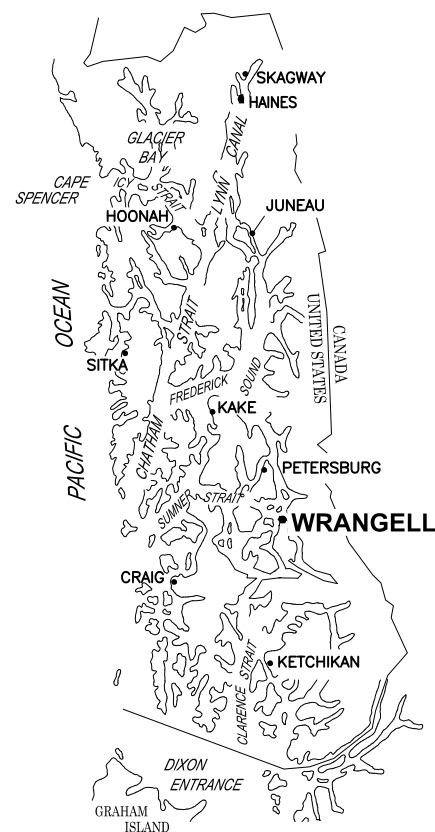


CITY AND BOROUGH OF WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM



LOCATION MAP

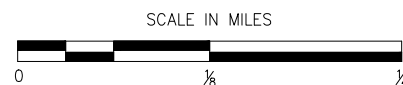


SOUTHEAST ALASKA



VICINITY MAP

IMAGERY FROM:
2022 MAXAR TECHNOLOGIES



DRAWING INDEX	
DWG. NO.	TITLE
1	COVER SHEET, VICINITY MAP AND DRAWING INDEX
2	LEGEND AND ABBREVIATIONS
3	EXISTING CONDITIONS AND SURVEY CONTROL
4	OVERALL SITE PLANS
5	MT DEWEY TRAIL LAYOUT POINT SUMMARY TABLES
6	MT DEWEY TRAIL PARKING PLAN AND SECTIONS
7	MT DEWEY TRAIL PLAN AND PROFILE
8	MT DEWEY TRAIL PLAN AND PROFILE
9	MT DEWEY TRAIL PLAN AND PROFILE
10	MT DEWEY TRAIL PLAN AND PROFILE
11	MT DEWEY TRAIL PLAN AND PROFILE
12	MT DEWEY TRAIL PLAN AND PROFILE
13	MT DEWEY TRAIL PLAN AND PROFILE
14	ISHIYAMA CONNECTOR TRAIL PLAN AND PROFILE
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L501	DETAILS
USFS STANDARD DETAILS	
910-01	STANDARD TRAIL TERMS
911-03	TYPICAL RETAINERS
912-01	CLEARING LIMITS - TREES AND LOGS
912-02	CLEARING LIMITS - BRUSHING
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921-10-01	STANDARD CULVERT
921-40-01	TREATED TIMBER BOX CULVERT
936-40-01	STAIRCASE
938-10-01	STANDARD BOARDWALK
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938-10-03	STANDARD BOARDWALK
938-30-01	STEP AND RUN
962-20-01	LONGITUDINAL NAIL-LAMINATED TIMBER TRAIL BRIDGE
962-20-02a	CROSS-SECTION DETAILS/ GENERAL NOTES (DOUGLAS FIR)
962-20-03a	TYPICAL LAYOUT - 12 FEET LONG
962-20-04a	TYPICAL SUPERSTRUCTURE/ DESIGN TABLE (DOUGLAS FIR)
962-20-05	ABUTMENT DETAILS

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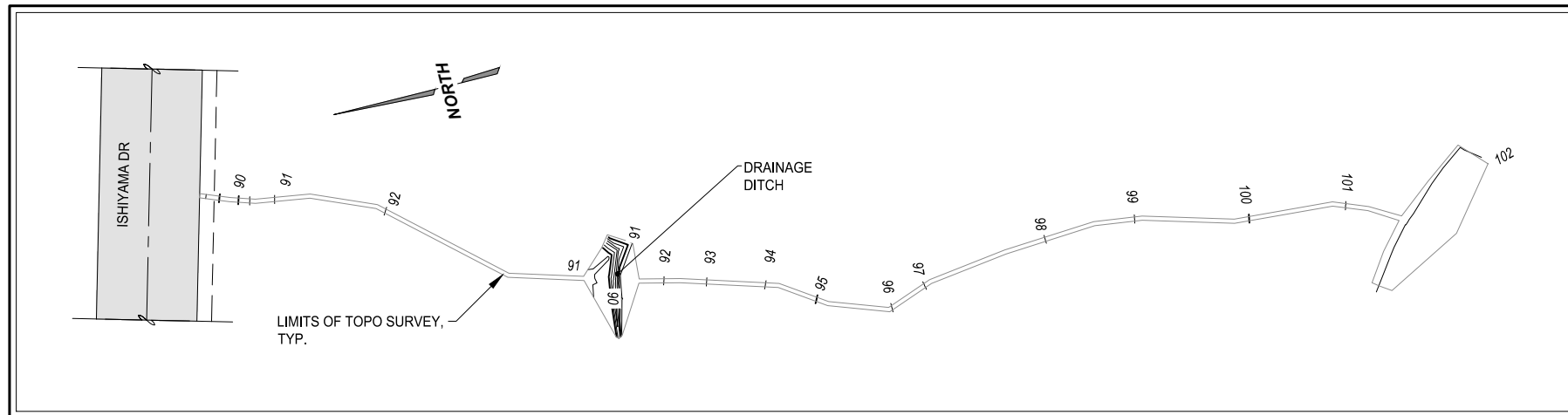
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WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

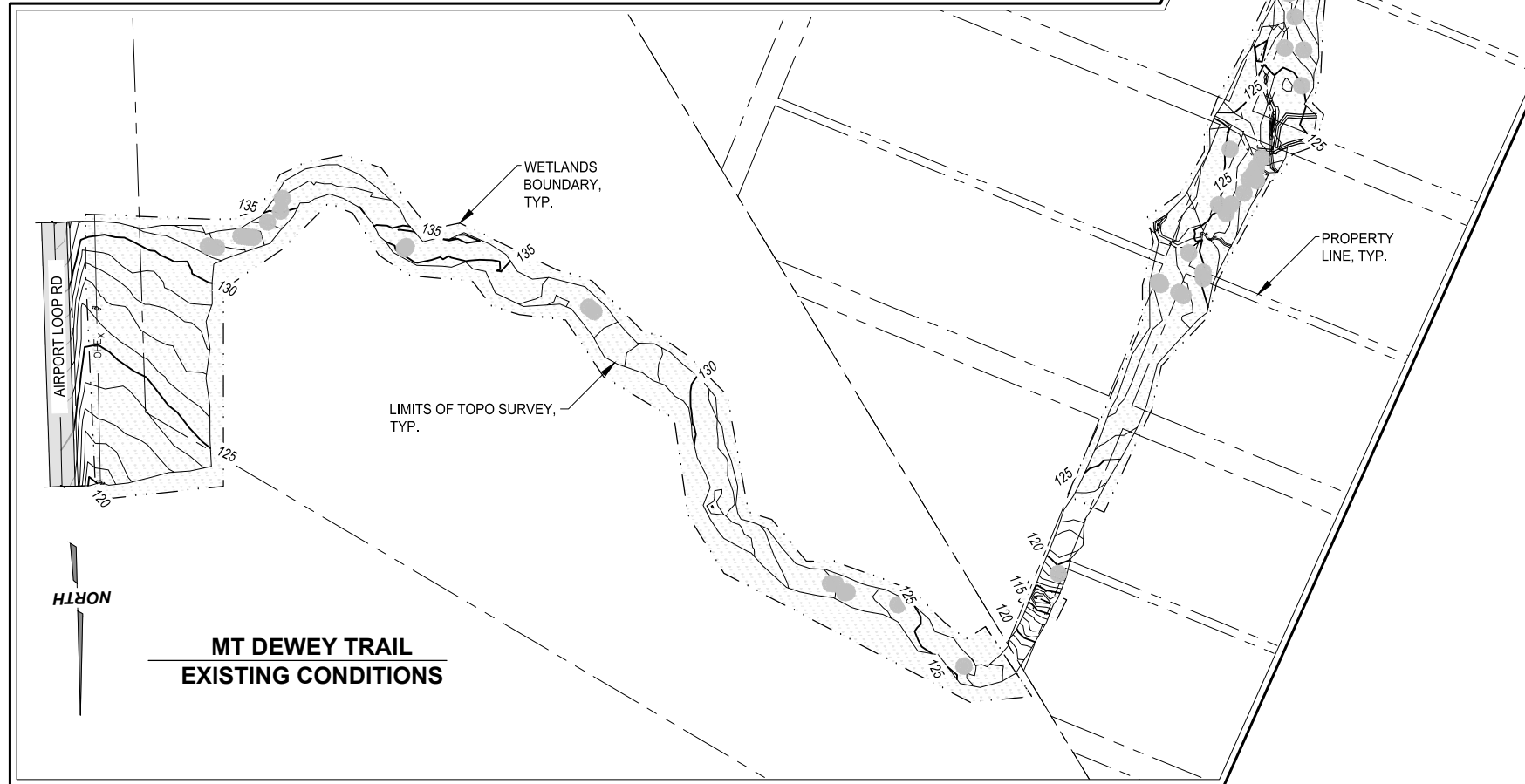
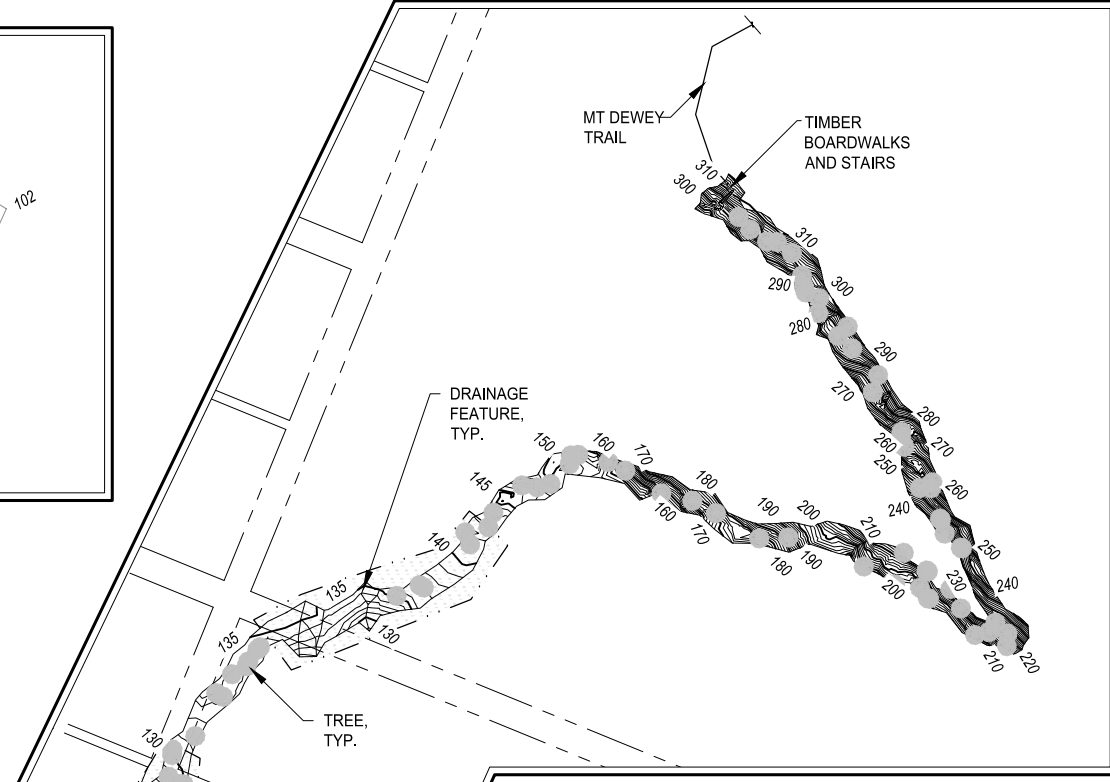
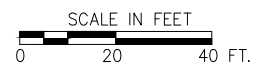
SHEET TITLE:
COVER SHEET, VICINITY MAP AND DRAWING INDEX

1

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250



**ISHIYAMA CONNECTOR TRAIL
EXISTING CONDITIONS**



**MT DEWEY TRAIL
EXISTING CONDITIONS**

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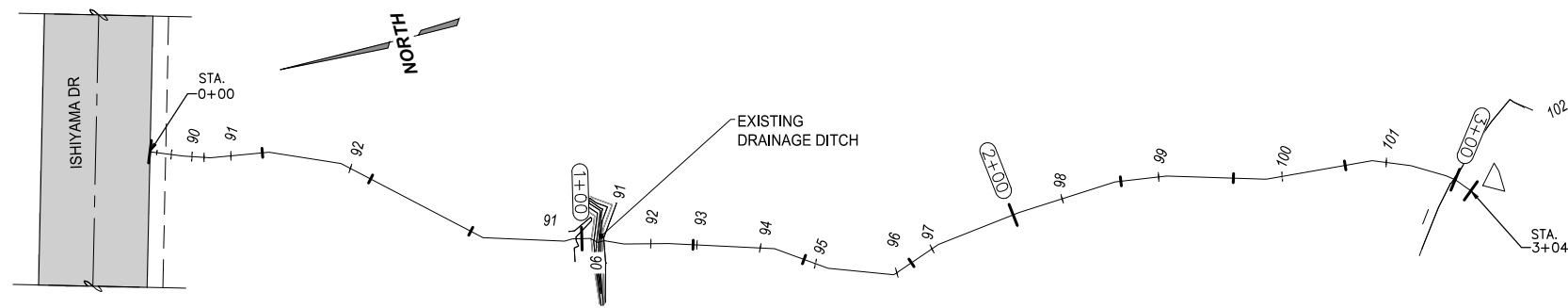
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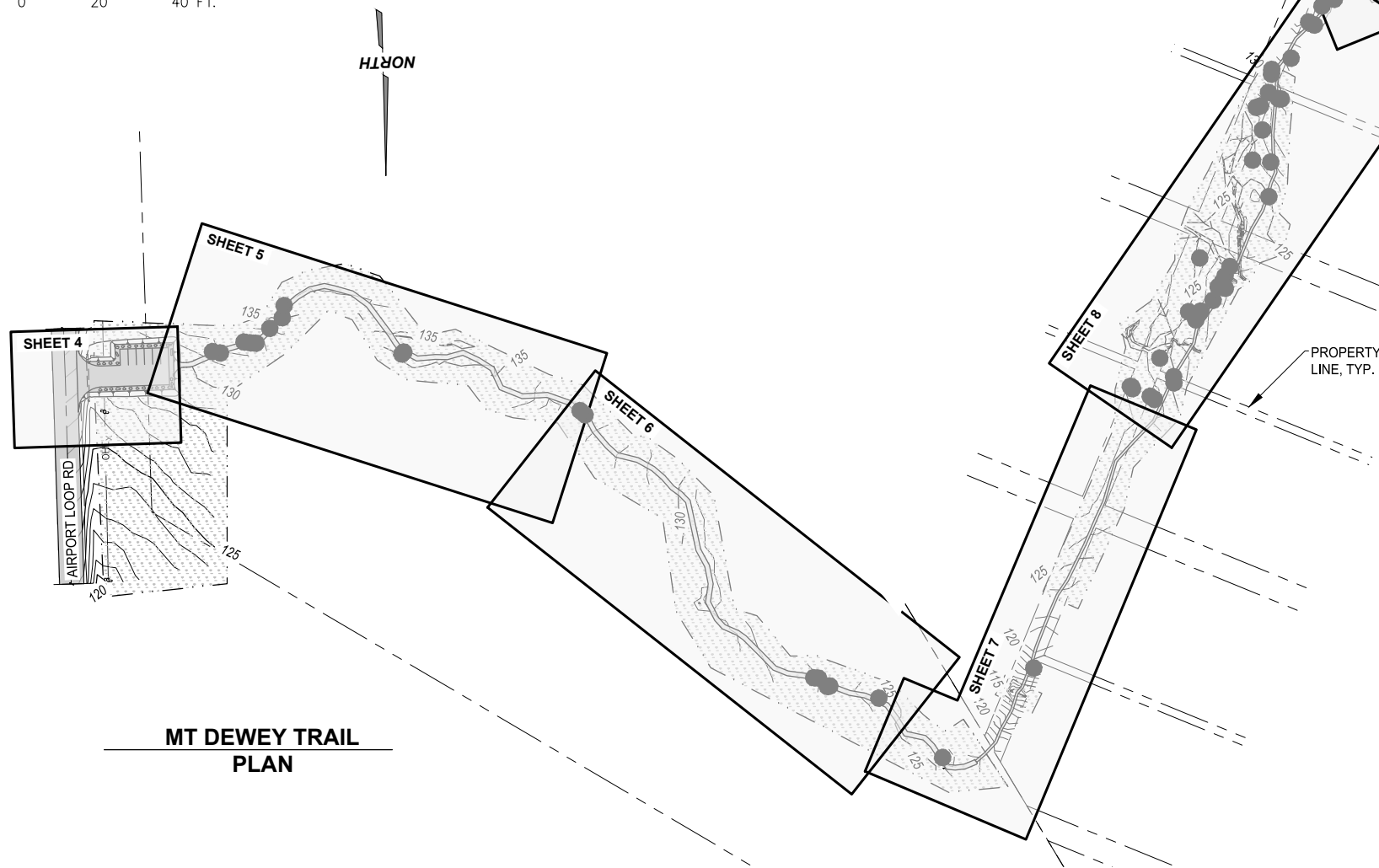
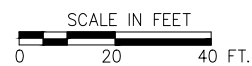
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SHEET TITLE: **EXISTING CONDITIONS
AND SURVEY CONTROL**

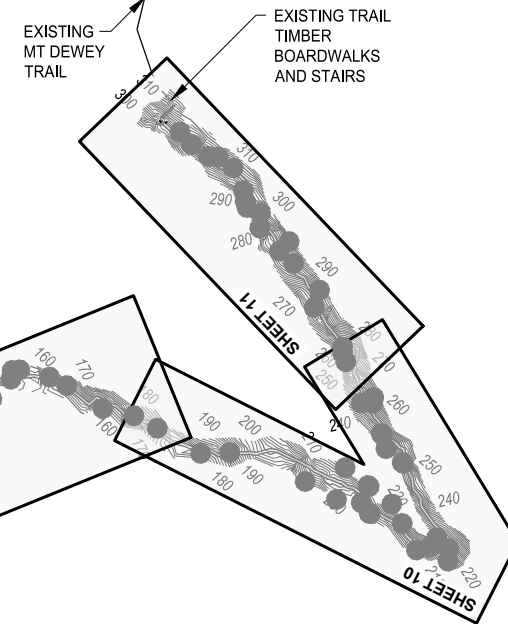
PND PROJECT NO.: 212038 C.A.N. NO.: AECC250



**ISHIYAMA CONNECTOR TRAIL
PLAN**



**MT DEWEY TRAIL
PLAN**



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**WRANGELL NON-MOTORIZED
TRANSPORTATION SYSTEM**

SHEET TITLE:

OVERALL SITE PLANS

4

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250

TRAIL LAYOUT SUMMARY TABLE		
POINT NO.	NORTHING	EASTING
1	1698663.71	2947246.88
2	1698661.26	2947222.15
3	1698651.03	2947199.34
4	1698642.21	2947175.97
5	1698634.64	2947152.16
6	1698622.84	2947130.72
7	1698603.71	2947114.79
8	1698584.12	2947099.56
9	1698569.93	2947078.94
10	1698566.99	2947054.81
11	1698573.45	2947030.53
12	1698586.93	2947009.74
13	1698606.13	2946993.96
14	1698626.17	2946979.01
15	1698645.82	2946964.10
16	1698654.88	2946941.46
17	1698653.46	2946916.53
18	1698648.98	2946892.16
19	1698657.84	2946869.45
20	1698673.40	2946850.80
21	1698693.26	2946837.53
22	1698701.75	2946814.18
23	1698700.48	2946789.22
24	1698707.37	2946765.44
25	1698721.29	2946745.11
26	1698740.28	2946729.52
27	1698759.98	2946714.28
28	1698775.46	2946695.30
29	1698782.14	2946671.31
30	1698795.27	2946650.14
31	1698812.99	2946632.58
32	1698829.41	2946613.86
33	1698852.94	2946606.91
34	1698877.40	2946601.71
35	1698900.84	2946593.76
36	1698924.09	2946585.34
37	1698948.72	2946585.63
38	1698971.71	2946578.80
39	1698989.21	2946561.97
40	1699001.54	2946540.44

TRAIL LAYOUT SUMMARY TABLE		
POINT NO.	NORTHING	EASTING
41	1699019.18	2946522.72
42	1699037.05	2946505.24
43	1699045.27	2946481.90
44	1699050.03	2946457.45
45	1699059.23	2946434.27
46	1699068.71	2946411.18
47	1699074.29	2946386.95
48	1699084.98	2946364.58
49	1699105.52	2946350.36
50	1699120.98	2946333.23
51	1699131.47	2946311.55
52	1699151.88	2946297.23
53	1699160.34	2946276.01
54	1699151.28	2946253.23
55	1699133.96	2946235.25
56	1699112.17	2946223.65
57	1699090.30	2946211.53
58	1699066.93	2946203.13
59	1699045.03	2946191.68
60	1699021.34	2946183.80
61	1698997.95	2946175.02
62	1698974.52	2946166.37
63	1698951.55	2946156.50
64	1698930.40	2946143.29
65	1698908.02	2946132.17
66	1698885.56	2946121.21
67	1698862.64	2946111.21
68	1698839.82	2946101.00
69	1698816.31	2946092.68
70	1698792.35	2946085.53
71	1698771.44	2946072.97
72	1698753.07	2946056.02
73	1698735.09	2946038.65
74	1698713.06	2946027.24
75	1698690.28	2946016.95
76	1698667.96	2946005.79
77	1698646.66	2945992.70
78	1698623.75	2945983.76
79	1698602.51	2945971.21
80	1698581.22	2945958.15

TRAIL LAYOUT SUMMARY TABLE		
POINT NO.	NORTHING	EASTING
81	1698559.52	2945945.75
82	1698538.47	2945932.41
83	1698515.30	2945923.01
84	1698492.37	2945913.13
85	1698471.13	2945901.30
86	1698446.82	2945893.21
87	1698423.34	2945885.25
88	1698398.50	2945888.15
89	1698373.53	2945888.45
90	1698348.64	2945886.14
91	1698323.71	2945884.31
92	1698298.72	2945883.46
93	1698278.04	2945870.37
94	1698257.00	2945857.16
95	1698239.74	2945839.09
96	1698220.95	2945822.64
97	1698200.61	2945808.13
98	1698180.31	2945793.54
99	1698171.44	2945771.10
100	1698171.57	2945746.10
101	1698167.14	2945721.97
102	1698151.77	2945702.40
103	1698145.22	2945678.56
104	1698139.64	2945654.29
105	1698133.47	2945630.74
106	1698118.84	2945610.51
107	1698105.53	2945589.37
108	1698084.62	2945576.35
109	1698063.52	2945564.25
110	1698045.75	2945548.01
111	1698027.70	2945532.24
112	1698026.86	2945508.30
113	1698008.51	2945491.70
114	1697997.33	2945471.22
115	1697998.77	2945446.41
116	1698009.03	2945423.76
117	1698021.12	2945402.31
118	1698022.31	2945382.89
119	1698033.87	2945361.21
120	1698044.46	2945339.30

TRAIL LAYOUT SUMMARY TABLE		
POINT NO.	NORTHING	EASTING
121	1698055.42	2945319.06
122	1698068.38	2945299.47
123	1698074.33	2945275.42
124	1698080.99	2945251.80
125	1698077.73	2945227.29
126	1698075.15	2945202.88
127	1698084.87	2945180.00
128	1698097.13	2945158.47
129	1698107.66	2945135.64
130	1698118.42	2945114.10
131	1698136.40	2945097.17
132	1698150.86	2945077.09
133	1698168.49	2945059.77
134	1698178.36	2945038.43
135	1698183.54	2945016.40
136	1698163.10	2945024.14
137	1698144.71	2945040.92
138	1698122.67	2945051.24
139	1698100.44	2945060.65
140	1698076.36	2945066.90
141	1698060.59	2945084.82
142	1698039.86	2945097.78
143	1698018.24	2945109.88
144	1697995.07	2945118.89
145	1697971.61	2945114.72
146	1697959.31	2945134.83
147	1697939.50	2945149.43
148	1697918.04	2945161.59
149	1697895.21	2945170.75
150	1697878.62	2945187.86
151	1697857.26	2945200.26
152	1697838.81	2945216.38
153	1697817.15	2945226.20
154	1697793.71	2945233.81
155	1697781.51	2945255.18
156	1697763.89	2945272.12
157	1697750.79	2945293.03
158	1697737.82	2945313.79
159	1697734.64	2945317.32

