STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	A.1

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

PLANS FOR PROPOSED PROJECT

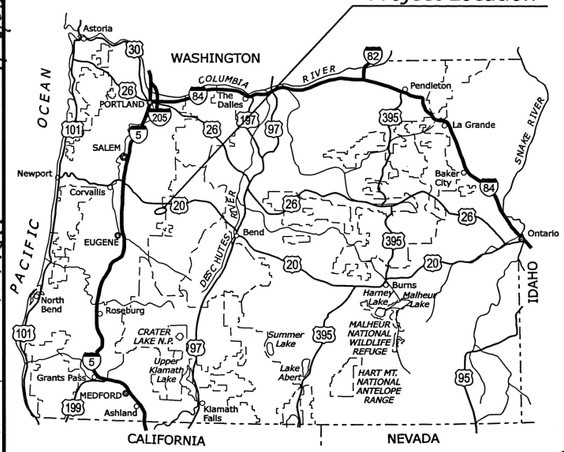
OR PFH 22(14)

MCKENZIE HIGHWAY

WILLAMETTE NATIONAL FOREST
LANE, LINN, AND DESCHUTES COUNTY
OREGON

LENGTH 15.532 MILES

Project Location



OREGON KEY MAP

REGISTERED PROFESSIONAL ENGINEER
13276PE
OREGON
JULY 1986
MICHAEL W. ODOM

EXPIRES 12-31-08

TYPE OF CONSTRUCTION:

Grading, Drainage, Milling, Paving, and Walls

DESIGN DESIGNATION:

ADT 2007	*420*
ADT 2027	*620*
V	*45 MPH*
e (max)	*Existing*

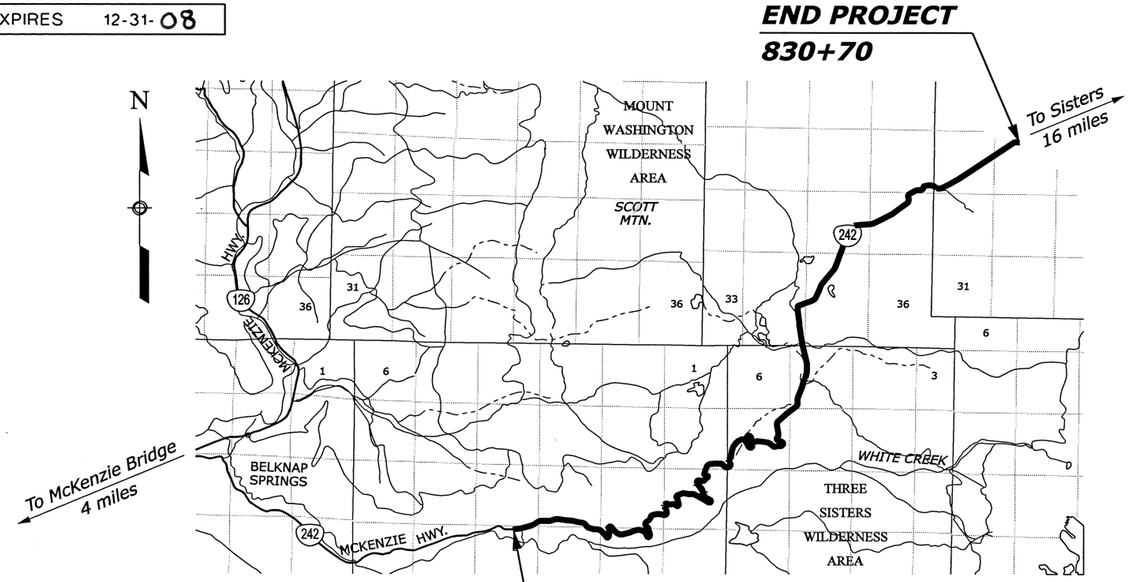
SPECIFICATION:

Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-03 US Customary Units

FEDERAL LANDS HIGHWAY
COMMITMENT TO EXCELLENCE

PLANS PREPARED BY

DAVID EVANS AND ASSOCIATES INC.



1 0 1 2 3 4
SCALE IN MILES

INDEX TO SHEETS

A. GENERAL INFORMATION
A.1 Title Sheet
A.2 Plan Symbols and Abbreviations
A.3 Vicinity Map
B. SUMMARIES
B.1-2 Summary of Quantities
C. TYPICAL SECTIONS
C.1 Mainline Typical Sections
C.2 Pavement Milling, Patching, and Overlay Details
C.3 Turnout Details
C.4 Dee Wright Parking Area
D. PLAN
D.1 Tabulation of Plan Quantities
D.2-28 Plan Sheets
E. ROAD APPROACH
E.1 Road Approach Details
F. RETAINING WALL
F.1 Gabion Wall Details
F.2 Gabion Basket Detail W253-1
G. DRAINAGE
G.1 Tabulation of Drainage Quantities
G.2 Cutoff Trench Drain Typical Details
H. EROSION CONTROL
H.1 Tabulation of Soil Erosion Control Quantities
H.2 Sediment Wattle Detail W157-20
I. TEMPORARY TRAFFIC CONTROL
I.1 Tabulation of Temporary Traffic Control Quantities
I.2 Temporary Traffic Control Plan Closure - Stage I
I.3 Temporary Traffic Control Plan Closure For Paving - Stage II
I.4 Temporary Sign Details
I.5 Temporary Traffic Control Advance Signing Std. Drwg. 635-1
I.6 Delineation And Signing For Unmarked Pavements Std. Drwg. 635-3
I.7 Temporary Traffic Control Single Lane Closure Layout (With Flaggers) Std. Drwg. 635-6
I.8 Temporary Traffic Control Sign Installation Std. Drwg. 635-14
J. PERMANENT TRAFFIC CONTROL
J.1 Tabulation of Delineators and Bollards
J.2 Delineator and Bollard Details
J.3-4 Tabulation of Permanent Traffic Control Quantities
J.5 Permanent Signing Details
J.6 Pavement Marking Details
J.7-33 Permanent Traffic Control Plan
J.34 Pavement Markings Symbols, and Words Detail W634-1

RECOMMENDED:

Project Manager, Western Federal Lands Highway Division — DATE 7/16/08

APPROVED:

Director, Project Delivery, Western Federal Lands Highway Division — DATE 7/16/08

T. BENNETT | 3/2008 | Checked by: M. HOHBACH 4/28/08 | 3/2008 | Designed by: | 4/28/2008

P:\FHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214aa.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	A.2

abutment	abut.
acre	ac
aggregate	aggr.
ahead	AH
alternate	alt.
and	&
and others	et al
and wife	et ux
and so forth (et cetera)	etc.
approach	appr.
approximate	approx.
asphalt	asph.
at	@
average daily traffic	ADT
back	BK
back to back	b. to b.
balance point	BP
batter	btr.
beam	bm.
bearing	brg.
beginning	beg.
bench mark	BM
bridge	br.
centerline	℄
center to center	cc or c. to c.
centers	ctrs.
channel change	ch. ch.
clear	clr.
column	col.
concrete	conc.
connection	conn.
construction	constr.
construction joint	constr. jt.
contingent sum	CTSM
continuous	cont.
Contracting Officer	CO
control point	CP
corrugated	corr.
corrugated metal pipe	CMP
county	cty.
countersink	ctsk.
creek	cr.
cubic foot(feet)	cuft, ft3 or ft^3
cubic yard(s)	cuyd, yd3 or yd^3
culvert	culv.
curve central angle	Δc
degree	° or deg.
degree Fahrenheit	°F
design hourly volume	DHV
design speed	V
diagonal	diag.
diameter	dia., D, or Ø
diaphragm	diaph.
district	Dist.
donation land claim	DLC
drawing(s)	drwg(s).
east	E
edge of pavement	EP
edge of water	EW
edge of road	ER
elevation	elev.
elevation with number	El. 94.16 ft
embankment	emb.
Engineer(s)	engr(s).
equation	EQ or eq.
excavation	exc.
expansion joint	exp. jt.
Federal	Fed.
finish	fin.
flange	flg.
foot (feet)	' or ft
foot pounds	ft-lb
footing	ftg.
for example	e.g.
gallon	gal
galvanized	galv.
gage (gauge)	ga.
headwall	hdwl.
hexagon	hex.
high water	HW
highway	hwy.
house	hse.
homestead entry survey	HES
identification	iden.
inches	" or in
inclusive	incl.
inside diameter	ID
joint	jt.
lamination	lam.
latitude	lat.
left	lt. or LT
length of curve	L
length of spiral	Ls
linear foot (feet)	lnft

longitudinal	long.
low water	LW
lump sum	LPSM
magnetic	mag.
main line	M.L.
maintenance	maint.
material	matl.
maximum	max.
mile	mi
miles per hour	mph
mile post	M.P.
minute(s) (angular)	'
minimum	min.
miscellaneous	misc.
monument	mon.
mountain(s)	mtn(s).
negative	neg.
north	N
number	no.
original ground	OG
out to out	o. to o.
outside diameter	OD
pavement	pvmt.
percent	pct. or %
perforate	perf.
plate	pl.
point of compound curve	PCC
point of curve	PC
point on curve	POC
point of intersection	PI
point of spiral to curve	PSC or SC
point of curve to spiral	PCS or CS
point on spiral	POS
point of spiral to reverse spiral	SRS
point of spiral to tangent	PST or ST
point on tangent	POT
point of tangent to spiral	PS or TS
point of tangent	PT
pound	lb
pounds per square inch	psi
pounds per square foot	psf
pounds per cubic foot	pcf
project	proj.
quantities	quant.
radian	rad
radius	R
range	R.
reconstruction	reconst.
reinforcement	reinf.
required	reqd.
reservoir or reservation	res.
retaining wall	ret. wall
right	rt. or RT
right-of-way	R/W
road	rd.
roadway	rdwy.
route	rte.
school	sch.
second (angular)	"
second (time)	s
section	sec.
slope protection	sl. prot.
south	S
spacing, spaces or spaced	spa.
specification	spec.
spiral central angle	θs
square	sq
square foot	sqft, ft2 or ft^2
square yard	sqyd, yd2 or yd^2
standard	std.
station	sta.
stiffener	stiff.
straight	str.
street	st.
stringer	stgr.
structural	struc.
superelevation rate	e
symmetrical	sym.
tangent	tan.
tangent distance	T
tangent distance (spiral curves)	Ts
temporary bench mark	TBM
thousand feet board measure	MFBM
thousand gallon	M-gal
thousand square feet	M-sqft
that is	i.e.
thread	thd.
total central angle	Δ
township	T.
typical	typ.
vehicles per hour	vph
vertical point of intersection	VPI
warehouse	whs.
west	W

NATIONAL BOUNDARY
STATE BOUNDARY
COUNTY BOUNDARY
CITY BOUNDARY
TOWNSHIP or RANGE LINE
SECTION LINE
¼ SECTION LINE
1/16 SECTION LINE
NATIONAL PARK or FOREST BOUNDARY
PROPERTY LINE — P/L
RIGHT-OF-WAY LINE — EXISTING — R/W; PROPOSED — R/W
RIGHT-OF-WAY LINE with MONUMENT — EXISTING — R/W; PROPOSED — R/W
EASEMENT (Permanent; Non-Permanent) — P/E; C/E
SLOPE STAKE — TOP OF CUT; TOE OF FILL; TRANSITION
ROADWAY, EXISTING
RAILROAD — SINGLE TRACK; MULTIPLE TRACK
SILT FENCE
TRAIL
INTERMITTENT DRAINAGE and SMALL CREEK
LARGE CREEK/RIVER
LAKE, POND or RESERVOIR; MARSHLAND
SPRING
TREELINE; TREE
MATERIAL SOURCE

	FOUND	PROJECTED
SECTION CORNER	36 31 / 1 6	36 31 / 1 6
¼ SECTION CORNER	15 / 22	15 / 22
1/16 SECTION or PROPERTY CORNER		
PROPERTY CORNER		No Symbol
PARCEL NUMBER	No Symbol	400

NOTE:

1. Other symbols used in the plans will be shown in a legend on the appropriate plan sheet.

NORTH ARROW

	EXISTING	PROPOSED
FENCE		
GATE with FENCE		
CATTLEGUARD		
GUARDRAIL		
SIGNS — Post mounted, single		
SIGNS — Post mounted, double		
SIGNS — Portable	No Symbol	
RETAINING WALL		wall face
POWER POLE UTILITIES P=power, T=telephone	P	P
UNDERGROUND UTILITIES G=gas, O=oil, P=power, SA= sanitary sewer, SS=storm sewer, T=telephone, W=water	P	P
SUPPORT POLE with ANCHOR		
TELEPHONE BOOTH or PEDESTAL	TB or TP	TB or TP
STREET LIGHT		
BRIDGE		
PIPE CULVERT (arrow shows flow)		
PIPE CULVERT with END SECTION		
PIPE CULVERT with HEADWALL		
BOX CULVERT		
CULVERT with DROP INLET		
UNDERDRAIN	UD	UD
CONTROL POINT	CP 12345	No Symbol
SURVEY MONUMENT		No Symbol
HUB & TACK		No Symbol
SPOT ELEVATION	x EL. 1234.56 ft	No Symbol
COORDINATE GRID TICK	N m	No Symbol
BUILDING		
BORING LOCATION		No Symbol
RIPRAP	No Symbol	

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

PLAN SYMBOLS AND ABBREVIATIONS

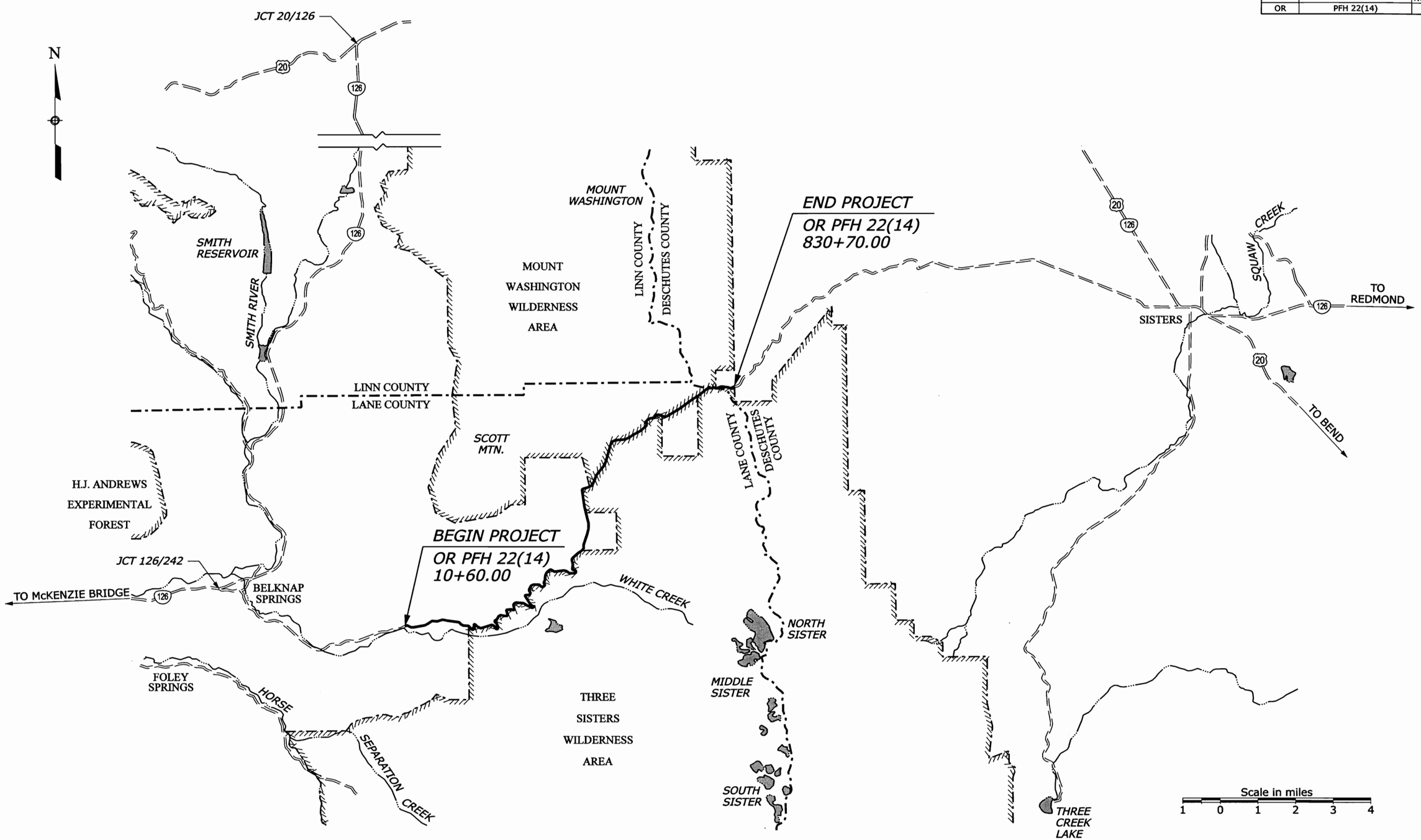
DETAIL APPROVED FOR USE 11/2001
REVISED: 9/2005

DETAIL W101-1

4/18/2008

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\w10101.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	A.3



VICINITY MAP

P:\FLH\AX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22l4ab.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: FLH | M. HOHBACH 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	B.1

SUMMARY OF QUANTITIES

		PLAN SHEET SECTION -------->>	C. TYPICAL SECTION	D. PLAN	F. RETAINING WALL	G. DRAINAGE	H. EROSION CONTROL	I. TEMPORARY TRAFFIC CONTROL	J. PERMANENT TRAFFIC CONTROL							ESTIMATED QUANTITIES	
ITEM	DESCRIPTION	UNIT														PLAN	BID SCHEDULE
15101-0000	MOBILIZATION	LPSM														ALL	ALL
15201-0000	CONSTRUCTION SURVEY AND STAKING	LPSM														ALL	ALL
15301-0010	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM														ALL	ALL
15401-0000	CONTRACTOR TESTING	LPSM														ALL	ALL
15501-0000	CONSTRUCTION SCHEDULE	LPSM														ALL	ALL
15703-1000	SOIL EROSION CONTROL, SOIL STABILIZATION	ACRE					.2									0.2	0.2
15705-1500	SOIL EROSION CONTROL, SEDIMENT WATTLE	LNFT					1560									1560	1,600
20301-0700	REMOVAL OF DELINEATOR	EACH							131							131	135
20301-1900	REMOVAL OF PIPE CULVERT	EACH				4										4	4
20301-2400	REMOVAL OF SIGN	EACH							91							91	93
20402-0000	SUBEXCAVATION	CUYD	104													104	110
20410-0000	SELECT BORROW	CUYD		426												426	440
20701-0700	EARTHWORK GEOTEXTILE, TYPE II-A	SQYD	230		690											920	950
21101-1000	ROADWAY OBLITERATION, METHOD 1	SQYD		1325												1325	1,400
25125-0000	BOULDER	EACH		24												24	26
25201-1000	SPECIAL ROCK EMBANKMENT, MECHANICALLY-PLACED	CUYD			193											193	210
25302-1000	GABIONS, GALVANIZED OR ALUMINIZED COATED	CUYD			134											134	140
30802-1000	ROADWAY AGGREGATE, METHOD 1	TON	3026		80	4										3110	3,300
40101-0600	SUPERPAVE PAVEMENT, 1/2-INCH NOMINAL MAXIMUM SIZI AGGREGATE, 0.3 TO <3 MILLION ESAL , TYPE IV PAVEMENT ROUGHNESS	TON	13773													13773	14,000
40301-0300	HOT ASPHALT CONCRETE PAVEMENT, GRADING C	TON	228		40	2										270	310
40301-0300	HOT ASPHALT CONCRETE PAVEMENT, GRADING C , WEDGE AND LEVELING COURSE, VARIABLE DEPTH	TON	1014													1014	1,160
41201-1000	TACK COAT GRADE CSS-1, CSS-1H, SS-1, OR SS-1H	TON	62													62	64
41301-0000	ASPHALT PAVEMENT MILLING , VARIABLE DEPTH, 0 -INCH TO 1 1/2-INCH	SQYD	467	1560												2027	2,300
41301-0800	ASPHALT PAVEMENT MILLING, 3-INCH DEPTH	SQYD	1227													1227	1,400
60201-0800	24-INCH PIPE CULVERT	LNFT				100										100	110
60501-0000	STANDARD UNDERDRAIN SYSTEM	LNFT				75										75	80

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\(Summary.xls)Sheet
22-Apr-2008 11:21 | Designed by: T. BENNETT | 4/2008 | Checked by: M. HOHBACH 4/22/08 | 4/2008

SUMMARY OF QUANTITIES

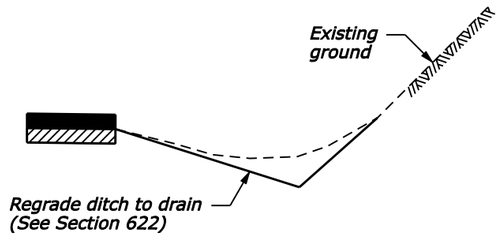
ITEM	DESCRIPTION	UNIT	C. TYPICAL SECTION	D. PLAN	F. RETAINING WALL	G. DRAINAGE	H. EROSION CONTROL	I. TEMPORARY TRAFFIC CONTROL	J. PERMANENT TRAFFIC CONTROL							ESTIMATED QUANTITIES PLAN	ESTIMATED QUANTITIES BID SCHEDULE
	PLAN SHEET SECTION -------->>																
15101-0000	MOBILIZATION	LPSM														ALL	ALL
15201-0000	CONSTRUCTION SURVEY AND STAKING	LPSM														ALL	ALL
15301-0010	CONTRACTOR QUALITY CONTROL AND ASSURANCE	LPSM														ALL	ALL
15401-0000	CONTRACTOR TESTING	LPSM														ALL	ALL
15501-0000	CONSTRUCTION SCHEDULE	LPSM														ALL	ALL
15703-1000	SOIL EROSION CONTROL, SOIL STABILIZATION	ACRE					.2									0.2	0.2
15705-1500	SOIL EROSION CONTROL, SEDIMENT WATTLE	LNFT					1560									1560	1,600
20301-0700	REMOVAL OF DELINEATOR	EACH							131							131	135
20301-1900	REMOVAL OF PIPE CULVERT	EACH				4										4	4
20301-2400	REMOVAL OF SIGN	EACH							91							91	93
20402-0000	SUBEXCAVATION	CUYD	104													104	110
20410-0000	SELECT BORROW	CUYD		426												426	440
20701-0700	EARTHWORK GEOTEXTILE, TYPE II-A	SQYD	230		690											920	950
21101-1000	ROADWAY OBLITERATION, METHOD 1	SQYD		1325												1325	1,400
25125-0000	BOULDER	EACH		24												24	26
25201-1000	SPECIAL ROCK EMBANKMENT, MECHANICALLY-PLACED	CUYD			193											193	210
25302-1000	GABIONS, GALVANIZED OR ALUMINIZED COATED	CUYD			134											134	140
30802-1000	ROADWAY AGGREGATE, METHOD 1	TON	3026		80	4										3110	3,300
40101-0600	SUPERPAVE PAVEMENT, 1/2-INCH NOMINAL MAXIMUM SIZ AGGREGATE, 0.3 TO <3 MILLION ESAL , TYPE IV PAVEMENT ROUGHNESS	TON	13773													13773	14,000
40301-0300	HOT ASPHALT CONCRETE PAVEMENT, GRADING C	TON	228		40	2										270	310
40302-0300	HOT ASPHALT CONCRETE PAVEMENT, GRADING C , WEDGE AND LEVELING COURSE, VARIABLE DEPTH	TON	1014													1014	1,160
41201-1000	TACK COAT GRADE CSS-1, CSS-1H, SS-1, OR SS-1H	TON	63													63	64
41301-0000	ASPHALT PAVEMENT MILLING , VARIABLE DEPTH, 0 -INCH TO 1 1/2-INCH	SQYD	467	1560												2027	2,300
41301-0800	ASPHALT PAVEMENT MILLING, 3-INCH DEPTH	SQYD	1227													1227	1,400
60201-0800	24-INCH PIPE CULVERT	LNFT				100										100	110
60501-0000	STANDARD UNDERDRAIN SYSTEM	LNFT				75										75	80

I:\Project_Dev\Oregon\McKenzie\ORPFH 22(14) McKenzie
1-Aug-2008 9:23 AM | Designed by: T. BENNETT
4/2008 | Checked by: M. HOHBACH
4/2008

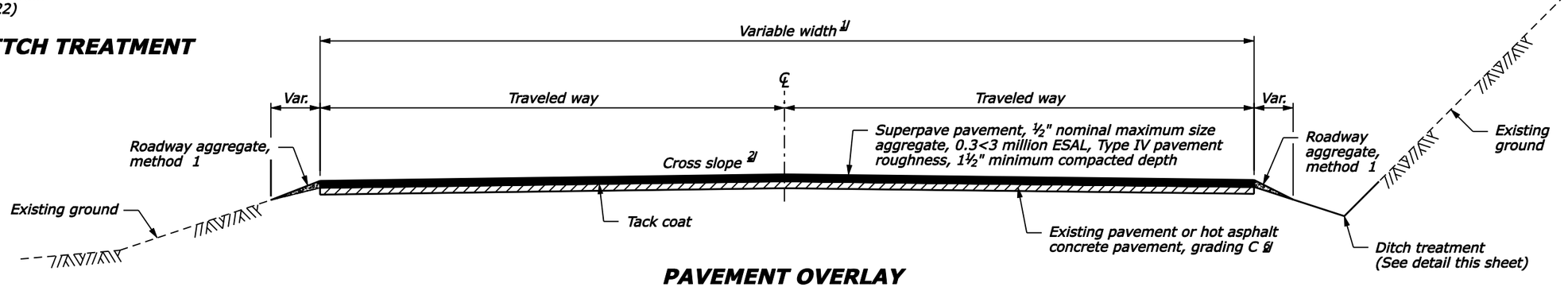
SUMMARY OF QUANTITIES

		PLAN SHEET SECTION -------->>	C. TYPICAL SECTION	D. PLAN	F. RETAINING WALL	G. DRAINAGE	H. EROSION CONTROL	I. TEMPORARY TRAFFIC CONTROL	J. PERMANENT TRAFFIC CONTROL							ESTIMATED QUANTITIES	
ITEM	DESCRIPTION	UNIT														PLAN	BID SCHEDULE
60510-0800	6-INCH OUTLET PIPE	LNFT				20										20	22
60704-0000	CLEANING CULVERT IN PLACE	EACH				21										21	22
61904-0000	BOLLARD POST	EACH							9							9	10
62201-0200	DUMP TRUCK, 8 CUBIC YARD MINIMUM CAPACITY	HOUR															60
62201-0700	BACKHOE LOADER, 1 CUBIC YARD MINIMUM CAPACITY FRONTEND BUCKET, 10 CUBIC FOOT MINIMUM CAPACITY BACKHOE BUCKET, 90 HP	HOUR															60
62201-2050	ROLLER	HOUR															40
62201-2800	MOTOR GRADER, 8 FOOT MINIMUM BLADE	HOUR															80
62301-0000	GENERAL LABOR	HOUR															80
63302-0000	SIGN SYSTEM	SQFT							1223							1223	1,250
63309-0000	DELINEATOR , TYPE 1 AND TYPE 2, STOCKPILED	EACH															40
63309-0000	DELINEATOR , TYPE 1	EACH							154							154	160
63309-0000	DELINEATOR , TYPE 2	EACH							16							16	18
63318-1000	SNOWPOLE HOLDER , REMOVE AND RESET	EACH							12							12	13
63401-0300	PAVEMENT MARKINGS, TYPE B, SOLID WHITE	LNFT							600							600	650
63401-0300	PAVEMENT MARKINGS, TYPE B, SOLID YELLOW	LNFT							290960							290960	292,000
63401-0400	PAVEMENT MARKINGS, TYPE B, BROKEN YELLOW	LNFT							31760							31760	32,000
63405-0850	PAVEMENT MARKINGS, TYPE B, ACCESSIBILITY SYMBOL	EACH							2							2	2
63502-0600	TEMPORARY TRAFFIC CONTROL, BARRICADE TYPE 3 (CENTER)	EACH						9								9	9
63502-0900	TEMPORARY TRAFFIC CONTROL, CONE, TYPE 28-INCH	EACH						300								300	300
63503-0400	TEMPORARY TRAFFIC CONTROL, CONCRETE BARRIER	LNFT						120								120	120
63504-1000	TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN	SQFT						456								456	460
63506-0600	TEMPORARY TRAFFIC CONTROL, PILOT CAR	HOUR						100								100	100
63507-0700	TEMPORARY TRAFFIC CONTROL, TRAFFIC AND SAFETY SUPERVISOR	DAY						90								90	90
63507-0800	TEMPORARY TRAFFIC CONTROL, PORTABLE CHANGEABLE MESSAGE SIGN	DAY						320								320	320
63509-1000	TEMPORARY TRAFFIC CONTROL, FLAGGER	FIX HR RATE						800								800	800

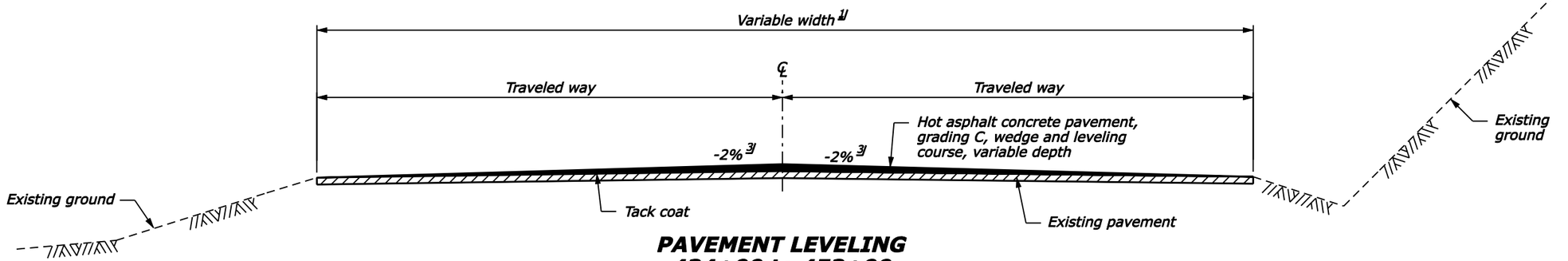
STATE	PROJECT	SHEET NUMBER
OR	.....PFH.22(14).....	.C.1.
--	.....	



DITCH TREATMENT



PAVEMENT OVERLAY
10+60 to 260+60
262+20 to 346+95
348+60 to 830+70



PAVEMENT LEVELING
434+00 to 453+00
467+50 to 477+00
494+00 to 502+00
533+50 to 538+50
559+50 to 569+00
654+50 to 685+00
694+50 to 699+00
748+00 to 755+50

FOOTNOTE:

1/ Match existing pavement width. Existing width varies between 17'-20'.

2/ Match existing cross slope, except in areas of pavement leveling.

3/ Restore roadway crown, see Section 152.

4/ Includes quantity for milled areas, turnouts, and parking areas.

5/ Includes quantities for approach roads.

6/ Includes pavement leveling and pavement milling areas.

PAVEMENT STRUCTURE QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITY	REMARKS
30802-1000	Roadway aggregate, method 1	tons	2,002 5/	Based on 1.97 ton/cuyd - includes 6% moisture
40101-0600	Superpave pavement, ½" nominal maximum size aggregate, 0.3 to <3 million ESAL, Type IV pavement roughness	tons	13,288 5/	Based on 1.95 ton/cuyd
40302-0300	Hot asphalt concrete pavement, grading C, wedge and leveling course, variable depth	tons	1,014	Based on 1.95 ton/cuyd - 2" depth at crown
41201-1000	Tack coat grade CSS-1, CSS-1H, SS-1, OR SS-1H	tons	63 4/	Based on 0.08 gal/sqyd

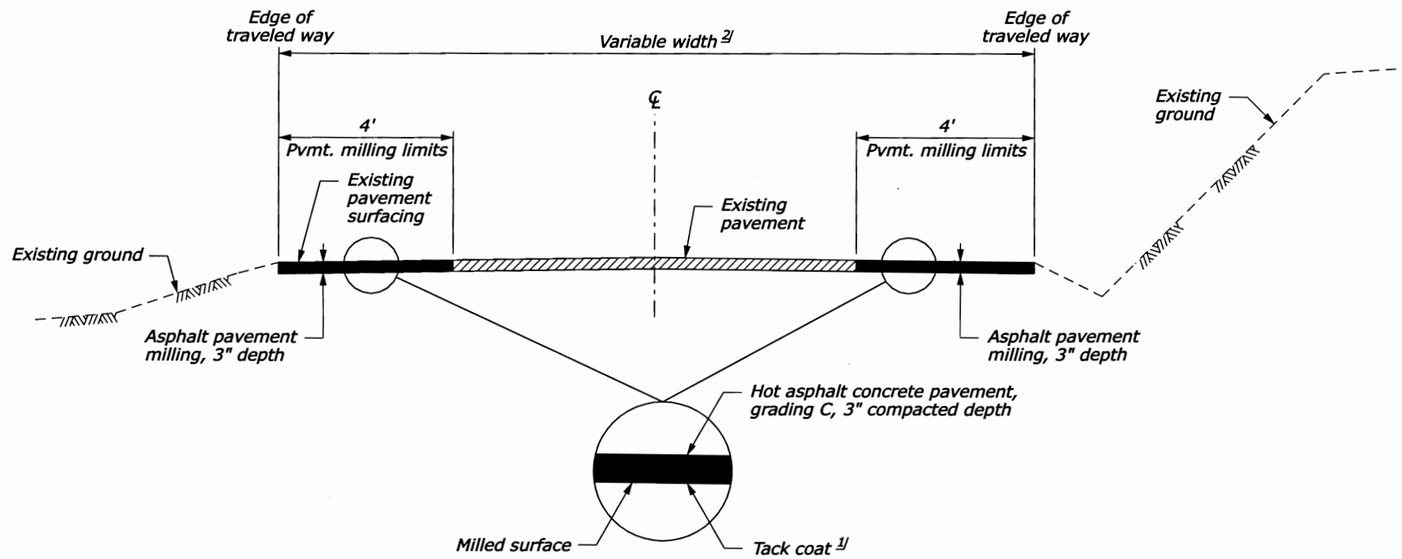
MAINLINE
TYPICAL SECTIONS

$PATH$ | $DATE$ | Designed by: T. BENNETT ..... 3/2008 | Checked by: M. HOHBACH 3/2008

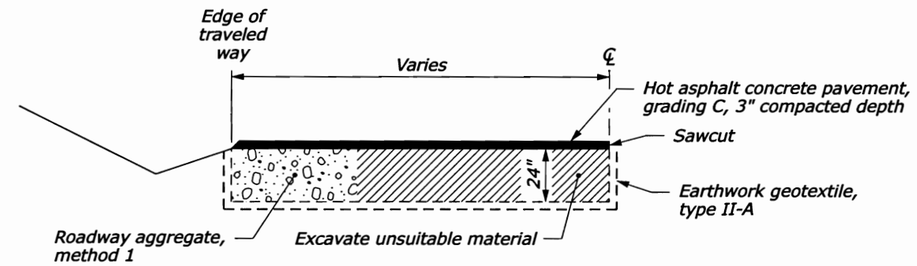
STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	C.2

PAVEMENT MILLING AND PATCHING

APPROXIMATE LOCATION	SIDE	HOT ASPHALT CONCRETE PAVEMENT, GRADING C ITEM 40301-0300 (TON)	ASPHALT PAVEMENT MILLING 3-INCH DEPTH ITEM 41301-0800 (SQYD)
13+20 to 14+00	RT	6	35
14+10 to 14+40	LT	2	13
14+90 to 15+70	LT	6	35
15+20 to 15+60	RT	3	18
16+30 to 17+05	RT	5	33
18+70 to 19+20	LT	4	22
19+60 to 20+00	RT	3	18
20+30 to 20+40	LT	1	4
20+70 to 21+70	LT	7	44
23+10 to 23+20	LT	1	4
24+70 to 25+90	LT	9	53
27+20 to 27+90	LT	5	31
35+05 to 35+90	RT	6	38
69+50 to 69+80	LT	2	13
69+95 to 72+85	RT	21	129
79+00 to 80+00	RT	7	44
104+50 to 106+30	RT	13	80
107+60 to 108+80	RT	9	53
110+00 to 110+30	RT	2	13
110+00 to 110+30	LT	2	13
115+40 to 115+70	RT	2	13
148+60 to 148+70	LT	1	4
169+05 to 169+25	RT	2	9
208+65 to 208+85	LT	2	9
209+40 to 210+00	RT	4	27
211+05 to 211+30	LT	2	11
213+50 to 214+10	LT	4	27
218+05 to 218+40	RT	3	16
218+70 to 219+10	RT	3	18
219+80 to 220+10	RT	2	13
238+40 to 238+60	RT	2	9
240+25 to 240+45	RT	2	9
271+60 to 271+80	LT	2	9
273+70 to 275+00	LT	9	58
280+20 to 280+40	LT	2	9
280+40 to 280+50	RT	1	4
329+70 to 330+20	LT	4	22
332+30 to 332+95	LT	5	29
535+85 to 536+70	LT	6	38
555+40 to 556+10	RT	5	31
643+20 to 644+30	RT	8	49
703+30 to 704+40	LT	8	49
764+80 to 766+00	RT	9	53
768+50 to 768+90	RT	3	18
TOTAL		205	1,227



PAVEMENT MILLING AND PATCHING DETAIL - PART WIDTH



SUBEXCAVATION DETAILS

SUBEXCAVATION

LOCATION	SUBEXCAVATION ITEM 20402-0000 (CUYD)	ROADWAY AGGREGATE, METHOD 1 ITEM 30802-1000 (TON)	EARTHWORK GEOTEXTILE, TYPE II-A ITEM 20701-0700 (SQYD)	HOT ASPHALT CONCRETE PAVEMENT, GRADING C ITEM 40301-0300 (TON)	DEPTH OF SUBEXCAVATION
218+30 to 218+70 RT	27	53	58	7	24"
565+55 to 566+52 LT	64	126	141	13	24"
567+13 to 567+34 LT	13	26	31	3	24"
TOTAL	104	205	230	23	

NOTE:

1. Milling and subexcavation locations are approximate beginning and ending stations. Field adjust with CO approval as needed.

FOOTNOTE:

1/ Do not apply if underlaying milled surface is aggregate.

2/ Existing pavement width varies 17'- 20'. Do not mill paved turnouts or parking areas; accept as shown on Sheet C.4.

PAVEMENT MILLING, PATCHING, AND OVERLAY DETAILS

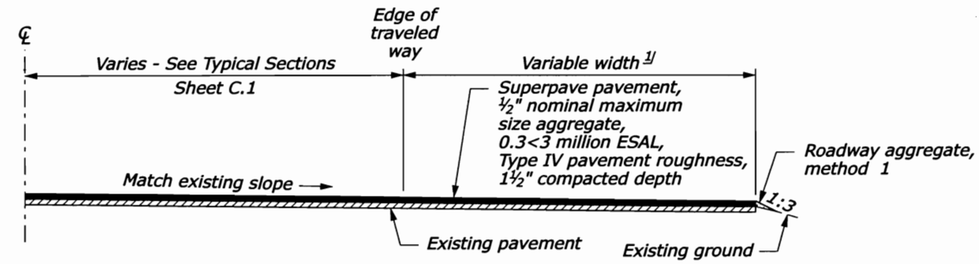
Designed by: T. BENNETT 3/2008 | Checked by: M. HOHBACH 3/2008 | 4/18/2008

P:\F\PHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214cb.dgn

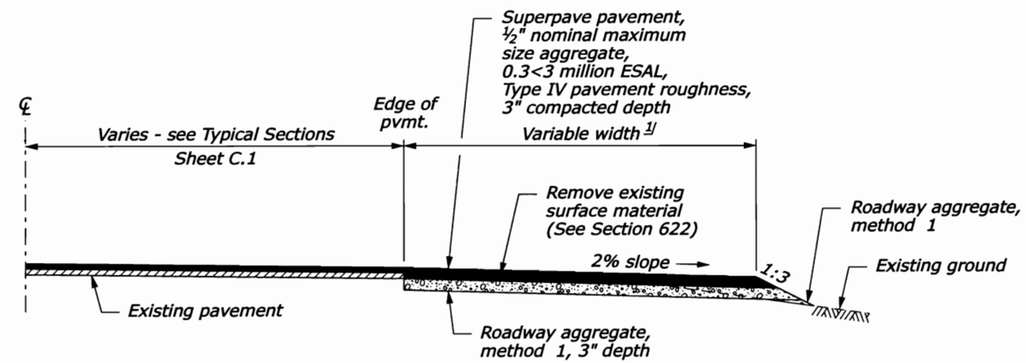
STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	C.3

TURNOUTS

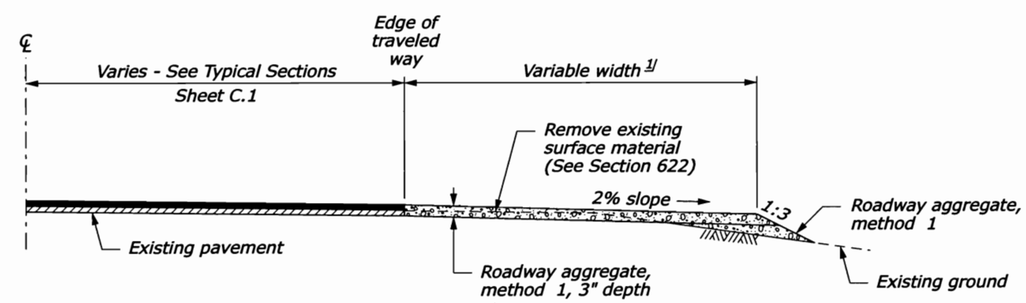
APPROXIMATE LOCATION	SIDE	ROADWAY AGGREGATE, METHOD 1 ITEM 30802-1000 (TON)	SUPERPAVE PAVEMENT, ½" NOMINAL MAXIMUM SIZE AGGREGATE, 0.3 TO <3 MILLION ESAL, TYPE IV PAVEMENT ROUGHNESS ITEM 40101-0600 (TON)	TYPE
Lower staging area near B.O.P.	RT	400		Aggregate
31+80 to 32+50	RT	10		Aggregate
35+10 to 35+90	RT	12		Aggregate
47+10 to 47+60	RT	7		Aggregate
158+20 to 158+75	RT	10		Aggregate
214+90 to 215+75	RT	16		Aggregate
302+30 to 304+00	RT	7		Aggregate
311+20 to 312+10	RT	30		Aggregate
315+40 to 316+30	LT	17		Aggregate
319+35 to 320+50	LT	22		Aggregate
324+90 to 325+90	LT	27		Aggregate
346+70 to 348+00	LT	5		Aggregate
364+60 to 365+60	LT	25		Aggregate
366+60 to 367+50	LT	21		Aggregate
394+20 to 394+80	RT	8		Aggregate
401+50 to 402+70	RT		18	Extg. pavement
424+75 to 425+25	LT	10		Aggregate
432+30 to 432+80	LT	9		Aggregate
471+45 to 473+50	RT		25	Extg. pavement
501+10 to 503+80	RT	13	20	Extg. pavement and aggregate
501+50 to 503+80	LT		20	Extg. pavement
532+00 to 535+00	RT		58	Extg. pavement
562+00 to 563+60	RT		19	Extg. pavement
564+00 to 564+50	LT	8		Extg. pavement
569+10 to 569+80	LT	13		Aggregate
642+20 to 644+10	LT		20	New pavement
703+40 to 704+40	LT	26		Aggregate
705+80 to 707+15	RT		34	Extg. pavement
712+20 to 714+10	RT	50		Aggregate
729+10 to 730+10	LT	18		Aggregate
745+50 to 750+40	RT		78	Extg. pavement
791+60 to 793+20	LT	55	50	New pavement
TOTAL		819	342	



TYPICAL SECTION FOR EXISTING PAVED TURNOUTS (EXTG. PAVEMENT)



TYPICAL SECTION FOR NEW PAVED TURNOUTS (NEW PAVEMENT)



TYPICAL SECTION FOR AGGREGATE SURFACED TURNOUTS (AGGREGATE)

NOTE:

1. *Slope ratios are shown in vertical:horizontal.*

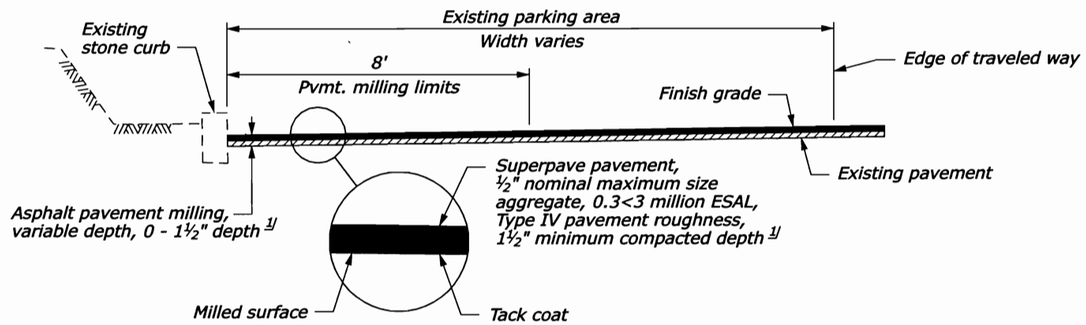
FOOTNOTE:

1/ Match existing surfacing width unless otherwise indicated on plan sheets.

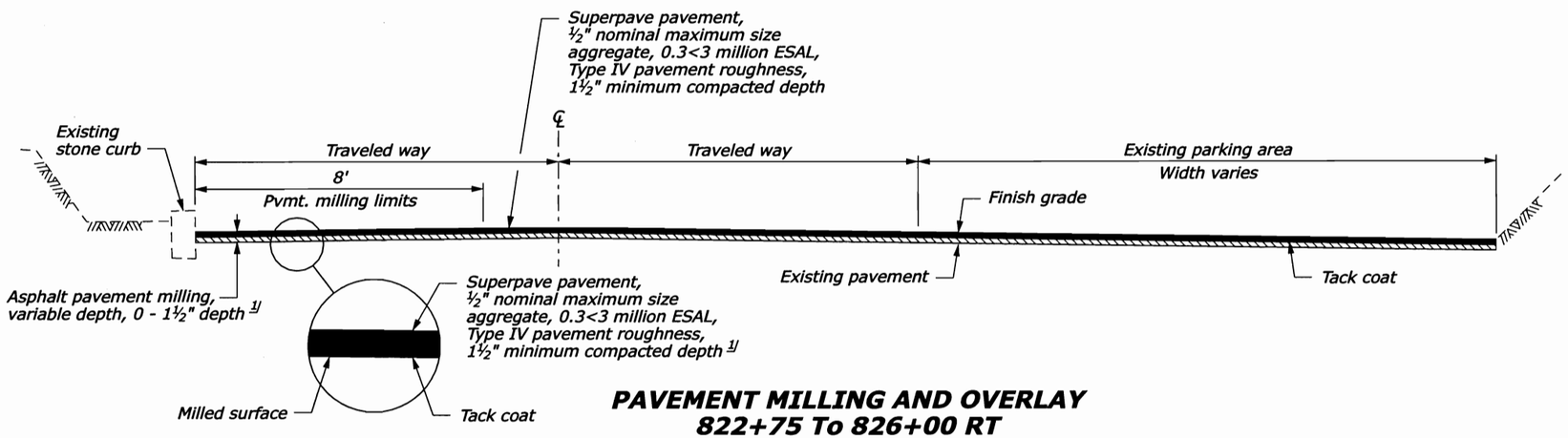
TURNOUT DETAILS

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214cc.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: KJH | M. HOHBACH 4/21/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	C.4



PAVEMENT MILLING AND OVERLAY
820+00 To 822+00 LT



PAVEMENT MILLING AND OVERLAY
822+75 To 826+00 RT

PAVEMENT STRUCTURE QUANTITIES 2/

ITEM	DESCRIPTION	UNIT	QUANTITY	REMARKS
40101-0600	Superpave pavement, ½" nominal maximum size aggregate, 0.3 to <3 million ESAL, Type IV pavement roughness	tons	143	Based on 1.95 ton/cuyd
41301-0000	Asphalt pavement milling, variable depth, 0-inch to 1½-inch	sqyd	467	

FOOTNOTE:

1/ Match finish grade to existing grade at stone curb.

2/ Quantity for parking area only.

