

Date: September 25, 2012

RE: City of Duluth Bid #12-4403  
New Passenger Terminal Bid Package 2C  
Wayfinding Rebid & Hazardous Materials Abatement

Addendum No. 1

TO: Prospective Bidders

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated September 17, 2012. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

**1.0 PROJECT MANUAL**

No Changes

**2.0 DRAWINGS**

**2.1 include drawings listed below for reference only.**

E100 - Site Electrical and Communication Overall Plan and Notes – Bid Package 1 Conformance;  
E101 – Site Electrical and Comm Plan (sheet 1 of 6) – Bid Package 1 Conformance;  
E102 – Site Electrical and Comm Plan (sheet 2 of 6) – Bid Package 1 Conformance;  
E103 - Site Electrical and Comm Plan (sheet 3 of 6) – Bid Package 1 Conformance;  
E104 - Site Electrical and Comm Plan (sheet 4 of 6) – Bid Package 1 Conformance;  
E105 - Site Electrical and Comm Plan (sheet 5 of 6) – Bid Package 1 Conformance;  
E106 - Site Electrical and Comm Plan (sheet 6 of 6) – Bid Package 1 Conformance;  
E400 – Electrical Comm Notes and Details – Bid Package 1 Conformance;  
E100 – Site Electrical and Communication Overall Plan and Notes – Record Documents;  
E101 – Site Electrical Plan (sheet 1 of 8) – Record Documents;  
E102 – Site Electrical Plan (sheet 2 of 8) – Record Documents;  
E103 – Site Electrical Plan (sheet 3 of 8) – Record Documents;  
E104 – Site Electrical Plan (sheet 4 of 8) – Record Documents;  
E105 – Site Electrical Plan (sheet 5 of 8) – Record Documents;  
E106 – Site Electrical Plan (sheet 6 of 8) – Record Documents;  
E107 – Site Electrical Plan (sheet 7 of 8) – Record Documents;  
E108 – Site Electrical Plan (sheet 8 of 8) – Record Documents;  
E400- Electrical Comm Notes and Details – Record Documents.

**ADDED FOR REFERENCE ONLY PLANS DATED:**

**May 15, 1972**

**May 24, 1972**

**May 23, 1986**

**February 2, 1989**

## **2.2 Drawing Change**

### **Drawing G100**

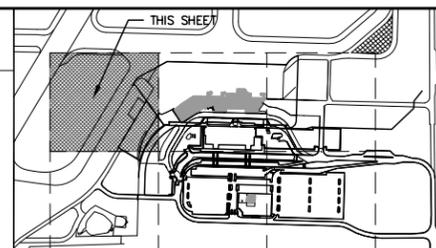
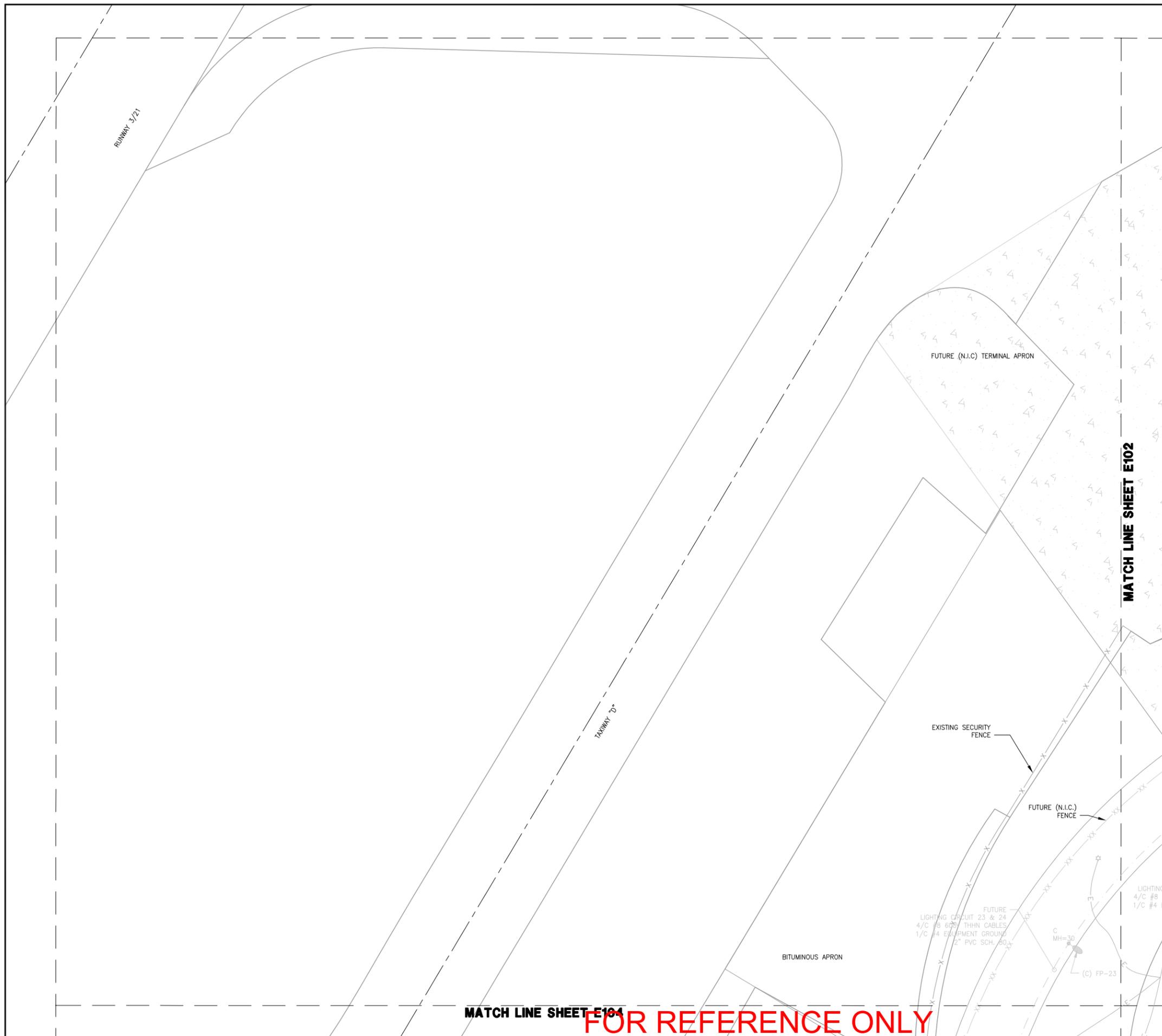
1. Add Electrical Notes as follows:
  - a. Provide 277V power for sign illumination as follows:
    - i. Signs E/01, E/04, E/05, & E/08 may be connected to perimeter roadway lighting circuit FP-9 or FP-10.
    - ii. Sign E/13 may be connected to roadway lighting circuit FP-5
  - b. All wiring shall be in conduit.
  - c. Existing circuit splice shall be done in handholes.
2. Add note as follows:
  - a. The contractor shall retain a certified utility locating service to locate all private (DAA owned) utilities within the project limits. It shall be the contractors responsibility to locate all private utilities as necessary to complete the work.

### **3.0 OTHER:**

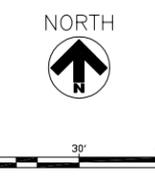
1. There will be no "Request for Substitutions" considered until each Bid Division has been awarded.
2. The existing Terminal Building will be fully energized and heated for the duration of the abatement process. The existing heating system will be utilized until disabled and then Construction Manager will provide temporary heating to meet needs.
3. The Owner has agreed to allow abatement contractor to utilize the existing elevator for the duration of the abatement process.
4. See attached plan holder list.

**END OF ADDENDUM NO. 1**





**KEY MAP**  
N.T.S.



**LEGEND**

- 4/C #6 THHN 600V, 1/C #4 GRD. IN CONDUIT
- 4/C #8 THHN 600V, 1/C #4 GRD. IN CONDUIT
- PROPOSED CONDUIT DUCTS
- 2~2/C 18 GA SHIELDED
- EXISTING OVERHEAD ELECT.
- ⊕ EXISTING POWER POLE
- ⊠ PROPOSED ELECT. MANHOLE
- ⊙ PROPOSED LIGHT POLES
- ⊞ PROPOSED PHONE PEDESTAL
- PROPOSED COMM MANHOLE
- EXISTING UNDERGROUND ELECT.
- EXISTING -PRIVATE- ELECT.
- ⊙ EXISTING LIGHT & POLE
- UT --- PROPOSED PHONE CABLES
- EXISTING PHONE CABLES
- UTV --- EXISTING CATV CABLES
- FO --- EXISTING FIBER OPTIC CABLE
- EXISTING PARKING GATE
- ⊕ EXISTING ELECT. MANHOLE
- W --- PROPOSED WATERMAIN
- EXISTING WATERMAIN
- S --- EXISTING SANITARY
- SAN --- PROPOSED SANITARY
- ⊙ SAN EXISTING SANITARY MANHOLE
- ⊙ PROPOSED SANITARY MANHOLE
- UG --- EXISTING GAS LINE
- GAS --- PROPOSED GAS LINE
- ⊕ EXISTING HYDRANT
- ⊕ PROPOSED HYDRANT
- ⊞ FUTURE (N.I.C.) GATES AND LOOPS

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Duluth, Minnesota 55811  
218-722-1227 Fax: 218-722-1052  
www.rsandh.com

**DULUTH AIRPORT AUTHORITY**

**DULUTH INTERNATIONAL AIRPORT  
DULUTH, MN**

**NEW TERMINAL DESIGN**

**CONSULTANTS**

Interior Architects:  
**SJA ARCHITECTS**  
11 E Superior Street Suite 340, Duluth MN 55802  
TEL: (218) 724-8578 / FAX: (218) 724-8717

Structural Engineers:  
**MBJ CONSULTING ENG.**  
501 Lake Avenue South, Suite 300, Duluth MN 55802  
TEL: (218) 722-1056 / FAX: (218) 722-9306

M/E/P/FP Engineers:  
**COSENTINI ASSOCIATES INC.**  
1 South Wacker Drive, 37th Floor, Chicago IL 60606  
TEL: (312) 201-7408 / FAX: (312) 201-0031

Baggage Handling Systems Consultants:  
**BNP ASSOCIATES INC.**  
101 East Ridge Office Park, Suite 103, Danbury CT 06810  
TEL: (203) 792-3000 / FAX: (203) 792-4900

Landscaping Consultants:  
**APPOLD DESIGN**  
2432 East First Street, Duluth MN 55812  
TEL: (218) 591-5079

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer or Architect under the laws of the State of Minnesota.

Print Name: PETER J. BUTLER  
Signature: *[Signature]*  
Date: 07/12/2010 Reg. No.: 46953

**REVISIONS**

NO.	DESCRIPTION	DATE
	CONFORMANCE SET	7.12.10

**DATE ISSUED: 07-12-2010**  
**REVIEWED BY: CEP**  
**DRAWN BY: LAD**  
**DESIGNED BY: PJB**

**AEP PROJECT NUMBER**  
**213-1882-091**

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**SHEET TITLE**

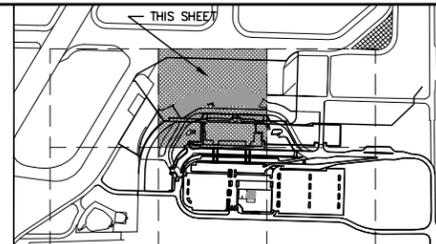
**SITE ELECTRICAL AND COMM. PLAN  
(SHEET 1 OF 6)**

**SHEET NUMBER**  
**E101**

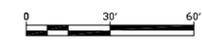
**BID PACKAGE 1  
CONFORMANCE**

MATCH LINE SHEET E104

**FOR REFERENCE ONLY**



**KEY MAP**  
N.T.S.



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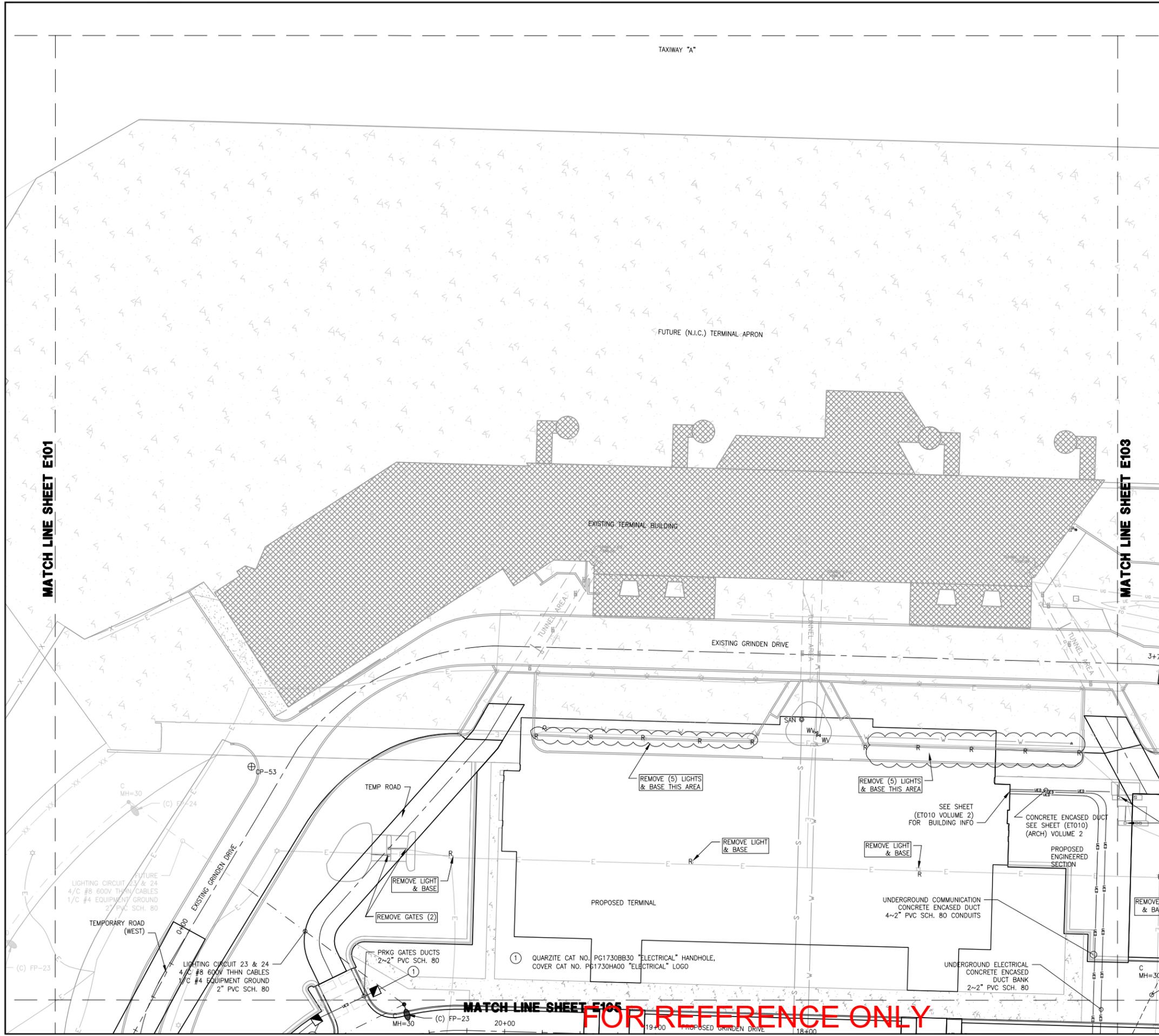
**SHEET TITLE**

**SITE ELECTRICAL AND COMM. PLAN  
(SHEET 2 OF 6)**

**SHEET NUMBER**

**E102**

**BID PACKAGE 1  
CONFORMANCE**



- LEGEND**
- 4/C #6 THHN 600V, 1/C #4 GRD. IN CONDUIT
  - 4/C #8 THHN 600V, 1/C #4 GRD. IN CONDUIT
  - PROPOSED CONDUIT DUCTS
  - 2~2/C 18 GA SHIELDED
  - EXISTING OVERHEAD ELECT.
  - ⊕ EXISTING POWER POLE
  - ⊕ PROPOSED ELECT. MANHOLE
  - ⊕ PROPOSED LIGHT POLES
  - ⊕ PROPOSED PHONE PEDESTAL
  - ⊕ PROPOSED COMM MANHOLE
  - EXISTING UNDERGROUND ELECT.
  - EXISTING -PRIVATE- ELECT.
  - ⊕ EXISTING LIGHT & POLE
  - PROPOSED PHONE CABLES
  - EXISTING PHONE CABLES
  - EXISTING CATV CABLES
  - EXISTING FIBER OPTIC CABLE
  - EXISTING PARKING GATE
  - ⊕ EXISTING ELECT. MANHOLE
  - PROPOSED WATERMAIN
  - EXISTING WATERMAIN
  - EXISTING SANITARY
  - PROPOSED SANITARY
  - ⊕ EXISTING SANITARY MANHOLE
  - ⊕ PROPOSED SANITARY MANHOLE
  - EXISTING GAS LINE
  - PROPOSED GAS LINE
  - ⊕ EXISTING HYDRANT
  - ⊕ PROPOSED HYDRANT
  - FUTURE (N.I.C.) GATES AND LOOPS

**FOR REFERENCE ONLY**

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DATE ISSUED: 07-12-2010

REVIEWED BY: CEP

DRAWN BY: LAD

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AEP PROJECT NUMBER

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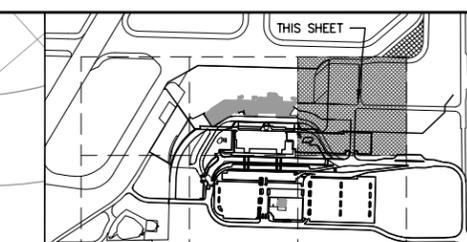
**SHEET TITLE**

**SITE ELECTRICAL AND COMM. PLAN  
(SHEET 3 OF 6)**

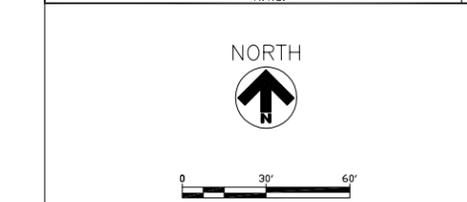
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**E103**

**BID PACKAGE 1  
CONFORMANCE**



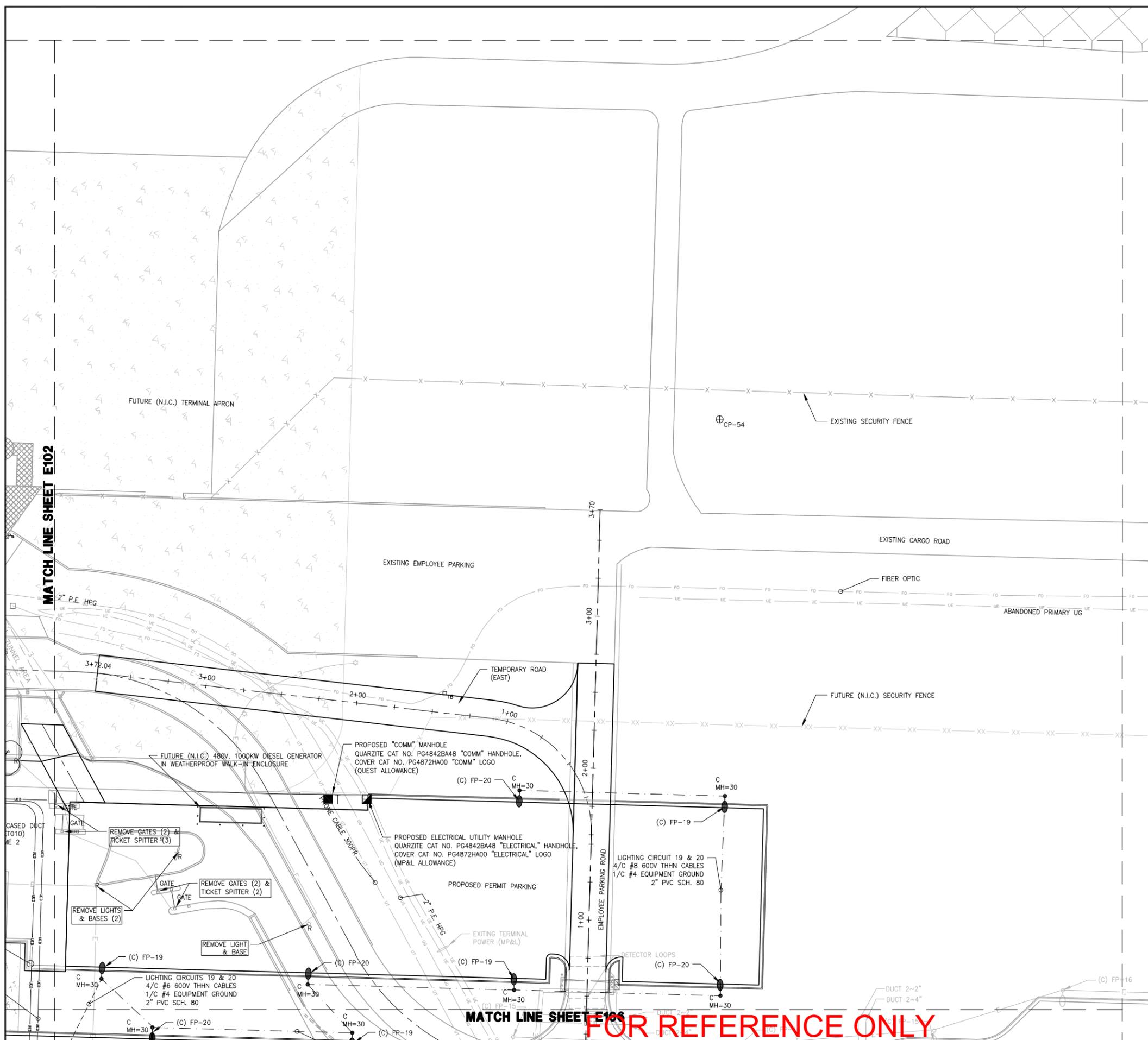
KEY MAP  
N.T.S.



NORTH

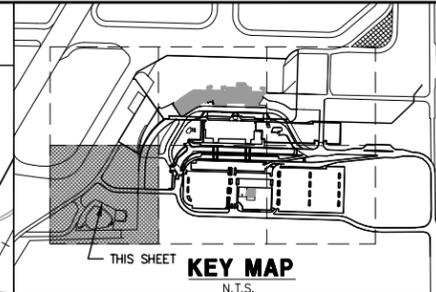


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- EXISTING HYDRANT
- PROPOSED HYDRANT
- FUTURE (N.I.C.) GATES AND LOOPS



**FOR REFERENCE ONLY**

MATCH LINE SHEET E101



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DULUTH INTERNATIONAL AIRPORT  
 DULUTH, MN

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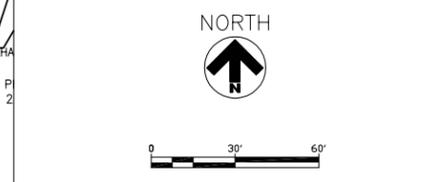
**REVISIONS**

NO.	DESCRIPTION	DATE
1	CONFORMANCE SET	7.12.10

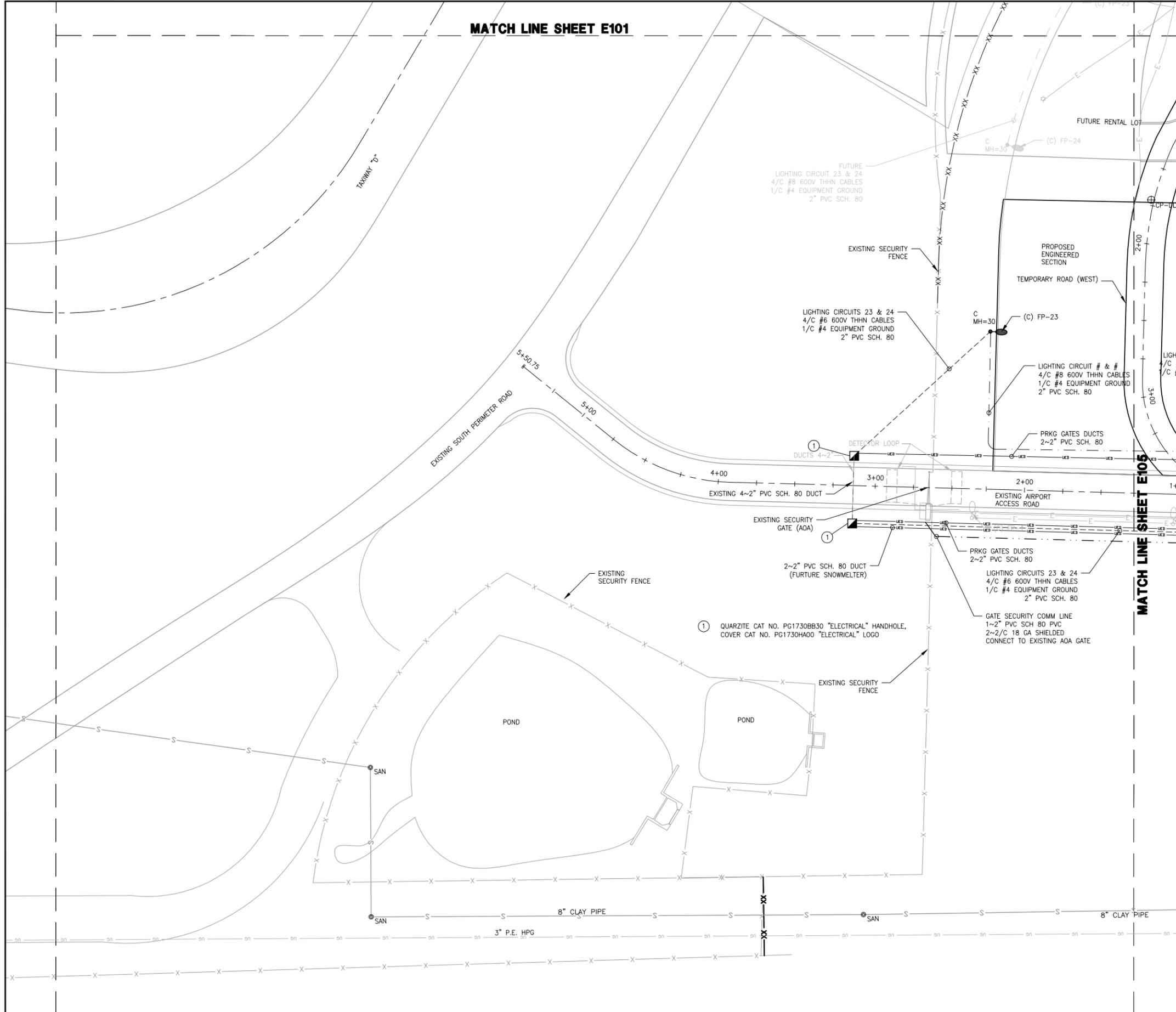
DATE ISSUED: 07-12-2010  
 REVIEWED BY: CEP  
 DRAWN BY: LAD  
 DESIGNED BY: PJB  
**AEP PROJECT NUMBER**  
 213-1882-091  
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**SHEET TITLE**  
 SITE ELECTRICAL AND COMM. PLAN  
 (SHEET 4 OF 6)

**SHEET NUMBER**  
 E104  
**BID PACKAGE 1 CONFORMANCE**



- LEGEND**
- 4/C #6 THHN 600V, 1/C #4 GRD. IN CONDUIT
  - 4/C #8 THHN 600V, 1/C #4 GRD. IN CONDUIT
  - PROPOSED CONDUIT DUCTS
  - 2~2/C 18 GA SHIELDED
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  - ⊙ PROPOSED LIGHT POLES
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  - ⊙ PROPOSED COMM MANHOLE
  - EXISTING UNDERGROUND ELECT.
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  - UT --- PROPOSED PHONE CABLES
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  - ⊙ EXISTING ELECT. MANHOLE
  - W --- PROPOSED WATERMAIN
  - W --- EXISTING WATERMAIN
  - S --- EXISTING SANITARY
  - SAN --- PROPOSED SANITARY
  - ⊙ SAN EXISTING SANITARY MANHOLE
  - ⊙ PROPOSED SANITARY MANHOLE
  - GAS --- EXISTING GAS LINE
  - GAS --- PROPOSED GAS LINE
  - ⊙ EXISTING HYDRANT
  - ⊙ PROPOSED HYDRANT
  - FUTURE (N.I.C.) GATES AND LOOPS



**FOR REFERENCE ONLY**







**SITE ELECTRICAL NOTES**

ELECTRICAL NOTES:

GENERAL:  
ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70), THE LIFE SAFETY CODE (NFPA 101), OSHA, STATE AND LOCAL CODES.

ALL MATERIALS USED ON THIS PROJECT SHALL BE NEW, UL APPROVED, UNLESS NOTED OTHERWISE.

ALL CIRCUIT CONDUCTORS SHALL BE COPPER TYPE THHN #10 AWG MINIMUM. ADJUST WIRE SIZE FOR VOLTAGE DROP AS REQUIRED.

ALL BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN SCHEDULE 80 PVC CONDUIT AS INDICATED ON THE DRAWINGS. MINIMUM CONDUIT SIZE SHALL BE 1" TRADE SIZE. CONCRETE EMBEDDED FEEDER CONDUIT SHALL BE CORROSION RESISTANT GALVANIZED IMC OR RIGID METAL CONDUIT WITH THREADED FITTINGS. SET SCREW FITTINGS ARE NOT PERMITTED. EMPTY CONDUIT SHALL BE PROVIDED WITH PULL STRING INSTALLED AND ENDS CAPPED.

PLAN:  
COORDINATE INSTALLATION OF NEW 480 V. O.H. ELECTRIC SERVICE W/ MINNESOTA POWER TO MH LOCATION AS SHOWN. PROVIDE ENTRANCE & METER HARDWARE REQUIRED.

PROVIDE CONCRETE BASE FOR MOUNTING PANEL FP ON EMBEDDED GALVANIZED STEEL STRUT. PROVIDE TWO 3" GRS CONNECTIONS TO MANHOLE.

PANEL FP SHALL BE SERVICE ENTRANCE RATED NEMA 4X SS 480/277 V, 3 PHASE, 125A, 42 POLE, WITH COPPER BUS, & BOLT ON PROGRAMMABLE CIRCUIT BREAKERS. SQUARE D TYPE NF POWERLINK G3 OR APPROVED EQUAL (SEE SPECIFICATIONS). PROVIDE A TYPEWRITTEN CIRCUIT DIRECTORY IN STEEL FRAME ON INSIDE OF DOOR.

PROVIDE PHOTOCELL CONTROL MOUNTED AT NORTH SIDE OF NEAREST TICKET BOOTH ROOF. CONNECT TO PANEL FP CONTROLLER.

PROVIDE BRANCH CIRCUIT WIRING TO LIGHT POLES & TICKET DISPENSERS USING #6 WIRE TO FIRST POLE/DISPENSER AND #8 WIRE TO REMAINING POLES ON RUN.

PROVIDE 480 V TO 208 V TRANSFORMER AT PANELBOARD FOR GATE OPERATOR AND TEMPORARY CONNECTIONS FOR EXISTING OUTDOOR LIGHTING.

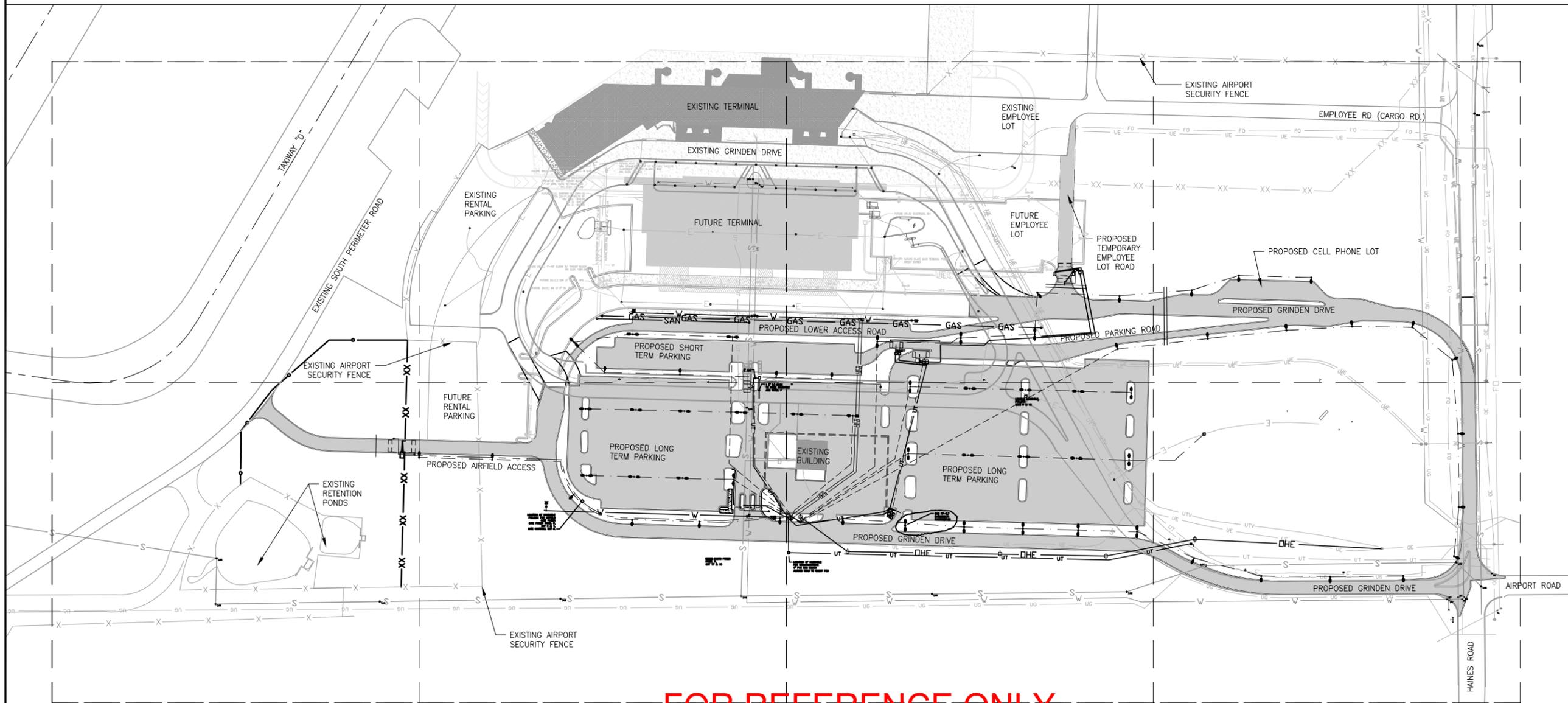
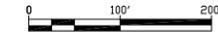
PROVIDE TWO 2" PVC CONDUIT CONNECTIONS BETWEEN ADJACENT ENTRY/EXIT ISLANDS AND BETWEEN ADJACENT TICKET BOOTHS STUBBED 6" AFG. CONNECT NEAREST TICKET BOOTH TO POWER MH AND TO COMM MH WITH A SINGLE 2" PVC CONDUIT.

PROVIDE TWO 2" GRS CONDUIT, CONCRETE ENCASED TO NEW AIRFIELD ACCESS ROAD GATE OPERATOR, STUBBED 6" AFG. PROVIDE A 1" PVC CONDUIT CONNECTION BETWEEN THE GATE OPERATOR AND EACH CARD ACCESS STATION.

**RECORD DRAWINGS:**  
THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON INFORMATION SUBMITTED, IN PART, BY OTHERS. WHILE IT IS BELIEVED TO BE RELIABLE, REYNOLDS, SMITH, & HILLS, INC. IS NOT RESPONSIBLE FOR ITS ACCURACY, NOR FOR ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS DOCUMENT AS A RESULT.

NOTE:

1. PRIOR TO DIGGING THE CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL. 1-800-252-1166
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO MARK, MAINTAIN, AND REMARK IF NECESSARY, ALL PRIVATE (DAA) OWNED UTILITIES.



**FOR REFERENCE ONLY**



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**REPLACEMENT  
TERMINAL AREA  
DEVELOPMENT,  
LANDSIDE SITE  
PHASE I**

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature  
Typed Name JOHN E. HIPPOCHEN  
Date 01/14/2011 Reg. No. 22088

**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: 01-14-2011  
REVIEWED BY: BCT  
DRAWN BY: LAD  
DESIGNED BY: B A

AEP PROJECT NUMBER  
214-1882-093 & 095  
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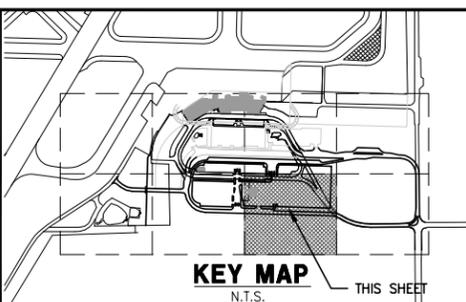
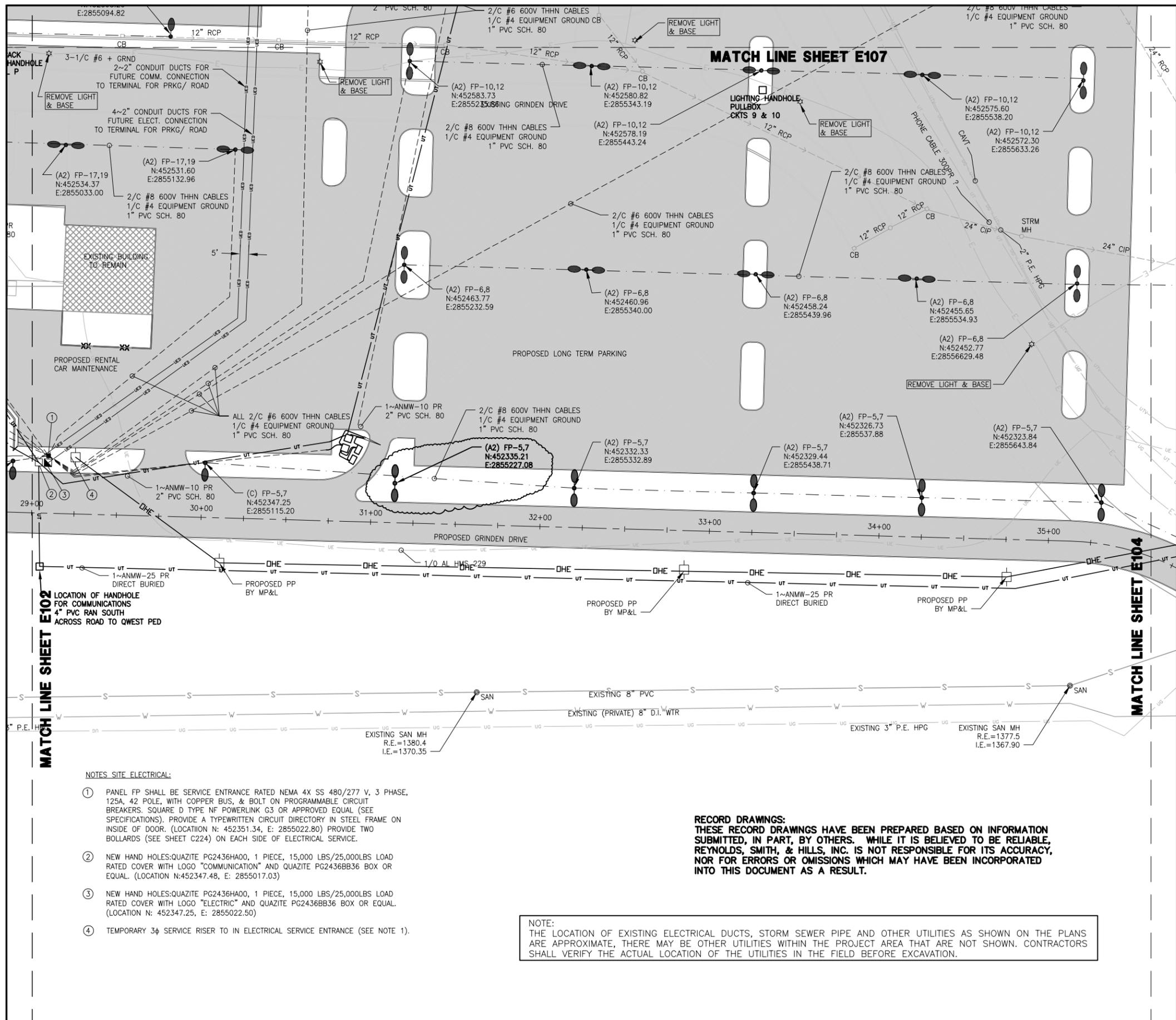
**SHEET TITLE  
SITE ELECTRICAL  
& COMM.  
OVERALL  
PLAN AND NOTES**

SHEET NUMBER  
**E100**

**RECORD  
DOCUMENTS**







**KEY MAP**  
N.T.S. THIS SHEET

**NOTE:**  
ALL NORTHINGS, EASTINGS AND ELEVATIONS LABELED ON THESE PLANS ARE IN:  
MINNESOTA STATE PLANE NORTH (1996)  
VERTICAL DATUM IS NAVD 88  
HORIZONTAL DATUM IS NAD83

**LEGEND**

- 2/C #6 THHN 600V, 1/C #4 GRD. IN CONDUIT
- 4/C #8 THHN 600V, 1/C #4 GRD. IN CONDUIT
- 2/C #8 THHN 600V, 1/C #4 GRD. IN CONDUIT
- PROPOSED CONDUIT DUCTS
- PROPOSED OVERHEAD ELECT.
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- PROPOSED ELECT. MANHOLE
- PROPOSED LIGHT POLES
- PROPOSED PHONE PEDESTAL
- PROPOSED COMM MANHOLE
- EXISTING UNDERGROUND ELECT.
- EXISTING -PRIVATE- ELECT.
- EXISTING LIGHT & POLE
- PROPOSED PHONE CABLES
- EXISTING PHONE CABLES
- EXISTING CATV CABLES
- EXISTING FIBER OPTIC CABLE
- EXISTING PARKING GATE
- EXISTING ELECT. MANHOLE
- PROPOSED WATERMAIN
- EXISTING WATERMAIN
- EXISTING SANITARY
- PROPOSED SANITARY
- EXISTING SANITARY MANHOLE
- PROPOSED SANITARY MANHOLE
- EXISTING GAS LINE
- PROPOSED GAS LINE
- EXISTING HYDRANT
- PROPOSED HYDRANT

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**REPLACEMENT TERMINAL AREA DEVELOPMENT, LANDSIDE SITE PHASE I**

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature  
Typed Name JOHN E. HIPPCHEN  
Date 01/14/2011 Reg. No. 22088

**REVISIONS**

NO.	DESCRIPTION	DATE
ESI 4	REVISION	09-02-09

**DATE ISSUED: 01-14-2011**  
**REVIEWED BY: BCT**  
**DRAWN BY: LAD**  
**DESIGNED BY: BOA**

**AEP PROJECT NUMBER**  
**214-1882-093 & 095**  
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**SHEET TITLE**  
**SITE ELECTRICAL PLAN (SHEET 3 OF 8)**

**SHEET NUMBER**  
**E103**

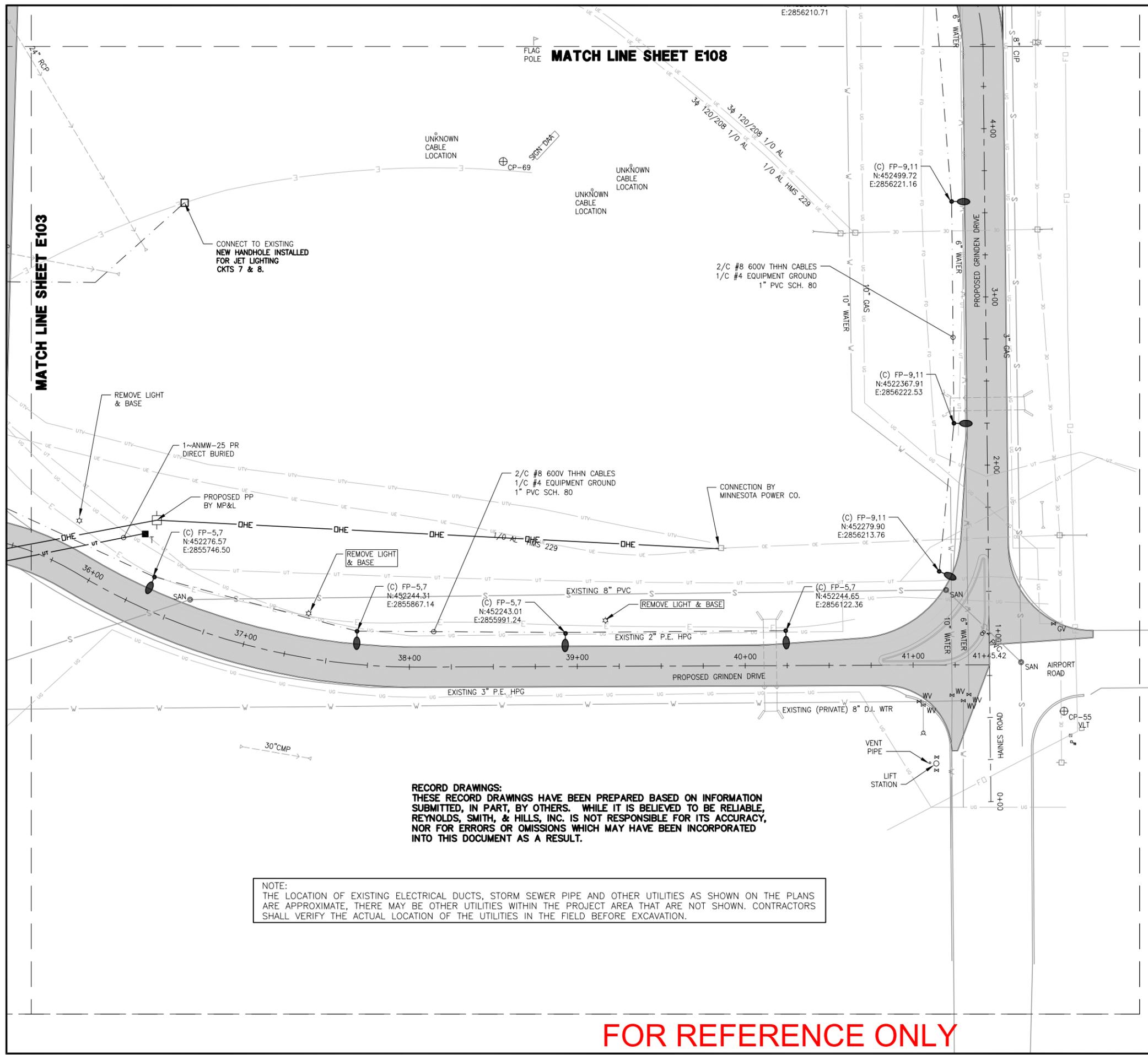
**RECORD DOCUMENTS**

**RECORD DRAWINGS:**  
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**NOTE:**  
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- NOTES SITE ELECTRICAL:**
- PANEL FP SHALL BE SERVICE ENTRANCE RATED NEMA 4X SS 480/277 V, 3 PHASE, 125A, 42 POLE, WITH COPPER BUS, & BOLT ON PROGRAMMABLE CIRCUIT BREAKERS. SQUARE D TYPE NF POWERLINK G3 OR APPROVED EQUAL (SEE SPECIFICATIONS). PROVIDE A TYPEWRITTEN CIRCUIT DIRECTORY IN STEEL FRAME ON INSIDE OF DOOR. (LOCATION N: 452351.34, E: 2855022.80) PROVIDE TWO BOLLARDS (SEE SHEET C224) ON EACH SIDE OF ELECTRICAL SERVICE.
  - NEW HAND HOLES:QUAZITE PG2436HA00, 1 PIECE, 15,000 LBS/25,000LBS LOAD RATED COVER WITH LOGO "COMMUNICATION" AND QUAZITE PG2436BB36 BOX OR EQUAL. (LOCATION N:452347.48, E: 2855017.03)
  - NEW HAND HOLES:QUAZITE PG2436HA00, 1 PIECE, 15,000 LBS/25,000LBS LOAD RATED COVER WITH LOGO "ELECTRIC" AND QUAZITE PG2436BB36 BOX OR EQUAL. (LOCATION N: 452347.25, E: 2855022.50)
  - TEMPORARY 3/4" SERVICE RISER TO IN ELECTRICAL SERVICE ENTRANCE (SEE NOTE 1).

