ADDENDUM TRANSMITTAL

ADDENDUM TO THE CONTRACT DOCUMENTS	Page Number 1	No. of Pages 42
Addendum No. One (1)	**Date Addendum Issued:** May 22, 2024	
Issuing Office Alaska State Parks, Design & Construction Section 550 W. 7th Ave., Suite 1340, Anchorage, Alaska 99501 Phone: 269-8731 Fax: 269-8907	**Previous Addenda Issued** None	
Project: Old Kasilof Landing SRS Site Development **Project No.:** 73032-1	**Date and Hour of Quotes Due** May 29th, 2024 at 2:00pm prevailing time	

NOTICE TO BIDDERS

Bidder must acknowledge receipt of this addendum prior to the hour and date set for the quotes being due by one of the following methods:

(a) By acknowledging receipt of this addendum on the quote submitted.
(b) By telegram or tele facsimile which includes a reference to the project and addendum number.

The bid documents require acknowledgment individually of all addenda to the drawings and/or specifications. This is a mandatory requirement and any quote received without acknowledgment of receipt of addenda may be classified as not being a responsive bid. If, by virtue of this addendum it is desired to modify a quote already submitted, such modification may be made by telegram or tele facsimile provided such a telegram or tele facsimile makes reference to this addendum and is received prior to the opening hour and date specified above.

****

THE CONTRACT IS MODIFIED AS FOLLOWS:

- Replace Bid Schedule of the Contract Documents with the modified Bid Schedule (Attachment A).

THE PLANS ARE MODIFIED AS FOLLOWS:

- Replace sheet 3 with modified sheet 3 (Attachment B).

The intent of these changes is to clarify the unit of measurement for Item 203.0005.000A Borrow, Type A to cubic yards for measurement and basis of payment.

- Replace sheet 29 & 30 with modified sheet 29 & 30 (Attachment C).

The intent of these changes is to clarify the striping plan, and to remove directional arrows drawn for traffic flow reference only.

- Replace sheet 26 & 28 with modified sheet 26 & 28 (Attachment D).
- Add sheet 32 – STAIRS AND LANDING PLAN & PROFILE and sheet 33 – PILE DETAILS to the Plans (Attachment E)

(Continued on page 2)

- Add the following Division of Parks and Outdoor Rec. standard drawings to the Plans:
    - G-1, G-2, P-6, R-1, S-1, S-3C, S-10, & S-12A (Attachment F).
- Add the following DOT&PF standard drawings to the Plans:
    - D-01.02, D-04.22, D-06.10, D-09.00, L-23.03, S-00.12, S-01.02, S-05.02, & S-30.05 (Attachment G).

Bidders are required to acknowledge this addendum on the proposal form or by FAX prior to the quotes being due.

****

Addendum Number One (1) received.

_____

Name/Title Date

_____

Firm

END OF ADDENDUM

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

BID SCHEDULE

Project Name: OLD KASILOF LANDING SRS: SITE DEVELOPMENT

Project Number: 73032-1

Before preparing this bid schedule, read carefully, Section 102 of the 2020 edition of the Standard Specifications for Highway Construction, and the following:

The Bidder shall insert, as called for, a unit price or lump sum price in figures opposite each pay item for which an estimated quantity appears in the bid schedule. A unit price or lump sum price is not to be entered or tendered for any pay item not appearing in the bid schedule. The estimated quantity of work for payment on a lump sum basis will be "All Required" (All Req'd) and as further specified in the contract.

Whenever a Contingent Sum is shown for any item in this schedule, such amount shall govern and be included in the bid total.

Conditioned or qualified bids will be considered non-responsive.

Notice: Contract award will be made on the basis of the total adjusted basic bid.

The bidder shall insert a unit bid price for each pay item listed below. Type or print legibly.

Pay Item Number	Pay Item Description	Pay Unit	Quantity	Unit Bid Price	Amount Bid
******** BASIC BID ********					
201.0006.0000	Clearing and Grubbing	Acre	3.75	$	$
201.0006.0000	Selective Tree Removal	Each	10	$	$
202.0001.0000	Removal of Structures and Obstructions	L.S.	All Req'd	$ (Lump Sum)	$
202.2012.0000	Ground Water Well Decommissioning	Each	2	$	$
203.0003.0000	Unclassified Excavation	C.Y.	6,000	$	$
203.0005.000A	**Borrow, Type A**	**C.Y.**	**11,600**	$	$
301.0001.00D1	Aggregate Base Course, Grading D-1	Ton	3,600	$	$
401.0001.200B	Hot Mix Asphalt, Type II, Class B	Ton	1,500	$	$
505.0005.0006	Furnish 6-Inch Structural Steel Pile	L.F.	1,000	$	$

Name of Bidding Firm_____

Pay Item Number	Pay Item Description	Pay Unit	Quantity	Unit Bid Price	Amount Bid
******** CONTINUE BASIC BID ********					
505.0006.0006	Drive 6-Inch Steel Pile	Each	29	$	$
603.0001.0024	24-Inch CSP	L.F.	210	$	$
603.0003.0024	End Sections for 24-Inch CSP	Each	10	$	$
607.0005.00BF	Barrier Fence	L.F.	1,050	$	$
615.0001.0000	Standard Sign	S.F.	97.25	$	$
618.0002.0000	Seeding	Pound	160	$	$
620.0001.000B	Topsoil, Class B	S.Y.	16,800	$	$
622.2014.0000	Spotting Scope	Each	2	$	$
622.2015.000A	ELP Walkway	S.F.	288	$	$
622.2015.000B	ELP Stairway	S.F.	180	$	$
622.2016.0000	Concrete Parking Bumper	Each	63	$	$
622.2017.0000	Barrier Rock	Each	69	$	$
622.2018.0000	Large Picnic Shelter	Each	1	$	$
622.2019.0000	Entrance Sign	Each	1	$	$
622.2020.0000	Orientation Kiosk	Each	1	$	$
622.2021.000E	Interpretive Panel, Type D	Each	7	$	$
622.2024.0000	Kids Don't Float Kiosk	Each	1	$	$
607.0005.00DE	Drive Gate, Double Entrance	Each	2	$	$
607.0005.00SE	Drive Gate, Single Entrance	Each	2	$	$
630.0001.0003	Geotextile Seperation, Class 3	S.Y.	13,500	$	$
640.0001.0000	Mobilization and Demobilization	L.S.	All Req'd	$ (Lump Sum)	$

Pay Item Number	Pay Item Description	Pay Unit	Quantity	Unit Bid Price	Amount Bid
******** CONTINUE BASIC BID ********					
641.0001.0000	Erosion, Sediment and Pollution Control Administration	L.S.	All Req'd	$ (Lump Sum)	$
641.0002.0000	Temporary Erosion, Sediment and Pollution Control	C.S.	All Req'd	$ 20,000.00	$ 20,000.00
641.0006.0000	Withholding	C.S.	All Req'd	$ 0.00	$ 0.00
642.0001.0000	Construction Surveying	L.S.	All Req'd	$ (Lump Sum)	$
642.0003.0000	Three Person Survey Party	Hour	20	$	$
642.0006.0000	As-Built Survey	L.S.	All Req'd	$ (Lump Sum)	$
643.0002.0000	Traffic Maintenance	L.S.	All Req'd	$ (Lump Sum)	$
647.0006.0000	Hydraulic Excavator, 1 C.Y., 100 HP Min.	Hour	40	$	$
654.0001.0000	Single Concrete Vaulted Toilet	Each	2	$	$
670.0001.0000	Traffic Markings	L.S.	All Req'd	$ (Lump Sum)	$
687.0000.0000	HDPE Innerduct Installation	L.F.	650	$	$
687.0002.0000	Junction Box	Each	3	$	$
688.0000.0001	Utility Support	C.S.	All Req'd	$ 20,000.00	$ 20,000.00
688.1000.0000	Utility Support Price Adjustment	C.S.	All Req'd	$ 0.00	$ 0.00
TOTAL BASIC BID					$

No:_____Expires_____
Alaska Business License

No:_____Expires_____
Alaska Contractor's License

Name of Bidding Firm_____

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
201.0001.0000	CLEARING AND GRUBBING	ACRE	3.75
201.0006.0000	SELECTIVE TREE REMOVAL	EACH	10
202.0001.0000	REMOVAL STRUCTURES AND OBSTRUCTIONS	L.S.	ALL REQ'D
202.2012.0000	GROUND WATER WELL DECOMMISSIONING	EACH	2
203.0003.0000	UNCLASSIFIED EXCAVATION	C.Y.	6,000
203.0005.000A	BORROW, TYPE A	C.Y.	11,600
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	TON	3,600
401.0001.200B	HOT MIX ASPHALT, TYPE II, CLASS B	TON	1,500
505.0005.0006	FURNISH 6 INCH STRUCTURAL STEEL PILE	L.F.	1,000
505.0006.0006	DRIVE 6 INCH STEEL PILE	EACH	29
603.0001.0024	24 INCH CSP	L.F.	210
603.0003.0024	END SECTIONS FOR 24 INCH CSP	EACH	10
607.0005.00BF	BARRIER FENCE	L.F.	1,050
615.0001.0000	STANDARD SIGN	S.F.	97.25
618.0002.0000	SEEDING	POUND	160
620.0001.000B	TOPSOIL, CLASS B	S.Y.	16,800
622.2014.0000	SPOTTING SCOPE	EACH	2
622.2015.000A	ELP WALKWAY	S.F.	288
622.2015.000B	ELP STAIRWAY	S.F.	180
622.2016.0000	CONCRETE PARKING BUMPER	EACH	63
622.2017.0000	BARRIER ROCK	EACH	69
622.2018.0000	LARGE PICNIC SHELTER	EACH	1
622.2019.0000	ENTRANCE SIGN	EACH	1
622.2020.0000	ORIENTATION KIOSK	EACH	1
622.2021.000E	INTERPRETIVE PANEL, TYPE D	EACH	7
622.2022.0000	KIDS DON'T FLOAT KIOSK	EACH	1
622.2023.00DE	DOUBLE ENTRANCE GATE	EACH	2
622.2024.00SE	SINGLE ENTRANCE GATE	EACH	2
630.0001.0003	GEOTEXTILE, SEPARATION, CLASS 3	S.Y.	13,500
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	L.S.	ALL REQ'D
641.0001.0000	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	L.S.	ALL REQ'D
641.0002.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	C.S.	ALL REQ'D
641.0006.0000	WITHOLDING	C.S.	ALL REQ'D
642.0001.0000	CONSTRUCTION SURVEYING	L.S.	ALL REQ'D
642.0003.0000	THREE PERSON SURVEY PARTY	HOUR	20
642.0006.0000	AS-BUILT SURVEY	L.S.	ALL REQ'D
643.0002.0000	TRAFFIC MAINTENANCE	L.S.	ALL REQ'D
647.0006.0000	HYDRAULIC EXCAVATOR, 1 C.Y., 100 HP MIN.	HOUR	40
654.0001.0000	SINGLE CONCRETE VAULTED TOILET	EACH	2
670.0001.0000	TRAFFIC MARKINGS	L.S.	ALL REQ'D
687.0001.0000	HDPE INNERDUCT	L.F.	650
687.0002.0000	JUNCTION BOX	EACH	3
688.0000.0001	UTILITY SUPPORT	C.S.	ALL REQ'D
688.1000.0000	UTILITY SUPPORT PRICE ADJUSTMENT	C.S.	ALL REQ'D

1

ABBREVIATIONS

ø	DIAMETER
℄	CENTERLINE
A	ALUMINUM
AC	ASPHALT CONCRETE
B	BRASS
BOP	BEGINNING OF PROJECT
BVCS	BEGINNING OF VERTICAL CURVE STATION
BVCE	BEGINNING OF VERTICAL CURVE ELEVATION
C.F.	CUBIC FOOT
C.S.	CONTINGENT SUM
CSP	CORRUGATED STEEL PIPE
C.Y.	CUBIC YARD
E	EAST
EA	EACH
E.G.	EXISTING GRADE
ELEV.	ELEVATION
EOG	EDGE OF GRAVEL
EOP	EDGE OF PAVEMENT
EVCS	ENDING VERTICAL CURVE STATIONING
EVCE	ENDING VERTICAL CURVE ELEVATION
F.G.	FINAL GRADE
GAL.	GALVANIZED
INTP.	INTERPRETIVE
INV	INVERT
L.F.	LINEAR FOOT
L.S.	LUMP SUM
LB/LBS	POUND/POUNDS
LVC	LENGTH OF VERTICAL CURVE
MP	MILEPOST
M.E.	MATCH EXISTING
N	NORTH
NE	NORTHEAST
NO.	NUMBER
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER
OHW	ORDINARY HIGH WATER
PCC	PORTLAND CEMENT CONCRETE
PIP	PROTECT IN PLACE
PUA	PUBLIC USE AREA
PST	PERFORATED STEEL TUBE
PVI	PROFILE VERTICAL CURVE INTERSECTION
REQ'D	REQUIRED
ROW	RIGHT-OF-WAY
S	STEEL
SE	SOUTHEAST
S.F.	SQUARE FOOT
SNF	SEARCH NOT FOUND
STA.	STATION
SW	SOUTHWEST
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
S.Y.	SQUARE YARD
TYP.	TYPICAL
W	WEST

LEGEND

EXISTING	PROPOSED	
		EDGE OF AC PAVEMENT
		EDGE OF PCC PAVEMENT
		EDGE OF VEGETATION
		EDGE OF WATER
100	100	MAJOR CONTOUR LINE
		MINOR CONTOUR LINE
		EDGE OF GRAVEL ROAD/PARKING
		CULVERT
		SURVEY CONTROL MONUMENTS
		GOVT. SURVEY MONUMENT
		BARRIER ROCK
		SIGN
		LIMITS OF CUT SLOPE
		LIMITS OF FILL SLOPE
	C#	HORIZONTAL CURVE TAG
	L#	HORIZONTAL LINE TAG
		TOPSOIL & SEED

TABLE OF ESTIMATING FACTORS

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
203.0005.000A	BORROW, TYPE A	LBS/C.F.	142
301.0001.00D1	AGGREGATE BASE COURSE, GRADING D-1	LBS/C.F.	146
401.0001.200B	HOT MIX ASPHALT, TYPE II, CLASS B	LBS/C.F.	151

STATE OF ALASKA 49TH
Rangell C. Soriano
CE – 18071
05/21/24
Registered Professional Engineer

NO.	REVISION	DATE	NOTES
1	ADDENDUM 1	5/21/2024	UNIT CHANGE & QUANTITY CHANGE

STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES
PLANS DEVELOPED BY: DIVISION OF PARKS AND OUTDOOR RECREATION
550 W 7TH AVE. SUITE 1340, ANCHORAGE, AK 99501 - 907.269.8731

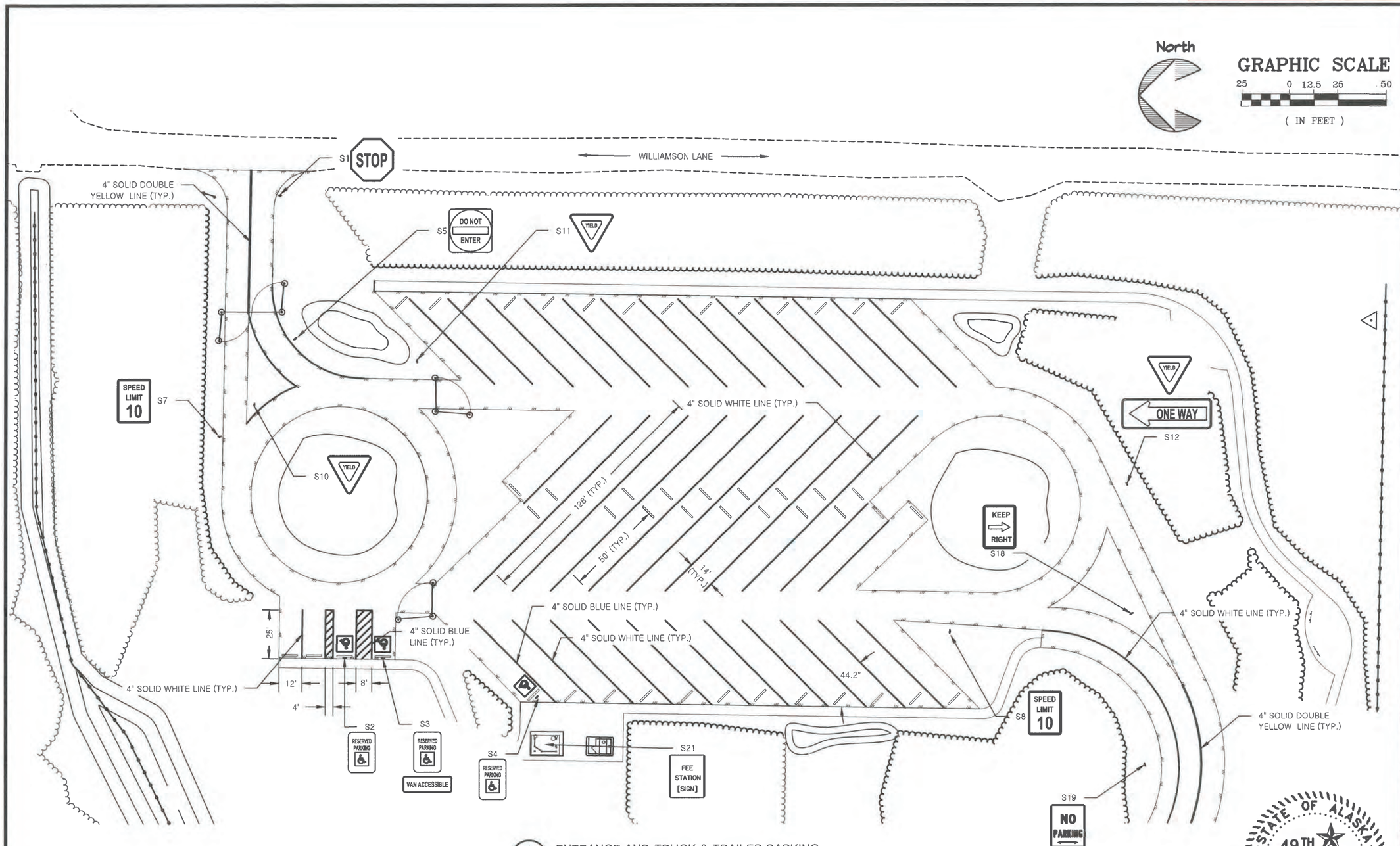
ESTIMATE OF QUANTITIES, LEGEND, ABBREVIATIONS & TABLE OF ESTIMATING FACTORS

OLD KASILOF LANDING SRS
SITE DEVELOPMENT
PROJECT No. 73032-1

ALASKA STATE PARKS

PREPARED: DKM
DRAWN: RCS
REVIEWED: RCS
DATE: MAY 2024

SHEET 3 OF 36 SHEETS



1/34 ENTRANCE AND TRUCK & TRAILER PARKING
PLAN VIEW

NOTES:

1. ALL STRIPING SHALL BE SOLID LINES UNLESS SPECIFIED OTHERWISE.

NO.	REVISION	DATE	NOTES
1	ADDENDUM 1	5/21/2024	CLARITY / REMOVE DIRECTIONAL ARROWS

STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES
PLANS DEVELOPED BY: DIVISION OF PARKS AND OUTDOOR RECREATION
550 W 7TH AVE. SUITE 1340, ANCHORAGE, AK 99501 - 907.269.8731

SIGNING AND STRIPING PLAN

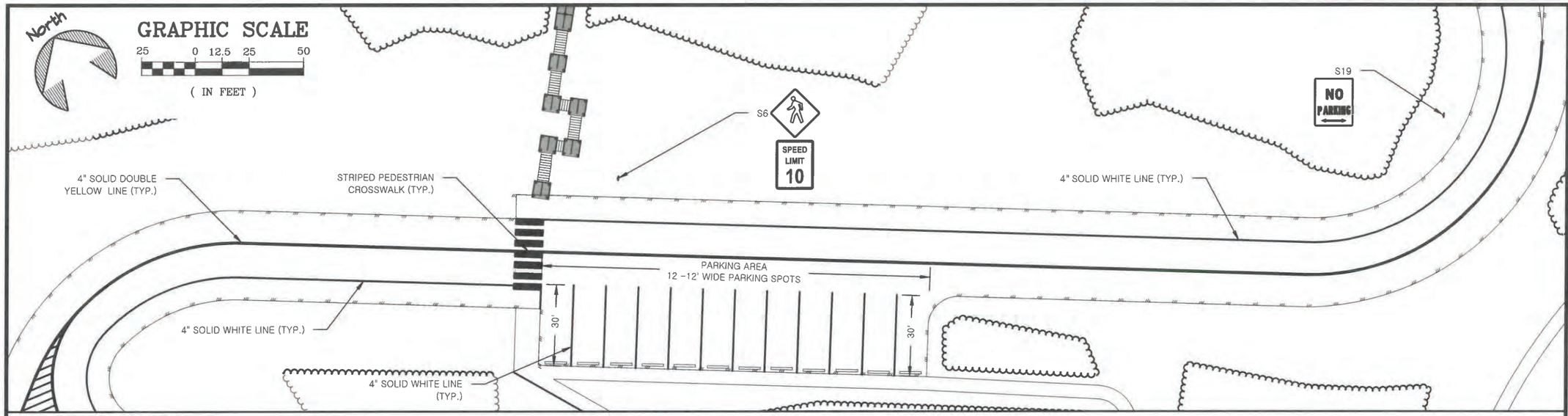
OLD KASILOF LANDING SRS
SITE DEVELOPMENT
PROJECT No. 73032-1

ALASKA STATE PARKS

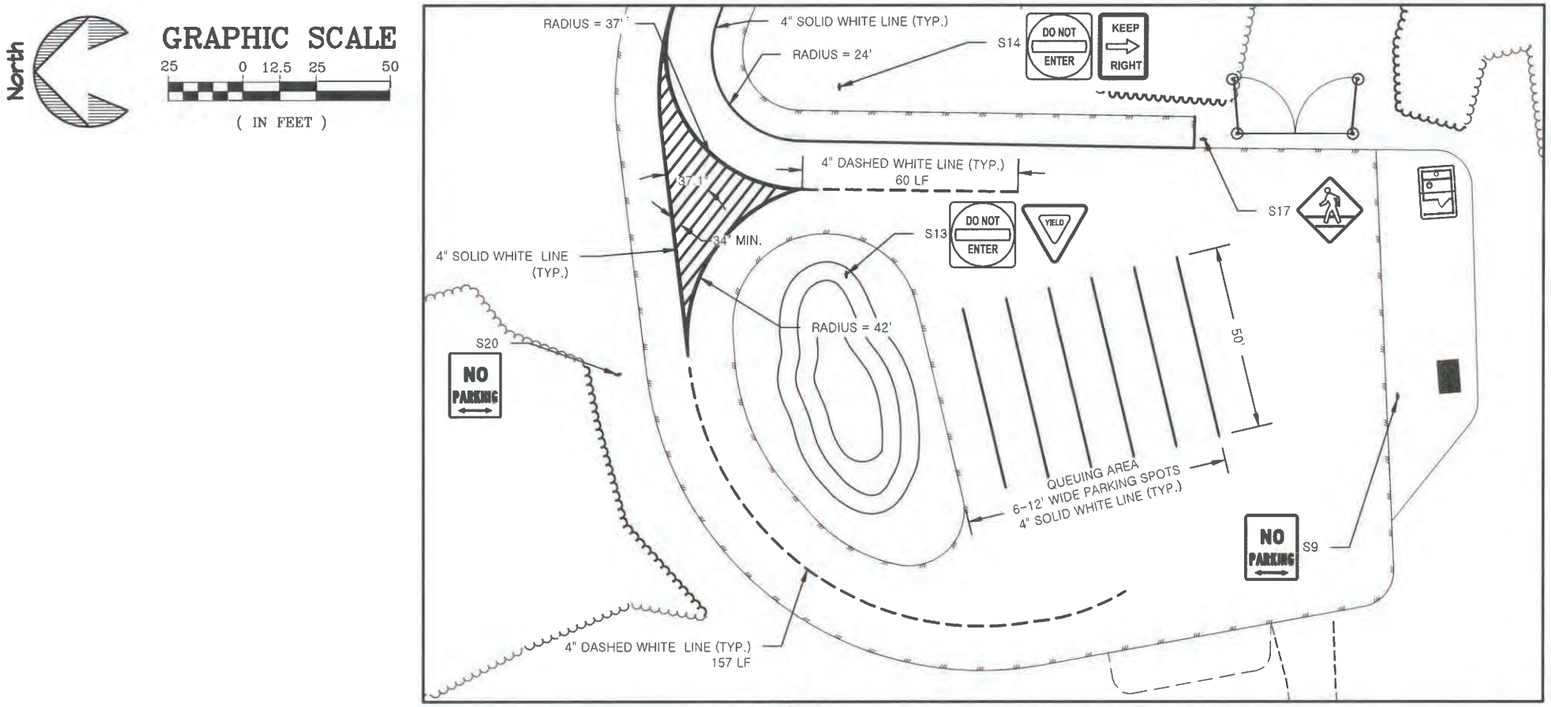
STATE OF ALASKA 49TH
Rangell C. Soriano
CE 18071
05/21/24
Registered Professional Engineer

PREPARED: DKM
DRAWN: DKM
REVIEWED: RCS
DATE: MAY 2024

SHEET 29 OF 36 SHEETS



1/30 PARKING AREA
PLAN VIEW



2/30 BOAT LAUNCH AREA
PLAN VIEW

NOTES:

1. ALL STRIPING SHALL BE SOLID LINES UNLESS SPECIFIED OTHERWISE.

NO.	REVISION	DATE	NOTES
1	ADDENDUM 1	5/21/2024	CLARITY / REMOVE DIRECTIONAL ARROWS

STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES
PLANS DEVELOPED BY: DIVISION OF PARKS AND OUTDOOR RECREATION
550 W 7TH AVE. SUITE 1340, ANCHORAGE, AK 99501 - 907.269.8731

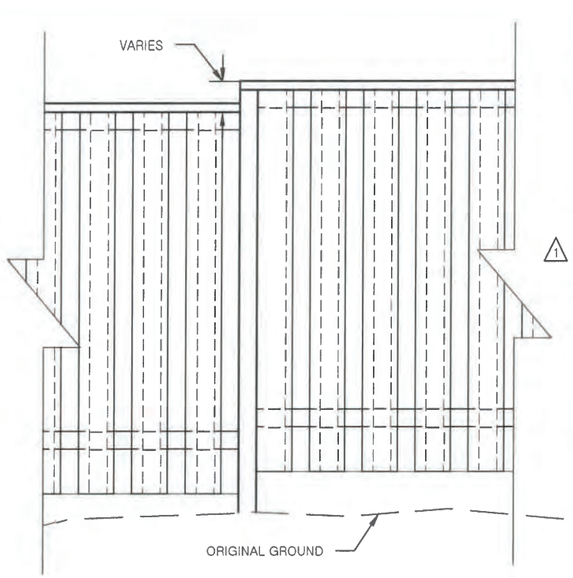
OLD KASILOF LANDING SRS
SITE DEVELOPMENT
PROJECT No. 73032-1

SIGNING AND STRIPING PLAN

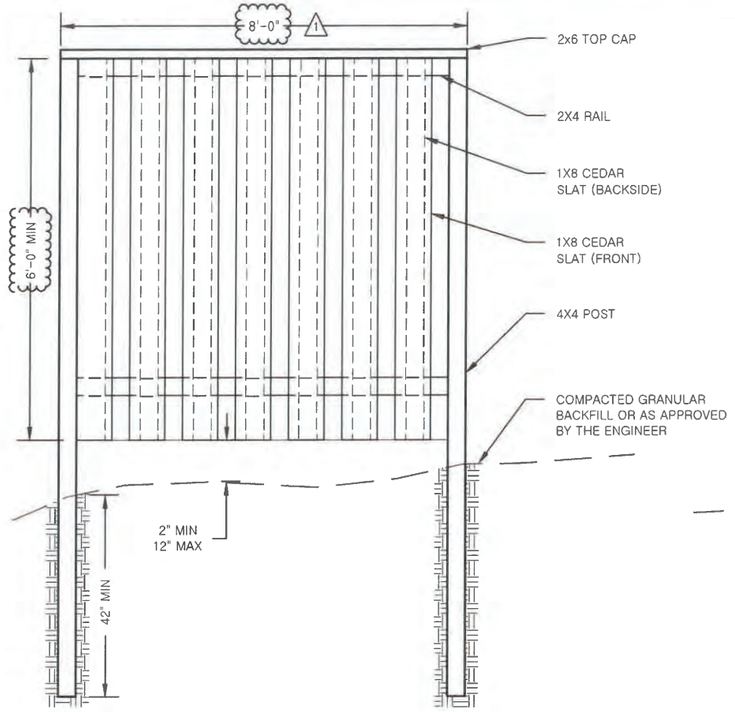
STATE OF ALASKA 49TH
Rangell C. Soriano
CE - 18079
05/21/24
Registered Professional Engineer

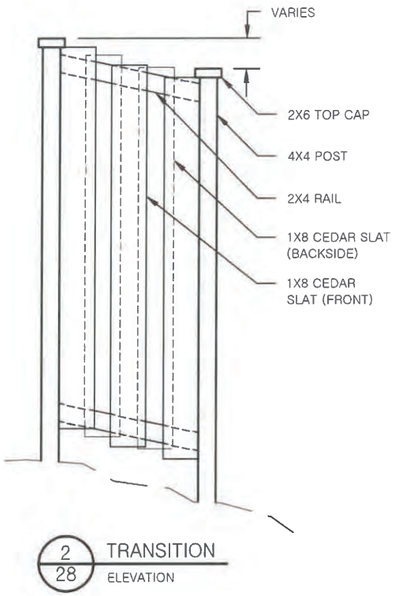
PREPARED: DKM
DRAWN: DKM
REVIEWED: RCS
DATE: MAY 2024

SHEET 30 OF 36 SHEETS

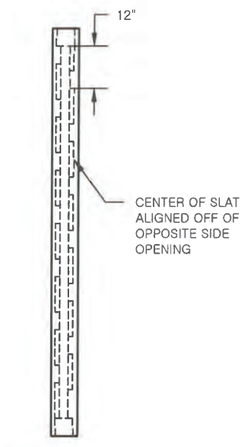


1/28 MAIN FENCE ELEVATION

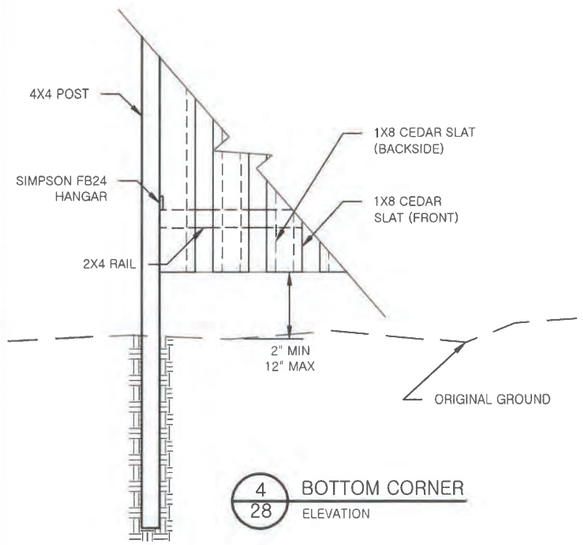




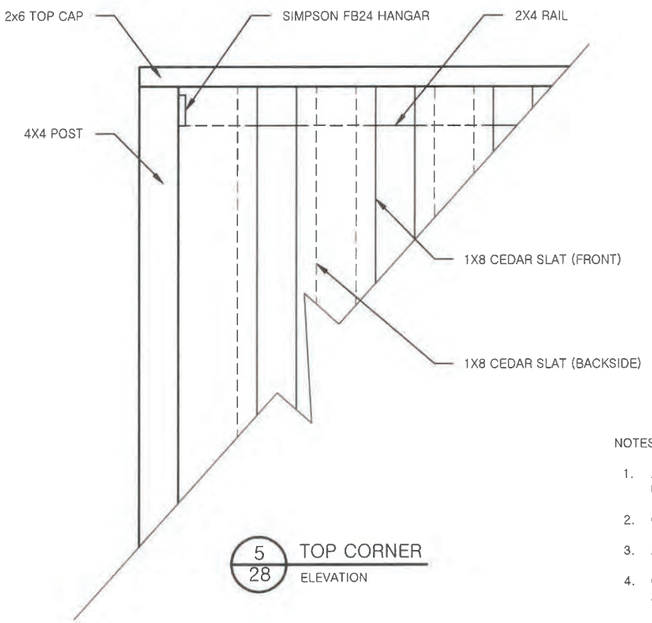
2/28 TRANSITION ELEVATION



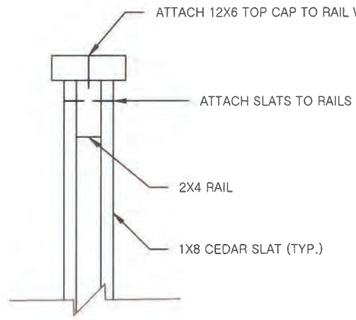
3/28 FENCE ELEVATION



4/28 BOTTOM CORNER ELEVATION



5/28 TOP CORNER ELEVATION



6/28 FENCE SECTION VIEW

NOTES:

