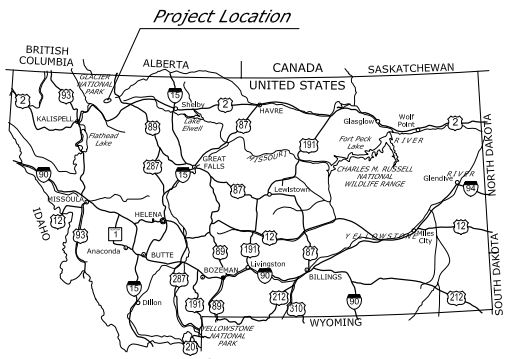
STATE	PROJECT	SHEET NUMBER
MT	PRA–GLAC 10(28)	A. 1



MONTANA KEY MAP

U. S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
GLACIER NATIONAL PARK

PLANS FOR PROPOSED PROJECT

MT PRA-GLAC 10(28)
PMIS PKG. NO. 121755

ST. MARY VISITOR CENTER REHABILITATION

FLATHEAD COUNTY
MONTANA

NATIONAL PARK SERVICE
Department of the Interior

WORLD HERITAGE SITE

TYPE OF CONSTRUCTION:

Grading, pavement, base, drainage, and structures

LENGTH OF PROJECT:

1,300'

DESIGN DESIGNATION:

ADT 2028	–
SADT 2028	–
V	*15 MPH*
e (max)	*4.75%*

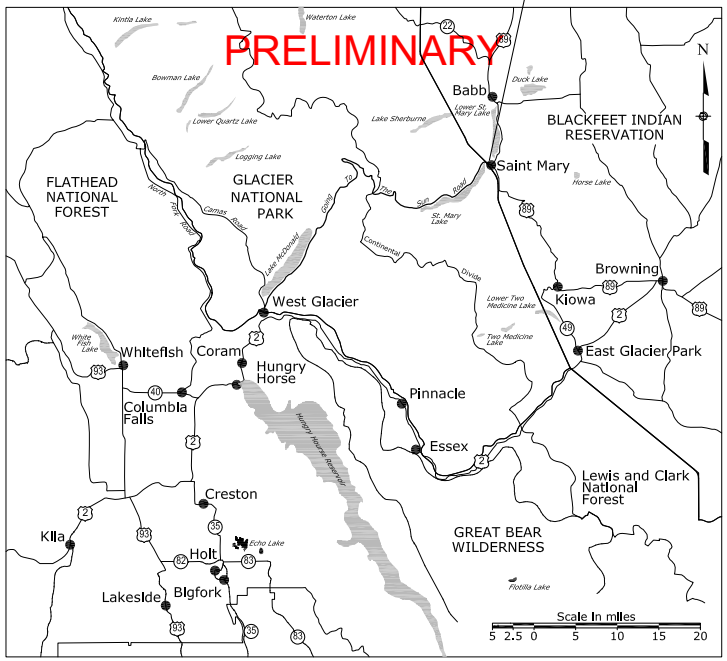
SPECIFICATION:

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

See Sheet A.3 for Vicinity Map



INDEX TO SHEETS

A. GENERAL INFORMATION
A.1 Title Sheet
A.2 Plan Symbols and Abbreviations
A.3 Vicinity Map / Existing Conditions

B. SUMMARY OF QUANTITIES
B.1 Summary of Quantities

E. APPROACH ROADS AND PARKING AREAS
E.1 Tabulation of Approaches and Parking Area Quantities
E.2 Demo Plan
E.3 Demo Plan
E.4 Site Plan - South
E.5 Site Plan - North
E.6 Site Plan Enlargement
E.7 Horizontal Control Plan
E.8 Horizontal Control Plan
E.9 Horizontal Control Plan
E.10 Grading Plan
E.11 Grading Plan
E.12 Grading Plan
E.13 Horizontal & Grading Table
E.14 Paving Plan
E.15 Portland Cement Concrete Pavement Joints
E.16 Concrete Pipe Culvert Installation
E.17 Concrete End Section for Round Pipe
E.18 Wheelchair Ramp Curb Taper
E.19 Wheelchair Ramp Curb Cut
E.20 Portland Cement Concrete Pavement
E.21 Pavement Details
E.22 Pavement Details

F. EROSION CONTROL
F.1 Tabulation of Quantities Plan
F.2 Temporary Erosion Control Plan
F.3 Erosion Details

J. Structural
J.1 Bus Shelter General Notes
J.2 Bus Shelter Abbreviations
J.3 Bus Shelter Foundation and Roof Plan
J.4 Bus Shelter Details

K. Architectural
K.1 Bus Shelter Plan
K.2 Bus Shelter Elevation
K.3 Bus Shelter Section
K.4 Bus Shelter Details
K.5 Bus Shelter Details

L.1 Electrical Site Plan

M. LANDSCAPING PLANS
M.1 Landscape Plan

N. TEMPORARY TRAFFIC CONTROL
N.1 Tabulation of Temporary Traffic Control Quantities
N.2 Detour Plans
N.3 Temporary Signing
N.4 Temporary Traffic Control Details

O. PERMANENT TRAFFIC CONTROL
O.1 Tabulation of Permanent Traffic Control Quantities
O.2 Signing and Striping Plans
O.3 Signing and Striping Plans
O.4 Temporary Traffic Control Advance Signing
O.5 Temporary Traffic Control Single Lane Closure Layout (With Flaggers)

RECOMMENDED:

_____ *DATE* _____
Project Manager,
Western Federal Lands Highway Division

APPROVED:

_____ *DATE* _____
Superintendent,
Glacier National Park

PMIS Pkg. No. 121755 NPS Drwg. No. 117/41117

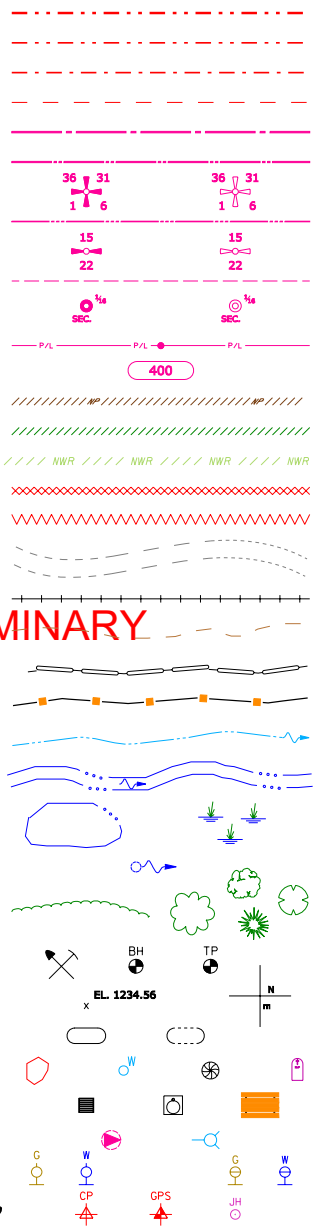
Drawing File Path: 06/14/07 | Designed by: Designer Name 6/2007 | Checked by: Checker Name 6/2007

Δ	total central angle
Δc	curve central angle
Ø	diameter
θs	spiral central angle
abut.	abutment
ADT	average daily traffic
AH	ahead
appr.	approach
BK	back
BM	bench mark
BP	balance point
br.	bridge
brg.	bearing
cc or c. to c.	center to center
℄	centerline
clr.	clear
CMP	corrugated metal pipe
col.	column
conc.	concrete
conn.	connection
constr. jt.	construction joint
cont.	continuous
CS	point of curve to spiral
ctrs.	centers
CUFT	cubic foot (feet)
culv.	culvert
CUYD	cubic yard(s)
D	diameter
DHV	design hourly volume
dia.	diameter
diag.	diagonal
diaph.	diaphragm
dist.	distance
drwg(s).	drawing(s)
E	east
e	superelevation rate
El. 94.16 ft	elevation with number
elev.	elevation
emb.	embankment
EP	edge of pavement
EQ or eq.	equation
ER	edge of road
EW	edge of water
exc.	excavation
exp. jt.	expansion joint
fin.	finish
flg.	flange
ft2	square foot
ft3	cubic foot (feet)
ftg.	footing
ga.	gage (gauge)
galv.	galvanized
hdwl.	headwall
hex.	hexagon
HW	high water
ID	inside diameter
jt.	joint
L	length of curve
lam.	lamination
lat.	latitude
LNFT	linear foot (feet)
long.	longitudinal
LPSM	lump sum
Ls	length of spiral
lt. or LT	left
LW	low water
M.L.	main line
M.P.	mile post
matl.	material
max.	maximum
MGAL	thousand gallon
min.	minimum
mon.	monument
N	north
NC	normal crown
o. c.	on center
o. to o.	out to out
OD	outside diameter
OG	original ground
PC	point of curve
PCC	point of compound curve
PCS	point of curve to spiral
PI	point of intersection
pl.	plate
POC	point on curve
POS	point on spiral
POT	point on tangent
PS	point of tangent to spiral
PSC	point of spiral to curve
PST	point of spiral to tangent
PT	point of tangent
pvmt.	pavement
R	radius
R.	range
R/W	right-of-way
rdwy.	roadway
reinf.	reinforcement
reqd.	required
rt. or RT	right
rte.	route
S	south
SADT	seasonal average daily traffic
SC	point of spiral to curve
sec.	section
shldr.	shoulder
SLRY	slurry unit
spa.	spacing, spaces or spaced
SQFT	square foot
SQYD	square yard
SRS	point of spiral to reverse spiral
SS	point of spiral to spiral (no curve)
ST	point of spiral to tangent
STA, Sta.	station
std.	standard
stgr.	stringer
stiff.	stiffener
struc.	structural
STS	point of spiral to tangent spiral
sym.	symmetrical
T	tangent distance
T.	township
TBM	temporary bench mark
thd.	thread
TS	point of tangent to spiral
Ts	tangent distance (spiraled curve)
typ.	typical
V	design speed
vph	vehicles per hour
VPI	vertical point of intersection
W	west
yd2	square yard
yd3	cubic yard(s)

NOTE:

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

National Boundary
State Boundary
County Boundary
City Boundary
Township or Range Line
Section Line
Section Corner (Found, Projected)
¼ Section Line
¼ Section Corner (Found, Projected)
1/16 Section Line
1/16 Section Corner (Found, Projected)
Property Line w/Found Property Corner
Parcel Number
National Park Boundary
National Forest Boundary
National Wildlife Refuge Boundary
BLM Lands Boundary
Indian Reservation Boundary
Existing Roadway (Road, Paved, Gravel)
Railroad
Trail
Wattle
Silt Fence
Intermittent Drainage or Small Creek
Large Creek or River
Lake, Pond or Reservoir; Marshland
Spring or Seep
Treeline; Individual Trees
Material Source; Bore Hole; Test Pit
Spot Elevation; Coordinate Grid Tick
Above Ground Tank; Underground Tank
Boulder; Well; Satellite Dish; Grave
Cooking Grate; Garbage Can; Picnic Table
Flagpole; Fire Hydrant
Gas & Water Meter; Gas & Water Valve
Control Point (Terestrial and GPS); Jump Hub



PRELIMINARY

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	A.2

North Arrow

	EXISTING	PROPOSED
Slope Stake Limits: Top of Cut		
Toe of Fill		
Transition		
Fence		
Gate with Fence		
Cattleguard		
Guardrail		
Concrete Barrier		
Retaining Wall		wall face
Signs (Single, double post; portable)		
Delineators		
Pipe Culvert (arrow shows flow)		
Pipe Culvert with End Section		
Pipe Culvert with Headwall		
Pipe Culvert with Drop Inlet	DI	DI
Box Culvert		
Underdrain	UD	UD
Overhead/Above Ground Utilities	P	P
Underground Utilities	W	W

FM = force main, FO = fiber optic, G = gas, IRR = irrigation, O = oil, P = power, SA= sanitary sewer, SD = storm drain, SS = storm sewer, STEAM = steam, T = telephone, TV = CATV, W = water

Poles (Power, Telephone, Joint Use, Light, Support w/Anchor)

Miscellaneous Utility Features

EM = electric meter, T = telephone pedestal, TV = CATV pedestal, UP = transformer or junction box, WF = water fountain

Building

Right-of-Way Line with Monument	R/W	R/W
Permanent Easement	P/E	P/E
Construction Easement	- no symbol -	C/E

Riprap

NO SCALE

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

U.S. CUSTOMARY DETAIL

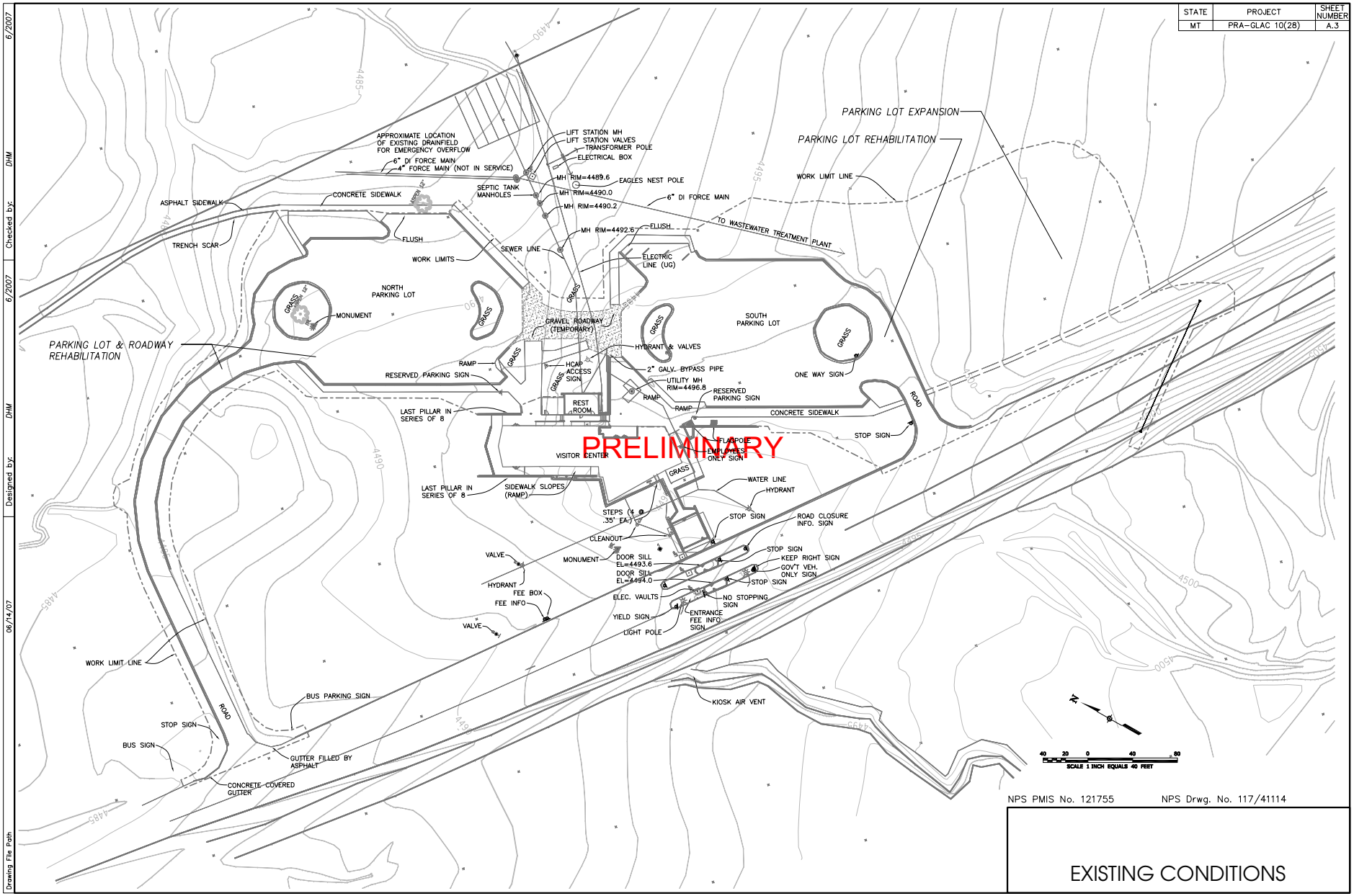
PLAN SYMBOLS AND ABBREVIATIONS

DETAIL APPROVED FOR USE 11/2001
REVISED: 9/2005 1/2007

DETAIL W101-1

27-Jun-2007 12:35 PM
F:\SignDraw\Western\w10101.dgn [US Customary]

