DESCHUTES COUNTY ROAD DEPARTMENT
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENT

DESCHUTES COUNTY
APRIL 2020

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: BARRY JOHNSON, P.E.
PHONE: (541) 508-7710
EMAIL: bjohnson@parametrix.com

SURVEYOR
PARAMETRIX
150 NW PACIFIC PARK LANE
BEND, OR 97701
CONTACT: ANDREW HUSTON
PHONE: (541) 508-7710
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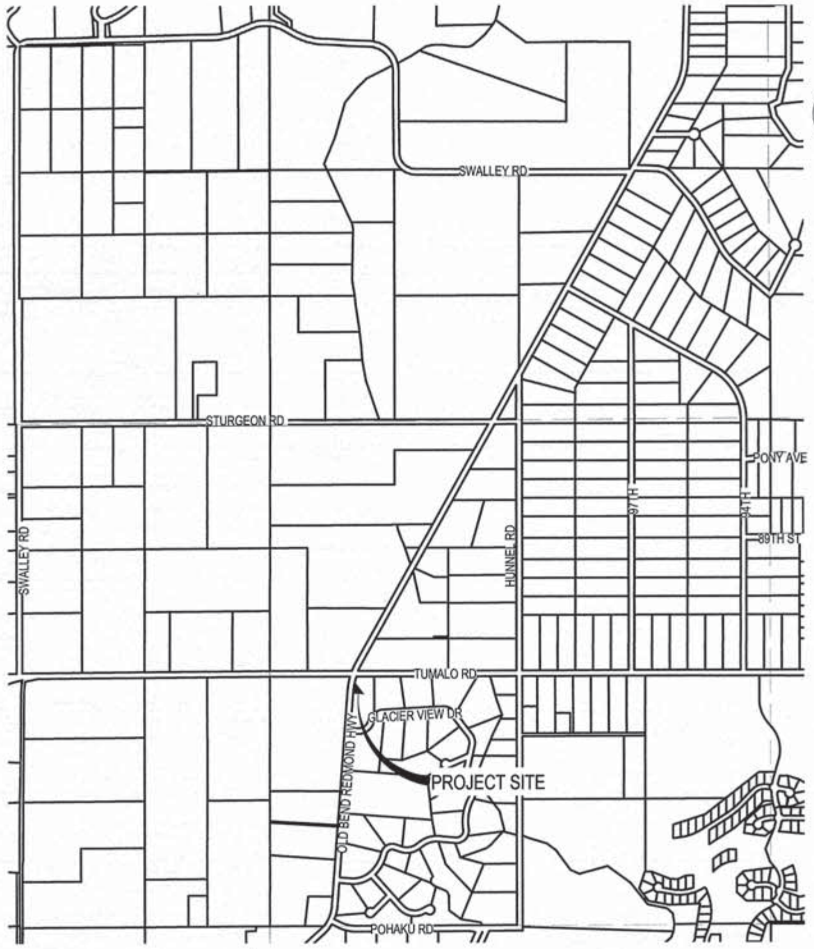
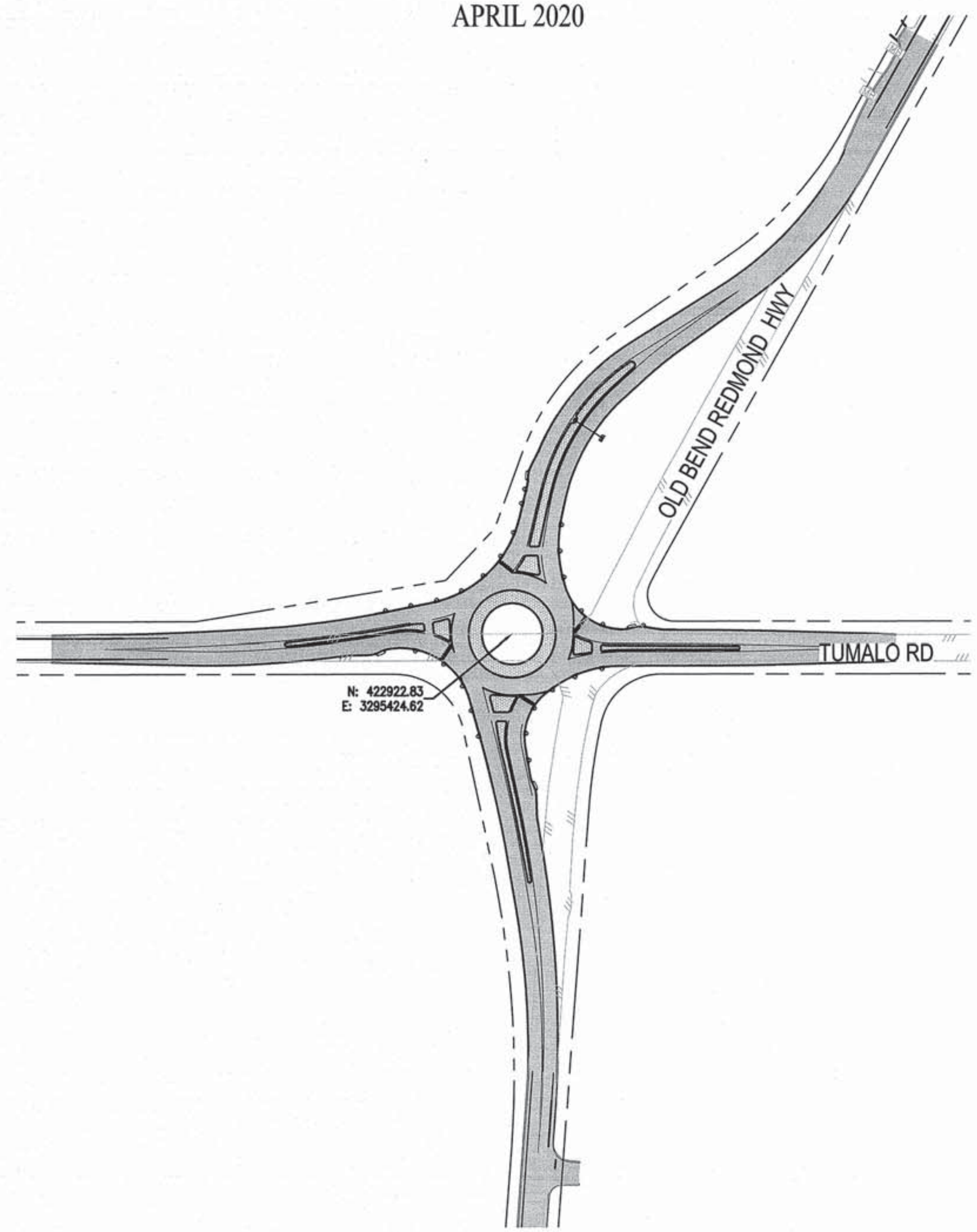


VICINITY MAP
1" = 1000'

SHEET INDEX



AREA MAP
1" = 100'

EXISTING LEGEND:

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

PROPOSED LEGEND

CURB CUT
BIKE RAMP
SWALE
CURB
GRAVEL SHOULDER
WOOD FENCE
SAWCUT
ASPHALT
STAMPED CONCRETE

CALL BEFORE YOU DIG

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.

APPROVALS:

DESCHUTES COUNTY ROAD DEPARTMENT: ________ Cody Smith 2020.06.09 07:26:56 -07'00'

REVISIONS	DATE	BY	
			DESIGNED DR
			DRAWN DR/LYF
			CHECKED
			APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME BE2509005-C1.0-CS00
JOB No. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER 14,972 OREGON JULY 25, 1990 BARRY C. JOHNSON
EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

COVER SHEET

DRAWING NO.
1 OF 43
C1.0

LAYOUT: C1.0 COVER SHEET PATH: U:\Bend\Projects\Clients\2509-deschutes county\297-2509-005 obrh design phase\99Svcs\CADD\DWG\tumalo rd rbas\C0'S PLOTTED BY: ricodev DATE: Friday, April 3, 2020 9:26:33 AM

CONSTRUCTION NOTES:

1. DURING THE COURSE OF THE WORK, CONTRACTOR SHALL COORDINATE AND ACCOMMODATE OTHER CONTRACTORS OR OPERATIONS OF THE COUNTY.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.

FOUND MONUMENTS TABLE

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1220	422906.52	3294632.26	3275.26	3 INCH BRASS CAP DOWN 0.8 FEET IN MONUMENT BOX MARKED DESCHUTES COUNTY SURVEYOR'S OFFICE
1221	420258.71	3294630.02	3295.56	FOUND 3-1/4 INCH ALUMINUM CAP MARKED DESCHUTES COUNTY
1222	421677.02	3295371.85	3278.14	FOUND 5/8 INCH IRON ROD WITH YELLOW PLASTIC CAP MARKED AST JR PLS 1988 UP 0.1
1223	422693.80	3295448.39	3272.99	FOUND 5/8 INCH IRON ROD WITH YELLOW PLASTIC CAP MARKED AST JR PLS 1988 DOWN 0.1
1224	422936.61	3295030.99	3273.00	FOUND 1/2 INCH IRON ROD DOWN 0.15
1225	422878.16	3294632.37	3274.24	FOUND 1/2 INCH SMOTTH IRON ROD DOWN 0.35
1226	423597.44	3295858.42	3284.40	FOUND SCREW AND WASHER AT TOP OF FENCE COLUMN
1227	424021.55	3296096.69	3294.95	FOUND 1/4 INCH IRON ROD
1228	424230.63	3296213.59	3310.83	FOUND 1/4 INCH IRON ROD BENT TIE POE
1229	422956.27	3295580.86	3274.48	FOUND 3-1/2 INCH BRASS CAP IN CONCRETE MARKED USGS
1240	421442.95	3295414.36	3277.79	FOUND 1/2 INCH IRON ROD BENT N60°E 0.9 TIED POE UP 0.5
1241	421891.69	3295448.31	3274.86	FOUND 1/2 INCH IRON ROD FLUSH
1242	422279.92	3295477.47	3272.75	FOUND 5/8 INCH IRON ROD FLUSH
1243	422689.31	3295507.93	3273.44	FOUND 1/2 INCH IRON ROD BENT N75°W 0.6 TIE POE FLUSH
1244	422877.25	3295731.56	3275.69	FOUND 1/2 INCH IRON ROD DOWN 0.3
1245	422877.70	3296336.60	3278.46	FOUND 1/2 INCH IRON ROD UP 0.1
1246	422877.86	3296816.21	3289.94	FOUND 1/2 INCH IRON ROD DOWN 0.3
1247	422877.68	3296931.17	3298.40	FOUND 1/2 INCH IRON ROD WITH ALUMINIM CAP NOT LEGIBLE DOWN 0.7

PARAMETRIX CONTROL TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1010	422931.40	3295085.52	3272.28	5/8 INCH IRON ROD WITH 1-1/2 INCH ALUMINUM CAP MARKED PARAMETRIX 1010
1011	424054.02	3296175.80	3304.63	5/8 INCH IRON ROD WITH 1-1/2 INCH ALUMINUM CAP MARKED PARAMETRIX 1011
1012	423528.34	3295826.96	3278.83	5/8 INCH IRON ROD WITH 1-1/2 INCH ALUMINUM CAP MARKED PARAMETRIX 1012
1013	422409.34	3295433.02	3273.25	5/8 INCH IRON ROD WITH 1-1/2 INCH ALUMINUM CAP MARKED PARAMETRIX 1013
1014	422926.56	3296050.24	3277.04	5/8 INCH IRON ROD WITH 1-1/2 INCH ALUMINUM CAP MARKED PARAMETRIX 1014
1016	422984.43	3295533.86	3275.30	5/8 INCH IRON ROD WITH RED PLASTIC CAP MARKED PMX CONTROL
1017	422880.28	3295563.18	3274.16	5/8 INCH IRON ROD WITH RED PLASTIC CAP MARKED PMX CONTROL

CONTROL POINTS & MONUMENTS
N.T.S
1 / C1.1

ODOT STD DWG INDEX	
RD 100	MAILBOX SUPPORT
RD 317	CULVERT EMBANKMENT PROTECTION AND RIPRAP PADS
RD 364	CONCRETE INLETS
RD 1040	SEDIMENT FENCE
TM 200	SIGN INSTALLATION DETAILS
TM 201	MISCELLANEOUS SIGN PLACEMENT DETAILS
TM 223	CONVENTIONAL ROADS DIRECTIONAL SIGN LAYOUT STREET NAME SIGNS
TM 500	PAVEMENT MARKING STANDARD DETAIL BLOCKS
TM 503	PAVEMENT MARKING STANDARD DETAIL BLOCKS
TM 530	INTERSECTION PAVEMENT MARKINGS (CROSSWALK, STOP BAR & BIKE LANE STENCIL)
TM 539	MEDIAN AND LEFT TURN CHANNELIZATION DETAILS
TM 560	ALIGNMENT LAYOUT: GENERAL
TM 561	ALIGNMENT LAYOUT: LEFT TURN LANE, CENTERLINE, & MEDIANS
TM 635	BREAKAWAY SIGN & LUMINAIRE SUPPORTS-SUPPORT LOCATION GUIDELINES
TM 671	3 SECOND GUST WIND SPEED MAP
TM 675	EXTRUDED ALUMINUM PANELS
TM 676	SIGN ATTACHMENTS
TM 678	SECONDARY SIGN MOUNTING DETAILS
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 810	TEMPORARY PAVEMENT MARKERS
TM 820	TEMPORARY BARRICADES
TM 821	TEMPORARY SIGN SUPPORTS
TM 822	TEMPORARY SIGN SUPPORTS
TM 840	CLOSURE DETAILS
TM 841	INTERSECTION WORK ZONE DETAILS
TM 850	2-LANE, 2-WAY ROADWAYS

LAYOUT: C1.1 GENERAL NOTES PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\TUMALO RD RBAs\CD'S PLOTTED BY: rlcoder DATE: Tuesday, April 28, 2020 1:49:07 PM

REVISIONS	DATE	BY	
			DESIGNED
			DRAWN
			CHECKED
			APPROVED

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C1.1-NT00
JOB No. 297-2509-005
DATE 12/2019

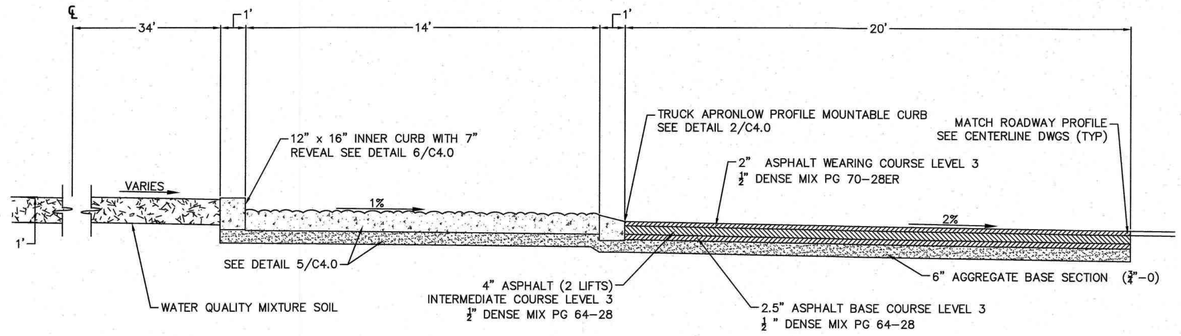
REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 25, 1980 — BARRY C. JOHNSON
EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

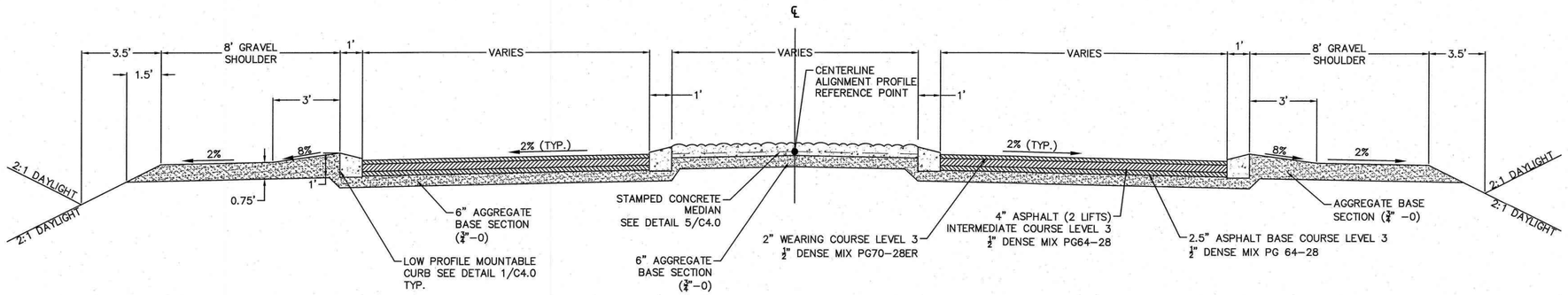
GENERAL NOTES

DRAWING NO.
2 OF 43
C1.1



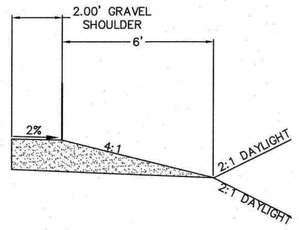
INNER ROUNDABOUT SECTION
STA: 0+00-4+40
N.T.S

1 / C2.0

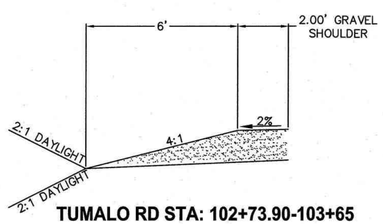


ROADWAY PERPETUAL SECTION
TUMALO RD STA: 103+65-104+66 STA:106+05-107+25
OBR HIGHWAY STA: 207+71.4-208+80 STA:210+20-211+25
N.T.S

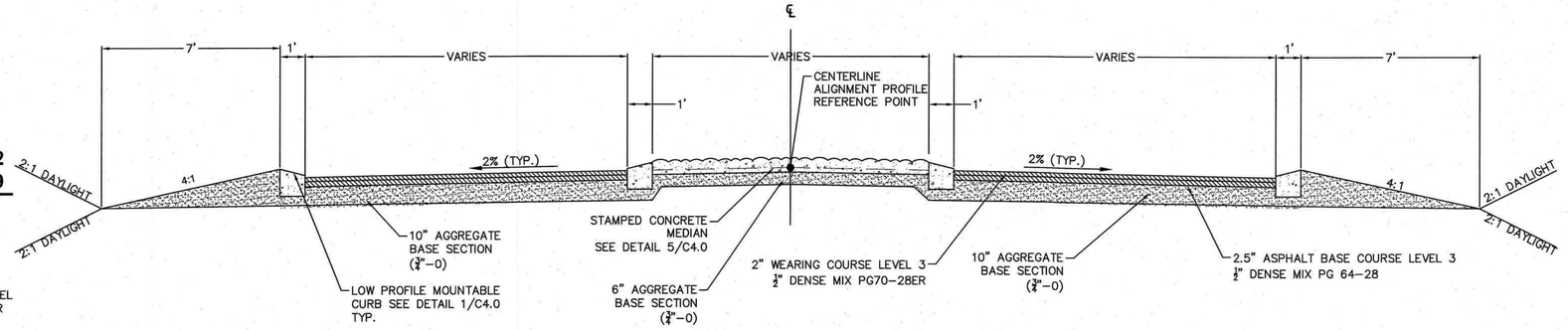
2 / C2.0



TUMALO RD STA: 106+71.90-107+25
N.T.S

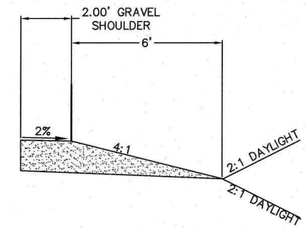


TUMALO RD STA: 102+73.90-103+65
OBR HIGHWAY STA: 207+71.4-207+01.2
OBR HIGHWAY STA: 211+77.9-212+38.9
N.T.S

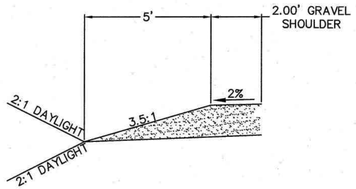


ROADWAY WITH MEDIAN & VARYING CURB
TUMALO RD STA: 102+73.90-103+65 STA:107+25-107.98.1
OBR HIGHWAY STA:206+00.8-207+71.4 STA: 211+25-212+38.9
N.T.S

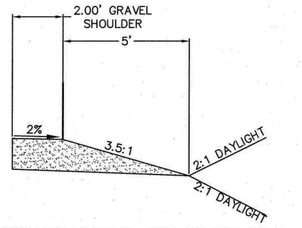
3 / C2.0



TUMALO RD STA: 102+73.90-103.34.8
OBR HIGHWAY STA:206+00.8-207+71.4
OBR HIGHWAY STA:211+25-212-38.9
N.T.S



TUMALO RD STA: 107+25-107+98.1
N.T.S



TUMALO RD STA: 107+25-107+98.1
N.T.S

	REVISIONS	DATE	BY	DESIGNED
				DRAWN
				CHECKED
				APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME BE2509005-C2.0-TS00
JOB No. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER 14,972 OREGON JULY 29, 1980 BARRY C. JOHNSON
EXPIRES: 6/30/2021

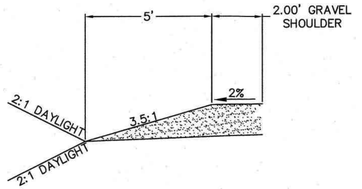
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

TYPICAL SECTIONS

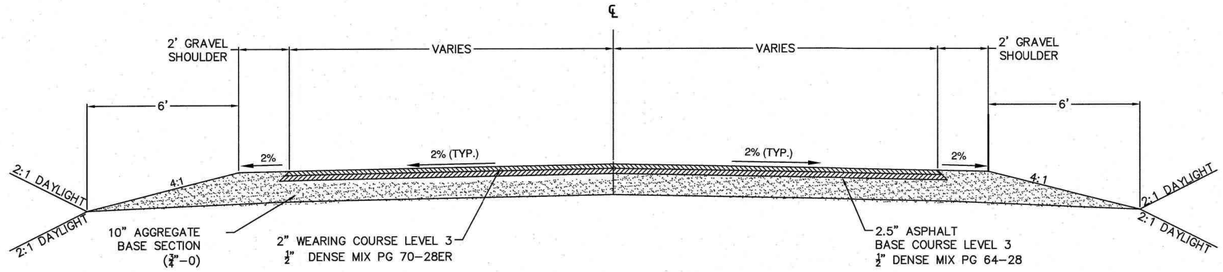
DRAWING NO. 3 OF 43
C2.0

LAYOUT: C2.0 TYPICAL SECTIONS PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\995vca\CADD\DWG\TUMALO RD RBAs\CD'S PLOTTED BY: ricodov DATE: Monday, April 27, 2020 11:16:54 AM



TUMALO RD STA:107+98.2-108+50

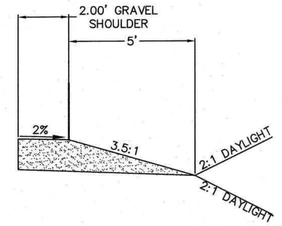
N.T.S



ROADWAY NO MEDIAN/CURB
TUMALO RD STA: 101+86.7-102+73.9 STA:107+98.2-108+50
OBR HIGHWAY STA:202+53.4-206+00.8 STA:212+39-215+13
GLACIER VIEW RD STA:1+16.6-1+49.3

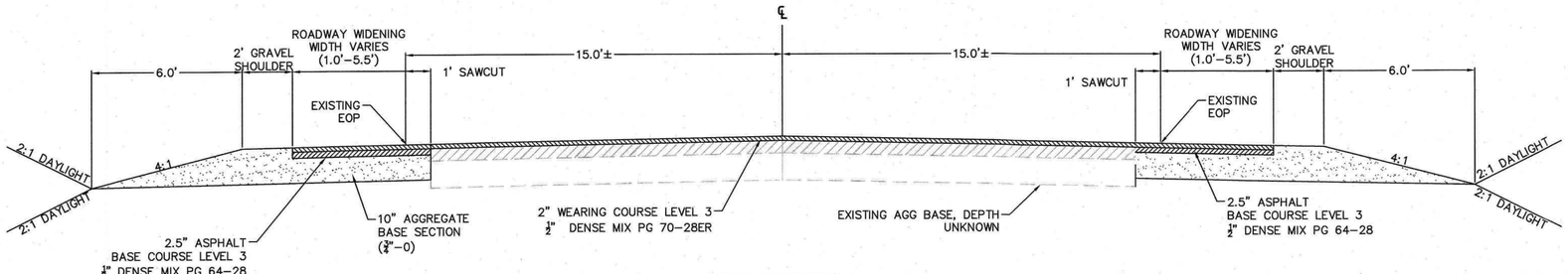
N.T.S

1 / C2.1



TUMALO RD STA:107+98.2-108+50

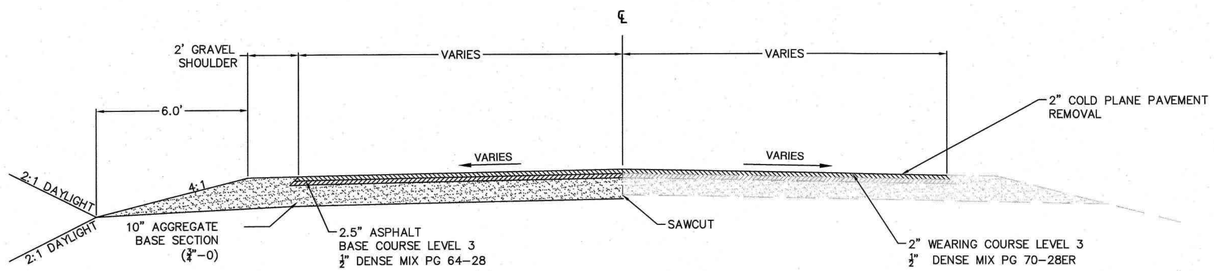
N.T.S



WIDENING SECTION
TUMALO RD STA:100+06.20-101+86.7 STA:108+50-109+76.9

N.T.S

2 / C2.1



FULL DEPTH /GRIND INLAY
OBR HIGHWAY STA: 200+91.8-202+53.4 STA:215+13-216+36.9

N.T.S

3 / C2.1

	REVISIONS	DATE	BY	DESIGNED
				DRAWN
				CHECKED
				APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME: BE2509005-C2.0-TS00
JOB No.: 297-2509-005
DATE: 12/2019

REGISTERED PROFESSIONAL ENGINEER
14,972
OREGON
JULY 29, 1980
BARRY C. JOHNSON
EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

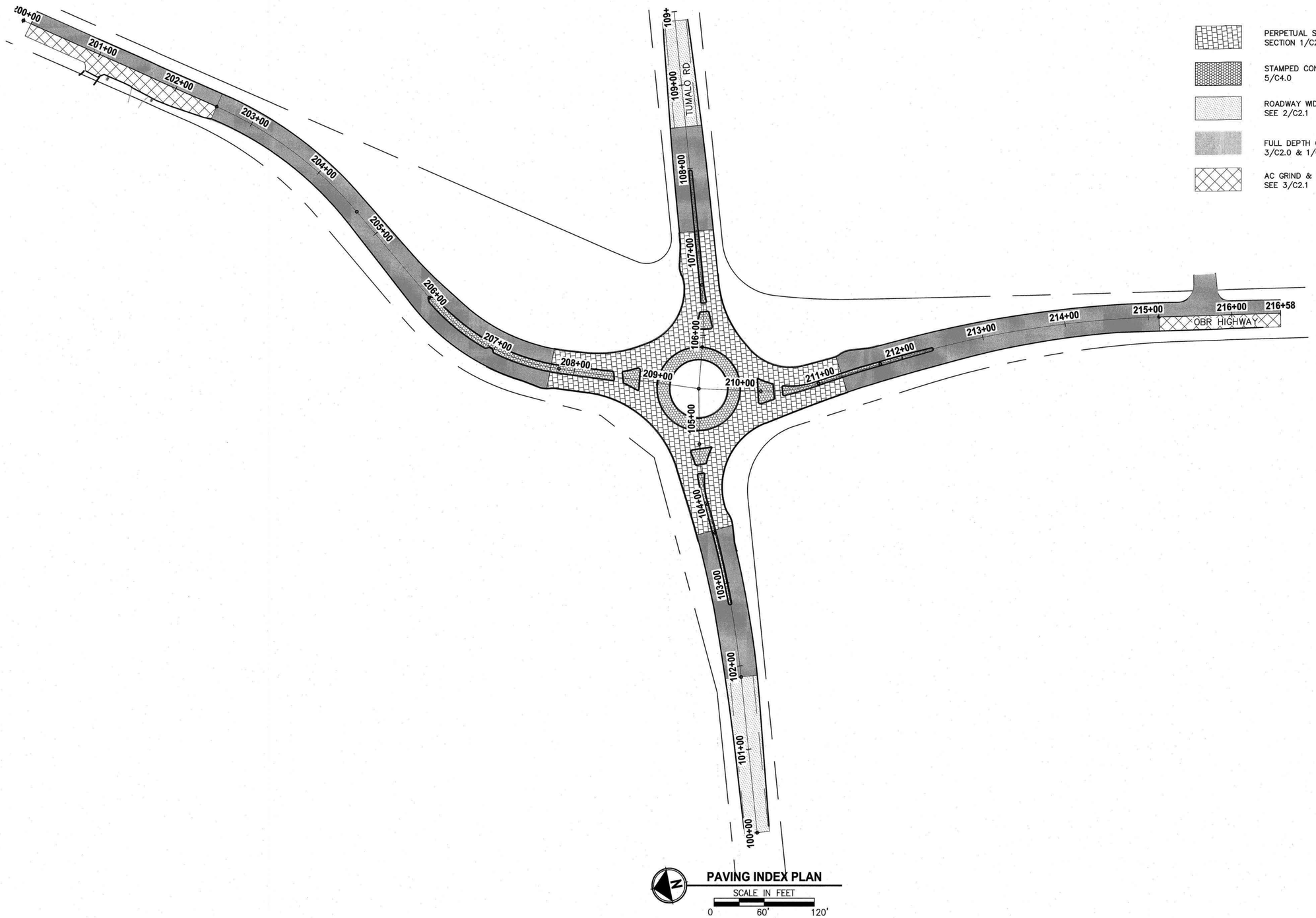
PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

TYPICAL SECTIONS

DRAWING NO.
4 OF 43

C2.1

LAYOUT: C2.1 TYPICAL SECTIONS PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\95Svcs\CADD\DWG\TUMALO RD RBAs\CD'S PLOTTED BY: ricoday DATE: Monday, April 27, 2020 11:21:10 AM



PAVING INDEX PLAN

SCALE IN FEET

0 60' 120'

LAYOUT: PAVING INDEX - SITE A PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\TUMALO RD RBAs\C0'S PLOTTED BY: ricodov DATE: Monday, April 27, 2020 11:15:24 AM

	REVISIONS	DATE	BY

DESIGNED
DRAWN
CHECKED
APPROVED

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME: BE2509005-C3.0-PI00
JOB No.: 297-2509-005
DATE: 12/2019

REGISTERED PROFESSIONAL ENGINEER
14,975
OREGON
JULY 25, 1986
BARRY C. JOHNSON
EXPIRES: 6/30/2021

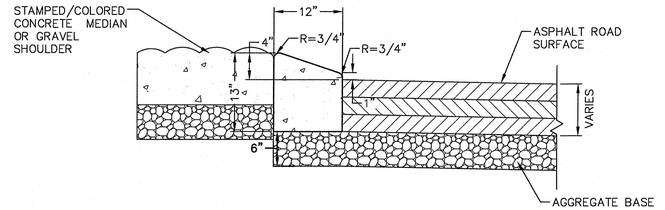
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

PAVING INDEX

DRAWING NO.
5 OF 43

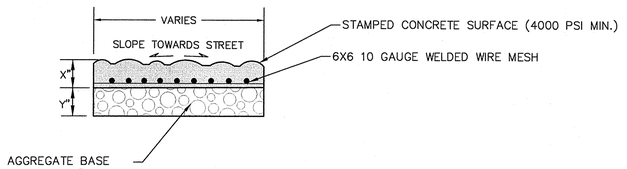
C3.0



LOW PROFILE MOUNTABLE CURB — 1 / C4.0

N.T.S

NOTES:
1. REFERENCE ODOT DWG RD700
2. ALL CONCRETE SHALL BE 5000 PSI HIGH STRENGTH WITH FIBER REINFORCEMENT

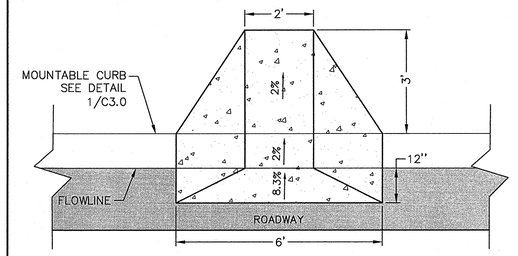


STAMPED CONCRETE — 5 / C4.0

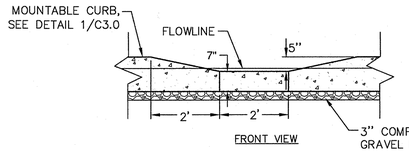
N.T.S

X DIMENSION:
- MEDIAN = 6"
- TRUCK APRON = 8"

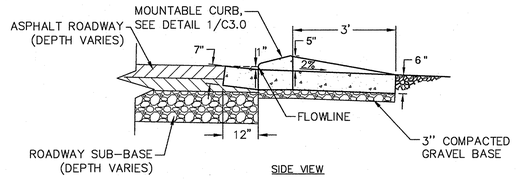
Y DIMENSION:
- MEDIAN = 6"
- TRUCK APRON = 6"



TOP VIEW



FRONT VIEW

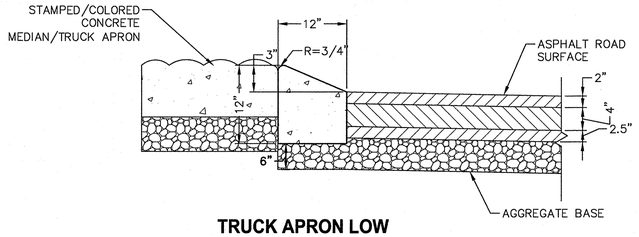


SIDE VIEW

CURB CUT — 9 / C4.0

N.T.S

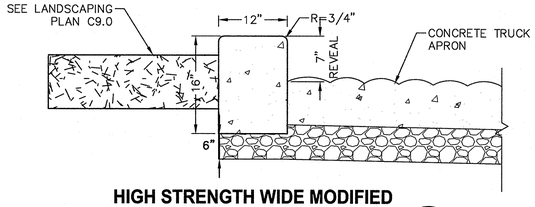
NOTE: ALL CONCRETE SHALL BE 5000 PSI HIGH STRENGTH WITH FIBER REINFORCEMENT



TRUCK APRON LOW PROFILE MOUNTABLE CURB — 2 / C4.0

N.T.S

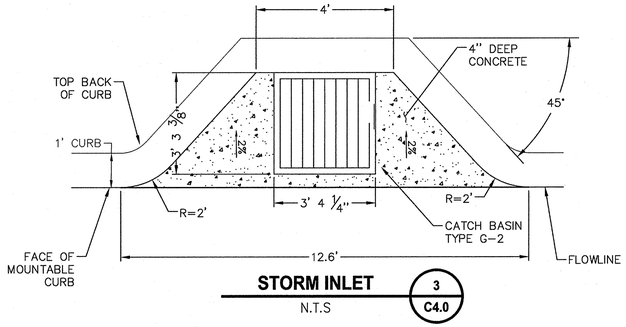
NOTES:
1. REFERENCE ODOT DRG RD700
2. ALL CONCRETE SHALL BE 5000 PSI HIGH STRENGTH WITH FIBER REINFORCEMENT



HIGH STRENGTH WIDE MODIFIED CURB INNER CURB — 6 / C4.0

N.T.S

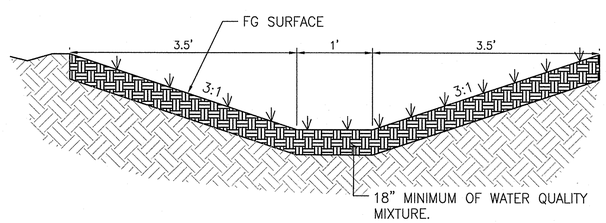
NOTE: CONCRETE SHALL BE 5000 PSI HIGH STRENGTH WITH FIBER REINFORCEMENT



STORM INLET — 3 / C4.0

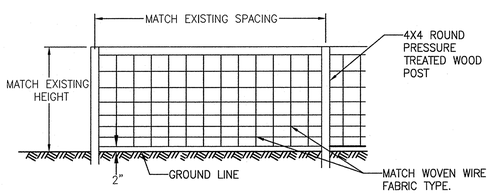
N.T.S

NOTE: ALL CONCRETE SHALL BE 5000 PSI HIGH STRENGTH WITH FIBER REINFORCEMENT



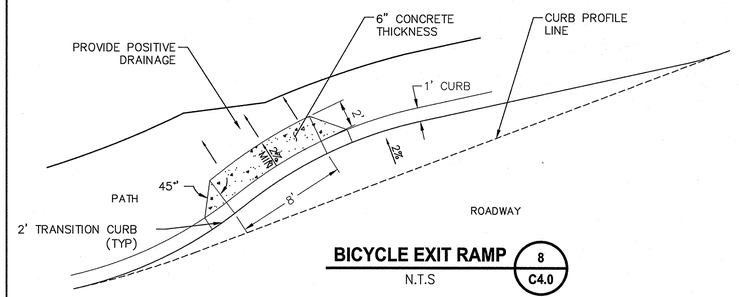
WATER QUALITY SWALE SECTION DETAIL — 7 / C4.0

N.T.S



WOOD FENCE — 4 / C4.0

N.T.S



BICYCLE EXIT RAMP — 8 / C4.0

N.T.S

NOTE: ALL CONCRETE SHALL BE 5000 PSI HIGH STRENGTH WITH FIBER REINFORCEMENT

	REVISIONS	DATE	BY	DESIGNED
				DRAWN
				CHECKED
				APPROVED

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY

FILE NAME: BE2509005-C4.0-DT00

JOB No.: 297-2509-005

DATE: 12/2019

REGISTERED PROFESSIONAL ENGINEER 14,977 OREGON JULY 25, 1986 BARRY C. JOHNSON

EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

DETAILS

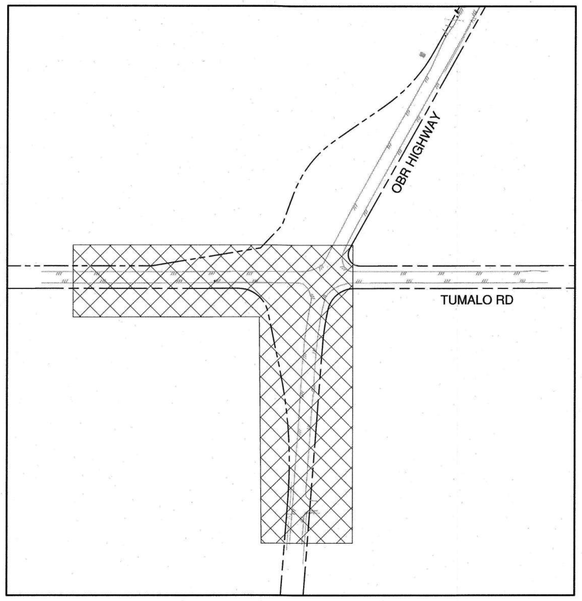
DRAWING NO. 6 OF 43

C4.0

PLOTTED BY: ricodov DATE: Friday, April 3, 2020 9:27:14 AM

PATH: U:\Bend\Projects\Clients\2509-deschutes county\297-2509-005 obrh design phase\99Svcs\CADD\DWG\tumalo rd rbas\C0'S

LAYOUT: C4.0 DETAILS

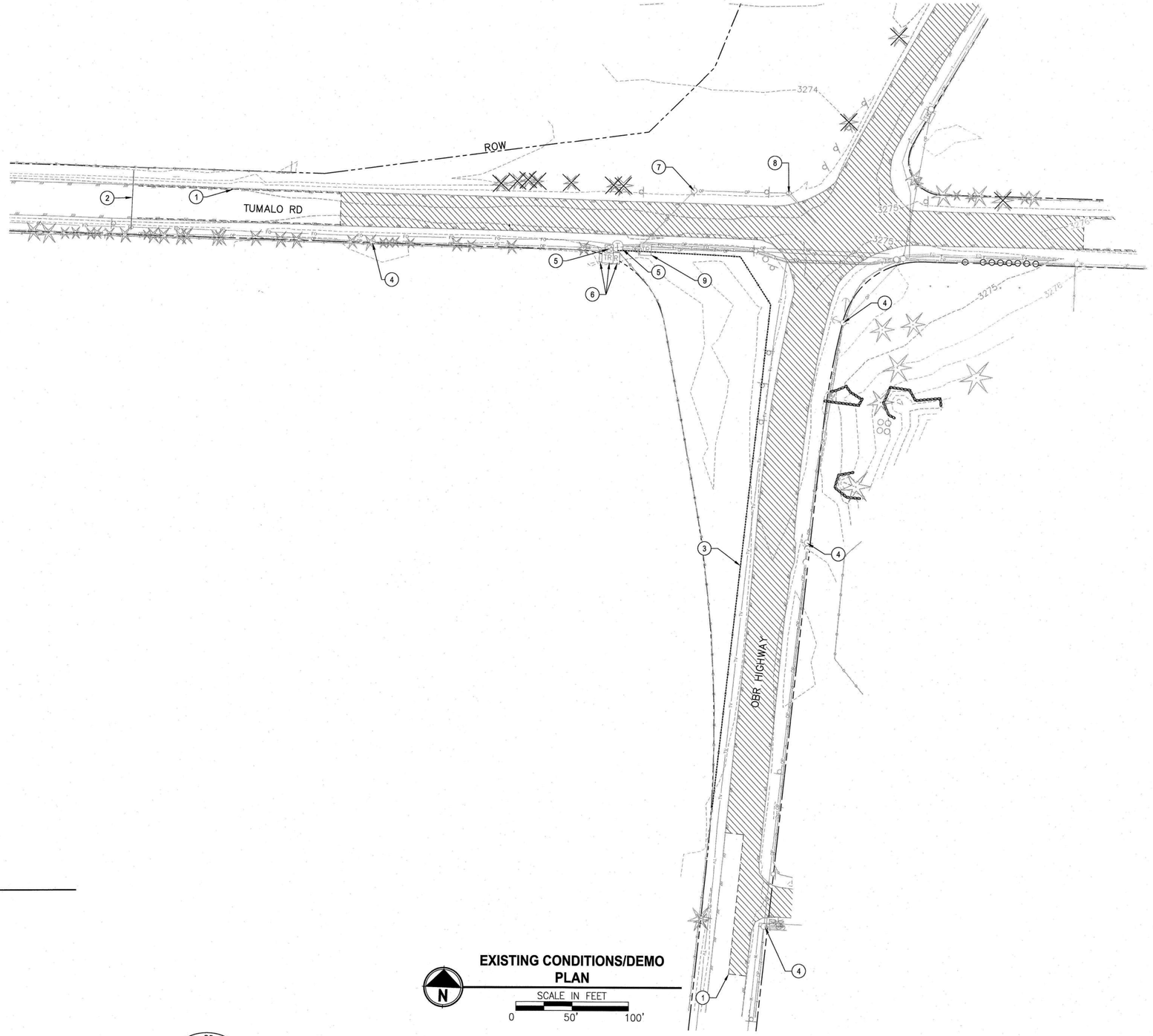


N

KEY MAP

SCALE IN FEET

0 200' 400'



N

EXISTING CONDITIONS/DEMO PLAN

SCALE IN FEET

0 50' 100'

DEMO NOTES:

1. SAWCUT EXISTING ASPHALT
2. EXISTING CMP PIPE, PROTECT IN PLACE
3. STA 104+33 TO STA 214+94
   REMOVE FENCE – APPROX. 610 LF
4. EXISTING POWER POLE, PROTECT IN PLACE
5. EXISTING TRANSFORMER, PROTECT IN PLACE
6. EXISTING TELEPHONE PEDESTAL, PROTECT IN PLACE
7. EXISTING POWER POLE TO BE REMOVED (BY OTHERS)
8. REMOVE AND DISPOSE OF EXISTING FLASHING BEACON
9. EXISTING TELEPHONE PEDESTAL, TO BE RELOCATED (BY OTHERS)

DEMO LEGEND:

- REMOVE AC SURFACING AND BASE ROCK TO SUB GRADE
- REMOVE EXISTING TREE (LOCATED TREES ARE 6" DBH AND LARGER. SMALLER TREES NOT SHOWN MAY REQUIRE REMOVAL)
- ---------- REMOVE EXISTING FENCE

	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C5.0-DE
JOB No. 297-2509-005
DATE 05/2020

REGISTERED PROFESSIONAL ENGINEER 14,972 OREGON JULY 25, 1980 BARRY C. JOHNSON
EXPIRES: 6/30/2021

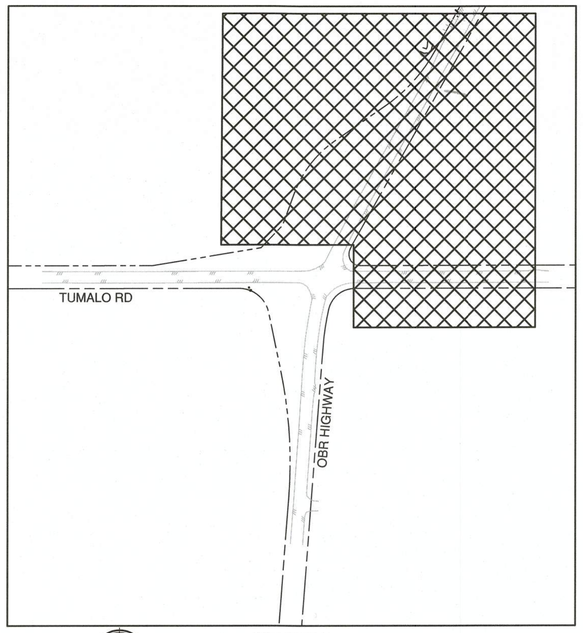
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
TUMALO RD / TUMALO PL
INTERSECTION IMPROVEMENTS

EXISTING CONDITIONS-DEMO PLAN

DRAWING NO.
7 OF 39

C5.0

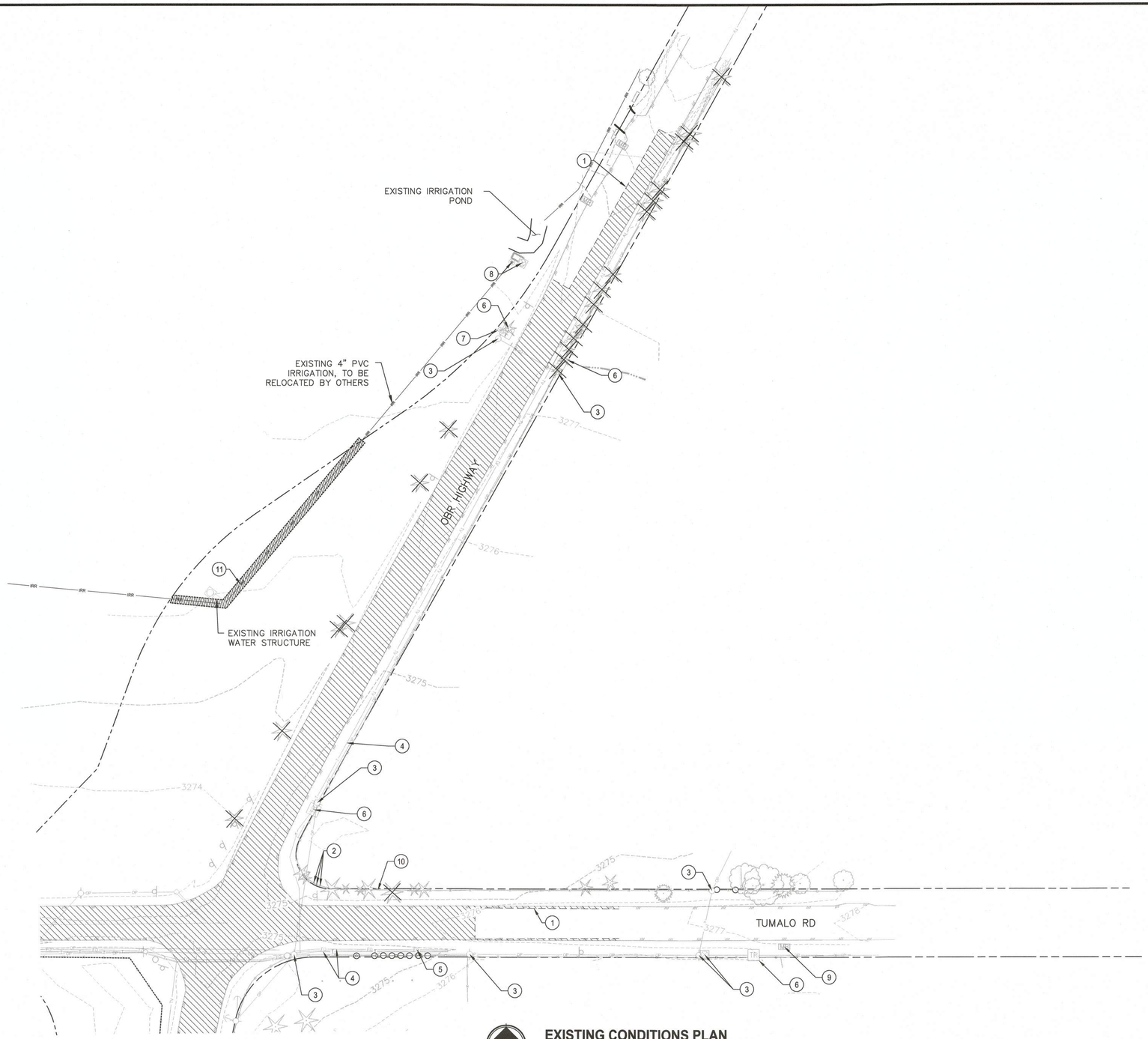


DEMO NOTES:

1. SAWCUT EXISTING ASPHALT
2. EXISTING BOLLARDS, PROTECT IN PLACE
3. EXISTING POWER POLE, PROTECT IN PLACE
4. EXISTING UNDERGROUND TELEPHONE LINE, PROTECT IN PLACE
5. EXISTING UNDERGROUND FIBER OPTIC LINE, PROTECT IN PLACE
6. EXISTING TELEPHONE PEDESTAL, PROTECT IN PLACE
7. EXISTING POWER TRANSFORMER, PROTECT IN PLACE
8. EXISTING PUMP HOUSE AND CONTROL PANEL, PROTECT IN PLACE
9. EXISTING MAILBOX, PROTECT IN PLACE
10. REMOVE FENCE (AS NEEDED)
11. REMOVE AND DISPOSE OF EXISTING 4" IRRIGATION PIPE. SALVAGE PIPE FITTINGS AND VALVES.