1. ALIGNMENT OF BARRIER FENCE SHALL BE STAKED OUT BY CONTRACTOR AND CONSTRUCTED UPON APPROVAL BY THE ENGINEER.
2. GRADE OF LUMBER SHALL CONFORM TO INDUSTRIAL CLEAR S4S AS SPECIFIED IN STANDARD GRADING RULES.
3. ALL FERROUS METALS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153
4. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST NATIONAL DESIGN SPECIFICATION FOR STRESS GRADE LUMBER AND CORRESPONDING FASTENINGS

NO.	REVISION	DATE	NOTES
1	ADDENDUM 1	5/21/2024	ADDED MISSING DIMENSIONS

STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES
PLANS DEVELOPED BY: DIVISION OF PARKS AND OUTDOOR RECREATION
550 W 7TH AVE. SUITE 1340, ANCHORAGE, AK 99501 - 907.269.8731

OLD KASILOF LANDING SRS
SITE DEVELOPMENT
PROJECT No. 73032-1

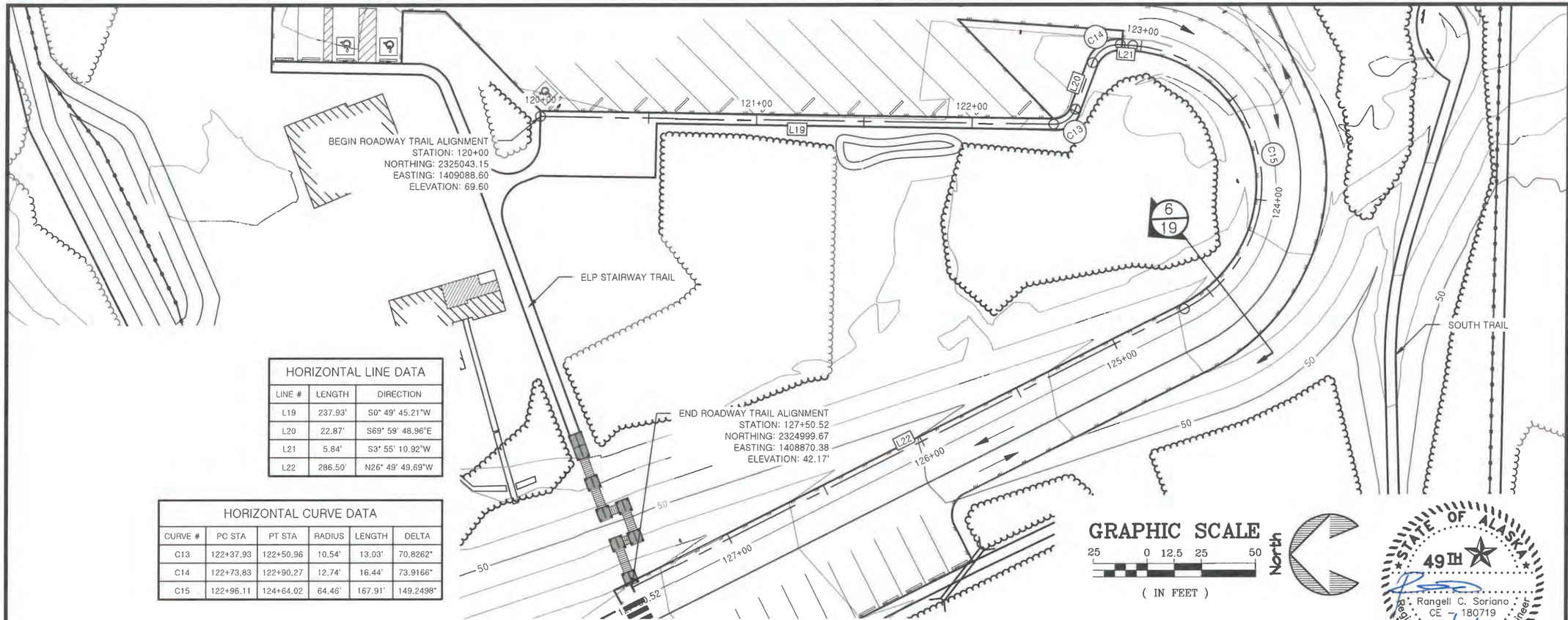
BARRIER FENCE DETAIL

STATE OF ALASKA 49TH
Rangell C. Soriano
CE – 180719
Registered Professional Engineer
5/21/24

ALASKA STATE PARKS

PREPARED: DKM
DRAWN: DKM
REVIEWED: RCS
DATE: MAY 2024

SHEET 28 OF 36 SHEETS

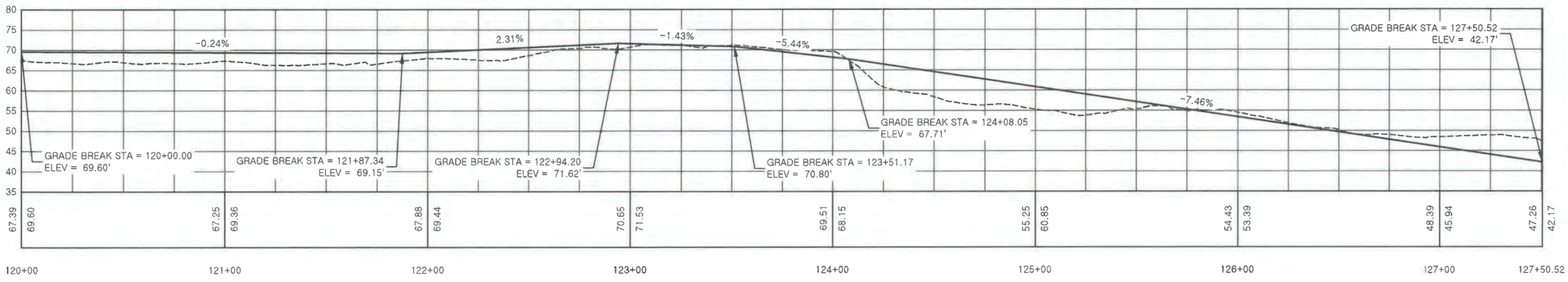


HORIZONTAL LINE DATA		
LINE #	LENGTH	DIRECTION
L19	237.93'	S0° 49' 45.21"W
L20	22.87'	S69° 59' 48.96"E
L21	5.84'	S3° 55' 10.92"W
L22	286.50'	N26° 49' 49.69"W

HORIZONTAL CURVE DATA					
CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA
C13	122+37.93	122+50.96	10.54'	13.03'	70.8262°
C14	122+73.83	122+90.27	12.74'	16.44'	73.9166°
C15	122+96.11	124+64.02	64.46'	167.91'	149.2498°

GRAPHIC SCALE
25 0 12.5 25 50
(IN FEET)
North

1/25 ROADWAY TRAIL
PLAN VIEW



2/25 ROADWAY TRAIL
PROFILE VIEW

NO.	REVISION	DATE	NOTES
	ADDENDUM 1	5/22/2024	REMOVED IRRELEVANT LINETYPES

STATE OF ALASKA
49TH
Rangell C. Soriano
CE – 180719
Registered Professional Engineer
5/21/24

STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES
PLANS DEVELOPED BY: DIVISION OF PARKS AND OUTDOOR RECREATION
550 W 7TH AVE. SUITE 1340, ANCHORAGE, AK 99501 - 907.269.8731

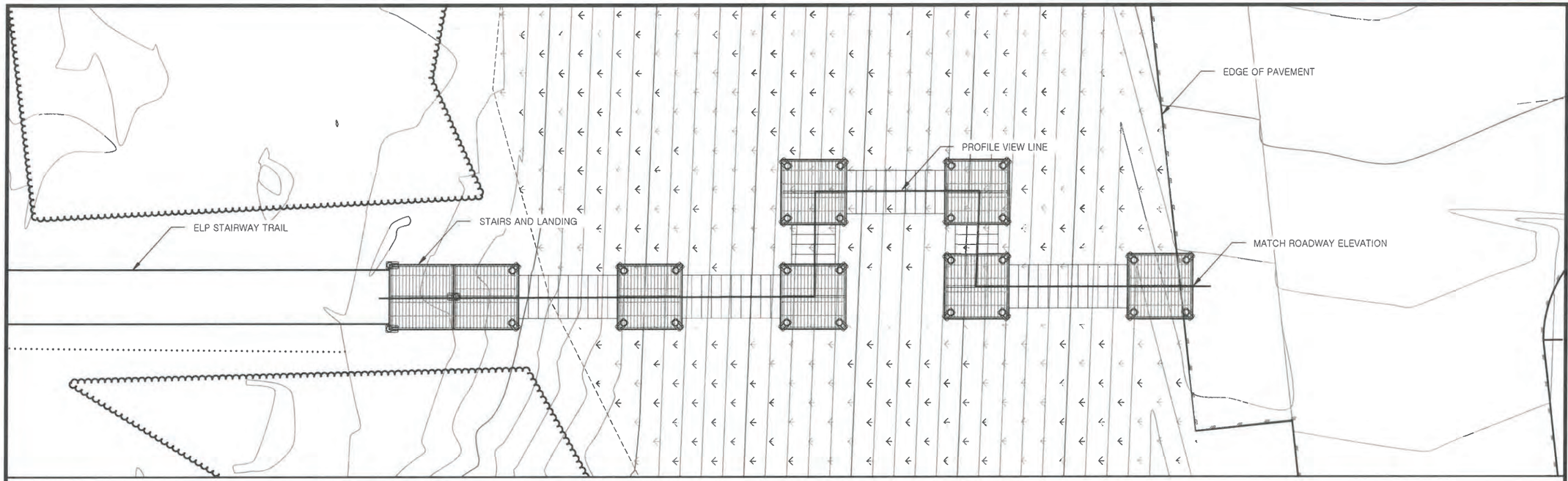
OLD KASILOF LANDING SRS
SITE DEVELOPMENT
PROJECT No. 73032-1

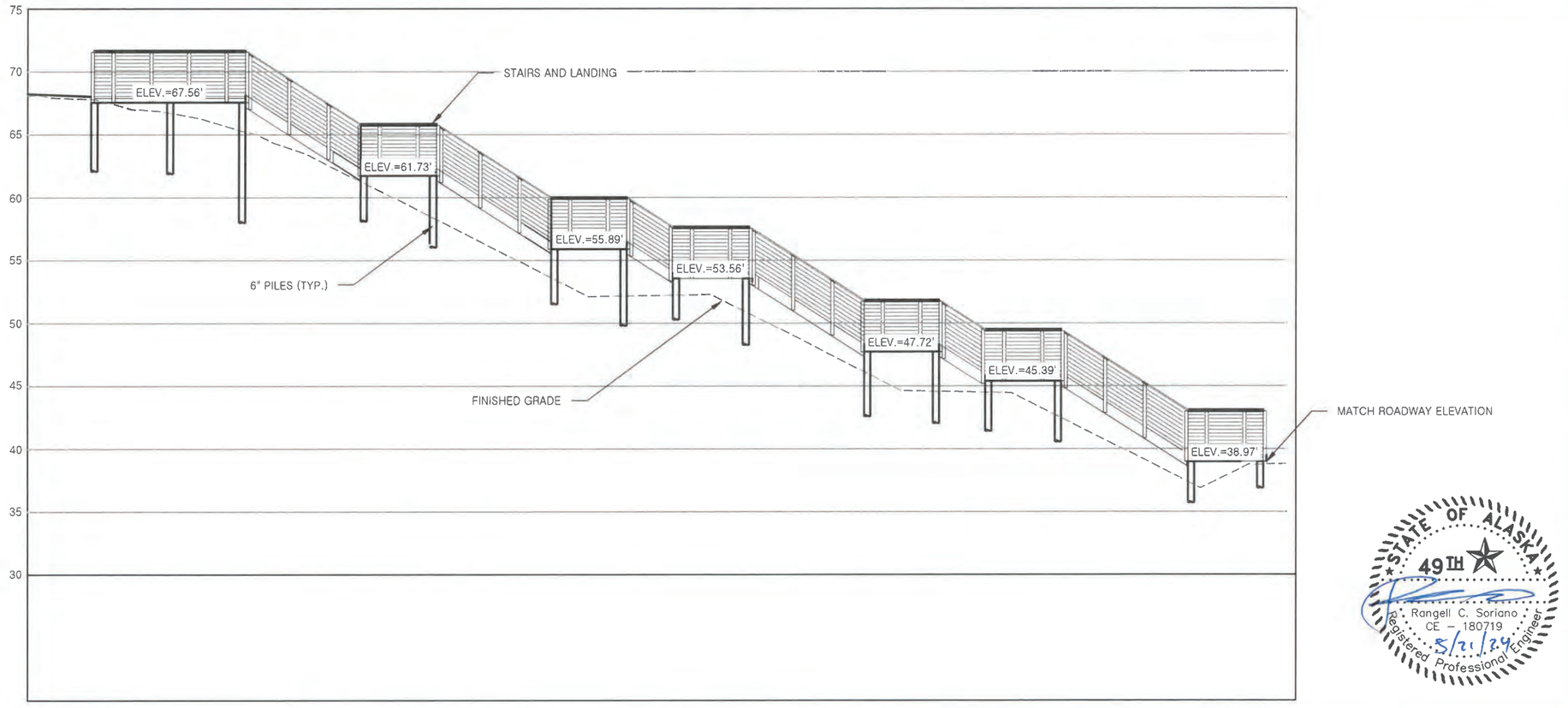
ROADWAY TRAIL PLAN & PROFILE
STA. 120+00 TO 127+50

ALASKA STATE PARKS

PREPARED: DKM
DRAWN: DKM
REVIEWED: RCS
DATE: MAY 2024

SHEET
26
OF 36 SHEETS





STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES
PLANS DEVELOPED BY: DIVISION OF PARKS AND OUTDOOR RECREATION
550 W 7TH AVE. SUITE 1340, ANCHORAGE, AK 99501 - 907.269.8731

STAIRS AND LANDING
PLAN & PROFILE

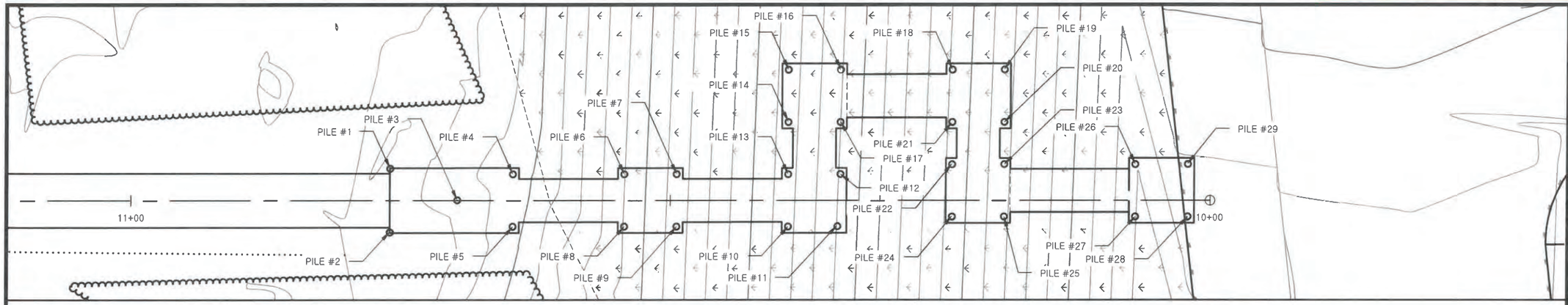
OLD KASILOF LANDING SRS:
SITE DEVELOPMENT
PROJECT No. 73032-1

ALASKA STATE PARKS

PREPARED: DKM
DRAWN: DKM
REVIEWED: RCS
DATE: MAY 2024

STATE OF ALASKA 49TH
Rangell C. Soriano
CE – 180719
Registered Professional Engineer
5/21/24

SHEET
32
OF 36 SHEETS

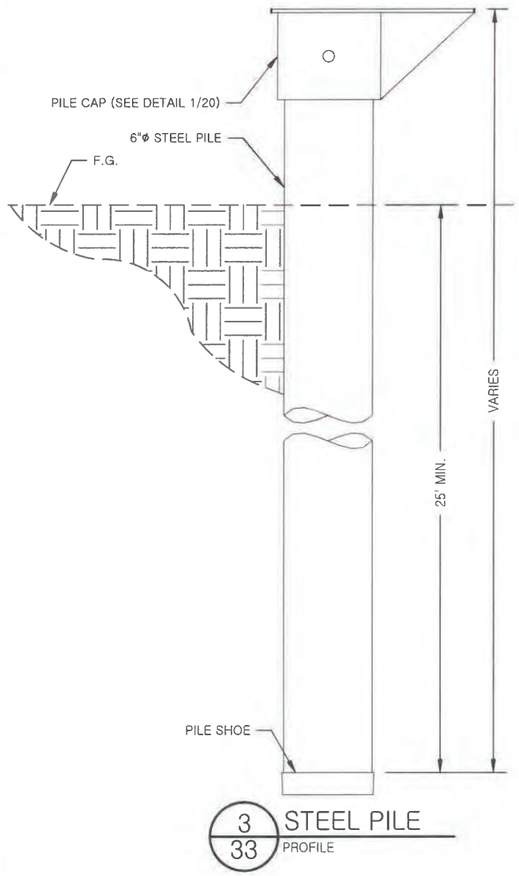


1/33 NAME
DETAIL

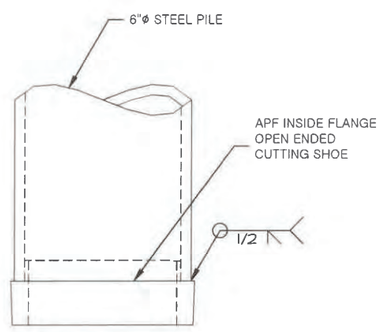
Point Table				
Pile #	Elevation	Northing	Easting	Description
1	67.56	2324997.25	1408873.48	Top of Pile
2	67.56	2324998.96	1408878.02	Top of Pile
3	67.56	2325003.49	1408876.33	Top of Pile
4	67.56	2325001.80	1408871.80	Top of Pile
5	67.56	2325007.74	1408887.73	Top of Pile
6	61.73	2325009.44	1408892.26	Top of Pile
7	61.73	2325003.20	1408889.41	Top of Pile
8	61.73	2325004.90	1408893.95	Top of Pile
9	61.73	2324999.54	1408890.78	Top of Pile
10	55.89	2325001.24	1408895.32	Top of Pile

Point Table				
Pile #	Elevation	Northing	Easting	Description
11	55.89	2324996.70	1408897.01	Top of Pile
12	55.89	2324995.00	1408892.47	Top of Pile
13	55.89	2325002.01	1408911.22	Top of Pile
14	53.56	2325000.30	1408906.68	Top of Pile
15	53.56	2325004.85	1408904.99	Top of Pile
16	53.56	2325006.54	1408909.53	Top of Pile
17	53.56	2325011.06	1408907.84	Top of Pile
18	47.72	2325009.36	1408903.30	Top of Pile
19	47.72	2325015.60	1408906.15	Top of Pile
20	47.72	2325013.90	1408901.61	Top of Pile

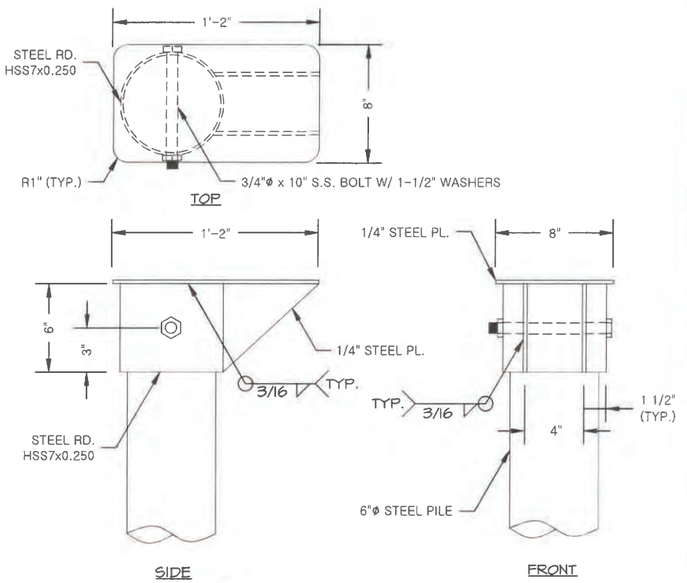
Point Table				
Pile #	Elevation	Northing	Easting	Description
21	47.72	2325019.21	1408915.83	Top of Pile
22	45.39	2325014.66	1408917.52	Top of Pile
23	45.39	2325016.37	1408922.06	Top of Pile
24	45.39	2325020.90	1408920.36	Top of Pile
25	45.39	2325019.97	1408931.73	Top of Pile
26	38.97	2325024.51	1408930.04	Top of Pile
27	38.97	2325024.03	1408935.74	Top of Pile
28	38.97	2325023.47	1408942.59	Top of Pile
29	38.97	2325029.00	1408940.55	Top of Pile



3/33 STEEL PILE
PROFILE



2/33 PILE SHOE
DETAIL



4/33 STANDARD PILE CAP
DETAILS

PILE NOTES:

1. THE PILE DESIGN LOADS (UNFACTORED):
   DEAD LOAD = 156 PSF
   LIVE LOAD = 60 PSF
   SNOW LOAD = 70 PSF
2. PILES SHALL BE DRIVEN WITH AN ENGINEER APPROVED PILE DRIVER.
3. PILES SHALL BE DRIVEN OPEN ENDED UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE AWS STRUCTURAL WELDING CODE, AWS D1.1 PUBLISHED BY THE AMERICAN WELDING SOCIETY.
5. WAIT AT LEAST 72 HOURS AFTER PILE INSTALLATION BEFORE APPLYING LOADS ON THE PILE.
6. PILES SHALL BE DRIVEN TO A MINIMUM DEPTH OF 25' AND HAVE AN ULTIMATE BEARING CAPACITY OF 6,000 LBS.
7. ENGINEER SHALL DETERMINE FINAL PILE CAP ORIENTATION IN THE FIELD.

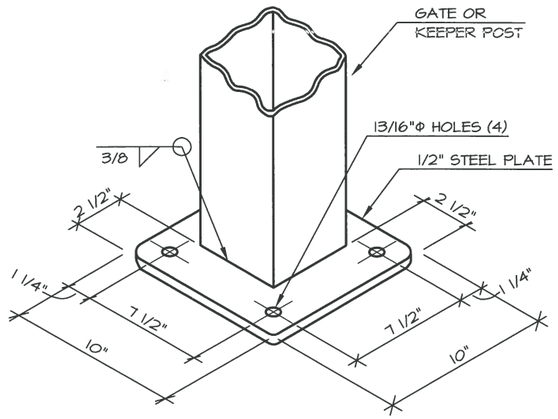
STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES
PLANS DEVELOPED BY: DIVISION OF PARKS AND OUTDOOR RECREATION
550 W 7TH AVE. SUITE 1340, ANCHORAGE, AK 99501 - 907.269.8731

OLD KASILOF LANDING SRS:
SITE DEVELOPMENT
PROJECT No. 73032-1

PILE DETAILS

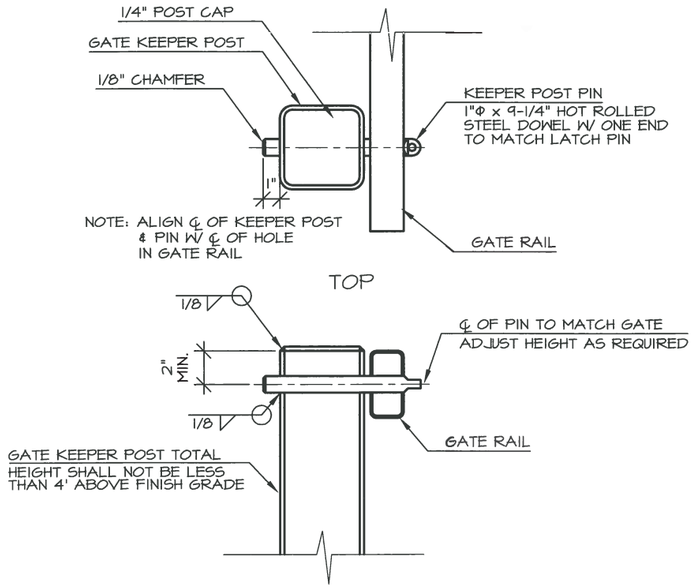
PREPARED: DKM
DRAWN: DKM
REVIEWED: RCS
DATE: MAY 2024

SHEET
33
OF 36 SHEETS

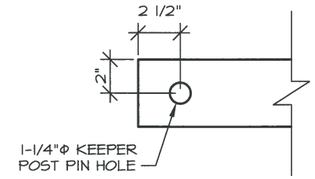


NOTE: FASTEN PLATES WITH 4 - 3/4" x 2" STEEL BOLTS WITH FLAT WASHERS, LOCK WASHERS, AND NUTS

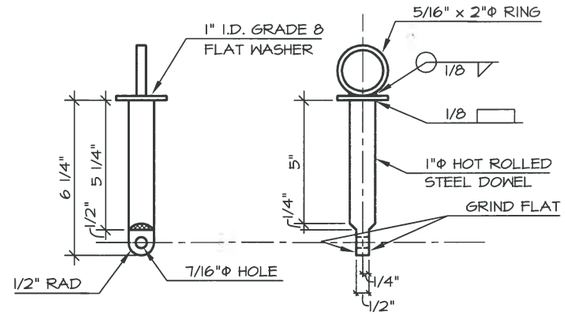
1 STEEL PLATE (TYP.)



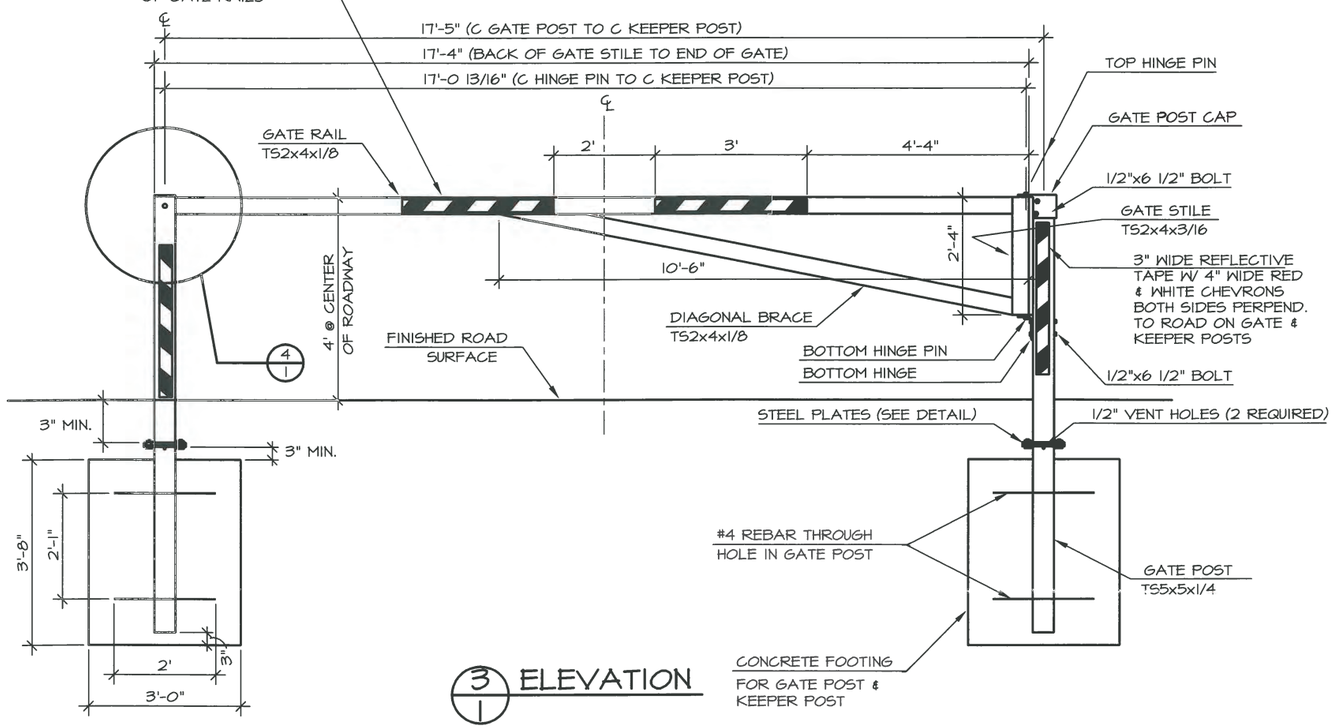
2 KEEPER POST



4 GATE RAIL END



5 LATCH PIN DETAIL



3 ELEVATION

NO.	REVISION	DATE	APPROVED
20	REPLACED STAMP	12/13	RBM
19	CHANGED STATE PARK LOGO	04/10	MPS
18	ADDED LATCH PIN DETAIL	04/10	MPS
17	CHANGED TITLE BLOCK	12/07	MPS
16	RESIZED KEEPER PIN HOLE	12/04	MPS
15	ADDED HORIZONTAL FOOTING REBAR / REMOVED VERTICLE REBAR	12/04	MPS
14	REDESIGNED KEEPER POST CONNECTION	12/04	MPS
13	REPLACED STAMP	3/04	MPS
12	REPLACED STAMP/CORRECTED DIMENSION	3/02	DH

STATE OF ALASKA
Rys B. Miranda
CE - 11010
2/26/14
Registered Professional Engineer

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

DESIGN & CONSTRUCTION SECTION

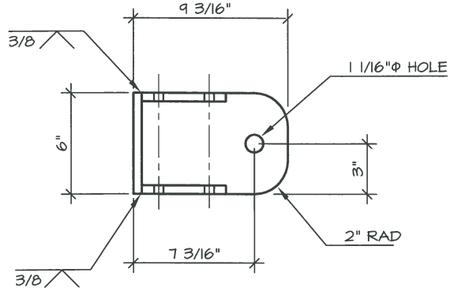
SINGLE GATE

ALASKA STATE PARKS

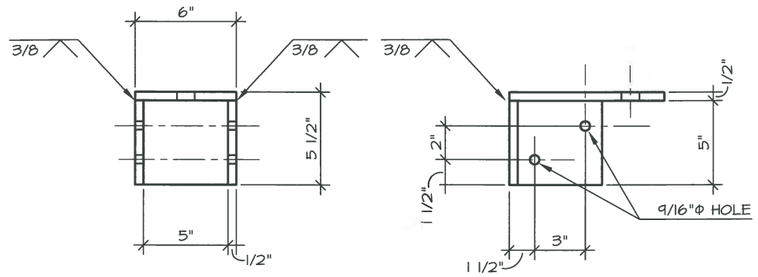
PREPARED:
DRAWN: RK
REVIEWED: DH TY
DATE: 10/14/85