**FOR REFERENCE ONLY**

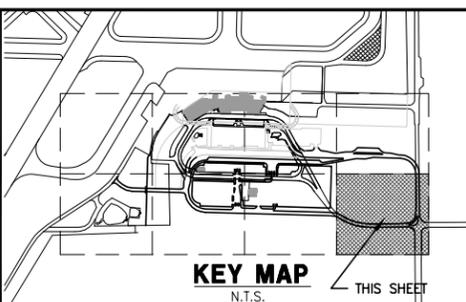


**MATCH LINE SHEET E108**

**MATCH LINE SHEET E103**

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**NOTE:**  
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 MINNESOTA STATE PLANE NORTH (1996)  
 VERTICAL DATUM IS NAVD 88  
 HORIZONTAL DATUM IS NAD83

**LEGEND**

- 2/C #6 THHN 600V, 1/C #4 GRD. IN CONDUIT
- 4/C #8 THHN 600V, 1/C #4 GRD. IN CONDUIT
- 2/C #8 THHN 600V, 1/C #4 GRD. IN CONDUIT
- PROPOSED CONDUIT DUCTS
- PROPOSED OVERHEAD ELECT.
- EXISTING OVERHEAD ELECT.
- ⊕ EXISTING POWER POLE
- ⊕ PROPOSED POWER POLE
- ⊕ PROPOSED ELECT. MANHOLE
- ⊕ PROPOSED LIGHT POLES
- ⊕ PROPOSED PHONE PEDESTAL
- ⊕ PROPOSED COMM MANHOLE
- EXISTING UNDERGROUND ELECT.
- EXISTING -PRIVATE- ELECT.
- ⊕ EXISTING LIGHT & POLE
- PROPOSED PHONE CABLES
- EXISTING PHONE CABLES
- EXISTING CATV CABLES
- EXISTING FIBER OPTIC CABLE
- ⊕ EXISTING PARKING GATE
- ⊕ EXISTING ELECT. MANHOLE
- PROPOSED WATERMAIN
- EXISTING WATERMAIN
- EXISTING SANITARY
- PROPOSED SANITARY
- ⊕ EXISTING SANITARY MANHOLE
- ⊕ PROPOSED SANITARY MANHOLE
- EXISTING GAS LINE
- PROPOSED GAS LINE
- ⊕ EXISTING HYDRANT
- ⊕ PROPOSED HYDRANT

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**REPLACEMENT  
 TERMINAL AREA  
 DEVELOPMENT,  
 LANDSIDE SITE  
 PHASE I**

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Signature  
 Typed Name JOHN E. HIPPCHEN  
 Date 01/14/2011 Reg. No. 22088

**REVISIONS**

NO.	DESCRIPTION	DATE

**DATE ISSUED: 01-14-2011**  
**REVIEWED BY: BCT**  
**DRAWN BY: LAD**  
**DESIGNED BY: BOA**

**AEP PROJECT NUMBER**  
**214-1882-093 & 095**  
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**SHEET TITLE**

**SITE ELECTRICAL  
 PLAN  
 (SHEET 4 OF 8)**

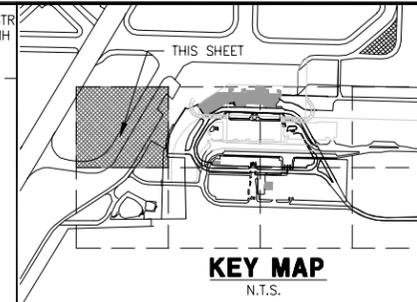
**SHEET NUMBER**  
**E104**

**RECORD  
 DOCUMENTS**

**FOR REFERENCE ONLY**

NOTE:  
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NORTH



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VERTICAL DATUM IS NAVD 88  
HORIZONTAL DATUM IS NAD83

**LEGEND**

- 2/C #6 THHN 600V, 1/C #4 GRD. IN CONDUIT
- 4/C #8 THHN 600V, 1/C #4 GRD. IN CONDUIT
- 2/C #8 THHN 600V, 1/C #4 GRD. IN CONDUIT
- UED UED PROPOSED CONDUIT DUCTS
- OHE OHE PROPOSED OVERHEAD ELECT.
- OE OE EXISTING OVERHEAD ELECT.
- EXISTING POWER POLE
- PROPOSED POWER POLE
- PROPOSED ELECT. MANHOLE
- PROPOSED LIGHT POLES
- PROPOSED PHONE PEDESTAL
- PROPOSED COMM MANHOLE
- UE UE EXISTING UNDERGROUND ELECT.
- E E EXISTING -PRIVATE- ELECT.
- \* EXISTING LIGHT & POLE
- UT UT PROPOSED PHONE CABLES
- UT UT EXISTING PHONE CABLES
- UTV UTV EXISTING CATV CABLES
- FO FO EXISTING FIBER OPTIC CABLE
- EXISTING PARKING GATE
- ⊕ EXISTING ELECT. MANHOLE
- W W PROPOSED WATERMAIN
- W W EXISTING WATERMAIN
- S S EXISTING SANITARY
- SAN SAN PROPOSED SANITARY
- SAN EXISTING SANITARY MANHOLE
- ⊙ PROPOSED SANITARY MANHOLE
- UG UG EXISTING GAS LINE
- GAS GAS PROPOSED GAS LINE
- ▲ EXISTING HYDRANT
- ▲ PROPOSED HYDRANT

MATCH LINE SHEET E106

MATCH LINE SHEET E101

**FOR REFERENCE ONLY**

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**REPLACEMENT  
TERMINAL AREA  
DEVELOPMENT,  
LANDSIDE SITE  
PHASE I**

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**REVISIONS**

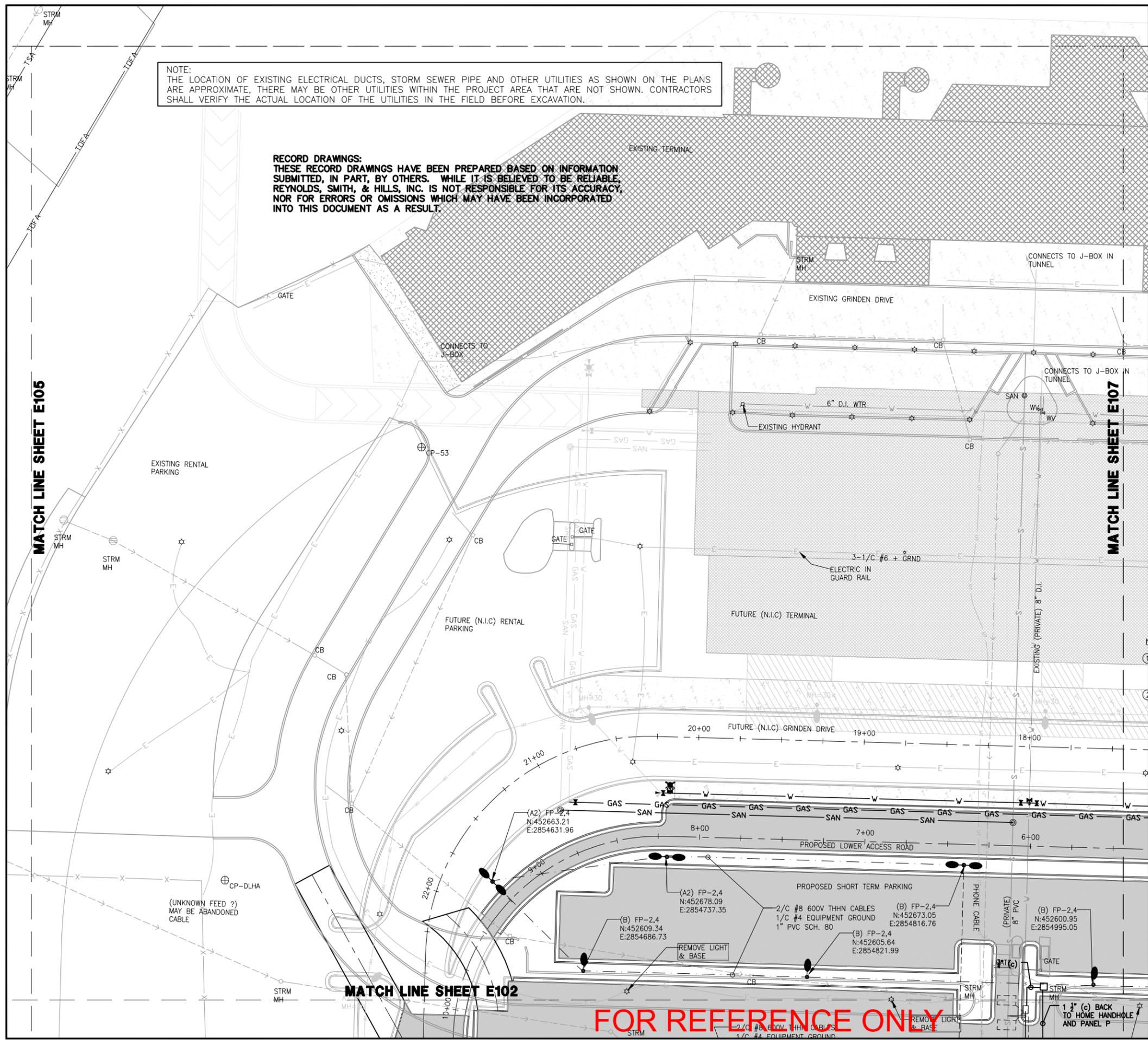
NO.	DESCRIPTION	DATE

**DATE ISSUED: 01-14-2011**  
**REVIEWED BY: BCT**  
**DRAWN BY: LAD**  
**DESIGNED BY: BOA**

**AEP PROJECT NUMBER**  
**214-1882-093 & 095**  
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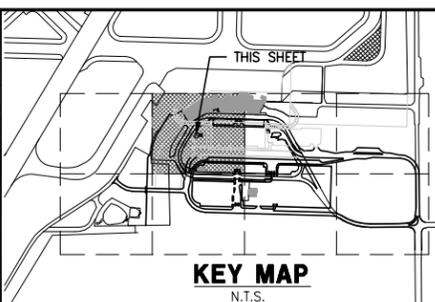
**SHEET TITLE**  
**SITE ELECTRICAL  
PLAN  
(SHEET 5 OF 8)**

**SHEET NUMBER**  
**E105**  
**RECORD  
DOCUMENTS**



NOTE:  
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VERTICAL DATUM IS NAVD 88  
HORIZONTAL DATUM IS NAD83

**LEGEND**

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- 4/C #8 THHN 600V, 1/C #4 GRD. IN CONDUIT
- 2/C #8 THHN 600V, 1/C #4 GRD. IN CONDUIT
- PROPOSED CONDUIT DUCTS
- PROPOSED OVERHEAD ELECT.
- EXISTING OVERHEAD ELECT.
- ⊕ EXISTING POWER POLE
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- ⊕ PROPOSED ELECT. MANHOLE
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- ⊕ EXISTING ELECT. MANHOLE
- PROPOSED WATERMAIN
- EXISTING WATERMAIN
- EXISTING SANITARY
- PROPOSED SANITARY
- ⊕ EXISTING SANITARY MANHOLE
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**REPLACEMENT  
TERMINAL AREA  
DEVELOPMENT,  
LANDSIDE SITE  
PHASE I**

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Date 01/14/2011 Reg. No. 22088

**REVISIONS**

NO.	DESCRIPTION	DATE

**DATE ISSUED: 01-14-2011**  
**REVIEWED BY: BCT**  
**DRAWN BY: LAD**  
**DESIGNED BY: BOA**

**AEP PROJECT NUMBER**  
**214-1882-093 & 095**  
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**SHEET TITLE**

**SITE ELECTRICAL  
PLAN  
(SHEET 6 OF 8)**

**SHEET NUMBER**  
**E106**

**RECORD  
DOCUMENTS**

**FOR REFERENCE ONLY**

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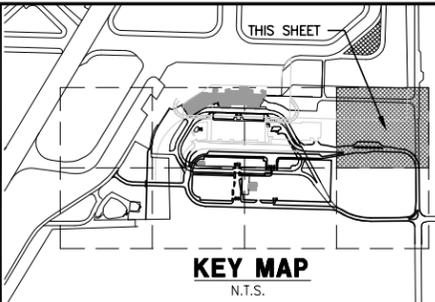
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MATCH LINE SHEET E107

MATCH LINE SHEET E104

FOR REFERENCE ONLY



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- PROPOSED COMM MANHOLE
- EXISTING UNDERGROUND ELECT.
- EXISTING -PRIVATE- ELECT.
- EXISTING LIGHT & POLE
- UT --- PROPOSED PHONE CABLES
- UT --- EXISTING PHONE CABLES
- UTV --- EXISTING CATV CABLES
- FO --- EXISTING FIBER OPTIC CABLE
- EXISTING PARKING GATE
- EXISTING ELECT. MANHOLE
- W --- PROPOSED WATERMAIN
- W --- EXISTING WATERMAIN
- S --- EXISTING SANITARY
- SAN --- PROPOSED SANITARY
- SAN EXISTING SANITARY MANHOLE
- PROPOSED SANITARY MANHOLE
- UG --- EXISTING GAS LINE
- GAS --- PROPOSED GAS LINE
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**REPLACEMENT  
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DEVELOPMENT,  
LANDSIDE SITE  
PHASE I**

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**214-1882-093 & 095**  
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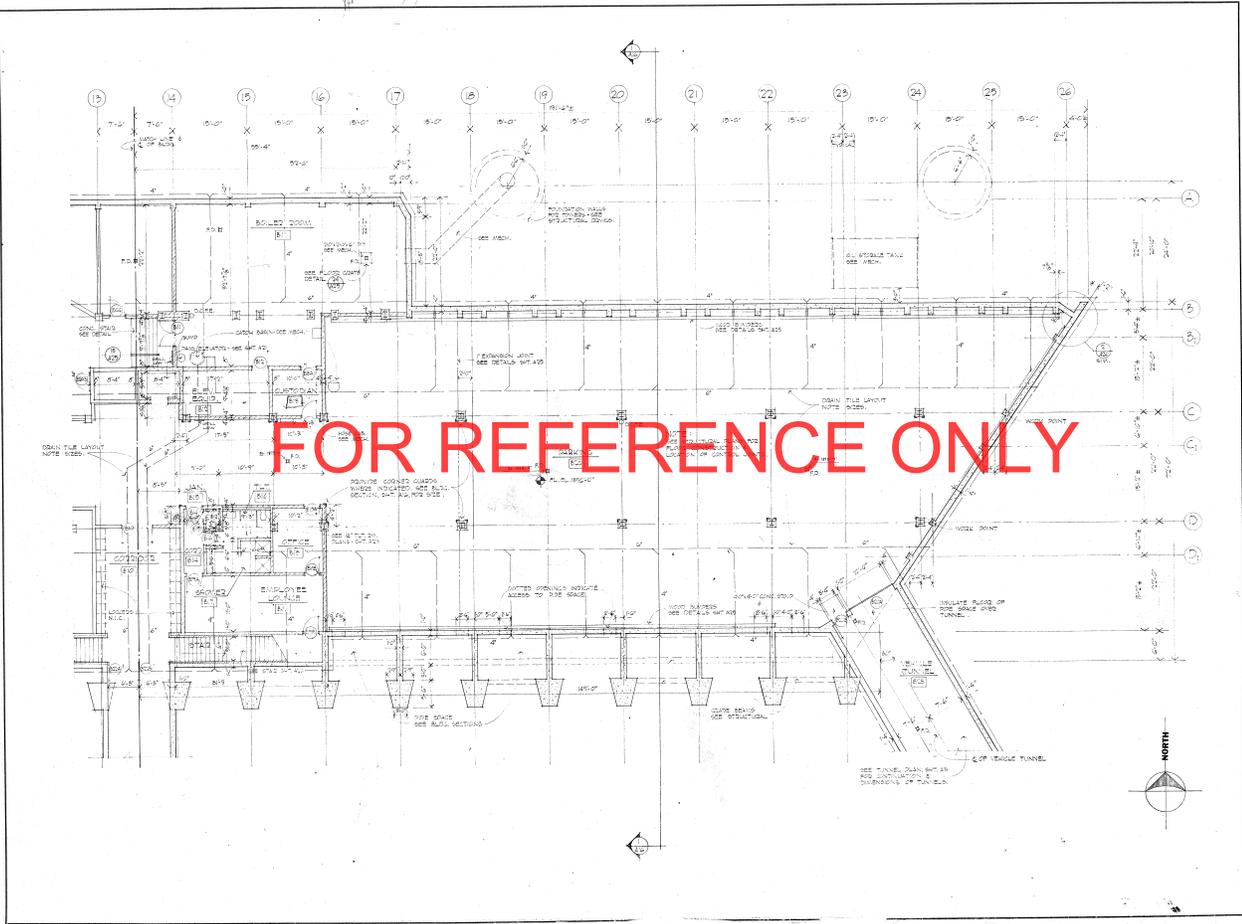
**SHEET TITLE**

**SITE ELECTRICAL  
PLAN  
(SHEET 8 OF 8)**

**SHEET NUMBER**  
**E108**

**RECORD  
DOCUMENTS**





**DULUTH  
INTERNATIONAL  
AIRPORT  
TERMINAL**



DULUTH AIRPORT AUTHORITY  
DULUTH MINNESOTA

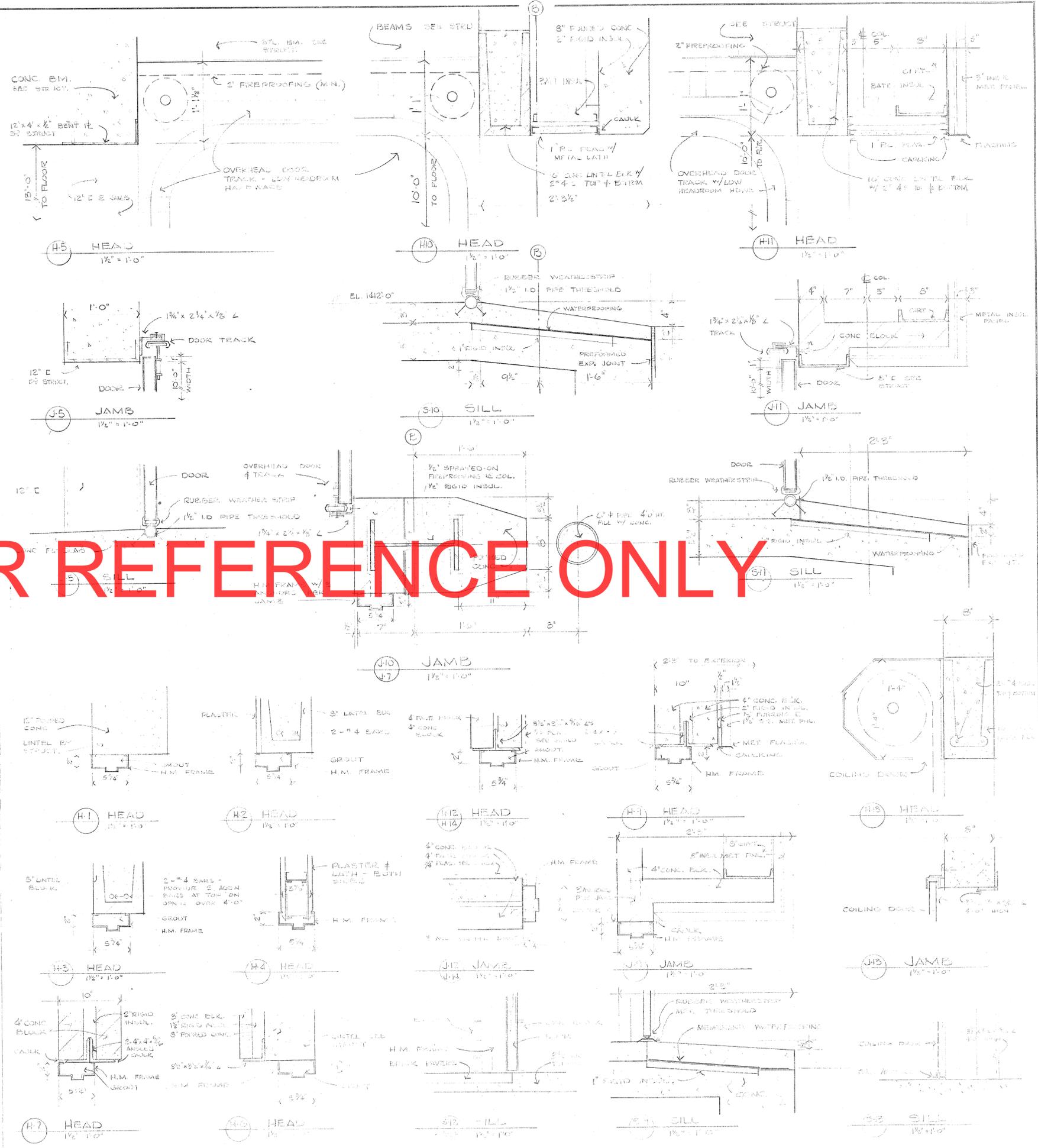
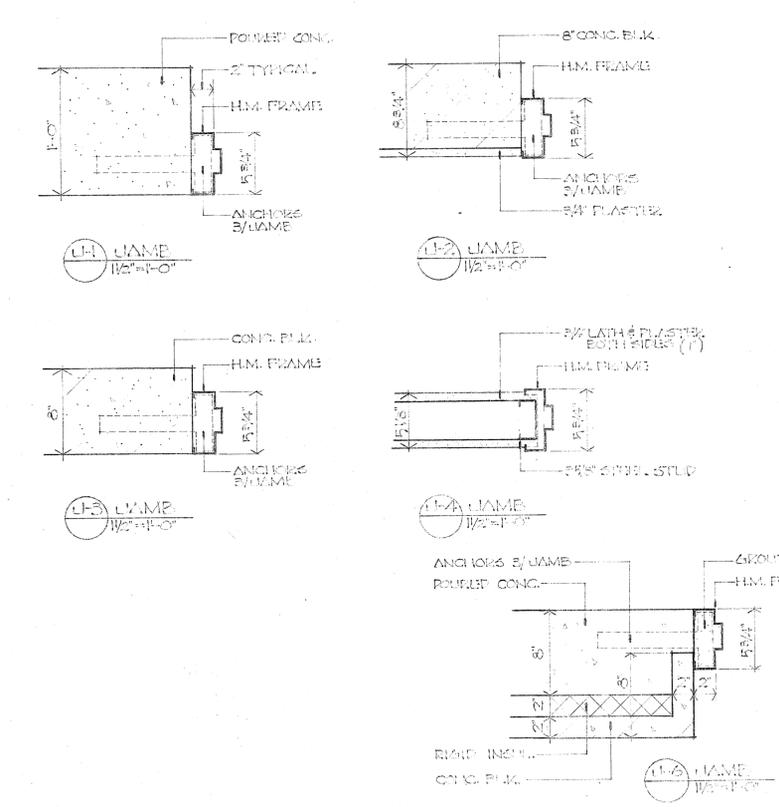
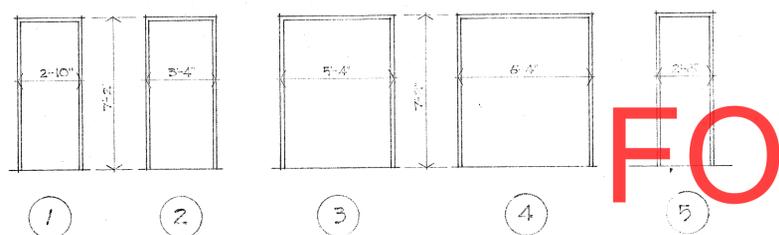
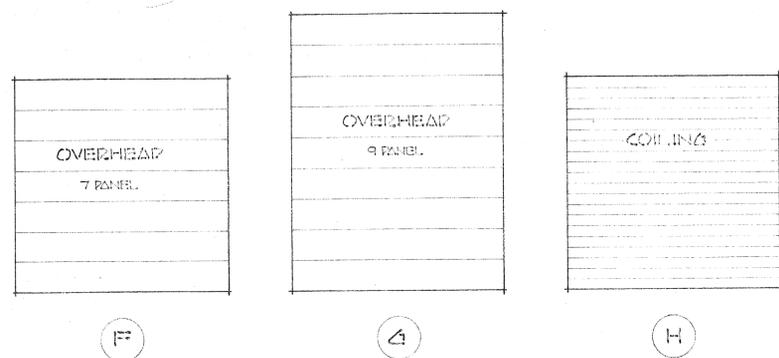
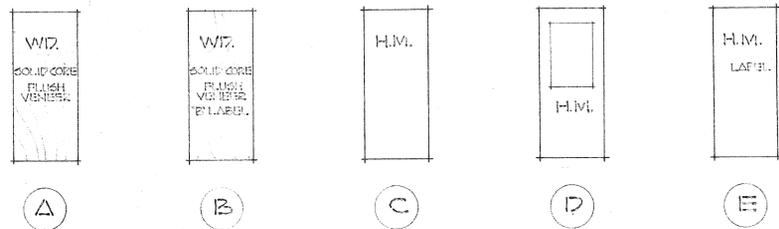
**architects**  
**MORGENSTERN  
STANIS  
ASSOCIATES**

**consultants**  
GIULIANI ASSOCIATES  
ARCHITECTS AND PLANNERS  
LARSEN & HANNAH INC  
structural engineers  
BEAN & HILL INC  
mechanical and  
electrical engineers

REVISIONS

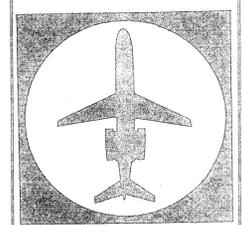
e.d.a. project no. 06-1-00822  
project no. 8924  
date drawn checked  
bsmt. flr. east  
scale 1/8" = 1'-0"

**a5**



FOR REFERENCE ONLY

**DULUTH INTERNATIONAL AIRPORT TERMINAL**



DULUTH AIRPORT AUTHORITY  
DULUTH MINNESOTA

**architects**  
MORGENSTERN STANIUS ASSOCIATES

**consultants**  
GIULIANI ASSOCIATES  
architects and planners

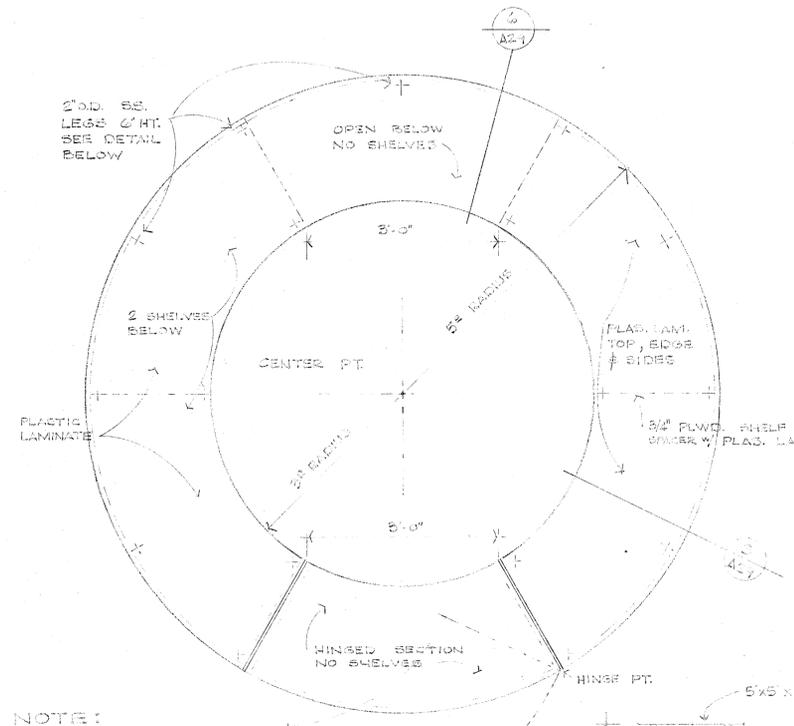
LARSEN & HARVALA INC  
structural engineers

BEAN & HILL INC  
mechanical and electrical engineers

REVISIONS

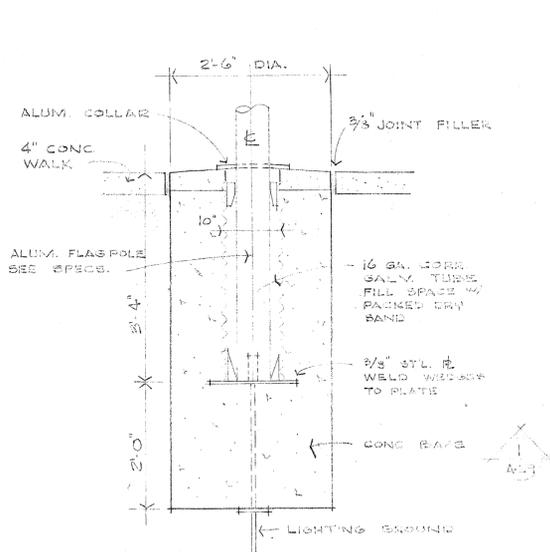
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project no. 6924  
date  
drawn  
checked

details **a22**

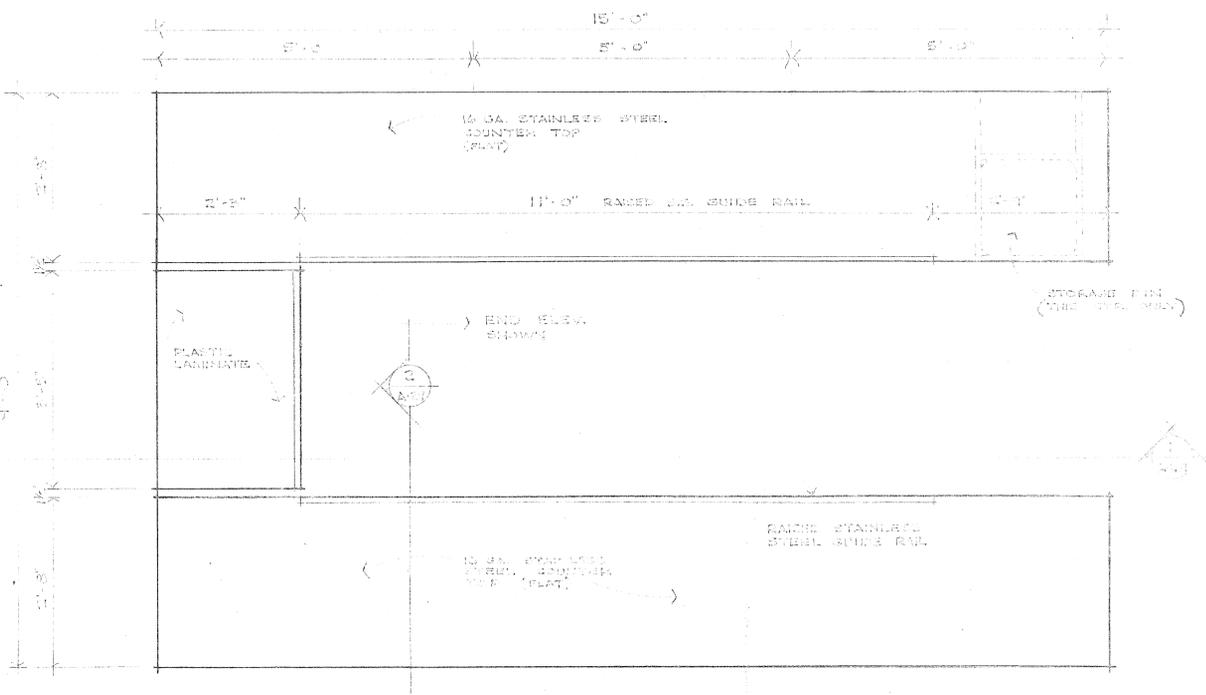


NOTE:  
PLASTIC LAMINATE  
CHOOSE IN  
ARCHITECTURAL  
COLORS

PLAN OF RENTAL BOOTH  
SCALE 3/4" = 1'-0"

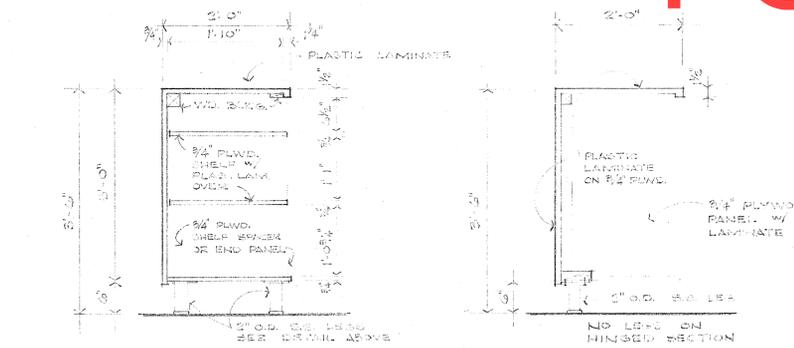


FLAGPOLE DETAIL  
SCALE 3/4" = 1'-0"



PLAN OF INSPECTION COUNTER  
SCALE 3/4" = 1'-0"

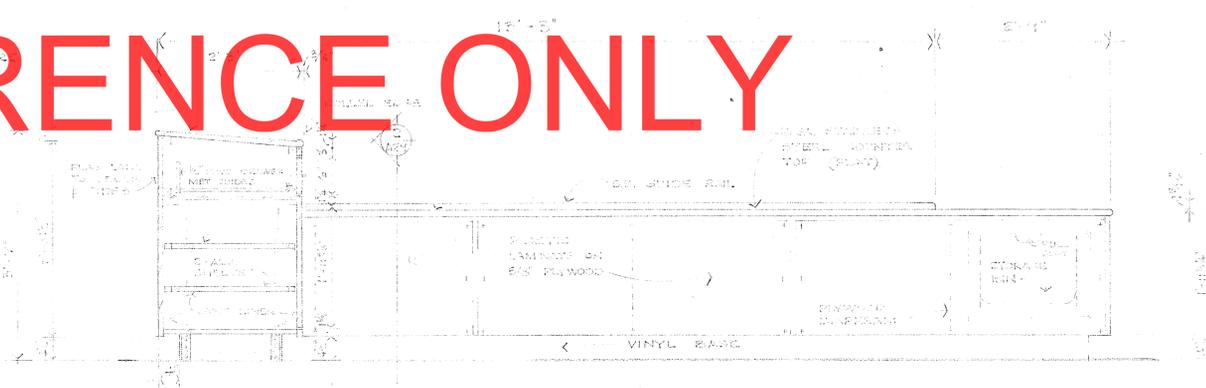
**FOR REFERENCE ONLY**



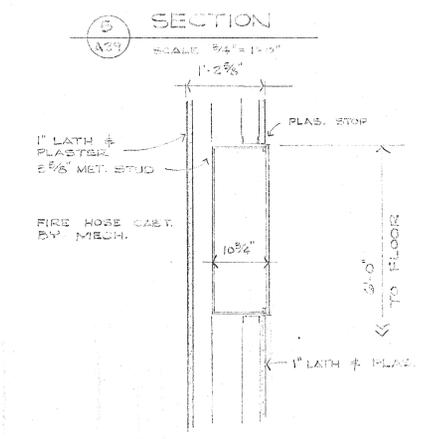
LEG DETAIL  
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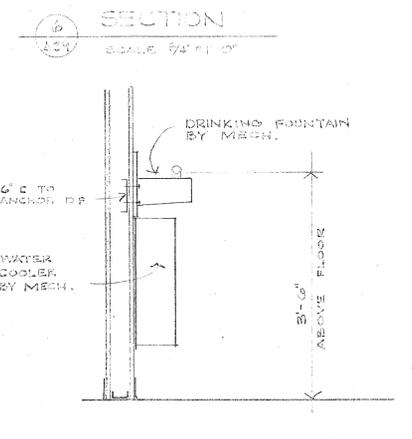
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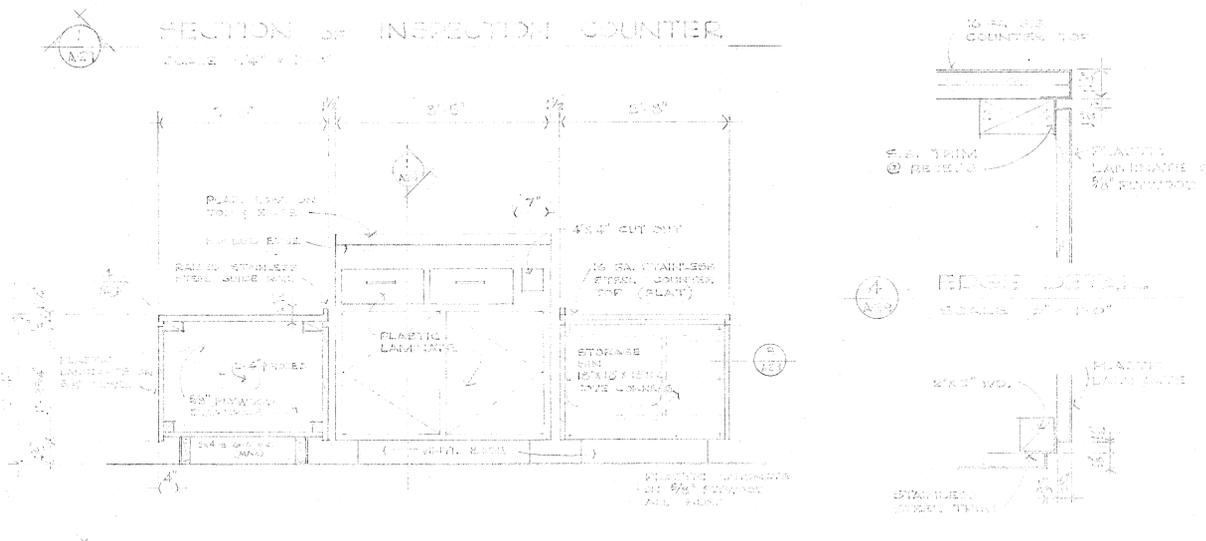
SECTION OF INSPECTION COUNTER  
SCALE 3/4" = 1'-0"



F.H.C. DETAIL  
SCALE 3/4" = 1'-0"



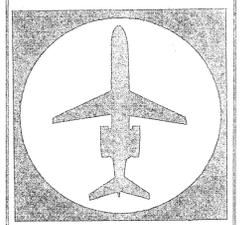
D.F. DETAIL  
SCALE 3/4" = 1'-0"



EDGE DETAIL  
SCALE 3/4" = 1'-0"

CORNER DETAIL  
SCALE 3/4" = 1'-0"

**DULUTH INTERNATIONAL AIRPORT TERMINAL**



DULUTH AIRPORT AUTHORITY  
DULUTH MINNESOTA

**architects**  
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**consultants**  
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architects and planners

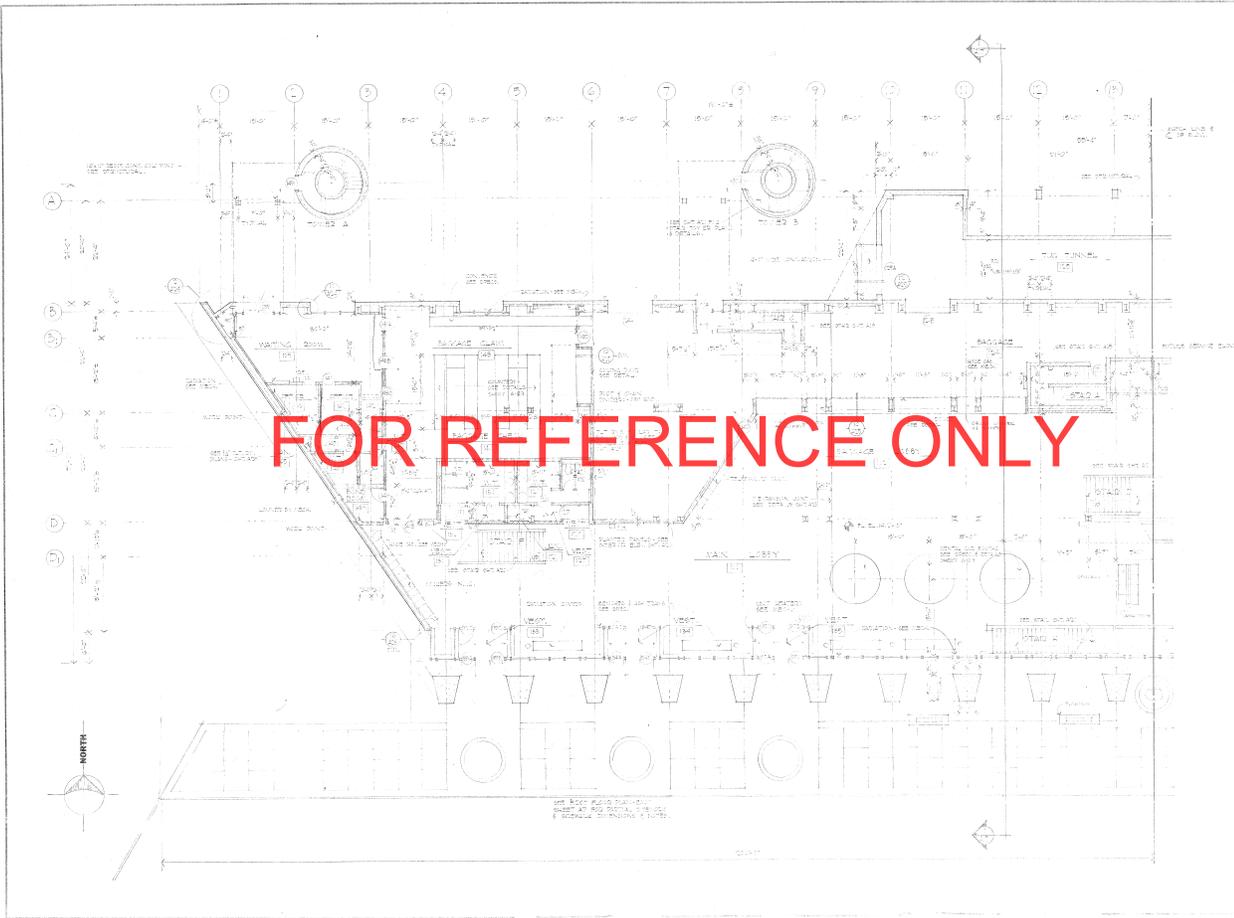
LARSEN & HARVALA INC  
structural engineers

BEAN & HILL INC  
mechanical and electrical engineers

REVISIONS

e.d.a. project no. 06-1-00822  
project no. 6924  
date drawn checked

details  
a 29



FOR REFERENCE ONLY

**DULUTH INTERNATIONAL AIRPORT TERMINAL**



DULUTH AIRPORT AUTHORITY  
DULUTH, MINNESOTA

**architects**  
MORGENSTERN  
STANUIS  
ASSOCIATES

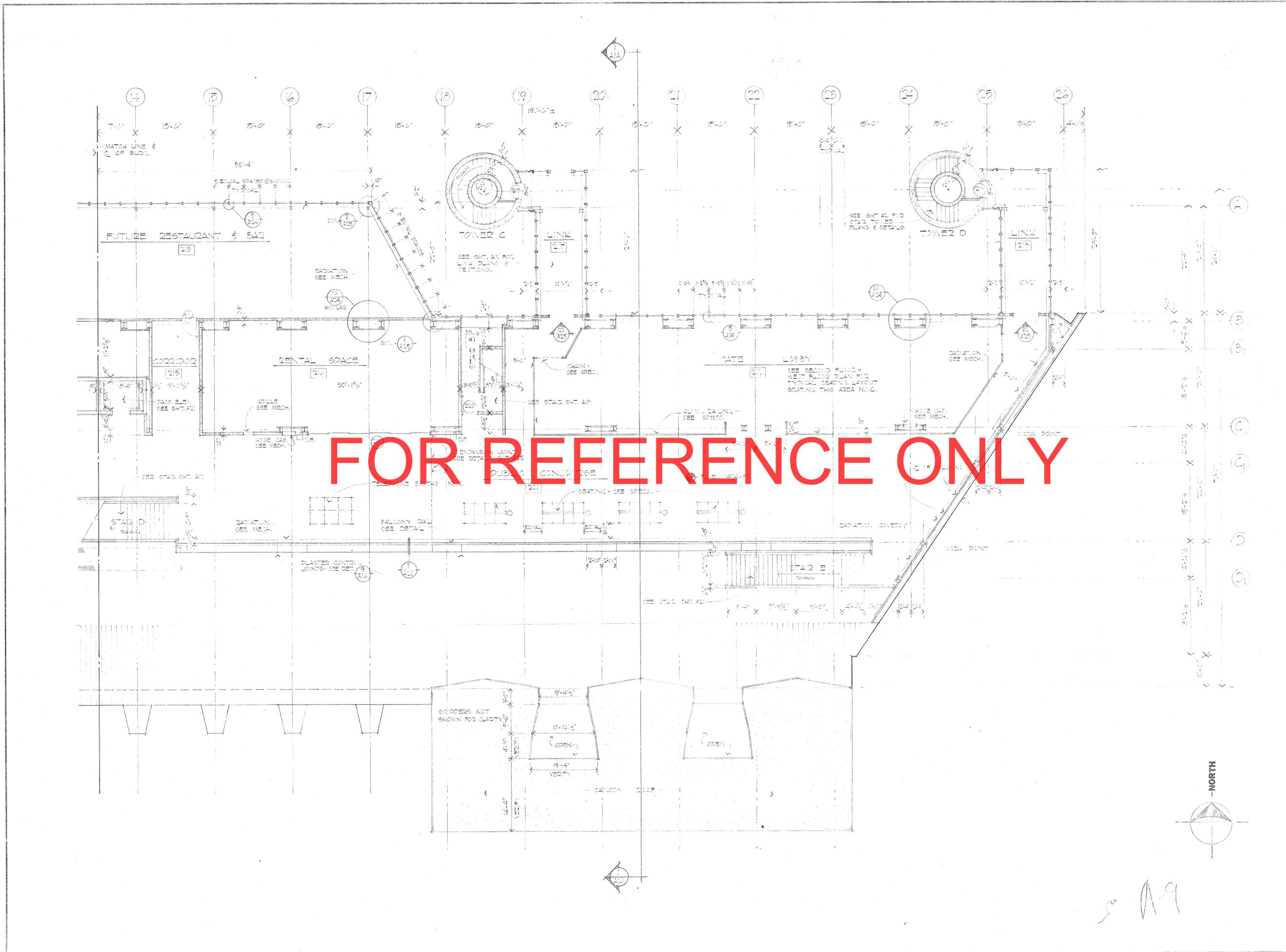
**consultants**  
GULIAN ASSOCIATES  
architects and planners

LARSEN & HARVALI, INC.  
STRUCTURE ENGINEERS

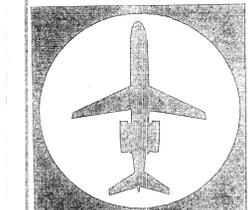
BEAN & HILL, INC.  
MECHANICAL and  
ELECTRICAL ENGINEERS

REVISIONS

s.d.a. project  
Project 06-1-00922  
Project 6224  
first floor west  
Scale: 1/8" = 1'-0"  
a6



