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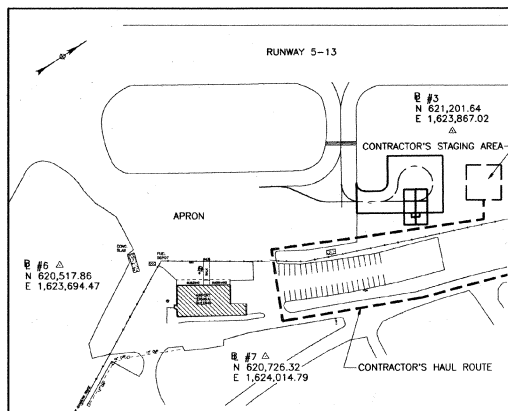
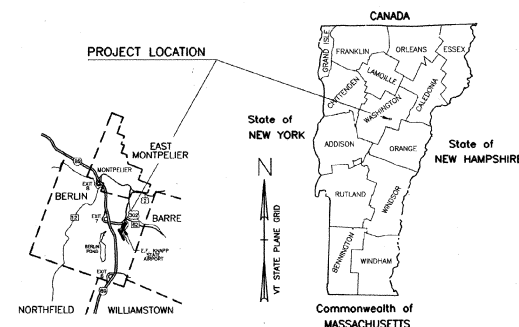
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STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT TOWN OF BERLIN COUNTY OF WASHINGTON E.F. KNAPP STATE AIRPORT JET A AND AVGAS FUELING SYSTEM A.I.R. 04-3087

INSTALLATION OF AN AVIATION FUEL SYSTEM, DISMANTLING THE EXISTING
FUEL SYSTEM, DRAINAGE, PAVING & PAVEMENT MARKINGS.



SITE LOCATION MAP

RECORD PLANS

CONTRACTOR: E.E. PACKARD MONTPELIER, VT.

RESIDENT ENGINEER: RICHARD COMI

CONSTRUCTION BEGAN: April 14, 1997

CONSTRUCTION COMPLETED: Oct. 21, 1997

RECORD PLANS BY: Charles Lafr

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

BY: Charles Lafr RESIDENT ENGINEER

DATE: 3-13-03

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

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING
CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY
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, 1993
FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT
REVISIONS AND SUCH REVISED SPECIFICATIONS AND
SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE
PLANS.

DATUM
VERTICAL _____
HORIZONTAL _____



APRIL 1993



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**CLOUGH, HARBOUR
& ASSOCIATES**

ENGINEERS, SURVEYORS & PLANNERS
111 WINNERS CIRCLE ALBANY, NEW YORK 12205

C.H.A. Project No. 2872

Date: APRIL 1993

APPROVED: [Signature]

VERMONT AGENCY OF TRANSPORTATION
APPROVED: [Signature]
DATE: JUNE 6, 1994



P.E. No. 6861

SHEET 1 of 13

NOTES:

1. BASE MAPPING PREPARED BY LITTLE RIVER SURVEY FROM APRIL 1992 AND JULY 1992 FIELD SURVEYS.
2. NORTH REFERENCE AND GRID SYSTEM ARE BASED ON NAD 83.
3. CONTOURS AND BENCHMARKS ARE BASED ON NVD 29.
4. UNDERGROUND UTILITIES ARE SHOWN FROM FIELD LOCATION WHERE POSSIBLE. OTHERS ARE SHOWN FROM RECORD DATA. THEIR LOCATION MAY DIFFER FROM THAT SHOWN AND OTHERS MAY EXIST.
5. BACKFILL EXCAVATION FROM TANK REMOVED WITH MATERIAL MEETING THE REQUIREMENTS OF VAOT 703.04A GRANULAR BORROW. BACKFILL SHALL BE PLACED IN LIFTS OF 6" OR LESS AND IT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 203 OF VAOT STANDARD SPECIFICATIONS 1990 EDITION, REGARDLESS TO PROVIDE POSITIVE DRAINAGE. DISTURBED AREA TO BE RESTORED IN KIND. EXISTING SYSTEM SHALL NOT BE REMOVED UNTIL NEW FUEL SYSTEM IS OPERATIONAL AND APPROVED BY THE ENGINEER.
6. THE CONTRACTOR'S ATTENTION IS CALLED TO SECTION 01015 OF THE SPECIFICATIONS AND FAA ADVISORY CIRCULAR AC NO. 150/5370-2C FOR REQUIREMENTS ON SAFETY CONSIDERATIONS WHEN WORKING NEAR THE RUNWAYS, TAXIWAYS, AND APRONS.
7. THE CONTRACTOR WILL BE PROVIDED ACCESS TO THE SITE BY THE AIRPORT MANAGER WITH WHOM THE CONTRACTOR SHALL FULLY COOPERATE.
8. THE CONTRACTOR SHALL CONFINED HIS ACTIVITIES TO THE WORK AREA SHOWN ON THE PLANS AND USE ONLY THE HAUL ROUTE SPECIFIED. SPECIAL RESTRICTIONS APPLY IN AREAS WITHIN THE RUNWAY SAFETY AREAS. NO WORK SHALL PROCEED WITHOUT THE APPROVAL OF THE ENGINEER AND NOTIFICATION OF AIRPORT GROUND PERSONNEL.
9. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
10. ALL DEBRIS DEPOSITED ON ANY ACTIVE PORTION OF A RUNWAY, TAXIWAY, OR APRON SHALL BE REMOVED CONTINUOUSLY DURING THE COURSE OF WORK.
11. THE CONTRACTOR AND HIS EMPLOYEES SHALL REMAIN ATTENTIVE TO AIR TRAFFIC WHEN TRAVELING ON ANY ACTIVE PORTION OF A RUNWAY, TAXIWAY, OR APRON. NO PERSON SHALL VENTURE TO ENTER AN ACTIVE AREA WHILE IT IS VISIBLY IN USE BY AIRCRAFT OR SHALL BE IN USE BY AN APPROACHING AIRCRAFT.
12. ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH THE LATEST REVISIONS OF O.S.H.A. REGULATIONS AND CONSTRUCTION.
13. DURING NON-WORKING HOURS, THE CONTRACTOR SHALL PARK HIS EQUIPMENT IN THE STAGING AREA DESIGNATED IN THE PLANS. CONTRACTOR'S EMPLOYEES SHALL PARK IN THE DESIGNATED STAGING AREA.
14. THE CONTRACTOR SHALL HAVE THE RESPONSIBILITY OF IDENTIFYING SUBSURFACE STRUCTURES, ABOVE-GROUND STRUCTURES AND/OR UTILITIES WHICH MAY INTERFERE WITH WORK SCHEDULED UNDER THIS PROJECT. HE SHALL PROCEED WITH GREAT CARE IN EXECUTING ANY WORK AND SHALL IMMEDIATELY REPLACE OR REPAIR ANY DAMAGED ITEMS TO THE SATISFACTION OF THE ENGINEER, AT NO COST TO THE AGENCY.

LEGEND

- BORING
- UNDERDRAIN AND FLUSHING BASIN
SEE DETAIL [8] AND [9]
- TYPE III BARRICADE
- 6" SOLID YELLOW TAXIWAY STRIPING
- PCC PAVEMENT

REMOVE 10,000 GALLON UNDERGROUND FIBERGLASS STORAGE TANK, PIPING, COVER SLAB, AND RELATED APPURTENANCES SEE NOTE 3, ITEM 529.15 (MOD)

REMOVE EXISTING FUEL DISPENSER, PUMP, CABINET, PIPING, SLAB, FILTERS, AND APPURTENANCES SEE NOTE 3, ITEM 529.15 (MOD)

PROJECT BENCHMARK N.W. CORNER MON. EL. 1125.97

AIRPORT TERMINAL BUILDING

W.D. 1/93
T.J.B. P.M. 1/93
Checked By: M.L.C. 4/93
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E.F. KNAPP
STATE AIRPORT

TOWN OF BERLIN

JET A AND AVGAS FUELING SYSTEM
A.I.R. 04-3087

SITE PLAN

SCALE: 1" = 20'