SHEET 1
G-1
OF 2 SHEETS

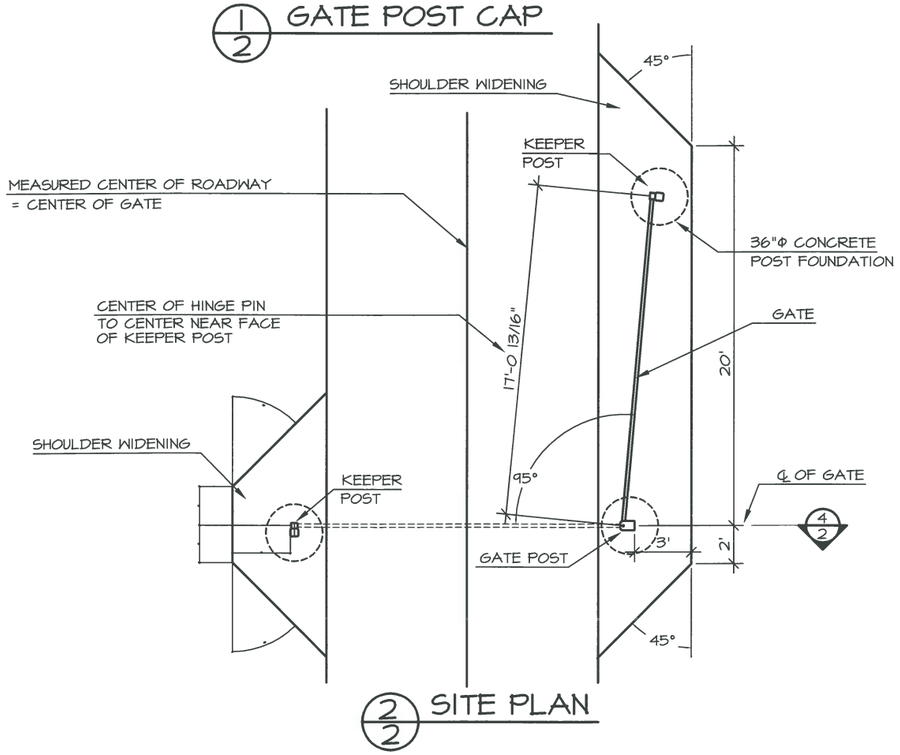
NO.	REVISION	DATE	APPROVED
10	REDESIGN & REDRAW	2/98	DH
11	CH. DIST FROM GATE PIN TO C KEEPER POST	4/98	DH
12	REPLACED STAMP	3/02	DH
13	REPLACED STAMP	3/04	MPS
14	CHANGED TITLE BLOCK	12/07	MPS
15	CHANGED STATE PARK LOGO	04/10	MPS
16	REPLACED STAMP	12/13	RBM



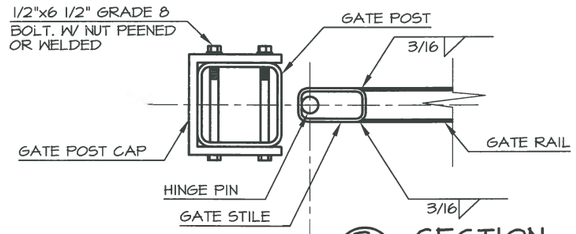
BOTTOM



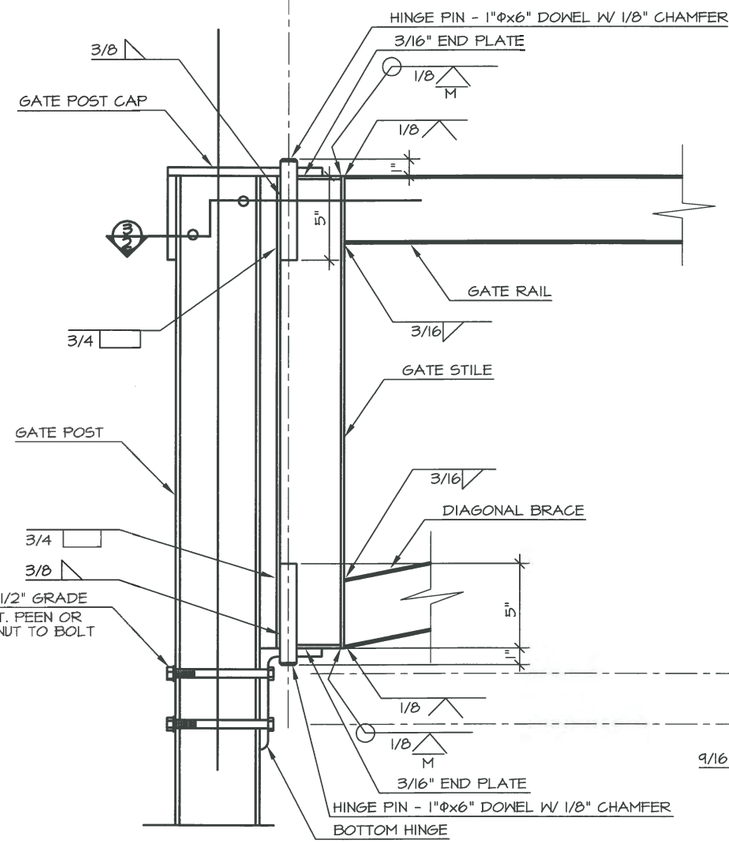
1/2 GATE POST CAP



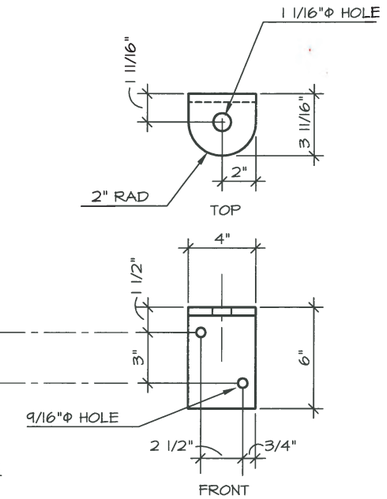
2/2 SITE PLAN



3/2 SECTION



4/2 SECTION



5/2 BOTTOM HINGE

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

DESIGN & CONSTRUCTION SECTION

SINGLE GATE

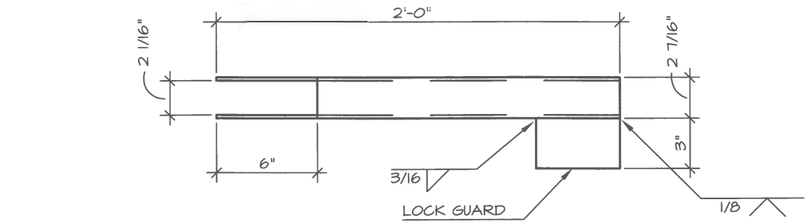
ALASKA STATE PARKS

PREPARED:
DRAWN: RK
REVIEWED: DH TY
DATE: 10/14/85

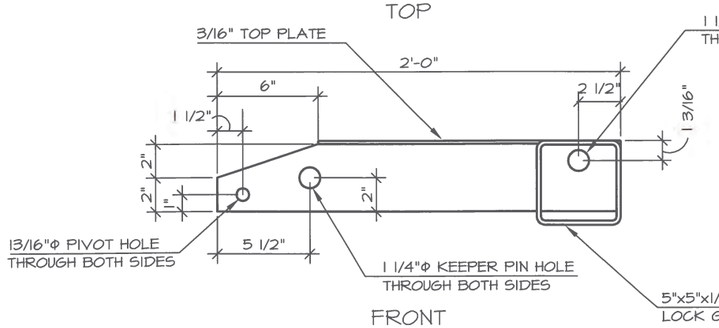
SHEET 2

G-1

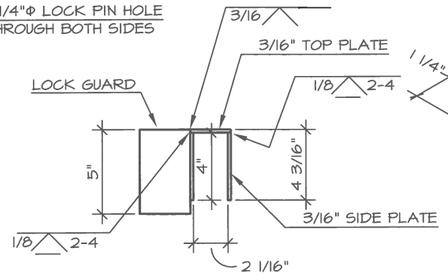
OF 2 SHEETS



TOP

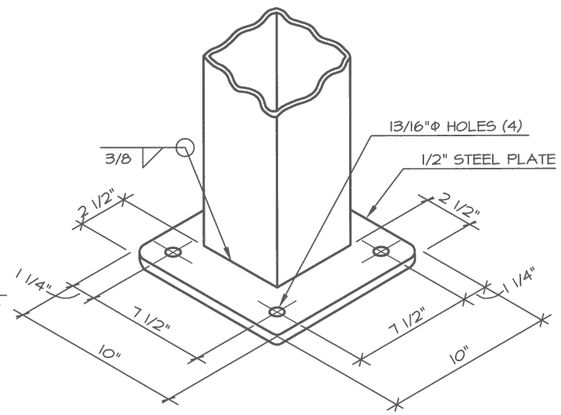


FRONT



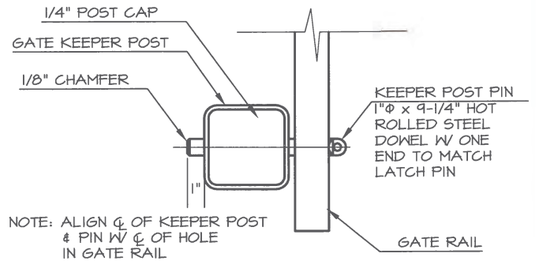
SIDE

1 LATCH

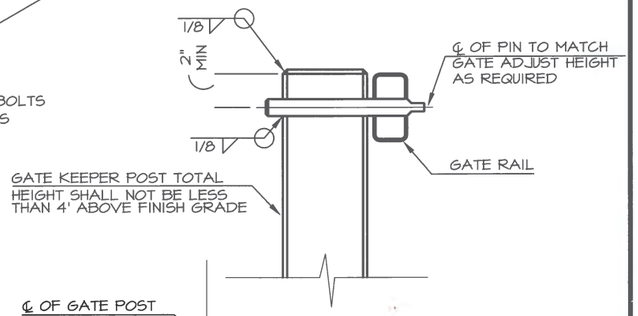


NOTE: FASTEN PLATES WITH 4 - 3/4" x 1-3/4" STEEL BOLTS WITH FLAT WASHERS, LOCK WASHERS, AND NUTS

2 STEEL PLATE (TYP.)

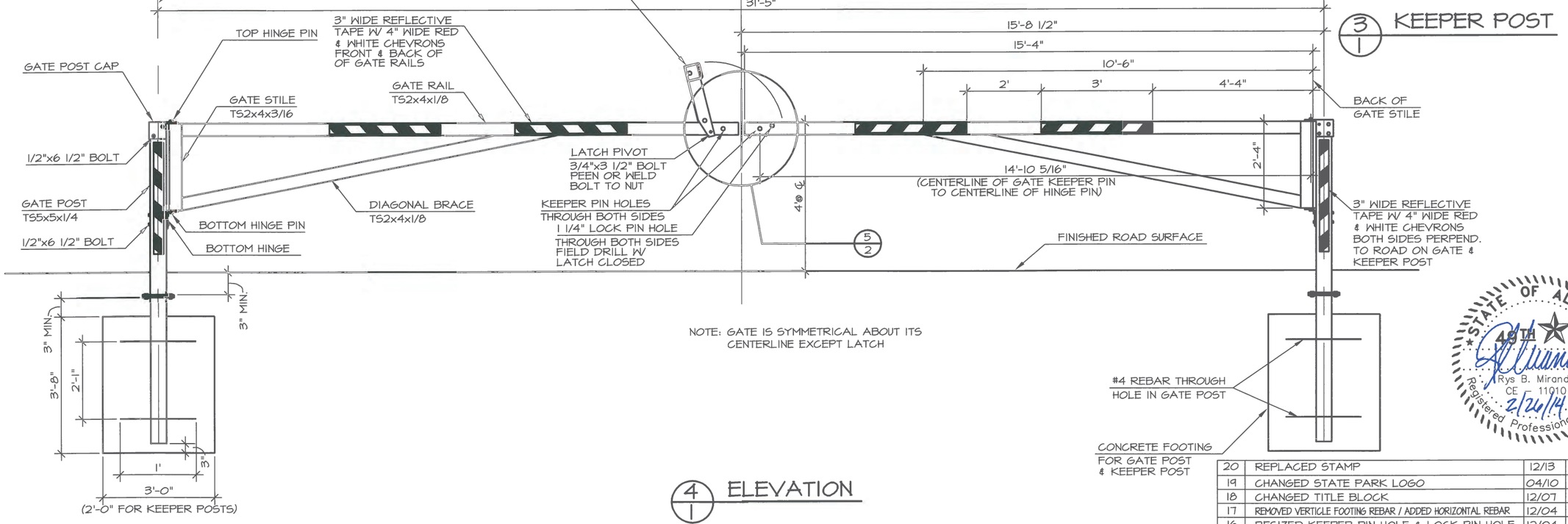


TOP



SECTION

3 KEEPER POST



NOTE: GATE IS SYMMETRICAL ABOUT ITS CENTERLINE EXCEPT LATCH

4 ELEVATION

NO.	REVISION	DATE	APPROVED
20	REPLACED STAMP	12/13	RBM
19	CHANGED STATE PARK LOGO	04/10	MPS
18	CHANGED TITLE BLOCK	12/07	MPS
17	REMOVED VERTICLE FOOTING REBAR / ADDED HORIZONTAL REBAR	12/04	MPS
16	RESIZED KEEPER PIN HOLE & LOCK PIN HOLE	12/04	MPS
15	REPLACED STAMP	3/02	BMS
14	REPLACED STAMP		

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

DESIGN & CONSTRUCTION SECTION

DOUBLE GATE

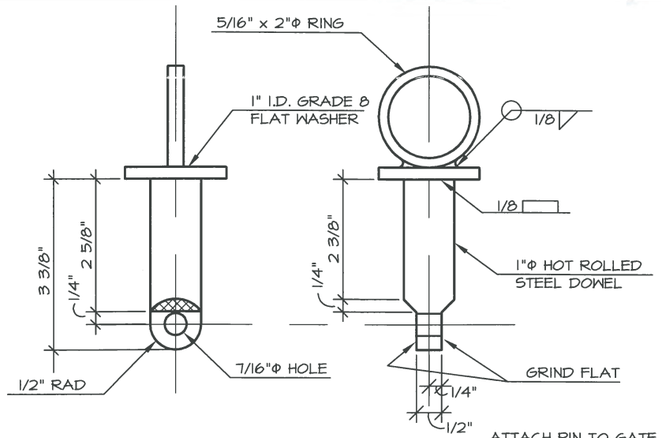
ALASKA STATE PARKS

PREPARED:
DRAWN: RK
REVIEWED: DH TY
DATE: 10/14/85

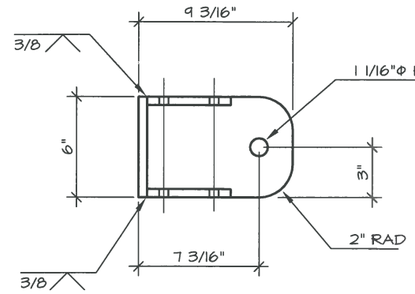
SHEET 1

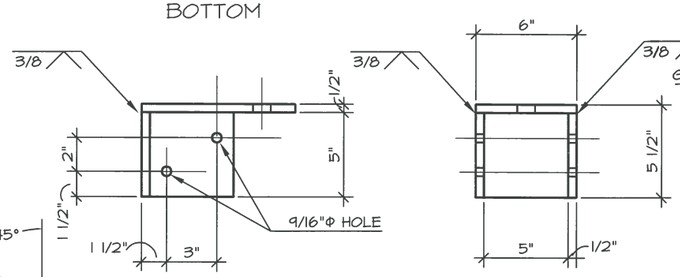
G-2

OF 2 SHEETS

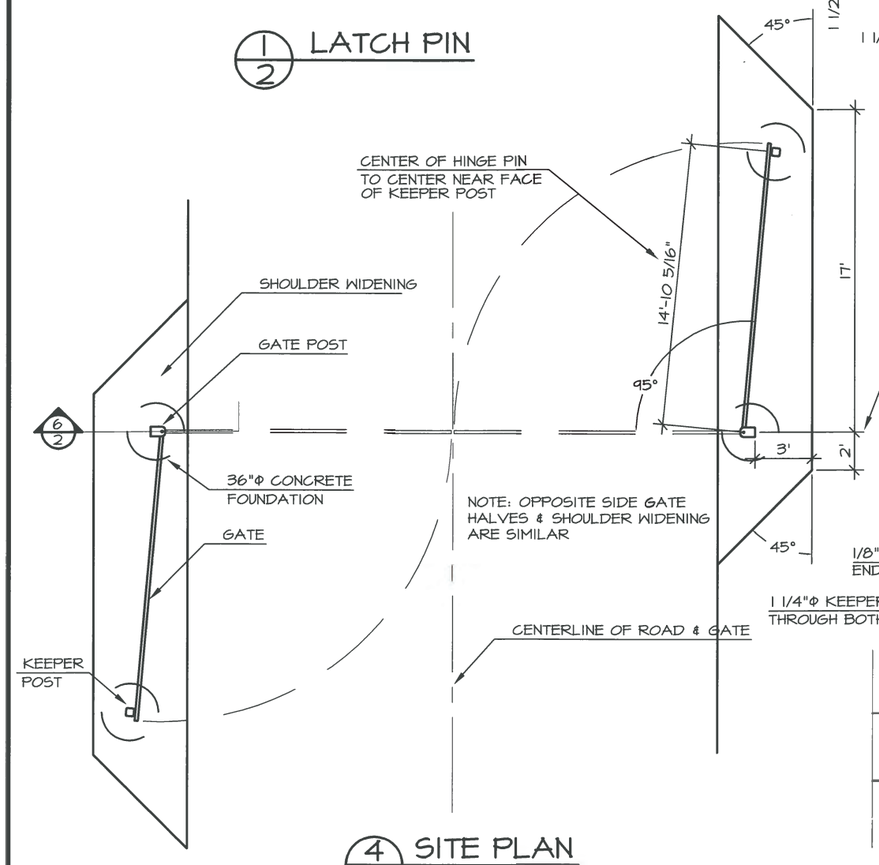


ATTACH PIN TO GATE RAIL W/ 1/8"x 18" S.S WIRE ROPE LANYARD. LOOP THROUGH PIN RING. USE EYELET & 1/4"x 1" TAPPING SCREW IN GATE RAIL



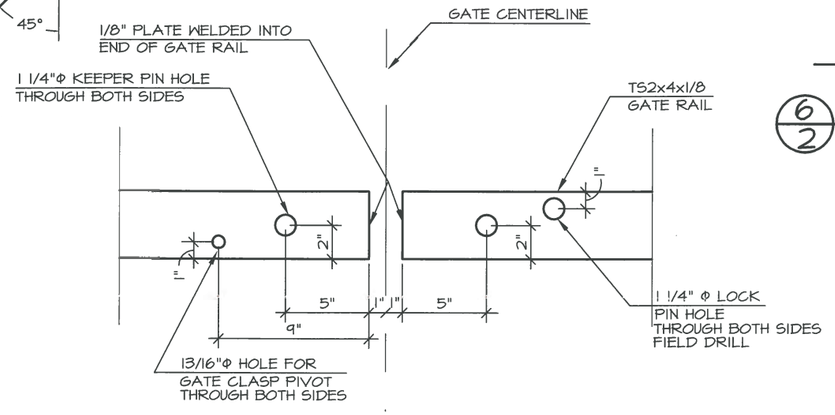


1/2 LATCH PIN

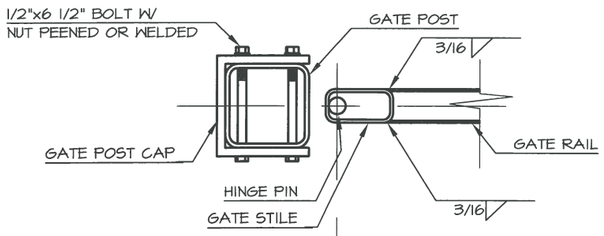


4/2 SITE PLAN

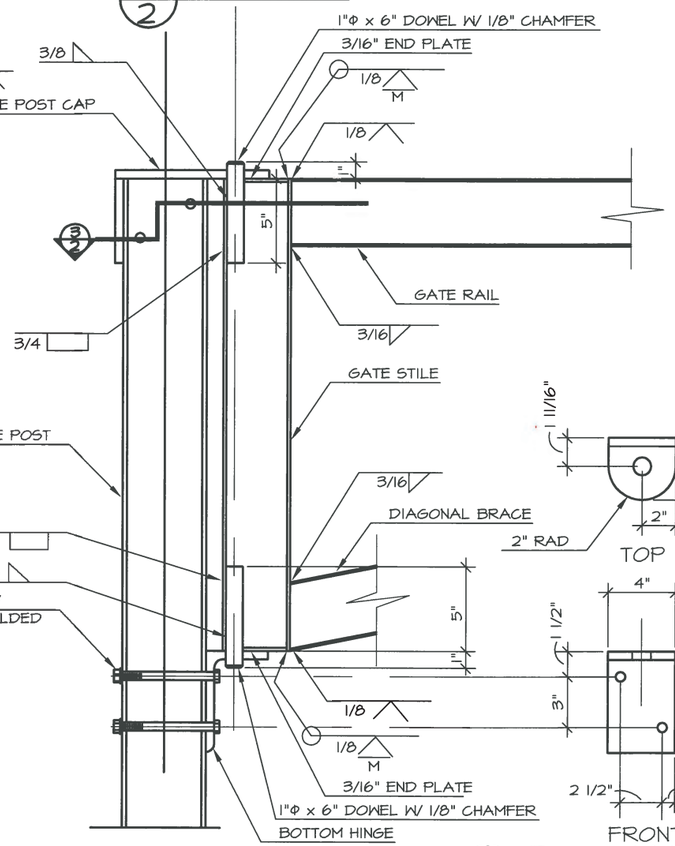
2/2 GATE POST CAP



5/2 DETAIL



3/2 SECTION



6/2 SECTION

7/2 BOTTOM HINGE

STATE OF ALASKA 49TH
Rys B. Miranda
CE 11010
2/26/14
Registered Professional Engineer

NO.	REVISION	DATE	APPROVED
19	REPLACED STAMP	12/13	RBM
18	CHANGED STATE PARK LOGO	04/10	MPS
17	CHANGED TITLE BLOCK	12/07	MPS
16	RESIZED KEEPER PIN HOLE & LOCK PIN HOLE	12/04	MPS
15	REPLACED STAMP	3/04	MPS
14	REPLACED STAMP	3/02	DH

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

DESIGN & CONSTRUCTION SECTION

ALASKA STATE PARKS

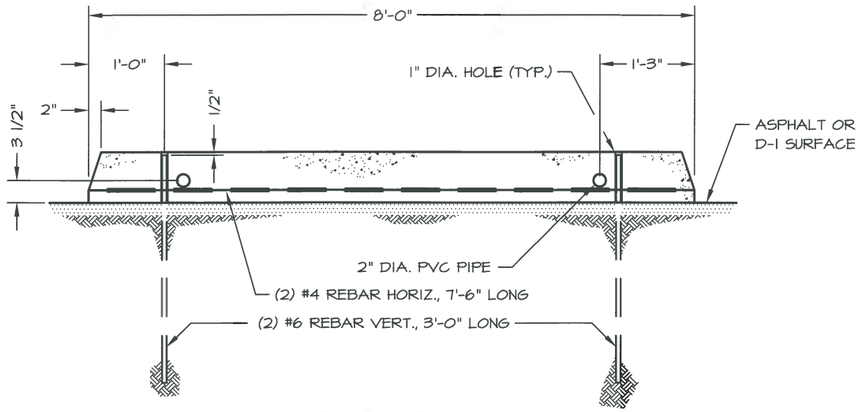
DOUBLE GATE

PREPARED:
DRAWN: RK
REVIEWED: DH TY
DATE: 10/14/85

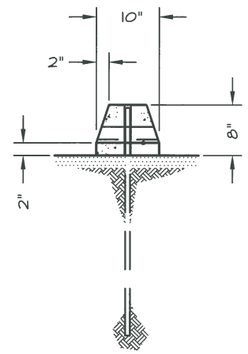
SHEET 2

G-2

OF 2 SHEETS



SIDE VIEW



END VIEW

① CONCRETE PARKING BUMPER

NO.	REVISION	DATE	APPROVED
11	REPLACED STAMP	12/13	RBM
10	CHANGED STATE PARK LOGO	04/10	MPS
9	CHANGED TITLE BLOCK	12/07	MPS
8	DELETED WOOD PARKING BUMPER & NOTES	10/05	MPS
7	UPDATED PRESSURE TREATMENT NOTE	12/04	MPS
6	UPDATED PRESSURE TREATMENT NOTE	3/04	MPS
5	REPLACED STAMP	3/04	MPS
4	REPLACED STAMP	3/02	DH

STATE OF ALASKA
49TH
Rys B. Mirando
CE - 11010
3/26/14
Registered Professional Engineer

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

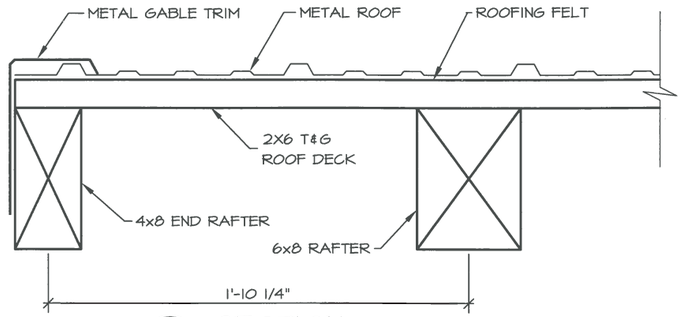
DESIGN & CONSTRUCTION SECTION

PARKING BUMPER

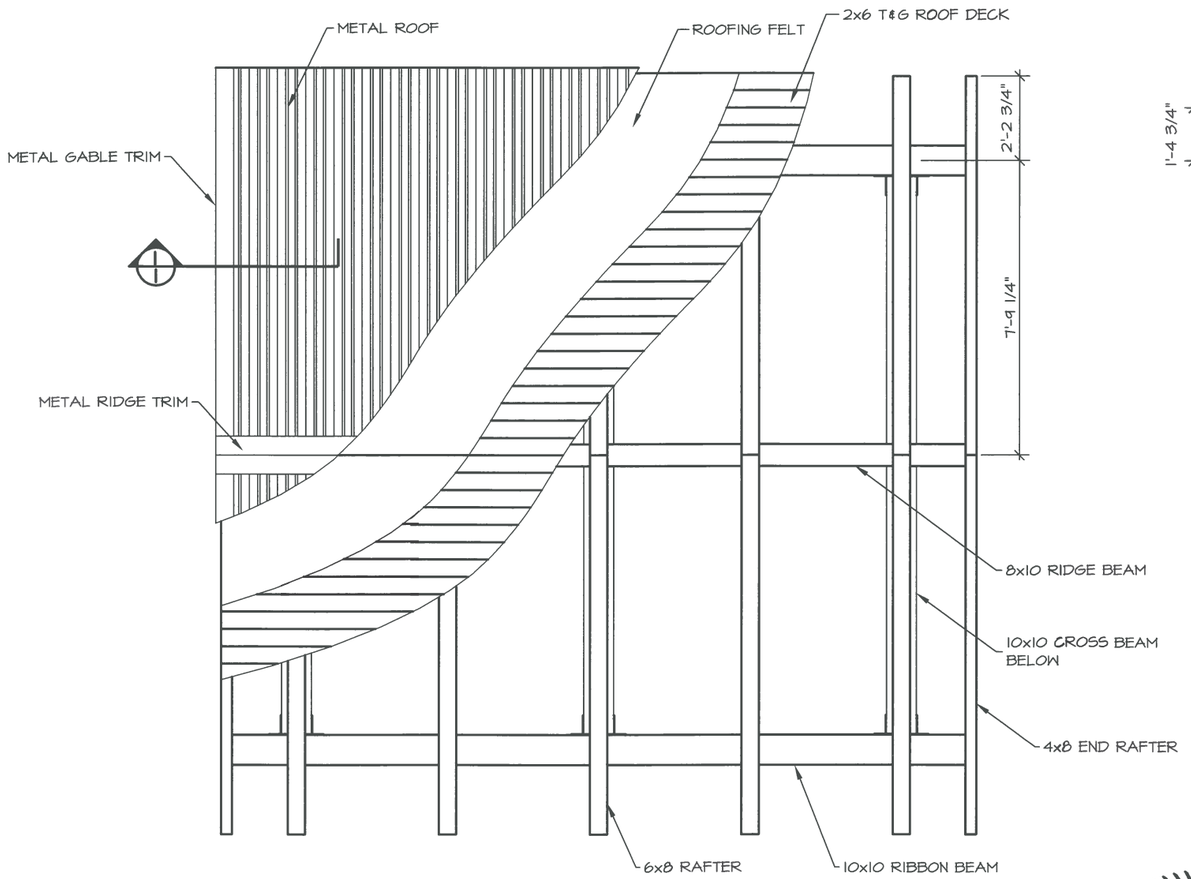
ALASKA STATE PARKS

PREPARED: tlc
DRAWN: tlc
REVIEWED: DH
DATE: 1 MAY 94

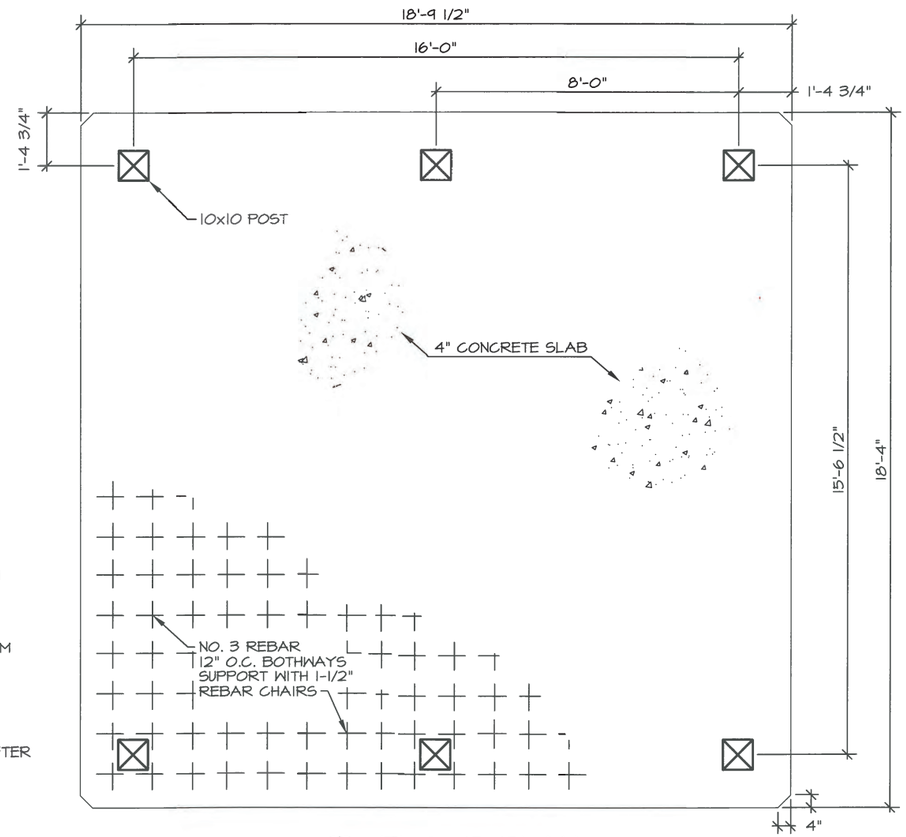
SHEET 1
P-6
OF 1 SHEETS



1 SECTION
GABLE



2 ROOF PLAN



3 FLOOR PLAN
POST LAYOUT

NO.	REVISION	DATE	APPROVED
11	REPLACED STAMP	12/13	RBM
10	CHANGED STATE PARK LOGO	04/10	MPS
9	CHANGED TITLE BLOCK	12/07	MPS
8	REPLACED STAMP	3/04	MPS
7	REPLACED STAMP	3/02	DH