**DULUTH**  
INTERNATIONAL  
**AIRPORT**  
TERMINAL



DULUTH AIRPORT AUTHORITY  
DULUTH MINNESOTA

**architects**  
MORGENSTERN  
STANIUS  
ASSOCIATES

**consultants**

GIULIANI ASSOCIATES  
architects and planners

LARSEN & HARVALA INC  
structural engineers

BEAN & HILL INC  
mechanical and  
electrical engineers

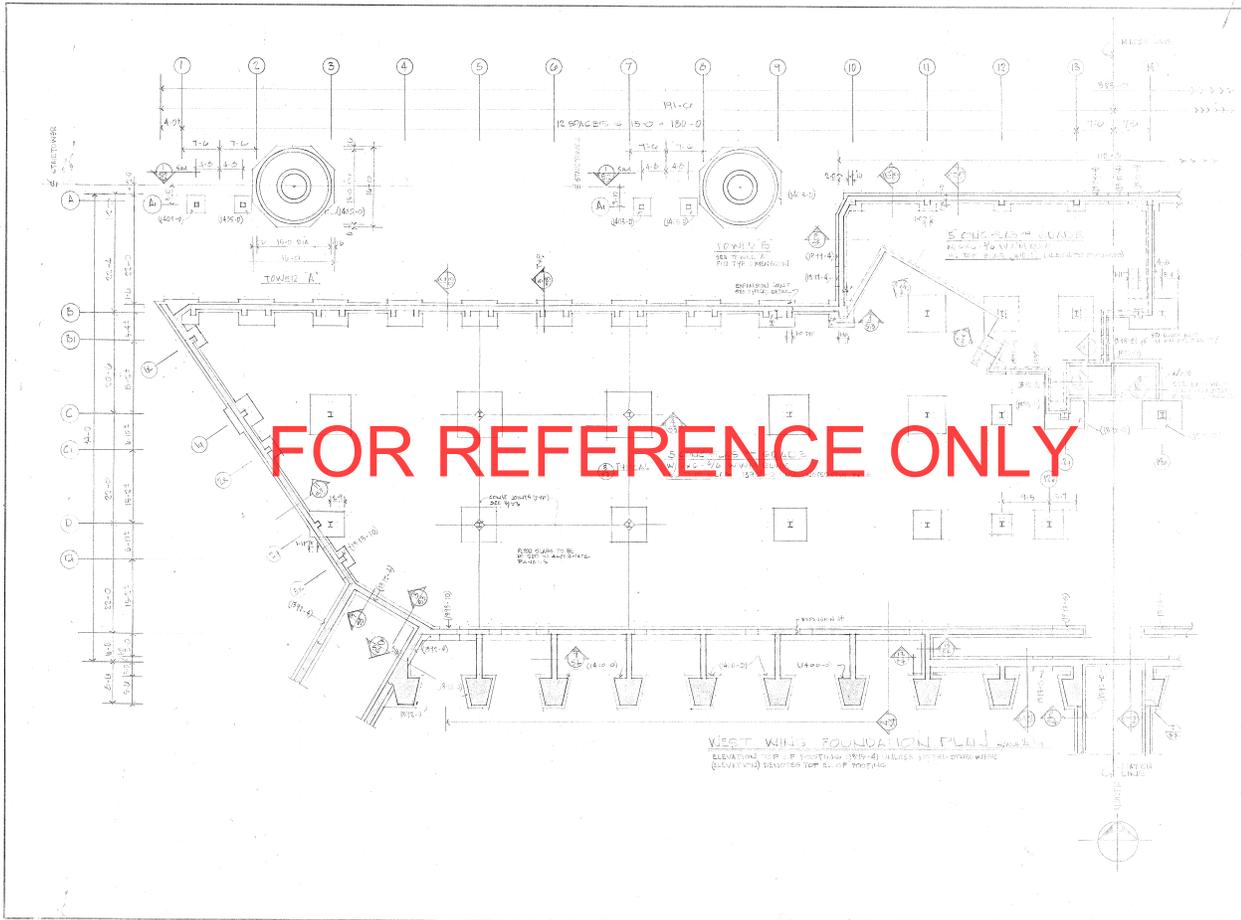
REVISIONS

c.d.a.  
**project** no.  
06-1-00822

**project** no. 6921  
date  
drawn  
checked

second fl. east  
scale 1/8" = 1'-0"

**a9**



**DULUTH INTERNATIONAL AIRPORT TERMINAL**



DULUTH AIRPORT AUTHORITY  
DULUTH, MINNESOTA

**architects**  
HORNBERGER STANUS ASSOCIATES

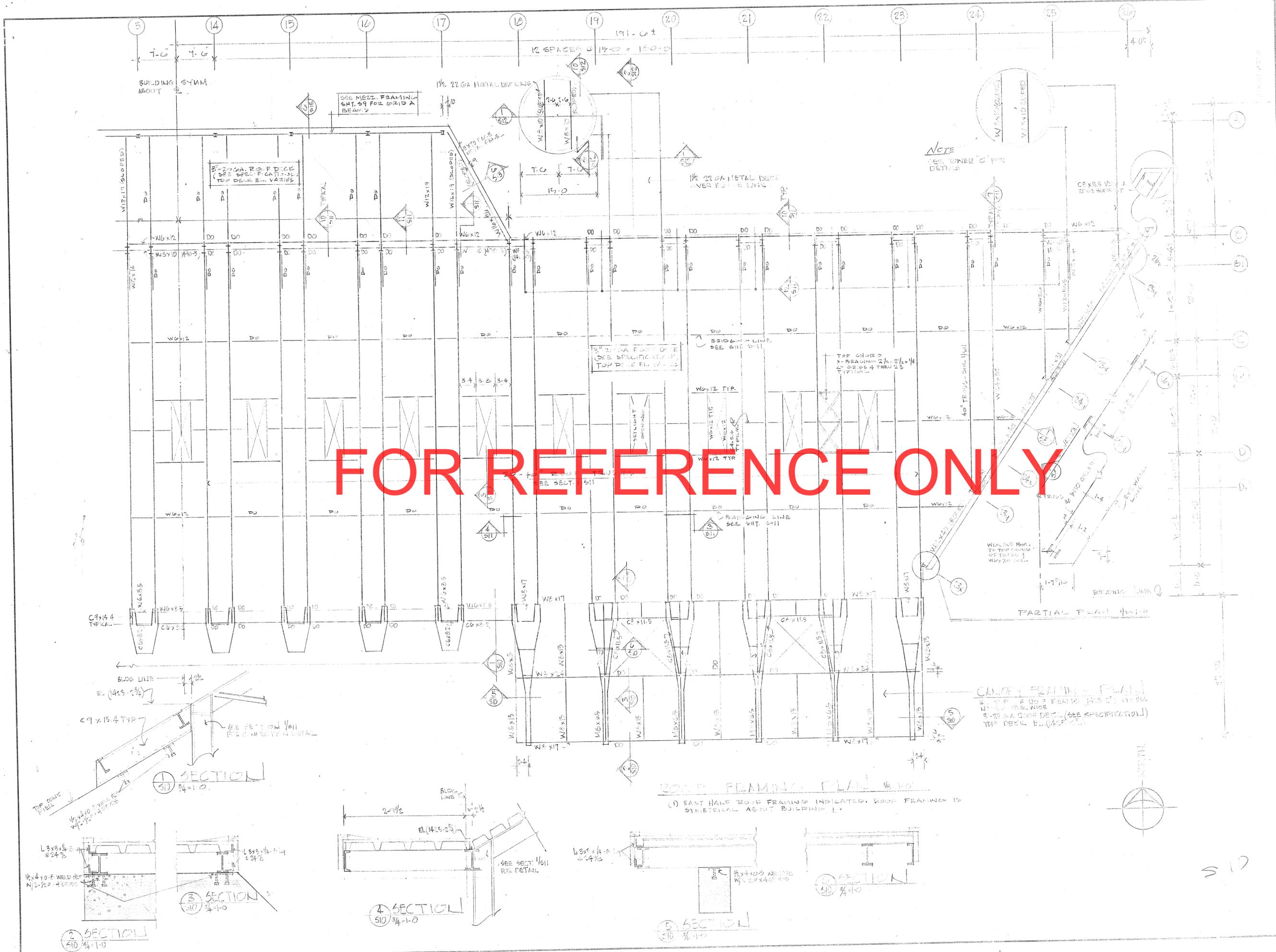
**consultants**  
GUILIANI ASSOCIATES  
architects and planners  
LARSEN & HARVALD INC.  
structural engineers  
BEAR & HILL INC.  
mechanical and electrical engineers

REVISIONS

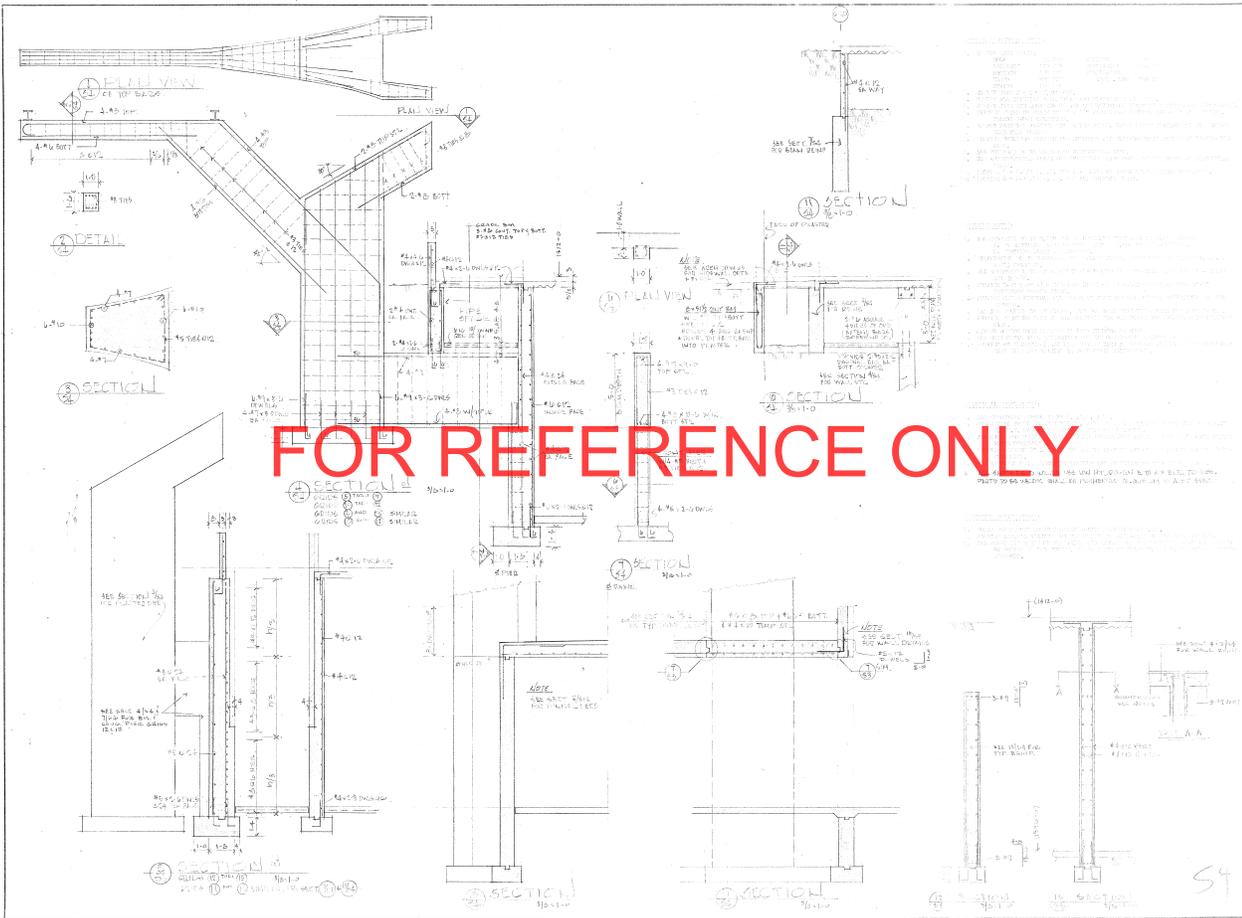
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Project No. 0000000000  
Date 00/00/00  
Drawn 00/00/00  
Checked 00/00/00

**S1**







**DULUTH INTERNATIONAL AIRPORT TERMINAL**

DULUTH AIRPORT AUTHORITY  
DESIGNER

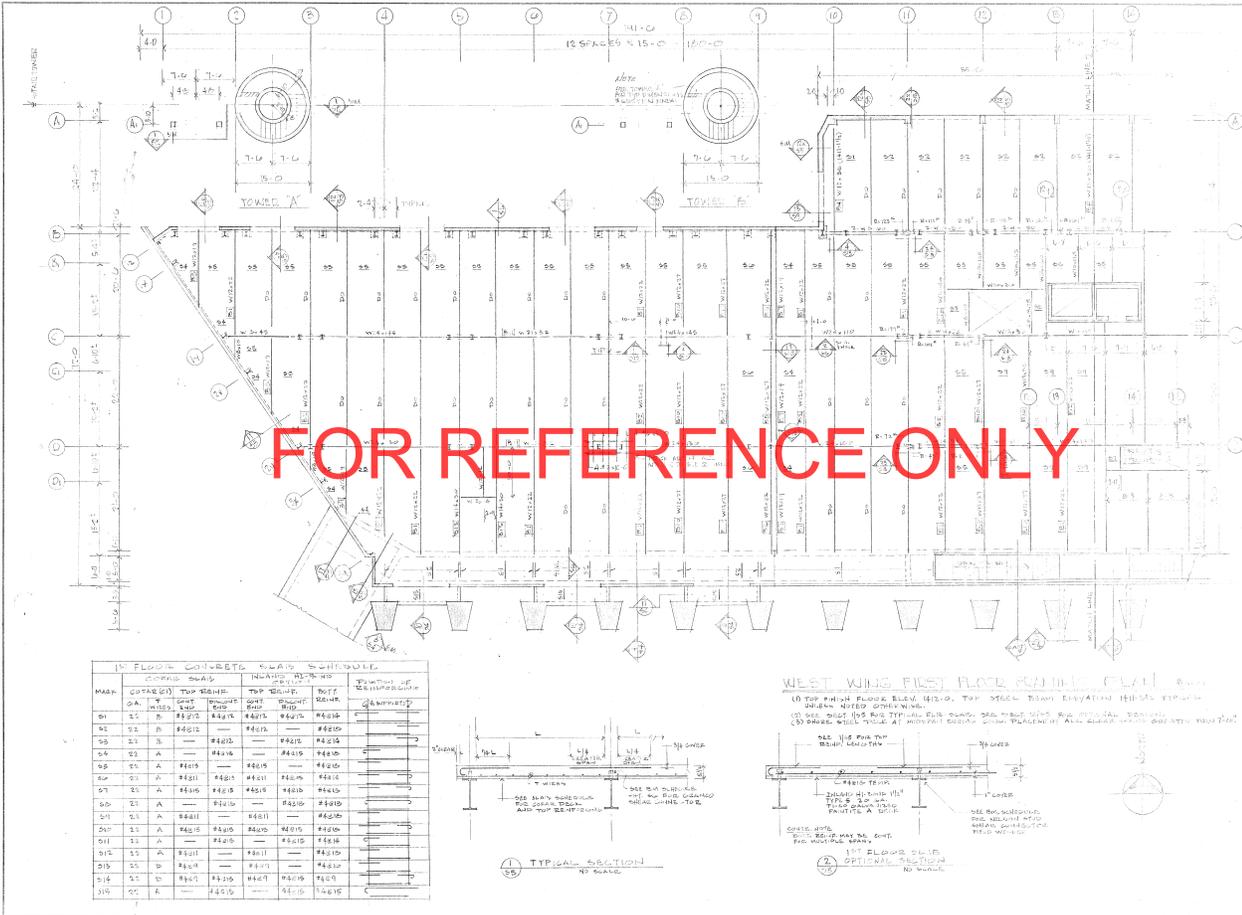
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MORGENSTERN ASSOCIATES

**consultants**  
GIULIANI ASSOCIATES  
ARCHITECTS AND PLANNERS  
LARSEN & HANVALA INC.  
STRUCTURAL ENGINEERS  
BEAN & HILL INC.  
MECHANICAL AND ELECTRICAL ENGINEERS

REVISIONS

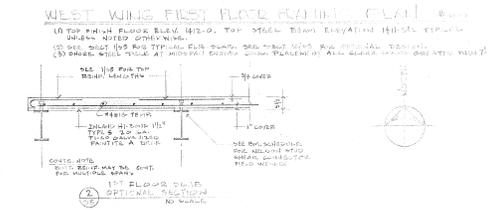
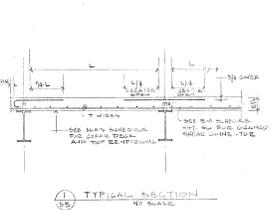
DATE	NO.	DESCRIPTION
06-1-008222		
0824		
DATE	NO.	DESCRIPTION

S4



**1ST FLOOR CONCRETE SLAB SCHEDULE**

MARK	FORMS		REINFORCING		TOP CONC. THICK.		NOTES	REVISIONS
	NO.	TYPE	NO.	TYPE	THICK.	THICK.		
01	11	A	#4@12	#4@12	#4@12	#4@12		
02	11	B	#4@12	#4@12	#4@12	#4@12		
03	11	C	#4@12	#4@12	#4@12	#4@12		
04	11	A	#4@12	#4@12	#4@12	#4@12		
05	11	A	#4@12	#4@12	#4@12	#4@12		
06	11	A	#4@12	#4@12	#4@12	#4@12		
07	11	A	#4@12	#4@12	#4@12	#4@12		
08	11	A	#4@12	#4@12	#4@12	#4@12		
09	11	A	#4@12	#4@12	#4@12	#4@12		
10	11	A	#4@12	#4@12	#4@12	#4@12		
11	11	A	#4@12	#4@12	#4@12	#4@12		
12	11	A	#4@12	#4@12	#4@12	#4@12		
13	11	A	#4@12	#4@12	#4@12	#4@12		
14	11	A	#4@12	#4@12	#4@12	#4@12		
15	11	A	#4@12	#4@12	#4@12	#4@12		



**DULUTH INTERNATIONAL AIRPORT TERMINAL**

DULUTH AIRPORT AUTHORITY PROJECT

**architects**  
MORGENSTERN SPANG ASSOCIATES

**consultants**  
GUILIAN ASSOCIATES ARCHITECTS AND PLANNERS  
LARSEN & HARVALA INC. STRUCTURAL ENGINEERS  
BEAN & HILL INC. MECHANICAL AND ELECTRICAL ENGINEERS

REVISIONS

DATE: 08-11-08  
PROJECT NO.: 08-1-00822  
PROJECT NO.: 8224  
DATE CHECKED: [blank]  
DRAWN BY: [blank]



DULUTH AIRPORT AUTHORITY  
DULUTH MINNESOTA

**architects**  
MORGENSTERN  
STANIUS  
ASSOCIATES

**consultants**  
GIULIANI ASSOCIATES  
architects and planners

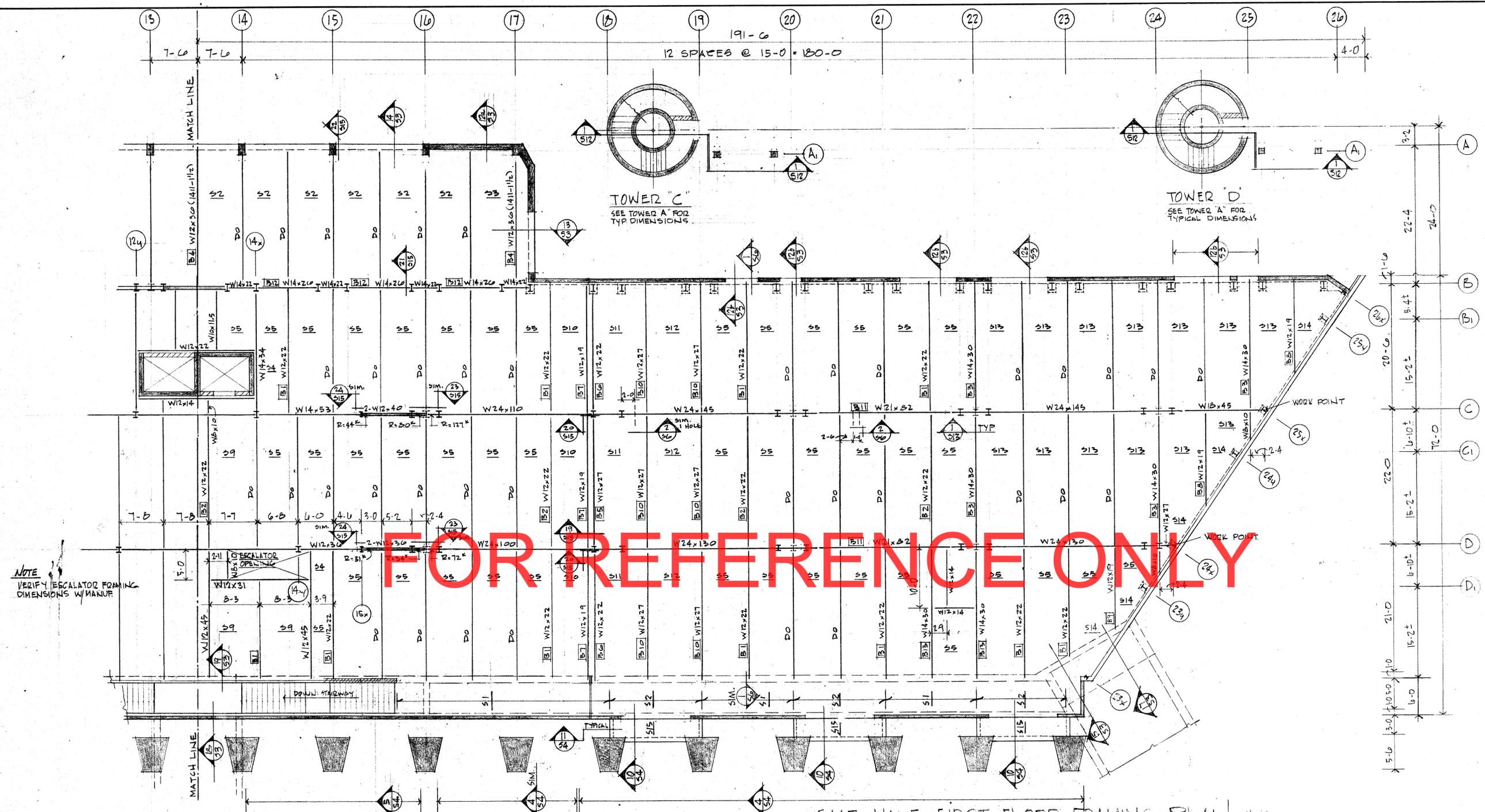
LARSEN & HANVALA INC  
structural engineers

BEAN & HILL INC  
mechanical and  
electrical engineers

REVISIONS

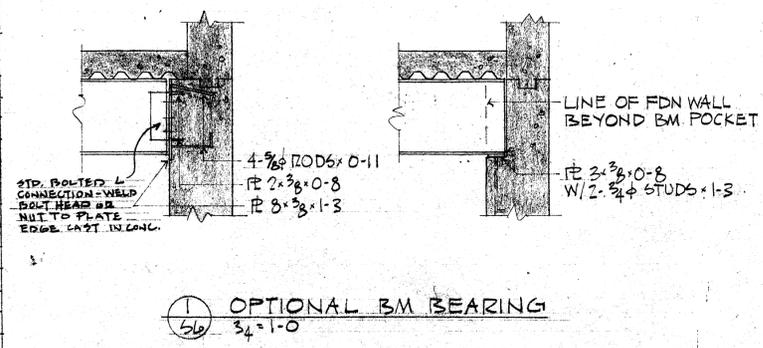
e.d.a.  
**project no.**  
06-1-00822  
**project no.** 6924  
date 5-15-72  
draw NBS  
checked HHH

**S6**



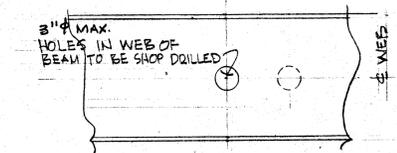
EAST HALF FIRST FLOOR FRAMING PLAN 1/8"=1'-0"

MARK	TOTAL NUMBER OF CONNECTIONS (GRANULES)	BEAM REACTION (KIPS)	SLAB SHARE CONNECTIONS (UNIMATED)
B1	22	15.8	34
B2	22	16.5	34
B3	30	25.3	46
B4	36	21.2	54
B5	B	10.0	12
B6	B	9.5	12
B7	B	6.6	12
B8	12	18.0	28
B9	4	11.3	0
B10	26	19.5	40
B11	10	66.0	10
B12	26	23.0	40
B13	30	21.0	40
B14	38	26.0	58
B15	B	33.0	8



OPTIONAL BM BEARING  
3/4"=1'-0"

- TOP FINISH FLOOR ELEV. 1412'-0". TOP STEEL BEAM ELEV. 1411'-3/2" TYPICAL UNLESS NOTED OTHERWISE.
- SEE SECT. 1155 FOR TYPICAL FLR. SLABS. SEE SECT. 2155 FOR OPTIONAL DESIGN.
- SHORE STEEL DECK AT MIDSPAN DURING CONC. PLACEMENT ALL CLEAR SPANS GREATER THAN 7'-0".
- PROVIDE SHEAR CONNECTORS 2'-0" O.C. ALL BMS. GRIDS B/C/D UNLESS NOTED OTHERWISE.



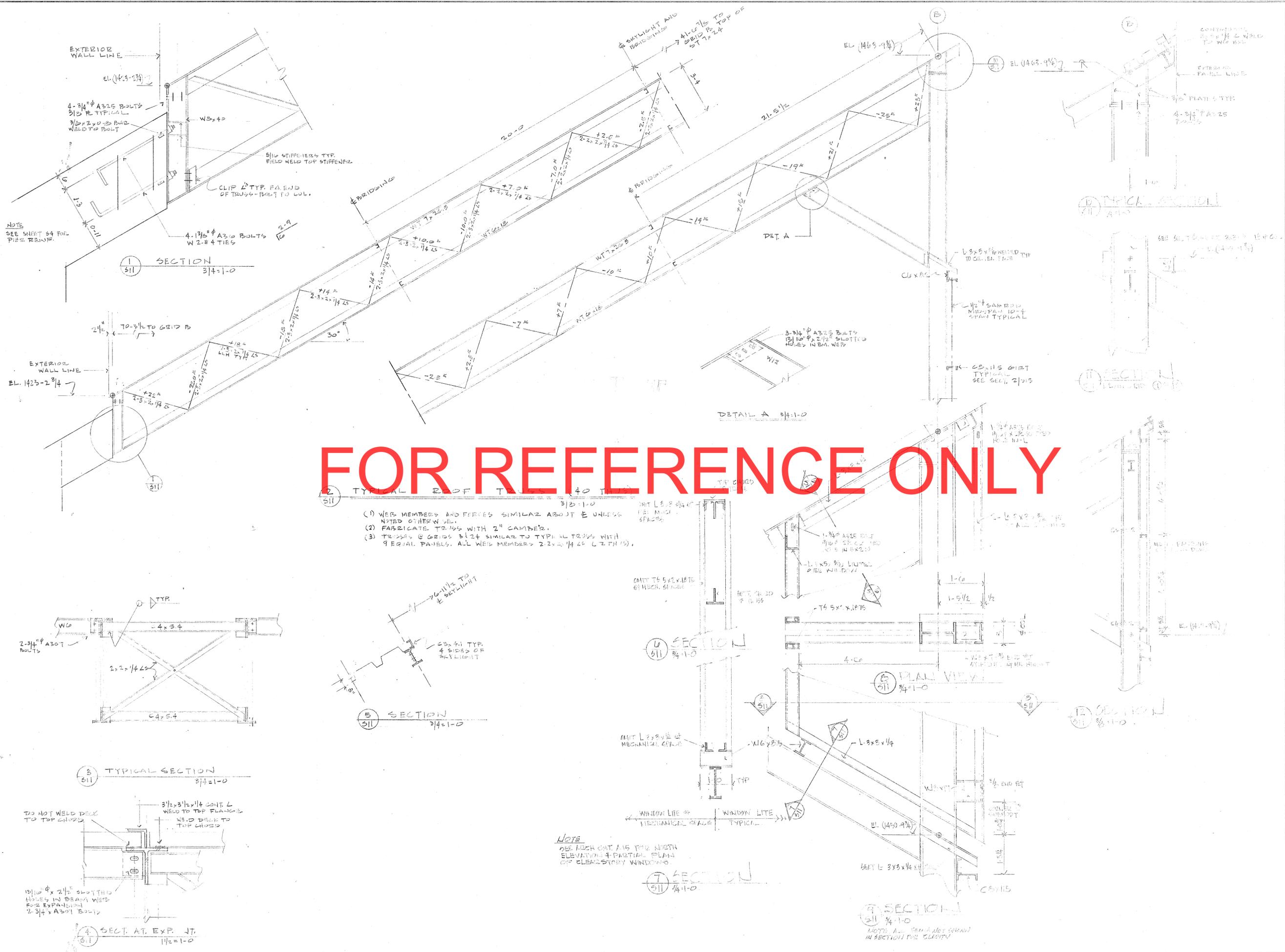
PARTIAL BEAM ELEVATION  
SHOWING HOLES FOR MECHANICAL  
3/4"=1'-0" TYPICAL

NOTE  
VERIFY ESCALATOR FRAMING DIMENSIONS W/ MANUF.









FOR REFERENCE ONLY

- (1) WEB MEMBERS AND FORCES SIMILAR ABOUT E UNLESS NOTED OTHERWISE.
- (2) FABRICATE TRUSSES WITH 2" CAMBER.
- (3) TRUSSES @ GRIDS 3 & 4 SIMILAR TO TYPICAL TRUSSES WITH 9 EQUAL PANELS. ALL WEB MEMBERS 22x2 1/4x1/4 L.T.H.S.

**NOTE**  
SEE ARCH. DRAWING FOR NORTH ELEVATION & PARTIAL PLAN OF CLEARATORY WINDOW.

**DULUTH INTERNATIONAL AIRPORT TERMINAL**



DULUTH AIRPORT AUTHORITY  
DULUTH MINNESOTA

**architects**  
MORGENSTERN STANIUS ASSOCIATES

**consultants**  
GIULIANI ASSOCIATES  
architects and planners

LARSEN & HARVALA INC  
structural engineers

BEAN & MILL INC  
mechanical and electrical engineers

REVISIONS

e.d.a. project no. 06-1-00822

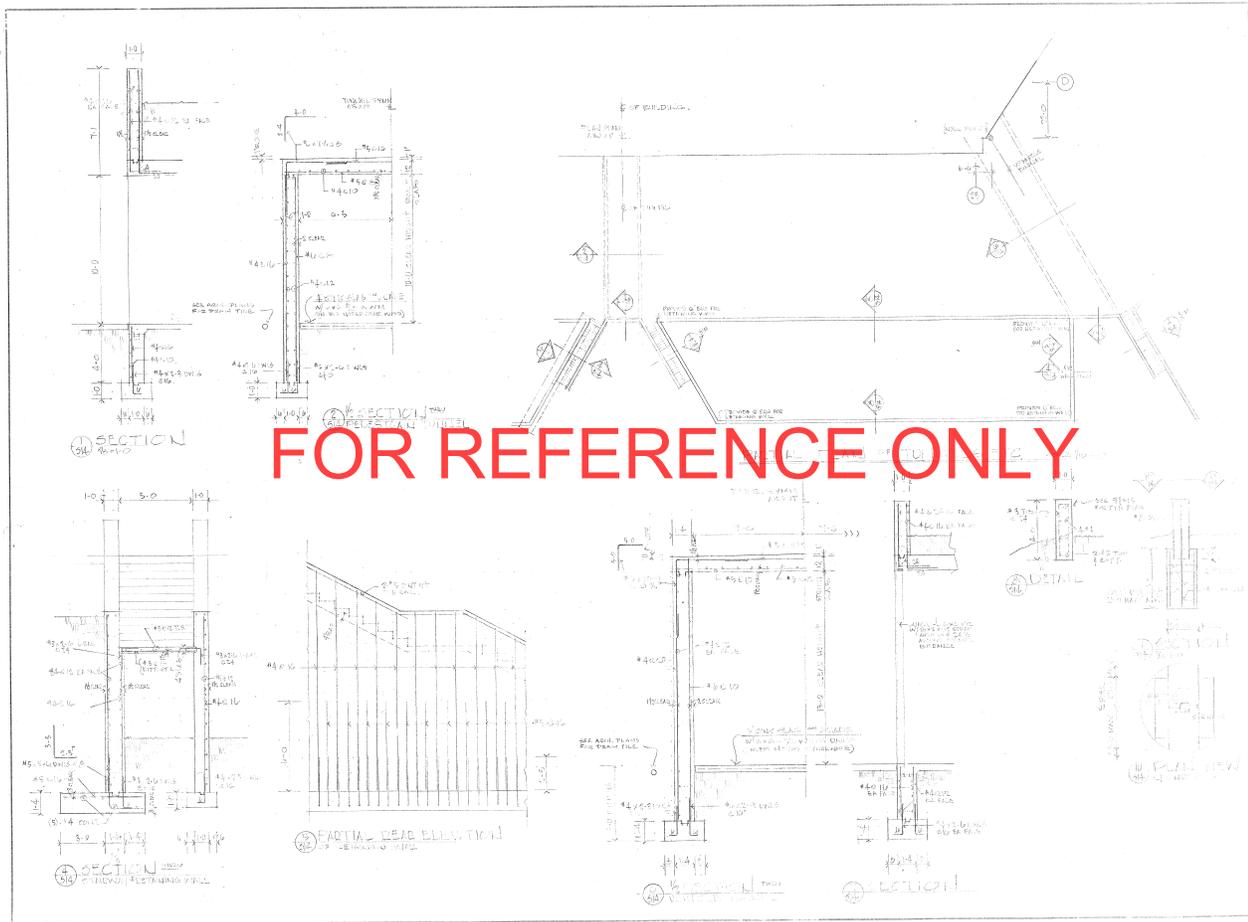
project no. 6324

date drawn checked

S11







DULUTH INTERNATIONAL AIRPORT TERMINAL



DULUTH AIRPORT AUTHORITY

architects REGISTERED ARCHITECTS ASSOCIATES

consultants CONSULTING ASSOCIATES ARCHITECTS AND PLANNERS

LARSEN & HANVOLD INC. structural engineers

DEAN & MILL INC. mechanical and electrical engineers

REVISIONS

project 00-1-00000  
 project 00-1-00000  
 date  
 done  
 checked

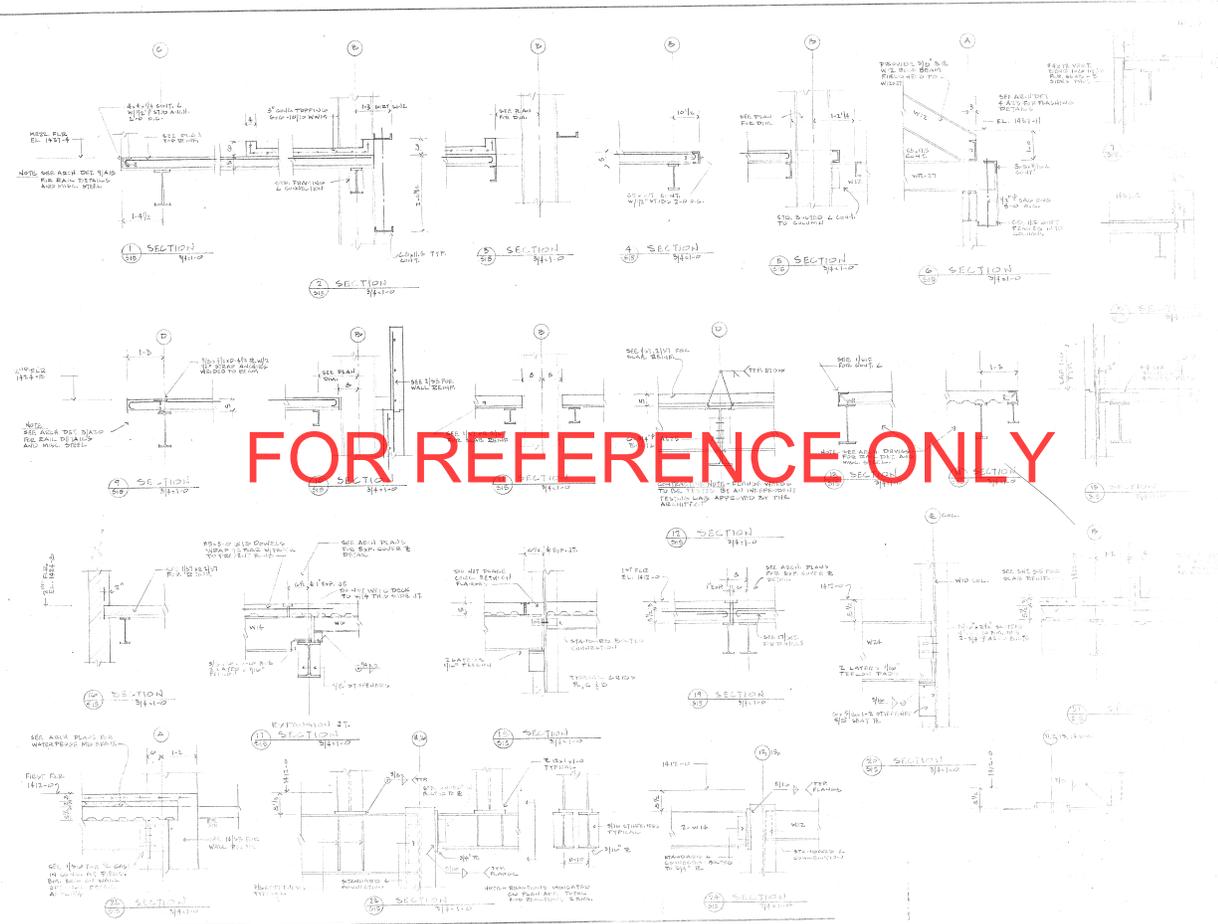




QUALITY INTERNATIONAL AIRPORT

QUALITY INTERNATIONAL AIRPORT ASSOCIATES

FOR REFERENCE ONLY

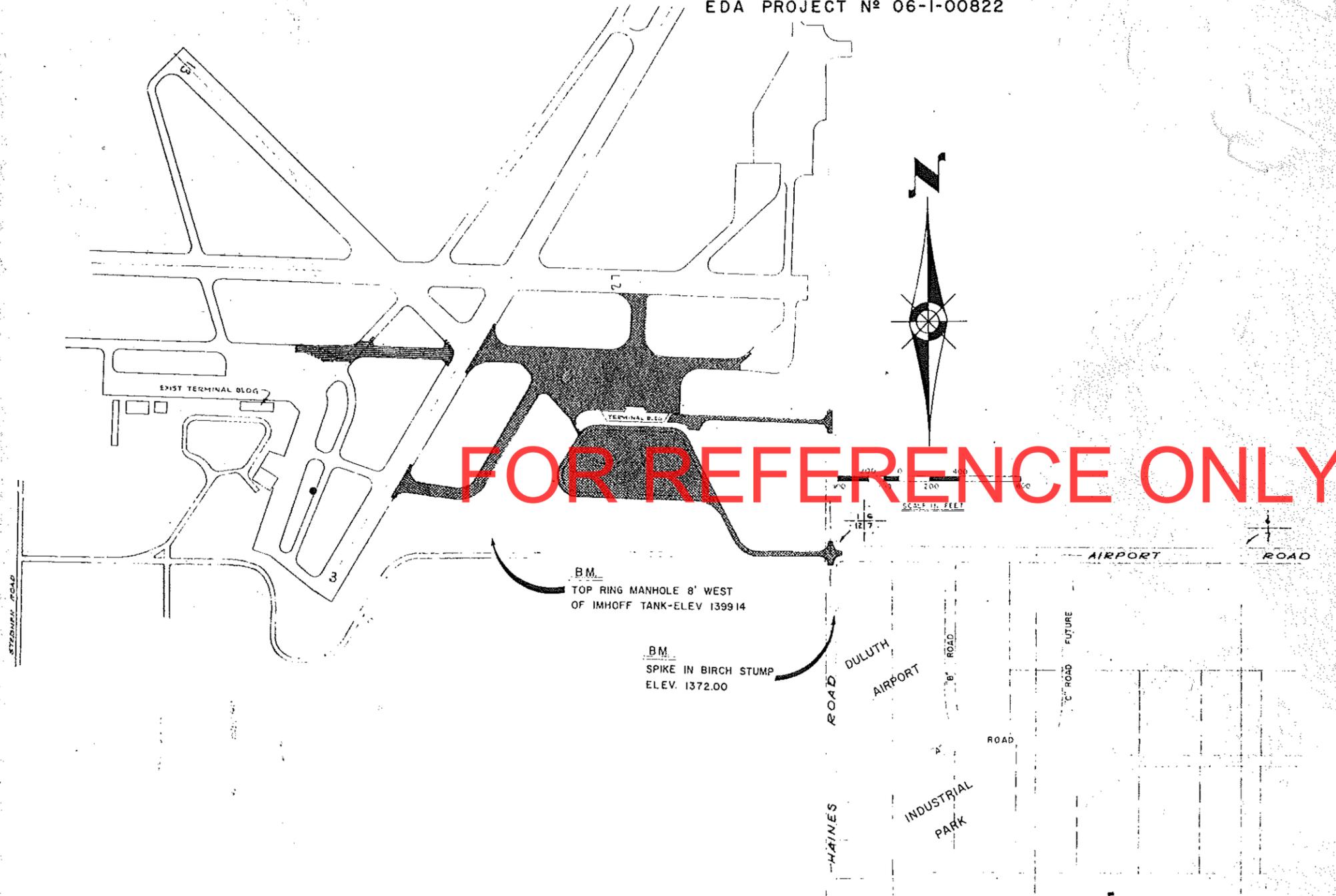


SITE CONSTRUCTION PLANS FOR  
**DULUTH AIRPORT  
 TERMINAL COMPLEX**

DULUTH AIRPORT AUTHORITY OF DULUTH  
 DULUTH, MINNESOTA  
 EDA PROJECT N° 06-1-00822

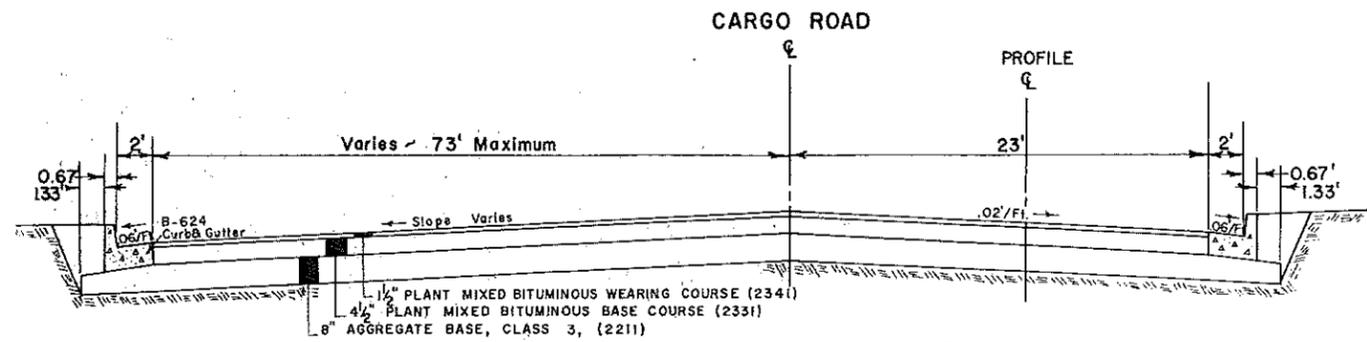
INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET AND LOCATION PLAN
2	SCHEDULE OF QUANTITIES AND ROAD INTERSECTION DETAILS
3	TYPICAL SECTIONS - ROADS AND PARKING LOT
4	HORIZONTAL CONTROL LAYOUT
5	CONSTRUCTION LIMITS AND WORK COORDINATION DRAWING
6	SOIL BORINGS
7	EXISTING TOPOGRAPHY
8	PARKING LOT DRAINAGE - PLAN AND PROFILE
9	DRAINAGE SCHEDULE
10	STORM SEWER PROFILES - TAXIWAYS AND APRONS
11	SUB-DRAIN PROFILES - TAXIWAYS AND APRONS
12	MISC. DRAINAGE DETAILS
13-13A	FUEL INTERCEPTOR SYSTEM
14-17	FINAL CONTOUR DRAWINGS
18-19	SANITARY SEWER AND WATER MAIN
20-21	ROADWAY PLAN AND PROFILES
22	ROADWAY AND PARKINGS LOT DETAILS
23	PARKING LOT PLAN
24	TYPICAL SECTIONS - TAXIWAY PROJECTS
25-27	TAXIWAY PROJECTS - PLAN AND PROFILES
28	CONCRETE APRON AND DETAILS
29	SODDING, SEEDING, FENCE, AND PLANTING
30-33	ELECTRICAL
34-56	CROSS SECTIONS

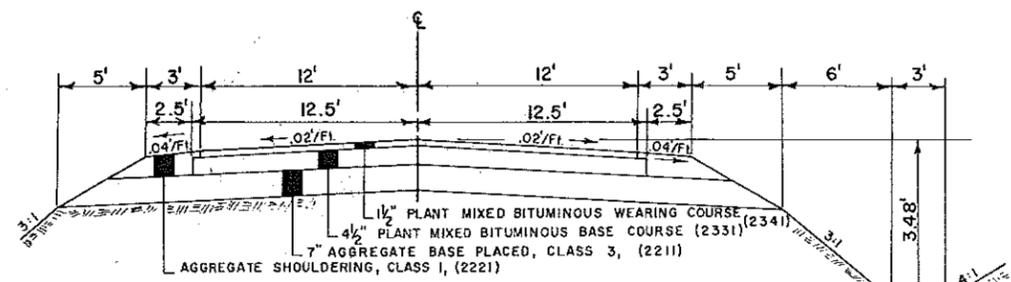


APPROVED	<i>Robert E. La...</i>	6843	5-24-72
	PROJECT COORDINATOR	REG. NO.	DATE
APPROVED	<i>Paul Dambros</i>	5991	5-24-72
	CITY ENGINEER	REG. NO.	DATE
APPROVED	<i>Paul A. Jund</i>	3617	5-24-72
	DIR. OF PUBLIC SERVICES	REG. NO.	DATE
APPROVED	<i>John T. Adams</i>	3577	5-24-72
	DIR. OF PUBLIC UTILITIES	REG. NO.	DATE
APPROVED	<i>James A. Johnson</i>	5846	5-24-72
	DIR. OF SANITARY SERVICES	REG. NO.	DATE

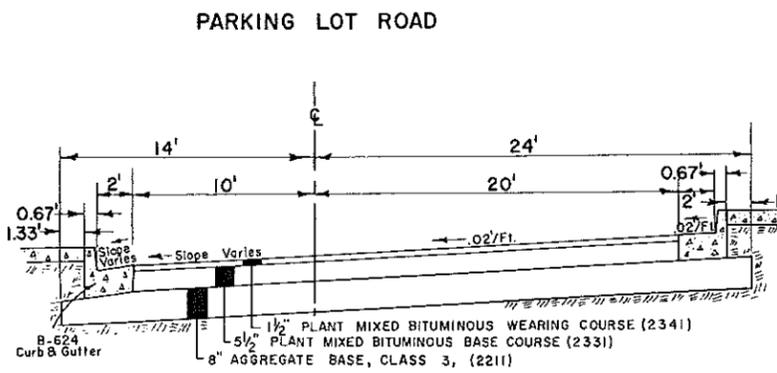




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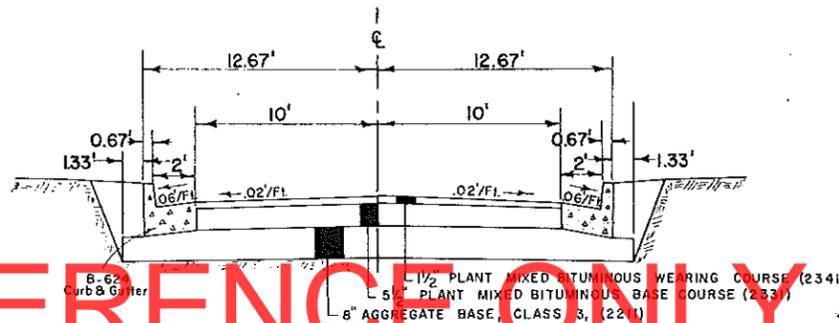


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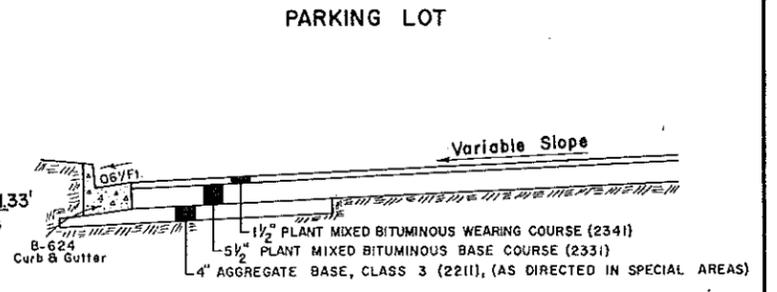


