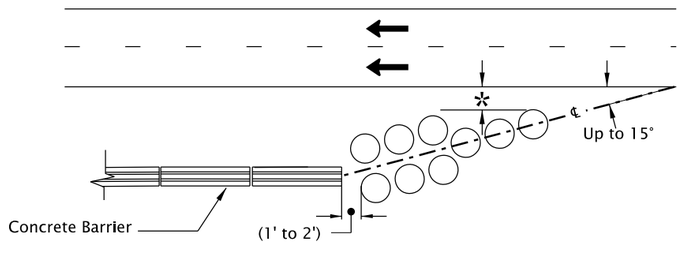
2018

DATE	REVISION DESCRIPTION

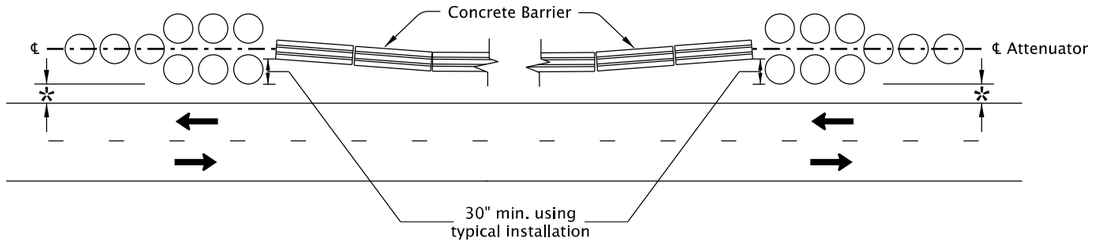
tm831.dgn 01-JAN-2019

TM831

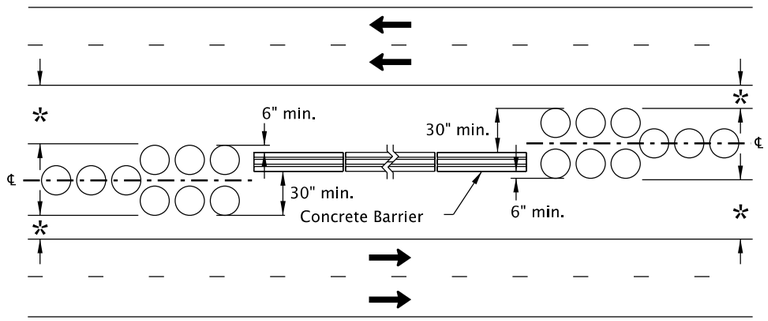
Effective Date: June 1, 2019 - November 30, 2019



DIVIDED HIGHWAY OR ONE-WAY ROADWAY
Angled Installation

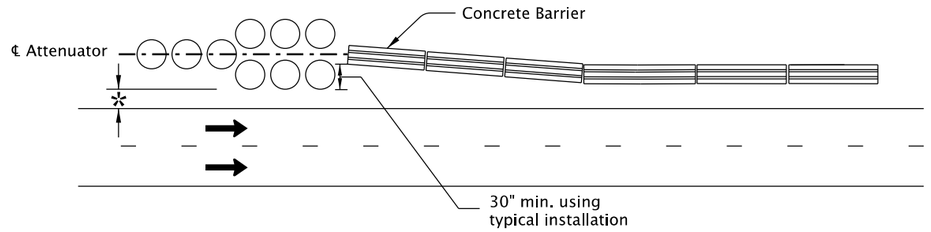


TWO-WAY ROADWAY
Typical Installation

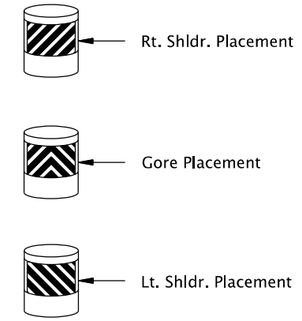


DIVIDED HIGHWAY
Typical Installation

NOTES:
Use the One-Way Roadway Typical Installation for each barrier terminal when the available width in median does not allow for the installation of the Divided Highway Typical Installation.



