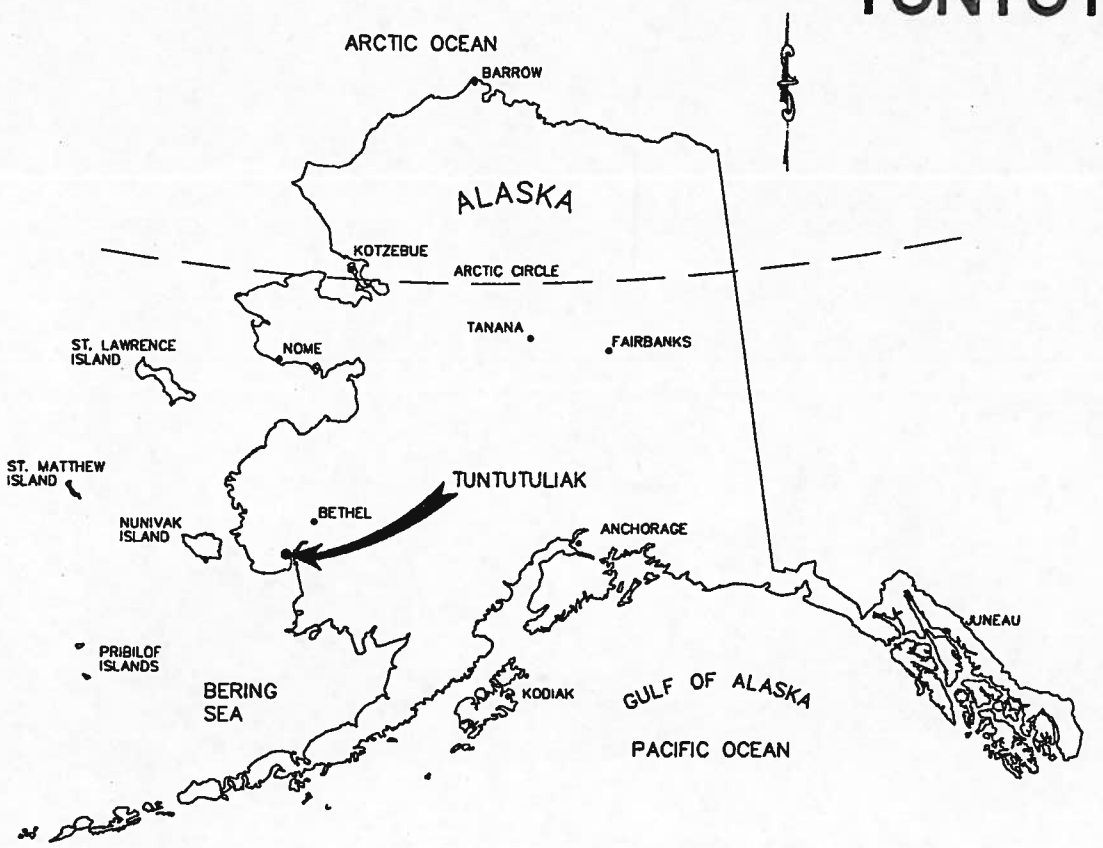
TUNTUTULIAK BOARDWALK PROJECT

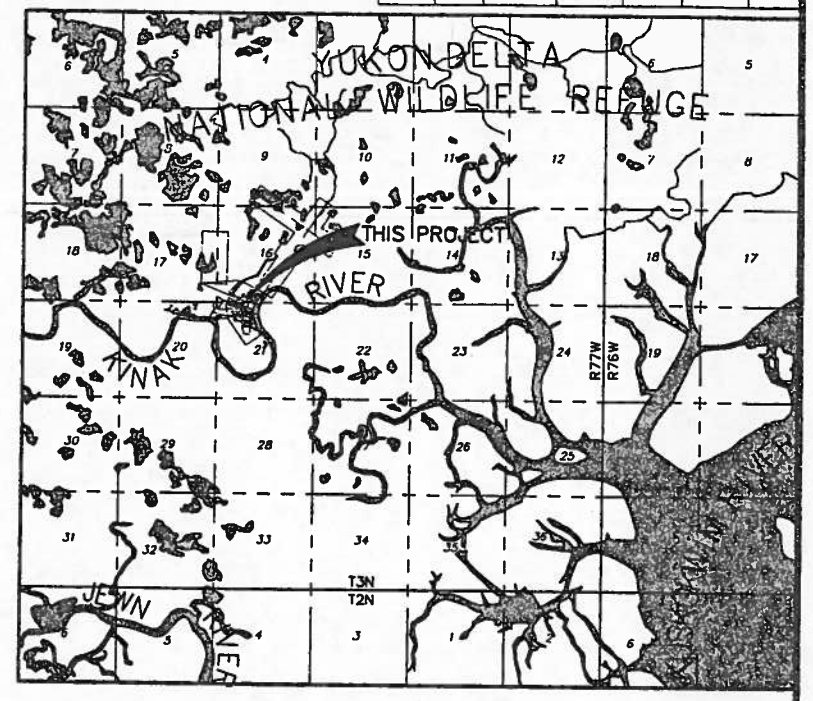
TUNTUTULIAK, ALASKA

PROJECT # E0211800

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005



PROJECT LOCATION MAP



VICINITY MAP
APPROXIMATE SCALE: 1" = 1 MILE
BASE SOURCE MAP: USGS QUADRANGLE
BAIRD INLET (B-2), ALASKA, 1954

INDEX OF SHEETS

PROJECT SUMMARY

LENGTH OF PROJECT	10-FOOT WIDE BOARDWALK	SUPPORTED BY ANCHORS	785 FT
		SUPPORTED BY MUDSILLS	383 FT
	6-FOOT WIDE BOARDWALK	SUPPORTED BY ANCHORS	1445 FT
		SUPPORTED BY MUDSILLS	426 FT
	7-FOOT WIDE	COMPOSITE MAT	938 FT
		TOTAL	3,977 FT

DESIGN DATA

MAXIMUM GRADE	BOARDWALKS	6%
	RAMPS	17%
DESIGN STRUCTURAL LOADING		7,000 LB SKID STEER LOADER

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES STANDARD DRAWINGS*

DRAWING NO.	DESCRIPTION
S-05.01	POST MOUNTED SIGN OFFSET AND HEIGHT
S-20.10	SIGN TO SIGN POST CONNECTIONS

*ATTACHED TO END OF THIS DRAWING SET FOR REPRODUCTION PURPOSES

PLAN LEGEND

EXISTING / PROPOSED

- BUILDING
- EXISTING BOARDWALK TO BE REMOVED
- BOARDWALK
- BRUSH LINE
- CENTERLINE OF BOARDWALK
- COMPOSITE MAT
- CONTOUR
- EDGE OF STREAM / STREAM
- FLOW LINE
- PROPERTY LINE
- RIGHT-OF-WAY
- SECTION LINE
- ELECTRIC LINE
- GAS / FUEL LINE
- OVERHEAD LINE
- TRAIL (FOOT PATH)
- GUY WIRE
- POWER POLE
- RUNWAY LIGHT
- SATELLITE DISH
- UTILITY POLE
- SIGN CALLOUT AND SIGN
- TRANSITION NUMBER
- TURN NUMBER
- 3 1/4" BRASS MONUMENT OR 3 1/2" ALUMINUM CAP MONUMENT
- 2 1/2" ALUMINUM CAP
- 1 1/2" ALUMINUM CAP
- 1 1/2" COPPER WELD

ABBREVIATIONS

ADOT&PF	ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES	ELEV./EL	ELEVATION	O.C.	ON CENTER
		EOP	END OF PROJECT	PI	POINT OF INTERSECTION
A.G.	ABOVE GROUND	FT	FEET	PP	POWER POLE
AVE.	AVENUE	H	HORIZONTAL	PVI	POINT OF VERTICAL INTERSECTION
BI	BOARDWALK INTERSECTION	LB	POUND	R	RECORD
BLM	BUREAU OF LAND MANAGEMENT	LP	LIGHT POLE	R.O.W.	RIGHT-OF-WAY
BOP	BEGINNING OF PROJECT	MIN.	MINIMUM	S	SOUTH
BW	BOARDWALK	MPH	MILES PER HOUR	SEC	SECTION
CP	CONTROL POINT	N	NORTHING/NORTH	STA.	STATION
COR	CORNER	N/A	NOT APPLICABLE	TBM	TEMPORARY BENCH MARK
C OR CL	CENTERLINE	NO.	NUMBER	TYP.	TYPICAL
DIA.	DIAMETER	NTS	NOT TO SCALE	V	VERTICAL
E	EASTING/EAST	OHL	OVER HEAD LINE	W	WEST

REGIONAL DESIGN ENGINEER
BUREAU OF INDIAN AFFAIRS
ALASKA REGION
DATE 10/17/05

REGIONAL CONSTRUCTION ENGINEER
BUREAU OF INDIAN AFFAIRS
ALASKA REGION
DATE 10/17/05

REGIONAL TRANSPORTATION ENGINEER
BUREAU OF INDIAN AFFAIRS
ALASKA REGION
DATE 10/17/05
Director

STATE OF ALASKA 49TH
Christopher M. Kinney
CE9134
9/30/05
Registered Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

TITLE SHEET, LEGEND AND ABBREVIATIONS

DESIGNED BY:	AES
DRAWN BY:	JCS
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO. 1

1 OF 22

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005

QINARMUIT CORPORATION

USS SURVEY 8467

QINARMUIT CORPORATION

NEW AIRPORT BOUNDARY

TUNTUTULIAK SUBDIVISION

QINARMUIT CORPORATION

U.S. SURVEY 4429 TRACT A

BASIS OF BEARING ("Q"-"T")
S83°32'29"E 1036.43' (M)
S84°05'19"E 1036.60'
(PLAT 2000-35, U.S.S. 4429)

U.S. SURVEY 4429 TRACT B

TUNTUTULIAK SCHOOL SITE

U.S. SURVEY 4429 TRACT A

KINAK RIVER

KINAK RIVER

EXISTING RUNWAY

SHEET 14
SHEET 15
SHEET 16
SHEET 17
SHEET 18
SHEET 19
SHEET 20
SHEET 21
SHEET 22

LEGEND (THIS SHEET ONLY)

- 3 1/4" BRASS MONUMENT OR
- 3 1/2" ALUMINUM CAP MONUMENT
- 2 1/2" ALUMINUM CAP
- 1 1/2" ALUMINUM CAP
- 1 1/2" COPPER WELD
- RPKA CONTROL/RECOVERED MONUMENTS
- RPKA VERTICAL CONTROL
- PI LOCATION AND POINT NUMBER (SEE SHEET 3 FOR PI COORDINATES)
- EXISTING PROPERTY LINE
- EXISTING BOARDWALK
- PROPOSED BOARDWALK CENTERLINE (TANGENT, PI TO PI)

BASIS OF VERTICAL DATUM

3 1/4" BLM MONUMENT, SEE RPKA VERTICAL CONTROL NUMBER 4, MONUMENT "U" SHEET 3.
ASSUMED EL.=15.55'

BASIS OF COORDINATES

3 1/4" BLM BRASS MONUMENT, SEE RPKA HORIZONTAL CONTROL/ RECOVERED MONUMENTS, MONUMENT "T" SHEET 3.
ASSUMED
N. 18223.9261
E. 19675.5611

NOTE:

SEE SHEET 3 FOR SURVEY CONTROL TABLES AND MONUMENT DETAILS

GRAPHIC SCALE

200 0 100 200 400 600

(IN FEET)
1 inch = 200 ft.

STATE OF ALASKA 49TH
Kevin M. Smith
LS-9854
9/30/05

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, Inc.
CONSULTING SURVEYORS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

SURVEY CONTROL
DIAGRAM, KEY MAP

DESIGNED BY:	AES
DRAWN BY:	JCS
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	1"=200'

SHEET NO.
2
2 OF 22

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005

RPKA HORIZONTAL CONTROL/RECOVERED MONUMENTS

POINT	NORTHING	EASTING	DESCRIPTION
A	17406.0843	16108.8699	3 1/4" BLM BRASS MONUMENT
B	17504.0040	16240.1872	1 1/2" BLM COPPER WELD
C	17451.5348	16420.9210	3 1/4" BLM BRASS MONUMENT
D	18718.4942	17077.7420	1 1/2" ALUMINUM CAP
E	18928.2500	17097.3100	2 1/2" ALUMINUM CAP
F	16299.9953	20128.3056	3 1/4" BLM BRASS MONUMENT
G	16652.3434	19725.7456	3 1/4" BLM BRASS MONUMENT
H	17092.1700	18901.6599	3 1/4" BLM BRASS MONUMENT
I	17269.7285	19092.1443	3 1/4" BLM BRASS MONUMENT
J	17272.4547	19439.0137	3 1/4" BLM BRASS MONUMENT
K	17293.7939	19604.5745	1 1/2" BLM COPPER WELD
L	17535.0489	19636.2637	3 1/4" BLM BRASS MONUMENT
M	17685.1117	19155.5325	3 1/4" BLM BRASS MONUMENT
N	18000.0268	18794.1052	3 1/4" BLM BRASS MONUMENT
O	18056.0886	18767.9120	3 1/4" BLM BRASS MONUMENT
P	18082.9410	18774.7617	3 1/4" BLM BRASS MONUMENT
Q	18340.5117	18645.7050	3 1/2" ALUMINUM CAP
R	18370.2105	18597.8980	3 1/2" ALUMINUM CAP
S	18012.8389	19725.0771	3 1/4" BLM BRASS MONUMENT
T	18223.9261	19675.5611	3 1/4" BLM BRASS MONUMENT
U	18366.6211	19955.5697	3 1/4" BLM BRASS MONUMENT

RPKA VERTICAL CONTROL

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	16734.3182	19709.8066	17.97'	SET PK NAIL IN BOARDWALK
2	17346.9674	19368.2887	15.88'	SET PK NAIL IN BOARDWALK
3	17652.3998	19070.8095	20.44'	SET PK NAIL IN BOARDWALK
4	18366.6211	19955.5697	15.55'	FOUND 3 1/4" BLM MONUMENT
5	18211.9910	18798.5269	21.54'	SET PK NAIL IN BOARDWALK
6	17257.3946	18771.0060	14.90'	SET PK NAIL IN BOARDWALK
7	17627.6664	17827.5619	16.66'	SET PK NAIL IN BOARDWALK
8	18692.8714	18155.7129	19.80'	SET PK NAIL IN BOARDWALK
9	17703.9888	17097.6122	19.47'	FOUND SPIKE
10	18718.4942	17077.7420	16.42'	1 1/2" ALUMINUM CAP
11	19608.4404	16853.4308	21.61'	SET PK NAIL IN BOARDWALK

VERTICAL CONTROL NOTE:

THE ENTIRE PROJECT AREA IS LIKELY TO BE AFFECTED BY THAW SETTLEMENT, FROST HEAVE, OR BOTH. TBM MAY HAVE RAISED OR LOWERED SINCE BEING ESTABLISHED. CONTRACTOR IS RESPONSIBLE TO VERIFY ELEVATIONS OF TBM'S AND BOARDWALK CONNECTION POINTS PRIOR TO CONSTRUCTION.

PI TABLE

PI COORDINATE		
POINT	NORTHING	EASTING
1	19185.4849	16677.1430
2	19225.6633	16982.4100
3	17628.1926	15260.6758
4	17640.4468	15272.9040
5	17820.3025	15525.4289
6	17820.3025	15760.1112
7	17438.0222	16358.5425
8	17451.7436	16420.5115
9	17447.2172	16475.2156
10	17410.5370	16765.7032
11	17644.7065	17056.0532
12	18686.9136	18163.8702
13	18651.5420	18208.2930
14	18488.3899	18241.5674
15	18387.0566	18403.0836
16	18315.0844	18552.0095
17	18299.2423	18603.4802
18	17254.6405	18501.9446
19	17266.5641	18443.1413
20	17248.9835	18782.5263
21	17175.1536	18774.6978
22	17114.3647	18802.6755
23	17093.1325	18864.7541
24	17347.1743	19368.5096
25	17272.9645	19437.1607
26	17237.0066	19503.1044
27	17441.4466	19552.0539
28	17412.5577	19639.1371
29	17510.5567	19636.4882
30	17494.2138	19689.9876
31	18244.0395	19707.8271
32	18278.6998	19764.6158
33	18289.3312	19812.2539
34	18354.5464	19895.2847
35	18363.2409	19946.8873
36	18388.3711	19963.5750
37	15968.7418	20399.0492
38	15839.3146	20561.1920
39	15708.2198	20644.5911

TANGENTS BETWEEN PI'S		
LINE	BEARING	LENGTH (FT)
L1	N82°30'07"E	307.90'
L2	N44°56'20"E	17.31'
L3	N54°32'25"E	310.03'
L4	N90°00'00"E	234.68'
L5	N77°30'53"E	63.47'
L6	S85°16'12"E	54.89'
L7	S82°48'12"E	292.79'
L8	N51°06'49"E	373.01'
L9	S51°28'18"E	56.78'
L10	S11°31'38"E	166.51'
L11	S57°53'47"E	190.67'
L12	S64°12'24"E	165.41'
L13	S72°53'32"E	53.85'
L14	N78°32'15"E	60.00'
L15	S06°03'10"W	74.24'
L16	S24°42'50"E	66.92'
L17	S71°07'06"E	65.61'
L18	S42°46'18"E	101.09'
L19	S61°23'50"E	75.11'
L20	S71°38'50"E	91.75'
L21	S73°00'48"E	55.94'
L22	N58°36'10"E	66.53'
L23	N77°25'10"E	48.81'
L24	N51°51'10"E	105.58'
L25	N80°26'10"E	52.33'
L26	N33°35'10"E	30.17'
L27	S51°24'08"E	207.46'
L28	S32°27'48"E	155.37'

A — 3 1/4" BLM BRASS MONUMENT
B — 1 1/2" BLM COPPER WELD
C — 3 1/4" BLM BRASS MONUMENT
D — 1 1/2" ALUMINUM CAP
E — 2 1/2" ALUMINUM CAP
F — 3 1/4" BLM BRASS MONUMENT
G — 3 1/4" BLM BRASS MONUMENT
H — 3 1/4" BLM BRASS MONUMENT
I — 3 1/4" BLM BRASS MONUMENT
J — 3 1/4" BLM BRASS MONUMENT
K — 1 1/2" BLM COPPER WELD
L — 3 1/4" BLM BRASS MONUMENT
M — 3 1/4" BLM BRASS MONUMENT
N — 3 1/4" BLM BRASS MONUMENT
O — 3 1/4" BLM BRASS MONUMENT
P — 3 1/4" BLM BRASS MONUMENT
Q — PARCEL 9 / 2000 — 3 1/2" ALUMINUM CAP
R — R+M / WC / PARCEL 9 / 2000 — 3 1/2" ALUMINUM CAP
S — 3 1/4" BLM BRASS MONUMENT
T — 3 1/4" BLM BRASS MONUMENT
U — 3 1/4" BLM BRASS MONUMENT
104 HV POINT — 3 1/4" BLM BRASS MONUMENT (CENTER MARKINGS ILLECIBLE)
105 HV POINT — 3 1/4" BLM BRASS MONUMENT

STATE OF ALASKA 49TH
Kevin M. Smith
LS-9234
9/30/05
Professional Land Surveyor

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, Inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

SURVEY CONTROL (DATA)

DESIGNED BY:	AES
DRAWN BY:	JCS
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO. 3

3 OF 22

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005

GENERAL NOTES:

1. ANCHORS WILL BE INSTALLED UNDER THE GUIDANCE OF A PROFESSIONAL ENGINEER OR ANCHOR MANUFACTURER'S REPRESENTATIVE.
2. THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES BY OBTAINING UTILITY LOCATES PRIOR TO CONSTRUCTION. UTILITY LOCATIONS SHOWN, BOTH HORIZONTAL AND VERTICAL, ARE APPROXIMATE ONLY.
3. THE CONTRACTOR SHALL RECORD ALL UTILITY LOCATIONS ENCOUNTERED. LOCATIONS SHALL BE RECORDED IN SURVEY NOTES TO BE SUBMITTED WITH AS-BUILT PLANS.
4. AFTER FINAL INSPECTION AND BEFORE FINAL PAYMENT, THE CONTRACTOR SHALL SUBMIT A SET OF AS-BUILT PLANS TO THE CONTRACTING OFFICER. THE AS-BUILT PLANS SHALL SHOW ALL DIFFERENCES BETWEEN THE DESIGN PLAN AND THE CONSTRUCTED PROJECT. AS-BUILT PLANS SHALL BE A INCIDENTAL OBLIGATION OF THE CONTRACTOR.
5. THIS PROJECT SHALL COMPLY WITH THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) FOR CONSTRUCTION ACTIVITIES.
6. THE CONTRACTOR SHALL OBTAIN PRIOR APPROVAL TO WORK OUTSIDE THE RIGHT-OF-WAY LIMITS OR PROVIDE CONSTRUCTION EASEMENTS FOR EACH RESPECTIVE LAND OWNER. PROVIDE PROOF OF APPROVAL TO THE CONTRACTING OFFICER PRIOR TO THE WORK. RESTORE ALL DISTURBED PROPERTY OUTSIDE THE WORK LIMITS TO ORIGINAL CONDITIONS.
7. ALL TRANSITION FROM NEW ELEVATED BOARDWALK TO EXISTING BOARDWALK ARE APPROXIMATE IN LENGTH, CONTRACTOR SHALL VERIFY LENGTH PRIOR TO BIDDING. ANY ADDITIONAL LENGTH REQUIRED IS CONSIDERED INCIDENTAL.
8. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SHOWN.
9. SUBMIT A QUALITY CONTROL PLAN MEETING SECTION 153 OF THE STANDARD SPECIFICATIONS AND THE SPECIAL CONTRACT REQUIREMENTS. INCLUDE ALL RELATED COSTS OF PREPARING THE PLAN AND INCIDENTAL COSTS UNDER BID ITEM 15401.
10. THE CONTRACTOR SHALL SUBMIT AN APPROVED CONSTRUCTION PLAN FOR PROPOSED BOARDWALK CONSTRUCTION AND ANCHOR PLACEMENT METHODS INCLUDING, BUT NOT LIMITED TO, MATERIALS, EQUIPMENT, AND SCHEDULE. THIS PLAN SHALL BE BASED ON USING EXISTING OR NEW BOARDWALKS FOR ALL MATERIAL STORAGE, EQUIPMENT ACCESS, AND WORKING AREAS. ALL EQUIPMENT MUST REMAIN ON BOARDWALKS EXCEPT AT SPECIFIC LOCATIONS APPROVED BY THE CONTACTING OFFICER. THE INTENT OF THIS RESTRICTION IS TO PROTECT THE EXISTING GROUND AND VEGETATION FROM DAMAGE. THE CONTRACTOR SHALL MEET ALL STATE AND FEDERAL REQUIREMENTS.
11. EXISTING BOARDWALK SHOWN TO BE REMOVED SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVAL SHALL BE OBTAINED FROM THE TUNTUTULIAK TRADITIONAL COUNCIL OR THEIR DESIGNATED REPRESENTATIVE PRIOR TO REMOVAL. THE COUNCIL MAY WISH TO REUSE PORTIONS OF THE EXISTING BOARDWALK TO BE REMOVED. INSTEAD OF TAKING THIS MATERIAL TO THE DISPOSAL SITE, CUT THE BOARDWALK INTO MAXIMUM PRACTICAL LENGTHS FOR TRANSPORTING, AND MOVE IT TO A COUNCIL APPROVED LOCATION TO BE STORED FOR FUTURE LOCAL USE. ALL OTHER MATERIAL TO BE REMOVED SHALL BE REMOVED AND DISPOSED OF AT DISPOSAL SITE. SEE SPECIAL CONTRACT REQUIREMENTS.
12. PROVIDE SMOOTH TRANSITION TO ALL EXISTING BOARDWALKS INTERSECTED BY THE PROPOSED BOARDWALK, UNLESS OTHERWISE NOTED.
13. SPECIES AND GRADE OF ALL LUMBER USED IN THIS PROJECT SHALL BE NO. 2 DOUGLAS FIR, KILN DRIED TO A MOISTURE CONTENT AS SPECIFIED IN THE SPECIAL CONTRACT REQUIREMENTS. ALL LUMBER SHALL BE PRESSURE TREATED WITH ACQ, AND SHALL BE INCISED PRIOR TO TREATMENT. CUTTING AND BORING OF LUMBER SHALL BE KEPT TO A PRACTICAL MINIMUM. ALL CUT OR BORED SURFACES SHALL BE COATED WITH AT LEAST TWO BRUSH COATS OF THE SPECIFIED TREATMENT.
14. STRUCTURAL STEEL SHALL BE A588-50 WEATHERING STEEL.
15. BOARDWALKS SHALL BE LEVEL TRANSVERSELY FOR BOARDWALKS ON MUDSILLS. FOR BOARDWALKS SUPPORTED BY ANCHORS USE A CROSS-SLOPE OF 2%. SEE SPECIFICATIONS FOR CROSS-SLOPE TOLERANCE
16. ANY MATERIAL CLEARED FOR SUBGRADE PREPARATION SHALL BE GATHERED AND DISPOSED OF AT DISPOSAL SITE, UNLESS OTHERWISE APPRDVED.
17. A HIGH STRENGTH CHANCE ANCHOR OR APPROVED EQUIVALENT SHOULD BE USED. SEE SPECIFICATIONS FOR ANCHOR INSTALLATION. HELICAL ANCHORS SHOULD BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS TO PROVIDE AN ALLOWABLE BEARING CAPACITY OF 6700 LB EACH FOR ANCHORS SUPPORTING 10-FOOT-WIDE BOARDWALKS AND 5200 LB EACH FOR ANCHORS SUPPORTING 6-FOOT-WIDE BOARDWALKS.

