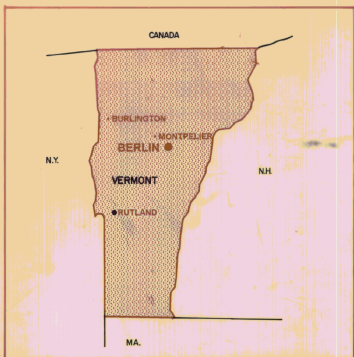


896049  
**E.F. KNAPP PARALLEL TAXIWAY**  
 1996  
 AIR 04-3077



LOCATION MAP



VICINITY MAP

FEDERAL AVIATION ADMINISTRATION

Approved \_\_\_\_\_ Manager, Airports Engineering Safety Branch  
 Date \_\_\_\_\_

VERMONT AGENCY OF TRANSPORTATION

Approved *Richard R. Corni* Director of Engineering Construction  
 Date *12-17-93*

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION OR THE CHIEF ENGINEER.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1990, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON MARCH 15, 1990 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

REVISED 9/17/95 PLD

SHEET NUMBER	TITLE
1	TITLE SHEET
2	QUANTITY SHEET
3	SITE PLAN
4	PARALLEL TAXIWAY PLAN AND PROFILE
5	STUB TAXIWAY PLAN AND PROFILE
6	MISCELLANEOUS DETAILS
7	TAXIWAY LIGHTING PLAN
8	TAXIWAY MARKING AND SIGN PLAN
9	ELECTRICAL DETAILS
10-16	TAXIWAY CROSS SECTIONS
17	BLANK
18	BLANK
19	SOIL BORING AND TEST PIT DATA

STANDARDS

D-15 06-01-94  
 AP-11 06-01-94

INDEX OF SHEETS

PLANS FOR CONSTRUCTION OF

**PARTIAL PARALLEL TAXIWAY TO RUNWAY 5-23**  
**(35' x 1,553' ±)**

**EDWARD F. KNAPP STATE AIRPORT**  
 Town of Berlin, Vermont

A.I.R. PROJECT NO. 04-3077

APRIL 1994

RECORD PLANS

CONTRACTOR: *Ray Cooley Const Inc*

RESIDENT ENGINEER: *Richard Corni*

CONSTRUCTION BEGAN: *Nov 20, 1995*

CONSTRUCTION COMPLETED: *Nov 11, 1996*

RECORD PLANS BY: *R.R. Corni*

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY *Richard R. Corni* RESIDENT ENGINEER

DATE *Dec 10, 1997*

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found on microfiche in Central Files.



Consulting Engineers

Offices: North Springfield, Vermont 05150; Montpelier, Vermont 05602; Rutland, Vermont 05701; Burlington, Vermont 05401; Charlestown, Massachusetts 01701; Westport, Massachusetts 01886; Manchester, New Hampshire 03103; Marlborough, New Jersey 07550.

Engineering Disciplines: Civil, Structural, Geotechnical, Industrial, Mechanical, Electrical, Environmental, Surveying, Transportation, Water Quality.

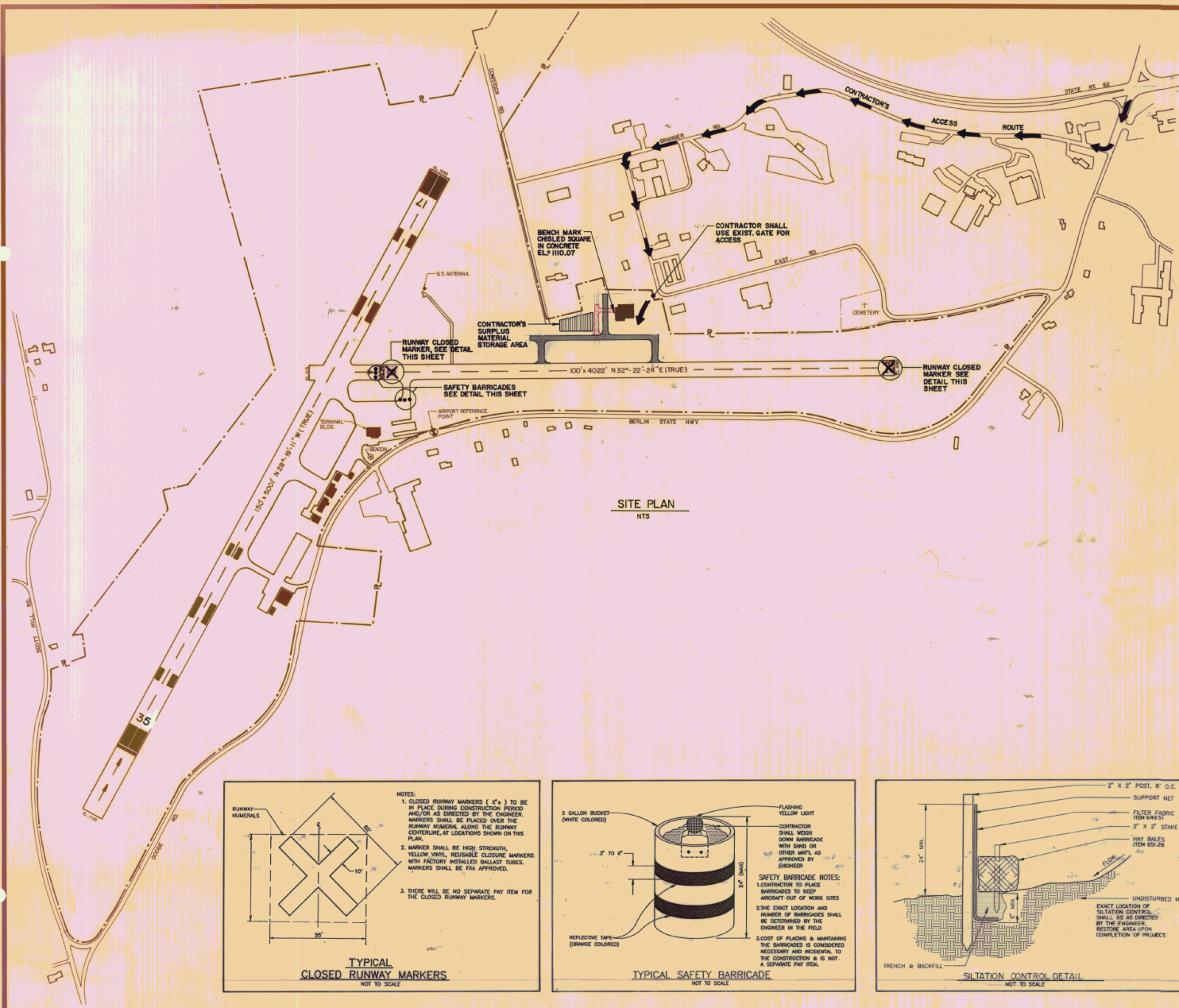
Associated Disciplines: Construction Management, Surveying.

Applied Sciences: Geology, Hydrology, Water Quality.

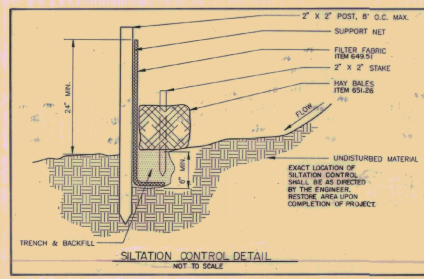
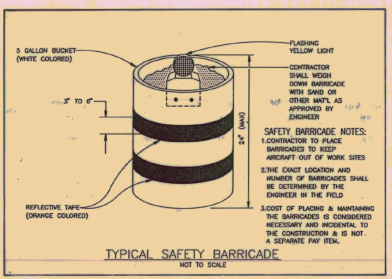
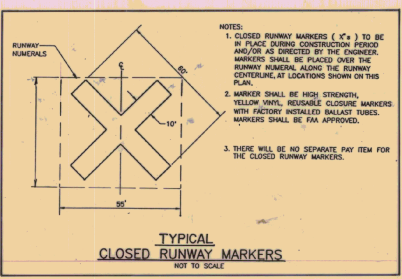
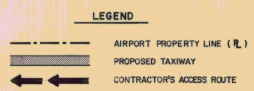


400 Southborough Drive  
 South Portland,  
 Maine 04106





- ### GENERAL NOTES
- The Contractor shall maintain continuous radio contact with the Airport Manager during construction. In addition, the Contractor shall monitor aircraft operating in the area. The Contractor shall provide three radios for this purpose, one for the Contractor's supervisor, one for the Contractor's flagperson, and one for the Resident Engineer. Ground Control Frequency is 122.80 Mhz. Radios shall be ICOM brand, Model IC A20 or approved equal, complete with spare battery pack and charger. The costs for furnishing and maintaining radios shall be considered incidental to the project and there is no separate pay item for this equipment.
  - Runway 5-23 shall be closed throughout the duration of construction. The Contractor shall coordinate this with the Airport Manager. Runway 5-23 shall be closed through the issuance of a "NOTAM", disconnecting the runway lights, and installing the closed runway markers over the numerals at either end of Runway 5-23, as shown on this plan.
  - Under no circumstances shall the Contractor's personnel or equipment approach within 200 feet of runway 17-35. The Contractor shall provide one full time person to function as a flagperson and shall post this person at the entrance to the work site.
  - The Contractor's vehicles shall be equipped with a flashing yellow rotating beacon which is visible for 360 degrees when operating on or adjacent to the airfield. See specifications for more detail.
  - The Contractor shall coordinate with FAA Airway Facilities, the Airport Manager, and Dig Safe prior to any excavation to determine the exact location of utilities. Any utilities requiring relocation shall be relocated/coordinated by the Contractor. Any damage to existing utilities by the Contractor shall be repaired by the Contractor at no additional cost to the airport.
  - Debris shall be swept/vacuumed from all paved areas (including the access road) at least once a day or as requested by the Engineer. All active aviation areas must remain free of all sand, stones, and similar debris at all times. The Contractor must also insure that no airborne dust created during construction is allowed to move into aircraft operations areas at any time.
  - The Contractor shall be responsible for disposing all debris and unsatisfactory materials off airport property, in compliance with all local, state, and federal regulations. Any material deemed acceptable by the Engineer shall be placed on airport property in the location shown on this plan. Such material shall be spread, compacted, loamed and seeded at no additional cost to the airport. Such work is considered incidental to the project. All material deemed "surplus" by the Engineer shall become the property of the Contractor and disposed of off-site.
  - The exact location of the Contractor's storage site shall be determined at the preconstruction conference.

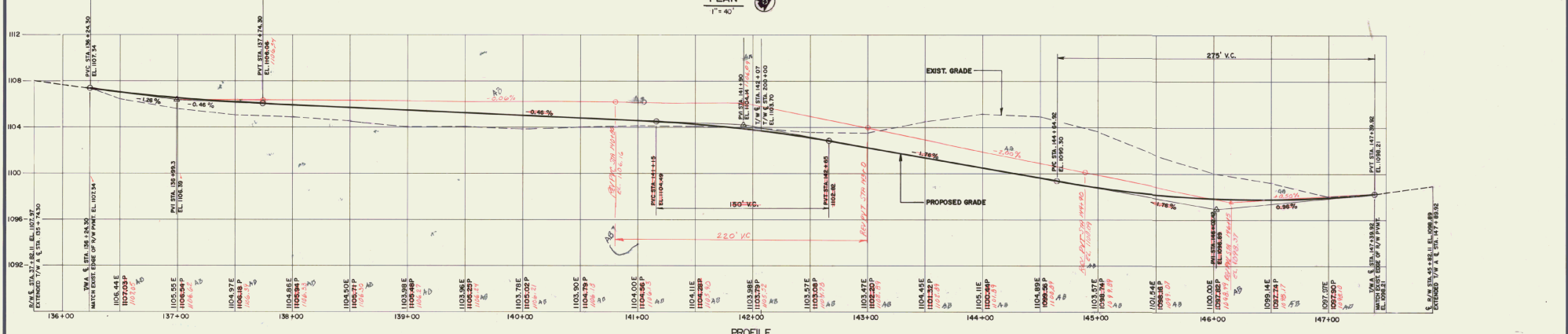
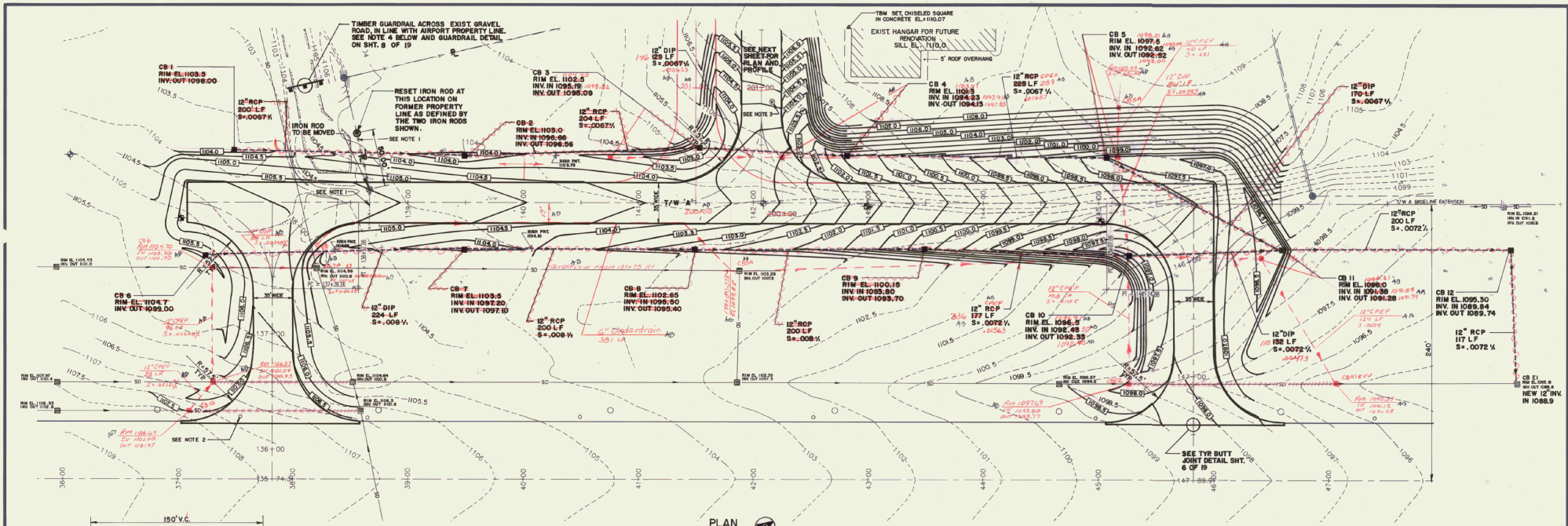