ONE-WAY ROADWAY
Typical Installation



OBJECT MARKERS

GENERAL NOTES FOR ALL DETAILS:

- Use the appropriate layout configuration based on the pre-construction posted speed, as approved by the Engineer.
- Use Temporary Impact Attenuator from the QPL. Typical outside diameter of each module is 36".
- Attenuator layout shown is a typical layout. Layouts may vary by both speed and manufacturer.
- Divided or One-Way Attenuator layouts may be oriented toward oncoming traffic at angles up to 15°.
- Final alignment of attenuator will be established in the field, as directed. At locations where vibrations and surface slopes may cause modules to shift, modules shall be anchored to prevent movement according to manufacturer's instructions and as approved by the engineer.
- In cold climates, mix sand with 5% rock salt by weight to prevent freezing.

TEMPORARY IMPACT ATTENUATOR
TYPICAL INSTALLATIONS

✲ Minimum 2', otherwise maximize the distance from the traveled way to the temporary impact attenuator.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2019

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OREGON STANDARD DRAWINGS

TEMPORARY IMPACT ATTENUATORS

2018

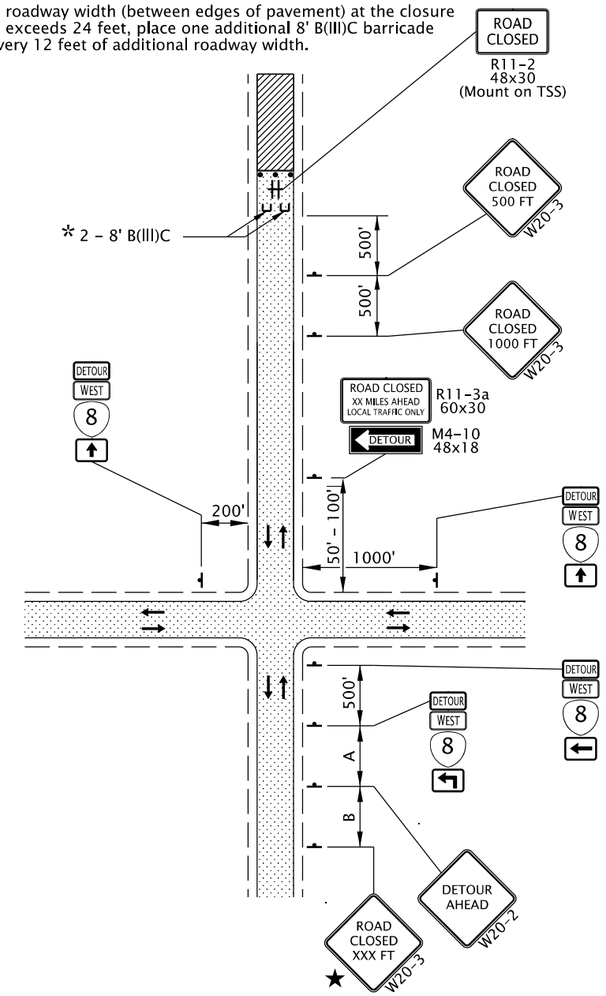
DATE	REVISION DESCRIPTION

tm833.dgn 01-JAN-2019

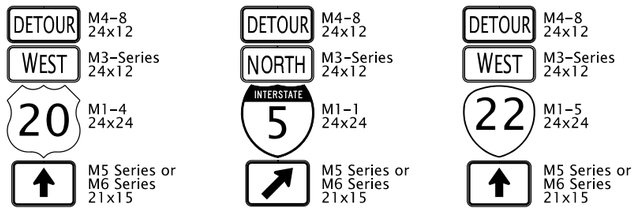
TM833

NOTES:
If closure point is less than 1500 ft. from nearest intersection, use a "ROAD CLOSED TO THRU TRAFFIC" (R11-4)sign in place of the "ROAD CLOSED XX MILES AHEAD" sign.

* If the roadway width (between edges of pavement) at the closure point exceeds 24 feet, place one additional 8' B(III)C barricade for every 12 feet of additional roadway width.

