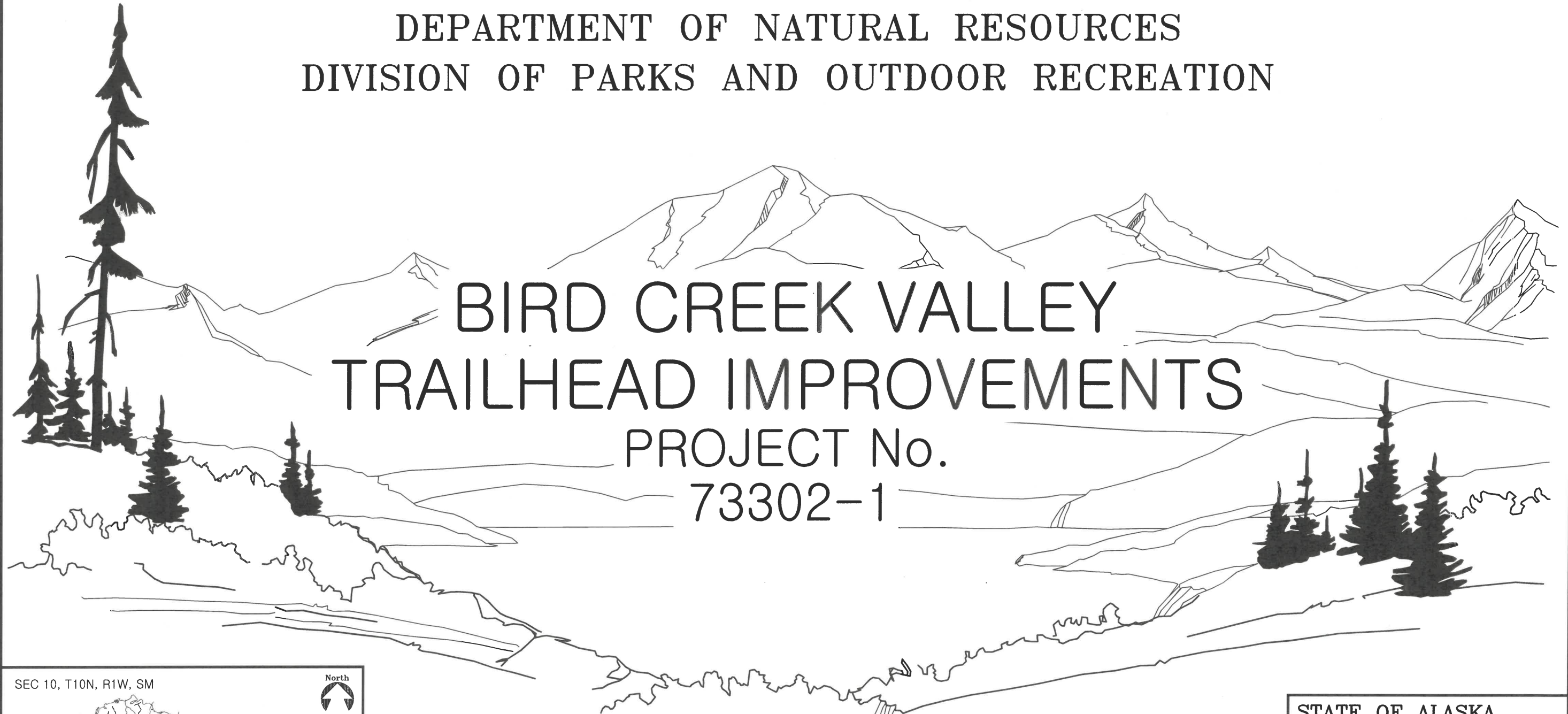


STATE OF ALASKA
 DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF PARKS AND OUTDOOR RECREATION



BIRD CREEK VALLEY
 TRAILHEAD IMPROVEMENTS
 PROJECT No.
 73302-1

INDEX

1. TITLE SHEET
2. LEGEND, ABBREVIATIONS & ESTIMATE OF QUANTITIES
3. VICINITY MAP
4. EXISTING CONDITIONS
5. SITE PLAN & COORDINATE POINTS
6. TYPICAL SECTIONS & BARRIER ROCK DETAILS
7. SIGN SUMMARY
8. SINGLE CONCRETE VAULTED TOILET SITE WORK & SITE PLAN
9. ATV LOADING RAMP DETAILS

SEC 10, T10N, R1W, SM



STATE OF ALASKA
 Department of Natural Resources
 Division of Parks & Outdoor Recreation

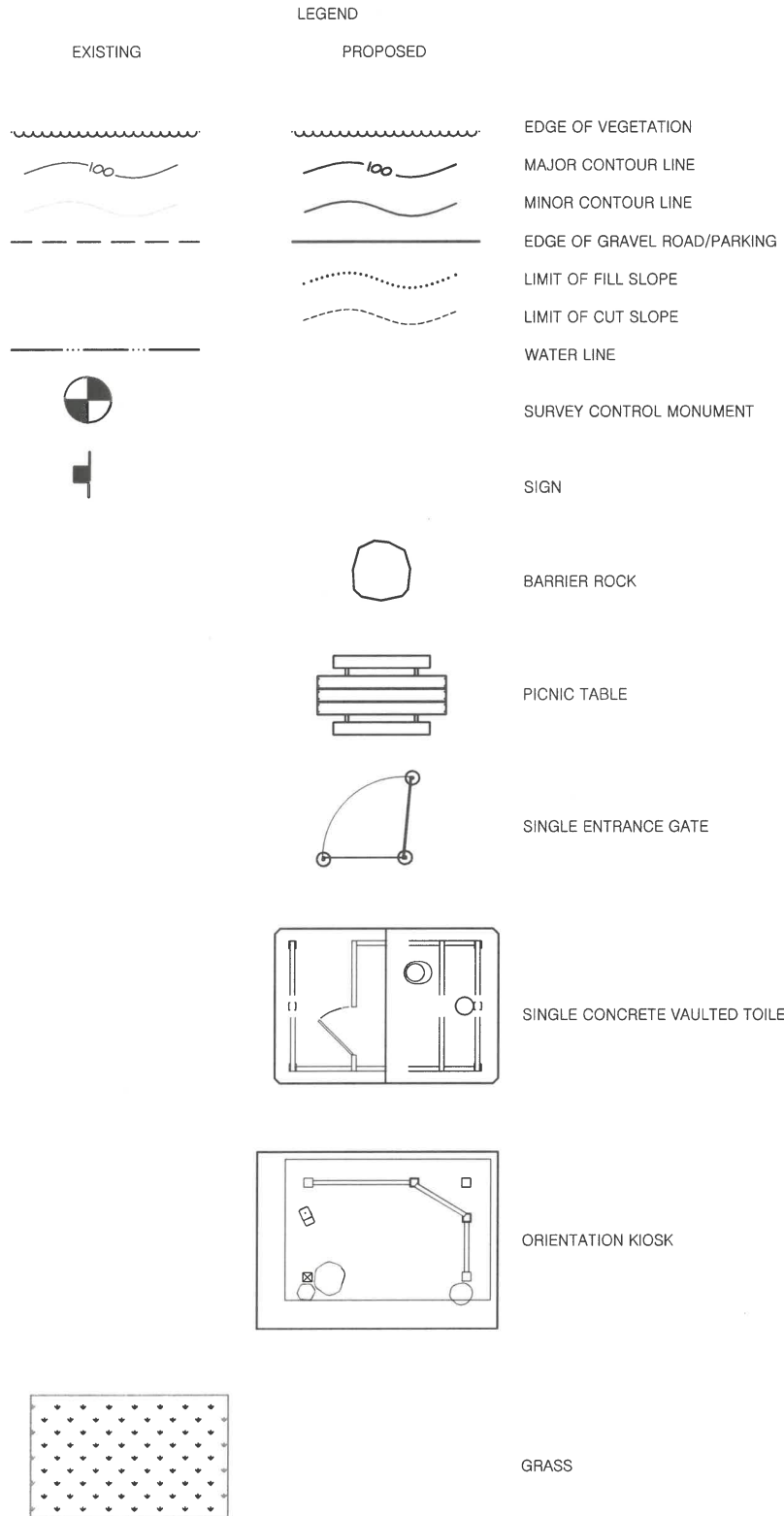
Recommended:

[Signature] 5/1/2024
 Date
 Rya Miranda, P.E.
 Chief, Design & Construction

Approved:

[Signature] 5/1/24
 Date
 Ricky Gease
 Director, Alaska State Parks

The following Division of Parks & Outdoor Rec. standard drawings apply to this project: C-1, S-10D
 The following D.O.T.(Highways) standard drawings apply to this project: S-00.12, S-05.02, S-30.05, S-31.02



ABBREVIATIONS AND SYMBOLS

∅	DIAMETER
€	CENTERLINE
C.S.	CONTINGENT SUM
DNR	DEPARTMENT OF NATURAL RESOURCES
E	EAST
ELEV.	ELEVATION
F.G.	FINISH GRADE
HWY	HIGHWAY
INV	INVERT
LB/LBS	POUND/POUNDS
L.S.	LUMP SUM
M.E.	MATCH EXISTING
MP	MILEPOST
N	NORTH
N/A	NOT APPLICABLE
NE	NORTHEAST
NO.	NUMBER
NW	NORTHWEST
PIP	PROTECT IN PLACE
RAM	RECYCLED ASPHALT MATERIAL
REQ'D	REQUIRED
RD	ROAD
SE	SOUTHEAST
S.F	SQUARE FOOT
SM	SEWARD MERIDIAN
SW	SOUTHWEST
S.Y	SQUARE YARD
TYP	TYPICAL
W	WEST

ESTIMATE OF QUANTITIES – BASIC BID			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
202.0001.0000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	ALL REQ'D
301.0005.0001	RECYCLED ASPHALT MATERIAL	TON	1225
615.0001.0000	STANDARD SIGN	S.F.	18.75
622.2020.0000	ORIENTATION KIOSK	EACH	1
622.2027.0000	BARRIER ROCK	EACH	15
622.2030.0000	PICNIC TABLE	EACH	3
622.2034.0000	ATV LOADING RAMP	EACH	1
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	ESCP PRICE ADJUSTMENT	C.S.	ALL REQ'D
642.0001.0000	CONSTRUCTION SURVEYING	L.S.	ALL REQ'D
642.0002.0000	THREE PERSON SURVEY PARTY	HOUR	5
643.0002.0000	TRAFFIC MAINTENANCE	L.S.	ALL REQ'D
647.0006.0000	HYDRAULIC EXCAVATOR, 1 CY, 100 HP MINIMUM	HOUR	5
654.2025.0000	SINGLE CONCRETE VAULTED TOILET	EACH	1

TABLE OF ESTIMATING FACTORS		
ITEM NO.	ITEM DESCRIPTION	FACTOR
301.0005.0001	RECYCLED ASPHALT MATERIAL	144 LBS/C.F.



STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES
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 550 W 7TH AVE. SUITE 1340, ANCHORAGE, AK 99501 - 907.269.8731

LEGEND, ABBREVIATIONS & ESTIMATE OF QUANTITIES

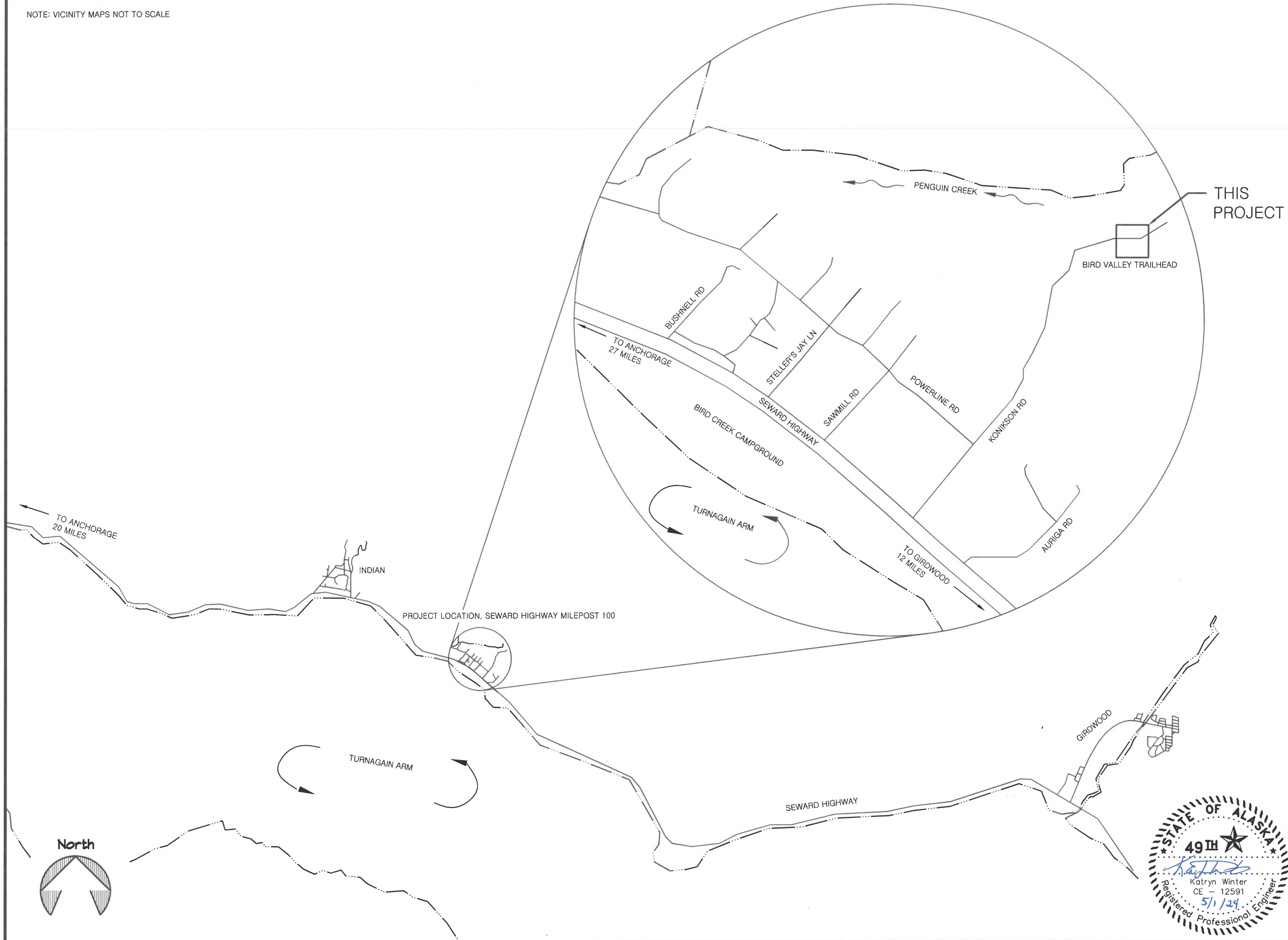
BIRD CREEK VALLEY
 TRAILHEAD IMPROVEMENTS
 PROJECT NO. 73302-1



PREPARED: BCC
 DRAWN: BCC
 REVIEWED: KRW
 DATE: APRIL 2024

SHEET
 2
 OF 9 SHEETS

NOTE: VICINITY MAPS NOT TO SCALE



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BIRD CREEK VALLEY
 TRAILHEAD IMPROVEMENTS
 PROJECT NO. 73302-1

VICINITY MAP



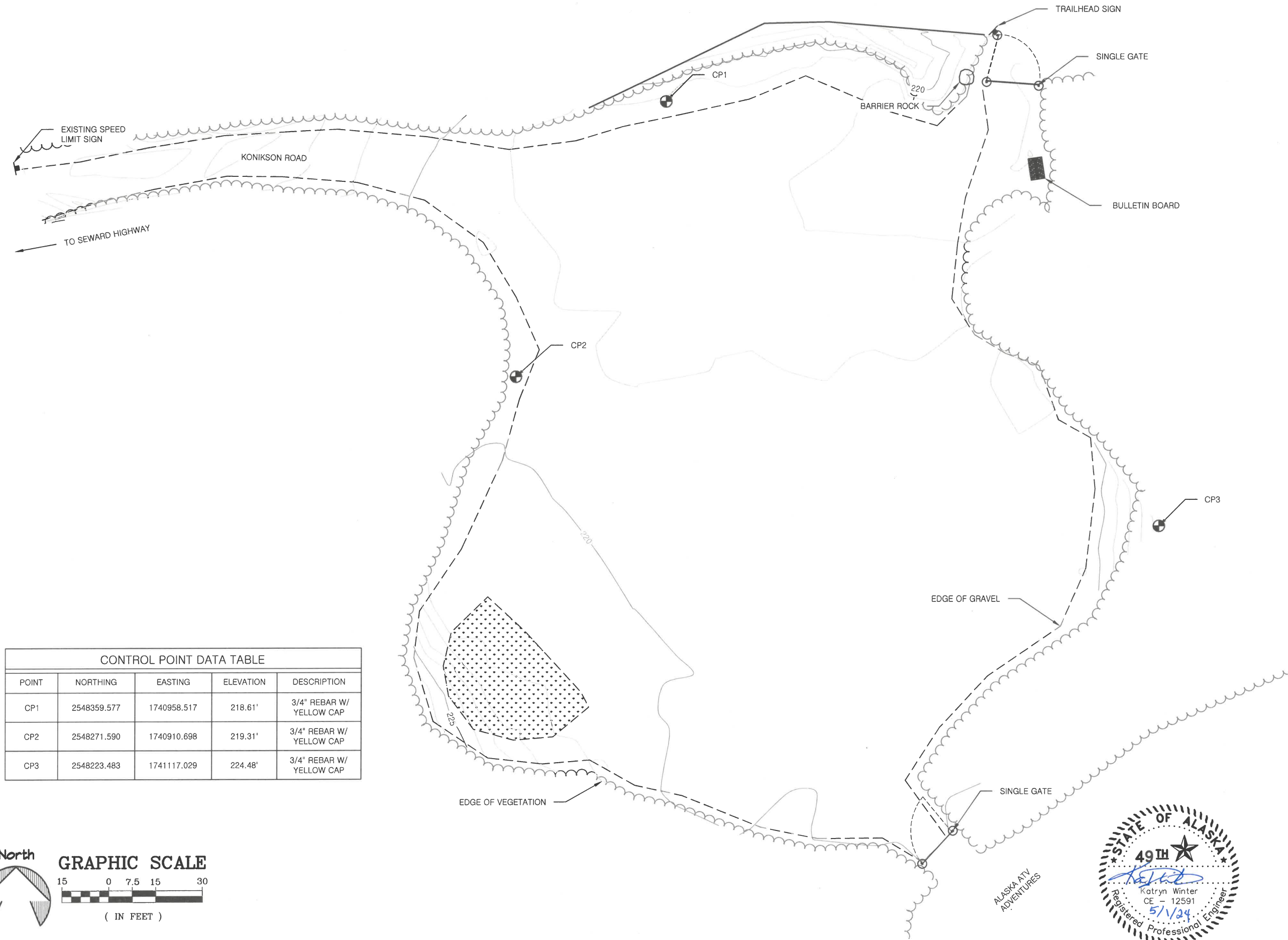
PREPARED: BCC
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 DATE: APRIL 2024