EDWARD F. KNAPP STATE AIRPORT  
AIR 04-3077  
**SITE PLAN**

Client No. B1047  
 Prod. Manager DCD  
 Prod. Designer PJM  
 Drawn By TVS  
 Checked By DCD  
 Scale N.T.S.  
 Approved LJC  
 Date DEC. 1993

Rev. Description By Date

45137-3



- GENERAL NOTES:**
- CONTRACTOR SHALL REMOVE EXISTING CHAIN LINK FENCE WITHIN 50' OF EDGE OF PAVEMENT.
  - EXISTING 6" DIAMETER GALVANIZED CORRUGATED METAL PIPE SHALL BE CUT OFF AND CAPPED WITH A WATERIGHT GALVANIZED STEEL CAP BELOW NEW SUBBASE MATERIAL. THIS WORK TO BE PAID UNDER ITEM 628.60, (M.G.2)
  - EXISTING 4" DIAMETER CAST IRON WELL CASING SHALL BE CUT OFF AND RECAPED APPROXIMATELY 6" BELOW FINISH GRADE AND PROTECTED WITH 6" DIAMETER CAST IRON PIPE BOX AND FABRICATED COVER (SEE DETAIL SHEET 8 OF 19). THIS WORK TO BE PAID UNDER ITEM 629.20, (M.G.3.)
  - GUARDRAIL MARKER PLATE SHALL BE MANUFACTURED OF 0.067" THICK REFLECTORIZED ALUMINUM WITH ALTERNATING 6" WIDE BLACK AND YELLOW STRIPES AT 45° AS SHOWN IN GUARDRAIL DETAIL ON SHEET 8 OF 19. THIS WORK TO BE PAID UNDER ITEM 621.15, (M.G.2.)

**LEGEND**

	EXISTING CONTOUR		EXISTING AIRPORT PROPERTY LINE
	PROPOSED CONTOUR		EXISTING PROPERTY CORNER
	NEW PAVEMENT		BORING
	EXISTING BUILDING		TEST PIT
	EXISTING CATCH BASIN		EXISTING STORM DRAIN
	EXISTING U.D. CLEANOUP (8" CMP)		NEW CATCH BASIN
	EXISTING R/W EDGE LIGHT		NEW STORM DRAIN
	EXISTING FENCE LINE		EXISTING 4" Ø C.I. WELL CASING
	EXISTING FENCE TO BE REMOVED		

*LEGEND: ~~XXXXXX~~ discontinued  
XXXXXX removed  
XXXXXX not installed*

EDWARD F. KNAPP STATE AIRPORT  
**PLAN & PROFILE**  
 STA. 136+24.3 TO STA. 147+39.92  
 PARALLEL TAXIWAY

Client No. B12017  
 Proj. Manager DCD  
 Proj. Designer PJM  
 Drawn By TVS  
 Checked By DCD  
 Approved LJC  
 Date DEC. 1993

BERLIN  
**DH**  
 Dufresne-Henry  
 400 Southborough Drive  
 So. Portland, ME 04106

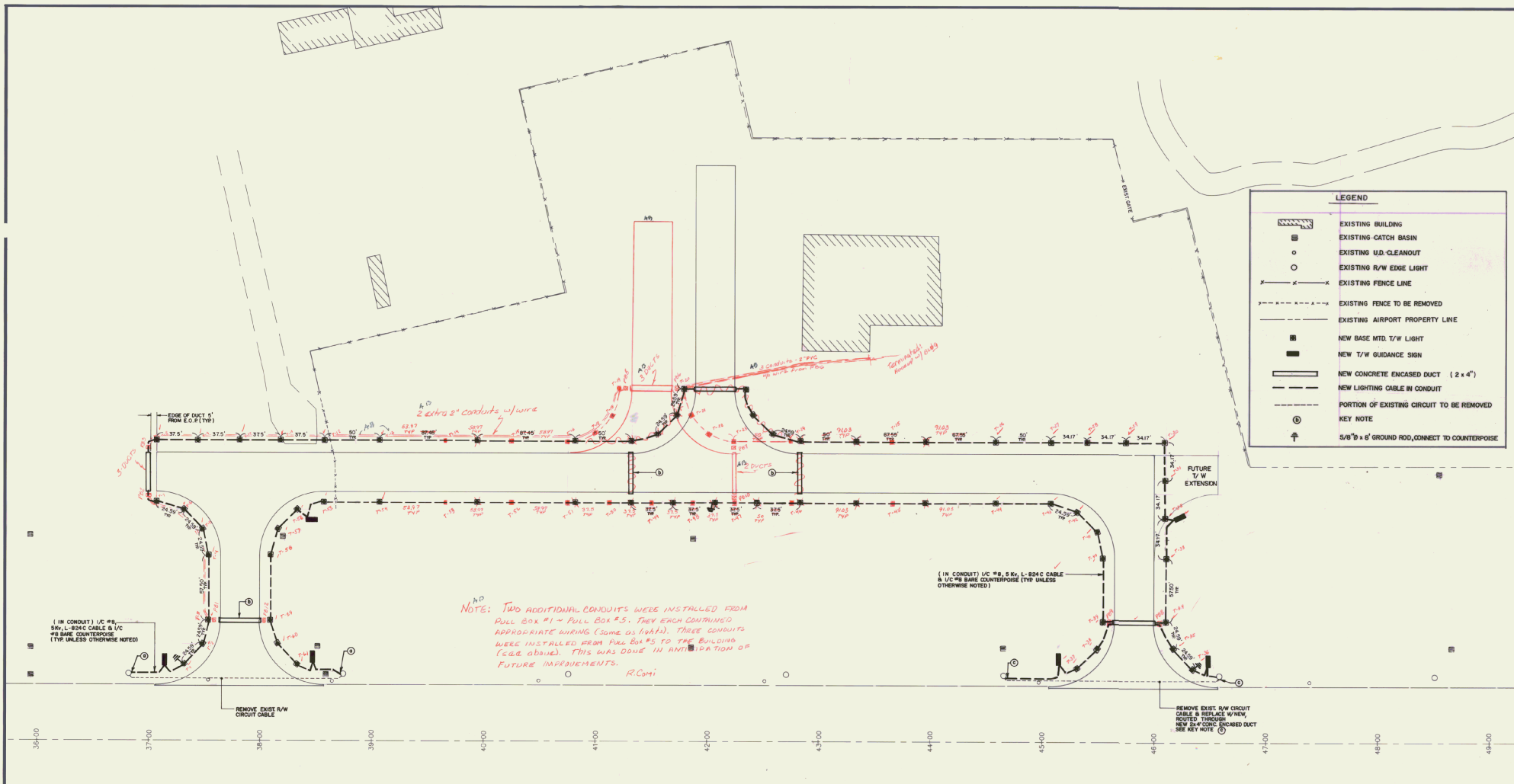
VERMONT  
 STATE OF VERMONT  
 PROFESSIONAL ENGINEER  
 License No. 3330

Scale 1" = 40'  
 Sheet 4 of 19

Rev.	Description	By	Date







**LEGEND**

- EXISTING BUILDING
- EXISTING CATCH BASIN
- EXISTING U.D. CLEANOUT
- EXISTING R/W EDGE LIGHT
- EXISTING FENCE LINE
- EXISTING FENCE TO BE REMOVED
- EXISTING AIRPORT PROPERTY LINE
- NEW BASE MTD. T/W LIGHT
- NEW T/W GUIDANCE SIGN
- NEW CONCRETE ENCASED DUCT (2 x 4")
- NEW LIGHTING CABLE IN CONDUIT
- PORTION OF EXISTING CIRCUIT TO BE REMOVED
- KEY NOTE
- 5/8" DIA x 6' GROUND ROD, CONNECT TO COUNTERPOISE

**NOTE:** TWO ADDITIONAL CONDUITS WERE INSTALLED FROM PULL BOX #1 - PULL BOX #3. THEY EACH CONTAINED APPROPRIATE WIRING (SOME U/I/AF). THREE CONDUITS WERE INSTALLED FROM PULL BOX #5 TO THE BUILDING (SEE ABOVE). THIS WAS DONE IN ANTICIPATION OF FUTURE IMPROVEMENTS.

(1 IN CONDUIT) U/C #8, 5 KV, L-324 C CABLE & U/C #8 BARE COUNTERPOISE (TYP UNLESS OTHERWISE NOTED)

**KEY NOTES**

- CONNECT NEW T/W LIGHTING CIRCUIT TO EXISTING R/W LIGHT TRANSFORMER WITH L-823 CONNECTOR.
- NEW 2 X 4" CONCRETE ENCASED DUCT FOR FUTURE USE, ENDS CAPPED.
- RECONNECT R/W LIGHTING CIRCUIT WITH NEW CABLE AT EXISTING LIGHT USING L-823 CONNECTOR.

**NOTES:**

1. AIRPORT MANAGER WILL PROVIDE THE CONTRACTOR WITH A LIGHTING SYSTEM NUMBERING NOMENCLATURE AT THE PRECONSTRUCTION CONFERENCE. THE CONTRACTOR SHALL TAG ALL LIGHTS INSTALLED OR RELOCATED ON THE PROJECT WITH THE APPROPRIATE NUMBER.
2. LIGHTS SHALL BE PLACED 10' FROM EDGE OF PAVEMENT UNLESS OTHERWISE NOTED. SIGNS SHALL BE PLACED 20' FROM EDGE OF PAVEMENT. EXACT LOCATIONS FOR SIGNS SHALL BE DETERMINED BY THE ENGINEER.

**T/W LIGHTING PLAN**  
1" = 40'

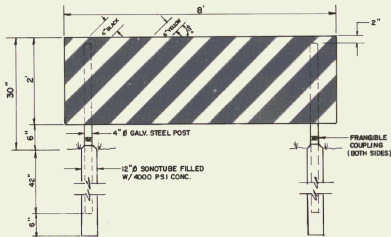
EDWARD F. KNAPP STATE AIRPORT  
**T/W LIGHTING PLAN**  
BERLIN AIR 04-3077 VERMONT

Client No.	B12017
Proj. Manager	DCD
Proj. Designer	PJM
Drawn By	TYS
Checked By	DCD
Scale	1" = 40'
Approved	LJC
Date	DEC. 1993

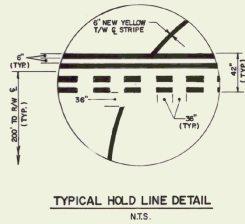
**DH**  
Dufresne-Henry  
400 Southborough Drive  
So. Portland, ME 04060

Sheet 7 of 19

Rev.	Description	By	Date



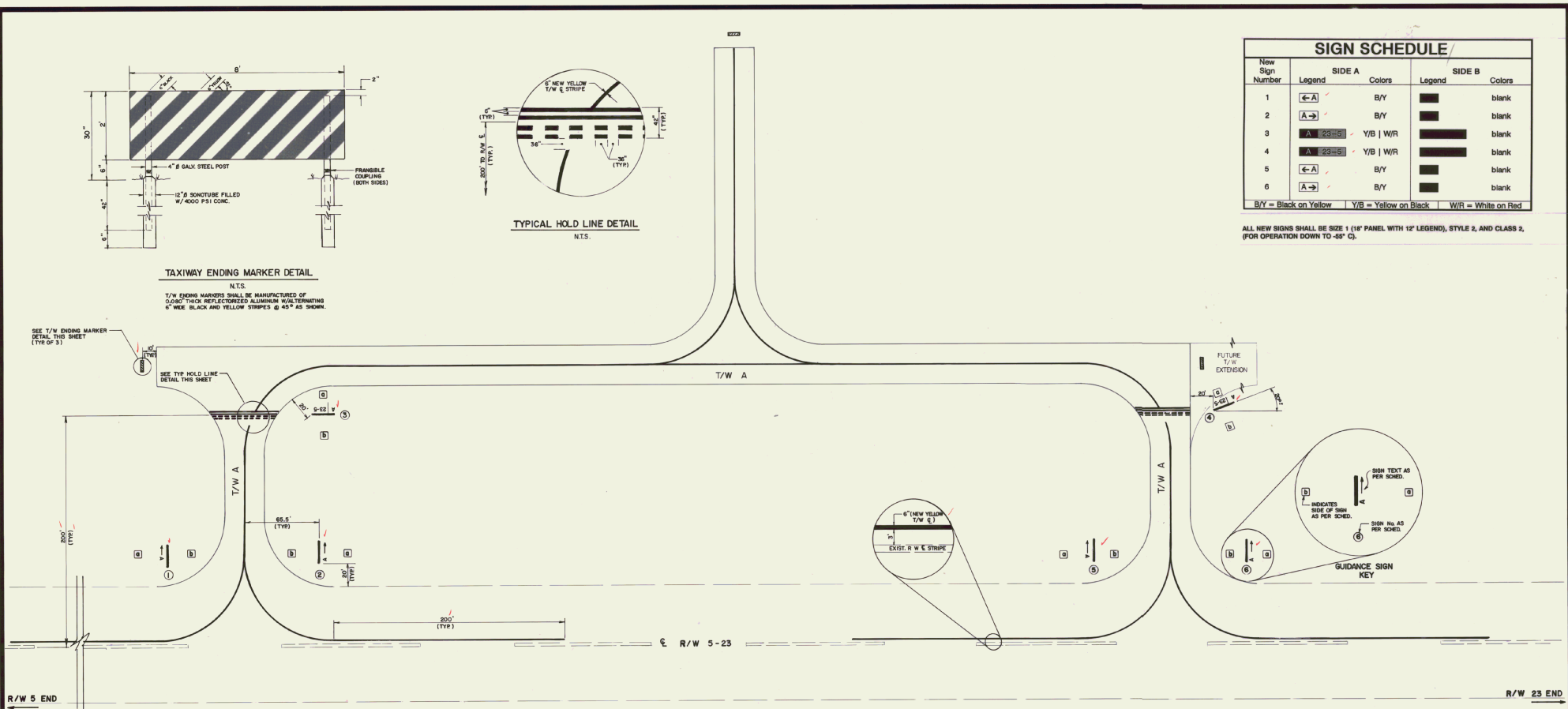
**TAXIWAY ENDING MARKER DETAIL**  
N.T.S.  
T/W ENDING MARKERS SHALL BE MANUFACTURED OF 0.080\"/>



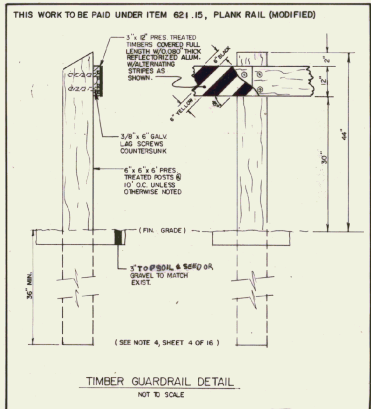
**TYPICAL HOLD LINE DETAIL**  
N.T.S.