ESTIMATE OF QUANTITIES SUMMARY

PAY ITEM NUMBER	DESCRIPTION	PAY UNIT	ESTIMATED QUANTITY
15101	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL
15201	CONSTRUCTION SURVEY AND STAKING	LUMP SUM	ALL
15401	CONTRACTOR TESTING	LUMP SUM	ALL
15501	CONSTRUCTION SCHEDULE	LUMP SUM	ALL
15801	ADMINISTRATION, EROSIDN AND POLLUTION CONTROL	LUMP SUM	ALL
15902	EROSION AND POLLUTION CONTROL	LUMP SUM	ALL
20102	CLEARING	LUMP SUM	ALL
63304	SIGNS, ALUMINUM PANELS, TYPE III SHEETING	SQUARE FEET	19
63501	TEMPORARY TRAFFIC CONTROL	LUMP SUM	ALL
63701	FIELD OFFICE	LUMP SUM	ALL
63703	RESIDENTIAL HOUSING	LUMP SUM	ALL
63704	CONTRACTING OFFICER'S/INSPECTOR'S TRANSPORTATION	LUMP SUM	ALL
80104	BOARDWALK REMOVAL	SQUARE FEET	7496
80201	HELICAL ANCHORS	EACH	372
80202	FLOODING RESTRAINTS	EACH	130
80301	BOARDWALK (10' WIDE)	LINEAR FOOT	1168
80302	BOARDWALK (6' WIDE)	LINEAR FOOT	1871
80303	MUDSILL	EACH	134
80501	COMPOSITE MAT	SQUARE FEET	6089

SIGN SUMMARY

SIGN NO. SHEET NO.	LOCATION (STATION)	LEGEND	SIGN TYPE (SEE NOTE 1 THIS SHEET)	SIZE (INCHES)	FACING	DESCRIPTION	NOTES
1 SHEET NO. 19	31+26	YIELD	R1-2	30 x 30 x 30	WEST	YIELD	
2 SHEET NO. 22	67+30	STOP	R1-1	24 x 24	NORTHWEST	STOP	
		LOW FLYING AIRCRAFT	W16-114	24 x 24	NORTHWEST	LOW FLYING AIRCRAFT	MOUNT BELOW STOP
3 SHEET NO. 22	69+25	STOP	R1-1	24 x 24	SOUTHEAST	STOP	
		LOW FLYING AIRCRAFT	W16-114	24 x 24	SOUTHEAST	LOW FLYING AIRCRAFT	MOUNT BELOW STOP

NOTES:

1. REFERENCE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", 2000 EDITION, "ALASKA TRAFFIC MANUAL SUPPLEMENT", JANUARY 2003 EDITION, AND "ALASKA SIGN DESIGN SPECIFICATIONS."
2. ALL SIGNS SHALL BE CLASS "L" AS SHOWN IN "ALASKA SIGN DESIGN SPECIFICATIONS". INSTALL SIGNS IN ACCORDANCE WITH ADOT&PF STANDARD DETAILS S-05.01, S-20.10, AND DETAIL 1, THIS SHEET.
3. SIGN LOCATION SHALL BE 4' FROM EDGE OF BOARDWALK TO CENTER OF POST.
4. SIGN NUMBERS 2 AND 3 NOT REQUIRED IF AIRPORT HAS BEEN RELOCATED AND RUNWAY CLOSED AT TIME OF CONSTRUCTION
5. SIGNS AND SIGN POSTS ARE INCLUDED IN PAY ITEM NO. 63304. FOUNDATION IS INCLUDED IN PAY ITEM NO 80202

FOUNDATION SUMMARY TABLE

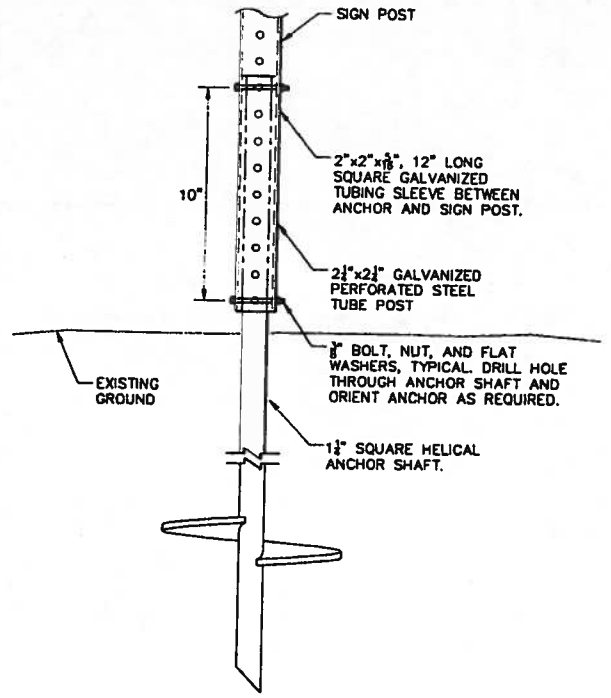
FOUNDATION	BOARDWALK	STATION
ANCHORS	QUNGUK	0+23.92 - 3+07.90
	BW-39	6+52 - 9+76
	AGAYUYARVIK	12+00 - 19+84.17
	PATLUSKA ST.	25+00 - 27+57.97; 29+13.97 - 30+20.76
	ATAUCIQ	40+00 - 42+06.77
	NO. NEQLIVIK	50+00 - 50+79.90
STRINGERS ON MUDSILLS	QUNGUK	0+00 - 0+23.92
	BW-39	5+00 - 6+52; 9+76 - 10+62.02
	PATLUSKA ST.	30+20.76 - 31+33.23
	S. NEQLIVIK	45+00 - 46+76.20
	N. NEQLIVIK	50+79.90 - 50+91.75
	ATARVIK	55+00 - 55+55.94
	SEVNEQ	60+00 - 63+03.42
COMPOSITE MAT	BW-41	67+00 - 70+62.84
	PATLUSKA ST.	27+57.97 - 29+13.97
	BW-34	35+00 - 35+60

NOTE:

APPROXIMATE LOCATION OF EACH FOUNDATION TYPE ARE SHOWN ON EACH PROFILE SHEET. REFERENCE THIS SUMMARY TABLE FOR EXACT STATIONING TO SWITCH FOUNDATION TYPES.

BOARDWALK SUMMARY

SHEET LOCATION	BOARDWALK NAME	LENGTH (FT)	WIDTH (FT)
SHEET 14	QUNGUK	307.90	10
SHEET 15	BW-39	562.02	6
SHEET 16 & 17	AGAYUYARVIK	784.17	6
SHEET 18 & 19	PATLUSKA	633.23	10 & 7
SHEET 19	BW-34	60.00	5 & 7
SHEET 20	ATAUCIQ	206.77	6
SHEET 20	NEQLIVIK SOUTH	176.20	6
SHEET 20	NEQLIVIK NORTH	91.75	6
SHEET 21	ATARVIK	55.94	10
SHEET 21	SEVNEQ	303.42	10
SHEET 22	BW-41	362.84	7



1/4 SIGN POST FOUNDATION DETAIL
-NTS-

STATE OF ALASKA 49TH
Christopher M. Kinney
CE9134
9/30/05
Registered Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, Inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

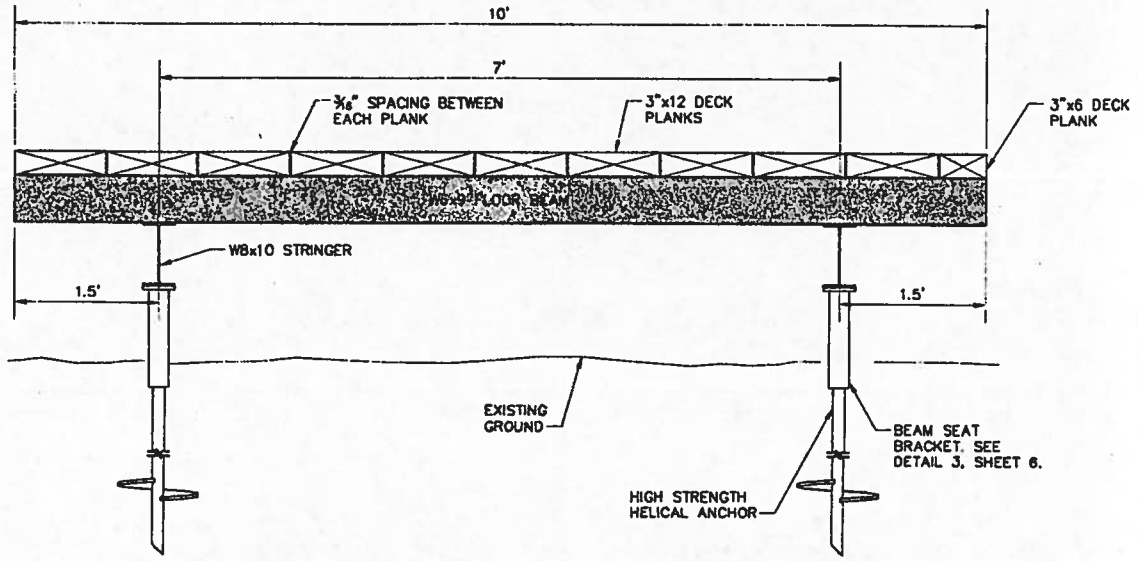
TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

GENERAL NOTES, QUANTITIES, BOARDWALK, FOUNDATION, AND SIGN SUMMARIES

DESIGNED BY:	AES
DRAWN BY:	JCS/SPK
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO. 4
4 OF 22

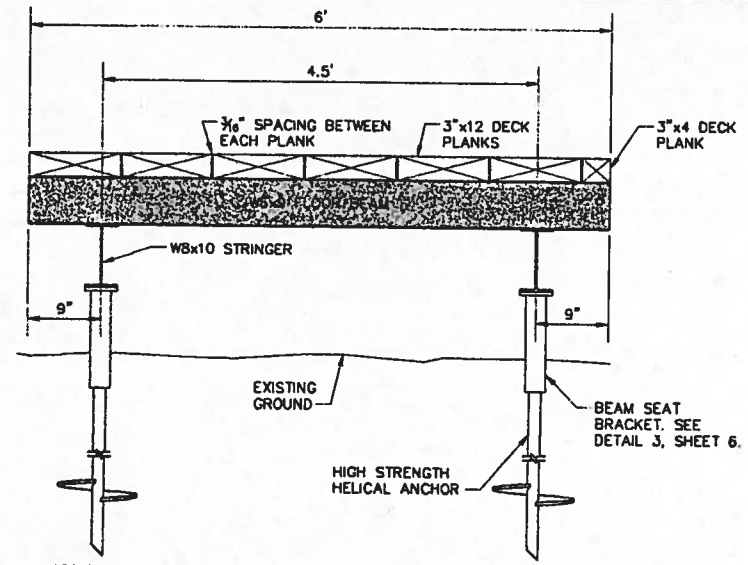
STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005



NOTES:

1. THIS DETAIL SHOWS BOARDWALK SUPPORTED BY ANCHORS. WHERE CONDITIONS DO NOT REQUIRE ANCHORS, BOARDWALKS ARE PLACED ON MUDSILLS AS SHOWN IN DETAIL 1, SHEET 6. SEE FOUNDATION SUMMARY TABLE ON SHEET 4 FOR FOUNDATION TYPE BY STATION RANGE.
2. PLANK SPACING AND 3"x6 EDGE PLANK SHOWN IN THIS DETAIL IS TYPICAL FOR ALL 10' BOARDWALKS, BUT NOT SHOWN IN ALL DETAILS.
3. SEE SHEET 7 FOR FASTENER DETAILS.
4. ADJUST PLANK SPACING SLIGHTLY IF REQUIRED TO ACHIEVE 10' OVERALL DECK WIDTH.

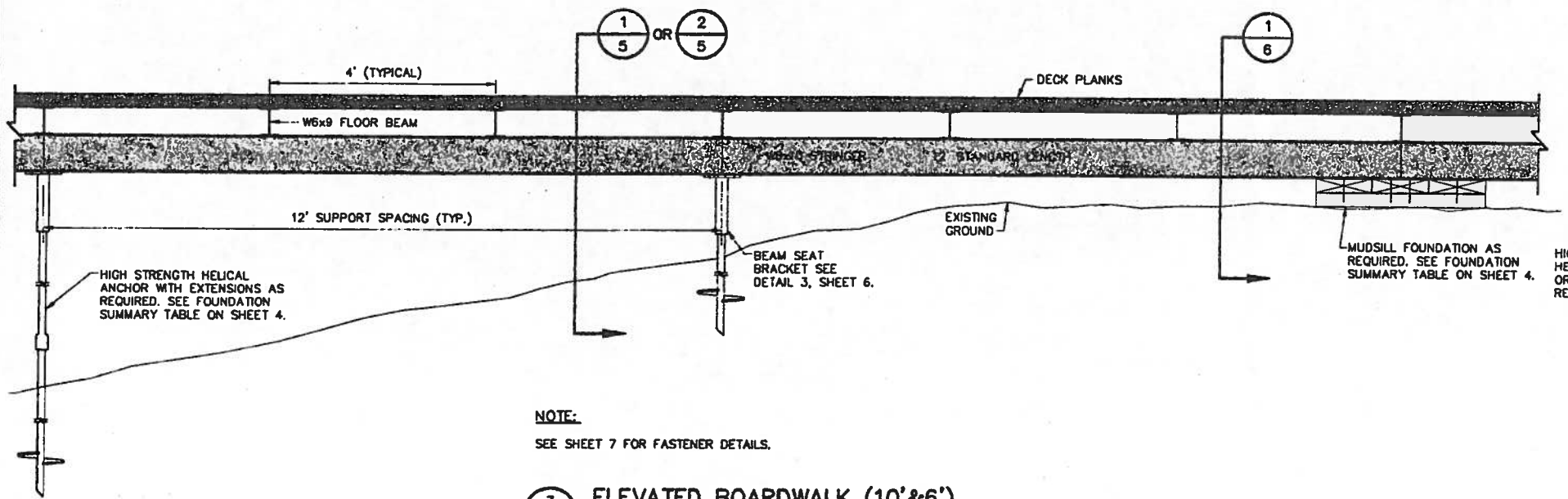
1/5 ELEVATED BOARDWALK (10')
SECTION -NTS-



NOTES:

1. THIS DETAIL SHOWS BOARDWALK SUPPORTED BY ANCHORS. WHERE CONDITIONS DO NOT REQUIRE ANCHORS, BOARDWALKS ARE PLACED ON MUDSILLS AS SHOWN IN DETAIL 1, SHEET 6. SEE FOUNDATION SUMMARY TABLE ON SHEET 4 FOR FOUNDATION TYPE BY STATION RANGE.
2. PLANK SPACING AND 3"x4 EDGE PLANK SHOWN IN THIS DETAIL IS TYPICAL FOR ALL 6' BOARDWALKS, BUT NOT SHOWN IN ALL DETAILS.
3. SEE SHEET 7 FOR FASTENER DETAILS.
4. ADJUST PLANK SPACING SLIGHTLY IF REQUIRED TO ACHIEVE 6' OVERALL DECK WIDTH.

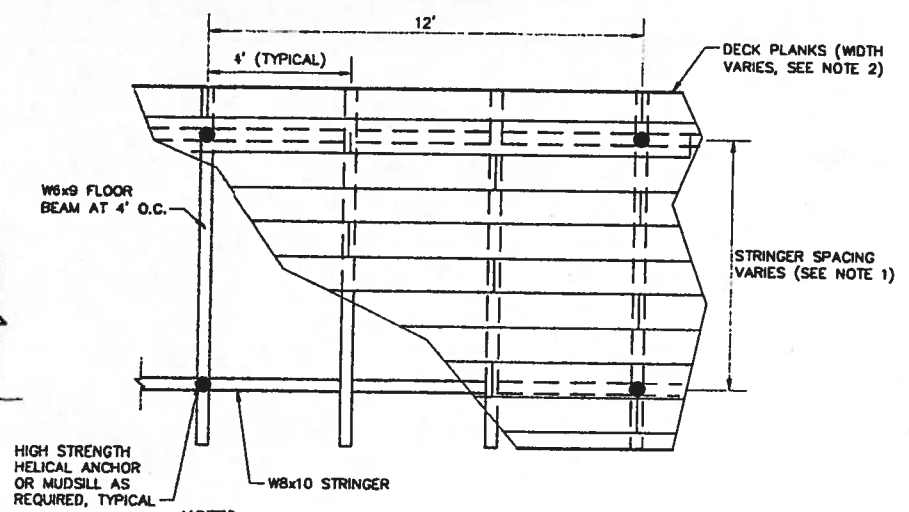
2/5 ELEVATED BOARDWALK (6')
SECTION -NTS-



NOTE:

SEE SHEET 7 FOR FASTENER DETAILS.

3/5 ELEVATED BOARDWALK (10'&6')
PROFILE -NTS-



NOTES:

1. DISTANCE BETWEEN STRINGERS IS 7' FOR 10-FOOT WIDE BOARDWALKS (SHOWN) AND 4.5' FOR 6-FOOT WIDE BOARDWALKS.
2. FOR A 10' WIDE BOARDWALK, DECK IS CONSTRUCTED WITH (10) 3"x12 PLANKS AND (1) 3"x6 PLANK (SHOWN), FOR A 6' WIDE BOARDWALK, DECK IS CONSTRUCTED WITH (6) 3"x12 PLANKS AND (1) 3"x4 PLANK.
3. DECK PLANK END JOINTS WILL BE STAGGERED, AS SHOWN, TO PROVIDE THE FEWEST POSSIBLE JOINTS ON ANY GIVEN FLOOR BEAM.

4/5 ELEVATED BOARDWALK (10'&6')
PLAN VIEW -NTS-

STATE OF ALASKA 49TH
Christopher M. Rooney
CERTIFIED
9/30/05
Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, Inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

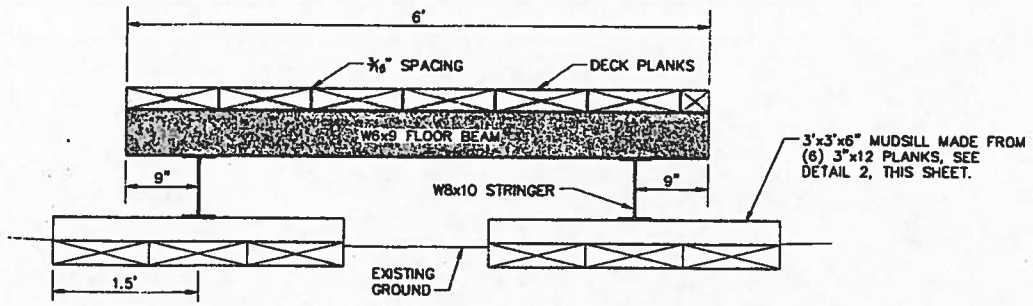
TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

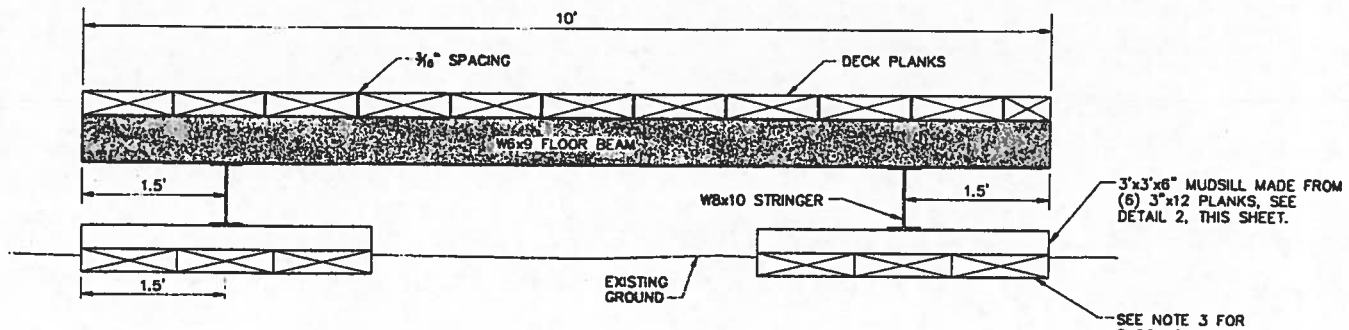
BOARDWALK DETAILS

DESIGNED BY:	AES
DRAWN BY:	SPK
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO. 5
5 OF 22

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005

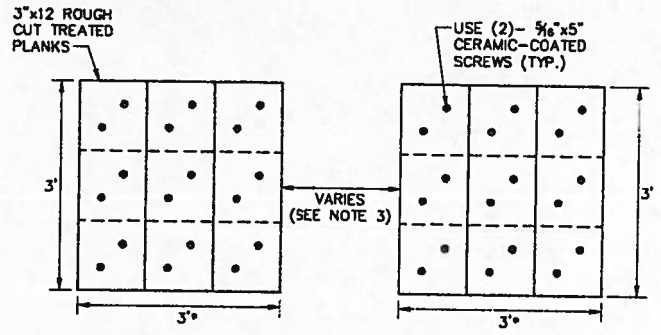




NOTES:

1. MUDSILLS ARE PLACED DIRECTLY BENEATH STRINGERS. MUDSILLS ARE CENTERED ON THE INTERSECTION BETWEEN STRINGERS AND FLOOR BEAMS.
2. MUDSILLS WILL HAVE A 6" MINIMUM HEIGHT. DEPENDING ON THE CONDITION OF THE EXISTING GROUND, ADDITIONAL BLOCKING MAY BE NEEDED FOR ELEVATION
3. SUBGRADE PREPARATION FOR MUDSILLS IN DISTURBED AREAS WILL CONSIST OF HAND LEVELING EXISTING GROUND AS REQUIRED TO PROVIDE LEVEL FOUNDATION. IN VEGETATED AREAS, PLACE MUDSILL DIRECTLY OVER VEGETATION WITHOUT DAMAGING VEGETATIVE MAT, EXCEPT THAT INDIVIDUAL TUSSOCKS MAY BE REMOVED.
4. SEE SHEET 7 FOR FASTENER DETAILS.

1/6 BOARDWALKS ON MUDSILLS (6'&10') SECTION -NTS-

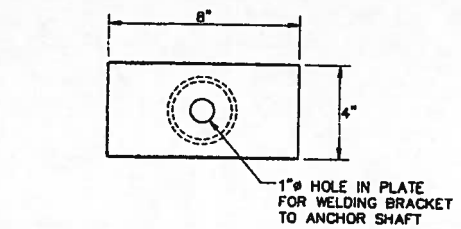


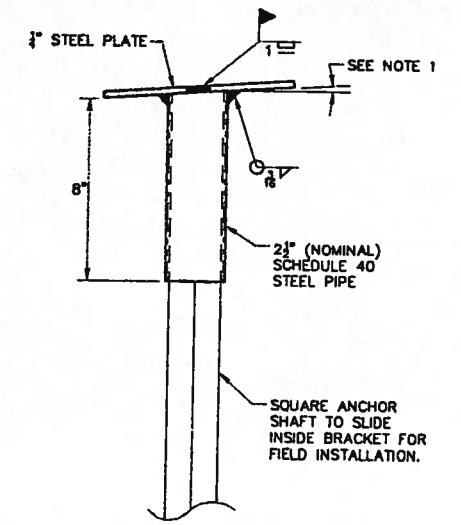
*UNLESS OTHERWISE SHOWN

NOTES:

1. MUDSILL HEIGHT WILL VARY DEPENDING ON EXISTING GROUND.
2. MUDSILLS CONSIST OF (2) LAYERS OF PLANKS AT RIGHT ANGLES TO EACH OTHER. EACH LAYER IS MADE OF (3) 3"x12 PLANKS. INSTALL ADDITIONAL 3"x12 BLOCKING AS REQUIRED TO PROVIDE STABLE FOUNDATION TO REQUIRED ELEVATION. MAXIMUM (4) 3"x12 PLANKS STACKED DIRECTLY ABOVE EACH OTHER WITHOUT BUILDING UP ADDITIONAL LAYERS AT RIGHT ANGLES TO EACH OTHER. FASTEN ALL BLOCKING WITH 5/16"x5" SCREWS
3. THE DISTANCE BETWEEN THE FOOTING PAD OR MUDSILL VARIES DEPENDING ON THE WIDTH OF THE RAMP OR BOARDWALK. FOR A 10' WIDE SECTION CLEAR DISTANCE IS 4' AND FOR A 6' WIDE SECTION CLEAR DISTANCE IS 1.5'.

2/6 MUDSILL FOUNDATION DETAIL PLAN VIEW -NTS-





NOTES:

1. CUT PIPE AND ATTACH PLATE AT ANGLE AS REQUIRED SO THAT THE TOP OF BEAM SEAT BRACKET MATCHES BOARDWALK GRADE FOR EACH LOCATION OR STATION RANGE.
2. WELDING SHALL BE IN ACCORDANCE WITH AMERICAN WELDING SOCIETY GUIDELINES
3. BRACKET SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. DAMAGE TO GALVANIZED COATING DURING HANDLING OR WELDING TO ANCHORS SHALL BE REPAIRED USING ZINC-RICH PAINT. SEE SPECIAL CONTRACT REQUIREMENTS.