DEE WRIGHT PARKING AREA

T. BENNETT | 3/2008 | Checked by: KJH | M. HOHBACH 4/22/08 | 3/2008 | Designed by: | 4/18/2008

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214cd.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.1

TURNOUT OBLITERATION

LOCATION Sta. to Sta.	SELECT BORROW ITEM 20410-0000 (CUYD)	ROADWAY OBLITERATION, METHOD 1 ITEM 21101-1000 (SQYD)	BOULDER ITEM 25125-000 (EACH)
185+40 to 186+80 RT	370	-	-
242+50 to 244+50 RT	56	-	-
312+25 to 313+05 RT	-	100	-
319+55 to 321+05 RT	-	130	-
639+90 to 641+30 LT	-	160	-
642+30 to 643+90 RT	-	155	-
643+50 to 643+75 LT	-	100	4
645+10 to 646+30 LT	-	110	4
651+00 to 651+80 LT	-	75	4
711+30 to 712+40 RT	-	170	-
728+00 to 729+00 RT	-	90	4
735+85 to 736+35 RT	-	50	-
746+00 to 747+20 LT	-	115	4
749+70 to 750+50 RT		70	4
TOTAL	426	1,325	24

LOCATION Sta. to Sta.	ASPHALT PAVEMENT MILLING VARIABLE DEPTH, 0" - 1½" ITEM 41301-0000 (SQYD) 1/
10+60 to 11+20	120
132+50 to 136+50	800
260+00 to 260+60	120
262+20 to 262+80	120
346+35 to 346+95	120
348+60 to 349+20	120
830+10 to 830+70	120
Approach roads	40
TOTAL	1,560

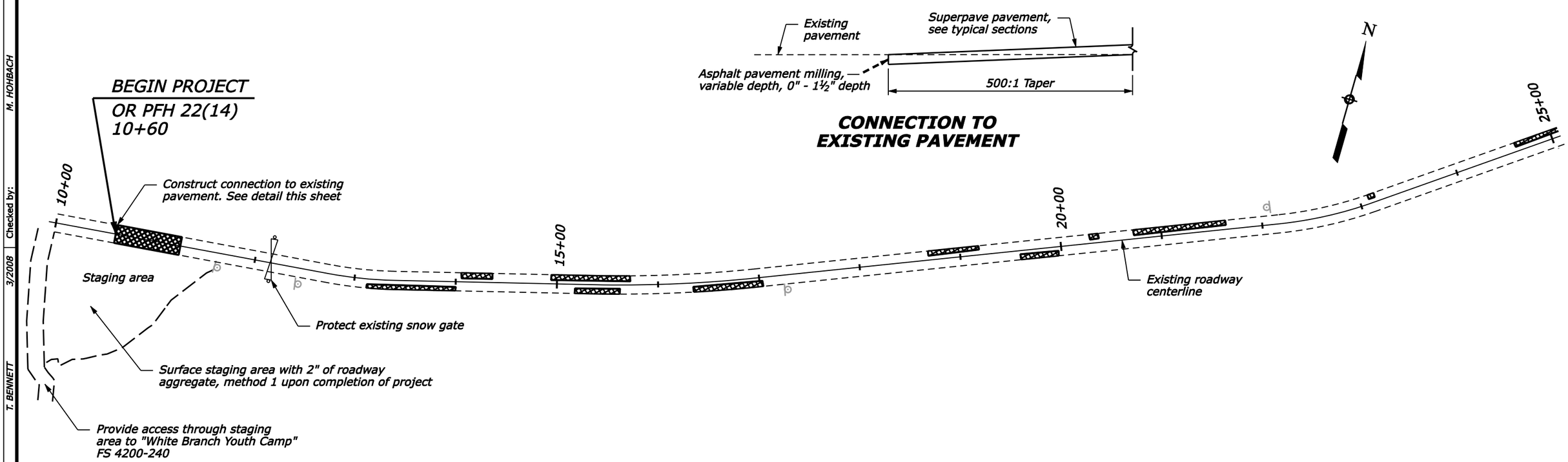
FOOTNOTE:

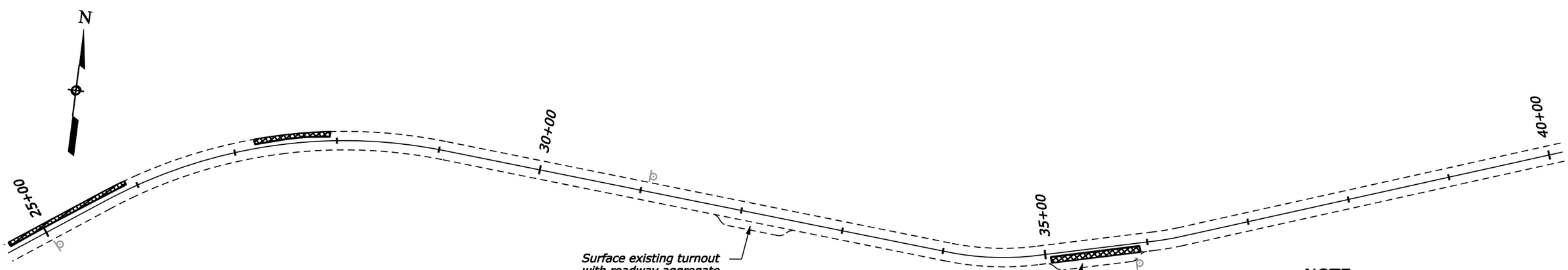
1/ See Sheets C.2 and C.4 for additional milling areas.

TABULATION OF PLAN QUANTITIES

P:\FY\FHAX0000014\7\0400CAD\PS&E - Roadway\DGN\SHEETS\or22145.dgn | Designed by: 4/18/2008 | T. BENNETT 3/2008 | Checked by: MJH 3/2008 | M. HOHBACH 4/22/08 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.2





NOTE:

1. Stationing is approximate and may require field adjustment.
2. Milling locations are approximate beginning and ending stations. Field adjust with CO approval as needed. See detail Sheet C.2

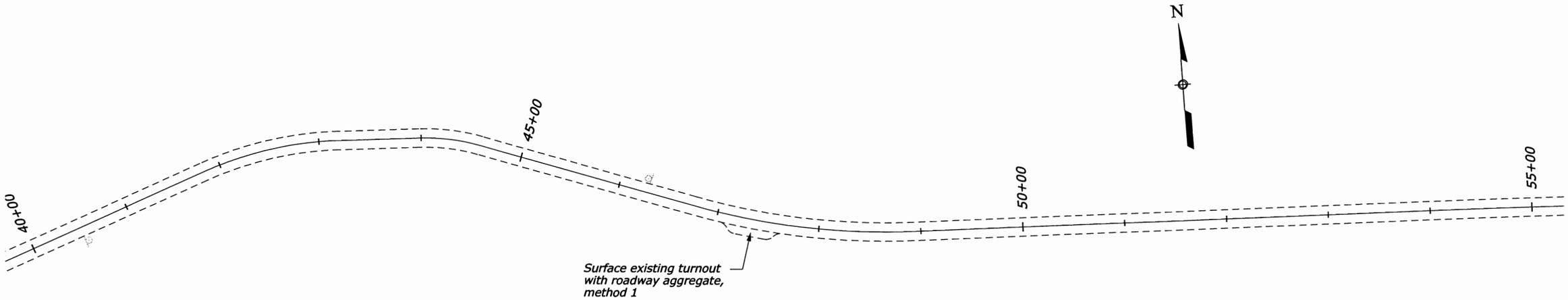
LEGEND

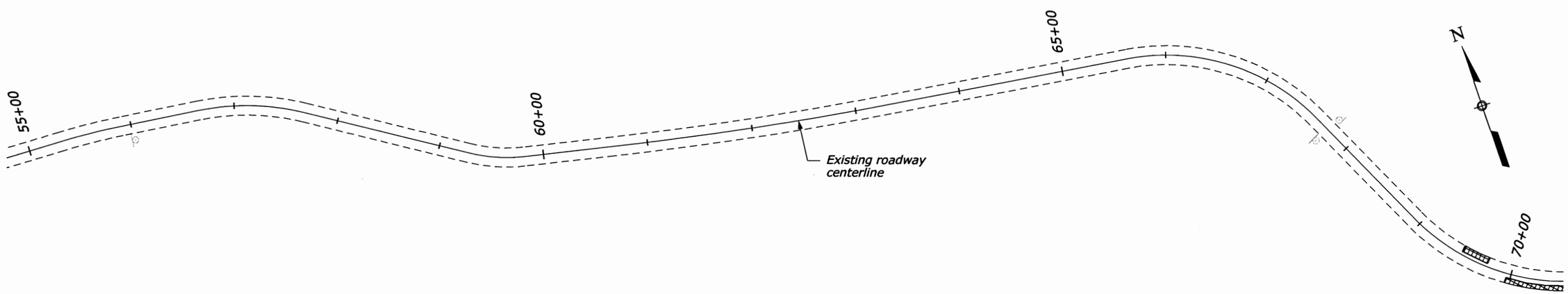
- Pavement milling areas
- Snow gate

PLAN SHEETS

$PATH$ | $DATE$ | Designed by: T. BENNETT | Checked by: M. HOHBACH | 3/2008 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.3





LEGEND

Pavement milling areas

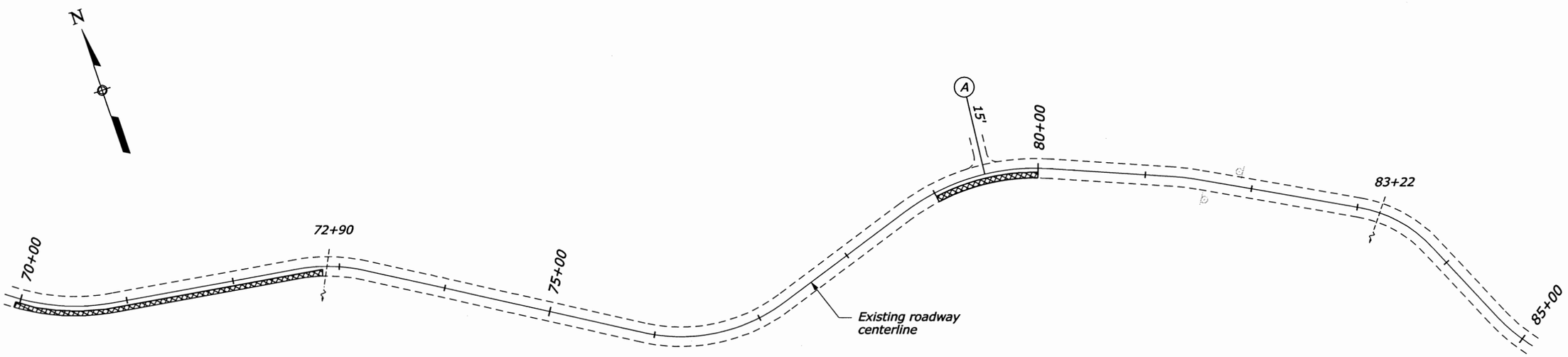
PLAN SHEETS

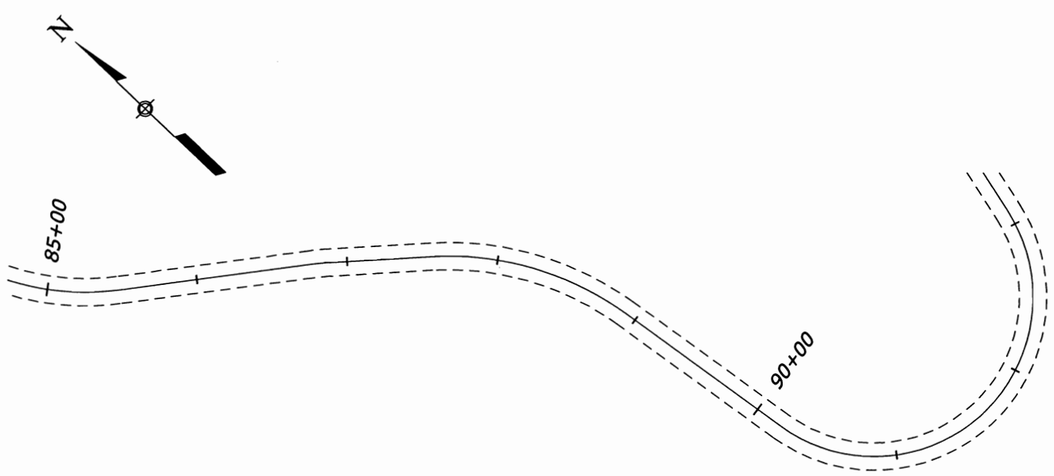
Designed by:	Checked by:	
T. BENNETT	MJH	M. HOHBACH 4/23/08
3/2008	3/2008	3/2008

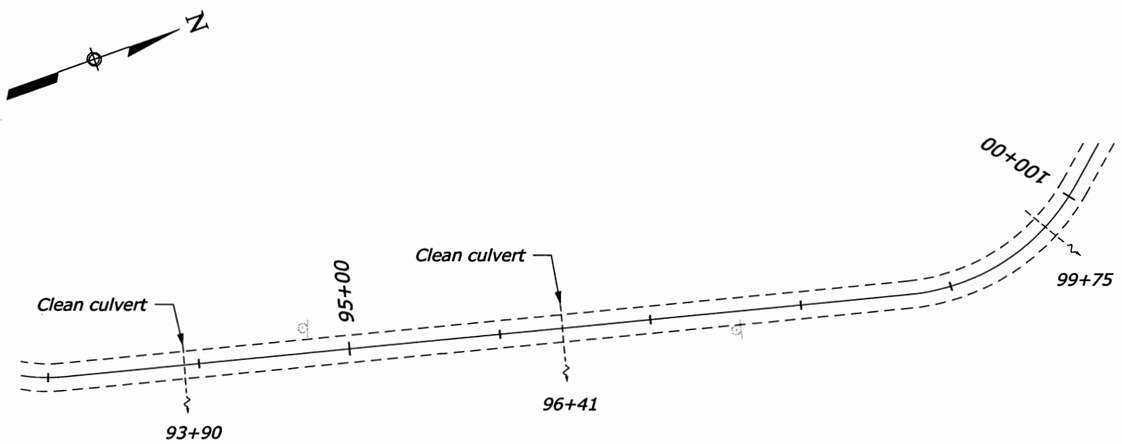
4/18/2008

P:\F\FHAX0000014 7\04400CAD\PS&E - Roadway\DGN\SHEETS\or2214fb.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.4







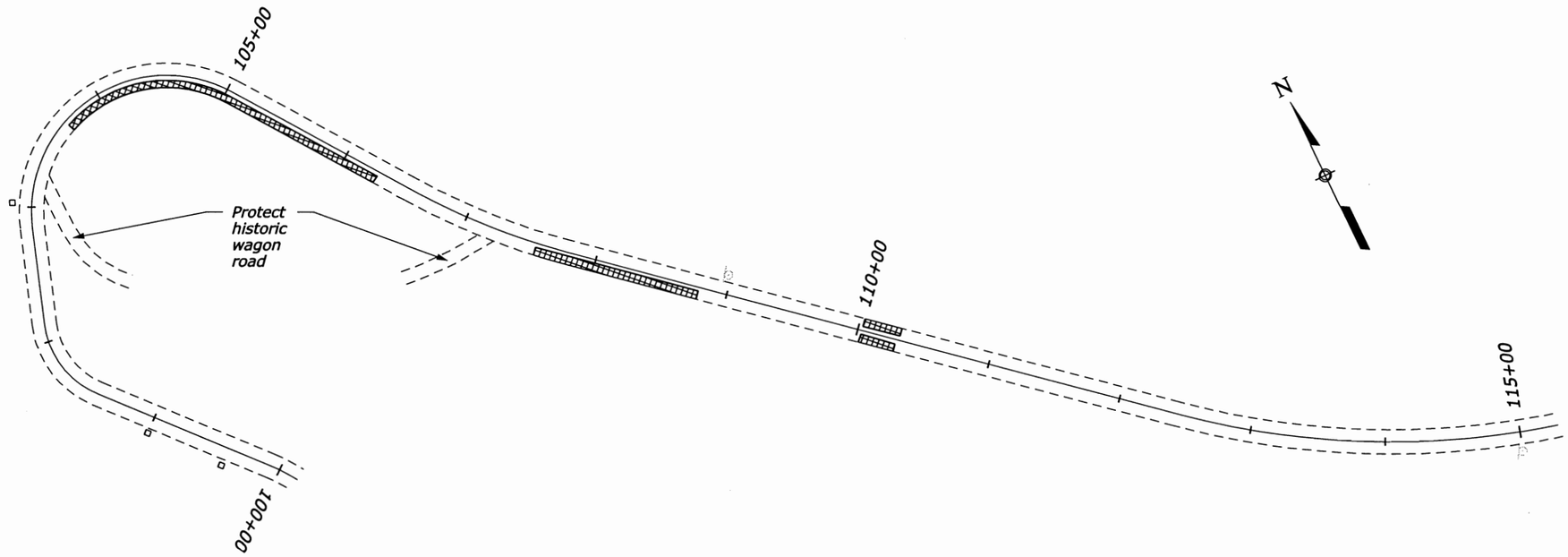
LEGEND

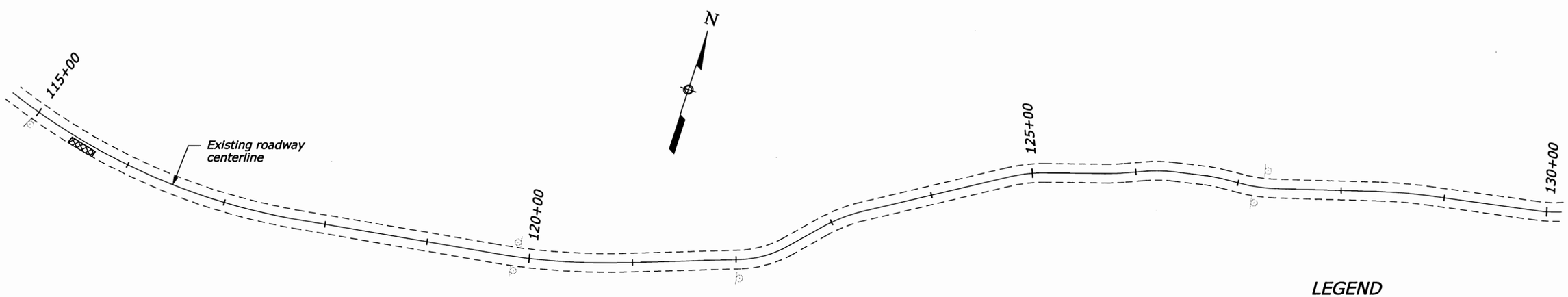
- Pavement milling areas
- (A) Approach road

PLAN SHEETS

P:\F\FHAX0000001471\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fb.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: MJH | M. HOHBACH 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.5





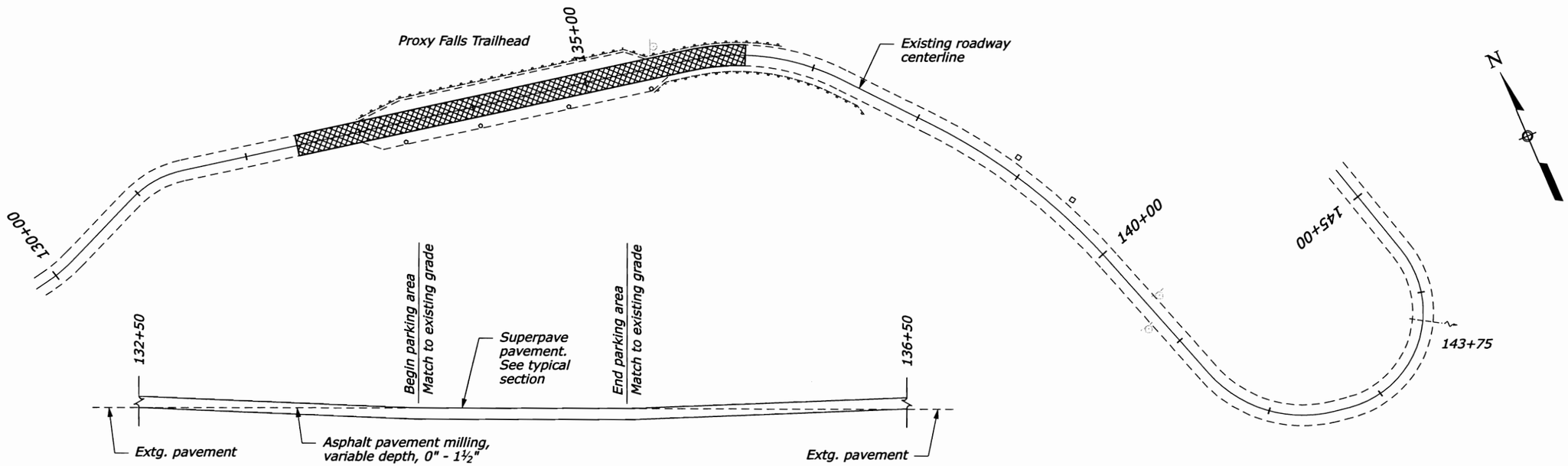
LEGEND

- *Pavement milling areas*
- *Existing delineator*

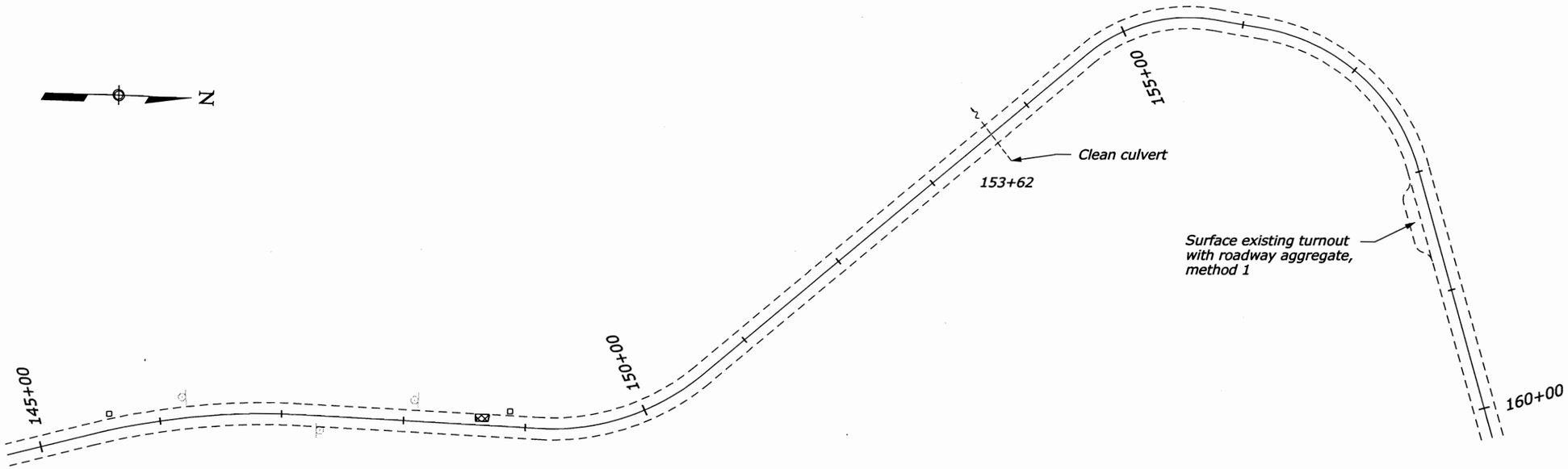
PLAN SHEETS

P:\R\FHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fb.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: MJH M. HOHBACH 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.6



MILLING DETAILS FOR PROXY FALLS TRAILHEAD



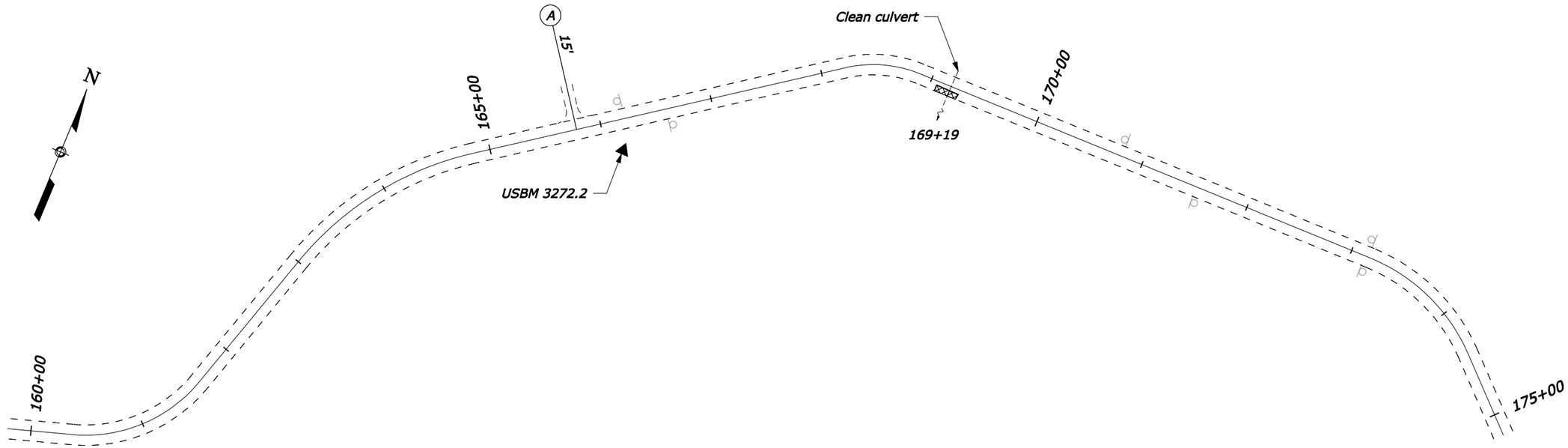
LEGEND

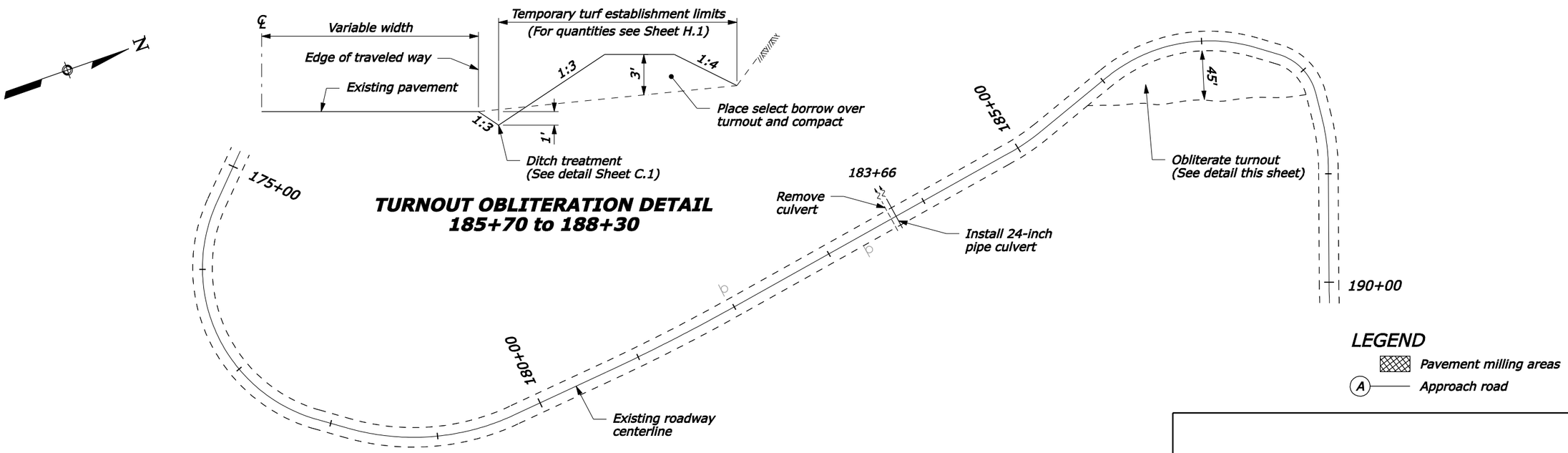
- Pavement milling areas
- Existing delineator
- Existing snowpole holder

PLAN SHEETS

P:\FFHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22l4fb.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: HJH | M. HOHBACH 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.7





LEGEND

Pavement milling areas

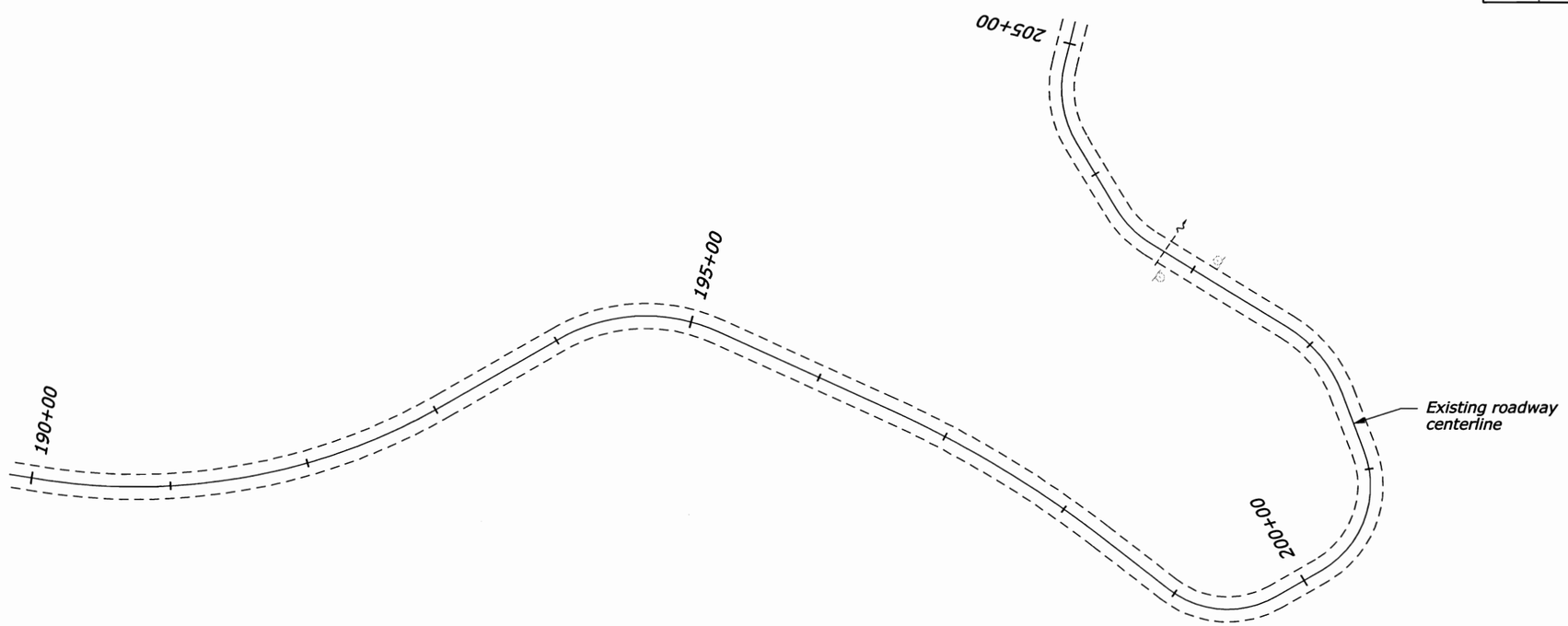
(A) Approach road

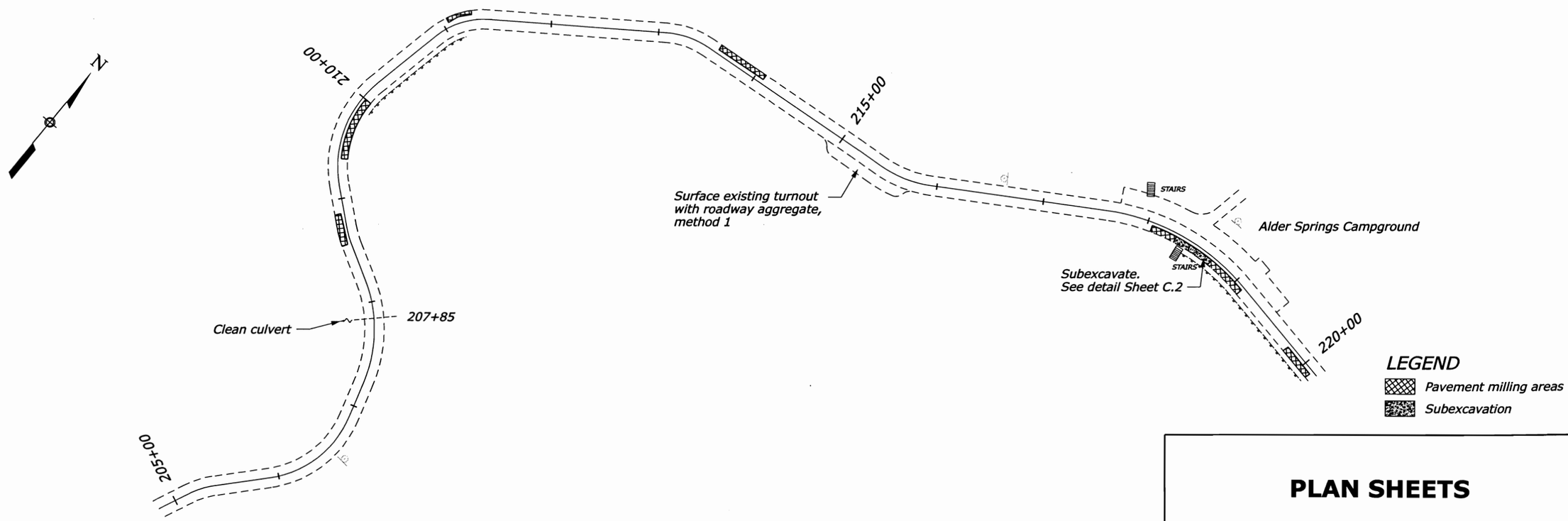
PLAN SHEETS

Designed by: _DATE_ " + " _FILE_ Checked by: M. HOHBACH 3/2008 T. BENNETT 3/2008

F:\CAD_Services\WFLHD-OR-PFH_22_14-UPDATE\or2214fh.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.8



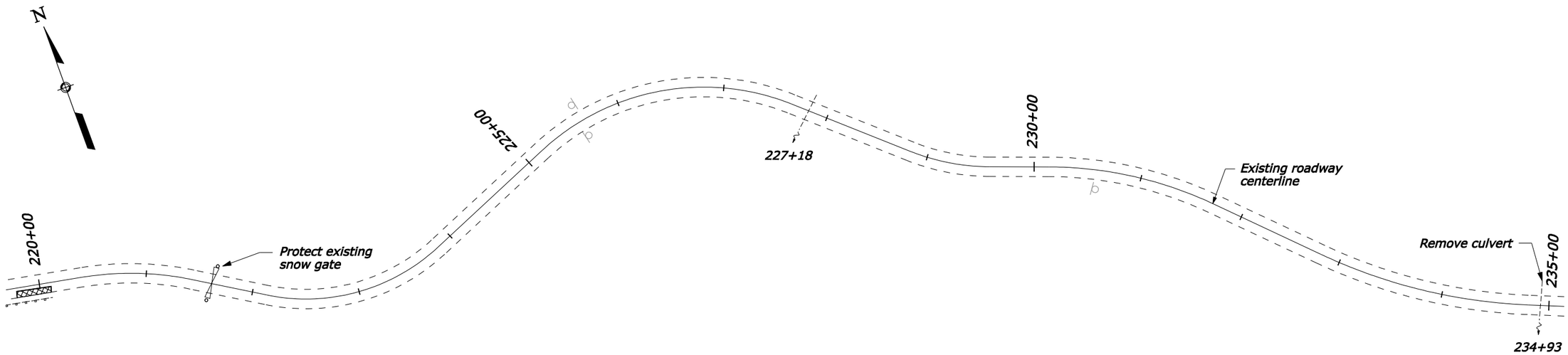


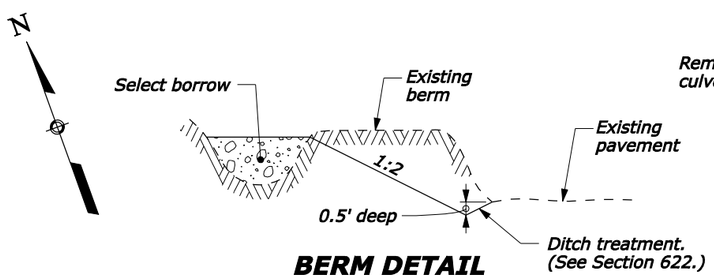
PLAN SHEETS

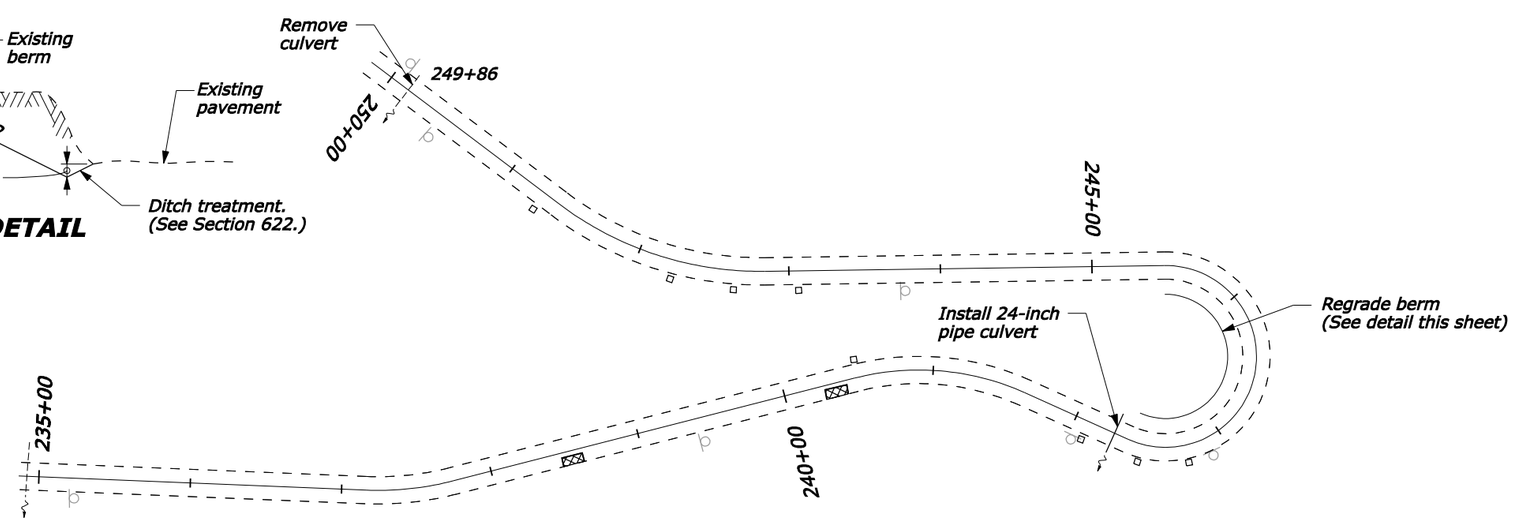
Designed by: T. BENNETT 3/2008 | Checked by: HH 3/2008 | M. HOHBACH 4/22/08 3/2008 | 4/18/2008

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22i4fb.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.9







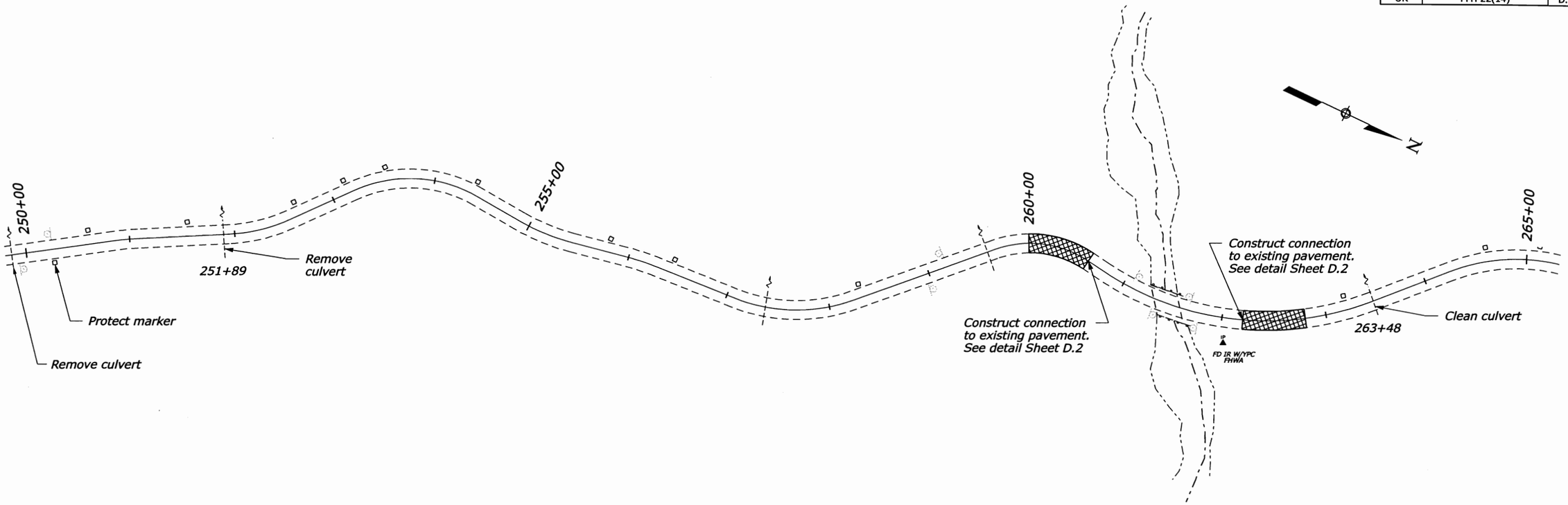
LEGEND

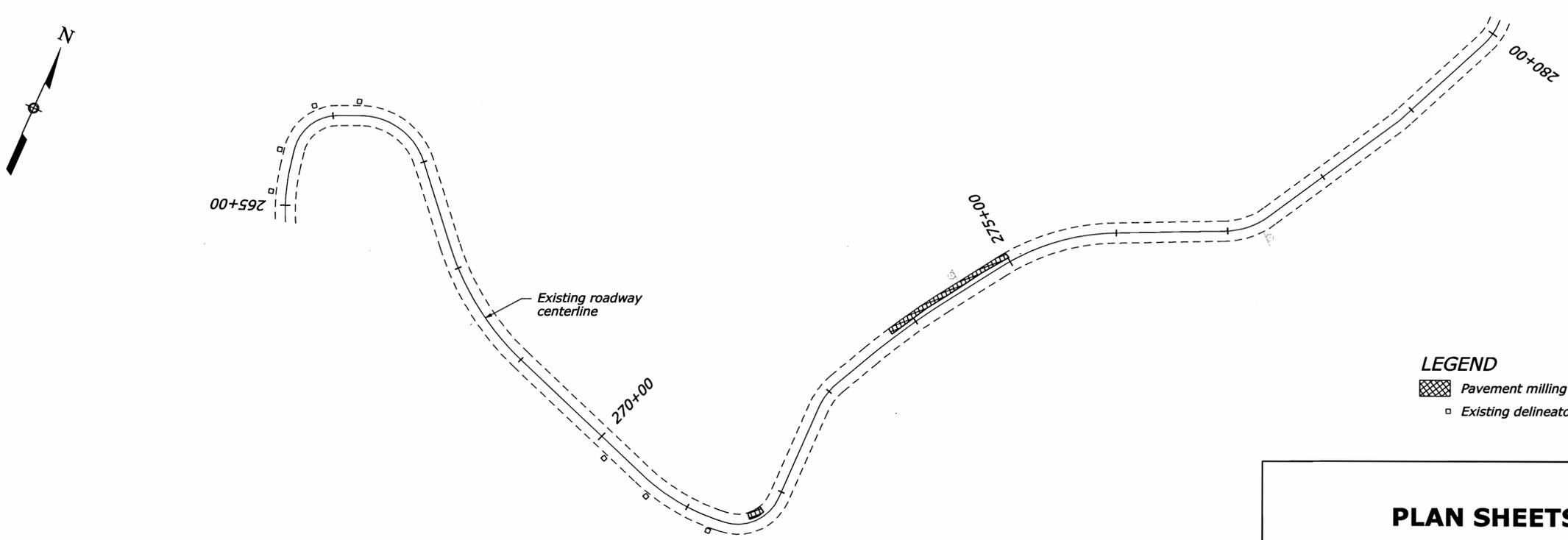
- Pavement milling areas
- Existing delineator
- Snow gate

PLAN SHEETS

3/2008 M. HOHBACH Checked by: 3/2008 T. BENNETT Designed by: $DATE$ $PATH$

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.10





LEGEND

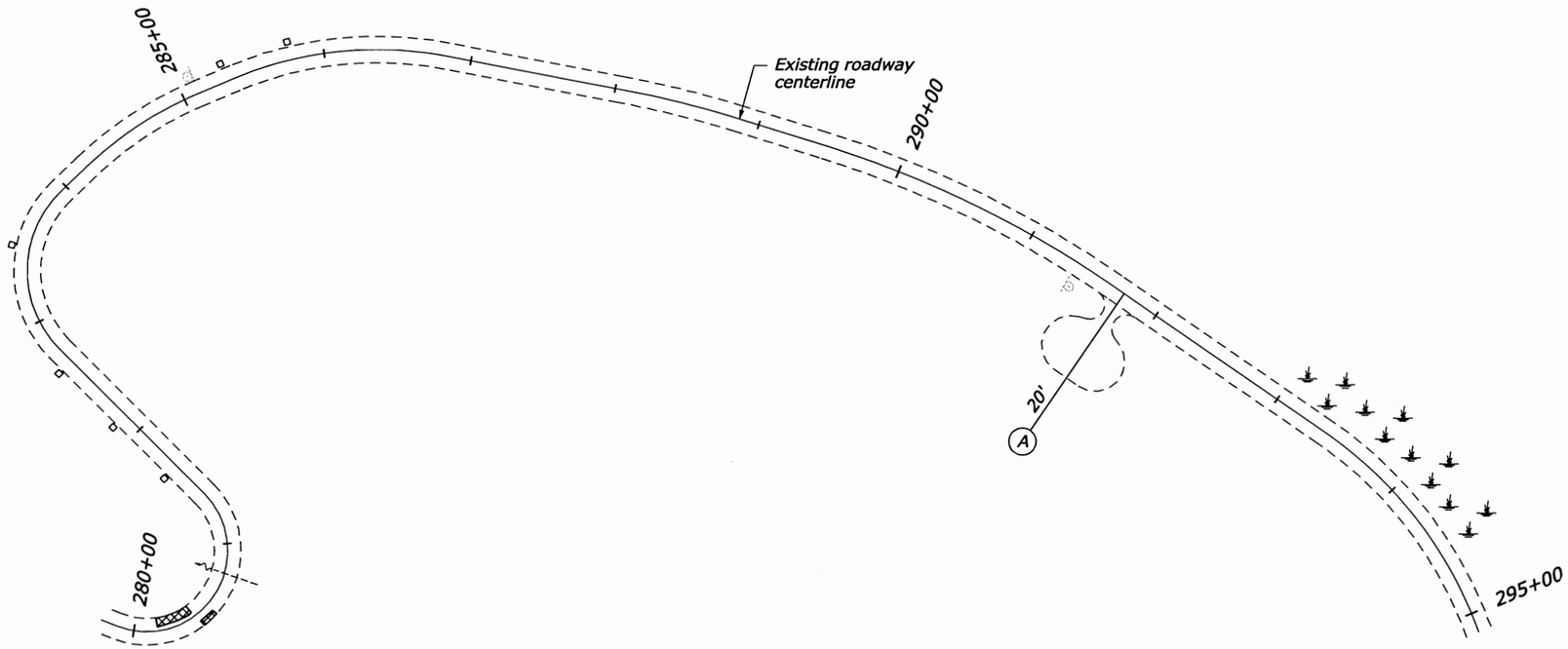
Pavement milling areas

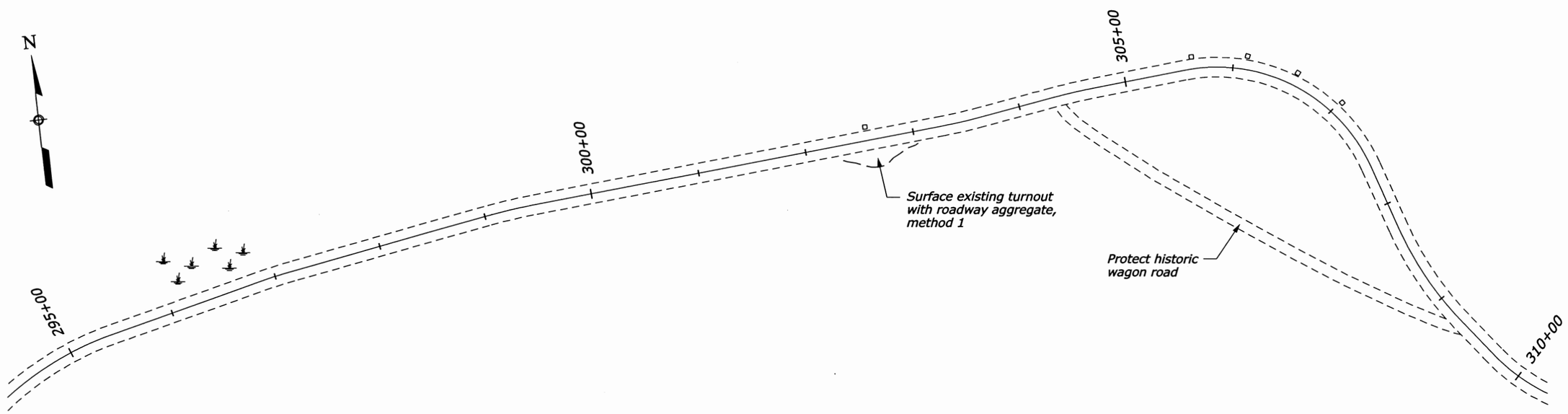
Existing delineator

PLAN SHEETS

P:\F\FHAX0000014?\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fc.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH 4/23/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.11





LEGEND

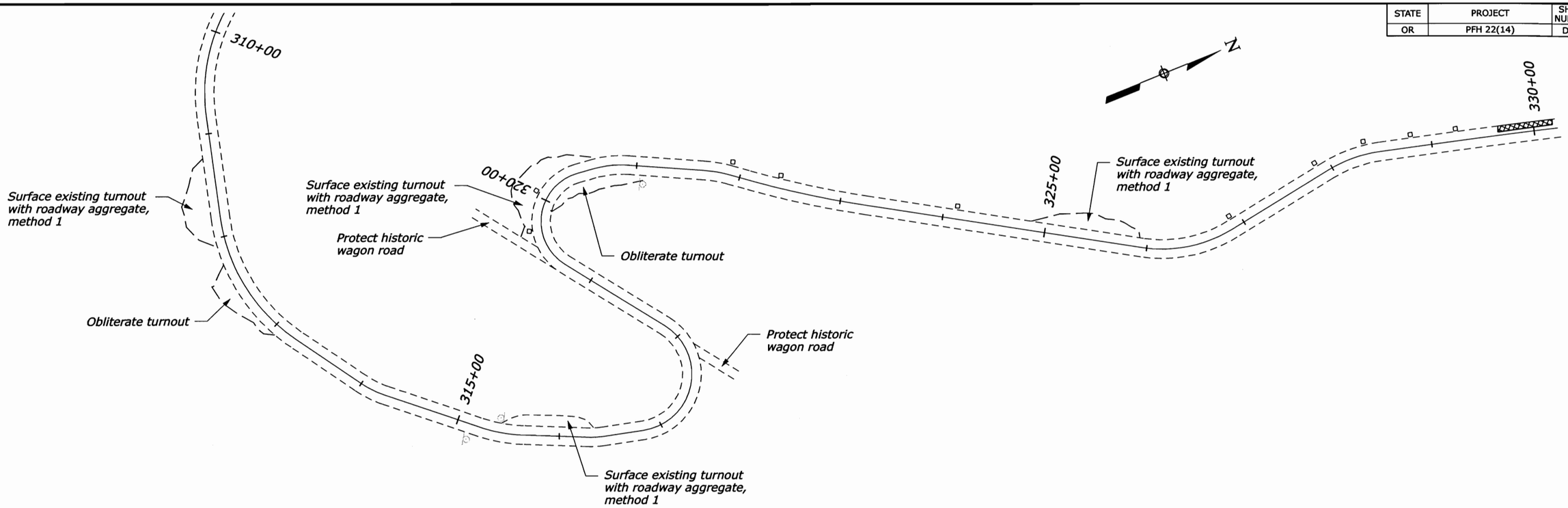
- Pavement milling areas
- Existing delineator
- (A) Approach road

