STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES
SOUTHEAST REGION
DESIGN AND CONSTRUCTION DIVISION

WRANGELL AIRPORT IMPROVEMENTS

PROJECT NO.70150
AIP 3-02-0323-0797

PAVING, GRADING, DRAINAGE, FENCING AND ELECTRICAL

AS-BUILT PLANS

Contractor: SOUTH COAST INC.
Project Engineer: Allen Culbreath
Begin Date: May 15, 1997
End Date: October 31, 1997

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE OF QUANTITIES
3	TYPICAL SECTIONS
4	MISCELLANEOUS CONSTRUCION DETAILS
5	PLAN & PROFILE - "W" AND "X" LINES
6	PLAN & PROFILE _ "G" AND "F" LINES
7	PLAN & PROFILE - EAST TAXIWAY
8	G/A SMALL AIRCRAFT PAVING PLAN
9	JET HARDSTAND PLAN AND DETAILS
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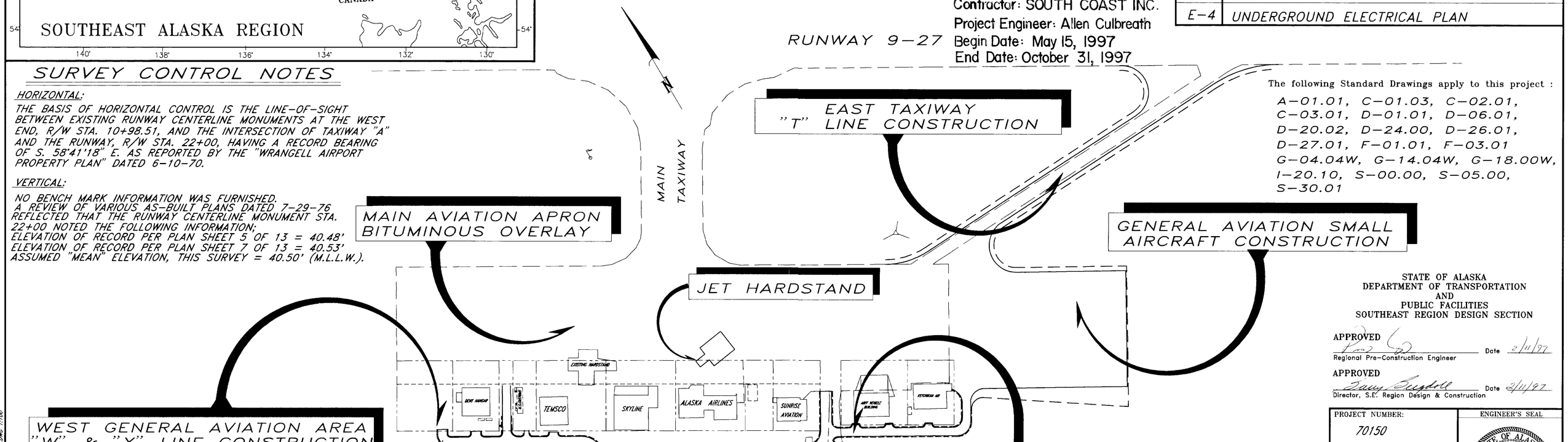
SURVEY CONTROL NOTES

HORIZONTAL:

THE BASIS OF HORIZONTAL CONTROL IS THE LINE-OF-SIGHT BETWEEN EXISTING RUNWAY CENTERLINE MONUMENTS AT THE WEST END, R/W STA. 10+98.51, AND THE INTERSECTION OF TAXIWAY "A" AND THE RUNWAY, R/W STA. 22+00, HAVING A RECORD BEARING OF S. 58°41'18" E. AS REPORTED BY THE "WRANGELL AIRPORT PROPERTY PLAN" DATED 6-10-70.

VERTICAL:

NO BENCH MARK INFORMATION WAS FURNISHED.
A REVIEW OF VARIOUS AS-BUILT PLANS DATED 7-29-76 REFLECTED THAT THE RUNWAY CENTERLINE MONUMENT STA. 22+00 NOTED THE FOLLOWING INFORMATION;
ELEVATION OF RECORD PER PLAN SHEET 5 OF 13 = 40.48'
ELEVATION OF RECORD PER PLAN SHEET 7 OF 13 = 40.53'
ASSUMED "MEAN" ELEVATION, THIS SURVEY = 40.50' (M.L.L.W.).



The following Standard Drawings apply to this project :

A-01.01, C-01.03, C-02.01, C-03.01, D-01.01, D-06.01, D-20.02, D-24.00, D-26.01, D-27.01, F-01.01, F-03.01 G-04.04W, G-14.04W, G-18.00W, I-20.10, S-00.00, S-05.00, S-30.01

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES
SOUTHEAST REGION DESIGN SECTION

APPROVED _____ Date 2/11/97
Regional Pre-Construction Engineer

APPROVED _____ Date 2/11/97
Director, S.E. Region Design & Construction

PROJECT NUMBER: 70150

ENGINEER'S SEAL

R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS

PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM	UNIT	SHEET NUMBER 5	6	7	8	9	10	11	12	E-1	E-4	TOTAL
100	MOBILIZATION AND DEMOBILIZATION	L.S.											ALL REQUIRED
111	TEMP. EROSION AND POLLUTION CONTROL	C.S.											ALL REQUIRED
120	DBE ADJUSTMENT	C.S.											ALL REQUIRED
121	CONSTRUCTION SURVEYING BY THE CONTR.	L.S.											ALL REQUIRED
125	ENGINEERING TRANSPORTATION	L.S.											ALL REQUIRED
130	ENGINEERS FIELD OFFICE AND LABORATORY	L.S.											ALL REQUIRED
200f	CLEARING AND GRUBBING	L.S.											ALL REQUIRED
203a	W-BEAM GUARDRAIL	L.F.	~~110~~ 50	25									135
203b	REMOVAL AND DISPOSAL OF GUARDRAIL	L.F.		25									25
203c	END ANCHORAGES	EACH	2	1									3
210a	REM. OF STRUCTURES AND OBSTRUCTIONS	L.S.											ALL REQUIRED
210b	REMOVAL OF CULVERT PIPE	L.F.	~~132~~ 161	~~100~~ 101	~~188~~ 196								~~420~~ 458
250a	EXCAVATION & DISPOSAL OF PVMT. MAT'L.	S.Y.	144		2,450	270	1,833						~~4,697~~ 6035.61
280a	ADJUST EXIST. SEWER MANHOLE TO FINISH GRADE	EACH	1	1									2
280b	ADJUST EXIST. SEWER CLEANOUT TO FINISH GRADE	EACH	3	1									~~5~~ 4
280c	ADJUST EXIST. VALVE BOX TO FINISH GRADE	EACH	~~3~~ 4	3									~~3~~ 7
280d	LOWER EXIST. SEWER MANHOLE	EACH	1										1
285a	EXTEND EXIST. 6" D.I. WATER SERVICE	EACH	~~2~~ 3										~~2~~ 3
285b	EXTEND EXIST. 6" D.I. SEWER SERVICE	EACH	~~2~~										~~2~~ 3
290	TAPERED PAVEMENT MILLING	S.Y.						~~923~~ 1,700	~~1,550~~ 752				~~3,250~~ 1675
330a	UNCLASSIFIED EXCAVATION	C.Y.	~~3385~~ ~~5,080~~	~~1,655~~ 781	~~3,893~~ 2855	~~2,068~~ 2701	~~292~~ 316			2900.63			~~10,989~~ 13050
330c	EMBANKMENT	C.Y.	~~170~~ 155	130	~~800~~ 485	~~265~~ 230							~~1,385~~ 870
340	DRIVEWAYS	EACH	3	3									6
~~350~~	~~ROCKERY WALL~~	S.F.		~~1,250~~									~~1,250~~
~~360~~	~~ROCK FACING~~	S.F.				~~4,050~~							~~4,050~~
400a	18", CORRUGATED METAL PIPE	L.F.	234 ~~228~~	~~84~~ 96									312
~~400b~~	~~28" X 20" CORRUGATED METAL PIPE ARCH~~	L.F.		~~28~~									~~28~~
400c	42" X 29" CORRUGATED METAL PIPE ARCH	L.F.		~~62~~ 108	~~248~~ 251	350 290							~~660~~ 649
400d	57" X 38" CORRUGATED METAL PIPE ARCH	L.F.	180		196								376
400e	END SECTION 18 INCH C.M.P.	EACH	~~8~~ 6	~~6~~ 2									~~14~~ 8
~~400f~~	~~END SECTION 28" X 20" C.M.P.A.~~	EACH		~~2~~									2
400g	END SECTION 42" X 29" C.M.P.A.	EACH		4	~~1~~ 2	~~3~~ 1							~~8~~ 7
400h	END SECTION 57" X 38" C.M.P.A.	EACH	4		2								6
405a	INLET, TYPE A	EACH	1	2									~~1~~ 3
405b	INLET, TYPE B	EACH	1	~~1~~									~~2~~ 1
405c	INLET, TYPE C	EACH		1	1								~~1~~ 2
440a	CHAIN-LINK FENCE	L.F.								~~603~~ 676.5			~~603~~ 676.5
440b	DRIVE THRU GATE	EACH								3			3
440c	PEDESTRIAN GATE	EACH								~~2~~ 4			~~2~~ 4
440d	RELOCATE EXISTING CHAINLINK FENCE	L.F.				~~600~~ 400							~~600~~ 400
441	GATE OPERATOR	EACH								3			3
500a	SUBBASE COURSE C.O. 1	~~C.Y.~~ TON	560	565	2,820	4,120							~~8,065~~ 12688
510a	CRUSHED AGGREGATE BASE COURSE	TON	555	580	3,350	4,360	220						~~9,065~~ 10587
570a	TRAFFIC MAINTENANCE	L.S.											ALL REQUIRED
570b	TRAFFIC CONTROL DEVICES	L.S.											ALL REQUIRED
600a	BITUMINOUS PRIME COAT, CMS-2S	TON	0.78	0.85	5.70	7.25	0.91						15.49
610	BITUMINOUS TACK COAT, STE-1	TON						6.85	6.10				12.95
660a	ASPHALT CONCRETE	TON	155	170	940	1,900	270	1,460	1,190				6,085
660c	ASPHALT CEMENT, P.B.A.-2	TON	9.30	10.20	56.4	114	16.20	87.60	71.40				365.10
660e	ASPHALT PRICE ADJUSTMENT	C.S.											ALL REQUIRED
700c	TAXIWAY AND APRON MARKING	L.S.											ALL REQUIRED
805	JET HARDSTAND	L.S.											ALL REQUIRED
820a	TIE-DOWN ANCHORS	EACH				75							75
900d	SEEDING	L.S.											ALL REQUIRED
920	STANDARD SIGNS	EACH	3	2	2	2							~~7~~ 9
1000a	NEW REGULATOR, 7.5KW, L-828	EACH									1		1
1000d	NEW HI. INT. RUNWAY, MARKER LT. L-862	EACH									1		1
1000f	NEW TAXIWAY MARKER LIGHT L-861T	EACH									32		32
1000i	2" RIGID STEEL CONDUIT	L.F.									1,205		1,205
1000k	2" PVC CONDUIT	L.F.									~~1,860~~ 1908		~~1,860~~ 1908
1000l	UNDERGROUND CABLE #8 AWG, COPPER, 5KV TYPE "B", L-824	L.F.									~~4,440~~ 3970		~~4,440~~ 3970
1000m	#6 THW GREEN COPPER GROUND	L.F.									~~2,430~~ 1995		~~2,430~~ 1995
1000n	REMOVE EXIST. #8 5KV CABLE	L.F.									~~2,195~~ 2192		~~2,195~~ 2192
1000o	REMOVE EXIST. RUNWAY/TAXIWAY LTS.	EACH									4		4
1000q	GROUND ROD	EACH									2		2
1000r	FLUSH BIDIRECTIONAL RUN. MARKER LT. L-850C	EACH									1		1
1000s	RETROREFLECTOR MARKER L853	EACH									2		2
1000t	CLEAN AND TEST EXISTING SYSTEM	L.S.											ALL REQUIRED
1002a	ELECT./TELEPHONE RELOCATION & PANEL B	L.S.											ALL REQUIRED
1002b	FIXTURE TYPE A	EACH									2		2
1002c	FIXTURE TYPE B	EACH									11		11
1002d	HARDSTAND GROUND SYSTEM	L.S.											ALL REQUIRED
1002e	ELECTRIC GATE POWER	EACH									3		3

BASIS OF ESTIMATE

ITEM No.	PAY ITEM	ESTIMATING FACTOR
330c	EMBANKMENT	1.86 TONS/C.Y.
500a	SUBBASE COURSE	1.96 TONS/C.Y.
510a	CRUSHED AGGREGATE BASE COURSE	1.96 TONS/C.Y.
600a	BITUMINOUS PRIME COAT CMS-2S	0.15 GAL/S.Y. AT 256 GAL/TON
610	BITUMINOUS TACK COAT, STE-1	0.10 GAL./S.Y. AT 240 GAL/TON
660a	ASPHALT CONCRETE	2.10 TONS/C.Y.
660c	ASPHALT CEMENT, P.B.A.-2	6% OF ITEM 660a

GENERAL NOTES

1. GRADES AND ALIGNMENTS SHOWN ON THESE PLANS MAY BE SUBJECT TO MINOR REVISIONS AS APPROVED OR DIRECTED BY THE ENGINEER.
2. PIPE CONDUIT LENGTHS AND LOCATIONS SHOWN ON THESE PLANS MAY BE SUBJECT TO MINOR FIELD REVISIONS AS APPROVED OR DIRECTED BY THE ENGINEER.
3. STORM DRAINAGE STRUCTURE LOCATIONS SHOWN ON THESE PLANS MAY BE SUBJECT TO MINOR FIELD REVISIONS AS APPROVED OR DIRECTED BY THE ENGINEER.
4. WASTE MATERIAL REMOVED FROM THE PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR AT DOT/PF APPROVED OFF-SITE DISPOSAL SITES.
5. THE UNCLASSIFIED EXCAVATION VOLUME SHOWN INCLUDES ALL EXCAVATION, REGARDLESS OF THE MATERIAL ENCOUNTERED.
6. IT IS ASSUMED THAT SOME OF THE UNCLASSIFIED EXCAVATION VOLUME MAY BE USABLE ON THE PROJECT AS EMBANKMENT MATERIAL PROVIDED IT MEETS THE PROJECT SPECIFICATIONS FOR EMBANKMENT.

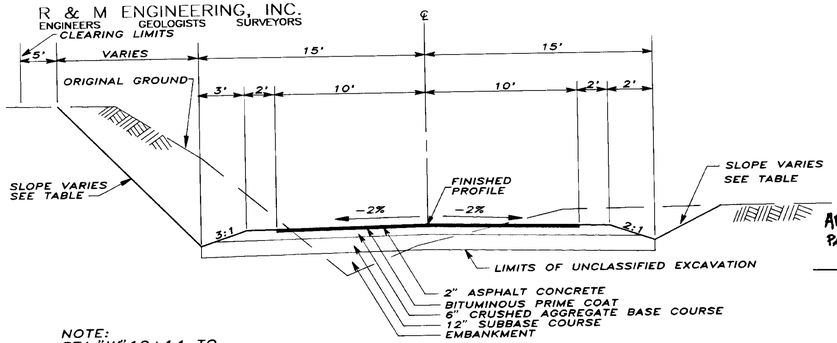
NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL

QUANTITY.DWG

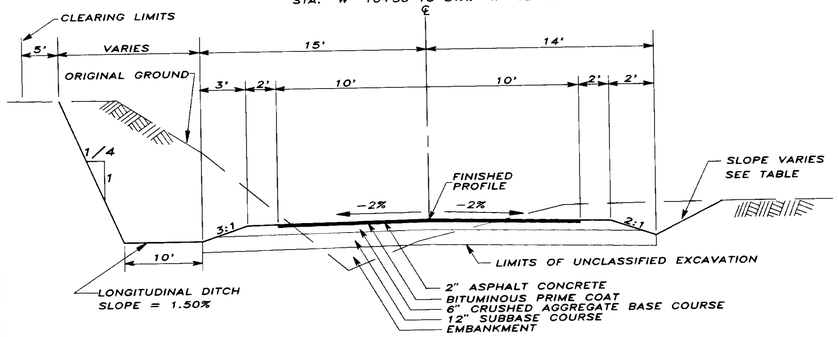
PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997

R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS

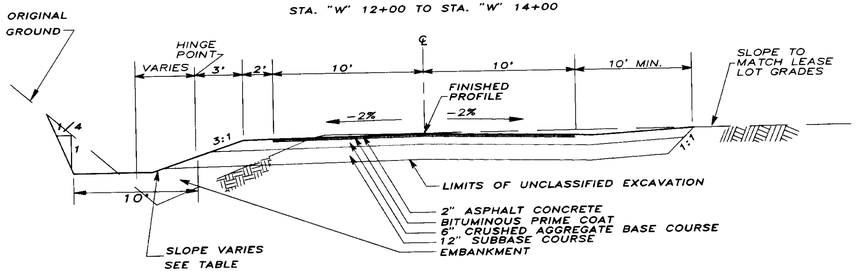


NOTE:
STA."W" 10+14 TO "W" 10+50 PAVED WIDTHS VARY.

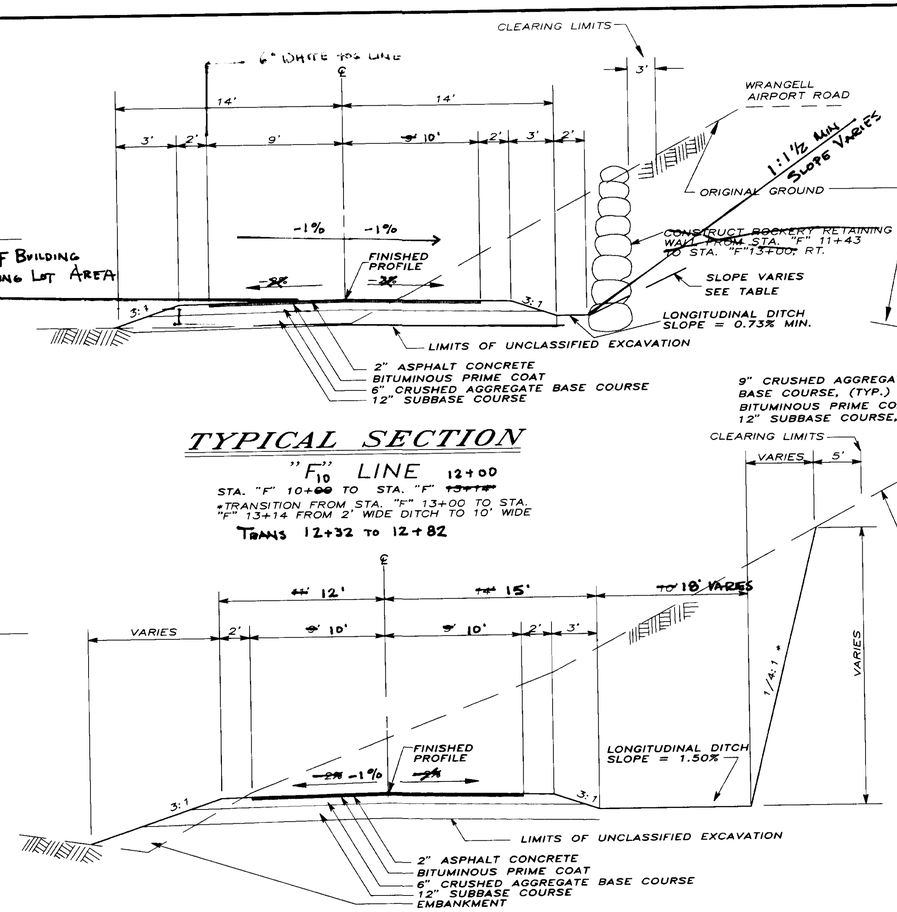
TYPICAL SECTION
"W" LINE
STA. "W" 10+50 TO STA. "W" 12+00



TYPICAL SECTION
"W" LINE
STA. "W" 12+00 TO STA. "W" 14+00



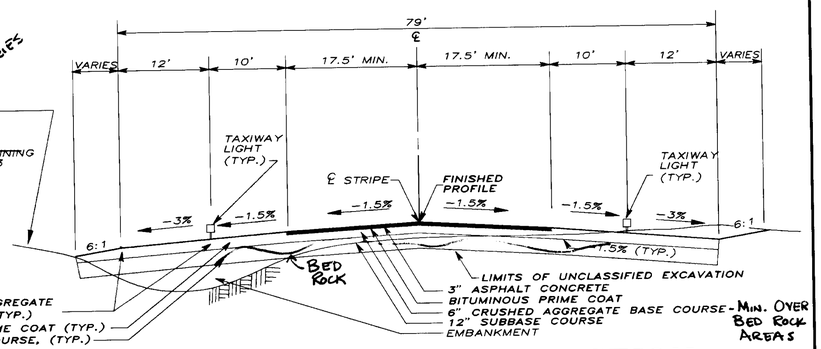
TYPICAL SECTION
"G" LINE
STA. "G" 20+00 TO STA. "G" 21+31.94



TYPICAL SECTION
"F_{10}" LINE 12+00
STA. "F" 10+~~00~~ TO STA. "F" ~~13+10~~
*TRANSITION FROM STA. "F" 13+00 TO STA. "F" 13+14 FROM 2' WIDE DITCH TO 10' WIDE
TRANS 12+32 TO 12+82

TYPICAL SECTION
"F" LINE
STA. "F" ~~12+82~~ 13+36.22 TO STA. "F" ~~13+10~~

* BACKSLOPE MAY VARY TO MATCH EXIST. CUTSLOPES



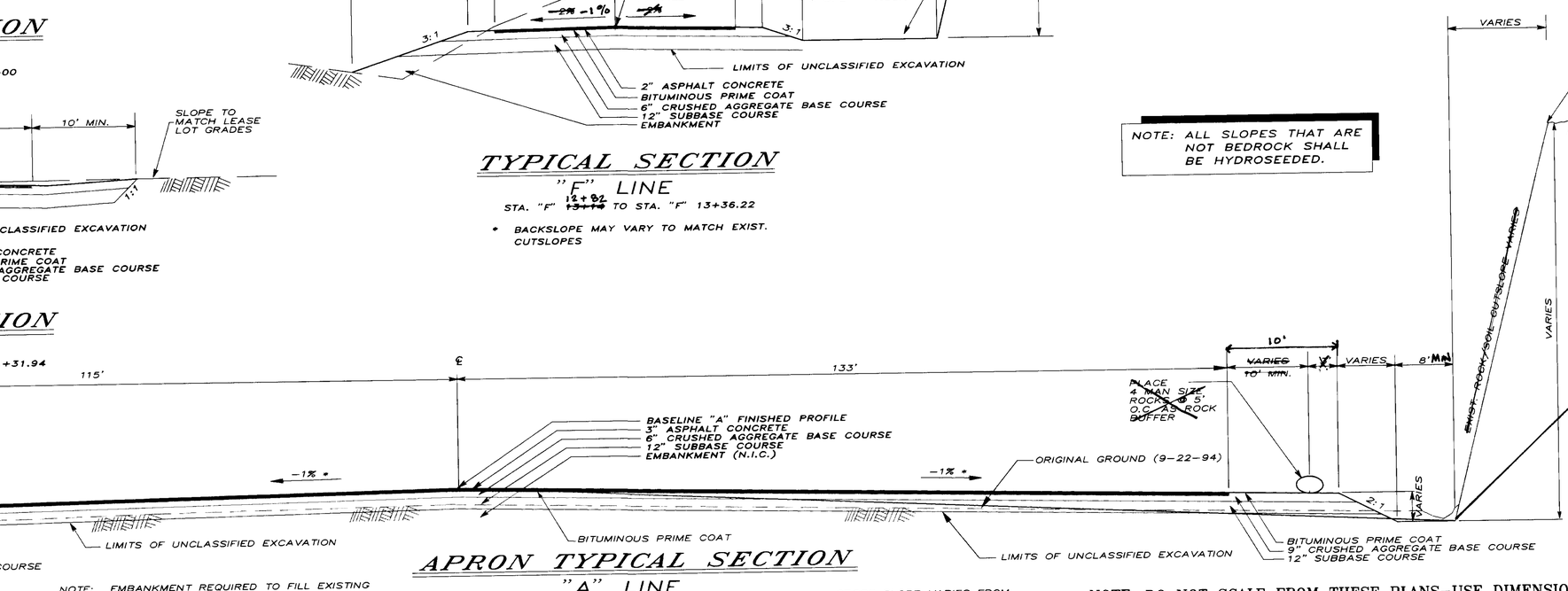
TAXIWAY TYPICAL SECTION
"T" LINE
STA. "T" 9+57.40 TO STA. "T" 17+84.60

TABLE OF SLOPES

FILL SLOPE		CUT SLOPE	
HEIGHT	SLOPE	HEIGHT	SLOPE
0'-3'	3:1	0 - 4.0'	2:1
3.1' - 5.0'	2:1	4.1' +	1-1/2:1
5.1' +	1-1/2:1	ROCK	1/4:1

SEE PLAN VIEWS FOR SPECIAL SLOPES

NOTE: ALL SLOPES THAT ARE NOT BEDROCK SHALL BE HYDROSEEDED.