3/6 BEAM SEAT BRACKET -NTS-

STATE OF ALASKA 49TH Christopher M. Kinney CE9134 9/30/05 Professional Engineer

REV.	DATE	DESCRIPTION	BY.

RPKA Rodney P. Kinney Associates, Inc. CONSULTING ENGINEERS & SURVEYORS

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF INDIAN AFFAIRS ALASKA REGIONAL OFFICE

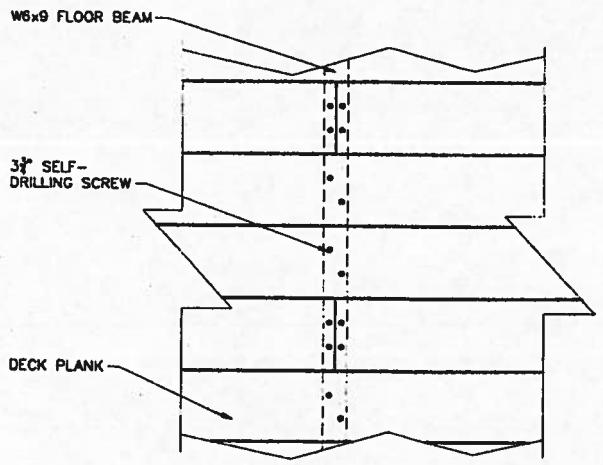
TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

BOARDWALK DETAILS

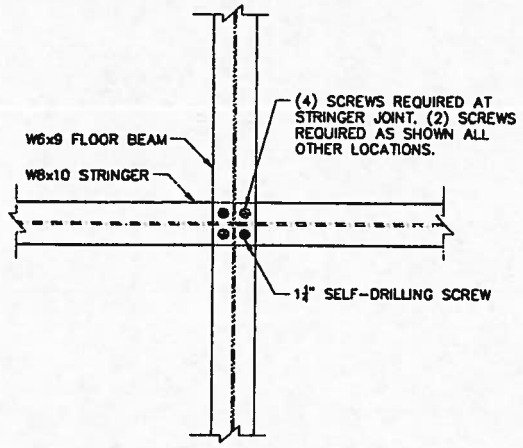
DESIGNED BY:	AES
DRAWN BY:	SPK
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO. 6

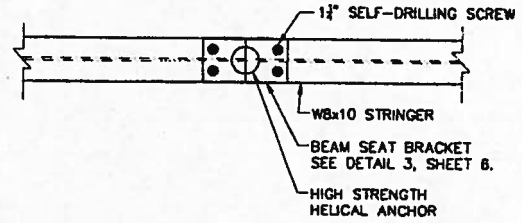
STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R7W	SEWARD	2005



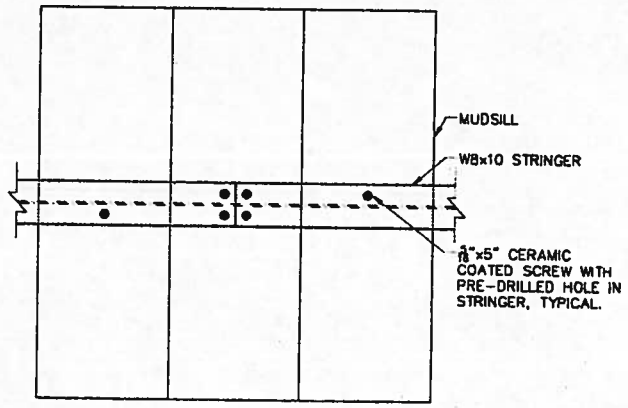
DECK PLANKS TO FLOOR BEAM



FLOOR BEAM TO STRINGER



STRINGER TO ANCHOR



NOTES:

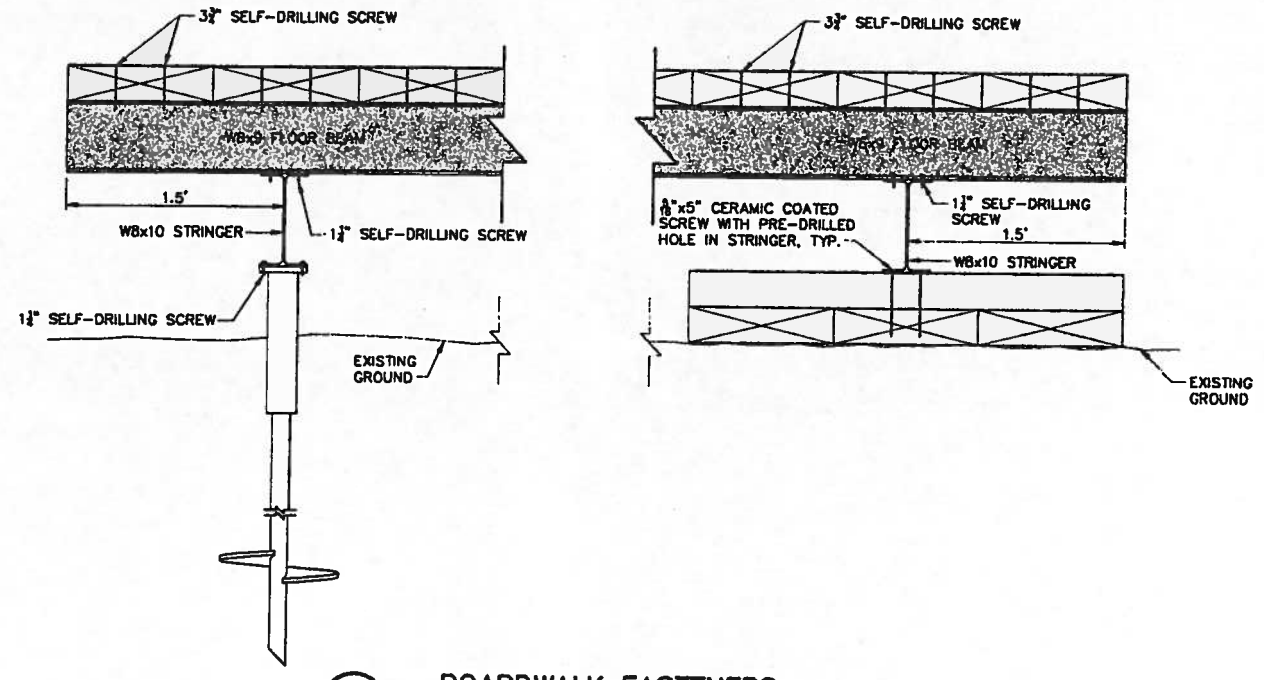
CONNECT FLOOR BEAM TO MUDSILL WHERE REQUIRED, IN A SIMILAR MANNER, WITH TWO SCREWS NEAR FLOOR BEAM END (IF APPLICABLE) AND ONCE SCREW, MINIMUM, INTO EACH MUDSILL PLANK.

STRINGER TO MUDSILL

NOTES:

1. 1½" SELF-DRILLING SCREW SHALL BE CORROSION RESISTANT SELF DRILLING SCREW, #12-24x1½" HEX WASHER HEAD #5 POINT, (HILTI S-MD #12-24x1½" HWH #5 KWIK-COTE OR APPROVED EQUIVALENT.) THIS SCREW SHALL BE USED AT ALL STEEL-TO-STEEL CONNECTIONS, UNLESS OTHERWISE SHOWN.
2. 3½" SELF-DRILLING SCREW SHALL BE CORROSION RESISTANT SELF DRILLING SCREW, ¼"-20x3½" PHILLIPS FLAT HEAD, #4 POINT WITH WINGS, COUNTERSINK ¼" INTO DECK PLANKS. THIS SCREW SHALL BE USED TO FASTEN ALL DECK PLANKS, UNLESS OTHERWISE SHOWN.

1/7 FASTENER DETAILS
PLAN VIEW -NTS-



2/7 BOARDWALK FASTENERS
SECTION -NTS-

STATE OF ALASKA 49TH
Christopher M. Kinney
CE9134
9/30/05
Registered Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA Rodney P. Kinney Associates, Inc. CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

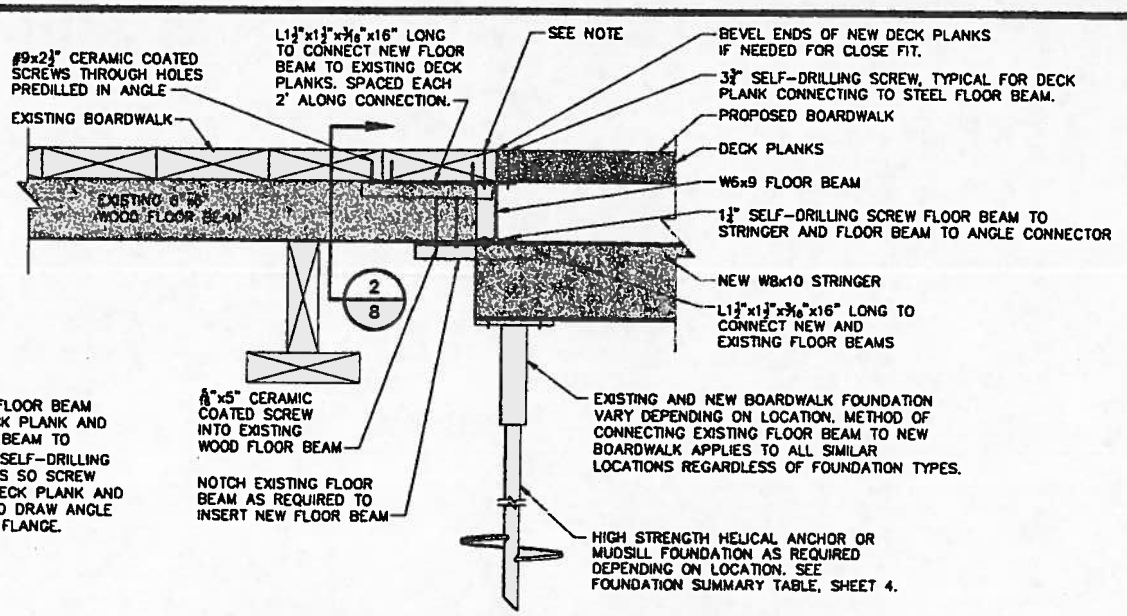
TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

FASTENER DETAILS

DESIGNED BY:	AES
DRAWN BY:	SPK
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO. 7
7 OF 22

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005

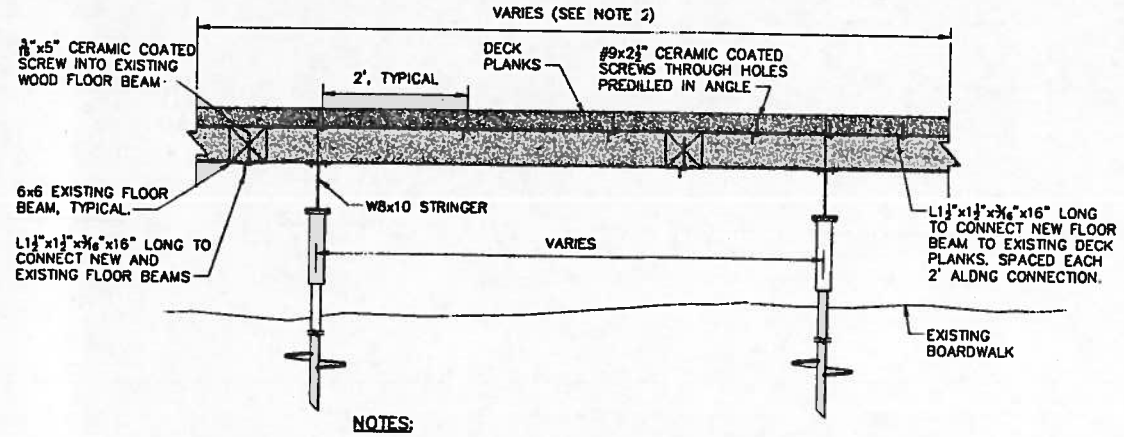


NOTE:

FOR UPPER ANGLE TO NEW FLOOR BEAM CONNECTION, PRE-DRILL DECK PLANK AND TOP FLANGE OF NEW FLOOR BEAM TO DIAMETER OF WINGS ON 3½" SELF-DRILLING SCREW. COUNTERSINK SCREWS SO SCREW THREADS REACH THROUGH DECK PLANK AND FLOOR BEAM TO ENGAGE AND DRAW ANGLE TIGHT AGAINST FLOOR BEAM FLANGE.

1/8 CONNECTION TO EXISTING BOARDWALK – PROFILE (PROPOSED BOARDWALK PERPENDICULAR TO EXISTING BOARDWALK)

-NTS-

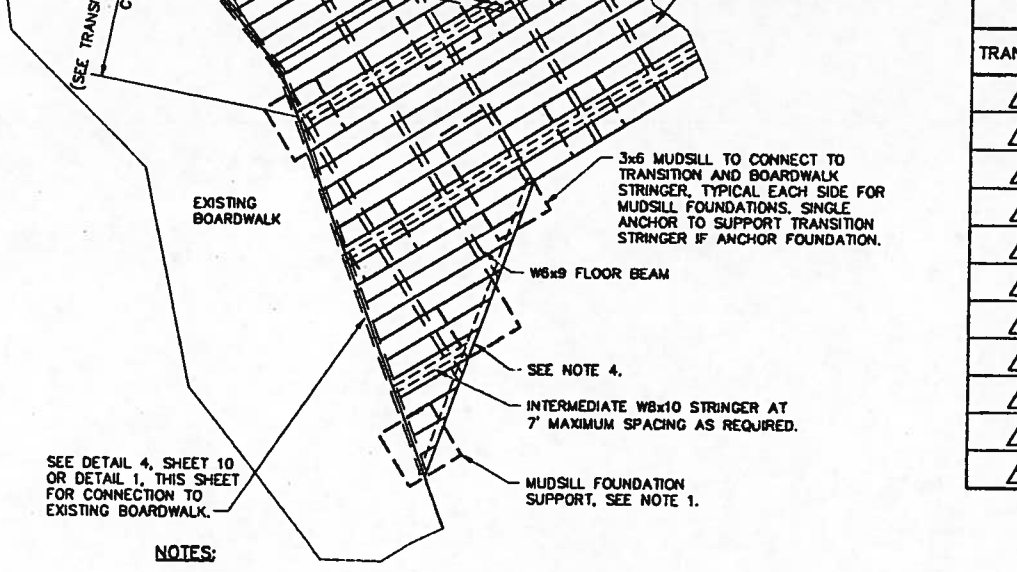


NOTES:

1. ACTUAL LOCATIONS OF EXISTING FLOOR BEAMS WILL VARY.
2. OVERALL WIDTH AT CONNECTION VARIES AT EACH LOCATION DEPENDING ON BOARDWALK AND TRANSITION WIDTHS.
3. FOUNDATION TYPE OF NEW BOARDWALK WILL VARY.

2/8 CONNECTION TO EXISTING BOARDWALK – SECTION (PROPOSED BOARDWALK PERPENDICULAR TO EXISTING BOARDWALK)

-NTS-



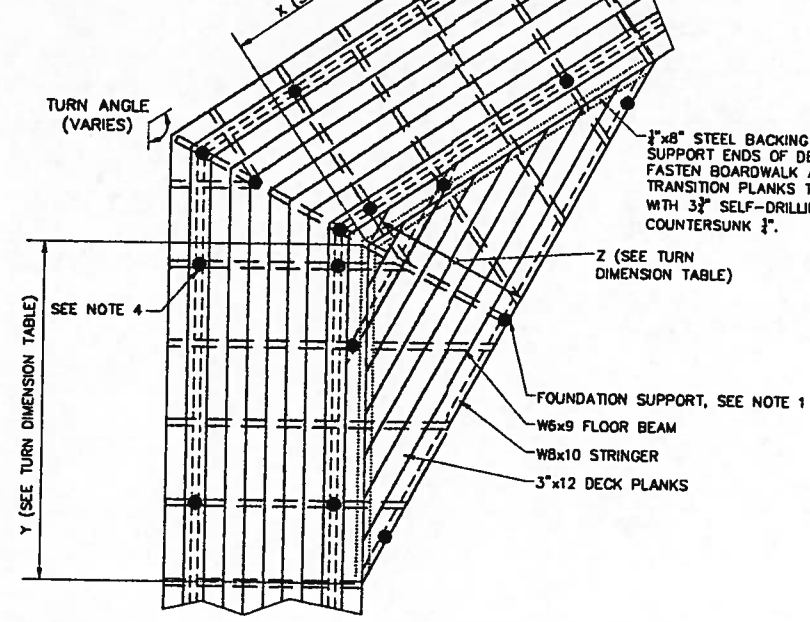
TRANSITION DIMENSION TABLE				
TRANSITION	ANGLE	A	B	C
1	78°	10.92'	10.92'	8.5'
2	102°	10.35'	10.35'	6.5'
3	77°	13.42'	13.42'	10.5'
4	58°	14.30'	14.30'	12.5'
5	87°	11.76'	11.76'	8.5'
6	70°	7.35	7.35	6'
7	52°	13.88'	13.88'	12.5'
8	107°	5.05'	5.05'	3'
9	73°	3.73'	3.73'	3'
10	102°	10.27'	10.27'	6.5'
11	98°	9.58'	9.58'	6.5'

NOTES:

1. FOUNDATION SUPPORTS WILL BE ANCHORS OR MUDSILLS, DEPENDING ON LOCATION. SEE FOUNDATION SUMMARY TABLE, SHEET 4, FOR FOUNDATION TYPE AT EACH SPECIFIC LOCATION.
2. TRANSITION IS NOT REQUIRED ON BOTH SIDES OF EVERY LOCATION. SEE PLAN SHEETS.
3. THIS DETAIL SHOWS TRANSITIONS AT THE BEGINNING OF SEVNEQ. OTHER TRANSITIONS WILL BE CONSTRUCTED SIMILAR, BUT DIMENSIONS WILL VARY AS SHOWN IN TRANSITION DIMENSION TABLE, THIS SHEET. ANCHORS, STRINGERS, AND FLOOR BEAMS ARE LOCATED SUCH THAT STRINGER SPAN DOES NOT EXCEED 12', FLOOR BEAM SPAN DOES NOT EXCEED 7', FLOOR BEAM CANTILEVER DOES NOT EXCEED 1.5', AND DECK PLANK SPAN IS 4' OR LESS.
4. W8x10 STRINGER WITH W6x9 BLOCKING BETWEEN FLOOR BEAM ENDS TO SUPPORT DECK PLANK ENDS ALONG TRANSITION EDGE, TYPICAL.
5. EXTEND FLOOR BEAM BEYOND END OF 12' EDGE STRINGER AND OVERLAP ONTO BOARDWALK STRINGER IF NEEDED TO SUPPORT DECK PLANK ENDS.

3/8 TRANSITION TO EXISTING BOARDWALK PLAN VIEW

-NTS-



TURN DIMENSIONS TABLE				
TURN	ANGLE	X	Y	Z
1	124°	17.00'	17.00'	8'
2	140°	11.71'	11.71'	4'
3	142°	12.36'	12.36'	4'
4	145°	13.14'	13.14'	4'
5	134°	15.23'	15.23'	6'

NOTES:

1. FOUNDATION SUPPORTS WILL BE ANCHORS OR MUDSILLS, DEPENDING ON LOCATION. SEE FOUNDATION SUMMARY TABLE, SHEET 4, FOR FOUNDATION TYPE AT EACH SPECIFIC LOCATION.
2. TRIANGULAR WIDENING PORTION IS NOT REQUIRED ON ALL TURNS. SEE PLAN SHEETS.
3. THIS DETAIL SHOWS TURN (1) OTHER TURNS WILL BE CONSTRUCTED SIMILAR, BUT DIMENSIONS WILL VARY AS SHOWN IN TURN DIMENSION TABLE, THIS SHEET. ANCHORS, STRINGERS, AND FLOOR BEAMS ARE LOCATED SUCH THAT STRINGER SPAN DOES NOT EXCEED 12', FLOOR BEAM SPAN DOES NOT EXCEED 7', FLOOR BEAM CANTILEVER DOES NOT EXCEED 1.5', AND DECK PLANK SPAN IS 4.5' OR LESS.
4. ANCHOR PLACEMENT FOR STANDARD WIDTH PORTION OF BOARDWALK WILL VARY BY LOCATION, AND MAY NOT BE AS SHOWN IN THIS DETAIL. ANCHOR PLACEMENT ENTERING TURN WILL DEPEND ON LOCATION OF 12' LAYOUT ON BOARDWALK.

4/8 TYPICAL TURN DETAIL PLAN VIEW

1"=4'

STATE OF ALASKA 49TH — Christopher M. Rooney CE9134 9/30/05 Registered Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA — Rodney P. Kinney Associates, Inc. — CONSULTING ENGINEERS & SURVEYORS

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF INDIAN AFFAIRS ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

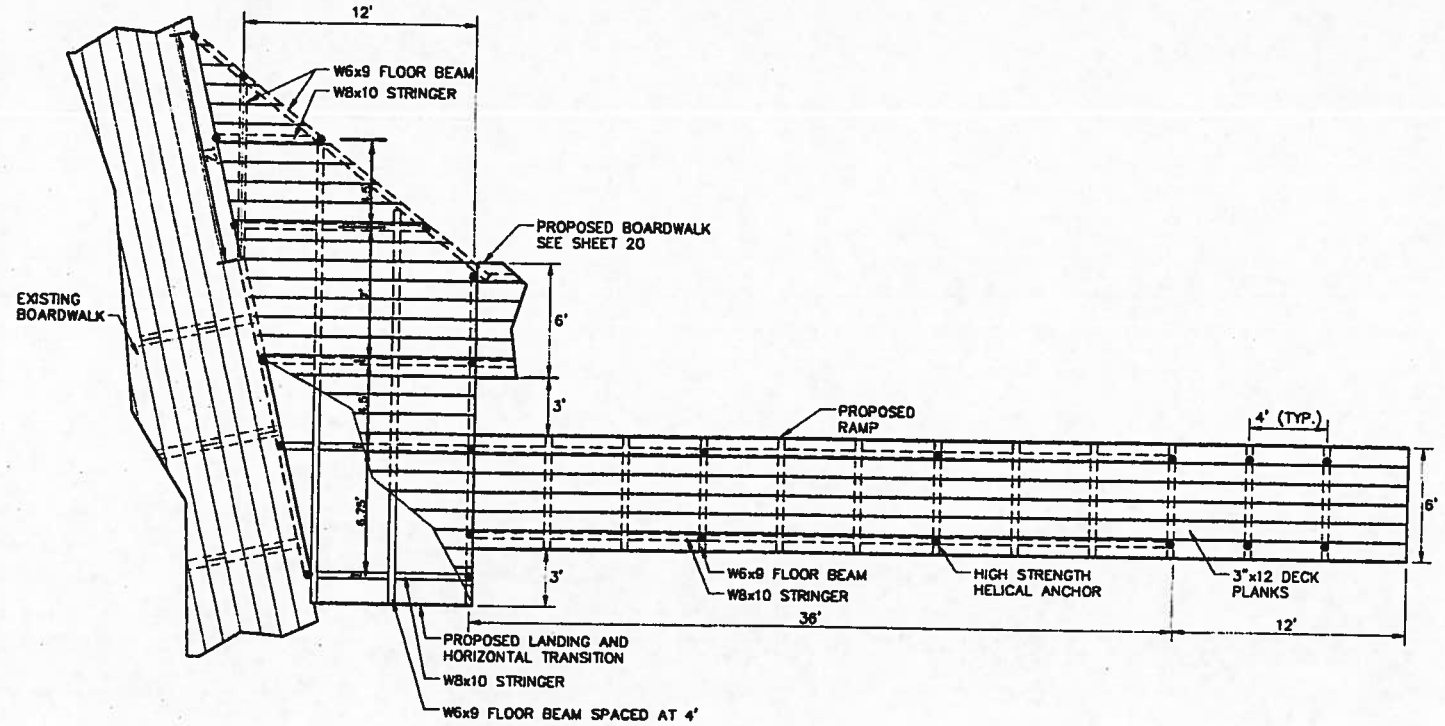
CONNECTION/ TURN/TRANSITION DETAILS

DESIGNED BY:	AES
DRAWN BY:	SPK
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO. 8

8 OF 22

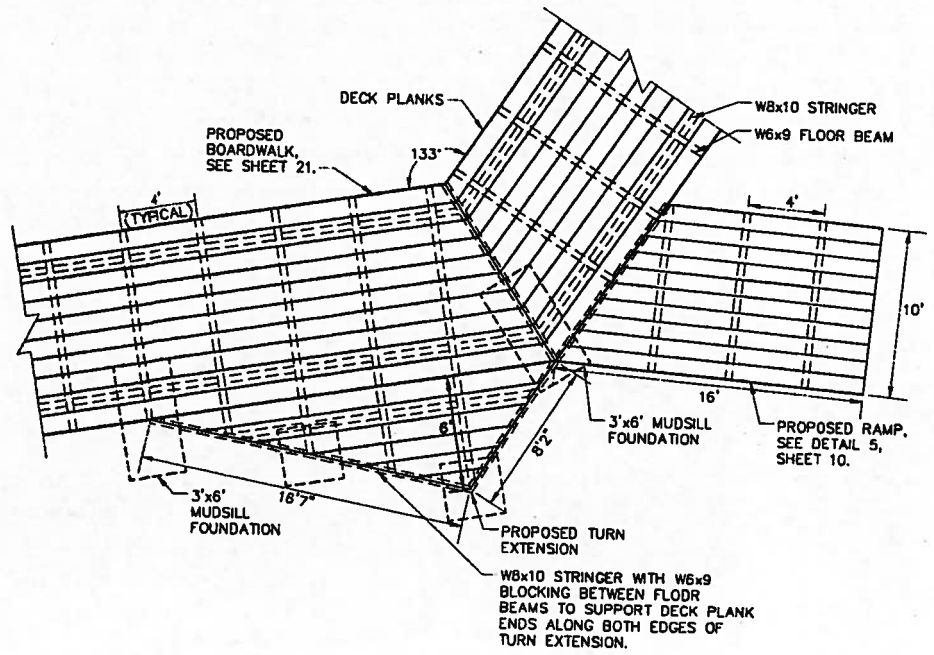
STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005



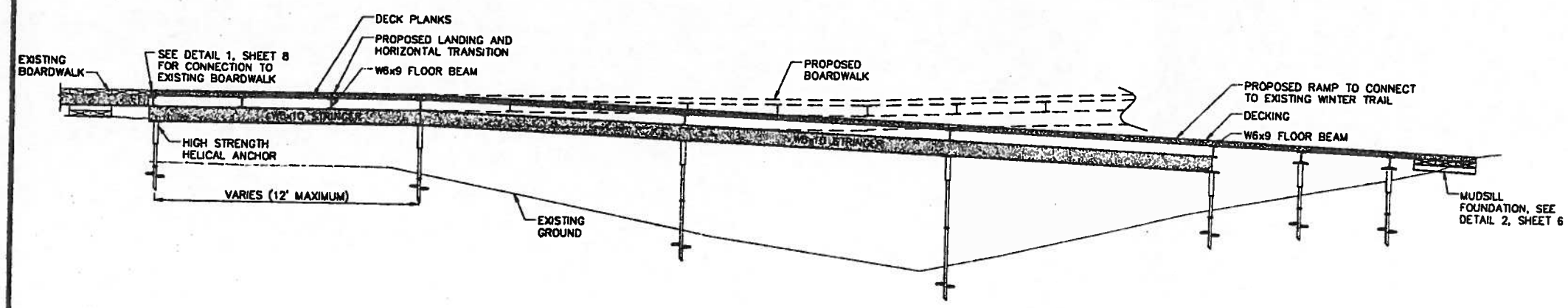
NOTE:

1. ANCHORS, STRINGERS, AND FLOOR BEAMS ARE LOCATED SUCH THAT STRINGER SPAN DOES NOT EXCEED 12', FLOOR BEAM SPAN DOES NOT EXCEED 7', FLOOR BEAM CANTILEVER DOES NOT EXCEED 1.5', AND DECK PLANKS SPAN IS 4' OR LESS.