DEMO LEGEND:

- REMOVE AC SURFACING AND BASE ROCK TO SUB GRADE
- REMOVE EXISTING TREE (LOCATED TREES ARE 6" DBH AND LARGER. SMALLER TREES NOT SHOWN MAY REQUIRE REMOVAL)
- REMOVE EXISTING FENCE



	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C5.0-DE
JOB No. 297-2509-005
DATE 05/2020

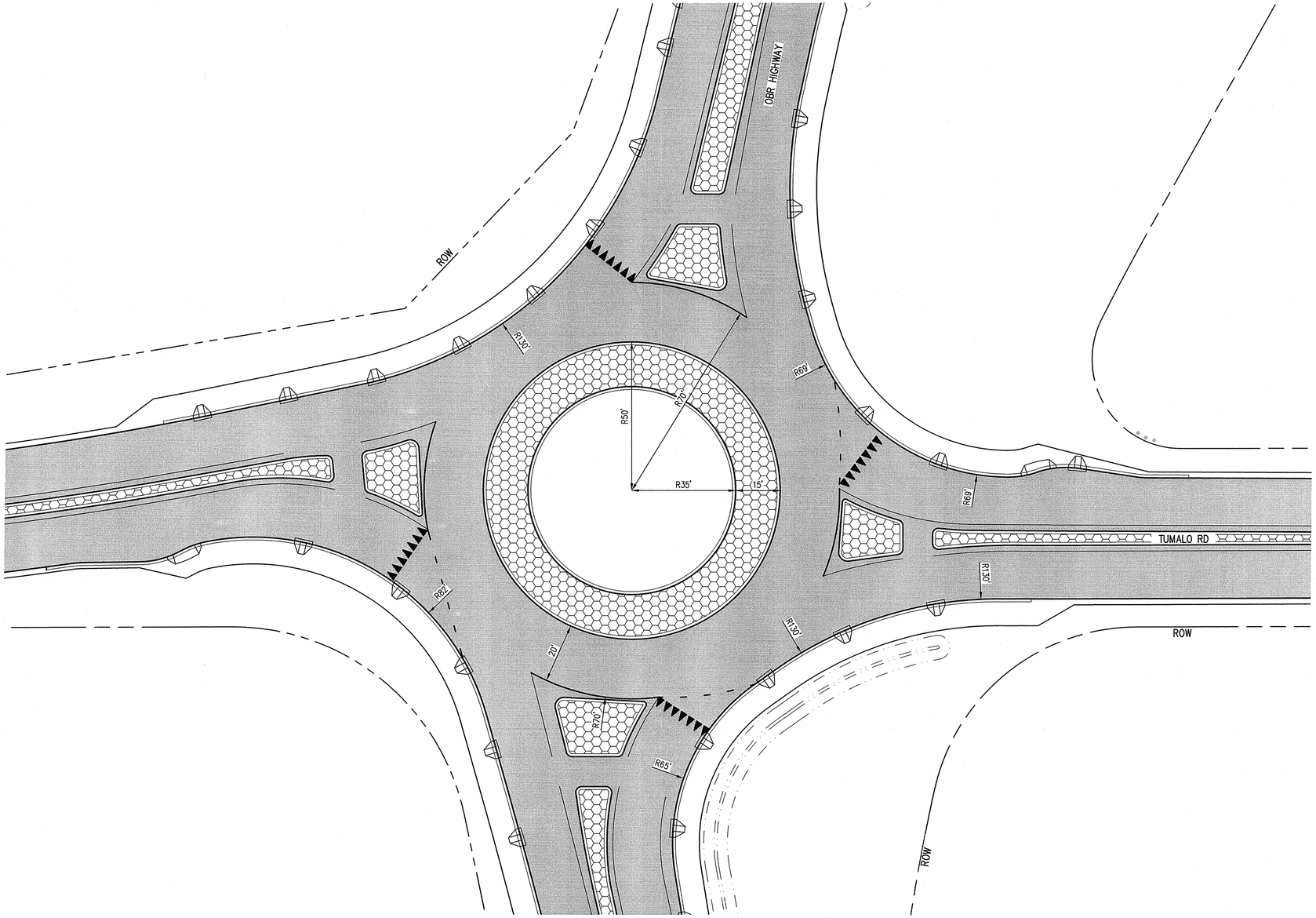
REGISTERED PROFESSIONAL ENGINEER 14,972 OREGON JULY 25, 1980 BARRY C. JOHNSON
EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
TUMALO RD / TUMALO PL INTERSECTION IMPROVEMENTS

EXISTING CONDITIONS-DEMO PLAN

DRAWING NO. 8 OF 39
C5.1



N

GEOMETRY PLAN

SCALE IN FEET

0 20' 40'

	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C6.0-G000
JOB No. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER
14,972
OREGON
JULY 25, 1980
BARRY C. JOHNSON
EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

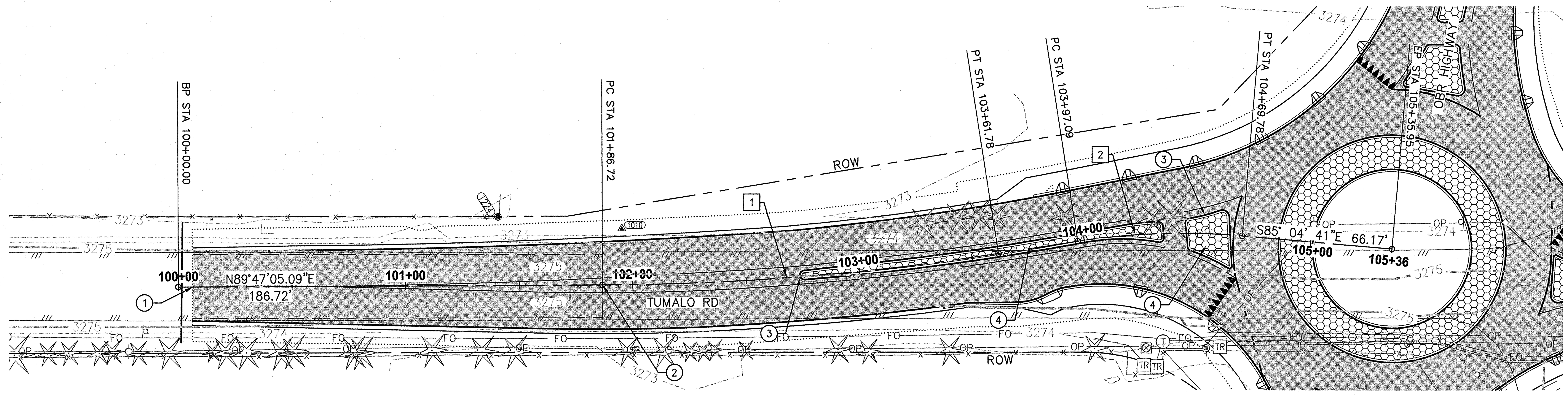
PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

GEOMETRY PLAN

DRAWING NO.
9 OF 43

C6.0

LAYOUT: C6.0 GEOMETRY PLAN - SITE A PATH: U:\Bend\Projects\Clients\2509-deschutes county\297-2509-005 obrh design phase\995vos\CADD\DWG\tumalo rd rbas\CD'S PLOTTED BY: rloadov DATE: Friday, April 3, 2020 9:27:34 AM



WEST LEG PLAN

SCALE IN FEET

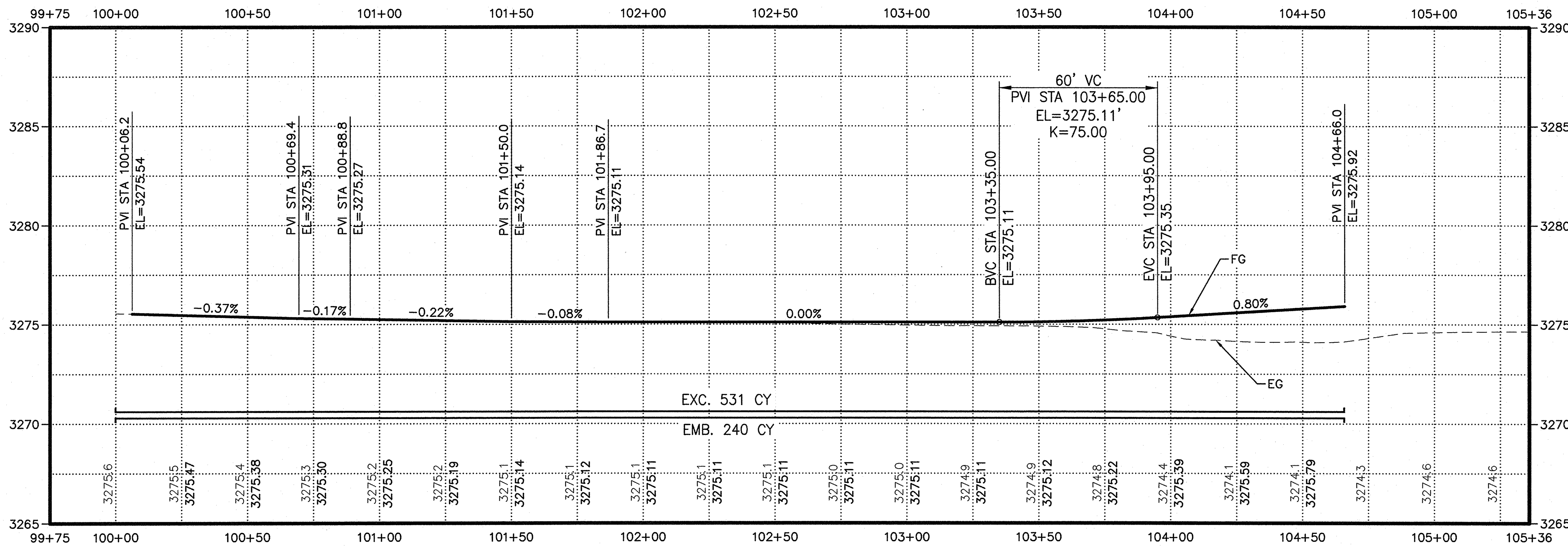
0 30' 60'

ROAD CONSTRUCTION NOTES:

1. BEGIN ROAD CONSTRUCTION STA:100+06.2
2. BEGIN FULL DEPTH CONSTRUCTION STA:101+88.7
3. CONSTRUCT HIGH STRENGTH LOW PROFILE MOUNTABLE CURB SEE DETAIL 1/C4.0 AND 1/C7.5
4. CONSTRUCT STAMPED COLORED CONCRETE MEDIAN SEE DETAIL 5/C4.0

CURVE TABLE

CURVE ID	LENGTH	RADIUS	DELTA
1	175.05'	1147.00'	8°44'39"
2	72.68'	300.00'	13°52'53"



WEST LEG PROFILE

SCALE IN FEET

0 30' 60'

4'

REVISIONS	DATE	BY	
			DESIGNED DR
			DRAWN DR/LYF
			CHECKED
			APPROVED

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.0-PP00

JOB No. 297-2509-005

DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER 14,972 OREGON JULY 25, 1990 BARRY C. JOHNSON

EXPIRES: 6/30/2021

Parametrix

ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME

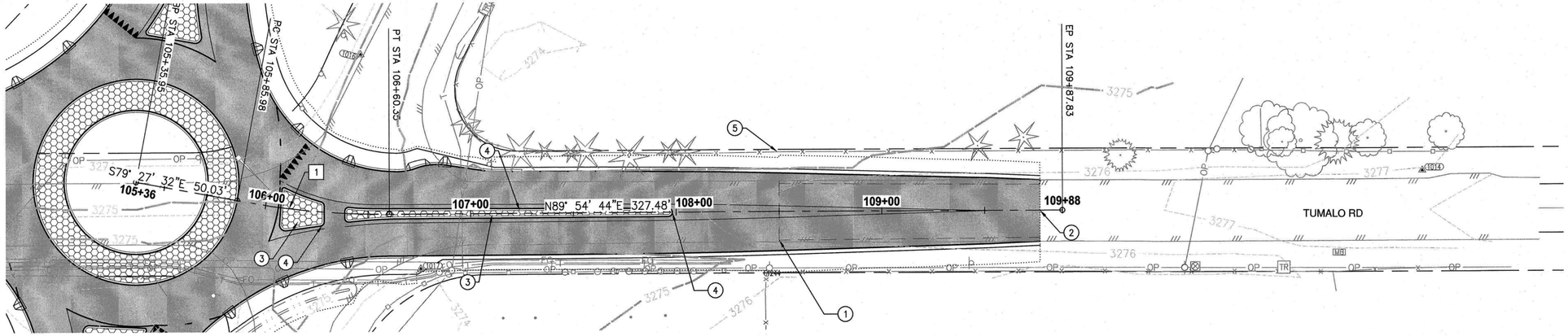
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

WEST LEG - PLAN & PROFILE

DRAWING NO. 10 OF 43

C7.0

LAYOUT: C7.0 SITE A - PLAN & PROFILE PATH: U:\Bend\Projects\Clients\2509-deschutes county\297-2509-005 obrh design phase\99Svcs\CADD\DWG\tumalo rd rbas\CD'S PLOTTED BY: rlcodov DATE: Friday, April 3, 2020 9:42:12 AM



ROAD CONSTRUCTION NOTES:

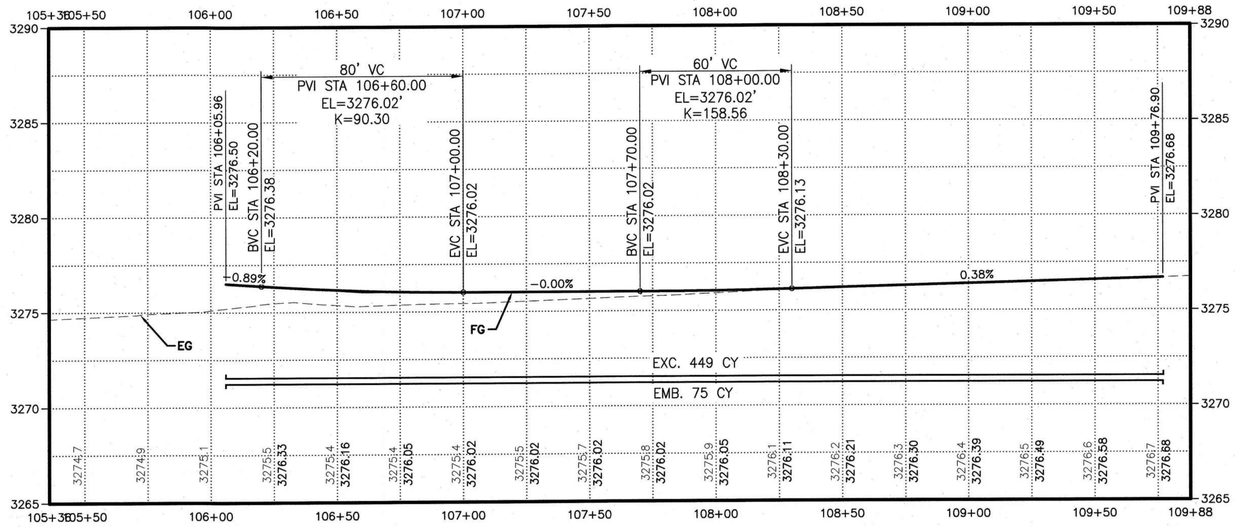
1. END FULL DEPTH CONSTRUCTION STA: 108+50
2. END ROAD CONSTRUCTION STA:109+76.9
3. CONSTRUCT STAMPED COLORED CONCRETE MEDIAN (SEE DETAIL 5/C4.0)
4. CONSTRUCT HIGH STRENGTH LOW PROFILE MOUNTABLE CURB SEE DETAIL 1/C4.0 AND 1/C7.8
5. REMOVE AND REBUILD EXISTING BARBED WIRE FENCE FENCE, AS NEEDED

EAST LEG PLAN

SCALE IN FEET

0 30' 60'

CURVE TABLE			
CURVE ID	LENGTH	RADIUS	DELTA
1	74.36'	400.86'	10°37'44"



EAST LEG PROFILE

SCALE IN FEET

0 30' 60'

4'

REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.1-PP00
JOB No. 297-2509-005
DATE 05/2020

REGISTERED PROFESSIONAL ENGINEER 14,872 OREGON JULY 25, 1980 BARRY C. JOHNSON
EXPIRES: 6/30/2021

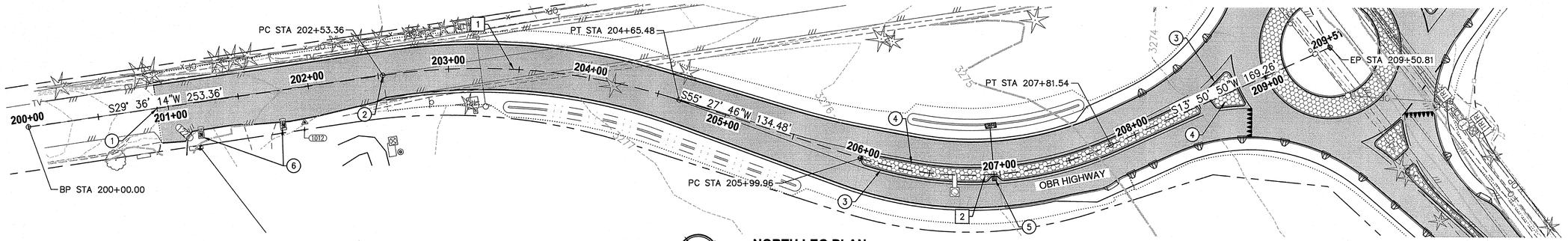
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
TUMALO RD / TUMALO PL INTERSECTION IMPROVEMENTS

EAST LEG - PLAN & PROFILE

DRAWING NO. 11 OF 39

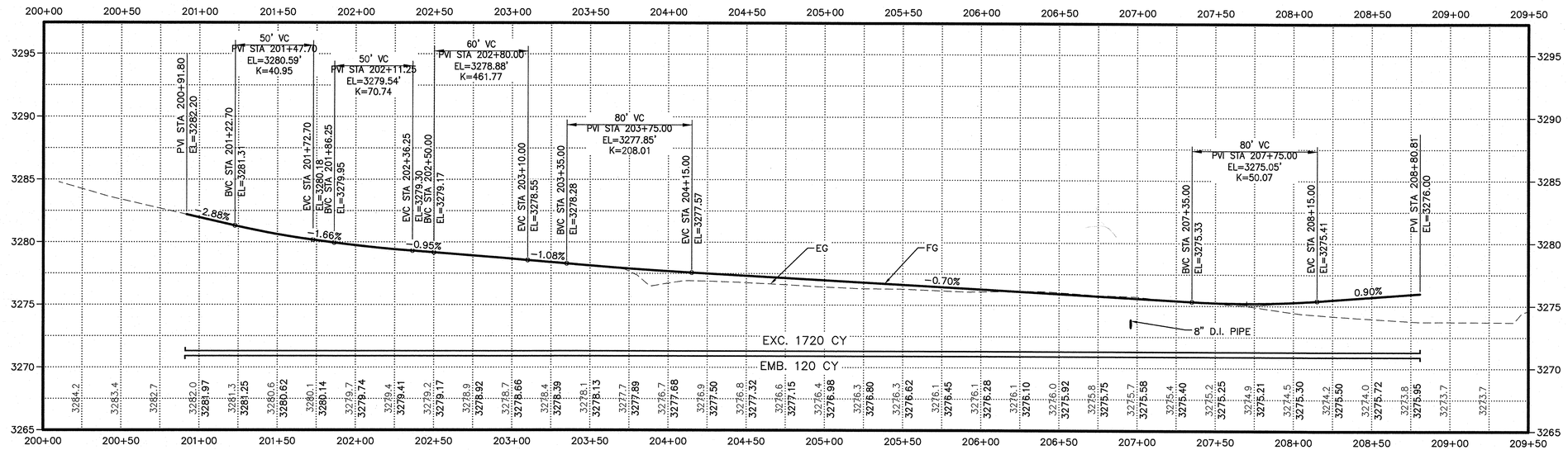
C7.1



NORTH LEG PLAN

SCALE IN FEET

0 40' 80'

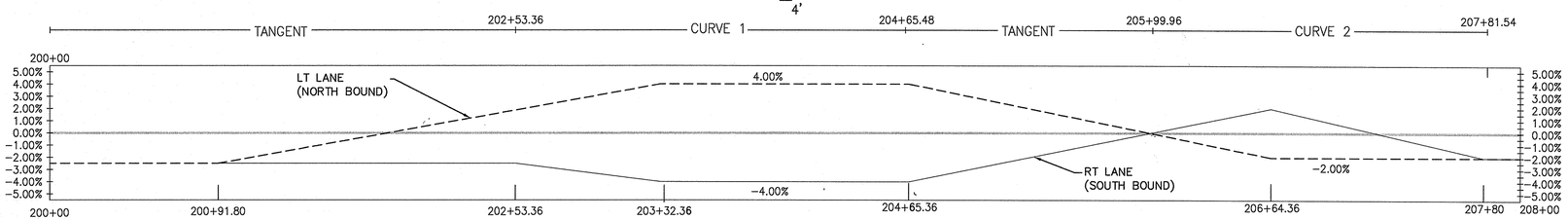


NORTH LEG PROFILE

SCALE IN FEET

0 40' 80'

4'



NORTH LEG SUPER ELEVATION GRAPH

1"=40'

CURVE TABLE			
CURVE ID	LENGTH	RADIUS	DELTA
2	181.58'	250.00'	41°36'56"
1	212.12'	470.00'	25°51'31"

ROAD CONSTRUCTION NOTES:

1. BEGIN 2" GRIND & INLAY STA: 200+92 RT & FULL DEPTH CONSRTUCTION PER TYPICAL SECTION 3/C2.1
2. BEGIN FULL DEPTH CONSTRUCTION STA:202+53.36
3. CONSTRUCT HIGH STRENGTH LOW PROFILE MOUNTABLE CURB SEE DETAIL 1/C4.0 AND 1/C7.6
4. CONSTRUCT STAMPED COLORED CONCRETE MEDIAN (SEE DETAIL 5/C4.0)
5. INSTALL ODOT TYPE G-2 INLET STA: 206+95.80 2.93'RT PER ODOT STD DWG RD364
   RIM=3275.627,I.E. OUT=3273.24INSTALL 36 LF 8" DUCTILE IRON PIPE, S=.005 FT/FT MIN
6. INSTALL MAILBOX SUPPORT PER ODOT STD DWG RD100

REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.2-PP00
JOB No. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER 14972 OREGON JULY 25, 1980 BARRY C. JOHNSON
EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

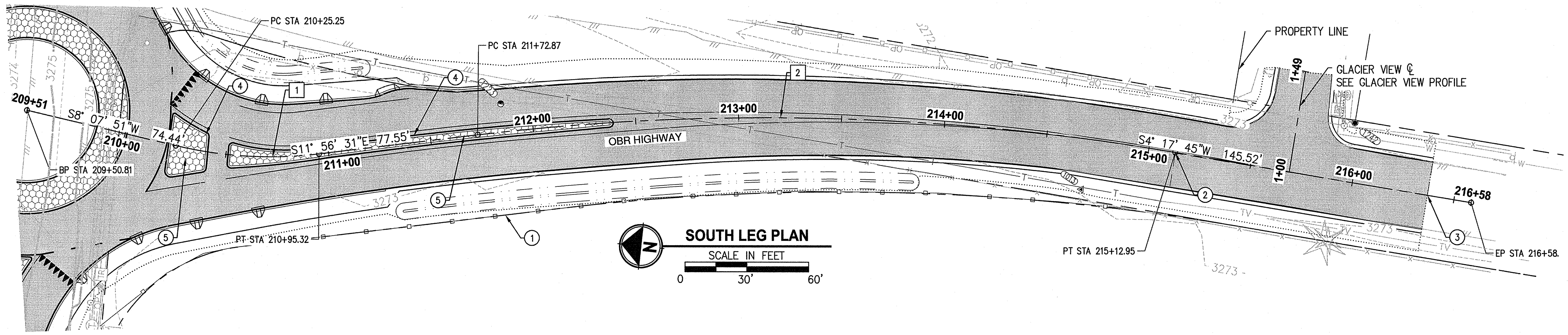
PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

NORTH LEG - PLAN & PROFILE

DRAWING NO. 12 OF 43

C7.2

PATH: U:\Bend\Projects\Clients\2509--Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\TUMALO RD RBAs\CD'S
PLOTTED BY: rlcadav DATE: Friday, April 3, 2020 9:52:40 AM
LAYOUT: C7.2 SITE A - PLAN & PROFILE



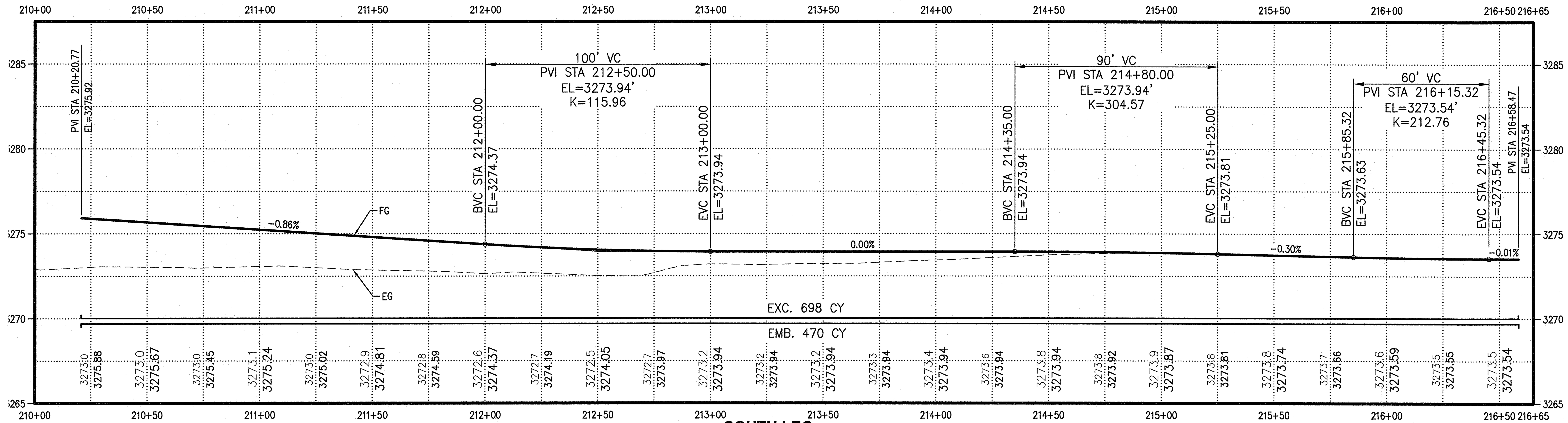
SOUTH LEG PLAN

SCALE IN FEET
0 30' 60'

CURVE TABLE			
CURVE ID	LENGTH	RADIUS	DELTA
1	70.07'	200.00'	20°04'21"
2	340.08'	1200.00'	16°14'15"

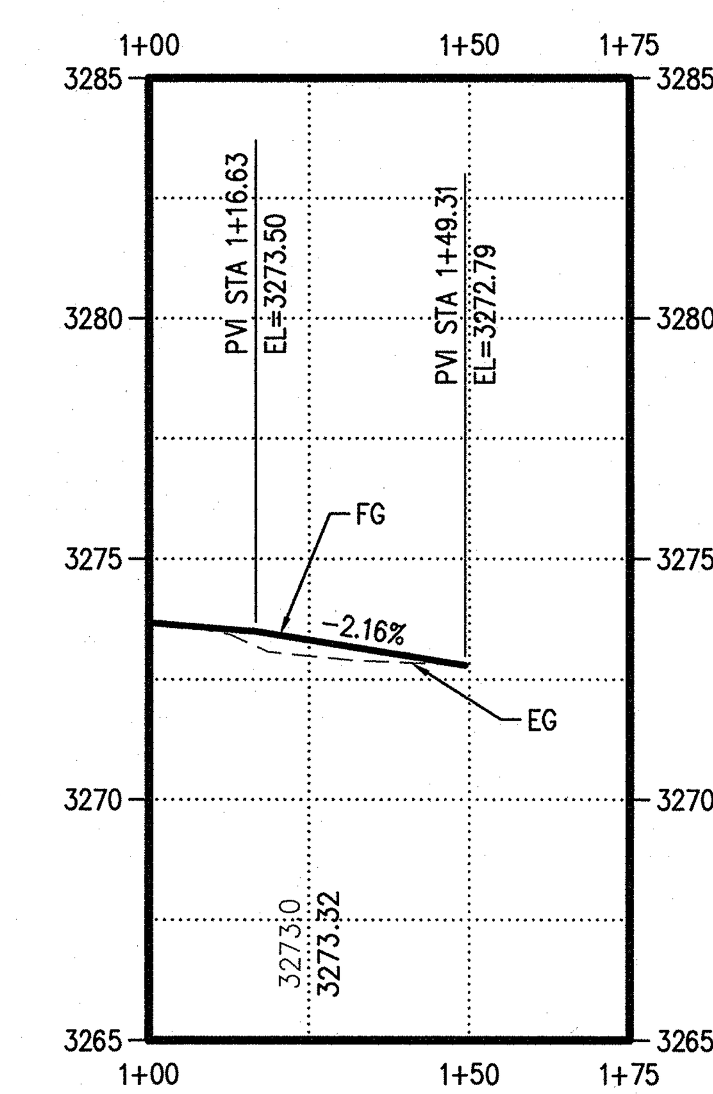
ROAD CONSTRUCTION NOTES:

1. INSTALL FENCE PER DETAIL 4/C4.0
2. END FULL DEPTH CONSTRUCTION STA: 215+13
3. END ROAD CONSTRUCTION STA: 216+36.9
4. CONSTRUCT HIGH STRENGTH LOW PROFILE MOUNTABLE CURB SEE DETAIL 1/C4.0 AND 1/C7.7
5. CONSTRUCT STAMPED COLORED CONCRETE MEDIAN (SEE DETAIL 5/C4.0)



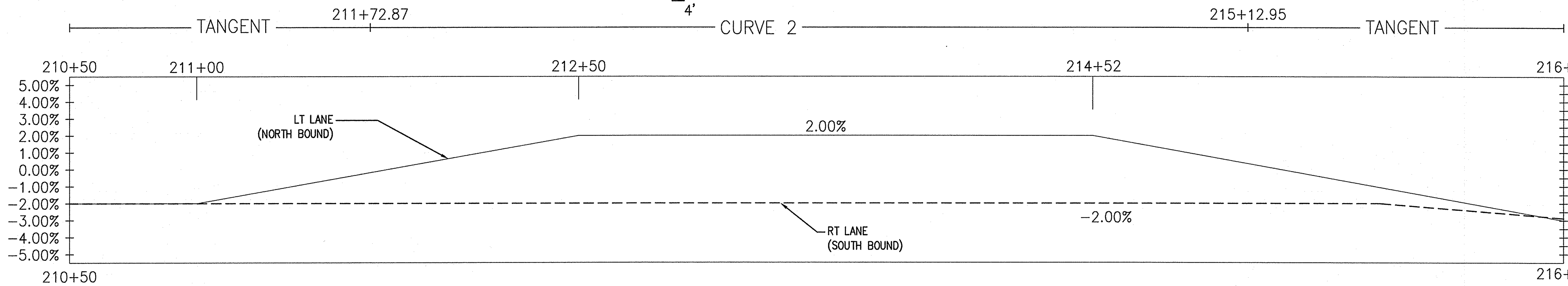
SOUTH LEG PROFILE

SCALE IN FEET
0 30' 60'
4'



GLACIER VIEW PROFILE

SCALE IN FEET
0 30' 60'
4'



SOUTH LEG SUPER ELEVATION GRAPH

1"=30'

REVISIONS	DATE	BY	
			DESIGNED DR
			DRAWN DR/LYF
			CHECKED
			APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME BE2509005-C7.3-PP00
JOB No. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER, OREGON, JULY 25, 1990, BARRY C. JOHNSON
EXPIRES: 6/30/2021

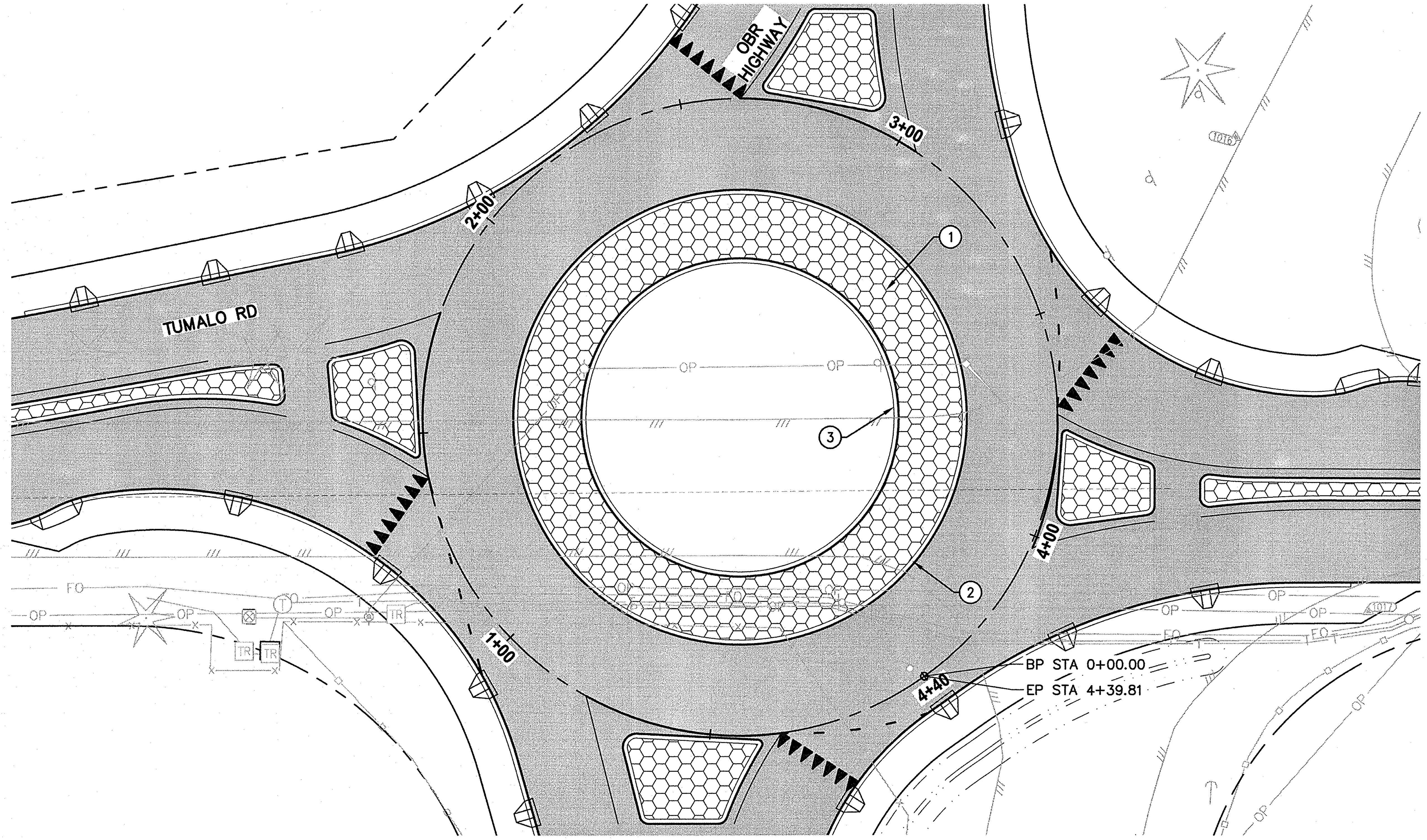
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

SOUTH LEG - PLAN & PROFILE

DRAWING NO.
13 OF 43
C7.3

LAYOUT: C7.3 SITE A - PLAN & PROFILE PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\TUMALO RD RBAs\CD'S PLOTTED BY: rlcodov DATE: Friday, April 3, 2020 10:13:05 AM

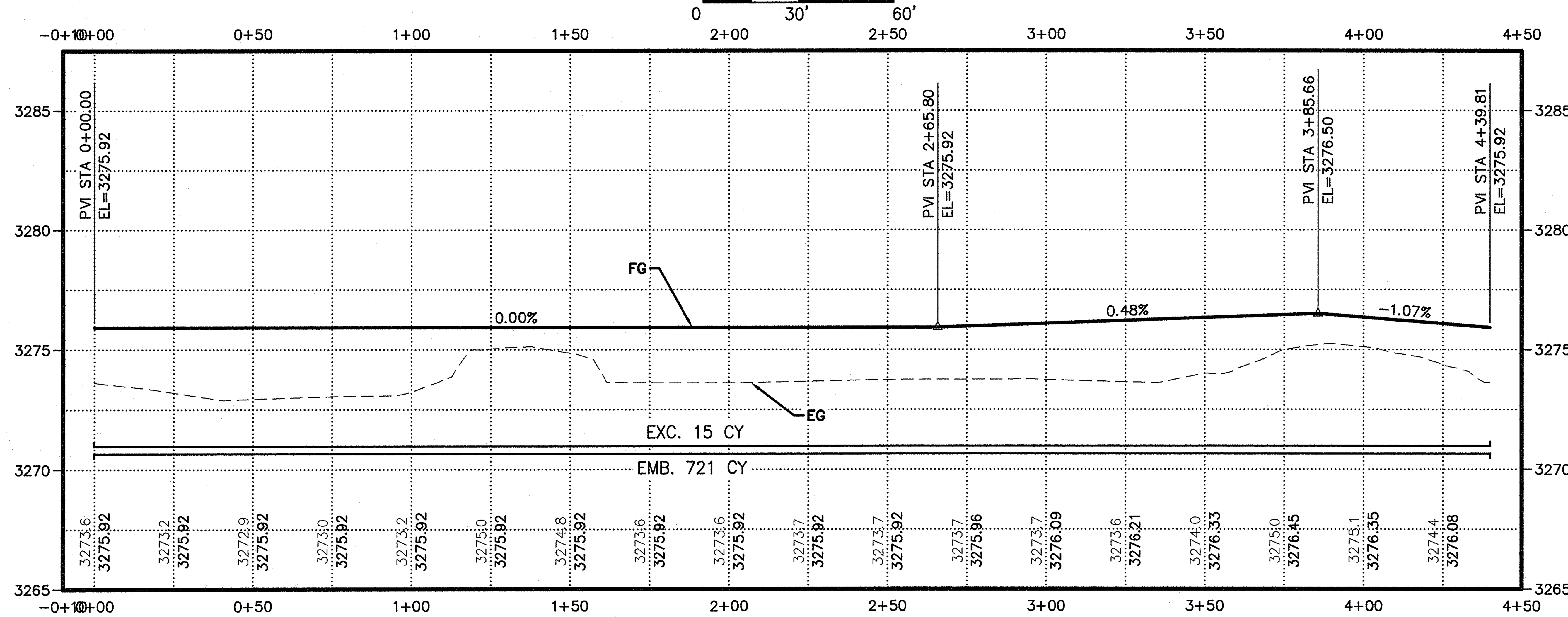


ROAD CONSTRUCTION NOTES:

1. CONSTRUCT STAMPED COLORED CONCRETE TRUCK APRON PER DEATIL 5/C.40
2. CONSTRUCT HIGH STRENGTH TRUCK APRON LOW PROFILE MOUNTABLE CURB PER DETAIL 2/C4.0
3. CONSTRUCT HIGH STRENGTH WIDE MODIFIED CURB PER DETAIL 6/C4.0

OUTER CIRCLE PLAN

SCALE IN FEET
0 30' 60'



OUTER CIRCLE PROFILE

SCALE IN FEET
0 30' 60'
4'

REVISIONS	DATE	BY	
			DESIGNED DR
			DRAWN DR/LYF
			CHECKED
			APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
FILE NAME BE2509005-C7.4-PP00
JOB No. 297-2509-005
DATE 12/2019

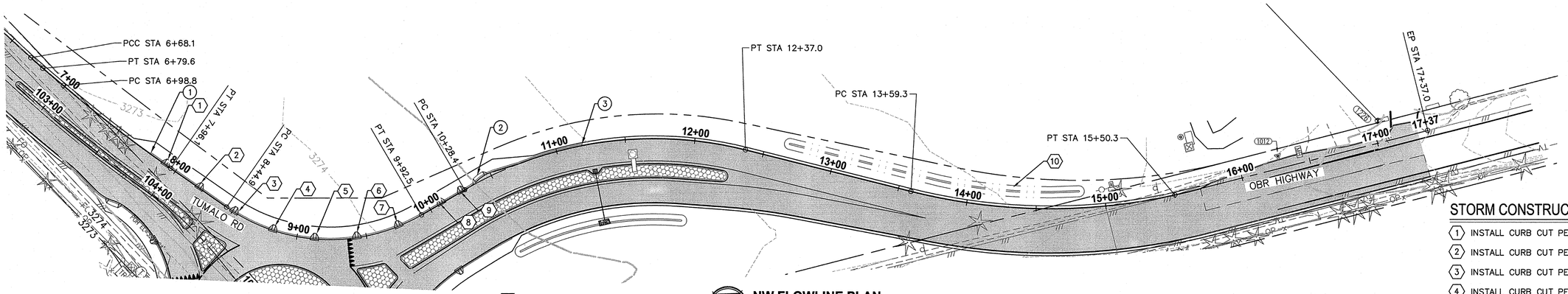
REGISTERED PROFESSIONAL ENGINEER 14972 OREGON JULY 25, 1990 BARRY C. JOHNSON
EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

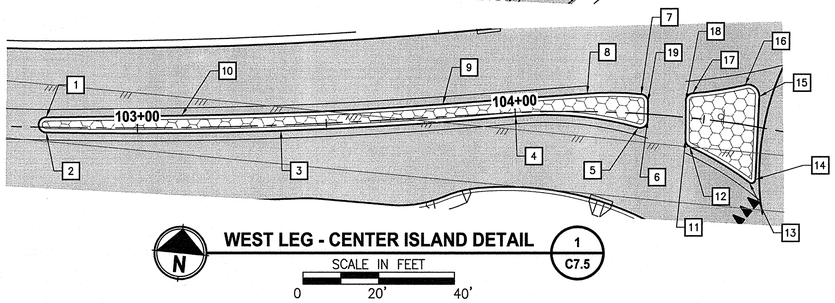
OUTER CIRCLE - PLAN & PROFILE

DRAWING NO.
14 OF 43
C7.4



NW FLOWLINE PLAN

SCALE IN FEET
0 40' 80'



WEST LEG - CENTER ISLAND DETAIL (1 / C7.5)

SCALE IN FEET
0 20' 40'

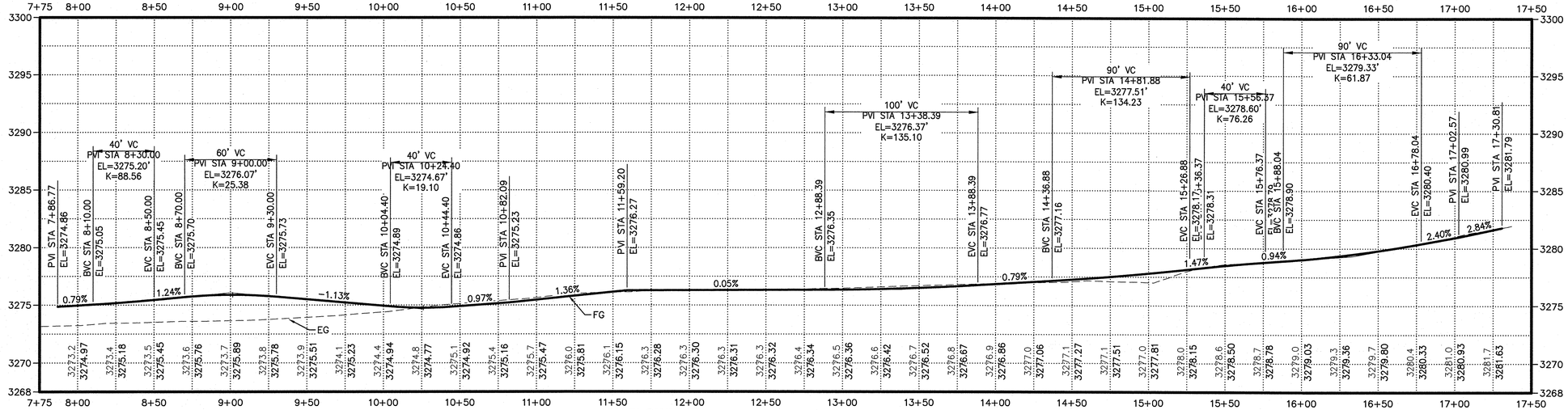
CONSTRUCTION NOTES:

1. CONSTRUCT HIGH STRENGTH CONCRETE CURB STA: 7+77.9 (SEE DETAIL 1/C4.0)
2. CONSTRUCT BIKE EXIT RAMP STA: 10+41.5 (SEE DETAIL 8/C4.0)
3. END HIGH STRENGTH CONCRETE CURB STA: 11+18.9 (SEE DETAIL 1/C4.0)

STORM CONSTRUCTION NOTES:

1. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 7+91.1
2. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 8+20.8
3. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 8+51.1
4. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 8+82
5. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 9+12.6
6. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 9+43.1
7. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 9+74.3
8. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 10+09.14
9. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 10+25.90 (LOW POINT)
10. CONSTRUCT WATER QUALITY SWALE PER DETAIL 7/C4.0

CURB RETURN TABLE				
POINT	FL @ FOC LOCATION	ELEVATION	DESC	RADIUS
1	STA 102+75.8/2.65 LT	3275.06'	PC	2'
2	STA 102+75.8/1.35 RT	3275.08'	PCC	1148'
3	STA 103+37.9/1.47 RT	3275.08'	MID	1148'
4	STA 104+00.1/0.94RT	3275.37'	PRC	90'
5	STA 104+32.8/3.73 RT	3275.58'	PT	2'
6	STA 104+35.2/1.65 RT	3275.64'	PC	
7	STA 104+33/5.14 LT	3275.58'	PCC	
8	STA 104+19/4.74 LT	3275.46'	PT	
9	STA 103+8.11/3.3 LT	3275.18'	PC	1145'
10	STA 103+11.8/3.2 LT	3275.05'	PT	
11	STA 104+45.7/5.9 RT	3275.66'	PC	2'
12	STA 104+47.1/7.62 RT	3275.65'	PRC	90'
13	STA 104+64.6/14.75 RT	3275.87'	PRC	1'
14	STA 104+66.1/13.74 RT	3275.90'	PT	
15	STA 104+63.5/8.03 LT	3275.89'	PC	3'
16	STA 104+59.5/10.46 LT	3275.82'	PRC	91.5'
17	STA 104+46.3/6.50 LT	3275.69'	PRC	2'
18	STA 104+44.7/4.33 LT	3275.70'	PT	
19	STA 104+34.9/3.23 LT	3275.62'	PT	2'



NW FLOWLINE PROFILE

SCALE IN FEET
0 30' 60'
4'

REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.5-PP00
JOB NO. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 25, 1998
BARRY C. JOHNSON
EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

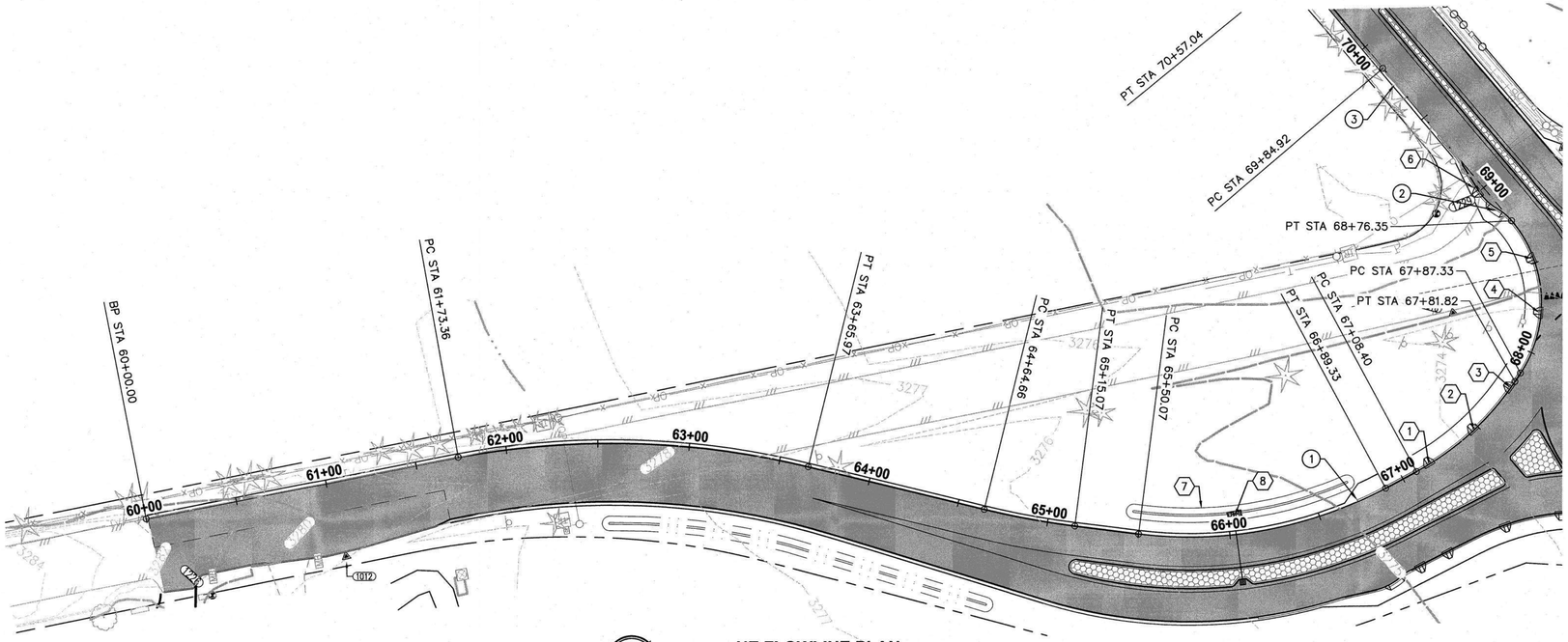
PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