NOTE: EMBANKMENT REQUIRED TO FILL EXISTING DITCH ADJACENT TO EAST END OF MAIN AVIATION APRON

APRON TYPICAL SECTION
"A" LINE
STA."A" 10+00 TO STA."A" 13+92

* CROSS SLOPE VARIES FROM STA "A" 10+00 TO STA "A" 11+00

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL
STATE OF ALASKA 49th

DESIGNED BY:	PROJECT NO.
DRAWN BY:	
CHECKED BY:	

TYPICALS.DWG

R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS

PROJECT DESIGNATION	YEAR
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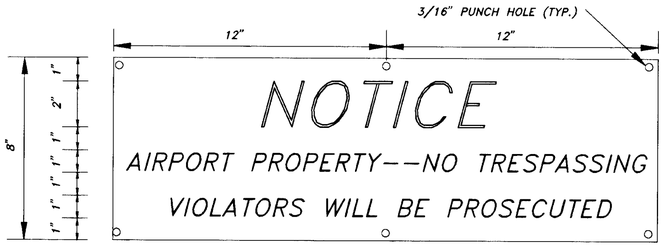
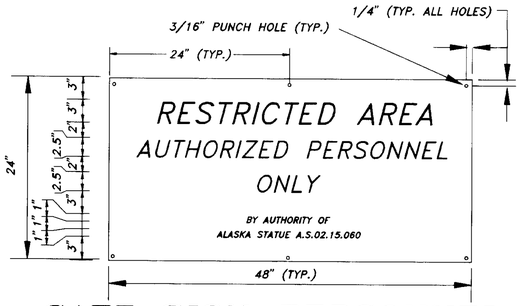


BOUNDARY SIGN PLATE DETAIL

N.T.S.

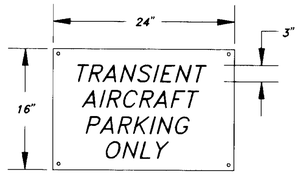
INSTALL AT 400' O.C. OF CHAINLINK FENCE- 8 TOTAL



GATE SIGN-PERSONNEL

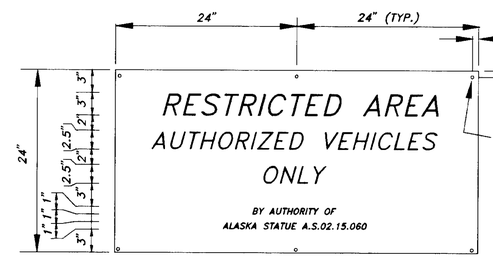
N.T.S.

INSTALL AT ALL MAN GATES- 2 TOTAL



AIRCRAFT PARKING SIGN

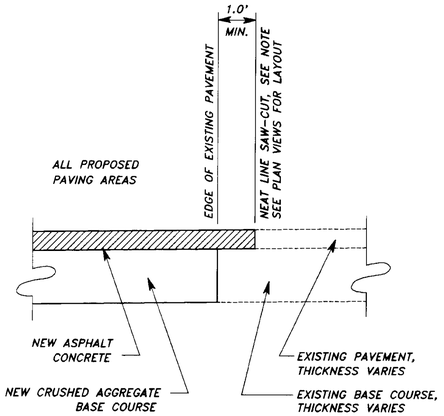
N.T.S.



GATE SIGN-VEHICLES

N.T.S.

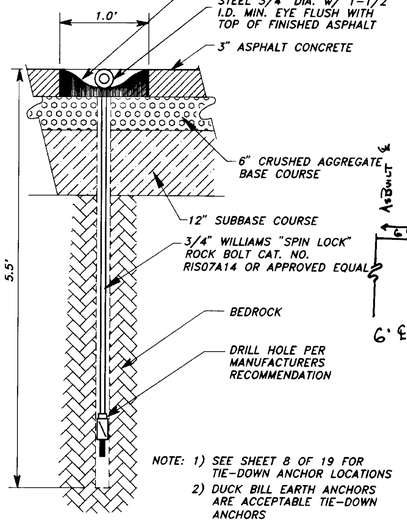
INSTALL AT DRIVE-THRU GATE 1, 2 & 3 - 3 TOTAL



NOTE: SAWCUT IN EXISTING PAVEMENT SHALL NOT BE MADE UNTIL 24 HOURS PRIOR TO FINAL PAVING

PAVEMENT MATCH JOINT DETAIL

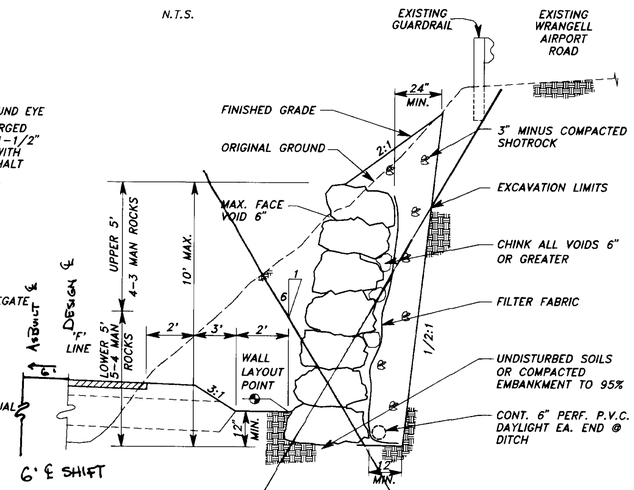
N.T.S.



NOTE: 1) SEE SHEET 8 OF 19 FOR TIE-DOWN ANCHOR LOCATIONS
2) DUCK BILL EARTH ANCHORS ARE ACCEPTABLE TIE-DOWN ANCHORS

TIE-DOWN ANCHOR DETAIL

N.T.S.



ROCKERY WALL DETAIL

N.T.S.

ROCKERY WALL NOTES

1) THE LONG DIMENSION OF THE ROCKS SHALL EXTEND INTO THE EARTH TO PROVIDE MAXIMUM STABILITY.
2) THE ROCK SHALL BE PLACED SO AS TO LOCK INTO TWO ROCKS IN THE TIER.
3) 3 MAN ROCKS 800 PONDS MIN., 1,500 POUNDS MAX., SIZED 18" TO 24"
   4 MAN ROCKS 1,500 POUNDS MIN., 2,100 POUNDS MAX., SIZED 24" TO 32"
   5 MAN ROCKS 2,100 POUNDS MIN., 3,000 POUNDS MAX., SIZED 30" TO 38"
   ROCKERIES 7' AND LOWER SHALL BE CONSTRUCTED OF 4 MAN TO 3 MAN ROCKS FROM BOTTOM TO TOP.
   ROCKERIES UP TO 10' SHALL BE CONSTRUCTED OF 5 MAN TO 4 MAN ROCKS FROM BOTTOM TO TOP.
4) SEE SPECIFICATIONS FOR THE FILTER FABRIC REQUIREMENTS.
5) SEE SHEET 6 OF 19 FOR WALL LAYOUT

SIGNING SUMMARY

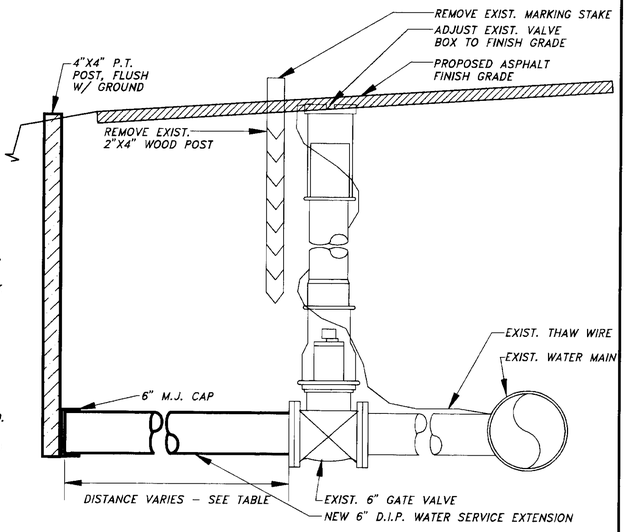
SIGN NUMBER	STATION	OFFSET	CODE No.	LEGEND	SIZE INCHES	AREA SQ. FT.	FACING DIRECTION	No. OF POST	REMARKS
(1)	"G" 20+23	25' LT.	R1-1	STOP	30 X 30	6.25	NORTH BOUND	1	
(2)	"F" 10+23	18' LT.	R1-2	YIELD	36 X 36 X 36	4.50	WEST	1	
(3)	"W" 10+23	26' LT.	R1-1	STOP	30 X 30	6.25	NORTH BOUND	1	
(4)	"W" 12+87	16' RT.	R1-2	YIELD	36 X 36 X 36	4.50	SOUTH BOUND	1	
(5)	"W" 11+71	12' RT.	R1-2	YIELD	36 X 36 X 36	4.50	SOUTH BOUND	1	
(6)	"A" 13+94	75' RT.		TRANSIENT AIRCRAFT PARKING ONLY	24 X 16	2.67		1	MOUNT ON POST
(7)	"A" 13+94	45' LT.		TRANSIENT AIRCRAFT PARKING ONLY	24 X 16	2.67		1	MOUNT ON POST
B19	"T" 11+29 16+00	65' LT 62' RT		CLOSED TO AIRCRAFT UNDER 12.5	48 X 24	8.00	WEST EAST	2	MOUNT ON POST

DRIVEWAY SUMMARY

STATION	OFFSET TO ℄		RADIUS		WIDTH	REMARKS
	LEFT	RIGHT	LEFT	RIGHT		
"W" 11+57.84		X	10'	10'	18'	PAVED
"W" 12+22		X	5'	5'	6'	GRAVEL
"W" 12+58.32		X	15'	25'	18'	PAVED
"F" 10+64	X		7.5'	7.5'	14'	PAVED
"F" 11+37	X		7.5'	7.5'	14'	PAVED
"F" 12+22	X		7.5'	7.5'	14'	PAVED

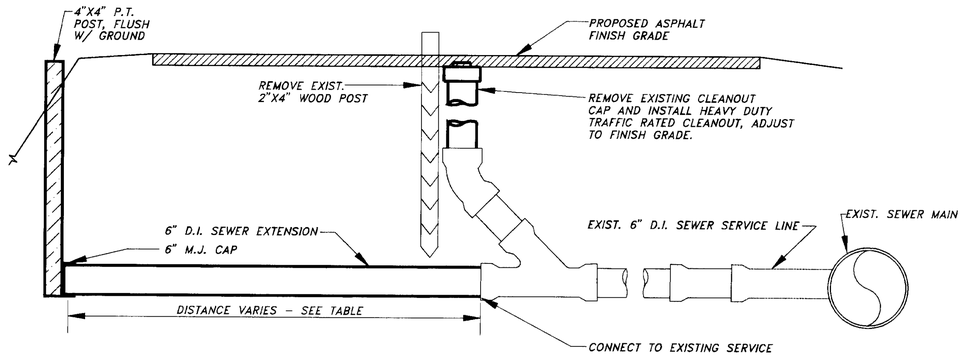
SIGNING NOTES

1. STATIONS AND OFFSETS AS GIVEN ARE APPROXIMATE ONLY AND ARE SUBJECT TO MINOR FIELD REVISIONS AS DIRECTED BY THE ENGINEER.
2. ALL SIGNS SHALL BE CLASS "I". SIGNS WITH A WIDTH LESS THAN 54" SHALL BE ON 0.080" THICK SHEET ALUMINUM AND SHALL BE UNFRAMED. SIGNS WITH A WIDTH GREATER THAN 54" SHALL BE ON 0.125" THICK SHEET ALUMINUM AND SHALL BE FRAMED. SEE STANDARD DRAWING S-00.00 FOR DETAILS.
3. ALL SIGN POSTS SHALL BE TELESCOPING, PERFORATED GALVANIZED SQUARE STEEL POSTS. THE 2" SIZE SHALL BE USED ABOVE GROUND 2 1/4" SIZE BELOW GROUND. SEE STANDARD DRAWING S-30.01 FOR DETAILS.
4. CODE NUMBER GIVEN REFERS TO A STANDARD FROM THE ALASKA SIGN DESIGN SPECIFICATIONS.
5. POST LENGTHS SHALL BE DETERMINED AS PER STANDARD DRAWING S-05.00.
6. ALL FENCE AND GATE SIGNING SHALL BE RED REFLECTIVE SHEETING WITH WHITE LETTERING. THEY SHALL BE INSTALLED 4' ABOVE GROUND
7. SLIDE GATES SHALL HAVE SIGNS ATTACHED IN THE CENTER OF THE GATE. OTHER GATE SIGNS SHALL BE INSTALLED IMMEDIATELY ADJACENT TO THE GATE.
8. SIGNS MAY BE ATTACHED TO THE FENCE WITH 9 GAUGE WIRE.
9. "AUTHORIZED VEHICLE" SIGNS SHALL BE USED ON VEHICLE GATES FOR VEHICULAR ACCESS. "AUTHORIZED PERSONNEL" SIGNS SHALL BE USED ON MANGATES FOR PERSONNELL ACCESS. "AIRPORT PROPERTY-NO TRESPASSING" SIGNS SHALL BE INSTALLED ON ALL DRIVE-THRU GATES, AND ALONG RELOCATED CHAINLINK FENCE.



WATER SERVICE EXTENSION

N.T.S.



SANITARY SEWER SERVICE EXTENSION

N.T.S.

ENGINEER'S SEAL

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DETAILS.DWG

R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS

NOTE: DITCH LINE INSULATED WITH 2" FOAM PANELS FROM STA. 12+80 TO 13+96 60' L & R OVER 10" WATER MIN.

PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997

STRUCTURE ADJUSTMENT SUMMARY

STATION	OFFSET	COMMENTS
"W" 10+96	2'LT	CONNECT TO EXIST. VALVE AND EXTEND EXIST. 6" D.I. WATER SERVICE ~~12'RT~~ CAP & MARK W/ P.T. 4X4 POST, ADJUST EXIST. VALVE BOX TO FINISH GRADE.
"W" 11+34	2'LT	EXTEND EXIST. 6" D.I. SEWER SERVICE 17', CAP & MARK W/P.T. 4"X4" POST. ADJUST EXISTING CLEANOUT TO FINISH GRADE.
"W" 12+40	2'LT	CONNECT TO EXIST. VALVE AND EXTEND EXIST. 6" D.I. WATER SERVICE ~~10'LT~~ CAP & MARK W/ P.T. 4X4 POST, ADJUST EXIST. ADJUST EXISTING CLEANOUT TO FINISH GRADE.
"W" 12+53	3'LT EXTEND 18'	EXTEND EXIST. 6" D.I. SEWER SERVICE 10', CAP & MARK W/P.T. 4"X4" POST. ADJUST EXISTING VALVE BOX TO FINISH GRADE.
"W" 12+79	8'RT.	ADJUST EXIST. M.H. TO FINISHED GRADE
"W" 13+93	15'LT	ADJUST EXIST. 6" D.I. SEWER CLEANOUT TO FINISH GRADE.
"W" 13+97	19'LT	ADJUST EXIST. WATER VALVE BOX TO MATCHED FINISHED SLOPE.

PIPE CONDUIT SUMMARY

PIPE	INLET STA.	INV.EL.	OUTLET STA.	INV.EL.	DIAMETER	LENGTH	% SLOPE	REMARKS
P-1	"W" 10+60, 29'RT.	30.20'	"W" 12+00, 21.5'LT.	29.67'	57"X 38"CMPA	160'	0.33	
P-2	"W" 11+15, 34'RT.	31.00'	"W" 11+73, 8'LT.	30.58'	18" CMP	42'	1.00	CONNECT TO P-1
~~P-3~~	~~"W" 11+30, 18'RT.~~	~~32.66'~~	~~"W" 11+72, 18'RT.~~	~~31.98'~~	~~18" CMP~~	~~34'~~	~~2.00~~	
P-4	"W" ~~12+04~~ 11+98'RT.	30.82'	"W" 12+~~53~~ 51'RT.	29.54'	18" CMP	~~32~~ 40'	4.00	
P-5	"W" 12+~~35~~ 31'RT.	29.44'	"W" 12+~~81~~ 78'RT.	29.20'	18" CMP	~~48~~ 40'	0.50	
P-6	"W" 13+06, 18'RT.	29.00'	"W" 13+42, 18'RT.	28.64'	18" CMP	~~36~~ 40'	1.00	
P-7	"W" 14+07, ~~31~~ 18'RT.	28.28'	"W" 14+07, 18'LT.	27.92'	18" CMP	36'	1.00	
P-7A	"W" 14+00, 25'RT.	27.96'	"W" 14+04.5, 35'LT.	27.81'	57" X 38" CMPA	20'	0.75	

STRUCTURE INSTALLATION SUMMARY

STRUCTURE	LOCATION	TYPE	GRATE ELEV.
S-1	STA."W" 11+15, 35'RT.	A	33.40'
S-2	STA."W" ~~12+~~ 22'RT.	B	32.50'

* ADJUST STORM DRAIN STRUCTURE AS NECESSARY TO AVOID CONFLICTING WITH EXISTING UTILITY POLE.