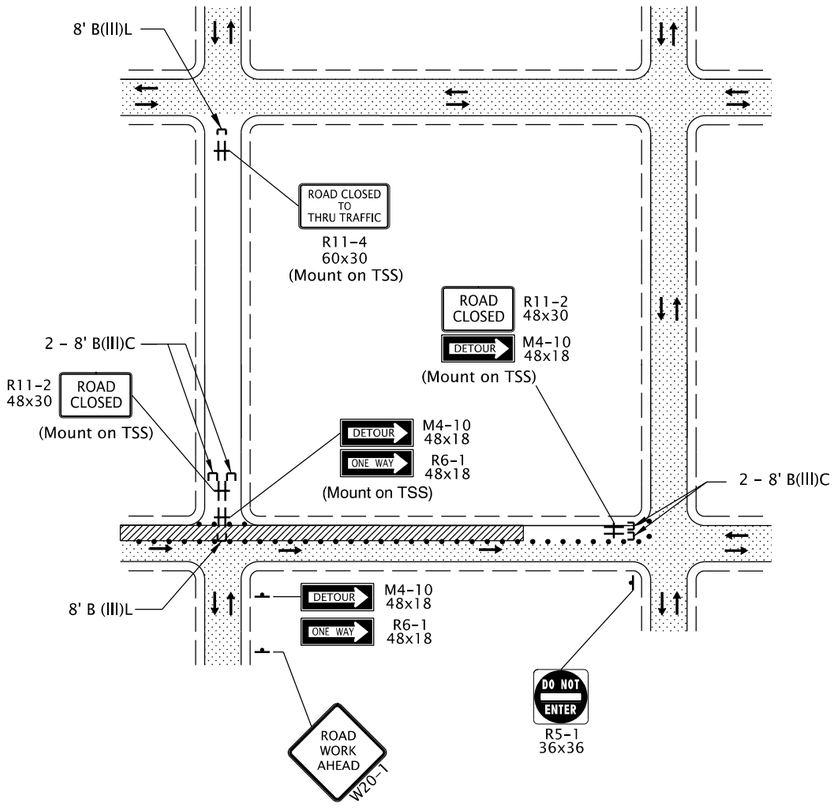


TYPICAL ROAD CLOSURE WITH DETOUR



TYPICAL TRAILBLAZER ASSEMBLY

NOTE:
When detour routes overlap, each Route Shield will include a seperate cardinal direction, detour, and directional arrow auxiliary sign assembly.



TYPICAL PARTIAL ROAD CLOSURE

GENERAL NOTES FOR ALL DETAILS:

★ A "Street Name" rider may be used to enhance Road Closure signing; or provide a project specific design; or, as shown in the traffic control plan.

##x18 Rider
Rider width to be determined by width of street name.

48 x 60 (nom.)
Project Specific Design

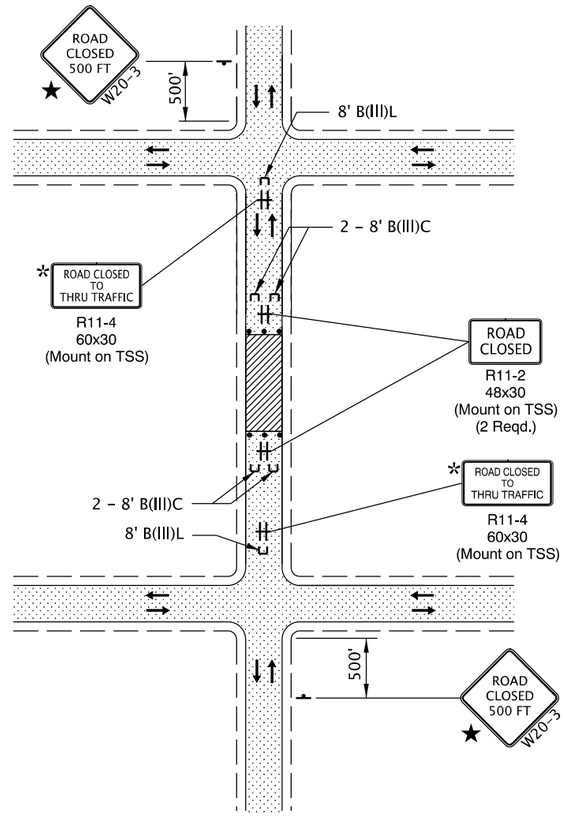
48 x 60 (nom.)
Project Specific Design

- Use a minimum of two Type III barricades for a road closure. For roads ≥ 36' wide between curbs or edge of pavement, use a minimum of three Type III barricades for the closure point.
- For full road closures, the C or LR barricade may be used.
- Place additional signing as directed.
- To determine sign spacing A, B, & C, use the "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Drg. TM800.
- To be accompanied by Drg. Nos.TM820 & TM821.