New Sign Number	SIDE A		SIDE B	
	Legend	Colors	Legend	Colors
1	← A	B/Y	■	blank
2	A →	B/Y	■	blank
3	A 23=B	Y/B   W/R	■	blank
4	A 23=B	Y/B   W/R	■	blank
5	← A	B/Y	■	blank
6	A →	B/Y	■	blank

B/Y = Black on Yellow Y/B = Yellow on Black W/R = White on Red  
ALL NEW SIGNS SHALL BE SIZE 1 (18\"/>



**T/W MARKING & GUIDANCE SIGN PLAN**  
1\"/>



**TIMBER GUARDRAIL DETAIL**  
NOT TO SCALE

- NOTES:**
- PAINT SHALL BE AVIATION YELLOW, NON-REFLECTIVE, CONFORMING TO FEDERAL SPECIFICATION TT-P-45.
  - WORK WITHIN 200 FEET OF THE RUNWAY SHALL BE COORDINATED WITH BOTH THE RESIDENT ENGINEER AND THE AIRPORT MANAGER AT LEAST 48 HOURS IN ADVANCE.

EDWARD F. KNAPP STATE AIRPORT  
AIR 04-3077

**T/W MARKING AND GUIDANCE SIGN LAYOUT PLAN**

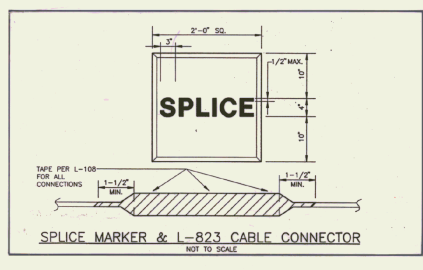
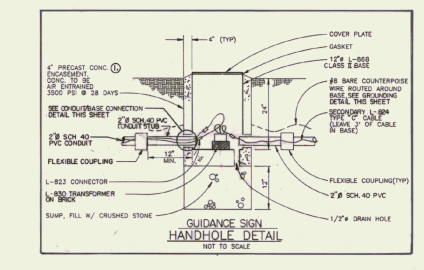
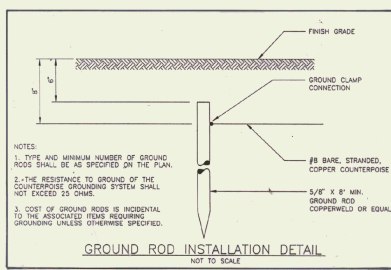
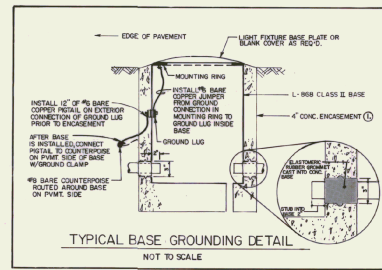
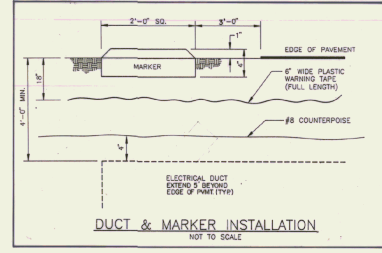
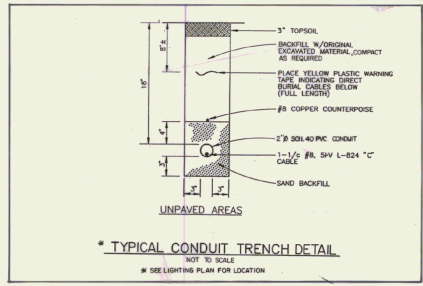
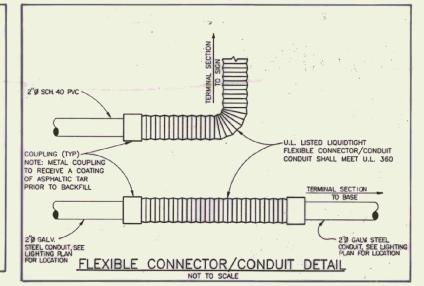
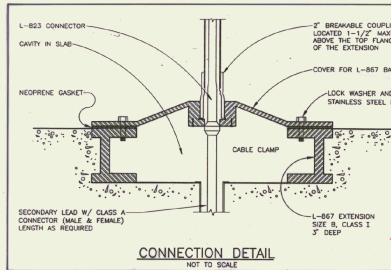
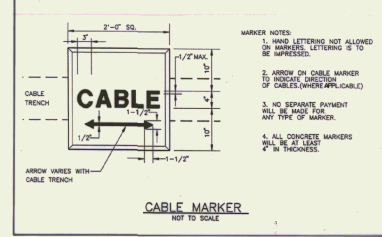
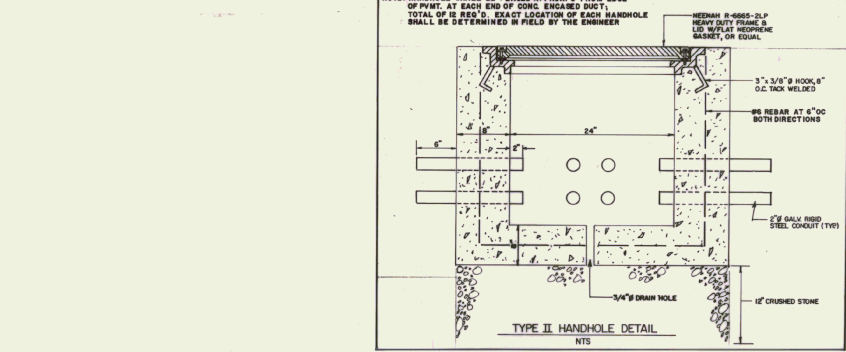
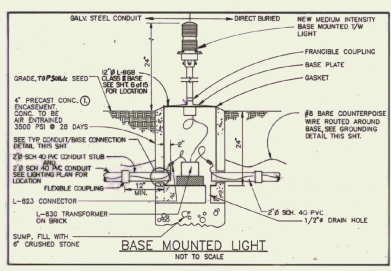
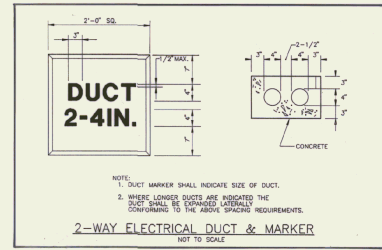
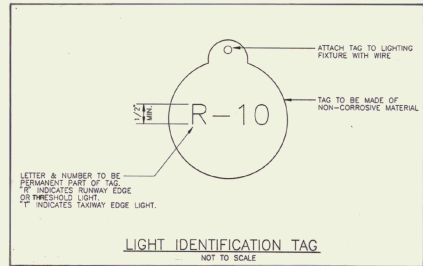
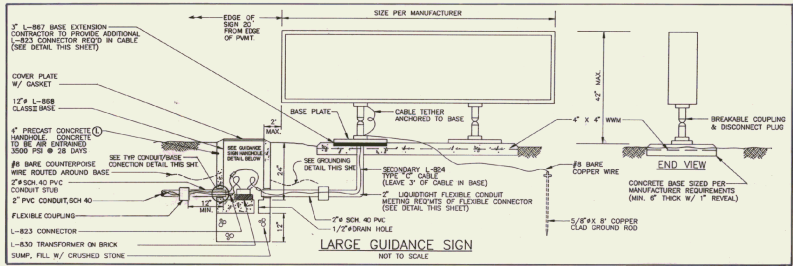
BERLIN, VERMONT

Client No.	812017
Prog. Manager	DCD
Prog. Designer	PJM
Drawn By	TVS
Checked By	DCD
Scale	1\"/>
Approved	LJC
Date	DEC. 1993

Sheet 8 of 19

Rev.	Description	By	Date

45373.3



CONCRETE ENCASUREMENT IS NOT REQUIRED UNLESS SPECIFIED FOR THIS WORK.

EDWARD F. KNAPP STATE AIRPORT  
**ELECTRICAL DETAILS**  
AIR 04-3077

BERLIN, INC. Client No. 812017  
Dudman, DCD  
Prof. Designer P.J.M.  
Drawn By TVS  
Checked By DCD  
Scale AS SHOWN  
Approved L.J.C.  
Date DEC. 1993

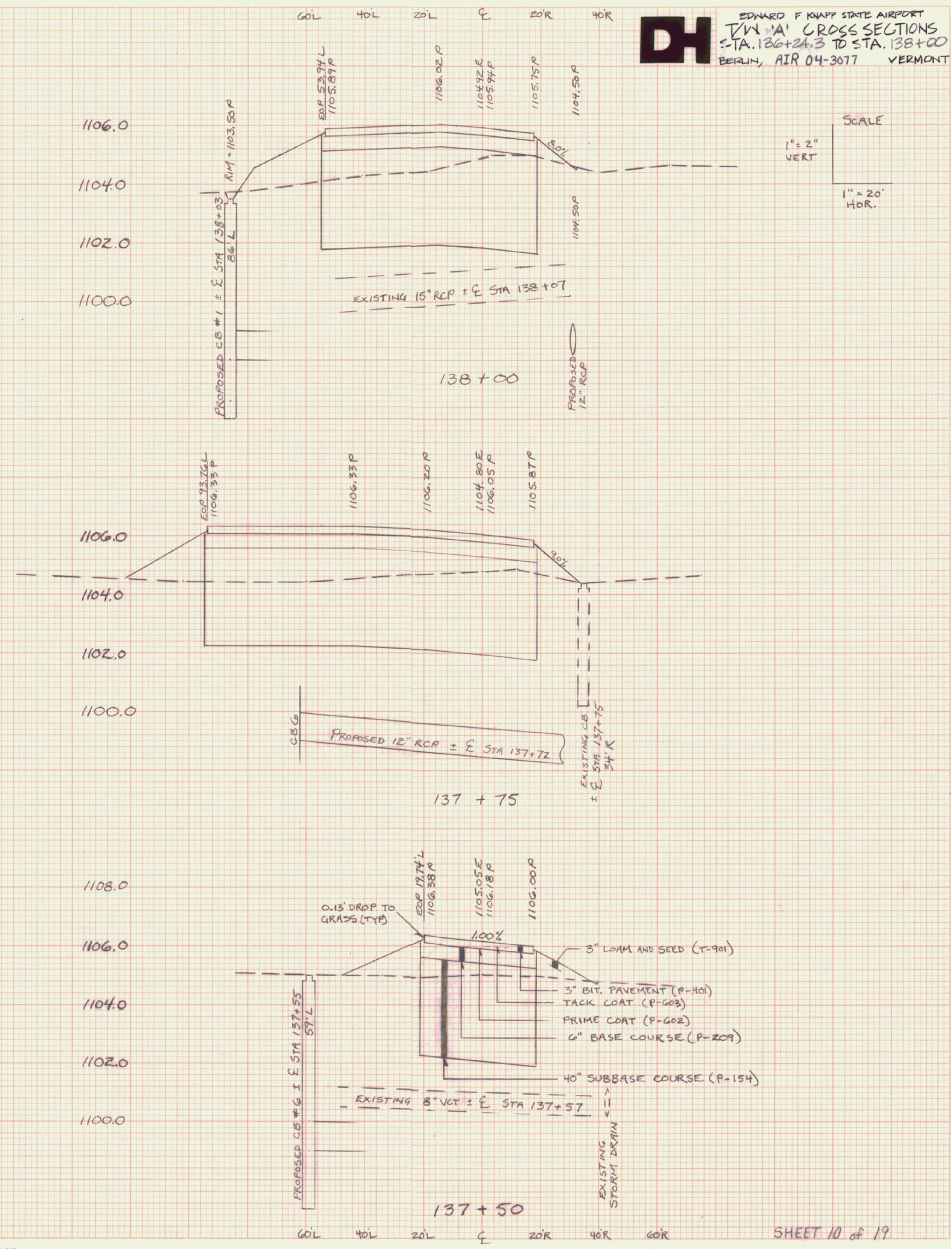
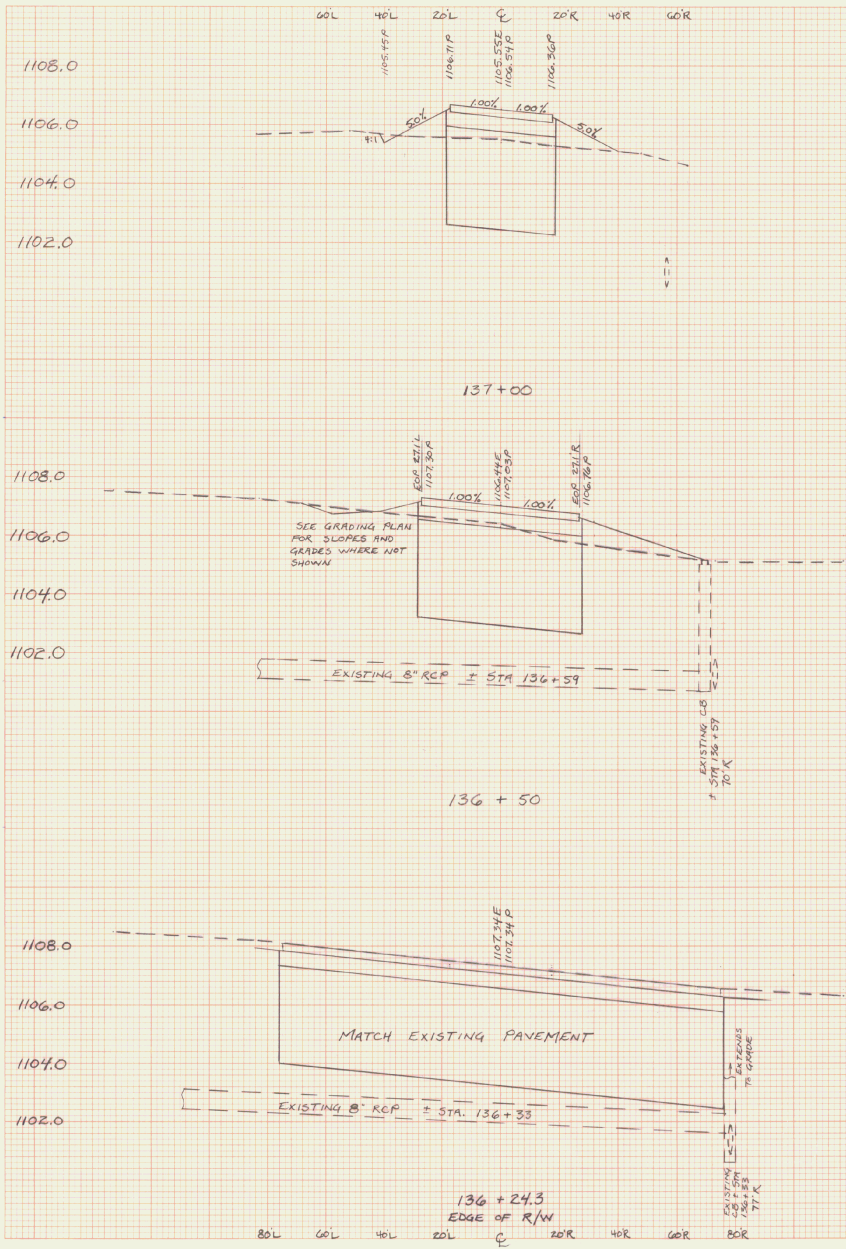
REV. Description By Date