12+38

BEGIN "W" LINE CONSTRUCTION
STA."W" 10+14
SAW CUT AND MATCH EXISTING PAVEMENT
ELEV.=40.70'
(FIELD VERIFY)

STA."W" 11+95, 15'RT.
~~LOWER~~ EXIST. SANITARY SEWER MH APPROX. 3'. INSTALL WATERTIGHT LID
REMOVED
ABANDONED LINE

STA."W" 11+56.75
N 11°25'48" E
R=32.5'
8" DI CISTERN OVERFOLW ENDS IN DITCH (P-1)
PC STA "W" 10+50.15
PT STA=10+96.05
R=30'
12" CMP OVERFLOW CONNECTED TO EXIST. CISTERN
STA."W" 10+16,36'RT. TO STA."W" ~~11+00~~ 12'RT. INSTALL ~~110~~ L.F. OF GW4 GUARDRAIL

STA."W" 12+57.77=
STA."X" 9+93.00
SLOPE LIMITS (typ.)
CONSTRUCT 10' WIDE DRAINAGE DITCH SLOPE = 0.75%
PC STA "W" 13+78.65
STA."W" 14+08.7, 28'LT END DITCH GRADING M.T.E. DITCH
PT STA "W" 14+05.90
EXIST. SEWAGE LIFT STATION & VALVE VAULT
EXIST. ABANDONED 6" SEWER
13+23.8 22.75'RT
ABOVE GROUND FUEL TANKS
EXISTING FENCE TO BE REMOVED
EXISTING CLEANOUT TO REMAIN
EXIST. 6" DI FORCE MAIN TO DI EXIST. WATER LINE
EXISTING STAIRS
EXIST. DRAINAGE DITCH
EXISTING FENCE
EXISTING ELECTRIC
EXISTING LIGHT
N30°32'00"E
MAIN GATE
DENT HANGAR
SLOPE LIMITS
EDGE OF EXISTING ASPHALT
LEASE LOT LINE TYPICAL

PROTECT & MAINTAIN EXIST FUEL & ELECTRIC LINES

ASPHALT REMOVAL LIMITS

T.B.M.
TOP OF BRASS CAP
ELEV.=35.90'
N-9925.4966
E-9841.9373

(S 58°44'30" E - (A-80311))
S 58°41'15" E - 90.77'
DOT/PF CENTERLINE MONUMENT TYP.
N-9878.3213
E-9919.4832

S 68°37'40" E - 263.79'
TO CENTERLINE MONUMENT EQUATION
STA."O" 67+55.56 P.T. Bk.=
STA."L" 70+09.23 P.O.T. Ahd.
(A-08311)

BEGIN "W" LINE
STA."W" 10+00.00=
STA.P.O.C."O" 64+90.44 (A-80311)=
RUNWAY CENTERLINE STATION
20+54.06, 941.91' RIGHT

CENTERLINE CURVE DATA
PI STA=10+76.47
I=70°07'06" L
R=37.50
L=45.89
T=26.32
C=43.08

CENTERLINE CURVE DATA
PI STA=13+92.28
I=89°13'15" R
R=17.50
L=27.25
T=17.26
C=24.58

N 58°41'18" W

PROTECT & MAINTAIN ELECT. UTILITIES & WOOD POWER POLE

END "W" LINE
STA. "W" 14+15.90
ELEV.=32.25'
(FIELD VERIFY)

NOTES:
1) SEE SHEET 12 OF 19 FOR FENCE AND GATE LAYOUT
2) SEE SHEET 10 OF 19 FOR 1-1/2" A.C. APRON OVERLAY

N 31°18'42" E
120.08'

END "X" LINE
SAW CUT & MATCH TO PROPOSED 1-1/2" A.C. OVERLAY
ELEV.=33.72'(±)
(FIELD VERIFY)

BEGIN "W" LINE CONSTRUCTION
VPI STA=10+14 NO VC
ELEV.=40.70'
MATCH EXISTING PAVEMENT
G=-2.00%
VPI STA=10+50 50'VC
ELEV.=39.98'
STA."W" 11+25.0 BVC
ELEV.=36.48'
FINISHED ROADWAY ℄ PROFILE
S=-4.65%
ORIGINAL GROUND
STA."W" 12+75.0 EVC
ELEV.=32.73'
S=-0.35%
EXISTING ABANDONED 6" C.A. SEWER
LOWER EXISTING S.S. MANHOLE APPROXIMATELY 3' AND INSTALL WATERTIGHT LID
VPI STA=12+00 150'VC
ELEV.=33.00'
NOTE: STRUCTURE S-1 AND PIPES P-2 & P-6 NOT SHOWN, FOR CLARITY.
STA."W" 12+57.77= EON. PT.
STA."X" 9+93.00
ELEV.=32.83'
S=2%
VPI STA=10+03 NO VC
ELEV.=32.63'
ORIGINAL GROUND
S=+0.99%
END "X" LINE
STA."X" 11+13.08
ELEV.=33.72'
(FIELD VERIFY)
MATCH TO 1-1/2" A.C. APRON OVERLAY
FINISHED ROADWAY ℄ PROFILE
EXISTING CLEANOUT TO REMAIN

50 45 40 35 30 25 20 15

"W"10+20 "W"10+80 "W"11+40 "W"12+00 "W"12+60 "W"13+20 "W"13+80 "W"14+40 "X"10+00 "X"10+60 "X"11+20

"W" LINE PROFILE

"X" LINE PROFILE

STRUCTURE REMOVAL SUMMARY

STATION	OFFSET	COMMENTS
"W" 11+00	0'	REMOVE & DISPOSE 42" CMP
"W" 11+16	34'RT.	REMOVE & DISPOSE 6" D.I. PIPE
"W" 12+15	0' TO 22'+/-LT.	REMOVE & DISPOSE 30" CMP - MITER TO MATCH FINISH SLOPE
"W" 14+03	30'LT	REMOVE & DISPOSE 24"X 20' CMP

GRAPHIC SCALE
0' 15' 25' 50' 100'

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL
STATE OF ALASKA
49th

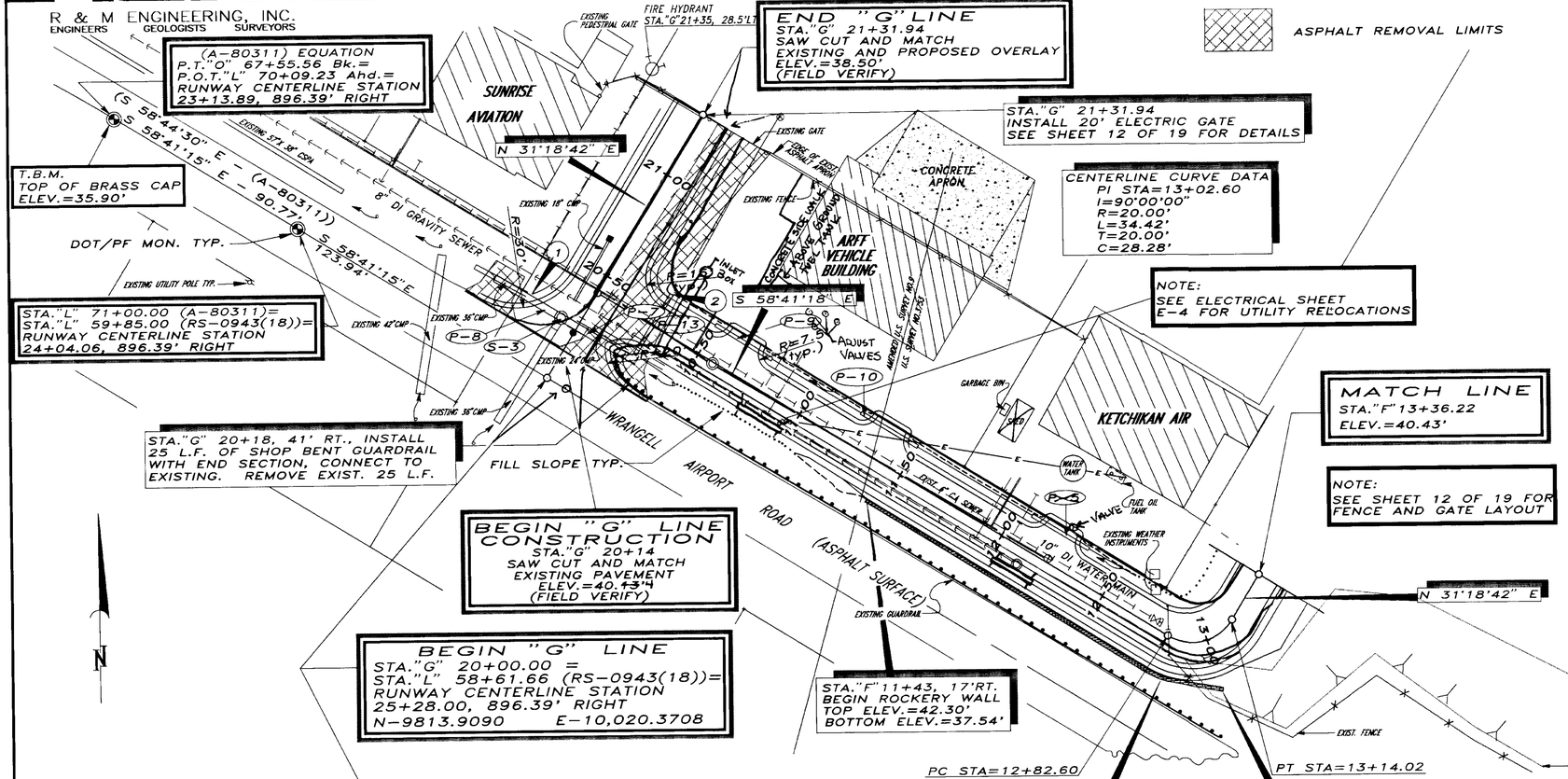
DESIGNED BY:
PROJECT NO.

EST.DWG

PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997

R&M

R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS



PIPE CONDUIT SUMMARY

PIPE	STATION	OFFSET	DIAMETER	LENGTH	% SLOPE	INLET EL	OUTLET EL	TYPE
P-7	"G" 20+25	0' *	42"X 29"	32'	1.69	35.90'	35.36'	CMPA
P-8	"G" 20+25	0' **	42"X 29"	30'	2.00	35.26'	34.66'	CMPA
P-9	"F" 10+64	14.0'	18"	28'	0.73	36.60'	36.40'	CMP
P-10	"F" 11+36	14.0'	18"	28'	0.73	37.32'	37.12'	CMP
P-11	"F" 12+21	14.0'	18"	28'	0.73	37.94'	37.74'	CMP
~~P-13~~	~~"F" 10+26~~	~~14'LT/RT~~	~~28"X 20"~~	~~28'~~	~~0.40~~	~~36.06'~~	~~35.95'~~	CMPA
P-13a	"F" 10+36	25'Lt./15'Rt.	8"	40	1.25%	36.4	35.9	CMP
P-10a	"F" 10+86	18'Rt.	18"	20				CMP
P-17	"F" 12+12	18'Rt.	12"	20				CMP

* 24'RT. TO 8'LT.
** 10'LT. TO 40'LT.

STRUCTURE REMOVAL SUMMARY

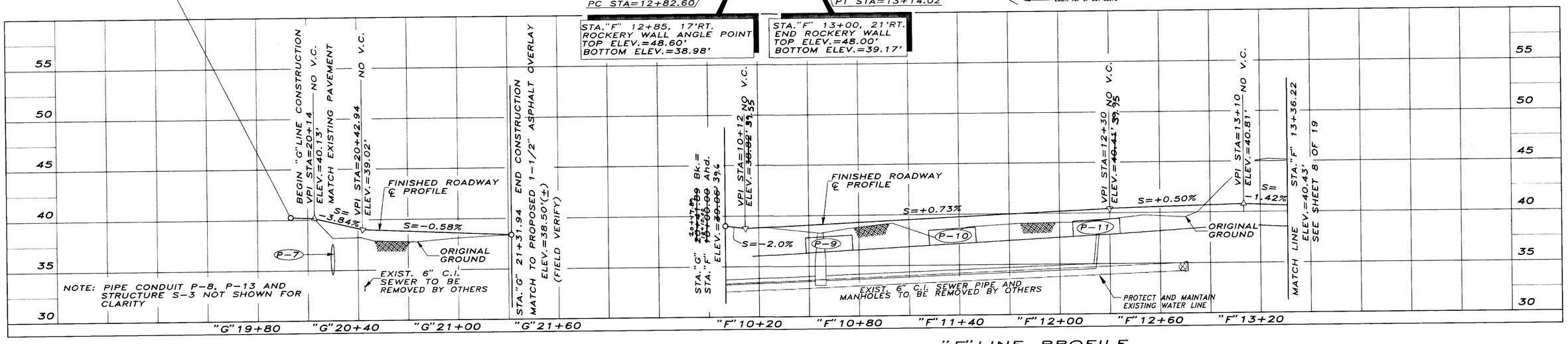
STATION	OFFSET	COMMENTS
"G" 20+25	36'LT.	OBLITERATE DRIVEWAY, REMOVE AND DISPOSE EXISTING 36" CMP
"G" 20+25	0'	OBLITERATE DRIVEWAY, REMOVE AND DISPOSE EXISTING 24" CMP
"G" 20+64	7'LT.	REMOVE AND DISPOSE EXISTING CATCH BASIN & 18" CMP
"G" 20+14 TO "G" 21+32		REMOVE AND DISPOSE EXISTING ASPHALT PAVEMENT
"G" 21+32	20'RT.	REMOVE AND RETURN EXISTING SWING GATE TO DOT/PF AIRPORT
"G" 20+30	0'	REMOVE AND REPOSITION EXISTING TIMBER WHEEL STOPS
"G" 20+26	0'	REMOVE EXISTING STOP SIGN

STRUCTURE ADJUSTMENT SUMMARY

STATION	OFFSET	COMMENTS
"F" 12+12	7'RT.	ADJUST EXISTING MANHOLE TO FINISHED GRADE
"F" 12+68	15'LT.	RELOCATE EXISTING WEATHER INSTRUMENTS TO 25' LT.
"F" 12+75	3'LT.	ADJUST EXISTING WATER VALVE BOX TO FINISHED GRADE
"f" 10+75	32'Rt.	ADJUST EXISTING WATER VALVE BOX TO FINISHED GRADE
"f" 12+37	4'Rt.	VALVE BOX AT END OF MAIN ADJUST TO FINISH GRADE
"f" 12+25	11'Lt.	VALVE BOX FOR TAQUAN AIR BUILDING
"f" 10+92	35'Lt.	ADJUST EXISTING CLEANOUT (OIL SEPARATOR VALVE BOX FOR ARFF BUILDING)
"f" 10+85	35'Lt.	ADJUST EXISTING SEWER CLEAN OUT

STRUCTURE INSTALLATION SUMMARY

STRUCTURE	LOCATION	TYPE	LID	COMMENTS
S-3	"G" 20+25, 8'LT.	B	39.52'	INSTALL 36" CMP AS REQ'D TO CONNECT EXISTING 36" CMP TO S-3



GRAPHIC SCALE
0' 15' 25' 50' 100'

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL
STATE OF ALASKA

R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS

PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997

PIPE CONDUIT SUMMARY

PIPE	INLET STA.	INV. EL.	OUTLET STA.	INV. EL.	DIAM.	LENGTH	SLOPE %
P-14	"T" 11+73, 72' RT.	~~35.00~~ 34.76'	"T" 10+53, 25' RT.	34.76'	42"X 29" CMPA	~~124'~~ 120'	1.00
P-15	"T" 10+53, 25' RT.	34.62'	"T" 9+50, 46' LT.	34.00'	42"X 29" CMPA	~~124'~~ 131'	0.50
P-16	"T" 16+45, 62' RT.	39.40'	"T" 14+88, 53.5' LT.	38.42'	57"X 38" CMPA	196'	0.50

STRUCTURE INSTALLATION SUMMARY

STRUCTURE	LOCATION	TYPE	GRATE ELEV.	COMMENTS
S-4	STA. "T" 10+53, 25' RT.	C	38.54'	SEE DETAIL THIS SHEET

STRUCTURE REMOVAL SUMMARY

STATION	OFFSET	
"T" 10+18	C/L STA.	REMOVE AND DISPOSE 24" CMP
"T" 10+27	31.5' RT.	REMOVE AND DISPOSE APRON LIGHT
"T" 15+62	C/L STA.	REMOVE AND DISPOSE 24" CMP

PROTECT AND MAINTAIN EXIST. APRON LIGHT

GRADE EXISTING DITCH TO DRAIN

DELTA=33°12'36"
R=57.50'
L=33.33'
T=17.15'
CH=32.86

T.B.M.
RUNWAY ℄ MON.
STA. 22+00
ELEV.=40.50'

PROTECT AND MAINTAIN EXIST. TAXIWAY SIGN

DELTA=152°28'27"
R=57.50'
L=153.01'
T=234.75'
CH=111.69'

REMOVE EXIST. RUNWAY LIGHT, SEE ELECTRICAL SHEET E-1 & E-2

SAW CUT

RUNWAY 9 - 27 (ASPHALT)

N

SLOPE LIMITS TYP.

PT STA. "T" 9+47.00

20'

SAW CUT

P-15

S-4

℄ MATCH EXIST. 136'

STA. "T" 11+27
65' RT., ELEV.=~~39.00~~ 39.50'

N 88°39'29" E
827.20'

PC STA. "T" 15+51
17.50' LT., ELEV.=43.20'

STA "T" 16+07
62' LT., ELEV.=43.10'

STA "T" 16+00
43' LT., ELEV.=43.04'

℄ MATCH EXIST. 331' ~~324'~~

PROTECT AND MAINTAIN EXIST. RUNWAY LIGHT

STA "T" 17+84.60
24' RT., ELEV.=44.24'

10'
17.50'
17.50'
10'

PT STA. "T" 11+83.10
17.50' RT., ELEV.=40.12'

PC STA. "T" 17+26.40
17.50' RT., ELEV.=44.14'

P-16

EXISTING MAIN AVIATION APRON TO RECIEVE 1-1/2" ASPHALT OVERLAY SEE SHEET 11 FOR DETAILS

STA. "T" 10+20
41' RT., ELEV.=38.77'

P-14

DITCH TO DRAIN TO DRAINAGE PIPE

DELTA=151°31'14"
R=57.50'
L=152.06'
T=226.58'
CH=111.46'

DELTA=35°16'00"
R=260.00'
L=160.03'
T=82.64'
CH=157.52

END TAXIWAY CONSTRUCTION
STA."T" 17+84.60=
RUNWAY CENTERLINE
STATION 34+05.49,
69.66' RIGHT
EL.=44.60'
FIELD VERIFY
SAW CUT & MATCH
EXISTING PAVEMENT

GRADE EXISTING DITCH TO DRAIN

BEGIN TAXIWAY CONSTRUCTION
STA."T" 9+57.40=
RUNWAY CENTERLINE
STATION 27+09.03,
515.98' RIGHT
EL.=38.36'
FIELD VERIFY
SAW CUT & MATCH
PROPOSED OVERLAY

P-18

PROPOSED G/A SMALL AIRCRAFT APRON SEE SHEET 8 OF 19

PC STA. "T" 11+55.20
124' RT., ELEV.=40.00'

GRAPHIC SCALE
0' 15' 25' 50' 100'

VPI STA."T" 10+50
EL.=38.90'
NO V.C.

VPI STA 13+00
EL.=41.70'
NO V.C.

VPI STA 15+00
EL.=~~43.20~~ 43.70
NO V.C.

TAXIWAY C/L FINISH PROFILE

S=+0.58%
S=+1.12%
S=+0.75%
S=+0.49%

ORIGINAL GROUND

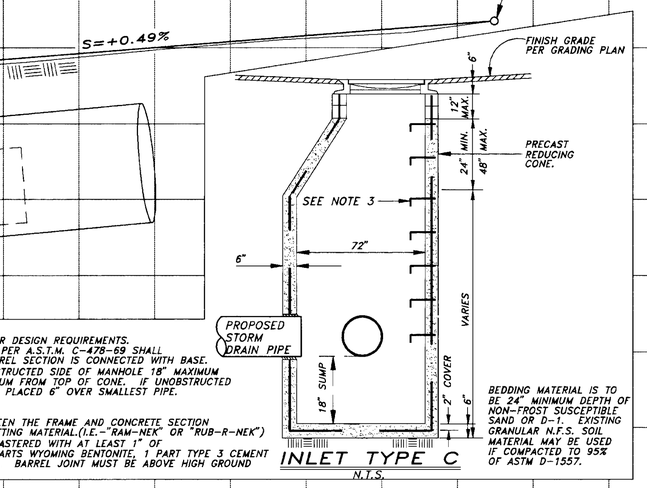
P-14
EXIST. 24" CMP
P-15
72" DIAM. MANHOLE, TYPE C INLET
S-4

NOTE:
PIPE CONDUIT P-18 DETAILED ON SHEET 8 OF 19

P-16
EXIST. 24" CMP

44 42 40 38 36 34 32

"T" 9+60 "T" 10+20 "T" 10+80 "T" 11+40 "T" 12+00 "T" 12+60 "T" 13+20 "T" 13+80 "T" 14+40 "T" 15+00 "T" 15+60 "T" 16+20 "T" 16+80 "T" 17+40 "T" 18+00



INLET TYPE C
N.T.S.

BEDDING MATERIAL IS TO BE 24" MINIMUM DEPTH OF NON-FROST SUSCEPTIBLE SAND OR D-1. EXISTING GRANULAR N.F.S. SOIL MATERIAL MAY BE USED IF COMPACTED TO 95% OF ASTM D-1557.

NOTES:
1. REFER TO A.S.T.M. DESIGNATION C-478 FOR DESIGN REQUIREMENTS.
2. MINIMUM STEEL REQUIRED FOR BARREL AS PER A.S.T.M. C-478-69 SHALL BE IMBEDDED IN BASE SO THAT FIRST BARREL SECTION IS CONNECTED WITH BASE.
3. RUNGS TO BE PLACES 12" O.C. ON UNOBSTRUCTED SIDE OF MANHOLE 18" MAXIMUM FROM BOTTOM OF MANHOLE AND 6" MAXIMUM FROM TOP OF CONE. IF UNOBSTRUCTED SIDE NOT AVAILABLE, BOTTOM RUNG TO BE PLACED 6" OVER SMALLEST PIPE.
4. ALL PIPE TO EXTEND 2" INTO MANHOLE.
5. BLOCKOUTS TO BE FORMED.
6. ALL JOINTS BETWEEN SECTIONS AND BETWEEN THE FRAME AND CONCRETE SECTION SHALL BE SEALED BY AN APPROVED GASKETING MATERIAL.(I.E.-"RAM-NEK" OR "RUB-R-NEK")
7. THE EXTERIOR OF ALL JOINTS MUST BE PLASTERED WITH AT LEAST 1" OF BENTONITE-CEMENT SEALING PLASTER (2 PARTS WYOMING BENTONITE, 1 PART TYPE 3 CEMENT AND 1 PART SAND AND WATER) OR EQUAL. BARREL JOINT MUST BE ABOVE HIGH GROUND WATER TABLE.

ENGINEER'S SEAL
STATE OF ALASKA

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

TAXIWAY.DWG

PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997

R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS

PIPE CONDUIT SUMMARY

PIPE	INLET STA.	INV. ELEV.	OUTLET STA.	INV. ELEV.	DIAMETER	LENGTH	% SLOPE
P-17	"A" 10+65, 173'LT.	36.91'	"A" 10+25, 170'RT.	36.71'	42"X 29" CMPA	40'	0.50
P-18	"A" 10+22, 166'RT.	36.27'	"A" 10+20, 144'LT.	34.72'	42"X 29" CMPA	310'	0.50

NOTE: CONSTRUCT ROCK INLET AT PIPE END SECTIONS ON STRUCTURE P-17 & P-18.

GRADE EXIST. DITCH TO DRAIN

ASPHALT REMOVAL LIMITS

MATCH LINE - SEE SHEETS 7 & 11 OF 19 FOR TAXIWAY & APRON OVERLAY

CUT OFF EXIST TIE-DOWNS FLUSH WITH EXIST. GROUND LINE (TYP.) FILL ANY HOLE w/A.C PAVEMENT

BEGIN APRON PAVING
STA "A" 10+00
ELEV.=39.72'(±)
MATCH TO APRON OVERLAY

EXIST, 1 1/2" ALUM. CAPS STAMPED LS 6268

S 51°48'18"E 150.05'

S 62°56'38" - 430.19'

TBM
TOP MON. EL.= 36.65'

APRON PAVING CONTROL TIE
N.T.S.