DATE: APRIL 1993

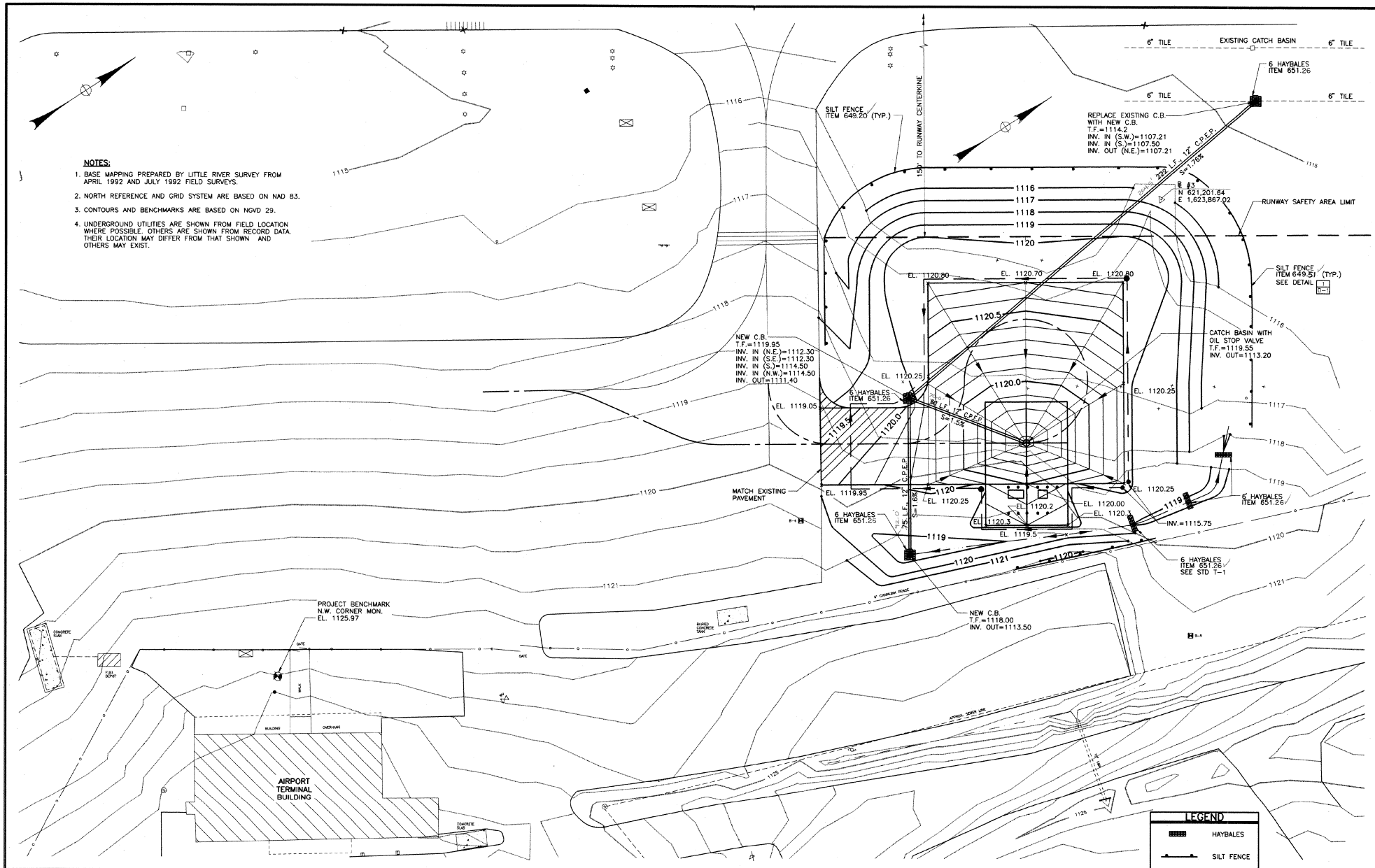
Drawing No.

S-1

SHEET 2 OF 13

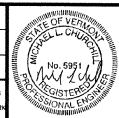
NOTES:

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Revisions:	Drawn By:	App'd. By:	Date:

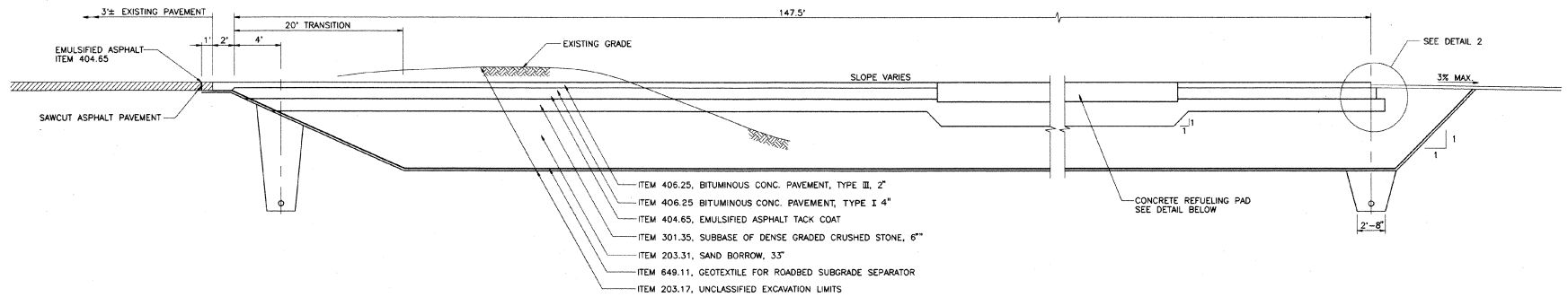
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Drawn By:	P.M.	Date:	1/93
Checked By:	M.L.C.	Date:	4/93



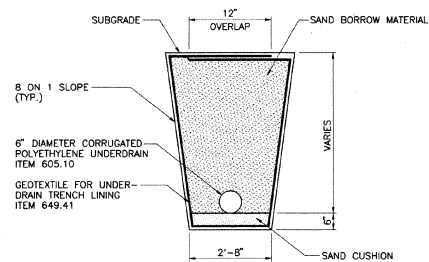
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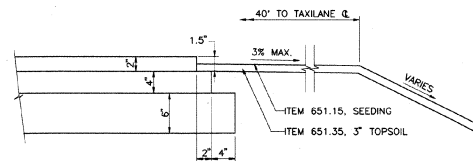
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GRADING AND DRAINAGE PLAN		S-2
SCALE: 1" = 20'	DATE: APRIL 1993	SHEET 3 OF 13



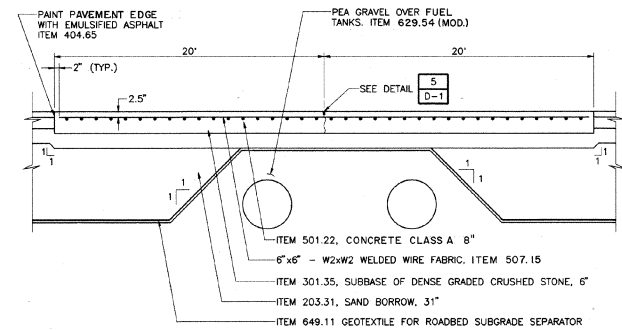
AIRCRAFT REFUELING APRON
NO SCALE
SECTION A-A



1 UNDERDRAIN CONSTRUCTION DETAIL
NO SCALE



2 PAVEMENT EDGE DETAIL
NO SCALE



3 CONCRETE REFUELING PAD DETAIL
NO SCALE

Revisions	Drawn By	App'd By	Date

Designed By: W.F.G. 1/93
Drawn By: P.M. 1/93
Checked By: M.L.C. 1/93
DATE: 1/93
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CHA Project No. 2972

EDWARD F. KNAPP
STATE AIRPORT

TOWN OF BERLIN

JET A AND AVGAS FUELING SYSTEM
A.I.R. 04-3087

TYPICAL SECTIONS

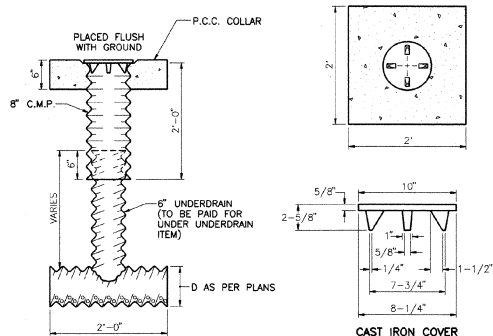
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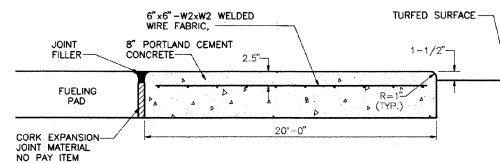
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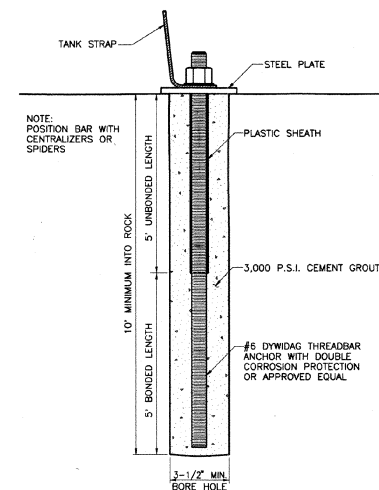
SHEET 4 OF 13



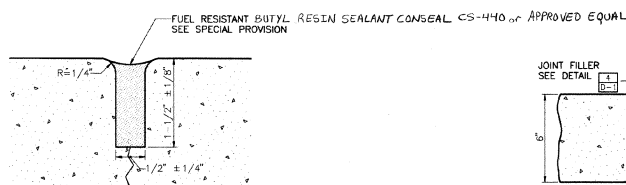
1 UNDERDRAIN FLUSHING BASIN
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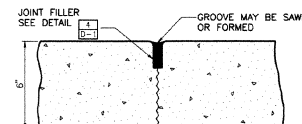
2 FUEL CABINET PAD DETAIL
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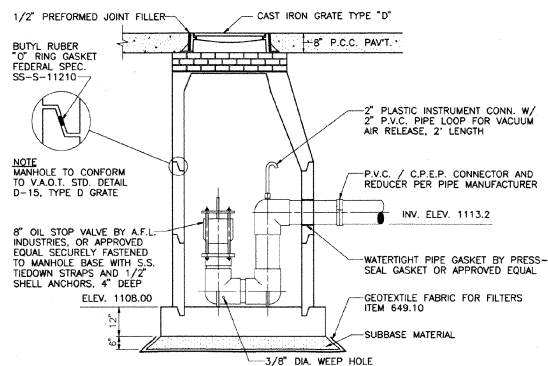
3 ROCK ANCHOR
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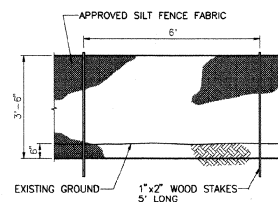
4 JOINT FILLER DETAIL
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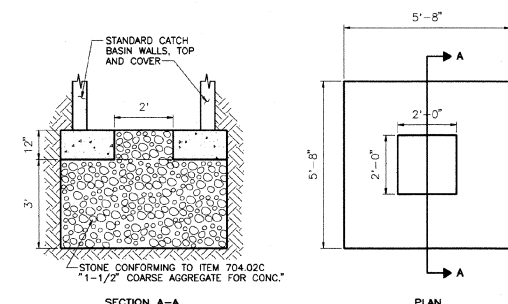
5 CONTRACTION JOINT DETAIL
NO SCALE