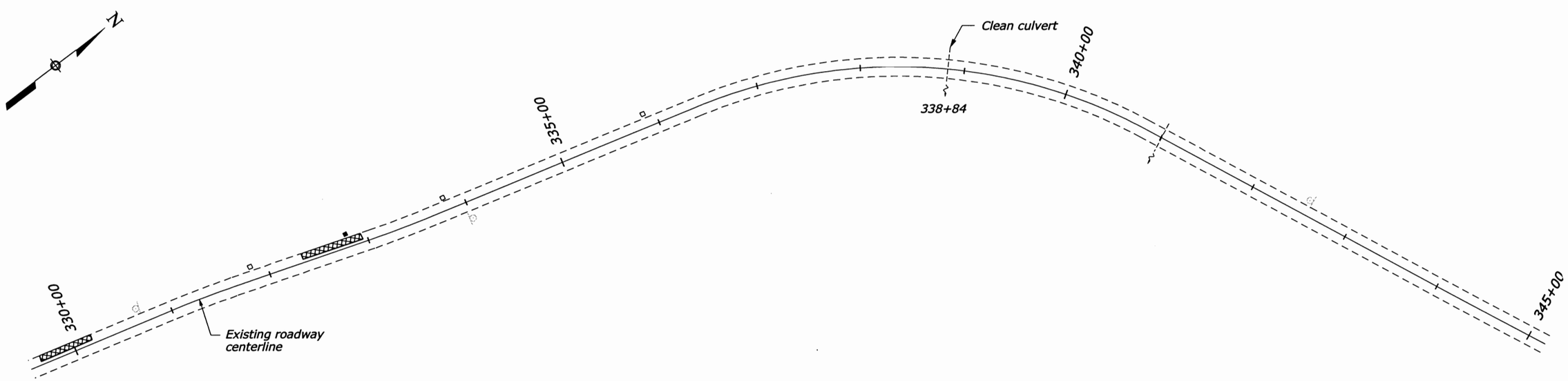
PLAN SHEETS

Designed by:	Checked by:	M. HOHBACH 4/22/08	T. BENNETT	3/2008	3/2008
4/18/2008					

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fc.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.12





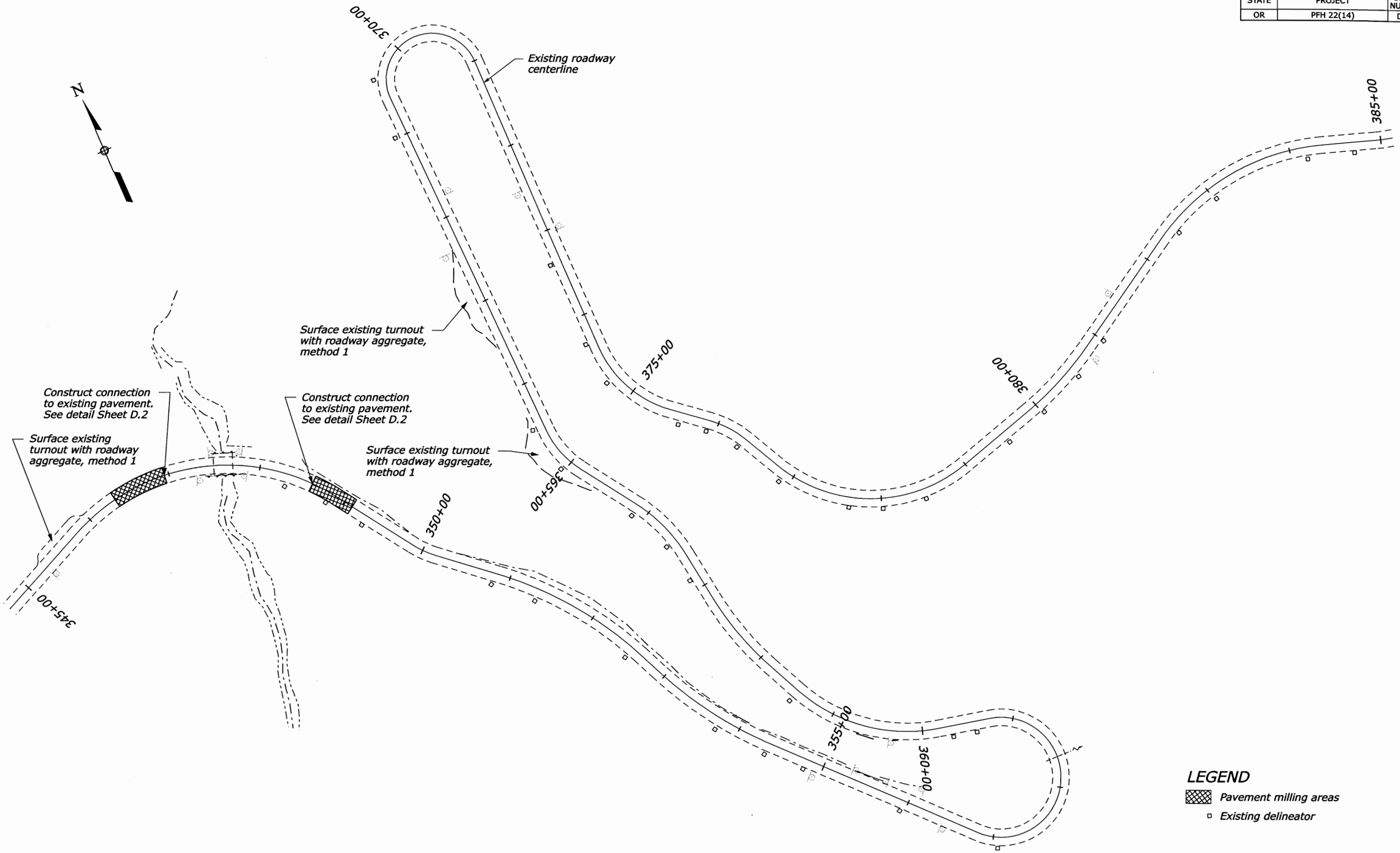
LEGEND

- *Pavement milling areas*
- *Existing delineator*

PLAN SHEETS

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fc.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH | 3/2008 | 4/22/08

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.13



LEGEND

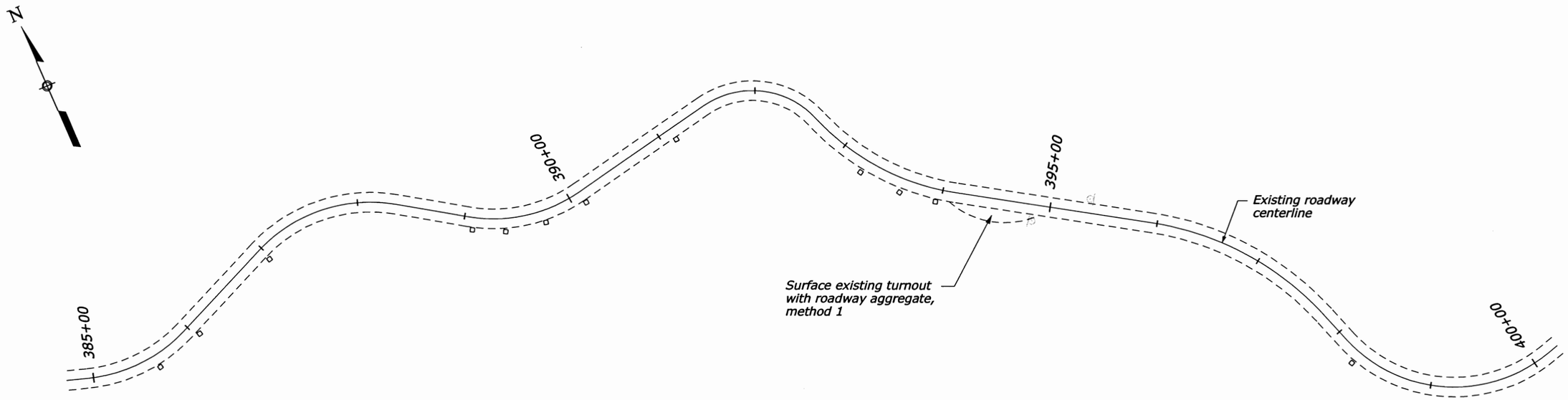
Pavement milling areas

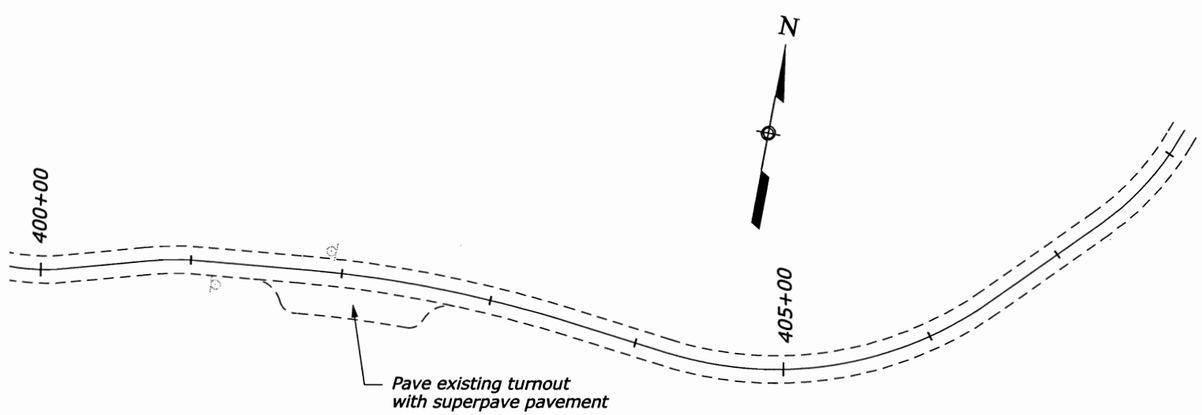
Existing delineator

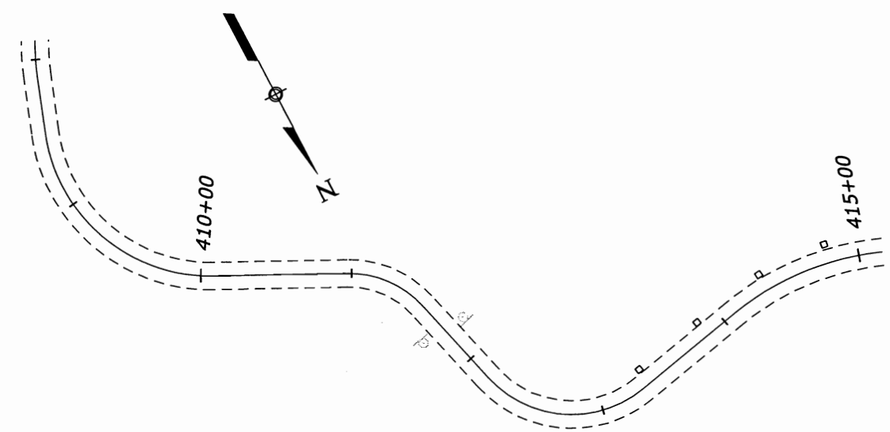
PLAN SHEETS

P:\FI\FHAX0000014?\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fc.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.14







LEGEND

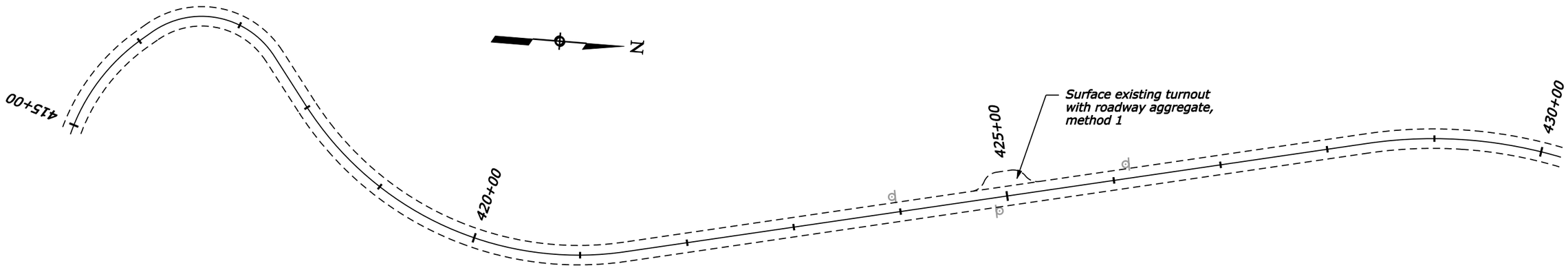
▫ *Existing delineator*

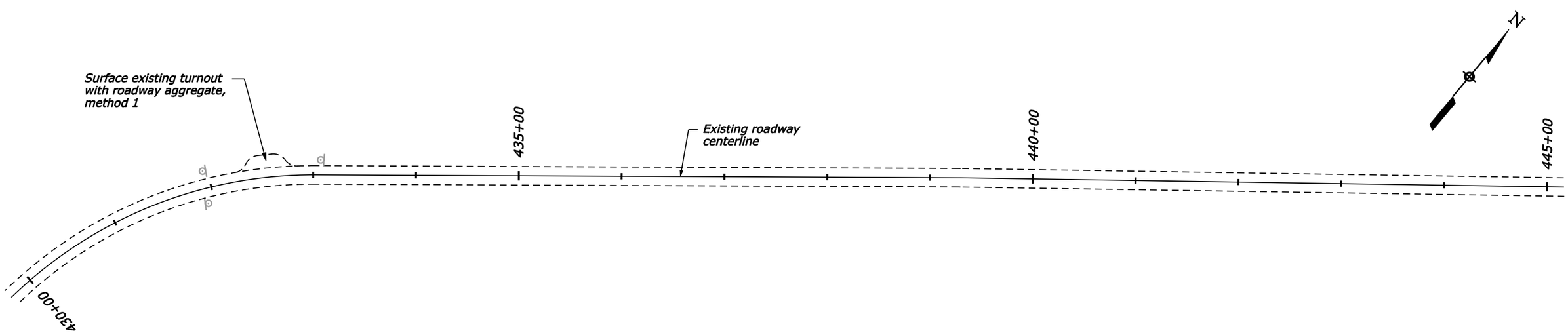
PLAN SHEETS

Designed by: 4/18/2008 | Checked by: 3/2008 | T. BENNETT | M. HOHBACH 4/22/08 | 3/2008

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fc.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.15

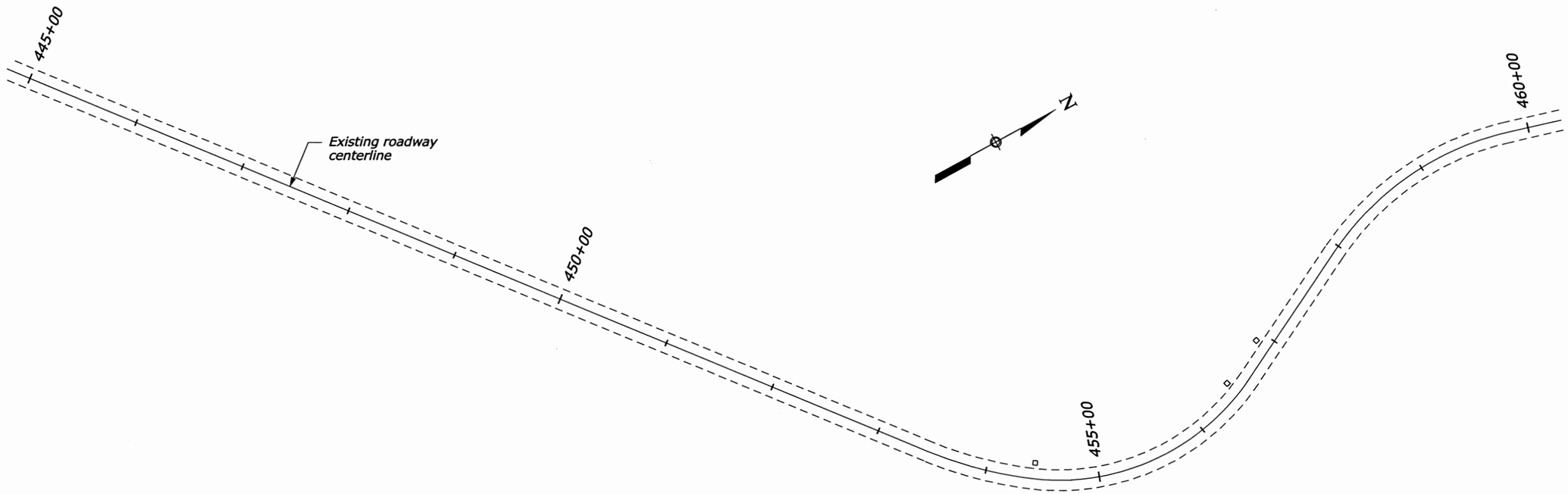


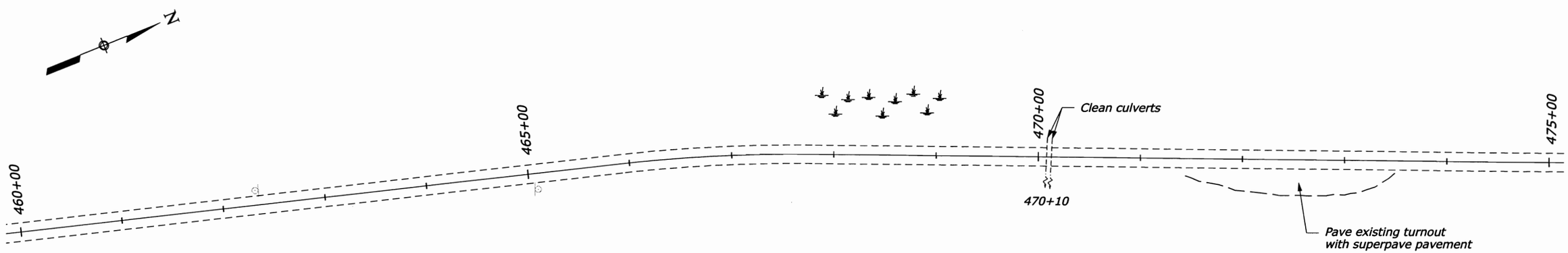


PLAN SHEETS

$PATH$ | $DATE$ | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.16





LEGEND

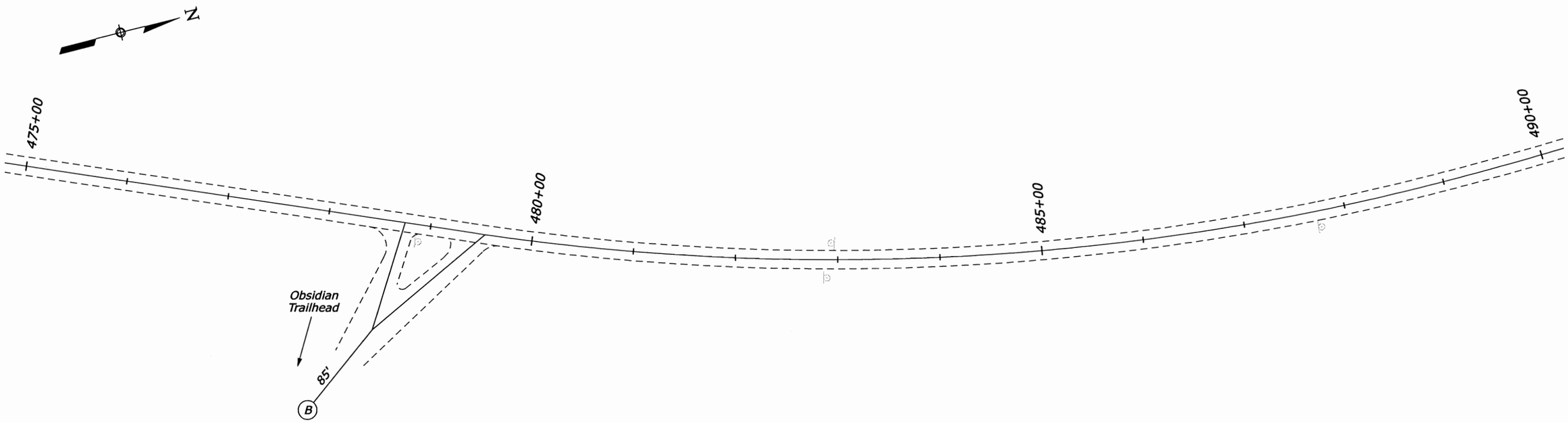
- *Existing delineator*

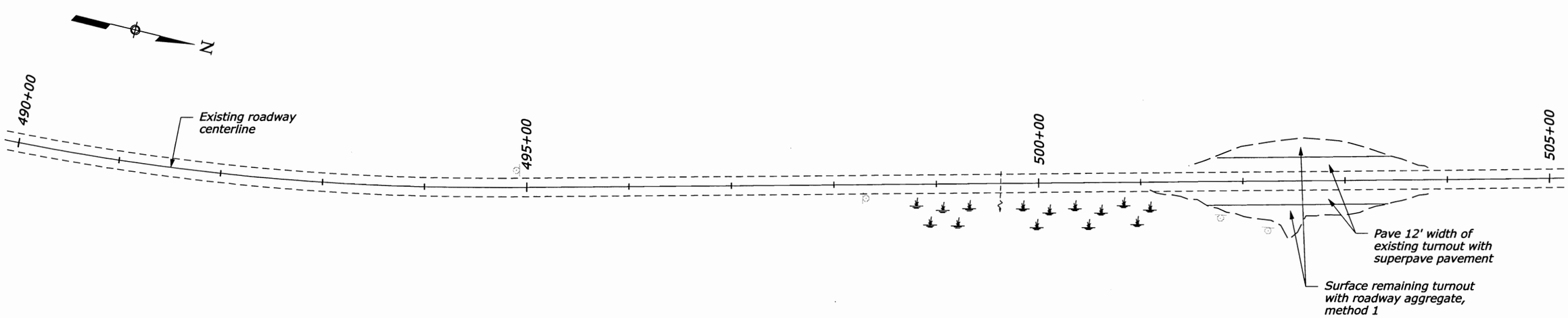
PLAN SHEETS

Designed by: T. BENNETT 3/2008 | Checked by: M. HOHBACH 3/2008 | 4/18/2008

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22.14fd.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.17





LEGEND

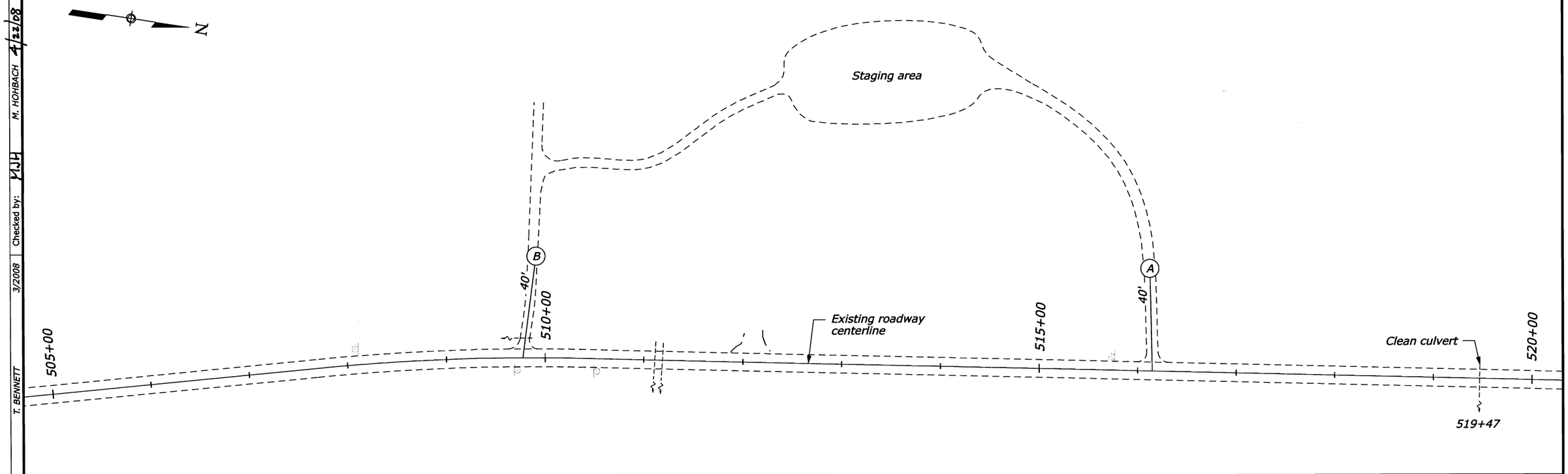
(A) —— Approach road

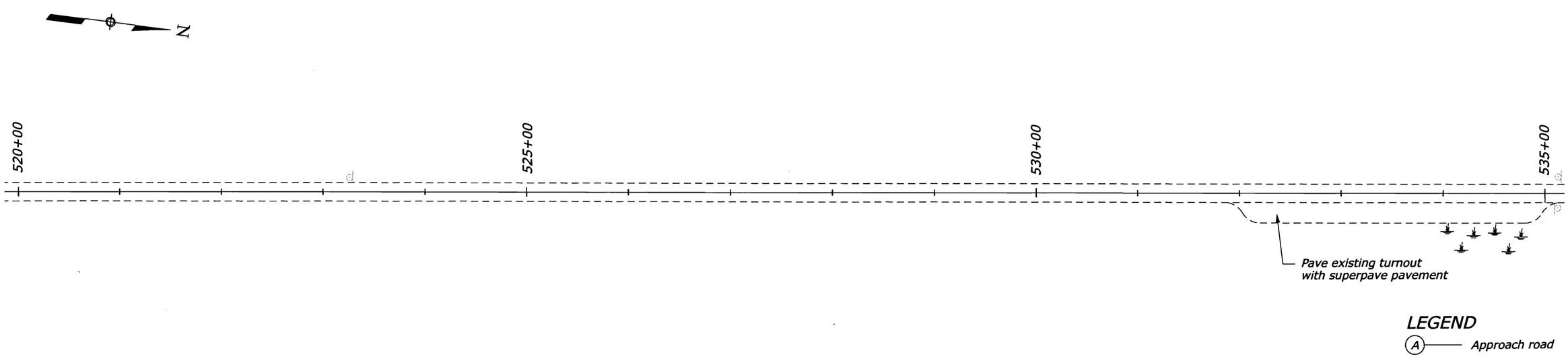
PLAN SHEETS

Designed by: 4/18/2008 | Checked by: MJH 3/2008 | T. BENNETT 3/2008 | M. HOHBACH 4/22/08 3/2008

P:\F\FHAX0000001471\0400CAD\PS&E - Roadway\DGN\SHEETS\or22141d.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.18





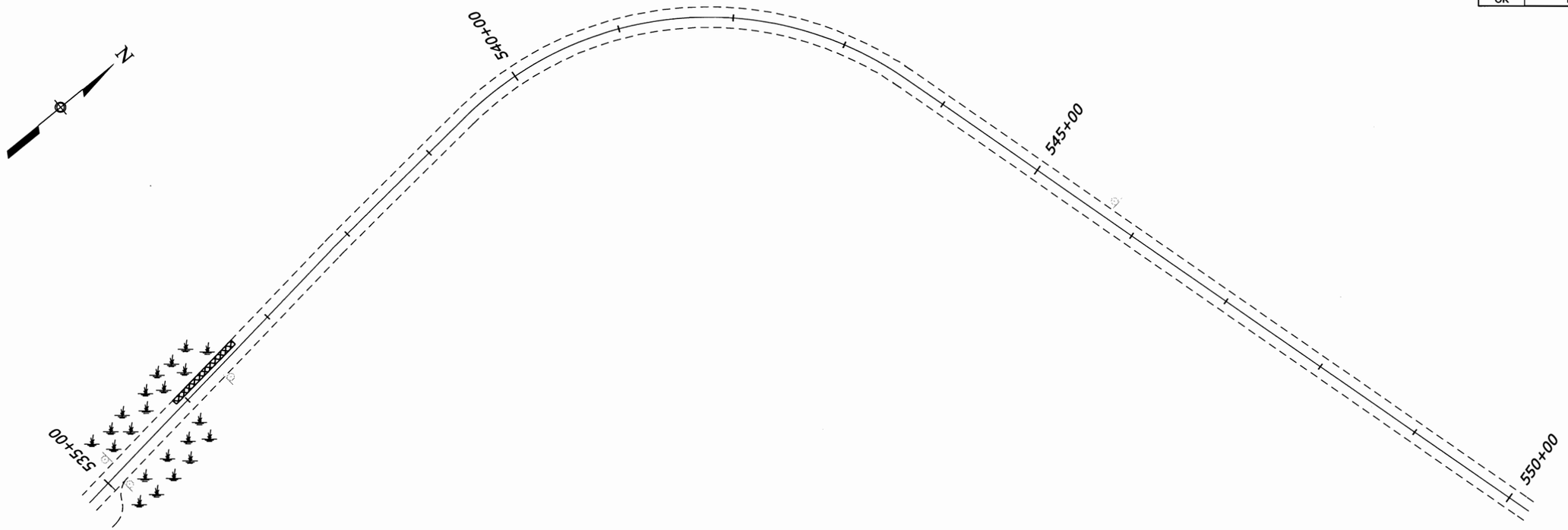
LEGEND

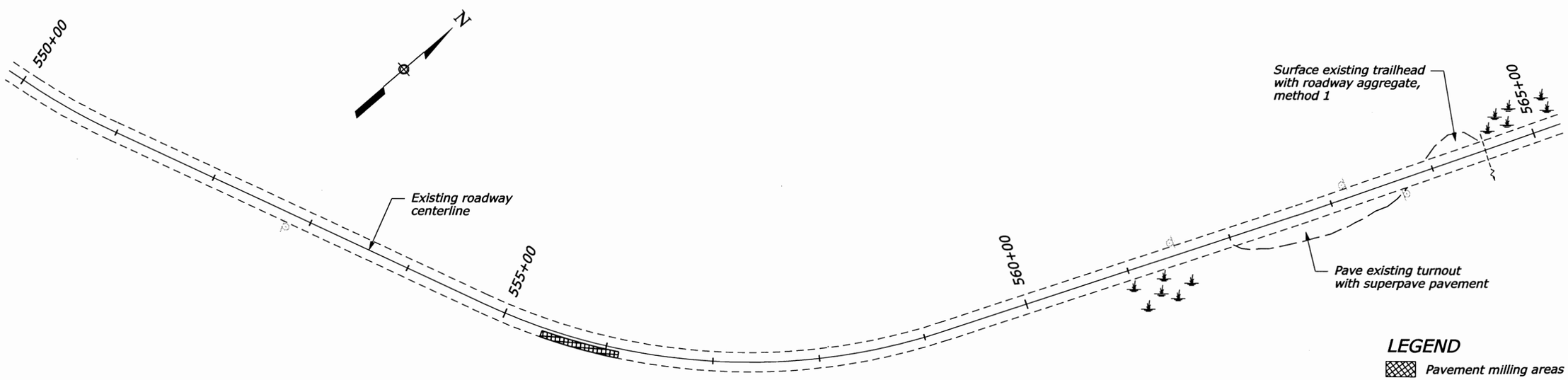
(A) — Approach road

PLAN SHEETS

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fd.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.19



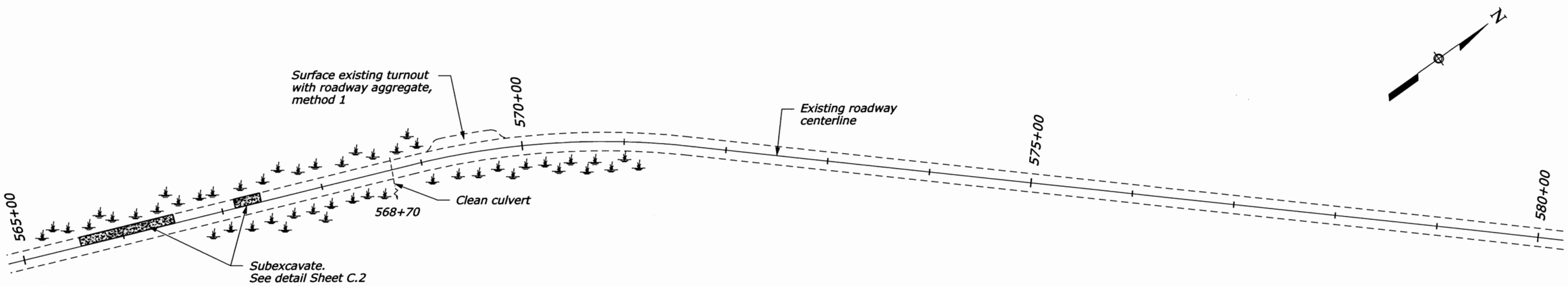


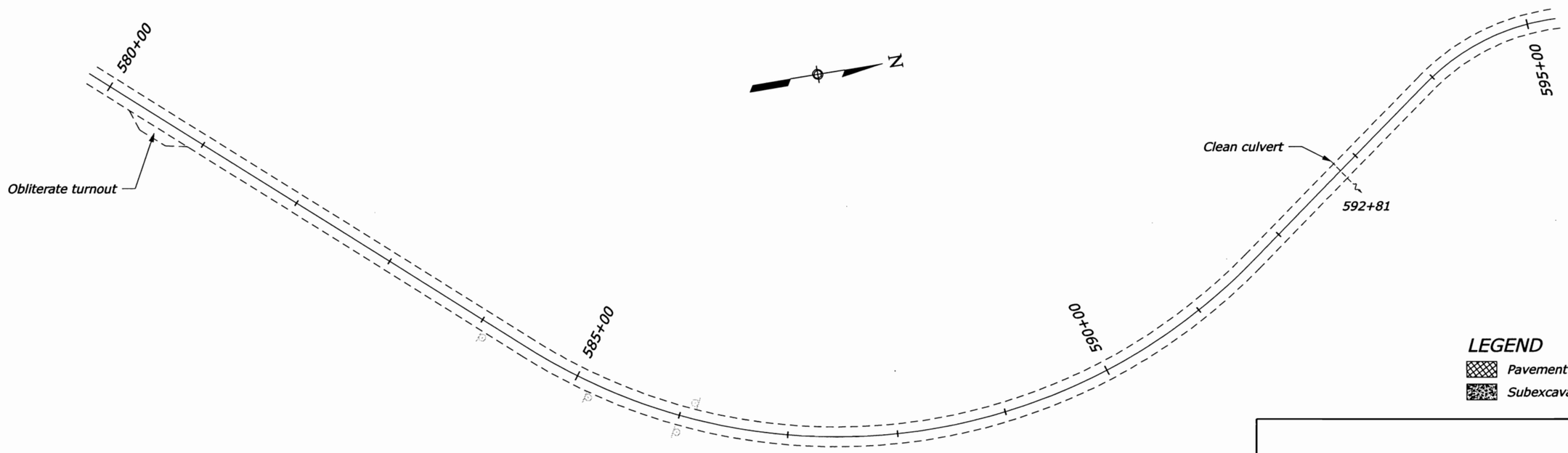
PLAN SHEETS

Designed by: T. BENNETT 3/2008 | Checked by: PJH M. HOHBACH 4/22/08 3/2008 | 4/18/2008

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22141d.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.20





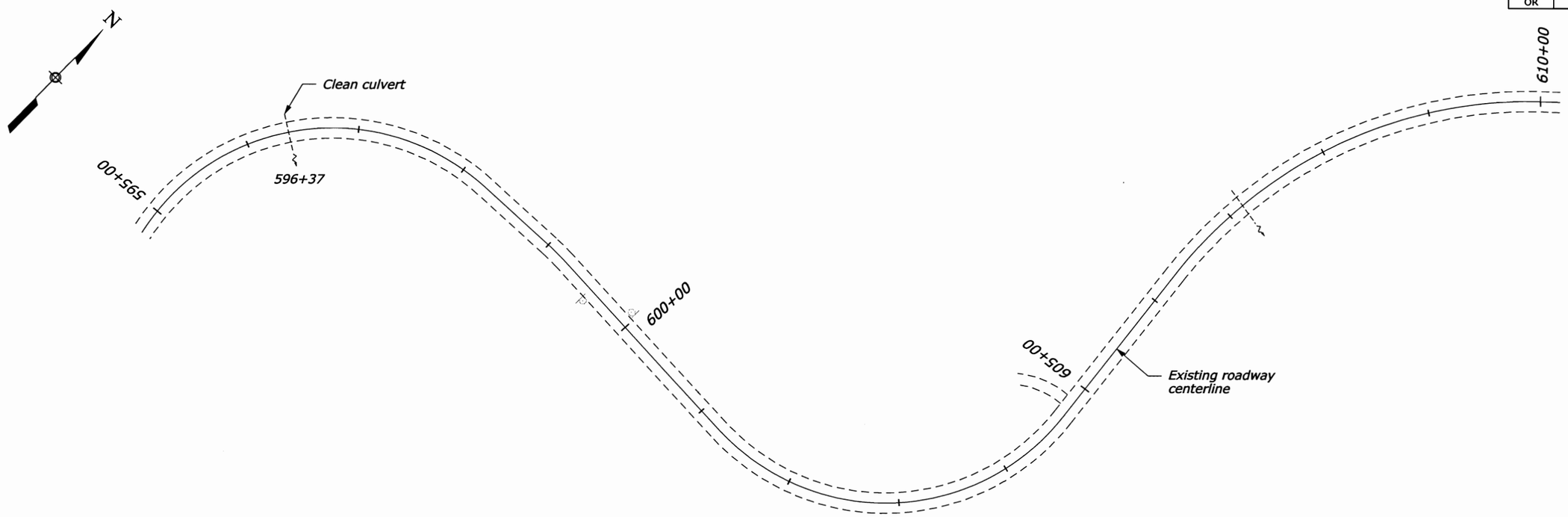
LEGEND

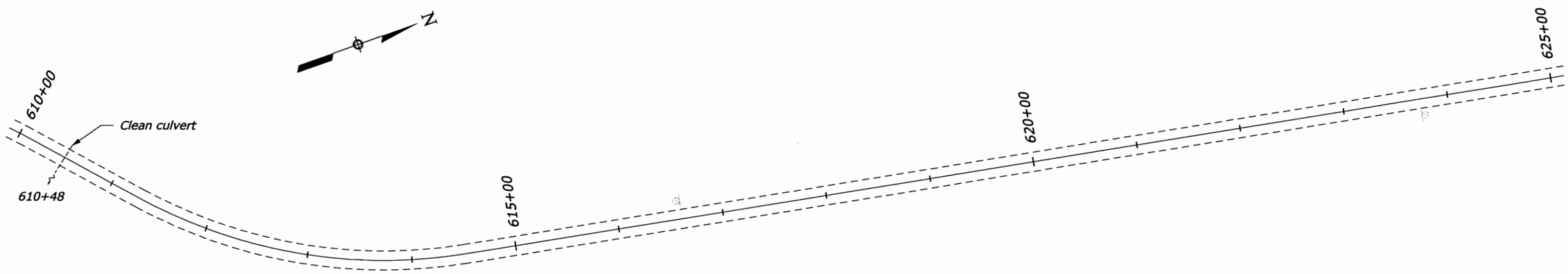
- Pavement milling areas
- Subexcavation area

PLAN SHEETS

P:\F\FHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fd.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.21

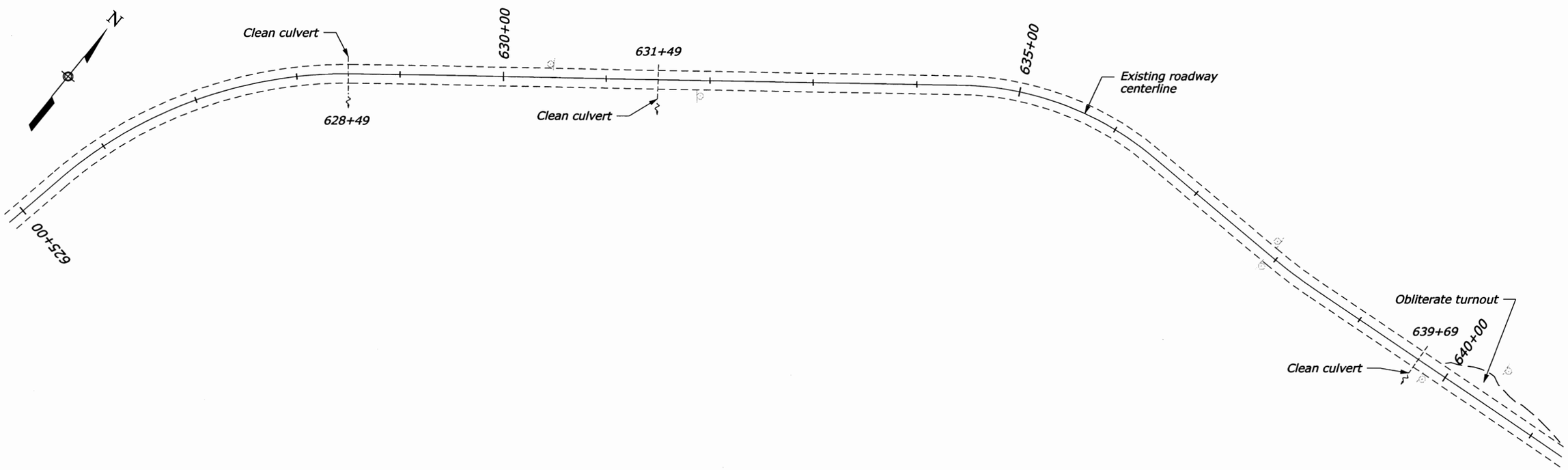


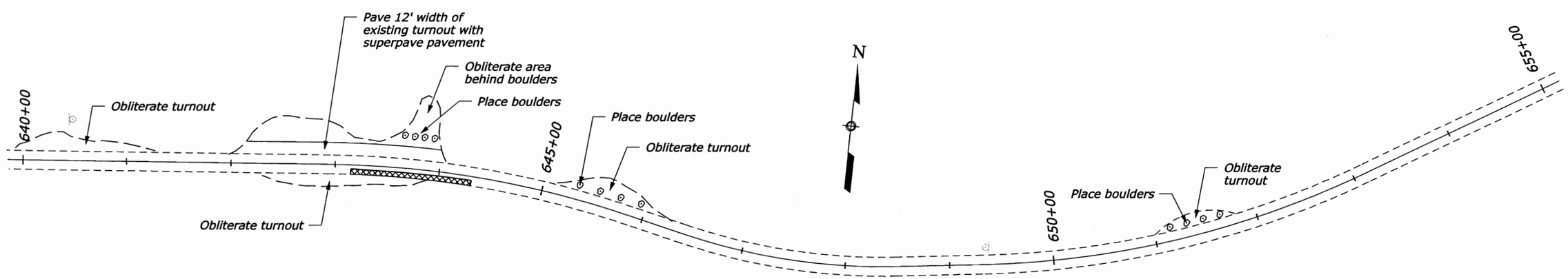


PLAN SHEETS

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22140.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: MJH | 3/2008 | M. HOHBACH 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.22





LEGEND

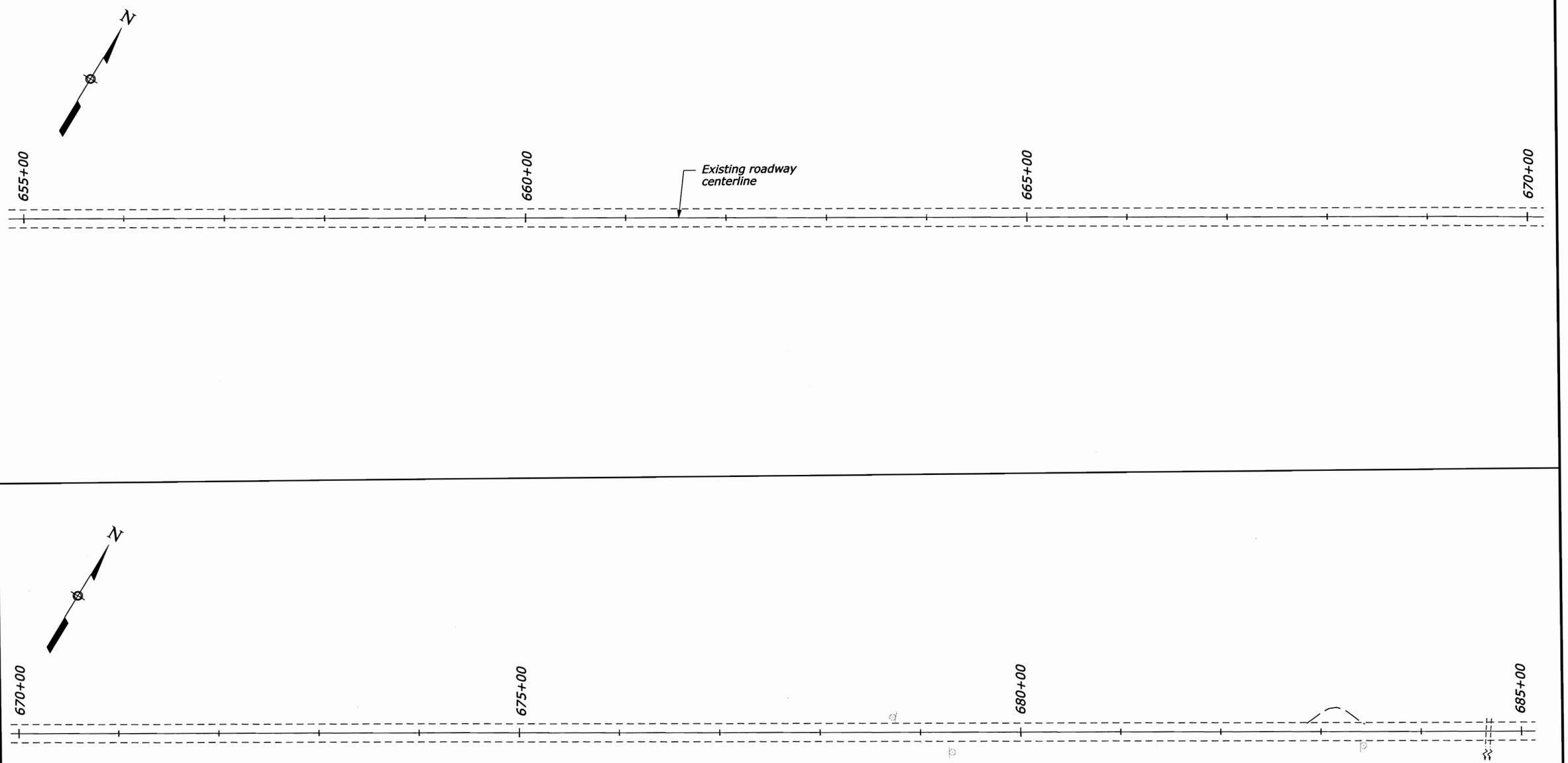
Pavement milling areas

Proposed boulder

PLAN SHEETS

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22141d.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH | 3/2008

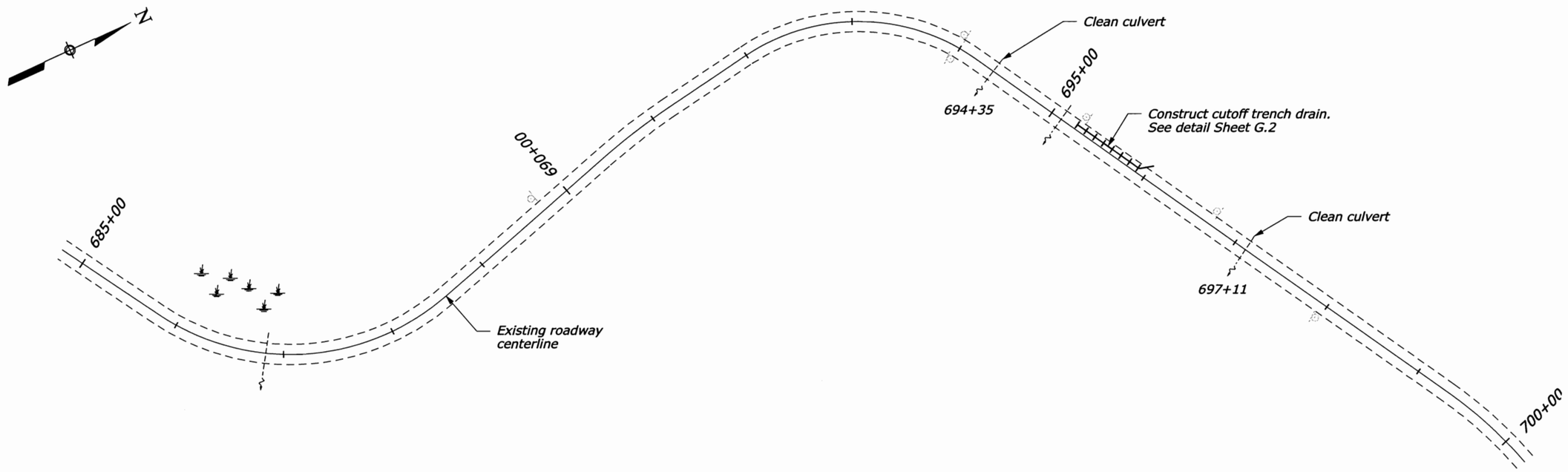
STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.23

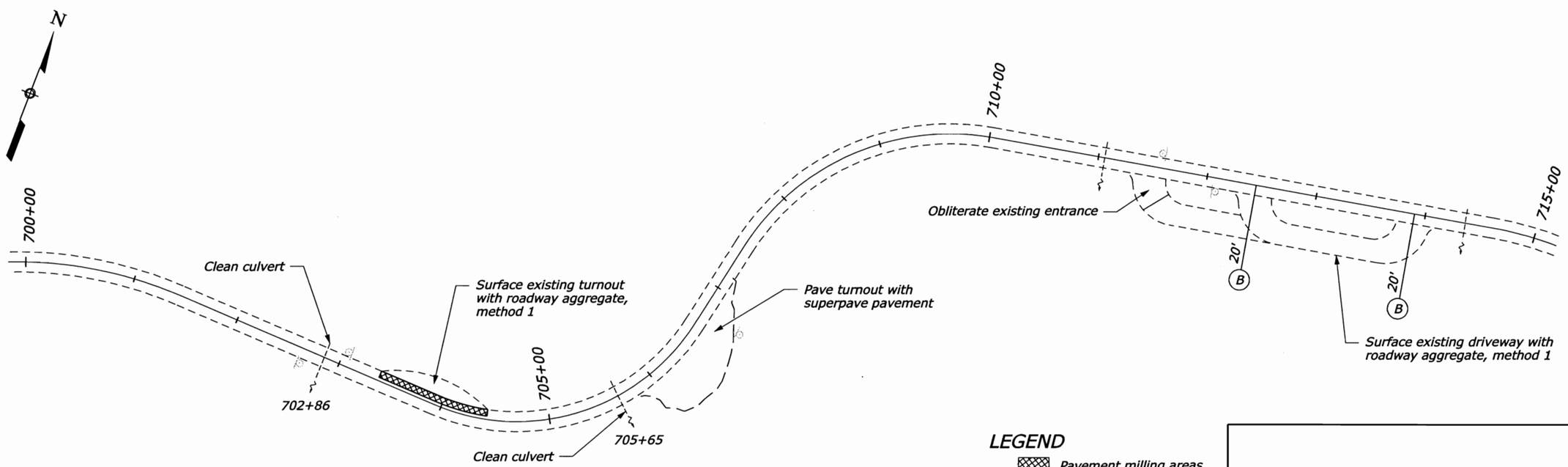


PLAN SHEETS

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fe.dgn | 4/18/2008 | Designed by: T. BENNETT 3/2008 | Checked by: M. HOHBACH 4/22/08 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.24