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

UNDER TRAFFIC

UNDER CONSTRUCTION



NOTE:
* If accesses exist between intersection and point of closure, install "ROAD CLOSED TO THRU TRAFFIC" sign as shown.

TYPICAL ROAD CLOSURE

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2019

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OREGON STANDARD DRAWINGS

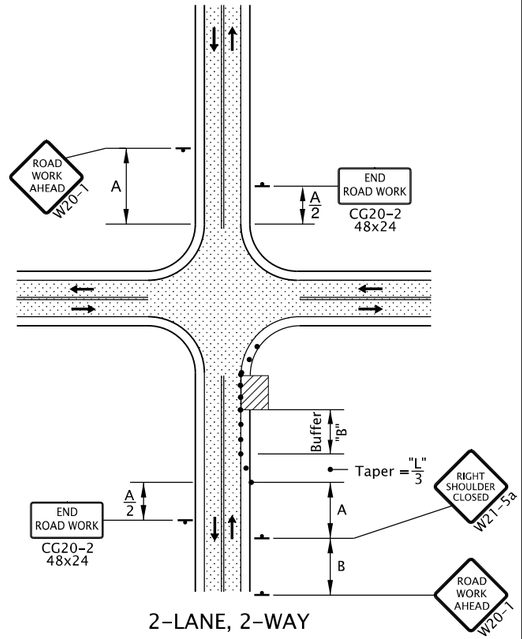
CLOSURE DETAILS

2018

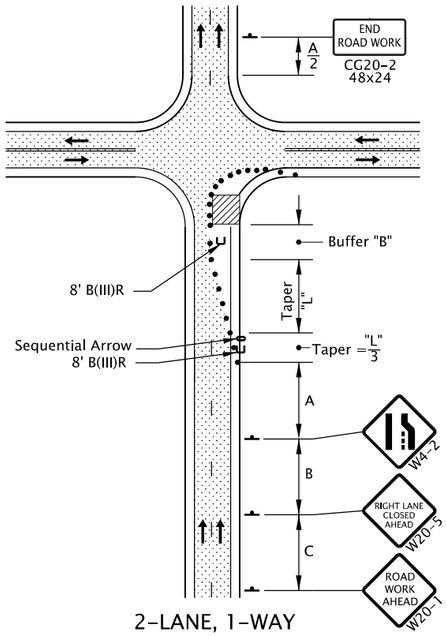
DATE	REVISION DESCRIPTION
01-2018	REVISED DRAWING

