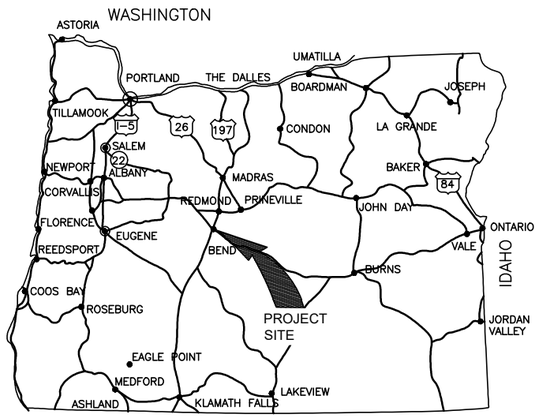
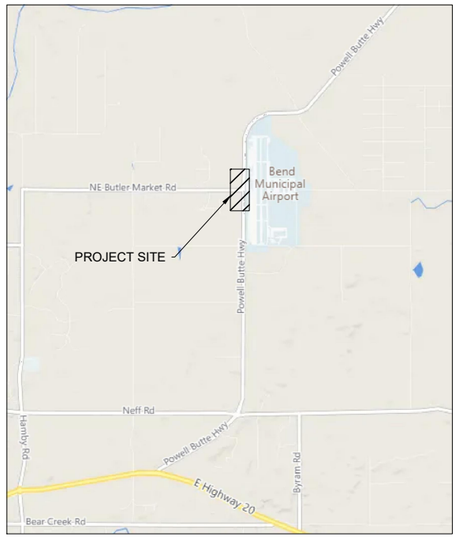
DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT
DECEMBER 2023

VICINITY MAP

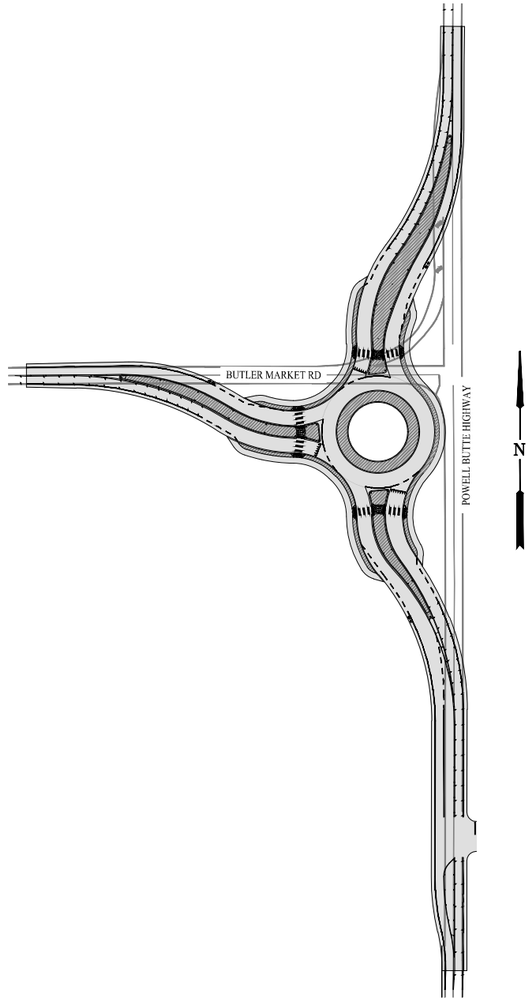


LOCATION MAP



N

NOT TO SCALE



AREA MAP
SCALE: 1" = 100'

OWNER

DESCHUTES COUNTY
61150 SE 27TH ST
BEND, OR 97702
CONTACT: CODY SMITH, PE, COUNTY ENGINEER
PHONE: 541-322-7113
EMAIL: CODY.SMITH@DESCHUTESCOUNTY.GOV

CIVIL ENGINEER

CENTURY WEST ENGINEERING
1020 SW EMKAY DRIVE, SUITE 100
BEND, OR 97702
CONTACT: MATT TIPTON, PE
PHONE: 541-322-8962
EMAIL: MTIPTON@CENTURYWEST.COM

TRAFFIC/LIGHTING ENGINEER

DKS ASSOCIATES
720 SW WASHINGTON ST, SUITE 500
PORTLAND, OR 97205
CONTACT: STEVE BOICE, PE
PHONE: 503-423-3500
EMAIL: SJB@DKSASSOCIATES.COM

SURVEYOR

HARPER HOUF PETERSON RIGHELLIS INC.
250 NW FRANKLIN AVE, SUITE 404
BEND, OR 97703
CONTACT: JT HAGLUND, PLS
PHONE: 541-318-1161
EMAIL: JTH@HHPR.COM

UTILITY CONTACTS

LS NETWORKS
CONTACT: CRAIG REDELINGS
PHONE: 541-527-1606
EMAIL: CREDELINGS@LSNETWORKS.NET

PACIFIC POWER & LIGHT
CONTACT: BRADLY ROBINSON
PHONE: 541-388-7129
EMAIL: BRADLY.ROBINSON@PACIFICORP.COM

TDS TELECOM
CONTACT: CHESTER PARKER
PHONE: 541-480-8963
EMAIL: CHESTER.PARKER@TDSTELECOM.COM

LUMEN/CENTURYLINK
CONTACT: TREVOR GILBERT
PHONE: 458-231-3146
EMAIL: TREVOR.W.GILBERT@LUMEN.COM

ZAYO
CONTACT: DAN BARCOMB
PHONE: 509-727-3345
EMAIL: DAN.BARCOMB@ZAYO.COM

APPROVALS:

Cody Smith
2023.12.20 15:16:02-08'00'

DESCHUTES COUNTY ROAD DEPARTMENT

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

COVER SHEET

DRAWING NO. 1 OF 45
SHEET NO. G-01

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Ra\BICAD_WORKING\G-01 COVER SHEET.dwg

GENERAL NOTES

1. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED IN THIS CONTRACT'S SPECIAL PROVISIONS, BE CONSTRUCTED IN ACCORDANCE WITH THE OREGON STATE "OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION," REVISED 2024.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT "UNDERGROUND LOCATE SERVICE" AT 1-800-332-2344, OR 811 PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE PUBLIC AGENCY FOR THE LOCATION OF UNDERGROUND FACILITIES.
3. 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.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO RE-ESTABLISH, PER OREGON REVISED STATUTES, 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 CONTRACTOR'S RESPONSIBILITY TO VERIFY ELEVATIONS OF SIDE SHOT MONUMENTS FOR USE AS TEMPORARY BENCHMARKS AND SET TEMPORARY BENCH MARKS OR ADDITIONAL HORIZONTAL CONTROL AS NEEDED.
5. DURING THE COURSE OF THE WORK, CONTRACTOR SHALL COORDINATE AND ACCOMMODATE OTHER CONTRACTORS OR OPERATIONS OF THE COUNTY.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. MATERIAL QUANTITIES USED, NOTED, OR PROVIDED IN A SEPARATE ITEMIZED QUANTITY TAKE-OFF ARE AN ENGINEER'S OPINION OF PROBABLE MATERIAL REQUIREMENTS, AND ARE AN ESTIMATE ONLY. CONTRACTORS HAVE THE SOLE RESPONSIBILITY OF MAKING THEIR OWN QUANTITY TAKE-OFF AND COST ESTIMATE.

LEGEND

EXISTING	PROPOSED
	RIGHT OF WAY
STM	STORM SEWER LINE
W	WATER LINE
G	GAS LINE
OW	OVERHEAD WIRE
x x x	BARBED WIRE FENCE
FO	FIBER OPTIC LINE
T	TELEPHONE LINE
IRR	IRRIGATION LINE
E	ELECTRIC LINE
TV	CABLE TELEVISION LINE
	BUILDING LINE
3431.0	CONTOUR (MINOR) 3431.0
3432.5	CONTOUR (MAJOR) 3432.5
	GRAVEL SHOULDER
	CURB
	CONCRETE SIDEWALK
	PIGMENTED CONCRETE SURFACING
	ASPHALT PAVEMENT
	DETECTABLE WARNING SURFACE
	SANITARY SEWER MANHOLE
	CLEANOUT
	STORM SEWER MANHOLE
	CATCH BASIN
	WATER VALVE
	FIRE HYDRANT
	WATER METER
	WELL
	IRRIGATION VALVE
	IRRIGATION BOX
	POWER METER
	POWER VAULT
	TELEPHONE BOX
	TELEPHONE MANHOLE
	TELEPHONE RISER
	GUY WIRE
	UTILITY POLE
	UTILITY POLE W/ STREET LIGHT
	SINGLE POST SIGN
	CONIFEROUS TREE
	DECIDUOUS TREE
	SURVEY CONTROL POINT
	FOUND MONUMENT

ODOT STANDARD DRAWINGS INDEX

RD300	TRENCH BACKFILL, BEDDING, PIPE ZONE, AND MULTIPLE INSTALLATIONS
RD364	CONCRETE INLETS TYPE G-1, G-2, G-2M, AND G-2MA
RD365	FRAMES AND GRATES FOR CONCRETE INLETS
RD610	ASPHALT CONCRETE PAVEMENT (ACP) DETAILS
RD615	SURFACE EDGE DETAILS
RD700	CURBS
RD710	ACCESSIBLE ROUTE ISLANDS
RD810	BARBED WIRE AND WOVEN WIRE FENCES
RD900	CURB RAMP COMPONENTS AND LEGEND
RD902	DETECTABLE WARNING SURFACE DETAILS
RD906	DETECTABLE WARNING SURFACE PLACEMENT FOR ACCESSIBLE ROUTE ISLAND
RD910	PERPENDICULAR CURB RAMPS
RD1006	CHECK DAMS TYPE 2 AND 6
RD1032	SEDIMENT BARRIER TYPE 8
RD1040	SEDIMENT FENCE
TM200	SIGN INSTALLATION DETAILS
TM223	CONVENTIONAL ROADS DIRECTIONAL SIGN LAYOUT STREET NAME SIGNS
TM471	TRENCHING & CONDUIT INSTALLATION
TM472	JUNCTION BOX / HAND HOLES
TM500	PAVEMENT MARKING STANDARD DETAIL BLOCKS
TM501	PAVEMENT MARKING STANDARD DETAIL BLOCKS
TM502	PAVEMENT MARKING STANDARD DETAIL BLOCKS
TM503	PAVEMENT MARKING STANDARD DETAIL BLOCKS
TM515	PAVEMENT MARKERS
TM517	RECESSED PAVEMENT MARKERS
TM521	DURABLE & HIGH-PERFORMANCE PAVEMENT MARKINGS SURFACE GROOVE INSTALLED NON-PROFILED
TM530	INTERSECTION PAVEMENT MARKINGS (CROSSWALK, STOP BAR, BIKE LANE STENCIL)
TM531	TURN ARROW MARKING DETAILS
TM560	ALIGNMENT LAYOUT: GENERAL
TM561	ALIGNMENT LAYOUT: LEFT TURN LANE, CENTERLINE & MEDIANS
TM570	TRAFFIC DELINEATORS
TM600	MULTI-POST BREAKAWAY SIGN SUPPORTS NOTES
TM601	MULTI-POST BREAKAWAY SIGN SUPPORT DETAILS
TM602	TRIANGULAR BASE BREAKAWAY MULTI-DIRECTIONAL SLIP BASE DESIGN
TM635	BREAKAWAY SIGN & LUMINAIRE SUPPORTS - SUPPORT LOCATION GUIDELINES
TM671	3 SECOND GUST WIND SPEED MAP
TM675	EXTRUDED ALUMINUM PANELS
TM676	SIGN ATTACHMENTS
TM681	PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION
TM688	PERFORATED STEEL SQUARE TUBE (PSST) SLIP BASE FOUNDATION
TM800	TABLES, ABRUPT EDGE AND PCMS DETAILS
TM810	TEMPORARY PAVEMENT MARKINGS
TM820	TEMPORARY BARRICADES
TM821	TEMPORARY SIGN SUPPORTS
TM822	TEMPORARY SIGN SUPPORTS
TM840	CLOSURE DETAILS
TM841	INTERSECTION WORK ZONE DETAILS
TM850	2-LANE, 2-WAY ROADWAYS
TM855	2-LANE, 2-WAY ROADWAYS

SHEET LIST TABLE

ABBREVIATIONS

BM	BUTLER MARKET RD
CL	CENTERLINE
E	EAST
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
FL	FLOW LINE AT FACE OF CURB
IE	INVERT ELEVATION
NW	NORTHWEST
PBH	POWELL BUTTE HIGHWAY
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
SUP	SHARED USE PATHWAY
SW	SOUTHWEST
TC	TOP OF CURB

POTENTIAL UNDERGROUND FACILITY OWNERS "ONE CALL" UTILITY NOTIFICATION CENTER 1-800-332-2344 OR 811

CALL BEFORE YOU DIG

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 72786PE OREGON JUN. 29, 2007 MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
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NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

GENERAL NOTES, ABBREVIATIONS, & LEGEND

DRAWING NO. 2 OF 45
SHEET NO. G-02

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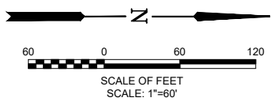

EROSION CONTROL KEY NOTES

1. INSTALL TEMPORARY SEDIMENT FENCE PER ODOT STANDARD DRAWING RD1040
2. INSTALL COMPOST FILTER SOCK PER ODOT STANDARD DRAWING RD1032

EROSION CONTROL PLAN

SCALE: 1" = 60'

1
G-03

DESCHUTES COUNTY
ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

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CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

EROSION CONTROL PLAN

DRAWING NO. 3 OF 45
SHEET NO. G-03

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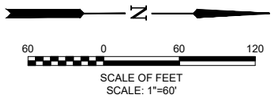

PBH ALIGNMENT CURVE TABLE					
CURVE #	RADIUS, FT	LENGTH, FT	DELTA	PC STA	PT STA
C1	320.00	185.06	33°08'05"	P13+45.24	P15+30.30
C2	125.00	71.47	32°45'38"	P15+82.77	P16+54.24
C3	150.00	75.19	28°43'15"	P18+76.65	P19+51.84
C4	350.00	173.38	28°22'55"	P20+28.38	P22+01.76

BM ALIGNMENT CURVE TABLE					
CURVE #	RADIUS, FT	LENGTH, FT	DELTA	PC STA	PT STA
C5	360.00	190.50	30°19'07"	B2+04.43	B3+94.93
C6	200.00	104.76	30°00'38"	B3+94.93	B4+99.69

CONTROL POINT DATA TABLE (SHOWN ON PLAN)				
POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION
4	CP 1/2IR RPC	399065.615	3321020.603	3425.67
7	CP 1/2IR RPC	398314.653	3321024.533	3436.83
91	CP FD-PK	399433.669	3321093.403	3425.11
92	CP FD-SPIKE	398767.687	3321126.349	3430.37
93	CP FD-PK	399098.709	3320296.780	3435.11
201	FD 3" ALCAP	399085.385	3321001.445	3425.87
202	FD AXLE-LEANING NORTH SHOT TOP	399218.831	3320999.792	3424.58
302	FD 3" BRASSDISC	398752.662	3321023.103	3429.77

CONTROL POINT DATA TABLE (POINTS LOCATED OUTSIDE OF PROJECT LIMITS, NOT SHOWN ON PLAN)				
POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	CP 1/2IR RPC-HHPRCONTROL	399093.286	3318351.425	3453.56
2	CP MAG&WASHER-HHPRCONTROL	399057.263	3317965.526	3461.04
3	CP 1/2IR RPC	399058.366	3319069.918	3452.16
5	CP 1/2IR RPC	399894.333	3320966.722	3417.37
6	CP 1/2IR RPC-HHPRCONTROL	400735.187	3320974.114	3405.88
8	CP 1/2IR RPC	397771.860	3321022.009	3443.02
9	CP 1/2IR RPC-HHPRCONTROL	396989.452	3321020.060	3455.60
10	CP 1/2IR RPC	399097.705	3319671.694	3444.87
11	CP 1/2RPC	396425.116	3320456.302	3469.10
203	FD 5/8IR	399084.179	3318361.583	3453.63
204	FD NAIL &1"WASHER LS2033	399126.285	3318354.016	3454.80
205	FD NAIL &1"WASHER LS2033	399105.090	3318328.008	3453.12
206	FD NAIL &1"WASHER LS2257KARL WASHERUNDER SHINER	399044.183	3318354.192	3453.61
207	FD 3" ALCAP	396443.966	3321000.866	3462.83
210	FD-SOUND	399084.698	3319681.494	3445.02
211	FD-5/8IR	399120.836	3319681.428	3443.99
212	FD-5/8IR	399116.163	3318361.426	3448.14
300	FD 1/4CORNER	401725.996	3321001.003	3405.01
301	FD 2" AC TYE ENGINEERING	396423.968	3321032.228	3462.98

NOTES:

HORIZONTAL DATUM: NAD83 (ADJUSTMENT 1991) EXPRESSED AS CENTRAL OREGON COORDINATE SYSTEM (COCS), ESTABLISHED FROM MULTIPLE AVERAGED GPS OBSERVATIONS

VERTICAL DATUM: NGVD29, BASED ON MULTIPLE AVERAGED GPS OBSERVATIONS UTILIZING THE OREGON REAL TIME GPS NETWORK (ORGN)

ALIGNMENT & SURVEY CONTROL PLAN

SCALE: 1" = 60'

1
G-04

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

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CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: MST
DRAWN BY: AVF
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DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

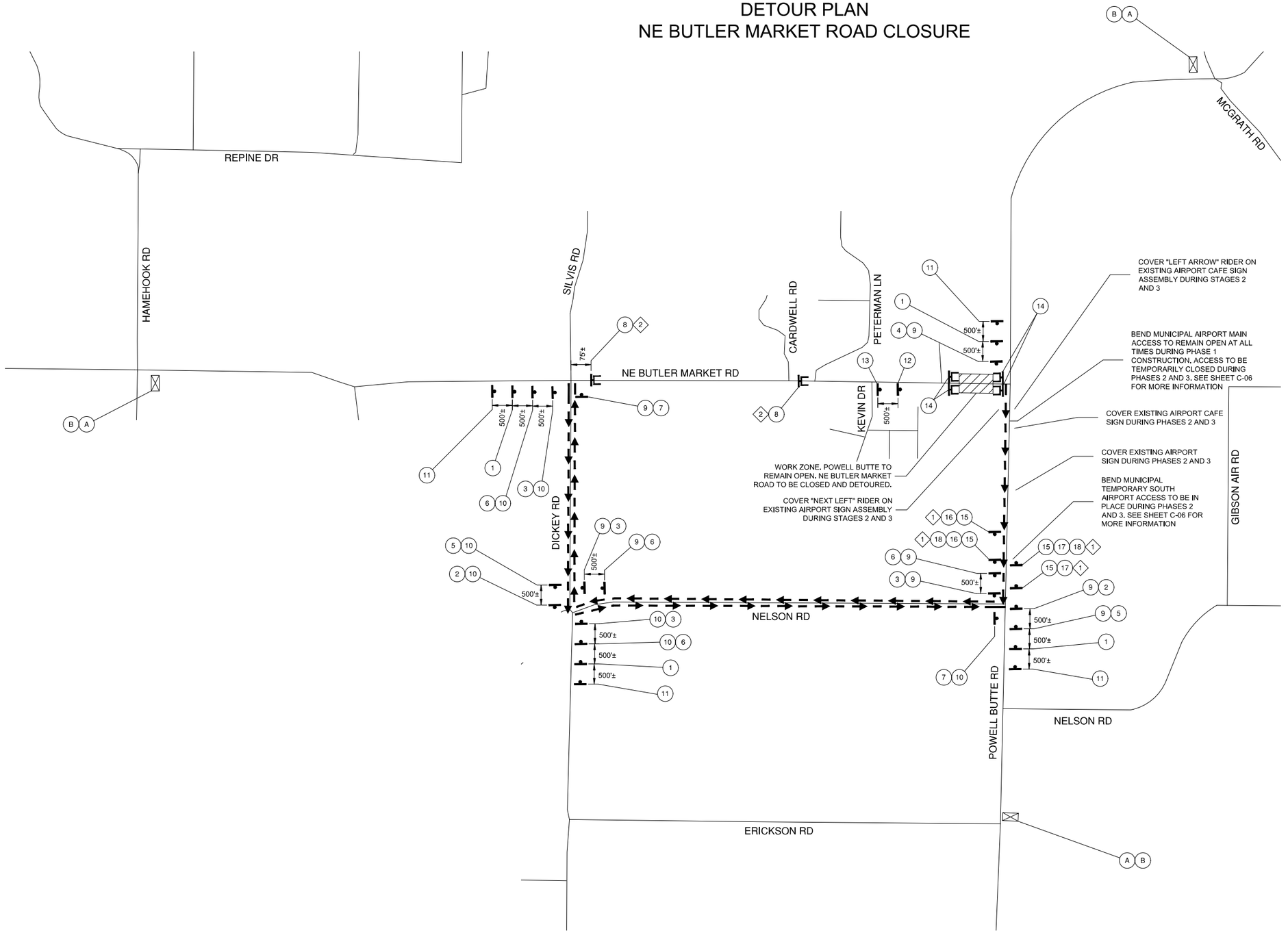
DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

ALIGNMENT & SURVEY CONTROL PLAN

DRAWING NO. 4 OF 45
SHEET NO. G-04

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Ra\CADD_WORKING\G-04 ALIGNMENT & SURVEY CONTROL PLAN.dwg

DETOUR PLAN
NE BUTLER MARKET ROAD CLOSURE



LEGEND

- WORK ZONE (FULL CLOSURE)
- DETOUR ROUTE
- TEMPORARY SIGN ON TEMPORARY SUPPORT
- TEMPORARY SIGN ON BARRICADE TYPE III (L, R, C, OR LR). REFER TO OREGON STD. DWG. TM844.
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS). SEE SHEET TC-02 FOR DETAILS
- (X) SIGNING DETAILS, SEE SHEET TC-02

GENERAL NOTES

1. SIGN SPACING MAY NEED TO BE ADJUSTED TO FIT FIELD LOCATIONS.
2. ALL TRAFFIC CONTROL DEVICES SHALL BE IN POSITION DURING THE DURATION OF CONSTRUCTION.
3. SEE SHEETS C-06 THROUGH C-09 FOR ROAD CLOSURE STAGING AND DETAILS.
4. RELOCATE TEMPORARY SIGNS ALONG POWELL BUTTE HWY AS NECESSARY DURING PHASE 3 WITH ALIGNMENT SHIFT.
5. ACCOMPANIED BY ODOT STD DRAWINGS TM800, TM820, TM821, AND TM822.

CONSTRUCTION NOTES

1. ONLY USE TEMPORARY SIGNS DURING STAGE 2 AND 3.
2. LOCATE IN CENTER OF ROADWAY.

N

NO SCALE

X:\Projects\2022\PI22207-000 (Deschutes Co. Butler Mkt\Powell Butte RAB)\CAD\TC-01-TC-02.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 74,348 OREGON — Digitally Signed 2023.09.26 22:51:02-07'00' — JUNE 12, 2015 — STEVEN J. BOICE — EXPIRES: DEC. 31, 2023

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" ▬ 1"
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NO.	DATE	BY	APPR	REVISIONS

DKS
1050 SW 6th Avenue, Suite 600
Portland, Oregon 97204
www.dksassociates.com

DATE: DECEMBER 2023
PROJECT NO: 12602.001.01

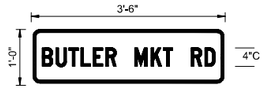
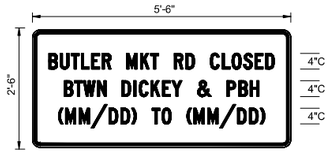
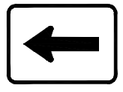
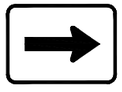
DESIGNED BY: EZA
DRAWN BY: KCJ
CHECKED BY: SXV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

DETOUR PLAN

DRAWING NO. 5 OF 45
SHEET NO. TC-01

DETOUR PLAN
NE BUTLER MARKET ROAD CLOSURE

 36"x36" W20-2 (MOD.) TYPE "04" (1)	 30"x24" M4-9 (L) TYPE "04" (2)	 30"x24" M4-9 (R) TYPE "04" (3)	 30"x36" CG20-6 TYPE "04" (4)	 30"x36" CG20-6 (MOD.)L TYPE "04" (5)	 30"x36" CG20-6 (MOD.)R TYPE "04" (6)	 24"X18" CG20-5 TYPE "04" (7)	 R11-3a(MOD) 60"x30" TYPE "W1" (MOUNT ON 4' B(III)C BARRICADE) (8)
 42"x12" TYPE "04" (9)	 54"x12" TYPE "04" (10)	 66"x30" TYPE "04" (11)	 36"x36" W20-3 TYPE "04" (12)	 36"x36" W20-3 TYPE "04" (13)	 48"x30" R11-2 TYPE "W1" (MOUNT ON 8' B(III)C BARRICADE) (14)	
 30"x24" TYPE "B" (15)	 30"x21" M6-1(L) TYPE "B" (16)	 30"x21" M6-1(R) TYPE "B" (17)	 36"x24" CG20-11 TYPE "B" (18)				

BUTLER MKT RD CLOSED	USE DETOUR

(A)

BUTLER MKT RD CLOSED	<DATE> TO <DATE>

(B)*

PORTABLE CHANGEABLE MESSAGE SIGNS
(SUGGESTED MESSAGE)
(LOCATED AS RECOMMENDED BY ENGINEER)

* DISPLAY MESSAGE TWO WEEKS BEFORE CONSTRUCTION BEGINS

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 74,348 — Digitally Signed 2023.09.26 22:51:21-07'00' OREGON JUNE 12, 2015 STEVEN J. BOICE — EXPIRES: DEC. 31, 2023

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

DKS
1050 SW 6th Avenue, Suite 600
Portland, Oregon 97204
www.dksassociates.com

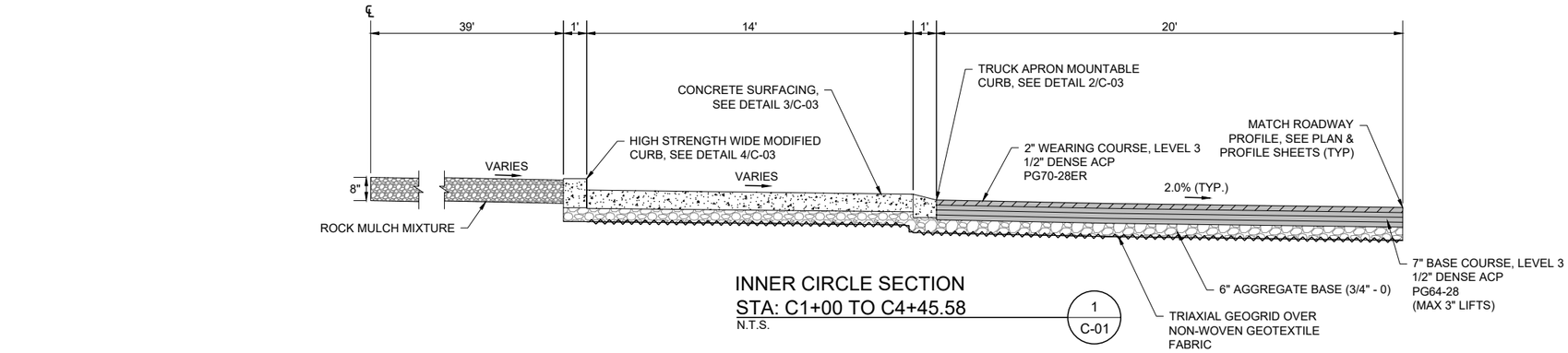
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
DESIGNED BY: EZA
DRAWN BY: KCJ
CHECKED BY: SXV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

DETOUR SIGN DETAILS

DRAWING NO. 6 OF 45
SHEET NO. TC-02

X:\Projects\2022\P22207-000 (Deschutes Co. Butler Mkt\Powell Butte RAB)\CAD\TC-01-TC-02.dwg

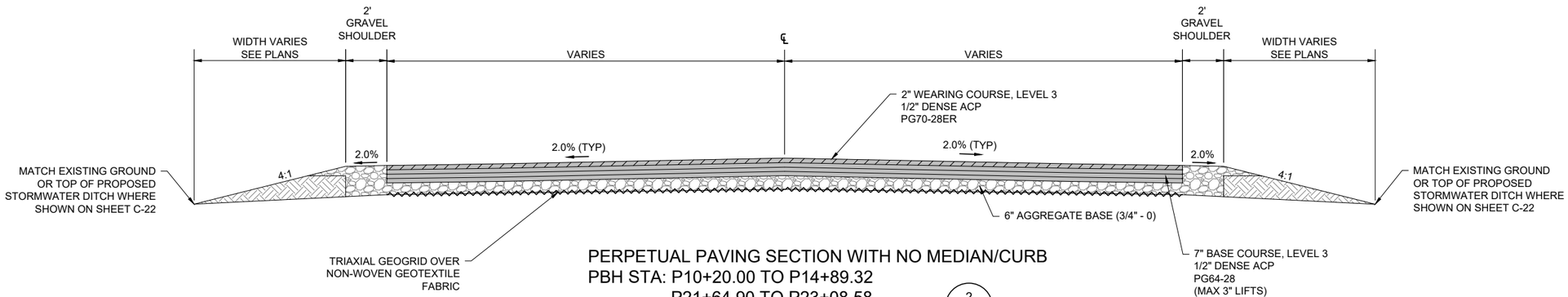


INNER CIRCLE SECTION
STA: C1+00 TO C4+45.58
N.T.S.

1
C-01

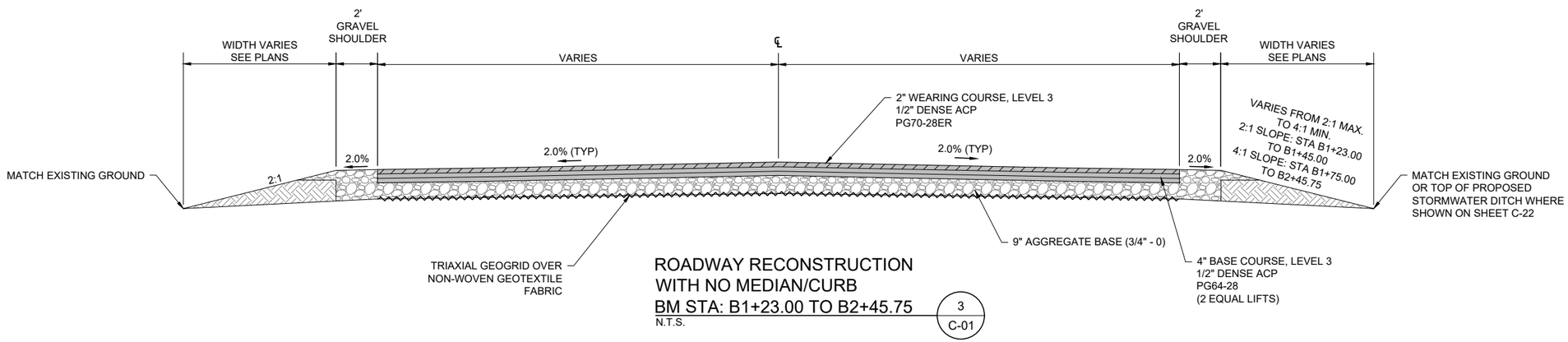
GENERAL NOTES

1. SEE ODOT STD. DWG. RD615 FOR MULTI-LAYER PAVEMENT CONSTRUCTION DETAILS.
2. SINGLE 4" BASE LIFT MAY BE ALLOWED UPON APPROVAL BY THE ENGINEER.



PERPETUAL PAVING SECTION WITH NO MEDIAN/CURB
PBH STA: P10+20.00 TO P14+89.32
P21+64.90 TO P23+08.58
N.T.S.

2
C-01



ROADWAY RECONSTRUCTION
WITH NO MEDIAN/CURB
BM STA: B1+23.00 TO B2+45.75
N.T.S.

3
C-01

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
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NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DATE: DECEMBER 2023
PROJECT NO: 12602.001.01

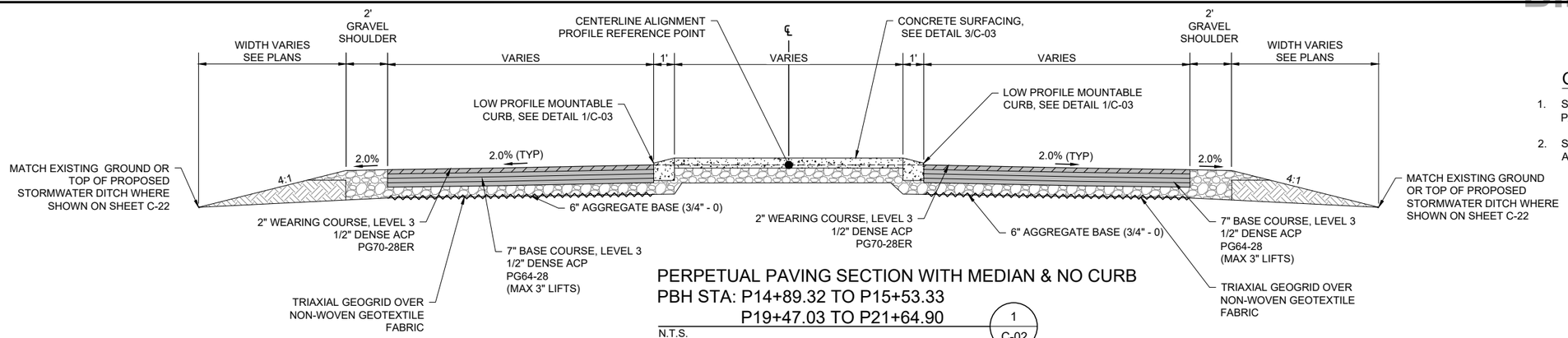
DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

TYPICAL SECTIONS

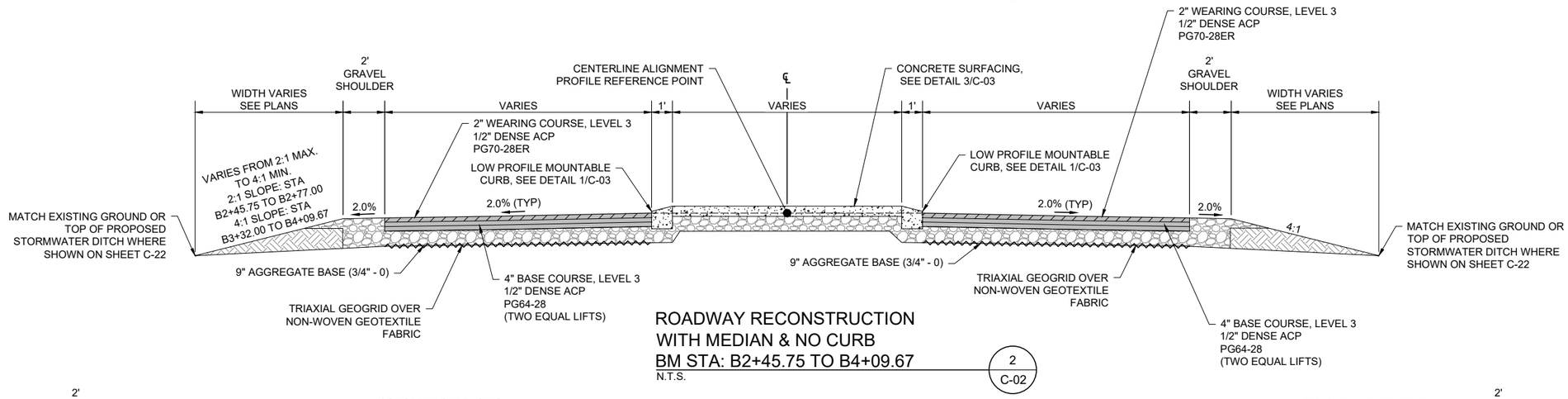
DRAWING NO. 7 OF 45
SHEET NO. C-01

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy RaBICAD_WORKING\C-01 TYPICAL SECTIONS.dwg



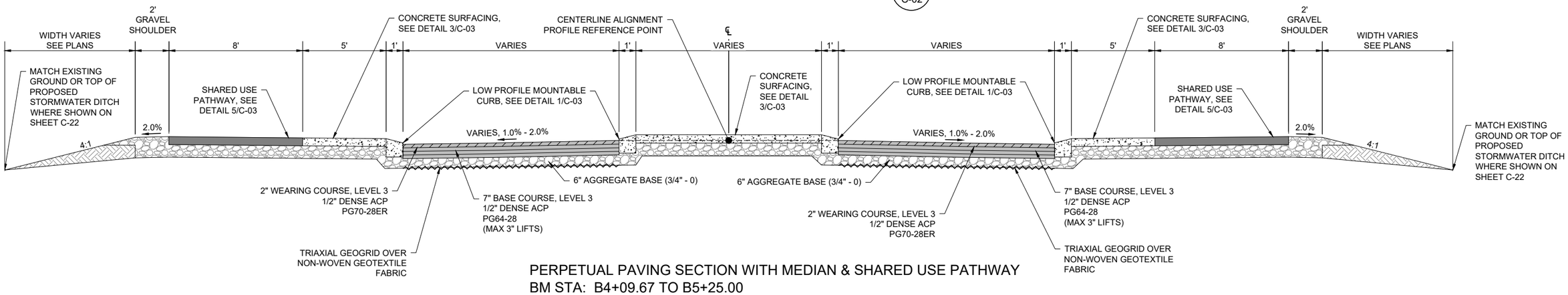
PERPETUAL PAVING SECTION WITH MEDIAN & NO CURB
PBH STA: P14+89.32 TO P15+53.33
P19+47.03 TO P21+64.90
N.T.S.

1 / C-02



ROADWAY RECONSTRUCTION
WITH MEDIAN & NO CURB
BM STA: B2+45.75 TO B4+09.67
N.T.S.

2 / C-02



PERPETUAL PAVING SECTION WITH MEDIAN & SHARED USE PATHWAY
BM STA: B4+09.67 TO B5+25.00
PBH STA: P15+53.33 TO P16+78.47
P18+28.47 TO P19+47.03
N.T.S.

3 / C-02

GENERAL NOTES

1. SEE ODOT STD. DWG. RD615 FOR MULTI-LAYER PAVEMENT CONSTRUCTION DETAILS.
2. SINGLE 4" BASE LIFT MAY BE ALLOWED UPON APPROVAL BY THE ENGINEER.

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 72786PE OREGON JUN. 29, 2009 MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
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0" ——— 1"
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NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

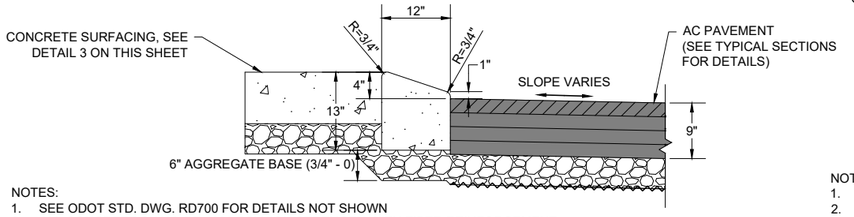
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

TYPICAL SECTIONS

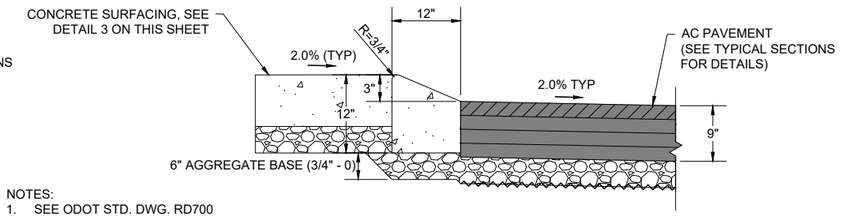
DRAWING NO. 8 OF 45
SHEET NO. C-02

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy RaBI\CAD_WORKING\C-01 TYPICAL SECTIONS.dwg



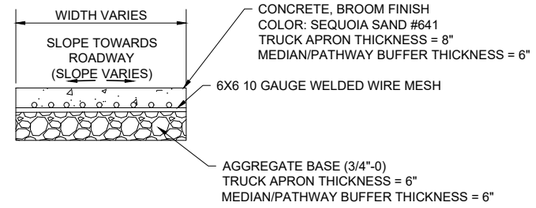
NOTES:
1. SEE ODOT STD. DWG. RD700 FOR DETAILS NOT SHOWN
2. ALL CONCRETE SHALL BE 5000 PSI HIGH STRENGTH WITH FIBER REINFORCEMENT

LOW PROFILE MOUNTABLE CURB (1 / C-03)
N.T.S.

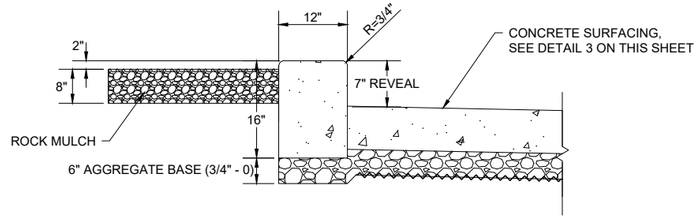


NOTES:
1. SEE ODOT STD. DWG. RD700
2. ALL CONCRETE SHALL BE 5000 PSI HIGH STRENGTH WITH FIBER REINFORCEMENT

TRUCK APRON MOUNTABLE CURB (2 / C-03)
N.T.S.



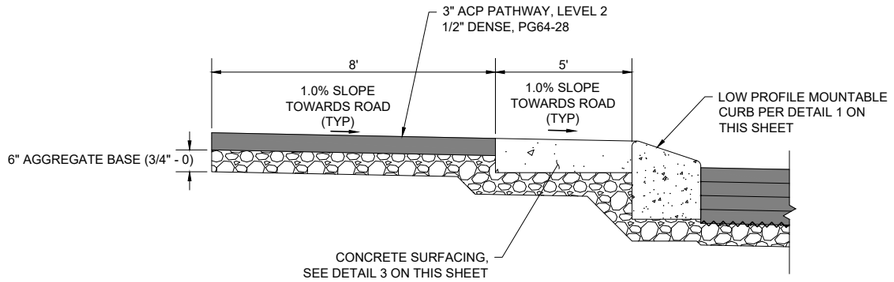
CONCRETE SURFACING (3 / C-03)
N.T.S.

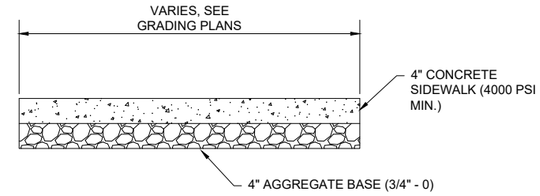


NOTE:
1. ALL CONCRETE SHALL BE 5000 PSI HIGH STRENGTH WITH FIBER REINFORCEMENT

GENERAL NOTES

1. SEE ODOT STD. DWG. RD615 FOR MULTI-LAYER PAVEMENT CONSTRUCTION DETAILS.

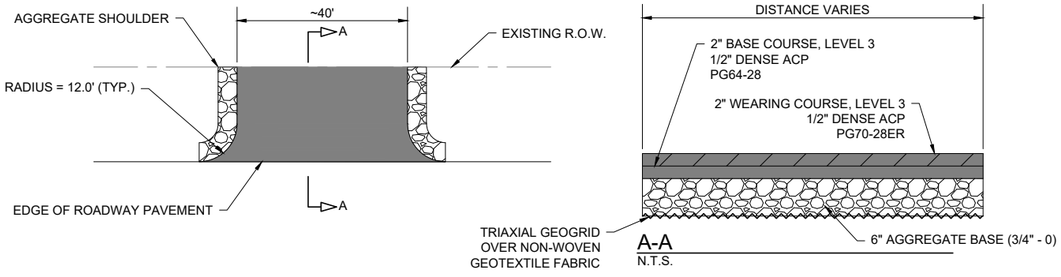




HIGH STRENGTH WIDE MODIFIED CURB (4 / C-03)
N.T.S.

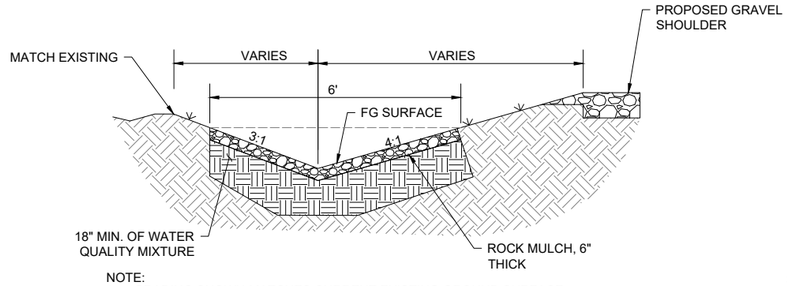
TYPICAL ASPHALT SHARED USE PATHWAY SECTION (5 / C-03)
N.T.S.

CONCRETE CURB RAMP (6 / C-03)
N.T.S.



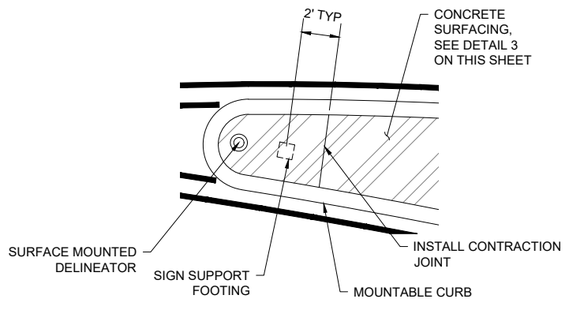
A-A
N.T.S.

AIRPORT ENTRANCE RECONSTRUCTION DETAIL (7 / C-03)
N.T.S.



NOTE:
1. GRADING SHOWN MATCHES CURRENT EXISTING GROUND SURFACE. CONTRACTOR TO ADJUST FOR ASPHALT REMOVAL. CONTRACTOR TO PLACE EMBANKMENT AS NEEDED TO PROVIDE 12" MIN. OF DITCH DEPTH.

TYPICAL DETENTION/CONVEYANCE SWALE (8 / C-03)
N.T.S.



ISLAND NOSE DETAIL (9 / C-03)
N.T.S.

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Ra\CAD_WORKING\C-01 TYPICAL SECTIONS.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JAN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" [bar] 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

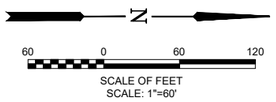
CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

TYPICAL DETAILS

DRAWING NO. 9 OF 45
SHEET NO. C-03



DEMOLITION PLAN
SCALE: 1" = 60'

1
C-04

DEMOLITION KEY NOTES

1. SAWCUT EXISTING ASPHALT
2. REMOVE EXISTING SIGN, SEE SHEETS SS-01 THROUGH SS-08
3. EXISTING POWER POLE TO BE RELOCATED BY OTHERS
4. REMOVE EXISTING TREE
5. EXISTING UNDERGROUND TELECOMMUNICATION UTILITY TO BE RELOCATED BY OTHERS
6. PROTECT EXISTING UNDERGROUND ELECTRICAL LINE
7. PROTECT EXISTING UNDERGROUND TELECOMMUNICATION LINE
8. PROTECT EXISTING FENCE
9. REMOVE EXISTING CULVERT
10. PROTECT EXISTING POWER VAULT

DEMOLITION LEGEND

- REMOVE EXISTING FENCE
- REMOVE EXISTING ASPHALT
- REMOVE EXISTING GRAVEL DRIVEWAY

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2005
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
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0" ■ 1"
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NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

DEMOLITION PLAN

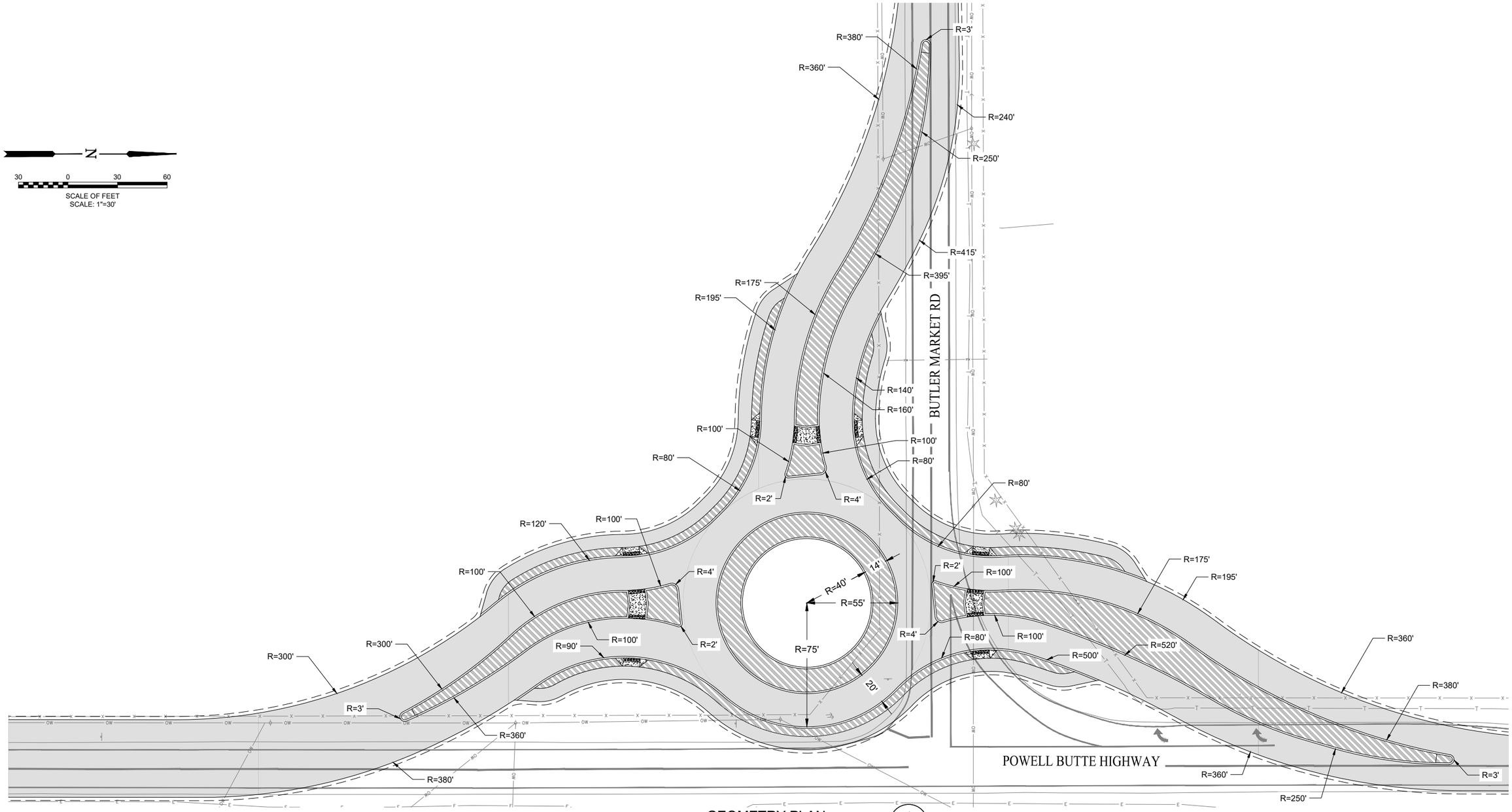
DRAWING NO. 10 OF 45
SHEET NO. C-04

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Ra\B\CAD_WORKING\C-04 DEMOLITION PLAN.dwg

N

30 0 30 60

SCALE OF FEET
SCALE: 1"=30'



GEOMETRY PLAN
SCALE: 1" = 30'

1
C-05

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy RAB\CAD_WORKING\C-05 GEOMETRY PLAN.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
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NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

GEOMETRY PLAN

DRAWING NO. 11 OF 45
SHEET NO. C-05

N

150 0 150 300

SCALE OF FEET
SCALE: 1"=150'

SOUTH AIRPORT ACCESS OVERVIEW
SCALE: 1" = 150'

1
C-06

NOTES

1. SOUTH AIRPORT ACCESS SHALL BE CONSTRUCTED PRIOR TO THE START OF PHASE 2 AND PHASE 3 CONSTRUCTION.

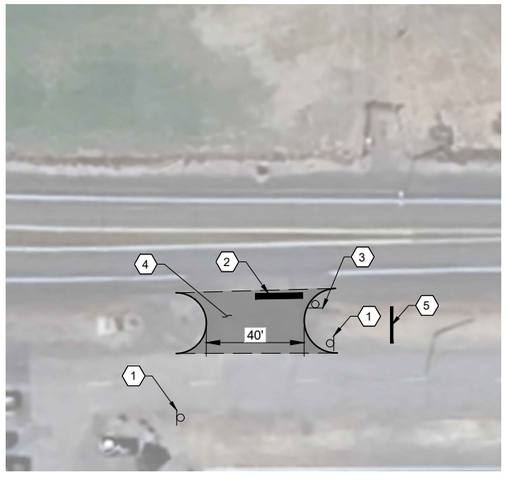
KEY NOTES

1. INSTALL TEMPORARY STOP SIGN PER ODOT STD. DETAIL TM821.
2. INSTALL 1' WHITE STOP BAR PER ODOT STD. DETAIL TM503.
3. PROTECT EXISTING STOP SIGN.
4. RECONSTRUCT EXISTING AIRPORT ENTRANCE PER DETAIL 7 ON SHEET C-03.
5. INSTALL COMPOST FILTER SOCK CHECK DAM - TYPE 6 PER ODOT STD. DETAIL RD1006.

N

30 0 30 60

SCALE OF FEET
SCALE: 1"=30'



SOUTH AIRPORT ACCESS PLAN
SCALE: 1" = 30'

2
C-06

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
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NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

SOUTH AIRPORT ACCESS PLAN

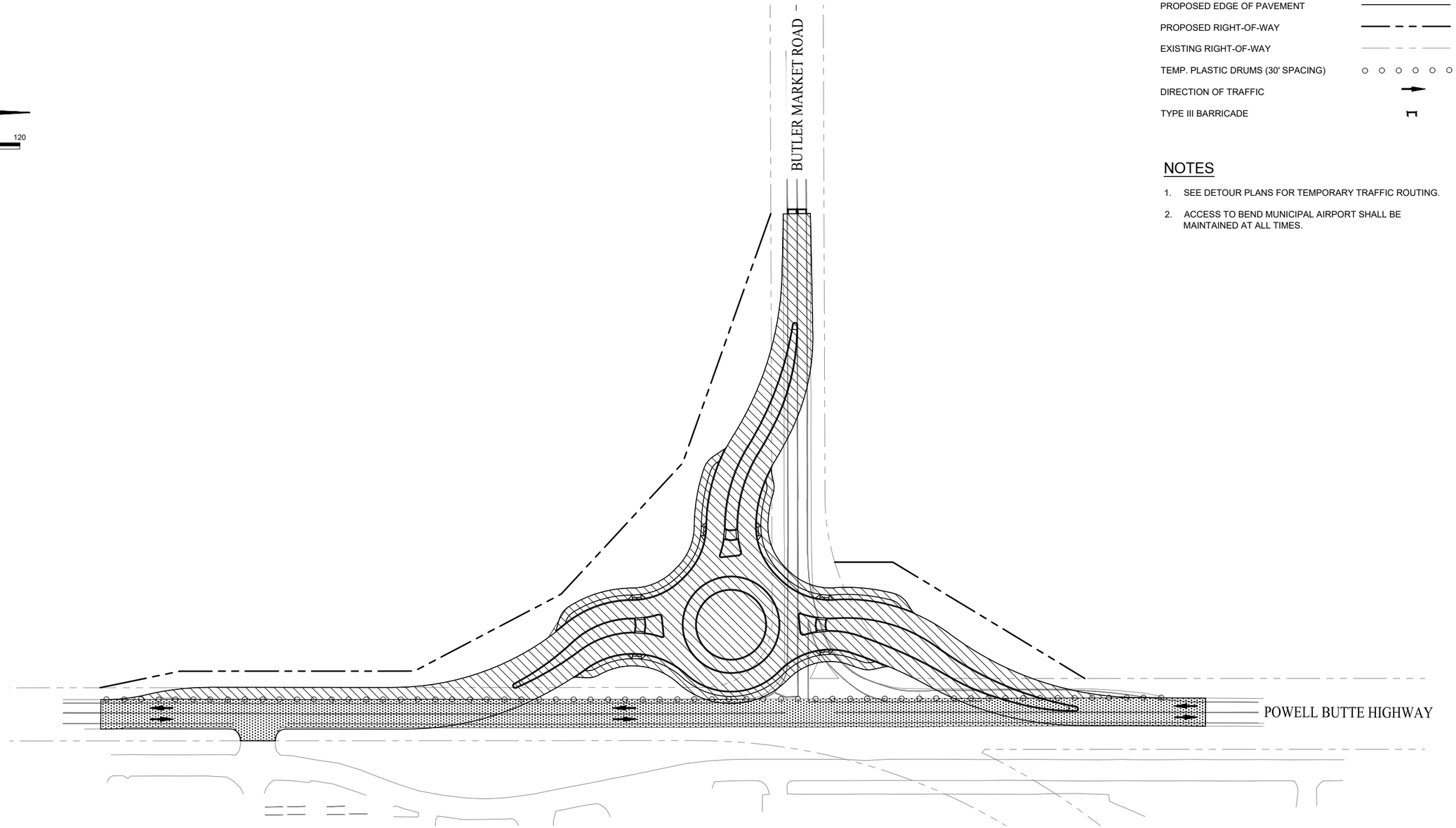
DRAWING NO. 12 OF 45
SHEET NO. C-06

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy RaBI\CAD_WORKING\C-06 PHASING PLAN.dwg

N

60 0 60 120

SCALE OF FEET
SCALE: 1"=60'



CONSTRUCTION PHASING PLAN - PHASE 1
SCALE: 1" = 60'

1
C-07

LEGEND

- UNDER CONSTRUCTION
- ROAD UNDER TRAFFIC
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- TEMP. PLASTIC DRUMS (30' SPACING)
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE

NOTES

1. SEE DETOUR PLANS FOR TEMPORARY TRAFFIC ROUTING.
2. ACCESS TO BEND MUNICIPAL AIRPORT SHALL BE MAINTAINED AT ALL TIMES.

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

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NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

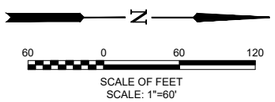
DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

CONSTRUCTION PHASING PLAN - PHASE 1

DRAWING NO. 13 OF 45
SHEET NO. C-07

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy RaB\CAD_WORKING\C-06 PHASING PLAN.dwg



CONSTRUCTION PHASING PLAN - PHASE 2

SCALE: 1" = 60'

1
C-08

LEGEND

- UNDER CONSTRUCTION
- ROAD UNDER TRAFFIC
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- TEMP. PLASTIC DRUMS (30' SPACING)
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE

NOTES

1. SEE DETOUR PLANS FOR TEMPORARY TRAFFIC ROUTING.
2. CONTRACTOR TO MAINTAIN 24 HOUR TRAFFIC CONTROL PER ODOT STD. DWGS. TM800, TM850 & TM855.

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2008
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
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NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

CONSTRUCTION PHASING PLAN - PHASE 2

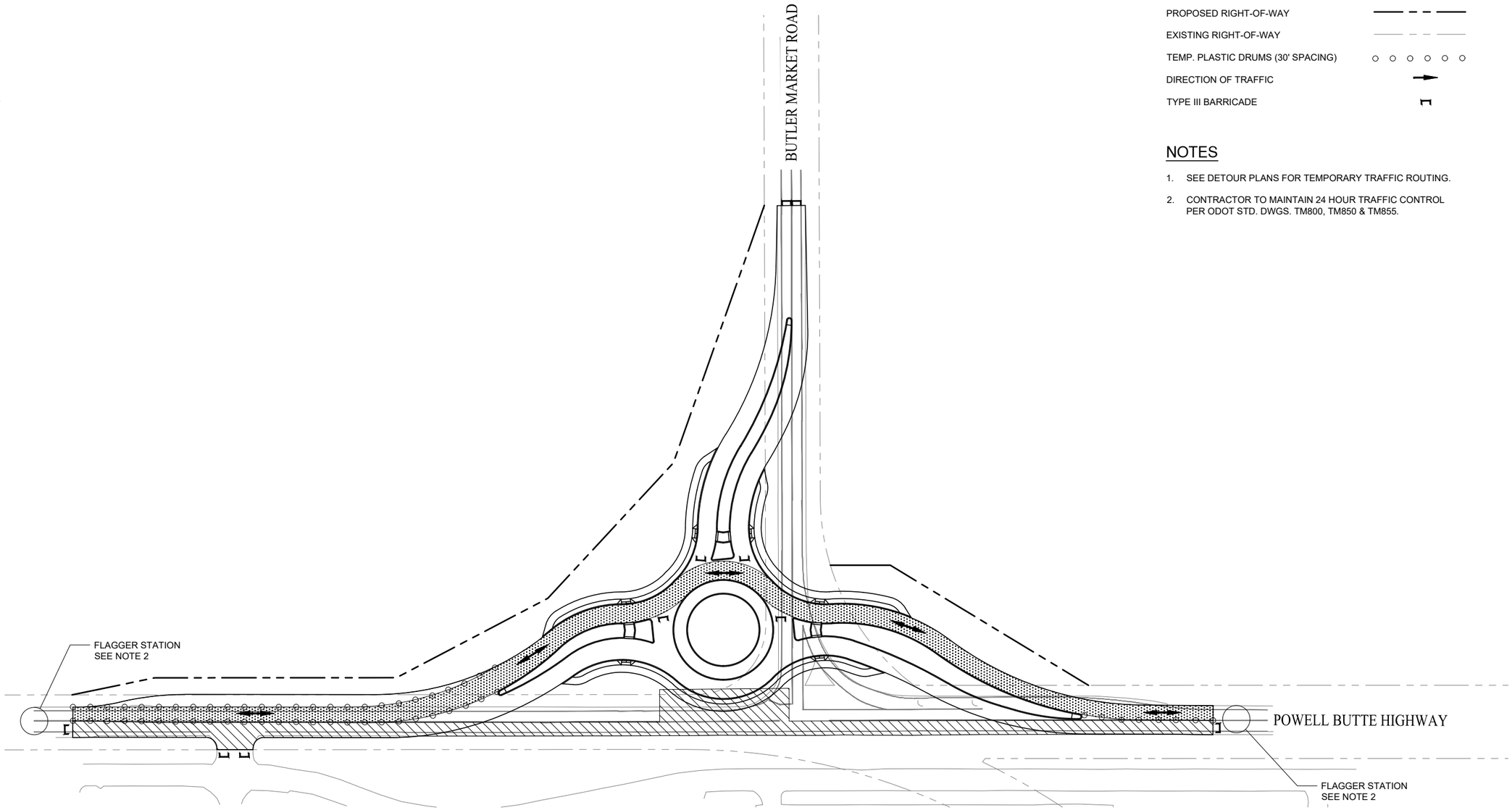
DRAWING NO. 14 OF 45
SHEET NO. C-08

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Rab\CAD_WORKING\C-06 PHASING PLAN.dwg

N

60 0 60 120

SCALE OF FEET
SCALE: 1"=60'



LEGEND

- UNDER CONSTRUCTION
- ROAD UNDER TRAFFIC
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- TEMP. PLASTIC DRUMS (30' SPACING)
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE

NOTES

1. SEE DETOUR PLANS FOR TEMPORARY TRAFFIC ROUTING.
2. CONTRACTOR TO MAINTAIN 24 HOUR TRAFFIC CONTROL PER ODOT STD. DWGS. TM800, TM850 & TM855.