EXIST. MAIN AVIATION APRON TO RECEIVE 1-1/2" ASPHALT OVERLAY

EDGE OF EXISTING ASPHALT

CONCRETE APRON

ARFF VEHICLE BUILDING

KETCHIKAN AIR

SEE SHEET 12 OF 19 FOR GATE LAYOUT

EXIST. CHAINLINK GATE

MATCH LINE STA."F" 13+36.22 SEE SHEET 6 OF 19

WRANGELL AIRPORT ROAD
(ASPHALT SURFACE)

STA."A" 11+85, 133'LT.
BEGIN DITCH TRANSITION TO NEW 42"X29" CMPA
ELEV.= 37.50'

STA."A" 13+94
132.5' LT., ELEV.=40.40'
BEGIN DITCH

STA."A" 13+94
125' LT., ELEV.=42.27'

STA."A" 13+92
115' LT., ELEV.=42.37'

STA."T"11+27,65' RT.=
STA."A"11+02,151' LT.
ELEV.= ~~39.00'~~ 39.50

P.C. STA"T"11+55.20,124' RT.=
STA."A"11+54,115' LT.
ELEV.= 40.00'

INSTALL TIE-DOWN ANCHORS PER TYPICAL DETAIL ON SHEET 4 OF 19

STA."A" ~~10+52.17~~ 10+42 AHD. ⊥=
STA."F" 15+17.~~60~~ 120 BK.
ELEV.=40.02'

S 55°01'56" E

N 31°18'42" E

P.T. STA."F" 13+81.50
29' LT.,ELEV.=40.40

P.T. STA."A" 10+83
133'RT.,ELEV.=39.10'

STA."A" 10+83
150'RT.,ELEV.=38.76'

P.C. STA."F" 13+53
9' LT.,ELEV.=40.30'

P.C. STA."F" 13+53.70
9' RT.,ELEV.=40.18'

PLACE 4-MAN SIZE ROCKS @ 5' ON CENTER FROM STA."A" 10+83 TO STA."A" 13+92

EDGE OF PROPOSED ASPHALT (TYP.)

STA. "A" 12+23
146' RT., ELEV.= 40.37'

STA. "A" 13+92
153' RT., ELEV.= 41.96'

STA. "A" 11+00, RT.
BEGIN ROCK FACING PER DETAIL
SCALE ROCK SLOPE

TOP OF EXISTING ROCK/SOIL CUT

STA. "A" 13+70, RT.
END ROCK FACING

END APRON PAVING
STA."A" 13+92
ELEV.=43.52'

GRADE EXIST. DITCH TO DRAIN TO NEW DITCH

SLOPE LIMIT (TYP.)

STA "A" 14+92, 156' RT
BEGIN DITCH GRADING
ELEV.=40.77' (±)

RELOCATE ~~100~~ 200 L.F. OF EXIST. CHAINLINK FENCE

MATCH TO EXIST. FENCE

ROCK SOURCE (EXISTING SHOT ROCK BONES). CONTRACTOR TO VERIFY AVAILABILITY OF QUANTITY & QUALITY. -USE ONLY WITH PERMISSION OF WRANGELL AIRPORT MAINTENANCE MANAGER.

C.I. = 2'
GRAPHIC SCALE
0' 15' 25' 50' 100'

NOTES:

1. REFERENCED ELEVATIONS GIVEN ON THIS SHEET ARE TO FINISH GRADE.
2. ELEVATIONS WITH GRID TIES, ARE ORIGINAL GROUND ELEVATIONS.
3. PIPE CONDUITS P-14, P-15 & STRUCTURE S-4 ARE DETAILED ON SHEET 7 OF 19.

ROCK FACING SUMMARY

FROM	TO	HEIGHT	S.F.
"A" 11+00, RT	"A" 13+70, RT	15'	4,050 ±

RELOCATE EXIST. CHAINLINK FENCE SEE PLAN VIEW THIS SHEET

100' Lt. DISPOSE OF 600' Lt.

REMOVE AND DISPOSE OF EXIST. EXPOSED SLOUGHING ORGANIC MATERIAL AS DIRECTED BY THE ENGINEER

HAND CLEAR ALL TREES WITHIN 15' OF TOP OF BANK

~~EXISTING 1:1~~ TO 1 1/2:1 SLOPE

GRASS COVERED SLOPE EXCEPT BED ROCK AREAS

~~18"~~ - 24" DIMENSION ROCK WITH MIN. WEIGHT OF 1,000 LBS. SCALE ROCK SLOPES ~~PRIOR~~ TO ROCK PLACEMENT

EDGE OF PROPOSED APRON PAVING
~~PROPOSED BUFFER ROCK~~

10' MIN. 3' 4' 8'

24"

15' MAX

12" MIN. KEY

FIRST TWO ROWS OF ROCKS SHALL BE DOUBLE ROCKED TO FORM ROCK FACING BUTTRESS

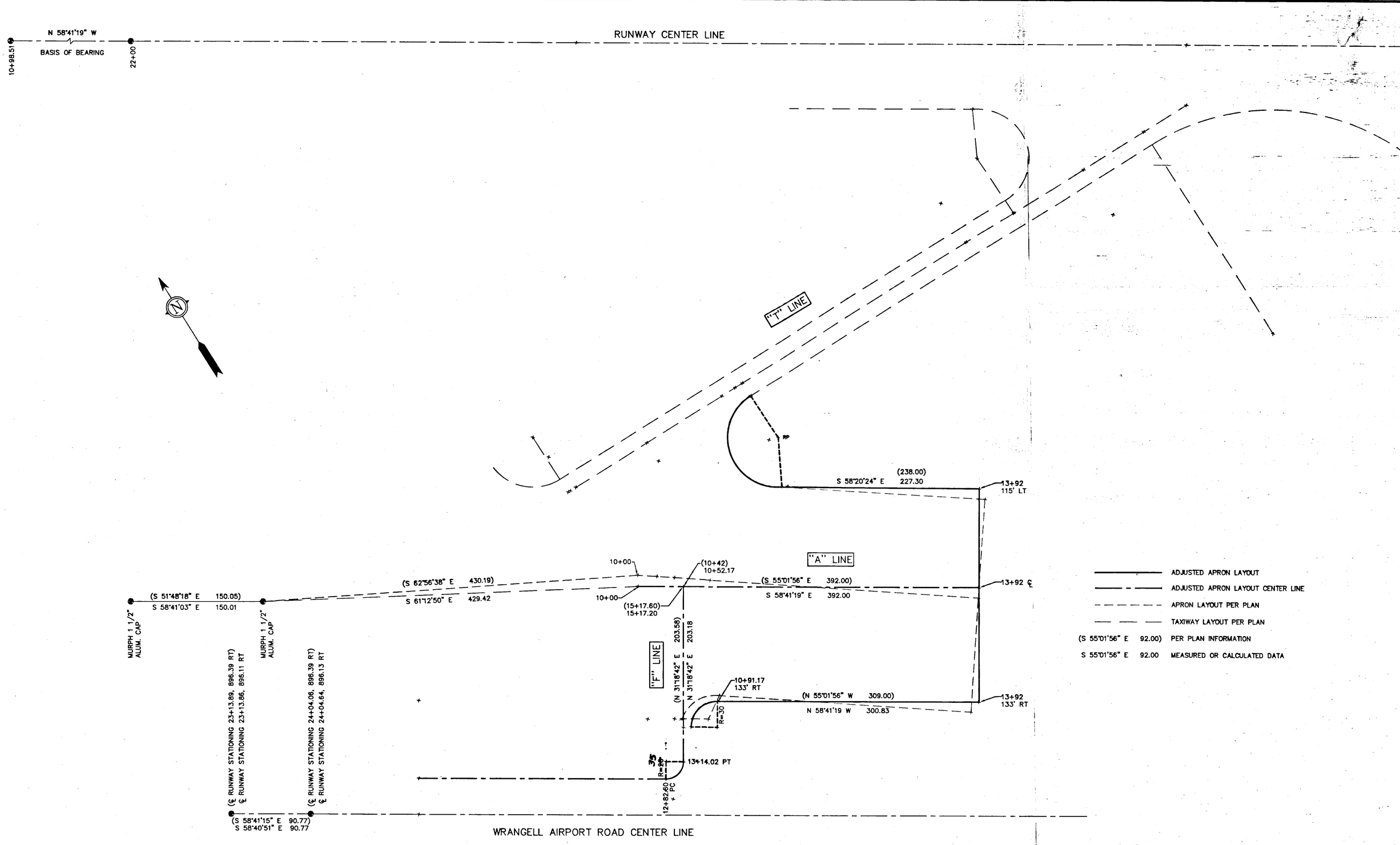
UNDISTURBED SOIL OR COMPACTED EMBANKMENT TO 95%.

~~ROCK FACING DETAIL~~
N.T.S.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL
STATE OF ALASKA 49th

DESIGNED BY:
PROJECT NO.



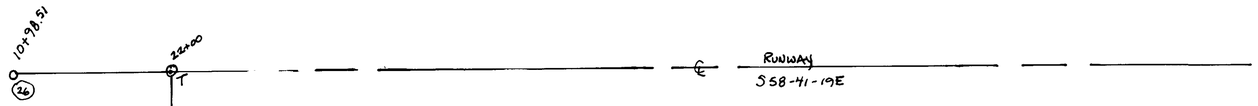
1 OF 1

DESIGNED: GGS
DRAWN: TLS
CHECKED: GGS
DATE OF SURVEY: 05/30/97

GREG SCHEFF & ASSOCIATES
LAND SURVEYORS

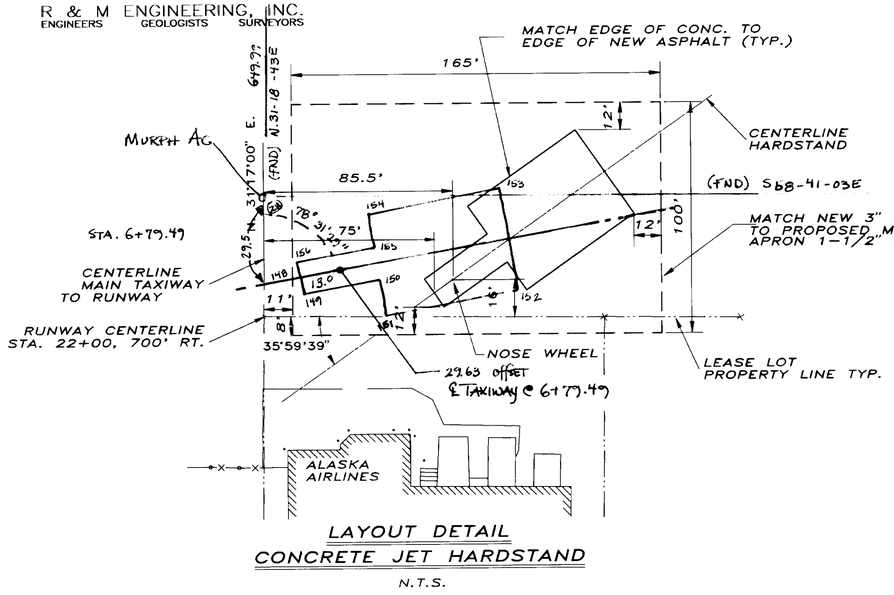
BOX 1331 WRANGELL, ALASKA 99929

PROJECT: **WRANGELL AIRPORT IMPROVEMENTS**

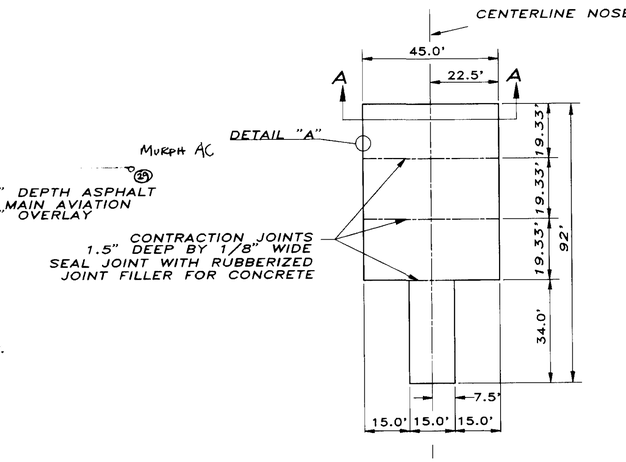


R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS

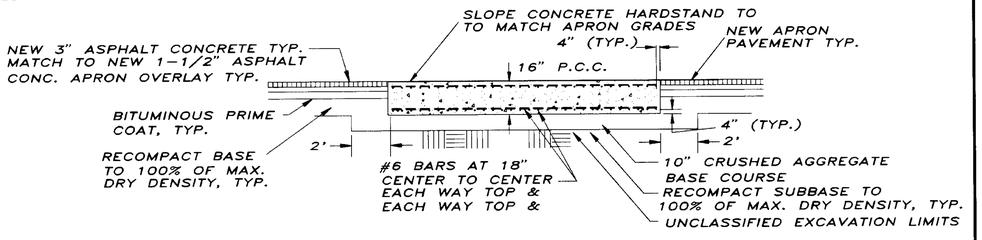
PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997



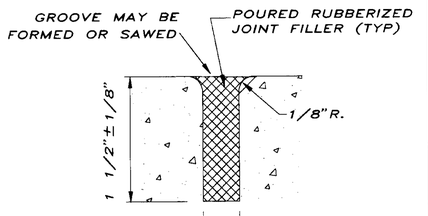
LAYOUT DETAIL
CONCRETE JET HARDSTAND
N.T.S.



PLAN VIEW
CONCRETE JET HARDSTAND
N.T.S.

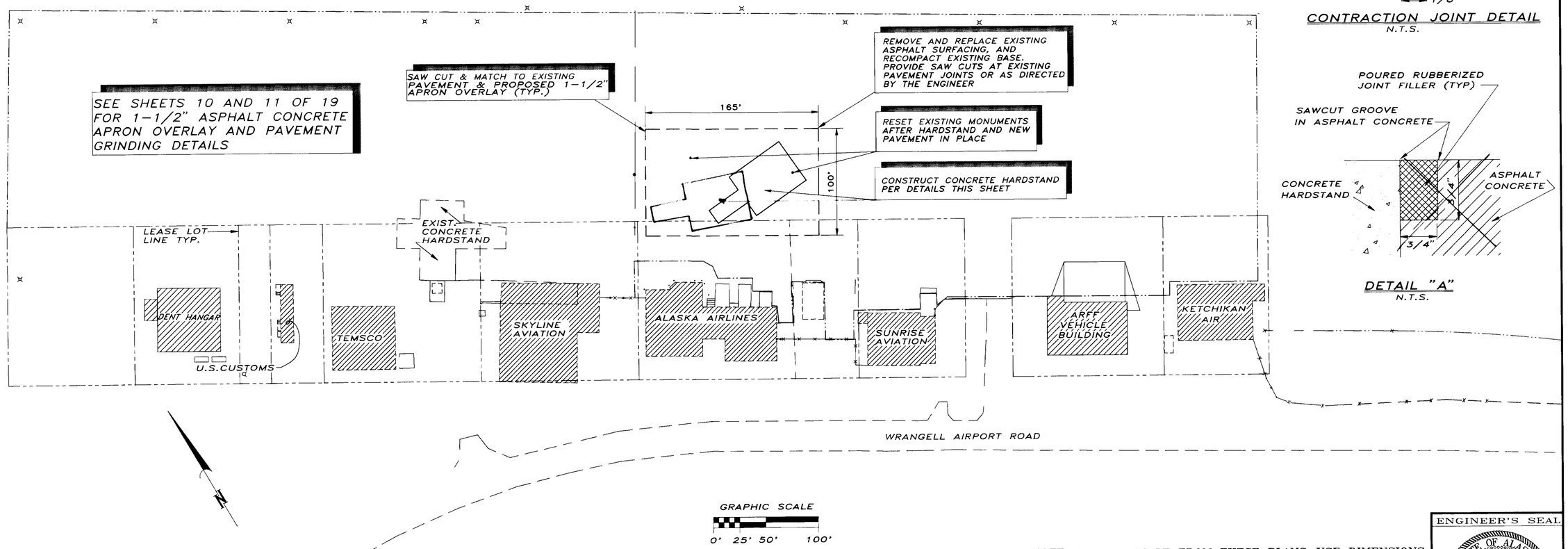


SECTION A-A
N.T.S.



CONTRACTION JOINT DETAIL
N.T.S.

DETAIL "A"
N.T.S.



NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL
STATE OF ALASKA

DESIGNED BY
DRAWN BY
CHECKED BY
PROJECT NO.

APRON.DWG 1-50

PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997

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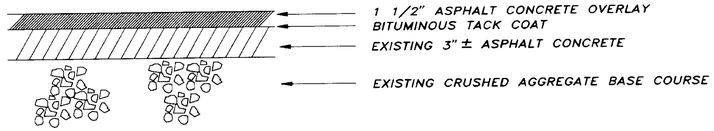
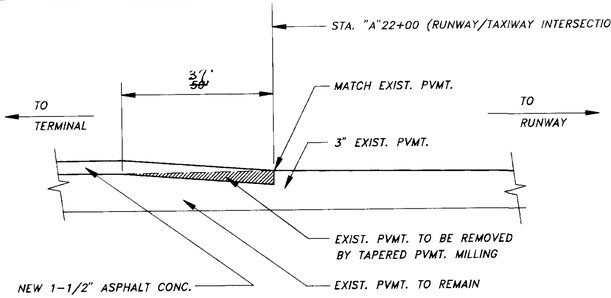


MAIN AVIATION APRON – OVERLAY SECTION

N.T.S.

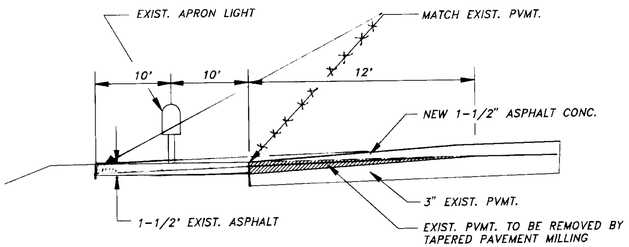


PAVEMENT TRANSITION DETAIL
MAIN APRON TO MATCH TAXIWAY

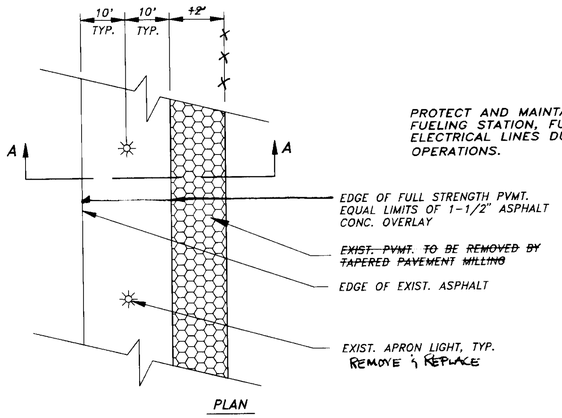
N.T.S.

NOTES:

1. ~~TAPERED~~ PAVEMENT ~~MILLING~~ SHALL REMOVE A WEDGE OF PAVEMENT ~~RANGING~~ IN DEPTH OF 0" AT START ~~(RUNWAY STA "A"22+00, 608' RT.)~~ TO 1.5" (RUNWAY STA "A"22+00, ~~558'~~ RT.)
2. ASPHALT MILLING MAY TAKE PLACE AT THE MAIN AVIATION AND TAXIWAY "A" PRIOR TO PAVING AS LONG AS TEMPORARY RAMP NOT EXCEEDING 1.5% IS CONSTRUCTED.
3. THE LIMITS OF BITUMINOUS OVERLAY ARE SUBJECT TO REVISIONS AS APPROVED BY THE ENGINEER.
4. THE EXISTING MAIN AVIATION APRON GRADE AND CROSS SLOPE SHALL BE USED AS CONTROL FOR THE NEW 1-1/2" ASPHALT PAVEMENT OVERLAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXISTING CROSS SLOPE GRADIENTS TO THE SATISFACTION OF THE ENGINEER.
5. BITUMINOUS OVERLAY OPERATIONS SHALL COMPLY WITH THE PROJECT OPERATIONS PLAN, SECTION 80-04, OF THE TECHNICAL SPECIFICATIONS.
6. SEE PLAN SHEETS 5, 12 AND 13 FOR "X" LINE ACCESS ROAD, FENCING AND GATE DETAILS.



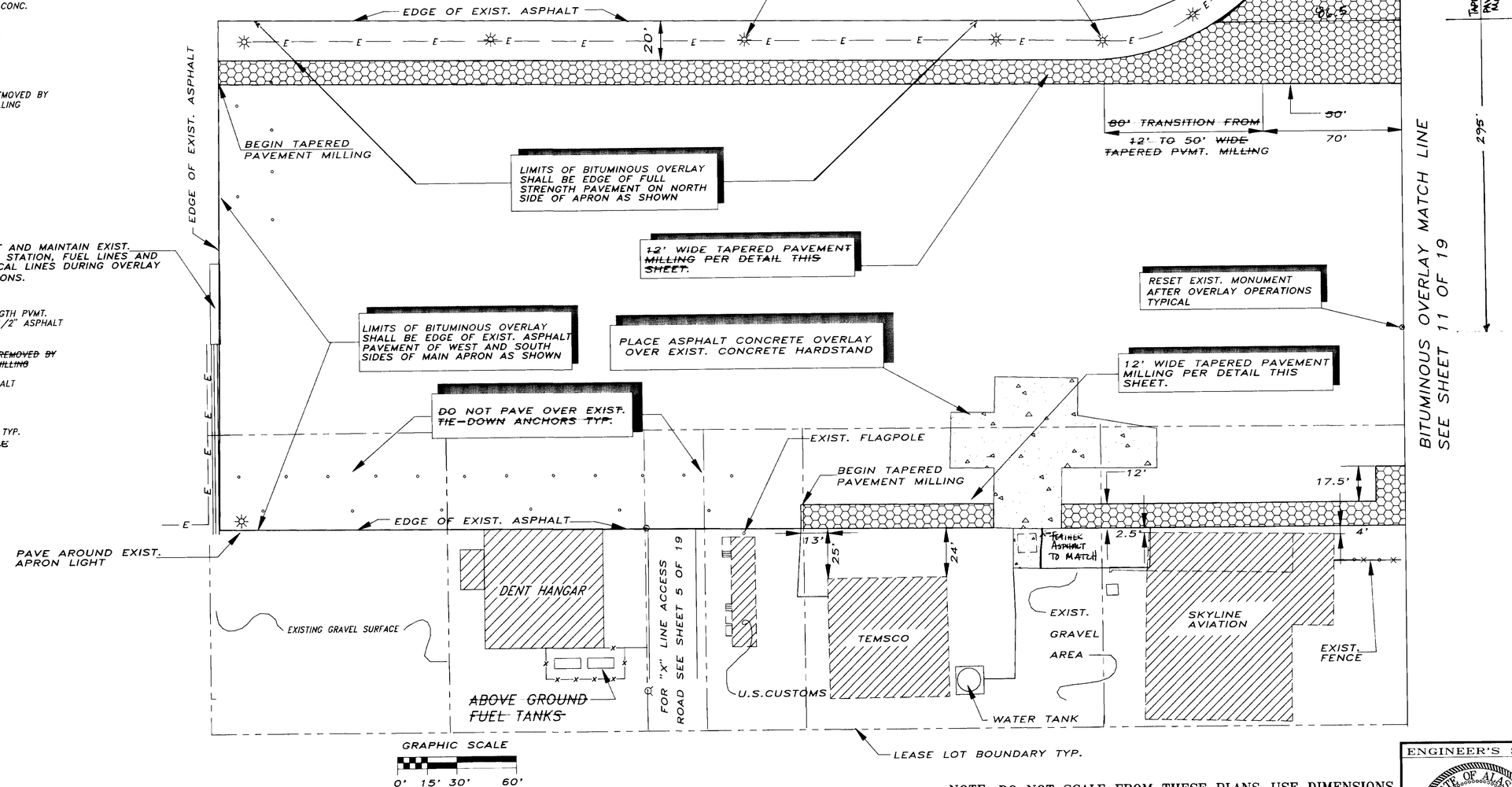
SECTION A-A



PLAN

TAPERED PAVEMENT MILLING DETAILS

N.T.S.