NW FLOWLINE - PLAN & PROFILE

DRAWING NO. 15 OF 43

C7.5

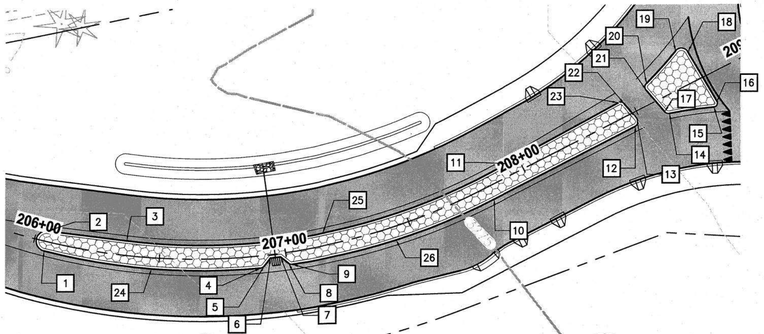
LAYOUT: C7.5 SITE A - PLAN & PROFILE PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\99Sheets\CADD\DWG\TUMALO RD RBAs\GD'S PLOTTED BY: rteadev DATE: Friday, April 3, 2020 9:57:53 AM



NE FLOWLINE PLAN

SCALE IN FEET

0 40' 80'



NORTH LEG - CENTER ISLAND DETAIL (1 / C7.6)

SCALE IN FEET

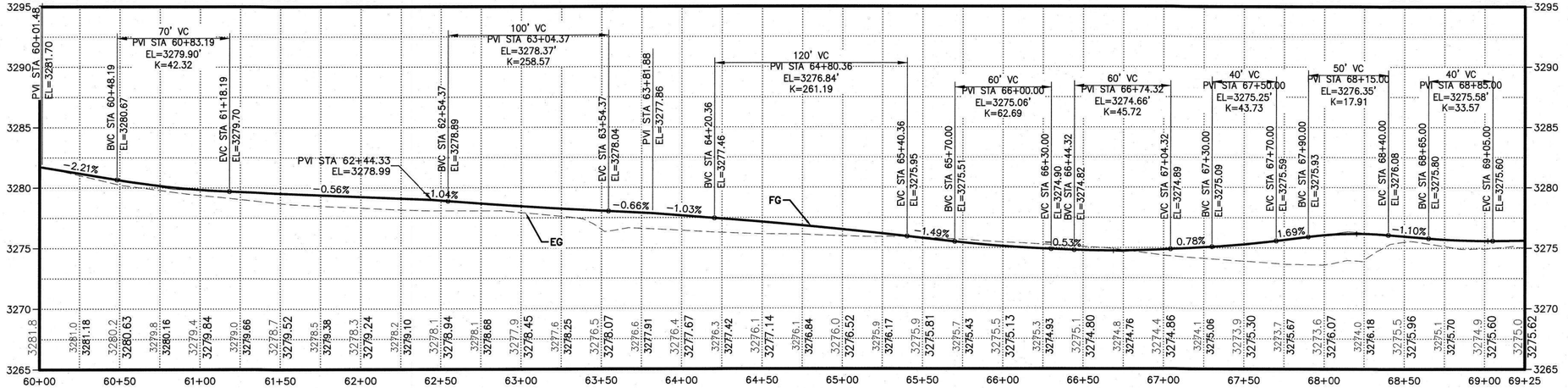
0 30' 60'

CONSTRUCTION NOTES:

1. CONSTRUCT HIGH STRENGTH CONCRETE CURB (SEE DETAIL 1/C4.0) STA: 66+72.5
2. CONSTRUCT BIKE EXIT RAMP STA: 68+86.3 (SEE DETAIL 8/C4.0)
3. END HIGH STRENGTH CONCRETE CURB STA: 69+37.5

STORM CONSTRUCTION NOTES:

1. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 67+16.50
2. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 67+46.90
3. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 67+77.60
4. INSTALL CURB CUT PER DETAIL 9/C4.0, STA: 68+22.50
5. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 68+52.80
6. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 69+00, 3.21' LT
7. CONSTRUCT WATER QUALITY SWALE PER DETAIL 7/C4.0
8. ARMOR PIPE OUTLET WITH 1.5 CUBIC YARD OF CLASS 50 RIPRAP PER ODOT STD DWG RD 317



NE FLOWLINE PROFILE

SCALE IN FEET

0 30' 60'

4'

CURB RETURN TABLE				
POINT	FL @ FOC LOCATION	ELEVATION	DESC	RADIUS
1	STA 206+05/3.81 RT	3276.25'	PCC	2'
2	STA 206+04/4.16 LT	3276.24'	PC	0'
3	STA 206+36/5.79 LT	3275.95'	PC	242'
4	STA 206+90/4.79 RT	3275.70'	PCC	2'
5	STA 206+91/4.19 RT	3275.68'	PT	
6	STA 206+94/1.33 RT	3275.63'		
7	STA 206+98/1.37 RT	3275.60'		
8	STA 207+01/4.28 RT	3275.60'	PC	2'
9	STA 207+02/4.91 RT	3275.60'	PCC	252'
10	STA 207+84/5.48 RT	3275.12'	PT	
11	STA 207+95/4.82 LT	3275.18'	PC	
12	STA 208+47/5.14 RT	3275.62'	PC	2'
13	STA 208+49/2.66 RT	3275.68'	PT	
14	STA 208+61/6.75 RT	3275.74'	PRC	152'
15	STA 208+78/12.48 RT	3275.89'	PRC	1.5'
16	STA 208+80/10.99 RT	3275.92'	PT	
17	STA 208+60/5.30 RT	3275.75'	PC	2'
18	STA 208+79/11.54 LT	3276.02'	PC	3'
19	STA 208+74/14.09 LT	3275.91'	PRC	174'
20	STA 208+58/7.93 LT	3275.71'	PRC	2'
21	STA 208+57/5.55 LT	3275.71'	PT	
22	STA 208+47/4.73 LT	3275.63'	PC	2'
23	STA 208+45/6.25 LT	3275.58'	PT	
24	STA 206+47/4.34 RT	3276.01'	MID	252'
25	STA 207+16/4.97 LT	3275.36'	MID	242'
26	STA 207+43/5.25 RT	3275.25'	MID	252'

REVISIONS	DATE	BY	
			DESIGNED DR
			DRAWN DR/LYF
			CHECKED
			APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.6-PP00

JOB No. 297-2509-005

DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER 14972 OREGON JULY 25, 1995 BARRY C. JOHNSON

EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

NE FLOWLINE - PLAN & PROFILE

DRAWING NO. 16 OF 43

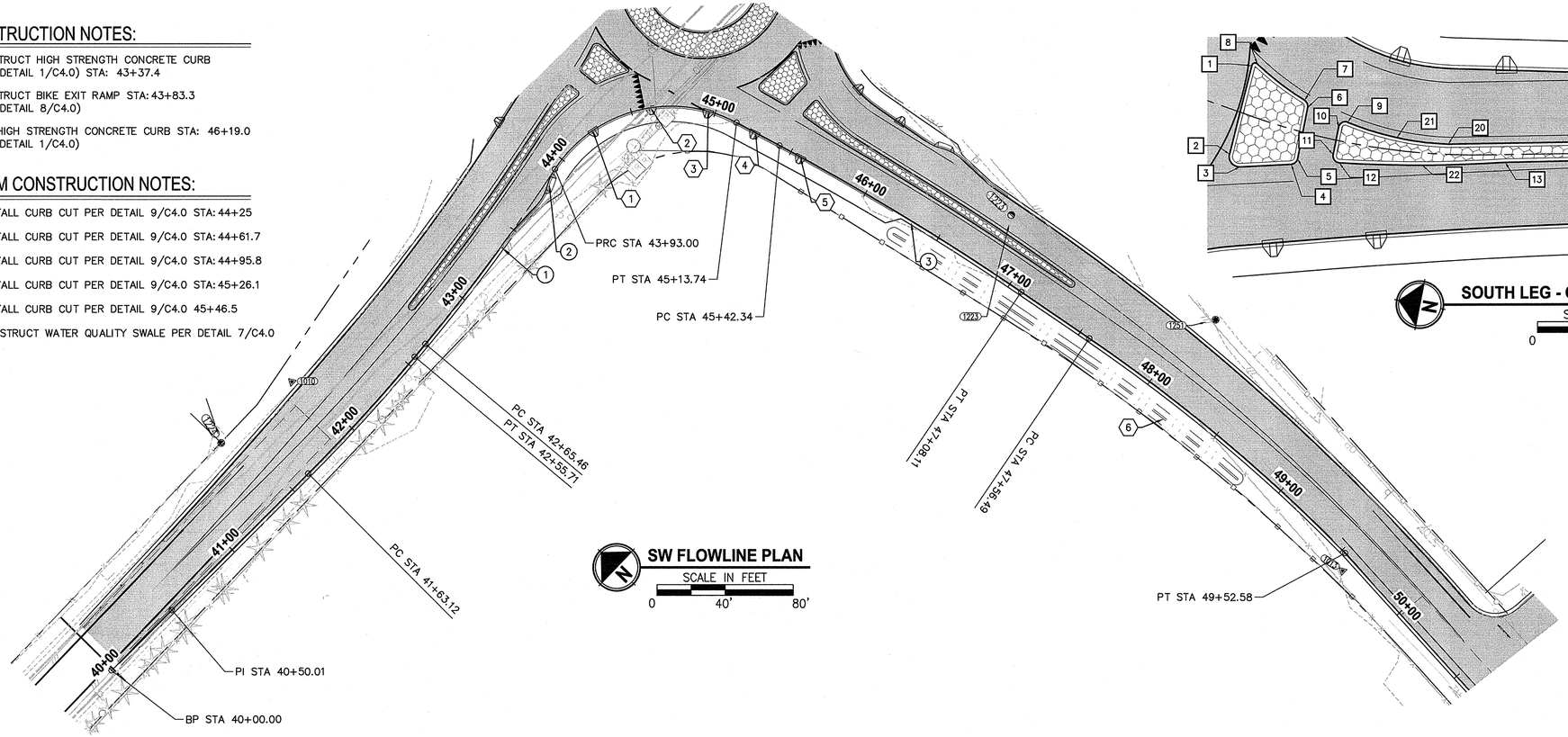
C7.6

CONSTRUCTION NOTES:

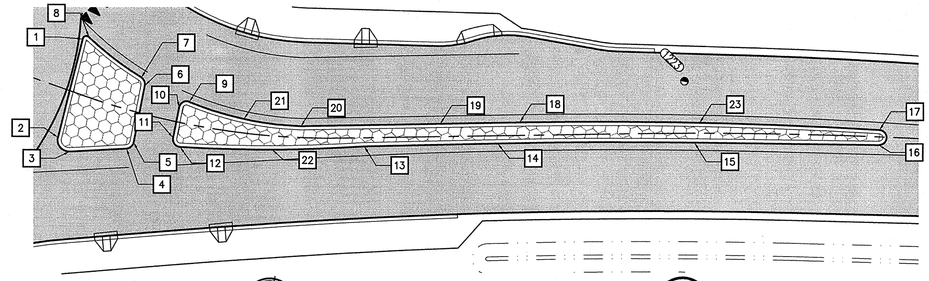
1. CONSTRUCT HIGH STRENGTH CONCRETE CURB (SEE DETAIL 1/C4.0) STA: 43+37.4
2. CONSTRUCT BIKE EXIT RAMP STA: 43+83.3 (SEE DETAIL 8/C4.0)
3. END HIGH STRENGTH CONCRETE CURB STA: 46+19.0 (SEE DETAIL 1/C4.0)

STORM CONSTRUCTION NOTES:

1. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 44+25
2. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 44+61.7
3. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 44+95.8
4. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 45+26.1
5. INSTALL CURB CUT PER DETAIL 9/C4.0 45+46.5
6. CONSTRUCT WATER QUALITY SWALE PER DETAIL 7/C4.0

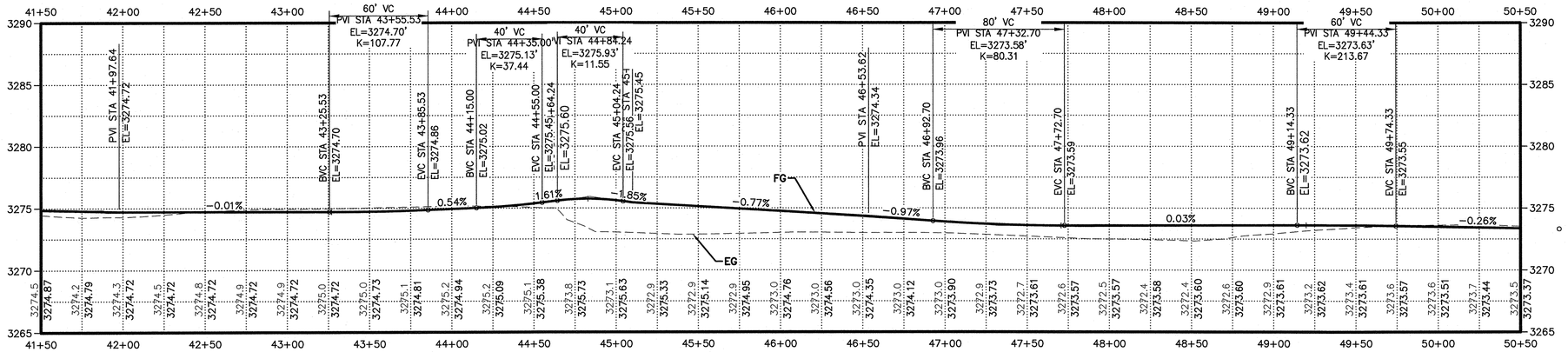


SW FLOWLINE PLAN
SCALE IN FEET
0 40' 80'



SOUTH LEG - CENTER ISLAND DETAIL 1 / C7.7
SCALE IN FEET
0 20' 40'

CURB RETURN TABLE				
POINT	FL @ FOC LOCATION	ELEVATION	DESC	RADIUS
1	STA 210+20/13.99 LT	3275.90	PT	
2	STA 210+23/12.60 RT	3275.86	PC	3'
3	STA 210+27/15.11 RT	3275.77	PT	
4	STA 210+40/9.96 RT	3275.62	PC	2'
5	STA 210+42/7.93 RT	3275.64	PT	
6	STA 210+41/7.38 LT	3275.66	PC	2'
7	STA 210+39/9.16 LT	3275.66	PRC	87'
8	STA 210+22/14.99 LT	3275.87	PRC	1'
9	STA 210+53/5.83 LT	3275.55	PRC	2'
10	STA 210+51/3.85 LT	3275.61	PT	
11	STA 210+51/4.31 RT	3275.59	PC	2'
12	STA 210+53/6.27 RT	3275.54	PCC	403.20'
13	STA 211+01/2.26 RT	3275.18	PT	
14	STA 211+36/2.03 RT	3274.88	PC	1539.40'
15	STA 211+88/2.47 RT	3274.43	PT	
16	STA 212+37/2.19 RT	3274.07	PC	2'
17	STA 212+37/1.81 LT	3274.15	PCC	1287'
18	STA 211+42/3.43 LT	3274.85	PT	
19	STA 211+21/3.39 LT	3275.01		
20	STA 210+84/3.02 LT	3275.31	PC	87'
21	STA 210+69/3.69 LT	3275.44	MID	87'
22	STA 210+77/3.59 RT	3275.37	MID	403.2'
23	STA 211+90/2.76 LT	3274.48	MID	1287'



SW FLOWLINE PROFILE
SCALE IN FEET
0 40' 80'
4'

REGISTERED PROFESSIONAL ENGINEER 14,972 OREGON JULY 25, 1980 BARRY C. JOHNSON
EXPIRES: 6/30/2021

REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.7-PP00
JOB No. 297-2509-005
DATE 12/2019

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

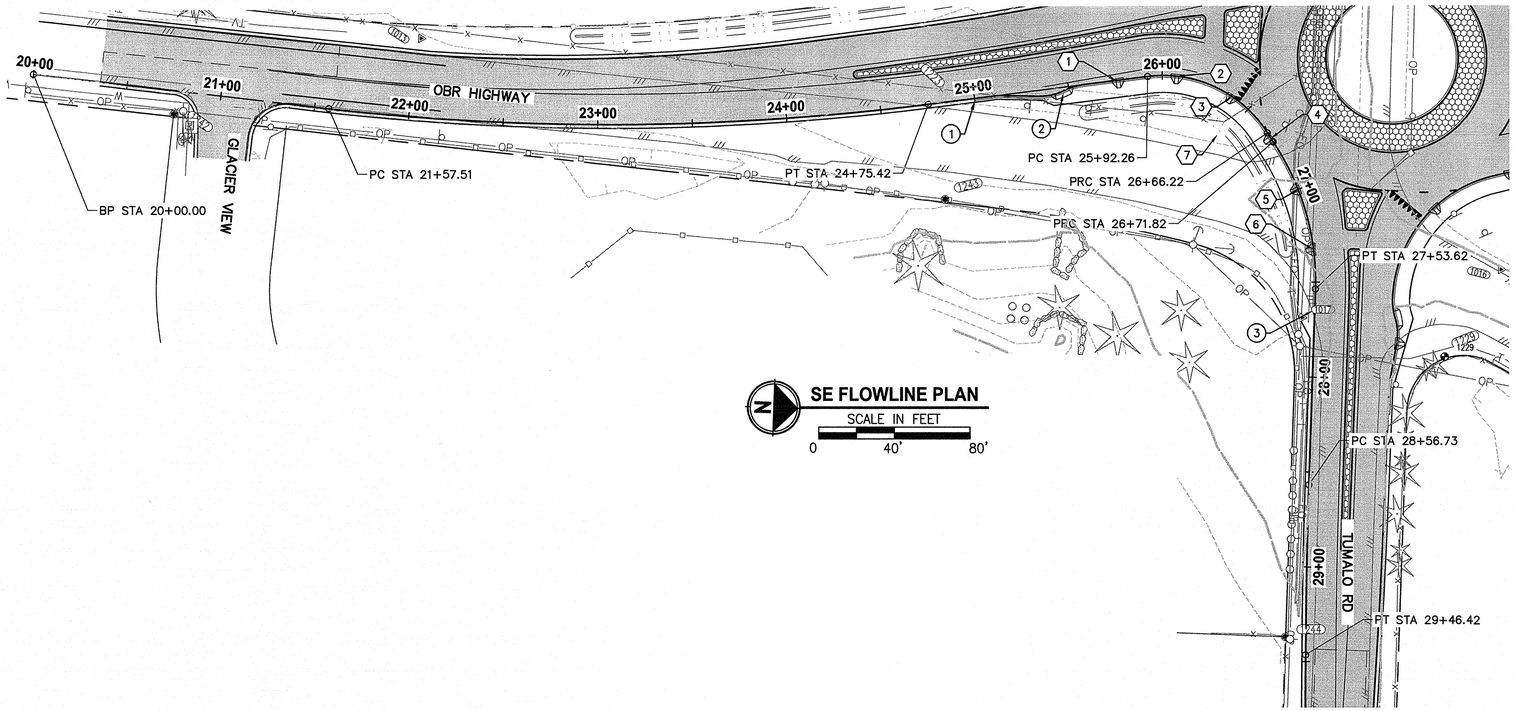
PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

SW FLOWLINE - PLAN & PROFILE

DRAWING NO. 17 OF 43

C7.7

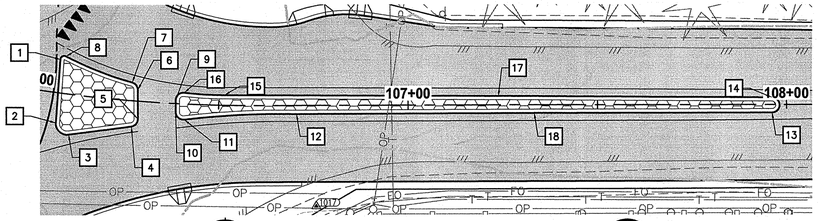
LAYOUT: C7.7 SITE A - PLAN & PROFILE PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\95Svcs\CADD\DWGS\TUMALO RD RBAs\C07'S PLOTTED BY: rlcoday DATE: Friday, April 3, 2020 10:08:35 AM



SE FLOWLINE PLAN

SCALE IN FEET

0 40' 80'



EAST LEG - CENTER ISLAND DETAIL

1 C7.8

SCALE IN FEET

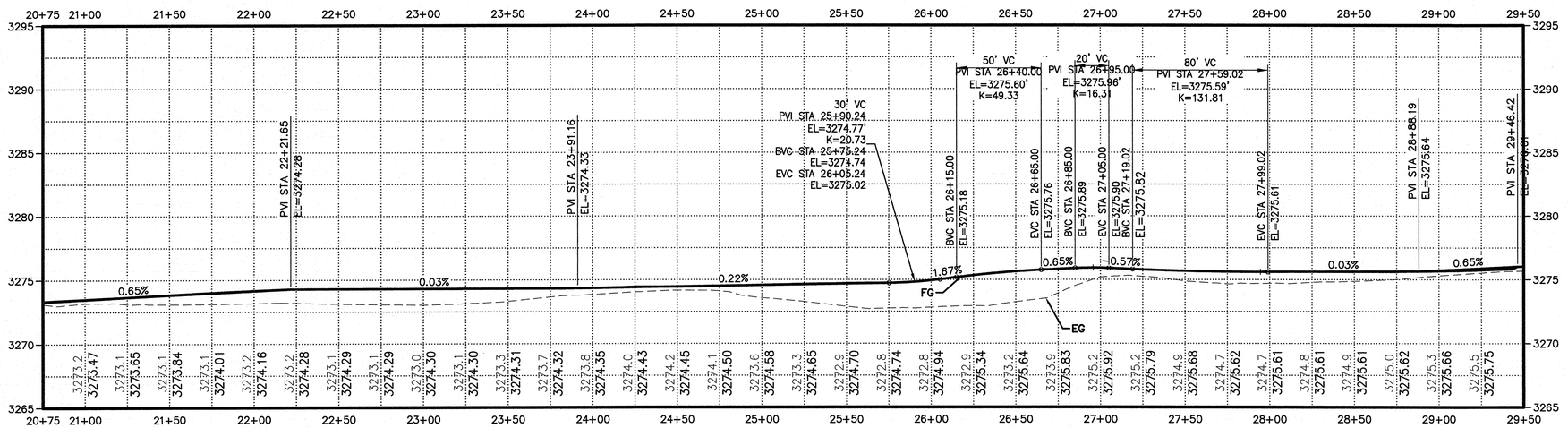
0 20' 40'

CONSTRUCTION NOTES:

1. CONSTRUCT HIGH STRENGTH CONCRETE CURB STA: 25+00.2 (SEE DETAIL 1/C4.0)
2. CONSTRUCT BIKE EXIT RAMP STA: 25+46.3 (SEE DETAIL 8/C4.0)
3. END HIGH STRENGTH CONCRETE CURB STA: 27+65.1

STORM CONSTRUCTION NOTES:

1. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 25+76.4
2. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 26+07.9
3. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 26+39.2
4. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 26+69.6
5. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 27+00
6. INSTALL CURB CUT PER DETAIL 9/C4.0 STA: 27+32.9
7. CONSTRUCT WATER QUALITY SWALE PER DETAIL 7/C4.0



SE FLOWLINE PROFILE

SCALE IN FEET

0 40' 80'

4'

CURB RETURN TABLE

POINT	FL @ FOC LOCATION	ELEVATION	DESC	RADIUS
1	STA 106+07/8.79 LT	3275.99'	PT	
2	STA 106+08/8.03 RT	3275.83'	PC	3'
3	STA 106+12/10.72 RT	3275.73'	PT	
4	STA 106+27/6.84 RT	3275.58'	PC	2'
5	STA 106+29/4.73 RT	3275.60'	PT	
6	STA 106+28/3.01 LT	3275.75'	PC	2'
7	STA 106+27/4.82 LT	3275.79'	PRC	92'
8	STA 106+08/9.83 LT	3276.02'	PRC	1'
9	STA 106+39/0.89 LT	3275.63'	PT	
10	STA 106+39/2.25 RT	3275.56'	PC	2'
11	STA 106+41/4.13 RT	3275.51'	PRC	226'
12	STA 106+71/2.27 RT	3275.44'	PT	
13	STA 107+96/2.11 RT	3275.88'	PC	2'
14	STA 107+96/1.89 LT	3275.86'	PT	
15	STA 106+51/2.68 LT	3275.55'	PC	92'
16	STA 106+41/2.98 LT	3275.65'	PRC	2'
17	STA 107+24/2.33 LT	0.00'	MID	
18	STA 107+33/2.19 RT	3275.97'	MID	

REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.8-PP00
JOB No. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER 14,972 OREGON JULY 25, 1990 BARRY C. JOHNSON
EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

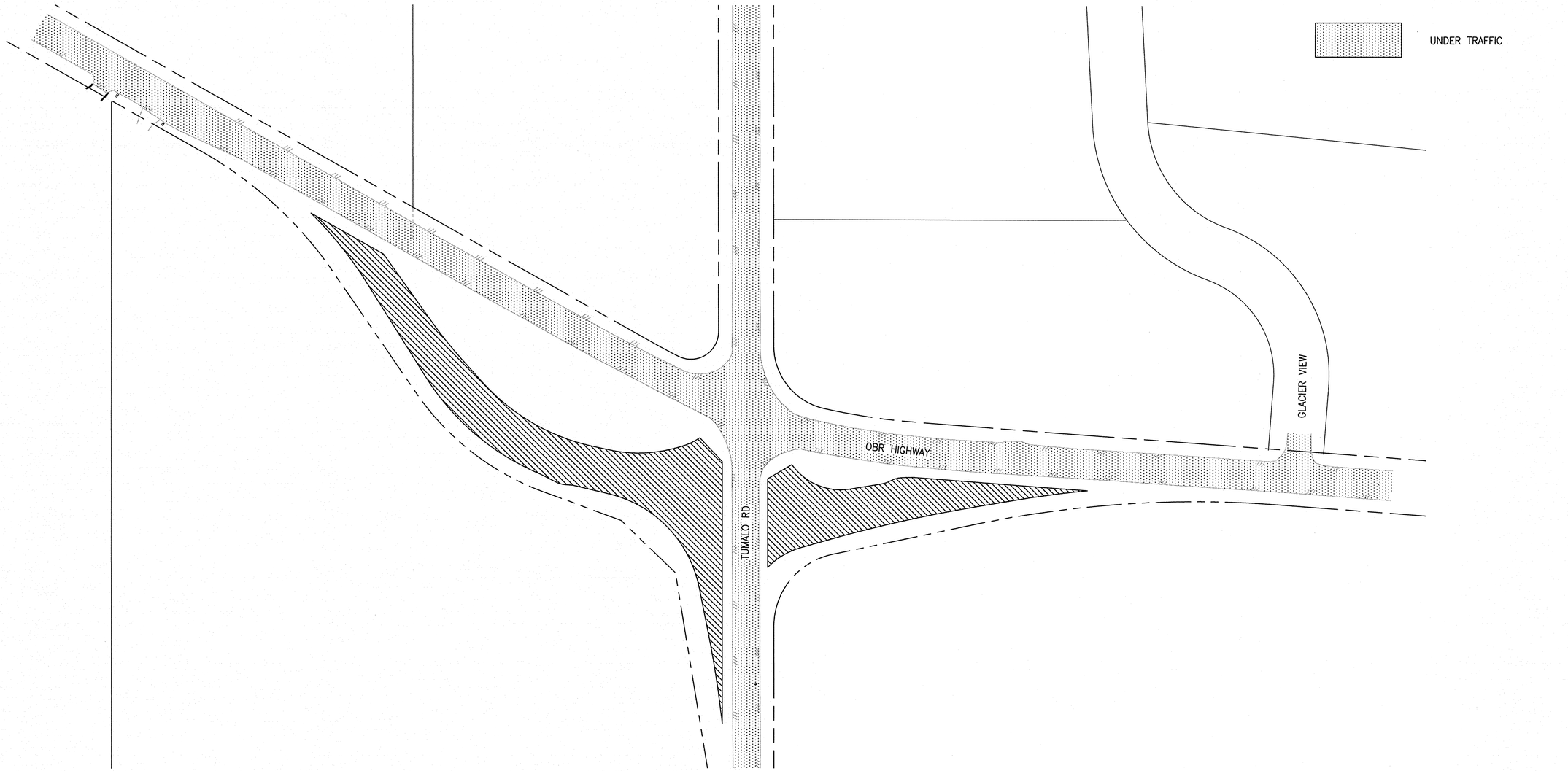
PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

SE FLOWLINE - PLAN & PROFILE

DRAWING NO. 18 OF 43

C7.8

LAYOUT: C7.8 SITE A - PLAN & PROFILE PATH: U:\Bend\Projects\Clients\2509-deschutes county\297-2509-005 dcm design phase\99Svcs\CADD\DWG\tumalo rd rbas\CD'S PLOTTED BY: rlcodov DATE: Friday, April 3, 2020 9:29:21 AM



	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.9-ST00
JOB No. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER
14872
OREGON
JULY 25, 1989
BARRY C. JOHNSON
EXPIRES: 6/30/2021

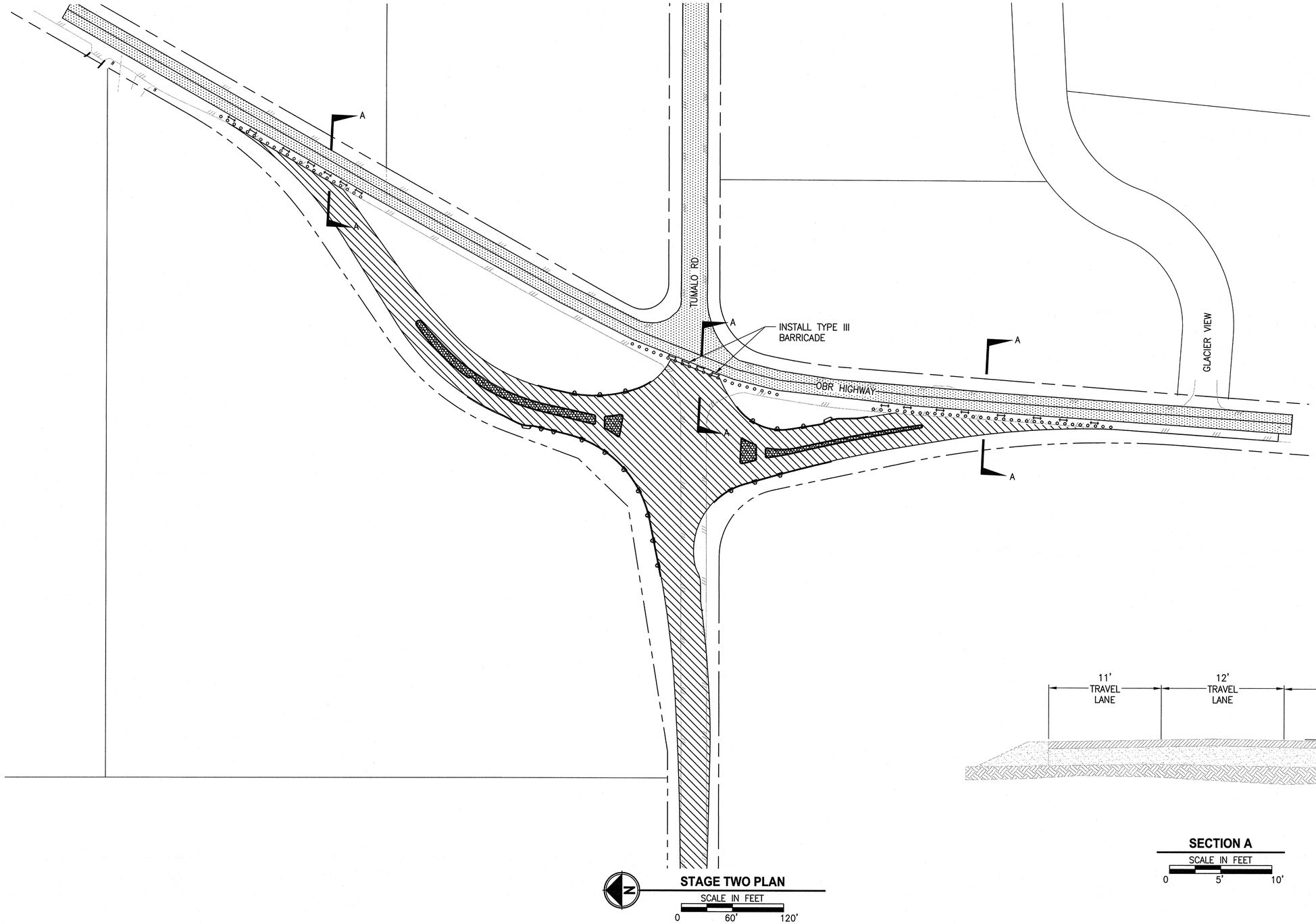
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND
HIGHWAY/ TUMALO RD
INTERSECTION IMPROVEMENTS

CONSTRUCTION STAGING - STAGE ONE

DRAWING NO.
19 OF 43

C7.9



STAGE TWO PLAN

SCALE IN FEET

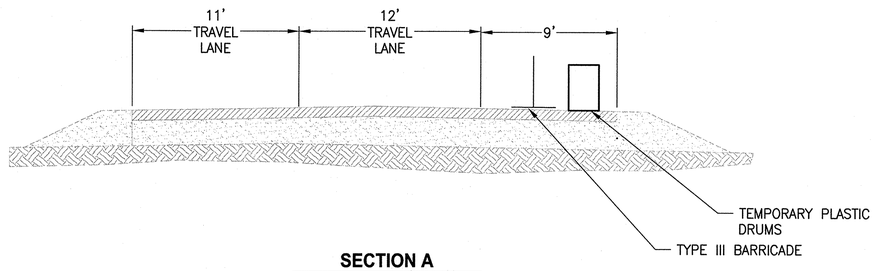
0 60' 120'

UNDER CONSTRUCTION

UNDER TRAFFIC

TRAFFIC BARRELS

TYPE III BARRICADE



SECTION A

SCALE IN FEET

0 5' 10'

LAYOUT: C7.10 SITE A STAGE TWO PATH: U:\Bend\Projects\Clients\2509-deschutes county\297-2509-005 dsrh design phase\99Svcs\CADD\DWG\tumalo rd roas\CD'S PLOTTED BY: rcedav DATE: Friday, April 3, 2020 9:29:38 AM

	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.9-ST00
JOB No. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER 14972 OREGON JULY 25, 1980 BARRY C. JOHNSON

EXPIRES: 6/30/2021

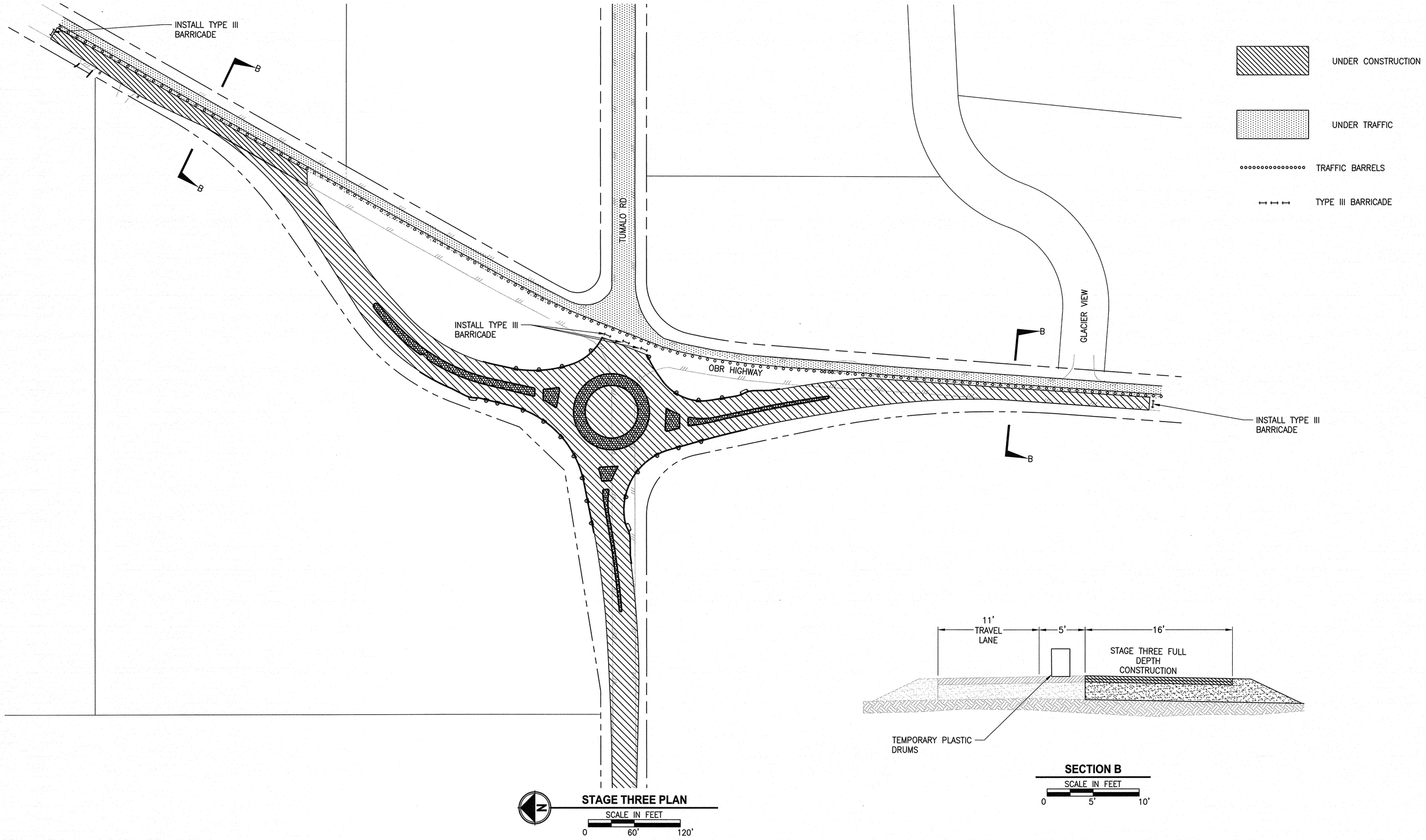
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

CONSTRUCTION STAGING - STAGE TWO

DRAWING NO. 20 OF 43

C7.10



STAGE THREE PLAN

SCALE IN FEET

0 60' 120'

SECTION B

SCALE IN FEET

0 5' 10'

REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.9-ST00
JOB NO. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER 14,972 OREGON JULY 25, 1986 BARRY C. JOHNSON
EXPIRES: 6/30/2021

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

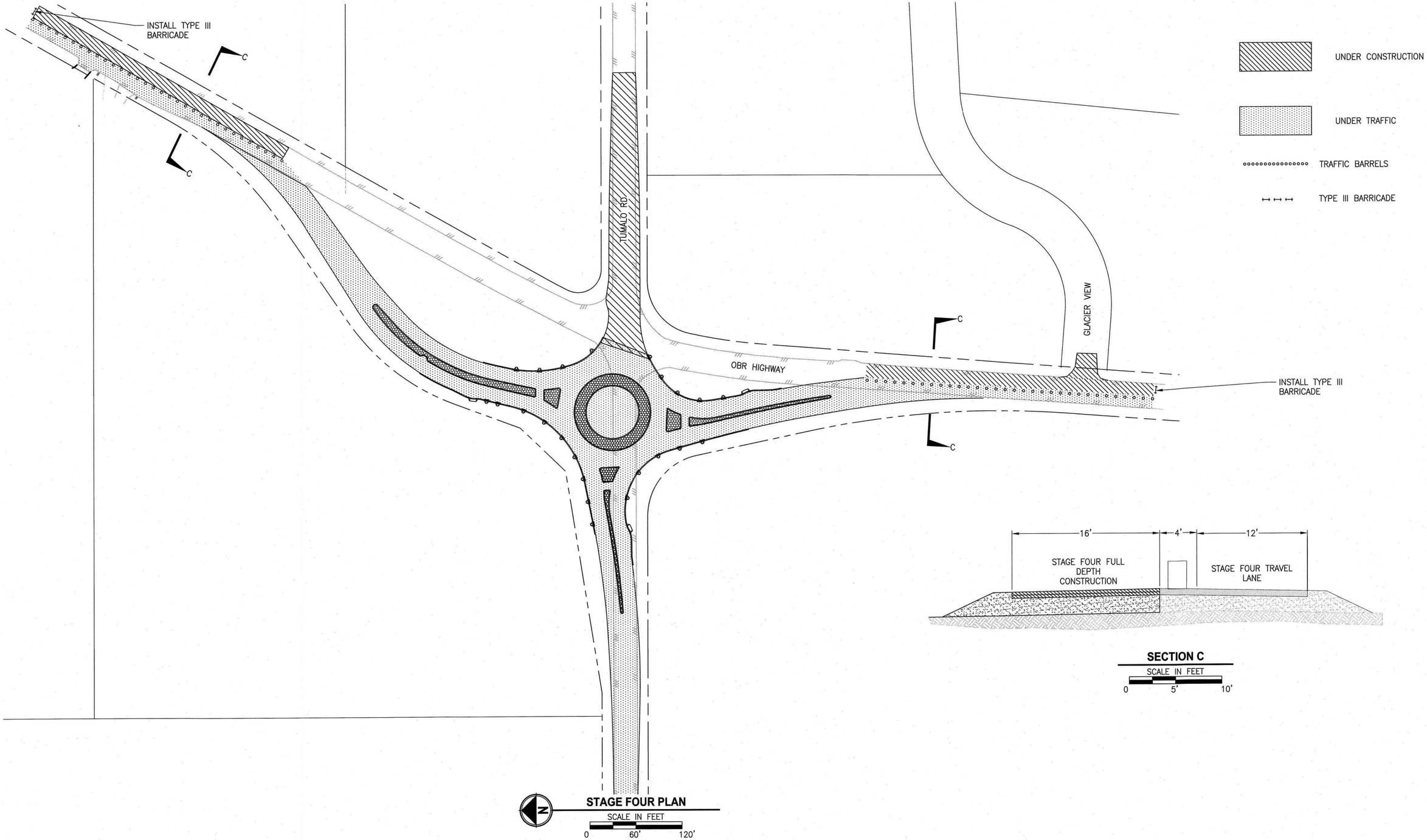
PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

CONSTRUCTION STAGING - STAGE THREE

DRAWING NO.
21 OF 43

C7.11

LAYOUT: C7.11 SITE A STAGE THREE PATH: U:\Bend\Projects\Clients\2509-deschutes county\297-2509-005 obrh design phase\99Sves\CADD\DWG\tumalo rd rbas\20'S PLOTTED BY: rlcadav DATE: Friday, April 3, 2020 9:29:42 AM



SECTION C

SCALE IN FEET

0 5' 10'

LAYOUT: C7.12 SITE A STAGE FOUR PATH: L:\Bend\Projects\Clients\2509--Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\TUMALO RD RBAs\CD'S PLOTTED BY: rlcoday DATE: Monday, April 27, 2020 11:14:24 AM

REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.9-ST00
JOB No. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER
19,977
OREGON
JULY 29, 1980
BARRY C. JOHNSON
EXPIRES: 6/30/2021

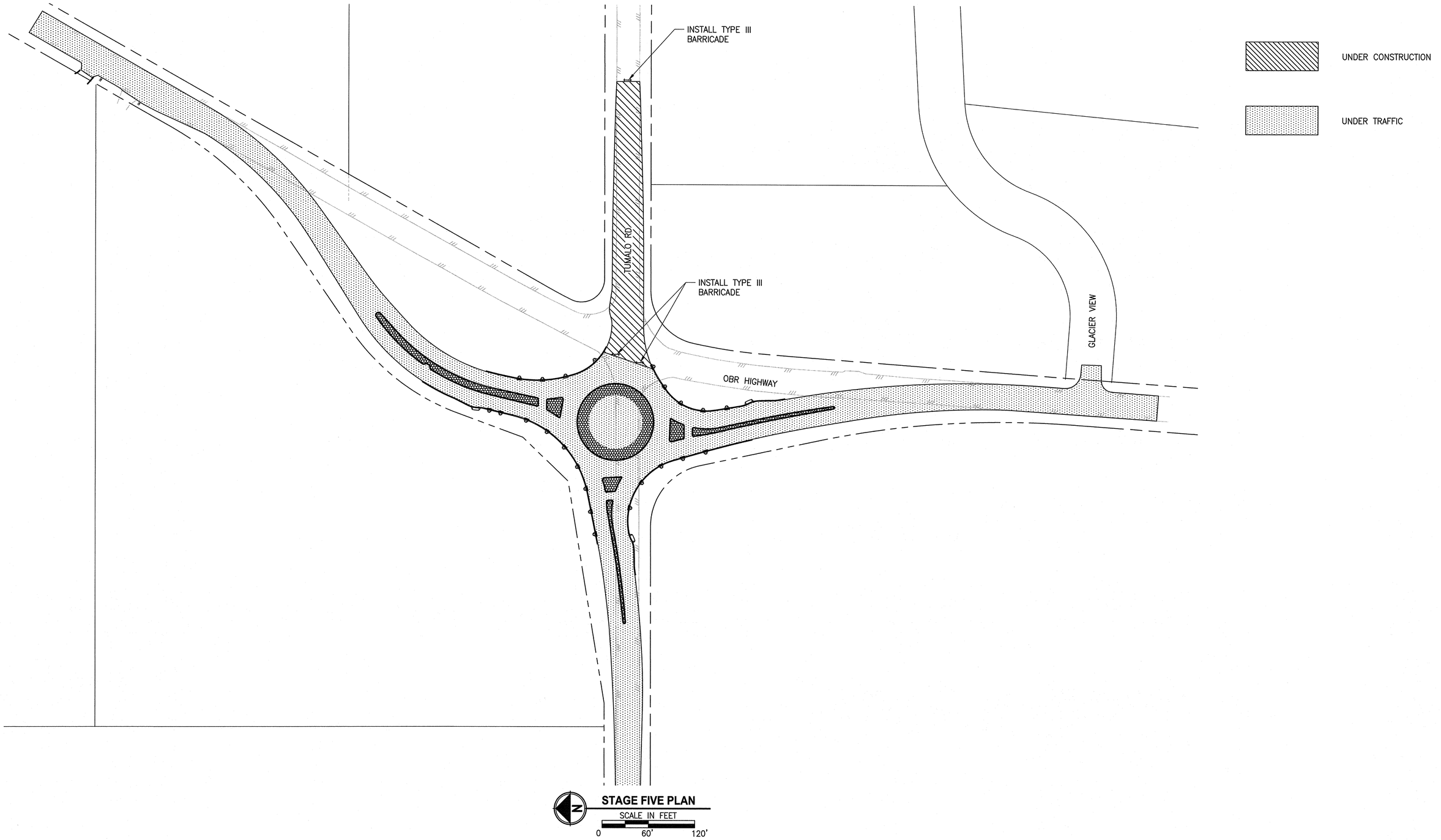
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

CONSTRUCTION STAGING - STAGE FOUR

DRAWING NO.
22 OF 43

C7.12



STAGE FIVE PLAN

SCALE IN FEET

	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C7.9-ST00
JOB No. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER
14,978
OREGON
JULY 25, 1980
BARRY C. JOHNSON
EXPIRES: 6/30/2021

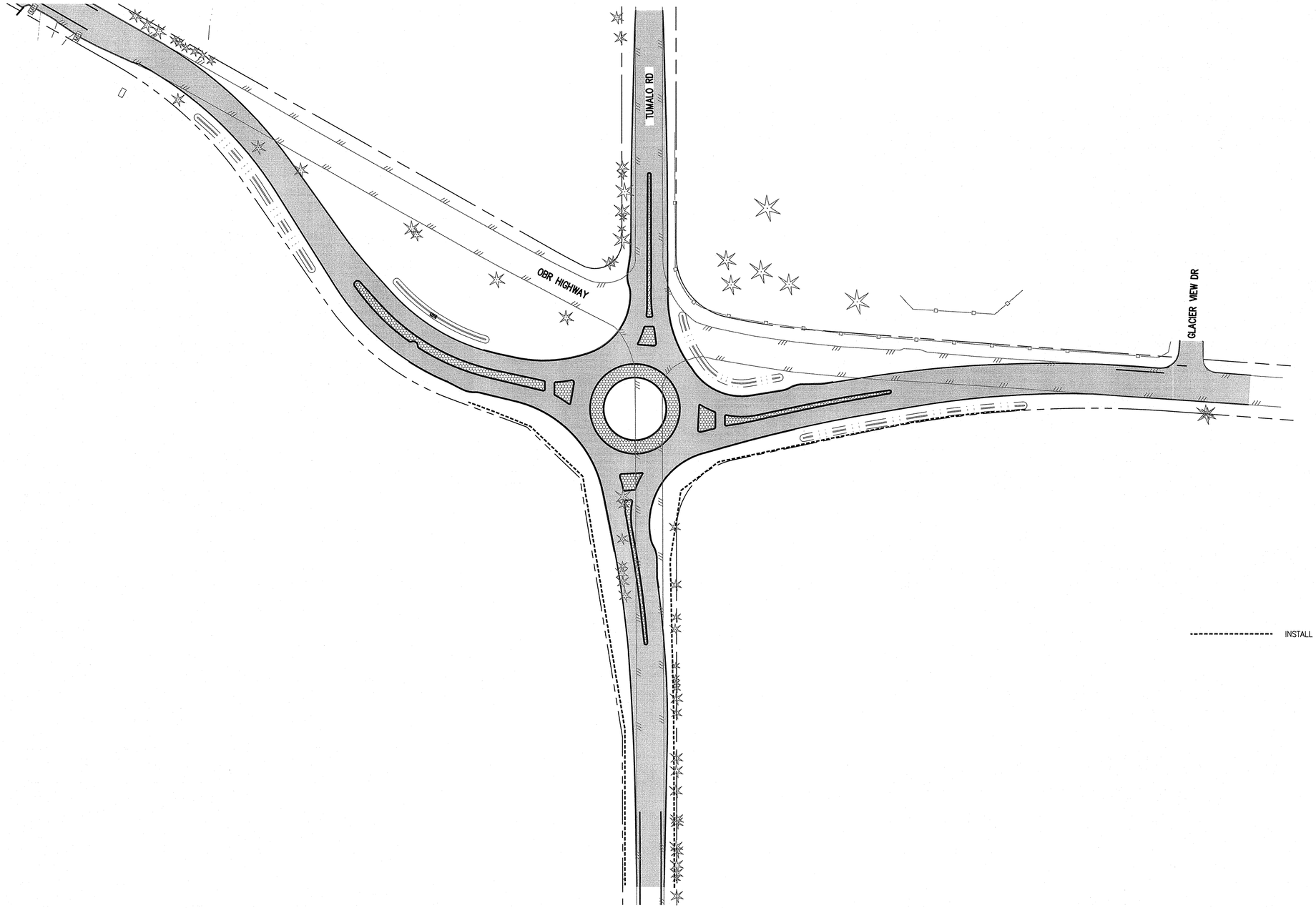
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