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	A.3



NPS PMIS No. 121755 NPS Drwg. No. 117/41114

EXISTING CONDITIONS

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STATE	PROJECT	SHEET NUMBER
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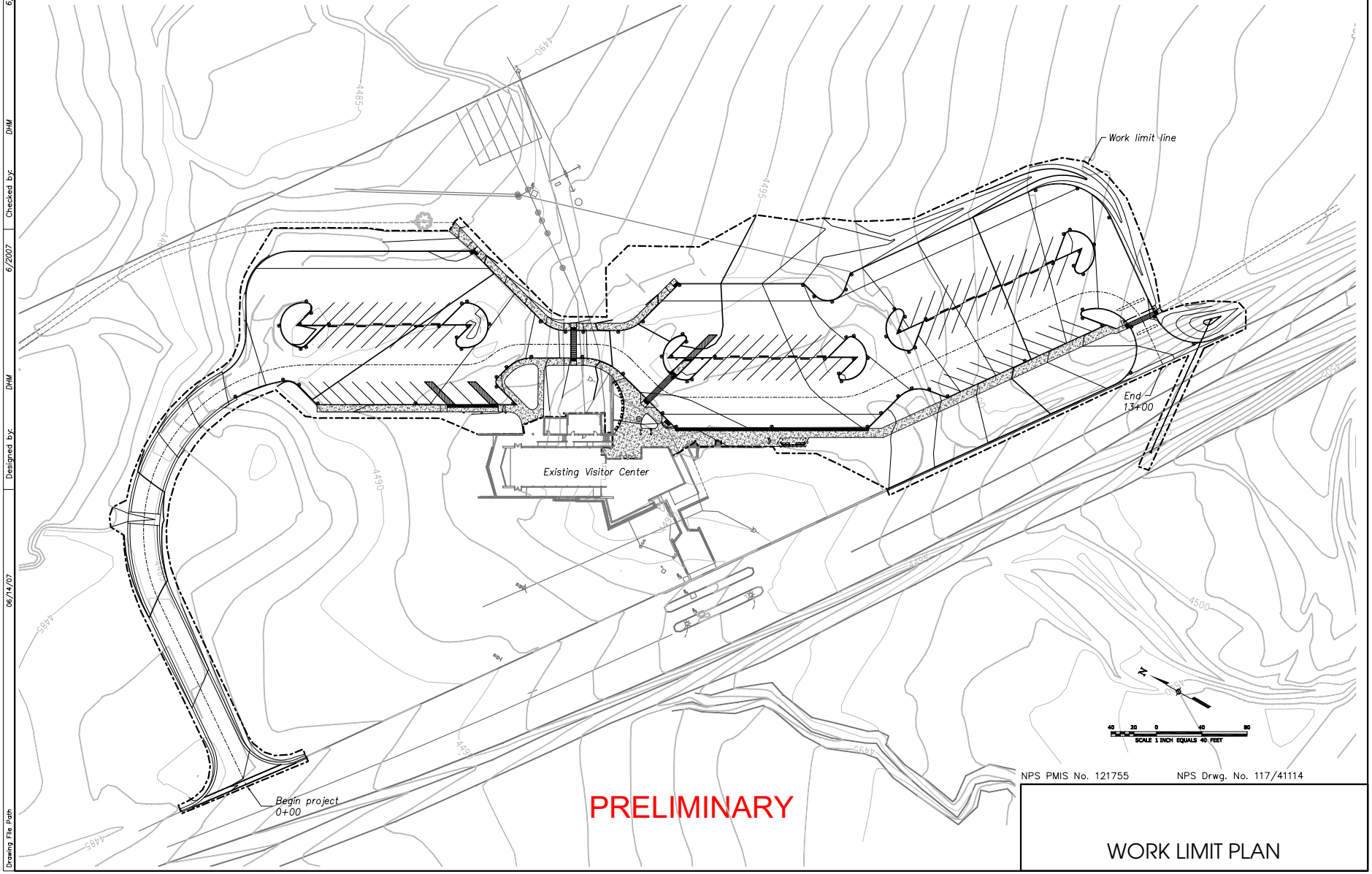

PRELIMINARY

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

WORK LIMIT PLAN

Drawing File Path	06/14/07	Designed by: DHM	6/2007	Checked by: DHM	6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	B.1

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PRELIMINARY

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

TABULATION OF QUANTITIES

Drawing File Path	Designed by:	Checked by:
06/14/07	B.EVANS 6/2007	B.EVANS 6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA–GLAC 10(28)	E.1

PRELIMINARY

ESTIMATED QUANTITIES
Approaches and Parking Area

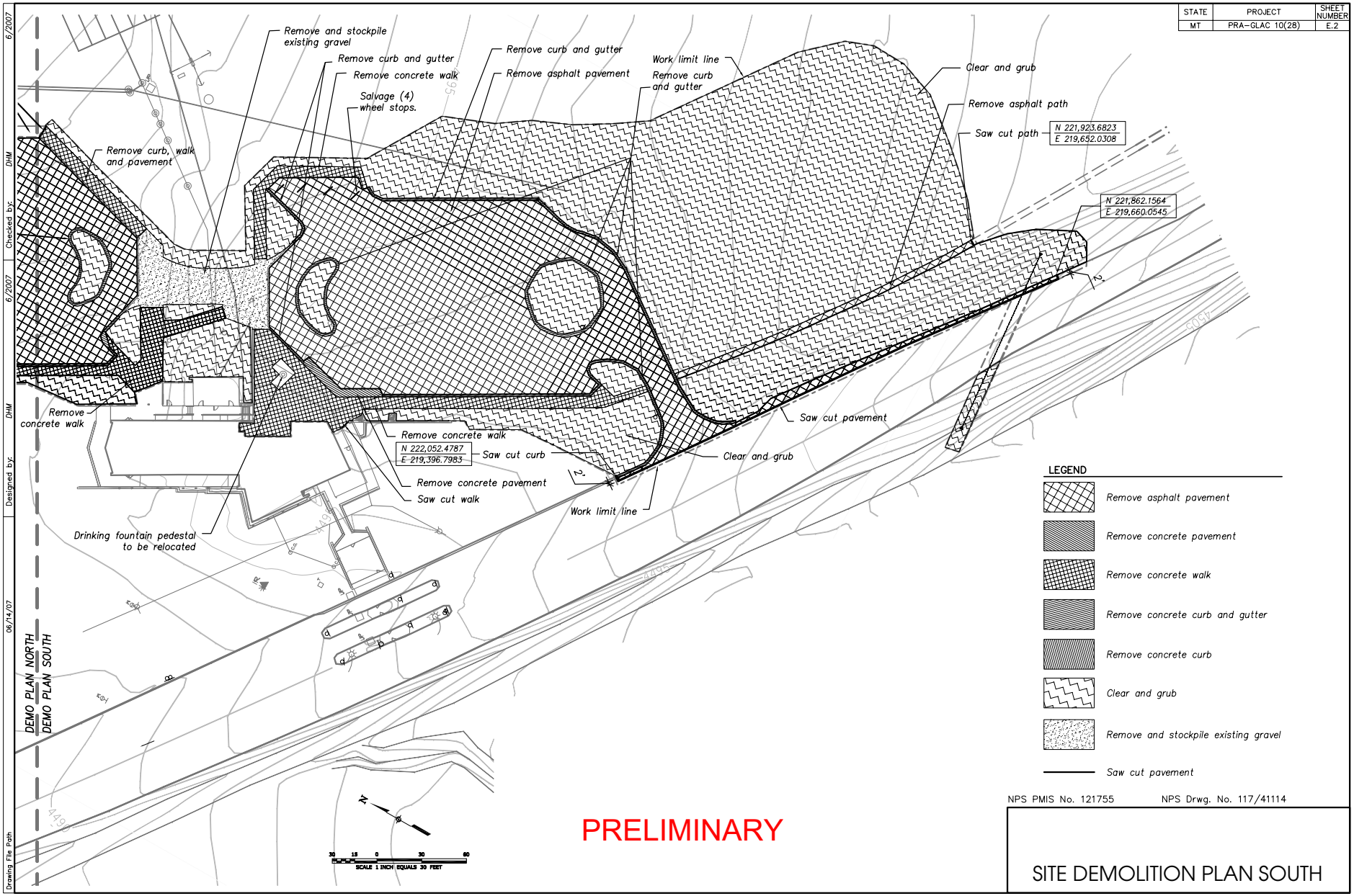
ITEM	DESCRIPTION	QUANTITY
20402-0000	Subexcavation	cuyd
20403-0000	Unclassified borrow	cuyd
20701-0100	Earthwork geotextile, type ___	10,155 sqyd
30103-0000	Aggregate base	576 cuyd
30107-0000	Subbase	2,257 cuyd
30112-0000	Aggregate surface course	0.9 cuyd
40201-0100	Hot asphalt concrete pavement, open graded	ton
60102-0000	Concrete	135 sqyd
60901-0000	Curb, concrete raised	1,408 lnft
60901-0000	Curb, concrete ribbon	915 lnft
60901-0000	Curb, concrete thickened edge	943 lnft
60905-1000	Gutter, concrete *(see 60102-0000)*	lnft
60915-1000	Wheelstop, concrete	22 Each
60920-0000	Reset wheelstop	4 Each
61501-0100	Sidewalk, concrete	1160.1 sqyd
61501-0400	Sidewalk, precast concrete pavers	59.1 sqyd
61502-1000	Drive pad, concrete	242.3 sqyd
61504-1000	Accessibility ramp, concrete *(included in sidewalk)*	0 sqyd
61902-0000	Gate	2 Each
63301-0000	Sign system *(cantilevered waysides)*	8 Each
63309-1000	Delineator, type snowpole	87 Each
63318-1000	Snowpole holder	87 Each
63602-6000	system installation, traffic detector system	LPSM

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

TABULATION OF APPROACHES AND PARKING AREA QUANTITIES

Drawing File Path	06/14/07	Designed by: DHM	6/2007	Checked by: DHM	6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA–GLAC 10(28)	E.2



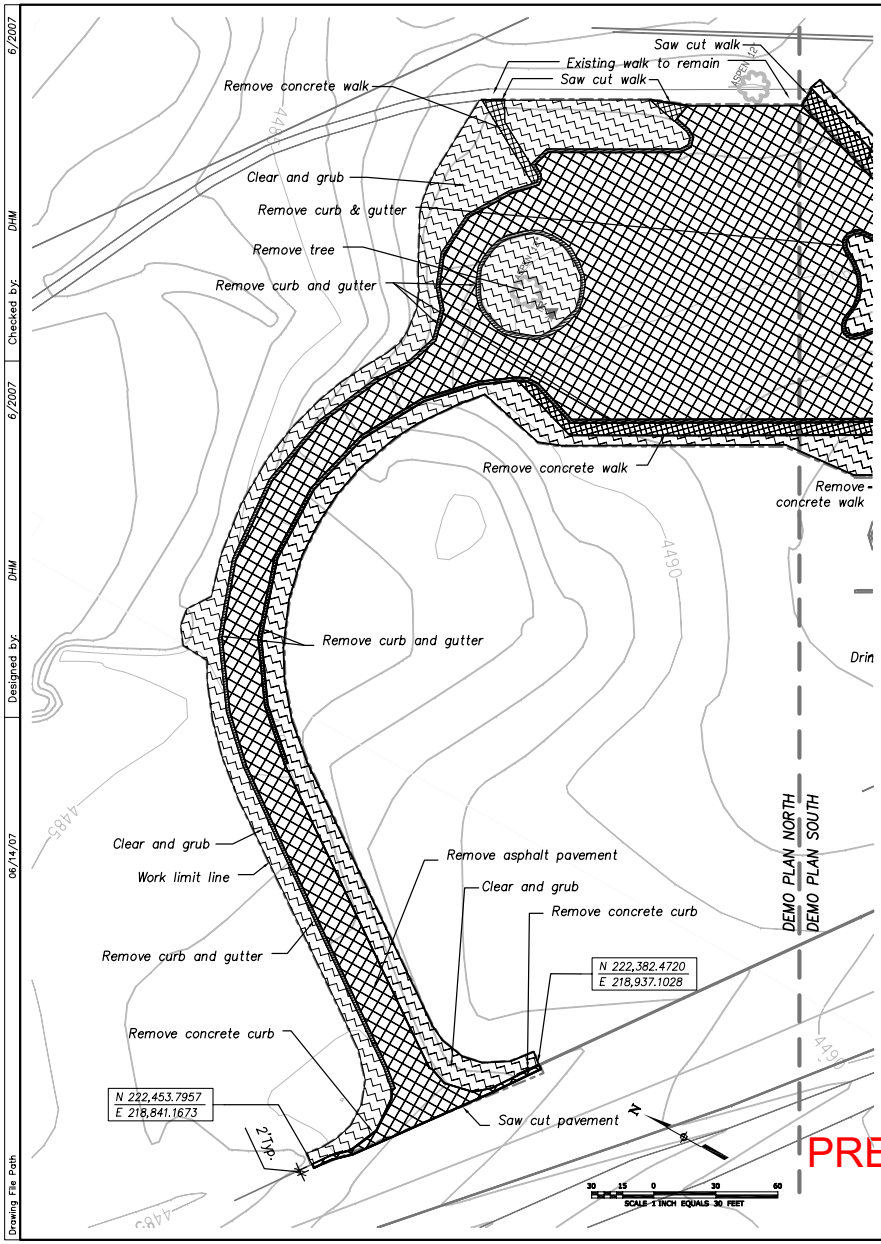
PRELIMINARY

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

SITE DEMOLITION PLAN SOUTH

Drawing File Path 06/14/07 Designed by: DHM 6/2007 Checked by: DHM 6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA–GLAC 10(28)	E.3



PRELIMINARY

ESTIMATED QUANTITIES
Site Demolition Plan

ITEM	DESCRIPTION	QUANTITY
20104–0000	Clearing	1.98 acre
20220–1000	Removal, individual trees	1 Each
20301–2400	Removal of wheelstops	4 Each
20302–0200	Removal of curb	59 lnft
20302–0300	Removal of curb and gutter, concrete	2,424 lnft
20303–1600	Removal of pavement, asphalt	6,862 sqyd
20303–2300	Removal of pavement, concrete	43 sqyd
20303–3000	Removal of sidewalk, asphalt	97 sqyd
20303–3200	Removal of sidewalk, concrete	923 sqyd
20315–0000	Sawcutting pavement	499 lnft

LEGEND

- Remove asphalt pavement
- Remove concrete pavement
- Remove concrete walk
  Note: portions of concrete walk may be salvaged as determined by contracting officer
- Remove concrete curb and gutter
- Remove concrete curb
- Clear and grub
- Remove and stockpile existing gravel
- Saw cut pavement

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

SITE DEMOLITION PLAN NORTH

Drawing File Path | 06/14/07 | Designed by: DHM | 6/2007 | Checked by: DHM | 6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA–GLAC 10(28)	E.4

LEGEND

Concrete sidewalk jointing
Note: portions of concrete walk may be salvaged sections of existing sidewalk as determined by contracting officer

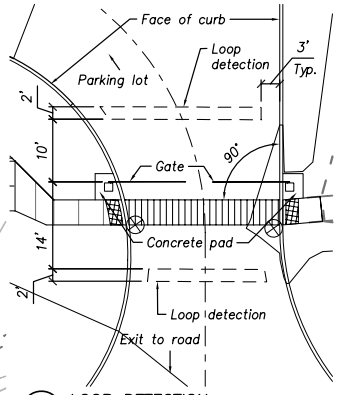
Detectable warning pavers
See sheet E.22 for details

SITE PLAN NORTH
SITE PLAN SOUTH

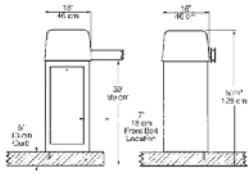
Existing path
Concrete walk
Parallel curb ramp
Ribbon curb
Sidewalk thickened edge
Parallel curb ramp
Sidewalk
Sidewalk thickened edge
(3) ADA van accessible spaces
Planting bed
Sidewalk flush
Parallel curb ramp
(8) cantilevered wayside, see sheet E.5 for details
Relocated drinking fountain
VISITOR CENTER
See area detail, sheet E.6
Snow pole pockets (typ.)
See sheet E21 for details.
Parallel curb ramp
Concrete walk
Red Jammer parking
Ribbon curb
6" raised curb at islands, typ.
(2) ADA van accessible spaces
Striped crosswalk
Concrete walk
Alternating wheel stops (typ.)
Perpendicular curb ramp
Detectable warning pavers
See sheet E22 for details
Sidewalk thickened edge
Existing flagpoles
Existing transit signs
Bus shelter
See sheets K.1 – K.5
Existing transit sign
Work limit line
Striping
RV parallel parking
Work limit line
Striping
Ribbon curb
6" raised curb at islands, typ.
6" raised curb
Sidewalk thickened edge
Concrete walk
6" raised curb
Loop detection
(see detail this sheet)
Access control gate
(see detail this sheet)
Striped crosswalk
Existing path
Ribbon curb
Ribbon curb
Concrete walk flush with ribbon curb
6" raised curb

