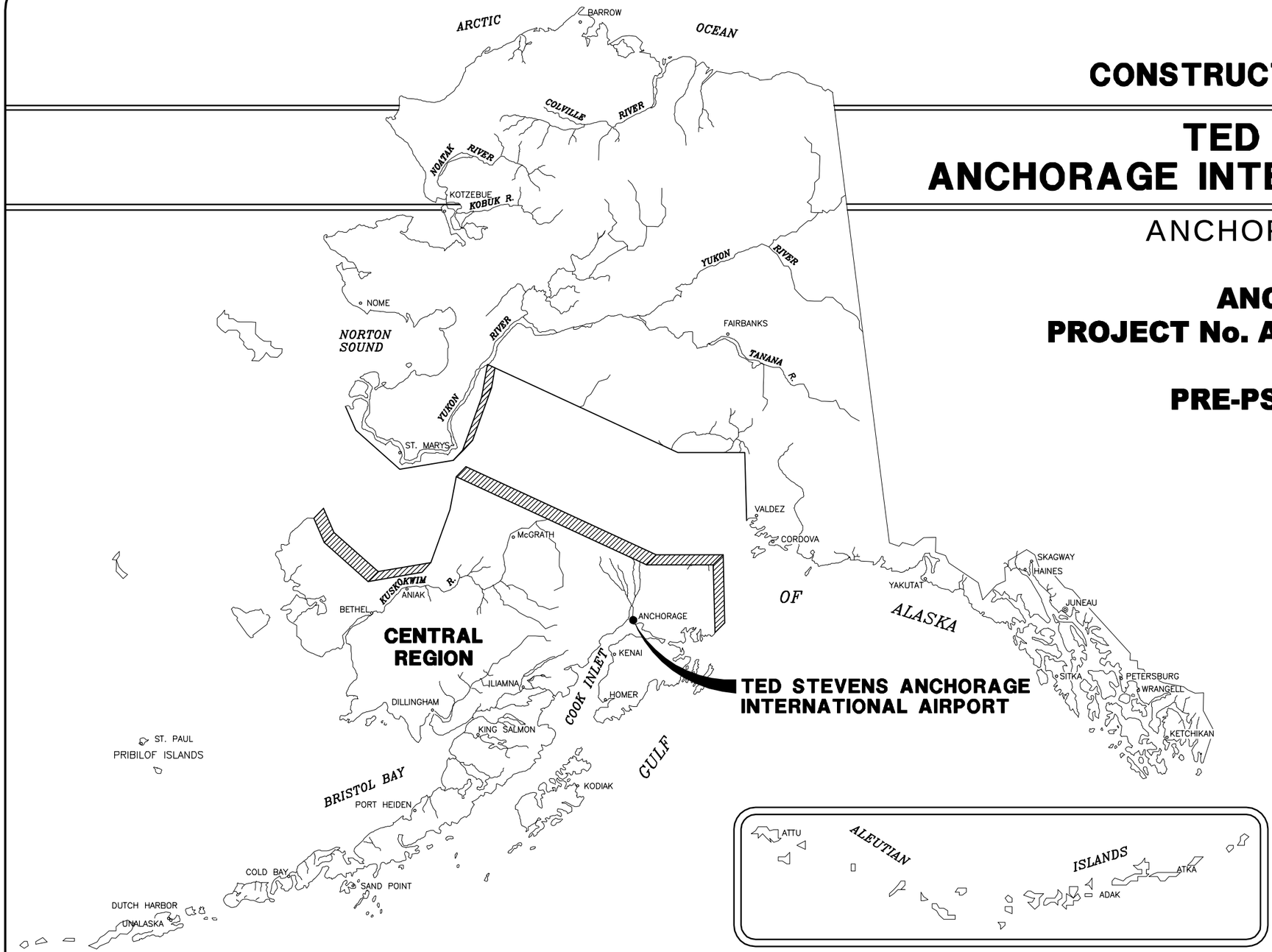


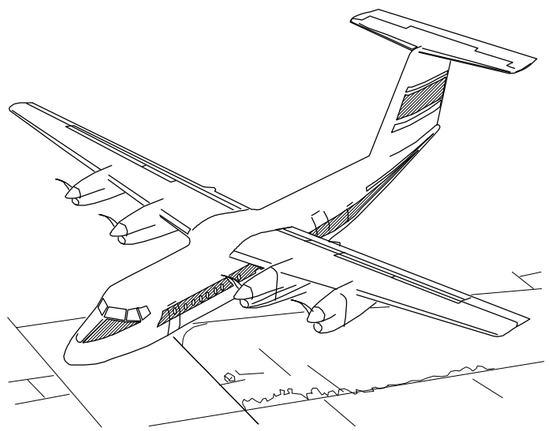

# CONSTRUCTION PLANS FOR

# TED STEVENS ANCHORAGE INTERNATIONAL AIRPORT

ANCHORAGE, ALASKA

## ANC GATE E21
## PROJECT No. AIP 3-02-0016-xxx-2011

## PRE-PSE SUBMITTAL



## SPONSORED BY
## STATE OF ALASKA
## DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
### CENTRAL REGION

| | |
|---|---|
| **CONCUR** | **DATE:** |
| ROBERT A. CAMPBELL P.E | DIRECTOR, DESIGN AND CONSTRUCTION |
| **APPROVED** | **DATE:** |
| K. KIM RICE, P.E. | REGIONAL PRECONSTRUCTION ENGINEER |
| **APPROVED** | **DATE:** |
| HARVEY M. DOUTHIT, P.E. | DESIGN SECTION CHIEF |
| **APPROVED** | **DATE:** |
| CARLA J. SMITH, P.E. | PROJECT MANAGER |

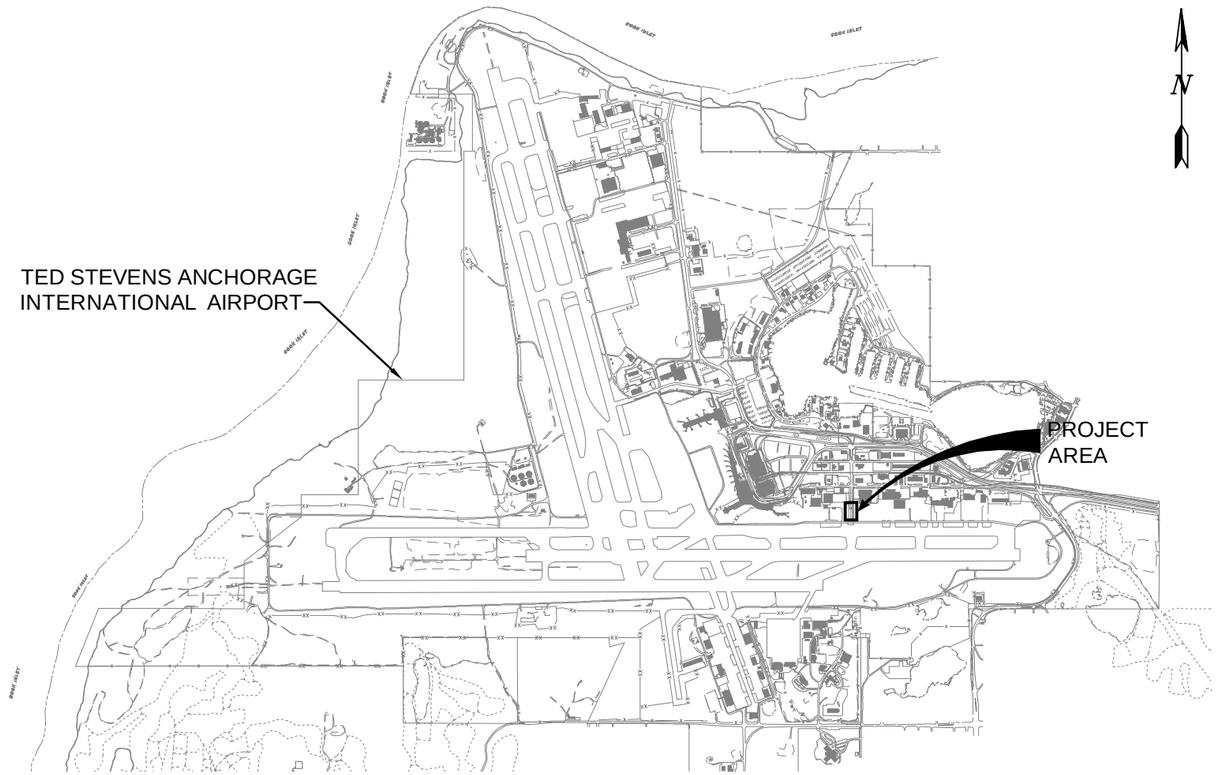
TED STEVENS ANCHORAGE INTERNATIONAL AIRPORT
ANC GATE E21

PROJECT No. 52339

SHEET G1 OF 16

File: 30202.06 COVER.DWG

Date of Last Revision: April 2011




**PROJECT VICINITY MAP**

T 13 N, R 4 W SEC. 34
SEWARD MERIDIAN
U.S.G.S. ANCHORAGE (A-8), ALASKA

## SHEET INDEX



## LEGEND

| PROPOSED | EXISTING | DESCRIPTION |
|---|---|---|
| | — — — — | EDGE OF GRAVEL |
| | — — — — — — | EDGE OF PAVEMENT |
| | ——— | PAINTED TRAFFIC MARKINGS |
| | — — —E— | UNDERGROUND ELECTRIC |
| | — — —F— | UNDERGROUND FUEL |
| | — — —SD— | STORM DRAIN |
| | — — —W— | WATER LINE |
| | ▤ | STORM DRAIN INLET |
| | ⋈ | WATER VALVE |
| | ⊏ — — — — ⊐ | CULVERT |
| ——— | —x—x—x— | FENCE |
| ▬▬ | | STRAW WATTLE BMP |
| — · · · — | | SWALE |
| — — — | | CUT LIMIT |

## ADOT&PF STANDARD DRAWINGS

*F-01.01,*F-03.01
T-20.02, T-21.02

* AS MODIFIED HEREIN.

## CALL BEFORE YOU DIG!!!

Locate Call Center of Alaska, Inc.
Anchorage Area ____ 278-3121
Statewide ____ 800-478-3121
who will notify the following:

- Alaska DOT/PF Anchorage Streetlights
- Alaska Fiber Star
- Alaska Native Center
- Alyeska Cable Company
- Anchorage Municipal School District
- Anchorage Public Works Department
- Anchorage Water and Wastewater Utility
- AT&T Alascom
- ATU Telecommunications
- Chugach Electric Association
- Doss Aviation
- Enstar Natural Gas
- Eyecom, Inc.
- GCI Communications
- Homer Electric Association
- Interior Telephone Company
- Kenai Pipeline Services
- Marathon Oil Company
- Matanuska Electric Association
- Matanuska Telephone Association
- Mukluk Telephone Company
- Municipal Light and Power
- Phillips Petroleum Pipeline
- PTI Communications
- Rogers Cablesystems
- Signature Flight Support
- Tesoro Petroleum Services
- UNOCAL Petroleum

Alaska Railroad ____ 265-2520
Military Fuel Lines ____ 552-3760
State Storm Drains ____ 333-2411
ASIG ____ 249-4241
Facilities ____ 266-2425
Facilities (Electrical) ____ 266-2423
FAA ____ 271-6783

DESIGNED BY: SMB
CHECKED BY: BCM
DRAWN BY: SMB
DATE PLOTTED: MAR 2011
SCALE: NTS
FILE: 30202.06 KEYMAP

| BY | DATE | REVISIONS | BY | DATE | REVISIONS |
|---|---|---|---|---|---|
| | | | | | |

Ted Stevens Anchorage International Airport

STATE OF ALASKA
49TH
Shane M. Blanchard
CE 11519
REGISTERED PROFESSIONAL ENGINEER

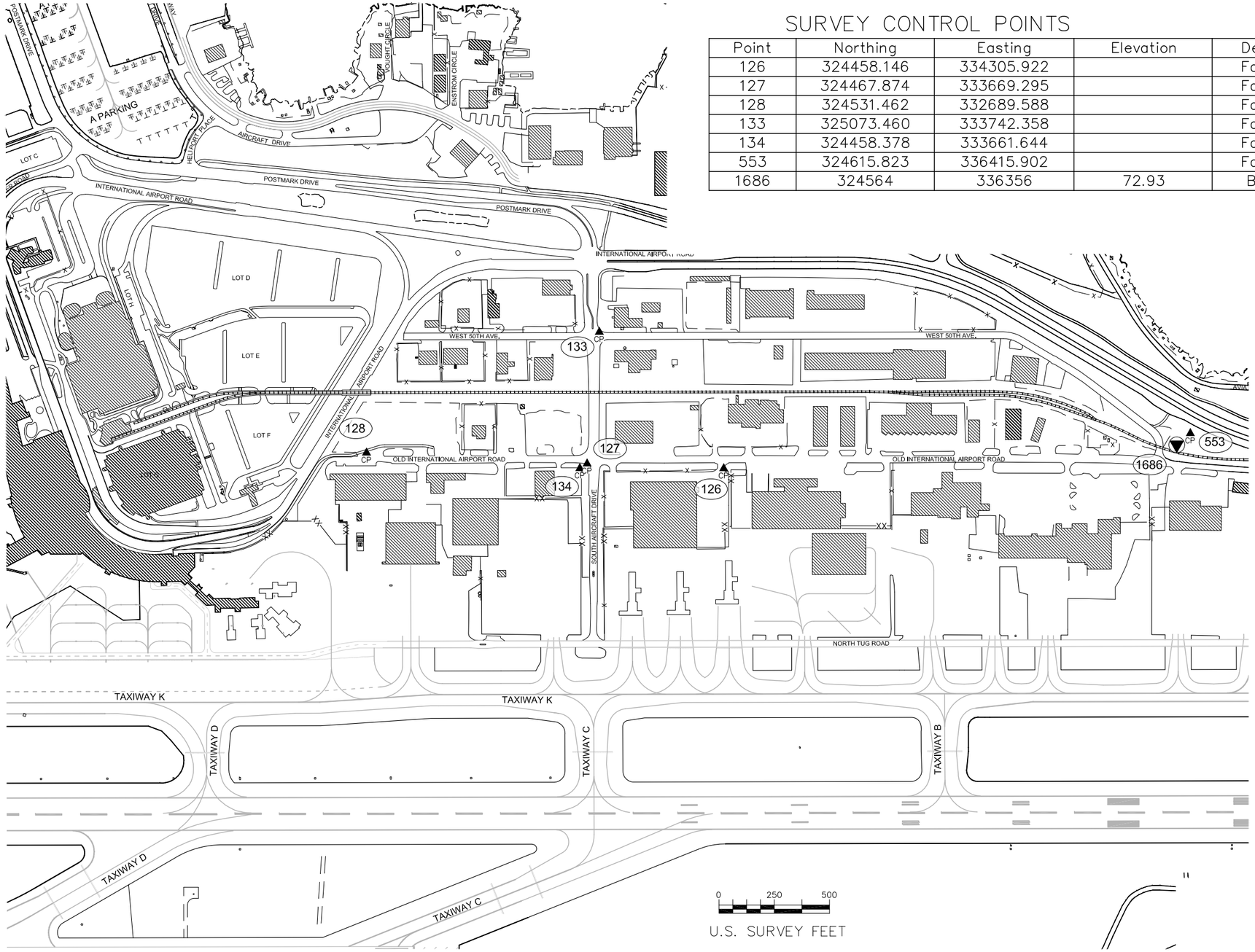
STATE OF ALASKA
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**
CENTRAL REGION