CONSTRUCTION STAGING - STAGE FIVE

DRAWING NO.
23 OF 43
C7.13

LAYOUT: C7.13 SITE A STAGE FIVE PATH: U:\Bend\Projects\Clients\2509-deschutes county\297-2509-005 obrh design phase\99Svcs\CADD\DWG\tumalo rd road\03'S PLOTTED BY: rlovday DATE: Friday, April 3, 2020 9:29:52 AM



INSTALL SEDIMENT FENCE

EROSION CONTROL PLAN

SCALE IN FEET

0 60' 120'

LAYOUT: EROSION CONTROL PLAN PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-005 OBRH Design Phase\99Svcs\CADD\DWG\TUMALO RD RB4s\CO'S PLOTTED BY:: rlcoday DATE: Friday, April 3, 2020 10:19:11 AM

	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-C8.0-ER00
JOB No. 297-2509-005
DATE 12/2019

REGISTERED PROFESSIONAL ENGINEER 14,972 OREGON JULY 25, 1980 BARRY C. JOHNSON

EXPIRES: 6/30/2021

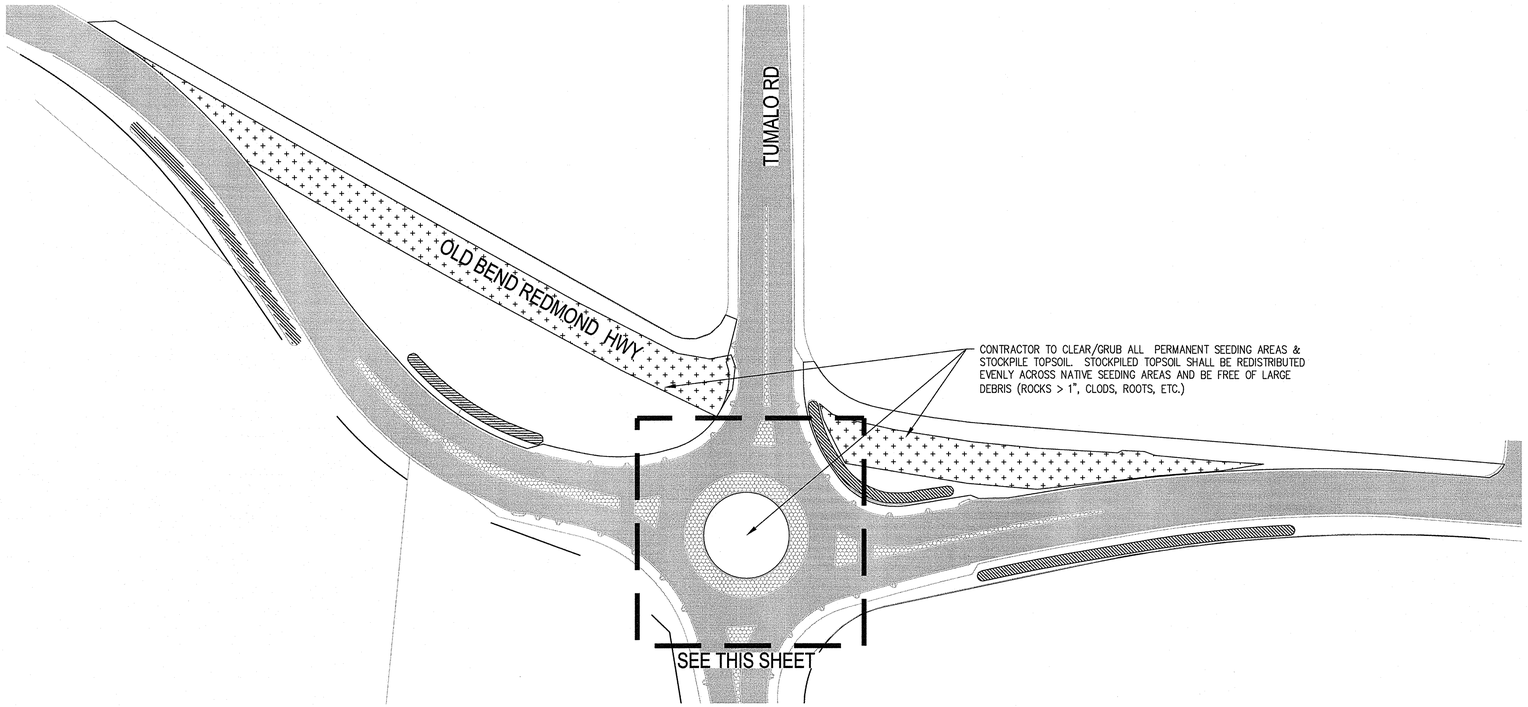
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

EROSION CONTROL PLAN

DRAWING NO. 24 OF 43

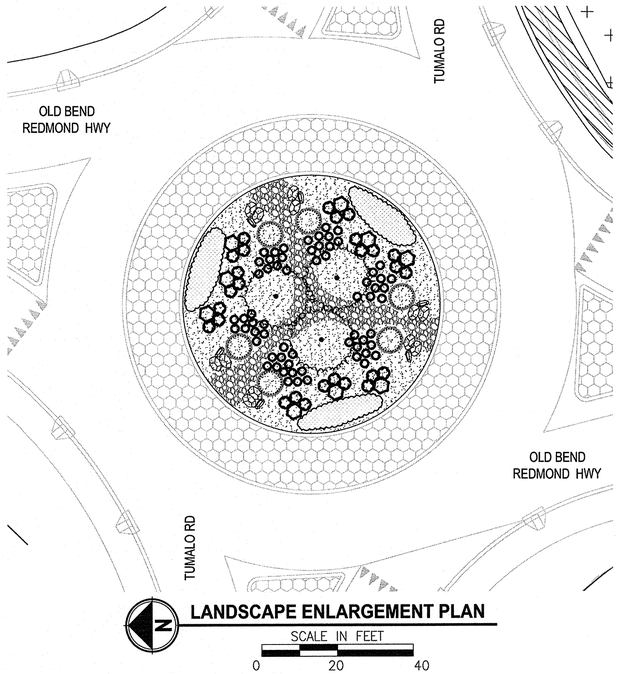
C8.0



LANDSCAPE PLAN

SCALE IN FEET

0 20' 40'



LANDSCAPE ENLARGEMENT PLAN

SCALE IN FEET

0 20 40

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CAL.
	JO	3	JUNIPERUS OCCIDENTALIS / WESTER JUNIPER	6' HT / B&B

SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	CK	64	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' / FEATHER REED GRASS	#1 CONT
	CV	27	CHRYSOTHAMNUS VISCIDIFLORUS / YELLOW RABBITBRUSH	#1 CONT
	PA	9	PEROVSKIA ATRIPLICIFOLIA / RUSSIAN SAGE	#2 CONT
	PP	6	PINUS MUGO 'PUMILIO' / MUGO PINE	#5 CONT

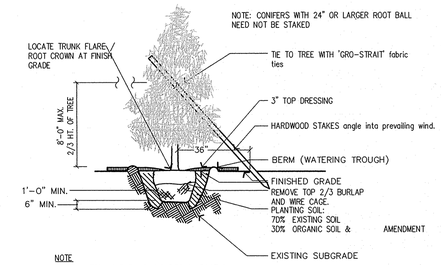
GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT	SPACING
	AL	105	ARTEMISIA ARBUSCULA / LITTLE SAGEBRUSH	#1	24" o.c.

LANDSCAPE MATERIALS LEGEND:

- REPLACE SITE TOPSOIL/NATIVE SEEDING
- WATER QUALITY SWALE HYDROSEEDING, SEE DETAIL 7/C4.0
- DECOMPOSED GRANITE AT 2" DEPTH
- 4"–6" WASHED RIVER ROCK COBBLES AT 3" DEPTH
- 3'–4' LANDSCAPE BOULDERS

GENERAL LANDSCAPE NOTES:

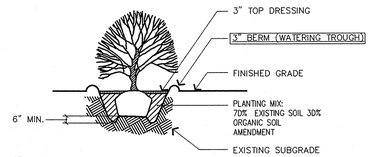
1. LANDSCAPE MATERIALS & QUANTITIES SHALL BE FIELD ADJUSTED TO FIT ACTUAL FIELD CONDITIONS IF NECESSARY. COORDINATE LANDSCAPE CONSTRUCTION & REVIEWS WITH DESCHUTES COUNTY.
2. CONTRACTOR SHALL APPLY PERMENNT SEEDING TO ALL THE DISTURBED AREAS WITHIN THE PROJECT AREA EXPECT AREAS OTHERWISE SHOWN ON PLANS.



NOTE
1. PLANTER HOLE TWICE THE SIZE OF ROOT BALL.
2. WATERING TROUGHS ARE REQUIRED FOR ALL SHRUBS WITH BUBBLER IRRIGATION.
3. WHEN PLANTING ON A SLOPE, WATERING TROUGH SHALL BE CONSTRUCTED TO HOLD AND 2" OF WATER

CONIFER TREE PLANTING DETAIL

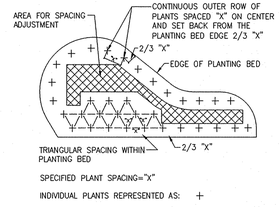
NOT TO SCALE



NOTE
1. PLANTER HOLE TWICE THE SIZE OF ROOT BALL.
2. WATERING TROUGHS ARE REQUIRED FOR ALL SHRUBS WITH BUBBLER IRRIGATION.
3. WHEN PLANTING ON A SLOPE, WATERING TROUGH SHALL BE CONSTRUCTED TO HOLD AND 2" OF WATER

SHRUB PLANTING DETAIL

NOT TO SCALE



SPECIFIED PLANT SPACING="X"

INDIVIDUAL PLANTS REPRESENTED AS: +

PLANT SPACING DETAIL

NO SCALE

	REVISIONS	DATE	BY

DESIGNED DR
DRAWN DR/LYF
CHECKED
APPROVED

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

FILE NAME BE2509005-L1.0-PL00
JOB No. 297-2509-005
DATE 12/2019

REGISTERED LA 905 Darren C. Sandeno OREGON 09/30/20 LANDSCAPE ARCHITECT

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/ TUMALO RD INTERSECTION IMPROVEMENTS

LANDSCAPE PLAN

DRAWING NO. 25 OF 43

L1.0

PLOTTED BY: rleodov DATE: Friday, April 3, 2020 9:30:10 AM
PATH: U:\Bend\Projects\Clients\2509-deschutes county\297-2509-005 dsrh design phase\99Sves\CADD\DWG\tumalo rd rbas\DS
LAYOUT: LANDSCAPE PLAN

SIGNING AND STRIPING LEGEND
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS

SIGNING LEGEND

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

ABBREVIATIONS

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

STRIPING LEGEND

- Y — Inst. 4" yellow line
- W-2 — Inst. 8" white line
- WD-2 — Inst. 8" white dotted line
- S — Inst. 1' white stop bar
- ND — Inst. narrow double no-pass two 4" yellow lines
- YLD — Inst. yield line (white)

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 "Method AB: Thermoplastic, Extruded or Sprayed, Surface, Non-Profiled".
4. All transverse bars and legends shall be type "AB Thermoplastic".
5. All signs and sign supports removed from the project shall be salvaged to Deschutes County.
6. Preserve and protect all existing striping outside of the project limits.

	REVISIONS	DATE	BY	
				DESIGNED LTN
				DRAWN LTN
				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
4/1/2020
EXPIRES 12/31/21

KITTELSON & ASSOCIATES

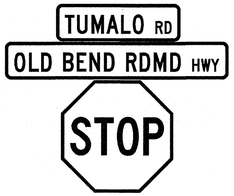
PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

SIGNING AND STRIPING LEGEND

DRAWING NO.
26 OF 43
SS1

EXISTING SIGN DETAILS
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS

Sign 1



Sign 2

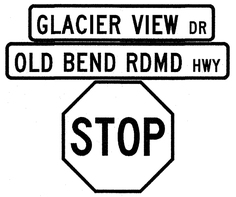
Sign 3


Sign 4

5a
5b
5c
Sign 5


Sign 6

Sign 7



Sign 8

Sign 9

Sign 10

Sign 11


Sign 12

Sign 13

	REVISIONS	DATE	BY	DESIGNED LTN
				DRAWN LTN
				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
4/3/2020
EXPIRES 12/31/21

KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

EXISTING SIGN DETAILS

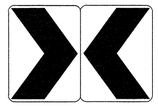
DRAWING NO.
27 OF 43
SS2

Sign 101

Sign 102

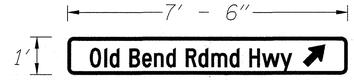
Sign 103

Sign 104

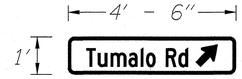
105a  105b

Sign 105

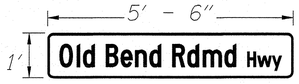
Sign 106



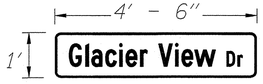
Sign 107



Sign 108

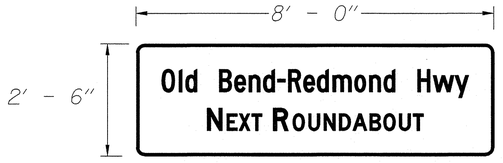


Sign 109

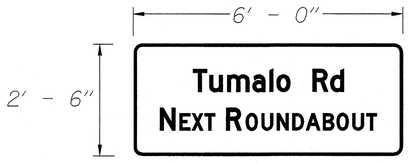


Sign 110

Sign 111



Sign 112



Sign 113

	REVISIONS	DATE	BY	
				DESIGNED LTN
				DRAWN LTN
				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
4/3/2020
EXPIRES 12/31/21

KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

PROPOSED SIGN DETAILS

DRAWING NO.
28 OF 43
SS3

SIGN & POST DATA TABLE
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS

SIGN NO.	SIGN LOCATION 4/ (TM200-TM201, TM635)	SIGN DIMENSIONS		SUB-STRATE			COLOR 1/					LEGEND		SIGN NO. 2/	TYPE OF SUPPORT																				POST		FOOTING		REMARKS
							BACKGROUND		LEGEND																									SECONDARY SIGN (TM676 & TM678)				SIZE	LENGTH	LOCATION 3/	MIN. DEPTH 5/	
		WIDTH	HEIGHT	PLYWOOD	SHEET ALUMINUM	EXTRUDED ALUM. (TM675)	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	NON-REFLECTIVE	PERMANENT	REMOVABLE (TM230-TM233)		WOOD POST (TM670-TM671, TM676)	SQ. TUBE SIGN SUPPORT (TM671, TM676, TM681, TM687-TM689)	TRIANGULAR BASE BREAKAWAY (TM602)	H-FRAME	MULTI-POST BREAKAWAY (TM220, TM600-TM601)	STAINLESS STEEL CLAMP (SSC) (TM677)	SIGNAL POLE MOUNT (TM680)	MAST ARM SIGN MOUNT (TM679)	BRIDGE STRUCTURE MOUNT (TM677)	CANTILEVER / BUTTERFLY (TM622-TM627)	SIGN BRIDGE (TM606-TM612, TM614-TM620)	EXIT NUMBER SIGN MOUNT (TM220, TM225)	ROUTE MARKER FRAME (TM678)	MILEPOST MARKER POST (TM221-TM222)	CROSSWALK CLOSURE BARRICADE (TM490)	VERTICAL SIGN MOUNTS ON EXISTING STRUCTURE	CUSTOM VARIABLE SUPPORT	C 4X5.4	C 4X7.25	LENGTH	(BASED ON ESTIMATED LENGTH)	(MUST BE FIELD VERIFIED)			
1	103+04.58													1		X																			2" - 12 ga.	11'	24.9 'LT	3' - 3 1/2"	Existing sign reinstalled on new sign support; Slip Base
5a	107+03.80													5a		X																			2 1/2" - 12 ga.	11'	25.7' LT	3' - 3 1/2"	Existing sign reinstalled on new sign support; Slip Base
5b	107+03.80													5b		X																						Below 5a
5c	107+03.80													5c		X																						Below 5b
13	101+00.08													13		X																			2" - 12 ga.	10'	21.4' LT	3' - 3 1/2"	Existing sign reinstalled on new sign support
101	104+55.41	36"	36"		X		SW		R			X		101		X																			2" - 12 ga.	10'	40.2' RT	3' - 3 1/2"	Slip Base
101	106+18.26	36"	36"		X		SW		R			X		101		X																			2" - 12 ga.	10'	35.6' LT	3' - 3 1/2"	Slip Base
101	208+74.37	36"	36"		X		SW		R			X		101		X																			2" - 12 ga.	10'	38.1' RT	3' - 3 1/2"	Slip Base
101	210+28.37	36"	36"		X		SW		R			X		101		X																			2" - 12 ga.	10'	40.0' RT	3' - 3 1/2"	Slip Base
102	215+42.99	30"	30"		X		R		SW			X		102		X																			2 1/4" & 2 1/2" - 12 ga.	11'	29.6' LT	3' - 3 1/2"	Same post as 109 and 110 (below); Slip Base
103	105+10.07	60"	24"		X		SW				BK	X		103		X																			2 1/2" - 12 ga.	11'	19.5' RT	3' - 3 1/2"	Slip Base
103	105+19.56	60"	24"		X		SW				BK	X		103		X																			2 1/2" - 12 ga.	11'	27.8' LT	3' - 3 1/2"	Slip Base
103	105+52.84	60"	24"		X		SW				BK	X		103		X																			2 1/2" - 12 ga.	11'	27.0' RT	3' - 3 1/2"	Slip Base
103	105+64.73	60"	24"		X		SW				BK	X		103		X																			2 1/2" - 12 ga.	11'	14.2' LT	3' - 3 1/2"	Slip Base
104	101+55.17	30"	30"		X		Y				BK	X		104		X																			2" - 12 ga.	9'	23.9' RT	3' - 3 1/2"	Slip Base
104	109+05.00	30"	30"		X		Y				BK	X		104		X																			2" - 12 ga.	9'	22.2' LT	3' - 3 1/2"	Slip Base
104	204+50.00	30"	30"		X		Y				BK	X		104		X																			2" - 12 ga.	9'	21.0' RT	3' - 3 1/2"	Slip Base
104	213+40.00	30"	30"		X		Y				BK	X		104		X																			2" - 12 ga.	9'	23.2' LT	3' - 3 1/2"	Slip Base
105a	202+60.99	18"	24"		X		Y				BK	X		105a		X																			2" - 12 ga.	9'	21.8' LT	3' - 3 1/2"	Slip Base
105a	203+02.53	18"	24"		X		Y				BK	X		105a		X																			2" - 12 ga.	9'	22.0' LT	3' - 3 1/2"	Slip Base
105a	203+45.34	18"	24"		X		Y				BK	X		105a		X																			2" - 12 ga.	9'	22.0' LT	3' - 3 1/2"	Slip Base
105a	203+88.77	18"	24"		X		Y				BK	X		105a		X																			2" - 12 ga.	9'	22.2' LT	3' - 3 1/2"	Slip Base
105b	205+27.60	18"	24"		X		Y				BK	X		105b		X																			2" - 12 ga.	9'	23.9" RT	3' - 3 1/2"	Slip Base
105b	205+94.55	18"	24"		X		Y				BK	X		105b		X																			2" - 12 ga.	9'	26.7' RT	3' - 3 1/2"	Slip Base
105b	206+74.19	18"	24"		X		Y				BK	X		105b		X																			2" - 12 ga.	9'	25.6' RT	3' - 3 1/2"	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 PROJECT CENTERLINE. 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 1' DIAMETER FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601 AND TM602.

REVISIONS	DATE	BY	DESIGNED LTN
			DRAWN LTN
			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 4/29/2020
EXPIRES 12/31/21

KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

SIGN & POST DATA TABLE

DRAWING NO.
29 OF 43
SS4

SIGN & POST DATA TABLE
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS

SIGN NO.	SIGN LOCATION 4/ (TM200-TM201, TM635)	SIGN DIMENSIONS		SUB-STRATE			COLOR 1/ BACKGROUND		COLOR 1/ LEGEND			LEGEND		SIGN NO. 2/	TYPE OF SUPPORT																						POST		FOOTING		REMARKS
		WIDTH	HEIGHT	PLYWOOD	SHEET ALUMINUM	EXTRUDED ALUM. (TM675)	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	NON-REFLECTIVE	PERMANENT	REMOVABLE (TM230-TM233)		WOOD POST (TM670-TM671, TM676)	SQ. TUBE SIGN SUPPORT (TM671, TM676, TM681, TM687-TM689)	TRIANGULAR BASE BREAKAWAY (TM602)	H-FRAME	MULTI-POST BREAKAWAY (TM220, TM600-TM601)	STAINLESS STEEL CLAMP (SSC) (TM677)	SIGNAL POLE MOUNT (TM680)	MAST ARM SIGN MOUNT (TM679)	BRIDGE STRUCTURE MOUNT (TM677)	CANTILEVER / BUTTERFLY (TM622-TM627)	SIGN BRIDGE (TM606-TM612, TM614-TM620)	EXIT NUMBER SIGN MOUNT (TM220, TM225)	ROUTE MARKER FRAME (TM678)	MILEPOST MARKER POST (TM221-TM222)	CROSSWALK CLOSURE BARRICADE (TM490)	VERTICAL SIGN MOUNTS ON EXISTING STRUCTURE	CUSTOM VARIABLE SUPPORT	SECONDARY SIGN (TM676 & TM678) C 4X5.4	SECONDARY SIGN (TM676 & TM678) C 4X7.25	SECONDARY SIGN (TM676 & TM678) LENGTH	SIZE (BASED ON ESTIMATED LENGTH)	LENGTH (MUST BE FIELD VERIFIED)	LOCATION 3/	MIN. DEPTH 5/	
106	102+77.46	12"	36"		X		Y				BK	X		106		X																			2" - 12 ga.	7'	CL	3' - 3 1/2"	Slip Base
106	107+94..16	12"	36"		X		Y				BK	X		106		X																			2" - 12 ga.	7'	CL	3' - 3 1/2"	Slip Base
106	206+05.74	12"	36"		X		Y				BK	X		106		X																			2" - 12 ga.	7'	CL	3' - 3 1/2"	Slip Base
106	212+34.98	12"	36"		X		Y				BK	X		106		X																			2" - 12 ga.	7'	CL	3' - 3 1/2"	Slip Base
107	208+74.37	7' - 6"	1' - 0"			X	G		SW			X		107		X																			2 1/2" - 12 ga.	8'	6.6' LT	3' - 3 1/2"	Slip Base
107	210+27.65	7' - 6"	1' - 0"			X	G		SW			X		107		X																			2 1/2" - 12 ga.	8'	7.6' RT	3' - 3 1/2"	Slip Base
108	104+58.65	4' - 6"	1' - 0"		X		G		SW			X		108		X																			2" - 12 ga.	8'	4.8' RT	3' - 3 1/2"	Slip Base
108	106+12.81	4' - 6"	1' - 0"		X		G		SW			X		108		X																			2" - 12 ga.	8'	4.4' RT	3' - 3 1/2"	Slip Base
109	215+42.99	5' - 6"	1' - 0"		X		G		SW			X		109		X																								Same post as 102 and 111 (above)
110	215+42.99	4' - 6"	1' - 0"		X		G		SW			X		110		X																								Same post as 102 (above) and 110 (below)
110	215+42.99	4' - 6"	1' - 0"		X		G		SW			X		110		X																								Back to back with 110
111	202+56.19	30"	30"		X		Y				BK	X		111		X																			2" - 12 ga.	11'	23.8' RT	3' - 3 1/2"	Slip Base
112	102+73.77	8' - 0"	2' - 6"			X	G		SW			X		112		X																			2 1/2" - 12 ga.	10'	23.6' RT	3' - 3 1/2"	Two Posts; Slip Base
112	108+04.89	8' - 0"	2' - 6"			X	G		SW			X		112		X																			2 1/2" - 12 ga.	10'	23.8' LT	3' - 3 1/2"	Two Posts; Slip Base
113	207+29.36	6' - 0"	2' - 6"			X	G		SW			X		113		X																			2 1/2" - 12 ga.	10'	29.3' RT	3' - 3 1/2"	Two Posts; Slip Base
113	212+39.09	6' - 0"	2' - 6"			X	G		SW			X		113		X																			2 1/2" - 12 ga.	10'	23.8' LT	3' - 3 1/2"	Two Posts; 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 PROJECT CENTERLINE. 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 1' DIAMETER FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601 AND TM602.

REVISIONS	DATE	BY

DESIGNED LTN
DRAWN LTN
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
4/24/2020
EXPIRES 12/31/21

KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

SIGN & POST DATA TABLE

DRAWING NO.
30 OF 43
SS5

CURVE SIGN & POST DATA TABLE
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS

SIGN NO.	SIGN LOCATION 4/ (TM200-TM201, TM635)	SIGN DIMENSIONS		SUB-STRATE			COLOR 1/					LEGEND		SIGN NO. 2/	TYPE OF SUPPORT																							POST		FOOTING		REMARKS
							BACKGROUND		LEGEND																														SECONDARY SIGN (TM676 & TM678)			SIZE	LENGTH	LOCATION 3/	MIN. DEPTH 5/	
		WIDTH	HEIGHT	PLYWOOD	SHEET ALUMINUM	EXTRUDED ALUM. (TM675)	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	NON-REFLECTIVE	PERMANENT	REMOVABLE (TM230-TM233)		WOOD POST (TM670-TM671, TM676)	SQ. TUBE SIGN SUPPORT (TM671, TM676, TM681, TM687-TM689)	TRIANGULAR BASE BREAKAWAY (TM602)	H-FRAME	MULTI-POST BREAKAWAY (TM220, TM600-TM601)	STAINLESS STEEL CLAMP (SSC) (TM677)	SIGNAL POLE MOUNT (TM680)	MAST ARM SIGN MOUNT (TM679)	BRIDGE STRUCTURE MOUNT (TM677)	CANTILEVER / BUTTERFLY (TM622-TM627)	SIGN BRIDGE (TM606-TM612, TM614-TM620)	EXIT NUMBER SIGN MOUNT (TM220, TM225)	ROUTE MARKER FRAME (TM678)	MILEPOST MARKER POST (TM221-TM222)	CROSSWALK CLOSURE BARRICADE (TM490)	VERTICAL SIGN MOUNTS ON EXISTING STRUCTURE	CUSTOM VARIABLE SUPPORT	C 4X5.4	C 4X7.25	LENGTH	(BASED ON ESTIMATED LENGTH)	(MUST BE FIELD VERIFIED)			
12	TO 258+00.00	36"	36"		X			YG	BK			X		12		X																					2 1/2" - 12 ga.	8'	26.0' RT	3' - 3 1/2"	
105a	TO 206+56.78	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105a	TO 207+70.82	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105a	TO 208+83.54	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105a	TO 209+97.61	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105a	TO 231+76.67	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' RT	3' - 3 1/2"	Facing NB Traffic, Slip Base
105a	TO 232+91.80	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' RT	3' - 3 1/2"	Facing NB Traffic, Slip Base
105a	TO 234+06.89	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' RT	3' - 3 1/2"	Facing NB Traffic, Slip Base
105a	TO 235+22.32	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' RT	3' - 3 1/2"	Facing NB Traffic, Slip Base
105a	TO 240+96.30	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105a	TO 242.09+35	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105a	TO 243+22.40	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105a	TO 244+36.48	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105a	TO 258+95.91	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' RT	3' - 3 1/2"	Facing NB Traffic, Slip Base
105a	TO 260+09.51	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' RT	3' - 3 1/2"	Facing NB Traffic, Slip Base
105a	TO 261+22.11	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' RT	3' - 3 1/2"	Facing NB Traffic, Slip Base
105a	TO 262+34.23	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' RT	3' - 3 1/2"	Facing NB Traffic, Slip Base
105a	TO 263+47.10	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' RT	3' - 3 1/2"	Facing NB Traffic, Slip Base
105a	TO 265+05.15	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing NB Traffic, Slip Base
105a	TO 266+20.85	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing NB Traffic, Slip Base
105a	TO 343+11.88	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105a	TO 343+81.65	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105a	TO 344+51.46	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105a	TO 345+21.26	18"	24"		X		Y				BK	X		105a		X																							2" - 12 ga.	8'	26.0' LT	3' - 3 1/2"	Facing SB Traffic, Slip Base
105b	TO 206+56.78	18"	24"		X		Y				BK	X		105b		X																											Same post as 105a, Facing NB traffic
105b	TO 207+70.82	18"	24"		X		Y				BK	X		105b		X																											Same post as 105a, Facing NB traffic
105b	TO 208+83.54	18"	24"		X		Y				BK	X		105b		X																											Same post as 105a, Facing NB traffic
105b	TO 209+97.61	18"	24"		X		Y				BK	X		105b		X																											Same post as 105a, Facing NB traffic
105b	TO 231+76.67	18"	24"		X		Y				BK	X		105b		X																											Same post as 105a, Facing SB traffic
105b	TO 232+91.80	18"	24"		X		Y				BK	X		105b		X																											Same post as 105a, Facing SB traffic
105b	TO 234+06.89	18"	24"		X		Y				BK	X		105b		X																											Same post as 105a, Facing SB traffic
105b	TO 235+22.32	18"	24"		X		Y				BK	X		105b		X																											Same post as 105a, Facing SB traffic
105b	TO 240+96.30	18"	24"		X		Y				BK	X		105b		X																											Same post as 105a, Facing NB traffic
105b	TO 242.09+35	18"	24"		X		Y				BK	X		105b		X																											Same post as 105a, Facing NB traffic

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L=LEFT POST
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3/ DISTANCE FROM PROJECT CENTERLINE. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601, TM602, AND TM635.

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	REVISIONS	DATE	BY

DESIGNED LTN
DRAWN LTN
CHECKED HJS
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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
6/5/2020
EXPIRES 12/31/21

KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

CURVE SIGN & POST DATA TABLE

DRAWING NO.
31 OF 43
SS6

CURVE SIGN & POST DATA TABLE
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS

SIGN NO.	SIGN LOCATION 4/ (TM200-TM201, TM635)	SIGN DIMENSIONS		SUB-STRATE			COLOR 1/					LEGENED		SIGN NO. 2/	TYPE OF SUPPORT																							POST		FOOTING		REMARKS
							BACKGROUND		LEGEND																													SECONDARY SIGN (TM676 & TM678)			SIZE	LENGTH	LOCATION 3/	MIN. DEPTH 5/	
		WIDTH	HEIGHT	PLYWOOD	SHEET ALUMINUM	EXTRUDED ALUM. (TM676)	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	NON-REFLECTIVE	PERMANENT	REMOVABLE (TM230-TM233)		WOOD POST (TM670-TM671, TM676)	SQ. TUBE SIGN SUPPORT (TM671, TM676, TM681, TM687-TM689)	TRIANGULAR BASE BREAKAWAY (TM602)	H-FRAME	MULTI-POST BREAKAWAY (TM220, TM600-TM601)	STAINLESS STEEL CLAMP (SSC) (TM677)	SIGNAL POLE MOUNT (TM680)	MAST ARM SIGN MOUNT (TM679)	BRIDGE STRUCTURE MOUNT (TM677)	CANTILEVER / BUTTERFLY (TM622-TM627)	SIGN BRIDGE (TM606-TM612, TM614-TM620)	EXIT NUMBER SIGN MOUNT (TM220, TM225)	ROUTE MARKER FRAME (TM678)	MILEPOST MARKER POST (TM221-TM222)	CROSSWALK CLOSURE BARRICADE (TM490)	VERTICAL SIGN MOUNTS ON EXISTING STRUCTURE	CUSTOM VARIABLE SUPPORT	C 4X5.4	C 4X7.25	LENGTH	(BASED ON ESTIMATED LENGTH)	(MUST BE FIELD VERIFIED)			
105b	TO 243+22.40	18"	24"		X		Y				BK	X		105b		X																								
105b	TO 244+36.48	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing NB traffic
105b	TO 258+95.91	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing NB traffic
105b	TO 260+09.51	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing SB Traffic
105b	TO 261+22.11	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing SB Traffic
105b	TO 262+34.23	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing SB Traffic
105b	TO 263+47.10	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing SB Traffic
105b	TO 265+05.15	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing SB Traffic
105b	TO 266+20.85	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing SB Traffic
105b	TO 343+11.88	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing NB traffic
105b	TO 343+81.65	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing NB traffic
105b	TO 344+51.46	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing NB traffic
105b	TO 345+21.26	18"	24"		X		Y				BK	X		105b		X																									Same post as 105a, Facing NB traffic

1/ BK= BLACK
BL= BLUE
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3/ DISTANCE FROM PROJECT CENTERLINE. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM601, TM602, AND TM635.

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	REVISIONS	DATE	BY

DESIGNED LTN
DRAWN LTN
CHECKED HJS
APPROVED SGB

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

EXPIRES 12/31/21

KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

CURVE SIGN & POST DATA TABLE

DRAWING NO.
32 OF 43
SS7

STRIPING PLAN
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS

CONSTRUCTION NOTES:

① End yellow line and begin white line at the end of island curb.

REVISIONS	DATE	BY	
			DESIGNED LTN
			DRAWN LTN
			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 4/3/2020

EXPIRES 12/31/21

KITTELSON & ASSOCIATES

PROJECT NAME: OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS

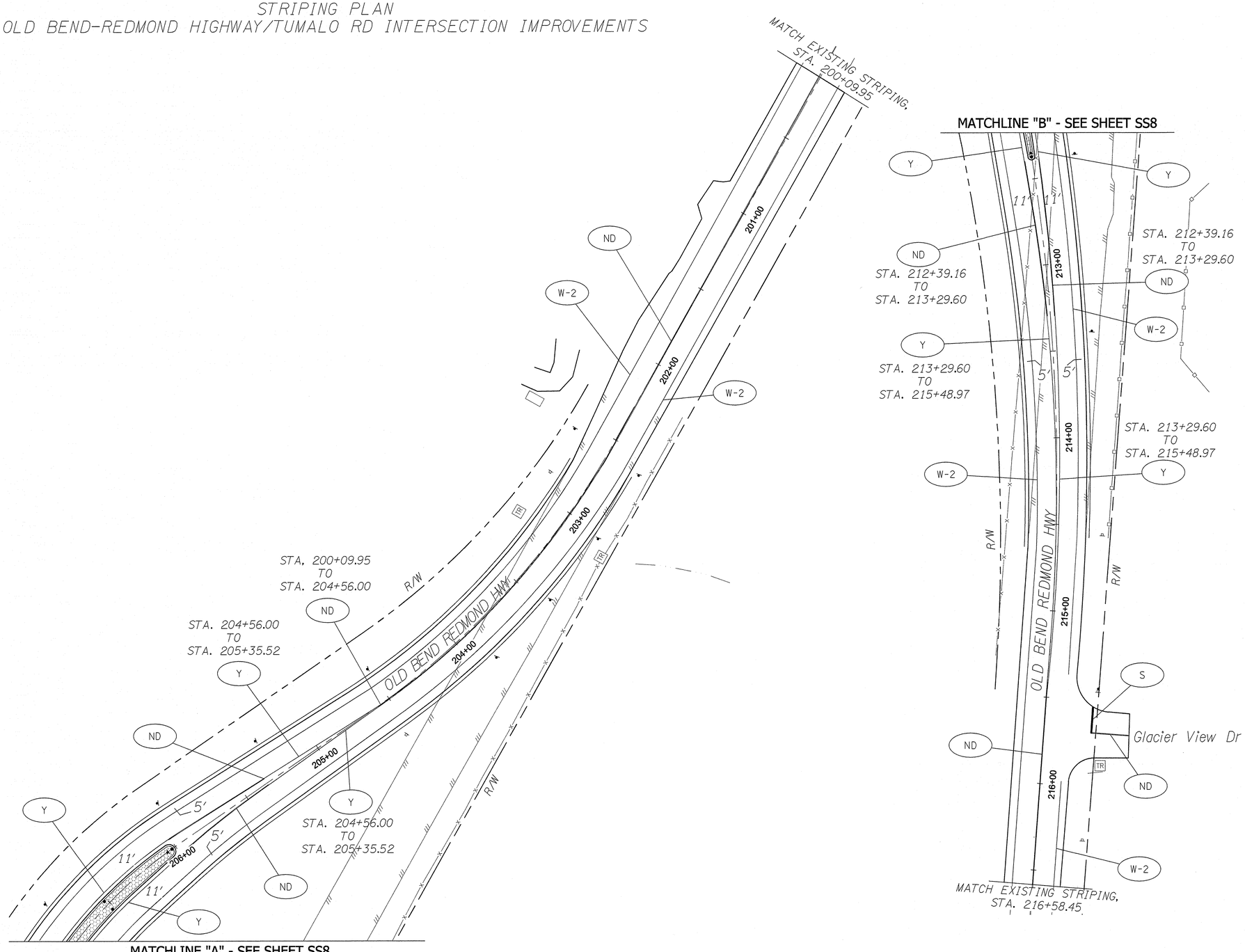
DESCHUTES COUNTY

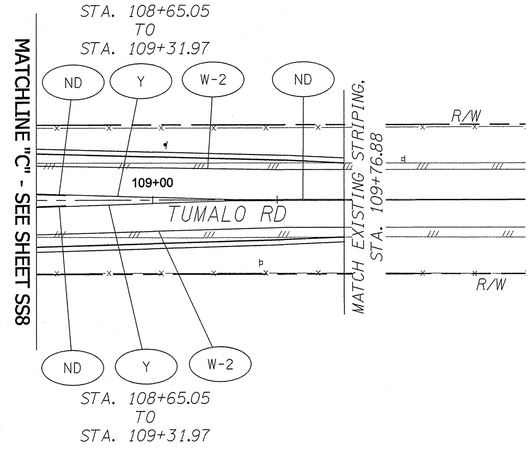
STRIPING PLAN

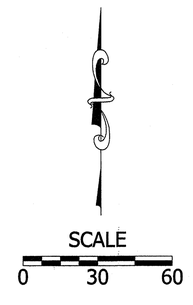
DRAWING NO. 33 OF 43

SS8

STRIPING PLAN
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS







REVISIONS	DATE	BY

DESIGNED LTN
DRAWN LTN
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
4/3/2020
EXPIRES 12/31/21

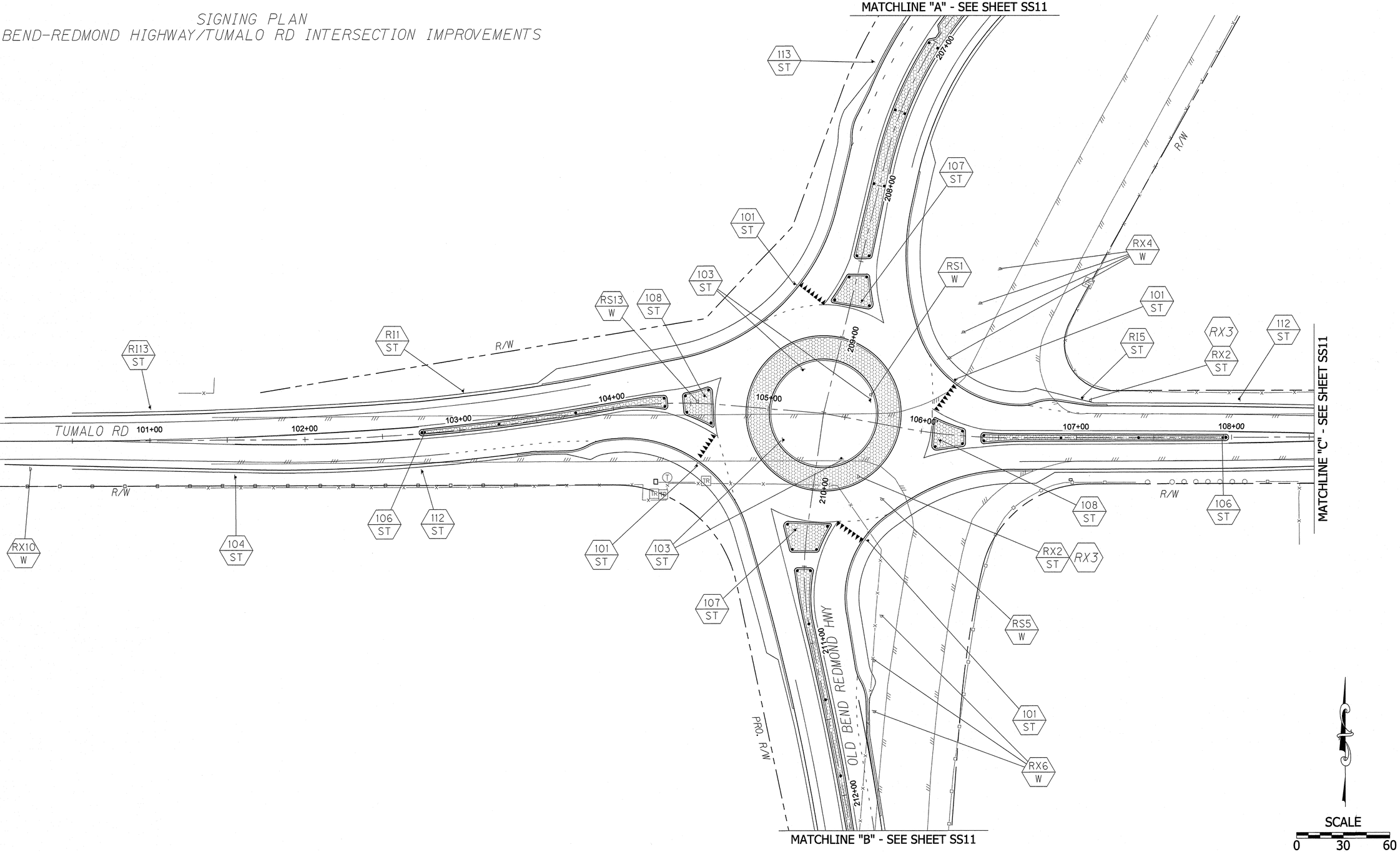
KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

STRIPING PLAN

DRAWING NO.
34 OF 43
SS9

SIGNING PLAN
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS



	REVISIONS	DATE	BY

DESIGNED LTN
DRAWN LTN
CHECKED HJS
APPROVED SGB

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

REGISTERED PROFESSIONAL ENGINEER
79204PE
4/15/2020
OREGON
JUNE 14, 2007
SCOTT GLENN BEARD
EXPIRES 12/31/21

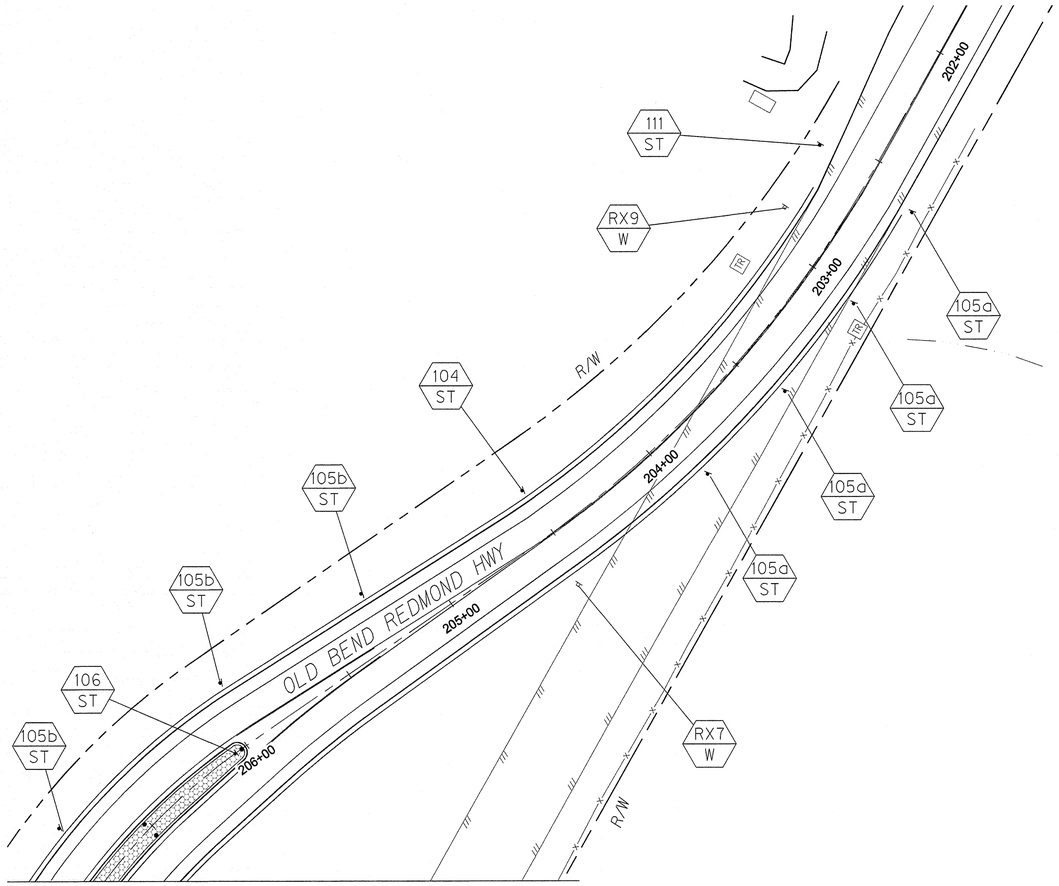
KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

SIGNING PLAN

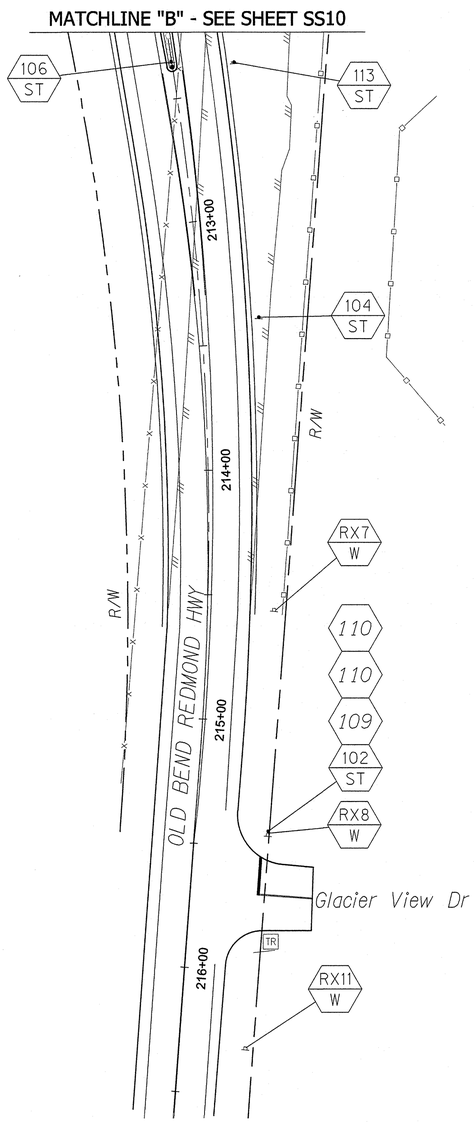
DRAWING NO.
35 OF 43
SS10

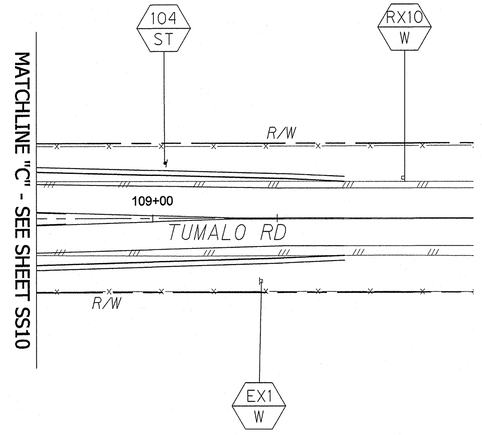
SIGNING PLAN
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS



MATCHLINE "A" - SEE SHEET SS10

MATCHLINE "B" - SEE SHEET SS10





SCALE
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	REVISIONS	DATE	BY

DESIGNED LTN
DRAWN LTN
CHECKED HJS
APPROVED SGB

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

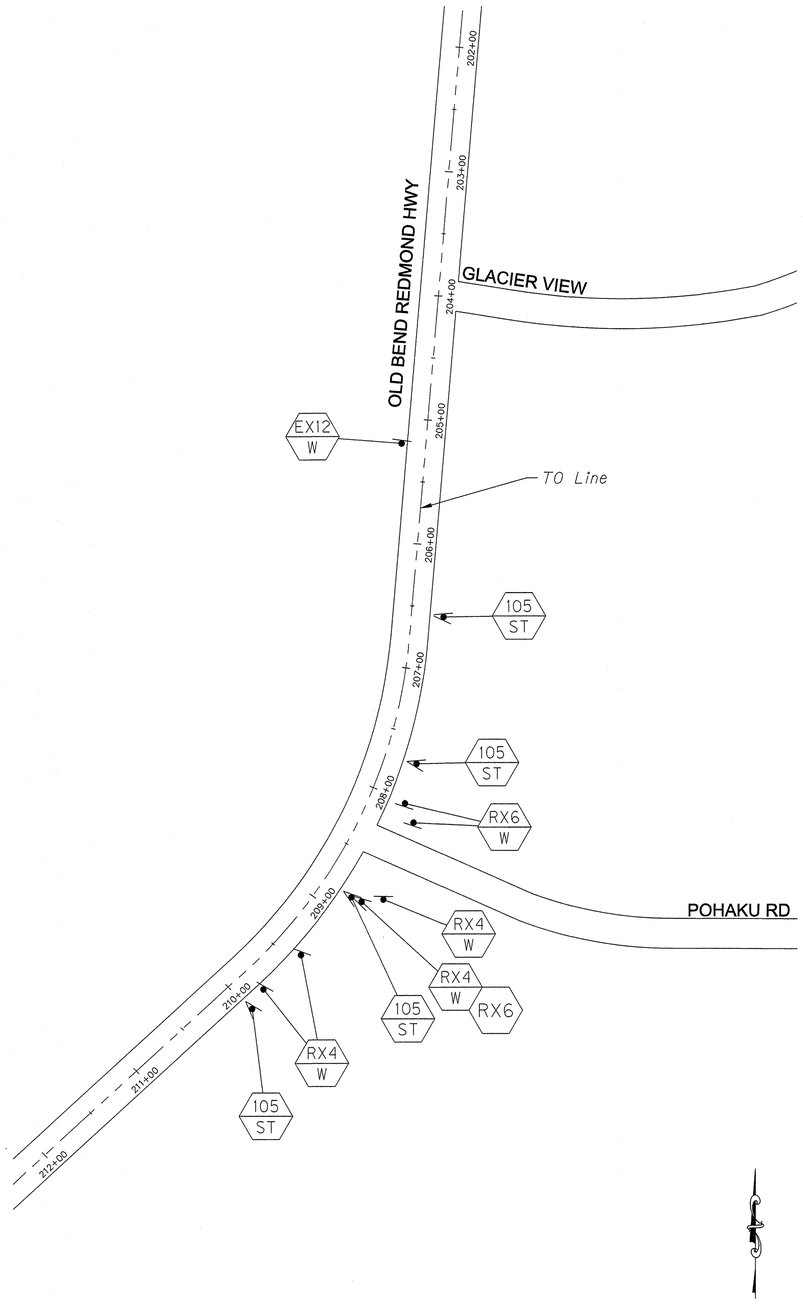
REGISTERED PROFESSIONAL ENGINEER
79208PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEHRA
4/3/2020
EXPIRES 12/31/21

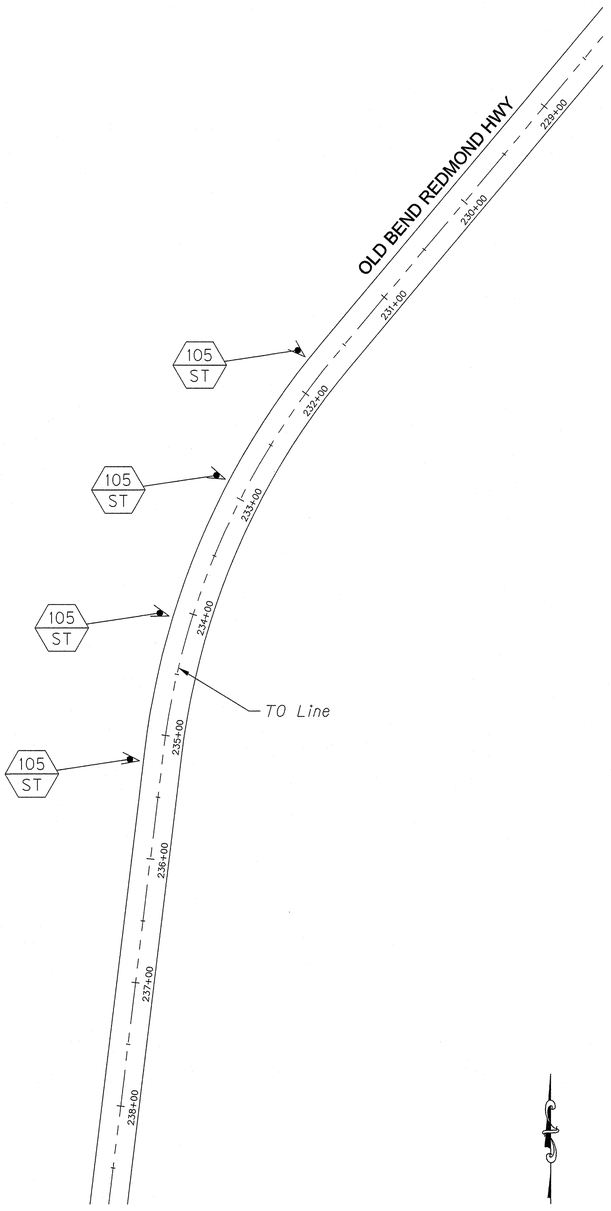
KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

SIGNING PLAN

DRAWING NO.
36 OF 43
SS11





SCALE
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	REVISIONS	DATE	BY

DESIGNED LTN
DRAWN LTN
CHECKED HJS
APPROVED SGB

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

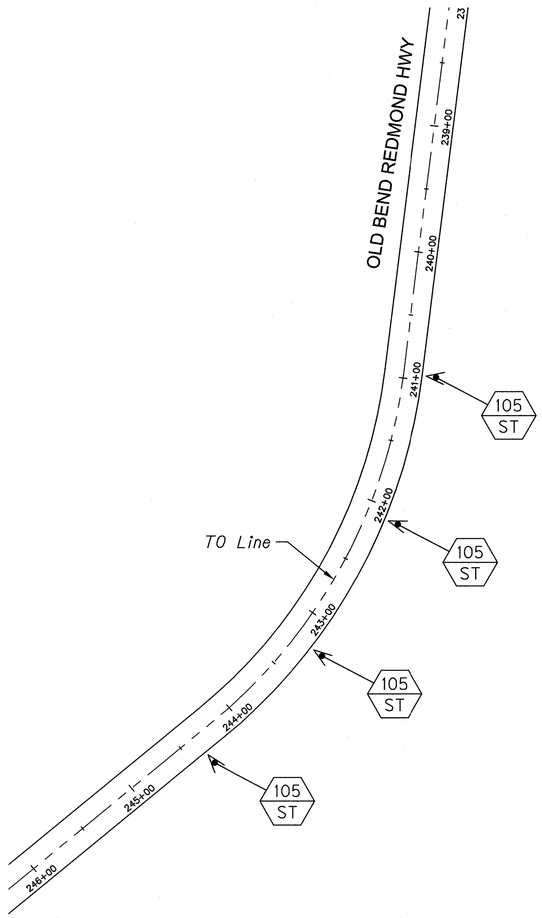
REGISTERED PROFESSIONAL ENGINEER
79204PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEARD
4/3/2020
EXPIRES 12/31/21

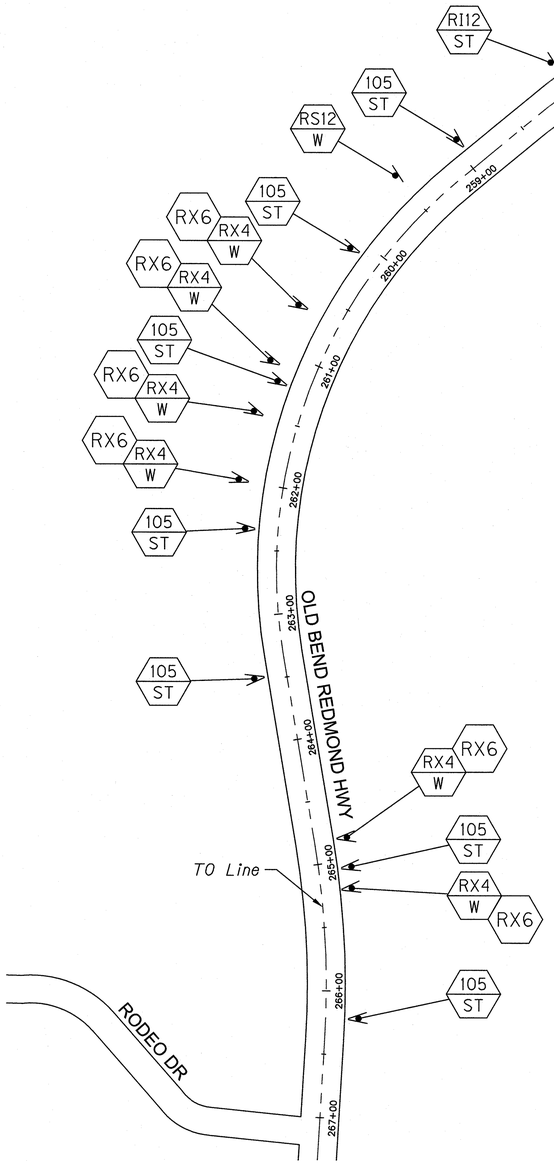
KITTELSON & ASSOCIATES

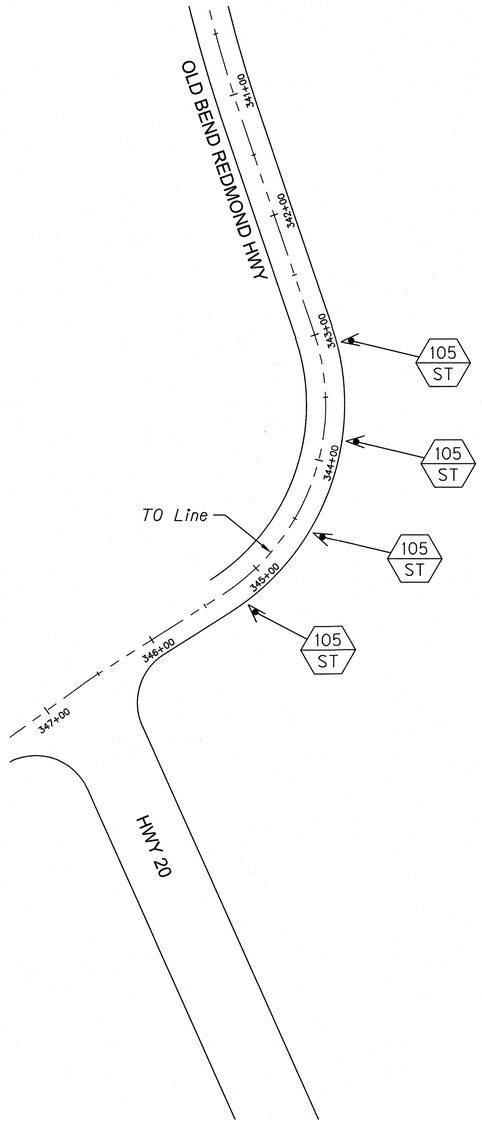
PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

CURVE SIGNING PLAN

DRAWING NO.
37 OF 43
SS12







SCALE
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	REVISIONS	DATE	BY

DESIGNED LTN
DRAWN LTN
CHECKED HJS
APPROVED SGB

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

REGISTERED PROFESSIONAL ENGINEER
79044PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEALD
6/9/2020
EXPIRES 12/31/21

KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

CURVE SIGNING PLAN

DRAWING NO.
38 OF 43
SS13

DETOUR PLAN - STAGE 2 & 3
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS

ROAD CLOSED 48"x30" (1)

DETOUR 24"x12" / Tumalo Rd 30"x7" / 21"x15" (2)

DETOUR 24"x12" / Tumalo Rd 30"x7" / 21"x15" (3)

End Detour 30"x24" (4)

DETOUR 24"x12" / Tumalo Rd 30"x7" / 21"x15" (5)

24HR FLAGGING AHEAD 36"x36" (6)

ROAD WORK AHEAD 36"x36" (7)

36"x36" (8)

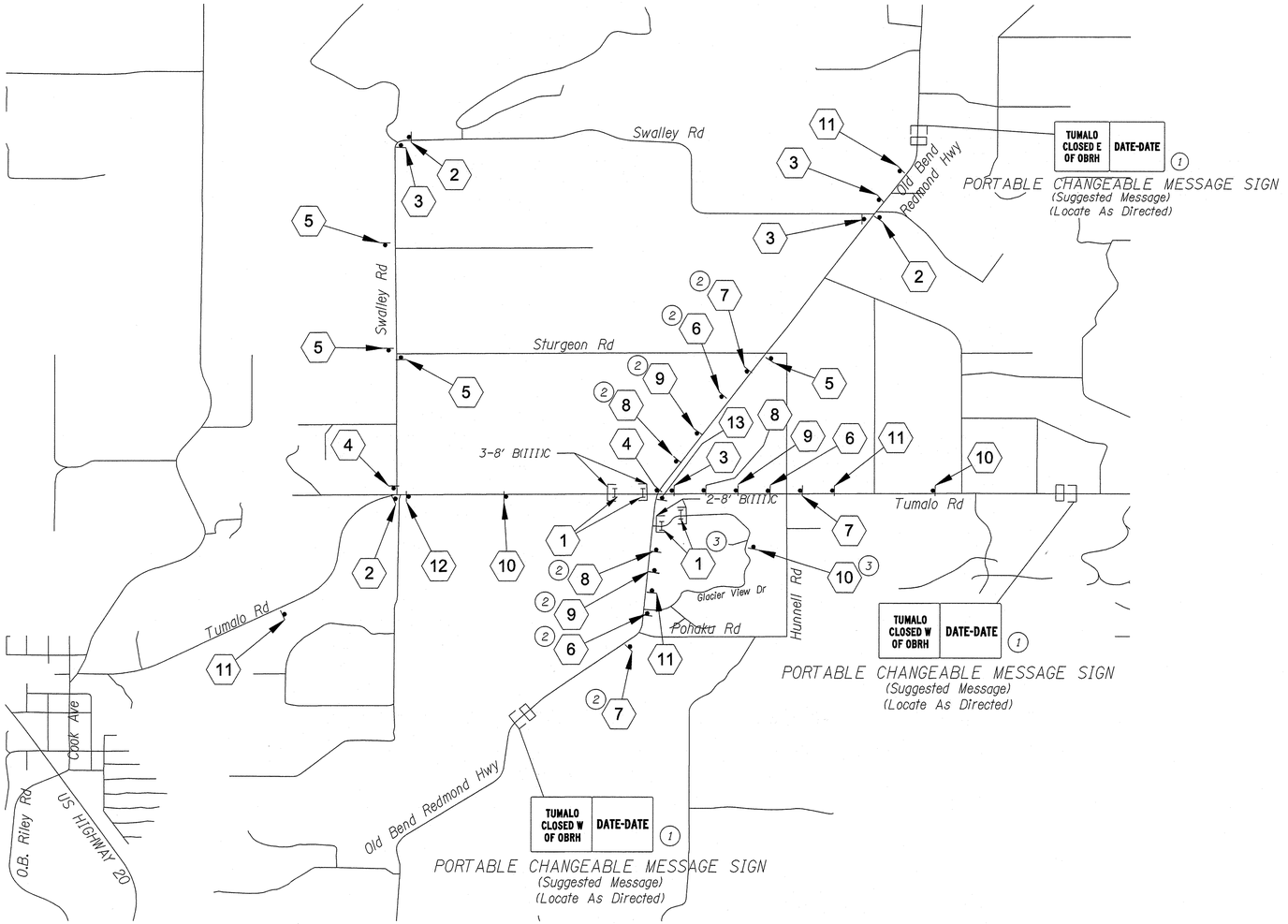
BE PREPARED TO STOP 36"x36" (9)

ROAD CLOSED AHEAD 36"x36" (10)

DETOUR AHEAD 36"x36" (11)

ROAD CLOSED TO THRU TRAFFIC LOCAL ACCESS ONLY 60"x30" (12)

DETOUR 24"x12" / Tumalo Rd 30"x7" / WEST 24"x12" / 21"x15" (13)



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.

(2) Install sign for flagging operations during Stage 3.

(3) Road closed during Stage 3.

	REVISIONS	DATE	BY

DESIGNED LTN
DRAWN LTN
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 BEHRD
4/3/2020
EXPIRES 12/31/21

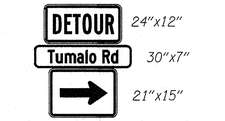
KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

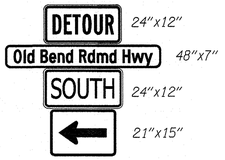
DETOUR PLAN - STAGE 2 & 3

DRAWING NO.
39 OF 43
SS14

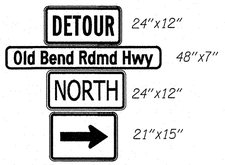
DETOUR PLAN - STAGE 4 & 5
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS



24"x12"
30"x7"
21"x15"
1



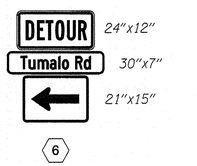
24"x12"
48"x7"
24"x12"
21"x15"
2



24"x12"
48"x7"
24"x12"
21"x15"
3

30"x24"
4

24"x12"
30"x7"
21"x15"
5



24"x12"
30"x7"
21"x15"
6

36"x36"
7


36"x36"
8

48"x30"
9

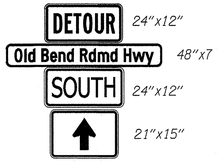
36"x36"
10

24"x12"
11

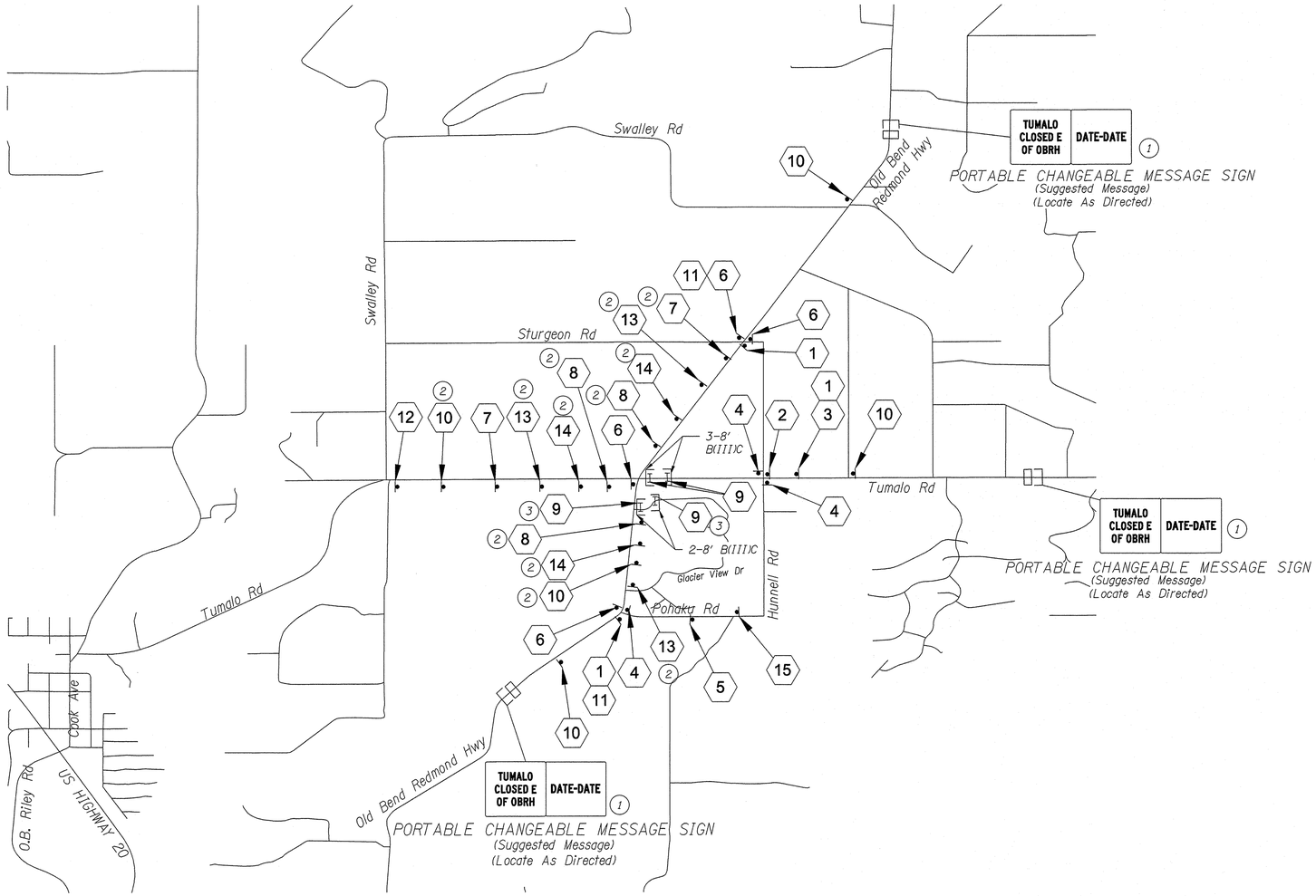
36"x36"
12

36"x36"
13

36"x36"
14



24"x12"
48"x7
24"x12"
21"x15"
15



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.

(2) Install sign for flagging operations during Stage 4.

(3) Road closed during Stage 4.

	REVISIONS	DATE	BY

DESIGNED LTN
DRAWN LTN
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 BEVIS
4/3/2020
EXPIRES 12/31/21

KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

DETOUR PLAN - STAGE 4 & 5

DRAWING NO.
40 OF 43
SS15

ILLUMINATION LEGEND
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS

L E G E N D

(FDN) Install Pacific Power approved street light foundation.

(JB PP) Install junction box (pedestal) provided by Pacific Power.

(LP) Pacific Power to furnish and install new Pacific Power approved street light. Street light pole shall be Valmont anchor base aluminum alloy light pole Model No. 27O845806T4/2MA0832b45 and street light shall be American Electric Model: ATBO 30BLEDE13 MVOLT R3 3K.

(N) Light pole number (XX), see "Street Light Pole Schedule".

[PL] Install poly pull line (500# minimum strength).

(S) Install (S) inch electrical grade sch 40 pvc conduit.

(PS 2) Power source for 120/240 volt, single phase.

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

1. All illumination related work other than pole foundation shall be paid for at the contract price for "Switching, conduit, and wiring - Lump Sum."
2. 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 engineer's approval. All lighting equipment must be placed within the right-of-way. Place conduit in same trench as other conduits whenever possible.
3. Location of all existing utilities shall be verified prior to beginning any work. Coordinate all work with utility companies to eliminate conflicts.
4. All proposed street lighting junction boxes, conduits, pull ropes, and concrete foundations shall be installed by contractor per Pacific Power requirements. Refer to Pacific Power 2011 Electric Service Requirements, 2nd Edition.
5. All street light poles, luminaire arms, luminaires, lamps, and wiring shall be furnished and installed by Pacific Power. All junction boxes shall be furnished by Pacific Power and installed by the contractor.
6. Final light pole location(s) shall be approved in the field by the engineer prior to foundation installation.
7. This illumination plans set is accompanied by Oregon Standard Drawing TM472.
8. 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.
9. Contractor to coordinate with Pacific Power ten (10) business days in advance of commencing illumination work. Contact Ryan Coburn at (541) 388-7129.
10. All conduit runs shall be approved by Pacific Power before backfill.
11. Cover and protect all new light pole foundations.

STREET LIGHT POLE SCHEDULE

POLE NO.	STREET	STATION	OFFSET*	LUMINAIRE ARM LENGTH (FT)	LAMP	LUMINAIRE MOUNTING HEIGHT (FT)	TYPE	NOTES
1	Tumalo Rd	100+34.44	20.7' LT	8'	LED	25'	III	126 Watts
2	Tumalo Rd	101+53.41	23.3' LT	8'	LED	25'	III	126 Watts
3	Tumalo Rd	102+78.55	26.0' LT	8'	LED	25'	III	126 Watts
4	Tumalo Rd	103+98.37	29.5' RT	8'	LED	25'	III	126 Watts
5	Tumalo Rd	104+51.72	41.6' LT	8'	LED	25'	III	126 Watts
6	Tumalo Rd	104+84.35	83.1' RT	8'	LED	25'	III	126 Watts
7	Tumalo Rd	105+89.06	82.1' LT	8'	LED	25'	III	126 Watts
8	Tumalo Rd	106+14.35	44.9' RT	8'	LED	25'	III	126 Watts
9	Tumalo Rd	106+81.75	28.0' LT	8'	LED	25'	III	126 Watts
10	Tumalo Rd	107+97.78	24.8' LT	8'	LED	25'	III	126 Watts
11	Tumalo Rd	109+20.84	21.8' LT	8'	LED	25'	III	126 Watts
12	Old Bend Redmond Hwy	202+68.00	20.8' RT	8'	LED	25'	III	126 Watts
13	Old Bend Redmond Hwy	203+67.57	19.8' RT	8'	LED	25'	III	126 Watts
14	Old Bend Redmond Hwy	204+78.07	22.0' RT	8'	LED	25'	III	126 Watts
15	Old Bend Redmond Hwy	205+96.55	26.7' RT	8'	LED	25'	III	126 Watts
16	Old Bend Redmond Hwy	207+19.78	28.1' RT	8'	LED	25'	III	126 Watts
17	Old Bend Redmond Hwy	208+39.34	34.8' RT	8'	LED	25'	III	126 Watts
18	Old Bend Redmond Hwy	210+70.52	35.9' LT	8'	LED	25'	III	126 Watts
19	Old Bend Redmond Hwy	211+97.76	25.6' LT	8'	LED	25'	III	126 Watts
20	Old Bend Redmond Hwy	213+14.65	23.6' LT	8'	LED	25'	III	126 Watts
21	Old Bend Redmond Hwy	214+28.73	22.3' LT	8'	LED	25'	III	126 Watts
22	Old Bend Redmond Hwy	215+40.57	21.7' LT	8'	LED	25'	III	126 Watts

* - Offset measured from roadway centerline.

INTERSECTION LIGHT LEVEL SUMMARY

INTERSECTION	CLASSIFICATION		LIGHT LEVEL	UNIFORMITY	LIGHT LOSS FACTOR	BUG RATING
Tumalo Rd at Old Bend Redmond Hwy Roundabout	Collector/ Minor Arterial	Target	≥ 1.4 fc	≤ 3 : 1	0.85	B2 U0 G2
		Design	1.7 fc	2.8 : 1		

ROADWAY LIGHT LEVEL SUMMARY

ROADWAY	CLASSIFICATION, PEDESTRIAN CONFLICT		LIGHT LEVEL	AVERAGE UNIFORMITY	LIGHT LOSS FACTOR	BUG RATING
Tumalo Rd - East Leg	Collector, Low	Target	≥ 0.6 fc	≤ 5.5 : 1	0.85	B2 U0 G2
		Design	1.6 fc	3.1 : 1	0.85	B2 U0 G2
Tumalo Rd - West Leg	Collector, Low	Target	≥ 0.6 fc	≤ 5.5 : 1	0.85	B2 U0 G2
		Design	1.6 c	2.6 : 1	0.85	B2 U0 G2
Old Bend Redmond Hwy-North Leg	Minor Arterial, Low	Target	≥ 0.8 fc	≤ 5 : 1	0.85	B2 U0 G2
		Design	1.6 fc	2.7 : 1	0.85	B2 U0 G2
Old Bend Redmond Hwy-South Leg	Minor Arterial, Low	Target	≥ 0.8 fc	≤ 5 : 1	0.85	B2 U0 G2
		Design	1.6 fc	2.6 : 1	0.85	B2 U0 G2

REVISIONS	DATE	BY

DESIGNED LTN
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APPROVED SGB

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY
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JOB No.
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REGISTERED PROFESSIONAL ENGINEER
79204PE
OREGON
JUNE 14, 2007
SCOTT GLENN BEHRD
4/3/2020
EXPIRES 12/31/21

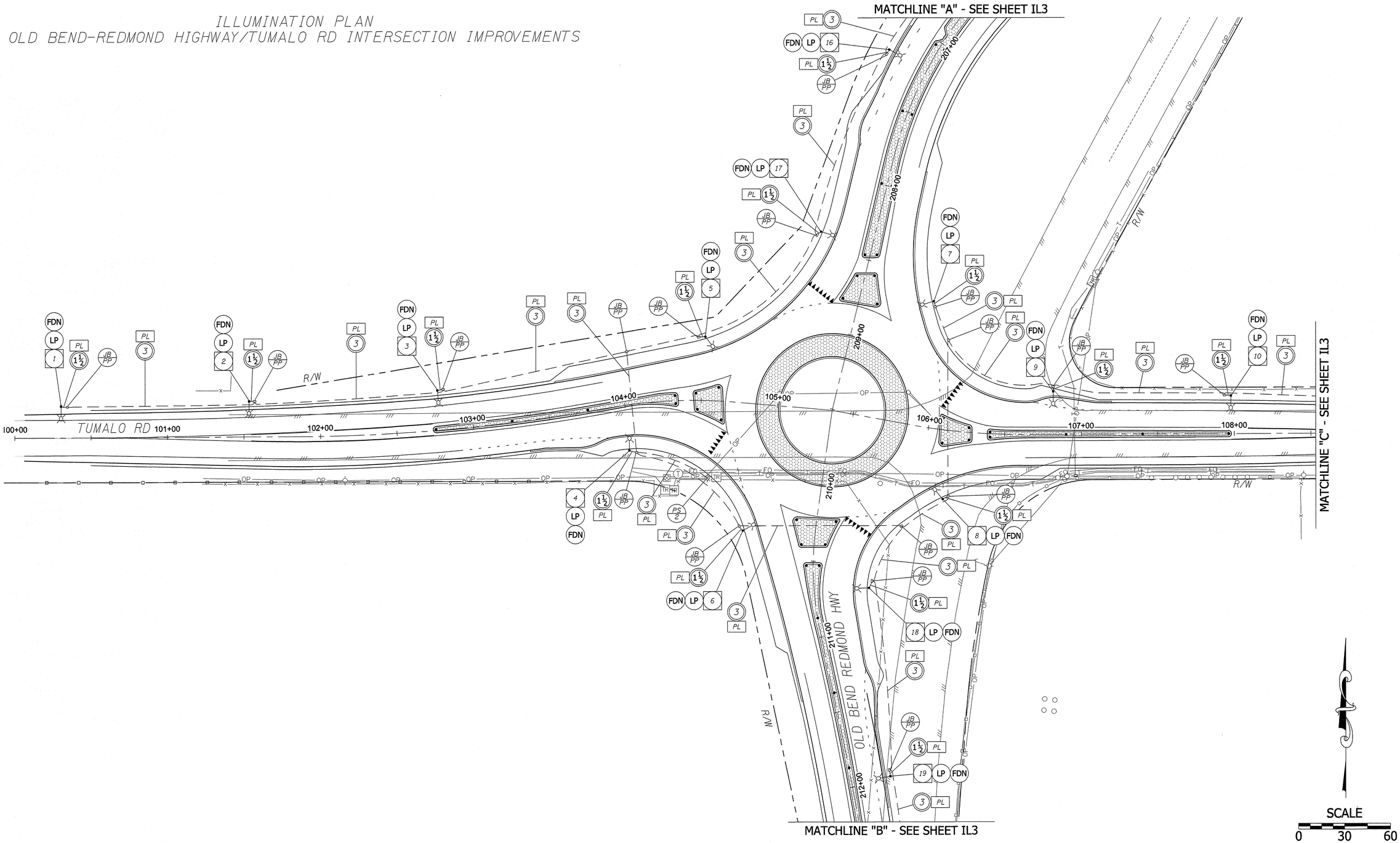
KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

ILLUMINATION LEGEND

DRAWING NO.
41 OF 43
IL1

ILLUMINATION PLAN
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS



	REVISIONS	DATE	BY

DESIGNED LTN
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ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY

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JOB No.

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JUNE 14, 2007
SCOTT GLENN BEARD
4/6/2020
EXPIRES 12/31/21

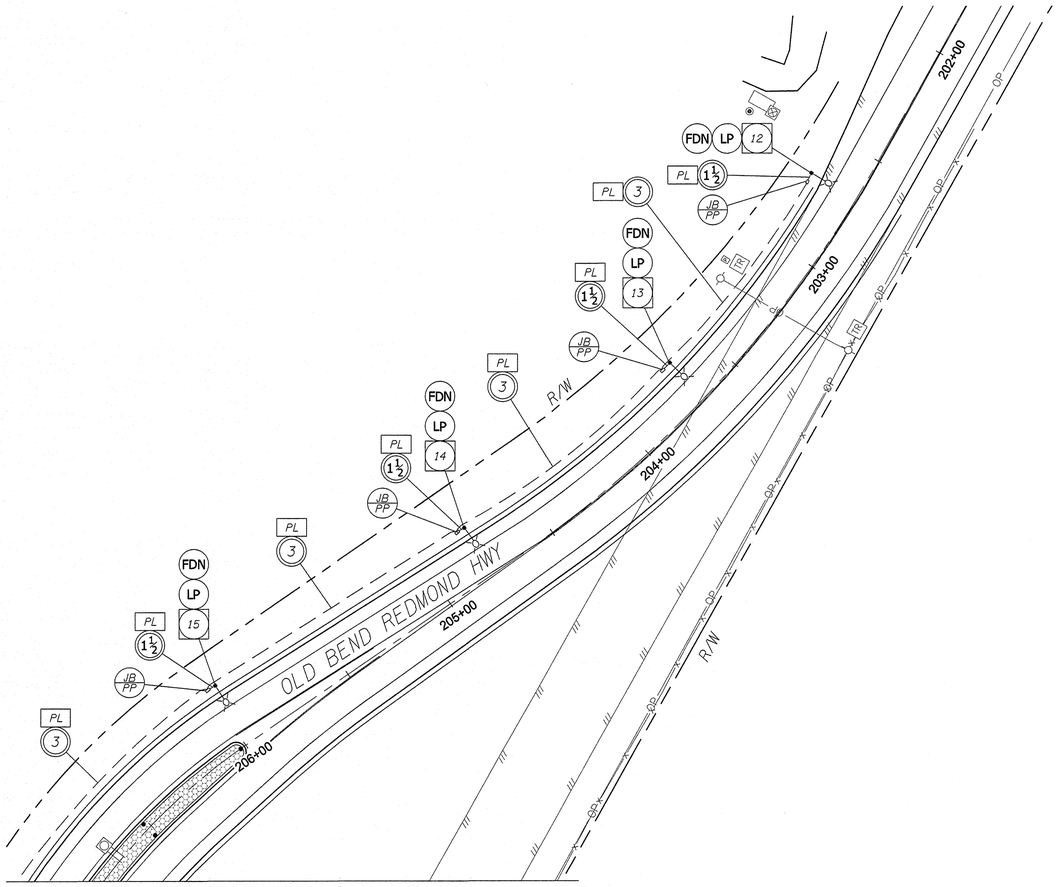
KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

ILLUMINATION PLAN

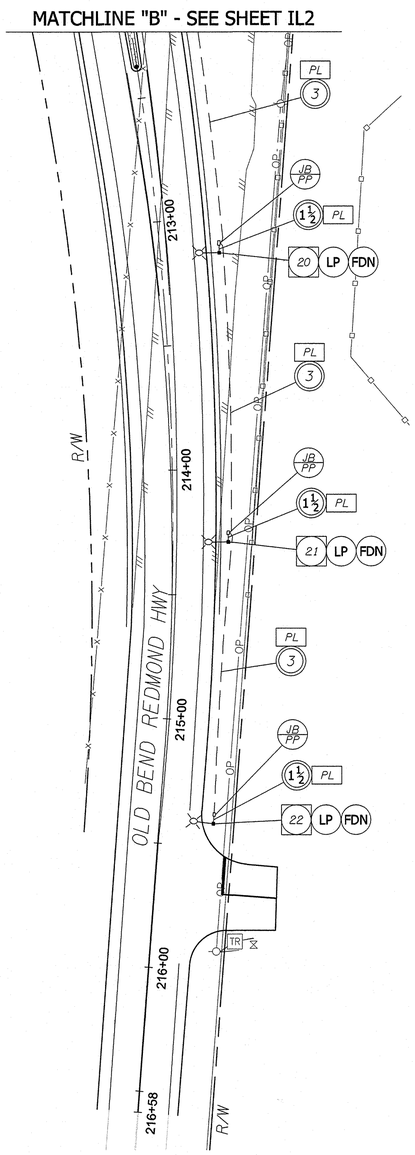
DRAWING NO.
42 OF 43
IL2

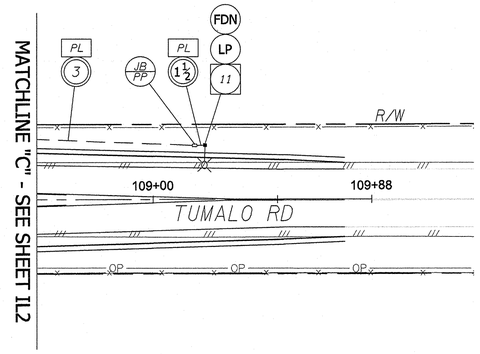
ILLUMINATION PLAN
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS



MATCHLINE "A" - SEE SHEET IL2

MATCHLINE "B" - SEE SHEET IL2





SCALE
0 30 60

	REVISIONS	DATE	BY

DESIGNED LTN
DRAWN LTN
CHECKED HJS
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ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY
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79204PE
OREGON
JUNE 14, 2001
SCOTT GLENN BEARD
4/2/2020
EXPIRES 12/31/21

KITTELSON & ASSOCIATES

PROJECT NAME
OLD BEND-REDMOND HIGHWAY/TUMALO RD INTERSECTION IMPROVEMENTS
DESCHUTES COUNTY

ILLUMINATION PLAN

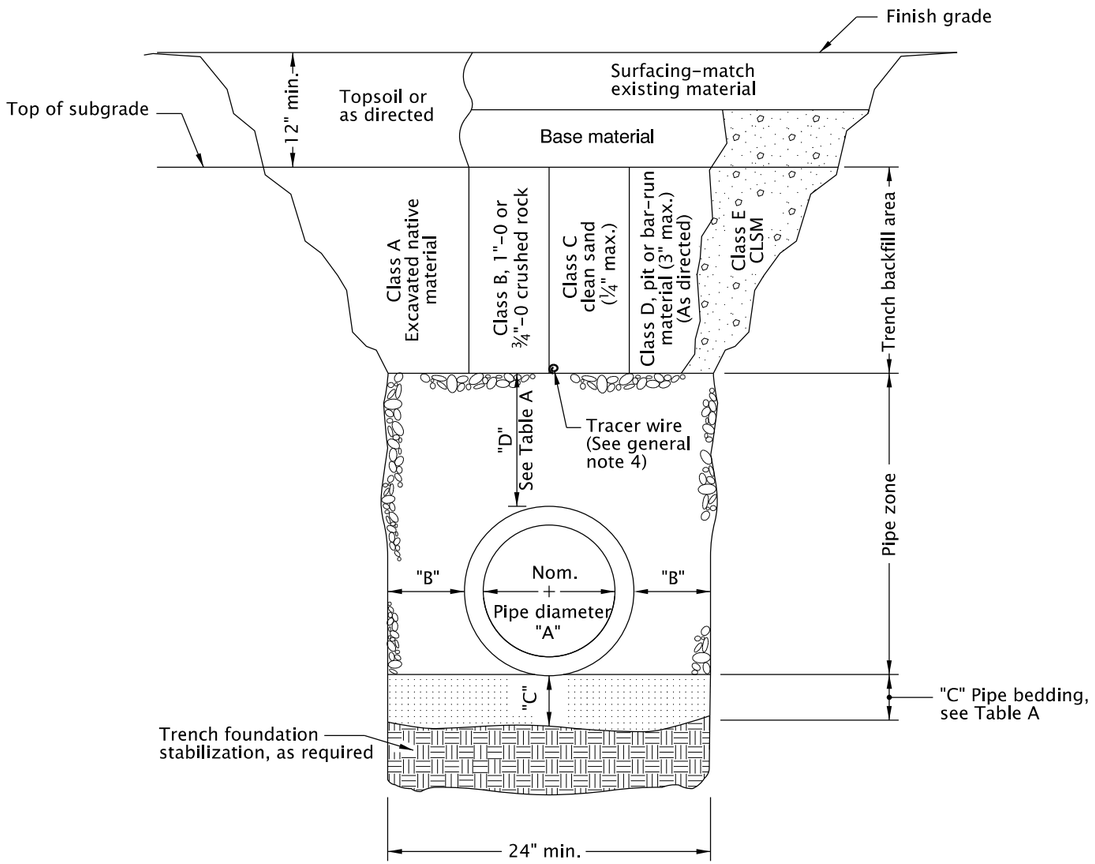
DRAWING NO.
43 OF 43
IL3

rd300.dgn 25-JUL-2017

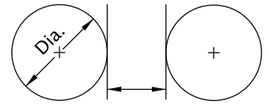
TABLE A

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

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



MULTIPLE INSTALLATIONS



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

GENERAL NOTES FOR ALL DETAILS:

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

CALC. BOOK NO. N/A

BASELINE REPORT DATE 14-JUL-2014

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.

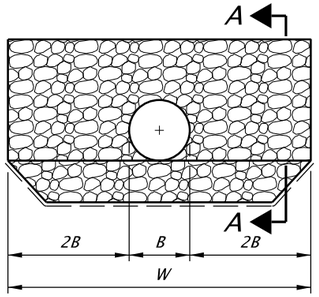
OREGON STANDARD DRAWINGS

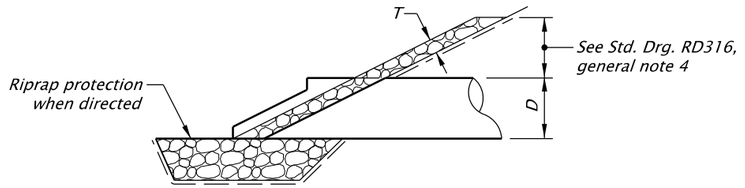
TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS

2018

DATE	REVISION DESCRIPTION

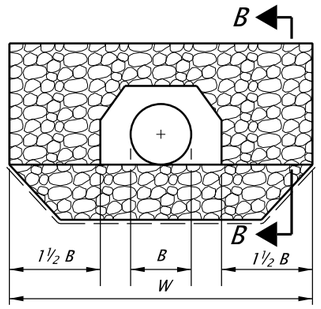
RD300

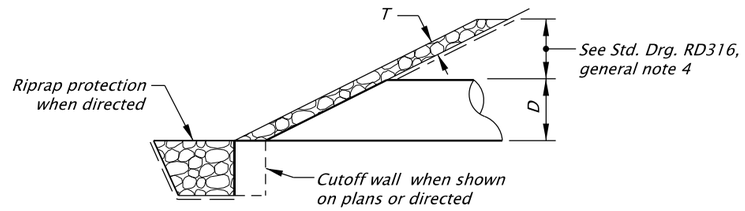




SECTION A-A

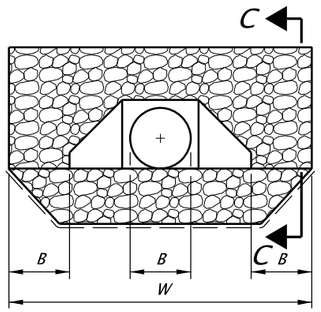
SLOPED OR PROJECTING END

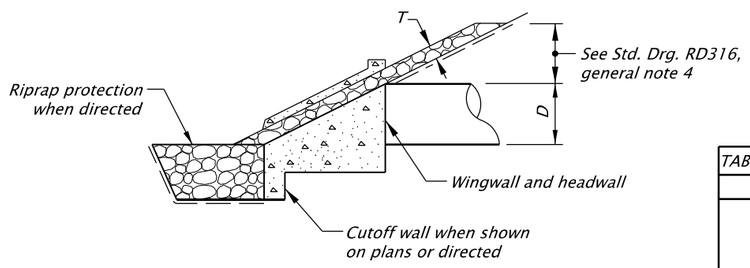




SECTION B-B

SLOPED END WITH SLOPE PAVING





SECTION C-C

HEADWALL AND WINGWALLS

B = Diameter of circular barrel or span of arch pipe, box, or open-bottom arch.
D = Diameter of circular barrel or rise of arch pipe, box, or open-bottom arch.
T = Thickness of riprap blanket, see Table A.

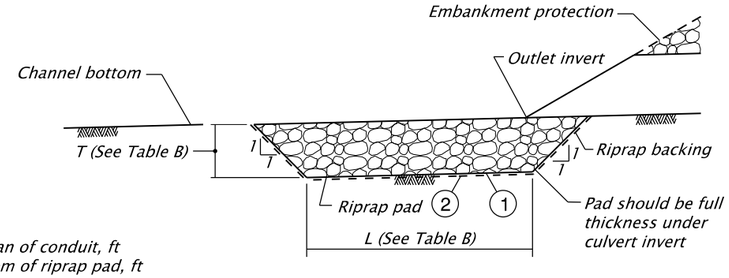
EMBANKMENT PROTECTION

TABLE A - Embankment Slope Protection	
Riprap Class	T Distance
50	12 Inches
100	18 Inches
200	24 Inches *
700	36 Inches *

* Riprap backing required between riprap and embankment

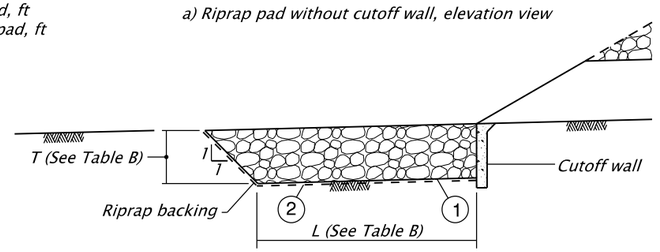
TABLE B - Riprap Pad Dimensions		
Riprap Class	L * (ft)	T (ft)
50	4B or 1.3	2.3
100	4B or 1.6	3.3
200	4B or 2.0	4.3
700	4B or 3.3	5.6

* L is the greater of 4B or the listed dimension.



a) Riprap pad without cutoff wall, elevation view

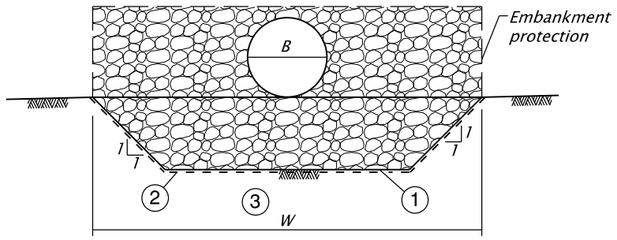
B = Diameter or span of conduit, ft
L = Length of bottom of riprap pad, ft
T = Thickness of riprap pad, ft
W= Width of top of riprap pad, ft



b) Riprap pad with cutoff wall, elevation view

RIPRAP PAD NOTES:

1. Do not excavate non-erodible rock in order to place riprap.
2. Use riprap backing under Class 200 and Class 700 loose riprap.
3. Top width (W) of the riprap pad is the larger of 5B or the width of the embankment slope protection.



c) Riprap pad, end view

RIPRAP PADS

GENERAL NOTES FOR ALL DETAILS:

1. See Std. Drg's. RD300 & RD304 for installation details.
2. Open ends of pipes normally require a site specific design, and may require special treatment (sloped ends, culvert embankment protection, paved end slopes, safety end sections, or other measures).
   See special details or Standard Drawings as called for on plans.