100 Southborough Drive  
So. Portland, ME 04106

Sheet 9 of 19

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 BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_

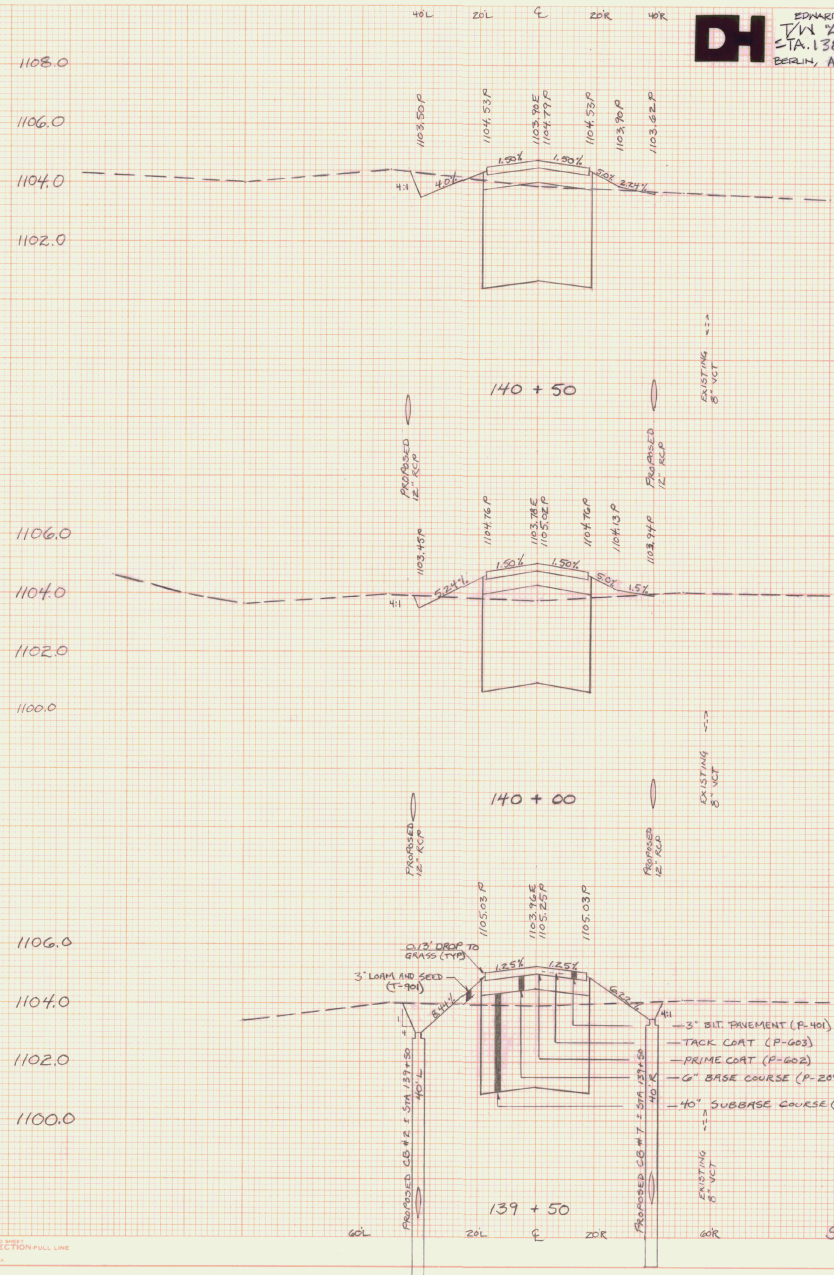
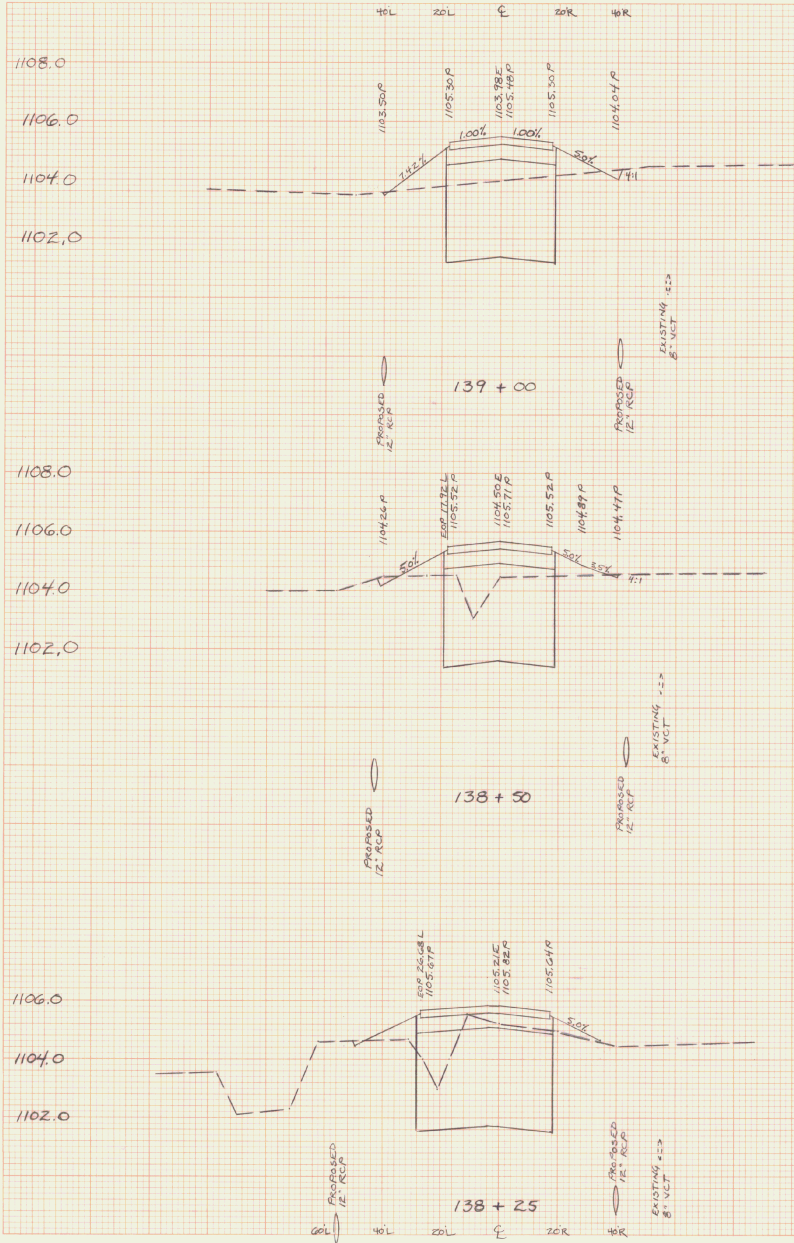
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 BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_



SCALE  
 1" = 2" VERT  
 1" = 20' HOR.

DATE	
BY	
PROJECT	
DESCRIPTION	
SCALE	

DATE	
BY	
PROJECT	
DESCRIPTION	
SCALE	



**DH** EDWARD F KNAPP STATE AIRPORT  
 DRAWING NO. 17A CROSS SECTIONS  
 STA. 138+25 TO STA. 140+50  
 BERLIN, AIR 04-3077 VERMONT

SCALE  
 1" = 2' VERT.  
 1" = 20' HOR.

PLATE 3-FULL CROSS SECTION-FULL LINE  
 PRINTED IN U.S.A.



SCALE  
 VERT 1" = 2'  
 HOR 1" = 20'

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_  
 TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_  
 TITLE: \_\_\_\_\_

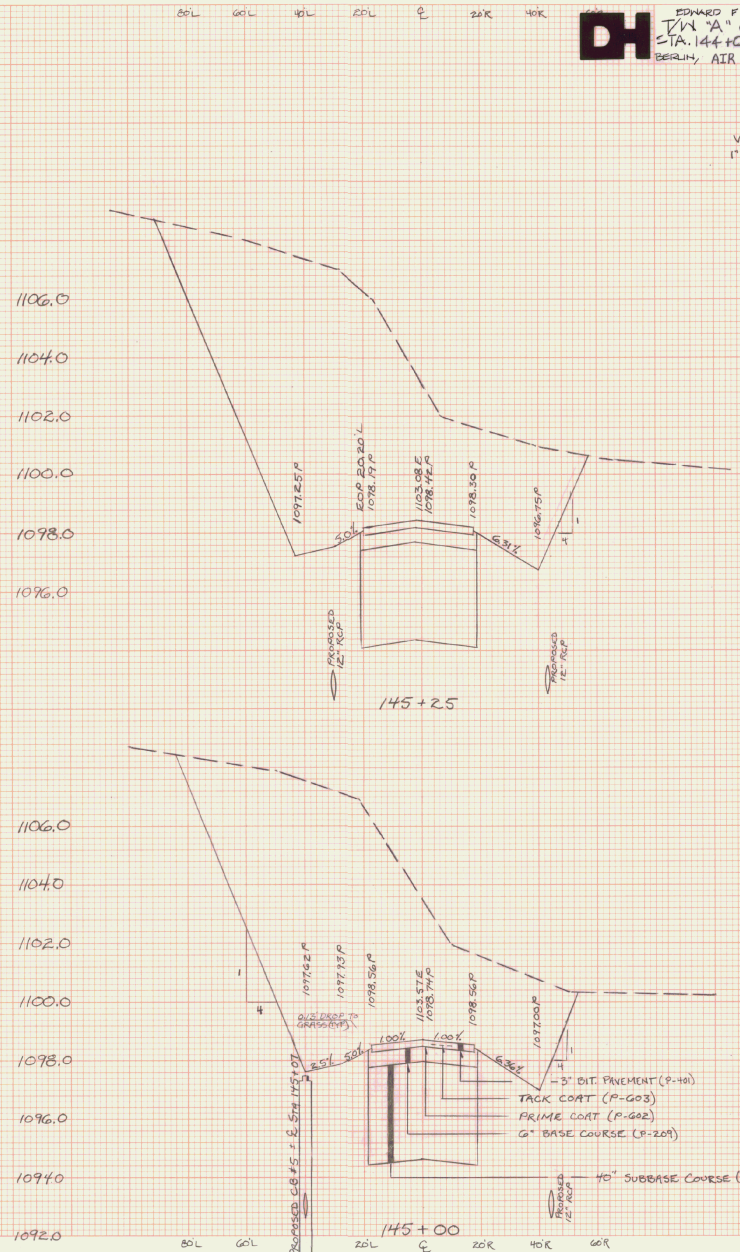
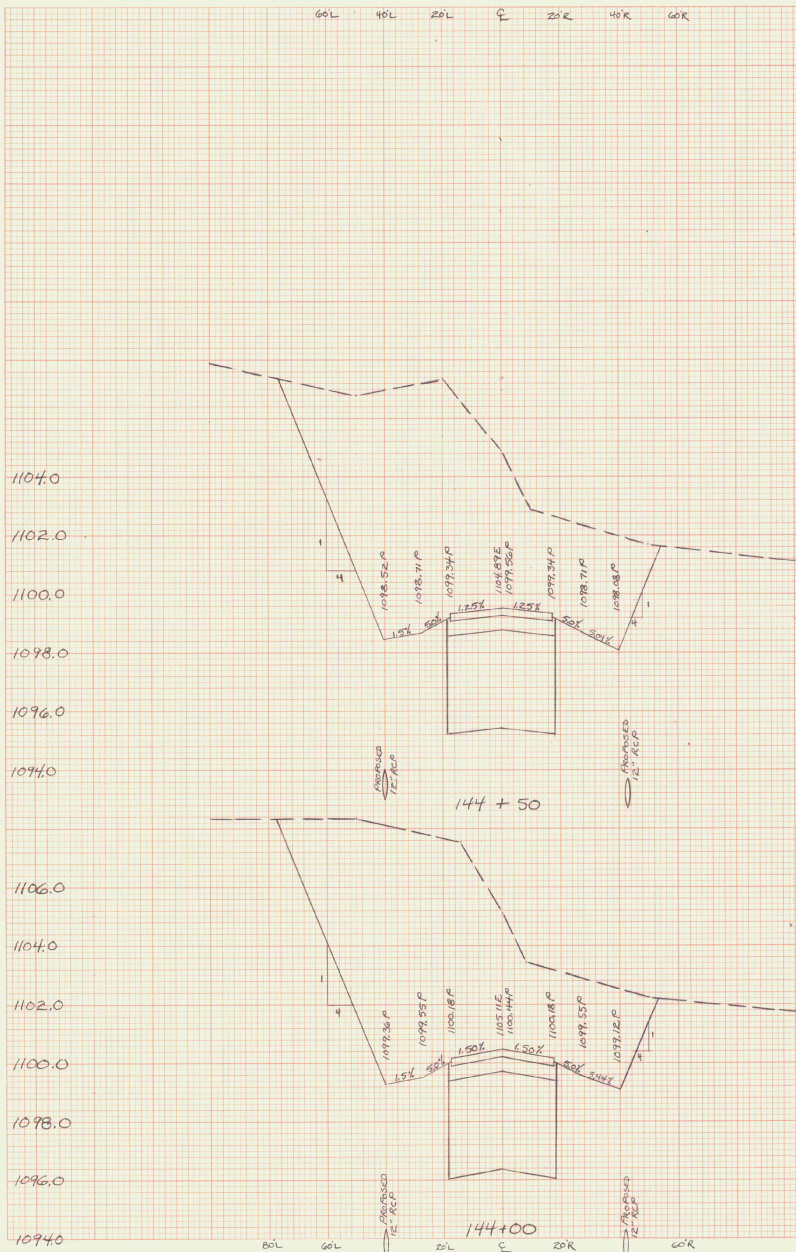