tm840.dgn 01-JAN-2019

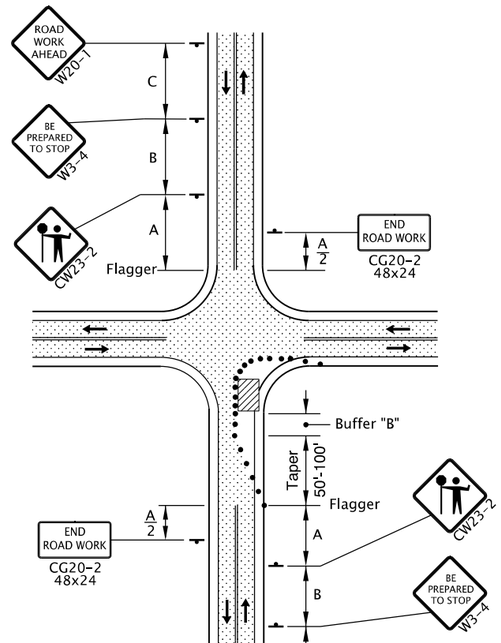
TM840



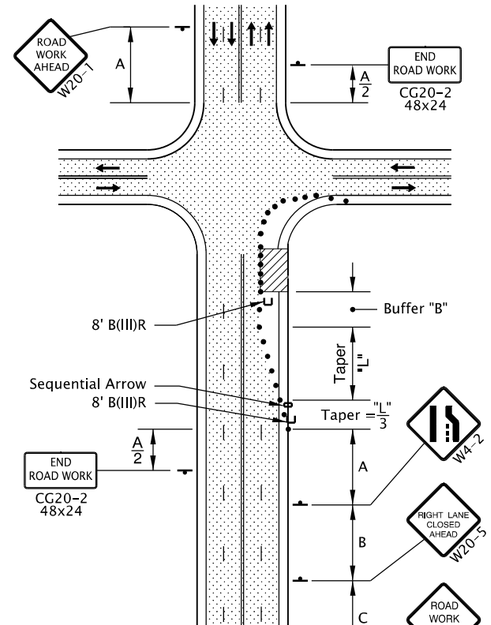
2-LANE, 2-WAY
SHOULDER CLOSURE



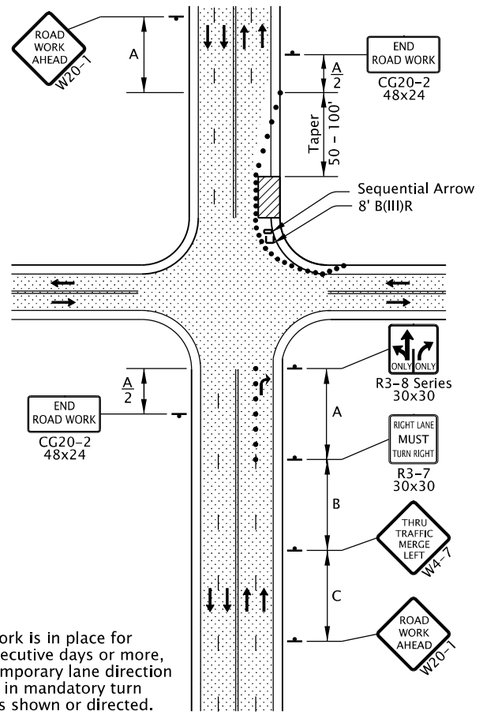
2-LANE, 1-WAY
RIGHT LANE CLOSURE



2-LANE, 2-WAY
ONE LANE CLOSURE

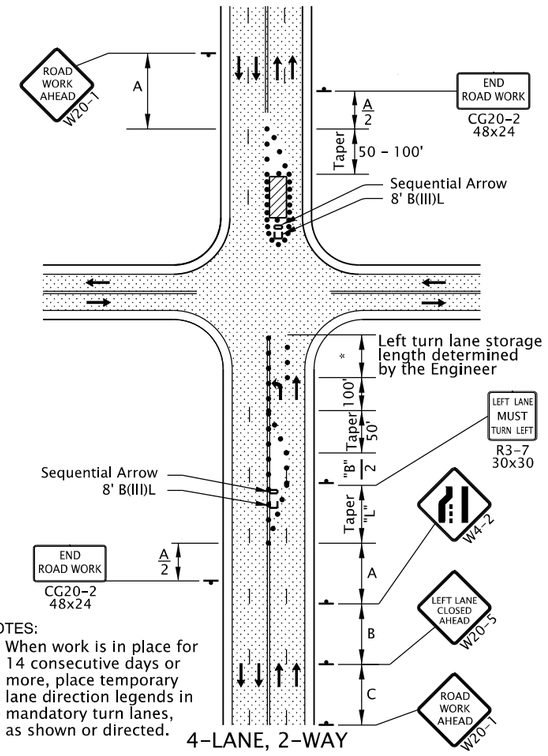


4-LANE, 2-WAY
RIGHT LANE CLOSURE, NEAR SIDE



NOTES:
- When work is in place for 14 consecutive days or more, place temporary lane direction legends in mandatory turn lanes, as shown or directed.

4-LANE, 2-WAY
RIGHT LANE CLOSURE, FAR SIDE



NOTES:
- When work is in place for 14 consecutive days or more, place temporary lane direction legends in mandatory turn lanes, as shown or directed.

4-LANE, 2-WAY
LEFT LANE CLOSURE, FAR SIDE

GENERAL NOTES FOR ALL DETAILS:

- Additional Traffic Control Measures (TCM) may be required for all legs of the intersection.
- The "FLAGGER" (CW23-2) symbol sign shall be used only in conjunction with the "BE PREPARED TO STOP" (W3-4) sign.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" on Drg. TM800.
- For left lane or shoulder work, place TCD to close left lane or shoulder. Use "LEFT LANE CLOSED AHEAD" (W20-5) sign, "LEFT LANE ENDS" (W4-2L) symbol sign, or "LEFT SHOULDER CLOSED" (W21-5a) sign, where applicable.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Drg. TM800.
- When a through road intersects within the work zone, place a "ROAD WORK AHEAD" (W20-1) sign in advance of the intersection at sign spacing A.
- Use plastic drums in lane closure tapers when the posted speed is 45 mph or greater.
- Where shoulder width is limited, Sequential Arrow may be placed within the lane closure taper.
- Place channelizing devices around intersection radii and construction areas at 10' spacing.
- 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. TM820,TM821 & TM840.