PLANS DEVELOPED BY:
CRW ENGINEERING GROUP

TED STEVENS
ANCHORAGE INTERNATIONAL AIRPORT
ANCHORAGE, ALASKA
PROJECT No. 52339
ANC GATE E21

VICINITY MAP, LEGEND AND INDEX

SHEET G2 OF G5




## SURVEY CONTROL POINTS

| Point | Northing | Easting | Elevation | Description |
|---|---|---|---|---|
| 126 | 324458.146 | 334305.922 | | Fd Rbr/PC |
| 127 | 324467.874 | 333669.295 | | Fd Rbr/PC |
| 128 | 324531.462 | 332689.588 | | Fd Rbr/PC |
| 133 | 325073.460 | 333742.358 | | Fd Rbr/PC |
| 134 | 324458.378 | 333661.644 | | Fd Rbr/PC |
| 553 | 324615.823 | 336415.902 | | Fd Rbr/PC |
| 1686 | 324564 | 336356 | 72.93 | BM E-75 |

## LEGEND

CP Survey Control Point

Primary Vertical Benchmark

HORIZONTAL CONTROL STATEMENT

Coordinate System:
This project is located entirely within the Anchorage Bowl 2000 adjustment, a local surface grid coordinate system expressed in U.S. Survey feet units developed by the Alaska Department of Transportation.

Basis of Coordinates:
The Basis of Coordinates is NGS Station O'Malley, located near the intersection of the New Seward Highway and O'Malley Road. Said station has Anchorage Bowl 2000 coordinates of 303939.2310 N, 353362.5446 E. U.S. Survey Feet.

Basis of Bearings:
The Basis of Bearings is a local plane bearing between NGS Station O'Malley and NGS Station Loop 2 USE RM 3 1964. NGS Station Loop 2 USE RM 3 1964 bears N 01°43'26.4"E a distance of 49488.4476 feet from NGS Station O'Malley. NGS Station Loop 2 USE RM 3 1964 has Anchorage Bowl 2000 coordinates of 353405.2778 N, 354851.3982 E. U.S. Survey Feet.

Translation Parameters:
To convert the local coordinates to NAD83 (92) State Plane coordinates expressed in U.S. Survey Feet, translate using +2296868.6878 N usf, +1312517.4904 E usf, and scale using 0.9998910192.

VERTICAL CONTROL STATEMENT

Vertical Datum:
The Vertical Datum used is the Municipality of Anchorage (MOA) datum, MSL as verified by a series of level loops performed by AKDOT between Airport benchemarks, including monuments set by USC&GS, MOA and DOT.

Primary Vertical Control Point:
L-31 RESET (MOA Datum), elevation is 91.776 US Feet. Found AK DOT BC set on the TSAIA FAA Control Tower.

Special note:
The Municipality of Anchorage (MOA) datum and the USC&GS datum at the airport do not agree, most probably due to the fact that the USC&GS did not adjust the airport spur run after 1965. It has been determined, through differential level loops performed by AKDOT and R&M Consultants, that the average difference between the MOA and USC&GS datum is 0.311 feet. For all work performed at the airport we will use the MOA datum. To convert from USC&GS elevations to MOA elevations, subtract 0.311.

NOTES

1) Project control coordinates shown on this sheet are in the local Anchorage Bowl 2000 coordinate system.

2) All dimensions and coordinates shown are in U.S. Survey Feet unless otherwise noted.

Surveyor's Certificate

I hereby certify that I am properly Registered and Licensed to practice Land Surveying in the State of Alaska, and that this drawing represents a survey made by me or under my direct supervision, and that the monuments shown hereon actually exist as described, and that all dimensions and other details are correct to the extent shown hereon.

Michael E. Spangler LS-10605 Date

STATE OF ALASKA 49TH Michael E. Spangler LS-10605 REGISTERED PROFESSIONAL LAND SURVEYOR

Ted Stevens Anchorage International Airport

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES
Survey Control Sheet
Project No. 52339

ANC Gate E21

| | | | |
|---|---|---|---|
| DRAWN | DATE | SCALE | 1" = 500' |
| CHECKED MES | DATE 4/05/2011 | SHEET G3 | OF G5 |

H:\EXHIBITS\CIP\52339 GATE E21\SCS.dwg APR 08 2011 10:31:43

# ESTIMATE OF QUANTITIES

| ITEM NO. | ITEM DESCRIPTION | UNIT | TOTAL |
|---|---|---|---|
| | | | |
| F-162a | 8 FT CHAIN LINK FENCE | LF | 123 |
| F-162d | 20 FT SINGLE CANTILEVER GATE | EACH | 4 |
| F-162f | 3 FT PEDESTRIAN GATE (W/KEYLESS LOCK) | EACH | 2 |
| F-162k | REMOVE FENCE | LF | 31 |
| | | | |
| F-170a | STEEL BOLLARD | EACH | 6 |
| | | | |
| F-171a | POWER GATE OPERATOR SYSTEM | EACH | 4 |
| F-171c | ACCESS CONTROL SYSTEM | EACH | 4 |
| F-171d | CARD READER | EACH | 8 |
| F-171e | CCTV CAMERA | EACH | 3 |
| F-171f | UNINTERRUPTABLE POWER SUPPLY | EACH | 1 |
| F-171g | PANEL BOARD | EACH | 1 |
| | | | |
| G-100a | MOBILIZATION AND DEMOBILIZATION | L.S. | ALL REQUIRED |
| | | | |
| G-135a | CONSTRUCTION SURVEYING BY THE CONTRACTOR | L.S. | ALL REQUIRED |
| G-135b | EXTRA THREE PERSON SURVEY PARTY | HOUR | 10 |
| | | | |
| G-150a | EQUIPMENT RENTAL (65 HP DOZER) | HOUR | 10 |
| | | | |
| G-300a | CMP SCHEDULING | L.S. | ALL REQUIRED |
| | | | |
| G-700a | AIRPORT FLAGGER | C.S. | ALL REQUIRED |
| | | | |
| L-110e | 1 INCH PE CONDUIT | LF | 1000 |
| L-110g | 2 INCH PE CONDUIT | LF | 750 |
| | | | |
| L-160e | MODIFY LOAD CENTER | EACH | 1 |
| | | | |
| P-152d | DRAINAGE EXCAVATION | CU. YD. | 245 |
| | | | |
| P-157a | EROSION, SEDIMENT, AND POLLUTION CONTROL ADMINISTRATION | L.S. | ALL REQUIRED |
| P-157b | TEMPORARY EROSION, SEDIMENT, AND POLLUTION CONTROL | C.S. | ALL REQUIRED |
| P-157e | SWPPP PRICE ADJUSTMENT | C.S. | ALL REQUIRED |
| | | | |
| P-401a | HOT MIX ASPHALT TYPE II, CLASS B | TON | 195 |
| P-401c | ASPHALT CEMENT, GRADE PG 52-28 | TON | 11 |
| | | | |
| P-610c | STANDARD CURB | LF | 89 |
| | | | |
| P-620c | RUNWAY AND TAXIWAY PAINTING | L.S. | ALL REQUIRED |
| | | | |
| T-901b | SEEDING | LB | 13 |
| T-901c | WATER FOR MAINTENANCE | M. GAL | 15 |
| | | | |

## TABLE OF ESTIMATING FACTORS

| ITEM NO. | ITEM | ESTIMATING FACTOR |
|---|---|---|
| | | |
| P-401a | HOT MIX ASPHALT, TYPE II, CLASS B | 115 LB./S.Y. - IN |
| | | |
| P-401c | ASPHALT CEMENT, GRADE PG 52-28 | 5.5% OF TOTAL WEIGHT OF 401(1A) |
| | | |

DESIGNED BY: SMB
CHECKED BY: BCM
DRAWN BY: SMB
DATE PLOTTED: MAR 2011
SCALE: NTS
FILE: 30202.06 ESTIMATE

| BY | DATE | REVISIONS | BY | DATE | REVISIONS |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Ted Stevens Anchorage International Airport

STATE OF ALASKA 49TH — Shane M. Blanchard CE 11519 — REGISTERED PROFESSIONAL ENGINEER

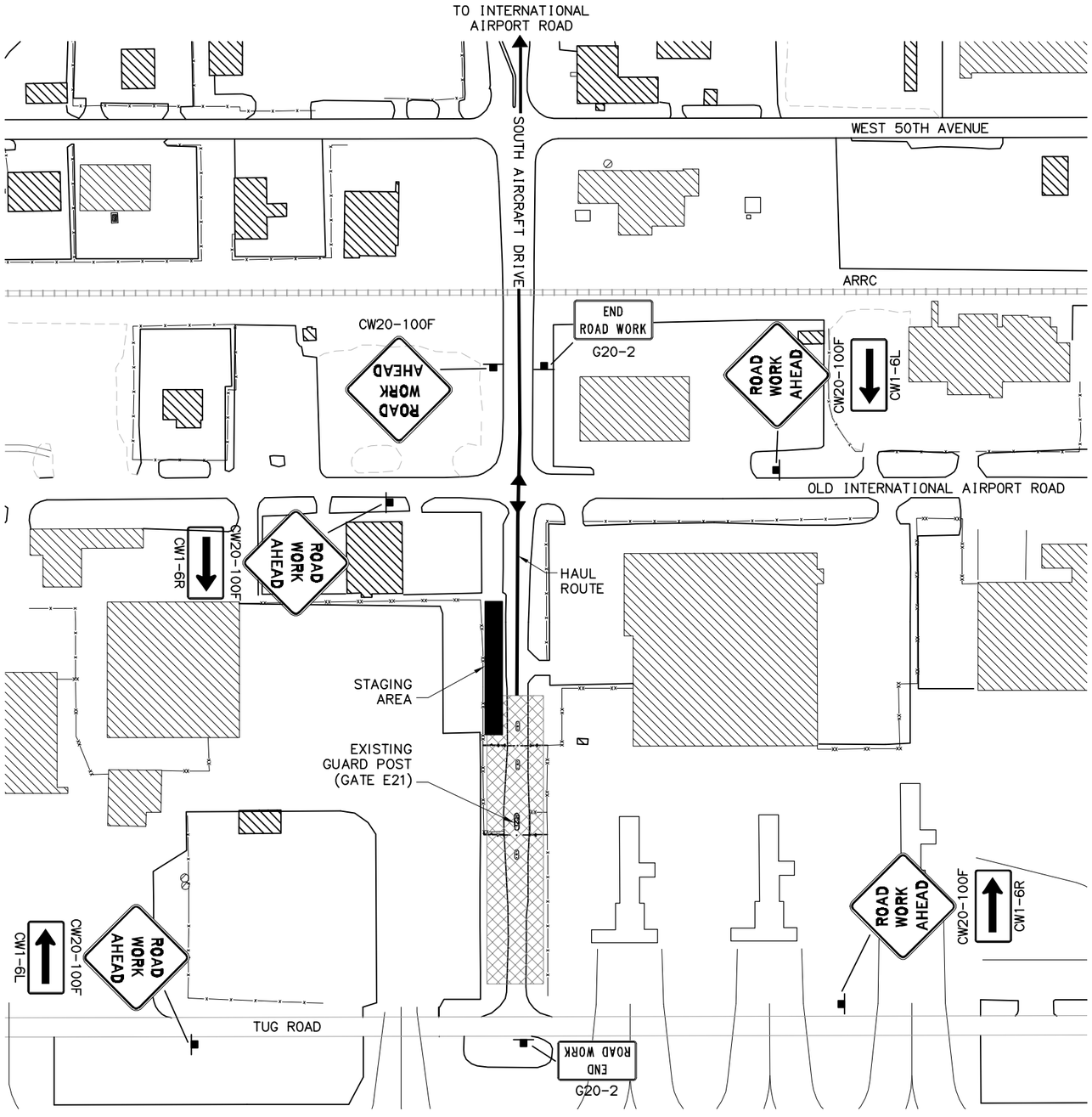
STATE OF ALASKA
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**
CENTRAL REGION

PLANS DEVELOPED BY:
CRW ENGINEERING GROUP

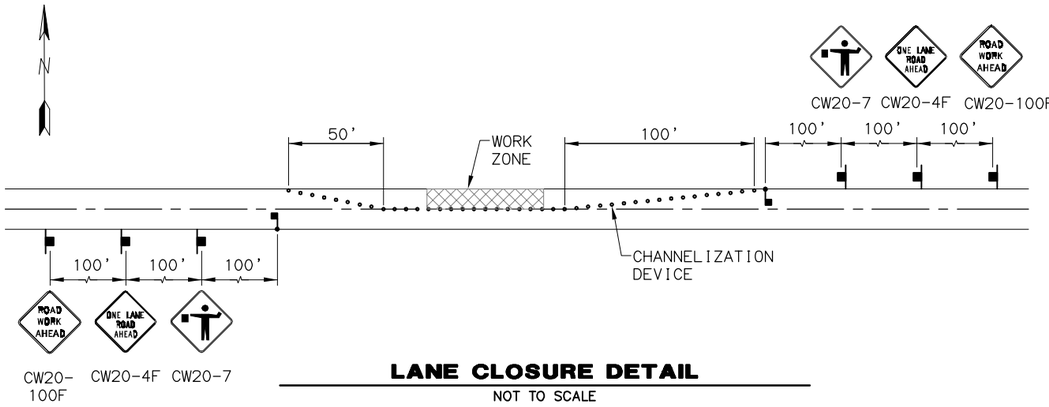
TED STEVENS
ANCHORAGE INTERNATIONAL AIRPORT
ANCHORAGE, ALASKA
PROJECT No. 52339
ANC GATE E21

ESTIMATE OF QUANTITIES

SHEET G4 OF G5




**TRAFFIC CONTROL PLAN**
1"=100'




**LANE CLOSURE DETAIL**
NOT TO SCALE

## LEGEND

- CONSTRUCTION SIGN
- FLAGGER
- CHANNELIZATION DEVICE
- WORK ZONE
- STAGING AREA

## TRAFFIC CONTROL NOTES:

1. THE TRAFFIC CONTROL PLAN (TCP) PRESENTED IN THESE DRAWINGS IS A GENERALIZATION OF THE TRAFFIC CONTROL REQUIRED. THE CONTRACTOR SHALL DEVELOP SPECIFIC TRAFFIC CONTROL PLANS FOR APPROVAL BY THE ALASKA DEPARTMENT OF TRANSPORTATION (ADOT&PF) AND THE PROJECT MANAGER.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE ALASKA TRAFFIC MANUAL AND THE APPROVED TCP. THE CONTRACTOR SHALL OBTAIN A PERMIT FROM ADOT&PF BEFORE CONDUCTING ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
3. FULL ROADWAY CLOSURE WILL NOT BE ALLOWED ALONG SOUTH AIRCRAFT DRIVE. SOUTH BOUND LANE MUST HAVE ACCESS TO THE GUARD POST AT ALL TIMES.
4. TYPE "A" FLASHING WARNING LIGHTS SHALL BE USED TO MARK BARRICADES, LANE CLOSURES, AND TRAFFIC DETOUR SIGNS AT NIGHT.
5. THE CONTRACTOR SHALL CONTACT ADOT&PF AND AIRPORT OPERATIONS 48 HOURS PRIOR TO COMMENCING WORK TO INFORM THE TRAFFIC ENGINEER WORK IS BEGINNING. THE NUMBERS TO CALL: (907)269-0635 (ADOT&PF) AND (907)266-2600 (ANC OPERATIONS).
6. ADJUST SIGN SPACING AS NECESSARY IN THE FIELD.