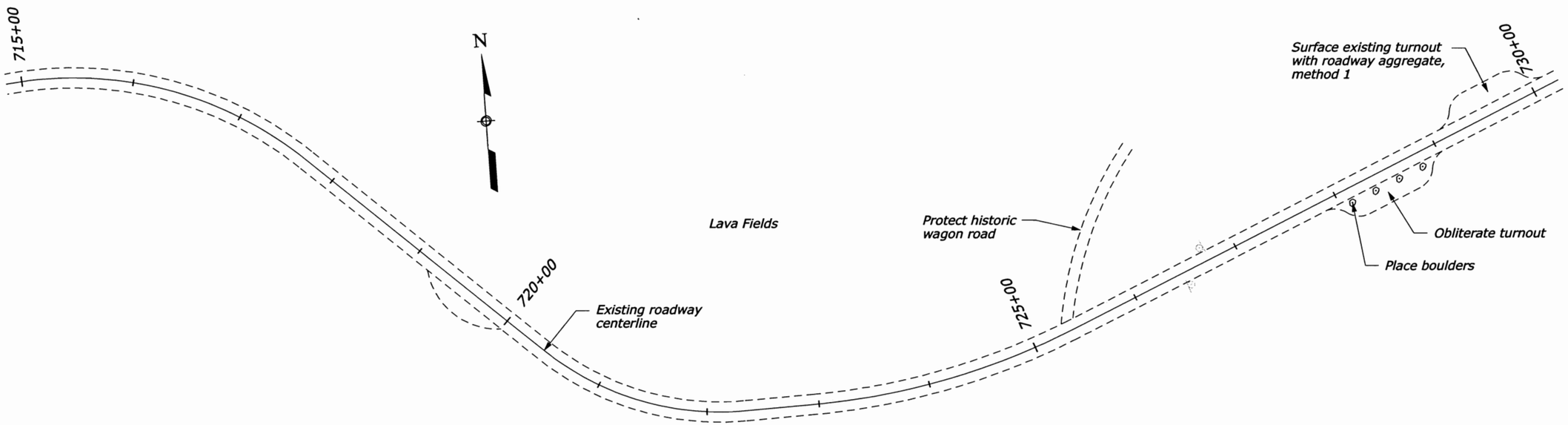
LEGEND

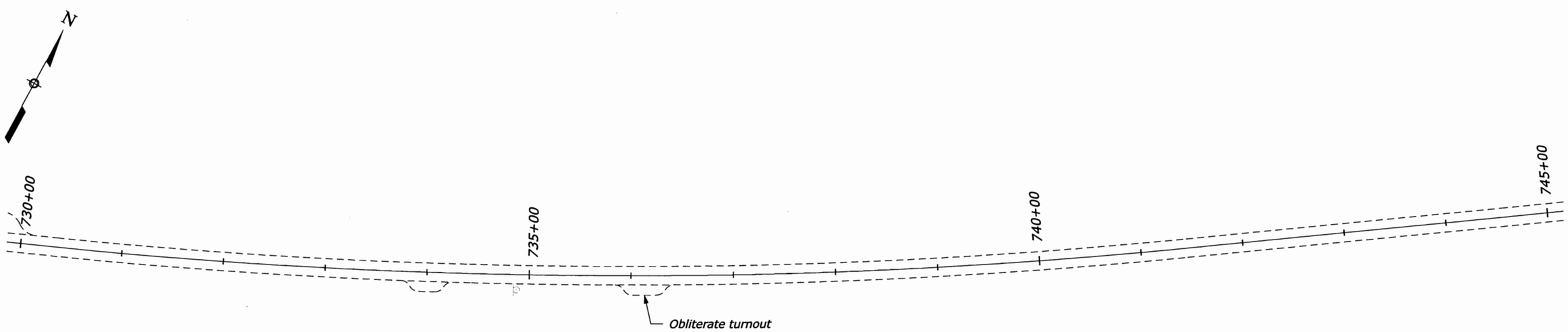
- Pavement milling areas
- (B) Approach road
- Cutoff trench

PLAN SHEETS

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fe.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.25





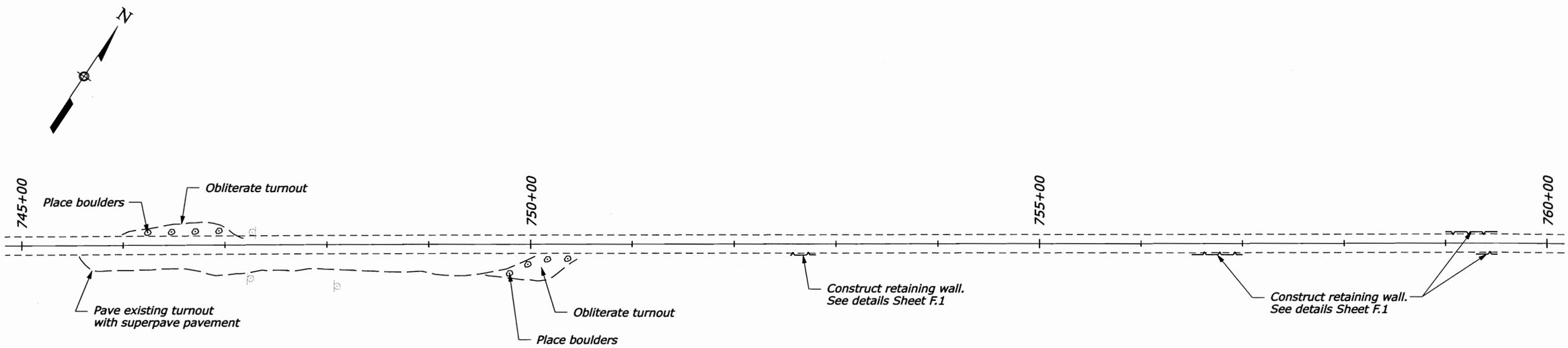
LEGEND

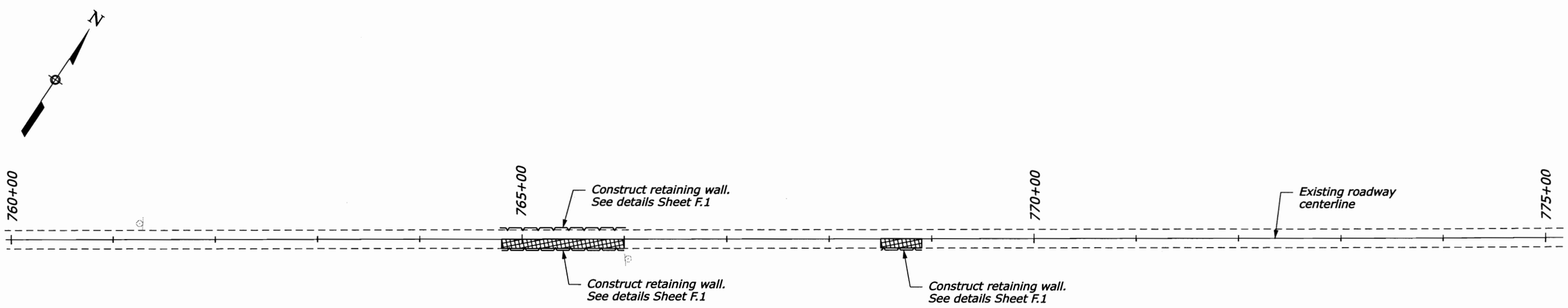
⊙ *Proposed boulder*

PLAN SHEETS

P:\FI\PHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214ft.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH 4/22/08 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.26





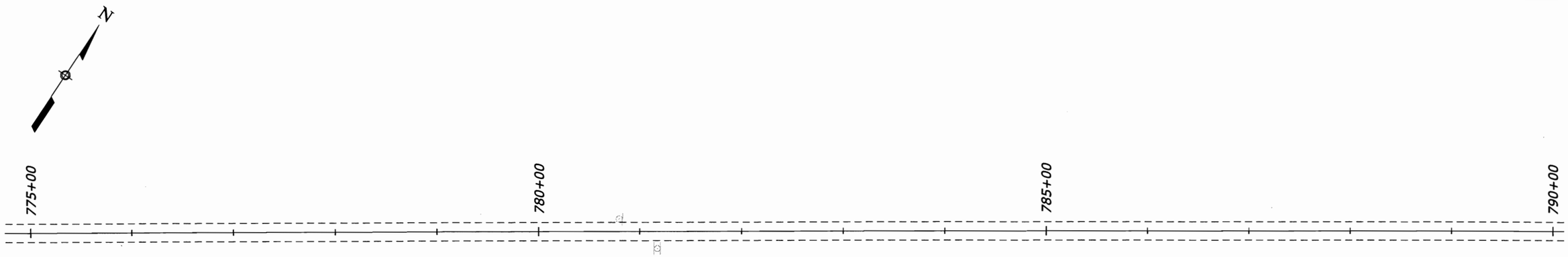
LEGEND

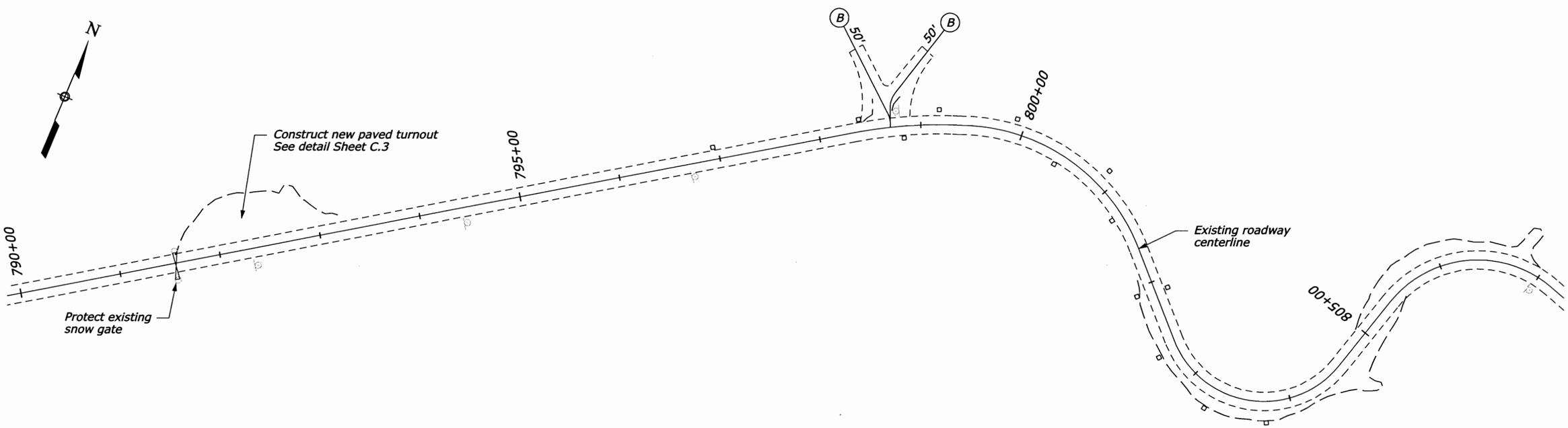
- Proposed boulder
- Pavement milling areas

PLAN SHEETS

Designed by: T. BENNETT 3/2008
Checked by: M. HOHBACH 3/2008
4/18/2008
P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22i4fe.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.27





LEGEND

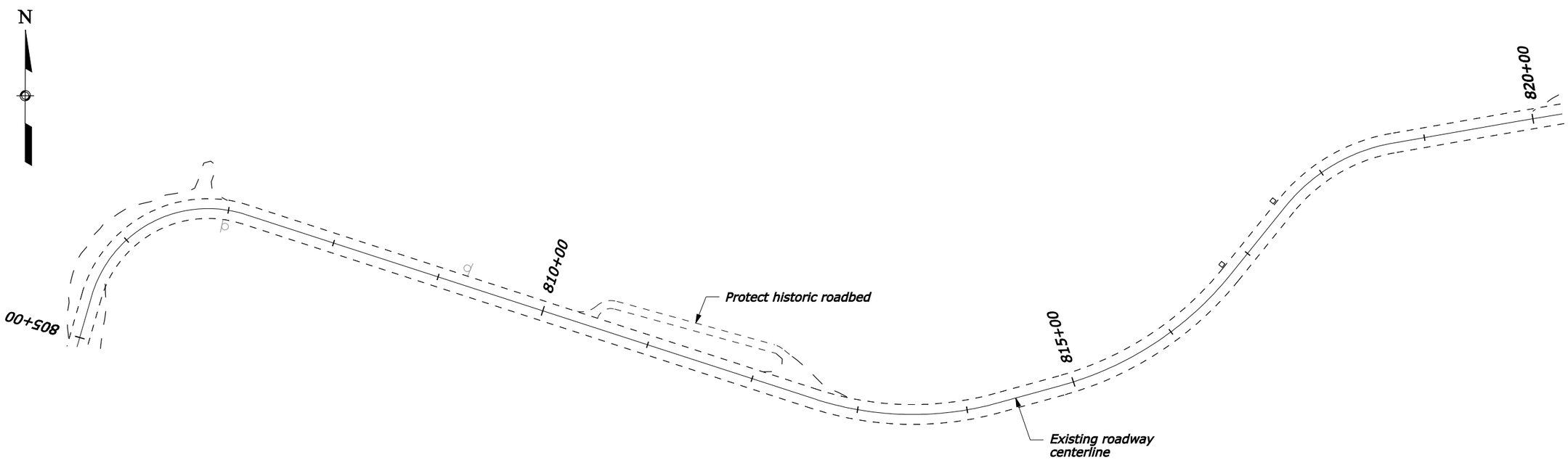
- ▫ Existing delineator
- (A) —— Approach road

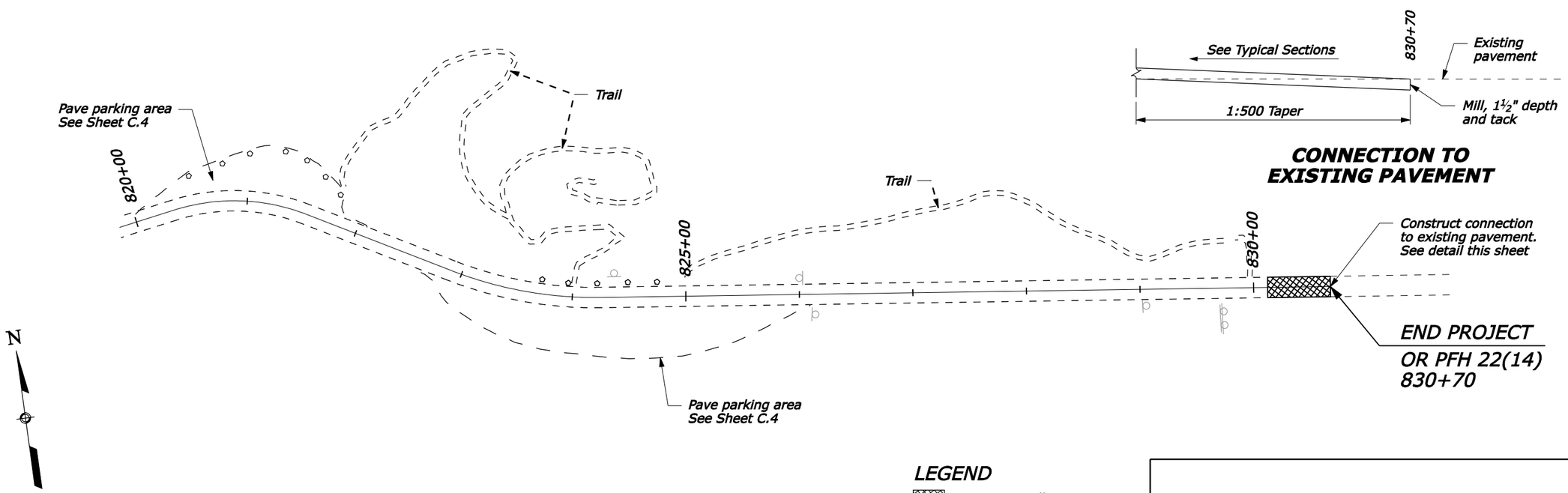
PLAN SHEETS

T. BENNETT 3/2008 | Checked by: M.J.H. M. HOHBACH 4/22/08 3/2008 | Designed by: 4/18/2008

P:\F\FHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214fa.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	D.28





LEGEND

- Pavement milling areas
- Existing snowpole holders
- Existing delineator

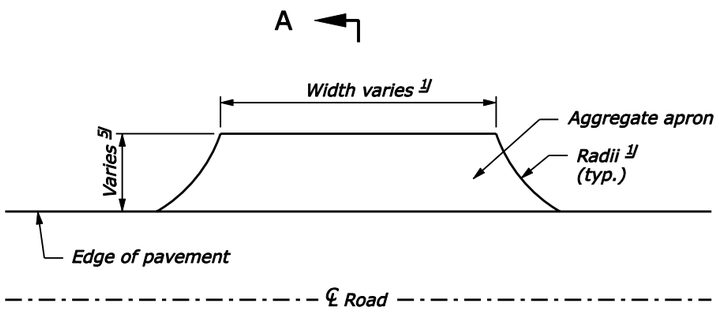
PLAN SHEETS

Designed by:	Checked by:	
T. BENNETT	M. HOHBACH	3/2008
3/2008	3/2008	

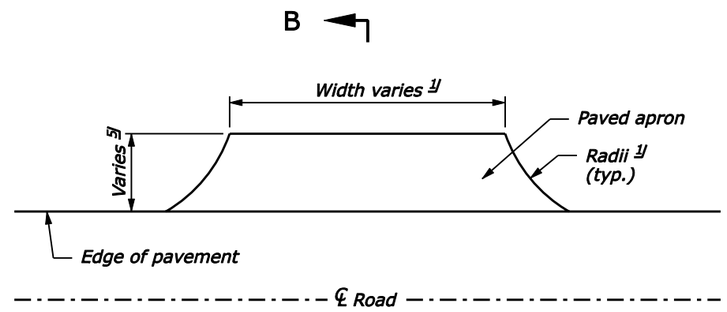
$DATE$

$PATH$

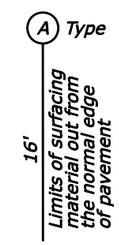
STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	E.1



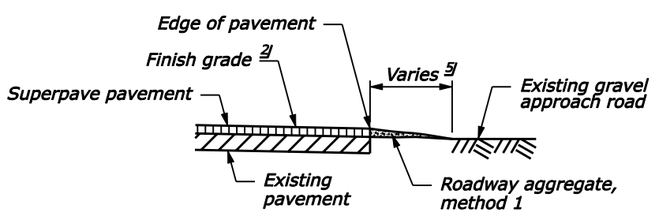
PLAN VIEW



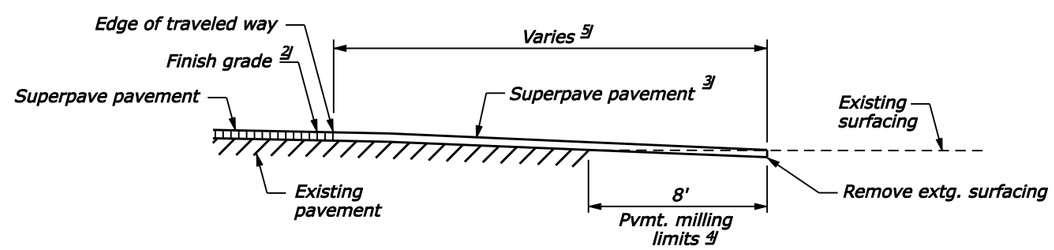
PLAN VIEW



ROAD APPROACH SYMBOL



SECTION A-A



SECTION B-B

TREATMENT FOR OVERLAY AREAS
TYPE A

TREATMENT FOR OVERLAY AREAS
TYPE B

NOTE:

1. Construct side slope ratio and degree of finish of approaches compatible with adjacent roadway construction.

FOOTNOTES:

1/ Match existing width and radii.

2/ Match approach grade to finish grade of mainline.

3/ Match depth of pavement overlay, see Sheet C.1.

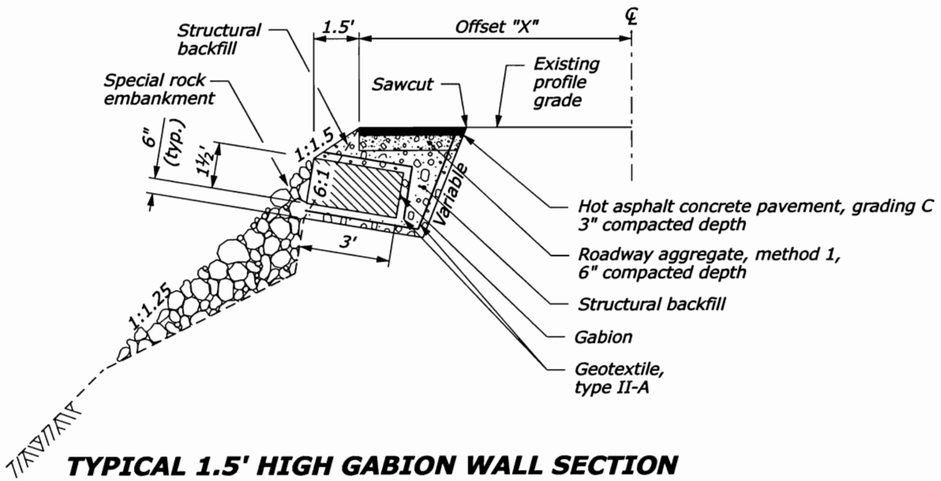
4/ Mill existing paved approach roads only.

5/ Limits of surfacing material out from the normal edge of pavement.

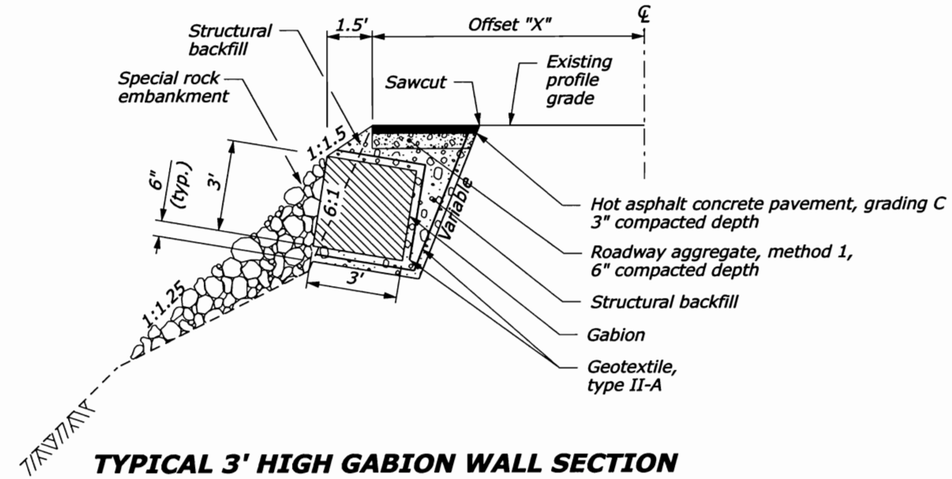
ROAD APPROACH DETAILS

$PATH$ | $DATE$ | Designed by: T. BENNETT | Checked by: M. HOHBACH | 3/2008 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	F.1



TYPICAL 1.5' HIGH GABION WALL SECTION



TYPICAL 3' HIGH GABION WALL SECTION

APPROXIMATE LOCATION	WALL HEIGHT	OFFSET "X"	SPECIAL ROCK EMBANKMENT, MECHANICALLY-PLACED ITEM 25201-1000 (CUYD)	GABIONS, GALVANIZED OR ALUMINIZED COATED ITEM 25302-1000 (CUYD)	EARTHWORK GEOTEXTILE, TYPE II-A ITEM 20701-0700 (SQYD)	ROADWAY AGGREGATE, METHOD 1 ITEM 30802-1000 (TON)	HOT ASPHALT CONCRETE PAVEMENT, GRADING C ITEM 40301-0300 (TON)
752+50 to 752+92 RT	3.0'	9.0'	20	14	70	8	4
756+70 to 757+00 RT	3.0'	9.0'	14	10	50	6	3
759+00 to 759+51 LT	1.5'	9.0'	15	9	65	10	5
759+30 to 759+51 RT	3.0'	9.0'	10	7	35	4	2
764+80 to 766+00 LT	3.0'	8.5'	57	40	200	22	11
764+80 to 766+00 RT	3.0'	8.5'	57	40	200	22	11
768+50 to 768+92 RT	3.0'	9.0'	20	14	70	8	4
TOTAL			193	134	690	80	40

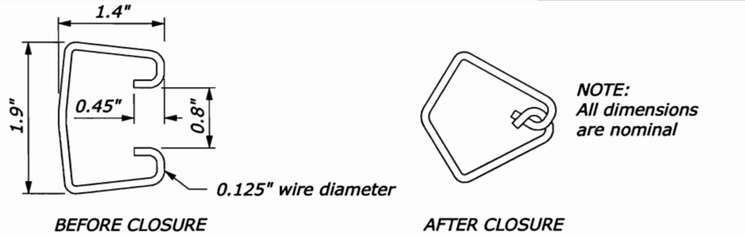
NOTE:

1. *The heights and locations are subject to field adjustments.*
2. *Any increase in maximum wall height over that shown on the plans shall be made only after analysis to determine wall stability.*
3. *Design assumptions:*
   Unit weight of filled gabions = 110 pcf
   Unit weight of structural backfill = 130 pcf
   ø = 35° for structural backfill material
4. *For additional geotechnical information see Geotechnical Report No. 17-06.*

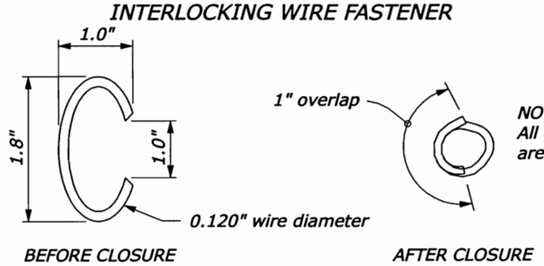
GABION WALL DETAILS

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214qd.dgn
4/18/2008 | Designed by: T. BENNETT
3/2008 | Checked by: M. HOHBACH
3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	F.2

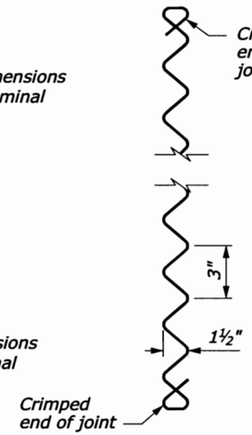


INTERLOCKING WIRE FASTENER

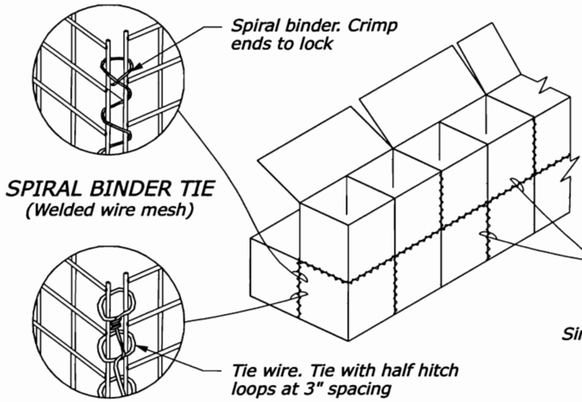


OVERLAPPING RING WIRE FASTENER
(Not allowed for basket to basket connection)

ALTERNATE TYING FASTENERS

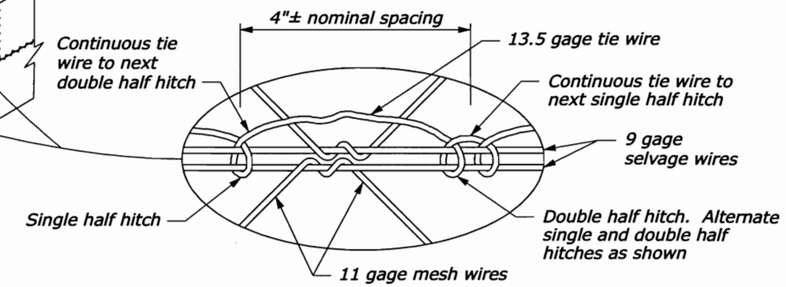


9 GAGE SPIRAL BINDER



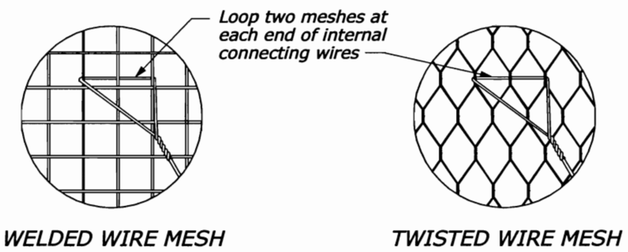
SPIRAL BINDER TIE
(Welded wire mesh)

HALF HITCH TYING DETAIL
(Welded wire mesh)



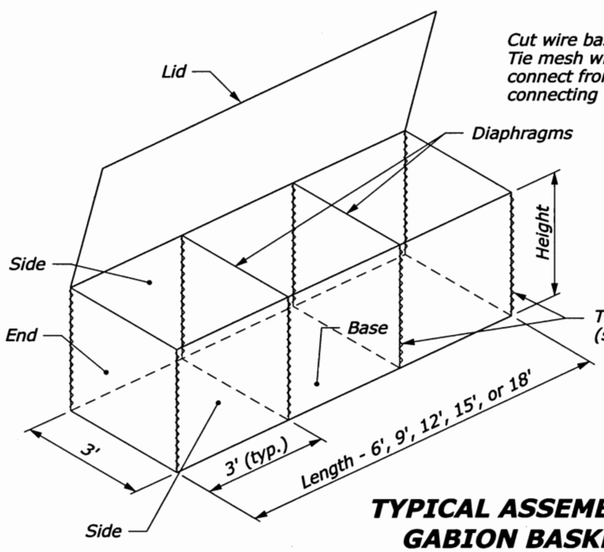
HALF HITCH TYING DETAIL
(Twisted wire mesh)

TYPICAL INSTALLATION GABION BASKETS

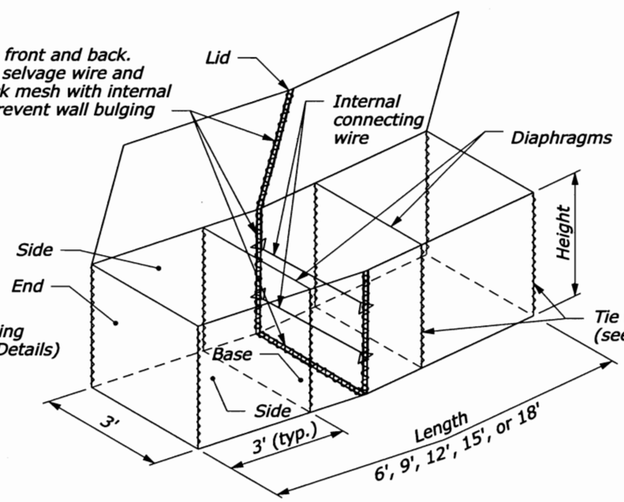


WELDED WIRE MESH

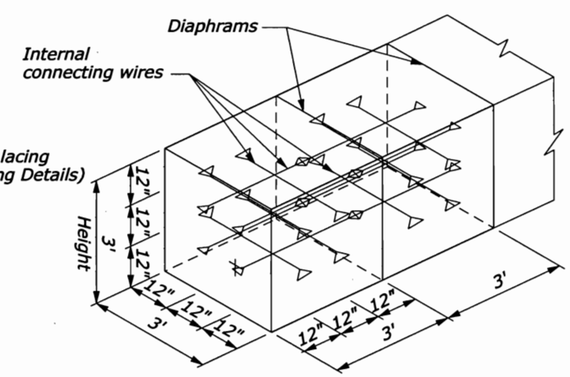
TWISTED WIRE MESH



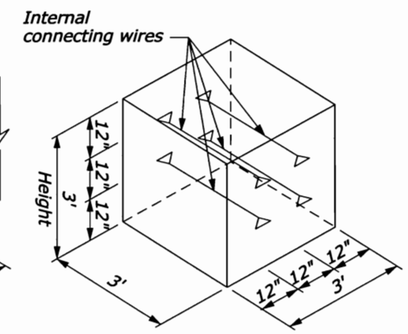
TYPICAL ASSEMBLED GABION BASKET



ASSEMBLED GABION BASKET IN WALL GRADE TRANSITION AREAS



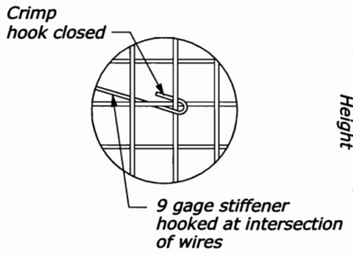
ALL END GABION CELLS

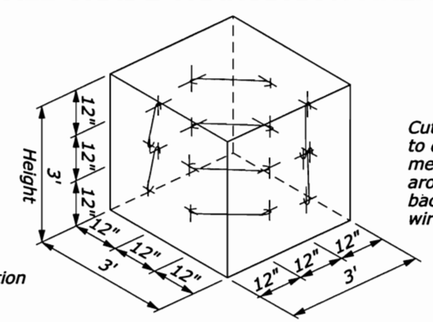


ALL INTERIOR GABION CELLS

TYPICAL INTERNAL CONNECTING WIRES

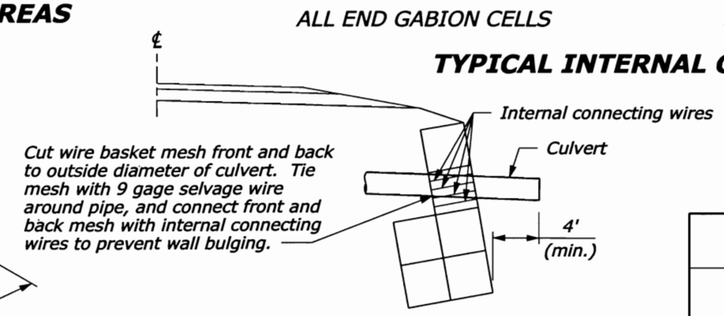
GABION BASKET NOMINAL SIZES AND CAPACITY				
Size Code Letter	Size in feet		Diaphragm Partitions	Capacity (CUYD)
	Length	Height		
A	6	3.0	1	2.00
B	9	3.0	2	3.00
C	12	3.0	3	4.00
X	15	3.0	4	5.00
Y	18	3.0	5	6.00
D	6	1.5	1	1.00
E	9	1.5	2	1.50
F	12	1.5	3	2.00
G	6	1.0	1	0.67
H	9	1.0	2	1.00
I	12	1.0	3	1.33





ALL GABION CELLS

OPTIONAL INTERNAL CONNECTING WIRES WELDED WIRE GABION BASKET



TYPICAL CULVERT INSTALLATION
THROUGH GABION WALL

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

GABION BASKET

DETAIL APPROVED FOR USE --/----

REVISED:
DRAFT: 3/2007

DETAIL
W253-1

P:\FLHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\w25301.dgn 4/18/2008

Note: The quantities shown hereon are approximate and are subject to field adjustments.

TABULATION OF DRAINAGE QUANTITIES

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	G.1

PAY ITEM NUMBER			20301			25101		60201				60213	60401	60403	60501	60510	60704	60707		60801	62011			Allow. Pipe Material (See key below)	BEVELS 1V:nH		FOOTNOTES See below for numbered footnotes
			-1200	-1400	-1900	-1000	-2000	-0600	-0800	-0900	-1000	-100	-0000	-1200	-0000	-0800	-0000	-0500	-0600	-0200	-0500	-0600					
STATION	EST MAX COVER (ft)	STR EXC (CUYD)	Removal (Each)			Placed riprap, energy dissapator (CUYD)		Pipe Culvert (LNFT)				Branch Connec-tion (Each)	Manhole (Each)	Inlet type 5A (Each)	Std. under-drain system	6-inch outlet pipe	Cleaning culverts in place (Each)	Lining pipe culvert (LNFT)		Paved water-way, type 2 (Each)	Stone masonry headwall for pipe culvert (Each)				Lt	Rt	
DIAMETER or SPAN x RISE (inch)			Head-wall	Inlet	Pipe Culverts	Class 1	Class 2		24						6	6											
93+90																	1										
96+41																	1										
153+62																	1										
169+19																	1										
183+66					1				50															A, AS, GS	1:1	1:1	1, 2, 4, 4
207+85																	1										
234+93					1																						
242+30									50															A, AS, GS	1:1	1:1	1, 2, 3, 4
249+86					1																						
251+89					1																						
263+48																	1										
338+84																	1										
470+10																	2										
519+47																	1										
568+70																	1										
592+81																	1										
596+37																	1										
610+48																	1										
628+49																	1										
631+49																	1										
639+69																	1										
694+35																	1										
695+70																											
to															75	20								GS		1:1	1
696+25																											
697+11																	1										
702+86																	1										
705+65																	1										
PROJECT TOTAL			**0**	**0**	**0**	**4**	**0**	**0**	**0**	**100**	**0**	**0**	**0**	**0**	**0**	**75**	**20**	**21**	**0**	**0**	**0**	**0**	**0**				

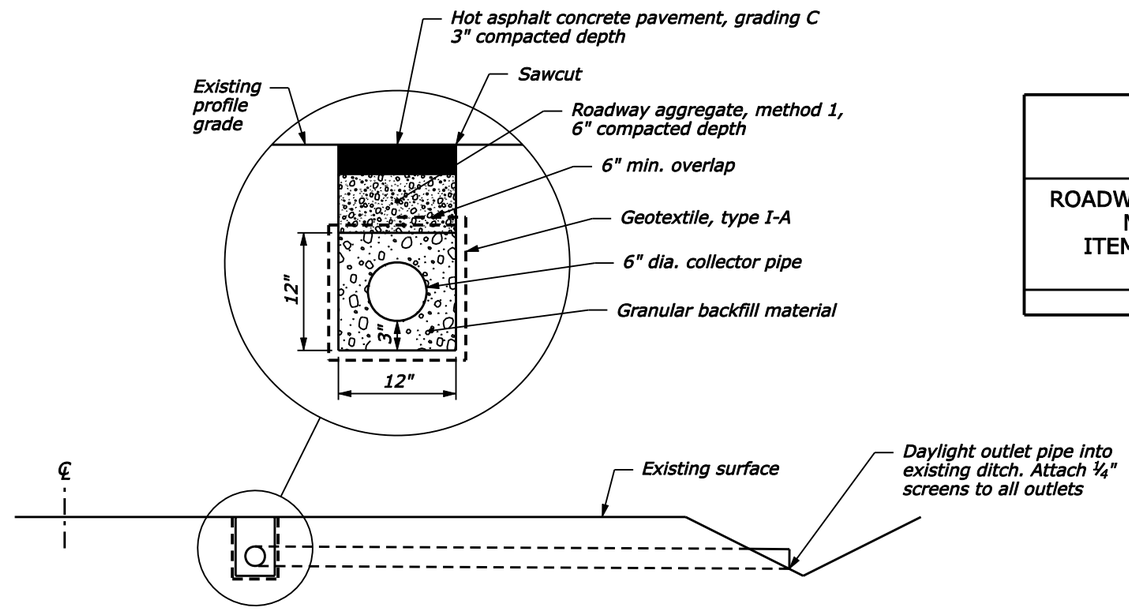
NOTE:
1. Steel pipe culvert minimum wall thickness is the larger of 0.064" or the thickness required by the Std. 602-1 fill height table.
2. Aluminized steel pipe culvert minimum wall thickness is the larger of 0.064" or the thickness required by the Std. 602-1 fill height table (steel).
3. Aluminum pipe culvert minimum wall thickness is the larger of 0.60" or the thickness required by the Std. 602-1 fill height table.
4. Plastic pipe is not allowed when final installation is exposed. Furnish metal end sections for all plastic pipe including those specified with bevels. See Std. 602-5 for acceptable cell class.
5. See Std. 602-7 for acceptable concrete cell class.

Allowable pipe culvert material

A	Aluminum
AS	Aluminized steel
C	Concrete
GS	Galvanized steel
P	Plastic
(blank)	Any appropriate material
X/__	Any appropriate material except __

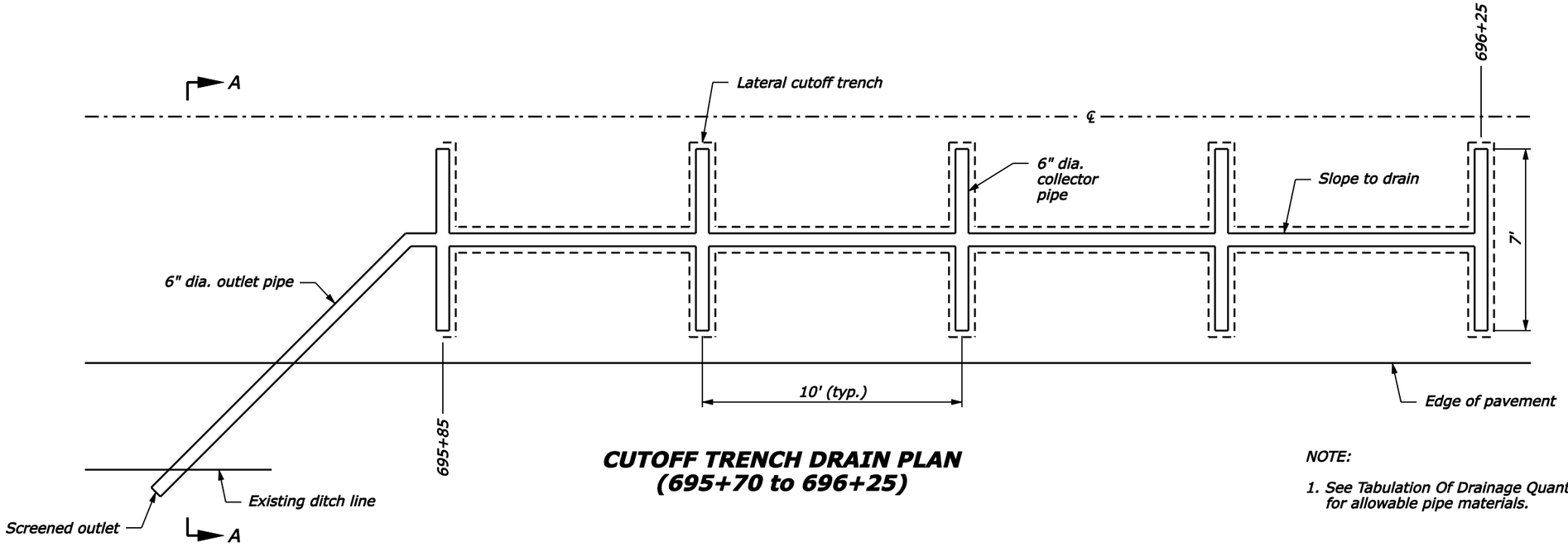
Designed by: T. BENNETT 3/2008
Checked by: M. HOHBACH 4/22/08
MJH 3/2008
18-Apr-2008 12:04
P:\F\HAX00000147\0400CAD\PS&E - Roadway\[Drainage.xls]US_Customary

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	G.2



CUTOFF TRENCH DRAIN SECTION A-A

SURFACING QUANTITIES FOR CUTOFF TRENCH	
ROADWAY AGGREGATE, METHOD 1 ITEM 30802-1000 (TON)	HOT ASPHALT CONCRETE PAVEMENT, GRADING C ITEM 40301-0300 (TON)
4	2



CUTOFF TRENCH DRAIN PLAN (695+70 to 696+25)

NOTE:

1. See Tabulation Of Drainage Quantities on Sheet G.1 for allowable pipe materials.

CUTOFF TRENCH DRAIN TYPICAL DETAILS

Designed by: $DATE$ | Checked by: M. HOHBACH 3/2008 | T. BENNETT 3/2008

$PATH$

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	H.1

LOCATION	SOIL EROSION CONTROL, SEDIMENT WATTLE ITEM 15705-1500 (LNFT)	COMMENT
185+40 to 186+80 RT	*10*	*Obliteration area 1/*
293+00 to 294+50 LT	*150*	*Wetland area 2/*
498+75 to 501+00 RT	*225*	*Wetland area 2/*
534+00 to 536+00 RT	*200*	*Wetland area 2/*
535+00 to 536+50 LT	*150*	*Wetland area 2/*
564+15 to 569+00 LT	*485*	*Wetland area 2/*
566+80 to 570+00 RT	*320*	*Wetland area 2/*
568+60 to 568+80 RT	*20*	*Culvert outlet 3/*
TOTAL	*1560*	

LOCATION Sta. to Sta.	SOIL EROSION CONTROL, SOIL STABILIZATION ITEM 15703-1000 (ACRE)
185+80 to 188+20	*ALL 0.2*
TOTAL	*ALL 0.2*

FOOTNOTES:

1/ Install in ditch

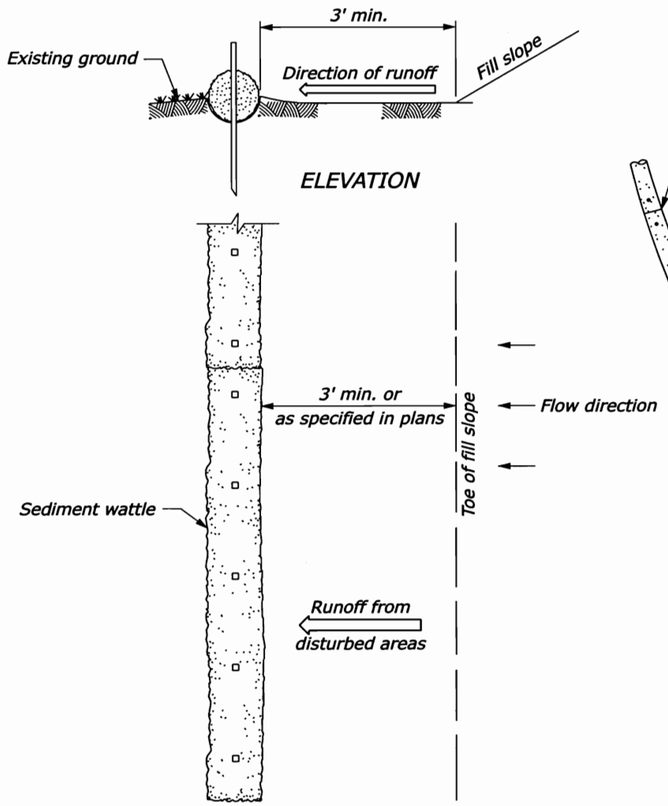
2/ Install at toe of fill

3/ Install while cleaning culvert

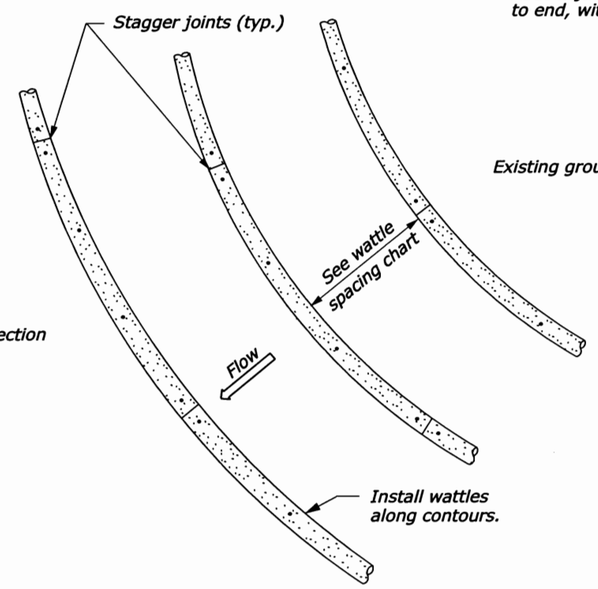
TABULATION OF SOIL EROSION CONTROL QUANTITIES

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22144a.dgn | 4/22/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH 4/22/08 | 3/2008

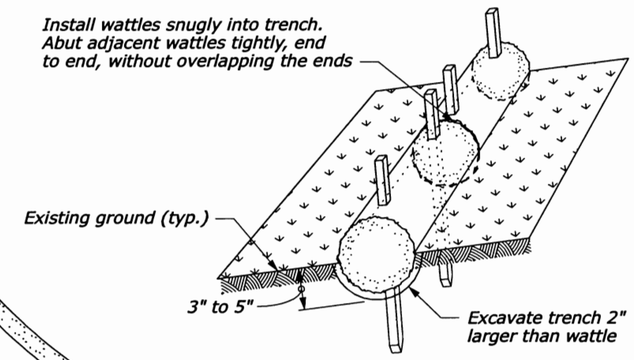
STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	H.2



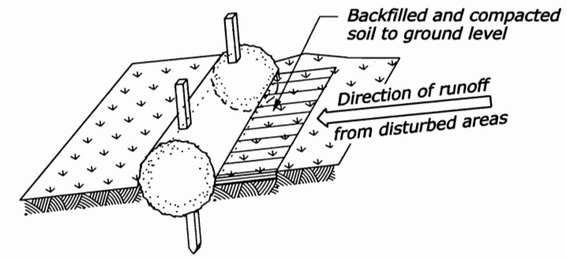
INSTALLATION BEYOND TOE OF SLOPE



INSTALLATION ALONG SLOPES



Step 1: Excavate trench and install wattles



Step 2: Backfill soil against wattles

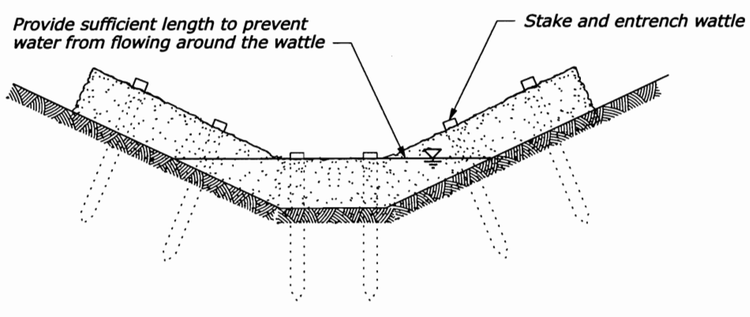
PROPERLY STAKED AND ENTRENCHED WATTLE

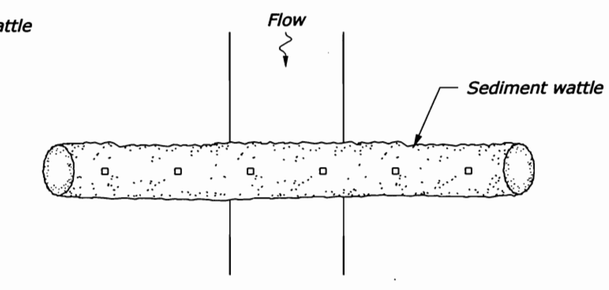
NOTE:

1. Drive stakes at each end and at 4' spacing until wattle is secure to slope. Do not crush wattle while staking. Live stakes may be used for permanent installations.
2. Use drainage ditch installation only in low flow conditions.