CONSTRUCTION PHASING PLAN - PHASE 3

SCALE: 1" = 60'

1
C-09

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2005
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
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CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

CONSTRUCTION PHASING PLAN - PHASE 3

DRAWING NO. 15 OF 45
SHEET NO. C-09

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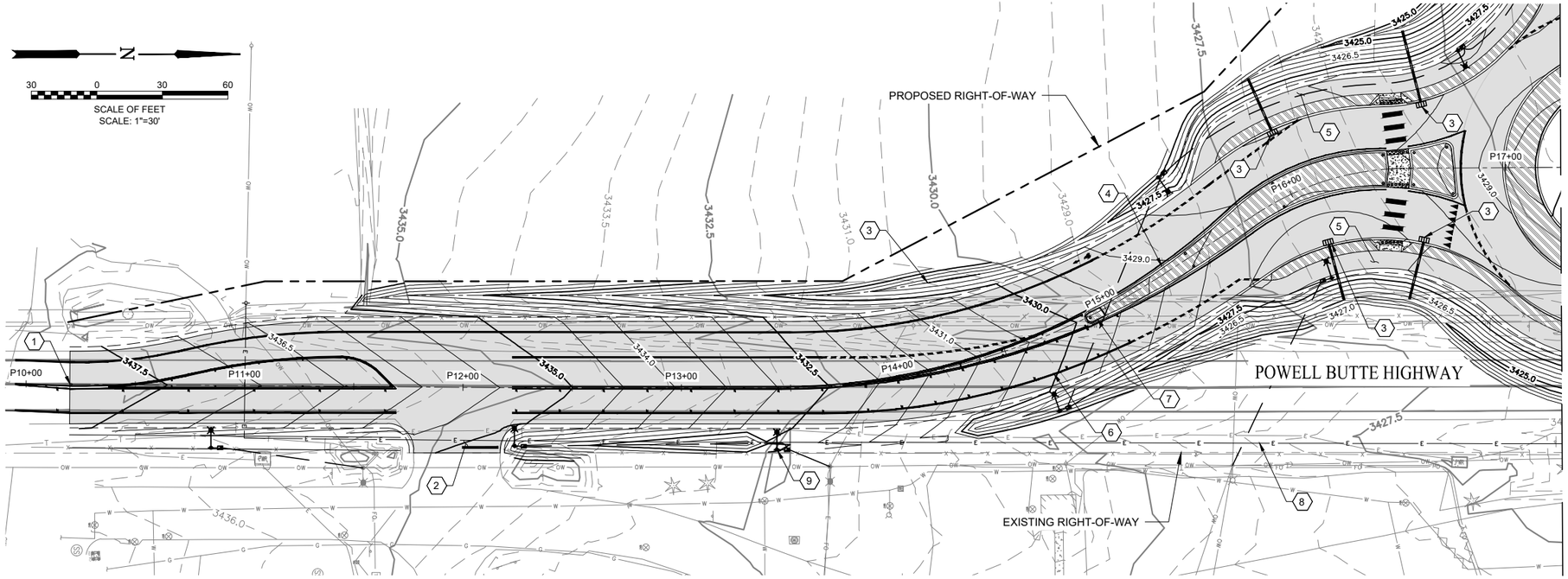


SOUTH LEG PLAN
SCALE: 1" = 30'

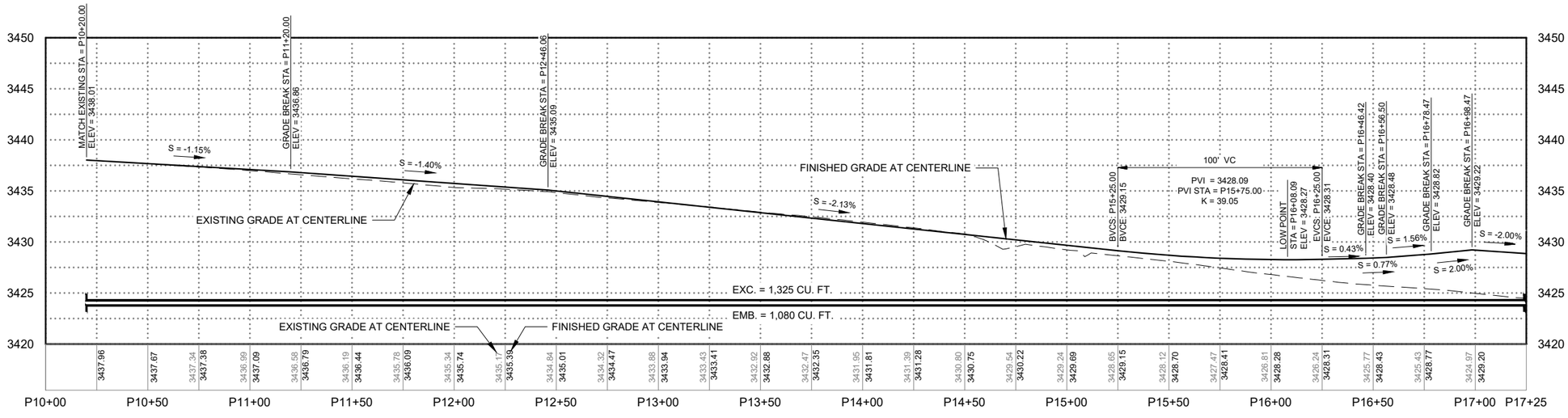
1
C-10

KEY NOTES

1. BEGIN ROADWAY RECONSTRUCTION, STA P10+20.00. SEE TYPICAL SECTIONS ON SHEETS C-01 & C-02.
2. RECONSTRUCT AIRPORT ENTRANCE PER DETAIL 7 ON SHEET C-03.
3. SEE SHEETS C-22 & C-23 FOR PROPOSED STORMWATER IMPROVEMENTS.
4. CONSTRUCT SPLITTER ISLAND PER DETAILS ON SHEETS C-03 & C-19.
5. CONSTRUCT SHARED USE PATHWAY PER DETAILS ON SHEETS C-03 & C-19.
6. SEE SHEETS SS-02 & SS-03 FOR SIGNING AND STRIPING INFORMATION.
7. CONSTRUCT ISLAND NOSE PER DETAIL 9 ON SHEET C-03.
8. PROPOSED UNDERGROUND POWER LINE TO BE INSTALLED BY OTHERS (LOCATION APPROXIMATE).
9. CONSTRUCT ILLUMINATION PER SHEETS IL-01 - IL-05.

GENERAL NOTES

1. SEE SHEETS C-01 & C-02 FOR TYPICAL ROADWAY CROSS SECTIONS.



SOUTH LEG PROFILE
SCALE: 1" = 30'
1" = 6' VERTICAL

2
C-10

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy RaBI\CAD_WORKING\C-09 PLAN & PROFILE.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JAN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
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NO.	DATE	BY	APPR	REVISIONS

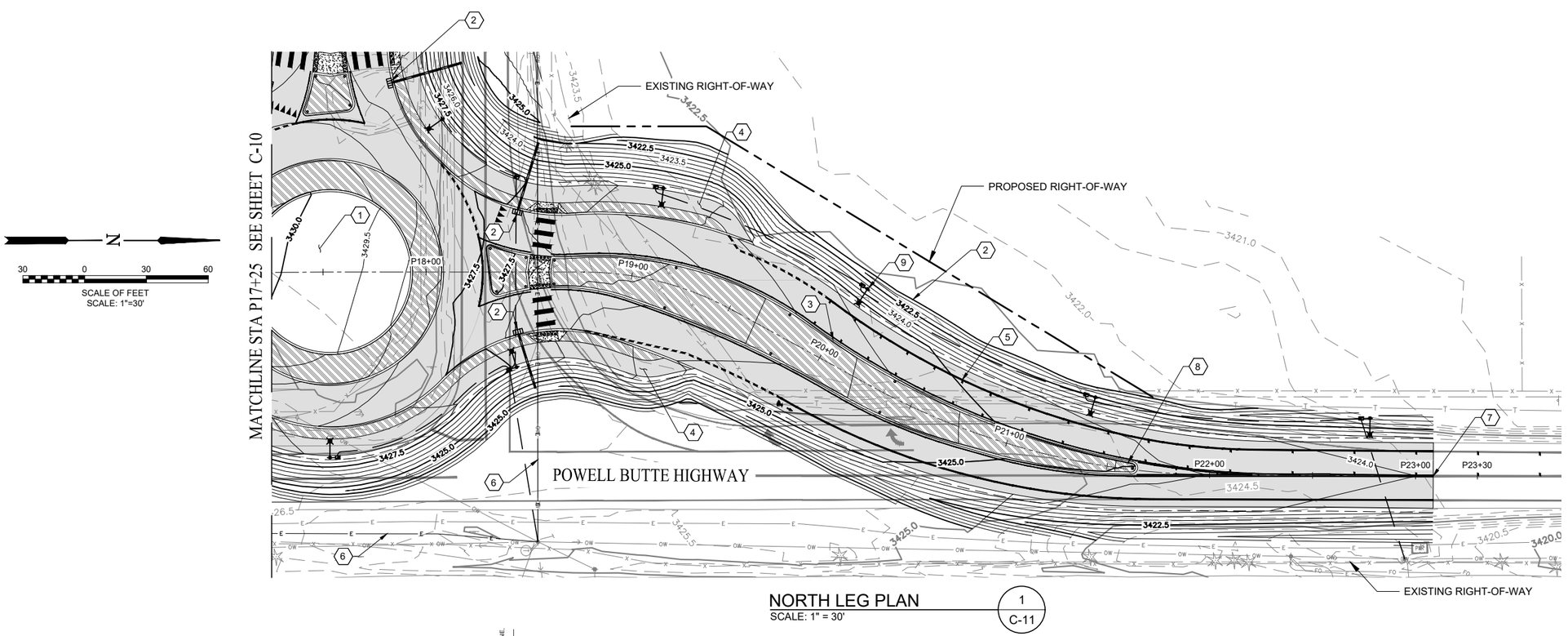
CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

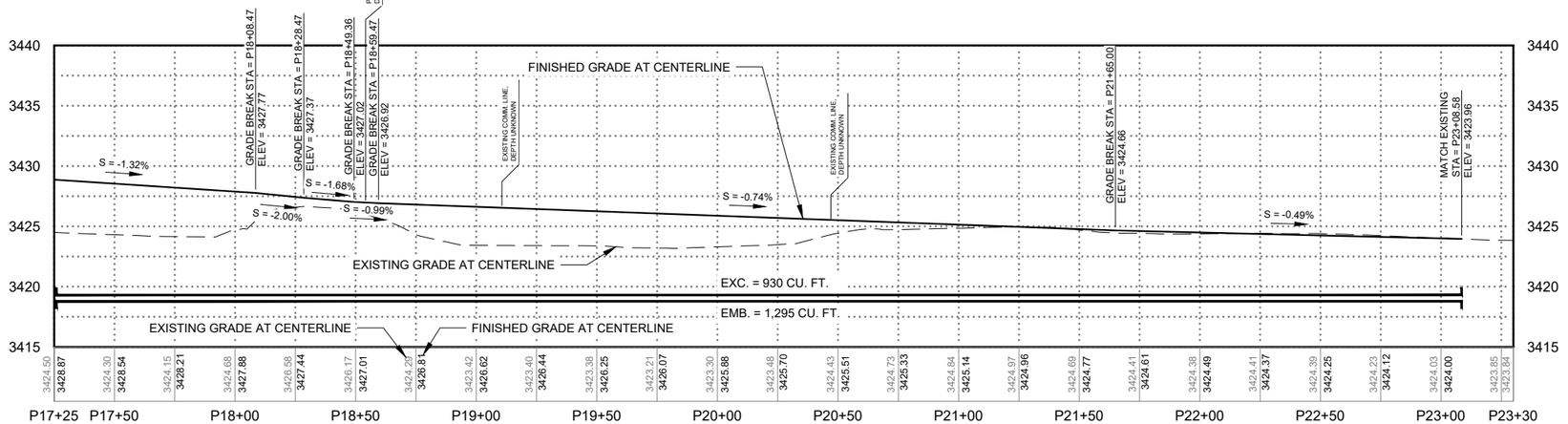
DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

PLAN AND PROFILE - SOUTH LEG

DRAWING NO. 16 OF 45
SHEET NO. C-10



NORTH LEG PLAN
SCALE: 1" = 30'
1
C-11



NORTH LEG PROFILE
SCALE: 1" = 30'
1" = 6' VERTICAL
2
C-11

KEY NOTES

1. CONSTRUCT INNER CIRCLE PER DETAIL 1 ON SHEET C-01.
2. SEE SHEETS C-22 & C-23 FOR PROPOSED STORMWATER IMPROVEMENTS.
3. CONSTRUCT SPLITTER ISLAND PER DETAILS ON SHEETS C-03 & C-20.
4. CONSTRUCT SHARED USE PATHWAY PER DETAILS ON SHEETS C-03 & C-20.
5. SEE SHEETS SS-03 & SS-04 FOR SIGNING AND STRIPING INFORMATION.
6. PROPOSED UNDERGROUND POWER LINE TO BE INSTALLED BY OTHERS (LOCATION APPROXIMATE).
7. END ROADWAY CONSTRUCTION, STA P23+08.58. SEE TYPICAL SECTIONS ON SHEETS C-01 & C-02.
8. CONSTRUCT ISLAND NOSE PER DETAIL 9 ON SHEET C-03.
9. CONSTRUCT ILLUMINATION PER SHEETS IL-01 - IL-05.

GENERAL NOTES

1. SEE SHEETS C-01 & C-02 FOR TYPICAL ROADWAY CROSS SECTIONS.

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy RaB\CAD_WORKING\C-09 PLAN & PROFILE.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 72786PE OREGON JUN. 29, 2009 MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

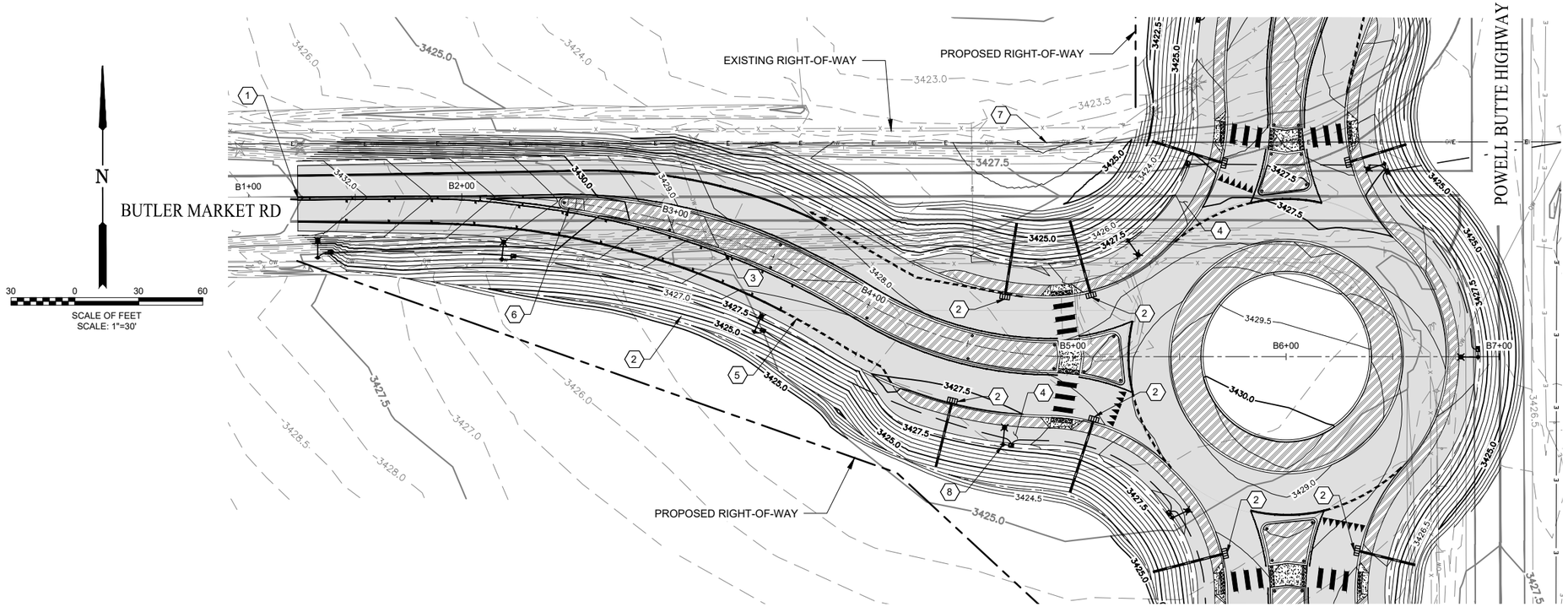
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

PLAN AND PROFILE - NORTH LEG

DRAWING NO. 17 OF 45
SHEET NO. C-11



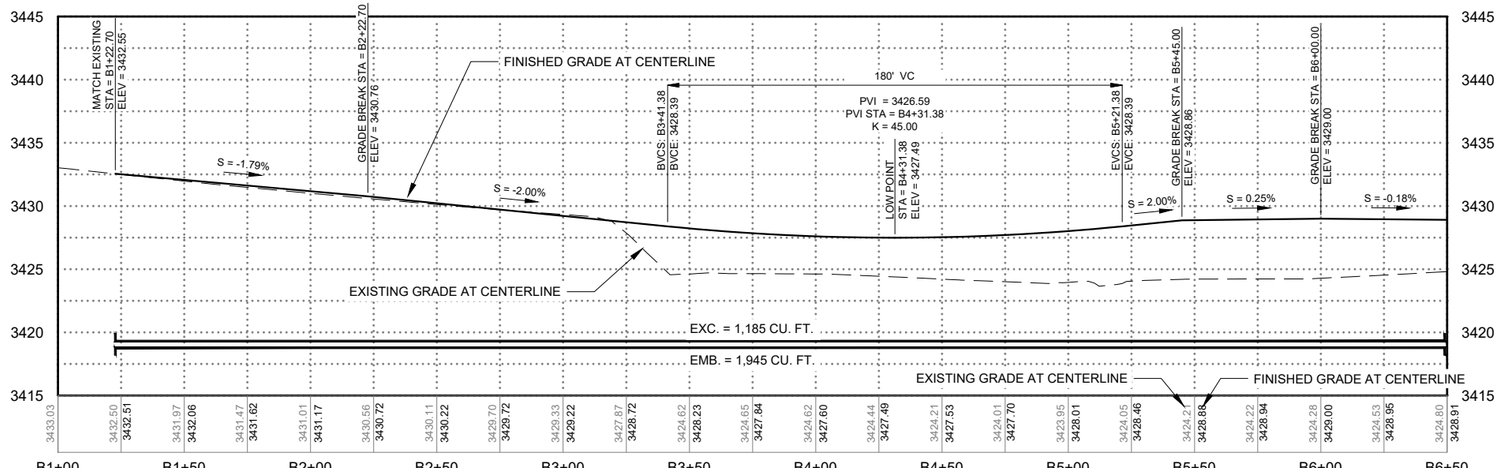
WEST LEG PLAN
SCALE: 1" = 30'
1
C-12

KEY NOTES

1. BEGIN ROADWAY RECONSTRUCTION, STA B1+23.00. SEE TYPICAL SECTIONS ON SHEETS C-01 & C-02.
2. SEE SHEET C-22 & C-23 FOR PROPOSED STORMWATER IMPROVEMENTS.
3. CONSTRUCT SPLITTER ISLAND PER DETAILS ON SHEETS C-03 & C-21.
4. CONSTRUCT SHARED USE PATHWAY PER DETAILS ON SHEETS C-03 & C-21.
5. SEE SHEETS SS-03 & SS-05 FOR SIGNING AND STRIPING INFORMATION.
6. CONSTRUCT ISLAND NOSE PER DETAIL 9 ON SHEET C-03.
7. PROPOSED UNDERGROUND POWER LINE TO BE INSTALLED BY OTHERS (LOCATION APPROXIMATE).
8. CONSTRUCT ILLUMINATION PER SHEETS IL-01 - IL-05.

GENERAL NOTES

1. SEE SHEETS C-01 & C-02 FOR TYPICAL ROADWAY CROSS SECTIONS.



WEST LEG PROFILE
SCALE: 1" = 30'
1" = 6' VERTICAL
2
C-12

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Rab\CAD_WORKING\C-09 PLAN & PROFILE.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2008
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
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0" 1"
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NO.	DATE	BY	APPR	REVISIONS

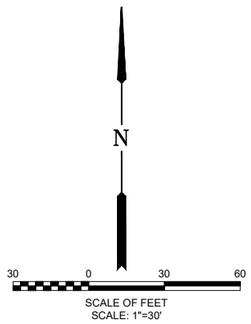
CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

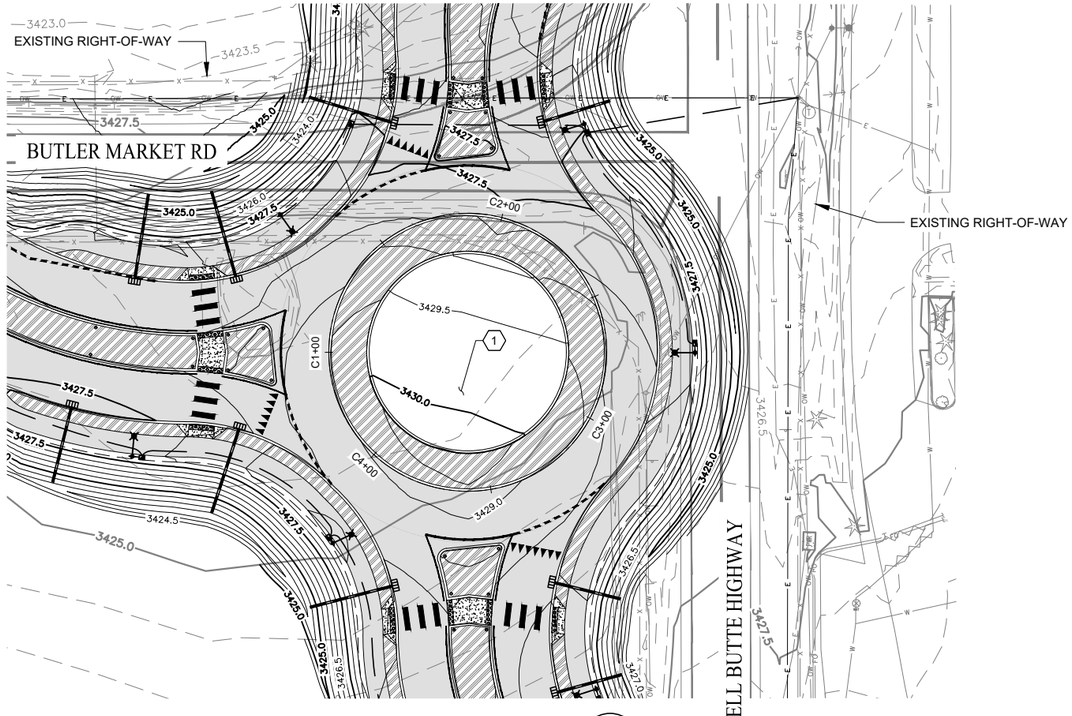
DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

PLAN AND PROFILE - WEST LEG

DRAWING NO. 18 OF 45
SHEET NO. C-12

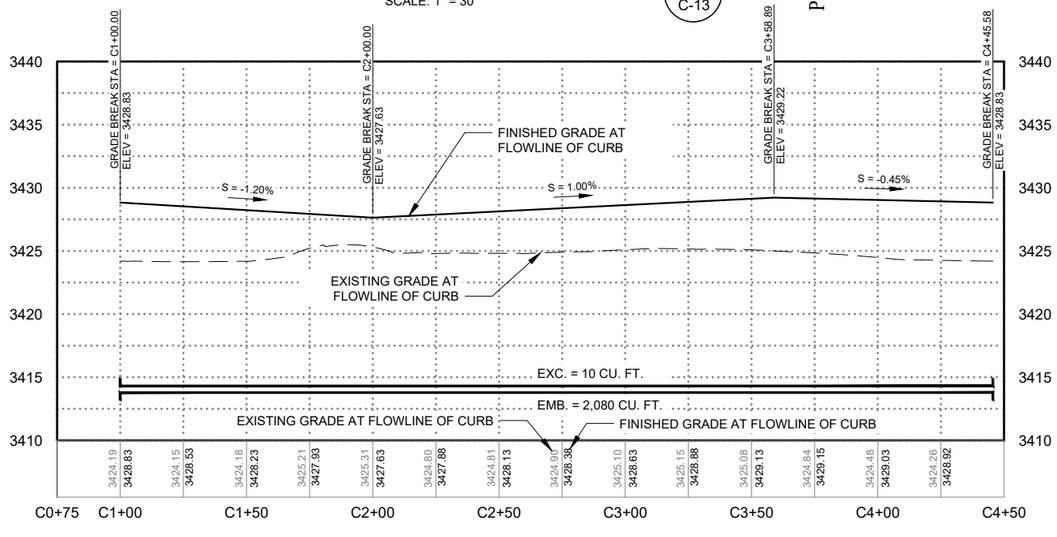




INNER CIRCLE PLAN
SCALE: 1" = 30'
1 / C-13

KEY NOTES

1. CONSTRUCT INNER CIRCLE PER DETAIL 1 ON SHEET C-01.



INNER CIRCLE PROFILE
SCALE: 1" = 30'
1" = 6' VERTICAL
2 / C-13

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DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JAN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" [bar] 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

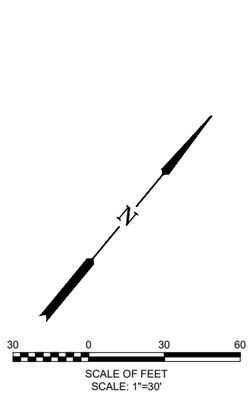
CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

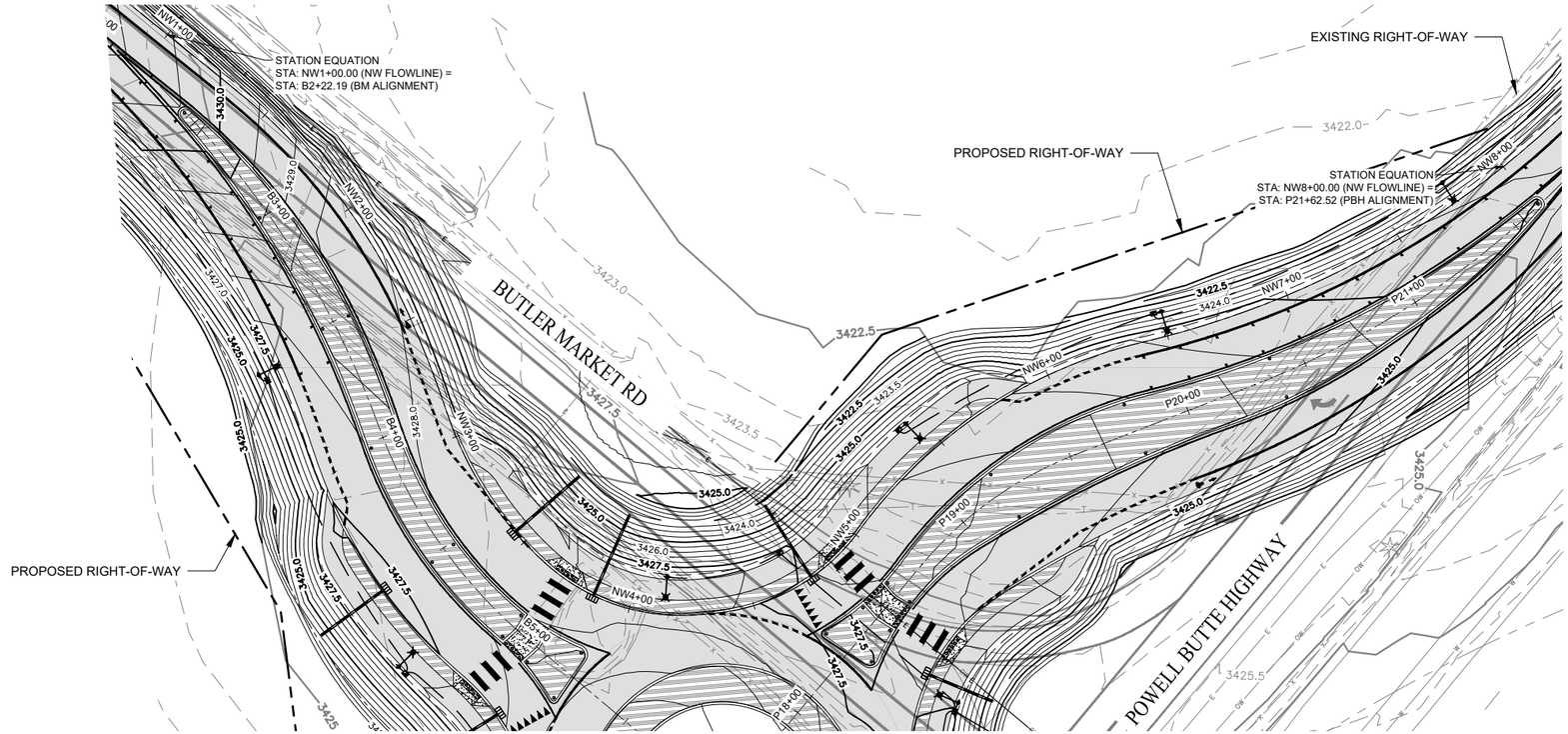
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

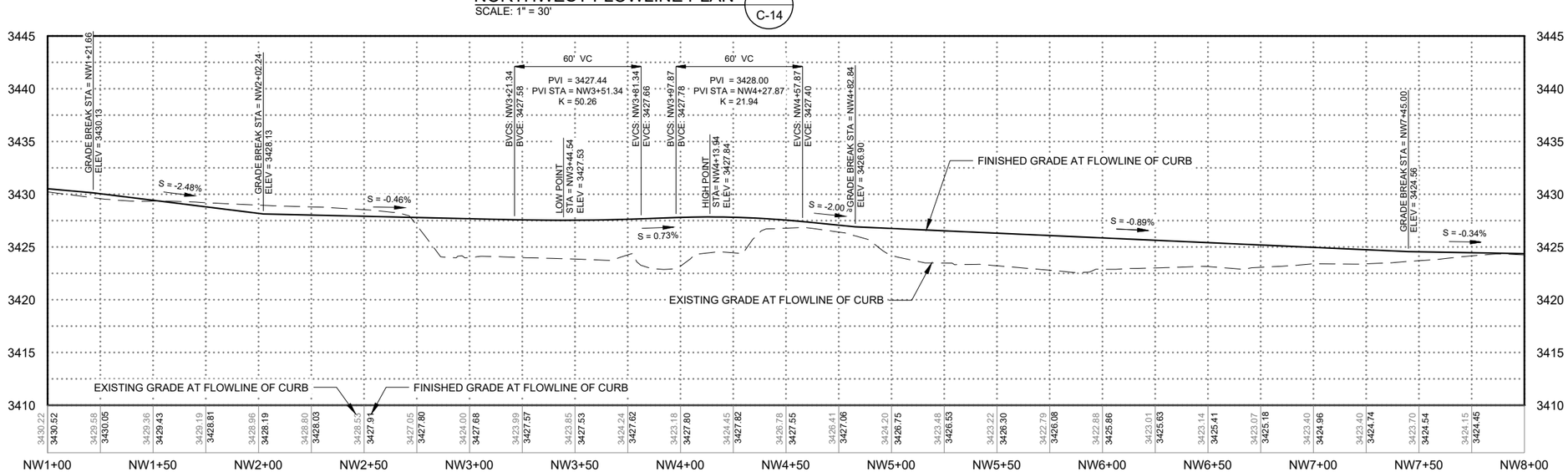
PLAN AND PROFILE - INNER CIRCLE

DRAWING NO. 19 OF 45
SHEET NO. C-13





NORTHWEST FLOWLINE PLAN (1 / C-14)
SCALE: 1" = 30'



NORTHWEST FLOWLINE PROFILE (2 / C-14)
SCALE: 1" = 30'
1" = 6' VERTICAL

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DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

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NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

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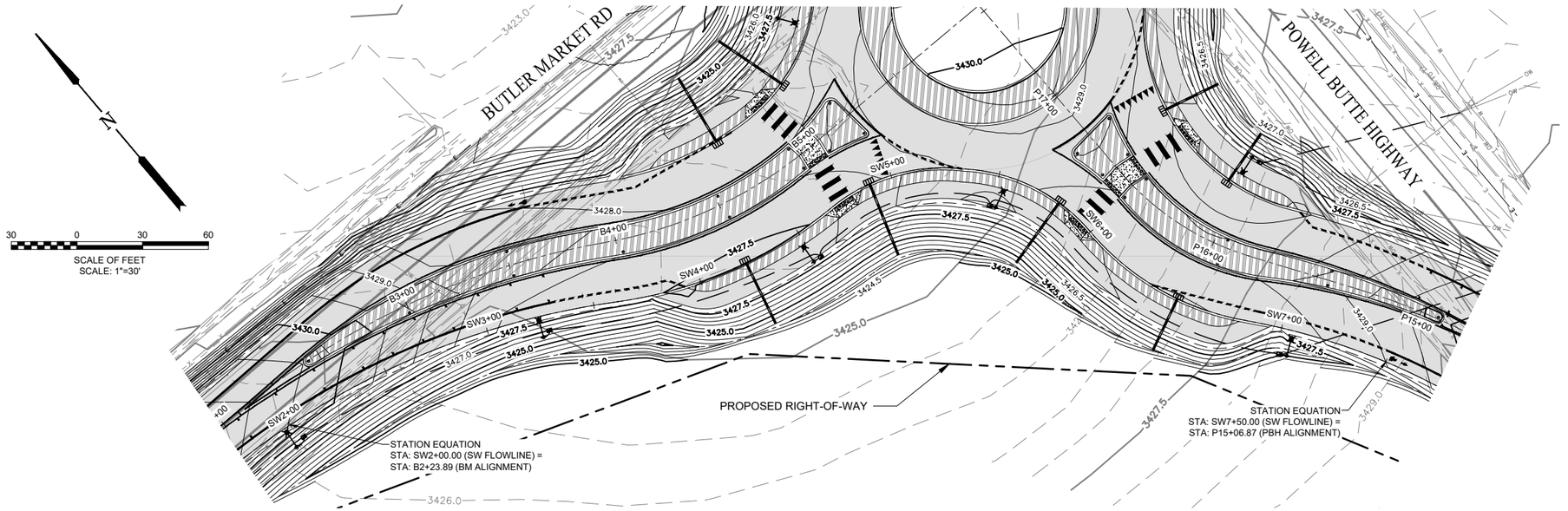
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

PLAN AND PROFILE - NORTHWEST FLOWLINE

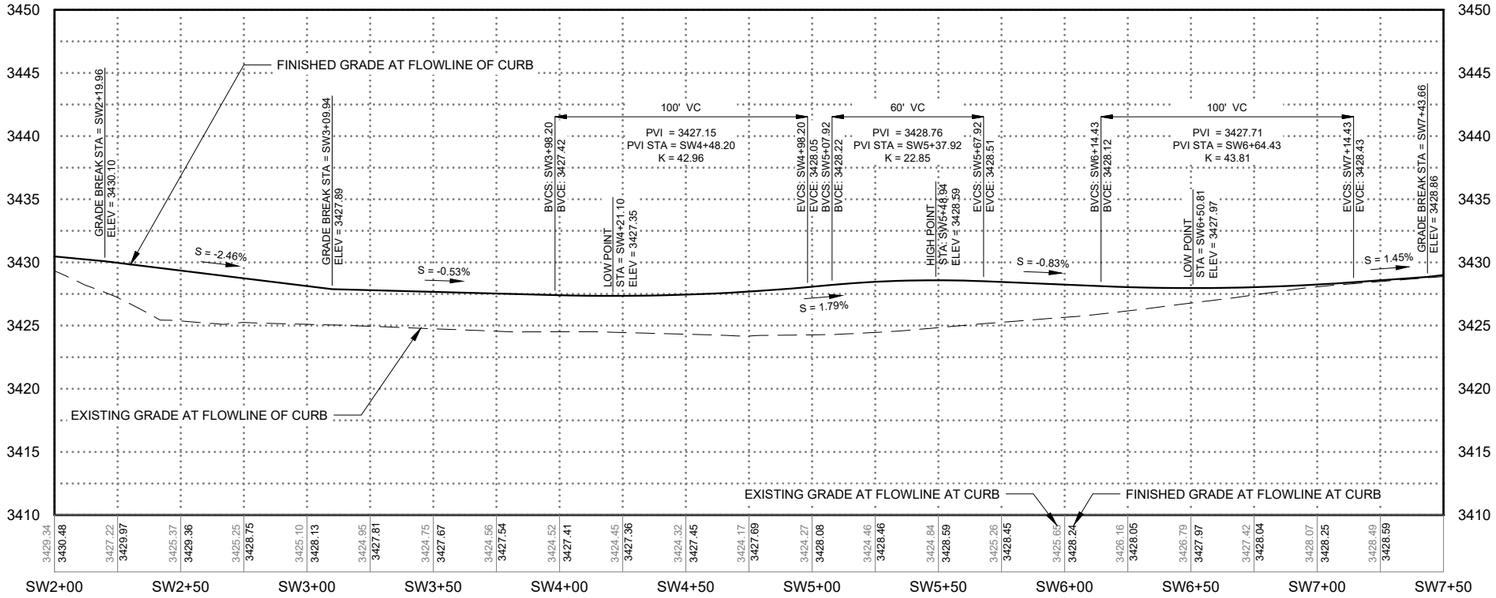
DRAWING NO. 20 OF 45
SHEET NO. C-14



SOUTHWEST FLOWLINE PLAN

SCALE: 1" = 30'

1 / C-15



SOUTHWEST FLOWLINE PROFILE

SCALE: 1" = 30'
1" = 6' VERTICAL

2 / C-15

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Ra\CAD_WORKING\C-09 PLAN & PROFILE.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN IPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" ■■■■■■■■ 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

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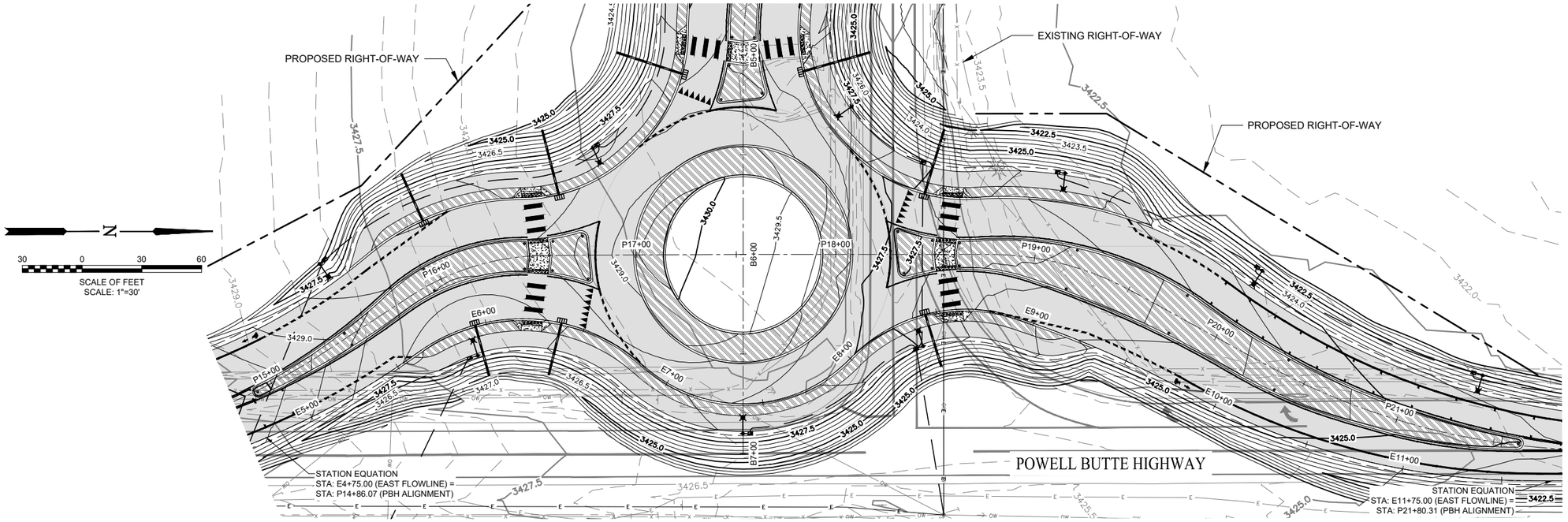
DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

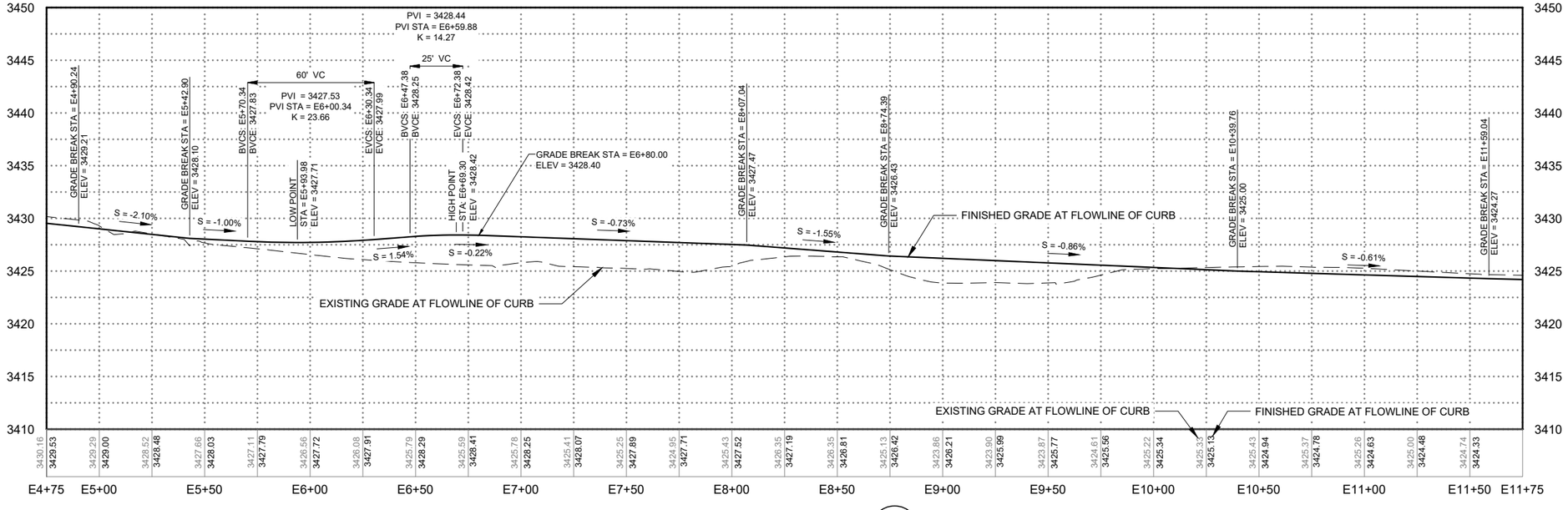
PLAN AND PROFILE - SOUTHWEST FLOWLINE

DRAWING NO. 21 OF 45
SHEET NO. C-15



EAST FLOWLINE PLAN
SCALE: 1" = 30'

1
C-16



EAST FLOWLINE PROFILE
SCALE: 1" = 30'
1" = 6' VERTICAL

2
C-16

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JAN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

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0" ——— 1"
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CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

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PROJECT NO: 12602.001.01

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DRAWN BY: AVF
CHECKED BY: RDV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

PLAN AND PROFILE - EAST FLOWLINE

DRAWING NO. 22 OF 45
SHEET NO. C-16

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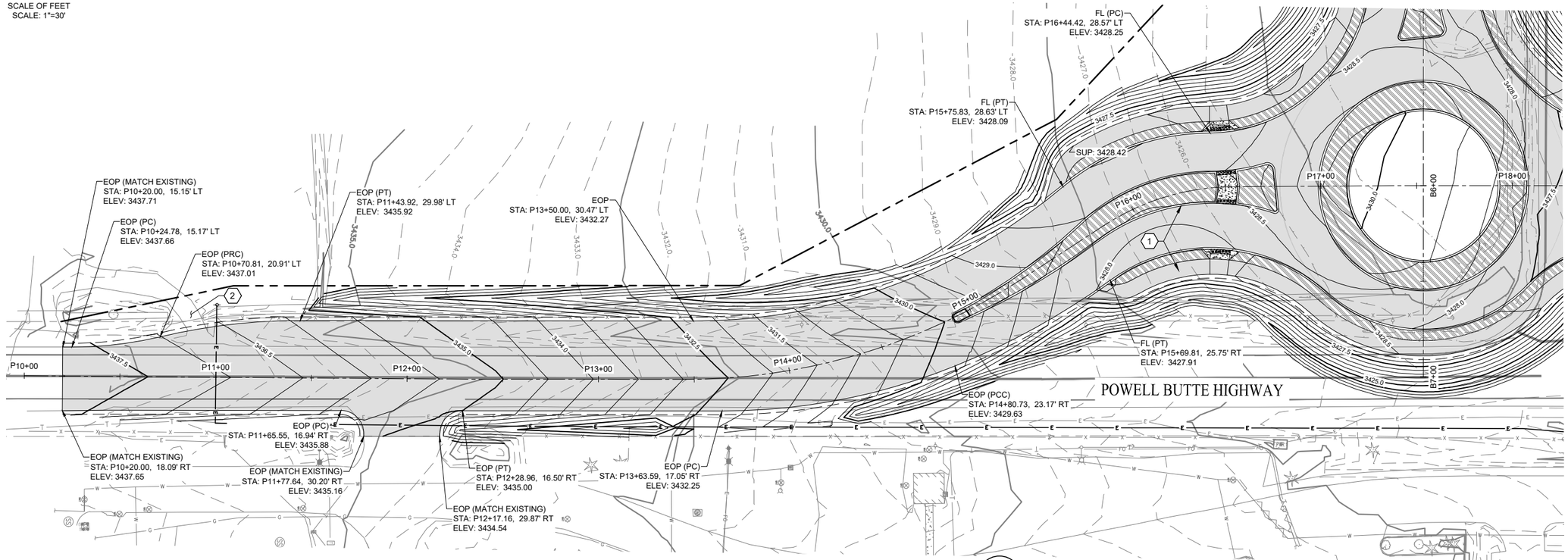
KEY NOTES

1. SEE SHEET C-19 FOR SPLITTER ISLAND AND SHARED USE PATHWAY GRADING INFORMATION.
2. REGRADE AREA TO PROVIDE POSITIVE DRAINAGE TO NORTH SIDE OF EXISTING DRIVEWAY. SIDE SLOPES SHALL BE 4:1 MAXIMUM.

N

60 0 60 120

SCALE OF FEET
SCALE: 1"=30'



SOUTH LEG GRADING PLAN

SCALE: 1" = 30'

1
C-17

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy RaB\CAD_WORKING\C-12 GRADING PLAN.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
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0" ▬ 1"
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NO.	DATE	BY	APPR	REVISIONS

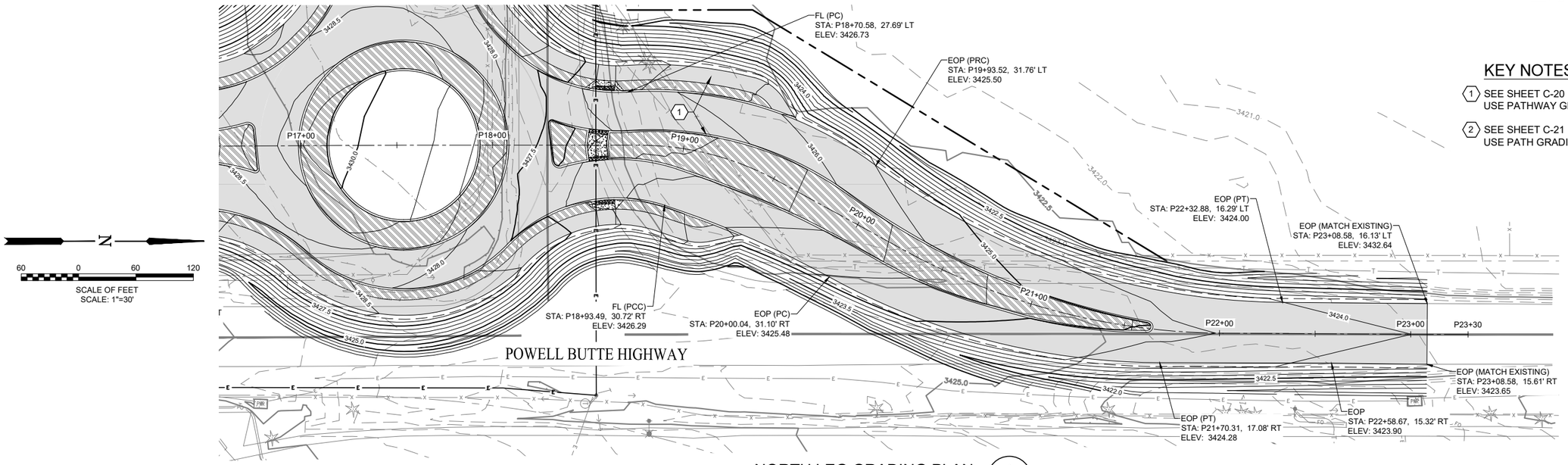
CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

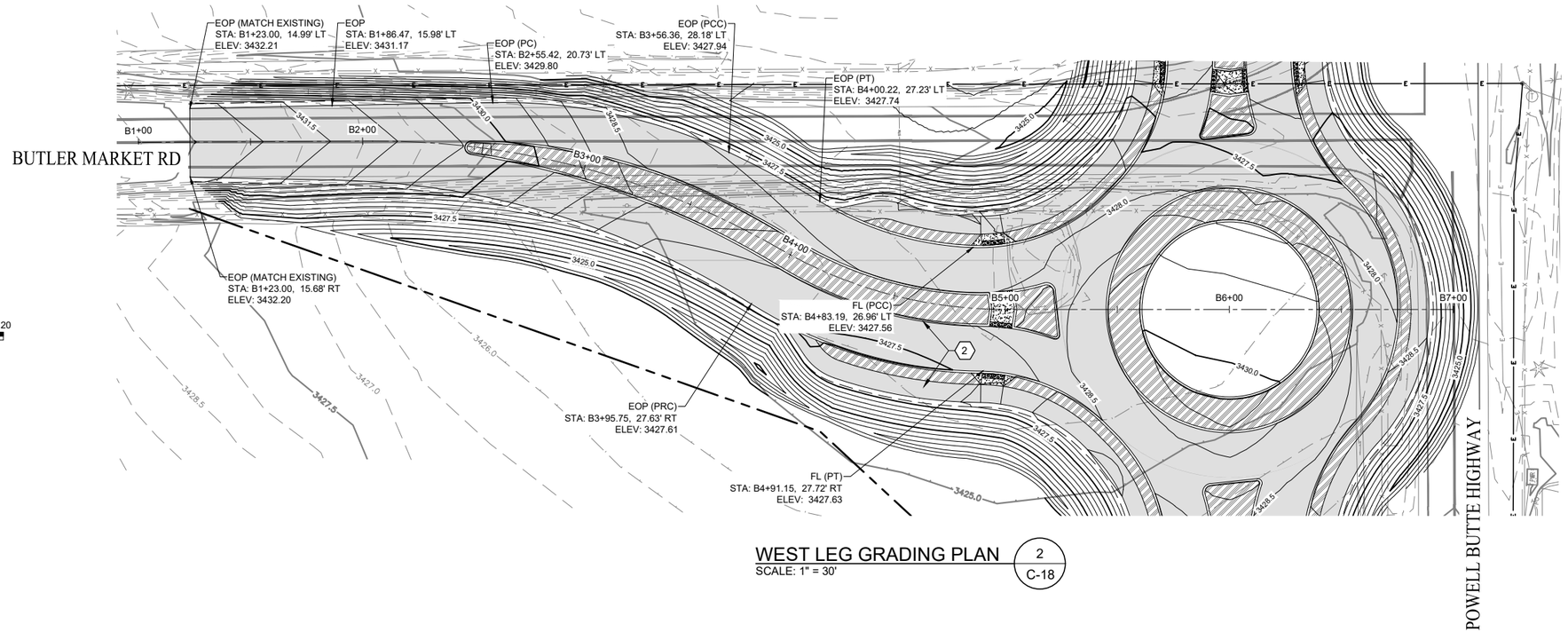
GRADING PLAN - SOUTH LEG

DRAWING NO. 23 OF 45
SHEET NO. C-17



NORTH LEG GRADING PLAN
SCALE: 1" = 30'

1
C-18



WEST LEG GRADING PLAN
SCALE: 1" = 30'

2
C-18

KEY NOTES

1. SEE SHEET C-20 FOR NORTH SPLITTER ISLAND AND SHARED USE PATHWAY GRADING INFORMATION.
2. SEE SHEET C-21 FOR WEST SPLITTER ISLAND AND SHARED USE PATH GRADING INFORMATION.

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

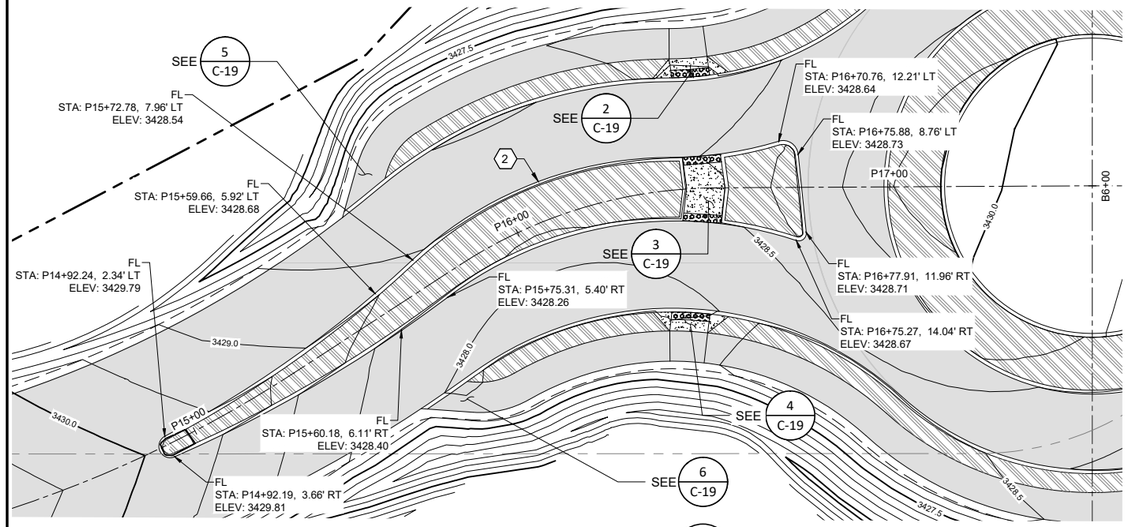
DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

GRADING PLAN - NORTH & WEST LEGS

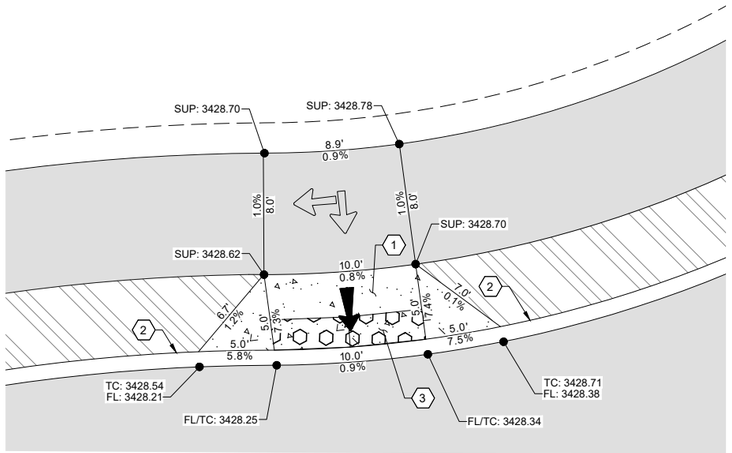
DRAWING NO. 24 OF 45
SHEET NO. C-18

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy R&B\CAD_WORKING\C-12 GRADING PLAN.dwg



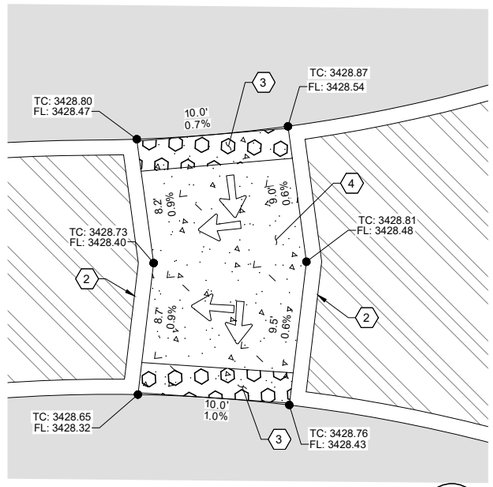
SOUTH SPLITTER ISLAND GRADING PLAN (1 C-19)
SCALE: 1" = 20'

20 0 20 40
SCALE OF FEET
SCALE: 1"=20'



CURB RAMP #1 GRADING PLAN (2 C-19)
SCALE: 1" = 5'

5 0 5 10
SCALE OF FEET
SCALE: 1"=5'



SOUTH PEDESTRIAN REFUGE GRADING PLAN (3 C-19)
SCALE: 1" = 5'

5 0 5 10
SCALE OF FEET
SCALE: 1"=5'

N

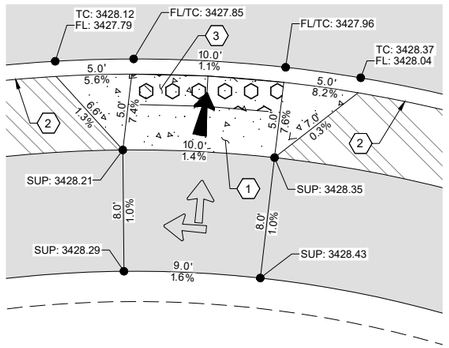
LEGEND

RUNNING SLOPE 7.5% MAX(MAX 8.3% FINISHED SURFACE SLOPE
(CONSTRUCT THE SLOPE AS SHOWN ON THE CURB RAMP DETAIL)
ARROW TO POINT IN DOWNWARD DIRECTION

SLOPE 1.5% MAX(MAX 2.0% FINISHED SURFACE SLOPE
(NORMAL SIDEWALK CROSS SLOPE)
(CONSTRUCT THE SLOPE AS SHOWN ON THE CURB RAMP DETAIL)
ARROW TO POINT IN DOWNWARD DIRECTION

KEY NOTES

1. CONSTRUCT CONCRETE CURB RAMP PER ODOT STD. DWG. RD910.
2. CONSTRUCT LOW PROFILE MOUNTABLE CURB PER DETAIL 1 ON SHEET C-03.
3. INSTALL YELLOW TRUNCATED DOMES PER ODOT STD. DWGS. RD902 AND RD906.
4. CONSTRUCT MEDIAN CUT-THROUGH CROSSING PER ODOT STD. DWG. RD710.



CURB RAMP #2 GRADING PLAN (4 C-19)
SCALE: 1" = 5'

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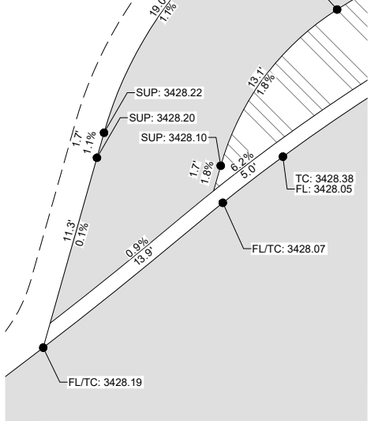
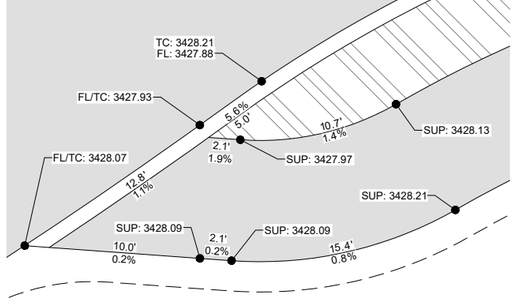
SCALE OF FEET
SCALE: 1"=5'



SW SHARED USE PATH EXIT GRADING PLAN (5 C-19)
SCALE: 1" = 5'

5 0 5 10
SCALE OF FEET
SCALE: 1"=5'



SE SHARED USE PATH ENTRY GRADING PLAN (6 C-19)
SCALE: 1" = 5'

5 0 5 10
SCALE OF FEET
SCALE: 1"=5'

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy RaB\CADD_WORKING\C-12 GRADING PLAN.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
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CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

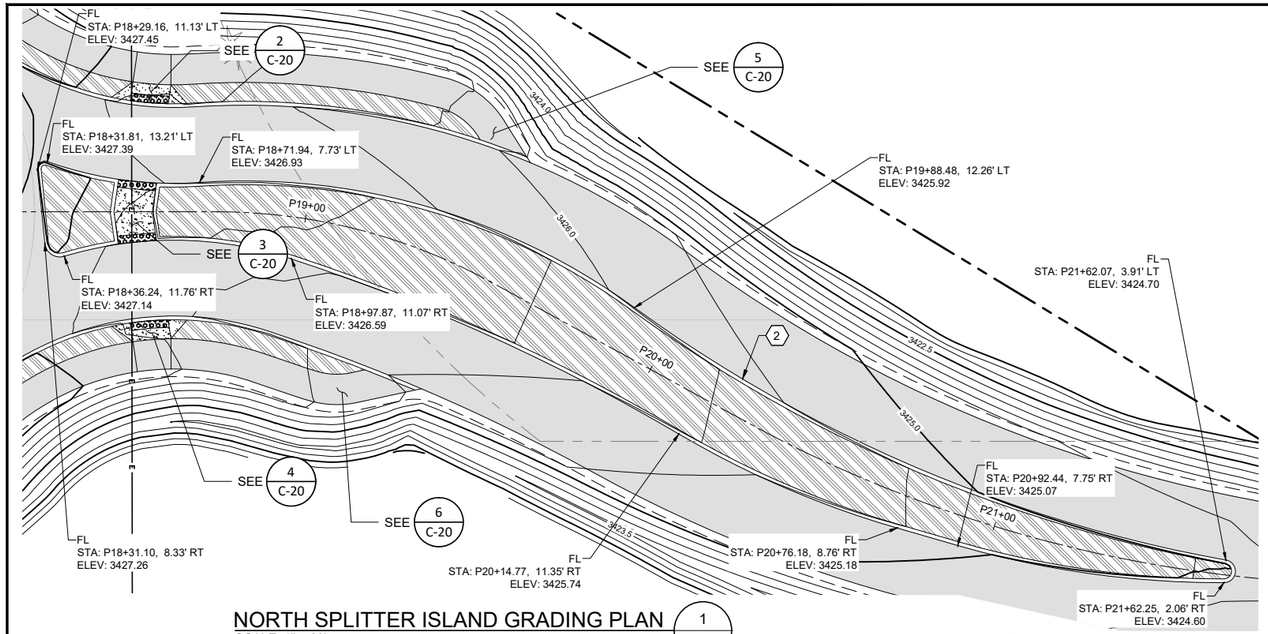
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

GRADING PLAN - SOUTH SPLITTER ISLAND & RAMPS

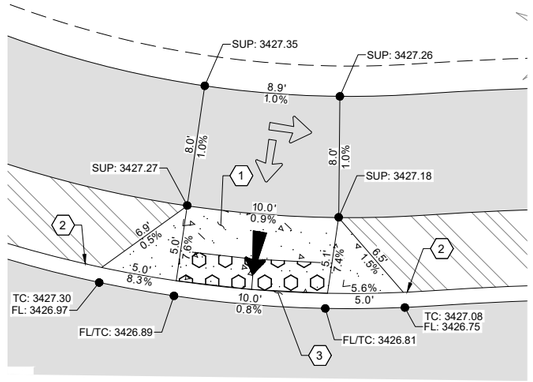
DRAWING NO. 25 OF 45
SHEET NO. C-19



NORTH SPLITTER ISLAND GRADING PLAN
SCALE: 1" = 20'

1 C-20

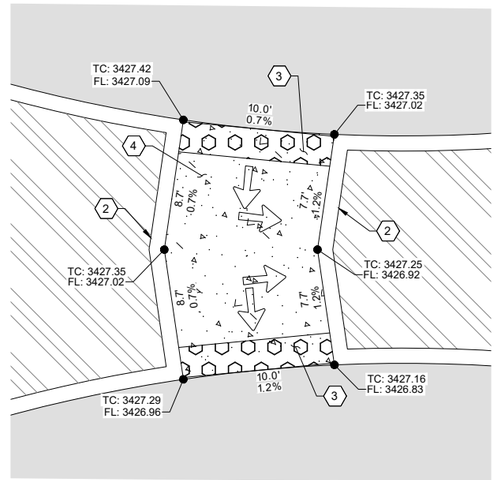
20 0 20 40
SCALE OF FEET
SCALE: 1"=20'



CURB RAMP #3 GRADING PLAN
SCALE: 1" = 5'

2 C-20

5 0 5 10
SCALE OF FEET
SCALE: 1"=5'



NORTH PEDESTRIAN REFUGE GRADING PLAN
SCALE: 1" = 5'

3 C-20

5 0 5 10
SCALE OF FEET
SCALE: 1"=5'

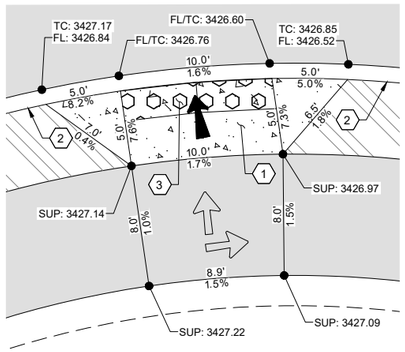
LEGEND

RUNNING SLOPE 7.5% MAX(MAX 8.3% FINISHED SURFACE SLOPE
(CONSTRUCT THE SLOPE AS SHOWN ON THE CURB RAMP DETAIL)
ARROW TO POINT IN DOWNWARD DIRECTION

SLOPE 1.5% MAX(MAX 2.0% FINISHED SURFACE SLOPE
(NORMAL SIDEWALK CROSS SLOPE)
(CONSTRUCT THE SLOPE AS SHOWN ON THE CURB RAMP DETAIL)
ARROW TO POINT IN DOWNWARD DIRECTION

KEY NOTES

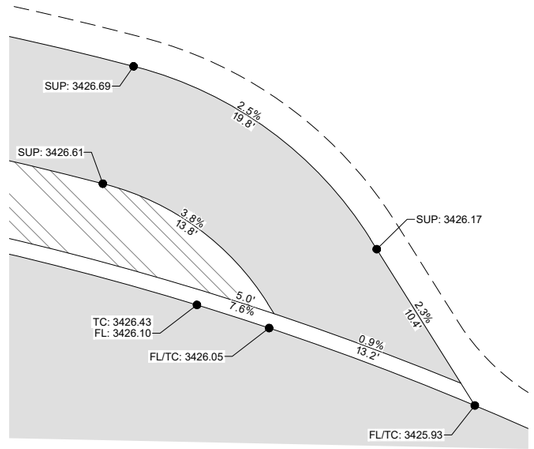
1. CONSTRUCT CONCRETE CURB RAMP PER ODOT STD. DWG. RD910.
2. CONSTRUCT LOW PROFILE MOUNTABLE CURB PER DETAIL 1 ON SHEET C-03.
3. INSTALL YELLOW TRUNCATED DOMES PER ODOT STD. DWGS. RD902 AND RD906.
4. CONSTRUCT MEDIAN CUT-THROUGH CROSSING PER ODOT STD. DWG. RD710.