6 CATCH BASIN WITH OIL STOP VALVE
NO SCALE



7 SILT FENCE DETAIL
NO SCALE



8 OPEN CONCRETE BASE DETAIL
NO SCALE

Revisions	Drawn By	App'd By	Date

Designed By	Date
M.L.C.	1/2/93
Drawn By	Date
P.M.	1/93
Checked By	Date
M.L.C.	4/93

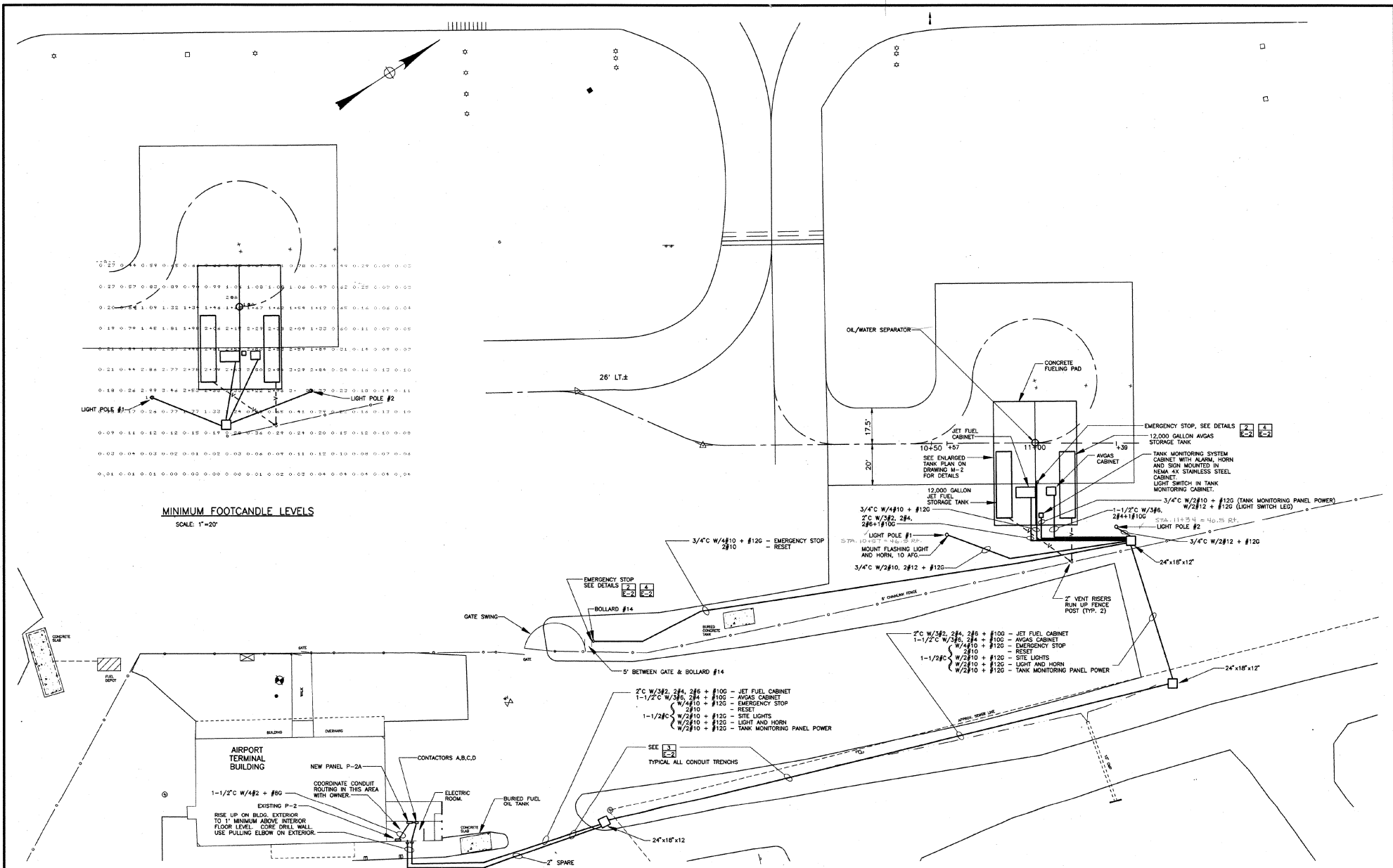


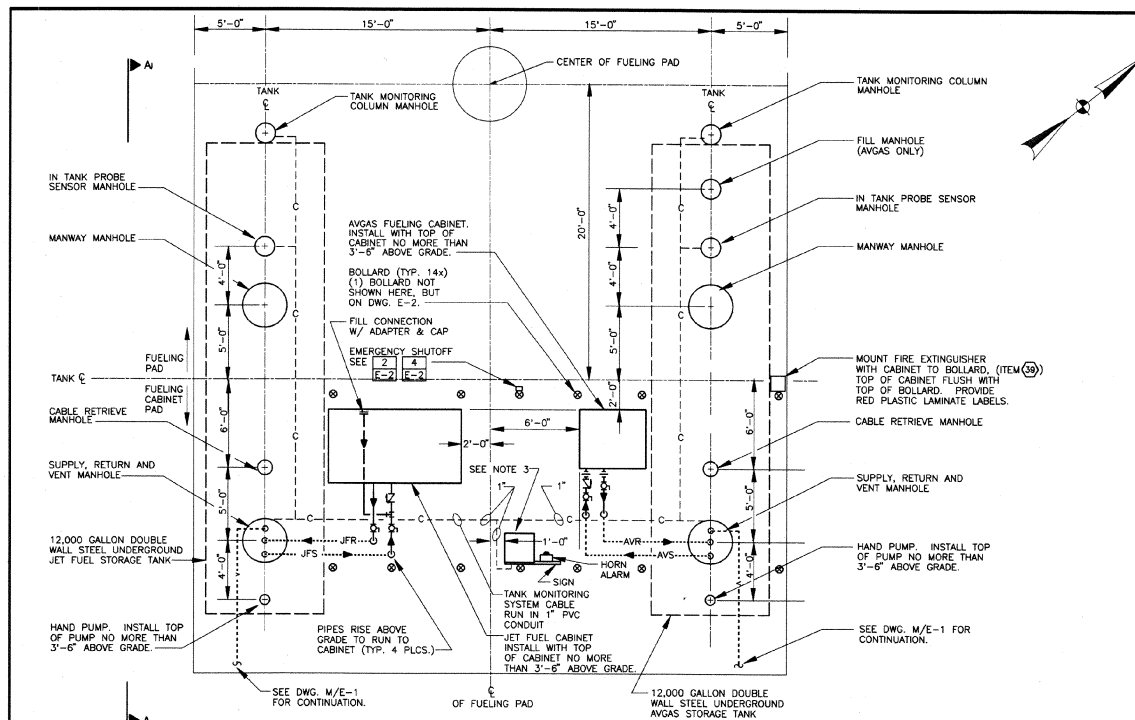
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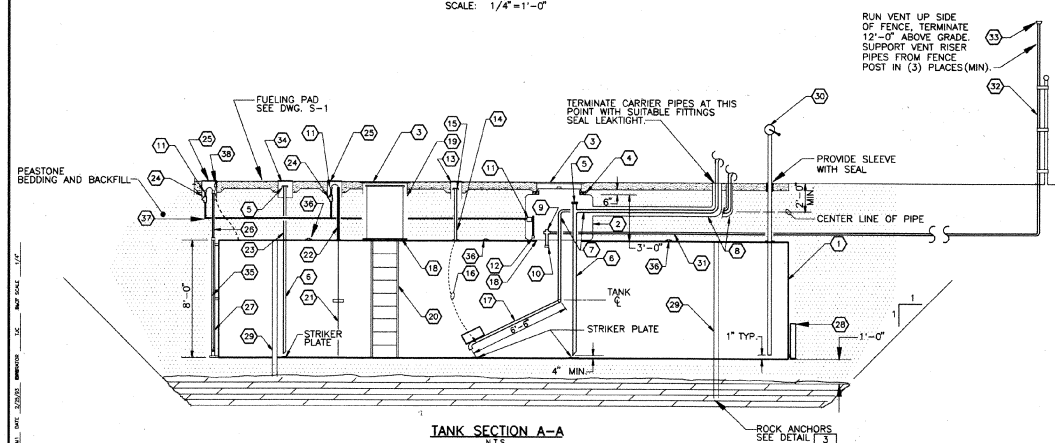
JET A AND AVGAS FUELING SYSTEM
A.I.R. 04-3087
DETAILS
SCALE: AS SHOWN DATE: APRIL 1993

Drawing No.
D-1
SHEET 5 OF 13





ENLARGED TANK PLAN
SCALE: 1/4"=1'-0"



TANK SECTION A-A
N.T.S.

NOTE:
THIS SECTION TYPICAL FOR AVGAS AND JET TANKS. SEE
NOTES AND SCHEDULE FOR DIFFERENCES.