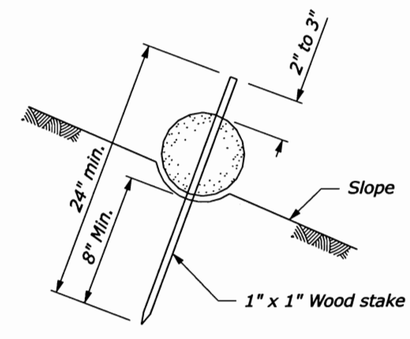
STAKES REQUIRED	
Wattle length (ft)	Stakes required for each wattle
25	8
20	6
12	4

WATTLE SPACING	
Slope	Spacing (ft)
1:4 or flatter	40
1:3	30
1:2	20
1:1	10





DRAINAGE DITCH INSTALLATION



WATTLE STAKING DETAIL

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

SEDIMENT WATTLE

DETAIL APPROVED FOR USE 9/2007

REVISED:

DETAIL W157-20

4/18/2008

P:\FLHX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\w15720.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	I.1

TEMPORARY TRAFFIC CONTROL, BARRICADE, TYPE 3 (CENTER) ITEM 63502-0600

APPROXIMATE LOCATION	QUANTITY (each)
12+00	3
820+00	3
M.P. 83.7	3
TOTAL	9

TEMPORARY TRAFFIC CONTROL, CONE, TYPE 28-INCH ITEM 63502-0900

QUANTITY (each)
300

TEMPORARY TRAFFIC CONTROL, CONCRETE BARRIER ITEM 63503-0400

QUANTITY (lnft)
120

TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN ITEM 63504-1000

MUTCD REF. NO.	SIGN LEGEND	SIGN SIZE	NUMBER OF SIGNS	AREA (sqft)
R11-3a	ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY	60" x 30"	2	25
W20-3	ROAD CLOSED 1500 FT	36" x 36"	2	18
W20-3	ROAD CLOSED AHEAD	36" x 36"	2	18
W20-1	ROAD WORK 500 FT	36" x 36"	2	18
R11-2	ROAD CLOSED	48" x 30"	2	20
G20-2	END ROAD WORK	36" x 18"	2	9
W20-1	ROAD WORK AHEAD	36" x 36"	2	18
W20-4	ONE LANE ROAD	36" x 36"	4	36
W13-1	25 MPH advisory speed plaque	24" x 24"	4	16
W20-7a	Flagger (symbol)	36" x 36"	4	36
W16-2	500 FT supplemental plaque	24" x 18"	4	12
G20-1	ROAD WORK NEXT 15 MILES	36" x 18"	2	9
G20-4	PILOT CAR FOLLOW ME	36" x 18"	1	5
W8-12	NO CENTER STRIPE	36" x 36"	4	36
R4-1	DO NOT PASS	24" x 30"	30	150
R8-3	NO PARKING	12" x 18"	2	3
SPECIAL 1	ROAD CLOSED AT DEE WRIGHT OBSERVATORY	60" x 30"	1	12.5
SPECIAL 2	NO RV'S - TRAILERS BEYOND SNOW GATE 8 MI. AHEAD	66" x 30"	1	13.75
TOTAL			69	455.75

TEMPORARY TRAFFIC CONTROL, PILOT CAR ITEM 63506-0600

QUANTITY (hour)
100

TEMPORARY TRAFFIC CONTROL, TRAFFIC AND SAFETY SUPERVISOR ITEM 63507-0700

QUANTITY (day)
90

TEMPORARY TRAFFIC CONTROL, PORTABLE CHANGEABLE MESSAGE SIGN ITEM 63507-0800

APPROXIMATE LOCATION	QUANTITY (day)
Hwy. 126 1,000' west of 242 Jct.	90
Hwy. 126 1,000' northeast of 242 Jct.	90
Hwy. 242 1,000' east of Sisters	50
Hwy. 242 1,000' M.P. 84.1	90
TOTAL	320

TEMPORARY TRAFFIC CONTROL, FLAGGER ITEM 63509-1000

QUANTITY (fix hr. rate)
800

NOTE:

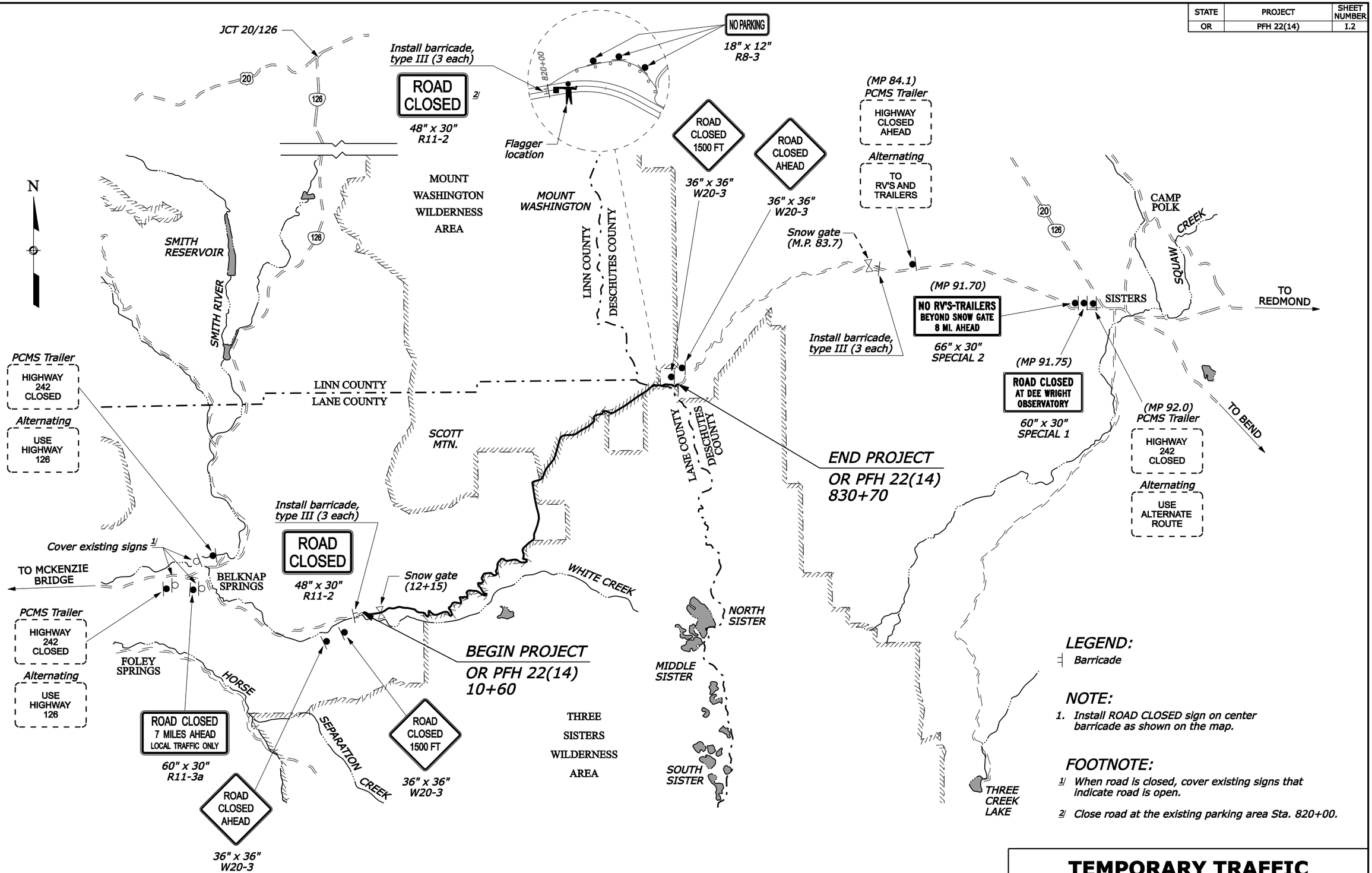
1. Install signs according to the current edition of the "Manual On Uniform Traffic Control Device (MUTCD)" and Std. 635-14.
2. Provide additional signs required to meet field conditions.
3. Install temporary traffic control advance signing according to standard 635-1 when the road is open to public traffic

TABULATION OF TEMPORARY TRAFFIC CONTROL QUANTITIES

Designed by: T. BENNETT 3/2008 | Checked by: M. HOHBACH 3/2008 | 4/18/2008

P:\F\PHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22i14ra.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	I.2



LEGEND:

Barricade

NOTE:

1. Install ROAD CLOSED sign on center barricade as shown on the map.

FOOTNOTE:

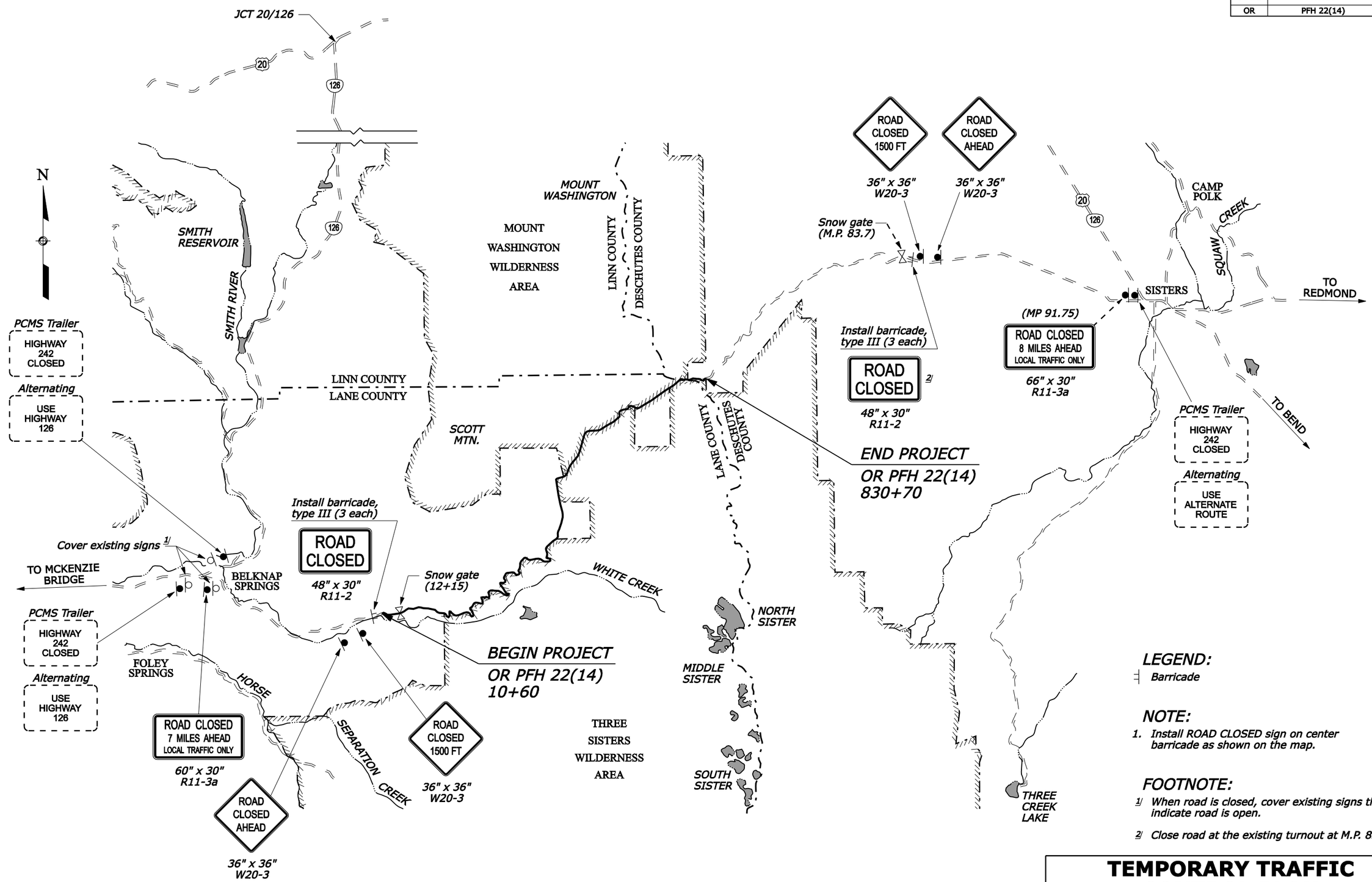
1/ When road is closed, cover existing signs that indicate road is open.

2/ Close road at the existing parking area Sta. 820+00.

TEMPORARY TRAFFIC CONTROL PLAN CLOSURE - STAGE I

$PATH$	Designed by: $DATE$	T. BENNETT 3/2008	Checked by: M. HOHBACH 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	I.3



LEGEND:

Barricade

NOTE:

1. Install ROAD CLOSED sign on center barricade as shown on the map.

FOOTNOTE:

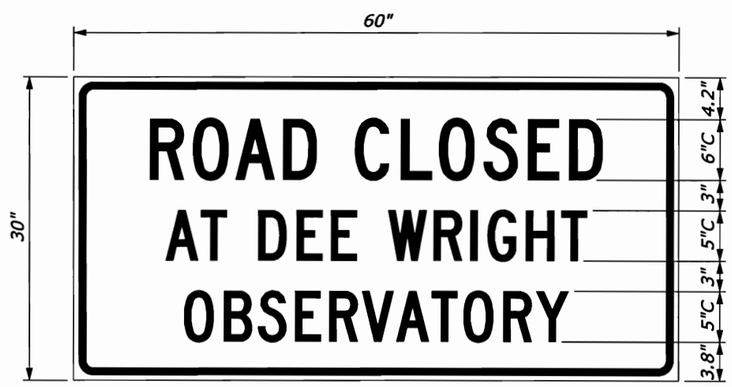
1/ When road is closed, cover existing signs that indicate road is open.

2/ Close road at the existing turnout at M.P. 83.7.

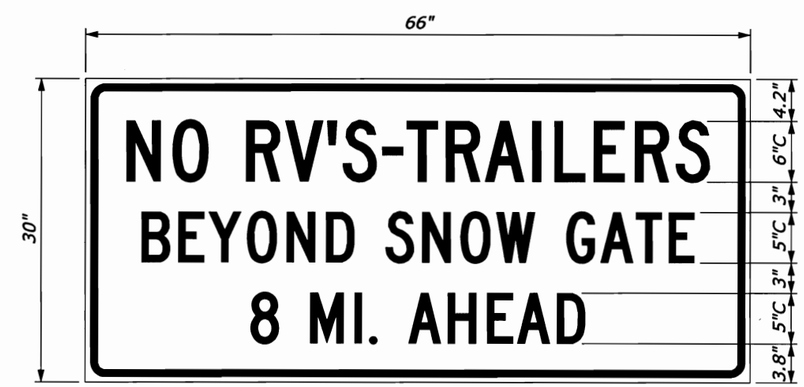
TEMPORARY TRAFFIC CONTROL PLAN CLOSURE FOR PAVING - STAGE II

$PATH$	Designed by: $DATE$	T. BENNETT	Checked by: 3/2008	M. HOHBACH	3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	I.4



SPECIAL SIGN 1 DETAIL



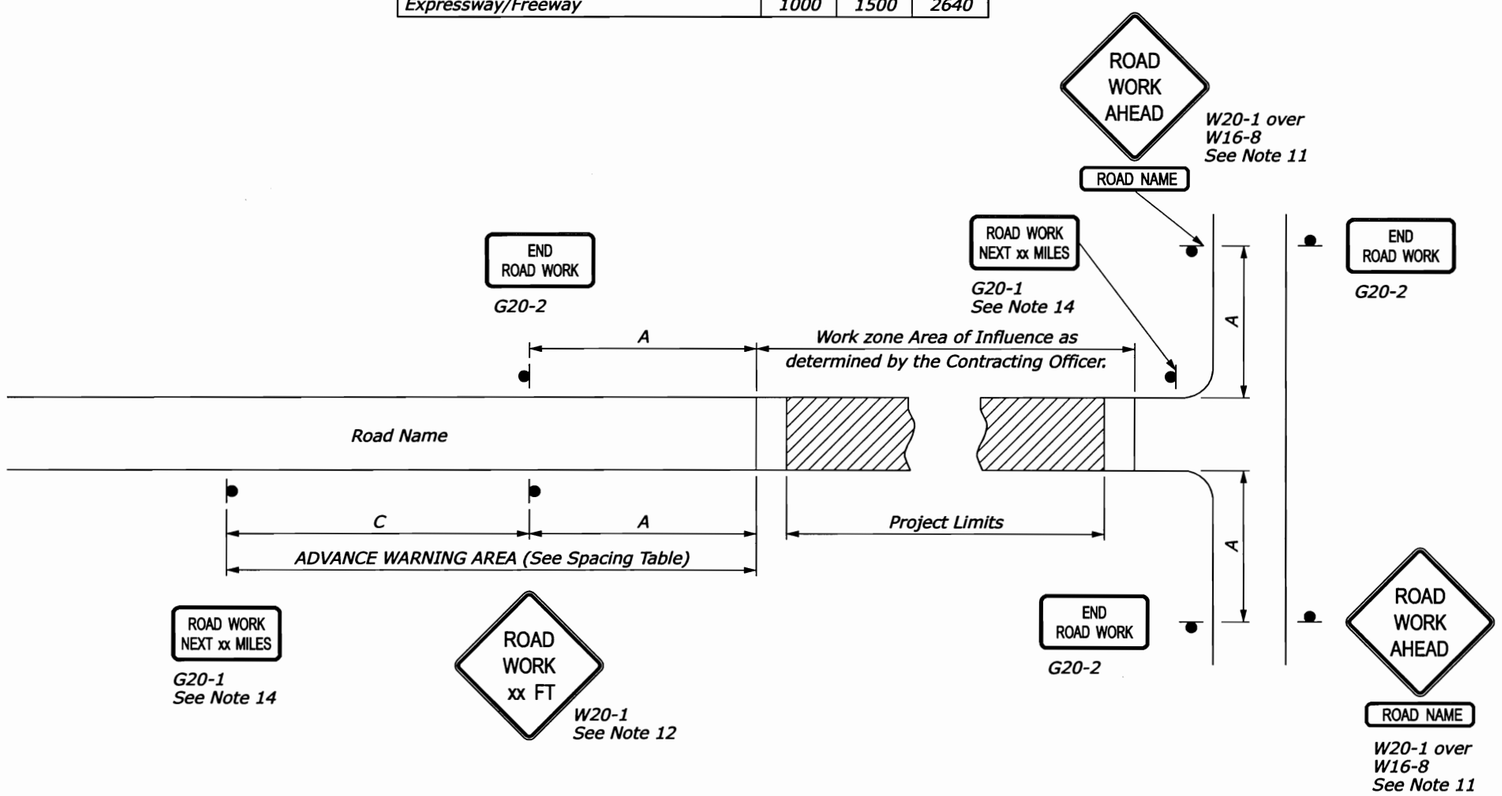
SPECIAL SIGN 2 DETAIL

TEMPORARY SIGN DETAILS

P:\FHAX00000147\040CAD\PS&E - Roadway\DGN\SHEETS\or22144nd.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: MJH | M. HOHBACH 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	I.5

SIGN SPACING TABLE			
ROAD TYPE	DISTANCE BETWEEN SIGNS IN FEET		
	A	B	C
Urban 40 MPH and less	100	100	100
Urban 45 MPH and greater	350	350	350
Rural	500	500	500
Expressway/Freeway	1000	1500	2640



NOTE:

1. Erect all advance warning signs before starting construction work.
2. Not all details shown on the temporary traffic control sheets may be applicable to this project. The Contractor may add or delete information and details in this traffic control plan as necessary to accommodate actual operations.
3. Where advance warning signs, placed as shown, interfere with permanent signs, locate the warning signs as determined by the CO for best results. Vary messages as required.
4. Use Type III or higher type sheeting on all signs and channelizing devices. Warning lights are not normally needed on devices with Type III or higher type sheeting, but may be beneficial to attract the drivers attention in fog or other special conditions. When used, apply the appropriate type of warning light (Type A, B, C, or D) per the MUTCD Chapter 6F.
5. When established in the contract, furnish beacons with the appropriate lens color as specified in the MUTCD Chapter 4K.
6. Additional or different message signs may be required to fit the actual construction conditions.
7. Install advisory speed plates under the W-20 series warning signs as needed to indicate a maximum recommended speed through the construction area.
8. Ensure all sign supports exposed to impact by traffic meet the requirements of NCHRP-350 for crash worthiness.
9. Maintain two-way traffic during all non-work hours except as approved by the CO.
10. Do not store traffic control devices along the roadway when not in use. Cover post-mounted signs when not applicable.
11. If W20-1 is on a roadway other than that on which the actual construction work occurs, include a supplementary plaque indicating the name of the road the work is on.
12. The message on the W20-1 signs may be "ROAD WORK AHEAD" or may specify the distance to the work area in feet or in miles. Install an additional W20-1 sign when approach speeds exceed 50 MPH. When used place the two W20-1 signs "B" feet apart.
13. When flagger warning sign series extend into project advance warning area, the second and third signs in the flagger series may be placed over the W20-1 sign(s) in project advance warning series.
14. For work zones that are more than 2 miles in length, install G20-1 sign. Show the distance on the G20-1 sign to the nearest whole mile.
15. If signs will be in place more than 72 consecutive hours, use ground-mounted post.
16. If signing on a roadway under a jurisdiction other than the client agency, verify that an encroachment permit has been obtained.
17. State standards may be used as an alternative if approved by the CO.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

TEMPORARY TRAFFIC CONTROL ADVANCE SIGNING

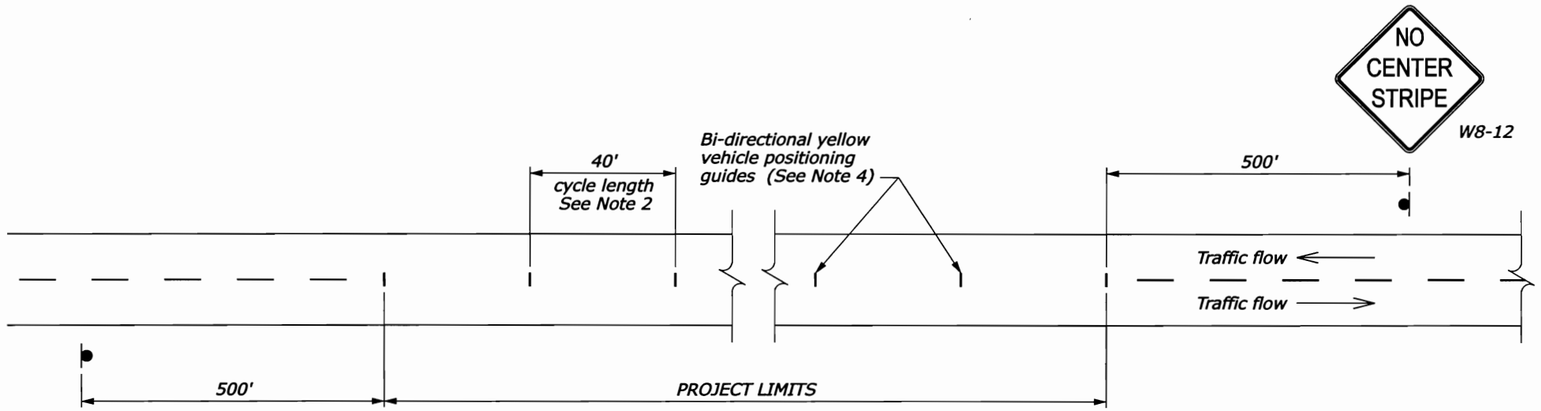
STANDARD APPROVED FOR USE 6/2005

REVISED:
DRAFT: 3/2006

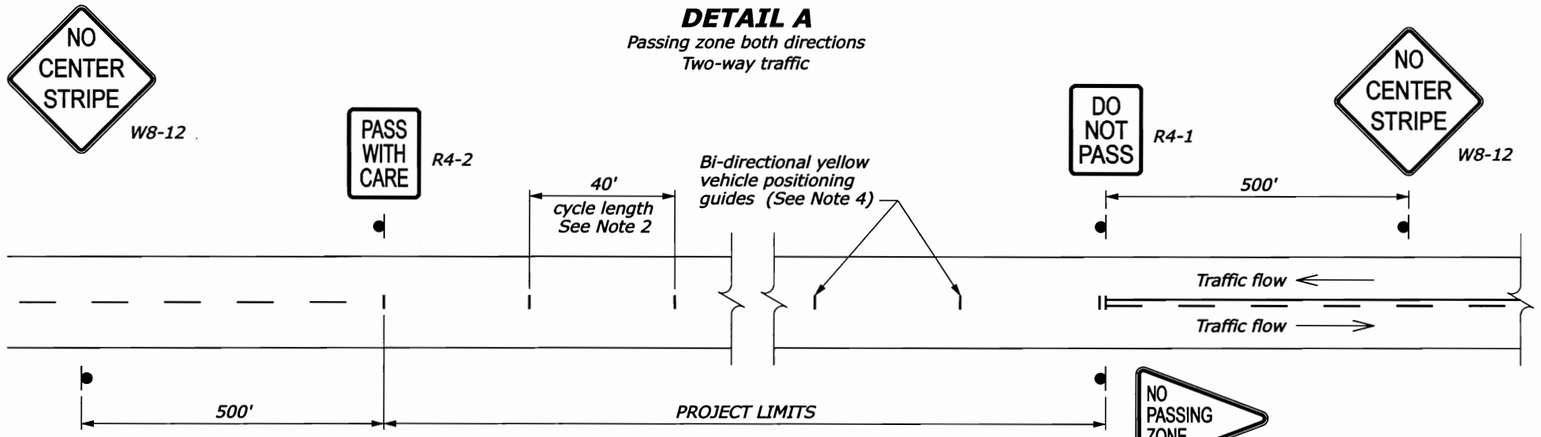
STANDARD 635-1

P:\FFHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\st63501.dgn 4/18/2008

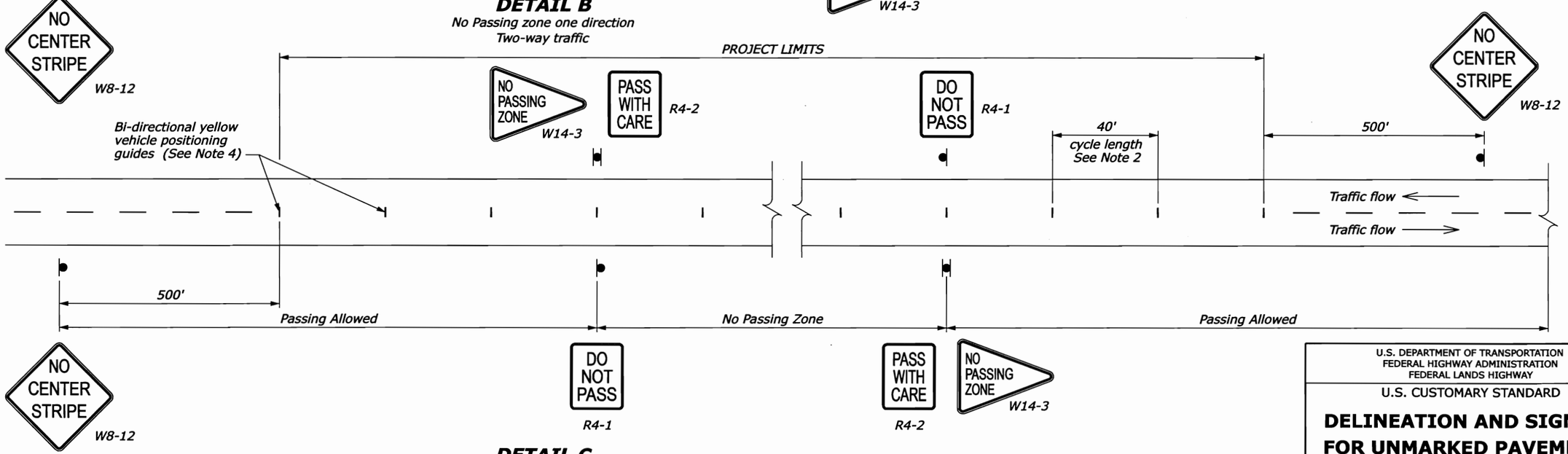
STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	I.6



DETAIL A
Passing zone both directions
Two-way traffic



DETAIL B
No Passing zone one direction
Two-way traffic



DETAIL C
No Passing zone both directions
Two-way traffic

NO SCALE

NOTE:

1. For periods noted in Table A, pavement may be unmarked if vehicle positioning guides and signing are provided per this detail. For longer periods/higher ADT's or for application of temporary markings with paint or tape, use Standard 635-2.
2. On curves with radius less than 500', reduce cycle length to 20'.
3. Use permanent markings plan to determine no passing zones for each direction of travel.
4. Ensure vehicle positioning guides meet the requirements of Sub-Section 718.21(b), Raised pavement markers.
5. Repeat R4-1 at 1 mile intervals.
6. Repeat W8-12 after each major intersection.
7. If signs will be in place more than 72 consecutive hours, use ground-mounted post.

TABLE A

ADT	Maximum Duration Before Markings Are Required
≤ 1000	14 Days
> 1000	3 Days

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

DELINEATION AND SIGNING FOR UNMARKED PAVEMENTS

STANDARD APPROVED FOR USE 6/2005

REVISED:
DRAFT: 3/2006

STANDARD
635-3

P:\FI\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\std63503.dgn 4/18/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	I.7

LENGTH AND SPACING TABLE

APPROACH SPEED*	LENGTH OF BUFFER SPACE	CHANNELIZING DEVICE		
		TAPER AREA	BUFFER SPACE	WORK SPACE
MPH	FEET	SPACING IN FEET		
25	155	20	50	50
30	200	20	60	60
35	250	20	70	70
40	305	20	80	80
45	360	20	90	90
50	425	20	100	100
55	495	20	110	110

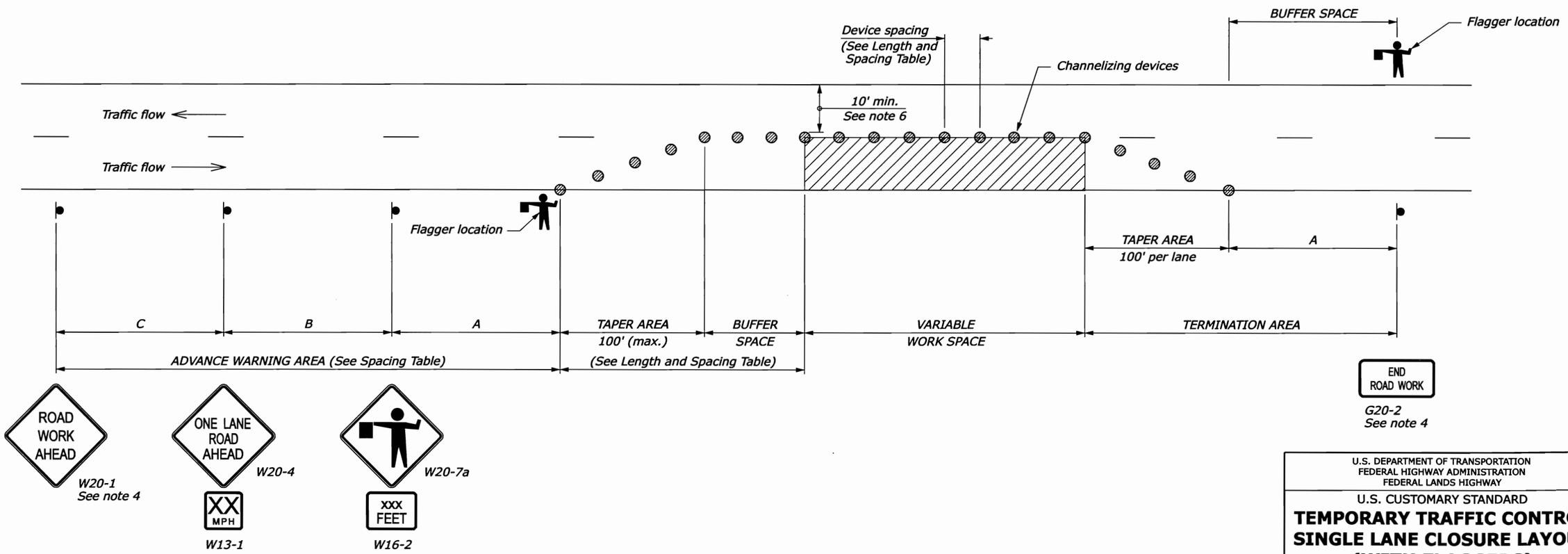
* Approach speed based on the regulatory posted speed, not the advisory speed.

SIGN SPACING TABLE

ROAD TYPE	DISTANCE BETWEEN SIGNS IN FEET		
	A	B	C
Urban 40 MPH and less	100	100	100
Urban 45 MPH and greater	350	350	350
Rural	500	500	500
Expressway/Freeway	1000	1500	2640

NOTE:

1. Signs are shown for one direction of travel only. Place devices similar to those depicted for the opposite direction of travel.
2. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
3. For pilot car operation, mount the PILOT CAR FOLLOW ME (G20-4) sign at a conspicuous location on the rear of vehicle. Prominently display the name of the contractor on the pilot car.
4. If closure is completely within the project limits, eliminate the "ROAD WORK AHEAD" (W20-1) and "END ROAD WORK" (G20-2) signs.
5. For night time flagging operation, provide floodlighting at flagger stations.
6. Refer to Special Contract Requirements, Section 156, for project specific minimum width.
7. Do not allow equipment, materials, or vehicles to be parked or stored in the buffer space.
8. If signs will be in place more than 72 consecutive hours, use ground-mounted post.



NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

TEMPORARY TRAFFIC CONTROL SINGLE LANE CLOSURE LAYOUT (WITH FLAGGERS)

STANDARD APPROVED FOR USE 6/2005

REVISED:

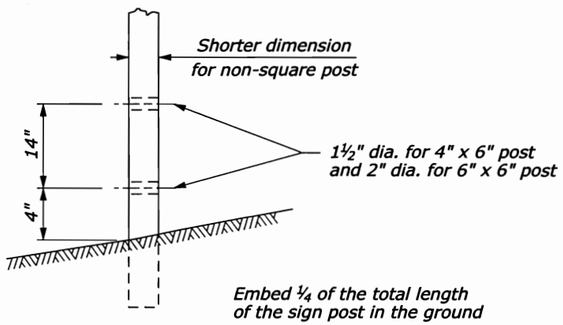
STANDARD 635-6

P:\FHAX0000147\040CAD\PS&E - Roadway\DGN\SHEETS\st63506.dgn 4/18/2008

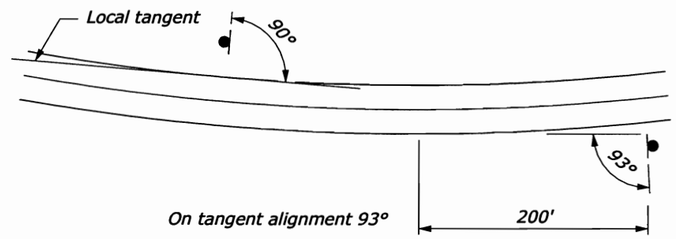
STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	I.8

NOTE:

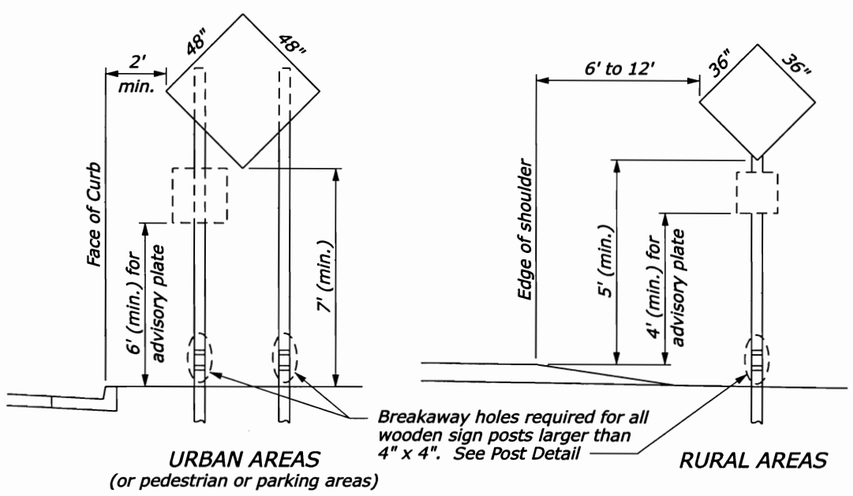
1. Use Type III or higher type sheeting on all signs and channelizing devices. Warning lights are not normally needed on devices with Type III or higher type sheeting, but may be beneficial to attract the drivers attention in fog or other special conditions. When used, apply the appropriate type of warning light (Type A, B, C, or D) per the MUTCD Chapter 6F.
2. Ensure all sign supports exposed to impact by traffic meet the requirements of NCHRP-350 for crash worthiness.
3. Do not store traffic control devices along the roadway when not in use. Cover post-mounted signs when not applicable.
4. State standards may be used as an alternative if approved by the CO.



POST DETAIL



SIGN INSTALLATION ANGLE



Note: Mount signs with area 9 sqft and under on a single 4" x 4" wood post. Use double wood posts for signs wider than 36" or signs with an area over 9 sqft. Steel may be used in lieu of wood posts (see note #2).

SIGN PLACEMENT

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

TEMPORARY TRAFFIC CONTROL SIGN INSTALLATION

STANDARD APPROVED FOR USE 6/2005

REVISED:

STANDARD 635-14

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\std3514.dgn 4/18/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.1

REMOVAL OF DELINEATOR ITEM 20301-0700

LOCATION	QUANTITY (each)	LOCATION	QUANTITY (each)	LOCATION	QUANTITY (each)
100+40 LT	1	319+72 LT	1	378+45 RT	1
101+00 LT	1	320+05 LT	1	379+53 RT	1
103+02 LT	1	321+89 LT	1	380+02 RT	1
138+91 LT	1	322+39 LT	1	380+53 RT	1
139+49 LT	1	324+12 LT	1	381+00 RT	1
145+62 LT	1	326+91 LT	1	382+42 RT	1
148+87 LT	1	327+88 LT	1	383+03 RT	1
240+60 LT	1	328+35 LT	1	384+19 RT	1
242+09 RT	1	328+80 LT	1	384+70 RT	1
242+49 RT	1	329+25 LT	1	385+59 RT	1
242+73 RT	1	331+83 LT	1	386+04 RT	1
246+94 LT	1	332+81 LT	1	386+98 RT	1
247+38 LT	1	333+81 LT	1	389+09 RT	1
247+77 LT	1	335+88 LT	1	389+37 RT	1
248+72 LT	1	348+32 RT	1	389+73 RT	1
250+62 LT	1	348+82 RT	1	390+10 RT	1
251+55 LT	1	349+30 RT	1	391+11 RT	1
252+65 LT	1	350+81 RT	1	393+24 RT	1
253+16 LT	1	351+34 RT	1	393+62 RT	1
253+54 LT	1	352+56 RT	1	393+93 RT	1
254+38 LT	1	353+77 RT	1	398+27 RT	1
255+80 LT	1	354+35 RT	1	413+36 LT	1
256+42 LT	1	354+80 RT	1	413+85 LT	1
258+32 LT	1	355+95 RT	1	414+34 LT	1
263+21 LT	1	357+05 RT	1	414+79 LT	1
264+63 LT	1	359+41 LT	1	454+43 LT	1
265+12 LT	1	359+68 LT	1	456+46 LT	1
265+49 LT	1	361+46 LT	1	456+91 LT	1
265+90 LT	1	363+12 LT	1	796+96 LT	1
266+24 LT	1	363+57 LT	1	798+41 LT	1
270+16 RT	1	364+13 LT	1	798+82 RT	1
270+65 RT	1	365+04 LT	1	799+18 LT	1
271+24 RT	1	365+51 LT	1	799+92 LT	1
281+65 LT	1	369+01 LT	1	800+42 RT	1
282+14 LT	1	369+63 LT	1	800+88 LT	1
282+66 LT	1	373+36 RT	1	801+28 RT	1
283+52 LT	1	374+31 RT	1	802+08 RT	1
285+32 LT	1	374+76 RT	1	802+10 LT	1
285+78 LT	1	375+58 RT	1	802+70 RT	1
302+58 LT	1	375+88 RT	1	803+25 RT	1
305+63 LT	1	376+31 RT	1	803+77 RT	1
306+11 LT	1	376+87 RT	1	816+78 LT	1
306+57 LT	1	377+65 RT	1	817+52 LT	1
307+02 LT	1	378+00 RT	1		
TOTAL					131

DELINEATOR, TYPE 1, ITEM 63309-0000

LOCATION	QUANTITY (each)	LOCATION	QUANTITY (each)	LOCATION	QUANTITY (each)
100+40 LT	1	307+02 LT	1	373+36 RT	1
101+00 LT	1	311+31 LT	1	374+31 RT	1
103+02 LT	1	318+27 LT	1	374+76 RT	1
138+91 LT	1	319+12 LT	1	375+58 RT	1
139+49 LT	1	319+72 LT	1	375+88 RT	1
141+75 LT	1	320+05 LT	1	376+31 RT	1
142+90 LT	1	320+70 LT	1	376+87 RT	1
144+50 LT	1	321+10 LT	1	377+65 RT	1
145+62 LT	1	321+89 LT	1	378+00 RT	1
148+87 LT	1	322+39 LT	1	378+45 RT	1
239+83 LT	1	322+95 LT	1	379+53 RT	1
240+60 LT	1	323+60 LT	1	380+02 RT	1
242+09 RT	1	324+12 LT	1	380+53 RT	1
242+49 RT	1	326+91 LT	1	381+00 RT	1
242+73 RT	1	327+88 LT	1	382+42 RT	1
243+06 RT	1	328+35 LT	1	383+03 RT	1
243+40 RT	1	328+80 LT	1	384+19 RT	1
246+60 LT	1	329+25 LT	1	384+70 RT	1
246+94 LT	1	331+83 LT	1	385+59 RT	1
247+38 LT	1	332+81 LT	1	386+04 RT	1
247+77 LT	1	333+81 LT	1	386+98 RT	1
248+22 LT	1	334+85 LT	1	389+09 RT	1
248+72 LT	1	335+88 LT	1	389+37 RT	1
250+62 LT	1	348+32 RT	1	389+73 RT	1
251+55 LT	1	348+82 RT	1	390+10 RT	1
252+65 LT	1	349+30 RT	1	391+11 RT	1
253+16 LT	1	349+80 RT	1	393+24 RT	1
253+54 LT	1	350+32 RT	1	393+62 RT	1
254+38 LT	1	350+81 RT	1	393+93 RT	1
255+80 LT	1	351+34 RT	1	398+27 RT	1
256+42 LT	1	352+56 RT	1	398+85 RT	1
258+32 LT	1	353+16 RT	1	399+35 RT	1
263+21 LT	1	353+77 RT	1	399+95 RT	1
264+63 LT	1	354+35 RT	1	400+08 RT	1
265+12 LT	1	354+80 RT	1	400+84 RT	1
265+49 LT	1	355+95 RT	1	413+36 LT	1
265+90 LT	1	357+05 RT	1	413+85 LT	1
266+24 LT	1	359+41 LT	1	414+34 LT	1
270+16 RT	1	359+68 LT	1	414+79 LT	1
270+65 RT	1	360+10 LT	1	415+20 LT	1
271+24 RT	1	360+53 LT	1	415+70 LT	1
271+50 RT	1	361+00 LT	1	416+00 LT	1
281+65 LT	1	361+46 LT	1	416+40 LT	1
282+14 LT	1	361+88 LT	1	454+43 LT	1
282+66 LT	1	362+29 LT	1	455+25 LT	1
283+52 LT	1	362+71 LT	1	456+46 LT	1
284+70 LT	1	363+12 LT	1	456+91 LT	1
285+32 LT	1	363+57 LT	1	458+00 LT	1
285+78 LT	1	364+13 LT	1		
302+58 LT	1	365+04 LT	1		
305+63 LT	1	365+51 LT	1		
306+11 LT	1	369+01 LT	1		
306+57 LT	1	369+63 LT	1		
TOTAL					154

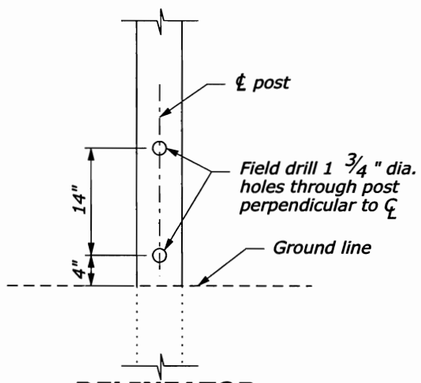
LOCATION	DELINEATOR, TYPE 2, ITEM 63309-0000 (each)
796+96 LT	1
798+41 LT	1
798+82 RT	1
799+18 LT	1
799+92 LT	1
800+42 RT	1
800+88 LT	1
801+28 RT	1
802+08 RT	1
802+10 LT	1
802+70 RT	1
803+25 RT	1
803+77 RT	1
816+00 LT	1
816+78 LT	1
817+52 LT	1
TOTAL	16

LOCATION	BOLLARD POST ITEM 61904-0000 (each)
706+00 to 706+90 RT	6
711+30 to 711+40 RT	3
TOTAL	9

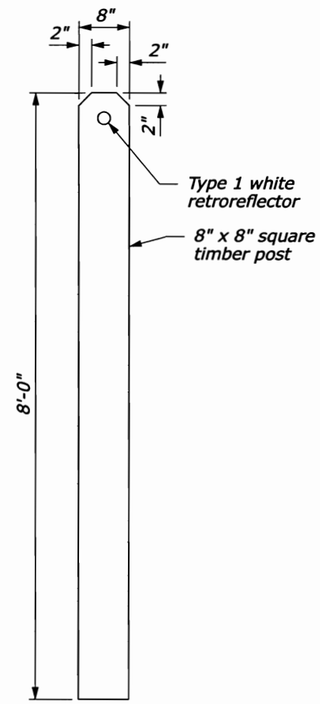
TABULATION OF DELINEATORS AND BOLLARDS

P:\FHAX00000147\0400CAD\PS8E - Roadway\DGN\SHEETS\or2214ff.dgn
Designed by: T. BENNETT 3/2008
Checked by: MH M. HOHBACH 4/22/08 3/2008
4/18/2008

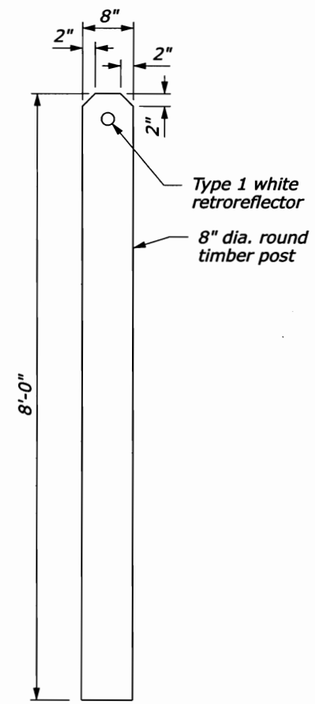
STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.2



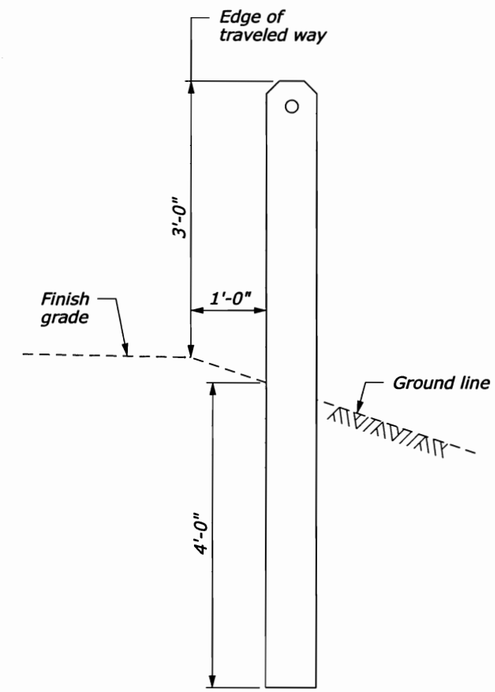
DELINEATOR BREAKAWAY DETAIL



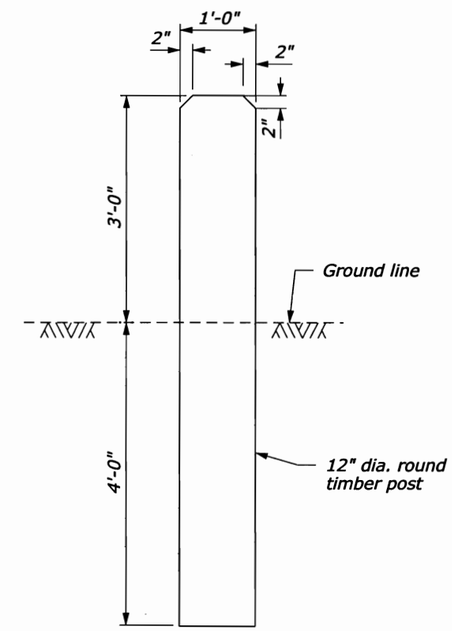
TYPE 1 DELINEATOR DETAIL
SCALE ½" = 1'