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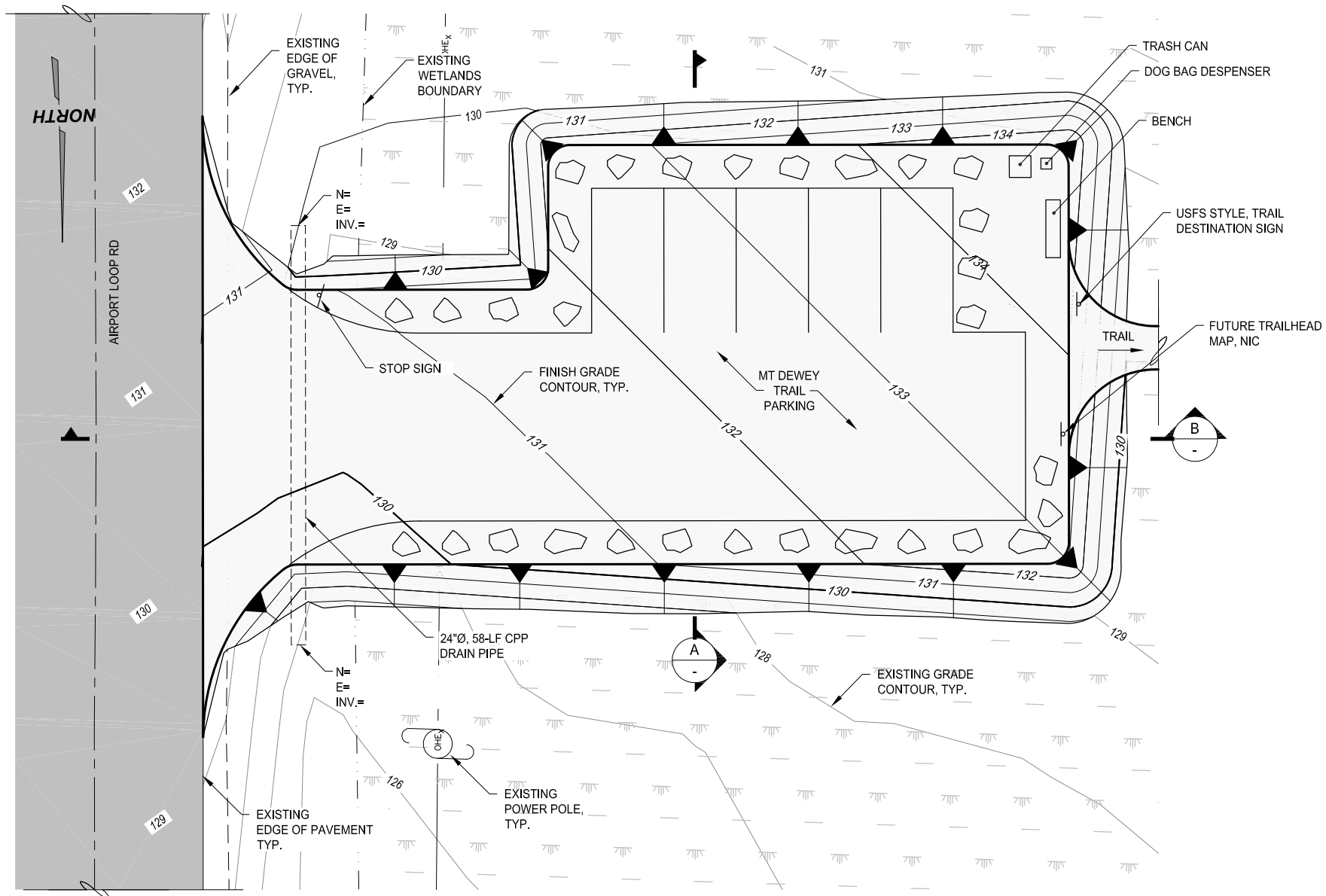
DATE: Oct. 11, 2022

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

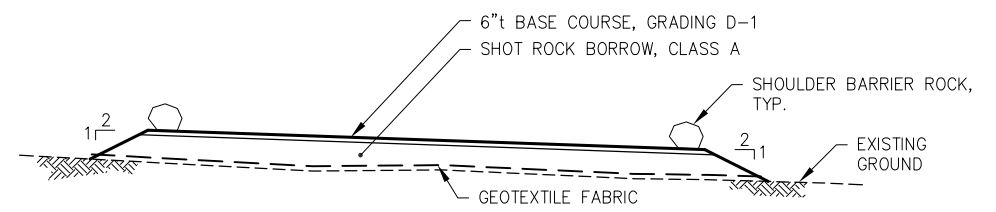
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PND PROJECT NO.: 212038 C.A.N. NO.: AECC250

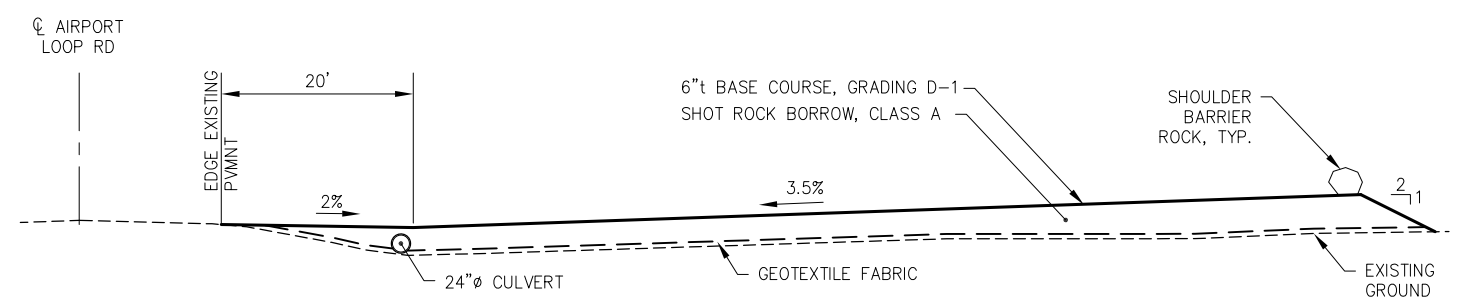
5



MT DEWEY TRAIL PARKING PLAN



A TYPICAL PARKING LOT SECTION



B TYPICAL PARKING LOT SECTION

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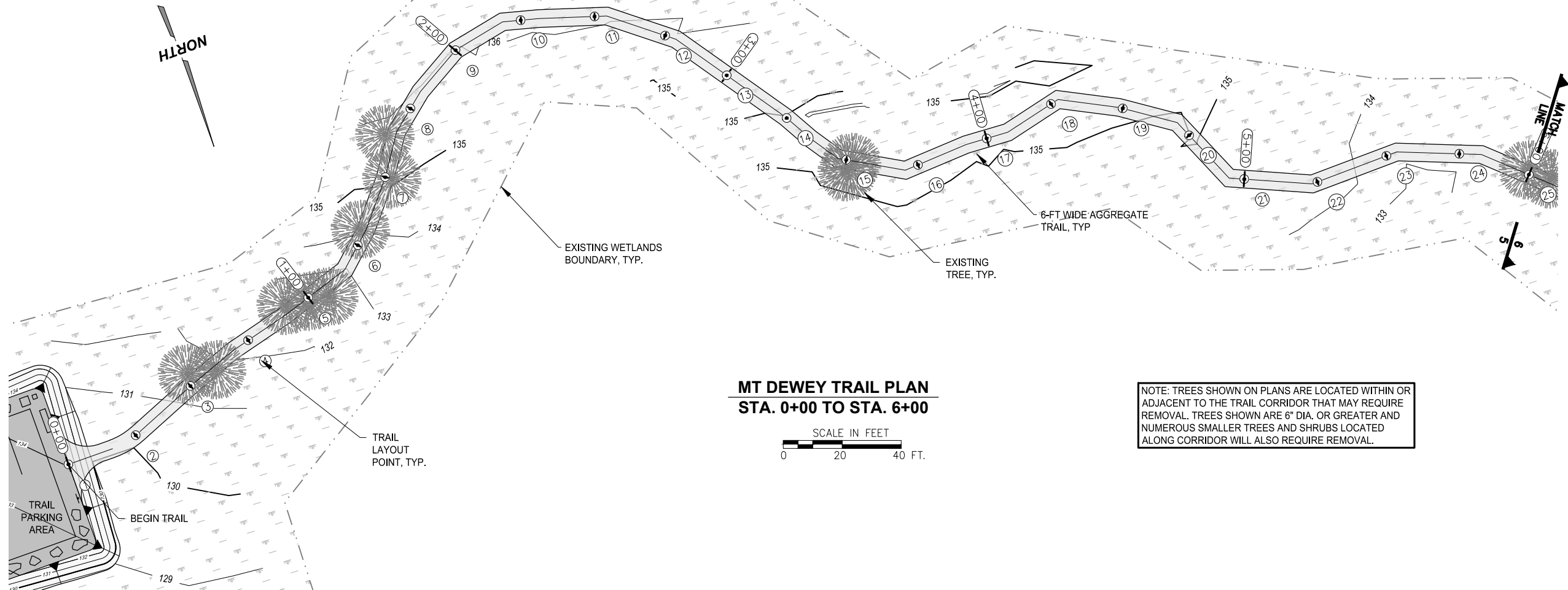
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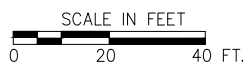
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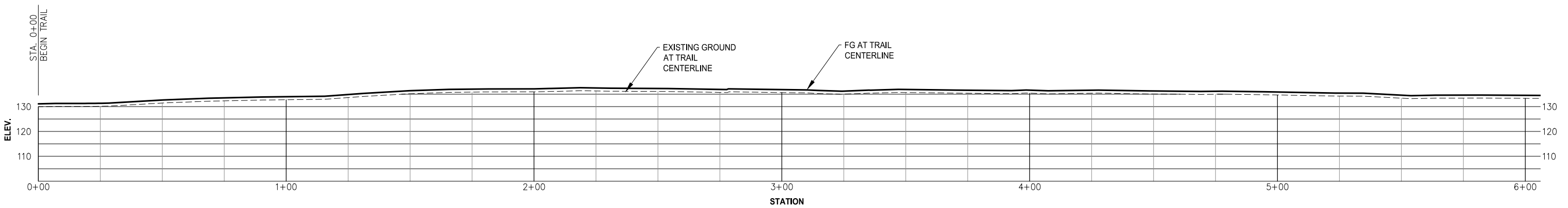
6



**MT DEWEY TRAIL PLAN
STA. 0+00 TO STA. 6+00**



NOTE: TREES SHOWN ON PLANS ARE LOCATED WITHIN OR ADJACENT TO THE TRAIL CORRIDOR THAT MAY REQUIRE REMOVAL. TREES SHOWN ARE 6" DIA. OR GREATER AND NUMEROUS SMALLER TREES AND SHRUBS LOCATED ALONG CORRIDOR WILL ALSO REQUIRE REMOVAL.



**MT DEWEY TRAIL PROFILE
STA. 0+00 TO STA. 6+00**

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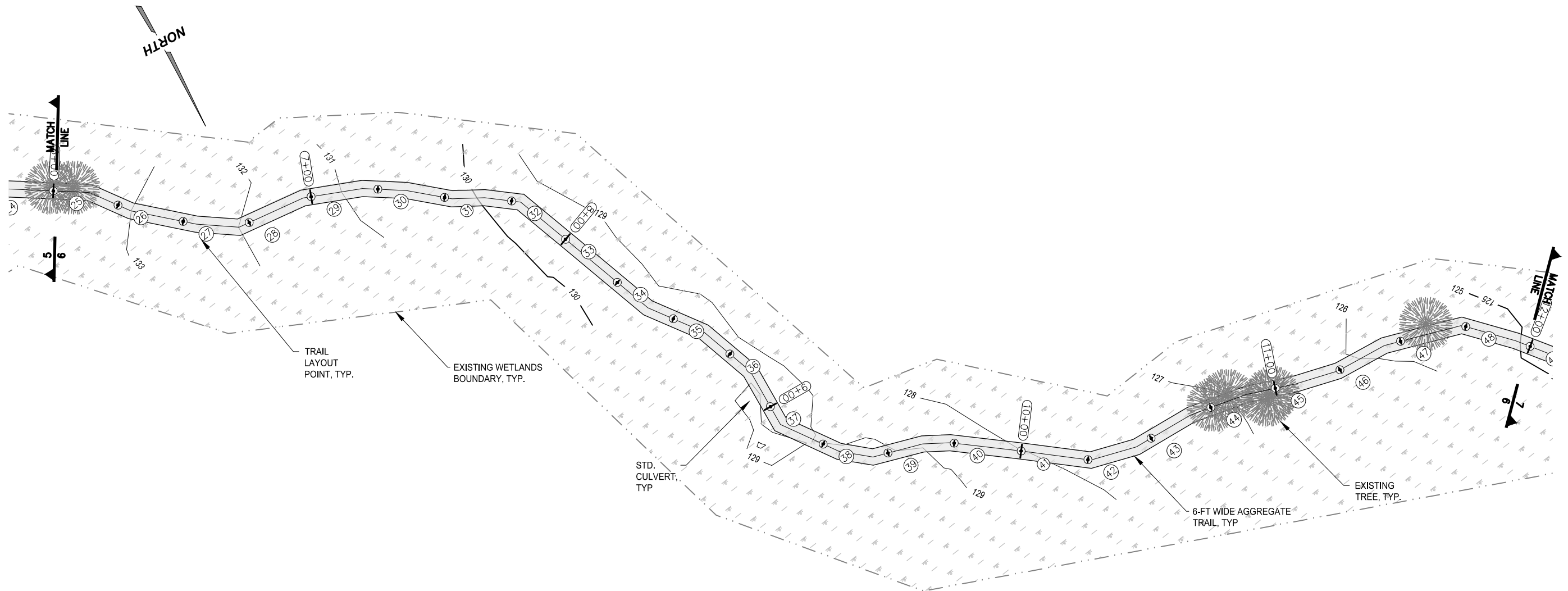
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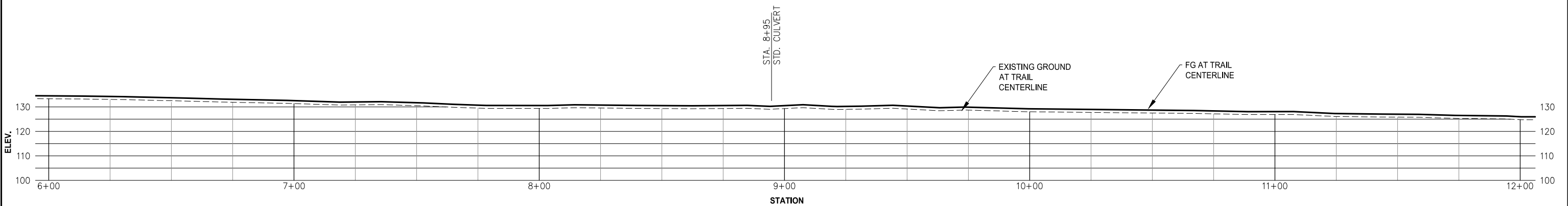
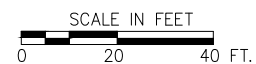
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SHEET TITLE: **MT DEWEY TRAIL PLAN
AND PROFILE**

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250



**MT DEWEY TRAIL PLAN
STA. 6+00 TO STA. 12+00**



**MT DEWEY TRAIL PROFILE
STA. 6+00 TO STA. 12+00**

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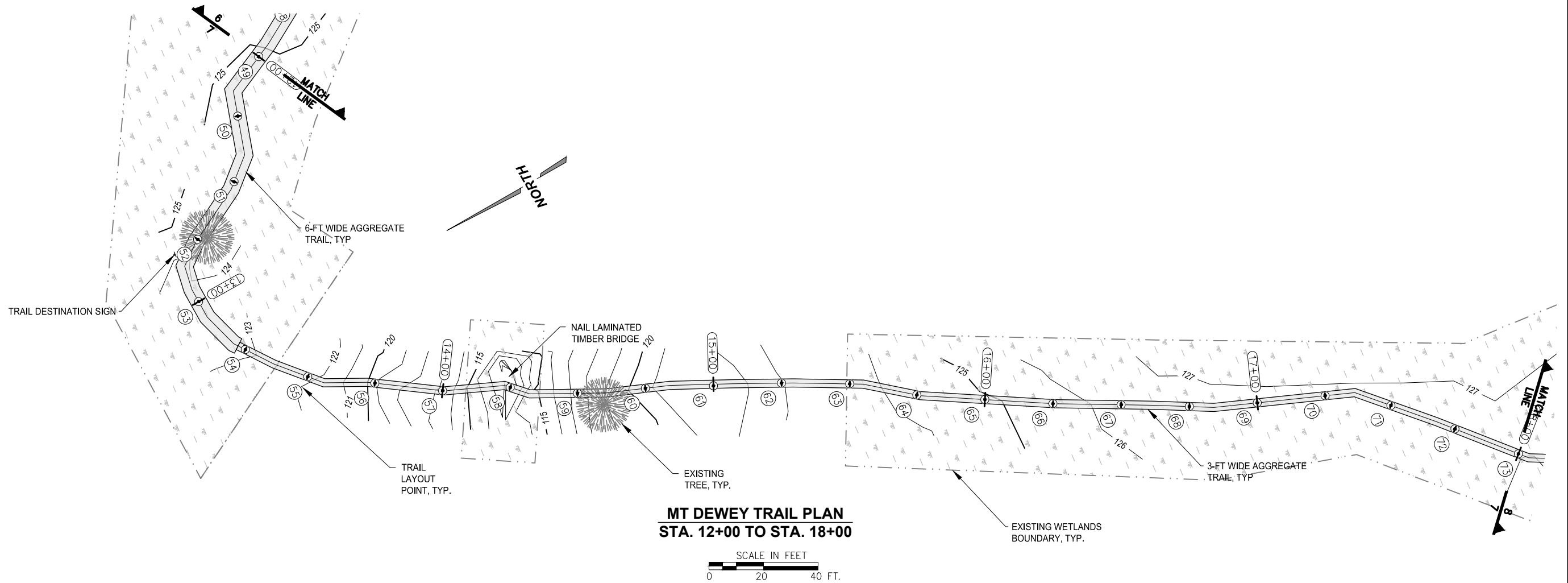
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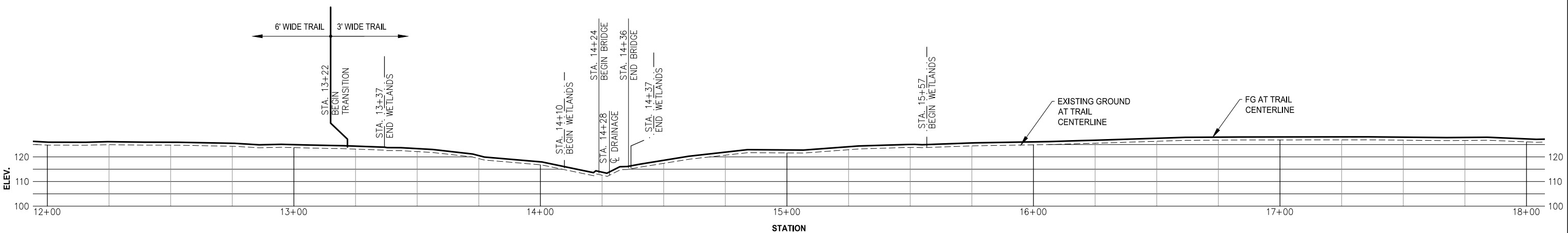
**MT DEWEY TRAIL PLAN
AND PROFILE**

8

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250



MT DEWEY TRAIL PLAN
STA. 12+00 TO STA. 18+00



MT DEWEY TRAIL PROFILE
STA. 12+00 TO STA. 18+00

65% DESIGN



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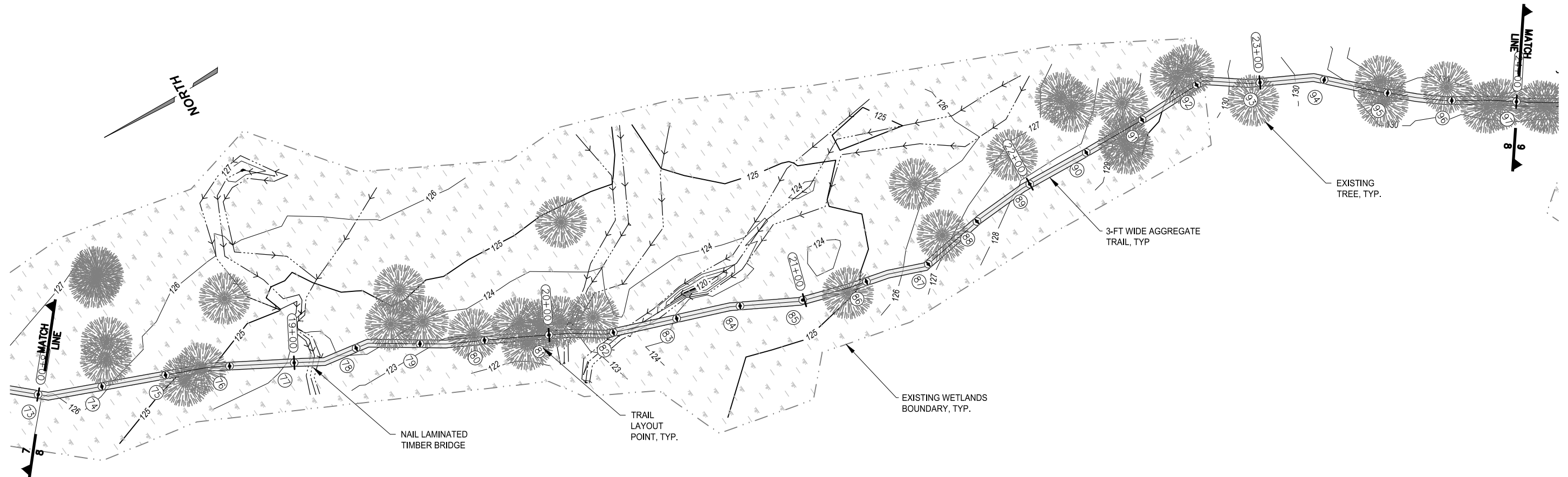
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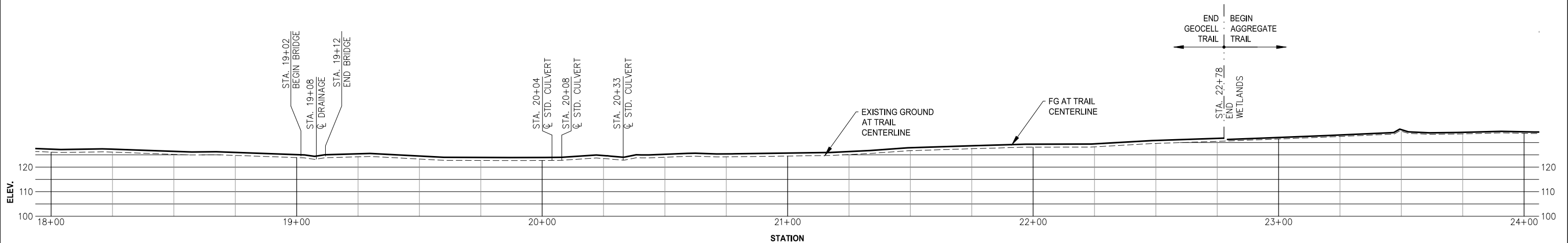
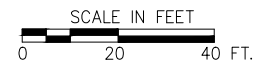
WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

SHEET TITLE: **MT DEWEY TRAIL PLAN AND PROFILE**

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250



**MT DEWEY TRAIL PLAN
STA. 18+00 TO STA. 24+00**



**MT DEWEY TRAIL PROFILE
STA. 18+00 TO STA. 24+00**

65% DESIGN



REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.