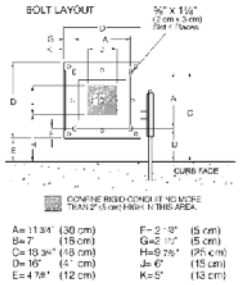
PRELIMINARY

SCALE 1 INCH EQUALS 30 FEET



1 LOOP DETECTION
NO SCALE





2 ACCESS CONTROL GATE
NO SCALE

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

SITE PLAN SOUTH

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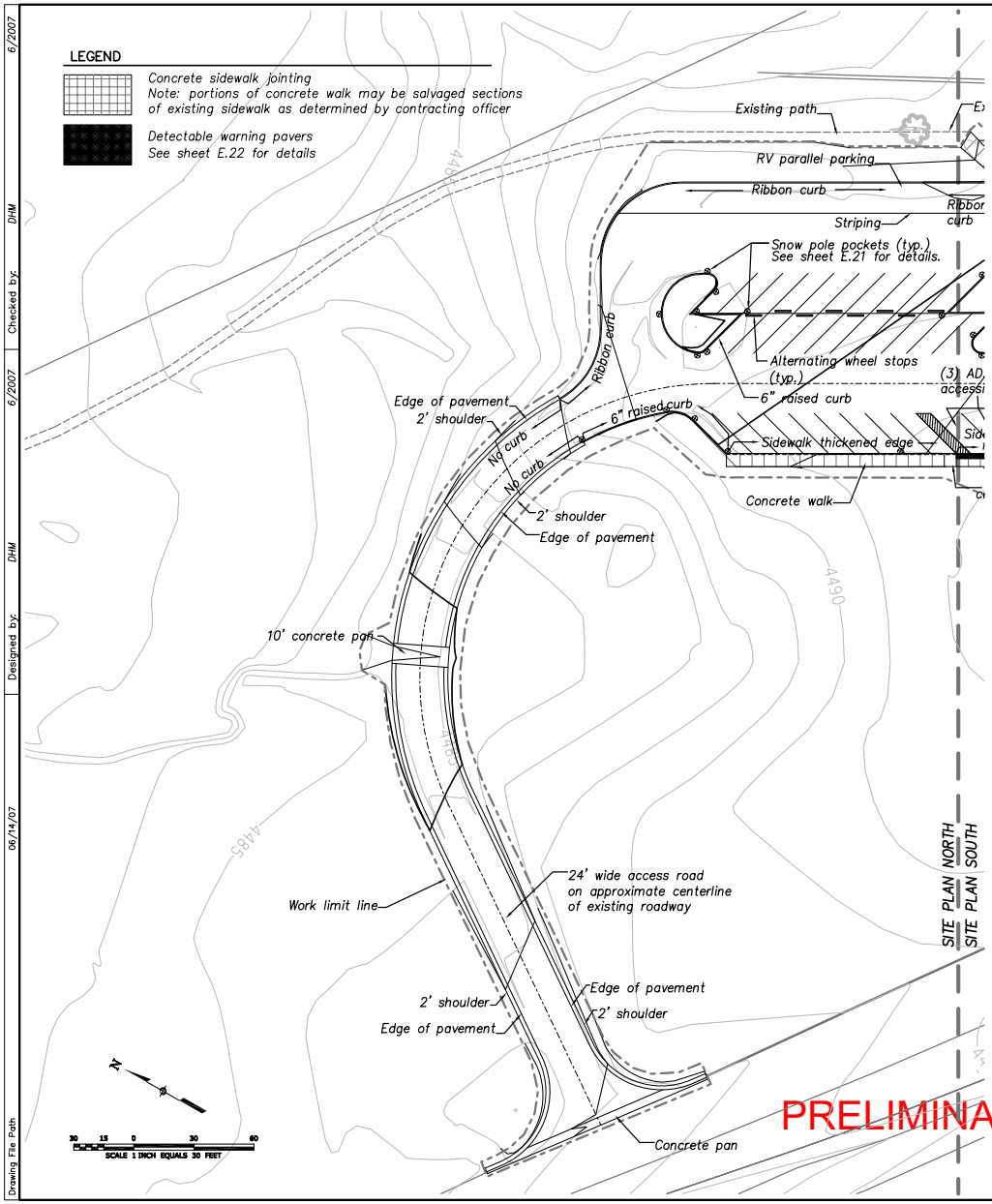
STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.5

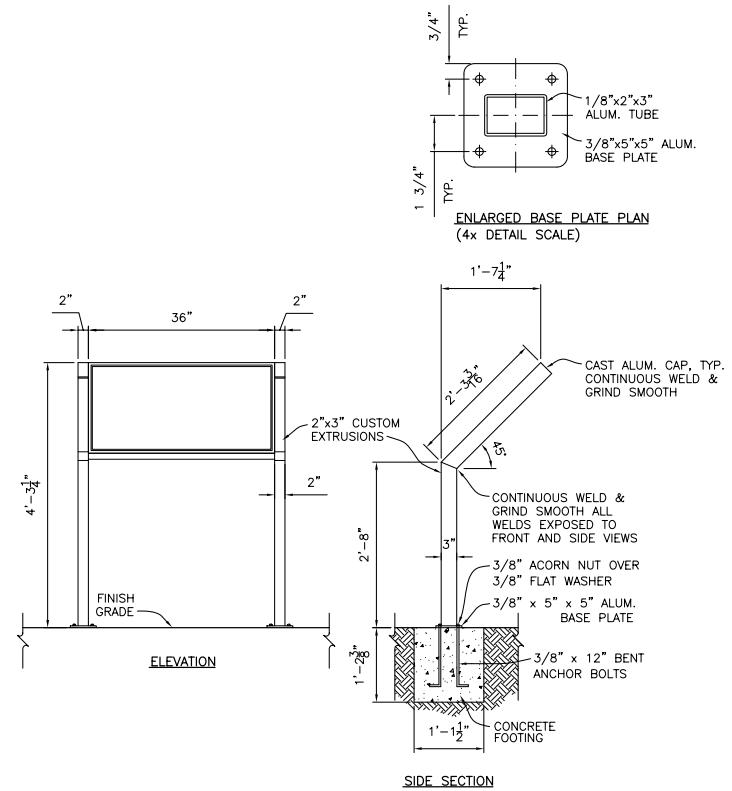
LEGEND

Concrete sidewalk jointing
Note: portions of concrete walk may be salvaged sections of existing sidewalk as determined by contracting officer

Detectable warning pavers
See sheet E.22 for details



PRELIMINARY



1 CANTILEVERED WAYSIDE
SCALE (A) 1"=1'-0"

SCALE (A) 1 0 1 2
SCALE OF FEET

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

SITE PLAN NORTH

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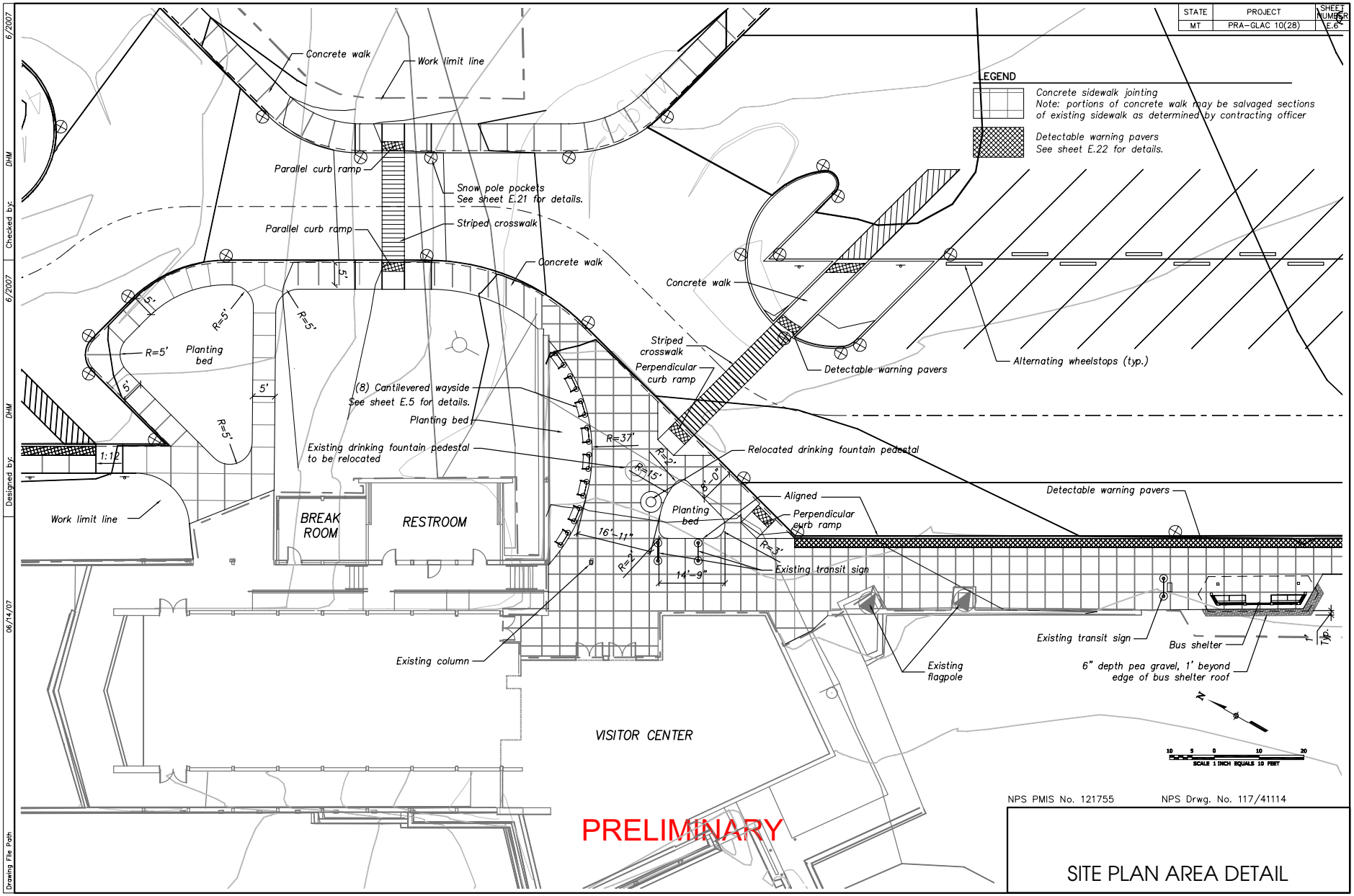
STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.6



NPS PMIS No. 121755 NPS Drwg. No. 117/41114

SITE PLAN AREA DETAIL

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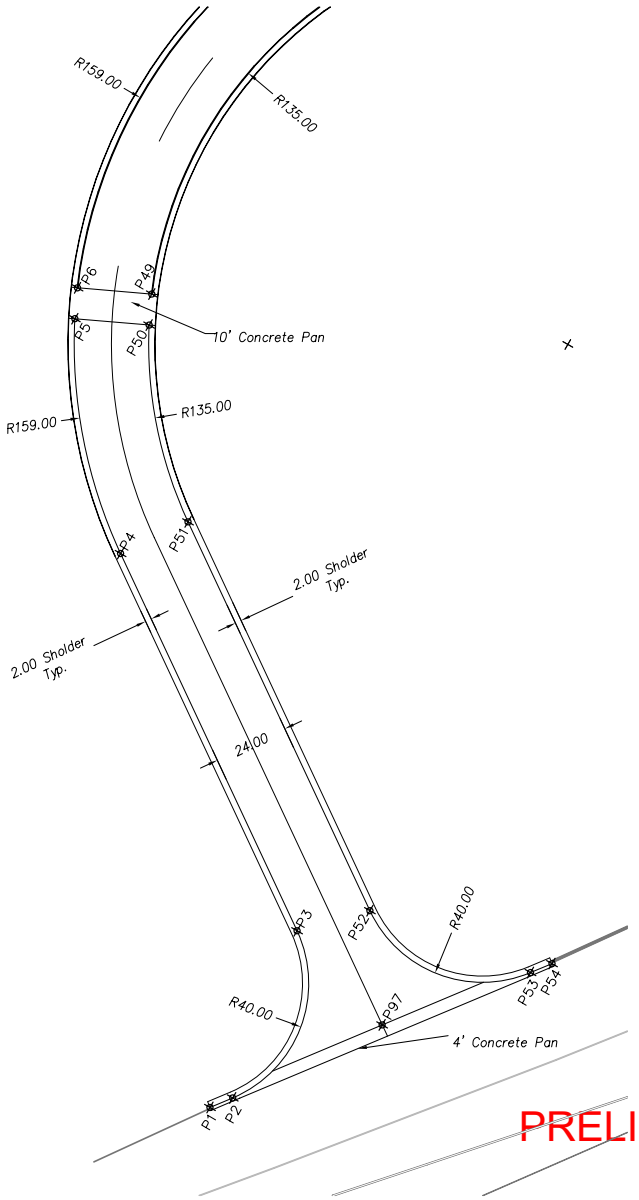
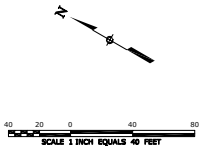
STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.7



X

ESTIMATED QUANTITIES
Schedules X & Y

ITEM	DESCRIPTION	QUANTITY
.	.	.



NOTE:
1. X

PRELIMINARY

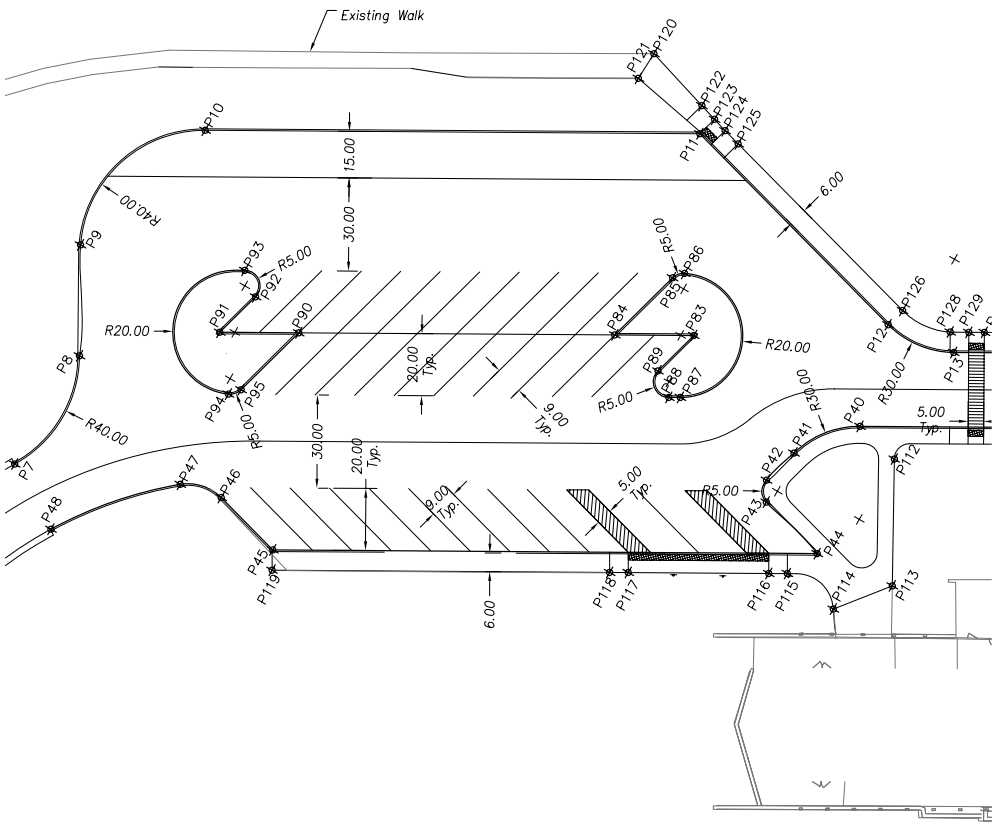
NPS PMIS No. 121755 NPS Drwg. No. 117/41114

HORIZONTAL CONTROL PLAN

Drawing File Path | 06/14/07 | Designed by: B.EVANS | 6/2007 | Checked by: B.EVANS | 6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.8

Drawing File Path	06/14/07	Designed by: B.EVANS	6/2007	Checked by: B.EVANS	6/2007



ESTIMATED QUANTITIES
Schedules X & Y

ITEM	DESCRIPTION	QUANTITY
.	.	.

CONTROL POINTS:

FHWA PIN & CAP
CP 50
N222560.70
E218697.82

FHWA PIN & CAP
CP51
N221805.99
E219744.86

N

40 20 0 40 80
SCALE 1 INCH EQUALS 40 FEET

NOTE:
1. X

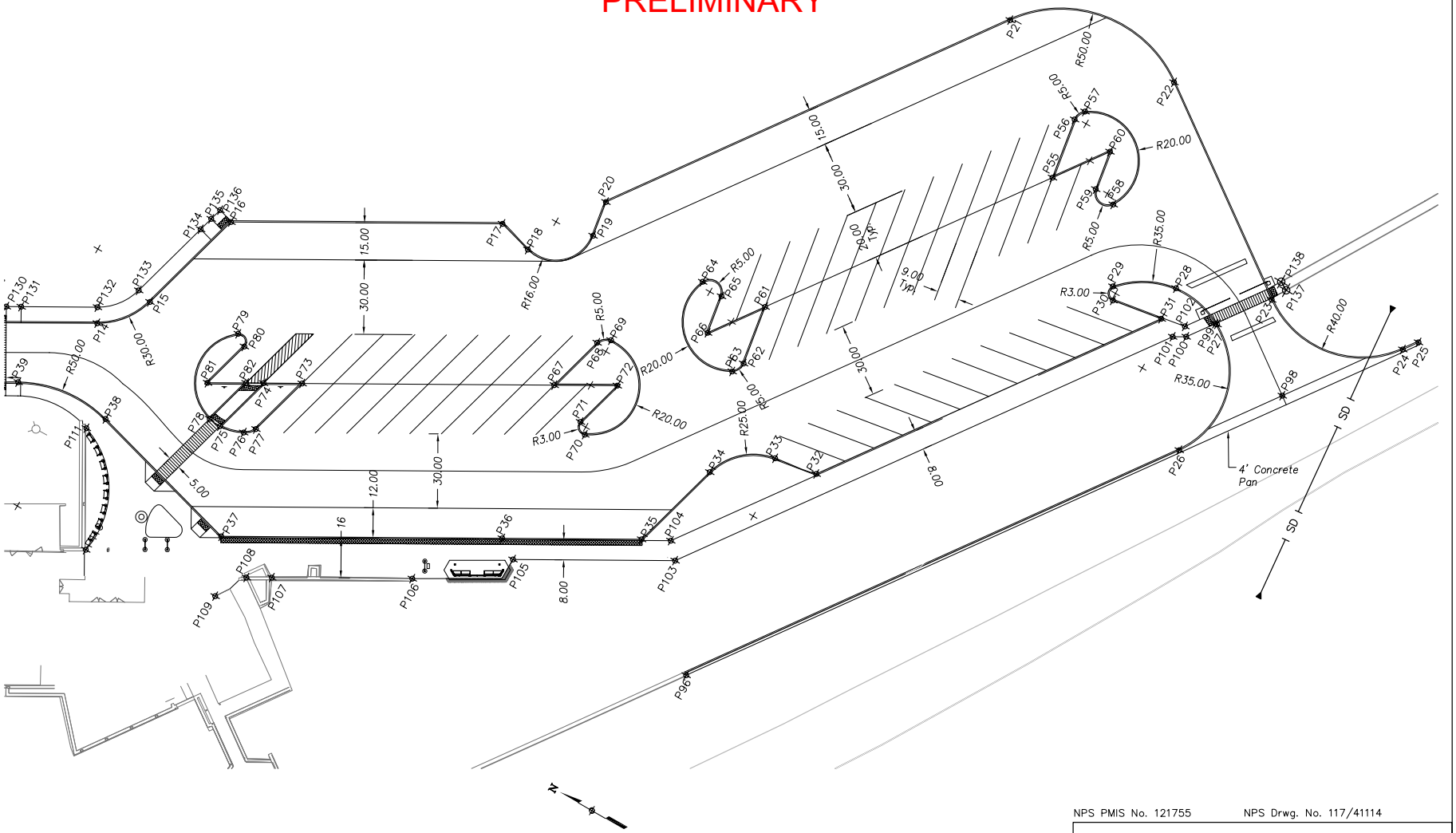
NPS PMIS No. 121755 NPS Drwg. No. 117/41114

