

07SR041

CONSTRUCTION PLANS

FOR

RAPID CITY REGIONAL AIRPORT

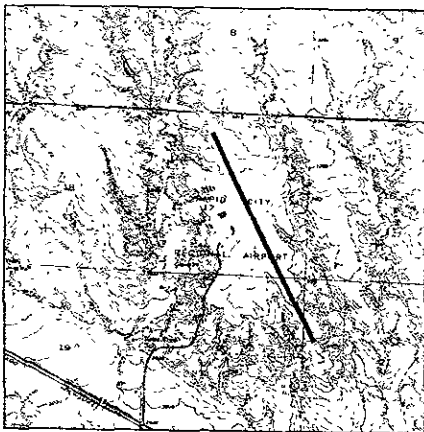
RAPID CITY, PENNINGTON COUNTY, SOUTH DAKOTA

RAPID CITY REGIONAL AIRPORT BOARD (OWNER)

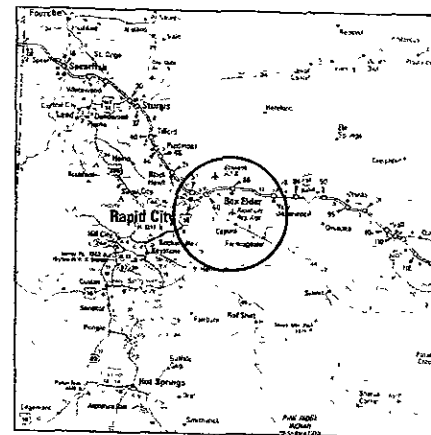
June 2007

AIP NO. 3-46-0048-034-2007

MIDFIELD DEVELOPMENT (PHASE 1) – TAXIWAY & APRON CONSTRUCTION AND MISCELLANEOUS ITEMS



LOCATION MAP



VICINITY MAP



STATE OF SOUTH DAKOTA

prepared for
RAPID CITY REGIONAL AIRPORT BOARD

prepared by
KADRMAS, LEE & JACKSON, INC
330 Knottwood Drive
P.O. Box 3416
Rapid City, SD 57701
Ph. (605) 721-5553

3237 East Broadway
P.D. Box 1157
Bismarck, ND 58502
Ph (701) 355-8400

PRELIMINARY

SPONSORS APPROVAL

I HEREBY APPROVE THESE PROJECT PLANS AND SPECIFICATIONS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER THAT THEY HAVE BEEN DEVELOPED TO THE BEST OF HIS PROFESSIONAL ABILITY IN ACCORDANCE WITH FEDERAL STANDARDS AS SET FORTH IN THE FAA ADVISORY CIRCULARS AND THAT NO DEVIATIONS WILL BE NECESSARY OTHER THAN THOSE PREVIOUSLY APPROVED BY THE FAA.

ACCEPTED

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

BRUCE LINDHOLM, P.E. _____
PROGRAM MANAGER
OFFICE OF AERONAUTICS

DATE _____

I HEREBY CERTIFY THAT TO THE BEST OF MY PROFESSIONAL ABILITY THESE PLANS AND SPECIFICATIONS WERE DEVELOPED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH ALL APPLICABLE FEDERAL STANDARDS AND REQUIREMENTS, AND THAT NO DEVIATION FROM OR MODIFICATIONS TO STANDARDS AS SET FORTH IN THE FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULARS WILL BE NECESSARY OTHER THAN THOSE PREVIOUSLY APPROVED BY THE FAA.

Rev	Date	Description	Drawn	CHK	Apprv

RAPID CITY REGIONAL AIRPORT
RAPID CITY REGIONAL AIRPORT BOARD (OWNER)
RAPID CITY, SOUTH DAKOTA

**Kadmas
Lee &
Jackson**
Engineers, Surveyors
and Planners

TITLE SHEET

Project No. 15507105-034-2007
Sheet No. 15507105-034-2007-001
Date: 05/21/2007

RAPID CITY REGIONAL AIRPORT PROJ. #10507105

Sheet List Table

Sheet Number	Sheet Title
	TITLE SHEET
	SHEET INDEX
1	PROJECT WORK DESCRIPTION & BASIS OF ESTIMATE
2	CONSTRUCTION SAFETY PLAN - GENERAL
3	CONSTRUCTION SAFETY PLAN - PHASE 1
4	CONSTRUCTION SAFETY PLAN - PHASE 2
5	CONSTRUCTION SAFETY PLAN - PHASE 3
6	CONSTRUCTION SAFETY PLAN - DETAILS
7	EROSION CONTROL PLAN
8	EROSION CONTROL DETAILS
9	REMOVAL PLAN
10	WATER LINE REMOVAL PLAN
11	STORM SEWER - PLAN & PROFILE
12	HANGAR STORM SEWER RELOCATION - PLAN & PROFILE
13	FENCE REMOVAL PLAN
14	FENCE LAYOUT PLAN
15	GATE LAYOUT PLAN
16	FENCE DETAILS
17	FENCE DETAILS
18	TYPICAL SECTION
19	TYPICAL SECTION
20	UNDERDRAIN LAYOUT & DETAILS
21	GRADING PLAN
22	PCC JOINT DETAILS
23	PCC JOINT LAYOUT - TAXIWAY
24	PCC JOINT LAYOUT - APRON
25	PCC JOINT GRADING - TAXIWAY
26	PCC JOINT GRADING - APRON
27	MARKING PLAN
E-1	ELECTRICAL REMOVAL PLAN
E-2	ELECTRICAL LAYOUT PLAN
E-3	ELECTRICAL DETAILS
E-4	BLACK POWER DETAILS

FOR INFORMATION ON THIS PROJECT CONTACT THE FOLLOWING:

GENERAL INFORMATION AND CIVIL CONSTRUCTION ITEMS
 ROD SENN 805-721-5553

ELECTRICAL CONSTRUCTION ITEMS
 CHRIS HORNER 701-355-8405

PRELIMINARY

Rvd 0 RAPID CITY REGIONAL AIRPORT RAPID CITY REGIONAL AIRPORT BOARD (OWNER) RAPID CITY SOUTH DAKOTA	SHEET NO. SHEET INDEX
Kadmas Lee & Jackson <small>Engineers, Surveyors and Planners</small>	DATE PLOTTED: _____ DATE PRINTED: _____ DRAWN BY: _____ CHECKED BY: _____ APPROVED BY: _____

LEGEND

--- LIMITS OF CONSTRUCTION AREA

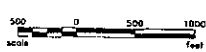
⇌ TRAFFIC FLOW PATTERN



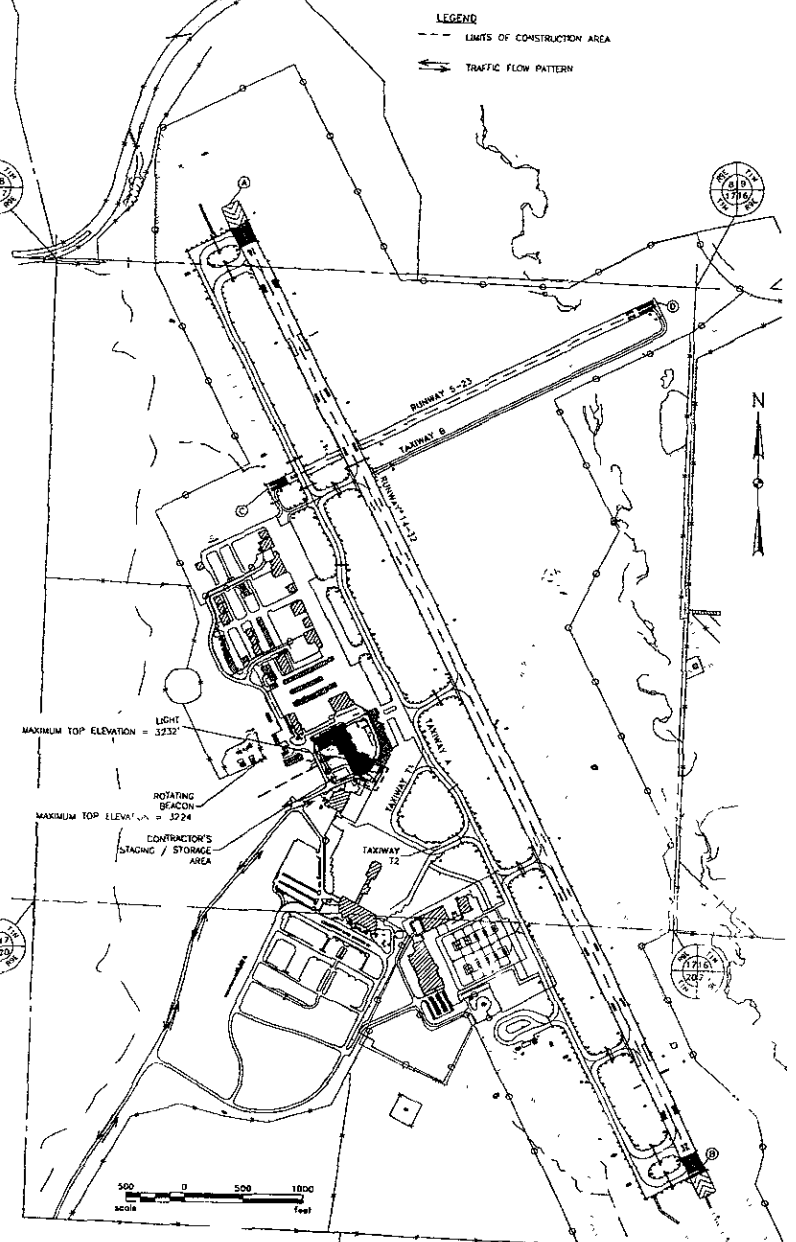
MAXIMUM TOP ELEVATION = 3232'

ROTATING BEACON
MAXIMUM TOP ELEVATION = 3224'

CONTRACTOR'S STAGING / STORAGE AREA



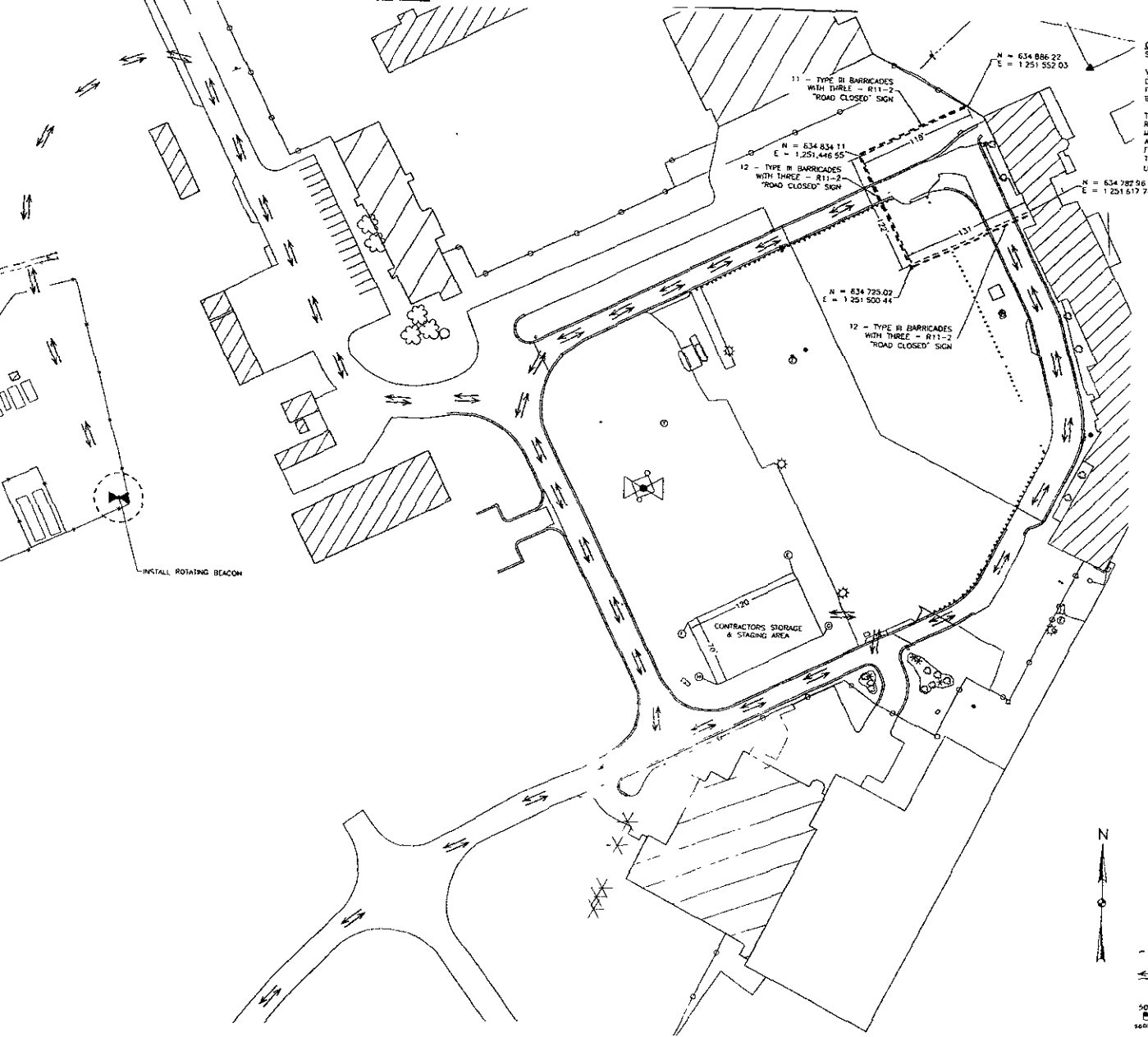
EXISTING	ITEM	STACK	ELEVATION
---	SECTION LINE WITH RIGHT-OF-WAY	---	---
---	AIRPORT PROPERTY LINE	---	---
---	AIRPORT EASEMENT	---	---
---	RIP P. EASEMENT	---	---
---	RUNWAY PROTECTION ZONE (RPZ)	---	---
---	PARALLEL REFLECTOR LINE (PAR)	---	---
---	RUNWAY OBSTACLE FREE ZONE (OFZ)	---	---
---	RUNWAY SWEET SPOT AREA (RSA)	---	---
---	PAVING	---	---
---	BITUMEN/CONCRETE SURFACE	---	---
---	AIRPORT REFLECTOR POINT (ARP)	---	---
---	REPORT BEACON	---	---
---	ROAD CONE & SCATTERED CONE	---	---
---	TREE ROW, BUSHES	---	---
---	ENTRANCE WIRE FENCE	---	---
---	CHAIN-LINK FENCE	---	---
---	POWER POLE/WIRE LIGHT	---	---
---	AIRWAY LIGHT/TOWER LIGHT	---	---
---	TOWER LIGHT/TOWER LIGHT	---	---
---	POWERS	---	---
---	POWERS	---	---
---	POWERS	---	---
---	POWERS	---	---



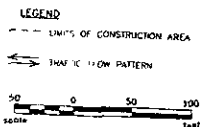
GENERAL CONSTRUCTION SAFETY
 SEE SHEET 2 - CONSTRUCTION SAFETY PLAN - GENERAL FOR GENERAL CONSTRUCTION SAFETY

WORK PHASING - PHASE 1
 DURING PHASE 1 INTERSECTION AND CURB IMPROVEMENTS WILL BE MADE TO THE ACCESS ROADS FOR
 FIRE STATION, OLD TERMINAL BUILDING, AND PARKING AREA. PHASE 1 MUST BE COMPLETED BEFORE
 BEGINNING PHASE 2

THE AIRPORT ROTATING BEACON WILL ALSO RELOCATED DURING THIS PHASE. THE EXISTING BEACON WILL
 BE REMOVED USING A CRANE WITH A MAXIMUM BOOM HEIGHT OF 75 FEET. THE CONTRACTOR WILL PROVIDE
 A MINIMUM OF 7 CALENDAR NOTICE PRIOR TO USING THE CRANE. THE CRANE BOOM SHALL BE LOWERED AT
 ALL TIMES WHEN NOT IN USE. THE CRANE SHALL NOT BE USED DURING THE NIGHT. A VEHICLE WARNING
 FLAG SHALL BE MOUNTED TO THE TOP OF THE HIGHEST POINT ON THE CRANE AT ALL TIMES. THE TOTAL
 TIME WITH A CRANE IN USE ON THE AIRPORT SHALL BE LIMITED TO TWO WORKING DAYS AFTER WHICH
 LIQUIDATED DAMAGES WILL BE ASSESSED IN THE AMOUNT OF \$10,000 PER DAY



PRELIMINARY

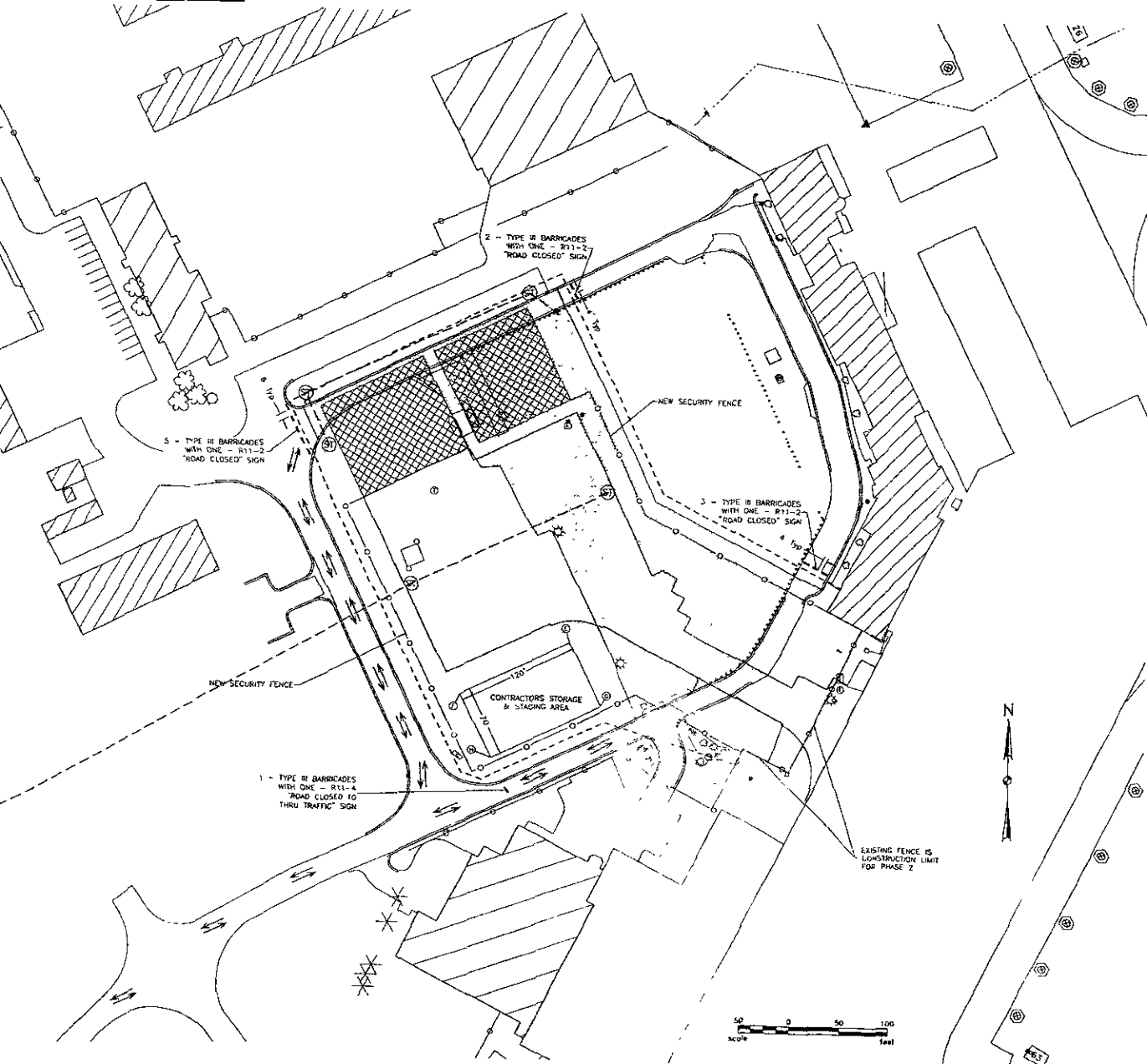


Rev'd		Sheet No.
RAPID CITY REGIONAL AIRPORT		3
RAPID CITY REGIONAL AIRPORT BOARD (OWNER)		
RAPID CITY, SOUTH DAKOTA		
Kadmas Lee & Jackson		Engineers, Surveyors and Planners
Drawn by	Checked by	Approved by
C-E	C-E	J-L

CONSTRUCTION SAFETY
 PLAN - PHASE 1

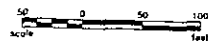
GENERAL CONSTRUCTION SAFETY
 SEE SHEET 2 - CONSTRUCTION SAFETY PLAN - GENERAL FOR GENERAL CONSTRUCTION SAFETY

WORK PHASING - PHASE 2
 DURING PHASE 2, THE TWO ROADS WILL BE OBLITERATED AND THE GRADING WILL BE COMPLETED OUTSIDE OF THE AIRPORT SECURITY FENCE WITHIN THE CONSTRUCTION LIMITS. AFTER GRADING IS COMPLETED NEW SECURITY FENCE WILL BE INSTALLED AS SHOWN ON SHEET 17 - PROPOSED FENCING LAYOUT PLAN. AFTER THAT FENCE IS COMPLETED AND THIS PORTION OF THE AIRPORT IS SECURED, PHASE 3 CAN COMMENCE.