CALC. BOOK NO. _ _ _ _ N/A _ _ _ _ _

BASELINE REPORT DATE _ _ 24-Nov-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

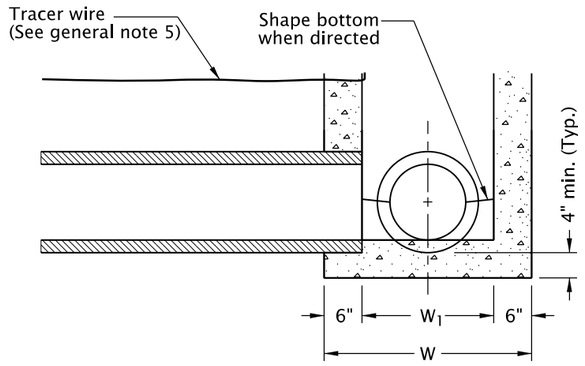
CULVERT EMBANKMENT PROTECTION and RIPRAP PADS

2018

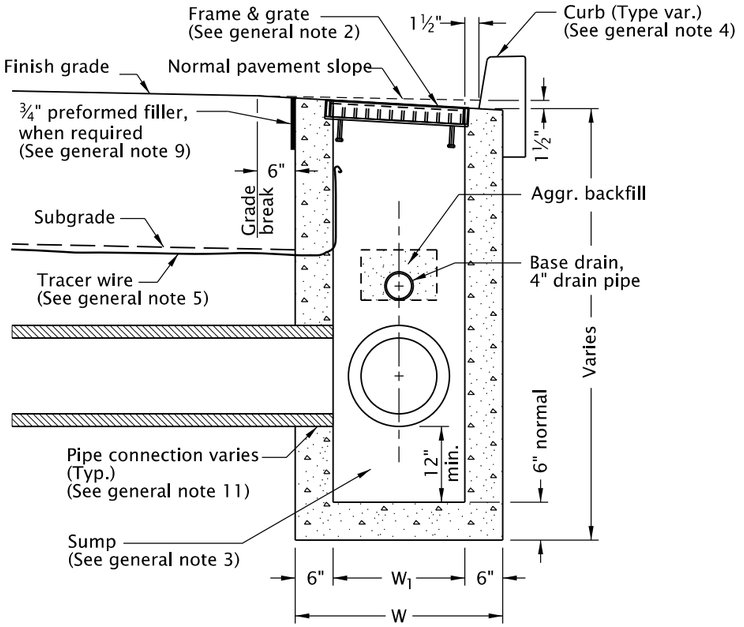
DATE	REVISION DESCRIPTION

rd317.dgn 06-01-2017

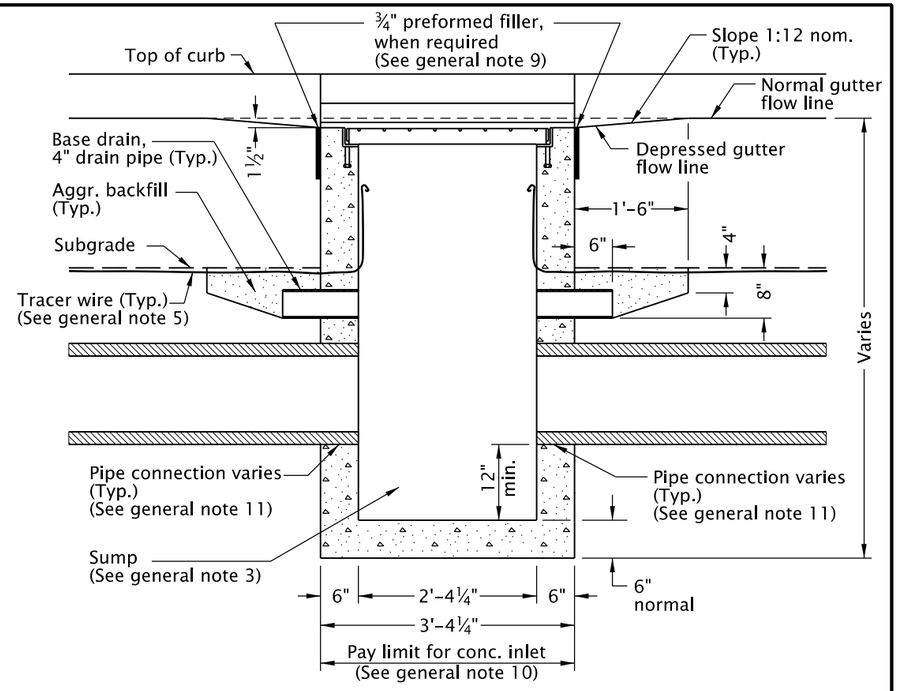
RD317



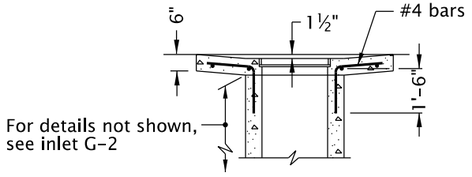
DETAIL A
WITHOUT SUMP



SECTION B – B



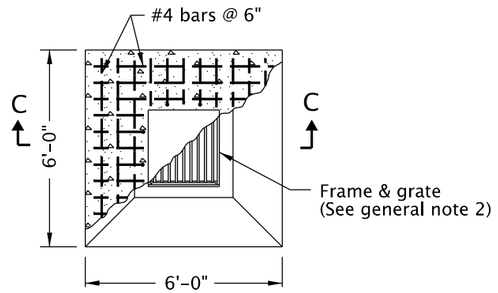
SECTION A – A



SECTION C-C

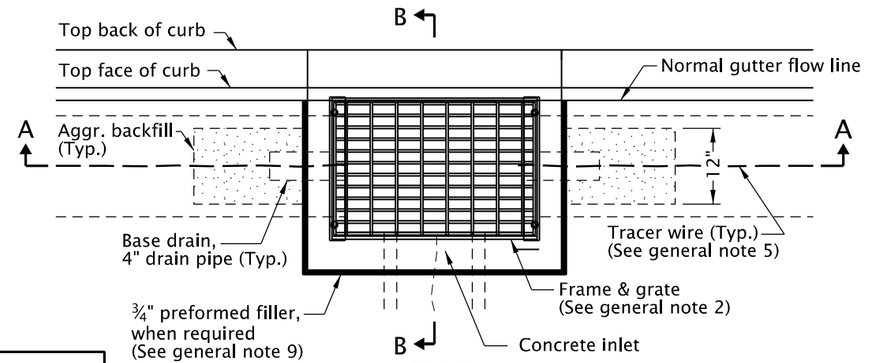
NOTE:

All reinforcement to be placed 2" clear of nearest face of concrete unless shown or noted otherwise



PLAN
TYPE G-2MA

TABLE A		
INLET TYPE	W	W_1
G-1	2'-8⅞"	1'-8⅞"
G-2, G-2M, G-2MA	3'-3⅜"	2'-3⅜"



PLAN
TYPE G-1, G-2, G-2M

GENERAL NOTES FOR ALL DETAILS:

1. Where precast inlets are used as an alternate to cast-in-place inlets, a 4" compacted leveling bed of sand or ¼"-0 crushed aggregate shall be provided. All precast inlets shall conform to requirements of ASTM C913.
2. Graphics show G-1 inlet with Type 2 grate. See Table A for inlet dimensions.
   Type 1 grate allowed only in locations not subject to bicycle or pedestrian use.
   For frame and grate details, see Std. Dwg. RD365.
3. Provide sump only where shown on plans, and allowed by jurisdiction. See Detail A for inlet without sump.
4. For curb details, see Std. Dwgs. RD700 & RD701.
5. See Std. Dwg. RD336 for tracer wire details, or approved alternate.
6. Max. pipe diameter varies with pipe material.
7. Location, elevation, diameter, slope, and number of pipe(s) varies, see project plans.
8. All concrete shall be commercial grade concrete.
9. ¾" preformed filler (in concrete pavement or gutter only) to extend through thickness of concrete.
10. See Std. Dwg. RD363 for gutter transition section, when curb and gutter are required.
11. See Std. Dwg. RD339 for pipe to structure connections.

CALC. BOOK NO. N/A

BASELINE REPORT DATE

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

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OREGON STANDARD DRAWINGS

CONCRETE INLETS
TYPE G-1, G-2, G-2M, & G-2MA

2018

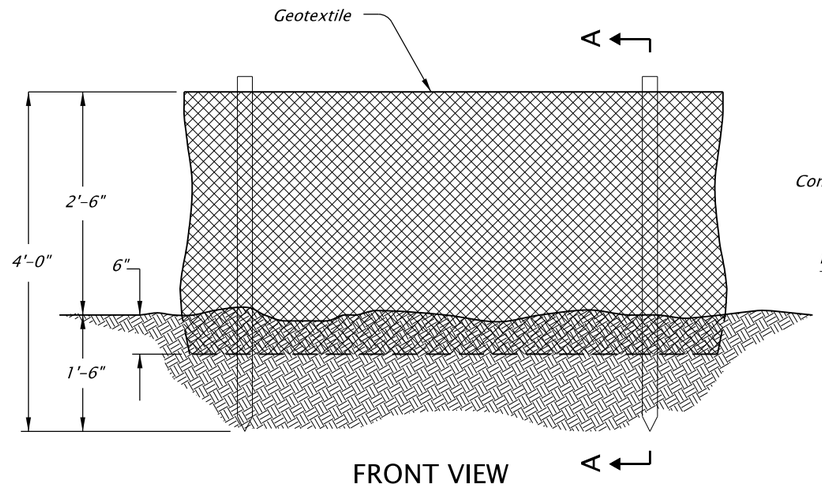
DATE	REVISION DESCRIPTION

rd364.dgn 25-JUL-2017

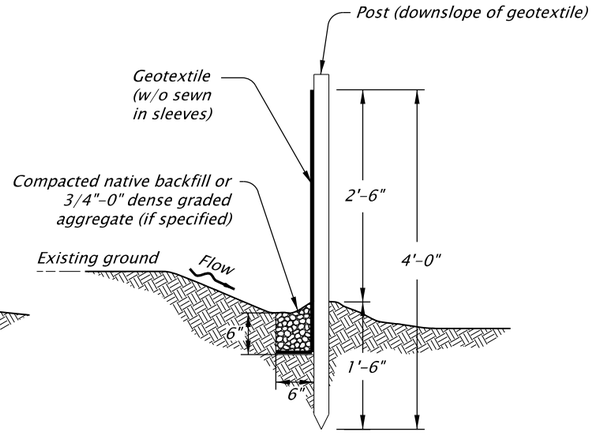
RD364

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

rd1040.dgn 11-08-2017

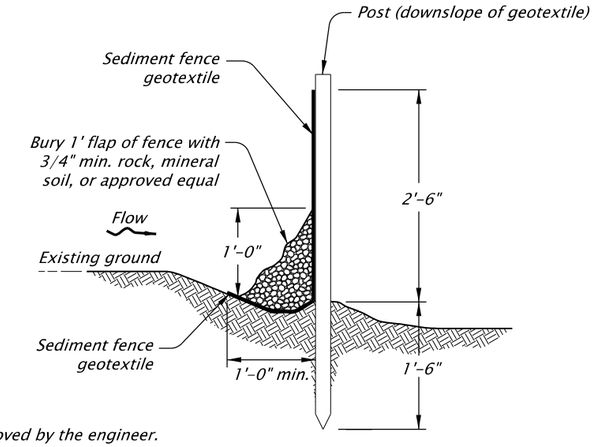


FRONT VIEW



SECTION A-A

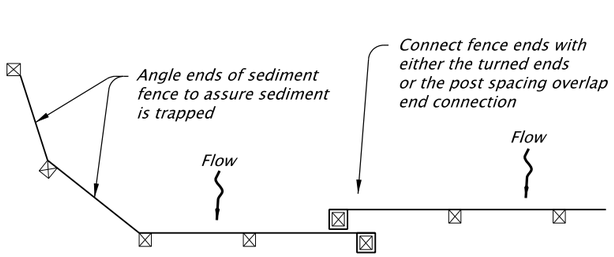
SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1



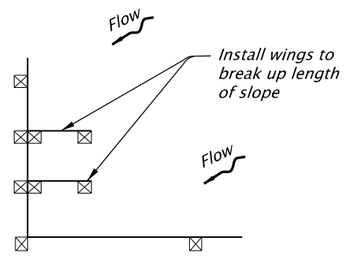
NOTES:

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

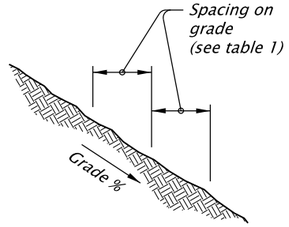
ALTERNATE SEDIMENT FENCE W/O TRENCHING - TYPE 2



PLAN VIEW



TERMINATION AT CORNER OR PROPERTY LINE

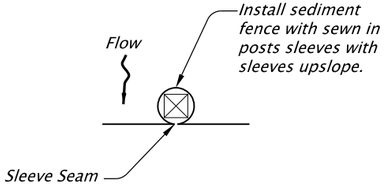


NOTES:

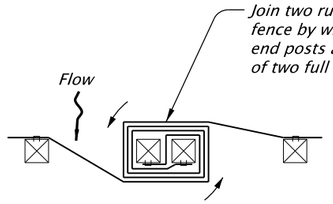
1. Use 2" X 2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5.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

TABLE 1
FENCE SPACING
FOR GENERAL APPLICATION

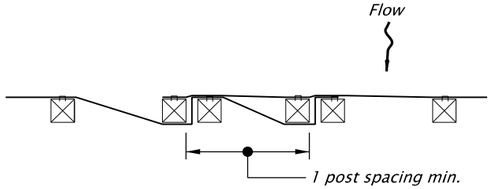
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade <10%	300'
10% ≤ Grade <15%	150'
15% ≤ Grade <20%	100'
20% ≤ Grade <30%	50'
30% ≤ Grade	25'



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

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.

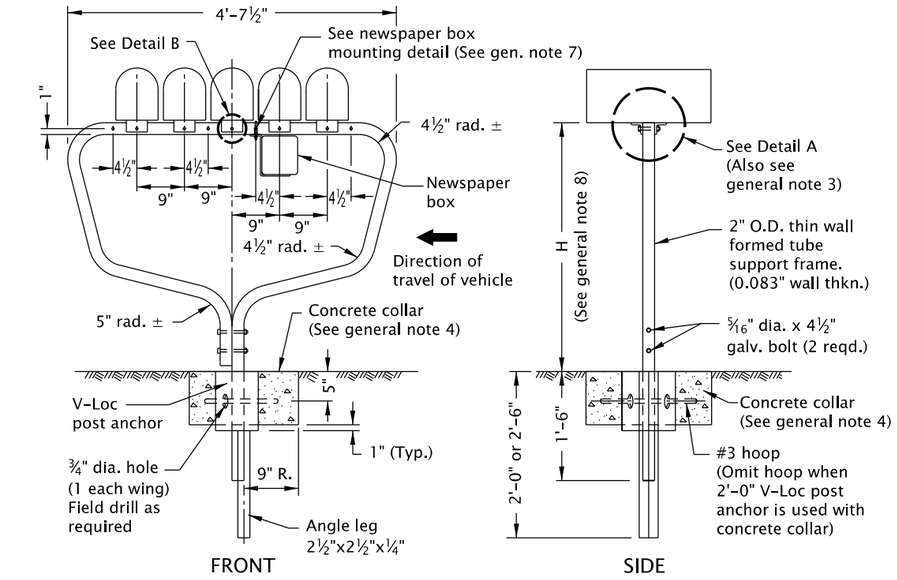
OREGON STANDARD DRAWINGS

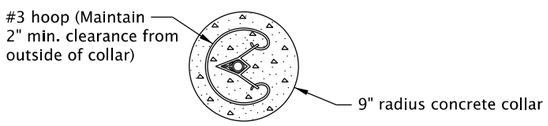
SEDIMENT FENCE

2018

DATE	REVISION DESCRIPTION

RD1040

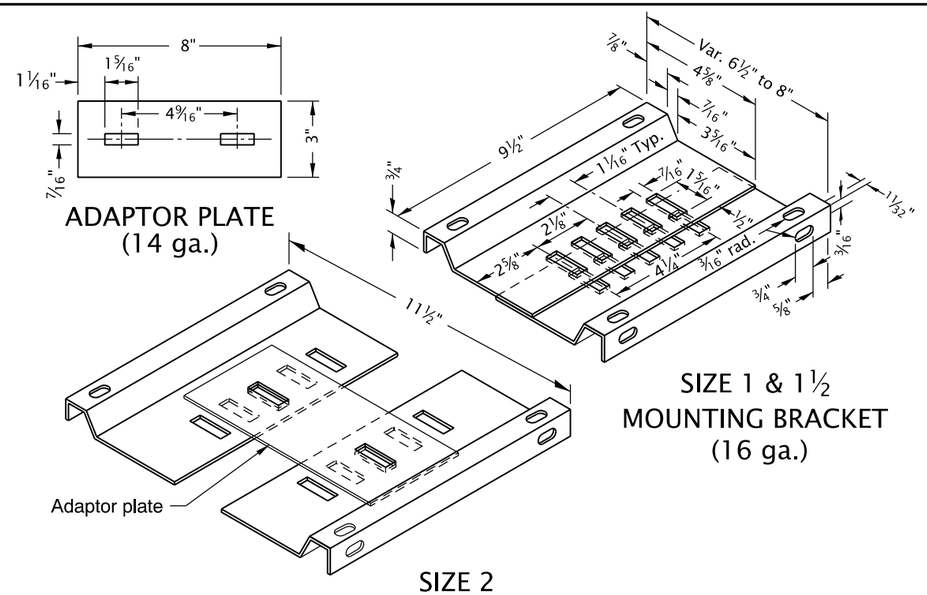




CONCRETE COLLAR
(See general note 4)

MULTIPLE SUPPORT

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



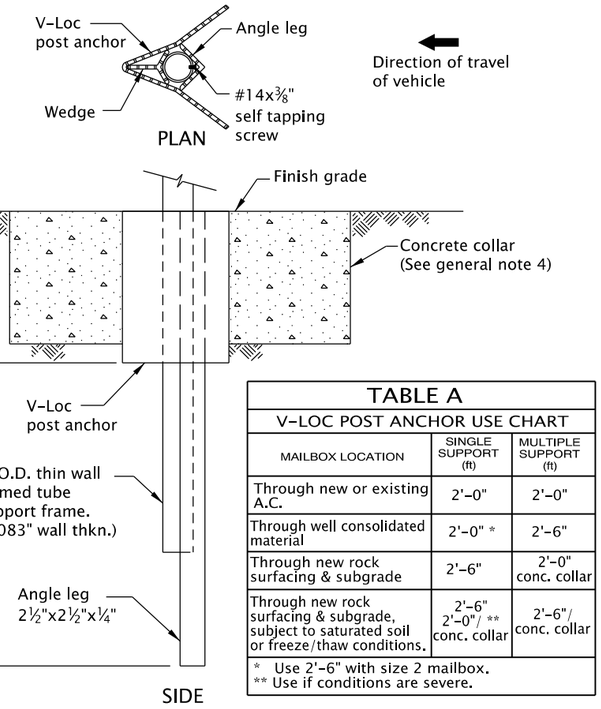


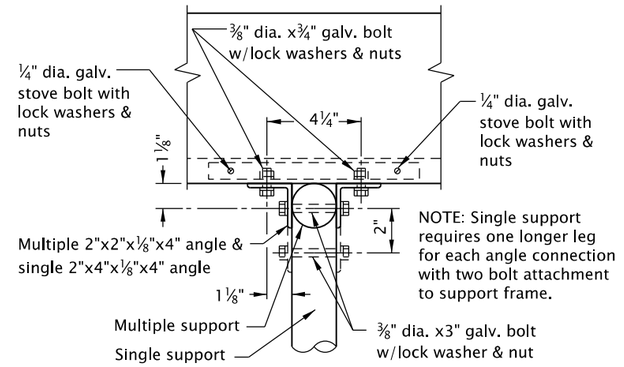
TABLE A

V-LOC POST ANCHOR USE CHART

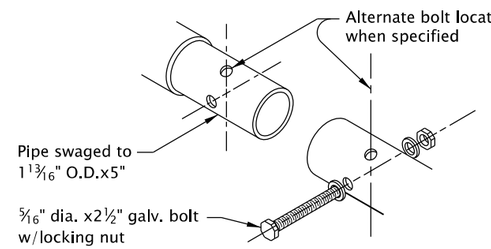
MAILBOX LOCATION	SINGLE SUPPORT (ft)	MULTIPLE SUPPORT (ft)
Through new or existing A.C.	2'-0"	2'-0"
Through well consolidated material	2'-0" *	2'-6"
Through new rock surfacing & subgrade	2'-6"	2'-0" conc. collar
Through new rock surfacing & subgrade, subject to saturated soil or freeze/thaw conditions.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

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

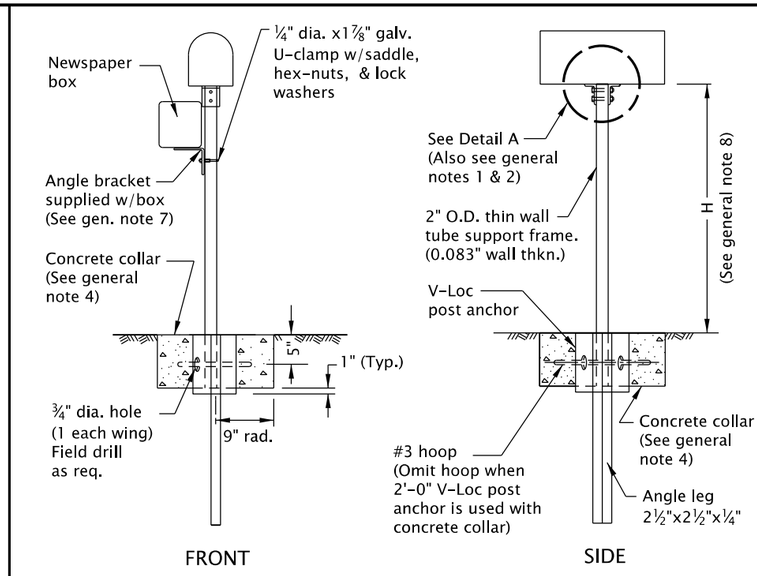
POST MOUNTING SOCKET



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

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OREGON STANDARD DRAWINGS

MAILBOX SUPPORT

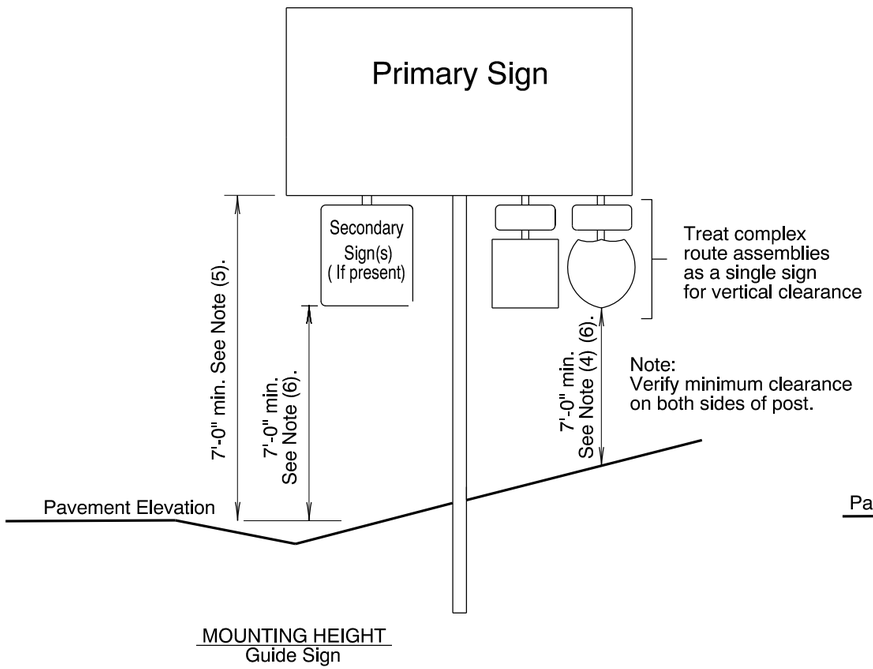
2018

DATE	REVISION DESCRIPTION

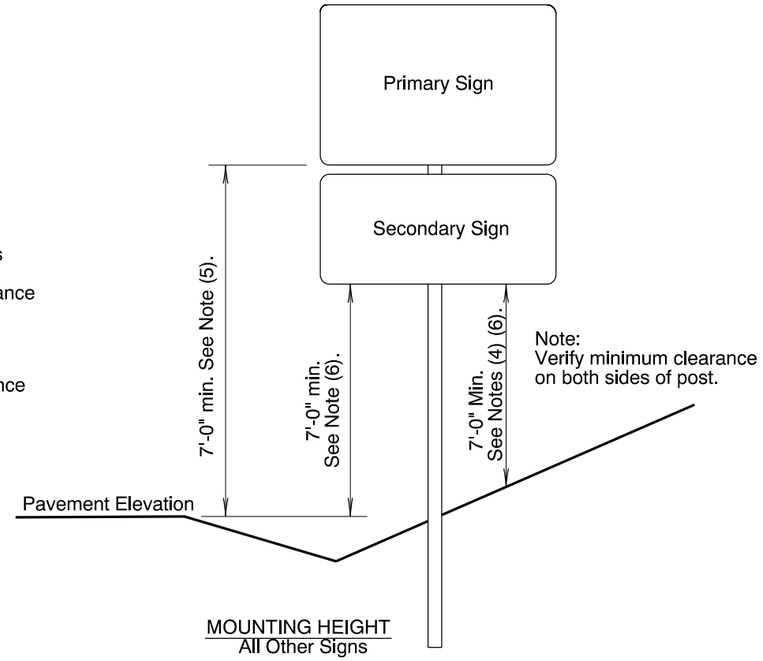
RD100

rd100.dgn 25-JUL-2017

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



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.

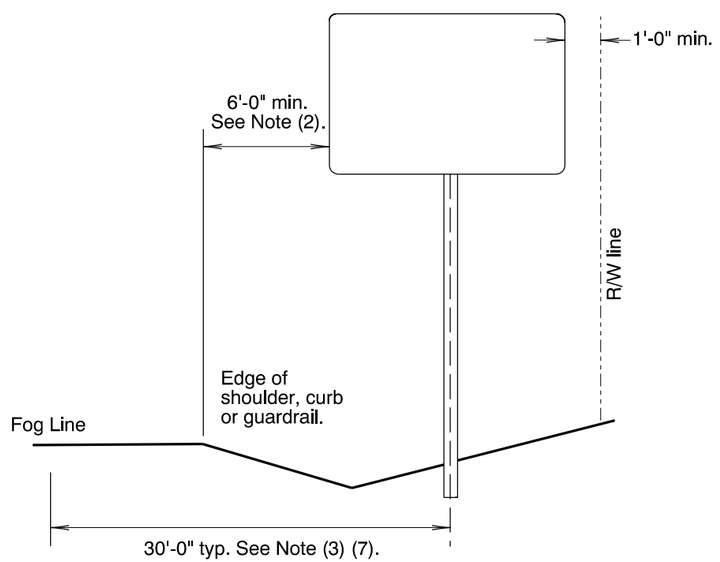
d. For perforated steelsquare tube support details see Dwg. No. TM681.

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

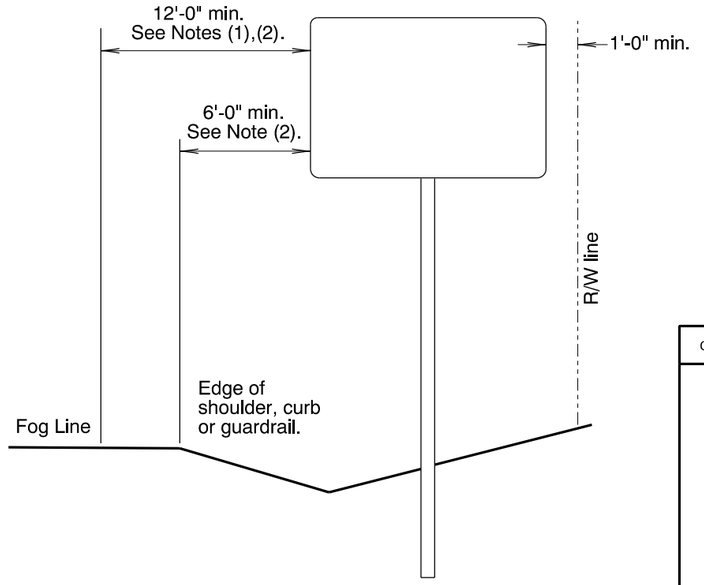
f. For multi-post breakaway support details see Dwg. No. TM600.

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

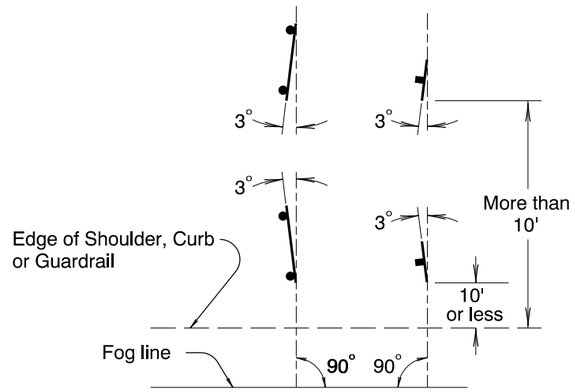
DATE	REVISION DESCRIPTION
1/08/18	Adjusted slope line on Mounting Height detail for clarity

TM200.dgn 1-3-2017

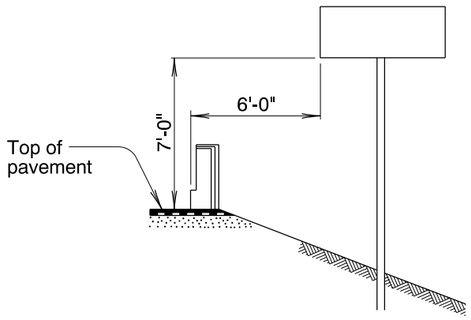
TM200

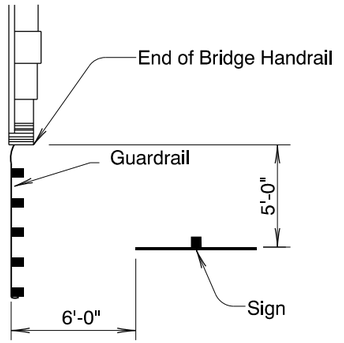
plotfile_TM200s_500s.dgn :: Default 1/2/2020 9:06:47 AM hwyr20m

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



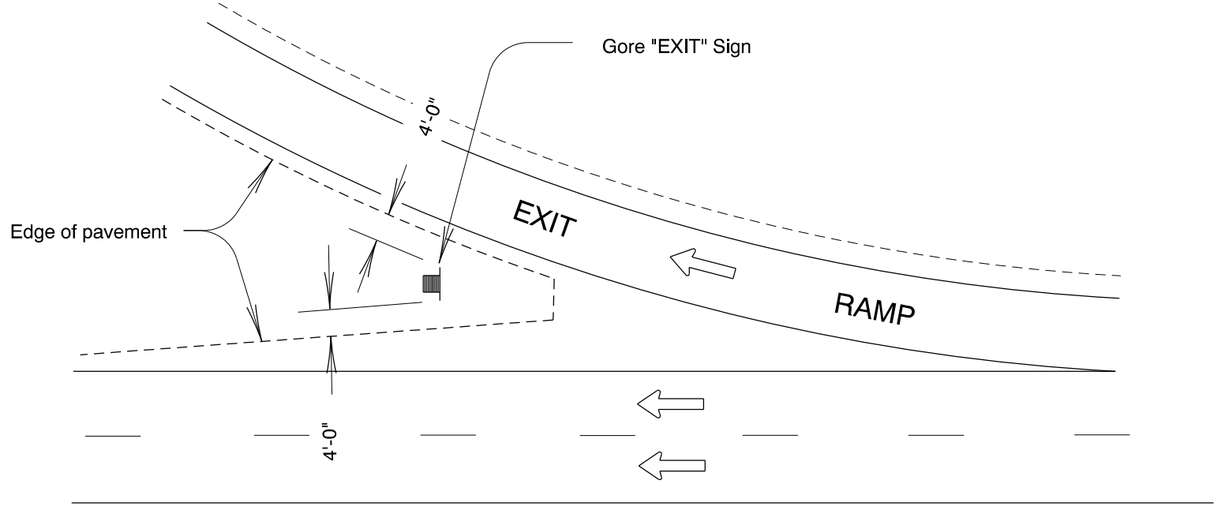
SIGN PLACEMENT





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

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

MISCELLANEOUS SIGN PLACEMENT DETAILS

2018

DATE	REVISION DESCRIPTION

TM201.dgn 1-3-2017

TM201

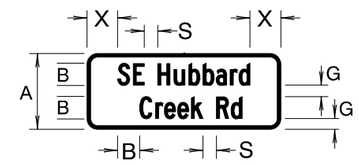
plotfile_TM200s_500s.dgn :: Default 1/2/2020 9:06:48 AM hwyr20m

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

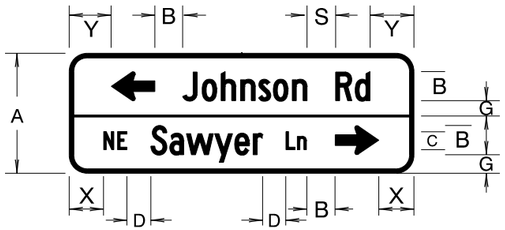
E = BORDER WIDTH F = BORDER RADIUS

* = USE FOR TEXT INCLUDING LOWER-CASE g, j, p, q and y

	A	A*	B	C	D	E	F	G	G*
GROUND-MOUNTED SIGN (2-3 LANE HWYS)	12"	15"	6"	4"	2½"	1"	1½"	3"	5"
GROUND-MOUNTED SIGN (4+ LANES AND 40 MPH OR LESS)	12"	15"	6"	4"	2½"	1"	1½"	3"	5"
GROUND-MOUNTED SIGN (4+ LANES AND > 40 MPH)	15"	18"	8"	5"	3⅛"	1"	1½"	3½"	6"
GROUND-MOUNTED SIGN (LOCAL ROAD, 25 MPH OR LESS)	9"	12"	5"	3"	1⅞"	½"	1½"	2"	4"
MAST ARM MOUNTED SIGN (12" STANDARD)	21"	24"	12"	8"	5"	1"	3"	4½"	7½"
MAST ARM MOUNTED SIGN (10" ALTERNATE)	21"	21"	10"	6"	3¾"	1"	3"	5½"	7"
STACKED LEGEND SIGN (GROUND-MOUNTED)	21"	24"	6"	N/A	N/A	1"	3"	3"	4"
STACKED LEGEND SIGN (MAST ARM MOUNTED)	30"	33"	8"	5"	3⅛"	1"	3"	3½"	5"



STACKED LEGEND FOR STREET NAME SIGN (GROUND-MOUNTED)



STACKED LEGEND FOR STREET NAME SIGN (MAST ARM MOUNTED)

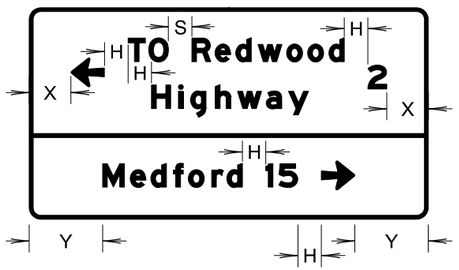
Notes: If 12"C font on mast arm mounted sign yields signs larger than 21 square feet, the 10" Alternate may be used.

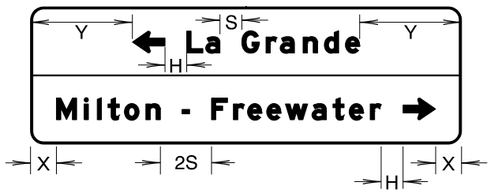
White border and legend on mast-arm signs are to be ASTM Type IX retroreflective sheeting. Borders shall be flush with edge of sign. Dividers, where used, shall be same width as border.

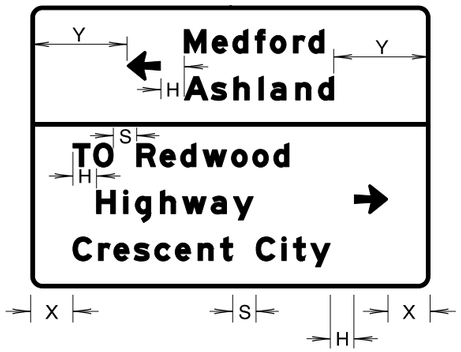
New Projects: Include mast-arm signs on Signing Plans.

Existing Poles: Perform pole analysis prior to adding or enlarging signs.

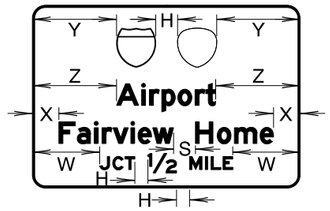
STREET NAME SIGN DETAILS



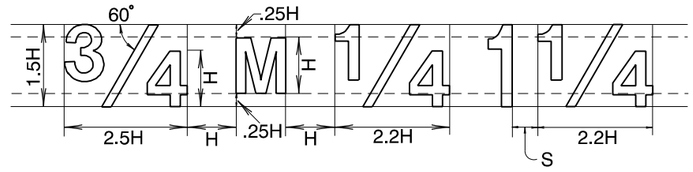




DIRECTIONAL SIGN DETAILS



Vertically center arrow between lines of legend.



FRACTIONAL LAYOUT

SERIES (FONT)				
	B	C	D	E
S	.531 H	.625 H	.836 H	1.00 H

SPACING BETWEEN WORDS

H = Letter Height
S = Space between words
W,X,Y & Z = ½ of remaining space

X-Dimension should be approximately the same dimension as the letter Height (H). At a minimum the X-Dimension shall be no less than one-half the letter height (1/2 H)

Sign examples shown here are not drawn to scale, but to illustrate the layout of the legend items.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 1/07/2019

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

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OREGON STANDARD DRAWINGS
CONVENTIONAL ROADS
DIRECTIONAL SIGN LAYOUT
STREET NAME SIGNS

2018

DATE	REVISION DESCRIPTION
1/08/18	Edited ground-mounted sign rows on chart for clarity
1/07/19	Edited ground-mounted sign rows on chart for clarity

TM223.dgn 1-3-2017

TM223

plotfile_TM200s_500s.dgn :: Default 1/2/2020 9:06:51 AM hwyr20m

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

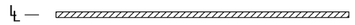
W

4" WHITE LINE

W-2

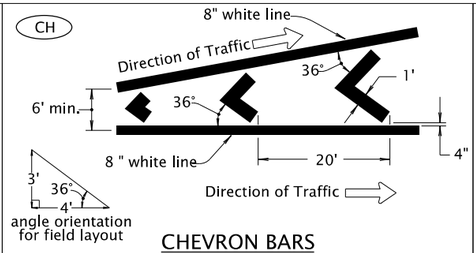
8" WHITE LINE

Y



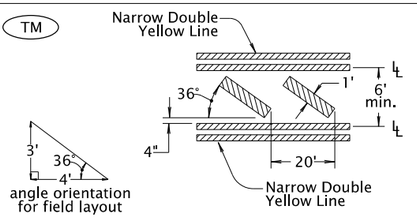
4" YELLOW LINE

CH



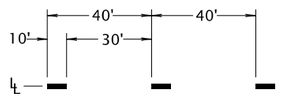
CHEVRON BARS
1' WHITE BARS AT 20' SPACING

TM



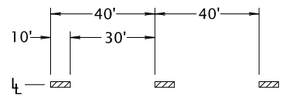
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 20' SPACING

WB



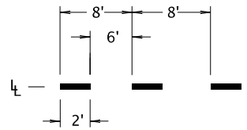
4" WHITE BROKEN LINE

YB



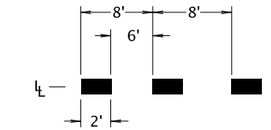
4" YELLOW BROKEN LINE

WD



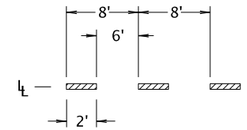
4" WHITE DOTTED LINE
For lane extensions

WD-2



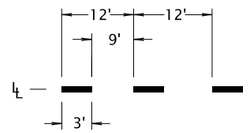
8" WHITE DOTTED LINE
For lane extensions and bike lane extensions

YD



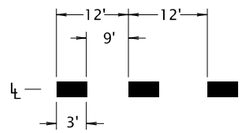
4" YELLOW DOTTED LINE
For lane extensions

DLL



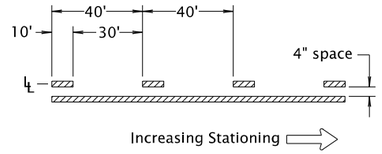
4" WHITE DOTTED LANE LINE
For lane lines in acceleration/deceleration lanes

DLL-2



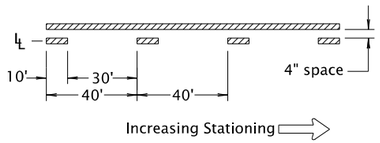
8" WHITE DOTTED LANE LINE
For lane lines in drop lanes

NPR



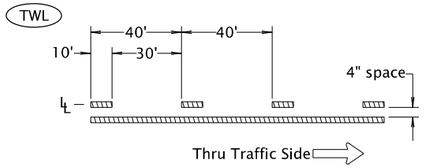
NO-PASS RIGHT
4" YELLOW LINES

NPL



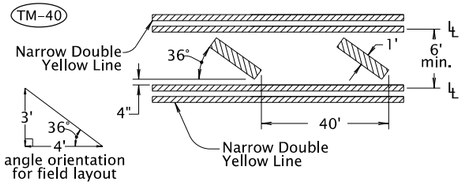
NO-PASS LEFT
4" YELLOW LINES

TWL



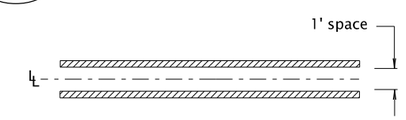
TWO-WAY LEFT TURN
4" YELLOW LINES

TM-40



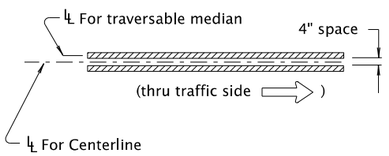
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 40' SPACING
For use at painted medians where
distance between left turn refuges exceeds 200'

D



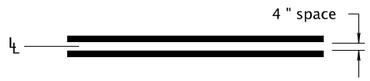
DOUBLE NO-PASS
TWO 4" YELLOW LINES

ND



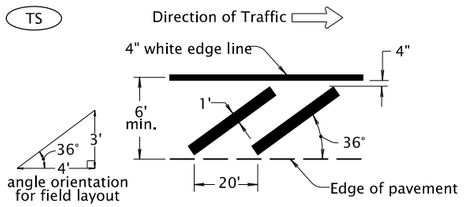
NARROW DOUBLE NO-PASS
TWO 4" YELLOW LINES

NDW



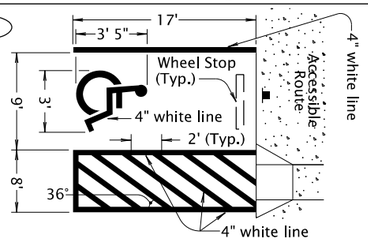
NARROW DOUBLE NO-LANE CHANGE
TWO 4" WHITE LINES

TS



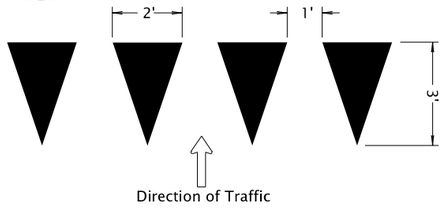
TRANSVERSE SHOULDER BARS
1' WHITE BARS AT 20' SPACING

HC



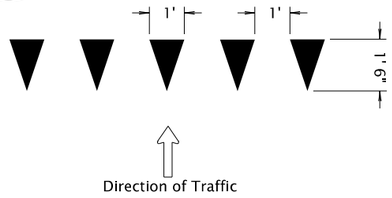
DISABLED PARKING DETAIL (white)

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

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OREGON STANDARD DRAWINGS

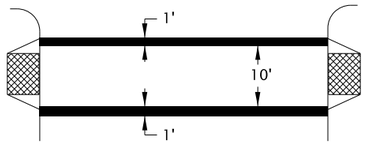
PAVEMENT MARKING STANDARD DETAIL BLOCKS

2018

DATE	REVISION DESCRIPTION

TM500

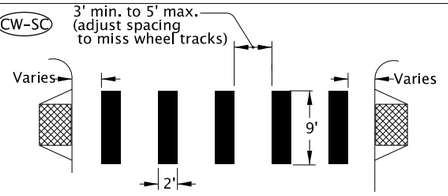
CW



STANDARD CROSSWALK
TWO 1' WHITE BARS

Install per Standard Drawing TM530

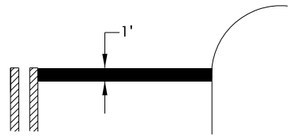
CW-SC



STAGGERED CONTINENTAL CROSSWALK
2' WHITE BARS

Install per Standard Drawing TM530

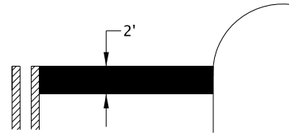
S



STOP BAR
1' WHITE BAR

Install per Standard Drawing TM530

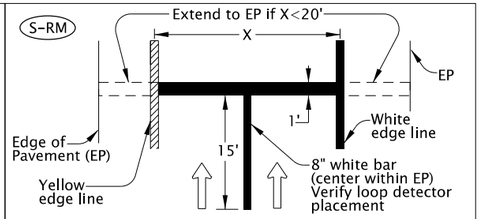
S-2



STOP BAR - LARGE
2' WHITE BAR

Install per Standard Drawing TM530

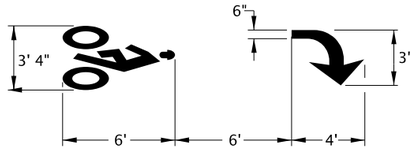
S-RM



RAMP METER STOP BAR
1' & 8" WHITE BARS

For multi-lane ramp meter applications

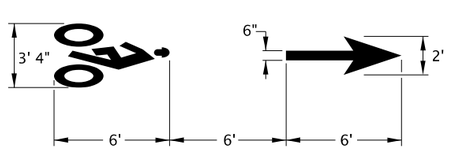
BR



BIKE RIGHT TURN STENCIL (white)

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

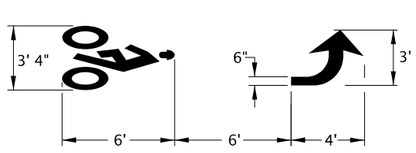
BS



BIKE LANE STANDARD STENCIL (white)

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

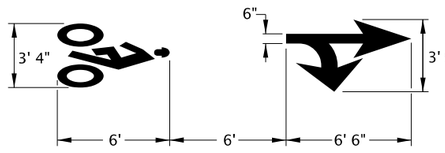
BL



BIKE LEFT TURN STENCIL (white)

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

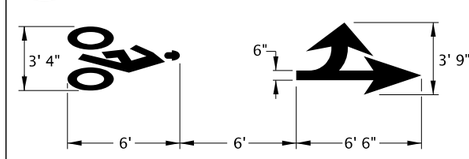
BRS



BIKE RIGHT TURN STRAIGHT STENCIL (white)

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

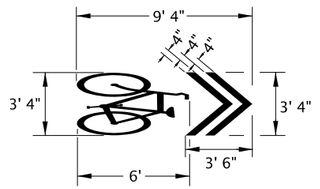
BLS



BIKE LEFT TURN STRAIGHT STENCIL (white)

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

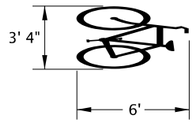
SLM



SHARED LANE MARKING (white)

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

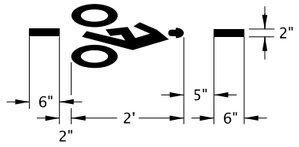
B



BIKE STENCIL (white)

Used for Intersection Bicycle Box applications
Place marking within bicycle box, ceneterd with motor vehicle lane width

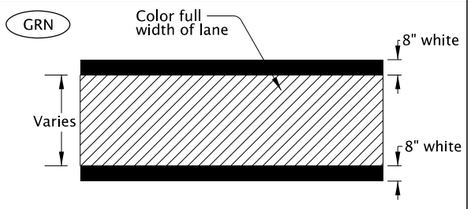
BD



BICYCLE DETECTOR MARKING (white)

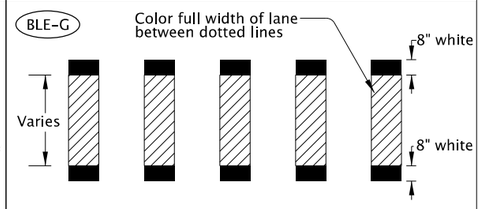
PLace Bicycle Detector Pavement Marking in optimum loction
where bicycle acuates the traffic signal

GRN



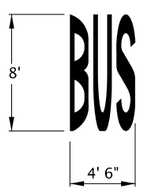
GREEN SUPPLEMENTAL BICYCLE LANE
SOLID LINE (green)

BLE-G



GREEN SUPPLEMENTAL BICYCLE LANE
DOTTED LINE EXTENSION (green)

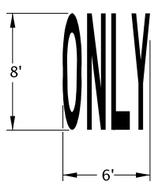
BUS



BUS (white)

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

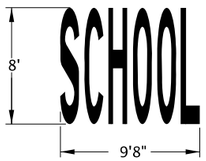
ON



ONLY (white)

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

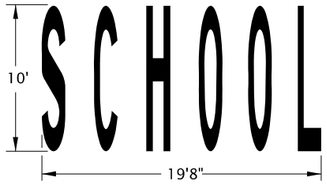
SCH



SCHOOL (white)

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

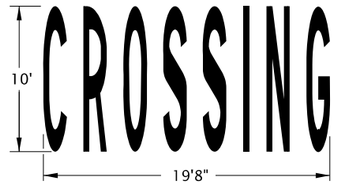
SCH-LG



SCHOOL - LARGE (white)

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

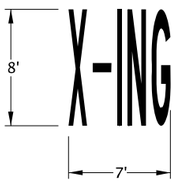
CRS-LG



CROSSING - LARGE (white)

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

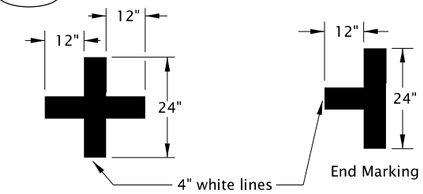
XNG



X-ING (white)

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

P



ON-STREET PARKING DETAIL (white)

General Note:

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

LEGEND

Direction of Travel

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.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01/03/2020

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

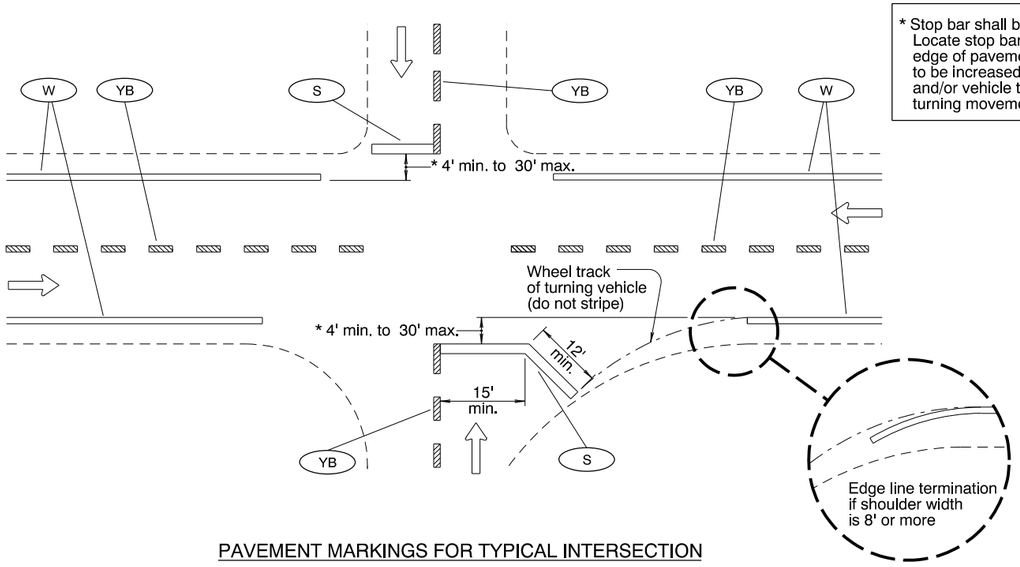
OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2018