PRELIMINARY

HORIZONTAL CONTROL PLAN

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.9

PRELIMINARY



40 20 0 40 80
SCALE 1 INCH EQUALS 40 FEET

NOTE:
1. X

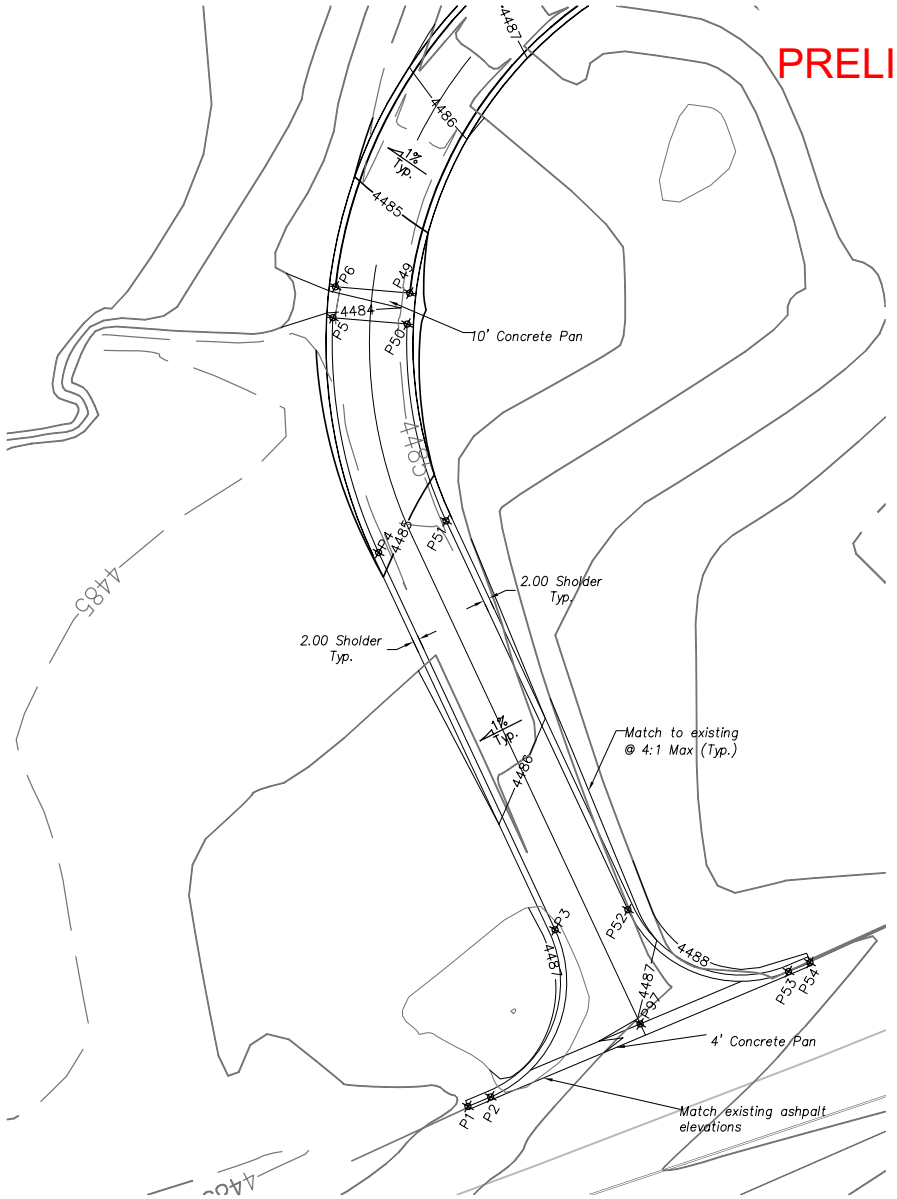
NPS PMIS No. 121755 NPS Drwg. No. 117/41114

HORIZONTAL CONTROL PLAN

Drawing File Path	06/14/07	Designed by: B.EVANS	6/2007	Checked by: B.EVANS	6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.10

PRELIMINARY



N

40 20 0 40 80

SCALE 1 INCH EQUALS 40 FEET

NOTE:

1. X

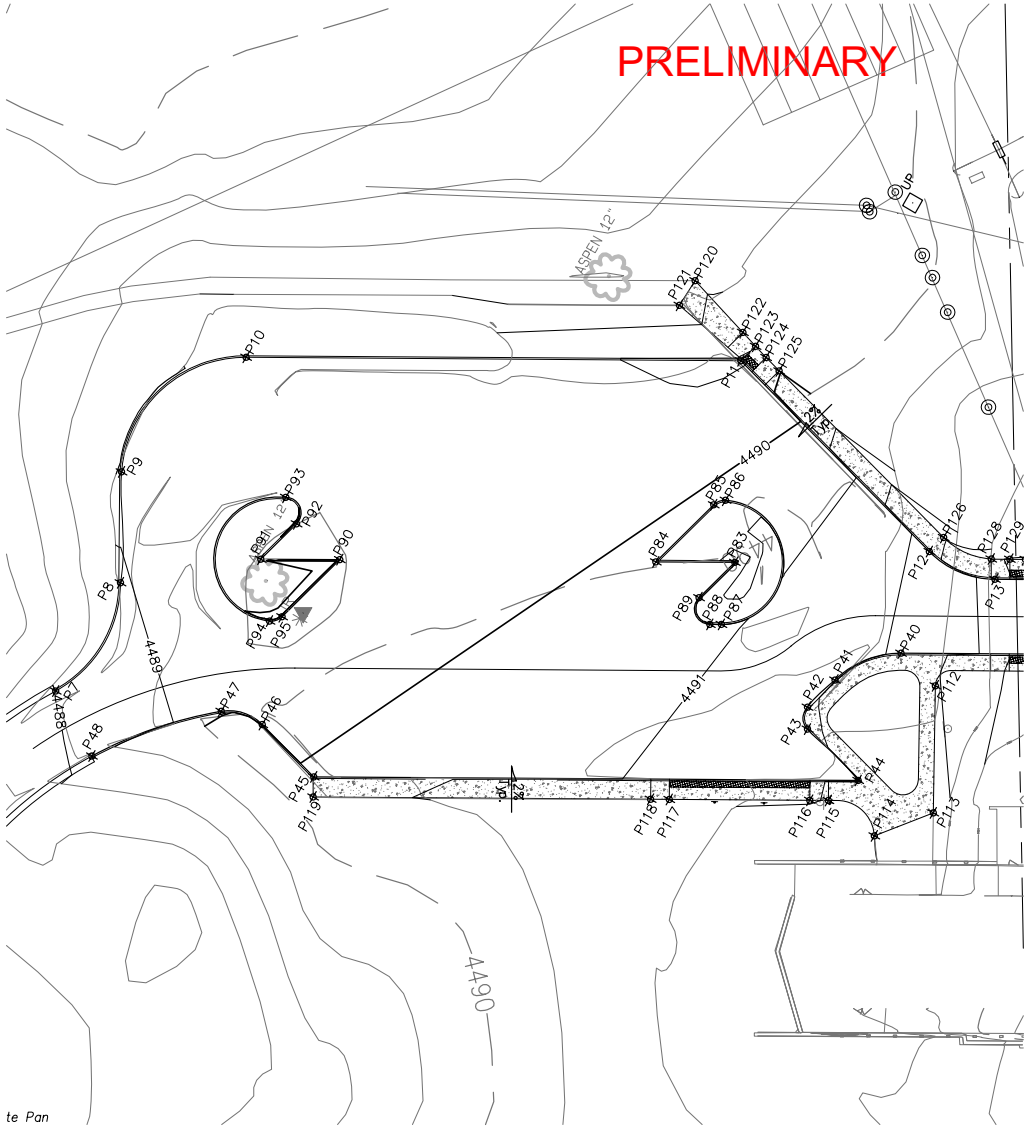
NPS PMIS No. 121755 NPS Drwg. No. 117/41114

GRADING PLAN

Drawing File Path	06/14/07	Designed by: B.EVANS	6/2007	Checked by: B.EVANS	6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.11

PRELIMINARY



NOTE:
1. X

40 20 0 40 80
SCALE 1 INCH EQUALS 40 FEET

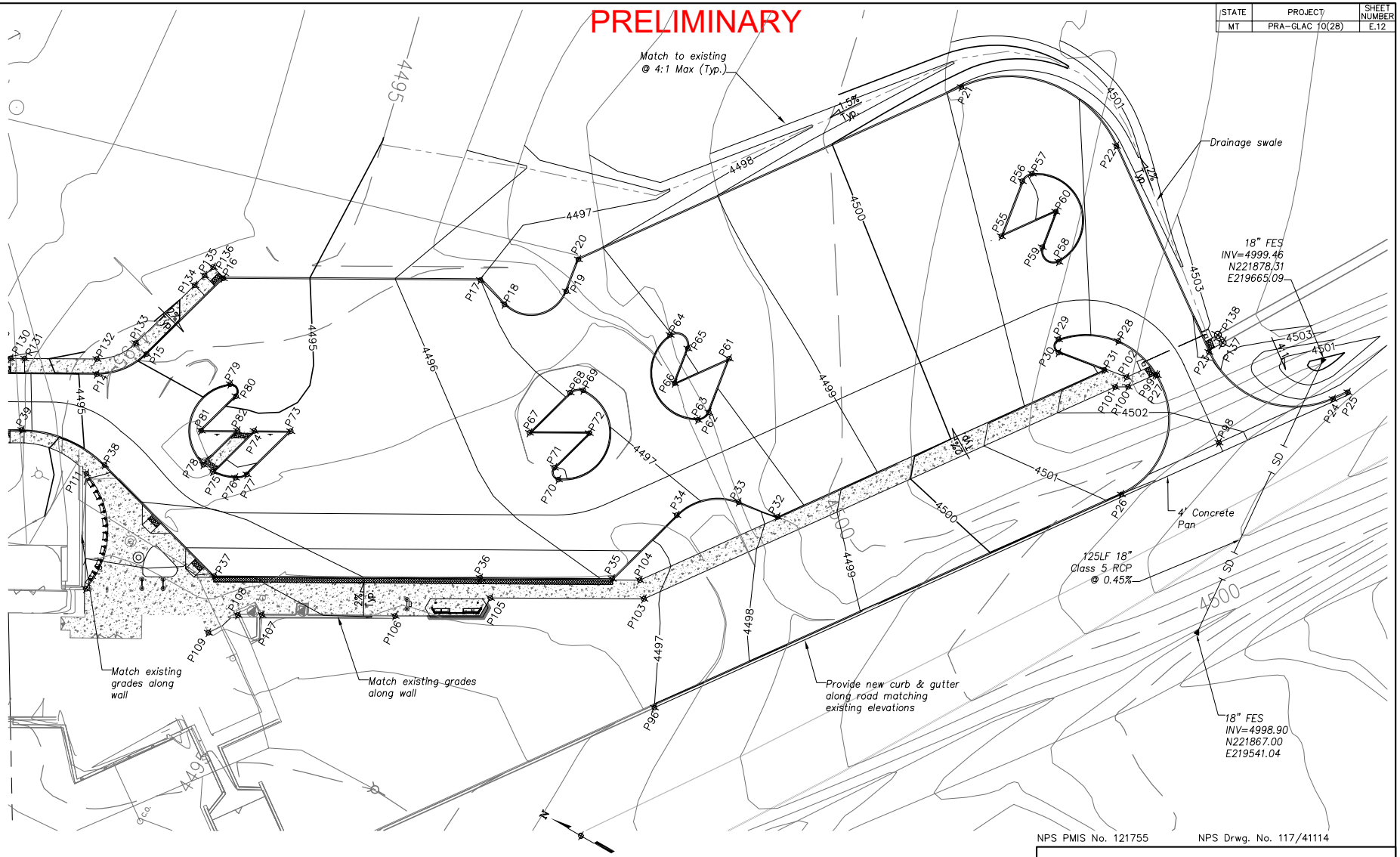
NPS PMIS No. 121755 NPS Drwg. No. 117/41114

GRADING PLAN

Drawing File Path	06/14/07	Designed by: B.EVANS	6/2007	Checked by: B.EVANS	6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.12

PRELIMINARY



NPS PMIS No. 121755 NPS Drwg. No. 117/41114

40 20 0 40 80
SCALE 1 INCH EQUALS 40 FEET

NOTE:
1. X

GRADING PLAN

6/2007 | B.EVANS | Checked by: | 6/2007 | B.EVANS | Designed by: | 06/14/07 | Drawing File Path

PRELIMINARY

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.13

LAYOUT INFORMATION

POINT	NORTHING	EASTING	ELEVATION	NOTES
P1	222454.05	218841.36	4486.44	Match Existing
P2	222449.25	218847.67	4486.69	Edge of Pavement
P3	222458.21	218904.64	4486.46	Edge of Pavement
P4	222568.21	218981.52	4484.93	Edge of Pavement
P5	222618.78	219039.61	4484.11	Edge of Pavement
P6	222623.04	219048.66	4484.11	Edge of Pavement
P7	222612.84	219194.71	4488.00	Edge of Pavement
P8	222612.20	219235.32	4488.79	Edge of Pavement
P9	222629.78	219266.44	4489.07	Edge of Pavement
P10	222613.45	219318.48	4489.25	Edge of Pavement
P11	222474.89	219397.22	4488.92	Flowline
P12	222391.58	219374.29	4492.31	Flowline
P13	222368.79	219377.13	4493.24	Flowline
P14	222328.31	219400.14	4495.38	Flowline
P15	222314.21	219418.26	4494.90	Flowline
P16	222302.02	219462.56	4493.98	Flowline
P17	222206.69	219516.73	4497.00	Edge of Pavement
P18	222192.63	219512.86	4497.19	Edge of Pavement
P19	222172.59	219530.85	4497.59	Edge of Pavement
P20	222174.93	219545.25	4497.78	Edge of Pavement
P21	222070.24	219690.48	4501.12	Edge of Pavement
P22	222000.44	219701.81	4502.42	Edge of Pavement
P23	221922.32	219645.50	4503.12	Edge of Pavement
P24	221866.46	219654.59	4502.78	Edge of Pavement
P25	221862.40	219660.24	4502.83	Match Ex. Edge of Pavement
P26	221924.28	219574.22	4500.64	Flowline
P27	221936.45	219625.86	4502.58	Flowline
P28	221958.12	219630.21	4502.23	Flowline
P29	221980.52	219618.09	4501.73	Flowline
P30	221977.75	219613.19	4501.72	Flowline
P31	221957.12	219616.54	4502.09	Flowline
P32	222046.43	219492.64	4497.64	Flowline
P33	222063.99	219489.79	4497.31	Flowline
P34	222084.09	219471.75	4496.78	Flowline
P35	222094.34	219434.51	4496.05	Flowline
P36	222143.26	219406.70	4495.47	Flowline
P37	222241.90	219350.64	4496.68	Flowline
P38	222306.10	219368.31	4495.39	Flowline
P39	222344.08	219363.58	4493.82	Flowline
P40	222383.08	219341.41	4492.10	Flowline
P41	222397.18	219323.29	4491.65	Flowline
P42	222400.48	219311.30	4491.41	Flowline
P43	222396.99	219305.16	4491.38	Flowline
P44	222374.54	219298.98	4491.70	Flowline
P45	222527.00	219212.33	4490.09	Flowline
P46	222549.83	219218.62	4489.74	Edge of Pavement
P47	222563.40	219215.69	4489.42	Edge of Pavement
P48	222592.25	219182.37	4488.24	Edge of Pavement
P49	222601.31	219058.89	4484.36	Edge of Pavement
P50	222597.06	219049.85	4484.36	Edge of Pavement
P51	222554.47	219001.19	4485.17	Edge of Pavement
P52	222441.12	218921.98	4486.74	Edge of Pavement
P53	222386.34	218930.59	4487.64	Edge of Pavement
P54	222381.79	218936.59	4487.68	Edge of Pavement
P55	222023.65	219643.95	4501.17	Flowline