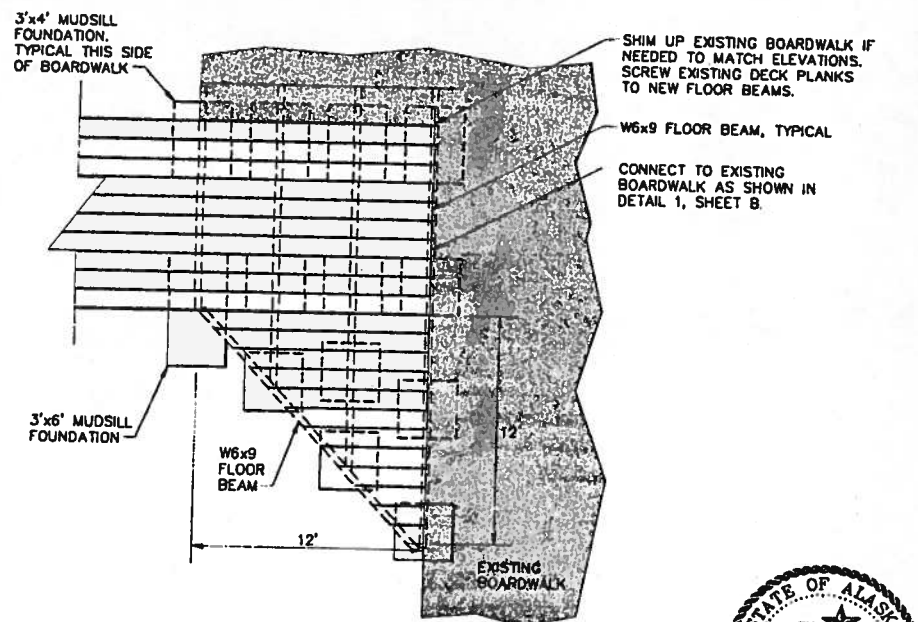
1/9 TRANSITION DETAIL – ATAUCIQ
PLAN VIEW 1"=5'



2/9 TURN DETAIL–SEVNEQ
PLAN VIEW -NTS-



3/9 TRANSITION DETAIL – ATAUCIQ
PROFILE -NTS-



4/9 TRANSITION AT PATLUSKA ST. (STA. 31+33)
PLAN VIEW -N.T.S-

STATE OF ALASKA 49TH
Christopher M. Kinney
CE9134
9/30/05
Registered Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA Rodney P. Kinney Associates, inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

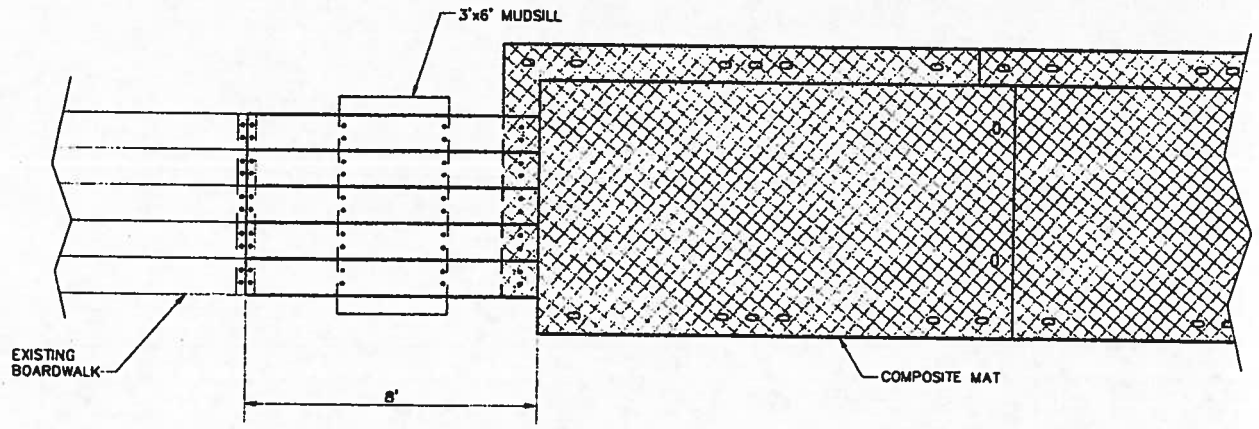
TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

TURN/TRANSITION DETAILS

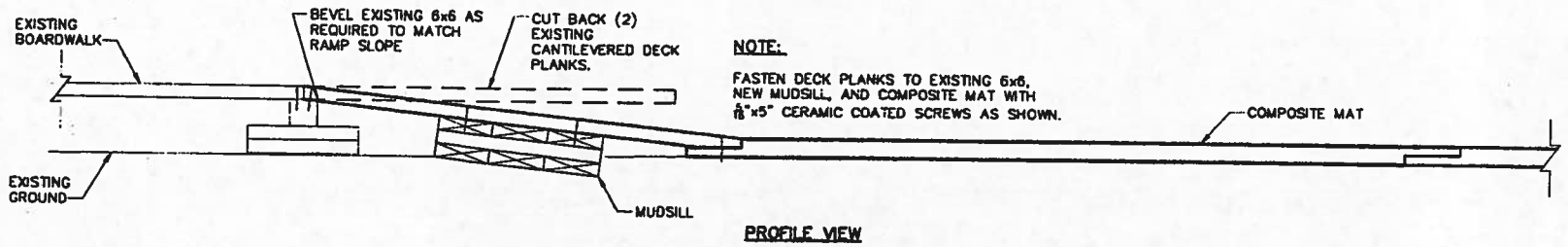
DESIGNED BY:	AES
DRAWN BY:	SPK
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO.
9
9 OF 22

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005

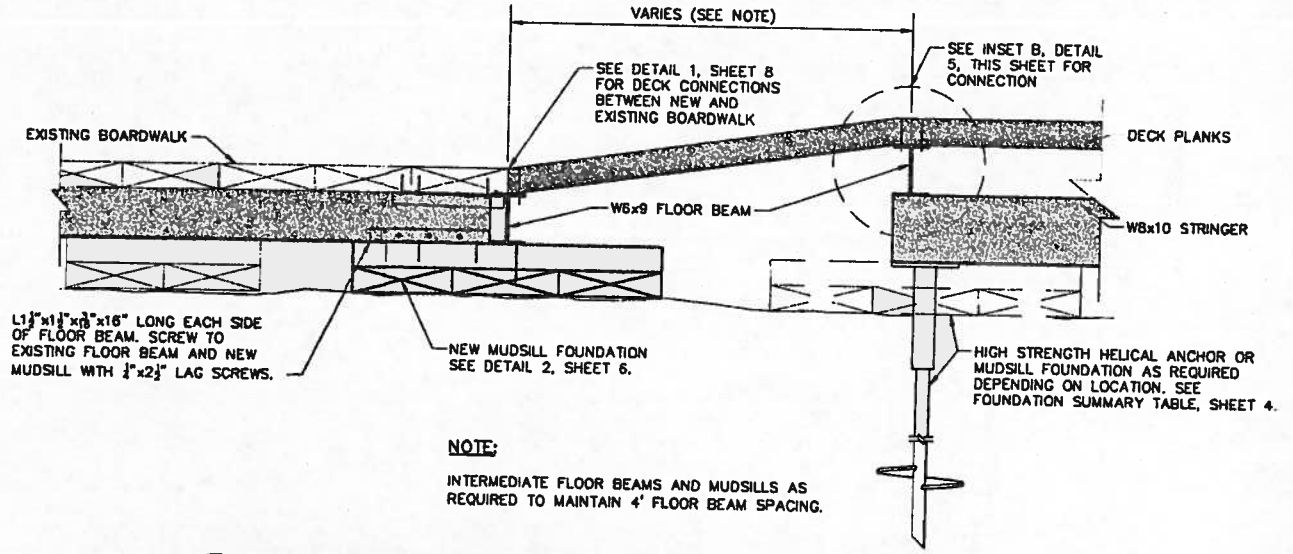


PLAN VIEW

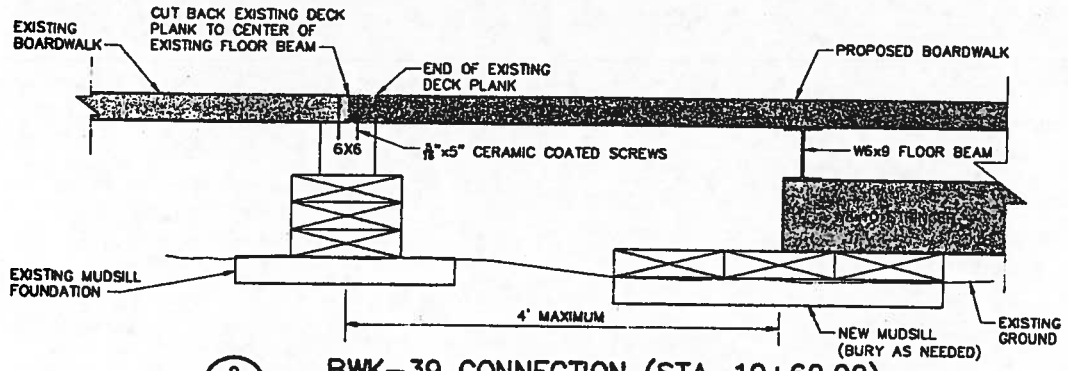


PROFILE VIEW

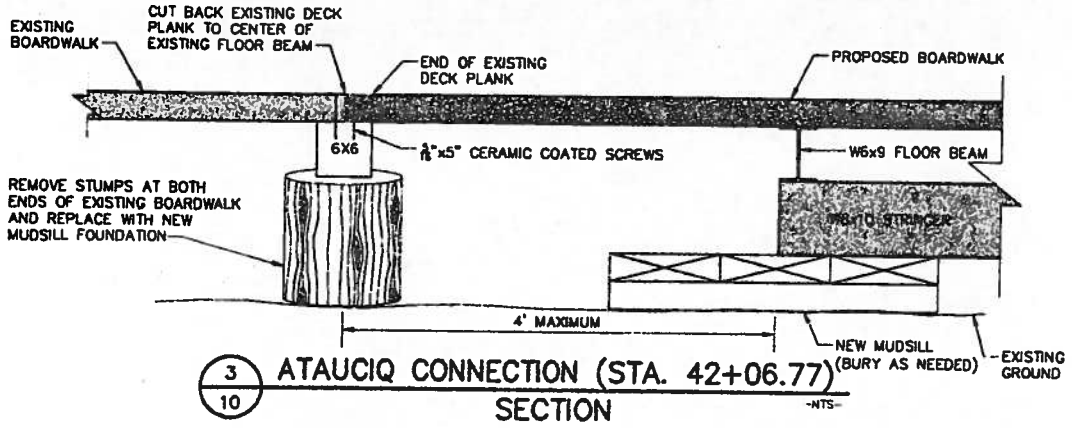
1/10 BW-34 RAMP CONNECTION -NTS-



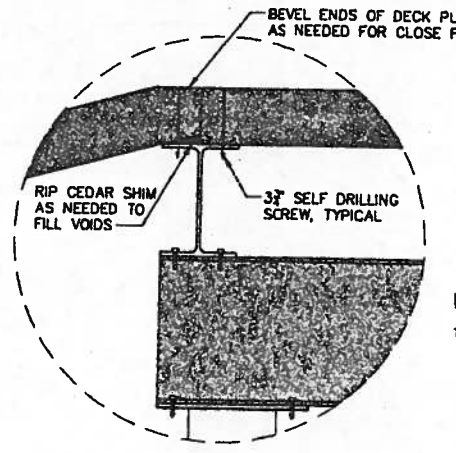
4/10 TRANSITION RAMP CONNECTING EXISTING BOARDWALK TO PROPOSED BOARDWALK - PROFILE -NTS-



2/10 BWK-39 CONNECTION (STA. 10+62.02) SECTION -NTS-



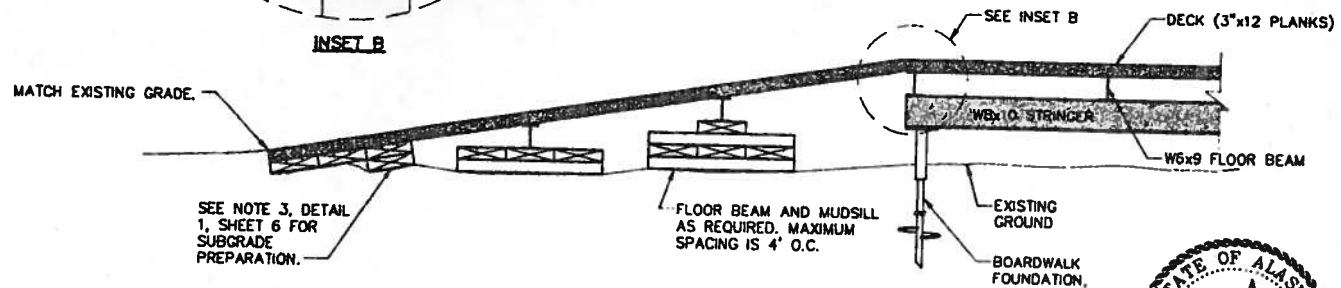
3/10 ATAUCIQ CONNECTION (STA. 42+06.77) SECTION -NTS-



INSET B

NOTE:

1. NEW BOARDWALK IS SHOWN WITH ANCHOR FOUNDATION. RAMP DETAIL ALSO APPLIES TO BOARDWALKS ON MUDSILL FOUNDATION.



5/10 TYPICAL ELEVATED RAMP CONNECTION AND ENDING SECTION -NTS-

STATE OF ALASKA 49TH Christopher M. Kinney CE9134 3/31/05 Registered Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA Rodney P. Kinney Associates, Inc. CONSULTING ENGINEERS & SURVEYORS

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF INDIAN AFFAIRS ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

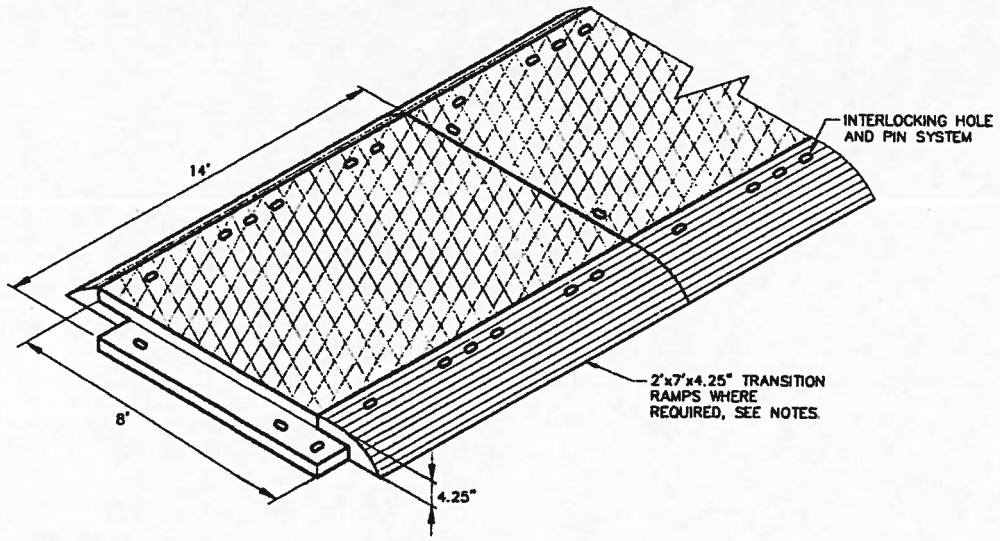
RAMP & CONNECTION DETAILS

DESIGNED BY:	AES
DRAWN BY:	SPK
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO. 10

10 OF 22

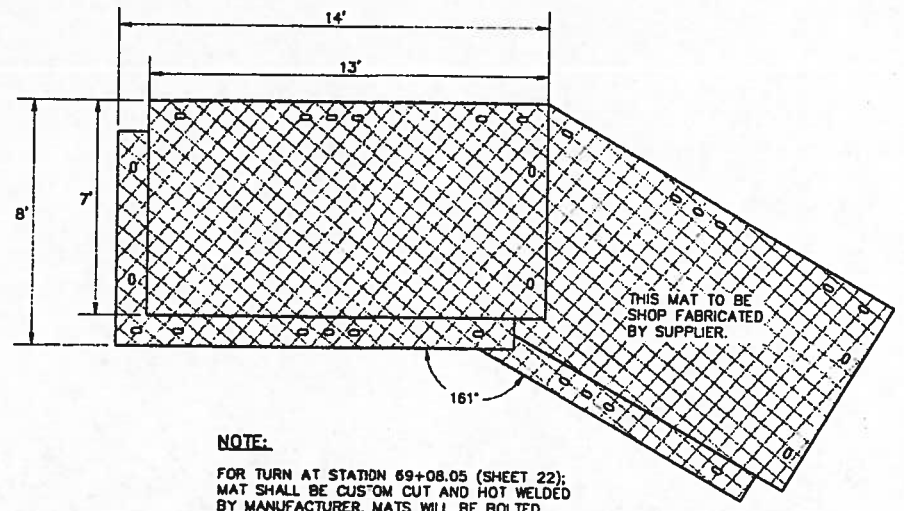
STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005



NOTE:

TRANSITION RAMPS WILL BE USED WHERE SHOWN IN PLAN VIEW. SEE PROFILE SHEETS 19 AND 22 FOR RAMP INSTALLATION LOCATION.

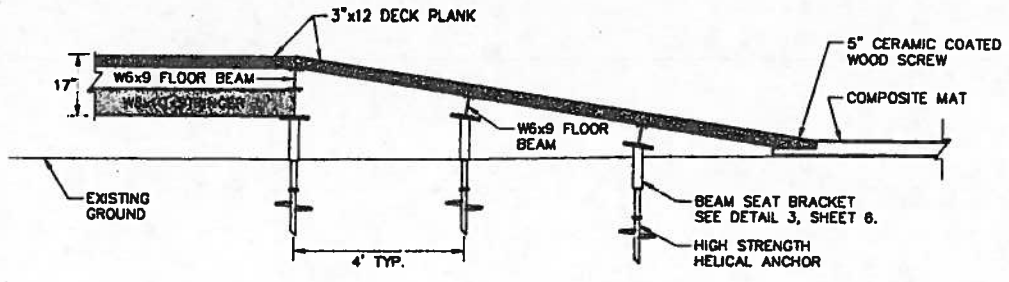
1/11 COMPOSITE MAT DETAIL -NTS-

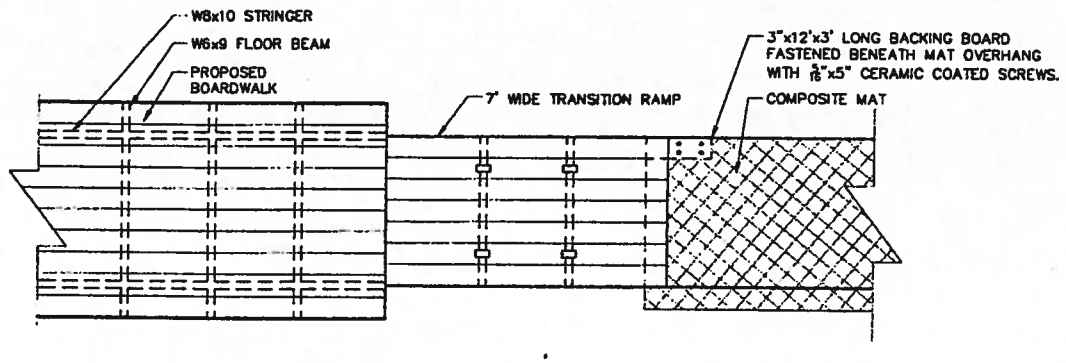


NOTE:

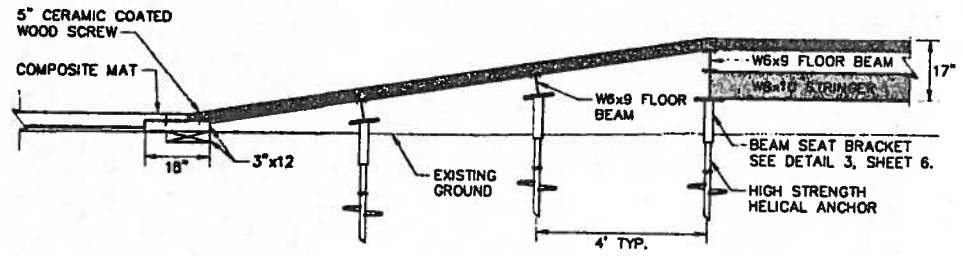
FOR TURN AT STATION 69+08.05 (SHEET 22); MAT SHALL BE CUSTOM CUT AND HOT WELDED BY MANUFACTURER. MATS WILL BE BOLTED TOGETHER AT CONNECTION.

