

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

CSP: RABBIT VALLEY
TRAILHEAD IMPROVEMENTS

PROJECT NO.
73103-2

VICINITY MAP

INDEX

- | | |
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| 1. TITLE SHEET | 7. GRADING PLAN & POINT TABLE |
| 2. VICINITY MAP | 8. TYPICAL SECTIONS |
| 3. ESTIMATE OF QUANTITIES, ABBREVIATIONS, LEGEND, &
TABLE OF ESTIMATING FACTORS | 9. TYPICAL SECTIONS |
| 4. EXISTING CONDITIONS | 10. SIGN PLAN |
| 5. SITE PLAN OVERVIEW | 11. MODULAR CONCRETE BLOCK DETAILS |
| 6. GRADING PLAN & POINT TABLE | 12. RETAINING WALL DETAILS |
| | 13. RETAINING WALL PROFILE & TYPICAL SECTION |

Plans developed by:
STATE OF ALASKA
Department of Natural Resources
Division of Parks & Outdoor Recreation
550 W 7th Ave. Suite 1340, Anchorage, AK 99501

Recommended:

[Signature]
Rys Miranda, P.E.
Chief, Design and Construction

8/7/2026
Date

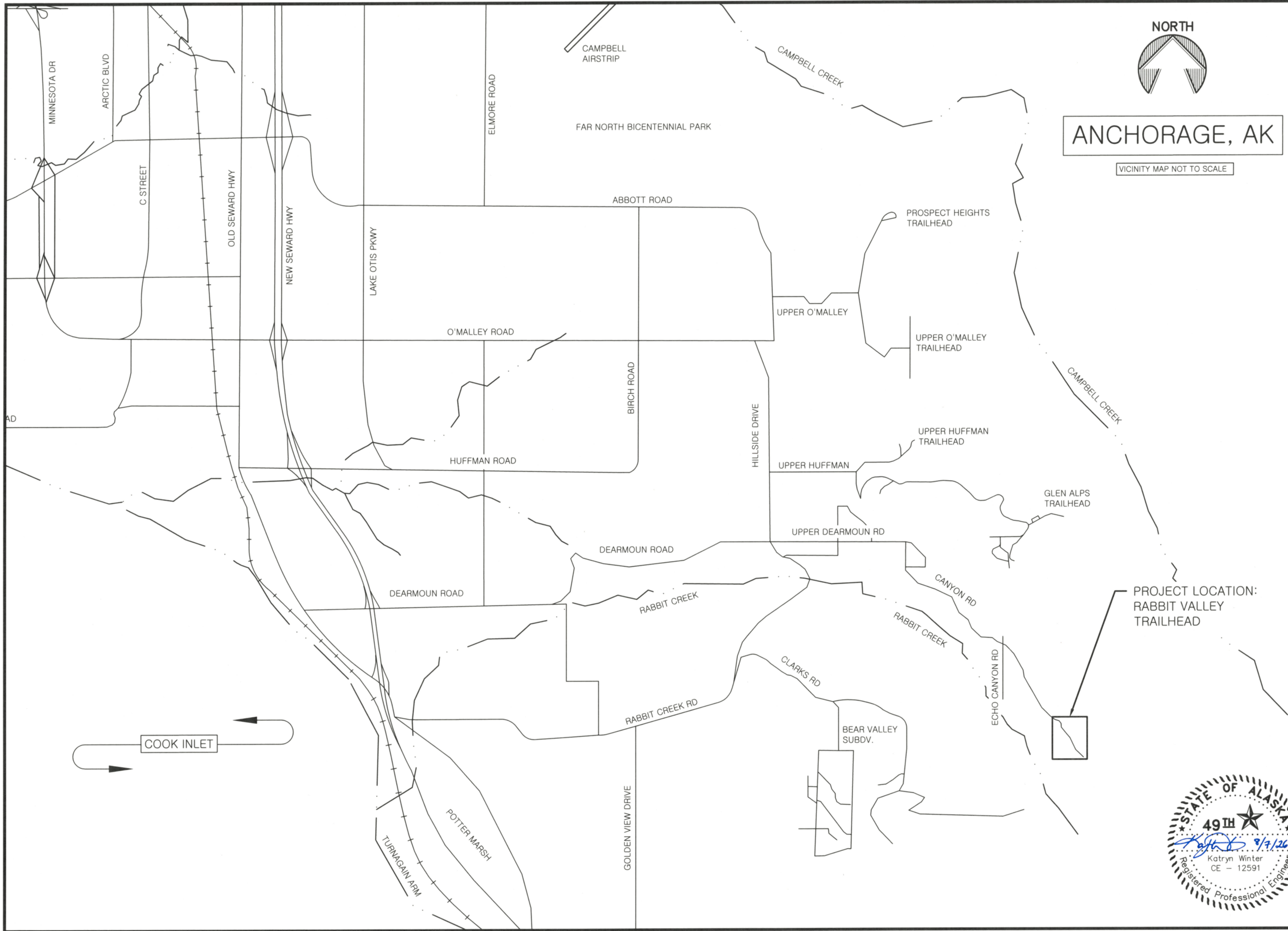
Approved:

[Signature]
Ricky Gease
Director, Alaska State Parks

8/10/26
Date

SECTION 012 TOWNSHIP 002 NORTH
RANGE 032 WEST, SEWARD MERIDIAN

The following Division of Parks & Outdoor Rec. standard drawings apply to this project: G-1, P-6, S-10D, S-11D
The following D.O.T.(Highways) standard plans apply to this project: D-01.02, D-04.22, D-06.10, D-09.00, D-14.10, I-30.10, S-00.12, S-05.02, S-30.05



ANCHORAGE, AK

VICINITY MAP NOT TO SCALE



PROJECT LOCATION:
RABBIT VALLEY
TRAILHEAD

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

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VICINITY MAP



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SHEET

2

OF 13 SHEETS



ESTIMATE OF QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
201.0003.0000	CLEARING AND GRUBBING	ACRE	2.20
202.0001.0000	REMOVAL OF STRUCTURES	L.S.	ALL REQ'D
203.0003.0000	UNCLASSIFIED EXCAVATION	C.Y.	10,500
203.0006.000A	BORROW, TYPE A	TON	6,100
301.0005.0RAM	RECYCLED ASPHALT MATERIAL	TON	550
530.0001.0000	MODULAR CONCRETE BLOCK RETAINING WALL	S.F.	2,228
603.0001.0024	24 INCH CSP	L.F.	150
603.0003.0024	END SECTIONS FOR 24 INCH CSP	EACH	4
603.2000.0001	REMOTE THAW WIRE	EACH	3
611.0002.0001	RIPRAP, CLASS I	TON	200
615.0001.0000	STANDARD SIGN	S.F.	14.5
618.0002.0000	SEEDING	POUND	162
620.0001.000B	TOPSOIL, CLASS B	S.Y.	9,000
622.2005.00SE	SINGLE ENTRANCE GATE	EACH	1
622.2010.0000	CONCRETE PARKING BUMPER	EACH	58
622.2012.0000	BARRIER ROCK	EACH	15
622.2015.000D	INTERPRETIVE SIGN, TYPE D	EACH	2
622.2017.0000	ORIENTATION KIOSK	EACH	1
622.2035.0000	BIKE REPAIR STATION	EACH	1
630.0001.0003	GEOTEXTILE, SEPARATION, CLASS 3	S.Y.	750
630.0003.0001	GEOTEXTILE, REINFORCEMENT, TYPE 1	S.Y.	520
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	WITHHOLDING	C.S.	ALL REQ'D
642.0001.0000	CONSTRUCTION SURVEYING	L.S.	ALL REQ'D
642.0003.0000	THREE PERSON SURVEY PARTY	HOURL	5
642.0005.0000	SET SECONDARY MONUMENT	EACH	4
642.0014.0000	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.	HOURL	20
654.2002.0000	DOUBLE CONCRETE VAULTED TOILET	EA	1

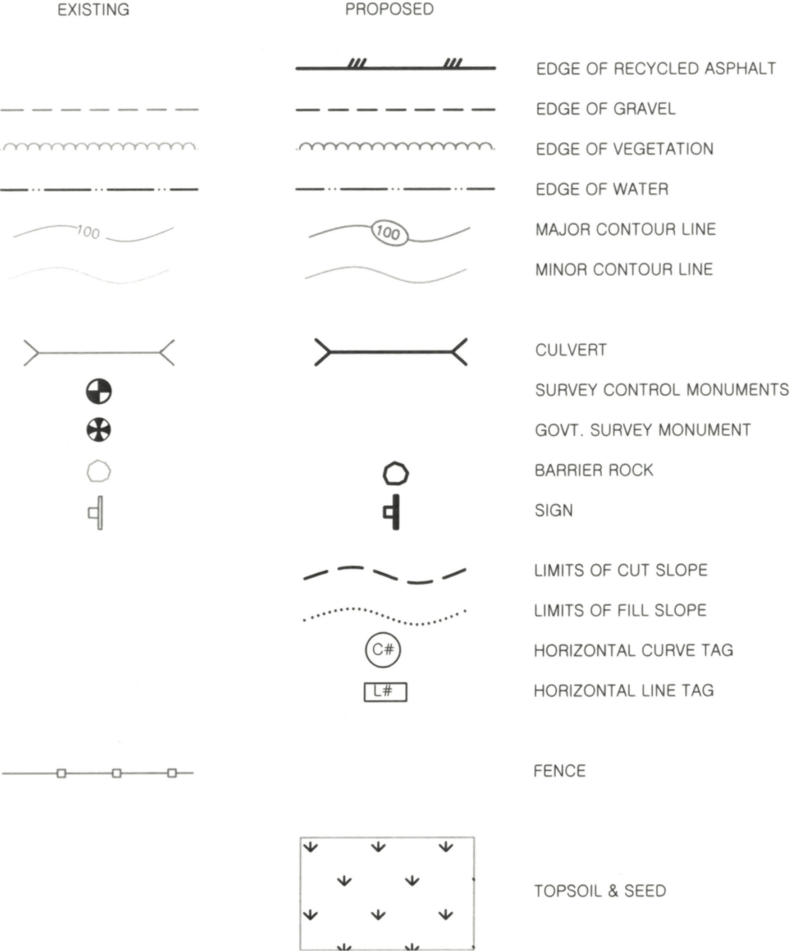
TABLE OF ESTIMATING FACTORS			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
203.0006.000A	BORROW, TYPE A	LBS/C.F.	142
301.0005.0RAM	RECYCLED ASPHALT MATERIAL	LBS/C.F.	146
611.0002.0001	RIPRAP, CLASS I	LBS/C.F.	108

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A
B
BOP
BVCS
BVCE
CKT
C.F.
C.S.
CSP
C.Y.
C.Y.V.M.
E
EA
E.G.
ELEV.
EOG
EOP
EVCS
EVCE
F.G.
GAL.
INTP.
INV
IPN
L.F.
L.S.
LB/LBS
LVC
MBW
MP
M.E.
N
NE
NIC
NO.
NTS
NW
OC
OHW
PCC
PIP
PUA
PST
PVI
REQ'D
ROW
S
SE
S.F.
SNF
STA.
SW
SWPPP
S.Y.
TYP.

ABBREVIATIONS

DIAMETER
CENTERLINE
ALUMINUM
BRASS
BEGINNING OF PROJECT
BEGINNING OF VERTICAL CURVE STATION
BEGINNING OF VERTICAL CURVE ELEVATION
CIRCUIT
CUBIC FOOT
CONTINGENT SUM
CORRUGATED STEEL PIPE
CUBIC YARD
CUBIC YARD VEHICLE MEASURE
EAST
EACH
EXISTING GRADE
ELEVATION
EDGE OF GRAVEL
EDGE OF PAVEMENT
ENDING VERTICAL CURVE STATIONING
ENDING VERTICAL CURVE ELEVATION
FINAL GRADE
GALVANIZED
INTERPRETIVE
INVERT
INDIGENOUS PLACE NAME
LINEAR FOOT
LUMP SUM
POUND/POUNDS
LENGTH OF VERTICAL CURVE
MODULAR BLOCK WALL
MILEPOST
MATCH EXISTING
NORTH
NORTHEAST
NOT IN CONTRACT
NUMBER
NOT TO SCALE
NORTHWEST
ON CENTER
ORDINARY HIGH WATER
PORTLAND CEMENT CONCRETE
PROTECT IN PLACE
PUBLIC USE AREA
PERFORATED STEEL TUBE
PROFILE VERTICAL CURVE INTERSECTION
REQUIRED
RIGHT-OF-WAY
STEEL
SOUTHEAST
SQUARE FOOT
SEARCH NOT FOUND
STATION
SOUTHWEST
STORM WATER POLLUTION PREVENTION PLAN
SQUARE YARD
TYPICAL

WESTLEGEND



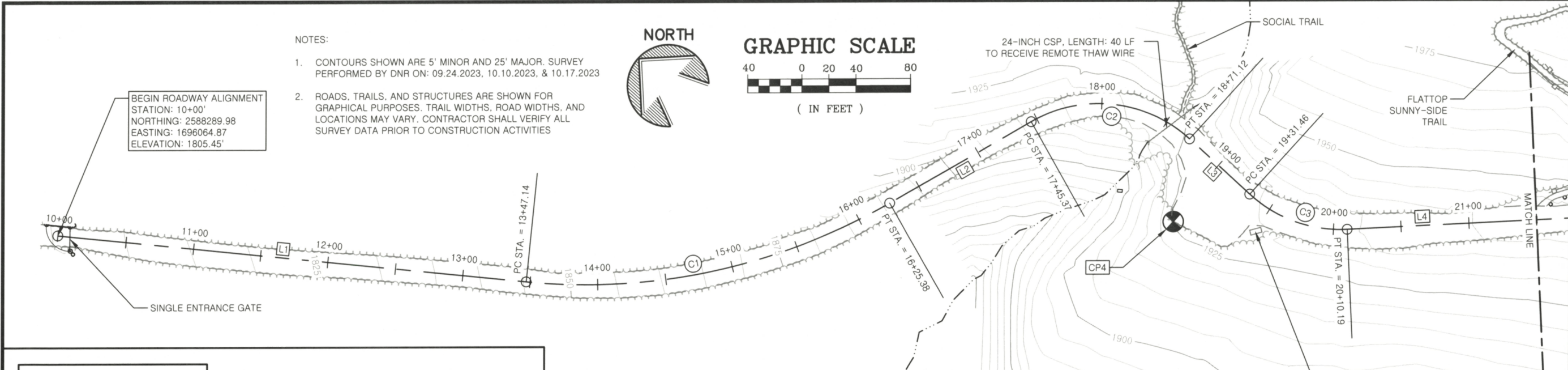
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SHEET
3
OF 13 SHEETS

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

ESTIMATE OF QUANTITIES,
ABBREVIATIONS, LEGEND, &
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HORIZONTAL LINE DATA		
LINE #	LENGTH	DIRECTION
L1	347.14'	S36° 20' 12.46"E
L2	119.99'	S71° 45' 48.75"E
L3	60.35'	S0° 16' 57.08"W
L4	238.14'	S44° 49' 28.53"E
L5	112.85'	S31° 57' 47.52"E
L6	220.42'	S26° 35' 02.95"E
L7	38.94'	S49° 32' 15.76"E
L8	19.71'	S60° 02' 17.07"E
L9	147.67'	S36° 00' 10.60"E

HORIZONTAL CURVE DATA					
CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA
C1	13+47.14	16+25.38	450.00'	278.24'	35.4267°
C2	17+45.37	18+71.12	100.00'	125.74'	72.0461°
C3	19+31.46	20+10.19	100.00'	78.73'	45.1071°
C4	22+48.33	24+72.80	1000.00'	224.47'	12.8614°
C5	25+85.66	27+26.48	1500.00'	140.82'	5.3790°
C6	29+46.90	30+87.11	350.00'	140.22'	22.9536°
C7	31+26.05	31+71.87	250.00'	45.82'	10.5004°
C8	31+91.57	32+54.50	150.00'	62.92'	24.0351°

CONTROL POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	2586716.95	1697297.34	1991.81	5/8"x30" REBAR W/CAP
CP2	2586813.35	1697319.99	2009.37	5/8"x30" REBAR W/CAP
CP3	2587299.97	1696993.23	1966.07	5/8"x30" REBAR W/CAP
CP4	2587684.67	1696621.98	1925.88	5/8"x30" REBAR W/CAP
TP1	2587417.77	196852.51	1946.82	3.5" GALV. SURVEY NAIL



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EXISTING CONDITIONS

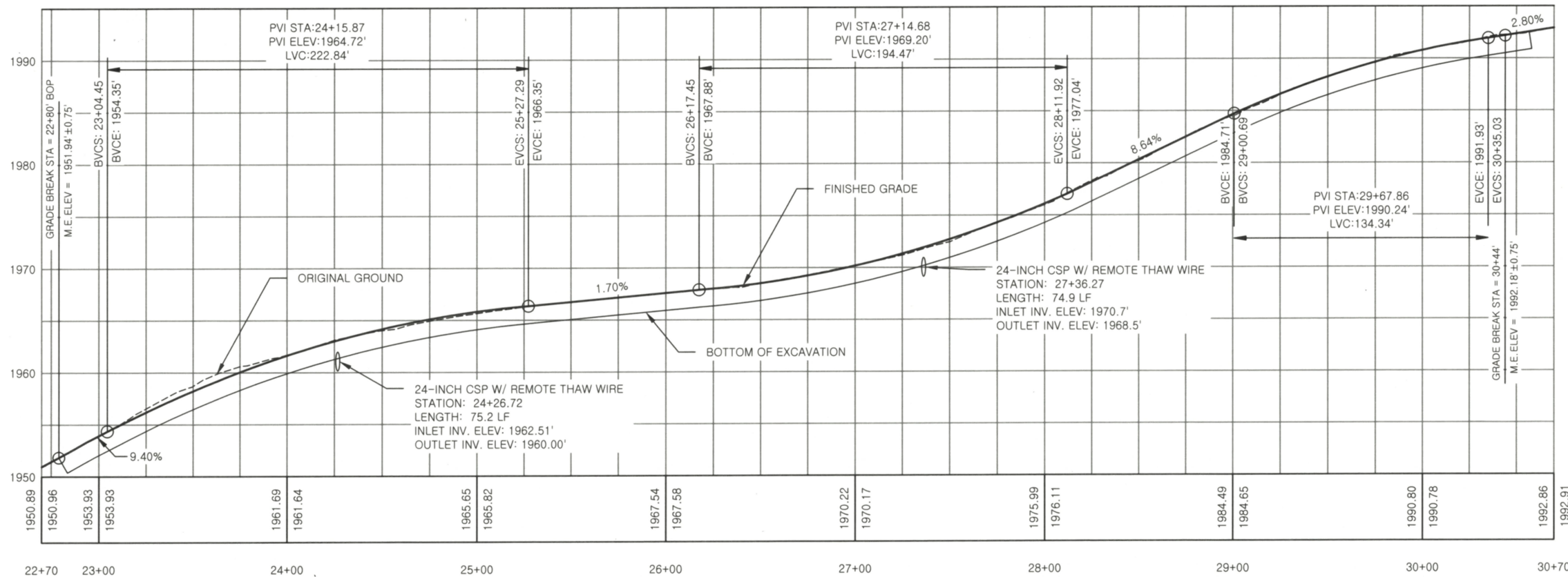
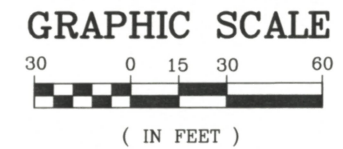
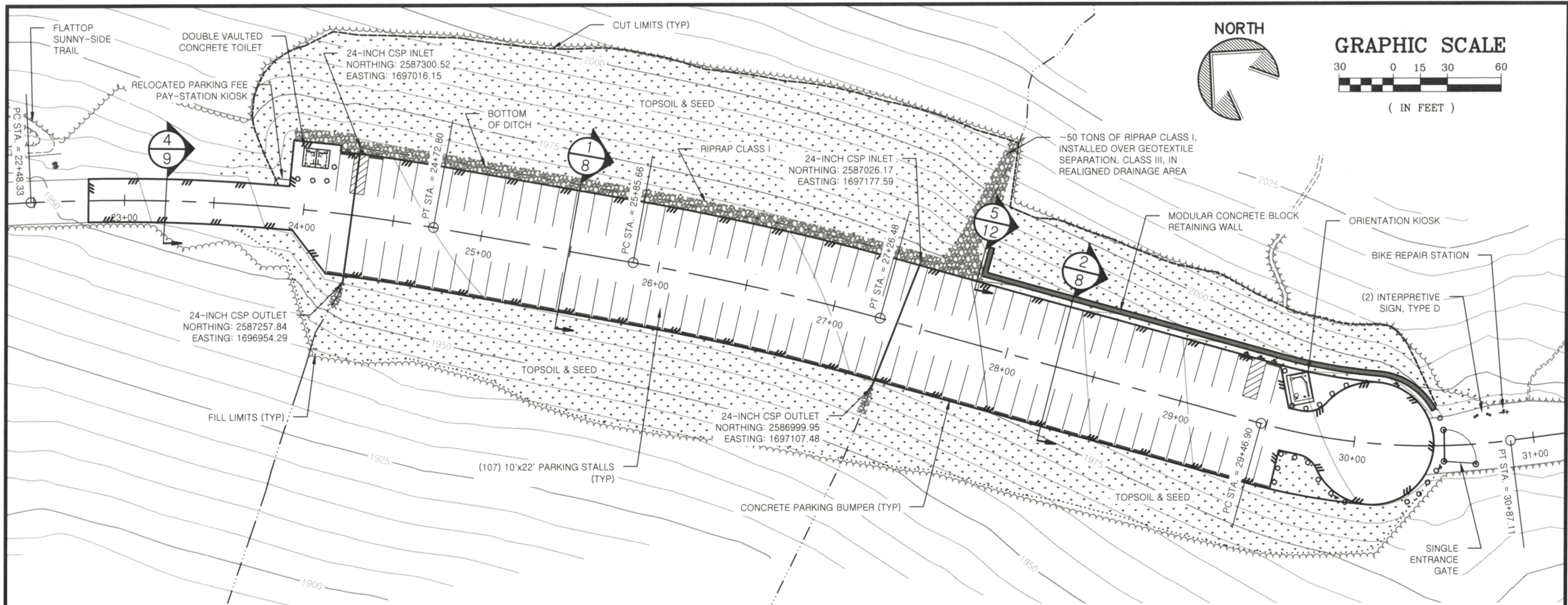


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SHEET

4

OF 13 SHEETS



NOTES:

1. FINAL ROADWAY ALIGNMENT FOLLOWS EXISTING LINE AND CURVE DATA SHOWN ON EXISTING CONDITIONS SHEET
2. CONSTRUCT ORIENTATION KIOSK IN MIRROR IMAGE OF STANDARD DRAWING
3. ALL TOPSOIL PLACED SHALL BE A MINIMUM OF 4-INCHES OF DEPTH
4. EXISTING CULVERT AT STATION 18+54 SHALL BE RETROFITTED WITH A REMOTE THAW WIRE
5. EXISTING PARKING FEE PAY-STATION KIOSK AND SIGN LOCATED AT APPROXIMATELY STATION 19+49.5, 19'R SHALL BE RELOCATED TO STATION 23+87, 13'L. FINAL LOCATION AND ORIENTATION SHALL BE APPROVED BY THE ENGINEER
6. STRIPING LINES SHOWN FOR INFORMATIONAL PURPOSES ONLY
7. THE ENGINEER SHALL APPROVE ALL SECONDARY MONUMENT LOCATIONS PRIOR TO INSTALLATION



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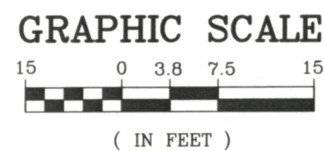


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SHEET
5
 OF 13 SHEETS

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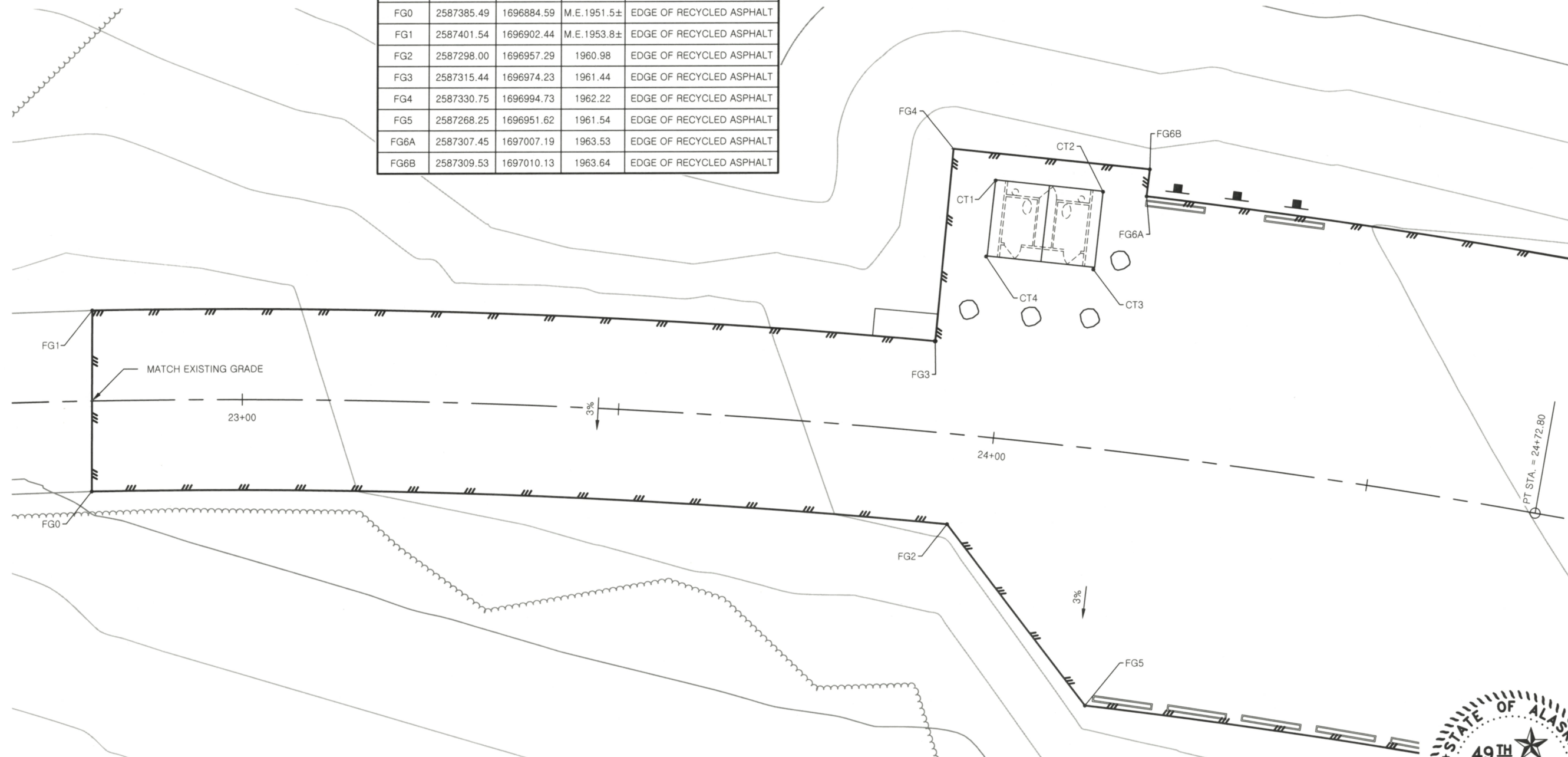
SITE PLAN OVERVIEW



COORDINATE POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
CT1	2587411.17	1696911.75	1963.21	CORNER OF CONCRETE TOILET
CT2	2587398.31	1696924.81	1963.21	CORNER OF CONCRETE TOILET
CT3	2587388.94	1696915.59	1963.21	CORNER OF CONCRETE TOILET
CT4	2587401.81	1696902.53	1963.21	CORNER OF CONCRETE TOILET
FG0	2587385.49	1696884.59	M.E.1951.5±	EDGE OF RECYCLED ASPHALT
FG1	2587401.54	1696902.44	M.E.1953.8±	EDGE OF RECYCLED ASPHALT
FG2	2587298.00	1696957.29	1960.98	EDGE OF RECYCLED ASPHALT
FG3	2587315.44	1696974.23	1961.44	EDGE OF RECYCLED ASPHALT
FG4	2587330.75	1696994.73	1962.22	EDGE OF RECYCLED ASPHALT
FG5	2587268.25	1696951.62	1961.54	EDGE OF RECYCLED ASPHALT
FG6A	2587307.45	1697007.19	1963.53	EDGE OF RECYCLED ASPHALT
FG6B	2587309.53	1697010.13	1963.64	EDGE OF RECYCLED ASPHALT

NOTES:

1. CONTRACTOR SHALL PLACE BARRIER ROCKS IN LOCATIONS AS SHOWN ON THE PLANS. FINAL LOCATION OF BARRIER ROCKS WILL BE FIELD VERIFIED BY THE ENGINEER.
2. DOUBLE VAULTED CONCRETE TOILET SHALL HAVE A D-1 SHOULDER GRADED TO SHED WATER AWAY FROM THE DOUBLE VAULTED CONCRETE TOILET ON ALL SIDES. FINAL GRADE SHALL HAVE A MINIMUM OF 2% AND MAXIMUM OF 4%.
3. CONTRACTOR SHALL OUTSLOPE THE WATERSHED FROM THE DOUBLE VAULTED CONCRETE TOILET TO THE CULVERT, AS PRACTICABLE.