DESIGNED BY: SMB
CHECKED BY: BCM
DRAWN BY: SMB
DATE PLOTTED: MARCH 2011
SCALE: AS NOTED
FILE: 30202.06 TCP

| BY | DATE | REVISIONS |
|---|---|---|

| BY | DATE | REVISIONS |
|---|---|---|

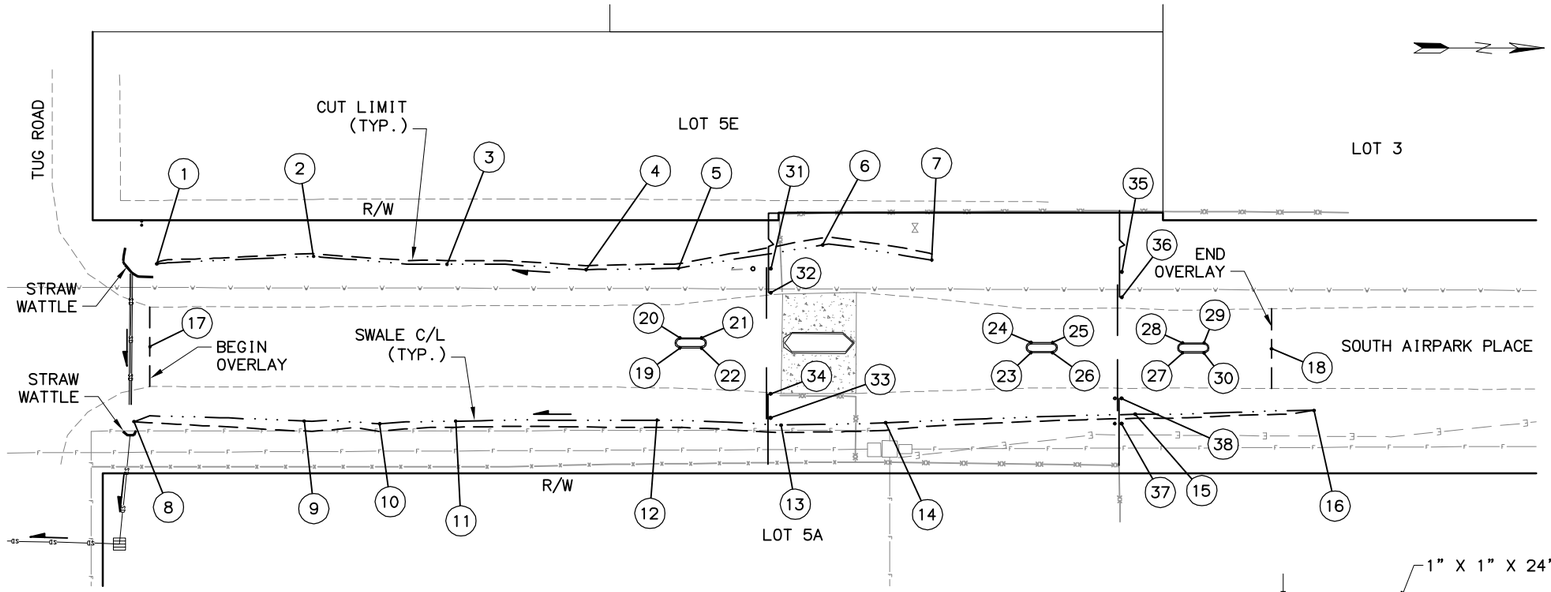
Ted Stevens Anchorage International Airport

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

PLANS DEVELOPED BY:
CRW ENGINEERING GROUP

TED STEVENS
ANCHORAGE INTERNATIONAL AIRPORT
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339
HAUL ROUTE, STAGING AREA
& TRAFFIC CONTROL PLAN

SHEET G5 OF G5




## SITE GRADING PLAN

1"=30'

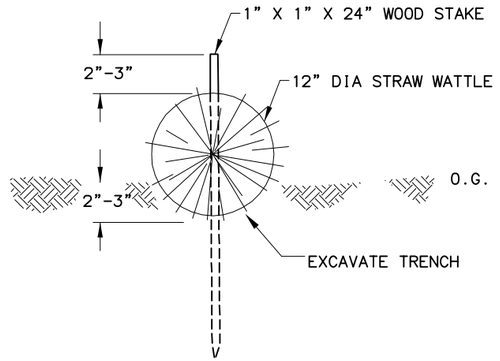
| SWALE POINT TABLE | | | |
|---|---|---|---|
| POINT | NORTHING | EASTING | ELEVATION |
| 1 | 323716.6001 | 333685.1633 | 75.84 |
| 2 | 323778.6779 | 333682.1290 | 76.16 |
| 3 | 323831.5511 | 333685.0769 | 76.43 |
| 4 | 323886.5763 | 333687.1591 | 76.70 |
| 5 | 323923.1370 | 333686.5803 | 76.89 |
| 6 | 323980.2443 | 333677.2403 | 77.18 |
| 7 | 324023.5187 | 333683.0812 | 77.58 |
| 8 | 323707.7462 | 333747.5809 | 75.67 |
| 9 | 323775.0994 | 333747.1736 | 76.02 |
| 10 | 323805.0110 | 333748.2842 | 76.17 |
| 11 | 323835.0487 | 333747.1147 | 76.32 |
| 12 | 323914.7980 | 333746.6046 | 76.72 |
| 13 | 323963.9533 | 333748.4696 | 76.96 |
| 14 | 324005.3359 | 333747.4268 | 77.17 |
| 15 | 324104.1630 | 333743.8263 | 77.66 |
| 16 | 324174.9549 | 333742.2223 | 78.02 |

| OVERLAY POINT TABLE | | |
|---|---|---|
| POINT | NORTHING | EASTING |
| 17 | 323713.9305 | 333717.9575 |
| 18 | 324158.0940 | 333717.8662 |

| CURB POINT TABLE | | | |
|---|---|---|---|
| POINT | NORTHING | EASTING | ELEVATION |
| 19 | 323923.8440 | 333718.0312 | 78.84 |
| 20 | 323923.8440 | 333714.0312 | 78.79 |
| 21 | 323932.3440 | 333714.0312 | 78.88 |
| 22 | 323932.3440 | 333718.0312 | 78.89 |
| 23 | 324062.8440 | 333719.6142 | 79.39 |
| 24 | 324062.8440 | 333715.6142 | 79.43 |
| 25 | 324071.3440 | 333715.6142 | 79.44 |
| 26 | 324071.3440 | 333719.6142 | 79.41 |
| 27 | 324122.8440 | 333719.6142 | 79.59 |
| 28 | 324122.8440 | 333715.6142 | 79.60 |
| 29 | 324131.3440 | 333715.6142 | 79.63 |
| 30 | 324131.3440 | 333719.6142 | 79.60 |

NOTE: CURB POINTS AT THE TOP OF CURB FACE.

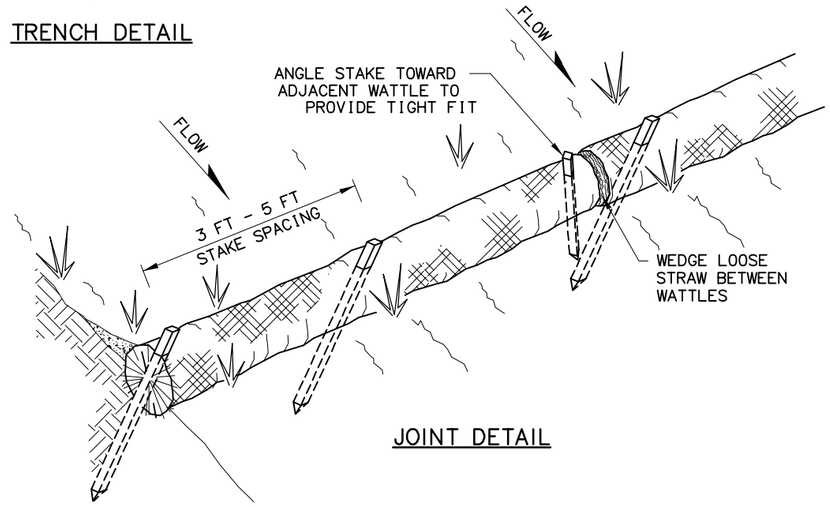
| GATE POST POINT TABLE | | |
|---|---|---|
| POINT | NORTHING | EASTING |
| 31 | 323959.7600 | 333686.5954 |
| 32 | 323959.7600 | 333696.0954 |
| 33 | 323959.7600 | 333745.5954 |
| 34 | 323959.7600 | 333736.0954 |
| 35 | 324098.7600 | 333687.6142 |
| 36 | 324098.7600 | 333697.6142 |
| 37 | 324098.7600 | 333747.6142 |
| 38 | 324098.7600 | 333737.6142 |




TRENCH DETAIL

## STRAW WATTLE NOTES:

1. STRAW WATTLES SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION OTHER THAN SURVEYING, UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER.
2. REMOVAL OF TRAPPED SEDIMENT TO AN AREA NOT SUBJECT TO EROSION IS REQUIRED WHEN THE SEDIMENT HAS REACHED A HEIGHT OF 5". WHEN APPROVED BY THE ENGINEER, AFTER REMOVING STAKES, WATTLES MAY BE LEFT IN PLACE TO DECOMPOSE.




JOINT DETAIL

DESIGNED BY: SMB
CHECKED BY: BCM
DRAWN BY: SMB
DATE PLOTTED: MARCH 2011
SCALE: 1"=30'
FILE: 30202.06 Base

| BY | DATE | REVISIONS |
|---|---|---|
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| | | |

| BY | DATE | REVISIONS |
|---|---|---|
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| | | |
| | | |
| | | |

Ted Stevens Anchorage International Airport

STATE OF ALASKA 49TH REGISTERED PROFESSIONAL ENGINEER Shane M. Blanchard CE 11519

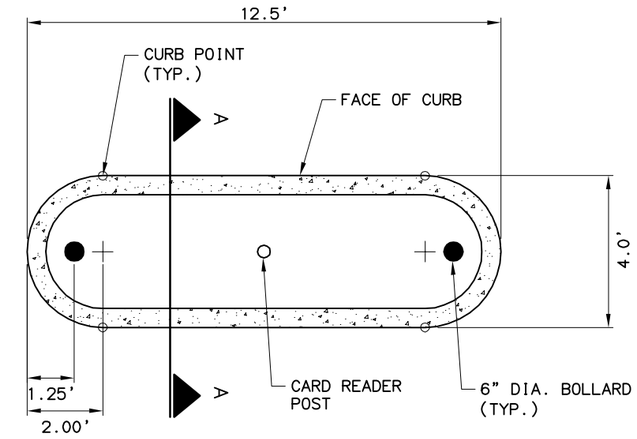
STATE OF ALASKA
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**
CENTRAL REGION

PLANS DEVELOPED BY:
CRW ENGINEERING GROUP

TED STEVENS
ANCHORAGE INTERNATIONAL AIRPORT
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339

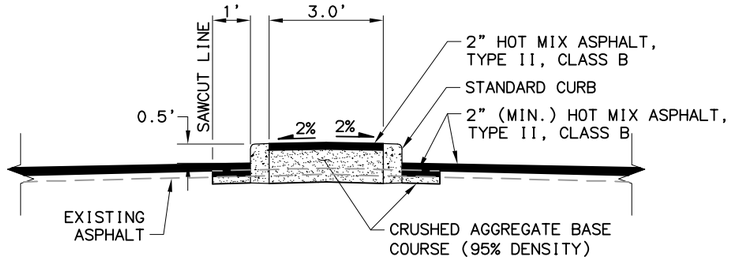
SITE GRADING PLAN

SHEET C1 OF C3



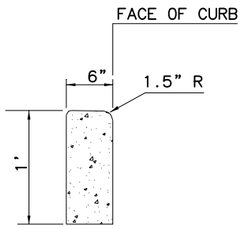

**TYPICAL CARD READER ISLAND**

NOT TO SCALE



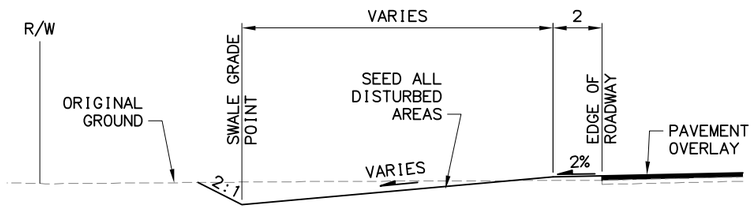

**SECTION A-A**

NOT TO SCALE



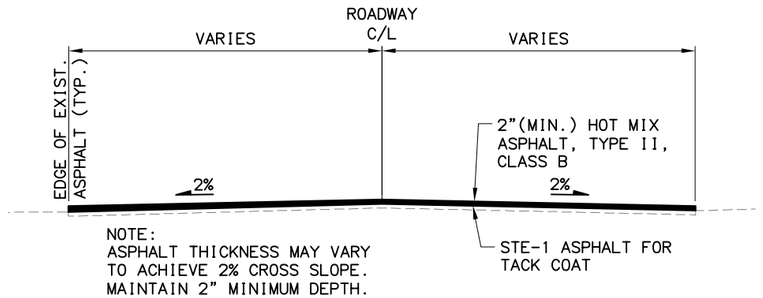

**STANDARD CURB DETAIL**

NOT TO SCALE



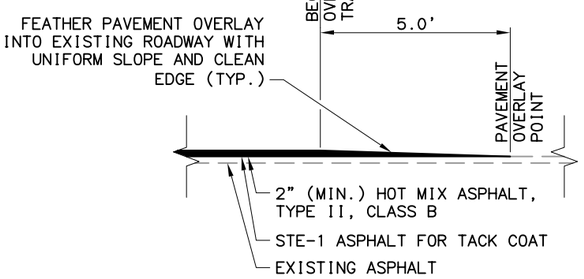

**TYPICAL SWALE SECTION**

N/A




**TYPICAL OVERLAY SECTION**

N/A




**TYPICAL OVERLAY TRANSITION DETAIL**

N/A

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DESIGNED BY: SMB<br>CHECKED BY: BCM<br>DRAWN BY: SMB<br>DATE PLOTTED: MARCH 2011<br>SCALE: NTS<br>FILE: 30202.06 Details | BY | DATE | REVISIONS | BY | DATE | REVISIONS | Ted Stevens Anchorage International Airport |