SYMBOLS

☼	EXISTING APRON LIGHT
○	EXISTING TIE-DOWN ANCHOR
—X—X—	EXISTING CHAINLINK FENCE
—E—E—	EXISTING UNDERGROUND ELECTRIC
——·——	LEASE LOT PROPERTY LINE
▨	PROPOSED PAVEMENT MILLING LIMITS

GRAPHIC SCALE
0' 15' 30' 60'

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL
STATE OF ALASKA 49th

DESIGNED BY:	PROJECT NO.

EXHIBIT_OVERLAY.DWG

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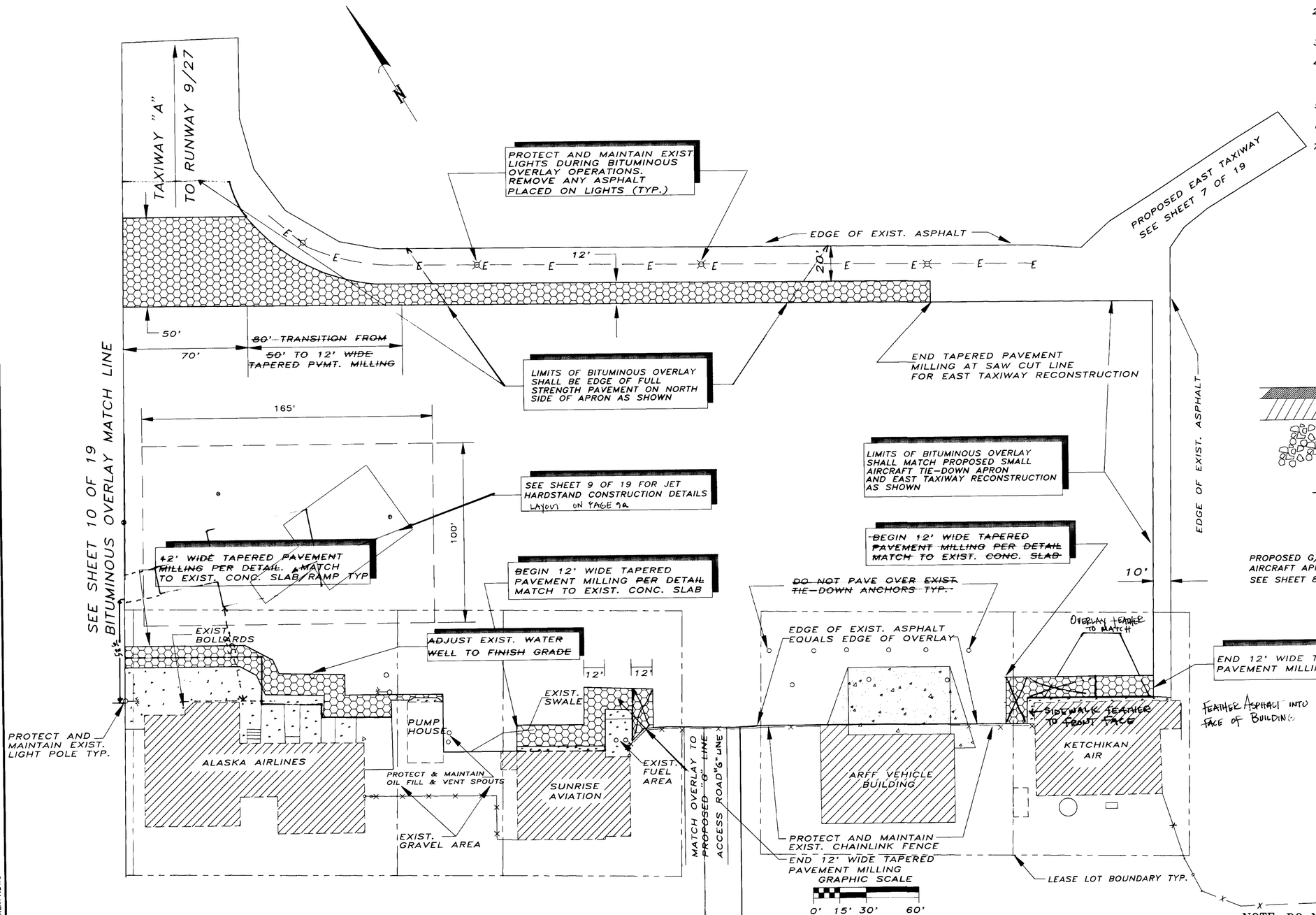

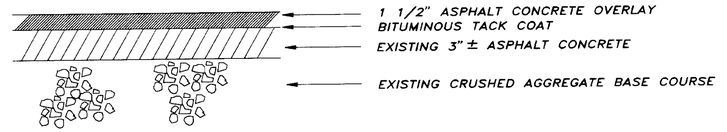

MAIN AVIATION APRON – OVERLAY SECTION

N.T.S.

NOTES:

1. TAPERED PAVEMENT MILLING SHALL REMOVE A WEDGE OF PAVEMENT RANGING IN DEPTH OF 0" AT START (RUNWAY STA. "A" 22+00, 608'RT.) TO 1.5" (STA. "A" 22+00, 558'RT).
2. ASPHALT MILLING MAY TAKE PLACE AT THE MAIN AVIATION AND TAXIWAY "A" PRIOR TO PAVING AS LONG AS TEMPORARY RAMP NOT EXCEEDING 1.5% IS CONSTRUCTED.
3. THE LIMITS OF BITUMINOUS OVERLAY ARE SUBJECT TO REVISIONS AS APPROVED BY THE ENGINEER.
4. THE EXISTING MAIN AVIATION APRON GRADE AND CROSS SLOPE SHALL BE USED AS CONTROL FOR THE NEW 1-1/2" ASPHALT PAVEMENT OVERLAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXISTING CROSS SLOPE GRADIENTS TO THE SATISFACTION OF THE ENGINEER.
5. BITUMINOUS OVERLAY OPERATIONS SHALL COMPLY WITH THE PROJECT OPERATIONS PLAN, SECTION 80-04, OF THE TECHNICAL SPECIFICATIONS.
6. SEE PLAN SHEETS 6, 12 AND 13 FOR "F" AND "G" LINE ACCESS ROAD, FENCING AND GATE DETAILS.
7. SEE SHEET 10 OF 19 FOR CONSTRUCTION DETAILS FOR TAPERED PAVEMENT MILLING AND TRANSITION DETAILS.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL
STATE OF ALASKA
49th

PROJECT DESIGNATION	YEAR
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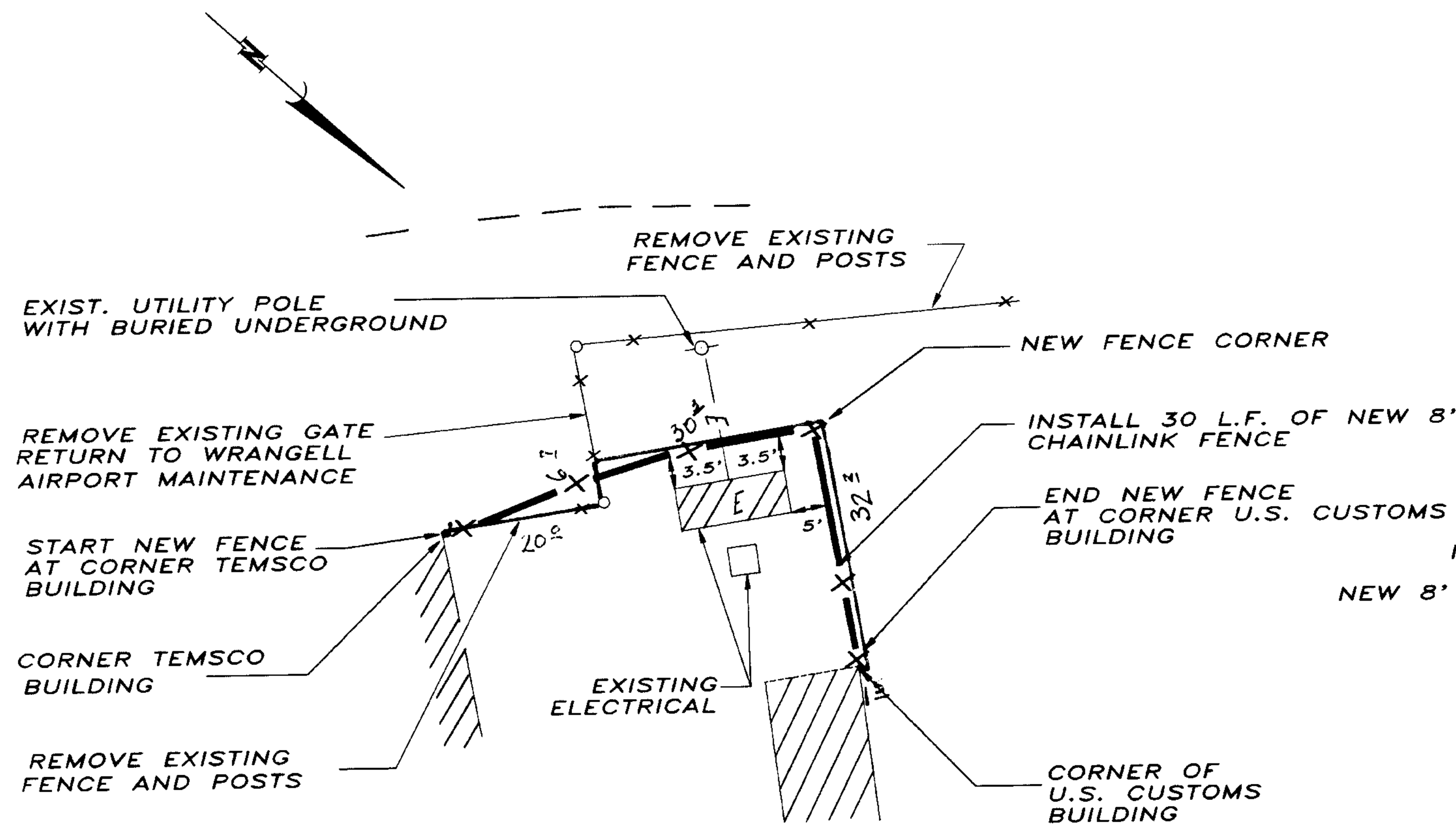
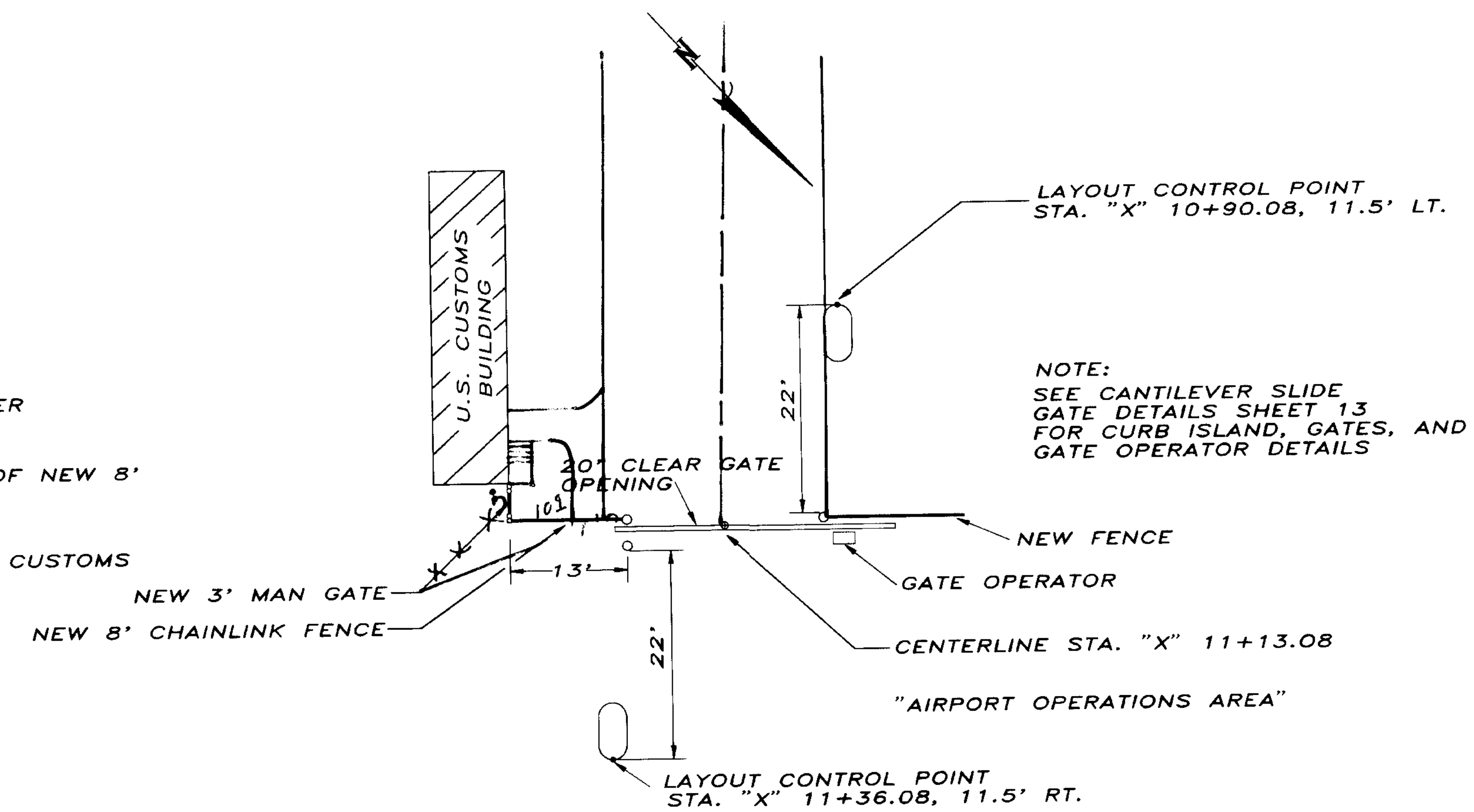
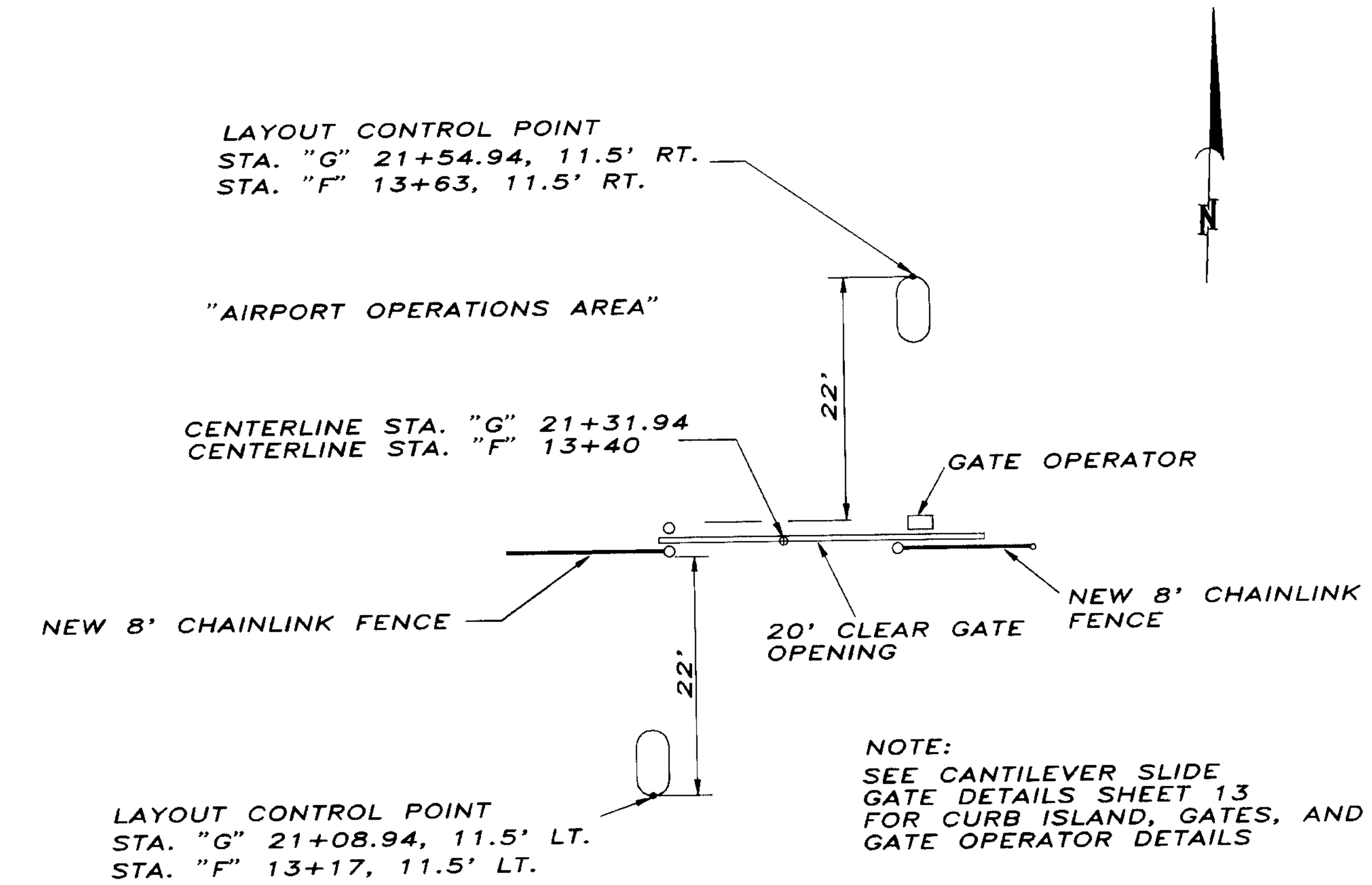


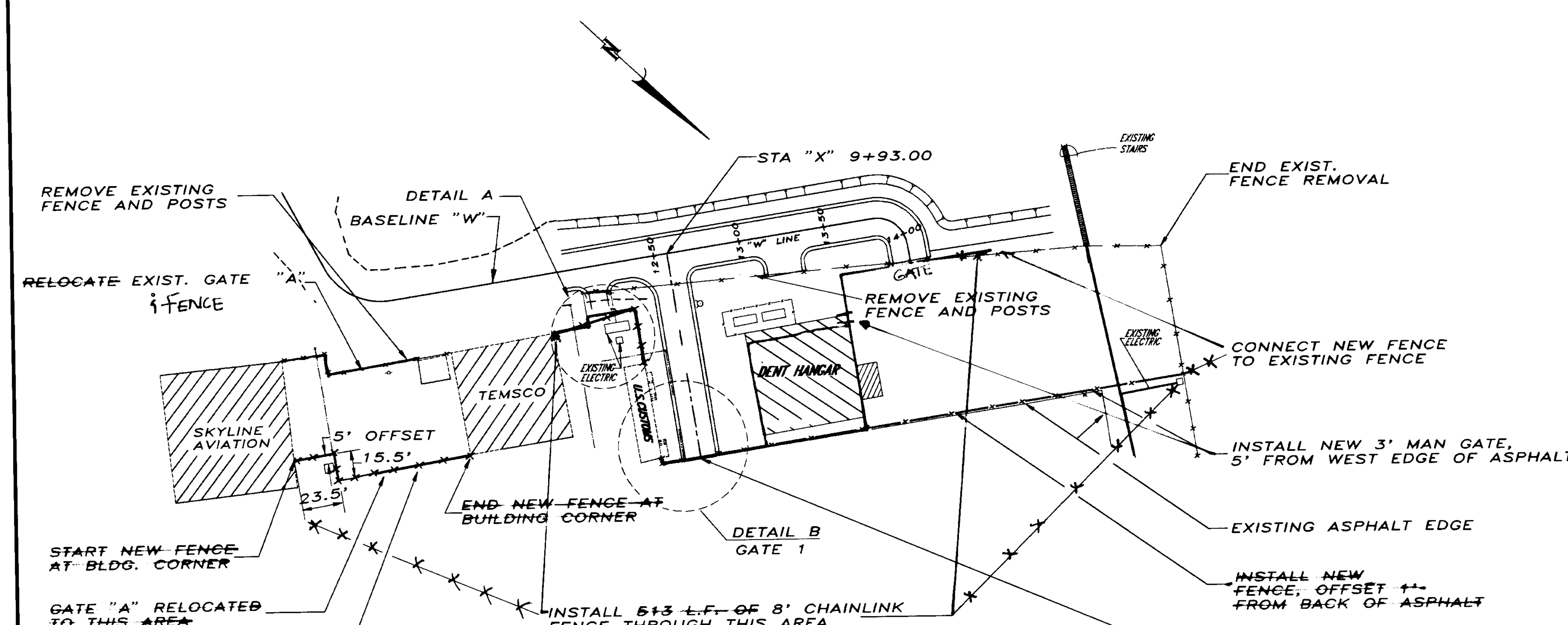
DETAIL A
N.T.S.