CURB RAMP #4 GRADING PLAN
SCALE: 1" = 5'

4 C-20

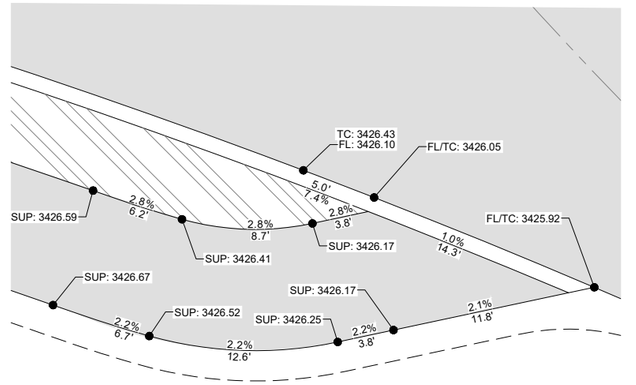
5 0 5 10
SCALE OF FEET
SCALE: 1"=5'



NW SHARED USE PATH ENTRY GRADING PLAN
SCALE: 1" = 5'

5 C-20

5 0 5 10
SCALE OF FEET
SCALE: 1"=5'



NE SHARED USE PATH EXIT GRADING PLAN
SCALE: 1" = 5'

6 C-20

5 0 5 10
SCALE OF FEET
SCALE: 1"=5'

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIFTON
RENEWS: JUNE 29, 2024

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CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

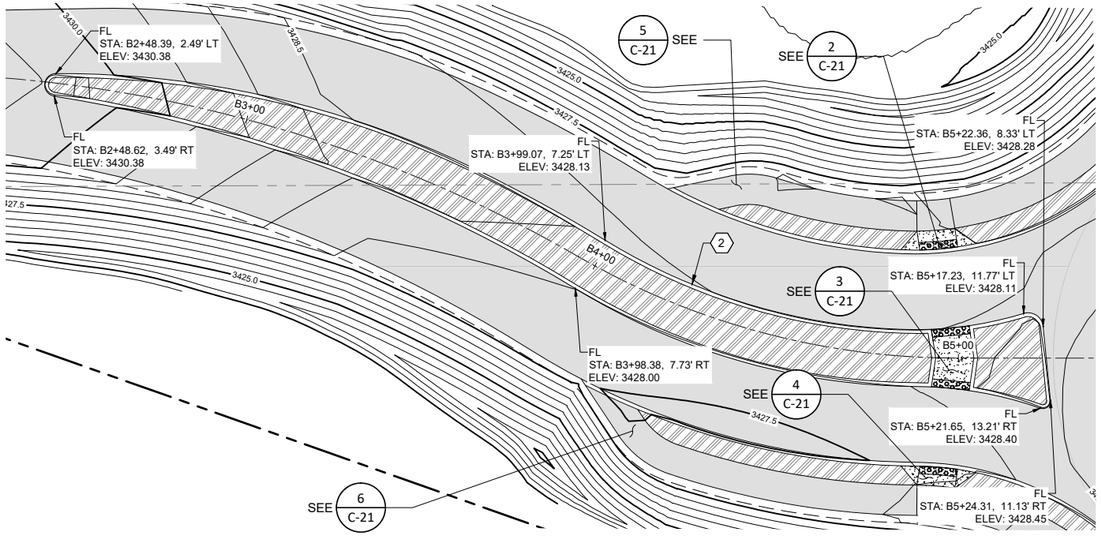
DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

GRADING PLAN - NORTH SPLITTER ISLAND & RAMPS

DRAWING NO. 26 OF 45
SHEET NO. C-20

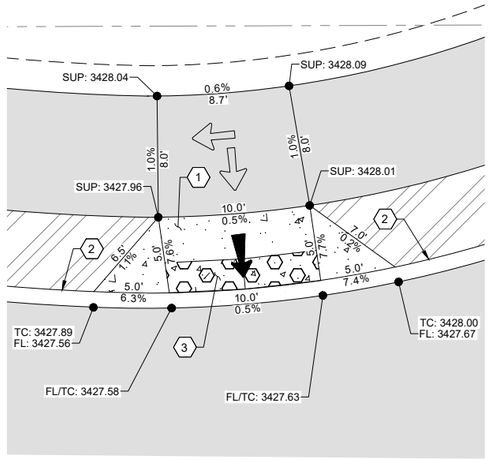
X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Rab\CAD_WORKING\C-12 GRADING PLAN.dwg



WEST SPLITTER ISLAND GRADING PLAN (1 C-21)

SCALE: 1" = 20'

20 0 20 40
SCALE OF FEET
SCALE: 1"=20'



CURB RAMP #5 GRADING PLAN (2 C-21)

SCALE: 1" = 5'

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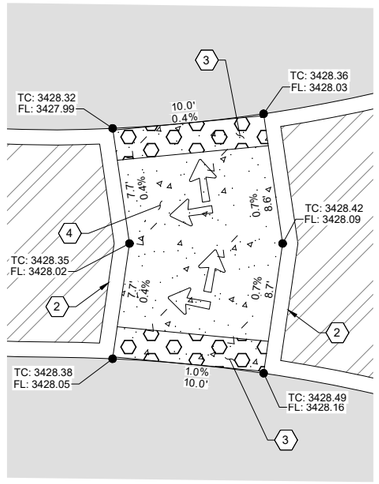
SCALE OF FEET
SCALE: 1"=5'



WEST PEDESTRIAN REFUGE GRADING PLAN (3 C-21)

SCALE: 1" = 5'

5 0 5 10
SCALE OF FEET
SCALE: 1"=5'

LEGEND

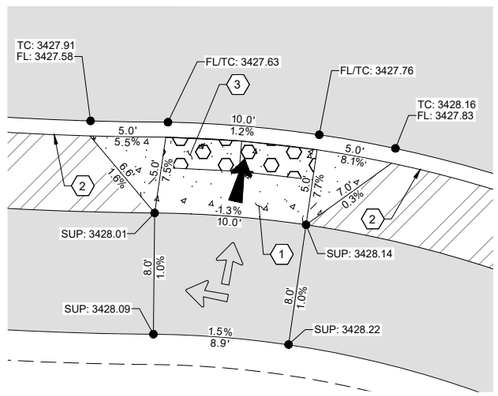
RUNNING SLOPE 7.5% MAX(MAX 8.3% FINISHED SURFACE SLOPE
(CONSTRUCT THE SLOPE AS SHOWN ON THE CURB RAMP DETAIL)
ARROW TO POINT IN DOWNWARD DIRECTION

SLOPE 1.5% MAX(MAX 2.0% FINISHED SURFACE SLOPE
(NORMAL SIDEWALK CROSS SLOPE)
(CONSTRUCT THE SLOPE AS SHOWN ON THE CURB RAMP DETAIL)
ARROW TO POINT IN DOWNWARD DIRECTION

N

KEY NOTES

1. CONSTRUCT CONCRETE CURB RAMP PER ODOT STD. DWG. RD910.
2. CONSTRUCT LOW PROFILE MOUNTABLE CURB PER DETAIL 1 ON SHEET C-03.
3. INSTALL YELLOW TRUNCATED DOMES PER ODOT STD. DWGS. RD902 AND RD906.
4. CONSTRUCT MEDIAN CUT-THROUGH CROSSING PER ODOT STD. DWG. RD710.



CURB RAMP #6 GRADING PLAN (4 C-21)

SCALE: 1" = 5'

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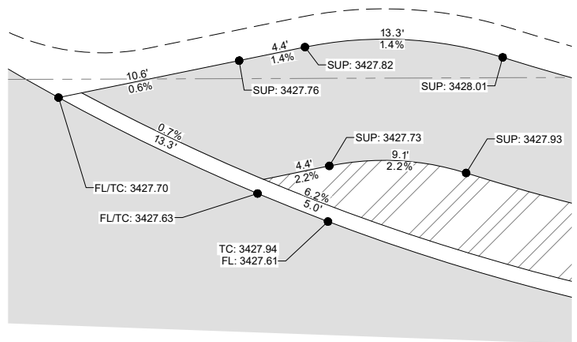
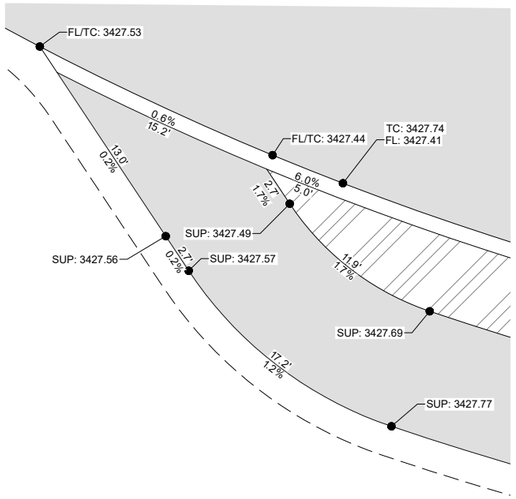
SCALE OF FEET
SCALE: 1"=5'



NW SHARED USE PATH EXIT GRADING PLAN (5 C-21)

SCALE: 1" = 5'

5 0 5 10
SCALE OF FEET
SCALE: 1"=5'



SW SHARED USE PATH ENTRY GRADING PLAN (6 C-21)

SCALE: 1" = 5'

5 0 5 10
SCALE OF FEET
SCALE: 1"=5'

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2005
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
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0" 1"
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NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY:	DRAWN BY:	CHECKED BY:
MST	AVF	RDV

DATE:	PROJECT NO:	SCALE:
DECEMBER 2023	12602.001.01	AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

GRADING PLAN - WEST SPLITTER ISLAND & RAMPS

DRAWING NO. 27 OF 45

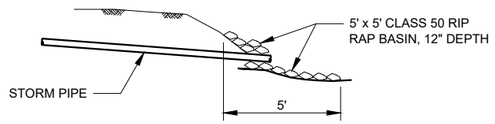
SHEET NO. C-21

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Ra\B\CAD_WORKING\C-12 GRADING PLAN.dwg

N

40 0 40 80

SCALE OF FEET
SCALE: 1"=40'



STORM OUTFALL
NO SCALE
2
C-22

STORMWATER PLAN
SCALE: 1" = 40'
1
C-22

STORMWATER KEY NOTES

1. MATCH EXISTING DITCH FLOWLINE
2. START DETENTION/CONVEYANCE SWALE
3. CONSTRUCT DETENTION/CONVEYANCE SWALE PER DETAIL 8 ON SHEET C03
4. PROTECT EXISTING DITCH
5. END DETENTION/CONVEYANCE SWALE.
6. DETENTION/CONVEYANCE SWALE FLOW LINE ELEVATION AT STORM PIPE OUTLET. CONSTRUCT STORM OUTFALL PER DETAIL 2 ON THIS SHEET
7. INSTALL 4' WIDE CLASS 50 RIP RAP ARMORING, MIN. 1' DEPTH. ARMORING SHALL EXTEND FROM EDGE OF ROADWAY TO BOTTOM OF PROPOSED DETENTION/CONVEYANCE SWALE
8. PROTECT EXISTING UTILITY VAULT

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

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DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

STORMWATER PLAN

DRAWING NO. 28 OF 45
SHEET NO. C-22

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy RAB\CAD_WORKING\STORMWATER PLAN.dwg

N

20 0 20 40

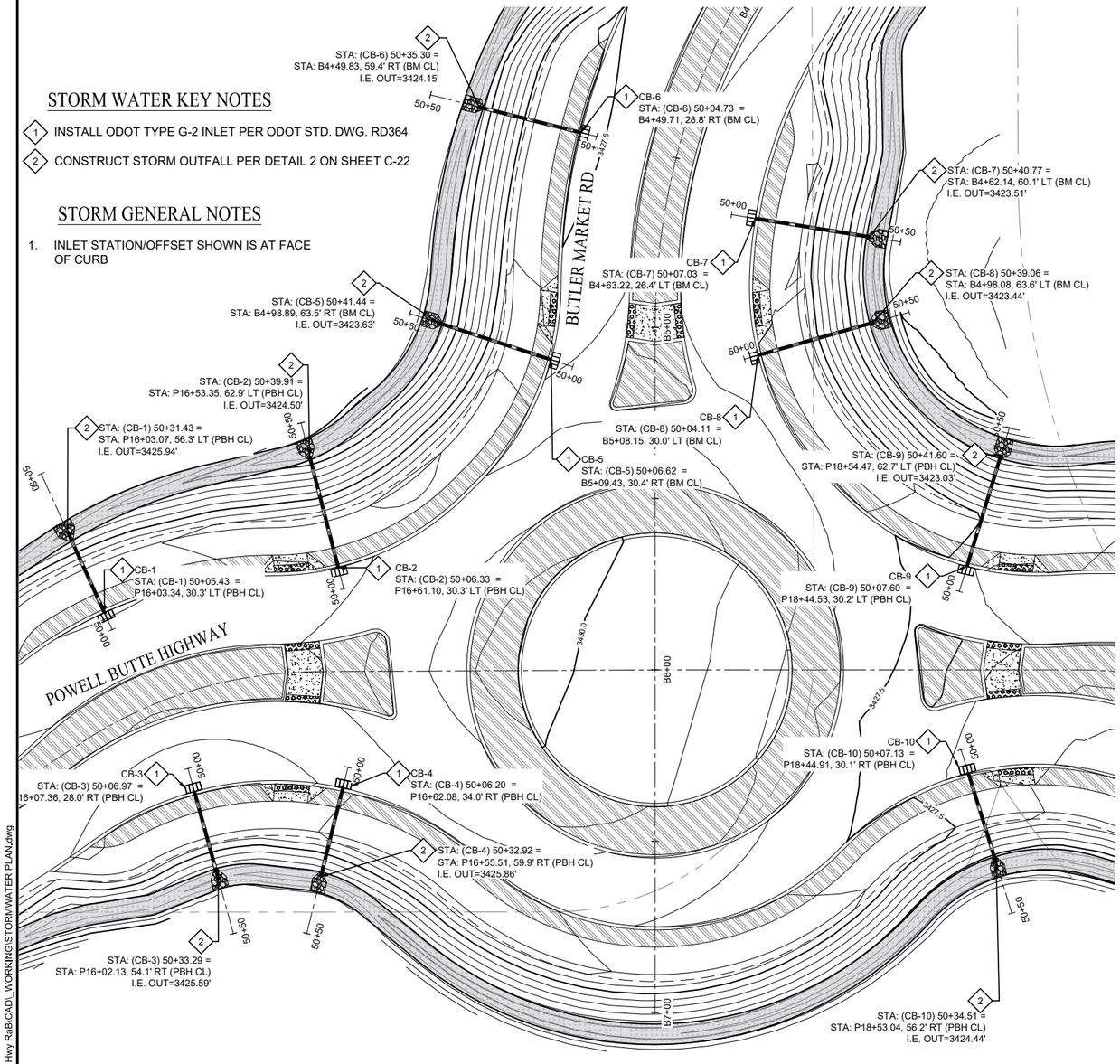
SCALE OF FEET
SCALE: 1"=20'

STORM WATER KEY NOTES

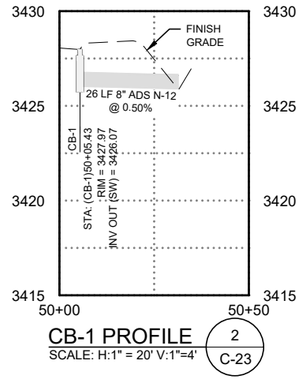
1. INSTALL ODOT TYPE G-2 INLET PER ODOT STD. DWG. RD364
2. CONSTRUCT STORM OUTFALL PER DETAIL 2 ON SHEET C-22

STORM GENERAL NOTES

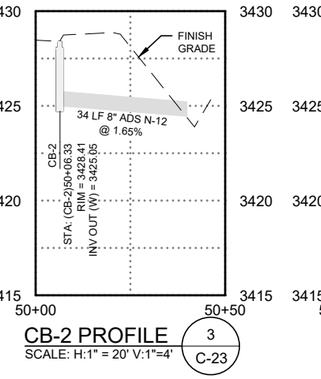
1. INLET STATION/OFFSET SHOWN IS AT FACE OF CURB



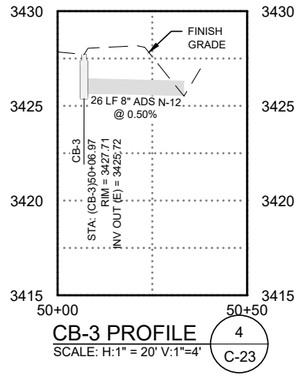
STORMWATER PLAN
SCALE: 1" = 20'
1 / C-23



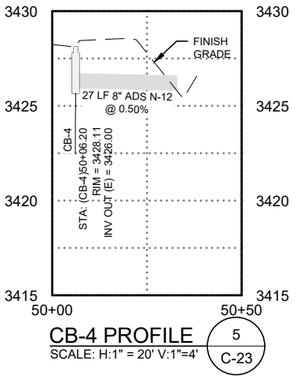
CB-1 PROFILE
SCALE: H:1" = 20' V:1"=4'
2 / C-23



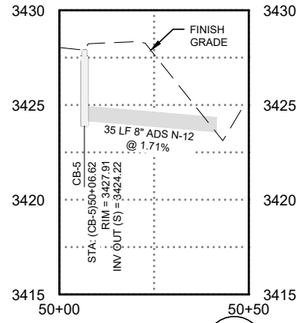
CB-2 PROFILE
SCALE: H:1" = 20' V:1"=4'
3 / C-23



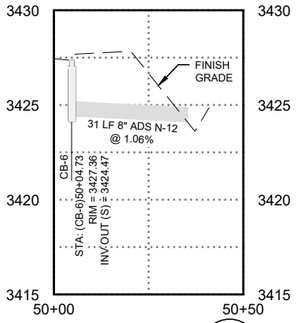
CB-3 PROFILE
SCALE: H:1" = 20' V:1"=4'
4 / C-23



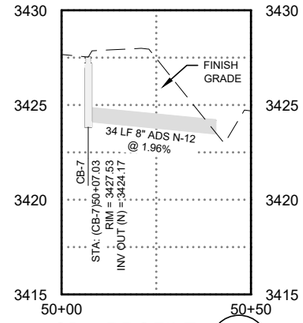
CB-4 PROFILE
SCALE: H:1" = 20' V:1"=4'
5 / C-23



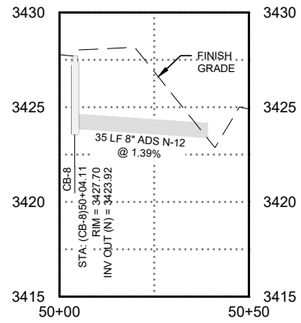
CB-5 PROFILE
SCALE: H:1" = 20' V:1"=4'
6 / C-23



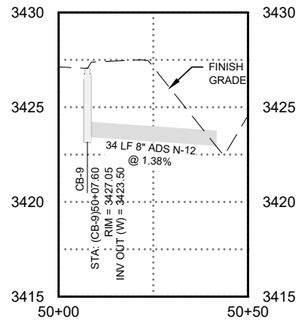
CB-6 PROFILE
SCALE: H:1" = 20' V:1"=4'
7 / C-23



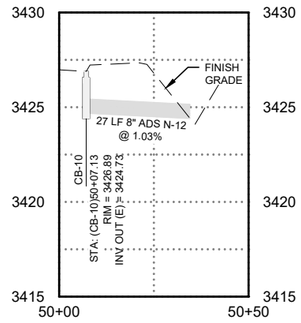
CB-7 PROFILE
SCALE: H:1" = 20' V:1"=4'
8 / C-23



CB-8 PROFILE
SCALE: H:1" = 20' V:1"=4'
9 / C-23



CB-9 PROFILE
SCALE: H:1" = 20' V:1"=4'
10 / C-23



CB-10 PROFILE
SCALE: H:1" = 20' V:1"=4'
11 / C-23

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy R&B\CAD_WORKING\STORMWATER PLAN.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" [redacted] 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DATE: DECEMBER 2023
PROJECT NO: 12602.001.01

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

STORMWATER PLAN & PROFILES

DRAWING NO. 29 OF 45
SHEET NO. C-23

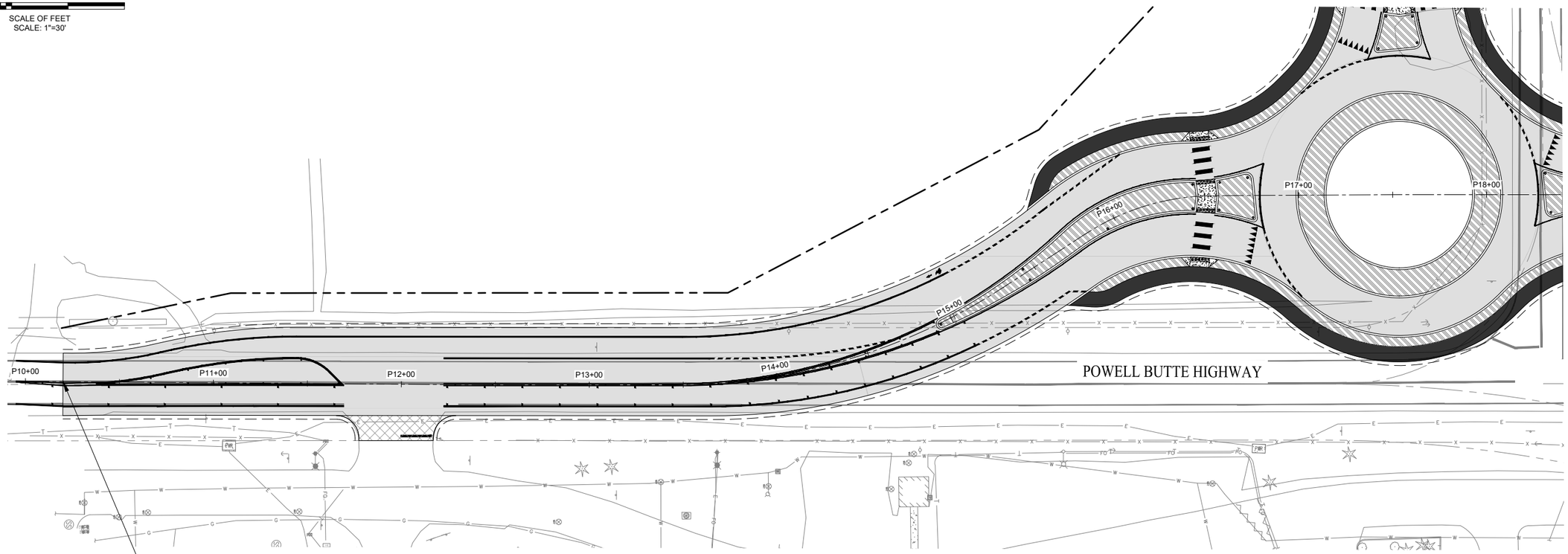
PAVING LEGEND

- PERPETUAL ASPHALT ROADWAY SECTION, SEE TYPICAL SECTION ON SHEET C-01
- ASPHALT SHARED USE PATHWAY, SEE DETAIL 5 ON SHEET C-03
- AIRPORT ENTRANCE RECONSTRUCTION, SEE DETAIL 7 ON SHEET C-03
- CONCRETE SURFACING, SEE DETAIL 3 ON SHEET C-03
- CONCRETE CURB RAMP, SEE DETAIL 6 ON SHEET C-03

N

30 0 30 60

SCALE OF FEET
SCALE: 1"=30'



BEGIN PERPETUAL PAVEMENT SECTION
STA: P10+20.00
SAND SEAL JOINT PER ODOT STD. DWG. RD610

SOUTH LEG PAVING PLAN

SCALE: 1" = 30'

1
C-24

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

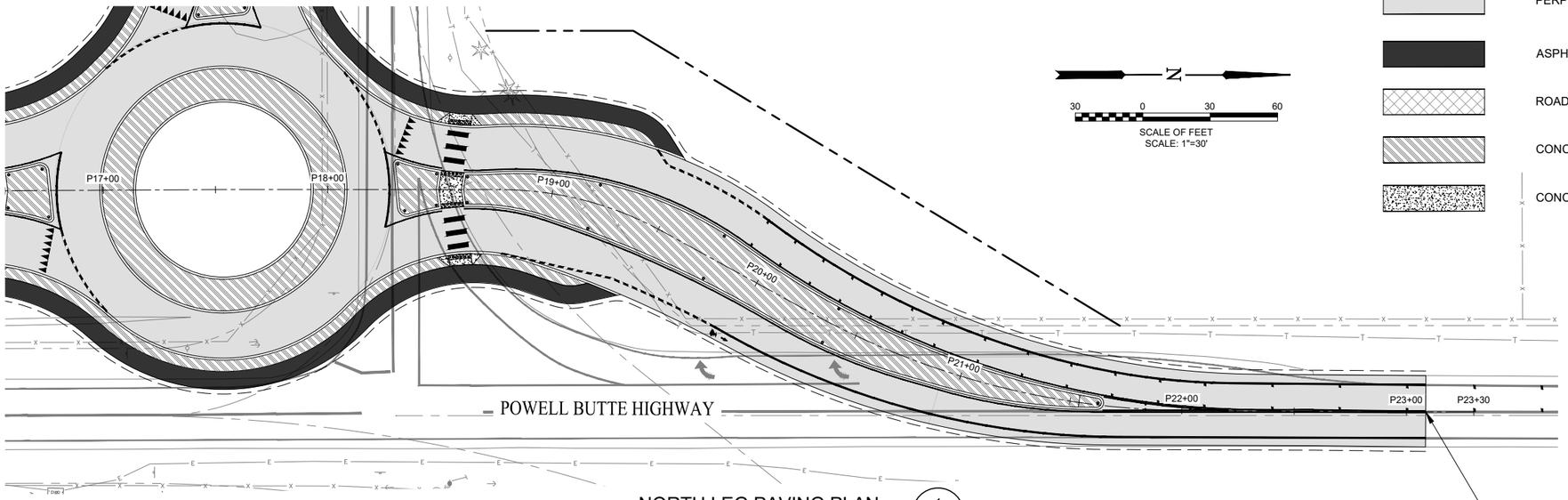
PAVING PLAN - SOUTH LEG

DRAWING NO. 30 OF 45
SHEET NO. C-24

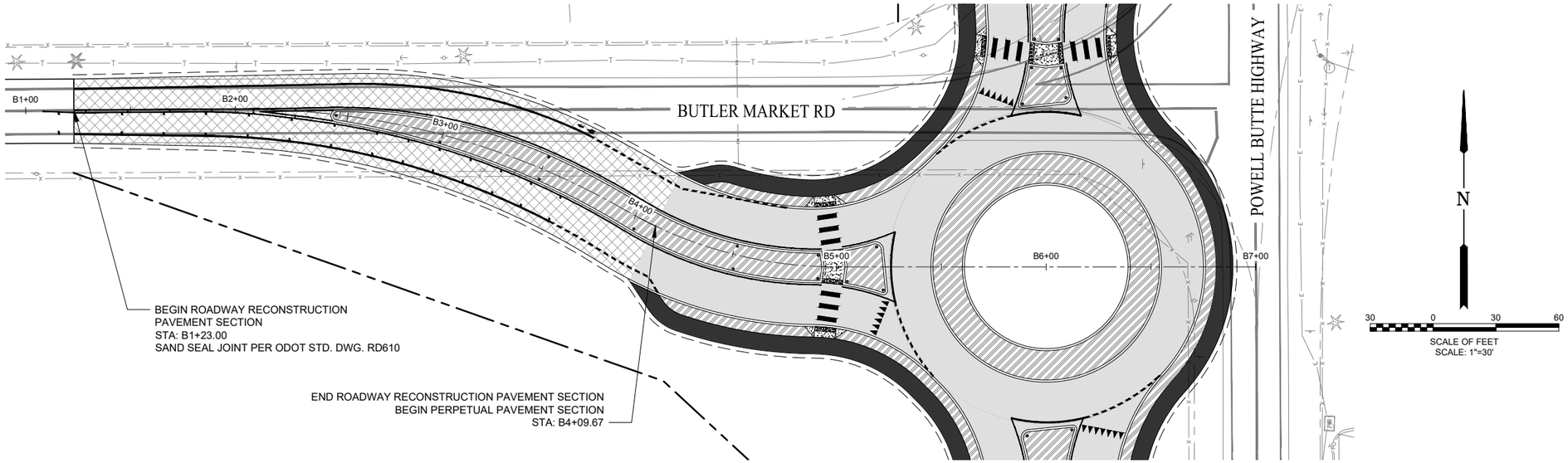
X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Rab\CAD_WORKING\C-17 PAVING PLAN.dwg

PAVING LEGEND

- PERPETUAL ASPHALT ROADWAY SECTION, SEE TYPICAL SECTIONS ON SHEETS C-01 & C-02
- ASPHALT SHARED USE PATHWAY, SEE DETAIL 5 ON SHEET C-03
- ROADWAY RECONSTRUCTION, SEE TYPICAL SECTIONS ON SHEETS C-01 & C-02
- CONCRETE SURFACING, SEE DETAIL 3 ON SHEET C-03
- CONCRETE CURB RAMP, SEE DETAIL 6 ON SHEET C-03



NORTH LEG PAVING PLAN (1 / C-25)
SCALE: 1" = 30'



WEST LEG PAVING PLAN (2 / C-25)
SCALE: 1" = 30'

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2009
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

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NO.	DATE	BY	APPR	REVISIONS

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DATE: DECEMBER 2023
PROJECT NO: 12602.001.01

DESIGNED BY: MST
DRAWN BY: AVF
CHECKED BY: RDV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

PAVING PLAN - NORTH & WEST LEGS

DRAWING NO. 31 OF 45
SHEET NO. C-25

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Rab\CADD_WORKING\C-17 PAVING PLAN.dwg

LANDSCAPING & FENCING LEGEND

PERMANENT SEEDING LIMITS

PROPOSED ROCK MULCH, 8" THICK

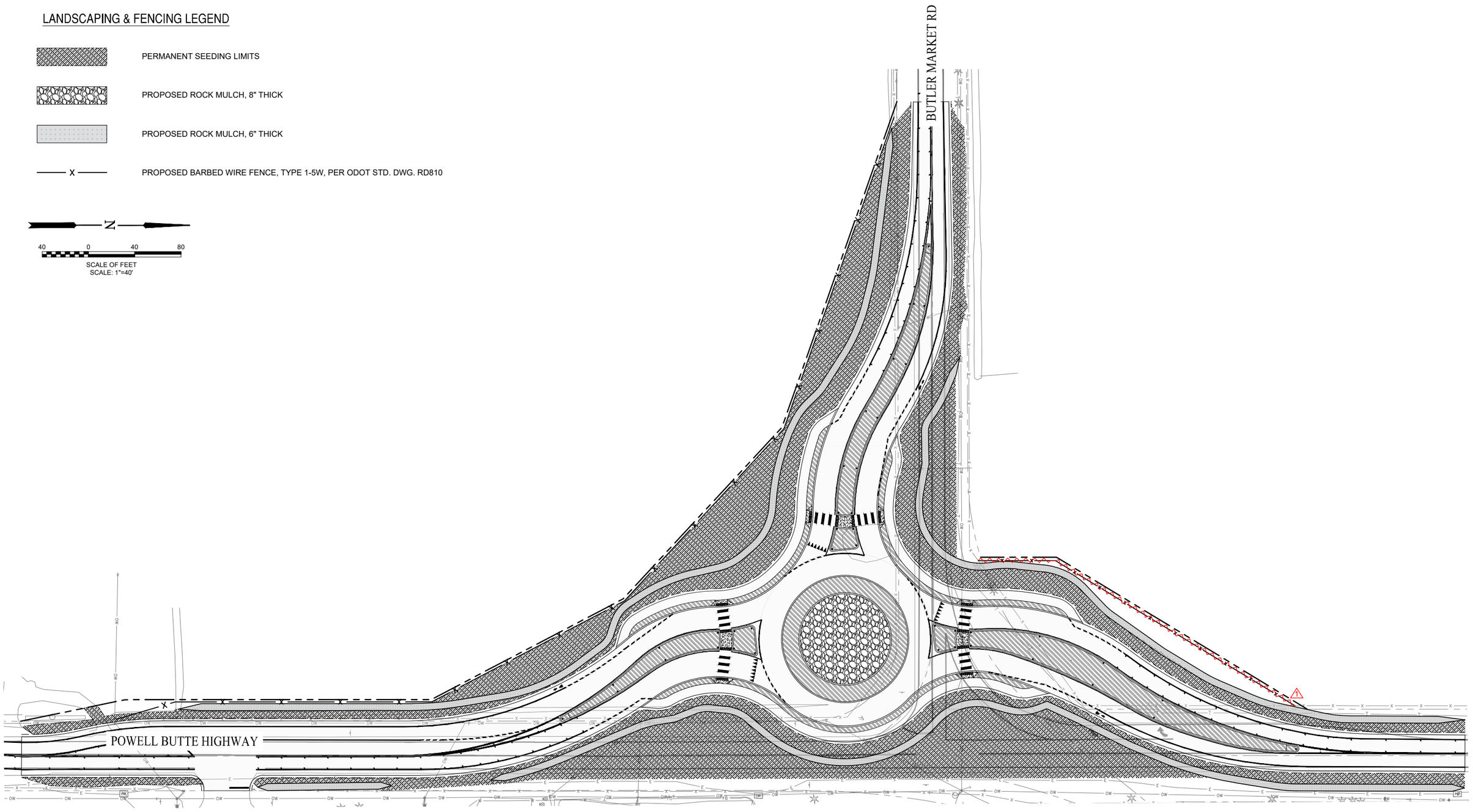
PROPOSED ROCK MULCH, 6" THICK

PROPOSED BARBED WIRE FENCE, TYPE 1-5W, PER ODOT STD. DWG. RD810

N

40 0 40 80

SCALE OF FEET
SCALE: 1"=40'



LANDSCAPING & FENCING PLAN
SCALE: 1" = 40'

1
C-26

X:\Projects\Deschutes County\Butler Market Powell Butte Hwy Rab\CAD_WORKING\30 LANDSCAPING & FENCING PLAN.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
72786PE
OREGON
JUN. 29, 2005
MATTHEW STEPHEN TIPTON
RENEWS: JUNE 29, 2024

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NO.	DATE	BY	APPR	REVISIONS
1	12/20	BW	CS	DELETE TYPE 1-5W FENCE

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: MST
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PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET ROAD
INTERSECTION IMPROVEMENT PROJECT

LANDSCAPING & FENCING PLAN

DRAWING NO. 32 OF 45
SHEET NO. C-26

LEGEND

(JB PP) FURNISH AND INSTALL PACIFIC POWER APPROVED JUNCTION BOX (GS 551) PLASTIC WITH LID.

(S) FURNISH AND INSTALL (S) INCH ELECTRICAL GRADE PVC OR FIBERGLASS CONDUIT.

(LP) PACIFIC POWER TO FURNISH AND INSTALL NEW PACIFIC POWER APPROVED STREET LIGHT POLE AND LED LUMINAIRE. SEE "STREET LIGHT POLE SCHEDULE" ON THIS SHEET.

(N) NEW LIGHT POLE NO. (N) FOR ROADWAY ILLUMINATION. SEE "STREET LIGHT POLE SCHEDULE" ON THIS SHEET.

(FND) FURNISH AND INSTALL PACIFIC POWER APPROVED FOUNDATION FOR STREET LIGHT POLE. FOUNDATION SHALL BE UTILITY VAULT PRECAST CONCRETE (PART 5CL–LB). CONTRACTOR TO ENSURE FOUNDATION BOLT CIRCLE PATTERN MATCHES POLE BASE. SEE DETAIL ON THIS SHEET.

[PL] FURNISH AND INSTALL POLY PULL TAPE (500 LB, NON–CONDUCTING).

(EX 2) RETAIN AND PROTECT EXISTING UTILITY POLE.

(PS) POWER SOURCE (SEE ILLUMINATION PLANS).

(RIS) INSTALL NEW 3 INCH PVC SCHEDULE 40 RISER CONDUIT ON EXISTING UTILITY POLE BRACKETS.

GENERAL NOTES

1. UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL UTILITIES ARE SHOWN. CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES THROUGH OUT CONSTRUCTION. MAINTAIN AND PROTECT ALL EXISTING UTILITIES UNLESS OTHERWISE NOTED.
2. ALL CONSTRUCTION, WORKMANSHIP, AND MATERIALS SHALL BE IN ACCORDANCE WITH THE PACIFIC POWER 2022 ELECTRIC SERVICE MANUAL.
3. 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 APPROVAL. ALL LIGHTING EQUIPMENT MUST BE PLACED IN THE RIGHT OF WAY.
4. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED. COORDINATE ALL WORK WITH UTILITIES COMPANIES TO ELIMINATE CONFLICTS.
5. ALL STREET LIGHT POLES, LUMINAIRE ARMS, LUMINAIRES, LAMPS, AND WIRING SHALL BE FURNISHED AND INSTALLED BY PACIFIC POWER. FOUNDATIONS, JUNCTION BOXES, CONDUITS, AND PULL ROPES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
6. FINAL LIGHT POLE LOCATIONS SHALL BE APPROVED IN THE FIELD BY THE ENGINEER PRIOR TO FOUNDATION INSTALLATION.
7. PER ELECTRONIC CODE OF FEDERAL REGULATIONS (e–CFR), 14 CFR 139.311, PREVENT ANY INTERFERENCE WITH AIR TRAFFIC CONTROL AND AIRCRAFT OPERATIONS DURING THE INSTALLATION OF THE LIGHTING SYSTEM.
8. COORDINATE WITH GABRIEL HOLTZ OF PPL (541–429–1778) FOR ALL POWER REQUIREMENTS. REFERENCE WORK ORDER #007023532.
9. ACCOMPANIED BY ODOT STD DRAWINGS TM471 AND TM472.

STREET LIGHT POLE SCHEDULE

POLE NO.	STATION	OFFSET* (ft)	LUMINAIRE						MOUNTING HEIGHT (ft)	ARM LENGTH (ft)	MODEL NUMBER	NOTES
			FIXTURE WATTS	PRODUCT	INITIAL LUMENS	LINE VOLT	DISTRIBUTION	BUG RATING				
1	P10+85	28.6 RT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
2	P12+24	26.7 RT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
3	P13+44	28.3 RT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
4	P14+63	34.3 RT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
5	P15+53	38.5 LT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
6	P16+00	42.6 RT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	6	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
7	P16+78	53.8 LT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	6	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
8	B6+90	0.2 RT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	6	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
9	B5+26	54.4 LT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	6	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
10	P18+44	46.2 RT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	6	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
11	P19+07	44.6 LT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
12	P20+04	40.4 LT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
13	P21+38	32.0 LT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
14	P22+78	27.9 LT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
15	B1+32	28.3 RT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
16	B2+20	29.2 RT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
17	B3+56	35.8 RT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.
18	B4+73	43.4 RT	76	GE EVOLVE	9600	120	III	B2-U0-G2	30	8	ERL1-0-10-C5-30-GRAY	FURNISHED AND INSTALLED BY PACIFIC POWER.

* OFFSET IS MEASURED FROM THE ROADWAY CONSTRUCTION CENTERLINE TO THE CENTER OF THE POLE.

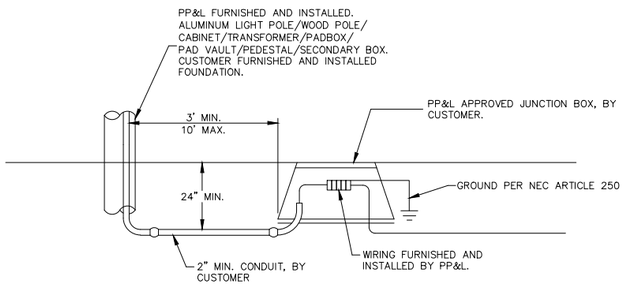
Roundabout Light Levels

Intersection	Roadway Classification	Achieved Values		Design Targets	
		Avg. Maintained Illuminance (fc)	Uniformity (Avg/Min)	Avg. Maintained Illuminance (fc)	Uniformity (Avg/Min)
NE Butler Market Rd/Powell Butte Rd	Major/Major	0.9	3.0	≥0.8	≤3.0:1

NOTE: VERTICAL ILLUMINANCE AT ALL UNCONTROLLED CROSSING LOCATIONS MEETS OR EXCEEDS THE AVERAGE HORIZONTAL ILLUMINANCE FOR EACH DRIVING DIRECTION.

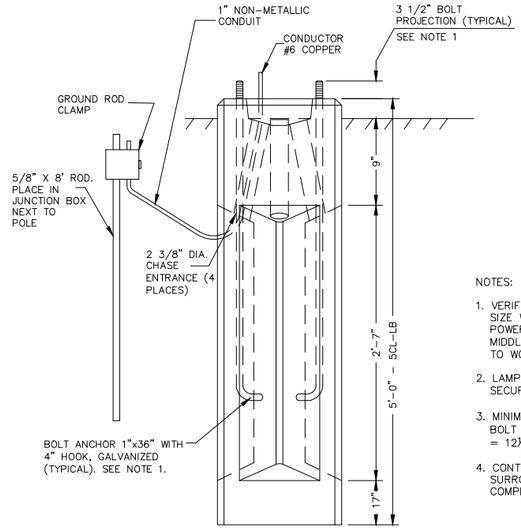
Roadway Light Levels

Segment	Roadway Classification	Achieved Values		Design Targets	
		Avg. Maintained Illuminance (fc)	Uniformity (Avg/Min)	Avg. Maintained Illuminance (fc)	Uniformity (Avg/Min)
NE Butler Market Rd	Major	0.8	2.8	≥0.8	≤3.0:1
Powell Butte Rd (North Leg)	Major	0.8	2.6	≥0.8	≤3.0:1
Powell Butte Rd (South Leg)	Major	0.8	2.8	≥0.8	≤3.0:1

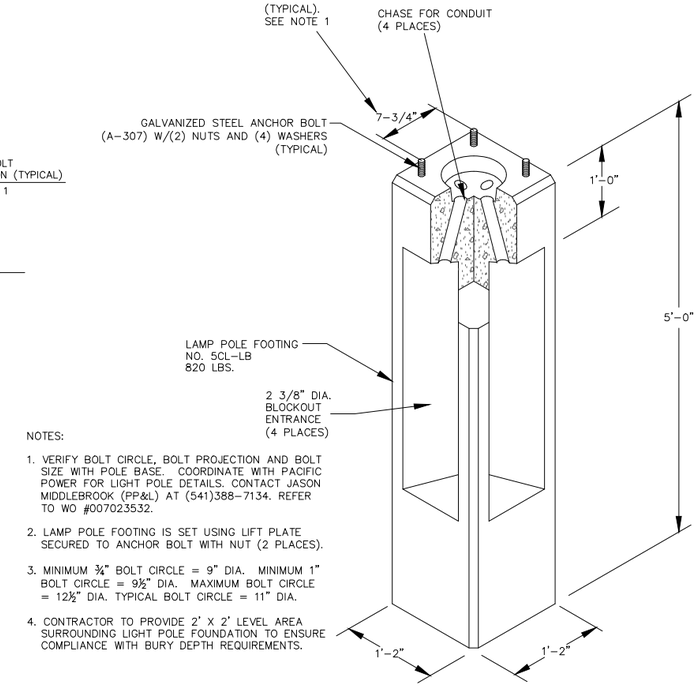


NOTE: A 90° SWEEP IS REQUIRED FOR PEDESTALS OR PADBOXES.

STREET LIGHTING POINTS OF CONNECTION DIAGRAM



SIDE VIEW



NOTES:

1. VERIFY BOLT CIRCLE, BOLT PROJECTION AND BOLT SIZE WITH POLE BASE. COORDINATE WITH PACIFIC POWER FOR LIGHT POLE DETAILS. CONTACT JASON MIDDLEBROOK (PP&L) AT (541)388–7134. REFER TO WO #007023532.
2. LAMP POLE FOOTING IS SET USING LIFT PLATE SECURED TO ANCHOR BOLT WITH NUT (2 PLACES).
3. MINIMUM ¾" BOLT CIRCLE = 9" DIA. MINIMUM 1" BOLT CIRCLE = 9½" DIA. MAXIMUM BOLT CIRCLE = 12½" DIA. TYPICAL BOLT CIRCLE = 11" DIA.
4. CONTRACTOR TO PROVIDE 2' X 2' LEVEL AREA SURROUNDING LIGHT POLE FOUNDATION TO ENSURE COMPLIANCE WITH BURY DEPTH REQUIREMENTS.

STREET LIGHT POLE FOUNDATION DETAIL

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 74,348 — Digitally Signed 2023.10.16 09:43:47-07'00' OREGON JUNE 12, 2015 STEVEN J. BOICE — EXPIRES: DEC. 31, 2023

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" ——— 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

DKS
1050 SW 6th Avenue, Suite 600
Portland, Oregon 97204
www.dksassociates.com

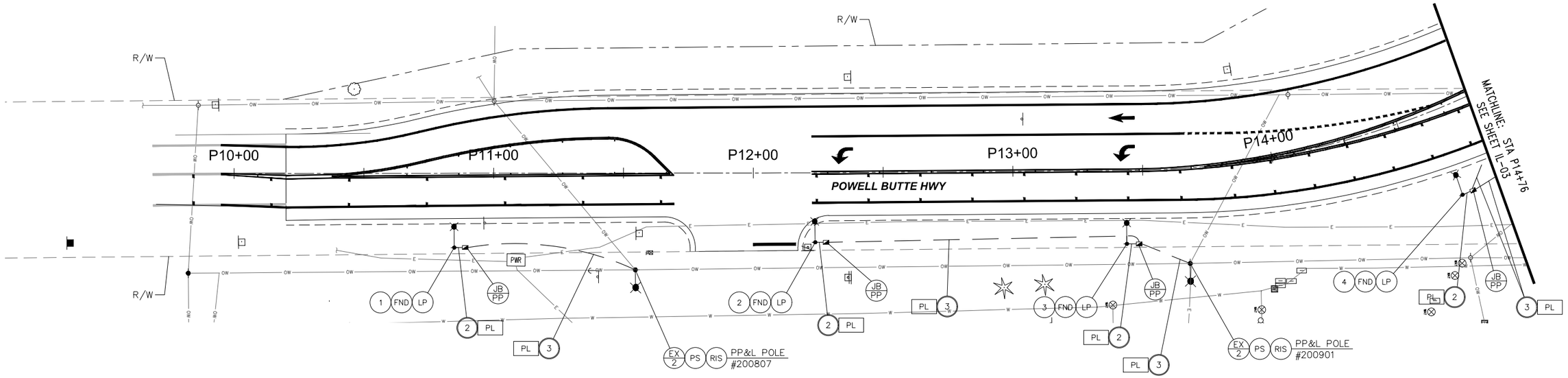
DESIGNED BY: EZA
DRAWN BY: KCJ
CHECKED BY: SXV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

ILLUMINATION PLAN LEGEND

DRAWING NO. 33 OF 45
SHEET NO. IL-01

X:\Projects\2022\P22207.000 (Deschutes Co. Butler Mkt\Powell Butte RAB)\CAD\IL-01-IL-05.dwg



N

0 10' 20' 40'
1 inch = 20 feet

X:\Projects\2022\P22207-000 [Deschutes Co. Butler Mkt\Powell Butte RAB\]CAD\IL-01-IL-05.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER
74,348
Digitally Signed 2023.11.10 09:15:21-08'00'
OREGON
JUNE 12, 2013
STEVEN J. BOICE
EXPIRES: DEC. 31, 2023

VERIFY SCALES
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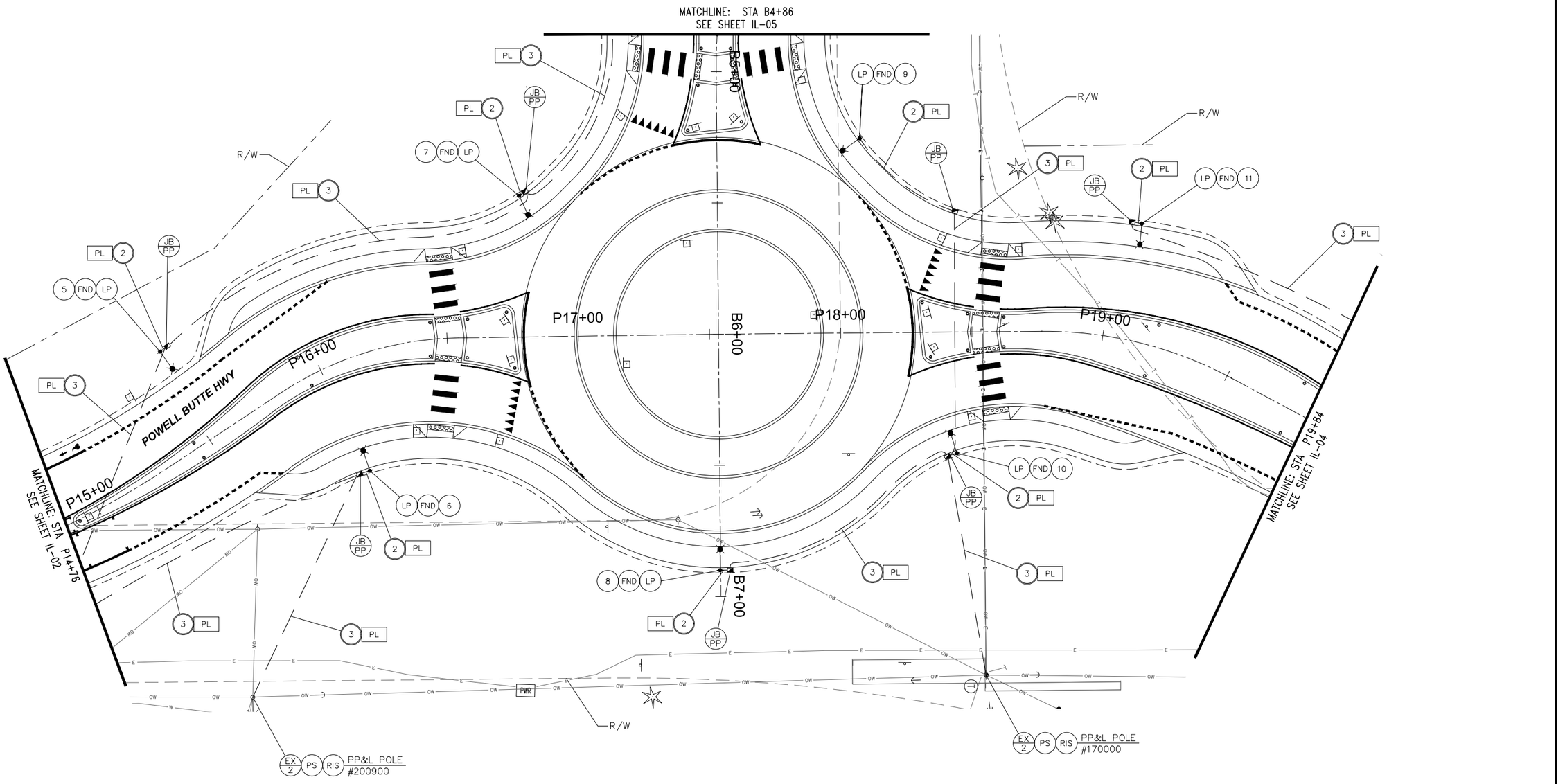
DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

ILLUMINATION PLAN

DRAWING NO. 34 OF 45
SHEET NO. IL-02



N

0 10' 20' 40'
1 inch = 20 feet

X:\Projects\2022\P22207-000 (Deschutes Co. Butler Mkt\Powell Butte RAB)\CAD\IL-01-IL-05.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 74,348 — Digitally Signed 2023.11.10 09:15:41-08'00' OREGON — JUNE 12, 2015 — STEVEN J. BOICE — EXPIRES: DEC. 31, 2023

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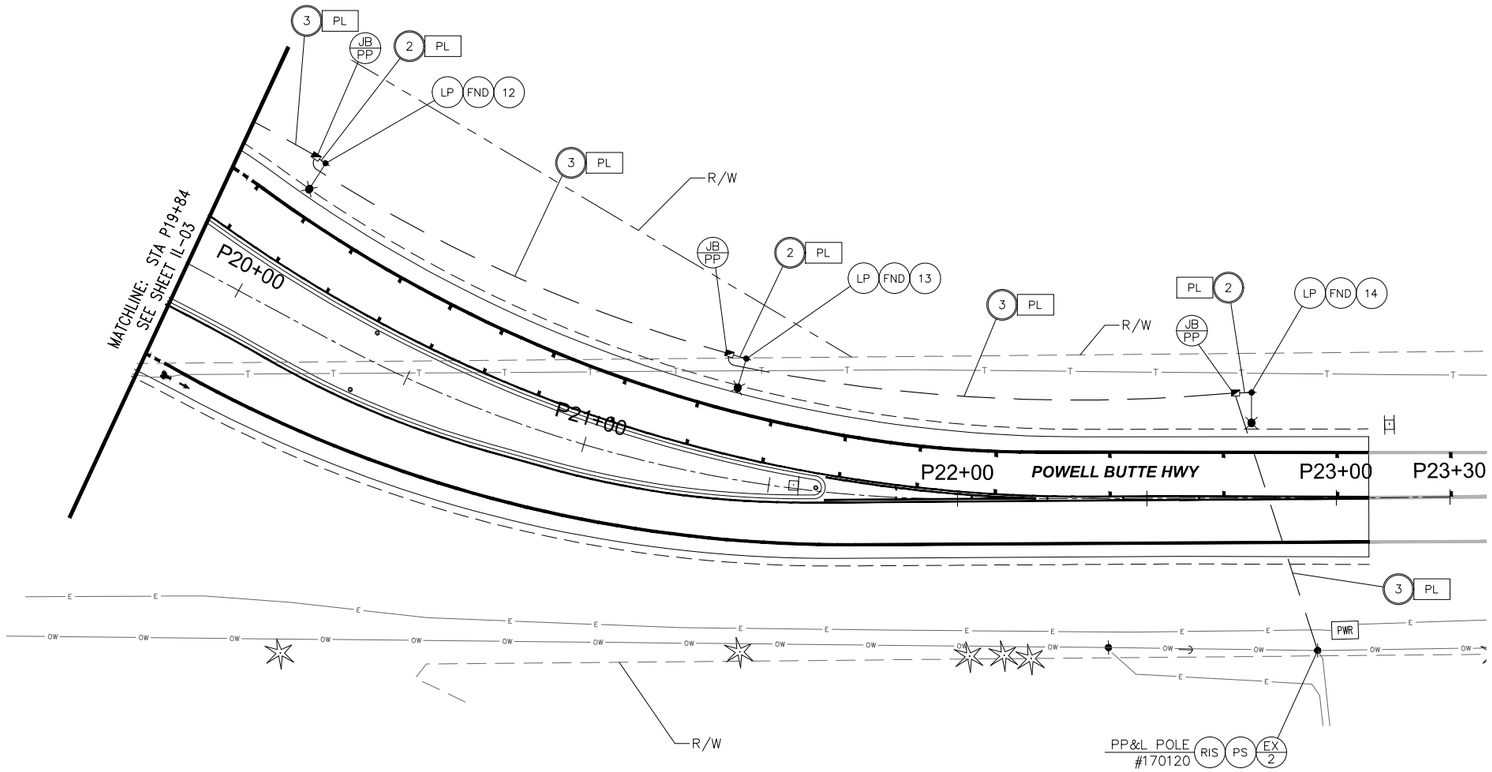
DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD INTERSECTION IMPROVEMENT PROJECT

ILLUMINATION PLAN

DRAWING NO. 35 OF 45
SHEET NO. IL-03



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DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 74,348 OREGON
Digitally Signed 2023.11.10 09:15:58-08'00'
JUNE 12, 2015 STEVEN J. BOICE
EXPIRES: DEC. 31, 2023

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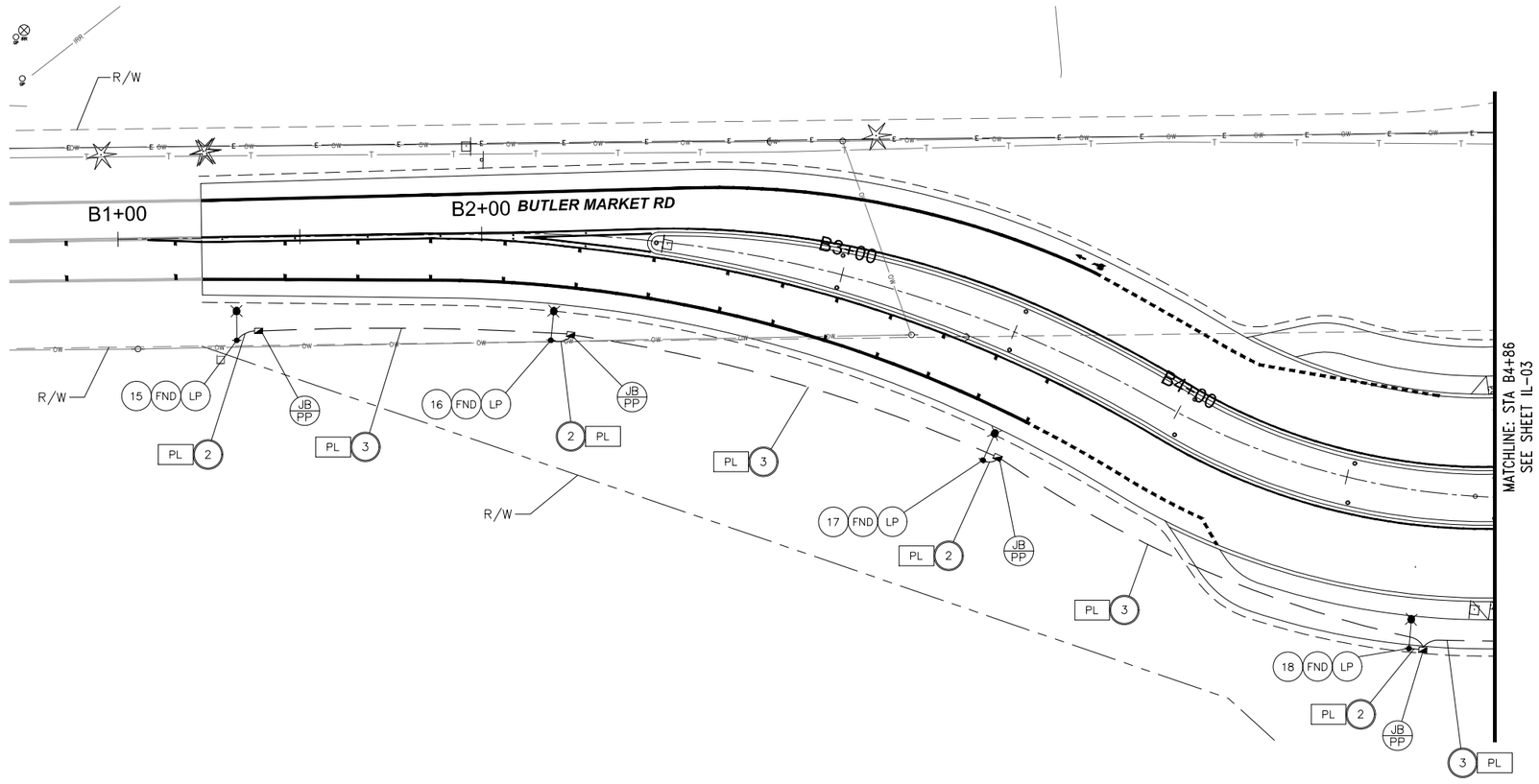
DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD INTERSECTION IMPROVEMENT PROJECT

ILLUMINATION PLAN

DRAWING NO. 36 OF 45
SHEET NO. IL-04



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DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 74,348 — Digitally Signed 2023.11.10 09:16:33-08'00' OREGON — JUNE 12, 2015 — STEVEN J. BOICE — EXPIRES: DEC. 31, 2023

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SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD INTERSECTION IMPROVEMENT PROJECT

ILLUMINATION PLAN

DRAWING NO. 37 OF 45
SHEET NO. IL-05

L E G E N D

- W-2 — *Inst. 8" white line*
- Y — *Inst. 4" yellow line*
- WD-2 — *Inst. 8" white dotted line*
- YLD — *Inst. yield line (white)*
- LA — *Inst. left turn arrow (white)*
- SA — *Inst. straight arrow (white)*
- D / R-20 — *Inst. double no-pass reflective recessed pavement markers*
- ND / R-20 — *Inst. narrow double no-pass with reflective recessed pavement markers*
- S — *Inst. stop bar 1' white bar*
- CW-SC — *Inst. staggered continental crosswalk*
- TB — *Inst. transverse speed bars. See detail on this sheet.*
- BS — *Inst. bike marking (white)*
- N — *Install new sign (N).*
- N / M — *Install new sign (N) on new (M) sign support.*
- EXN — *Maintain and protect existing sign (N) and support.*
- RSN / M — *Remove and save existing sign (N) and remove (M) sign support.*
- RIN / M — *Reinstall existing sign (N) on new (M) sign support.*
- RXN / M — *Remove existing sign (N) and (M) sign support.*

N = Sign Number

M = Material options

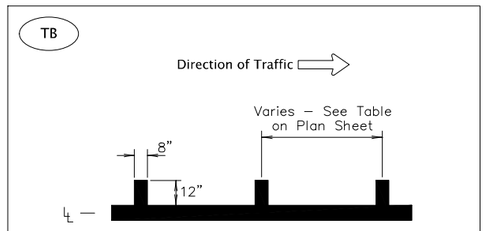
W = Wood Sign Post
ST = Perforated Steel Square Tube Sign Support

NOTES

1. ALIGN CROSSWALKS WITH SIDEWALK RAMP LOCATIONS OR 5 FT. BACK OF EXTENDED EDGE LINE, EDGE OF PAVEMENT, OR CURB FACE.
2. REMOVAL OF EXISTING PAVEMENT MARKINGS IS TO BE DETERMINED IN THE FIELD BY THE ENGINEER. PAVEMENT MARKINGS AND STRIPING SHALL BE REMOVED PER THE OREGON STANDARD SPECIFICATIONS AND PROJECT SPECIAL PROVISIONS. REMOVE ALL CONFLICTING STRIPING.
3. ALL PAVEMENT MARKING MATERIALS SHALL BE INSTALLED AS PER OREGON STANDARD SPECIFICATIONS AND PROJECT SPECIAL PROVISIONS.
4. ALL PAINT AND PAVEMENT MARKINGS SHALL BE FROM THE ODOT QUALIFIED PRODUCTS LISTING.
5. FOR DETAILS NOT SHOWN SEE REMAINING TM500 SERIES OF THE OREGON STANDARD DRAWINGS.
6. ALL PAVEMENT MARKINGS, WITH THE EXCEPTION OF TRANSVERSE BARS, SHALL BE "METHOD A: THERMOPLASTIC, EXTRUDED OR SPRAYED, SURFACE, NON-PROFILED".
7. ALL TRANSVERSE BAR, CROSSWALKS, AND LEGEND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC, TYPE B-HS.

℄ — LANE LINE DIMENSIONS ARE SHOWN ON THE STRIPING PLANS.