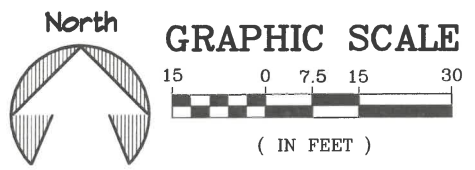
SHEET

3

OF 9 SHEETS



CONTROL POINT DATA TABLE				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	2548359.577	1740958.517	218.61'	3/4" REBAR W/ YELLOW CAP
CP2	2548271.590	1740910.698	219.31'	3/4" REBAR W/ YELLOW CAP
CP3	2548223.483	1741117.029	224.48'	3/4" REBAR W/ YELLOW CAP



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BIRD CREEK VALLEY
 TRAILHEAD IMPROVEMENTS
 PROJECT NO. 73302-1

EXISTING CONDITIONS

PREPARED: BCC
 DRAWN: BCC
 REVIEWED: KRW
 DATE: APRIL 2024

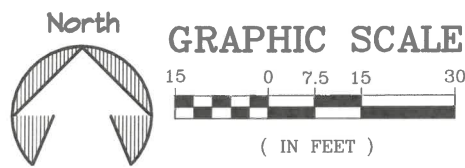
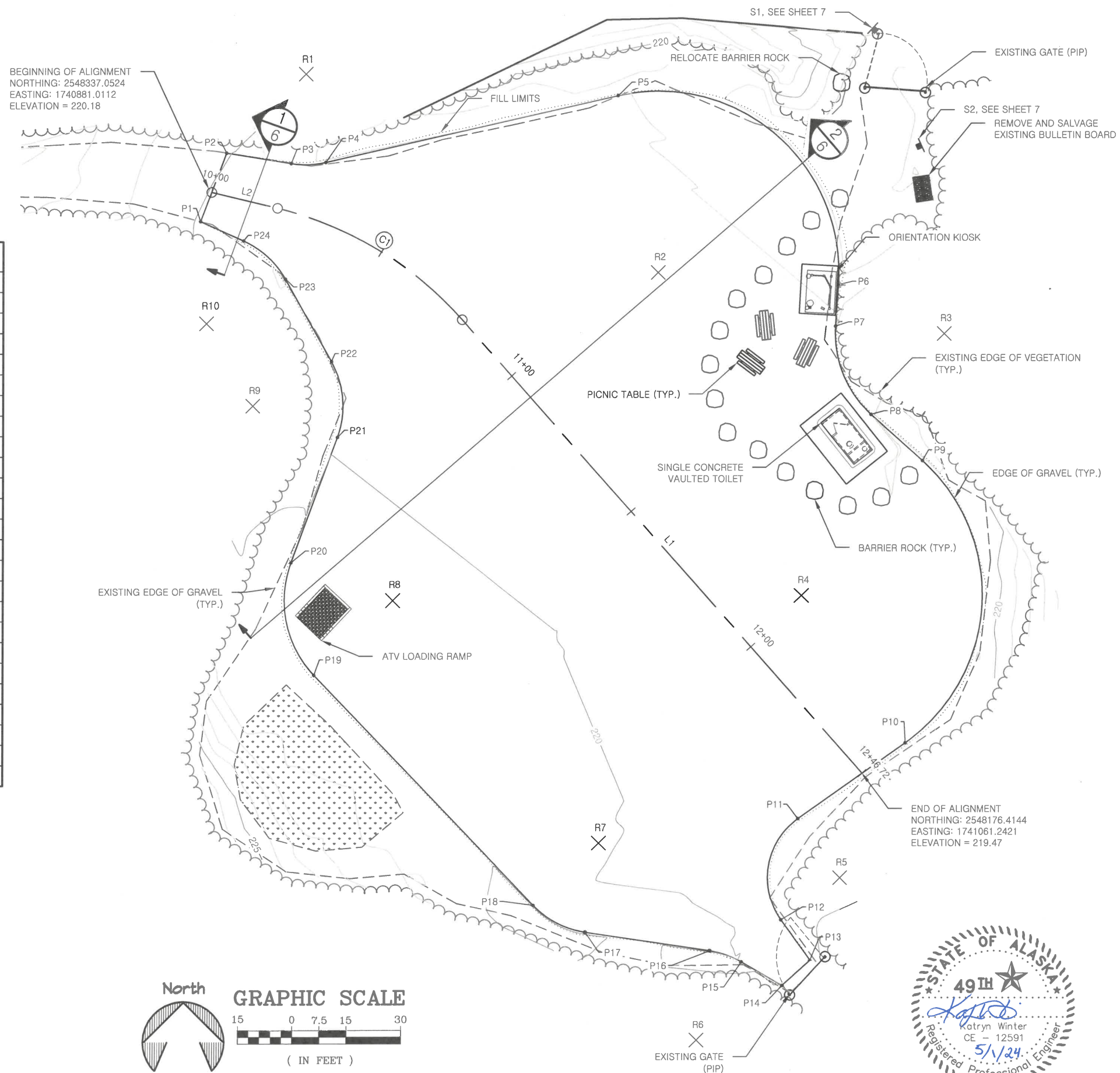
SHEET
4
 OF 9 SHEETS

HORIZONTAL LINE DATA		
LINE #	LENGTH	DIRECTION
L1	167.50'	S41° 31' 25.35"E
L2	18.65'	S76° 19' 34.25"E

HORIZONTAL CURVE DATA					
CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA
C1	10+18.65	10+79.23	100.00'	60.57'	34.7069°

COORDINATE POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
P1	2548328.98	1740877.96	M.E.	START OF PROJECT
P2	2548347.89	1740885.10	M.E.	START OF PROJECT
P3	2548344.96	1740902.92	219.50	EDGE OF GRAVEL
P4	2548345.25	1740912.50	219.31	EDGE OF GRAVEL
P5	2548363.56	1740993.29	219.06	EDGE OF GRAVEL
P6	2548311.41	1741054.23	218.62	EDGE OF GRAVEL
P7	2548299.99	1741053.45	219.17	EDGE OF GRAVEL
P8	2548275.61	1741063.36	219.30	EDGE OF GRAVEL
P9	2548262.85	1741077.60	219.40	EDGE OF GRAVEL
P10	2548184.80	1741073.12	219.41	EDGE OF GRAVEL
P11	2548163.85	1741043.52	219.56	EDGE OF GRAVEL
P12	2548135.80	1741038.87	219.90	EDGE OF GRAVEL
P13	2548124.61	1741046.97	M.E.	END OF PROJECT
P14	2548117.59	1741039.22	M.E.	END OF PROJECT
P15	2548124.13	1741027.94	219.98	EDGE OF GRAVEL
P16	2548127.23	1741019.10	220.13	EDGE OF GRAVEL
P17	2548132.37	1740984.77	220.30	EDGE OF GRAVEL
P18	2548139.83	1740970.38	220.11	EDGE OF GRAVEL
P19	2548203.63	1740909.47	220.88	EDGE OF GRAVEL
P20	2548234.76	1740903.04	220.56	EDGE OF GRAVEL
P21	2548269.39	1740915.85	219.91	EDGE OF GRAVEL
P22	2548290.32	1740914.20	219.47	EDGE OF GRAVEL
P23	2548313.09	1740901.39	219.33	EDGE OF GRAVEL
P24	2548323.64	1740889.84	219.65	EDGE OF GRAVEL

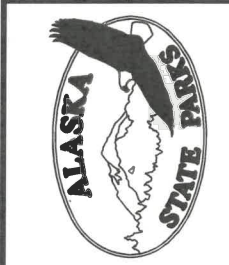
RADIUS POINT TABLE				
POINT #	NORTHING	EASTING	RADIUS	DESCRIPTION
R1	2548369.63	1740906.97	25'	EDGE OF GRAVEL
R2	2548314.80	1741004.34	50'	EDGE OF GRAVEL
R3	2548297.95	1741083.38	30'	EDGE OF GRAVEL
R4	2548225.62	1741044.23	50'	EDGE OF GRAVEL
R5	2548147.53	1741055.07	30'	EDGE OF GRAVEL
R6	2548102.50	1741015.40	20'	EDGE OF GRAVEL
R7	2548157.09	1740988.47	25'	EDGE OF GRAVEL
R8	2548224.35	1740931.17	30'	EDGE OF GRAVEL
R9	2548278.06	1740892.41	25'	EDGE OF GRAVEL
R10	2548300.84	1740879.60	25'	EDGE OF GRAVEL



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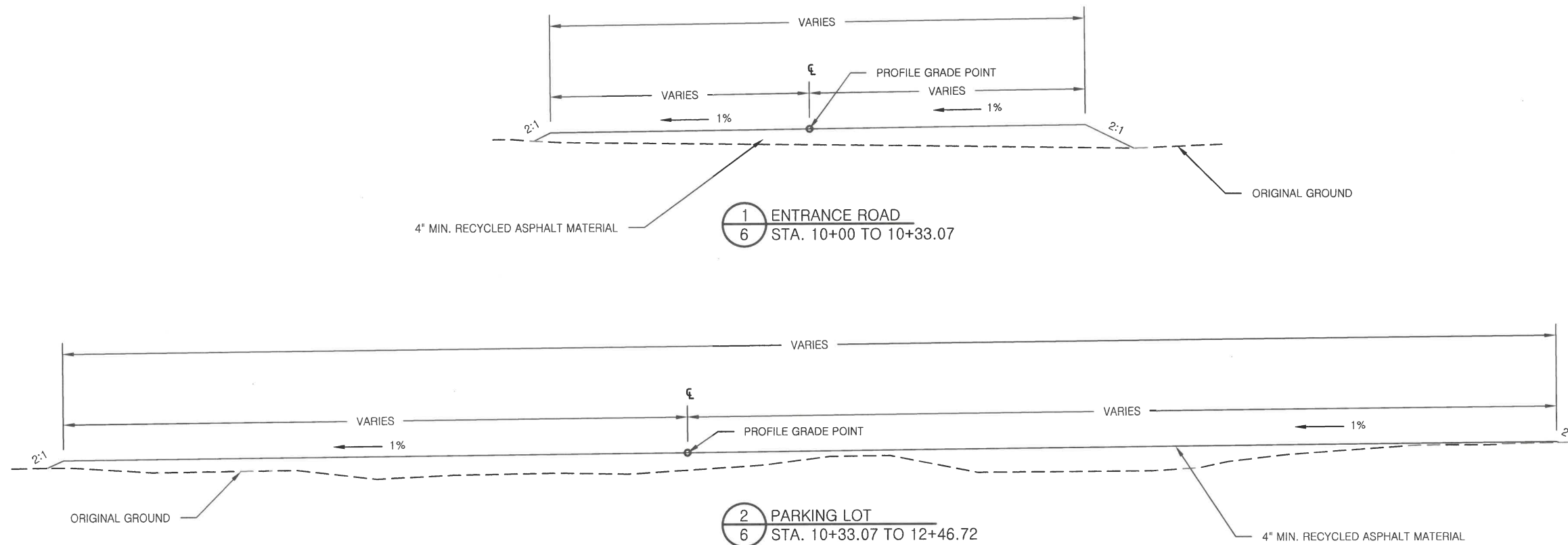
BIRD CREEK VALLEY
 TRAILHEAD IMPROVEMENTS
 PROJECT NO. 73302-1

SITE PLAN & COORDINATE POINTS



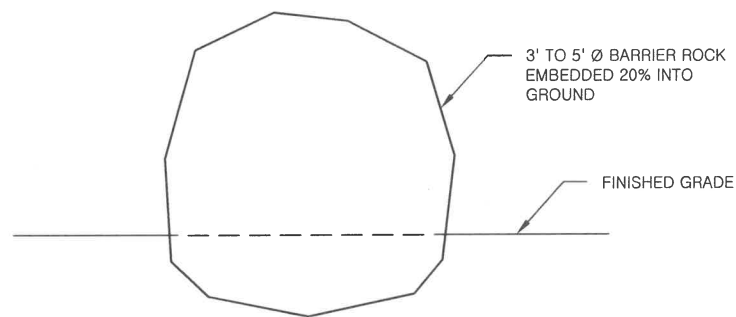
PREPARED: BCC
 DRAWN: BCC
 REVIEWED: KRW
 DATE: APRIL 2024

SHEET
 5
 OF 9 SHEETS



1 ENTRANCE ROAD
6 STA. 10+00 TO 10+33.07

2 PARKING LOT
6 STA. 10+33.07 TO 12+46.72



3 BARRIER ROCK
6 PROFILE VIEW

3' TO 5' Ø BARRIER ROCK
EMBEDDED 20% INTO
GROUND

FINISHED GRADE

NOTES:
1. PARKING LOT AND ENTRANCE ROAD SURFACE SLOPE NOT TO EXCEED 2%.



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BIRD CREEK VALLEY
TRAILHEAD IMPROVEMENTS
PROJECT NO. 73302-1

TYPICAL SECTIONS & BARRIER ROCK
DETAILS

PREPARED: BCC
DRAWN: BCC
REVIEWED: KRW
DATE: APRIL 2024

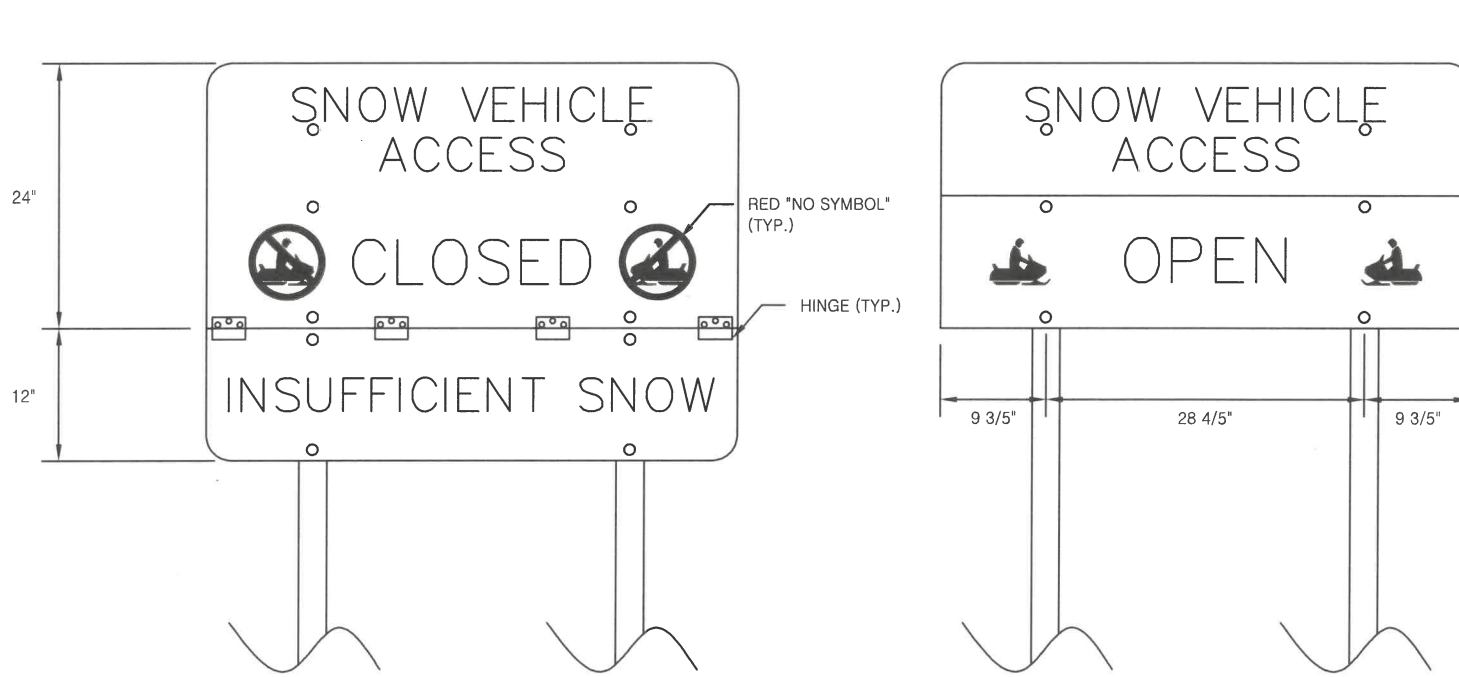
SHEET

6

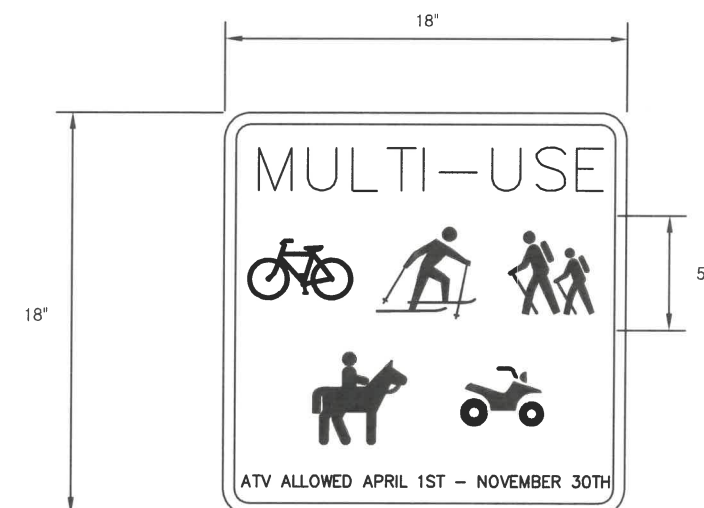
OF 9 SHEETS

ITEM 615.0001.0000 STANDARD SIGN										
SIGN NO.	STATION	FACING	TYPE	LEGEND	SIZE (INxIN)	AREA (S.F.)	THICKNESS (IN.)	SIGN POST DATA		
								TYPE	SIZE (IN)	NO.
S1	11+00	SOUTH	D7-100	BIRD VALLEY TRAILHEAD	18 X 36	4.5	0.125	EXISTING PST	2.5 x 2.5	1
			CUSTOM 1	MULTI-USE	18 X 18	2.25	0.125			
S2	11+25	SOUTHWEST	CUSTOM 2	SNOW VEHICLE ACCESS CLOSED INSUFFICIENT SNOW	36 X 48	12	0.125	2 PST	2.5 x 2.5	2 & 3
TOTALS						18.75				3