LAYOUT INFORMATION

POINT	NORTHING	EASTING	ELEVATION	NOTES
P56	222027.67	219668.74	4501.43	Flowline
P57	222025.65	219673.60	4501.54	Flowline
P58	221996.99	219646.82	4501.73	Flowline
P59	222006.18	219648.65	4501.57	Flowline
P60	222008.76	219664.60	4501.72	Flowline
P61	222098.08	219540.70	4498.30	Flowline
P62	222094.16	219516.58	4497.76	Flowline
P63	222096.55	219511.47	4497.62	Flowline
P64	222124.98	219536.88	4497.99	Flowline
P65	222115.49	219535.63	4498.04	Flowline
P66	222112.96	219520.05	4497.77	Flowline
P67	222156.02	219470.77	4496.59	Flowline
P68	222149.55	219494.27	4497.05	Flowline
P69	222145.22	219497.92	4497.15	Flowline
P70	222135.35	219459.65	4496.44	Flowline
P71	222139.43	219463.20	4496.49	Flowline
P72	222133.89	219483.34	4496.87	Flowline
P73	222244.54	219420.46	4495.23	Flowline
P74	222258.07	219412.77	4495.17	Flowline
P75	222264.65	219388.87	4495.64	Flowline
P76	222255.05	219391.48	4495.65	Flowline
P77	222251.50	219395.18	4495.59	Flowline
P78	222269.68	219389.44	4495.58	Flowline
P79	222276.89	219424.90	4494.85	Flowline
P80	222272.21	219421.70	4494.93	Flowline
P81	222277.74	219401.59	4495.17	Flowline
P82	222264.22	219409.28	4495.29	Flowline
P83	222444.08	219339.97	4490.58	Flowline
P84	222466.21	219327.39	4490.25	Flowline
P85	222459.27	219352.63	4490.14	Flowline
P86	222456.68	219355.78	4490.17	Flowline
P87	222437.86	219320.50	4491.08	Flowline
P88	222441.09	219318.66	4490.85	Flowline
P89	222448.39	219324.34	4490.65	Flowline
P90	222554.74	219277.08	4489.62	Flowline
P91	222576.87	219264.50	4489.49	Flowline
P92	222572.57	219280.13	4489.51	Flowline
P93	222579.86	219285.81	4489.46	Flowline
P94	222564.44	219248.66	4489.57	Flowline
P95	222561.67	219251.90	4489.58	Flowline
P96	222051.29	219395.95	4496.57	Ex. Flowline
P97	222419.31	218892.10	4487.15	Centerline
P98	221899.28	219614.10	4501.74	Centerline
P99	221937.28	219625.70	4502.57	Back of Walk
P100	221944.75	219615.34	4502.75	Back of Walk
P101	221949.52	219612.55	4502.78	Back of Walk
P102	221947.32	219618.64	4502.66	Back of Walk
P103	222078.35	219433.82	4496.83	Back of Walk
P104	222083.82	219439.91	4496.67	Back of Walk
P105	222135.26	219401.48	4496.18	Back of Walk
P106	222166.59	219374.48	4496.67	Ex. Back of Walk
P107	222215.96	219346.43	4497.28	Ex. Back of Walk
P108	222224.87	219341.31	4497.25	Ex. Back of Walk
P109	222231.99	219328.54	4497.03	Ex. Back of Walk
P110	222286.60	219318.62	4497.38	Ex. Back of Walk

LAYOUT INFORMATION

POINT	NORTHING	EASTING	ELEVATION	NOTES
P111	222310.94	219361.24	4495.93	Ex. Back of Walk
P112	222368.25	219337.81	4492.85	Back of Walk
P113	222348.37	219302.05	4492.36	Ex. Back of Walk
P114	222361.09	219286.12	4492.53	Ex. Back of Walk
P115	222379.63	219288.60	4492.23	Back of Walk
P116	222384.85	219285.64	4491.68	Back of Walk
P117	222424.20	219263.28	4491.27	Back of Walk
P118	222429.41	219260.31	4491.70	Back of Walk
P119	222523.97	219206.58	4490.71	Back of Walk
P120	222500.56	219412.15	4488.82	Ex. Back of Walk
P121	222500.96	219402.80	4488.67	Ex. Back of Walk
P122	222478.86	219405.40	4489.52	Back of Walk
P123	222473.13	219403.62	4489.05	Back of Walk
P124	222468.34	219402.16	4489.25	Back of Walk
P125	222462.56	219400.57	4489.97	Back of Walk
P126	222389.85	219380.56	4492.94	Back of Walk
P128	222373.09	219382.21	4493.80	Back of Walk
P129	222367.85	219385.15	4494.09	Back of Walk
P130	222363.51	219387.62	4494.19	Back of Walk
P131	222358.29	219390.58	4494.49	Back of Walk
P132	222331.52	219405.79	4496.00	Back of Walk
P133	222320.48	219419.99	4495.53	Back of Walk
P134	222311.15	219453.88	4494.82	Back of Walk
P135	222309.56	219459.66	4494.21	Back of Walk
P136	222308.23	219464.48	4494.10	Back of Walk
P137	221919.21	219651.73	4503.75	Ex. Back of Walk
P138	221922.67	219653.74	4503.75	Ex. Back of Walk

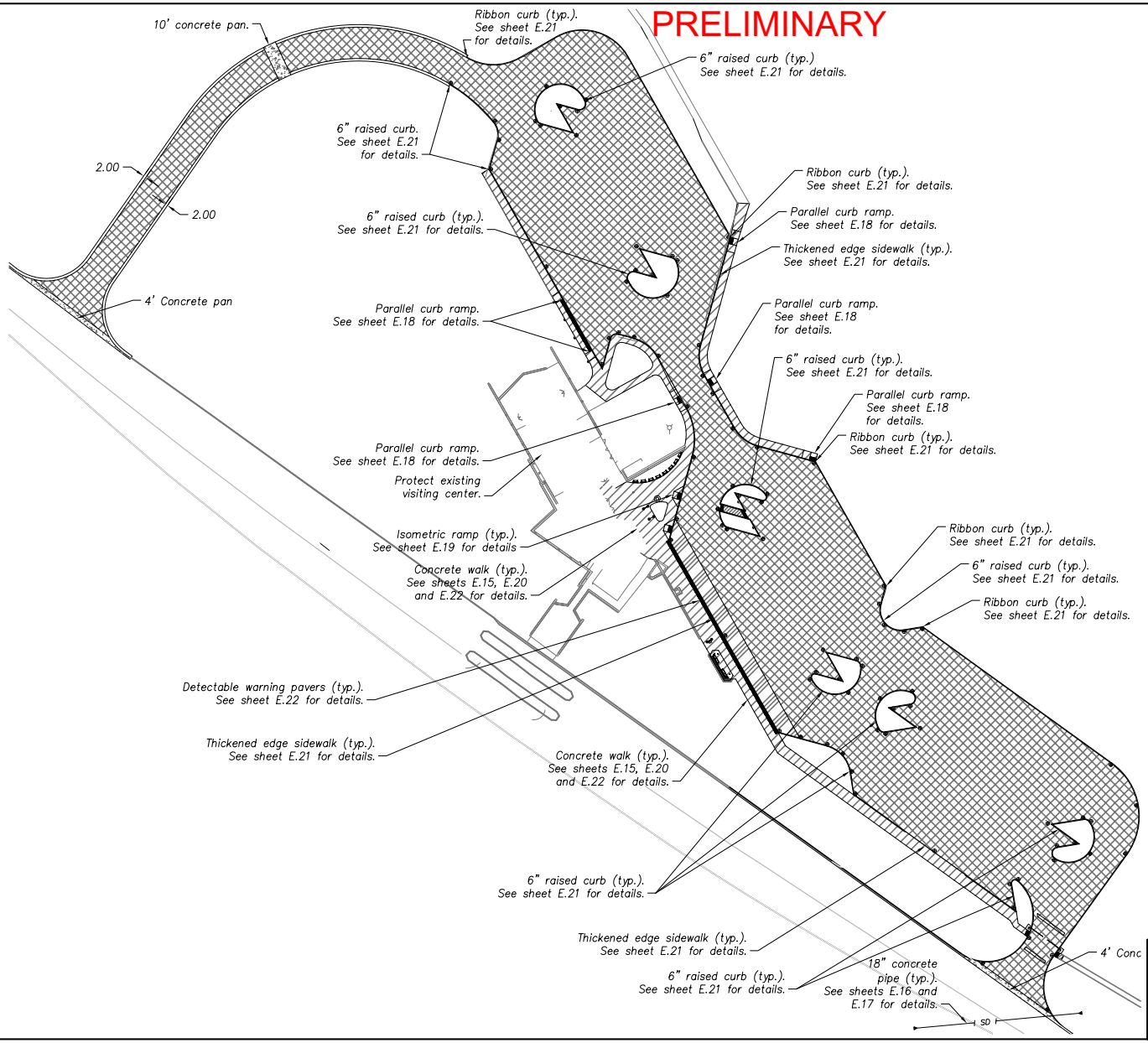
NPS PMIS No. 121755 NPS Drwg. No. 117/41114

HORIZONTAL & GRADING TABLE

Drawing File Path	Designed by: B.EVANS	06/14/07	Checked by: B.EVANS	6/2007	6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.14

PRELIMINARY



Porous Asphalt

Concrete Walk

Concrete Drain Pan

Concrete Drive

Snow Poles

NOTE:

1. Snowpoles are located as shown on this plan along 6" raised curb and thickened edge sidewalk. (typ.) Refer to Sheet E.21 for Snowpole Detail.

N

80 40 0 80 160

SCALE 1 INCH EQUALS 80 FEET

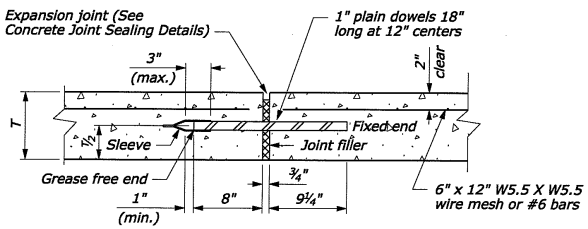
NPS PMIS No. 121755 NPS Drwg. No. 117/41114

PAVING PLAN

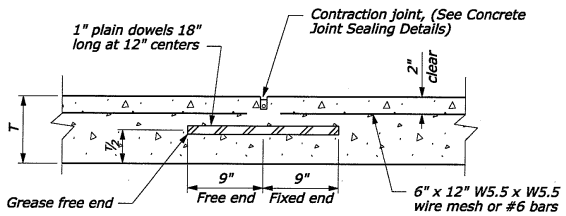
Drawing File Path | 06/14/07 | Designed by: B.EVANS | 6/2007 | Checked by: B.EVANS | 6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.15

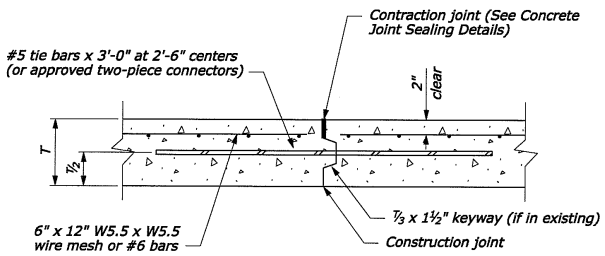
PRELIMINARY



TRANSVERSE EXPANSION JOINT



TRANSVERSE CONTRACTION JOINT

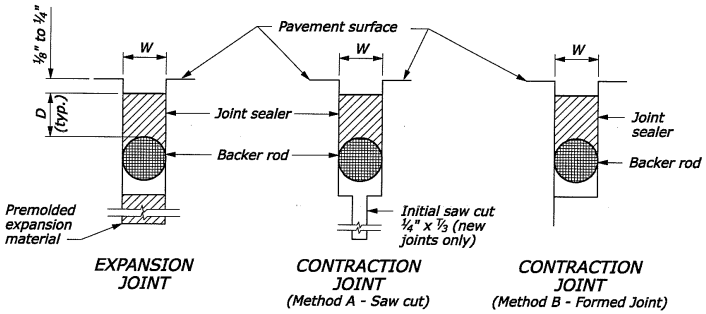


LONGITUDINAL CONSTRUCTION JOINT

REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT JOINT DETAILS

NOTE:

1. *Anchor tie bars and dowels into existing concrete pavement with epoxy resin adhesive.*
2. *Space expansion joints a minimum of 280 feet.*
3. *W= ⅜" for longitudinal contraction joints and ¾" for transverse expansion and contraction joints field conditions require larger openings.*
4. *Maintain joint sealant shape factor of 1:1 except that when silicone sealant is used, the width to depth (W:D) shape factor is 1:2.*



REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT JOINT SEALING DETAILS

NO SCALE

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

U.S. CUSTOMARY STANDARD

PORTLAND CEMENT CONCRETE PAVEMENT JOINTS

STANDARD APPROVED FOR USE --/----
REVISED:
DRAFT: 9/2004

STANDARD 501-2

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STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.16

CONCRETE ROUND PIPE CULVERT

PIPE SIZE	FILL HEIGHT AND PIPE CLASS TABLE								
		EMBANKMENT				TRENCH			
DIAMETER INCHES	MINIMUM COVER INCHES	CLASS II	CLASS III	CLASS IV	CLASS V	CLASS II	CLASS III	CLASS IV	CLASS V
		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE IN FEET							
12	12	10	10	15	23	18	18	26	13
18	12	10	10	25	39	13	13	31	45
24	12	10	10	15	30	15	15	22	40
30	12	9	13	15	35	13	16	20	46
36	12	9	9	20	41	10	13	26	56
48	12	12	13	26	44	15	16	30	49
60	12	15	17	28	44	15	20	32	49
72	12	13	17	30	41	15	20	35	49
84	12	13	19	30		15	23	37	
96	12	13	20			15	24		
108	14	15	20			18	26		

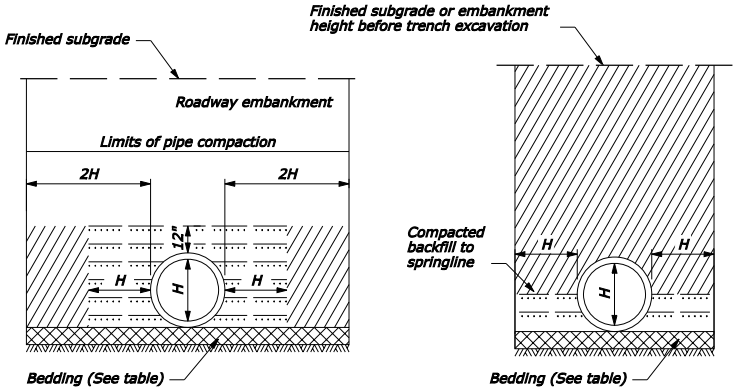
LEGEND:

- Bedding material (uncompacted).
- Embankment material placed in layers not exceeding 6" compacted depth.
- Compacted backfill material placed in layers not exceeding 6" compacted depth meeting the following:
  Maximum particle size = 3"
  Soil classification; A-1, A-2 or A-3
  Or, lean concrete backfill in accordance with Section 614.
- Impermeable backfill material.

NOTE:

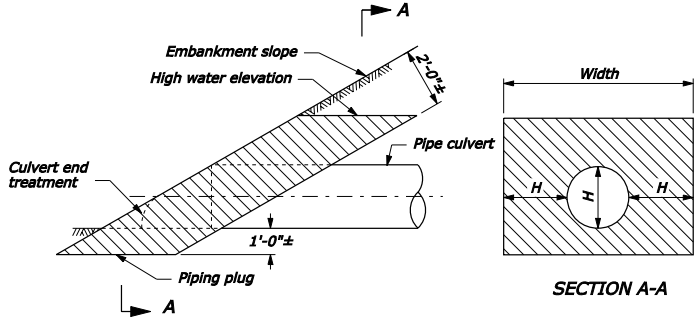
1. When directed, camber pipe culverts upwards from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
2. Measure minimum cover from the top of the pipe culvert to the subgrade for flexible pavements, and to the top of the pavement for rigid pavements. Measure maximum fill height from the top of the pipe to the top of the pavement for both flexible and rigid pavements.
3. Pipe compaction limits shown are for pipe installation in an embankment. For pipe installation in a trench, the compaction limits shall be the walls of the trench.
4. Where unyielding or unstable material is encountered, install the pipe culvert according to the limits of pipe compaction shown on Standard 602-3.
5. Maximum fill heights for pipe culvert installations may be increased on approval of site-specific structural pipe designs meeting the criteria of AASHTO Standard Specifications for Highway bridges.

BEDDING DEPTH	
PIPE SIZE (H)	DEPTH
12" TO 54"	4"
> 54"	6"



EMBANKMENT INSTALLATION

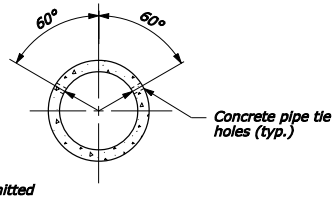
TRENCH INSTALLATION

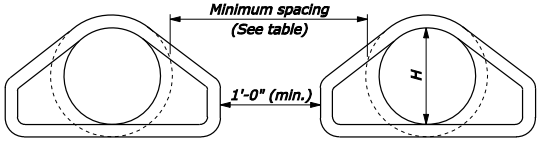


SECTION A-A

Construct a piping plug of impermeable backfill material at the pipe inlet where granular material is used for backfill. Width may be adjusted to tie into impervious material.