TB



8" WHITE TRANSVERSE BAR

ODOT STANDARD DRAWINGS

- TM200 SIGN INSTALLATION DETAILS
- TM201 MISCELLANEOUS SIGN PLACEMENT DETAILS
- TM223 CONVENTIONAL ROADS DIRECTIONAL SIGN LAYOUT STREET NAME SIGNS
- TM500 PAVEMENT MARKING STANDARD DETAIL BLOCKS
- TM501 PAVEMENT MARKING STANDARD DETAIL BLOCKS
- TM502 PAVEMENT MARKING STANDARD DETAIL BLOCKS
- TM503 PAVEMENT MARKING STANDARD DETAIL BLOCKS
- TM515 PAVEMENT MARKERS
- TM517 RECESSED PAVEMENT MARKERS
- TM530 INTERSECTION PAVEMENT MARKINGS (CROSSWALK, STOP BAR, BIKE LANE STENCIL)
- TM531 TURN ARROW MARKING DETAILS
- TM560 ALIGNMENT LAYOUT: GENERAL
- TM561 ALIGNMENT LAYOUT: LEFT TURN LANE, CENTERLINE & MEDIANS
- TM570 TRAFFIC DELINEATORS
- TM635 BREAKAWAY SIGN & LUMINAIRE SUPPORTS – SUPPORT LOCATION GUIDELINES
- TM671 3 SECOND GUST WIND SPEED MAP
- TM676 SIGN ATTACHMENTS
- TM681 PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION
- TM688 PERFORATED STEEL SQUARE TUBE (PSST) SLIP BASE FOUNDATION

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 74,348 — Digitally Signed 2023.09.26 22:54:01-07'00' OREGON — JUNE 12, 2015 — STEVEN J. BOICE — EXPIRES: DEC. 31, 2023

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

DKS
1050 SW 6th Avenue, Suite 600
Portland, Oregon 97204
www.dksassociates.com

DESIGNED BY: EZA
DRAWN BY: KCJ
CHECKED BY: SXV
DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

SIGNING/STRIPING LEGEND

DRAWING NO. 38 OF 45
SHEET NO. SS-01

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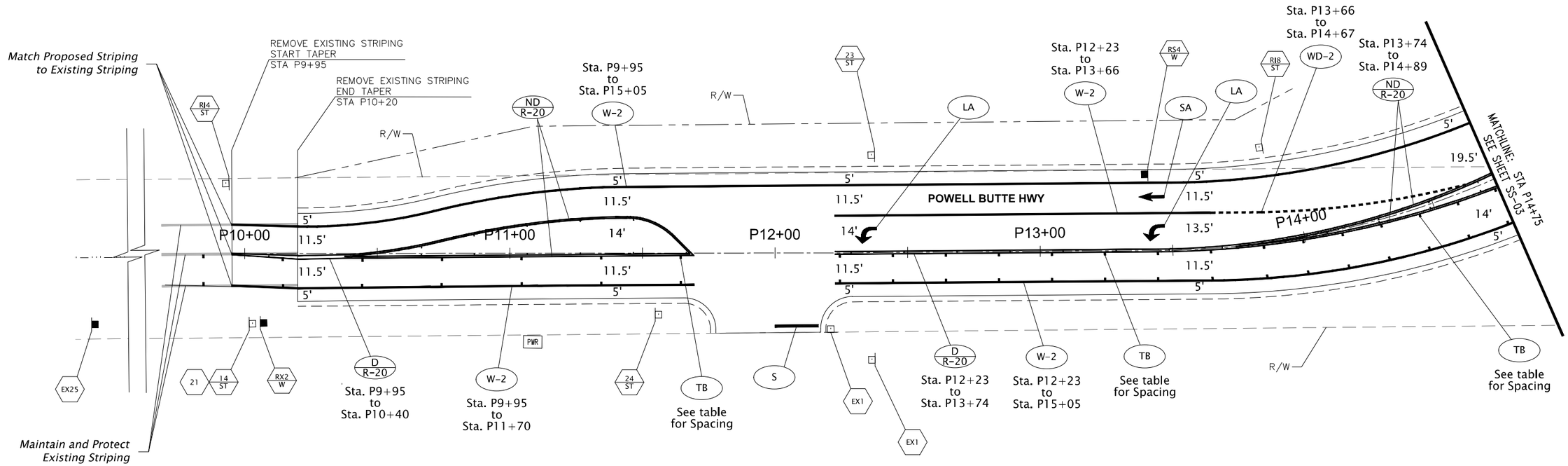

Speed Reduction Transverse Bar Spacing

Powell Butte Highway Stations	*Spacing*
P9+85 to P12+25	*30'*
P12+25 to P13+85	*20'*
P13+85 to P15+05	*15'*

N

0 10' 20' 40'
1 inch = 20 feet

X:\Projects\2022\P22207-000 (Deschutes Co. Butler Mkt\Powell Butte RAB)\CAD\SS-01-SS-08.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

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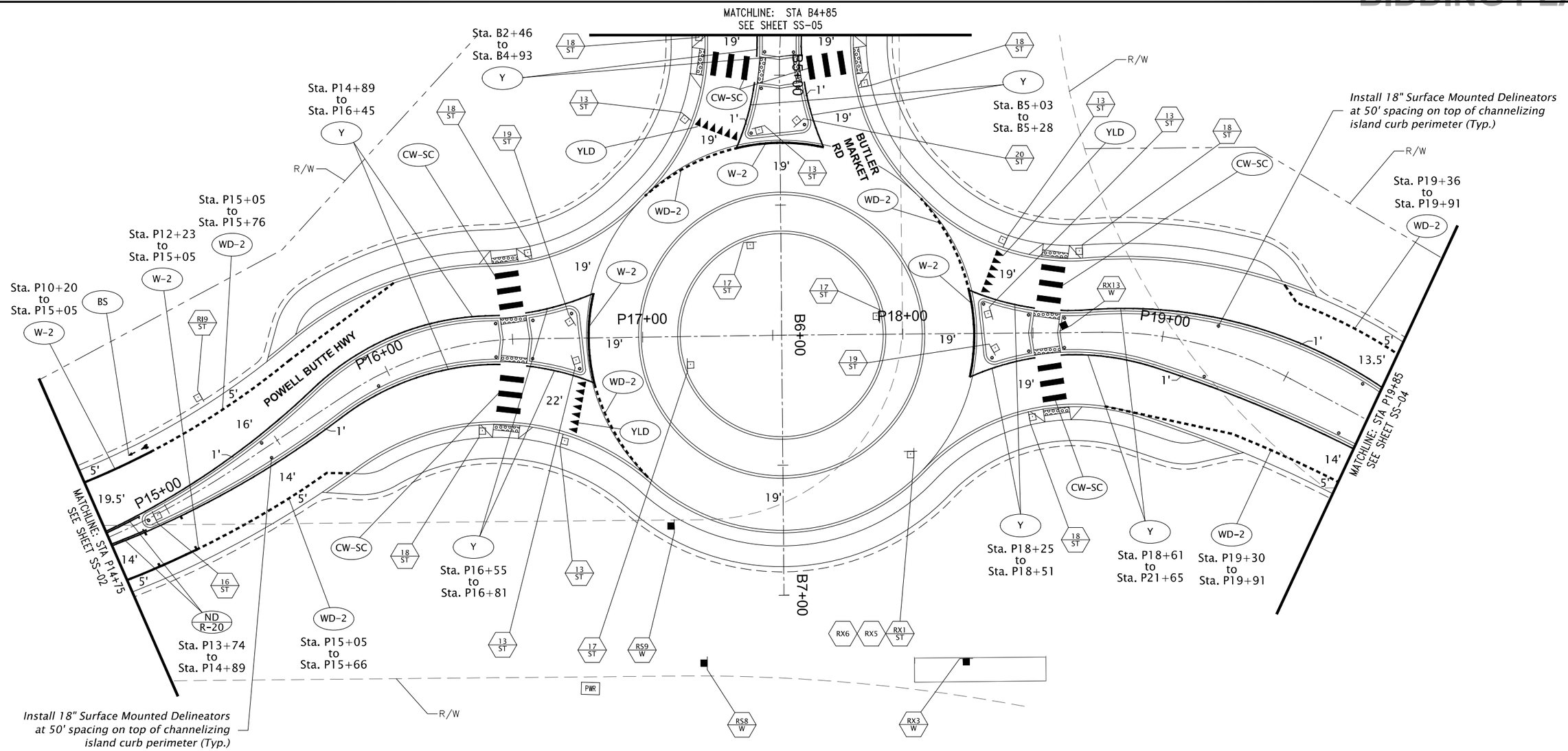
DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

SIGNING/STRIPING PLAN

DRAWING NO. 39 OF 45
SHEET NO. SS-02



0 10' 20' 40'
1 inch = 20 feet

X:\Projects\2022\P22207-000 (Deschutes Co. Butler Mkt\Powell Butte RAB)\CAD\SS-01-SS-08.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

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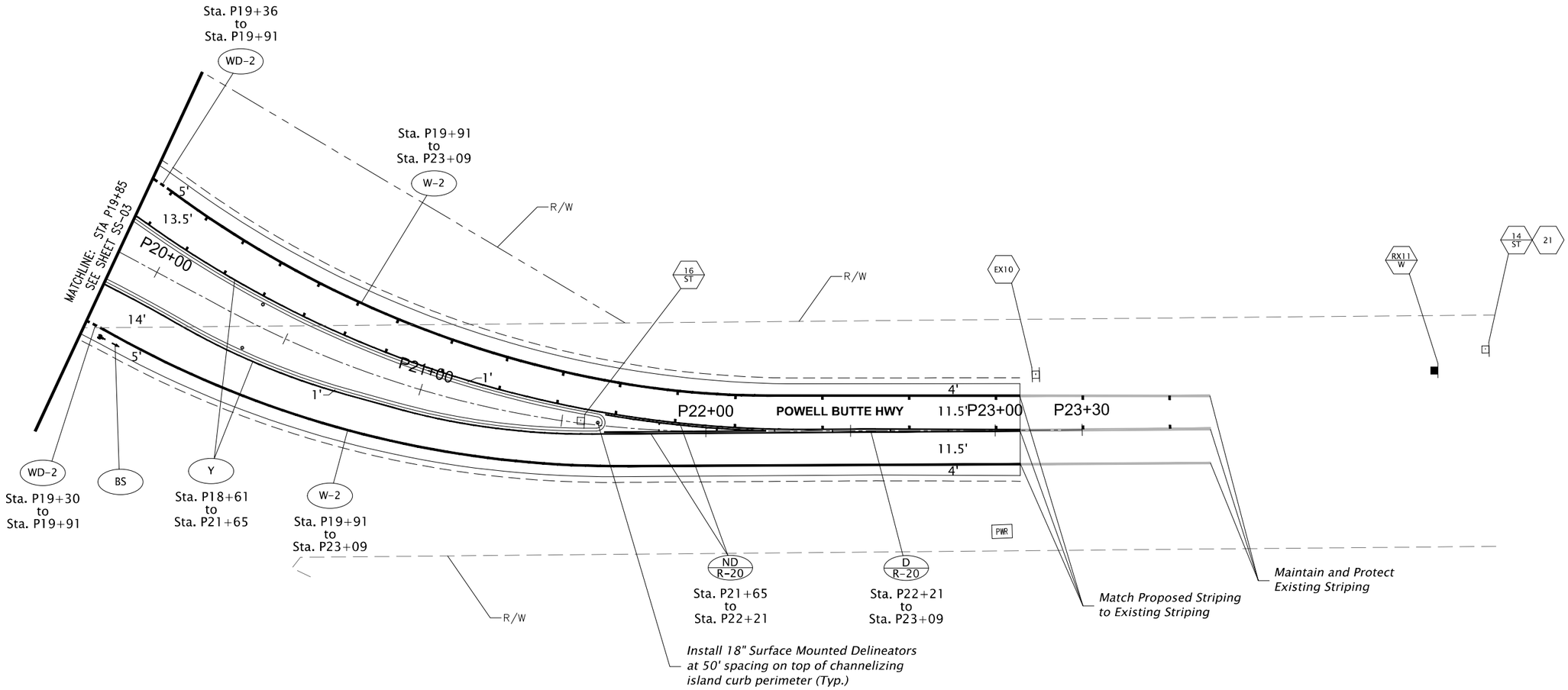
DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

SIGNING/STRIPING PLAN

DRAWING NO. 40 OF 45
SHEET NO. SS-03



Speed Reduction Transverse Bar Spacing	
Powell Butte Highway Stations	*Spacing*
P19+90 to P20+85	*15'*
P20+85 to P22+10	*20'*
P22+10 to P23+60	*30'*

N

0 10' 20' 40'
1 inch = 20 feet

X:\Projects\2022\P22207-000 (Deschutes Co. Butler Mkt\Powell Butte RAB\ICAD\SS-01-SS-08.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

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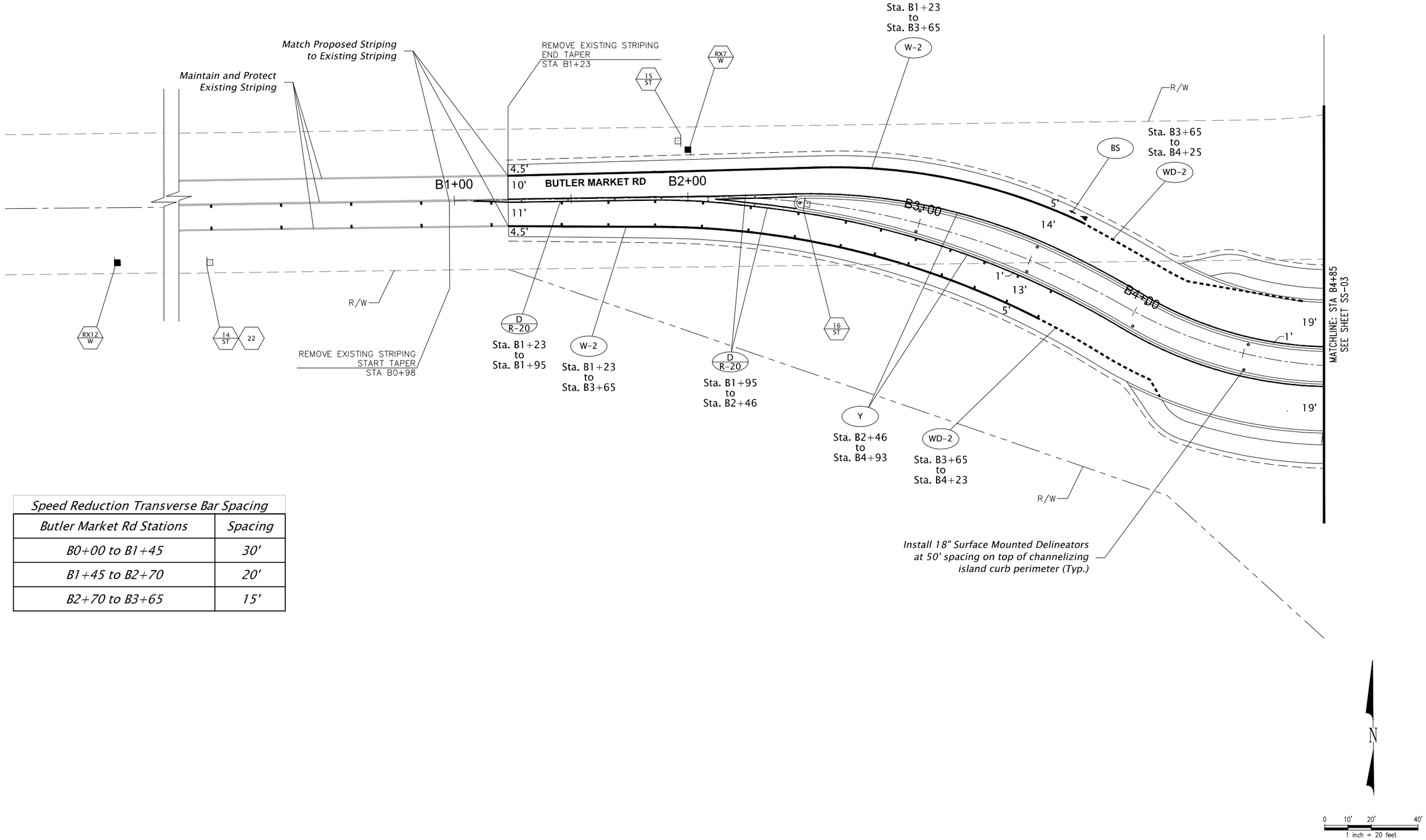
PROJECT NO: 12602.001.01
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

SIGNING/STRIPING PLAN

DRAWING NO. 41 OF 45
SHEET NO. SS-04



Speed Reduction Transverse Bar Spacing

Butler Market Rd Stations	*Spacing*
B0+00 to B1+45	*30'*
B1+45 to B2+70	*20'*
B2+70 to B3+65	*15'*

DESCHUTES COUNTY ROAD DEPARTMENT

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0" ▬ 1"
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DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

SIGNING/STRIPING PLAN

DRAWING NO. 42 OF 45
SHEET NO. SS-05

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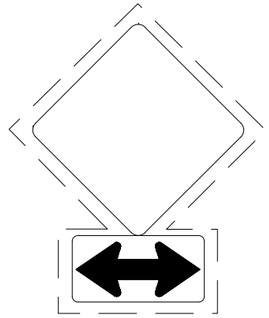
Sign No. 1

Sign No. 2

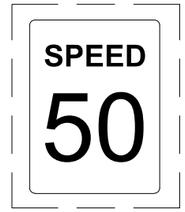


Sign No. 3

Sign No. 4

Sign No. 5

Sign No. 6



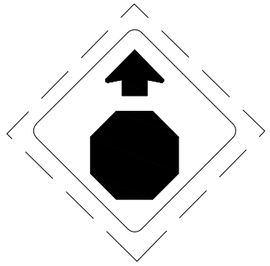
Sign No. 7

Sign No. 8

Sign No. 9

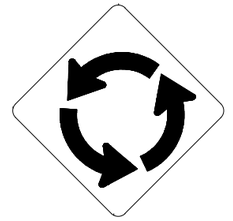
Sign No. 10

Sign No. 11



Sign No. 12

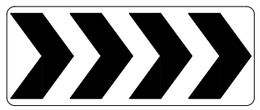
Sign No. 13
R1-2



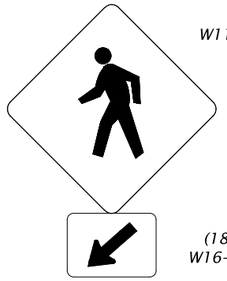
Sign No. 14
W2-6

Sign No. 15
R2-1

Sign No. 16
R4-7



Sign No. 17
R6-4b



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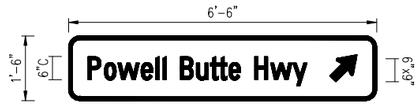

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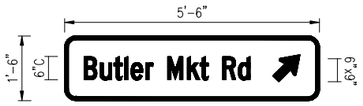
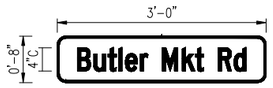
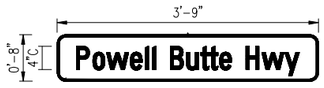


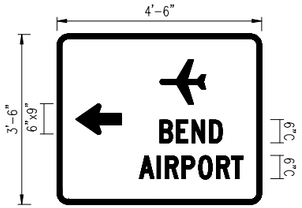
Sign No. 20



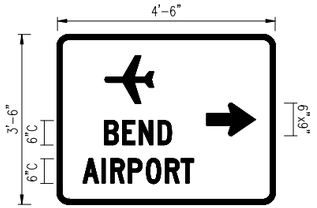
Sign No. 21
W16-8P



Sign No. 22
W16-8P



Sign No. 23



Sign No. 24

Sign No. 25

NOTE:
Signs shown with broken borders are existing signs.

X:\Projects\2022\P22207-000 (Deschutes Co. Butler Mkt\Powell Butte RAB)\CAD\SS-01-SS-08.dwg

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 74,348 — Digitally Signed 2023.09.26 22:56:13-07'00' OREGON — JUNE 12, 2015 — STEVEN J. BOICE — EXPIRES: DEC. 31, 2023

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

DKS
1050 SW 6th Avenue, Suite 600
Portland, Oregon 97204
www.dksassociates.com

DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
DESIGNED BY: EZA
DRAWN BY: KCJ
CHECKED BY: SXV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

SIGNING DETAILS

DRAWING NO. 43 OF 45
SHEET NO. SS-06

SIGN NO.	SIGN LOCATION 4/	SIGN DIMENSIONS		SUB-STRATE				COLOR 1/					LEGEND TYPE		SIGN NO. 2/																	POST		FOOTING		REMARKS 6/
								BACK-GROUND		LEGEND																	SECONDARY SIGN (TM676 & TM678)								
		WIDTH	HEIGHT	PLYWOOD	SHEET ALUMINUM	EXTRUDED ALUMINUM (ODOT TM675)	DOUBLE-SIDED	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	ASTM TYPE III OR TYPE IV	ASTM TYPE IX	NON-REFLECTIVE	PERMANENT	DEMOUNTABLE		WOOD POST (ODOT TM670-671, TM676)	PERF. STEEL SQUARE TUBE (ODOT TM671, TM676, TM681, TM687-689)	TRIANGULAR BASE BREAKAWAY (ODOT TM602)	MULTI-POST BREAKAWAY (ODOT TM220, TM600-601)	STAINLESS STEEL CLAMP (SSC) (TM677)	SIGNAL POLE MOUNT (ODOT TM680)	BRIDGE RAIL MOUNT	STRUCTURE MOUNT	CANTILEVER	CROSSWALK CLOSURE BARRICADE (ODOT TM240)	VERTICAL SIGN MOUNT ON EXISTING STRUCTURE	ADJUSTABLE SIGN MOUNT	MAST ARM SNS MOUNT	C 4 X 5.4	C 4 X 7.25	ROUTE MARKER FRAME (ODOT TM676 & TM678)	LENGTH (FT.)	SIZE (BASED ON ESTIMATED LENGTH)	LENGTH 5/ (MUST BE FIELD VERIFIED)	LOCATION 3/	MIN. DEPTH	
4	*P9+93 LT*	*(36")*	*(66")*		*EX*										*4*		✓															*2-1/4" & 2-1/2"-10 GA.*	*13'-5"*	*15.5'*	*3'-0"*	*3/ EDGE OF TRAVEL LANE, SLIP BASE, REINSTALL SIGN ON NEW PSST*
8	*P13+87 LT*	*(36")*	*(72")*		*EX*										*8*		✓															*2-1/2"-10 GA.*	*14'-0"*	*10.5'*	*3'-0"*	*3/ EDGE OF TRAVEL LANE, SLIP BASE, REINSTALL SIGN ON NEW PSST*
9	*P15+42 LT*	*(36")*	*(48")*		*EX*										*9*		✓															*2-1/2"-10 GA.*	*12'-0"*	*10.5'*	*3'-0"*	*3/ EDGE OF TRAVEL LANE, SLIP BASE, REINSTALL SIGN ON NEW PSST*
13	*B5+20 RT*	*36"*	*36"*		✓			*R*		*SW*			✓		*13*		✓															*2-1/2"-10 GA.*	*10'-0"*	*3.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
13	*B5+21 RT*	*36"*	*36"*		✓			*R*		*SW*			✓		*13*		✓															*2-1/2"-10 GA.*	*10'-0"*	*4.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
13	*P16+70 RT*	*36"*	*36"*		✓			*R*		*SW*			✓		*13*		✓															*2-1/2"-10 GA.*	*10'-0"*	*3.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
13	*P16+75 RT*	*36"*	*36"*		✓			*R*		*SW*			✓		*13*		✓															*2-1/2"-10 GA.*	*10'-0"*	*4.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
13	*P18+33 LT*	*36"*	*36"*		✓			*R*		*SW*			✓		*13*		✓															*2-1/2"-10 GA.*	*10'-0"*	*3.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
13	*P18+34 LT*	*36"*	*36"*		✓			*R*		*SW*			✓		*13*		✓															*2-1/2"-10 GA.*	*10'-0"*	*4.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
14	*B0+00 RT*	*36"*	*36"*		✓			*Y*				*BK*	✓		*14*		✓															*2-1/2"-10 GA.*	*13'-0"*	*13.9'*	*3'-0"*	*3/ EDGE OF TRAVEL LANE, SLIP BASE, INST. ABOVE SIGN 21*
14	*P10+03 RT*	*36"*	*36"*		✓			*Y*				*BK*	✓		*14*		✓															*2-1/2"-10 GA.*	*13'-0"*	*14.4'*	*3'-0"*	*3/ EDGE OF TRAVEL LANE, SLIP BASE, INST. ABOVE SIGN 21*
14	*P24+69 LT*	*36"*	*36"*		✓			*Y*				*BK*	✓		*14*		✓															*2-1/2"-10 GA.*	*13'-0"*	*16.2'*	*3'-0"*	*3/ EDGE OF TRAVEL LANE, SLIP BASE, INST. ABOVE SIGN 21*
15	*B1+96 LT*	*30"*	*36"*		✓			*SW*				*BK*	✓		*15*		✓															*2-1/2"-10 GA.*	*11'-0"*	*13.0'*	*3'-0"*	*3/ EDGE OF TRAVEL LANE, SLIP BASE*
16	*B2+51 C*	*24"*	*30"*		✓			*SW*				*BK*	✓		*16*		✓															*2-1/2"-10 GA.*	*10'-0"*	*3.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
16	*P14+96 C*	*24"*	*30"*		✓			*SW*				*BK*	✓		*16*		✓															*2-1/2"-10 GA.*	*10'-0"*	*3.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
16	*P21+57 C*	*24"*	*30"*		✓			*SW*				*BK*	✓		*16*		✓															*2-1/2"-10 GA.*	*10'-0"*	*3.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
17	*B5+65 RT*	*60"*	*24"*		✓			*SW*				*BK*	✓		*17*		✓															*2-1/2"-10 GA.*	*9'-0"*	*18.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
17	*P17+18 RT*	*60"*	*24"*		✓			*SW*				*BK*	✓		*17*		✓															*2-1/2"-10 GA.*	*9'-0"*	*18.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
17	*P17+90 LT*	*60"*	*24"*		✓			*SW*				*BK*	✓		*17*		✓															*2-1/2"-10 GA.*	*9'-0"*	*18.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
18	*B4+87 RT*	*30"*	*30"*		✓			*Y*				*BK*	✓		*18*		✓															*2-1/2"-10 GA.*	*12'-0"*	*3.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
18a	*B4+87 RT*	*24"*	*12"*		✓			*Y*				*BK*	✓		*18a*																				
18	*B5+03 LT*	*30"*	*30"*		✓			*Y*				*BK*	✓		*18*		✓															*2-1/2"-10 GA.*	*12'-0"*	*3.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
18a	*B5+03 LT*	*24"*	*12"*		✓			*Y*				*BK*	✓		*18a*																				
18	*P16+32 RT*	*30"*	*30"*		✓			*Y*				*BK*	✓		*18*		✓															*2-1/2"-10 GA.*	*12'-0"*	*3.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
18a	*P16+32 RT*	*24"*	*12"*		✓			*Y*				*BK*	✓		*18a*																				
18	*P16+56 LT*	*30"*	*30"*		✓			*Y*				*BK*	✓		*18*		✓															*2-1/2"-10 GA.*	*12'-0"*	*3.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
18a	*P16+56 LT*	*24"*	*12"*		✓			*Y*				*BK*	✓		*18a*																				
18	*P18+49 RT*	*30"*	*30"*		✓			*Y*				*BK*	✓		*18*		✓															*2-1/2"-10 GA.*	*12'-0"*	*3.5'*	*3'-0"*	*3/ FACE OF CURB, SLIP BASE*
18a	*P18+49 RT*	*24"*	*12"*		✓			*Y*				*BK*	✓		*18a*																				

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

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

3/
DISTANCE FROM EDGE OF TRAVEL LANE, FACE OF CURB, GUARDRAIL, OR BARRIER TO THE CENTERLINE OF FOOTING. FOR ADDITIONAL INFORMATION SEE STANDARD DRAWINGS TM200 AND TM635

4/
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/
POST LENGHTS SHOWN ARE FOR REFERENCE ONLY CONTRACTOR SHALL COMPLETE APPROPRIATE FIELD VERIFICATION OF POST LENGTHS FROMS FOR EACH SIGN SUPPORT. FORMS ARE AVAILABLE FROM THE ENGINEER.

6/
FOR PSST SLIP BASE INSTALLATIONS, REFER TO THE STANDARD DRAWINGS TM688.

(##) = EXISTING SIGN DIMENSIONS
EX = EXISTING

DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 74,348 — Digitally Signed 2023.09.26 22:56:46-07'00' OREGON — JUNE 12, 2015 — STEVEN J. BOICE — EXPIRES: DEC. 31, 2023

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

DKS
1050 SW 6th Avenue, Suite 600
Portland, Oregon 97204
www.dksassociates.com

DATE: DECEMBER 2023
PROJECT NO: 12602.001.01

DESIGNED BY: EZA
DRAWN BY: KCJ
CHECKED BY: SXV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

SIGN AND POST DATA TABLE

DRAWING NO. 44 OF 45
SHEET NO. SS-07

X:\Projects\2022\P22207-000 (Deschutes Co. Butler Mkt\Powell Butte RAB)\CAD\SS-01-SS-08.dwg

SIGN NO.	SIGN LOCATION 4/	SIGN DIMENSIONS		SUB-STRATE				COLOR 1/				LEGEND TYPE		SIGN NO. 2/																			POST		FOOTING		REMARKS 6/
								BACK-GROUND		LEGEND																	SECONDARY SIGN (TM676 & TM678)							SIZE	LENGTH 5/	LOCATION 3/	MIN. DEPTH	
		WIDTH	HEIGHT	PLYWOOD	SHEET ALUMINUM	EXTRUDED ALUMINUM (ODOT TM675)	DOUBLE-SIDED	ASTM TYPE II OR TYPE IV	ASTM TYPE IX	ASTM TYPE II OR TYPE IV	ASTM TYPE IX	NON-REFLECTIVE	PERMANENT	DEMOUNTABLE		WOOD POST (ODOT TM670-671, TM676)	PERF. STEEL SQUARE TUBE (ODOT TM671, TM676, TM681, TM687-686)	TRIANGULAR BASE BREAKAWAY (ODOT TM602)	MULTI-POST BREAKAWAY (ODOT TM220, TM600-601)	STAINLESS STEEL CLAMP (SSC) (TM677)	SIGNAL POLE MOUNT (ODOT TM680)	BRIDGE RAIL MOUNT	STRUCTURE MOUNT	CANTILEVER	CROSSWALK CLOSURE BARRICADE (ODOT TM240)	VERTICAL SIGN MOUNT ON EXISTING STRUCTURE	ADJUSTABLE SIGN MOUNT	MAST ARM SNS MOUNT	C 4 X 5.4	C 4 X 7.25	ROUTE MARKER FRAME (ODOT TM676 & TM678)	LENGTH (FT.)	(BASED ON ESTIMATED LENGTH)	(MUST BE FIELD VERIFIED)			
18	P18+68 LT	30"	30"		✓			Y				BK	✓		18		✓																2-1/2"-10 GA.	12'-0"	3.5'	3'-0"	3/ FACE OF CURB, SLIP BASE
18a	P18+68 LT	24"	12"		✓			Y				BK	✓		18a																					
19	P16+72 LT	78"	18"		✓			G		SW			✓		19		✓																2-1/2"-10 GA.	8'-5"	5.0'	3'-0"	3/ FACE OF CURB, SLIP BASE
19	P18+35 RT	78"	18"		✓			G		SW			✓		19		✓																2-1/2"-10 GA.	8'-5"	5.0'	3'-0"	3/ FACE OF CURB, SLIP BASE
20	B5+17 LT	66"	18"		✓			G		SW			✓		20		✓																2-1/2"-10 GA.	8'-5"	5.0'	3'-0"	3/ FACE OF CURB, SLIP BASE
21	P10+03 RT	36"	8"		✓			Y				BK	✓		21																					INST. BELOW SIGN 14
21	P24+69 LT	36"	8"		✓			Y				BK	✓		21																					INST. BELOW SIGN 14
22	B0+00 RT	45"	8"		✓			Y				BK	✓		22																					INST. BELOW SIGN 14
23	P12+37 LT	54"	42"		✓			G		SW			✓		23		✓																2-1/2"-10 GA.	12'-0"	11.2'	3'-0"	3/ EDGE OF TRAVEL LANE, SLIP BASE
24	P11+56 RT	54"	42"		✓			G		SW			✓		24		✓																2-1/2"-10 GA.	12'-0"	11.2'	3'-0"	3/ EDGE OF TRAVEL LANE, SLIP BASE

1/
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FY=FLUORESCENT YELLOW
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FOR PSST SLIP BASE INSTALLATIONS, REFER TO THE STANDARD DRAWINGS TM688.

(##) = EXISTING SIGN DIMENSIONS
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DESCHUTES COUNTY ROAD DEPARTMENT

REGISTERED PROFESSIONAL ENGINEER 74,348 — Digitally Signed 2023.09.26 22:57:32-07'00' OREGON — JUNE 12, 2015 — STEVEN J. BOICE — EXPIRES: DEC. 31, 2023

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS

DKS
1050 SW 6th Avenue, Suite 600
Portland, Oregon 97204
www.dksassociates.com

DATE: DECEMBER 2023
PROJECT NO: 12602.001.01
DESIGNED BY: EZA
DRAWN BY: KCJ
CHECKED BY: SXV
SCALE: AS NOTED

DESCHUTES COUNTY
POWELL BUTTE HIGHWAY / BUTLER MARKET RD
INTERSECTION IMPROVEMENT PROJECT

SIGN AND POST DATA TABLE

DRAWING NO. 45 OF 45
SHEET NO. SS-08

X:\Projects\2022\P22207-000 (Deschutes Co. Butler MktPowell Butte RAB)\CAD\SS-01-SS-08.dwg

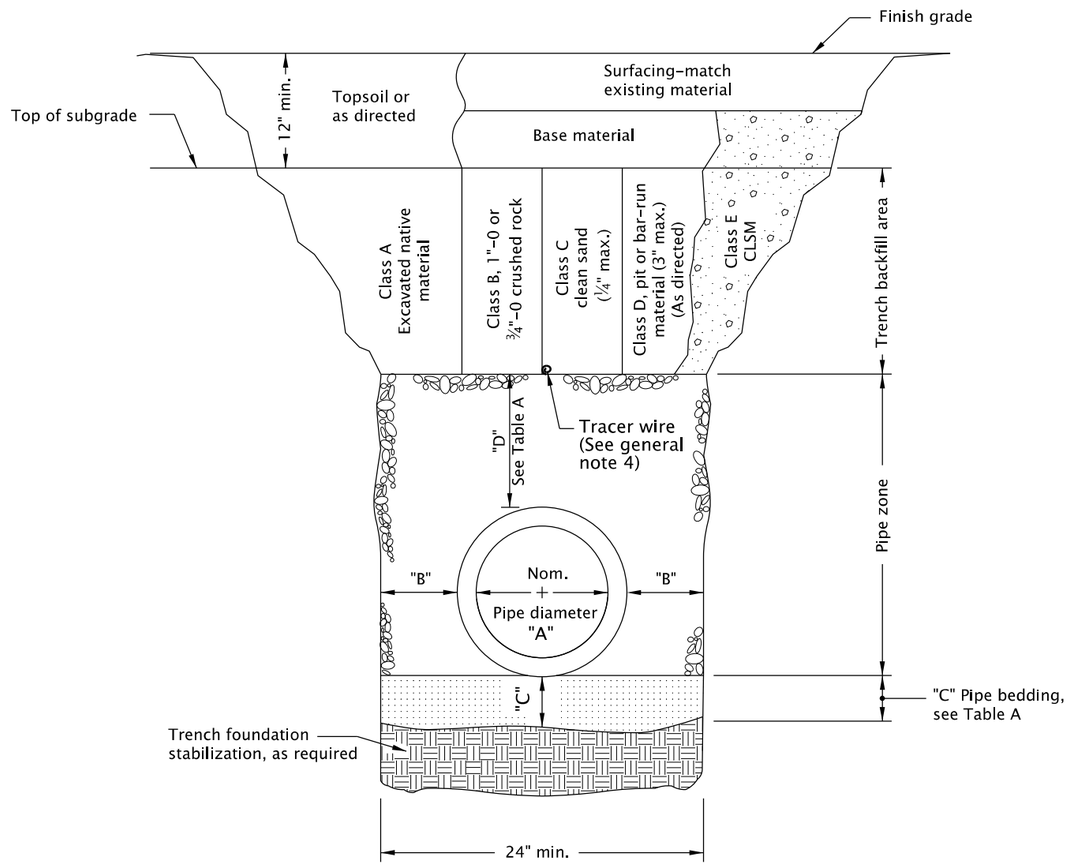
20-JUL-2020

RD300.dgn

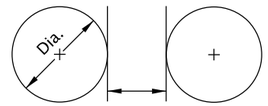
TABLE A

"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 ON THIS SHEET:

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).

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS

2024

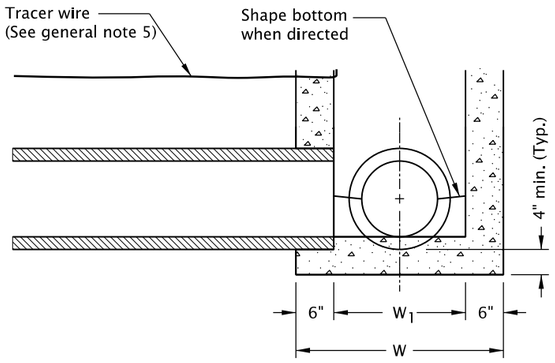
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2014 | **RD300**

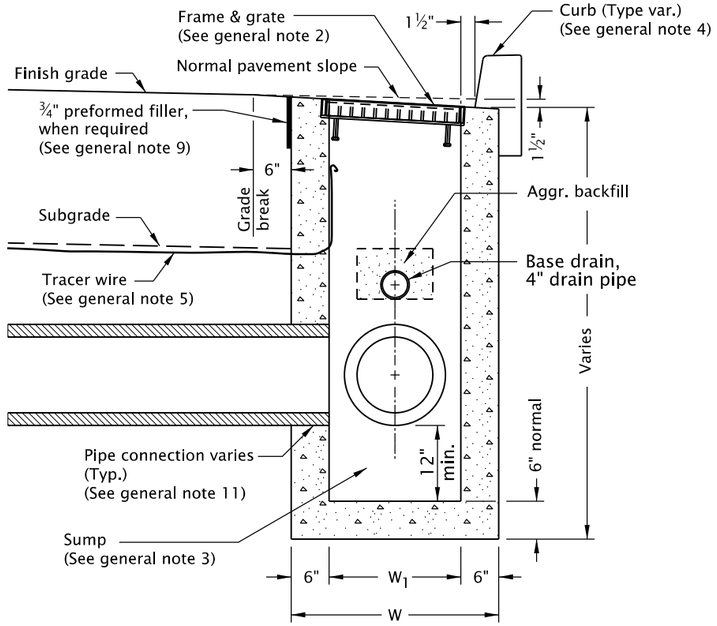
Effective Date: December 1, 2023 – May 31, 2024

20-JUL-2020

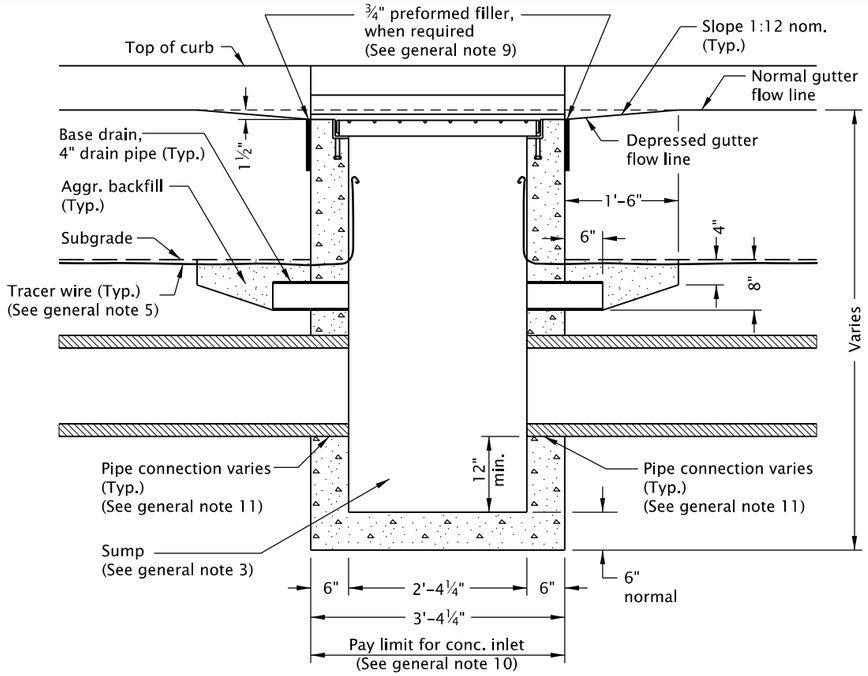
RD364.dgn



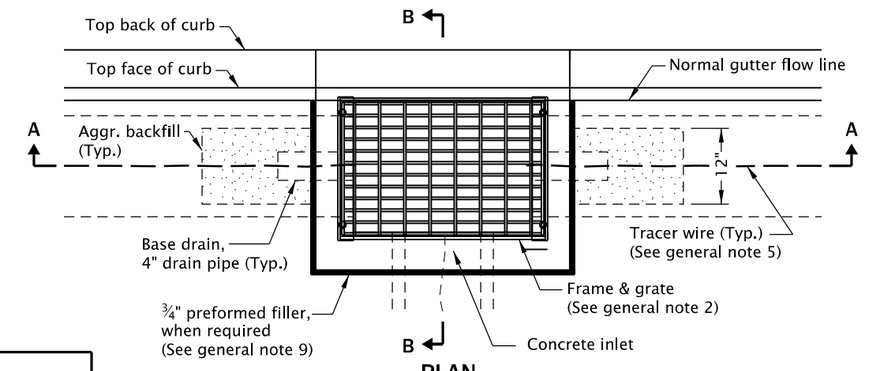
DETAIL A
WITHOUT SUMP



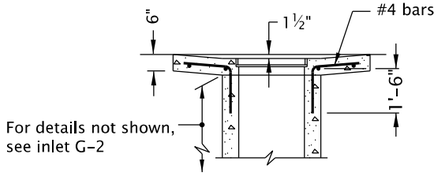
SECTION B - B



SECTION A - A



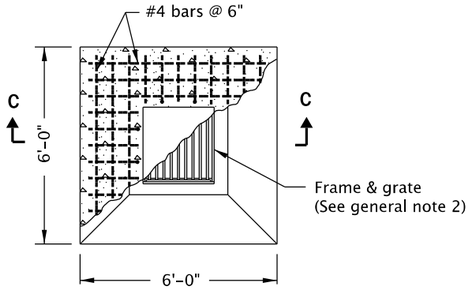
PLAN
TYPE G-1, G-2, G-2M



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"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

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.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

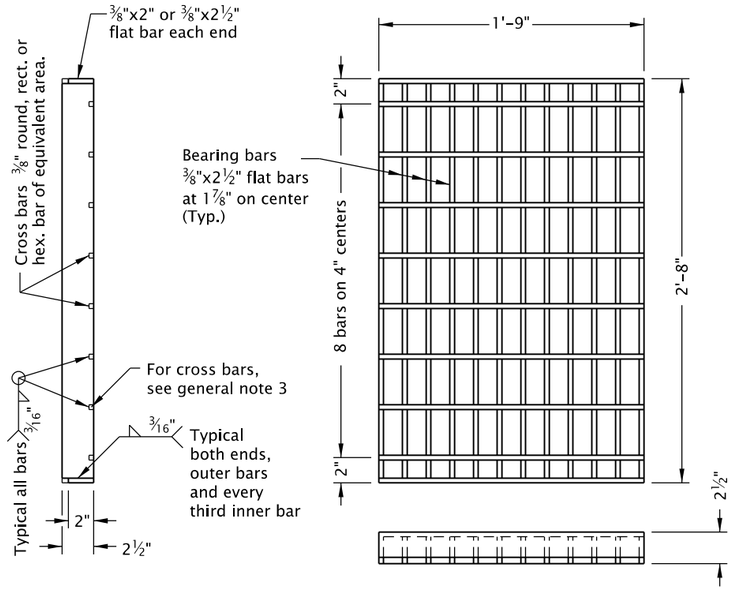
CONCRETE INLETS
TYPE G-1, G-2, G-2M, & G-2MA

2024

DATE	REVISION DESCRIPTION

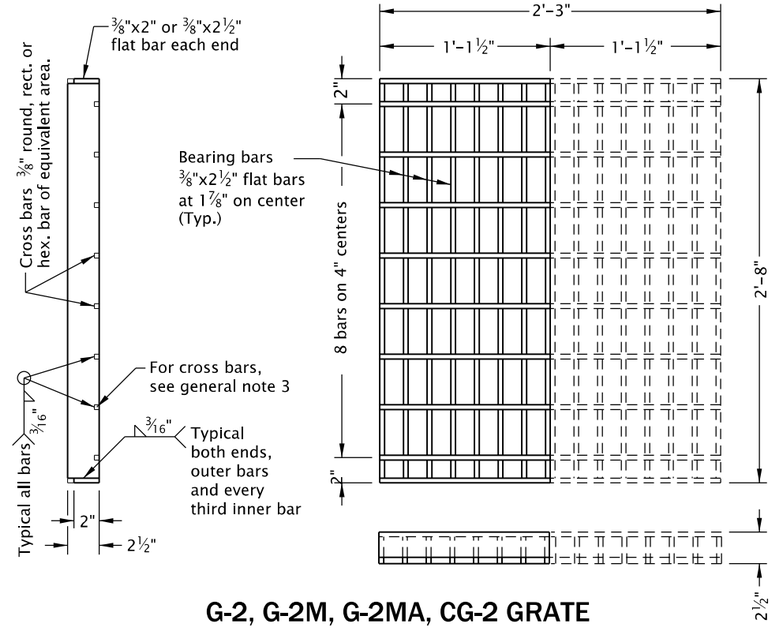
CALC. BOOK NO. N/A | SDR DATE 21-JUL-2015 | **RD364**

20-JUL-2020
RD365.dgn



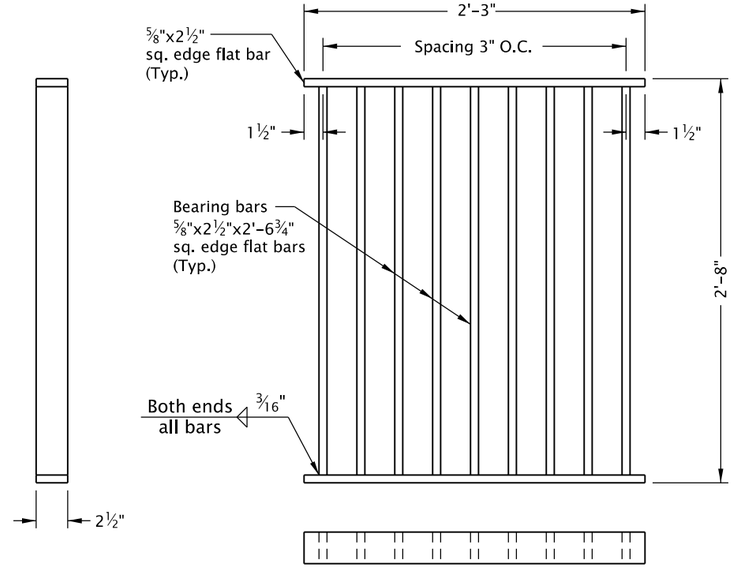
G-1, CG-1 GRATE (TYPE 2)

(Bicycle-safe)



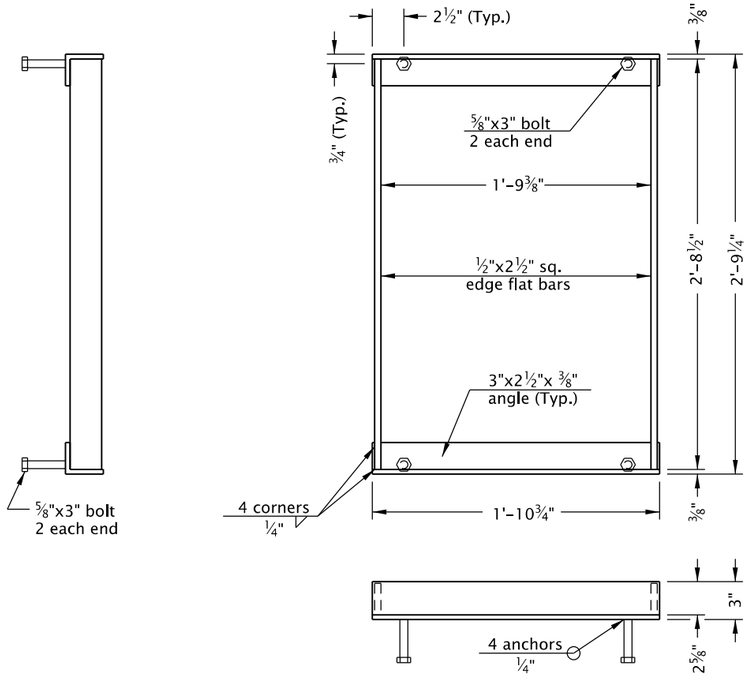
G-2, G-2M, G-2MA, CG-2 GRATE (TYPE 2)

(Bicycle-safe)
(2 grates required per inlet, as shown)

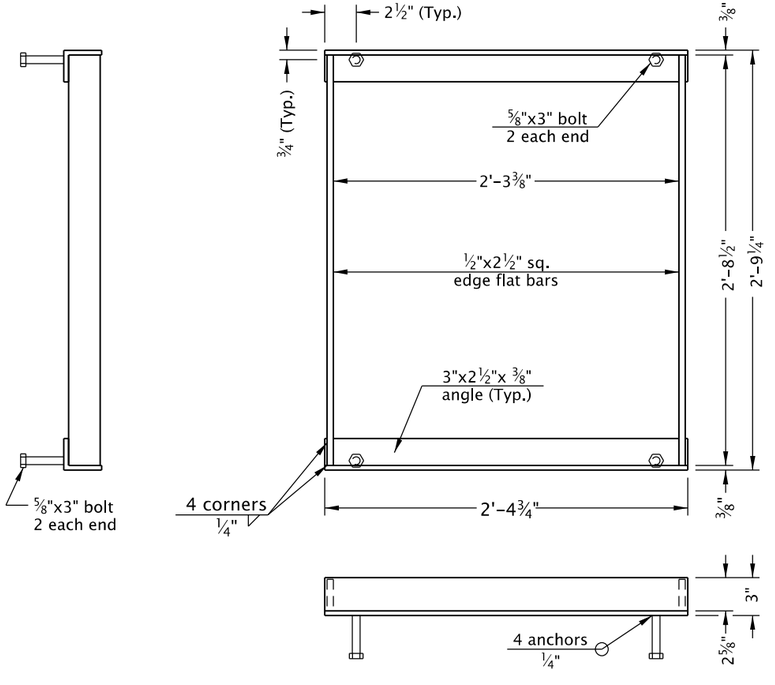


G-2, G-2M, G-2MA, CG-2 GRATE (TYPE 1)

(See general note 2)



G-1, CG-1 FRAME



G-2, G-2M, G-2MA, CG-2 FRAME

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. For inlet details, see appropriate inlet standard drawing(s).
2. Type 1 grate allowed only in locations not subject to bicycle or pedestrian use.
3. 3/8" cross bars shall be flush with the top of grate surface and may be fillet welded, resistance welded or electroforged to bearing bars.
4. Hot dip galvanize after fabrication.
5. Cast iron grate and frame are acceptable alternates. See ODOT's QPL.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

FRAMES & GRATES FOR CONCRETE INLETS

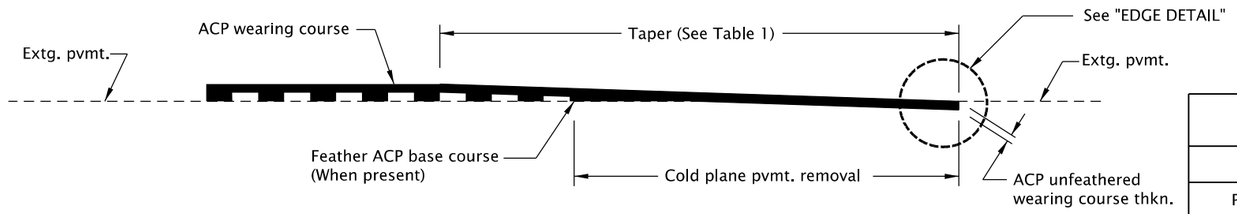
2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. _ _ _ N/A _ _ _ | SDR DATE _ 14-JUL-2014 _ | **RD365**

Effective Date: December 1, 2023 - May 31, 2024

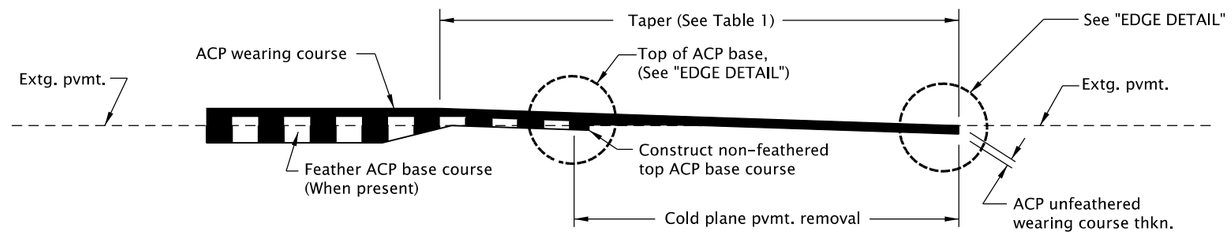
20-JUL-2020
RD610.dgn



METHOD A *

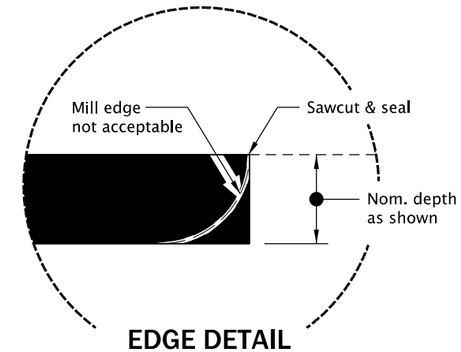
* See project plans for method.

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

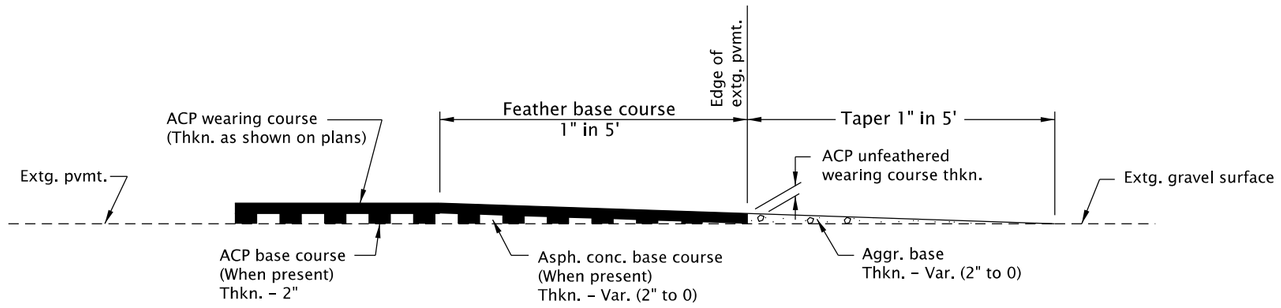


METHOD B *

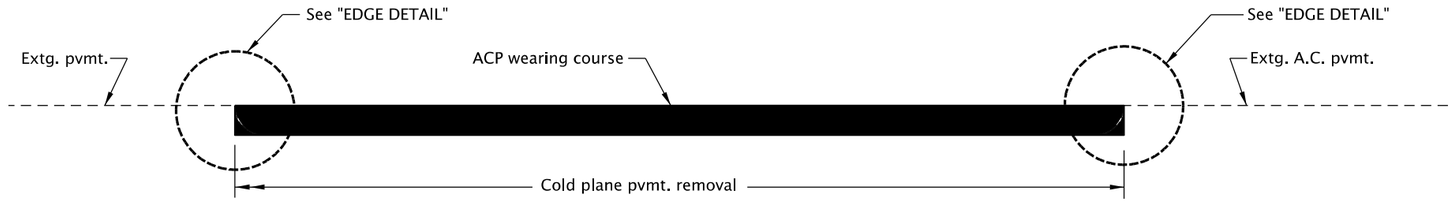
ACP PAVEMENT MATCH AT PROJECT ENDS OR BRIDGE ENDS WHEN NOT OVERLAYING THE BRIDGE



EDGE DETAIL



METHOD OF FEATHERING ACP PAVEMENT AT GRAVEL APPROACHES



METHOD OF MATCHING EXTG. ACP INLAY SURFACING

(Inlay to extg. asphalt conc. pvmt.)

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 first consulting a Registered Professional Engineer.

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OREGON STANDARD DRAWINGS

ASPHALT CONCRETE PAVEMENT (ACP) DETAILS

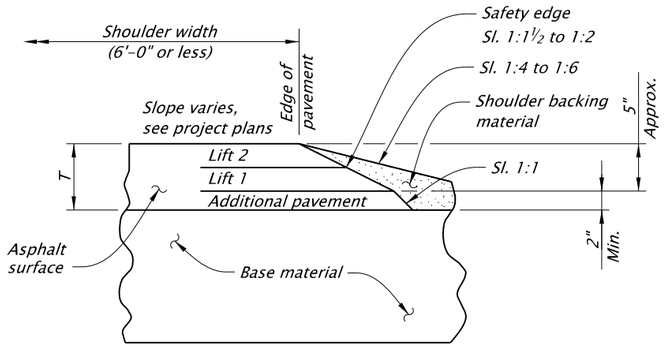
2024

DATE	REVISION DESCRIPTION

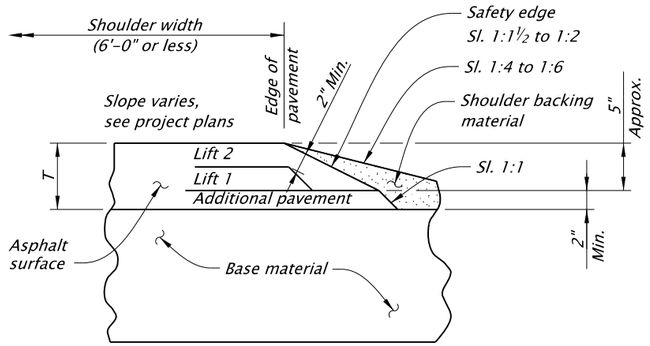
CALC. BOOK NO. N/A | SDR DATE 25-JUL-2017 | **RD610**

Effective Date: December 1, 2023 – May 31, 2024

19-JUL-2021
RD615.dgn

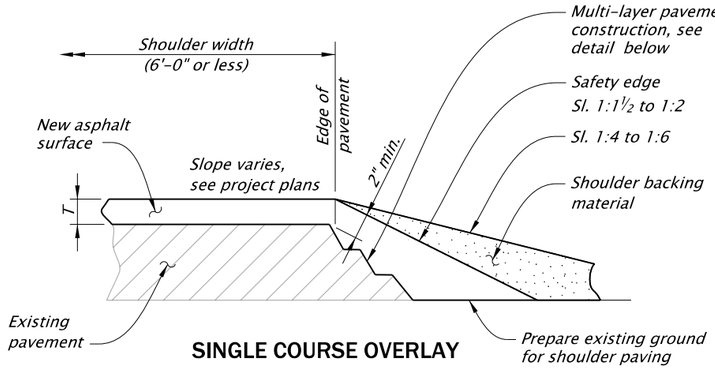


SAFETY EDGE PLACED WITH LIFTS

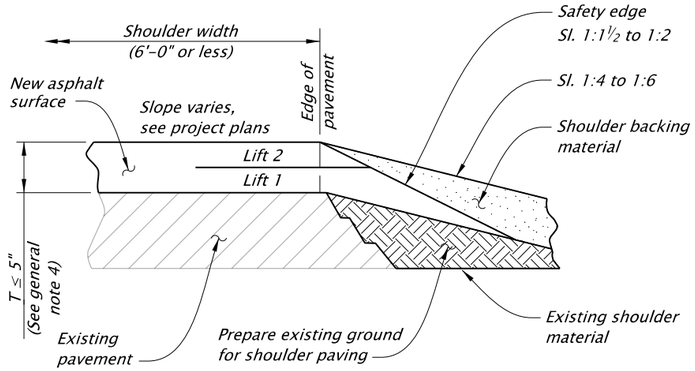


SAFETY EDGE PLACED ONLY WITH FINAL LIFT

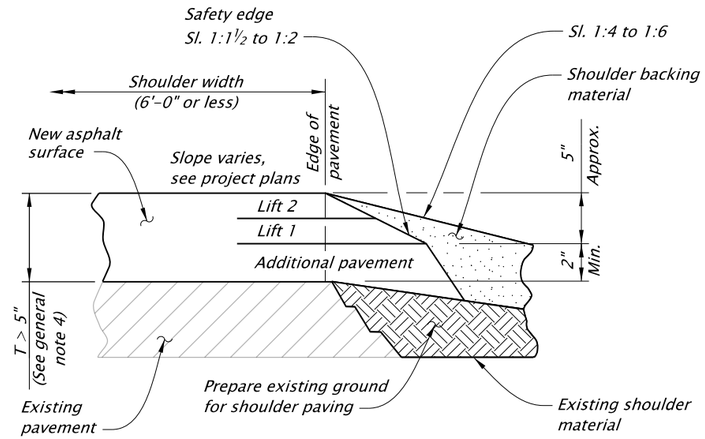
SAFETEY EDGE FOR ASPHALT CONCRETE (NEW CONSTRUCTION)



SINGLE COURSE OVERLAY



PAVEMENT THICKNESS (T) 5" OR LESS

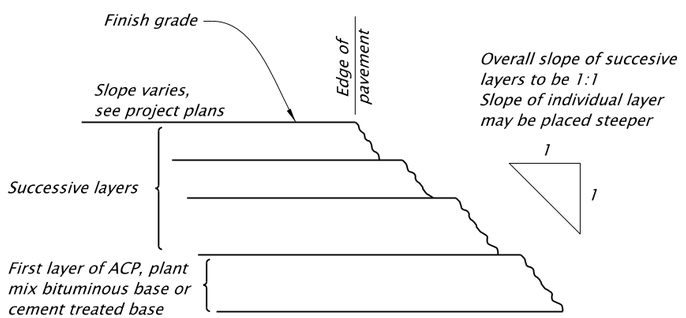


PAVEMENT THICKNESS (T) GREATER THAN 5"

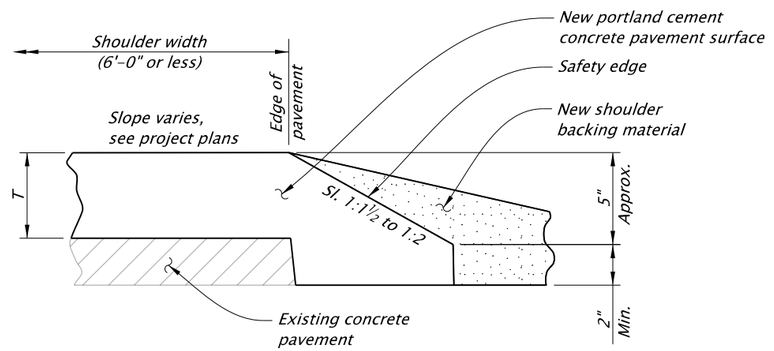
SAFETY EDGE FOR ASPHALT CONCRETE RECONSTRUCTION (INCLUDING MILL, INLAY AND OVERLAY)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *Safety edges are required at the outside edges of the paved roadway (edge of travel lane or edge of paved shoulders), where the wearing surface thickness is 2" or greater, except where indicated in the plans.*
2. *Construct the safety edge at a slope of 1:1½ to 1:2 measured from the pavement surface.*
3. *Do not construct safety edge at intersections, paved drives, or other obstructions.*
4. *For total new asphalt depth of "T"≤5", construct the safety edge to the full thickness of the surface and intermediate courses. For total new asphalt depth of "T" > 5", construct the safety edge to a depth of 5" approximately with a 1:1 sloped face below the safety edge.*



MULTI-LAYER PAVEMENT CONSTRUCTION



SAFETY EDGE FOR PORTLAND CEMENT CONCRETE PAVEMENT OVERLAY

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SURFACE EDGE DETAILS

2024

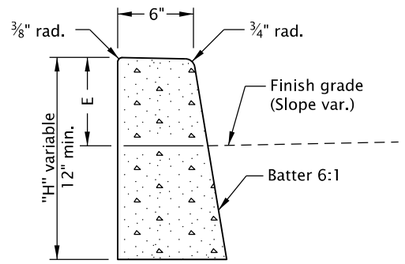
DATE	REVISION DESCRIPTION
07-2021	TITLE CHANGED, REVISED DETAILS AND NOTES

CALC. BOOK NO. N/A | SDR DATE 19-JUL-2021 | **RD615**

Effective Date: December 1, 2023 - May 31, 2024

20-JUL-2020

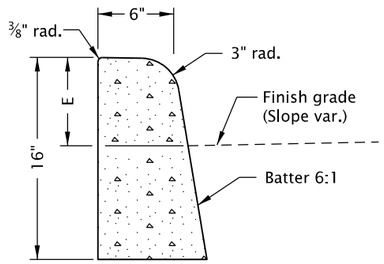
RD700.dgn



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

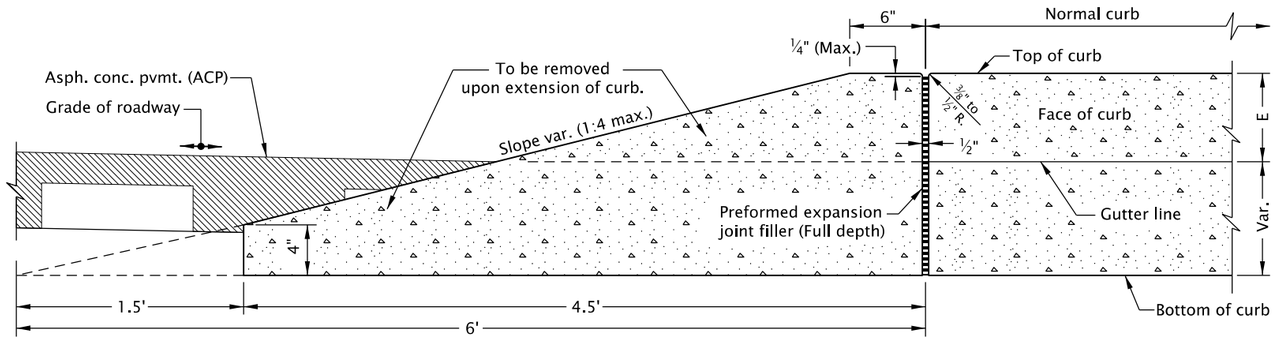
STANDARD CURB

(See general note 11)

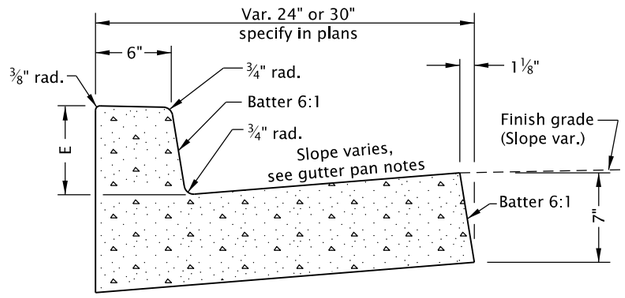


MOUNTABLE CURB

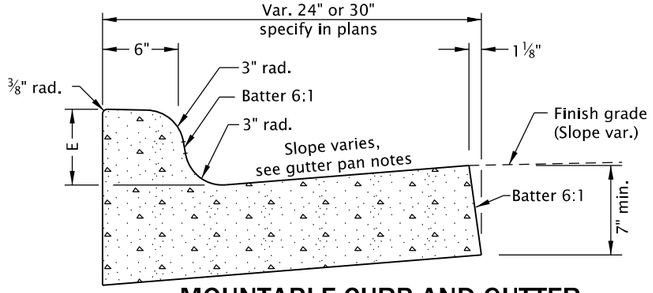
(See general note 11)



CURB ENDING DETAIL



CURB AND GUTTER



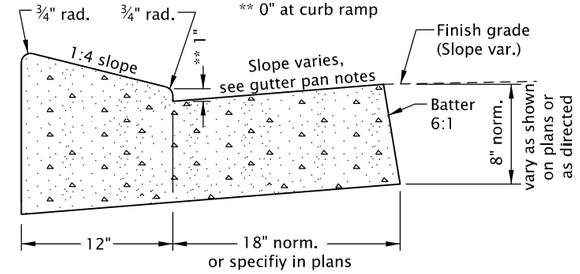
MOUNTABLE CURB AND GUTTER

GUTTER PAN NOTES:

Slope 5.0% normal.