PLATE 3-FULL CROSS SECTION-FULL LINE  
 10/15/04  
 PRINTED IN U.S.A.

FINAL  
 SURVEY  
 DATE: 10/15/2010  
 DRAWN BY: [illegible]  
 CHECKED BY: [illegible]

VIRGINIA  
 SURVEY  
 DATE: 10/15/2010  
 DRAWN BY: [illegible]  
 CHECKED BY: [illegible]

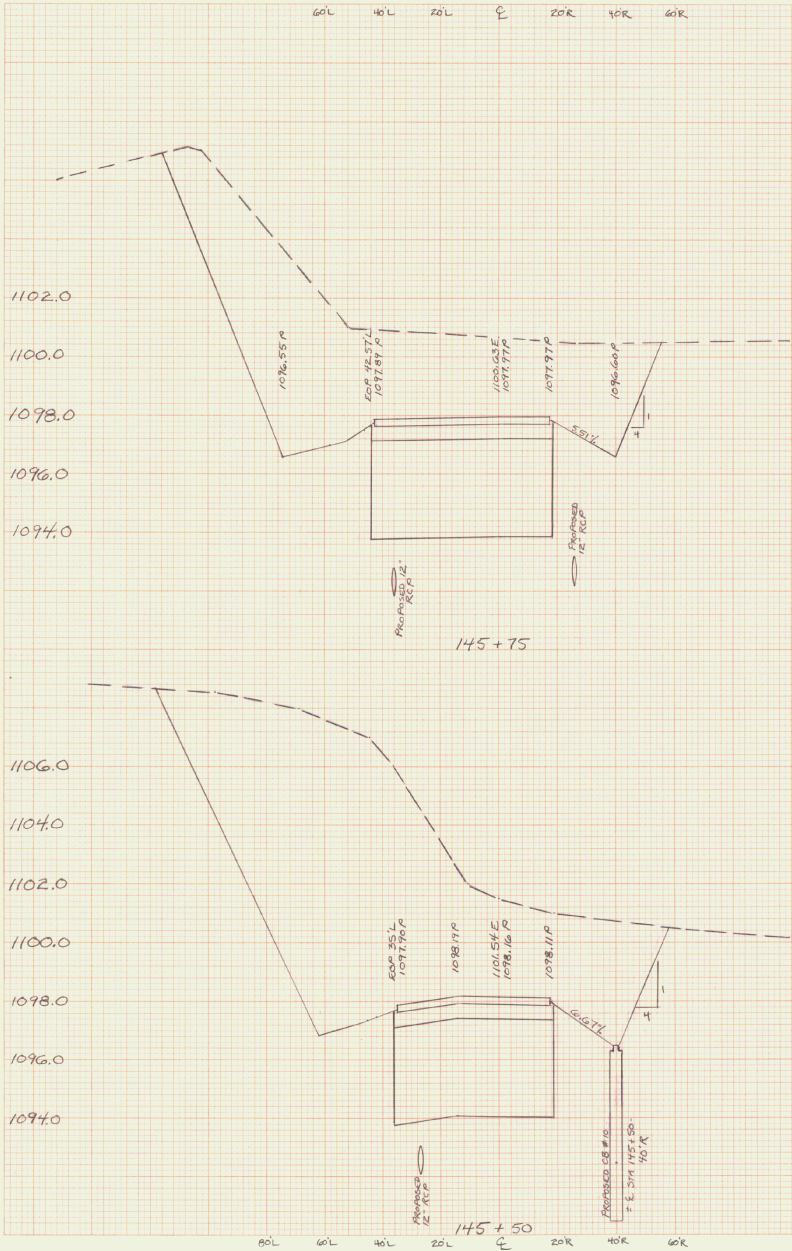
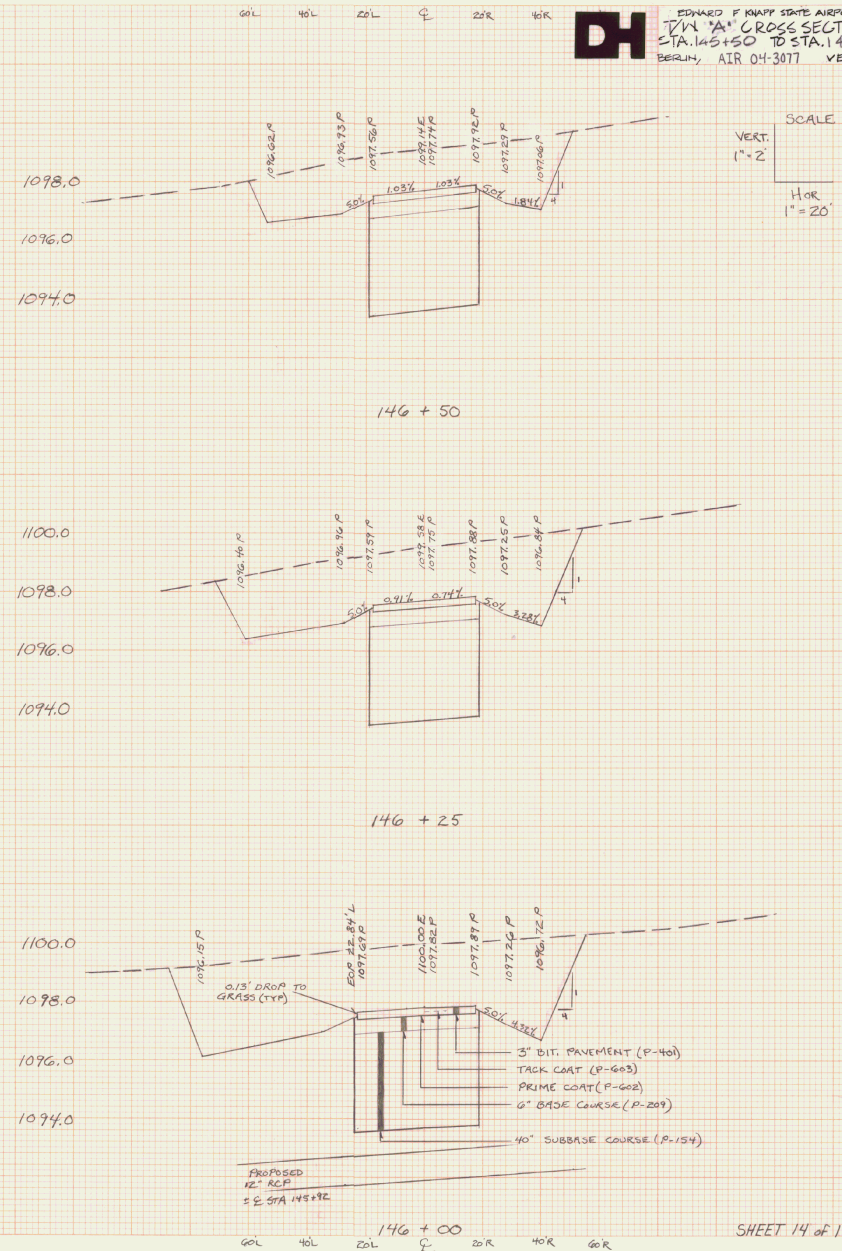


PLATE 3 - FULL CROSS SECTION FULL LINE  
 10/15/2010  
 10/15/2010



EDWARD F RANK STATE AIRPORT  
 TYPICAL CROSS SECTIONS  
 STA. 145+50 TO STA. 146+50  
 BERLIN, ATR 04-3077 VERMONT

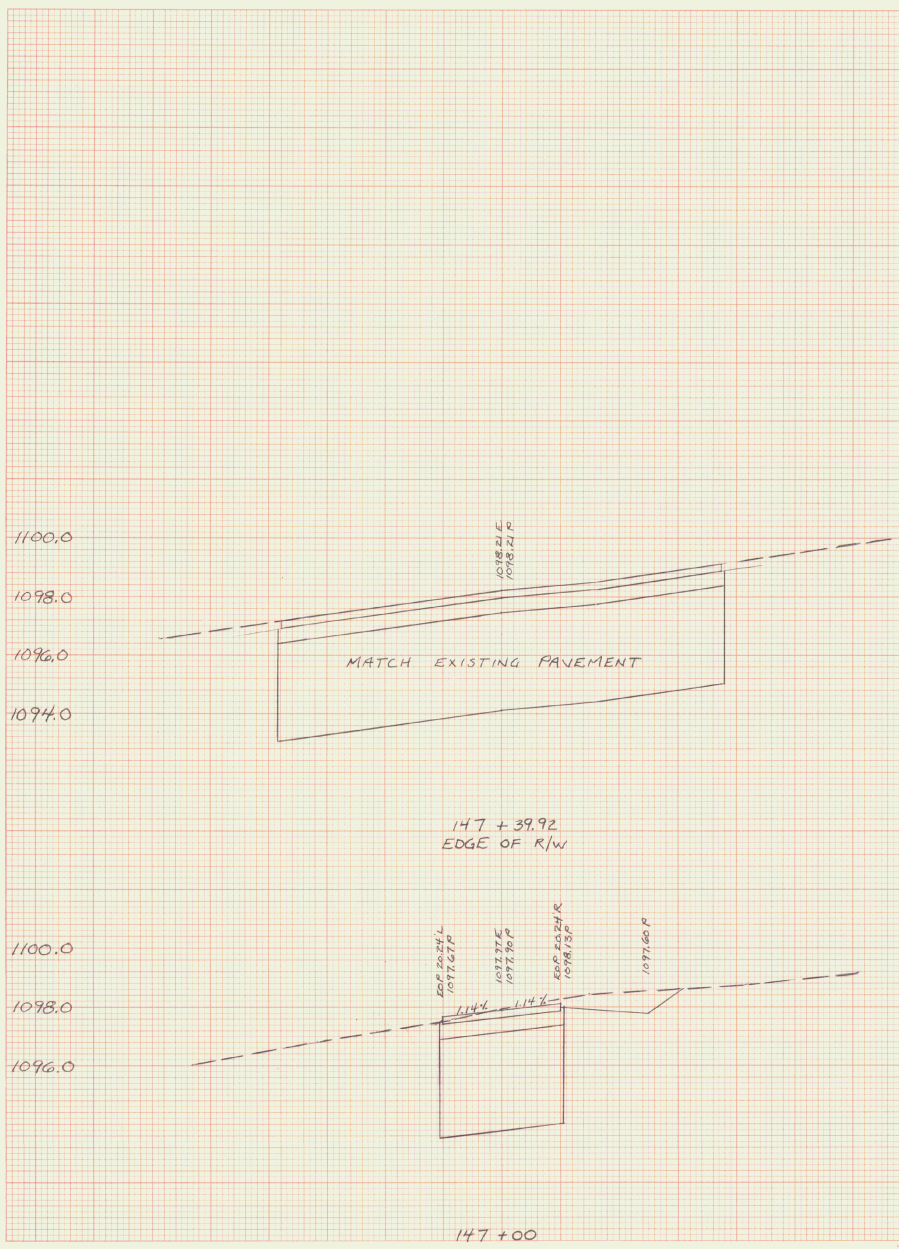


SCALE  
 VERT.  
 1" = 2'  
 HOR  
 1" = 20'

SCALE  
 VERT.  
 1" = 2'  
 HOR.  
 1" = 20'

DATE	
BY	
PROJECT	
NO.	
DATE	
BY	
PROJECT	
NO.	
DATE	
BY	

DATE	
BY	
PROJECT	
NO.	
DATE	
BY	
PROJECT	
NO.	
DATE	
BY	



FINAL  
 DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_  
 PROJECT: \_\_\_\_\_

ORIGINAL  
 DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
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 APPROVED: \_\_\_\_\_  
 PROJECT: \_\_\_\_\_