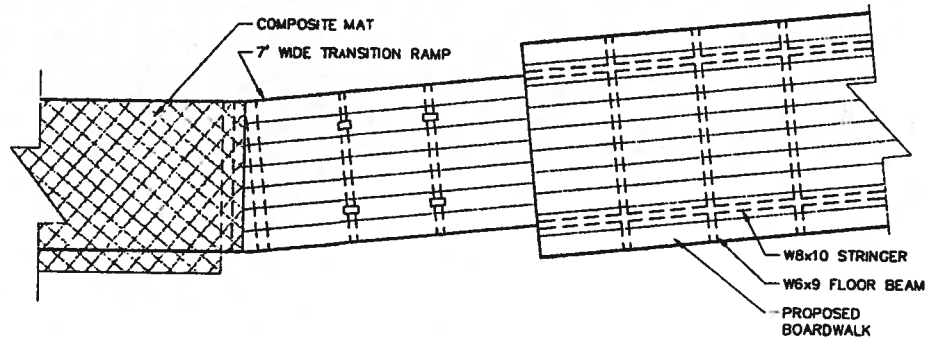
2/11 COMPOSITE MAT TURN DETAIL
BW-41, PLAN VIEW -NTS-





3/11 BOARDWALK AND COMPOSITE MAT CONNECTION (STA. 27+57.97) -NTS-





4/11 BOARDWALK AND COMPOSITE MAT CONNECTION (STA. 29+13.97) -NTS-

STATE OF ALASKA 49TH
Christopher M. Kinney
CE9134
9/30/05
Registered Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA Rodney P. Kinney Associates, Inc. CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

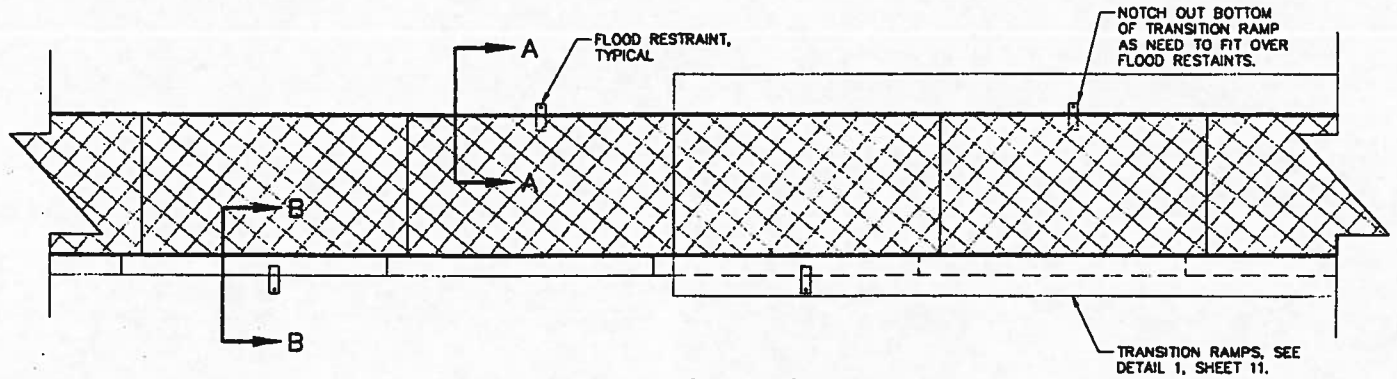
TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

COMPOSITE MAT DETAILS

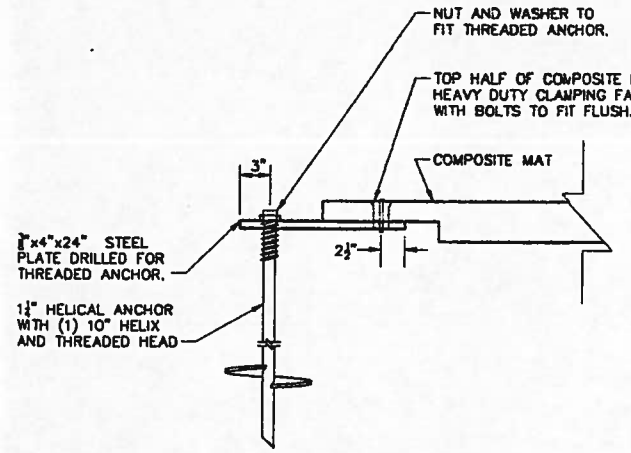
DESIGNED BY:	AES
DRAWN BY:	SPK
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO. 11
11 OF 22

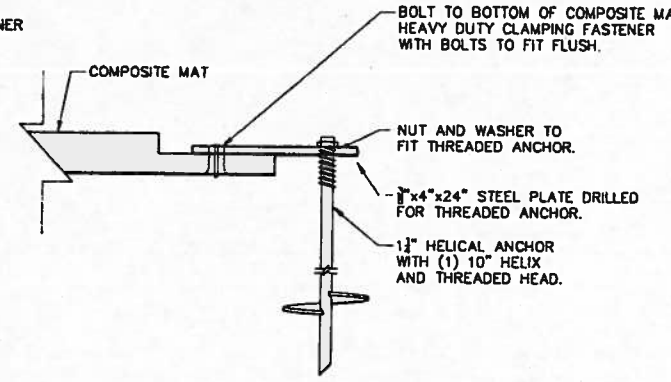
STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005



PLAN VIEW

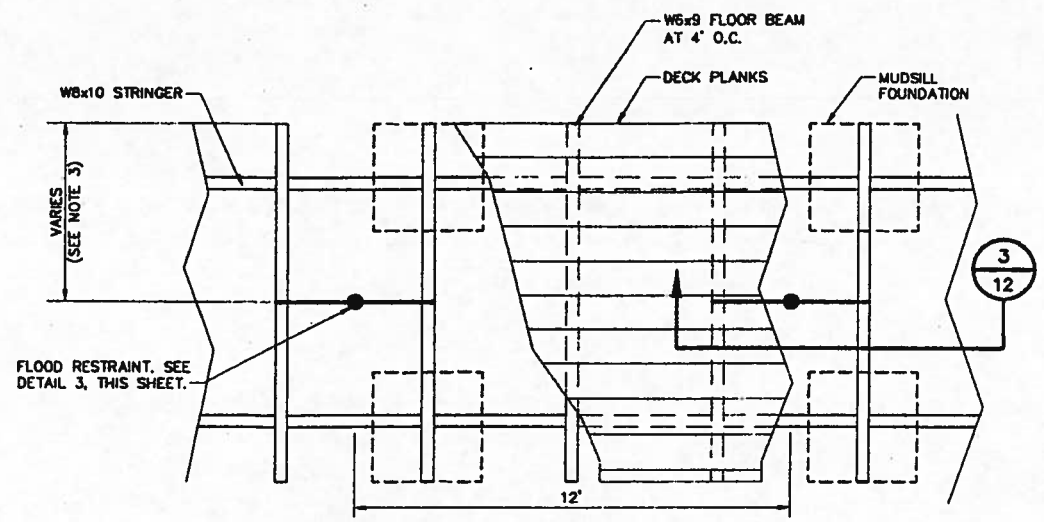


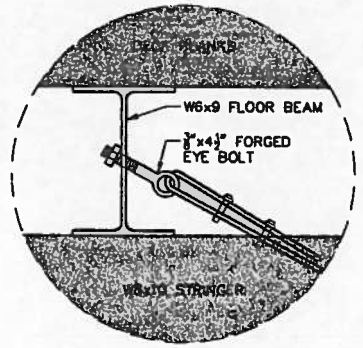
SECTION B–B



SECTION A–A

1/12 FLOOD RESTRAINTS FOR COMPOSITE MAT –NTS–





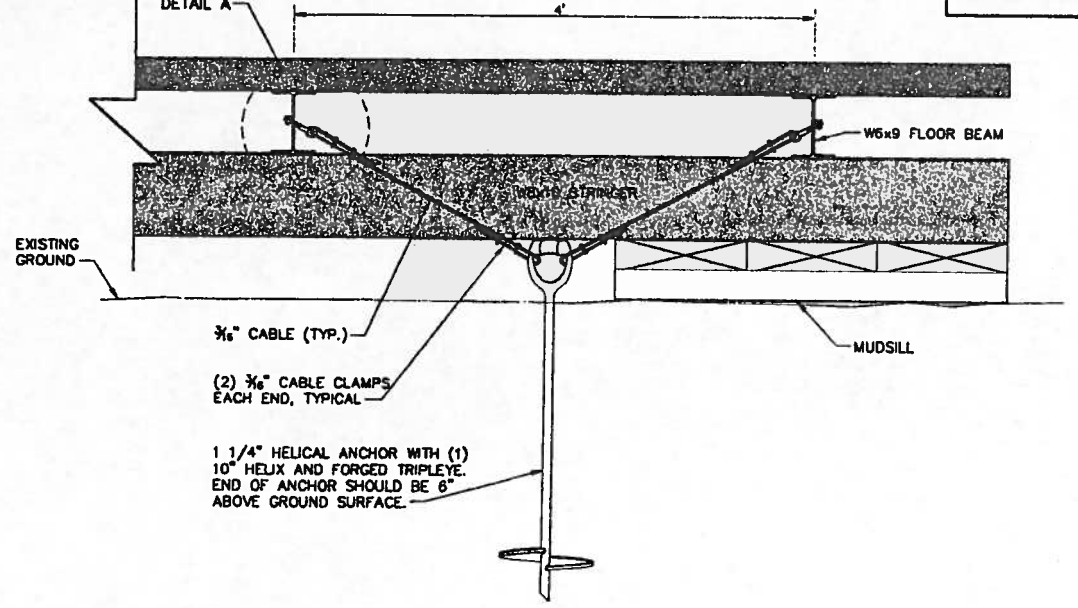
DETAIL A

FLOOD RESTRAINT SUMMARY TABLE		
BOARDWALK	FOUNDATION	STATION
BOARDWALK–39	MUDSILLS	5+00 – 6+52
BOARDWALK–34	MUDSILLS COMPOSITE MAT	35+00 – 35+08 35+08 – 35+60
NEQUVIK SOUTH	MUDSILLS	45+00 – 46+76.20
NEQUVIK NORTH	MUDSILLS	50+79.75 – 50+91.75
ATARVIK	MUDSILLS	55+00 – 55+55.94
SEVNEQ	MUDSILLS	60+00 – 63+03.42
BOARDWALK–41	COMPOSITE MAT	67+00 – 70+62.84 AROUND WORK/ ACCESS PAD

NOTES:

1. FLOOD RESTRAINTS ARE ONLY USED FOR BOARDWALK SECTIONS SUPPORTED BY MUDSILLS AND COMPOSITE MAT SYSTEM.
2. EACH RESTRAINT IS A 1½" SCREW ANCHOR WITH (1) 10" HELIX. RESTAINTS WILL BE ATTACHED TO TWO W6x9 FLOOR BEAMS, RESTRAINTS WILL BE SPACED AT 12' INTERVALS.
3. FLOOD RESTRAINT CONNECTED AT CENTER OF FLOOR BEAMS – 5' FOR 10' WIDE BOARDWALKS AND 3' FOR 6' WIDE BOARDWALKS.

2/12 FLOOD RESTRAINT FOR BOARDWALKS ON MUDSILLS PLAN VIEW –NTS–



NOTE:

ALL CABLE AND RELATED HARDWARE IS TO BE GALVANIZED.

3/12 FLOOD RESTRAINT FOR BOARDWALKS ON MUDSILLS PROFILE –NTS–

STATE OF ALASKA 49TH
Christopher M. Kinney
CM0134
11/30/05
Registered Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

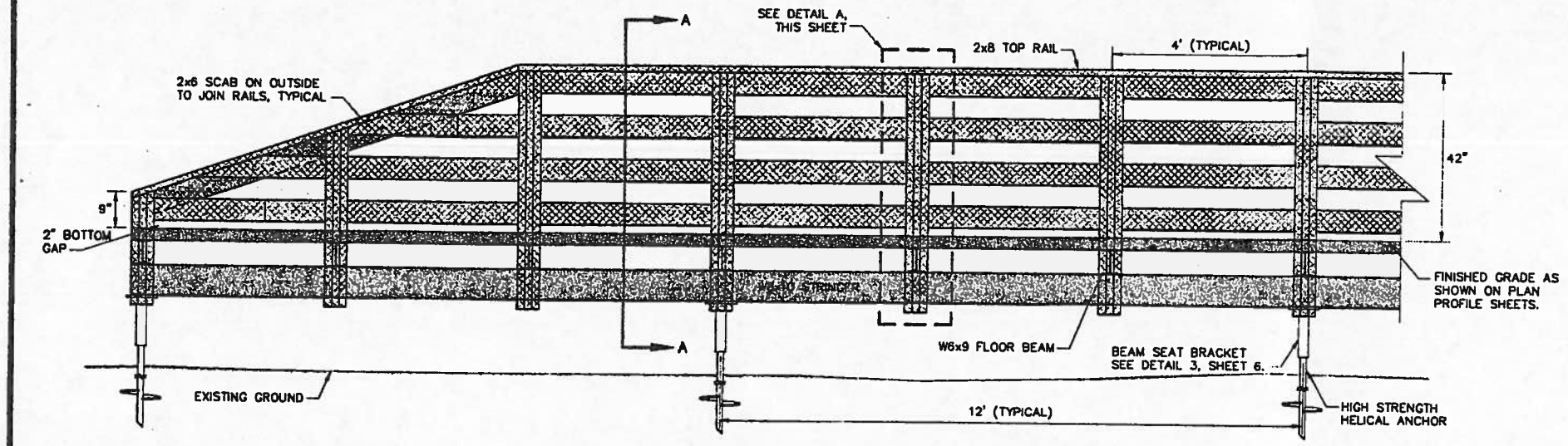
TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

FLOOD RESTRAINT DETAILS

DESIGNED BY:	AES
DRAWN BY:	JCS/SPK
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO. 12
12 OF 22

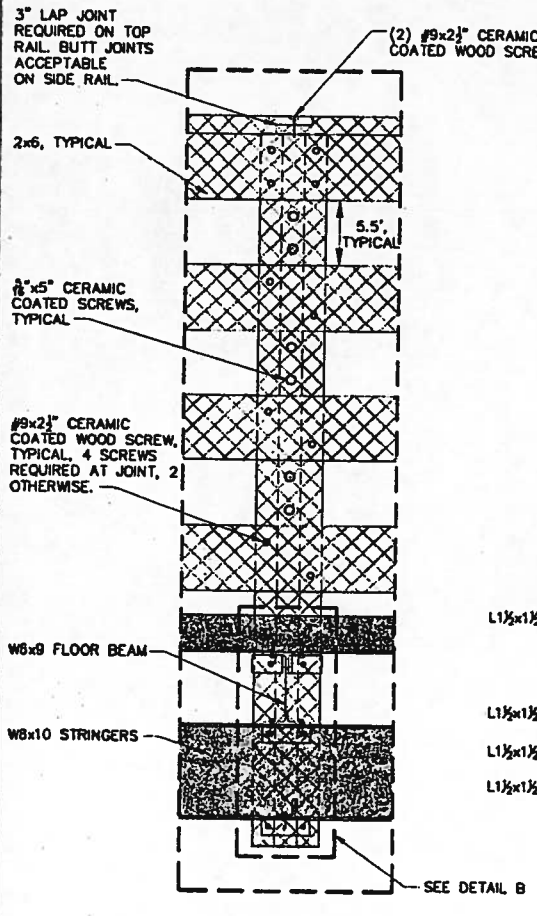
STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005



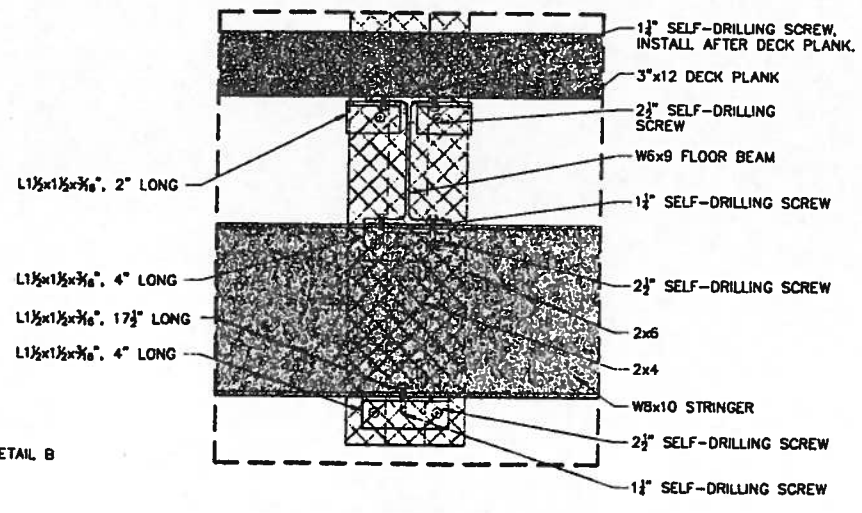
1/13 BOARDWALK RAILING
-NTS-

NOTES:

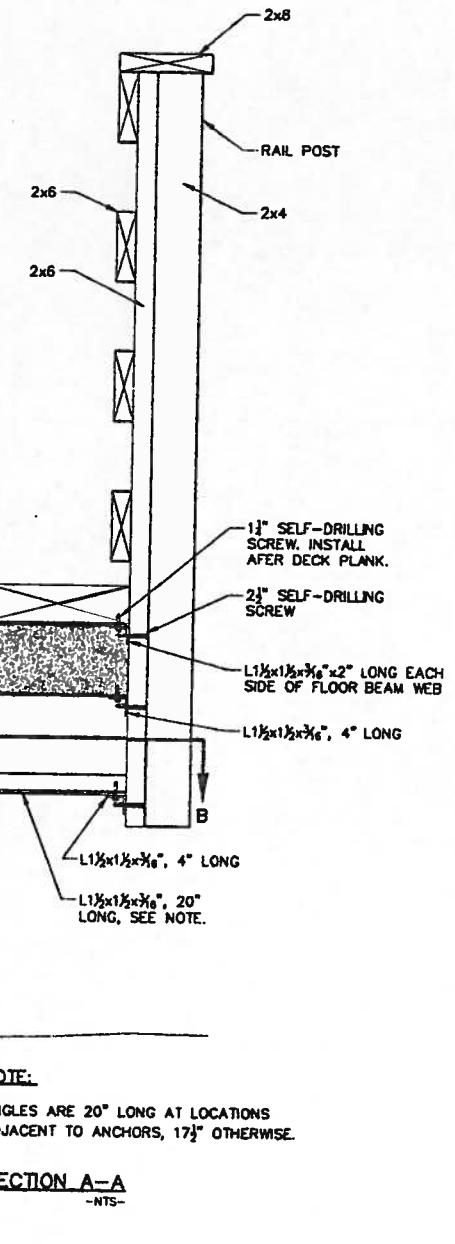
1. INSTALL RAILING ON ALL PORTIONS OF BOARDWALK ELEVATED MORE THAN 48 INCHES ABOVE GROUND LEVEL. RAILING SHALL START AND STOP AT A FLOOR BEAM.
2. ALL RAILS SHOULD BE CONSTRUCTED FROM 16' MATERIAL TO MINIMIZE THE NUMBER OF LAP JOINTS.
3. ALL RAIL JOINTS SHOULD OCCUR AT POST LOCATIONS, STAGGER JOINTS SO THAT NO MORE THAN 2 JOINTS OCCUR AT ONE POST.
4. ALL 3/16" STEEL TO 3/16" STEEL CONNECTIONS USE CORROSION RESISTANT SELF-DRILLING SCREW #12-24x1¼" HEX WASHER HEAD #5 POINT, (HILTI S-MD 12-24x1¼" HWH #5 KWIK-COTE OR APPROVED EQUIVALENT).
5. ALL WOOD TO STEEL CONNECTIONS OTHER THAN DECK PLANKS TO FLOOR BEAMS, USE CORROSION RESISTANT SELF-DRILLING SCREW #12-24x2½" PHILLIPS FLAT HEAD #4 POINT WITH WINGS, (HILTI S-WW 12-24x2½" PFH #4 WINGS OR APPROVED EQUIVALENT).
6. RAIL POSTS SHALL BE INSTALLED PLUMB.



DETAIL A
-NTS-

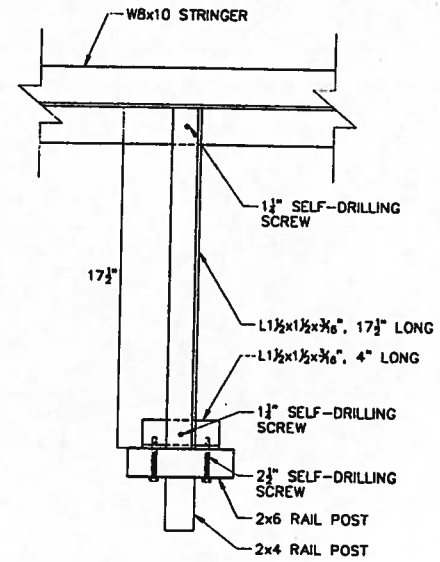


DETAIL B
-NTS-

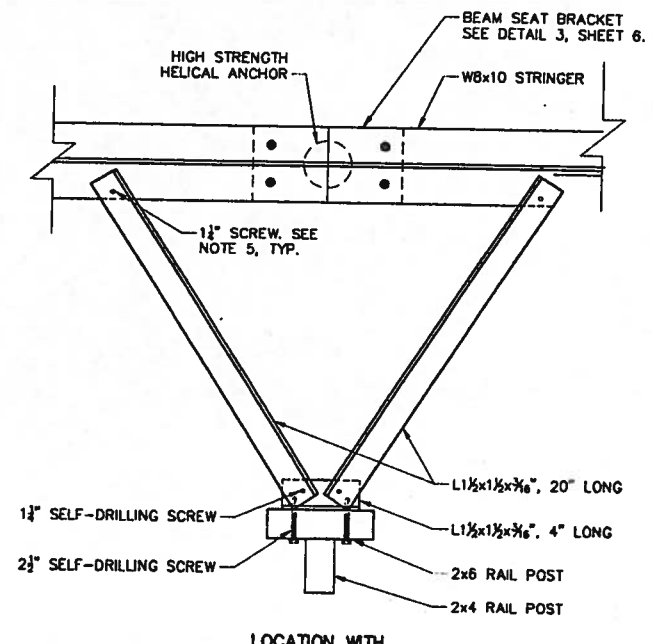


NOTE:
ANGLES ARE 20" LONG AT LOCATIONS ADJACENT TO ANCHORS, 17½" OTHERWISE.

SECTION A-A
-NTS-



LOCATION WITHOUT ANCHOR



LOCATION WITH ANCHOR

NOTE:
AT LOCATIONS WITH ANCHORS, (2) ANGLES ARE REQUIRED TO AVOID DRILLING INTO BEAM SEAT BRACKET.

SECTION B-B
-NTS-

STATE OF ALASKA 49TH
Christopher M. Rooney
CR9134
9/29/05
Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA Rodney P. Kinney Associates, Inc. CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

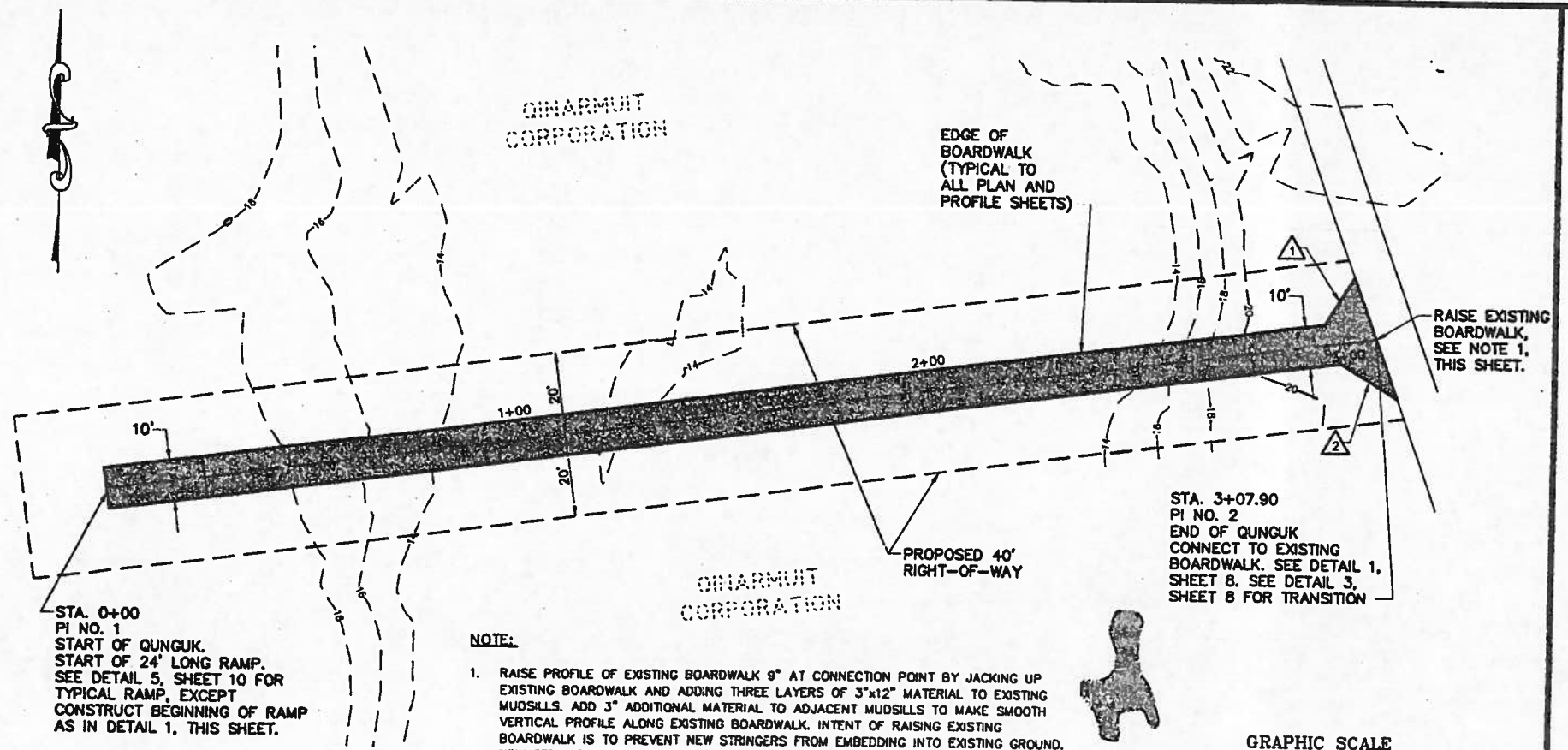
BOARDWALK RAILING DETAILS

DESIGNED BY:	AES
DRAWN BY:	SPK
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	AS SHOWN