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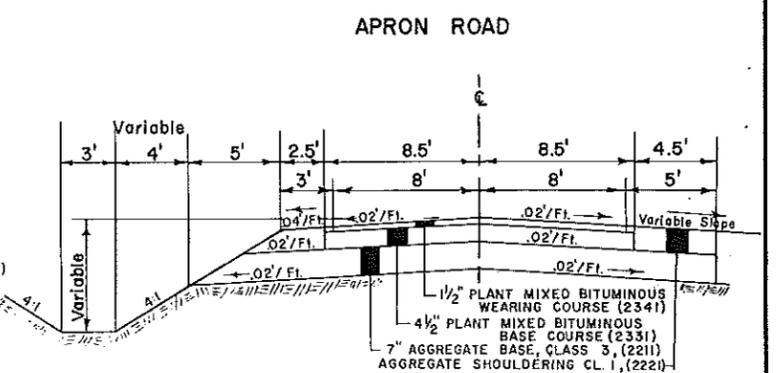
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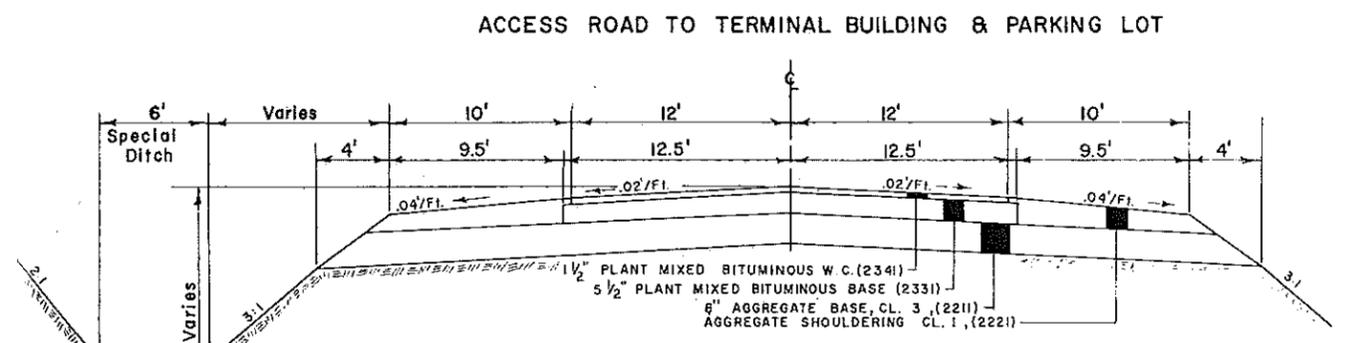


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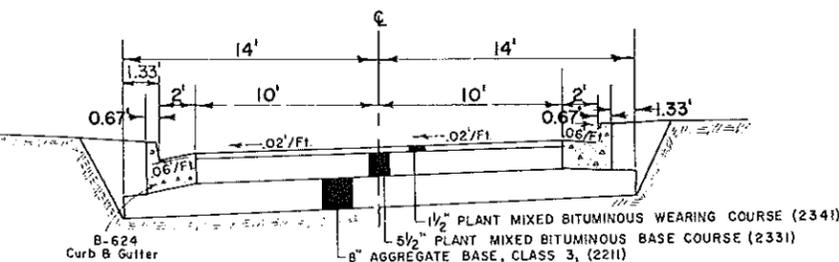


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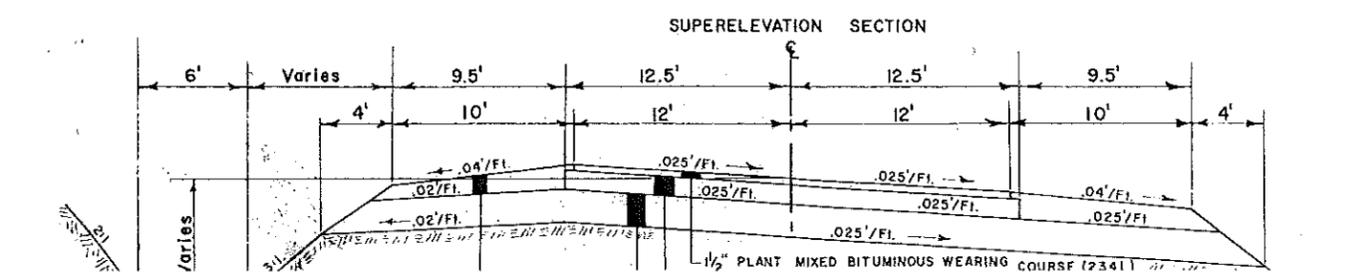
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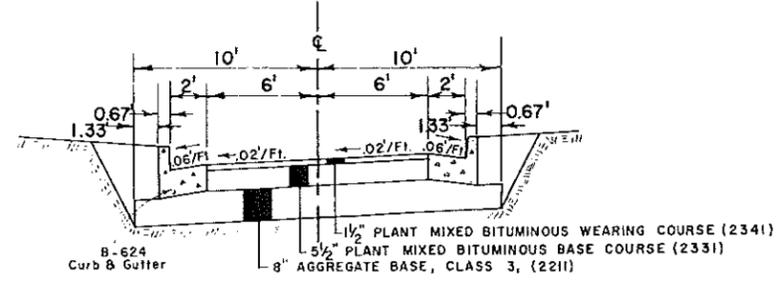
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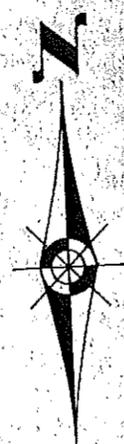
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SECTION "H-H"

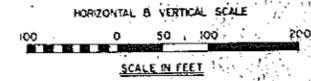
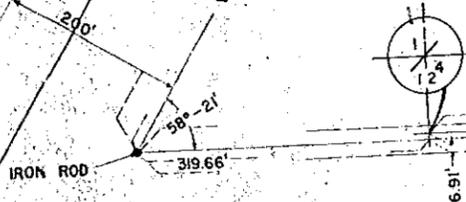


E-W RUNWAY

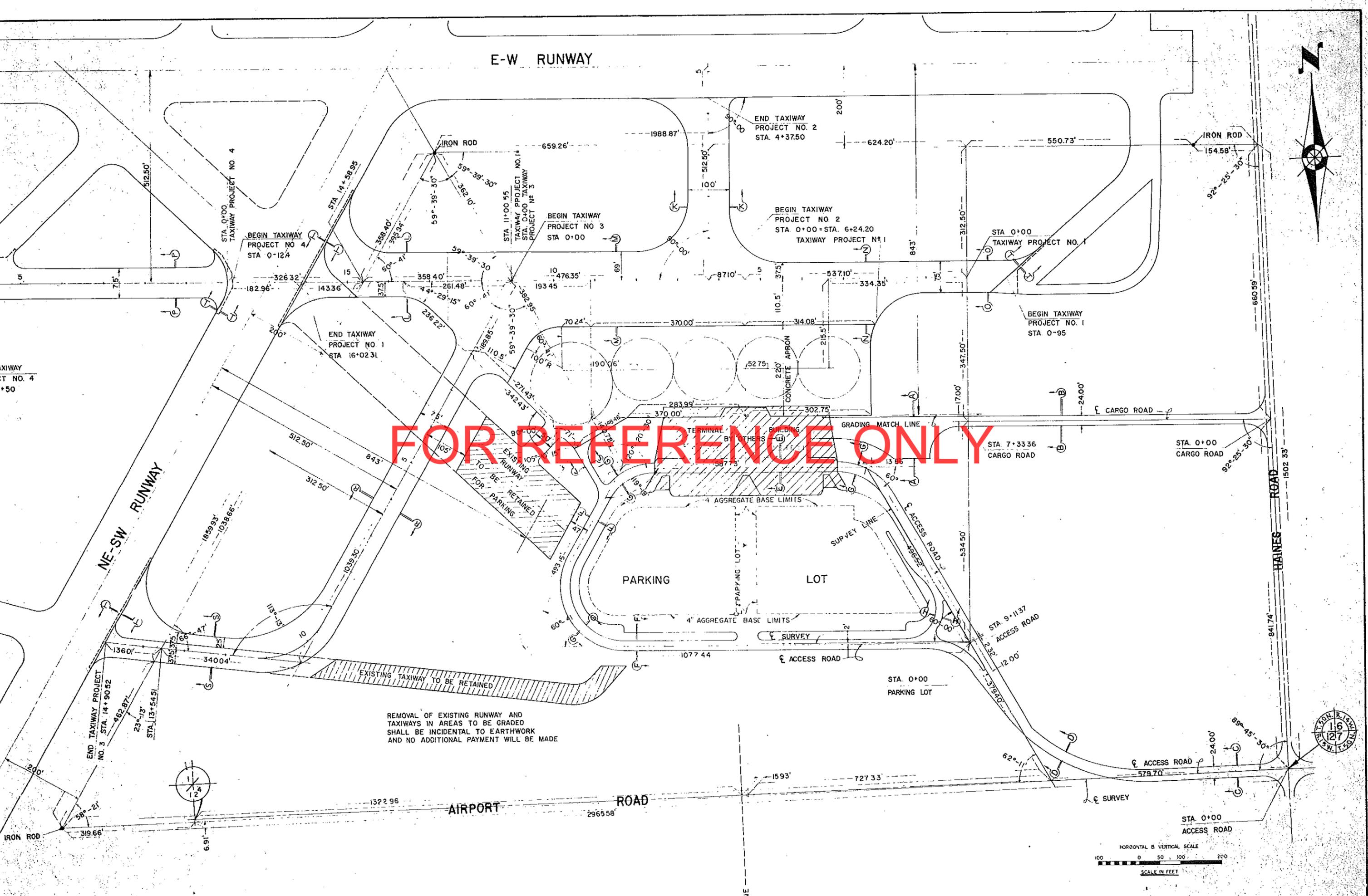


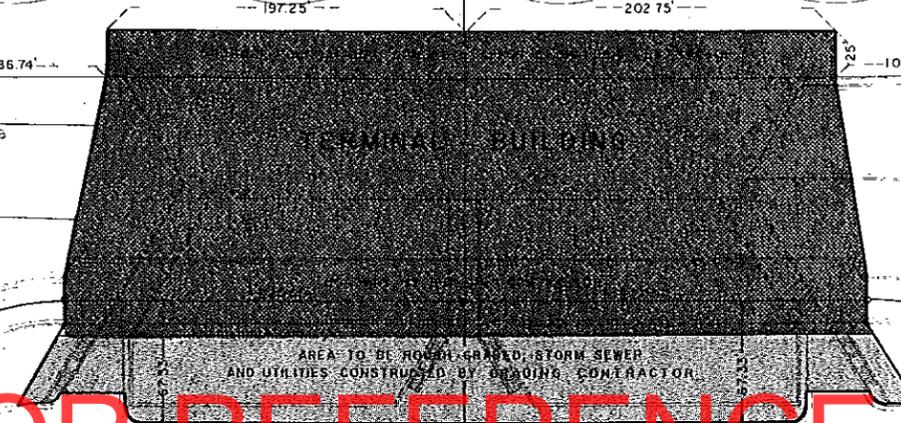
FOR REFERENCE ONLY

TAXIWAY  
PROJECT NO. 4  
9+50



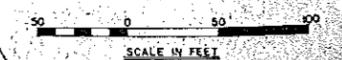
REMOVAL OF EXISTING RUNWAY AND  
TAXIWAYS IN AREAS TO BE GRADED  
SHALL BE INCIDENTAL TO EARTHWORK  
AND NO ADDITIONAL PAYMENT WILL BE MADE





FOR REFERENCE ONLY

EACH CONTRACTOR SHALL COOPERATE WITH THE ENGINEER, ARCHITECT, UTILITY OWNERS AND WITH OTHER CONTRACTORS IN EVERY WAY POSSIBLE.  
EACH CONTRACTOR SHALL COORDINATE THEIR WORK WITH THAT OF OTHER CONTRACTORS AND UTILITY OWNERS SO THAT REMOVAL AND REARRANGEMENT OPERATIONS AND CONSTRUCTION OPERATIONS MAY PROGRESS IN A REASONABLE MANNER, SO AS NOT TO INTERFERE WITH OR HINDER THE PROGRESS OR COMPLETION OF THE WORK BEING PERFORMED BY OTHER CONTRACTORS.  
EACH CONTRACTOR SHALL ASSUME ALL LIABILITY, FINANCIAL OR OTHERWISE, IN CONNECTION WITH HIS CONTRACT AND SHALL SAVE THE AIRPORT AUTHORITY, THE ENGINEER AND THE ARCHITECT HARMLESS FROM ALL DAMAGES AND CLAIMS ARISING FROM ANY DELAY, INCONVENIENCE, OR LOSS EXPERIENCED BY HIM BECAUSE OF THE PRESENCE AND OPERATIONS OF OTHER CONTRACTORS WORKING WITHIN THE LIMITS OF THE SAME PROJECT.



EXISTING RUNWAY TO REMAIN AND TO BE USED BY BUILDING CONTRACTOR FOR HIS CONSTRUCTION OPERATIONS UNTIL OTHER STORAGE AND ACCESS IS AVAILABLE

APRON CONNECTOR NO. 1

CONSTRUCTION IN THIS AREA BY GRADING CONTRACTOR WHEN OTHER ACCESS HAS BEEN PROVIDED

APRON ROAD

APRON CONNECTOR NO. 2

CARGO ROAD

AREA TO BE HOLED GRADED, STORM SEWER AND UTILITIES CONSTRUCTED BY GRADING CONTRACTOR

PARKING LOT

PARKING LOT

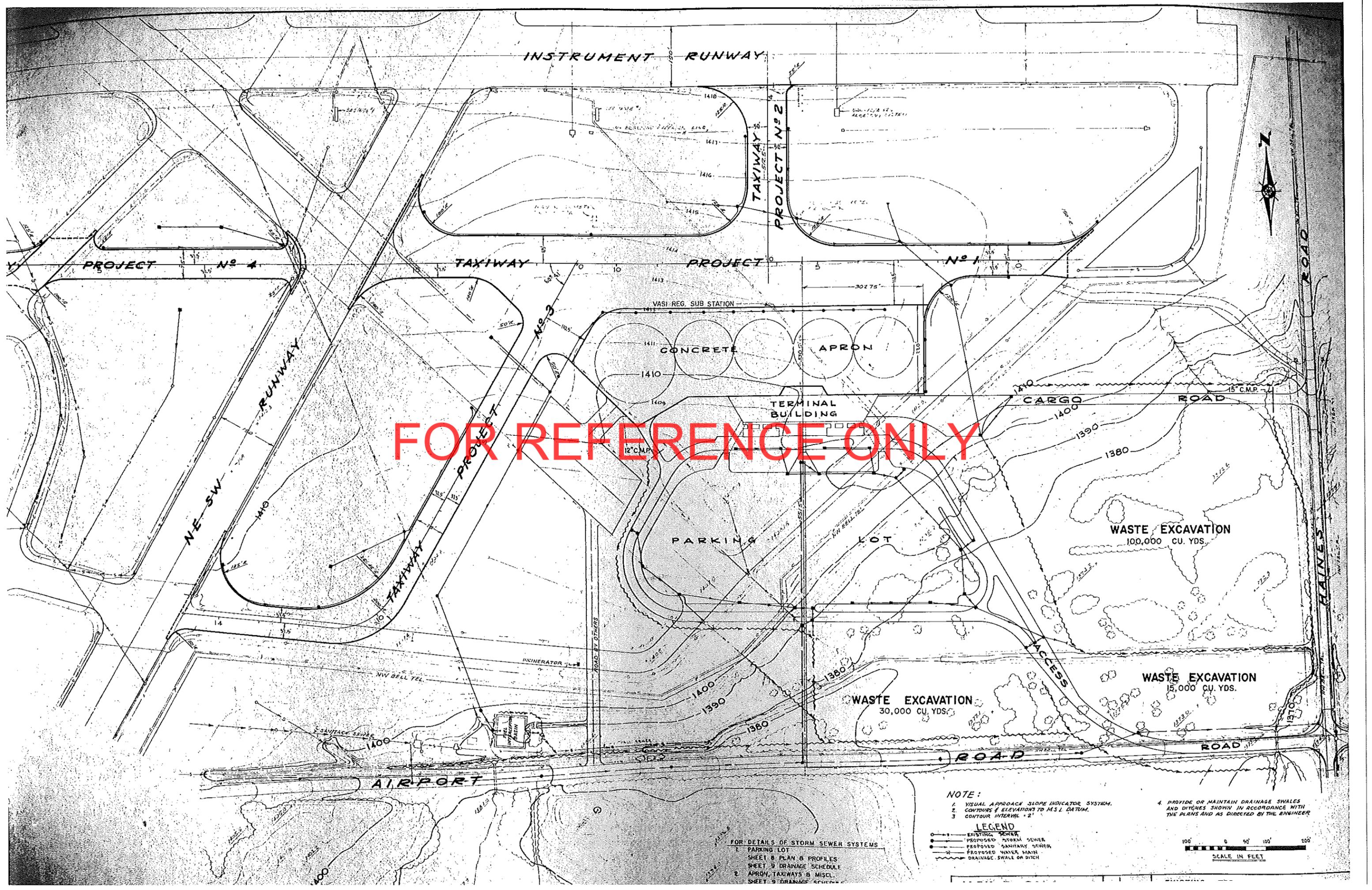
ACCESS ROAD

ROAD TO BE CONSTRUCTED & MAINTAINED BY BUILDING CONTRACTOR FOR BUILDING CONTRACTOR

ALTERNATE ROAD

EXISTING TAXIWAY TO REMAIN





FOR REFERENCE ONLY

INSTRUMENT RUNWAY

TAXIWAY PROJECT NO 2

PROJECT NO 4

TAXIWAY

PROJECT NO 1

PROJECT NO 1

NE-SW RUNWAY

CONCRETE

APRON

TERMINAL BUILDING

CARGO ROAD

PARKING

LOT

WASTE EXCAVATION  
100,000 CU. YDS.

WASTE EXCAVATION  
30,000 CU. YDS.

WASTE EXCAVATION  
15,000 CU. YDS.

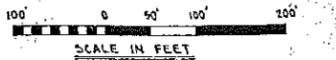
AIRPORT

NOTE:

1. VISUAL APPROACH SLOPE INDICATOR SYSTEM.
2. CONTOURS & ELEVATIONS TO M.S.L. DATUM.
3. CONTOUR INTERVAL = 2'
4. PROVIDE OR MAINTAIN DRAINAGE SWALES AND DITCHES SHOWN IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER

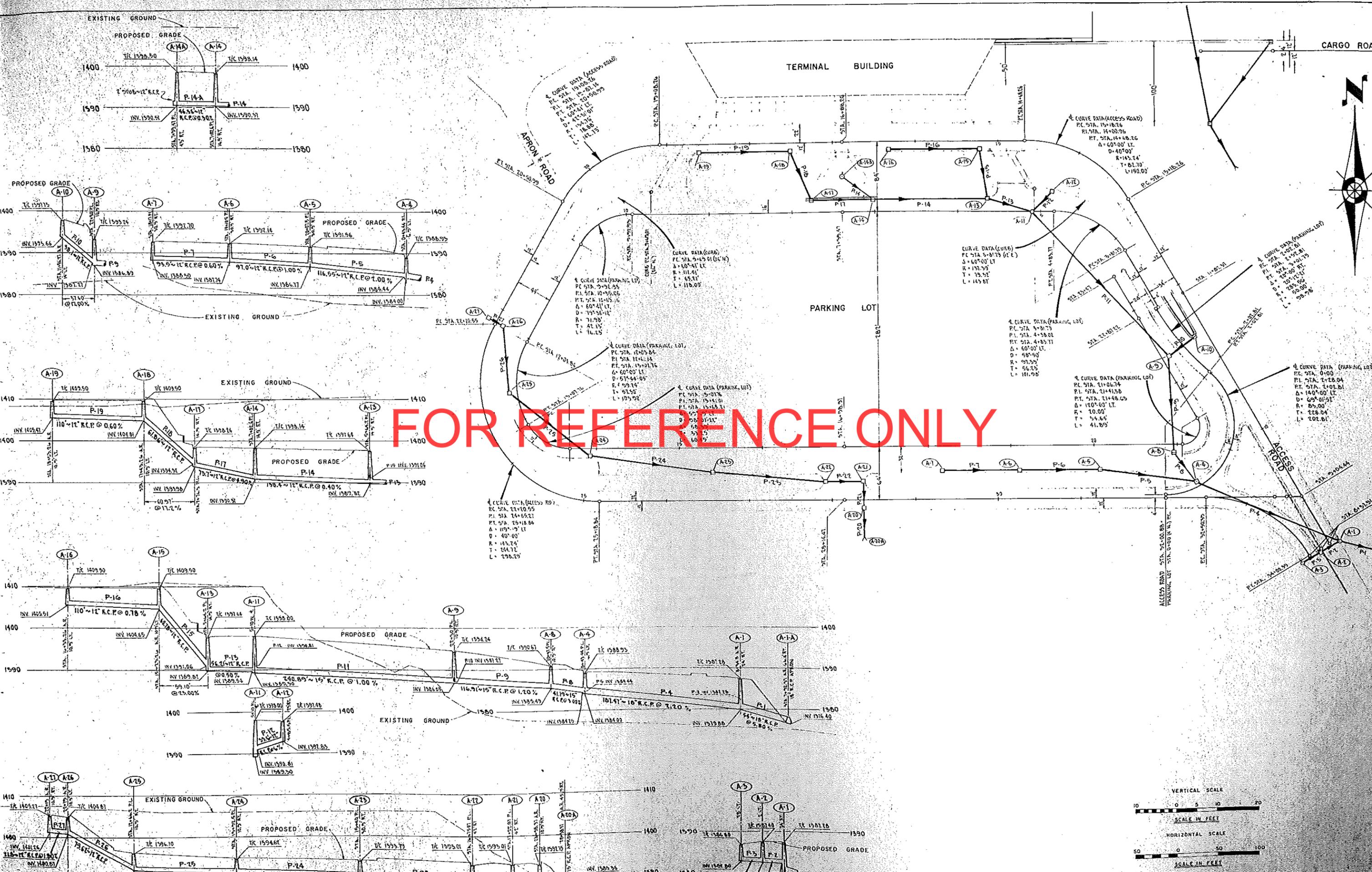
LEGEND

- EXISTING ROAD
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- DRAINAGE SWALE OR DITCH

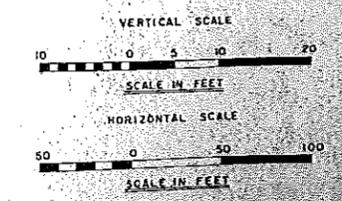
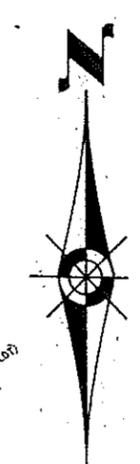


FOR DETAILS OF STORM SEWER SYSTEMS  
 1. PARKING LOT  
 SHEET 8 PLAN & PROFILES  
 SHEET 9 DRAINAGE SCHEDULE  
 2. APRON, TAXIWAYS & MISCL.  
 SHEET 9 DRAINAGE SCHEDULE





FOR REFERENCE ONLY



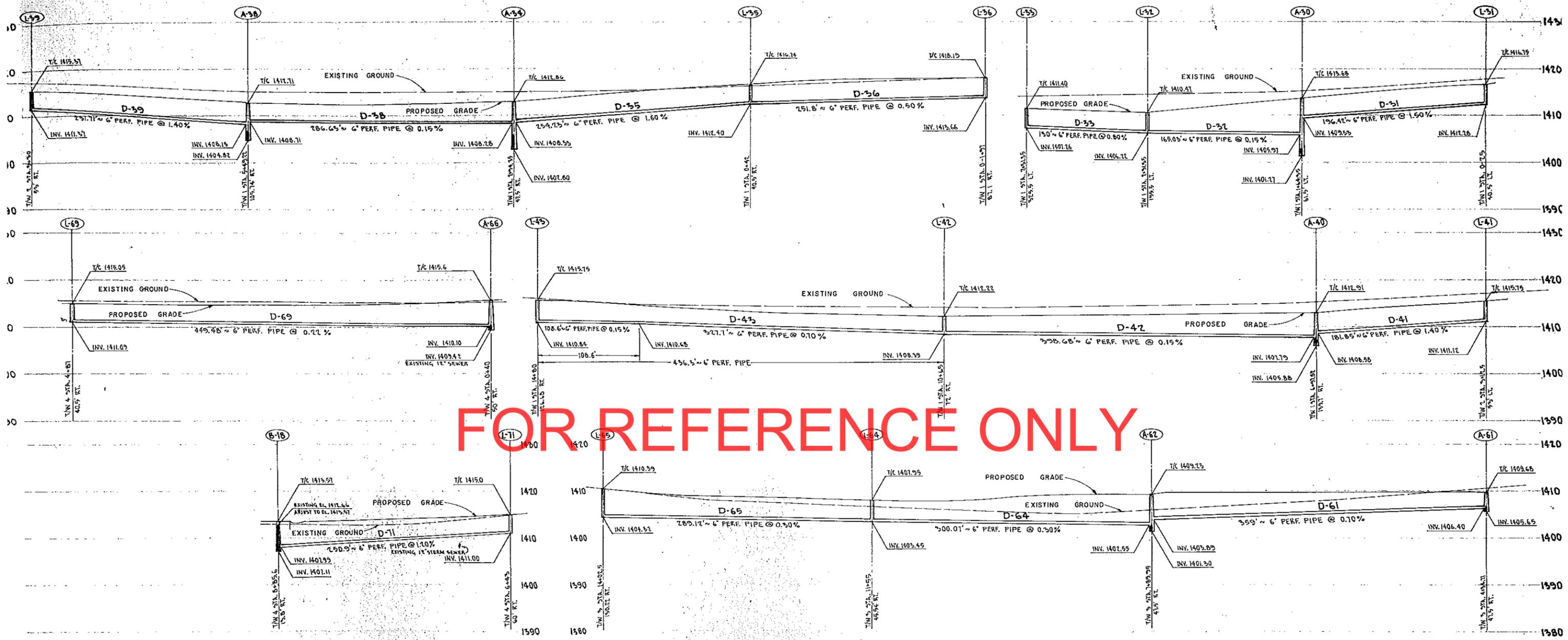
STRUCTURE CODE NO.	STORM				SEWER				SCHEDULE										REMARKS		
	LOCATION				CONSTRUCTION				F & I		PIPE					SEWER				PRECAST CONC. MEDIAN DRAIN	APRONS
	STATION ACCESS ROAD	STATION PARKING LOT	STATION TAXIWAY	DISTANCE LEFT RIGHT	DESIGN M.H. C.B.	PAY HEIGHT LIN FT.	ELEVATION TOP/CSGT INVERT	F&I CASTING ASSEMBLY TYPE	PIPE OUTFALL	CODE NO.	OUTLET TO STRUCTURE CODE NO.	STRUCTURE CODE NO.	12" RCP	15" RCP	18" R.C.P.	21" R.C.P.	24" R.C.P.	CLASS			
A-1-A	7+92.37			66.4	A or F	7.4	1387.26	1379.88	"A"	P-1	Ditch										
A-1	8+34.8			24	A or F	4.9	1387.40	1382.54	"B"	P-2	A-1-A				54			III			
A-2	8+34.8			28	C or G	4.0	1386.80	1382.80	"A"	P-3	A-1	26						III			
A-3	8+34.8			6.9	A or F	4.9	1386.93	1384.00	"C"	P-4	A-2	26						III			
A-4	0+43.44				A or F	4.8	1391.56	1386.77	"C"	P-5	A-4	117			187			III			
A-5	20+07.5			30.9	C or G	4.4	1392.14	1387.74	"C"	P-6	A-5	97						III			
A-6	19+10.5			30.9	C or G	4.4	1392.70	1388.30	"C"	P-7	A-6	97						III			
A-7	18+17			10.9	A or F	5.2	1390.67	1385.49	"C"	P-8	A-4	94						III			
A-8	20+97.5			10.9	A or F	7.4	1394.24	1386.89	"C"	P-9	A-8			41			III				
A-9	22+30			10.9	C or G	4.1	1397.73	1393.61	"B"	P-10	A-9	38		112			III				
A-10	11+36.27			14	A or F	8.7	1398.00	1389.30	"D"	P-11	A-9			241			III				
A-11	5+10			23	C or G	4.8	1397.48	1392.83	"C"	P-12	A-11	34						III			
A-12	4+85.5			14.9	A or F	7.8	1397.64	1389.62	"C"	P-13	A-11	50						III			
A-13	5+64.2			14.9	A or F	7.8	1397.64	1389.62	"C"	P-14	A-12	138						III			
A-14	7+02.6			43	A or F	8.0	1398.50	1390.51	"D"	P-14-A	A-14	46.2						III			
A-14-A	7+39.47				C or G	4.8	1410.00	1405.51	"C"	P-15	A-14	61						III			
A-15	15+23.26			10.9	C or G	4.8	1410.00	1405.51	"C"	P-16	A-15	110						III			
A-16	16+33.26			10.9	C or G	4.8	1410.00	1405.51	"C"	P-17	A-14	74						III			
A-17	7+76.3			10.9	A or F	5.2	1410.00	1404.81	"C"	P-18	A-17	62						III			
A-18	17+43.26			10.9	C or G	4.8	1410.00	1405.47	"C"	P-19	A-18	110						III			
A-19	18+53.26			10.9	C or G	4.8	1410.00	1405.47	"C"	P-20	Ditch							III			
A-20	28+38.37			10.9	C or G	5.3	1392.75	1387.46	"C"	P-21	A-20-A			29			III				
A-20-A	28+38.37			42	C or G	5.2	1393.01	1387.79	"C"	P-22	A-20			33			III				
A-21	17+22.87			42	C or G	4.7	1393.01	1388.27	"C"	P-23	A-21			46			III				
A-22	16+75.07			30.9	C or G	4.0	1393.79	1390.15	"C"	P-24	A-22	130						III			
A-23	15+40			10.9	C or G	4.0	1394.62	1391.34	"C"	P-25	A-23	142						III			
A-24	13+92.5			10.9	C or G	4.0	1396.10	1392.09	"C"	P-26	A-24	122						III			
A-25	12+66.2			10.9	C or G	4.0	1404.87	1400.87	"C"	P-27	A-25	80						III			
A-26	22+19			10.9	C or G	4.0	1405.27	1401.26	"C"	P-28	A-26	25						III			
A-27	22+19			486.46	A or F	10.7	1408.56	1397.65	"C"	P-29	A-28-A							III			
A-28	0+93.18			424.5	C or G	5.1	1407.12	1402.04	"C"	P-30	A-28	123			54			III			
A-29	0+19.18			336.5	A or F	12.4	1413.68	1401.27	"E"	P-31	A-28			360			III				
A-30	1+64.35			61.5	SP-1	4.5	1416.75	1412.28	"E"	P-32	A-30							III			
L-31	-0+25			40.5	SP-1	4.2	1410.47	1406.22	"E"	P-33	L-31							III		196	
L-32	2+31.35			195.5	SP-1	4.2	1411.40	1407.26	"E"	P-34	L-32							III		165	
L-33	2+31.35			325.5	SP-1	10.1	1412.66	1402.80	"E"	P-35	A-33				170			III		130	
A-34	2+94.35			47.5	A or F	4.3	1416.74	1412.30	"E"	P-36	L-35							III		254	
L-35	0+42			87.1	SP-1	4.5	1418.19	1413.66	"E"	P-37	A-34							III		252	
A-37-A	3+24.2			142.5	A or F	7.9	1412.71	1404.62	"F"	P-38	A-34							III		287	
L-38	5+49.22			105.74	SP-1	4.0	1415.37	1411.37	"E"	P-39	A-38				261			III		222	
L-39	3+30			53	A or F	7.0	1412.91	1405.88	"F"	P-40	A-38				152			III		222	
A-40	6+97.82			139.7	A or F	4.6	1415.75	1411.12	"E"	P-40-A	A-40				167			III		182	
A-40-A	8+74.2			155	SP-1	4.0	1412.22	1408.39	"E"	P-41	A-40							III		399	
L-41	3+12.5			53	SP-1	4.9	1415.75	1410.61	"E"	P-42	A-40							III		36	
L-42	10+65			72	SP-1	4.0	1412.22	1408.39	"E"	P-43	A-40							III		36	
L-43	14+80			126.66	SP-1	4.9	1415.75	1410.61	"E"	P-44	A-40							III		36	
A-44					SP-2	10.9	1406.86	1399.97	"E"	P-45	A-43				57			III		Interceptor Basin	
A-45	8+86.24			98	SP-2	11.3	1409.36	1399.05	"E"	P-46	A-45				305			III		Basin	
A-46	4+69.55			98	SP-2	11.9	1411.12	1399.26	"E"	P-47	A-46				100			III		Basin	
A-47	3+09.14			98	SP-2	4.6	1408.00	1403.40	"C"	P-48	A-47			195				III		Basin	
A-48	2+63.73			91.64	C or G	8.5	1408.00	1399.49	"C"	P-49	A-48							III		Basin	
A-49	2+63.73			91.64	SP-2	9.4	1409.47	1400.03	"H"	P-50	A-49				163			III		Basin	
A-50	1+55			96	SP-2	5.2	1409.47	1400.46	"H"	P-51	A-50				66			III		Basin	
A-51	0+71.21			119.29	SP-2	6.9	1409.75	1400.87	"H"	P-52	A-51				80			III		Basin	
A-52	9+51			120.5	SP-2	8.3	1409.84	1401.53	"H"	P-53	A-52				63			III		Basin	
A-53	8+68			120.5	SP-2	8.0	1409.92	1401.95	"H"	P-54	A-53				64			III		Basin	
A-54	7+84.35			120.5	SP-2	7.7	1410.00	1402.32	"H"	P-55	A-54				75			III		Basin	
A-55	7+09.35			120.5	SP-2	7.1	1410.07	1402.95	"H"	P-56	A-55				75			III		Basin	
A-56	6+34.35			120.5	SP-2	6.8	1410.14	1403.32	"H"	P-57	A-56				75			III		Basin	
A-57	5+59.35			120.5	SP-2	6.5	1410.22	1403.70	"H"	P-58	A-57				75			III		Basin	
A-58	4+84.35			120.5	SP-2	6.0	1410.30	1404.33	"H"	P-59	A-58				75			III		Basin	
A-59	4+09.35			120.5	SP-2	5.7	1410.37	1404.70	"H"	P-60	A-59				75			III		Basin	
A-60	3+34.35			120.5	SP-2	4.0	1409.66	1405.65	"E"	P-61	A-60							III		Basin	
A-61	4+31.41			47.5	C or G	7.9	1409.23	1401.30	"E"	P-62	A-62							III		Basin	
A-62	7+89.95			47.5	A or F	4.0	1405.00	1402.00	"E"	P-63	A-62				200			III		Basin	
A-63	11+32			151.29	C or G	4.5	1407.95	1403.45	"E"	P-64	A-62							III		Basin	
L-64	11+52			45.54	SP-1	6.1	1410.39	1404.32	"E"	P-65	A-64							III		Basin	
L-65	14+02.5			130.22	SP-1	6.2	1415.00	1409.40	"E"	P-66	A-65							III		Basin	
A-66	0+40			92.5	A or F	4.0	1413.00	1410.29	"E"	P-67	A-66							III		Basin	
A-67	1+95			92.5	C or G	4.0	1413.00	1410.29	"E"	P-68	A-67							III		Basin	
A-68	3+50			92.5	C or G	4.0	1415.05	1411.09	"E"	P-69	A-68							III		Basin	
L-69	4+87			40.5	SP-1	4.0	1410.2	1406.36	"E"	P-70	A-69							III		Basin	
A-70	3+00			112.5	C or G	4.0	1415.00	1411.00	"E"	P-71	A-70							III		Basin	
L-71	6+43			60	SP-1	4.0	1415.00	1411.00	"E"	P-72	A-71							III		Basin	
A-72	8+25			68	C or G	4.0	1411.50	1405.64	"E"	P-73	A-72							III		Basin	
A-73							1393.00	1388.21	"O"	P-74	A-73-A							III		Basin	
A-73-A								1388.00			A-74-A								III		Basin
S-74								1388.00			Ditch								III		Basin
A-74-A								1385.50											III		Basin

CASTING ASSEMBLY "A" CONSISTS OF CASTING NO. 700-9 & 721  
 CASTING ASSEMBLY "B" CONSISTS OF CASTING NO. 801,810, & 821B  
 CASTING ASSEMBLY "C" CONSISTS OF CASTING NO. 802A,811 & 823A  
 CASTING ASSEMBLY "D" CONSISTS OF CASTING NO. 700-9 & 711  
 CASTING ASSEMBLY "E" CONSISTS OF CASTING NEENAH R-1974 OR EQUAL  
 CASTING ASSEMBLY "F" CONSISTS OF CASTING NEENAH R-3492 OR EQUAL  
 CASTING ASSEMBLY "G" CONSISTS OF CASTING NO. 790-2 & 711  
 CASTING ASSEMBLY "H" CONSISTS OF CASTING NEENAH R-2565F GRATE AND R-3492 FRAME

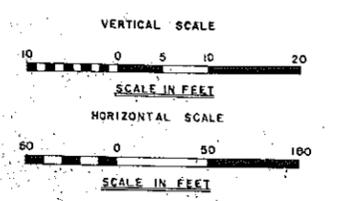
FOR REFERENCE ONLY

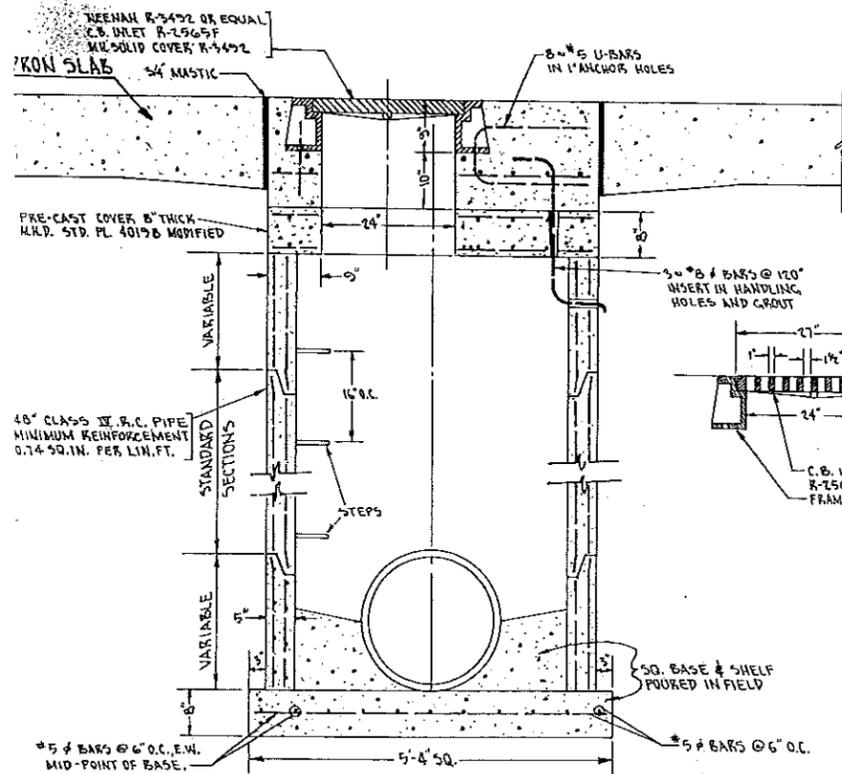
\* Minimum Pay Height 4'-0"; Fill With Concrete To Invert As Shown Above And On Profiles.

STRUCTURE CODE NO.	LOCATION				IN PLACE		TOP OF CASTING ELEVATION		F&I CASTING ASS. TYPE	REMOVE	RECONSTRUCT LIN. FT.	ADJUST CASTINGS	REMARKS
	STATION ACCESS ROAD	STATION PARKING LOT	STATION TAXIWAY	DISTANCE LEFT RIGHT	M.H.	C.B.	EXISTING	PROPOSED					

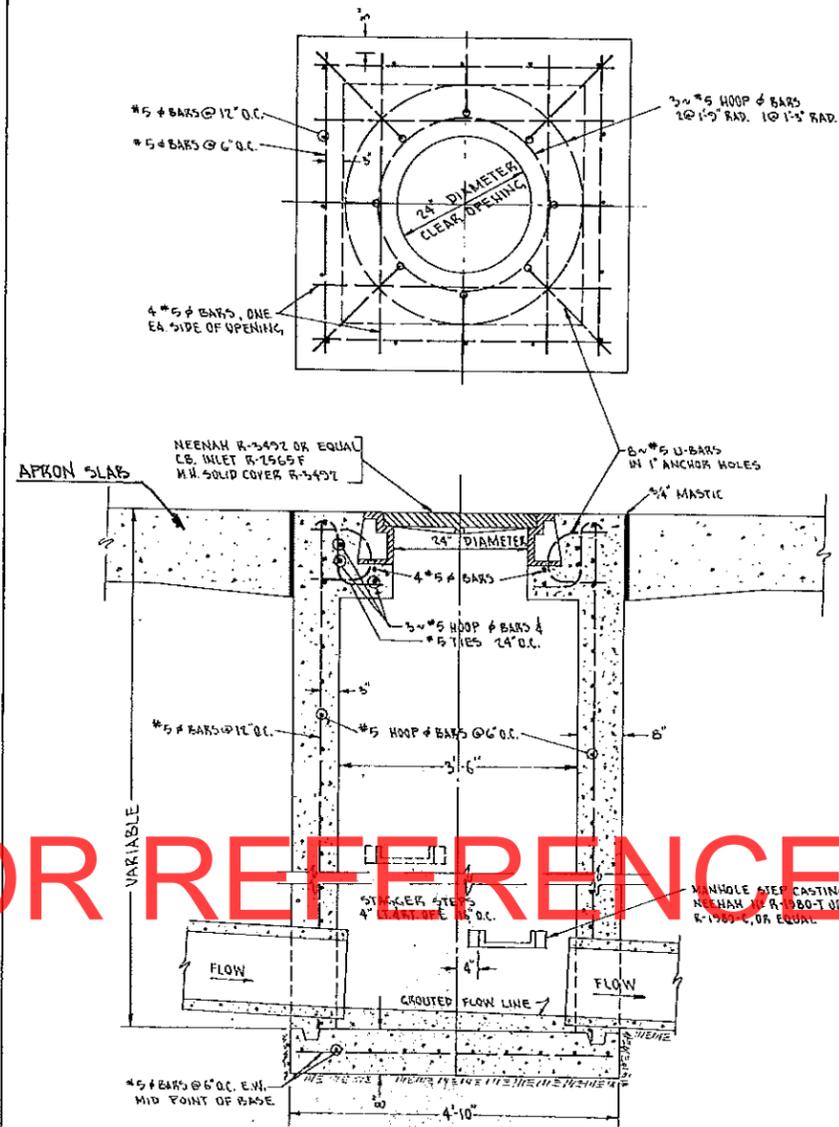


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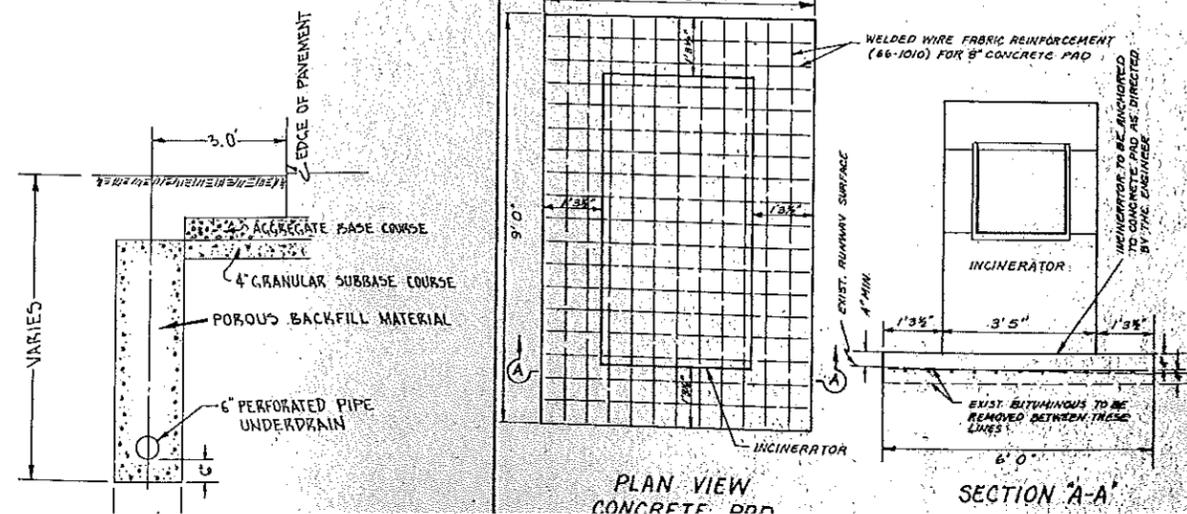
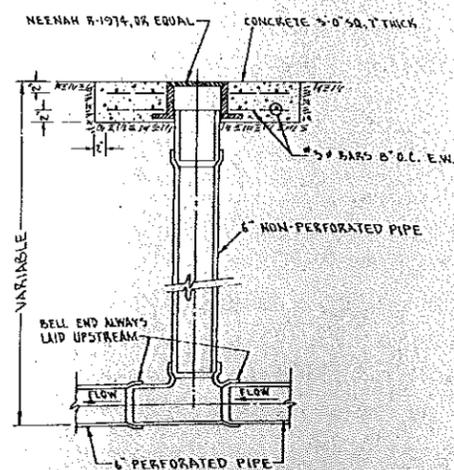
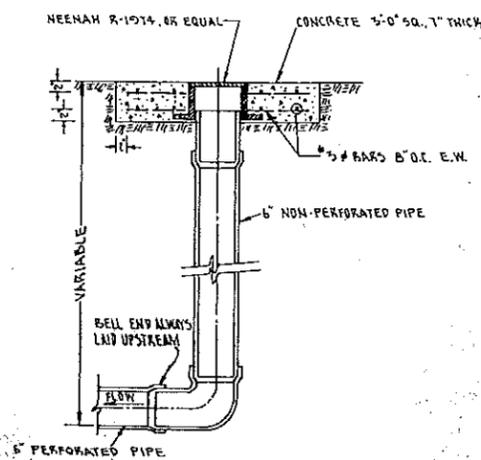
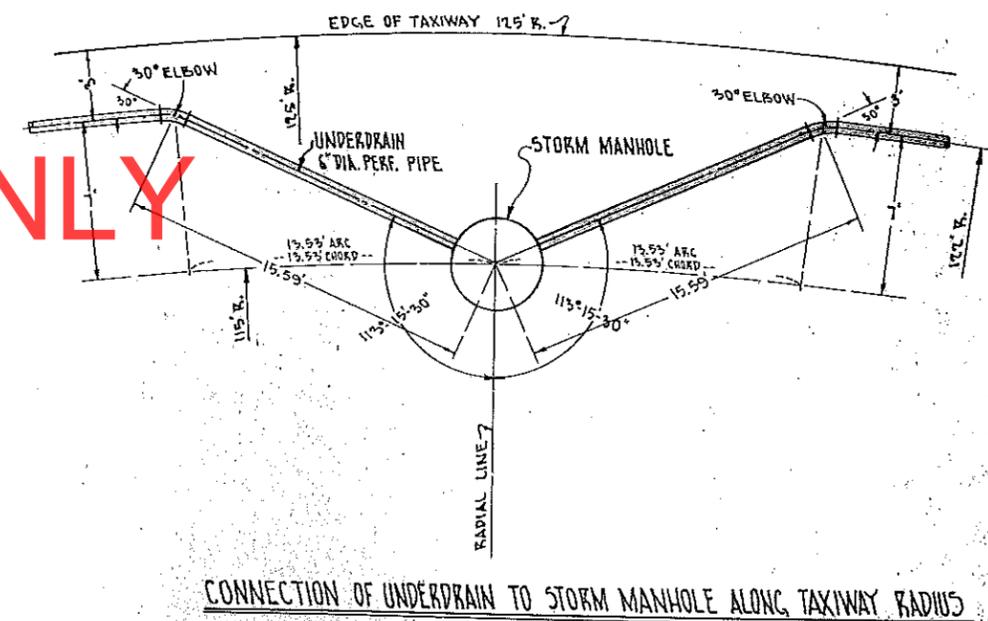
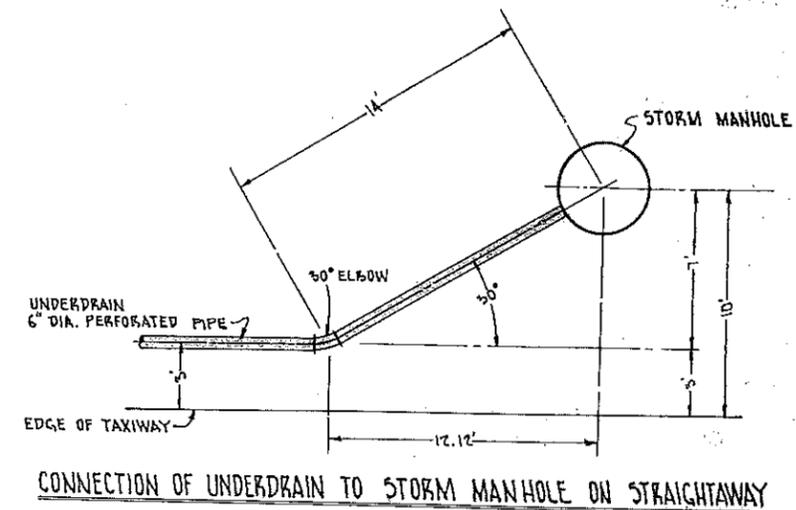