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GRADING PLAN & POINT TABLE



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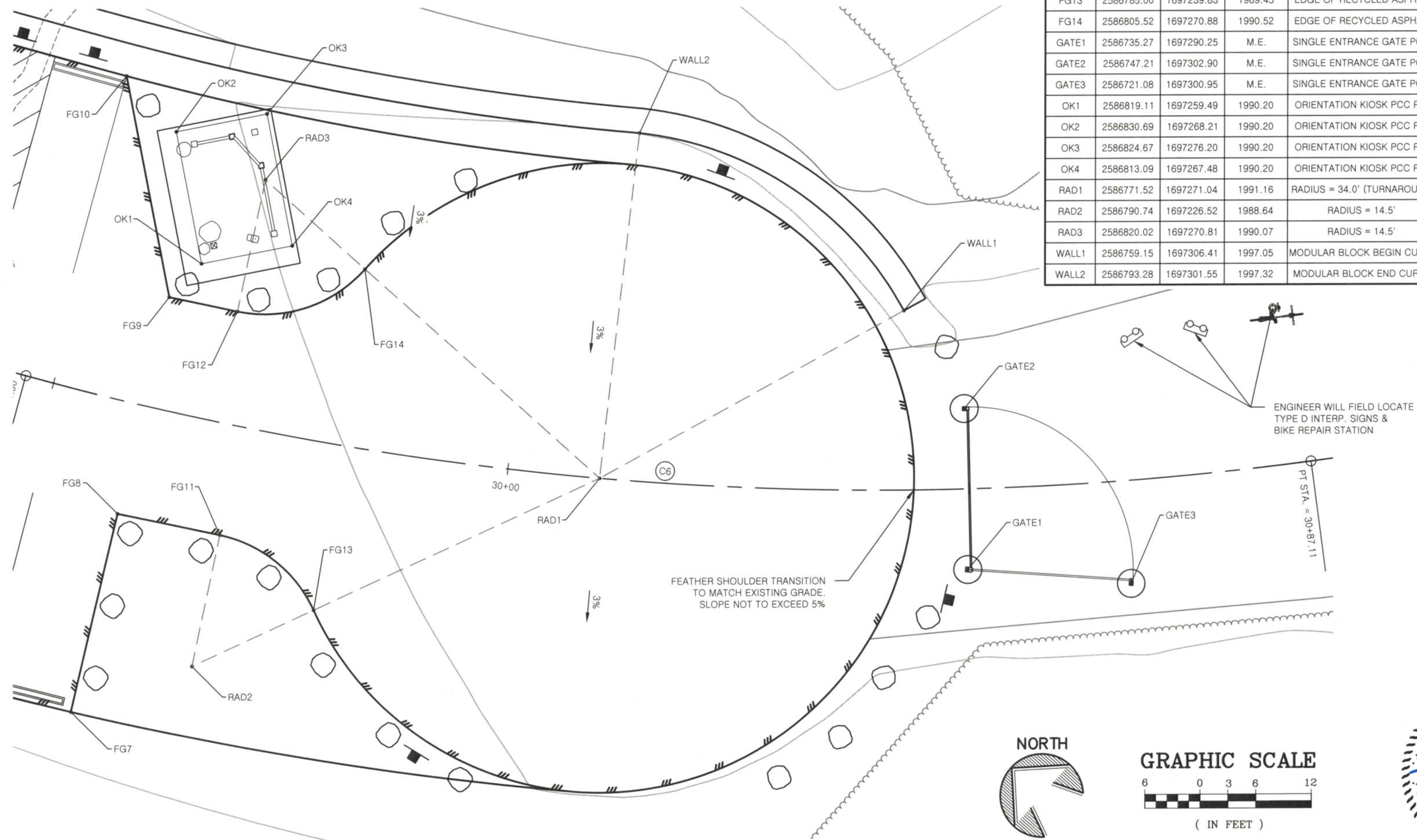
SHEET

6

OF 13 SHEETS

NOTES:

1. CONTRACTOR SHALL PLACE BARRIER ROCKS IN LOCATIONS AS SHOWN ON THE PLANS. FINAL LOCATION OF BARRIER ROCKS WILL BE FIELD VERIFIED BY THE ENGINEER.
2. ORIENTATION KIOSK CONCRETE PAD SHALL HAVE A D-1 SHOULDER GRADED TO SHED WATER AWAY FROM THE PAD ON ALL SIDES. FINAL GRADE SHALL HAVE A MINIMUM OF 2% AND MAXIMUM OF 4%



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GRADING PLAN & POINT TABLE

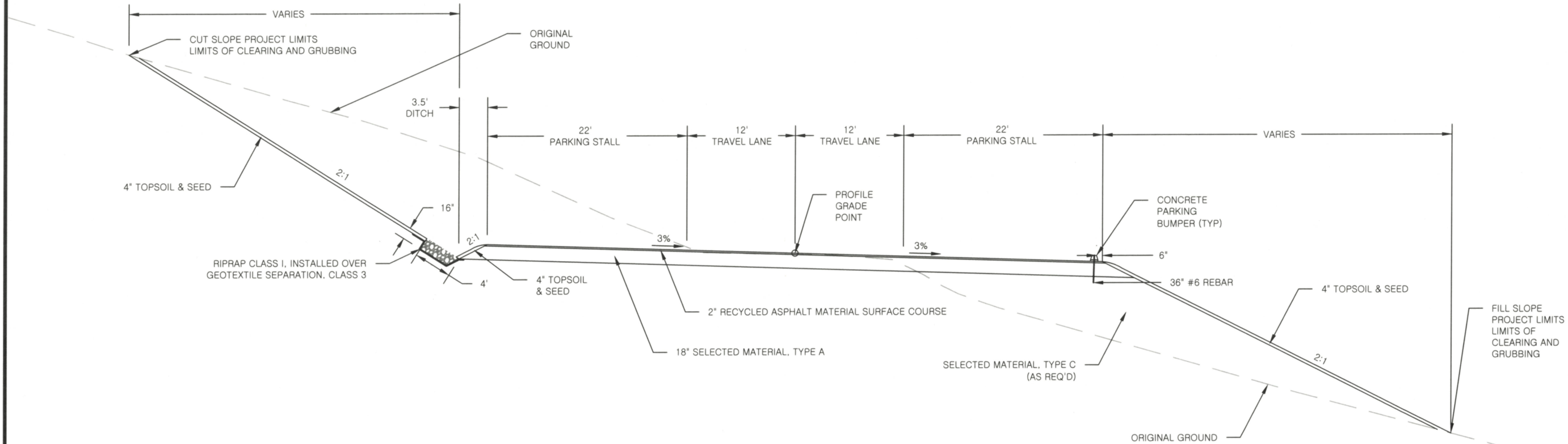
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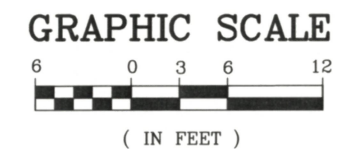
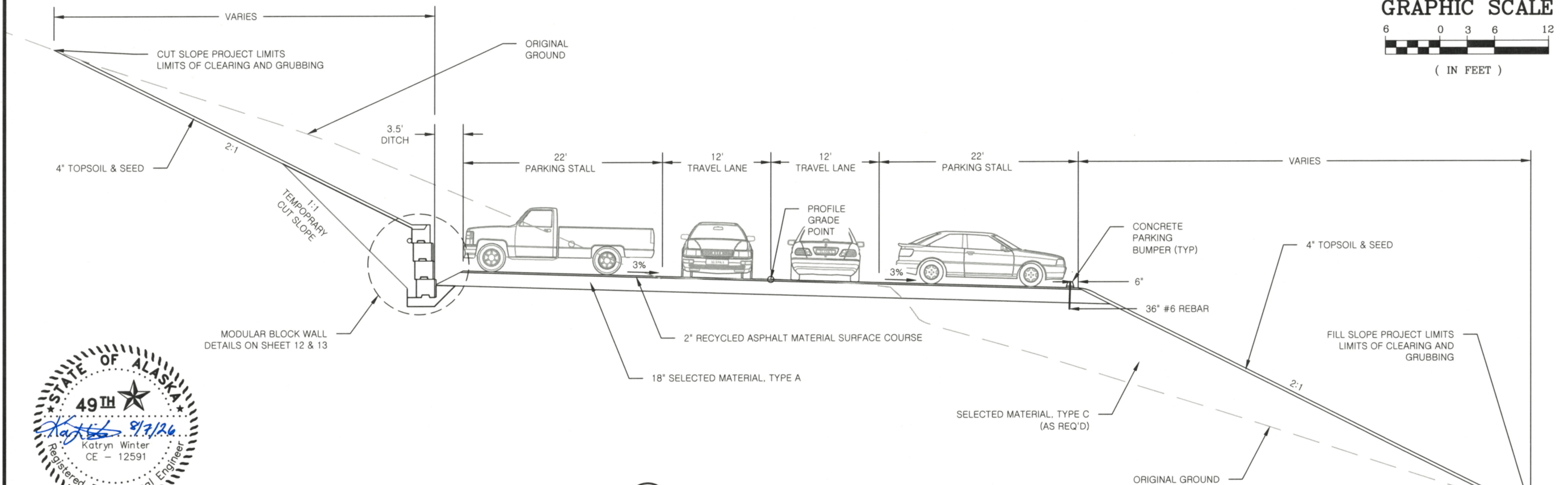
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SHEET
7
OF 13 SHEETS





1
8 ROADWAY TYPICAL SECTION NO CONCRETE MBW
STA: 24+16.3 TO 27+75



2
8 TYPICAL SECTION W/ CONCRETE MBW
STA: 27+75 TO 30+44



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ROADWAY TYPICAL SECTIONS

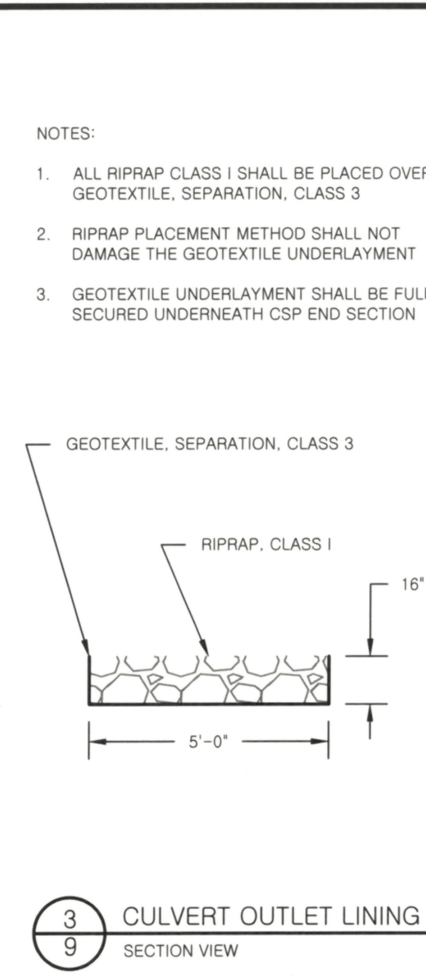
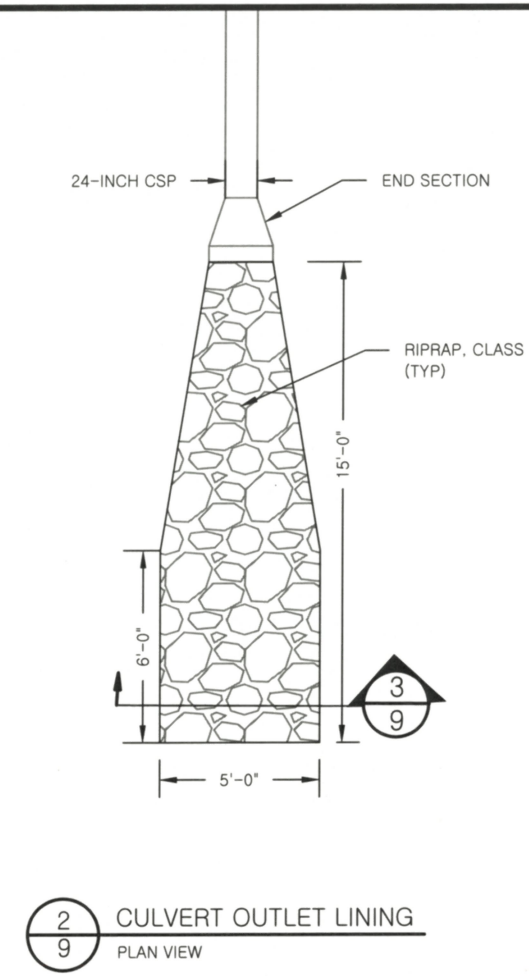
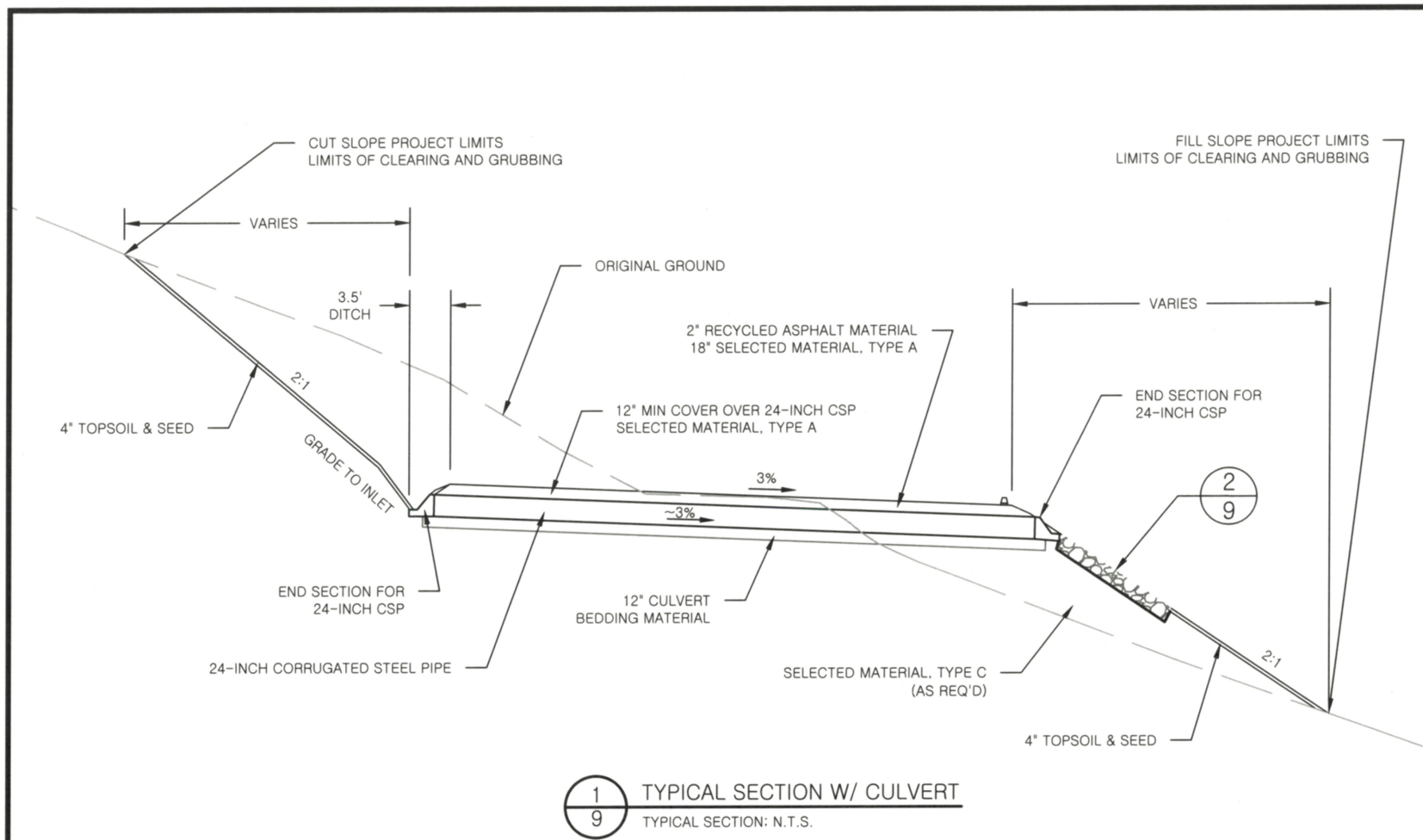


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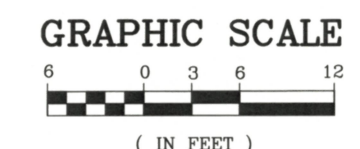
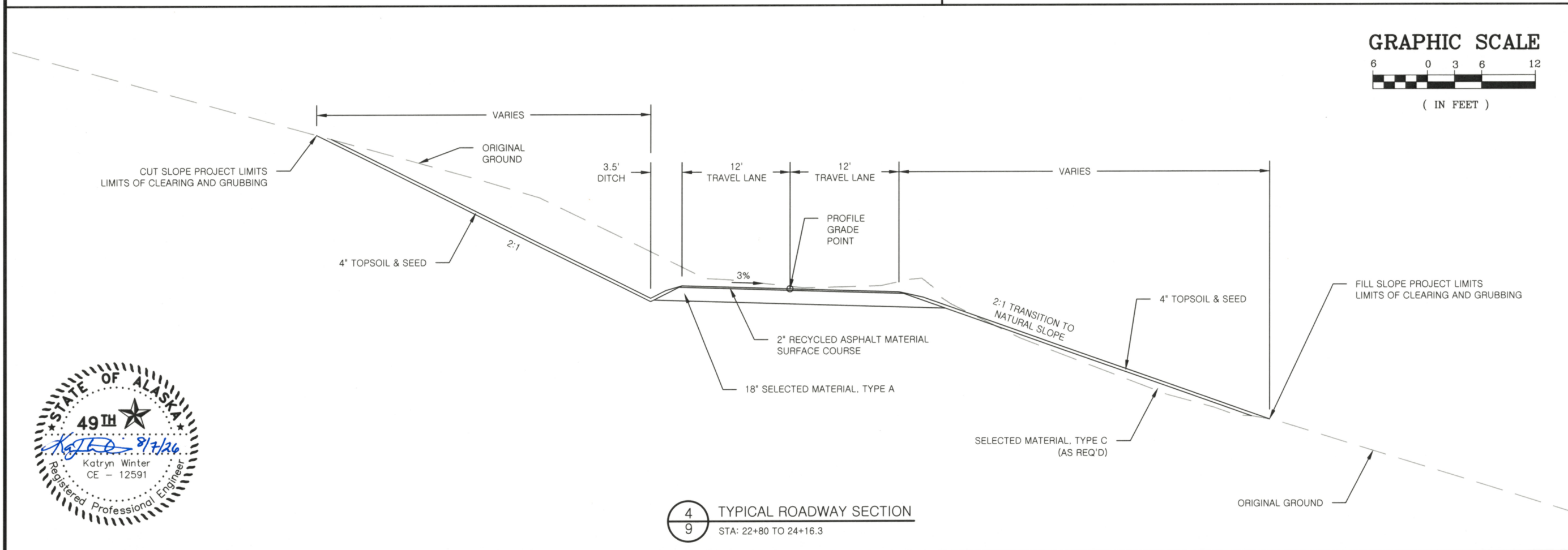
SHEET

8

OF 13 SHEETS



- NOTES:
1. ALL RIPRAP CLASS I SHALL BE PLACED OVER GEOTEXTILE, SEPARATION, CLASS 3
 2. RIPRAP PLACEMENT METHOD SHALL NOT DAMAGE THE GEOTEXTILE UNDERLAYMENT
 3. GEOTEXTILE UNDERLAYMENT SHALL BE FULLY SECURED UNDERNEATH CSP END SECTION



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ROADWAY TYPICAL SECTIONS

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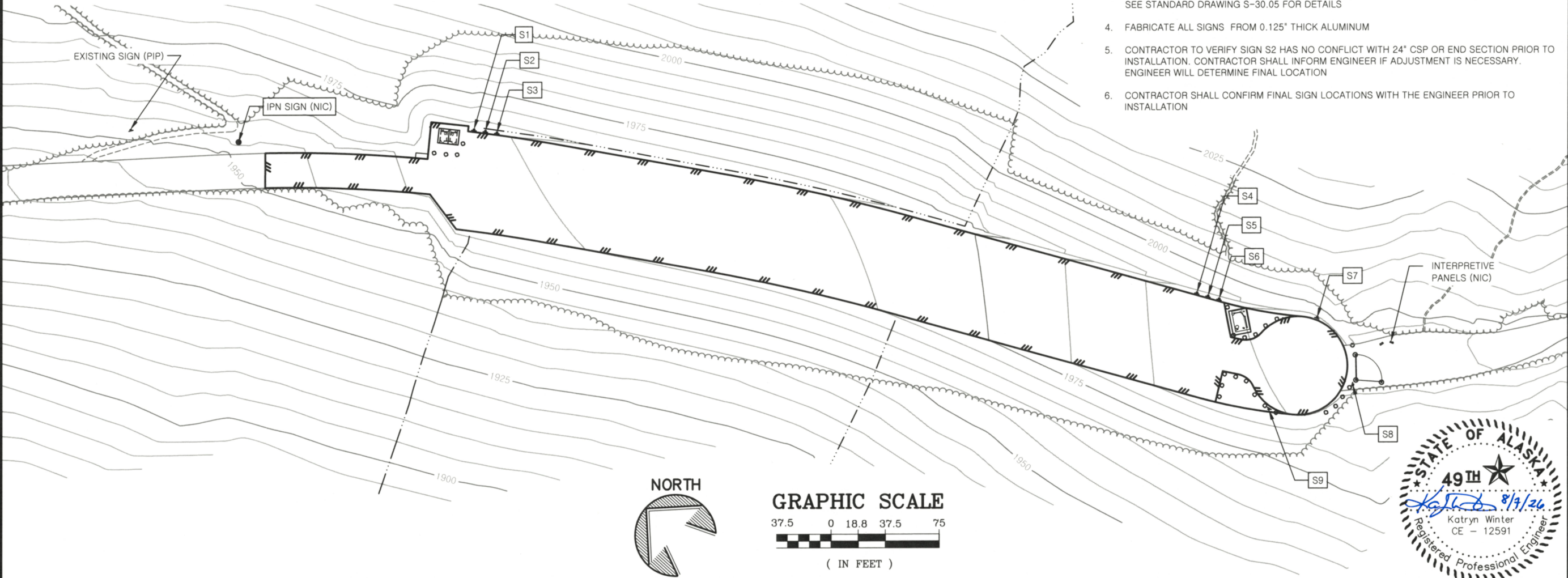
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SHEET
9
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ITEM 615.0001.0000 STANDARD SIGN										
SIGN NO.	STA.	FACING	TYPE	LEGEND	SIZE (SQ-IN.)	AREA (S.F.)	THICKNESS (IN.)	SIGN POST DATA		
								TYPE	SIZE (IN)	NO.
S1	24+20.1', 35.5L	SW	R7-8		12 x 18	1.5	0.125	PST	2.5 x 2.5	1
		SW	R7-8B		12 x 6	0.5	0.125			
S2	24+27.9', 35.5L	SW	R8-3		12 x 18	1.5	0.125	PST	2.5 x 2.5	1
S3	24+35.6', 35.5L	SW	R7-8		12 x 18	1.5	0.125	PST	2.5 x 2.5	1
S4	29+28.7', 35.5L	SW	R7-8		12 x 18	1.5	0.125	PST	2.5 x 2.5	1
		SW	R7-8B		12 x 6	0.5	0.125			