1 SIGN SUMMARY
7 TABLE



2 S2 POST
7 DETAIL



3 CUSTOM 1
7 DETAIL

- NOTES:
- ALL SIGN TYPES ARE REFERENCED FROM THE ALASKA SIGN DESIGN GUIDE SPECIFICATIONS, 2020 EDITION. UNLESS SPECIFIED OTHERWISE.
 - ALL SIGNS ARE BROWN BACKGROUND WITH WHITE TEXT, WHITE SYMBOLS AND WHITE BORDER. UNLESS SPECIFIED OTHERWISE.
 - S1 INSTALLED ON EXISTING POST.
 - S2 INSTALLED ON TWO NEW POST AS SHOWN ON S2 POST DETAIL.



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BIRD CREEK VALLEY
 TRAILHEAD IMPROVEMENTS
 PROJECT NO. 73302-1

SIGN SUMMARY

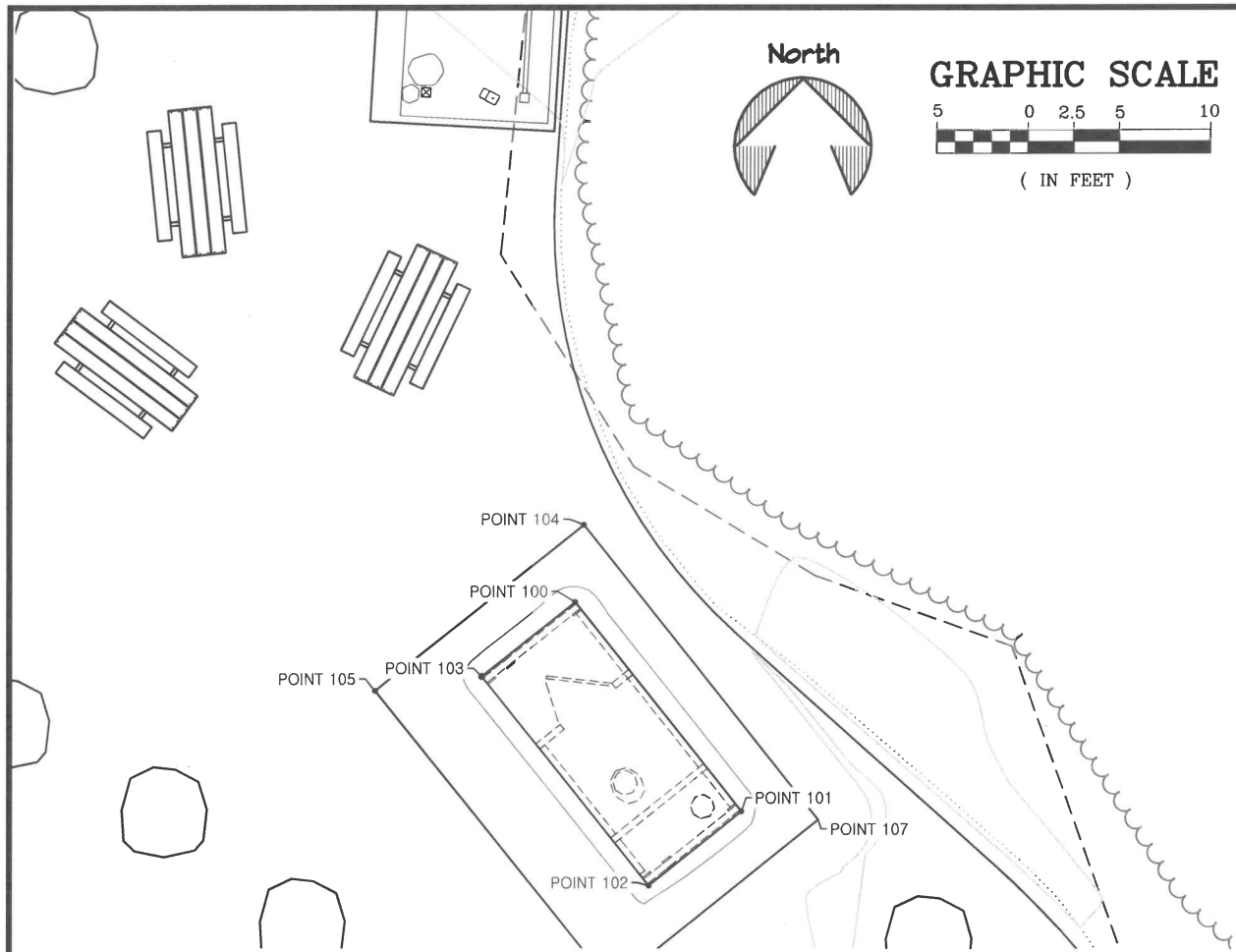


PREPARED: BCC
 DRAWN: BCC
 REVIEWED: KRW
 DATE: APRIL 2024

SHEET

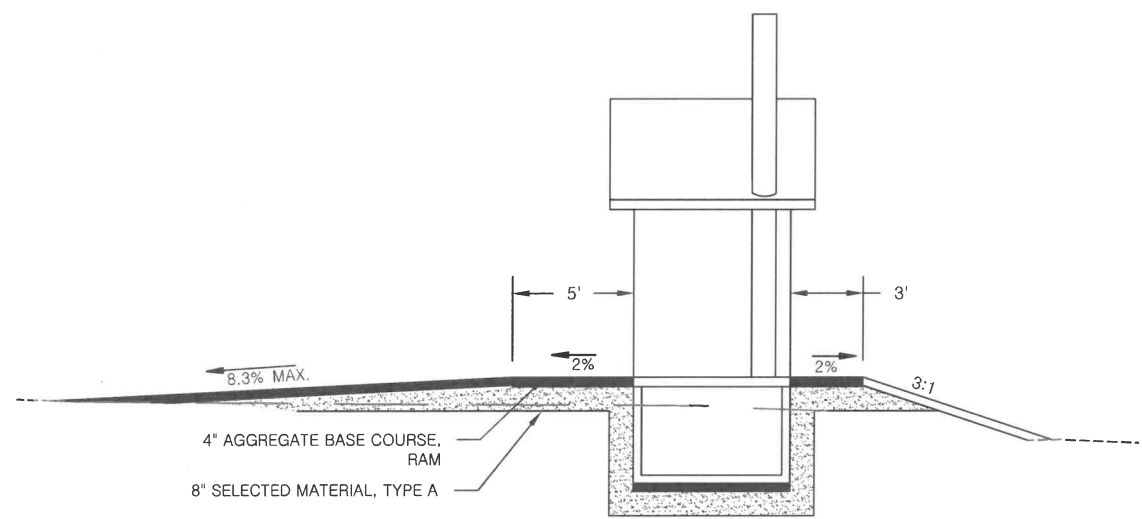
7

OF 9 SHEETS

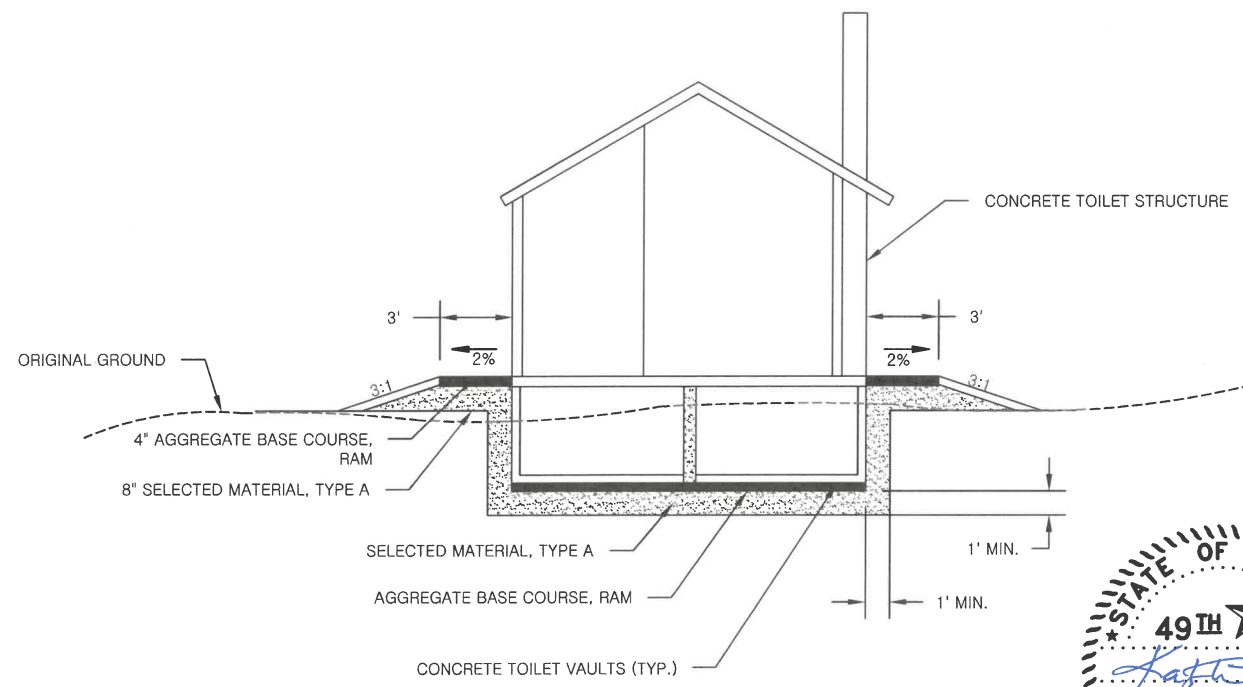


1 CONCRETE VAULTED TOILET
8 GRADING PLAN

TOILET GRADING POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
POINT 100	2548277.30	1741054.57	220.02	CONCRETE PAD
POINT 101	2548265.88	1741063.70	220.02	CONCRETE PAD
POINT 102	2548261.82	1741058.62	220.02	CONCRETE PAD
POINT 103	2548273.24	1741049.49	220.02	CONCRETE PAD
POINT 104	2548281.52	1741055.04	219.96	EDGE OF SHOULDER
POINT 105	2548272.46	1741043.71	219.92	EDGE OF SHOULDER
POINT 106	2548256.35	1741056.59	219.92	EDGE OF SHOULDER
POINT 107	2548265.41	1741067.91	219.96	EDGE OF SHOULDER



2 CONCRETE VAULTED TOILET
8 TYPICAL PLAN



3 CONCRETE VAULTED TOILET
8 FRONT VIEW



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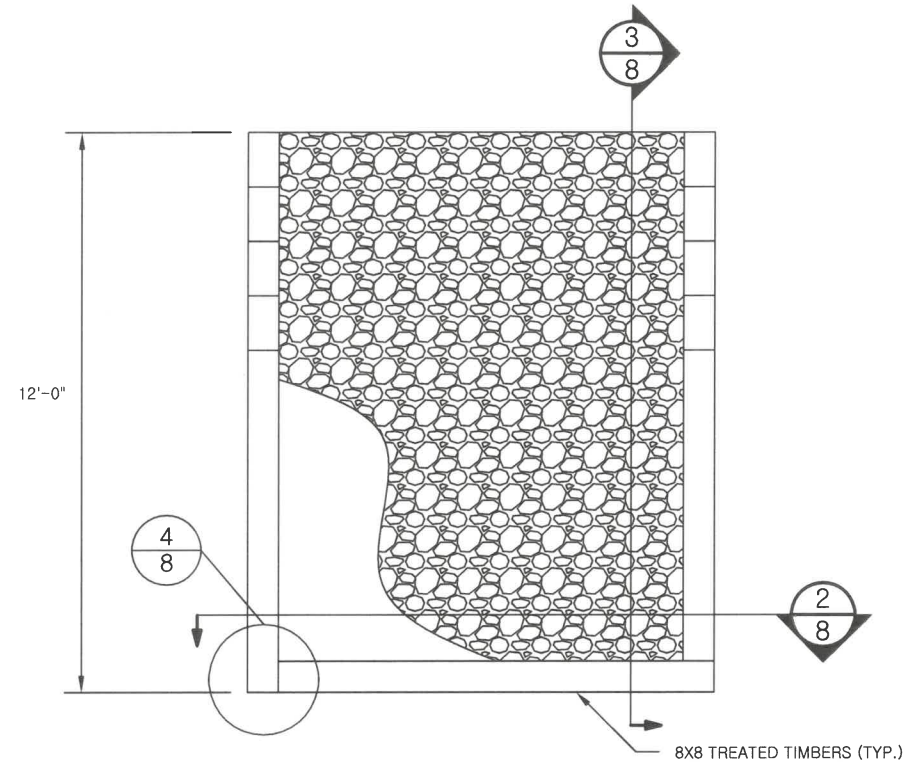
BIRD CREEK VALLEY
 TRAILHEAD IMPROVEMENTS
 PROJECT NO. 73302-1