STATE OF ALASKA
49TH
Shane M. Blanchard
CE 11519
REGISTERED PROFESSIONAL ENGINEER

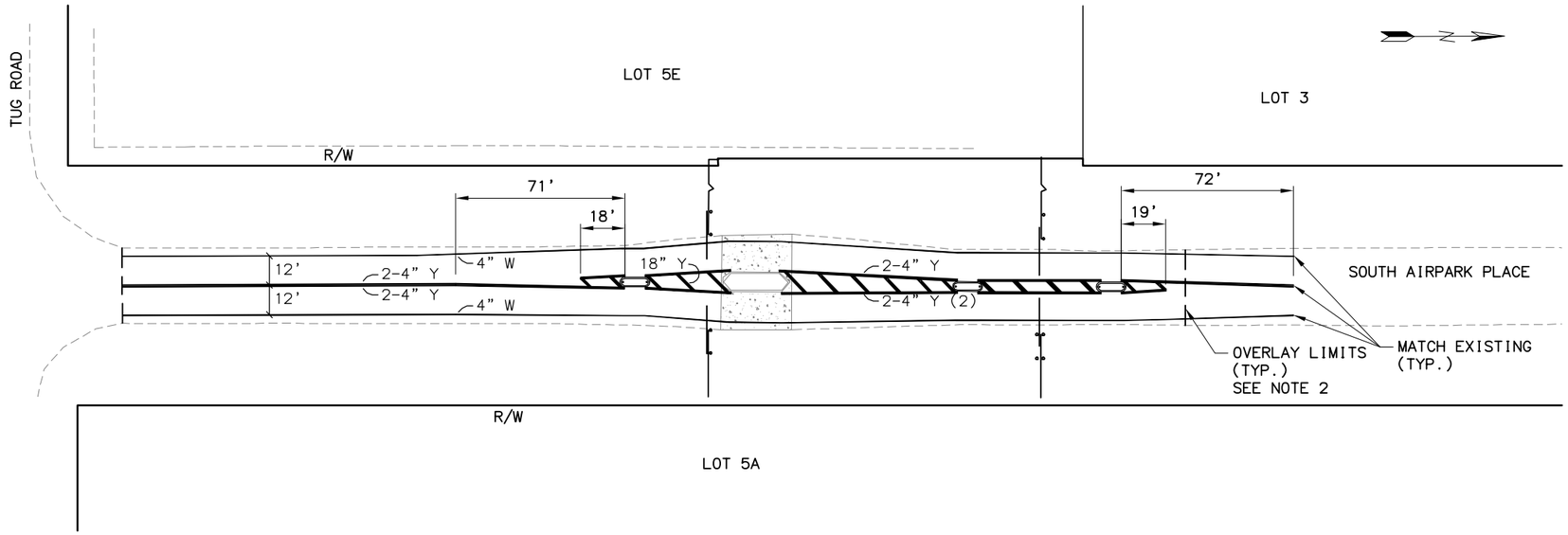
STATE OF ALASKA
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**
CENTRAL REGION

PLANS DEVELOPED BY:
CRW ENGINEERING GROUP

TED STEVENS
ANCHORAGE INTERNATIONAL AIRPORT
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339

CIVIL DETAILS

SHEET C2 OF C3




NOTES:

1. SEE ADOT STANDARD DETAIL T-20.02 & T-21.02 FOR LANE LINE AND MEDIAN PAINTING DETAILS.
2. REMOVE EXISTING STRIPING OUTSIDE PAVEMENT OVERLAY AREA AS NECESSARY TO ACHIEVE SMOOTH TRANSITION BETWEEN NEW AND OLD STRIPING. REMOVAL OF EXISTING STRIPING SHALL BE INCIDENTAL TO PAY ITEM P-620c RUNWAY AND TAXIWAY PAINTING.

DESIGNED BY: SMB
CHECKED BY: BCM
DRAWN BY: SMB
DATE PLOTTED: MARCH 2011
SCALE: NTS
FILE: 30202.06 Painting

| BY | DATE | REVISIONS |
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Ted Stevens Anchorage International Airport

STATE OF ALASKA
49TH
Shane M. Blanchard
CE 11519
REGISTERED PROFESSIONAL ENGINEER

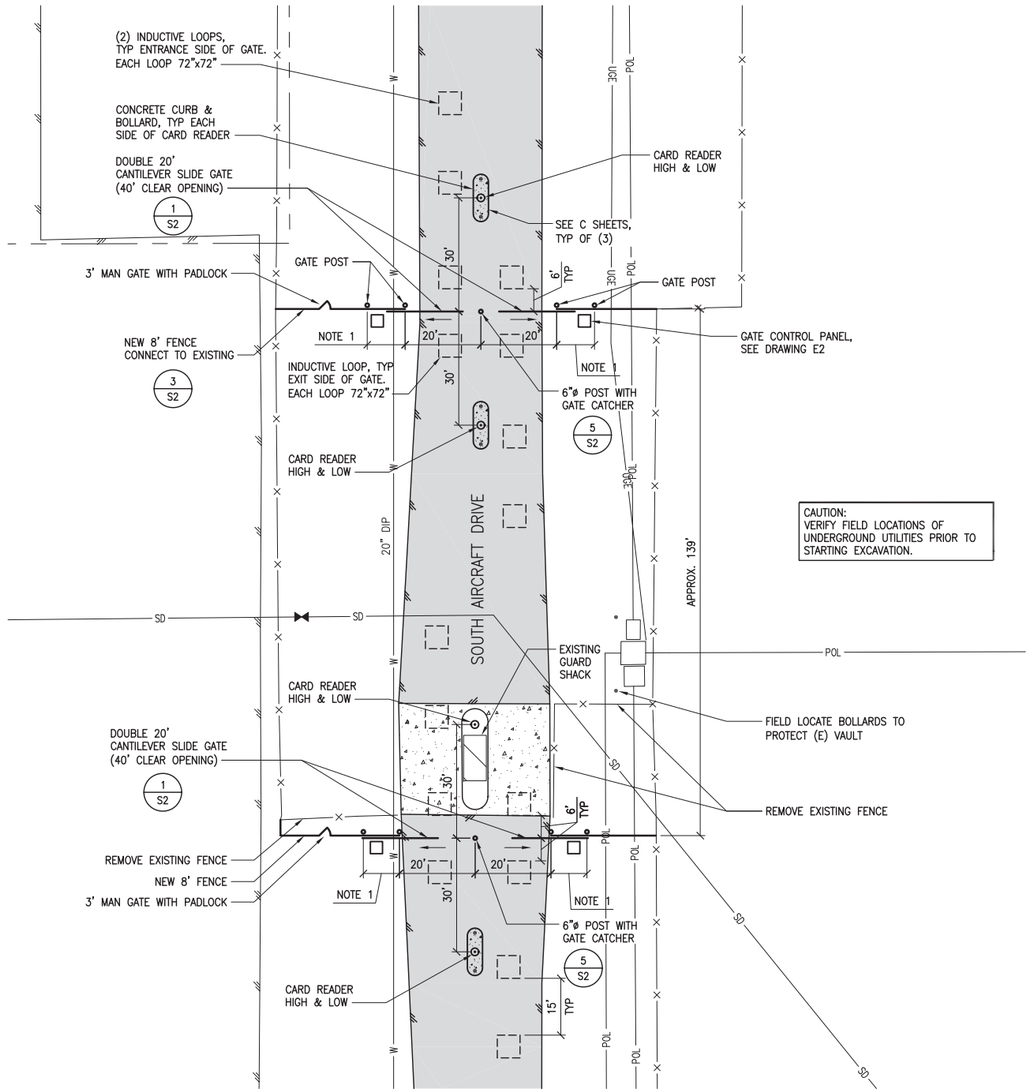
STATE OF ALASKA
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**
CENTRAL REGION

PLANS DEVELOPED BY:
CRW ENGINEERING GROUP

TED STEVENS
ANCHORAGE INTERNATIONAL AIRPORT
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339

STRIPING LAYOUT

SHEET C3 OF C3




CAUTION:
VERIFY FIELD LOCATIONS OF UNDERGROUND UTILITIES PRIOR TO STARTING EXCAVATION.

NOTES:
1. FIELD VERIFY EXACT LOCATION OF NEW GATE SO COUNTERBALANCE BACKSPAN DOES NOT INTERFERE WITH EXISTING FENCE IN FULLY OPEN POSITION.

## 1 S1 SITE PLAN

SCALE: 1" = 20'

NORTH

1"=20'-0" 0 10 20 40 60

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DESIGNED BY: DG<br>CHECKED BY:<br>DRAWN BY: BH<br>DATE PLOTTED: 03-21-2011<br>SCALE: 1" = 20'<br>FILE: 09361-S1.dwg | BY | DATE | REVISIONS | BY | DATE | REVISIONS | |

Ted Stevens Anchorage International Airport

STATE OF ALASKA 49TH — Mar 25, 2011 — REGISTERED PROFESSIONAL ENGINEER

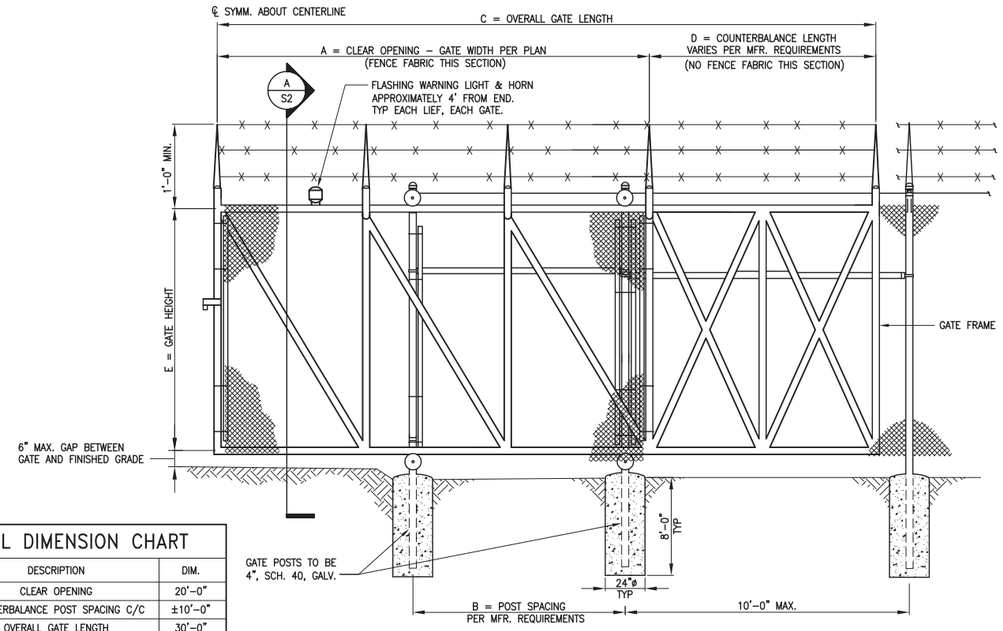
STATE OF ALASKA
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**
CENTRAL REGION

PLANS DEVELOPED BY:
COFFMAN ENGINEERS

**TED STEVENS ANCHORAGE INTERNATIONAL AIRPORT**
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339

SITE PLAN

SHEET S1 OF S2

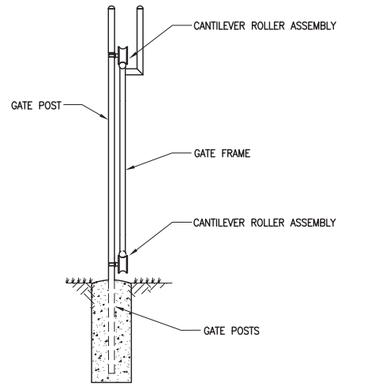



| CRITICAL DIMENSION CHART | | |
|---|---|---|
| MARK | DESCRIPTION | DIM. |
| A | CLEAR OPENING | 20'–0" |
| B | COUNTERBALANCE POST SPACING C/C | ±10'–0" |
| C** | OVERALL GATE LENGTH | 30'–0" |
| D** | COUNTERBALANCE LENGTH | 10'–0" |
| E | NOMINAL GATE HEIGHT | 8'–0" |

** FIELD VERIFY EXACT LOCATION OF NEW GATE AND ADJUST COUNTERBALANCE LENGTH SO IT DOES NOT INTERFERE WITH EXISTING FENCE IN FULLY OPEN POSITION.