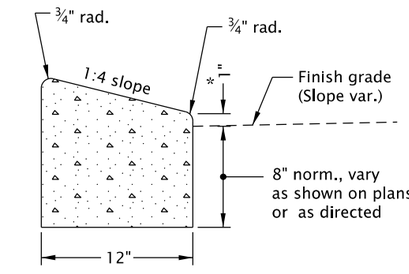
Slope 4.0% max. at curb ramps.

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



LOW PROFILE MOUNTABLE CURB AND GUTTER

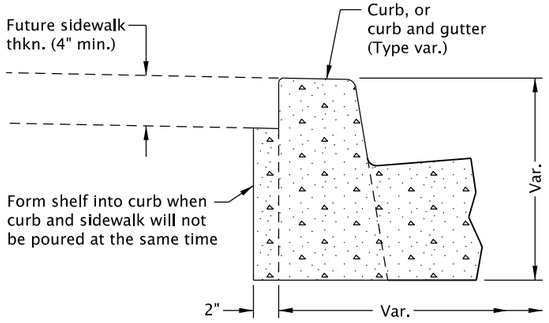
(Where shown on plans)



* 0" for Truck Apron

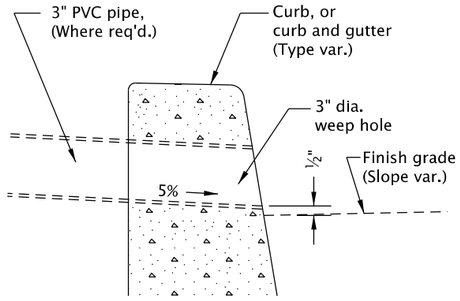
LOW PROFILE MOUNTABLE CURB

(See general note 11)



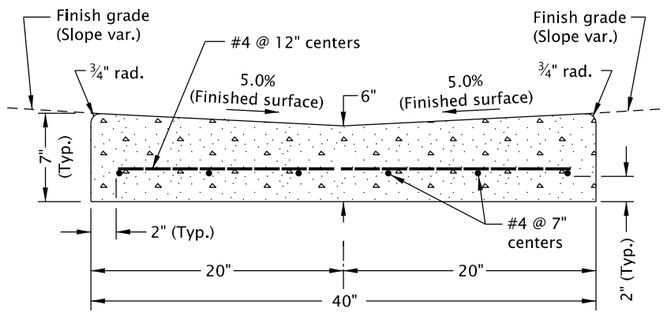
MODIFICATION FOR KEYWAY

(Where shown on plans)



WEEP HOLE DETAIL

(Where shown on plans, and allowed by jurisdiction)



VALLEY GUTTER

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb exposure "E" = 6" to 9", as measured vertically from flowline to highest point on curb. Vary as shown on plans or as directed. O.D.O.T standard "E"=7".
2. Const. curb expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveways.
3. Const. curb contraction joints at 15' maximum spacing, and at ends of each inlet and curb ramp.
4. Transitions shall be used to connect curbs of different exposures "E". ("E" Is the total vertical dimension of those curb surfaces having a slope of 1:1 or steeper). Minimum desirable transition length shall be 20' for each 1" difference in "E".
5. Tops of all curbs shall slope toward the roadway at 1.5% max. (Max. 2.0% finished surface slope), unless otherwise shown, or as directed.
6. Dimensions are nominal, vary to conform with curb machine approved by the engineer.
7. Dimensions adjacent to radii are measured to the point of intersection of curb surfaces.
8. For sidewalk details, and monolithic curb & sidewalk, see Std. Dwgs. RD720 & RD721.
9. For drainage curbs, see Std. Dwg. RD701.
10. For curb ramp details, see Std. Dwgs. RD900 series.
11. On or along state highways, curb and gutter is required at curb ramp.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CURBS

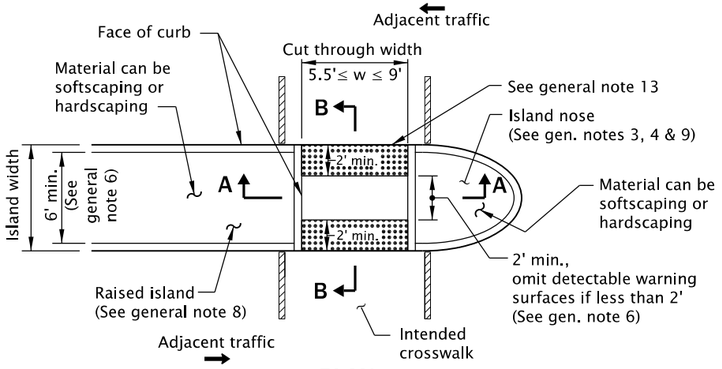
2024

DATE	REVISION DESCRIPTION

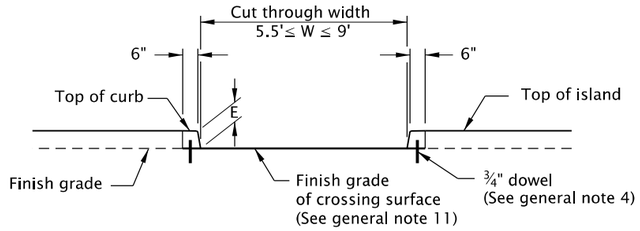
CALC. BOOK NO. N/A | SDR DATE 20-JUL-2020 | **RD700**

Effective Date: December 1, 2023 - May 31, 2024

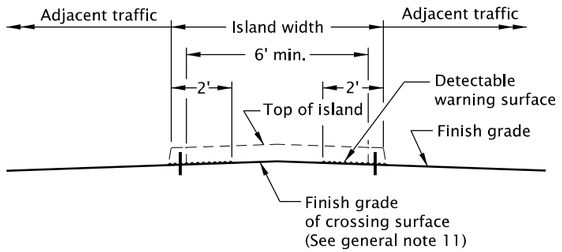
14-JAN-2022
RD710.dgn



PLAN



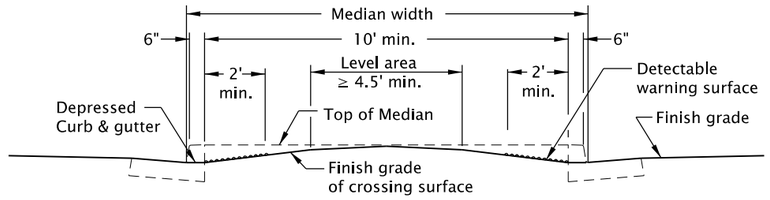
SECTION A-A



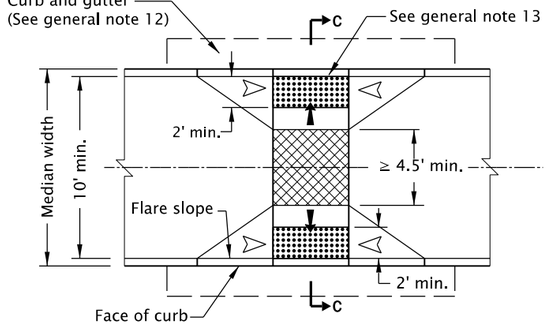
SECTION B-B

MEDIAN ISLAND CROSSING (CUT THROUGH)

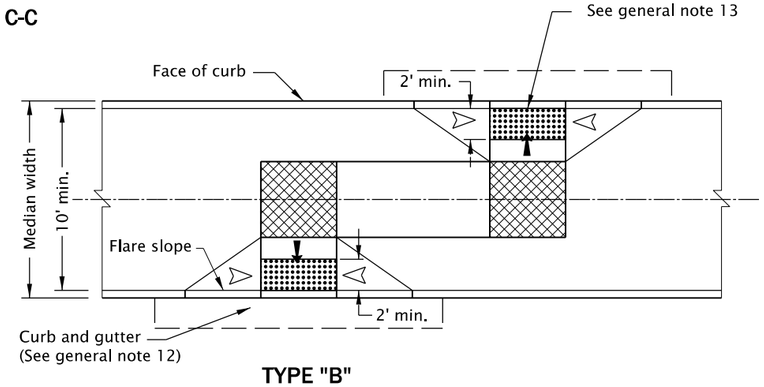
(A.C. pavement shown)



SECTION C-C



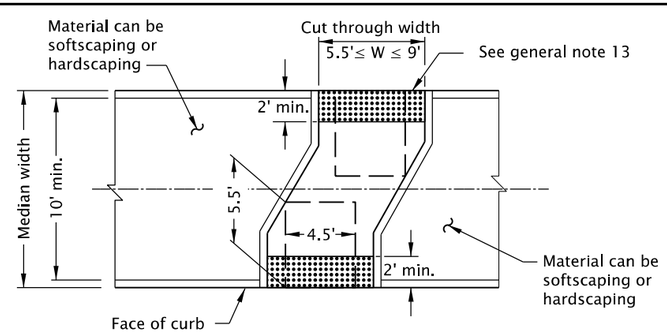
TYPE "A"



TYPE "B"

MEDIAN RAISED CROSSING

(P.C. conc. surface shown)



MEDIAN CUT-THROUGH CROSSING

(Asph. conc. surface shown)

LEGEND:

- Marked or intended crossing location
- Level area (Turning space/landing) Unobstructed 4.5' x 4.5' With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing). For the purposes of this application, a max. 2.0% finished surface slope (for drainage) is considered level.
- Detectable warning surface
- Cross slope 1.5% max. (Max. 2.0% finished surface slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)
- Flare slope (Max. 10.0% finished surface slope)
- Zero curb exposure
- Clear space 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Accessible route islands are based on applicable ODOT Standards.
2. Place detectable warning surface at the back of curb for a minimum depth of 2 feet at curb ramp that is adjacent to traffic. For details not shown, see Std. Dwgs. RD902 through RD908.
3. The minimum area of islands that contain signal poles, pedestals, etc., shall be 75 square feet. Square feet to be measured to outer perimeter of entire island.
4. For cut through islands, dowel each island segment to the pavement with a minimum of two ¾" diameter dowels. Dowel the nose section of the raised median island with a minimum of two ¾" diameter dowels. Place dowels as directed. See Std. Dwg RD705.
5. Align curb ramps for lowered or partially lowered island and cut through island with the crosswalk.
6. Detectable warning surfaces shall be separated by a 2-foot minimum length of walkway without detectable warnings. Where no curb, the detectable warning surface shall be placed at the edge of roadway.
7. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
8. Curb type and island width as shown on plans or as directed. Type A or Type CA islands are acceptable alternates, see Std. Dwg. RD705.
9. See project plans for details not shown. See Std. Dwg. RD707 for island nose treatment. See Std. Dwg. RD705 for expansion and contraction joint spacing. See Std. Dwgs. RD700, RD701, RD705 & RD706 for additional details. See TM Standard Drawings for signal pole, pedestrian pedestal, crosswalk markings, and related details.
10. Details intended for pedestrian route only. For multi-use path, see project plans for specific details.
11. When crossing surface grade is ≤ 5%, a level area is not required.
12. On or along state highways, curb and gutter is required at curb ramps.
13. Raised islands in crossings shall have accessible curb ramps at all crossings or all crossings shall be cut through with the street.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

ACCESSIBLE ROUTE ISLANDS

2024

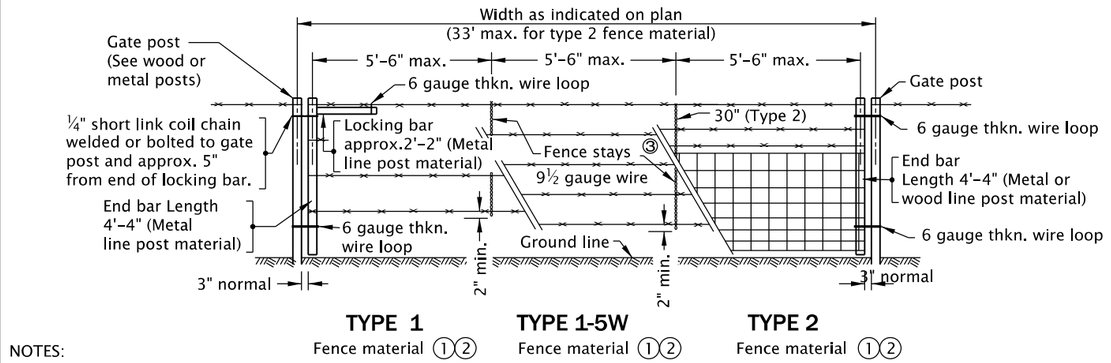
DATE	REVISION DESCRIPTION
07-2021	REVISED DETAILS AND NOTES
11-2021	REVISED NOTES

CALC. BOOK NO. N/A | SDR DATE 14-JAN-2022 | **RD710**

Effective Date: December 1, 2023 - May 31, 2024

20-JUL-2020

RD810.dgn



TYPE 1 Fence material ①②

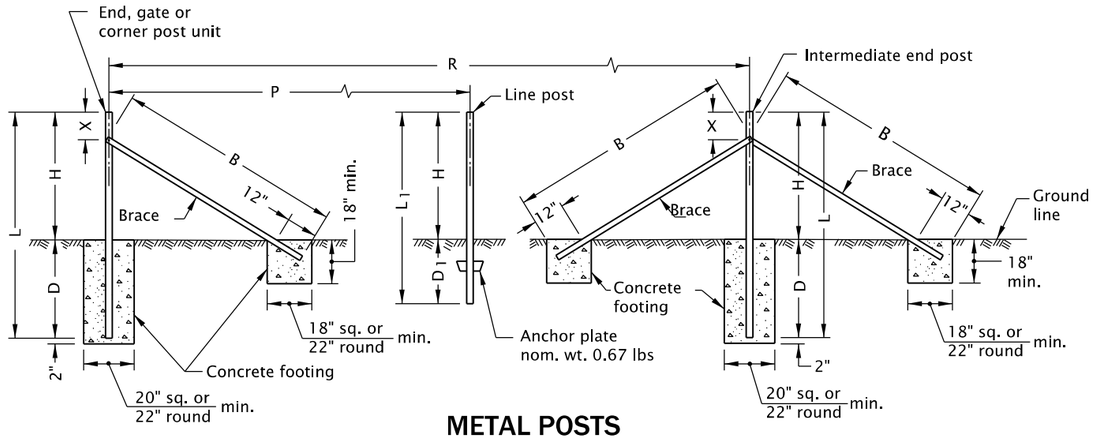
TYPE 1-5W Fence material ①②

TYPE 2 Fence material ①②

NOTES:

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

GATEWAY



METAL POSTS

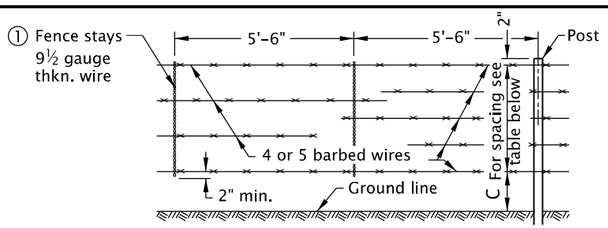


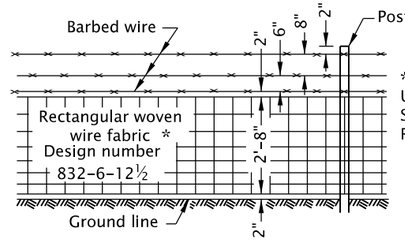
TABLE OF DIMENSIONS

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

① NOTE:

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

TYPES 1 , & 1-5W



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

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

② **TYPE 2**

TABLE 1 (For wood posts)

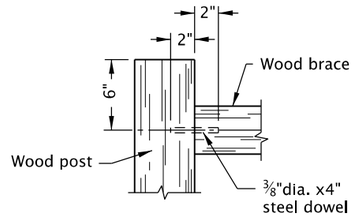
FENCE	R (ft)	UNITS REQUIRED
Types 1, 1-5W & 2	20 or Less	* None
	20-330	A
	Over 330	A & B

* Unit A required at gate post.

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

TABLE 2

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



BRACE RAIL CONNECTION

TABLE 3

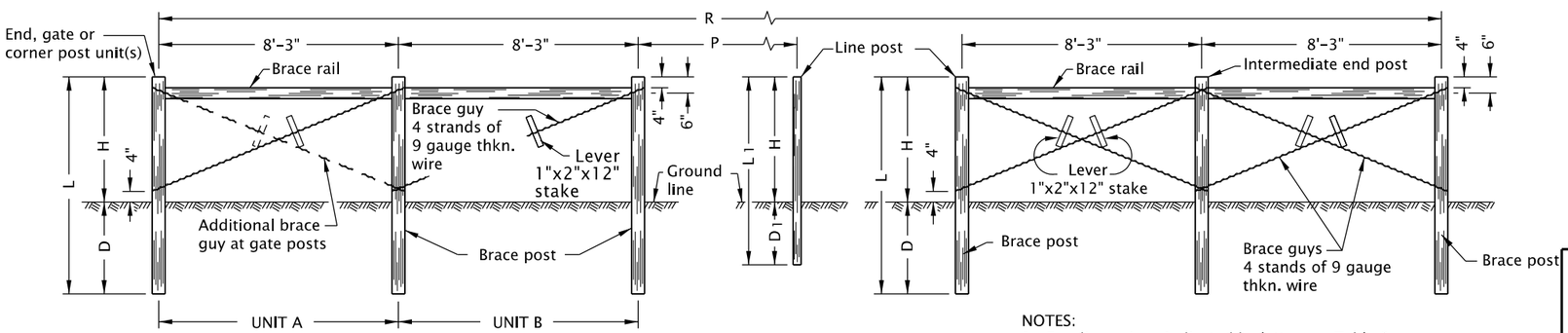
MEMBER	WOOD * ROUND DIAMETER OF SMALL END (in) min.-max.	WOOD * ROUND DIAMETER OF SMALL END (in) min. avg.	WOOD SQUARE SIZE nominal (in)	METAL SHAPE	METAL WEIGHT PER (ft) nominal	METAL SIZE nominal
Line Post	3" to 4"	3"	† 3"x3"	Tee Channel ⓐ or U-bar	1.33 lb	ASTM A-702
Brace or Brace Rail	3½" to 5½"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

* Max. taper 1":48".

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

ⓐ In accordance with ASTM A 702.

ⓑ In accordance with AASHTO M 181.



For units required see Table 1

WOOD POSTS

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

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

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

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

BARBED AND WOVEN WIRE FENCES

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 13-JAN-2020 | **RD810**

14-JAN-2022

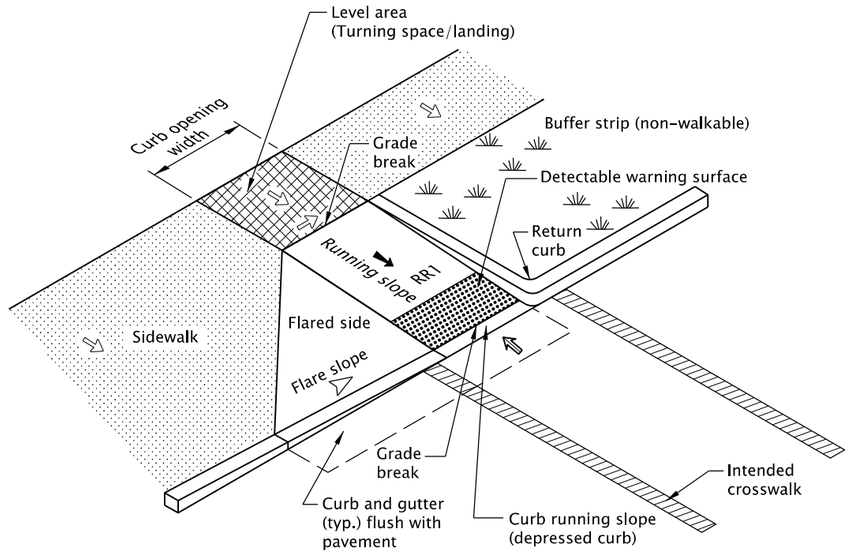
RD900.dgn

CURB RAMP INDEX

STD. DWG. NO.	STD. DWG. TITLE
RD900	Curb Ramp Components And Legend
RD901	Curb Ramp Legend And Corner Identification
RD902	Detectable Warning Surface Details
RD904	Detectable Warning Surface Placement For Curb Ramps
RD905	Detectable Warning Surface Placement For Directional Curbs
RD906	Detectable Warning Surface Placement For Accessible Route Island
RD908	Detectable Warning Surface Placement
RD909	Detectable Guide Strip Placement At Bike Ramps
RD910, RD912	Perpendicular Curb Ramp
RD913	Perpendicular Curb Ramp With Closure
RD916	Perpendicular Curb Ramp Single Ramp
RD920	Parallel Curb Ramp
RD922	Parallel Curb Ramp Single Ramp
RD930, RD932 & RD936	Combination Curb Ramp
RD938	Combination Curb Ramp Single Ramp
RD940	Blended Transition Curb Ramp Single Ramp
RD950 & RD952	End Of Walk Curb Ramp
RD960	Unique Curb Ramp

LEGEND:

- Marked or intended crossing location
- Sidewalk or other traversable surface
- Detectable warning surface (DWS)
- Level area (Turning space/landing)
- Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
- Running slope 4.0% max. (Max. 4.9% finished surface slope)
- Running slope 7.5% max. (Max. 8.3% finished surface slope)
- Counter slope 4.0% max. ascending or descending (Max. 5.0% finished surface slope) Slope as required for drainage
- Flare slope (Max. 10.0% finished surface slope)
- 4'x4' clear space
- RR1 Ramp Run Position 1



TYPICAL CURB RAMP SYSTEM COMPONENTS

(PERPENDICULAR TYPE SHOWN)

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CURB RAMP COMPONENTS AND LEGEND

2024

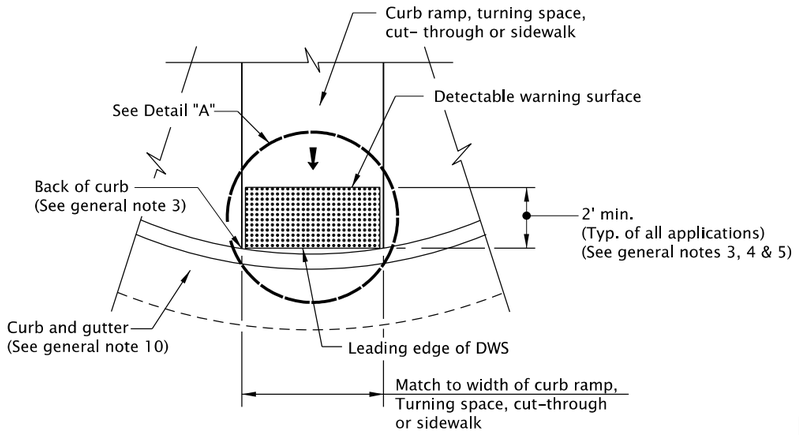
DATE	REVISION DESCRIPTION
07-2020	NEW DRAWING CREATED
07-2021	REVISED DETAILS AND NOTES
01-2022	REVISED LEGEND

CALC. BOOK NO. N/A | SDR DATE 14-JAN-2022 | **RD900**

Effective Date: December 1, 2023 - May 31, 2024

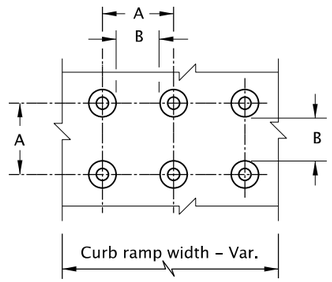
19-JUL-2021

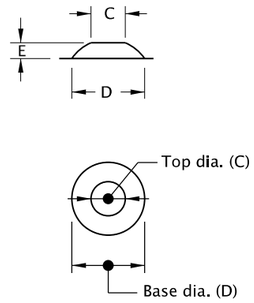
RD902.dgn



DETECTABLE WARNING SURFACE DETAIL

	A	B	C	D	E
MIN.	1.60"	0.65"	0.45"	0.90"	0.20"
MAX.	2.40"	--	0.91"	1.40"	0.20"

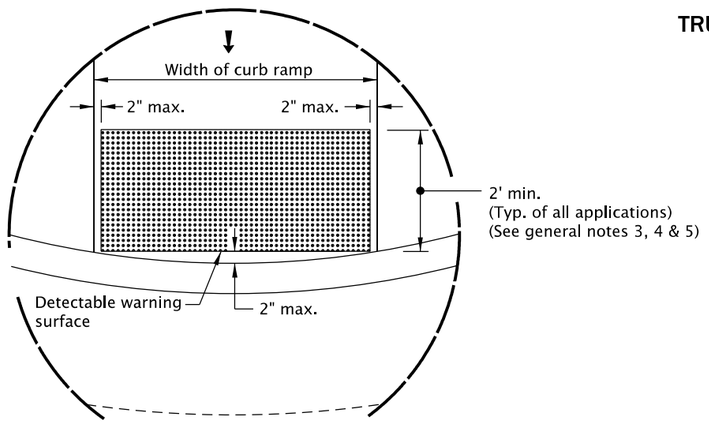




TRUNCATED DOME SPACING

TRUNCATED DOME

TRUNCATED DOME DETAILS



DETAIL "A"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Detectable warning surface details & locations are based on applicable ODOT Standards.
2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
3. The detectable warning surface shall extend the full width of the curb ramp opening, shared use path, blended transition, turning space, or other roadway entrance as applicable. A gap of up to 2 inches on each side of the detectable warning surface is permitted (measured at the leading edge of the detectable warning surface panel as shown in Detail "A").
4. Detectable warning surface shall be placed at the back of curb for a minimum depth of 2 ft. in the direction of pedestrian travel at curb ramps that are adjacent to traffic. Detectable warning surface may be radial or rectangular, but must comply with the truncated dome size and spacing standards. Detectable warning surface may be cut to meet necessary shape as shown in plans. Detectable warning surface across a grade break is prohibited. Place abutting panels within¼ inch of each other and install anchors, as specified by manufacturers, along cut edge.
5. Color to be safety yellow if no color specified in construction note. Alternative colors require a design exception on or along state highways.
6. Detectable warning surface shall be used in the following locations:
   a) Curb ramps at street crossings.
   b) Crossing islands (Accessible Route Islands).
   c) Rail crossings.
7. Where public transportation stations (rail, bus, etc.) use platform boarding, detectable warning surface shall be placed along the full edge length of the station, when not protected by platform screens or guards, (see Std. Dwg. RD908).
8. Detectable warning surface shall not be used on the following locations:
   a) End of sidewalk transitions that are not at a crosswalk, (see Std. Dwgs. RD950, RD952 and RD960).
   b) Driveways, unless constructed with curb return or are signalized.
   c) Parking lots, access aisles and passenger loading zones where curb ramp does not lead to vehicular way.
9. Where no curb is present, the detectable warning surface shall be placed at the edge of the roadway.
10. On or along state highways, curb and gutter is required at curb ramps.

LEGEND:

Detectable warning surface

Cross slope 1.5% max.
(Max. 2.0% finished surface slope)
(Normal sidewalk cross slope)

Running slope 7.5% max.
(Max. 8.3% finished surface slope)

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

DETECTABLE WARNING SURFACE DETAILS

2024

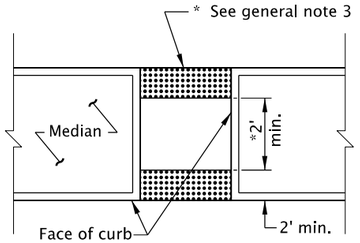
DATE	REVISION DESCRIPTION
07-2020	NEW DRAWING CREATED
07-2021	REVISED DETAILS AND NOTES

CALC. BOOK NO. N/A | SDR DATE ~~19-JUL-2021~~ | **RD902**

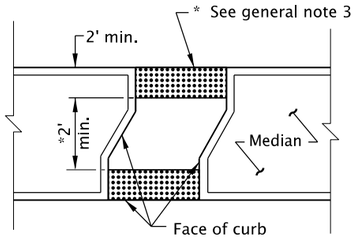
Effective Date: December 1, 2023 - May 31, 2024

20-JUL-2020

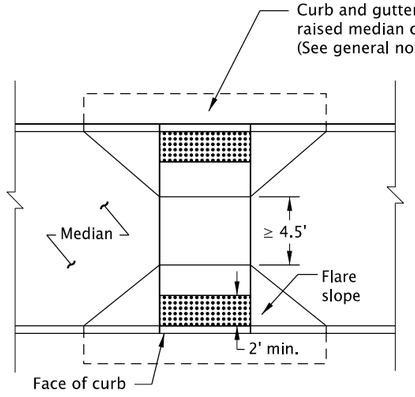
RD906.dgn



* Omit detectable warning surfaces if less than 2'



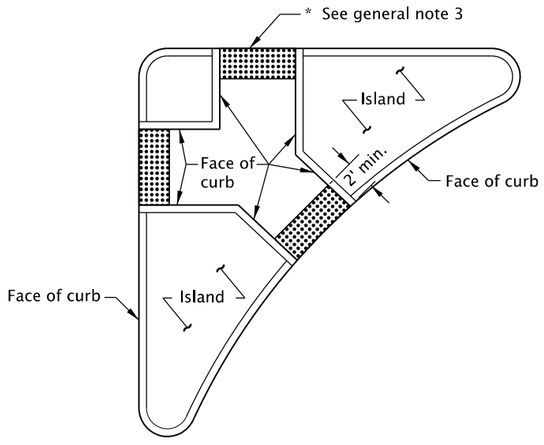
CUT-THROUGH
(Asph. conc. surface shown)



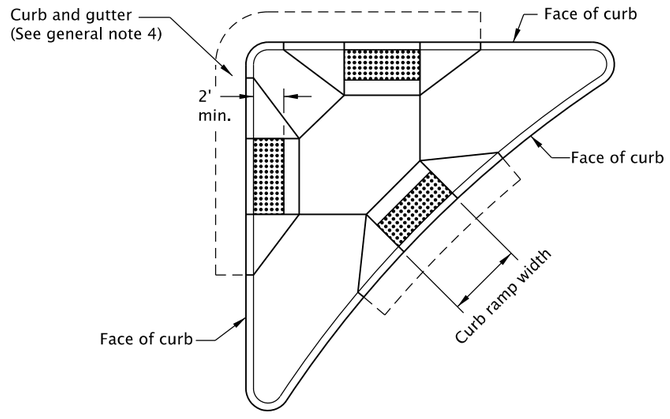
RAISED MEDIAN
(P.C. conc. surface shown)

MEDIAN CROSSING

* Omit detectable warning surfaces if less than 2'



CUT-THROUGH ISLAND
(Asph. conc. surface shown)



RAISED ISLAND
(P.C. conc. surface shown)

RIGHT TURN CHANNELIZATION ISLAND

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Detectable warning surface details & locations are based on applicable ODOT Standards.

2. See project plans for details not shown.
   See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwgs. RD710 & RD711 for accessible route island.
   See Std. Dwg. RD902 for detectable warning surface installation details.

3. Detectable warning surfaces shall be separated by a 2.0 ft minimum length of walkway without detectable warnings. Where the island has no curb, the detectable warning surface shall be placed at the edge of roadway.

4. On or along state highways, curb and gutter is required at curb ramps.

5. Details intended for pedestrian route only. For protected bike lanes on multi-use paths, see project plans for specific details.

LEGEND:

Detectable warning surface

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

DETECTABLE WARNING SURFACE PLACEMENT FOR ACCESSIBLE ROUTE ISLAND

2024

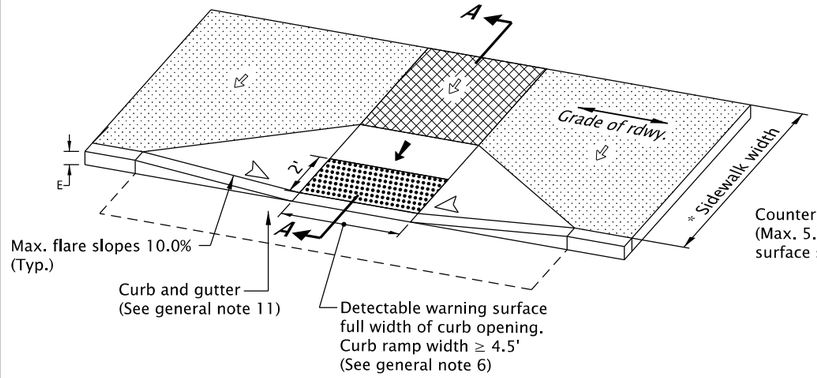
DATE	REVISION DESCRIPTION
07-2020	NEW DRAWING CREATED

CALC. BOOK NO. N/A | SDR DATE 20-JUL-2020 | **RD906**

Effective Date: December 1, 2023 - May 31, 2024

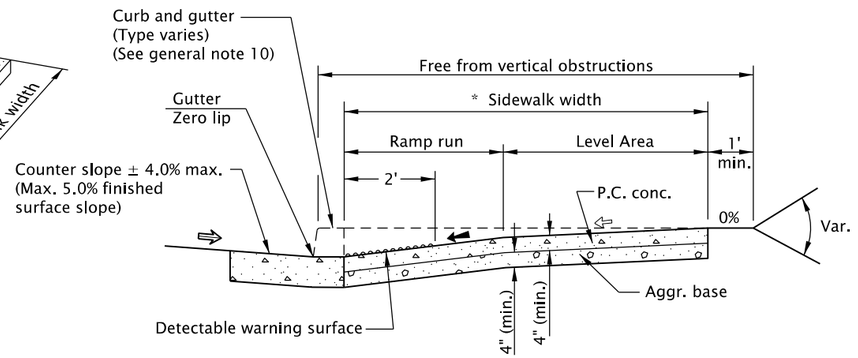
14-JAN-2022

RD910.dgn



PERPENDICULAR CURB RAMP DETAIL

(Use "Parallel Curb Ramp Detail" or "Combination Curb Ramp Detail" when reqd. turning space cannot be obtained)



SECTION A-A

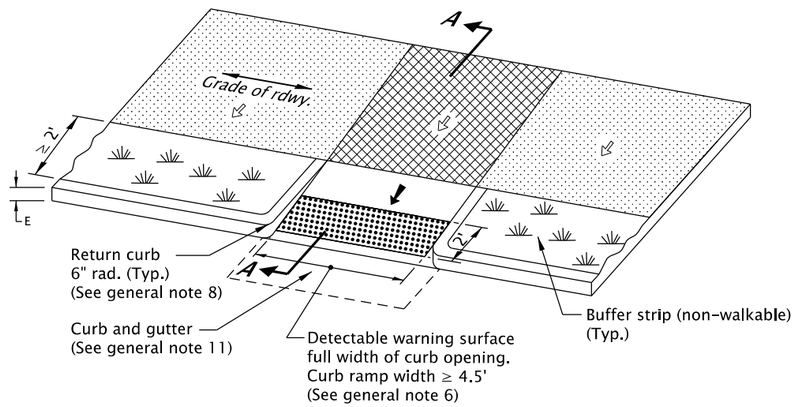
* NOTE: Minimum width of 14.25 feet sidewalk for E=7"

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

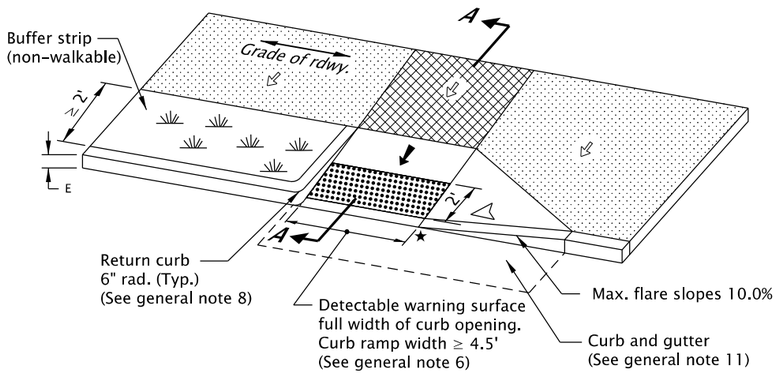
1. Curb ramp details are based on applicable ODOT Standards.
2. See Std. Dwgs. RD700 & RD701 for curbs.
   See Std. Dwgs. RD720 & RD721 for sidewalks.
   See Std. Dwgs. RD902 through RD908 for detectable warning surface installation details.
   See Std. Dwgs. RD912 through RD916 for curb ramp placement options.
3. Site conditions normally require a project specific design. See project plans for details not shown.
4. Tooled dummy joints are required at all curb ramp grade break lines, (see Std. Dwg. RD722).
5. Curb ramp slopes shown are relative to the true level horizon (zero bubble).
6. Place detectable warning surface at the back of curb for a minimum depth of 2' in the direction of pedestrian travel full width of curb ramp opening that is adjacent to traffic.
7. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.
8. Return curb may be provided in lieu of flared slope only if protected from traverse travel by landscaping, see Std. Dwg. RD721. Return curb shall not reduce width of approaching sidewalk.
9. Curb ramps for shared use paths intersecting a roadway shall be full width of path, excluding flares. When a curb ramp is used to provide bicycle access from a roadway to a sidewalk, the curb ramp opening will be ≥ 8' wide, (see Std. Dwg. RD909 for additional details).
10. Place an inlet at upstream side of curb ramp or perform other approved design mitigation. Check the gutter flow depth at curb ramp locations to assure that the design flood does not overtop the back of sidewalk.
11. On or along state highways, curb and gutter is required at curb ramps.

LEGEND:

- Sidewalk
- Detectable warning surface
- Level area (Turning space/landing)
  Unobstructed 4.5' x 4.5'
  With obstruction 4.5' x 5.5' (Longer dimension in direction of pedestrian street crossing).
  For the purposes of this application, a max. 2.0% finished surface slope (for drainage) measured perpendicular in two directions is considered level.
- Cross slope 1.5% max.
  (Max. 2.0% finished surface slope)
  (Normal sidewalk cross slope)
- Running slope 7.5% max.
  (Max. 8.3% finished surface slope)
- Counter slope 4.0% max. ascending or descending,
  (Max. 5.0% finished surface slope)
  Slope as required for drainage
- Flare slope
  (Max. 10% finished surface slope)



THROUGH BUFFER STRIP



WITH SINGLE FLARE

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PERPENDICULAR CURB RAMP

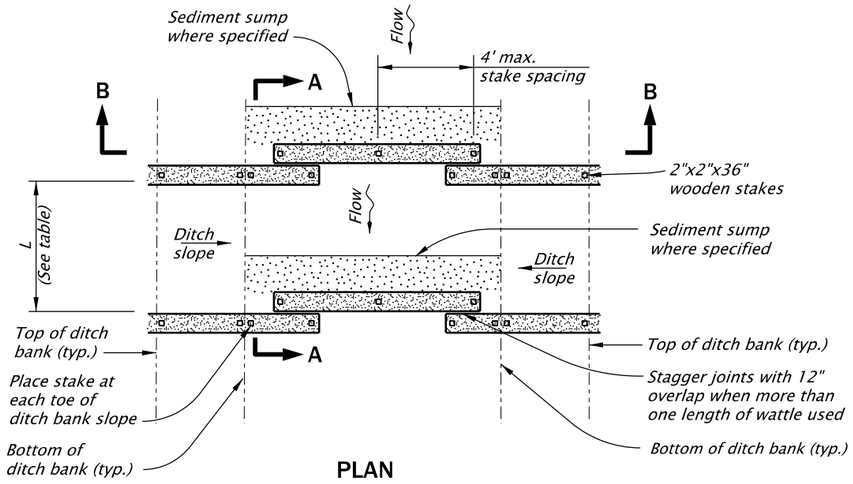
2024

DATE	REVISION DESCRIPTION
12-2021	NEW DRAWING CREATED
01-2022	REVISED NOTES

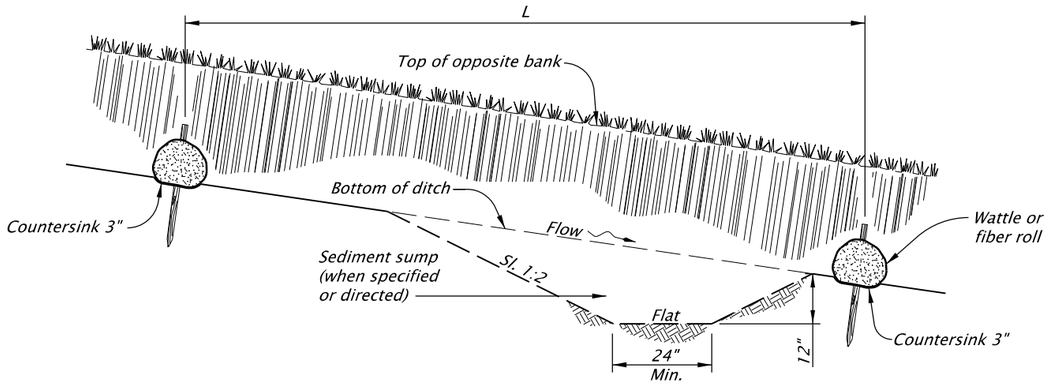
CALC. BOOK NO. N/A | SDR DATE 14-JAN-2022 | **RD910**

Effective Date: December 1, 2023 - May 31, 2024

20-JAN-2021
RD1006.dgn



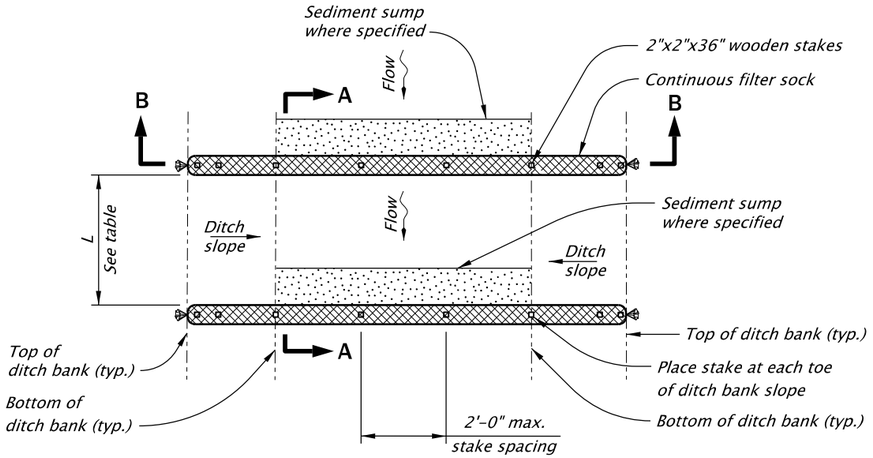
PLAN



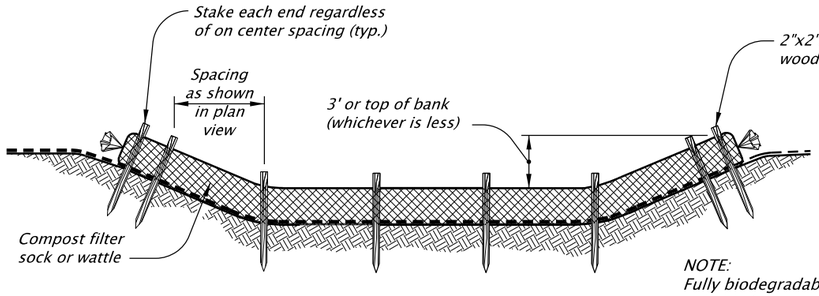
SECTION A-A

WATTLE / FIBER ROLL CHECK DAM - TYPE 2

NOT TO SCALE



PLAN

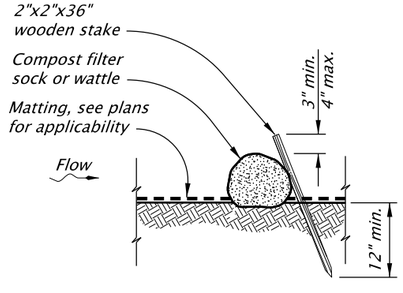


SECTION B-B

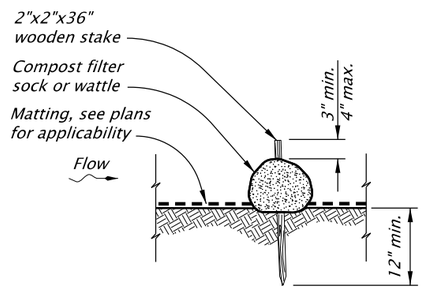
NOTE:
Fully biodegradable compost socks are suitable for permanent installation only. Product becomes too fragile to be moved or removed intact.

COMPOST FILTER SOCK CHECK DAM - TYPE 6

NOT TO SCALE



ALTERNATIVE 1



ALTERNATIVE 2

FIBER ROLL AND COMPOST SOCK STAKING ALTERNATIVES

NOT TO SCALE

MAXIMUM CHECK DAM SPACING "L"

Ditch Grade	H=8"	H=12"	H=18"	H=24"
10%	* *	* *	15'	20'
9%	* *	* *	16'	22'
8%	* *	* *	18'	25'
7%	* *	* *	21'	28'
6%	* *	16'	25'	33'
5%	* *	20'	30'	40'
4%	16'	25'	37'	50'
3%	22'	33'	50'	66'
2%	33'	50'	75'	100'

* * Not allowed H = Min. dam height

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CHECK DAMS TYPE 2 AND 6

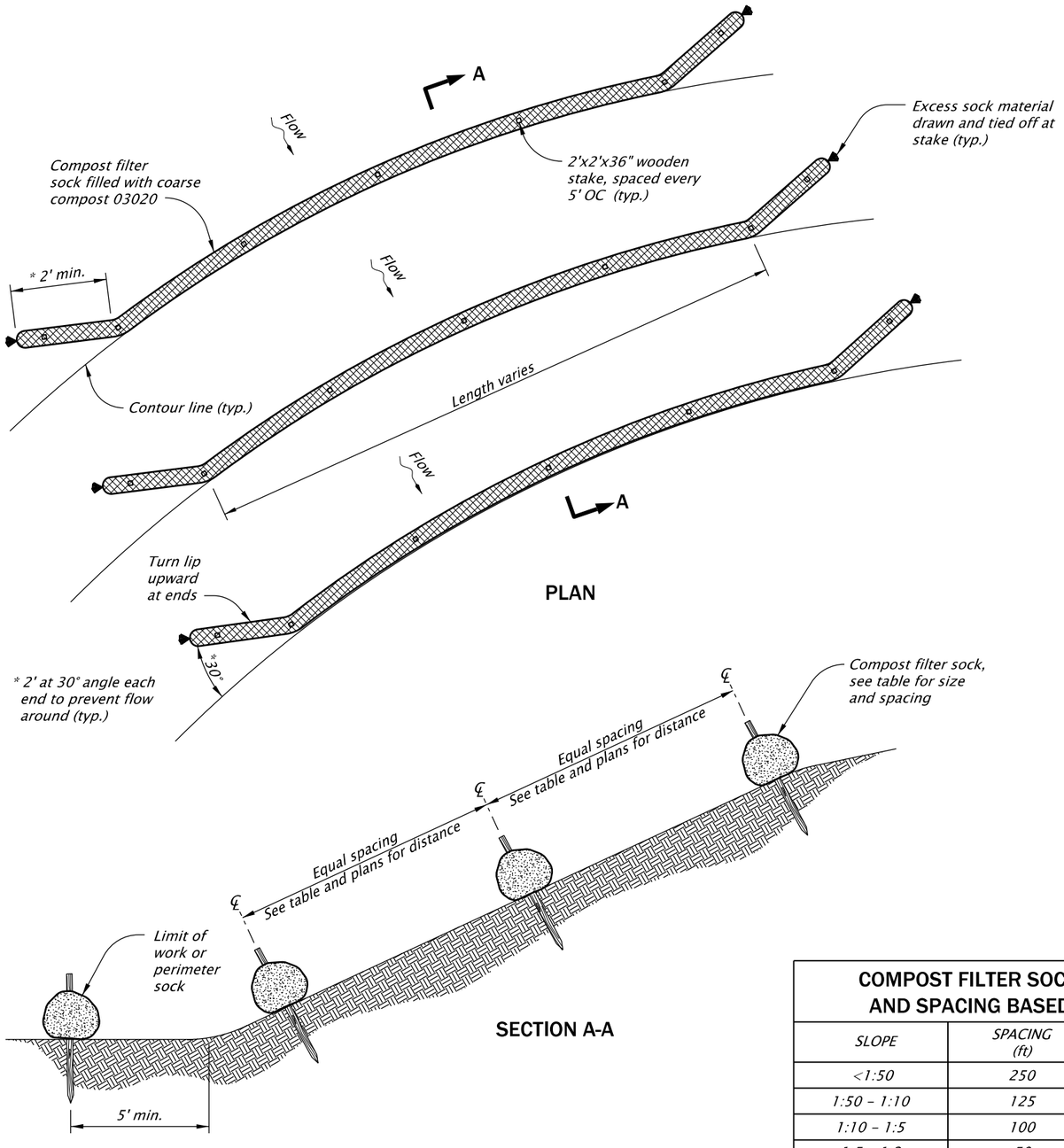
2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1006**

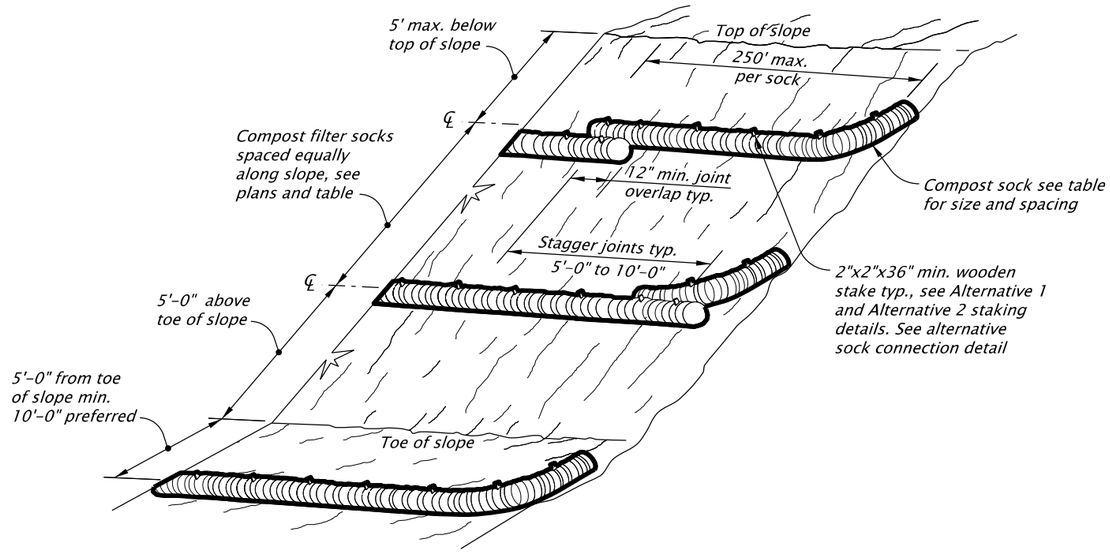
20-JAN-2021

RD1032.dgn

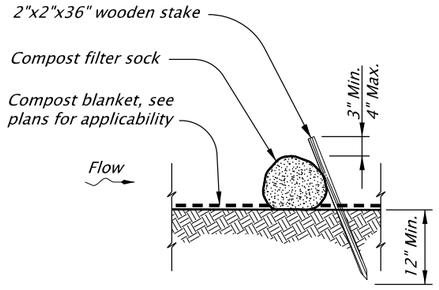


PLAN

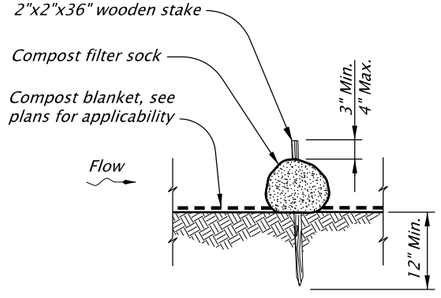
SECTION A-A



SLOPE APPLICATION - PERSPECTIVE VIEW



ALTERNATIVE 1 (Staking)



ALTERNATIVE 2 (Staking)

COMPOST FILTER SOCK DIAMETER AND SPACING BASED ON SLOPE		
SLOPE	*SPACING (ft)*	*DIAMETER (in)*
<1:50	*250*	*8*
1:50 - 1:10	*125*	*12*
1:10 - 1:5	*100*	*12*
1:5 - 1:2	*50*	*18*
>1:2	*25*	*18*

NOTE:
Fully biodegradable compost sock mesh is recommended for permanent installations. Where compost socks must be moved or removed, synthetic sock mesh should be used.

COMPOST FILTER SOCK

NOT TO SCALE

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SEDIMENT BARRIER TYPE 8

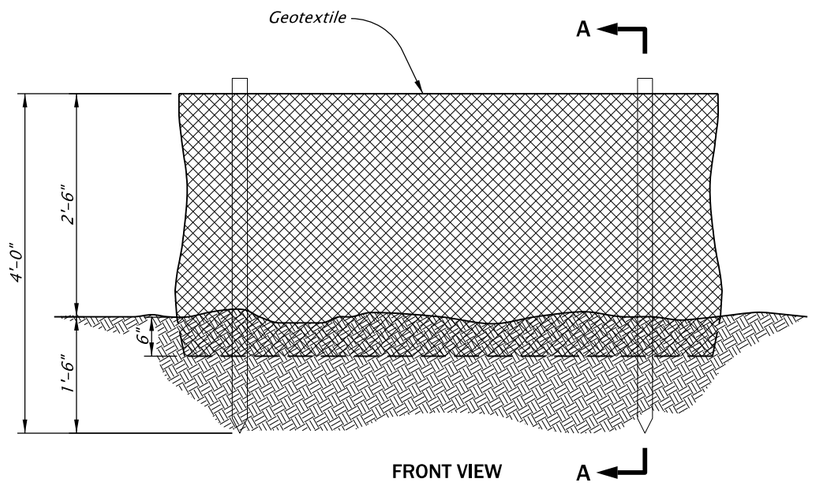
2024

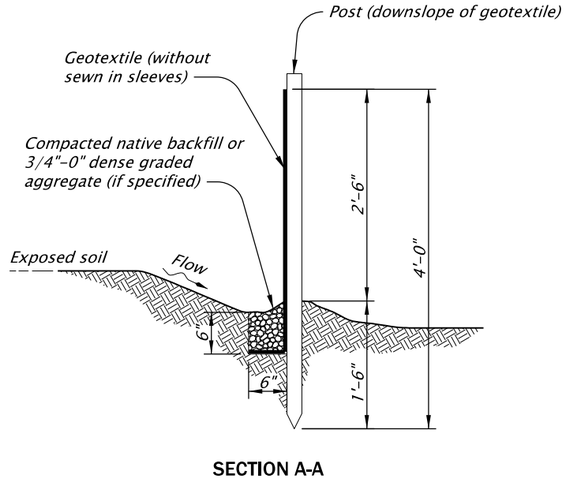
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | RD1032

Effective Date: December 1, 2023 - May 31, 2024

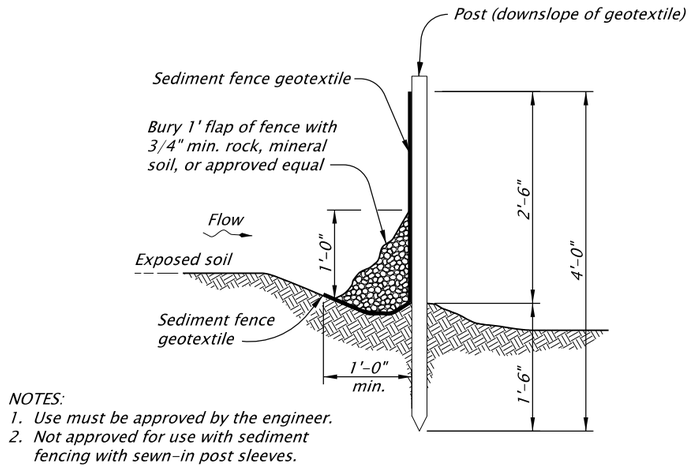
20-JAN-2021
RD1040.dgn





SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1

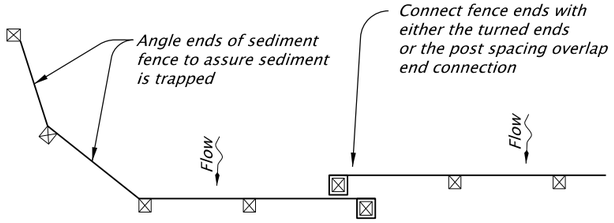
NOT TO SCALE



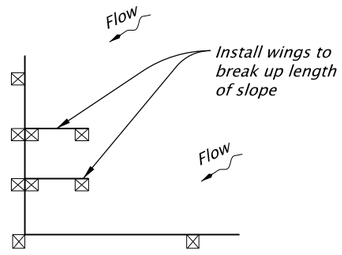
NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2

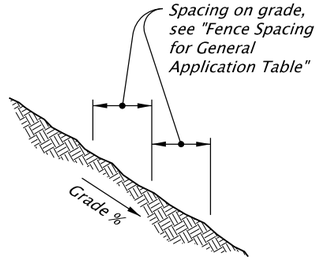
NOT TO SCALE



PLAN VIEW



TERMINATION AT CORNER OR PROPERTY LINE



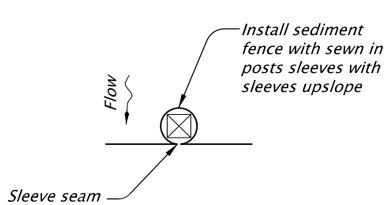
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE

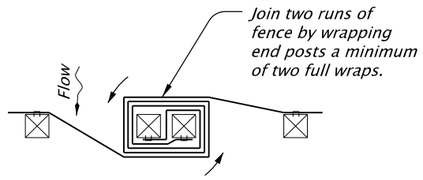
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

POST SPACING TABLE

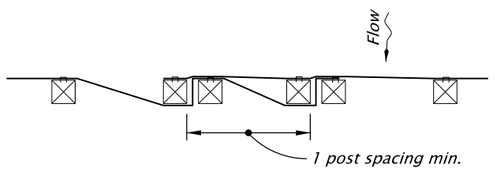
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS

NOT TO SCALE

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SEDIMENT FENCE

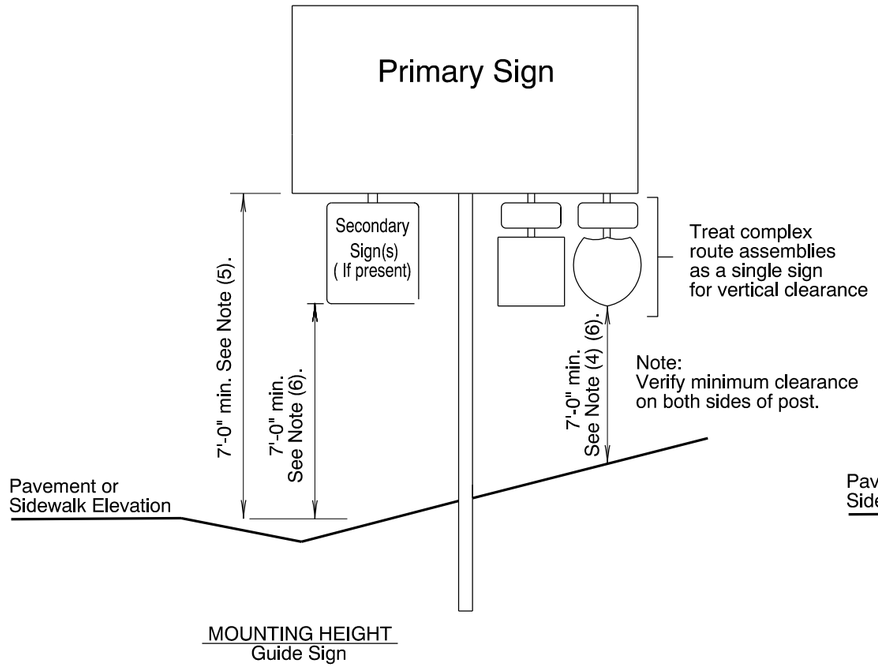
2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

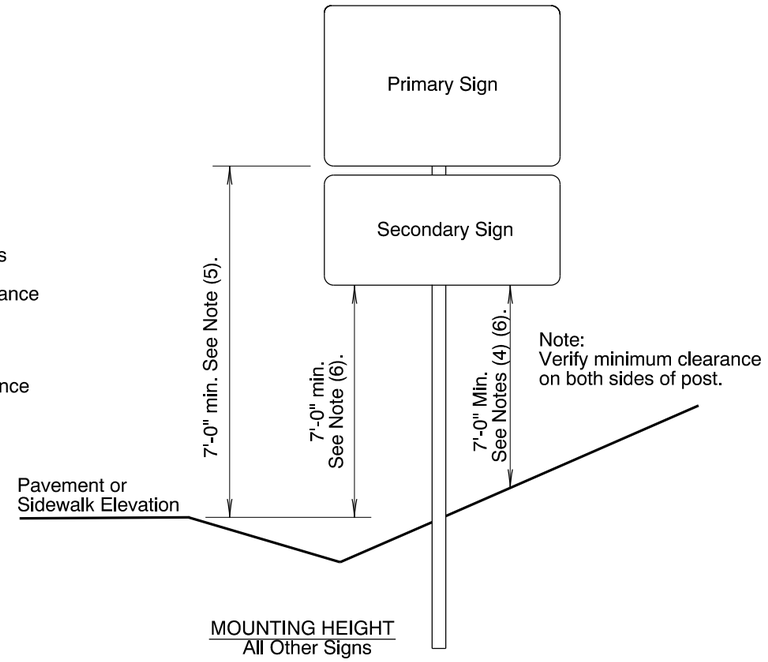
CALC. BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1040**

07-JAN-2022

TM200.dgn



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.

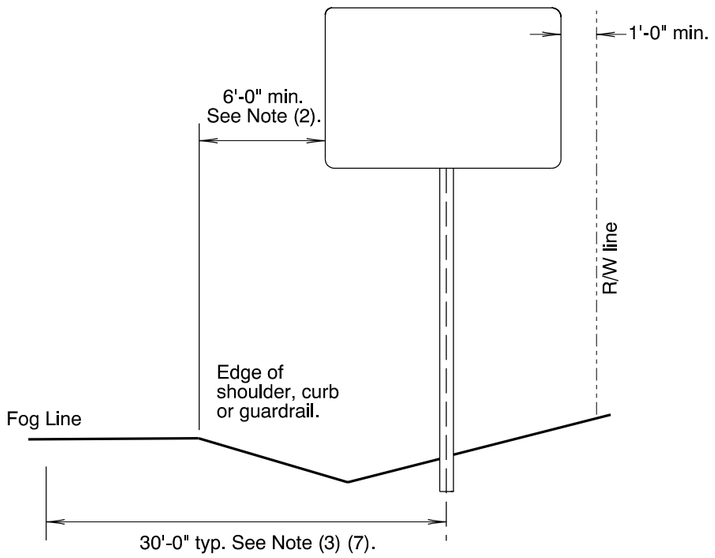
d. For perforated steelsquare tube support details see Dwg. No. TM681.

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

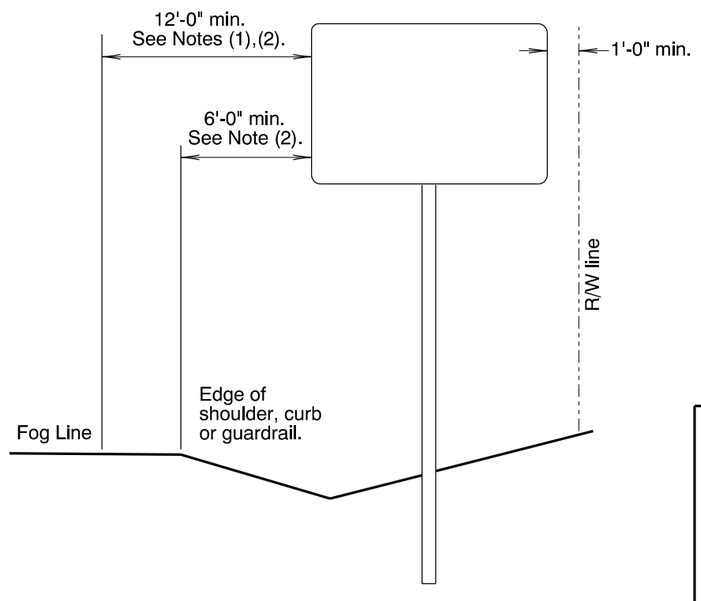
f. For multi-post breakaway support details see Dwg. No. TM600.

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.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SIGN INSTALLATION DETAILS

2024

DATE	REVISION DESCRIPTION
01/22	Edited elevation text in Mounting Height details

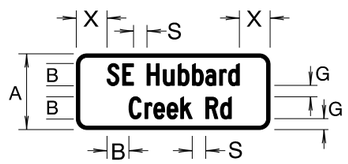
CALC. BOOK NO. N/A | SDR DATE 07 JAN 2022 | **TM200**

Effective Date: December 1, 2023 - May 31, 2024

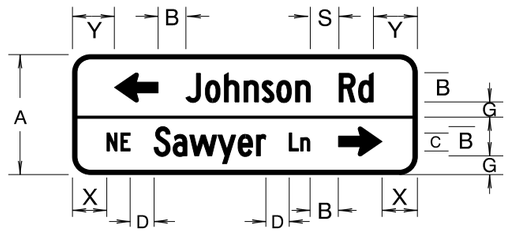
23-NOV-2020
TM223.dgn

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"



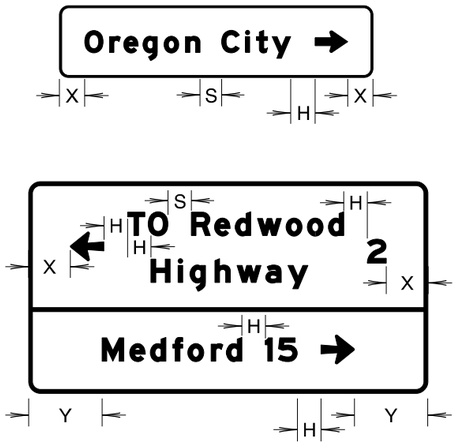
STACKED LEGEND FOR STREET NAME SIGN (GROUND-MOUNTED)



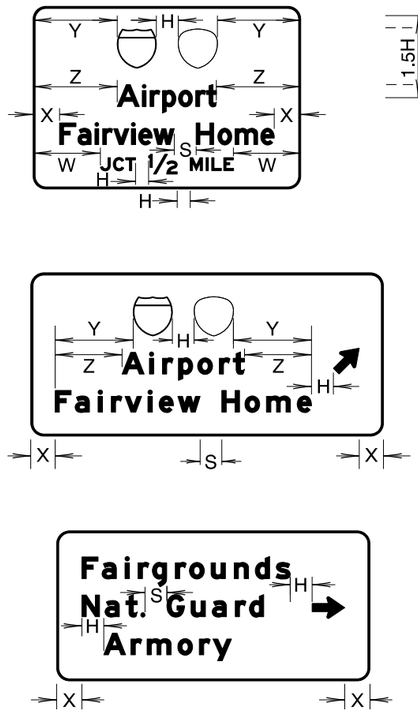
STACKED LEGEND FOR STREET NAME SIGN (MAST ARM MOUNTED)

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.