SINGLE CONCRETE VAULTED TOILET
 SITE WORK & SITE PLAN

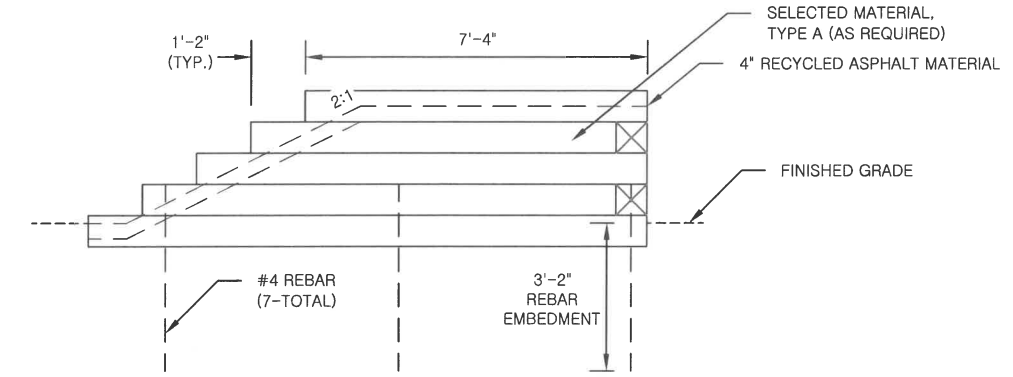


PREPARED: BCC
 DRAWN: BCC
 REVIEWED: KRW
 DATE: APRIL 2024

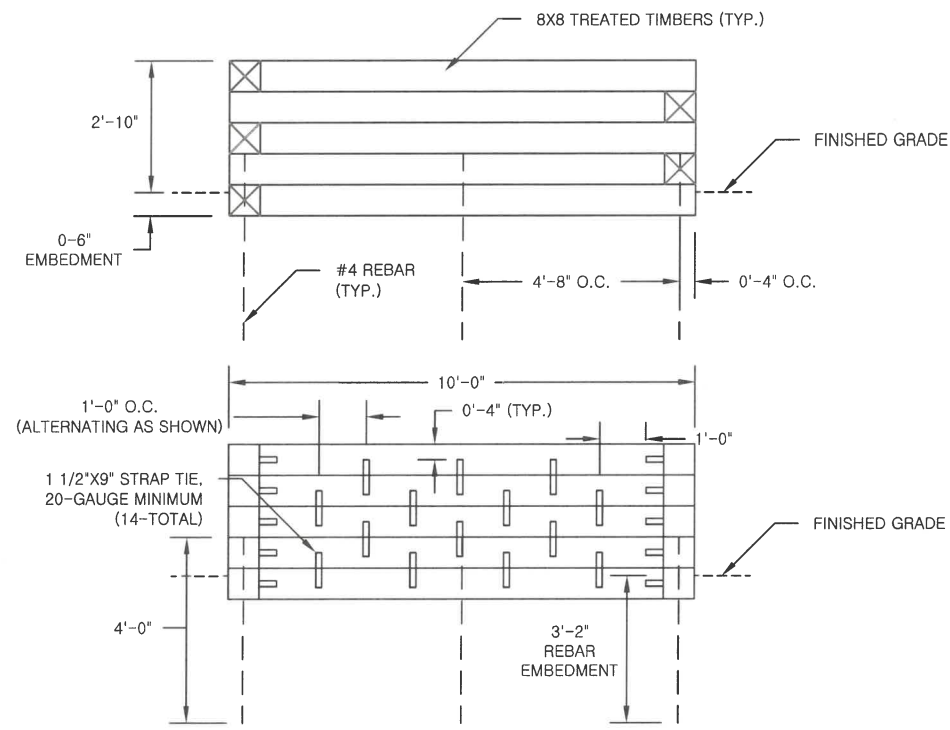
SHEET
 8
 OF 9 SHEETS



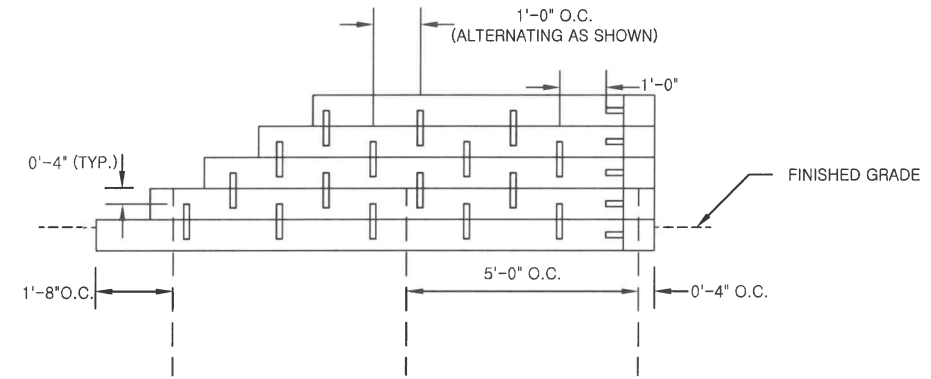
1
9
ATV LOADING RAMP
PLAN VIEW



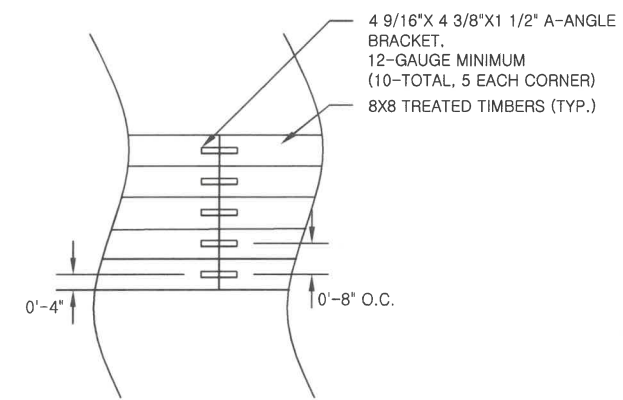
3
9
ATV LOADING RAMP
PROFILE VIEW



2
9
ATV LOADING RAMP
SECTION VIEW



3
9
ATV LOADING RAMP
PROFILE VIEW



4
9
ATV LOADING RAMP
INTERIOR CORNER DETAIL



STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES
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BIRD CREEK VALLEY
 TRAILHEAD IMPROVEMENTS
 PROJECT NO. 73302-1

ATV LOADING RAMP DETAILS



PREPARED: BCC
 DRAWN: BCC
 REVIEWED: KRW
 DATE: APRIL 2024

SHEET

9

OF 9 SHEETS



PREPARED: GLD

DRAWN: BD PN

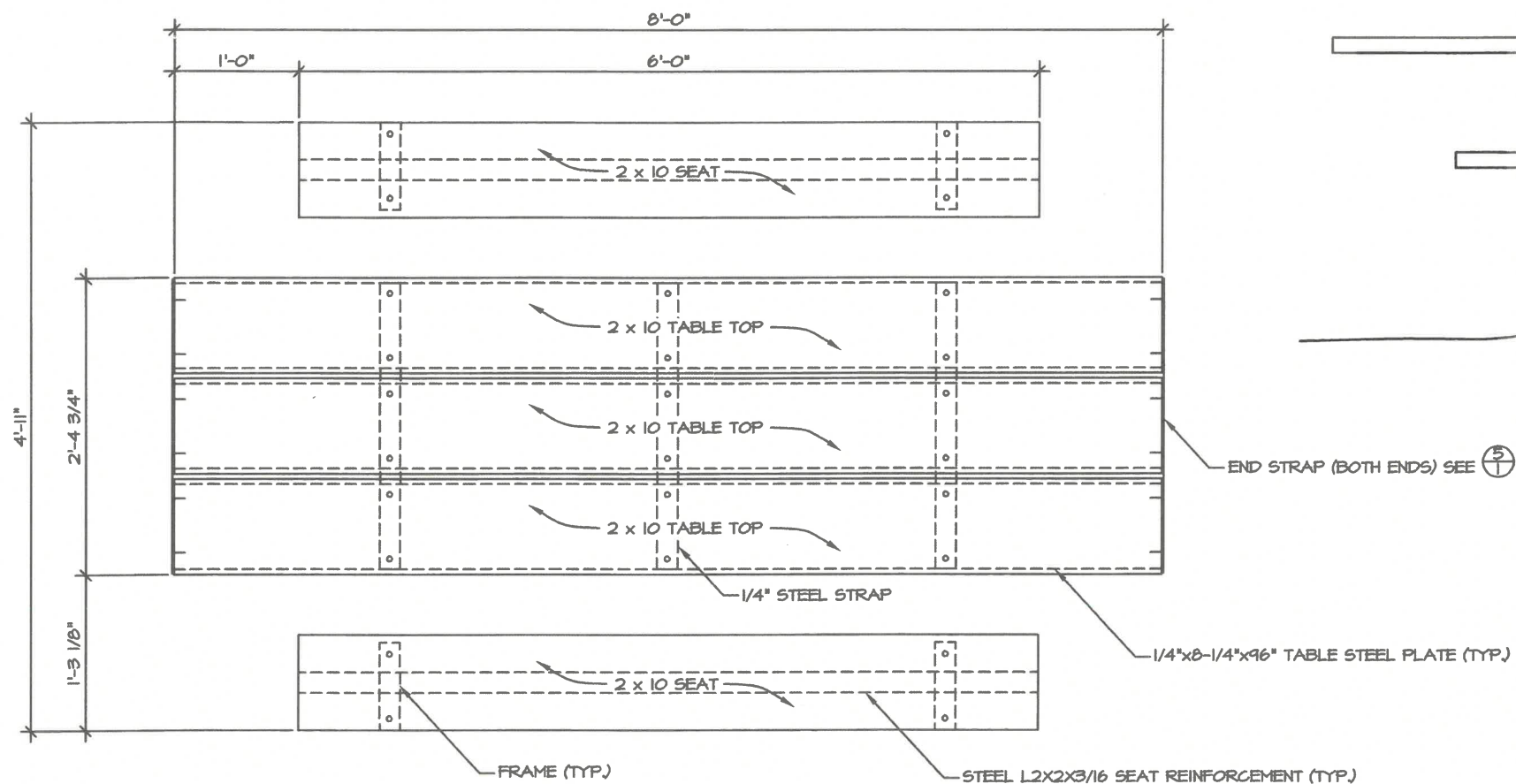
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DATE: JAN. 03

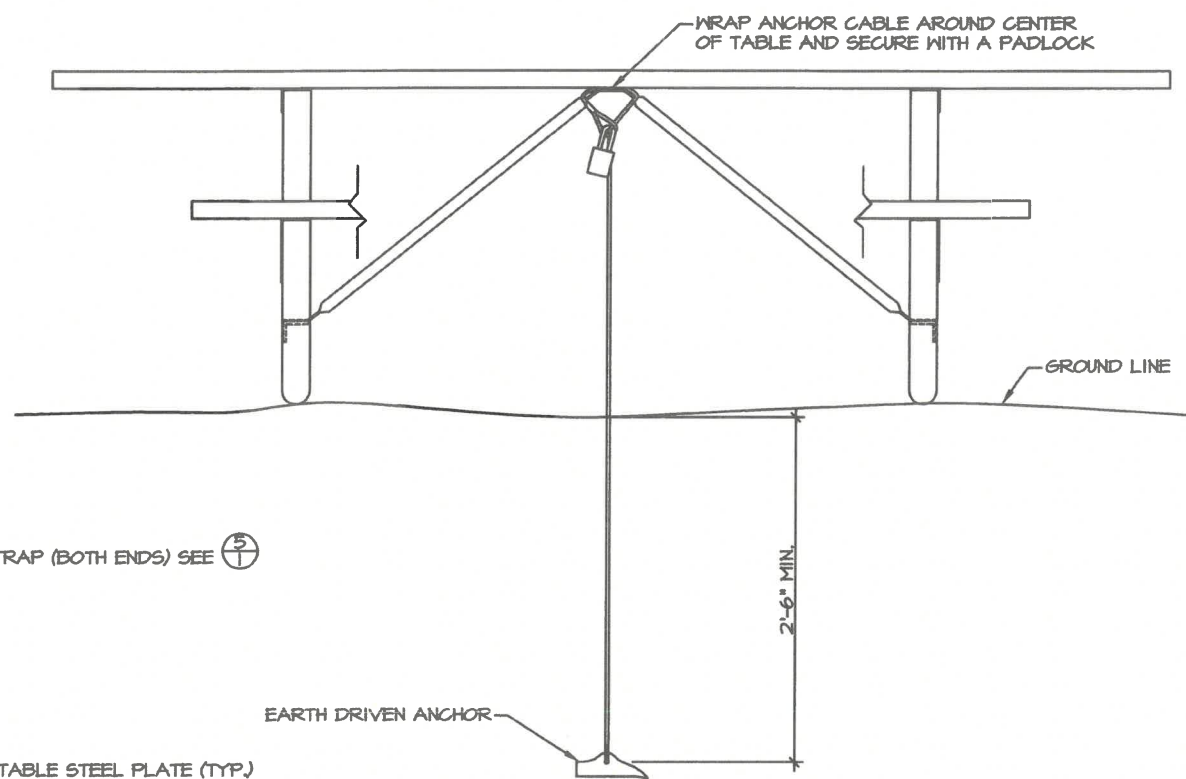
SHEET 1

C-1

OF 1 SHEETS

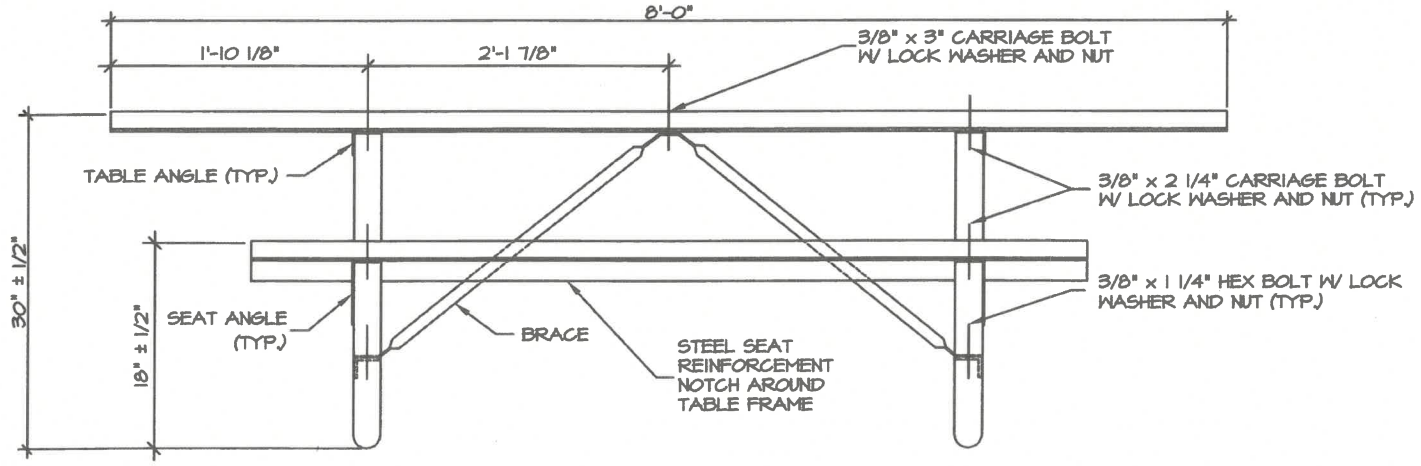


① TOP VIEW

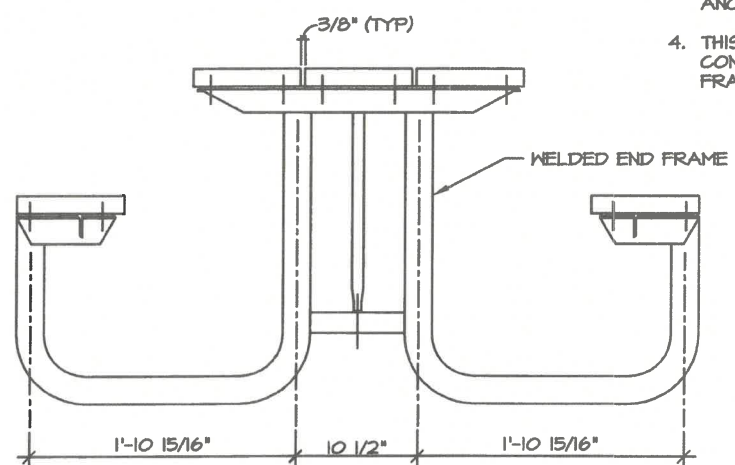


② ANCHOR DETAIL

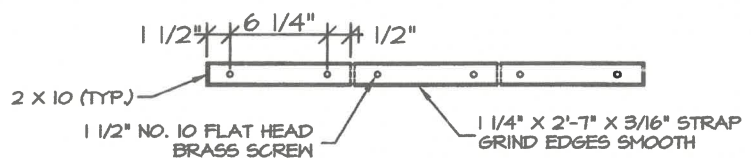
- NOTES:
- SEATS & TOP SHALL RECYCLED PLASTIC LUMBER.
 - BOLT HOLES FOR TABLE TOP, SEATS, & STEEL PLATES TO BE SHOP DRILLED.
 - SWAGED SLEEVED SHALL BE USED TO FASTEN ANCHOR CABLE.
 - THIS DRAWING ILLUSTRATES SEAT & TABLE TOP CONSTRUCTION. REFER TO SPECIAL PROVISIONS FRAME STYLES & MODELS.