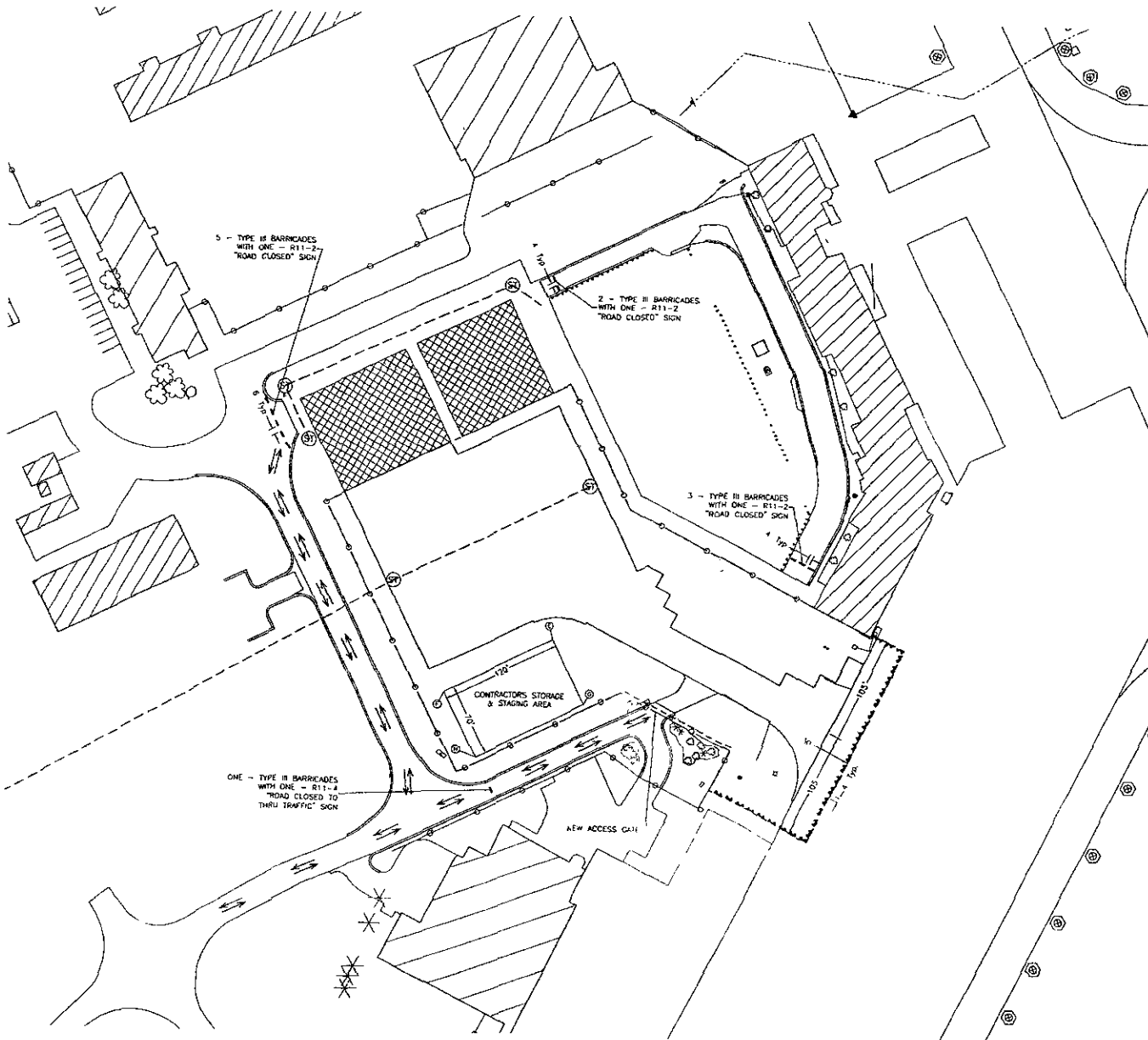
PRELIMINARY

LEGEND
 --- LIMITS OF CONSTRUCTION AREA
 ⇨ TRAFFIC FLOW PATTERN



Rev'd	4
RAPID CITY REGIONAL AIRPORT RAPID CITY REGIONAL AIRPORT BOARD (OWNER) RAPID CITY SOUTH DAKOTA	
Kadmas Lee & Jackson Engineers, Surveyors and Planners	CONSTRUCTION SAFETY PLAN - PHASE 2
DATE: 5-8	SCALE: AS SHOWN

WORK PHASING - PHASE 3
DURING PHASE 3, THE PAVING GRADING WILL BE COMPLETED ADJACENT TO THE COMMERCIAL SERVICE APRON. PAVING AND STRIPING WILL THEN BE COMPLETED. ACCESS TO THE WORKSITE DURING THIS PHASE SHALL BE THROUGH NEW GATE 3. THE CONTRACTOR SHALL PROVIDE A GATE GUARD OR LOCK AND SECURE THE ACCESS POINT AS NECESSARY TO ENSURE AIRPORT SECURITY AT ALL TIMES. VIOLATIONS OF AIRPORT SECURITY SHALL TRIGGER A \$10,000 LIQUIDATED DAMAGE ON UNITS AND ENTER THE AIR OPERATIONS AREA.



5 - TYPE II BARRICADES WITH ONE - R11-2 "ROAD CLOSED" SIGN

2 - TYPE II BARRICADES WITH ONE - R11-2 "ROAD CLOSED" SIGN

3 - TYPE II BARRICADES WITH ONE - R11-2 "ROAD CLOSED" SIGN

ONE - TYPE II BARRICADES WITH ONE - R11-2 "ROAD CLOSED TO THRU TRAFFIC" SIGN

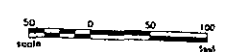
CONTRACTORS STORAGE & STAGING AREA

NEW ACCESS GATE



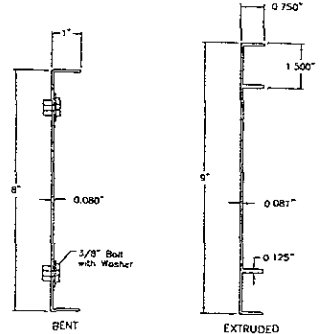
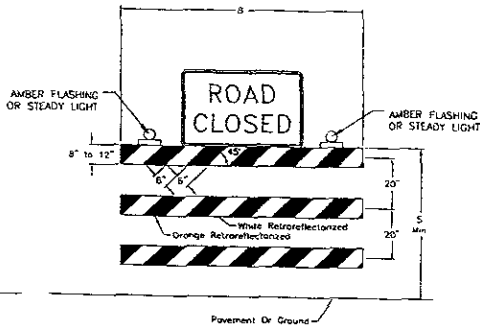
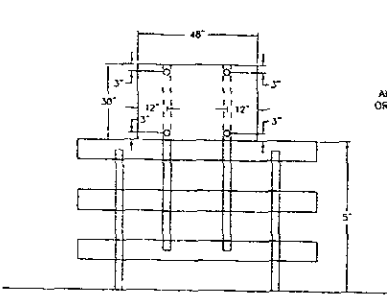
LEGEND

- SAFETY BARRICADE WITH STORAGE & RED WARNING LIGHT (LOW INTENSITY OPERATING DESK TO DRAWN)
- LIMITS OF CONSTRUCTION AREA
- TRAFFIC FLOW PATTERN
- SAFETY BARRICADES SHALL ALSO HAVE SIGN PERMANENTLY MOUNTED BY CONTRACTOR SEE DETAIL



PRELIMINARY

RAPID CITY REGIONAL AIRPORT RAPID CITY REGIONAL AIRPORT BOARD (OWNER) RAPID CITY, SOUTH DAKOTA	SHEET NO. 5
Kadmas Lee & Jackson Engineers, Surveyors and Planners	
CONSTRUCTION SAFETY PLAN - PHASE 3	
Equipment, Supplies and Plans	Date: _____ Scale: _____ Date: _____



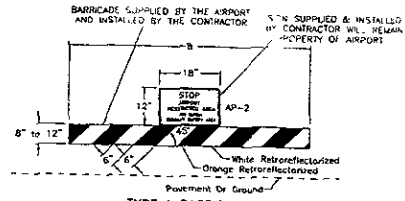
TYPE III BARRICADE MOUNTING
SCALE 1"=4'

TYPE III BARRICADE
SCALE 1"=4'

ALUMINUM BARRICADE BAR DETAIL
SCALE 1"=1/2"

TYPE III BARRICADE NOTES

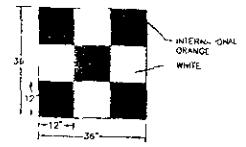
- BARRICADE AND SIGN SUPPORTS STEEL SUPPORTS SHALL BE GALVANIZED OR PAINTED THE ANCHOR FOR STEEL SUPPORTS SHALL HAVE A STUB HEIGHT OR 4" OR LESS
- BARRICADE MOUNTING SIGNS THE BOTTOM OF THE SIGN SHALL BE FLUSH WITH THE TOP OF THE TOP RAIL ALL BARRICADES AND BARRICADE MOUNTED SIGNS SHALL BE ASSEMBLED WITH 3/8" BOLTS
- MATERIAL ALL SIGNS SHALL BE 0.100" ALUMINUM OR OTHER APPROVED MATERIAL
- HOLES ALL HOLES TO BE PUNCHED ROUND FOR 3/8" BOLTS
- NUMBER OF RETROREFLECTORIZED RAILS - 6 (FACING IN TWO DIRECTIONS)
- BARRICADE RAIL MATERIAL MAY BE 1" NOMINAL THICKNESS STANDARD LUMBER OR 3/4" PLYWOOD AND PREPARED AS RECOMMENDED BY THE SHEETING MANUFACTURER BEFORE RETROREFLECTIVE SHEETING IS APPLIED
- PLACE SANDBAGS OVER THE LOWER PART OF THE FRAME OR STAYS TO PROVIDE THE NECESSARY BALLAST TO KEEP THE SIGN IN PLACE
- THE CONTRACTOR SHALL SUPPLY INSTALL AND MAINTAIN ALL TYPE III BARRICADES



TYPE I BARRICADE
NO SCALE

NOTES:

- 1 ALL WARNING DEVICES SHALL MEET THE REQUIREMENTS OF PART 6 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
- 2 ALL WARNING LIGHTS SHALL BE KEPT IN OPERATIONAL ORDER BY CONTRACTOR
- 3 THE LAYOUTS ARE A MINIMUM REQUIREMENT NECESSARY TO ASSIST CONTRACTOR IN DETERMINING COST FOR PROVIDING NECESSARY TRAFFIC CONTROL THE CONTRACTOR MAY ADD ADDITIONAL WARNING DEVICES UPON APPROVAL OF THE ENGINEER
- 4 THE SIGNS SUPPLIED AND INSTALLED BY THE CONTRACTOR (AP-2) SHALL BE MADE OF ALUMINUM AND BE 0.080 INCHES THICK



VEHICLE WARNING FLAG
NO SCALE

QUANTITIES -
SIGNS (CONTRACTOR PROVIDED) - 29 EA

PRELIMINARY

Rev'd
RAPID CITY REGIONAL AIRPORT
RAPID CITY REGIONAL AIRPORT BOARD (OWNER)
RAPID CITY, SOUTH DAKOTA
Sheet No. 6

Kadmas
Lee &
Jackson
CONSTRUCTION SAFETY
PLAN - DETAILS

NOTE: UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.



EROSION CONTROL MEASURES

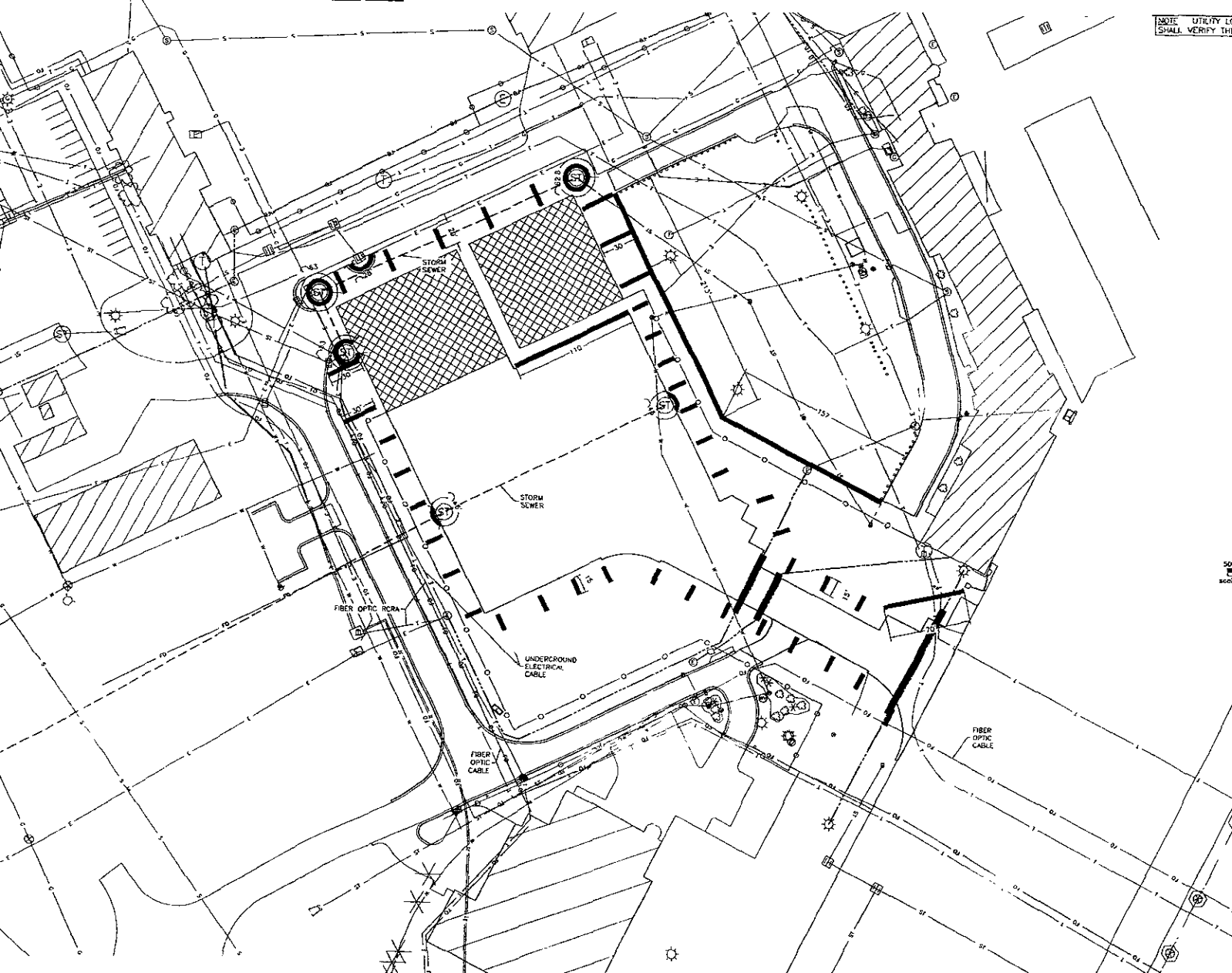
INSTALL WATTLES (AS NEEDED) (SP-T-912) - 1,548 LF

NOTE

ACTUAL EROSION CONTROL DEVICE LOCATIONS TO BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION

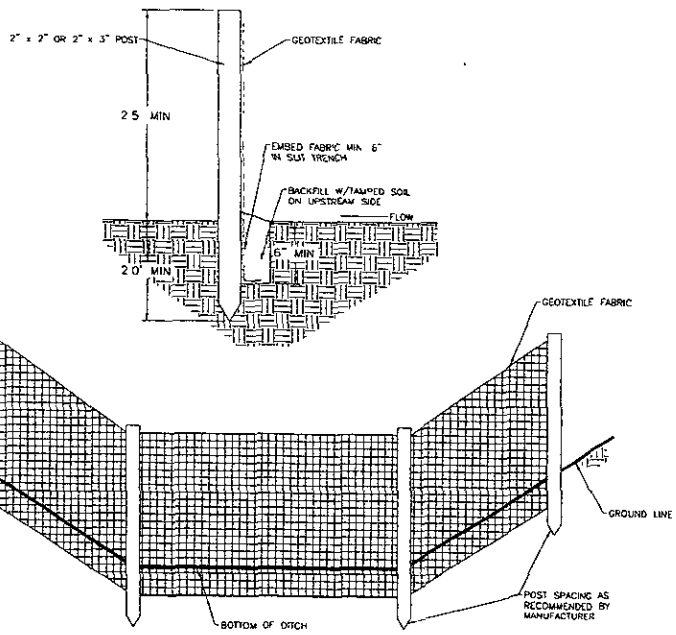
LEGEND

-  WATTLES
-  SILT FENCE



PRELIMINARY

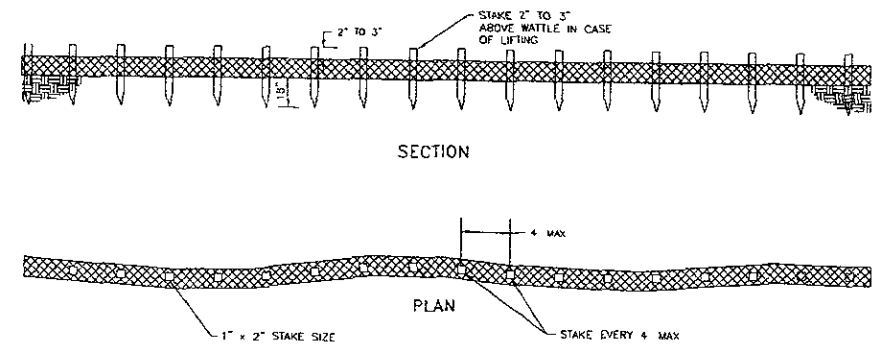
3 of 5		RAPID CITY REGIONAL AIRPORT		sheet no.
RAPID CITY REGIONAL AIRPORT BOARD (OWNER)		RAPID CITY SOUTH DAKOTA		7
Kadmas Lee & Jackson		Engineers, Surveyors and Planners		
Project No.	Drawn by	Checked by	Date	
15592706	CLB	15592706	06/02/2016	



SEDIMENT CONTROL FENCING
NO SCALE

NOTE:

1. ALWAYS DRIVE STAKES PERPENDICULAR TO SLOPES.
2. 18" STAKES SHOULD BE USED UNLESS WATTLES ARE BEING INSTALLED IN SOFT MATERIAL WHERE LONGER STAKES WILL BE REQUIRED.