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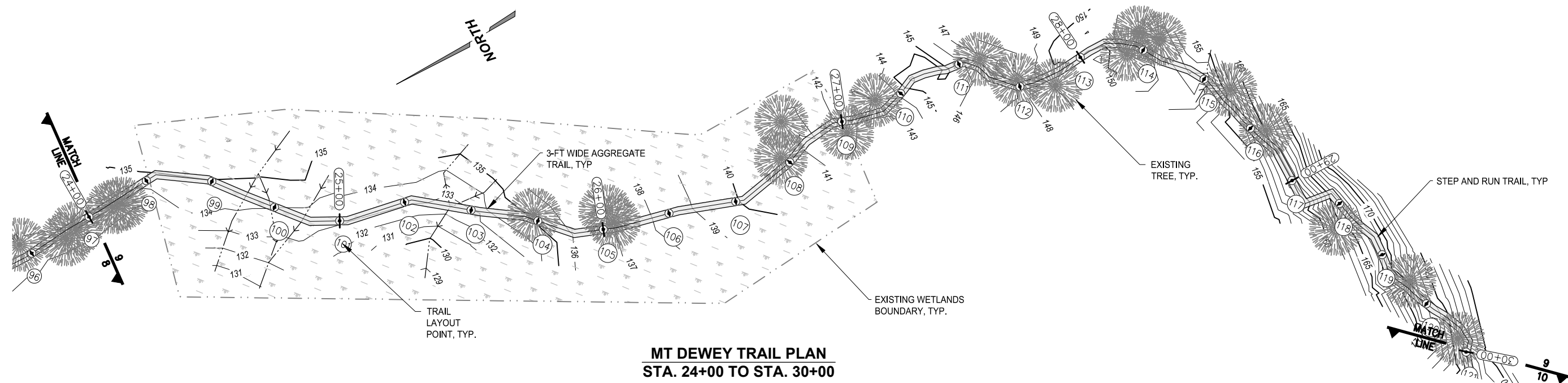
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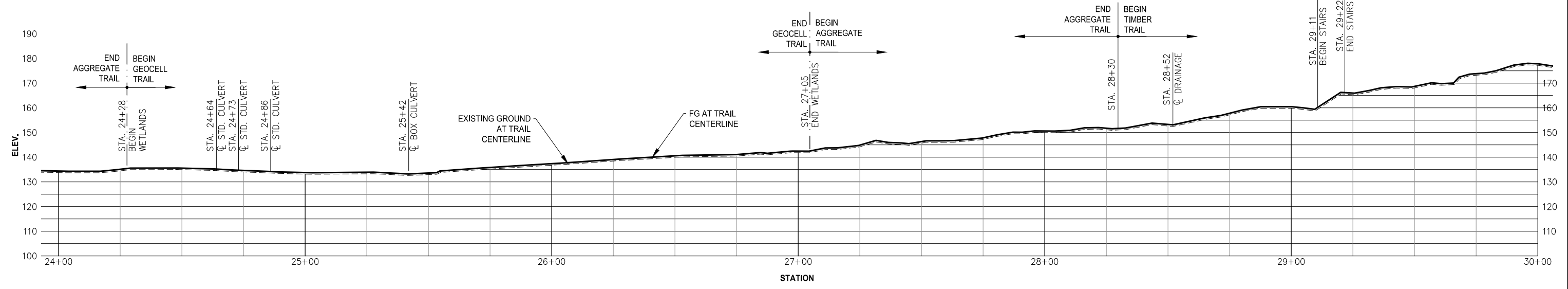
**WRANGELL NON-MOTORIZED
TRANSPORTATION SYSTEM**

SHEET TITLE: **MT DEWEY TRAIL PLAN
AND PROFILE**

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250



MT DEWEY TRAIL PLAN
STA. 24+00 TO STA. 30+00



MT DEWEY TRAIL PROFILE
STA. 24+00 TO STA. 30+00

65% DESIGN



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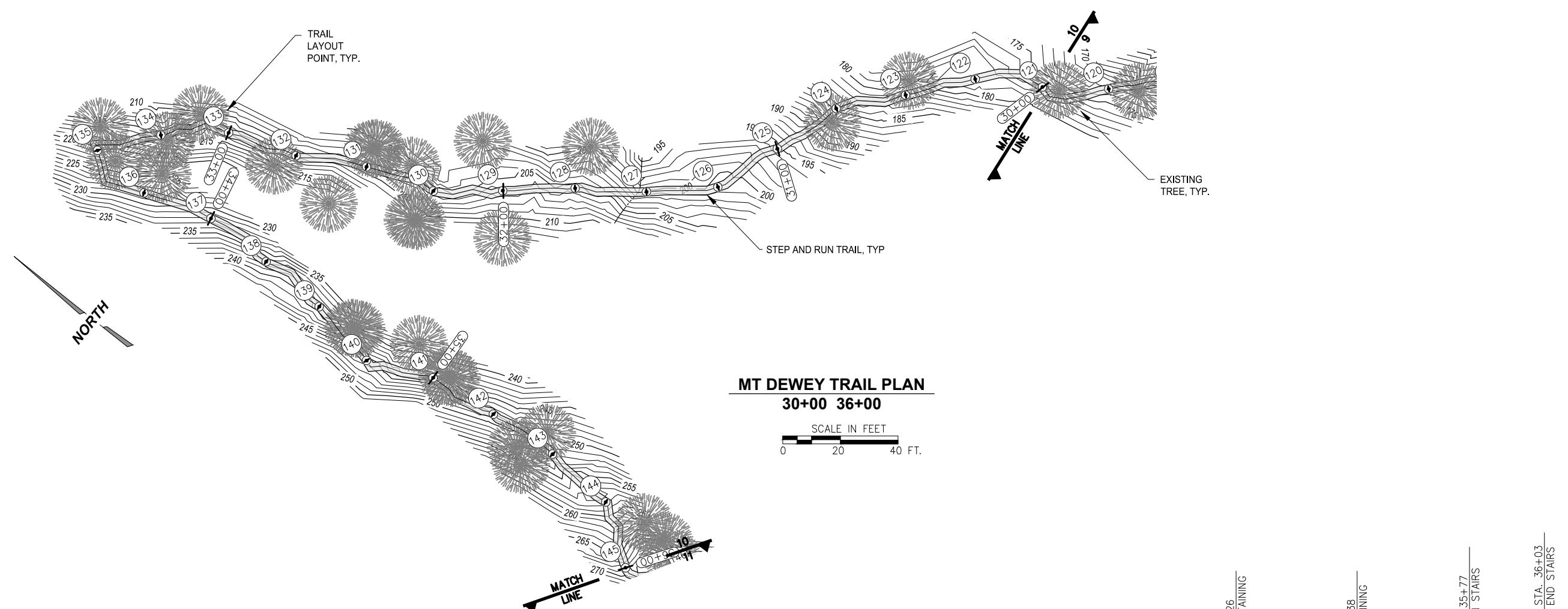
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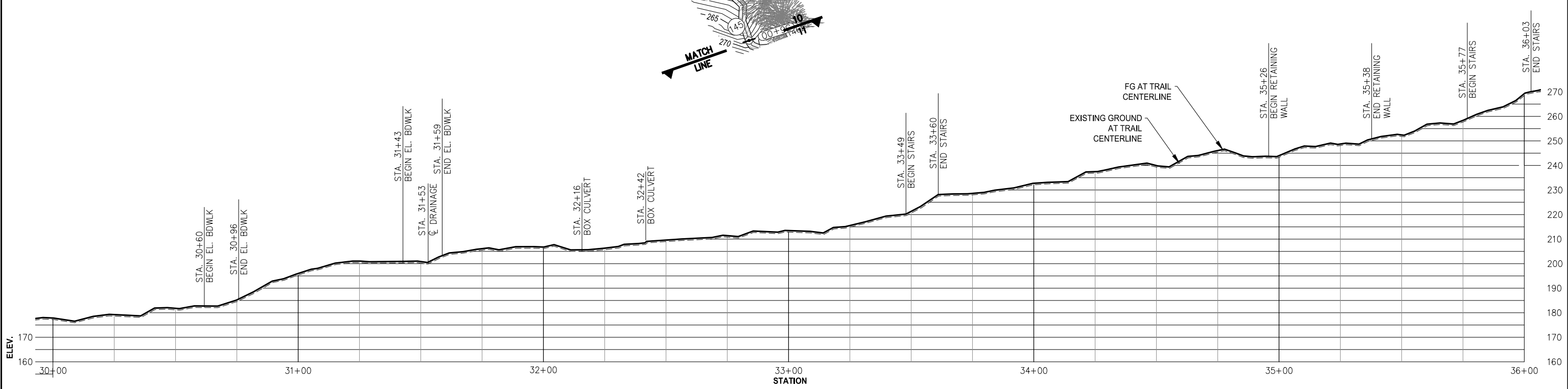
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DATE: Oct. 11, 2022

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250



MT DEWEY TRAIL PLAN
30+00 36+00
 SCALE IN FEET
 0 20 40 FT.



MT DEWEY TRAIL PROFILE
STA. 30+00 TO STA. 36+00

65% DESIGN



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DESIGN: BMI CHECKED: CRS SCALE:
 DRAWN: PJD APPROVED: _____

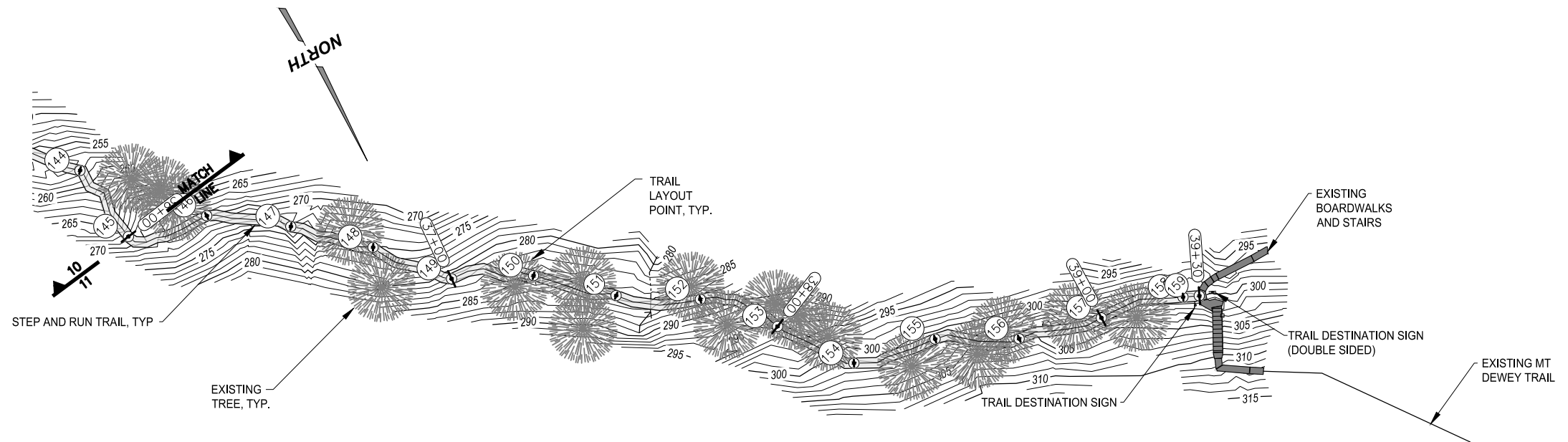
DATE: Oct. 11, 2022

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

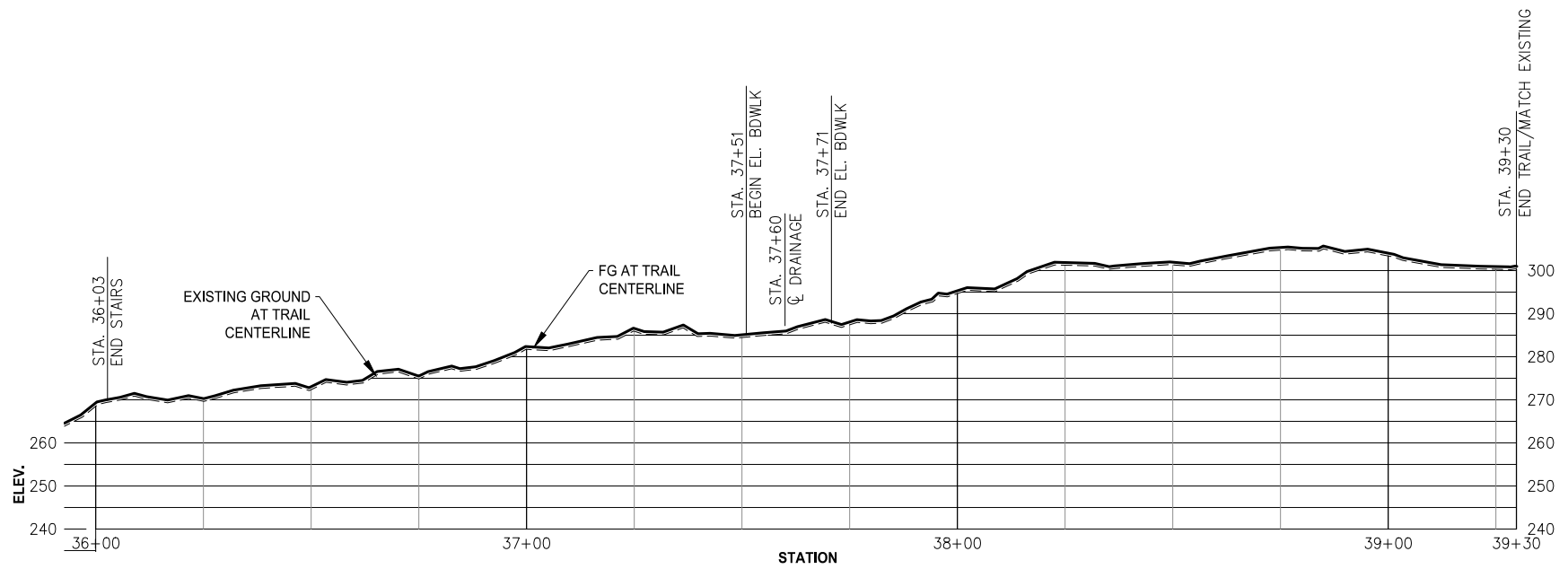
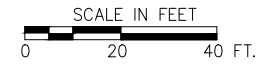
SHEET TITLE: **MT DEWEY TRAIL PLAN AND PROFILE**

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250

12



**MT DEWEY TRAIL PLAN
STA. 36+00 TO STA. 39+30**



**MT DEWEY TRAIL PROFILE
STA. 36+00 TO STA. 39+30**

65% DESIGN



REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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9360 Glacier Highway, Ste. 100
Juneau, Alaska 99801
Phone: 907-586-2093
Fax: 907-586-2099
www.pndengineers.com

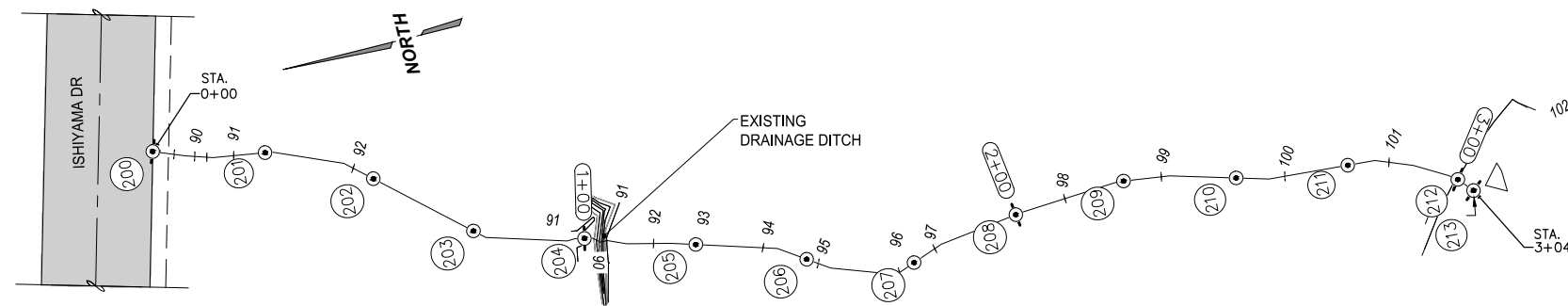
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DATE: Oct. 11, 2022

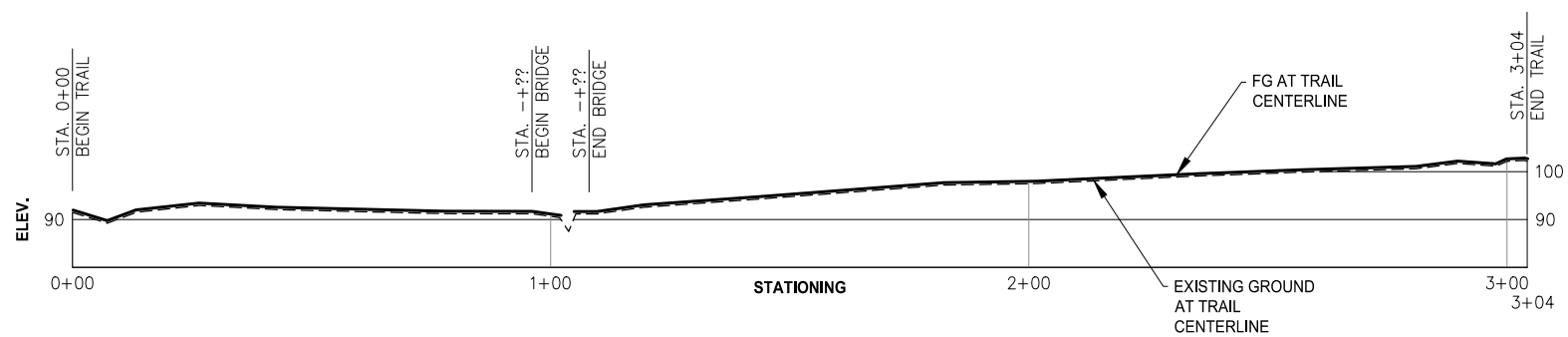
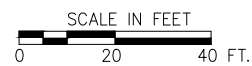
**WRANGELL NON-MOTORIZED
TRANSPORTATION SYSTEM**

SHEET TITLE: **MT DEWEY TRAIL PLAN
AND PROFILE**

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250



**ISHIYAMA CONNECTOR TRAIL
PLAN**



**ISHIYAMA CONNECTOR TRAIL
PROFILE**



65% DESIGN



REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.



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DESIGN: BMI CHECKED: CRS
DRAWN: PJD APPROVED: _____

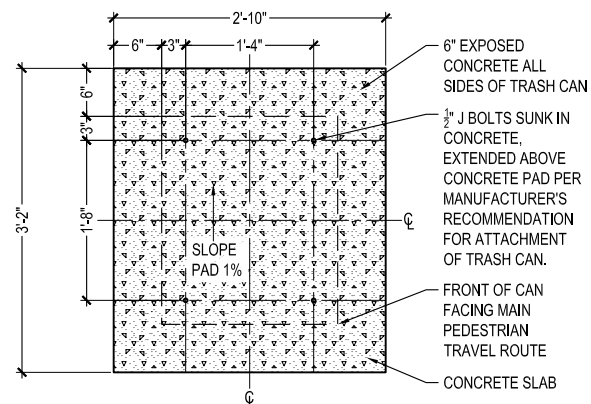
SCALE:

DATE: Oct. 11, 2022

**WRANGELL NON-MOTORIZED
TRANSPORTATION SYSTEM**

SHEET TITLE:
**ISHIYAMA CONNECTOR TRAIL
PLAN AND PROFILE**

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250



NOTE: DIMENSIONS FOR PAD AND BOLT SPACING MAY VARY TO ACCOMMODATE OWNER PROVIDED TRASH CAN.



MANUFACTURER: PILOT ROCK
 MODEL: TRAILSIDE BENCH - MULTI-PEDESTAL-WB SERIES WITH ARMS, 6FT LENGTH
 COLOR: POWDERCOATED BLACK WITH CEDAR COLORED RECYCLED PLASTIC SLATS
 ATTACHMENT: SURFACE MOUNT TO PAD

6 BENCH
 L501 SCALE: NTS @22x34



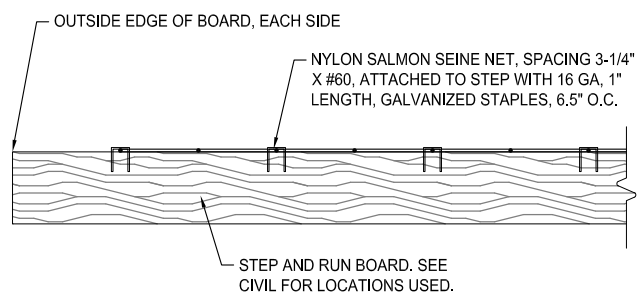
MANUFACTURER: BEAR SAVER
 MODEL: CE140-CH, ADA COMPLIANT
 COLOR: BY OWNER
 ATTACHMENT: SURFACE MOUNT TO PAD

4 LITTER BIN
 L501 SCALE: 1" = 1'-0" @22x34



MANUFACTURER: MAX-R
 MODEL: SIGN AND BOX KIT
 COLOR: BY OWNER
 ATTACHMENT: ATTACH TO 4X4 BURIED POST PER MANUFACTURER'S SPECIFICATIONS

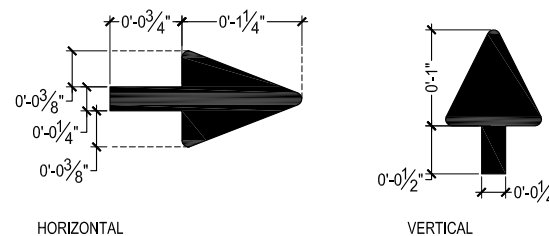
7 DOG BAGS
 L501 SCALE: NTS @22x34



5 STEP AND RUN - NET NON-SKID MATERIAL
 L501 SCALE: NTS @22x34

SIGN SCHEDULE

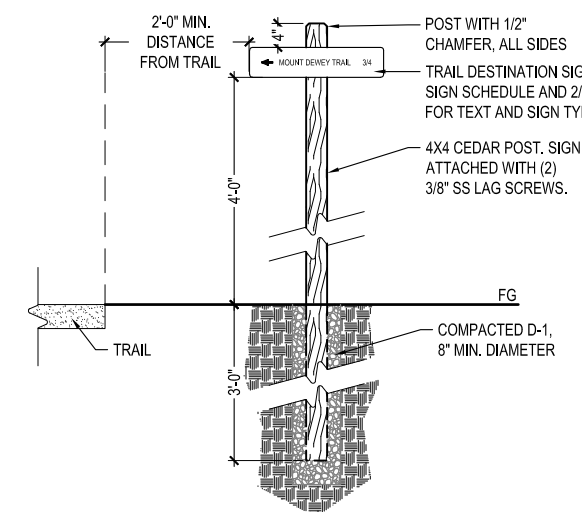
SIGN #	SIGN TYPE	SIGN NUMBER AND SHAPE	SIGN MATERIAL	SIGN FACE	TEXT/SYMBOLS	POSTS
1	TRAIL DESTINATION SIGN	TD-1	YELLOW CEDAR	UNFINISHED WOOD WITH BLACKENED ROUTED TEXT	"MOUNT DEWEY TRAIL 3/4" ARROW: UP	(1) 4X4
2	TRAIL DESTINATION SIGN	TD-1	YELLOW CEDAR	UNFINISHED WOOD WITH BLACKENED ROUTED TEXT	"MOUNT DEWEY TRAIL 1/2" ARROW: LEFT	(1) 4X4
3	TRAIL DESTINATION SIGN	TD-2	YELLOW CEDAR	UNFINISHED WOOD WITH BLACKENED ROUTED TEXT	"MOUNT DEWEY TRAIL 1/2" ARROW: LEFT "MOUNT DEWEY OVERLOOK 1/4" ARROW: RIGHT	(1) 4X4
4 (SOUTH)	TRAIL DESTINATION SIGN	TD-2	YELLOW CEDAR	UNFINISHED WOOD WITH BLACKENED ROUTED TEXT	"MOUNT DEWEY EXTENSION TRAILHEAD 3/4" ARROW: RIGHT "MOUNT DEWEY OVERLOOK 1/4" ARROW: UP	(1) 4X4
4 (NORTH)	TRAIL DESTINATION SIGN	TD-2	YELLOW CEDAR	UNFINISHED WOOD WITH BLACKENED ROUTED TEXT	"MOUNT DEWEY EXTENSION TRAILHEAD 3/4" ARROW: LEFT "MOUNT DEWEY TRAILHEAD 1/2" ARROW: UP	(1) 4X4



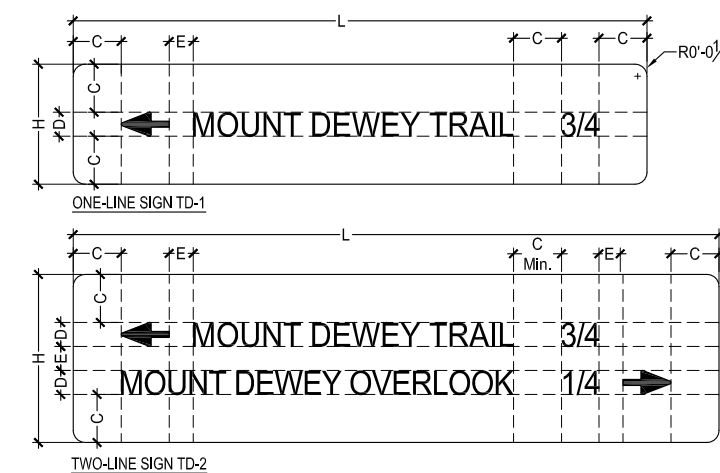
3 ARROW
 L501 SCALE: 1" = 1'-0" @22x34

SIGN LAYOUT DIMENSIONS (INCHES)					
SIGN NUMBER	H	L	C	D	E
TD-1	5	VARIES	2	1	1
TD-2	7	VARIES	2	1	1

TEXT TO BE CAPITAL ASA SERIES C, 1-INCH ROUTED 1/4" DEEP, PAINTED PLACK



1 TRAIL DESTINATION SIGN
 L501 SCALE: 3/4" = 1'-0" @22x34



NOTE: SEE SIGN LAYOUT DIMENSION TABLE

2 TRAIL DESTINATION SIGN LAYOUT
 L501 SCALE: 3" = 1'-0" @22x34

65% DESIGN



REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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DESIGN: BL CHECKED: CM SCALE:
 DRAWN: BL APPROVED: _____