③ SIDE VIEW



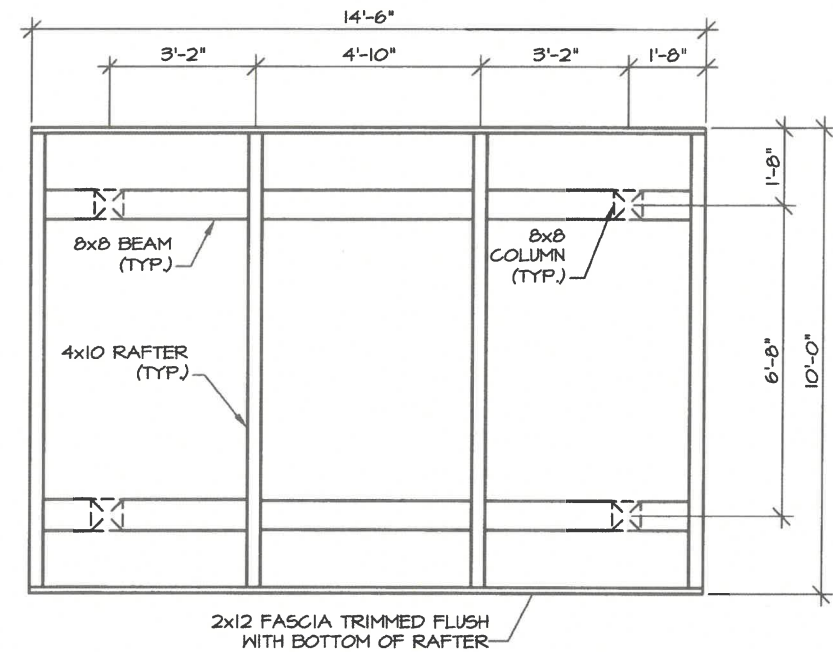
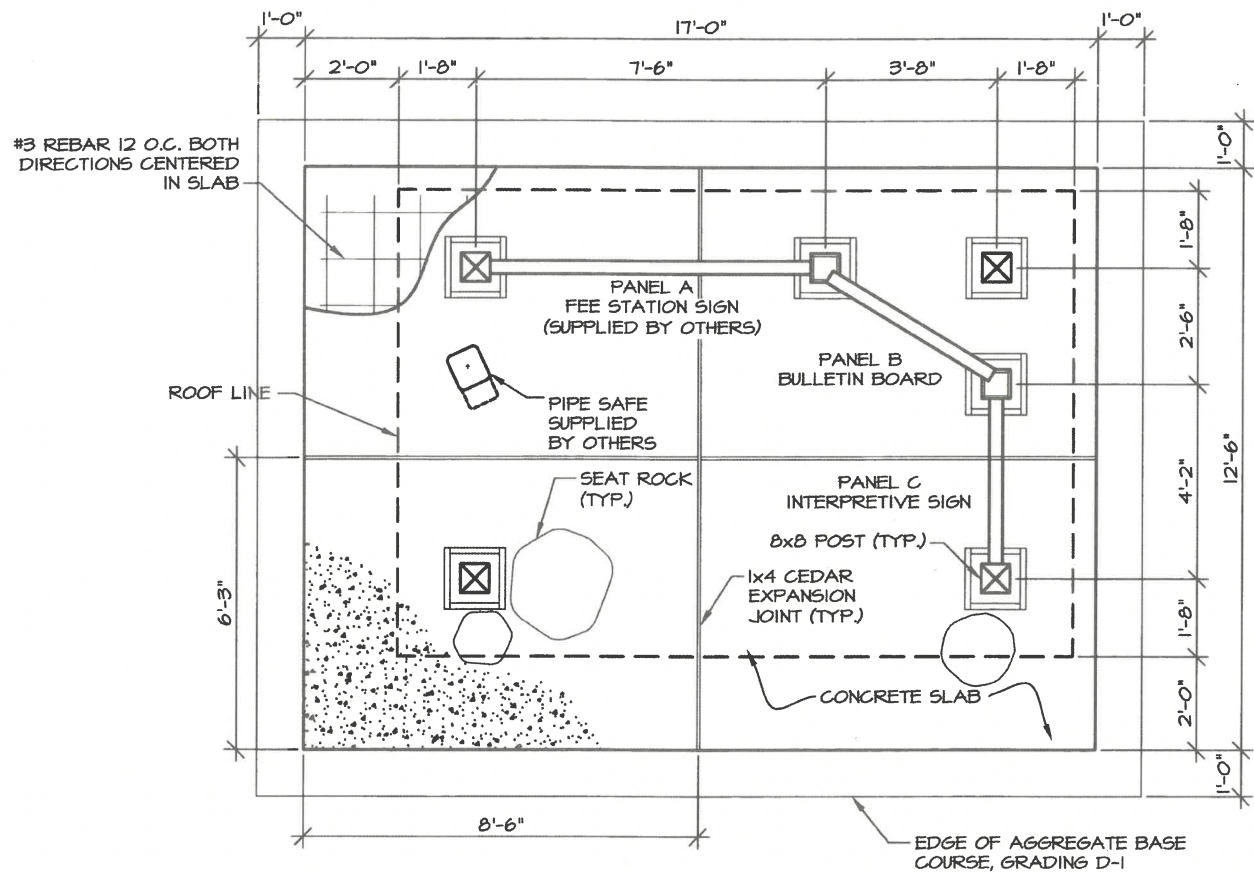
④ END VIEW



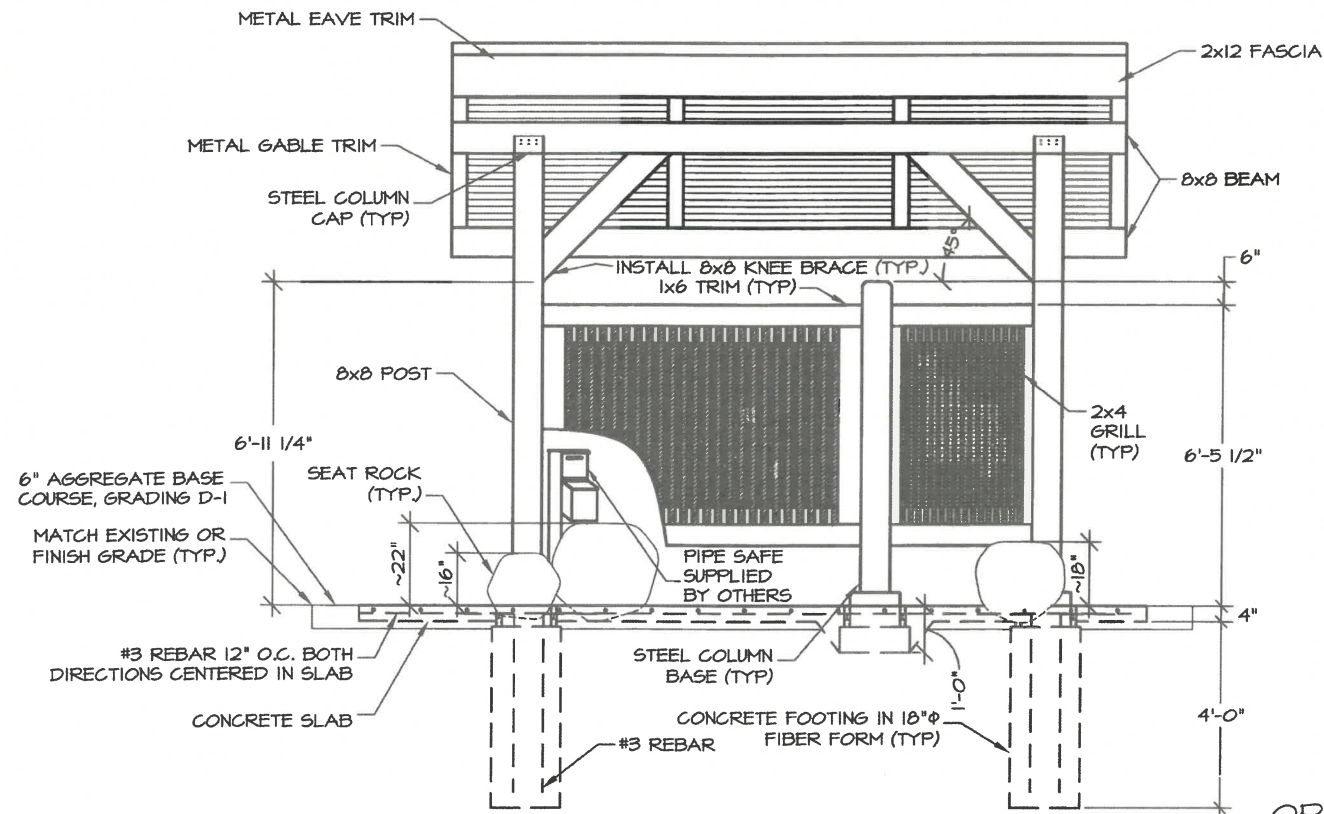
⑤ END STRAP

NO.	REVISION	DATE	APPROVED
21	REPLACED STAMP	12/13	RBM
20	CHANGED "STATE PARKS" LOGO	04/10	MPS
19	CHANGED ANCHOR TO EARTH DRIVEN ANCHOR	04/10	MPS
18	ADDED EARTH ANCHOR AS AN ANCHOR OPTION	06/09	MPS
17	CHANGED TABLE TOP & SEAT MATERIAL	06/09	MPS
16	ADDED STEEL REINFORCING PLATE & ANGLE IRON	06/09	MPS
15	CHANGED TITLE BLOCK	12/07	MPS
14	CHANGED TABLE TOP AND SEAT MATERIAL	10/05	MPS
13	MODIFIED FRAME SIZE	10/05	MPS
12	REPLACED STAMP	3/04	MPS

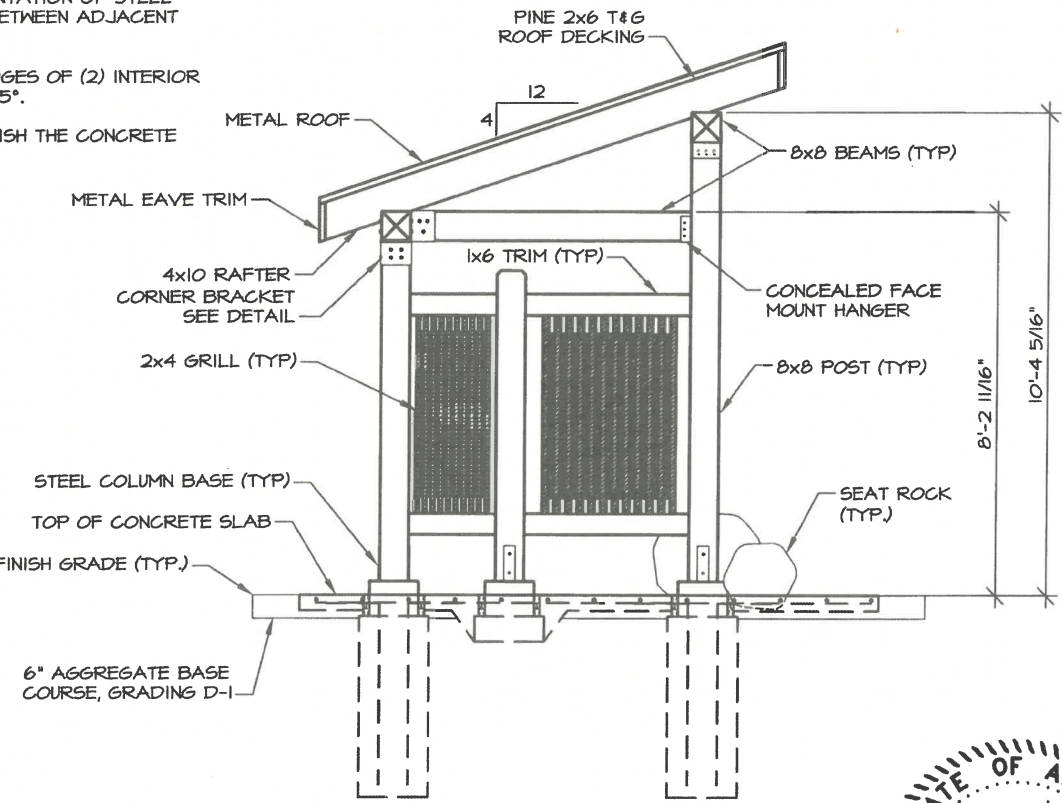




- NOTES:
1. ALTERNATE ORIENTATION OF STEEL COLUMN BASES BETWEEN ADJACENT 8x8 POSTS.
 2. CHAMFER TOP EDGES OF (2) INTERIOR 8x8 POSTS 1" @ 45°.
 3. LIGHT BROOM FINISH THE CONCRETE SLAB.



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



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

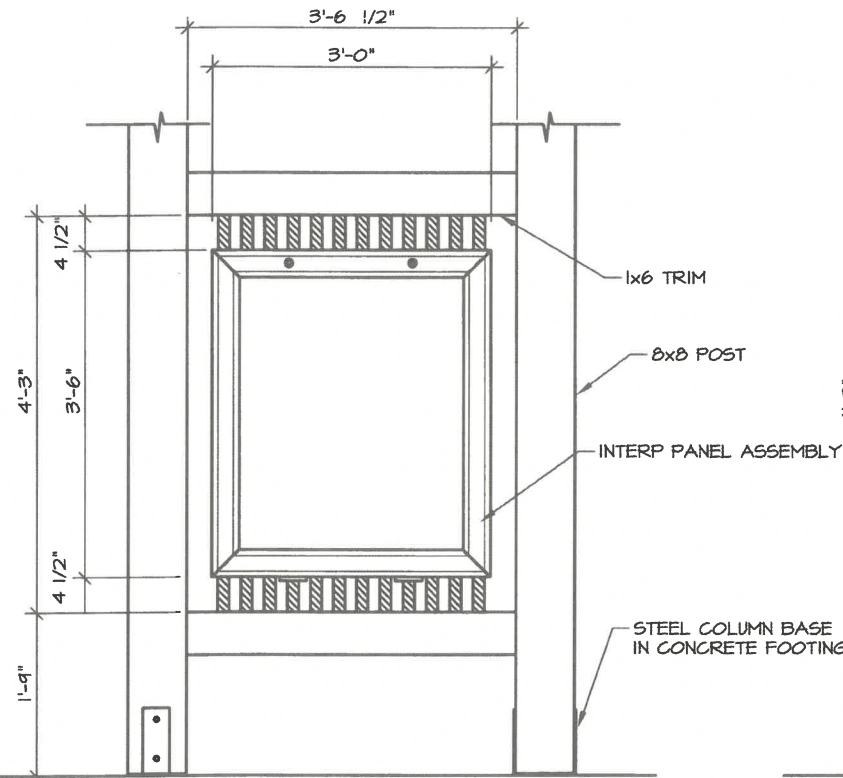
SHEET 1
S-10D
OF 3 SHEETS



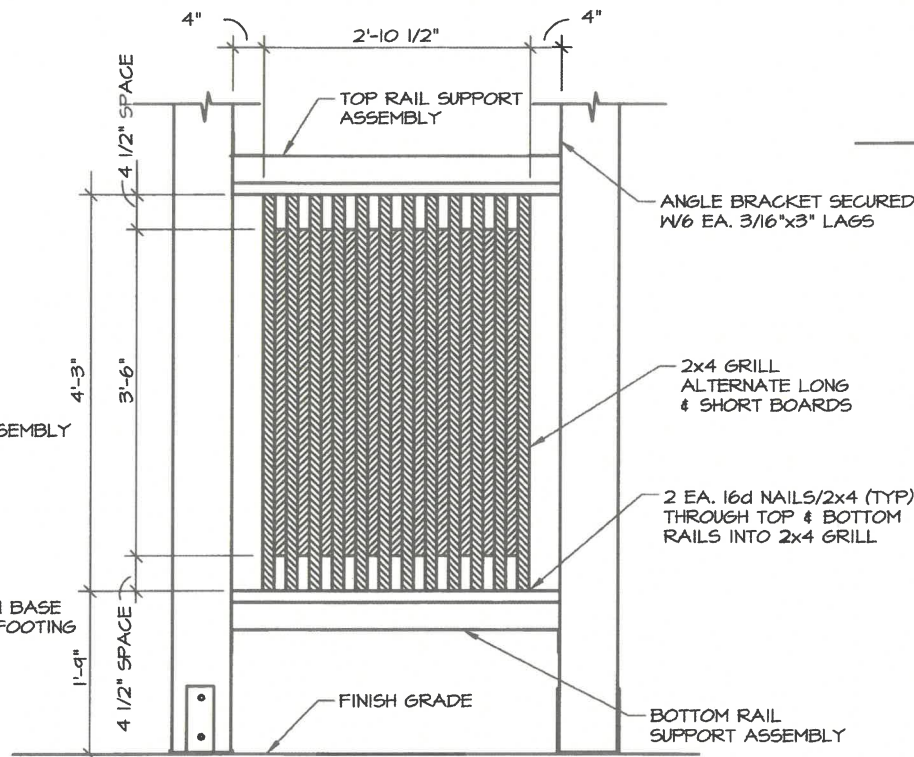
PREPARED: RBM/JAS
 DRAWN: AT/RBM/JAS
 REVIEWED: MFS
 DATE: JAN 2004

SHEET 2

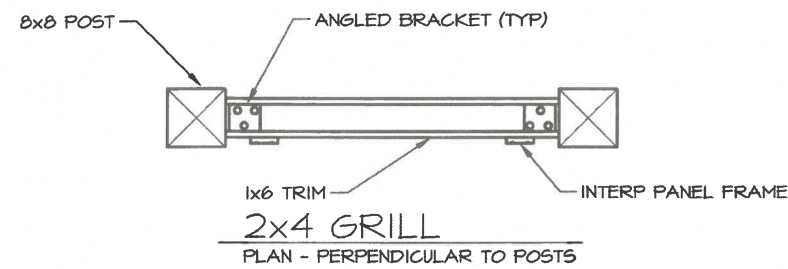
S-10D
 OF 3 SHEETS



2x4 GRILL W/ INTERP PANEL
 DETAILS

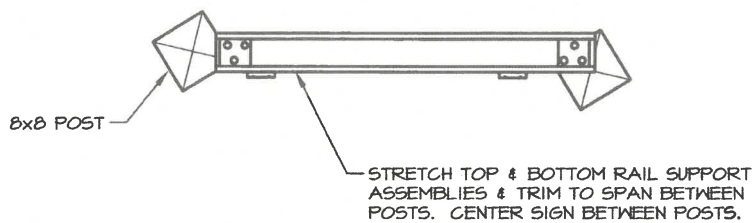


2x4 GRILL
 DETAILS - INTERP PANEL &
 1x6 TRIM NOT SHOWN

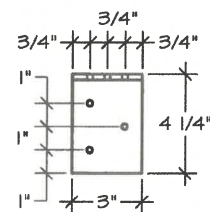


2x4 GRILL
 PLAN - PERPENDICULAR TO POSTS

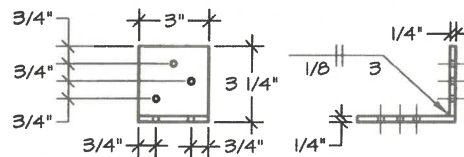
- NOTES:
 1. NOTCH POSTS TO FIT ANGLE BRACKETS & TOP/BOTTOM SUPPORT RAILS.
 2. DO NOT NOTCH POSTS FULL LENGTH OF 2x4 GRILL.