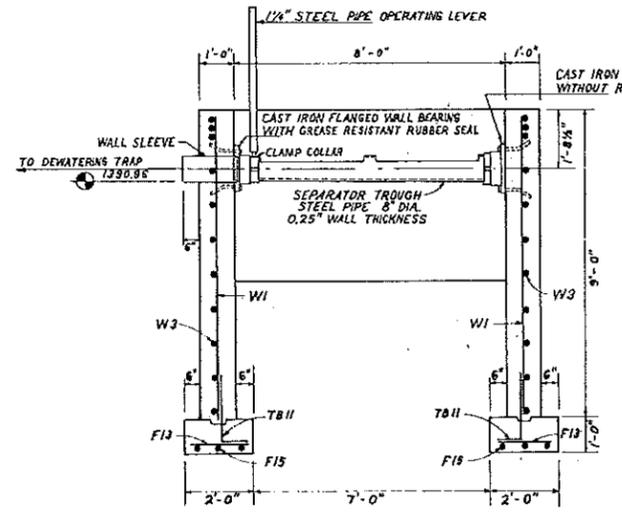
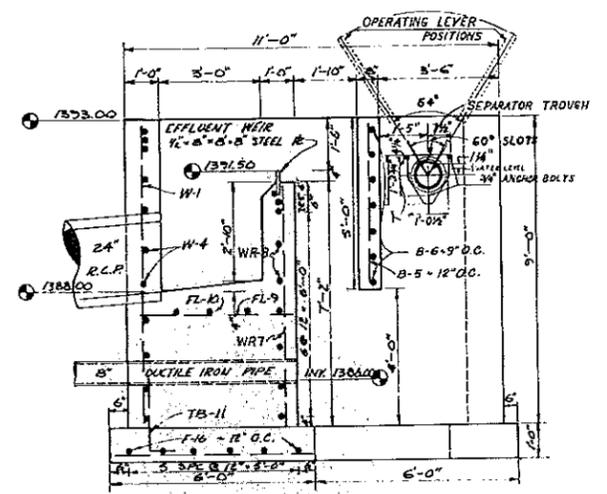
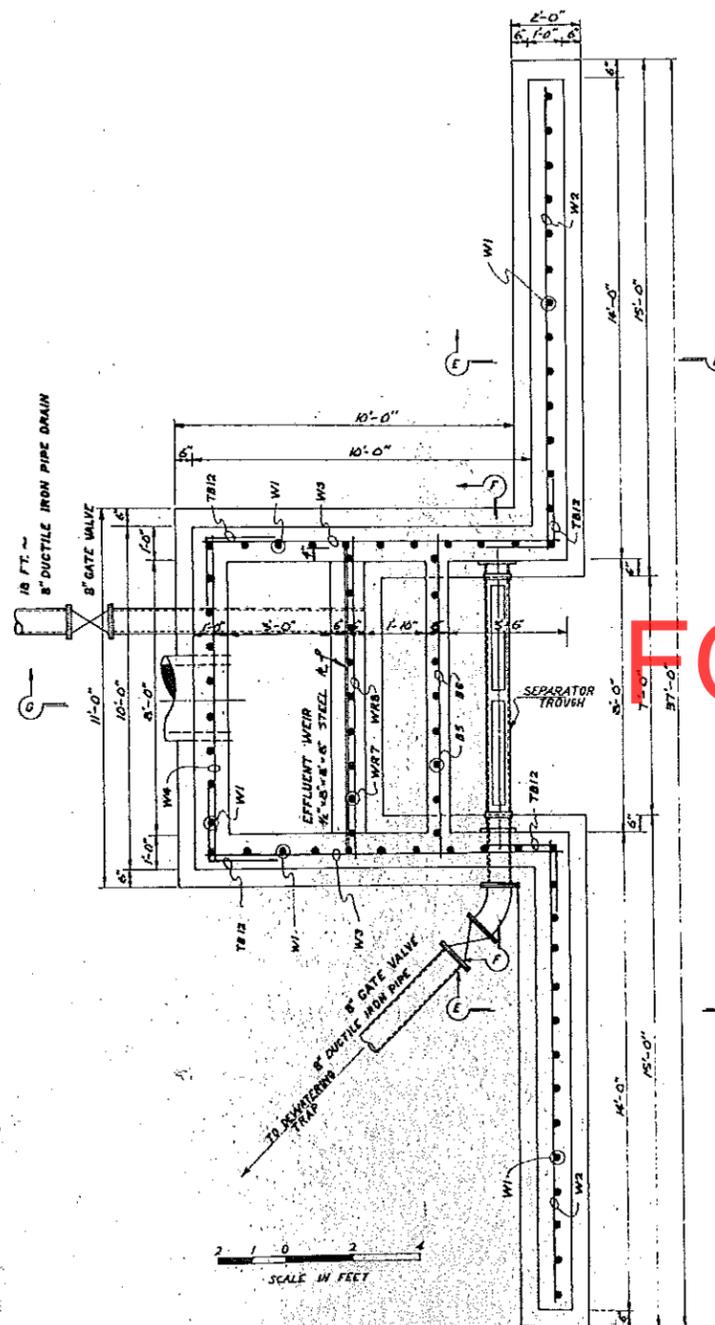


**PRECAST MANHOLE, ALTERNATE  
TYPE SP-2 M.H. DESIGN  
IN APRON AREAS**



**CAST-IN-PLACE CONCRETE MANHOLE  
TYPE SP-2 M.H. DESIGN  
IN APRON AREAS**





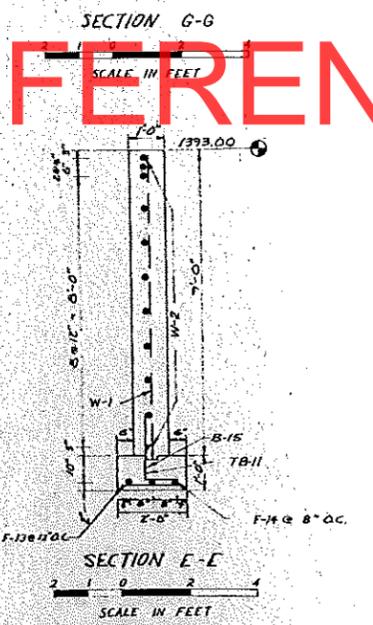
**SPECIFICATIONS FOR SEPARATOR TROUGH**

THE CONTRACTOR UNDER THIS ITEM SHALL FURNISH AND INSTALL, COMPLETE, A SEPARATOR TROUGH FOR THE OVERFLOW STRUCTURE MEASURING 8'-0" WIDE AND HAVING A FREE-BOARD OF 1'-6". THE TROUGH SHALL BE DESIGNED FOR REMOVAL OF FUEL OR OTHER FLOATING PETROLEUM MATERIAL.

THE TROUGH SHALL BE THE LINK-BELT ROTOLINE TYPE, OR EQUAL. THE MANUFACTURER SHALL FURNISH THE COMPLETE UNIT AS SHOWN ON THE DRAWING AND DESCRIBED BELOW.

THE SEPARATOR TROUGH SHALL CONSIST OF AN 8 INCH DIAMETER STEEL PIPE WITH LONGITUDINAL SLOTS. TROUGH SHALL BE MOUNTED IN CAST IRON FLANGED WALL BEARINGS. BEARING AT OPEN END OF TROUGH ONLY, SHALL INCLUDE A GREASE RESISTANT RUBBER SEAL. PROVIDE A 1 FOOT 6 INCH WALL SLEEVE FOR CONNECTION TO DUCTILE IRON PIPE AND DEWATERING TRAP. A 1 1/4 INCH DIAMETER STEEL PIPE OPERATING LEVER SHALL BE PROVIDED. THE LEVER SHALL EXTEND AT LEAST 36 INCHES ABOVE TOP OF TANK.

FOR REFERENCE ONLY



REINFORCING STEEL				
MARK	NO. REQD	SIZE	LENGTH	REMARKS
W 1	56	5/8"	8' 9"	VERTICAL BARS
W 2	22	5/8"	13' 6"	HORIZONTAL BARS
W 3	22	5/8"	10' 6"	HORIZONTAL BARS
W 4	11	5/8"	9' 6"	HORIZONTAL BARS
B 5	9	5/8"	4' 8"	VERTICAL BARS
B 6	7	5/8"	9' 6"	HORIZONTAL BARS
WR 7	9	5/8"	7' 0"	VERTICAL BARS
WR 8	9	5/8"	9' 6"	HORIZONTAL BARS
FL 9	8	5/8"	4' 6"	HORIZONTAL BARS
FL 10	3	5/8"	9' 6"	HORIZONTAL BARS
TB 11	56	5/8"	2' 9"	VERTICAL BARS ~ BENT 90°
TB 12	44	5/8"	2' 0"	HORIZONTAL BARS ~ BENT 90°
F 13	56	1/2"	1' 9"	HORIZONTAL BARS
F 14	8	3/4"	14' 6"	HORIZONTAL BARS
F 15	6	3/4"	11' 6"	HORIZONTAL BARS
F 16	6	3/4"	10' 6"	HORIZONTAL BARS

W = WALL REINFORCEMENT  
 B = BAFFLE REINFORCEMENT  
 WR = WEIR REINFORCEMENT  
 FL = FLOOR OF OVERFLOW CHAMBER REINFORCEMENT  
 TB = TIE-BAR REINFORCEMENT  
 F = FOOTING REINFORCEMENT

**NOTE: ESTIMATE OF QUANTITIES FOR CONTRACTORS CONVICIENCE IN COMPUTING HIS BID.**

ITEM	UNIT	QUAN.
CONCRETE	CU. YD.	30.7
REINFORCEMENT	LB.	2150

INSTRUMENT

RUNWAY

END TAXIWAY PROJ. NO. 2 STA. 4+37.50

FOR REFERENCE ONLY

BEGIN TAXIWAY PROJ. NO. 3 STA. 0+00+ STA. 1+00.55 TAXIWAY PROJ. NO. 1

BEGIN TAXIWAY PROJ. NO. 2 STA. 0+00+ STA. 6+22.20 TAXIWAY PROJ. NO. 1

BEGIN TAXIWAY PROJ. NO. 1 STA. 0+95

CONCRETE APRON



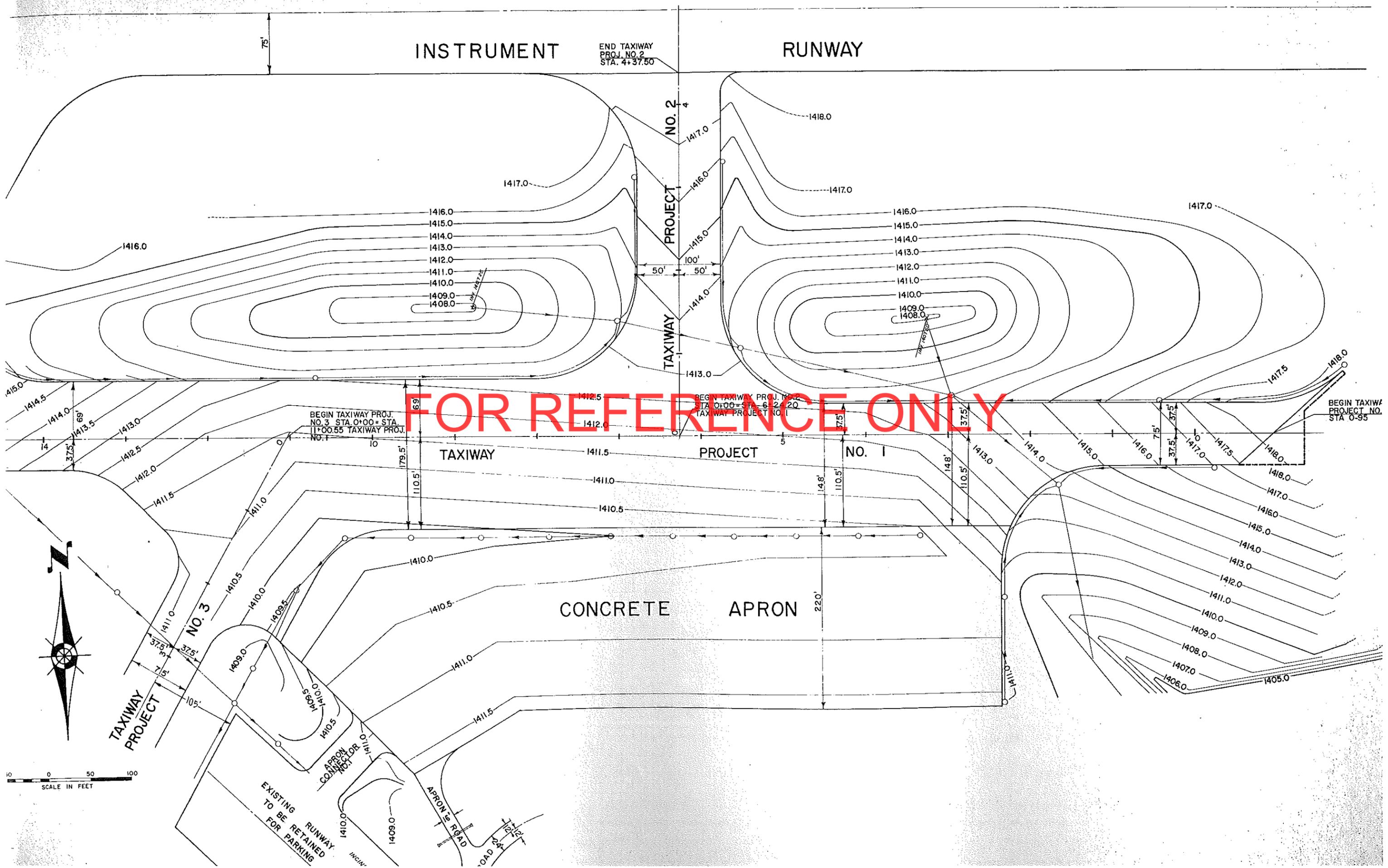
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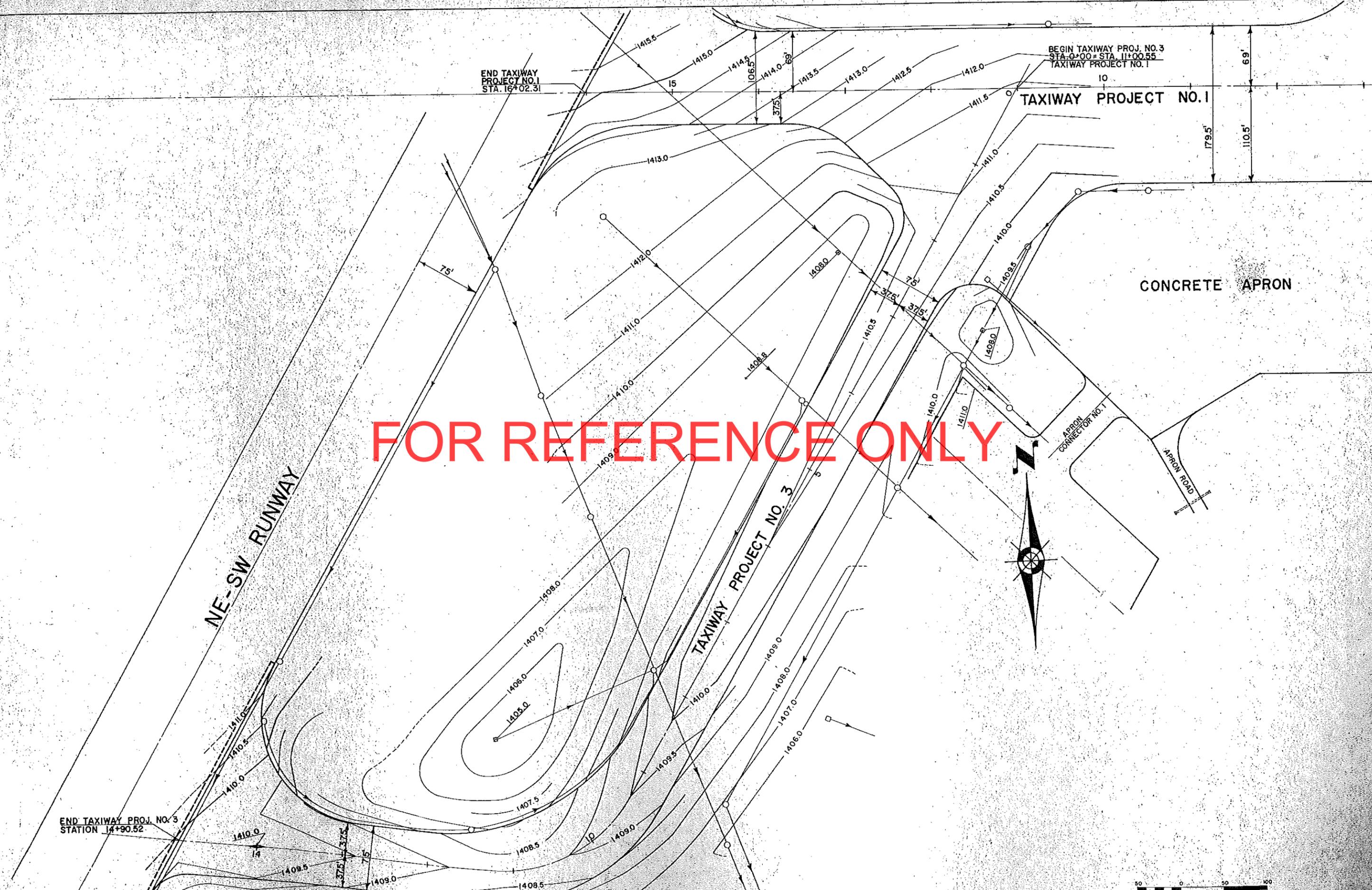
EXISTING RUNWAY TO BE RETAINED FOR PARKING

APRON CONNECTOR

APRON ROAD

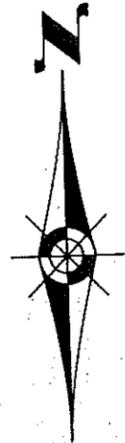
ROAD 24





FOR REFERENCE ONLY

SCALE IN FEET  
0 50 100



FOR REFERENCE ONLY

END TAXIWAY PROJ. NO. 4  
STA. 9+50

END TAXIWAY PROJ. NO. 1  
STA. 16+02.31

BEGIN TAXIWAY PROJ. NO. 4  
STATION 0+00

EXISTING  
TAXIWAY

TAXIWAY

PROJECT NO. 4

TAXIWAY

PROJECT NO. 1

NE-SW  
RUNWAY

1414.0

1413.5

1413.0

1412.5

1412.0

1413.5

1413.0

1414.0

1414.5

1415.0

1415.5

1415.0

1414.5

1414.0

1415.0

1414.5

1414.0

1415.0

1415.5

1414.0

1413.5

1413.0

1412.5

1412.0

1411.5

1411.0

1416.0

1415.5

1415.0

1414.5

1414.0

75'

150'

75'

106.5'

69'

37.5'

9

5

7.5

37.5

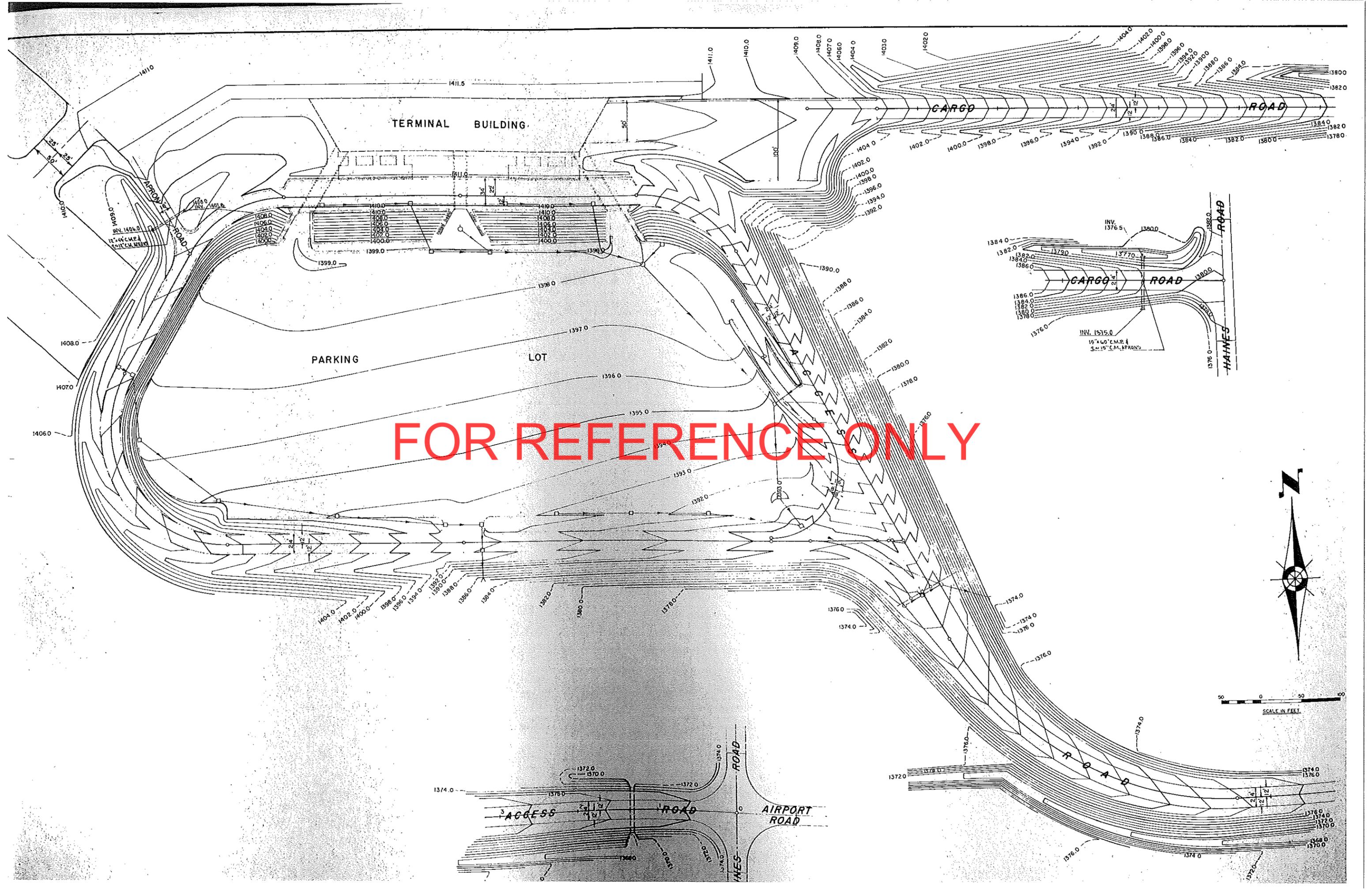
37.5

7.5

5

15

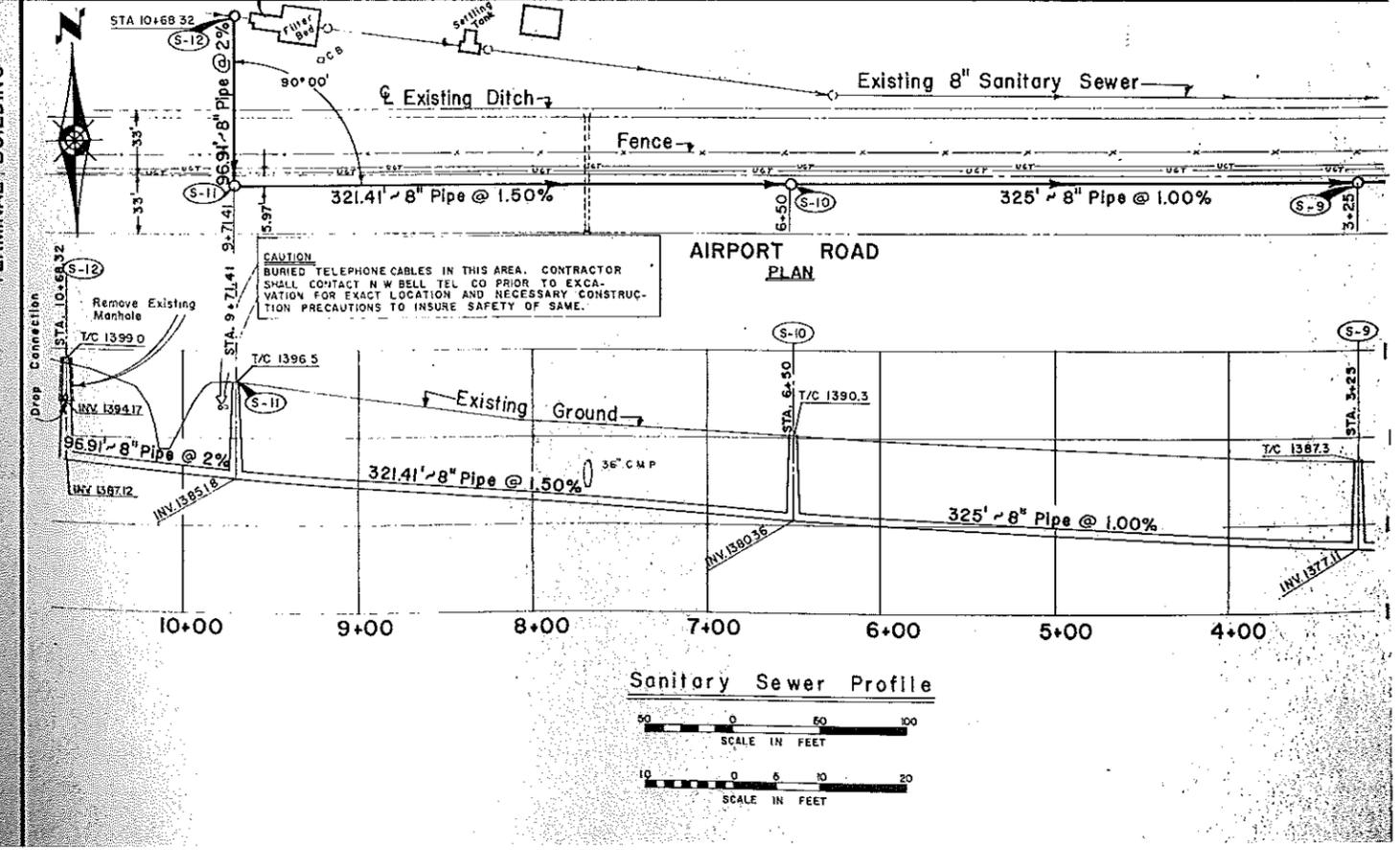
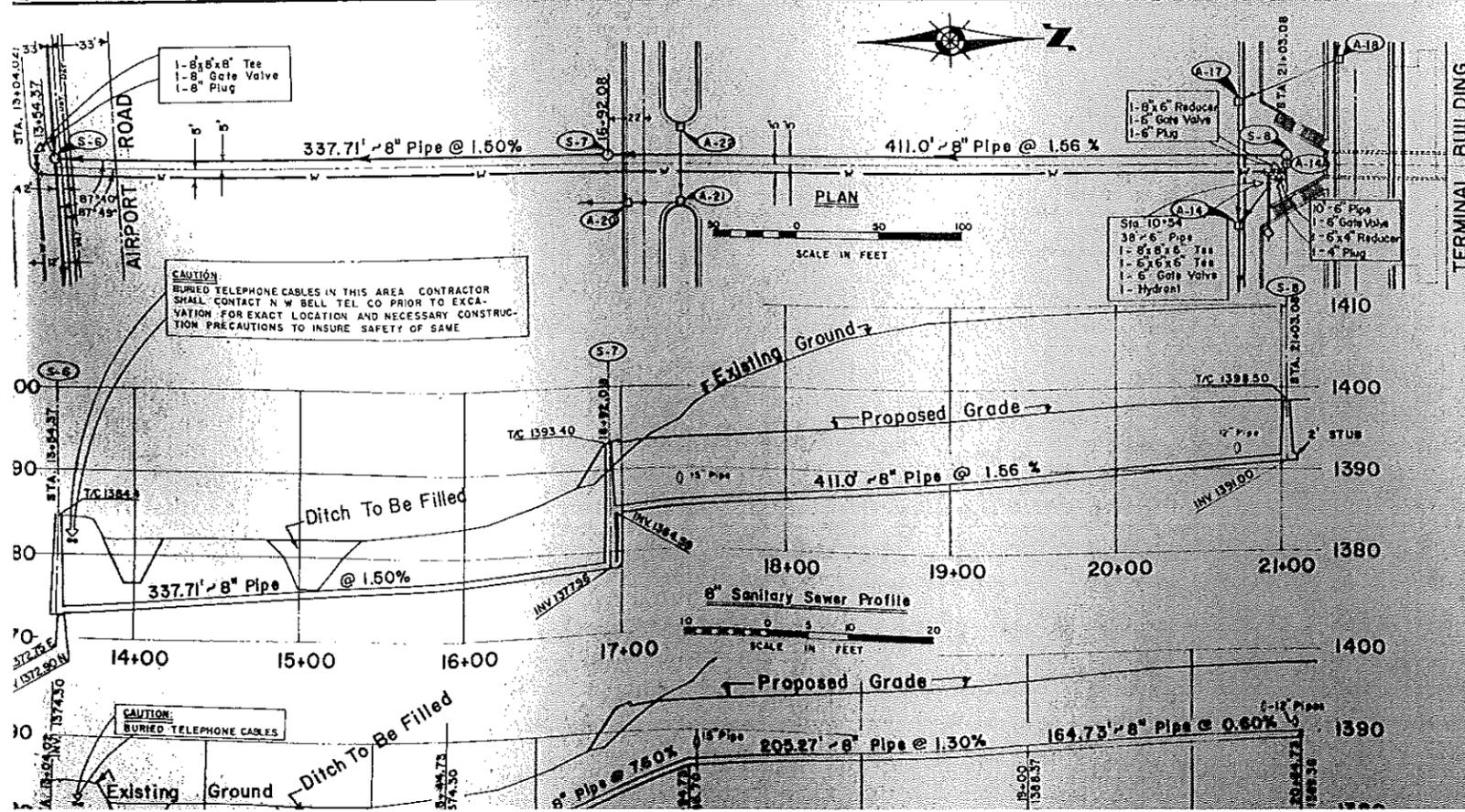
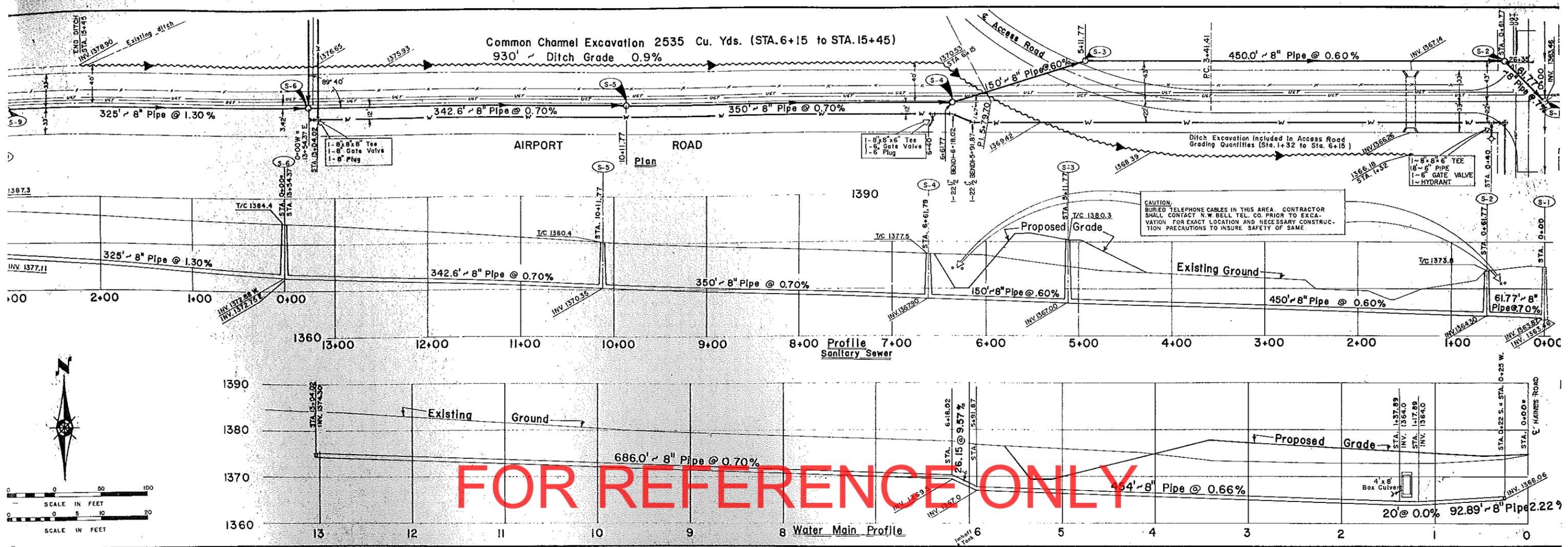
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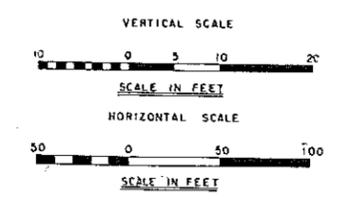
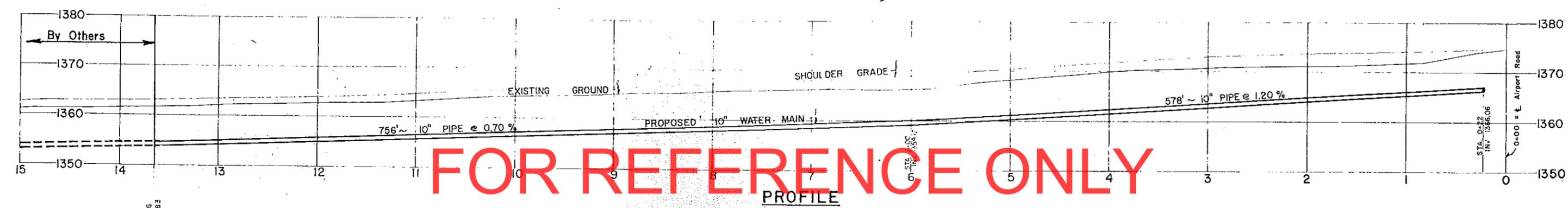
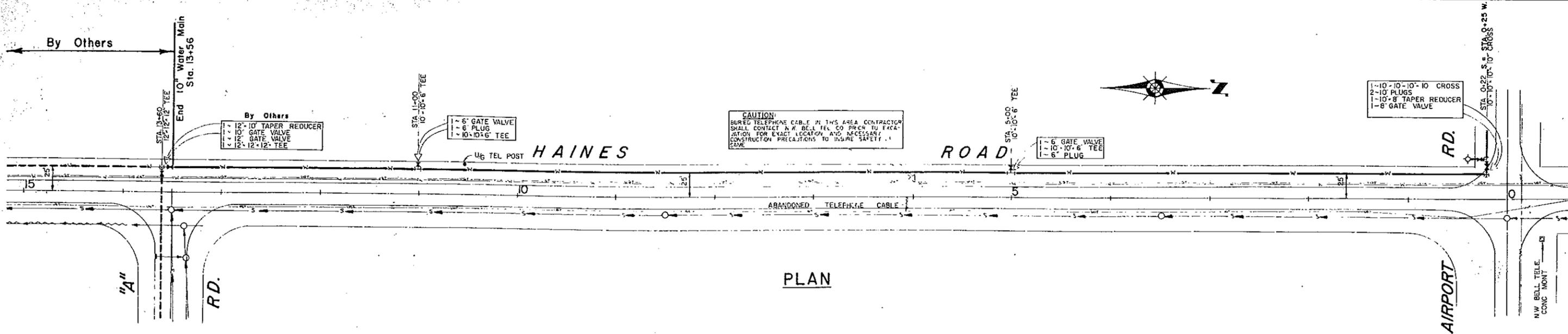


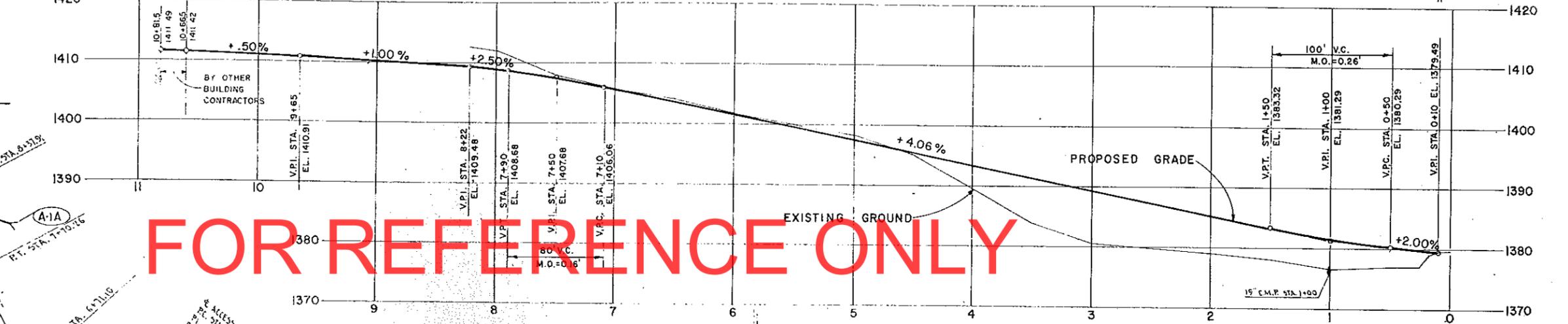
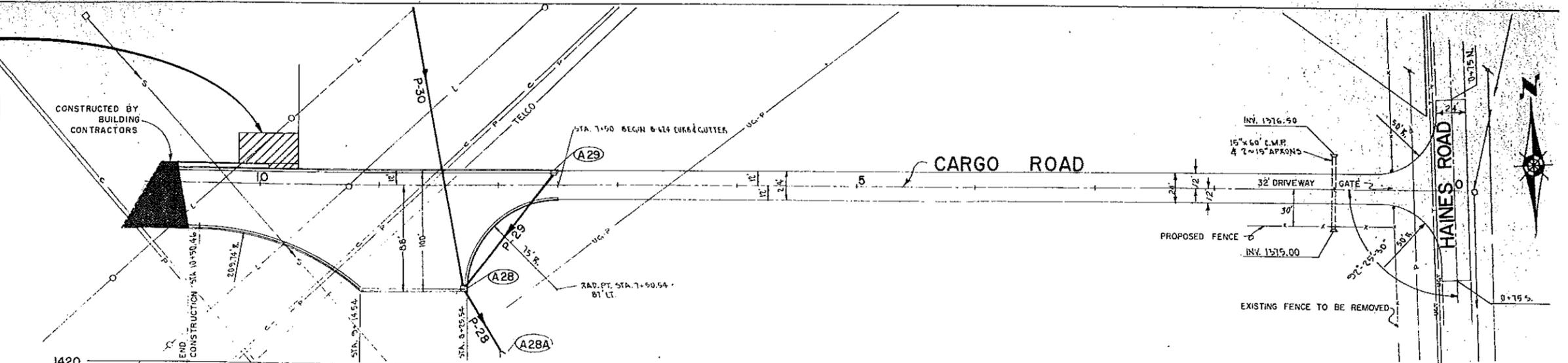
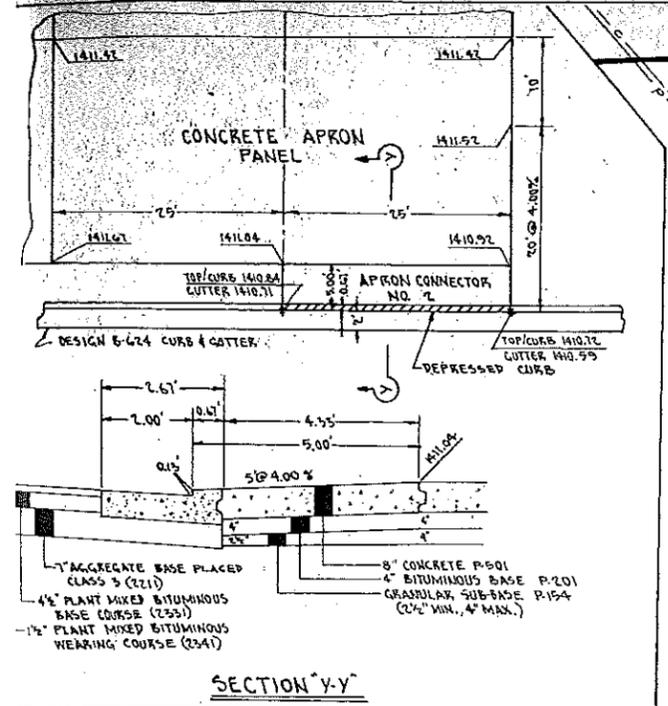
FOR REFERENCE ONLY



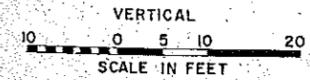
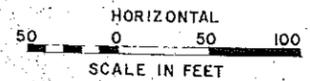
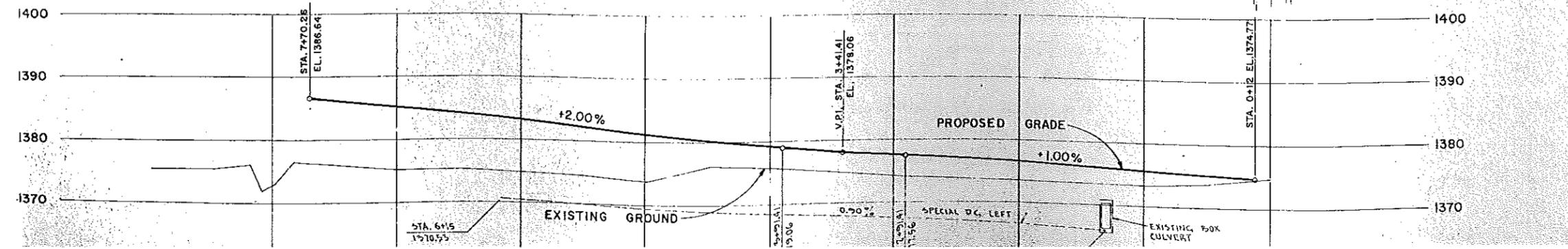
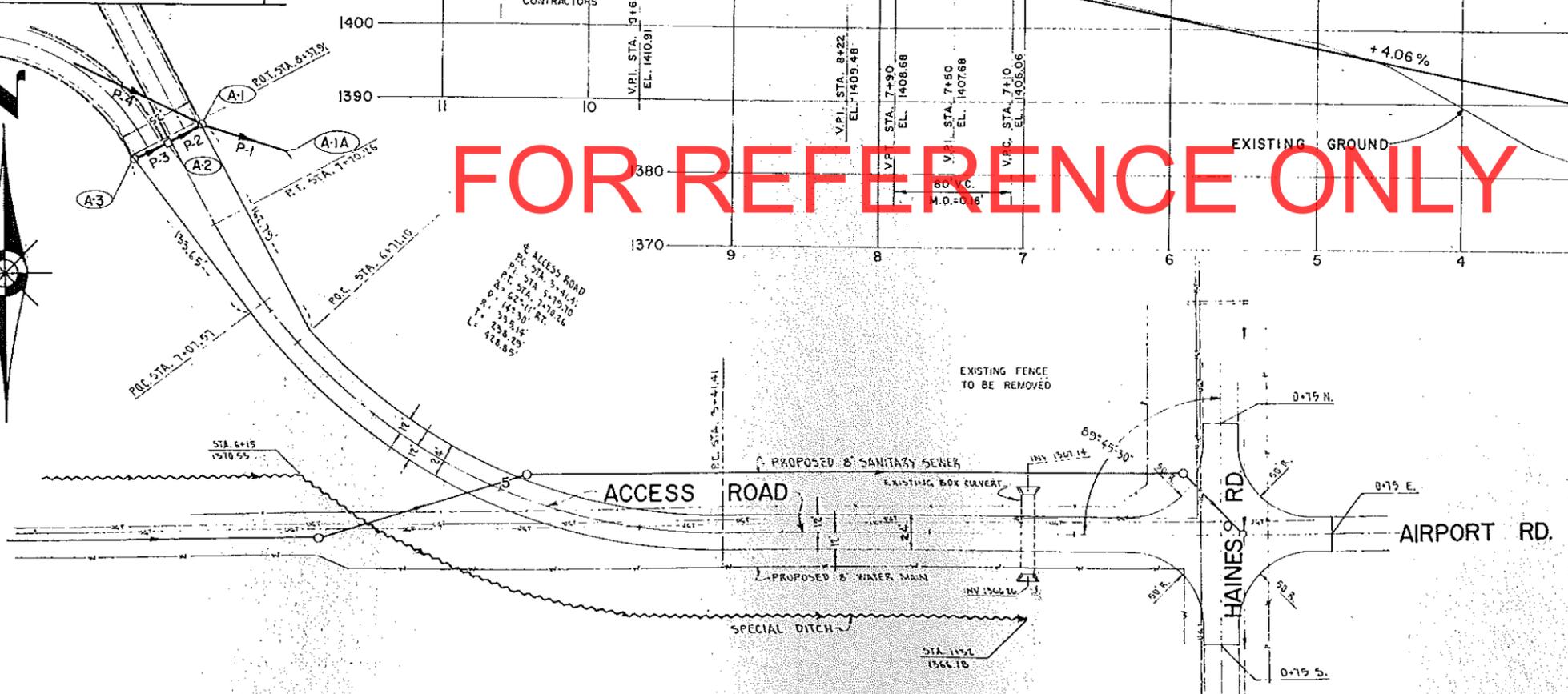
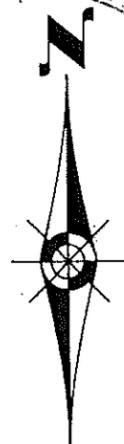
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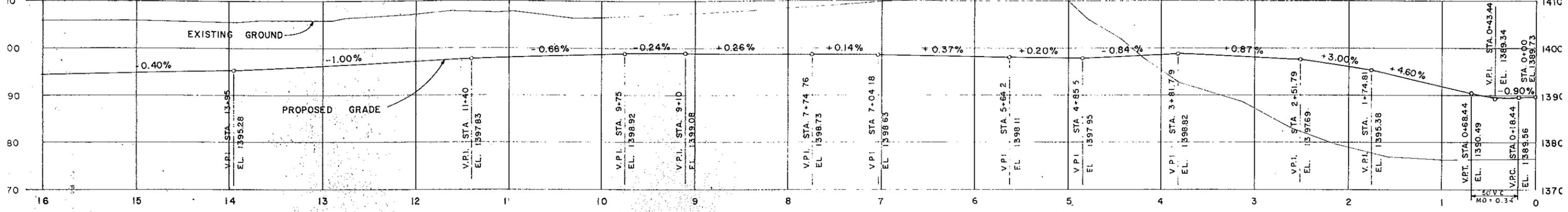
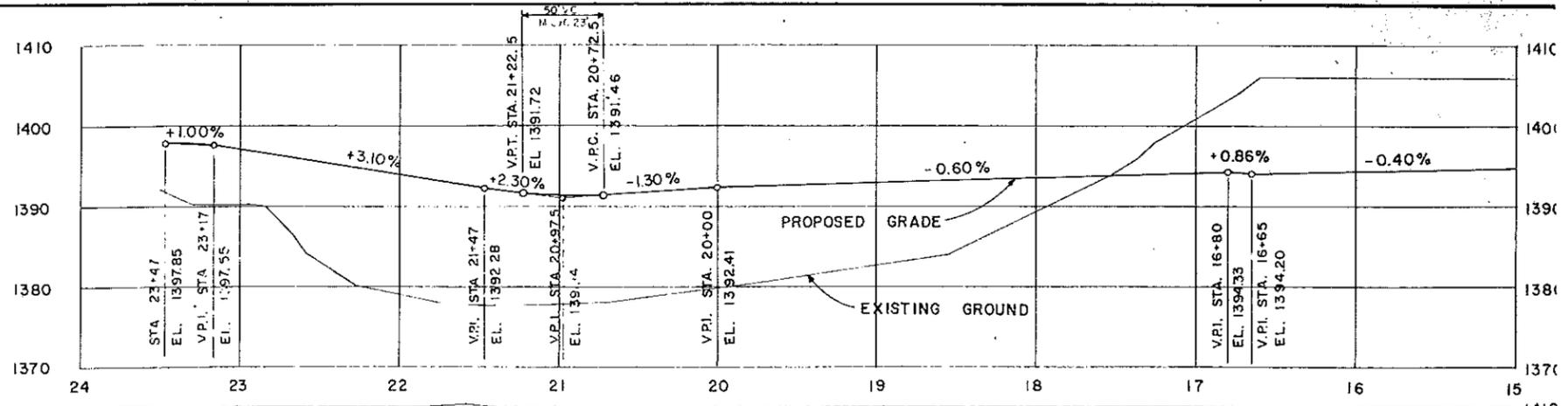