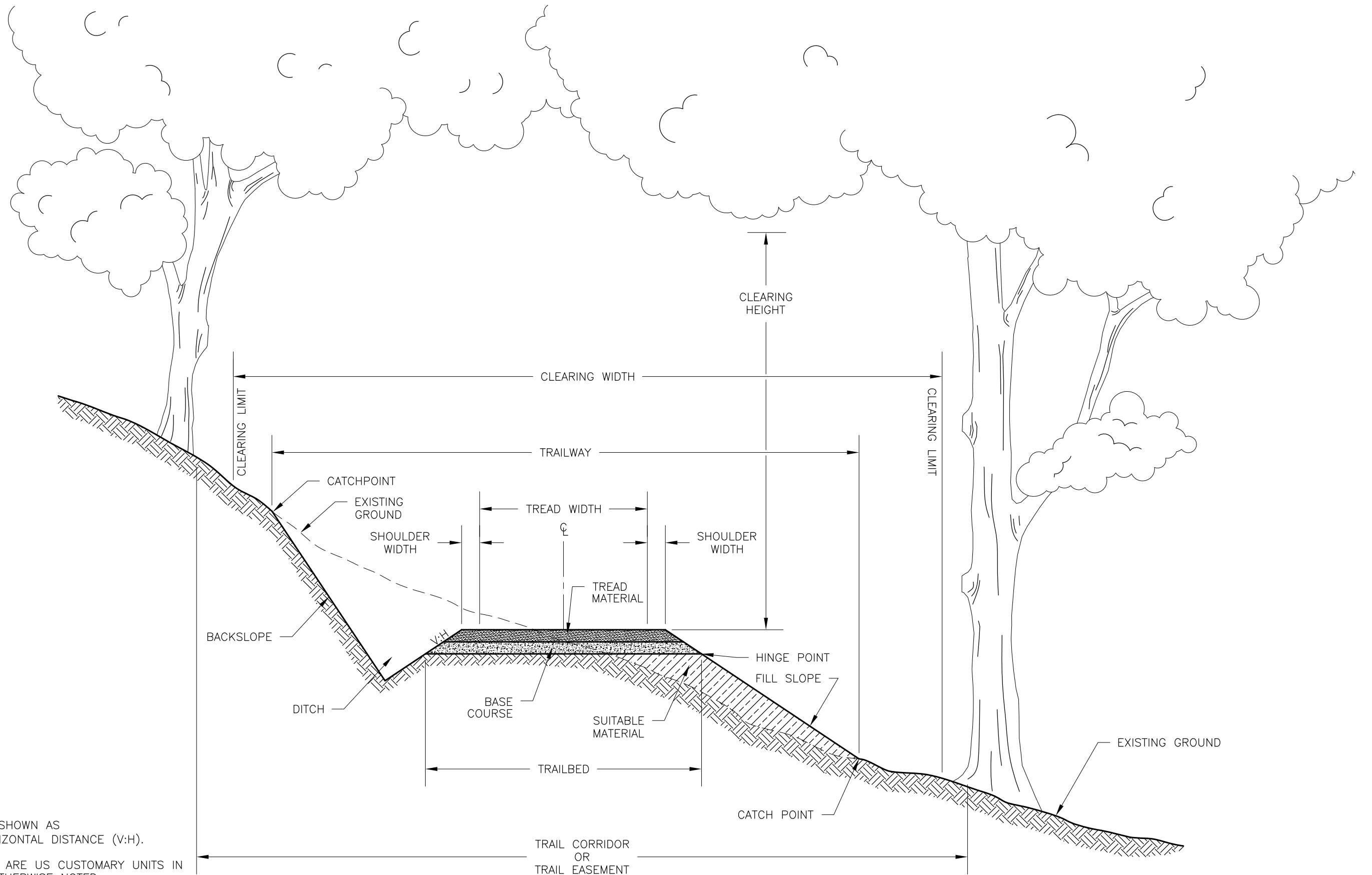
DATE: Oct. 7, 2022

WRANGELL NON-MOTORIZED TRANSPORTATION SYSTEM

SHEET TITLE: **DETAILS**

PND PROJECT NO.: 212038 C.A.N. NO.: AECC250

L501



NOTES:
 ALL SLOPES ARE SHOWN AS VERTICAL-TO-HORIZONTAL DISTANCE (V:H).
 ALL UNITS SHOWN ARE US CUSTOMARY UNITS IN INCHES UNLESS OTHERWISE NOTED.

U.S. DEPARTMENT OF AGRICULTURE
 FOREST SERVICE
STANDARD TRAIL PLAN

PROJECT NAME & LOCATION
**WRANGELL NON-MOTORIZED
 TRANSPORTATION SYSTEM**

DRAWING NAME
STANDARD TRAIL TERMS

SECTION: **910 - TRAILWAY** TYPICAL ID: **STT**

REVISION DATE
10/11/22

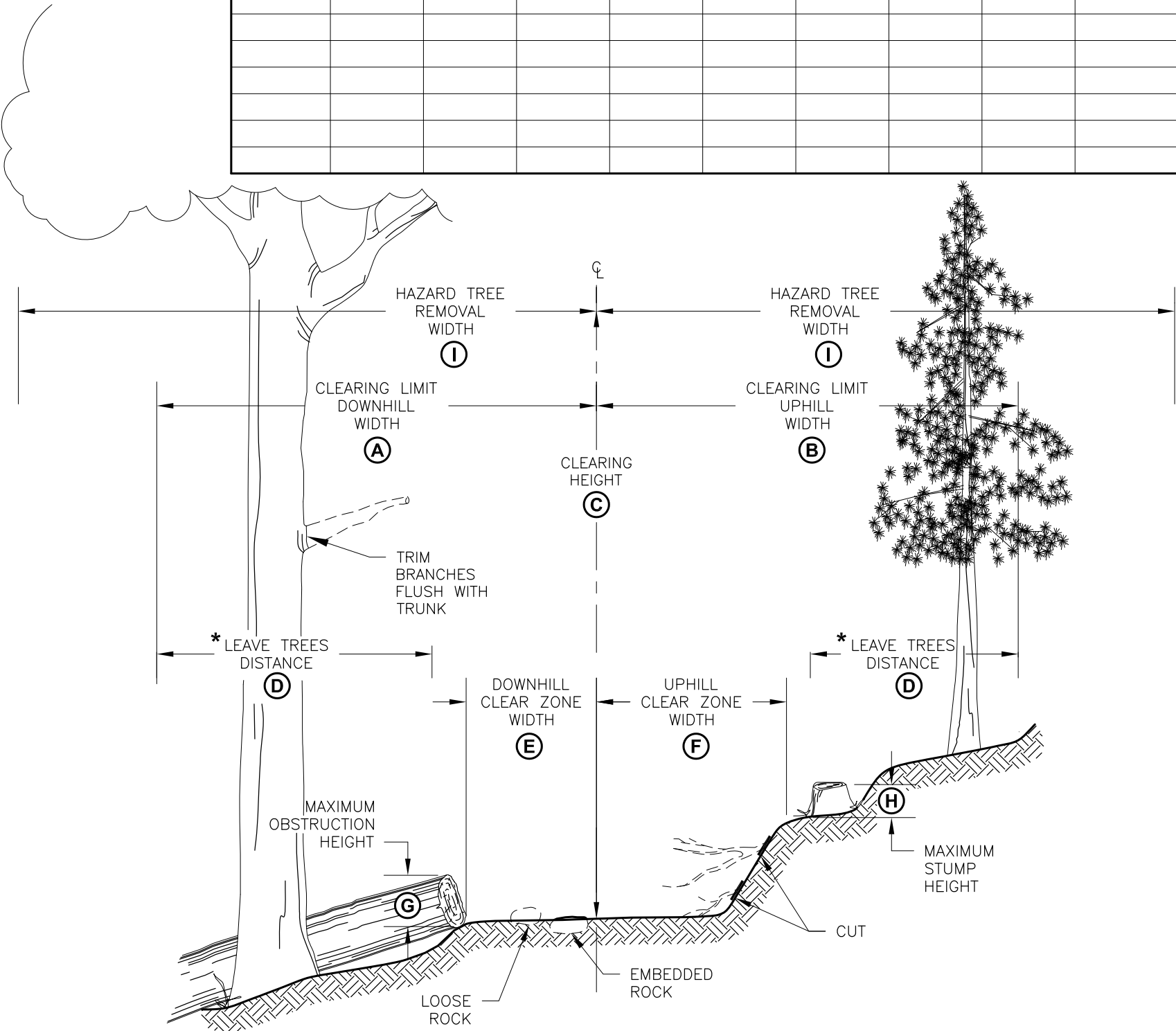
NOT TO SCALE

DRAWING NO.
STD_910-01

SHEET **X** OF **X**

CLEARING LIMITS - TREES AND LOGS

TYPICAL ID	CLEARING METHOD	CLEARING LIMITS			* LEAVE TREES		CLEAR ZONE			STUMPS	HAZARD TREE	DISPOSAL METHOD	COMMENTS
		DOWNHILL WIDTH (A)	UPHILL WIDTH (B)	CLEARING HEIGHT (C)	DISTANCE (FEET) (D)	DIAMETER (INCHES)	DOWNHILL WIDTH (E)	UPHILL WIDTH (F)	MAXIMUM OBSTRUCTION HEIGHT (G)	MAXIMUM HEIGHT (H)	REMOVAL WIDTH (I)		
	C X	X	X	X	X	X	X	X	X	X	X	D X	X



CLEARING METHOD

CLEARING TYPE	CLEARING METHOD	COMMENTS
C1	NEW CONSTRUCTION	TREES, PRUNING, & BRUSH
C2	CLEARING LIMIT RESTORATION	TREES, PRUNING, LOGS, BRUSH & MAINTENANCE
C3	TRAIL OPENING	LOGGING OUT, LOOSE ROCK & DRAINAGE CLEARING
C4	HAZARD TREE REMOVAL	ALONG TRAIL CORRIDOR
C5	HAZARD TREE REMOVAL	INDIVIDUAL (AS MARKED)
C6	LOOSE ROCK & ROOT REMOVAL	X
C7	X	X

LEAVE TREES: LEAVE TREES SHOULD BE LIVE, SOUND & UNDAMAGED WITH UNCOMPROMISED ROOT SYSTEMS.

HAZARD TREES: HAZARD TREES ARE TREES THAT ARE STANDING OR LEANING DEAD TREES LARGER THAN 8 INCHES IN DIAMETER AND GREATER THAN 90 FEET IN HEIGHT.

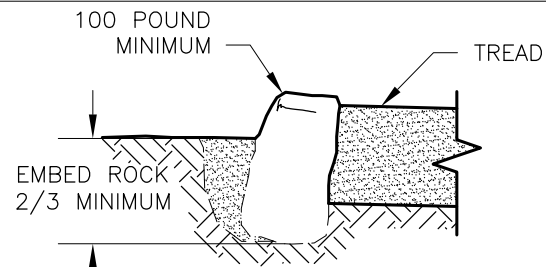
DISPOSAL METHOD

DISPOSAL TYPE	DISPOSAL METHOD	COMMENTS
D1	LOP AND SCATTER OUTSIDE TRAILWAY	X
D2	LOP AND SCATTER ON FILL SLOPE	
D3	PILE AND BURN	
D4	CHIP	
D5	HAUL TO DISPOSAL SITE	
D6	X	

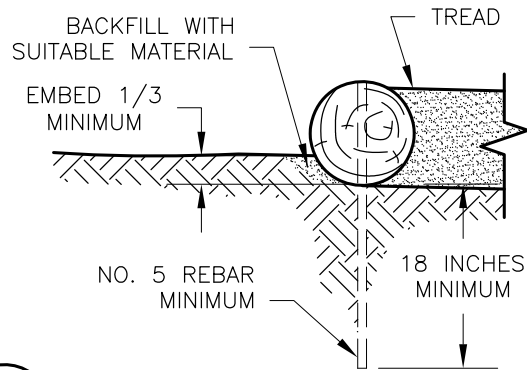
TYPICAL RETAINER TYPE

RETAINER TYPE	MATERIAL	SIZE	SPECIES/ GRADE	PRESERV. TYPE	JOINT TYPE	COMMENTS
R1	ROCK					
R2a	LOG	12"	YC		L2	R2a OR R3a MAY BE USED AT CONTRACTOR OPTION.
R2b	LOG					
R2c	LOG					
R3a	SAWN TIMBER	12x6	YC		L2	
R3b	SAWN TIMBER					
R3c	RAIL ROAD TIES					
	X					
	X					
	X					
	X					

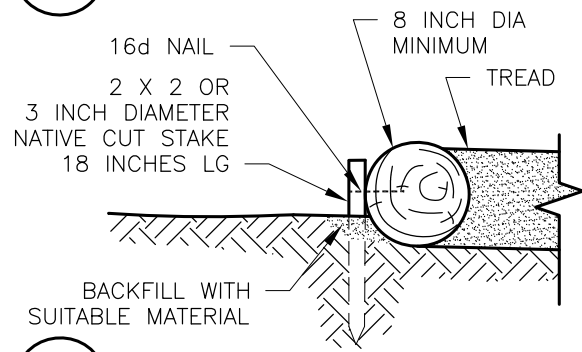
R1 TYPICAL ROCK RETAINER



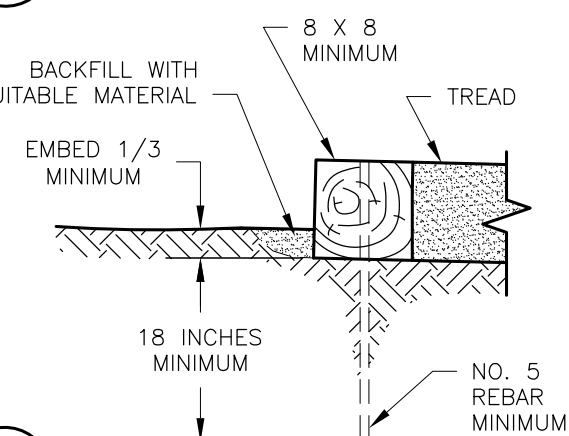
R2a TYPICAL LOG RETAINER



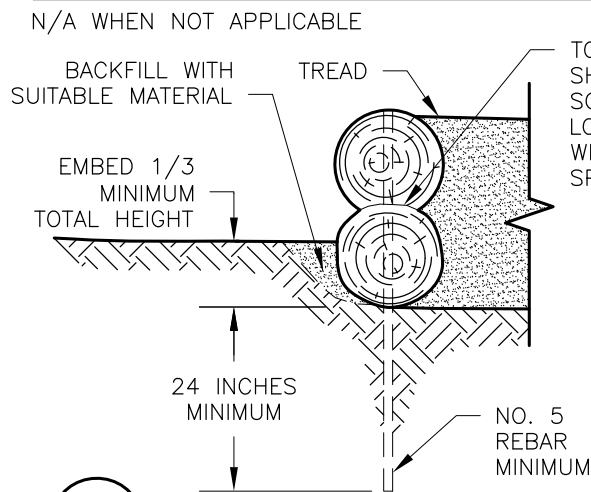
R2b TYPICAL LOG RETAINER



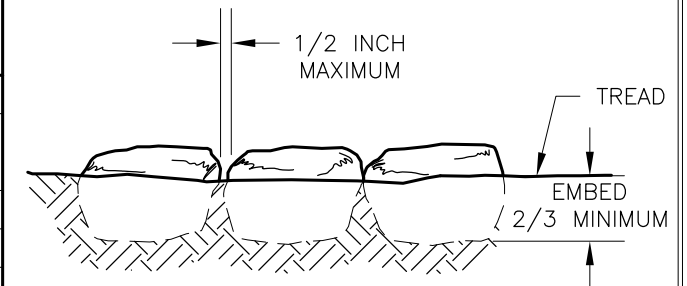
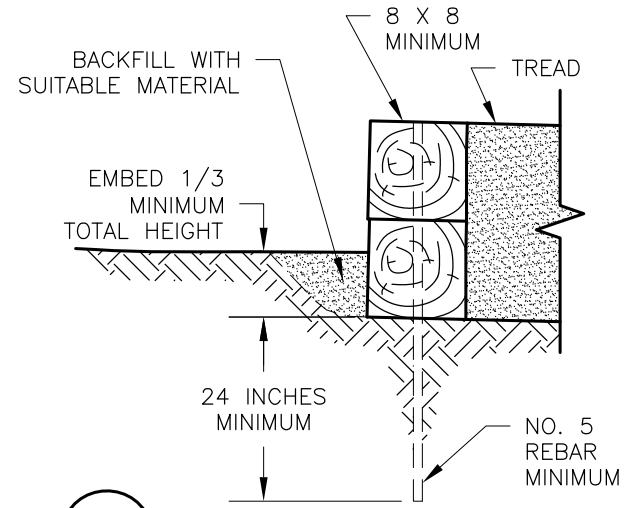
R3a TYPICAL TIMBER RETAINER



R2c TYPICAL STACKED LOG RETAINER

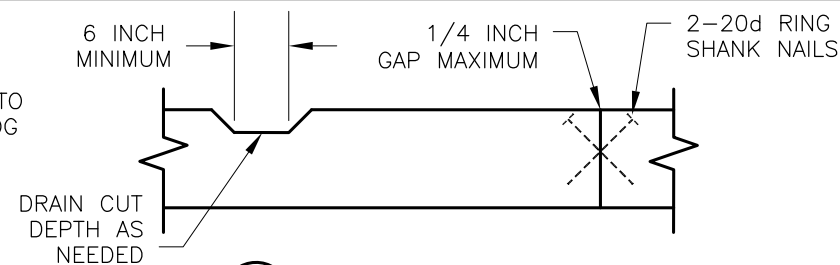


R3b TYPICAL STACKED TIMBER RETAINER

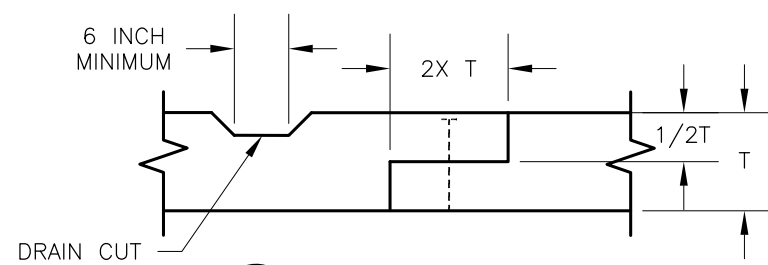


TYPICAL ROCK SPACING

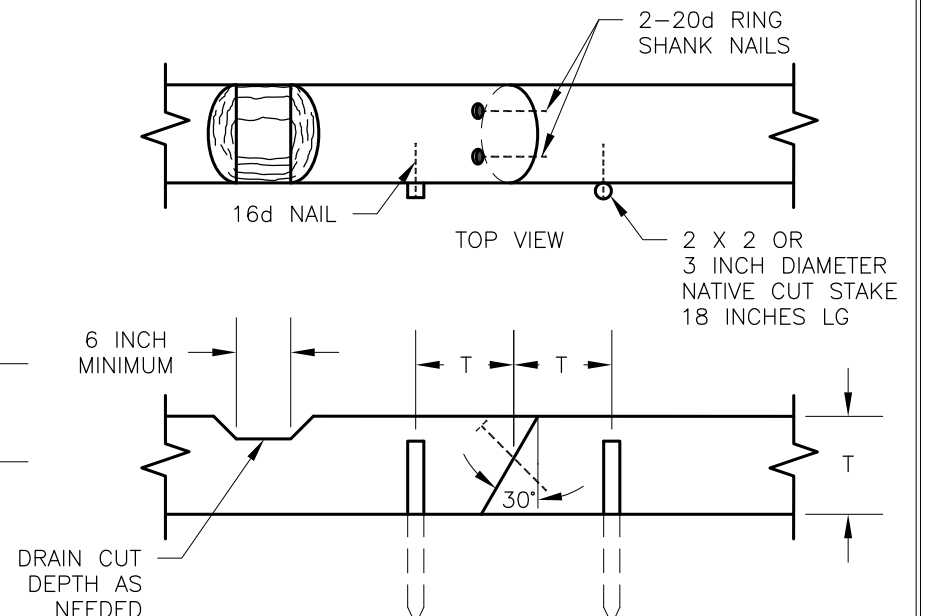
L1 TYPICAL BUTT JOINT



L2 TYPICAL LAP JOINT



L3 TYPICAL SCARF JOINT



NOTES:

1. PRE-DRILL HOLES FOR REBAR TO PREVENT SPLITTING OF LOGS OR SAWN TIMBERS. RECESS END OF REBAR 1/2 INCH BELOW TOP OF TIMBER.
2. PLACE REBAR, ANCHOR BOLT OR STAKE 6 INCHES FROM EACH END OF TIMBER WITH MAXIMUM SPACING OF 36 INCHES. FOR STACKED RETAINERS STAGGER JOINTS 24 INCHES MINIMUM.
3. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
4. ALL FIELD DRILLED HOLES AND CUTS SHALL BE FIELD TREATED.
5. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.

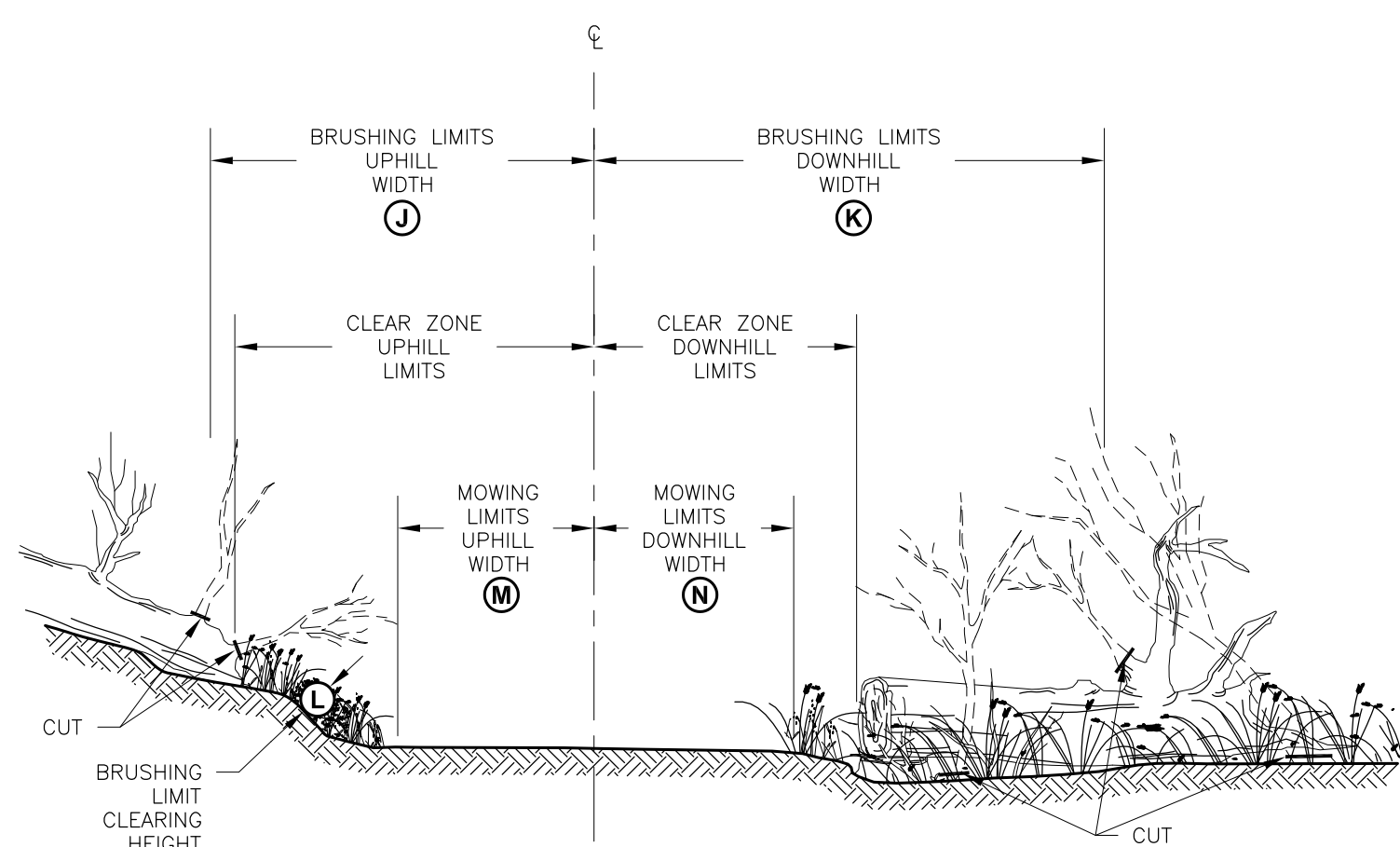
PRESERVATIVE TREATMENT - (REFER TO AWPA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	X
P2	WB	UC3B	
P3	XX	XXXX	