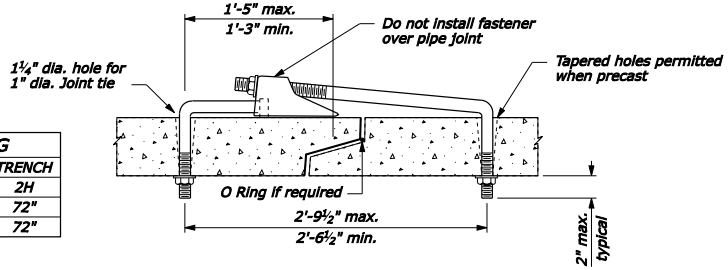
PIPING PLUG





MINIMUM SPACING		
DIAMETER	EMBANKMENT	TRENCH
12"-36"	15"	2H
36"-96"	0.5H	72"
OVER 96"	48"	72"

MULTIPLE ROUND PIPE INSTALLATION



SUPPLEMENTAL CONCRETE PIPE TIE

PRELIMINARY

NO SCALE

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

U.S. CUSTOMARY STANDARD

CONCRETE PIPE CULVERT INSTALLATION

STANDARD APPROVED FOR USE 12/1993
REVISED: 4/1994 6/2005
DRAFT: 9/2005

STANDARD 602-7

27-Sep-2005 01:46 PM
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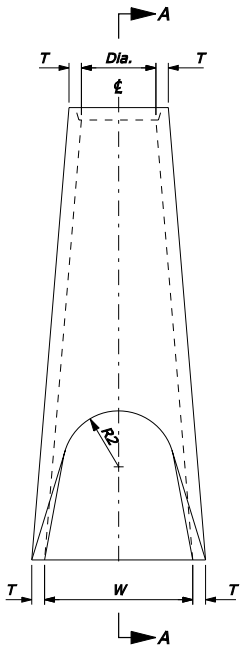
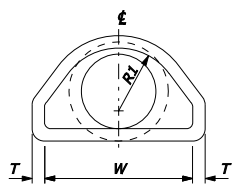
STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.17

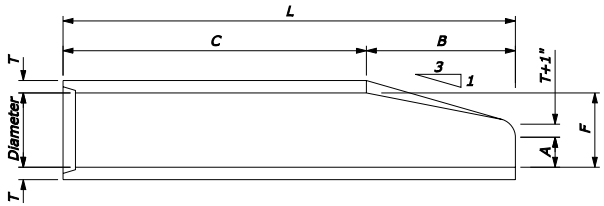
PRELIMINARY



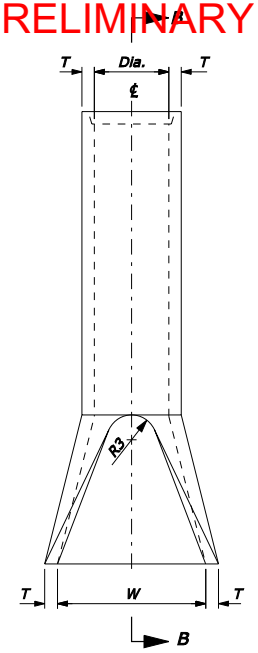
PLAN



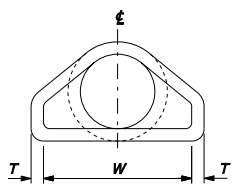
ELEVATION



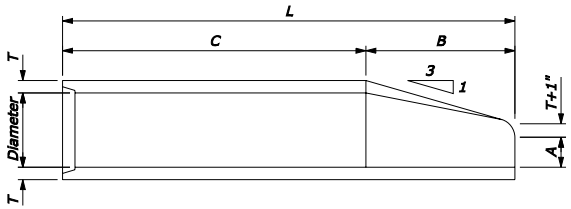
SECTION A-A



PLAN



ELEVATION



SECTION B-B

NOTE:

1. Variations in design and dimensions are permitted to allow for manufacturer's standards.
2. Fabricate the outlet end section with a groove end and the inlet end section with a tongue end.
3. Warp embankment slopes to match the slope of the flared end section.

END SECTIONS FOR ROUND PIPE CULVERT

PIPE SIZE DIAMETER INCHES	DIMENSIONS INCHES									
	T	A	B	C	L	W	F	R1	R2	R3
12	2	4	24	48 7/8	72 7/8	24	13	10 1/8	9	4
15	2 1/4	6	27	46	73	30	16	12 1/2	11	6
18	2 1/2	9	27	46	73	36	19	15 1/2	12	7 1/2
21	2 3/4	9	36	37	73	42	22	16 1/2	13	5
24	3	9 1/2	43 1/2	30	73 1/2	48	25	16 3/4	14	8
27	3 1/4	10 1/2	48	25 1/2	73 1/2	54	28	--	14 1/2	9
30	3 1/2	12	54	19 3/4	73 3/4	60	31	18 1/2	15	8
33	3 3/4	13 1/2	59 1/2	37 1/2	96	66	34	23 3/4	17 1/2	9
36	4	15	63	33	96	72	37	23 1/4	20	11
42	4 1/2	21	63	33	96	78	43	--	22	11
48	5	24	72	24	96	84	49	--	22	12

NO SCALE

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

U.S. CUSTOMARY STANDARD

CONCRETE END SECTION FOR ROUND PIPE

STANDARD APPROVED FOR USE 12/1993
REVISED: 4/1994 6/2005

STANDARD 602-8

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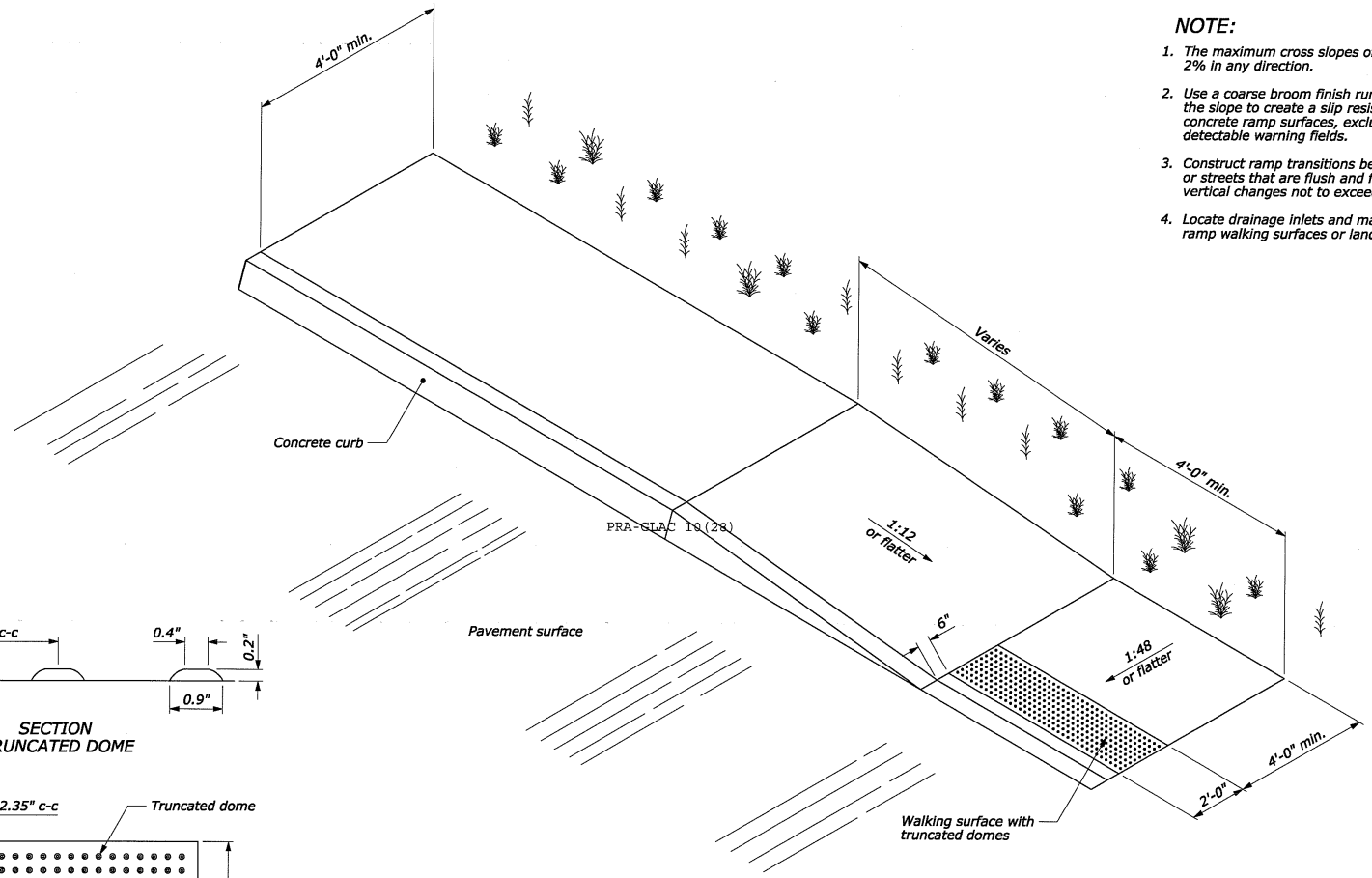
PRELIMINARY

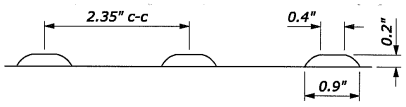
STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.18

NOTE:

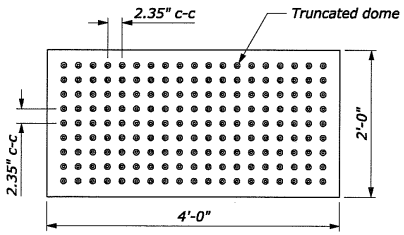
1. The maximum cross slopes of ramps must not exceed 2% in any direction.
2. Use a coarse broom finish running perpendicular to the slope to create a slip resistant surface on concrete ramp surfaces, exclusive of the detectable warning fields.
3. Construct ramp transitions between walks, gutters, or streets that are flush and free of abrupt vertical changes not to exceed 2.5 inches.
4. Locate drainage inlets and manholes outside of ramp walking surfaces or landings.



PARALLEL CURB RAMP



SECTION
TRUNCATED DOME



PLAN

DETECTABLE WARNING FIELD WITH TRUNCATED DOMES

NO SCALE

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

U.S. CUSTOMARY STANDARD

WHEELCHAIR RAMP CURB TAPER

STANDARD APPROVED FOR USE --/----

REVISED:
DRAFT: 1/2004

STANDARD 615-2

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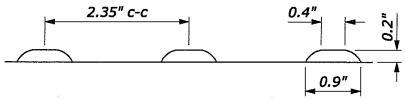
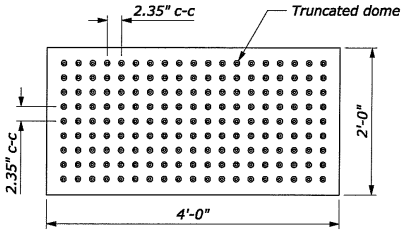
PRELIMINARY

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.19

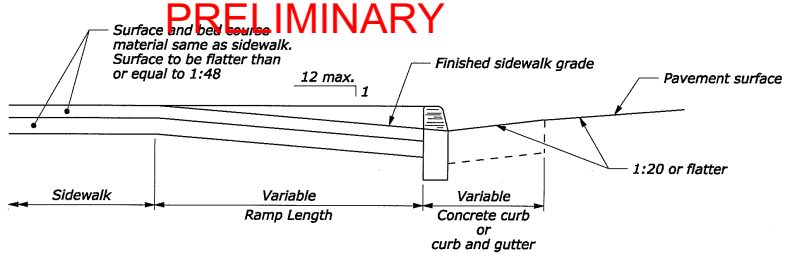


SECTION
TRUNCATED DOME

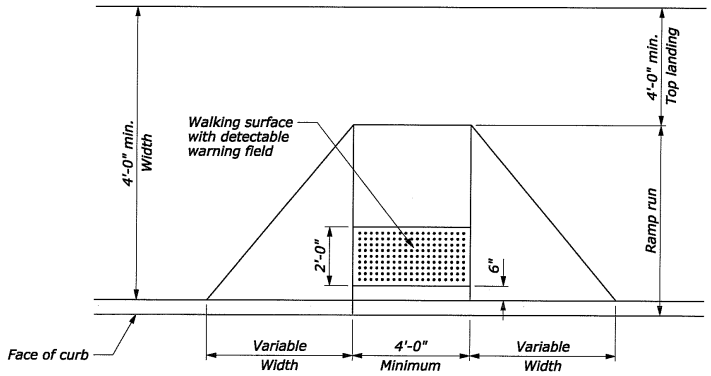


PLAN

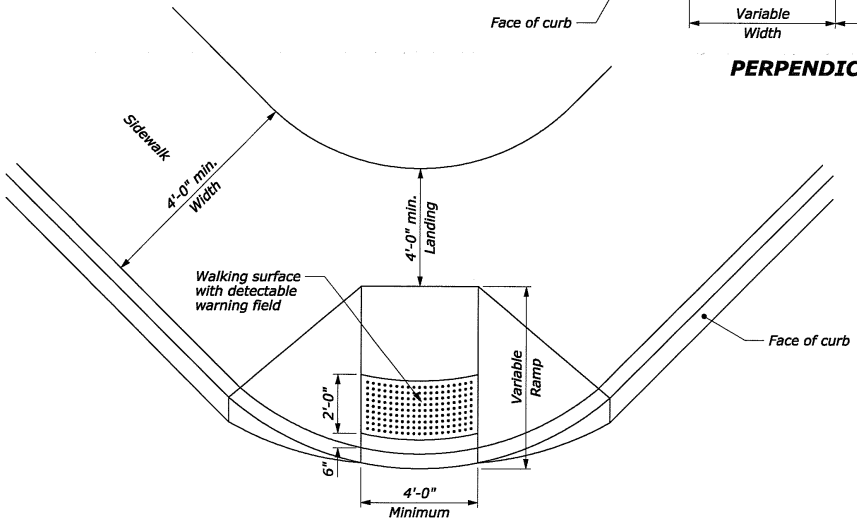
DETECTABLE WARNING FIELD WITH TRUNCATED DOMES



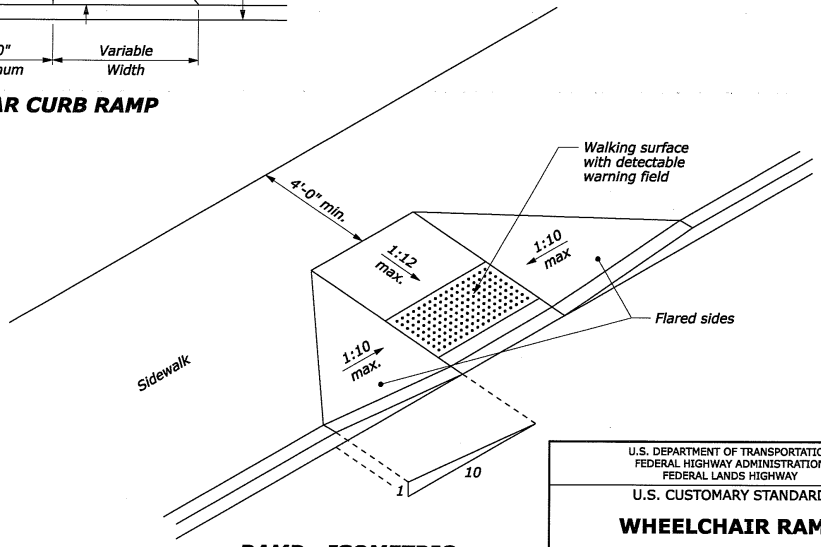
RAMP - TYPICAL SECTION



PERPENDICULAR CURB RAMP



DIAGONAL CURB RAMP



RAMP - ISOMETRIC

NO SCALE

NOTE:

1. The maximum cross slopes of ramps must not exceed 2% in any direction.
2. Use a coarse broom finish running perpendicular to the slope to create a slip resistant surface on concrete ramp surfaces, exclusive of the detectable warning fields.
3. Construct curb ramp perpendicular to the curb. Avoid skewing the ramp face.
4. Construct ramp transitions between walks, gutters, or streets that are flush and free of abrupt vertical changes not to exceed 2.5 inches.
5. Locate drainage inlets and manholes outside of ramp walking surfaces or landings.