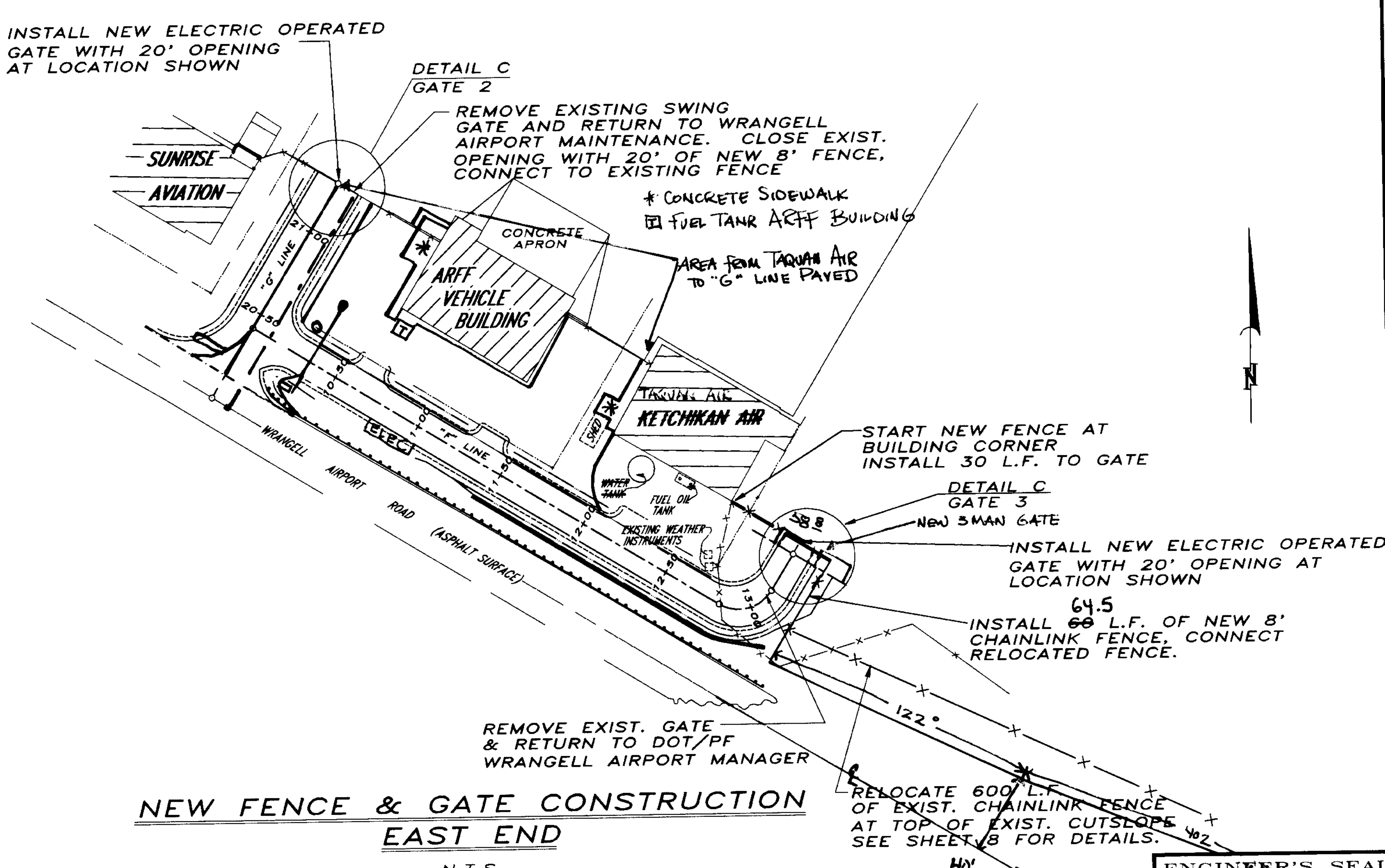
DETAIL B GATE 1
N.T.S.



DETAIL C GATE 2 & 3
N.T.S.



NEW FENCE & GATE CONSTRUCTION
WEST END
N.T.S.



NEW FENCE & GATE CONSTRUCTION
EAST END
N.T.S.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

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ENGINEER'S SEAL

WEST.DWG

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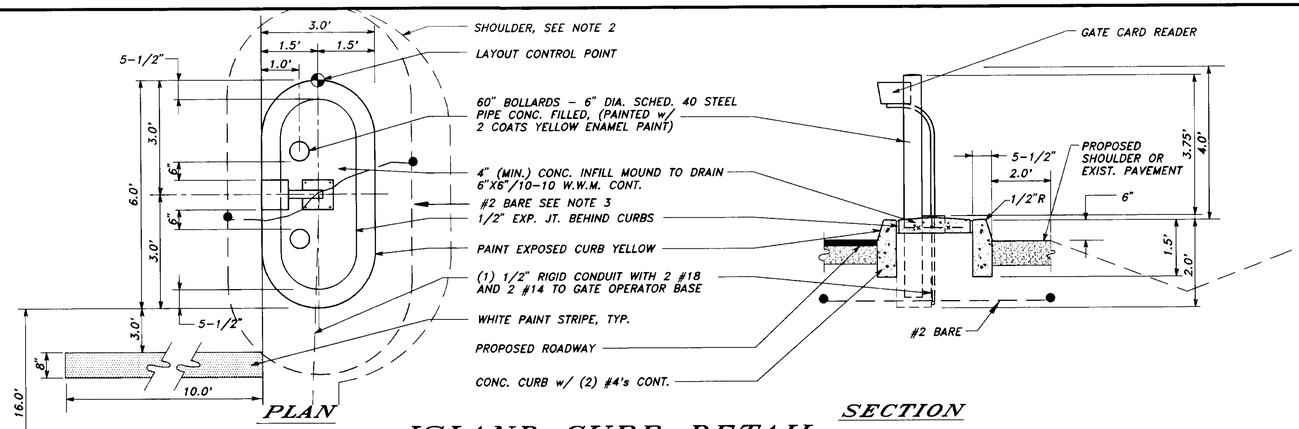
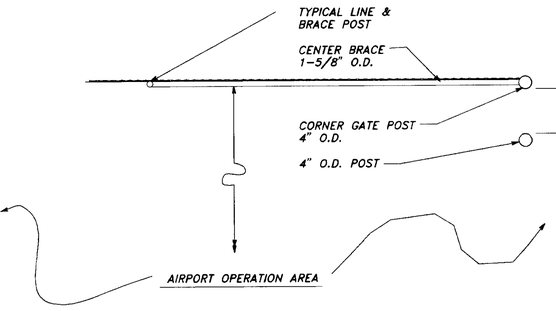
ISLAND CURB NOTES:

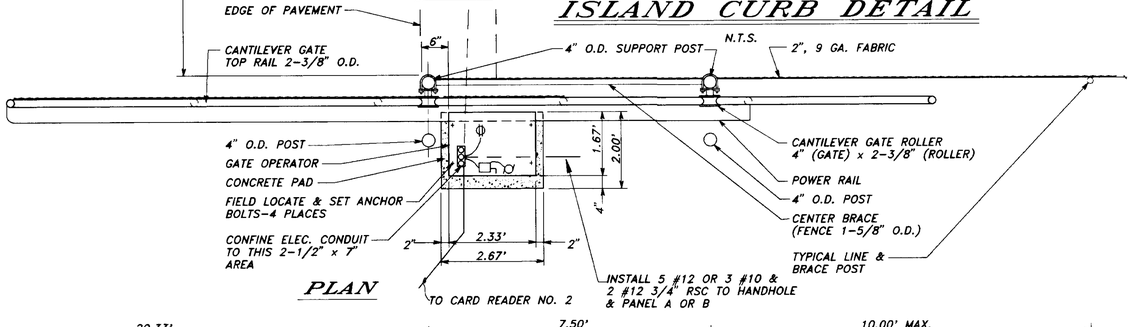
1) SAW-CUT AND MATCH EXIST. PAVEMENT WHERE PAVEMENT EXISTS AT GATES 1 AND 2 WITHIN THE AIRPORT OPERATIONS AREA.
2) PROVIDE WIDENED SHOULDER FOR ISLAND CURB LOCATIONS AS REQUIRED.
3) INSTALL #2 AWG BARE APPROX. 22 L.F. AT 24" DEPTH WITH #12 EACH WAY FOR EACH CARD READER.
4) SEE SHEET 12 OF 19 FOR GATE LOCATIONS.



ISLAND CURB DETAIL

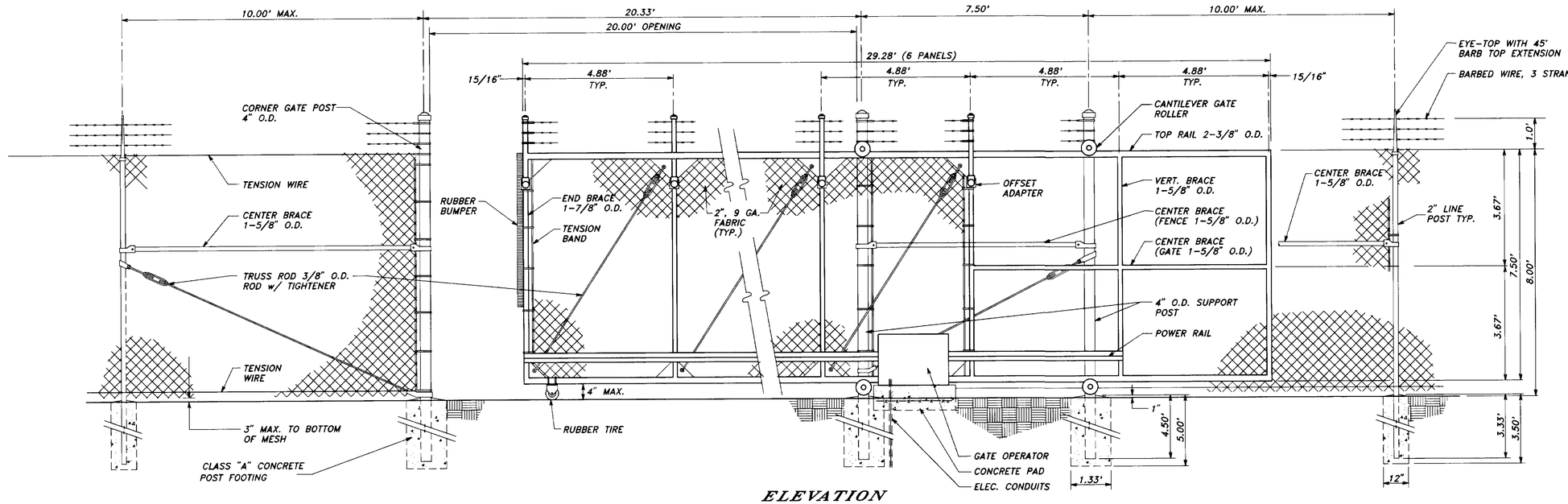
N.T.S.

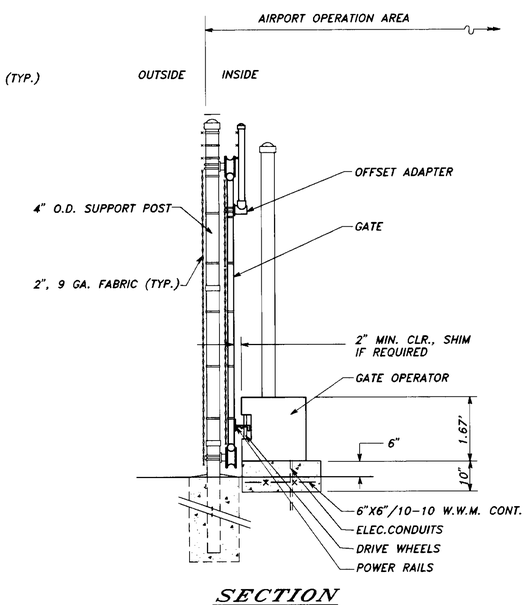




FENCING NOTES:

1) FENCE FABRIC SHALL BE 9 GA. WIRE WOVEN IN A 2" MESH. FENCING SHALL BE 8' TALL WITH BARBED WIRE ON TOP.
2) NOT ALL OF CHAINLINK FENCE AND MISC. FENCING HARDWARE IS SHOWN IN THIS DETAIL. REFER TO DOT/PF STANDARD DETAILS NO. F-01.01 FOR FURTHER DETAIL.





AUTOMATIC SLIDING GATE DETAILS

N.T.S.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL
STATE OF ALASKA

R & M ENGINEERING, INC.
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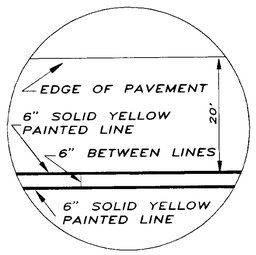

DETAIL A
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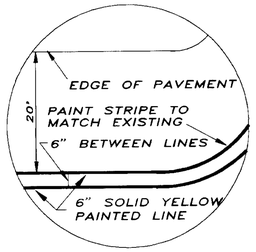

DETAIL B
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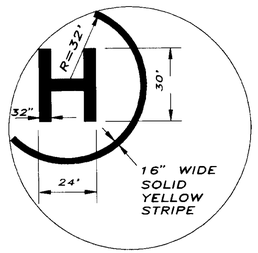

DETAIL C
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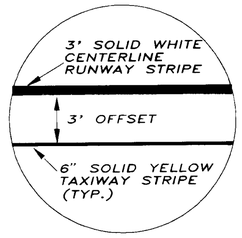

DETAIL D
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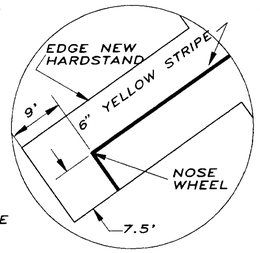

DETAIL E
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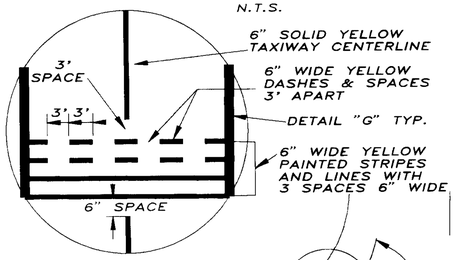

DETAIL F
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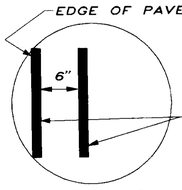

DETAIL G
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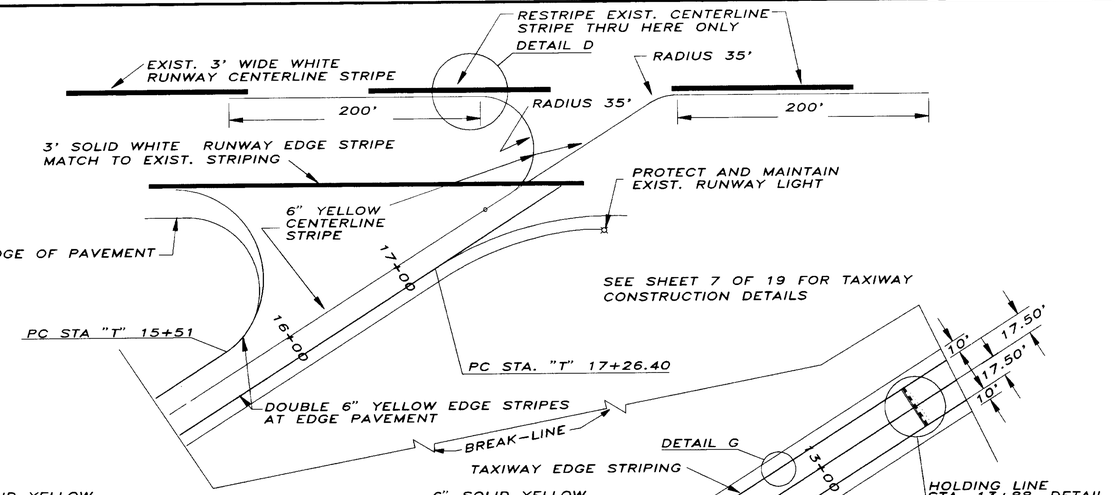

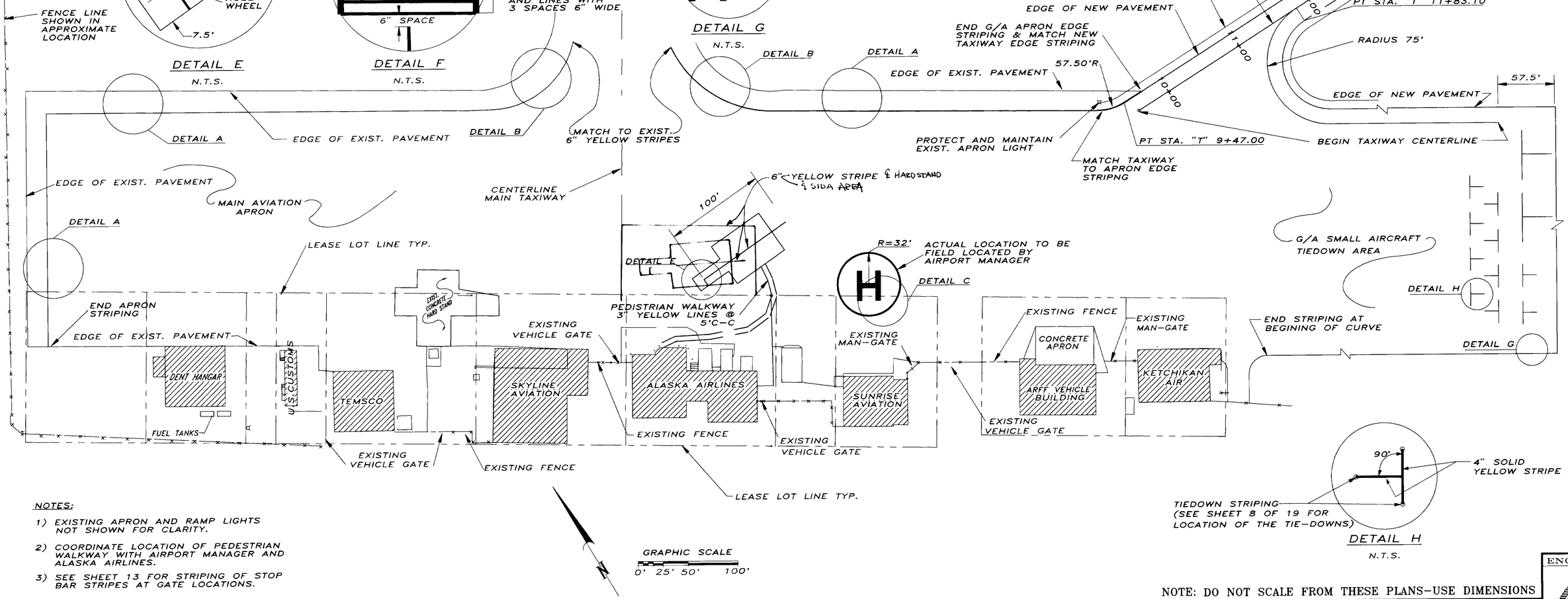

DETAIL H
N.T.S.

FENCE LINE SHOWN IN APPROXIMATE LOCATION

GRAPHIC SCALE
0' 25' 50' 100'

N

NOTES:

1) EXISTING APRON AND RAMP LIGHTS NOT SHOWN FOR CLARITY.
2) COORDINATE LOCATION OF PEDESTRIAN WALKWAY WITH AIRPORT MANAGER AND ALASKA AIRLINES.
3) SEE SHEET 13 FOR STRIPING OF STOP BAR STRIPES AT GATE LOCATIONS.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL
STATE OF ALASKA

PLOTTING.DWG 1:100

R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS

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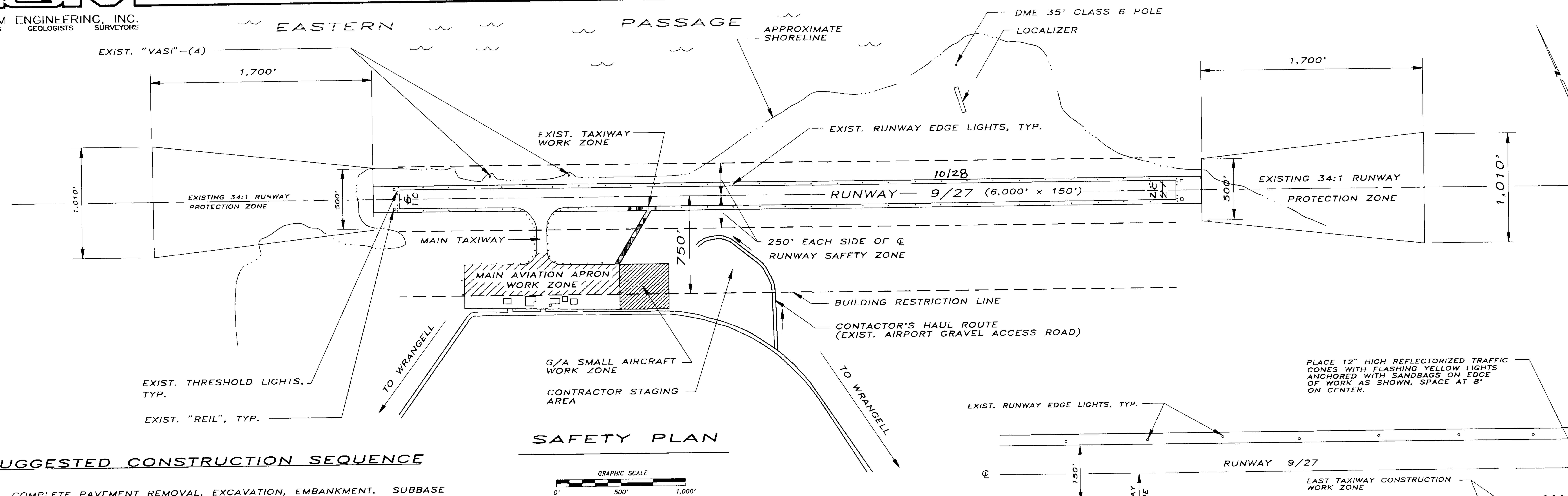


SAFETY PLAN

SUGGESTED CONSTRUCTION SEQUENCE

A. COMPLETE PAVEMENT REMOVAL, EXCAVATION, EMBANKMENT, SUBBASE COURSE AND CRUSHED AGGREGATE BASE COURSE ON EAST TAXIWAY.

B. COMPLETE SUBBASE COURSE AND CRUSHED AGGREGATE BASE COURSE ON SMALL AIRCRAFT TIE-DOWN FACILITY.

C. COMPLETE PAVING ON EAST TAXIWAY AND SMALL AIRCRAFT TIE-DOWN FACILITY.

D. COMPLETE JET HARDSTAND PAVEMENT REMOVAL, EXCAVATION, CRUSHED AGGREGATE BASE PLACEMENT AND CONCRETE PLACEMENT. PROVIDE TEMPORARY JET PARKING AREA ON WEST HALF OF MAIN AVIATION APRON. COMPLETE TAPERED PAVEMENT MILLING AND 1-1/2" ASPHALT CONCRETE OVERLAY ON EAST HALF OF MAIN AVIATION APRON.