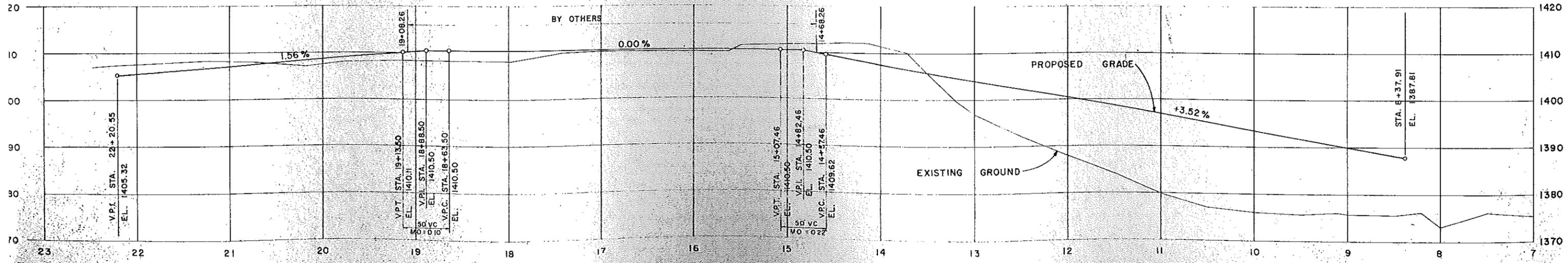
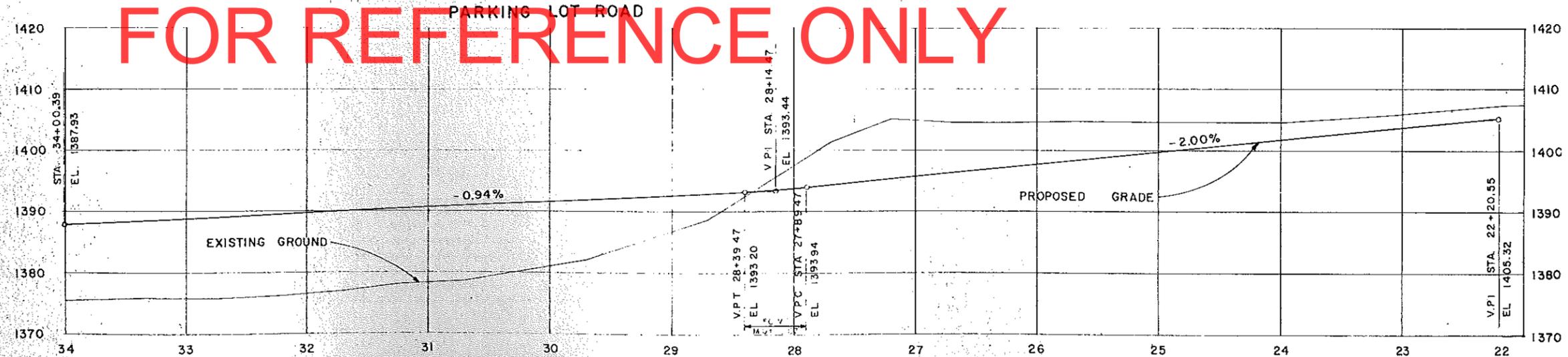


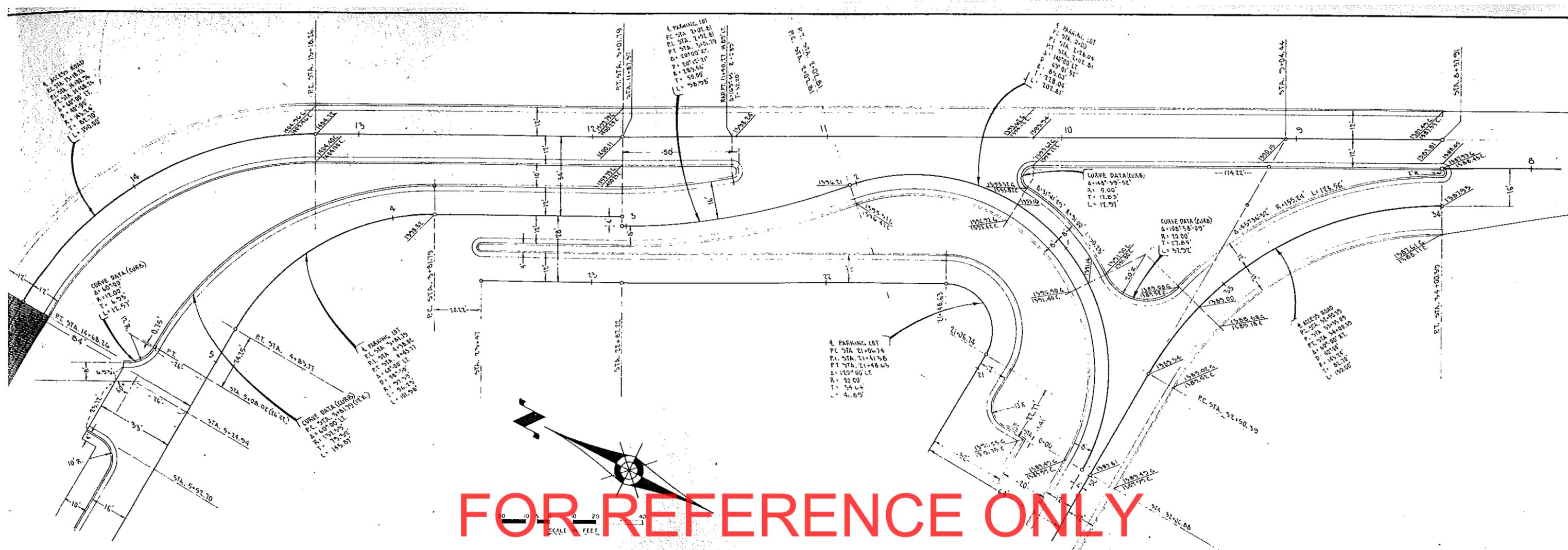
FOR REFERENCE ONLY



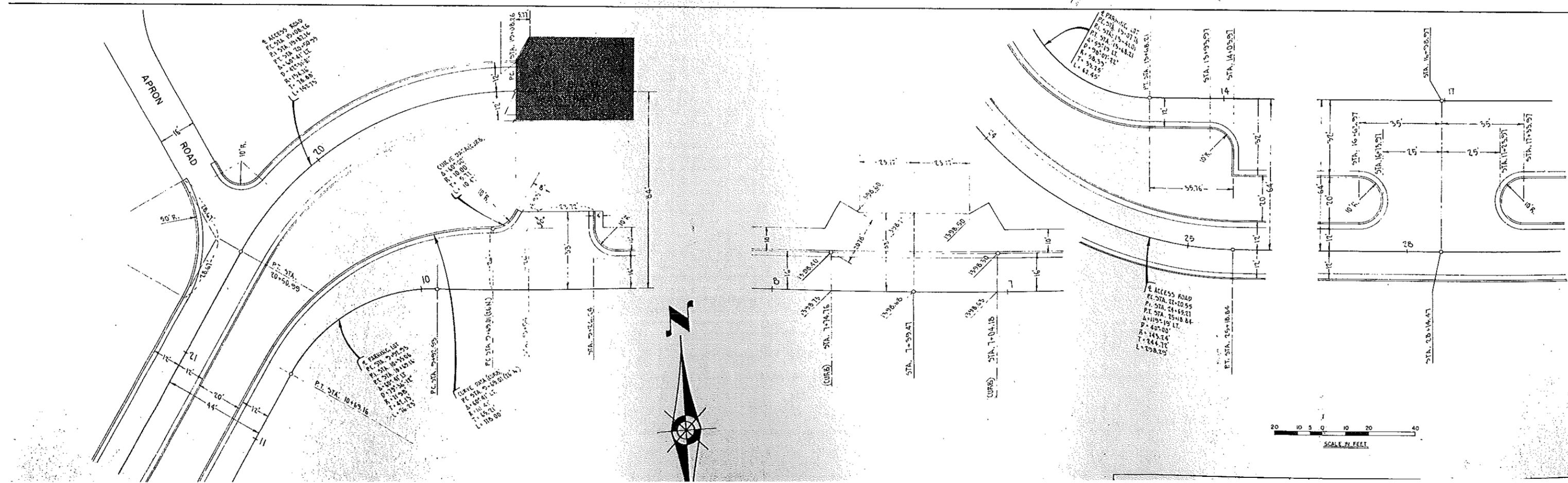


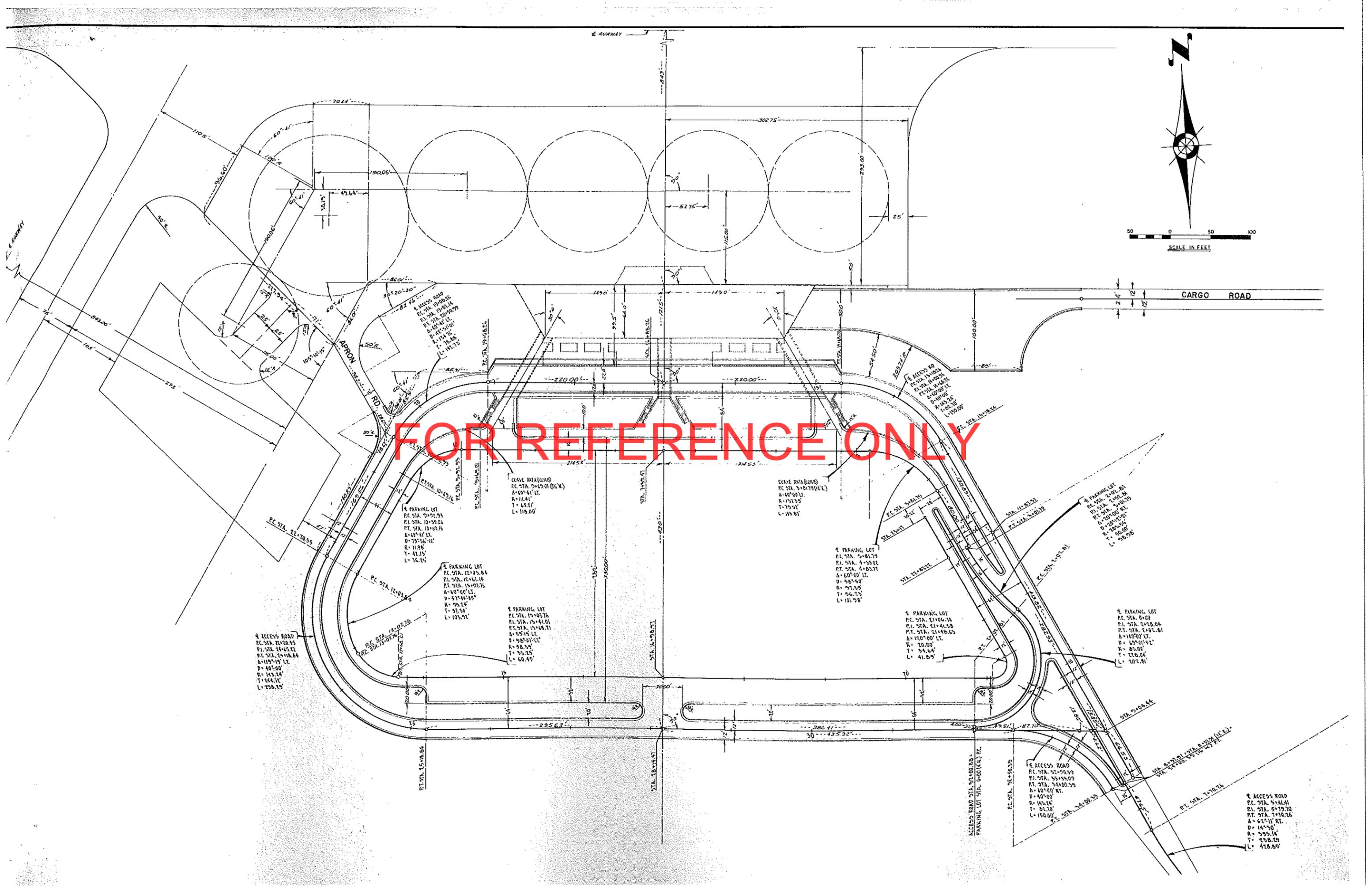
FOR REFERENCE ONLY



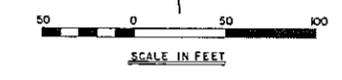


FOR REFERENCE ONLY





FOR REFERENCE ONLY



CARGO ROAD

ACCESS ROAD  
P.C. STA. 14+00.55  
P.I. STA. 14+45.21  
P.T. STA. 14+18.84  
Δ = 119°19' LT.  
R = 145.24'  
T = 444.31'  
L = 756.15'

PARKING LOT  
P.C. STA. 11+05.84  
P.I. STA. 11+41.14  
P.T. STA. 11+07.36  
Δ = 140°00' LT.  
R = 79.24'  
T = 57.30'  
L = 105.91'

PARKING LOT  
P.C. STA. 15+07.76  
P.I. STA. 15+41.01  
P.T. STA. 15+14.21  
Δ = 98°01' LT.  
R = 98.55'  
T = 93.75'  
L = 60.45'

CURVE DATA (C85B)  
P.C. STA. 5+01.79 (I.C.E.)  
Δ = 40°50' LT.  
R = 152.55'  
T = 79.91'  
L = 115.81'

PARKING LOT  
P.C. STA. 5+01.79  
P.I. STA. 4+58.02  
P.T. STA. 4+05.71  
Δ = 60°40' LT.  
R = 97.55'  
T = 66.25'  
L = 101.98'

PARKING LOT  
P.C. STA. 11+04.74  
P.I. STA. 11+41.58  
P.T. STA. 11+16.65  
Δ = 110°00' LT.  
R = 20.00'  
T = 54.64'  
L = 41.69'

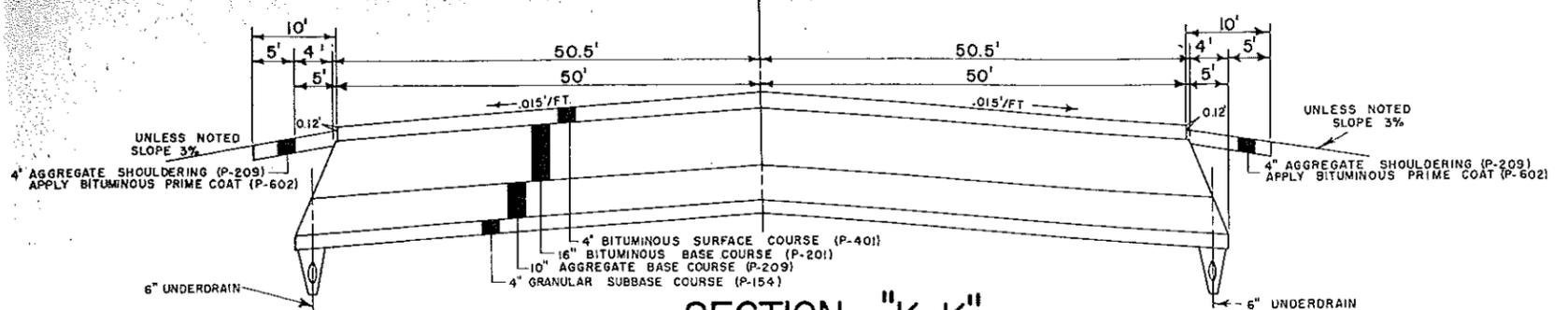
PARKING LOT  
P.C. STA. 2+01.81  
P.I. STA. 1+48.24  
P.T. STA. 2+01.81  
Δ = 100°00' RT.  
R = 100.00'  
T = 50.00'  
L = 98.98'

PARKING LOT  
P.C. STA. 0+00  
P.I. STA. 2+16.04  
P.T. STA. 2+16.04  
Δ = 140°00' LT.  
R = 100.00'  
T = 85.00'  
L = 207.81'

ACCESS ROAD  
P.C. STA. 51+50.59  
P.I. STA. 53+55.05  
P.T. STA. 54+00.55  
Δ = 40°00' RT.  
R = 145.24'  
T = 87.10'  
L = 150.00'

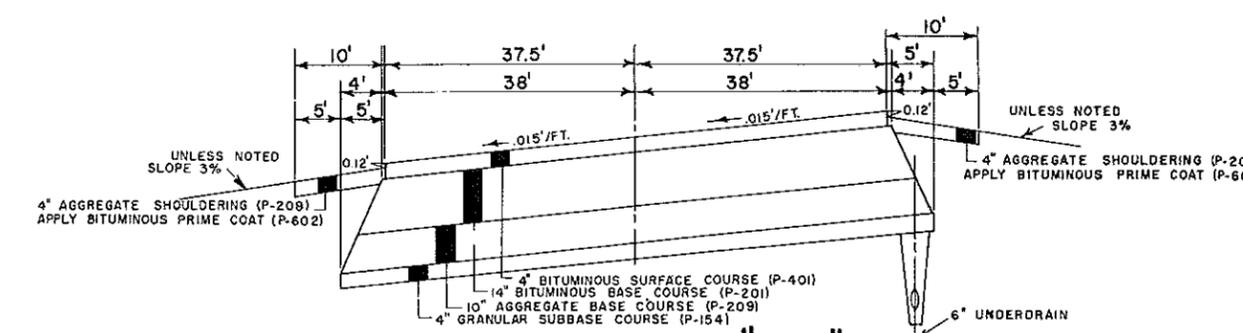
ACCESS ROAD  
P.C. STA. 5+14.41  
P.I. STA. 5+19.70  
P.T. STA. 5+19.70  
Δ = 61°11' RT.  
R = 59.51'  
T = 258.19'  
L = 418.69'

TAXIWAY PROJECT NO. 2



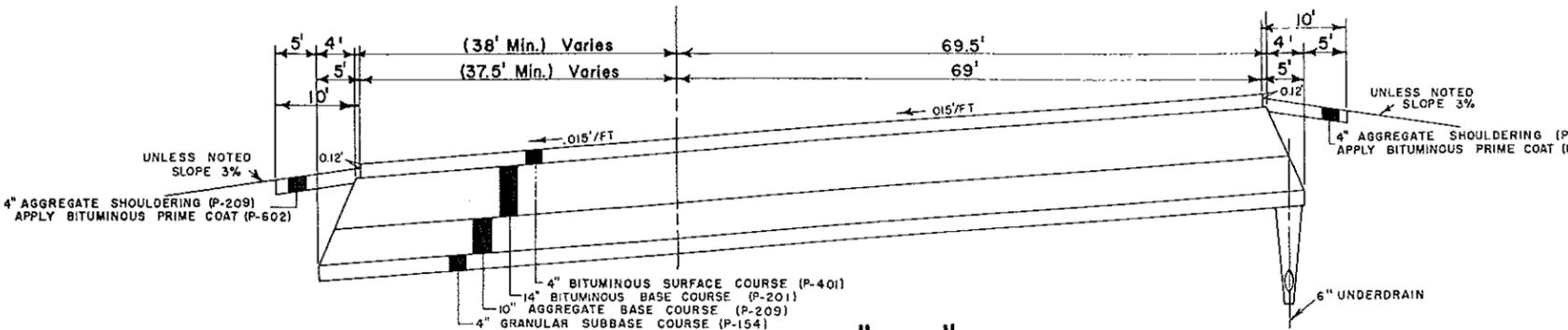
SECTION "K-K"

TAXIWAY PROJECT NO. 4

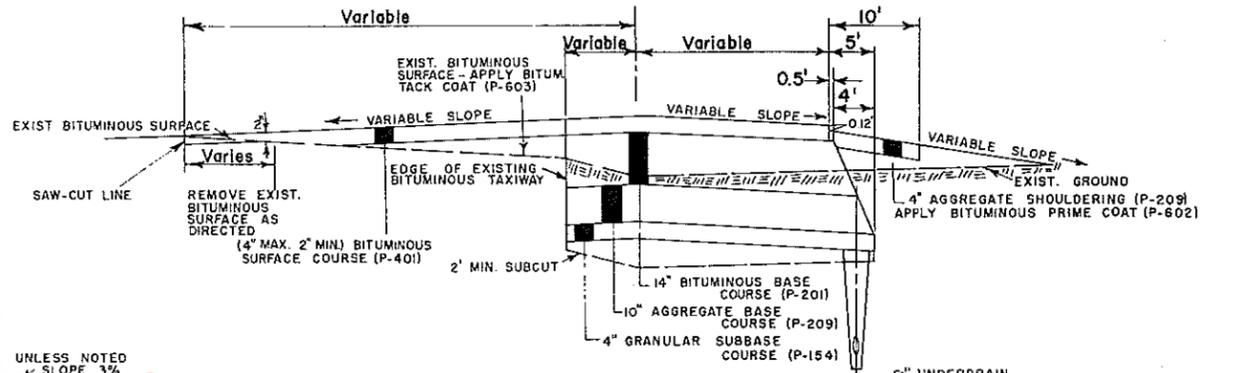


SECTION "P-P"

TAXIWAY PROJECT NO. 1

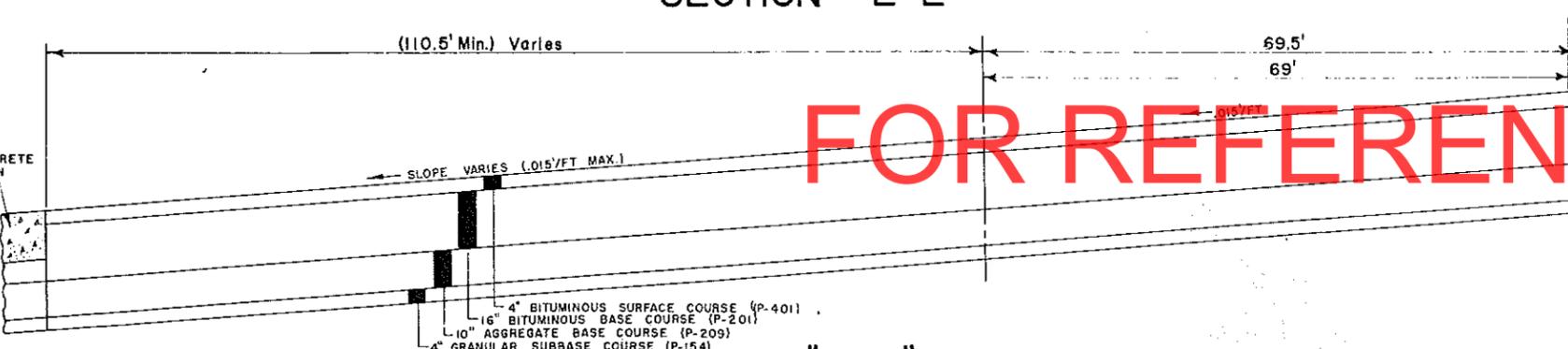


SECTION "L-L"

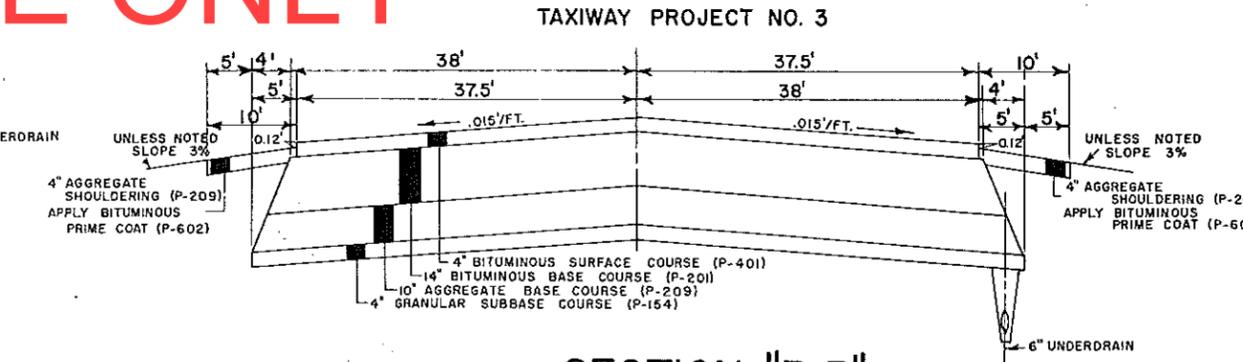


SECTION "Q-Q"

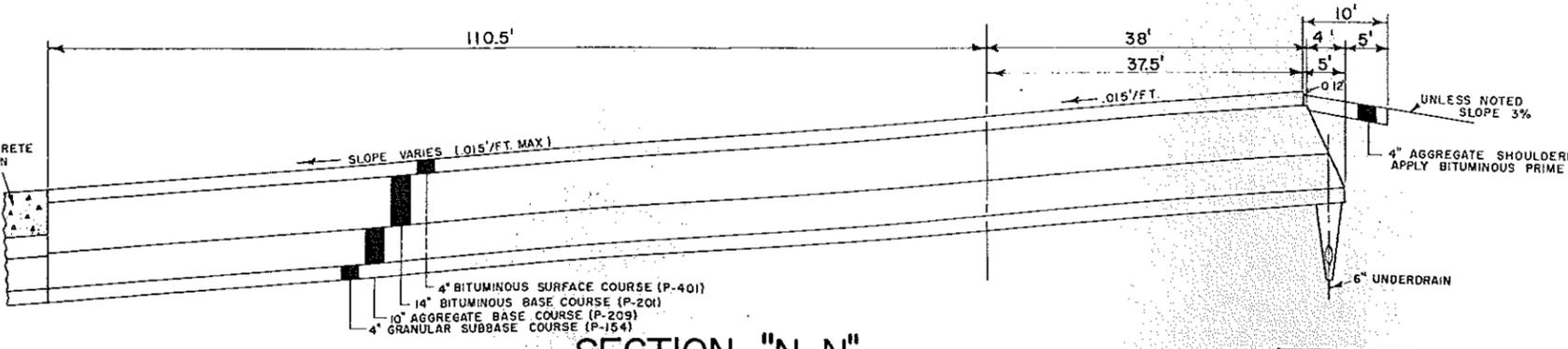
FOR REFERENCE ONLY



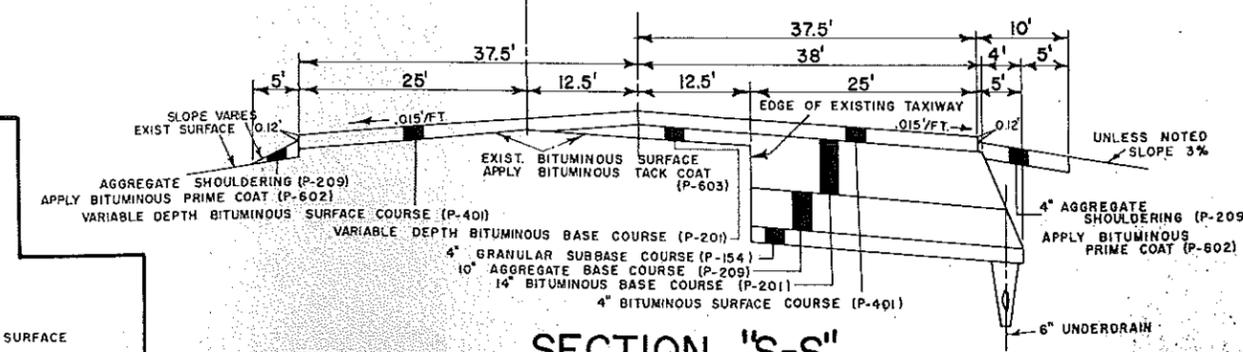
SECTION "M-M"



SECTION "R-R"

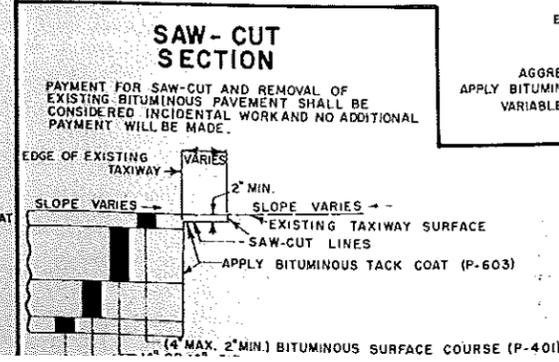


SECTION "N-N"

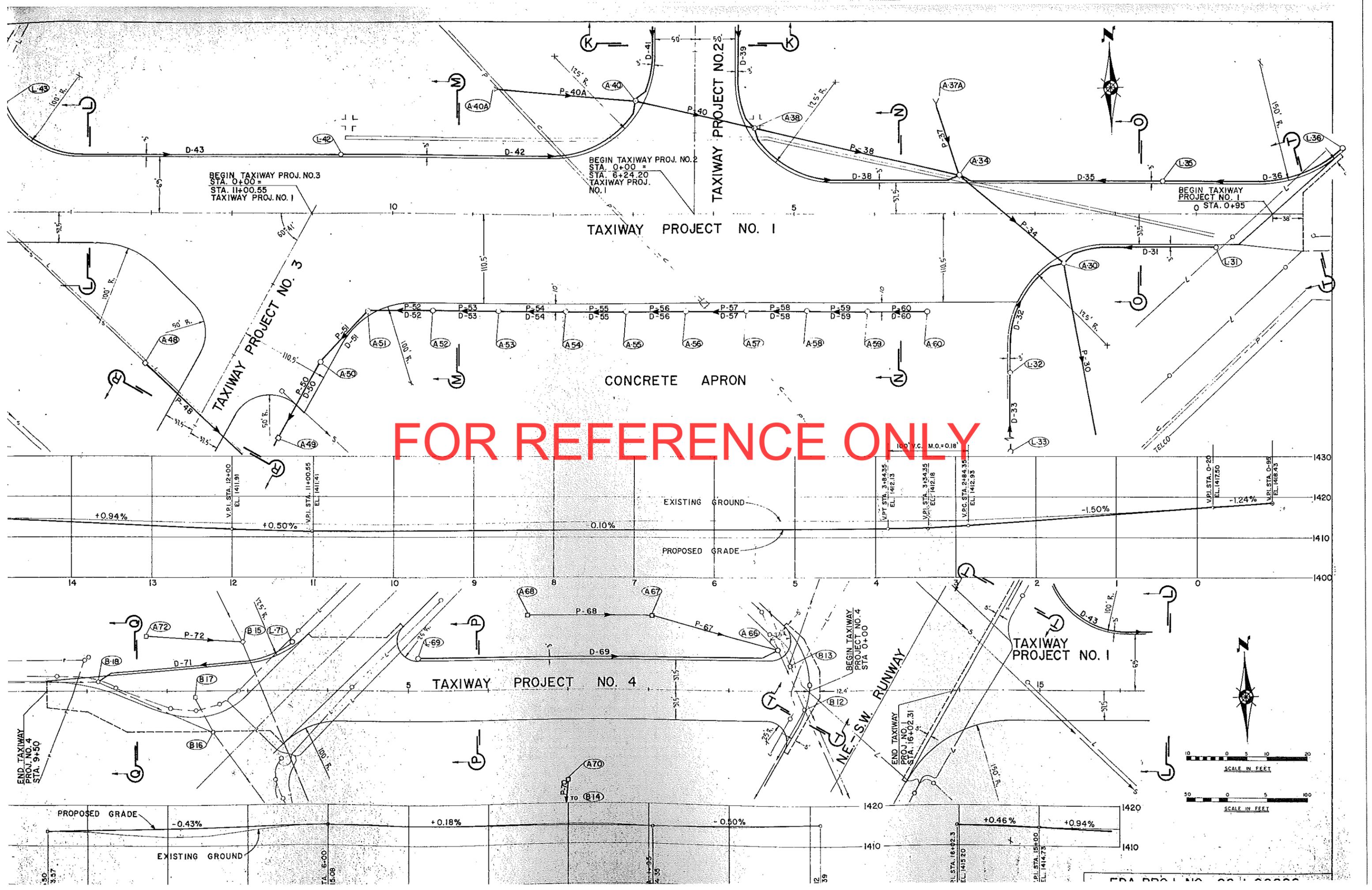


SECTION "S-S"

SEE SHEETS 4, 25, 26, & 27 FOR LOCATIONS



SAW-CUT SECTION  
PAYMENT FOR SAW-CUT AND REMOVAL OF EXISTING BITUMINOUS PAVEMENT SHALL BE CONSIDERED INCIDENTAL WORK AND NO ADDITIONAL PAYMENT WILL BE MADE.



FOR REFERENCE ONLY

TAXIWAY PROJECT NO. 1

CONCRETE APRON

EXISTING GROUND

PROPOSED GRADE

TAXIWAY PROJECT NO. 4

TAXIWAY PROJECT NO. 1

NE-S.W. RUNWAY

+0.94%

+0.50%

0.10%

-1.50%

-1.24%

-0.43%

+0.18%

-0.50%

+0.46%

+0.94%

EXISTING GROUND

PROPOSED GRADE

SCALE IN FEET

SCALE IN FEET



BEGIN TAXIWAY PROJ. NO. 3  
STA. 0+00 =  
STA. 11+00.55  
TAXIWAY PROJ. NO. 1

BEGIN TAXIWAY PROJ. NO. 2  
STA. 0+00 =  
STA. 6+24.20  
TAXIWAY PROJ. NO. 1

BEGIN TAXIWAY PROJ. NO. 1  
STA. 0+95

BEGIN TAXIWAY PROJ. NO. 4  
STA. 0+00

END TAXIWAY PROJ. NO. 1  
STA. 16+02.31

END TAXIWAY PROJ. NO. 4  
STA. 9+50

V.P.I. STA. 12+00  
EL. 1411.91

V.P.I. STA. 11+00.55  
EL. 1411.41

V.P.I. STA. 3+84.35  
EL. 1412.13

V.P.I. STA. 3+44.35  
EL. 1412.18

V.P.C. STA. 2+84.35  
EL. 1412.95

V.P.I. STA. 0+20  
EL. 1417.50

V.P.I. STA. 0+95  
EL. 1418.43

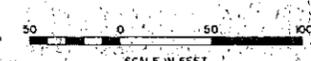
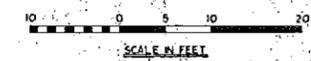
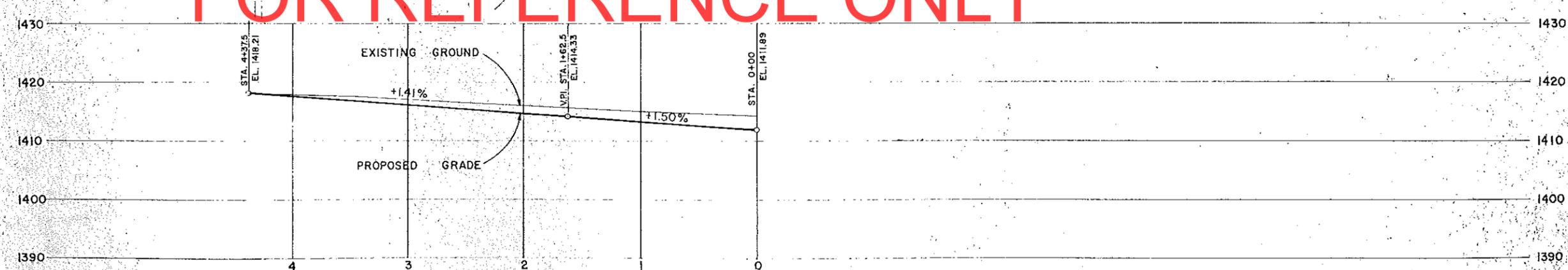
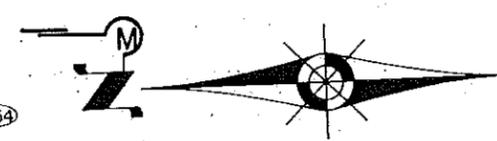
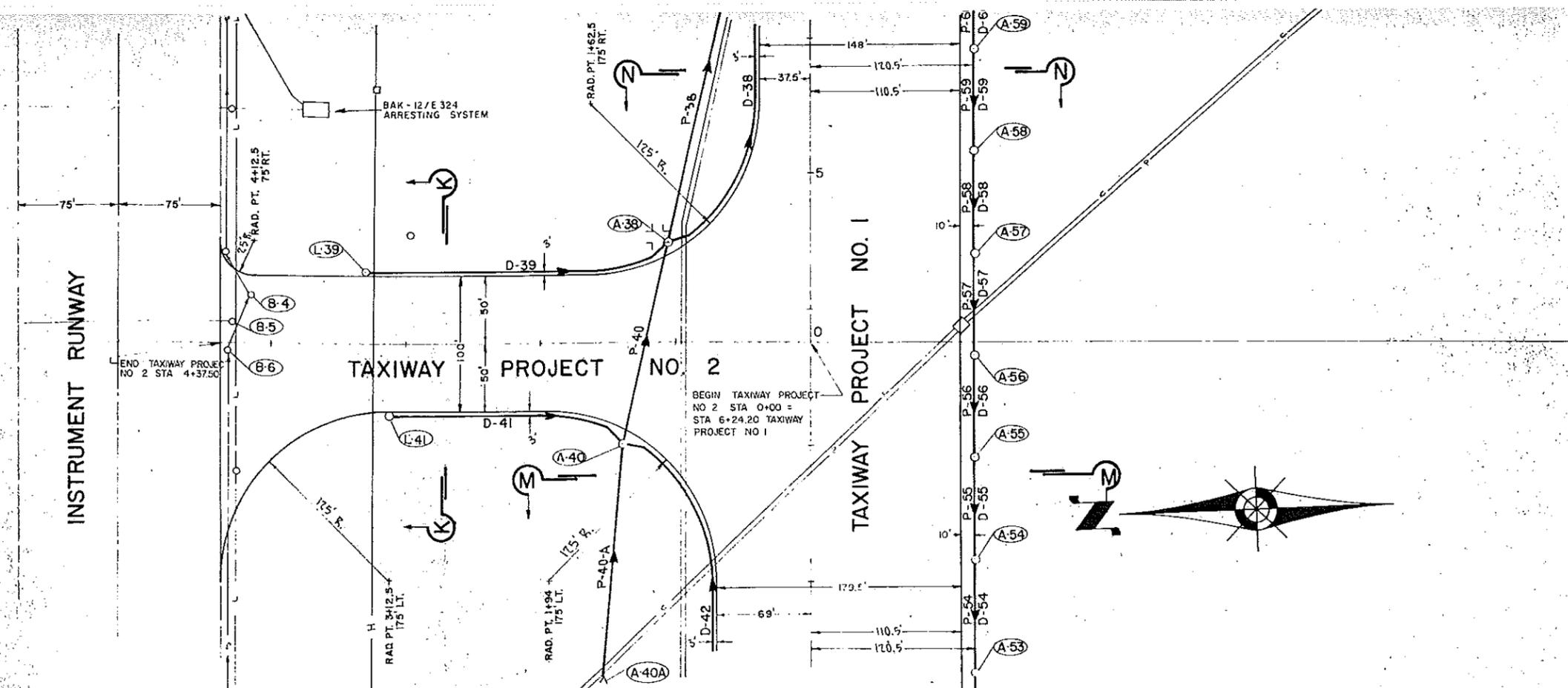
P.I. STA. 16+02.3  
EL. 1415.50

P.I. STA. 15+00  
EL. 1414.73

TA. 6+00  
5.08

12  
39

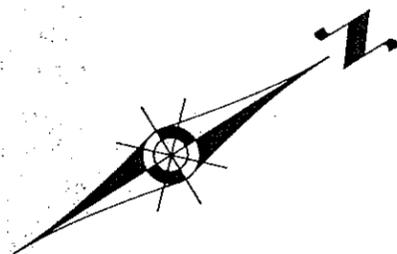
FDA PROJ. NO. 001-00000



NE-SW RUNWAY

END TAXIWAY PROJECT NO. 3  
STA 14+90.52

END TAXIWAY PROJECT NO. 1  
STA 16+02.31

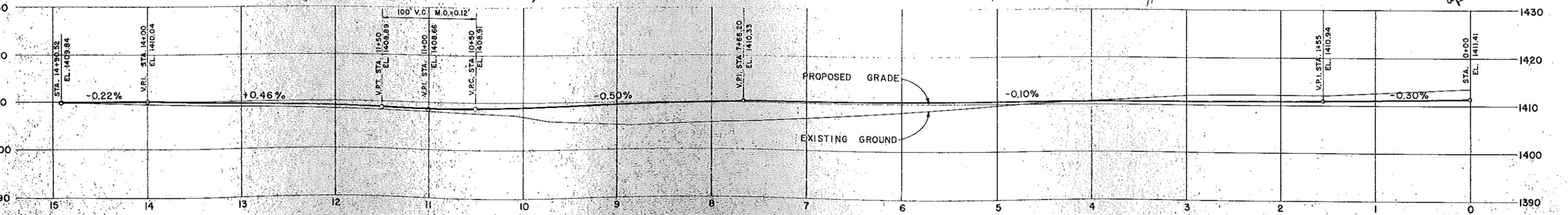


FOR REFERENCE ONLY

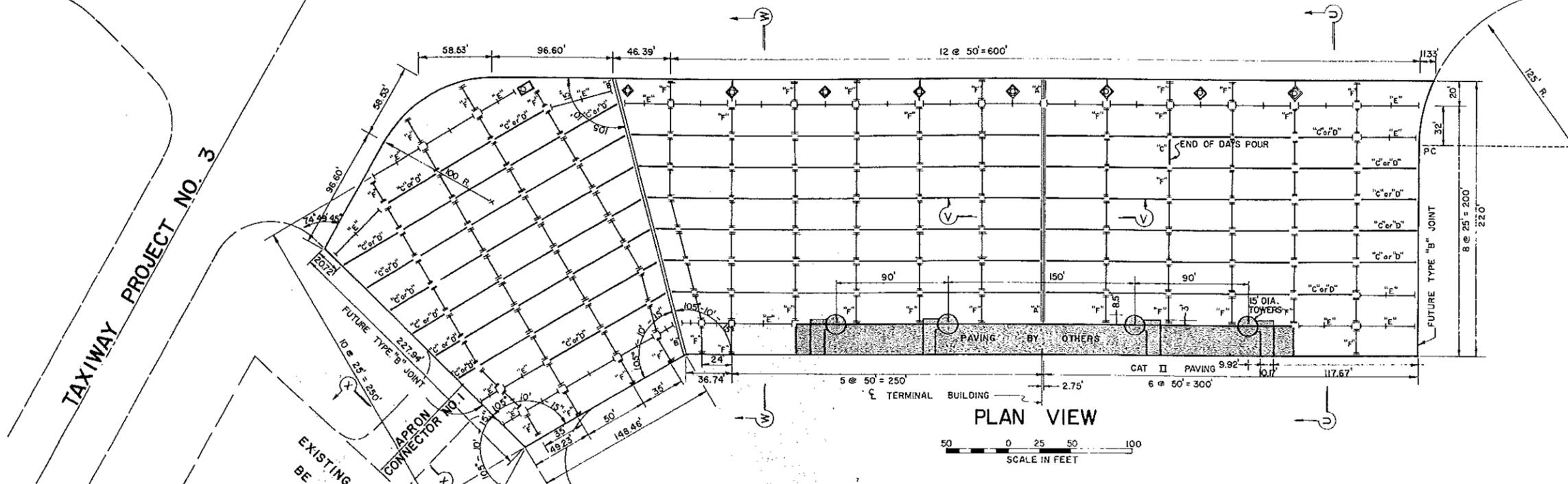
TAXIWAY PROJECT NO. 1  
STA 11+00.55 = STA 0+00  
TAXIWAY PROJECT NO. 3

TAXIWAY PROJECT NO. 1  
STA 11+00.55 = STA 0+00  
TAXIWAY PROJECT NO. 3

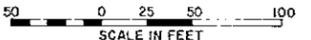
EXISTING SANITARY SEWER



TAXIWAY PROJECT NO. I



PLAN VIEW

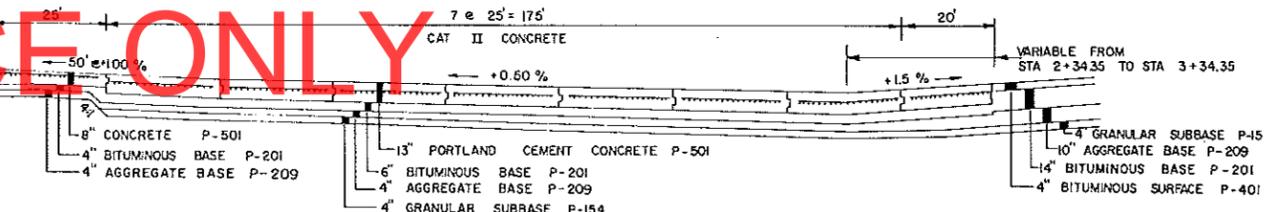


**LEGEND**

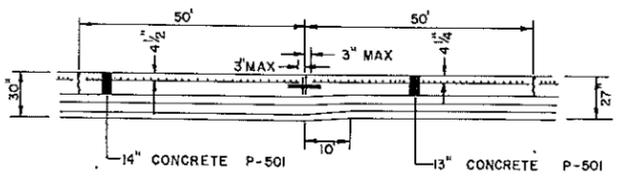
	EXPANSION JOINT TYPE "A"
	EXPANSION JOINT TYPE "B"
	CONSTRUCTION JOINT TYPE "C" OR "D"
	CONSTRUCTION JOINT TYPE "E"
	CONTRACTION JOINT TYPE "F"
	CONTRACTION JOINT TYPE "G"
	CONTRACTION JOINT TYPE "H"

- NOTES:**
1. TIE BARS FOR TYPE "E" AND "G" JOINTS SHALL BE 5/8" DIA 2'-6" LONG, SPACED 30" ON CENTER.
  2. DOWEL BARS FOR TYPE "A", "D", & "F" JOINTS SHALL BE 1/2" DIA., 1'-8" LONG SPACED 12" ON CENTER.
  3. WELDED WIRE FABRIC REINFORCING FOR ALL 13" AND 14" PAVEMENT SHALL BE 4"x16"x NO. 1 GAUGE x NO. 1 GAUGE (4-16-11)
  4. WELDED WIRE FABRIC REINFORCING FOR 8" PAVEMENT SHALL BE 6"x12"x NO. 2 GAUGE x NO. 4 GAUGE (612-24)
  5. ALL OUTSIDE EDGES OF PAVEMENT SHALL BE KEYED OR DOWEL
  6. FOR PAVEMENT CONTOURS SEE SHEET NO. 14
  7. PAYMENT FOR CONCRETE PAVING AT THE APPLICABLE UNIT PRICE PER SQ. YD. SHALL BE COMPENSATION IN FULL FOR ALL INCIDENTAL WORK INCLUDING WIRE FABRIC, REINFORCING, DOWELS, TIE BARS, THICKENED EDGES, JOINTING, JOINT SEALING, AND ALL MISC. ITEMS.