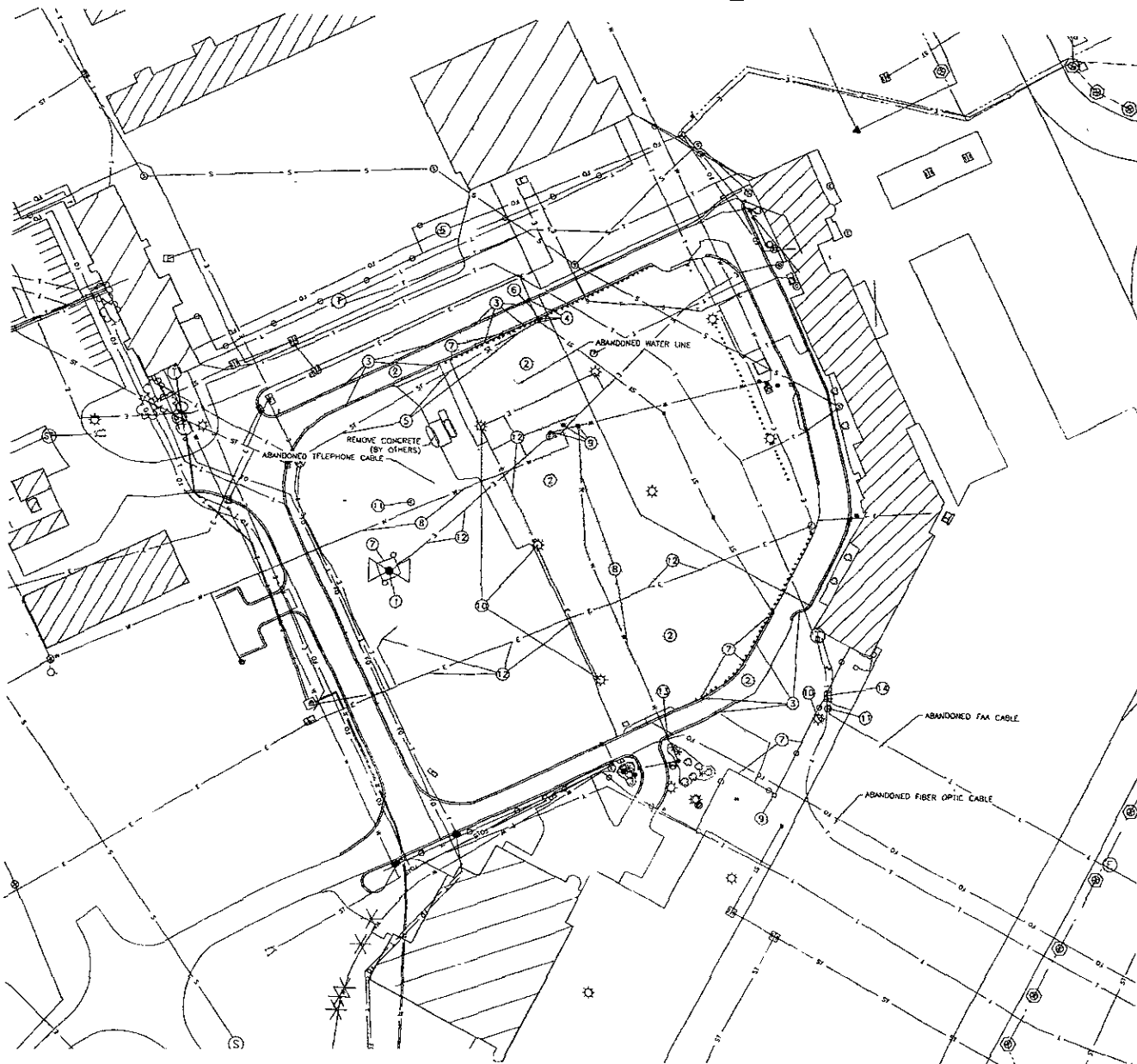


WATTLE IN FLAT GROUND APPLICATION
NO SCALE

NOTE: THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY EROSION CONTROL MEASURES AS INDICATED AT LOCATIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER TO CONTROL EROSION AND SEDIMENTATION.

PRELIMINARY

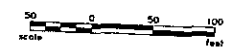
Revised		
RAPID CITY REGIONAL AIRPORT		SHEET NO.
RAPID CITY REGIONAL AIRPORT BOARD (OWNER)		8
RAPID CITY, SOUTH DAKOTA		
Kadmas Lee & Jackson		EROSION CONTROL DETAILS
Engineers, Surveyors and Planners		
Drawn by: C.R.	Check by:	DATE PLOTTED: 05/03/2007
DATE: 10/07/06	DATE: 05/03/2007	



REMOVAL QUANTITIES

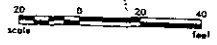
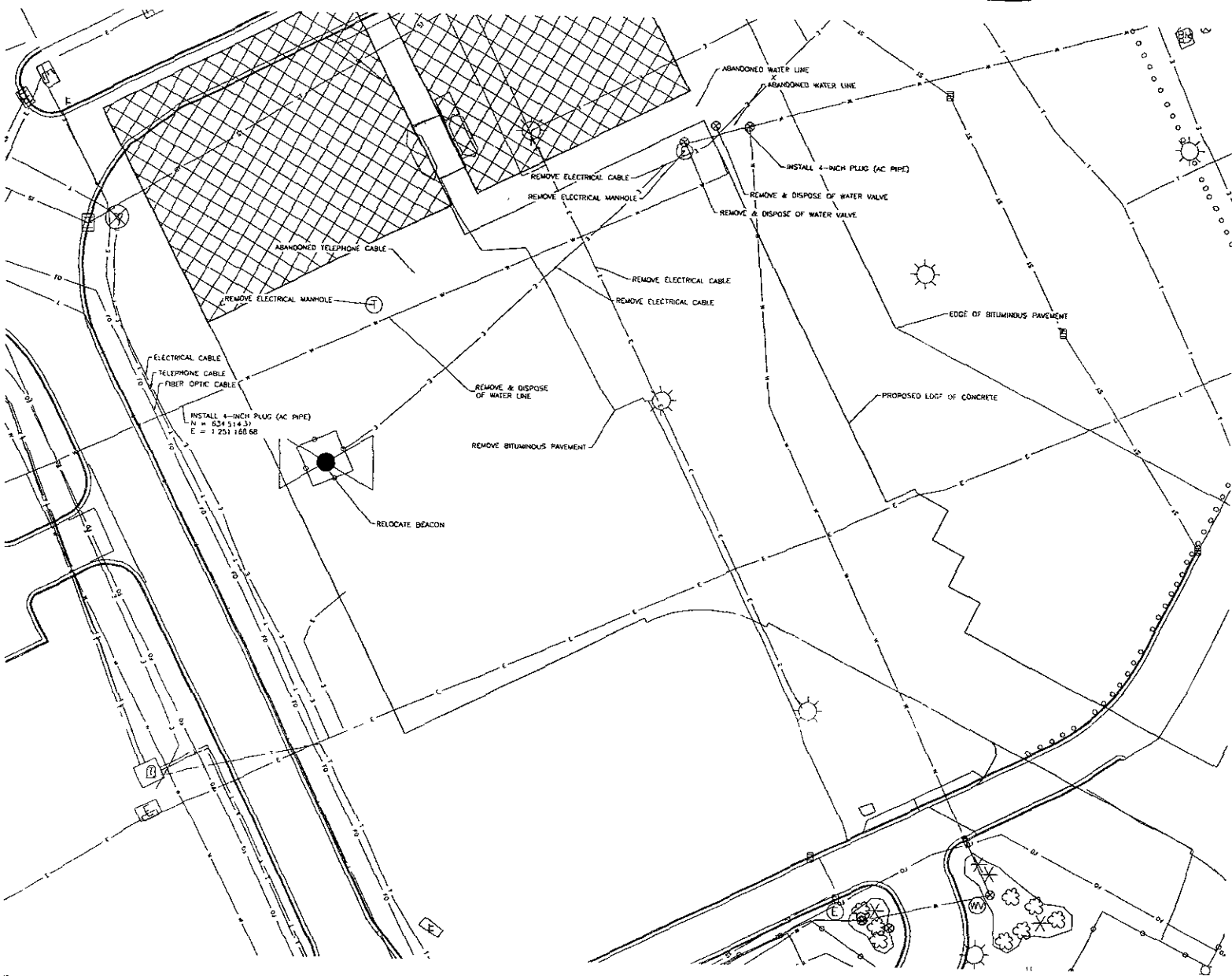
- ① REMOVE & SALVAGE EXISTING AIRPORT BEACON & TOWER - 1 EACH
- ② REMOVE & SALVAGE ASPHALT PAVEMENT - 7218 S Y
- ③ REMOVE & DISPOSE OF CONCRETE CURB & GUTTER - 955 L F
- ④ REMOVE & DISPOSE OF STORM SEWER INLET STRUCTURE - 3 EACH
- ⑤ REMOVE & DISPOSE OF 21" RCP STORM SEWER - 262 L F
- ⑥ REMOVE & DISPOSE OF 24" RCP STORM SEWER - 22 L F
- ⑦ REMOVE & DISPOSE OF FENCE - 455 L F
- ⑧ REMOVE & DISPOSE OF WATER LINE - 563 L F
- ⑨ REMOVE & DISPOSE OF WATER VALVES & FIXTURES - 4 EACH
- ⑩ REMOVE & SALVAGE LIGHT FIXTURE AND DISPOSE OF FOUNDATION - 4 EACH
- ⑪ REMOVE & DISPOSE OF ELECTRICAL MANHOLE - 3 EACH
- ⑫ REMOVE & DISPOSE OF ELECTRICAL CABLE - 1022 L F
- ⑬ REMOVE & SALVAGE MAILBOXES - 1 L S
- ⑭ REMOVE & DISPOSE OF TELEPHONE PEDISTAL - 1 EACH

NOTE: SOME QUANTITIES ARE PAY ITEMS AND SOME ARE INCIDENTAL TO OTHER PROJECT COSTS REFER TO THE PROJECT MANUAL FOR DETAILED INFORMATION



PRELIMINARY

Rev'd		Rapid City Regional Airport		Sheet No.
		Rapid City Regional Airport Board (Owner)		9
		Rapid City, South Dakota		
Kadmas Lee & Jackson	Engineers, Surveyors and Planners	Drawn by	Checked by	Scale
		C.M.	C.M.	AS NOTED
		DATE	DATE	DATE
		1/15/07	1/15/07	1/15/07



PRELIMINARY

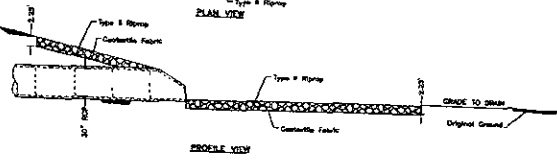
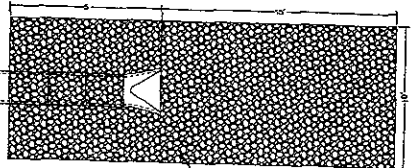
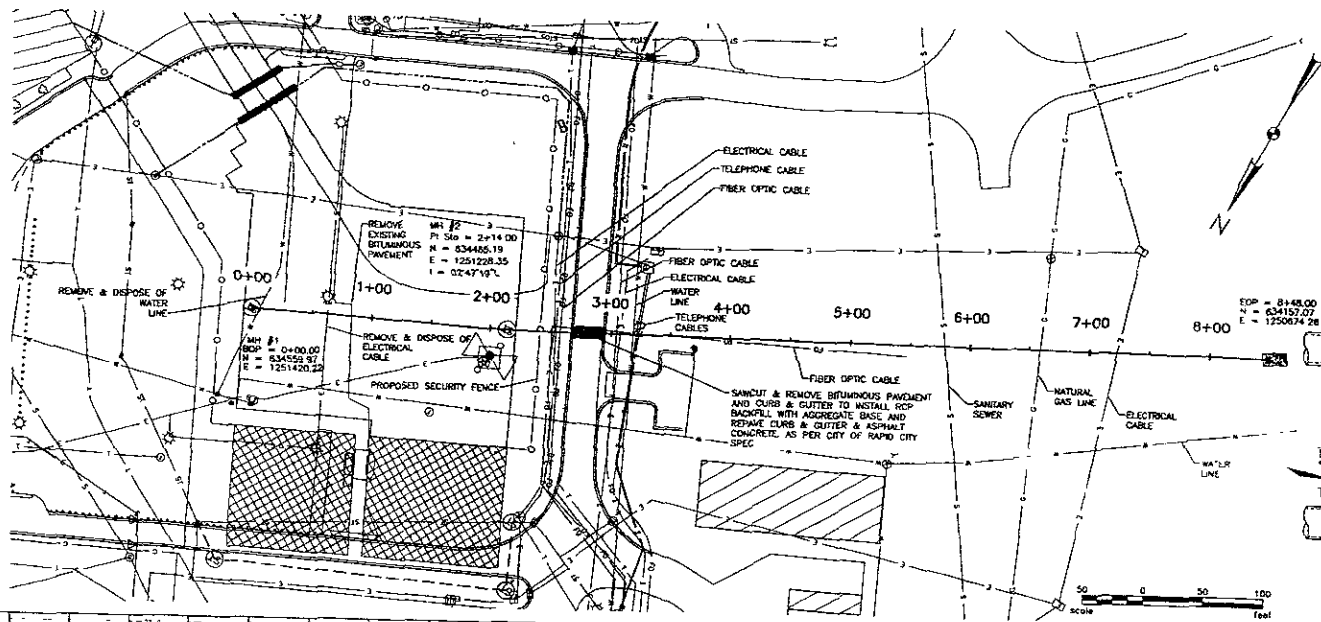
Project: RAPID CITY REGIONAL AIRPORT
 RAPID CITY REGIONAL AIRPORT BOARD (OWNER)
 RAPID CITY SOUTH DAKOTA

Sheet No. 10

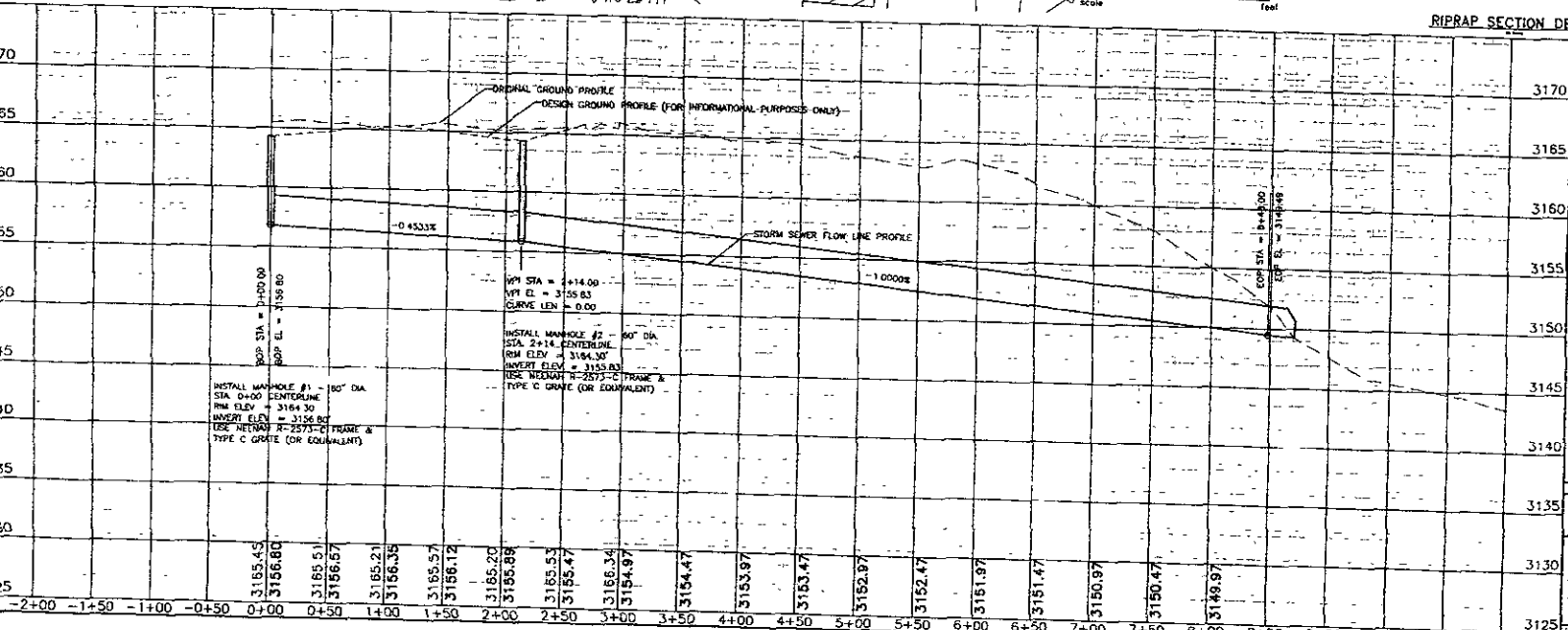
Kadmas
Lee &
Jackson
 Engineers, Surveyors
 and Planners

WATER LINE
 REMOVAL PLAN

NOTE: UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
 NOTE: COORDINATES GIVEN ARE TO THE CENTER OF MANHOLE.