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

U.S. CUSTOMARY STANDARD

WHEELCHAIR RAMP CURB CUT

STANDARD APPROVED FOR USE --/----

REVISED:
DRAFT: 1/2004

STANDARD
615-1

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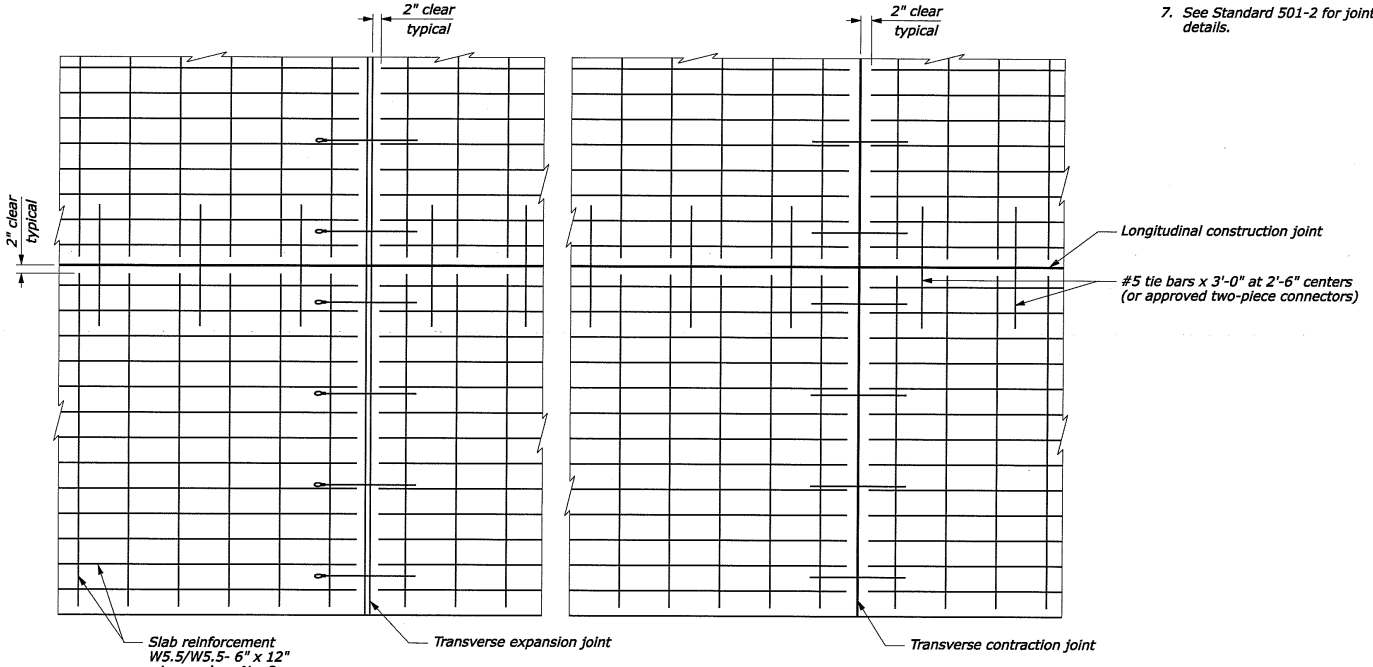
PRELIMINARY

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.20

NOTE:

1. Lap longitudinal reinforcement not less than 13-inches.
2. Lap transverse reinforcement not less than 9-inches.
3. Eliminate all longitudinal and transverse reinforcing steel, wire, or bars where plain portland cement concrete pavement or base is required.
4. Provide the same type of dowel assemblies and tie bars for joints in plain portland cement concrete pavement as shown for joints in reinforced pavement.
5. Space transverse expansion joints at a minimum of 280 feet.
6. Space transverse contraction joints for reinforced concrete pavement at not more than 40 foot intervals and for plain concrete pavement or base at not more than 20 foot intervals.
7. See Standard 501-2 for joint details and joint sealing details.



PLAN

NO SCALE

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

U.S. CUSTOMARY STANDARD

PORTLAND CEMENT CONCRETE PAVEMENT

STANDARD APPROVED FOR USE --/----

REVISED:
DRAFT: 9/2004

STANDARD 501-1

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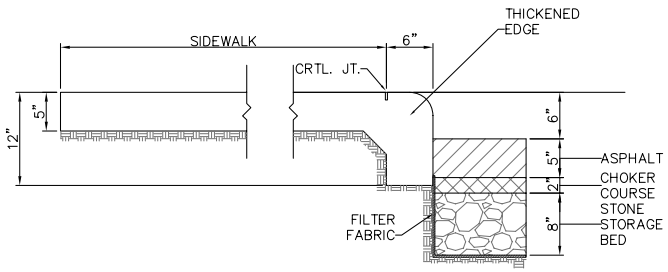
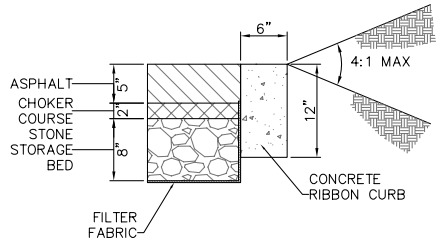
PRELIMINARY

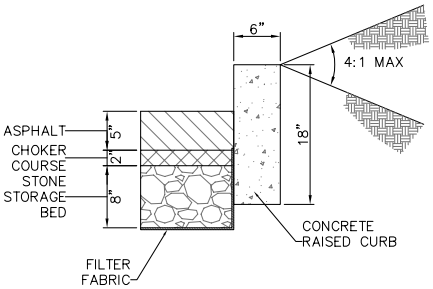
STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.21



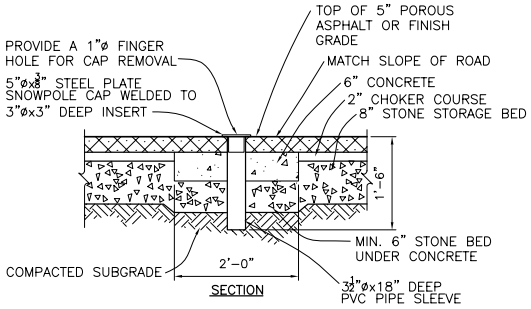
THICKENED EDGE DETAIL
(N.T.S)



CONCRETE RIBBON CURB
(N.T.S.)



CONCRETE RAISED CURB
(N.T.S)



SNOW POLE BASE SLEEVE IN ASPHALT
(N.T.S.)

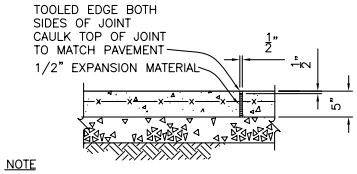
NPS PMIS No. 121755 NPS Drwg. No. 117/41114

PAVING DETAILS

Drawing File Path 06/14/07 Designed by: B.EVANS 6/2007 Checked by: B.EVANS 6/2007

PRELIMINARY

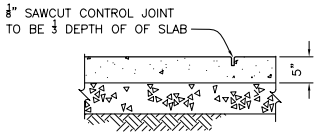
STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	E.22



NOTE

EXPANSION JOINT SHALL BE INSTALLED WHEN ABUTTING EXISTING CONCRETE OR FIXED STRUCTURES SUCH AS SITE WALLS AND BUILDINGS, AND EVERY 30' ON LONG STRAIGHT CONCRETE STRETCHES.

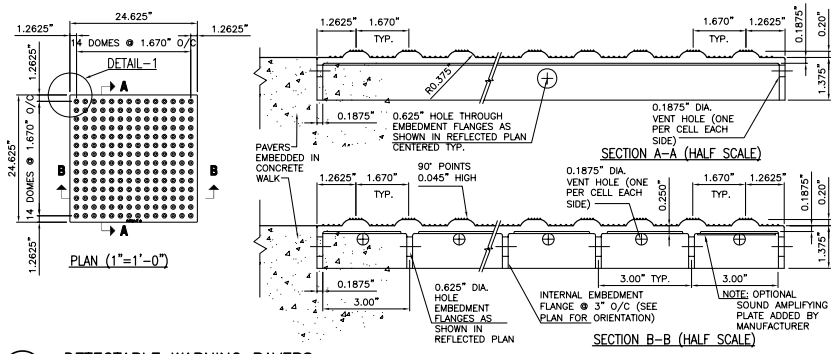
EXPANSION JOINT



CONTROL JOINT

1 CONCRETE WALK CONTROL JOINT

SCALE (A)

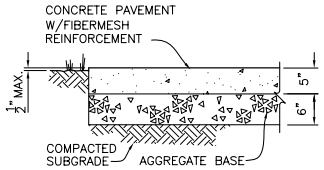


2 DETECTABLE WARNING PAVERS

SET IN CONCRETE WALK

NOTE

STANDARD INSTALLATION PAVERS TO ABUTT. GAP INSTALLATION REQUIRED ON RADIUS LAYOUTS ONLY TO REFLECT CURVED CONDITION.



SECTION

3 CONCRETE SIDEWALK

SCALE (A)

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

PAVING DETAILS

Drawing File Path | 06/14/07 | Designed by: B.EVANS | 6/2007 | Checked by: B.EVANS | 6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	F.1

TABULATION OF EROSION CONTROL QUANTITIES

THIS SHEET LEFT BLANK INTENTIONALLY

PRELIMINARY

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

TABULATION QUANTITIES PLAN

Drawing File Path	06/14/07	Designed by: B.EVANS 6/2007	Checked by: B.EVANS 6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	F.2

PRELIMINARY

Install straw waddles.

Permanent riprap erosion protection

Install straw waddles.

Vehicle traction control.

Install straw waddles

Install straw waddle in swale

Vehicle traction control.

Install straw waddles

Permanent riprap erosion protection

LEGEND	
DEVICE	SYMBOL
straw waddles	
riprap	
vehicle traction control	

NOTE:

1. Straw waddles shall be placed every 100lf along swale.

N

80 40 0 80 160

SCALE 1 INCH EQUALS 80 FEET

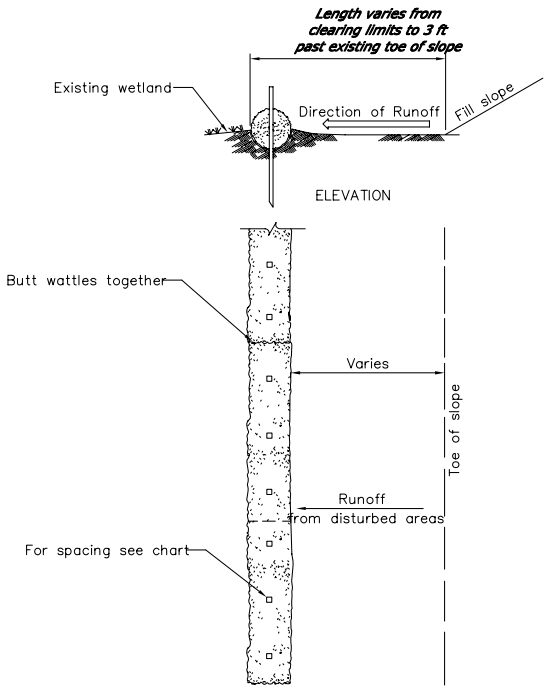
NPS PMIS No. 121755 NPS Drwg. No. 117/41114

TEMP. EROSION CONTROL PLAN

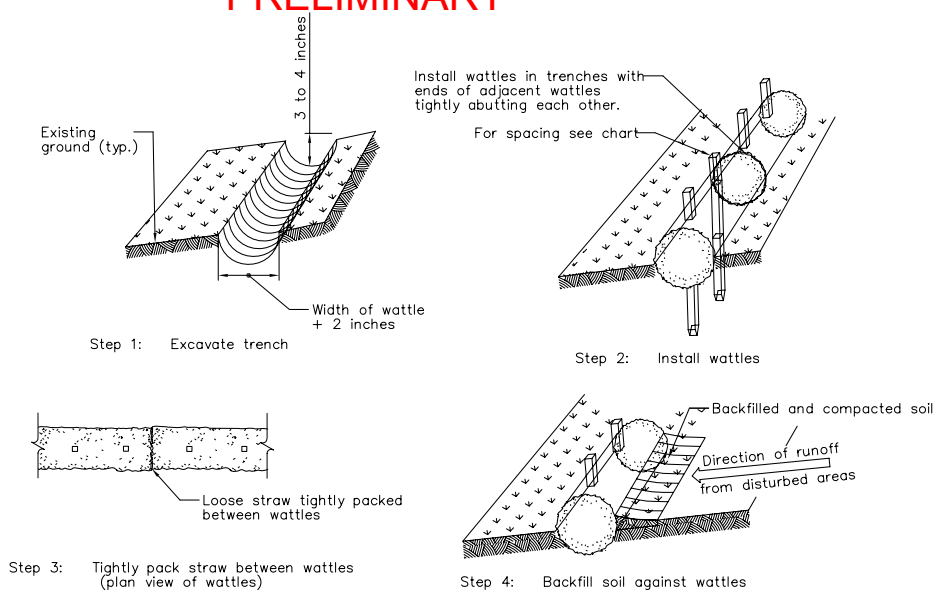
Drawing File Path	06/14/07	Designed by: B.EVANS	6/2007	Checked by: B.EVANS	6/2007

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	F.3

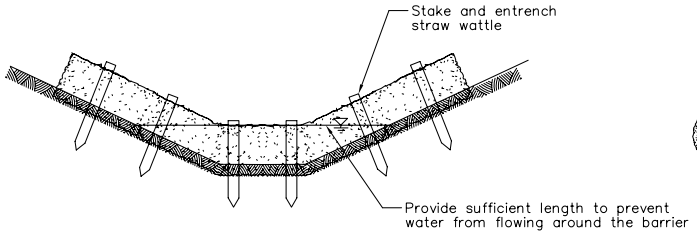
PRELIMINARY

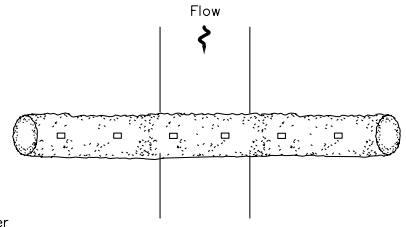


INSTALLATION OF A STRAW WATTLE BARRIER AT TOE OF FILL



STAKED AND ENTRENCHED STRAW WATTLES





INSTALLATION OF A STRAW WATTLE BARRIER IN DITCH

STAKE SPACING	
Wattle length (ft)	No. of stakes (each)
25	6
20	5
12	4

NOTE:

1. Use straw wattles in drainage ditches for only low flow conditions.
2. Dimensions not labeled are in inches.

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

SEDIMENT WATTLES

Drawing File Path 06/14/07 Designed by: B.EVANS Checked by: B.EVANS 6/2007 6/2007

PRELIMINARY

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	J.1

GENERAL NOTES

DESIGN CRITERIA

1. CODES AND STANDARDS USED IN DESIGN:

INTERNATIONAL BUILDING CODE 2003

2. SEISMIC LOADS

OCCUPANCY CATEGORY II
SEISMIC USE GROUP I
EARTHQUAKE IMPORTANCE FACTOR, IE 1.0
MAPPED SPECTRAL RESPONSE ACCELERATIONS (%g) .. SS = 50, S1 = 14
DESIGN SPECTRAL RESPONSE COEFFICIENTS . . .SDS = 0.47, SD1 = 0.21
SOIL SITE CLASS. . . . . D

BASIC STRUCTURAL SYSTEM. . . . . BUILDING FRAME
BUS SHELTER SEISMIC LATERAL SYSTEM . . . . . .WOOD BRACED FRAME

BUS SHELTER RESPONSE MODIFICATION FACTOR, R. 2.5
SEISMIC RESPONSE COEFFICIENT, Cs 0.2256
BUILDING DESIGN BASE SHEAR, Vu . . . . . 4.62 KIPS E-W DIRECTION
. . . . . 4.62 KIPS N-S DIRECTION
SEISMIC ANALYSIS PROCEDURE . . . . . EQUIVALENT LATERAL FORCE
PROCEDURE PER 1617.5
SEISMIC DESIGN CATEGORY . . . . . D

3. WIND LOADS PER IBC 2003

BUILDING CATEGORY. II
WIND IMPORTANCE FACTOR, Iw. 1.0
BASIC WIND SPEED (3-SECOND GUST WIND SPEED). . . . . 130 MPH
EXPOSURE CATEGORY. C
INTERNAL PRESSURE COEFFICIENT, GCpi 0.0

4. GRAVITY LOADS
A.

LOCATION	SUPERIMPOSED DEAD LOAD, PSF	LIVE LOAD, PSF	LIVE LOAD REDUCTION
ROOF	10	SNOW AS NOTED BELOW	NO

NOTES: SUPERIMPOSED DEAD LOAD EXCLUDES STRUCTURE SELF WEIGHT BUT INCLUDES THE WEIGHT OF ALL OTHER PERMANENT MATERIALS SUCH AS ROOFING, ETC.

B. SNOW LOADS

GROUND SNOW LOAD Pg . . . . . 180 PSF
FLAT ROOF SNOW LOAD Pf . . . . . 137 PSF
SNOW EXPOSURE FACTOR Ce 0.9
SNOW LOAD IMPORTANCE FACTOR Is. 1.0
THERMAL FACTOR Ct 1.2

GENERAL NOTES

SECTION 1 – GENERAL REQUIREMENTS

1.0 CONSTRUCTION SPECIFICATION:

FEDERAL HIGHWAYS ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, FP-03 W/ SCR'S FOR THIS PROJECT

1.1 SPECIAL INSPECTION

SPECIAL INSPECTION OF THE FOLLOWING ITEMS IS REQUIRED PER IBC 2003 CHAPTER 1 – SECTION 109 AND CHAPTER 17.

SOILS:
- SUBGRADE AND FILL BENEATH FOOTINGS

CONCRETE:
- STRUCTURAL CONCRETE
- INSTALLATION OF EMBEDDED BOLTS AND PLATES SUPPORTING STRUCTURE
- REINFORCING STEEL PLACEMENT
- FIELD BENDING OF REINFORCING STEEL
- REBAR ANCHORED INTO HARDENED CONCRETE

STEEL:
- STEEL WELDING:
  - ALL WELDS SHALL BE VISUALLY INSPECTED AND ALL GROOVE WILDS SHALL BE ULTRASONICALLY TESTED BY A CERTIFIED WELDING INSPECTOR.

WOOD:
- DIAPHRAGM NAILING
- FRAMING DETAILS AND CONNECTIONS.

SECTION 2 – FOUNDATIONS

2.1 DESIGN CRITERIA

A. REFERENCE PROJECT SOILS REPORT PREPARED BY DIANN MOREHOUSE/ FHWA, NUMBER 22-06, DATED OCTOBER 25, 2006, FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
B. MAXIMUM FOOTING TOTAL LOAD SOIL BEARING PRESSURE SHALL BE 2500 PSF.
C. ULTIMATE COEFFICIENT OF FRICTION USED IN DESIGN TO RESIST LATERAL LOADS. 0.30
D. EQUIVALENT FLUID PRESSURE USED FOR WALL DESIGN = 50 PCF FOR "AT REST" CONDITION USING SAND/GRAVEL BACKFILL.