## 1 S2 SLIDE GATE DETAIL

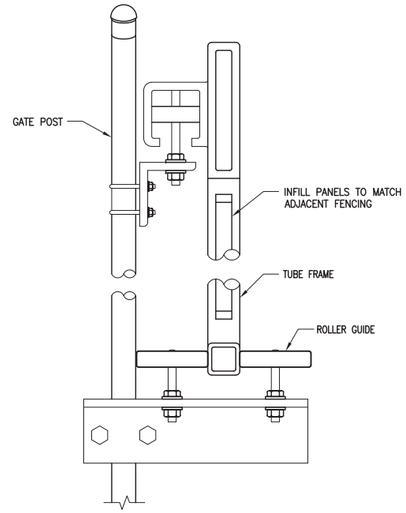
SCALE: NTS




NOTE:
GATE ROLLERS SHALL BE OF SAME DESIGN
AS EXISTING MOTOR OPERATED GATES.
NO BEARINGS, TEFLON STYLE BUSHINGS.

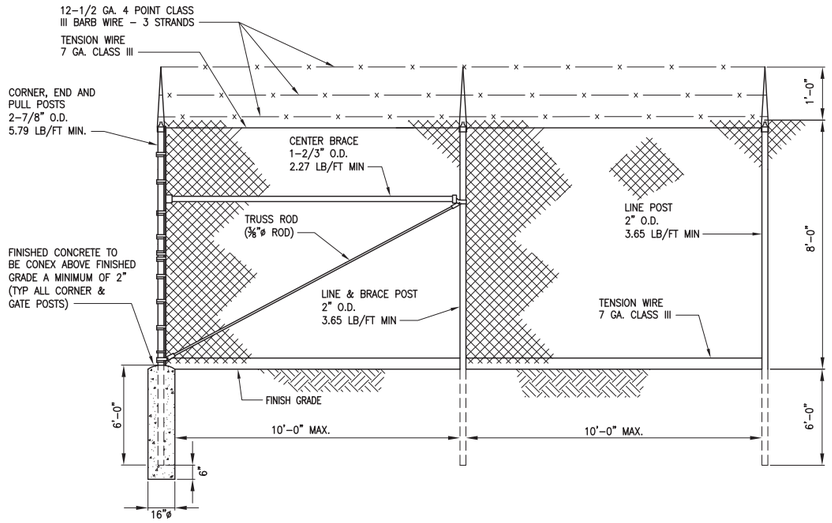
## A S2 SLIDE GATE SECTION

SCALE: NTS



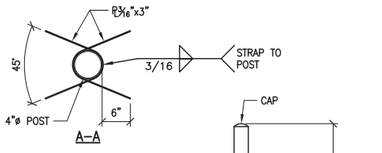

## 2 S2 CANTILEVER GATE DETAIL

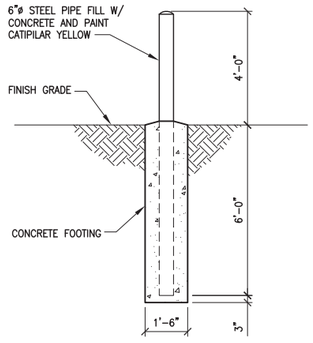
SCALE: NTS




## 3 S2 CHAIN-LINK SECURITY FENCE DETAIL

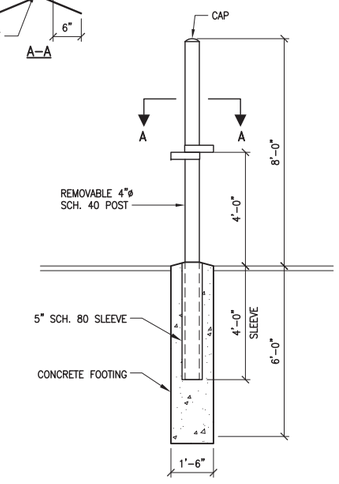
SCALE: NTS

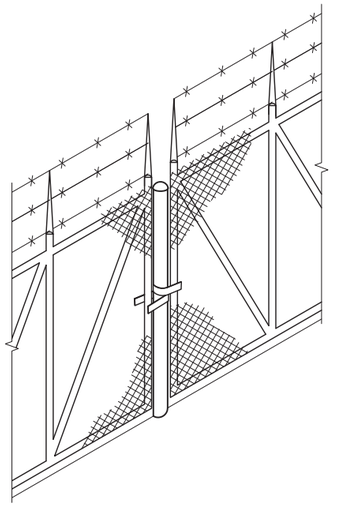



## 4 S2 BOLLARD DETAIL

SCALE: NTS



## 5 S2 GATE CATCHER DETAIL

SCALE: NTS

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|---|---|---|---|---|---|---|---|
| DESIGNED BY: DG | | | | | | | |
| CHECKED BY: | | | | | | | |
| DRAWN BY: BH | | | | | | | |
| DATE PLOTTED: 03-21-2011 | | | | | | | |
| SCALE: AS NOTED | | | | | | | |
| FILE: 09361-S2.dwg | BY | DATE | REVISIONS | BY | DATE | REVISIONS | |

Ted Stevens Anchorage International Airport

STATE OF ALASKA 49TH
DAVID GARDNER
Mar 25, 2011
CE 8181
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**
CENTRAL REGION

PLANS DEVELOPED BY:
COFFMAN ENGINEERS

**TED STEVENS ANCHORAGE INTERNATIONAL AIRPORT**
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339

GATE DETAILS

SHEET S2 OF S2

# ELECTRICAL ABBREVIATIONS

| ABBREVIATION | DEFINITION | ABBREVIATION | DEFINITION |
|---|---|---|---|
| A | AMPERE | LTG | LIGHTING |
| AC | ALTERNATING CURRENT | LVL | LEVEL |
| AIC | AMPS INTERRUPTING CAPACITY | MAX | MAXIMUM |
| BATT | BATTERY | MECH | MECHANICAL |
| BLDG | BUILDING | MFR | MANUFACTURER |
| BRKR | BREAKER | MH | MANHOLE |
| C | CABLE; CONDUIT; COIL | MIN | MINIMUM |
| CAB | CABINET | MM | MULTI MODE |
| CB | CIRCUIT BREAKER | MTD | MOUNTED |
| CKT | CIRCUIT | MTG | MOUNTING |
| COMM | COMMUNICATIONS | MTR | MOTOR |
| CONTR | CONTRACTOR | (N) | NEW |
| CR | CARD READER | NEUT | NEUTRAL |
| CTL | CONTROL | NIC | NOT IN CONTRACT |
| CU | COPPER | NO | NUMBER |
| D | DEEP (DIM) | NTS | NOT TO SCALE |
| DBC | ACCESS CONTROL DOOR CONTROLLER | OFOI | OWNER FURNISHED, OWNER INSTALLED |
| DISC | DISCONNECT | OFCI | OWNER FURNISHED, CONTRACTOR INSTALLED |
| DWG | DRAWING | OH/E | OVERHEAD ELECTRICAL |
| EA | EACH | PH | PHASE |
| EL | ELEVATION | PKG | PACKAGE |
| ELEC | ELECTRICAL | PNL | PANEL; PANELBOARD |
| EMERG | EMERGENCY | P.O.E. | POINT OF ENTRY |
| EQUIP | EQUIPMENT | PVC | POLYVINYL CHLORIDE CONDUIT |
| (E), EXIST | EXISTING | RECEPT | RECEPTACLE |
| FDR | FEEDER | RM | ROOM |
| FIXT | FIXTURE | SCH | SCHEDULE |
| FLR | FLOOR | SECT | SECTION |
| FT | FEET; FOOT | SHLD | SHIELDED |
| FU | FUSE | SMF | SINGLE MODE FIBER |
| FUT | FUTURE | SPEC | SPECIFICATIONS |
| GALV | GALVANIZED | SQ | SQUARE |
| GC | GATE CONTROLLER | STBY | STANDBY |
| GFI | GROUND FAULT INTERRUPTER | STD | STANDARD |
| GND | GROUND | STL | STEEL |
| GRS | GALVANIZED RIGID STEEL | SW | SWITCH |
| H | HIGH (DIM) | SYS | SYSTEM |
| HDPE | HIGH DENSITY POLY ETHYLENE | TB | TERMINAL BLOCK |
| HH | HANDHOLE | TEMP | TEMPORARY |
| HID | HIGH INTENSITY DISCHARGE | TTB | TELEPHONE TERMINAL BACK BOARD |
| HP | HORSEPOWER | TYP | TYPICAL |
| HZ | HERTZ (CYCLES PER SEC) | UGC | UNDERGROUND COMMUNICATIONS |
| ID | INSIDE DIMENSION | UPS | UNINTERRUPTIBLE POWER SUPPLY |
| I.R. | INFRARED | V | VOLT (S) |
| IMH | INTERMEDIATE MANHOLE | W | WATT (S), WIDE (DIM), WEST |
| IN | INCH | WHM | WATT HOUR METER |
| JB OR J-BOX | JUNCTION BOX | WP | WEATHERPROOF |
| kcmil | THOUSAND CIRCULAR MILS | XFMR | TRANSFORMER |
| kVA | KILOVOLT AMPERES | Z | IMPEDANCE |
| kW | KILOWATT(S) | | |
| kWH | KILOWATT HOUR | CR-#X | CARD READER (# - NUMBER, X - IDENTIFIER) |
| LCC | LIGHTING CONTROL CONTACTOR | LD-#X | LOOP DETECTOR (# - NUMBER, X - IDENTIFIER) |
| LD | LOOP DETECTOR | PLC-# | PROGRAMMABLE LOGIC CONTROLLER (# - NUMBER) |
| LT | LIGHT | GC-# | GATE CONTROLLER (# - NUMBER) |

ABBREVIATIONS AND SYMBOLS ARE STANDARD AND NOT ALL MAY BE USED ON DRAWINGS

# ELECTRICAL SYMBOLS LEGEND

| SYMBOL PLAN | SYMBOL DIAGRAM | DESCRIPTION |
|---|---|---|
| | | PANELBOARD – SEE PANEL SCHEDULE |
| | | EQUIPMENT CABINET – TYPE AS INDICATED |
| CB | ST 30A/3P | CIRCUIT BREAKER NUMBER INDICATES TRIP SETTING AND NUMBER OF POLES<br>CL – INDICATES CURRENT LIMITING<br>ST – INDICATES SHUNT TRIP |
| | | GATE CONTROLLER |
| | | EQUIPMENT CONNECTION |
| | | GROUND CONNECTION |
| | | UNDERGROUND ELECTRICAL |
| | | GATE LIGHT |
| J | J | JUNCTION BOX |
| | | OPEN/CLOSE/STOP PUSHBUTTON CONTROL STATION |
| | | SECURITY CAMERA |
| | | CARD READER |
| P | P | PRESSURE SENSOR |
| M | M | MAGNETIC CONTACT |
| | | CABLE/FEEDER TAG |
| | | NORMALLY OPEN RELAY |
| | | NORMALLY CLOSED RELAY |

## GENERAL NOTES:

1. INSTALLATION SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE AND APPLICABLE LOCAL, STATE AND NATIONAL CODES AND STANDARD AND THE AIRPORT TERMINAL CONSTRUCTION STANDARDS (TCS).
2. ALL WIRING INSTALLED IN UNHEATED OR EXTERIOR SPACES SHALL BE XHHW, INTERIOR WIRING MAY BE THHW/THHN.
3. EXISTING EQUIPMENT INFORMATION SHOWN ON THESE DRAWINGS SHOULD BE FIELD VERIFIED. CONFIRM EQUIPMENT LOCATIONS WITH OWNER AND ADJUST AS REQUIRED.
4. ALL CONDUCTORS SHALL BE COPPER. ALUMINUM CONDUCTORS MAY BE USED ON FEEDERS OVER 50A. REFER TO THE NEC TO SIZE ALUMINUM CONDUCTORS.
5. PROVIDE TYPED, UPDATED PANEL SCHEDULES FOR NEW PANELS AND PANELS WITH CIRCUIT MODIFICATIONS FROM THIS PROJECT.
6. NEW UNDERGROUND CONDUITS TO BE INSTALLED NO LESS THAN 18" BELOW FINISHED GRADE. ALL CONDUIT BELOW GRADE TO BE GALVANIZED RIGID STEEL UNLESS SPECIFIED ON DRAWINGS.
7. MATERIALS SHALL BE NEW, FULL WEIGHT, AND BEAR THE UL LABEL.

DESIGNED BY: LRJ
CHECKED BY: TEL
DRAWN BY: JPW
DATE PLOTTED: 03-21-2011
SCALE: AS NOTED
FILE:

| BY | DATE | REVISIONS | BY | DATE | REVISIONS |
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Ted Stevens Anchorage International Airport

STATE OF ALASKA
49 TH
TOM E. LOONEY
Mar 25, 2011
EE 9369
REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

PLANS DEVELOPED BY:
COFFMAN ENGINEERS

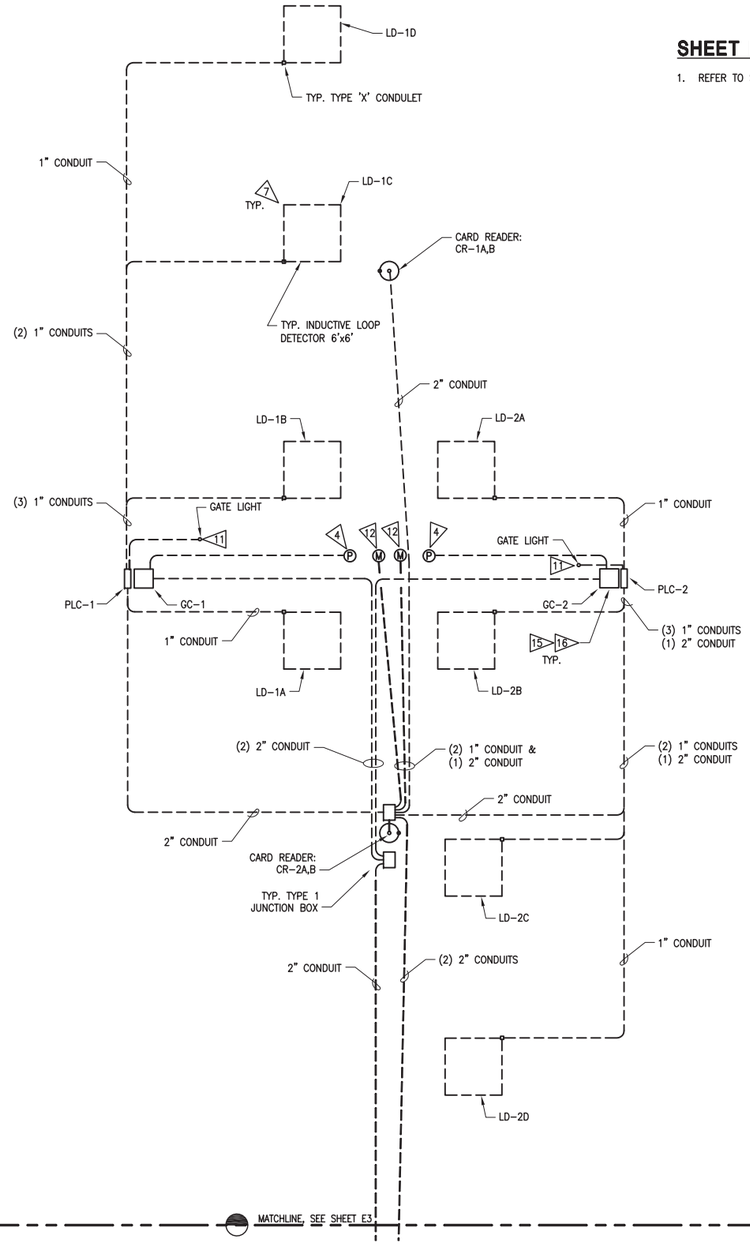
TED STEVENS
ANCHORAGE INTERNATIONAL AIRPORT
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339