ITEM 615.0001.0000 STANDARD SIGN										
SIGN NO.	STA.	FACING	TYPE	LEGEND	SIZE (SQ-IN.)	AREA (S.F.)	THICKNESS (IN.)	SIGN POST DATA		
								TYPE	SIZE (IN)	NO.
S5	29+36.7', 35.5L	SW	R8-3		12 x 18	1.5	0.125	PST	2.5 x 2.5	1
S6	29+44.7', 35.5L	SW	R7-8		12 x 18	1.5	0.125	PST	2.5 x 2.5	1
S7	30+21.3', 34.1L	W	R7P-CS		12 X 18	1.5	0.125	PST	2.5 x 2.5	1
S8	30+47.6', 11.9R	N	R7P-CS		12 X 18	1.5	0.125	PST	2.5 x 2.5	1
S9	29+94.1', 32.0L	E	R7P-CS		12 X 18	1.5	0.125	PST	2.5 x 2.5	1
TOTALS:						14.5				9

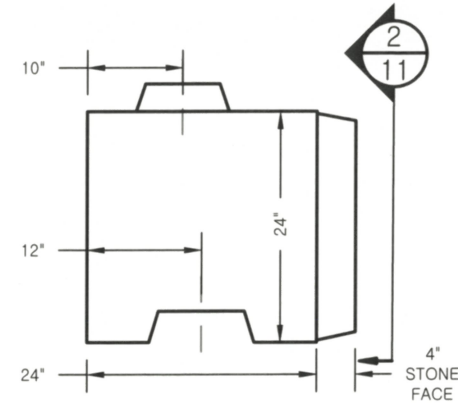
- NOTES:
- PST DENOTES PERFORATED STEEL TUBE
 - ALL SIGNS SHALL CONFORM TO SOA DOT&PF SIGN DESIGN SPECIFICATIONS
 - ALL SIGNS SHALL HAVE Ø 12" x 48" EMBEDDED DEPTH CONCRETE SONOTUBE FOUNDATION. SEE STANDARD DRAWING S-30.05 FOR DETAILS
 - FABRICATE ALL SIGNS FROM 0.125" THICK ALUMINUM
 - CONTRACTOR TO VERIFY SIGN S2 HAS NO CONFLICT WITH 24" CSP OR END SECTION PRIOR TO INSTALLATION. CONTRACTOR SHALL INFORM ENGINEER IF ADJUSTMENT IS NECESSARY. ENGINEER WILL DETERMINE FINAL LOCATION
 - CONTRACTOR SHALL CONFIRM FINAL SIGN LOCATIONS WITH THE ENGINEER PRIOR TO INSTALLATION



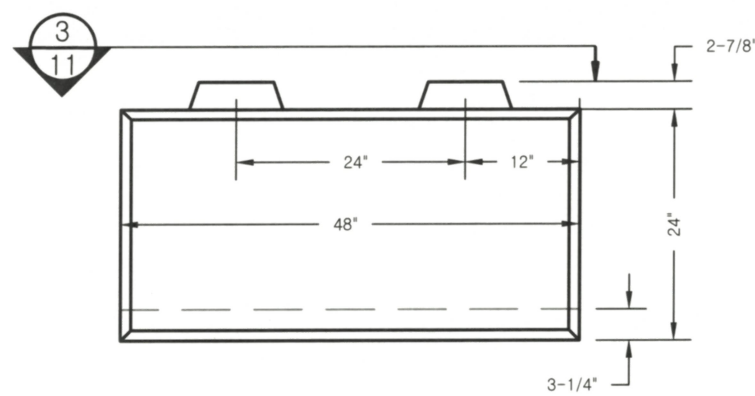
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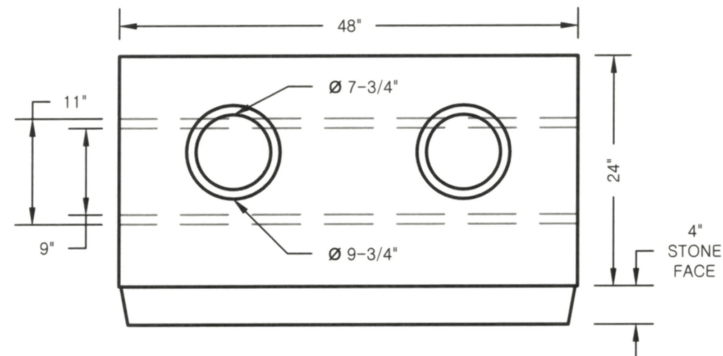

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SHEET
10
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1 BLOCK 1
11 SECTION VIEW

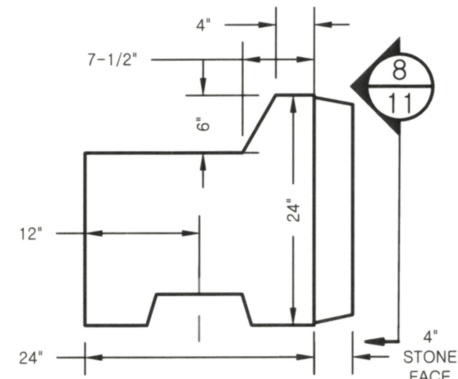


2 BLOCK 1
11 PROFILE VIEW

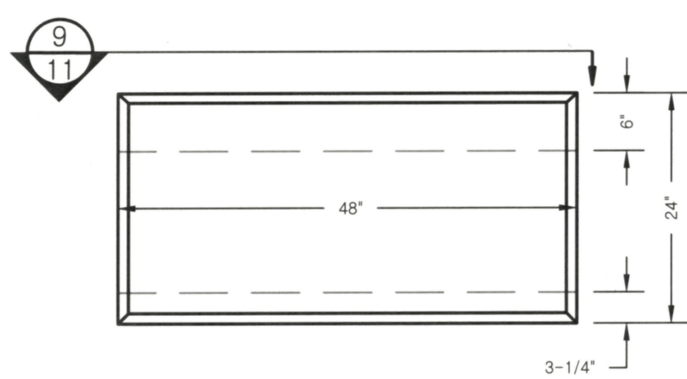


3 BLOCK 1
11 PLAN VIEW

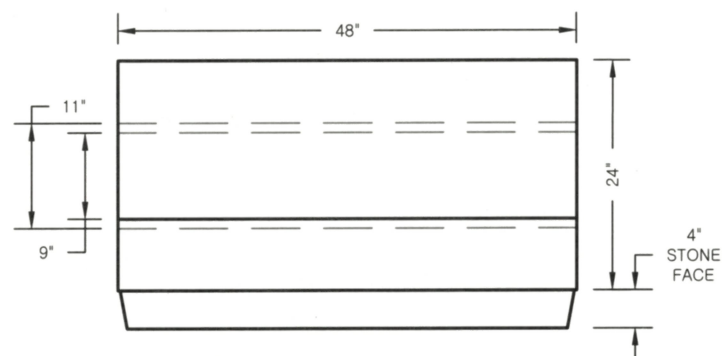
- NOTES:
1. FORM USED: WORLD BLOCK 24Hx28Dx48L LANDSCAPE FULL BLOCK WITH STRAIGHT ENDS
 2. BLOCK SHALL BE FURNISHED WITH A LIFTING EYE LOCATED IN THE CENTER OF THE BLOCK RELATIVE TO THE CENTER OF MASS



7 BLOCK 3
11 SECTION VIEW

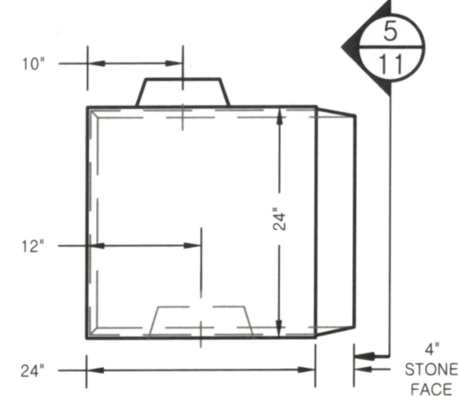


8 BLOCK 3
11 PROFILE VIEW

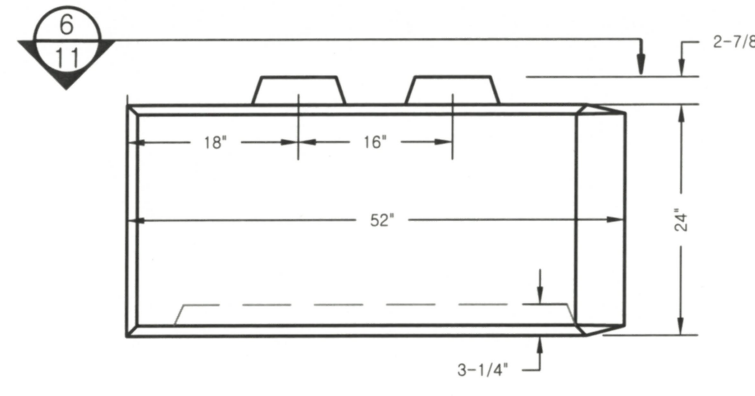


9 BLOCK 3
11 PLAN VIEW

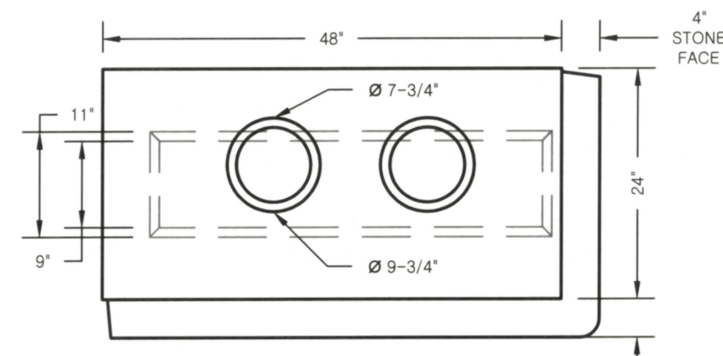
- NOTES:
1. FORM USED: WORLD BLOCK 24Hx28Dx48L LANDSCAPE FULL TOP RECESS BLOCK WITH STRAIGHT ENDS
 2. BLOCK SHALL BE FURNISHED WITH A LIFTING EYE LOCATED IN THE CENTER OF THE BLOCK RELATIVE TO THE CENTER OF MASS



4 BLOCK 2
11 SECTION VIEW

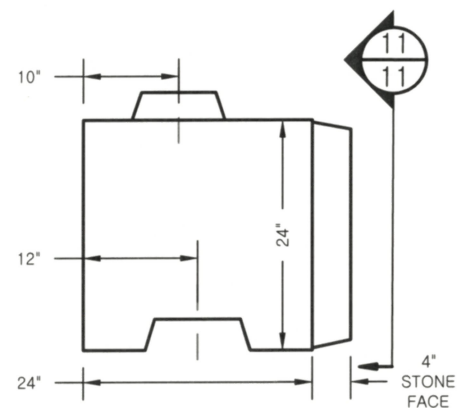


5 BLOCK 2
11 PROFILE VIEW

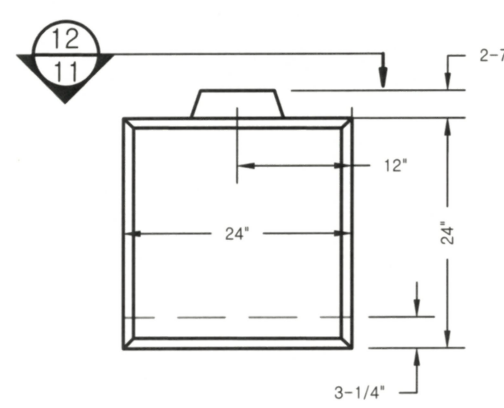


6 BLOCK 2
11 PLAN VIEW

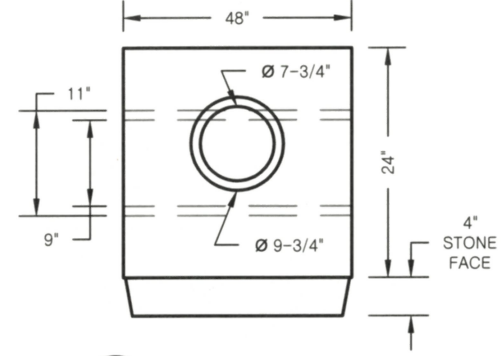
- NOTES:
1. FORM USED: WORLD BLOCK 24Hx28Dx52L LANDSCAPE CORNER BLOCK
 2. VERIFY THE REQUIRED LEFT AND RIGHT HAND MODELS PRIOR TO PROCUREMENT
 3. BLOCK SHALL BE FURNISHED WITH A LIFTING EYE LOCATED IN THE CENTER OF THE BLOCK RELATIVE TO THE CENTER OF MASS



10 BLOCK 4
11 SECTION VIEW



11 BLOCK 4
11 PROFILE VIEW



12 BLOCK 4
11 PLAN VIEW

- NOTES:
1. FORM USED: WORLD BLOCK 24Hx28Dx24L LANDSCAPE HALF BLOCK WITH STRAIGHT ENDS
 2. BLOCK SHALL BE FURNISHED WITH A LIFTING EYE LOCATED IN THE CENTER OF THE BLOCK RELATIVE TO THE CENTER OF MASS



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

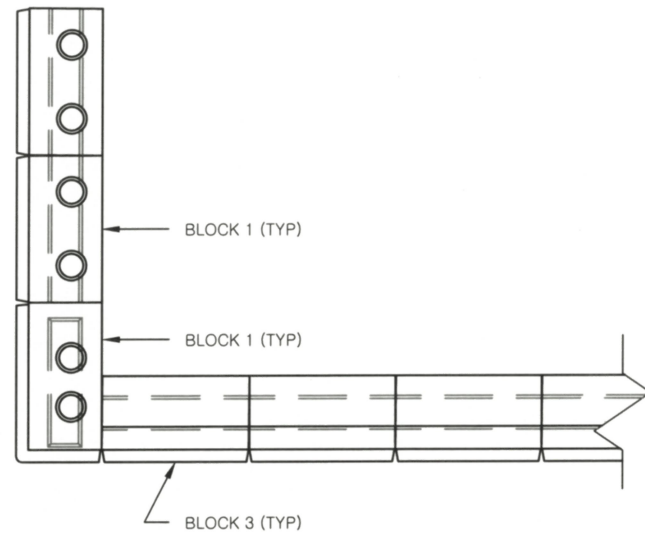
MODULAR CONCRETE BLOCK DETAILS

CSP: RABBIT VALLEY
TRAILHEAD IMPROVEMENTS
PROJECT No. 73103-2

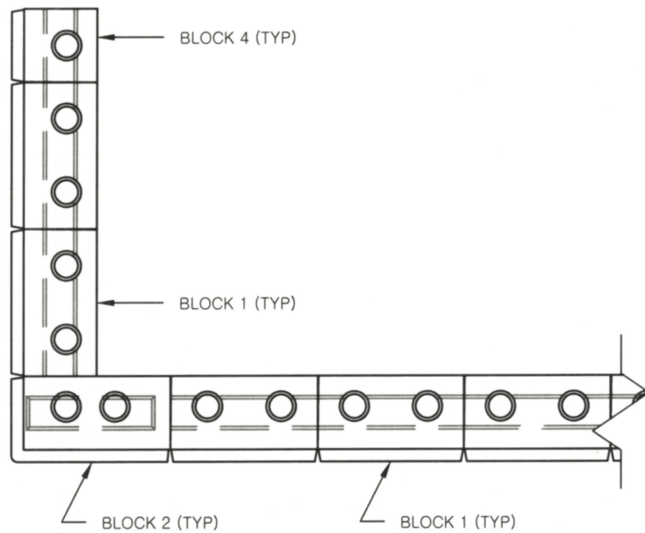


PREPARED: DKM
DRAWN: DKM
REVIEWED: KRW
DATE: AUG 7, 2026

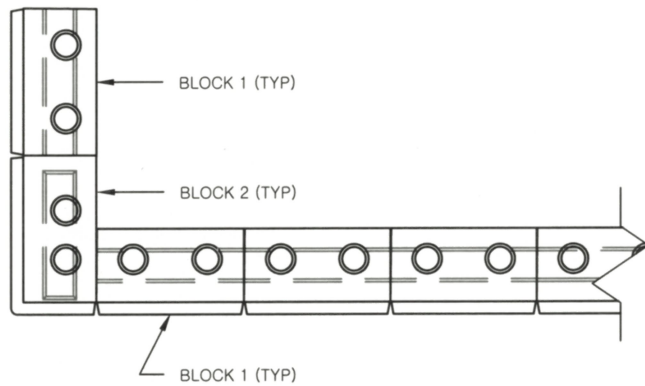
SHEET
11
OF 13 SHEETS



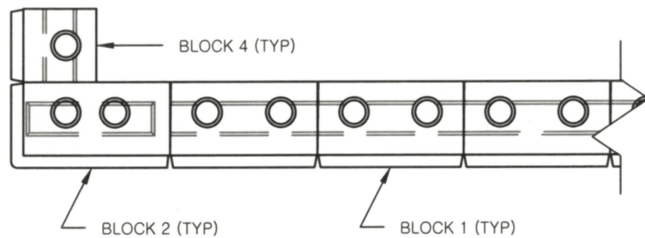
1 ROW 4 LAYOUT
12 PLAN VIEW DETAIL



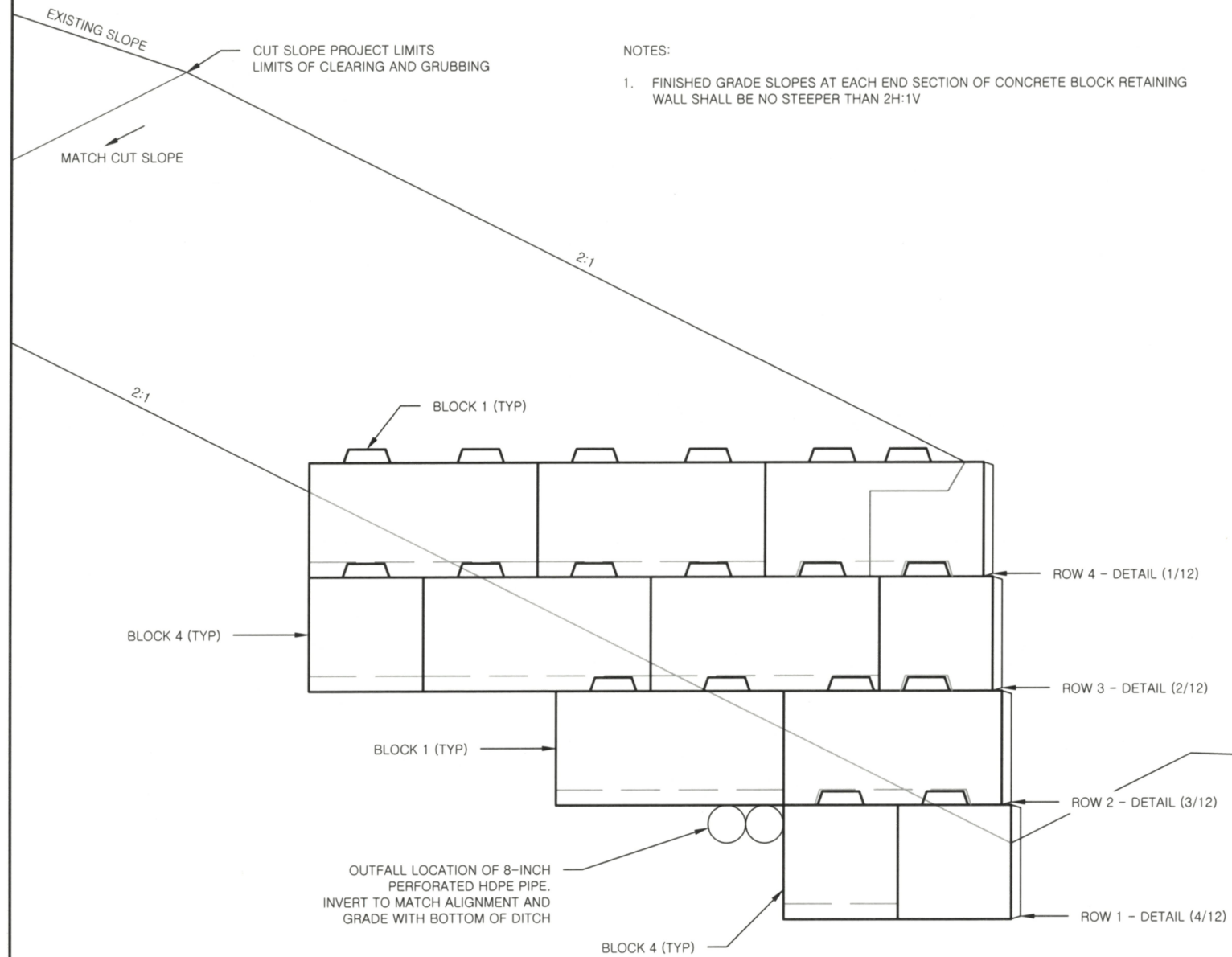
2 ROW 3 LAYOUT
12 PLAN VIEW DETAIL



3 ROW 2 LAYOUT
12 PLAN VIEW DETAIL



4 ROW 1 LAYOUT
12 PLAN VIEW DETAIL



5 WING WALL TYPICAL SECTION
12 PROFILE VIEW DETAIL



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

CSP: RABBIT VALLEY
TRAILHEAD IMPROVEMENTS
PROJECT No. 73103-2

RETAINING WALL DETAILS

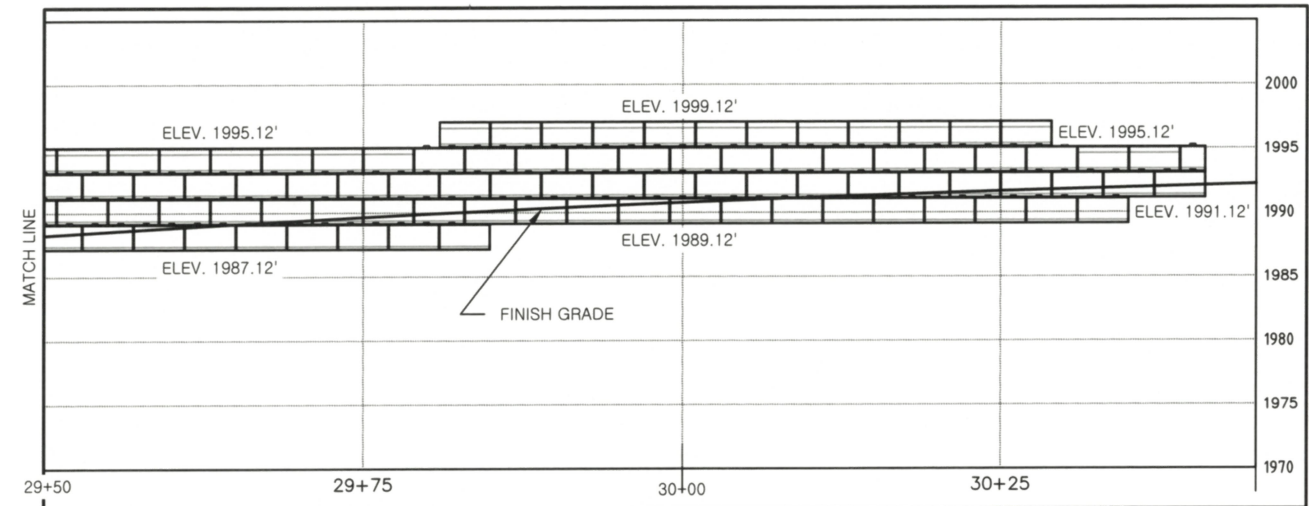


PREPARED: DKM
DRAWN: DKM
REVIEWED: KRW
DATE: AUG 7, 2026

SHEET

12

OF 13 SHEETS



1. STRUCTURE BACKFILL BEHIND THE RETAINING WALL SHALL MEET SUBSECTION 511-2.01(1)
2. DRAINAGE ROCK SHALL MEET THE REQUIREMENTS OF POROUS BACKFILL IN SUBSECTION 703-2.10
3. MODULAR CONCRETE BLOCKS SHALL BE MANUFACTURED WITH A QUARRIED ROCK ARCHITECTURAL STONE FACING
4. THE COLOR OF THE STONE FACING SHALL BE CONCRETE BROWN OR AS APPROVED BY THE ENGINEER
5. MODULAR CONCRETE BLOCKS SHALL BE FURNISHED WITH A LIFTING EYE LOCATED IN THE CENTER OF THE BLOCK RELATIVE TO THE CENTER OF MASS
6. 8-INCH PERFORATED PIPE SHALL BE CORRUGATED POLYETHYLENE WITH PERFORATIONS SPACED UNIFORMLY TO MEET A MINIMUM WATER INLET AREA OF 0.945 IN²/LF. PERFORATIONS SHALL MEET AASTHO M252
7. 8-INCH PERFORATED PIPE SHALL BE INSTALLED WITH PERFORATIONS ORIENTED DOWNWARD - FACING THE GROUND
8. 8-INCH PERFORATED PIPE SHALL DAYLIGHT TO OUTFALL IN THE DOWNSLOPE SIDE OF THE RETAINING WALL. CONTRACTOR SHALL VERIFY 8-INCH PERFORATED PIPE OULETS ARE NOT OBSTRUCTED BY RIPRAP
9. CONCRETE BLOCK LEVELING PAD SHALL FOLLOWING THE LINES AND GRADES OF THE PLAN AND PROFILE IN THE PLANS AT AN APPROPRIATE OFFSET
10. ENGINEER SHALL INSPECT AND APPROVE OF THE FIRST COURSE (ROW 1 LAYOUT) OF CONCRETE MODULAR BLOCKS PRIOR TO INSTALLATION OF SUBSEQUENT ROWS



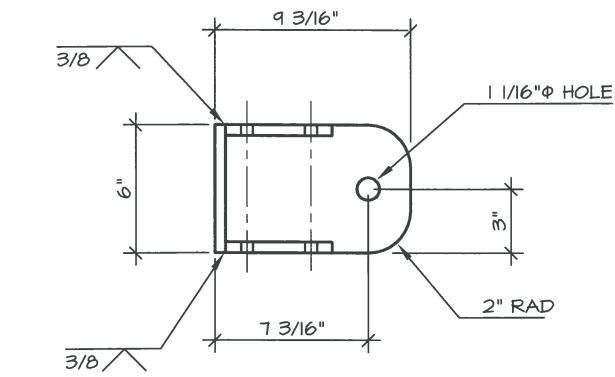
RETAINING WALL PROFILE & TYPICAL SECTION