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

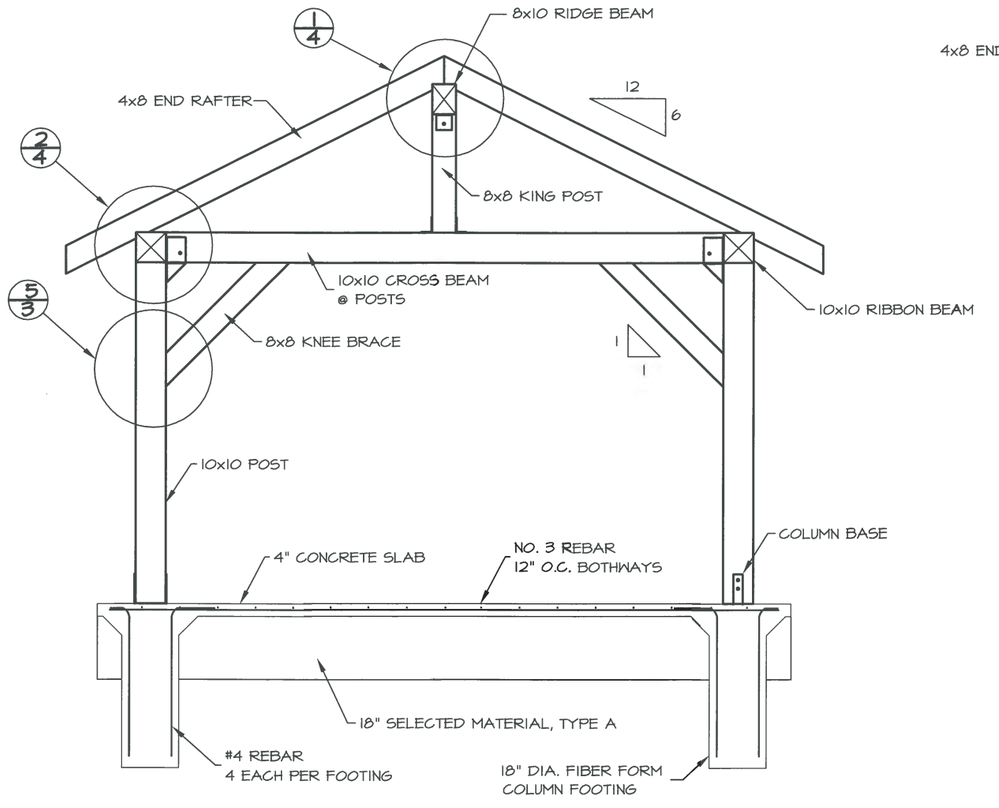
DESIGN & CONSTRUCTION SECTION

PICNIC SHELTER

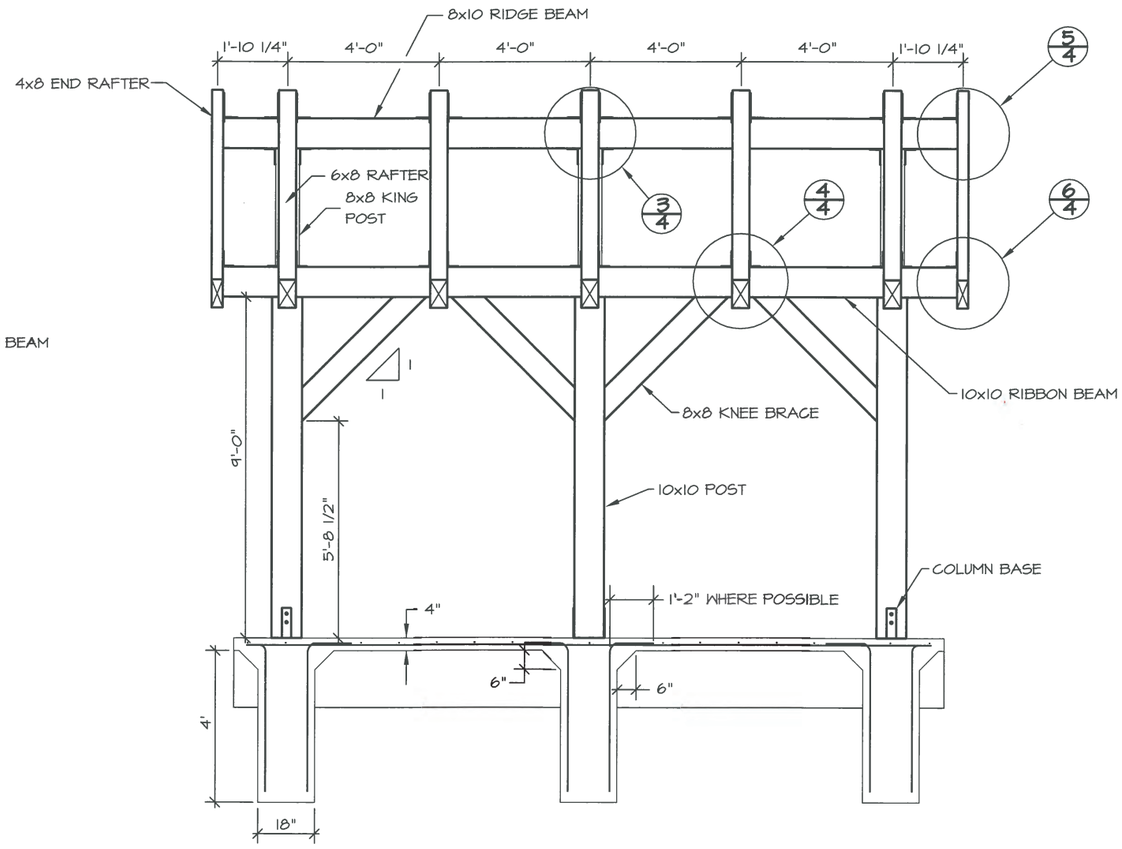
ALASKA STATE PARKS

PREPARED: WME
DRAWN: WME
REVIEWED: DH
DATE: MAY 97

SHEET 1
R-1
OF 4 SHEETS



1/2 END STRUCTURE



2/2 SIDE STRUCTURE

STATE OF ALASKA 49TH
Kys B. Miranda
CE 11010
2/26/14
Registered Professional Engineer

NO.	REVISION	DATE	APPROVED
11	REPLACED STAMP	12/13	RBM
12	CHANGED STATE PARK LOGO	04/10	MPS
11	CHANGED TITLE BLOCK	12/07	MPS
10	REPLACED STAMP	3/04	MPS
9	REPLACED STAMP	3/02	DH
8	SHORTENED STRUCTURE BY 1'	MAR 01	DH

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

DESIGN & CONSTRUCTION SECTION

PICNIC SHELTER

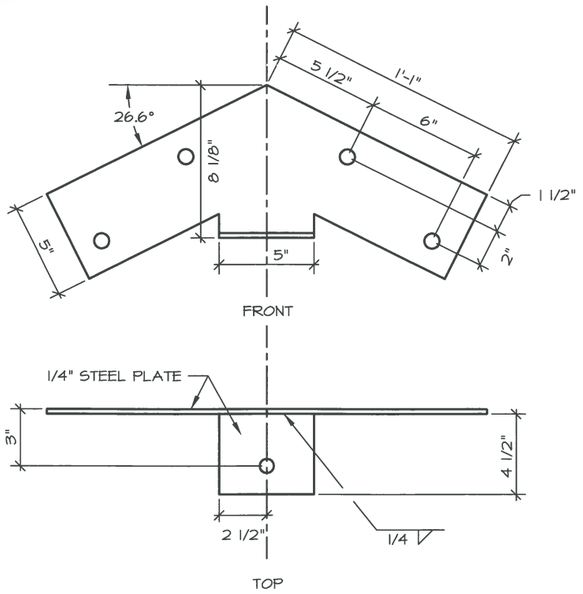
ALASKA STATE PARKS

PREPARED: WME
DRAWN: WME
REVIEWED: DH
DATE: MAY 97

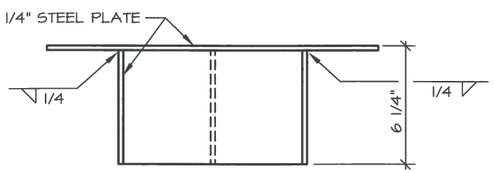
SHEET 2

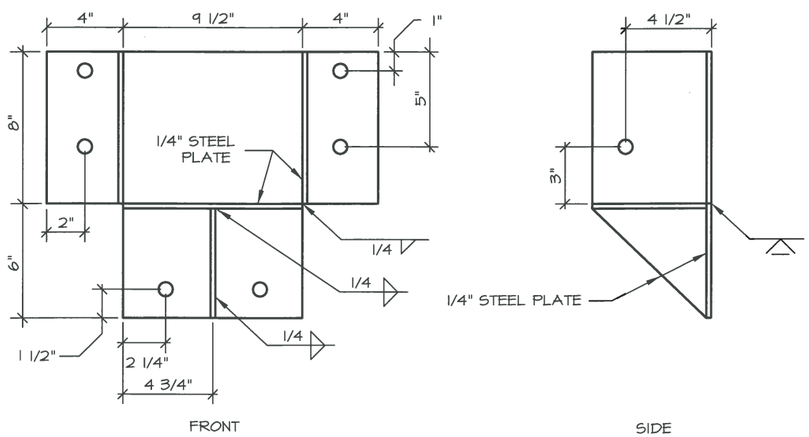
R—1

OF 4 SHEETS

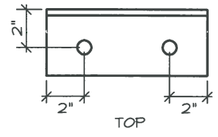


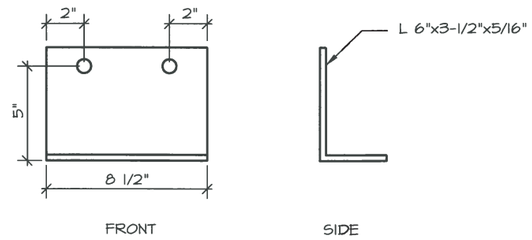
1/3 RIDGE BEAM BRACKET



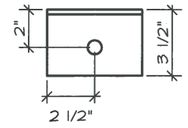


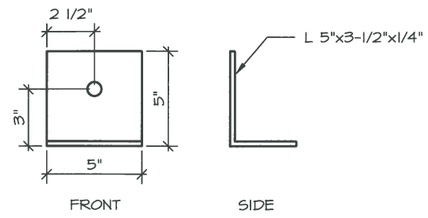
2/3 COLUMN TO BEAM BRACKET



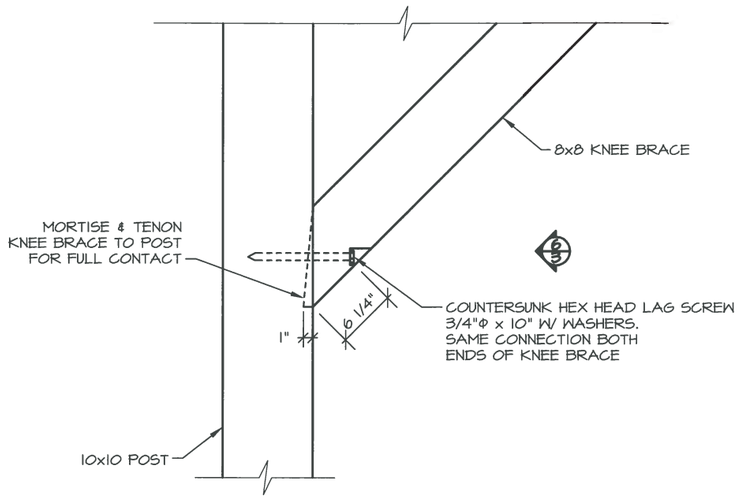


3/3 RAFTER ANGLE BRACKET

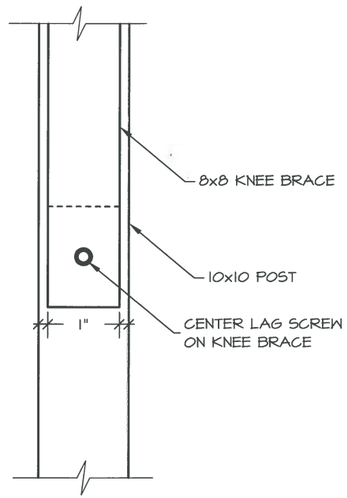




4/3 KING POST ANGLE BRACKET



5/3 DETAIL
KNEE BRACE CONNECTION



6/3 SIDE
KNEE BRACE CONNECTION

NO.	REVISION	DATE	APPROVED
8	REPLACED STAMP	12/13	RBM
7	CHANGED STATE PARKS LOGO	04/10	MPS
6	CHANGED TITLE BLOCK	12/07	MPS
5	REDESIGNED ANGLE OF HEX HEAD LAG SCREW (1/3)	12/04	MPS
4	REPLACED STAMP	3/04	MPS
3	REPLACED STAMP	3/02	DH
2	CLARIFIED NOTES	AUG 01	DH

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

DESIGN & CONSTRUCTION SECTION

PICNIC SHELTER

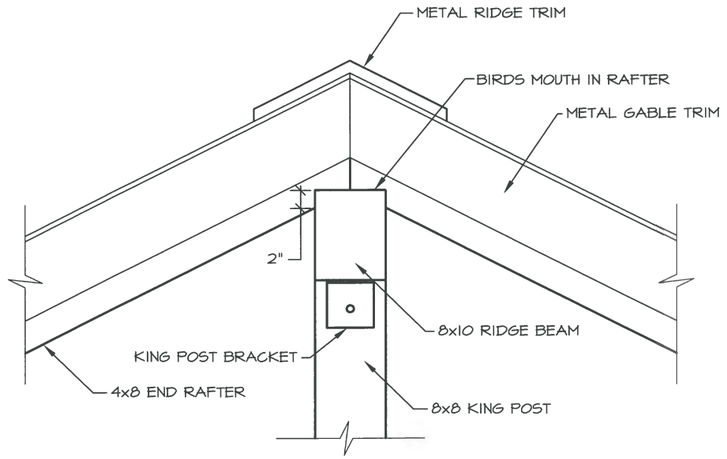
ALASKA STATE PARKS

PREPARED: WME
DRAWN: WME
REVIEWED: DH
DATE: MAY 97

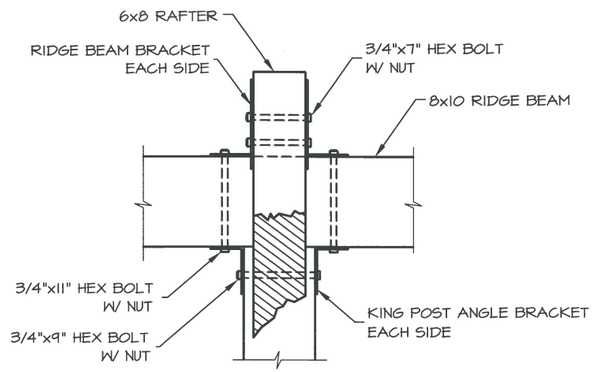
SHEET 3

R-1

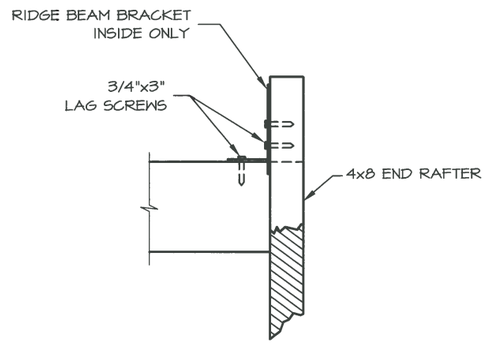
OF 4 SHEETS



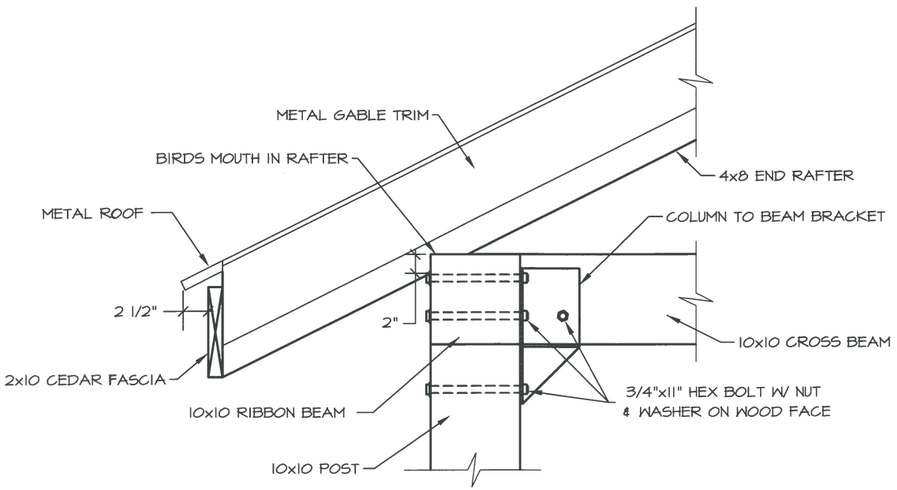
1/4 DETAIL
RIDGE W/ROOFING



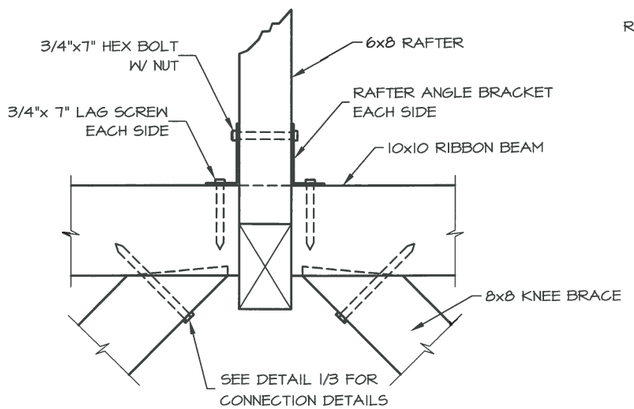
3/4 DETAIL



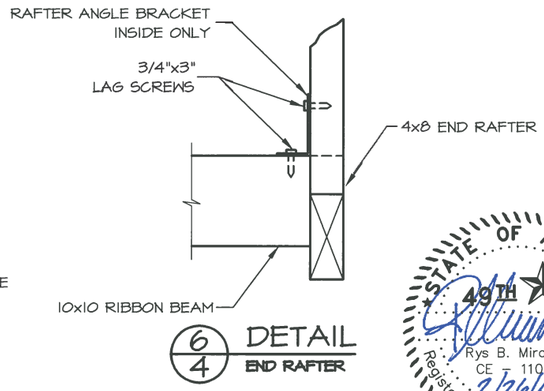
5/4 DETAIL
END RAFTER



2/4 DETAIL
EAVE W/ROOFING & TRIM



4/4 DETAIL



6/4 DETAIL
END RAFTER

NOTE: KING POST ANGLE BRACKET TO BE USED AT BOTTOM OF POST FOR CONNECTING TO CROSS BEAM SHALL BE ATTACHED TO CROSS BEAM WITH 3/4"x3" LAG SCREWS

NO.	REVISION	DATE	APPROVED
6	REPLACED STAMP	12/13	RBM
5	CHANGED STATE PARK LOGO	04/10	MPS
4	CHANGED TITLE BLOCK	12/07	MPS
3	REPLACED STAMP	3/04	MPS
2	REPLACED STAMP	3/02	DH
1	ADD NOTE	DEC 97	DH

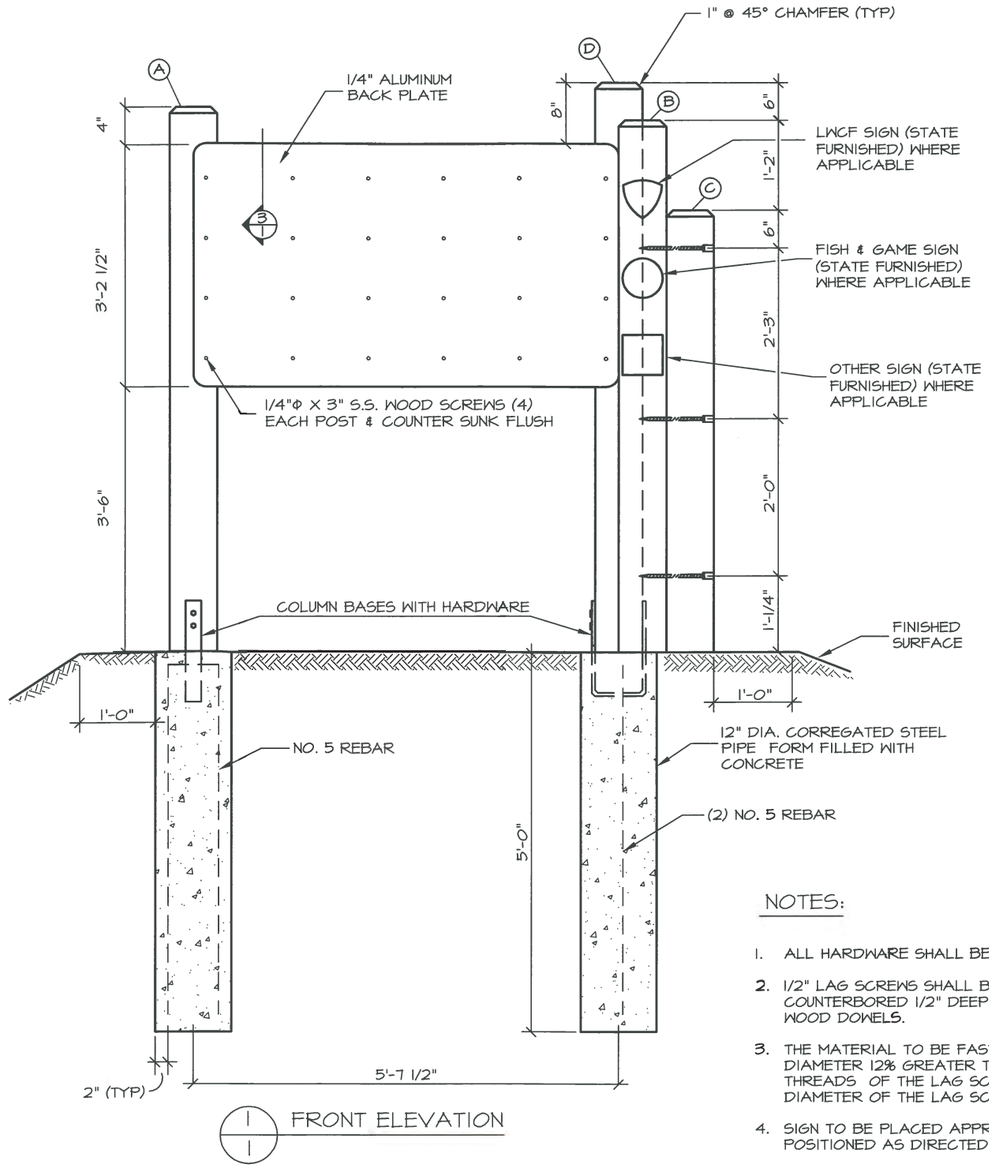
STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DESIGN & CONSTRUCTION SECTION

PICNIC SHELTER

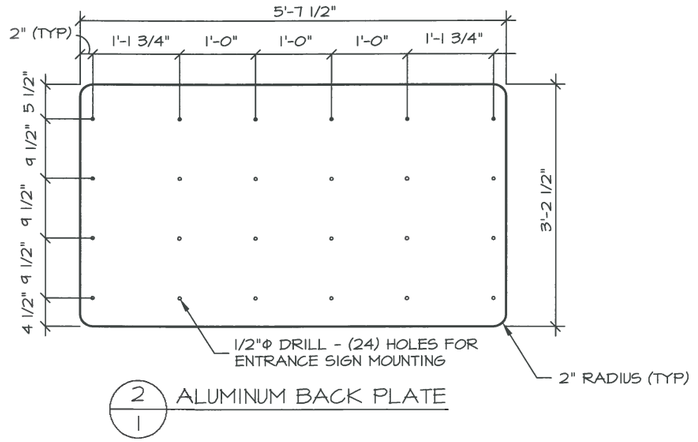
ALASKA STATE PARKS

PREPARED: WME
DRAWN: WME
REVIEWED: DH
DATE: MAY 97

SHEET 4
R—1
OF 4 SHEETS



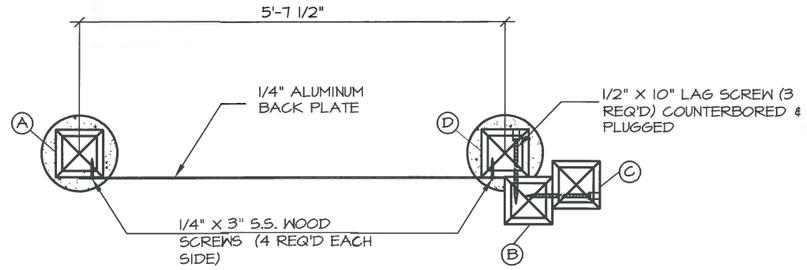
1/1 FRONT ELEVATION



2/1 ALUMINUM BACK PLATE

8" x 8" POST LENGTHS

POST NUMBER	LENGTH
A	6'-11 1/4"
B	7'-1/4"
C	5'-9 1/4"
D	7'-5 1/4"



3/1 PLAN VIEW

NOTES:

1. ALL HARDWARE SHALL BE GALVANIZED UNLESS OTHERWISE SPECIFIED
2. 1/2" LAG SCREWS SHALL BE COUNTERBORED 2 1/2" DEEP. 1/4" LAG BOLTS SHALL BE COUNTERBORED 1/2" DEEP. ALL COUNTERBORED HOLES SHALL BE PLUGGED WITH WOOD DOWELS.
3. THE MATERIAL TO BE FASTENED BY THE LAG SCREW SHALL BE PRE-DRILLED TO A DIAMETER 12% GREATER THAN THE LAG SCREW. THE MATERIAL RECEIVING THE THREADS OF THE LAG SCREW SHALL BE PRE-DRILLED TO A MAXIMUM OF 75% OF THE DIAMETER OF THE LAG SCREW.
4. SIGN TO BE PLACED APPROXIMATELY WHERE IT IS SHOWN ON THE PLANS. IT SHALL BE POSITIONED AS DIRECTED BY THE ENGINEER.

NO.	REVISION	DATE	APPROVED
2	REPLACED STAMP	12/13	RBM
1	CHANGED STATE PARK LOGO	04/10	MPS

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

DESIGN & CONSTRUCTION SECTION

ENTRANCE SIGN

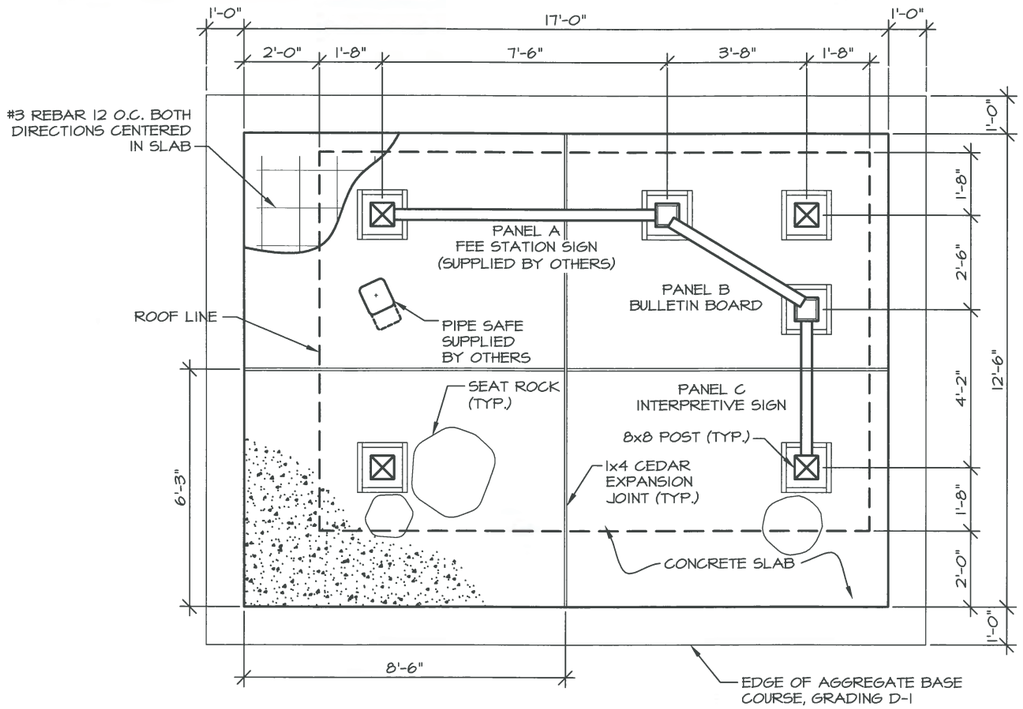
ALASKA STATE PARKS

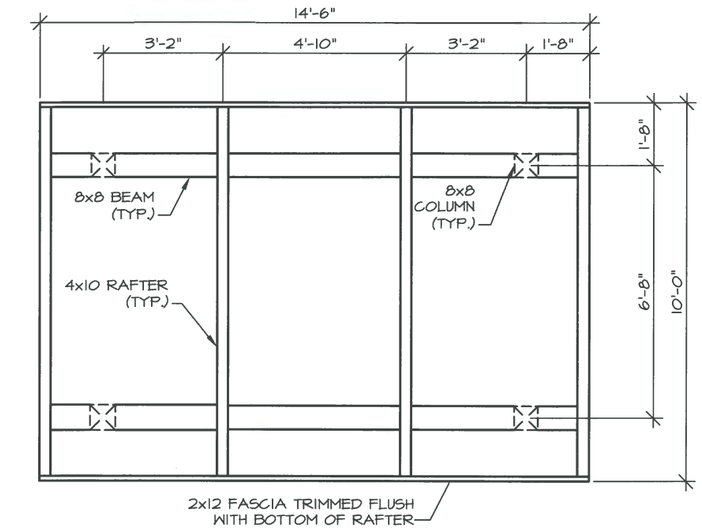
PREPARED: LMR
DRAWN: MH/LMR
REVIEWED: JAM
DATE: 01/09/09

SHEET 1

S-3C

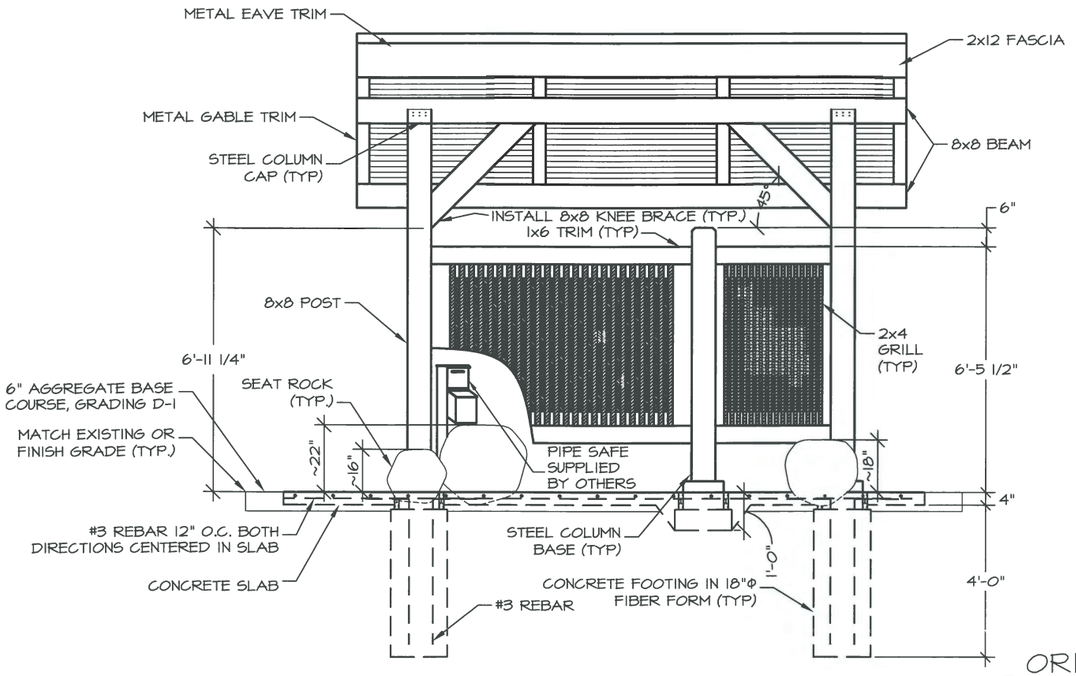
OF 1 SHEETS

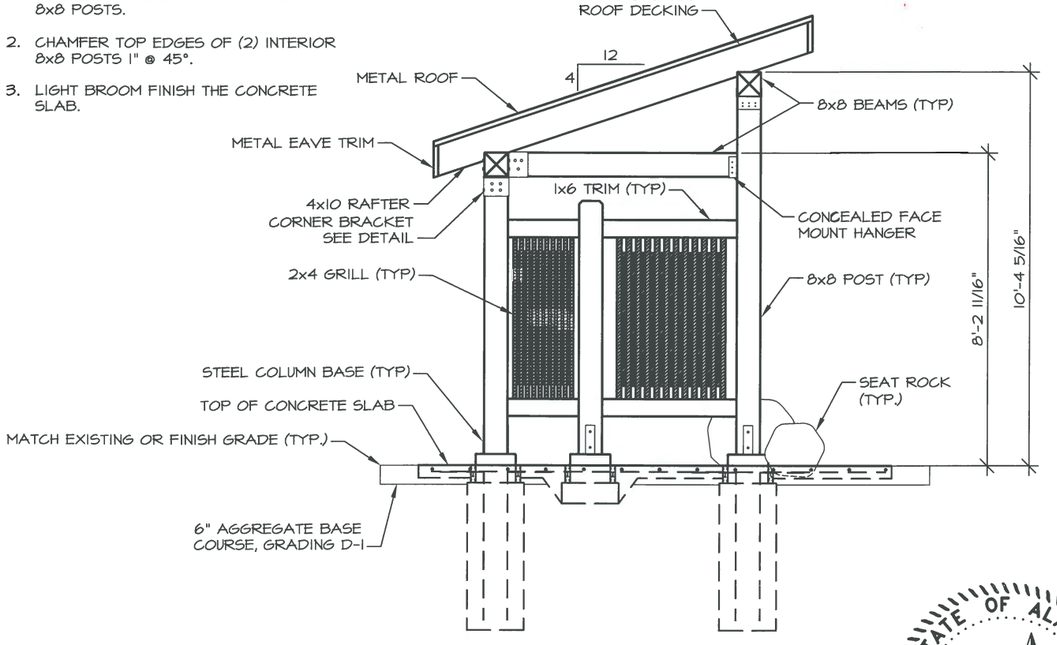




NOTES:

1. ALTERNATE ORIENTATION OF STEEL COLUMN BASES BETWEEN ADJACENT 8x8 POSTS.
2. CHAMFER TOP EDGES OF (2) INTERIOR 8x8 POSTS 1" @ 45°.
3. LIGHT BROOM FINISH THE CONCRETE SLAB.