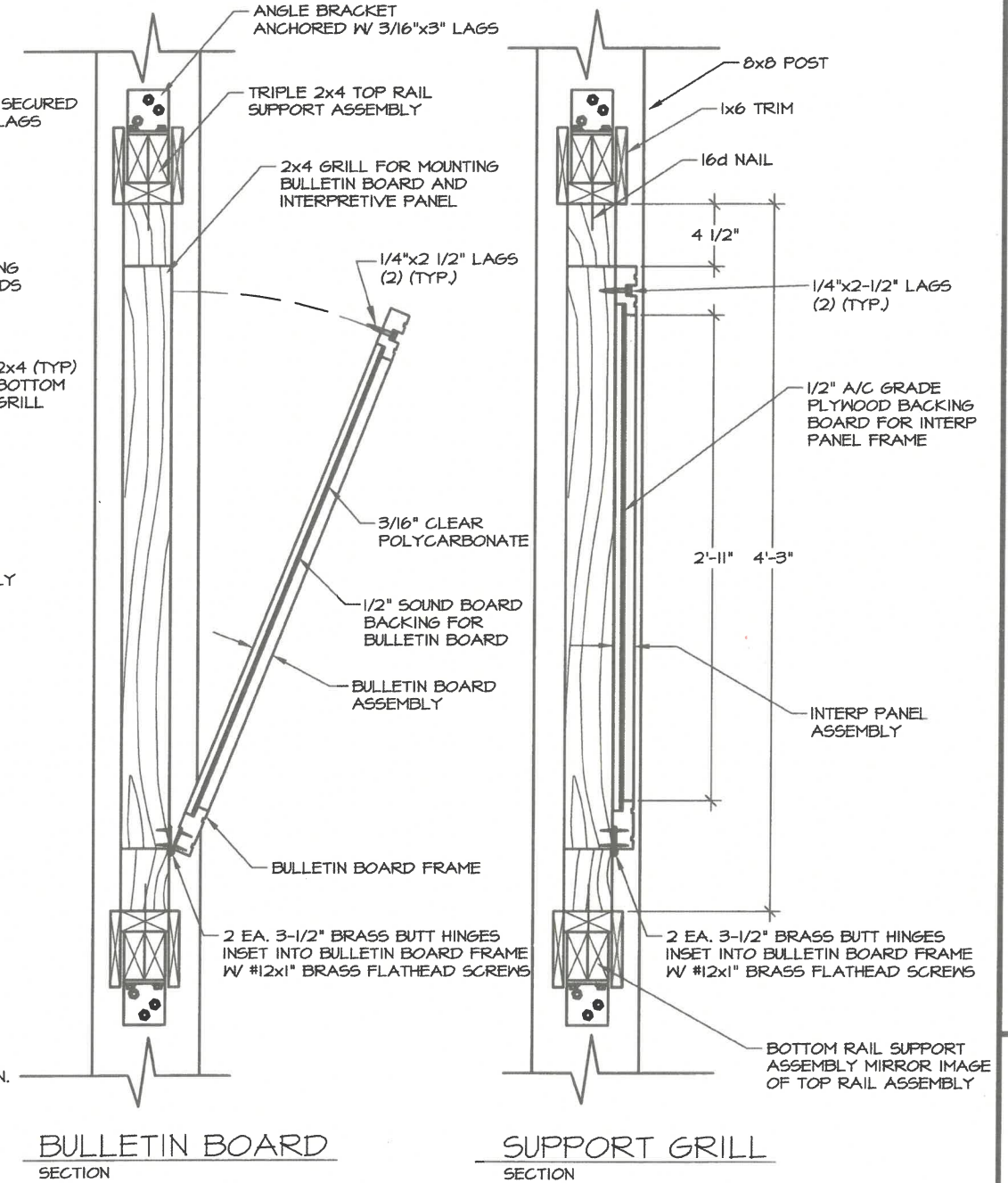
2x4 GRILL
 PLAN - ANGLED TO POSTS



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



ANGLE BRACKET
 DETAILS



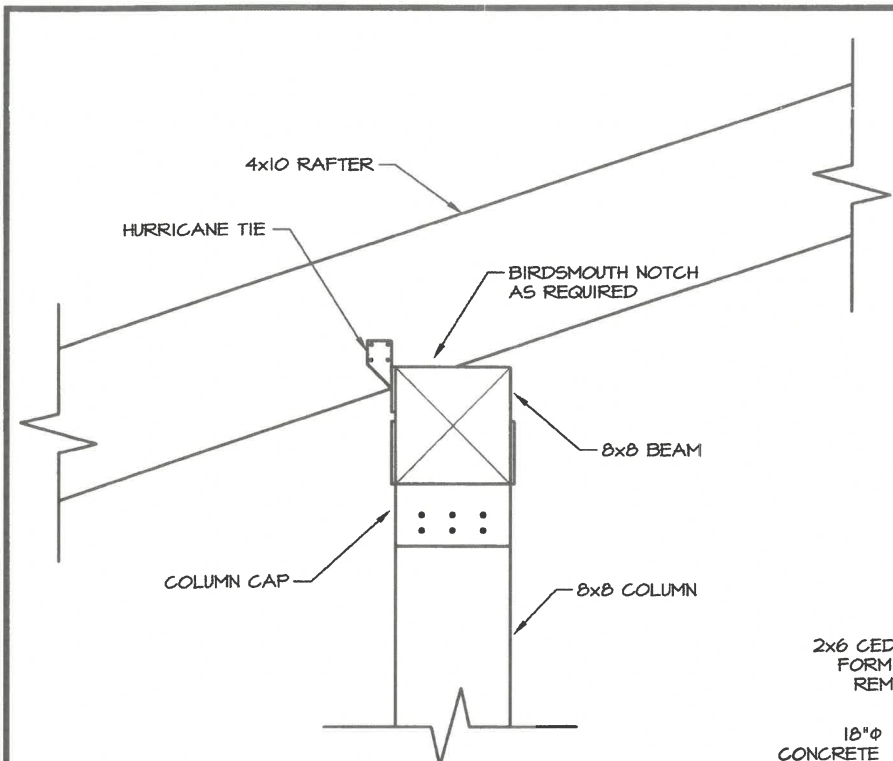
BULLETIN BOARD
 SECTION

SUPPORT GRILL
 SECTION

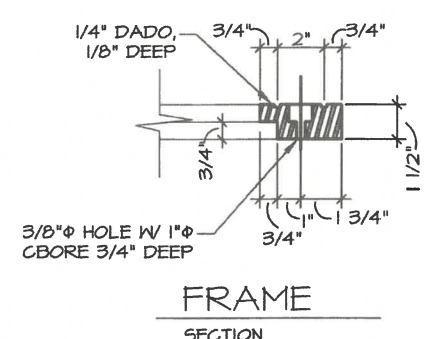
- NOTES:
 1. INTERPRETIVE PANEL ASSEMBLY CONSISTS OF INTERPRETIVE GRAPHIC BACKING BOARD AND INTERP PANEL FRAME.
 2. INTERPRETIVE GRAPHIC PANEL SUPPLIED BY OTHERS MEASURES 3'-0 1/2"x2'-6 1/2"x1/8". THE CONTRACTOR SHALL MAKE ACCOMMODATIONS FOR THIS GRAPHIC IN MEASUREMENTS AND CONSTRUCTION.

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

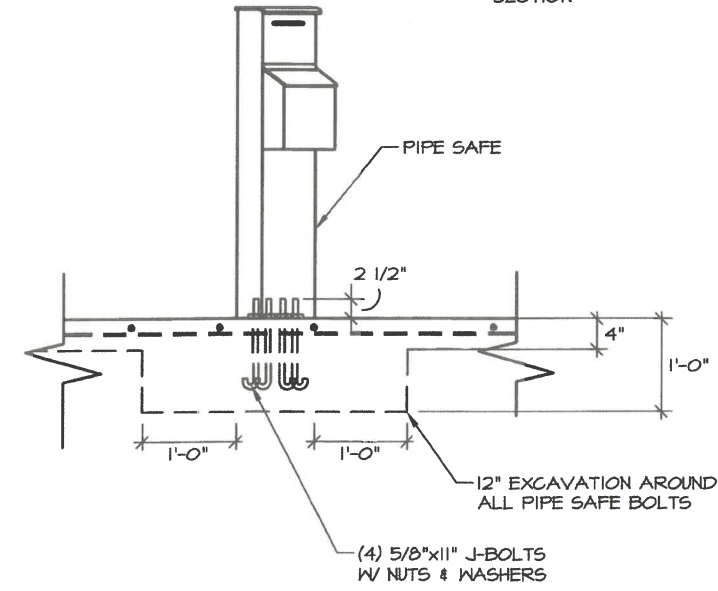




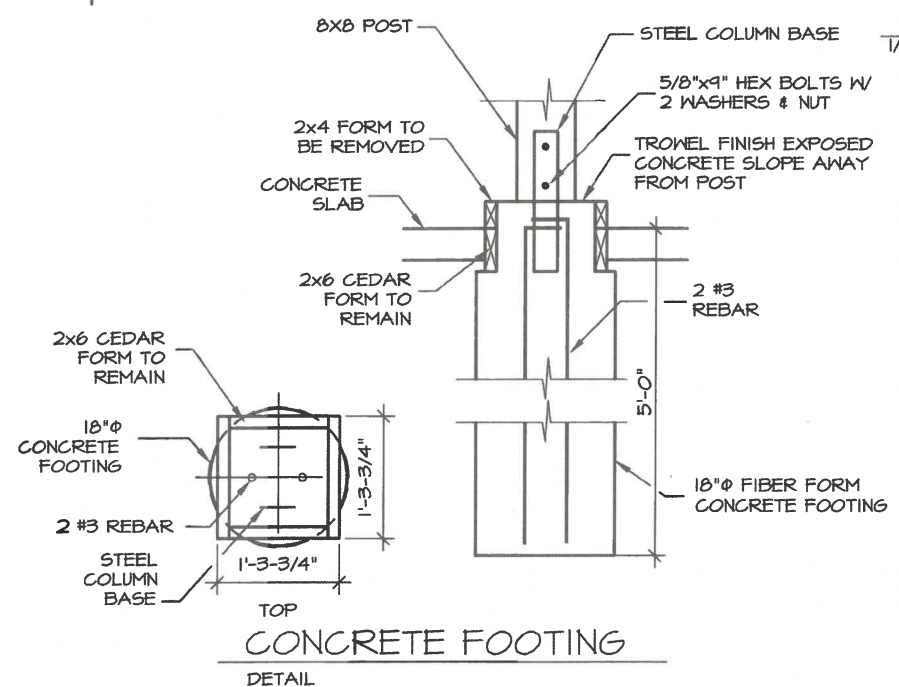
BEAM/RAFTER CONNECTION
 DETAILS - 2x6 T&G DECKING & METAL ROOF NOT SHOWN



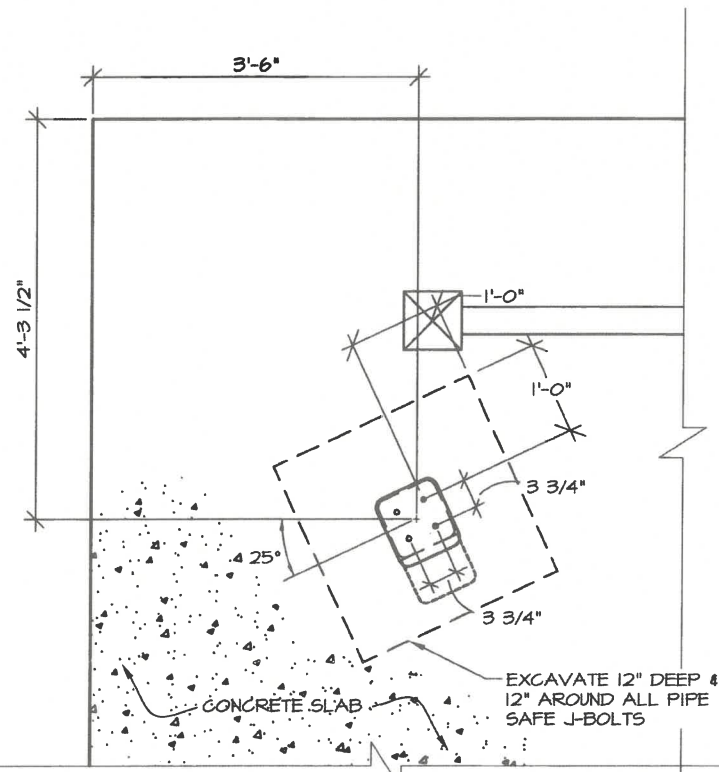
FRAME SECTION



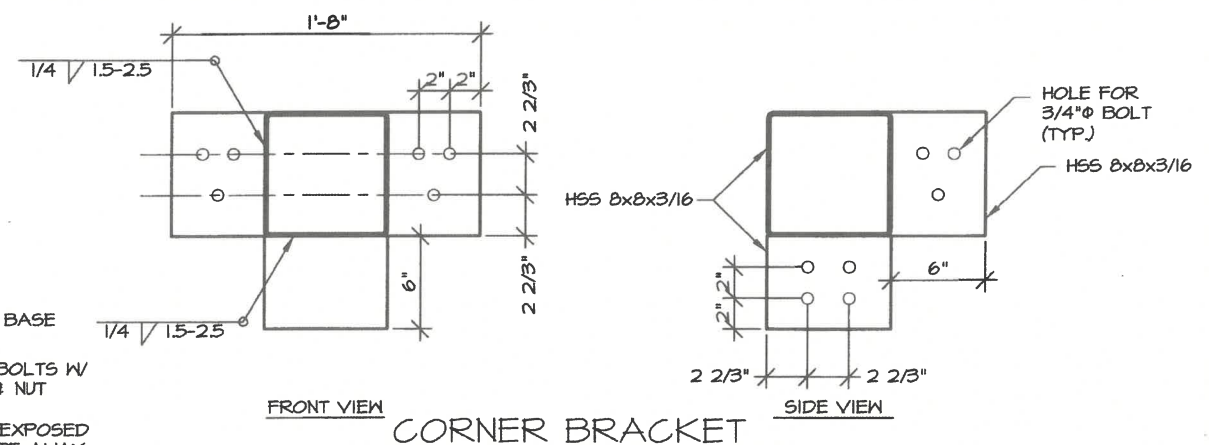
PIPE SAFE DETAILS



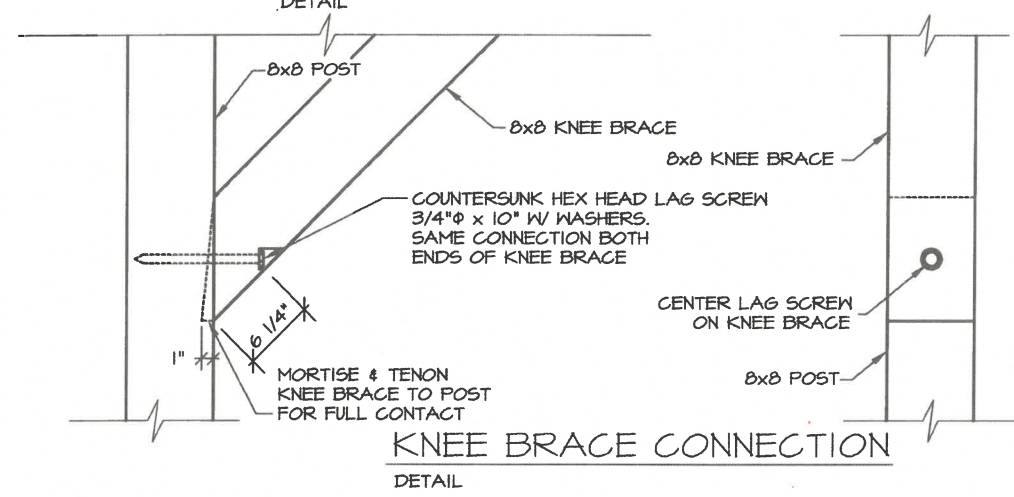
CONCRETE FOOTING
 TOP DETAIL



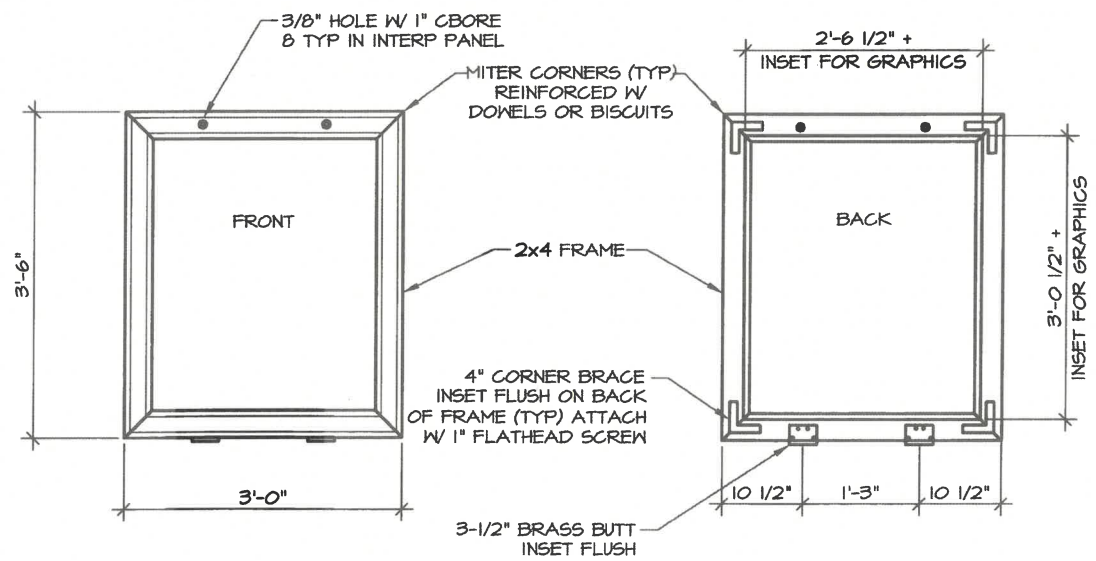
PIPE SAFE BOLT PATTERN
 DETAILS



CORNER BRACKET
 FRONT VIEW DETAIL



KNEE BRACE CONNECTION
 DETAIL



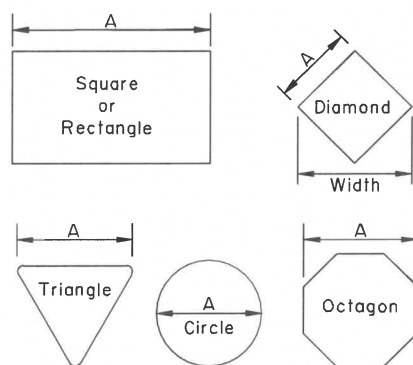
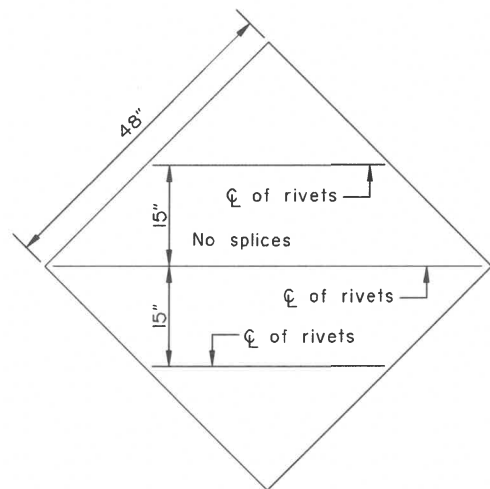
INTERPANEL/BULLETIN BOARD FRAME
 DETAILS