IRIPRAP SECTION DETAIL



INSTALL MANHOLE #1 - 60" DIA.
 STA. 0+00 CENTERLINE
 RIM ELEV. = 3164.30
 INVERT ELEV. = 3156.00
 USE INVERT #22375-C FRAME & TYPE C GRATE (OR EQUIVALENT)

MP1 STA = 2+14.00
 MP1 EL. = 3155.83
 CURVE LEN. = 0.00

INSTALL MANHOLE #2 - 60" DIA.
 STA. 2+14.00 CENTERLINE
 RIM ELEV. = 3164.30
 INVERT ELEV. = 3155.00
 USE INVERT #22375-C FRAME & TYPE C GRATE (OR EQUIVALENT)

EXISTING STA. = 8+48.00
 ELEV. = 3149.97

PRELIMINARY

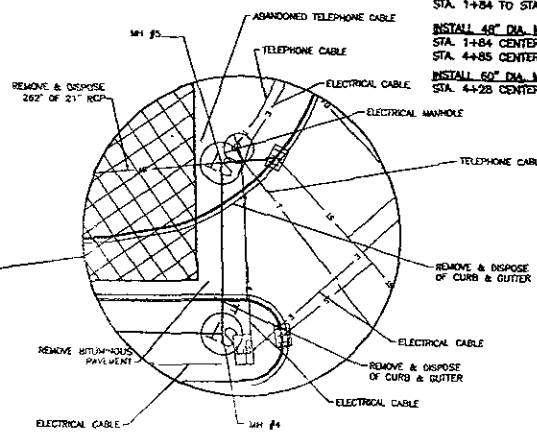
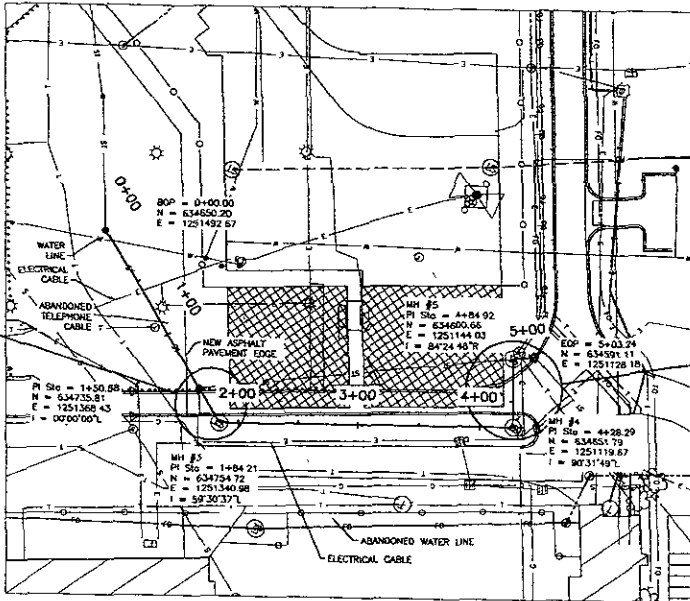
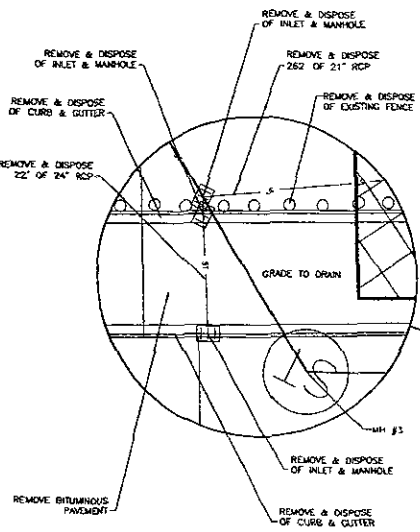
Revised: RAPID CITY REGIONAL AIRPORT
 RAPID CITY REGIONAL AIRPORT BOARD (OWNER)
 RAPID CITY, SOUTH DAKOTA

Kadmas Lee & Jackson
 Engineers, Surveyors and Planners
 10251 165th Avenue, Rapid City, SD 57702
 Phone: 605/277-3139 Fax: 605/277-3139

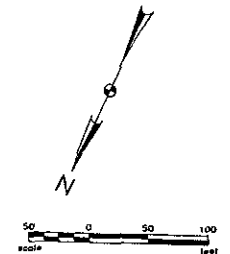
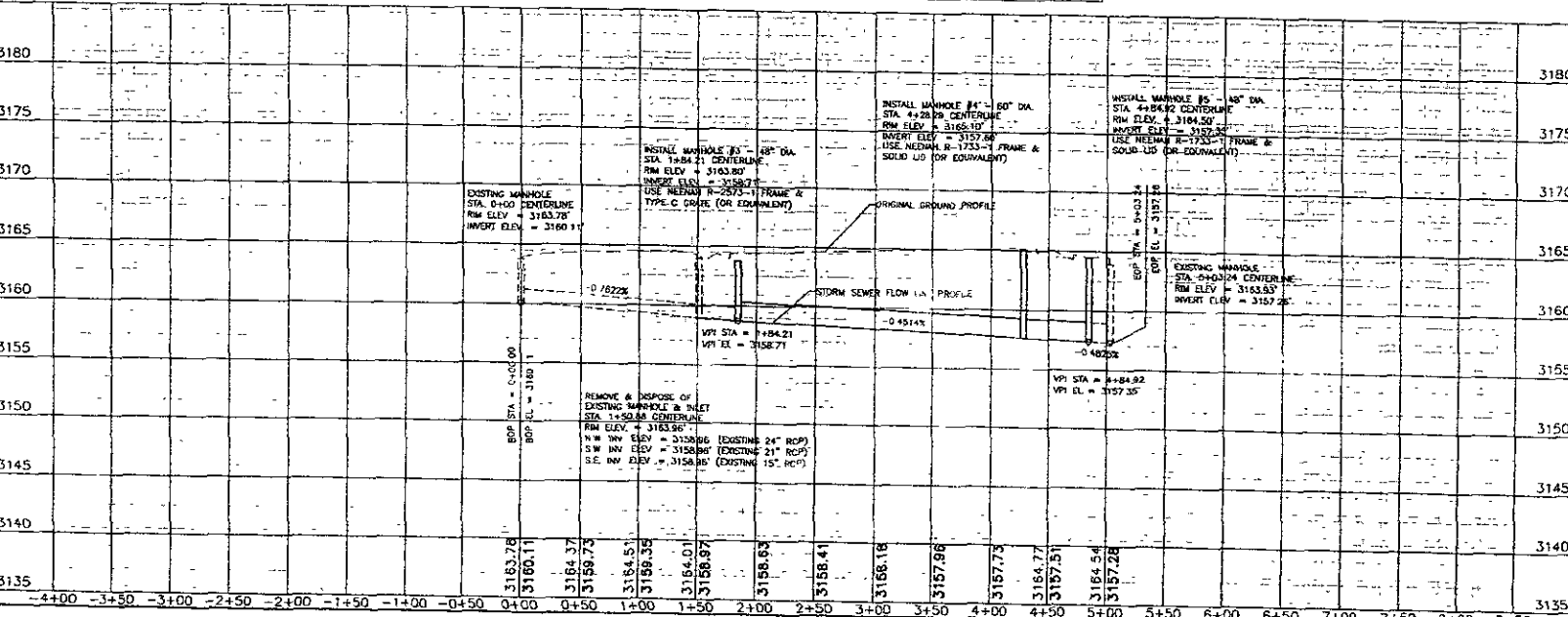
Sheet No. **11**

STORM SEWER PLAN & PROFILE

NOTE: UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
NOTE: COORDINATES GIVEN ARE TO THE CENTER OF MANHOLE.



- INSTALL 15" REINFORCED CONCRETE PIPE (CL. B)
STA. 1+51 TO STA. 1+84 - 34 L.F.
- INSTALL 21" REINFORCED CONCRETE PIPE (CL. B)
STA. 1+84 TO STA. 4+85 - 302 L.F.
- INSTALL 48" DIA. MANHOLE
STA. 1+84 CENTERLINE - 1 EA. (MH #3)
STA. 4+85 CENTERLINE - 1 EA. (MH #5)
- INSTALL 60" DIA. MANHOLE
STA. 4+28 CENTERLINE - 1 EA. (MH #4)



PRELIMINARY

Rev'd

12

Kadmas Lee & Jackson
Engineers, Surveyors and Planners

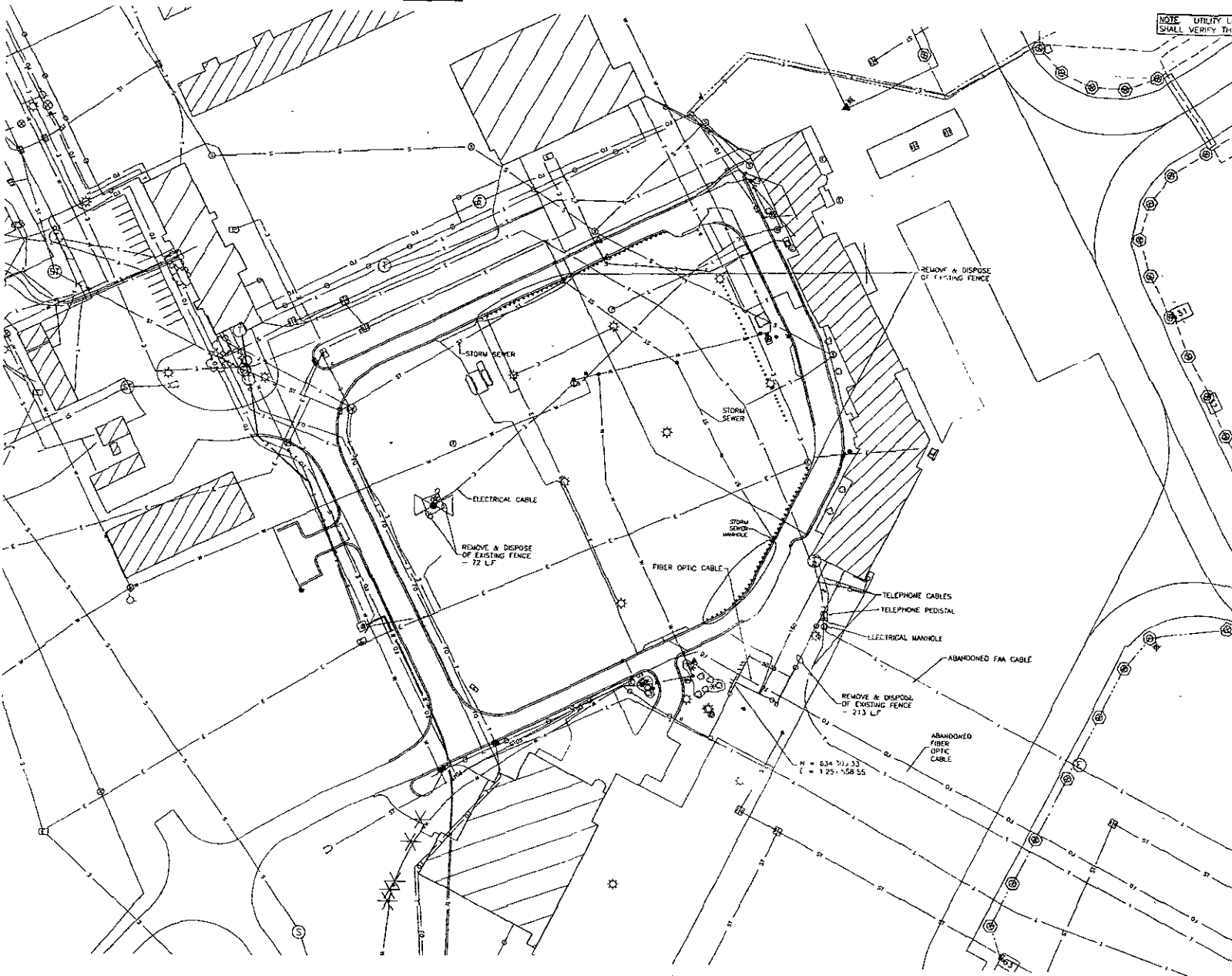
HANGAR STORM SEWER RELOCATION PLAN & PROFILE

PROJECT NO. 12

DATE 06/06/2003

SCALE 1"=40'

NOTE: UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.



REMOVE AND DISPOSE OF 455 LF OF EXISTING FENCE (F-159)



PRELIMINARY

Rev. d
 RAPID CITY REGIONAL AIRPORT
 RAPID CITY REGIONAL AIRPORT BOARD (OWNER)
 RAPID CITY, SOUTH DAKOTA

SHEET NO.
 13

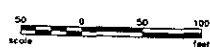
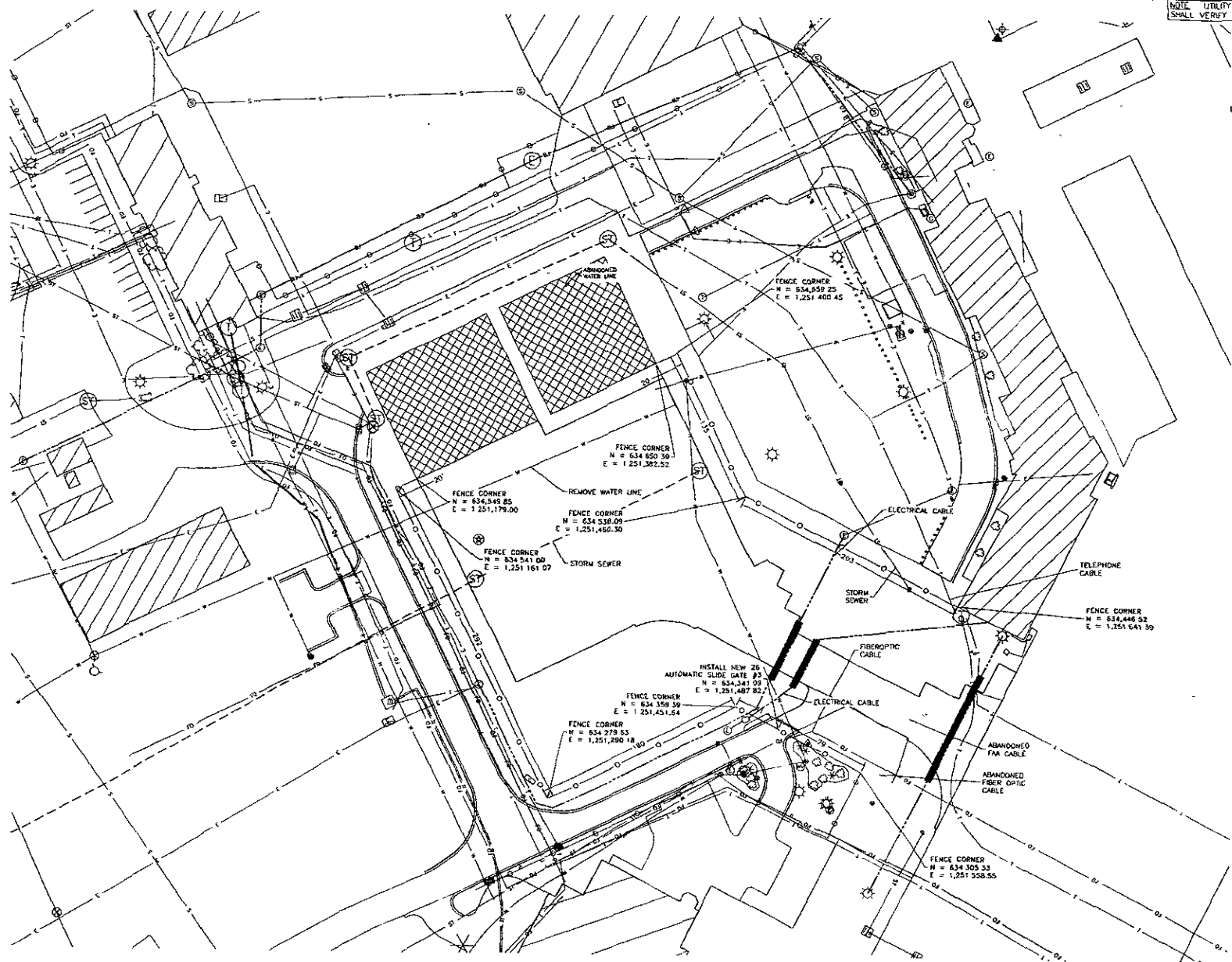
**Kadmas
 Lee &
 Jackson**

FENCE REMOVAL
 PLAN

Engineer, Supervisor
 and Planner
 Date: 06/08/2010
 10567125
 10567125
 10567125