TREATMENT TYPE
 WB = WATERBORNE
 OT = OIL-BORNE

USE CATEGORY
 UC3B = ABOVE GROUND - EXPOSED
 UC4A = GROUND CONTACT - GENERAL USE
 UC4B = GROUND CONTACT - HEAVY DUTY

CLEARING LIMITS - BRUSHING

TYPICAL ID	CLEARING METHOD	BRUSHING LIMITS			MOWING LIMITS		DISPOSAL METHOD	COMMENTS
		UPHILL WIDTH (J)	DOWNHILL WIDTH (K)	CLEARING HEIGHT (L)	UPHILL WIDTH (M)	DOWNHILL WIDTH (N)		
	C X	X	X	X	X	X	D X	X



NOTE:
SEE SHEET STD_912-01 FOR
CLEAR ZONE LIMITS

CLEARING METHOD

CLEARING TYPE	CLEARING METHOD	COMMENTS
C9	BRUSHING	X
C10	MOWING	
C11	X	

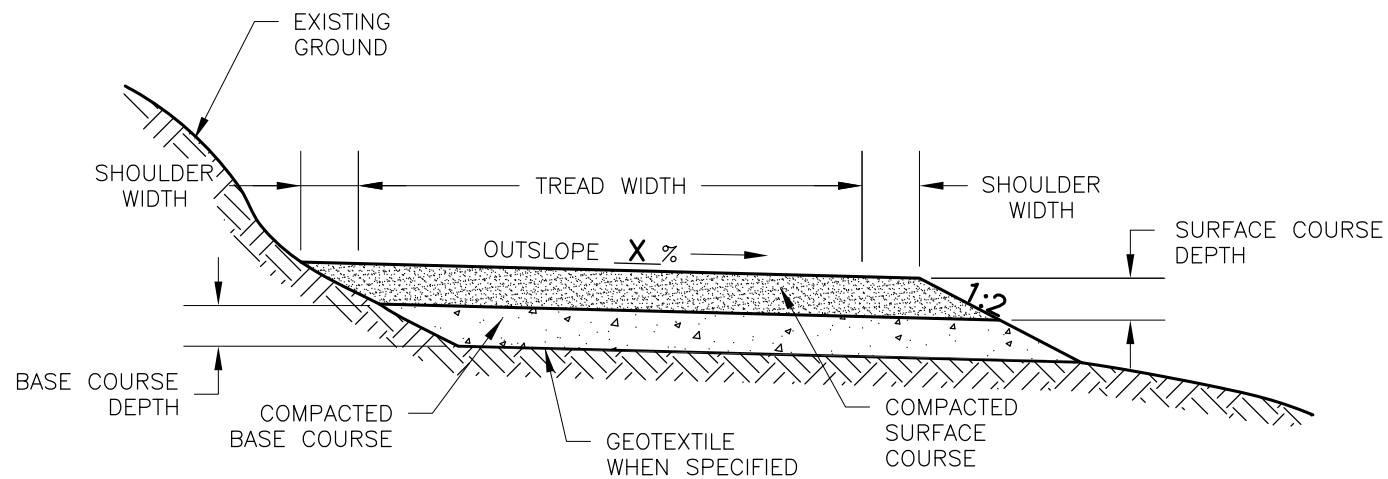
DISPOSAL METHOD

DISPOSAL TYPE	DISPOSAL METHOD	COMMENTS
D1	LOP AND SCATTER OUTSIDE TRAILWAY	X
D2	LOP AND SCATTER ON FILL SLOPE	
D3	PILE AND BURN	
D4	CHIP	
D5	HAUL TO DISPOSAL SITE	
D6	X	

SURFACING SECTIONS

TYPICAL ID	SECTION TYPE	TREAD WIDTH	SHOULDER WIDTH		GEOTEXTILE TYPE	BASE COURSE		SURFACE COURSE		COMMENTS
			UPHILL	DOWNHILL		TYPE	DEPTH	TYPE	DEPTH	
				B		2'	6"	6"	X	

N/A WHEN NOT APPLICABLE



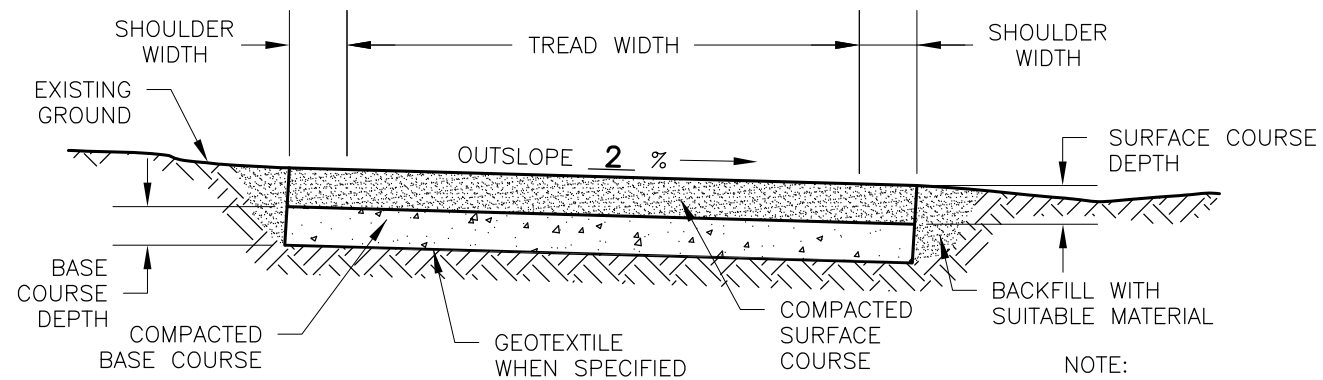
(A) OUTSLOPED SECTION

BASE COURSE MATERIAL TYPE

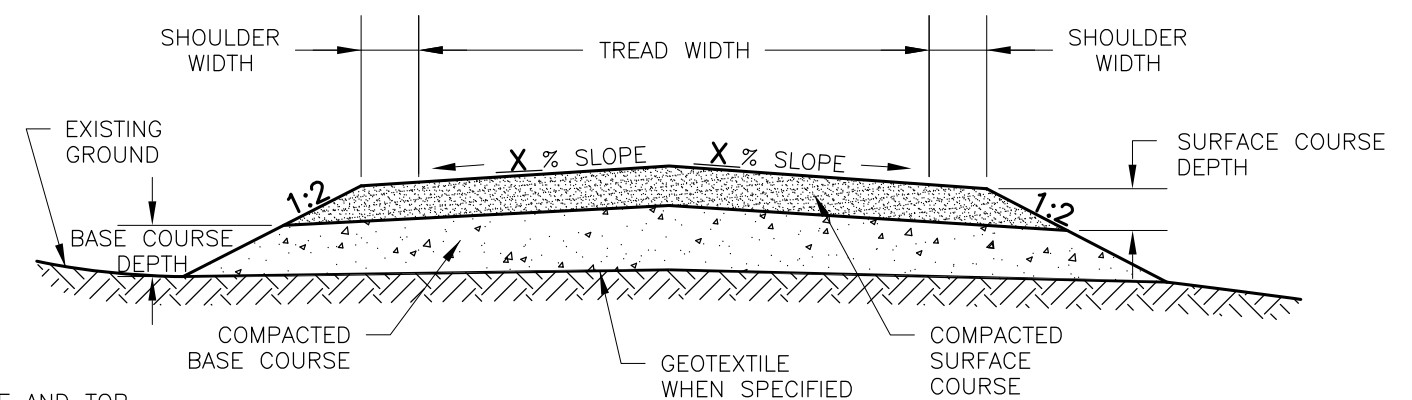
TYPE	MATERIAL	GRADATION	COMMENTS
B1	PITRUN	X	X
B2	AGGREGATE	X	
B3	X	X	

SURFACE COURSE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
S1	PITRUN	X	X
S2	AGGREGATE	X	
S3	CLAY	X	
S4	WOODCHIPS	X	
S5	X	X	



(B) EXCAVATED SECTION



(C) RAISED SECTION

- NOTE:
1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
 2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

SURFACING SECTIONS

TYPICAL ID	SECTION TYPE	TREAD WIDTH	SHOULDER WIDTH		GEOTEXTILE TYPE	RETAINER*	SUBBASE			BASE COURSE		SURFACE COURSE		COMMENTS
			UPHILL	DOWNHILL		TYPE	DEPTH	WIDTH	TYPE	DEPTH	TYPE	DEPTH		
	F	5'	6"	6"	X	R2 ^a	SB2	4"	9'	BX	6"	S5	2"	6" BASE COURSE SHALL BE PLACED WITHIN GEO-CELL
	F	2'	6"	6"	X	R2 ^a	SB2	4"	6'	BX	6"	S5	2"	

N/A WHEN NOT APPLICABLE
 *FOR TYPICAL RETAINERS SEE SHEET STD_911-03

SUBBASE MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
SB1	PITRUN	X	X
SB2	AGGREGATE	X	
SB3	X	X	

BASE COURSE MATERIAL TYPE

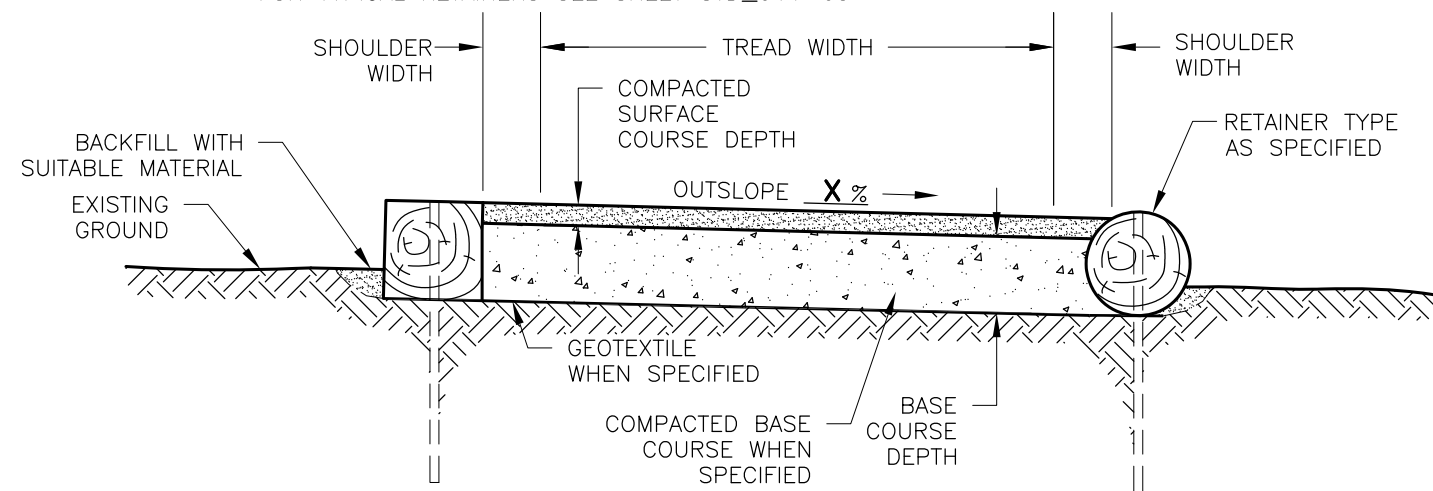
TYPE	MATERIAL	GRADATION	COMMENTS
B1	PITRUN	X	X
B2	AGGREGATE	X	
B3	X	X	

SURFACE COURSE MATERIAL TYPE

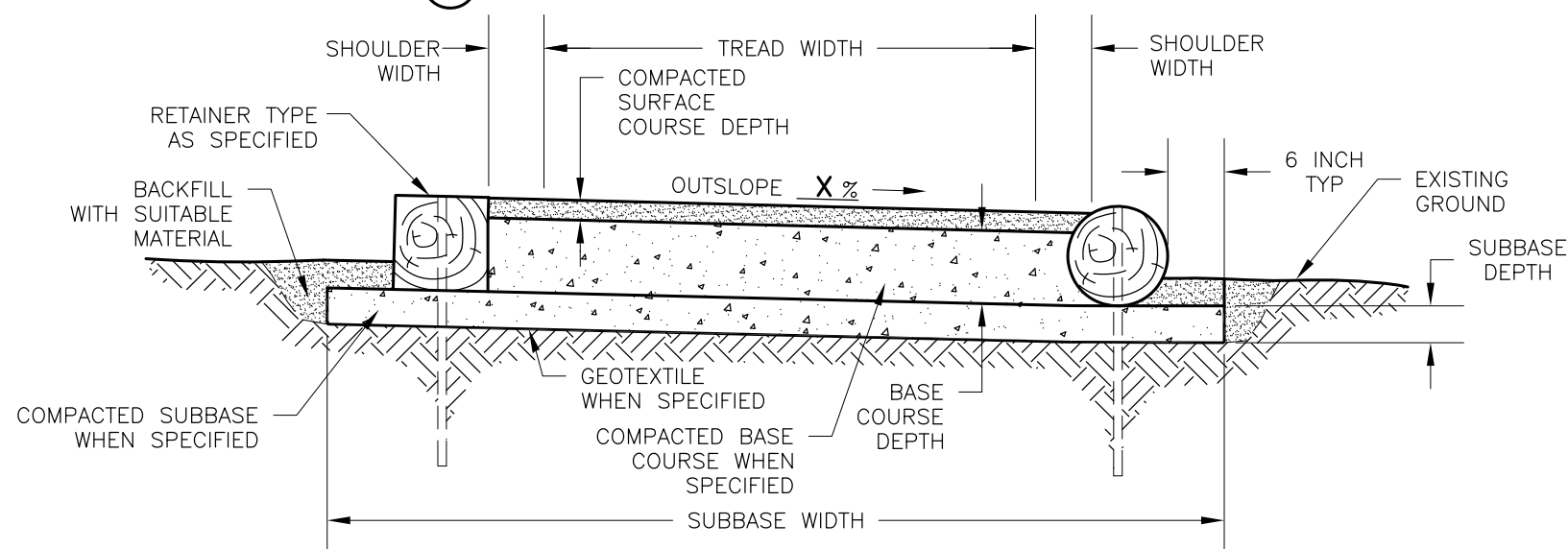
TYPE	MATERIAL	GRADATION	COMMENTS
S1	PITRUN	X	X
S2	AGGREGATE	X	
S3	CLAY	X	
S4	WOODCHIPS	X	
S5	X	X	

NOTE:

1. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.
2. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.



D SURFACING SECTION WITH RETAINERS

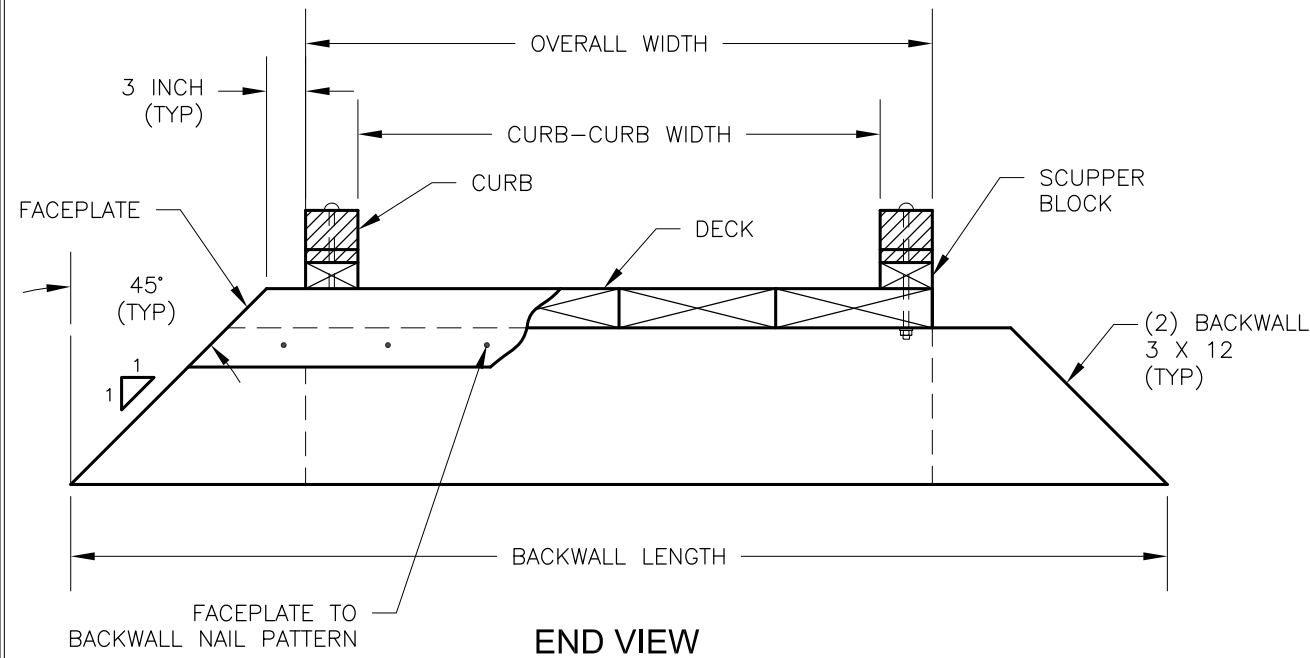


E SURFACING SECTION WITH RETAINERS AND SUB BASE

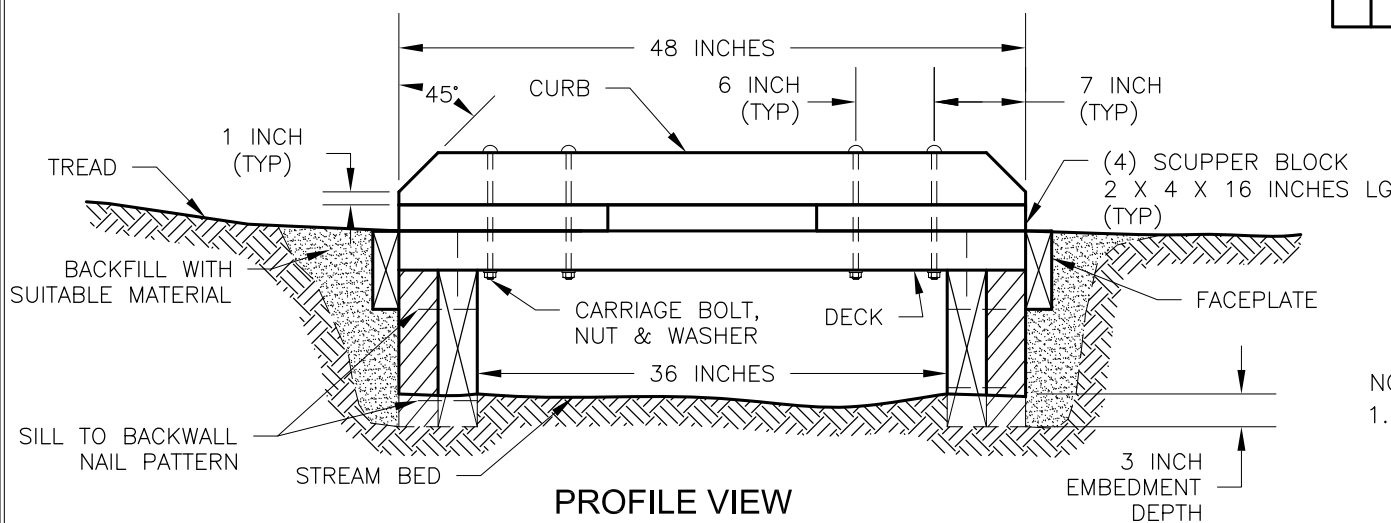
TREATED TIMBER BOX CULVERT & CURB

TYPICAL ID	CURB-CURB WIDTH	OVERALL WIDTH	BACKWALL/SILL/FACEPLATE			DECK		CURBS/SCUPPER BLOCKS		COMMENTS
			LENGTH	SPECIES	PRESERV. TYPE	SPECIES	PRESERV. TYPE	SPECIES	PRESERV. TYPE	
	3'-0"	3'-0"	X	DF	P 1	YC		YC		X

N/A WHEN NOT APPLICABLE

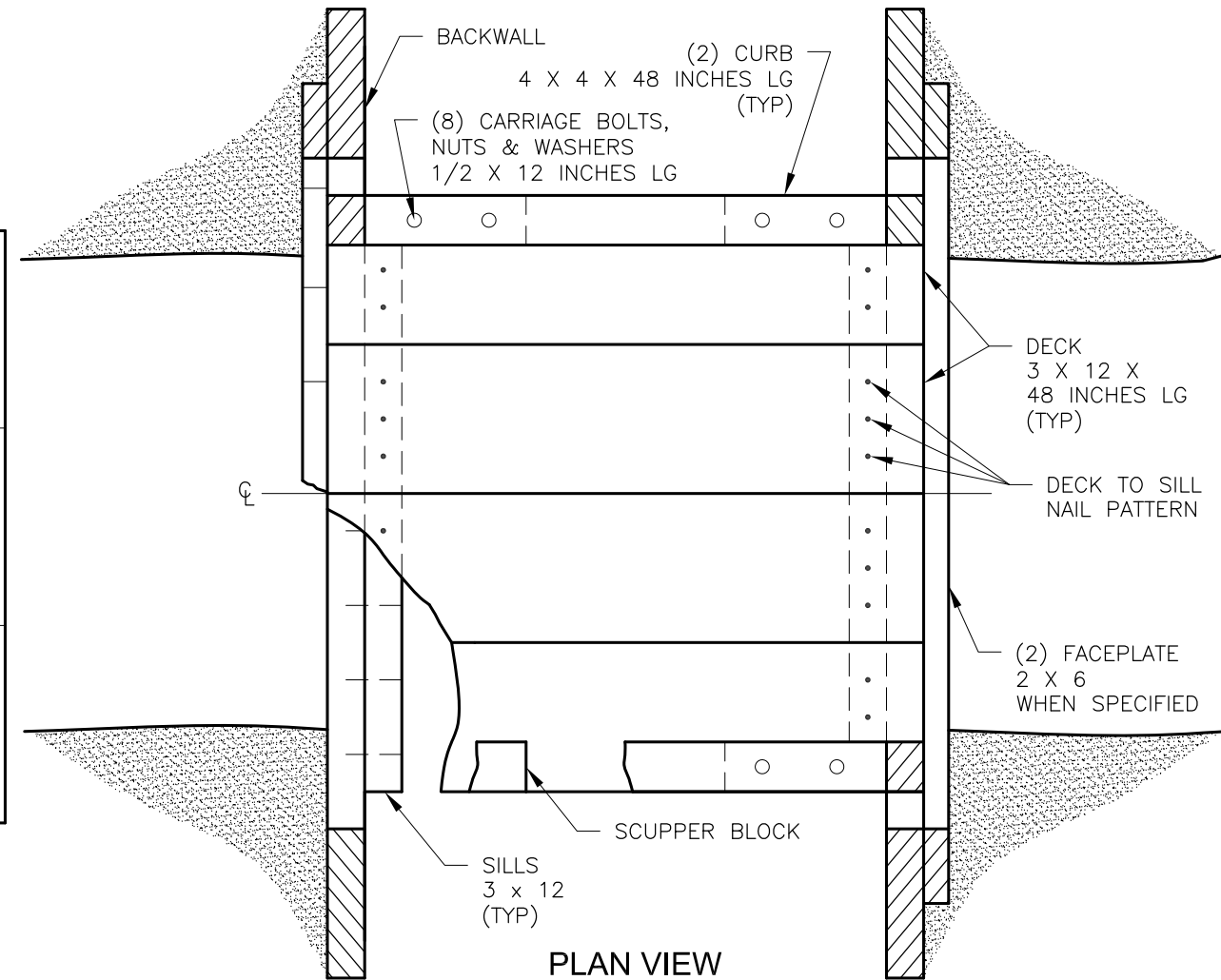


END VIEW



PROFILE VIEW

NAIL PATTERN	DETAIL
FACEPLATE TO BACKWALL	30d NAILS @ 12 INCHES ON CENTER.
SILL TO BACKWALL	30d NAILS IN TWO 6 INCH STAGGERED ROWS, 2 INCH MINIMUM FROM EDGE OF SILL.
DECK TO SILL	(3) 60d NAILS THROUGH EACH END OF DECK PLANK INTO SILL, 6 INCHES FROM EDGE OF DECK PLANK.



PLAN VIEW

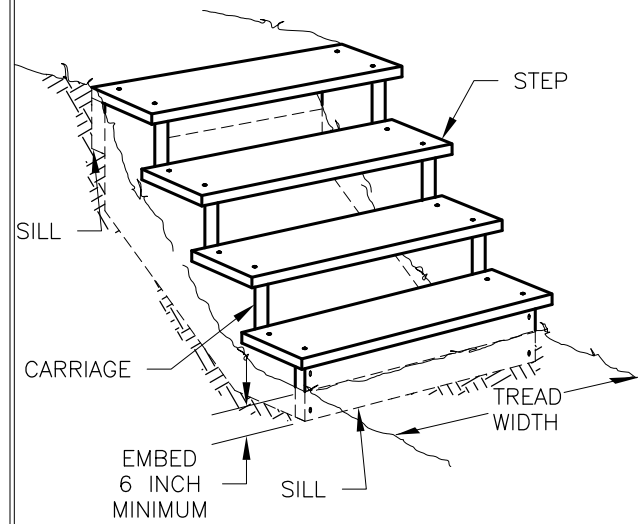
- NOTES:
1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.