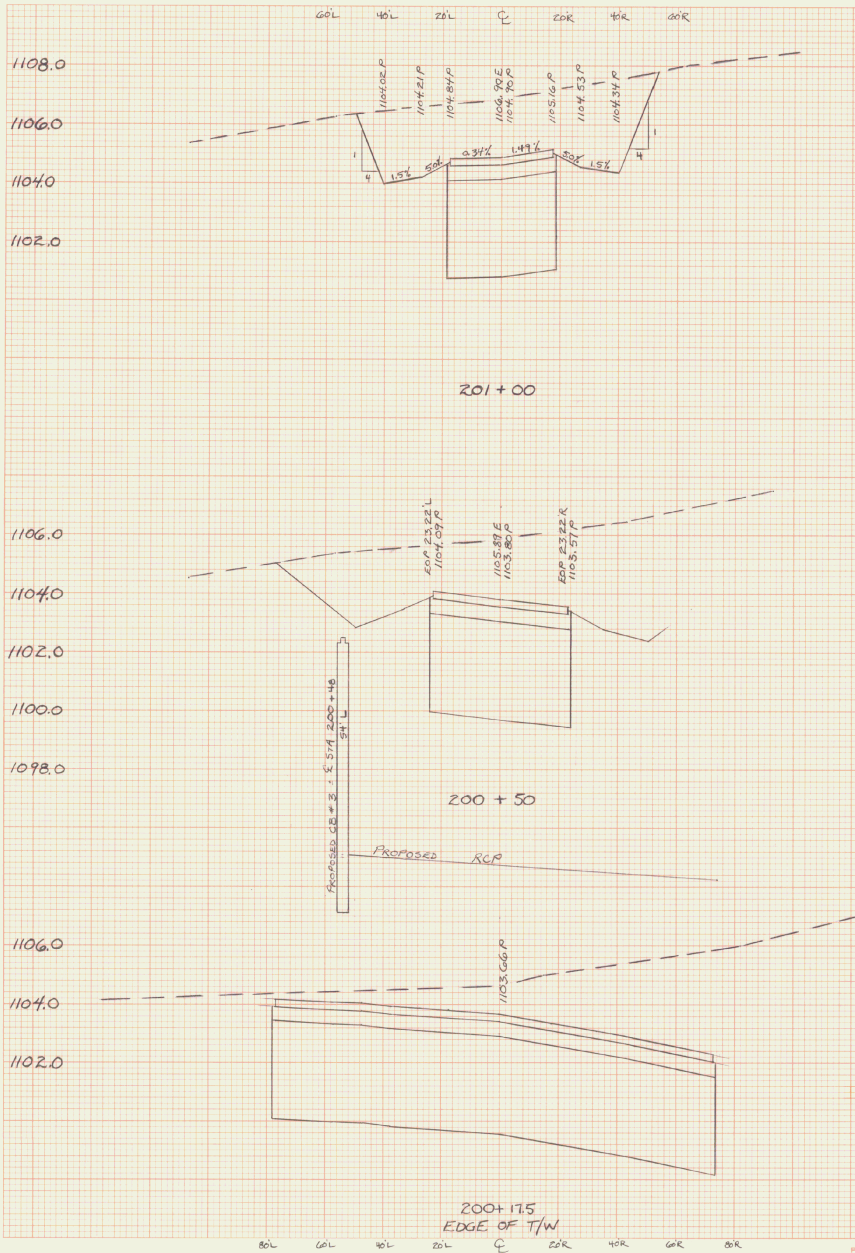
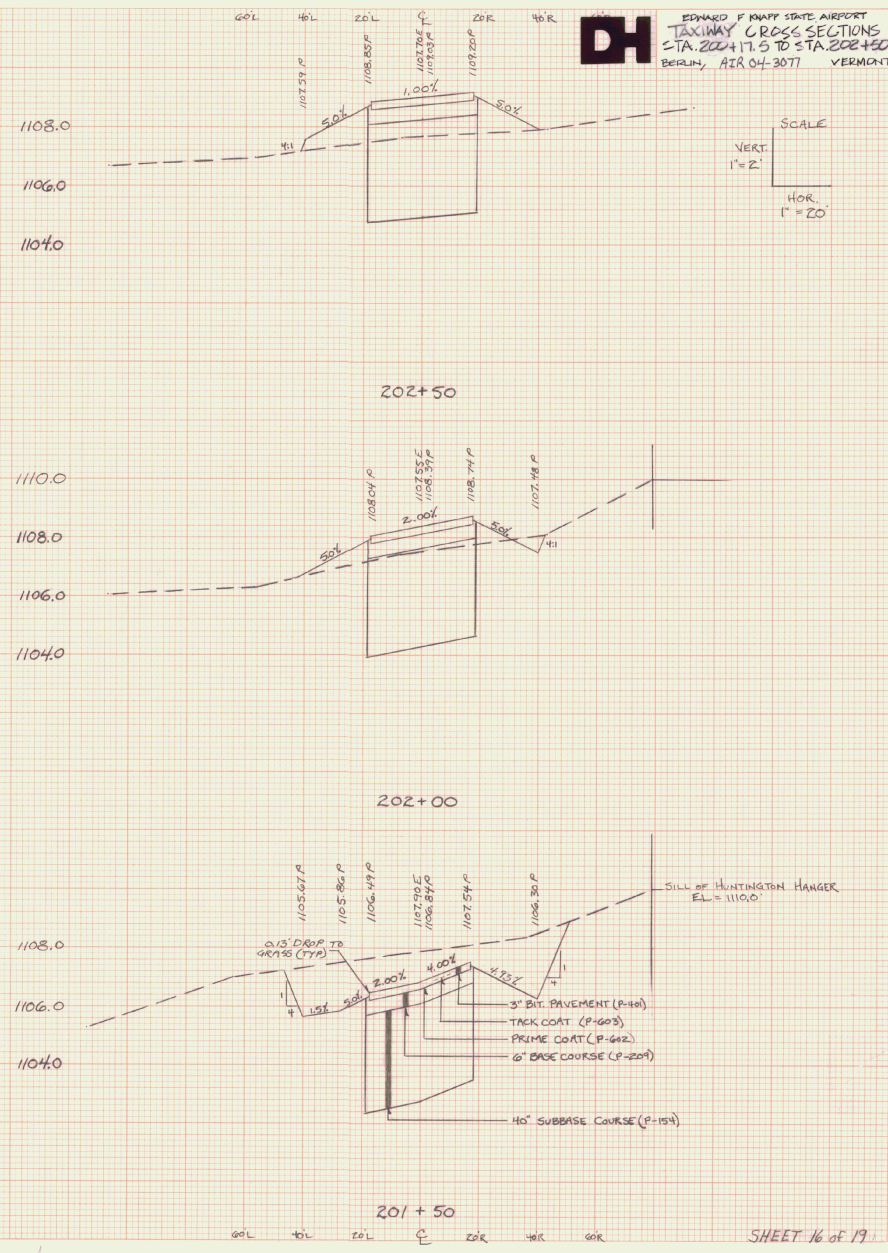


PLATE 3-FULL CROSS SECTION-FULL LINE  
 PRINTED IN U.S.A.

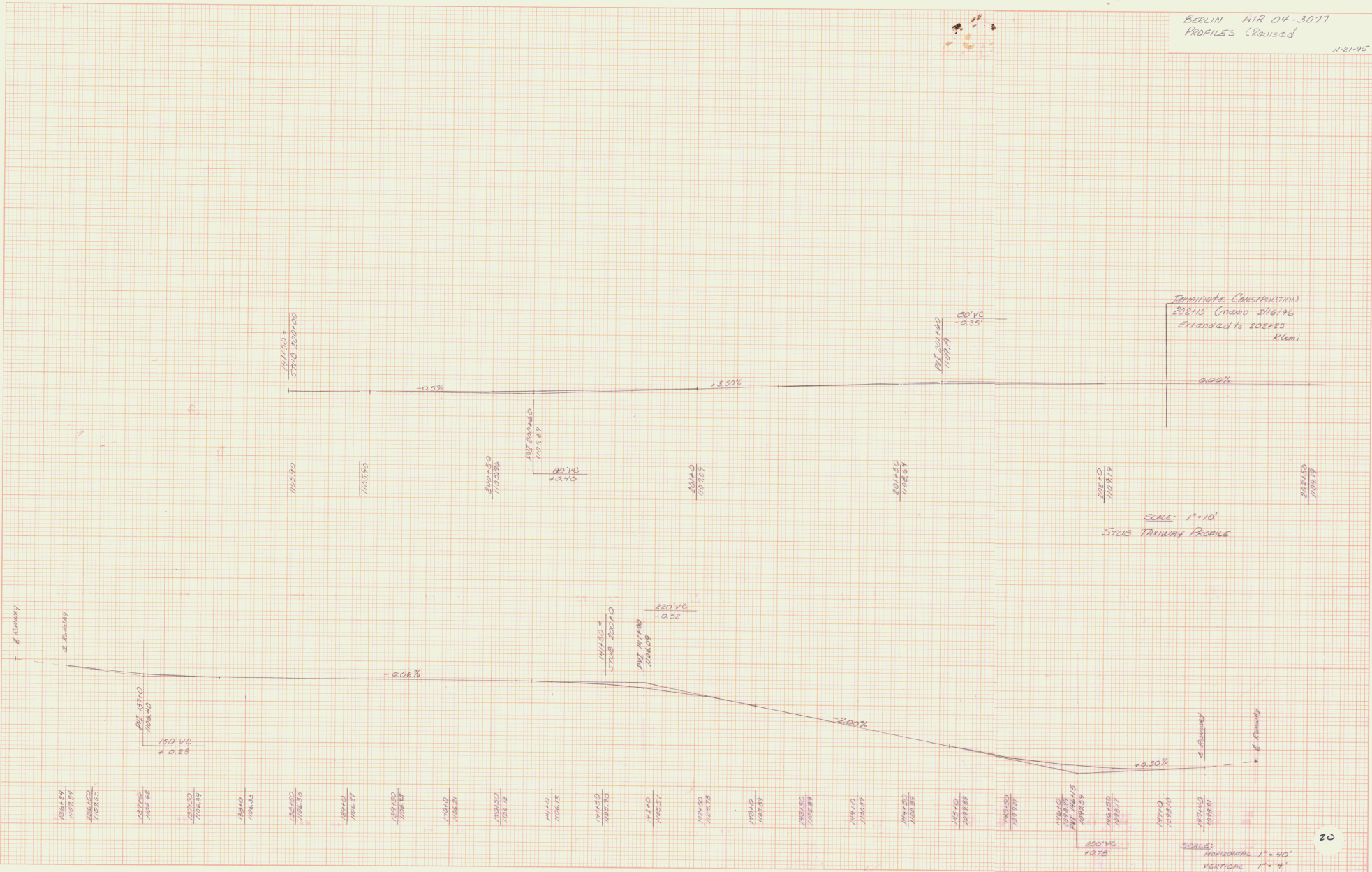


SCALE  
 VERT. 1" = 2'  
 HOR. 1" = 20'



DESIGNED	DATE
CHECKED	BY
APPROVED	
DATE	

DESIGNED	DATE
CHECKED	BY
APPROVED	
DATE	



Terminate Construction  
 202+15 (Grade 216' 1/2)  
 Extended to 202+15  
 R.R.M.

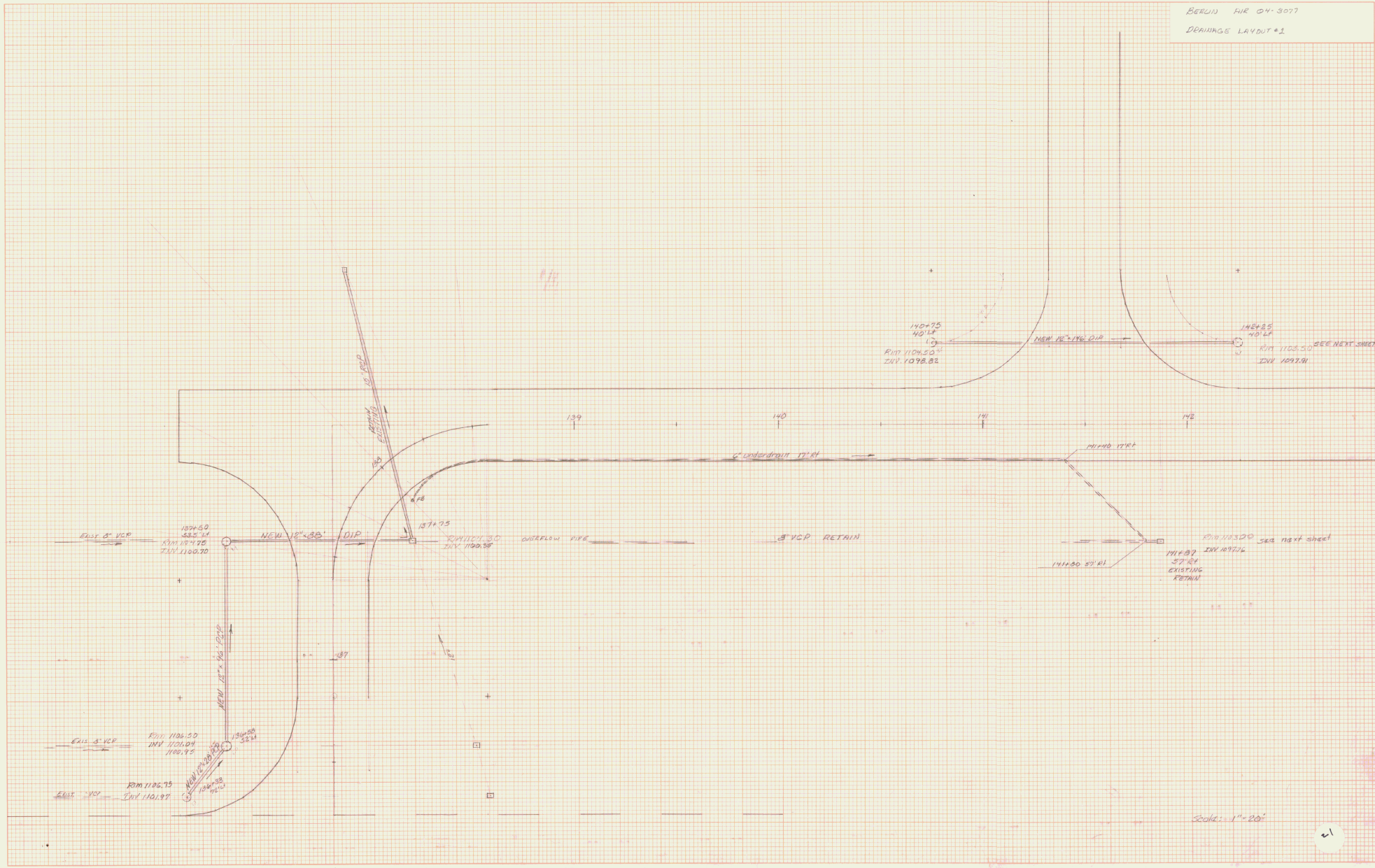
SCALE: 1"=10'  
 STUB TAXIWAY PROFILE

SCALE:  
 HORIZONTAL 1"=40'  
 VERTICAL 1"=4'