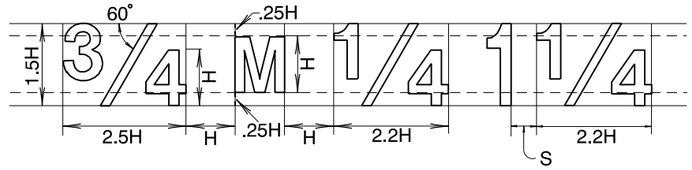
STREET NAME SIGN DETAILS



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.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CONVENTIONAL ROADS DIRECTIONAL SIGN LAYOUT STREET NAME SIGNS

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 23-NOV-2020 | **TM223**

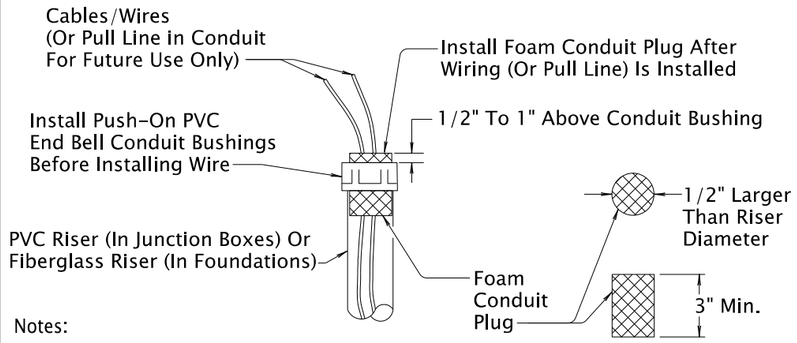
04-JAN-2021

TM471.dgn

Type Of Conduit	Minimum Cover From Top of Finished Surface (Use Permit Depth If Greater Than These) Roadway & Shoulders	Other Areas
Metallic	24"	18"
Non-Metallic	30"	18"

Note:
1.) Additional Cover Depth May Be Necessary Near Foundations And Junction Boxes To Accommodate The Minimum Radius ("R") Of The Conduit Elbow. See "Conduit Elbow", "Conduit Installation In Foundations" And "Conduit Installation In Junction Boxes" Details For More Information.

MINIMUM COVER FROM FINISHED SURFACE



Notes:

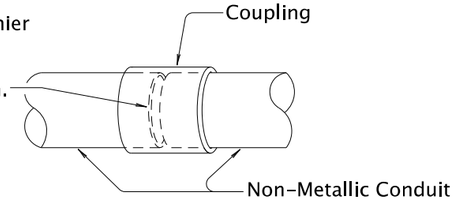
1.) Ream Conduit Ends To Remove Rough Edges And Burrs
2.) Temporarily Plug Or Cap Conduit Ends At All Times To Keep Debris Out

CONDUIT ENDS AND BUSHINGS

Conduit Diameter	R (min.)
1 1/2"	10"
2"	12"
2 1/2"	15"
3"	18"

CONDUIT ELBOWS

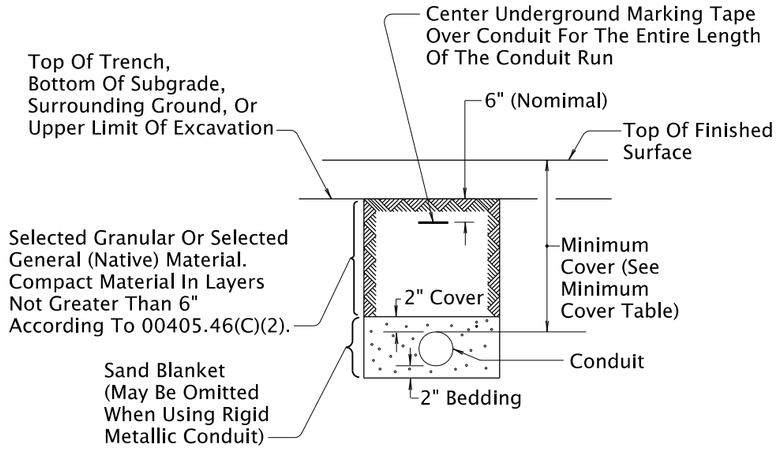
Make Cuts Square And True So Conduit Ends Fit Together For Thier Full Circumference. Use Solvent Weld To Connect Conduit As Per Manufacturer's Recommendation.



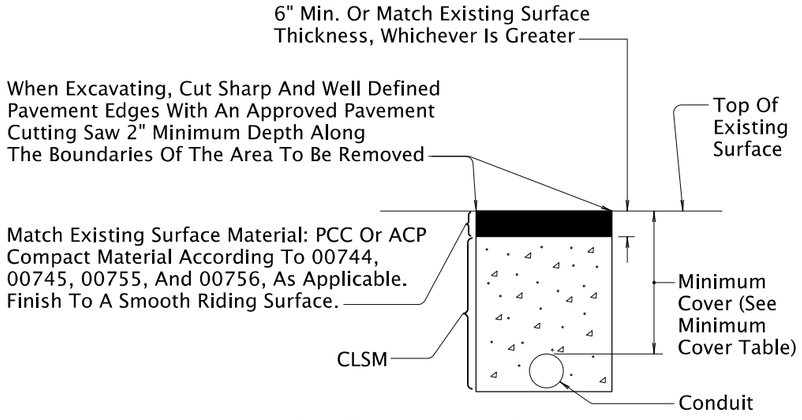
Notes:

1.) Slip Joints, Running Threads Or Reducing Couplings Not Allowed. Use The Same Size Conduit For The Entire Length, Outlet To Outlet.

CONDUIT COUPLINGS



UNSURFACED AREAS
(new roadway prior to paving, shoulders, under sidewalk, landscaped areas, etc.)

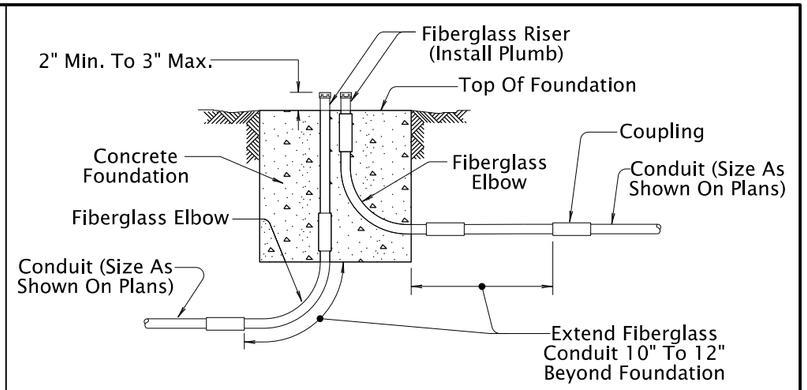


EXISTING PAVED AREAS

Trenching & Backfill Notes:

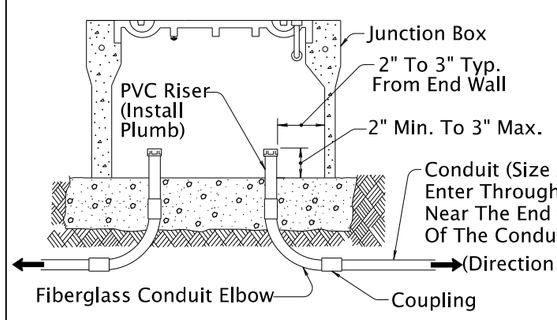
1. Excavate According To 00960.40. In Areas To Be Paved Or Landscaped, Place All Conduit Before Paving Or Landscaping.
2. Hold Trench Width To A Practical Minimum
3. Do Not Backfill Trenches Until Inspected By The Engineer
4. Furnish Backfill Materials According To 00960.10

CONDUIT OPEN TRENCH EXCAVATION & BACKFILL



CONDUIT INSTALLATIONS IN FOUNDATIONS

(Applicable for Pole, Pedestal, Post, Service Cabinet and Controller Cabinet Foundations)



Junction Box Type	Max. Sum Of Conduit Diameters
JB1	12"
JB2	18"
JB3	34"

CONDUIT INSTALLATION IN JUNCTION BOXES

General Notes:

1. Install Non-Metallic Conduit Unless Otherwise Shown. Conduit Runs Shall Be Continous Between Any Pole, Junction Box, Or Cabinet.
2. Install Conduit By Open Trench Method, Horizontal Directional Drilling, Or As Shown
3. Conduit Runs Shown On Plans Are For Bidding Purposes Only. Locations May Be Changed To Avoid Obstructions.
4. Larger Conduit Than Specified May Be Used At The Option And Cost Of The Contractor If Max. Sum Of Conduit Diameters In Junction Box Is Not Exceeded.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

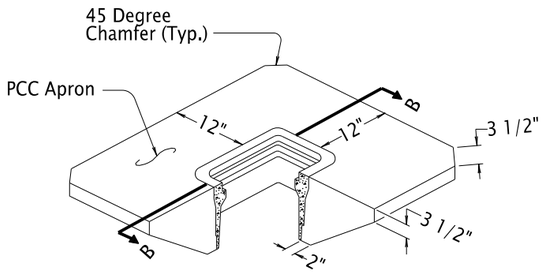
TRENCHING & CONDUIT INSTALLATION

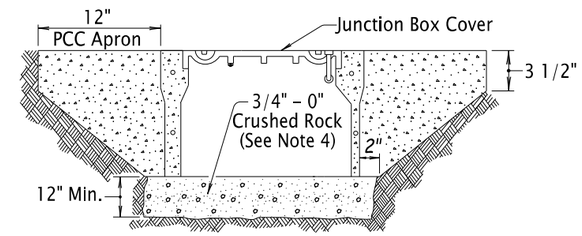
2024

DATE	REVISION DESCRIPTION
01-2021	ADDED NOTE 1 TO "MINIMUM COVER FROM FINISHED SURFACE" DETAIL

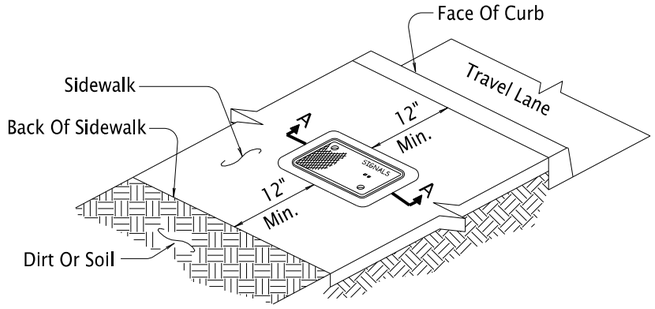
CALC. BOOK NO. N/A | SDR DATE 04-JAN-2021 | **TM471**

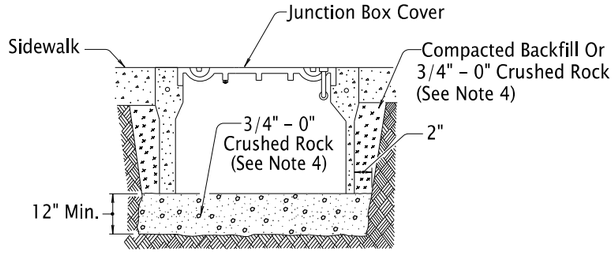
Effective Date: December 1, 2023 - May 31, 2024





SECTION B-B

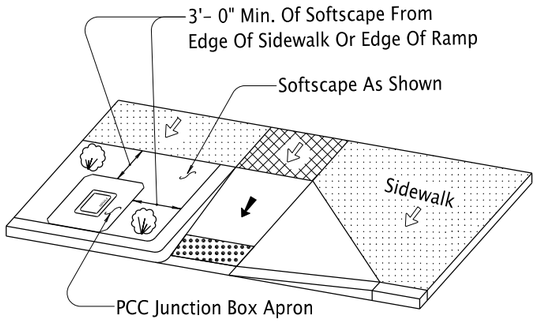




SECTION A-A

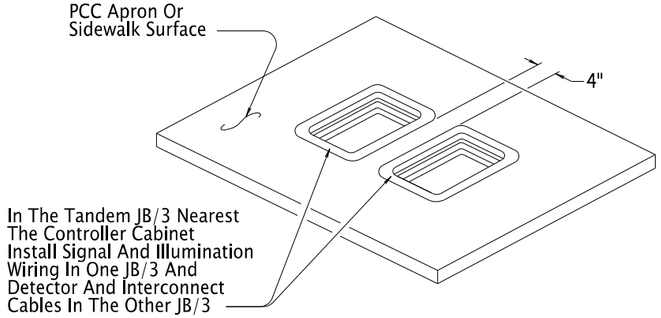
JUNCTION BOX INSTALLATION IN PCC SIDEWALK

(This Detail Only Applicable for Junction Boxes Located In Flat Areas Of Sidewalks. Do Not Install In Slopes Of Ramps Or Driveways)

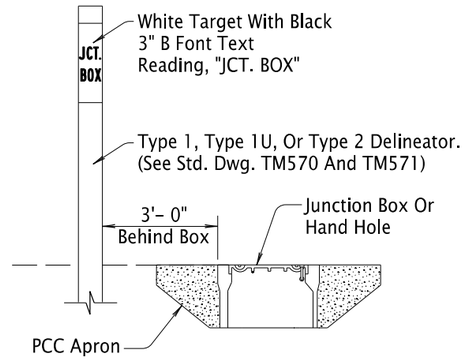


JUNCTION BOX INSTALLATION IN UNSURFACED AREA

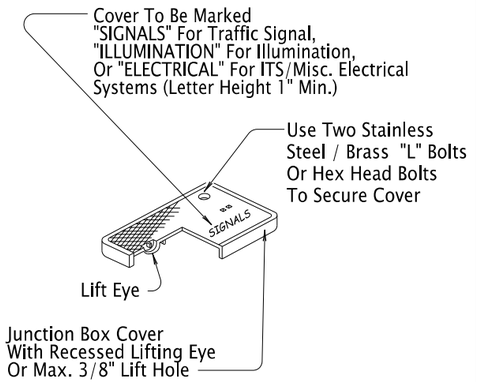
(This Detail Only Applicable for Junction Boxes Located In Incidental Travel Areas; Gravel Shoulders, Behind Guardrail, Etc. Do Not Install In Travel Lanes, Paved Shoulders, Or Other Areas Exposed To Traffic.)



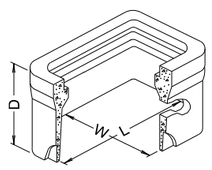
TANDEM JB/3A JUNCTION BOX DETAILS



DELINEATION OF JUNCTION BOX & HAND HOLE IN UNSURFACED AREA



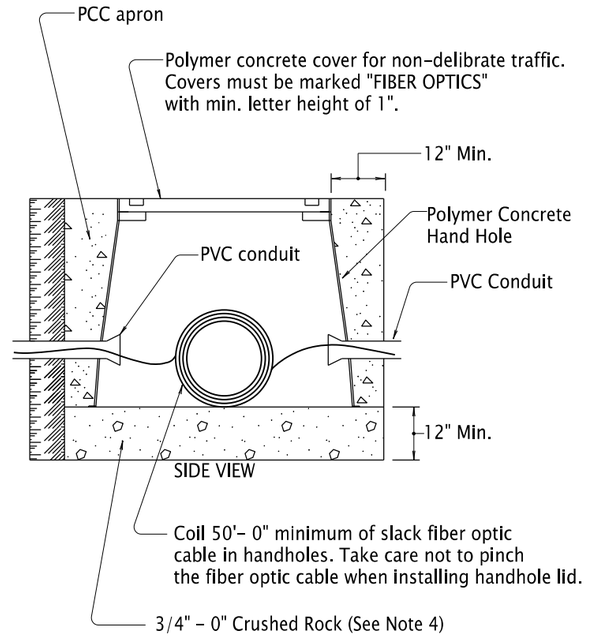
JUNCTION BOX COVER DETAILS

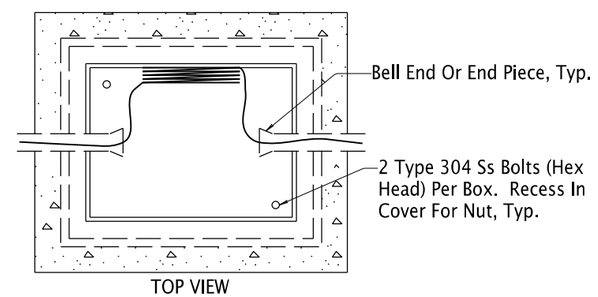


Type*	L	W	D
JB1	17"	10"	12"
JB2	22"	12"	12"
JB3	30"	17"	12"
HH-1	24"	30"	24"
HH-2	30"	48"	24"
HH-3	30"	48"	36"

*Junction Box Or Handhole
Type As Shown On Plans

DIMENSION TABLE





FIBER OPTIC CABLE HAND HOLE INSTALLATION

GENERAL NOTES:

1. Install Top of Junction Box And Hand Hole Flush With The Sidewalk, Surrounding Grade, Or Top Of Curb. For Hand Holes Installed In The Roadway Or Shoulder, Leave The Top Of The Hand Hole 1/2" Below The Pavement Surface.
2. Install Junction Boxes And Hand Holes At The Approximate Locations Shown, Or If Not Shown, No More Than 300 Feet Apart For Junction Boxes And No More Than 1000 Feet Apart For Hand Holes.
3. More Junction Boxes And Hand Holes Than Specified May Be Installed To Facilitate The Work At The Option And Cost Of The Contractor
4. Use Materials According To 00640.10 and 00640.16. Use Compaction Equipment Suitable For Area And Compact Each Six Inch Layer With Sufficient Coverages To Produce A Firm Unyielding Surface. Do Not Install Conductors Until Surface Has Been Constructed.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

JUNCTION BOXES/HAND HOLES

2024

DATE	REVISION DESCRIPTION
07-2022	ADDED NEW MARKING (ILLUMINATION & ELECTRICAL) FOR JB COVER

CALC. BOOK NO. N/A | SDR DATE 08-JUL-2022 | **TM472**

07-01-2020

TM500.dgn

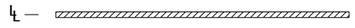
W

4" WHITE LINE

W-2

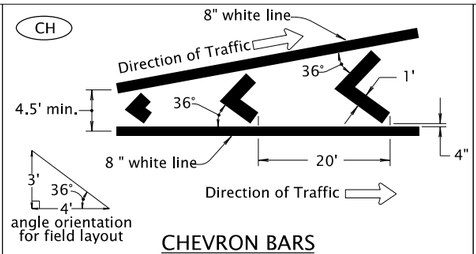
8" WHITE LINE

Y



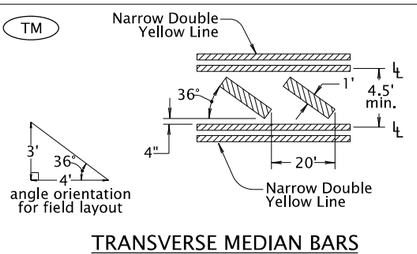
4" YELLOW LINE

CH



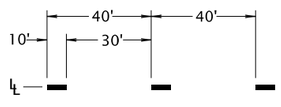
CHEVRON BARS
1' WHITE BARS AT 20' SPACING

TM



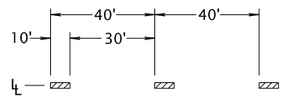
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 20' SPACING

WB



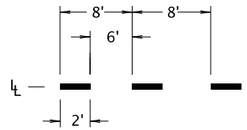
4" WHITE BROKEN LINE

YB



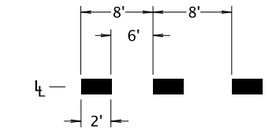
4" YELLOW BROKEN LINE

WD



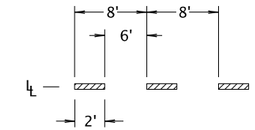
4" WHITE DOTTED LINE
For lane extensions

WD-2



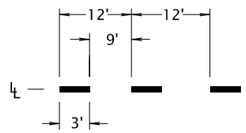
8" WHITE DOTTED LINE
For lane extensions and bike lane extensions

YD



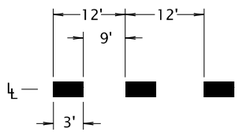
4" YELLOW DOTTED LINE
For lane extensions

DLL



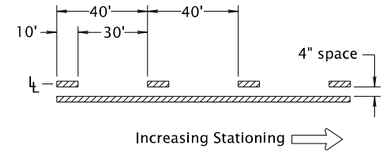
4" WHITE DOTTED LANE LINE
For lane lines in acceleration/deceleration lanes

DLL-2



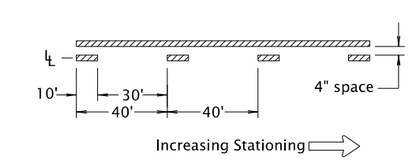
8" WHITE DOTTED LANE LINE
For lane lines in drop lanes

NPR



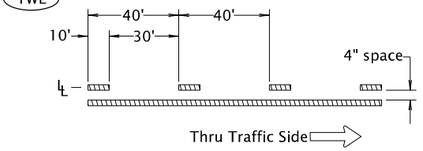
NO-PASS RIGHT
4" YELLOW LINES

NPL



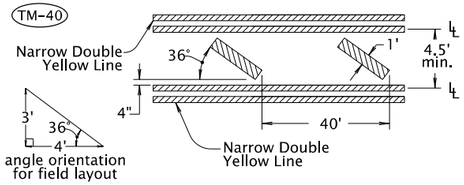
NO-PASS LEFT
4" YELLOW LINES

TWL



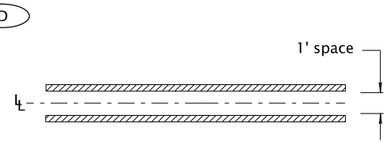
TWO-WAY LEFT TURN
4" YELLOW LINES

TM-40



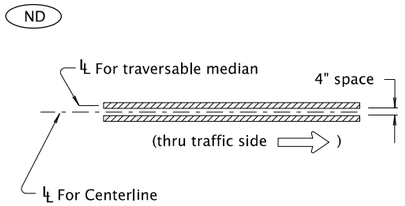
TRANSVERSE MEDIAN BARS
1' YELLOW BARS AT 40' SPACING
For use at painted medians where
distance between left turn refuges exceeds 200'

D



DOUBLE NO-PASS
TWO 4" YELLOW LINES

ND

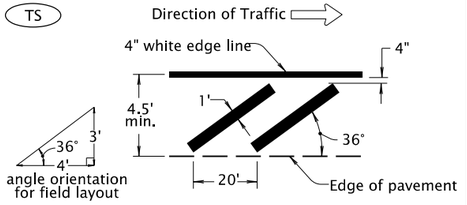


NARROW DOUBLE NO-PASS
TWO 4" YELLOW LINES

NDW

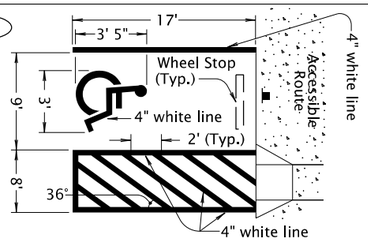
NARROW DOUBLE NO-LANE CHANGE
TWO 4" WHITE LINES

TS



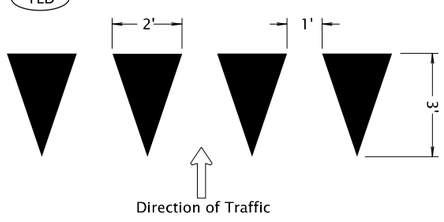
TRANSVERSE SHOULDER BARS
1' WHITE BARS AT 20' SPACING

HC



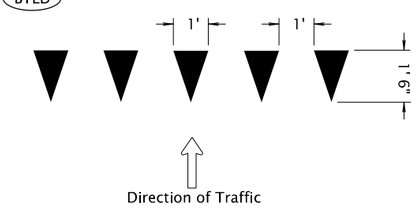
DISABLED PARKING DETAIL (white)

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

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with
the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2024

DATE	REVISION DESCRIPTION
07-2020	Changed Min. widths for CH, TM, TM-40, and TS

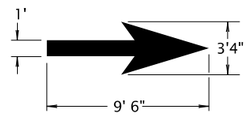
CALC. BOOK NO. N/A | SDR DATE 07-01-2020 | **TM500**

Effective Date: December 1, 2023 - May 31, 2024

01-03-2022

TM501.dgn

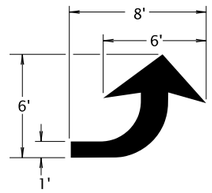
SA



STRAIGHT ARROW (white)

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

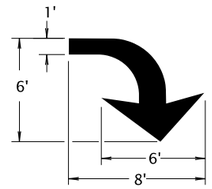
LA



LEFT TURN ARROW (white)

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

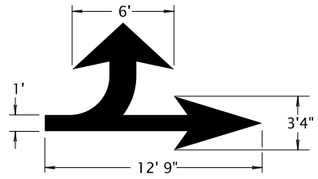
RA



RIGHT TURN ARROW (white)

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

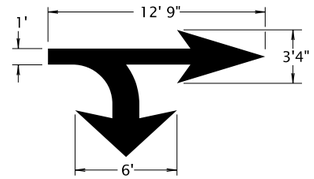
LSA



LEFT TURN STRAIGHT ARROW (white)

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

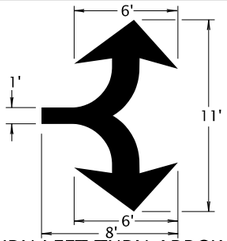
RSA



RIGHT TURN STRAIGHT ARROW (white)

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

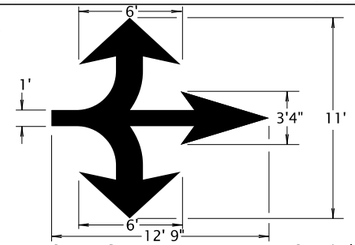
RALA



RIGHT TURN LEFT TURN ARROW (white)

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

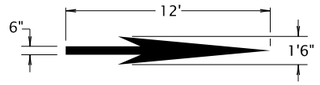
RSLA



RIGHT TURN STRAIGHT LEFT TURN ARROW (white)

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

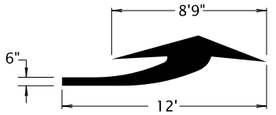
E-SA



ELONGATED STRAIGHT ARROW (white)

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

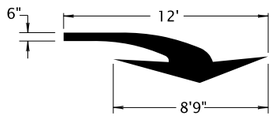
E-LA



ELONGATED LEFT TURN ARROW (white)

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

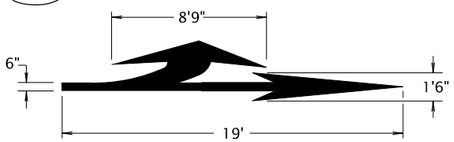
E-RA



ELONGATED RIGHT TURN ARROW (white)

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

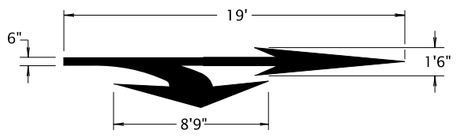
E-LSA



ELONGATED LEFT TURN STRAIGHT ARROW (white)

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

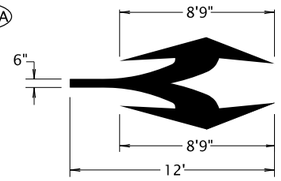
E-RSA



ELONGATED RIGHT TURN STRAIGHT ARROW (white)

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

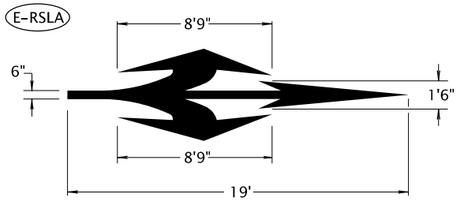
E-RALA



ELONGATED RIGHT TURN LEFT TURN ARROW (white)

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

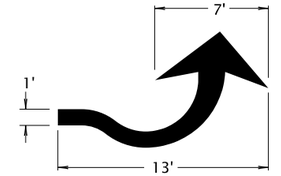
E-RSLA



ELONGATED RIGHT TURN STRAIGHT LEFT TURN ARROW (white)

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

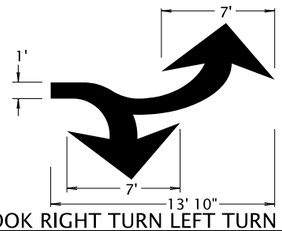
F-LA



FISH-HOOK LEFT TURN ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

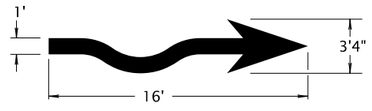
F-RALA



FISH-HOOK RIGHT TURN LEFT TURN ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

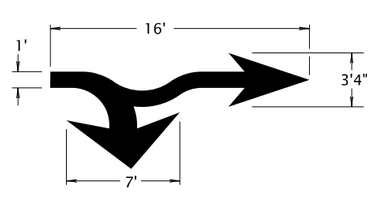
F-SA



FISH-HOOK STRAIGHT ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

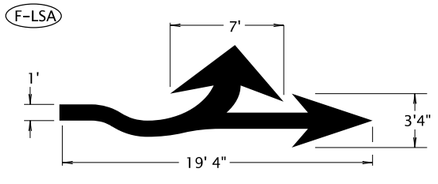
F-RSA



FISH-HOOK RIGHT TURN SRAIGHT ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

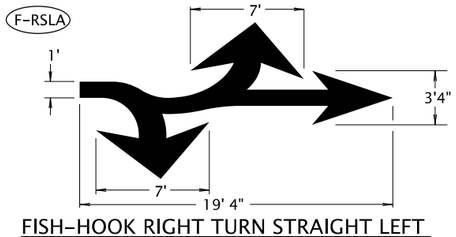
F-LSA



FISH-HOOK LEFT TURN STRAIGHT ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

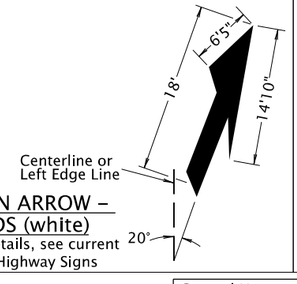
F-RSLA



FISH-HOOK RIGHT TURN STRAIGHT LEFT TURN ARROW (white)

For arrow proportion details, see the current ODOT Traffic Line Manual

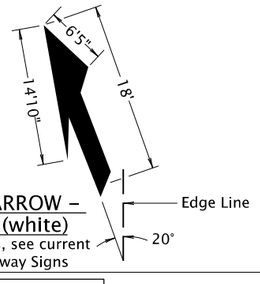
LRA-L



LANE REDUCTION ARROW - LEFT LANE ENDS (white)

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

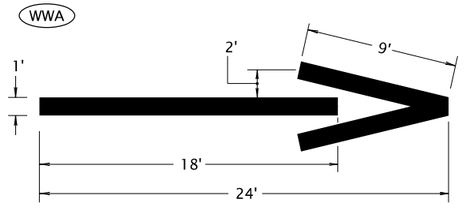
LRA-R



LANE REDUCTION ARROW - RIGHT LANE ENDS (white)

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

WWA



WRONG-WAY ARROW (white)

General Note:

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

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2024

DATE	REVISION DESCRIPTION
07-2020	Some Detail Blocks moved to new Std. Drawing TM504
	Fish-hook Arrows added, LRA split into LRA-L and LRA-R
01-2022	Corrected bubble callout of LRA-L and typo in LRA-R

CALC. BOOK NO. N/A

SDR DATE 01-03-2022

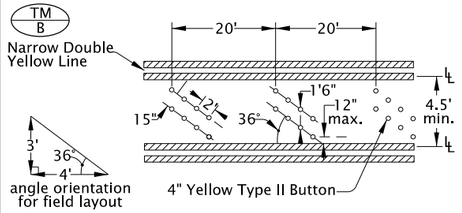
TM501

Effective Date: December 1, 2023 - May 31, 2024

01-03-2022

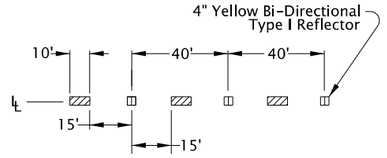
TM502.dgn

TM B



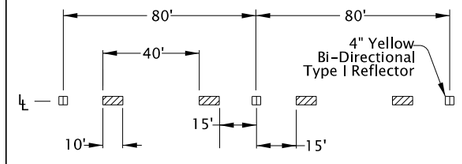
TRANSVERSE MEDIAN BAR SUBSTITUTION
BUTTON

YB R-40



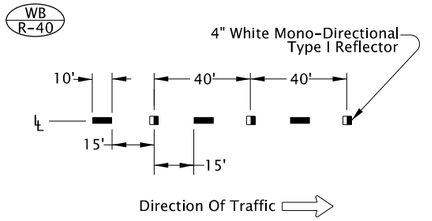
YELLOW BROKEN LINE SUPPLEMENTATION
REFLECTORS WITH 4" YELLOW BROKEN LINE

YB R-80



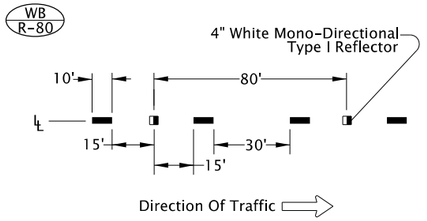
YELLOW BROKEN LINE SUPPLEMENTATION
REFLECTORS WITH 4" YELLOW BROKEN LINE

WB R-40



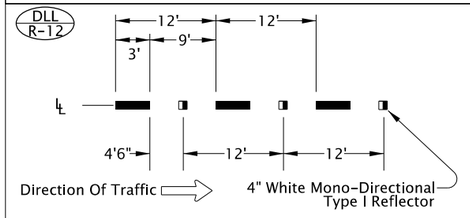
WHITE BROKEN LINE SUPPLEMENTATION
REFLECTORS WITH 4" WHITE BROKEN LINE

WB R-80



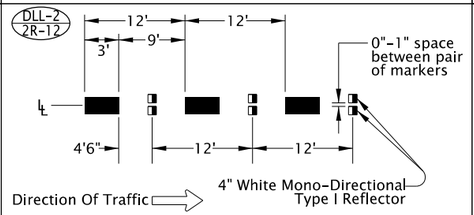
WHITE BROKEN LINE SUPPLEMENTATION
REFLECTORS WITH 4" WHITE BROKEN LINE

DLL R-12



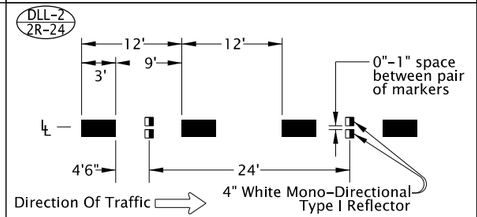
WHITE DOTTED LANE LINE SUPPLEMENTATION
REFLECTORS WITH 4" WHITE DOTTED LANE LINE

DLL-2 2R-12



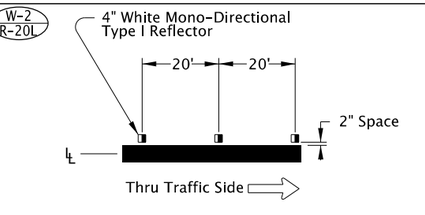
WIDE DOTTED LANE LINE SUPPLEMENTATION
REFLECTORS WITH 8" WHITE DOTTED LANE LINE

DLL-2 2R-24



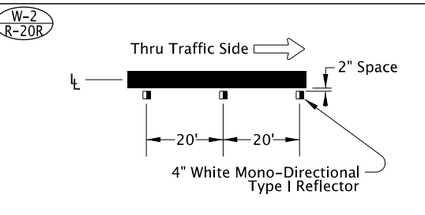
WIDE DOTTED LANE LINE SUPPLEMENTATION
REFLECTORS WITH 8" WHITE DOTTED LANE LINE

W-2 R-20L



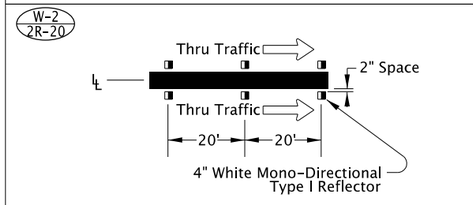
CHANNELIZING LINE POSITIONING GUIDE
REFLECTORS WITH 8" WHITE LINE

W-2 R-20R



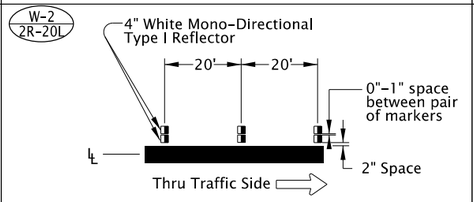
CHANNELIZING LINE POSITIONING GUIDE
REFLECTORS WITH 8" WHITE LINE

W-2 2R-20



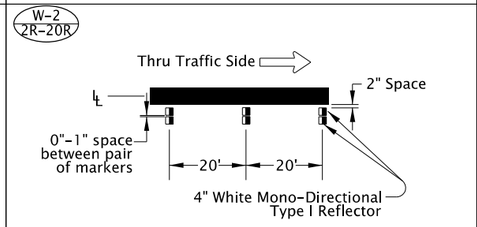
CHANNELIZING LANE LINE POSITIONING GUIDE
REFLECTORS WITH 8" WHITE LINE

W-2 2R-20L



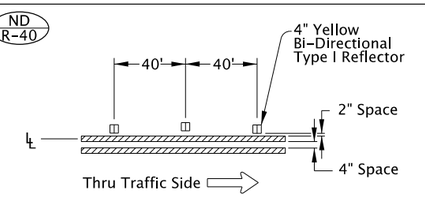
CHANNELIZING LINE SUPPLEMENTATION
REFLECTORS WITH 8" WHITE LINE

W-2 2R-20R



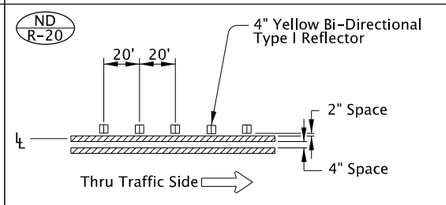
CHANNELIZING LINE SUPPLEMENTATION
REFLECTORS WITH 8" WHITE LINE

ND R-40



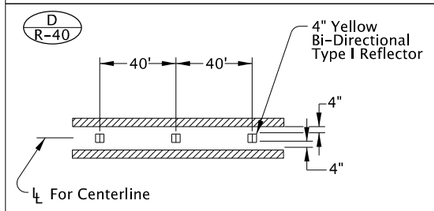
NARROW DOUBLE YELLOW POSITIONING GUIDE
REFLECTORS WITH TWO 4" YELLOW LINES

ND R-20



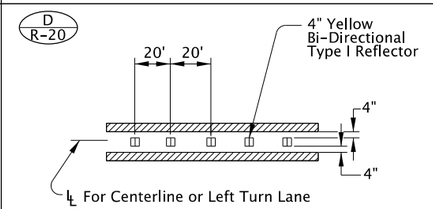
NARROW DOUBLE YELLOW POSITIONING GUIDE
REFLECTORS WITH TWO 4" YELLOW LINES

D R-40



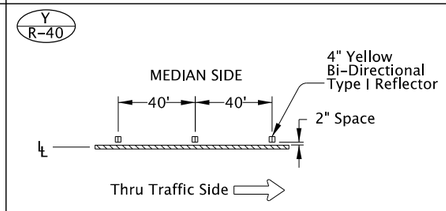
DOUBLE NO-PASS POSITIONING GUIDE
REFLECTORS WITH TWO 4" YELLOW LINES

D R-20



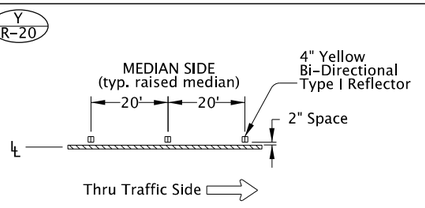
DOUBLE NO-PASS POSITIONING GUIDE
REFLECTORS WITH TWO 4" YELLOW LINES

Y R-40



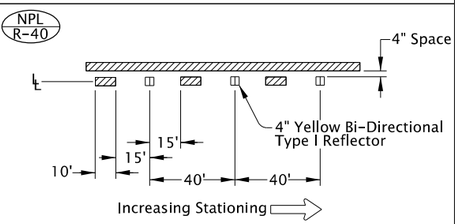
YELLOW LINE POSITIONING GUIDE
REFLECTORS WITH 4" YELLOW LINE

Y R-20



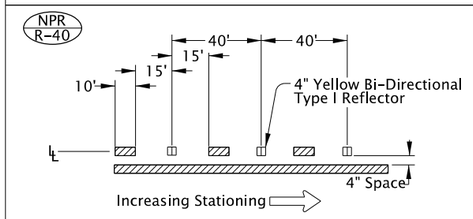
YELLOW LINE POSITIONING GUIDE
REFLECTORS WITH 4" YELLOW LINE

NPL R-40



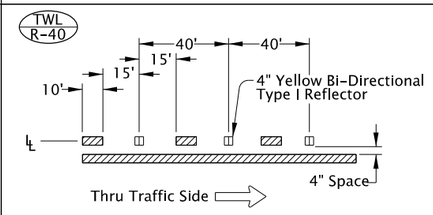
NO-PASS LEFT POSITIONING GUIDE
REFLECTORS WITH 4" YELLOW LINES

NPR R-40



NO-PASS RIGHT POSITIONING GUIDE
REFLECTORS WITH 4" YELLOW LINES

TWL R-40



TWO WAY LEFT TURN POSITIONING GUIDE
REFLECTORS WITH 4" YELLOW LINES

General note:

1) Surface mount Raised Pavement Markers (RPMs) unless otherwise specified.

LEGEND

- Direction Of Travel, Increasing Stationing or Thru Traffic Side
- ℄ — Lane line dimensions are shown on the striping plans
- Mono-directional crystal white marker reflects white to the left in this symbol
- Bi-directional yellow marker reflects yellow both left and right in this symbol

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2024

DATE	REVISION DESCRIPTION
07-2020	Changed min. width of TM/B from 6' to 4.5'
01-2022	Removed "LANE" from W-2/R-20R title

CALC. BOOK NO. N/A

SDR DATE 01-03-2022

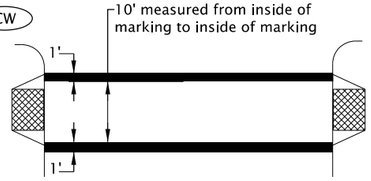
TM502

Effective Date: December 1, 2023 - May 31, 2024

07-08-2022

TM503.dgn

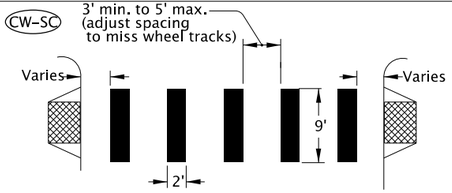
CW



STANDARD CROSSWALK
TWO 1' WHITE BARS

Install per Standard Drawing TM530

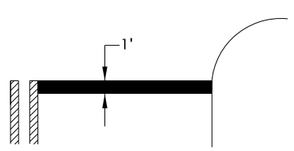
CW-SC



STAGGERED CONTINENTAL CROSSWALK
2' WHITE BARS

Install per Standard Drawing TM530

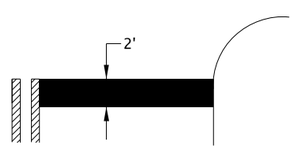
S



STOP BAR
1' WHITE BAR

Install per Standard Drawing TM530

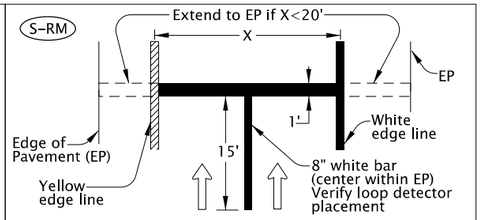
S-2



STOP BAR - LARGE
2' WHITE BAR

Install per Standard Drawing TM530

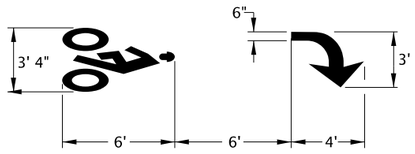
S-RM



RAMP METER STOP BAR
1' & 8" WHITE BARS

For multi-lane ramp meter applications

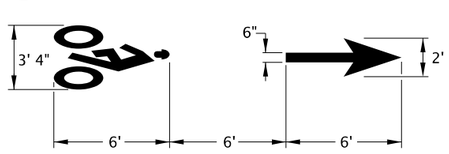
BR



BIKE RIGHT TURN STENCIL (white)

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

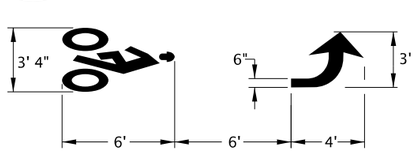
BS



BIKE LANE STANDARD STENCIL (white)

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

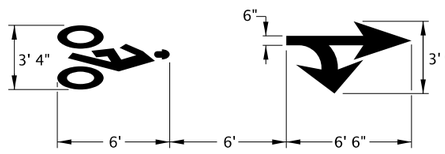
BL



BIKE LEFT TURN STENCIL (white)

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

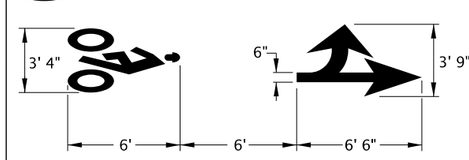
BRS



BIKE RIGHT TURN STRAIGHT STENCIL (white)

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

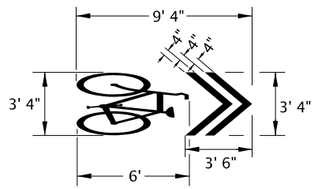
BLS



BIKE LEFT TURN STRAIGHT STENCIL (white)

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

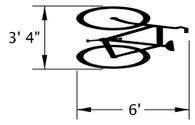
SLM



SHARED LANE MARKING (white)

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

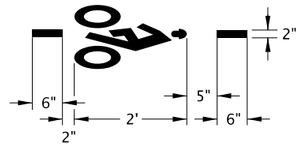
B



BIKE STENCIL (white)

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

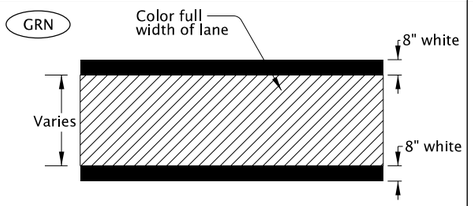
BD



BICYCLE DETECTOR MARKING (white)

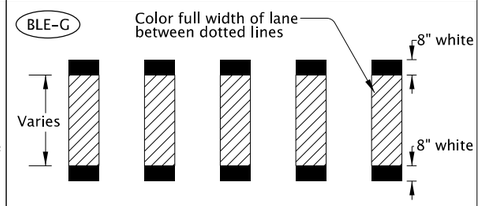
PLace Bicycle Detector Pavement Marking in optimum loction where bicycle acuates the traffic signal

GRN



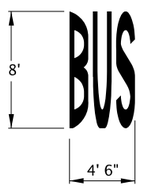
GREEN SUPPLEMENTAL BICYCLE LANE
SOLID LINE (green)

BLE-G



GREEN SUPPLEMENTAL BICYCLE LANE
DOTTED LINE EXTENSION (green)

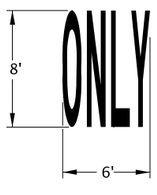
BUS



BUS (white)

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

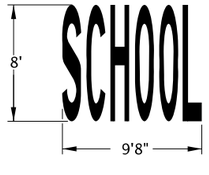
ON



ONLY (white)

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

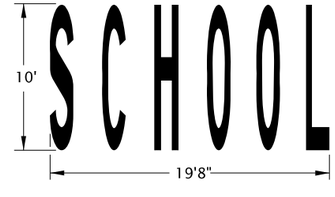
SCH



SCHOOL (white)

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

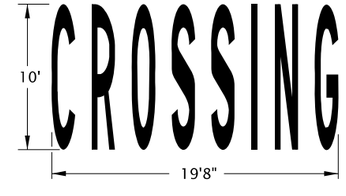
SCH-LG



SCHOOL - LARGE (white)

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

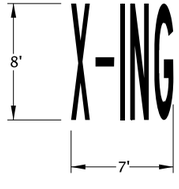
CRS-LG



CROSSING - LARGE (white)

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

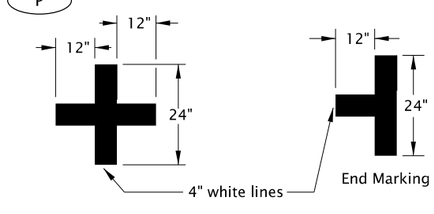
XNG



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 Trave

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PAVEMENT MARKING STANDARD DETAIL BLOCKS

2024

DATE	REVISION DESCRIPTION
07-2022	Added note for measurement of Standard Crosswalk

CALC. BOOK NO. N/A

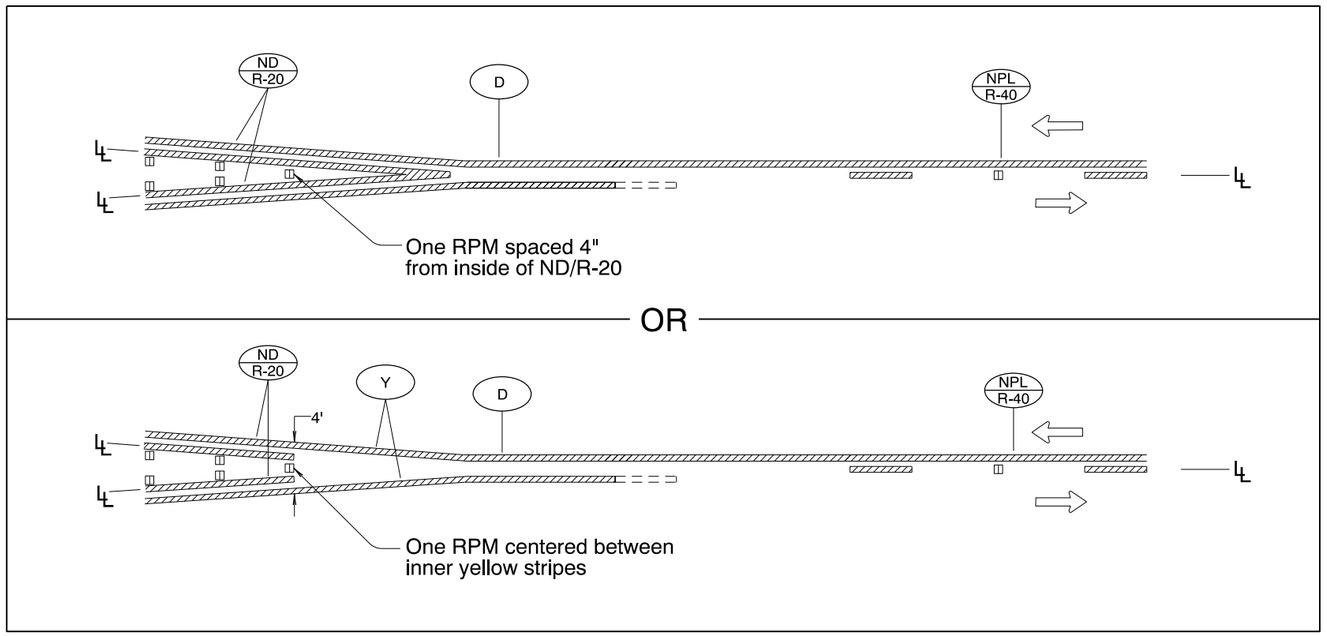
SDR DATE 07-08-2022

TM503

Effective Date: December 1, 2023 - May 31, 2024

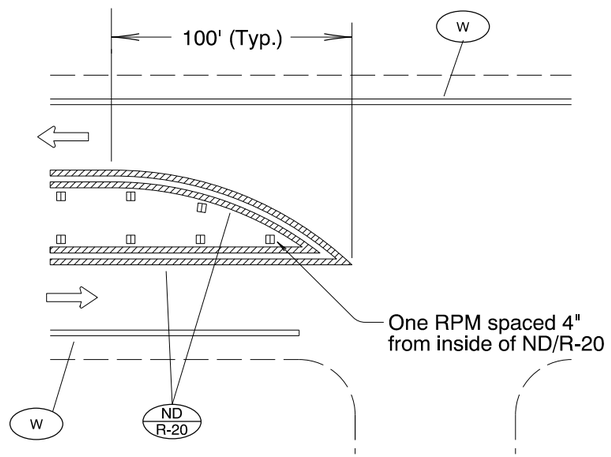
01-JUL-2015

TM515.dgn

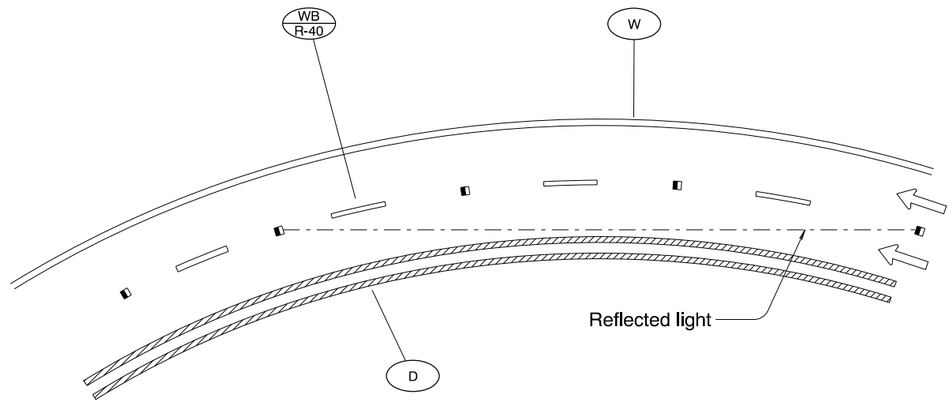


MEDIAN WIDTH TRANSITION

(TWO NARROW DOUBLE YELLOW LINES TO ONE-DIRECTION NO-PASSING LINE)
(Refer to TM539 for additional details)



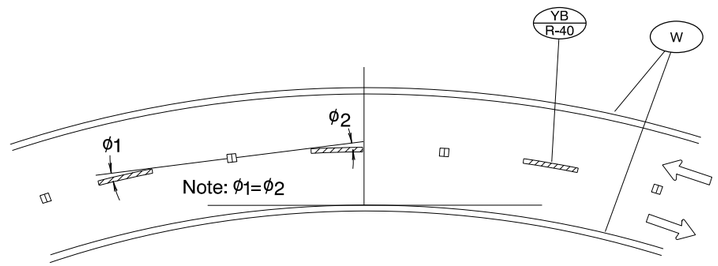
MEDIAN BULLNOSE DETAIL



NOTE:

On one way sections the marker shall be installed with the reflective surface aimed to direct the reflected light back three markers.

(a) PAVEMENT MARKER INSTALLATION FOR MONO-DIRECTIONAL RAISED PAVEMENT MARKERS



(b) PAVEMENT MARKER INSTALLATION FOR BI-DIRECTIONAL RAISED PAVEMENT MARKERS

PAVEMENT MARKER INSTALLATION ON HORIZONTAL CURVES

LEGEND

- Mono-Directional White (marker reflects white to left in this symbol)
- Bi-Directional Yellow (marker reflects yellow to both the left and right in this symbol)
- 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 TM504

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OREGON STANDARD DRAWINGS

PAVEMENT MARKERS

2024

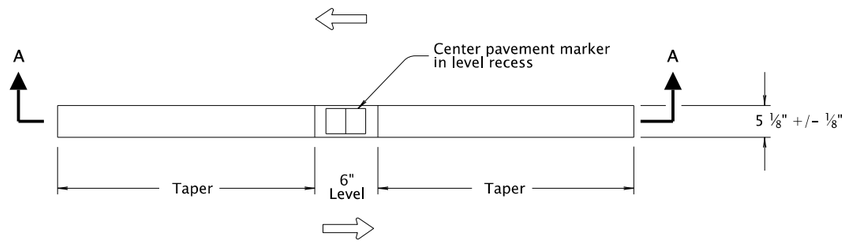
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 01-JUL-2015 | **TM515**

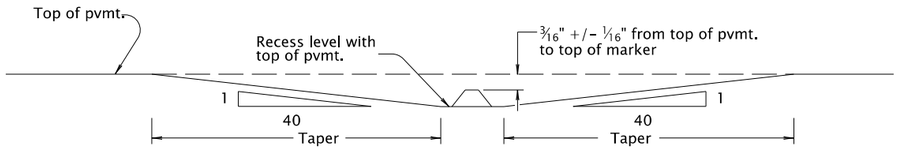
Effective Date: December 1, 2023 - May 31, 2024

07-06-2021

TM517.dgn

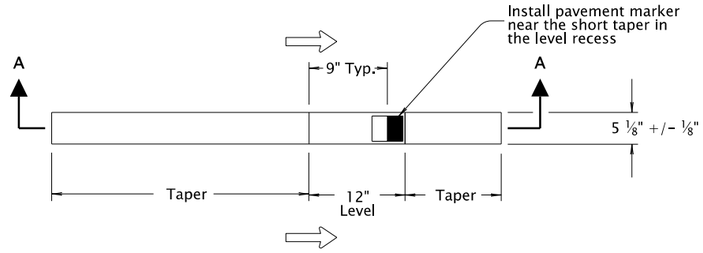


PLAN VIEW

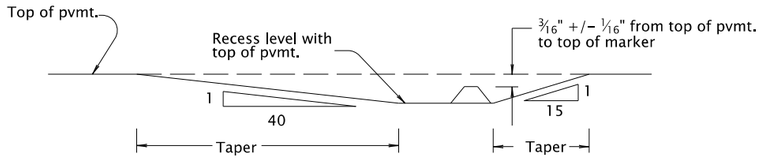


SECTION A – A

BI-DIRECTIONAL RECESSED PAVEMENT MARKER DETAIL



PLAN VIEW



SECTION A – A

MONO-DIRECTIONAL RECESSED PAVEMENT MARKER DETAIL

LEGEND

- Direction of Travel
- Bi-directional yellow marker reflects yellow both left and right in this symbol
- Mono-directional crystal white marker reflects white to the left in this symbol

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

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

RECESSED PAVEMENT MARKERS

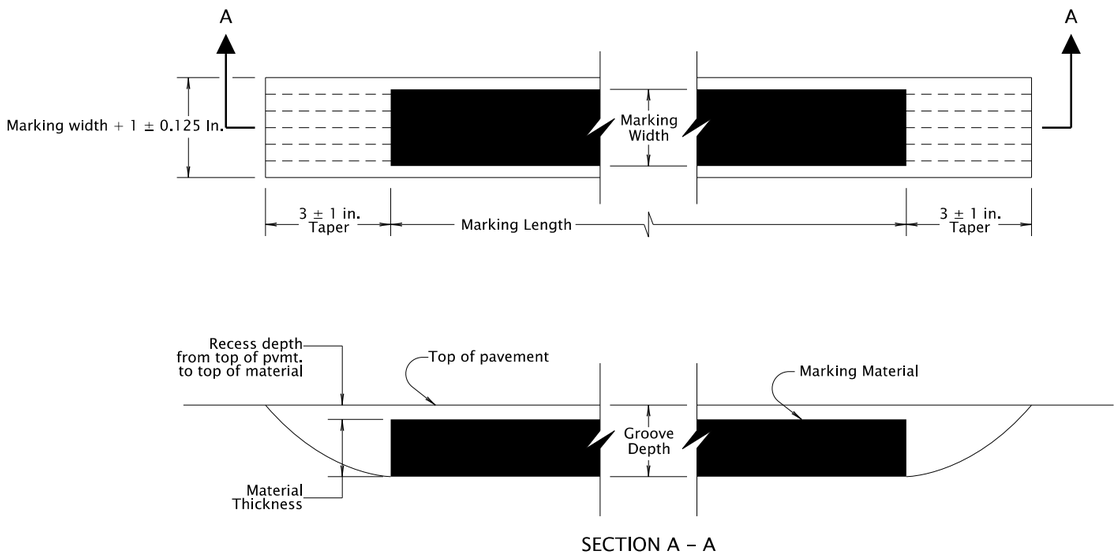
2024

DATE	REVISION DESCRIPTION
07-2021	Updated to better fit ODOT drafting standards

CALC. BOOK NO. N/A | SDR DATE 07-06-2021 | **TM517**

Effective Date: December 1, 2023 - May 31, 2024

20-JAN-2023
TM521.dgn

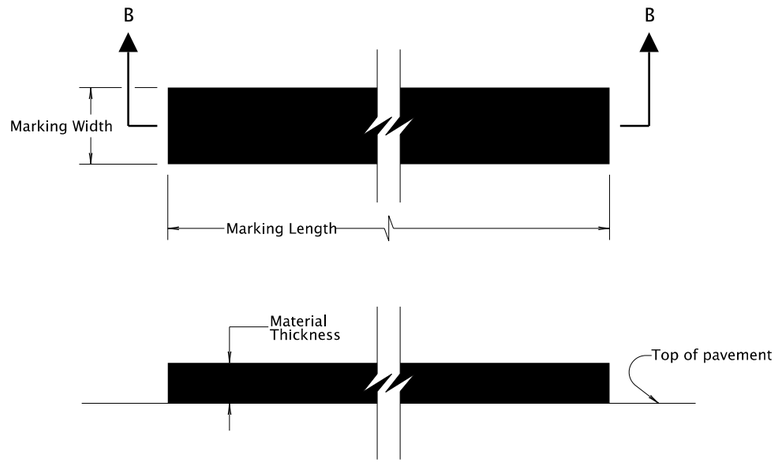


SECTION A – A

GROOVE INSTALLED GROOVE AND MATERIAL DIMENSIONS

Pavement Marking Material Type	Groove Depth	Recess Depth	Material Thickness
Durable Method 'A' & Method 'D'	220 ± 20 mils	45 ± 5 mils	Var.
High Performance	60 ± 10 mils	Var.	25 mils

GROOVE INSTALLED MARKINGS



SECTION B – B

SURFACE INSTALLED MATERIAL THICKNESS

Pavement Marking Material Type	Thickness
Durable Method 'A' & Method 'B' & Method 'D'	120 mils
High Performance	25 mils

SURFACE INSTALLED MARKINGS

General Notes:

1) See Standard Drawing TM500 and/or project plans for marking length and width dimensions.
2) See Standard Specification 00850.46 for marking installation tolerances.