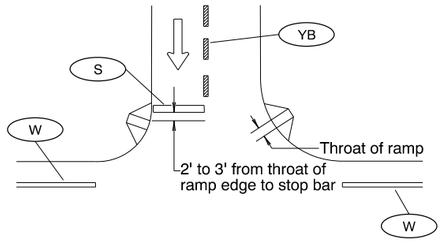
DATE	REVISION DESCRIPTION
07/18	Added B, BD, GRN, BLE-G details
01/20	Added BRS and BLS. Rearranged layout and updated BS
	Modified GRN and BLE-G dimension notation
	Changed notes for B and BD

TM503

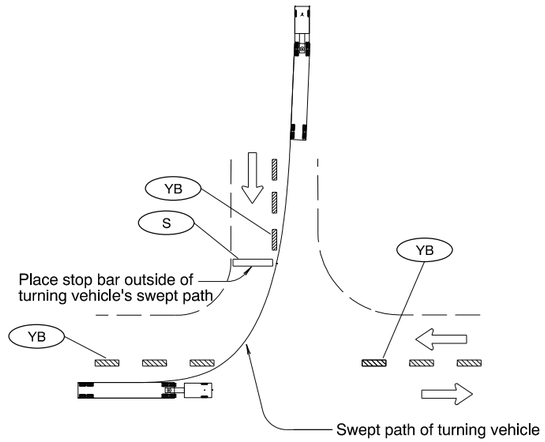


PAVEMENT MARKINGS FOR TYPICAL INTERSECTION

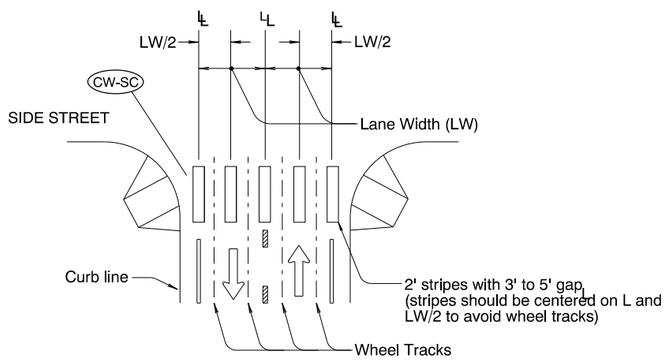
* Stop bar shall be placed as near as possible to the intersecting traveled way. Locate stop bar 4' min. to 30' max. in advance of the extended fog line, edge of pavement, or curb face. Minimum stop bar distance may need to be increased, depending on location of pedestrian ramps (see Detail "A") and/or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



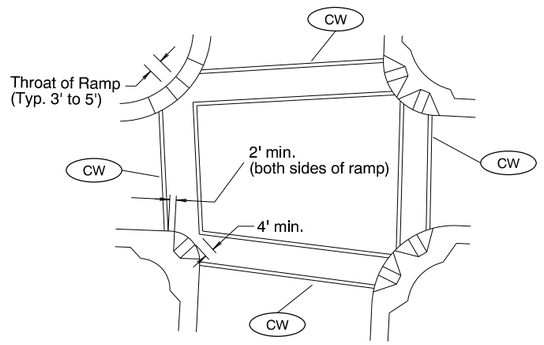
Detail "A"
STOP BAR PLACEMENT WITH
RESPECT TO PEDESTRIAN RAMPS



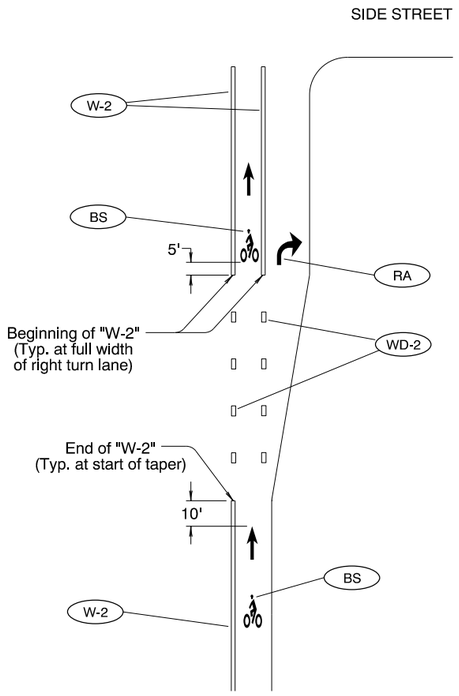
Detail "B"
STOP BAR PLACEMENT WITH
RESPECT TO TURN RADII



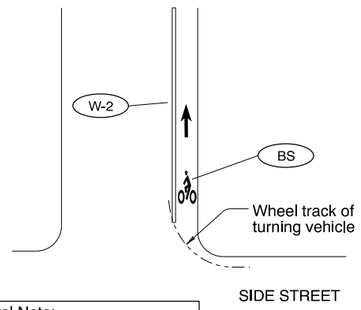
STAGGERED CONTINENTAL LAYOUT



STANDARD CROSSWALK BARS
AT INTERSECTION



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

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

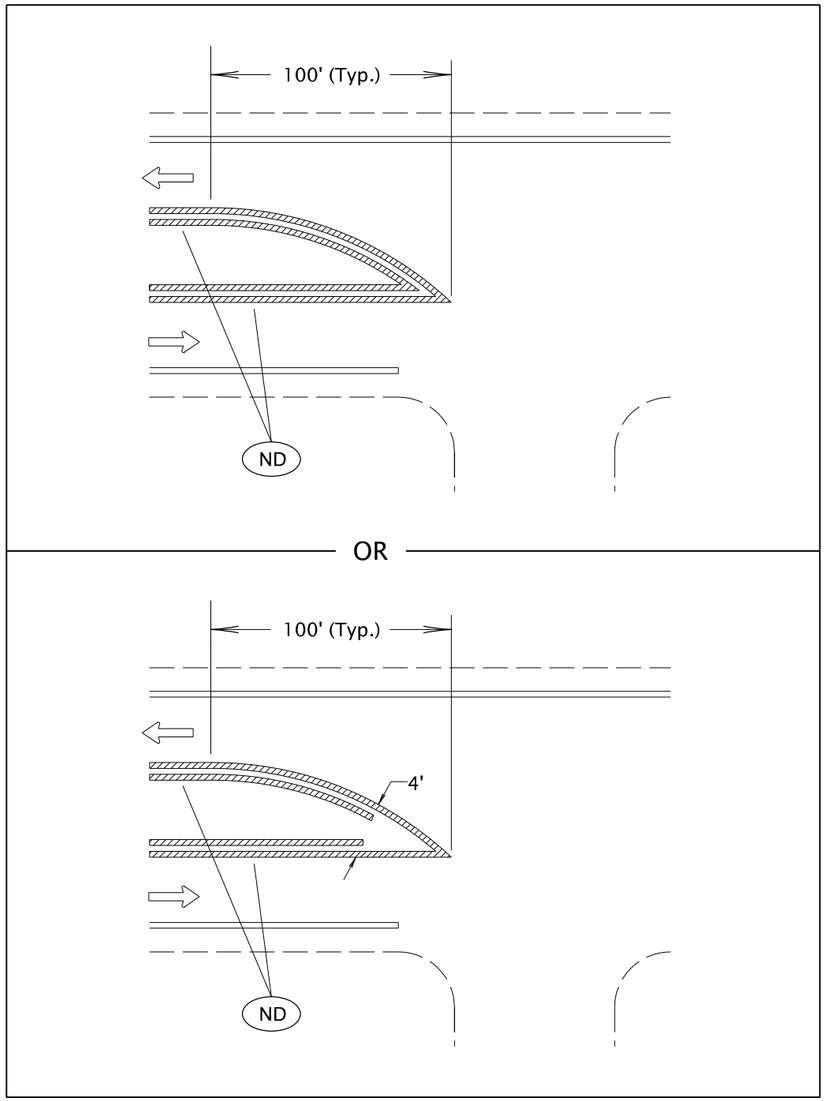
NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

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.

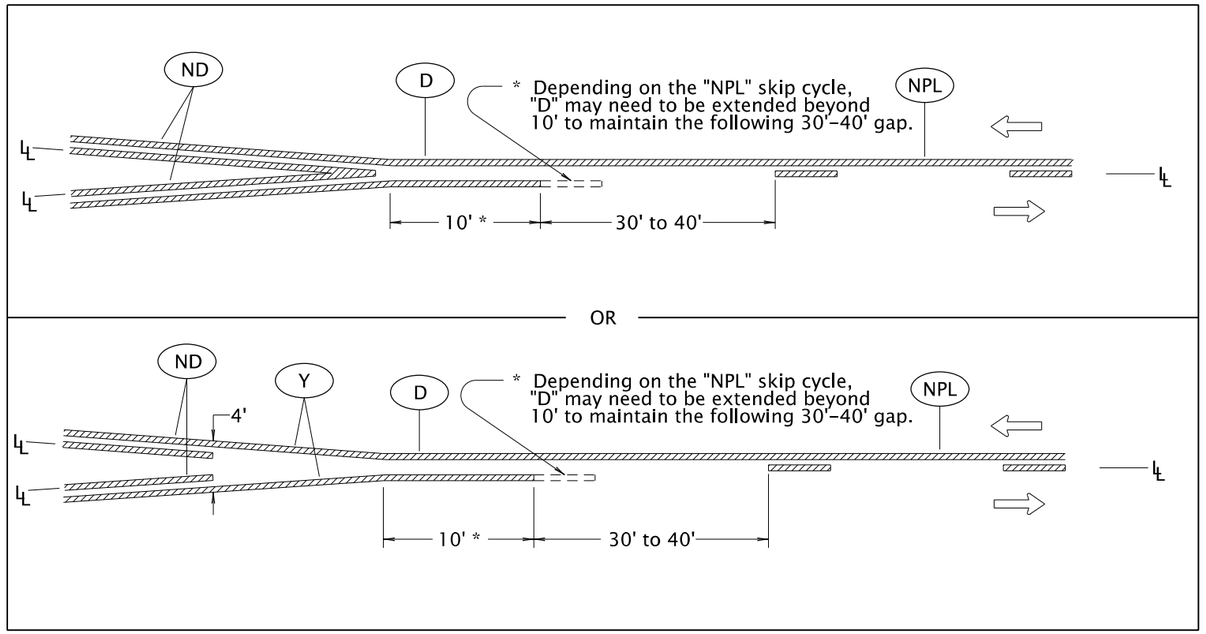
OREGON STANDARD DRAWINGS
INTERSECTION PAVEMENT MARKINGS (CROSSWALK, STOP BAR & BIKE LANE STENCIL)

2018

DATE	REVISION DESCRIPTION



MEDIAN BULLNOSE DETAIL



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

LEGEND

Increasing stationing from left to right

Direction of Travel

℄ 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 07/01/2015

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

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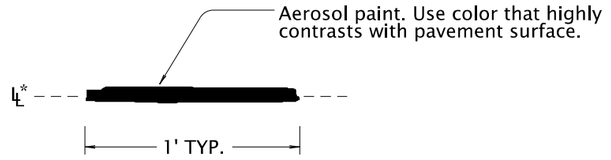
OREGON STANDARD DRAWINGS

MEDIAN AND LEFT TURN CHANNELIZATION DETAILS

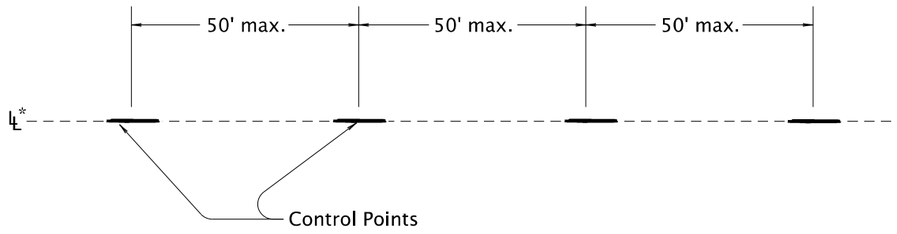
2018

DATE	REVISION DESCRIPTION

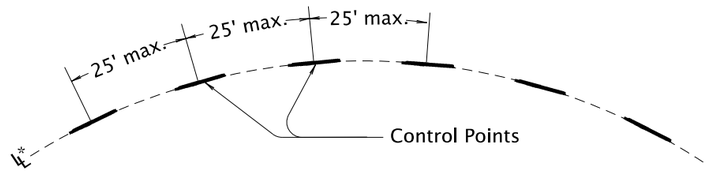
TM539



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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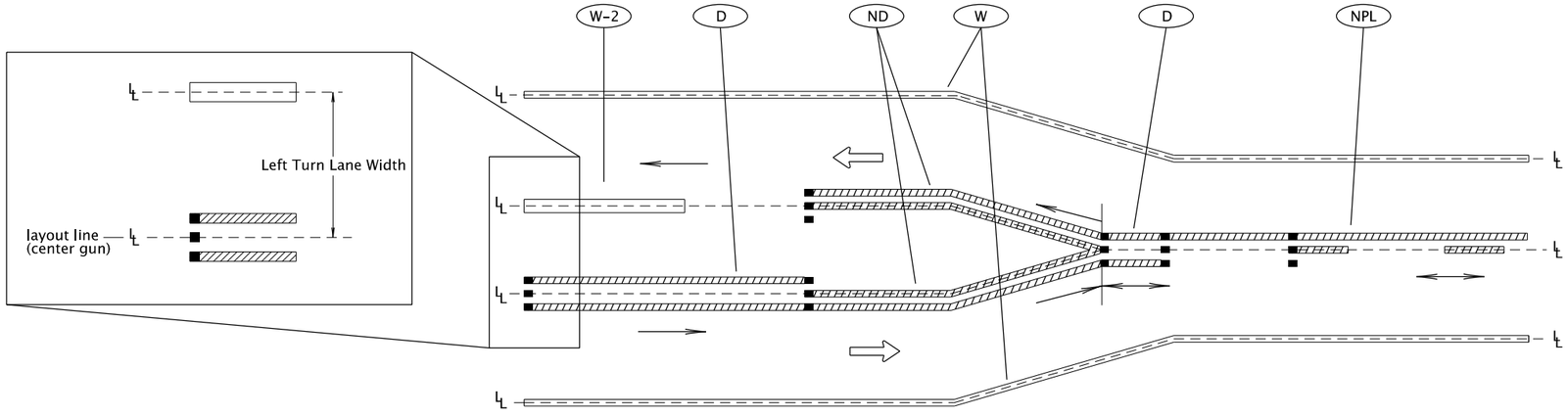
OREGON STANDARD DRAWINGS

ALIGNMENT LAYOUT: GENERAL

2018

DATE	REVISION DESCRIPTION

TM560



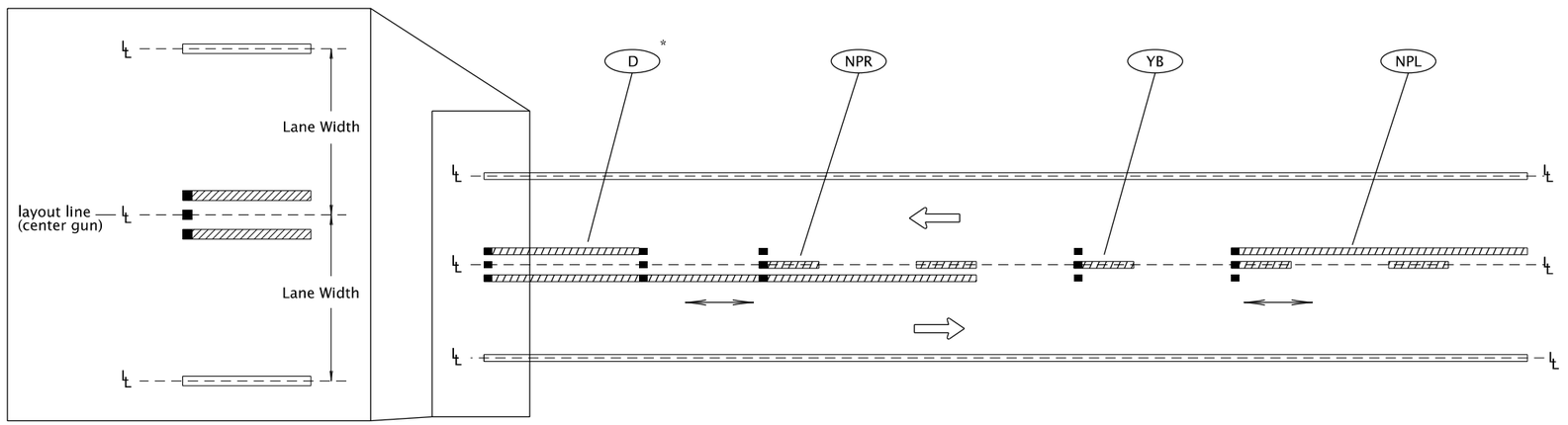
LEFT TURN LANE ALIGNMENT LAYOUT

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)



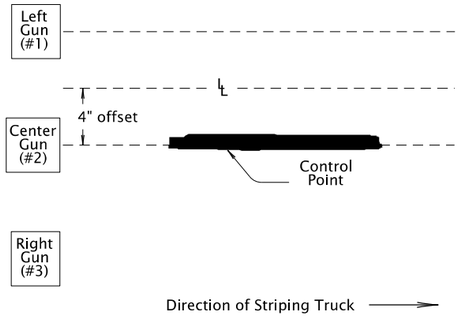
CENTERLINE ALIGNMENT LAYOUT

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

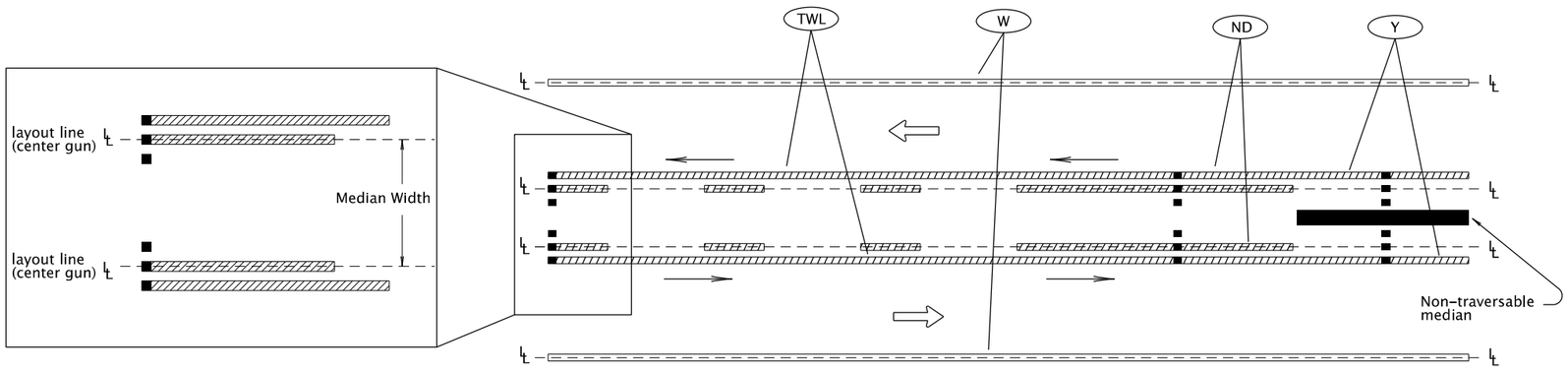
Line Types requiring control points to be 4" offset from lane line:

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

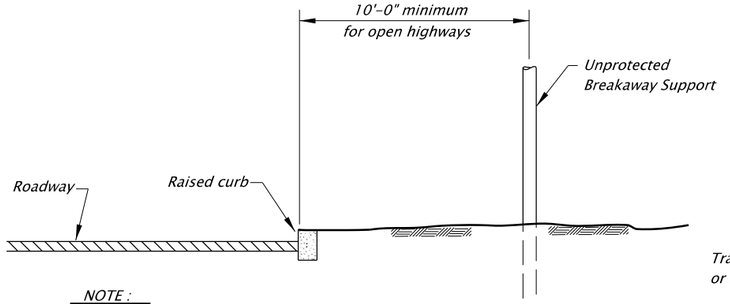
ALIGNMENT LAYOUT: LEFT TURN LANE, CENTERLINE & MEDIANS

2018

DATE	REVISION DESCRIPTION

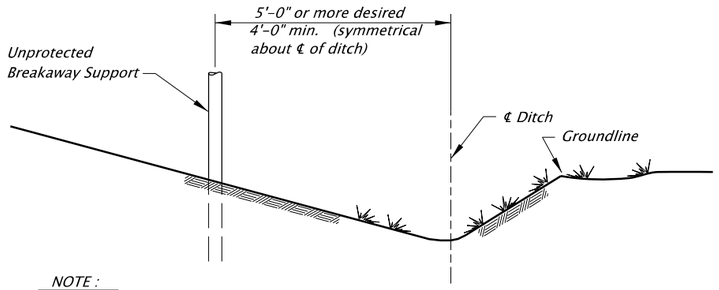
TM561

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



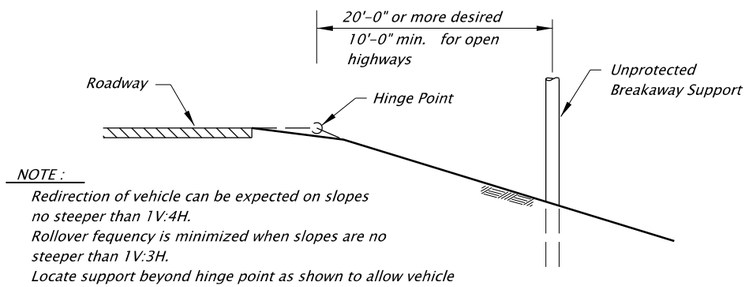
NOTE :
Locate supports far enough behind curb to allow vehicle to stabilize before impacting support.

BREAKAWAY SUPPORTS BEHIND RAISED CURBS



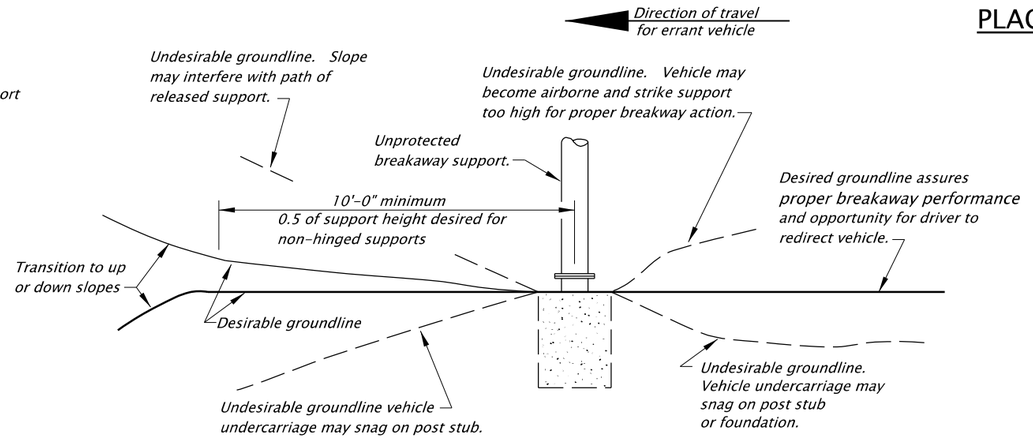
NOTE :
Locate breakaway supports away from ditches to avoid problems with erosion, corrosion, debris, maintenance, and breakaway performance.

BREAKAWAY SUPPORTS NEAR DITCHES



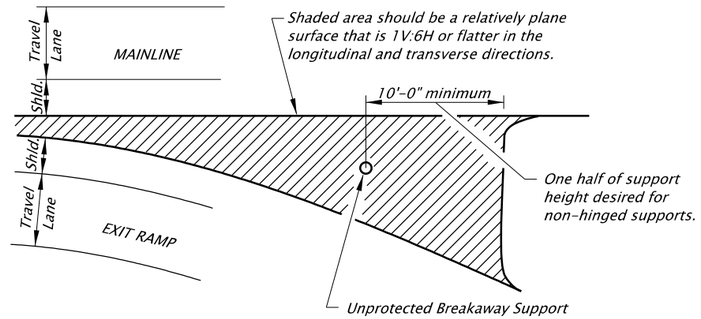
NOTE :
Redirection of vehicle can be expected on slopes no steeper than 1V:4H.
Rollover fequency is minimized when slopes are no steeper than 1V:3H.
Locate support beyond hinge point as shown to allow vehicle to stabilize before impact.

BREAKAWAY SUPPORT ON FILL SLOPE

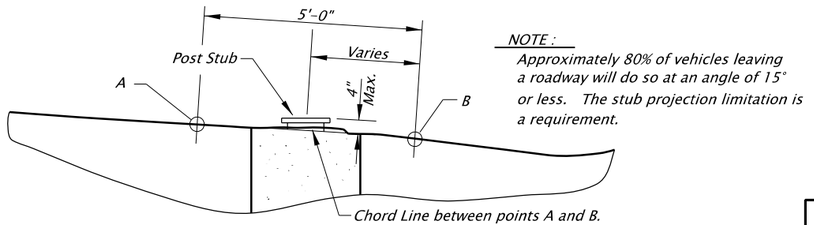


BREAKAWAY SUPPORT - PARTIAL ELEVATION

(Along possible paths of errant vehicles)



GORE AREA BREAKAWAY SUPPORT LOCATION



NOTE :
Approximately 80% of vehicles leaving a roadway will do so at an angle of 15° or less. The stub projection limitation is a requirement.

UNPROTECTED BREAKAWAY SUPPORT CLEARANCE DIAGRAM

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

PLACEMENT OF UNPROTECTED BREAKAWAY SUPPORTS:

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

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

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

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

Where possible, supports should be located behind established barriers.

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

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

CALC. BOOK NO. _____

BASELINE REPORT DATE 06-JUL-2015

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

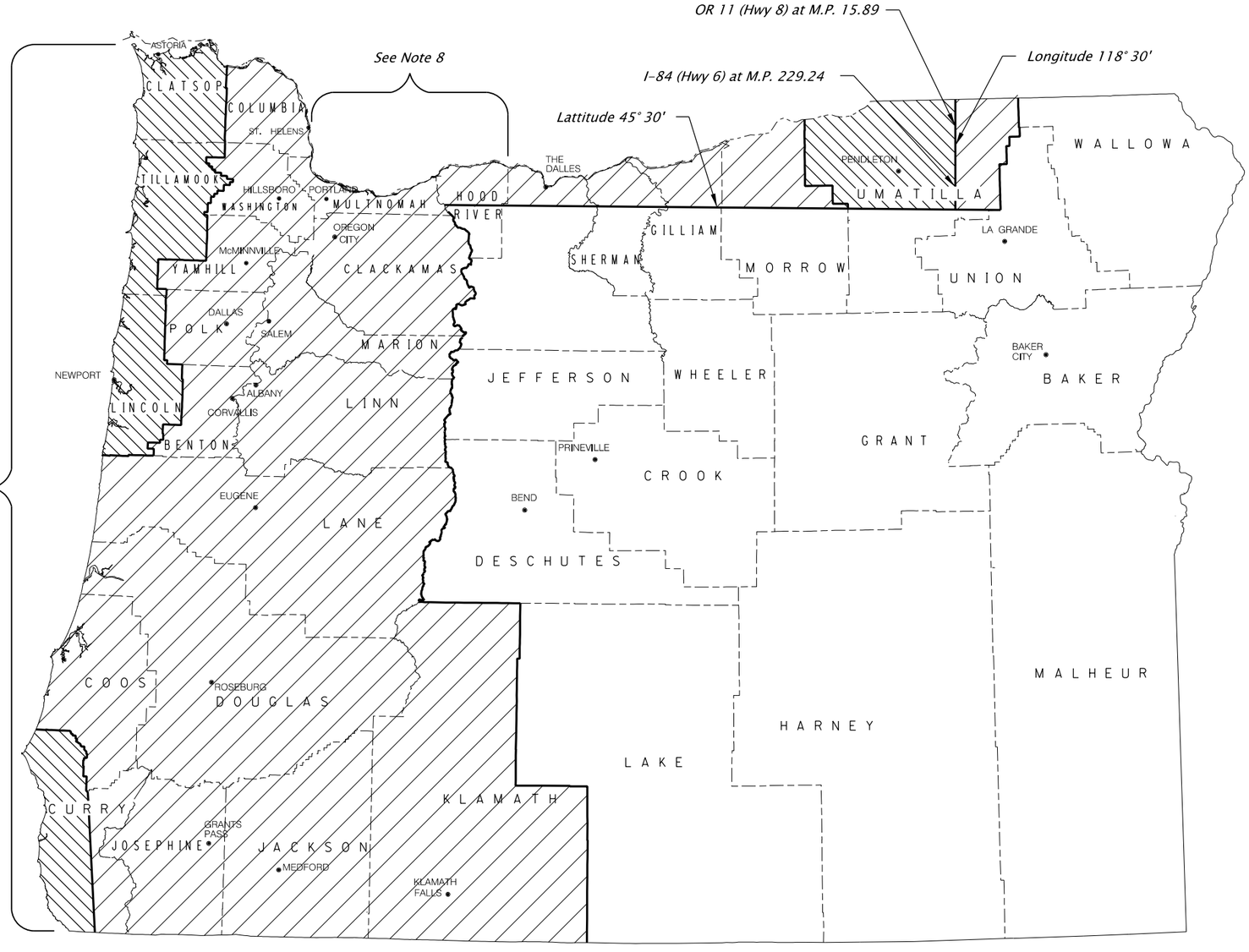
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON STANDARD DRAWINGS

BREAKAWAY SIGN & LUMINAIRE SUPPORTS - SUPPORT LOCATION GUIDELINES

2018

DATE	REVISION DESCRIPTION



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

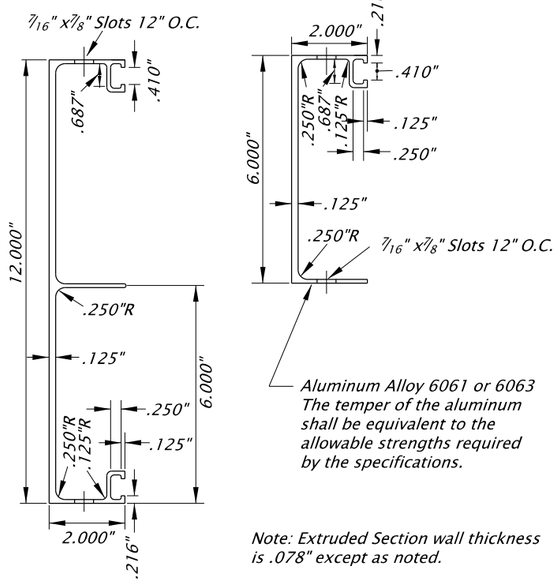
2018

DATE	REVISION DESCRIPTION

TM671.dgn 10-JUL-2017

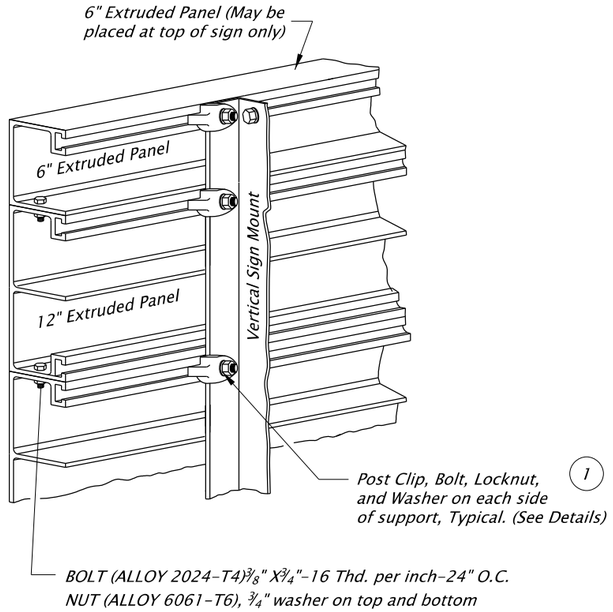
TM671

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

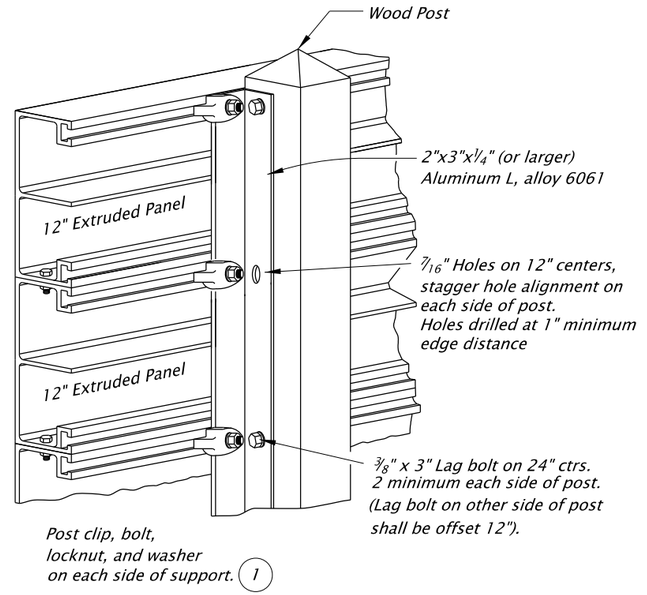


Note: Extruded Section wall thickness is .078" except as noted.

SIGN PANELS & DETAILS

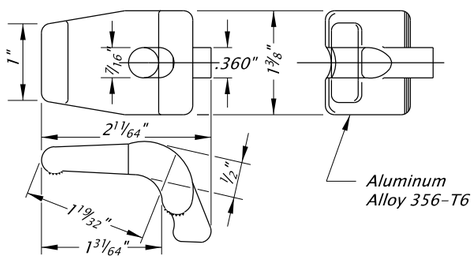


SIGN PANELS ON METAL STRUCTURES
No Scale

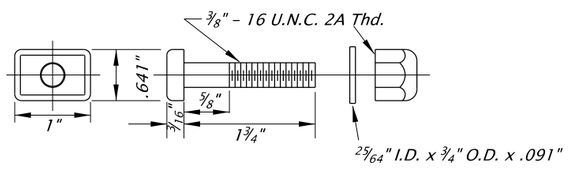


SIGN PANELS ON WOOD POSTS
No Scale

(1) Note:
The locking feature of the nut shall be a nylon insert.

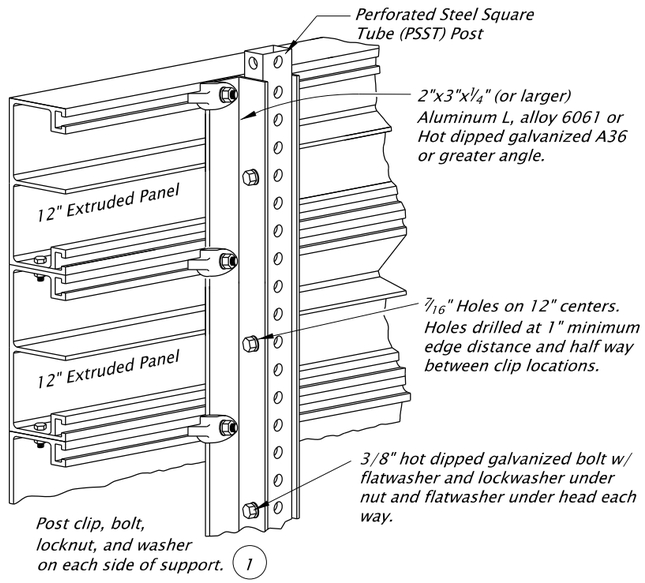


POST CLIP DETAIL

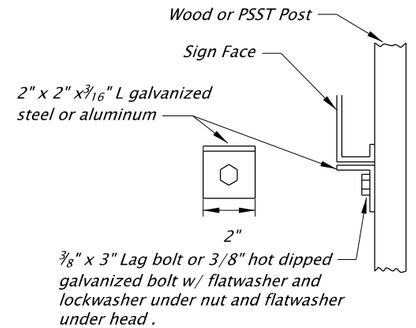


ALUMINUM ALLOYS; BOLT 2024-T4 (1)
LOCKNUT 6061-T6
WASHER (No alloy specified)

POST CLIP BOLT, NUT, & WASHER DETAIL



SIGN PANELS ON PERFORATED STEEL SQUARE TUBE (PSST) POSTS
No Scale



SIGN SUPPORT BRACKET DETAIL
1 Required per post

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

BASELINE REPORT DATE 06-JAN-2017

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

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OREGON STANDARD DRAWINGS

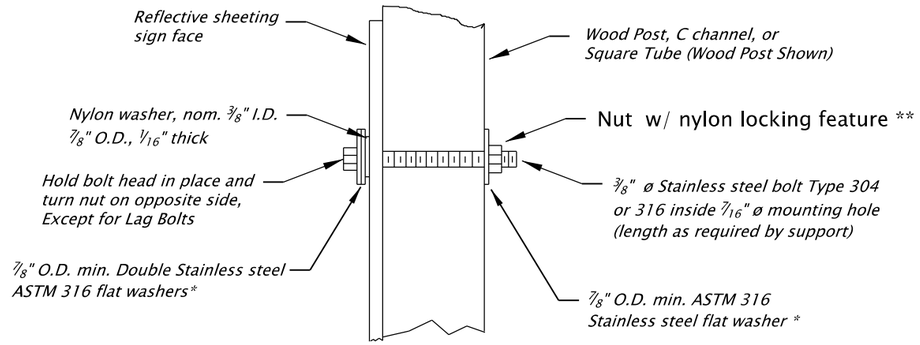
EXTRUDED ALUMINUM PANELS

2018

DATE	REVISION DESCRIPTION

tm675.dgn 10-JUL-2017

TM675



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

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OREGON STANDARD DRAWINGS

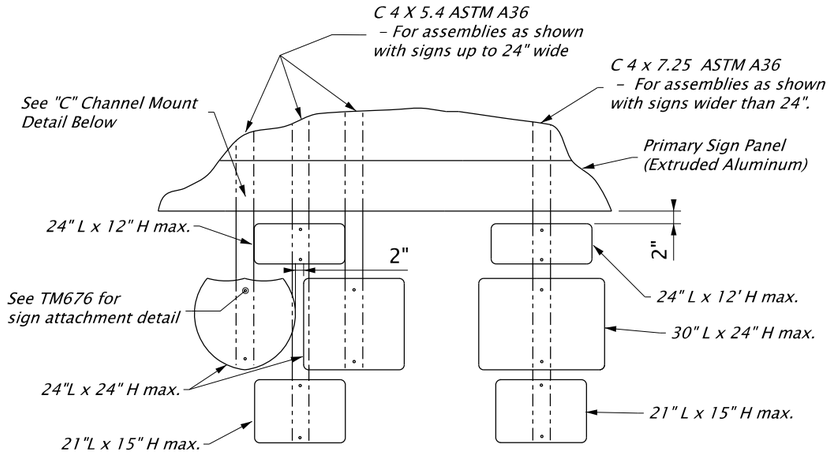
SIGN ATTACHMENTS

2018

DATE	REVISION DESCRIPTION

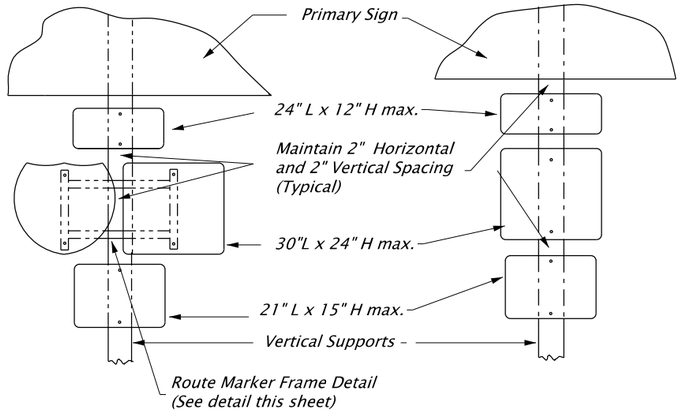
tm676.dgn 10-JUL-2017

TM676

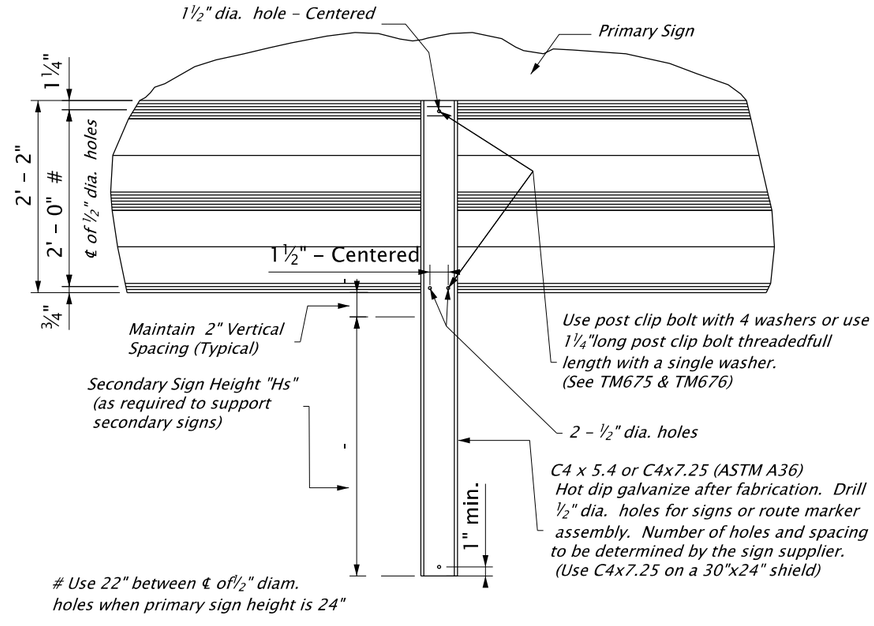


Note: Maintain 2" Horizontal and 2" Vertical Spacing (Typical)

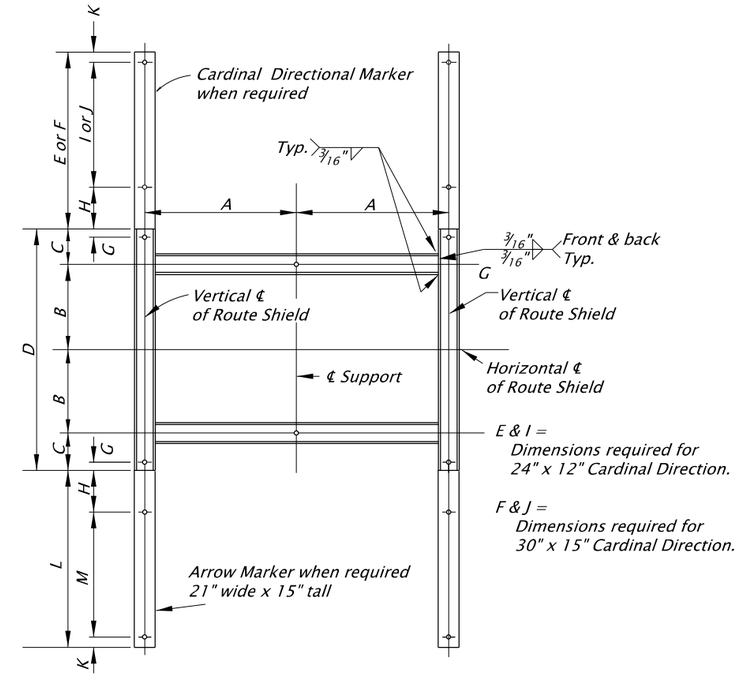
ROUTE MARKERS MOUNTED TO EXTRUDED PANELS
No Scale



ROUTE MARKERS MOUNTED TO VERTICAL SUPPORTS
No Scale



"C" CHANNEL CONNECTION DETAIL
No Scale



Shield Sizes (in inches)	A	B	C	D	E	F	G	H	I	J	K	L	M
2 – 24" x 24"	13	8	3½	23	14	17	¾	4	9	12	1	17	12
1 – 24" x 24" & 1–30" x 24"	14½	8	3½	23	14	17	¾	4	9	12	1	17	12
2 – 30" x 24"	16	8	3½	23	14	17	¾	4	9	12	1	17	12
2 – 36" x 36"	19	12	5½	35	14	17	1⅜	4	9	12	1	17	12
1 – 36" x 36" & 1–45" x 36"	21¼	12	5½	35	14	17	1⅜	4	9	12	1	17	12
2 – 45" x 36"	23½	12	5½	35	14	17	1⅜	4	9	12	1	17	12

Note: Route Marker frames shall be constructed from 2" x 2" x 3/16" ASTM A53 GR B tubing, galvanized after fabrication. Provide 7/16" holes, 3/8" galvanized steel bolts, washers, and lock–nuts for mounting route marker frame to post. For sign attachments see TM676.

ROUTE MARKER FRAME DETAIL
No Scale

Accompanied by dwgs. TM675, TM676

CALC. BOOK NO. _____

BASELINE REPORT DATE 09–JAN–2015

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

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OREGON STANDARD DRAWINGS

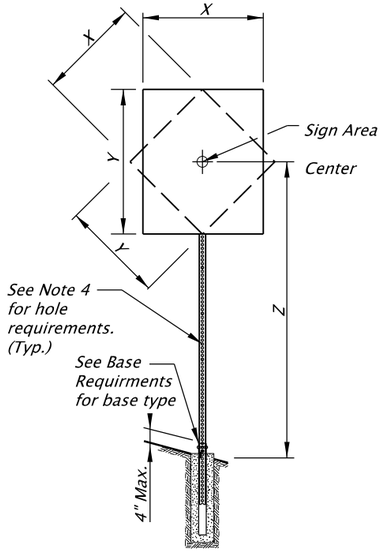
SECONDARY SIGN MOUNTING DETAILS

2018

DATE	REVISION DESCRIPTION

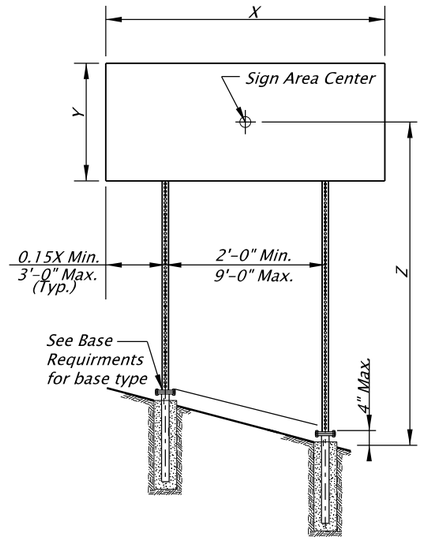
TM678

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



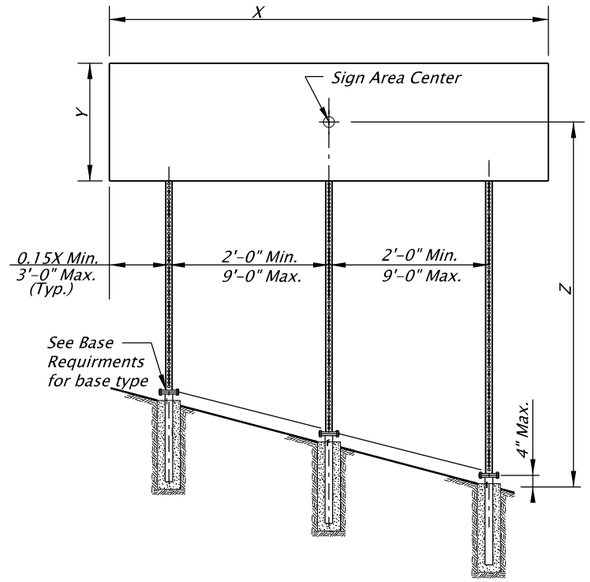
SINGLE POST ELEVATION

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

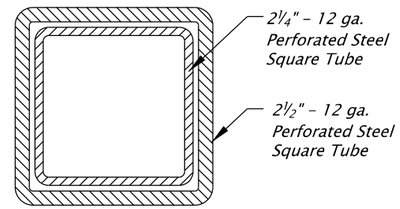
TEMPORARY PERFORATED STEEL SQUARE TUBE TABLE

* - 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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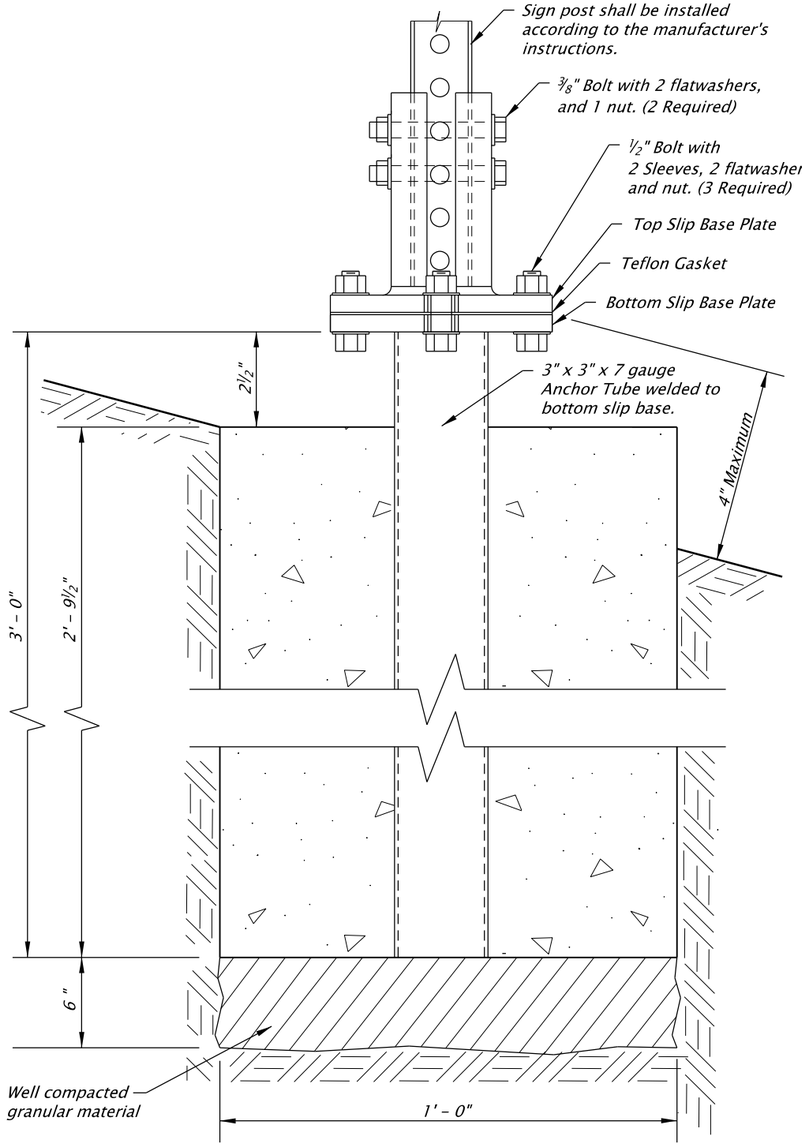
OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION

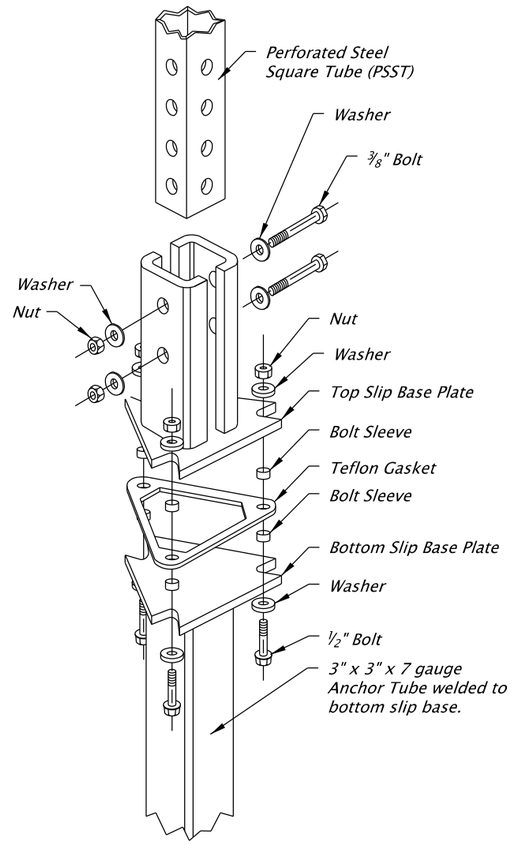
2018

DATE	REVISION DESCRIPTION
07/17	Changed G140 to G90.