ORIENTATION KIOSK

PLAN & PROFILE

NO.	REVISION	DATE	APPROVED
5	REPLACED STAMP	12/13	RBM
4	ADDED D-1 SHOULDER	12/10	MPS
3	CHANGED CONCRETE FOOTER, ADDED NOTE 3	12/10	MPS
2	UPDATED STATE PARK LOGO	12/10	MPS
1	CHANGED TITLE BLOCK	12/07	MPS

STATE OF ALASKA
49TH
Rys B. Miranda
CE 11010
Registered Professional Engineer
2/26/14

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

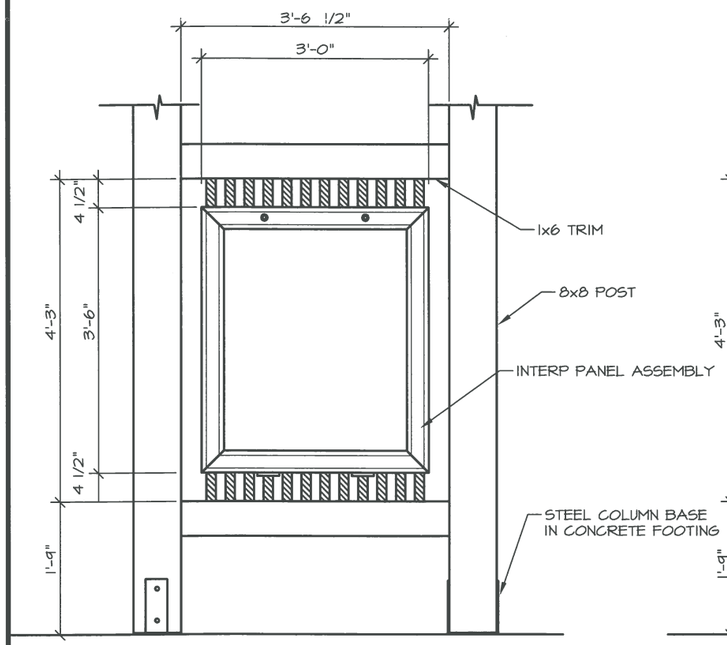
DESIGN & CONSTRUCTION SECTION

ORIENTATION KIOSK

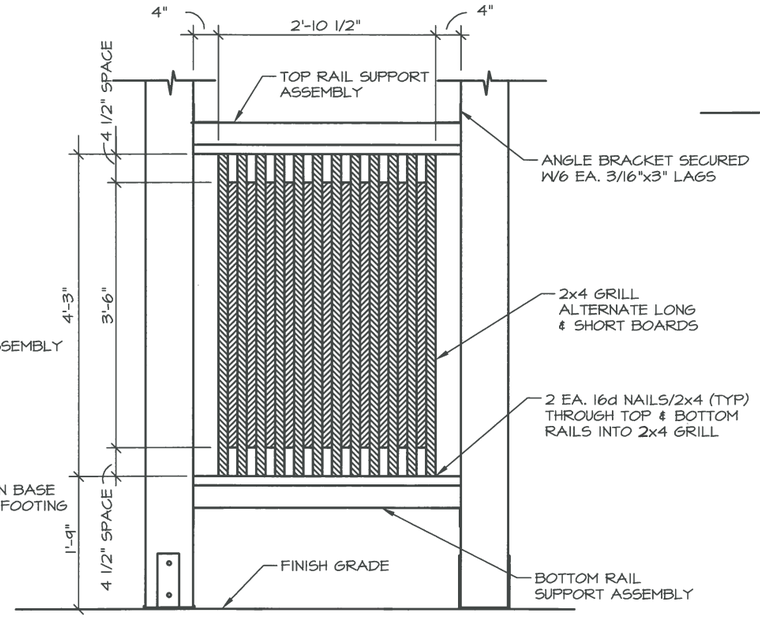
ALASKA STATE PARKS

PREPARED: RBM/JAS
DRAWN: AT/RBM/JAS
REVIEWED: MPS
DATE: JAN 2004

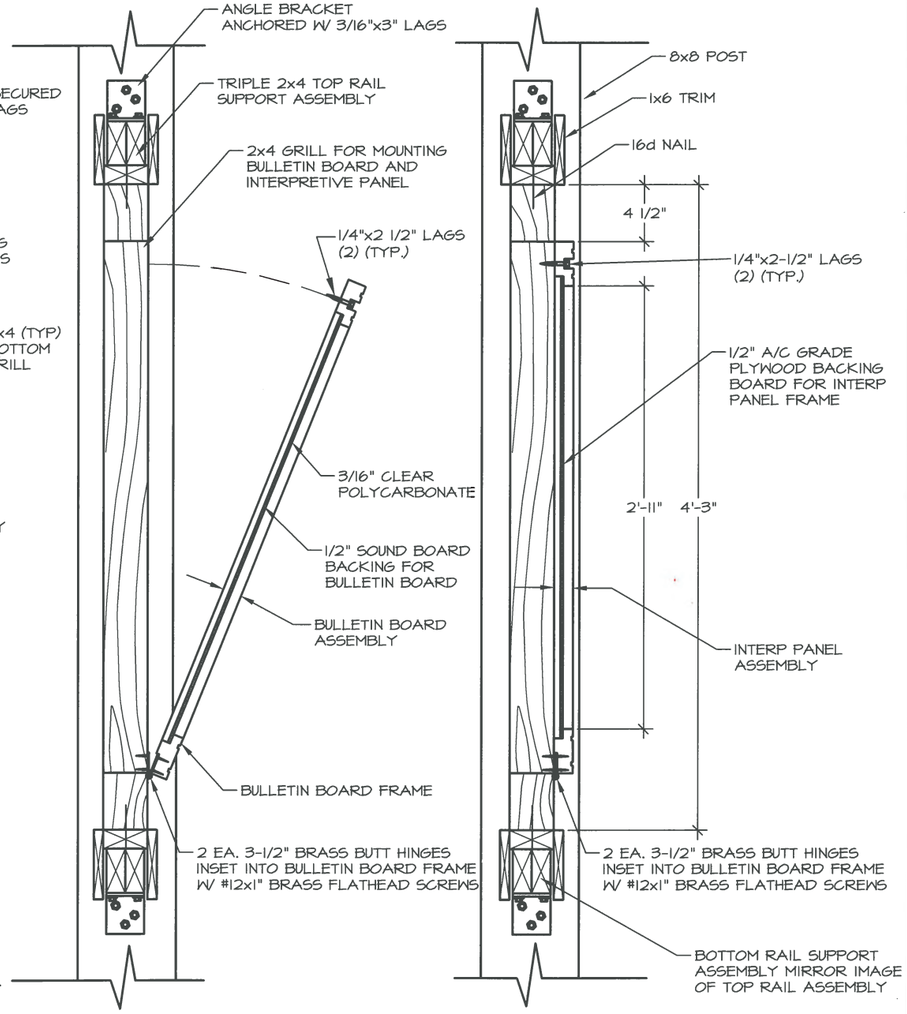
SHEET 1
S-10D
OF 3 SHEETS



2x4 GRILL W/ INTERP PANEL
DETAILS

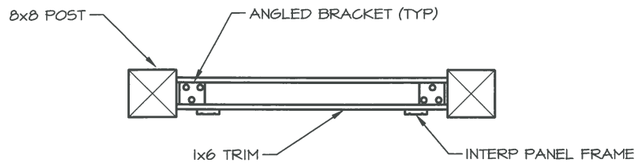


2x4 GRILL
DETAILS - INTERP PANEL & 1x6 TRIM NOT SHOWN



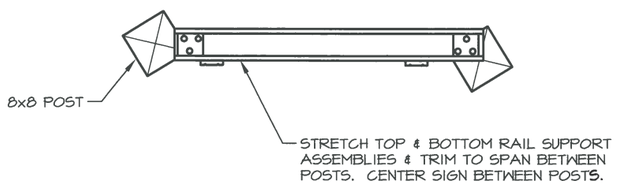
BULLETIN BOARD
SECTION

SUPPORT GRILL
SECTION

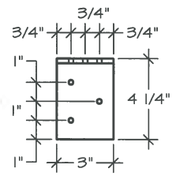


2x4 GRILL
PLAN - PERPENDICULAR TO POSTS

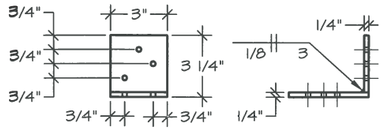
NOTES:
1. NOTCH POSTS TO FIT ANGLE BRACKETS & TOP/BOTTOM SUPPORT RAILS.
2. DO NOT NOTCH POSTS FULL LENGTH OF 2x4 GRILL.



2x4 GRILL
PLAN - ANGLED TO POSTS



NOTES:
1. DRILL HOLES 1/4"Φ.
2. 1/4" MILD STEEL, (4) REQ'D PER SIGN.
3. L4x3x1/4 MAY BE USED.



ANGLE BRACKET
DETAILS

NOTES:
1. INTERPRETIVE PANEL ASSEMBLY CONSISTS OF INTERPRETIVE GRAPHIC BACKING BOARD AND INTERP PANEL FRAME.
2. INTERPRETIVE GRAPHIC PANEL SUPPLIED BY OTHERS MEASURES 3'-0 1/2"x2'-6 1/2"x1/8". THE CONTRACTOR SHALL MAKE ACCOMMODATIONS FOR THIS GRAPHIC IN MEASUREMENTS AND CONSTRUCTION.

NO.	REVISION	DATE	APPROVED
4	REPLACED STAMP	12/13	RBM
3	CHANGED INTERP FRAME FASTENER SYSTEM	12/10	MPS
2	UPDATED STATE PARK LOGO	12/10	MPS
1	CHANGED TITLE BLOCK	12/07	MPS

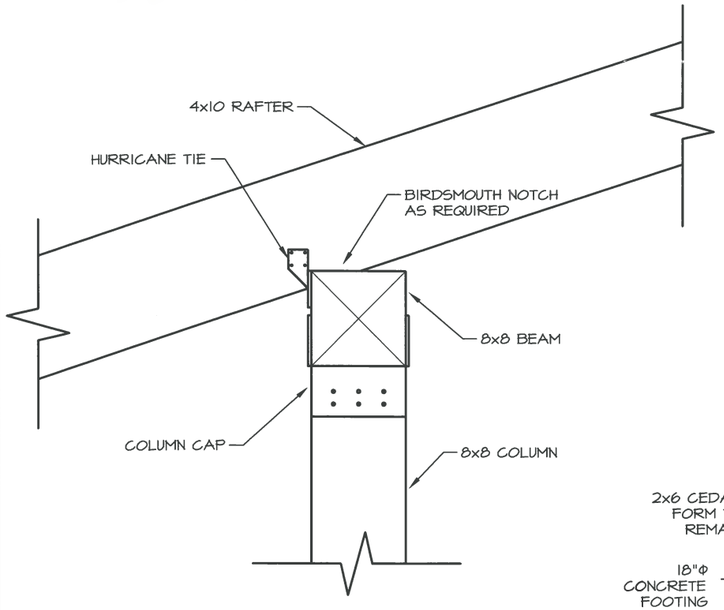
STATE OF ALASKA
49TH
Rys B. Miranda
CE 11010
2/26/14
Registered Professional Engineer

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES
DESIGN & CONSTRUCTION SECTION
ORIENTATION KIOSK

ALASKA STATE PARKS

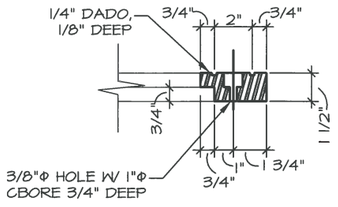
PREPARED: RBM/JAS
DRAWN: AT/RBM/JAS
REVIEWED: MPS
DATE: JAN 2004

SHEET 2
S-10D
OF 3 SHEETS



BEAM/RAFTER CONNECTION

DETAILS - 2x6 T&G DECKING & METAL ROOF NOT SHOWN

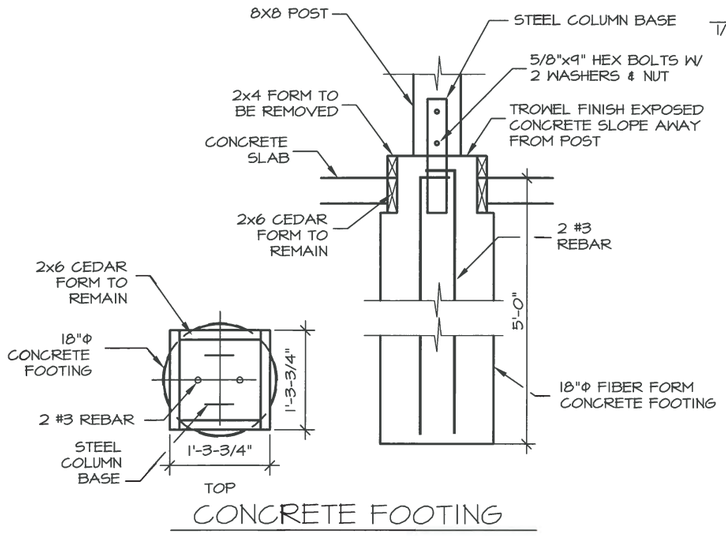


FRAME

SECTION

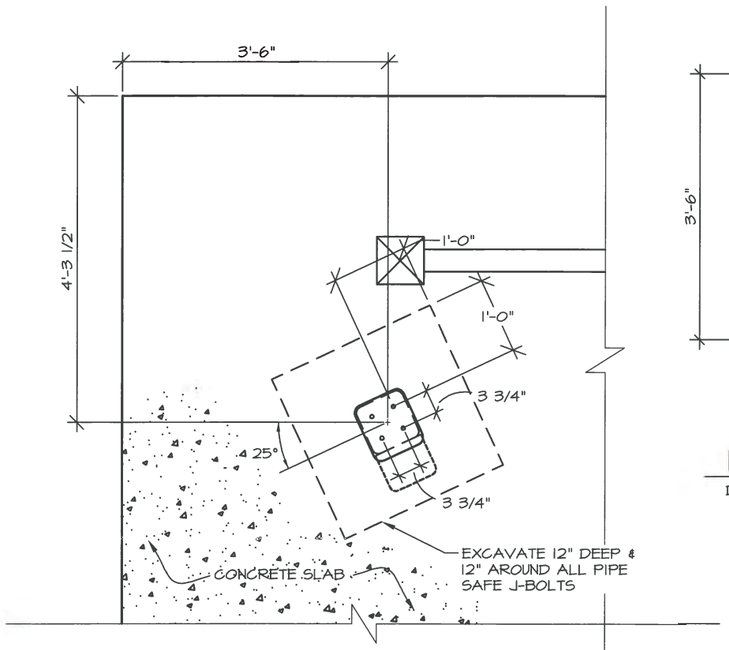
PIPE SAFE

DETAILS



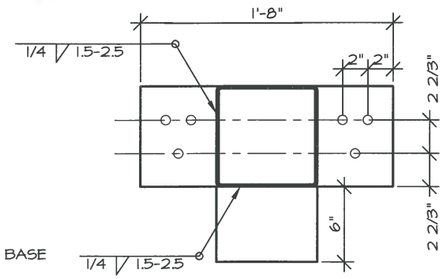
CONCRETE FOOTING

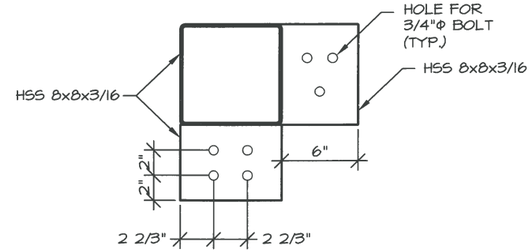
DETAIL



PIPE SAFE BOLT PATTERN

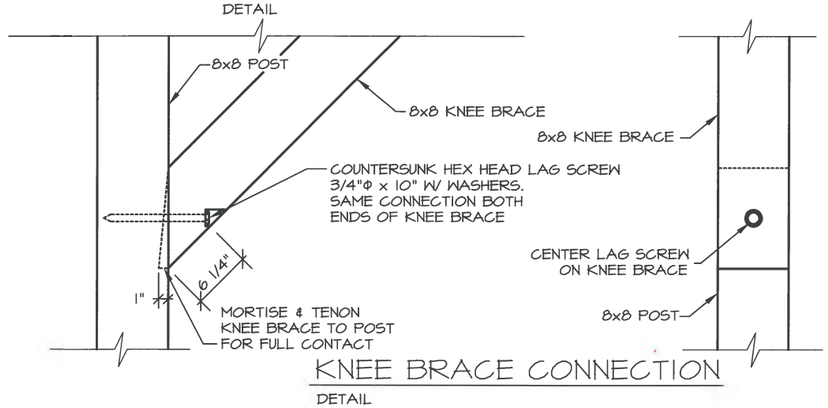
DETAILS





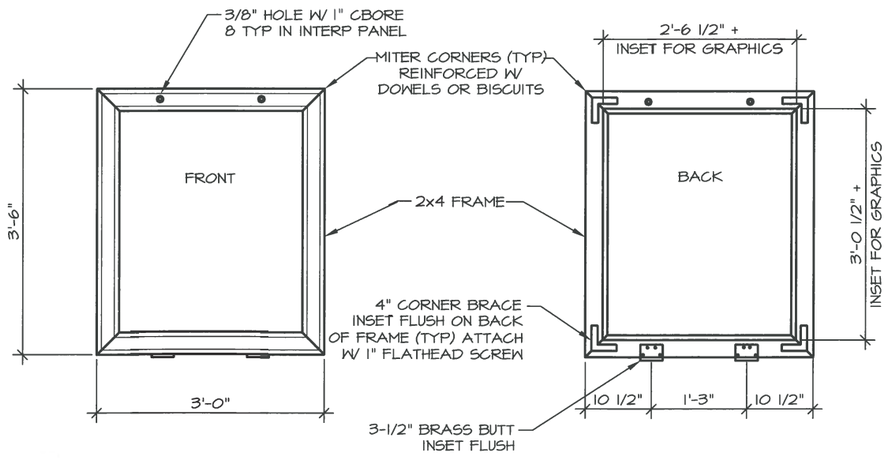
CORNER BRACKET

DETAIL



KNEE BRACE CONNECTION

DETAIL



INTERP PANEL/BULLETIN BOARD FRAME

DETAILS

NO.	REVISION	DATE	APPROVED
7	REPLACED STAMP	12/13	RBM
6	INCREASED THE SIZE OF THE J-BOLTS	12/10	MPS
5	ADDED COCRETE FOOTER DETAIL	12/10	MPS
4	ADDED KNEE BRACE CONNECTION DETAIL	12/10	MPS
3	UPDATED STATE PARK LOGO	12/10	MPS
2	CHANGED TITLE BLOCK	12/07	MPS
1	RELOCATED PIPE SAFE	8/07	MPS

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

DESIGN & CONSTRUCTION SECTION

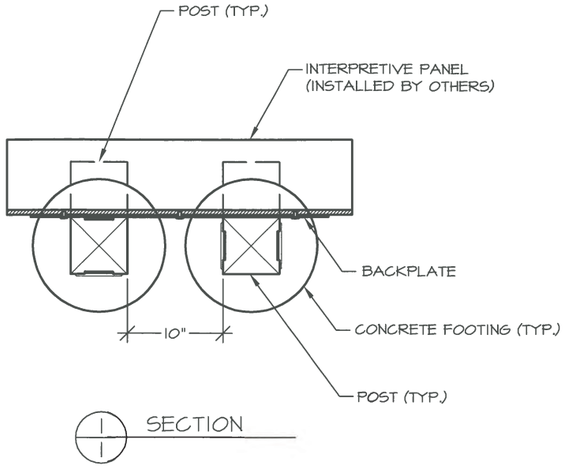
ORIENTATION KIOSK

ALASKA STATE PARKS

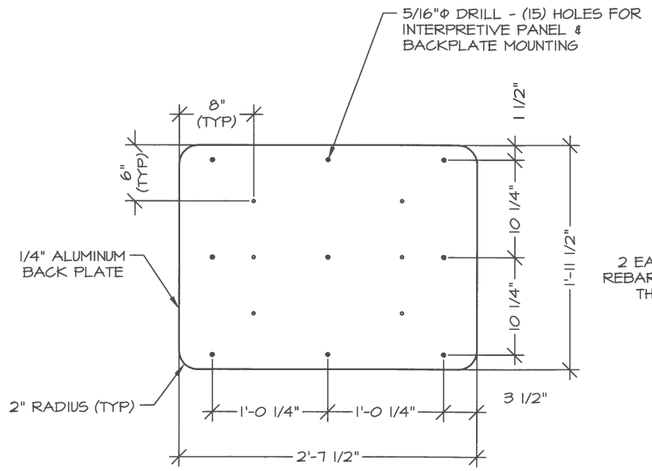
PREPARED: RBM/JAS
DRAWN: AT/RBM/JAS
REVIEWED: MPS
DATE: JAN 2004

SHEET 3
S-10D
OF 3 SHEETS

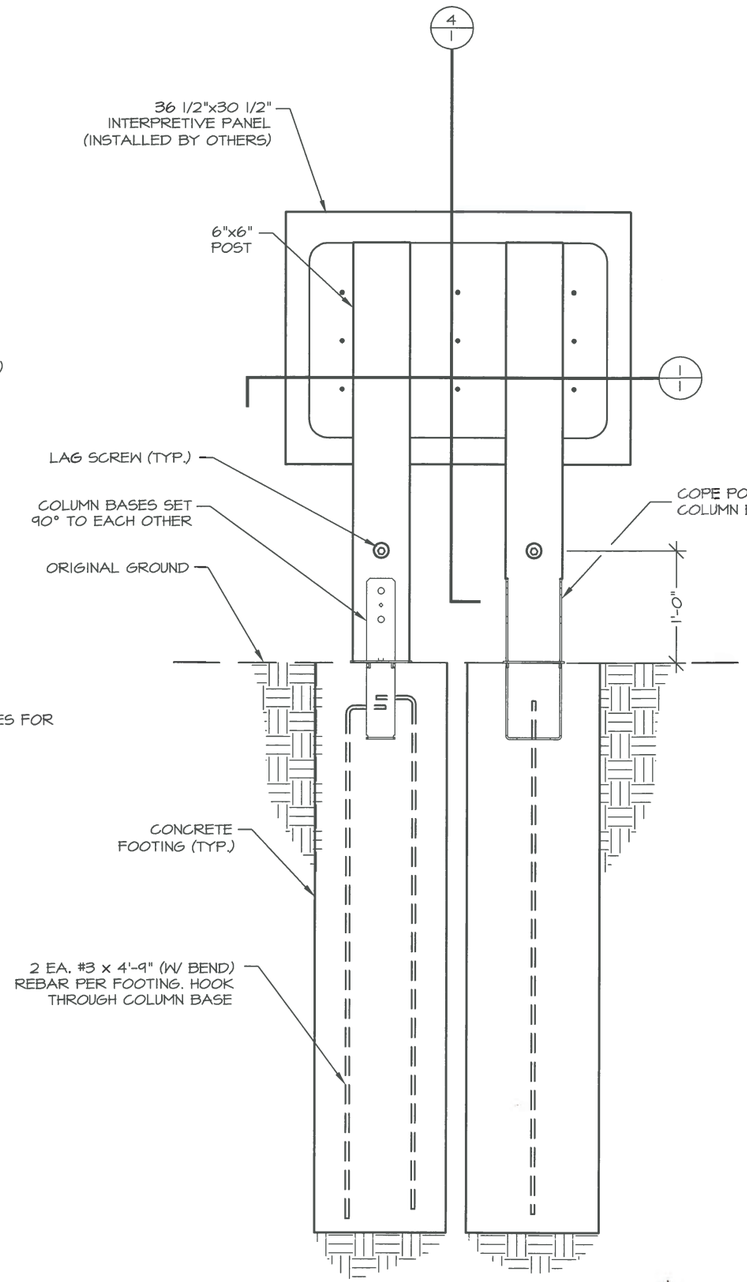
STATE OF ALASKA
49TH
Rys B. Miranda
CE 11010
2/6/14
Registered Professional Engineer



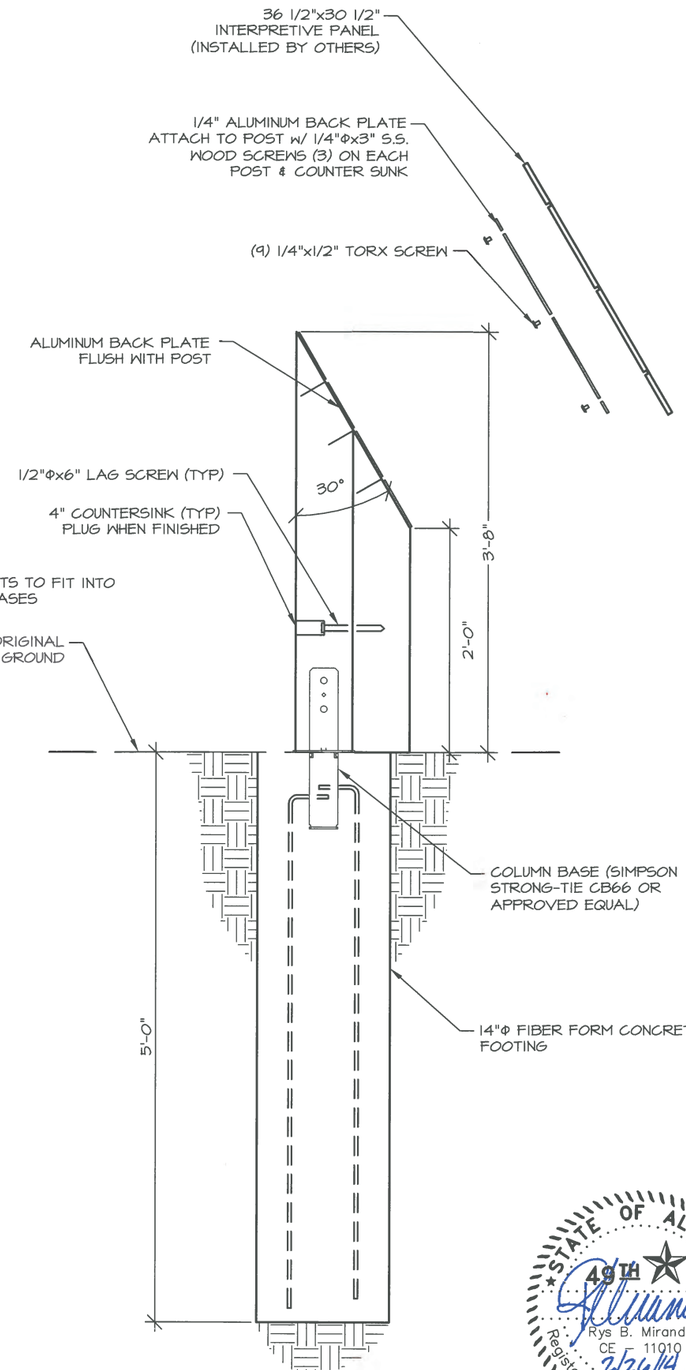
1/1 SECTION



2/1 ALUMINUM BACK PLATE



3/1 BACK ELEVATION



4/1 SECTION

STATE OF ALASKA
Registered Professional Engineer
49TH
Rys B. Miranda
CE 11010
2/26/14