SHEET NO. 13

13 OF 22

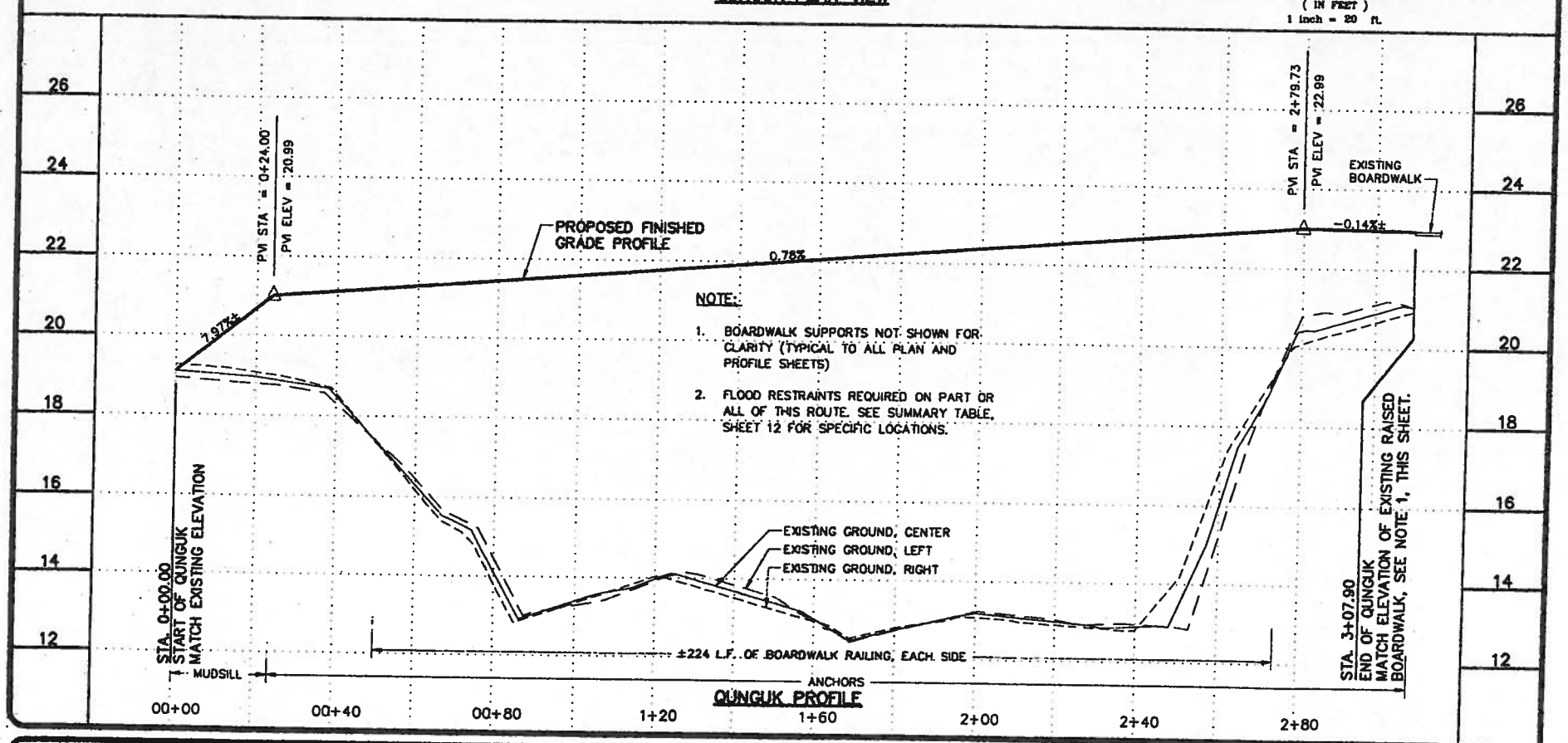
STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005



NOTE:

1. RAISE PROFILE OF EXISTING BOARDWALK 9" AT CONNECTION POINT BY JACKING UP EXISTING BOARDWALK AND ADDING THREE LAYERS OF 3"x12" MATERIAL TO EXISTING MUDSILLS. ADD 3" ADDITIONAL MATERIAL TO ADJACENT MUDSILLS TO MAKE SMOOTH VERTICAL PROFILE ALONG EXISTING BOARDWALK. INTENT OF RAISING EXISTING BOARDWALK IS TO PREVENT NEW STRINGERS FROM EMBEDDING INTO EXISTING GROUND. NEW STRINGERS SHALL REMAIN CLEAR OF TUNDRA. (EXISTING MUDSILLS LIKELY 2" WIDE WITH 6' LONGITUDINAL SPACING ALONG BOARDWALK. CONTRACTOR TO VERIFY.)

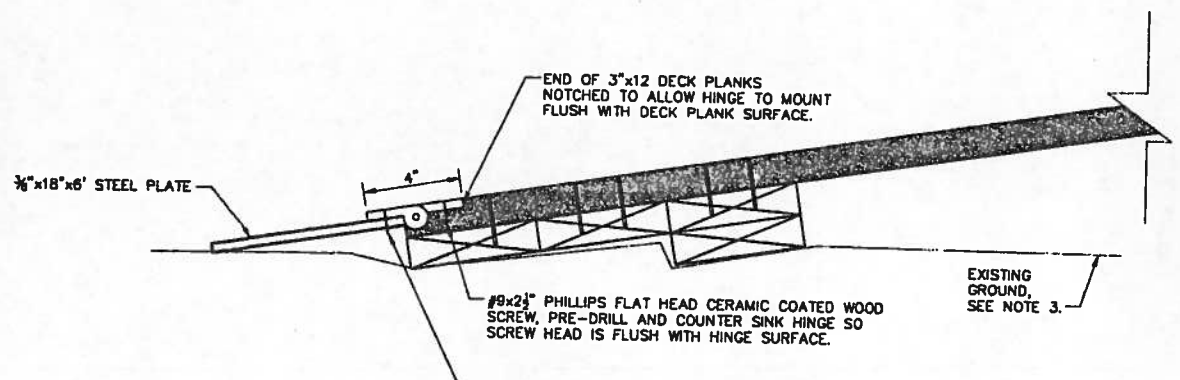
QUNGUK PLAN VIEW



NOTE:

1. BOARDWALK SUPPORTS NOT SHOWN FOR CLARITY (TYPICAL TO ALL PLAN AND PROFILE SHEETS)
2. FLOOD RESTRAINTS REQUIRED ON PART OR ALL OF THIS ROUTE. SEE SUMMARY TABLE, SHEET 12 FOR SPECIFIC LOCATIONS.

QUNGUK PROFILE



NOTES:

1. TYPE 301 STAINLESS STEEL HINGE, GAUGE THICKNESS 0.075", OPEN WIDTH 4", PIN DIAMETER 0.25", KNUCKLE WIDTH 2" MAXIMUM.
2. HINGE SCREWS SPACED AT 2", EACH SIDE.
3. PLACE RAMP END AND FOUNDATION DIRECTLY ON EXISTING VEGETATION WITHOUT REMOVING VEGETATIVE MAT, EXCEPT THAT INDIVIDUAL TUSSOCKS MAY BE CUT OFF AND REMOVED.

1/14 RAMP BEGINNING FOR QUNGUK (STA. 0+00) SECTION -NTS-

REV.	DATE	DESCRIPTION	BY

RPKA Rodney P. Kinney Associates, Inc. CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

PLAN/PROFILE
QUNGUK
STA. 0+00.00
TO
STA. 3+07.90

DESIGNED BY:	AES
DRAWN BY:	JCS/SPK
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	H 1"=20' V 1"=5'

SHEET NO. 14

14 OF 22

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005

QINARMUIT CORPORATION

STA. 5+00
PI NO. 3
START OF BW-39
START OF 24' LONG RAMP. SEE DETAIL 5, SHEET 10 FOR RAMP CONNECTION

STA. 5+17.31
PI NO. 4
TURN BOARDWALK 10°±

PROPOSED 20' RIGHT-OF-WAY

6'

STA. 8+27.34
PI NO. 5
TURN BOARDWALK 35°±
SEE DETAIL 4, SHEET 8.

PROPOSED 20' RIGHT-OF-WAY

PROPOSED 16' RIGHT-OF-WAY

6'

STA. 10+62.02
PI NO. 6
END OF BW-39
CONNECT TO EXISTING BOARDWALK. SEE DETAIL 2, SHEET 10.

HOUSE

SHED

HOUSE

QINARMUIT CORPORATION

N44°36'20"E 17.31

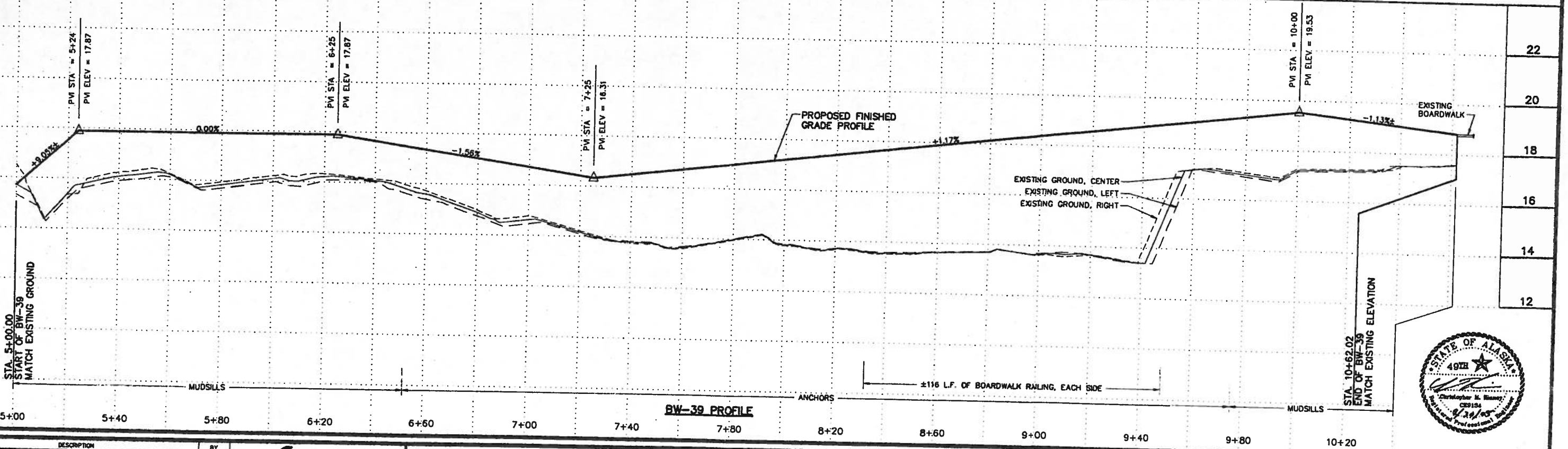
NOTES:

FLOOD RESTRAINTS REQUIRED ON PART OR ALL OF THIS ROUTE. SEE SUMMARY TABLE, SHEET 12 FOR SPECIFIC LOCATIONS.

BW-39 PLAN VIEW

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.



BW-39 PROFILE

STATE OF ALASKA 49TH
Christopher M. Mooney
CE9134
9/30/05
Registered Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, Inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

PLAN/PROFILE
BW-39
STA. 5+00.00
TO
STA. 10+62.02

DESIGNED BY:	AES
DRAWN BY:	JCS
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	H 1"=20' V 1"=5'

SHEET NO.
15
15 OF 22

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005

U.S.S. 4429, TRACT B, BLOCK 2

U.S.S. 4429, TRACT C, BLOCK 3

CEMETERY

U.S.S. 4429 TRACT B BLOCK 1

OLD CHURCH

GRAVE SITES

QINARMUIT CORPORATION

QINARMUIT CORPORATION

QINARMUIT CORPORATION

STA. 12+00.00
PI NO. 7
START OF AGAYUYARVIK
CONNECT TO EXISTING
BOARDWALK. SEE
DETAIL 1, SHEET 8.

STA. 12+63.47
PI NO. 8
TURN BOARDWALK 17'±
SEE DETAIL 4, SHEET 8.

SEE DETAIL 3,
SHEET 8 FOR
TRANSITION.

N77°30'53"E 63.47'

S85°16'12"E
54.89'

S82°48'12"E 232.79'

STA. 13+18.38
PI NO. 9
TURN BOARDWALK 4'±
SEE DETAIL 4, SHEET 8.

REMOVE EXISTING
BOARDWALK, SEE
GENERAL NOTE 11.

PROPOSED 30'
RIGHT-OF-WAY

STA. 16+11.16
PI NO. 10
TURN BOARDWALK 46'±
SEE DETAIL 4, SHEET 8.

MATCH LINE STA. 17+20, SEE SHEET 17

AGAYUYARVIK PLAN VIEW

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

PROPOSED FINISHED
GRADE PROFILE

PVI STA = 13+00
PVI ELEV = 19.98

EXISTING BOARDWALK

+0.74%±

-0.31%±

EXISTING GROUND, CENTER
EXISTING GROUND, LEFT
EXISTING GROUND, RIGHT

STA. 12+00.00
START OF AGAYUYARVIK
MATCH EXISTING ELEVATION

±28 L.F. OF BOARDWALK RAILING, EACH SIDE

±120 L.F. OF BOARDWALK RAILING, EACH SIDE

ANCHORS

MATCH LINE STA. 17+20, SEE SHEET 17

AGAYUYARVIK PROFILE

STATE OF ALASKA 49TH
Christopher M. Rooney
CE9136
9.19.05
Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, Inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

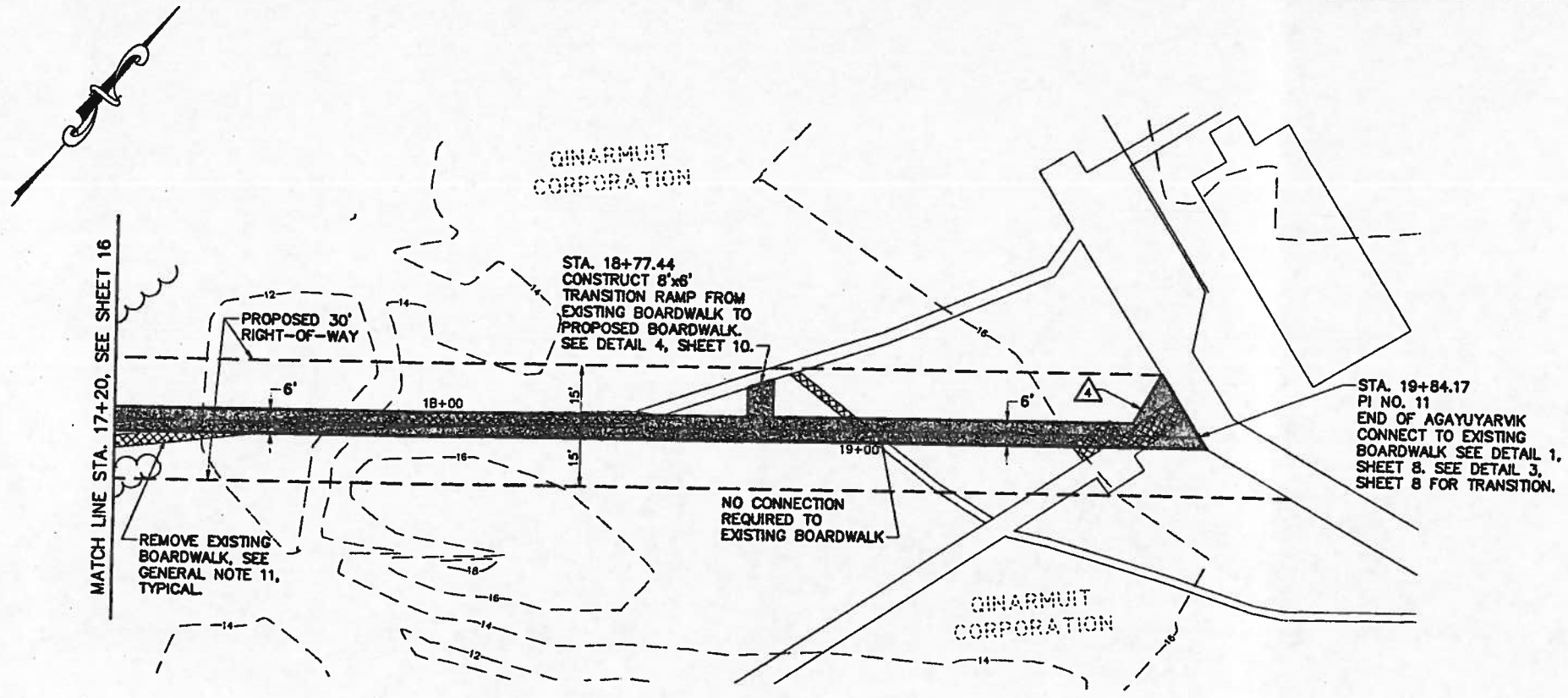
TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

PLAN/PROFILE
AGAYUYARVIK
STA. 12+00.00
TO
STA. 17+20.00

DESIGNED BY:	AES
DRAWN BY:	JCS
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	H 1"=20' V 1"=5'

SHEET NO.
16
16 OF 22

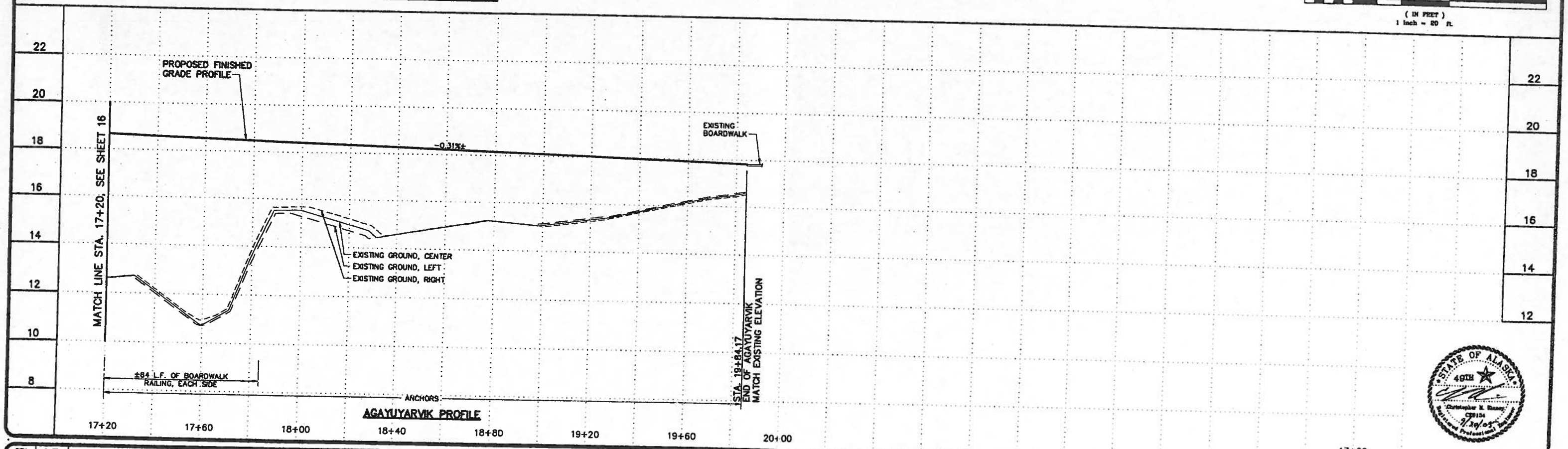
STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005



AGAYUYARVIK PLAN VIEW

GRAPHIC SCALE

(IN FEET)
1 inch = 80 ft.



AGAYUYARVIK PROFILE

STATE OF ALASKA 49TH
Christopher M. Rooney
CE9134
11/9/05
Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinsey Associates, Inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

PLAN/PROFILE
AGAYUYARVIK
STA. 17+20.00
TO
STA. 19+84.17

DESIGNED BY:	AES
DRAWN BY:	JCS
APPROVED BY:	MAA
DATE:	9/30/05

SHEET NO.
17
17 OF 22

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005

STA. 25+00
PI NO. 12
START OF PATLUSKA ST.
CONNECT TO EXISTING BOARDWALK. SEE DETAIL 2, SHEET 8. SEE DETAIL 3, SHEET 8 FOR TRANSITION.

STA. 25+56.78
PI NO. 13
TURN BOARDWALK 40'±
SEE DETAIL 4, SHEET 8.

GINARMUIT CORPORATION

REMOVE EXISTING BOARDWALK, SEE GENERAL NOTE 11

PROPOSED 40' RIGHT-OF-WAY

GINARMUIT CORPORATION

STA. 27+23.30
PI NO. 14
TURN BOARDWALK 46'±
SEE DETAIL 4, SHEET 8.

STA. 27+57.97
START OF COMPOSITE MAT SECTION. SEE DETAIL 3, SHEET 11 FOR CONNECTION.

HOUSE

S57°53'47"E
190.7'

REMOVE EXISTING BOARDWALK, SEE GENERAL NOTE 11

STA. 28+08.72
CUT BACK EXISTING BOARDWALK AS REQUIRED TO CONNECT TO EXISTING BOARDWALK SIMILAR TO DETAIL 4, SHEET 11 WITH MUDSILL FOUNDATION.

HOUSE

STA. 28+74.97
START OF 7'x26' COMPOSITE MAT PARKING AREA.

STA. 28+88.78
CONNECT TO EXISTING BOARDWALK.

STA. 29+13.97
PI NO. 15
TURN BOARDWALK 6'±.
SEE DETAIL 4, SHEET 8.
END OF COMPOSITE MAT SECTION SEE DETAIL 4, SHEET 11 FOR CONNECTION.

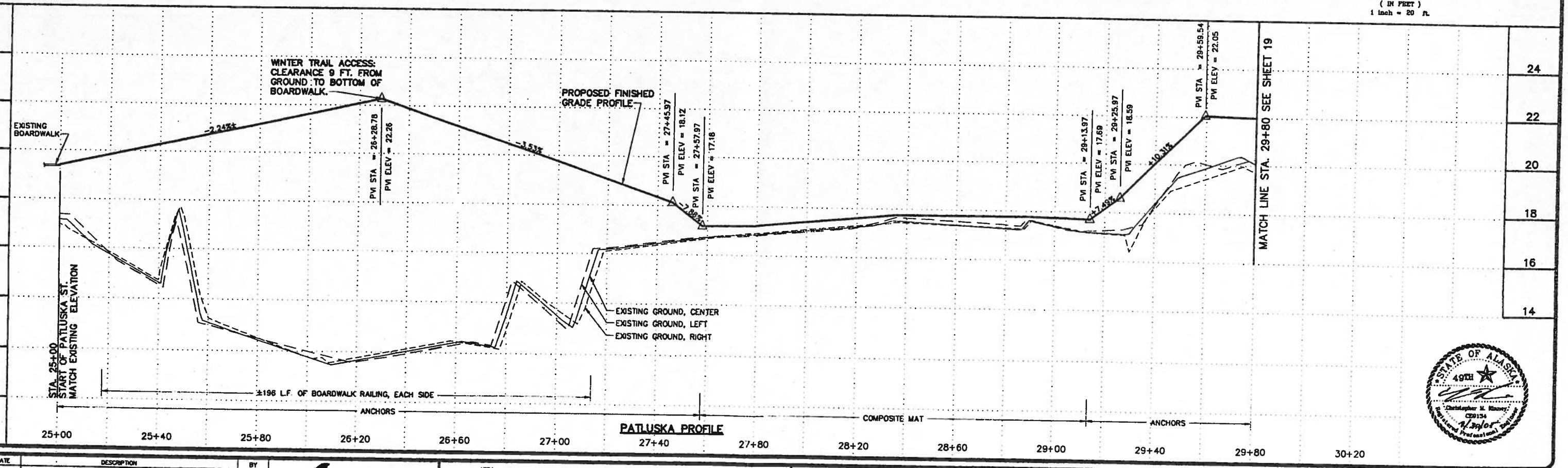
MATCH LINE STA. 29+80 SEE SHEET 19

NOTE:

STA. 27+57.97 TO STA. 29+13.97 IS TO BE CONSTRUCTED FROM COMPOSITE MAT (DURA-BASE OR APPROVED EQUIVALENT) PLACED ON THE EXISTING GROUND SURFACE. NO GROUND PREPARTION IS REQUIRED. COMPOSITE MATS FOLLOW EXISTING GROUND.

PATLUSKA PLAN VIEW

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.