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

DURABLE & HIGH PERFORMANCE PAVEMENT MARKINGS SURFACE & GROOVE INSTALLED NON-PROFILED

2024

DATE	REVISION DESCRIPTION
07-2021	Changed groove width for 4 In. markings
01-2023	Changed groove width back to previous width for 4 in. markings

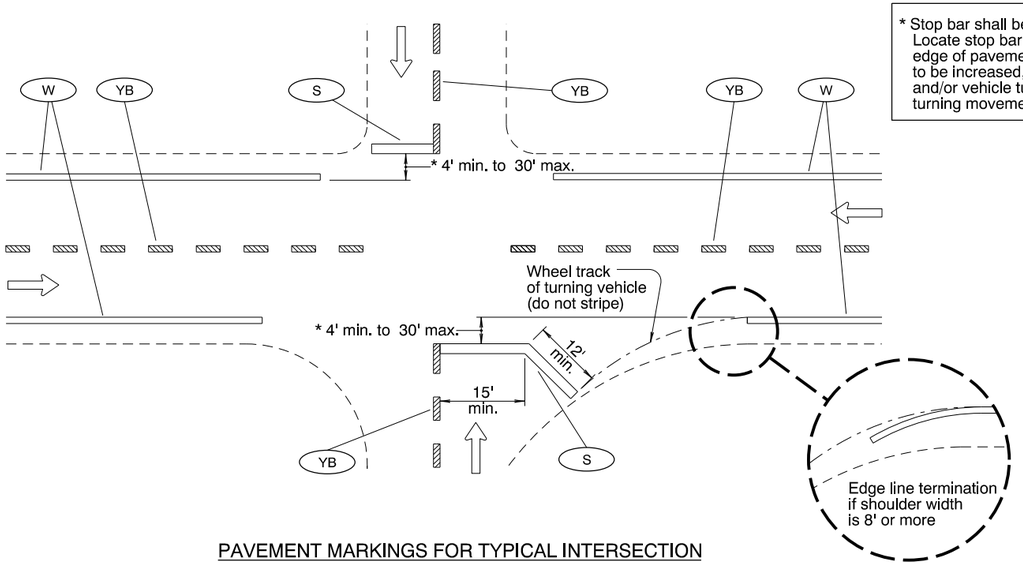
CALC. BOOK NO. N/A

SDR DATE 20-JAN-2023

TM521

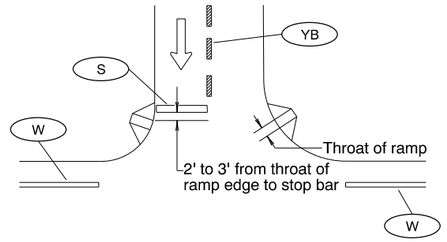
Effective Date: December 1, 2023 – May 31, 2024

06-JUL-2022
TM530.dgn

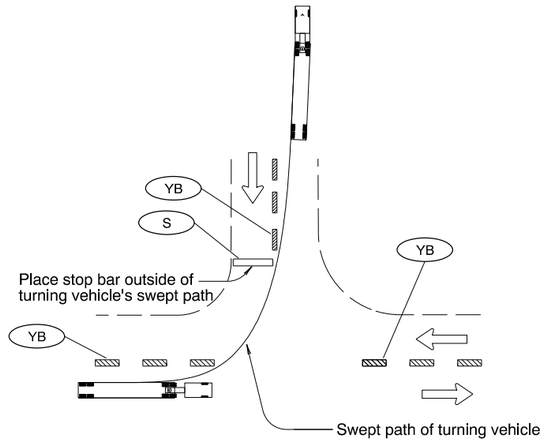


PAVEMENT MARKINGS FOR TYPICAL INTERSECTION

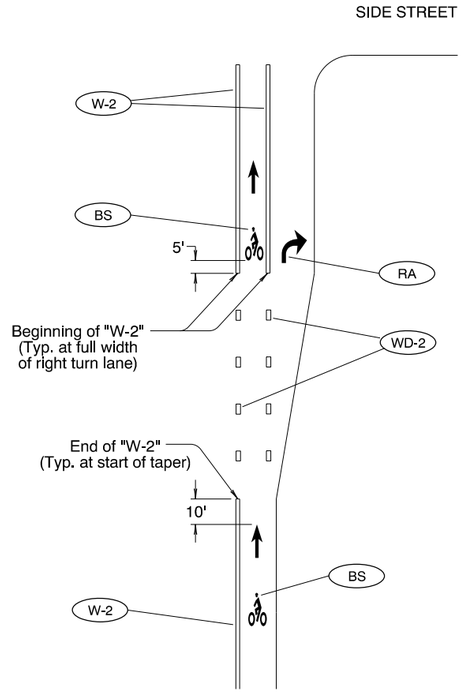
* Stop bar shall be placed as near as possible to the intersecting traveled way. Locate stop bar 4' min. to 30' max. in advance of the extended fog line, edge of pavement, or curb face. Minimum stop bar distance may need to be increased, depending on location of pedestrian ramps (see Detail "A") and/or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



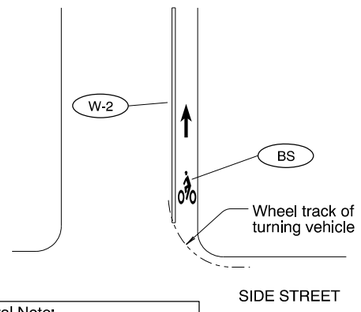
Detail "A"
STOP BAR PLACEMENT WITH
RESPECT TO PEDESTRIAN RAMPS



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



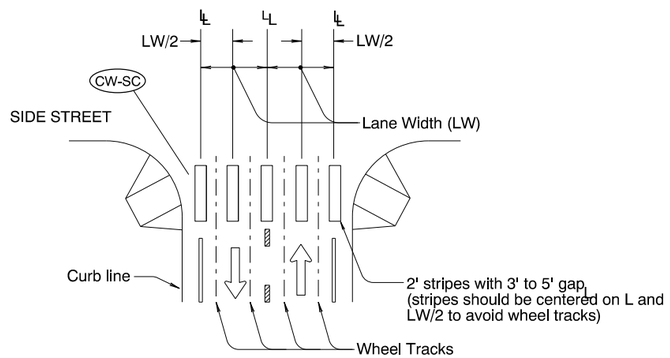
INSTALLATION OF BIKE LANE STENCILS
FOR BIKE LANE SEPARATED BY RIGHT TURN LANE



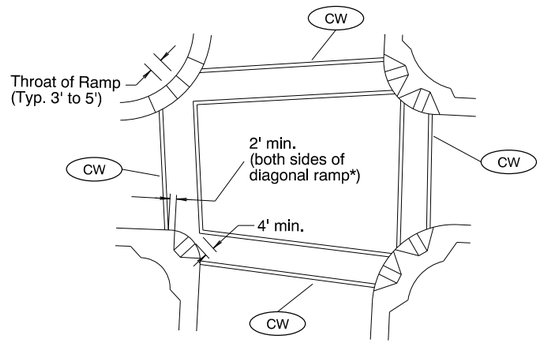
General Note:

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

INSTALLATION OF BIKE LANE STENCILS
FOLLOWING INTERSECTIONS



STAGGERED CONTINENTAL LAYOUT



STANDARD CROSSWALK BARS
AT INTERSECTION

* = Refer to Std Dwg RD916

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 TM504

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

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

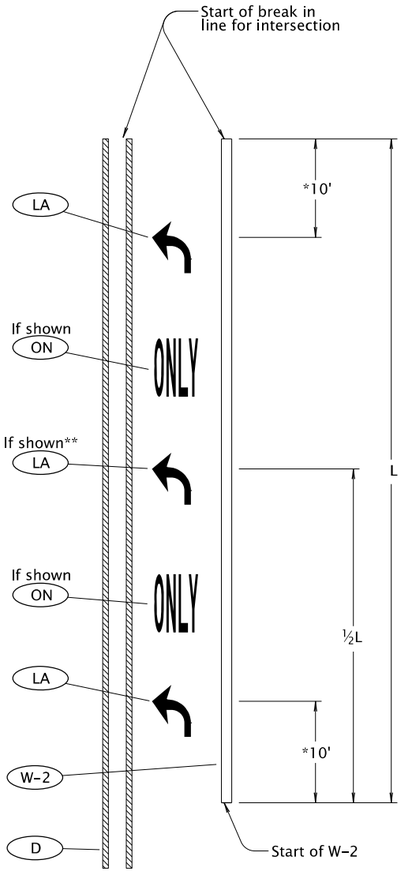
2024

DATE	REVISION DESCRIPTION
07-2022	Added Roadway Standard Drawing reference to detail for clarity

CALC. BOOK NO. N/A | SDR DATE 06-JUL-2022 | **TM530**

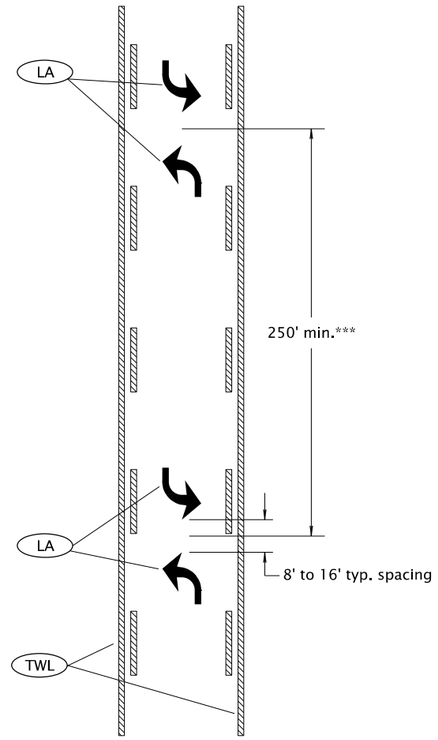
07-01-2020

TM531.dgn



LANE USE ARROW PLACEMENT FOR TURN LANE

DETAIL "A"



TWO-WAY LEFT TURN LANE ARROW PLACEMENT

DETAIL "B"

General Notes:

1) Center pavement marking legends within the lane.

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

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

* 15' when installing elongated arrows.

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

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

To be accompanied by Standard Dwg. Nos. TM500 thru TM504

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TURN ARROW MARKING DETAILS

2024

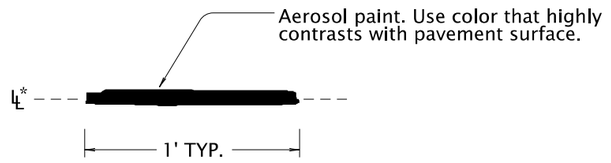
DATE	REVISION DESCRIPTION
07-2020	Extended accompanied by drawings to include TM504

CALC. BOOK NO. N/A

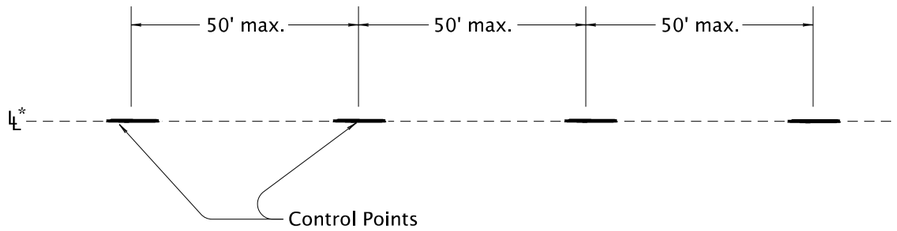
SDR DATE 07-01-2020

TM531

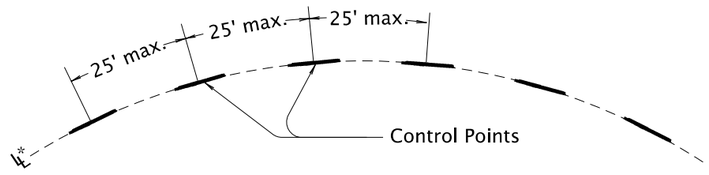
Effective Date: December 1, 2023 - May 31, 2024



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.

LEGEND

℄ — Lane line dimensions are shown on the striping plans.

To be accompanied by Standard Dwg. Nos. TM500 thru TM504

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

ALIGNMENT LAYOUT: GENERAL

2024

DATE	REVISION DESCRIPTION
07-2020	Extended accompanied by drawings to include TM504

CALC. BOOK NO. N/A | SDR DATE 07-01-2020 | **TM560**

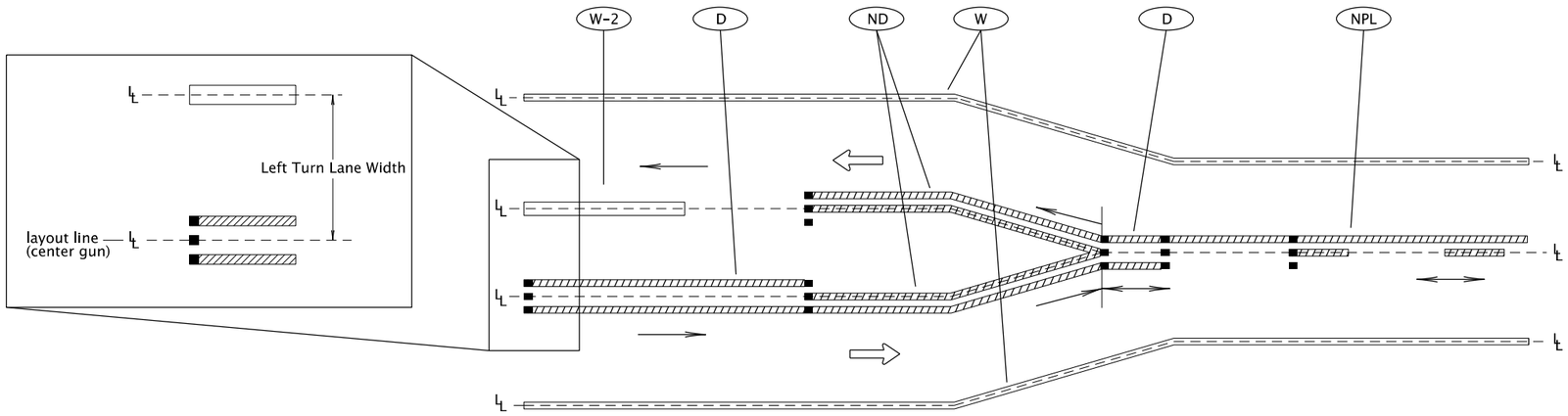
Effective Date: December 1, 2023 - May 31, 2024

07-01-2020

TM560.dgn

07-01-2020

TM561.dgn



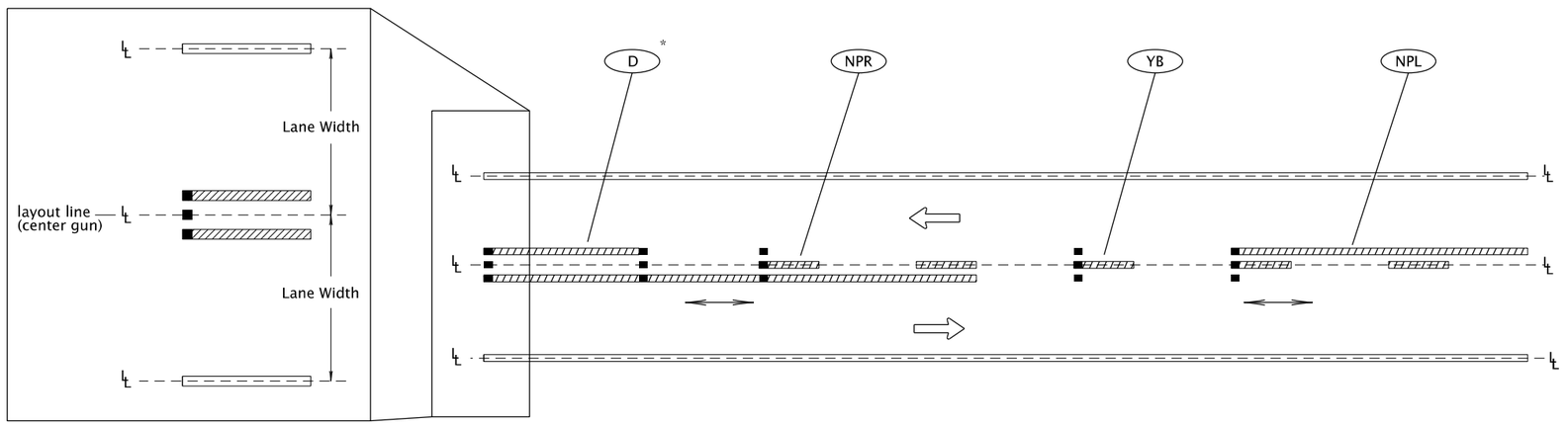
LEFT TURN LANE ALIGNMENT LAYOUT

General note:

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

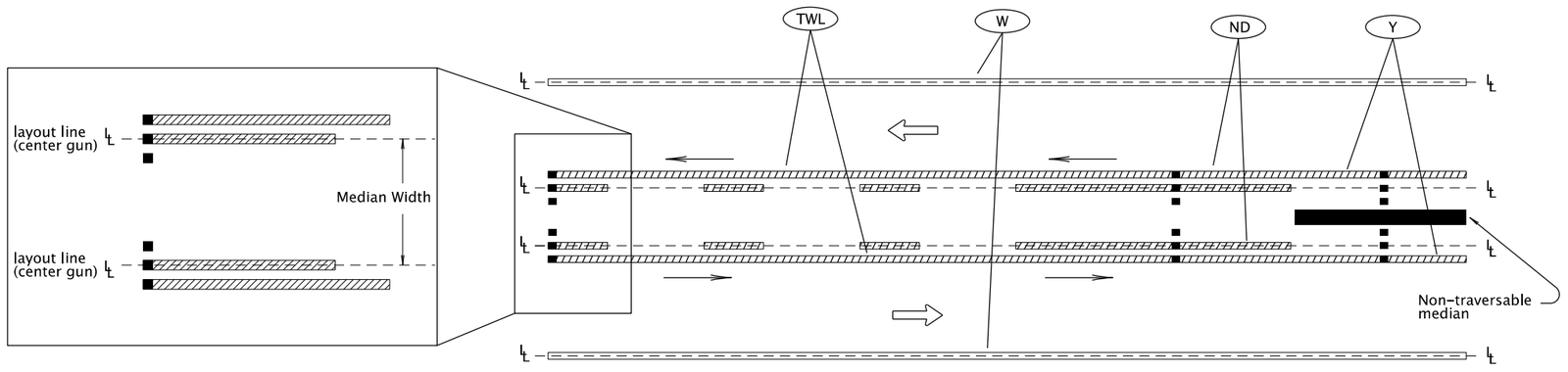
LEGEND

- 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

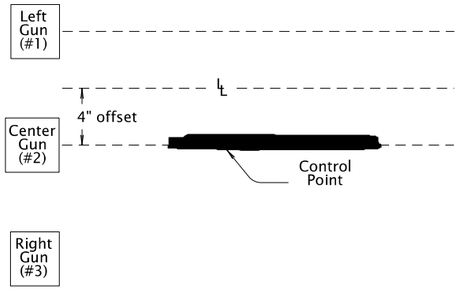
*When ND is used as centerline markings, a control point layout 4" offset from the lane line is required.



MEDIAN ALIGNMENT LAYOUT

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

ND
For centerlines only



4" Offset of Lane Line and Center Gun

To be accompanied by Standard Dwg. Nos. TM500 thru TM504

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

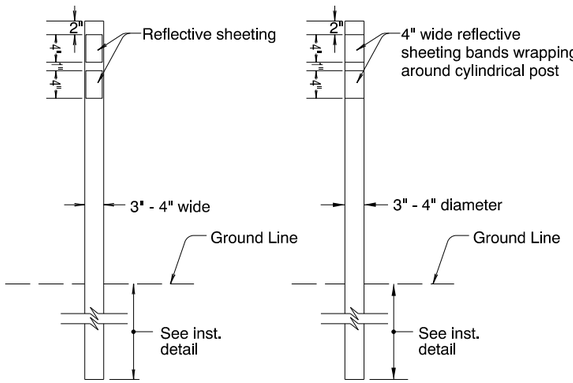
ALIGNMENT LAYOUT: LEFT TURN LANE, CENTERLINE & MEDIANS

2024

DATE	REVISION DESCRIPTION
07-2020	Extended accompanied by drawings to include TM504

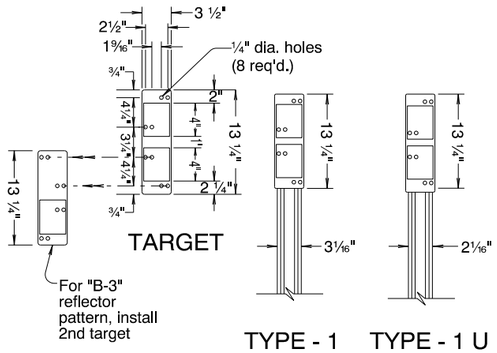
CALC. BOOK NO. N/A | SDR DATE 07-01-2020 | **TM561**

Effective Date: December 1, 2023 - May 31, 2024

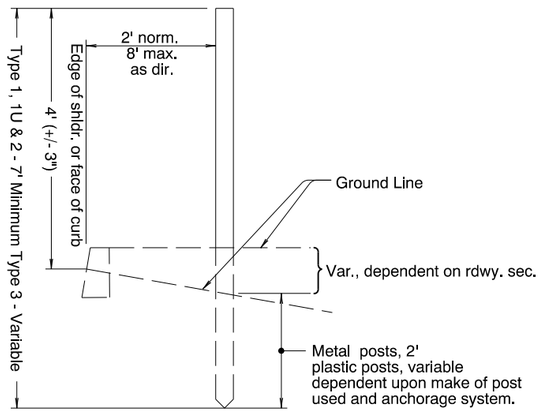


TYPE - 2 TYPE - 3

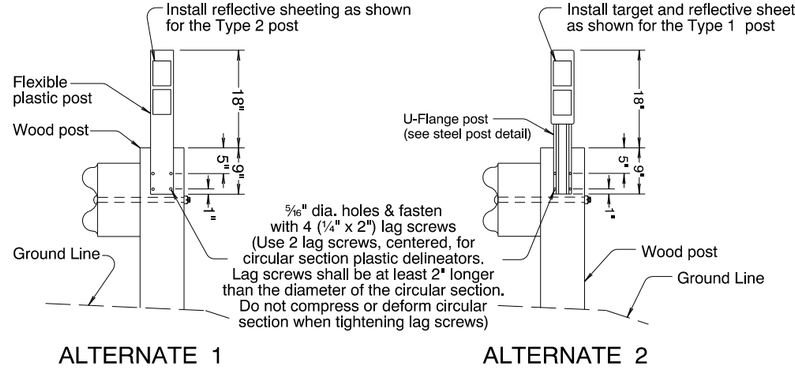
FLEXIBLE PLASTIC POSTS



STEEL POSTS

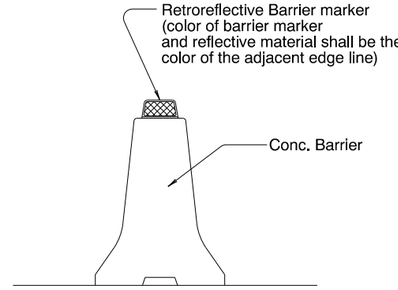


INSTALLATION DETAIL



TYPE - 4

GUARDRAIL AREAS (WITH WOOD POSTS)



TYPE - 5

CONCRETE BARRIER AREAS

(Install barrier markers at 50' spacing unless otherwise noted in plans)

NOTES:

POST:
Galv. steel, nominal weight Type 1, 2 lb/ft, Type 1 U, 1.12 lb/ft.

See Standard Drawing TM571 for steel post dimensions and details.

TARGET:
Aluminum sheet, nominal thickness .050". Fasten to post with⅜" dia. aluminum blind rivets and washers.

For "B-3" reflector pattern, top target shall overlap bottom target.

REFLECTORS:
3" x 4" reflective sheeting unless otherwise shown.
(3½" x 4" reflective sheeting is an acceptable alternate unless otherwise shown.)
Acrylic prismatic reflectors acceptable on Type 1, 1 U, 2 and 4 posts and Type 5 barrier mounts.
Place required number in sequence from top of target.

GENERAL NOTES:

1. Spacing shall be measured along the shoulder.
2. On roads with less than 500 vehicle ADT, delineators are not to be used except where situations such as sharp horizontal curves, etc. exist.
3. To clear driveways, crossroads etc., or for required adjustments at ramps and at intersections, either:
   (a) vary placement of that post up to 25% of spacing shown, or;
   (b) eliminate said post if limit of variation must be exceeded.
4. Judgement should be exercised in the installation of delineators in cut section, particularly on roads constructed to older standards where ditches are narrow and where delineators tend to hamper maintenance operations.
5. On horizontal curves place delineators nearly opposite each other.
6. At guard rail locations the delineators are to be installed behind the rail and shall be located adjacent to guard rail posts as shown for Type 4 Delineators.
7. Install all delineators with reflectors facing adjacent oncoming traffic.
8. Offset delineators an additional 4' in areas of heavy snow removal operations.
9. Backside Delineators may be used in frequently snow plowed areas where use of snow poles is not justified. When Backside Delineators are specified, substitute "W-1" and "W-2" with "W-1B" and "W-2B" respectively, on Type 1 steel posts. Do not install Backside Delineators on one-way sections of roadway, freeways and ramps, or on radius sections.
10. Refer to TM 222 for bracket assembly details for Backside Reflector Pattern.

REFLECTOR PATTERN TABLE					
	Color Type	Color Of Reflector And Target Or Post	Number Of Reflectors	Color Of Reflector And Target Or Post On Backside	Number Of Reflectors On Backside
Standard Pattern	"W-1"	White	1	Not Applicable	Not Applicable
	"W-2"	White	2		
	"Y-1"	Yellow	1		
	"Y-2"	Yellow	2		
	"B-1"	Blue	1		
	"B-2"	Blue	2		
	"B-3"	Blue	3		
	"R-1"	Red	1		
Backside Pattern	"W-1B"	White	1	White	2
	"W-2B"	White	2	White	2

TANGENT	HORIZONTAL CURVES				
▲MAX. SPACING EACH SIDE OF ROADWAY IN FEET	▲ MAX. SPACING EACH SIDE OF ROADWAY IN FEET				
	DEGREE OF CURVE	ON CURVE	IN ADVANCE OF & BEYOND CURVE		
			FIRST SPACE	SECOND SPACE	THIRD SPACE
400	Lower Than 1	300	300	300	300
	1	230	300	300	300
	2	160	300	300	300
	3	130	260	300	300
	4	110	220	300	300
	5	100	200	300	300
	6	90	180	270	300
	7 - 8	80	160	240	300
	9 - 11	70	140	210	300
	12 - 16	60	120	180	300
	17 - 22	50	100	150	300
	23 - 34	40	80	120	240
	35 - 53	30	60	90	180
	54 & Higher	20	40	60	120

(Min. spacing 20 feet)

(▲Install "W-1" reflective pattern unless otherwise noted. See Standard Drawings TM575 thru TM577 for spacing, layout, and reflective pattern of delineators at interchange ramps, channelized intersections, lane reductions, emergency escape ramps and freeway crossovers.)

DELINEATOR SPACING TABLE FOR TYPES 1, 1U, 2, and 4

To be accompanied by Drg. No. TM571, TM575, TM576, and/or TM577 as specified.

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

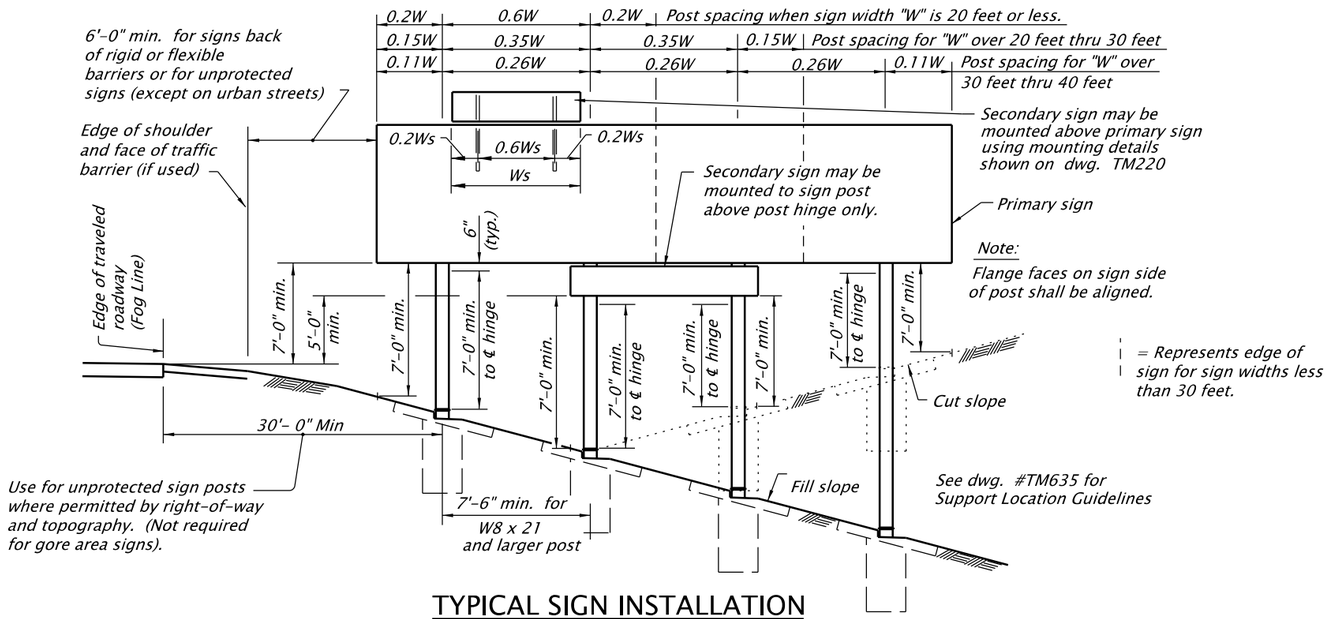
TRAFFIC DELINEATORS

2024

DATE	REVISION DESCRIPTION

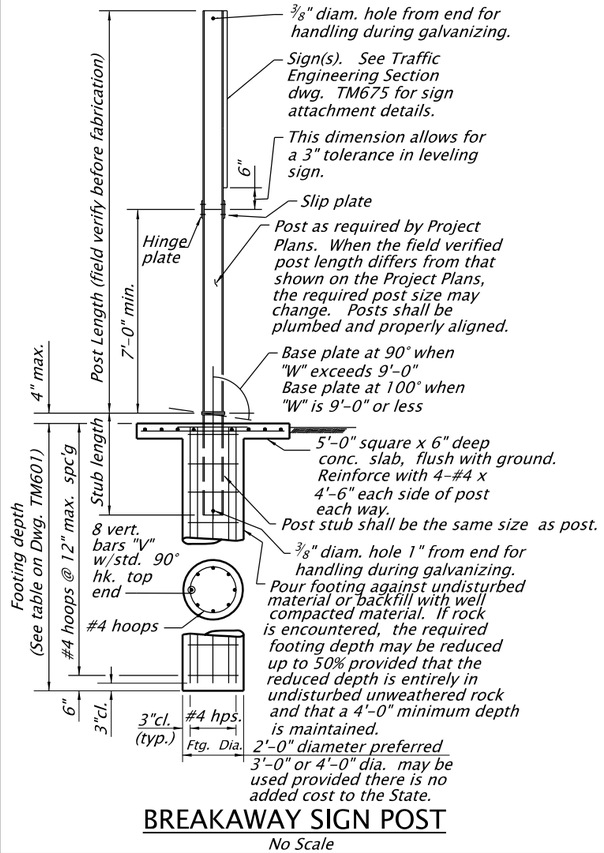
CALC. BOOK NO. N/A | SDR DATE 06-JAN-2012 | **TM570**

Effective Date: December 1, 2023 - May 31, 2024



TYPICAL SIGN INSTALLATION

No Scale



BREAKAWAY SIGN POST

No Scale

GENERAL NOTES:

1. Sign supports are designed in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals 1994. Use a wind velocity with a 25-year mean reccurrence interval.
2. All concrete shall be Commercial Grade Concrete (f'c = 3000 psi).
3. All reinforcing steel shall conform to AASHTO Specification M31 (ASTM A615), Grade 60 or A706.
4. The following splice lengths shall be used unless otherwise shown:

Bar Size		3	4	5	6	7	8	9	10	11
Splice Length	Uncoated	1'-0"	1'-4"	1'-8"	2'-0"	2'-8"	3'-6"	4'-4"	5'-7"	6'-9"

5. All structural steel shall conform to ASTM Specification A572, Grade 50 unless shown otherwise.
6. Shims shall be fabricated from brass shim stock conforming to ASTM B36.
7. All bolts shall be high strength bolts conforming to ASTM Specification A325 (AASHTO M164). Nuts for high strength bolts shall be well lubricated heavy hexagon nuts conforming to ASTM Specification A563, (AASHTO M291), Grade DH. Compressible direct tension indicator washers shall conform to ASTM Specification F959. Hardened steel washers shall conform to ASTM Specification F436 (AASHTO M293).
8. Steel sheet for keepers shall conform to ASTM Specification A653.
9. Hinge and base plate holes shall be sub-drilled and reamed to size. Hinge and base plate slots shall be saw cut or machine guided flame cut.
10. Direct tension indicator washers shall be mechanically galvanized to ASTM B695.
11. Keeper plate shall be galvanized in accordance with ASTM A653, Coating G165.
12. All other steel including fasteners shall be hot-dip galvanized after fabrication. Remove galvanizing runs and beads on all slip surfaces. Nuts for high strength bolts may be retapped after galvanizing.
13. The use of a post larger than required by design is not permitted.
14. Tightening of base plate bolts shall be done with a state inspector present.
15. See TM601 for additional details.

BASE PLATE BOLTING PROCEDURE:

1. Assemble post to stub as shown in Base Assembly Detail.
2. Shim as required to plumb post. ($\pm \frac{1}{16}$" / vert. 12") (2 shims maximum per bolt)
3. Tighten bolts in a systematic order to the "T1" torque prescribed in the Base Plate Data Table.
4. Loosen and retighten bolts to the "T2" torque prescribed in the Base Plate Data Table. Use the same order as the intitial tightening and DO NOT OVER TIGHTEN!
5. Burr threads at junction with nut using a center punch.

HINGE AND SLIP PLATE BOLTING PROCEDURE:

1. Shop assemble post sections as shown. (D.T.I. bumps toward bolt head)
2. Tighten each nut in a systematic order until the gap between the bolt head and direct tension indicator washer is in the 0.005" to 0.010" range.
3. Further tighten each nut in the same order until a nil gap between the bolt head and indicator washer is attained.

Accompanied by dwgs. TM220, TM601, TM635, TM675

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

MULTI-POST BREAKAWAY SIGN SUPPORTS NOTES

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. _ _ _ 1493 _ _ _ | SDR DATE_ 09-JAN-2015 | TM600

Effective Date: December 1, 2023 - May 31, 2024

10-JUL-2020

TM601.dgn

Post & Stub	Hinge Data							Base Plate Data									Footing Data		Min. Footing Depth			Max. Footing Slope	
Depth & Mass/ft	Hinge ℄t1	Slip ℄t2	A	B	C	Hinge Bolts		Base ℄t3	D	E	F	G	Bolt				Stub Length	V bars	2'-0" dia.	3'-0" dia.	4'-0" dia.	Rise per ft. "Y"	Grade
						Dia.	Length						dia.	"T1" Torque	"T2" Torque	Length							
W6 x 9	3/8"	3/8"	4"	7/8"	2 1/4"	3/4"	2"	1"	4 1/4"	3/4"	8 1/2"	10"	5/8"	150 ft.-lb.	50 ft.-lb.	4 1/4"	2'-0"	#4	4'-9"	—	—	12"	1V:1.00H
W6 x 12	3/8"	3/8"	4"	7/8"	2 1/4"	3/4"	2"	1"	4 1/2"	3/4"	8 1/2"	10"	5/8"	150 ft.-lb.	50 ft.-lb.	4 1/4"	2'-4"	#5	5'-6"	—	—	11 1/4"	1V:1.07H
W6 x 15	3/8"	1/2"	6"	1 1/4"	3 1/2"	7/8"	2 1/2"	1"	6 1/4"	7/8"	8 1/2"	10 1/4"	3/4"	280 ft.-lb.	70 ft.-lb.	4 1/2"	2'-8"	#6	6'-6"	—	—	7 1/4"	1V:1.66H
W8 x 18	1/2"	1/2"	5 1/4"	1 1/4"	2 3/4"	7/8"	2 1/2"	1 3/8"	5 1/2"	7/8"	11 3/4"	1'-1 1/2"	3/4"	280 ft.-lb.	70 ft.-lb.	5"	3'-0"	#7	8'-0"	6'-6"	—	8 1/2"	1V:1.41H
W8 x 21	1/2"	5/8"	5 1/4"	1 1/4"	2 3/4"	1"	2 3/4"	1 3/8"	6"	1"	11 3/4"	1'-1 3/4"	7/8"	450 ft.-lb.	80 ft.-lb.	5 1/4"	3'-4"	#8	8'-9"	7'-0"	—	7 1/2"	1V:1.60H
W10 x 22	1/2"	5/8"	5 3/4"	1 1/2"	2 3/4"	1"	2 3/4"	1 3/8"	6"	1"	1'-1 1/2"	1'-3 1/2"	7/8"	450 ft.-lb.	80 ft.-lb.	5 1/4"	3'-8"	#8	10'-3"	7'-9"	6'-6"	7 1/2"	1V:1.60H
W10 x 26	1/2"	5/8"	5 3/4"	1 1/2"	2 3/4"	1 1/8"	3"	1 3/8"	7"	1 1/8"	1'-1 1/2"	1'-3 3/4"	1"	680 ft.-lb.	90 ft.-lb.	5 1/2"	4'-0"	#9	11'-0"	8'-9"	7'-3"	6 3/8"	1V:1.88H
W12 x 26	1/2"	5/8"	6 1/2"	1 1/2"	3 1/2"	1 1/8"	3"	1 1/2"	7"	1 1/8"	1'-3 1/2"	1'-5 3/4"	1"	680 ft.-lb.	90 ft.-lb.	5 3/4"	4'-4"	#10	12'-3"	9'-6"	8'-0"	6 3/8"	1V:1.88H
W12 x 30	1/2"	5/8"	6 1/2"	1 1/2"	3 1/2"	1 1/4"	3"	1 1/2"	8"	1 1/4"	1'-3 1/2"	1'-6"	1 1/8"	840 ft.-lb.	100 ft.-lb.	5 3/4"	4'-8"	#11	13'-3"	10'-6"	8'-9"	5 3/8"	1V:2.23H
W14 x 30	1/2"	5/8"	6 3/4"	1 1/2"	3 3/4"	1 1/4"	3"	1 1/2"	8"	1 1/4"	1'-5 1/2"	1'-8"	1 1/8"	840 ft.-lb.	100 ft.-lb.	5 3/4"	5'-0"	#11	13'-9"	10'-9"	9'-0"	5 1/2"	1V:2.18H

Notes:
1. *See TM635 for placement of signs.*
2. *See TM600 for Additional details and bolting procedures.*

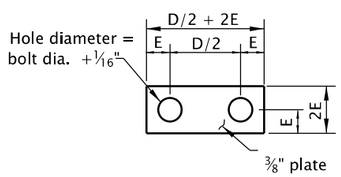
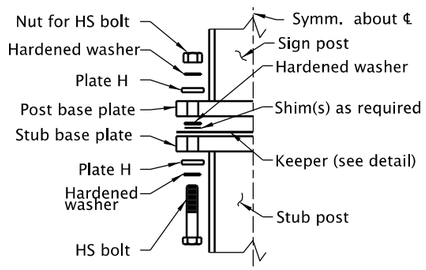
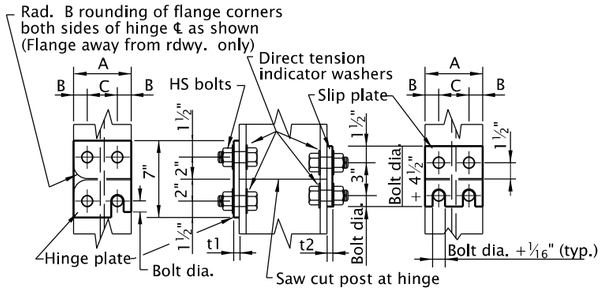


PLATE "H"
No Scale

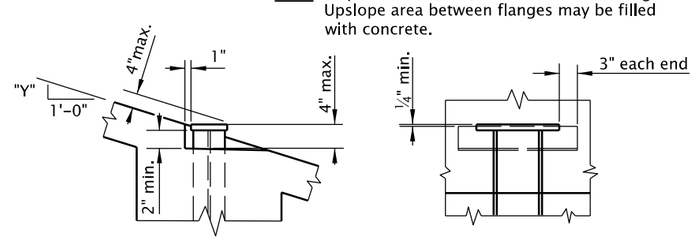


BASE ASSEMBLY DETAIL
No Scale

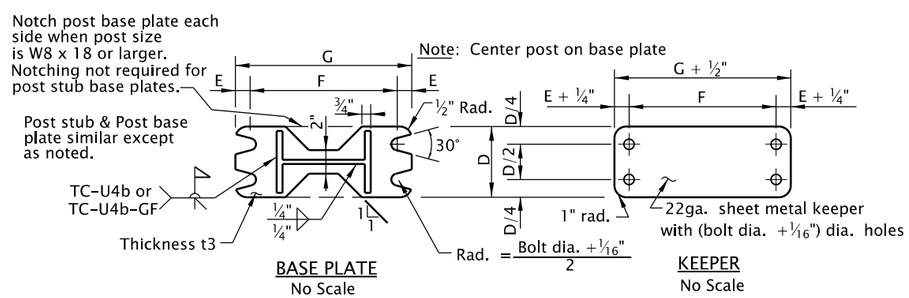


POST HINGE DETAILS
No Scale

Note: Slope bottom of recess cavities for drainage. Upslope area between flanges may be filled with concrete.

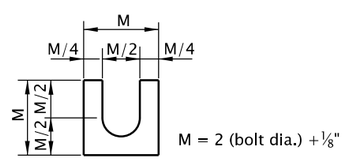


BASE PLATE RECESS FOR SIDE SLOPE INSTALLATIONS
No Scale



BASE PLATE
No Scale

KEEPER
No Scale



BRASS SHIM DETAIL

Provide 2 @ 0.012" thick and 2 @ 0.032" thick at each bolt.

Accompanied by dwgs. TM220, TM600, TM635, TM675

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

MULTI-POST BREAKAWAY SIGN SUPPORTS DETAILS

2024

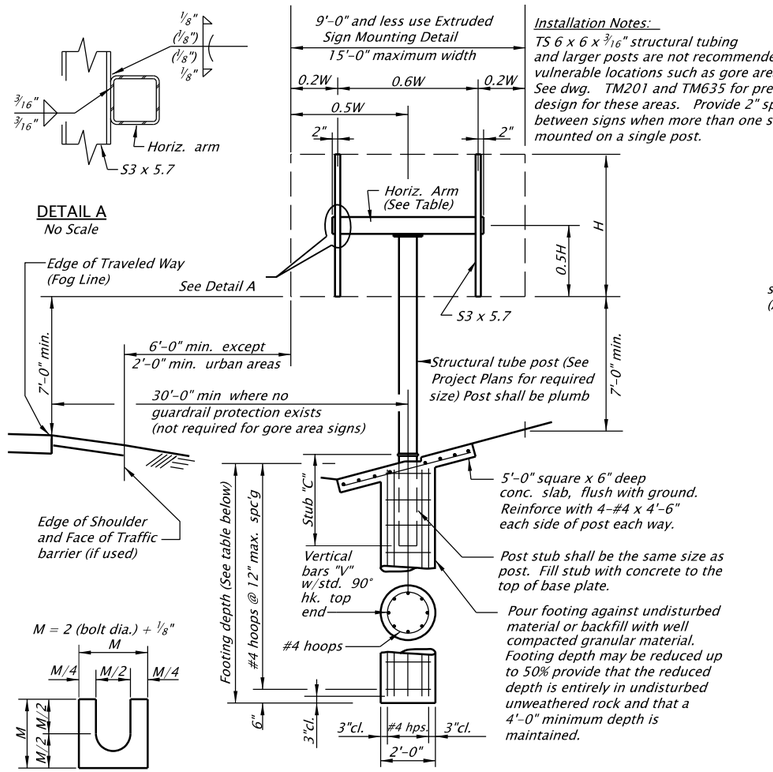
DATE	REVISION DESCRIPTION

CALC. BOOK NO. 1493 | SDR DATE 06-JAN-2017 | **TM601**

Effective Date: December 1, 2023 - May 31, 2024

10-JUL-2020

TM602.dgn

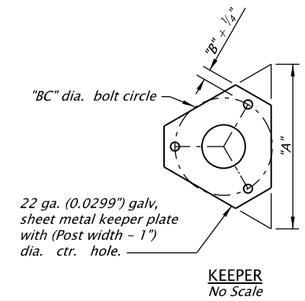


DETAIL A
No Scale

Installation Notes:
TS 6 x 6 x 3/16" structural tubing and larger posts are not recommended in vulnerable locations such as gore areas. See dwg. TM201 and TM635 for preferred design for these areas. Provide 2" space between signs when more than one sign is mounted on a single post.

BRASS SHIM DETAIL
Provide 2 @ 0.012" thick and 2 @ 0.032" thick at each bolt.

BREAKAWAY SIGN POST
No Scale



KEEPER
No Scale

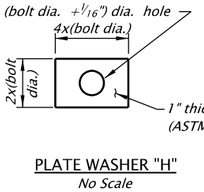
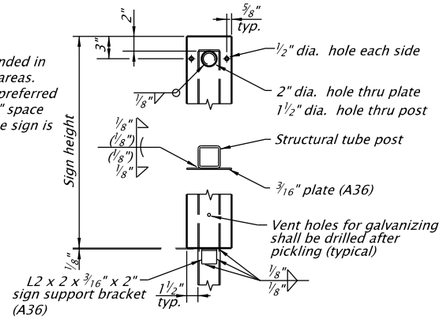
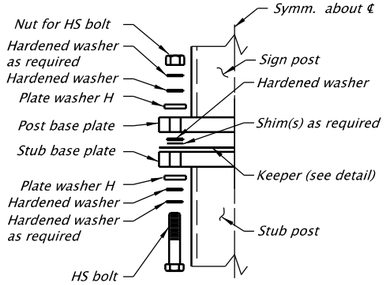


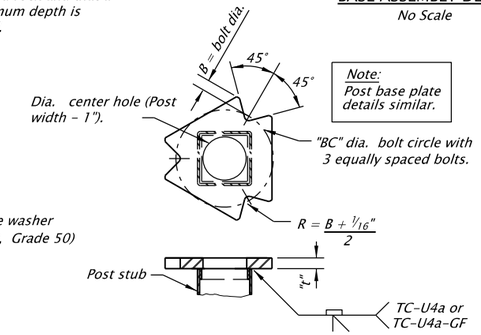
PLATE WASHER "H"
No Scale



EXTRUDED SIGN MOUNTING DETAILS
No Scale
For signs 9'-0" or less in width

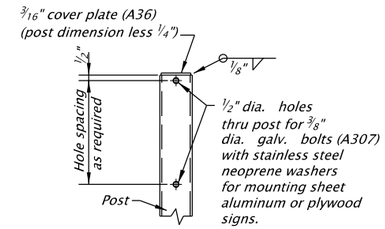


BASE ASSEMBLY DETAIL
No Scale

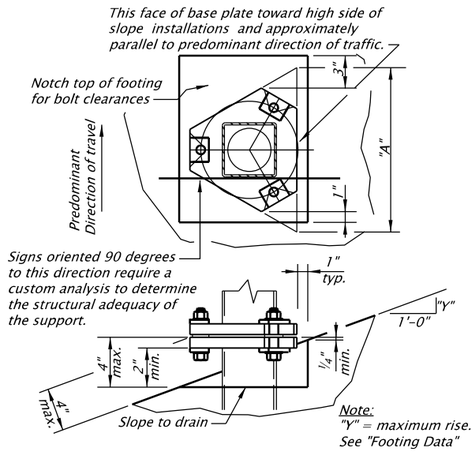


Note:
Post base plate details similar.

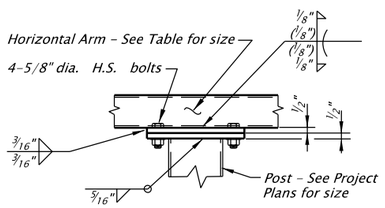
POST STUB DETAILS
No Scale



SIGN MOUNTING DETAILS
FOR PLYWOOD & SHEET ALUMINUM SIGNS
No Scale



BASE PLATE ORIENTATION
No Scale



HORIZONTAL ARM TO POST CONNECTION DETAIL
No Scale

GENERAL NOTES:

1. *Sign supports are designed in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals 1994. Use a wind velocity with a 10-year mean reccurrence interval.*
2. *All concrete shall be Commercial Grade Concrete (f'c = 3000 psi)*
3. *All reinforcing steel shall conform to AASHTO Specification M31, Grade 60, or ASTM A706.*
4. *The following splice lengths shall be used unless otherwise shown:*

Bar Size	#4	#5
Splice Length (mm)	1'-1"	1'-5"

5. *Structural steel shall conform to AASHTO M223 (ASTM A572) Grade 50. unless shown otherwise.*
6. *Structural tubing shall conform to ASTM Specification A500,Grade B, or A501.*
7. *Shims shall be fabricated from brass shim stock conforming to ASTM B36.*
8. *All bolts shall be high strength bolts conforming to to ASTM Specification A325 (AASHTO M164). Nuts for high strength bolts shall be well lubricated heavy hexagon nuts conforming to ASTM Specification A563, (AASHTO M291), Grade DH. Hardened steel washers shall conform to ASTM Specification F436 (AASHTO M293).*
9. *Steel sheet for keepers shall conform to ASTM Specification A653.*
10. *Base plate holes shall be sub-drilled and reamed to size. Base plate slot shall be saw cut or machine guided flame cut.*
11. *Keeper sheet metal shall be galvanized in accordance with ASTM A653, Coating G165. All other steel including fasteners shall be hot-dip galvanized after fabrication. Remove galvanizing runs and beads on all slip surfaces. Nuts for high strength bolts may be retapped after galvanizing.*
12. *The use of post larger than required by design will not be permitted.*
13. *See Dwg. TM675 for sign and sign mounting details.*

BASE PLATE BOLTING PRODEDURE:

1. *Assemble post to stub as shown in Base Assembly Detail.*
2. *Shim as required to plumb post. (± 1/16"/vert. 12") (2 shims maximum per bolt)*
3. *Tighten bolts in a systematic order to the "T1" ft-lbs torque.*
4. *Loosen and retighten bolts to the "T2" ft-lbs torque. Use the same order as the intitial tightening and DO NOT OVER TIGHTEN!*
5. *Burr threads at junction with nut using a center punch.*

Structural Tubing Post and Post Stub Size	Structural Tubing Horiz. Arm (if req'd)	Slip Base Data: Base Plate "t"	Base Plate "A"	Bolt Dia. "B"	Bolt Length	Bolt Circle "BC"	Bolt "T1" ft-lbs torque	Bolt "T2" ft-lbs torque	Bolt Num. of additional washers	Footing Data: Post Stub Length	Vert. Reinf. Bars "V"	Footing Depth 2'-0" Dia.	Footing Depth 4'-0" Dia.	Max. Slope Rise per ft. "Y"
TS 3 x 3 x 3/16	TS 3 x 3 x 3/16	3/4"	10"	1/2"	5"	6"	50	30	2	1'-6"	8-#4	3'-0"	——	6.3"
TS 3 1/2x 3 1/2x 3/16	TS 3 x 3 x 3/16	3/4"	11 3/8"	5/8"	5"	6 3/4"	150	50	-	1'-9"	8-#4	3'-6"	——	5.5"
TS 4 x 4 x 3/16	TS 3 x 3 x 3/16	1"	1'-0 3/8"	5/8"	5 1/2"	7 1/2"	150	50	-	2'-0"	8-#4	4'-0"	——	5.2"
TS 5 x 5 x 3/16	TS 3 x 3 x 3/16	1"	1'-2 5/8"	3/4"	5 1/2"	9"	280	70	-	2'-3"	8-#4	4'-6"	4'-0"	4.4"
TS 6 x 6 x 3/16	TS 3 x 3 x 3/16	1 1/4"	1'-4 7/8"	7/8"	6 1/2"	10 1/2"	450	75	1	2'-6"	8-#5	5'-0"	4'-0"	3.8"
TS 7 x 7 x 3/16	TS 4 x 4 x 3/16	1 1/4"	1'-6 1/4"	7/8"	6 1/2"	12"	450	75	1	3'-0"	8-#5	6'-0"	4'-6"	3.5"
TS 8 x 8 x 3/16	TS 5 x 5 x 3/16	1 3/8"	1'-8 1/2"	1"	7"	1'-1 1/2"	680	75	1	3'-6"	12-#5	7'-0"	5'-0"	3.1"

Accompanied by dwgs. TM200, TM201, TM635, TM675

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TRIANGULAR BASE BREAKAWAY MULTI-DIRECTIONAL SLIP BASE DESIGN

2024

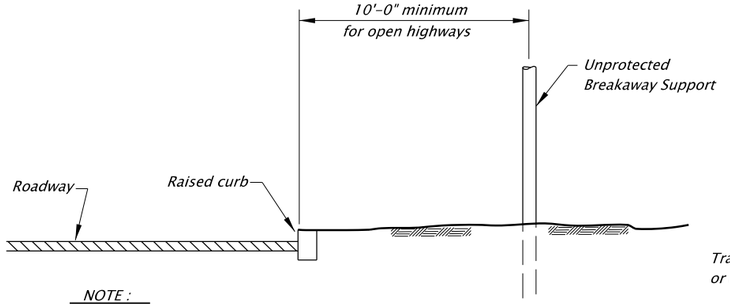
DATE	REVISION DESCRIPTION

CALC. BOOK NO. 1493 | SDR DATE 09-JAN-2015 | **TM602**

Effective Date: December 1, 2023 - May 31, 2024

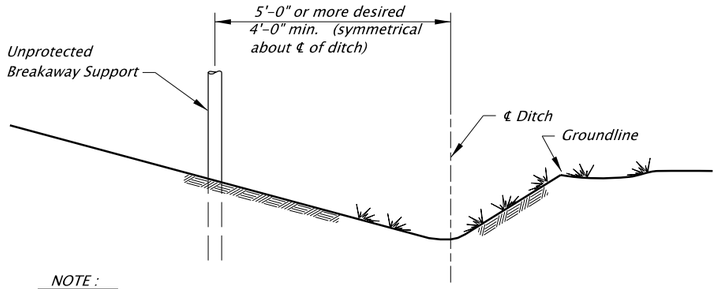
10-JUL-2020

TM635.dgn



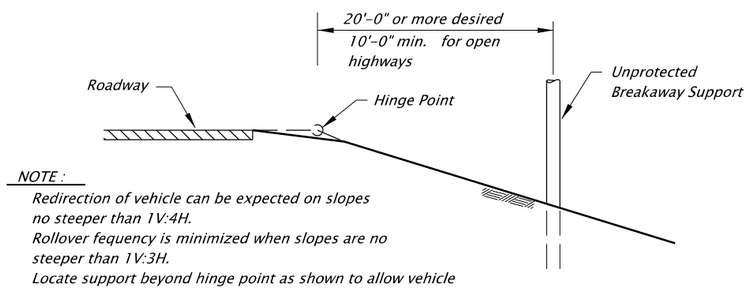
NOTE :
Locate supports far enough behind curb to allow vehicle to stabilize before impacting support.

BREAKAWAY SUPPORTS BEHIND RAISED CURBS



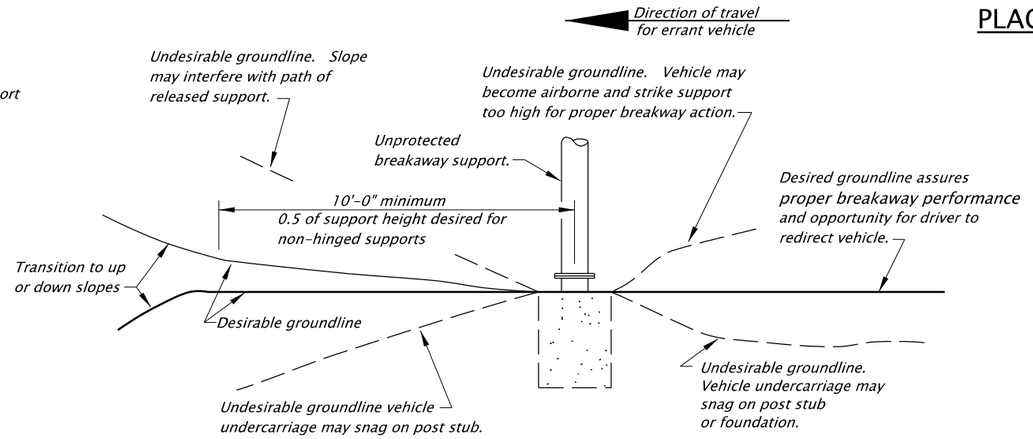
NOTE :
Locate breakaway supports away from ditches to avoid problems with erosion, corrosion, debris, maintenance, and breakaway performance.

BREAKAWAY SUPPORTS NEAR DITCHES



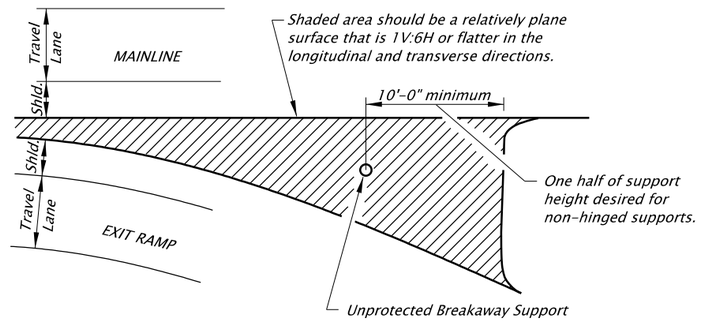
NOTE :
Redirection of vehicle can be expected on slopes no steeper than 1V:4H.
Rollover fequency is minimized when slopes are no steeper than 1V:3H.
Locate support beyond hinge point as shown to allow vehicle to stabilize before impact.

BREAKAWAY SUPPORT ON FILL SLOPE

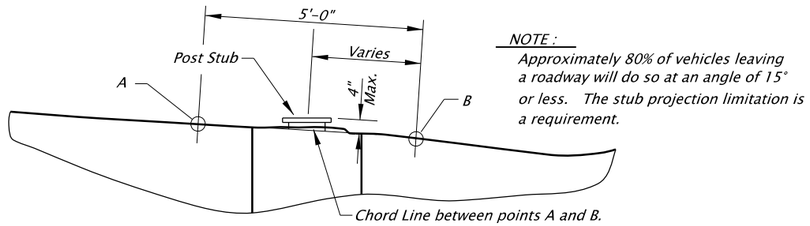


BREAKAWAY SUPPORT - PARTIAL ELEVATION

(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.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

BREAKAWAY SIGN & LUMINAIRE SUPPORTS - SUPPORT LOCATION GUIDELINES

2024

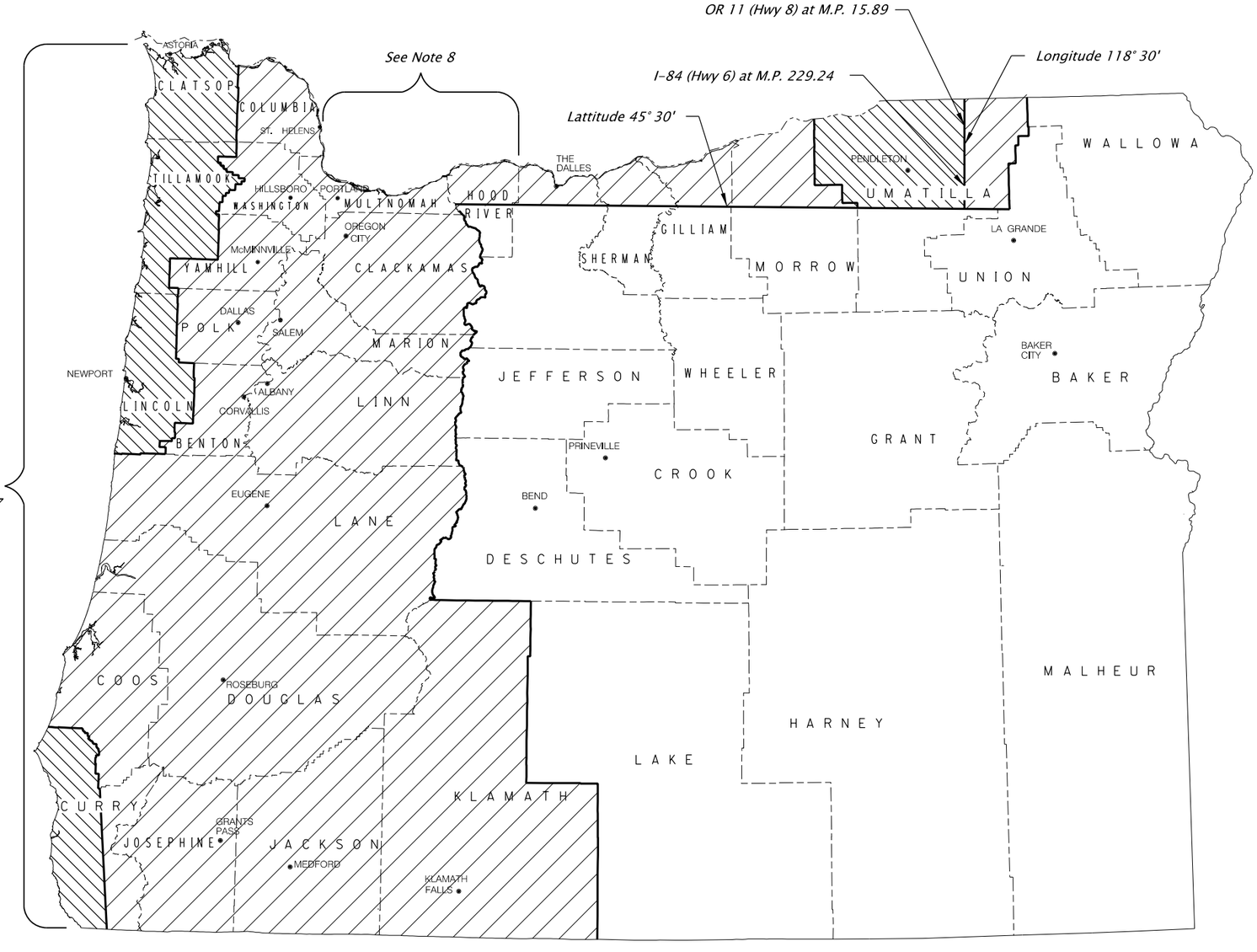
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 06-JUL-2015 | **TM635**

Effective Date: December 1, 2023 - May 31, 2024

10-JUL-2020

TM671.dgn



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.*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

3 SECOND GUST WIND SPEED MAP

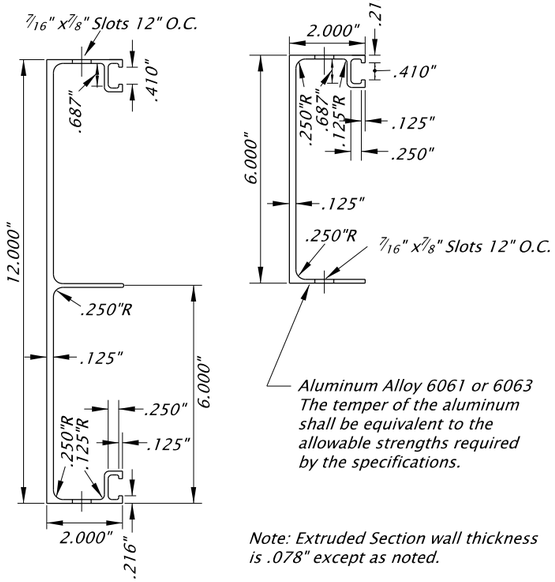
2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 06-JAN-2012 | **TM671**

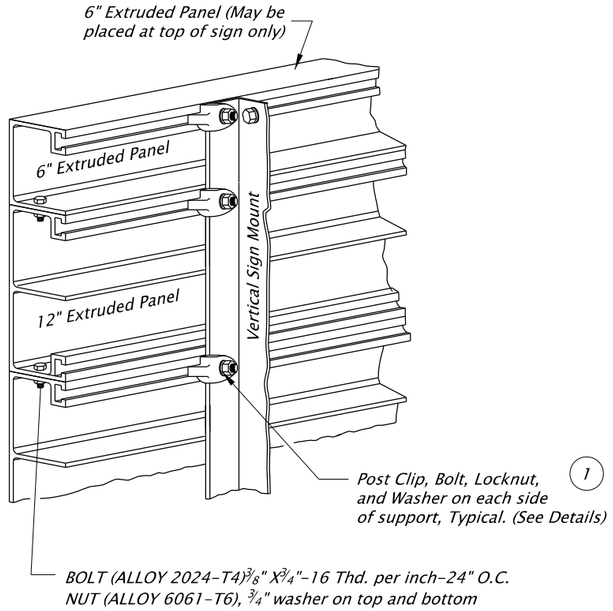
Effective Date: December 1, 2023 - May 31, 2024

10-JUL-2020
TM675.dgn



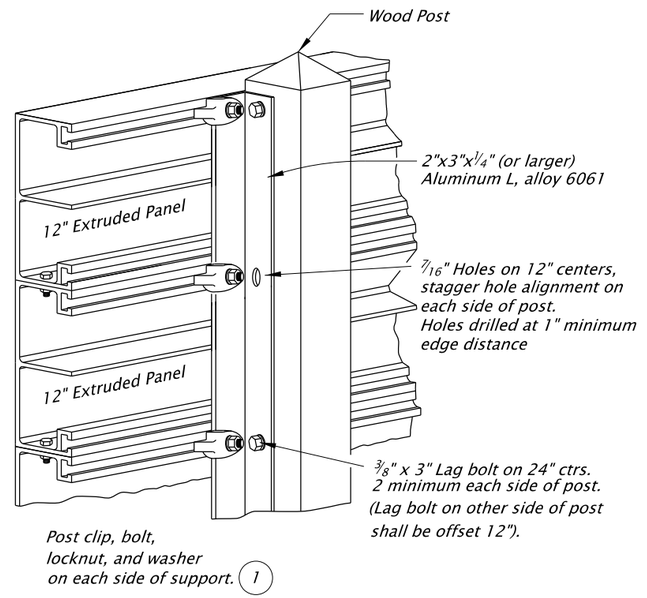
Note: Extruded Section wall thickness is .078" except as noted.

SIGN PANELS & DETAILS

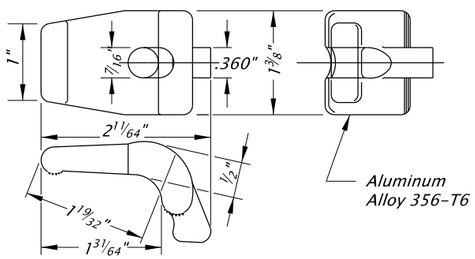


SIGN PANELS ON METAL STRUCTURES
No Scale

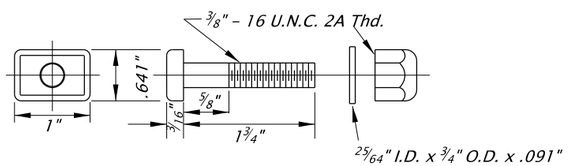
(1) Note:
The locking feature of the nut shall be a nylon insert.