NO.	REVISION	DATE	APPROVED
1	REPLACED STAMP	12/13	RBM

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

DESIGN & CONSTRUCTION

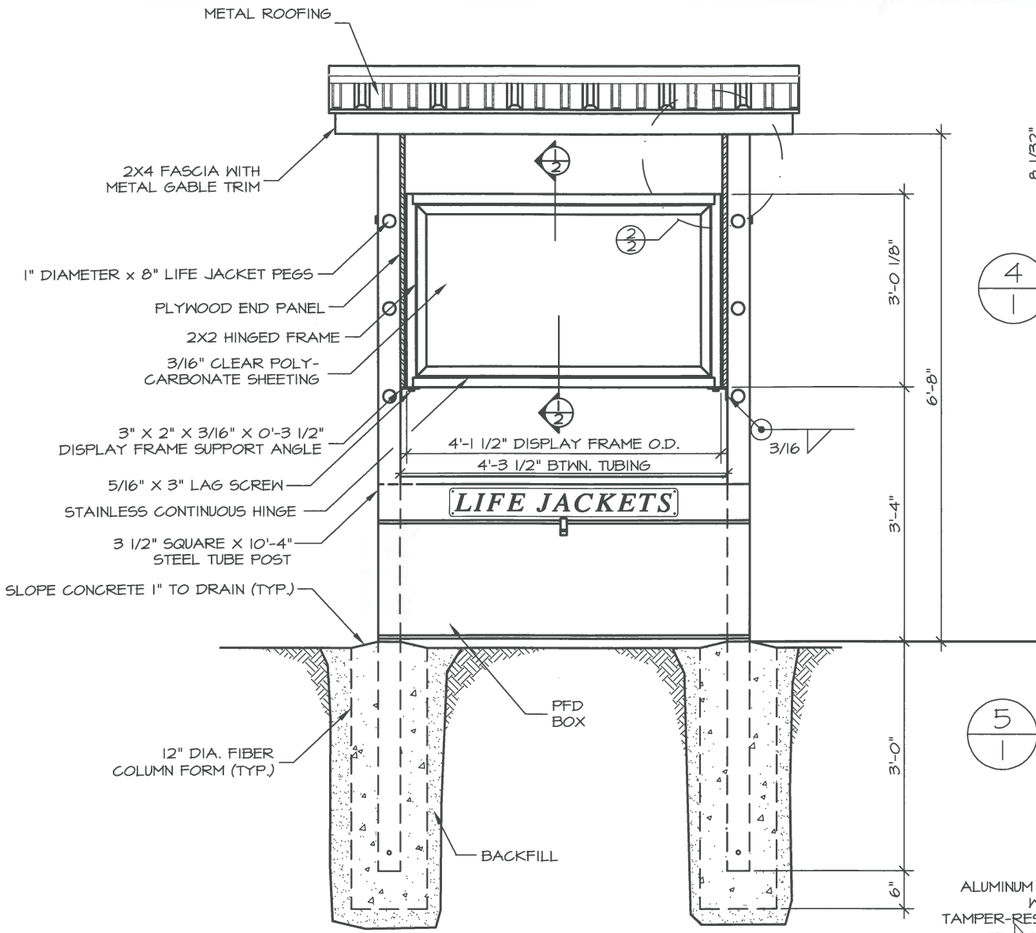
INTERPRETIVE SIGN, TYPE D

SECTION

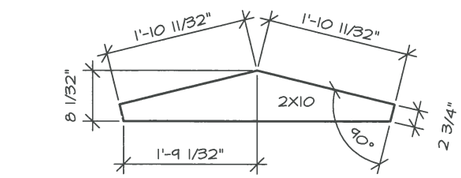
ALASKA STATE PARKS

PREPARED: JAM
DRAWN: JAM
REVIEWED: D&C
DATE: 03/18/10

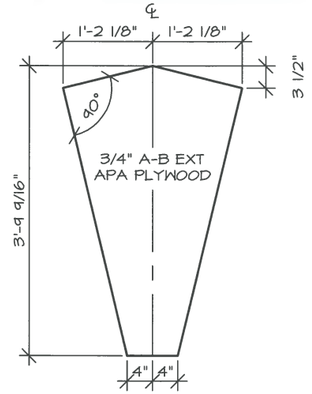
SHEET 1
S-11D
OF 1 SHEETS



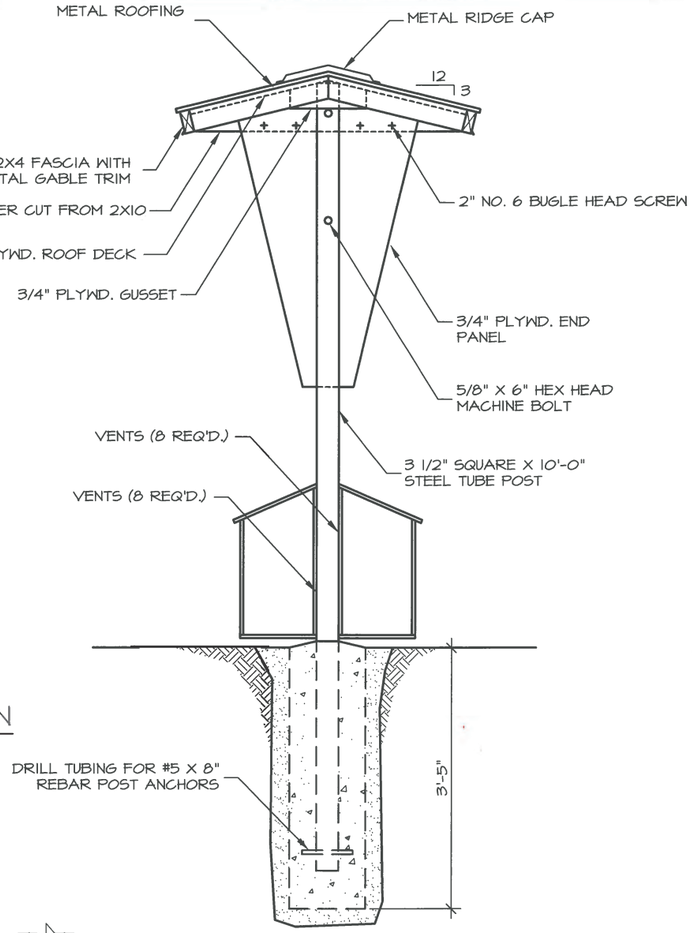
2 FRONT ELEVATION



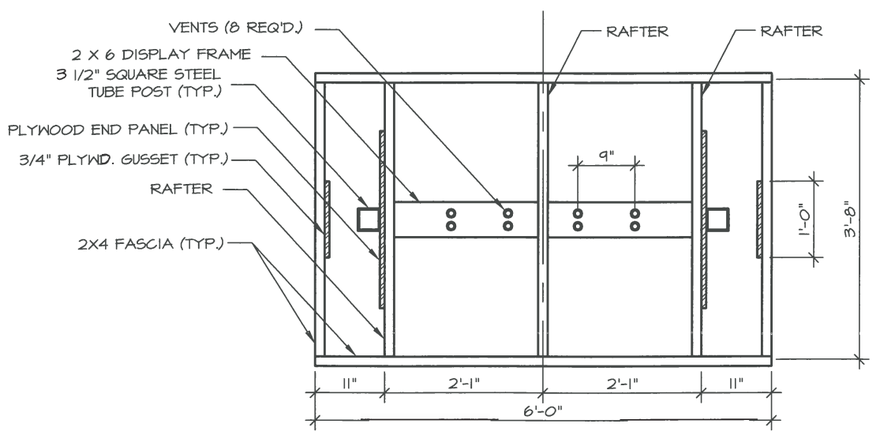
4 2X8 RAFTER PATTERN



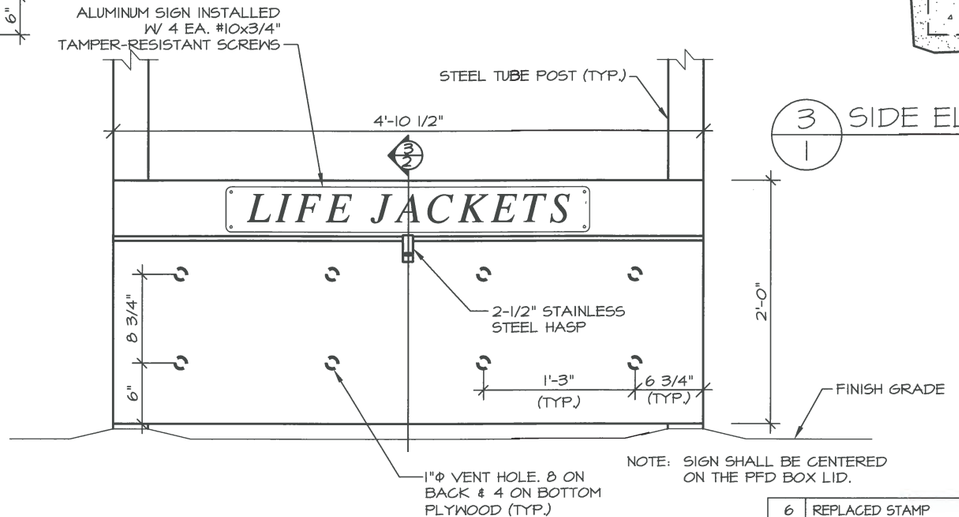
5 PLYWOOD END PANEL PATTERN



3 SIDE ELEVATION



1 ROOF FRAMING PLAN



6 PFD BOX

NOTE: SIGN SHALL BE CENTERED ON THE PFD BOX LID.

STATE OF ALASKA 49TH
Rys B. Miranda
CE 11010
2/26/14
Registered Professional Engineer

NO.	REVISION	DATE	APPROVED
6	REPLACED STAMP	12/13	RBM
5	CHANGED "LIFE JACKETS" TO BE A SIGN	12/10	MPS
4	ADDED VENT HOLES ON BOTTOM OF PFD BOX.	12/10	MPS
3	CHANGED ROOFING MAT'L, RAFTER SIZE, & FASCIA SIZE	12/10	MPS
2	UPDATED STATE PARK LOGO	12/08	MPS
1	CHANGED TITLE BLOCK, CORRECTED BOX DIMEN.	12/07	MPS

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

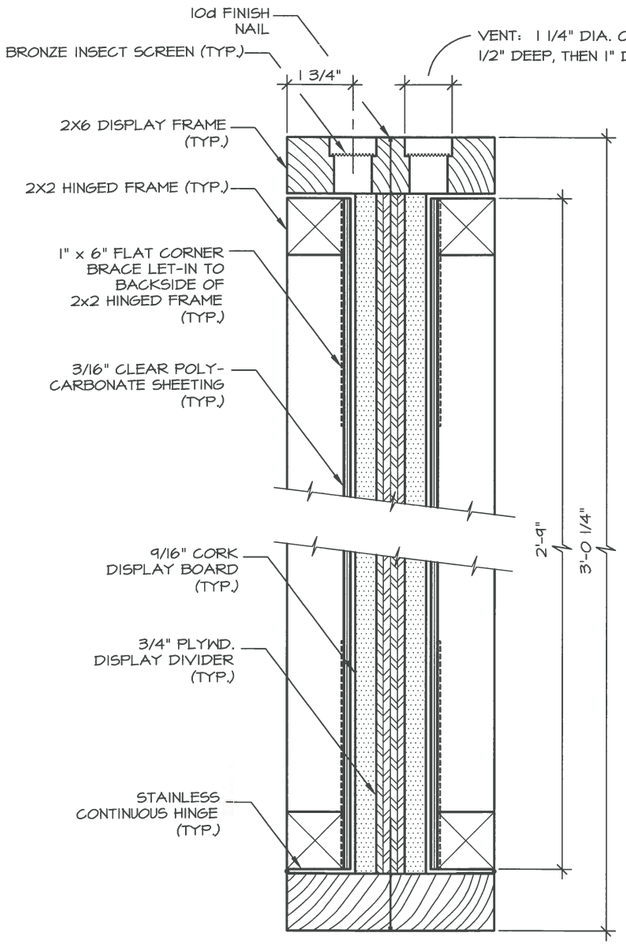
DESIGN & CONSTRUCTION SECTION

"KIDS DON'T FLOAT" KIOSK, TYPE A

ALASKA STATE PARKS

PREPARED: JSG
DRAWN: JSG
REVIEWED: MPS
DATE: 07/06

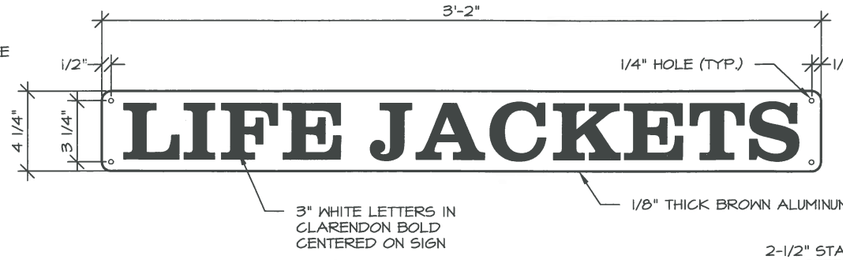
SHEET 1
S-12A
OF 2 SHEETS



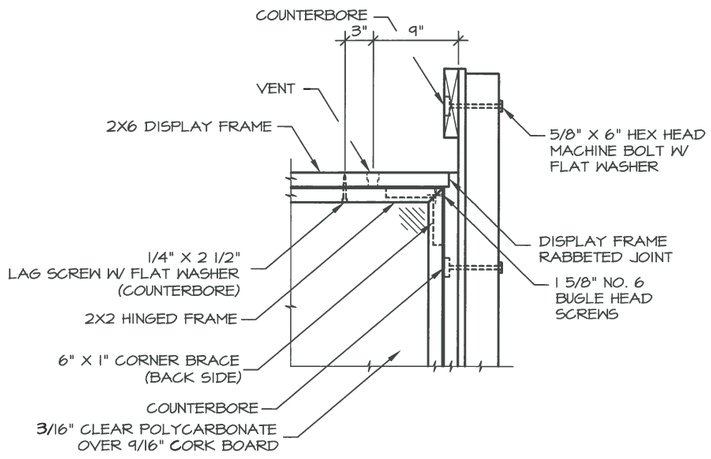
1/2 DISPLAY FRAME SECTION

NOTES:

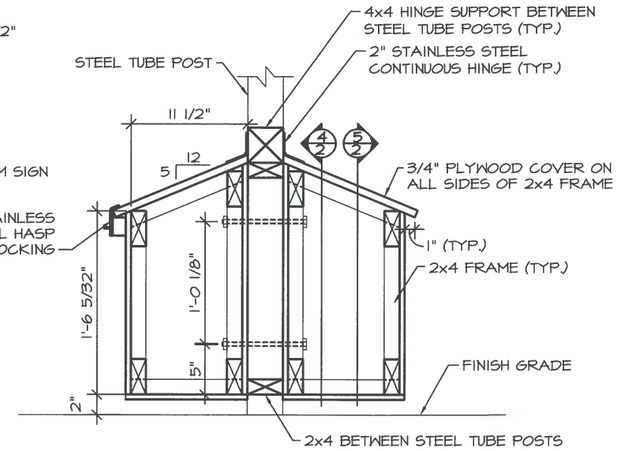
ALL COMPONENTS OF THE PFD BOX SHALL BE CONNECTED WITH APPROPRIATE FASTENERS TO SECURELY HOLD THE MEMBERS IN PLACE.



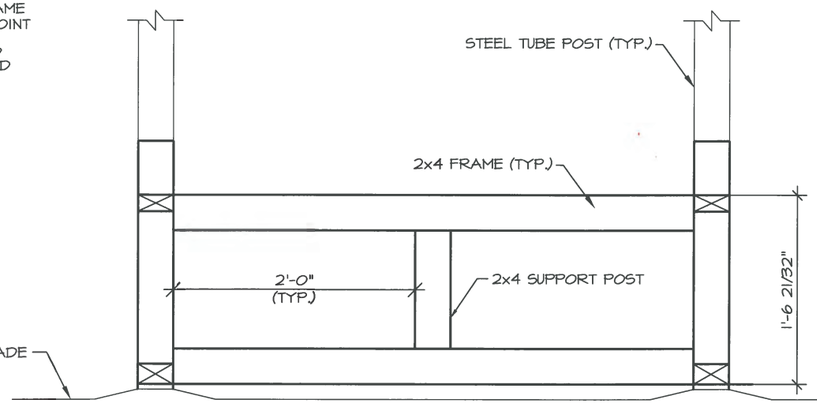
6/2 FRAME DETAIL



2/2 FRAME DETAIL

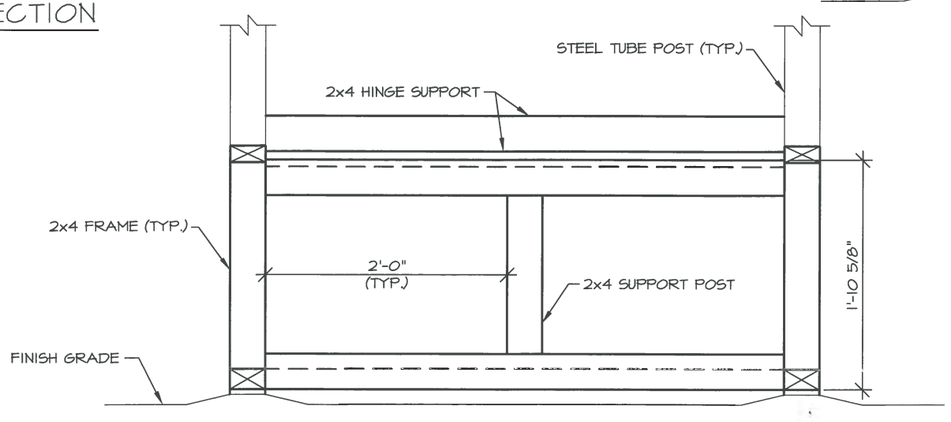


3/2 PFD BOX FRAME DETAIL
SIDE SECTION



NOTE: PLYWOOD COVER NOT SHOWN FOR CLARITY.

5/2 PFD BOX FRAME DETAIL
FRONT



NOTE: PLYWOOD COVER NOT SHOWN FOR CLARITY.

4/2 PFD BOX FRAME DETAIL
BACK

STATE OF ALASKA
49TH
Rys B. Miranda
CE - 11010
2/26/14
Registered Professional Engineer

NO.	REVISION	DATE	APPROVED
4	REPLACED STAMP	12/13	RBM
3	ADDED SIGN DETAIL	12/10	MPS
2	UPDATED STATE PARK LOGO	12/10	MPS
1	CHANGED TITLE BLOCK, CORRECTED BOX DIMEN.	12/07	MPS

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DESIGN & CONSTRUCTION SECTION

"KIDS DON'T FLOAT" KIOSK, TYPE A

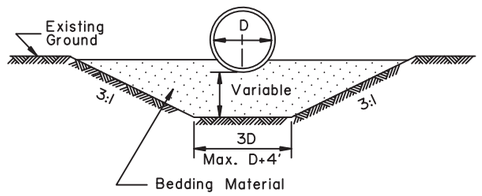
ALASKA STATE PARKS

PREPARED: JSG
DRAWN: JSG
REVIEWED: MPS
DATE: 07/06

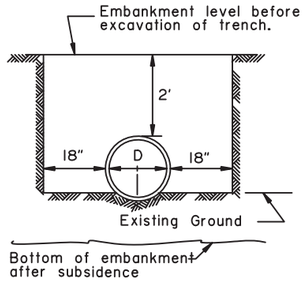
SHEET 2
S-12A
OF 2 SHEETS

D-01.02

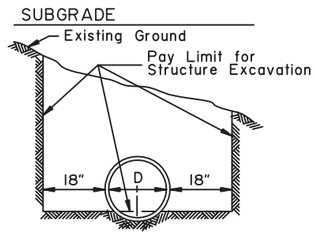
SHEET | of |



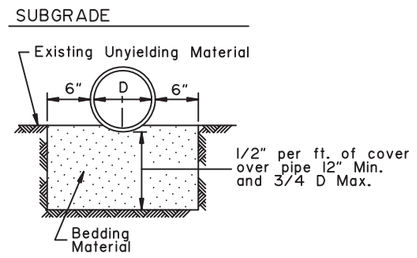
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.



TYPE "B"



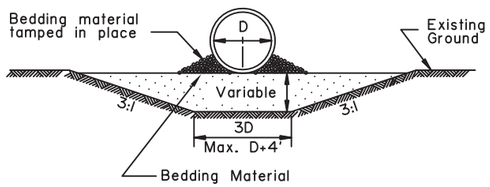
TYPE "C"



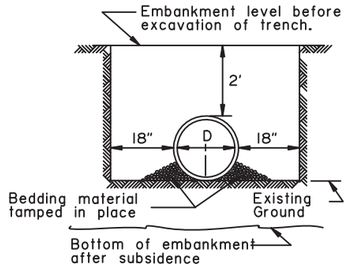
TYPE "D"
ROCK OR UNYIELDING MATERIAL

GENERAL NOTES:

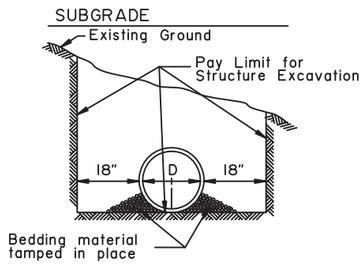
1. Sidefill shall be placed and compacted with care under haunches of pipe and shall be brought up evenly and simultaneously on both sides of pipe to 1 foot above the top of the full length of the pipe.
2. Alternate installation methods may only be used when specified or approved by the Engineer.



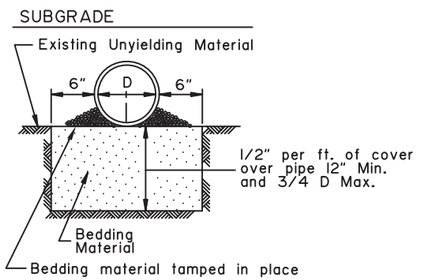
'ALTERNATE'
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.



'ALTERNATE'
TYPE "B"

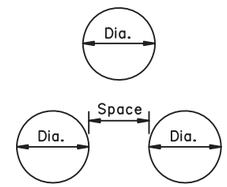


'ALTERNATE'
TYPE "C"



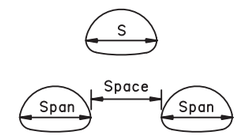
'ALTERNATE' TYPE "D"
ROCK OR UNYIELDING MATERIAL

D = Nominal Pipe Diameter



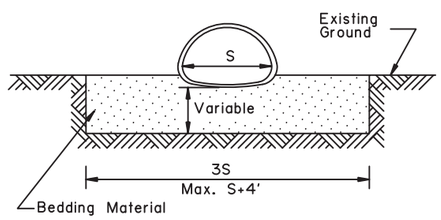
MULTIPLE INSTALLATIONS	
Dia.	Minimum Space Between Pipes
0" - 42"	24"
48" & Over	1/2 Dia. of pipe or 3', whichever is less.

S = Nominal Pipe Arch Span

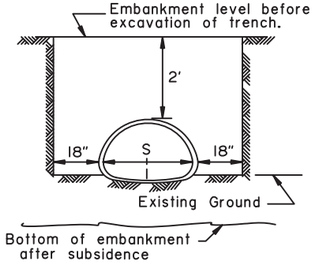


MULTIPLE INSTALLATIONS	
Dia.	Minimum Space Between Pipes
0" - 42"	24"
48" & Over	1/2 Span of pipe arch or 3', whichever is less.

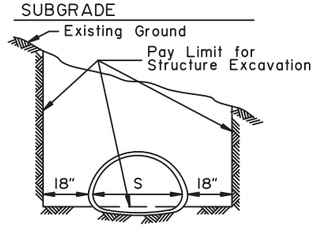
CULVERT PIPE



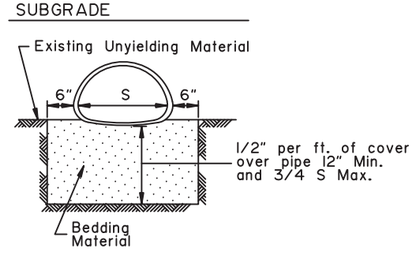
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.



TYPE "B"



TYPE "C"



TYPE "D"
ROCK OR UNYIELDING MATERIAL

ARCH

State of Alaska DOT&PF
ALASKA STANDARD PLAN

CULVERT PIPE & ARCH INSTALLATION DETAILS

Adopted as an Alaska Standard Plan by:
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

Next Code and Standards Review date: 02/08/2029

D-01.02

Minimum & Maximum Cover for 2 2/3"X 1/2" Aluminum Pipe						
Gage		16	14	12	10	8
Thickness		0.060	0.075	0.105	0.135	0.164
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
12	12	100+	100+	100+	100+	100+
15	12	100	100+	100+	100+	100+
18	12	83	100+	100+	100+	100+
21	12	71	89	100+	100+	100+
24	12	62	78	100+	100+	100+
27	12		69	97	100+	100+
30	12		62	87	100+	100+
36	12		51	73	94	100+
42	12			62	80	100+
48	12			54	70	85
54	15			48	62	76
60	15				52	64
66	18					52
72	18					43

Minimum & Maximum Cover for 3" x 1" Aluminum Pipe						
Gage		16	14	12	10	8
Thickness		0.060	0.075	0.105	0.135	0.164
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
30	12	57	72	100+	100+	100+
36	12	47	60	84	100+	100+
42	12	40	51	72	96	100+
48	12	35	44	62	84	99
54	15	31	39	55	74	88
60	15	28	35	50	67	79
66	18	25	32	45	61	72
72	18	23	29	41	56	66
78	21		27	38	51	61
84	21			35	48	56
90	24			33	44	52
96	24			31	41	49
102	24				39	46
108	24				37	43
114	24					39
120	24					36

Minimum & Maximum Cover for 9" X 2 1/2" Aluminum Structural Plate Pipe*			
Thickness		0.125	0.150
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)
84	18	31	
90	18	27	
96	18	27	
102	18	24	
108	18	24	
114	18	21	
120	24	21	
126	24	19	
132	30	19	
138	30	18	
144	30	18	
150	30		22
156	30		22
162	36		20
168	36		20

*5.33 - 3/4" dia. steel bolts per foot.

GENERAL NOTES:

1. All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.
2. The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
3. No more than one type of pipe may be used on any single installation or installation grouping.
4. All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.
5. See Standard Plan D-01 "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
6. Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the bottom of flexible pavement subgrade. In all cases, the minimum cover shall not be less than 12". Minimum cover during construction shall be that required to protect the pipe from damage or deflection.
7. These tables have been developed for an HL-93 live load and for compacted soil weighing 120 lbs. per cubic foot or less. If compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specific pipe. Where compacted soil cover exceeds 120 lbs. per cubic foot and no specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2017 AASHTO "LRFD Bridge Design Specifications".

CORRUGATED CIRCULAR ALUMINUM PIPE

CORRUGATED ALUMINUM PIPE-ARCH

Minimum & Maximum Cover for 2 2/3"X 1/2" Aluminum Pipe-Arch					
				2 Tons/Sf Corner Bearing Pressure	
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	Max. Cover (Ft)
17	13	3 4/8	16 (0.060)	12	13
21	15	4 1/8	16 (0.060)	12	12
24	18	4 7/8	16 (0.060)	12	12
28	20	5 4/8	14 (0.075)	12	12
35	24	6 7/8	14 (0.075)	12	12
42	29	8 2/8	12 (0.105)	12	12
49	33	9 5/8	12 (0.105)	15	12
57	38	11	10 (0.135)	15	12
64	43	12 3/8	10 (0.135)	18	12
71	47	13 6/8	8 (0.164)	18	12

Minimum & Maximum Cover for 3" x 1" Aluminum Pipe-Arch					
				2 Tons/Sf Corner Bearing Pressure	
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	Max. Cover (Ft)
60	46	18 6/8	14 (0.075)	15	20
66	51	20 6/8	14 (0.075)	18	20
73	55	22 7/8	14 (0.075)	21	20
81	59	20 7/8	12 (0.105)	21	16
87	63	22 7/8	12 (0.105)	24	16
95	67	24 3/8	12 (0.105)	24	16
103	71	26 1/8	10 (0.135)	24	16
112	75	27 6/8	8 (0.164)	24	16

Minimum & Maximum Cover for 9" x 2 1/2" Aluminum Multiplate Pipe-Arch*					
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	2 Tons/Sf Corner Bearing Pressure Max. Cover (Ft)
6-7	5-8	31.75	0.125	24	24
6-11	5-9	31.75	0.125	24	24
7-3	5-11	31.75	0.125	24	18
7-9	6-0	31.75	0.125	24	18
8-5	6-3	31.75	0.125	24	16
9-3	6-5	31.75	0.125	24	15
10-3	6-9	31.75	0.125	30	13
10-9	6-10	31.75	0.125	30	13
11-5	7-1	31.75	0.125	30	13
12-7	7-5	31.75	0.125	30	11
12-11	7-6	31.75	0.125	30	11
13-1	8-2	31.75	0.125	30	11
13-11	8-5	31.75	0.125	36	10
14-8	9-8	31.75	0.125	36	9
15-4	10-0	31.75	0.150	36	8
16-1	10-4	31.75	0.150	36	8
16-9	10-8	31.75	0.150	42	7
17-3	11-0	31.75	0.150	42	7
18-0	11-4	31.75	0.175	42	7
18-8	11-8	31.75	0.175	42	7

*5.33 - 3/4" dia. steel bolts per foot.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

PIPE AND ARCH TABLES

Adopted as an Alaska Standard Plan by: Carolyn Morehouse

Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLH Date: 7/8/2020

Next Code and Standards Review date: 7/8/2030

D-04.22

Minimum & Maximum Cover for 2 2/3" x 1/2" Steel Pipe						
Gage		16	14	12	10	8
Thickness		0.060	0.075	0.105	0.135	0.164
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
12	12	100+	100+	100+	100+	100+
15	12	100+	100+	100+	100+	100+
18	12	100+	100+	100+	100+	100+
21	12	100+	100+	100+	100+	100+
24	12	100+	100+	100+	100+	100+
30	12	83	100+	100+	100+	100+
36	12	69	86	100+	100+	100+
42	12	59	74	100+	100+	100+
48	12	51	64	91	100+	100+
54	12		57	80	100+	100+
60	12			72	93	100+
66	12			66	85	100+
72	12				78	95
78	12					84
84	12					73

Minimum & Maximum Cover fo 3" x 1" Steel Pipe						
Gage		16	14	12	10	8
Thickness		0.060	0.075	0.105	0.135	0.164
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
36	12			100+	100+	100+
42	12			100+	100+	100+
48	12		74	100+	100+	100+
54	12	53	66	93	100+	100+
60	12	47	59	83	100+	100+
66	12	43	54	76	98	100+
72	12	39	49	69	89	100+
78	12	36	45	64	82	100+
84	12	33	42	59	77	94
90	12	31	39	55	71	87
96	12	29	37	52	67	82
102	18	27	34	49	63	77
108	18		32	46	59	73
114	18		31	43	56	69
120	18		29	41	53	65
126	18			39	51	62
132	18			37	48	59
138	18			36	46	57
144	18				44	54

Minimum & Maximum Cover for 5" x 1" Steel Pipe						
Gage		16	14	12	10	8
Thickness		0.060	0.075	0.105	0.135	0.164
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
36	12	71	88	100+	100+	100+
42	12	60	76	100+	100+	100+
48	12	53	66	93	100+	100+
54	12	47	59	82	100+	100+
60	12	42	53	74	96	100+
66	12	38	48	67	87	100+
72	12	35	44	62	79	97
78	12	32	40	57	73	90
84	12	30	37	53	68	83
90	12	28	35	49	63	78
96	12	26	33	46	59	73
102	18	24	31	43	56	69
108	18		29	41	53	65
114	18		27	39	50	61
120	18		26	37	47	58
126	18			35	45	55
132	18			33	43	53
138	18			32	41	50
144	18				39	48

Minimum & Maximum Cover for 6" x 2" Steel Multiplate Pipe*								
Gage		12	10	8	7	5	3	1
Thickness		0.111	0.140	0.170	0.188	0.218	0.249	0.280
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
60	12	46	67	87	100	100+	100+	100+
66	12	42	60	79	91	100+	100+	100+
72	12	38	55	73	83	100+	100+	100+
78	12	35	51	67	77	93	100+	100+
84	12	32	47	62	71	86	100+	100+
90	12	30	44	58	67	80	95	100+
96	12	28	41	54	62	75	89	97
102	18	27	39	51	59	71	84	91
108	18	25	37	48	55	67	79	86
114	18	24	35	45	52	63	75	82
120	18	22	33	43	50	60	71	77
126	18	21	31	41	47	57	68	74
132	18	20	30	39	45	54	64	70
138	18	19	28	37	43	52	62	67
144	18	18	27	36	41	50	59	64

*4 - 3/4" dia. steel bolts per foot.

GENERAL NOTES

1. All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.
2. The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
3. No more than one type of pipe may be used on any single installation or installation grouping.
4. All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.
5. See Standard Plan D-01 "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
6. Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the bottom of flexible pavement subgrade. In all cases, the minimum cover shall not be less than 12". Minimum cover during construction shall be that required to protect the pipe from damage or deflecton.
7. These tables have been developed for an HL-93 live load and for compacted soil weighing 120 lbs. per cubic foot or less. If compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specific pipe. Where compacted soil cover exceeds 120 lbs. per cubic foot and no specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2017 AASHTO "LRFD Bridge Design Specifications".