EQUIPMENT SCHEDULE		
DESCRIPTION	MANUFACTURER & MODEL	REMARKS
1 12000 GALLON DOUBLE WALL STEEL STIP3 STORAGE TANK	HIGHLAND OR EQUAL	
2 FIBERGLASS PIPING SUMP WITH COVER LID	OWENS CORNING OR EQUAL	3'-6" DIA.
3 MANHOLE AND COVER	UNIVERSAL 98-3610 OR EQUAL	3'-0" DIA 1/2" THICK RAINTIGHT BOLTED COVER
4 2" THICK COMPRESSIBLE FOAM BOARD		
5 4" ADAPTER AND CAP	UNIVERSAL 724-4040 & 733-40 OR EQUAL	
6 4" DROP TUBE	UNIVERSAL 723-4012 OR EQUAL	
7 3" PRODUCT PIPE (JET FUEL) PRODUCT PIPE (AVGAS)		SEE SPECIAL PROVISION 25 OF SCHEDULE 40 STAINLESS STEEL
8 6" CARRIER PIPE (JET FUEL) 4" CARRIER PIPE (AVGAS)		SEE SPECIAL PROVISION 25 OF SCHEDULE 40 STAINLESS STEEL
9 VENT VALVE ASSEMBLY (2"x2")	UNIVERSAL V421-2020 OR EQUAL	CAP TOP AND UNUSED SIDE OUTLET
10 FLOAT VENT VALVE	UNIVERSAL 37-201618	
11 EXPLOSION PROOF/WEATHERPROOF JUNCTION BOX		
12 CONTAINMENT SUMP SENSOR	VEEDER ROOT OR EQUAL	
13 6" DIA. MANHOLE	UNIVERSAL 60-8075	CAST IRON RING & COVER W/ GALV. SKIRT, (USED FOR RETRIEVING CABLE GUIDE)
14 2" RISER PIPE FOR CABLE GUIDE		SCHEDULE 40 STAINLESS STEEL
15 2" THREAD ADAPTER & WATERTIGHT PIPE CAP		ATTACH CABLE END TO INSIDE OF CAP
16 FLOATING SUCTION CABLE	GAMMON OR EQUAL	STAINLESS STEEL W/PLASTIC COATING
17 FLOATING SUCTION ASSEMBLY	GAMMON GTP-1644-3-5-39	ALUM. CONST. W/STAINLESS ST. BOLTS & FASTENERS, DUAL BALL RACK SWIVEL
18 30" I.D. MANHOLE	HIGHLAND OR EQUAL	PROVIDE MANUFACTURER'S STANDARD MANHOLE W/ (4) 4" FITTINGS (FITTINGS NOT REQ. @ MANWAY)
19 30" I.D. MANWAY EXTENSION W/BOLTED WATERTIGHT COVER	HIGHLAND OR EQUAL	
20 LADDER	HIGHLAND OR EQUAL	PROVIDE MANUFACTURER'S LADDER W/TANK
21 TANK SENSOR PROBE	VEEDER ROOT OR EQUAL	PROVIDE SENSOR, FLOATS, THREADED WELL, CAP, CABLE & ALL ACCESSORIES
22 4" RISER PIPE FOR TANK SENSOR PROBE		SCHEDULE 40 STAINLESS STEEL
23 4" RISER PIPE FOR TANK FILL		PROVIDE ON AVGAS TANK ONLY SCHEDULE 40 STAINLESS STEEL
24 EPOXY FILLED CONDUIT SEAL OFF		
25 MONITOR TYPE MANHOLE	UNIVERSAL 98MM-1810	CAST IRON RING AND COVER (15" DIA. MIN.)
26 TANK MONITOR COLUMN EXTENSION RISER PIPE		SCHEDULE 40 STAINLESS STEEL
27 TANK MONITOR COLUMN	HIGHLAND OR EQUAL	PROVIDE AS PART OF TANK
28 TANK SACRIFICIAL ANODE	HIGHLAND OR EQUAL	PROVIDE AS PART OF STIP3 TANK SYSTEM
29 HOLD DOWN STRAPS, TURNBUCKLES, BALLAST PAD ANCHOR BOLTS	HIGHLAND OR EQUAL	PROVIDE QUANTITIES, LOCATIONS AND METHODS AS RECOMMENDED BY MANUFACTURER
30 HAND PUMP	GAS BOY MOD. 1720	
31 2" VENT PIPE		SEE SPECIAL PROVISIONS OF SCHEDULE 40 STAINLESS STEEL
32 2" VENT RISER PIPE		TYPE 304 STAINLESS STEEL
33 2" PRESSURE/VACUUM VENT	UNIVERSAL 465-2080	
34 FILL MANHOLE	UNIVERSAL 71	CAST IRON RING AND COVER, FLEXIBLE BELLGOWS, INTERNAL DRAW
35 TANK MONITOR COLUMN SENSOR SWITCH	VEEDER ROOT OR EQUAL	FIBERGLASS, SIZE AS REQUIRED TO ACCOMMODATE DROP TUBE
36 SPARK NOZZLE W/CAP		
37 TANK MONITORING SYSTEM CONDUIT/CABLE		1" PVC CONDUIT, SCH. 80
38 TANK CATHODIC PROTECTION MONITORING CONNECTION	HIGHLAND OR EQUAL	PROVIDE AS PART OF STIP3 TANK SYSTEM
39 FIRE EXTINGUISHER WITH CABINET	PEM-ALL PA-200ABC WITH 105-20 CABINET	MULTI-PURPOSE DRY CHEMICAL TYPE 20LB CAPACITY, IN WEATHERPROOF CABINET

LEGEND

-JFS..... JET FUEL SUPPLY PIPE
-JFR..... JET FUEL RETURN PIPE
-AVS..... AVGAS SUPPLY PIPE
-AVR..... AVGAS RETURN PIPE
-C..... BELOW GRADE CONDUIT
-V..... TANK VENT PIPE - BELOW GRADE
-V..... BALL VALVE
-C..... CHECK VALVE
-G..... GATE VALVE
-U..... UNION
->..... INDICATES DIRECTION OF FLOW
-D..... PIPE DROP
-CL..... CENTERLINE

NOTES:

- PROVIDE PROPER IDENTIFICATION LABELING OF THE FUELING CABINET AND ALL ABOVE GROUND PIPING ENTERING AND EXITING CABINET. PER SPECIFICATIONS IN AMERICAN PETROLEUM INSTITUTE MANUAL.
- SUBMIT MANUFACTURER'S LATEST PRODUCT DATA FOR EACH ITEM LISTED ABOVE IN THE EQUIPMENT SCHEDULE.
- TANK MONITORING PANEL MOUNTED IN NEMA 4X ENCLOSURE. MOUNT ENCLOSURE SECURELY TO UNISTRUT MOUNTED TO BOLLARD. MOUNT ALARM LIGHT/HORN/SILENCE SWITCH ON UNISTRUT. ALSO MOUNT A 12"x12" ALUMINUM SIGN ON UNISTRUT, ON THE SIDE OF THE ENCLOSURE, WITH THE FOLLOWING MESSAGE:

URGENT
IF THE LEAK DETECTION ALARM
OR ALARM LIGHT IS ACTIVATED,
CALL THE FOLLOWING NUMBER:
1-800-641-5006

SIGN SHALL BE PAINTED WHITE WITH RED LETTERS. TOP OF CABINET SHALL BE NO MORE THAN 3'-6" ABOVE GRADE.

Revisions	Drawn By	App'd. By	Date

Designed By: JWP
Date: APRIL 1993
Drawn By: DMW
Date: APRIL 1993
Checked By: DJF
Date: APRIL 1993
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ADDITION TO THIS DOCUMENT IS
LEGAL.



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CHA Project No. 2972

E.F. KNAPP
STATE AIRPORT
TOWN OF BERLIN

JET A AND FUELING SYSTEM
AIR 04-3087

TANK PLAN
SECTION AND SCHEDULE

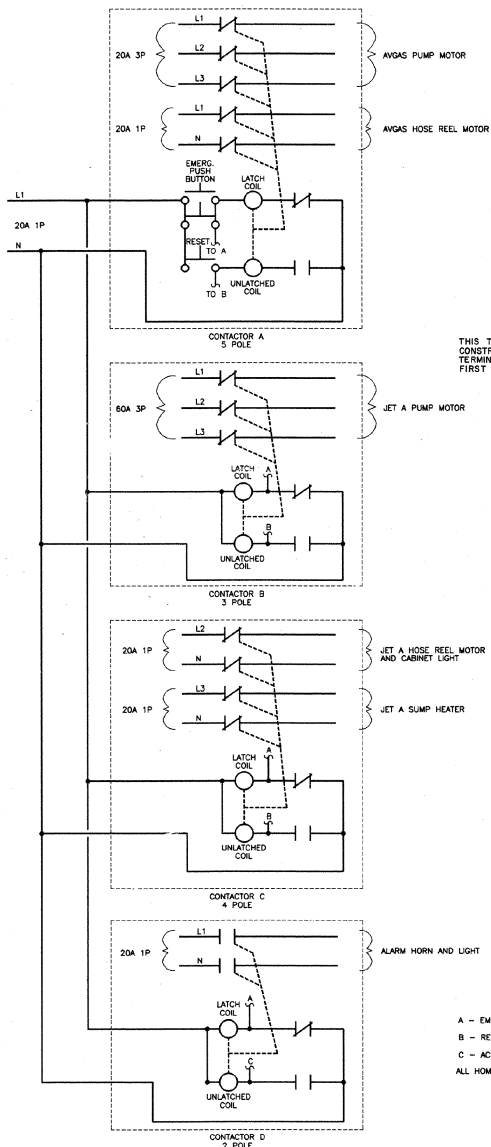
SCALE: AS SHOWN

DATE: APRIL 1993

Drawing No

M-2

SHEET 7 OF 13

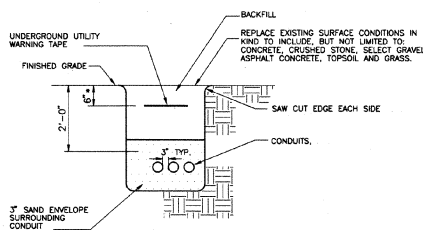
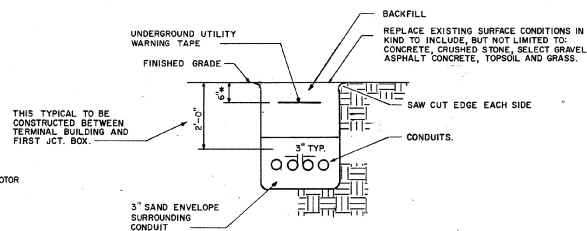


CONTACTOR LAYOUT
N.T.S.