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

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

UNDER TRAFFIC

UNDER CONSTRUCTION

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2019

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OREGON STANDARD DRAWINGS

INTERSECTION WORK ZONE DETAILS

2018

DATE	REVISION DESCRIPTION

tm841.dgn 01-JAN-2019

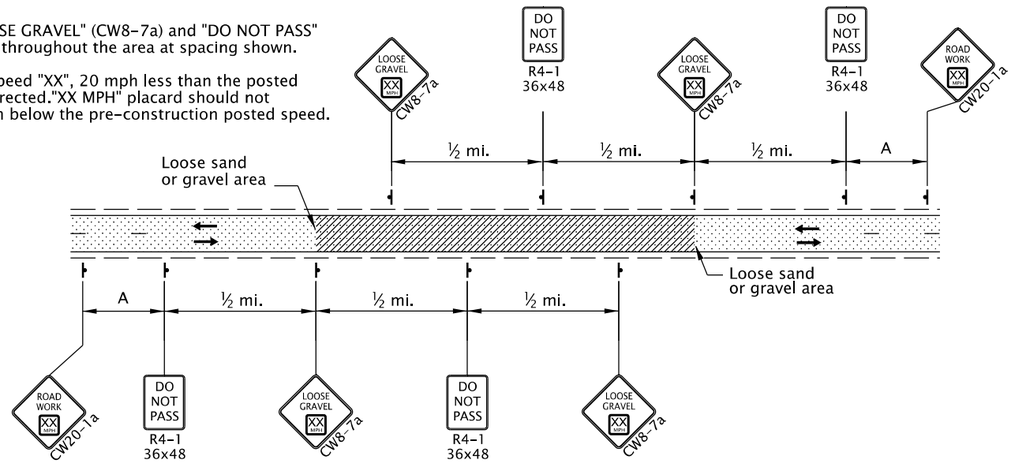
TM841

Effective Date: June 1, 2019 - November 30, 2019

TM841

NOTE:

- Continue "LOOSE GRAVEL" (CW8-7a) and "DO NOT PASS" (R4-1) signing throughout the area at spacing shown.
- Use advisory speed "XX", 20 mph less than the posted speed, or as directed."XX MPH" placard should not exceed 20 mph below the pre-construction posted speed.

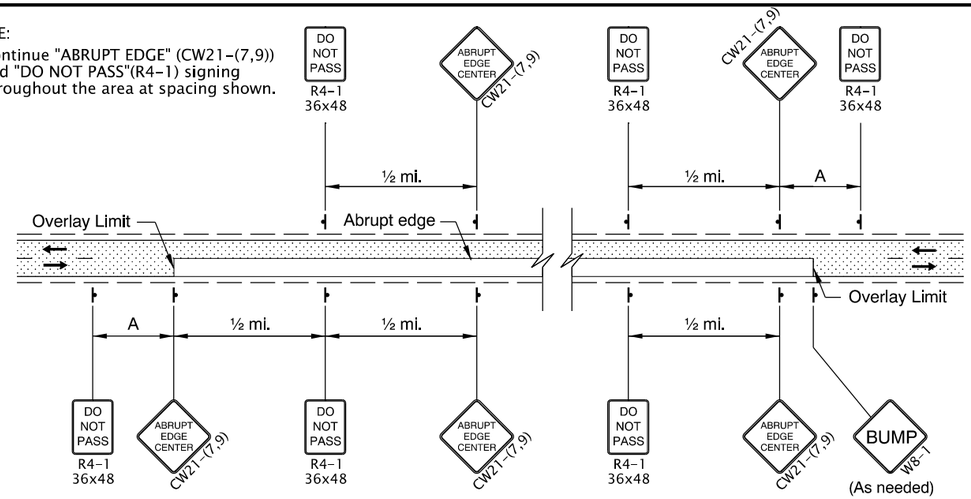


2-LANE, 2-WAY ROADWAY

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.