E. COMPLETE TAPERED PAVEMENT MILLING AND 1-1/2" ASPHALT CONCRETE OVERLAY ON WEST HALF OF MAIN APRON.

F. COMPLETE STRIPING AND CLEAN-UP WORK.

G. CHANGES TO THE CONSTRUCTION SEQUENCE PLAN MUST BE APPROVED IN WRITING BY THE AIRPORT MANAGER AND THE ENGINEER PRIOR TO COMMENCING WORK.

SAFETY PLAN NOTES

1. NO WORK (PERSONNEL, EQUIPMENT, AND MATERIALS) SHALL BE ALLOWED WITHIN 250' OF RUNWAY 9-27 CENTERLINE 30 MINUTES BEFORE UNTIL 30 MINUTES AFTER JET OPERATIONS.

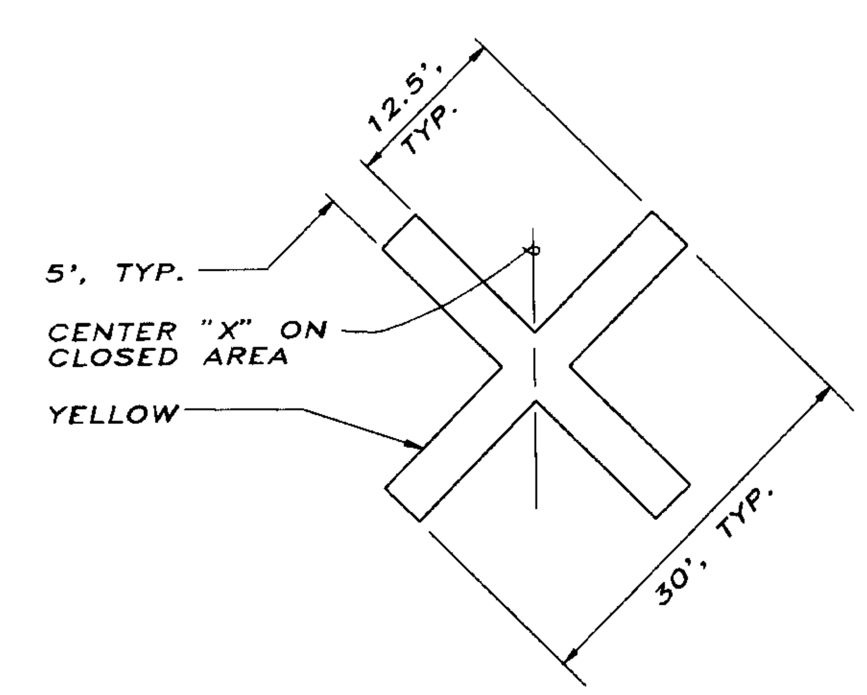
2. SEE SECTION 80 OF THE PROJECT SPECIFICATIONS FOR SPECIAL LIMITATIONS AND OPERATIONAL SAFETY CONCERNS.

3. TEMPORARY PAVEMENT TRANSITION SHALL BE CONSTRUCTED AT ALL VERTICAL DROPS OF 1-1/2" OR GREATER IN THICKNESS. PAVEMENT TRANSITIONS SHALL BE SIZED SUCH THAT THE GRADE OF THE TRANSITION DOES NOT EXCEED 1.5%.

4. AT ALL EXCAVATIONS ADJACENT TO EXISTING RUNWAY, TAXIWAY OR APRON PAVEMENTS A 6:1 RAMP SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE EXCAVATION.

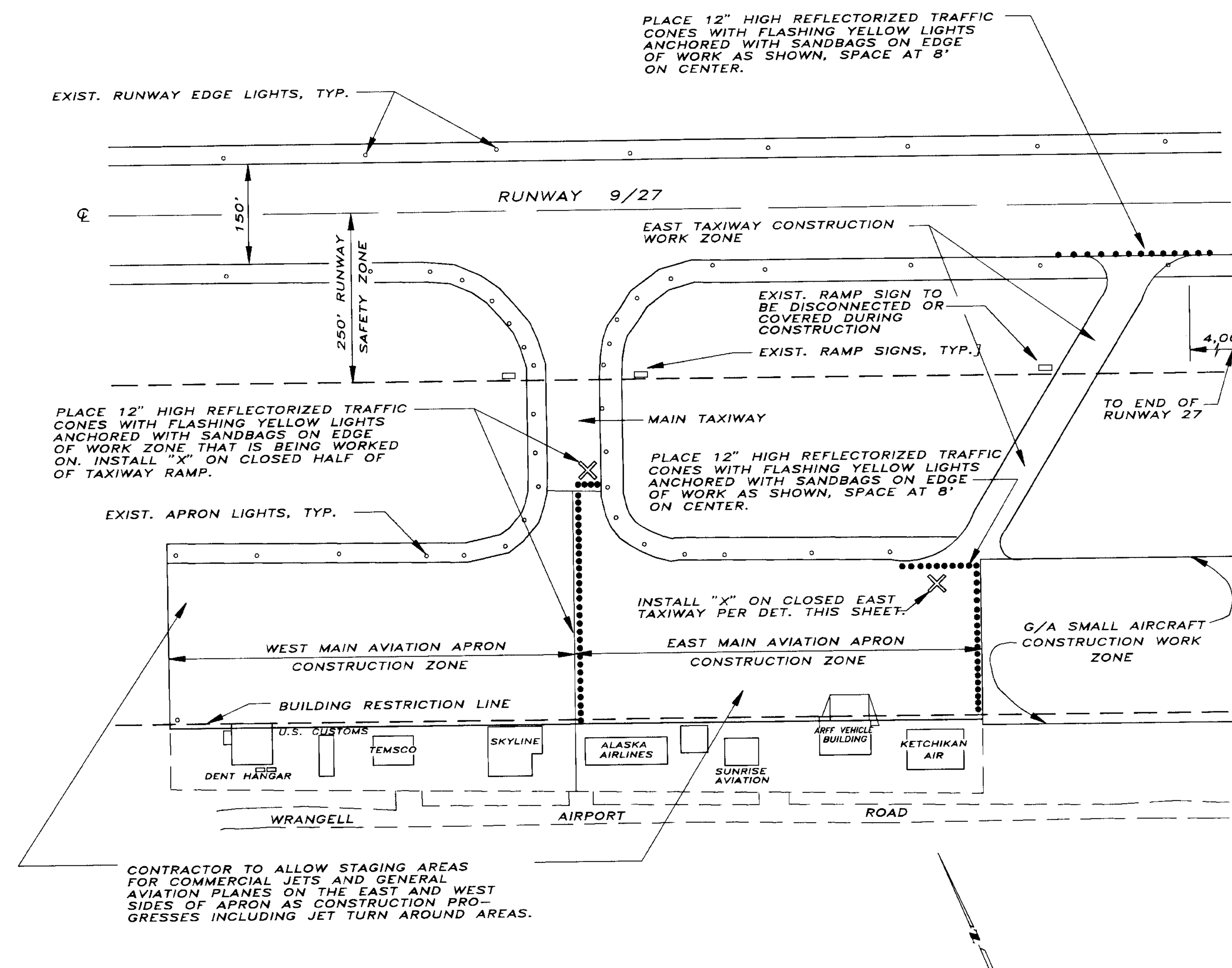
5. TEMPORARY "X" MARKINGS MAY BE CLOTH, WOOD OR PLASTIC SECURELY ANCHORED IN PLACE WITH YELLOW COLORED SANDBAGS.

6. ONLY ONE HALF OF THE MAIN TAXIWAY MAY BE CLOSED AT ANY ONE TIME. THE CONTRACTOR SHALL PROVIDE JET AND GENERAL AVIATION ACCESS TO THE MAIN AVIATION APRON AT ALL TIMES.



TEMPORARY MARKINGS

N.T.S.



SAFETY PLAN

N.T.S.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

ENGINEER'S SEAL

DESIGNED BY: | PROJECT NO.

WRG-SP.DWG

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PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997

LEGEND

- EXISTING RUNWAY/TAXIWAY LIGHTS
- NEW TAXIWAY LIGHT – BLUE
- NEW RUNWAY LIGHT – ELEVATED WHITE/YELLOW
- NEW RUNWAY LIGHT – FLUSH WHITE/YELLOW
- JUNCTION
- SINGLE FIXTURE TYPE A
- DOUBLE FIXTURE TYPE B
- (1) NOTE 1, SEE PLAN REFERENCES
- (E) EXISTING ITEM
- (X) REMOVE
- —#— NEW CONDUIT AND WIRE – 2/C
- —— —— EXISTING CONDUIT AND WIRE
- —— —\ EXISTING CONDUIT AND WIRE CONTINUES
- EXISTING FLOODLIGHT
- APRON REFLECTOR
- RSC RIGID STEEL CONDUIT
- MOTOR – SIZE NOTED
- EXISTING UTILITY POLE
- DUPLEX OUTLET 5–15R
- DISCONNECT
- [T] TRANSFORMER
- PRIMARY CUTOUT
- PRIMARY TERMINATOR
- PRIMARY ARRESTOR

FIXTURE SCHEDULE

TYPE	MFG.		W	REMARKS (SEE SHEET E-3)
A	DEVINE	PCR1628A-250HPS-DB-240-LEX	1-250HPS	SEE DETAIL
	HUBBELL	RCJ-0250S-IT8-1-240-RCS-SPC	1-250HPS	SEE DETAIL AND MAA-10-1
	McPHILBEN	17RA64-1D-240-VC	1-250HPS	SEE DETAIL
B	DEVINE	PCR1628B-400HPS-DB-240-LEX	2-400HPS	SEE DETAIL
	HUBBELL	RCJ-0400S-IT8-1-240-RCS-SPC	2-400HPS	SEE DETAIL AND MAA-10-1(2)
	McPHILBEN	17RB66-2D-240-VC	2-400HPS	SEE DETAIL

TAXIWAY LIGHT LOCATIONS

LIGHT #	STATION	OFFSET	LIGHT #	STATION	OFFSET
T-39	"T" 9+52.0	27.50'LT	T-55	"T" 17+77.92	32.80'RT
T-40	"T" 10+02.0	27.50'LT	T-56	"T" 17+31.40	27.50'RT
T-41	"T" 10+95.0	27.50'LT	T-57	"T" 16+81.40	27.50'RT
T-42	"T" 11+88.0	27.50'LT	T-58	"T" 16+18.70	27.50'RT
T-43	"T" 12+38.0	27.50'LT	T-59	"T" 15+56.0	27.50'RT
T-44	"T" 13+72.0	27.50'LT	T-60	"T" 15+06.0	27.50'RT
T-45	"T" 15+06.0	27.50'LT	T-61	"T" 13+72.0	27.50'RT
T-46	"T" 15+56.0	27.50'LT	T-62	"T" 12+38.0	27.50'RT
T-47	"T" 15+79.90	37.00'LT	T-63	"T" 11+88.0	27.50'RT
T-48	"T" 15+96.45	59.50'LT	T-64	"T" 11+53.53	38.00'RT
T-49	"T" 15+97.5	88.50'LT	T-65	"T" 11+39.68	61.75'RT
T-50	"T" 15+71.14	103.20'LT	T-66	"T" 11+41.36	93.00'RT
T-51	"T" 15+74.70	108.80'LT	T-67	"T" 11+58.30	114.50'RT
T-52	"T" 18+53.50	70.00'RT	T-68	"T" 12+00	142.00'RT
T-53	"T" 18+49.40	75.60'RT	T-69	"T" 12+76.23	190.50'RT
T-54	"T" 18+20.05	46.20'RT	T-70	"T" 13+51.92	238.50'RT

NOTE – STATION AND OFFSETS GIVEN TO CENTER OF TAXIWAY OR APRON LIGHT, SEE SHEET 7 OF 19 FOR "T" BASELINE INFORMATION.

PLAN REFERENCES

(1B) REMOVE EXISTING 2–1/C #8 5KV IN 2"PVC TO T–8.

(2) REMOVE (E) 2–1/C #8 5KV FROM (E) 2"PVC – ALSO REMOVE T–2, T–4 & T–6.

(3) ~~EXISTING 2"PVC WITH 12–2 UF AND 10/C–14 TO EXISTING WIND GAUGE. PROVIDE 3 RUNS OF 340 LF 2:RSC – REPLACEMENT OF CABLE WILL BE BY U.S. WEATHER BUREAU – NOTE EXISTING CONDUIT IS IN EXISTING CULVERT.~~

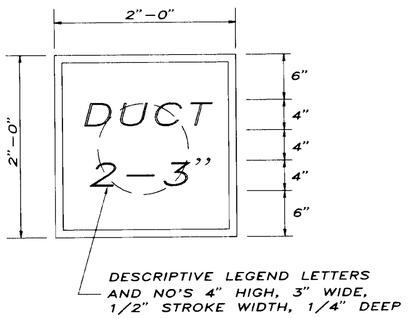
(4) INSTALL NEW HIGH INTENSITY RUNWAY LIGHT TO MATCH (E) (C–H 44609A WHITE/YELLOW). INTERCEPT E 2"PVC CONDUIT AND INSTALL NEW L–867–12" BASE WITH NEW #8–5KV CABLE EACH WAY.

(5) REMOVE (E) ELEVATED RUNWAY LIGHT AND INSTALL NEW FLUSH MOUNTED L–850C RUNWAY WHITE/YELLOW BIDIRECTION EDGE LIGHT WITH NEW L868–15" BASE.

(6) REMOVE (E) 40' STEEL TOWER WITH 2–1000 MV AND CONCRETE BASE. INSTALL NEW FIXTURE TYPE "B".

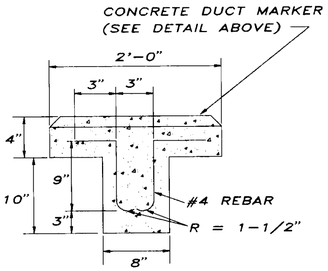
(7) ELECTRIC GATE 1H.P. 240V 1 Ø 5#12 OR 3#10 & 2#12–3/4 OR 2" RSC – SEE DETAIL SHEET 13 OF 19 FOR INSTALLATION AND CONTROLS.

(8) CHANGE EXISTING SIGN CIRCUIT FROM RUNWAY TO NEW TAXIWAY CIRCUIT.

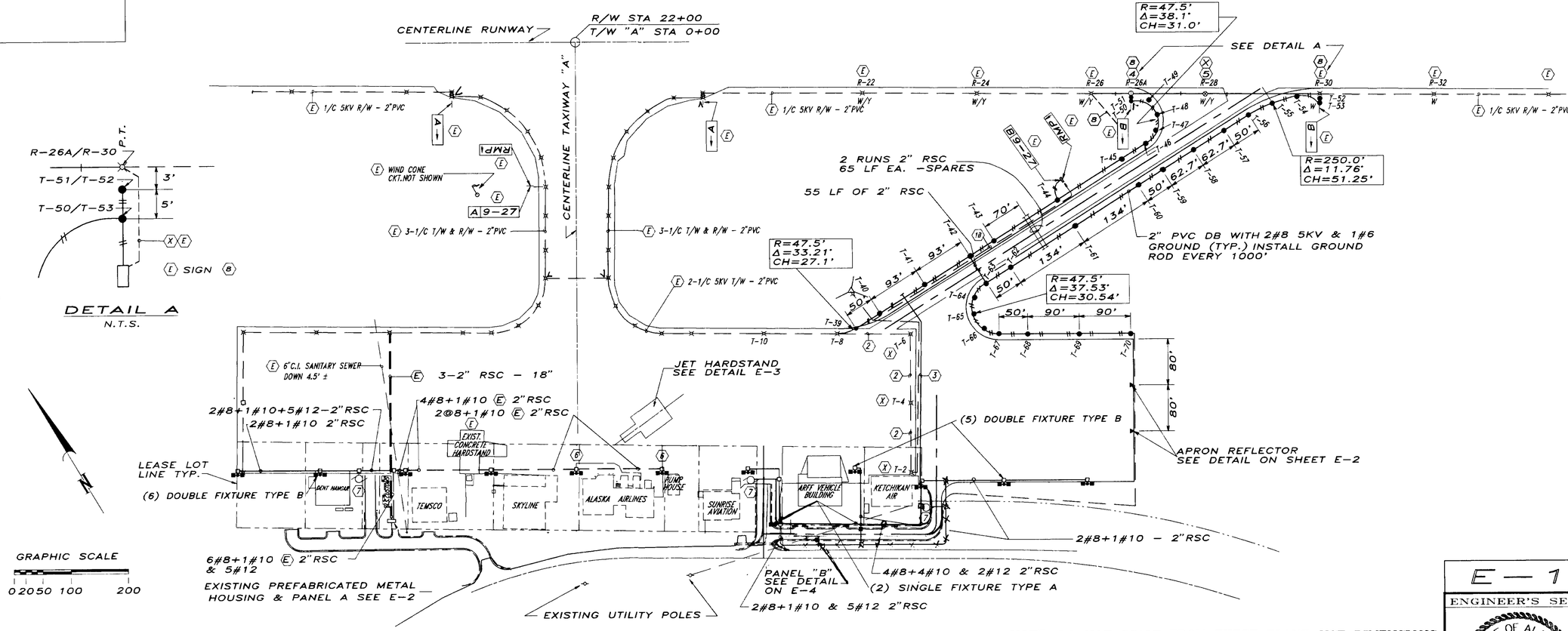


DUCT MARKER (TOP VIEW)
N.T.S.

DETAIL A
N.T.S.



DUCT MARKER (ELEVATION)
N.T.S.



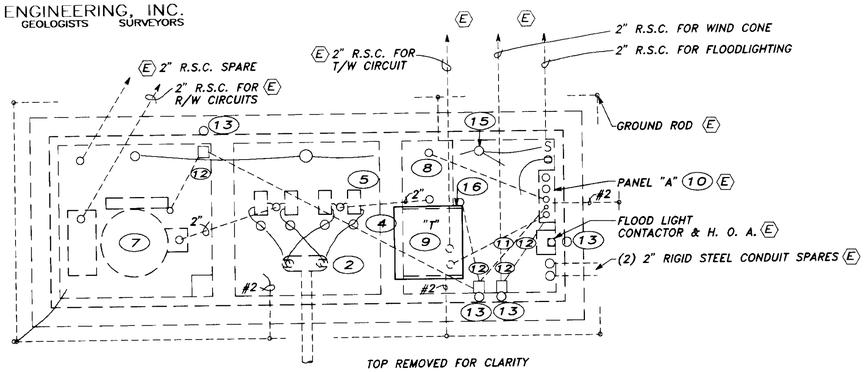
NOTE: DO NOT SCALE FROM THESE PLANS–USE DIMENSIONS

E – 1

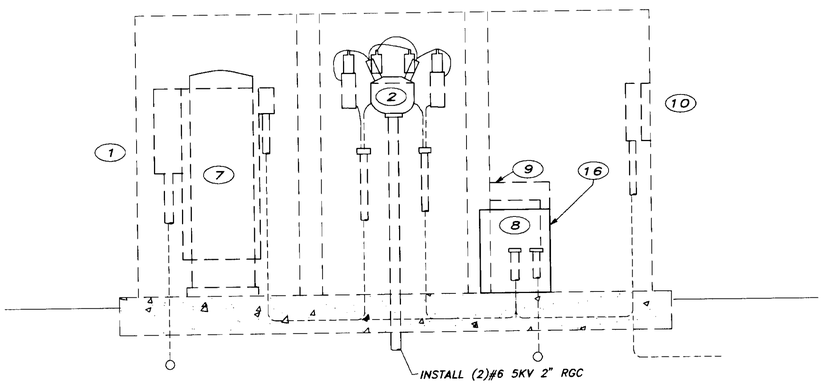
ENGINEER'S SEAL
STATE OF ALASKA

PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997

R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS



PLAN



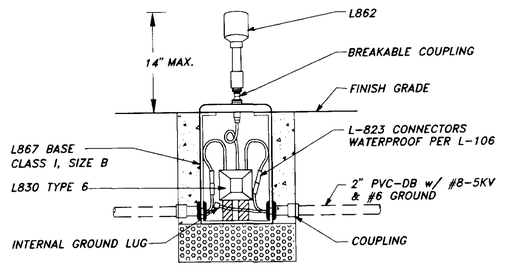
ELEVATION

PREFABRICATED METAL HOUSING

N.T.S.

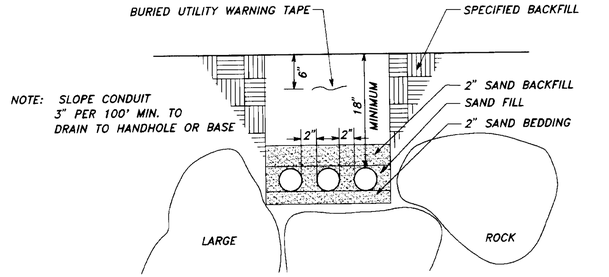
QUANTITIES				
ITEM	QTY.	MFG OR EQUAL	DESCRIPTION	REMARKS
1	1	L/M DU13E43	55"Wx162"Lx91"H	(E)
2	1	G&W JT2404B	POTHEAD 8KV	(E)
3	LOT		#6-5KV 1/C	(E)
4	4		INSULATOR 5KV	(E)
5	4	L/MFEIA3	CUTOUT FUSED	
6				(E)
7	1	L828	CONSTANT CURRENT 20KW	(E)
8	1	TIERNEY 5AC12515Y13H	25VA 2400-1ϕ TO 120/240 1ϕ WEATHER PROOF	(E)
9		L813 (HD#D52620)	CONSTANT CURRENT 4KW	REMOVE
10	1	SQ D NQOB-100A	PNL A NEMA 3R	(E)
11	1	SQ D LG80	8P-20A NEMA 3R	(E)
12	4	SQ D KYC111	H.O.A. NEMA 3R	(E)
13	3	TORK 2100	PHOTO ELEC. - NORTH SIDE	(E)
14	LOT	L/M	MOUNTING RAILS & BOLTS	(E)
15	3	APP. VGAT1050G	100W ABOVE DOOR	(E)
16	1	L828	CONSTANT CURRENT 7.5KW	INSTALL *

* C-H 26.1H X 21.0W X 23.0D MAINTAIN CLEARANCE TO PANEL A PER NEC



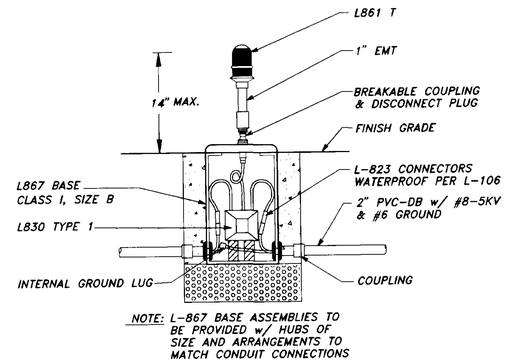
TYPICAL RUNWAY LIGHT INSTALLATION DETAIL

N.T.S.