PRESERVATIVE TREATMENT - (REFER TO AWPAA USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	X
P2	WB	UC3B	
P3	XX	XXXX	

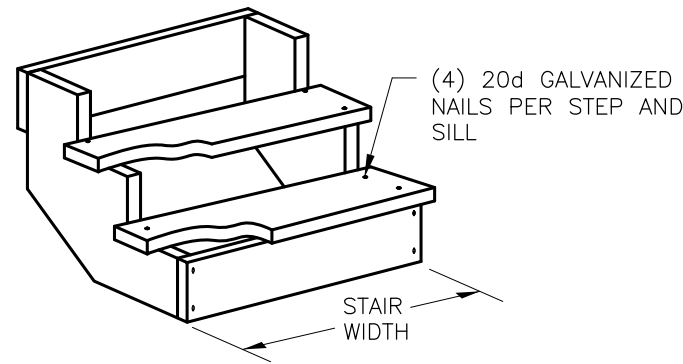
TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

STAIRCASE

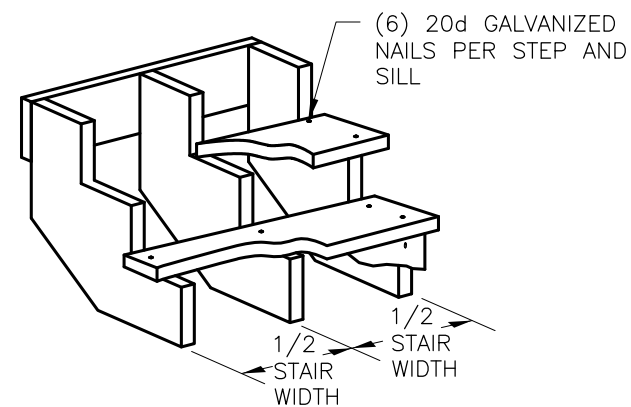


TYPICAL ID	SPAN	CARRIAGE		SILL	STEP				SPECIES	PRESERV. TYPE	COMMENTS
		NO. OF CARRIAGES	MATERIAL DIMENSION	MATERIAL DIMENSION	WIDTH	MATERIAL DIMENSION	RUN	RISE			
	X	X	X X X	X X X	X	X X X	X	X	X	P X	X



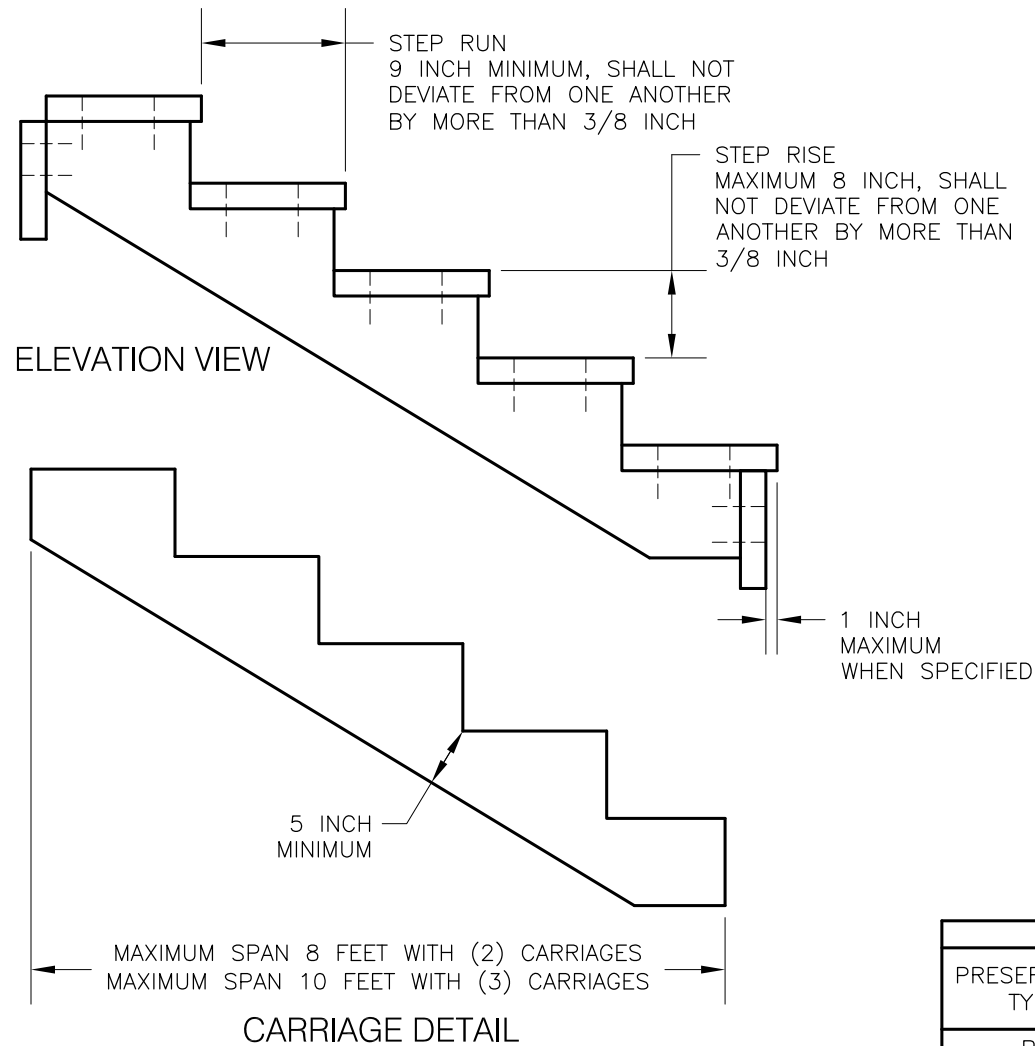
TWO CARRIAGE OPTION

FOR 3 FOOT OR LESS STEP WIDTH



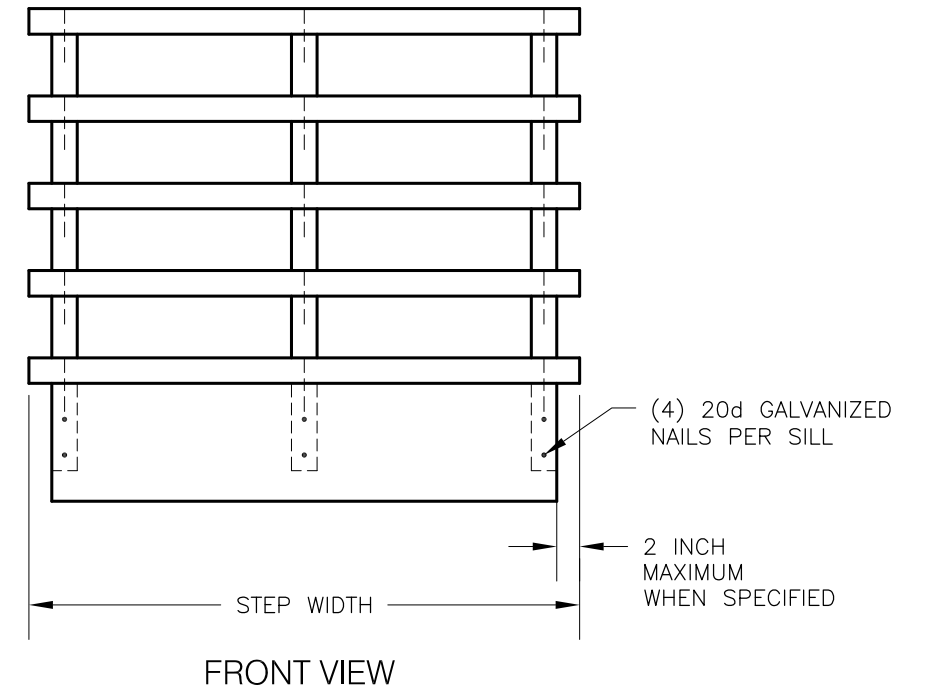
THREE CARRIAGE OPTION

FOR 3 TO 6 FOOT STEP WIDTH



NOTES:

1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
2. REMOVE AND DISPOSE OF DUFF AND TOP ORGANIC LAYERS DOWN TO MINERAL SOIL.



PRESERVATIVE TREATMENT - (REFER TO AWPAs USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	X
P2	WB	UC3B	
P3	XX	XXXX	

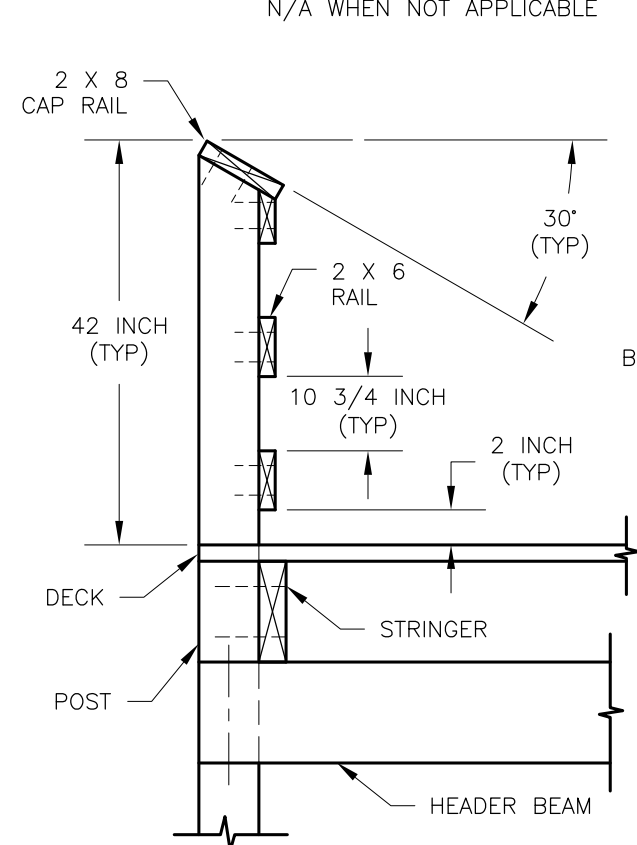
TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

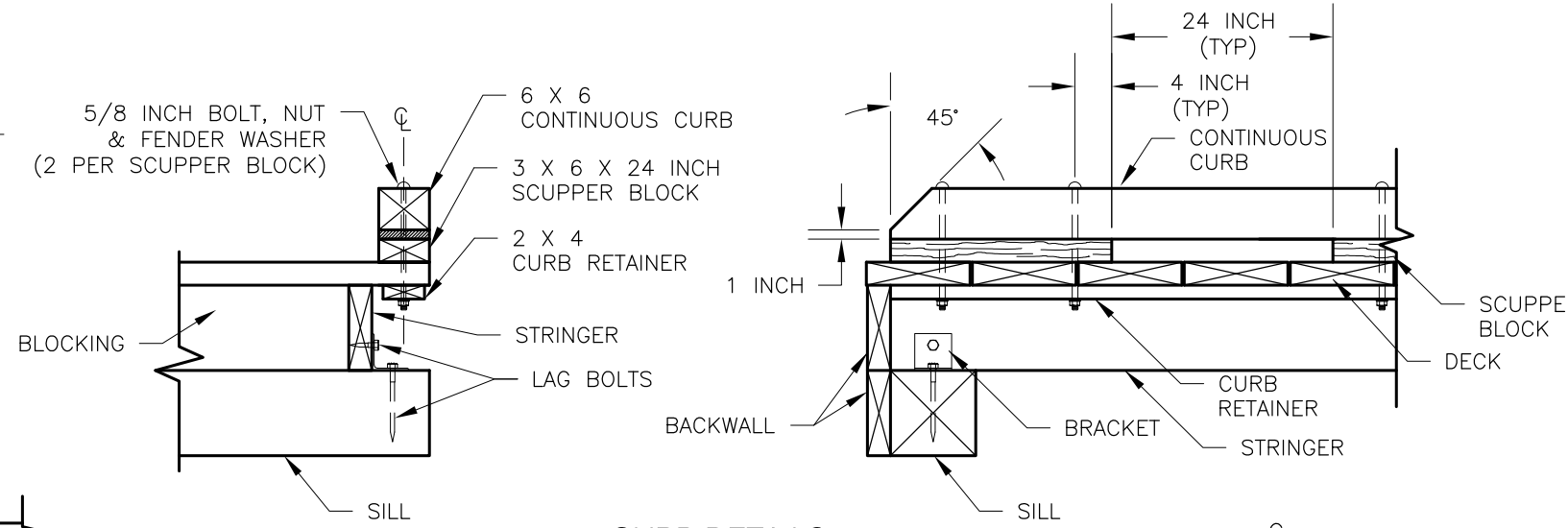
STANDARD BOARDWALK

TYPICAL ID	SECTION TYPE	OVERALL WIDTH	SURFACE WIDTH	FOOTING MATERIAL			POST/SILLS/BACKWALLS				HEADER BEAM/STRINGERS/DECK/CURB/RAILING SYSTEM			COMMENTS
				TYPE	DEPTH	WIDTH	POST HEIGHT	POST EMBEDMENT DEPTH	SPECIES	PRESERV. TYPE	DECK SIZE	SPECIES	PRESERV. TYPE	
SB1-1	X	X	X	FX	X	X	X	X	X	PX	XX	X	PX	X

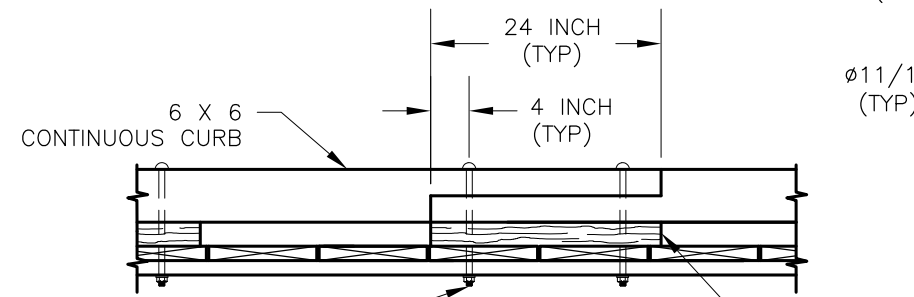
N/A WHEN NOT APPLICABLE



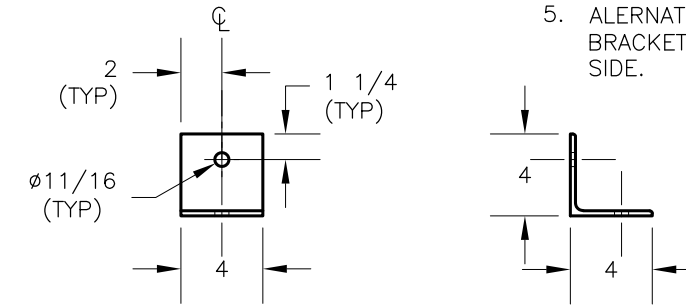
RAIL SYSTEM DETAIL



CURB DETAILS



CURB SPLICING DETAIL



BRACKET DETAIL

- NOTES:
- DESIGN LOAD: 100 PSF PEDESTRIAN LOAD.
 - ALL MATERIAL TYPE SHALL BE DOUGLAS FIR OR SOUTHERN PINE NO. 2 OR BETTER AS SPECIFIED IN THE ABOVE TABLE.
 - ALL FASTENERS SHALL BE GALVANIZED.
 - FASTENERS:
 - DECKING: 60d 6 INCH RING SHANK NAILS OR DECK SCREWS 2 PER DECK STRINGER CONNECTION.
 - RAILING: NO. 10 X 4 INCH LONG WOOD SCREWS 2 PER RAIL POST CONNECTION.
 - STRINGERS & BACKWALLS: 40d 5 INCH LONG RING SHANK NAILS.
 - ALTERNATIVE FOR 7/8 BOLTS FOR HEADER BEAM IS BRACKET WITH AN ALLOWABLE LOAD OF 1100 LBS EACH SIDE.

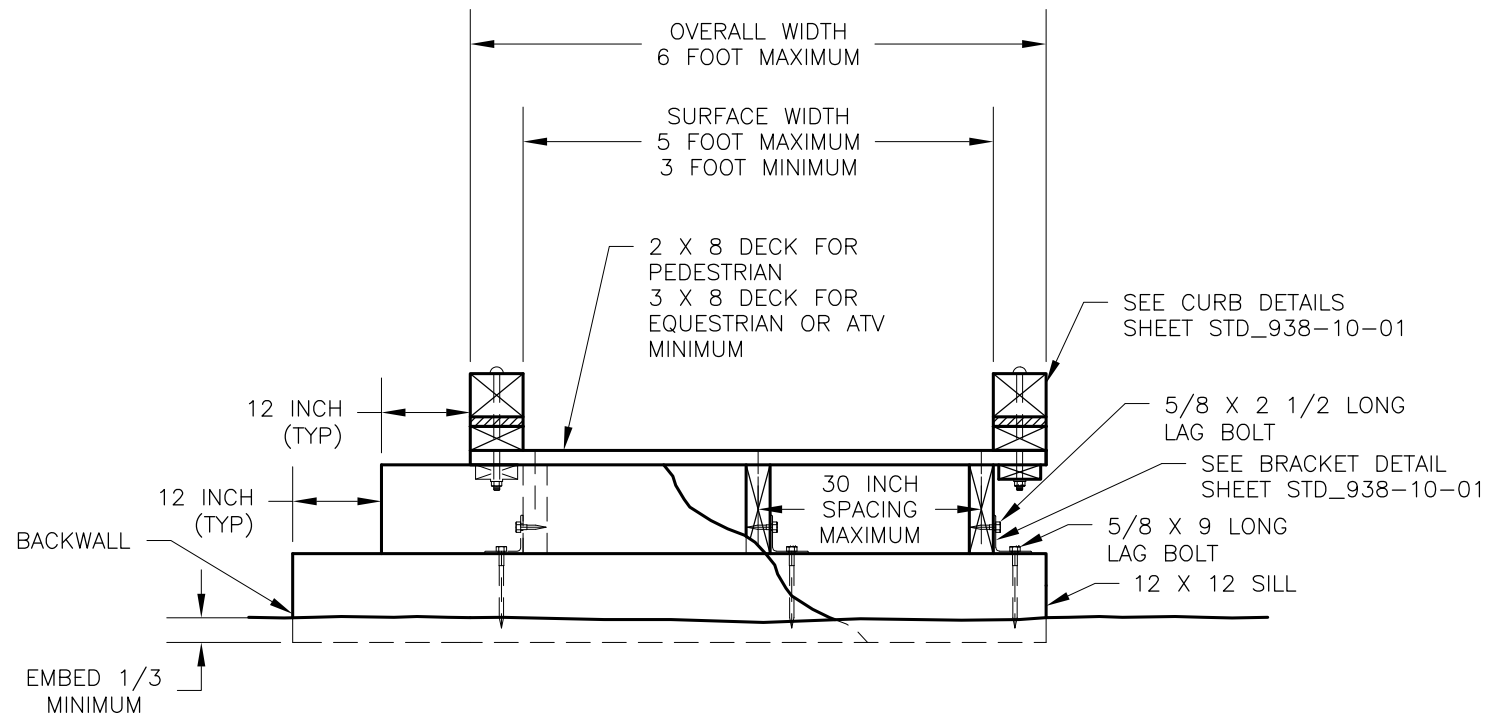
FOOTING MATERIAL

TYPE	MATERIAL	GRADATION	COMMENTS
FT1	CONCRETE	X	
FT2	AGGREGATE	X	
FT3	X	X	

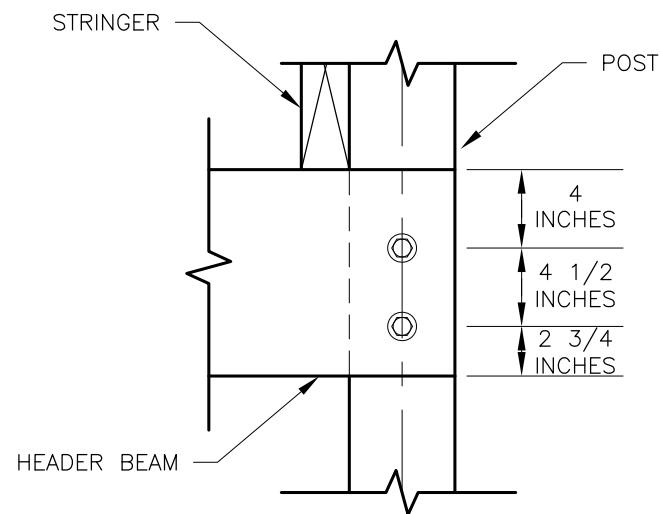
PRESERVATIVE TREATMENT - (REFER TO AWPAs USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	X
P2	WB	UC3B	
P3	XX	XXXX	

TREATMENT TYPE USE CATEGORY SHEET 1 OF 3

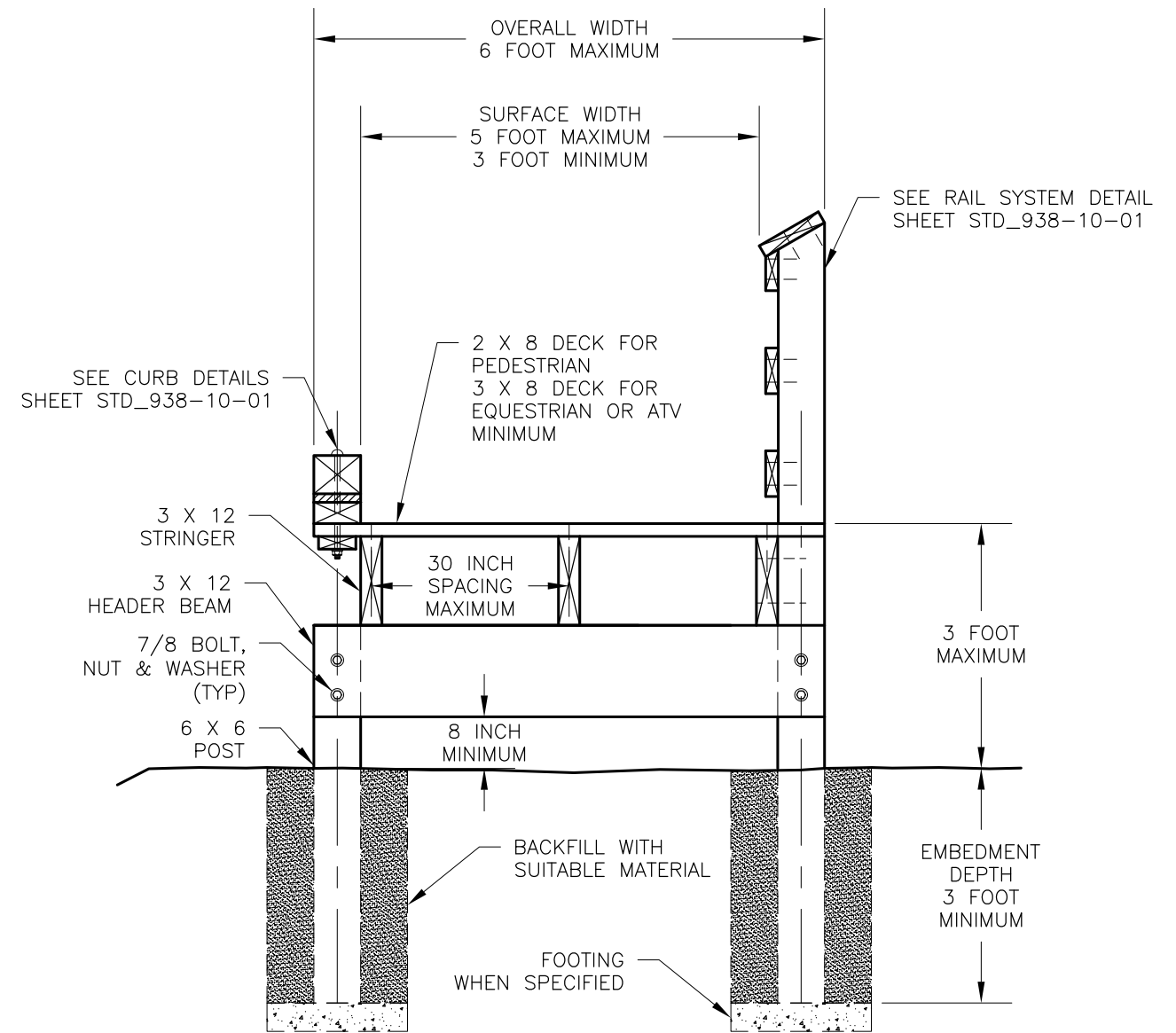
WB = WATERBORNE **UC3B** = ABOVE GROUND - EXPOSED
OT = OIL-BORNE **UC4A** = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY



(A) TYPICAL GROUND SECTION
BLOCKING REQUIRED AT EVERY SUPPORT NOT SHOWN FOR CLARITY



BOLT DETAIL

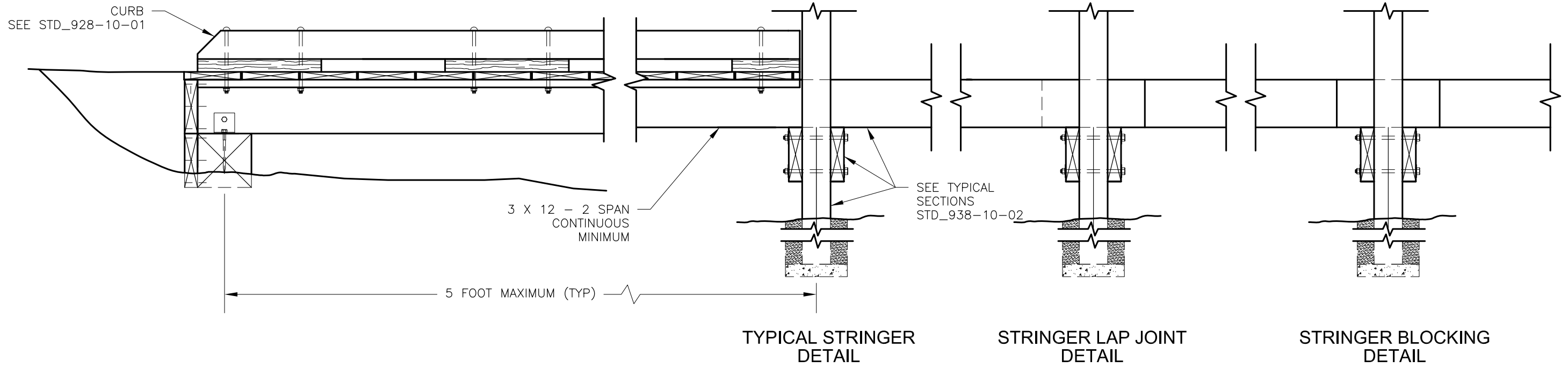


(B) TYPICAL ELEVATED SECTION

LESS THAN 3 FEET WITH CURB
BLOCKING REQUIRED AT EVERY SUPPORT
NOT SHOWN FOR CLARITY

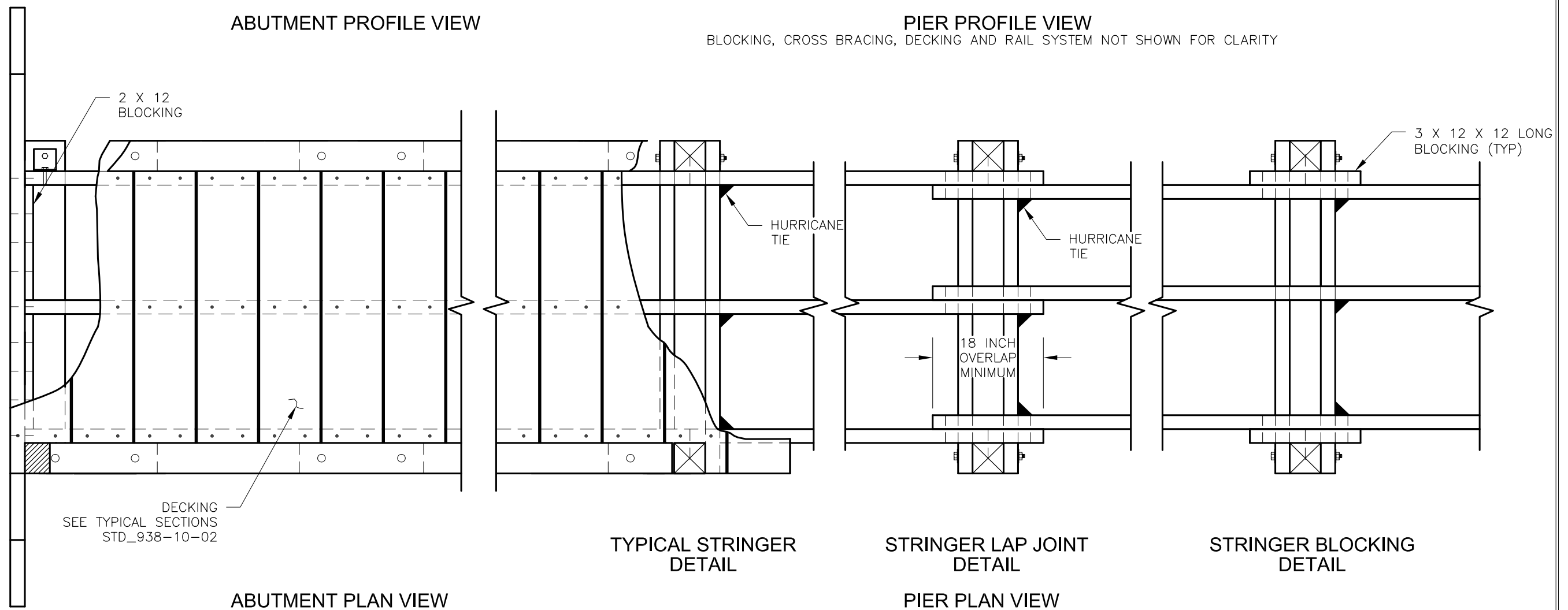
(C) TYPICAL ELEVATED SECTION

LESS THAN 3 FEET WITH CURB
BLOCKING REQUIRED AT EVERY SUPPORT
NOT SHOWN FOR CLARITY

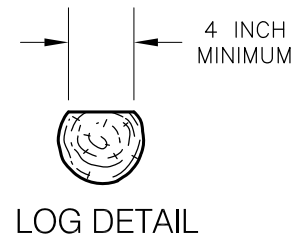
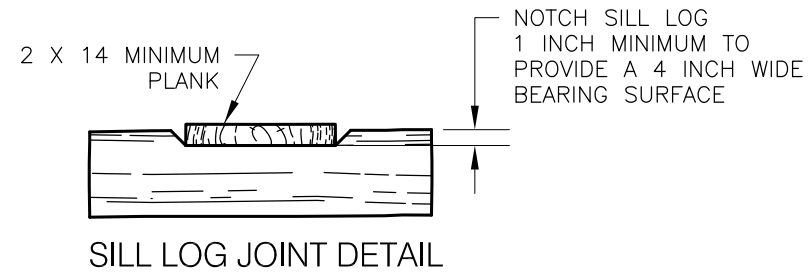


ABUTMENT PROFILE VIEW

PIER PROFILE VIEW
BLOCKING, CROSS BRACING, DECKING AND RAIL SYSTEM NOT SHOWN FOR CLARITY

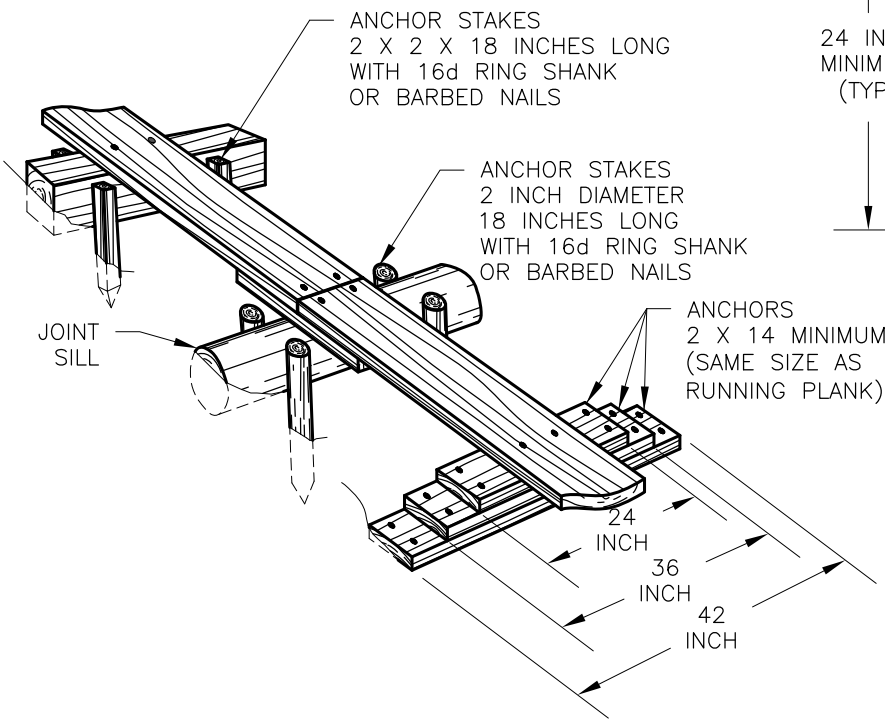
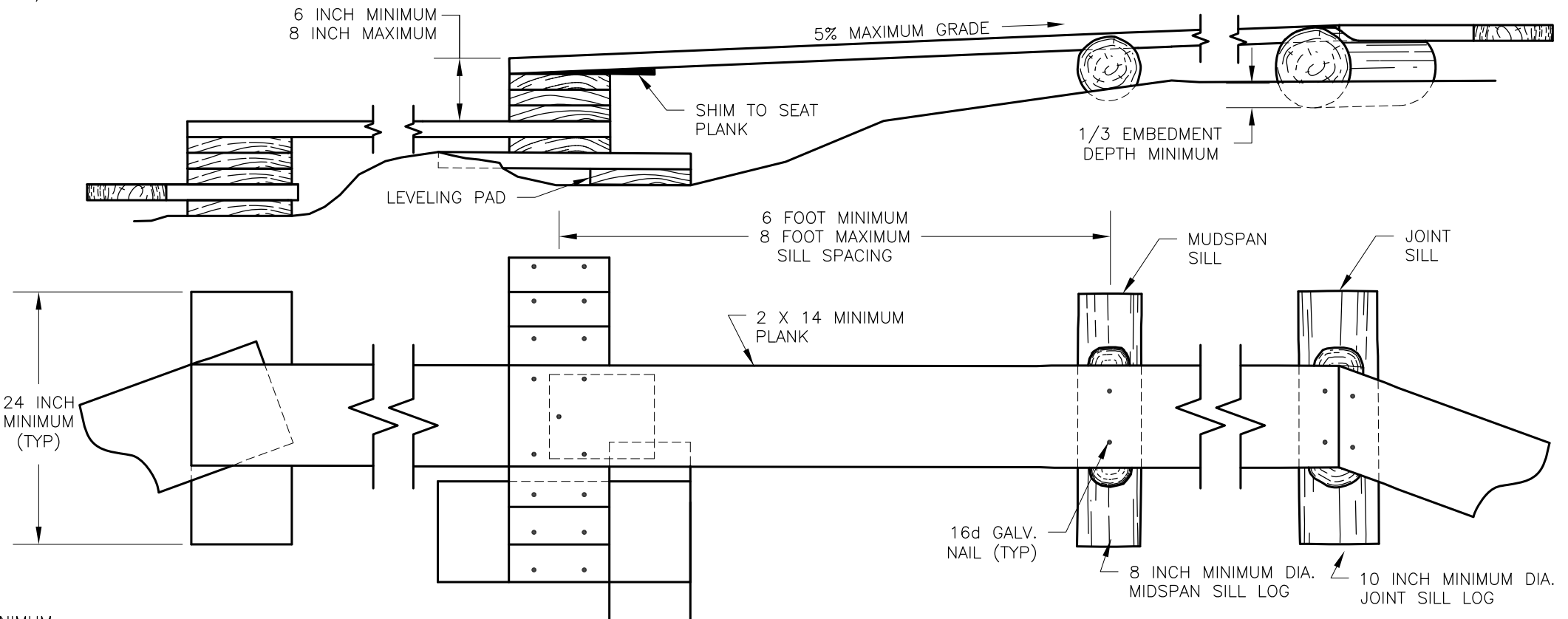


STEP AND RUN



TYPICAL ID	SILL				PLANK			COMMENTS
	TYPE	SIZE	SPECIES	PRESERV. TYPE	SIZE	SPECIES	PRESERV. TYPE	
	X	X	X	P 1	2x14	YC		(2) PLANKS SHALL BE PLACED SIDE BY SIDE WITH 1/2" GAP BETWEEN BOARDS.

N/A WHEN NOT APPLICABLE



NOTES:

- KEEP PLANKS LOW TO THE GROUND. FOLLOW TOPOGRAPHY THROUGH SMALL DIPS.
- AVOID STACKING PLANKS FOR SILL ON SIDE HILLS. DIG THE SILL INTO THE BANK.

PRESERVATIVE TREATMENT - (REFER TO AWP A USE CATEGORY SYSTEM)			
PRESERVATIVE TYPE	TREATMENT TYPE	USE CATEGORY	COMMENTS
P1	WB	UC4A	X
P2	WB	UC3B	
P3	XX	XXXX	

TREATMENT TYPE
WB = WATERBORNE
OT = OIL-BORNE

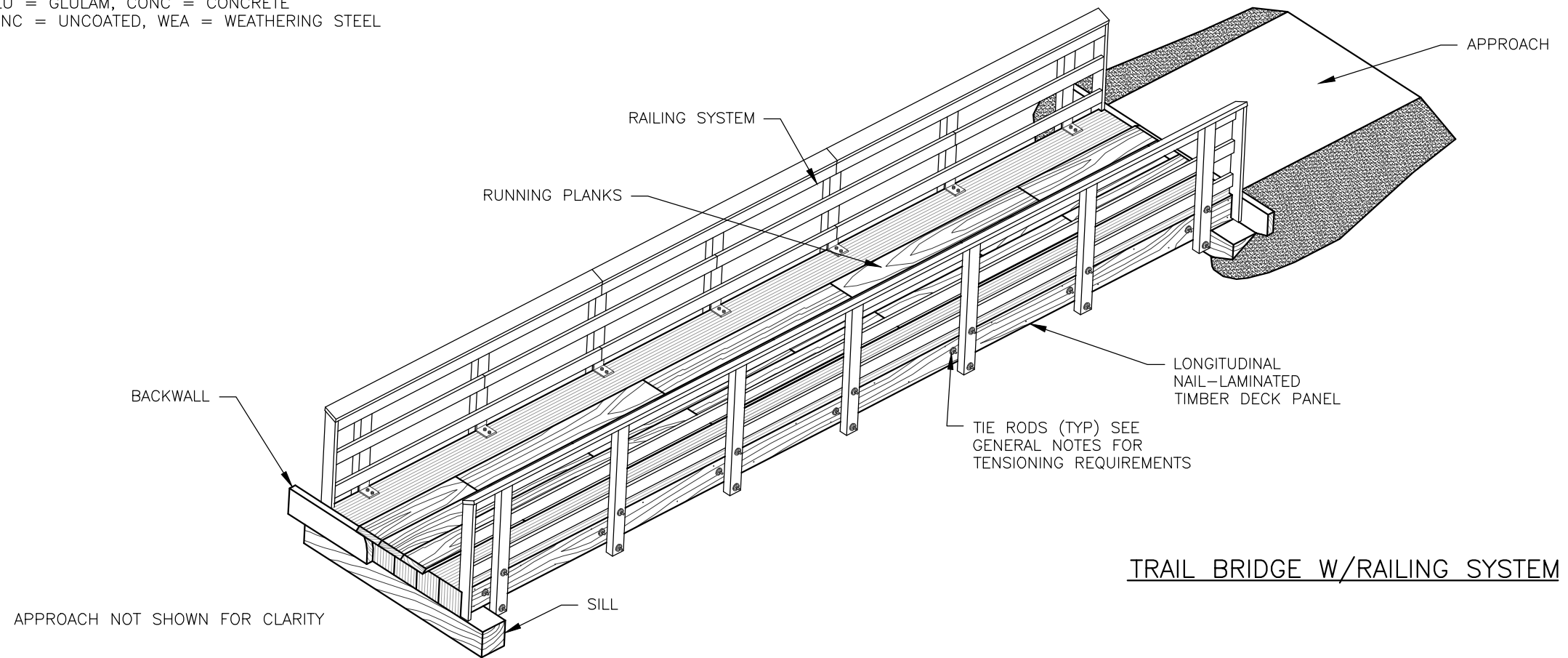
USE CATEGORY
UC3B = ABOVE GROUND - EXPOSED
UC4A = GROUND CONTACT - GENERAL USE
UC4B = GROUND CONTACT - HEAVY DUTY

STRUCTURE NUMBER	TRAIL NO.	BRIDGE LOCATION	BRIDGE LENGTH OUT-TO-OUT	DECK PANEL SPAN CL-CL BRNG	BRIDGE CLEAR WIDTH	PEDESTRIAN LOAD	GROUND SNOW LOAD	DECK PANNELS				BACKWALL					COMMENTS	
								SPECIES	NUMBER	MATERIAL SIZE	TREATMENT	TYPE	SPECIES	SIZE	WIDTH	HEIGHT		TREATMENT

NA = NOT APPLICABLE

STRUCTURE NUMBER	RAILING SYSTEM/CURB						RUNNING PLANK					SILL			APPROACHES					HARDWARE		
	SPECIES	TYPE	HEIGHT	MATERIAL TYPE	TREATMENT		SPECIES	SIZE	WIDTH	TREATMENT		TYPE	SIZE	TREATMENT	LENGTH		WIDTH	MATERIAL TYPE	MATERIAL DEPTH	GEO- SYNTHETIC TYPE	COATINGS	
					YES	NO				YES	NO				NEAR	FAR						

ABUTMENT MATERIAL TYPE: SS = SOLID SAWN, GLU = GLULAM, CONC = CONCRETE
 HARDWARE COATING TYPE: GALV = GALVANIZED, UNC = UNCOATED, WEA = WEATHERING STEEL



TRAIL BRIDGE W/RAILING SYSTEM

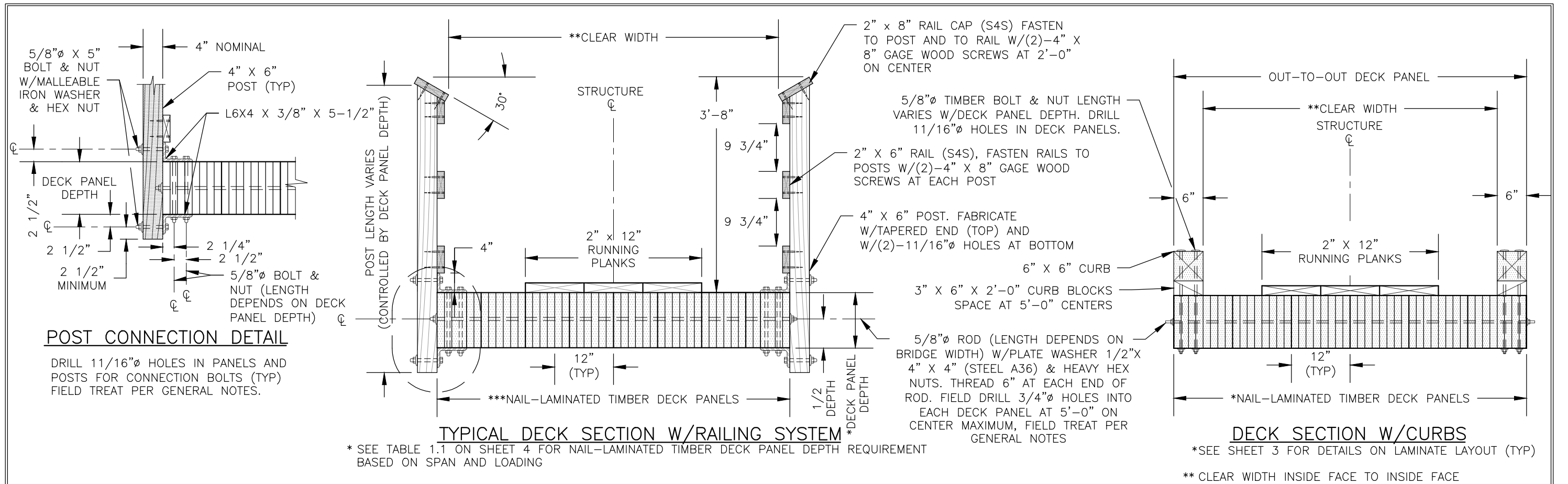
U.S. DEPARTMENT OF AGRICULTURE
 FOREST SERVICE
STANDARD TRAIL PLAN

PROJECT NAME & LOCATION

DRAWING NAME **LONGITUDINAL NAIL-LAMINATED TIMBER TRAIL BRIDGE**
 SECTION **962 - SAWN TIMBER TRAIL BRIDGE**
 TYPICAL ID **LNL**

REVISION DATE
NOT TO SCALE

DRAWING NO. **STD_962-20-01**
 SHEET **1** OF **1**



GENERAL NOTES:

SPECIFICATIONS: MATERIALS AND CONSTRUCTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS (FP-03) AND STANDARD SPECIFICATIONS FOR CONSTRUCTION OF TRAILS AND TRAIL BRIDGES ON FEDERAL PROJECTS,

TIMBER & LUMBER: SOLID SAWN TIMBER MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF THE GRADING RULES AGENCY FOR THE SPECIES, TYPE, AND GRADE SPECIFIED BELOW.

LAMINATIONS

- COASTAL REGION DOUGLAS FIR - LARCH OR HEM - FIR SURFACED S4S, NO. 1 GRADE GRADING RULES AGENCY - WWPA, WCLIB

CURB MEMBERS, SILLS, AND BACKING PLANKS RUNNING PLANKS

- COASTAL REGION DOUGLAS FIR-LARCH ROUGH SAWN NO.1 GRADE, GRADING RULES AGENCY - WWPA, WCLIB
- COASTAL REGION DOUGLAS FIR-LARCH ROUGH SAWN NO.2 GRADE, GRADING RULES AGENCY - WWPA, WCLIB

RAILS & POSTS (SEE PROJECT CRITERIA)

UNTREATED

- REDWOOD, S4S, NO.1 GRADE GRADING RULES AGENCY - RIS
- WESTERN RED CEDAR, S4S, SELECT STRUCTURAL GRADE GRADING RULES AGENCY - WWPA, WCLIB

TREATED

- HEM-FIR/DOUGLAS FIR, S4S, NO.1 GRADE GRADING RULES AGENCY - WWPA, WCLIB

TREATMENT: SEE PROJECT CRITERIA FOR MEMBERS IDENTIFIED TO BE TREATED AND FOR TREATMENT TYPE. PRESERVATIVE TREATMENT SHALL BE IN ACCORDANCE WITH THE CURRENT AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) SPECIFICATIONS USING THE TREATMENT MATERIALS LISTED BELOW. TREATMENT WILL COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF WESTERN WOOD PRESERVERS INSTITUTE (WWPI) "BEST MANAGEMENT PRACTICES FOR THE USE OF TREATED WOOD IN AQUATIC ENVIRONMENTS".

*** SEE SHEET 3 FOR DETAILS ON LAMINATE LAYOUT (TYP)

** INSIDE FACE TO INSIDE FACE OF RAILING SYSTEM, NUMBER OF DECK PANELS MINUS 3-INCHES

LAMINATIONS, RUNNING PLANKS, & RAILING SYSTEM, IF TREATED

- AWPA USE CATEGORY SYSTEM (U1) FOR USE CATEGORY 3B ABOVE GROUND-EXPOSED (UC3B)
- PENTACHLOROPHENOL IN LIGHT OIL (TYPE C SOLVENT)
- COPPER NAPHTHENATE (CuN) IN LIGHT OIL (TYPE C SOLVENT)

SILLS, BACKING PLANKS, CRIBS, TIMBER WALLS, IF TREATED

- AWPA USE CATEGORY SYSTEM (U1) FOR USE CATEGORY 4B GROUND CONTACT-HEAVY DUTY (UC4B)
- PENTACHLOROPHENOL IN HEAVY OIL (TYPE A SOLVENT)
- COPPER NAPHTHENATE (CuN) IN HEAVY OIL (TYPE A SOLVENT)

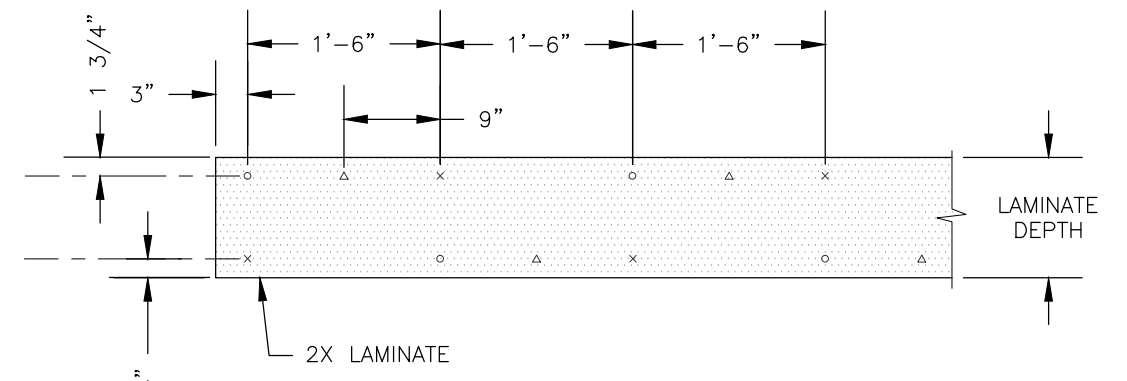
FIELD TREATMENT: COPPER NAPHTHENATE (2% SOLUTION) SHALL BE FURNISHED FOR FIELD TREATING OF WOOD. ALL ABRASIONS AND FIELD CUTS -APPROVED BY THE C.O.- SHALL BE CAREFULLY TRIMMED AND GIVEN THREE BRUSH COATS OF THE FIELD TREATMENT SOLUTION. WHERE APPROVED FIELD DRILLING OF BOLT OR NAIL HOLES IS REQUIRED, THE HOLES SHALL BE FILLED WITH PRESERVATIVE PRIOR TO INSERTING THE FASTENERS.