LEGEND & ABBREVIATIONS

SHEET E1 OF E6

## SHEET NOTES:

1. REFER TO SHEET E3 FOR ELECTRICAL NOTES

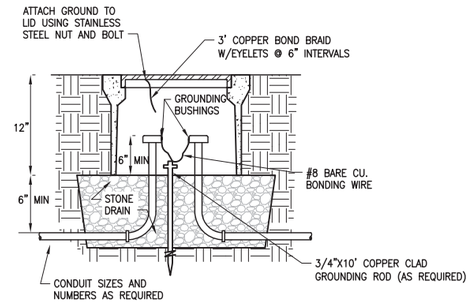



## 1 E2 ELECTRICAL SITE PLAN - NORTH

SCALE: 1/8" = 1'-0"

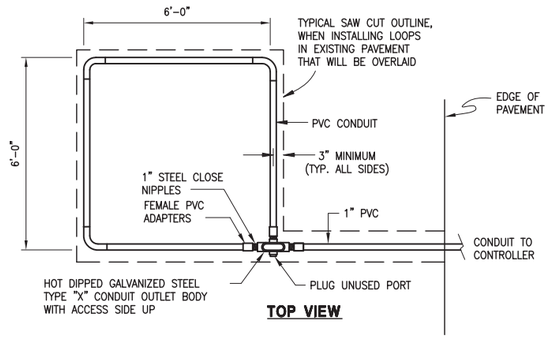
NORTH

1/8"=1'-0" 0 2 4 6 8 16 24

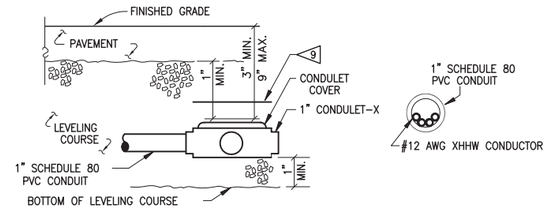



## 2 E2 TYPE 1 JUNCTION BOX

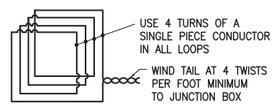
SCALE: NTS




**TOP VIEW**




**SIDE VIEW**




**LOOP WIRING DETAIL**

## 3 E2 CONDUIT ENCASED LOOP DETECTOR

SCALE: NTS

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|---|---|---|---|---|---|---|---|
| DESIGNED BY: LRJ<br>CHECKED BY: TEL<br>DRAWN BY: JPW<br>DATE PLOTTED: 03-21-2011<br>SCALE: AS NOTED<br>FILE: | BY | DATE | REVISIONS | BY | DATE | REVISIONS | Ted Stevens Anchorage International Airport |

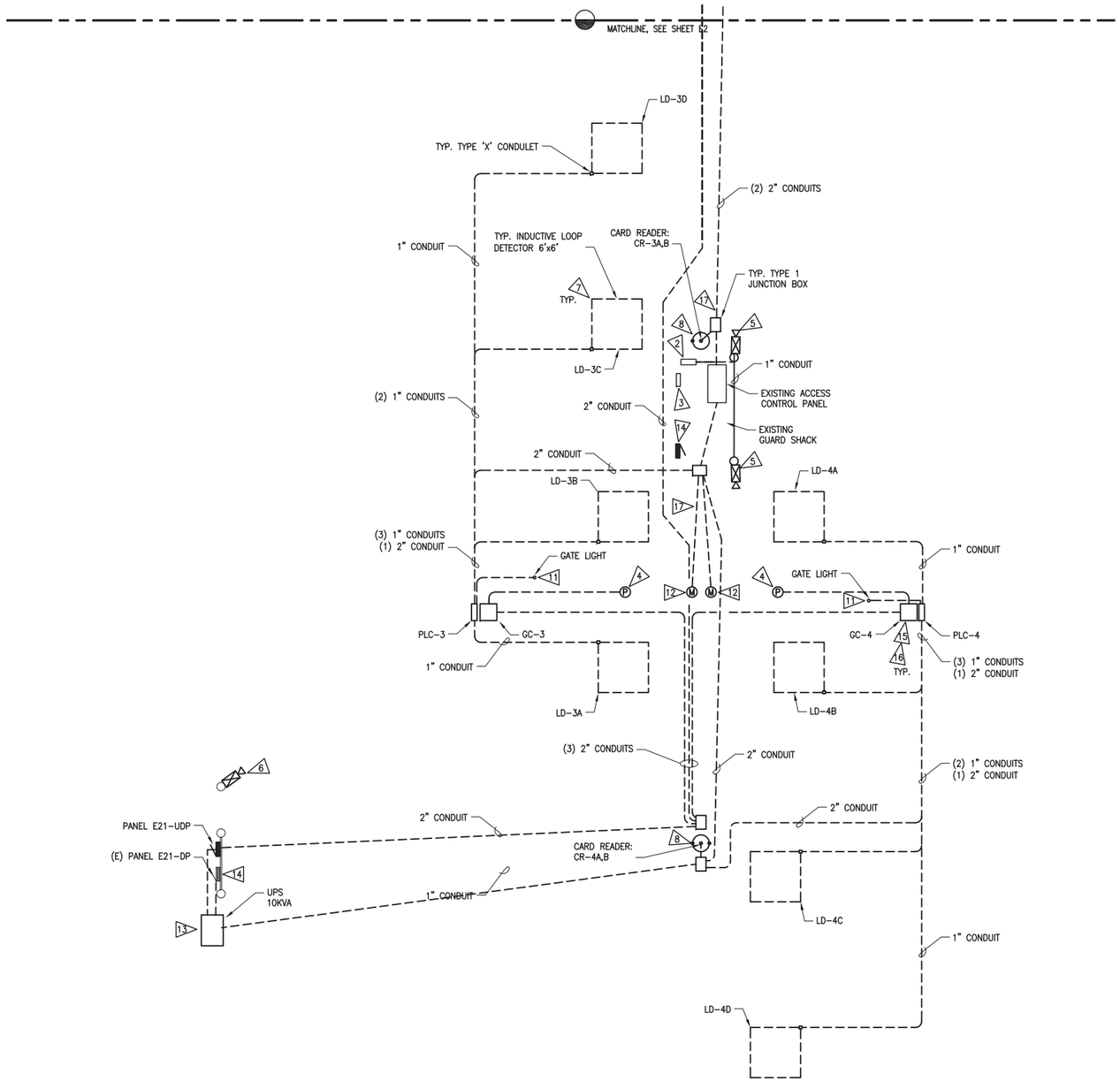
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

PLANS DEVELOPED BY:
COFFMAN ENGINEERS

**TED STEVENS ANCHORAGE INTERNATIONAL AIRPORT**
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339

ELECTRICAL SITE DRAWING – NORTH

SHEET E2 OF E6




1/8"=1'-0" 0 2 4 6 8 16 24

## 1 ELECTRICAL SITE PLAN - SOUTH

E3 SCALE: 1/8" = 1'-0"

## SHEET NOTES:

1. PROVIDE (4) GATE CONTROLLERS AND PLC CABINETS, NORTHWEST (GC-1, PLC-1), NORTHEAST (GC-2, PLC-2), SOUTHWEST (GC-3, PLC-3), SOUTHEAST (GC-4, PLC-4), TO OPERATE EACH GATE LEAF. INTERFACE GATE CONTROLLER AND PLC TO THE EXISTING ACCESS CONTROL SYSTEM DOOR CONTROLLER (AMAG 8DBC) LOCATED IN THE GUARD SHACK. REFER TO RISER DIAGRAM ON SHEET E4 FOR MORE INFORMATION.

2. EXISTING CISCO IE-3000-8TC-E NETWORK SWITCH MOUNTED IN NEMA 3R ENCLOSURE. PROVIDE ONE (1) EIGHT PORT EXPANSION MODULE (CISCO IEM-3000-8TM) AND INSTALL PER MANUFACTURES INSTRUCTIONS.

3. PROVIDE & INSTALL (4) OPEN/CLOSE/STOP PUSH BUTTON CONTROL STATIONS IN THE GUARD SHACK, ONE (1) FOR EACH GATE LEAF. INTERFACE CONTROL STATIONS TO INDIVIDUAL GATE PLC. COORDINATE LOCATION WITH THE DEPARTMENT.

4. MOUNT PRESSURE SENSITIVE EDGES TO GATE LEAF EDGE PER MANUFACTURES INSTRUCTIONS. INTERFACE PRESSURE SENSING EDGES TO THE GATE CONTROLLERS SAFETY REVERSING INPUT.

5. PROVIDE NEW FIXED CCTV CAMERAS WITH WEATHER PROOF ENCLOSURES AND MOUNT TO GUARD SHACK. PROVIDE NEW CCTV POWER SUPPLY INSIDE THE GUARD SHACK. CIRCUIT AS SHOWN ON PANEL E21 SCHEDULE. ORIENTATE CAMERAS TO VIEW THE NORTH AND SOUTH GATES. CONNECT TO THE EXISTING SECURITY NETWORK SWITCH LOCATED AT THE GUARD SHACK VIA CAT. 5 CABLES. COORDINATE FINAL VIEW WITH THE DEPARTMENT. REFER TO GATE E21 RISER DIAGRAM FOR ADDITIONAL INFORMATION.

6. PROVIDE NEW FIXED CCTV CAMERA WITH WEATHER PROOF ENCLOSURE AND MOUNT TO THE EXISTING CCTV POLE LOCATED SOUTHWEST OF THE GUARD SHACK. ORIENTATE CAMERA TO VIEW THE GUARD SHACK. CONNECT CAMERA TO THE SECURITY NETWORK SWITCH LOCATED IN THE GUARD SHACK VIA EXISTING CAT. 5 CABLE LOCATED IN THE CCTV POLE ENCLOSURE. VIA EXISTING FIBER LOCATED AT THE GUARD SHACK. COORDINATE FINAL VIEW WITH THE DEPARTMENT. REFER TO GATE E21 RISER DIAGRAM FOR ADDITIONAL INFORMATION.

7. PROVIDE INDUCTIVE LOOP DETECTORS FOR CONTROL OF GATE OPERATORS. LOCATE INDUCTIVE LOOP DETECTORS PER DIRECTION OF THE DEPARTMENT AND THE GATE MANUFACTURES INSTRUCTIONS. REFER TO 2/E2 FOR ADDITIONAL INFORMATION.

8. PROVIDE TWO CARD READERS AT EACH LOCATION INDICATED. PROVIDE CARD READER EXTENDER CABLE AND CONNECT TO CARD READER INPUTS ON THE EXISTING ACS DBC. CONNECT ACS DBC OUTPUT TO GATE PLC FOR ACCESS AUTHORIZATION. REFER TO GATE E21 RISER DIAGRAM FOR ADDITIONAL INFORMATION.

9. PROVIDE 4-11/16 INCH BOX COVER ABOVE THE TYPE X CONDULET FOR FUTURE MAGNETIC LOCATION.

10. PROVIDE CUSTOM PREFABRICATED PROTECTIVE ENCLOSURE TO MATCH EXISTING CARD READER ENCLOSURES IN USE AT THE GATE NEAR TUG ROAD AND THE E21 GATE. REFER TO 3/E3 ENCLOSURE PHOTO. SUBMIT SHOP DRAWING OF CARD READER ENCLOSURE FOR APPROVAL BY THE DEPARTMENT PRIOR TO CONSTRUCTION.

11. GATE CLOSING WARNING LIGHT. MOUNT THE GATE LIGHT AT THE TOP OF POST. PROVIDE 3/4" GRS CONDUIT FROM THE GATE PLC TO GATE POST. RUN THE 3/4" CONDUIT UP THE GATE POST, SUPPORTING THE CONDUIT AT THE REQUIRED NEC SPACING.

12. PROVIDE EXTRA WIDE GAP MAGNETIC CONTACT FOR EACH GATE LEAF. INTERFACE THE MAGNETIC CONTACTS TO THE ACCESS CONTROL SYSTEM PANEL LOCATED IN THE GUARD SHACK. PROGRAM ACCESS CONTROL SYSTEM TO REPORT THE STATUS OF THE GATES AS EITHER OPEN OR CLOSED BASED ON THE MAGNETIC CONTACTS.

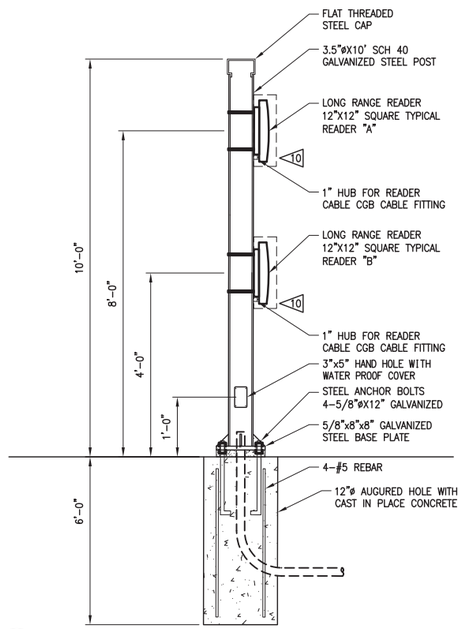
13. PROVIDE OUTDOOR RATED 10 KVA UPS IN NEMA 3R ENCLOSURE CONFIGURED FOR MINIMUM 90 MINUTES OF RUN TIME AT FULL LOAD. INSTALL NEW 50A, 2 POLE CIRCUIT BREAKER IN PANEL E21-DP FOR FEED TO THE UPS. INSTALL NEW UPS DISTRIBUTION PANEL ON THE EXISTING UNISTRUT RACK NEXT TO PANEL E21-DP. PROVIDE CAT. 5 CABLE TO THE EXISTING ACCESS CONTROL NETWORK SWITCH LOCATED AT THE GUARD SHACK FOR UPS MONITORING. REFER TO ELECTRICAL ONE-LINE FOR ADDITIONAL INFORMATION.