PATLUSKA PROFILE

STATE OF ALASKA 49TH
Christopher M. Rooney
CM0134
Registered Professional Engineer
9/30/05

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, Inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

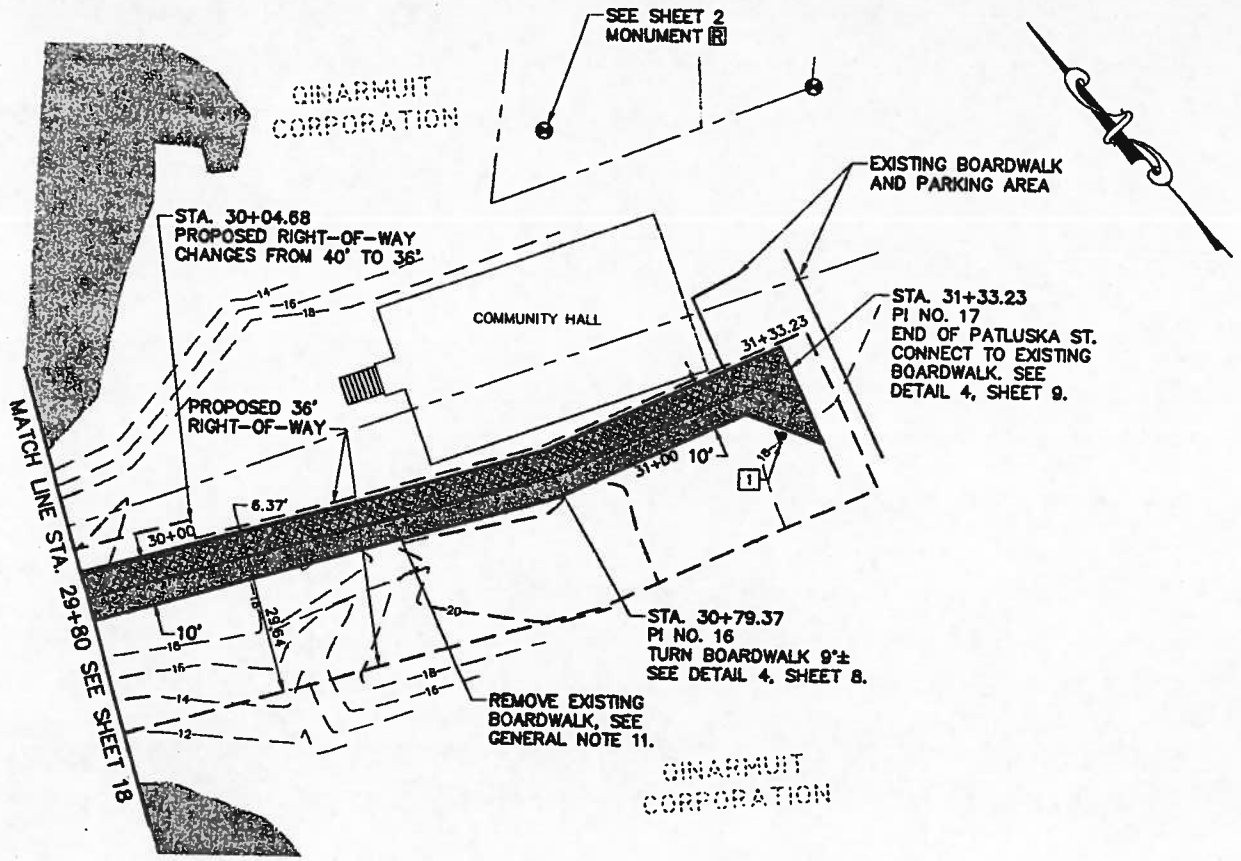
TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

PLAN/PROFILE
PATLUSKA ST.
STA. 25+00.00
TO
STA. 29+80.00

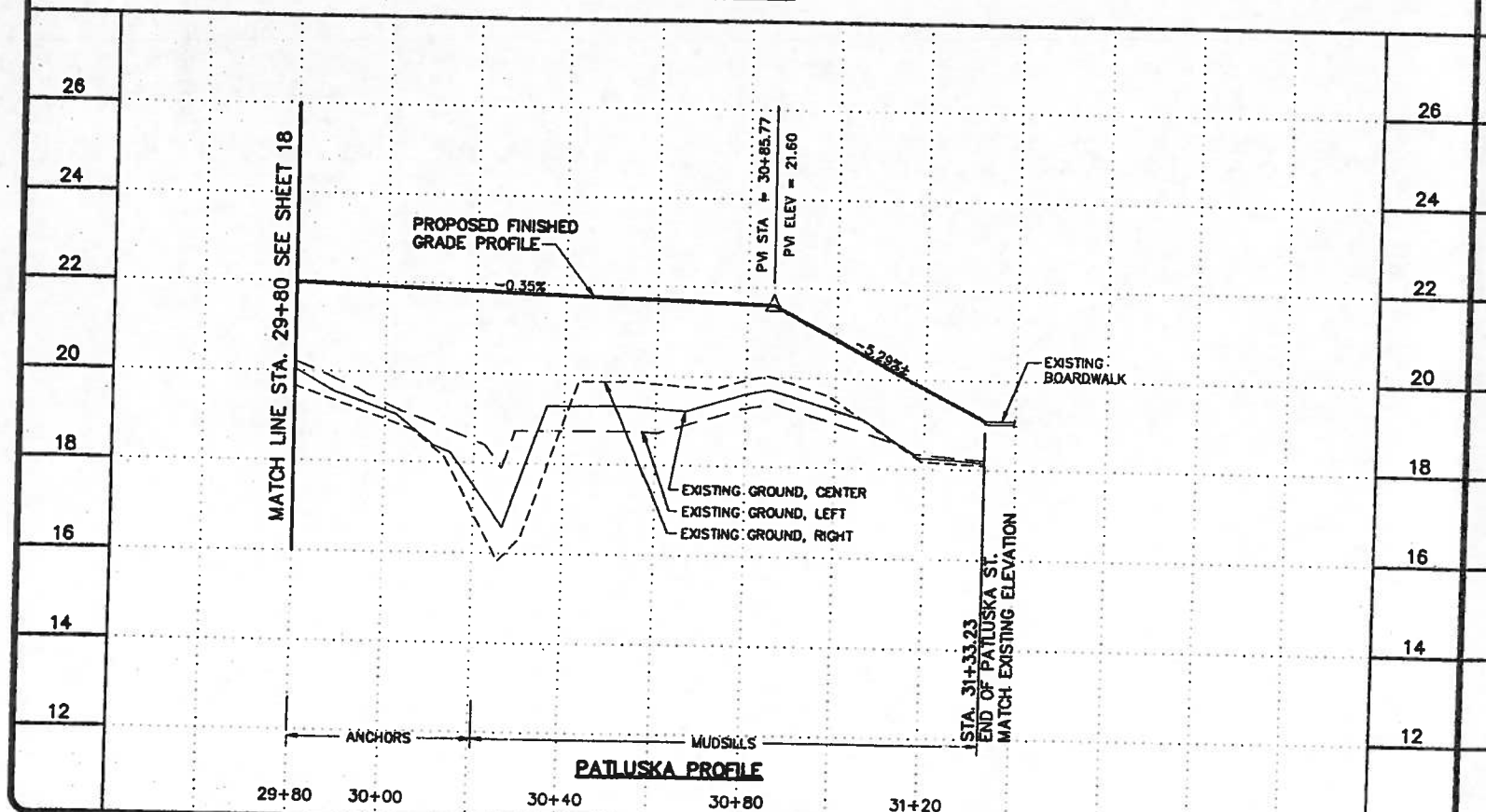
DESIGNED BY:	AES
DRAWN BY:	JCS
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	H 1"=20' V 1"=5'

SHEET NO.
18
18 OF 22

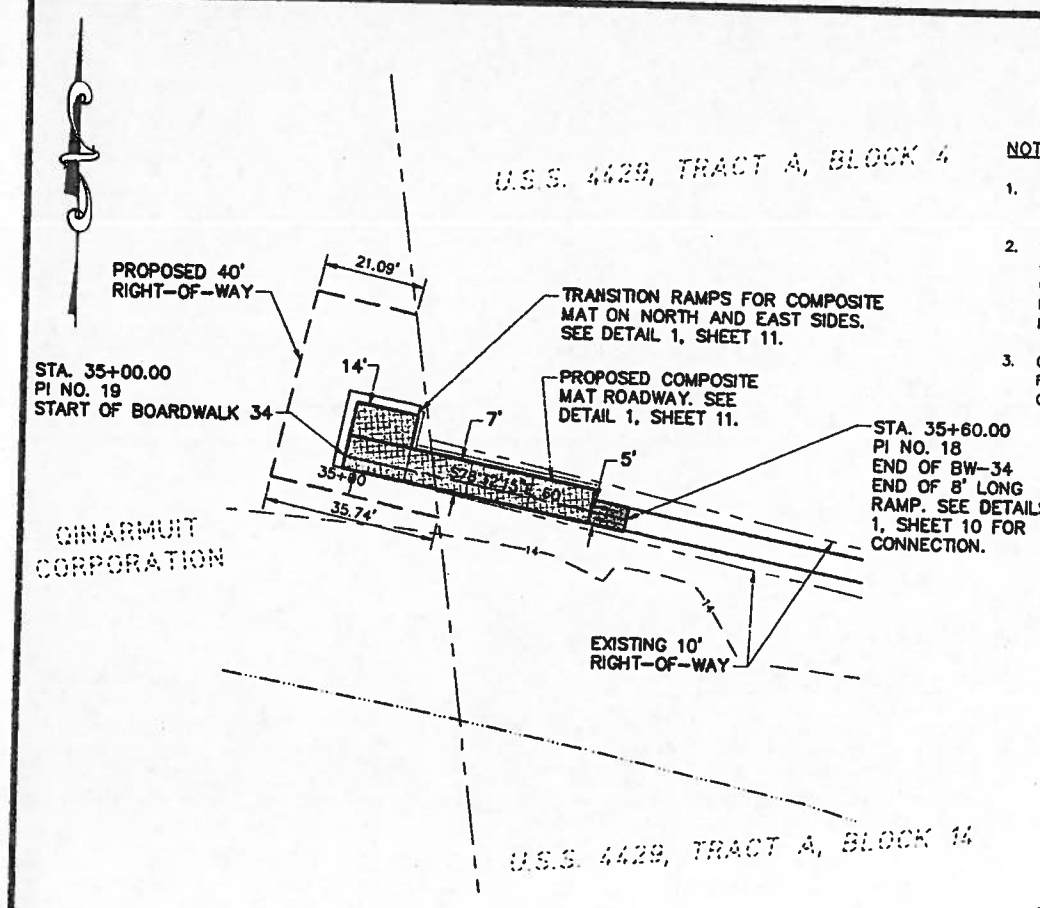
STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005



PATLUSKA PLAN VIEW



PATLUSKA PROFILE



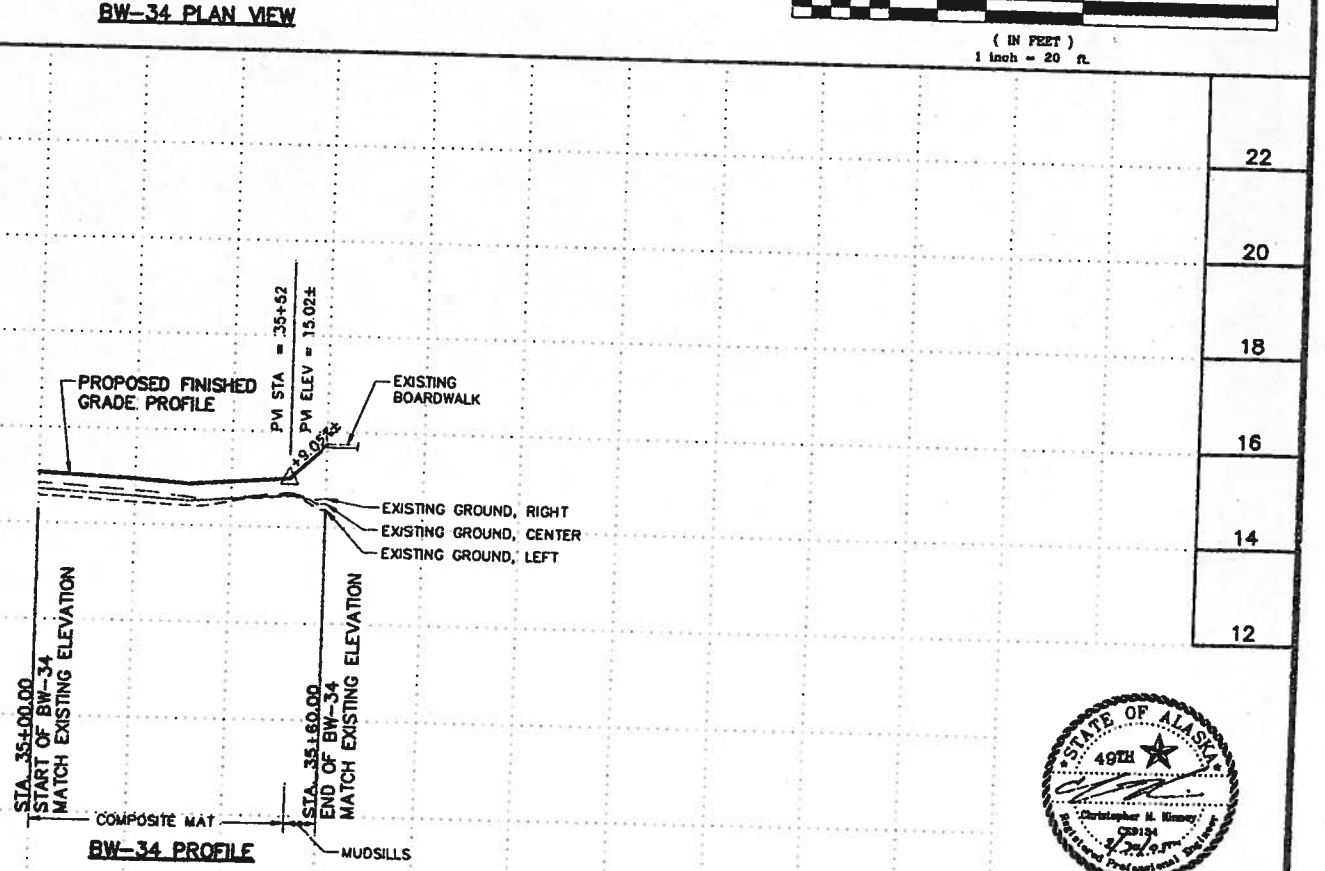
BW-34 PLAN VIEW

NOTES:

1. FLOOD RESTRAINTS REQUIRED ON PART OR ALL OF THIS ROUTE. SEE SUMMARY TABLE, SHEET 12 FOR SPECIFIC LOCATIONS.
2. STA. 35+00.00 TO STA. 35+52.00 IS TO BE CONSTRUCTED FROM COMPOSITE MAT (DURA-BASE OR APPROVED EQUIVALENT) PLACED ON THE EXISTING GROUND SURFACE. MINOR LEVELING MAY BE NEEDED TO ELIMINATE RUTS AND HIGH POINTS. COMPOSITE MATS FOLLOW EXISTING GROUND.
3. CENTERLINE OF 7' WIDE COMPOSITE MAT IS OFFSET 2' NORTHERLY FROM ALIGNMENT SO SOUTHERLY EDGE OF MATS MATCHES EDGE OF BOARDWALK AND REMAINS IN RIGHT-OF-WAY AS SHOW.

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.



BW-34 PROFILE

REV	DATE	DESCRIPTION	BY

RPKA Rodney P. Kinney Associates, Inc. CONSULTING BUSINESS & ECONOMISTS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

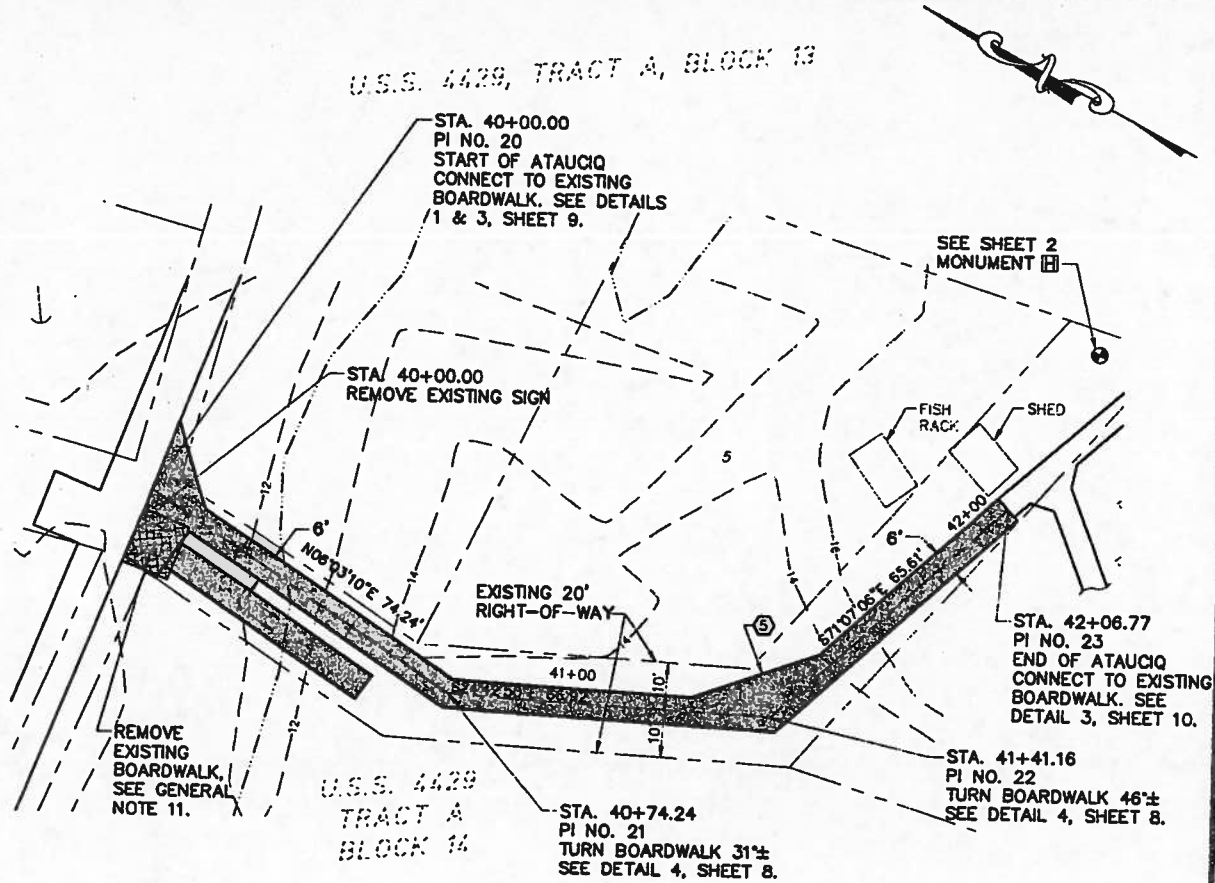
TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

PLAN/PROFILE
PATLUSKA ST. STA. 29+80.00 TO STA. 31+33.23
BW-34 STA. 35+00.00 TO STA. 35+60.00

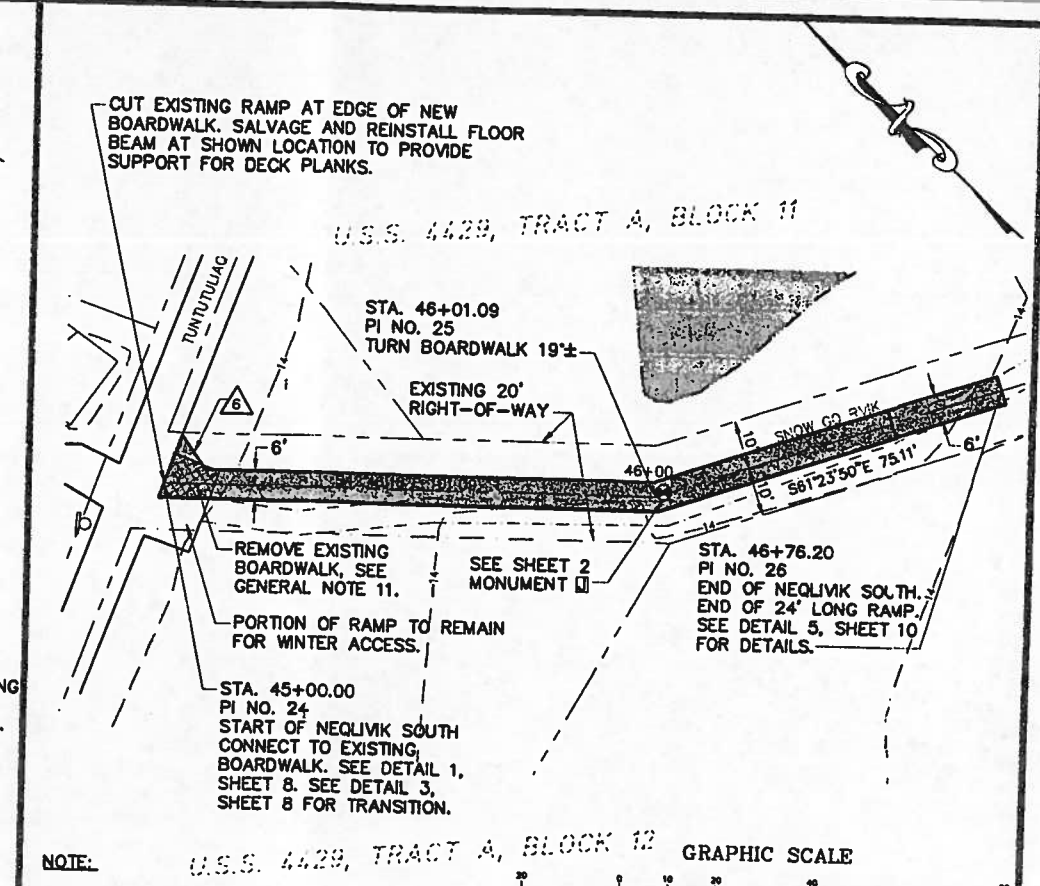
DESIGNED BY:	AES
DRAWN BY:	JCS
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	H 1"=20' V 1"=5'

SHEET NO. 19
19 OF 22

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005



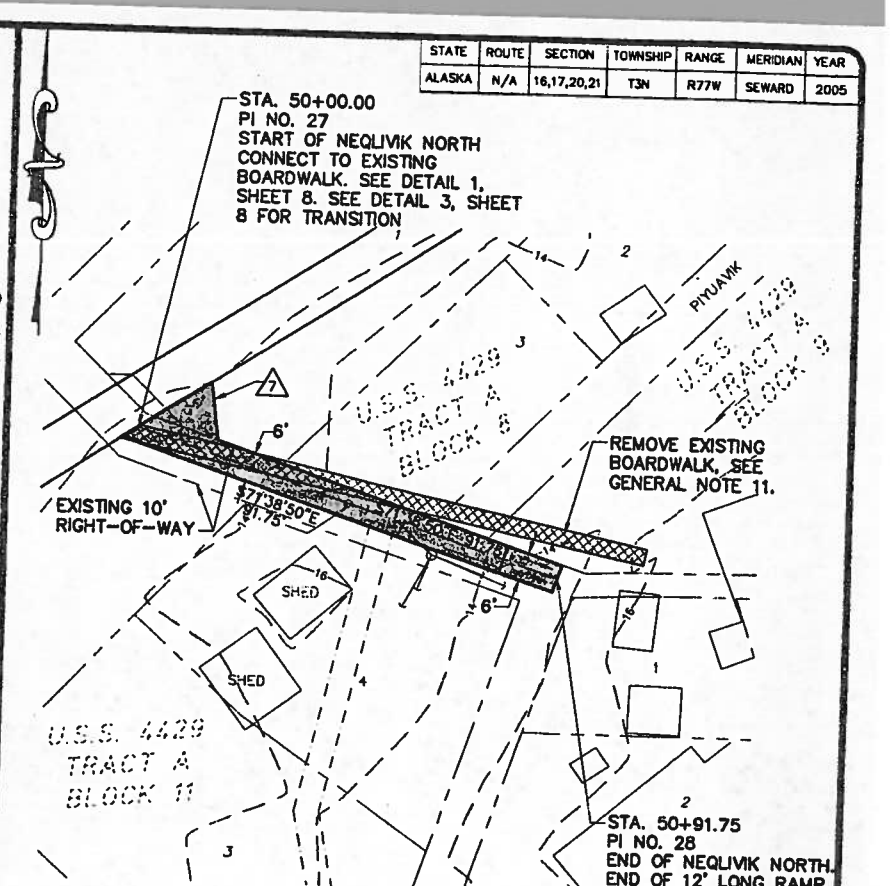
ATAUCIQ PLAN VIEW



NOTE:

FLOOD RESTRAINTS REQUIRED ON PART OR ALL OF THIS ROUTE. SEE SUMMARY TABLE, SHEET 12 FOR SPECIFIC LOCATIONS.