TYPICAL TRENCH DETAIL

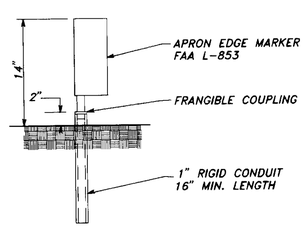
N.T.S.



NOTE: L-867 BASE ASSEMBLIES TO BE PROVIDED w/ HUBS OF SIZE AND ARRANGEMENTS TO MATCH CONDUIT CONNECTIONS

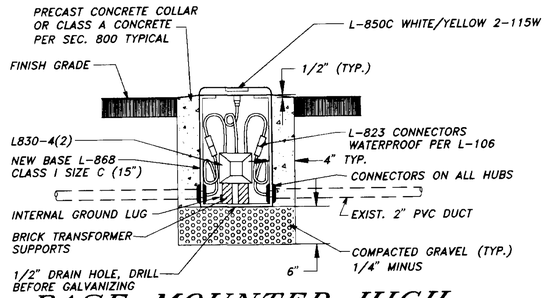
TAXIWAY LIGHT INSTALLATION DETAIL

N.T.S.



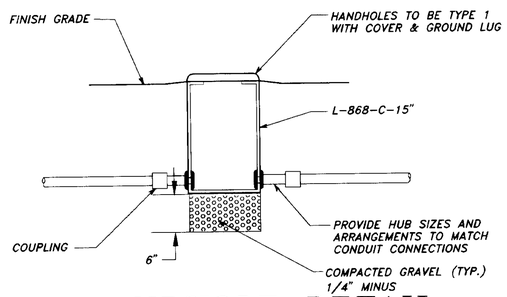
APRON REFLECTOR DETAIL

N.T.S.



BASE MOUNTED HIGH INTENSITY RUNWAY LIGHT

N.T.S.



HANDHOLE DETAIL

N.T.S.

NOTE: DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

E-2

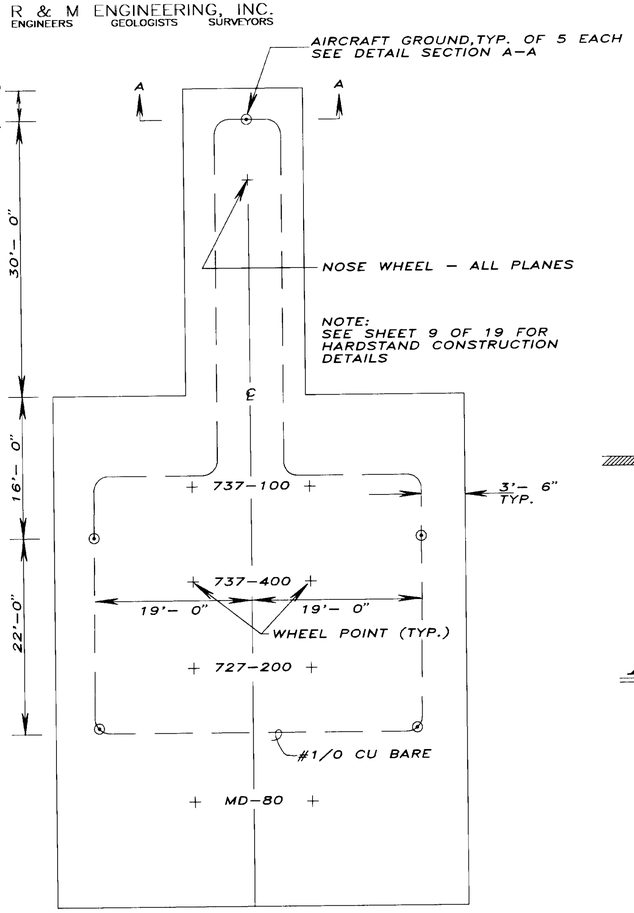
ENGINEER'S SEAL

STATE OF ALASKA 49TH

ALL.DWG

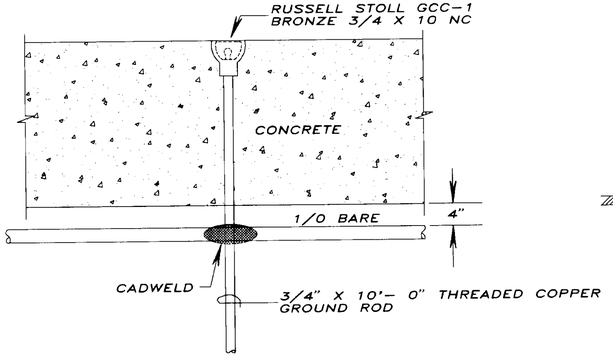
PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997

R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS



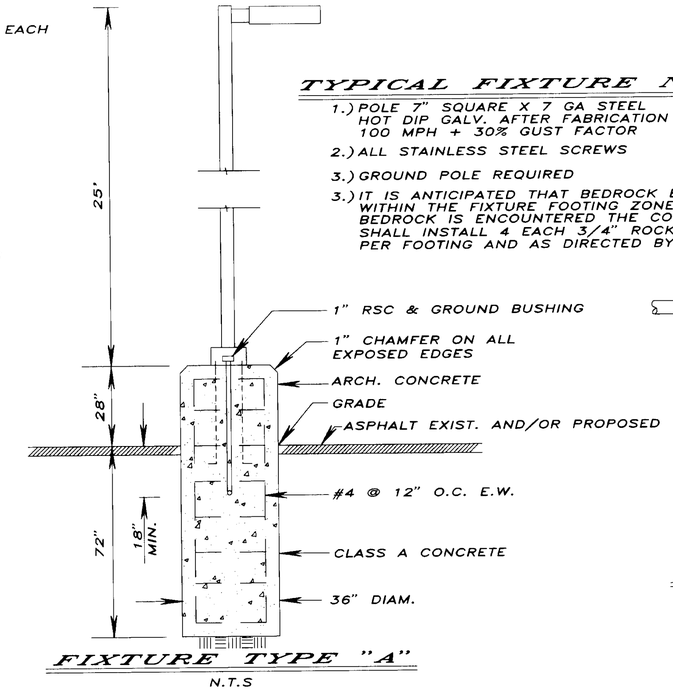
AIRCRAFT HARDSTAND GROUND PLAN

N.T.S.



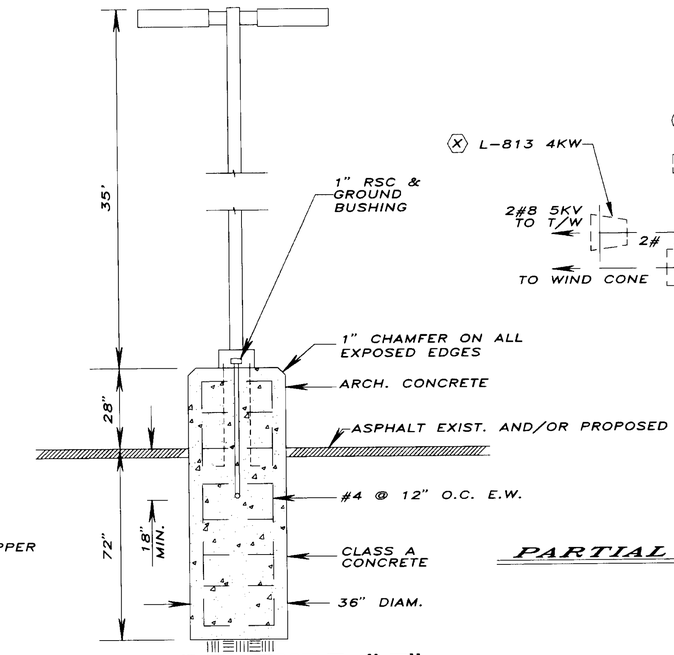
SECTION A–A

N.T.S.



FIXTURE TYPE "A"

N.T.S



FIXTURE TYPE "B"

N.T.S

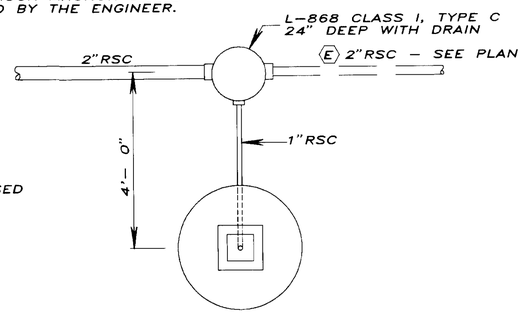
TYPICAL FIXTURE NOTES:

1.) POLE 7" SQUARE X 7 GA STEEL
HOT DIP GALV. AFTER FABRICATION
100 MPH + 30% GUST FACTOR

2.) ALL STAINLESS STEEL SCREWS

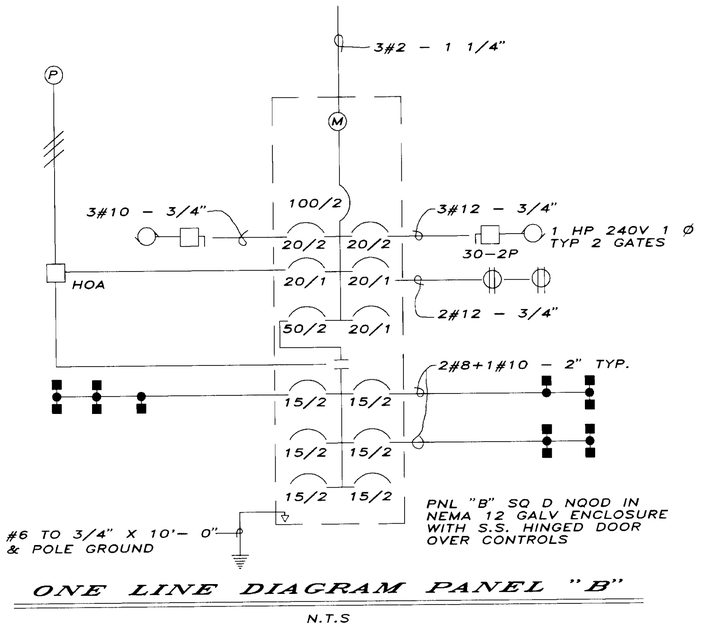
3.) GROUND POLE REQUIRED

3.) IT IS ANTICIPATED THAT BEDROCK EXISTS WITHIN THE FIXTURE FOOTING ZONE. IF BEDROCK IS ENCOUNTERED THE CONTRACTOR SHALL INSTALL 4 EACH 3/4" ROCK ANCHOR BOLTS PER FOOTING AND AS DIRECTED BY THE ENGINEER.



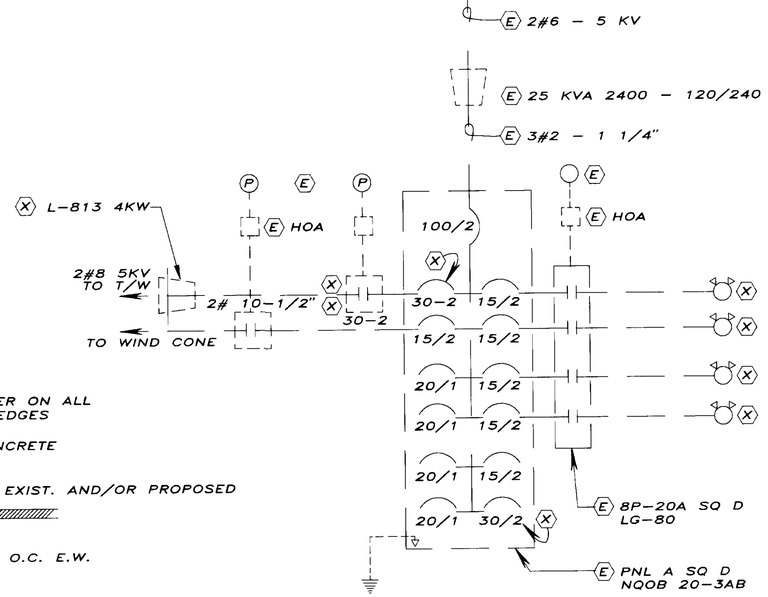
FIXTURE DETAIL PLAN

N.T.S



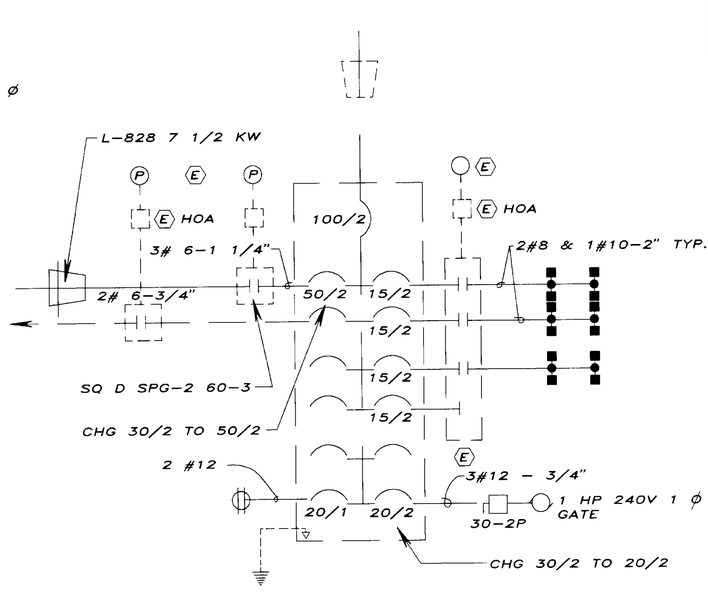
ONE LINE DIAGRAM PANEL "B"

N.T.S



PARTIAL EXISTING ONE LINE DIAGRAM

N.T.S



REVISED ONE LINE DIAGRAM

N.T.S

NOTE: DO NOT SCALE FROM THESE PLANS–USE DIMENSIONS

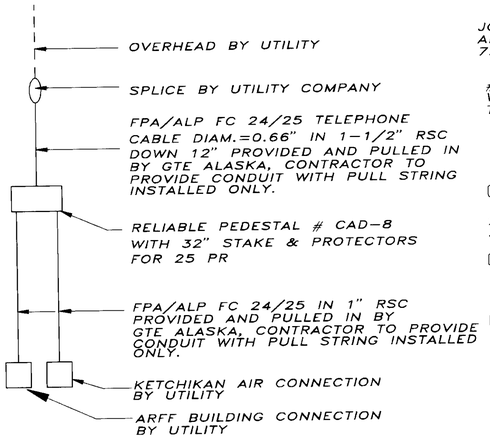
E–3

ENGINEER'S SEAL

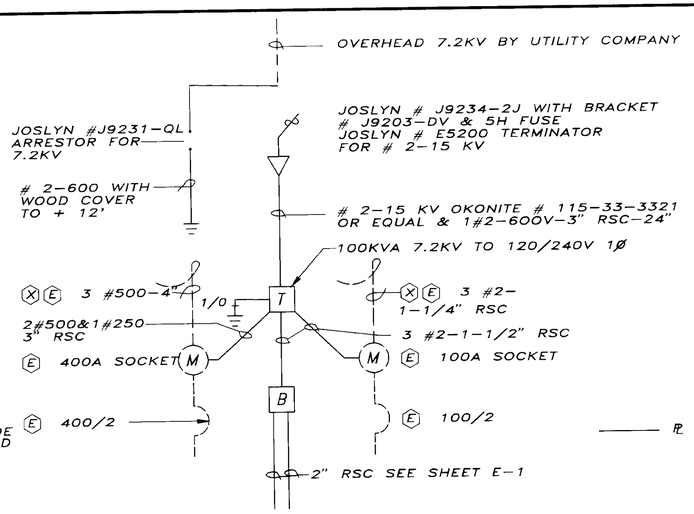
STATE OF ALASKA

PROJECT DESIGNATION	YEAR
70150/AIP 3-02-0323-0797	1997

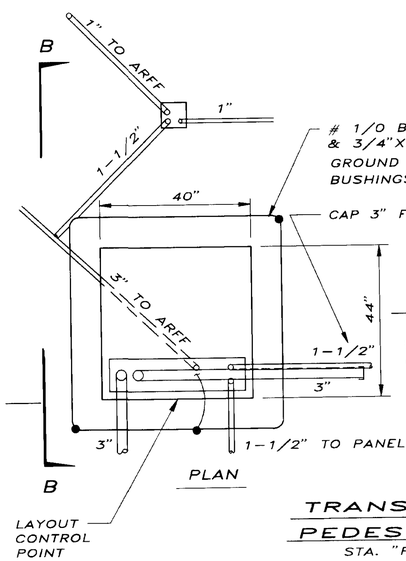
R & M ENGINEERING, INC.
ENGINEERS GEOLOGISTS SURVEYORS



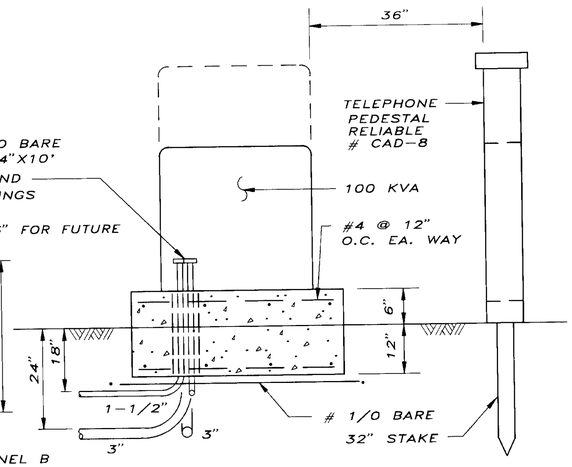
ONE LINE TELEPHONE DIAGRAM
N.T.S.



ONE LINE POWER DIAGRAM
N.T.S.

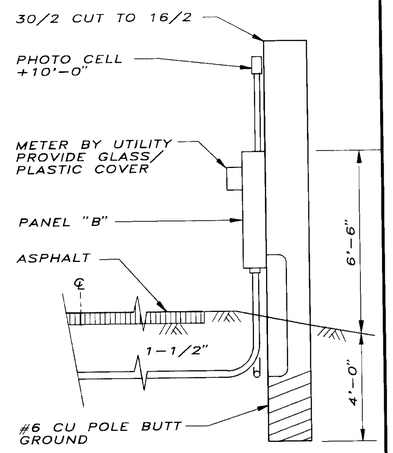


PLAN



TRANSFORMER & PEDESTAL DETAIL
STA. "F" 11+00, 17.5'LT
N.T.S.

SECTION B-B



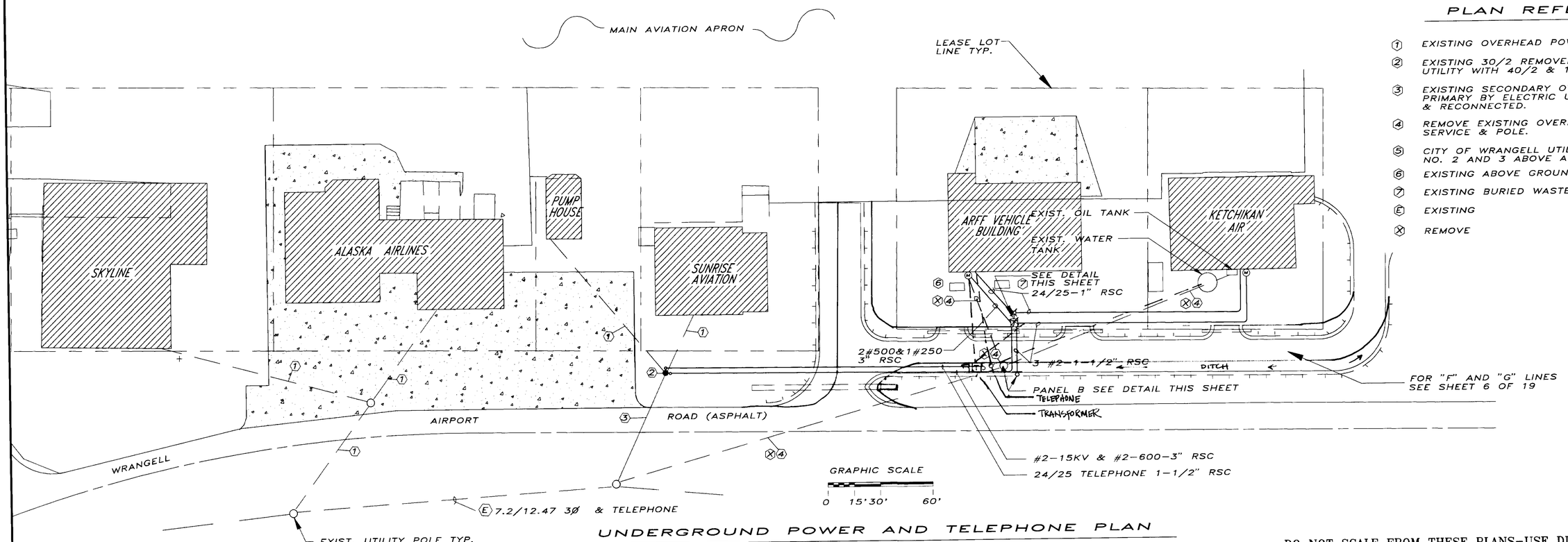
PANEL "B" DETAIL
STA. "F" 11+00, 13'RT
N.T.S.

POWER AND TELEPHONE PLAN REFERENCE NOTES

1. EXISTING OVERHEAD POWER & TELEPHONE REMAINS.
2. EXISTING 30/2 REMOVED & REPLACED BY ELECTRIC UTILITY WITH 40/2 & 15KVA 7.2KV TO 120/240V 1Ø.
3. EXISTING SECONDARY OVERHEAD CHANGED TO 7.2KV PRIMARY BY ELECTRIC UTILITY. TELEPHONE REMAINS & RECONNECTED.
4. REMOVE EXISTING OVERHEAD ELECTRIC & TELEPHONE SERVICE & POLE.
5. CITY OF WRANGELL UTILITIES WILL PERFORM ITEMS NO. 2 AND 3 ABOVE AT THEIR OWN EXPENSE.
6. EXISTING ABOVE GROUND FUEL STORAGE TANK.
7. EXISTING BURIED WASTE OIL STORAGE TANK.

(E) EXISTING

(X) REMOVE



UNDERGROUND POWER AND TELEPHONE PLAN

DO NOT SCALE FROM THESE PLANS-USE DIMENSIONS

DESIGNED BY:	PROJECT NO.
DRAWN BY:	
CHECKED BY:	

E — 4

ENGINEER'S SEAL
STATE OF ALASKA 49TH