SECTION 3 – STRUCTURAL CONCRETE

3.2.1 REINFORCING

A. REINFORCING: ASTM A615, 60 KSI
B. WELDED AND FIELD BENT REINFORCING: ASTM A706, 60 KSI
D. SPLICES:

1. MAKE BARS CONTINUOUS AROUND CORNERS. SPLICES SHALL BE MADE BY CONTACT LAPS. LAP #3 BARS 28", LAP #4 BARS 37", LAP #5 BARS 46".

3.2.2 STRUCTURAL CONCRETE MIX REQUIREMENTS

TYPE	PEN TABLE 601-1 SECTION 601	Intended Use	28 Day Strength fc (ksi)
1		FOOTINGS & GRADE BEAMS	3.0

3.3.1 PLACING REINFORCEMENT

A. REINFORCEMENT PROTECTION (CLEAR COVER)
1. CONCRETE PLACED AGAINST EARTH. . . . . 3"
2. CONCRETE PLACED IN FORMS BUT EXPOSED TO WEATHER OR EARTH:
   A. BARS #5 AND SMALLER . . . . . 1-1/2"

SECTION 5 – METALS

5.2.1 STRUCTURAL STEEL MATERIAL: PROVIDE THE FOLLOWING UNLESS NOTED:

A. ROUND HOLLOW STRUCTURAL SECTIONS (HSS):
ASTM A500 GR B. . . . . Fy = 35 KSI
B. PLATES, ANGLES, AND
OTHER STEEL NOT IDENTIFIED: ASTM A36 . . . . . Fy = 36 KSI

5.2.2 CONNECTION MATERIAL

A. ANCHOR BOLTS: ASTM F1554 GR 36 UNLESS NOTED OTHERWISE.
B. WELDING ELECTRODES: AWS D1.1, E70 SERIES UNLESS NOTED OTHERWISE.

5.3 FINISH: ALL METAL MEMBERS & FASTENERS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.

6.2.1 FRAMING LUMBER

A. PROVIDE "DOUGLAS FIR-LARCH" (DFL), WITH MINIMUM DESIGN VALUES NOTED BELOW BASED ON THE 2001 NDS.

TYPE OF USE	GRADE	Fb (PSI)	Fc (PSI)	Fv (PSI)	E (KSI)
DFL ALL	NO. 1	1000	1500	180	1700

6.2.2 GLUED LAMINATED MEMBERS:

6.2.2.1 LAMINATED DECKING: 2"x6" NOMINAL SIZE (1 7/16"x5 " ACTUAL SIZE), DOUGLAS FIR-LARCH. MINIMUM DESIGN VALUES ARE SHOWN BELOW:

A. BENDING STRESS 2585 PSI
B. MODULUS OF ELASTICITY 1800 KSI
C. SHEAR PARALLEL TO GRAIN 165 PSI

6.2.3 SHEATHING

A. PLYWOOD:
1. CONFORM TO U.S. DEPARTMENT OF COMMERCE STANDARD PS-1 AND APA PERFORMANCE STANDARD PRP-108, LATEST EDITIONS.
B. WOOD STRUCTURAL PANELS (WSP)
1. WOOD STRUCTURAL PANELS SHALL BE APA RATED SHEATHING CONFORMING TO U.S. DEPARTMENT OF COMMERCE STANDARD PS-2 AND APA PERFORMANCE STANDARD PRP-108, LATEST EDITIONS.

6.3.1 NAILING: UNLESS NOTED OTHERWISE ON THE DRAWINGS, PROVIDE BOX NAILS WITH SIZES SHOWN ON THE DRAWINGS. ALL NAILING SHALL BE IN ACCORDANCE WITH THE NAILING SCHEDULE IN IBC 2003 TABLE 2304.9.1 UNLESS NOTED OTHERWISE ON DRAWINGS. INCREASE NAILING IN TABLE 2304.9.1 BY ADDING ONE ADDITIONAL NAIL PER CONNECTION AND/OR DECREASE SPACING BY 25% (I.E. REVISE 16 INCH SPACING IN TABLE TO A MINIMUM OF 12 INCH SPACING) TO ACCOMMODATE BOX NAILS IN LIEU OF COMMON.

d	ø	LENGTH
6d	0.099"	2"
8d	0.113"	2 1/2"
10d	0.128"	3"
12d	0.128"	3 1/4"
16d	0.135"	3 1/2"

d	ø	LENGTH
20d	0.148"	4"
30d	0.148"	4 1/2"
40d	0.162"	5"
50d	0.244"	5 1/2"
60d	0.244"	6"

6.3.2 WOOD SCREWS: WOOD SCREWS SHALL CONFORM TO THE DATA SHOWN IN THE FOLLOWING TABLE. REFER TO DETAILS FOR SCREW LENGTHS.

SCREW NUMBER	NOMINAL DIAMETER (IN)	ROOT DIAMETER (IN)
6	0.138	0.113
8	0.164	0.131
9	0.177	0.142
10	0.190	0.152
12	0.216	0.171
14	0.242	0.196

SHEET INDEX

J.1 GENERAL NOTES
J.2 STRUCTURAL ABBREVIATIONS/LEGEND/ESTIMATE
J.3 FOUNDATION/ROOF LEVEL PLAN
J.4 DETAILS

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

70% CD SET. NOT FOR CONSTRUCTION

GENERAL NOTES

Designed by: 08/24/07 | Checked by: 8/2007 | Drawing File Path: 8/2007

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PRELIMINARY

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	J.2

STRUCTURAL ABBREVIATIONS

/	PER
@	AT
AB	ANCHOR BOLT
ADDNL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATE
ARCH	ARCHITECT OR ARCHITECTURAL
BAL	BALANCE
BD	BOARD
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BO	BOTTOM OF
BOT or B	BOTTOM
BOS	BOTTOM OF STEEL
BRG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
CC	CENTER TO CENTER
CG	CENTER OF GRAVITY
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CONTRACTING OFFICER
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUE OR CONTINUOUS
CONTR	CONTRACTOR
CSJ	CONSTRUCTION JOINT
CTR	CENTER
d	PENNY
DAS	DEFORMED ANCHOR STUD
DBL	DOUBLE
DIA or ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DO	DITTO
DP	DRILLED PIER OR DEEP
DT	PRECAST DOUBLE TEE
DTL(S)	DETAIL(S)
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)
(E) or EXIST	EXISTING
EA	EACH
EC	EPOXY COATED
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEV	ELEVATOR
EMBED	EMBEDDED
EN	EDGE NAIL
ENGR	ENGINEER
EOS	EDGE OF SLAB
EQ	EQUAL
EQ SP	EQUALLY SPACED
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
E-W	EAST-WEST
EXP ANCH	EXPANSION ANCHOR
EXP	EXPANSION
EXT	EXTERIOR
FAB	FABRICATE
FF	FINISHED FLOOR
FIN	FINISH(ED)
FLG	FLANGE
FLR	FLOOR
FND	FOUNDATION
FO	FACE OF
FOS	FACE OF STUD
FP	FULL PENETRATION OR FIRE PROOFING
FRAM	FRAMING
FS	FAR SIDE
FT	FOOT OR FEET
FTG	FOOTING
FV	FIELD VERIFY
GA	GAGE OR GAUGE
GALV	GALVANIZED
GL	GLU-LAM
GR	GRADE
GR BM	GRADE BEAM
HDAB	HEADED ANCHOR BOLT
HD	HEADED OR HOLDOWN
HDAS	HEADED ANCHOR STUD
HDG	HOT DIPPED GALVANIZED
HK	HOOK
HORIZ	HORIZONTAL
HT	HEIGHT
HVAC	HEATING-VENTILATING AND A/C
ID	INSIDE DIAMETER
I.F.	INSIDE FACE
IN	INCH
INT	INTERIOR
IT	PRECAST INVERTED TEE BEAM
JST	JOIST
JT	JOINT
k	KIP
L or LG	LENGTH
LB(S)	POUND(S)
LB	PRECAST L-SHAPED BEAM
LVL	LEVEL OR LAMINATED VENEER LUMBER
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC(S)	LOCATION(S) OR LOCATE
LONG	LONGITUDINAL
LSL	LAMINATED STRAND LUMBER
LT WT	LIGHTWEIGHT
LT	LIGHT
MACH	MACHINE
MACH RM	MACHINE ROOM
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MEP	MECH/ELECT/PLUMB
MIN	MINIMUM
MISC	MISCELLANEOUS
ML	MICRO-LAM
mm	MILLIMETER
MNFR	MANUFACTURER
MO	MASONRY OPENING
MTL	METAL
N	NORTH
NM	NON-METALLIC
NS	NON-SHRINK OR NEAR SIDE
N-S	NORTH-SOUTH
NIC	NOT IN CONTRACT
NO or #	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OAE	OR APPROVED EQUIVALENT
OC	ON CENTER
OD	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OVS	OVERSIZED
PAF	POWER ACTUATED FASTENER
PC	PRECAST
PEN	PENETRATION
PERP	PERPENDICULAR
PL	PLATE (STEEL)
PLF	POUNDS PER LINEAL FOOT
PREFAB	PREFABRICATED
PRELIM	PRELIMINARY
PS	PRESTRESSED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
QTY	QUANTITY
RAD or R	RADIUS
RB	PRECAST RECTANGULAR BEAM
RC	REINFORCED CONCRETE
RE: or REF	REFER TO (REFERENCE)
REINF	REINFORCE(ING)(D)(MENT)
REQD	REQUIRED
REQT(S)	REQUIREMENT(S)
RO	ROUGH OPENING
ROF	RANDOM ORIENTED FIBER
(S)	SALVAGED
SC	SLIP CRITICAL
SCHED	SCHEDULE
SECT	SECTION
SIM	SIMILAR
SLH	SHORT LEG HORIZONTAL
SLV	SHORT LEG VERTICAL
SOG	SLAB ON GRADE
SP @	SPACE AT
SP	SPACE(S)
SPECS	SPECIFICATIONS
SPRT	SUPPORT
SS	STAINLESS STEEL
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STR	STRUCTURAL
SW	SHEARWALL
SYM	SYMMETRICAL
T&B	TOP & BOTTOM
T	TOP
THK	THICK OR THICKNESS
TL	TOTAL LOAD
T.O.	TOP OF
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOM	TOP OF MASONRY
TOPG	TOPPING
TOS	TOP OF STEEL
TRANS	TRANSVERSE
TYP	TYPICAL
ULT	ULTIMATE
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/O	WITHOUT
W/	WITH
WD	WIDTH OR WOOD
WF	WIDE FLANGE
WP	WORKING POINT OR WATERPROOFING
WSP	WOOD STRUCTURAL PANEL
WT	WEIGHT
WWF	WELDED WIRE FABRIC
WxH	WIDTH X HEIGHT

ESTIMATE – BUS SHELTER STRUCTURE

ITEM NO.	DESCRIPTION	UNITS	QUANTITY	NOTES
208	STRUCTURE EVACUTATION	CYD		
601	STRUCTURE CONCRETE	CYD		
554	REINFORCING STEEL	#		
646	STRUCTURAL STEEL	#		
646	LAMINATED DECKING	SF		
646	WOOD STRUCTURAL PANEL	SF		

LEGEND

- XXX'-XX" = ELEVATION SYMBOL
- = STEP
- = SLOPE
- = BOX NOTE: DESIGNATES THE NOTE IS TYPICAL AND APPLIES TO ALL SIMILAR CONDITIONS
- = DRAWING REVISION NUMBER
- = CURRENT REVISION CLOUD
- = SUBGRADE
- = OVERFRAMING STRUCTURE
- = SHEATHING FACE GRAIN DIRECTION
- = STRUCTURAL WOOD SHEATHING

NPS PMIS No. 121755 NPS Drwg. No. 117/41114

70% CD SET. NOT FOR CONSTRUCTION

STRUCTURAL ABBREVIATIONS

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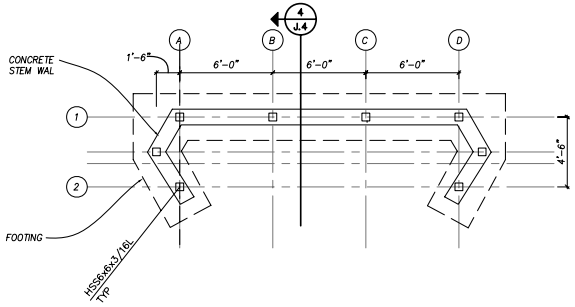
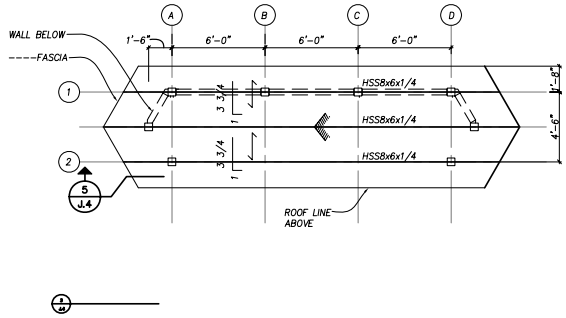
PRELIMINARY

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	J.3





N

1 / J.3 FLOOR PLAN

SCALE : 1/4"=1'-0"

N

2 / J.3 ROOF FRAMING PLAN

SCALE : 1/4"=1'-0"

BUILDING FOUNDATION/GROUND LEVEL PLAN NOTES

A. FOOTINGS

1. ALL FOOTINGS SHALL BEAR ON NATURAL, UNDISTURBED SOIL OR PROPERLY COMPACTED STRUCTURAL FILL. RE: SOILS REPORT FOR REQUIREMENTS.

B. RE: ARCHITECTURAL DRAWINGS FOR DIMENSIONS, ELEVATIONS, AND SLOPES NOT SHOWN.

ROOF FRAMING PLAN NOTES

A. *EAVE AND GIDGE BEAMS*

HSS8x6x1/4.

B. *ROOF DECKING:*
1. PROVIDE 2x6 NOMINAL GLU-LAMINATED WOOD DECKING.
2. DIRECTION OF DECKING NOTED ON PLAN THUS: ⟷

C. ROOF SHEATHING:

1. *DIRECTION OF SHEATHING FACE GRAIN TO BE PERPENDICULAR TO ROOF DECKING*
2. ROOF SHEATHING SHALL BE APA RATED SHEATHING, EXPOSURE 1. SHEATHING SHALL BE 5/16" THICK WITH A SPAN RATING OF 16/0 OR LARGER.
3. SHEATHING SHALL BE NAILED TO THE TOP SURFACE OF THE DECKING.

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FOUNDATION AND ROOF PLAN

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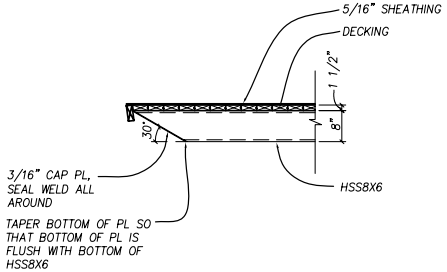
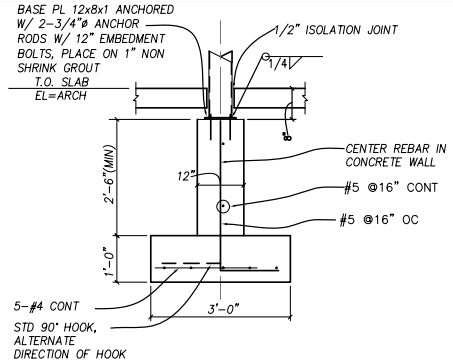
PRELIMINARY

STATE	PROJECT	SHEET NUMBER
MT	PRA-GLAC 10(28)	J.4



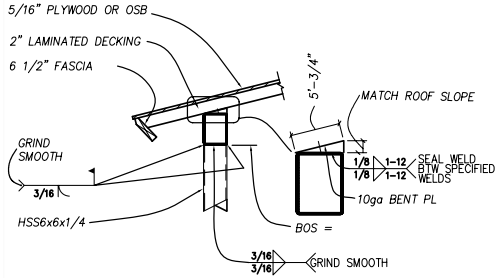
5 / J.4 TYPICAL END OF ROOF BEAM

SCALE : 3/4" = 1'-0"



3 / J.4 FOUNDATION DETAIL

SCALE : 3/4"=1'-0"



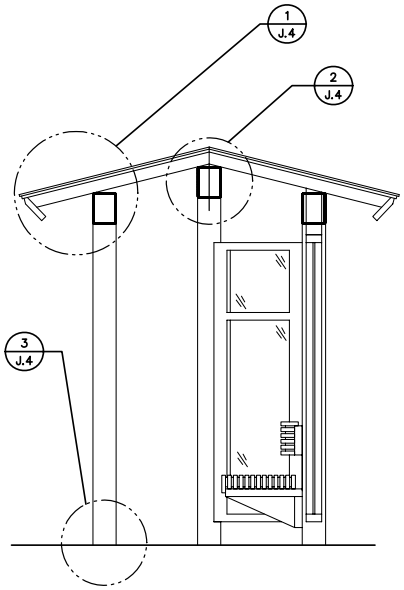
1 / J.4 EAVE CONN DETAIL

SCALE : 3/4"=1'-0"

SCALE : 3/4"=1'-0"

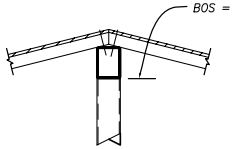
SCALE : 3/4"=1'-0"

RE: 1/K2.4 FOR ADDNL REQTS



4 / J.4 SECTION

NO SCALE



2 / J.4 RIDGE CONN DETAIL

SCALE : 3/4"=1'-0"

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DETAILS

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