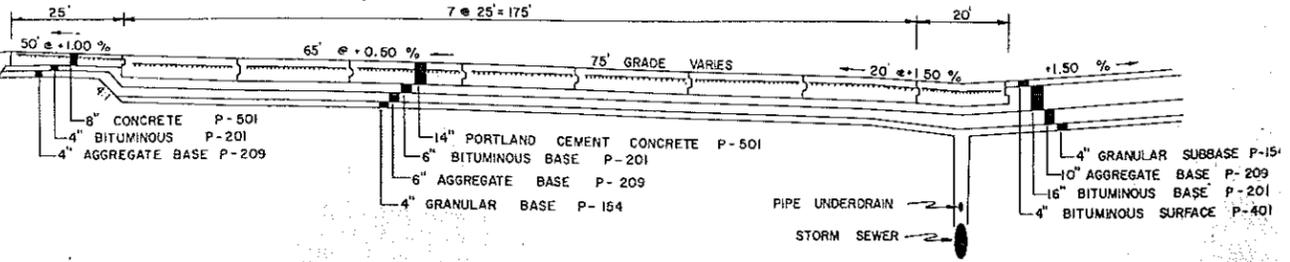
FOR REFERENCE ONLY



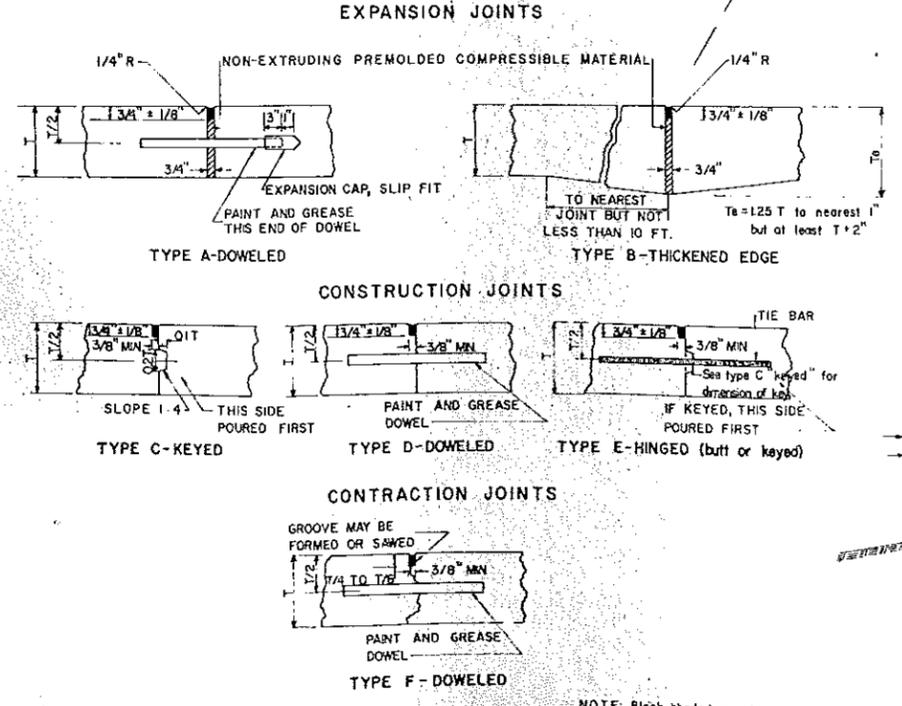
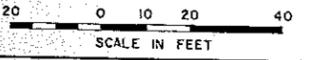
SECTION "U-U"



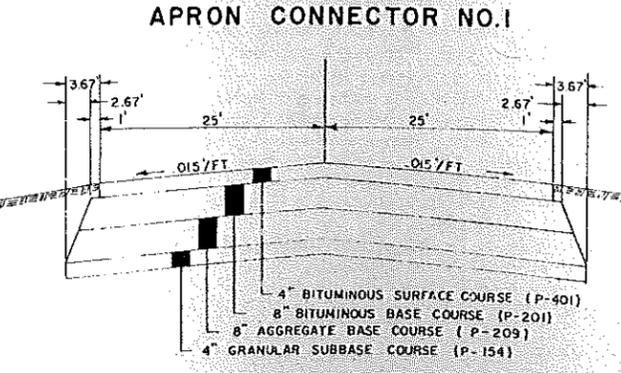
SECTION "V-V"



SECTION "W-W"

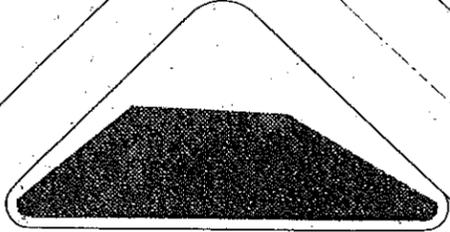
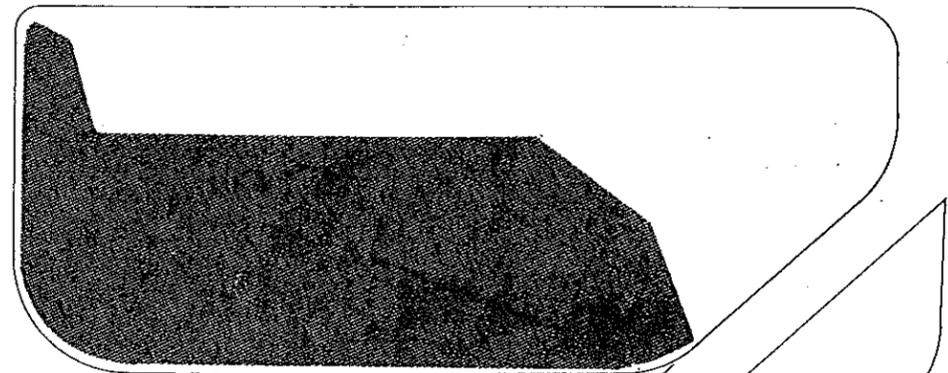
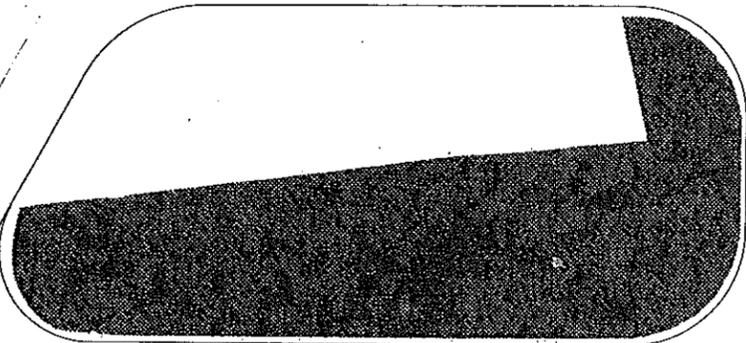
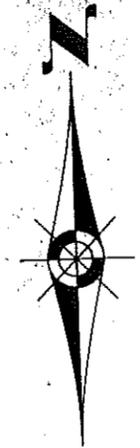


DETAILS OF JOINTS IN RIGID PAVEMENT  
NO SCALE



SECTION "X-X"

E-W RUNWAY

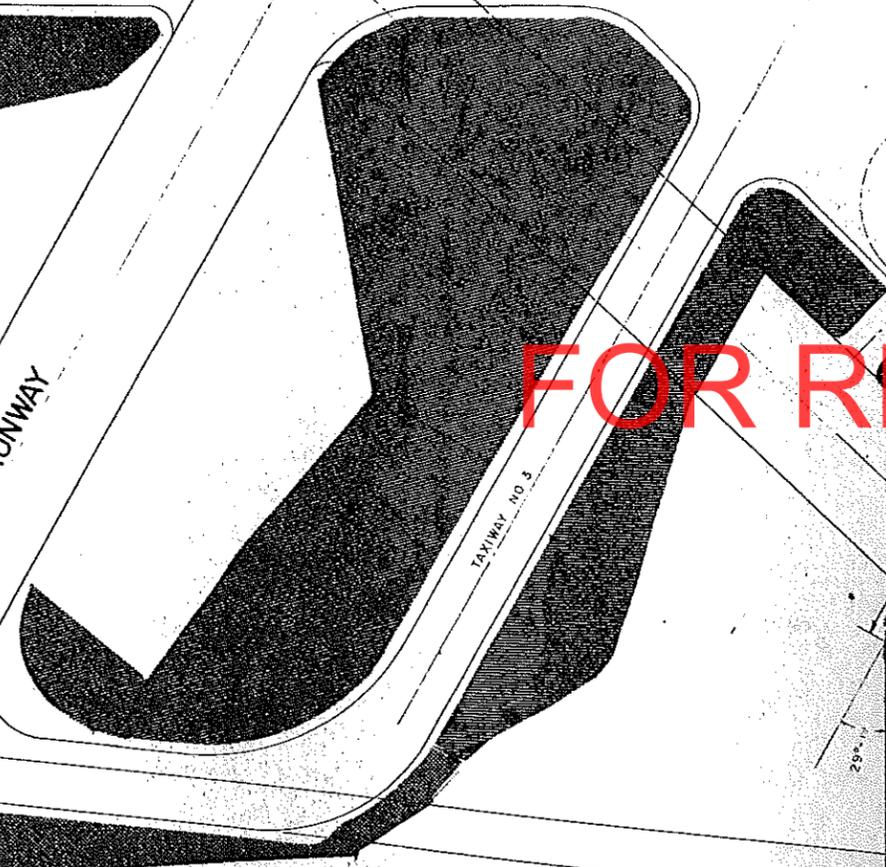


TAXIWAY NO. 4

TAXIWAY NO. 1

TAXIWAY NO. 2

NE-SW RUNWAY



TAXIWAY NO. 3

CONCRETE APRON

10 NORWAY PINE TERMINAL BUILDING

4 WALKWAY GATE

10 NORWAY PINE

4 WALKWAY GATE

CARGO ROAD

CONNECT TO EXISTING FENCE

37' DRIVEWAY GATE

FOR REFERENCE ONLY

PARKING LOT

AIRPORT ROAD

EXISTING FENCE TO BE REMOVED INCIDENT TO EARTHWORK AND NO ADDITIONAL PAYME WILL BE MADE

SEE DETAIL PLATE FOR FENCING DETAILS

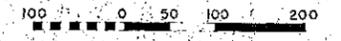
CONNECT TO EXISTING FENCE

AIRPORT ROAD

HAINES ROAD

PLANTING SCHEDULE		
COMMON NAME	BOTANICAL NAME	SIZE & ROOTS
NORWAY PINE	PINUS RESINOSA	5'-6' B.B.
SCOTCH PINE	PINUS SYLVESTRIS	6'-6' B.B.
BLACK HILLS SPRUCE	PICEA GLAUCA DESATA	6'-6' B.B.

- SEEDING (40 ACRES)
- SODDING
- FENCE
- NORWAY PINE PLANTING
- SCOTCH PINE PLANTING
- BLACK HILLS SPRUCE PLANTING



SCALE IN FEET



JACK D. SALO, INC.

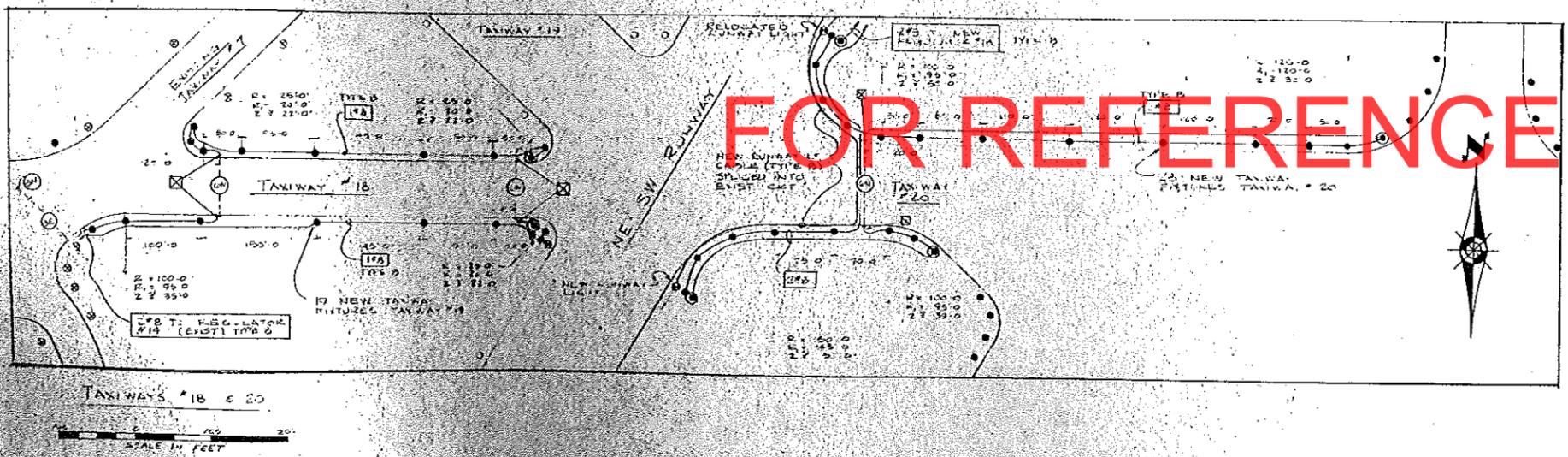
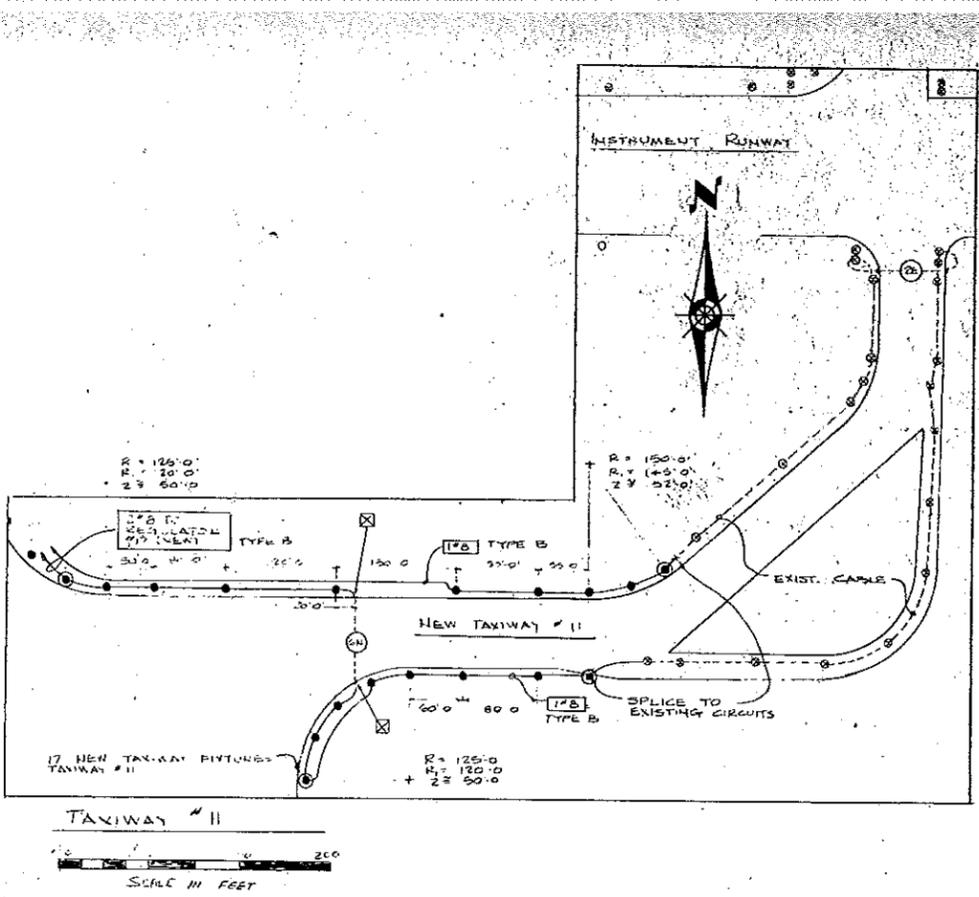
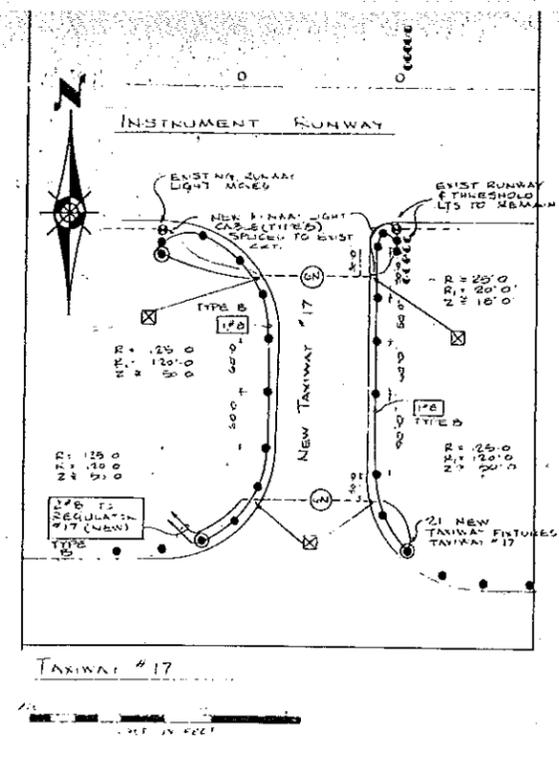
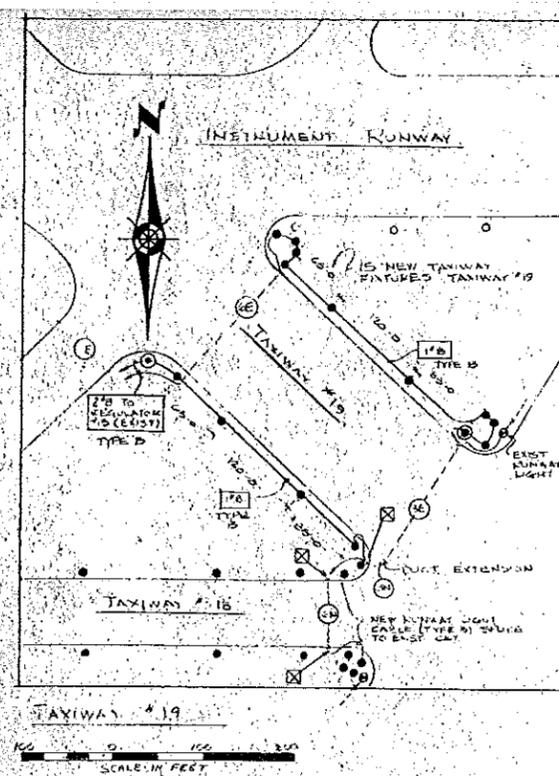
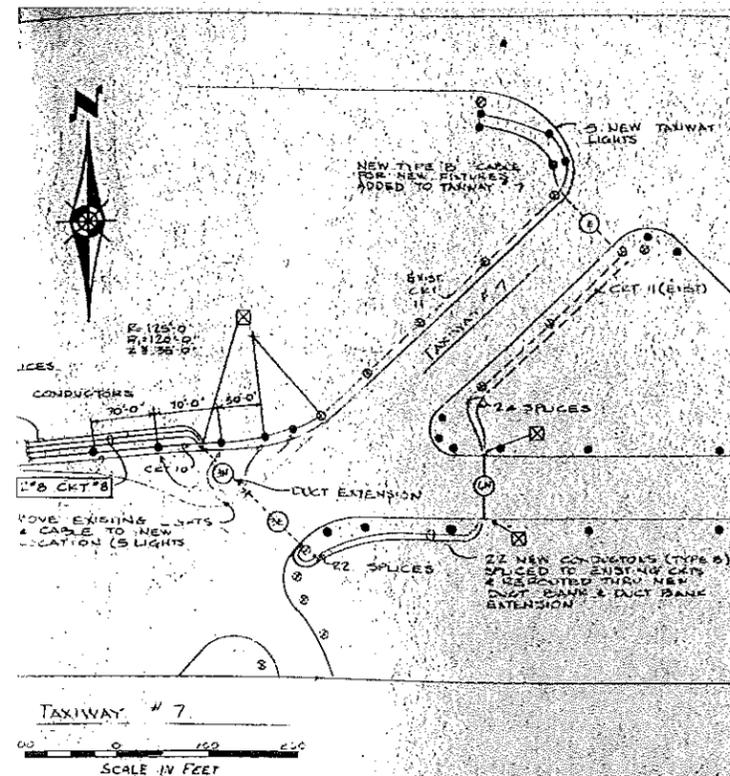


FOR REFERENCE ONLY

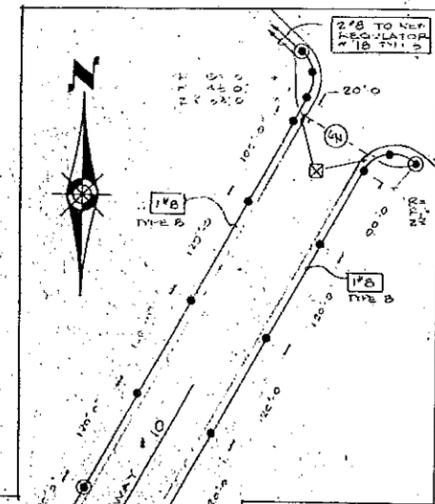
- LEGEND**
- NEW TAXIWAY LIGHT - JUNCTION BOX MOUNTED
  - NEW TAXIWAY LIGHT - STAKE MOUNTED
  - EXISTING TAXIWAY LIGHT
  - NEW RUNWAY LIGHT ON NEW LIGHT LOCATION
  - EXISTING RUNWAY LIGHT
  - EXISTING THRESHOLD LIGHT
  - EXISTING WIRING TO BE REMOVED
  - NEW TAXIWAY LIGHT WIRING
  - EXISTING WIRING TO REMAIN

- NOTES**
1. ALL EXISTING LIGHTING EQUIPMENT REMOVED & NOT REUSED TO BECOME PROPERTY OF AIRPORT AUTHORITY
  2. VASI TRANSDUCER EQUIPMENT TO BE MOVED BY OTHERS (FAA #7)
  3. EXISTING CABLES NOT INVOLVED IN CHANGES ARE TO REMAIN AS IS OR SHALL BE REPLACED & EXTENDED WHEN NECESSARY TO ACCOMMODATE DUCT BANK EXTENSIONS, ETC.
  4. TYPICAL TAXIWAY LIGHT IS 5'0" FROM EDGE OF RUNWAY OR TAXIWAY

**NOTE**  
 TAXIWAY NUMBERS CORRESPOND TO EXISTING TAXIWAY NUMBERING SYSTEM.



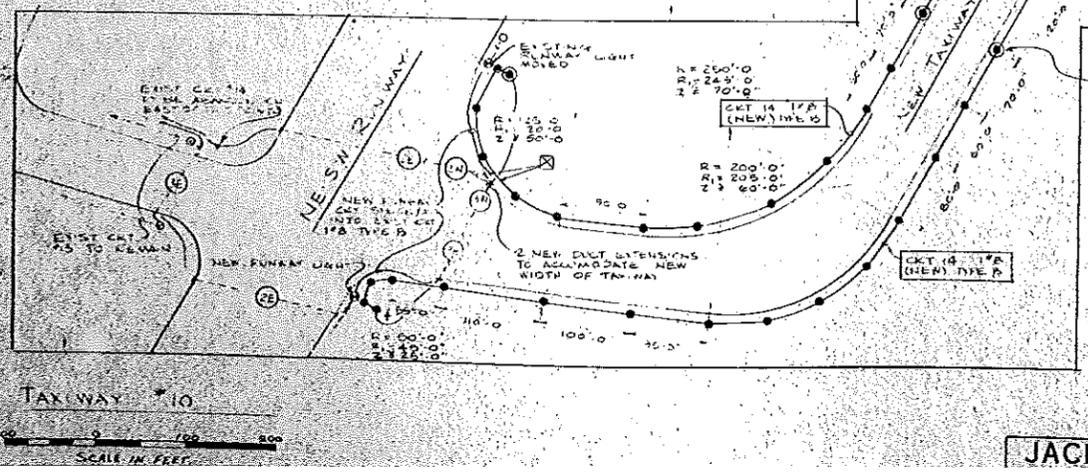
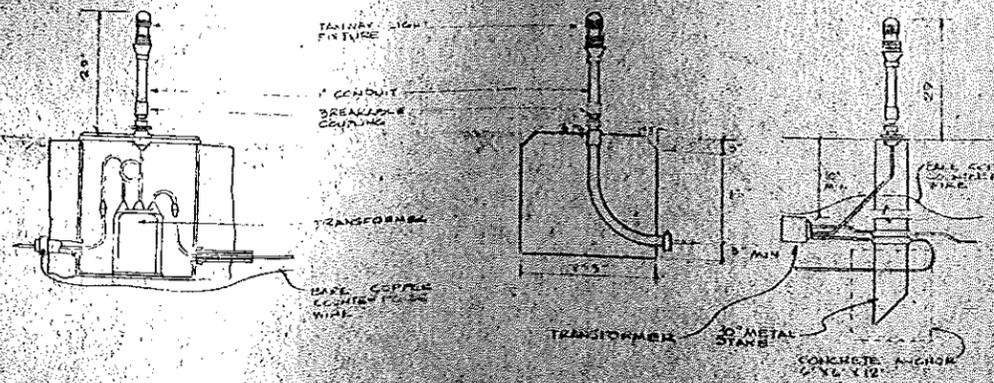
FOR REFERENCE ONLY



R = RADIUS OF PAYEMENT  
 R' = RADIUS OF FIXTURES  
 Z = APPROX DISTANCE BETWEEN FIXTURES

NOTE  
 ALL CABLE (TYPE B) SHOWN ON THIS SHEET IS NEW INSTALLATION, UNLESS NOTED AS EXISTING.

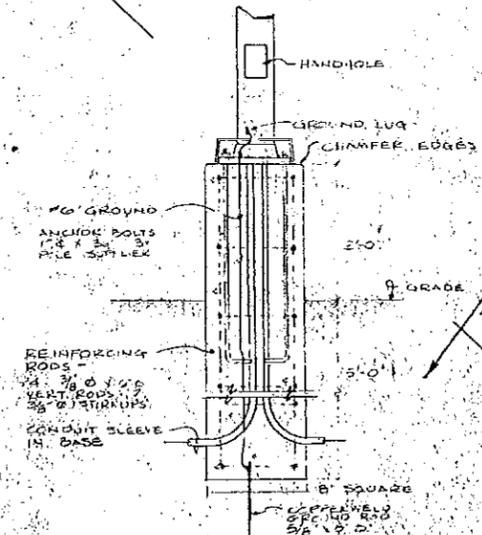
NOTE  
 TAXIWAY NUMBERS CORRESPOND TO EXISTING TAXIWAY NUMBERING SYSTEM



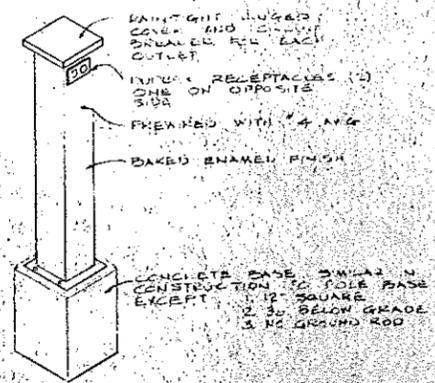




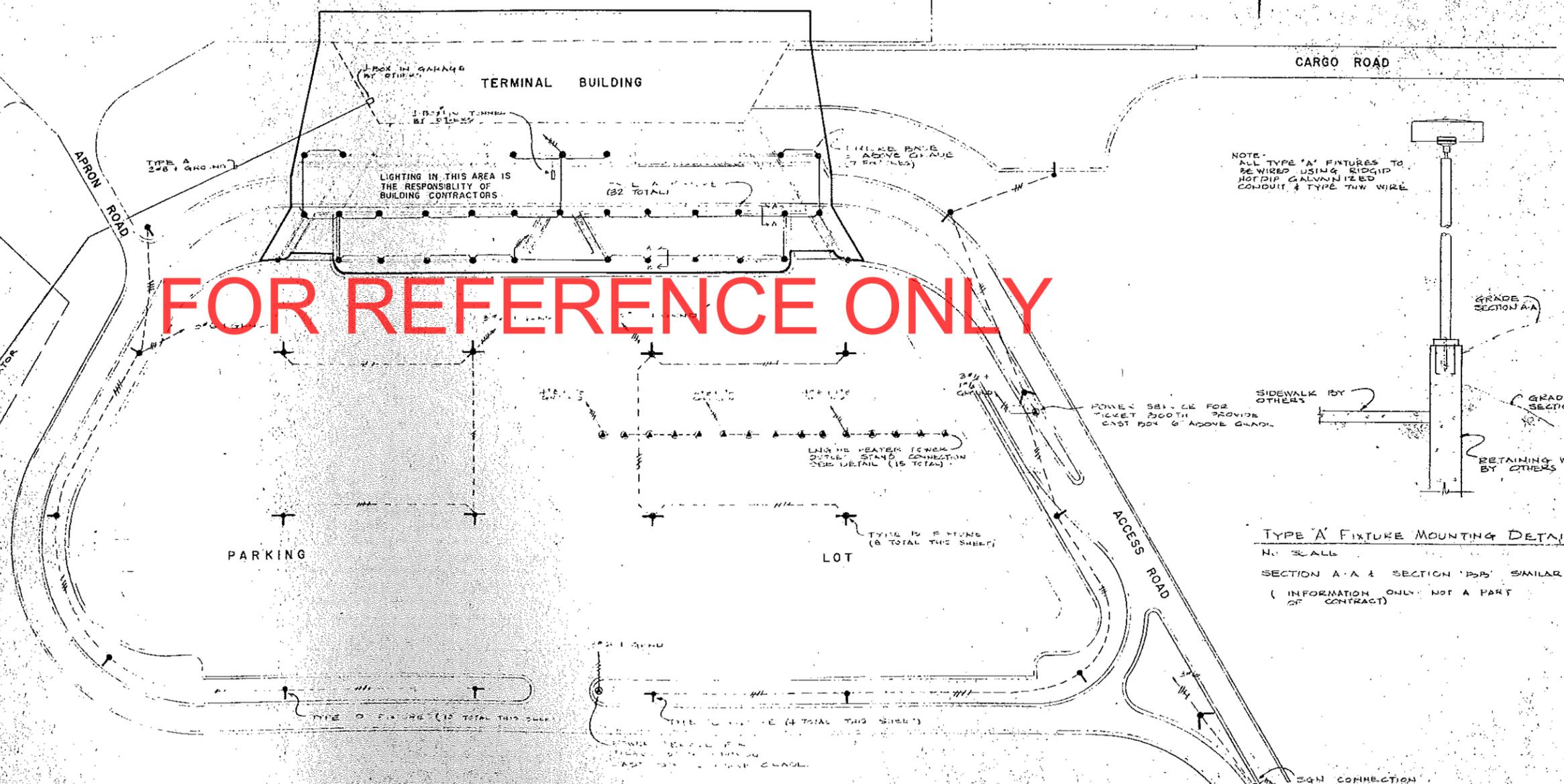
FOR REFERENCE ONLY



TYPES B, C & D  
POLE BASE DETAIL  
NO SCALE



POWER OUTLET STAND



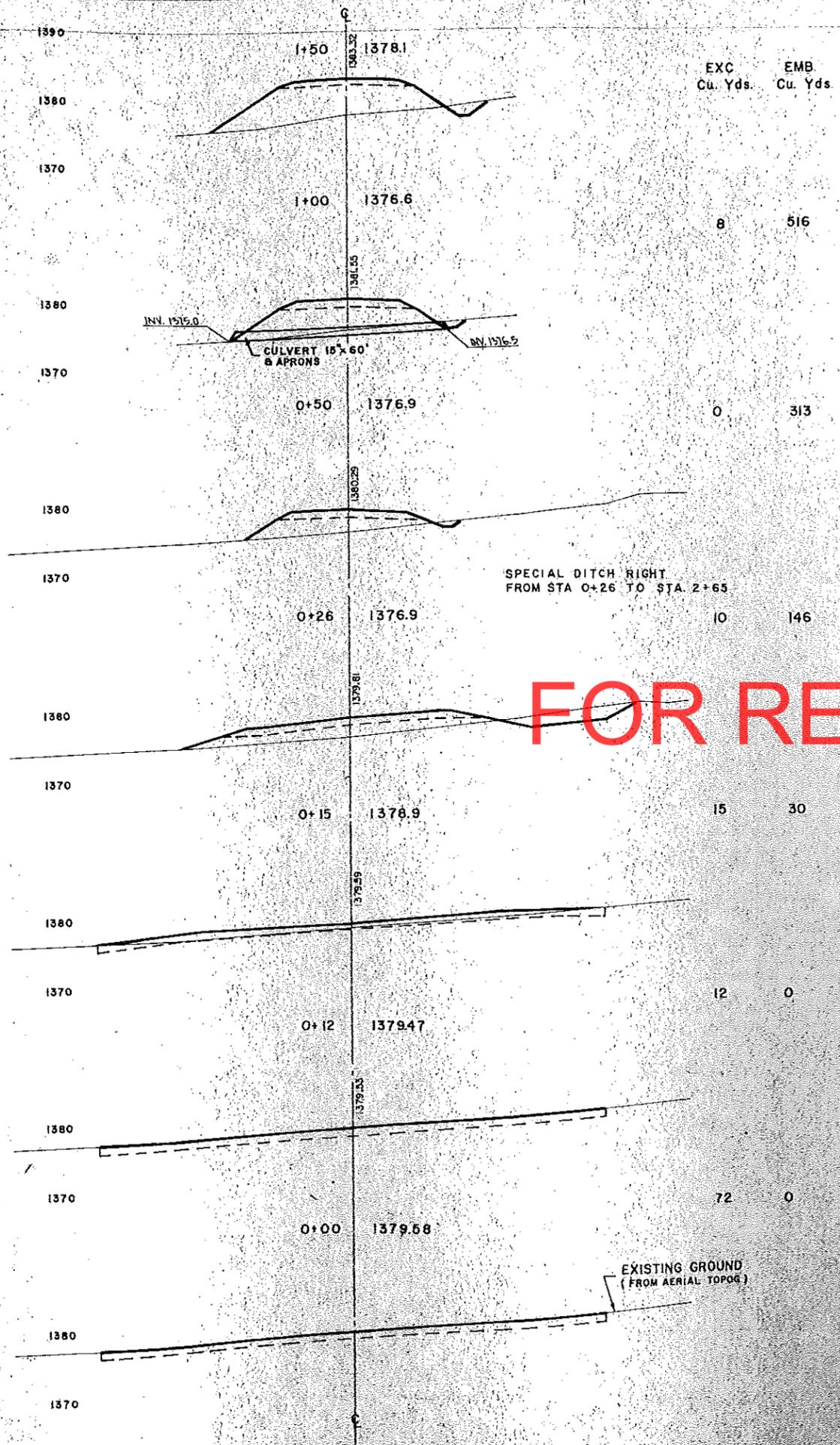
PARKING LOT PLAN  
SCALE IN FEET

NOTE: ALL TYPE 'A' FIXTURES TO BE WIRED USING RIGID HOT DIP GALVANIZED CONDUIT & TYPE THW WIRE.

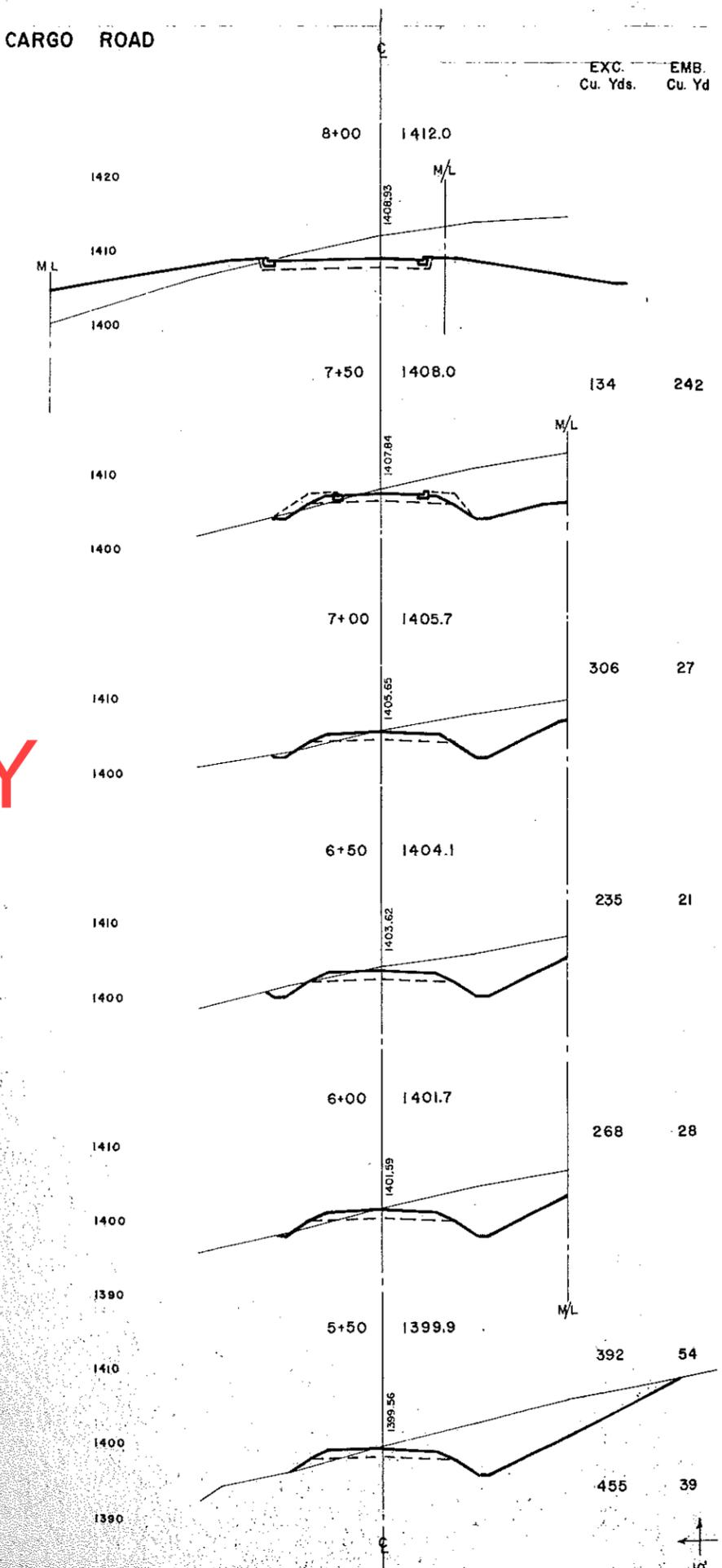
TYPE 'A' FIXTURE MOUNTING DETAIL  
NO SCALE  
SECTION A-A & SECTION 'B-B' SIMILAR  
( INFORMATION ONLY - NOT A PART OF CONTRACT )

NOTE: TAXIWAY NUMBERS CORRESPOND TO EXISTING TAXIWAY NUMBERING SYSTEM

NOTE: ALL HOME RUNS TERMINATE AT J-BOX IN WALL OF PEDESTRIAN TUNNEL



**CARGO ROAD**



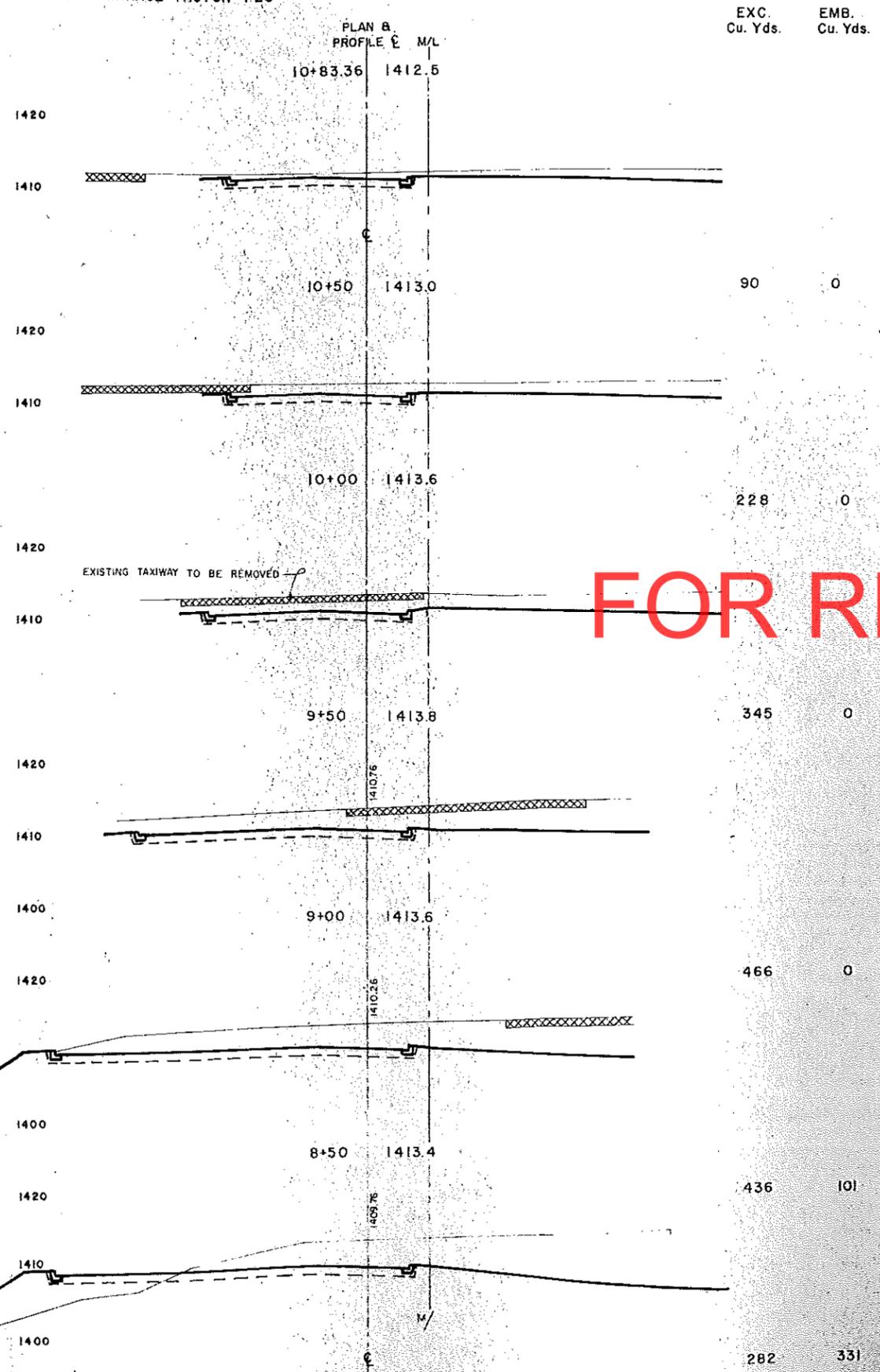
**FOR REFERENCE ONLY**

EXISTING GROUND  
(FROM AERIAL TOPOG.)