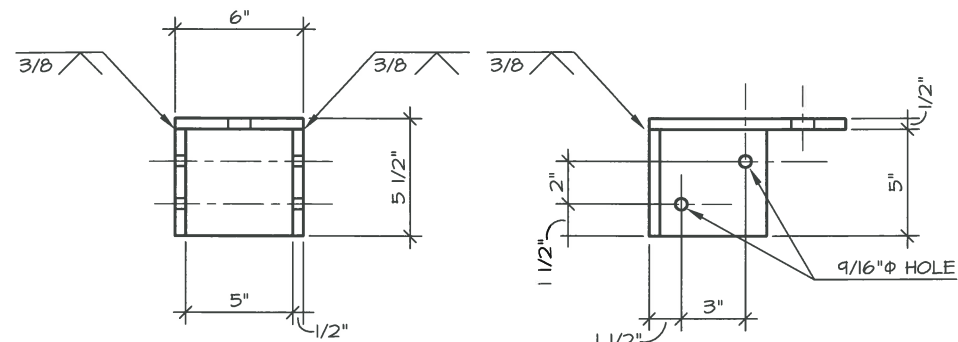
OF 13 SHEETS



2 OF 2 SHEETS



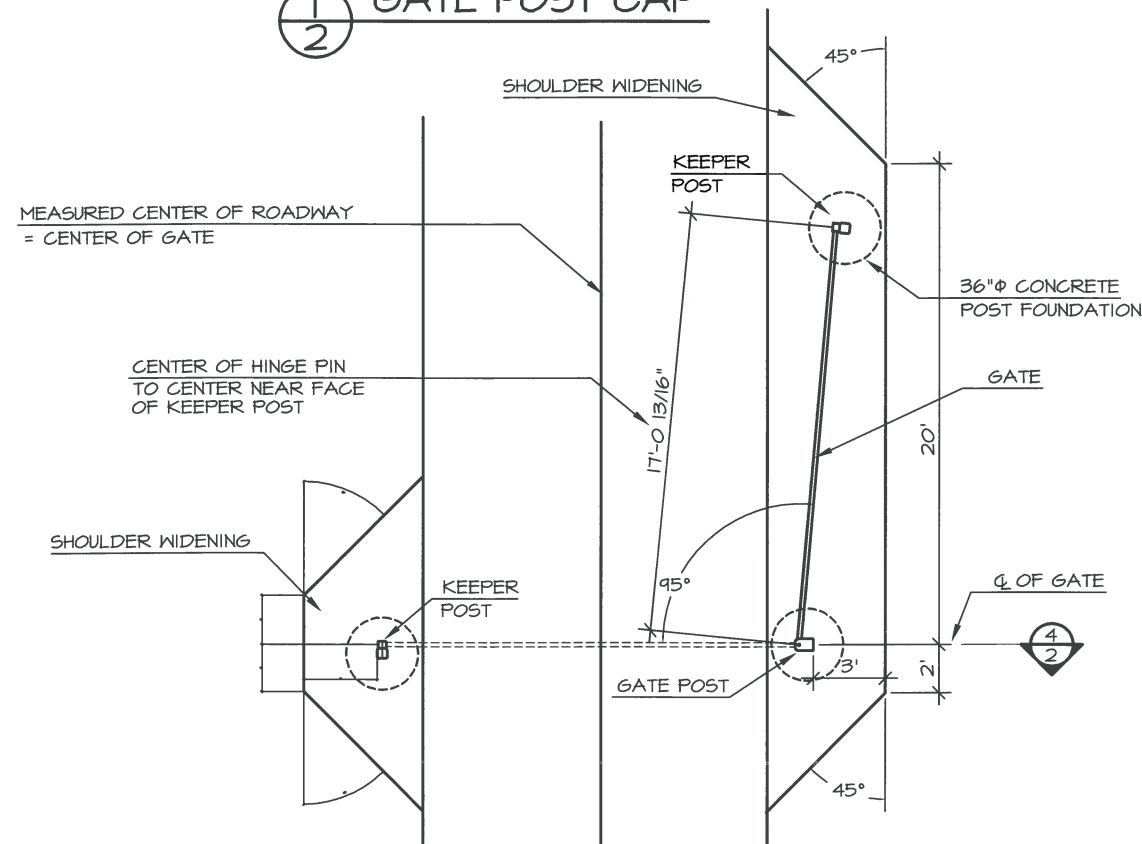
BOTTOM



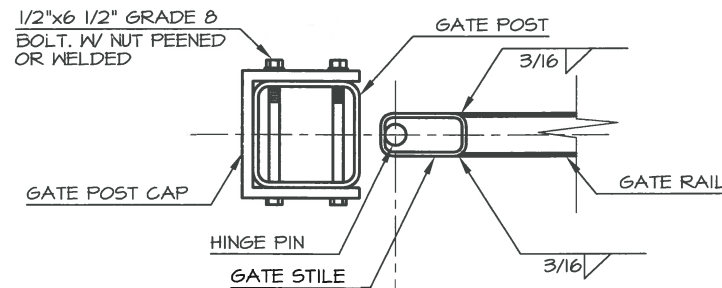
FRONT

SIDE

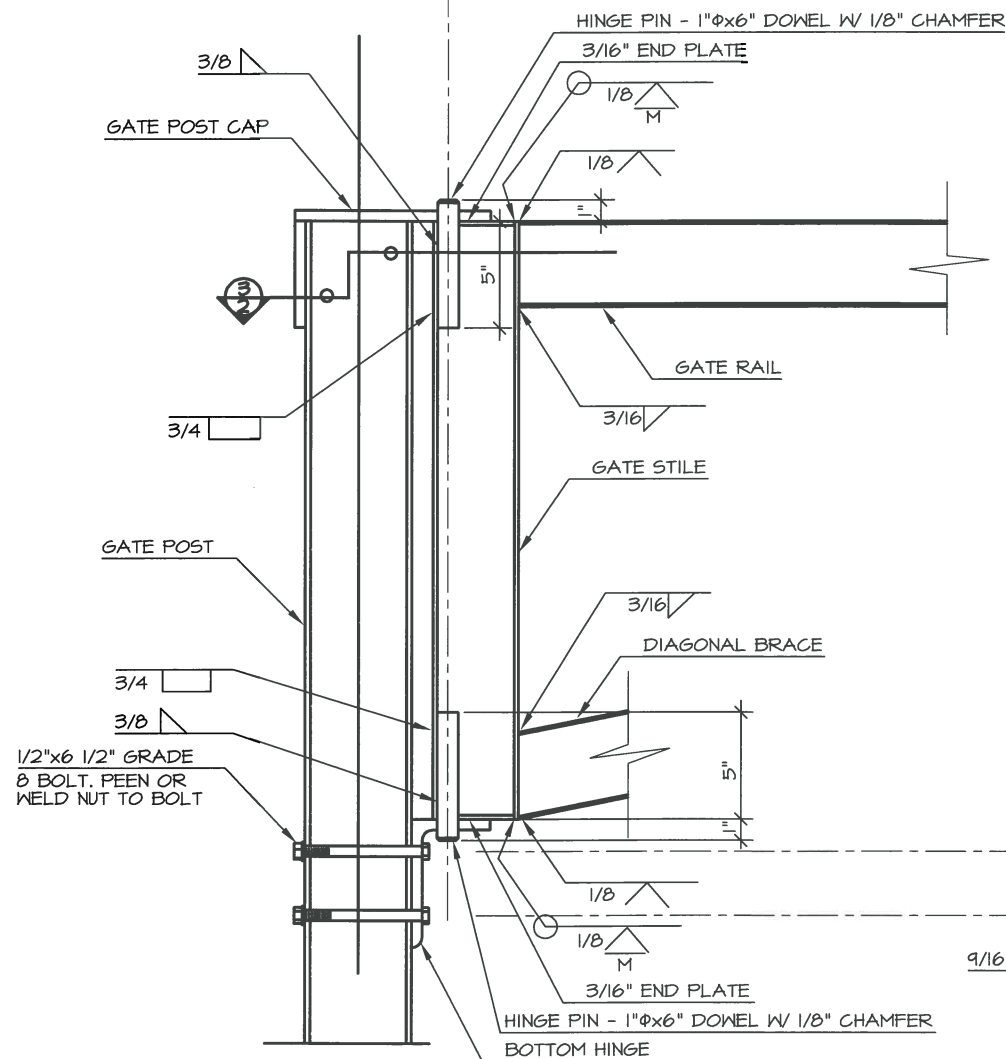
1
2 GATE POST CAP



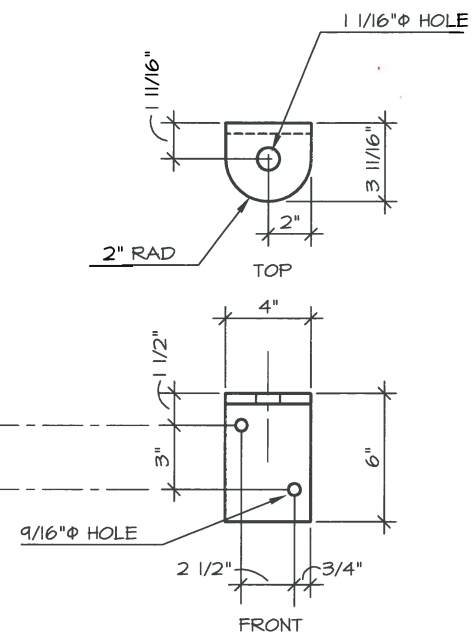
2
2 SITE PLAN



3
2 SECTION



4
2 SECTION



5
2 BOTTOM HINGE

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	MP5
14	CHANGED TITLE BLOCK	12/07	MP5
15	CHANGED STATE PARK LOGO	04/10	MP5
16	REPLACED STAMP	12/13	RBM



STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

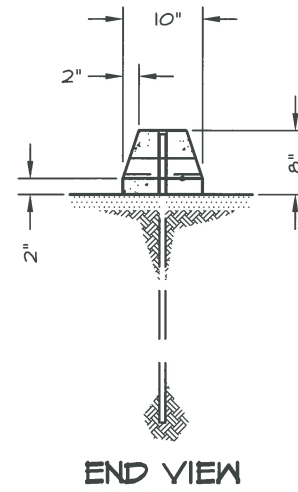
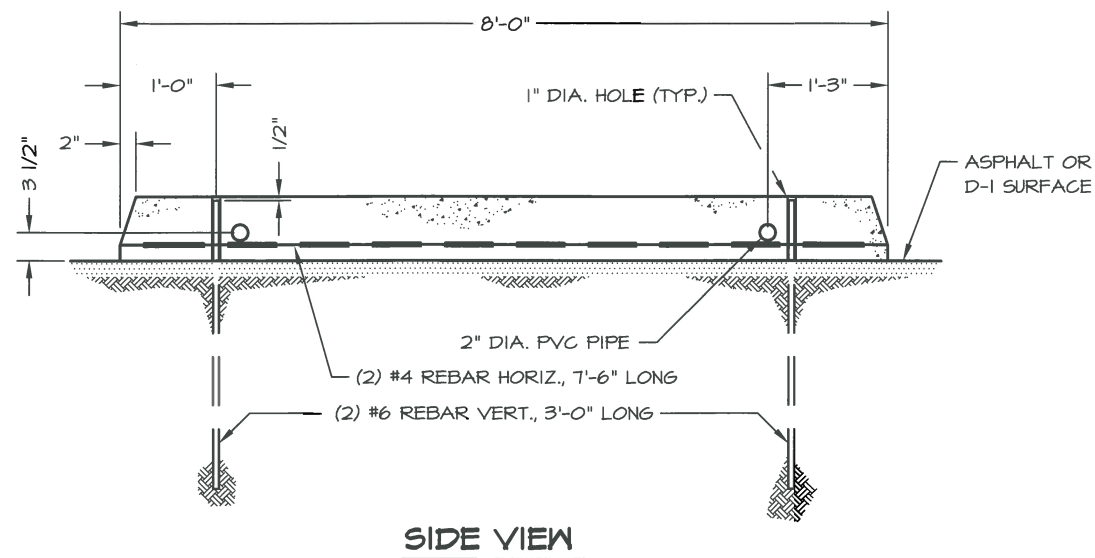
SINGLE GATE

DESIGN & CONSTRUCTION SECTION



PREPARED:
DRAWN: RK
REVIEWED: DH TY
DATE: 10/14/05

SHEET 2
G-1
OF 2 SHEETS



① CONCRETE PARKING BUMPER



STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

PARKING BUMPER

DESIGN & CONSTRUCTION SECTION



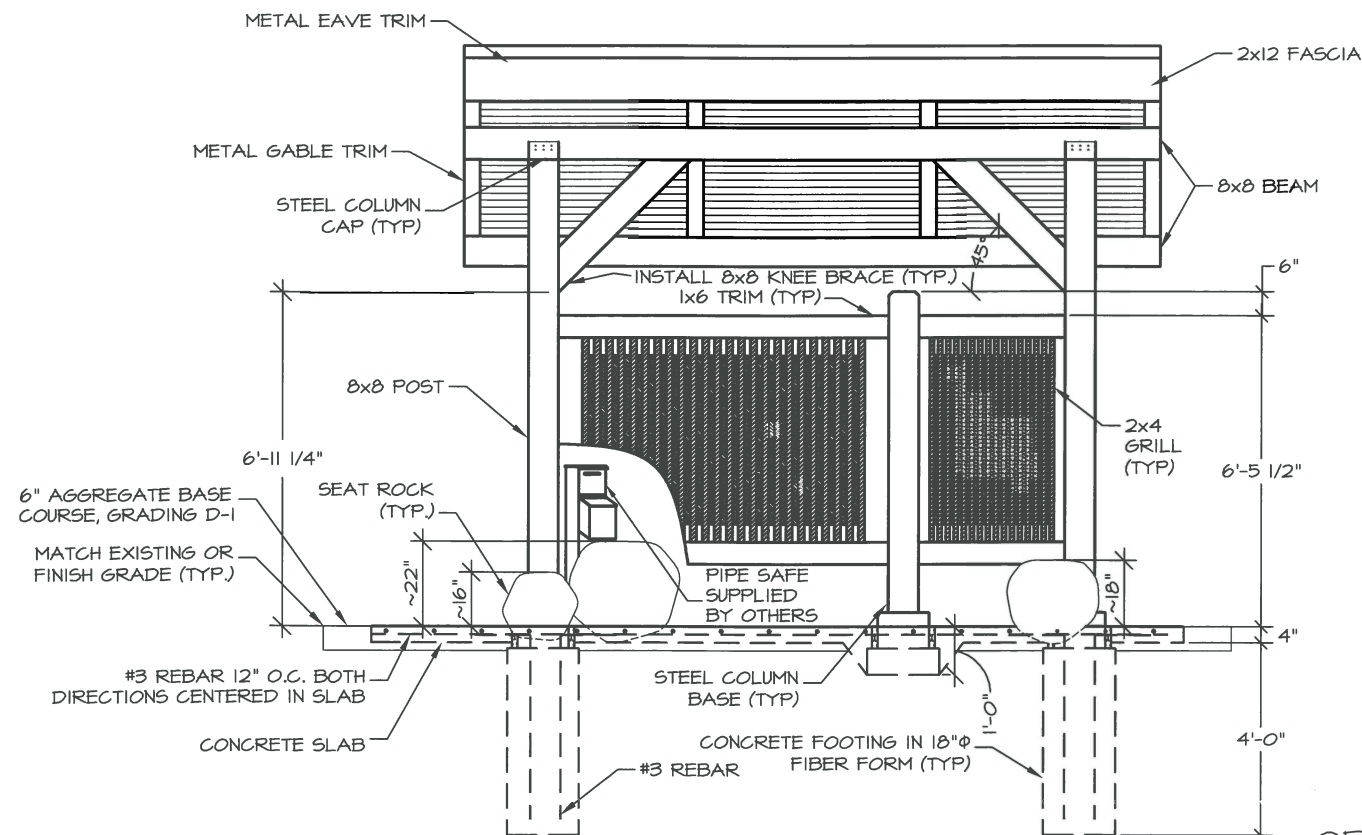
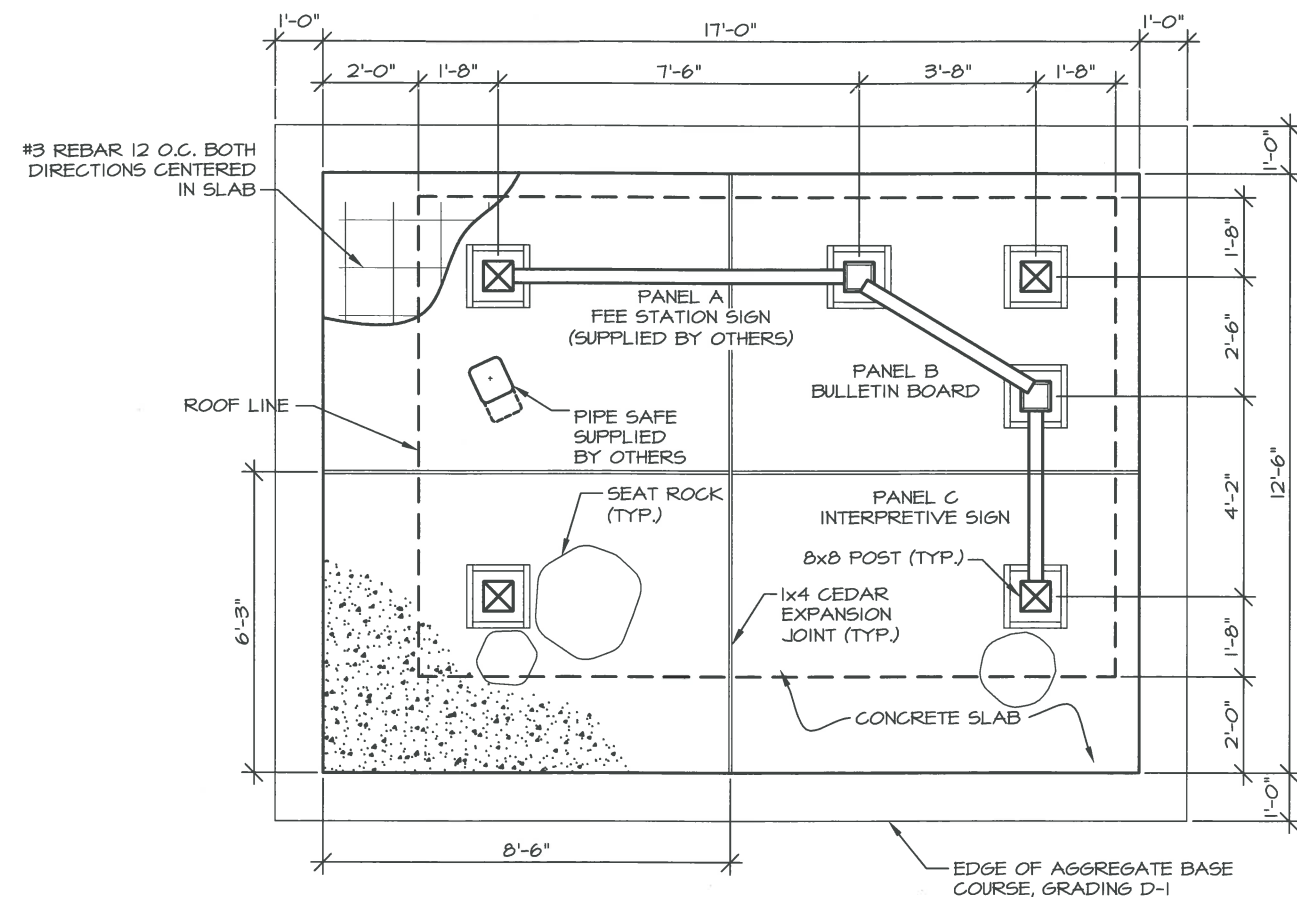
PREPARED: tlc
DRAWN: tlc
REVIEWED: DH
DATE: 1 MAY 94

SHEET 1

P-6

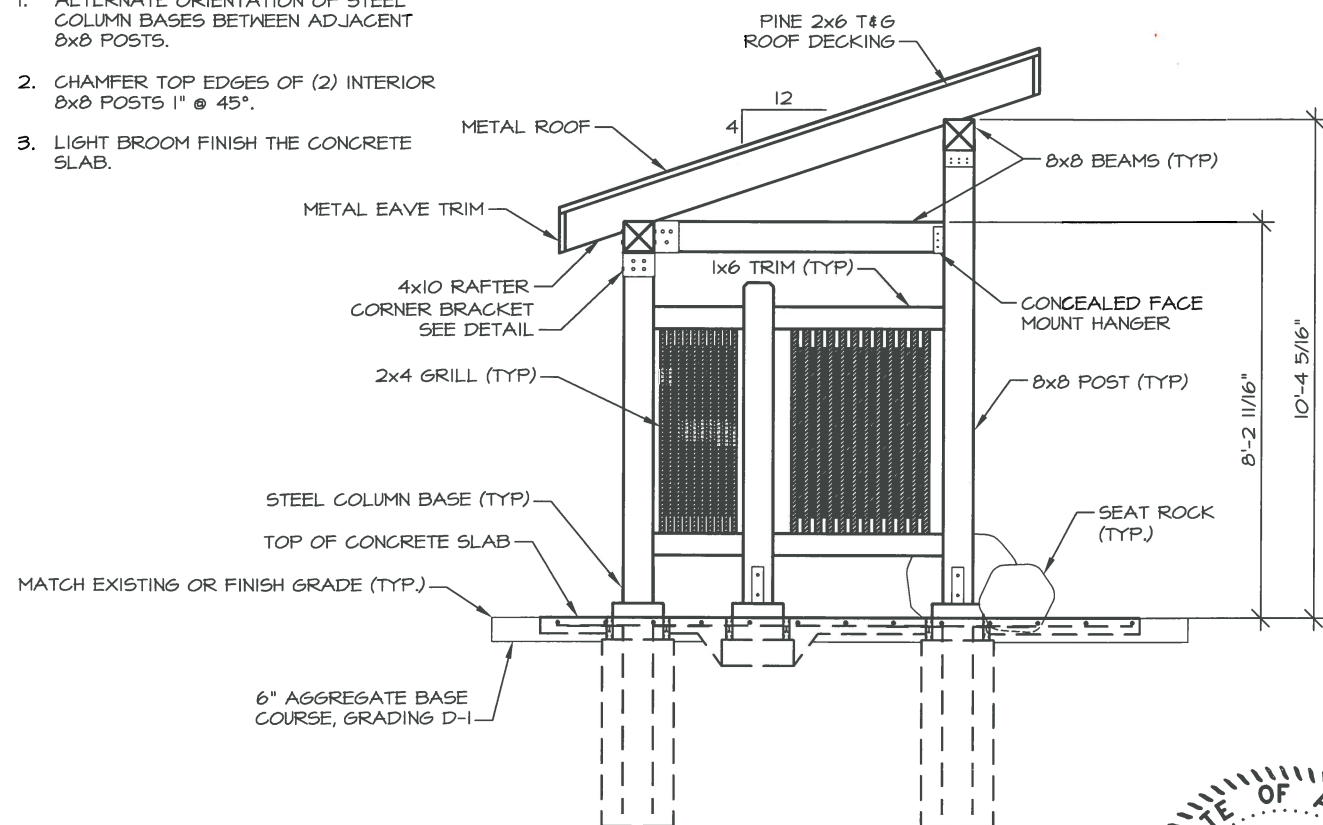
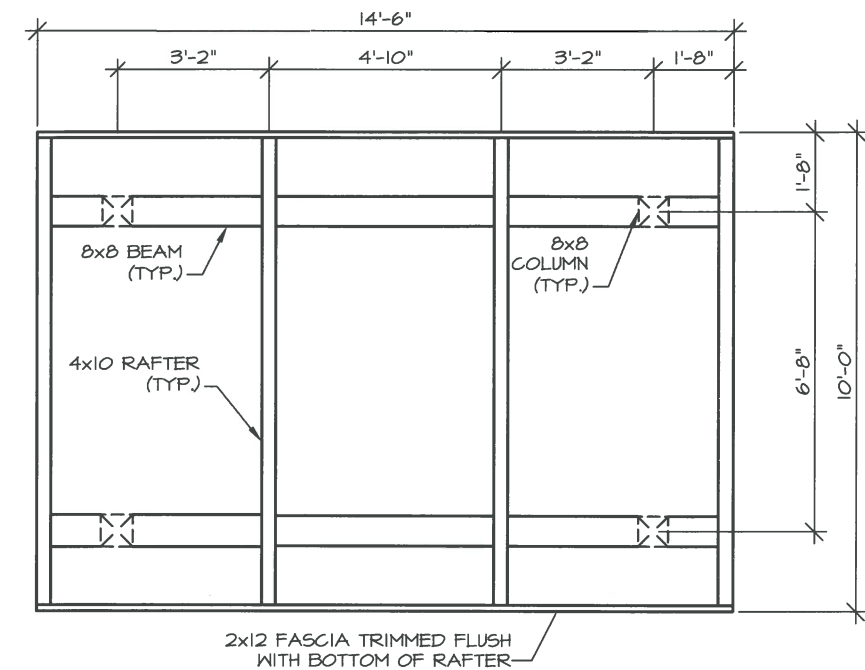
OF 1 SHEETS