BERLIN HWY 04-3077  
DRAINAGE LAYOUT #1

DATE	BY

DATE	BY

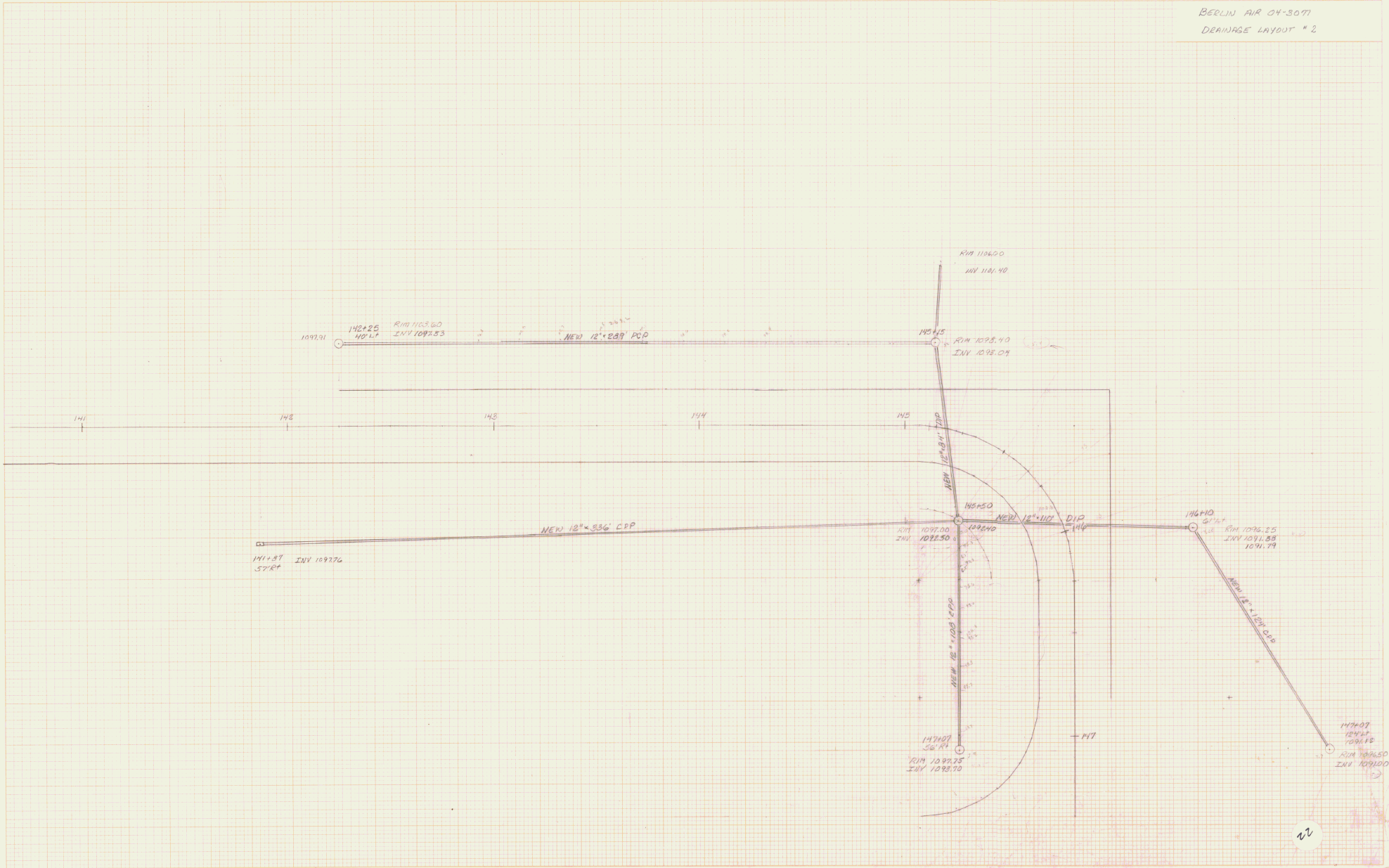


Scale: 1"=20'

BERLIN AIR 04-3077  
DRAINAGE LAYOUT # 2

DATE	
BY	
REVISION	
DESCRIPTION	
DATE	
BY	
REVISION	
DESCRIPTION	

DATE	
BY	
REVISION	
DESCRIPTION	
DATE	
BY	
REVISION	
DESCRIPTION	



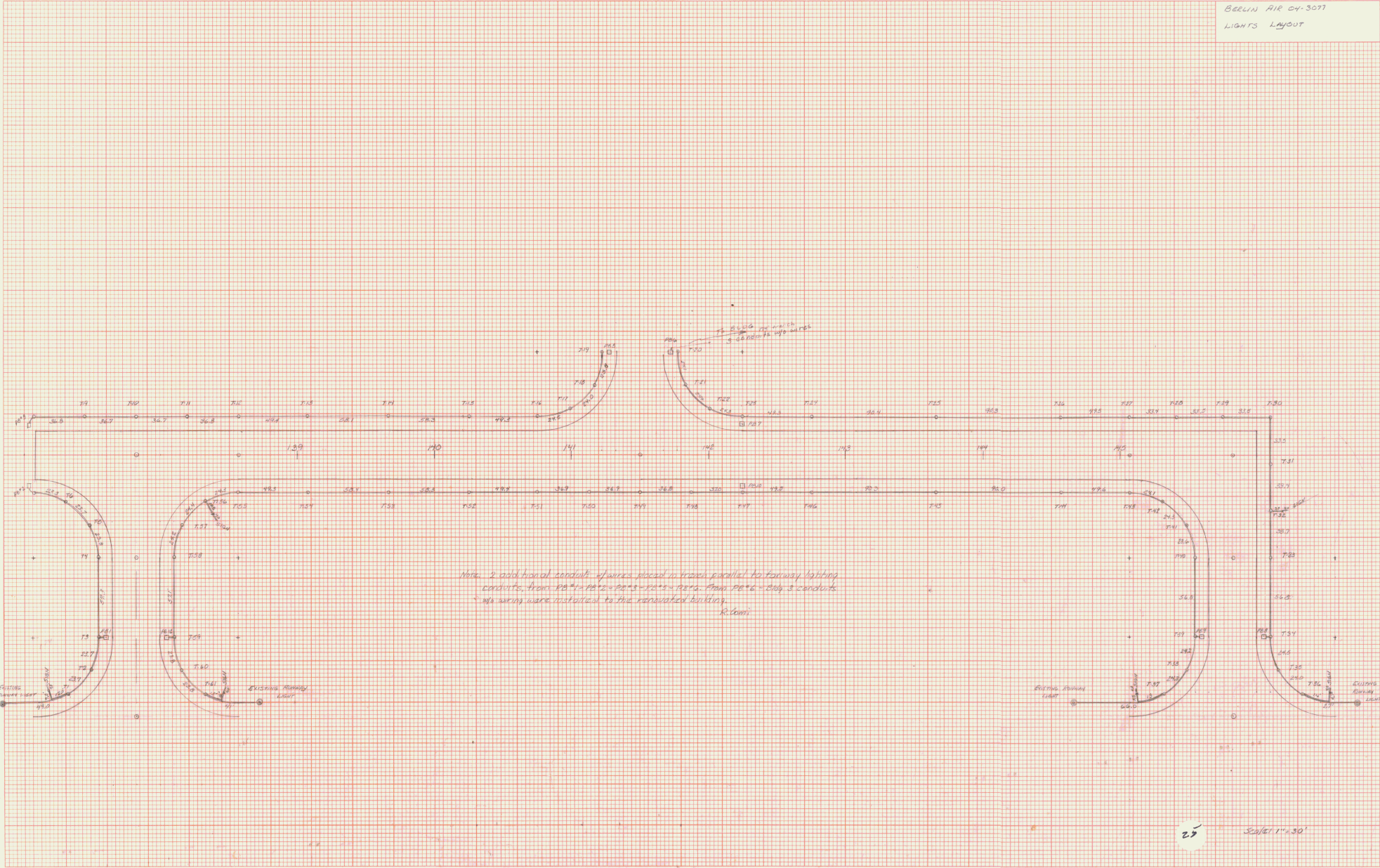




BELLEVUE AIR 04-3077  
LIGHTS LAYOUT

DATE	BY
REVISIONS	DATE
BY	DATE
BY	DATE

DATE	BY
REVISIONS	DATE
BY	DATE
BY	DATE

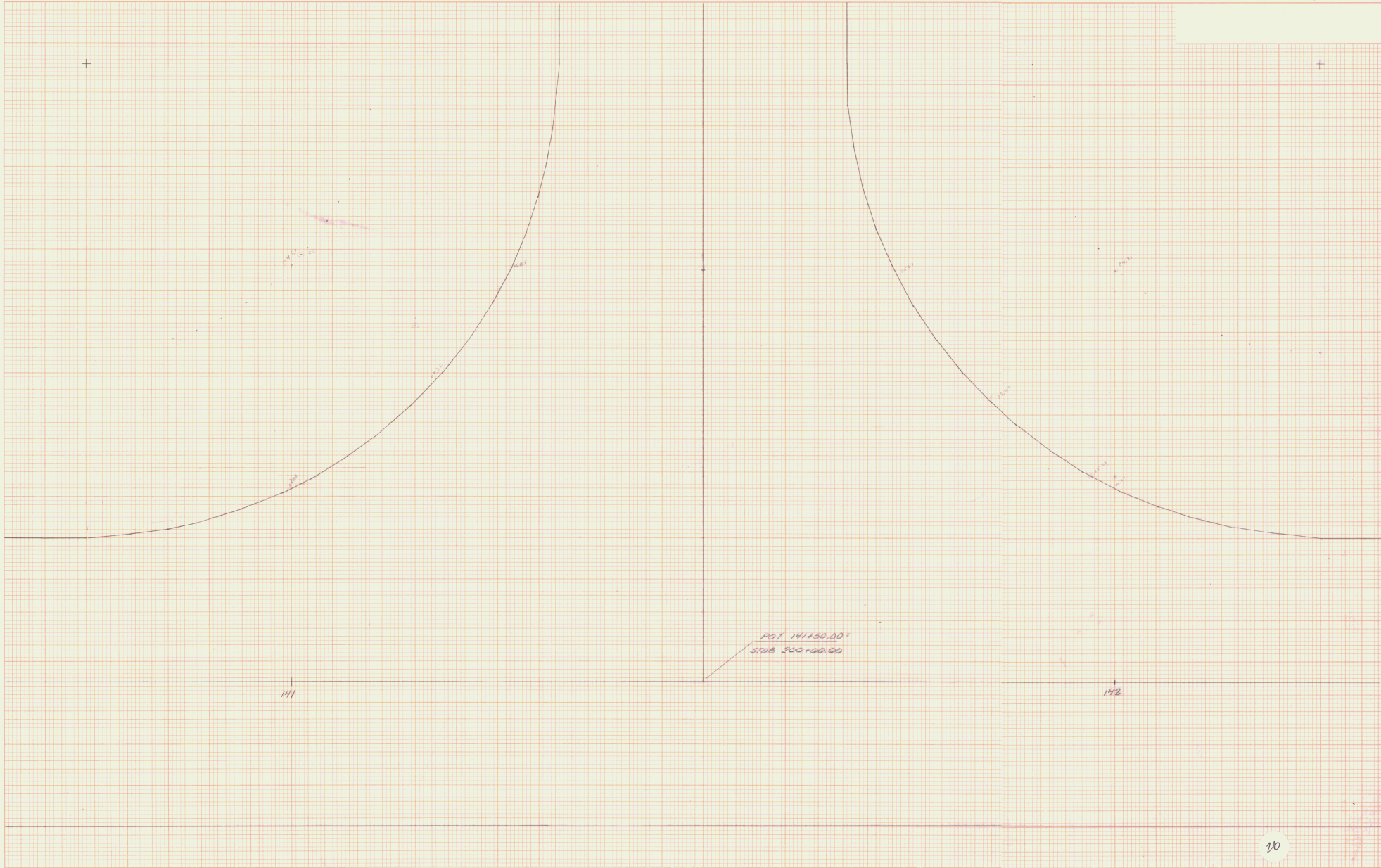


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Scale 1" = 30'