HARDWARE AND STRUCTURAL STEEL: SEE PROJECT CRITERIA FOR STEEL HARDWARE FINISH. GALVANIZED OR UNFINISHED HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 36, WITH NUTS AND BOLTS CONFORMING TO ASTM A307, GRADE A. WEATHERING STEEL AND HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 50W, WITH BOLTS AND NUTS CONFORMING TO ASTM A325, TYPE 3. USE MALLEABLE IRON WASHERS AGAINST WOOD UNLESS OTHERWISE NOTED.

WHEN STRUCTURAL STEEL IS TO BE WELDED, THE WELDING PROCEDURE SHALL BE IN ACCORDANCE WITH AWS D1.1 AND SHALL BE SUITABLE FOR THE GRADE OF STEEL AND INTENDED USE OR SERVICE.

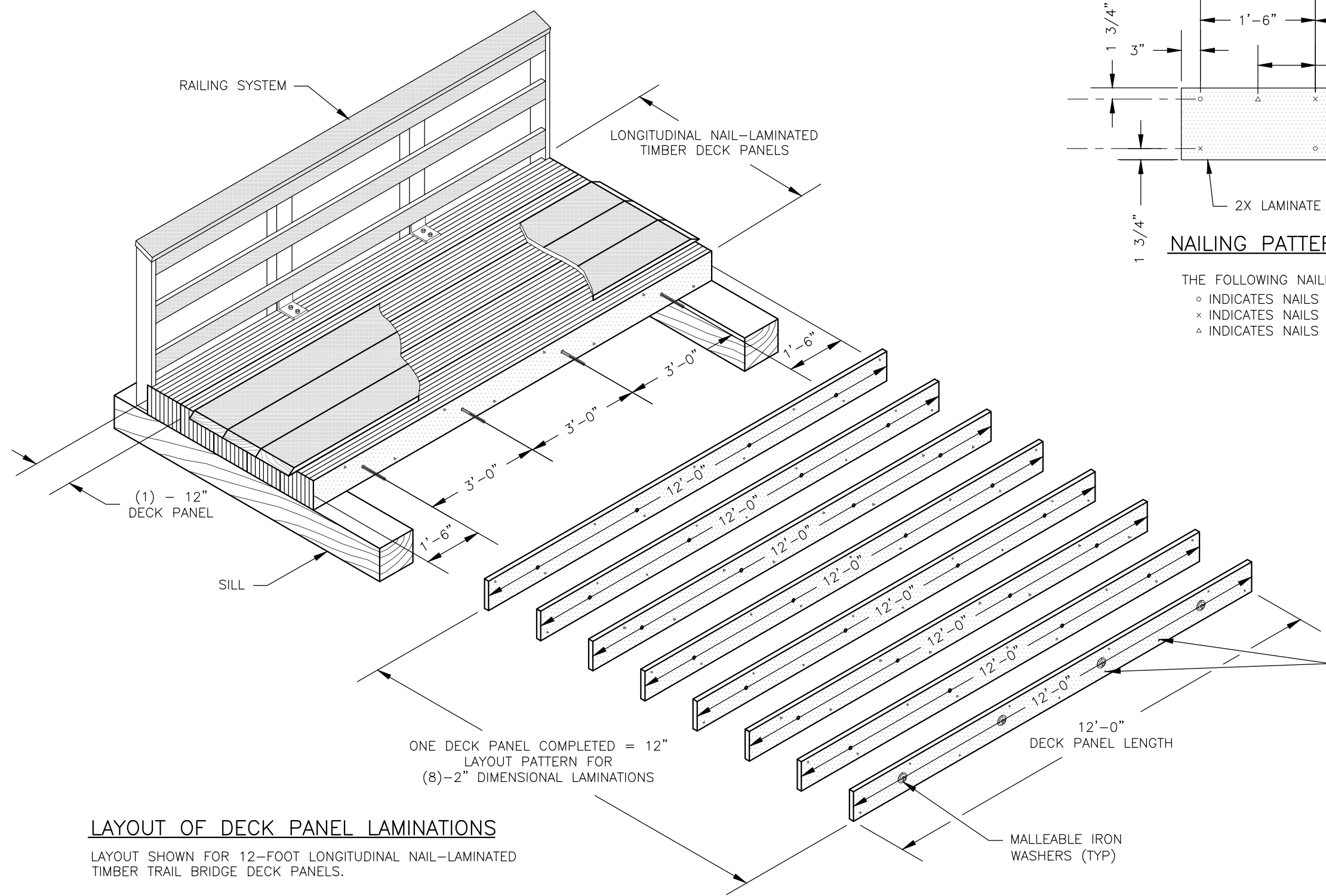
FABRICATION: SUBMIT SHOP DRAWINGS FOR ALL BRIDGE COMPONENTS (EXCEPT TIMBER RUNNING PLANKS). SHOW ALL DIMENSIONS AND FABRICATION DETAILS FOR ALL CUT OR BORED TIMBER. FIELD DRILLING OF HOLES SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED ON THESE PLANS.

TIE ROD TENSIONING: TIE RODS SHALL BE TORQUED TO 200 FT-LBS UPON INITIAL INSTALLATION OF THE DECK PANELS. TIE RODS SHALL BE CHECKED FOR PROPER TENSION EACH YEAR FOR THE FOLLOWING 4 YEARS AFTER INSTALLATION. SUBSEQUENT TENSION CHECKS SHALL OCCUR DURING ROUTINE INSPECTIONS UNLESS OTHERWISE NOTED IN THE INSPECTION REPORT.



NAILING PATTERN FOR NAIL-LAMINATES

THE FOLLOWING NAILING PATTERNS SHOULD BE FOLLOWED:
 ○ INDICATES NAILS IN FIRST LAMINATION
 × INDICATES NAILS IN SECOND LAMINATION
 △ INDICATES NAILS IN THIRD LAMINATION

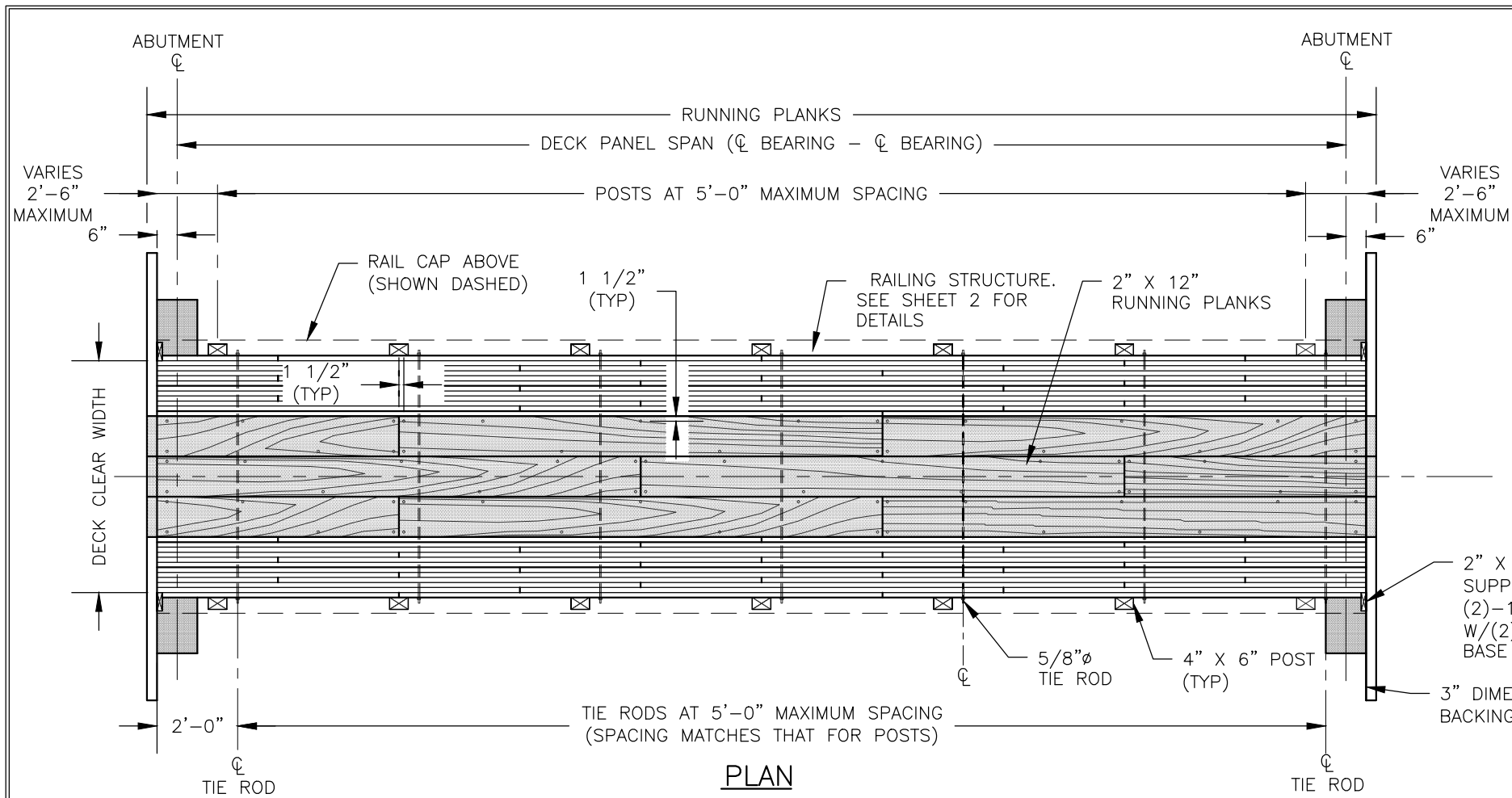


LAYOUT OF DECK PANEL LAMINATIONS

LAYOUT SHOWN FOR 12-FOOT LONGITUDINAL NAIL-LAMINATED
 TIMBER TRAIL BRIDGE DECK PANELS.
 BUTT JOINTS NOT ALLOWED

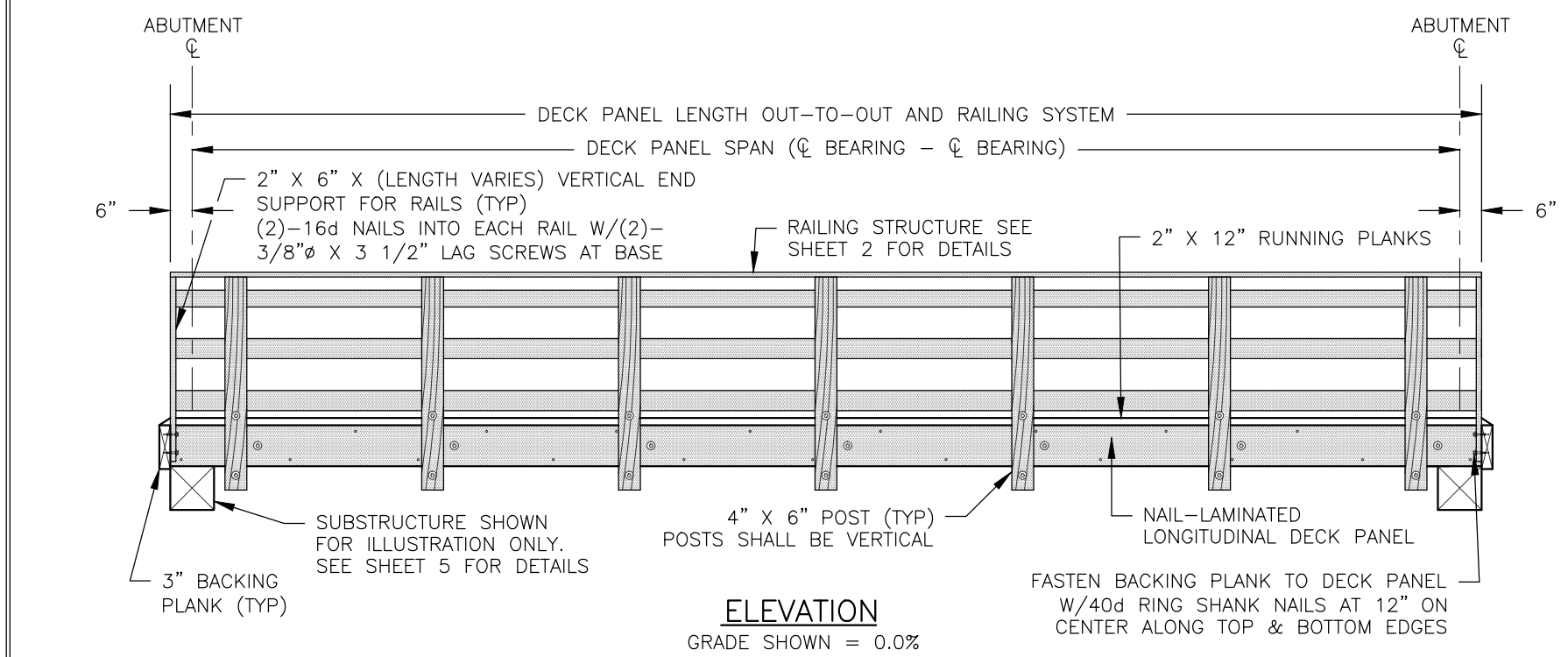
30d HARDENED
 RING SHANK NAILS

MALLEABLE IRON
 WASHERS (TYP)



NOTES:

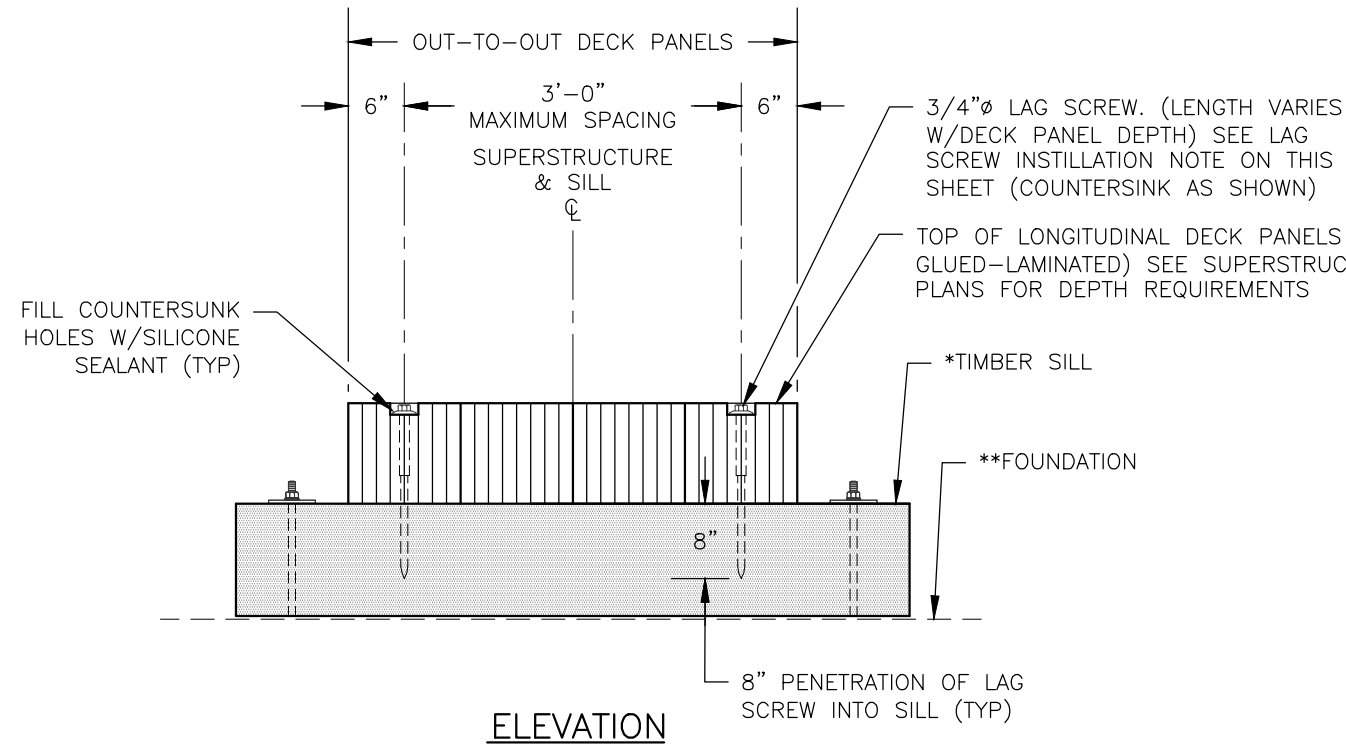
1. SPLICE RAILS AT POSTS. RAILS SHALL BE CONTINUOUS FOR A MINIMUM OF TWO POST SPACES. ALTERNATE RAIL SPLICES AT POSTS. FASTEN RUNNING PLANKS TO DECK PANELS WITH 30d (4 1/2-INCH RING SHANK) NAILS AT 24-INCH SPACING. ALTERNATE SIDES WITH TWO AT EACH END.
2. ALL DEPTHS SHOWN IN TABLE-1.1 ARE NOMINAL. NAIL-LAMINATED DECK PANELS SHALL BE CONSTRUCTED USING S2S LUMBER.



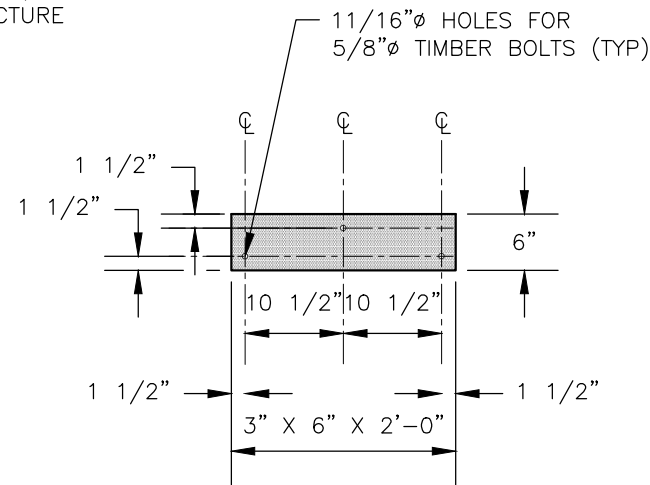
***TABLE-1.1: LAMINATION DEPTH REQUIREMENTS - LRFD**

**DECK PANEL LENGTH (FEET)	TIMBER SPECIES - DOUGLAS FIR/HEM-FIR GRADE - NO. 1				
	DESIGN LOADING IN POUNDS PER SQUARE FOOT				
	PEDESTRIAN LOAD ***65	90	120	150	200
12	6"	6"	6"	6"	6"
16	6"	6"	6"	6"	8"
20	8"	8"	8"	8"	10"

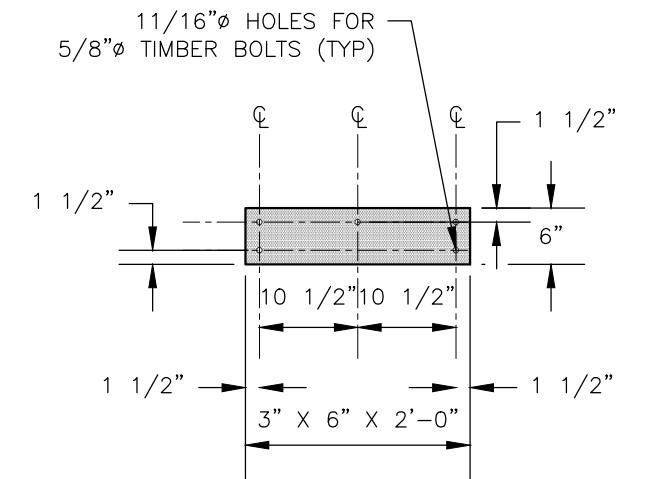
- *DECK PANEL SIZE SHALL BE THE LARGER OF THE PEDESTRIAN OR GROUND SHOW LOAD SIZE REQUIRED FOR THE SITE CONDITIONS
- **DECK PANEL LENGTH EQUAL TO DECK PANEL SPAN PLUS ONE FOOT
- ***REQUIRES REGIONAL BRIDGE ENGINEER APPROVAL



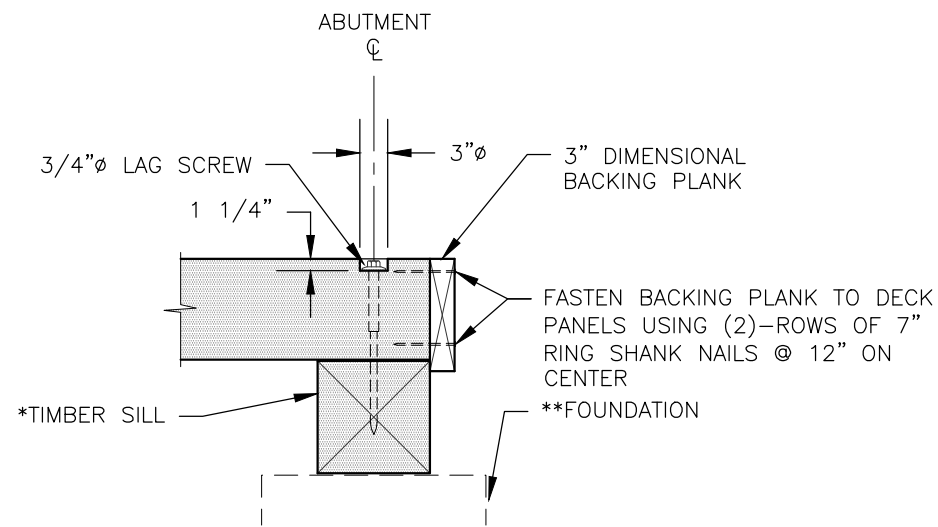
ELEVATION



PLAN-CURB BLOCK



PLAN-CURB BLOCK AT SPLICE



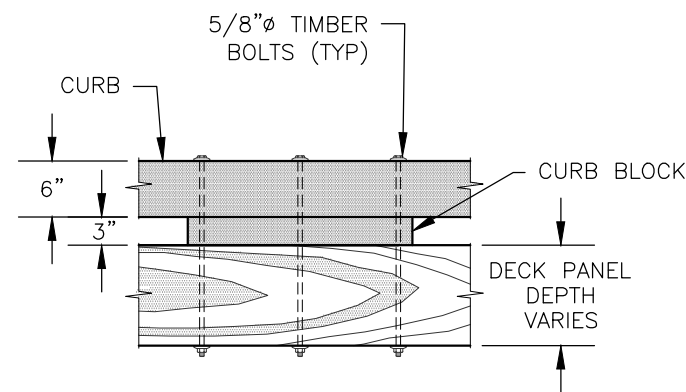
TYPICAL SECTION

ABUTMENT CONNECTION DETAILS

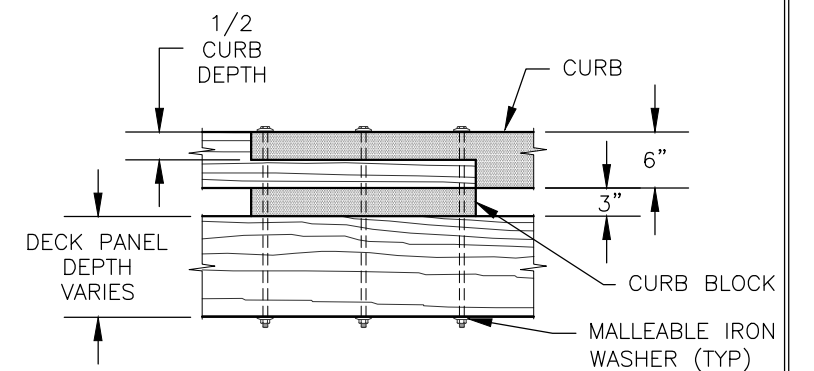
BACKING PLANKS NOT SHOWN FOR CLARITY

* TIMBER SILL CAN BE EITHER 12" X 12" SOLID SAWN 10 3/4" X 12" GLUE-LAMINATED, BUILT-UP 3" X 12", 4" X 12", & 6" X 12" TREATED MEMBERS.

** SEE STANDARD DRAWINGS 965-10, 965-20, 965-30, & 965-40 FOR FOUNDATION ALTERNATIVES



**ELEVATION
TYPICAL CONNECTION**



**ELEVATION
CONNECTION AT SPLICE**

SOLID SAWN CURB CONNECTION DETAILS