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



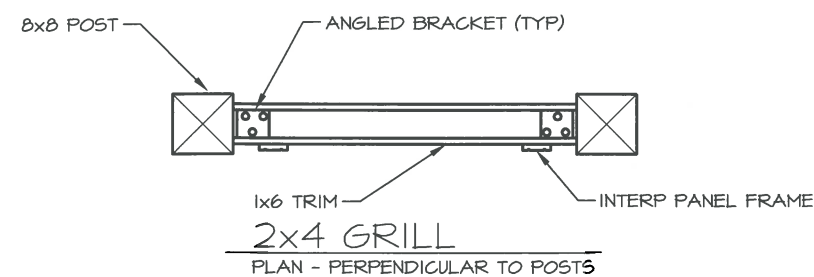
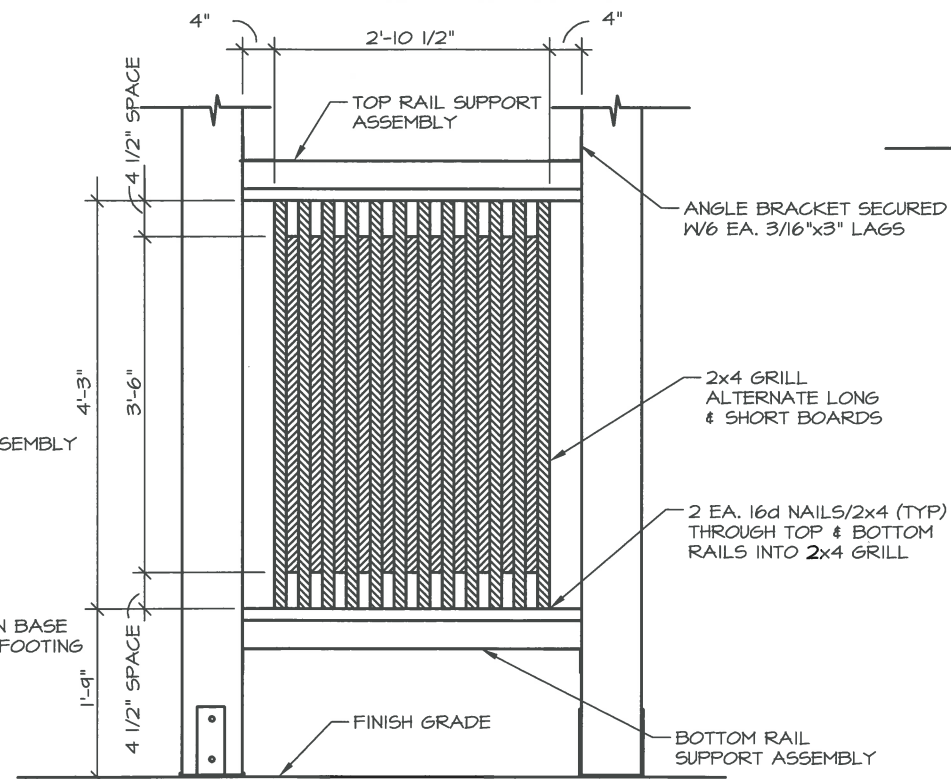
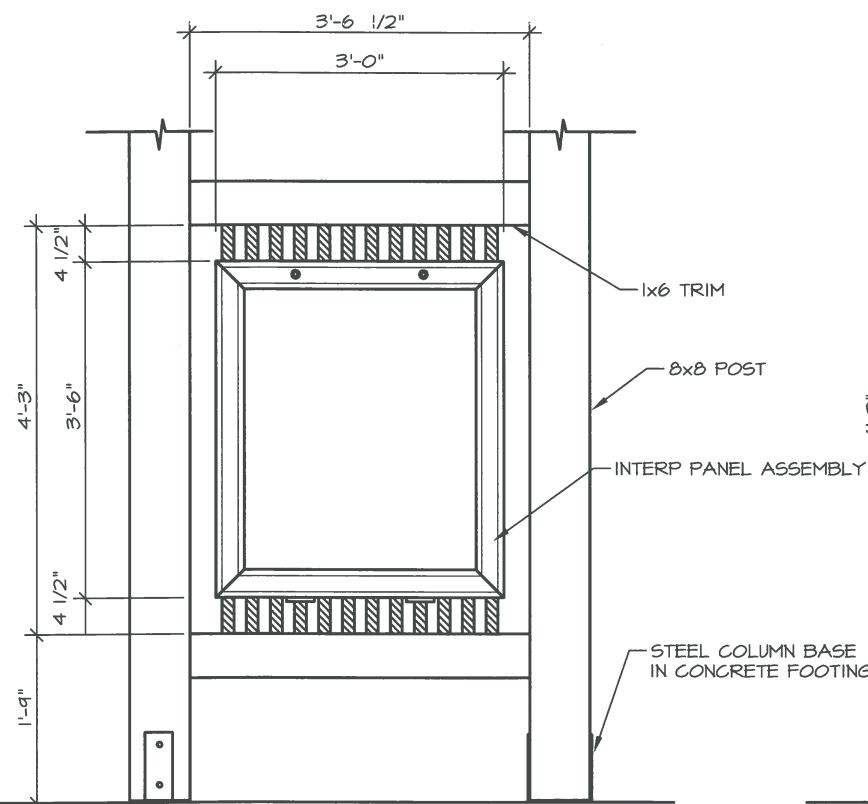
ORIENTATION KIOSK
PLAN & PROFILE

- 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.

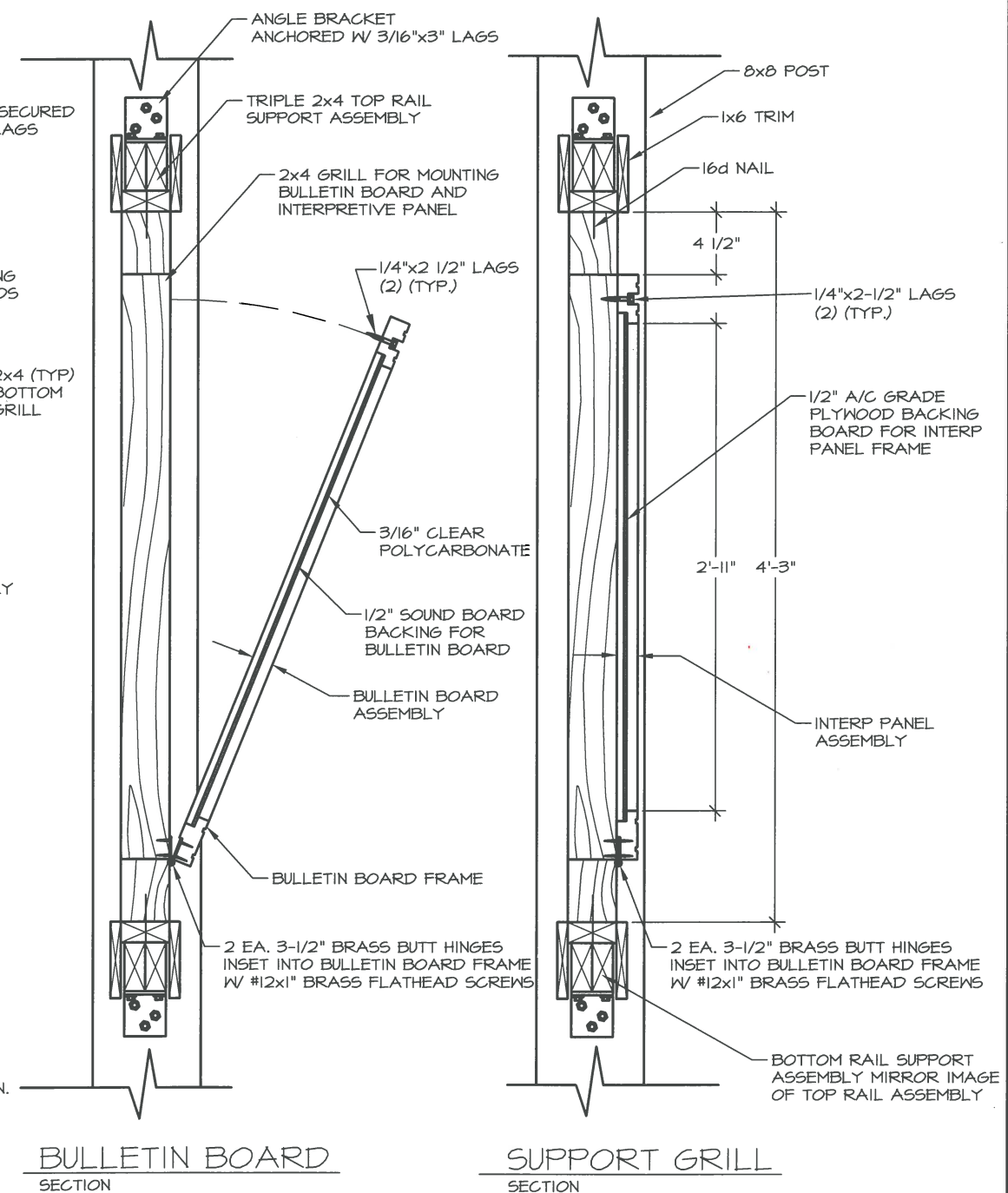
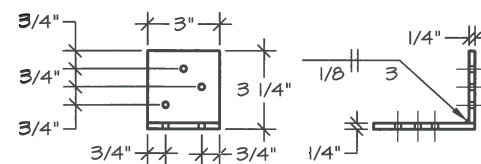
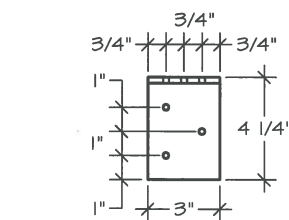
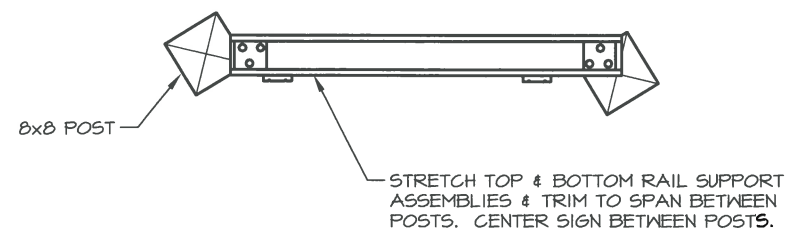


5	REPLACED STAMP	12/13	RBM
4	ADDED D-1 SHOULDER	12/10	MPS
3	CHANGED CONCRETE FOOTER, ADDED NOTE 3	12/10	MPS
2	UPDATED STATE PARK LOGO	12/10	MPS
1	CHANGED TITLE BLOCK	12/07	MPS
NO.	REVISION	DATE	APPROVED





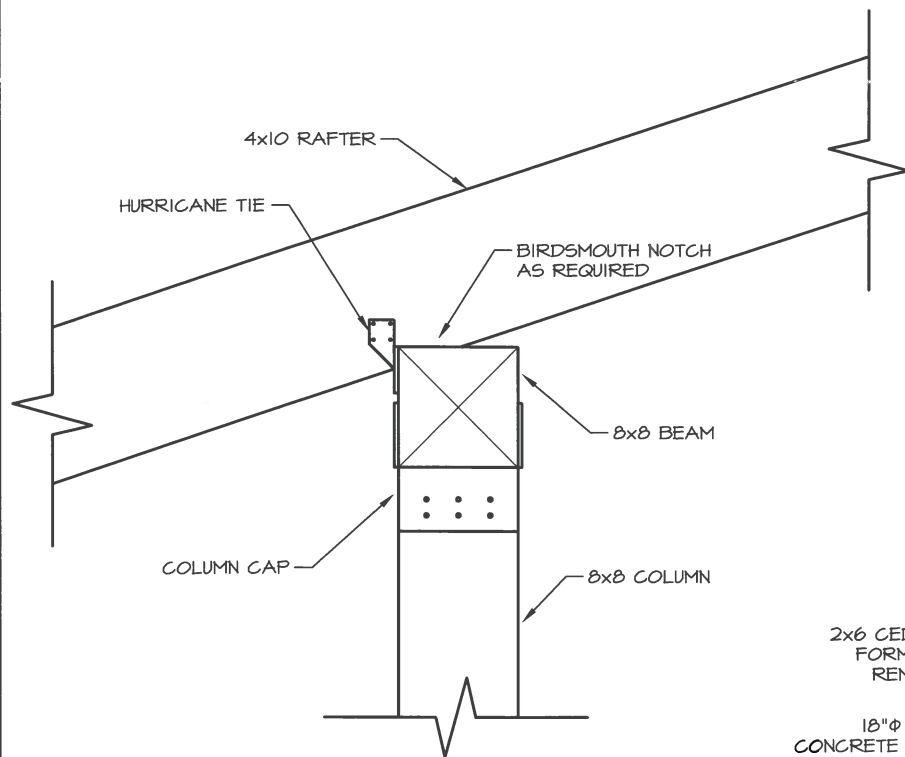
- NOTES:
1. NOTCH POSTS TO FIT ANGLE BRACKETS & TOP/BOTTOM SUPPORT RAILS.
 2. DO NOT NOTCH POSTS FULL LENGTH OF 2x4 GRILL.



- 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.

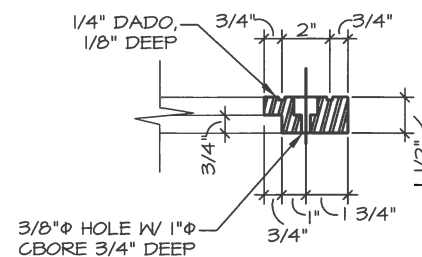
4	REPLACED STAMP	12/13	RBM
3	CHANGED INTERP FRAME FASTENER SYSTEM	12/10	MPS
2	UPDATED STATE PARK LOGO	12/10	MPS
1	CHANGED TITLE BLOCK	12/07	MPS
NO.	REVISION	DATE	APPROVED



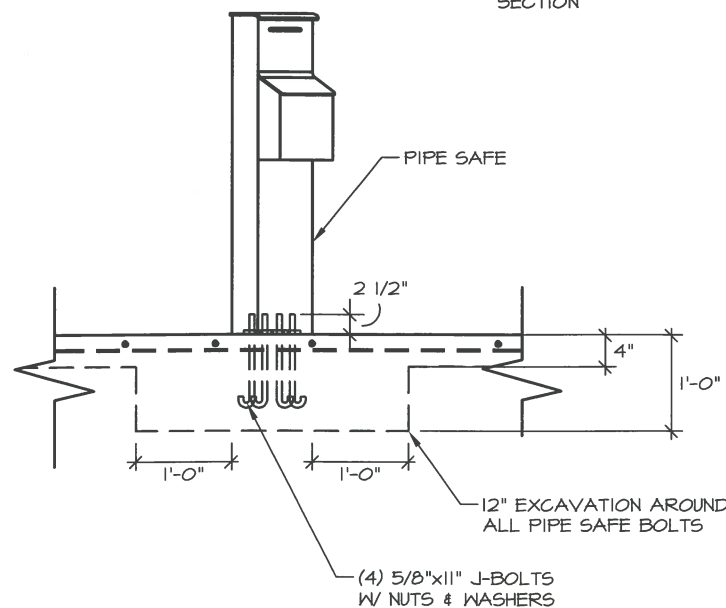


BEAM/RAFTER CONNECTION

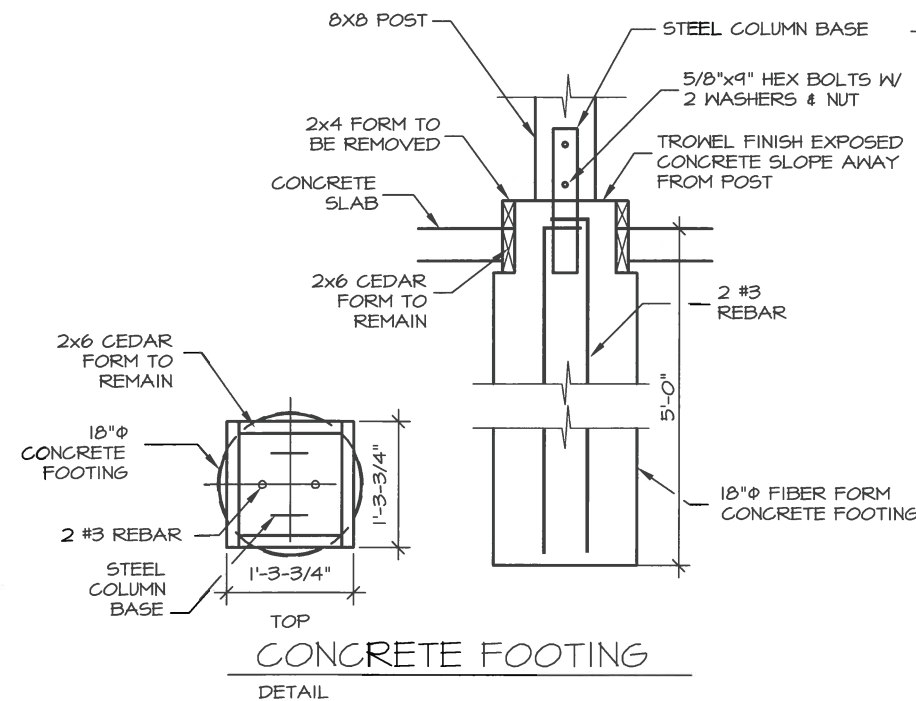
DETAILS - 2x6 T&G DECKING & METAL ROOF NOT SHOWN



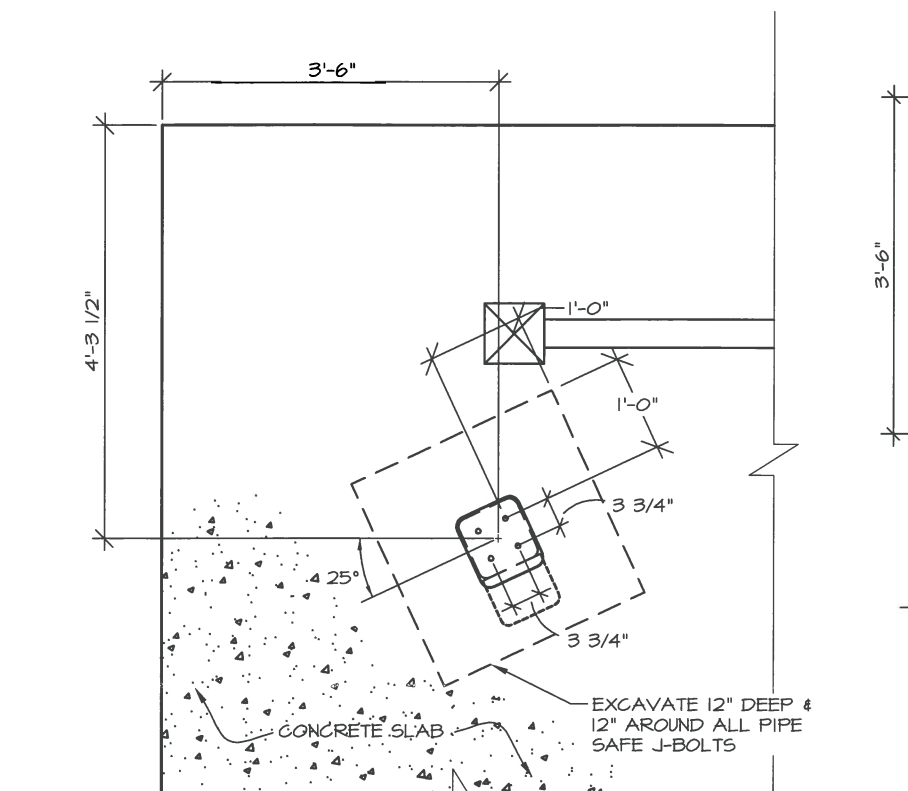
**FRAME
SECTION**



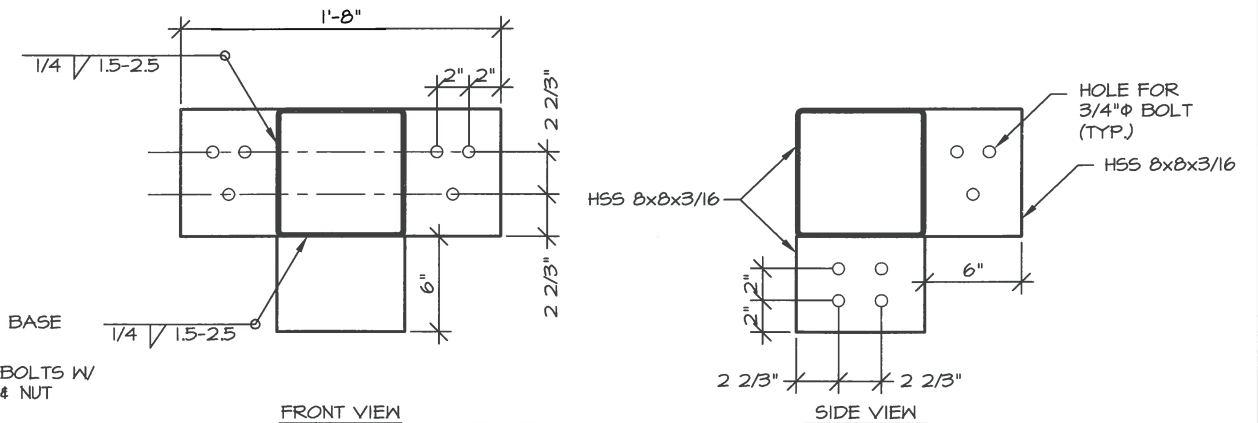
**PIPE SAFE
DETAILS**



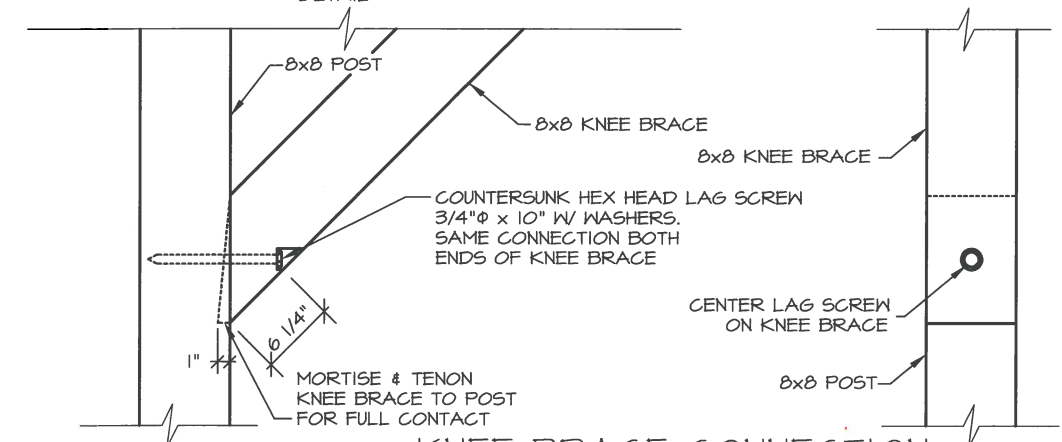
**CONCRETE FOOTING
DETAIL**



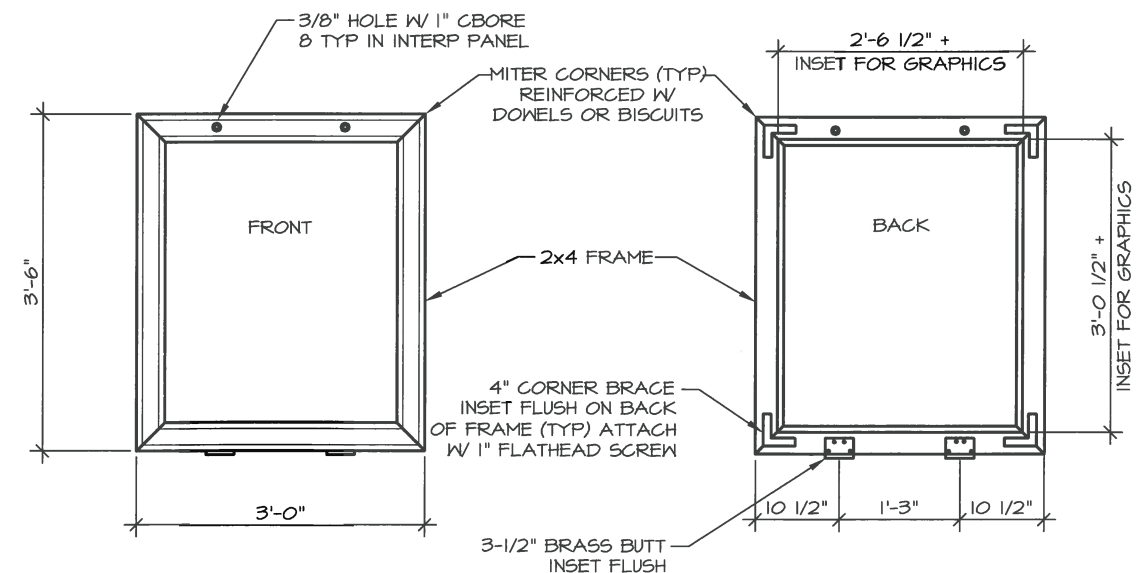
**PIPE SAFE BOLT PATTERN
DETAILS**



**CORNER BRACKET
DETAIL**



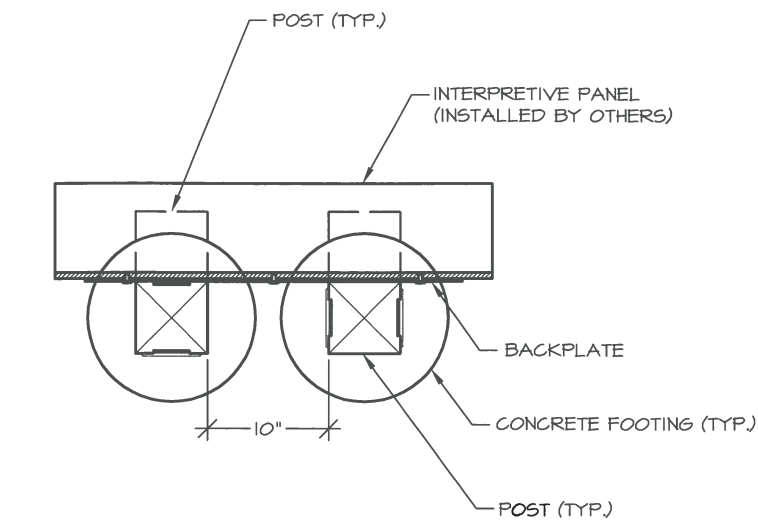
**KNEE BRACE CONNECTION
DETAIL**



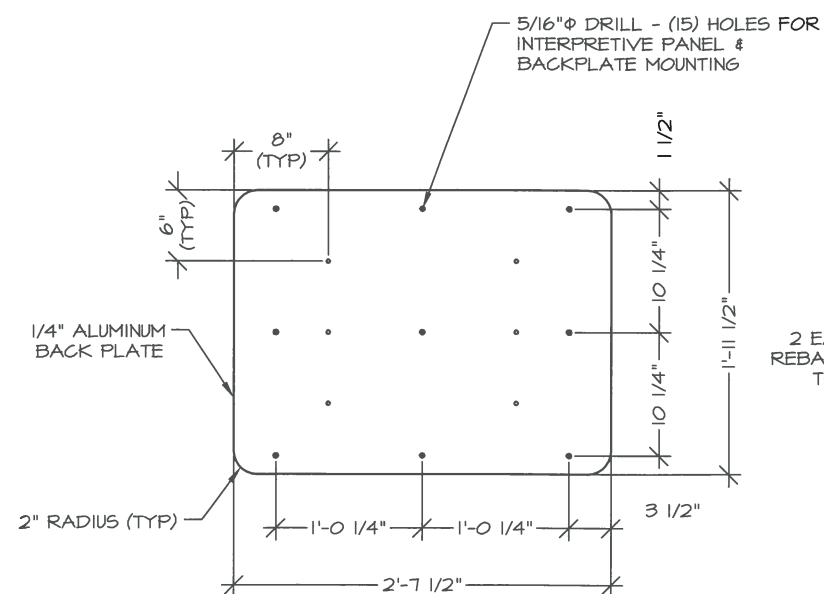
**INTERP PANEL/BULLETIN BOARD FRAME
DETAILS**