DATE	
BY	
PROJECT NO.	
PLANT NO.	
ROUTE NO.	
MILE	
SCALE	

DATE	
BY	
PROJECT NO.	
PLANT NO.	
ROUTE NO.	
MILE	
SCALE	

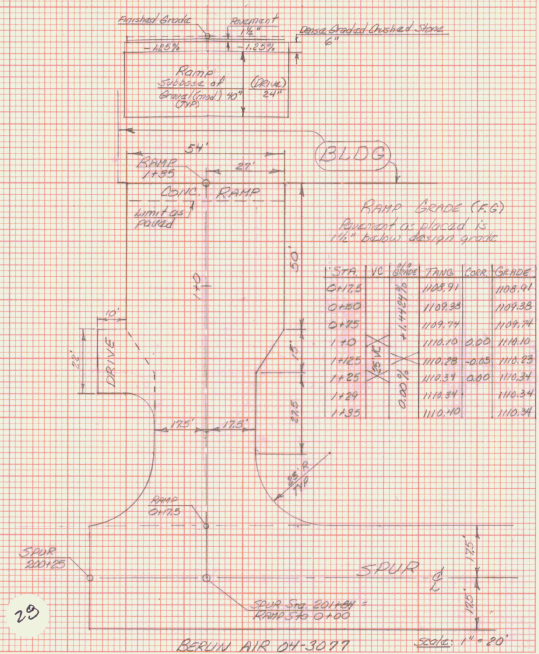




BERLIN AIR 04-3077  
Ramp to hangar

DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
SCALE: \_\_\_\_\_

DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
SCALE: \_\_\_\_\_

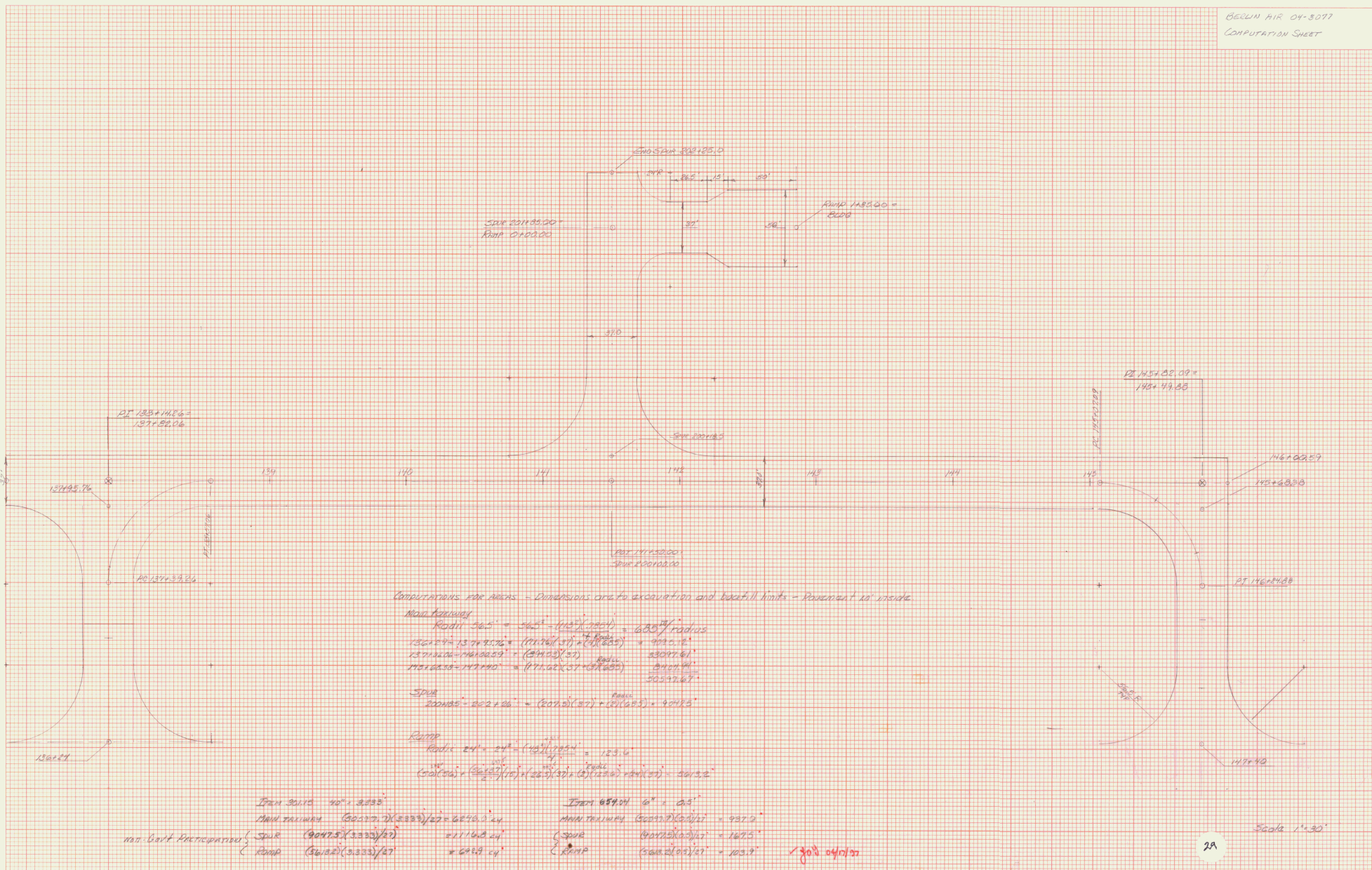


29

BERLIN AIR 04-3077 Scale: 1" = 20'

DATE	
BY	
DESIGNED BY	
CHECKED BY	
IN CHARGE	
SCALE	

DATE	
BY	
DESIGNED BY	
CHECKED BY	
IN CHARGE	
SCALE	



COMPUTATIONS FOR AREAS - DIMENSIONS OF CUTS AND BEACON LIMITS - ROADWAY 10' WIDE

Main Roadway  
 Radius 56.5' =  $56.5^2 - (112)(.284) = 655.7$  radius  
 $136 + 27 + 137 + 95.76 + (112)(.27) + (112)(.284) = 499.516'$   
 $137 + 95.76 - 146 + 28.09 = (27)(.27) = 33097.61$   
 $170 + 28.18 - 177 + 10 = (112)(.27) + (112)(.284) = 59404.94$   
 50597.67

SPUR  
 Radius 30' =  $30^2 - (60)(.27) + (60)(.284) = 904.2$

Ramp  
 Radius 24' =  $24^2 - (48)(.284) = 123.6$   
 $(27)(.27) + (27)(.284) + (27)(.284) + (27)(.27) = 2013.2$

Iron 30' =  $30^2 = 900$   
 Main roadway  $(60)(.27)(.284)/2 = 2450.54$

Iron 24' =  $24^2 = 576$   
 Main roadway  $(60)(.27)(.284)/2 = 927.0$

non-Part Participation  
 Spur  $(60)(.27)(.284)/2 = 2116.24$   
 Ramp  $(60)(.27)(.284)/2 = 2013.24$

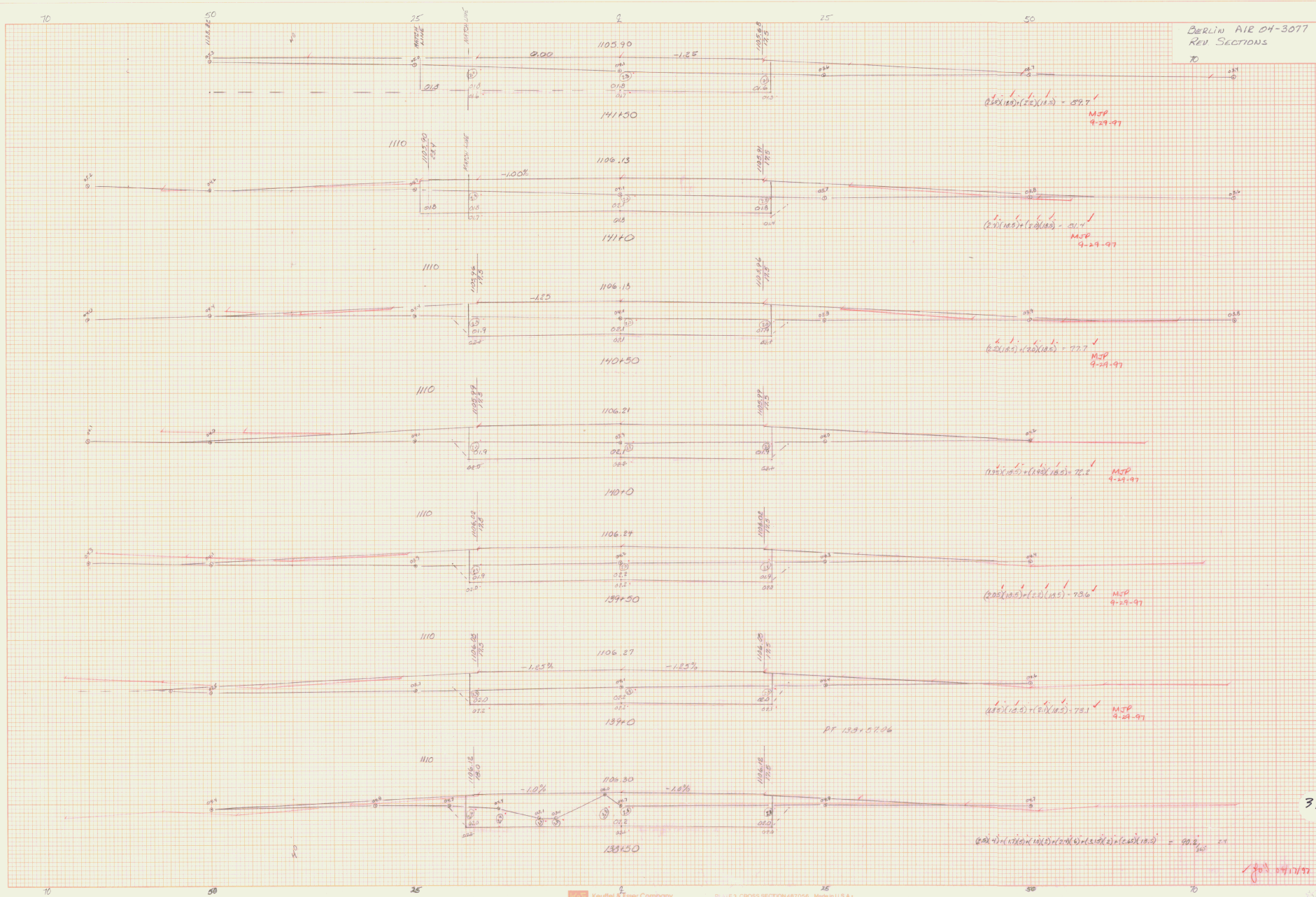
Spur  $(60)(.27)(.284)/2 = 1675$   
 Ramp  $(60)(.27)(.284)/2 = 103.9$

✓ good system

Scale 1" = 30'



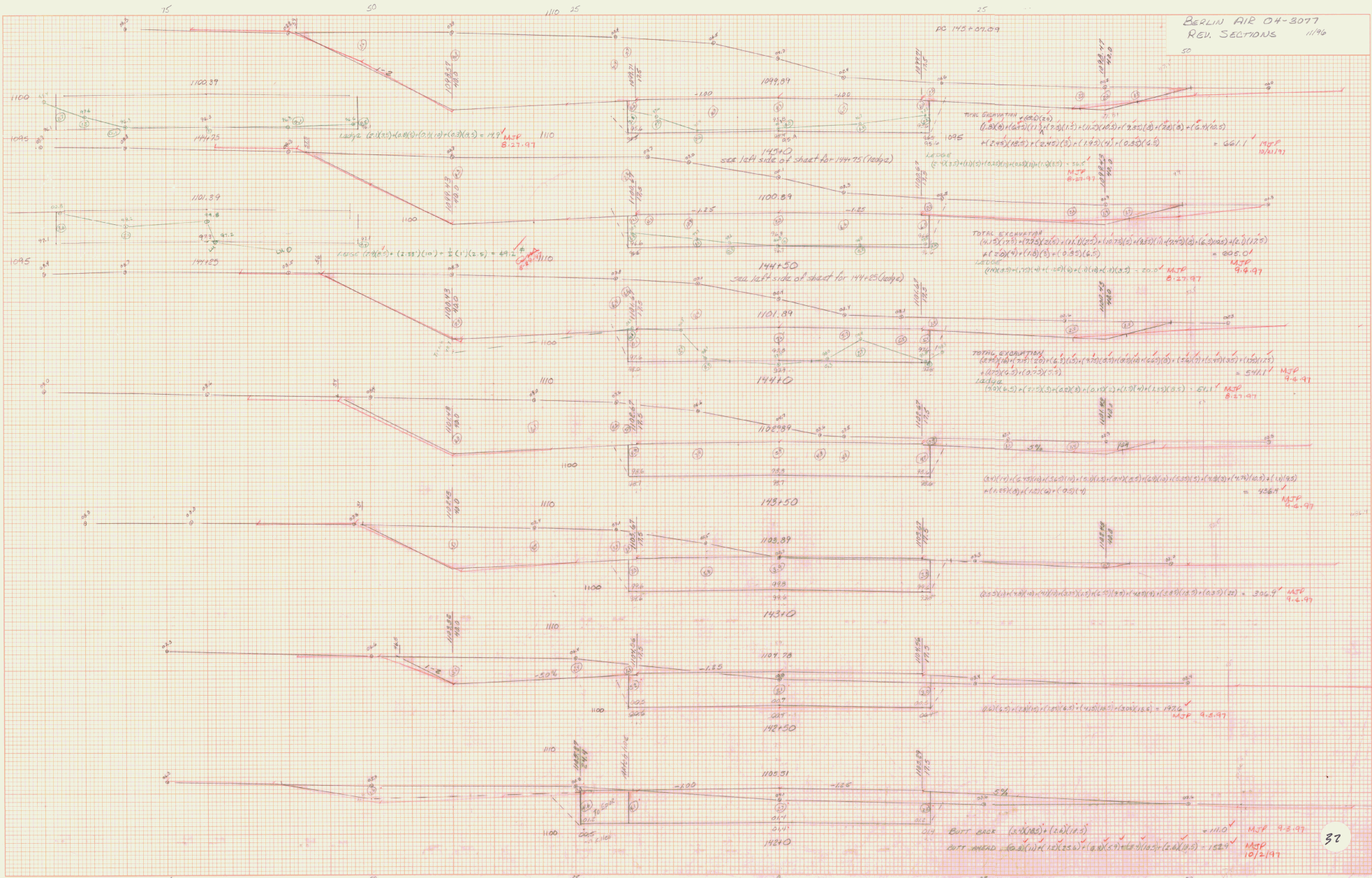
BERLIN AIR 04-3077  
REV SECTIONS  
70



DATE	
BY	
PROJECT	
DESCRIPTION	
DATE	

DATE	
BY	
PROJECT	
DESCRIPTION	
DATE	

BERLIN AIR 04-3077  
REV. SECTIONS 1176



DATE	
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REVISIONS	
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BERLIN AIR 04-3077  
REV. SECTIONS