NOTE: UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

INSTALL 970 L.F. OF 10' CHAIN LINK SECURITY FENCE



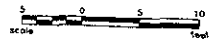
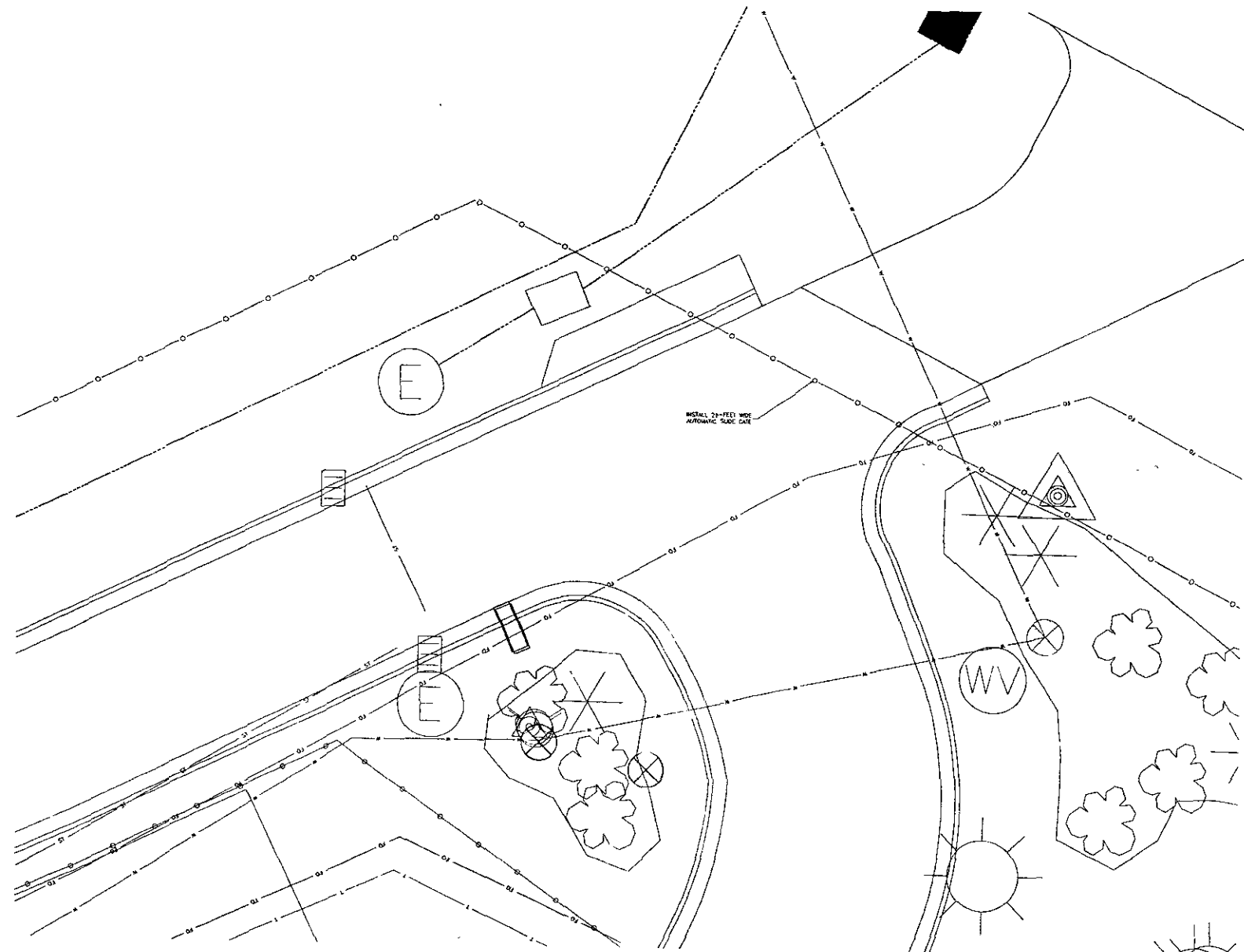
PRELIMINARY

Revised: RAPID CITY REGIONAL AIRPORT
 RAPID CITY REGIONAL AIRPORT BOARD (OWNER)
 RAPID CITY, SOUTH DAKOTA

Kadmas Lee & Jackson
 Engineers, Surveyors and Planners

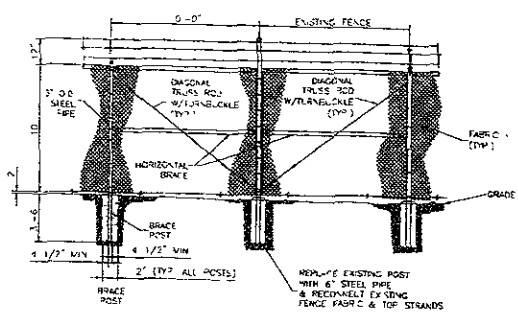
FENCE LAYOUT PLAN

Sheet No. 14 of 14
 Date: 06/08/2007
 Project: 10500100

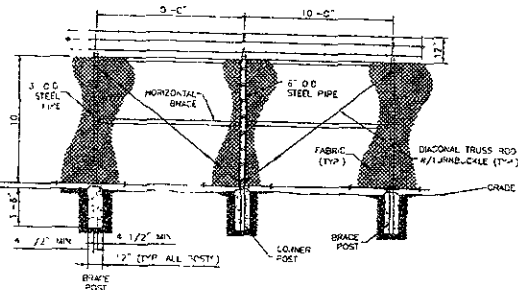


PRELIMINARY

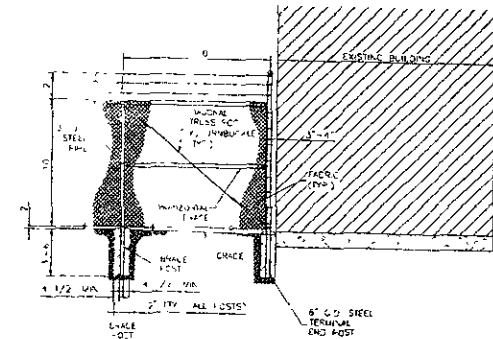
Rev. 0		RAPID CITY REGIONAL AIRPORT		SHEET NO.	
RAPID CITY REGIONAL AIRPORT BOARD (OWNER)		Rapid City, South Dakota		15	
Kadmas Lee & Jackson		GATE LAYOUT PLAN			
Engineers, Surveyors and Planners	Scale: 1" = 40'	Drawn by: CAS	Checked by: JCS	Date: 06/04/2007	Project: 3/08-2007-2-3600



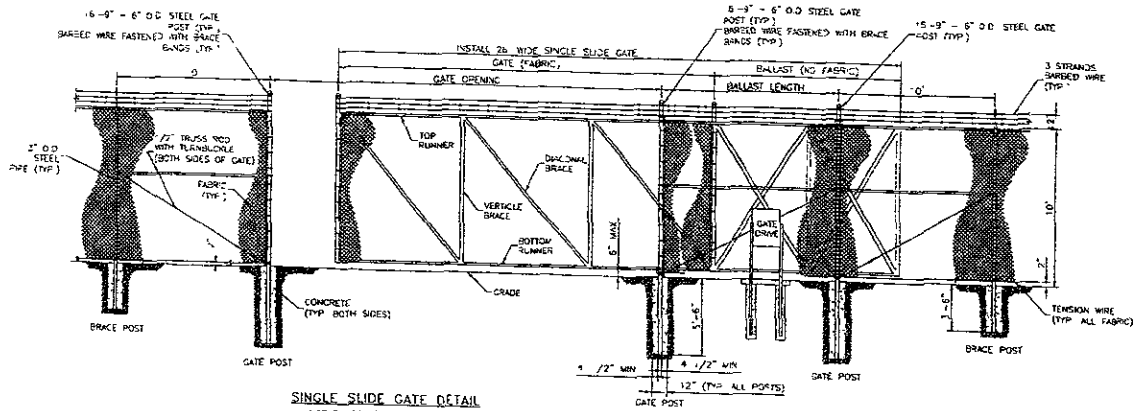
TIE TO EXISTING CHAIN-LINK FENCE
NOT TO SCALE



CHAIN-LINK CORNER PANEL
NOT TO SCALE



CHAIN-LINK FENCE ADJACENT TO BUILDING
NOT TO SCALE



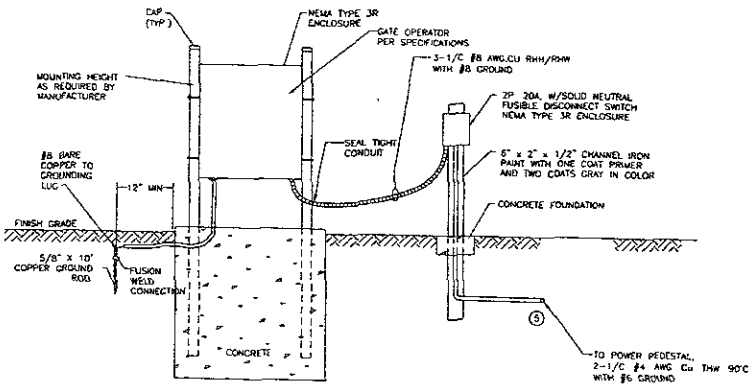
SINGLE SLIDE GATE DETAIL
NOT TO SCALE

NOTES

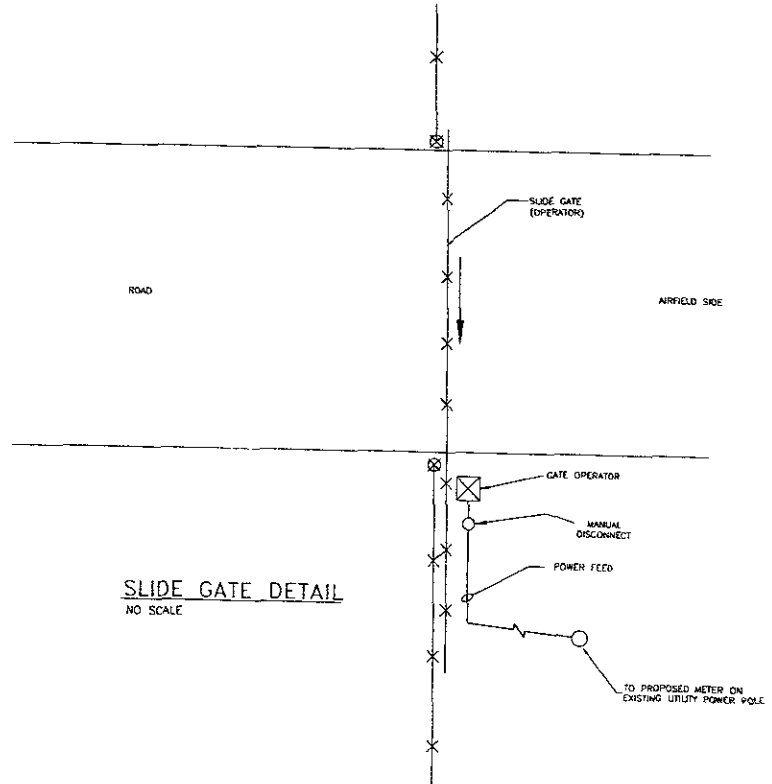
- EXISTING CHAIN LINK FENCE SHALL REMAIN IN PLACE UNLESS NEW FENCE AND GATE IS COMPLETE AT THE TIME THERE IS AN UNATTENDED GAP IN THE PERIMETER FENCES.
- EXISTING SIGNS SHALL BE SALVAGED FOR USE ON THE NEW FENCE.
- FENCE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL CITY, STATE AND FEDERAL SECURITY REQUIREMENTS.

PRELIMINARY

RAPID CITY REGIONAL AIRPORT RAPID CITY REGIONAL AIRPORT BOARD (OWNER) RAPID CITY, SOUTH DAKOTA		Sheet No 16
Kadmas Lee & Jackson Engineers, Surveyors & Architects		FENCE DETAILS
Scale	Date	Approved by



TYPICAL ACCESS POINT DETAIL



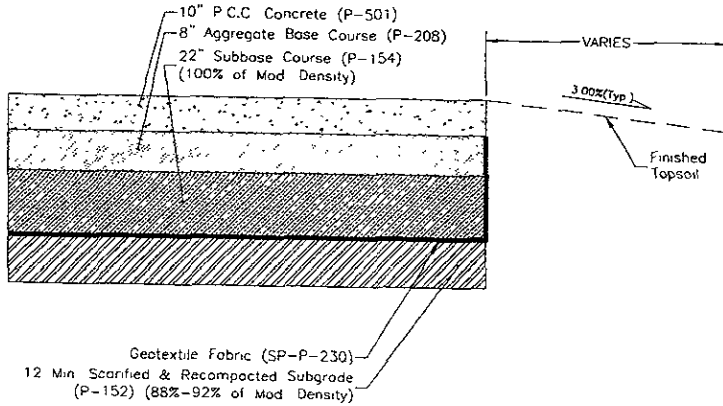
SLIDE GATE DETAIL
NO SCALE

NOTES

- EXISTING CHAIN LINK FENCE SHALL REMAIN IN PLACE UNTIL NEW FENCE AND GATE IS COMPLETE
- AT NO TIME SHALL THERE BE AN UNATTENDED GAP IN THE NEW OR EXISTING FENCES
- EXISTING SIGNS SHALL BE SALVAGED FOR USE ON THE NEW FENCE
- FENCE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL CITY, STATE AND FEDERAL SECURITY REQUIREMENT SEE PHASING SHEETS FOR MINIMUM SECURITY REQUIREMENTS

PRELIMINARY

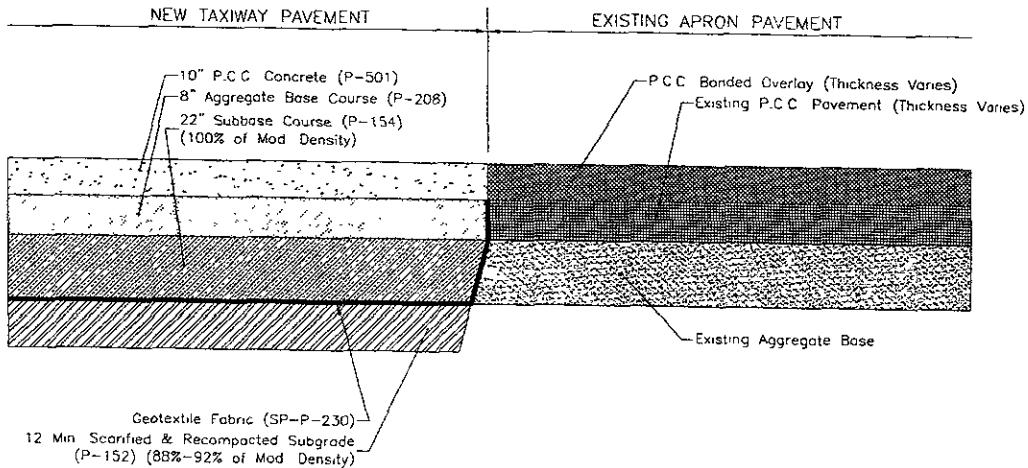
Rev 0 RAPID CITY REGIONAL AIRPORT RAPID CITY REGIONAL AIRPORT BOARD (OWNER) RAPID CITY, SOUTH DAKOTA		SHEET NO. 17
Kadmas Lee & Jackson <small>Engineers, Surveyors and Planners</small>		FENCE DETAILS
DATE	DRAWN BY	CHECKED BY



NEW TAXIWAY & APRON PAVEMENT
 NO SCALE

PRELIMINARY

Rev'd		SHEET NO	
RAPID CITY REGIONAL AIRPORT		18	
RAPID CITY REGIONAL AIRPORT BOARD (OWNER)			
RAPID CITY SOUTH BUILDING			
Kadmas Lee & Jackson		TYPICAL SECTION	
Engineers, Surveyors and Planners			
DATE OF DAS	DRAWN BY	CHECKED BY	DATE

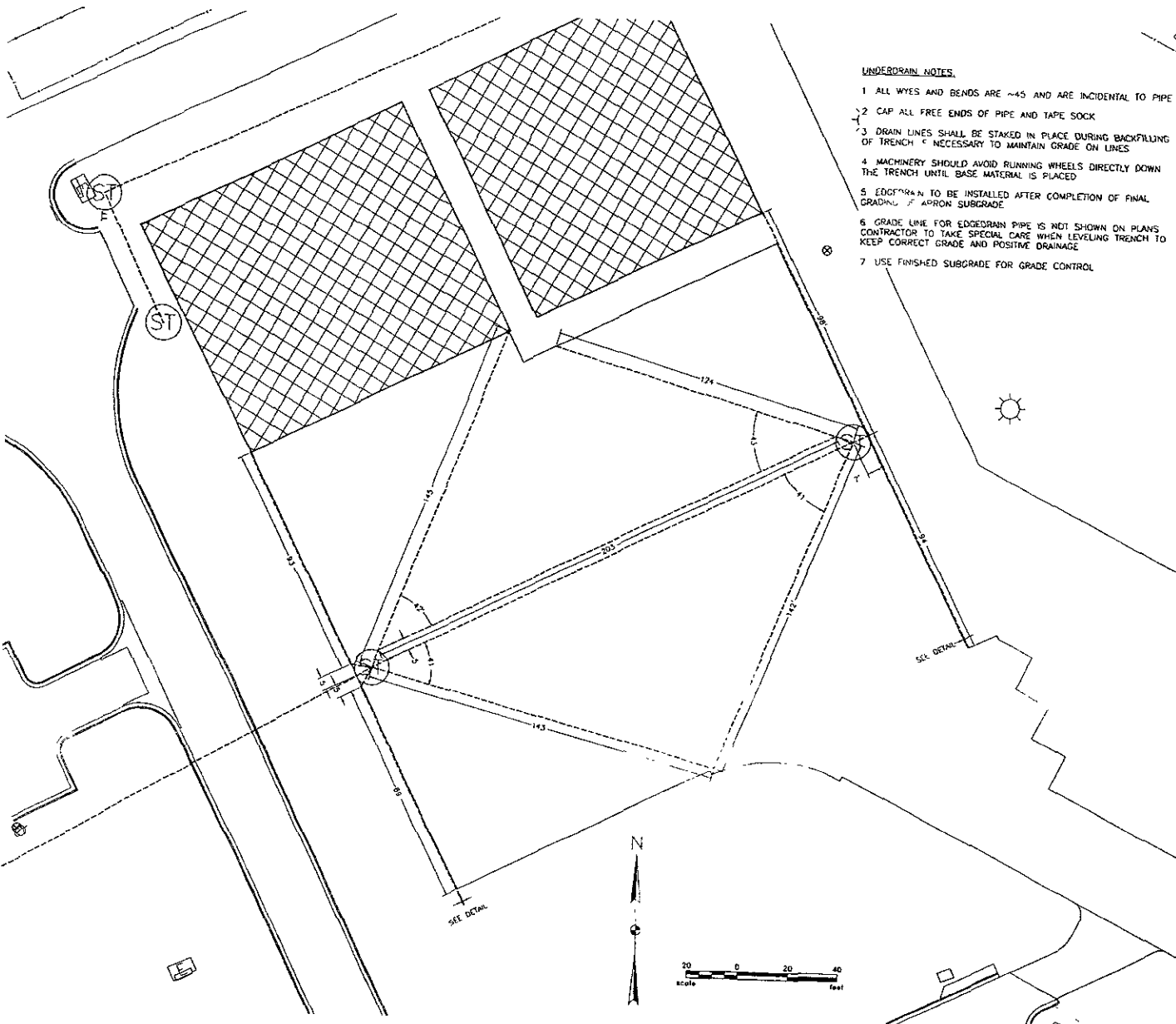


NEW TAXIWAY PAVEMENT TO
EXISTING COMMERCIAL SERVICE APRON

NO SCALE

PRELIMINARY

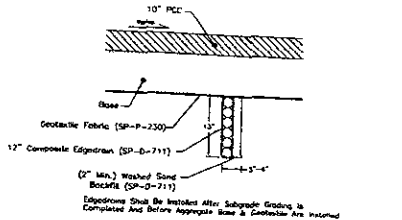
Rev'd		SHEET NO	
RAPID CITY REGIONAL AIRPORT		19	
RAPID CITY REGIONAL AIRPORT BOARD (OWNER)		RAPID CITY, SOUTH DAKOTA	
Kadmas Lee & Jackson		TYPICAL SECTION	
Engineer	Scale	Contract No.	Date Plotted
and Planner	CAS	10507125	06/08/2007
A:\projects\10507125\CAD\plan\10507125_typ_sec.dwg		Date Plotted	