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
NO.	REVISION	DATE	APPROVED

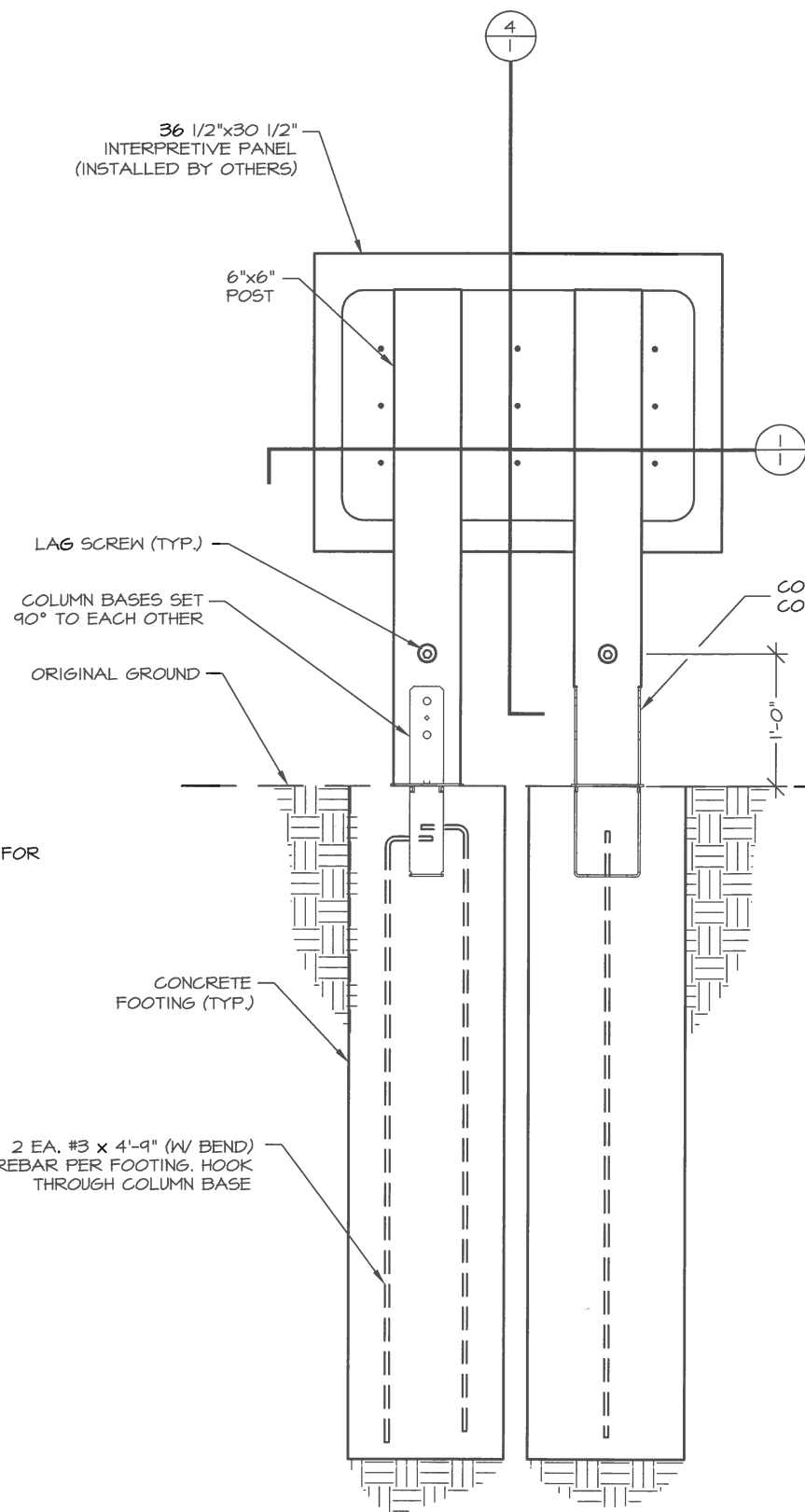




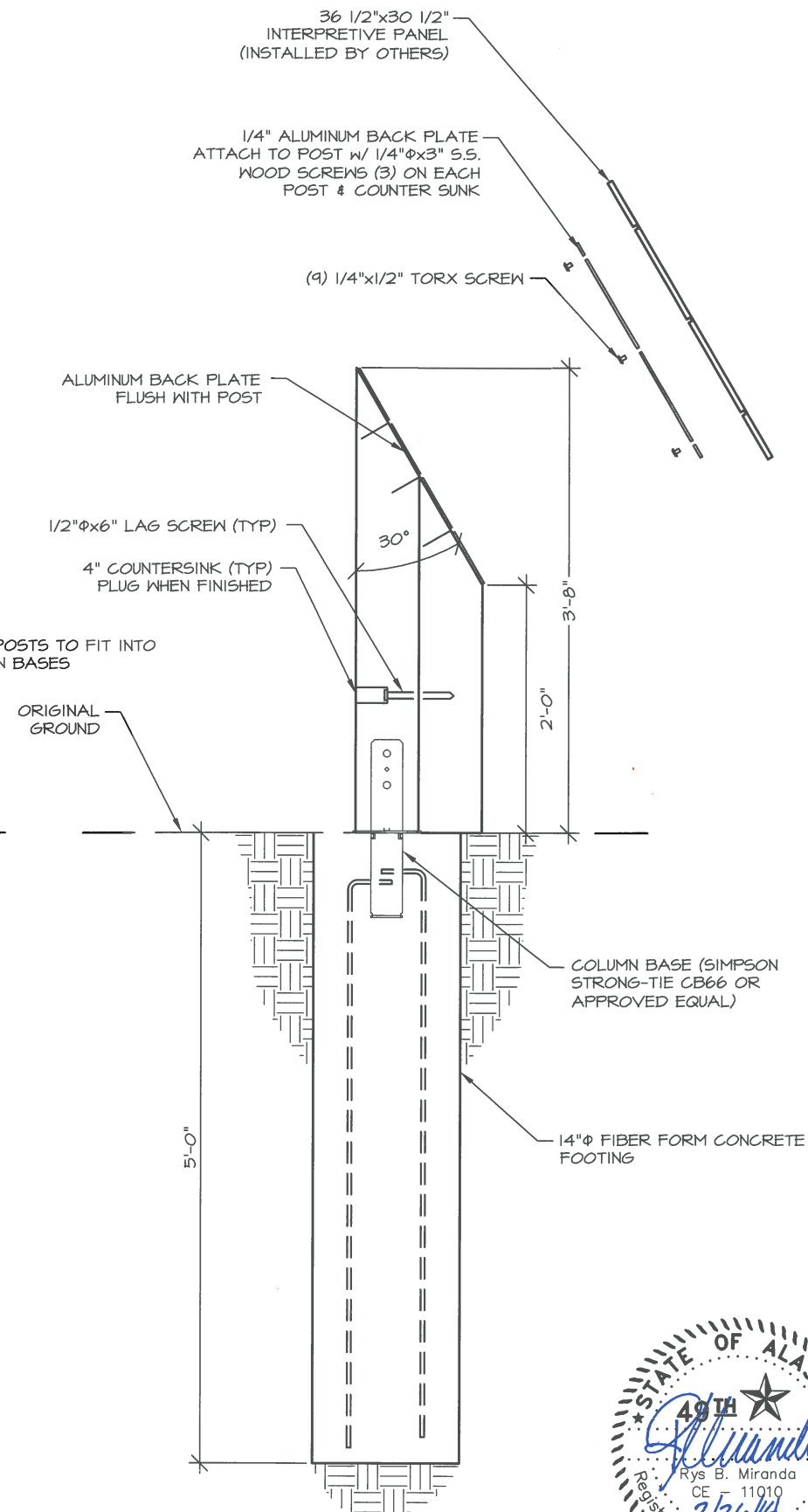
SECTION



ALUMINUM BACK PLATE



BACK ELEVATION



SECTION

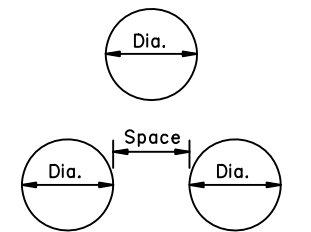


NO.	REVISION	DATE	APPROVED
1	REPLACED STAMP	12/13	REM

GENERAL NOTES:

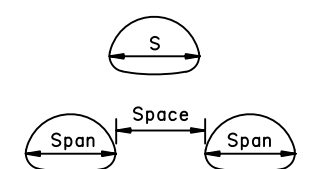
1. Sidefill shall be placed and compacted with care under haunches of pipe and shall be brought up evenly and simultaneously on both sides of pipe to 1 foot above the top of the full length of the pipe.
2. Alternate installation methods may only be used when specified or approved by the Engineer.

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



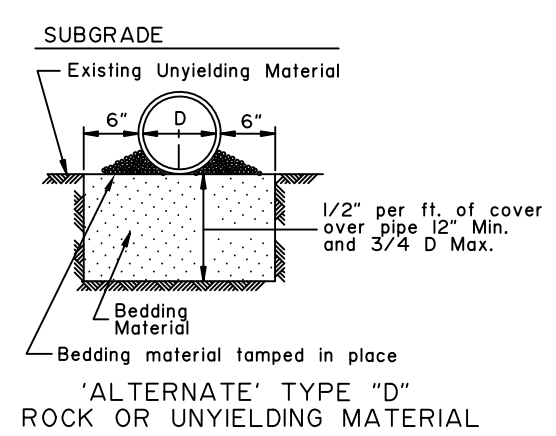
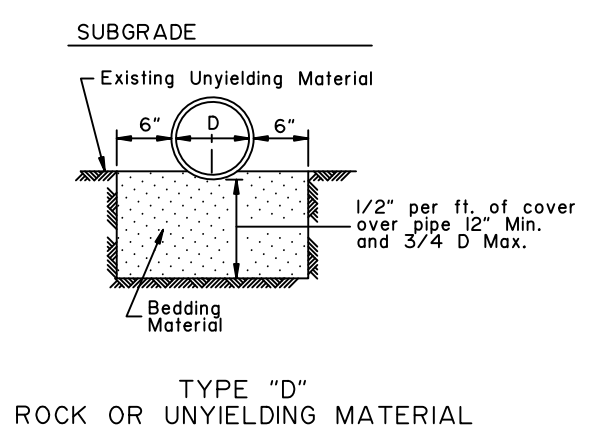
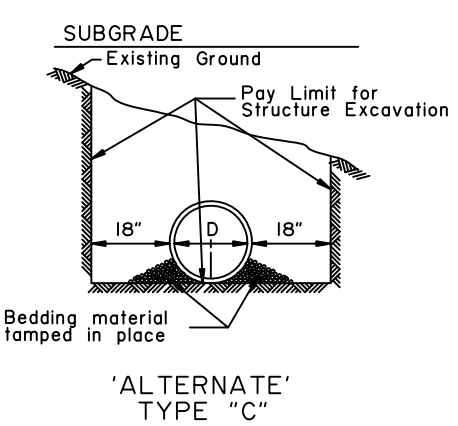
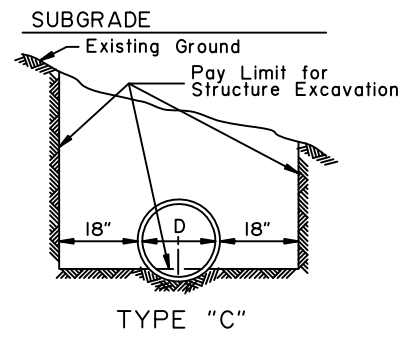
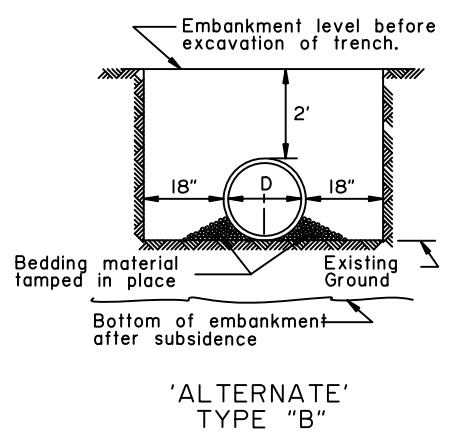
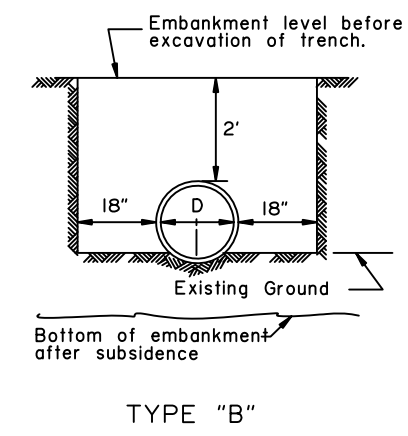
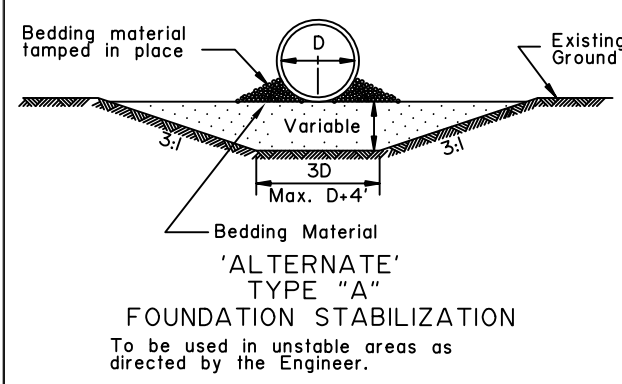
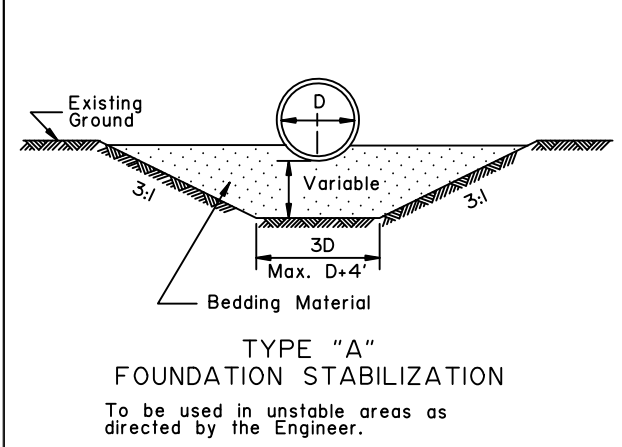
MULTIPLE INSTALLATIONS	
Dia.	Minimum Space Between Pipes
0" - 42"	24"
48" & Over	1/2 Span of pipe arch or 3', whichever is less.

State of Alaska DOT&PF
ALASKA STANDARD PLAN
CULVERT PIPE & ARCH
INSTALLATION DETAILS

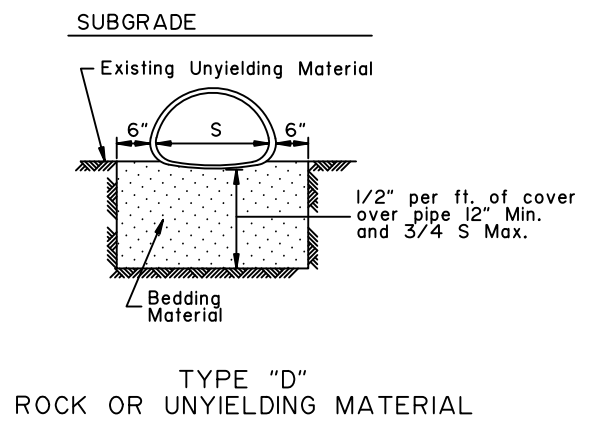
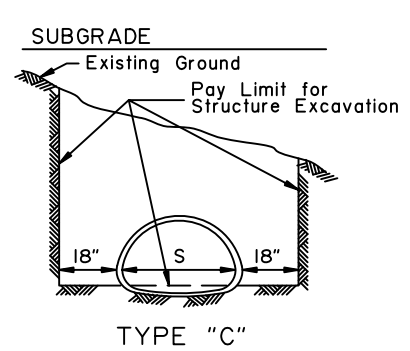
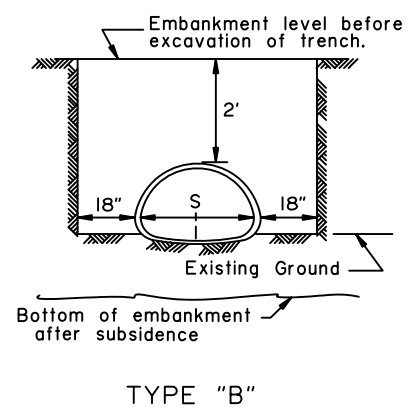
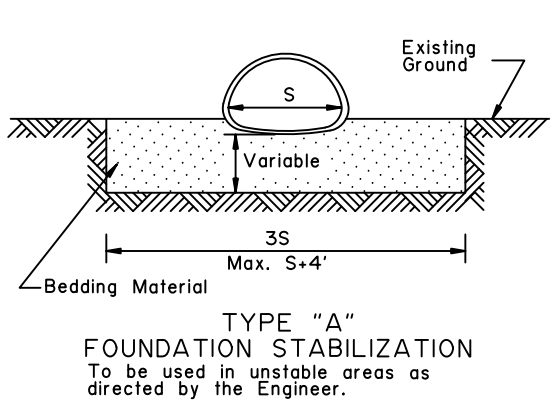
Adopted as an Alaska
Standard Plan by: *Kenneth J. Fisher*
Kenneth J. Fisher, P.E.
Chief Engineer

Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:
Next Code and Standards Review date: 02/08/2029



CULVERT PIPE



ARCH

GENERAL NOTES:

- All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.
- The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
- No more than one type of pipe may be used on any single installation or installation grouping.
- 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.
- See Standard Plan D-01 "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
- 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.
- 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".

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.

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

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 STEEL PIPE

CORRUGATED STEEL PIPE-ARCH

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

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

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

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.

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

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- All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.
- The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
- No more than one type of pipe may be used on any single installation or installation grouping.
- 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.
- See Standard Plan D-01 "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
- 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.
- 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".

Minimum & Maximum Cover for Aluminum Spiral Rib Circular Pipe*					
Gage		I6	I4	I2	I0
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

* $\frac{3}{4}$ x $\frac{3}{4}$ x $7\frac{1}{2}$ in. Corrugations

Minimum & Maximum Cover for Aluminum Spiral Rib Pipe-Arch*						
Gage			I6	I4	I2	I0
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

* $\frac{3}{4}$ x $\frac{3}{4}$ x $7\frac{1}{2}$ in. Corrugations

ALUMINUM SPIRAL RIB PIPE

STEEL SPIRAL RIB PIPE

Minimum & Maximum Cover for Steel and Aluminized Steel Spiral Rib Circular Pipe*					
Gage		I6	I4	I2	I0
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

* $\frac{3}{4}$ x $\frac{3}{4}$ x $7\frac{1}{2}$ 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

* $\frac{3}{4}$ x $\frac{3}{4}$ x $7\frac{1}{2}$ in. Corrugations

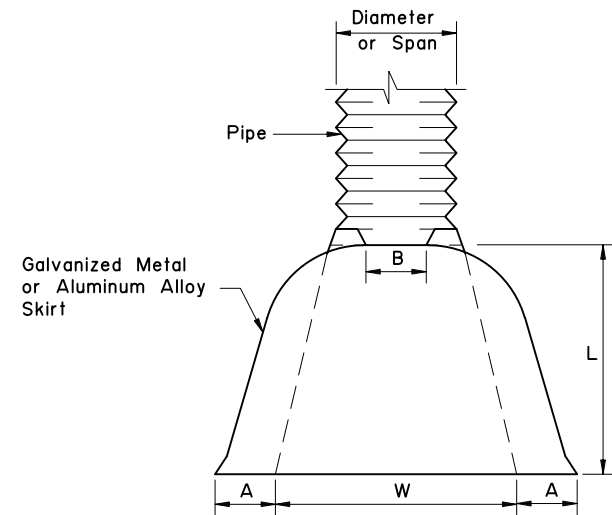
State of Alaska DOT&PF
ALASKA STANDARD PLAN

PIPE AND ARCH TABLES

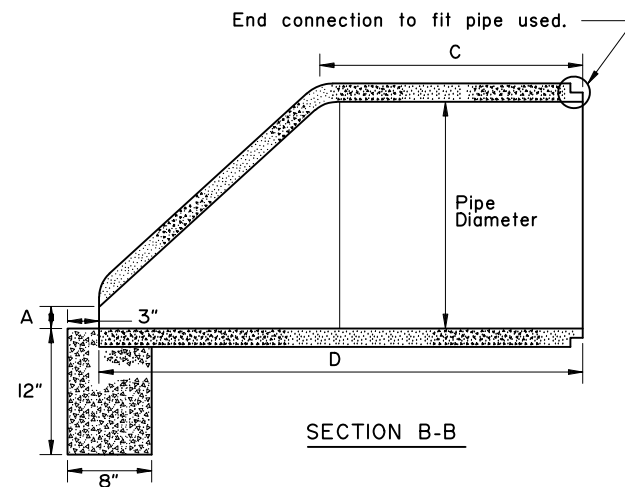
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Chief Engineer

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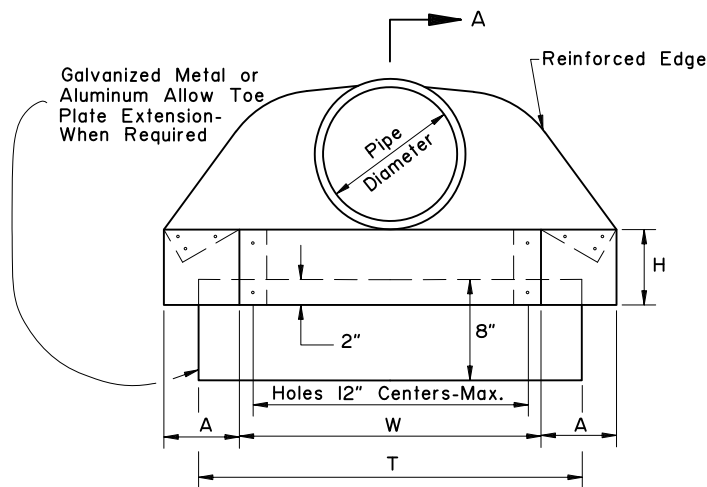
PLAN
ROUND AND PIPE ARCH



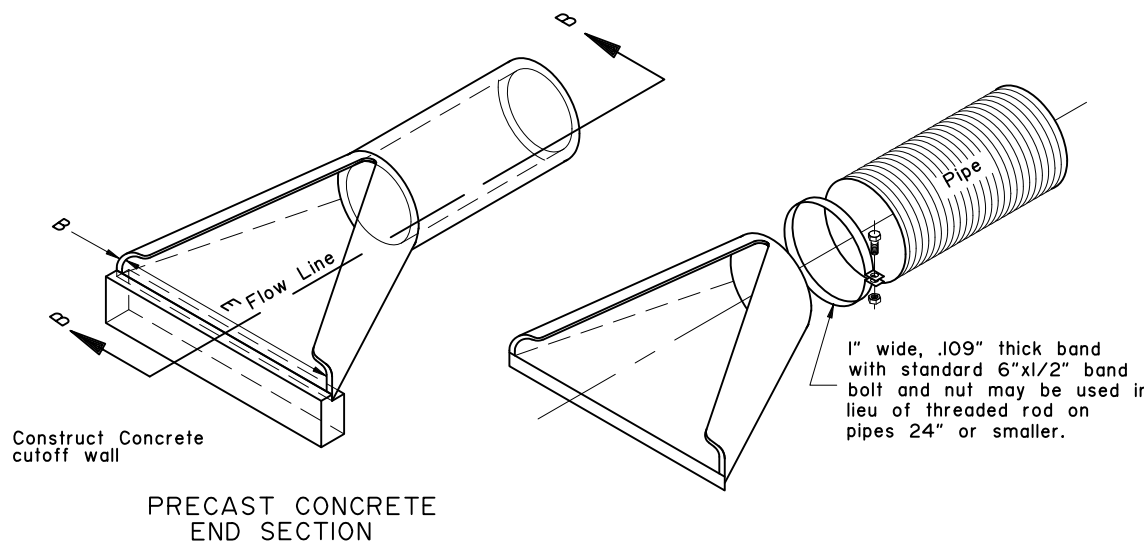
SECTION B-B

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"

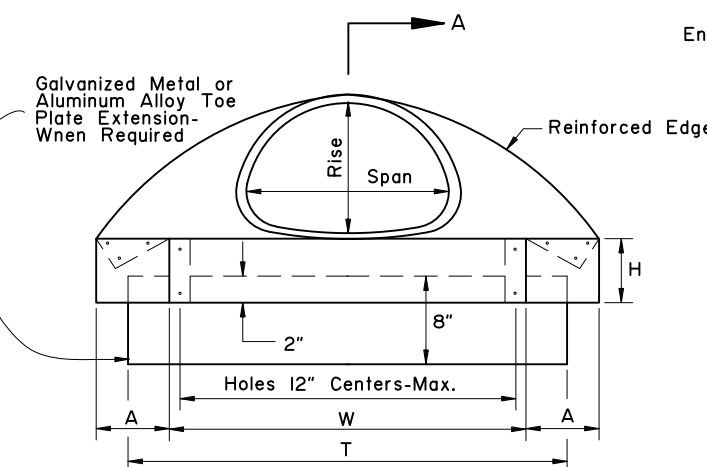
ROUND PIPE										
Pipe Diam. Inches	Thickness For Aluminum	Thk. for Galv. Metal	Dimension Inches						Skirt	Approx. Slope
			A 1" Tol.	B Max.	H 1" Tol.	L 1 1/2" Tol.	W 2" Tol.	T 2" Tol.		
12"	0.060	0.064	6"	6"	6"	21"	24"	34"	1 Pc.	2 1/2
15"	0.060	0.064	7"	8"	6"	26"	30"	40"	1 Pc.	2 1/2
18"	0.060	0.064	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