NOTES:

1. CONTACTOR OPERATION:

- EMERGENCY STOP BUTTON SHALL ACTIVATE THE LATCH COILS OF CONTACTORS A, B, C AND D. CONTACTORS A, B AND C WILL SHUT OFF ALL POWER TO THE FUEL CABINETS. CONTACTOR D WILL SUPPLY POWER TO THE HORN AND STROBE LIGHT.
- THE ACKNOWLEDGE BUTTON SHALL ACTIVATE THE UNLATCH COIL OF CONTACTOR D TO SHUT OFF POWER TO THE HORN AND STROBE LIGHT.
- THE RESET BUTTON SHALL ACTIVATE THE UNLATCH COILS OF CONTACTORS A, B AND C, TO RESTORE POWER TO THE FUEL CABINETS.

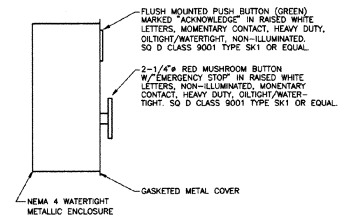


3 UNDERGROUND CONDUIT
M/E-1 N.T.S.

- 6" BELOW SURFACE IF GRASS
- 6" BELOW BOTTOM OF PAVED SURFACES
- TRENCH - ITEM 204.20

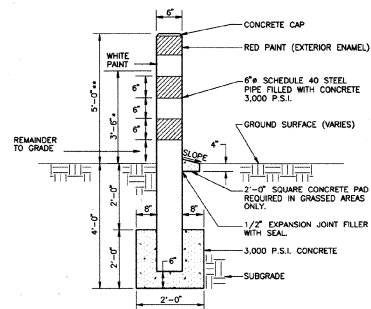
- A - EMERGENCY STOP
- B - RESET
- C - ACKNOWLEDGE

ALL HOMERUNS ARE TO PANEL P2A.



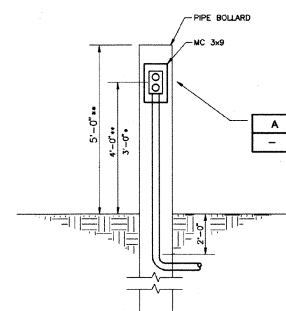
1 EMERGENCY STOP STATION
N.T.S.

- SEE DETAIL 4, THIS SHEET, FOR MOUNTING



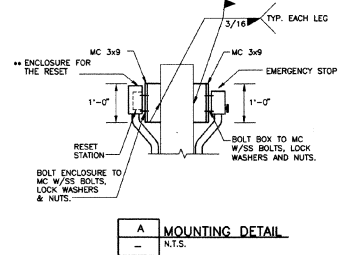
2 PIPE BOLLARD DETAIL
M/E-1 N.T.S.

- BOLLARDS AROUND FUEL CABINETS
- BOLLARD #14



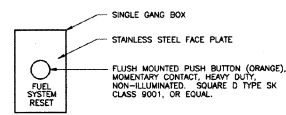
4 EMERGENCY STOP MOUNTING DETAIL
M/E-1 N.T.S.

- AT BOLLARD BY FUEL CABINET
- BOLLARD #14



A MOUNTING DETAIL
N.T.S.

ENCLOSURE FOR RESET: 16 GAUGE TYPE 304 STAINLESS STEEL WITH CONTINUOUSLY WELDED SEAMS. CONTINUOUS DOOR HINGE. DIMENSIONS: 6" x 6" x 4". DOOR TO BE GASKETED, WATER TIGHT AND LOCKABLE.



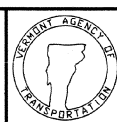
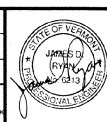
5 RESET STATION
M/E-1 N.T.S.

MOUNT ON BOLLARD #14

4
E-2

Revisions:	Drawn By:	App'd. By:	Date:
	B.C. J.R.S.		1/83
	B.C. J.R.S.		1/83

Designed By:	Date:
B.C. J.R.S.	1/83
Drawn By:	Date:
B.C. J.R.S.	1/83
Checked By:	Date:
M.V.	1/83



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CHA Project No. 2972

EDWARD F. KNAPP
STATE AIRPORT
TOWN OF BERLIN

FUELING SYSTEMS
A.I.R. 04-3087

ELECTRICAL DETAILS

SCALE: AS NOTED

DATE: APRIL 1993

Drawing No.

E-2

SHEET 8 OF 13

ELECTRICAL EQUIPMENT

DESCRIPTION:

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING THE ELECTRICAL EQUIPMENT, CONDUIT, WIRE, ETC., IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND/OR DIRECTIONS OF THE ENGINEER.

GENERAL:

- DRAWINGS: THE DRAWINGS ARE DIAGRAMATIC AND INDICATE THE GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF EQUIPMENT AND DEVICES UNLESS INDICATED OTHERWISE. VERIFY EXACT LOCATIONS BASED ON ACTUAL FIELD CONDITIONS. REPORT ANY DISCREPANCIES DISCOVERED, PRIOR TO COMMENCING WORK.
- COMPLETE SYSTEMS: FURNISH AND INSTALL ALL MATERIALS AS REQUIRED FOR COMPLETE SYSTEMS, INCLUDING ALL PARTS OBVIOUSLY OR REASONABLY INCIDENTAL TO A COMPLETE INSTALLATION, WHETHER SPECIFICALLY INDICATED OR NOT.
- CODES: COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) AND ALL GOVERNING FEDERAL, STATE AND LOCAL LAWS, ORDINANCES, RULES AND REGULATIONS.
- INSPECTIONS: DURING AND UPON COMPLETION OF THE WORK, ARRANGE FOR AND PAY ALL ASSOCIATED FEES FOR INSPECTION OF THE ELECTRICAL INSTALLATION BY AN APPROVED INSPECTION AGENCY. PROVIDE CERTIFICATE OF FINAL INSPECTION TO THE OWNER'S REPRESENTATIVE.
- SUBMITTALS: SUBMIT FOR APPROVAL, PRODUCT DATA AND/OR SHOP DRAWINGS FOR ALL ELECTRICAL EQUIPMENT, DEVICES AND MATERIALS TO BE USED ON THE PROJECT.
- SUBSTITUTIONS: MANUFACTURERS OTHER THAN THOSE LISTED WILL BE CONSIDERED ON AN APPROVED EQUAL BASIS. BURDEN OF PROOF OF BEING EQUAL WILL BE ON THE CONTRACTOR.
- PRODUCTS: ALL ELECTRICAL MATERIALS TO BE NEW, STANDARD PRODUCTS OF THE RESPECTIVE MANUFACTURERS, AND UL LISTED.
- INSTALLATION: ALL MATERIALS AND EQUIPMENT TO BE INSTALLED AS RECOMMENDED BY THE RESPECTIVE MANUFACTURERS, BY MECHANICS SKILLED IN THEIR PARTICULAR TRADE, IN A NEAT AND WORKMANLIKE MANNER, AND SO AS NOT TO VOID ANY WARRANTY OR UL LISTING.
- COORDINATION: COORDINATE THE ELECTRICAL WORK WITH THAT FOR THE OTHER TRADES ON THE PROJECT.
- ACCEPTANCE: ALL SYSTEMS TO BE COMPLETELY ASSEMBLED, TESTED, ADJUSTED AS REQUIRED, AND DEMONSTRATED TO BE FULLY OPERATIONAL PRIOR TO OWNER ACCEPTANCE.
- CLEANING: REMOVE FROM THE SITE ALL DEBRIS AND SURPLUS MATERIALS RESULTING FROM THE ELECTRICAL WORK. CLEAN ALL ELECTRICAL EQUIPMENT.

IDENTIFICATION:

- NAMEPLATES: PROVIDE THREE-LAYER LAMINATED PLASTIC NAMEPLATE (WHITE CHARACTERS ON BLACK BACKGROUND) ENGRAVED WITH EQUIPMENT DESIGNATION FOR EACH SAFETY SWITCH, PANELBOARD, MOTOR STARTER, AND ALL OTHER ELECTRICAL DEVICES, ETC. FASTEN NAMEPLATES WITH STAINLESS STEEL SCREWS.
- MARKING PEN LABELING: MARK EACH JUNCTION AND PULL BOX INDICATING SOURCE DESIGNATION AND CIRCUIT NUMBER(S) FOR THE ENCLOSED CONDUCTORS.
- LABEL EACH CONDUCTOR AT ALL TERMINATIONS, SPLICES AND JUNCTION BOXES. EXAMPLE: PHASE A, JET FUEL PUMP.
- UPDATE EXISTING PANEL CIRCUIT DIRECTORY.