TYPE 2 DELINEATOR DETAIL
SCALE ½" = 1'



DELINEATOR INSTALLATION DETAIL
SCALE ½" = 1'



BOLLARD DETAIL
SCALE ½" = 1'

DELINEATOR AND BOLLARD DETAILS

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22l4qc.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: MJH | M. HOHBACH 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.3

PERMANENT SIGNS

LOCATION	SIGN NO.	MUTCD NUMBER	LEGEND	SIGN SIZE (in)	SIGN SYSTEM ITEM 63302-0000 (sq. ft.)	REMOVAL OF SIGNS ITEM 20301-2400 (ea.)
25+06 RT.	10	W1-2R	Curve right (symbol)	36" x 36"	9	1
	6	W13-1	35mph advisory speed plaque	24" x 24"	4	
31+09 LT.	8	W1-2L	Curve left (symbol)	36" x 36"	9	1
	6	W13-1	35mph advisory speed plaque	24" x 24"	4	
40+53 RT.	15	W1-1R	Turn right (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
46+26 LT.	14	W1-1L	Turn left (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
56+00 RT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
81+59 RT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
81+86 LT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
94+70 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
97+56 RT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	4	W13-1	35mph advisory speed plaque	24" x 24"	4	
109+00 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
115+00 RT.	16	W1-3L	Reverse turn left (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
127+20 RT.	7	W11-2	Pedestrian traffic (symbol)	36" x 36"	9	1
127+30 LT.	5	W1-4R	Reverse curve right (symbol)	36" x 36"	9	1
	6	W13-1	35mph advisory speed plaque	24" x 24"	4	
140+60 LT.	7	W11-2	Pedestrian traffic (symbol)	36" x 36"	9	1
140+75 RT.	18	W1-11L	Hairpin curve left (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
146+20 LT.	19	W1-11R	Hairpin curve right (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
147+32 RT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
166+20 LT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
166+60 RT.	15	W1-1R	Turn right (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
170+77 LT.	14	W1-1L	Turn left (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
171+55 RT.	17	W1-3R	Reverse turn right (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
182+00 LT.	17	W1-3R	Reverse turn right (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
183+35 RT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
202+88 RT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
203+15 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
235+25 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
239+40 RT.	17	W1-3R	Reverse turn right (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
246+25 LT.	18	W1-11R	Hairpin curve right (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
249+95 RT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	

PERMANENT SIGNS

LOCATION	SIGN NO.	MUTCD NUMBER	LEGEND	SIGN SIZE (in)	SIGN SYSTEM ITEM 63302-0000 (sq. ft.)	REMOVAL OF SIGNS ITEM 20301-2400 (ea.)
250+25 LT.	6	W1-1L	Turn left (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
259+00 RT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
259+15 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
274+48 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
277+30 RT.	16	W1-3L	Reverse turn left (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
285+08 LT.	16	W1-3L	Reverse turn left (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
291+38 RT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
315+13 RT.	13	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
315+39 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
330+68 LT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
334+00 RT.	15	W1-1R	Turn right (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
342+55 LT.	14	W1-1L	Turn left (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
345+32 RT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
354+93 RT.	18	W1-11L	Hairpin curve left (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
356+07 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
360+35 LT.	19	W1-11R	Hairpin curve right (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
360+50 RT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
367+60 LT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	2	W13-1	15mph advisory speed plaque	24" x 24"	4	
368+25 RT.	19	W1-11R	Hairpin curve right (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
372+53 RT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
373+00 LT.	18	W1-11L	Hairpin curve left (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
380+80 RT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	
381+45 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
394+85 RT.	17	W1-3R	Reverse turn right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
395+35 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	9	W13-1	15mph advisory speed plaque	24" x 24"	4	

TABULATION OF PERMANENT TRAFFIC CONTROL QUANTITIES

P:\F\FHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or22140a.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH | 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.4

PERMANENT SIGNS

LOCATION	SIGN NO.	MUTCD NUMBER	LEGEND	SIGN SIZE (in)	SIGN SYSTEM ITEM 63302-0000 (sq. ft.)	REMOVAL OF SIGNS ITEM 20301-2400 (ea.)
401+17 RT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
401+92 LT.	17	W1-3R	Reverse turn right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
411+70 RT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
411+75 LT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
423+95 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
424+91 RT.	15	W1-1R	Turn right (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
433+07 LT.	14	W1-1L	Turn left (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
453+15 RT.	16	W1-3L	Reverse turn left (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
462+33 LT.	16	W1-3L	Reverse turn left (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
536+40 RT.	10	W1-2R	Curve right (symbol)	36" x 36"	9	1
	6	W13-1	35mph advisory speed plaque	24" x 24"	4	
545+70 RT.	8	W1-2L	Curve left (symbol)	36" x 36"	9	1
	6	W13-1	35mph advisory speed plaque	24" x 24"	4	
552+80 RT.	8	W1-2L	Curve left (symbol)	36" x 36"	9	1
	12	W13-1	40mph advisory speed plaque	24" x 24"	4	
561+45 LT.	10	W1-2R	Curve right (symbol)	36" x 36"	9	1
	12	W13-1	40mph advisory speed plaque	24" x 24"	4	
584+08 RT.	1	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
599+55 RT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
599+94 LT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	2	W13-1	15mph advisory speed plaque	24" x 24"	4	
616+58 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20mph advisory speed plaque	24" x 24"	4	
623+75 RT.	10	W1-2R	Curve right (symbol)	36" x 36"	9	1
	6	W13-1	35mph advisory speed plaque	24" x 24"	4	
630+45 LT.	8	W1-2L	Curve left (symbol)	36" x 36"	9	1
	6	W13-1	35mph advisory speed plaque	24" x 24"	4	
631+90 RT.	10	W1-1L	Curve right (symbol)	36" x 36"	9	1
	6	W13-1	35mph advisory speed plaque	24" x 24"	4	
637+90 LT.	8	W1-2L	Curve left (symbol)	36" x 36"	9	1
	6	W13-1	35mph advisory speed plaque	24" x 24"	4	
639+82 RT.	5	W1-4R	Reverse curve right (symbol)	36" x 36"	9	1
	6	W13-1	35mph advisory speed plaque	24" x 24"	4	
649+35 LT.	5	W1-4R	Reverse curve right (symbol)	36" x 36"	9	1
	6	W13-1	35mph advisory speed plaque	24" x 24"	4	
683+43 RT.	14	W1-1L	Turn left (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
689+70 LT.	15	W1-1R	Turn right (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
689+70 RT.	15	W1-1R	Turn right (symbol)	36" x 36"	9	
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
696+70 LT.	14	W1-1L	Turn left (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
697+97 RT.	15	W1-1R	Turn right (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	

PERMANENT SIGNS

LOCATION	SIGN NO.	MUTCD NUMBER	LEGEND	SIGN SIZE (in)	SIGN SYSTEM ITEM 63302-0000 (sq. ft.)	REMOVAL OF SIGNS ITEM 20301-2400 (ea.)
702+67 RT.	16	W1-5L	Reverse turn left (symbol)	36" x 36"	9	1
	2	W13-1	25mph advisory speed plaque	24" x 24"	4	
703+05 LT.	14	W1-1L	Turn left (symbol)	36" x 36"	9	1
	3	W13-1	30mph advisory speed plaque	24" x 24"	4	
711+55 LT.	16	W1-3L	Reverse turn left (symbol)	36" x 36"	9	1
	2	W13-1	20mph advisory speed plaque	24" x 24"	4	
712+10 RT.	17	W1-3R	Reverse turn right (symbol)	36" x 36"	9	1
	3	W13-1	30 mph advisory speed plaque	24" x 24"	4	
726+70 LT.	17	W1-3R	Reverse turn right (symbol)	36" x 36"	9	1
	3	W13-1	30 mph advisory speed plaque	24" x 24"	4	
734+88 RT.	11	Special 1/	Three sisters view point	60" x 36"	15	
761+25 LT.	11	Special 1/	Three sisters view point	60" x 36"	15	
796+73 RT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20 mph advisory speed plaque	24" x 24"	4	
809+25 LT.	13	W1-5L	Winding road left (symbol)	36" x 36"	9	1
	4	W13-1	20 mph advisory speed plaque	24" x 24"	4	
820+00 RT.	7	W11-2	Pedestrian traffic	36" x 36"	9	1
826+00 LT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	4	W13-1	20 mph advisory speed plaque	24" x 24"	4	
827+94 LT.	7	W11-2	Pedestrian traffic	36" x 36"	9	1
829+05 RT.	1	W1-5R	Winding road right (symbol)	36" x 36"	9	1
	9	W13-1	15 mph advisory speed plaque	24" x 24"	4	
TOTAL					1,223	91

LOCATION	SNOWPOLE HOLDER REMOVE AND RESET ITEM 63318-1000 (each)
820+50 to 821+80 LT	7
823+70 to 824+80 LT	5
TOTAL	12

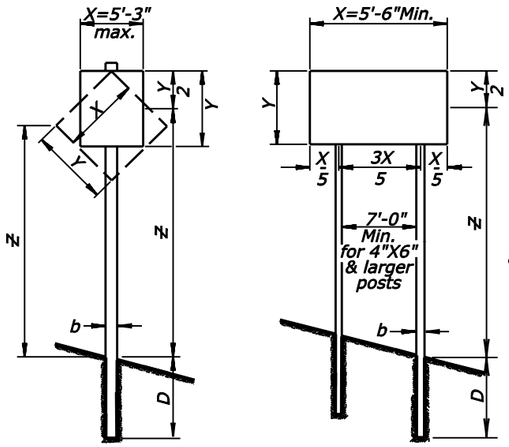
FOOTNOTE:

1/ See detail Sheet J.5.

TABULATION OF PERMANENT TRAFFIC CONTROL QUANTITIES

P:\F\FHAX0000014710400CAD\PS&E - Roadway\DGN\SHEETS\or2214ps.dgn | Designed by: T. BENNETT 3/2008 | Checked by: M. HOHBACH 3/2008 | 4/18/2008 | 4/23/08

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.5



for 4"X6" & larger posts

X and Y are the dimensions of the rectangle enclosing all the signs.
Z is the height from groundline to the midpoint of the sign rectangle at the longest post.
D is the minimum post imbedment depth.
b is the smaller dimension of the post.

1./ 4" x 6" Posts shall have 1½" diameter transverse holes drilled through them at 4" and 18" above ground level. For Multi-post installations, drill additional 1½" diameter transverse

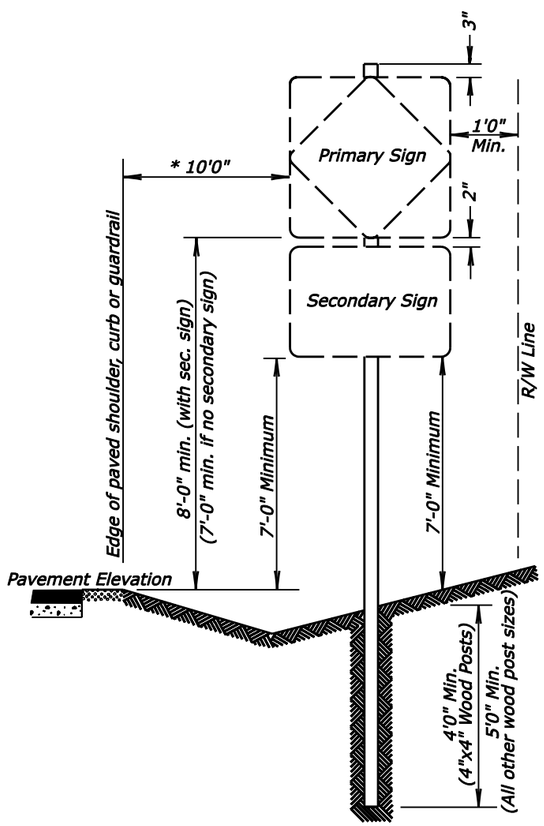
2./ 6"X6" Posts shall have 2" diameter transverse holes drilled through them at 4" and 18" above ground level. For Multi-post installations, drill additional 2" diameter transverse holes in each post at 4" and 18" below the bottom edge of the sign.

3./ 6"X8" Posts shall have 3" diameter transverse holes drilled through them at 4" and 18" above ground level. For Multi-post installations, drill additional 3" diameter transverse holes in each post at 4" and 18" below the bottom edge of the sign.

		(X•Y•Z) in FT 3			
	NO. OF POSTS	1	2	3	D
POST SIZE	4"X4"	80	160	240	4'-0"
	1/ 4"X6"	135	270	405	5'-0"
	2/ 6"X6"	205	410	615	5'-0"
	3/ 6"X8"	380	760	1140	5'-0"
		BSP	BSP	BSP	

POST SELECTION

Given a sign 8 ft. wide and 4 ft. high mounted 10 ft. above the ground.
X=8, Y=4, Z=12; (X) (Y) (Z) = 384
Use two 6"X6" posts.
Values shown in the table for the product X Y Z are the maximum permitted.

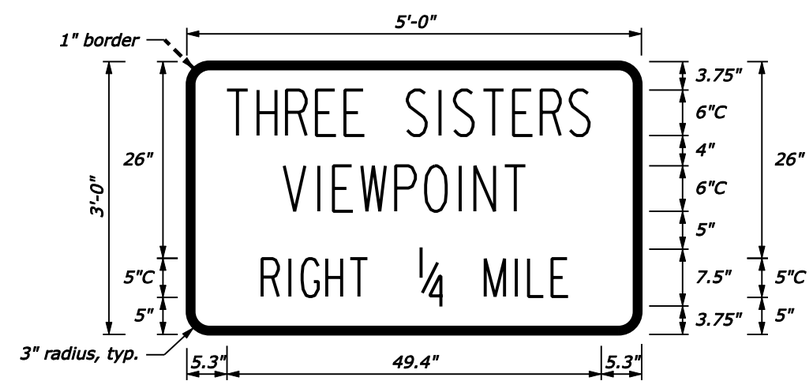


General Installation Notes:

1. Signing details shown on this sheet are intended to convey "typical" conditions only. Individual locations may require installation different from those shown.
2. In order to develop the maximum moment resistance of the 4" x 6" and the 6" x 8" wood post, the longer post dimension should be at right angles to the sign face. If signs are installed on more than one side of the post, the longer post dimension should be at right angle to the side with the largest area of sign face.

Vertical Clearance Notes:

1. In rural areas the secondary sign may be installed at 5'-0" minimum provided the sign is located outside the clear zone and away from pedestrian conflicts.
2. Where any sign is located over a bike route, the minimum mounting height is 8'-0" from ground line.



Background
Type: ASTM Type III or IV
Color: Brown

Legend/Border
Type: ASTM TYpe III or IV
Color: White

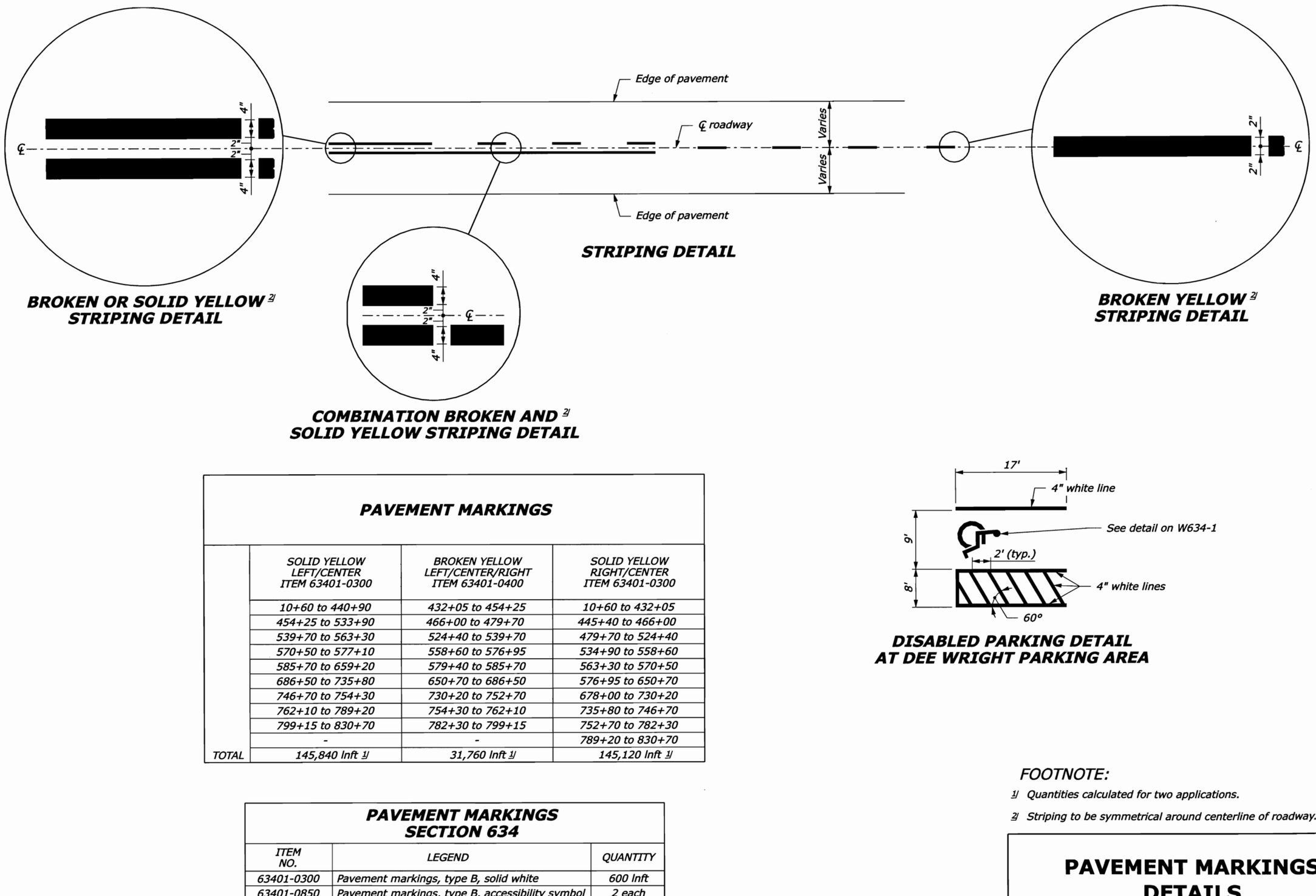
SPECIAL SIGN 11 DETAIL

PERMANENT SIGNING DETAILS

3/2008 | M. HOHBACH | Designed by: | $DATE$
3/2008 | Checked by: | T. BENNETT | $PATH$

or2214pa.dgn 6/30/2008 10:19:22 AM

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.6



PAVEMENT MARKINGS

	SOLID YELLOW LEFT/CENTER ITEM 63401-0300	BROKEN YELLOW LEFT/CENTER/RIGHT ITEM 63401-0400	SOLID YELLOW RIGHT/CENTER ITEM 63401-0300
	10+60 to 440+90	432+05 to 454+25	10+60 to 432+05
	454+25 to 533+90	466+00 to 479+70	445+40 to 466+00
	539+70 to 563+30	524+40 to 539+70	479+70 to 524+40
	570+50 to 577+10	558+60 to 576+95	534+90 to 558+60
	585+70 to 659+20	579+40 to 585+70	563+30 to 570+50
	686+50 to 735+80	650+70 to 686+50	576+95 to 650+70
	746+70 to 754+30	730+20 to 752+70	678+00 to 730+20
	762+10 to 789+20	754+30 to 762+10	735+80 to 746+70
	799+15 to 830+70	782+30 to 799+15	752+70 to 782+30
	-	-	789+20 to 830+70
TOTAL	145,840 lnft 1/	31,760 lnft 1/	145,120 lnft 1/

PAVEMENT MARKINGS SECTION 634

ITEM NO.	LEGEND	QUANTITY
63401-0300	Pavement markings, type B, solid white	600 lnft
63401-0850	Pavement markings, type B, accessibility symbol	2 each

FOOTNOTE:

1/ Quantities calculated for two applications.

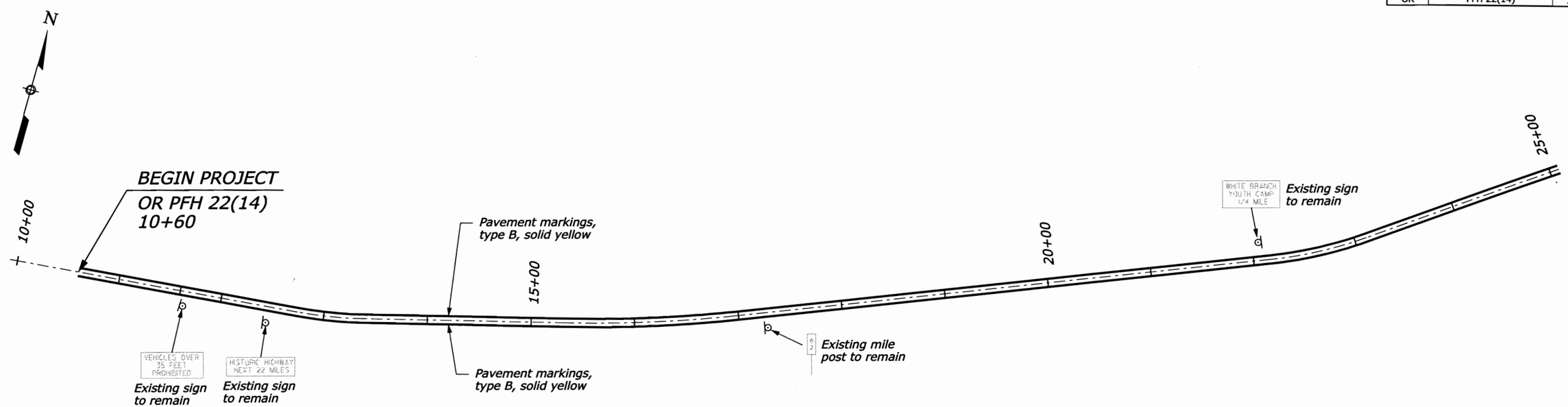
2/ Striping to be symmetrical around centerline of roadway.

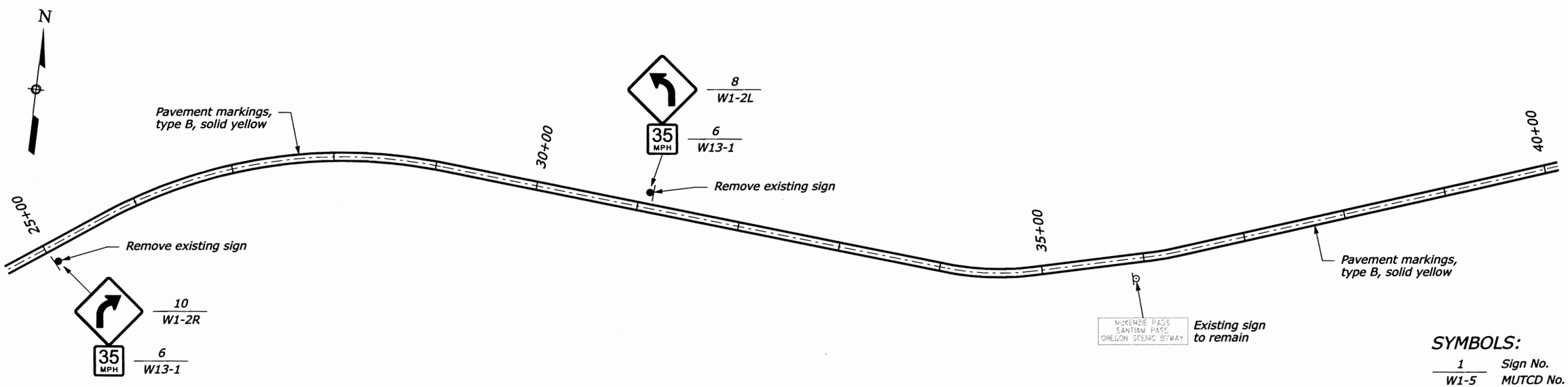
PAVEMENT MARKINGS DETAILS

T. BENNETT | 3/2008 | Checked by: M. HOHBACH | 4/22/08 3/2008 | Designed by: 4/18/2008

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pa.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.7





SYMBOLS:

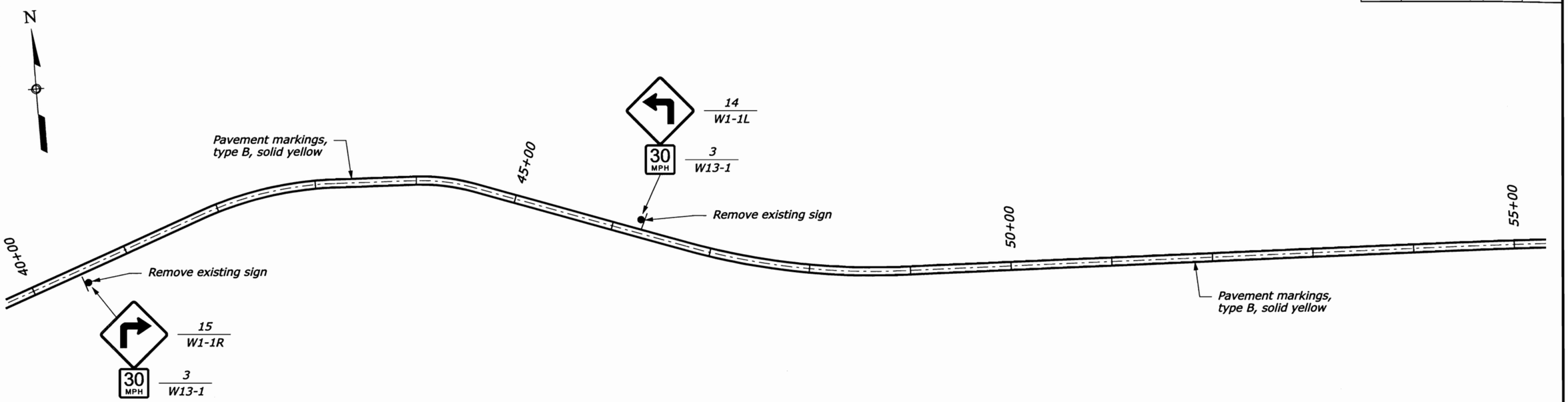
1	Sign No.
W1-5	MUTCD No.

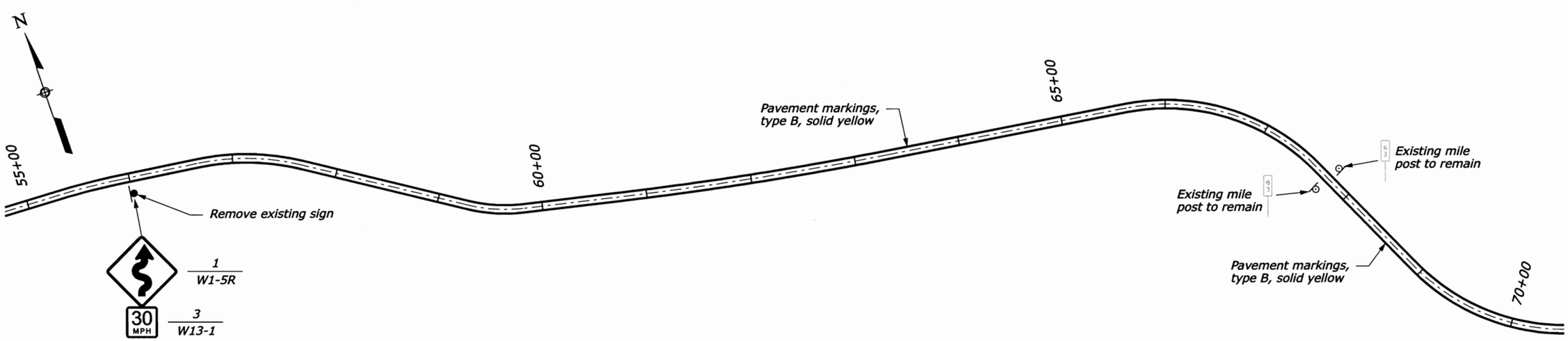
Note:
1. Stationing is approximate and may require field adjustment.

PERMANENT TRAFFIC CONTROL PLAN

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pb.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH | 4/22/08 | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.8





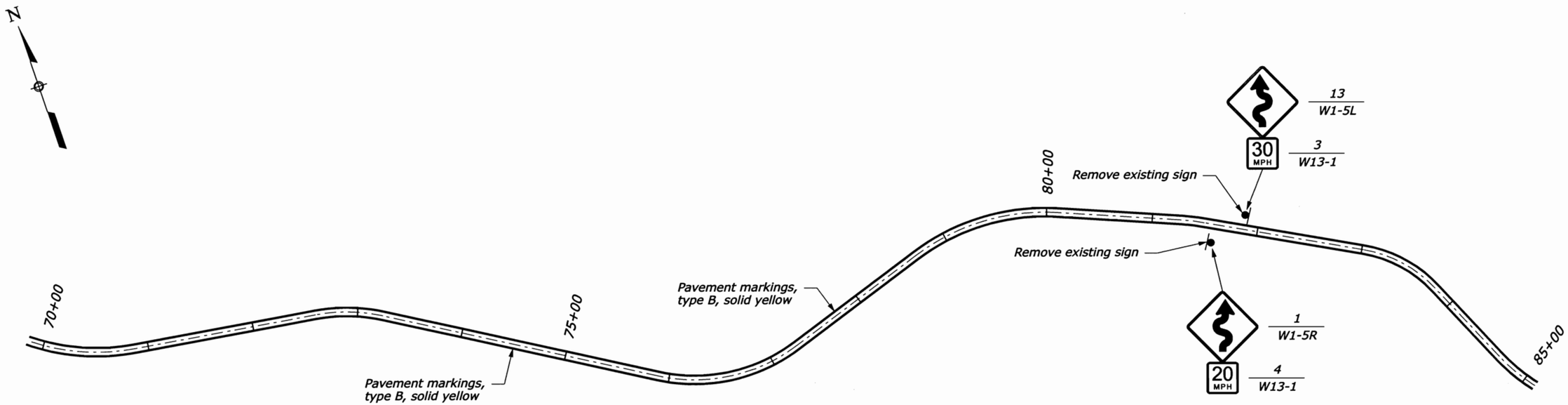
SYMBOLS:

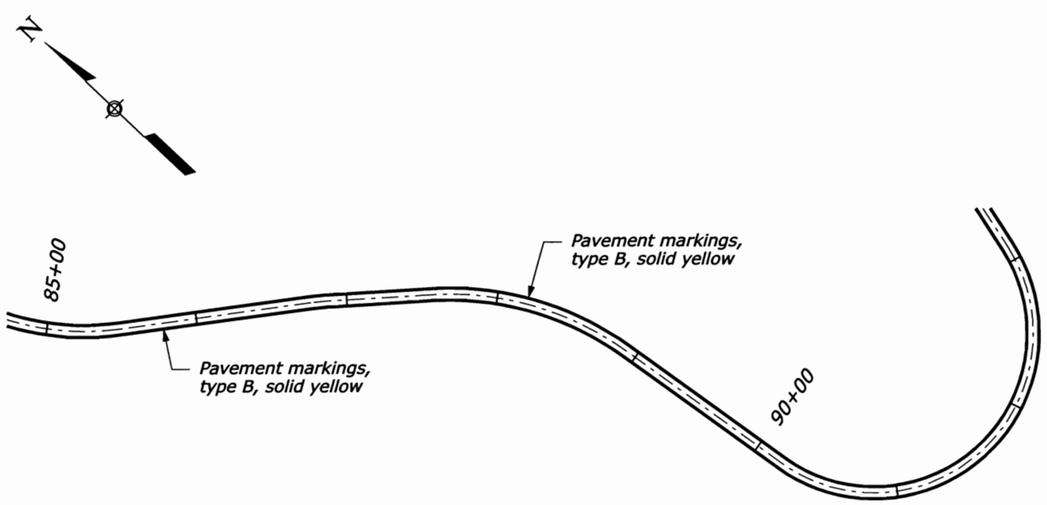
1	Sign No.
W1-5	MUTCD No.

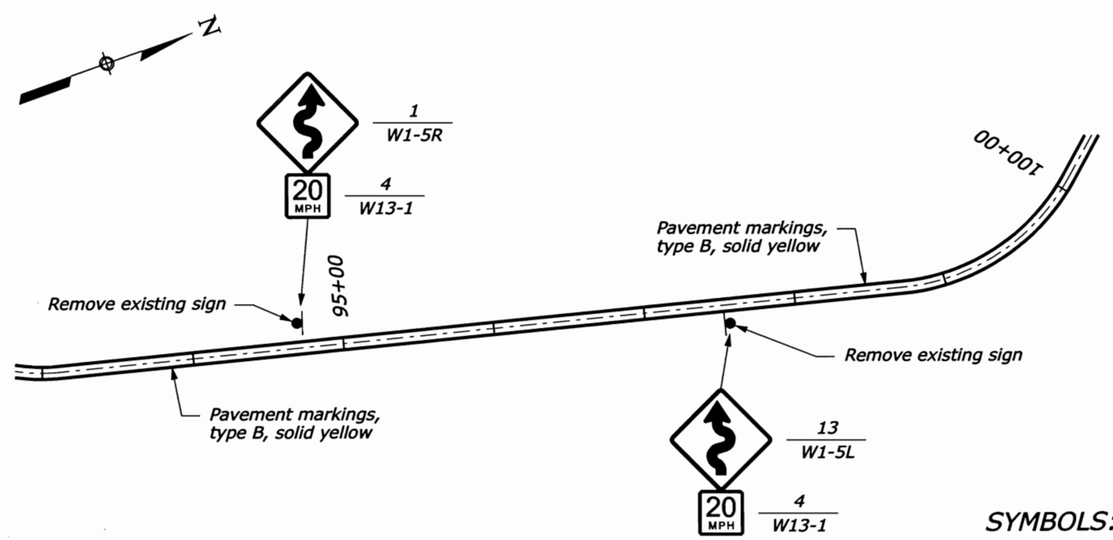
PERMANENT TRAFFIC CONTROL PLAN

P:\FHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pb.dgn | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH | 3/2008 | 4/18/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.9







SYMBOLS:

1	Sign No.
W1-5	MUTCD No.

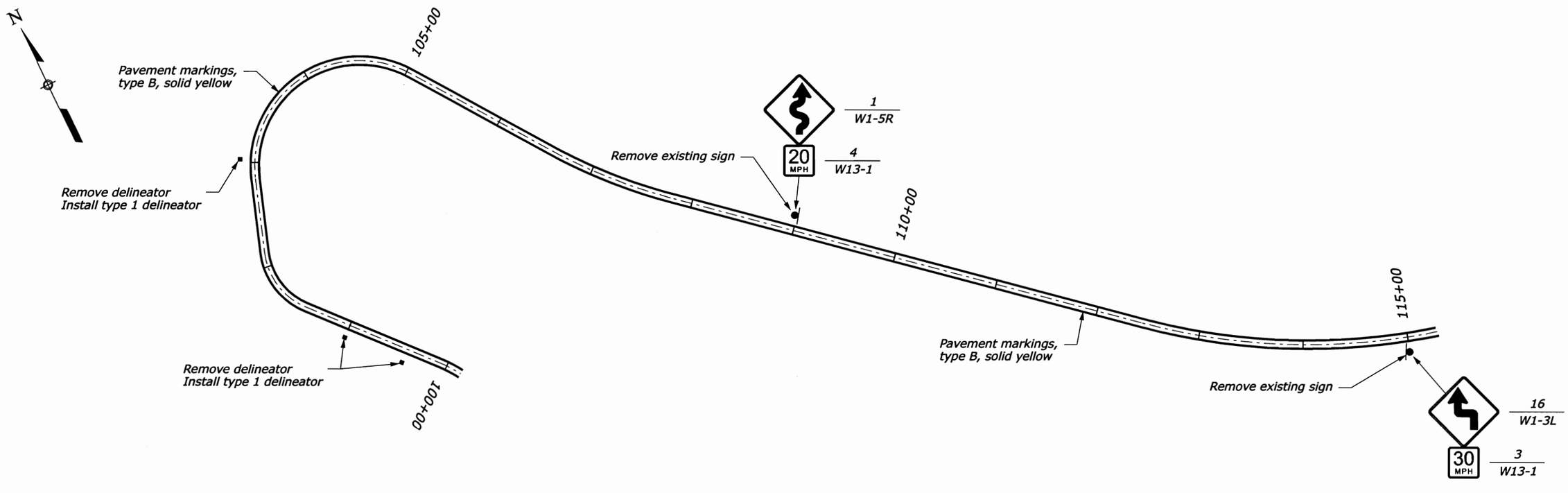
PERMANENT TRAFFIC CONTROL PLAN

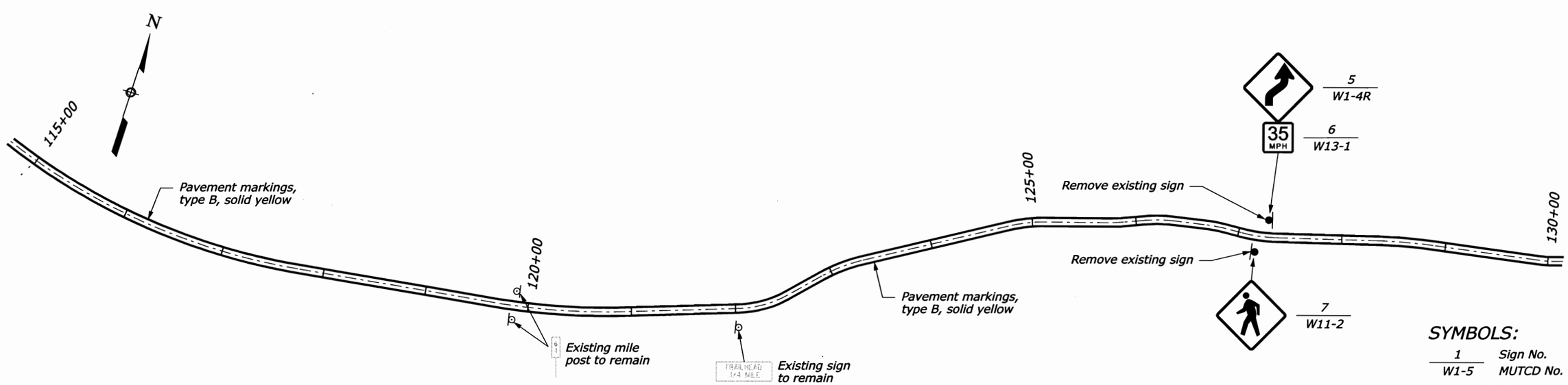
Designed by: 4/18/2008 P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pb.dgn

Checked by: 3/2008 T. BENNETT

M. HOHBACH 4/22/08 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.10





SYMBOLS:

1 / W1-5 — Sign No. / MUTCD No.

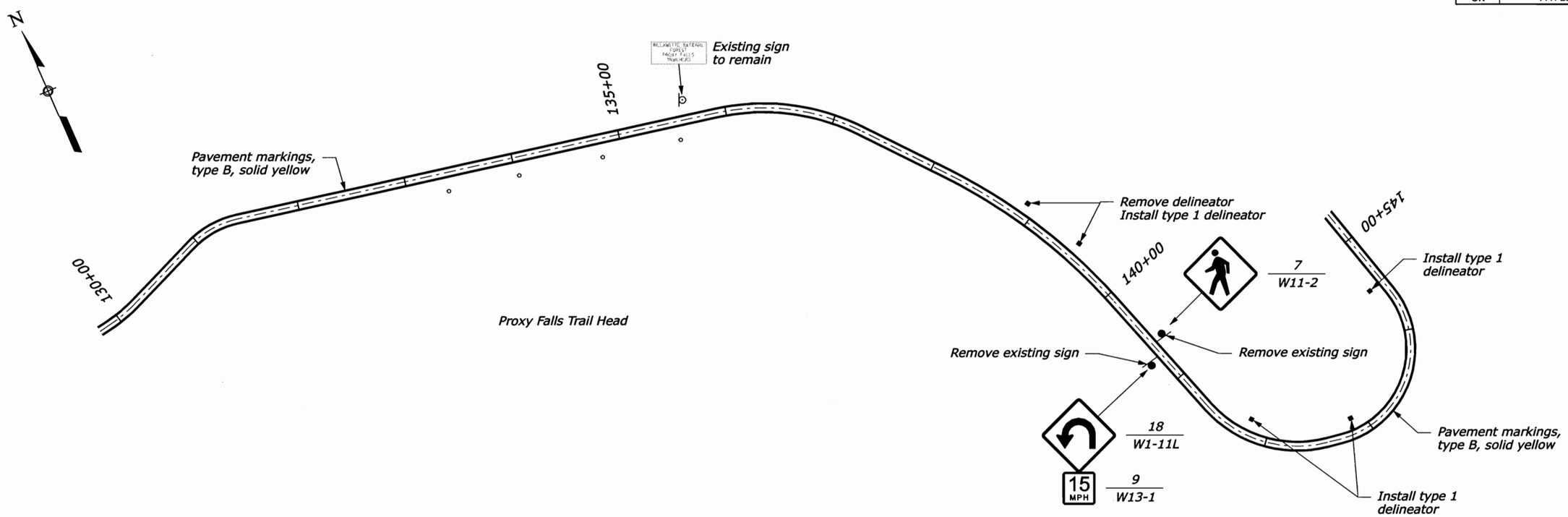
▪ Proposed delineator

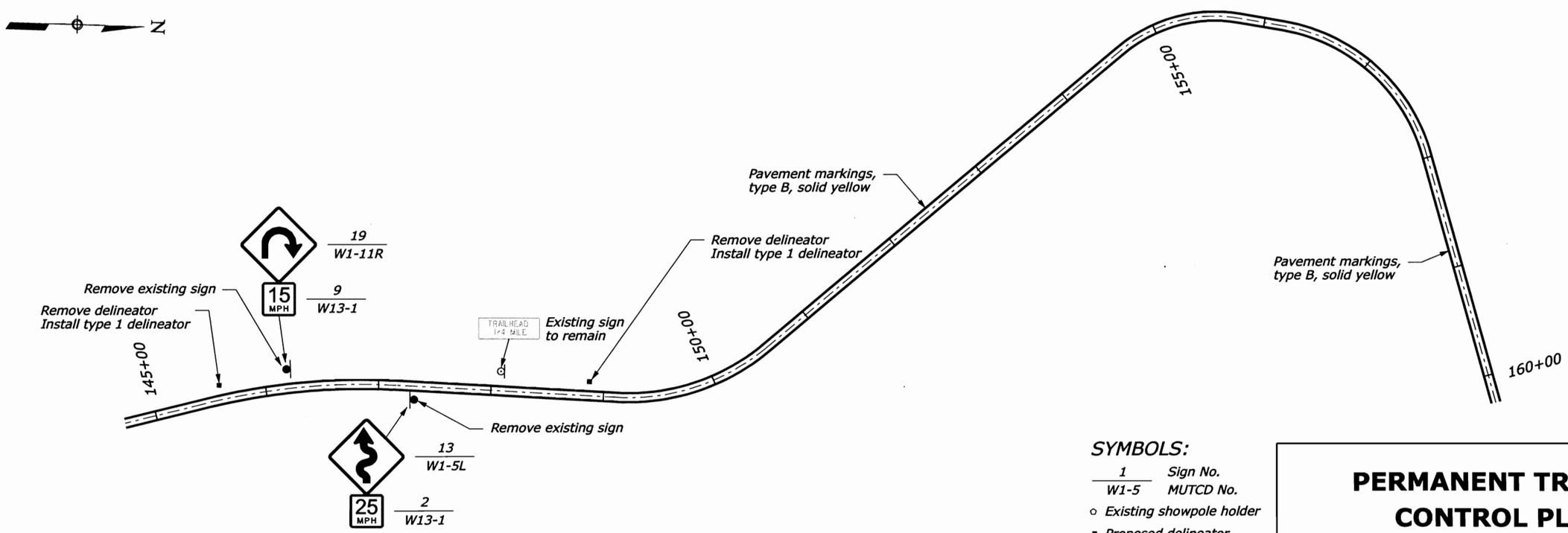
PERMANENT TRAFFIC CONTROL PLAN

Designed by: T. BENNETT 3/2008 | Checked by: M. HOHBACH 4/22/08 3/2008 | 4/18/2008

P:\F\FHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pb.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.11





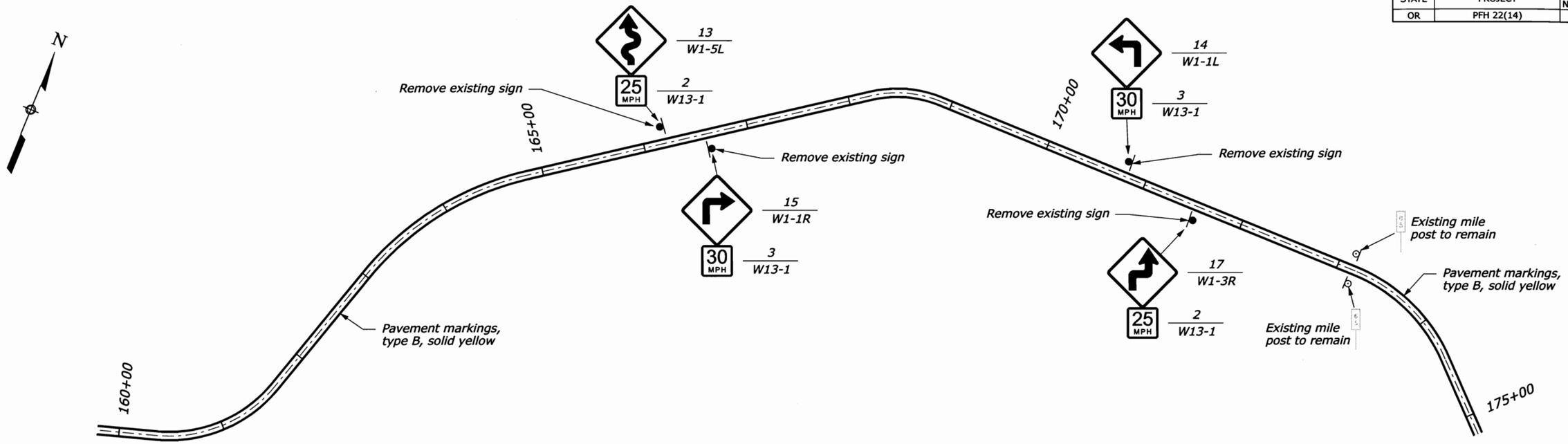
SYMBOLS:

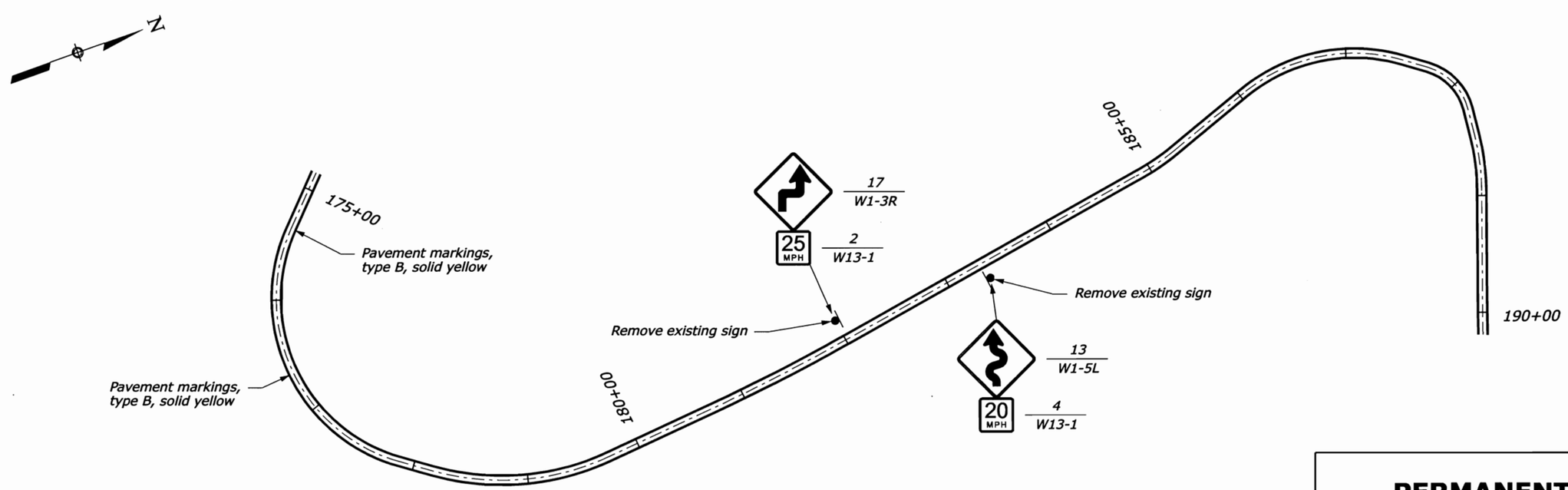
1 / W1-5	Sign No. / MUTCD No.
○	Existing showpole holder
▪	Proposed delineator

PERMANENT TRAFFIC CONTROL PLAN

Designed by: T. BENNETT 3/2008
Checked by: M. HOHBACH 4/22/08 3/2008
4/18/2008
P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pb.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.12





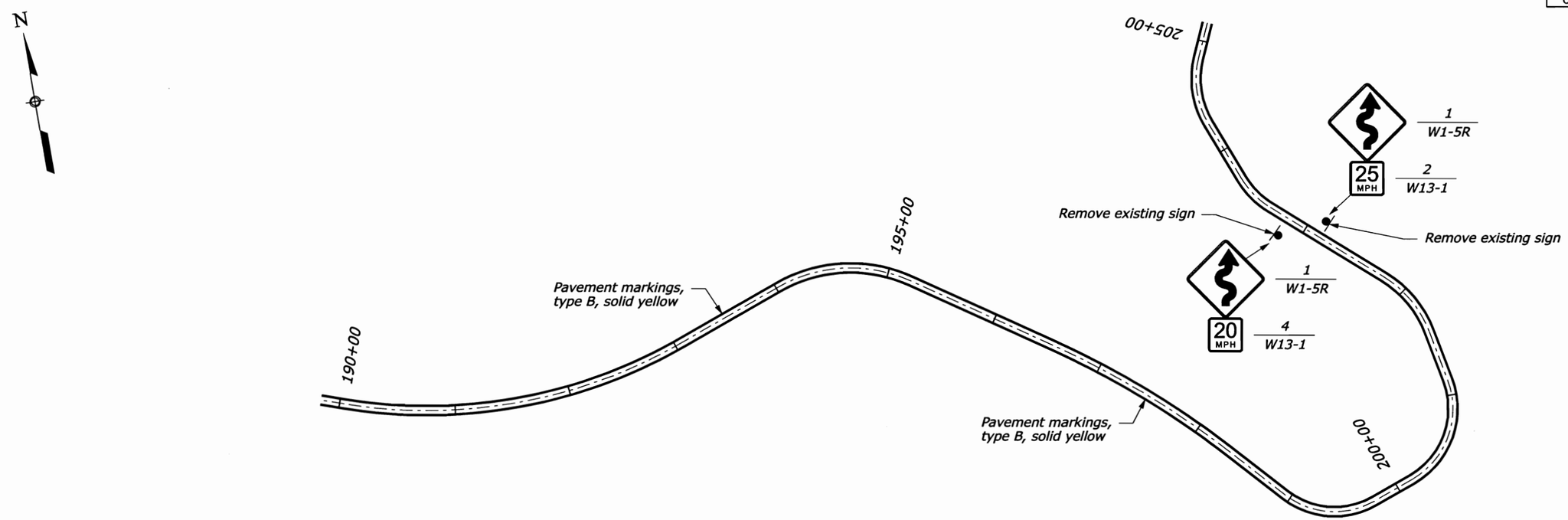
SYMBOLS:

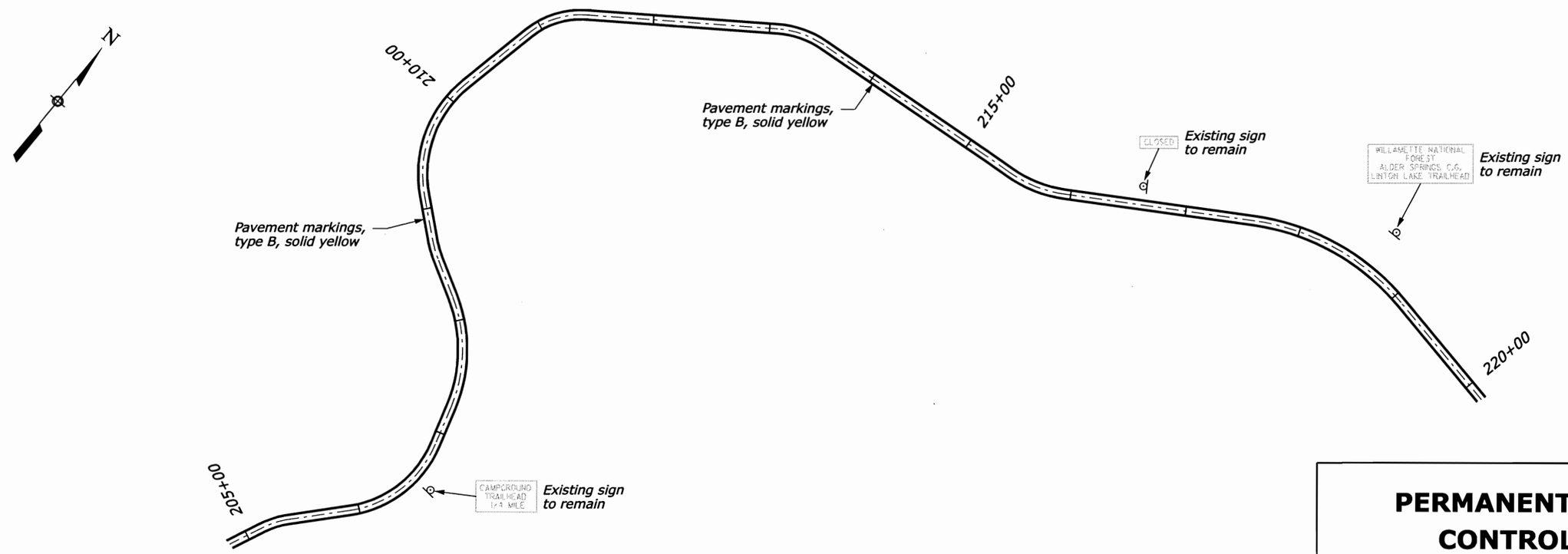
1	Sign No.
W1-5	MUTCD No.