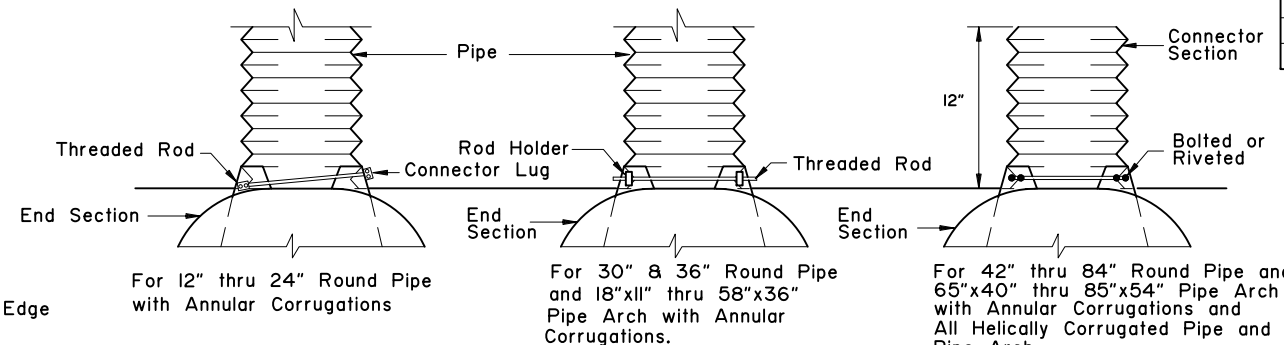
ELEVATION
ROUND PIPE



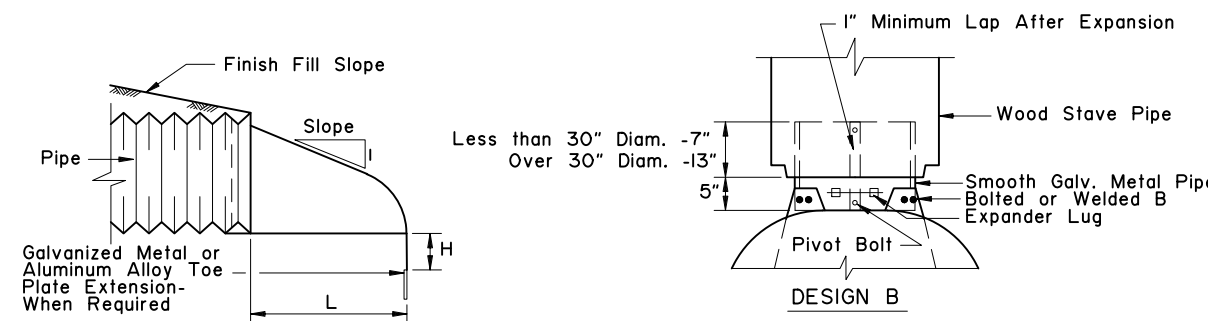
PRECAST CONCRETE
END SECTION



ELEVATION
PIPE ARCH



DESIGN A



METAL END SECTION CONNECTED
TO WOOD STAVE PIPE

PIPE-ARCH											
Pipe-Arch Dimension Inches		Thickness for Aluminum	Thk. for Galv. Metal	Dimension Inches						Skirt	Approx. Slope
Span	Rise			A 1" Tol.	B Max.	H 1" Tol.	L 1 1/2" Tol.	W 2" Tol.	T 2" Tol.		
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

GENERAL NOTES:

- 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.
- Galvanized Metal or Aluminum Alloy End Sections may be used on Wood Stave and Plastic Pipe.
- 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.*
Kenneth J. Fisher, P.E.
Chief Engineer

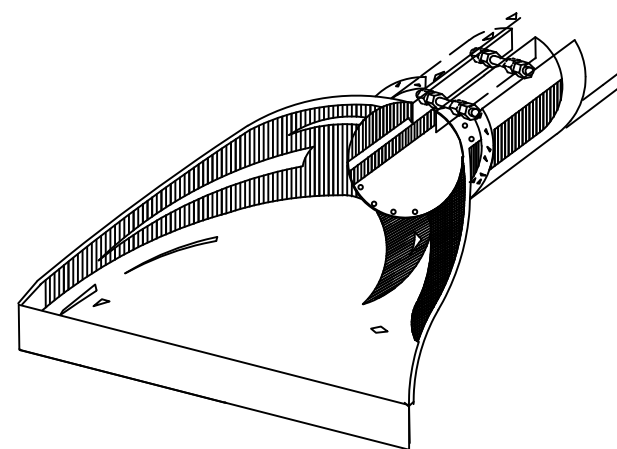
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

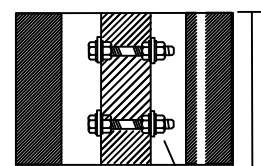
Next Code and Standards Review date: 02/08/2029

GENERAL NOTES

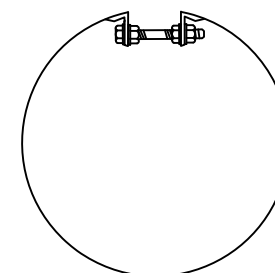
1. See general notes on sheet 1 of 3.
2. See sheet 1 of 3 for metal end section dimensions.
3. Insert bolts, washers and rivets shall be galvanized. Insert thickness is the same as the end section.
4. Use culvert inserts only at inlet.



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



SEE NOTE 2

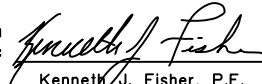


5/8" GALV.BOLTS

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

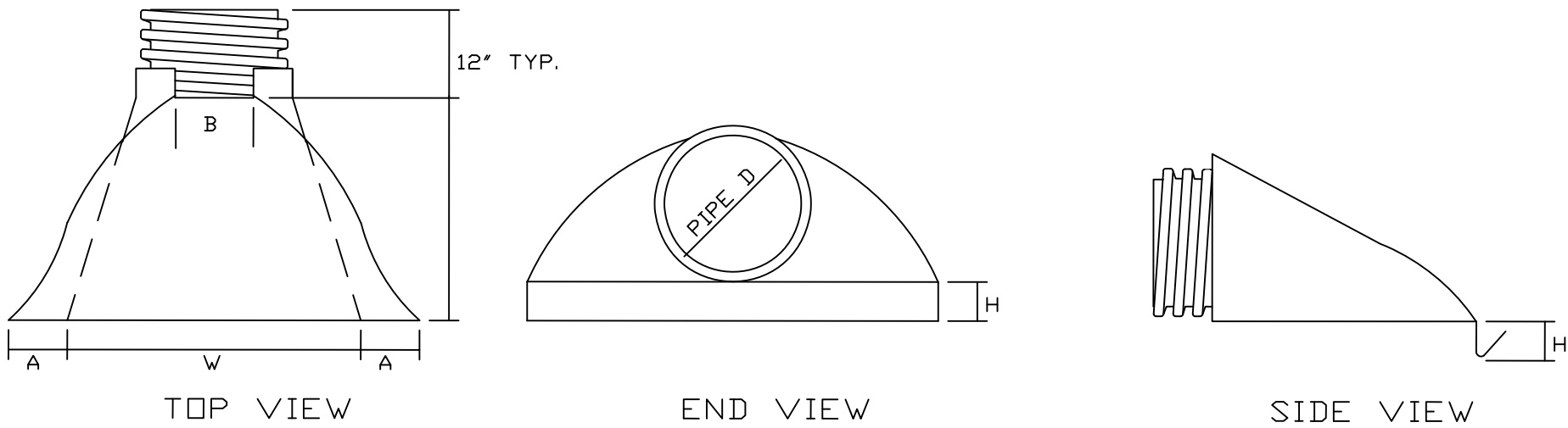
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

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

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.

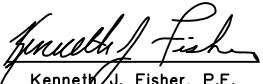


PIPE DIAMETER	DIMENSIONS IN MILLIMETERS				
	A<1"±>	B MAX	H<1"±>	L<1/2"±>	W<2"±>
12" and 15"	6 1/2"	10"	6 1/2"	25"	29"
18"	7 1/2"	15"	6 1/2"	32"	35"
24"	7 1/2"	18"	6 1/2"	36"	45"
30"	10 1/2"	N/A	7"	53"	68"
36"	10 1/2"	N/A	7"	53"	68"

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:

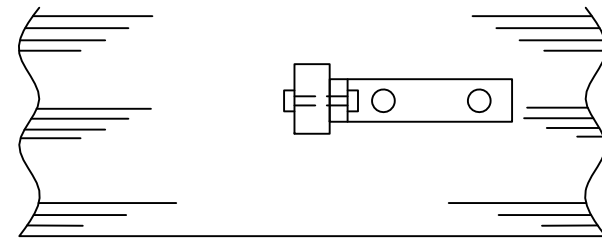
Next Code and Standards Review date: 02/08/2029

GENERAL NOTES:

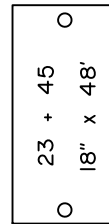
- Culvert marker post shall be installed with galvanized steel hardware meeting the following requirements: Galvanizing for nuts and washers shall meet the requirements of ASTM A-153, Class C. Galvanizing for steel mounting supports shall meet the requirements of MIL-P-26915A, or ASTM A-153, Class C.

DIRECTION OF TRAFFIC

Shoulder of Road



TOP VIEW

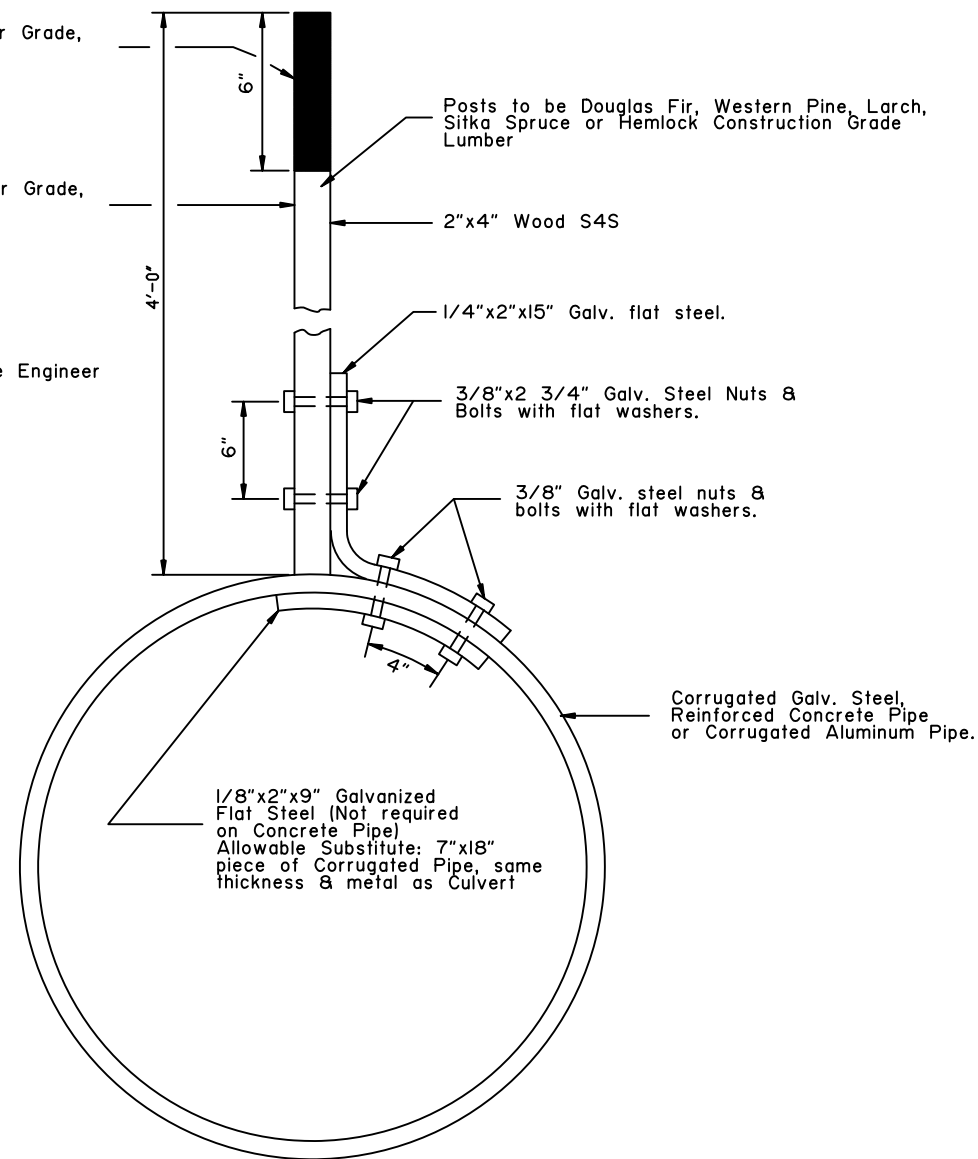


Sta. and size of Culvert to be stamped into a 2"x4"x0.064" thick brass plate, fastened, with No. 8 round head brass screws, to the marker post as shown. Plate to be on side of post facing traffic.

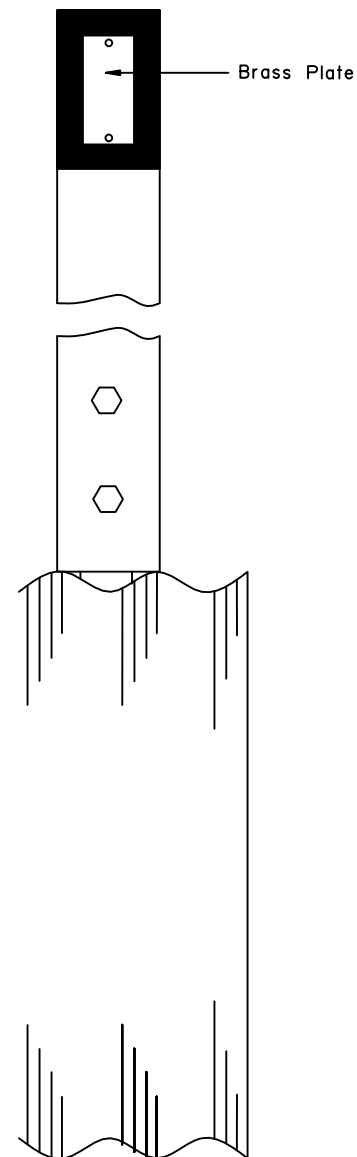
* Black Paint, Exterior Grade, Semi Gloss Enamel.

* White Paint, Exterior Grade, Semi Gloss Enamel

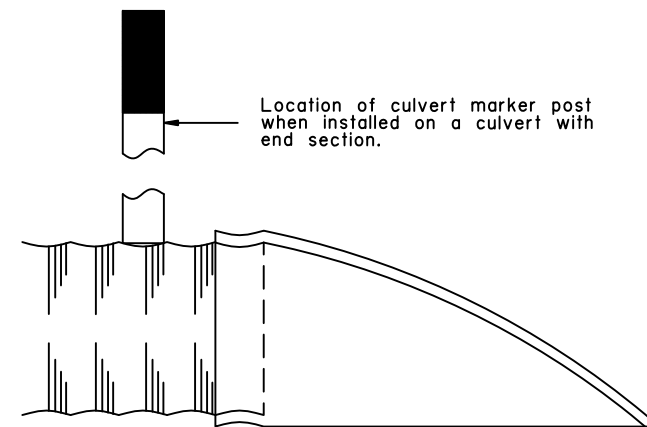
* As approved by the Engineer



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*
Kenneth J. Fisher, P.E.
Chief Engineer

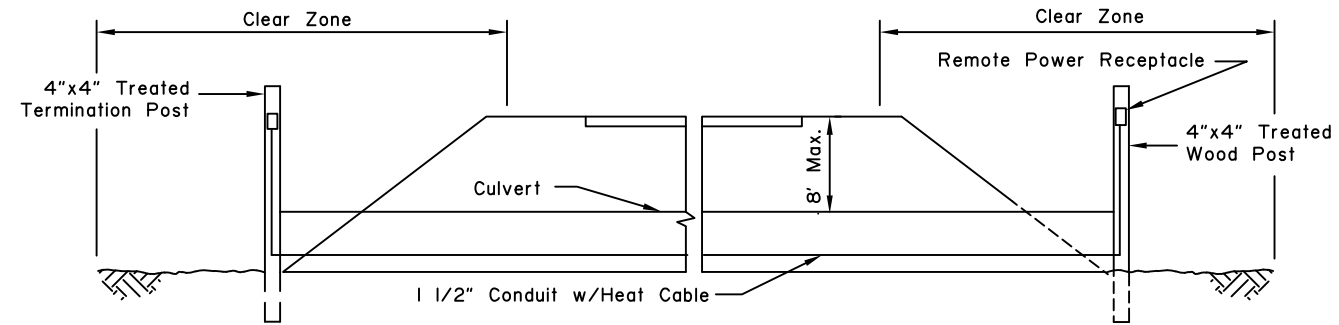
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

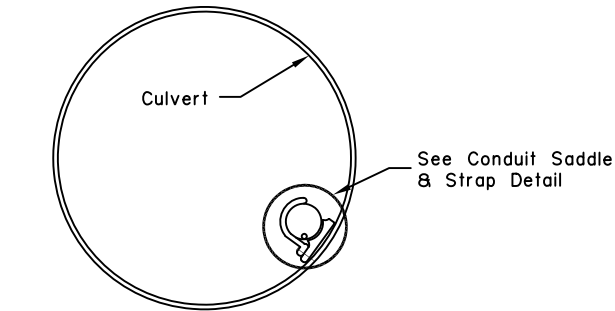
Next Code and Standards Review date: 02/08/2029

GENERAL NOTES:

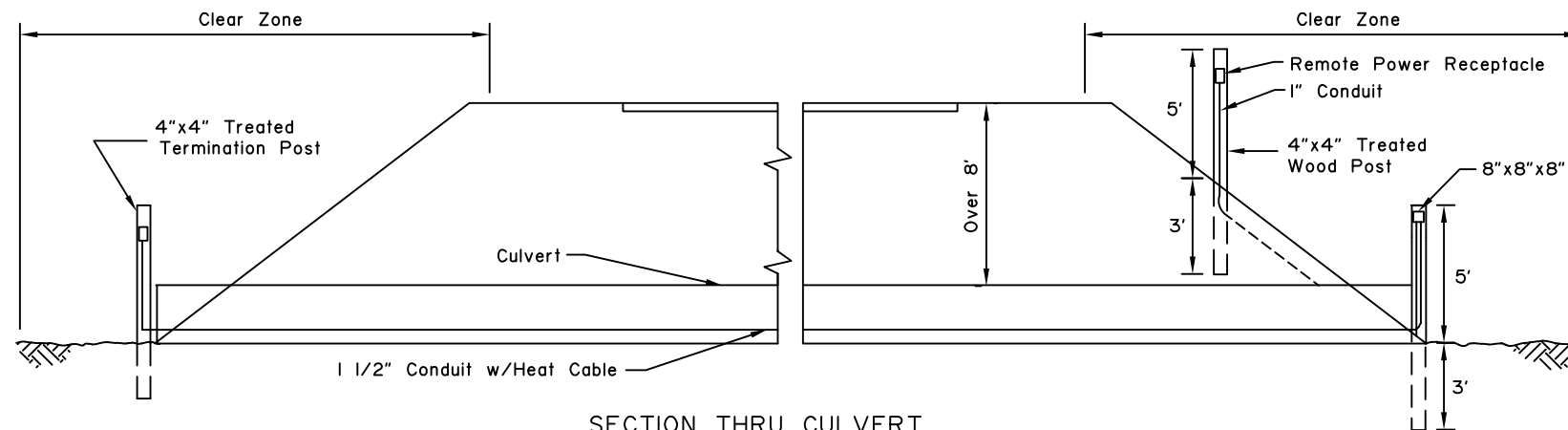
1. Type FD Cast Device Box w/green pilot light on the termination post shall be located a minimum of 6" above high water.



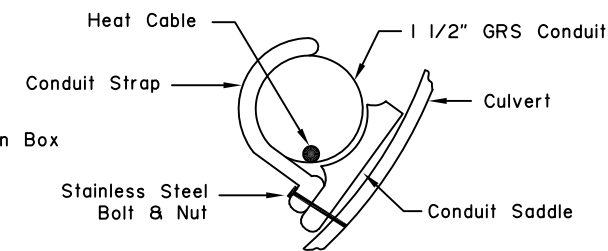
SECTION THRU CULVERT
(Low Fill)



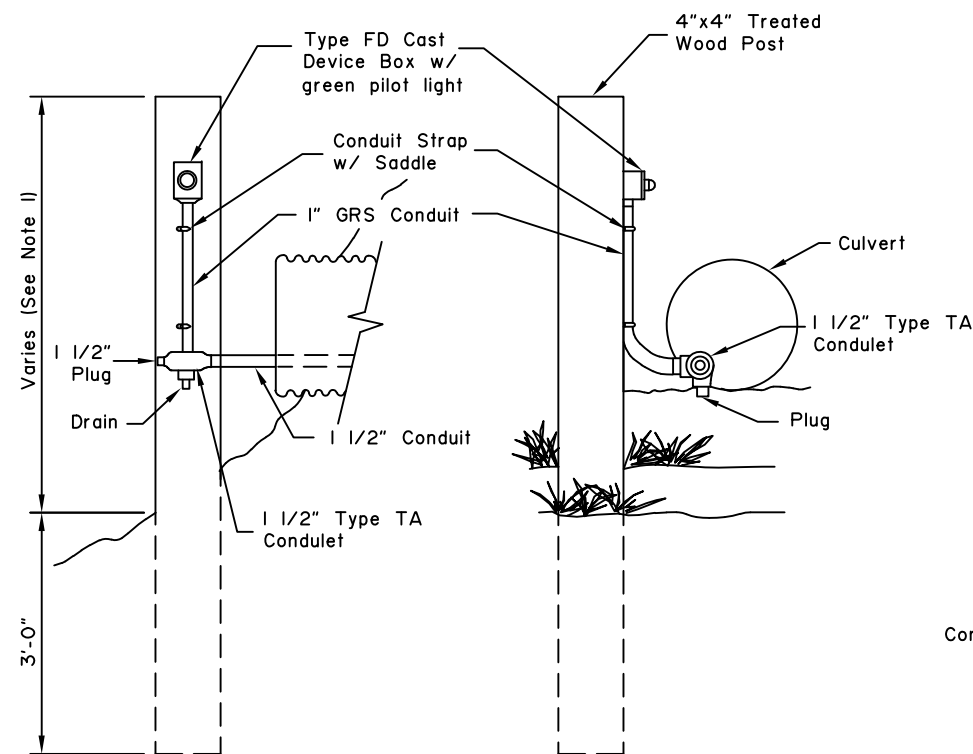
CULVERT CROSS SECTION



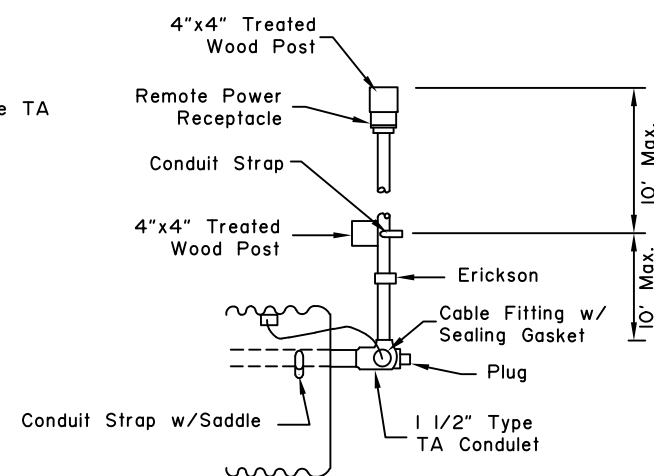
SECTION THRU CULVERT
(High Fill)



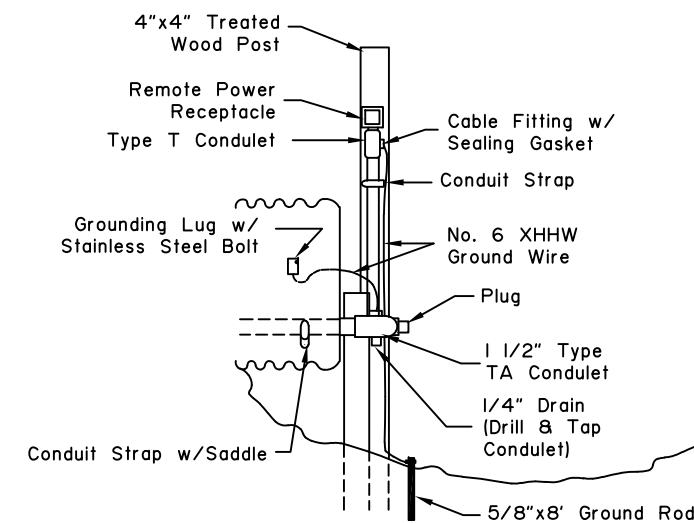
CONDUIT SADDLE &
STRAP DETAIL



FRONT VIEW
PROFILE VIEW
TERMINATION POST DETAIL



PLAN VIEW



ELEVATION

REMOTE CULVERT ENTRY DETAIL

State of Alaska DOT&PF ALASKA STANDARD PLAN REMOTE THAW WIRE INSTALLATION

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

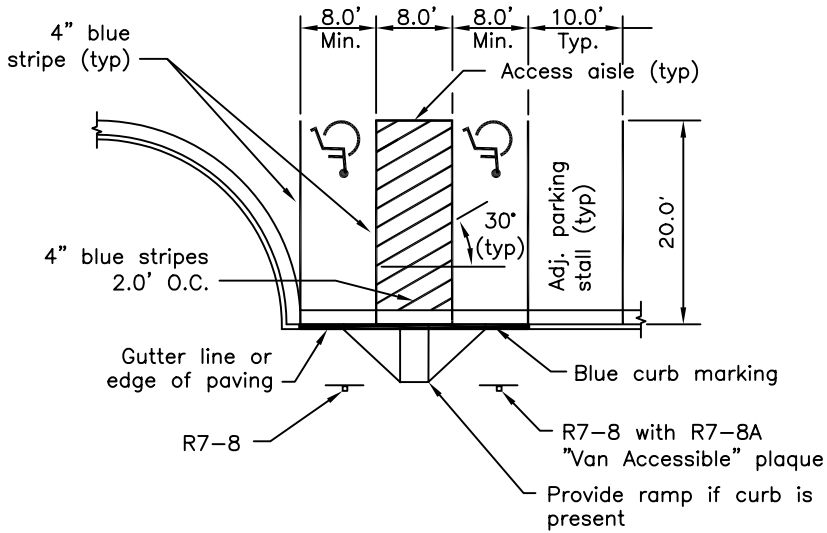
Adoption Date: 02/08/2019

Last Code and Stds. Review
By: Date:

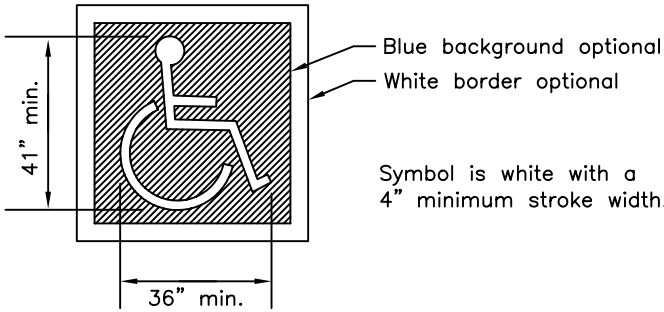
Next Code and Standards Review date: 02/08/2029

GENERAL NOTES:

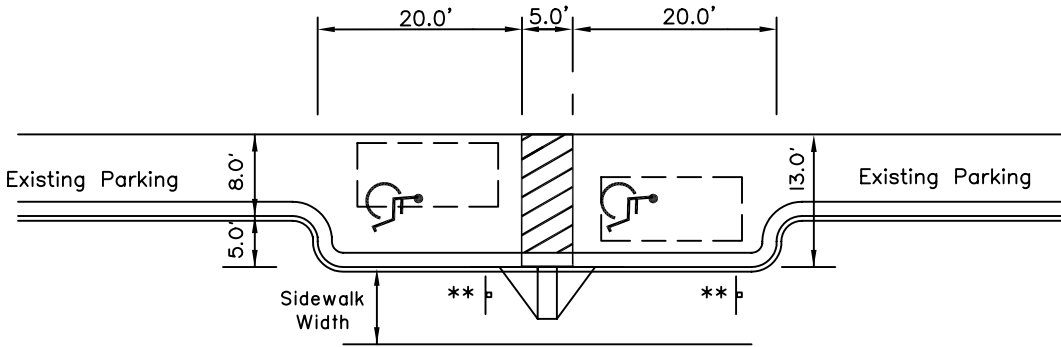
- 1. Accessible aisles and accessible routes and those pathways leading from the accessible parking space to the sidewalk shall be free of any obstructions, fixtures or loose surfaces.
- 2. See standard drawing I-20, I-21, I-22 for curb and curb ramp details.
- 3. All curb ramps shall be constructed of concrete.
- 4. The slope for all accessible parking spaces, van accessible parking spaces and access aisles shall not exceed 50:1 in any direction.
- 5. Although only perpendicular ramps are shown, either parallel or perpendicular ramps are allowable, space permitting.