NO.	REVISION	DATE	APPROVED
7	REPLACED STAMP	12/13	RBM
6	INCREASED THE SIZE OF THE J-BOLTS	12/10	MPS
5	ADDED CONCRETE 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



GENERAL NOTES

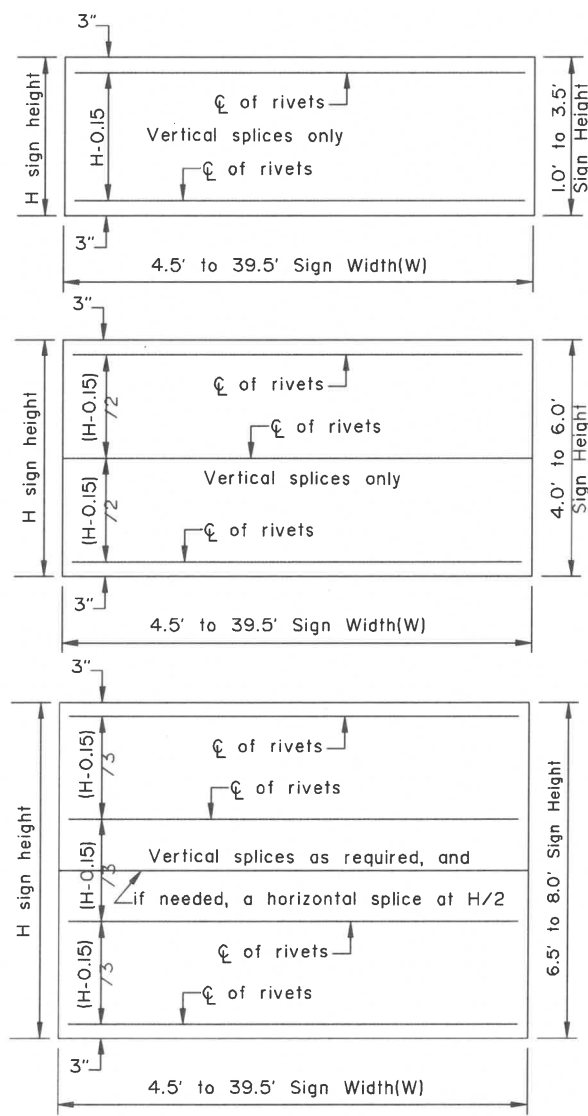
1. See the standard specifications for the aluminum alloys that you may use for sign sheeting and wind framing members.
2. Fabricate all signs from 0.125" thick aluminum sheeting.
3. Sign fabricators may use alternates to the zee shaped framing member with approval of the engineer, if the frame manufacturer 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.



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"

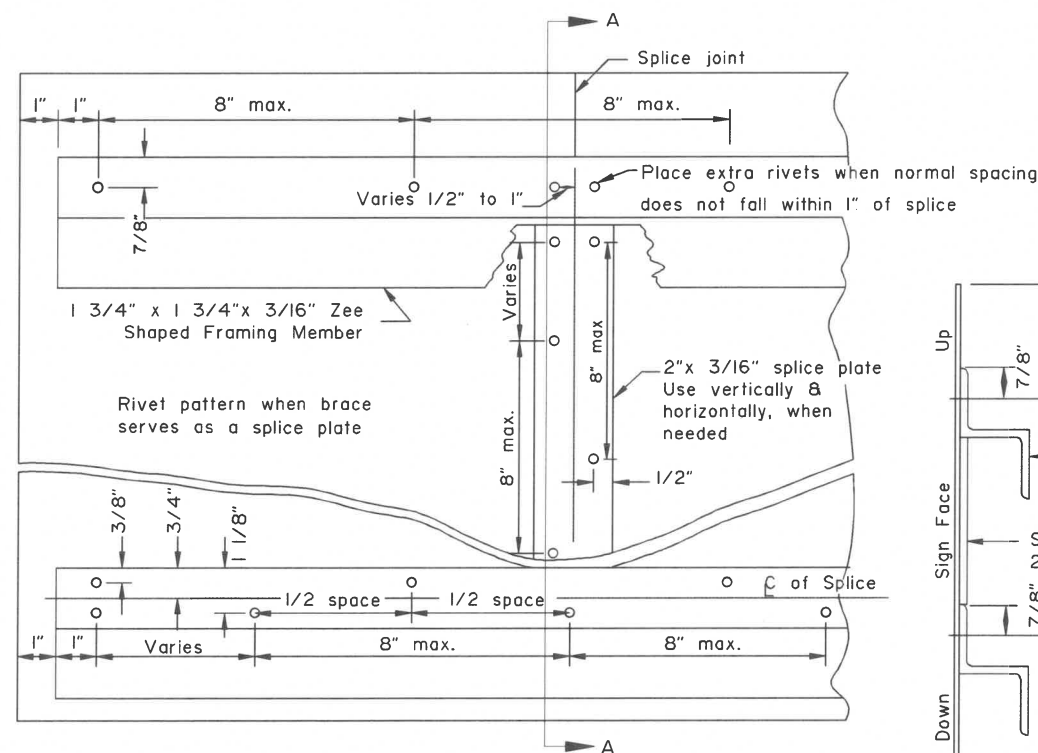
Install wind framing on all signs that exceed the dimensions listed.

LIGHT SIGNS

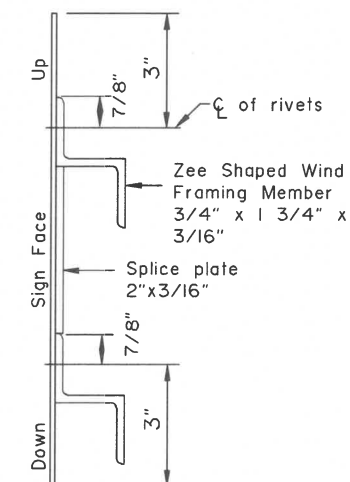


WIND FRAMING LOCATIONS

Note: Drawing not to scale



RIVET DETAIL FOR ZEE SHAPED WIND FRAMING & SPLICE PLATE



SECTION A-A

State of Alaska DOT&PF
ALASKA STANDARD PLAN

SIGN FRAMING

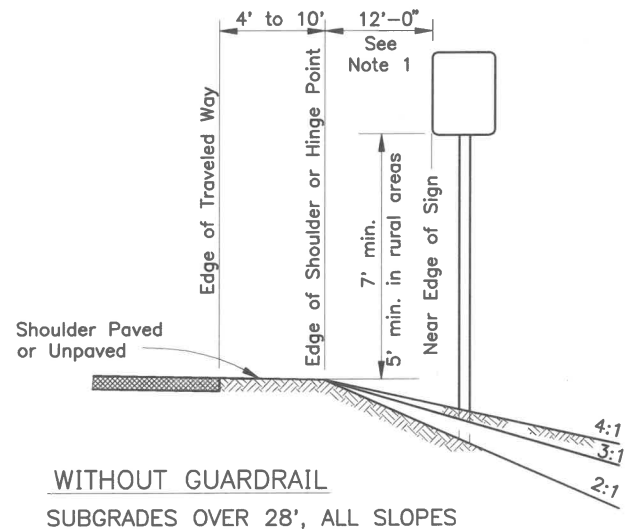
Adopted as an Alaska Standard Plan by: *Carolyn Morehouse*

Carolyn Morehouse, P.E.
Chief Engineer

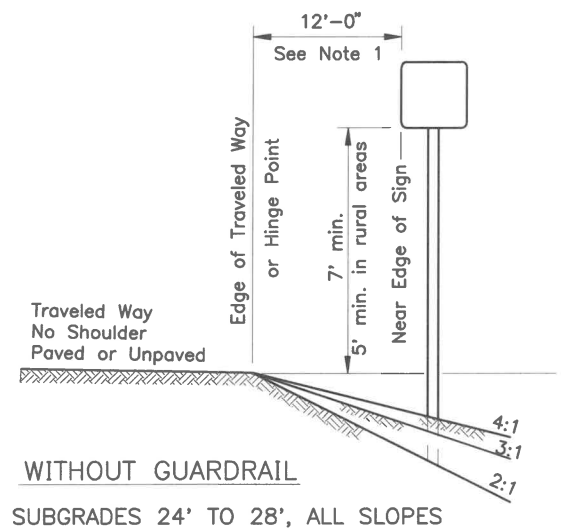
Adoption Date: 7/17/2020

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

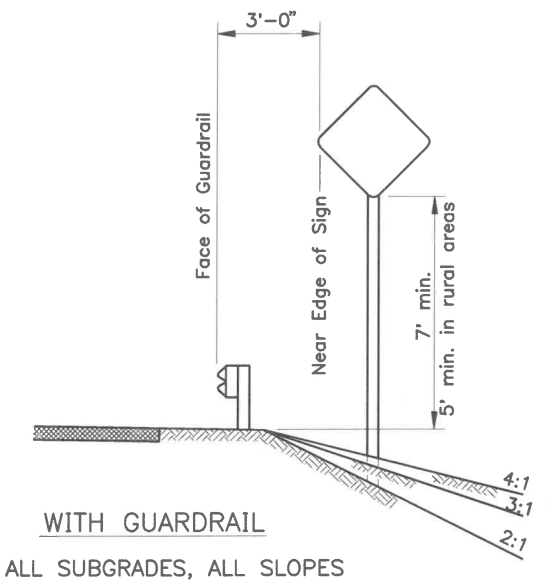
Next Code and Standards Review date: 7/8/2030



WITHOUT GUARDRAIL
SUBGRADES OVER 28', ALL SLOPES



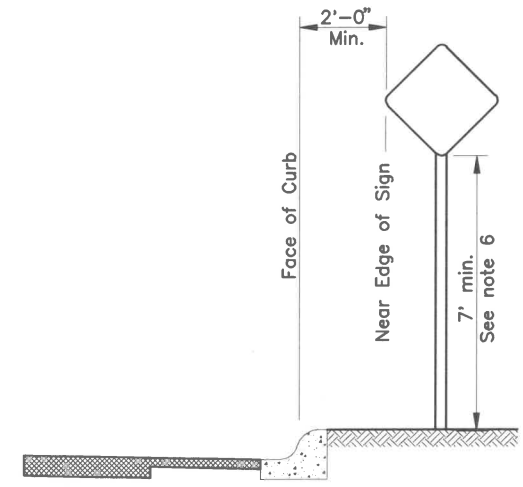
WITHOUT GUARDRAIL
SUBGRADES 24' TO 28', ALL SLOPES



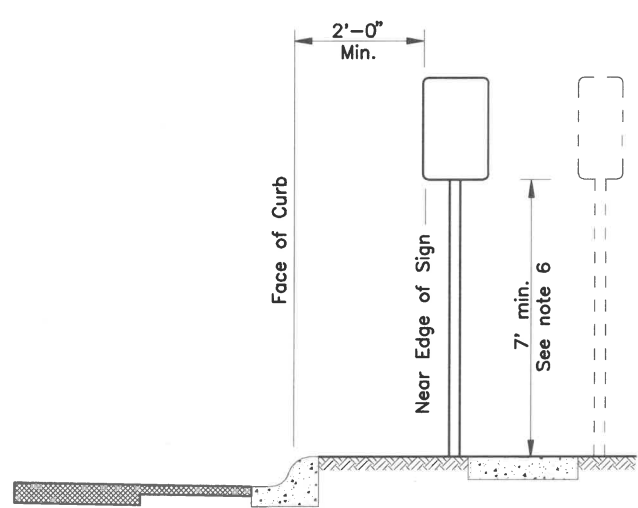
WITH GUARDRAIL
ALL SUBGRADES, ALL SLOPES

GENERAL NOTES

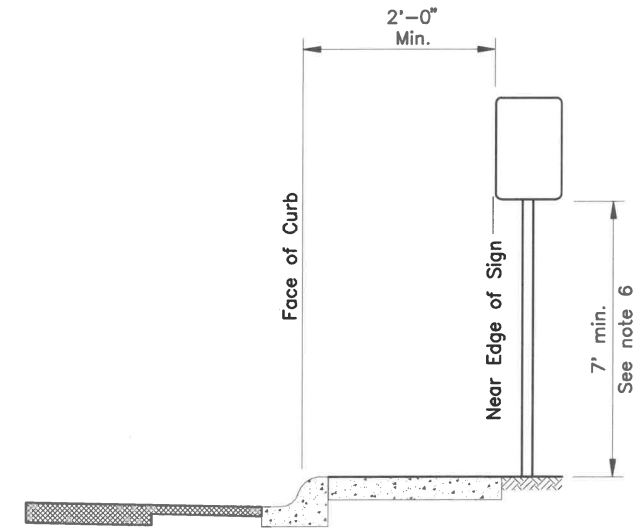
1. Unless shown otherwise on the plans, the standard sign offset is 12'. The minimum is 6' where shoulder width is 6' or greater.
2. Add 6" to mounting height on unpaved roads.
3. If signs extend over bike paths, the minimum vertical clearance is 8' 0".
4. When signs are placed 30' or more from the edge 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 signs extend over sidewalks.
7. For construction signs in rural areas, mounting height shall be 7' minimum.



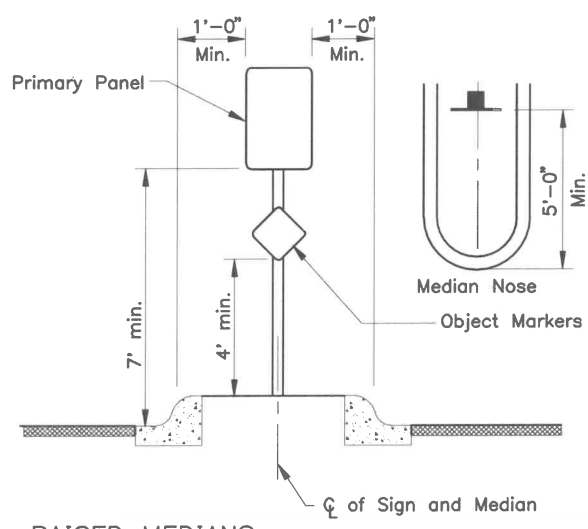
CURB WITHOUT SIDEWALK



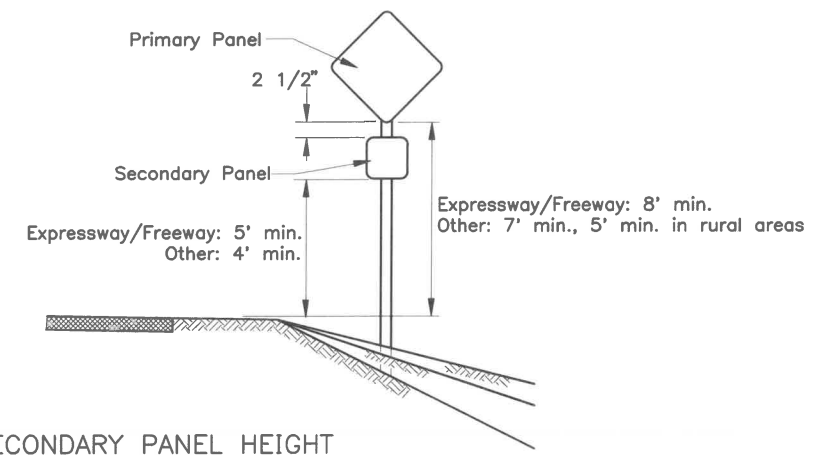
CURB WITH PARKWAY AND SIDEWALK
(If R/W width permits, signs should be placed behind sidewalk.)