MATERIAL

CONDUIT:

- UNDERGROUND- SCHEDULE 80 RIGID PLASTIC, EXCEPT STUB UP ELBOW AND LAST 2'-0" TO CONNECTION TO BE GALVANIZED RIGID STEEL.
- ABOVE GROUND- IN AREA OF FUELING CABINET-GALVANIZED RIGID STEEL WITH SEALS. INSIDE BLDG.-EMT WITH COMPRESSION FITTINGS. EXITING BLDG. ABOVE GRADE-GALVANIZED RIGID STEEL.

CONDUCTORS:

- SINGLE COPPER CONDUCTORS WITH 600 VOLT, TYPE "THW" OR THHN/THWN INSULATION.
- CONNECTORS TO BE UL LISTED TO SUIT THE APPLICATION.

STROBE LIGHT AND HORN ASSEMBLY:

- STROBE LIGHT: 75 FLASHES PER MINUTE WITH GLASS FRESNEL LENS HOUSED IN RED LEXAN DOME, ON ALUMINUM HOUSING; HORN: SOUND LEVEL 100DB AT 10'-0"; UL LISTED, 120 VAC TO BE MOUNTED IN STROBE LIGHT HOUSING. FEDERAL SIGNAL MODEL 400 ST (STROBE LIGHT) AND MODEL 350 (HORN) WITH 400 MHK AC ACCESSORY MOUNTING KIT.

CONTACTORS:

- MECHANICALLY WELD, MOTOR RATED, UL LISTED, 60 AMP, 120 VAC COIL. NEMA 1, POLES AS SHOWN; SQUARE D TYPE S OR EQUAL.

PANEL P2A:

- TWO-ROW CIRCUIT BREAKER STYLE.
- RATINGS, MAINS, MOUNTING AND COMPLEMENT OF BRANCH CIRCUIT BREAKERS PER DRAWING.
- ENCLOSURE: NEMA-1 (UNLESS INDICATED OTHERWISE) MINIMUM 20" WIDE GALVANIZED STEEL ROUGH-IN BOX WITH TURNED FLANGES ON ALL SIDES OF FRONT.
- FRONT COVER: DEAD FRONT SHEET STEEL WITH GRAY ENAMEL FINISH AND PARACENTRIC LOCK WITH SPRING CATCH. ALL LOCKS TO BE KEYS ALIKE. PROVIDE TWO KEYS PER LOCK.
- PANELBOARD ASSEMBLIES: REMOVABLE, WITH PROVISIONS FOR FRONT TRIM ADJUSTMENT.
- BUSING: COPPER ONLY, ARRANGED FOR ALTERNATING PHASE CONNECTION OF BRANCH DEVICES, AND ALL POLE SPACES EQUIPPED TO RECEIVE BRANCH CIRCUIT MEMBERS. INCLUDE NEUTRAL BUS AND GROUND BUS IN EACH PANELBOARD, WITH REQUIRED LUGS OR SCREW TERMINALS. GROUND BUS TO BE BONDED TO ENCLOSURE.
- CIRCUIT BREAKERS: BOLT-IN TYPE, WOUND CASE, WITH THERMAL AND MAGNETIC TRIPS. PROVIDE 3P 100A CIRCUIT BREAKER IN PANEL 2. MATCH EXISTING PANEL.
- IDENTIFICATION: PERMANENTLY IDENTIFY EACH PANELBOARD WITH DRAWING DESIGNATION, USING ENGRAVED LAMINATED PLASTIC NAMEPLATE.
- CIRCUIT DIRECTORY: PLASTIC COVERED, WITH HOLDER ON INSIDE OF COVER DOOR. ALL CIRCUIT DIRECTORIES TO BE ACCURATELY COMPLETED (TYPEWRITTEN) IDENTIFYING EACH CONNECTED LOAD OR "SPARE".

PULL BOXES

- MINIMUM SIZE SHOWN ON DIAGRAMS.
- TOP OF BOX TO BE FLUSH WITH GROUND.
- COVER TO BE BOLTED TO BOX AND LOGO TO READ "ELECTRIC".
- BOXES CAN BE CONCRETE, PRE CAST METAL OR REINFORCED FIBERGLASS.
- BOX SHALL HAVE PRE CUT CABLE ENTRANCES.

SITE LIGHTING

FIXTURE: HEAVY DUTY FLOODLIGHT, 200W, 250W METAL HALIDE LAMP, OPTICS - WIDE HORIZONTAL NARROW VERTICAL BEAM, STANDARD YOKE MOUNT AND VISOR SHIELD, CATALOG #12A-250HP-20-N-B-P.

POLE: SQUARE STRAIGHT ALUMINUM POLE, 4" SQUARE, WITH .125" WALL THICKNESS, COLOR-BRONZE, POLE TOP MOUNTING TO INCLUDE SLIP FIT ADAPTOR AND TENON, ADJUSTABLE FOR HORIZONTAL AIMING, CATALOG #105-4012-14 BY WIDELITE OR EQUAL.

TESTING

ALL CONDUCTORS TO BE MEGGER TESTED BEFORE AND AFTER INSTALLATION. MEGGER TEST TO BE CONDUCTED IN PRESENCE OF THE OWNER'S REPRESENTATIVE AND SUBMIT TYPED TEST RESULTS ON THE FORM APPROVED BY THE OWNER'S REPRESENTATIVE. IF THE MEGGER READINGS FOR THE INSTALLED CABLE ARE LESS THAN 100 MEG OHMS, THE INSTALLATION IS NOT ACCEPTABLE.

GROUNDING: ALL GROUNDS SHALL BE TESTED AND THE READINGS RECORDED.

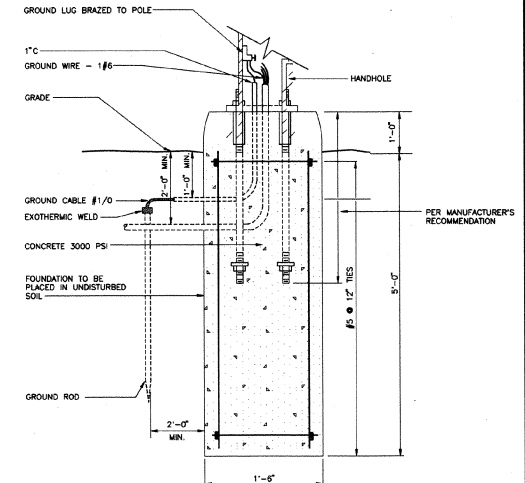
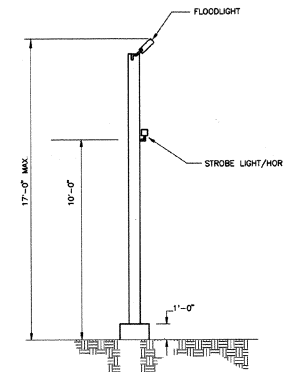
METHOD OF MEASUREMENT

PAYMENT FOR THIS WORK WILL BE MADE ON A LUMP SUM BASIS.

BASIS OF PAYMENT

THE UNIT PRICE BID FOR THIS WORK SHALL INCLUDE THE FURNISHING OF ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND SAFETY REQUIREMENTS AS DETERMINED BY THE U.S. DEPARTMENT OF LABOR'S OCCUPATIONAL SAFETY AND HEALTH STANDARDS AND INCIDENTALS AS NECESSARY TO COMPLETE THE WORK OF THIS ITEM AND PERFORM ALL TESTS TO THE SATISFACTION OF THE ENGINEER.

PANEL:	P-2A	VOLTS, PHASE, WIRE:	120/208, 3W 4W	20 POLES						
LOCATION:	ELECTRIC ROOM	MAINS:	100 MLO							
MOUNTING:	SURFACE	SHORT CIRCUIT RATING:	10,000 AIS							
CKT	LOAD DESCRIPTION	CONN LOAD KVA	WIRE SIZE	CB AMPS/POLE	PHASE	CB AMPS/POLE	WIRE SIZE	CONN LOAD KVA	LOAD DESCRIPTION	CKT
1	AVGAS PUMP	4.0	#6	20/3	A	60/3	#2	11.6	JET A PUMP	2
3					B					4
5					C					6
7	AVGAS HOSE REEL	1.2	#4	20/1	A	20/1	#4	1.2	JET A HOSE REEL	8
9	ALARM HORN AND LIGHT		#10	20/1	B	20/1	#6	0.8	JET A SUMP HEATER	10
11	CONTACTOR A,B,C,D		#12	20/1	C	20/1	#10		TANK MONITORING PANEL	12
13	SITE LIGHTS	0.6	#10	20/2	A					14
15					B					16
17					C					18
19					A					20



6 LIGHT POLE BASE DETAIL
M/E-1 N.T.S.

7 LIGHT POLE #1
M/E-1 N.T.S.

LIGHT POLE #2 THE SAME EXCEPT NO STROBE LIGHT/HORN.

LIGHT	STATION	OFFSET
1	10+57	45' RT
2	11+39	42' RT

Revised:	Drawn By:	App'd. By:	Date:
	B.C. J.R.S.		1/93
	B.C.		1/93
	Checked By:		1/93
	K.V.		1/93

Designed By:	Date:
B.C. J.R.S.	1/93
Drawn By:	Date:
B.C.	1/93
Checked By:	Date:
K.V.	1/93

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7059 SUBSECTION 2 OF THE NEW YORK STATE EDUCATION LAW.