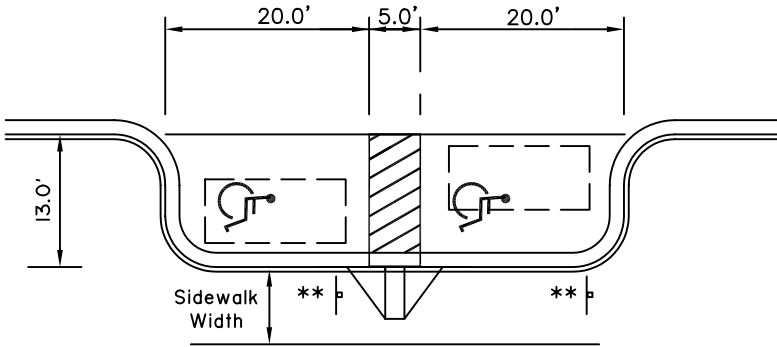
PARKING LOT ACCESSIBLE PERPENDICULAR PARKING



PAVEMENT MARKING SYMBOL DETAIL



ACCESSIBLE ON-STREET PARALLEL PARKING PARTIAL INSET



ACCESSIBLE ON-STREET PARALLEL PARKING FULL INSET

ON-STREET PARALLEL PARKING NOTES

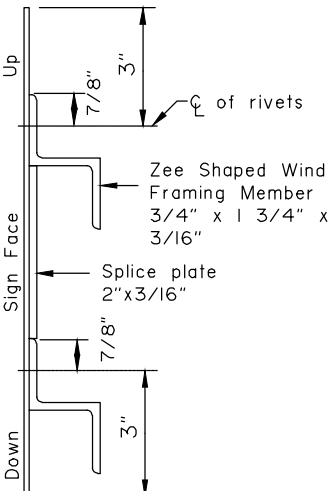
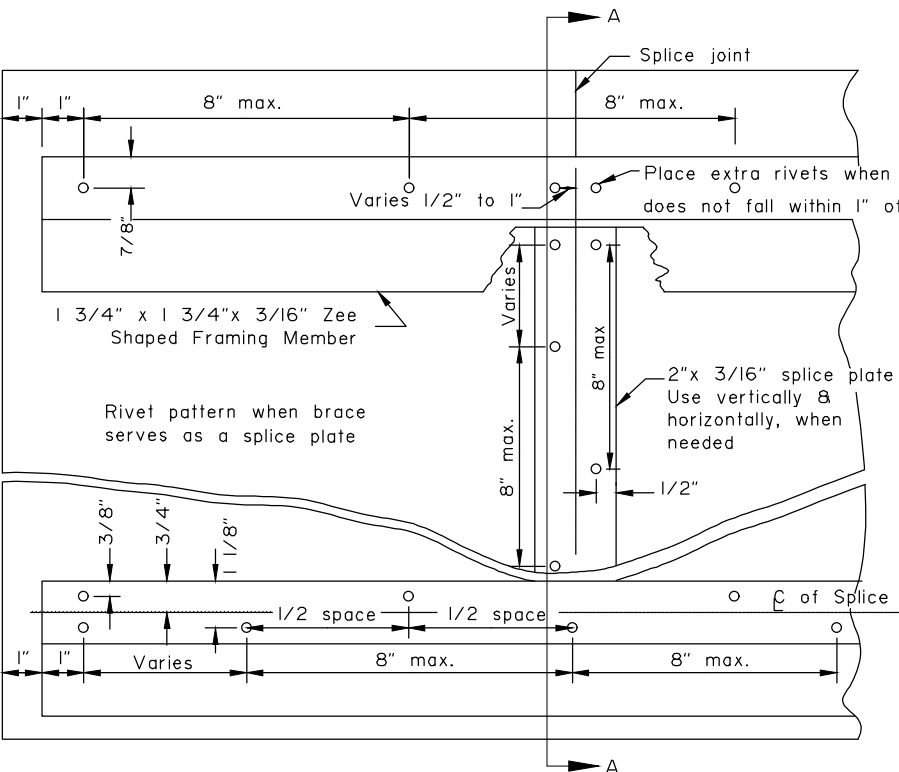
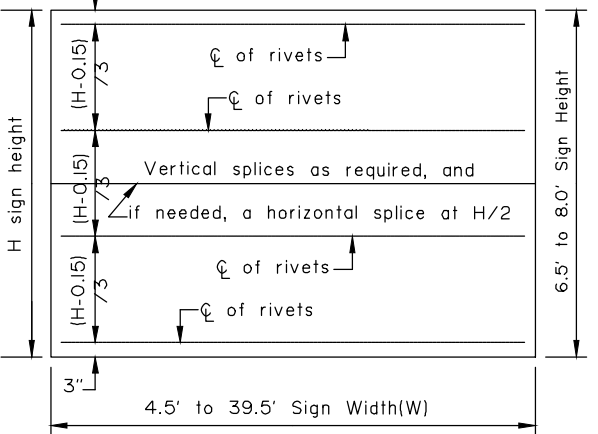
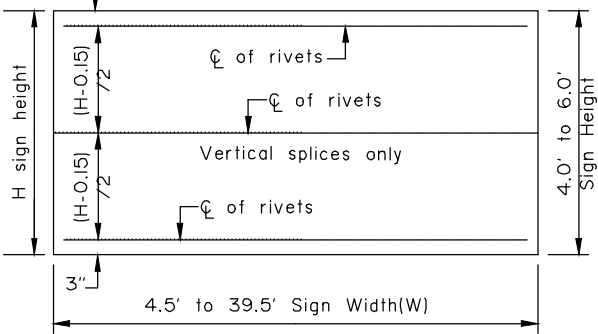
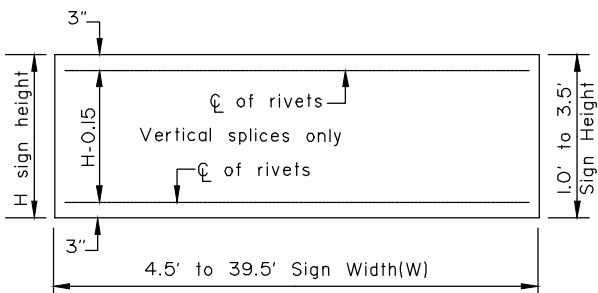
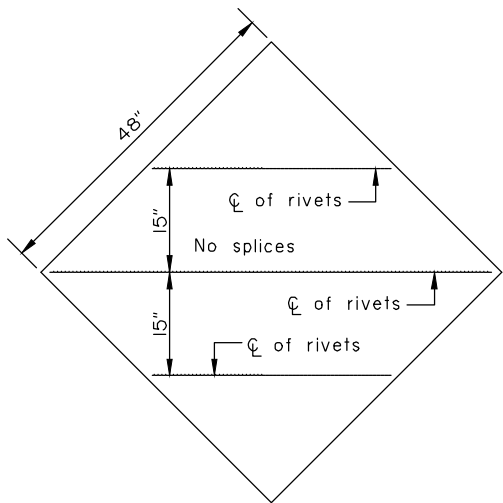
- 1. The 13' width provides for 8' wide parking with a 5' wide access aisle on either side of a car.
- 2. Add a new curb ramp and 5' aisle between parking places for each additional two accessible parking spaces.
- 3. Parking spaces may be made van accessible by providing an unobstructed 8' sidewalk width next to each parking space. Ensure curb ramps, parking meters, sign posts, etc. do not encroach on the area where a van's lift would operate.
- 4. In some cases, ADAAG may allow normal-width parking spaces at the beginning and end of blocks to be designated as accessible. See the latest ADAAG.

** R7-8 "Reserved Parking" and, where appropriate (see note 3), R7-8A, "Van Accessible".

REVISIONS		
Date	Description	By
Sheet 1 of 1		
State of Alaska Department of Transportation & Public Facilities		
ACCESSIBLE PARKING		
APPROVED Date 2/28/03		

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.



SECTION A-A

RIVET DETAIL FOR ZEE SHAPED WIND FRAMING & SPLICE PLATE

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

Note: Drawing not to scale

State of Alaska DOT&PF
ALASKA STANDARD PLAN

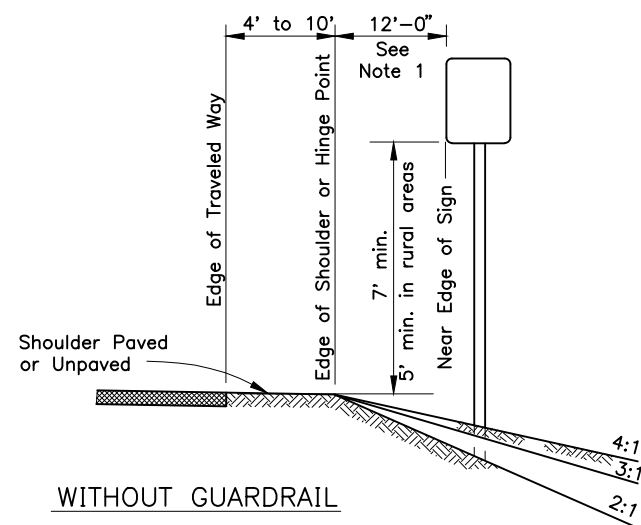
SIGN FRAMING

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

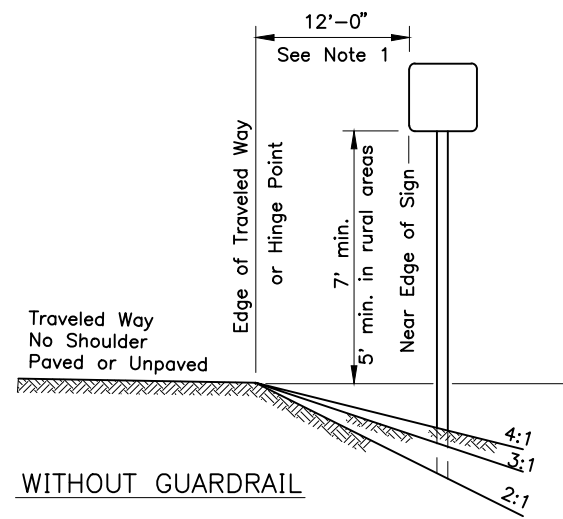
Adoption Date: 7/17/2020

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

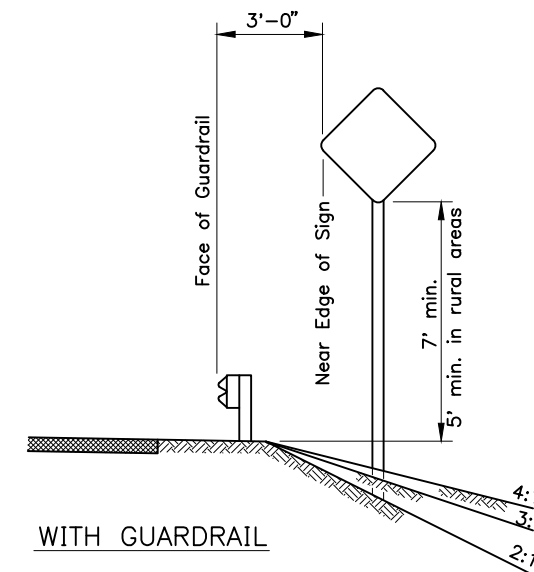
Next Code and Standards Review date: 7/8/2030



WITHOUT GUARDRAIL
SUBGRADES OVER 28', ALL SLOPES



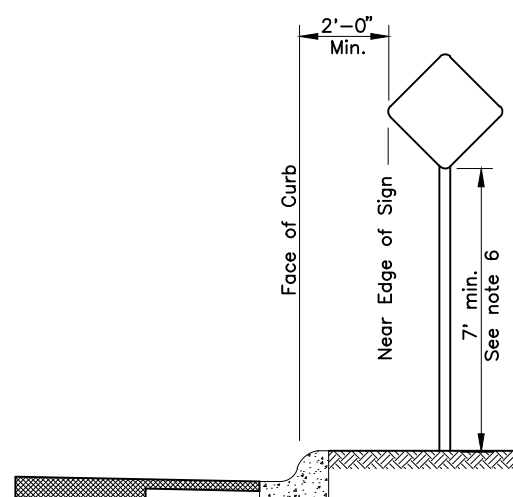
WITHOUT GUARDRAIL
SUBGRADES 24' TO 28', ALL SLOPES



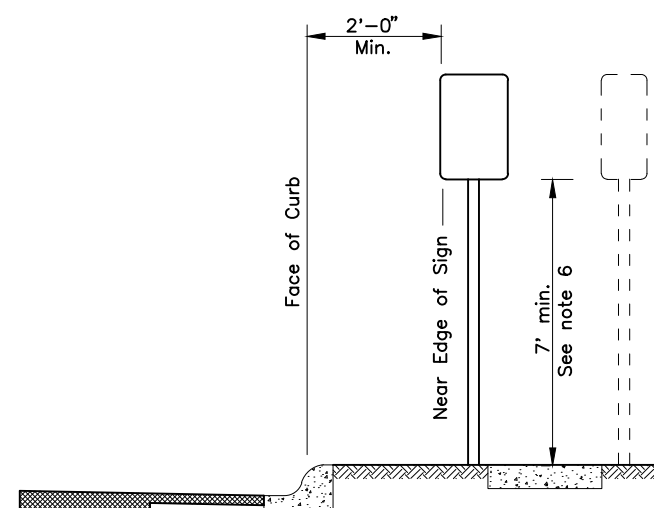
WITH GUARDRAIL
ALL SUBGRADES, ALL SLOPES

GENERAL NOTES

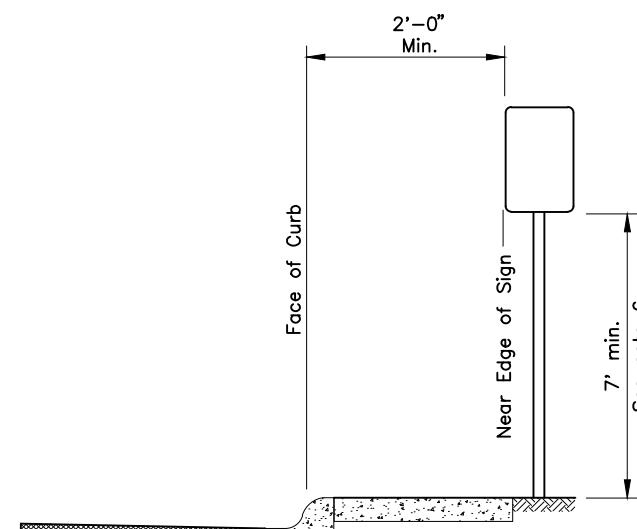
1. Unless shown otherwise on the plans, the standard sign offset is 12'. The minimum is 6' where shoulder width is 6' or greater.
2. Add 6" to mounting height on unpaved roads.
3. If signs extend over bike paths, the minimum vertical clearance is 8' 0".
4. When signs are placed 30' or more from the edge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



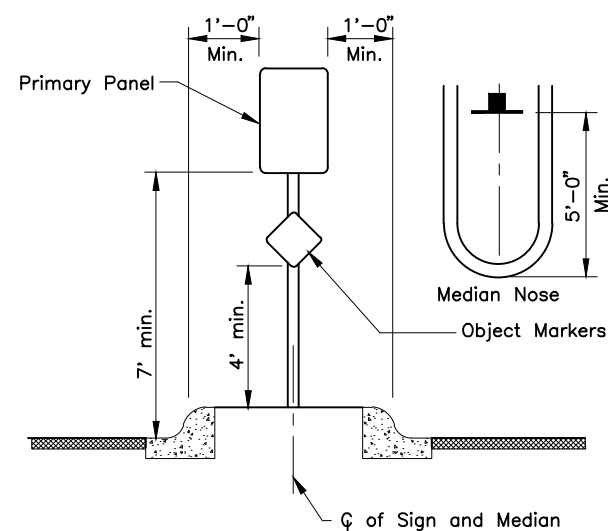
CURB WITHOUT SIDEWALK



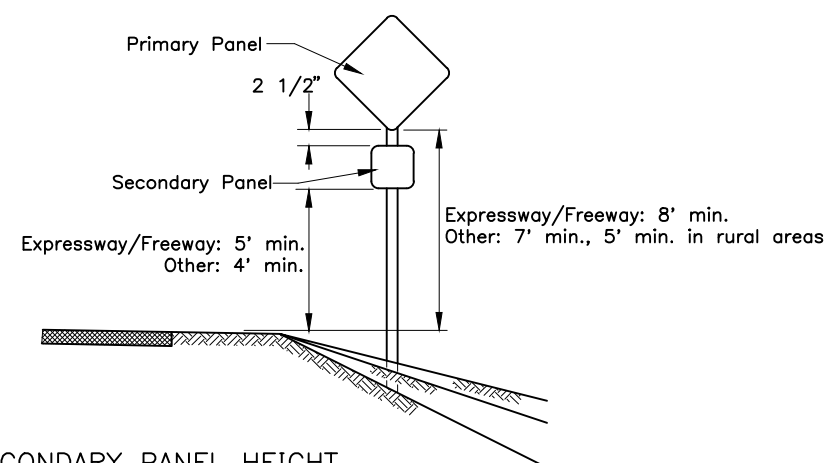
CURB WITH PARKWAY AND SIDEWALK
(If R/W width permits, signs should be placed behind sidewalk.)



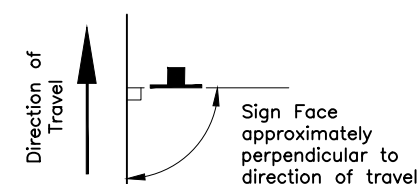
CURB WITH SIDEWALK WITHOUT PARKWAY



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: KKK Date: 7/8/2020

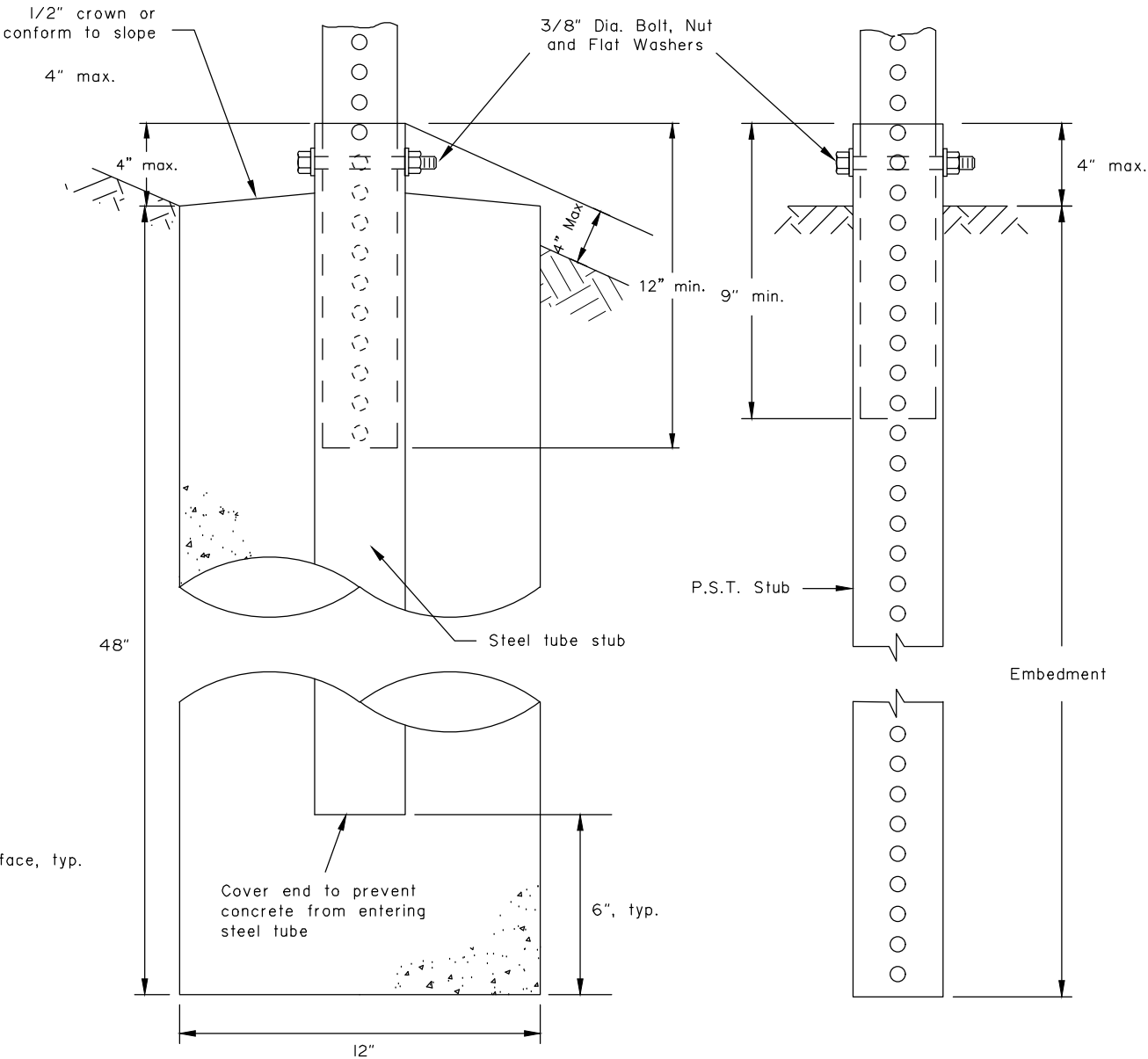
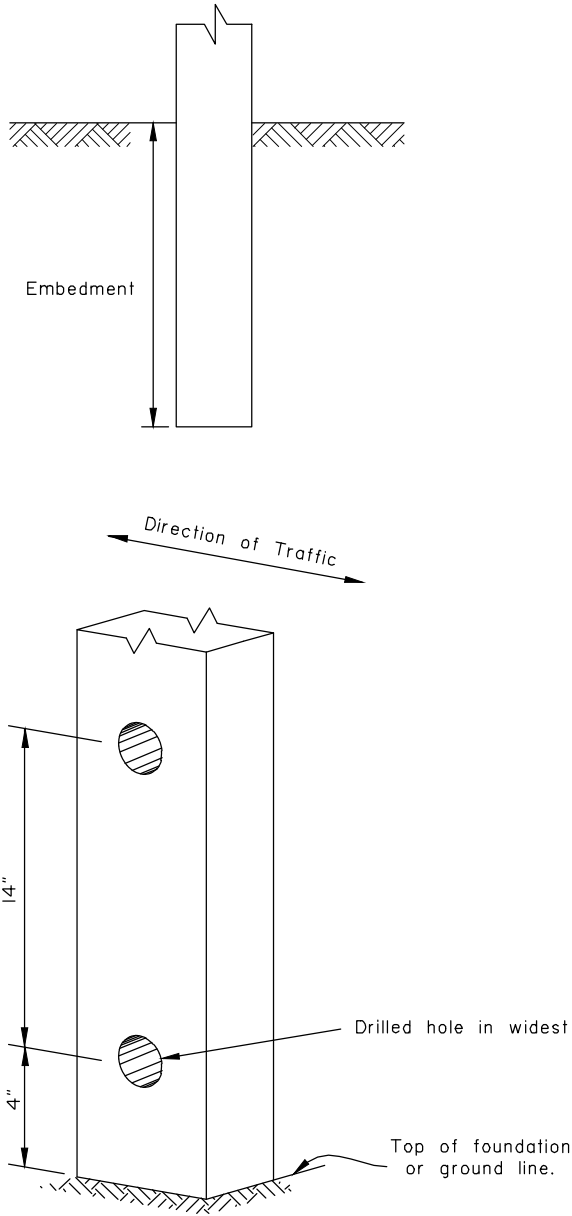
Next Code and Standards Review Date: 7/8/2030

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-I 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-3I 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*
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