CORRUGATED CIRCULAR STEEL PIPE

CORRUGATED STEEL PIPE-ARCH

Minimum & Maximum Cover for 2 2/3"X 1/2"Steel Pipe-Arch					
			2 Tons/Sf Corner Bearing Pressure		
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	Max. Cover (Ft)
17	13	3 4/8	16 (0.060)	12	11
21	15	4 1/8	16 (0.060)	12	11
24	18	4 7/8	16 (0.060)	12	11
28	20	5 4/8	16 (0.060)	12	11
35	24	6 7/8	16 (0.060)	12	11
42	29	8 2/8	16 (0.060)	12	11
49	33	9 5/8	14 (0.075)	12	11
57	38	11	12 (0.109)	12	11
64	43	12 3/8	12 (0.109)	12	11
71	47	13 6/8	10 (0.138)	12	11
77	52	15 1/8	10 (0.138)	12	11
83	57	16 4/8	8 (0.168)	12	11

Minimum & Maximum Cover for 3"X 1"Steel Pipe-Arch					
			2 Tons/Sf Corner Bearing Pressure		
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	Max. Cover (Ft)
53	41	10 2/8	14 (0.079)	12	10
60	46	18 6/8	14 (0.079)	15	29
66	51	20 6/8	14 (0.079)	15	29
73	55	22 7/8	14 (0.079)	18	18
81	59	20 7/8	14 (0.079)	18	15
87	63	22 7/8	14 (0.079)	18	15
95	67	24 3/8	14 (0.079)	18	15
103	71	26 1/8	14 (0.079)	18	14
112	75	27 6/8	14 (0.079)	21	14
117	79	29 4/8	12 (0.109)	21	14
128	83	31 2/8	10 (0.138)	24	14
137	87	33	10 (0.138)	24	14
142	91	34 6/8	10 (0.138)	24	13
150	96	36	10 (0.138)	30	13
157	96	38	10 (0.138)	30	13
164	105	40	10 (0.138)	30	14
171	110	41	10 (0.138)	30	13

Minimum & Maximum Cover for 5"X 1"Steel Pipe-Arch					
			2 Tons/Sf Corner Bearing Pressure		
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Thickness (In)	Min. Cover (In)	Max. Cover (Ft)
53	41	10 2/8	14 (0.079)	12	10
60	46	18 6/8	14 (0.079)	15	29
66	51	20 6/8	14 (0.079)	15	29
73	55	22 7/8	14 (0.079)	18	18
81	59	20 7/8	14 (0.079)	18	15
87	63	22 7/8	14 (0.079)	18	15
95	67	24 3/8	14 (0.079)	18	15
103	71	26 1/8	14 (0.079)	18	14
112	75	27 6/8	14 (0.079)	21	14
117	79	29 4/8	12 (0.109)	21	14
128	83	31 2/8	10 (0.138)	24	14
137	87	33	10 (0.138)	24	14
142	91	34 6/8	10 (0.138)	24	13
150	96	36	10 (0.138)	30	13
157	96	38	10 (0.138)	30	13
164	105	40	10 (0.138)	30	14
171	110	41	10 (0.138)	30	13

Minimum & Maximum Cover for Steel Multiplate Pipe-Arch 6" x 2" *					
			2 Tons/Sf Corner Bearing Pressure		
Span (Ft.-In.)	Rise (Ft.-In.)	Corner Radius (In)	Min. Gage (In)	Min. Cover (In)	Max. Cover (Ft)
6-1	4-7	18	12 (0.111)	12	14
7-0	5-1	18	12 (0.111)	12	12
7-11	5-7	18	12 (0.111)	12	10
8-10	6-1	18	12 (0.111)	18	9
9-9	6-7	18	12 (0.111)	18	8
10-11	7-1	18	12 (0.111)	18	6
11-10	7-7	18	12 (0.111)	18	5
12-10	8-4	18	12 (0.111)	24	5
13-3	9-4	31	10 (0.140)	24	11
14-2	9-10	31	10 (0.140)	24	10
15-4	10-4	31	10 (0.140)	24	9
16-3	10-10	31	10 (0.140)	30	8
17-2	11-4	31	10 (0.140)	30	8
18-1	11-10	31	10 (0.140)	30	7
19-3	12-4	31	10 (0.140)	30	7
19-11	12-10	31	10 (0.140)	30	6
20-7	13-2	31	10 (0.140)	36	6

*4 - 3/4" dia. steel bolts per foot.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

PIPE AND ARCH TABLES

Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLH Date: 7/8/2020

Next Code and Standards Review date: 7/8/2030

D-04.22

Maximum Cover for Type S Corrugated Polyethelene Pipe	
Size (in)	Max. Cover (ft)
12	24
15	25
18	24
24	20
30	20
36	18
42	16
48	17

GENERAL NOTES

1. All materials and workmanship shall be in accordance with the State of Alaska Standard Specifications for Highway Construction.

2. For foundation and structural backfill details see Standard Plan D-01 "Culvert Pipe & Arch Installation Details".

3. Pipe cover height is measured from top of the pipe to top of rigid pavement, or to the bottom of subgrade for flexible pavement. In all cases the minimum cover shall be no less than 2 ft. Where loads traverse the culvert during construction minimum cover shall be no less than 4 ft.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

PIPE AND ARCH TABLES

Adopted as an Alaska Standard Plan by: Carolyn Morehouse

Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLH Date: 7/8/2020

Next Code and Standards Review date: 7/8/2030

ALUMINUM SPIRAL RIB PIPE

Minimum & Maximum Cover for Aluminum Spiral Rib Circular Pipe*					
Gage		16	14	12	10
Thickness		0.064	0.079	0.109	0.138
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
18	12	43	61		
21	12	38	52	84	
24	12	33	45	73	
30	15	26	36	58	
36	18	21	30	49	69
42	21		25	41	59
48	24			36	51
54	24			32	46
60	24			29	41
66	24				37
72	30				34

*¾ x ¾ x 7½ in. Corrugations

Minimum & Maximum Cover for Aluminum Spiral Rib Pipe-Arch*						
Gage			16	14	12	10
Thickness			0.060	0.075	0.105	0.135
Span (Ft.-In.)	Rise (Ft.-In.)	Min. Cover (In)	Max. Cover (Ft)			
20	16	12	16			
23	19	12	15			
27	21	15	13	13		
33	26	18	13	13	13	
40	31	21		13	13	
46	36	24			13	13
53	41	24			13	13
60	46	24			13	13
66	51	24				13

*¾ x ¾ x 7½ in. Corrugations

STEEL SPIRAL RIB PIPE

Minimum & Maximum Cover for Steel and Aluminized Steel Spiral Rib Circular Pipe*					
Gage		16	14	12	10
Thickness		0.064	0.079	0.109	0.138
Dia. (In)	Min. (In)	Max. (Ft)	Max. (Ft)	Max. (Ft)	Max. (Ft)
18	12	91			
24	12	68	95	100+	
30	12	54	76	100+	
36	12	45	63	100+	
42	12	38	54	90	
48	12	33	47	79	
54	18	30	42	70	
60	18	27	38	63	92
66	18	24	34	57	83
72	18		31	52	76
78	24		29	48	70
84	24		27	45	65
90	24			42	61
96	24			39	56
102	30			36	50
108	30			32	45

*¾ x ¾ x 7½ in. Corrugations.

Minimum & Maximum Cover for Steel Spiral Rib Pipe-Arch*					
			2 Tons/Sf Corner Bearing Pressure		
Thickness			0.064	0.079	0.109
Span (Ft.-In.)	Rise (Ft.-In.)	Min. Cover (In)	Max. Cover (Ft)		
20	16	12	13		
23	19	12	13		
27	21	12	11		
33	26	12	11		
40	31	12	11		
46	36	12	11		
53	41	18		11	
60	46	18		19	
66	51	18		19	
73	55	18			18
81	59	18			15
87	63	18			15
95	67	18			15

*¾ x ¾ x 7½ in. Corrugations

GENERAL NOTES

1. All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.
2. The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
3. No more than one type of pipe may be used on any single installation or installation grouping.
4. All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.
5. See Standard Plan D-01 "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
6. Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the bottom of flexible pavement subgrade. In all cases, the minimum cover shall not be less than 12". Minimum cover during construction shall be that required to protect the pipe from damage or deflecton.
7. These tables have been developed for an HL-93 live load and for compacted soil weighing 120 lbs. per cubic foot or less. If compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specific pipe. Where compacted soil cover exceeds 120 lbs. per cubic foot and no specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2017 AASHTO "LRFD Bridge Design Specifications".

State of Alaska DOT&PF
ALASKA STANDARD PLAN

PIPE AND ARCH TABLES

Adopted as an Alaska Standard Plan by: Carolyn Morehouse

Carolyn Morehouse, P.E.
Chief Engineer

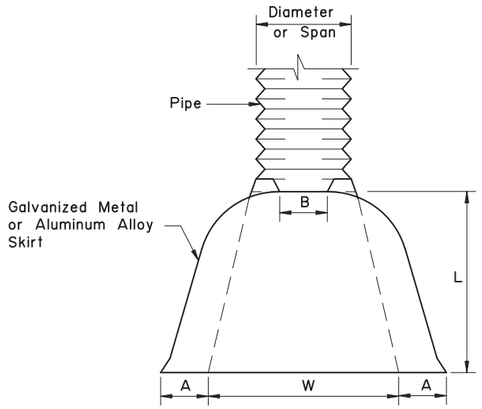
Adoption Date: 7/17/2020

Last Code and Stds. Review
By: KLH Date: 7/8/2020

Next Code and Standards Review date: 7/8/2030

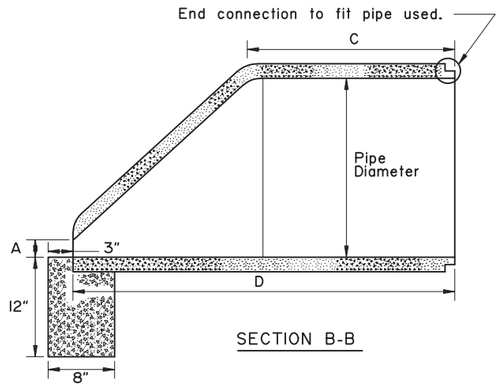
D-06.10

SHEET 1 of 3



PLAN

ROUND AND PIPE ARCH

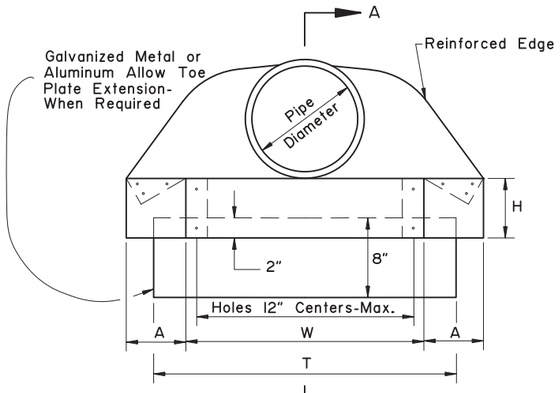


SECTION B-B

MINIMUM DIMENSIONS					
Pipe Diameter	A	B	C	D	E
12"	4"	1 3/4"	24"	46"	24"
18"	9"	2"	25"	50"	36"
24"	9 1/2"	2 1/2"	30"	72"	48"
30"	12"	3"	20"	73"	60"
36"	15"	3 3/8"	35"	97"	72"
42"	21"	3 3/4"	35"	98"	78"
48"	24"	4 1/4"	26"	98"	84"
54"	27"	4 5/8"	33"	99"	82"

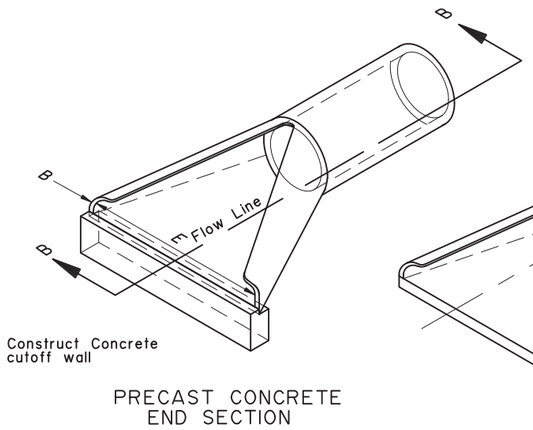
ROUND PIPE									
Pipe Diam. Inches	Thickness For Aluminum	Thk. for Galv. Metal	Dimension Inches A 1" Tol.	B Max.	H 1" Tol.	L 1 1/2" Tol.	W 2" Tol.	T 2" Tol.	Skirt	Approx. Slope
12"	0.060	0.064	6"	6"	6"	21"	24"	34"	1 Pc.	2 1/2
15"	0.060	0.064	7"	8"	6"	26"	30"	40"	1 Pc.	2 1/2
18"	0.060	0.064	8"	10"	6"	31"	36"	46"	1 Pc.	2 1/2
21"	0.060	0.064	9"	12"	6"	36"	42"	52"	1 Pc.	2 1/2
24"	0.075	0.064	10"	13"	6"	41"	48"	58"	1 Pc.	2 1/2
30"	0.075	0.079	12"	16"	8"	51"	60"	70"	1 Pc.	2 1/2
36"	0.105	0.079	14"	19"	9"	60"	72"	94"	2 Pc.	2 1/2
42"	0.105	0.109	16"	22"	11"	69"	84"	106"	2 Pc.	2 1/2
48"	0.105	0.109	18"	27"	12"	78"	90"	112"	2 Pc.	2 1/4
54"	0.105	0.109	18"	30"	12"	84"	102"	122"	2 Pc.	2 1/4
60"	0.135	0.109	18"	33"	12"	87"	114"	134"	3 Pc.	2 1/4
66"	0.135	0.109	18"	36"	12"	87"	120"	142"	3 Pc.	2 1/4
72"	0.135	0.109	18"	39"	12"	87"	126"	146"	3 Pc.	2 1/4
78"	— —	0.109	18"	42"	12"	87"	132"	152"	3 Pc.	1 1/4
84"	— —	0.109	18"	45"	12"	87"	138"	158"	3 Pc.	1 1/6

PIPE-ARCH										
Pipe-Arch Dimension Inches Span	Rise	Thickness for Aluminum	Thk. for Galv. Metal	Dimension Inches A 1" Tol.	B Max.	H 1" Tol.	L 1 1/2" Tol.	W 2" Tol.	T 2" Tol.	Skirt	Approx. Slope
17"	13"	0.060	0.064	7"	9"	6"	19"	30"	40"	1 Pc.	2 1/2
21"	15"	0.060	0.064	7"	10"	6"	23"	36"	46"	1 Pc.	2 1/2
24"	18"	0.060	0.064	8"	12"	6"	28"	42"	52"	1 Pc.	2 1/2
28"	20"	0.075	0.064	9"	14"	6"	32"	48"	58"	1 Pc.	2 1/2
35"	24"	0.075	0.079	10"	16"	6"	39"	60"	70"	1 Pc.	2 1/2
42"	29"	0.105	0.079	12"	18"	8"	46"	75"	85"	1 Pc.	2 1/2
49"	33"	0.105	0.109	13"	21"	9"	53"	85"	103"	2 Pc.	2 1/2
57"	38"	0.105	0.109	18"	26"	12"	63"	90"	114"	2 Pc.	2 1/2
64"	43"	0.105	0.109	18"	30"	12"	70"	102"	130"	2 Pc.	2 1/4
71"	47"	0.135	0.109	18"	33"	12"	77"	114"	144"	3 Pc.	2 1/4
77"	52"	0.135	0.109	18"	36"	12"	84"	120"	158"	3 Pc.	2 1/4
83"	57"	0.135	0.109	18"	39"	12"	90"	126"	170"	3 Pc.	2 1/4

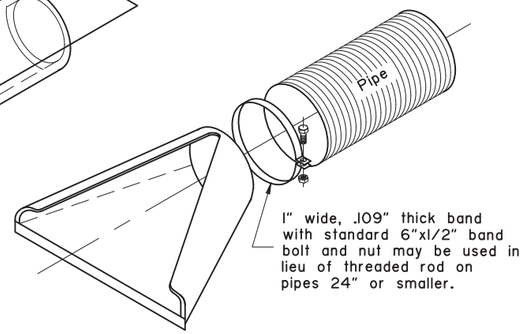


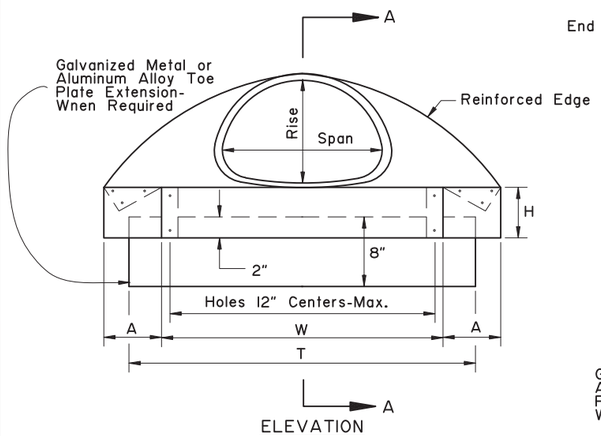
ELEVATION

ROUND PIPE



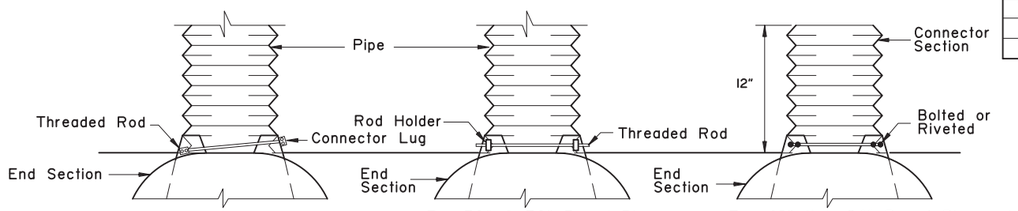
PRECAST CONCRETE END SECTION





ELEVATION

PIPE ARCH

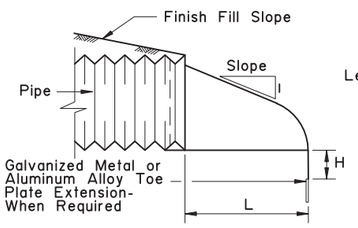


For 12" thru 24" Round Pipe with Annular Corrugations

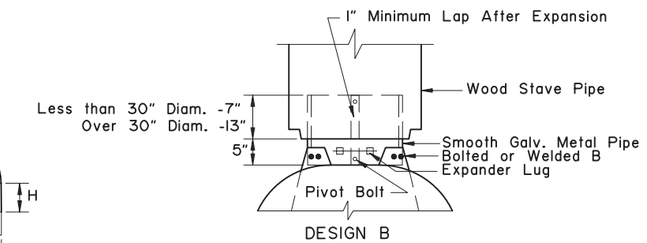
For 30" & 36" Round Pipe and 18"x11" thru 58"x36" Pipe Arch with Annular Corrugations.

For 42" thru 84" Round Pipe and 65"x40" thru 85"x54" Pipe Arch with Annular Corrugations and All Helically Corrugated Pipe and Pipe Arch.

DESIGN A



SECTION A-A



DESIGN B

METAL END SECTION CONNECTED TO WOOD STAVE PIPE

GENERAL NOTES:

1. Toe plate extensions will be required only when provided for on the plans. When required, the toe plate extensions shall be punched with holes to match those in lip of skirt and fastened with 3/8 inch or larger galvanized nuts and bolts and shall be the same gage as the end section.
2. Galvanized Metal or Aluminum Alloy End Sections may be used on Wood Stave and Plastic Pipe.
3. All 3 piece bodies shall have 12 gage sides and 10 gage center panels. Multiple panel bodies shall have lap seams which are to be tightly joined by 3/8" galvanized rivets or bolts.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

CULVERT END SECTIONS

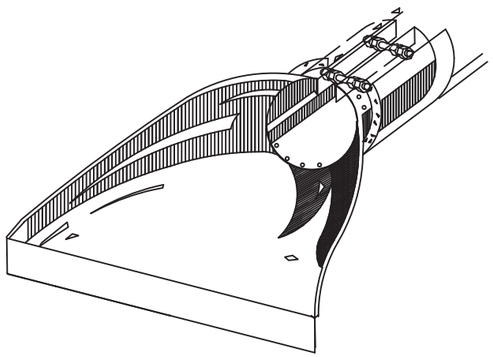
Adopted as an Alaska Standard Plan by: Kenneth J. Fisher, P.E. Chief Engineer

Adoption Date: 02/08/2019

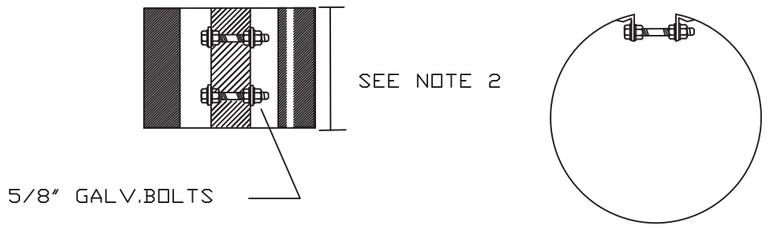
Last Code and Stds. Review By: Date:

Next Code and Standards Review date: 02/08/2029

D-06.10



FOR CONNECTING CONCRETE PIPE OR CORRUGATED POLYETHYLENE PIPE TO METAL END SECTION.



GENERAL NOTES

1. See general notes on sheet 1 of 3.
2. See sheet 1 of 3 for metal end section dimensions.
3. Insert bolts, washers and rivets shall be galvanized. Insert thickness is the same as the end section.
4. Use culvert inserts only at inlet.

METAL INSERTS FOR USE WITH CORRUGATED PLASTIC PIPE AND METAL END SECTIONS

State of Alaska DOT&PF
ALASKA STANDARD PLAN

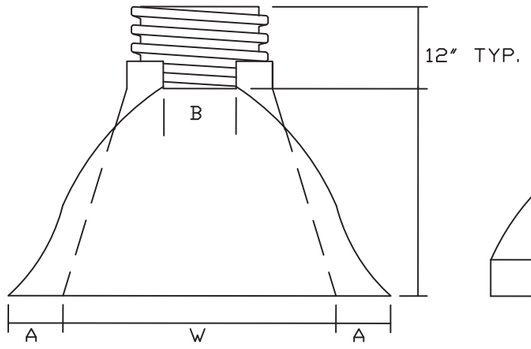
CULVERT END SECTIONS

Adopted as an Alaska Standard Plan by: Kenneth J. Fisher, P.E.
Chief Engineer

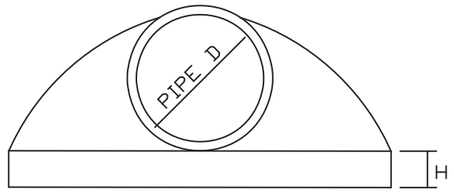
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

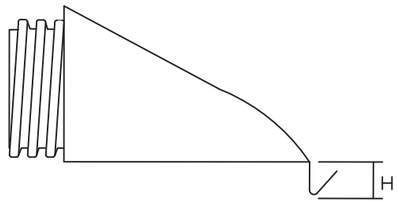
Next Code and Standards Review date: 02/08/2029



TOP VIEW



END VIEW



SIDE VIEW

PIPE DIAMETER	DIMENSIONS IN MILLIMETERS				
	A(1"±)	B MAX	H(1"±)	L(1/2"±)	W(2"±)
12" and 15"	6 1/2"	10"	6 1/2"	25"	29"
18"	7 1/2"	15"	6 1/2"	32"	35"
24"	7 1/2"	18"	6 1/2"	36"	45"
30"	10 1/2"	N/A	7"	53"	68"
36"	10 1/2"	N/A	7"	53"	68"

GENERAL NOTES

1. Plastic flared end sections may be used with HDPE corrugated culvert pipes where noted in project plans or approved by project engineer.
2. Consult manufacturer's recommendations for proper sizing and coupling devices. Recommended fasteners may include connecting bands or cinch ties. Fittings across dimension B may include threaded rods with wing nuts or bolts and washers. plastic welds may be recommended.
3. Align coupling to accomodate pipe corrugations.
4. Metal components e.g. bolts or washers must be galvanized.
5. Attachment of end section should preserve culvert alignment and not impair pipe function. Use end sections only on culvert inlet.
6. Toe plate extensions will be required only when designated on the plans.
7. End sections will not be used on HDPE culvert pipes larger than 36" unless indicated by project plans or approved by the Engineer.

PLASTIC END SECTION FOR CORRUGATED PLASTIC PIPE

State of Alaska DOT&PF
ALASKA STANDARD PLAN

CULVERT END SECTIONS

Adopted as an Alaska Standard Plan by:

Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

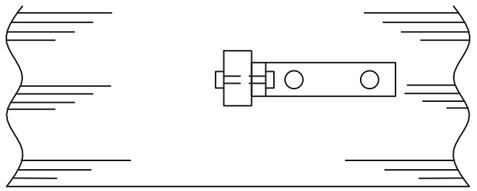
Next Code and Standards Review date: 02/08/2029

D-09.00

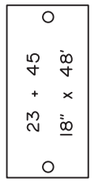
SHEET | of |

DIRECTION OF TRAFFIC

Shoulder of Road



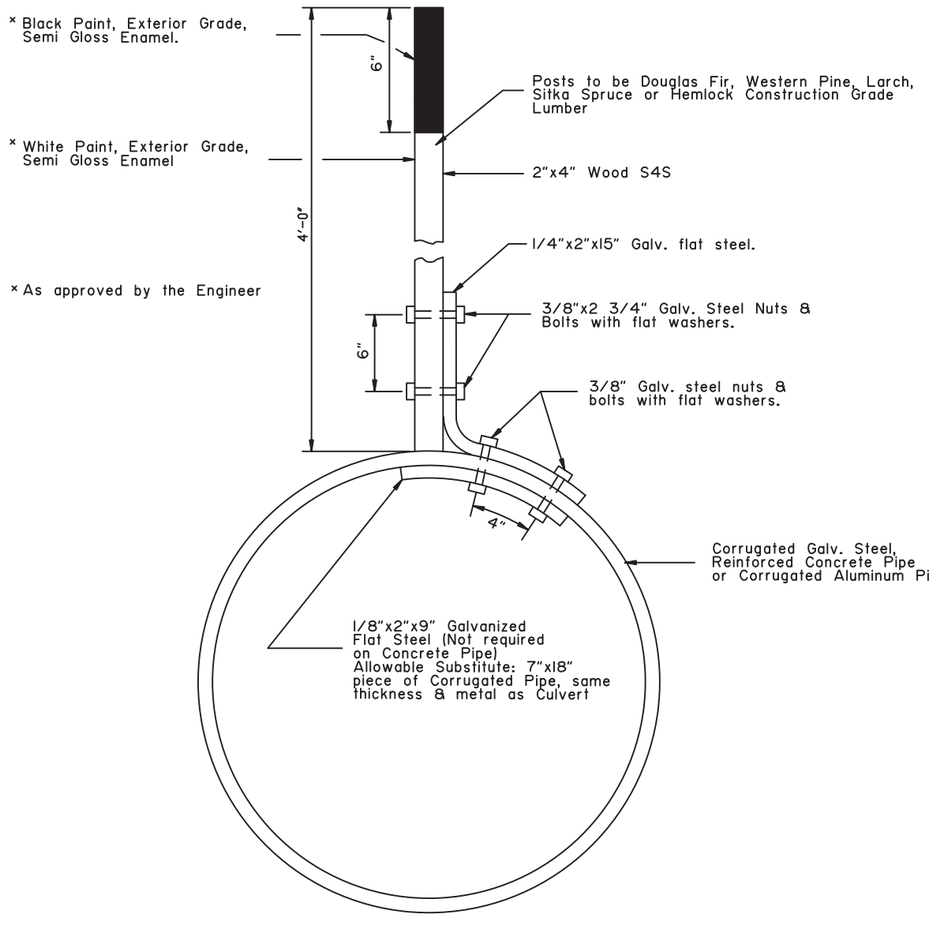
TOP VIEW



Sta. and size of Culvert to be stamped into a 2"x4"x0.064" thick brass plate, fastened, with No. 8 round head brass screws, to the marker post as shown. Plate to be on side of post facing traffic.

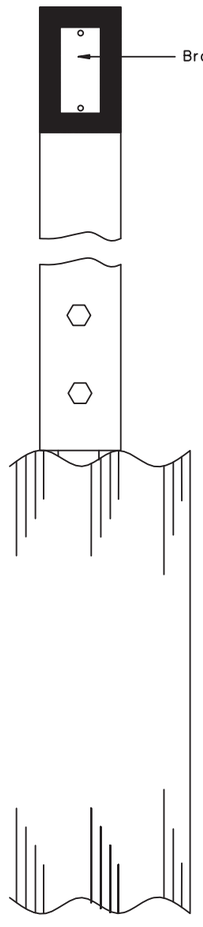
GENERAL NOTES:

1. Culvert marker post shall be installed with galvanized steel hardware meeting the following requirements: Galvanizing for nuts and washers shall meet the requirements of ASTM A-153, Class C. Galvanizing for steel mounting supports shall meet the requirements of MIL-P-26915A, or ASTM A-153, Class C.