SLIP BASE ELEVATION

No scale

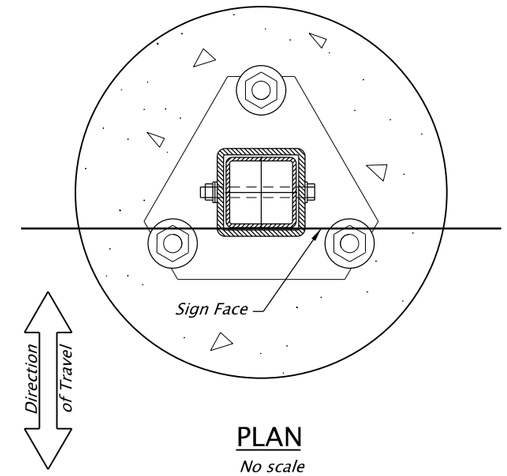


SLIP BASE EXPLODED VIEW

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

tm800.dgn 01-JAN-2019

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

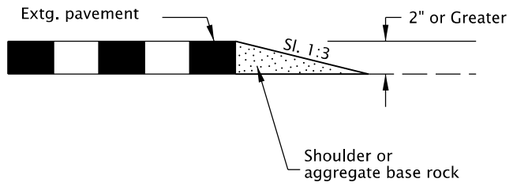
NOTES:
- For Lane closures where W < 10', use "L" value for W = 10'.
- For Shoulder closures where W < 10', use "L" value for W = 10' or calculate "L" using formula, for Speeds ≥ 45: L = WS, Speeds < 45: L = $S^2W/60$, S = Speed, W=Width

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.

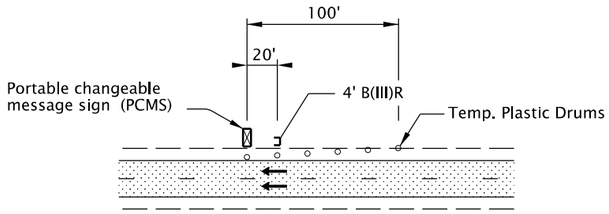
TM800

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.



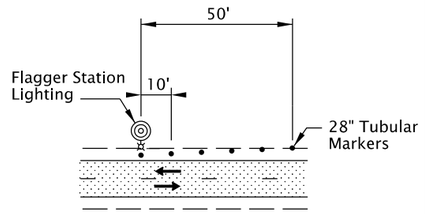
EXCAVATION ABRUPT EDGE

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



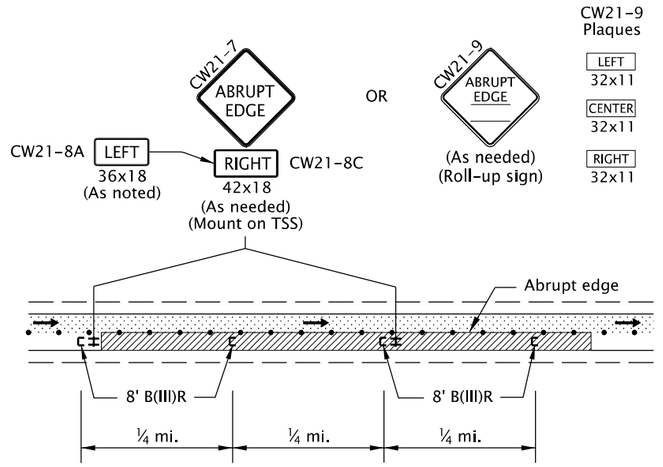
PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) INSTALLATION

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

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

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OREGON STANDARD DRAWINGS

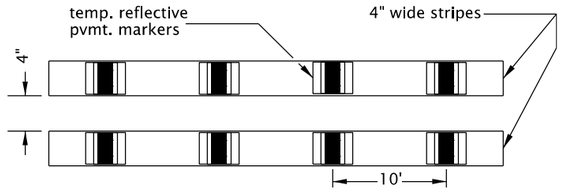
TABLES, ABRUBT EDGE AND PCMS DETAILS

2018

DATE	REVISION DESCRIPTION

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

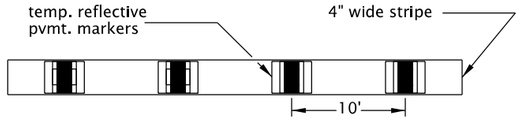
TM800



LAYOUT "A"
(Supplemented double solid lines)

TYPICAL APPLICATIONS:

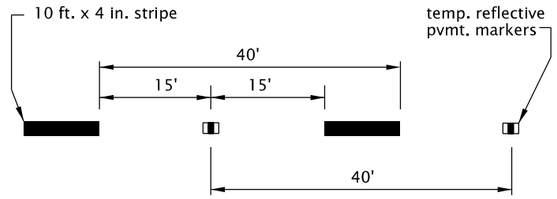
- To prohibit lane changes or passing (include appropriate regulatory signs).
- Freeway or multilane shifts and crossovers.
- For projects in place through winter months.
- Two-lane, two-way centerlines.



LAYOUT "B"
(Supplemented solid line)

TYPICAL APPLICATIONS:

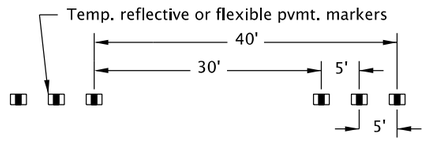
- Alignment shifts or crossovers.
- To discourage lane changes in multilane sections.
- For projects in place through winter months.



LAYOUT "C"
(Supplemented broken lines)

TYPICAL APPLICATIONS:

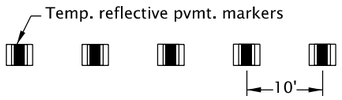
- Freeway and multilane broken lines.
- High ADT 2 lane roads (greater than 10,000).
- For projects in place through winter months.



LAYOUT "D"
(Simulated broken lines)

TYPICAL APPLICATIONS:

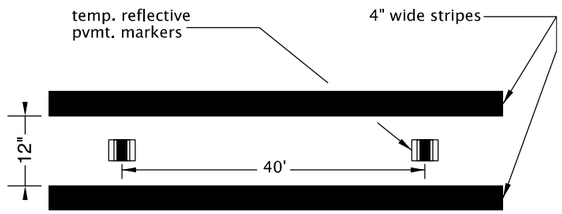
- During staging on finished/existing surfaces.
- HMAC intermediate surfaces.
- Emulsified asphalt surface treatments (chip seals) where permanent pavement markings cannot be placed within two weeks.



LAYOUT "E"
(Simulated solid lines)

TYPICAL APPLICATIONS:

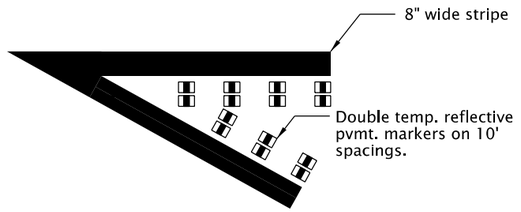
- Alignment shifts or crossovers.
- To discourage lane changes in multilane sections.
- Edge lines for short durations, less than 14 days.



LAYOUT "F"
(Supplemented wide double solid lines)

TYPICAL APPLICATIONS:

- To prohibit lane changes or passing (include appropriate regulatory signs).
- 2 lane, 2 way centerlines.
- 2 lane, 1 way alignments on freeways or multi-lane highways.



LAYOUT "G"
(Supplemented solid 8" line)

TYPICAL APPLICATIONS:

- Gore areas
- Alignment splits (bifurcations)

GENERAL NOTES FOR ALL DETAILS:

- When using Supplemented or Simulated lines:
  1. Yellow Bi-Directional Pavement Markers are required for Two-Way Traffic.
  2. White Mono-Directional Pavement Markers are required for one-way traffic or edge lines.
- Supplemented lines are painted lines enhanced with Reflective Pavement Markers.
- Simulated lines are Reflective Pavement Markers placed in a pattern to substitute for a painted line.
- Pavement marking colors shall conform to the MUTCD.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2019

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OREGON STANDARD DRAWINGS

TEMPORARY PAVEMENT MARKINGS

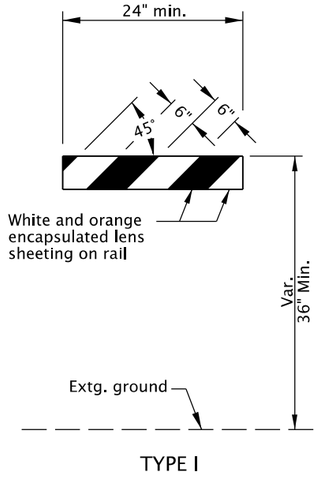
2018

DATE	REVISION DESCRIPTION

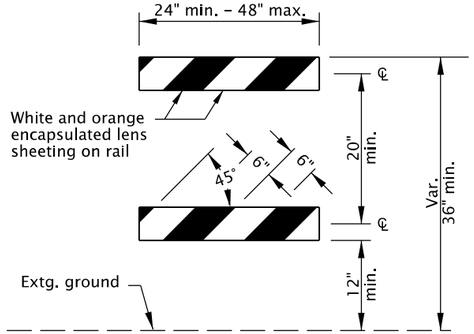
tm810.dgn 01-JAN-2019

TM810

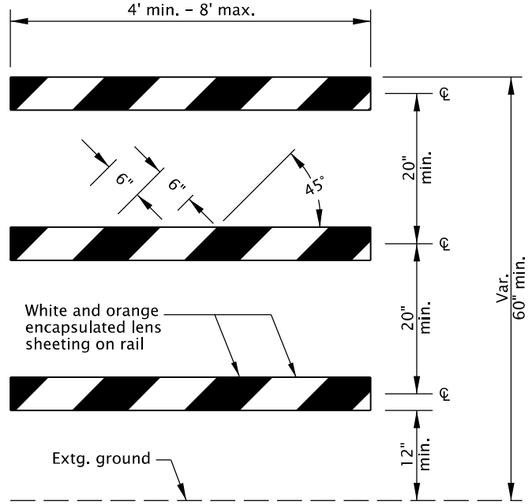
tm820.dgn 01-JAN-2019



TYPE I



TYPE II



TYPE III

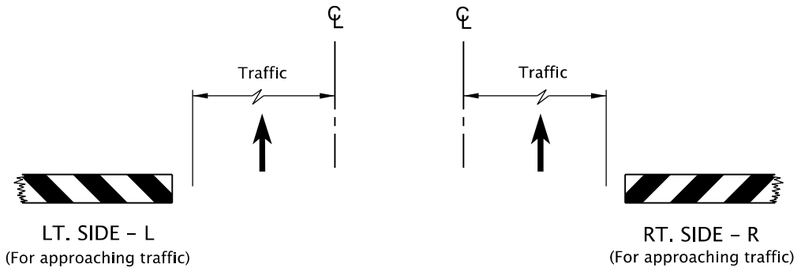
BARRICADE RAIL LAYOUT

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 Drg. No. TM844.

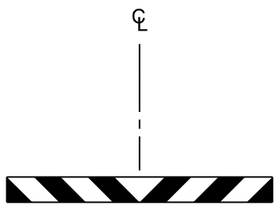
NOTES:

- 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.

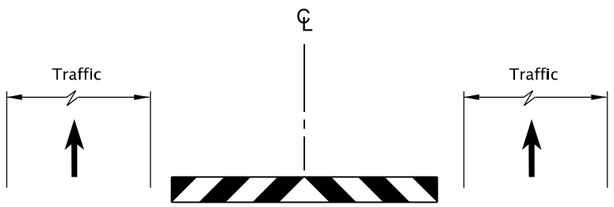


LT. SIDE – L
(For approaching traffic)

RT. SIDE – R
(For approaching traffic)

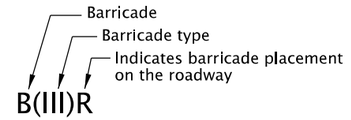


CLOSED – C
(For approaching traffic)



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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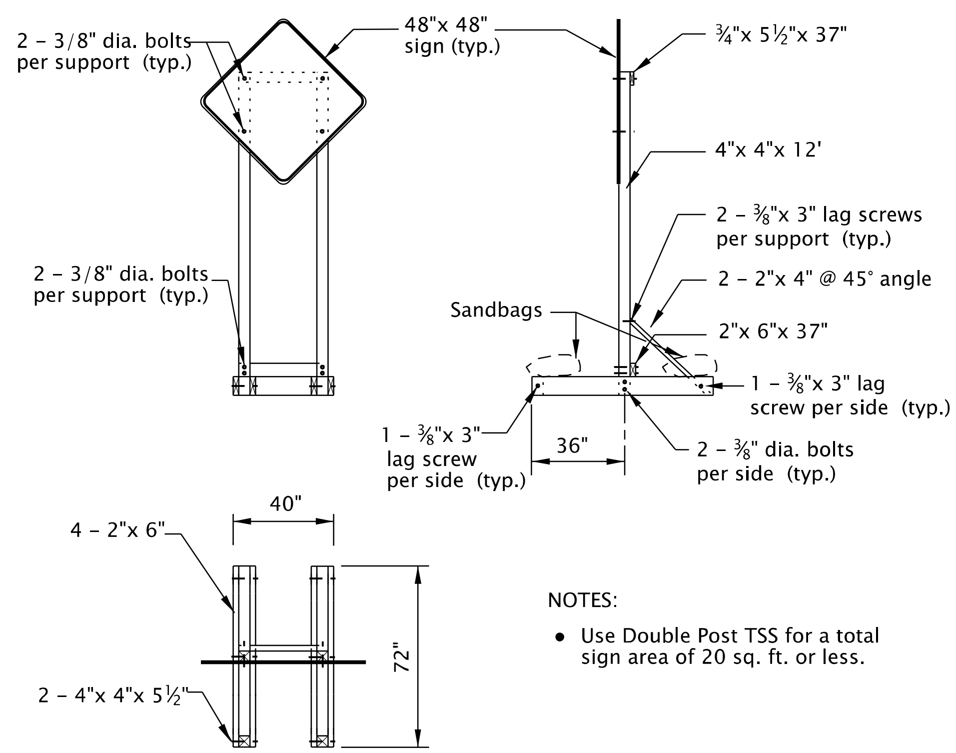
OREGON STANDARD DRAWINGS

TEMPORARY BARRICADES

2018

DATE	REVISION DESCRIPTION
01-2019	REVISED NOTES

TM820

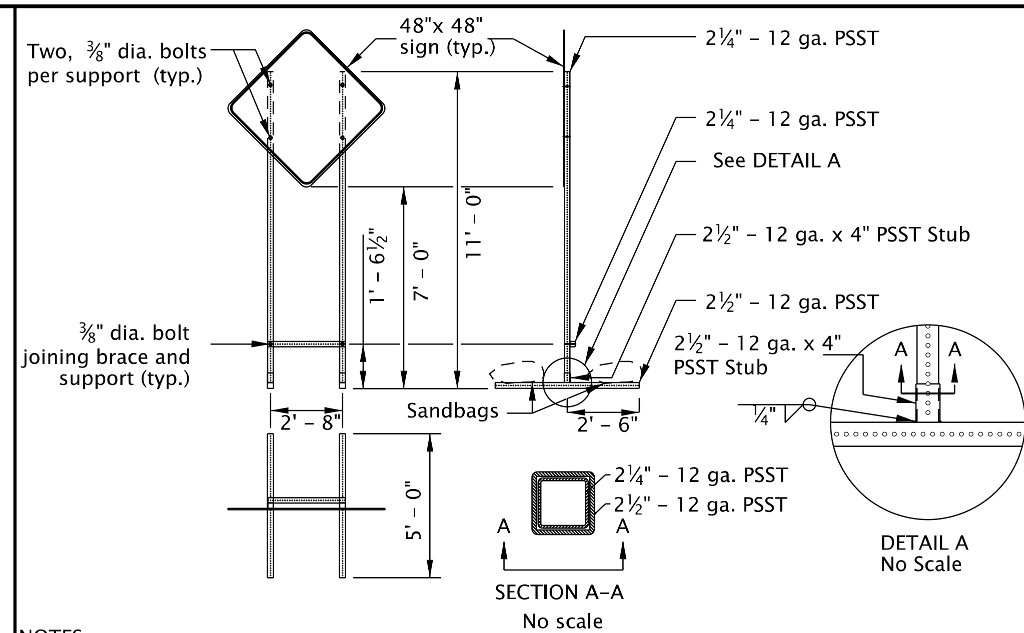


NOTES:

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

DOUBLE POST

TEMPORARY SIGN SUPPORT (TSS)

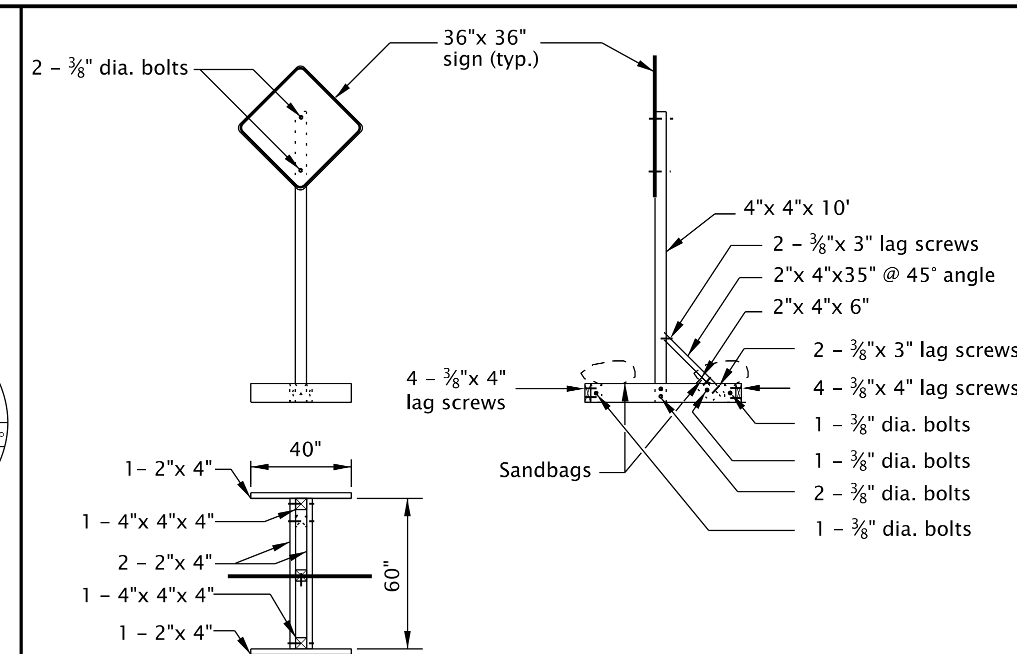


NOTES:

- 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)

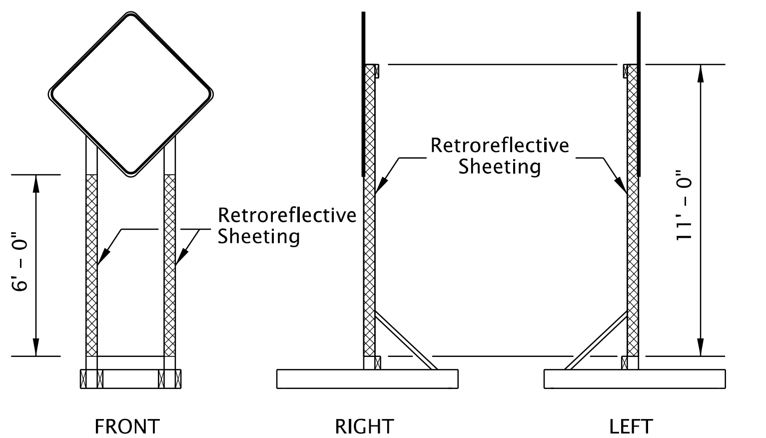


NOTES:

- 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.

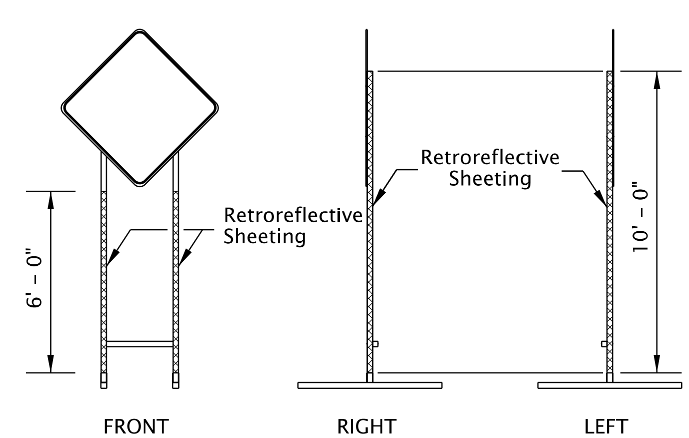
SINGLE POST

TEMPORARY SIGN SUPPORT (TSS)



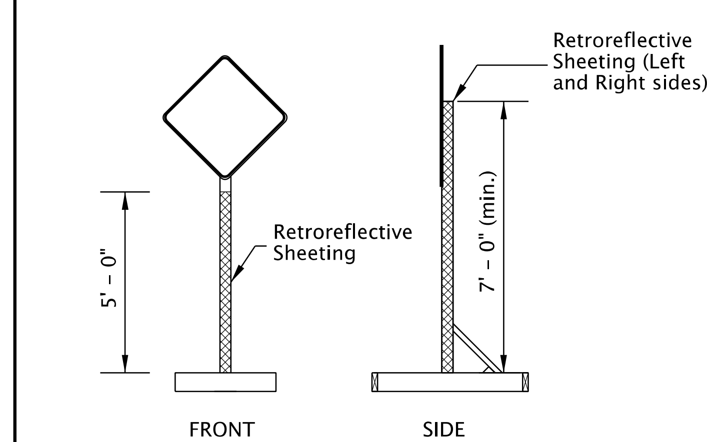
DOUBLE POST

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).
- See Drg. No. TM204 for flag board mounting detail.

NOTES:

- Apply fluorescent 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-2020

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OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

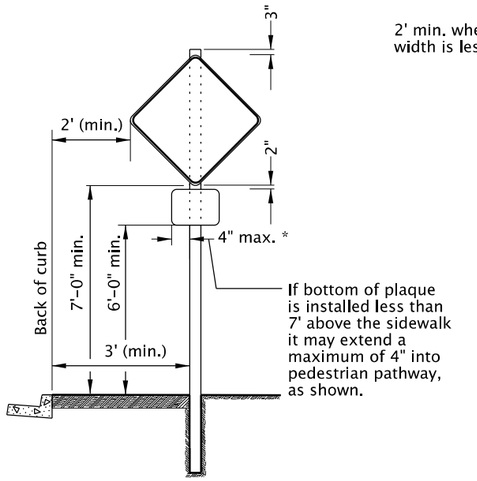
2018

DATE	REVISION DESCRIPTION
01-2019	REVISED NOTES
01-2020	REVISED NOTES

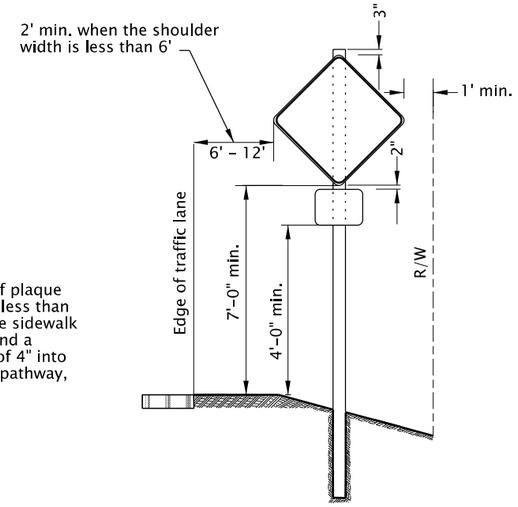
Effective Date: June 1, 2020 - November 30, 2020

NOTES:

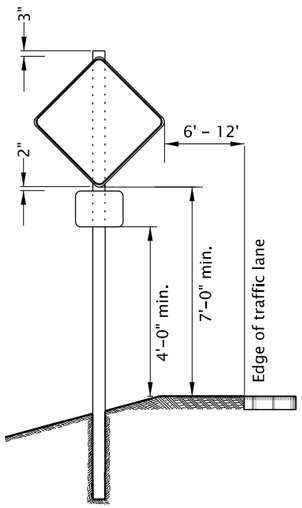
- Do not block bicycle lanes, sidewalks, or TPAR's with sign supports. Maintain minimum widths for these facilities according TCP Design Manual, MUTCD, ADA, or as directed.
- To be accompanied by Drg. Nos. TM670, TM671, TM687, TM688 & TM689.



URBAN AREAS WITH CURB/SIDEWALK

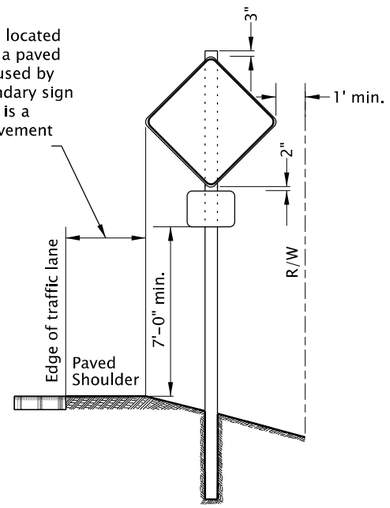


RURAL AREAS



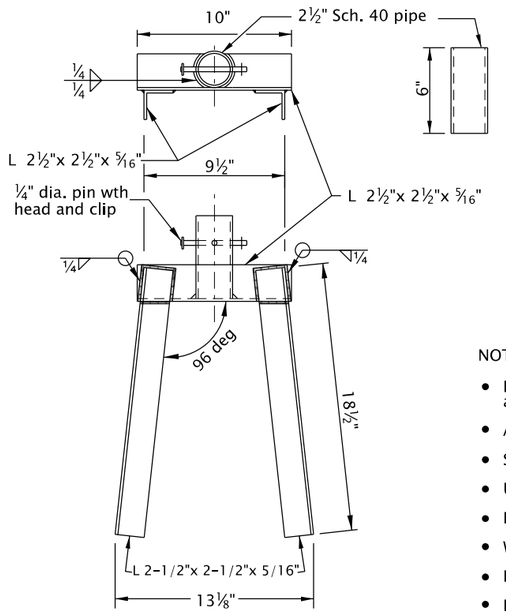
DIVIDED HIGHWAY/FREEWAY MEDIANS
NO CURB/SIDEWALK

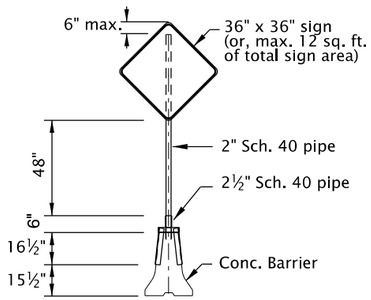
Where temporary signs are located adjacent to or intrude into a paved shoulder or other surface used by bicycle traffic, install secondary sign (plaque) so bottom of sign is a minimum of 7'0" above pavement surface, as shown.



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.
- Follow manufacturer recommendation when installing signs on barrier other than concrete.

CONCRETE BARRIER SIGN SUPPORT

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2020

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OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

2018

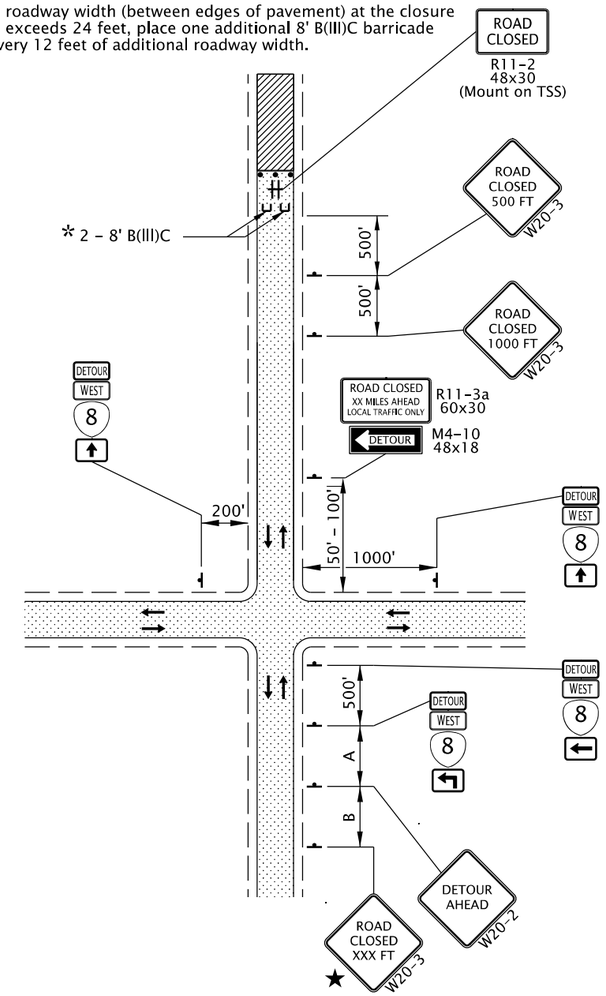
DATE	REVISION DESCRIPTION
01-2018	REVISED DRAWING
01-2019	REVISED NOTES
01-2020	REVISED NOTES

tm822.dgn 01-JAN-2020

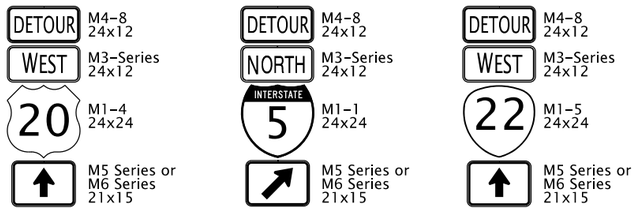
TM822

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.

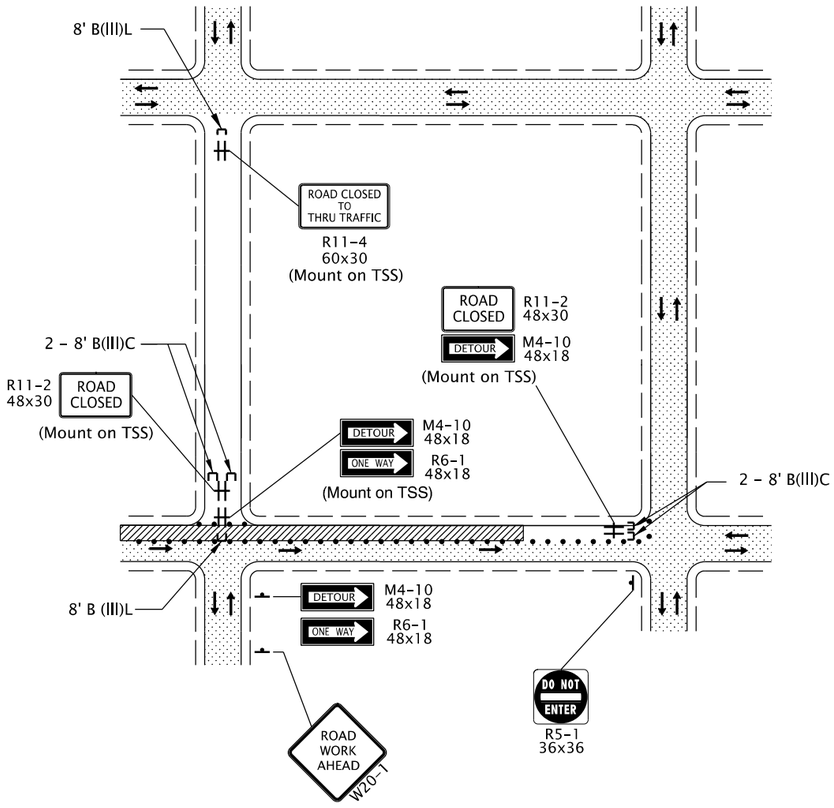


TYPICAL ROAD CLOSURE WITH DETOUR



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

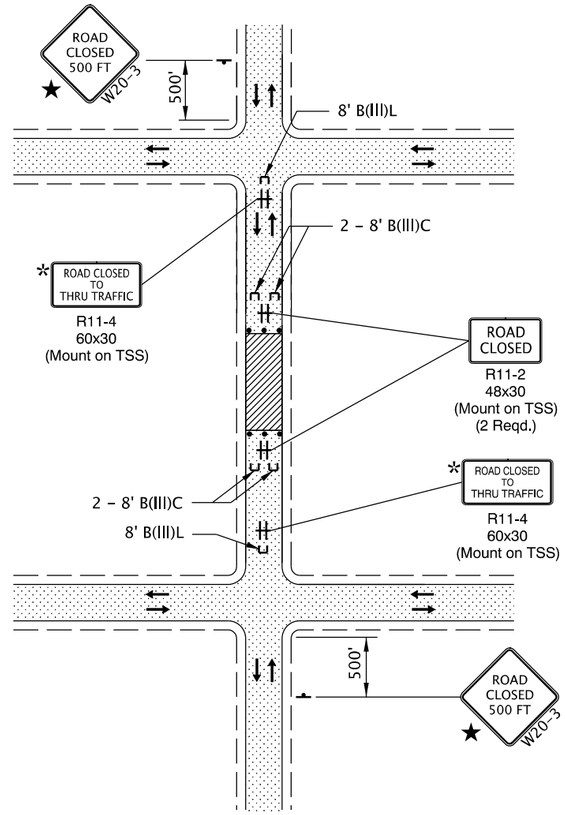
48 x 60 (nom.)
Project Specific Design

- 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

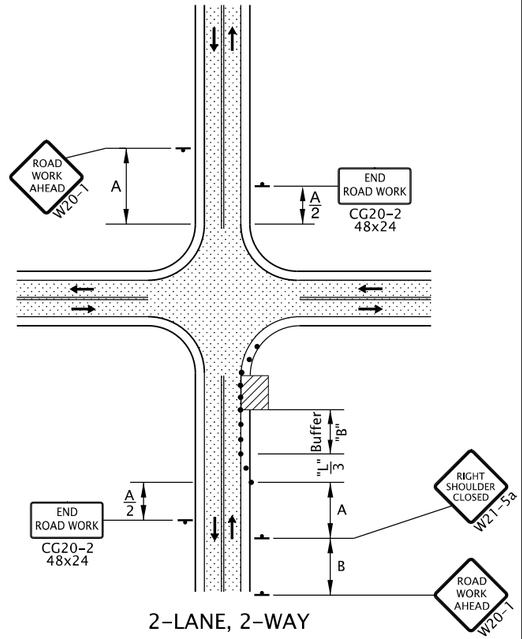
CLOSURE DETAILS

2018

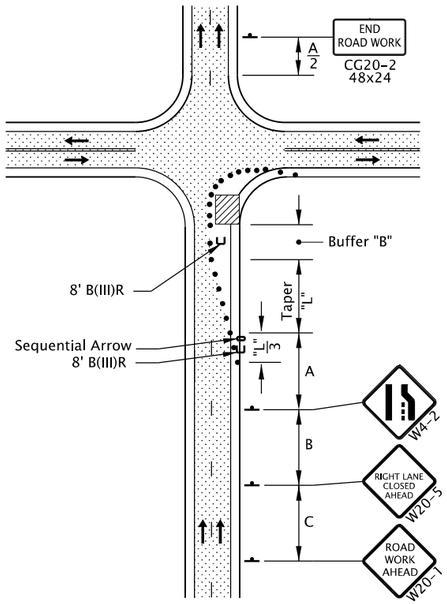
DATE	REVISION DESCRIPTION
01-2018	REVISED DRAWING

tm840.dgn 01-JAN-2019

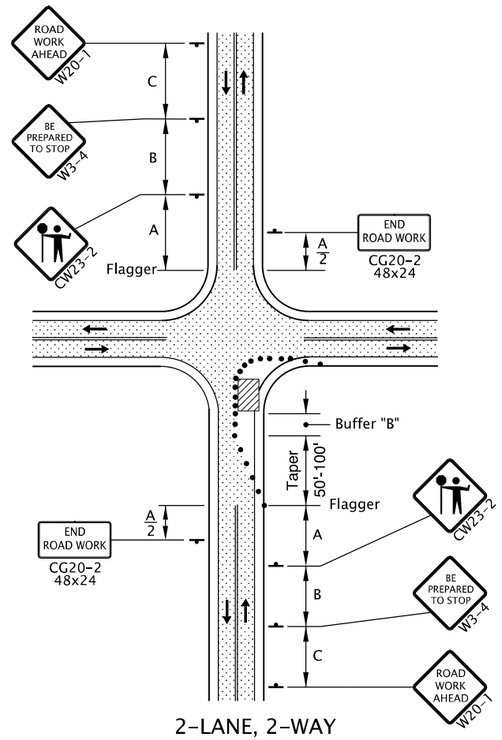
TM840



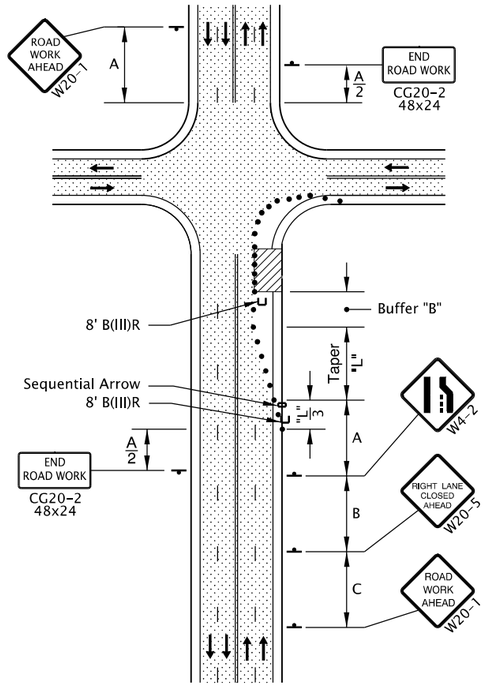
2-LANE, 2-WAY
SHOULDER CLOSURE



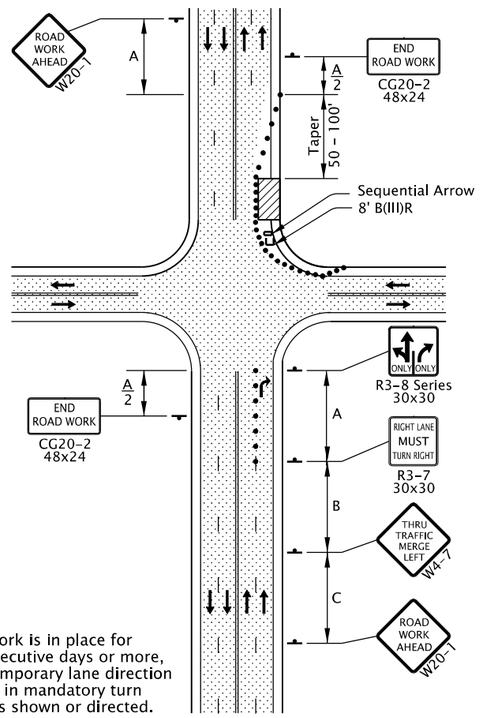
2-LANE, 1-WAY
RIGHT LANE CLOSURE



2-LANE, 2-WAY
ONE LANE CLOSURE

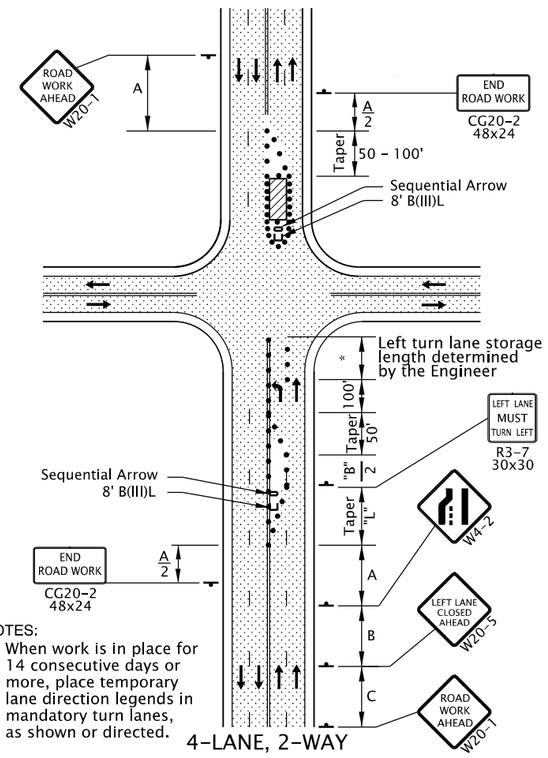


4-LANE, 2-WAY
RIGHT LANE CLOSURE, NEAR SIDE



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-JUL-2019_____

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OREGON STANDARD DRAWINGS

INTERSECTION WORK ZONE DETAILS

2018

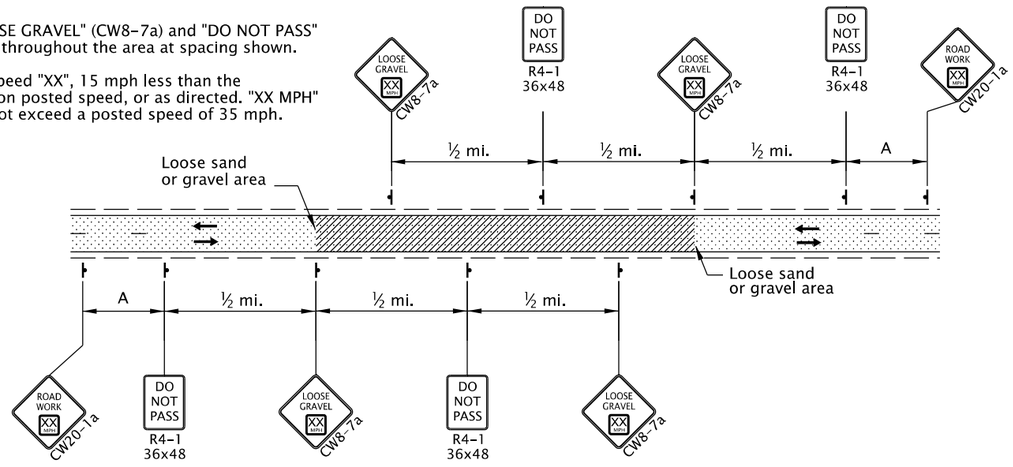
DATE	REVISION DESCRIPTION
07-2019	REVISED DRAWING

TM841

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

NOTE:

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

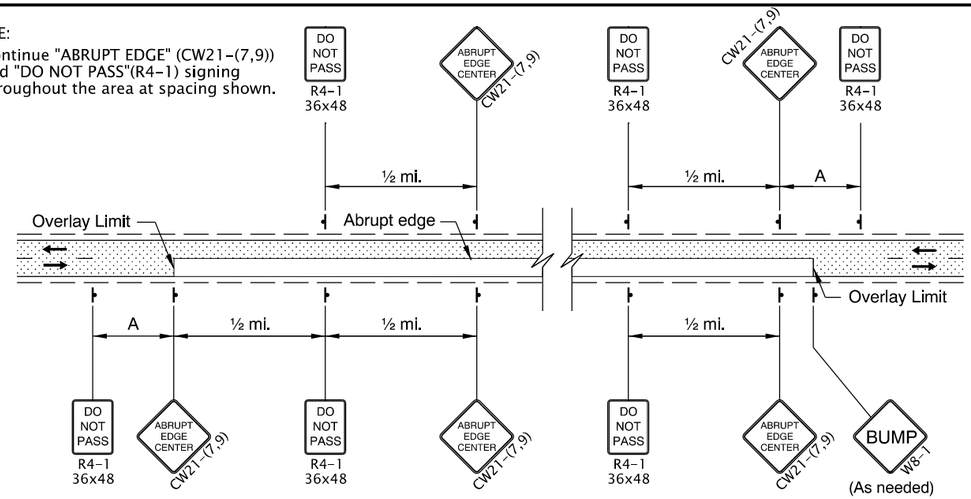


2-LANE, 2-WAY ROADWAY

LOOSE GRAVEL IN ROADWAY SIGNING

NOTE:

- Continue "ABRUPT EDGE" (CW21-(7,9)) and "DO NOT PASS"(R4-1) signing throughout the area at spacing shown.

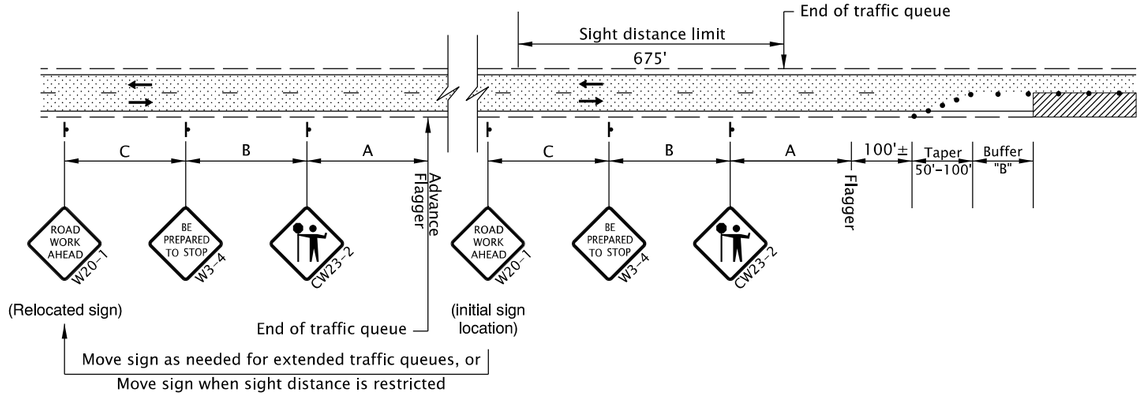


2-LANE, 2-WAY ROADWAY

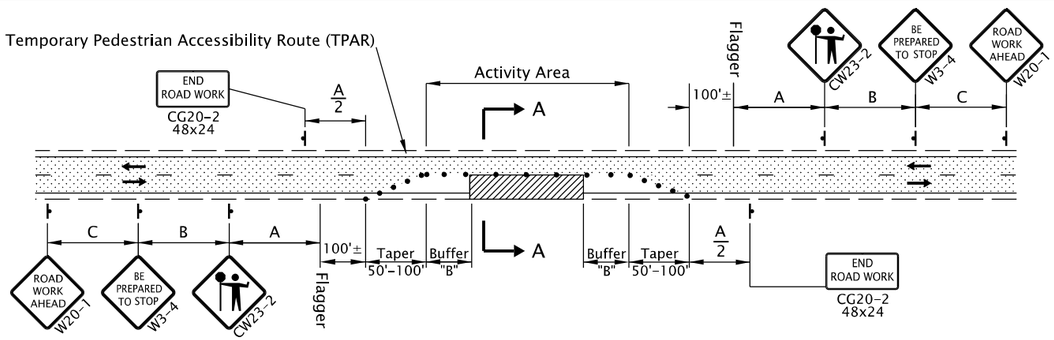
OVERLAY AREA SIGNING

NOTES:

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

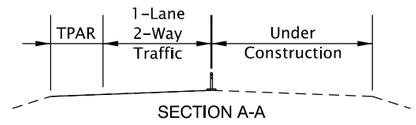


ADVANCE FLAGGER FOR EXTENDED TRAFFIC QUEUES



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

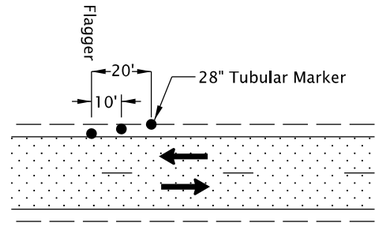
GENERAL NOTES FOR ALL DETAILS:

- 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

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.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 01-JAN-2020

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

OREGON STANDARD DRAWINGS

2-LANE, 2-WAY ROADWAYS

2018

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

01-JAN-2020

tm850.dgn

TM850

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