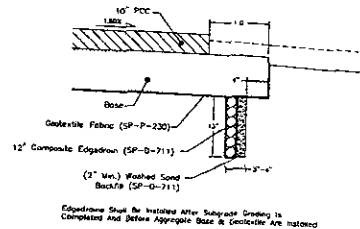
UNDERDRAIN NOTES:

- 1 ALL WYES AND BENDS ARE ~45 AND ARE INCIDENTAL TO PIPE
- 2 CAP ALL FREE ENDS OF PIPE AND TAPE SOCK
- 3 DRAIN LINES SHALL BE STAKED IN PLACE DURING BACKFILLING OF TRENCH & NECESSARY TO MAINTAIN GRADE ON LINES
- 4 MACHINERY SHOULD AVOID RUNNING WHEELS DIRECTLY DOWN THE TRENCH UNTIL BASE MATERIAL IS PLACED
- 5 EDGEDRAIN TO BE INSTALLED AFTER COMPLETION OF FINAL GRADING / APRON SUBGRADE
- 6 GRADE LINE FOR EDGEDRAIN PIPE IS NOT SHOWN ON PLANS CONTRACTOR TO TAKE SPECIAL CARE WHEN LEVELING TRENCH TO KEEP CORRECT GRADE AND POSITIVE DRAINAGE
- 7 USE FINISHED SUBGRADE FOR GRADE CONTROL

INSTALL 12" COMPOSITE EDGEDRAIN (SP-D-711)
1,155 LF



COMPOSITE EDGEDRAIN APRON DETAIL
NOT TO SCALE



COMPOSITE EDGEDRAIN APRON DETAIL
NOT TO SCALE

LEGEND

- - - - - 12" COMPOSITE EDGEDRAIN (SP-D-711)
- EDGEDRAIN FLOW

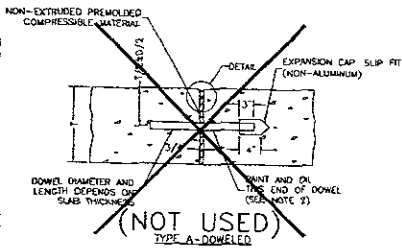
PRELIMINARY

Rev: d
RAPID CITY REGIONAL AIRPORT
RAPID CITY REGIONAL AIRPORT BOARD (OWNER)
RAPID CITY, SOUTH DAKOTA

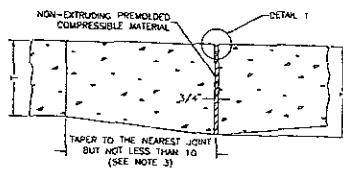
Kadmas
Lee &
Jackson

UNDERDRAIN
LAYOUT &
DETAILS

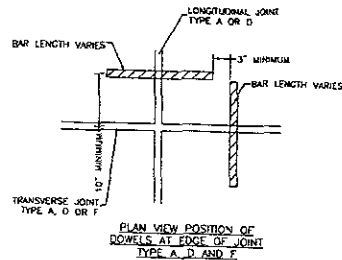
sheet no
20



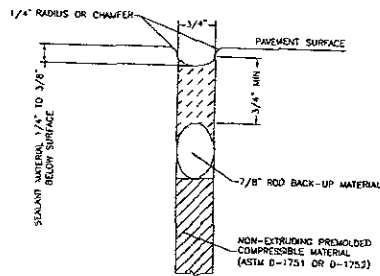
EXPANSION JOINTS



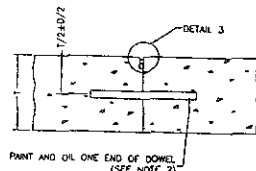
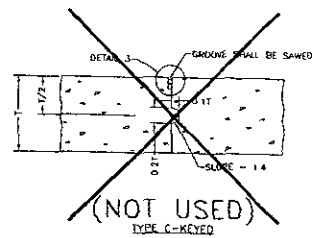
TYPE B-THICKENED EDGE



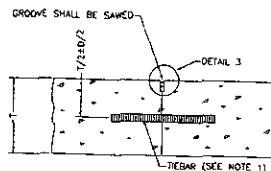
PLAN VIEW POSITION OF ROWELS AT EDGE OF JOINT TYPE A, D, AND F



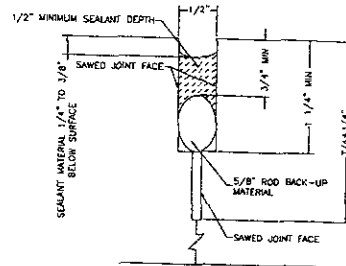
EXPANSION JOINT TYPE A AND B DETAIL 1



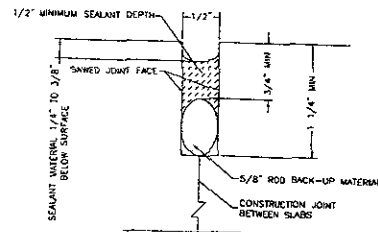
TYPE D-DOWELED



TYPE E-TIED KEYED

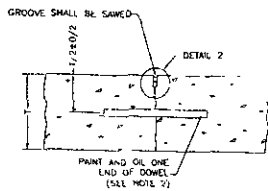


CONTRACTION JOINT TYPE F, G AND H DETAIL 2

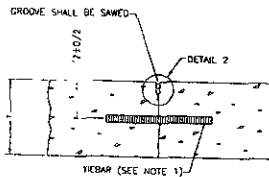


CONTRACTION JOINT TYPE C, D AND E DETAIL 3

CONSTRUCTION JOINTS

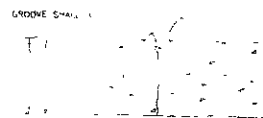


TYPE F-DOWELED



TYPE G-HINGED

CONTRACTION JOINTS

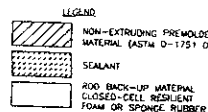


TYPE H-DOWELED

DETAIL OF JOINTS IN RIGID PAVEMENTS

NOTE


- TIEBAR FOR 10\"/>
- DOWEL BARS SHALL BE AS FOLLOWS:
 LENGTH = 10\"/>
- T₀ = THICKENED EDGE
 T = THICKNESS
 T₀ = 1/2\"/>
- ROD BACKUP MATERIAL MUST BE COMPATIBLE WITH THE TYPE OF SEALANT USED AND SIZED TO PROVIDE THE DESIRED SHAPE FACTOR
- ON CONTINUOUSLY REINFORCED CONCRETE PANELS DEFORMED REBAR MAY BE RUN CONTINUOUSLY THROUGH A TIED JOINT (TYPE G & H) AND QUARRY JOINT (TYPE H) BUT MUST BE CUT AND HAVE A MINIMUM OF 3 INCHES CLEAR COVER FROM A DOWELED JOINT (TYPE F & G)

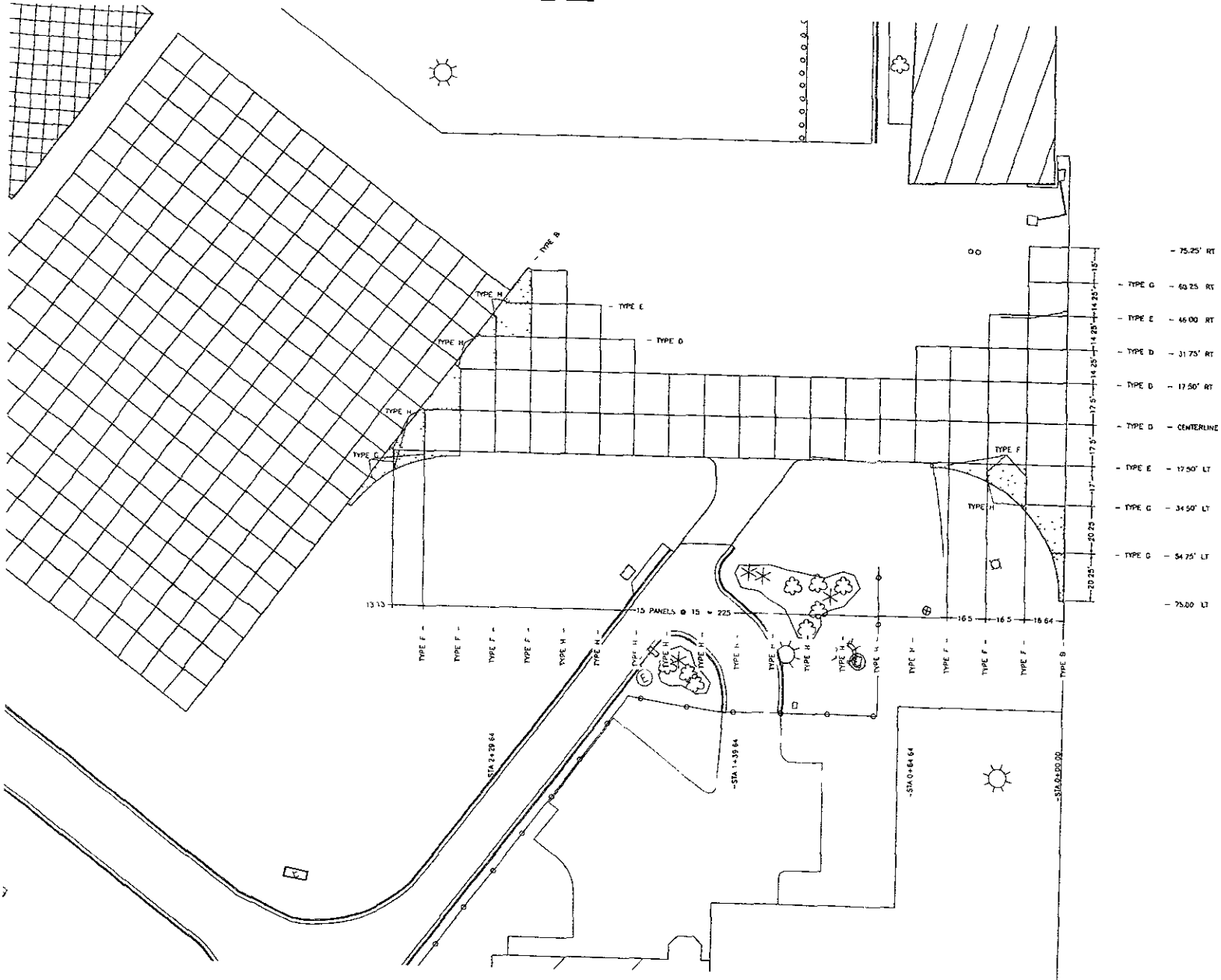


PRELIMINARY

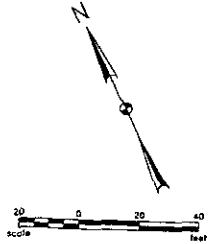
Rev'd RAPID CITY REGIONAL AIRPORT RAPID CITY REGIONAL AIRPORT BOARD (OWNER) RAPID CITY, SOUTH DAKOTA	SHEET NO. 22
Kadmas Lee & Jackson Engineers, Surveyors and Planners	PCC JOINT DETAILS SHEET NO. 105671405 DATE 05/01/2007

1 SEE SHEET 22 - PCC JOINT DETAILS FOR JOINT TYPE AND DETAILS

LEGEND:
 CONTINUOUSLY REINFORCED CONCRETE PANELS WITH #3 REBAR SPACED AT 18" ON CENTER IN BOTH DIRECTIONS

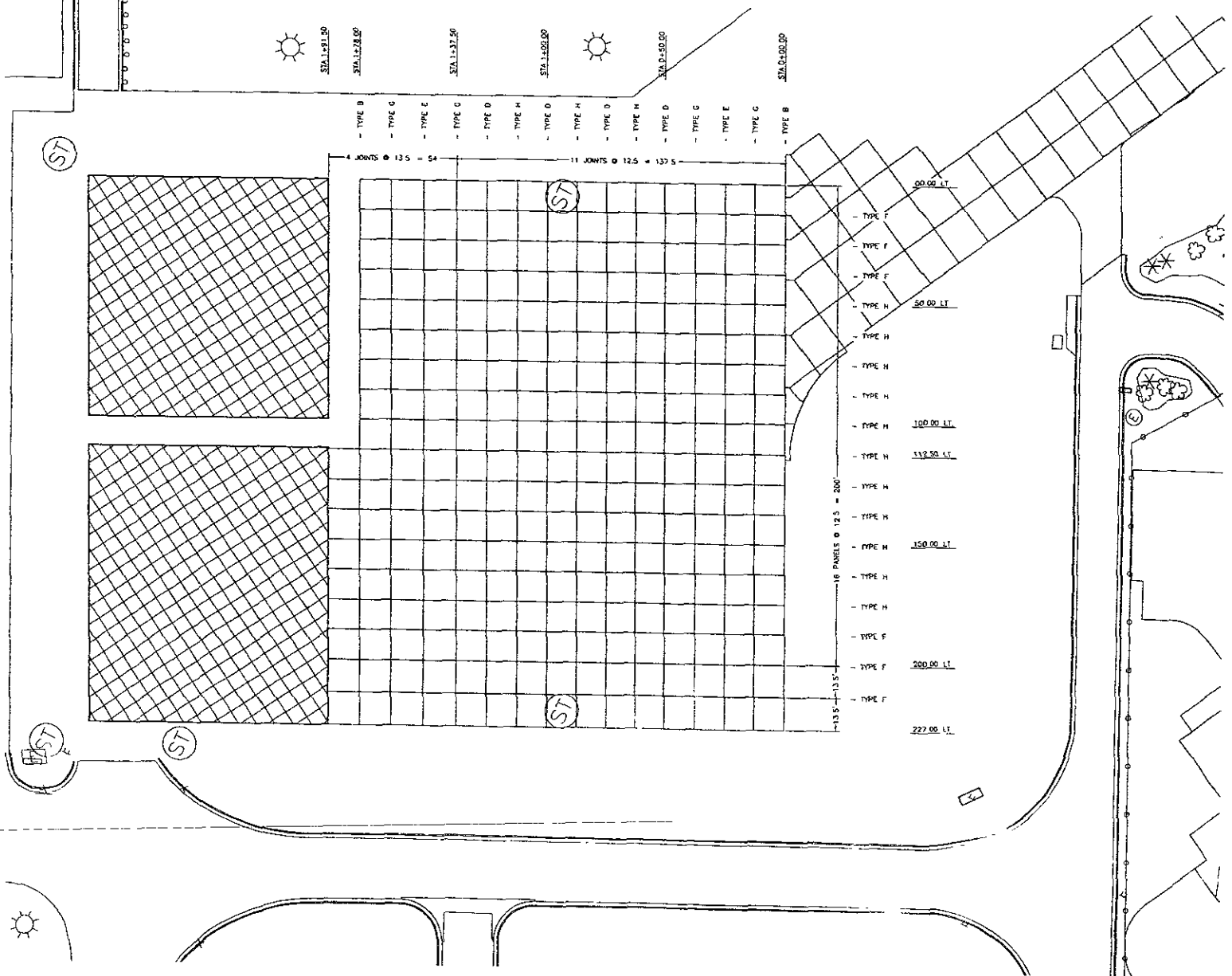


- 75.25' RT
- TYPE G - 60.25 RT
- TYPE E - 46.00 RT
- TYPE D - 31.75' RT
- TYPE D - 17.50' RT
- TYPE D - CENTERLINE
- TYPE E - 12.50' LT
- TYPE C - 34.50' LT
- TYPE C - 54.25' LT
- 75.00 LT

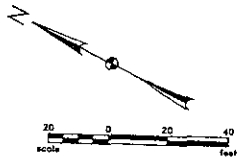


PRELIMINARY

Rev'd		Sheet No.	23
RAPID CITY REGIONAL AIRPORT RAPID CITY REGIONAL AIRPORT BOARD (OWNER) RAPID CITY, SOUTH DAKOTA			
Kadmas Lee & Jackson Engineers, Surveyors and Planners		TAXIWAY JOINT LAYOUT PLAN	
Scale: 1" = 40'	Drawn by: CUB	Checked by: 1962/125	Date: 08/21/2003



GENERAL NOTES:
 1. SEE SHEET 22 - PCC JOINT DETAILS FOR JOINT TYPE AND DETAILS








PRELIMINARY

Rev'd		RAPID CITY REGIONAL AIRPORT		sheet no.
		RAPID CITY REGIONAL AIRPORT BOARD (OWNER)		24
		RAPID CITY, SOUTH DAKOTA		
Kadmas Lee & Jackson Engineers, Surveyors and Planners	Date of Plan	City of	Contract No.	Date Revised
			10507105	06/07/2009

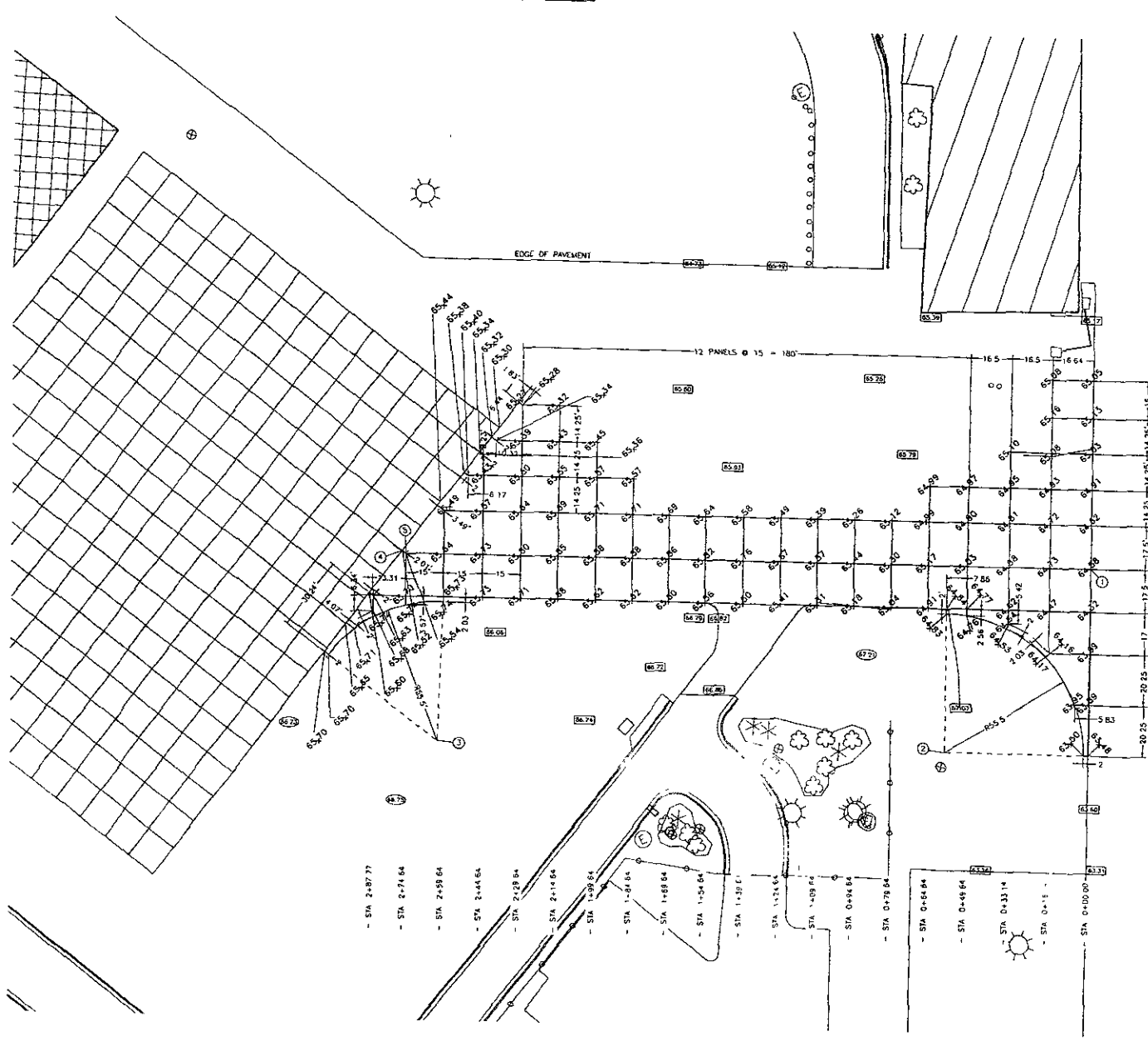
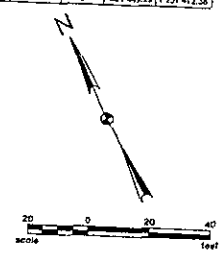
GENERAL NOTES
 1. SEE SHEET 22 - PCC JOINT DETAILS FOR JOINT TYPE AND DETAILS