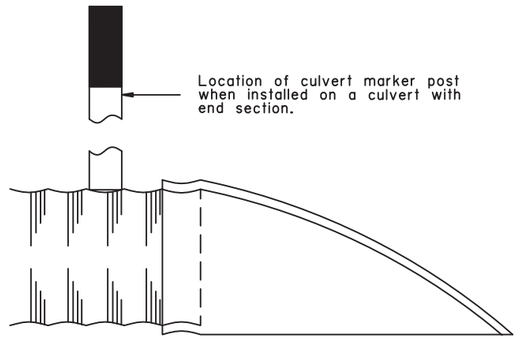


× As approved by the Engineer

END VIEW



SIDE VIEW



END SECTION SIDE VIEW

State of Alaska DOT&PF
ALASKA STANDARD PLAN

CULVERT MARKER POST

Adopted as an Alaska Standard Plan by:
Kenneth J. Fisher, P.E.
Chief Engineer

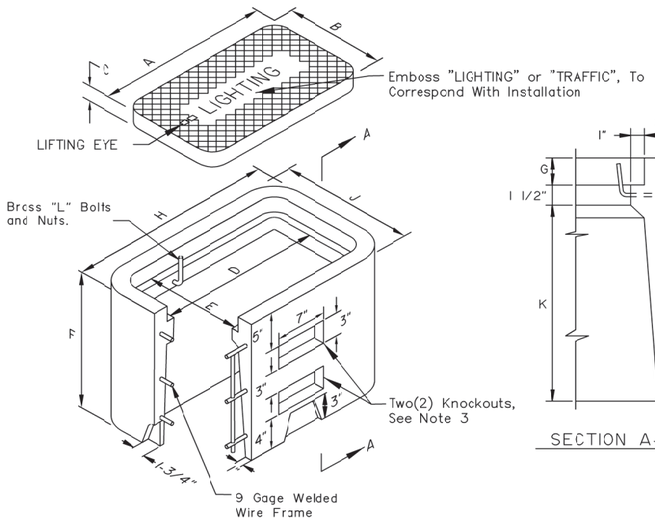
Adoption Date: 02/08/2019

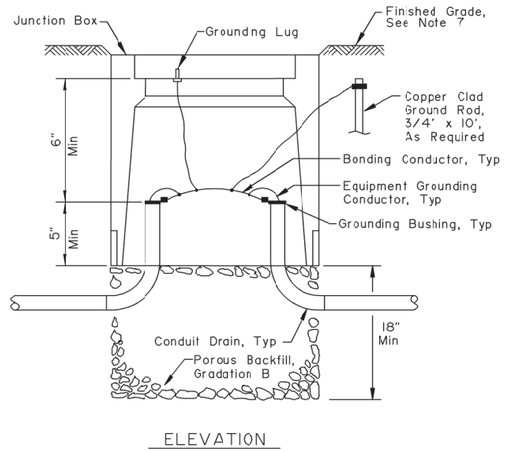
Last Code and Stds. Review
By: Date:

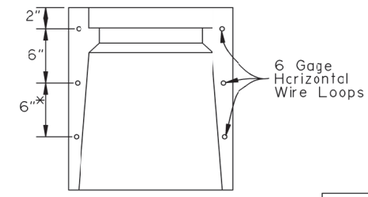
Next Code and Standards Review date: 02/08/2029

D-09.00

L-23.03 SHEET | of |







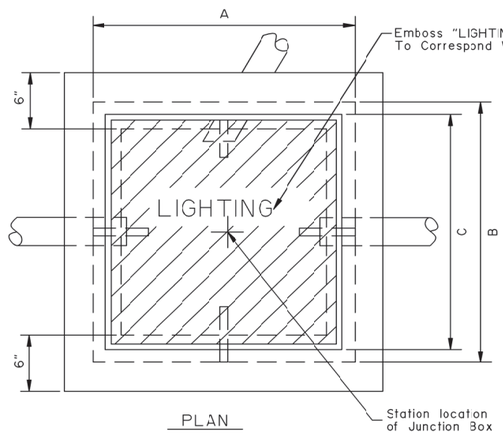
	DIMENSIONS (IN)	
	TYPE I	TYPE IA
A	15	22 3/4
B	10	13 1/4
C	1 3/4	2
D	13 1/2	21 1/4
E	8 1/2	11 3/4
F	12	18
G	1 3/4	2
H	19 1/2	27 1/4
J	14 1/2	17 3/4
K	8 3/4	14 1/2

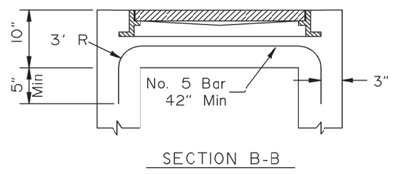
	DIMENSIONS (IN)		
	TYPE II	TYPE II	TYPE IV
A (Max)	30	30	30
B (Max)	30	30	36
C (Mn)	22	22	30
D (Mn)	22	22	24
E (Mn)	24	24	30

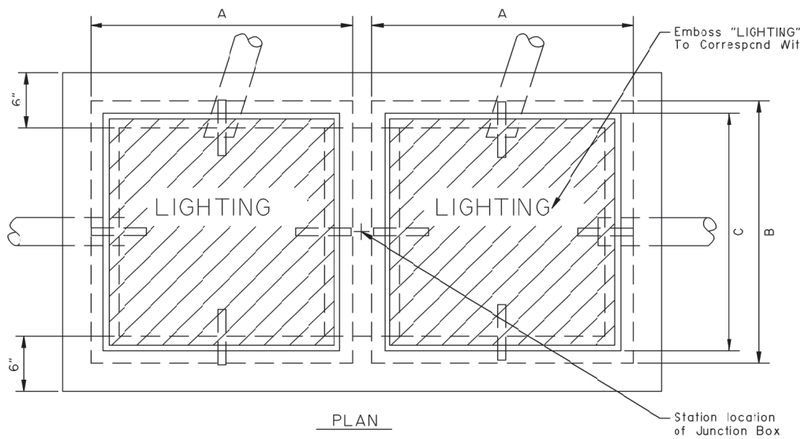
TYPE I & IA JUNCTION BOX

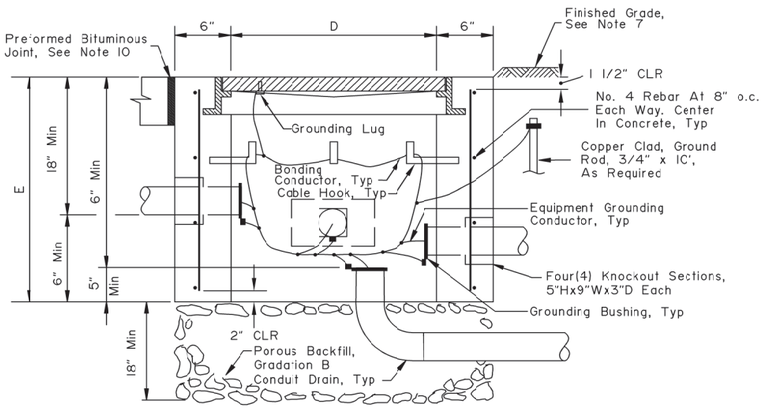
GENERAL NOTES:

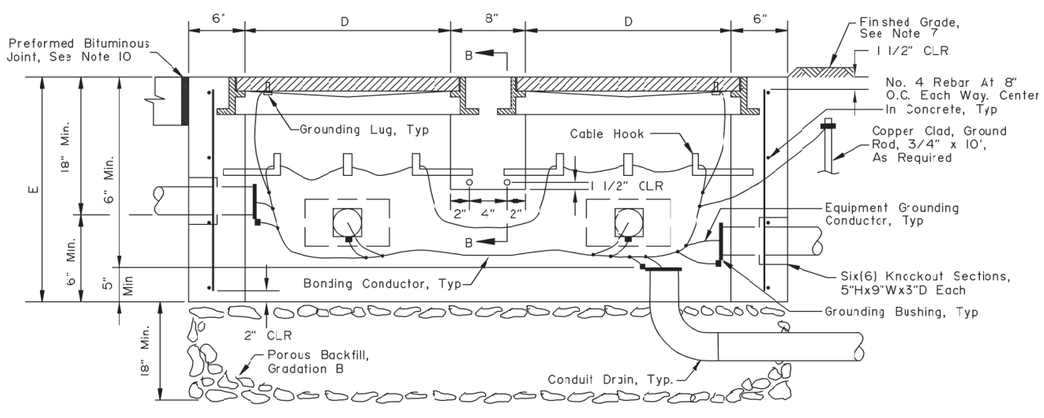
1. See the Standard Specifiecctions for Highway Construction (SSHC) for additional requirements.
2. See Section 660-2.01 of the SSHC for concrete and reinforcing steel requirements.
3. Provide knockouts indicated ir Type IA junction box when installed fcr loop detection. Conduit for loop detectors to enter junction box through knockouts.
4. Covers for junction boxes shall be cast iron. Type I and IA shall be secured to junction box with a minimum of two bolts anc be rated ANSI/SCTE 77, Tier 8, minimum. Type II, Type III and Type IV cover shall weigh over 100 pounds and be ANSI/SCTE77, AASHTO H-20 traffic rated.
5. The minimum required bearing capacity for Type I shall be 6,800psf. for Type IA shall oe 5,100psf, for Type II shall be 3,500psf. for Type III shall be 2,300psf, anc for Type IV shall be 2,000psf.
6. See section 703-2.10 of the SSHC for Porous Backfill material requirements.
7. See section 660-3.04 of the SSHC for top of junction box placemen: to finished grade requirements.
8. Provide conduits as required, size and quantity indicated in plans.
9. Provide grout around conduits in knockouts and for unused knockouts.
10. Provide a 1/2" thick preformed bituminous joint material around junction boxes installed in concrete walkways.
11. Metal conduits and junction box covers shall be bonded together to be electrically continuous using No. 8 AWG minimum copper bonding conductor. Cover shall be bonded using a tinned copper braided bonding jumper.











NOT TO SCALE

State of Alaska DOT&PF
ALASKA STANDARD PLAN

JUNCTION BOXES FOR ELECTROLIER & TRAFFIC SIGNALS

Adopted as an Alaska Standard Plan by: Carolyn H Morehouse
Carolyn Morehouse, P.E
Chief Engineer

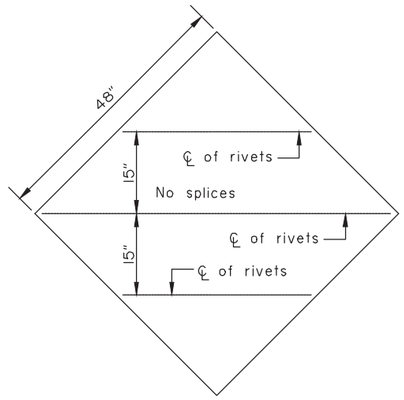
Adoption Date: 09/15/2022

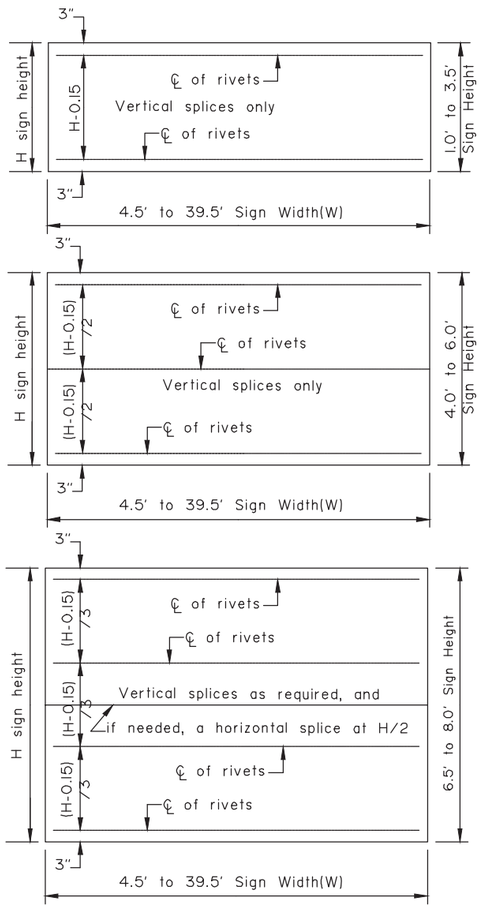
Last Code and Stds. Review By: CNH Date: 7/15/2020

Next Code and Standards Review date: 7/15/2030

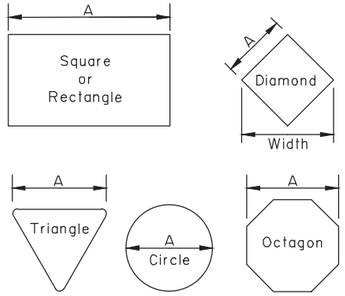
L-23.03

S-00.12 SHEET | of |





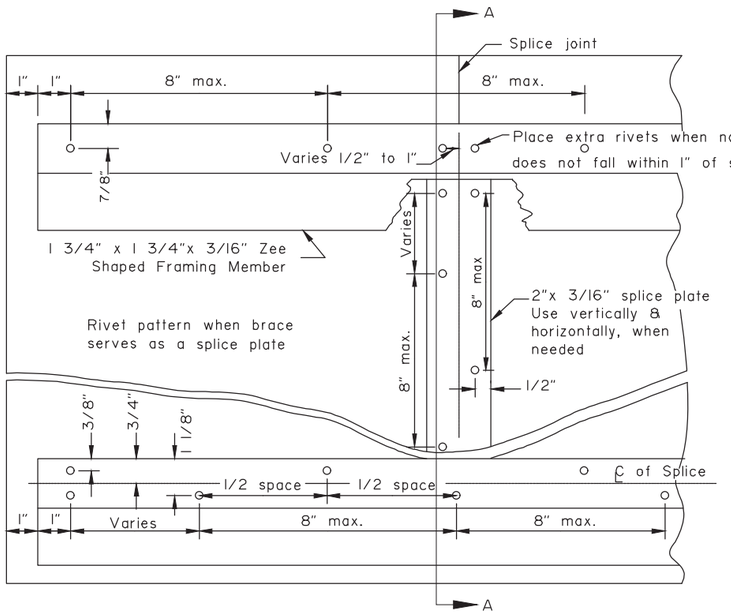
WIND FRAMING LOCATIONS



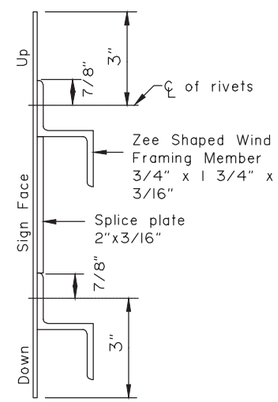
Maximum size unframed signs using 0.125" thick aluminum sheeting.	
Sign Shape	A
Squares, Shields, and Route Markers	48"
Rectangles	48"
Diamonds	48"
Triangles	48"
Rounds and Octagons	48"

Install wind framing on all signs that exceed the dimensions listed.

LIGHT SIGNS



RIVET DETAIL FOR ZEE SHAPED WIND FRAMING & SPLICE PLATE



SECTION A-A

Note: Drawing not to scale

GENERAL NOTES

1. See the standard specifications for the aluminum alloys that you may use for sign sheeting and wind framing members.
2. Fabricate all signs from 0.125" thick aluminum sheeting.
3. Sign fabricators may use alternates to the zee shaped framing member with approval of the engineer, if the frame manufacturer certifies their design equals or exceeds the strength of the zee shaped design.
4. Install one piece wind framing members on all signs up to 23.5' wide. Use one splice in each wind frame on all signs wider than 23.5'. Locate splices at least 18" from all posts and panel edges. Stagger splices in adjacent framing members at least 8.0' apart.
5. Attach wind framing members with rivets or with an engineer approved, double sided, high strength, adhesive tape. Clean and handle sheeting and framing members and apply tape in accordance with the tape manufacturer's written instructions. Install two rivets in both ends of each framing member.
6. Use 3/16" diameter rivets conforming to aluminum alloy 6061-T6 for cold driven rivets, or aluminum alloy 6061-T43 for hot driven rivets.
7. Sign fabricators may use sign panels extruded with integral framing with approval of the engineer, if the manufacturer certifies their design equals or exceeds the strength of the 0.125" thick panel with framing attached to it.
8. Frame all signs taller than 8.0' with five wind framing members located (H-0.15)/4 spaces. If needed, make a horizontal splice at the middle wind frame.
9. Do not use round pipes for sign supports.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

SIGN FRAMING

Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

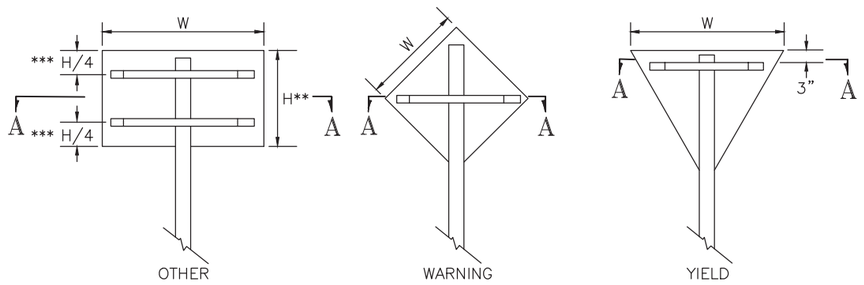
Adoption Date: 7/17/2020

Last Code and Stds. Review
By: WTH Date: 7/8/2020

Next Code and Standards Review date: 7/8/2030

S-00.12

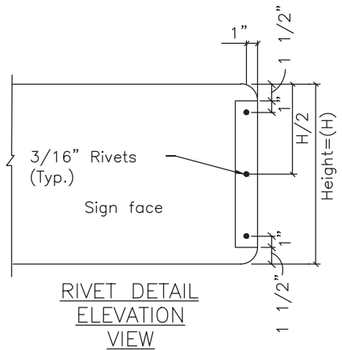
S-01.02 SHEET | of |



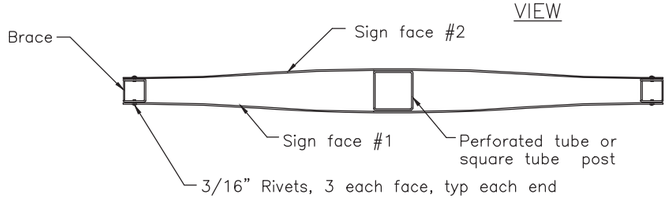
*** Use one brace when H ≤ 18"
Use two braces when 18"< H < 48"
Use three braces when H ≥ 48"

** Position of brace may be varied to match Predrilled mounting holes in panel

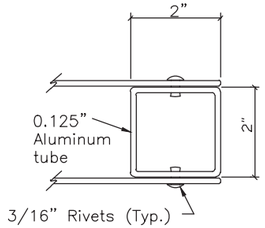
SIGN BRACING PLACEMENT



RIVET DETAIL ELEVATION VIEW

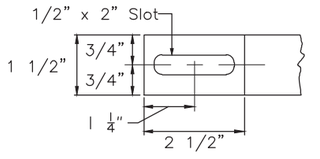


PLAN VIEW

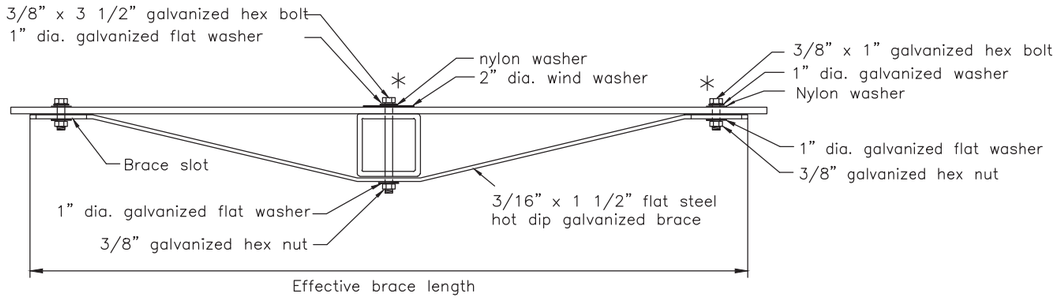


END BRACE DETAIL

SMALL STREET NAME SIGN (D3-1, D3-1A, D3-1D) BRACING DETAILS



DETAIL OF BRACE SLOT
Elevation view



TUBE POST SIGN BRACING SECTION A-A
Plan view

* Adjust location of bracing so that bolts and washers will miss the sign legend

Sign Width(W)	Effective Brace Length		
	Warning	Yield	Other
30"	36"	24"	24"
36"	42"	30"	30"
42"	48"	–	36"
48"	Two posts	36"	42"

< 30" No bracing required and use square tube

Note: Drawing not to scale

State of Alaska DOT&PF
ALASKA STANDARD PLAN

BRACING FOR SIGNS MOUNTED ON SINGLE POST

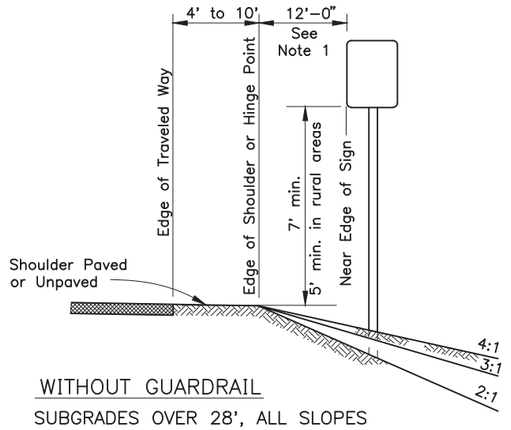
Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

Adoption Date: 7/17/2020

Last Code and Stds. Review
By: WTH Date: 7/8/2020

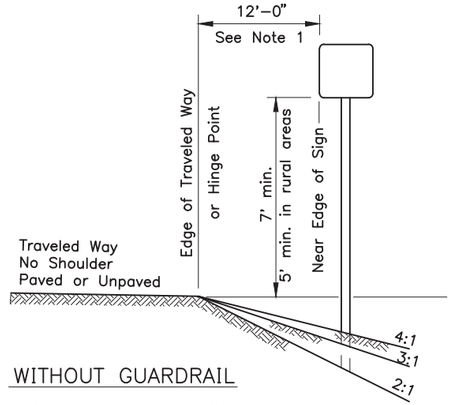
Next Code and Standards Review date: 7/8/2030

S-01.02



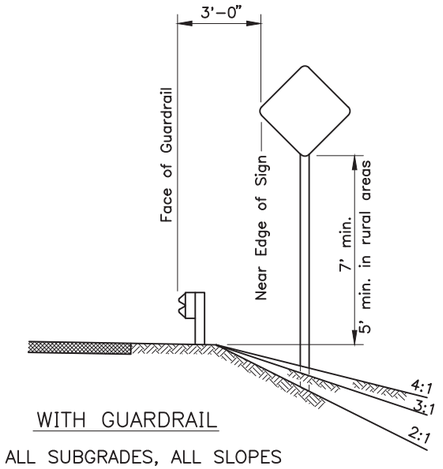
WITHOUT GUARDRAIL

SUBGRADES OVER 28', ALL SLOPES



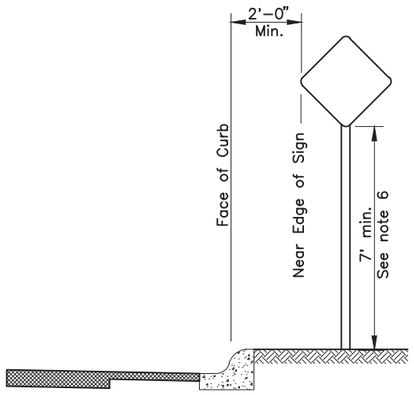
WITHOUT GUARDRAIL

SUBGRADES 24' TO 28', ALL SLOPES

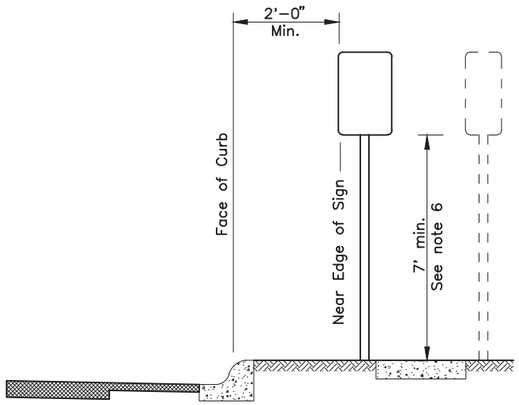


WITH GUARDRAIL

ALL SUBGRADES, ALL SLOPES

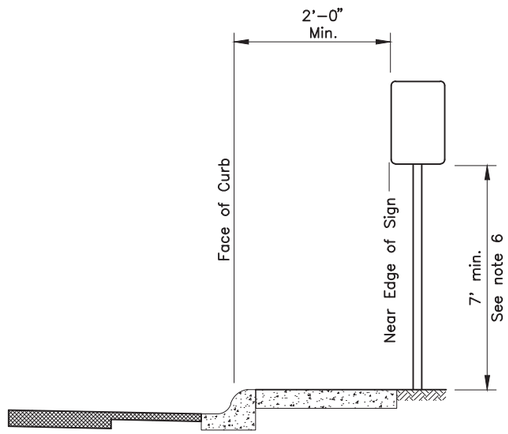


CURB WITHOUT SIDEWALK

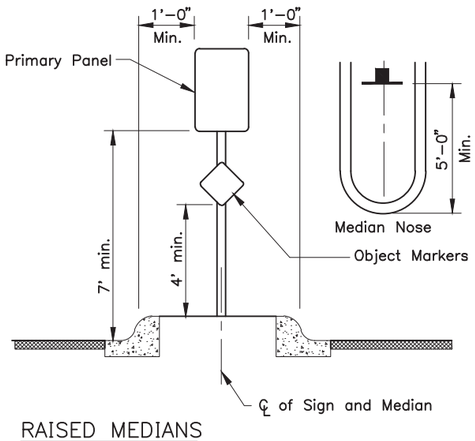


CURB WITH PARKWAY AND SIDEWALK

(If R/W width permits, signs should be placed behind sidewalk.)

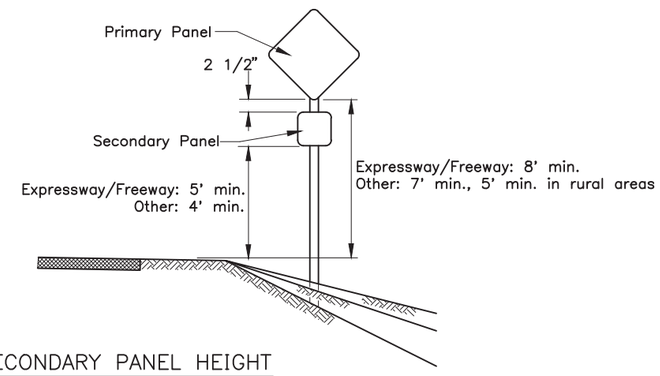


CURB WITH SIDEWALK WITHOUT PARKWAY



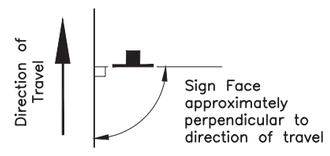
RAISED MEDIANS

Minimum 4' Width for Signing



SECONDARY PANEL HEIGHT

ALL TWO PANEL MOUNTING



SIGN POSITIONING

GENERAL NOTES

1. Unless shown otherwise on the plans, the standard sign offset is 12'. The minimum is 6' where shoulder width is 6' or greater.
2. Add 6" to mounting height on unpaved roads.
3. If signs extend over bike paths, the minimum vertical clearance is 8' 0".
4. When signs are placed 30' or more from the edge of traveled way, mount them with the bottom of the sign at least 5' above the road surface at the near edge of the road.
5. When multiple hinged sign supports are used, mount hinges at least 7' above the ground.
6. Minimum mounting height is 7'–0" where parking or pedestrian movements are likely to occur, or where sings extend over sidewalks.
7. For construction signs in rural areas, mounting height shall be 7' minimum.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

POST MOUNTED SIGN
OFFSET AND HEIGHT

Adopted as an Alaska Standard Plan by: Carolyn Morehouse
Carolyn Morehouse, P.E.
Chief Engineer

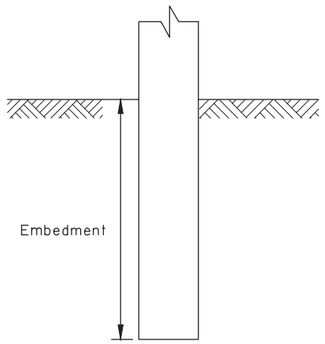
Adoption Date: 7/17/2020

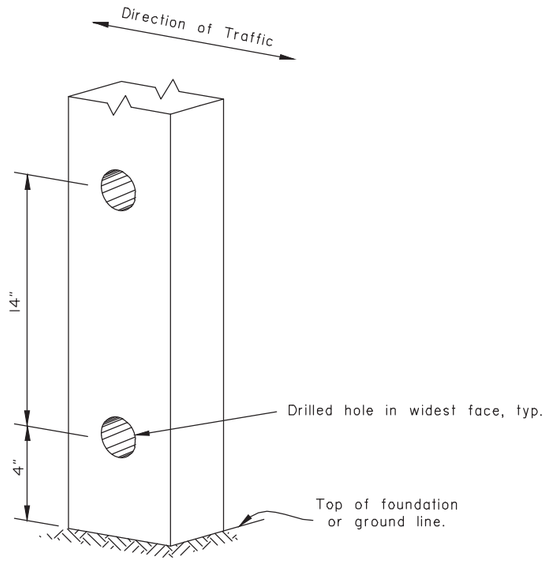
Last Code and Stds. Review
By: KLK Date: 7/8/2020

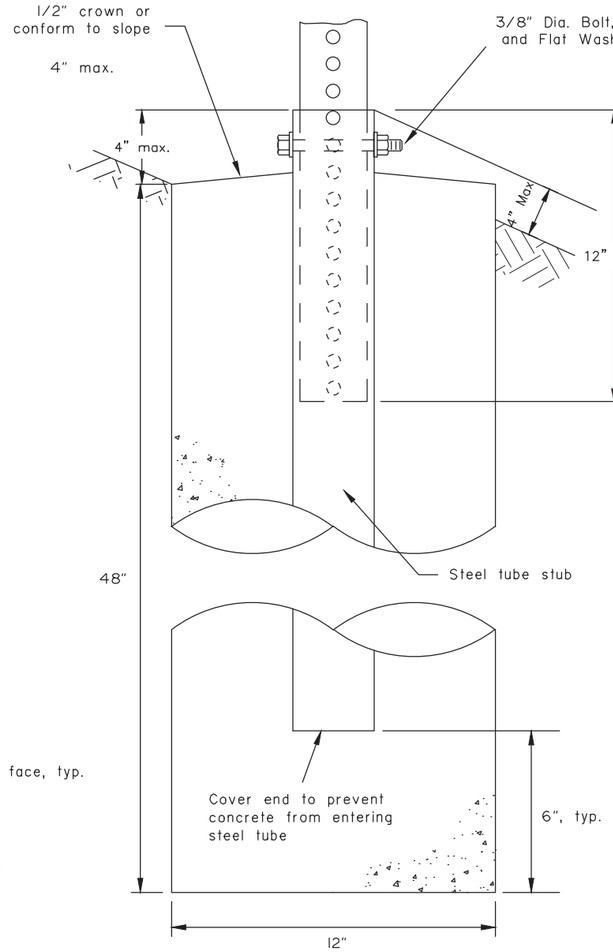
Next Code and Standards Review Date: 7/8/2030

S-05.02

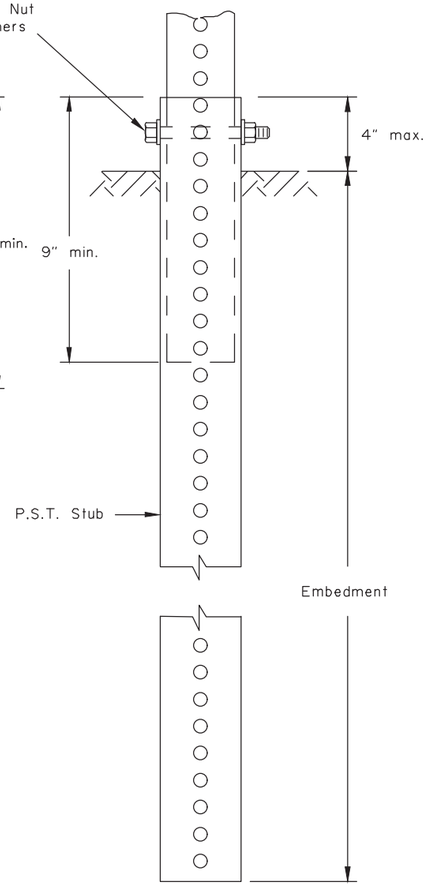
S-30.05 SHEET | of |







SLEEVE TYPE
CONCRETE FOUNDATION



SLEEVE TYPE*
SOIL EMBEDMENT

GENERAL NOTES:

1. Sign shall be placed symmetrically around posts and refer to Standard Plan S-00 for sign framing details.
2. See plans for type of post, size and embedment type.
3. To maintain crashworthiness, install no more than the number of P.S.T.s or wood posts specified in the tables within 7' of each other.
4. Concrete shall be class B.
5. Do not use the supports on this drawing for multiple support signs if supports are separated by more than 7 feet.
6. Treat all field cuts and field drilled holes in wood posts in accordance with Section 730-2.04 of the Standard Specifications.

SIGN POST SPACING NOTES:

1. Install sign support in accordance with the table below, unless otherwise required by plans or specifications.
2. Exceptions:
   a. Use one post for all E5-1 gore signs, regardless of width.
   b. Use one 2.5" P.S.T. for all STOP signs, with or without street name signs.
3. Supports placed within 7' of each other must be acceptable for that use. See tables below for the sizes of wood posts and P.S.T.s that may be used within 7'. See Manufacturer's documentation for breakaway couplings and tubes that may be used within 7'.
4. See Standard Plan S-31 for frangible couplings, hinges, and foundations for tube and W-shape sign supports.

WOOD SIGN POSTS			
SIZE	HOLE DIA.	EMBEDMENT*	NO. OF POSTS WITHIN 7 Ft. PATH
4"x4"	NONE	4'-1"	2
4"x6"	1 1/2"	5'-3"	2
6"x6"	1 1/2"	4'-9"	1
6"x8"	3"	4'-9"	1

* Embedment depth applies in both strong and weak soil.

WOOD POSTS

PERFORATED STEEL TUBES (P.S.T.)		
POST SIZE	Embedment Depth	No. of P.S.T.s permitted within 7 ft path
1 1/2" x 1 1/2"	4'-8"	2
1 3/4" x 1 3/4"	4'-6"	2
2" x 2"	4'-3"	2
2 1/4" x 2 1/4"	5'-0"	1
2 1/2" x 2 1/2"	4'-6"	1

* Use 3"x3"x3/16" Stub for 2 1/2"x2 1/2" PST Applications.

PERFORATED STEEL TUBE (PST) POSTS

TUBE SIGN POST SPACING								
Sign Width (feet)	No. of Posts	Distance Between Posts	Sign Overhang	Post Type				Notes
				P.S.T.	Wood	Steel Tube	W-Shape	
0.5 to 4.0	1	-	0.5W	X	X	X		See Note 2.
4.5 to 10.0	2	0.6W	0.2W	X	X	X		See Note 3.
10.5 to 11.0	2	6	Varies	X	X	X		See Note 3.
11.5 to 13.0	2	8	Varies				X	
13.5 to 20.0	2	0.6W	0.2W				X	
20.5 to 22.5	3	8	Varies				X	
23.0 to 29.5	3	0.35W	0.15W				X	
30.0 to 31.5	4	8	Varies				X	
32.0 to 40.0	4	0.25W	0.125W				X	

TUBE SIGN POST SPACING

Note: Drawing not to scale

State of Alaska DOT&PF
ALASKA STANDARD PLAN

LIGHT SIGN STRUCTURE
POST EMBEDMENT

Adopted as an Alaska Standard Plan by: Carolyn Morehouse
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By: WTH Date: 7/8/2020

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