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CHA Project No. 2972

EDWARD F. KNAPP
STATE AIRPORT
TOWN OF BERLIN

FUELING SYSTEMS
A.I.R. 04-3087

ELECTRICAL DETAILS

SCALE: AS NOTED

DATE: APRIL 1993

Drawing No.

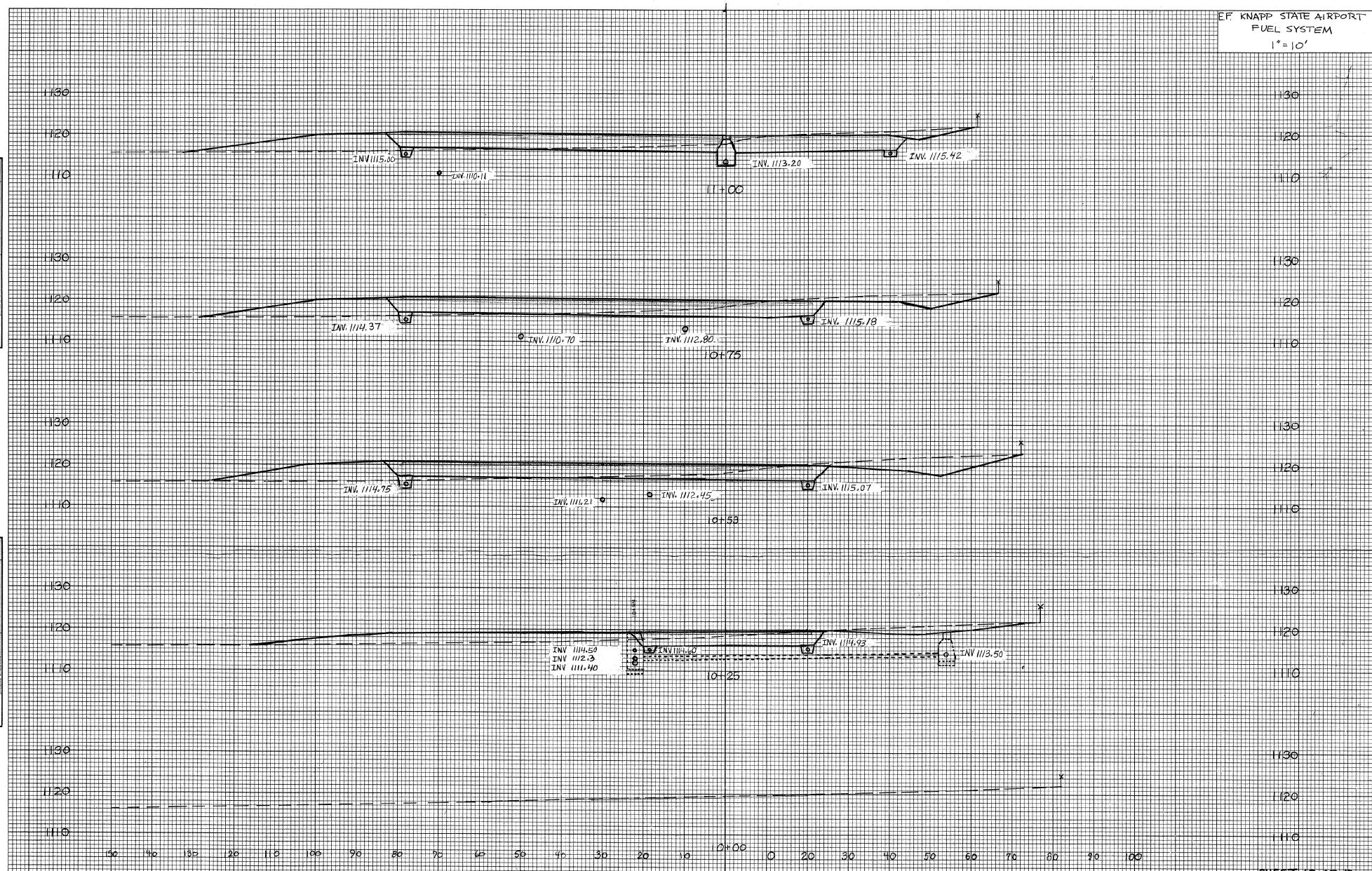
E-3

SHEET 9 OF 13

EF KNAPP STATE AIRPORT
FUEL SYSTEM
1" = 10'

STATE OF MISSISSIPPI
SURVEY
NOTE BOOK
NO. 1116-11
PAGE 1116-11

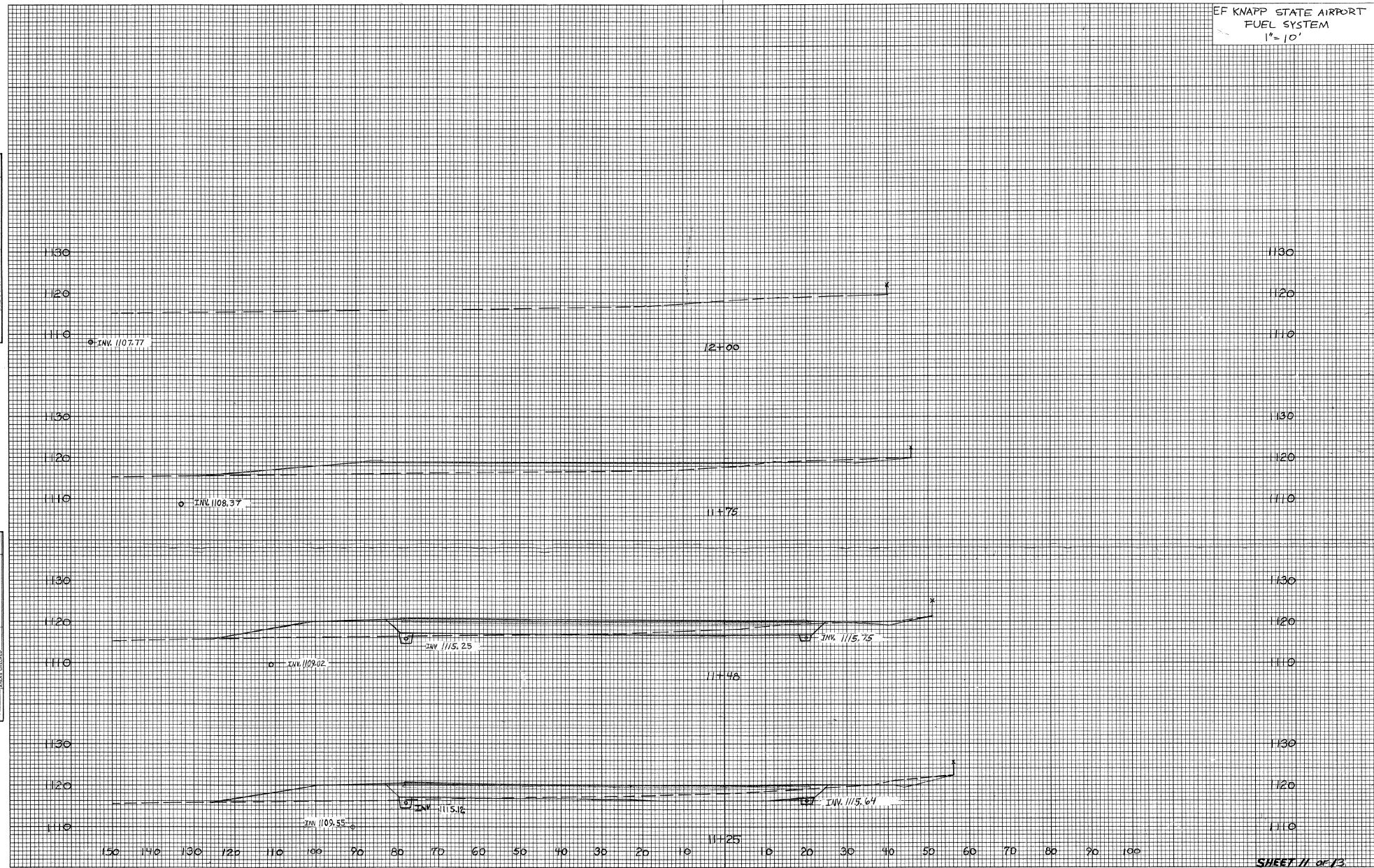
STATE OF MISSISSIPPI
SURVEY
NOTE BOOK
NO. 1116-11
PAGE 1116-11



EF KNAPP STATE AIRPORT
FUEL SYSTEM
1" = 10'