PERMANENT TRAFFIC CONTROL PLAN

P:\F\FHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pb.dgn | Designed by: T. BENNETT 3/2008 | Checked by: M. HOHBACH 3/2008 | 4/18/2008 | 4/22/08

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.13





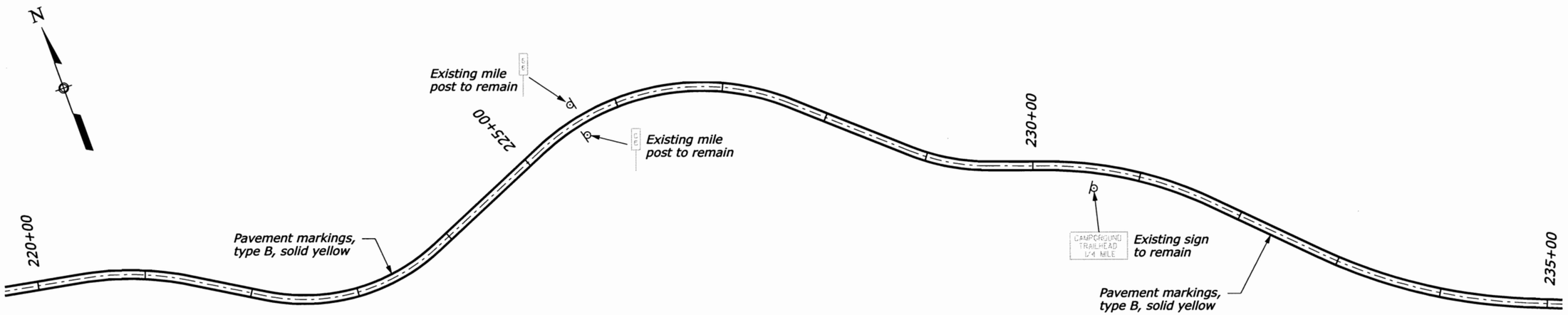
SYMBOLS:

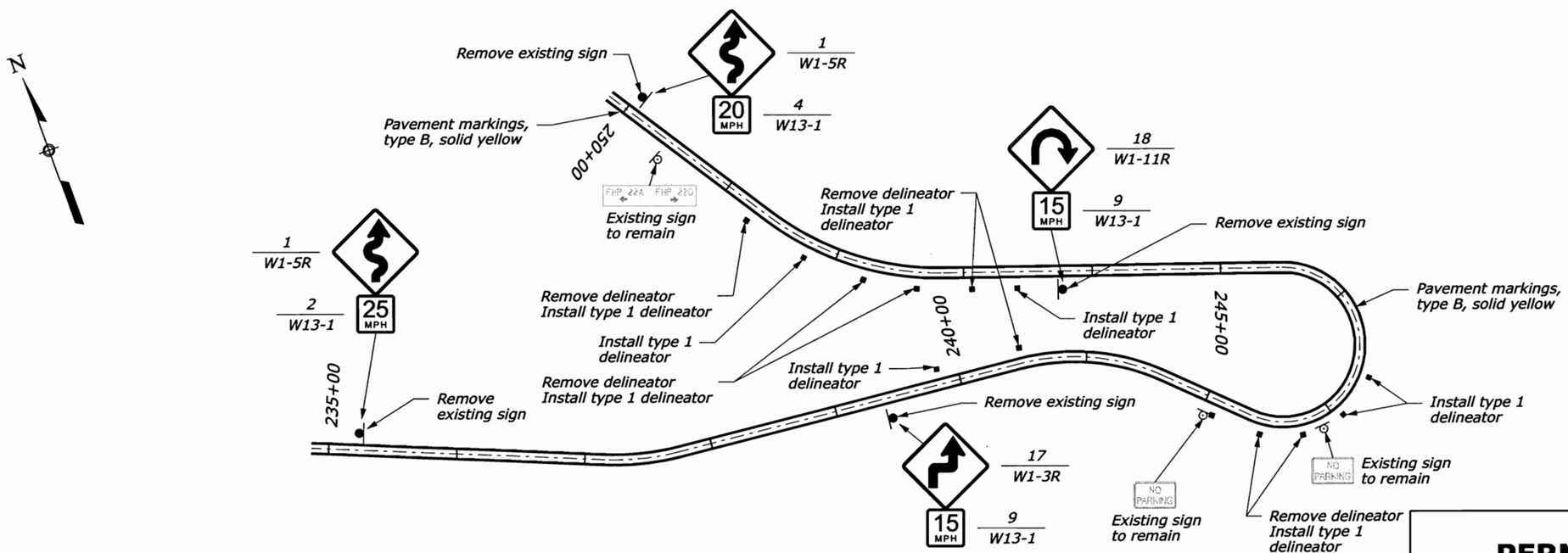
1	Sign No.
W1-5	MUTCD No.

PERMANENT TRAFFIC CONTROL PLAN

P:\F\FHAX0000014710400CAD\PS&E - Roadway\DGN\SHEETS\or2214pb.dgn | Designed by: T. BENNETT 3/2008 | Checked by: M. HOHBACH 3/2008 | 4/18/2008 | 4/22/08

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.14





SYMBOLS:

1	Sign No.
W1-5	MUTCD No.

▪ Proposed delineator

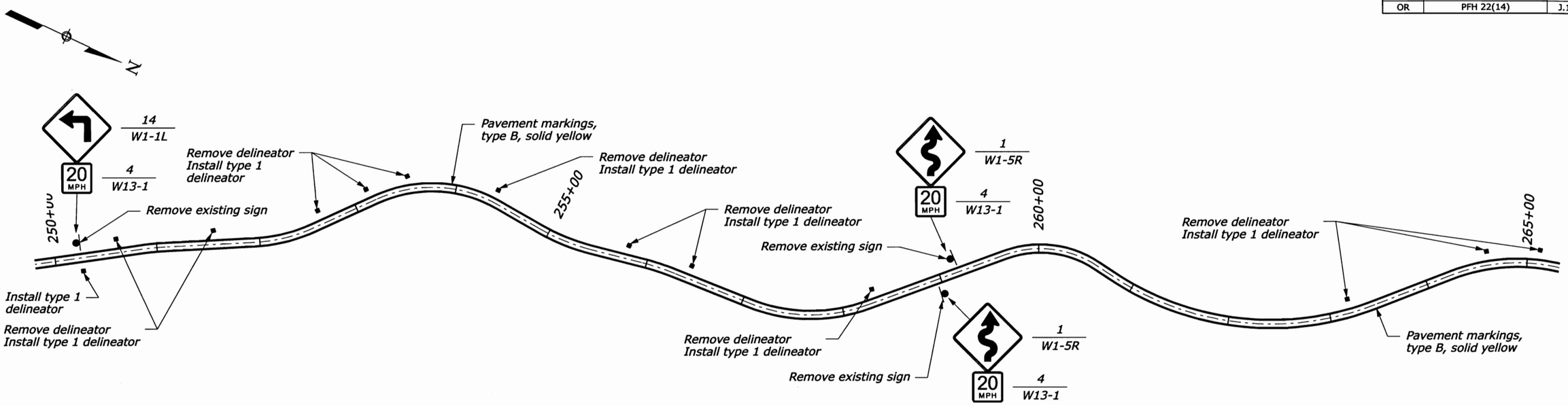
PERMANENT TRAFFIC CONTROL PLAN

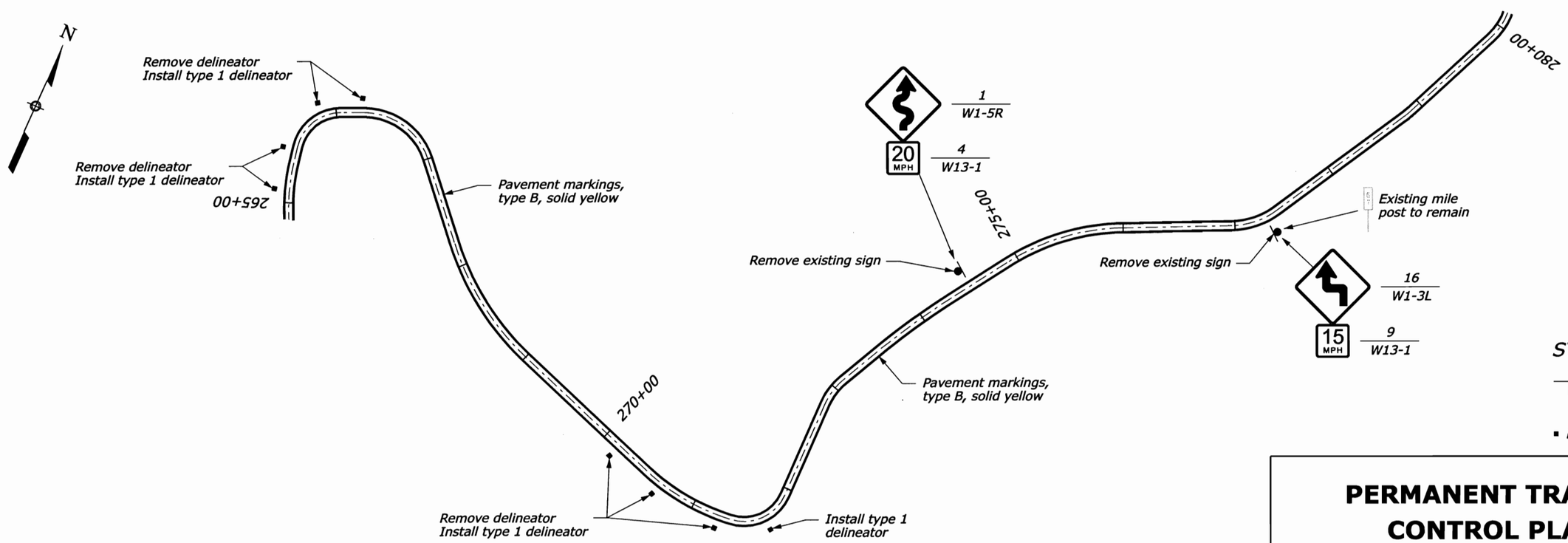
T. BENNETT	3/2008	Checked by: M. HOHBACH 4/22/08	3/2008

4/18/2008	Designed by:

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pc.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.15





SYMBOLS:

1	Sign No.
W1-5	MUTCD No.

▪ Proposed delineator

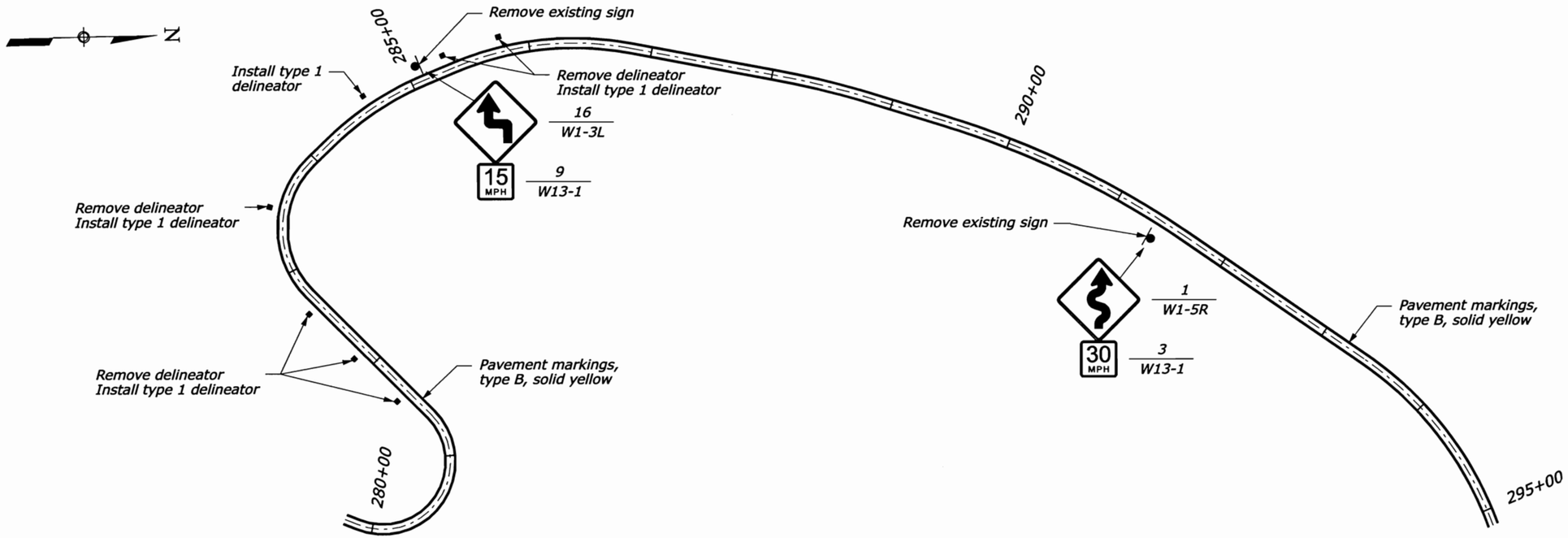
PERMANENT TRAFFIC CONTROL PLAN

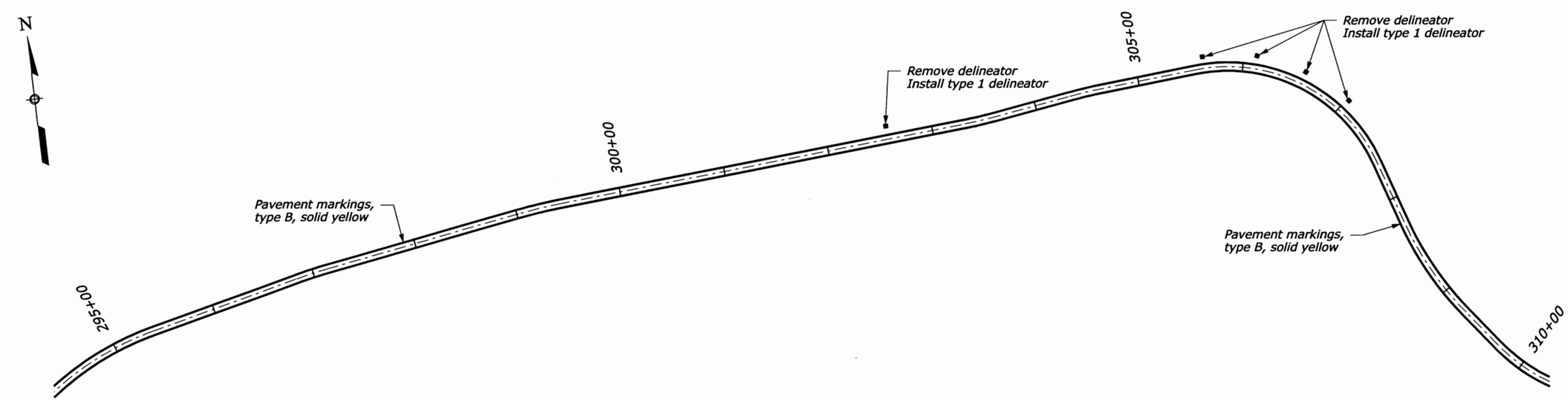
T. BENNETT | 3/2008 | Checked by: HJH | M. HOHBACH 4/22/08 | 3/2008

4/18/2008 | Designed by:

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pc.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.16





SYMBOLS:

1	Sign No.
W1-5	MUTCD No.

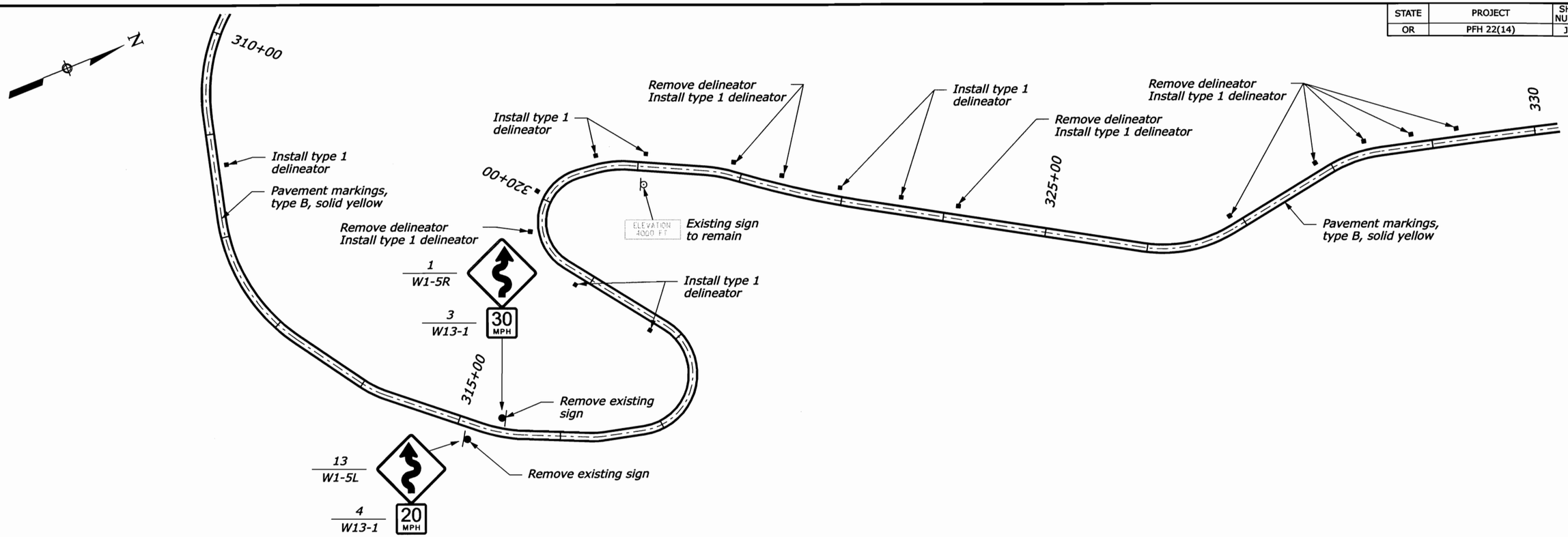
▪ Proposed delineator

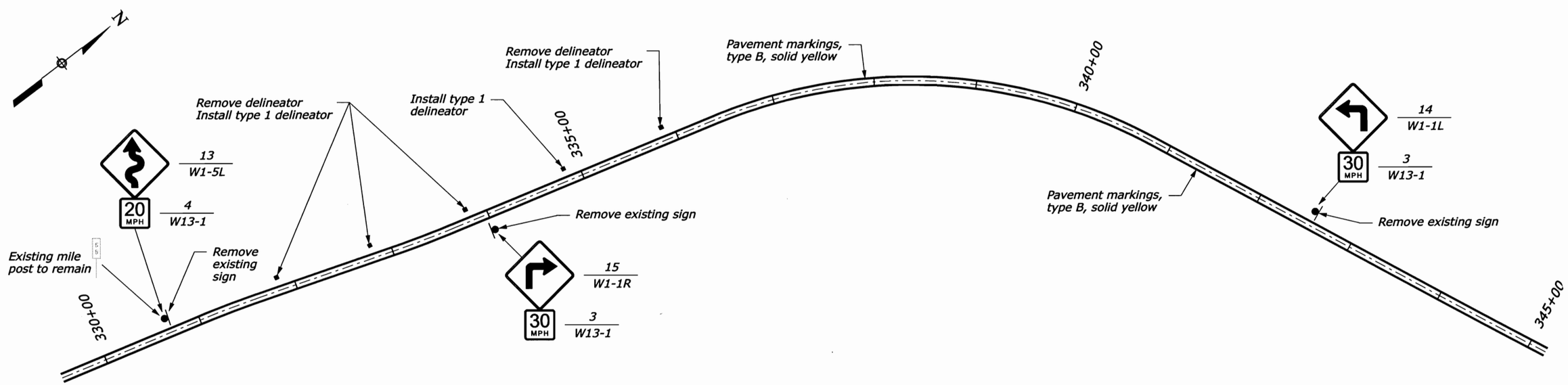
PERMANENT TRAFFIC CONTROL PLAN

T. BENNETT 3/2008 | Checked by: MJH 3/2008 | M. HOHBACH 4/22/08 | Designed by: 4/18/2008

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pc.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.17





SYMBOLS:

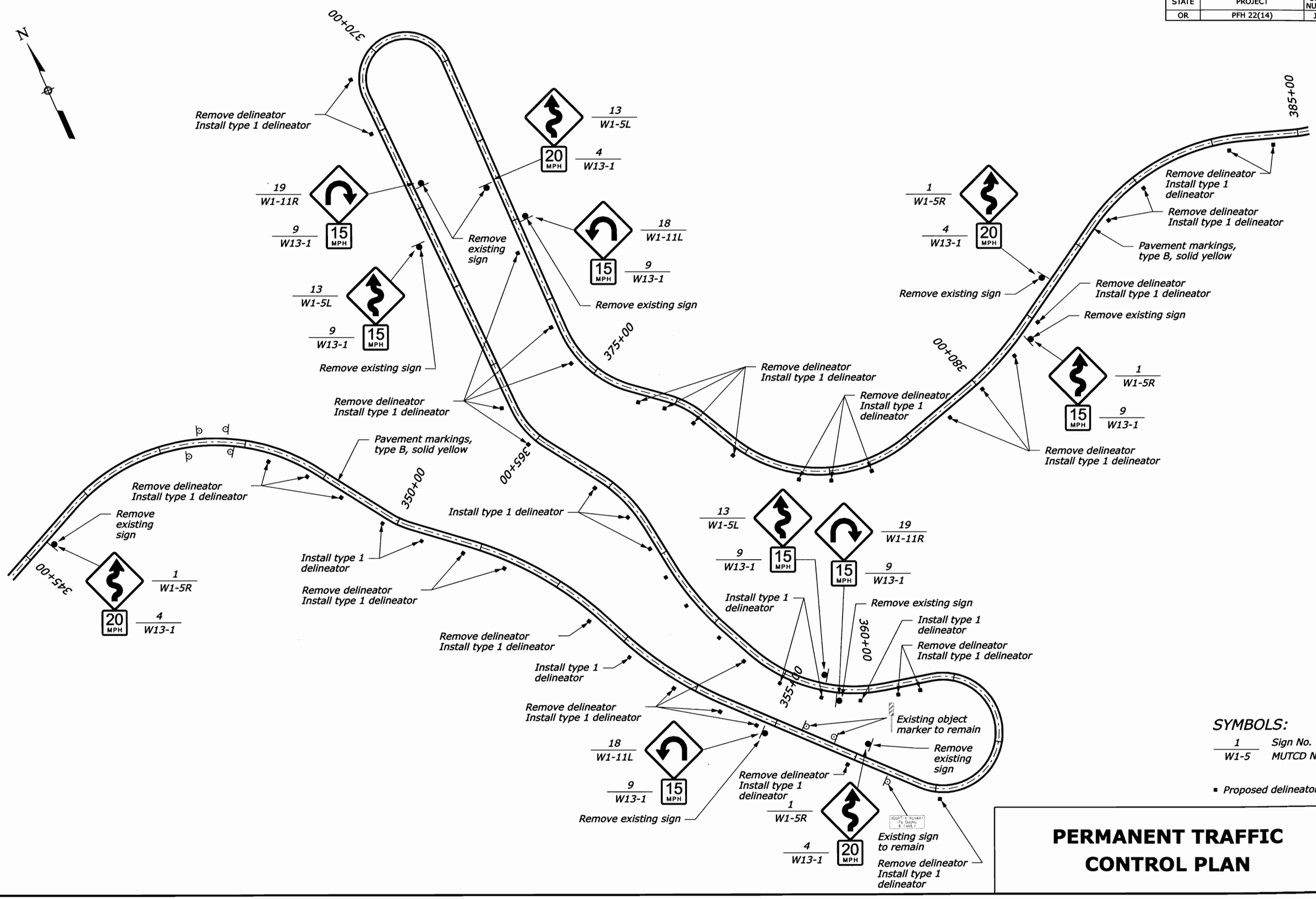
1 / W1-5 — Sign No. / MUTCD No.

▪ Proposed delineator

PERMANENT TRAFFIC CONTROL PLAN

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pc.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH | 3/2008 | 4/22/08

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.18



SYMBOLS:

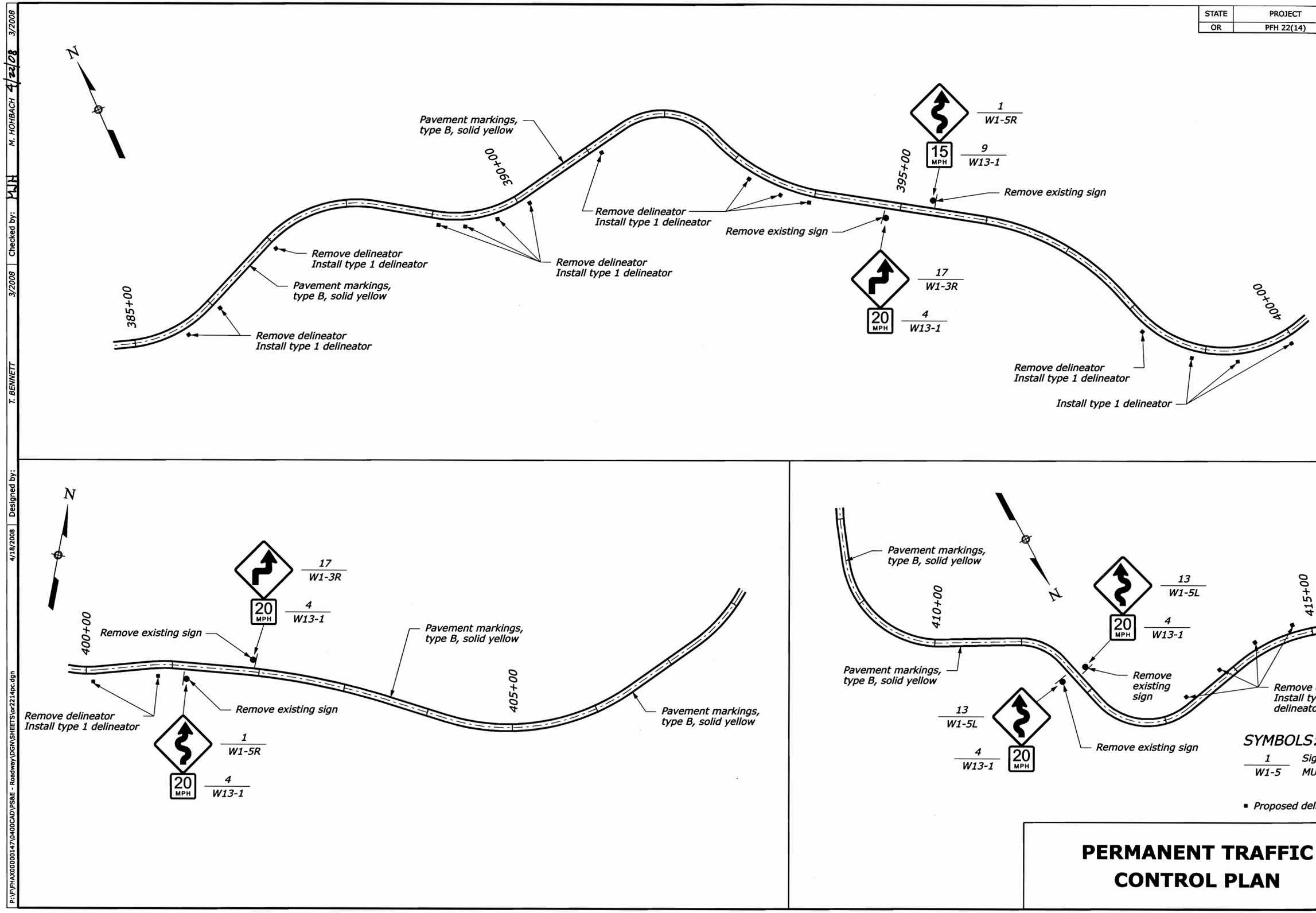
1	Sign No.
W1-5	MUTCD No.

▪ Proposed delineator

PERMANENT TRAFFIC CONTROL PLAN

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pc.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: MJH | M. HOHBACH | 4/22/08 | 3/2008

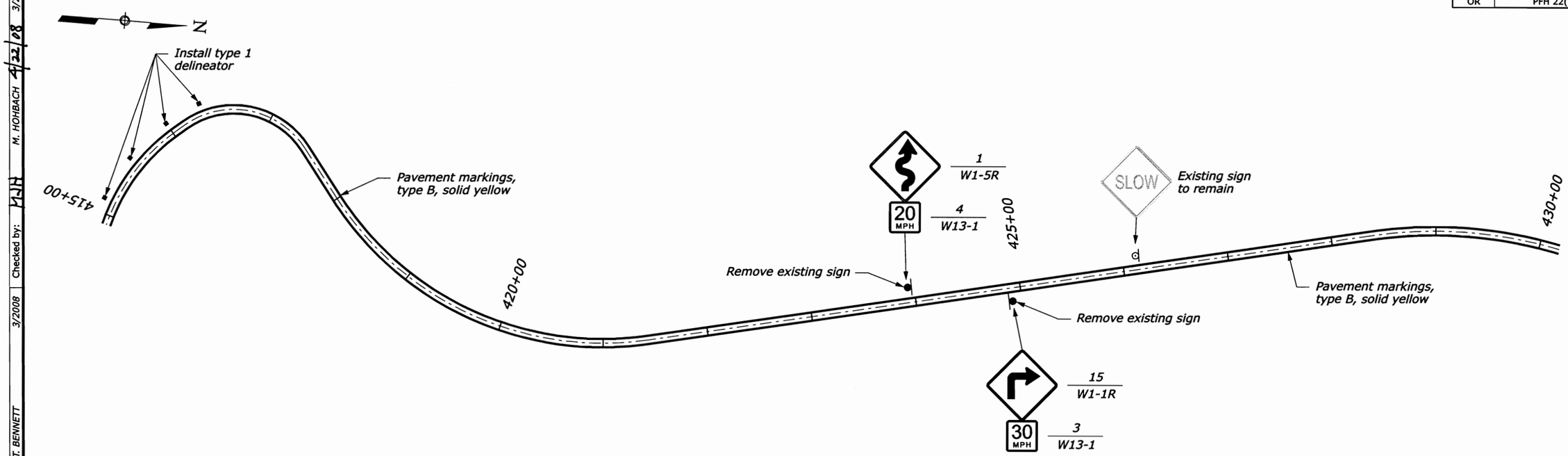
STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.19

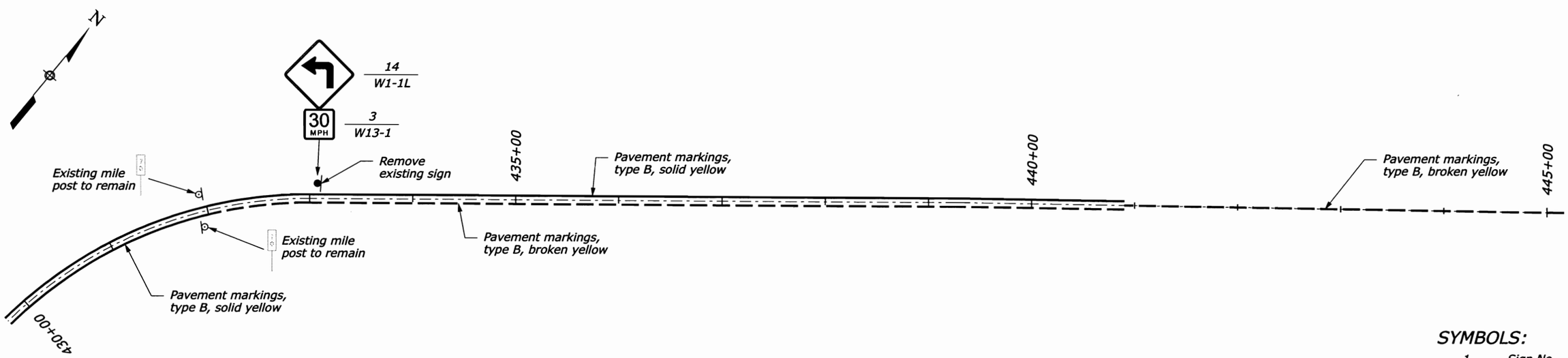


PERMANENT TRAFFIC CONTROL PLAN

P:\FHWA\0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pc.dgn | Designed by: T. BENNETT 3/2008 | Checked by: M. HOHBACH 3/2008 | 4/18/2008 | 4/22/08

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.20





SYMBOLS:

1	Sign No.
W1-5	MUTCD No.

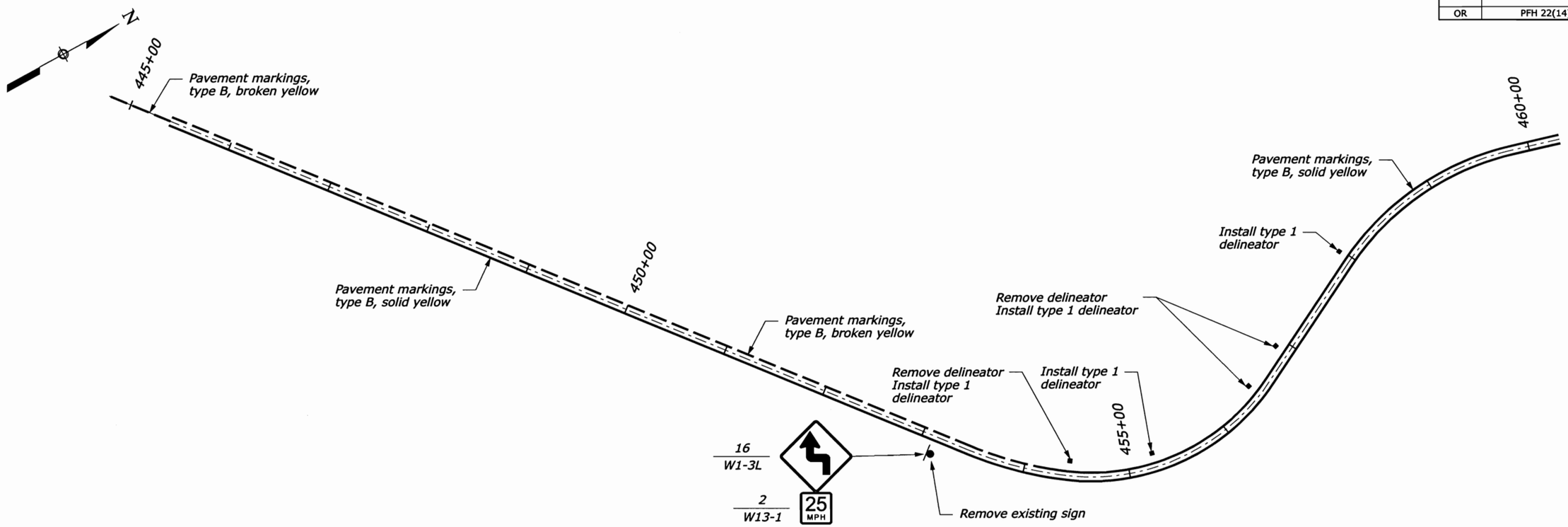
▪ Proposed delineator

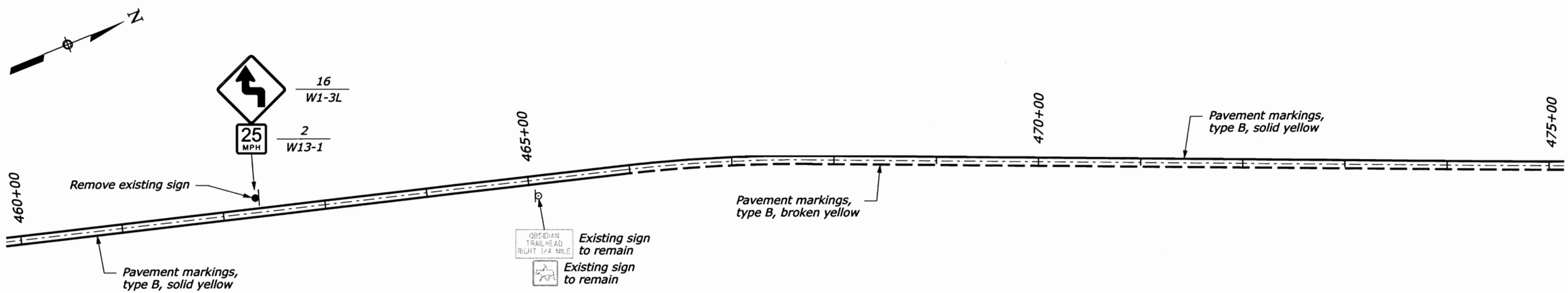
PERMANENT TRAFFIC CONTROL PLAN

Designed by: T. BENNETT 3/2008 | Checked by: M. HOHBACH 3/2008 | 4/18/2008 | 4/22/08

P:\F\HAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pc.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.21





SYMBOLS:

1	Sign No.
W1-5	MUTCD No.

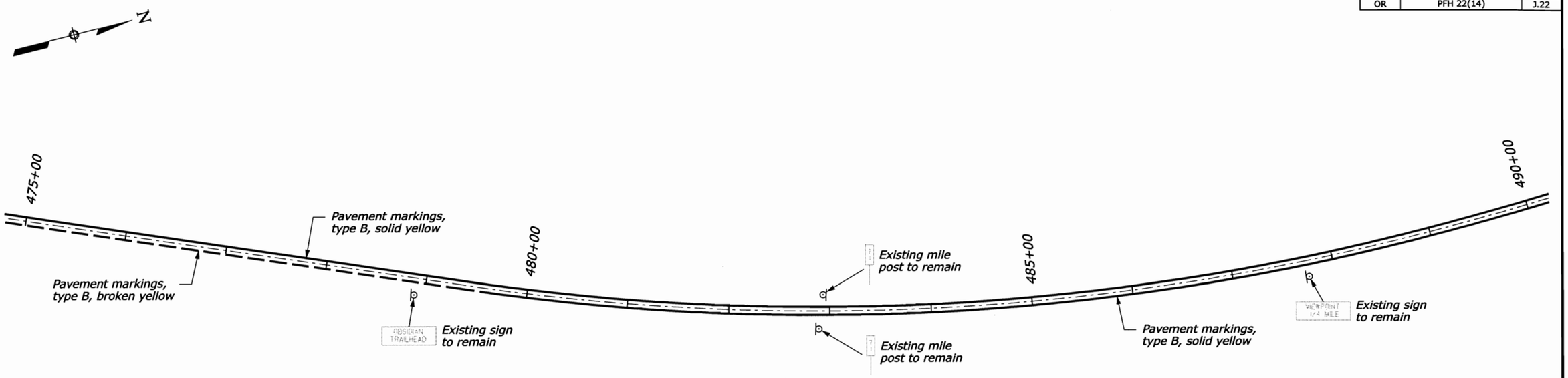
▪ *Proposed delineator*

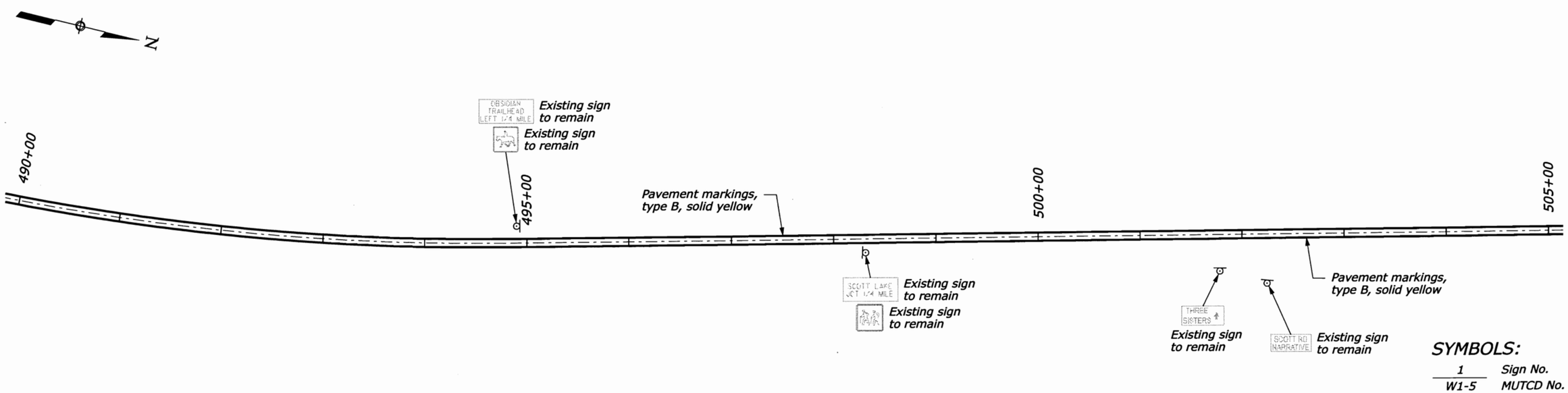
PERMANENT TRAFFIC CONTROL PLAN

Designed by: T. BENNETT | Checked by: M. HOHBACH | 3/2008 | 4/22/08 | 3/2008 | 4/18/2008

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pd.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.22





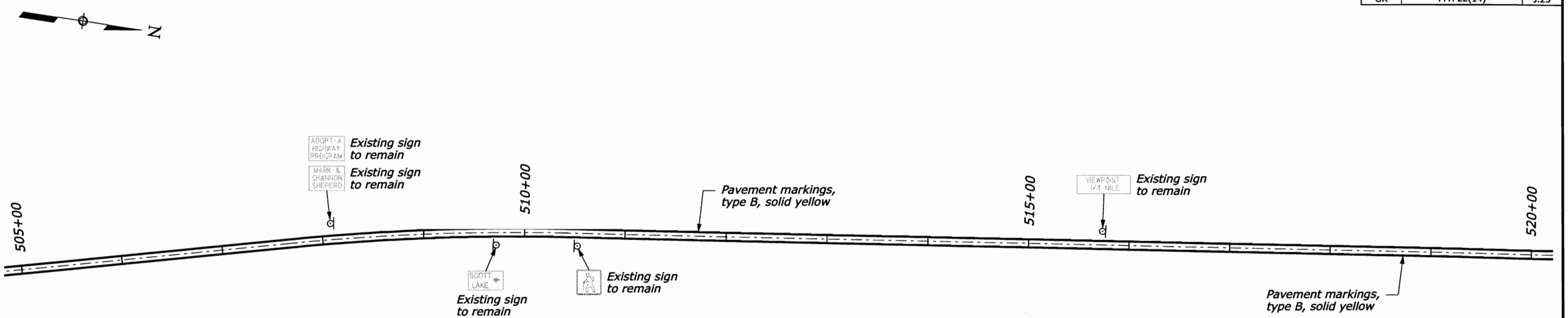
SYMBOLS:

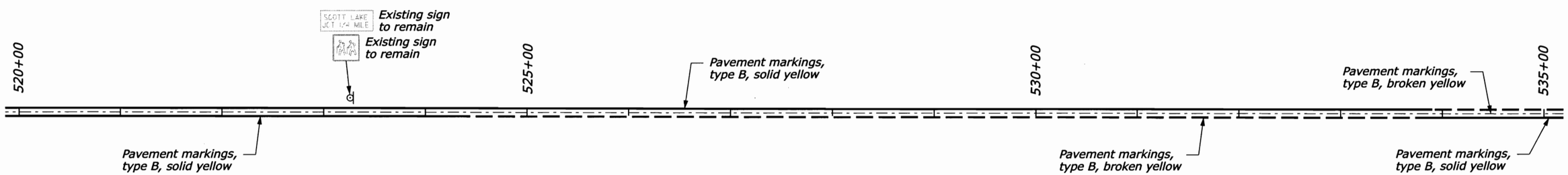
1	Sign No.
W1-5	MUTCD No.

PERMANENT TRAFFIC CONTROL PLAN

Designed by: T. BENNETT 3/2008
Checked by: HJH M. HOHBACH 4/22/08 3/2008
4/18/2008
P:\R\PHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pd.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.23





SYMBOLS:

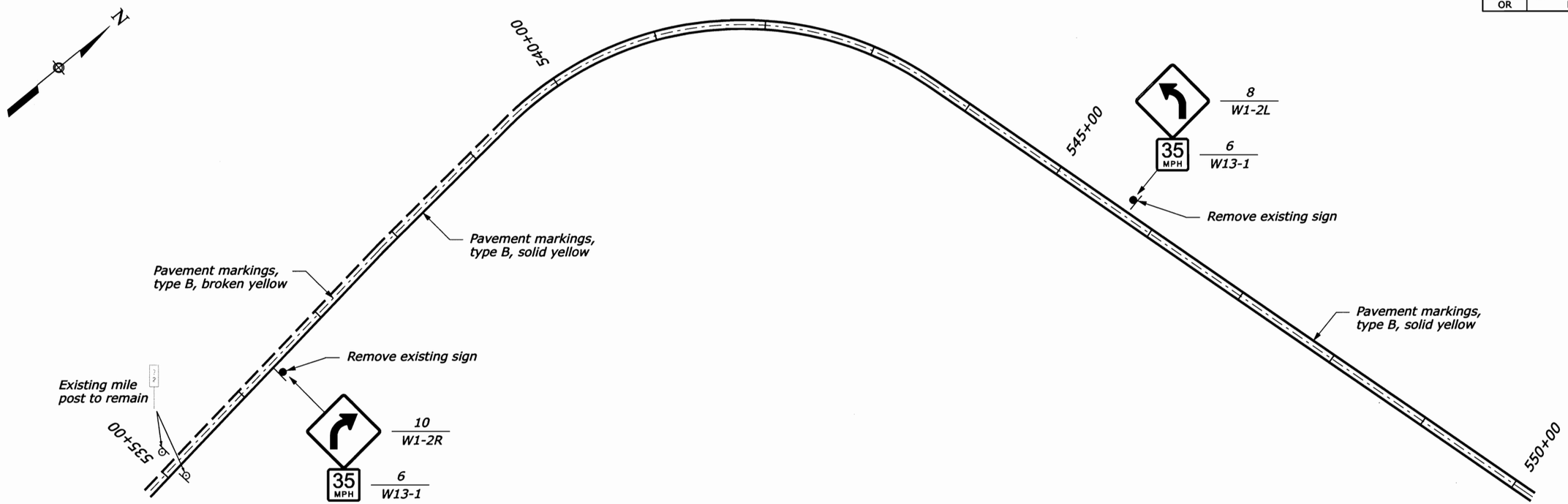
1	Sign No.
W1-5	MUTCD No.