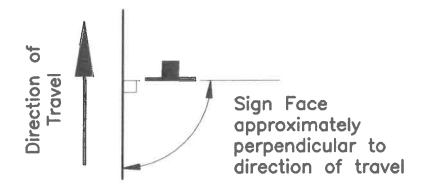
CURB WITH SIDEWALK WITHOUT PARKWAY



RAISED MEDIANS
Minimum 4' Width for Signing



SECONDARY PANEL HEIGHT
ALL TWO PANEL MOUNTING



SIGN POSITIONING

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

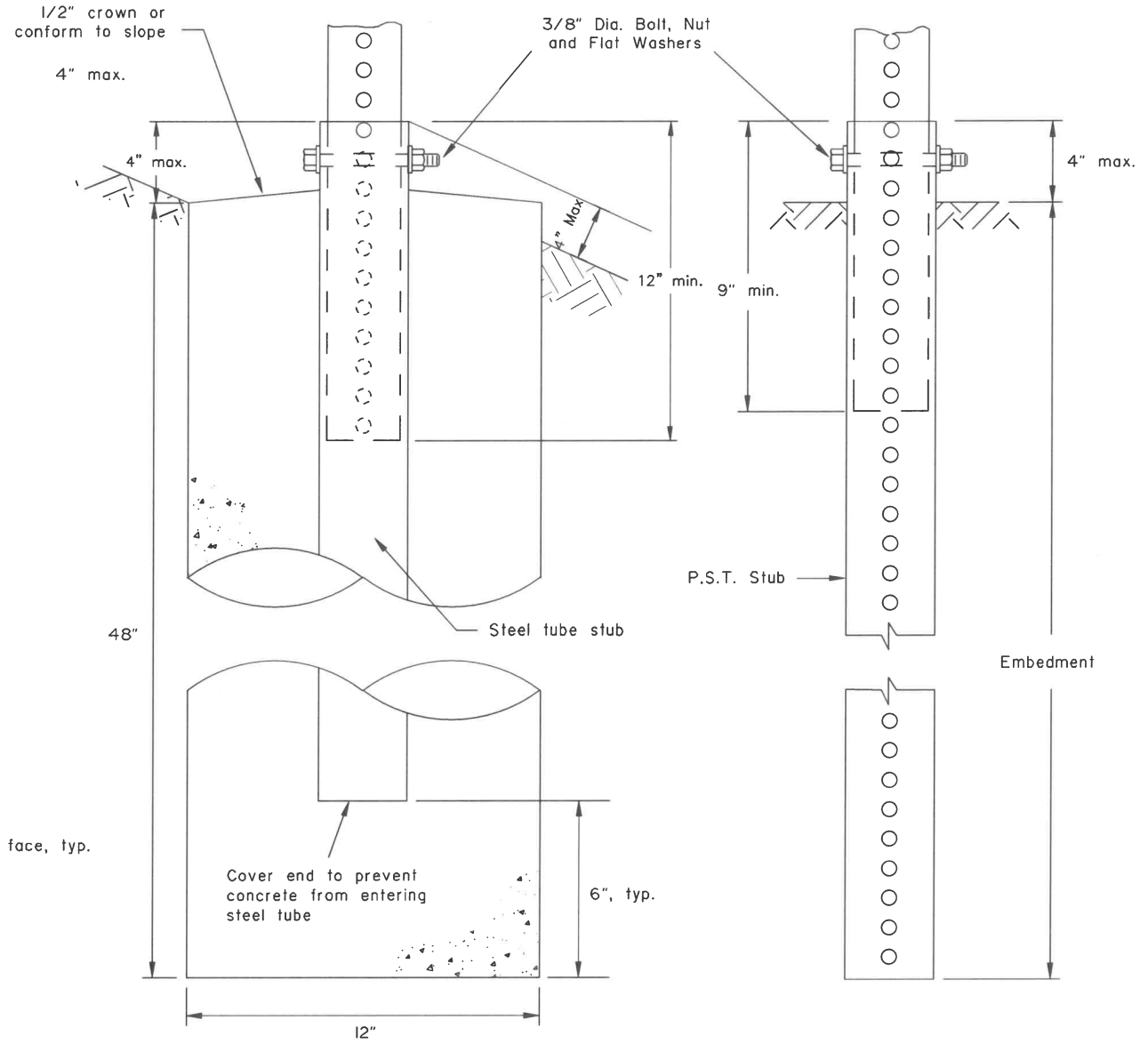
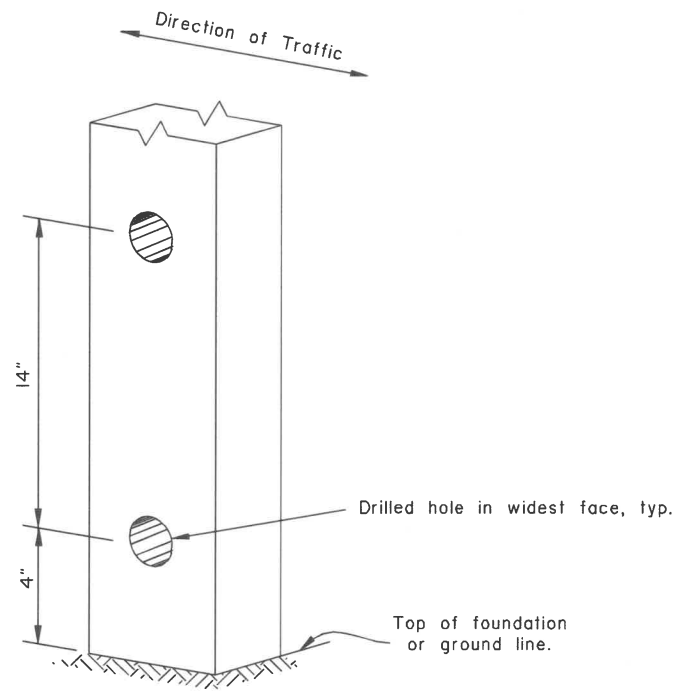
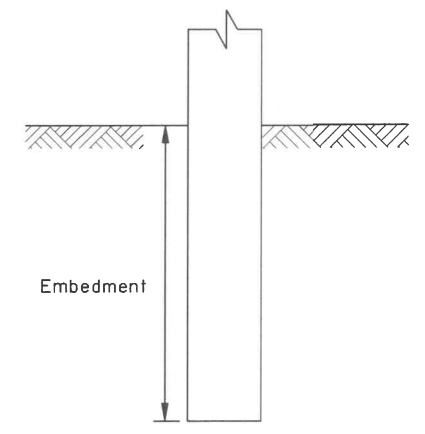
Next Code and Standards Review Date: 7/8/2030

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.



SLEEVE TYPE
CONCRETE FOUNDATION

SLEEVE TYPE*
SOIL EMBEDMENT

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

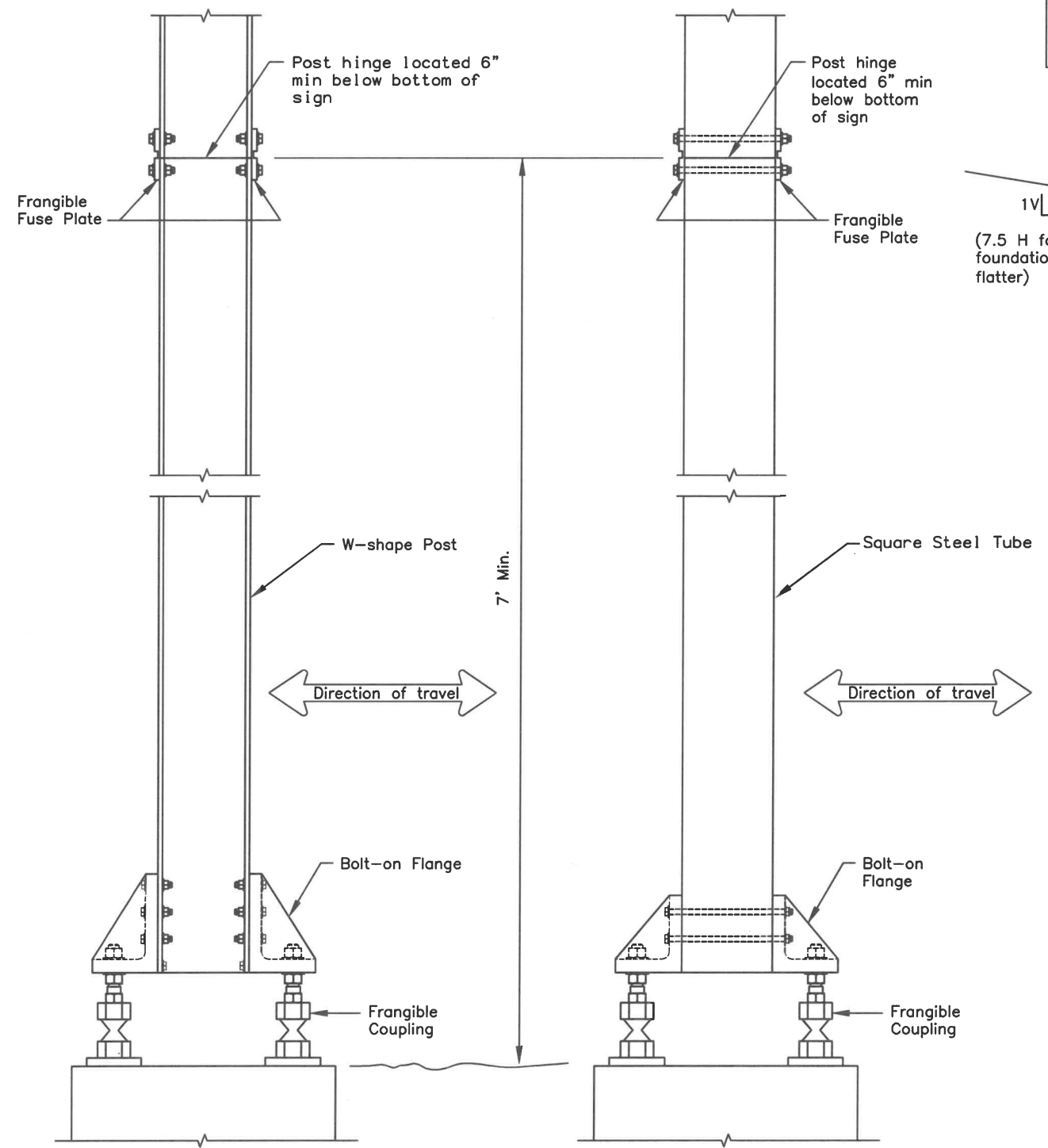
State of Alaska DOT&PF
ALASKA STANDARD PLAN
LIGHT SIGN STRUCTURE
POST EMBEDMENT

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

Adaption Date: 7/17/2020

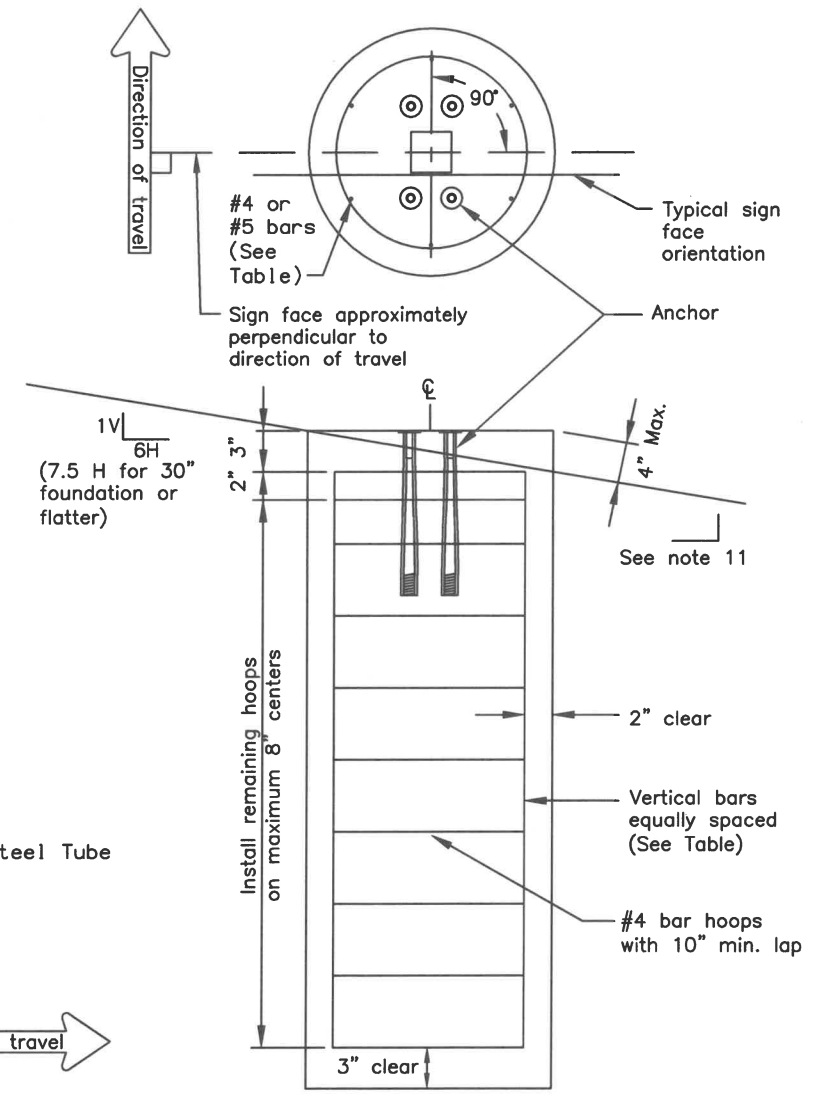
Last Code and Stds. Review
By: WTH Date: 7/8/2020
Next Code and Standards Review date: 7/8/2030

NOTE:
Install hinges when more than one post is used to support a sign. Do not install hinges on single post installations.



FRANGIBLE COUPLING SYSTEM FOR W-SHAPE POST

FRANGIBLE COUPLING SYSTEM FOR SQUARE STEEL TUBES



SIGN POST FOUNDATION
See Table for depth and diameter

POST SIZE & TYPE	FOUNDATION *			REINFORCEMENT			
	DIA.	MIN. DEPTH	Cy ³ CONC.	VERTICAL BARS QTY./SIZE	LGTH.	HOOPS QTY./SIZE	DIA.
2 1/2" TUBE	1'-6"	6'-0"	0.39	7 #5	5'-6"	10 #4	1'-2"
3" TUBE	1'-6"	6'-0"	0.39	7 #5	5'-6"	10 #4	1'-2"
3 1/2" TUBE	1'-6"	6'-0"	0.39	7 #5	5'-6"	10 #4	1'-2"
4" TUBE	2'-6"	6'-0"	1.09	8 #8	5'-6"	10 #4	2'-2"
4 1/2" TUBE	2'-6"	6'-0"	1.09	8 #8	5'-6"	10 #4	2'-2"
5" TUBE	2'-6"	6'-0"	1.09	8 #8	5'-6"	10 #4	2'-2"
W6 x 9	2'-6"	6'-0"	1.09	8 #8	5'-6"	10 #4	2'-2"
W6 x 12	2'-6"	6'-0"	1.09	8 #8	5'-6"	10 #4	2'-2"
W6 x 15	3'-0"	6'-6"	1.70	8 #11	6'-0"	12 #4	2'-8"
W6 x 30	3'-0"	7'-6"	1.96	8 #11	7'-0"	13 #4	2'-8"

FOUNDATION TABLE

* Foundations sized for use where there are no loose, high moisture, or fine grained soils.

GENERAL NOTES

1. Furnish sign posts with NCHRP 350 compliant frangible couplings designed to break away safely when struck from any direction. There is no MASH compliant device at this time. See SPDR report for more info.
2. Furnish frangible coupling systems with bolt-on flanges.
3. Details on this sheet illustrate only the general components of a frangible coupling system, and are not intended to specify a particular product.
4. Install frangible fuse plates as specified by the manufacturer and hinged joints when multiple posts are used to support a sign. Do not use round pipes.
5. Install the components of the breakaway system, including hinges, in accordance with the written instructions of the system manufacturer.
6. Use Class A, B or W concrete conforming to Sections 501 or 550 of the Standard Specifications. Furnish ASTM A615 grade 60 steel bars for concrete reinforcement conforming to AASHTO M31.
7. Spiral reinforcing steel may be substituted for hoops in concrete foundation. Spiral option shall consist of #3 plain spiral with 6" pitch with three flat turns at the top and one flat turn at the bottom.
8. Install the concrete anchors using a rigid template. Locate the anchors on centers and within tolerances specified by the manufacturer.
9. Install the anchors in fresh concrete as recommended by the manufacturer. Adjust the template's final position until it is level. Remove and replace all foundations that need more than 2 shims under any 1 coupling or more than a total of 3 shims under any pair of couplings to plumb the post.
10. Drill the holes for attaching brackets before the sign posts are hot dip galvanized. Test fit templates in the holes to ensure the brackets can be installed square to the posts.
11. Special grading detail and/or shielding may be required to maintain 4" maximum clear distance.

State of Alaska DOT&PF
ALASKA STANDARD PLAN

SIGN POST BASE AND FOUNDATION

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, MJM Date: 7/8/2020

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