14. INTERCEPT EXISTING 30A FEED TO THE GUARD SHACK DISTRIBUTION PANEL AND EXTEND TO NEW PANEL E21-UDP. REFER TO ELECTRICAL ONE-LINE FOR ADDITIONAL INFORMATION.

15. INSTALL CURRENT TRANSFORMER (CT) WITH NORMALLY OPEN RELAY ON ONE LEG OF GATE OPERATOR MOTOR FEEDER. WRAP THE FEEDER AROUND THE CT A MINIMUM OF 5 TIMES TO INCREASE THE INCREASE THE SECONDARY CURRENT FROM THE CT. CONNECT TO PLC FOR MONITORING OF MOTOR RUN STATUS. REFER TO TYPICAL PLC ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.

16. CONNECT AUXILARY NORMALLY OPEN CONTACT ON GATE OPERATOR OPEN AND CLOSE LIMIT SWITCHES TO THE PLC FOR MONITORING OF GATE STATUS. REFER TO TYPICAL PLC ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.

17. PATCH CONCRETE ISLAND AND CURB TO MATCH EXISTING FORM.




## 2 CARD READER POST DETAIL

E3 SCALE: NTS

## 3 ENCLOSURE PHOTO

E3 SCALE: NTS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DESIGNED BY: NORTH LRJ<br>CHECKED BY: TEL<br>DRAWN BY: JPW<br>DATE PLOTTED: 03-21-2011<br>SCALE: AS NOTED<br>FILE: | BY | DATE | REVISIONS | BY | DATE | REVISIONS | Ted Stevens Anchorage International Airport | STATE OF ALASKA 49TH TOME LOONEY Mar 25, 2011 EE 9369 REGISTERED PROFESSIONAL ENGINEER |

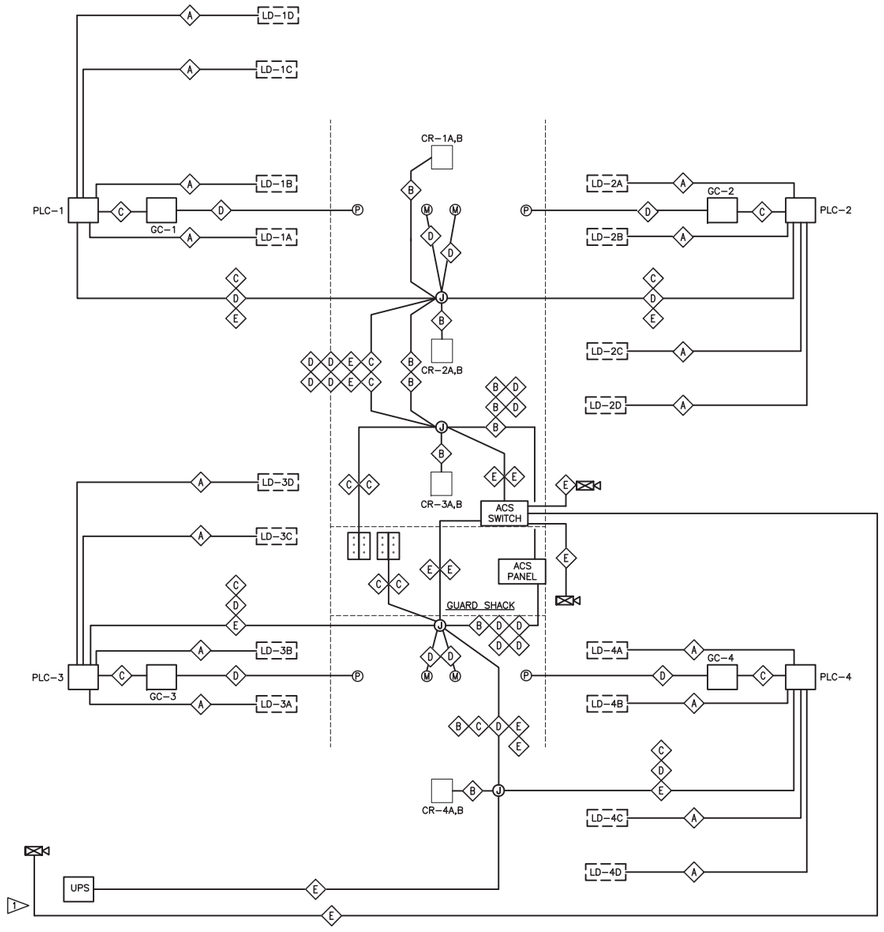
STATE OF ALASKA
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**
CENTRAL REGION

PLANS DEVELOPED BY:
COFFMAN ENGINEERS

**TED STEVENS ANCHORAGE INTERNATIONAL AIRPORT**
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339

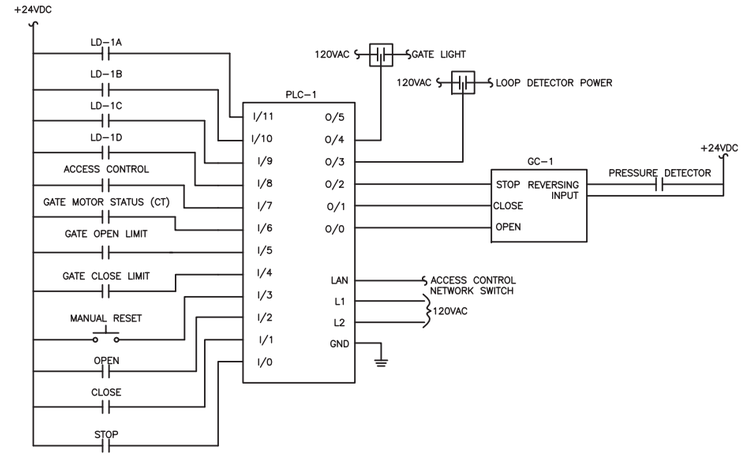
ELECTRICAL SITE DRAWING – SOUTH

SHEET E3 OF E6




## 1 E4 GATE E21 RISER DIAGRAM

SCALE: NTS




## 2 E4 TYPICAL PLC ONE-LINE DIAGRAM

SCALE: NTS

## SHEET NOTES:

1. USE EXISTING CAT. 5e CABLE INSTALLED BETWEEN THE CCTV POST AND ACS NETWORK SWITCH.

## CABLE SCHEDULE

| TAG | CONDUCTOR SIZE | COMMENTS |
|---|---|---|
| A | 2#12 AWG | SEE LOOP DETECTOR DETAIL #3/E2 |
| B | 2EA 9#18 AWG | CARD READER EXTENDER CABLES PER MFG SPECIFICATIONS |
| C | 6#18 AWG | |
| D | 2#18 AWG | |
| E | 4PR#22 AWG CAT. 5e | |

## EQUIPMENT USED AS BASIS OF DESIGN:

1. GATE CONTROLLERS GC-1 THRU GC-4: TYMETAL CORP TYM-VARISPEED, WITH 1HP MOTOR AND INTERNAL HEATER KIT OR APPROVED EQUAL.
2. PROGRAMMABLE LOGIC CONTROLLERS PLC-1 THRU PLC-4: ALLEN-BRADLEY MICROLOGIX 1400 SERIES (1766-L32BWA) WITH MEMORY MODULE (1766-MM1) AND POWER SUPPLY (SOLA SDP1-24-100T) IN NEMA 3R ENCLOSURE.
3. CARD READERS CR-1 THRU CR-4: "HID" BRAND MODEL R-90 LONG RANGE READER, HIGHMOUNT FOR TRUCKS, LOW MOUNT FOR CARS.
4. GATE OBSTRUCTION LIGHT: TORK #TA96B*R5, 120V, 80mA, XENON STROBE 75fpm, NEMA 3R, RED LEXAN LENS OR APPROVED EQUAL.
5. LOOP DETECTORS LD-1 THRU LD-4: PEEK 625X SERIES OR APPROVED EQUAL.
6. CCTV CAMERA: AXIS Q1755E WITH OUTDOOR HOUSING OR APPROVED EQUAL.
7. UPS: ONLINE POWER HE-UPS SERIES OR APPROVED EQUAL.
8. 3 BUTTON STATION: VEE INDUSTRIES INC. 3BXT OR APPROVED EQUAL.

## GATE SEQUENCE OF OPERATIONS:

1. INBOUND AND OUTBOUND GATES ARE INTERLOCKED ALLOWING ONLY ONE GATE TO OPEN AT A TIME. ALL GATES ARE INDEPENDENTLY OPENED BY VEHICLE DETECTION AND PROXIMITY CARD READERS FOR ALL TRAFFIC.
2. WHILE A GATE OPENS THE FOLLOWING WILL OCCUR
   - LOCAL GATE OPEN STROBE LIGHT ACTIVATES
   - SPECIFIC GATE IS REPORTED TO DISPATCH AS OPEN
   - IF THE GATE CONTROLLER PRESSURE SENSOR IS ACTIVATED THEN THE GATE WILL STOP, REVERSE DIRECTION FOR A SHORT PERIOD OF TIME THEN STOP. THE GATE WILL AUTOMATICALLY START TO CLOSE AT A PREDETERMINED PERIOD OF TIME.
   - IF OPEN MOVEMENT IS NOT INTERRUPTED BY AN OPEN SAFETY SIGNAL THEN THE GATE WILL STOP AT THE OPEN LIMIT SWITCH.
3. GATE WILL AUTOMATICALLY START TO CLOSE AT A PREDETERMINED PERIOD OF TIME IF OUTBOUND VEHICLE DETECTION LOOP IS NOT ACTIVE. COORDINATE WITH USER FOR TIMING INTERVAL.
   - WHILE GATE IS CLOSING IF THE GATE CONTROLLER PRESSURE SENSOR IS ACTIVATED THEN THE GATE WILL STOP, AND REVERSE DIRECTION FOR A SHORT PERIOD OF TIME THEN STOP. GATE WILL AUTOMATICALLY START TO CLOSE AT A PREDETERMINED PERIOD OF TIME.
   - IF CLOSE MOVEMENT IS NOT INTERRUPTED BY A SAFETY SIGNAL THEN THE GATE WILL STOP AT THE CLOSE LIMIT SWITCH.
   - ONCE GATE REACHES THE CLOSE LIMIT SWITCH THE GATE OPEN STROBE LIGHT WILL DEACTIVATE AND THE GATE POSITION WILL BE REPORTED TO DISPATCH AS CLOSED

THE SEQUENCE OF OPERATION IS BASED UPON THE EQUIPMENT SELECTED AS THE BASIS OF DESIGN. ANY SUBSTITUTIONS OF EQUIPMENT SHALL BE APPROVED THROUGH THE SUBMITTAL PROCESS AND THE CONTRACTOR SHALL BEAR COMPLETE RESPONSIBILITY FOR PROVIDING A COMPLETE AND FUNCTIONAL SYSTEM THAT OPERATES AS DESCRIBED IN THE ABOVE SEQUENCE OF OPERATIONS.

CAUSE & EFFECT CHART

LEGEND:
X = CONTROL FUNCTION

= INDICATES ALL CONTROL FUNCTIONS REQUIRED TO MAINTAIN OUTPUT

| CAUSE DESCRIPTION | EFFECT DESCRIPTION: GATE OPENS | GATE CLOSES | GATE STOPS | CLOSE TIMER STARTS |
|---|---|---|---|---|
| CARD READER ACTIVE | X | | | |
| VEHICLE DETECTION LOOP AT CARD READER ACTIVE | X | | | |
| INTERLOCKED GATE CLOSED | X | | | |
| GATE CONTROLLER PRESSURE SENSOR OPEN ACTIVE | | | X | X |
| GATE CONTROLLER PRESSURE SENSOR OPEN INACTIVE | X | | | |
| GATE CONTROLLER PRESSURE SENSOR CLOSE ACTIVE | | | X | X |
| GATE CONTROLLER PRESSURE SENSOR CLOSE INACTIVE | | X | | |
| GATE OPEN LIMIT SWITCH ACTIVE | | | X | X |
| GATE CLOSE LIMIT SWITCH INACTIVE | X | | | |
| GATE OPEN LIMIT SWITCH ACTIVE | | | X | X |
| GATE CLOSE LIMIT SWITCH INACTIVE | | X | | |
| VEHICLE REVERSING DETECTION LOOP INACTIVE | | X | | |
| VEHICLE REVERSING DETECTION LOOP ACTIVATED WHILE GATE IS CLOSING | X | | | |
| CLOSE TIMER ACTIVE | | X | | |

DESIGNED BY: LRJ
CHECKED BY: TEL
DRAWN BY: JPW
DATE PLOTTED: 03-21-2011
SCALE: AS NOTED
FILE:

| BY | DATE | REVISIONS | BY | DATE | REVISIONS |
|---|---|---|---|---|---|
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Ted Stevens Anchorage International Airport

STATE OF ALASKA 49TH
TOME LOOKEY Mar 25, 2011 EE 9369
REGISTERED PROFESSIONAL ENGINEER

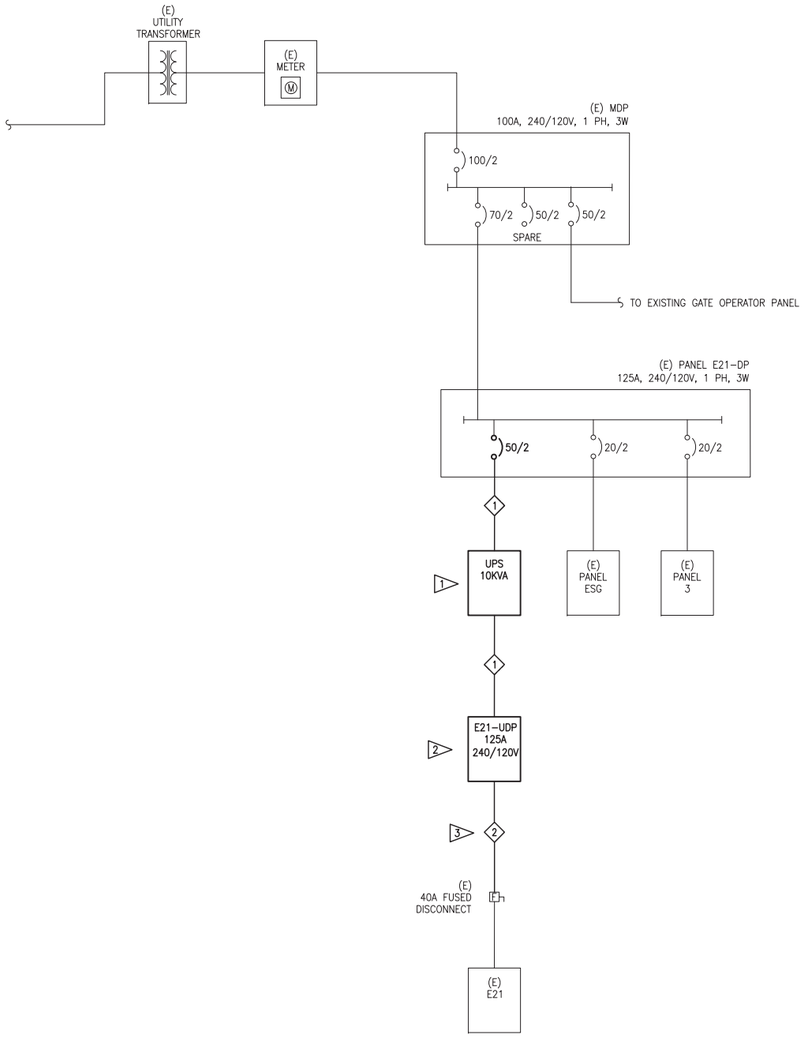
STATE OF ALASKA
**DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES**
**CENTRAL REGION**