LEGEND

-  PROPOSED FINISHED PAVEMENT GRADE
-  PROPOSED FINISHED TOPSOIL GRADE
-  EXISTING PAVEMENT GRADE
-  EXISTING GROUND GRADE
-  DRAINAGE DIRECTION

COORDINATE DATA TABLE

①	STATION	OFFSET	NORTHING	EASTING
①	20+00.00	0	634,325.37	1,251,657.40
②	20+52.50	75.00 L	634,284.37	1,251,572.28
③	2+58.84	75.00 L	624,378.45	1,251,590.21
④	2+36.26	1.20 S	624,451.08	1,251,411.47
⑤	2+74.84	0	624,449.20	1,251,412.28



- 75.25 RT
- 60.25 RT
- 46.00 RT
- 31.75 RT
- 17.50 RT
- CENTERLINE
- 17.50' LT
- 34.50' LT
- 54.75' LT
- 75.00' LT

PRELIMINARY

Rev 0 RAPID CITY REGIONAL AIRPORT RAPID CITY REGIONAL AIRPORT BOARD (OWNER) RAPID CITY, SOUTH DAKOTA		SHEET NO. 25
Kadmas Lee & Jackson Engineers, Surveyors and Planners	DRAWN BY C.G.	CHECKED BY J.S.
	DATE 11/02/19	DATE 06/01/2003
TAXIWAY GRADING PLAN		

D:\Projects\10091\100\CAD\Auto\10091100.dwg, pcc, 0/1/2003

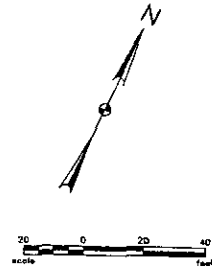
GENERAL NOTES.

1. SEE SHEET 22 - PCC JOINT DETAILS FOR JOINT TYPE AND DETAILS.

LEGEND

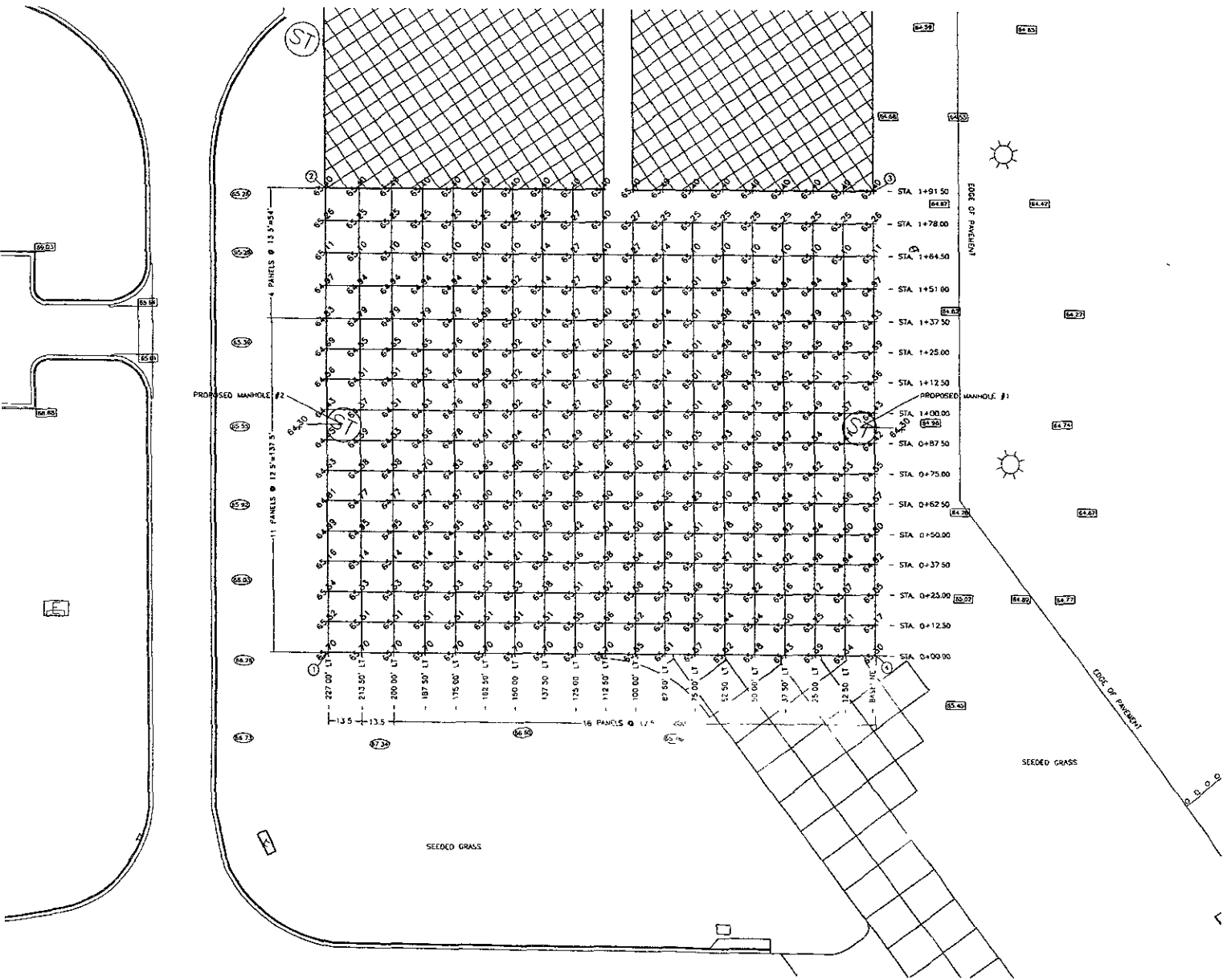
- PROPOSED FINISHED PAVEMENT GRADE
- PROPOSED FINISHED TOPSOIL GRADE
- EXISTING PAVEMENT GRADE
- EXISTING GROUND GRADE
- DRAINAGE DIRECTION

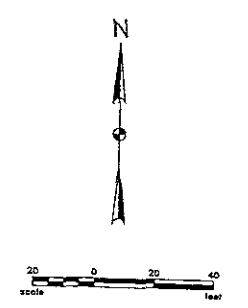
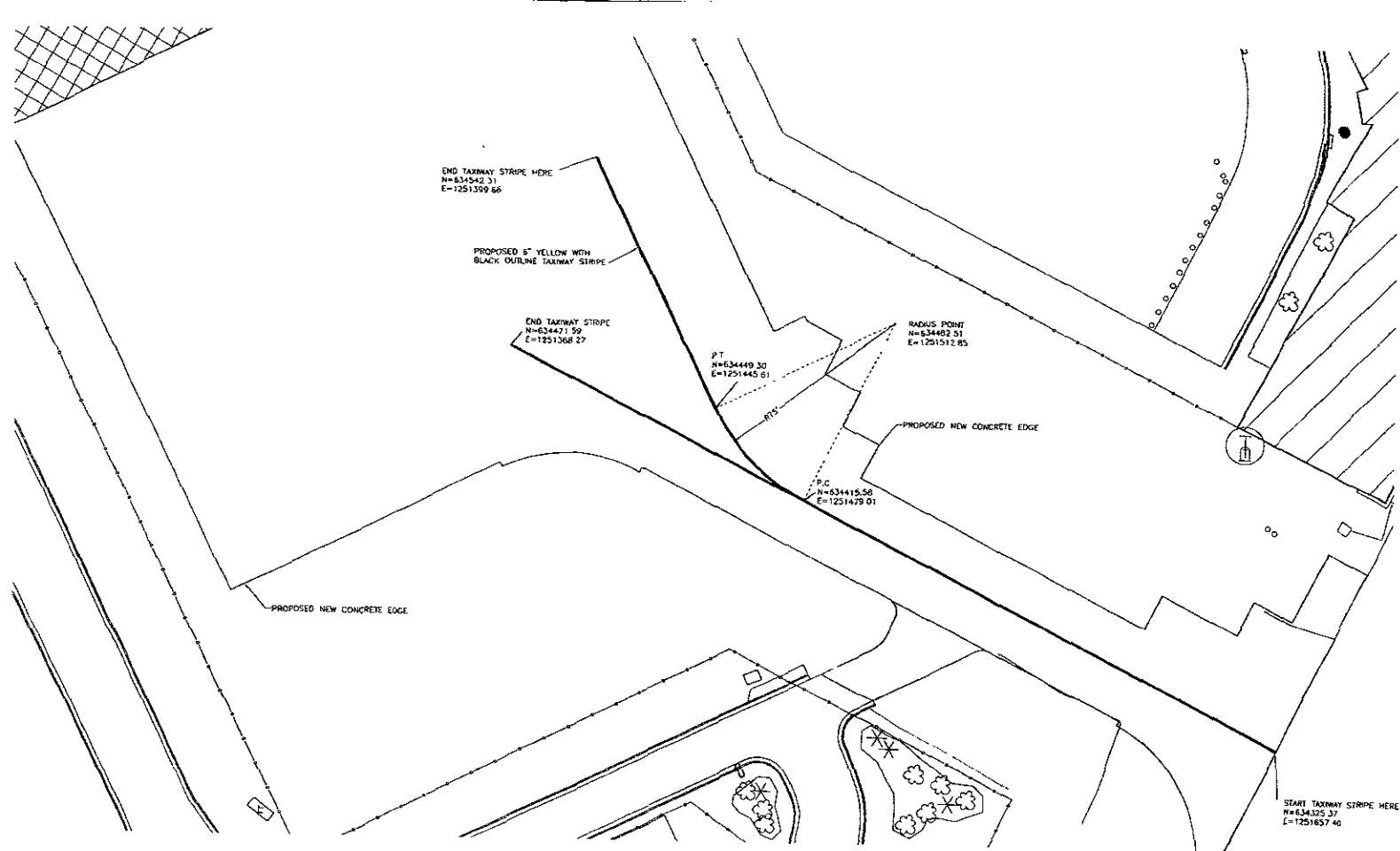
COORDINATE DATA TABLE			
STATION	OFFSET	NORTHING	EASTING
①	0+00.00	227.00 L	634,376.15 1,251,263.85
②	1+81.50	127.00 L	634,549.84 1,251,179.01
③	1+91.50	0	634,886.36 1,251,367.38
④	0+110.00	0	624,418.09 1,251,497.34



PRELIMINARY

Rev. d RAPID CITY REGIONAL AIRPORT RAPID CITY REGIONAL AIRPORT BOARD (OWNER) RAPID CITY, SOUTH DAKOTA	SHEET NO. <div style="font-size: 24pt; font-weight: bold;">26</div>
<div style="font-size: 24pt; font-weight: bold;">Kadmas Lee & Jackson</div> Engineers, Surveyors and Planners	
DRAWN BY: CJB CHECKED BY: CJB DATE: 05/01/2007	PROJECT NO.: 18509105 SHEET NO.: 05/01/2007





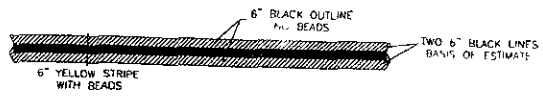
MARKING QUANTITIES

YELLOW TAXIWAY CENTERLINE	238 S F
BLACK TAXIWAY CENTERLINE	476 S F
TOTAL	714 S F

APRON LAYOUT

NOTES

- 1 ALL TAXIWAY MARKINGS ON CONCRFTE SHALL BE 6" YELLOW WITH REFLECTIVE BEADS. OUTLINED WITH 6" BLACK, NO REFLECTIVE BEADS ON THE BLACK PORTION ONLY
- 2 COORDINATES SHOWN ARE TO RADIUS POINTS OF CURVES POINT OF INTERSECTION ON TANGENT LINES
- 3 TAXIWAY CENTERLINE MARKING QUANTITIES ARE BASED ON 6" YELLOW STRIPE & TWO 6" BLACK STRIPES ON EACH SIDE OF YELLOW CENTERLINE

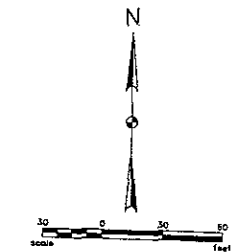
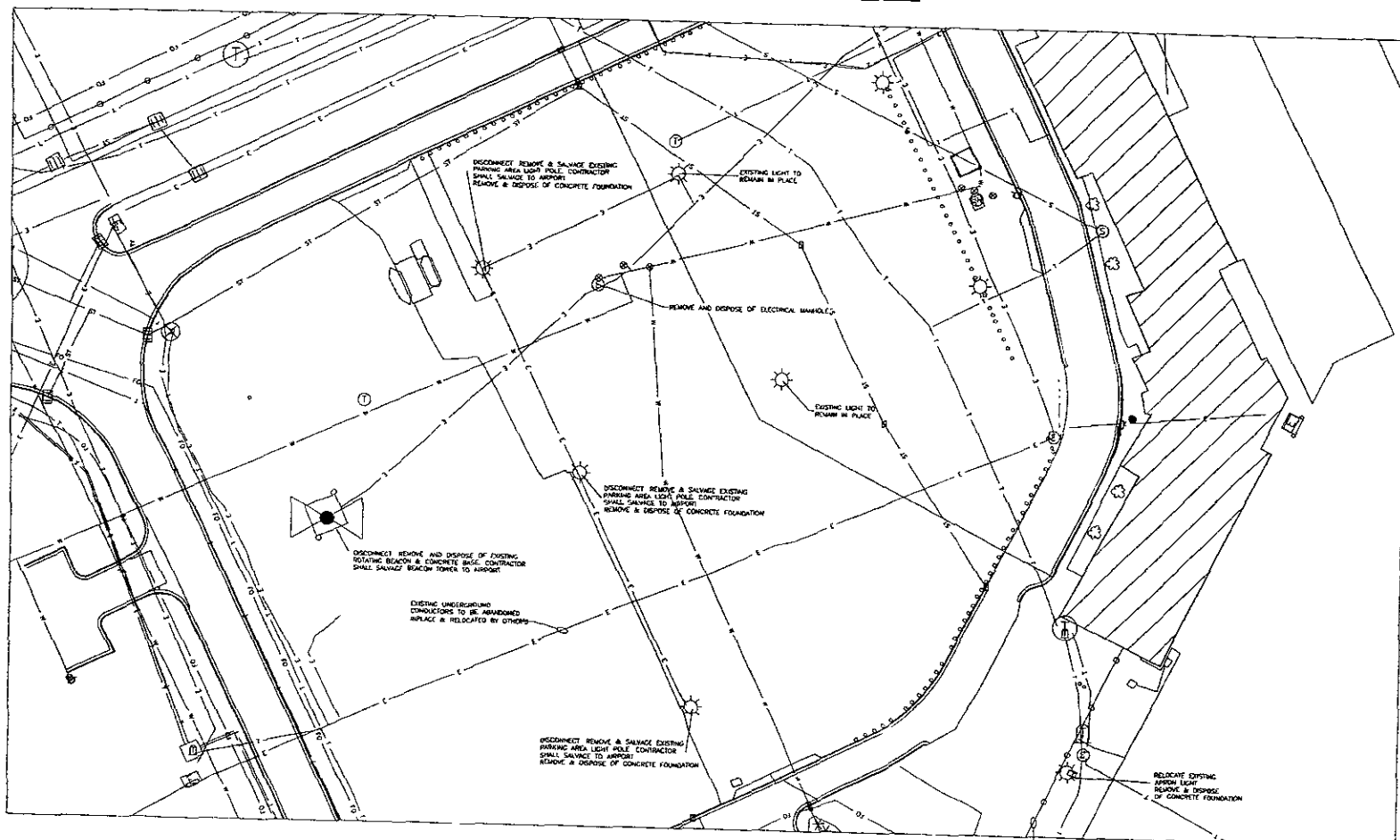


CONCRETE TAXIWAY CENTERLINE MARKING DETAIL

NO SCALE

PRELIMINARY

Rapid City Regional Airport		Sheet No.
RAPID CITY REGIONAL AIRPORT BOARD (OWNER)		27
RAPID CITY, SOUTH DAKOTA		
Kadmas Lee & Jackson		MARKING PLAN
Engineer, Surveyor and Planner	Drawn by: BRY/CJS	Checked by: 10/07/05
		DATE PLOTTED: 06/09/2006



ELECTRICAL LIGHTING LEGEND

Existing	Proposed	Description
▲	▲	TAXIWAY RETROREFLECTIVE MARKER
●	●	TAXIWAY LIGHT FIXTURE (STAR/PAISE MOUNTED)
○	○	ROADWAY LIGHT FIXTURE (STAR/PAISE MOUNTED)
○	○	EMERGENCY LIGHT FIXTURE (STAR/PAISE MOUNTED)
○	○	INDEPENDENT LIGHT FIXTURE (STAR/PAISE MOUNTED)
○	○	PLATE LIGHT FIXTURE
○	○	WASH LIGHT FIXTURE
○	○	WELL LIGHT FIXTURE
○	○	BASE C/W WITH SOLID COVER
○	○	MANHOLE WITH SOLID COVER
○	○	DUOT BANK - Size as indicated
○	○	POINT OF TANGENCY
○	○	END-POINT
○	○	SURFACE SIGN MESSAGE
○	○	CHANGE SIGN LOCATION & SIGN # FROM SCHEDULE
---	---	1-#8, 300V, L-824 CABLE WITH #6 GROUNDING
---	---	2-#8, 300V, 90°C CABLE WITH #6 GROUND
---	---	2-#6, 300V, 90°C CABLE WITH #6 GROUND
---	---	2-#6, 300V, 90°C CABLE WITH #6 GROUND
---	---	MULTIPLE CONDUCTORS (Color & Type As Indicated)
---	---	CABLE/SPLICE/DUCT MARKER