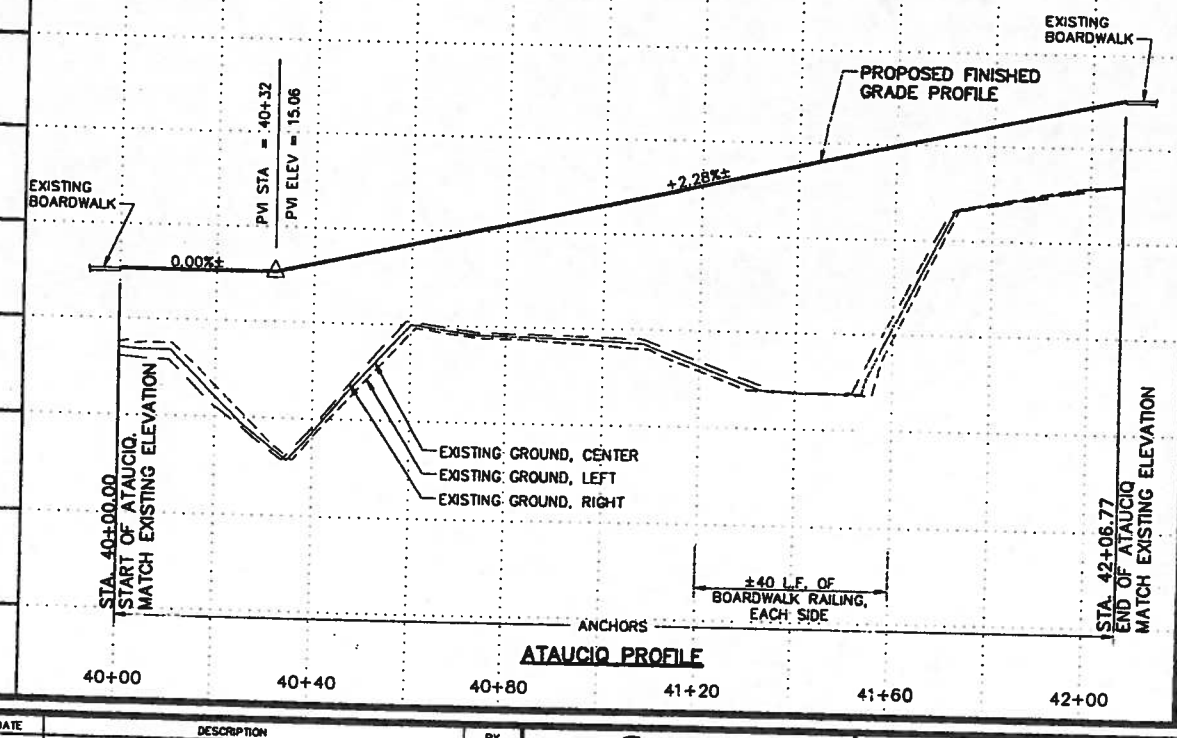
NEQLIVIK SOUTH PLAN VIEW



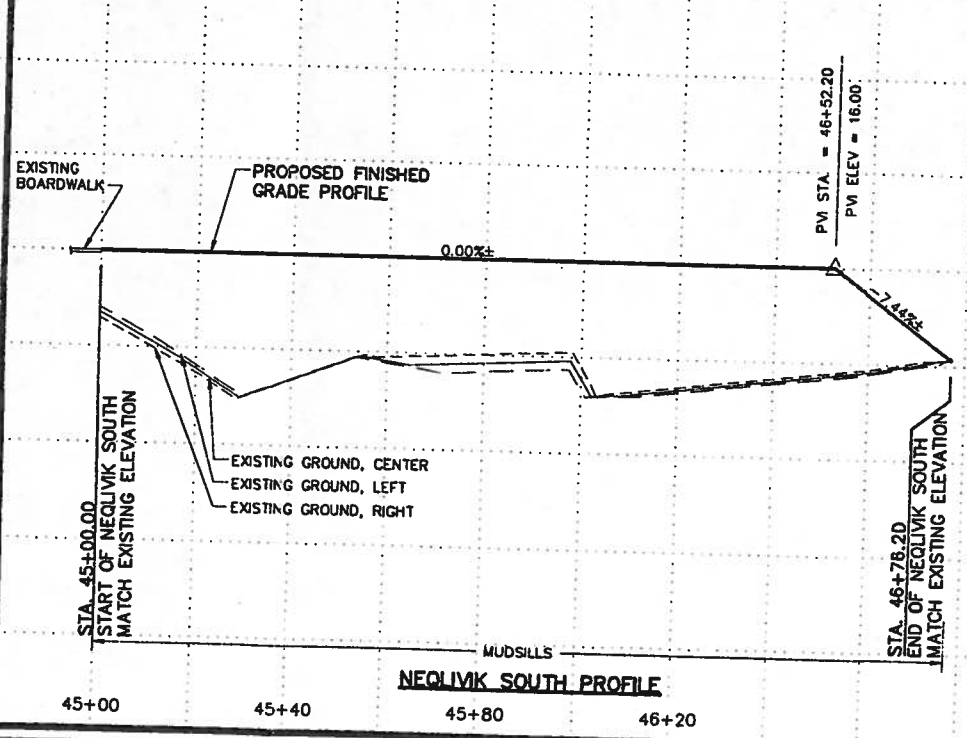
NOTE:

FLOOD RESTRAINTS REQUIRED ON PART OR ALL OF THIS ROUTE. SEE SUMMARY TABLE, SHEET 12 FOR SPECIFIC LOCATIONS.

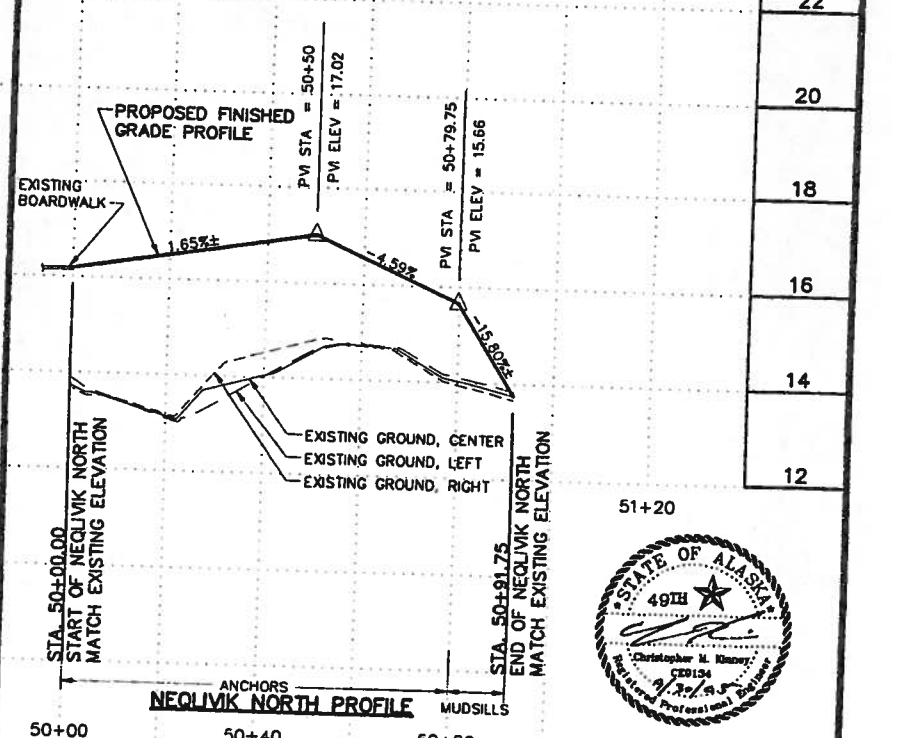
NEQLIVIK NORTH PLAN VIEW



ATAUCIQ PROFILE



NEQLIVIK SOUTH PROFILE



NEQLIVIK NORTH PROFILE

51+20

STATE OF ALASKA 49TH
Christopher M. Kinney
CE0134
Registered Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, Inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

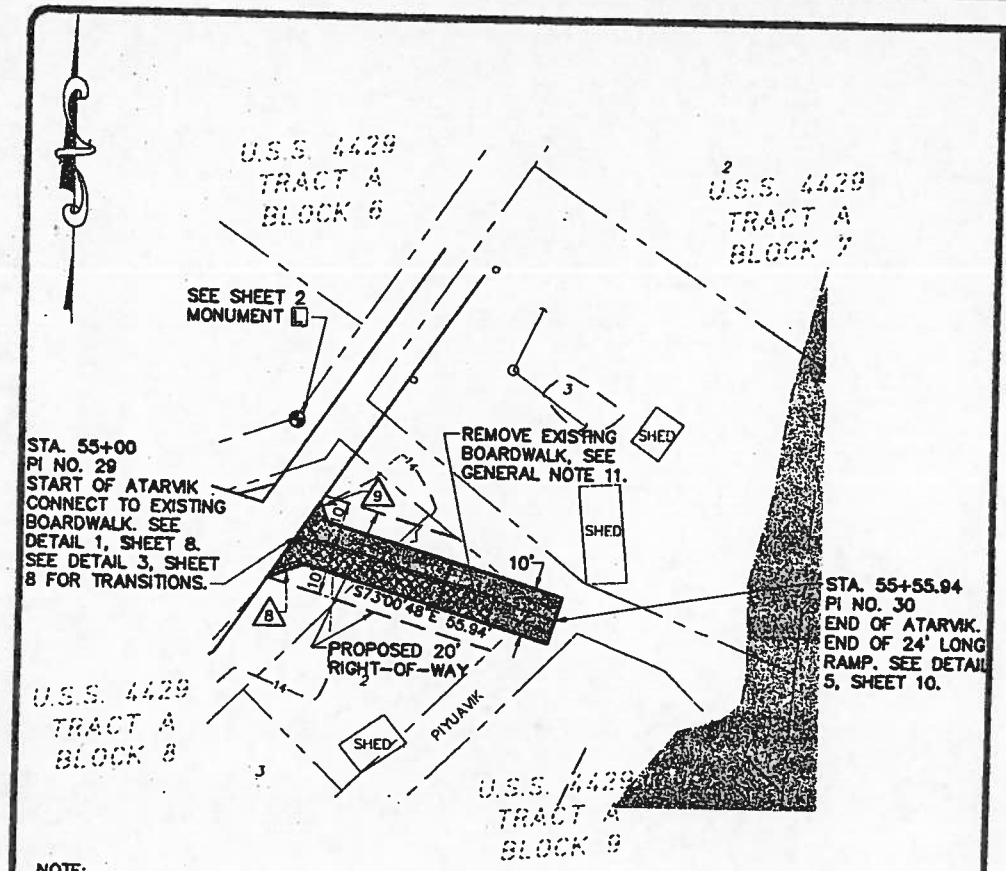
PLAN/PROFILE

ATAUCIQ	NEQLIVIK SO.	NEQLIVIK NO.
STA. 40+00.00 TO STA. 42+06.77	STA. 45+00.00 TO STA. 46+76.20	STA. 50+00.00 TO STA. 50+91.75

DESIGNED BY:	AES
DRAWN BY:	JCS
APPROVED BY:	MAA
DATE:	9/30/05
SCALE:	H 1"=20' V 1"=5'

SHEET NO.
20
20 OF 22

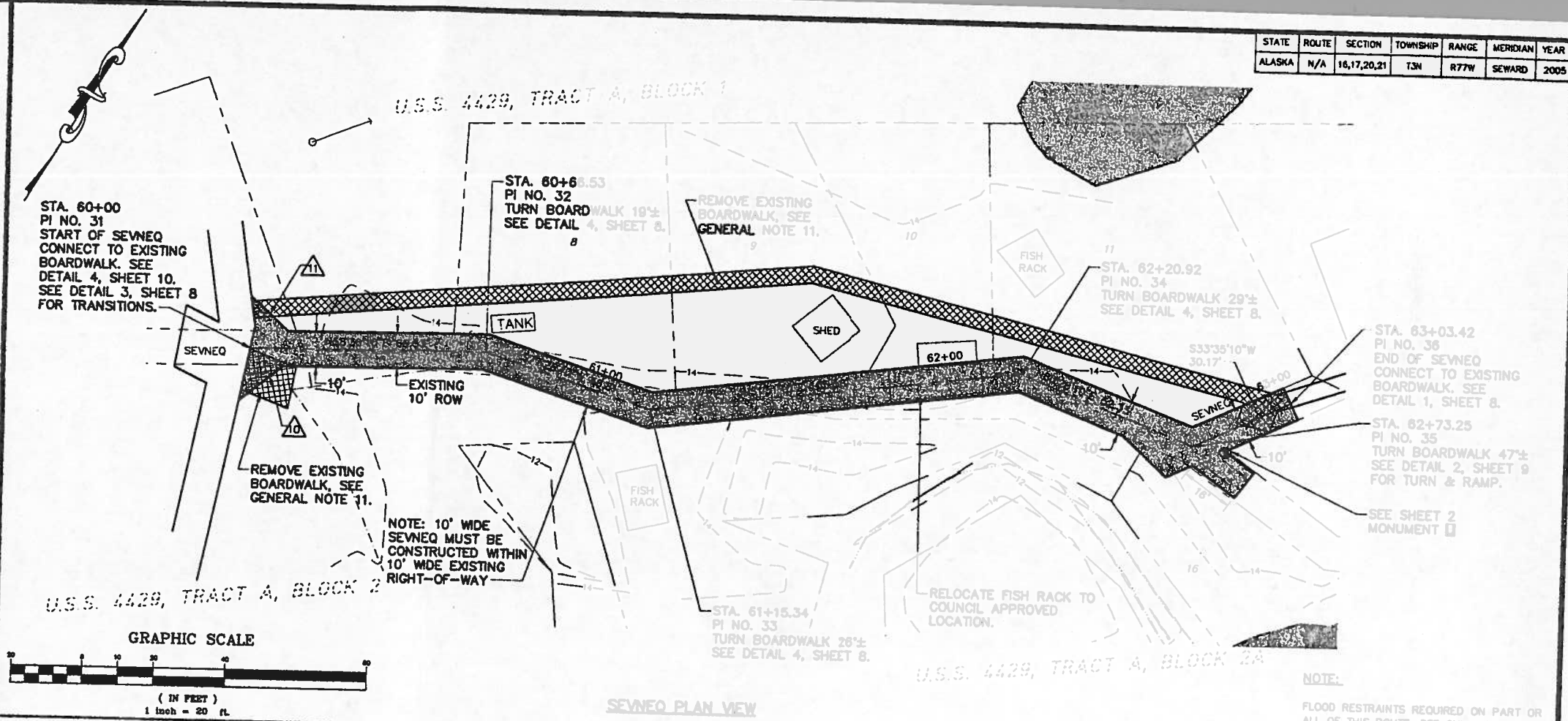
STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005



NOTE:

FLOOD RESTRAINTS REQUIRED ON PART OR ALL OF THIS ROUTE. SEE SUMMARY TABLE, SHEET 12 FOR SPECIFIC LOCATIONS.

ATARVIK PLAN VIEW

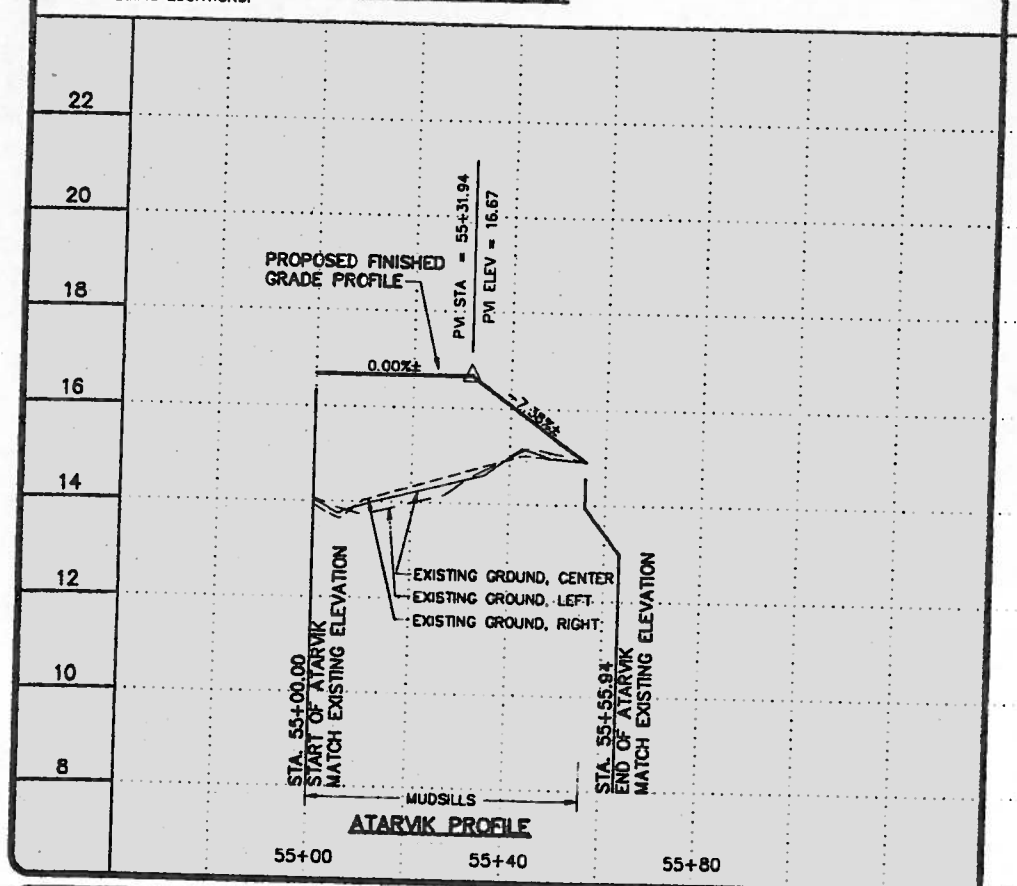


GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

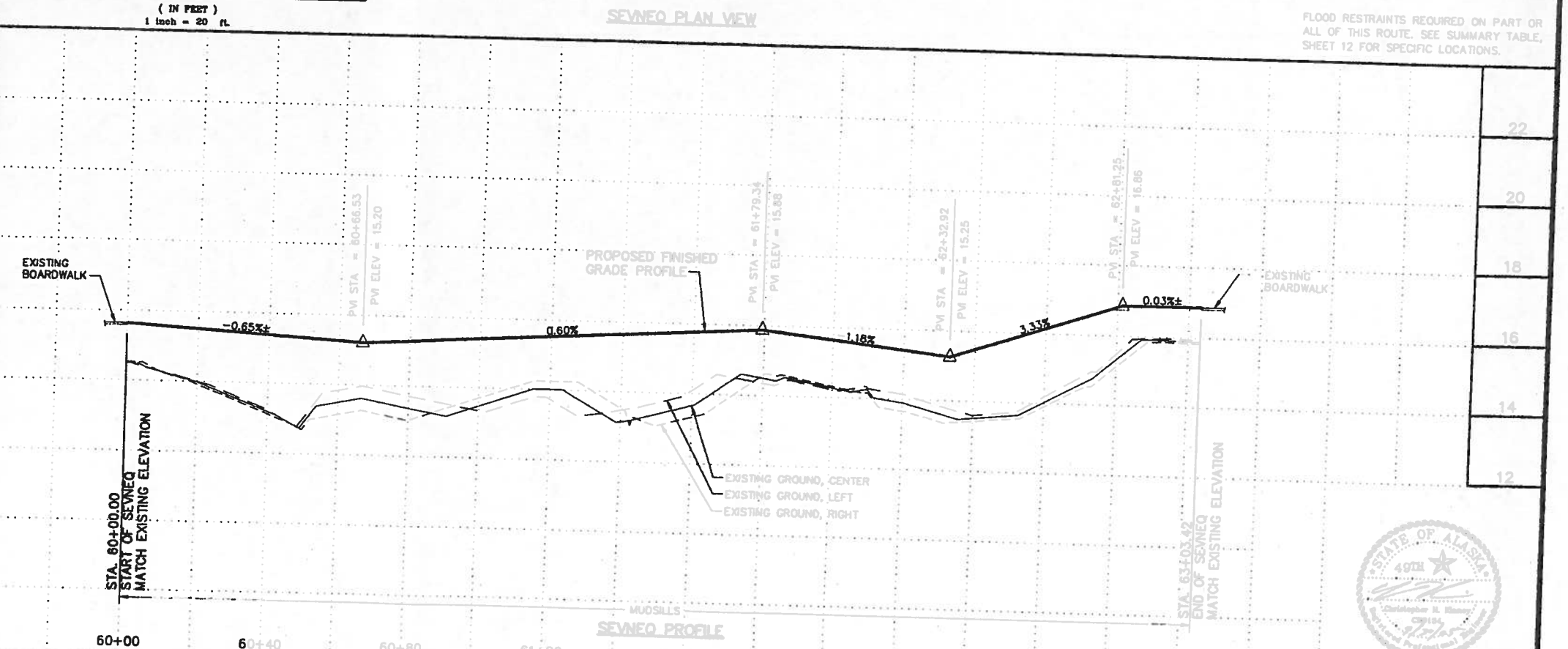
NOTE:

FLOOD RESTRAINTS REQUIRED ON PART OR ALL OF THIS ROUTE. SEE SUMMARY TABLE, SHEET 12 FOR SPECIFIC LOCATIONS.



ATARVIK PROFILE

SEVNEQ PLAN VIEW



SEVNEQ PROFILE

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, Inc.
CONSULTING GEOLOGISTS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

PLAN/PROFILE
ATARVIK STA. 55+00.00 TO STA. 55+55.94
SEVNEQ STA. 60+00.00 TO STA. 63+03.42

DESIGNED BY: AES
DRAWN BY: JCS
CHECKED BY: MAA
DATE: 9/30/05

SHEET NO. 21
21 OF 22

STATE	ROUTE	SECTION	TOWNSHIP	RANGE	MERIDIAN	YEAR
ALASKA	N/A	16,17,20,21	T3N	R77W	SEWARD	2005

NOTES:

1. BW-41 AND PERMANENT WORK PAD IS TO BE CONSTRUCTED FROM COMPOSITE MAT, (DURA-BASE OR APPROVED EQUIVALENT,) PLACED ON THE EXISTING GROUND SURFACE.
2. NO GROUND PREPARATION IS REQUIRED. COMPOSITE MATS FOLLOW EXISTING GROUND.
3. RECORD FLOOD ELEVATION = 17.7 FEET
4. FLOOD RESTRAINTS REQUIRED ON PART OR ALL OF THIS ROUTE. SEE SUMMARY TABLE, SHEET 12 FOR SPECIFIC LOCATIONS.

STA. 67+00
PI NO. 37
START OF BW-41

PROPOSED 20'
RIGHT-OF-WAY

7'

68+00

69+00

S51°24'08"E 207.46'

STA. 69+08.05
PI NO. 38
TURN ROADWAY 19°±
SEE DETAIL 2, SHEET 11.

PROPOSED COMPOSITE
MAT ROADWAY. SEE
DETAIL 1, SHEET 11.

EDGE OF GRAVEL
RUNWAY/APRON

TRANSITION RAMPS. SEE DETAIL 1,
SHEET 11. RAMPS ARE NOT REQUIRED
IF CONSTRUCTION OF BW-41 OCCURS
AFTER AIRPORT HAS BEEN
RELOCATED AND RUNWAY CLOSED.

70+00

S32°27'48"E 188.37'

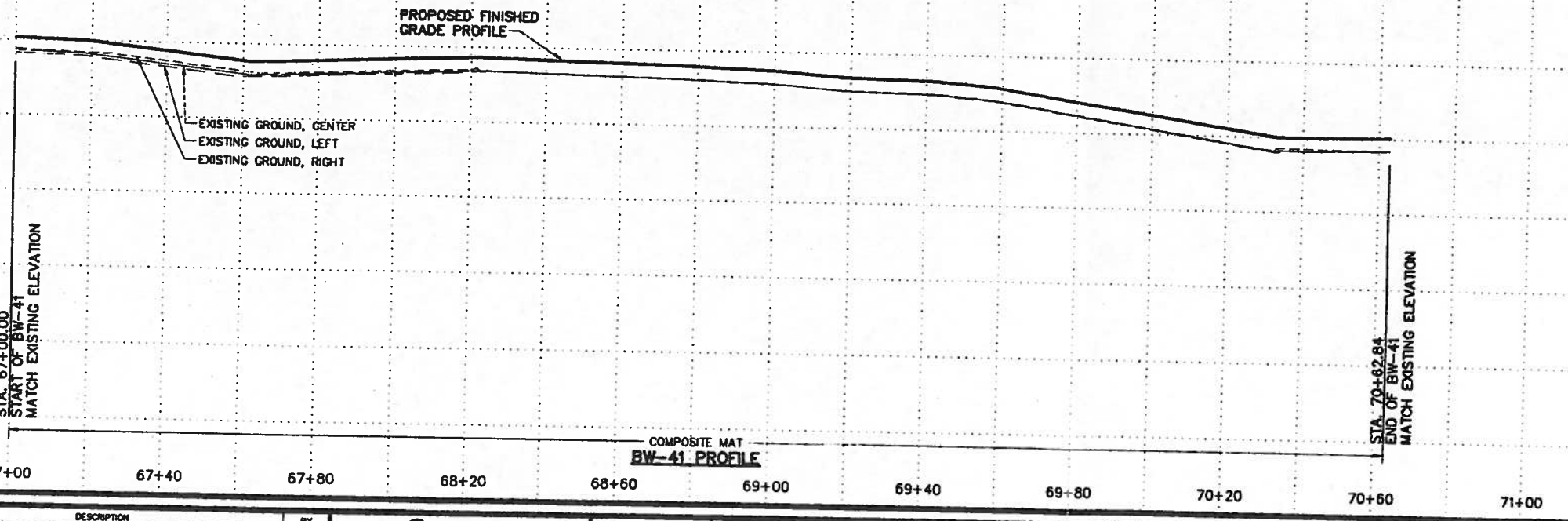
STA. 70+62.84
PI NO. 39
END OF BW-41
CONSTRUCT 29'x66'
COMPOSITE MAT
WORK/ACCESS PAD FOR
BARGE UNLOADING.

(20) FLOOD RESTRAINTS
SPACED AROUND
WORK/ACCESS PAD AS
SHOWN. SEE DETAIL 1,
SHEET 12.

PROPOSED 101'x38'
RIGHT-OF-WAY

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

BW-41 PLAN VIEW



BW-41 PROFILE

STATE OF ALASKA 49TH
Christopher S. Rooney
CP9184
Registered Professional Engineer

REV.	DATE	DESCRIPTION	BY

RPKA
Rodney P. Kinney Associates, Inc.
CONSULTING ENGINEERS & SURVEYORS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
ALASKA REGIONAL OFFICE

TUNTUTULIAK BOARDWALK PROJECT
TUNTUTULIAK, ALASKA

PLAN/PROFILE
BW-41
STA. 67+00.00
TO
STA. 70+62.84

DESIGNED BY:	AES
DRAWN BY:	JCS
APPROVED BY:	MAA
DATE:	9/30/05

SHEET NO.
22