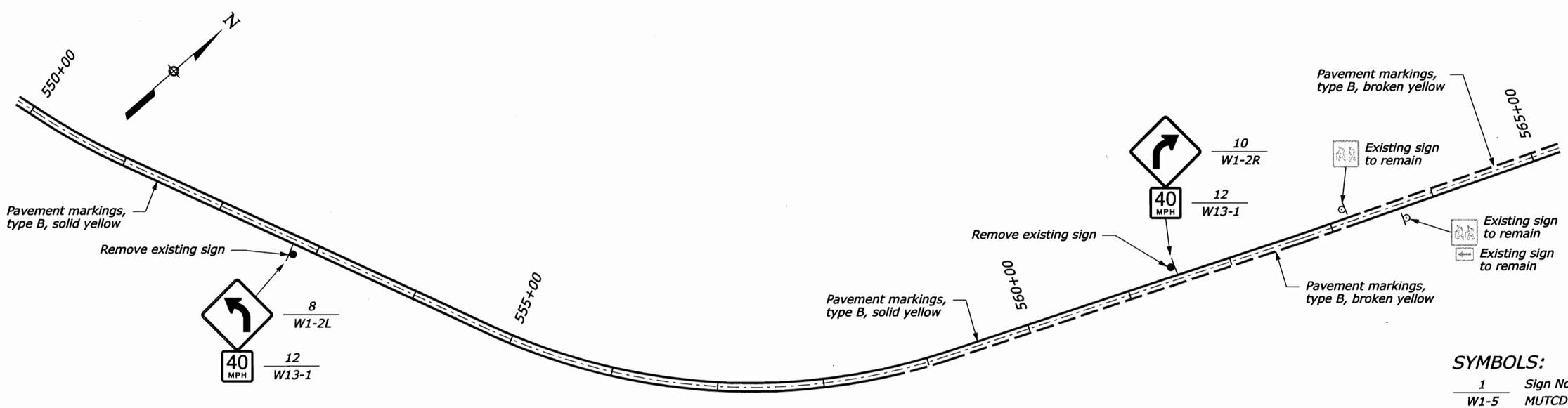
PERMANENT TRAFFIC CONTROL PLAN

T. BENNETT | 3/2008 | Checked by: M. HOHBACH 4/22/08 | 3/2008 | Designed by: 4/18/2008

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pd.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.24





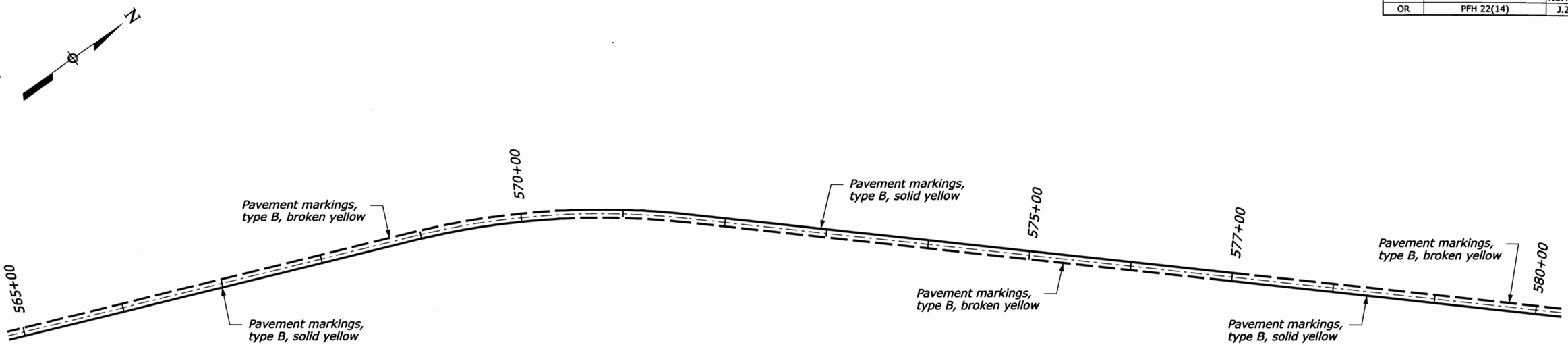
SYMBOLS:

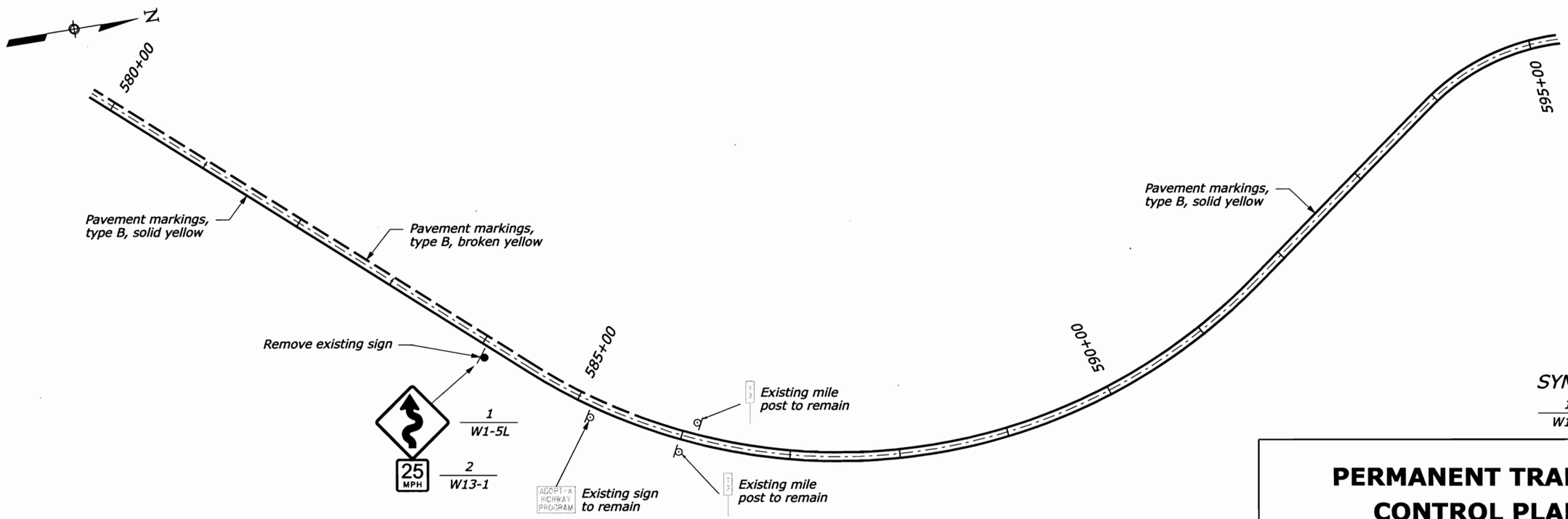
1	Sign No.
W1-5	MUTCD No.

PERMANENT TRAFFIC CONTROL PLAN

P:\R\RHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pd.dgn | 4/18/2008 | Designed by: T. BENNETT | 3/2008 | Checked by: M. HOHBACH | 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.25





SYMBOLS:

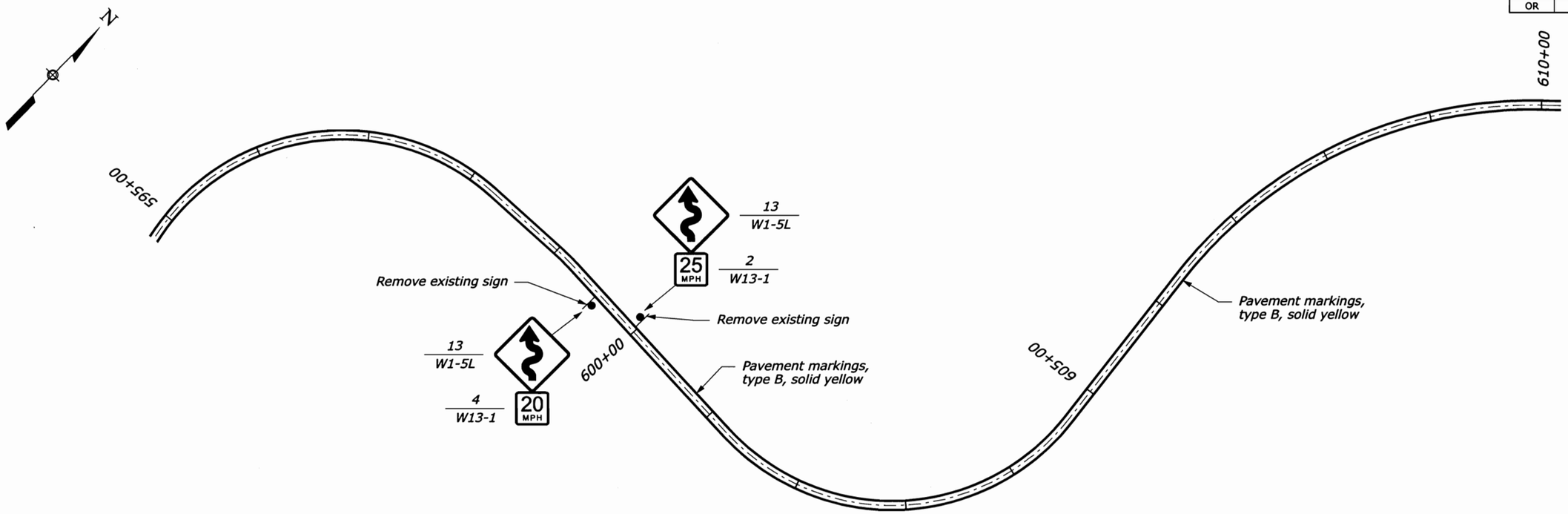
1	Sign No.
W1-5	MUTCD No.

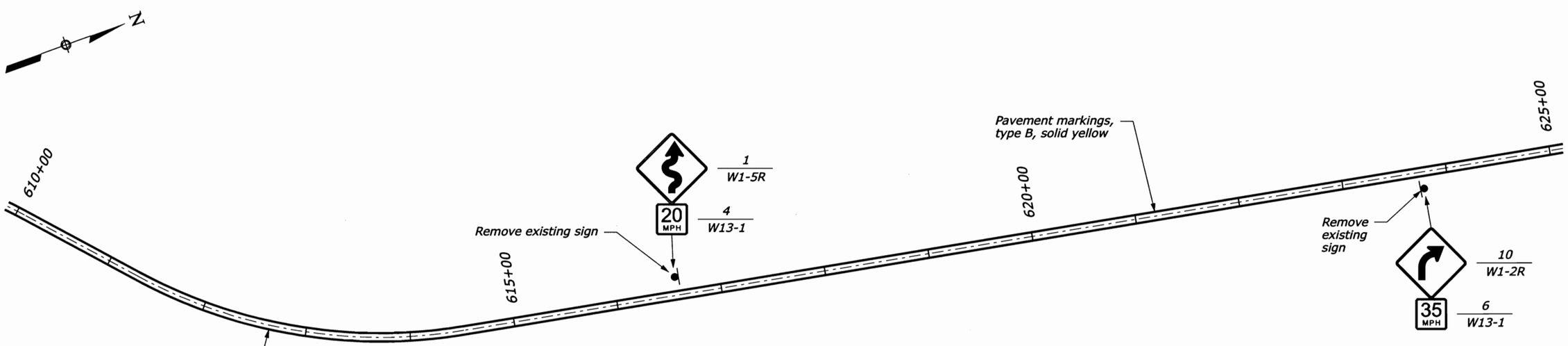
PERMANENT TRAFFIC CONTROL PLAN

Designed by: T. BENNETT 3/2008 | Checked by: MJH M. HOHBACH 4/22/08 3/2008 | 4/18/2008

P:\R\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pd.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.26





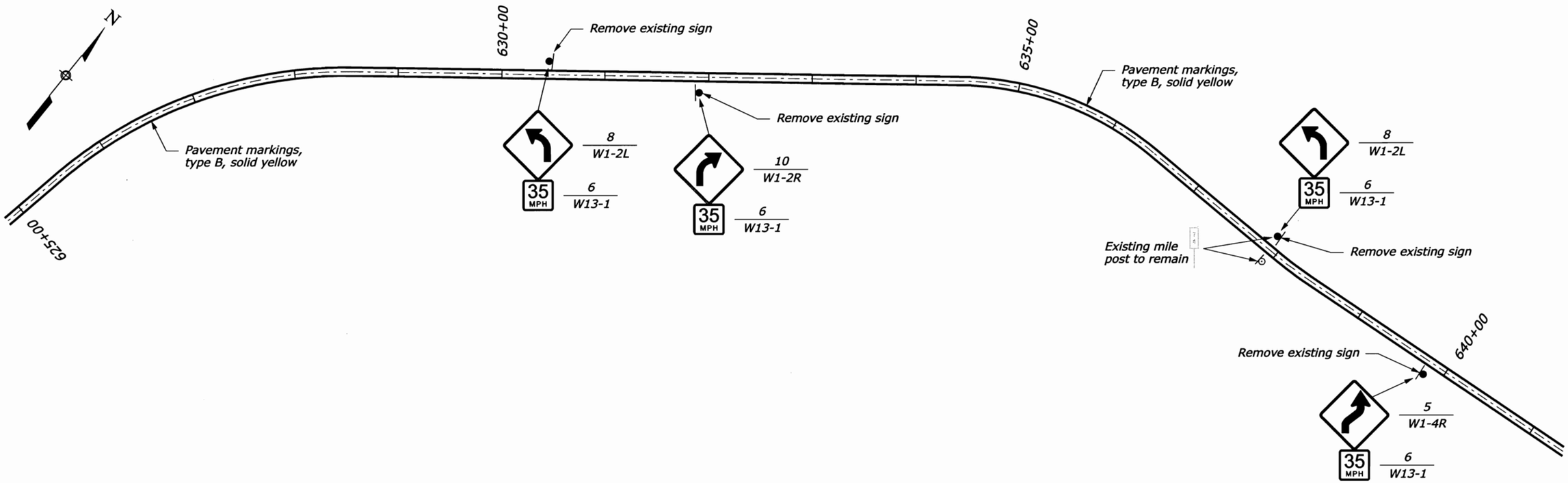
SYMBOLS:

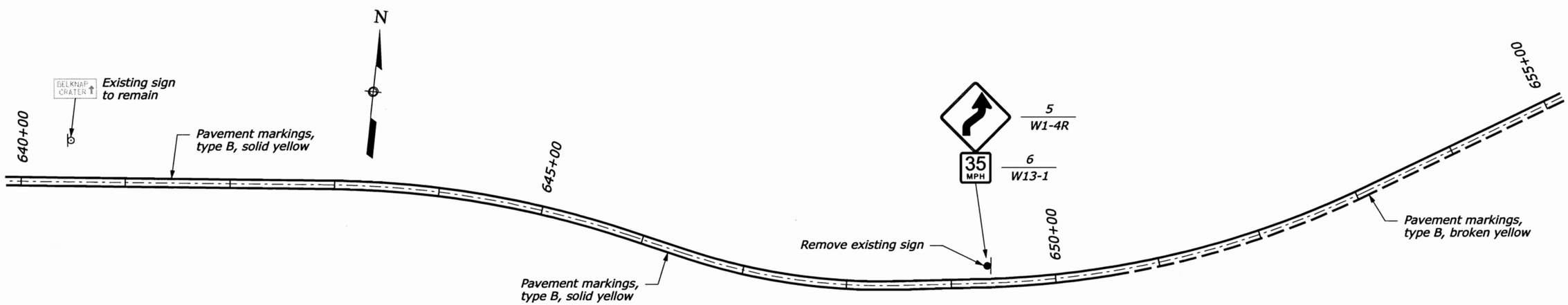
1 — Sign No.
W1-5 — MUTCD No.

PERMANENT TRAFFIC CONTROL PLAN

Designed by: 4/18/2008
Checked by: 3/2008 T. BENNETT
M. HOHBACH 4/22/08 3/2008
P:\F\FHAX0000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pd.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.27





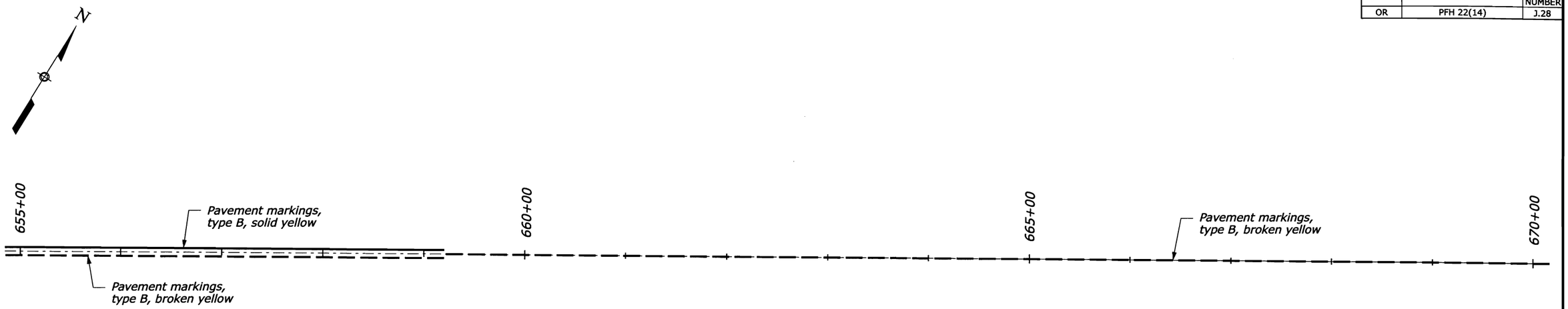
SYMBOLS:

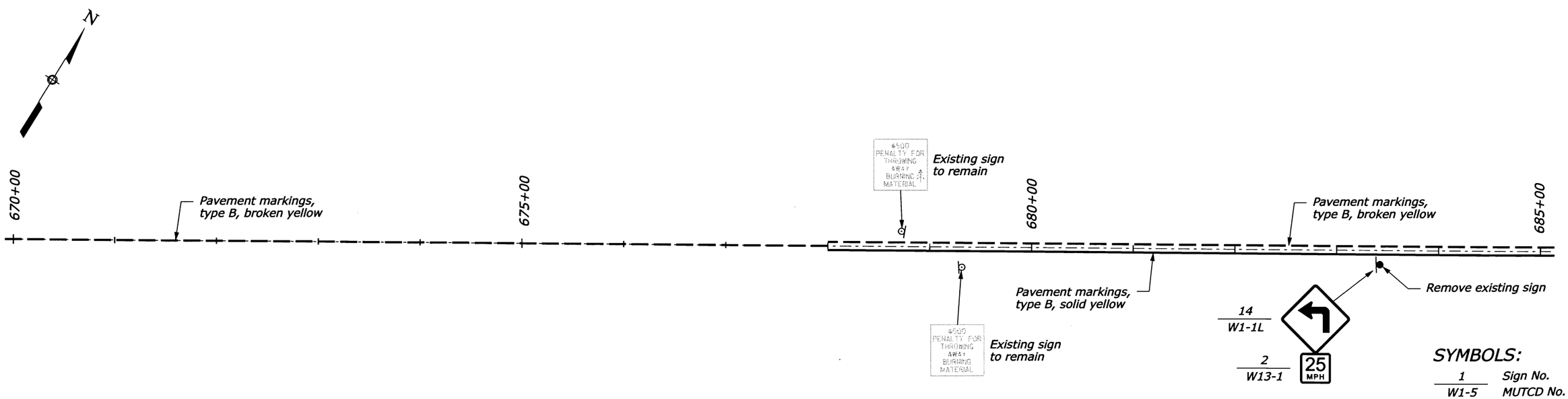
1	Sign No.
W1-5	MUTCD No.

PERMANENT TRAFFIC CONTROL PLAN

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pd.dgn | Designed by: 4/18/2008 | T. BENNETT | Checked by: 3/2008 | M. HOHBACH 4/22/08 3/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.28

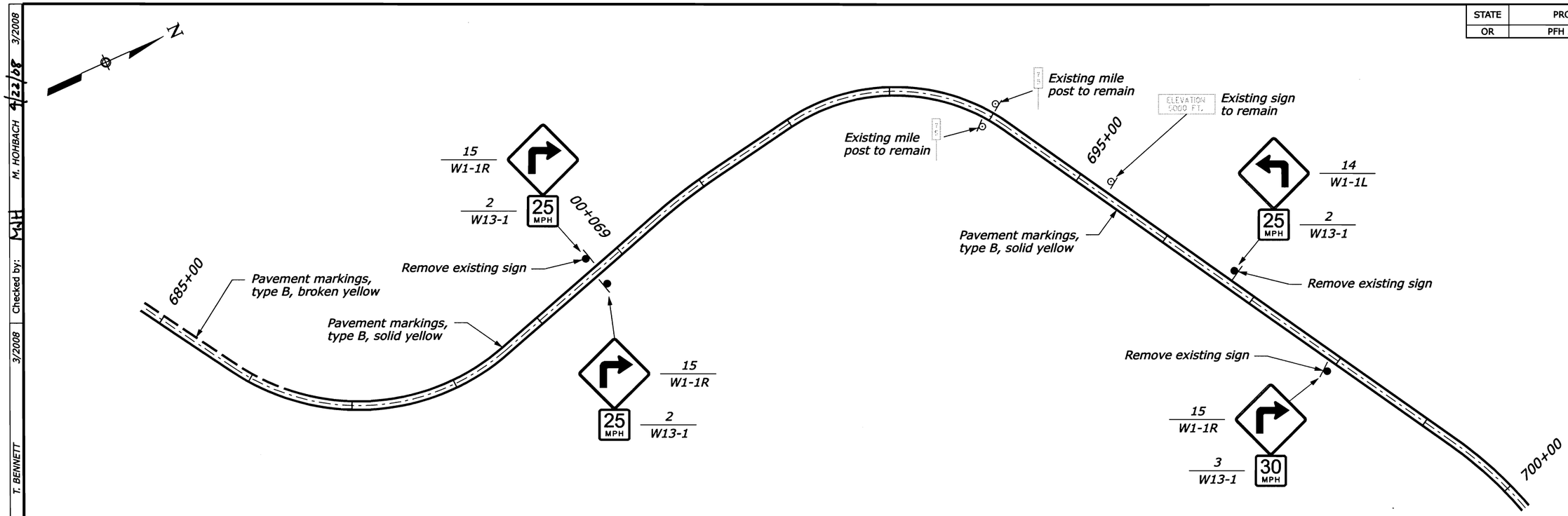


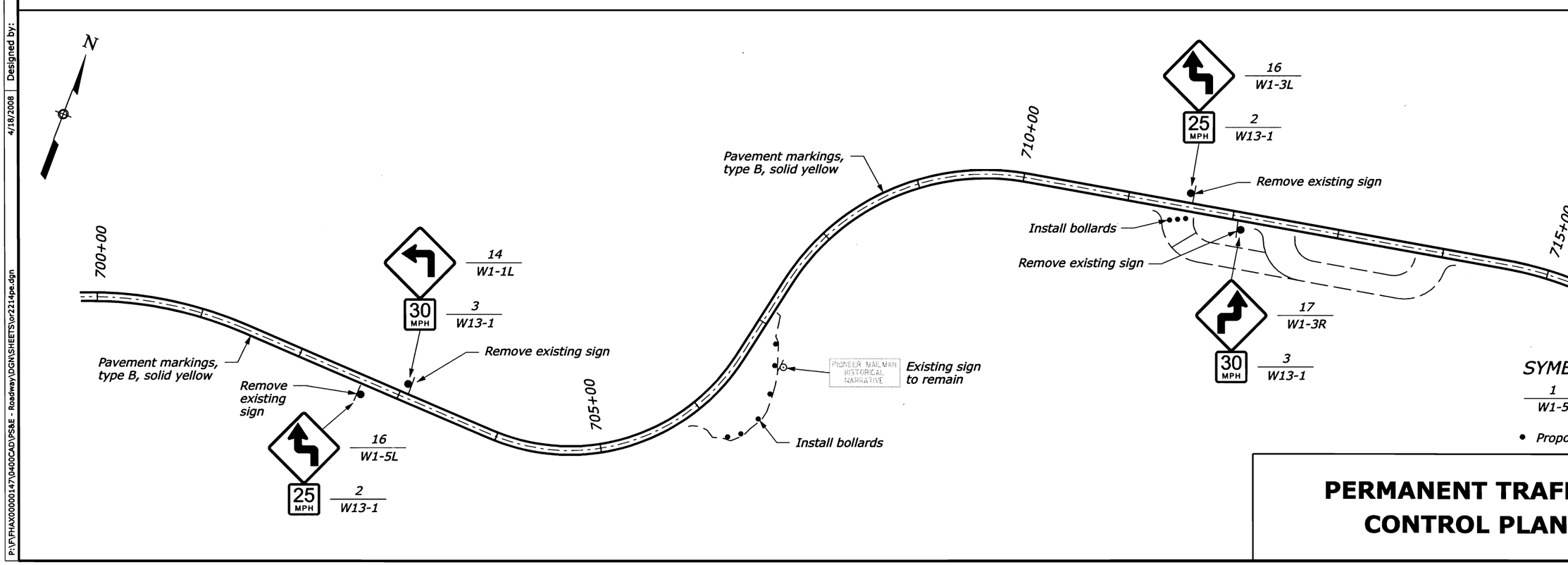


PERMANENT TRAFFIC CONTROL PLAN

P:\FI\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pe.dgn | Designed by: 4/18/2008 | Checked by: 3/2008 | T. BENNETT | 3/2008 | M. HOHBACH 4/22/08

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.29





SYMBOLS:

1 / W1-5 — Sign No. / MUTCD No.

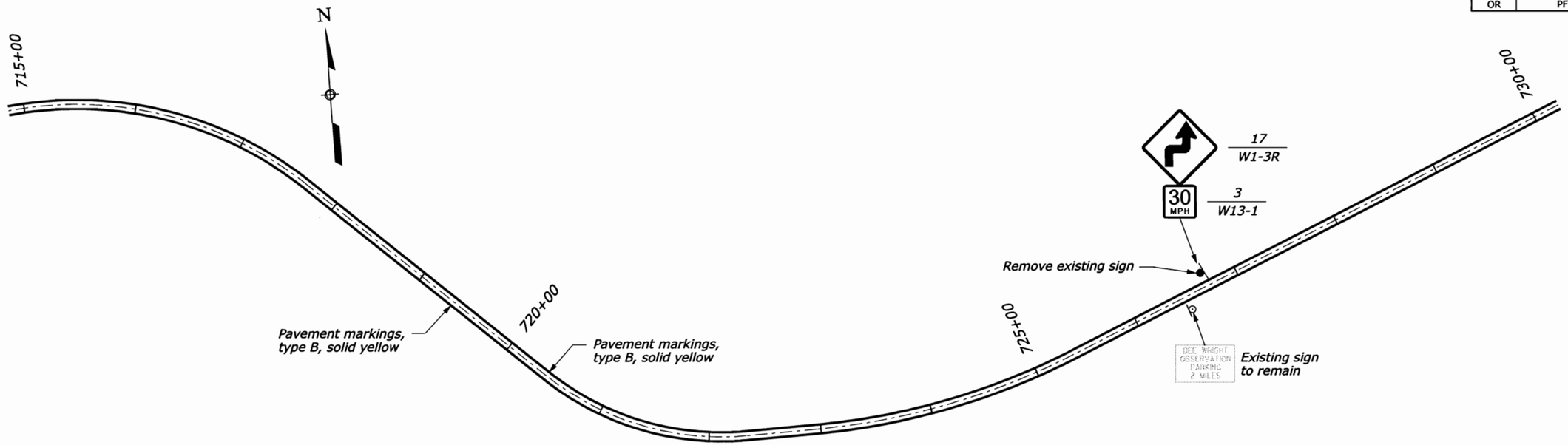
• Proposed bollard

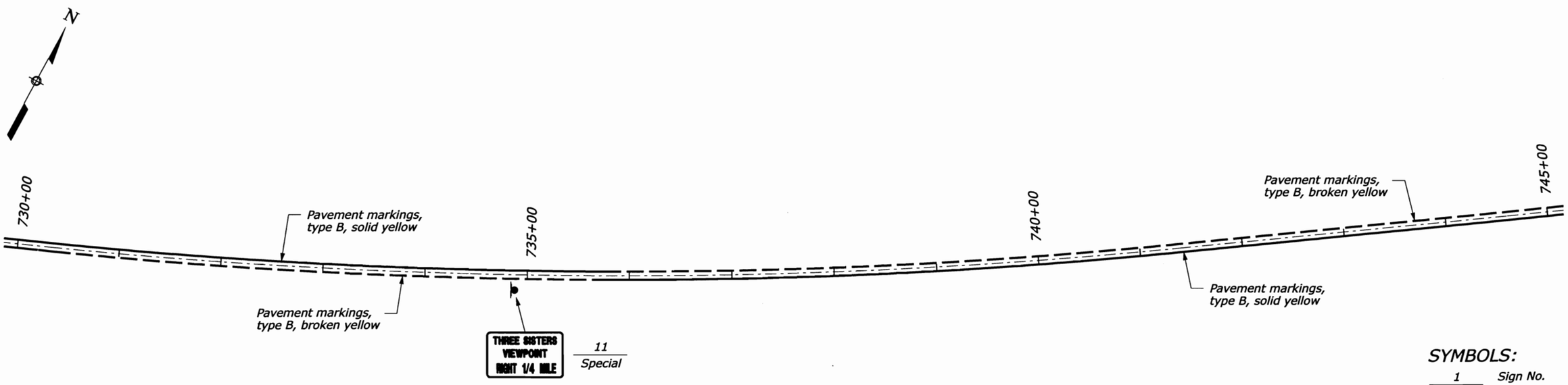
PERMANENT TRAFFIC CONTROL PLAN

Designed by: T. BENNETT 3/2008 | Checked by: M. HOHBACH 3/2008 | 4/18/2008

P:\FI\FHAX0000014\7\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pe.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.30





SYMBOLS:

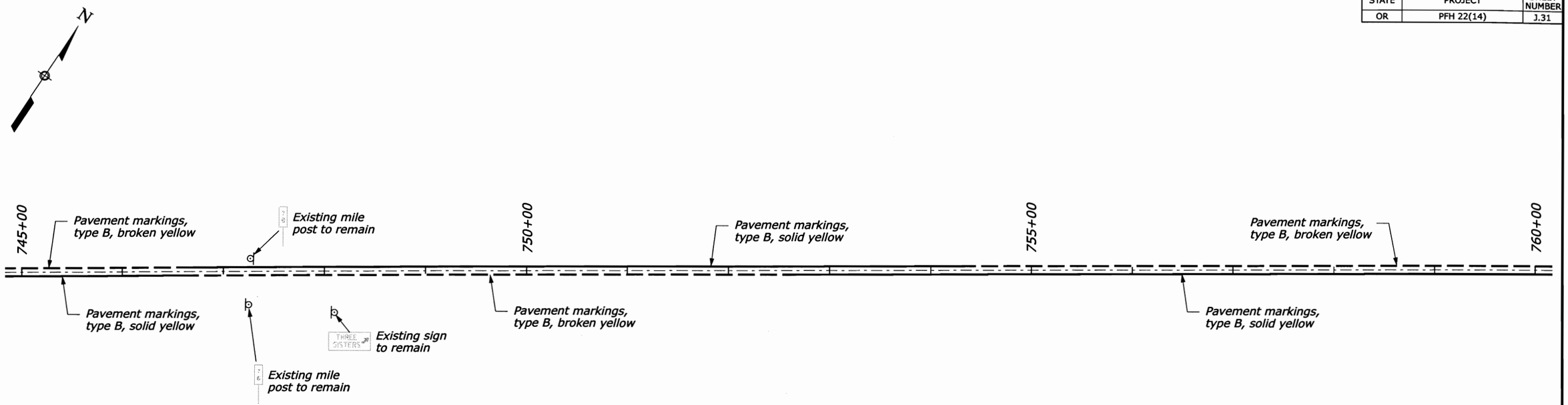
1 / W1-5 — Sign No. / MUTCD No.

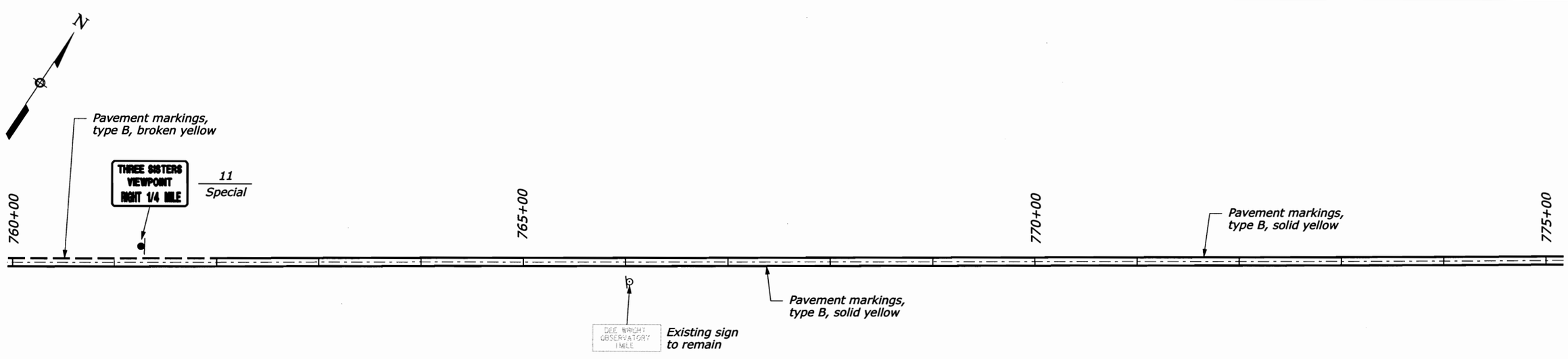
PERMANENT TRAFFIC CONTROL PLAN

T. BENNETT 3/2008 | Checked by: M. HOHBACH 4/22/08 3/2008 | Designed by: 4/18/2008

P:\F\FHAX0000147\0400CADD\PS&E - Roadway\DGN\SHEETS\or2214pe.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.31





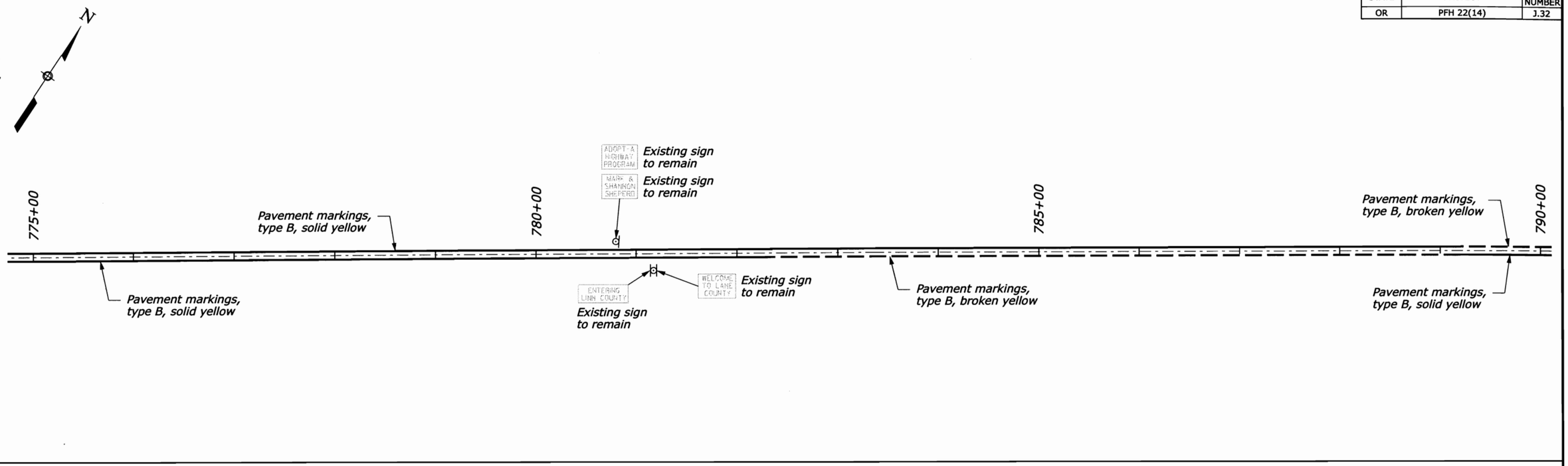
SYMBOLS:

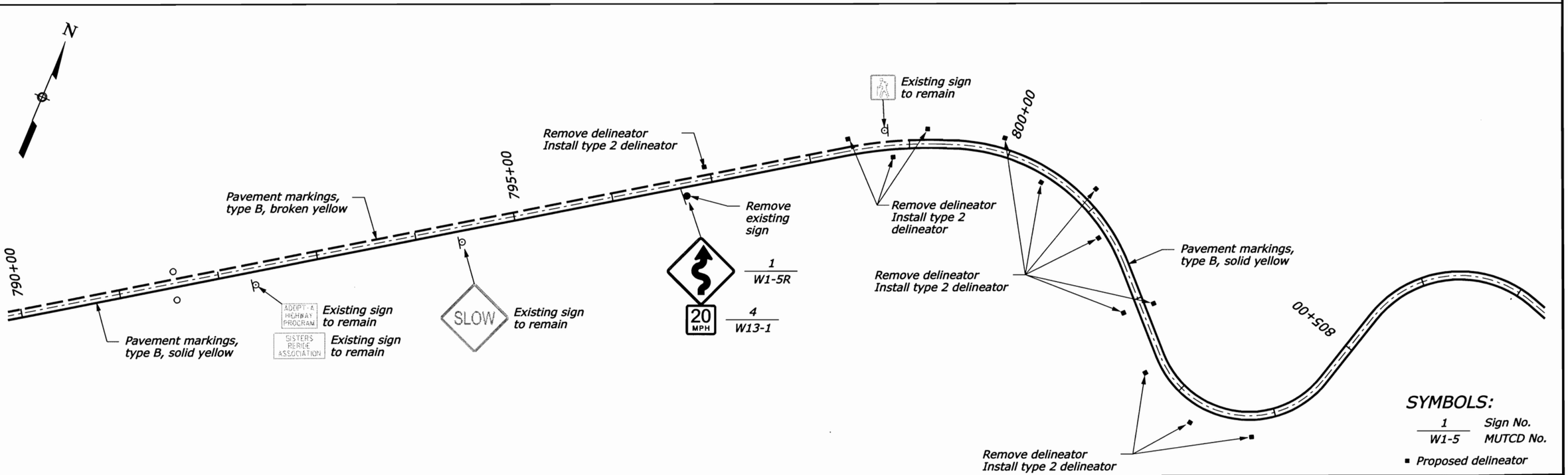
1	Sign No.
W1-5	MUTCD No.

PERMANENT TRAFFIC CONTROL PLAN

Designed by: T. BENNETT 3/2008
Checked by: MJH M. HOHBACH 4/22/08 3/2008
4/18/2008
P:\F\FHAX0000014\7\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pe.dgn

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.32

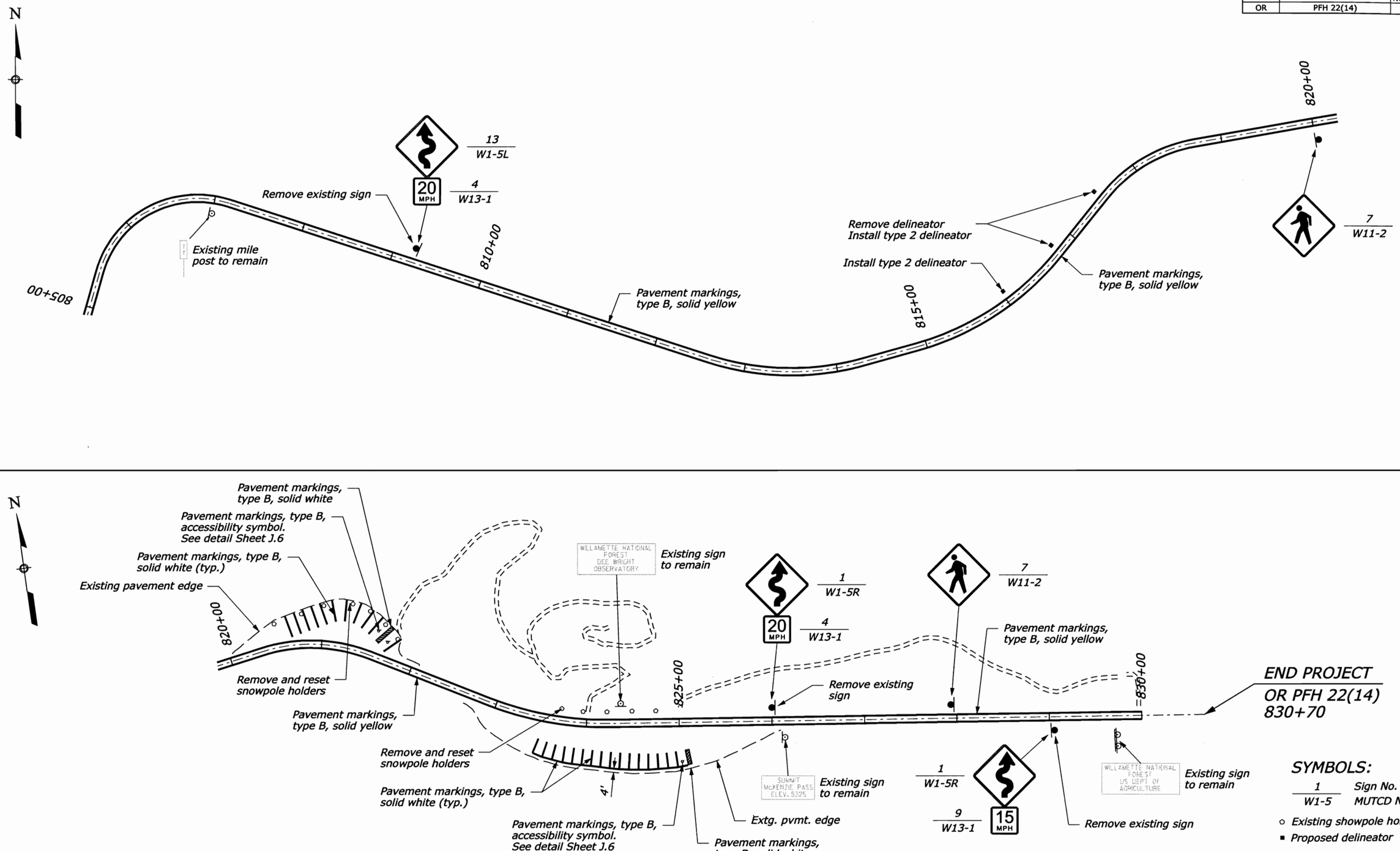




PERMANENT TRAFFIC CONTROL PLAN

P:\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pe.dgn | Designed by: T. BENNETT 3/2008 | Checked by: MJH 3/2008 | M. HOHBACH 4/23/08 | 4/18/2008

STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.33

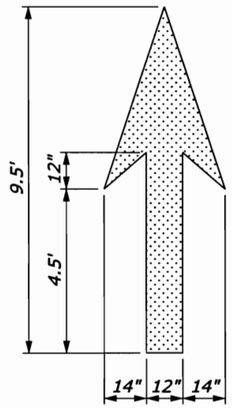


PERMANENT TRAFFIC CONTROL PLAN

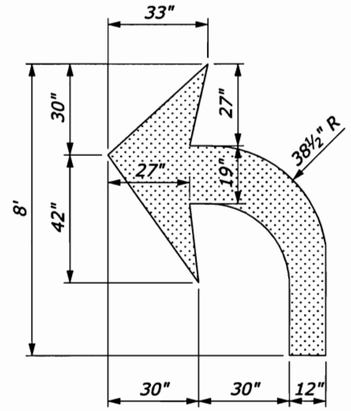
Designed by: T. BENNETT 3/2008 | Checked by: M.H. 3/2008 | M. HOHBACH 4/22/08 | 4/18/2008

P:\F\FHAX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\or2214pe.dgn

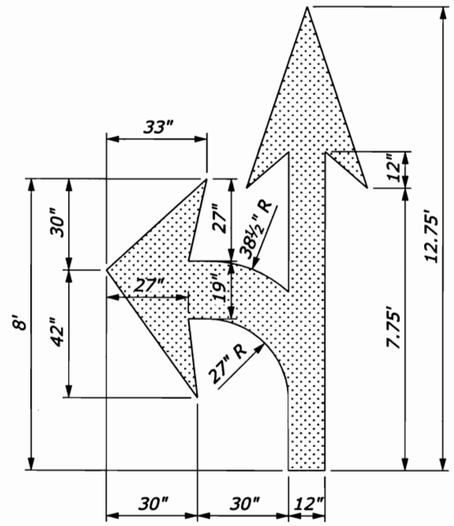
STATE	PROJECT	SHEET NUMBER
OR	PFH 22(14)	J.34



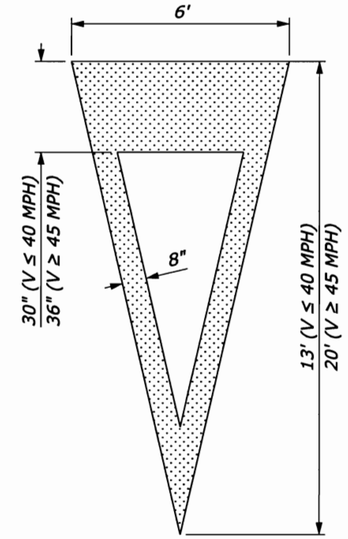
THROUGH LANE-USE ARROW



TURN LANE-USE ARROW



TURN AND THROUGH LANE-USE ARROW



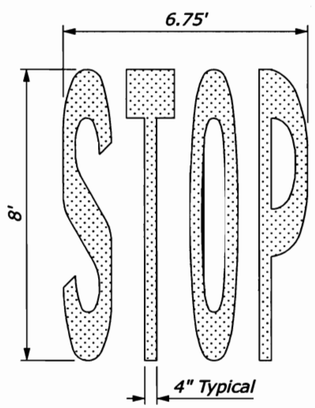
YIELD AHEAD TRIANGLE SYMBOL

NOTE:

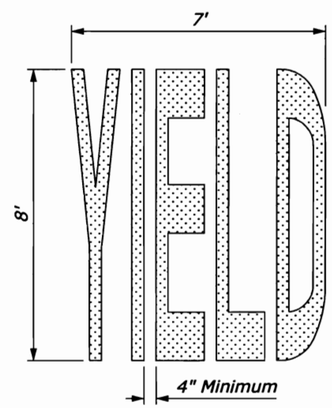
1. *Place pavement word and symbol markings in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD), current edition.*
2. *All letters, numerals and symbols shall conform with the "Standard Highway Signs", current edition.*
3. *The Accessibility Parking Space marking only includes the accessibility symbol unless a border is indicated in the Striping Plans.*

PAVEMENT MARKING AREAS

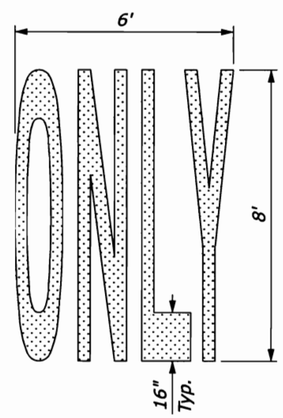
TYPE	SQFT
Through Lane-Use Arrow	12
Turn Lane-Use Arrow	16
Turn and Through Lane-Use Arrow	26
Yield Ahead Triangle (V≤40 MPH)	26
Yield Ahead Triangle (V≥45 MPH)	37
Accessibility Marking (symbol only)	2
Accessibility Marking w/ border (White)	5
Accessibility Marking w/ border (Blue)	9
AHEAD Word Marking	30
ONLY Word Marking	21
SCHOOL Word Marking	33
STOP Word Marking	22
YIELD Word Marking	24



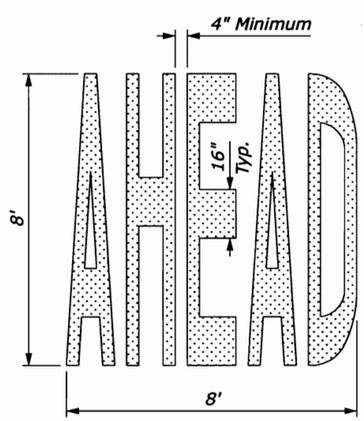
"STOP" WORD MARKING



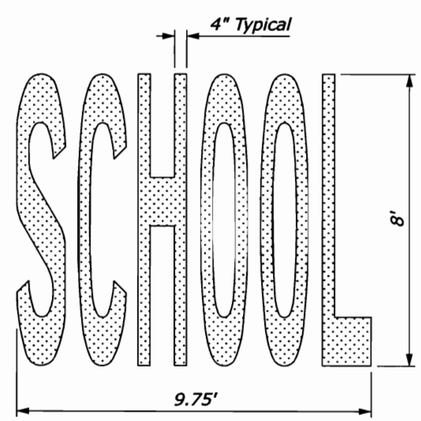
"YIELD" WORD MARKING



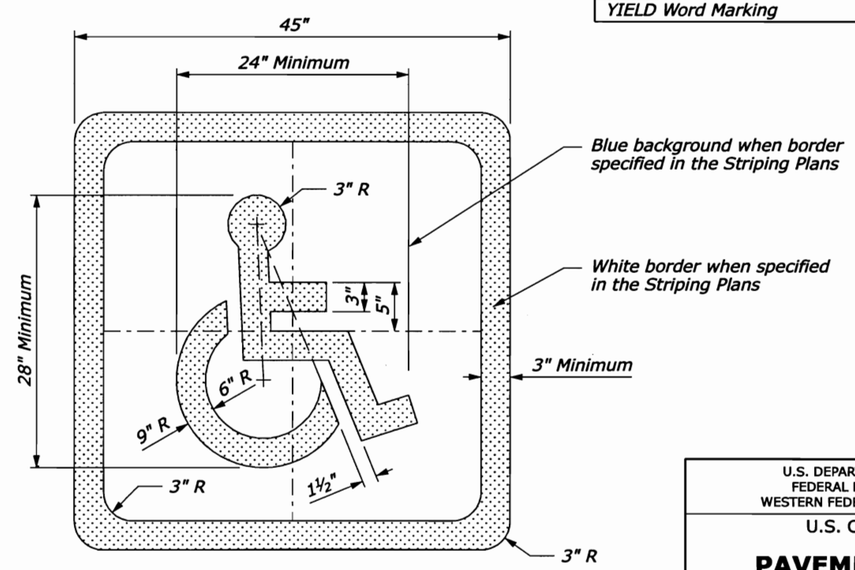
"ONLY" WORD MARKING



"AHEAD" WORD MARKING



"SCHOOL" WORD MARKING



ACCESSIBILITY PARKING SPACE MARKING

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

PAVEMENT MARKINGS SYMBOLS AND WORDS

DETAIL APPROVED FOR USE 3/2003
REVISED: 11/2006 10/2007

DETAIL W634-1

P:\F\FHX00000147\0400CAD\PS&E - Roadway\DGN\SHEETS\w63401.dgn 4/18/2008