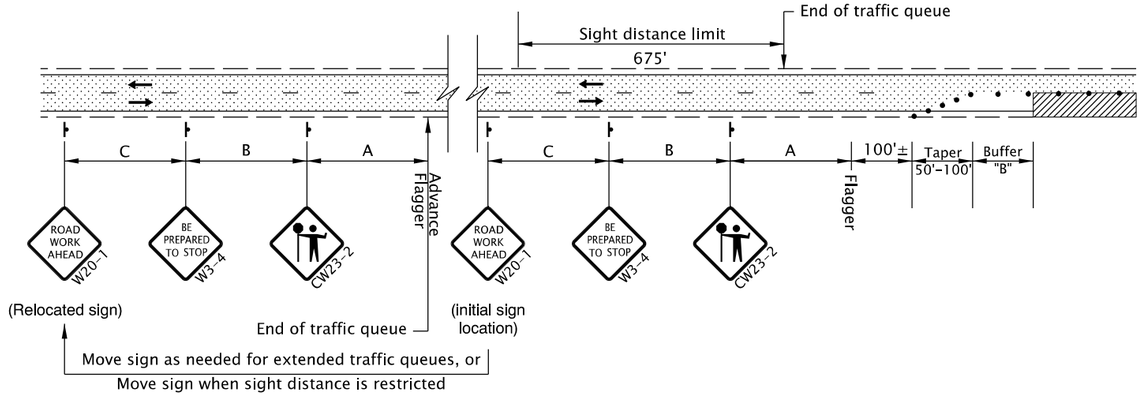


2-LANE, 2-WAY ROADWAY

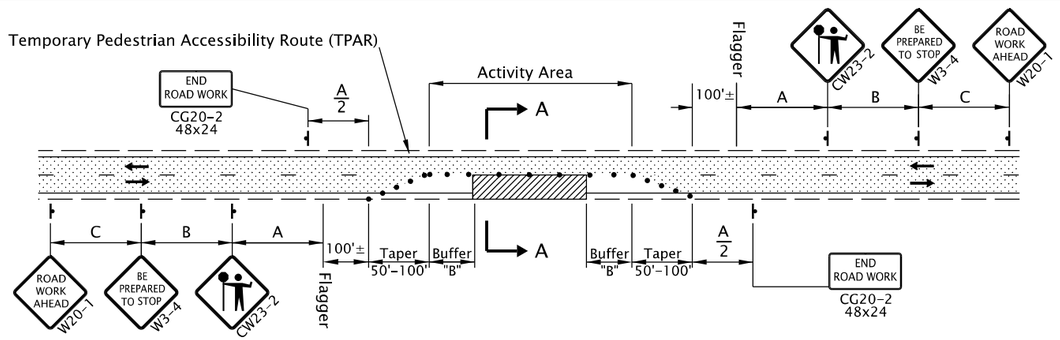
OVERLAY AREA SIGNING

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.

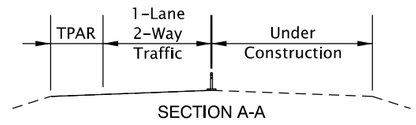


ADVANCE FLAGGER FOR EXTENDED TRAFFIC QUEUES



NOTE:

- When using pilot cars with flaggers to control traffic during paving operations, the Tubular Marker spacing along centerline may be increased to 200' within the Activity Area, as shown or as directed.
- Include CR4-23 signs mounted on Type II Barricade located approx. 50' before each Flagger.
- Coordinate and control pedestrians movements through the TPAR using Flaggers, other TCM, or as directed. When the existing shoulder is greater than or equal to 4' wide, provide a minimum of 4' of width for the TPAR.



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.

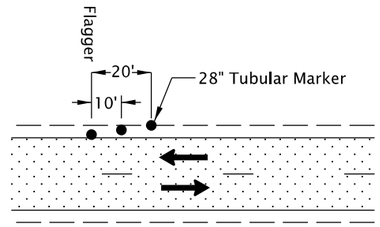
UNDER TRAFFIC

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-2019

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OREGON STANDARD DRAWINGS

2-LANE, 2-WAY ROADWAYS

2018

DATE	REVISION DESCRIPTION
01-2018	REVISED DRAWING AND NOTES

01-JAN-2019

tm850.dgn

TM850

Effective Date: June 1, 2019 - November 30, 2019

TM850