SIGN PANELS ON WOOD POSTS
No Scale

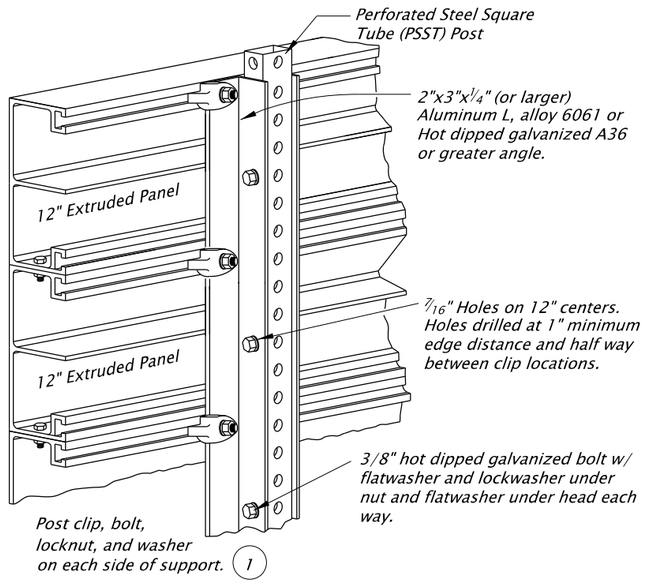


POST CLIP DETAIL

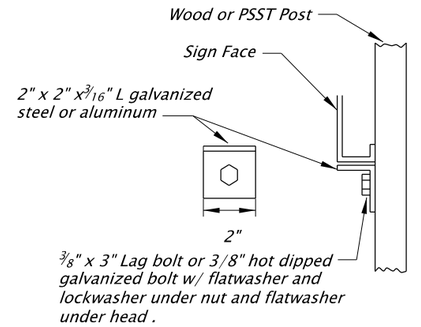


ALUMINUM ALLOYS; BOLT 2024-T4 (1)
LOCKNUT 6061-T6
WASHER (No alloy specified)

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

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

EXTRUDED ALUMINUM PANELS

2024

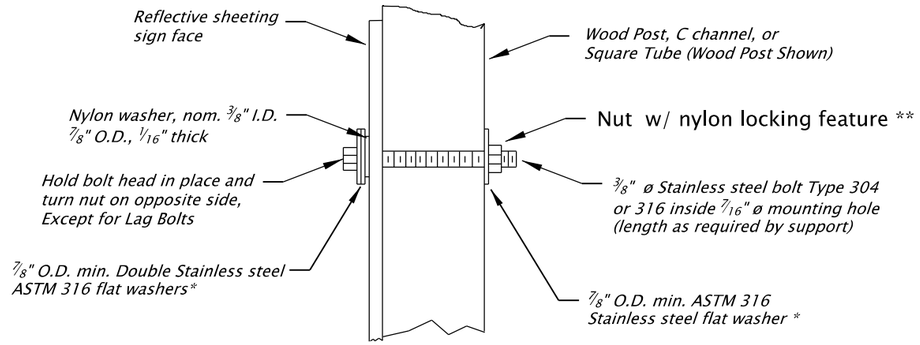
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 06-JAN-2017 | **TM675**

Effective Date: December 1, 2023 - May 31, 2024

10-JUL-2020

TM676.dgn

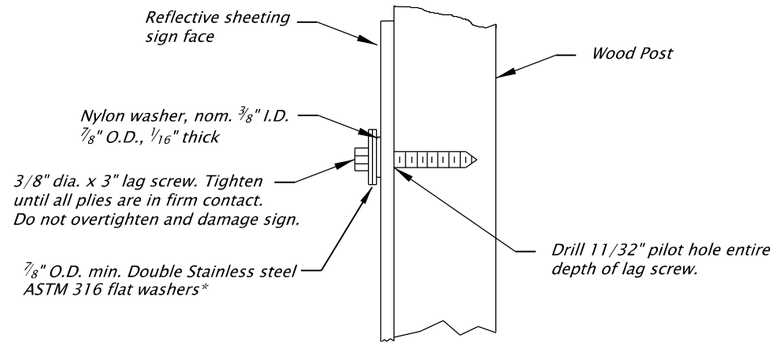


Note:
1)When signs are placed on opposing sides of post, 3/8" x 3" lag screws can be used instead of through bolt.
2) Use nylon and stainless steel washers when signs are placed on both sides of post.
3) Burr threads at junction with nut when locknuts are not used.
4) Post bolts to extend beyond the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



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

Note: This optional detail is to be used only when specified on a project.

OPTIONAL WOOD POST LAG SCREW DETAIL

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SIGN ATTACHMENTS

2024

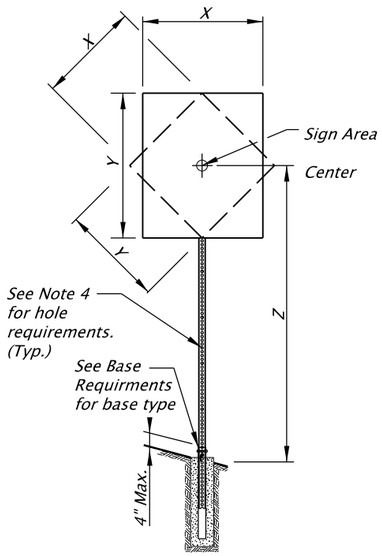
DATE	REVISION DESCRIPTION
07-2020	ADDED OPTIONAL LAG SCREW DETAIL

CALC. BOOK NO. N/A | SDR DATE 10-JUL-2020 | **TM676**

Effective Date: December 1, 2023 - May 31, 2024

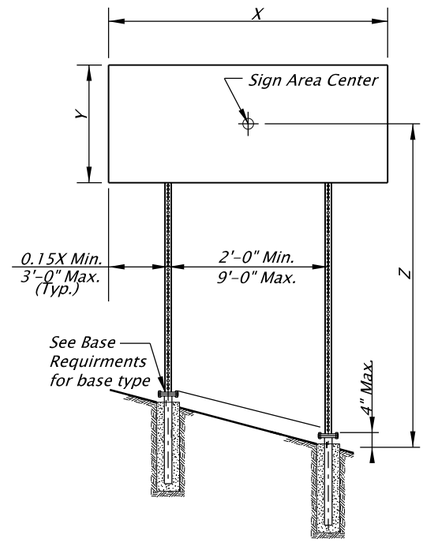
10-JUL-2020

TM681.dgn



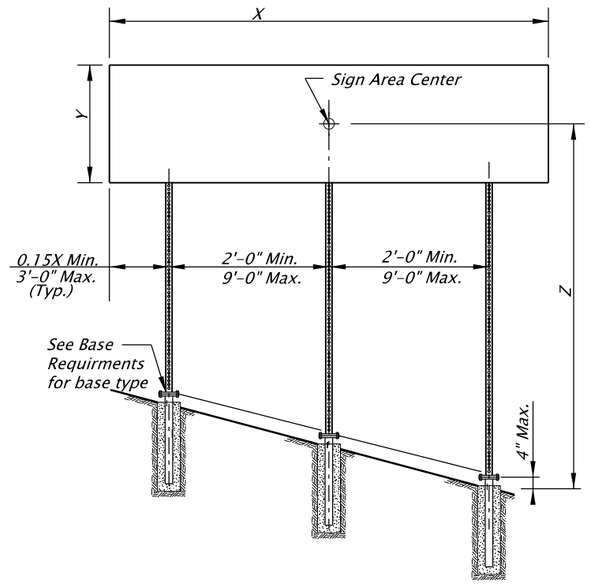
SINGLE POST ELEVATION

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

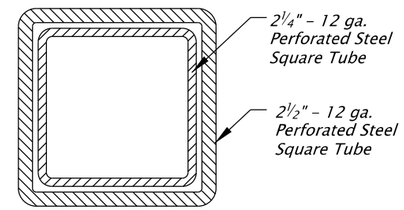
TEMPORARY PERFORATED STEEL SQUARE TUBE TABLE

* - 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

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SIGN SUPPORT INSTALLATION

2024

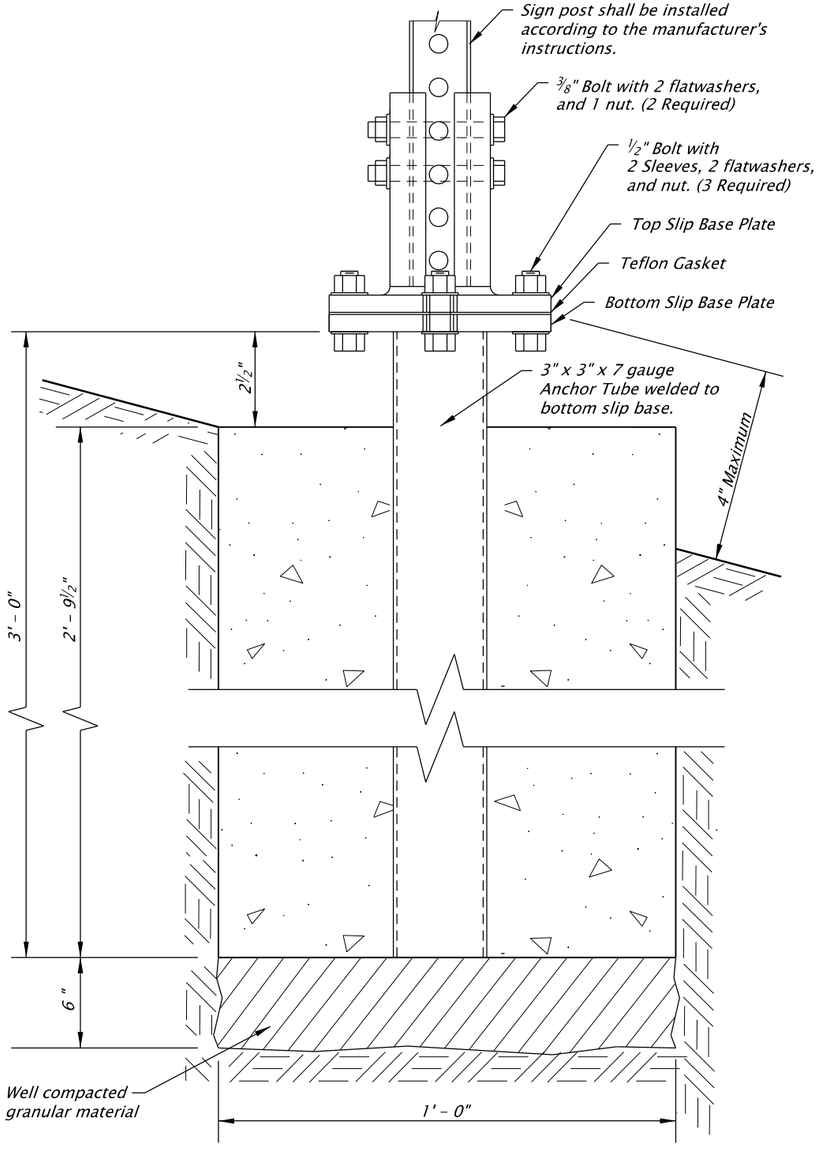
DATE	REVISION DESCRIPTION

CALC. BOOK NO. 5752 | SDR DATE 10-JUL-2017 | TM681

Effective Date: December 1, 2023 - May 31, 2024

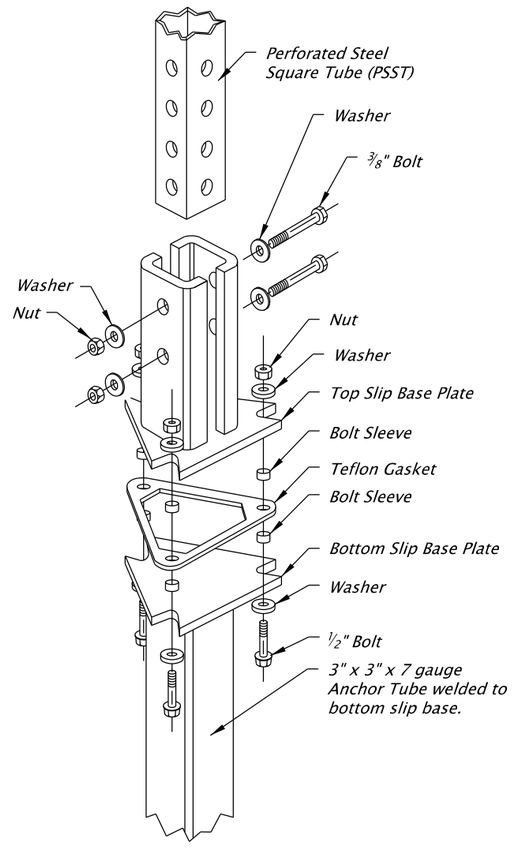
10-JUL-2020

TM688.dgn



SLIP BASE ELEVATION

No scale

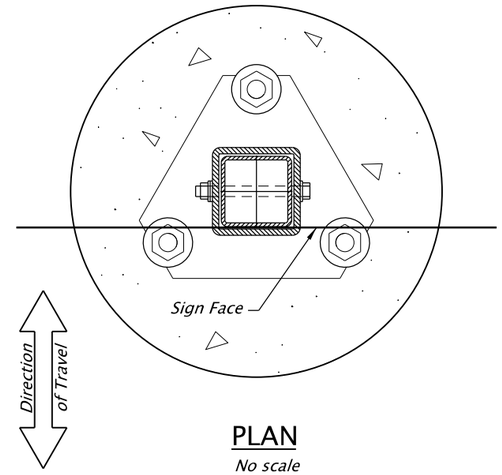


SLIP BASE EXPLODED VIEW

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

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PERFORATED STEEL SQUARE TUBE (PSST) SLIP BASE FOUNDATION

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. 5752 | SDR DATE 06-JAN-2012 | **TM688**

Effective Date: December 1, 2023 - May 31, 2024

01-JUL-2022

TM800.dgn

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:

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

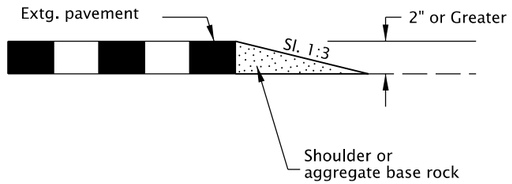
MINIMUM LENGTHS TABLE					
"L" VALUE FOR TAPERS (ft)					BUFFER "B" (ft)
★ SPEED (mph)	W = Lane or Shoulder Width being closed or shifted				
	W ≤ 10	W = 12	W = 14	W = 16	
25	105	125	145	165	75
30	150	180	210	240	100
35	205	245	285	325	125
40	265	320	375	430	150
45	450	540	630	720	180
50	500	600	700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

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

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

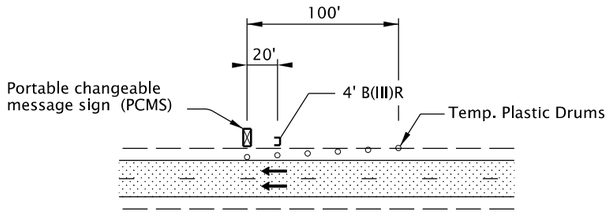
NOTES:
- Place traffic control devices on 10 ft. spacing for intersection and access radii.
- When necessary, sign spacing may be adjusted to fit site conditions. Limit spacing adjustments to 30% of the "A" dimension for all speeds.

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



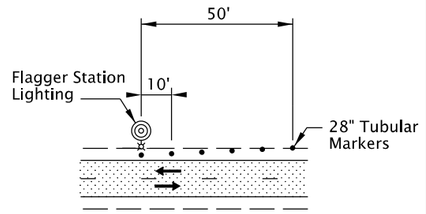
EXCAVATION ABRUPT EDGE

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



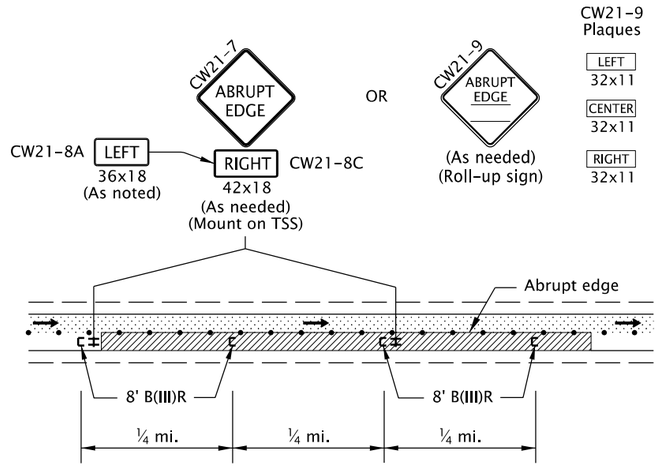
PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) INSTALLATION

NOTES:
- Install Flagger Station Lighting beyond the outside shoulder, where practical.
- Use six tubular markers in shoulder taper on 10' spacing.
- Place cart / generator / power supply off of the shoulder, as far as practical.



FLAGGER STATION LIGHTING DELINEATION

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



TYPICAL ABRUPT EDGE DELINEATION

GENERAL NOTES FOR ALL TCP DRAWINGS:
- Signs and other Traffic Control Devices (TCD) shown are the minimum required.
- Place a barricade approx. 20' ahead of all sequential arrow boards.
- Arrows shown in roadway are directional arrows to indicate traffic movements.
- All signs are 48" x 48" unless otherwise shown. Use fluorescent orange sheeting for the background of all temporary warning signs.
- All diamond shaped warning signs mounted on barrier sign supports shall be 36" by 36". All other signs mounted on barrier sign supports shall not exceed 12 sq. ft. in total sign area.
- Low speed highways have a pre-construction posted speed of 40 mph or less. High speed highways have a pre-construction posted speed of 45 mph or higher.
- 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.
- Coordinate and control pedestrian movements through a Temporary Accessible Route using Flaggers, Traffic Control Measures, or as directed.
- To be accompanied by Dwg. Nos. TM820 & TM821.

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

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

UNDER TRAFFIC

UNDER CONSTRUCTION

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TABLES, ABRUPT EDGE AND PCMS DETAILS

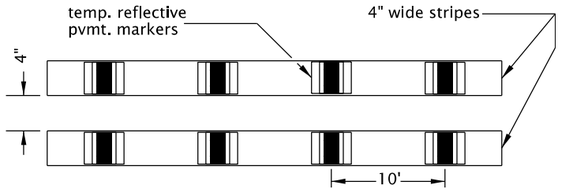
2024

DATE	REVISION DESCRIPTION
07-2022	Added a note for TPARs

CALC. BOOK NO. N/A | SDR DATE 01-JUL-2022 | **TM800**

Effective Date: December 1, 2023 – May 31, 2024

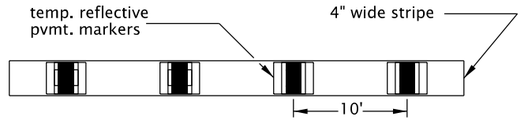
01-JUL-2020
TM810.dgn



LAYOUT "A"
(Supplemented double solid lines)

TYPICAL APPLICATIONS:

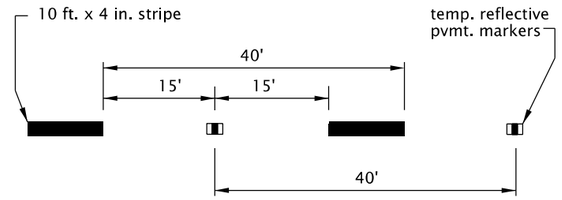
- To prohibit lane changes or passing (include appropriate regulatory signs).
- Freeway or multilane shifts and crossovers.
- For projects in place through winter months.
- Two-lane, two-way centerlines.



LAYOUT "B"
(Supplemented solid line)

TYPICAL APPLICATIONS:

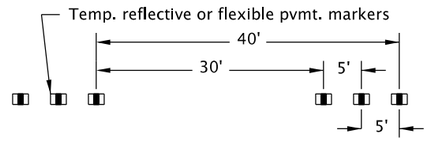
- Alignment shifts or crossovers.
- To discourage lane changes in multilane sections.
- For projects in place through winter months.



LAYOUT "C"
(Supplemented broken lines)

TYPICAL APPLICATIONS:

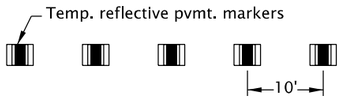
- Freeway and multilane broken lines.
- High ADT 2 lane roads (greater than 10,000).
- For projects in place through winter months.



LAYOUT "D"
(Simulated broken lines)

TYPICAL APPLICATIONS:

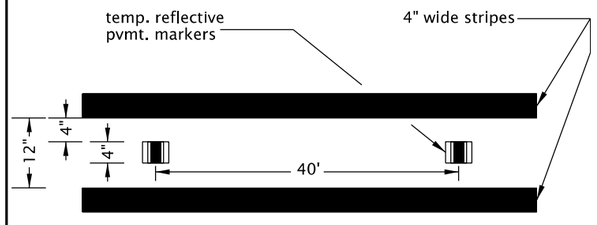
- During staging on finished/existing surfaces.
- HMAC intermediate surfaces.
- Emulsified asphalt surface treatments (chip seals) where permanent pavement markings cannot be placed within two weeks.



LAYOUT "E"
(Simulated Solid Lines)

TYPICAL APPLICATIONS:

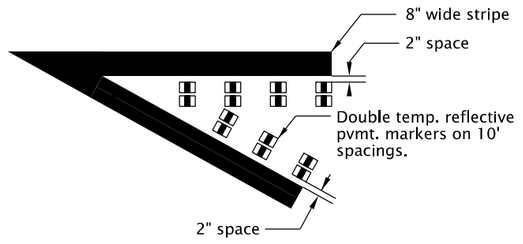
- Alignment shifts or crossovers.
- To discourage lane changes in multilane sections.
- Edge lines for short durations, less than 14 days.



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.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TEMPORARY PAVEMENT MARKINGS

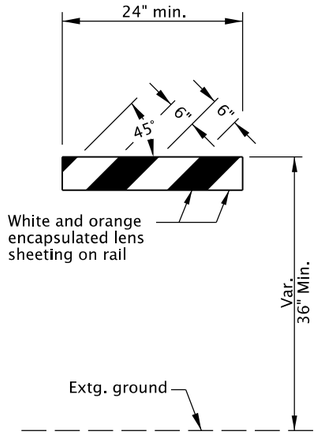
2024

DATE	REVISION DESCRIPTION

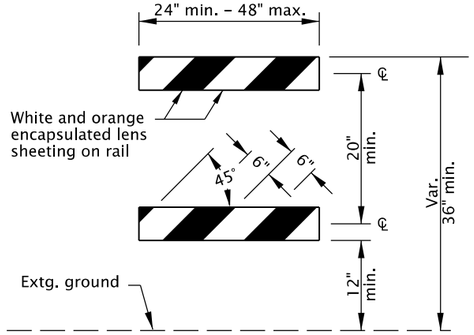
CALC. BOOK NO. N/A | SDR DATE 01-JUL-2020 | **TM810**

Effective Date: December 1, 2023 - May 31, 2024

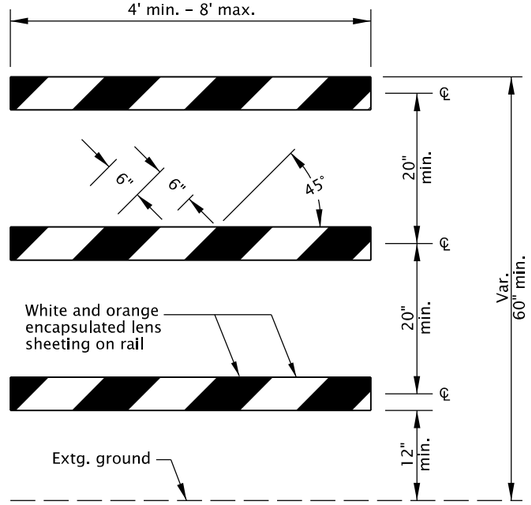
01-JUL-2020
TM820.dgn



TYPE I



TYPE II



TYPE III

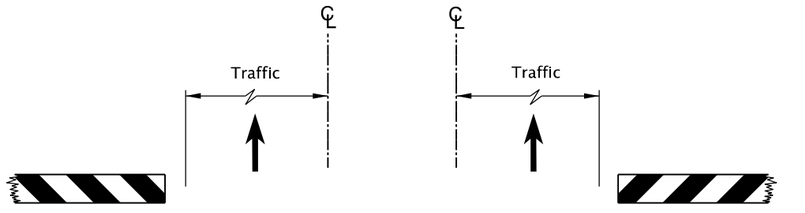
BARRICADE RAIL LAYOUT

GENERAL NOTES FOR ALL DETAILS:

- Sandbags (approximately 25 lb sack filled with sand) may be placed on lower frame to provide additional ballast.
- Ballast shall not extend above bottom rail or be suspended from barricade.
- For rails less than 36" long, 4" wide stripes shall be used.
- Rails must be 8" min. to 12" max. in height.
- Use barricades from ODOT Qualified Products List (QPL).
- Use 4' Type III barricades where horizontal space is limited.
- Do not block bike lanes or shoulders unless the facility is properly closed and signed.
- Do not place barricades in sidewalks unless sidewalk is closed and a temporary pedestrian accessible route (TPAR) is signed according to the TCP. See Dwg. No. TM844.

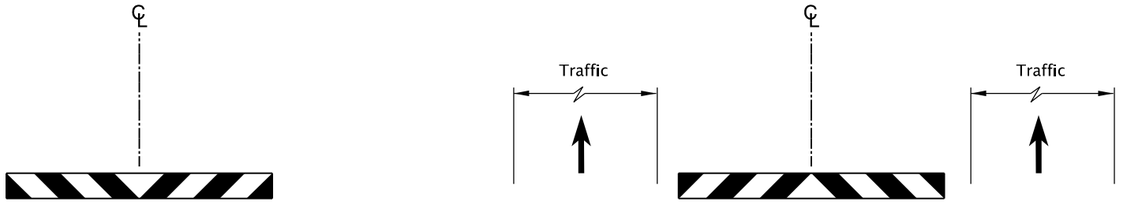
NOTES:

- 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)

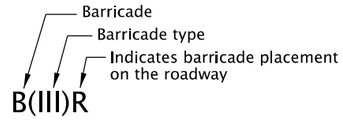
RT. SIDE - R
(For approaching traffic)



CLOSED - C
(For approaching traffic)

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

DIAGRAM FOR BARRICADE PLACEMENT AND SLOPE MARKING



BARRICADE NOTATION

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TEMPORARY BARRICADES

2024

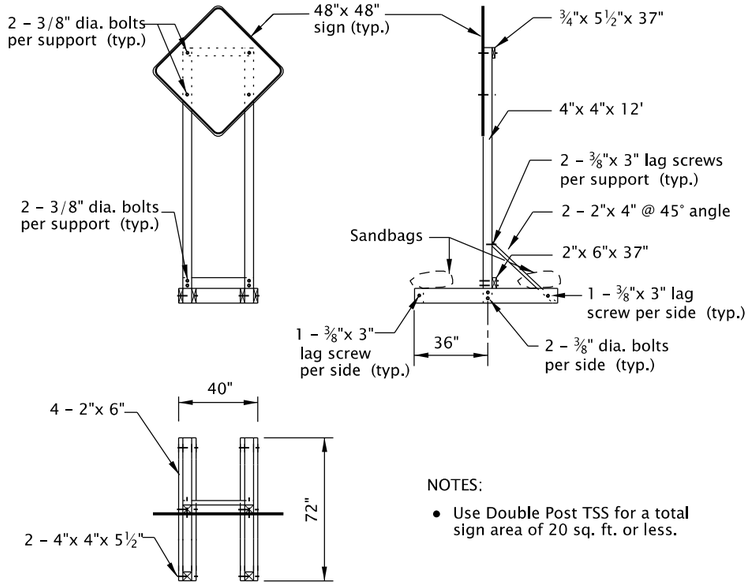
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 01-JUL-2020 | **TM820**

Effective Date: December 1, 2023 – May 31, 2024

14-JUL-2023

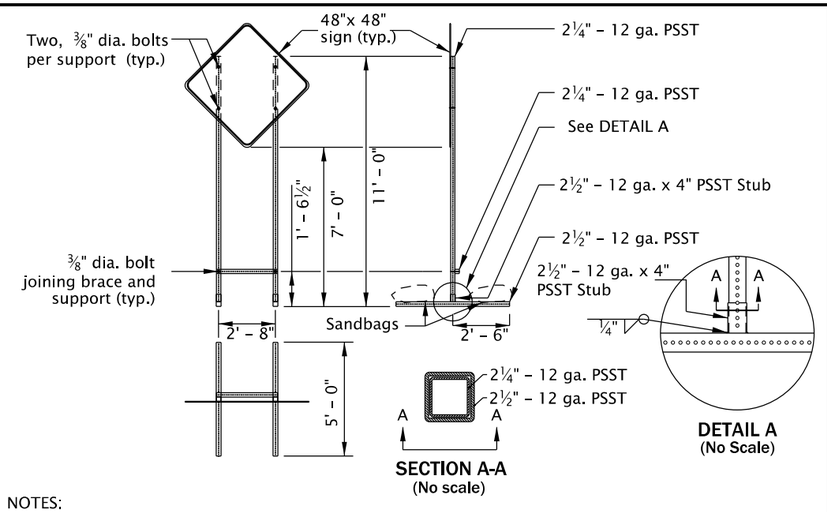
TM821.dgn



NOTES:

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

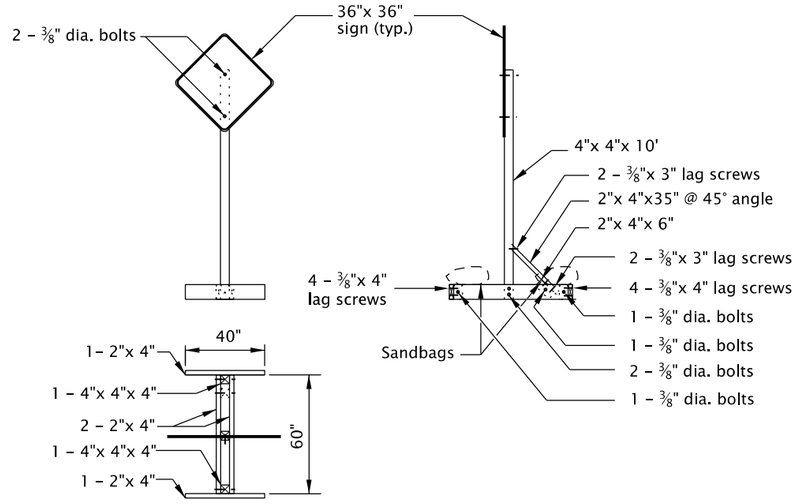
DOUBLE POST DETAIL



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 American Welding Society (AWS) D.1.1.

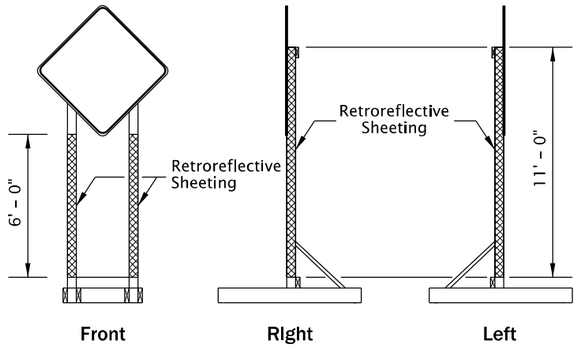
PERFORATED STEEL SQUARE TUBE (PSST) DETAIL



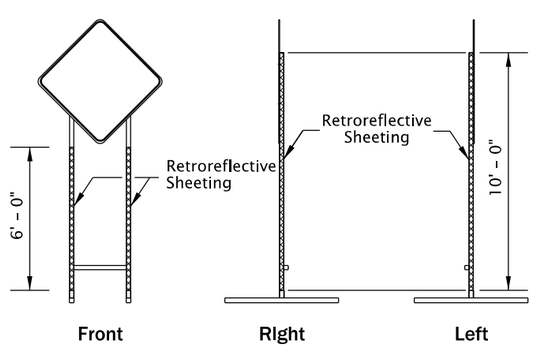
NOTES:

- 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.

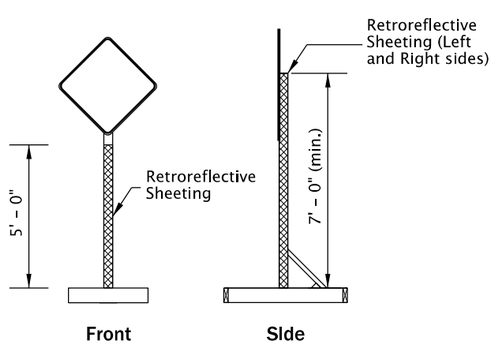
SINGLE POST DETAIL



Double Post



Perforated Steel Square Tube (PSST)



Single Post

TEMPORARY SIGN SUPPORT GENERAL NOTES:

- Do not tip over TSS at any time.
- Do not locate TSS's in locations that block pedestrian or 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 not in use, locate TSS as far from Public Traffic as practicable and turn away from traffic, or cover the sign. Do not cover reflective sheeting on the TSS posts.
- 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 Dwg. 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

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

2024

DATE	REVISION DESCRIPTION

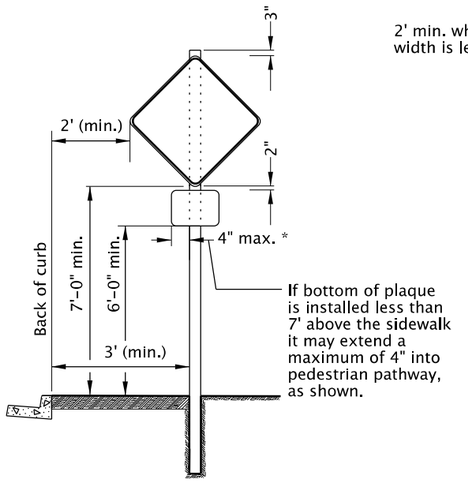
CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | TM821

Effective Date: December 1, 2023 – May 31, 2024

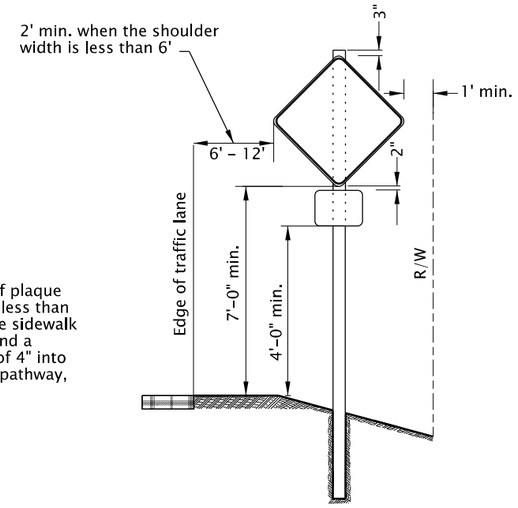
01-JUL-2020
TM822.dgn

NOTES:

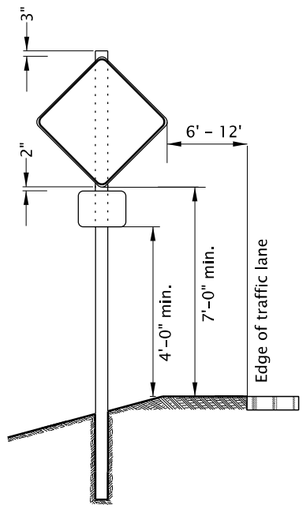
- Do not block bicycle lanes, sidewalks, or TPAR's with sign supports. Maintain minimum widths for these facilities according TCP Design Manual, MUTCD, ADA, or as directed.
- To be accompanied by Dwg. Nos. TM670, TM671, TM687, TM688 & TM689.



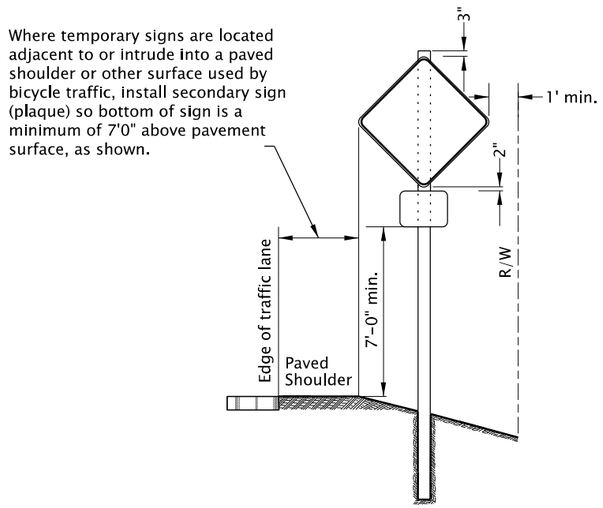
Urban Areas With Curb/Sidewalk



Rural Areas

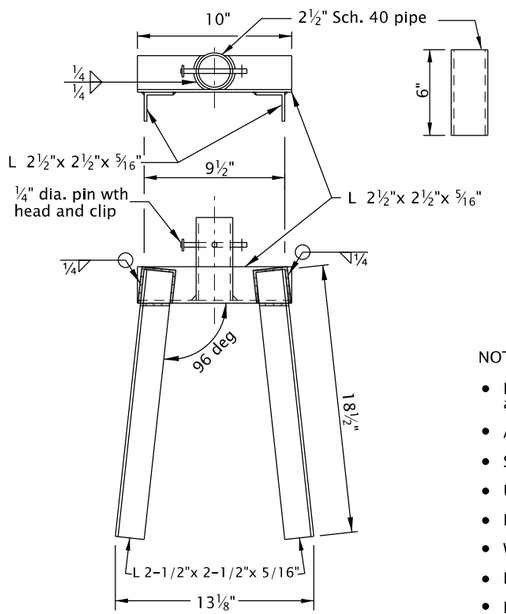


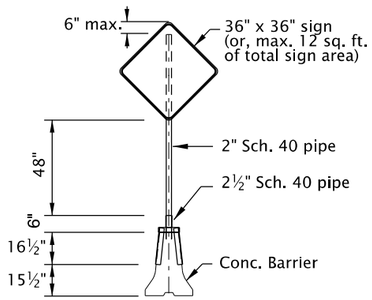
**Divided Highway/Freeway Medians
No Curb/Sidewalk**



**Rural or Urban Areas - Curb or No Curb
Bicycles On Shoulder**

TEMPORARY SIGN PLACEMENT





NOTES:

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

CONCRETE BARRIER SIGN SUPPORT

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

2024

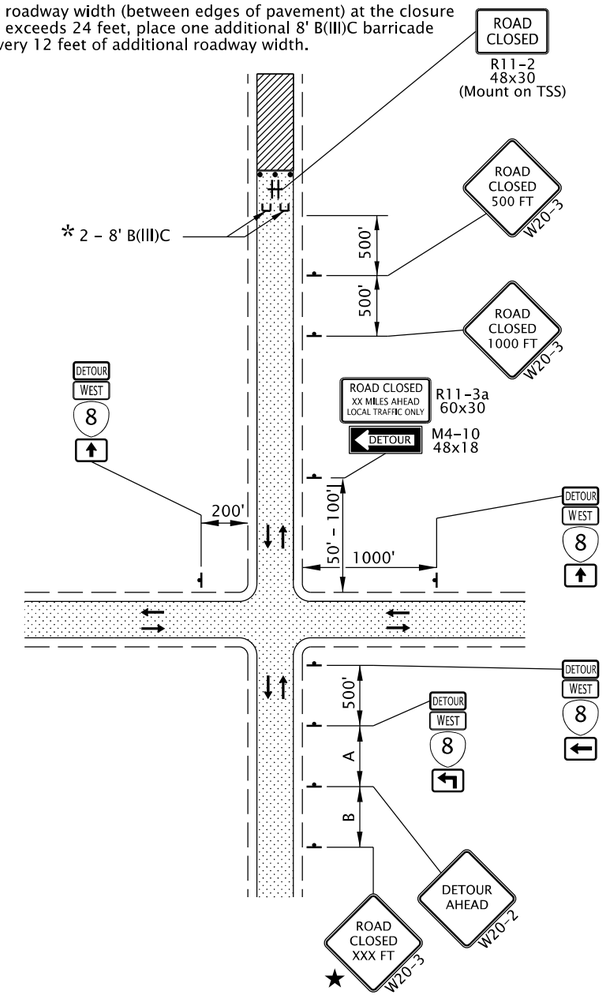
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 01-JUL-2020 | **TM822**

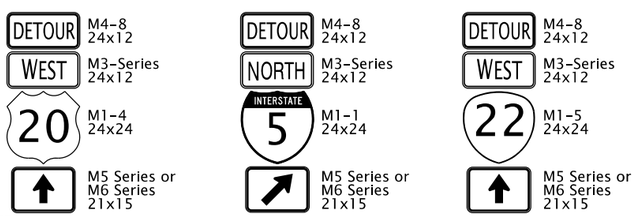
01-JUL-2020
TM840.dgn

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.

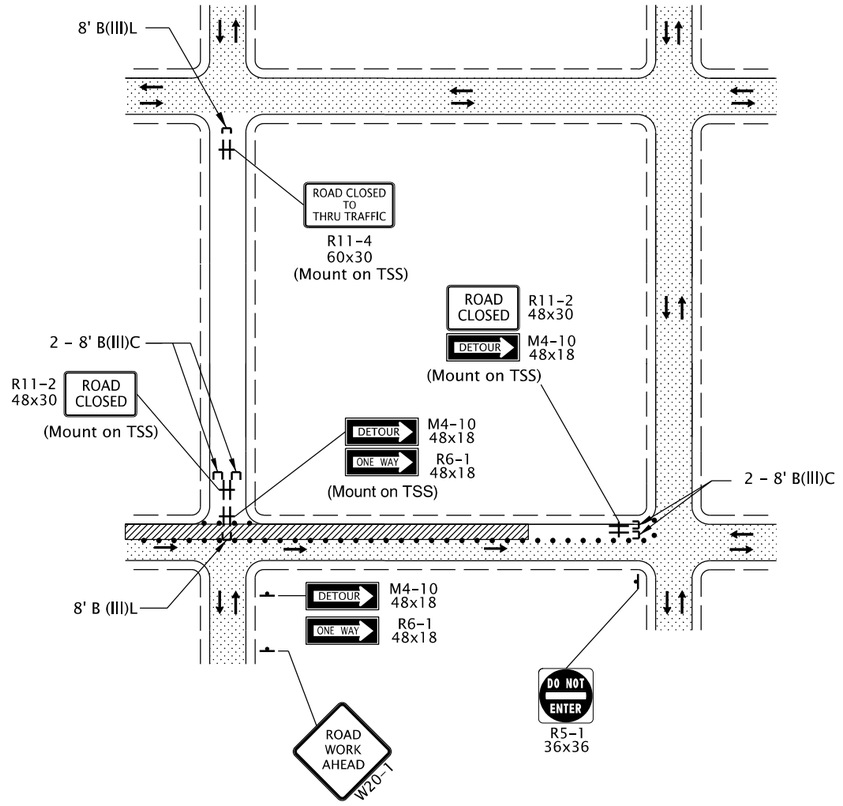


TYPICAL ROAD CLOSURE WITH DETOUR



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

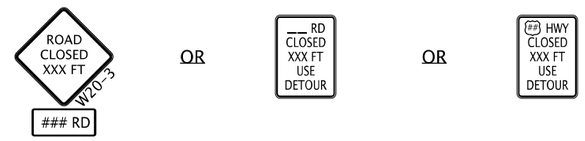
TYPICAL TRAILBLAZER ASSEMBLY



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

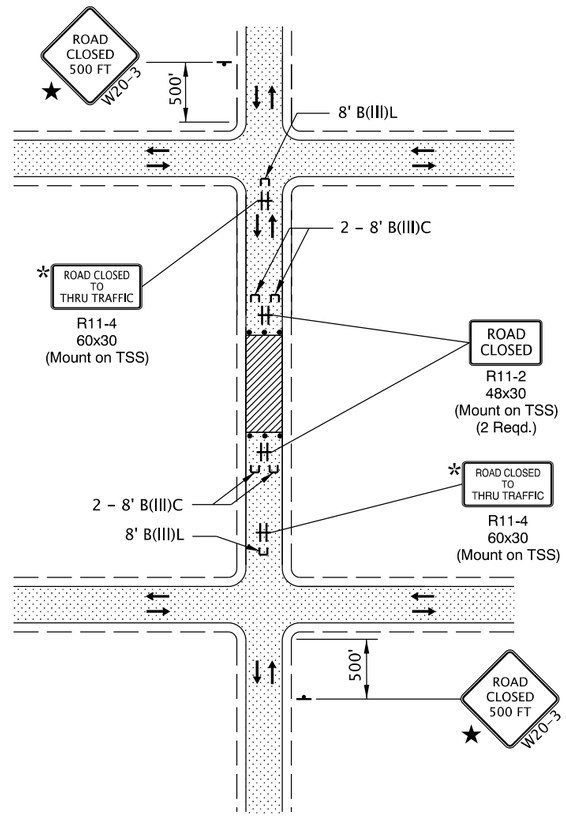
48 x 60 (nom.)
Project Specific Design

- 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 Dwg. TM800.
- To be accompanied by Dwg. 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

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CLOSURE DETAILS

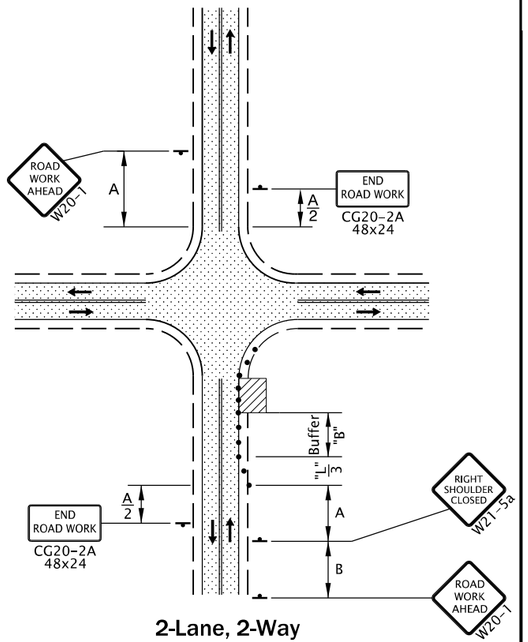
2024

DATE	REVISION DESCRIPTION

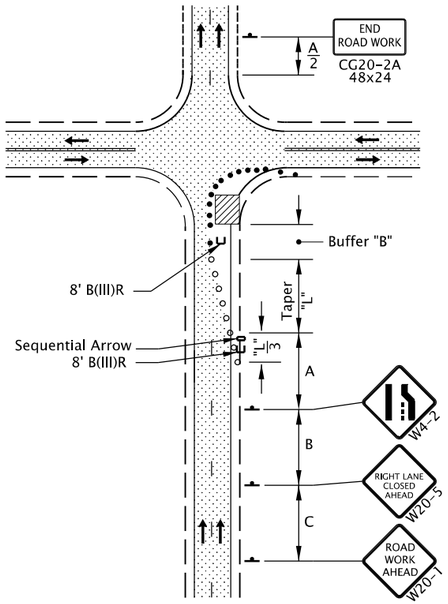
CALC. BOOK NO. N/A | SDR DATE 01-JUL-2020 | **TM840**

Effective Date: December 1, 2023 - May 31, 2024

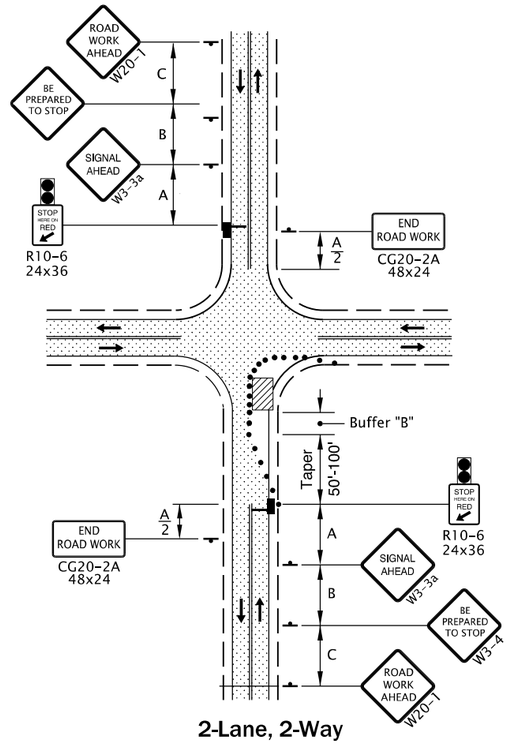
01-JUL-2022
TM841.dgn



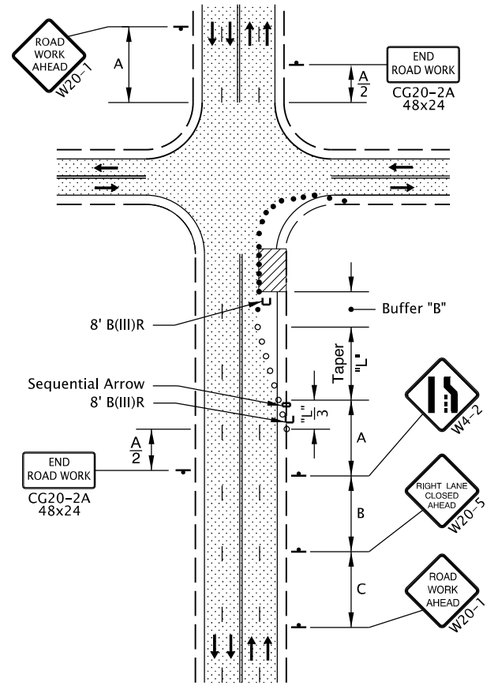
2-Lane, 2-Way
SHOULDER CLOSURE



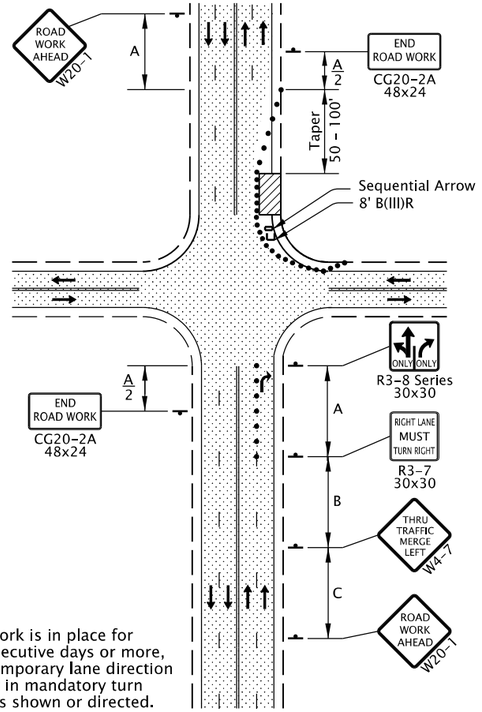
2-LANE, 1-WAY
RIGHT LANE CLOSURE



2-Lane, 2-Way
ONE LANE CLOSURE



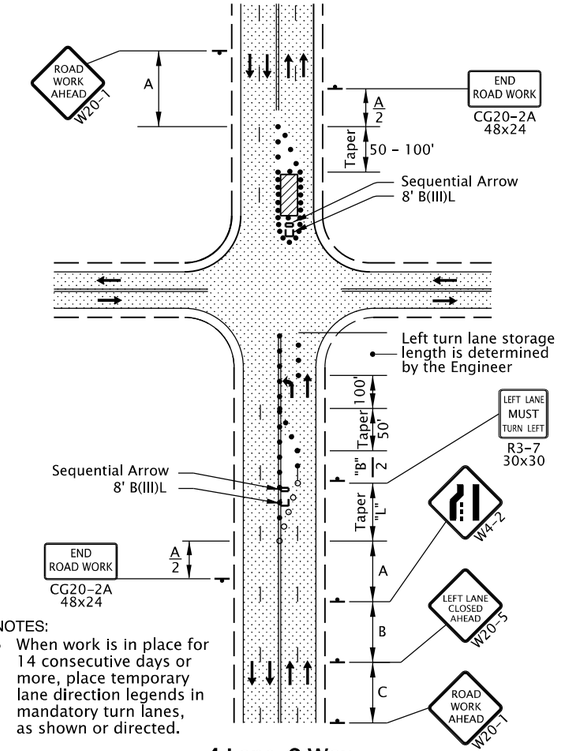
4-Lane, 2-Way
RIGHT LANE CLOSURE, NEAR SIDE



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 "SIGNAL AHEAD" (W3-3a) sign may be substituted with the signal ahead symbol (W3-3) sign.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" on Dwg. 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 Dwg. 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.
- Tubular markers may be used in lane closure tapers where posted speed is 40 mph or less.
- Where shoulder width is limited, Sequential Arrow may be placed within the lane closure taper.
- Place channelizing devices around intersection radii, business accesses and driveways 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 Dwg. Nos. TM820, TM82, TM840 & TM854.

Automated Flagging Assistance Device (AFAD)

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

Temp. Plastic Drums See TCD Spacing Table on TM800 for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

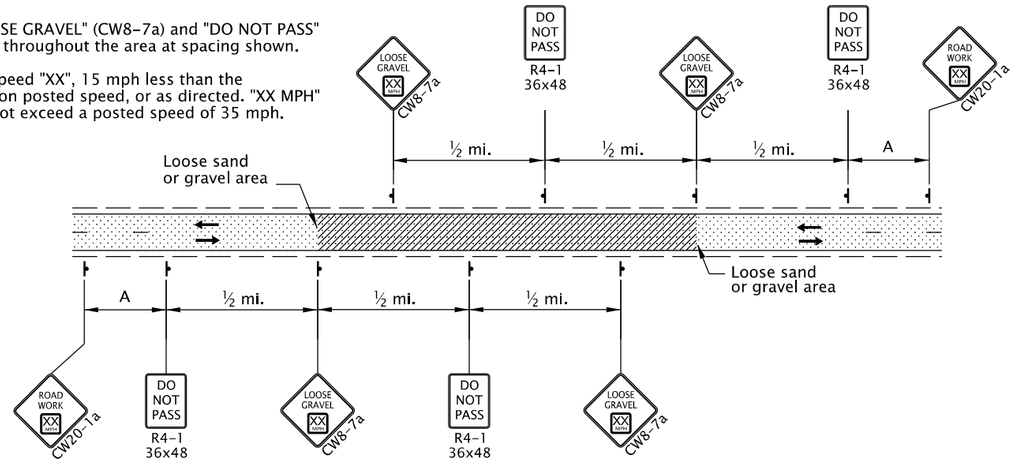
INTERSECTION WORK ZONE DETAILS

2024

DATE	REVISION DESCRIPTION

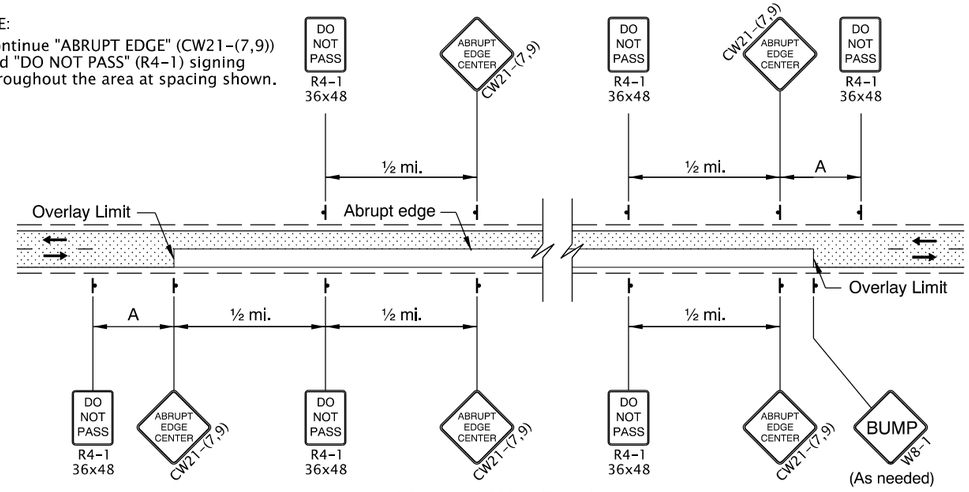
CALC. BOOK NO. N/A | SDR DATE 01-JUL-2022 | **TM841**

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.



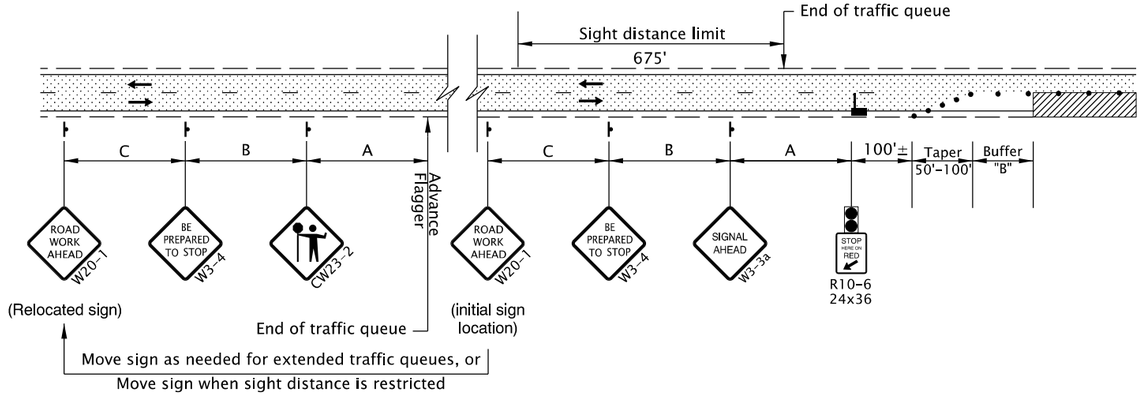
2-Lane, 2-Way Roadway
LOOSE GRAVEL IN ROADWAY SIGNING

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



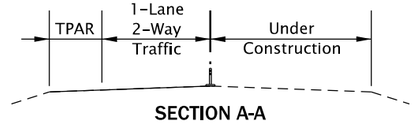
2-Lane, 2-Way Roadway
OVERLAY AREA SIGNING

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.

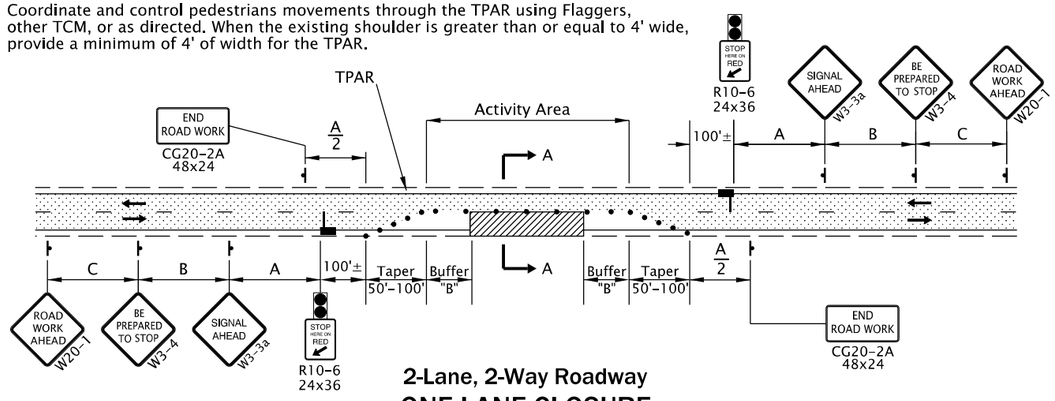


ADVANCE FLAGGER FOR EXTENDED TRAFFIC QUEUES

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 "WAIT FOR FLAGGER" (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.



SECTION A-A



2-Lane, 2-Way Roadway
ONE LANE CLOSURE

GENERAL NOTES FOR ALL DETAILS:
- The "SIGNAL AHEAD" (W3-3a) sign may be substituted with the Signal Ahead (W3-3) symbol 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 Dwg. No. TM800.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. 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.
- At night, flagger stations shall be illuminated according to the FLAGGER STATION LIGHTING DELINEATION detail on Dwg No. TM800.
- To be accompanied by Dwg. Nos. TM820, TM821 & TM854.

Automated Flagging Assistance Device (AFAD)

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

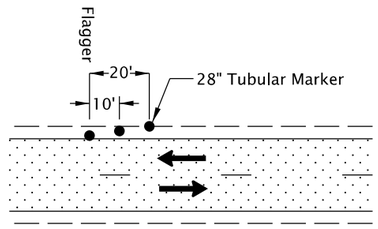
• • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.

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

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

2-LANE, 2-WAY ROADWAYS

2024

DATE	REVISION DESCRIPTION
01-2022	Added AFADs to drawing.

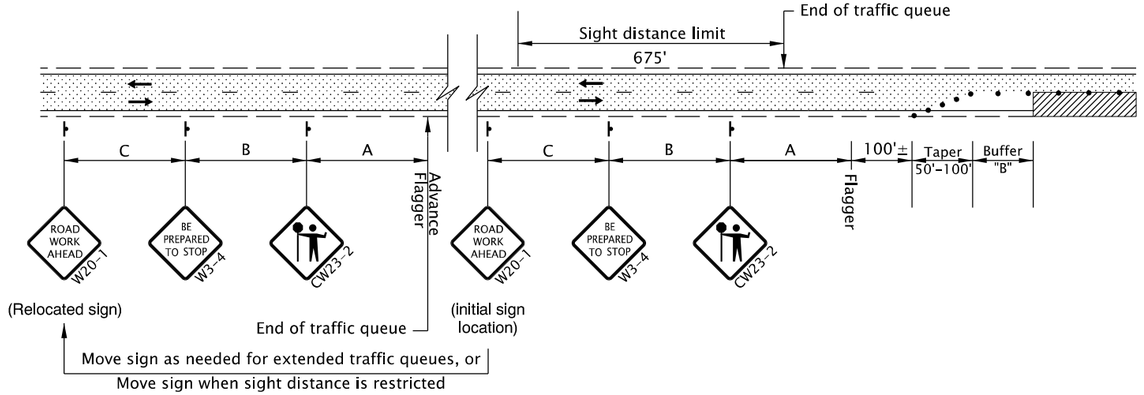
CALC. BOOK NO. N/A | SDR DATE 01-JUL-2022 | **TM850**

13-JAN-2023

TM855.dgn

NOTES:

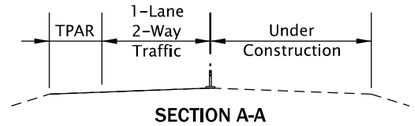
- Place Advance Flagger and additional signing when traffic queues extend beyond initial warning signing OR when sight distance is restricted.
- Relocate initial "ROAD WORK AHEAD" (W20-1) sign in advance of additional "BE PREPARED TO STOP" (W3-4) and Flagger Ahead (CW23-2) signs, as shown.
- Place additional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



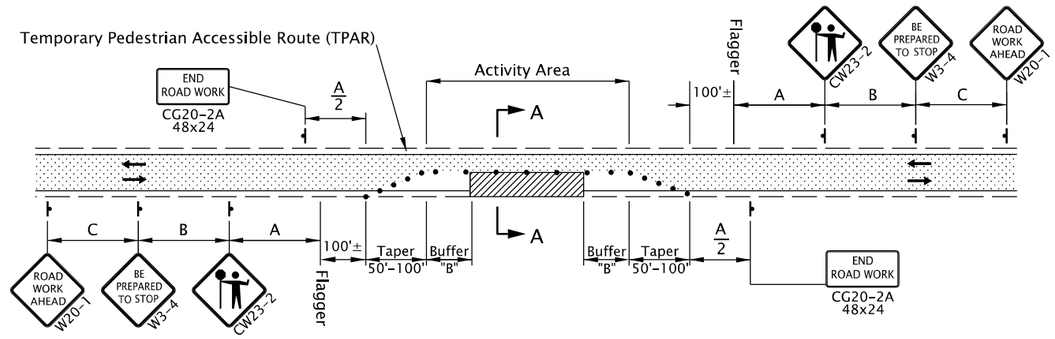
ADVANCE FLAGGER FOR EXTENDED TRAFFIC QUEUES

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 "WAIT FOR FLAGGER" (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.



SECTION A-A



2-Lane, 2-Way Roadway
ONE LANE CLOSURE

GENERAL NOTES FOR ALL DETAILS:

- This drawing is only intended to be used where an Automated Flagger Assistance Device (AFAD) cannot be utilized.
- 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 Dwg. No. TM800.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. 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.
- At night, flagger stations shall be illuminated according to the FLAGGER STATION LIGHTING DELINEATION detail on Dwg No. TM800.
- To be accompanied by Dwg. Nos. TM820 & TM821.

•••••••• 28" Tubular Markers on 10'max. spacing arround intersection radii.

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

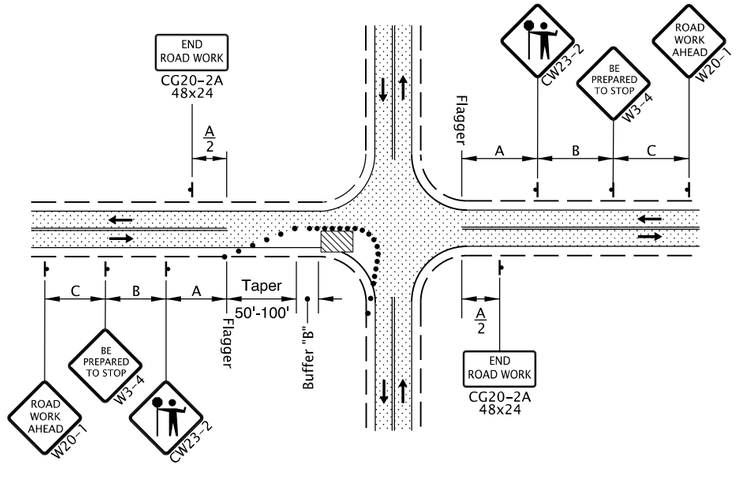
• • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

NOTE:

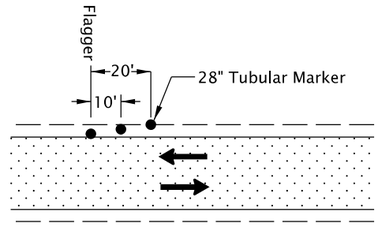
- Additional Traffic Control Measures (TCM) may be required for all legs of the intersection



2-Lane, 2-Way Roadway
ONE LANE CLOSURE, INTERSECTION

NOTE:

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



FLAGGER STATION DELINEATION

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

2-LANE, 2-WAY ROADWAYS

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 13-JAN-2023 | **TM855**

Effective Date: December 1, 2023 - May 31, 2024