APRON LAYOUT

PRELIMINARY

Rev'd

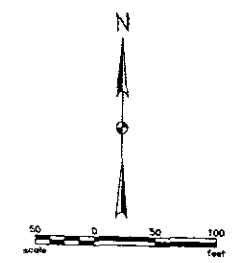
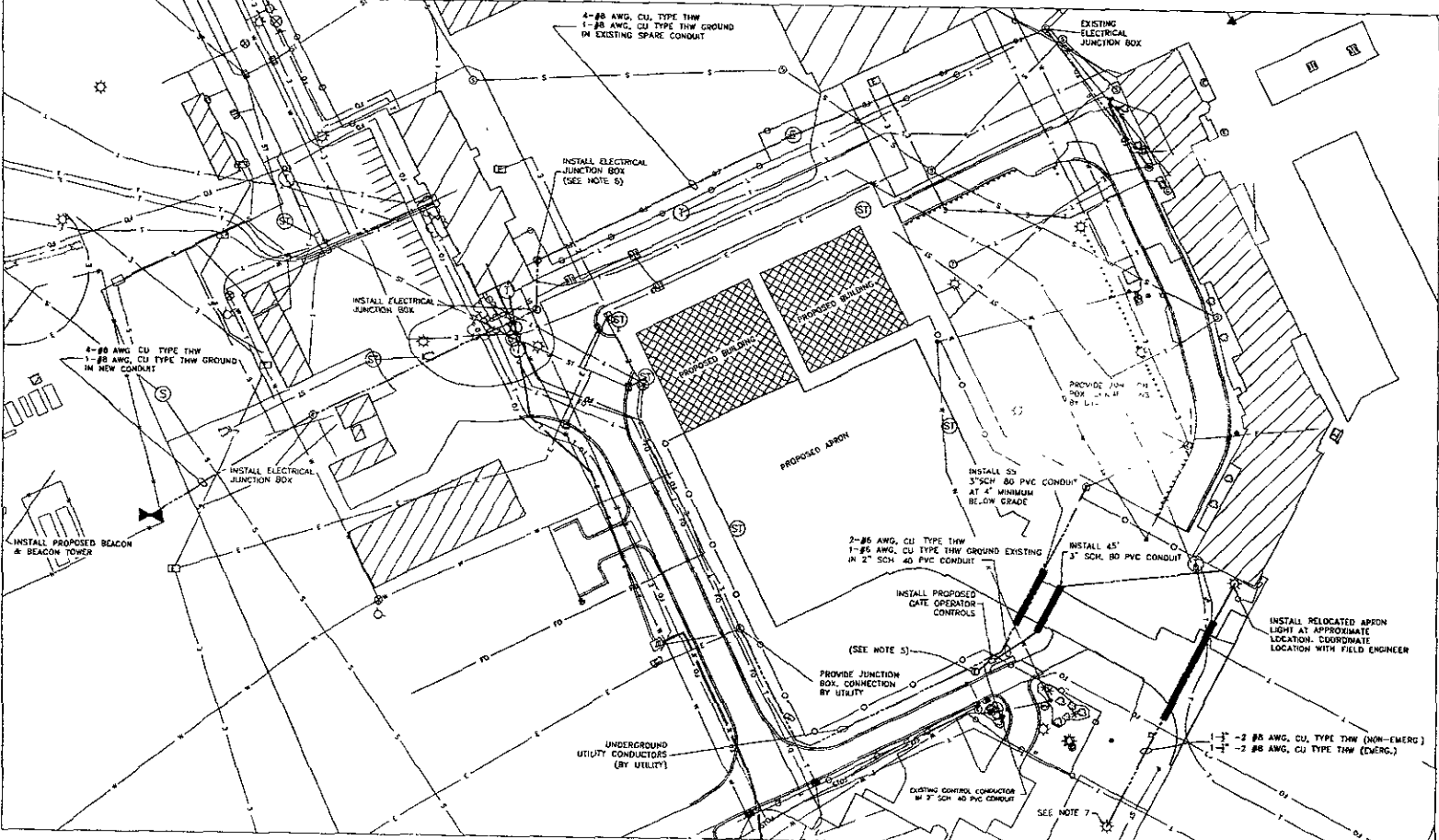
RAPID CITY REGIONAL AIRPORT
 RAPID CITY REGIONAL AIRPORT BOARD (OWNER)
 RAPID CITY, SOUTH DAKOTA

PROJECT NO. **E-1**

Kadmas Lee & Jackson
 Engineers, Surveyors and Planners

ELECTRICAL REMOVAL PLAN

DATE: 06/07/2012



ELECTRICAL LIGHTING LEGEND

EXISTING	PROPOSED	
○	●	TAXIWAY RETROREFLECTIVE MARKER
○	○	TAXIWAY LIGHT FIXTURE (STAKE/BRIDGE MOUNTED)
○	○	RUNWAY LIGHT FIXTURE (STAKE/BRIDGE MOUNTED)
○	○	THRESHOLD LIGHT FIXTURE (STAKE/BRIDGE MOUNTED)
○	○	PARA LIGHT FIXTURE
○	○	VASI LIGHT FIXTURE
○	○	RED LIGHT FIXTURE
○	○	BASE CAN WITH SOLID COVER
○	○	FRAMM HOLE WITH SOLID COVER
○	○	DUCT BASE - See as indicated
○	○	POINT OF TANGENCY
○	○	MID-POINT
○	○	CHANGING SIGN MESSAGE
○	○	CHANGING SIGN LOCATION
○	○	▲ SIGN # FROM SCHEDULE
○	○	1 - #8, 50' 1-824 CABLE WITH #8 COUNTDOWN
○	○	2 - #8, 50' 90'C CABLE WITH #8 GROUND
○	○	2 - #8, 50' 90'C CABLE WITH #8 GROUND
○	○	2 - #8, 50' 90'C CABLE WITH #8 GROUND
○	○	MULTIPLE CONDUCTORS (Size & Type as indicated)
○	○	CABLE/SPLICE/DUCT MARKER

APRON LAYOUT

- GENERAL NOTES:**
- FIELD VERIFY THE EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES BEFORE COMMENCING WORK. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR BY FAILURE TO EXACTLY LOCATE AND PRESERVE AND ALL UNDERGROUND UTILITIES.
 - CONTRACTOR SHALL FEED BEACON CIRCUIT THROUGH EXISTING CONDUIT TO THE PANEL BOUNT.
 - CONTRACTOR SHALL PROVIDE CIRCUIT BREAKERS, STEP-UP/DOWN TRANSFORMERS, AND DISCONNECTS PER SPEC. CALL OUT.
 - CONTRACTOR SHALL POWER PROPOSED GATE OPERATOR FROM EXISTING PANELBOARD REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 - CONTRACTOR SHALL CONNECT EXISTING CONTROL CONDUCTORS INSIDE JUNCTION BOX TO THE GATE OPERATOR'S PRIMARY CABLE BREAKER.
 - CONTRACTOR SHALL INSTALL JUNCTION BOX & TIE INTO EXISTING SPARE CONDUIT IN EXISTING CIRCUIT SHALL NOT DAMAGE EXISTING CIRCUITS. ANY DAMAGE TO THE SATISFACTION OF THE FIELD ENGINEER.
 - CONTRACTOR SHALL RECONNECT CONDUIT AND CONDUCTORS UP TO EXISTING CIRCUIT & JUNCTION BOX.

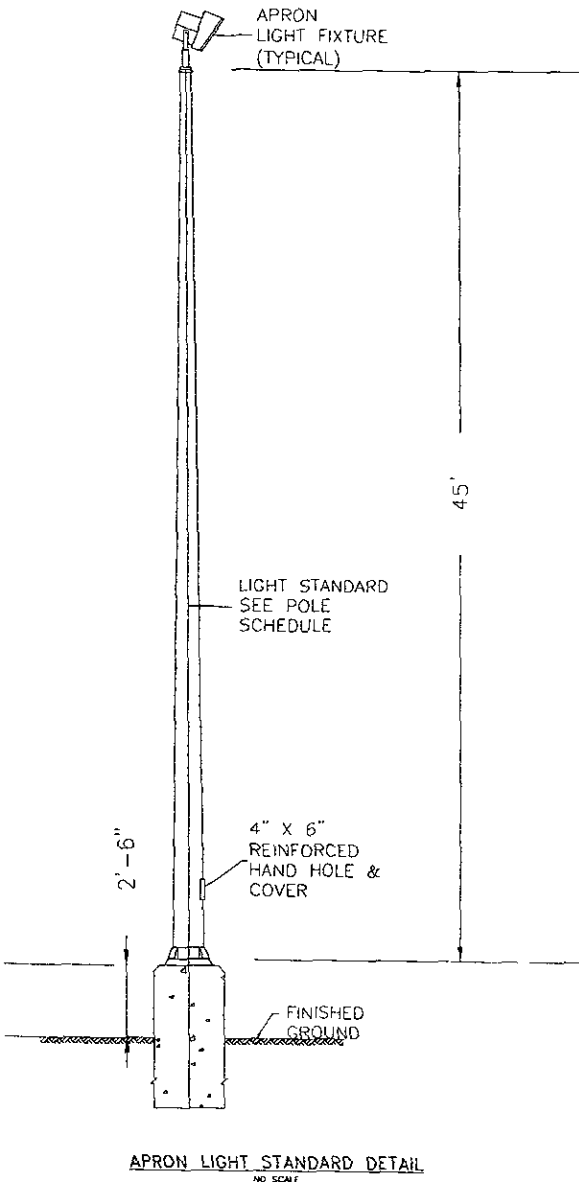
PRELIMINARY

Rev. of
RAPID CITY REGIONAL AIRPORT
 RAPID CITY REGIONAL AIRPORT BOARD (OWNER)
 RAPID CITY, SOUTH DAKOTA

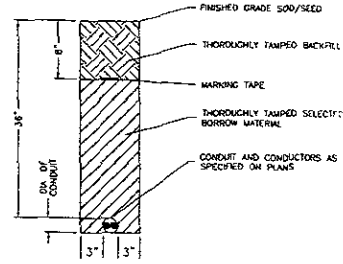
Kadmas Lee & Jackson
 ENGINEERS, SURVEYORS AND PLANNERS

ELECTRICAL LAYOUT PLAN

PROJECT NO. **E-2**
 SHEET NO. 105001145
 DATE PLOTTED 06/07/2007



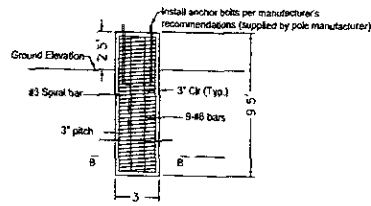
APRON LIGHT STANDARD DETAIL
NO SCALE



NOTES:
1. INCREASE TRENCH WIDTH AND OVERALL DEPTH OF TRENCH SO THE SMALLEST CURRENT CARRYING CONDUCTORS ARE A MINIMUM 36" BELOW FINISHED GRADE.
2. FOR MULTIPLE CONDUITS OF THE SAME OPERATION VOLTAGE, PLACE CONDUITS IN SINGLE LAYER AND INCREASE THE WIDTH OF THE TRENCH TO ACCOMMODATE REQUIRED 3" SPACINGS.

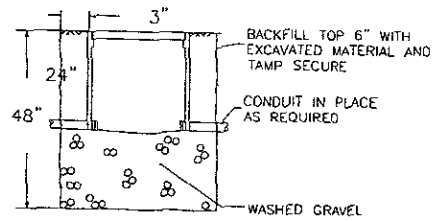
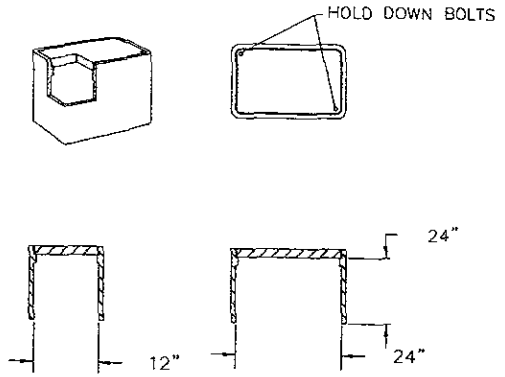
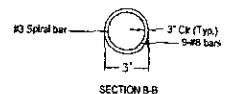
CONDUIT TRENCH DETAIL

NO SCALE



Concrete = 2.5 CY per foundation
Rebar = #34 to per foundation

30" Above Grade Concrete Foundation

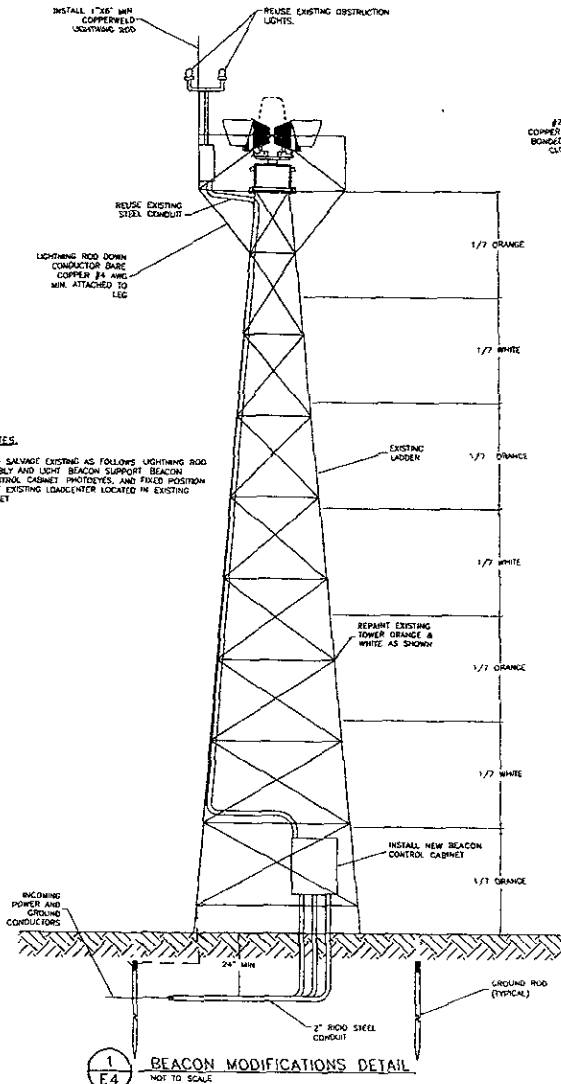


JUNCTION BOX DETAIL

NO SCALE

PRELIMINARY

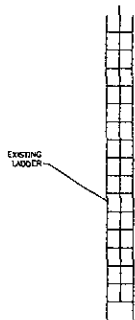
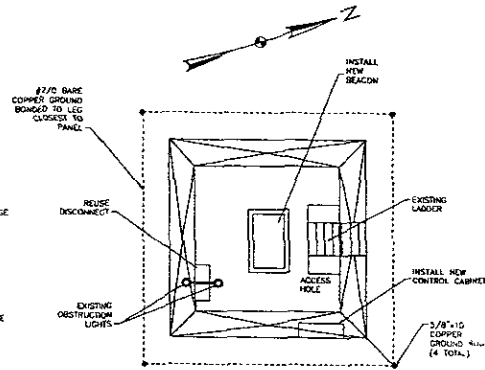
RAPID CITY REGIONAL AIRPORT RAPID CITY REGIONAL AIRPORT BOARD (OWNER) RAPID CITY, SOUTH DAKOTA		SHEET NO. E-3
Kadmas Lee & Jackson Engineers, Surveyors and Planners	ELECTRICAL DETAILS	DATE: 11/20/2007 DRAWN BY: SLS CHECKED BY: 11/20/2007 PROJECT NO: 110071100



GENERAL NOTES.

1. REMOVE AND SALVAGE EXISTING AS FOLLOWS: LIGHTNING ROD, BEACON ASSEMBLY AND LIGHT BEACON SUPPORT BEACON CONTROL CONTROL CABINET PHOTOEYES, AND FIXED POSITION BEACON. REUSE EXISTING LOADCENTER LOCATED IN EXISTING CONTROL CABINET.

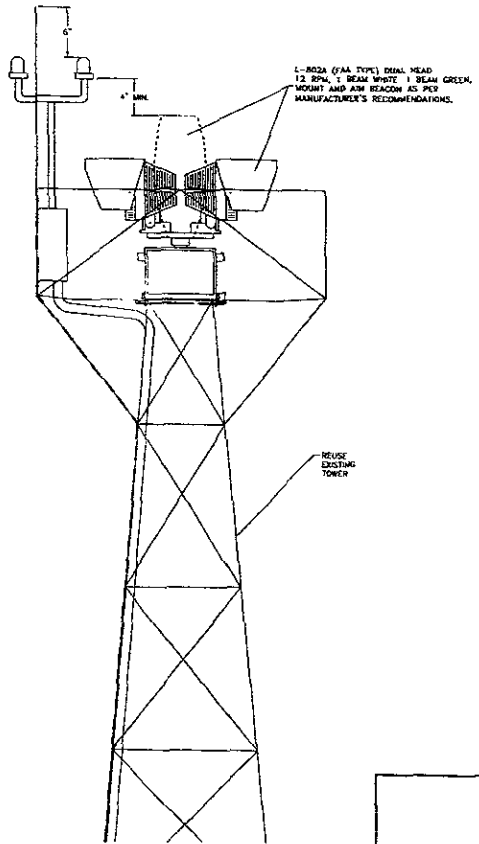
2
E4 BEACON PLAN VIEW
NOT TO SCALE



NOTES

1. INSTALL LADDER SAFETY SYSTEM SUCH AS LAD SAF FIBERGLASS CABLE SYSTEM OR APPROVED EQUIVALENT. INSTALL PER MANUFACTURER'S RECOMMENDATION.
2. THE INSTALLATION SHALL INCLUDE HARNESS SLEEVES AND CONNECTORS FOR FULL OPERATIONAL SYSTEM. THE LADDER SAFETY SYSTEM SHALL BE INCLUDED IN THE TOWER REPAIRS UNDER ALTERNATE 0.

3
E4 ROTATING BEACON & MOUNTING BRACKET
DETAIL



PRELIMINARY

Rev'd		RAPID CITY REGIONAL AIRPORT BOARD (OWNER)		Sheet No.
RAPID CITY REGIONAL AIRPORT BOARD (OWNER)		RAPID CITY, SOUTH DAKOTA		E-4
Kadmas Lee & Jackson Engineers, Surveyors and Planners	DATE	DATE	PROJECT NO.	DATE
	05/15/08	06/06/2007	10007105	06/06/2007
BEACON TOWER DETAILS				