FINAL SURVEY
DATE: _____
BY: _____
PROJECT: _____
SHEET NO.: _____
TOTAL SHEETS: _____

ORIGINAL SURVEY
DATE: _____
BY: _____
PROJECT: _____
SHEET NO.: _____
TOTAL SHEETS: _____



QUANTITY SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

APPROXIMATE SUMMARY OF QUANTITIES

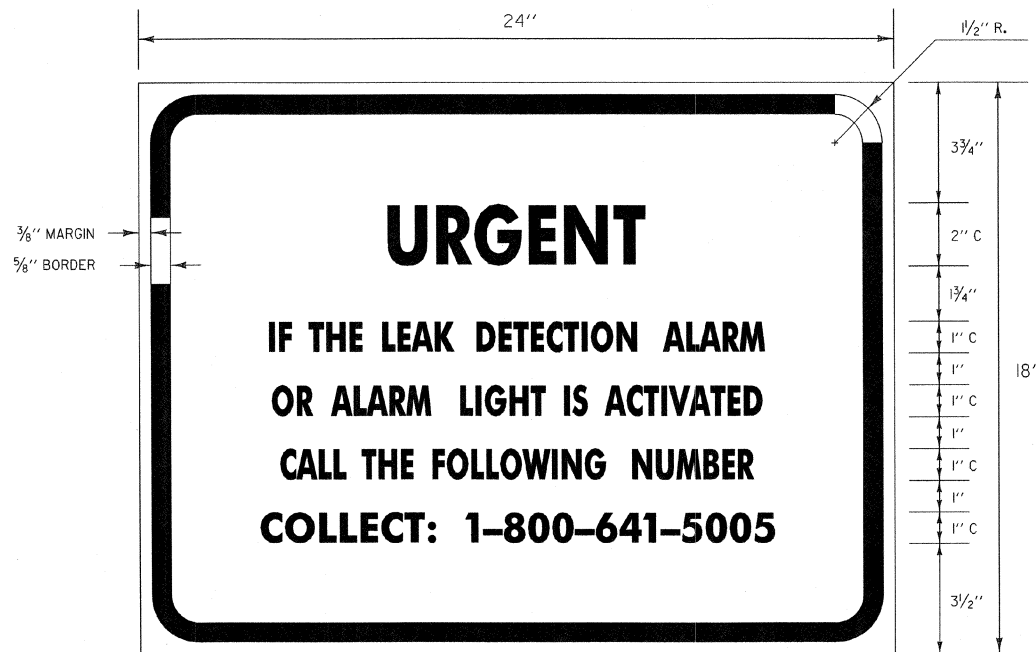
				QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM TOTAL	ROUNDING
				50	CY	SOLID ROCK EXCAVATION	203.16	-
				* 1020	CY	COMMON EXCAVATION	203.15	-
				110	CY	EARTH BORROW	203.30	-
				1400	CY	SAND BORROW	203.31	-
				500	CY	TRENCH EXCAVATION OF EARTH	204.20	-
				25	CY	TRENCH EXCAVATION OF ROCK	204.21	-
				50	CY	EXCAV. CL. I CONTAMINATED SOILS	215.20	EST.
				50	CY	EXCAV. CL. II CONTAMINATED SOILS	215.21	EST.
				220	CY	SUBBASE DENSE GRADED CRUSHED STONE	301.35	-
				20	CWT	EMULSIFIED ASPHALT	404.65	-
				380	TON	BITUMINOUS CONCRETE PAVEMENT	406.25	-
				60	CY	CONCRETE, CLASS A	501.22	-
				250	LB	REINFORCING STEEL	507.15	-
				5	GAL	JOINT SEALER, HOT POURED (MOD.)	524.10	-
				1	EA	REMOVAL OF STRUCTURE (MODIFIED)	529.15	-
				357	LF	12" CORRUGATED POLYETHYLENE PIPE	601.0905	-
				3	EA	PRECAST REINFORCED CONC. CATCH BASIN W/CAST IRON GRATE	604.20	-
				1	EA	PRECAST REINFORCED CONCRETE MANHOLE WITH CAST IRON COVER	604.21	-
				1	EA	PRECAST REINFORCED CONC. MANHOLE W/CAST IRON COVER (MODIFIED)	604.21	-
				1	EA	CAST IRON GRATE W/FRAME TYPE D	604.51	-
				500	LF	6" UNDERDRAIN	605.10	EST.
				4	EA	UNDERDRAIN FLUSHING BASIN	605.95	EST.
				60	MGL	DUST CONTROL W/WATER	609.10	EST.
				8	EA	GUIDE POSTS (MODIFIED)	621.85	-
				140	TON	CRUSHED STONE BEDDING (MODIFIED)	629.54	-
				1	LS	MOBILIZATION	635.10	EST.
				300	LF	4" YELLOW LINE (MODIFIED)	646.21	EST.
				300	LF	TEMP. 4" YELLOW LINE (MOD.)	646.61	EST.
				1670	SY	GEOTEXTILE FOR ROADBED SUBGRADE SEPARATOR	649.11	EST.
				* 200	SY	GEOTEXTILE FABRIC FOR SILT FENCE	649.51	EST.
				265	SY	GEOTEXTILE FOR UNDERDRAIN TRENCH LINING	649.41	EST.
				55	LB	SEED	651.15	-
				320	LB	FERTILIZER	651.18	-
				2	TON	AGRICULTURAL LIMESTONE	651.20	-
				2	TON	HAY MULCH	651.25	-
				35	EA	HAY BALES FOR EROSION CONTROL	651.26	-
				220	CY	TOPSOIL	651.35	-
				2200	LF	ELECTRICAL CONDUIT	678.21	EST.
				3	EA	JUNCTION BOX	678.26	-
				2	EA	LIGHT POLE BASE	679.21	-
				2	EA	LIGHT POLE	679.45	-
				2	EA	LUMINAIRE	679.50	-
				1	LS	AIRPORT FUEL SYSTEM	830.15	-
				* 1	LS	TESTING EQUIPMENT- CONCRETE	631.16	-
				* 1	LS	TESTING EQUIPMENT- BITUMINOUS	631.17	-
				* 250	SF	BLACK PAVEMENT MARKING MASKING TAPE	646.86	EST.

DETAILED SUMMARY OF QUANTITIES

[illegible]

DETAILED SUMMARY OF QUANTITIES

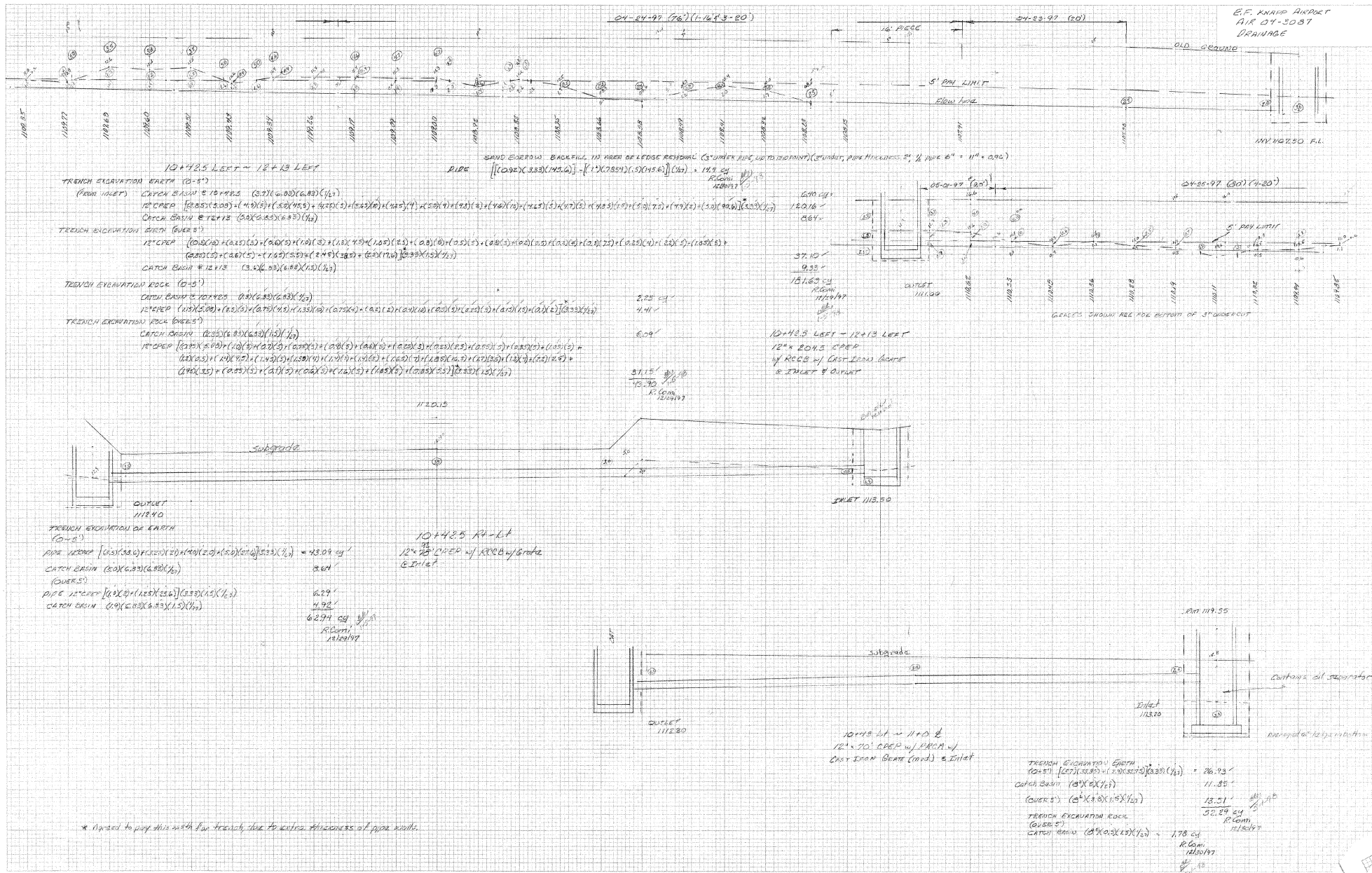
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COLORS:
TEXT & BORDER - RED
BACKGROUND - REFLECTORIZED WHITE

MATERIALS:
SEE STANDARD E-140

ORIGINAL SURVEY	REVIEWED	DATE
NOT RECD		82



[illegible]

	DATE	NO.	HOLD BOOK	SUBJECT
	DATED RECEIVED			
	PAGE NO.			
	CHECKED BY			
	REMARKS			