PLANS DEVELOPED BY:
COFFMAN ENGINEERS

**TED STEVENS ANCHORAGE INTERNATIONAL AIRPORT**
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339

RISER DIAGRAM & POWER ONE-LINE DIAGRAM

SHEET E4 OF E6




## SHEET NOTES:

1. PROVIDE OUTDOOR RATED 10 KVA UPS IN NEMA 3R ENCLOSURE CONFIGURED FOR 90 MINUTES OF RUN TIME AT FULL LOAD. INSTALL NEW 50A, 2 POLE CIRCUIT BREAKER IN PANEL E21–DP FOR FEED TO THE UPS.
2. INSTALL NEW UPS DISTRIBUTION PANEL ON THE EXISTING UNISTRUT RACK NEXT TO PANEL E21–DP.
3. INTERCEPT EXISTING 3#4 & 1#4 GND FEEDER FROM E21–DP TO EXISTING PANEL E21 AND EXTEND TO NEW PANEL E21–UDP.

**FEEDER SCHEDULE**

| TAG | FEEDER | COMMENTS |
|---|---|---|
| 1 | 2"C – 3#6 AWG, 1#10 G | |
| 2 | 1"C – 3#10 AWG, 1#10 G | |

1 / E5 ONE-LINE DIAGRAM - EAST SAAP GATE
SCALE: NTS

DESIGNED BY: LRJ
CHECKED BY: TEL
DRAWN BY: JPW
DATE PLOTTED: 03–21–2011
SCALE: AS NOTED
FILE:

| BY | DATE | REVISIONS | BY | DATE | REVISIONS |
|---|---|---|---|---|---|
| | | | | | |

Ted Stevens Anchorage International Airport

STATE OF ALASKA 49TH Mar 25, 2011 REGISTERED PROFESSIONAL ENGINEER

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

PLANS DEVELOPED BY:
COFFMAN ENGINEERS

TED STEVENS
ANCHORAGE INTERNATIONAL AIRPORT
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339

ONE–LINE DIAGRAM

SHEET E5 OF E6

| PANEL | MDP | 120/240V, 1 PHASE, 3 WIRE | MOUNTING: | SURFACE, NEMA 3R |
|---|---|---|---|---|
| LOCATION | EXISTING | 100 AMP BUS 100 AMP MAIN BKR | GRND BUS: | EQUIPMENT |
| SPECIAL | | | SHORT CKT: | 10,000 RMS SYM AMPS |

| CT | CIRCUIT DESCRIPTION | VA | AMPS | POLE | CKT NO | BUS | CKT NO | POLE | AMPS | VA | CIRCUIT DESCRIPTION | CT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | (E) GATE OPERATOR PANEL | 3120 | 50 | 2 | 1 | L1 | 2 | 2 | 70 | 12987 | PANEL E21-DP | 6 |
| | " | | | | 3 | L2 | 4 | | | | " | |
| | SPACE | | | | 5 | L1 | 6 | 2 | 50 | | SPARE | |
| | SPACE | | | | 7 | L2 | 8 | | | | " | |
| | SPACE | | | | 9 | L1 | 10 | | | | SPACE | |
| | SPACE | | | | 11 | L2 | 12 | | | | SPACE | |

| CATEGORY (CT) | CONNECTED LOAD (KVA) | NEC DEMAND FACTOR | NEC DEMAND LOAD (KVA) |
|---|---|---|---|
| 1 LIGHTING | 0.00 | 100% | 0.00 |
| 2 RECEPTACLES | 0.00 | 50% OVER 10 KVA | 0.00 |
| 3 EQUIPMENT (CONTINUOUS) | 0.00 | 100% | 0.00 |
| 4 EQUIPMENT (NON-CONTINUOUS) | 0.00 | 100% | 0.00 |
| 5 MOTORS NO MOTORS | 0.00 | 100% | 0.00 |
| 6 NO DIVERSITY | 16.11 | 100% | 16.11 |
| 7 NOT USED | 0.00 | 100% | 0.00 |
| TOTAL KVA | 16.11 | – | 16.11 |
| TOTAL AMPS | 67 | – | 67 |
| NEC 215.2 MINIMUM FEEDER RATING: | | | 84 |

COMMENTS:
1. EXISTING LOADS BASED ON AS-BUILD DRAWINGS, FIELD VERIFY

| PANEL | E21-DP | 120/240V, 1 PHASE, 3 WIRE | MOUNTING: | SURFACE, NEMA 3R |
|---|---|---|---|---|
| LOCATION | EXISTING, PANEL RACK | 100 AMP BUS MAIN LUGS ONLY | GRND BUS: | EQUIPMENT |
| SPECIAL | | | SHORT CKT: | 10,000 RMS SYM AMPS |

| CT | CIRCUIT DESCRIPTION | VA | AMPS | POLE | CKT NO | BUS | CKT NO | POLE | AMPS | VA | CIRCUIT DESCRIPTION | CT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | PANEL E21-UDP (N) | 9187 | 50 | 2 | 1 | L1 | 2 | 2 | 40 | 2400 | EAST SAAP GATE PANEL | 6 |
| | " | | | | 3 | L2 | 4 | | | | " | |
| | SPACE | | | | 5 | L1 | 6 | 2 | 30 | 1400 | PANEL 3 | 6 |
| | SPACE | | | | 7 | L2 | 8 | | | | " | |
| | SPACE | | | | 9 | L1 | 10 | | | | SPACE | |
| | SPACE | | | | 11 | L2 | 12 | | | | SPACE | |

| CATEGORY (CT) | CONNECTED LOAD (KVA) | NEC DEMAND FACTOR | NEC DEMAND LOAD (KVA) |
|---|---|---|---|
| 1 LIGHTING | 0.00 | 100% | 0.00 |
| 2 RECEPTACLES | 0.00 | 50% OVER 10 KVA | 0.00 |
| 3 EQUIPMENT (CONTINUOUS) | 0.00 | 100% | 0.00 |
| 4 EQUIPMENT (NON-CONTINUOUS) | 0.00 | 100% | 0.00 |
| 5 MOTORS NO MOTORS | 0.00 | 100% | 0.00 |
| 6 NO DIVERSITY | 12.99 | 100% | 12.99 |
| 7 NON-COINCIDENT | 0.00 | 0% | 0.00 |
| TOTAL KVA | 12.99 | – | 12.99 |
| TOTAL AMPS | 54 | – | 54 |
| NEC 215.2 MINIMUM FEEDER RATING: | | | 68 |

COMMENTS:
1. EXISTING LOADS BASED ON AS-BUILD DRAWINGS, FIELD VERIFY
2. (N) INDICATES NEW BREAKER

| PANEL | E21-UDP | 120/240V, 1 PHASE, 3 WIRE | MOUNTING: | SURFACE, NEMA 3R |
|---|---|---|---|---|
| LOCATION | PANEL RACK | 100 AMP BUS MAIN LUGS ONLY | GRND BUS: | EQUIPMENT |
| SPECIAL | | | SHORT CKT: | 10,000 RMS SYM AMPS |

| CT | CIRCUIT DESCRIPTION | VA | AMPS | POLE | CKT NO | BUS | CKT NO | POLE | AMPS | VA | CIRCUIT DESCRIPTION | CT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | PANEL E21 | 4674 | 30 | 2 | 1 | L1 | 2 | | | | SPACE | |
| | " | | | | 3 | L2 | 4 | | | | SPACE | |
| 5 | GATE CONTORLLER GC-1 | 2000 | 20 | 2 | 5 | L1 | 6 | 2 | 20 | 2000 | GATE CONTROLLER GC-3 | 7 |
| | " | | | | 7 | L2 | 8 | | | | " | |
| 5 | GATE CONTROLLER GC-2 | 2000 | 20 | 2 | 9 | L1 | 10 | 2 | 20 | 2000 | GATE CONTROLLER GC-4 | 7 |
| | " | | | | 11 | L2 | 12 | | | | " | |

| CATEGORY (CT) | CONNECTED LOAD (KVA) | NEC DEMAND FACTOR | NEC DEMAND LOAD (KVA) |
|---|---|---|---|
| 1 LIGHTING | 0.00 | 100% | 0.00 |
| 2 RECEPTACLES | 0.00 | 50% OVER 10 KVA | 0.00 |
| 3 EQUIPMENT (CONTINUOUS) | 0.00 | 100% | 0.00 |
| 4 EQUIPMENT (NON-CONTINUOUS) | 0.00 | 100% | 0.00 |
| 5 MOTORS Largest Motor 1.5 HP | 4.00 | 100% | 4.51 |
| 6 NO DIVERSITY | 4.67 | 100% | 4.67 |
| 7 NON-COINCIDENT | 4.00 | 0% | 0.00 |
| TOTAL KVA | 12.67 | – | 9.19 |
| TOTAL AMPS | 53 | – | 38 |
| NEC 215.2 MINIMUM FEEDER RATING: | | | 43 |

COMMENTS:

| PANEL | E21 | 120/240V, 1 PHASE, 3 WIRE | MOUNTING: | FLUSH |
|---|---|---|---|---|
| LOCATION | EXISTING, GUARD SHACK E21 | 100 AMP BUS MAIN LUGS ONLY | GRND BUS: | EQUIPMENT |
| SPECIAL | | | SHORT CKT: | 10,000 RMS SYM AMPS |

| CT | CIRCUIT DESCRIPTION | VA | AMPS | POLE | CKT NO | BUS | CKT NO | POLE | AMPS | VA | CIRCUIT DESCRIPTION | CT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | HEATER | 2880 | 30 | 2 | 1 | L1 | 2 | 1 | 20 | 200 | CCTV POWER SUPPLY | 3 |
| | " | | | | 3 | L2 | 4 | 1 | 15 | 180 | RECEPT. LIGHT POLE | 2 |
| 1 | LIGHTS | 64 | 20 | 1 | 5 | L1 | 6 | 1 | 20 | 360 | RECEPT. REAR COUNTER | 2 |
| 2 | RECEPT. FRONT COUNTER | 360 | 20 | 1 | 7 | L2 | 8 | 1 | 20 | 180 | RECEPT. TOILET RM | 2 |
| 3 | CONTROL PANEL POWER | 200 | 20 | 1 | 9 | L1 | 10 | 1 | 20 | | SPARE | |
| 1 | LIGHT POLE | 250 | 20 | 1 | 11 | L2 | 12 | 1 | 20 | | SPARE | |

| CATEGORY (CT) | CONNECTED LOAD (KVA) | NEC DEMAND FACTOR | NEC DEMAND LOAD (KVA) |
|---|---|---|---|
| 1 LIGHTING | 0.31 | 100% | 0.31 |
| 2 RECEPTACLES | 1.08 | 50% OVER 10 KVA | 1.08 |
| 3 EQUIPMENT (CONTINUOUS) | 3.28 | 100% | 3.28 |
| 4 EQUIPMENT (NON-CONTINUOUS) | 0.00 | 100% | 0.00 |
| 5 MOTORS NO MOTORS | 0.00 | 100% | 0.00 |
| 6 NO DIVERSITY | 0.00 | 100% | 0.00 |
| 7 NOT USED | 0.00 | 100% | 0.00 |
| TOTAL KVA | 4.67 | – | 4.67 |
| TOTAL AMPS | 19 | – | 19 |
| NEC 215.2 MINIMUM FEEDER RATING: | | | 23 |

COMMENTS:
1. EXISTING LOADS BASED ON AS-BUILD DRAWINGS, FIELD VERIFY

## LOAD SUMMARY – EAST SAAP GATE

SERVICE: 100A, 120/240V, 1PH 3W

EXISTING LOAD
LOAD FROM PANEL MDP 12.1 KVA

LOAD REMOVED
E21 GATE OPERATOR 1.2 KVA

LOAD ADDED
2 EA 1 HP GATE OPERATORS 3.68 KVA
GATE CONTROL PANELS 1.5 KVA
TOTAL LOAD ADDED 5.18 KVA

TOTAL NEW LOAD 16.1 KVA
AMPERAGE AT 240V 67 A

SERVICE CAPACITY IS ADEQUATE

## SHEET NOTES:

1. DEMOLISH EXISTING GATE E21 GATE OPERATOR. RETAIN CIRCUIT BREAKER FOR NEW CCTV POWER SUPPLY.
2. PROVIDE NEW 50A, 2 POLE CIRCUIT BREAKER FOR PANEL E21-UDP.
3. NEW PANEL

DESIGNED BY: LRJ
CHECKED BY: TEL
DRAWN BY: JPW
DATE PLOTTED: 03-21-2011
SCALE: AS NOTED
FILE:

| BY | DATE | REVISIONS | BY | DATE | REVISIONS |
|---|---|---|---|---|---|
| | | | | | |

Ted Stevens Anchorage International Airport

STATE OF ALASKA 49TH REGISTERED PROFESSIONAL ENGINEER Mar 25, 2011

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
CENTRAL REGION

PLANS DEVELOPED BY:
COFFMAN ENGINEERS

TED STEVENS
ANCHORAGE INTERNATIONAL AIRPORT
ANCHORAGE, ALASKA
ANC GATE E21
PROJECT No. 52339

PANEL SCHEDULES

SHEET E6 OF E6