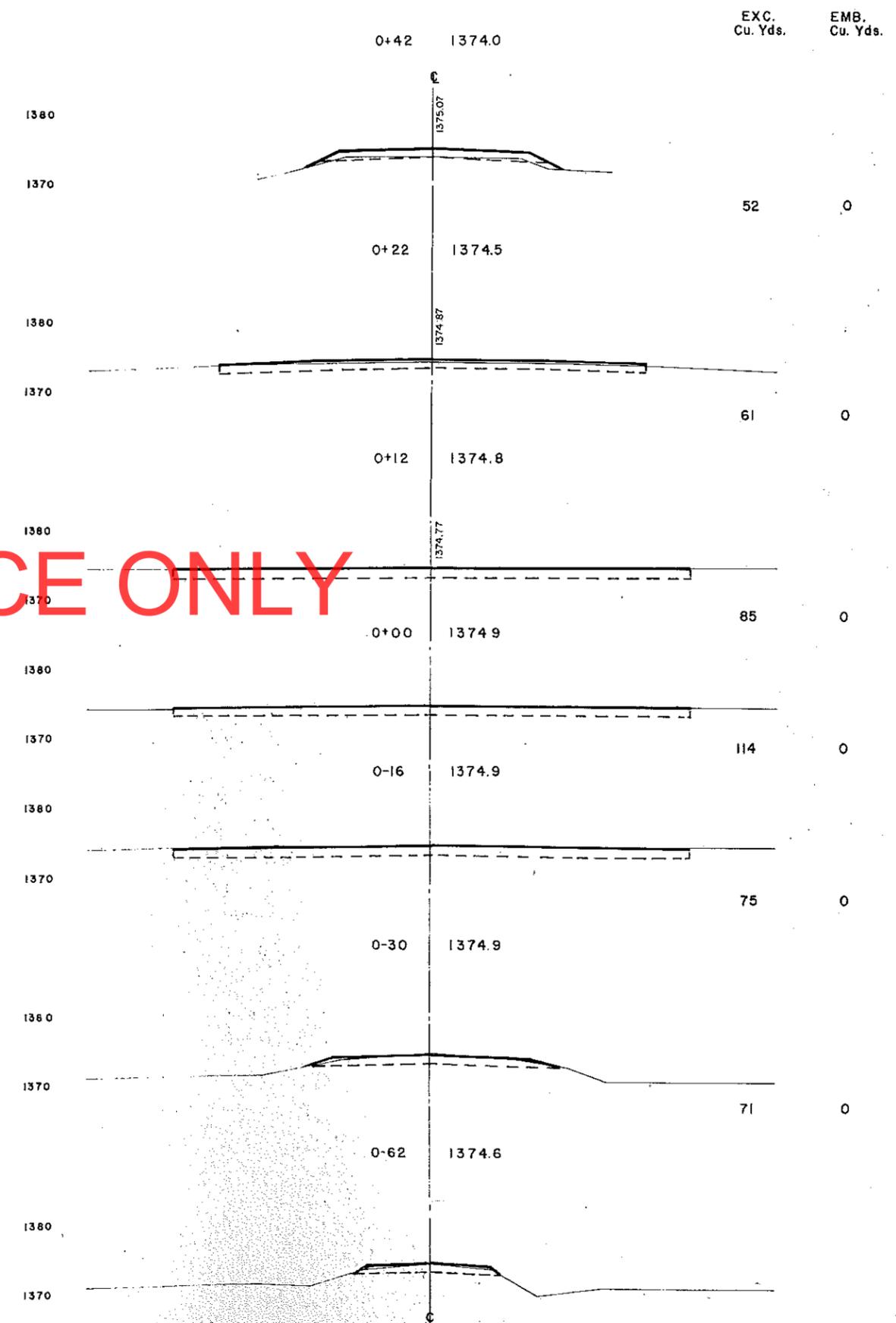


CARGO ROAD

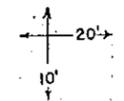
CARGO ROAD  
 TOTAL EXCAVATION 4393 CU. YDS.  
 TOTAL EMBANKMENT 7278 CU. YDS.  
 SHRINKAGE FACTOR 1.25



ACCESS ROAD TO TERMINAL BLDG. & PARKING LOT



FOR REFERENCE ONLY

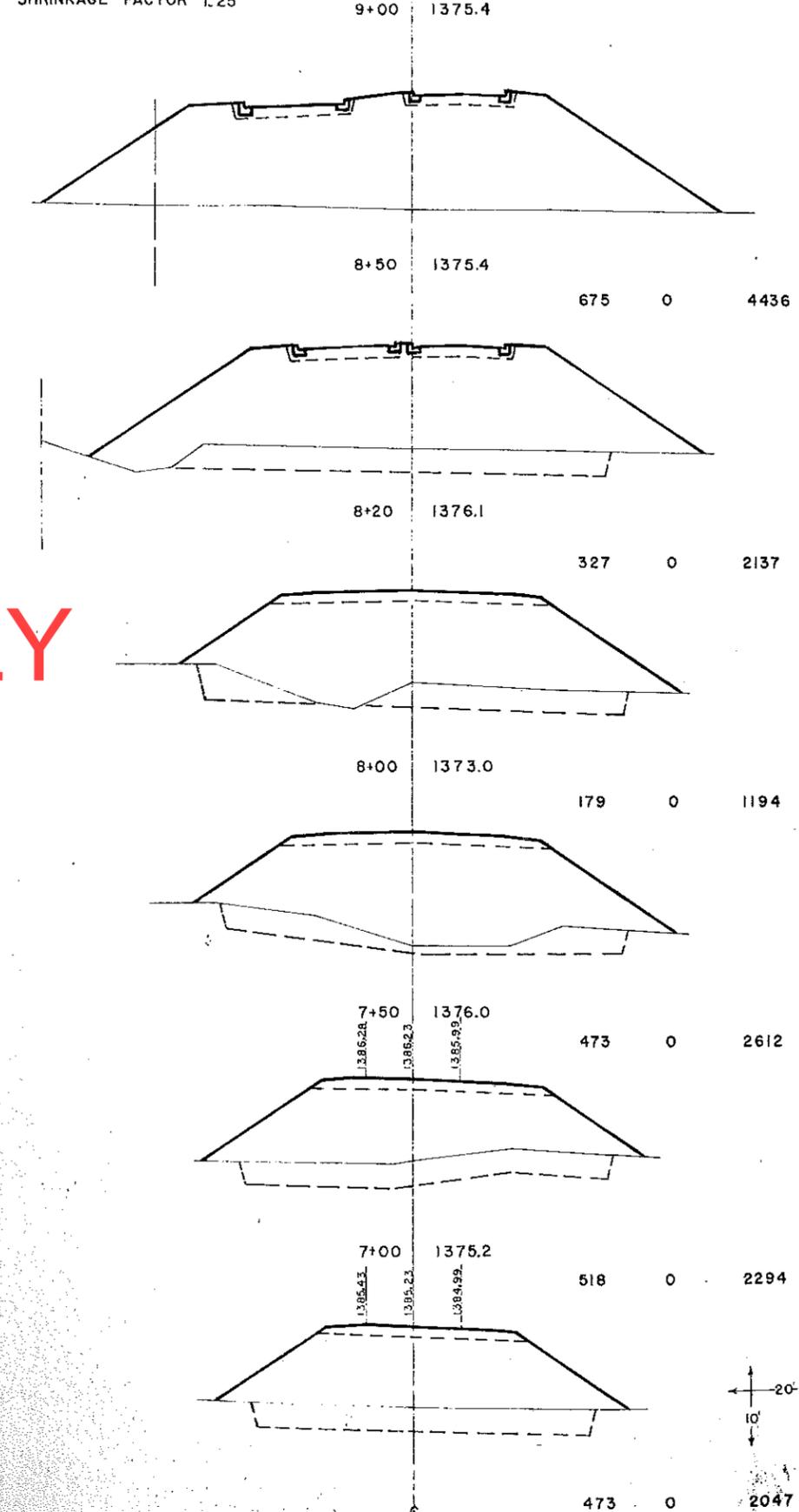


ACCESS RD. TO TERMINAL BLDG. & PARKING LOT

ACCESS ROAD

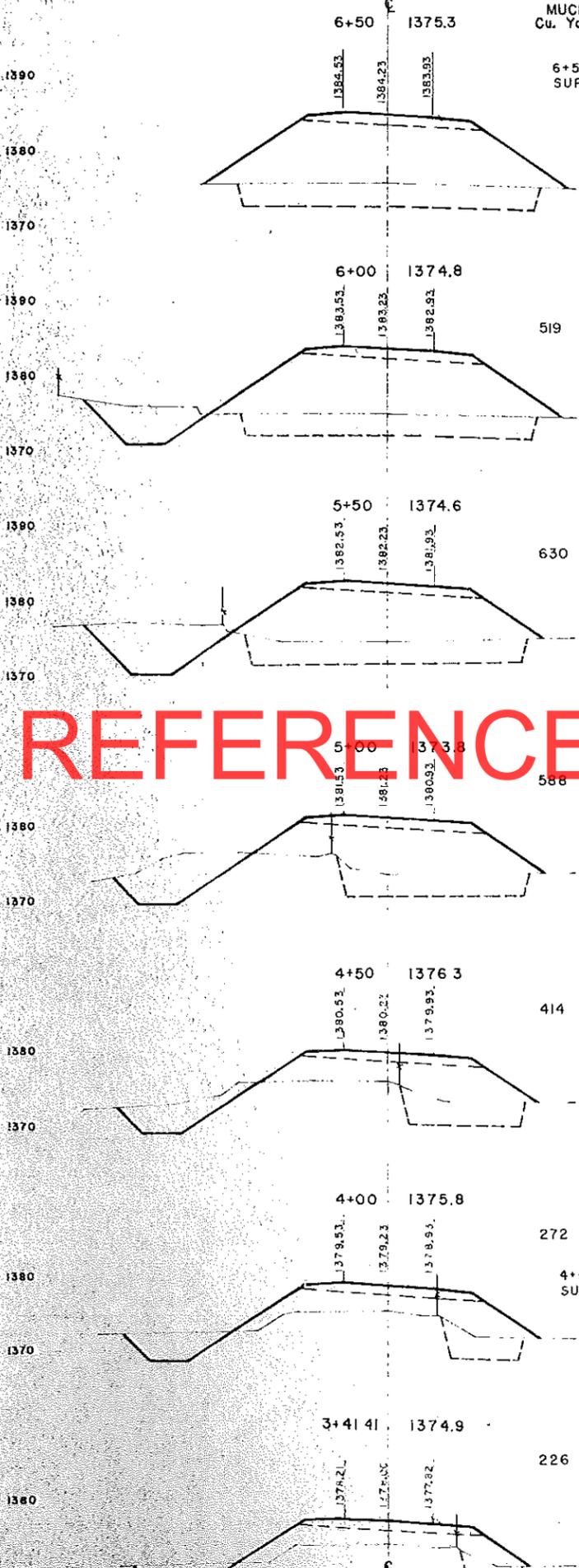
TOTAL MUCK EXCAVATION 6612 CU. YDS.  
 TOTAL EXCAVATION 465 CU. YDS.  
 TOTAL EMBANKMENT 24846 CU. YDS.  
 SHRINKAGE FACTOR 1.25

MUCK EXC. EMB.  
 Cu Yds Cu Yds Cu Yd



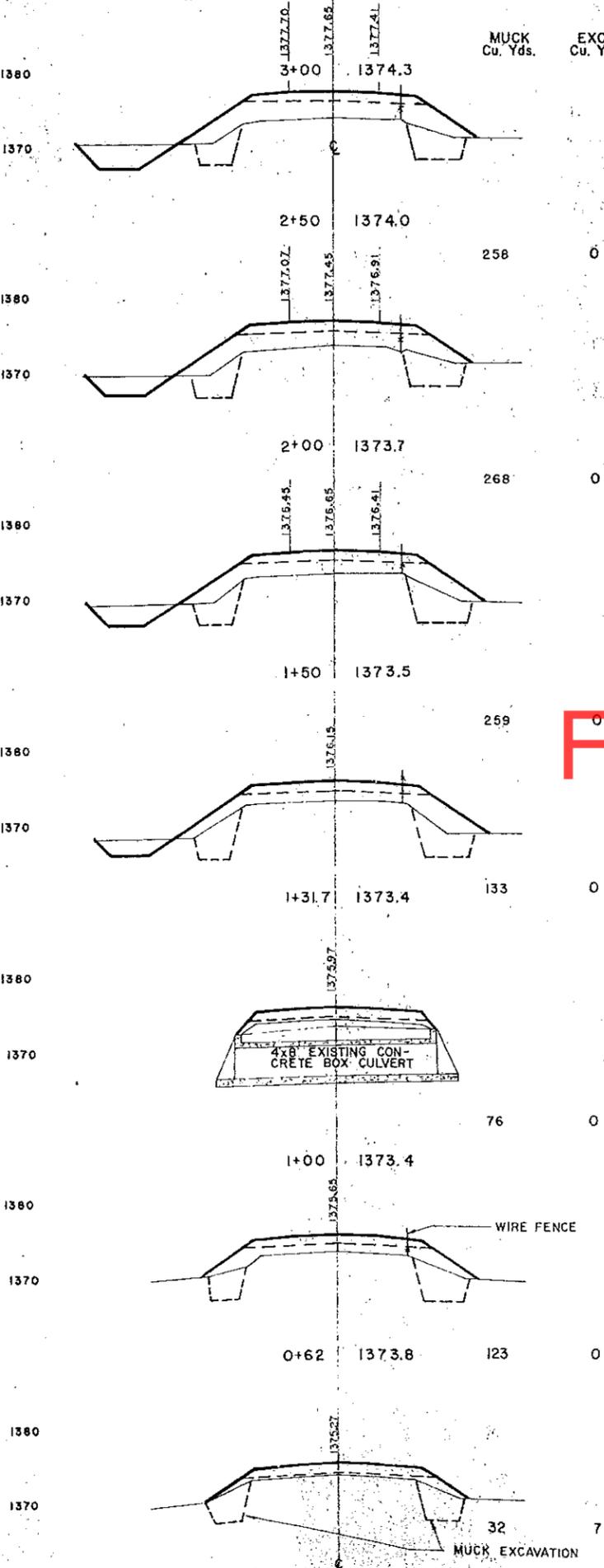
MUCK EXC. EMB.  
 Cu Yds Cu Yds Cu Yds

6+50.26 END SUPER ELEVATION



4+01.41 BEGIN SUPER ELEVATION

MUCK EXC. EMB.  
 Cu Yds Cu Yds Cu Yds

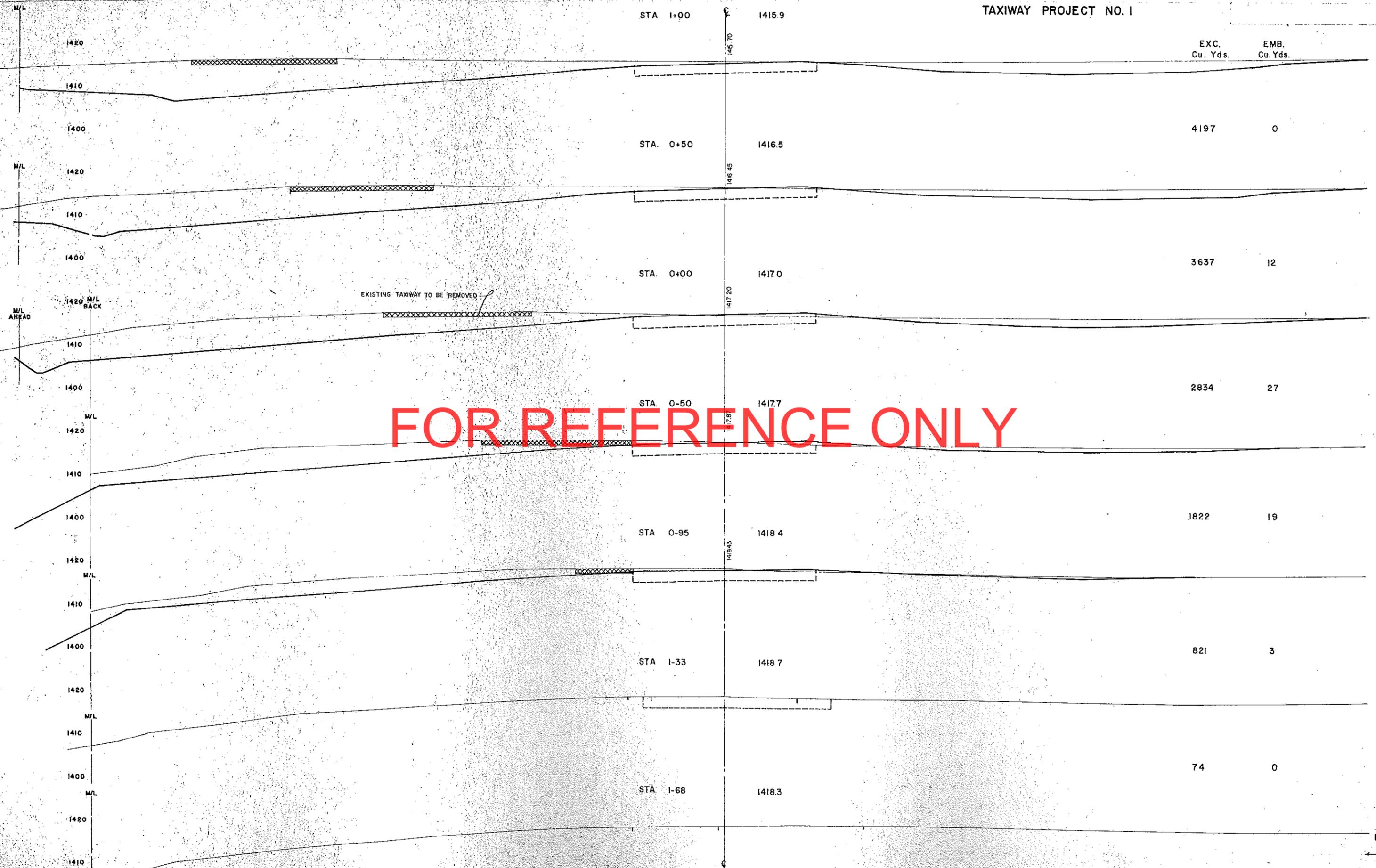


MUCK EXCAVATION

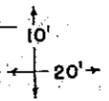
FOR REFERENCE ONLY



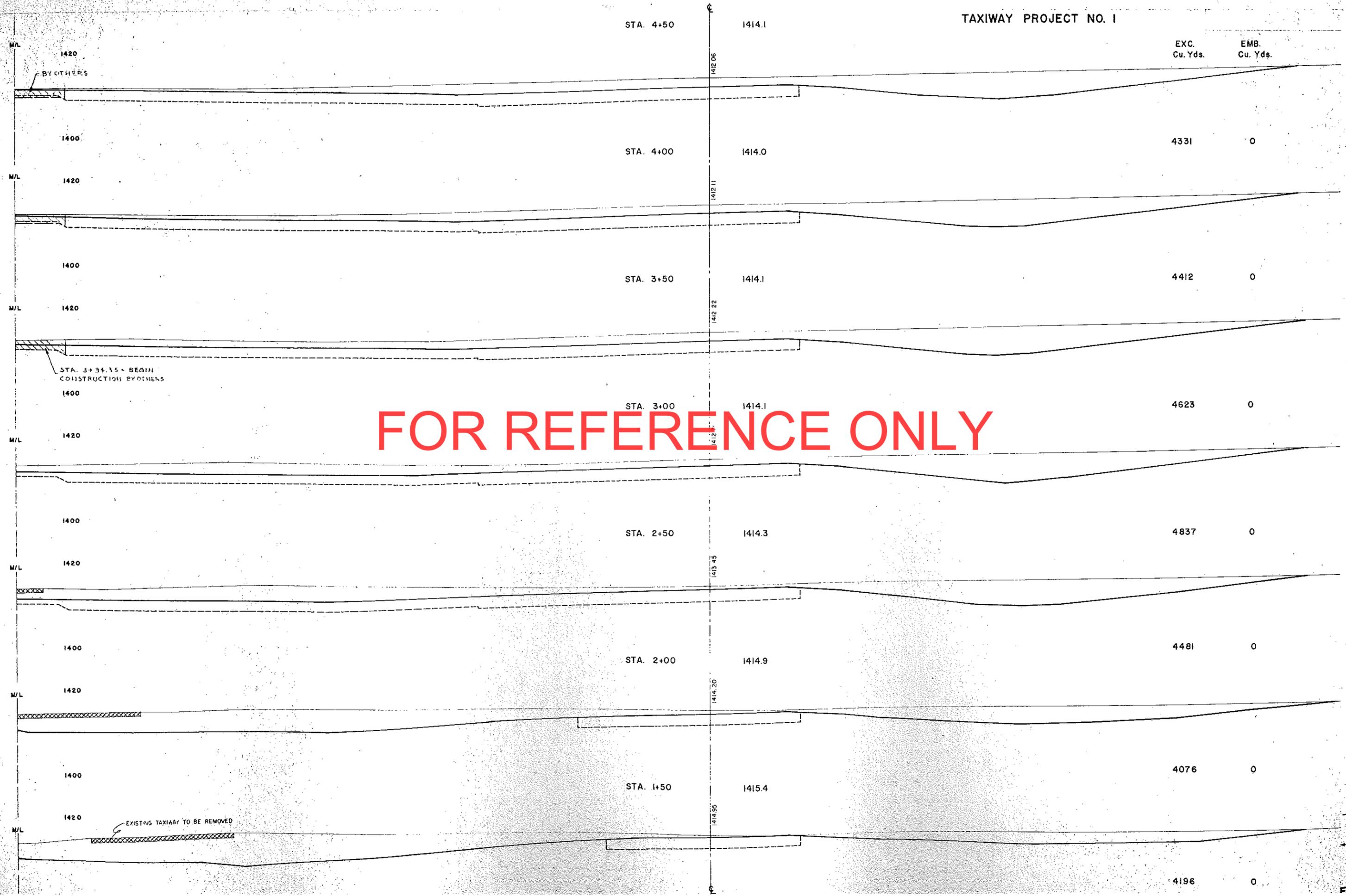
TAXIWAY PROJECT NO. 1



FOR REFERENCE ONLY

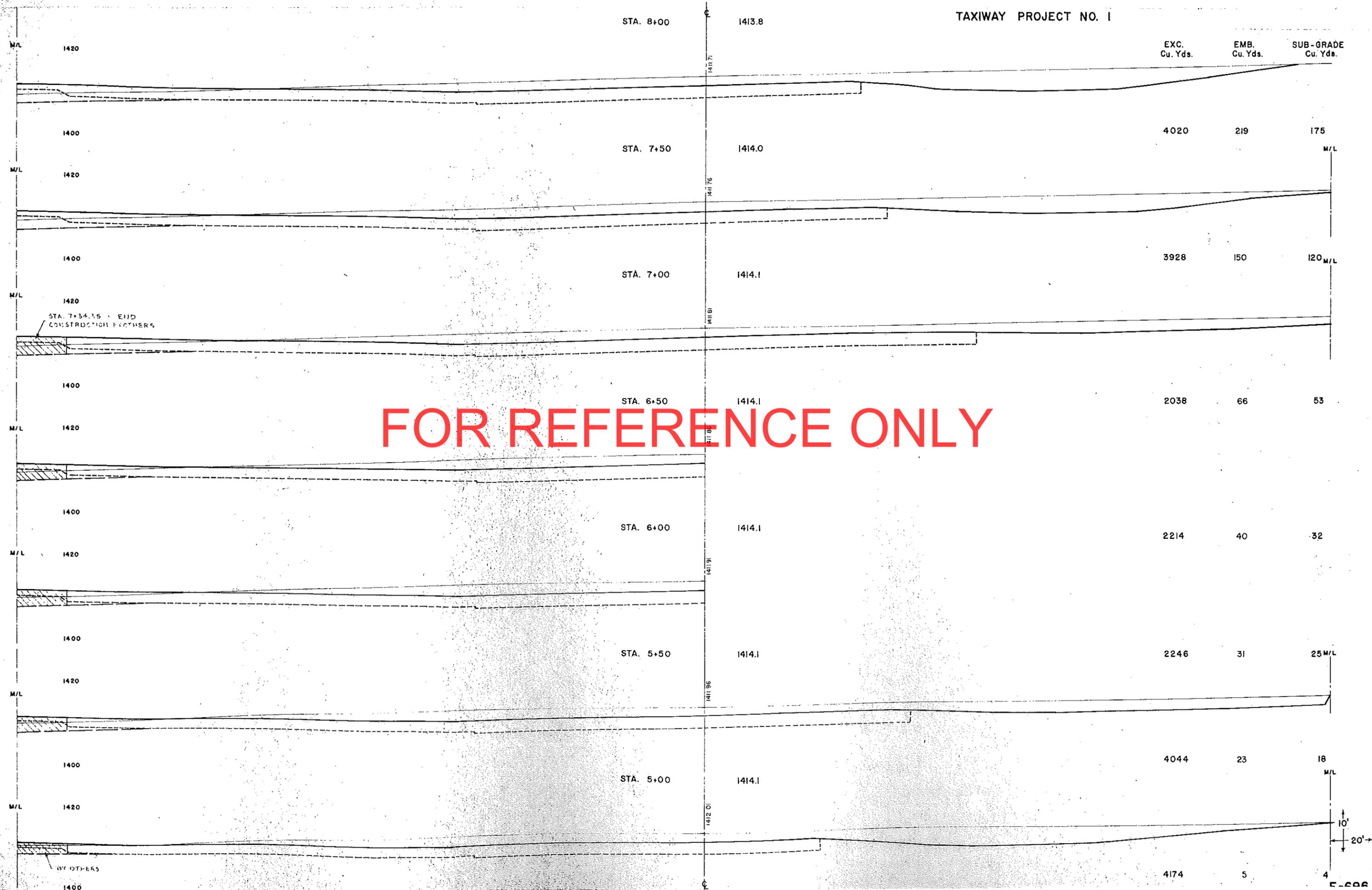


TAXIWAY PROJECT NO. 1



FOR REFERENCE ONLY

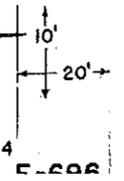
TAXIWAY PROJECT NO. 1



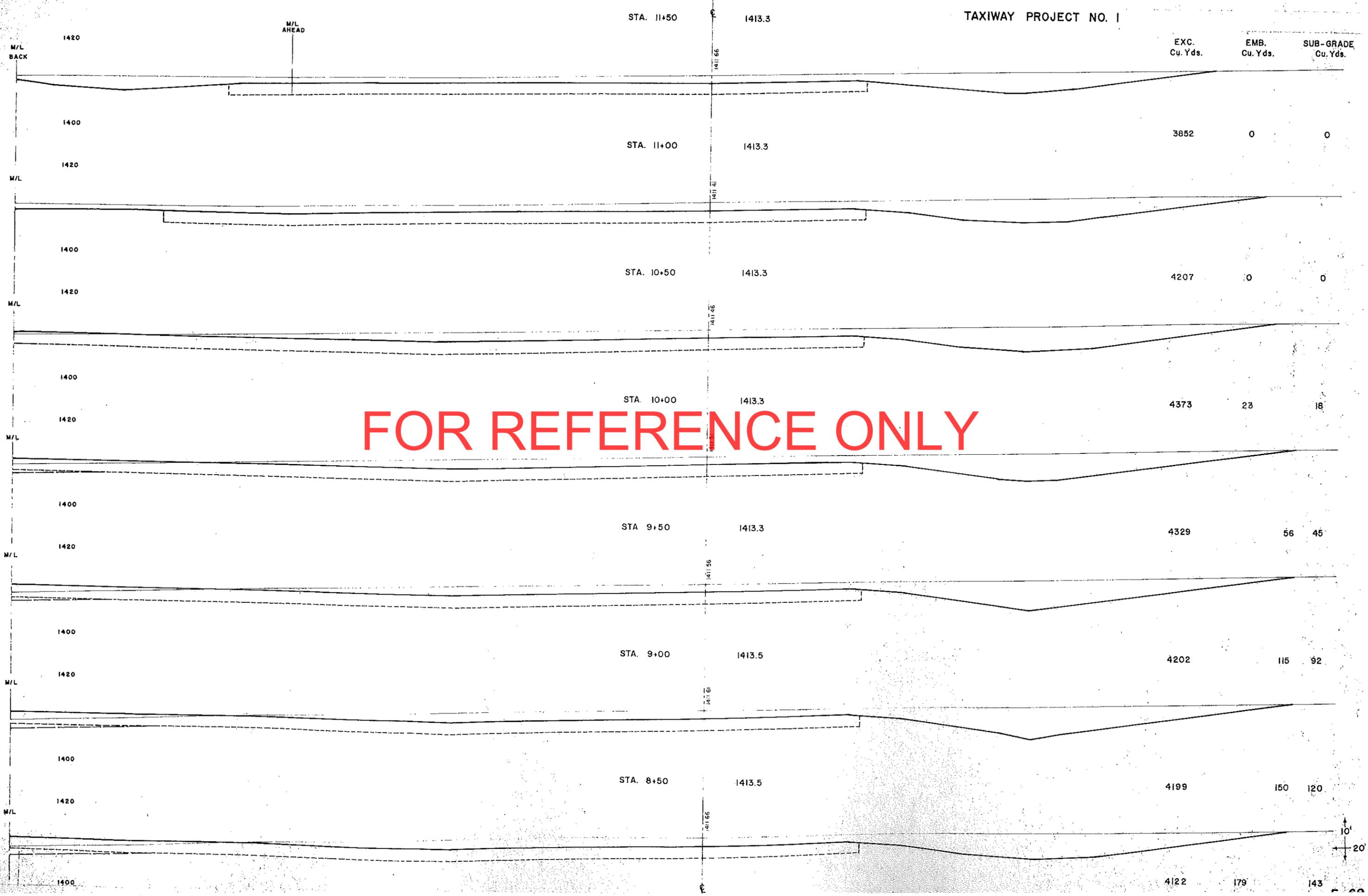
FOR REFERENCE ONLY

STA. 7+34.35 END CONSTRUCTION FENCES

BY OTHERS



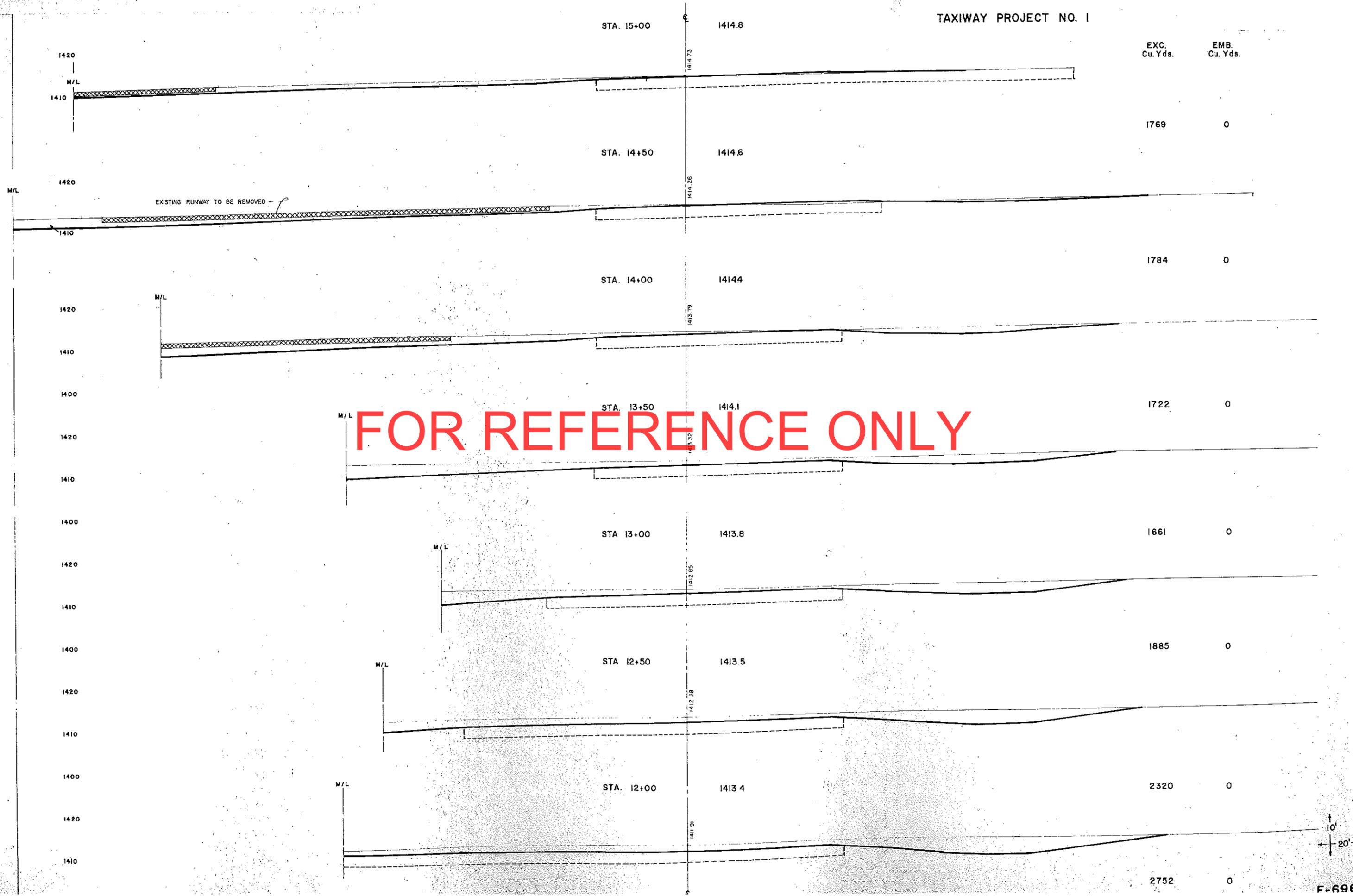
TAXIWAY PROJECT NO. 1



FOR REFERENCE ONLY

10'  
20'

TAXIWAY PROJECT NO. 1



EXC.  
Cu. Yds.

EMB.  
Cu. Yds.

1769

0

1784

0

1722

0

1661

0

1885

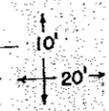
0

2320

0

2752

0

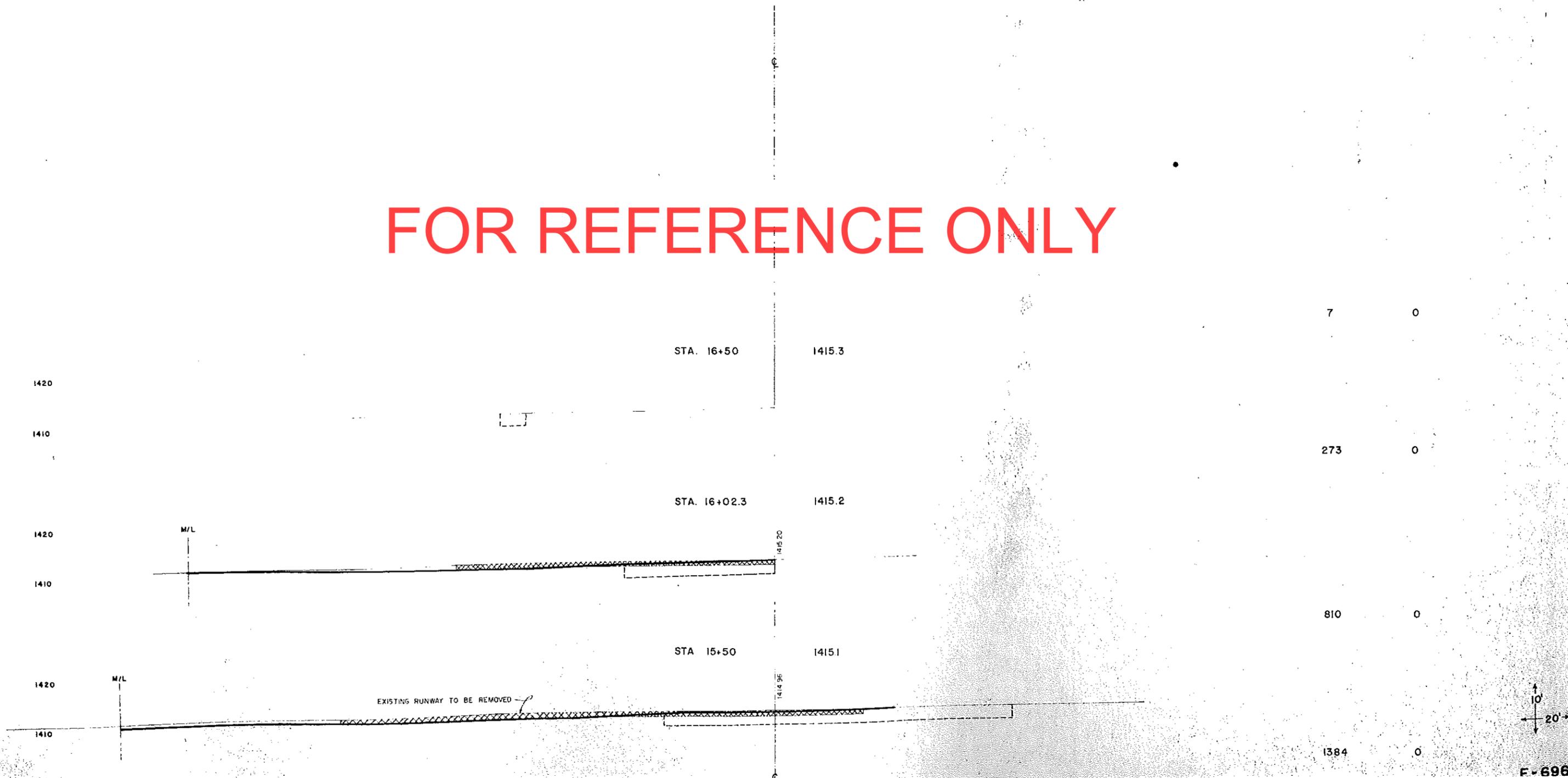


EXC.

EMB.

TAXIWAY PROJECT NO. 1  
 TOTAL EXCAVATION 112656 CU. YDS.  
 TOTAL EMBANKMENT 1118 CU. YDS.  
 TOTAL SUB-GRADE EXCAVATION 845 CU. YDS.  
 SHRINKAGE FACTOR 1.25

FOR REFERENCE ONLY

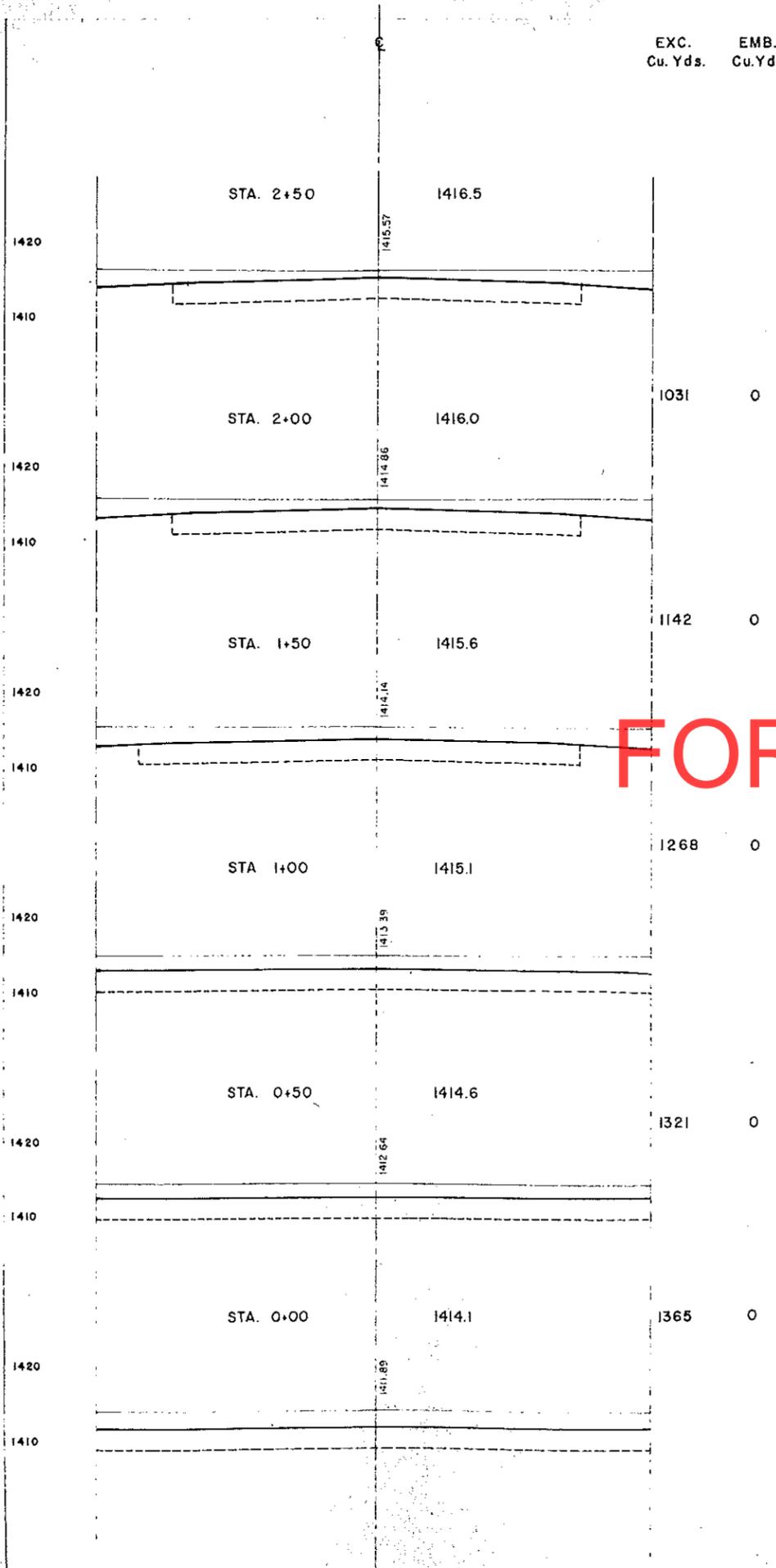


EXC. EMB.  
Cu. Yds. Cu. Yds.

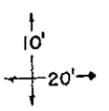
TAXIWAY PROJECT NO. 2

EXC. EMB.  
Cu. Yds. Cu. Yds.

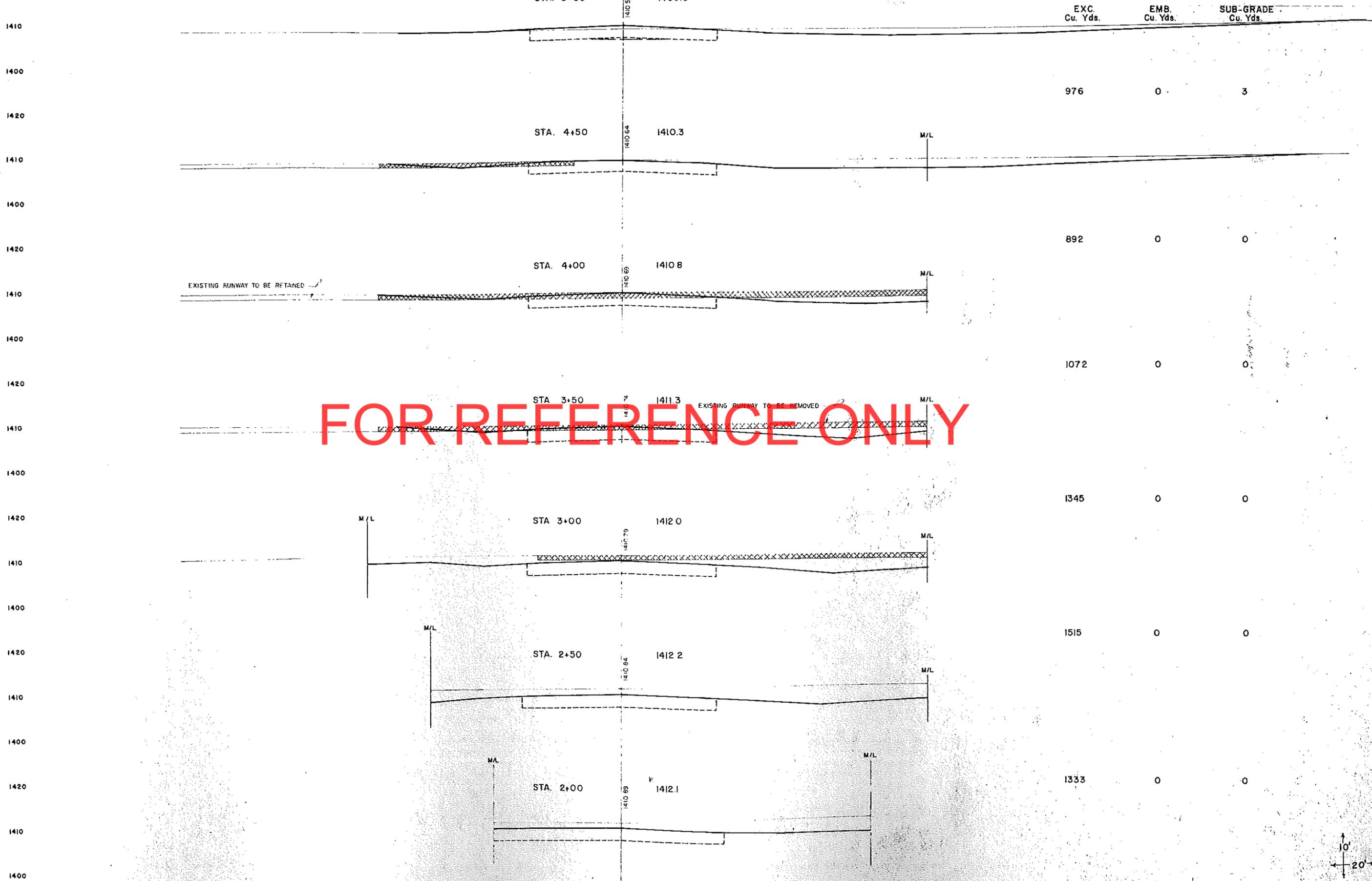
TAXIWAY PROJECT NO. 2  
TOTAL EXCAVATION 10127 CU. YDS.  
TOTAL EMBANKMENT 0 CU. YDS.  
SHRINKAGE FACTOR 1.25



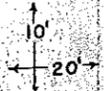
FOR REFERENCE ONLY



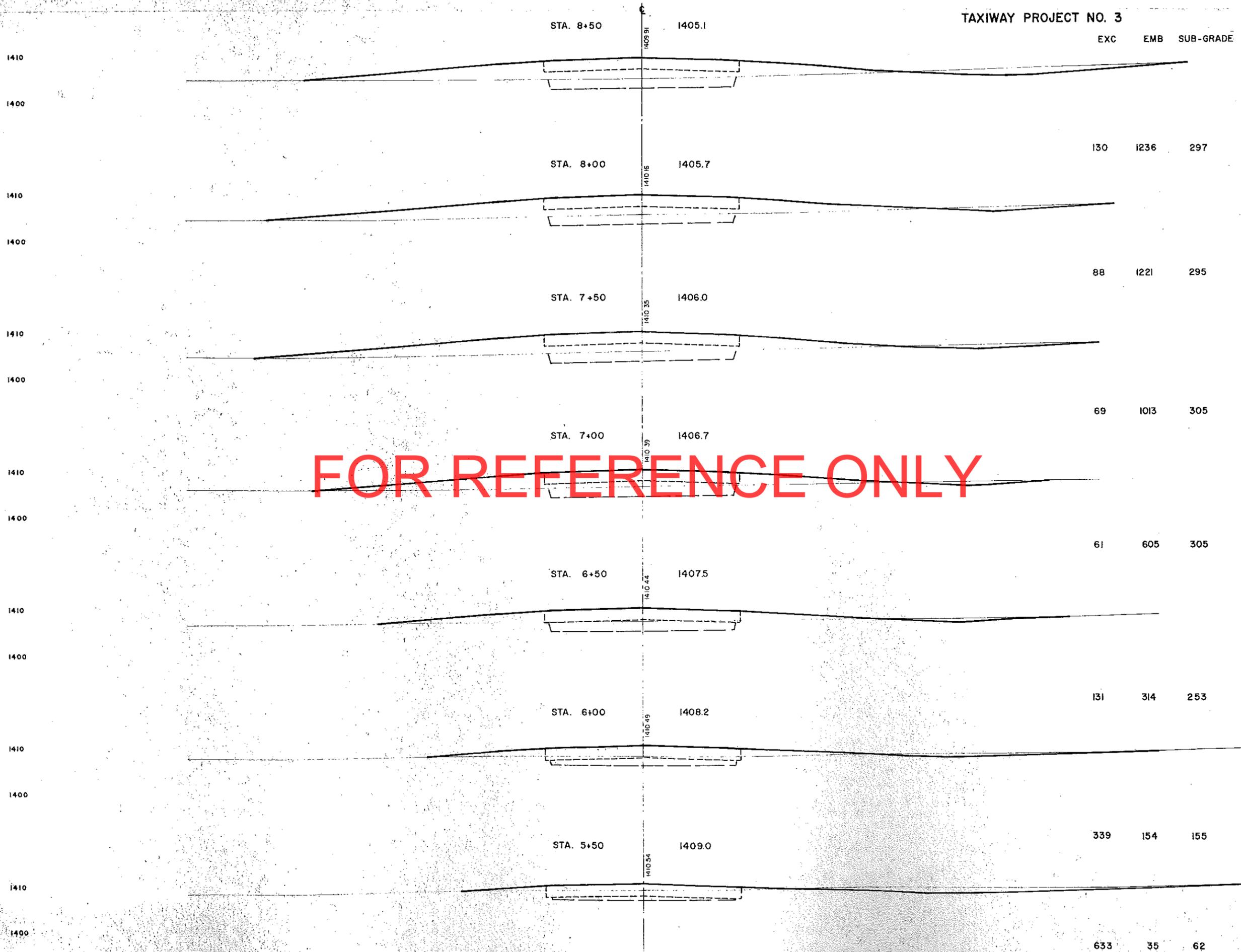
TAXIWAY PROJECT NO. 3



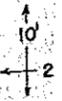
FOR REFERENCE ONLY



TAXIWAY PROJECT NO. 3

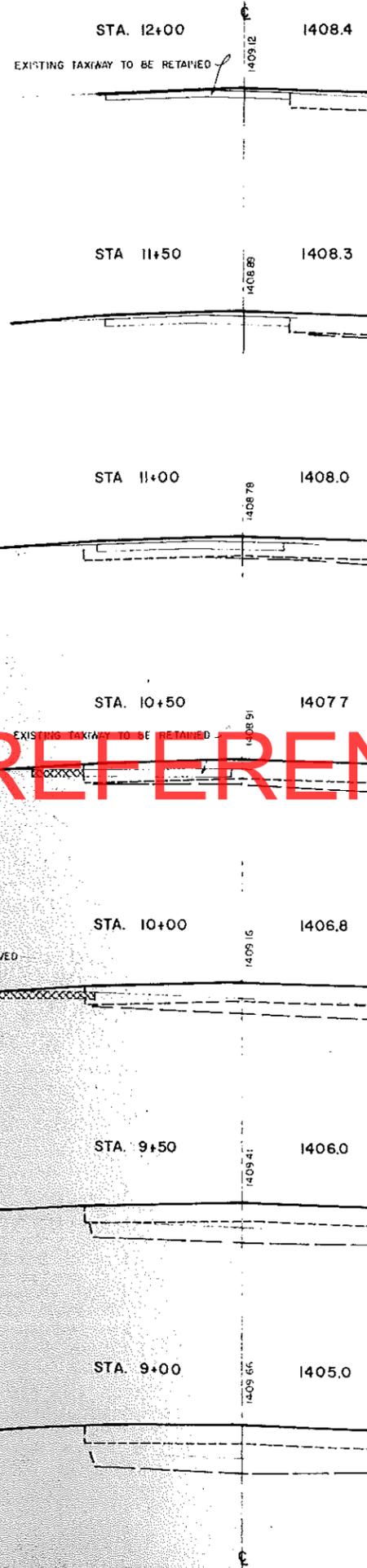


FOR REFERENCE ONLY



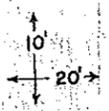
TAXIWAY PROJECT NO. 3

1410  
1400  
1410  
1400  
1410  
1400  
1410  
1400  
1410  
1400  
1410  
1400  
1410  
1400



EXC. Cu. Yds.	EMB. Cu. Yds.	SUB-GRADE Cu. Yds.
215	71	9
246	107	46
332	0	130
236	179	245
107	304	347
137	634	359
110	978	319

FOR REFERENCE ONLY



TAXIWAY PROJECT NO. 3

EXC. EMB.  
Cu. Yds. Cu. Yds.

TAXIWAY NO. 3  
TOTAL SUB-GRADE EXCAVATION 3130 CU. YDS.  
TOTAL EXCAVATION 11872 CU. YDS.  
TOTAL EMBANKMENT 6916 CU. YDS.  
SHRINKAGE FACTOR 125

84 0

403 0

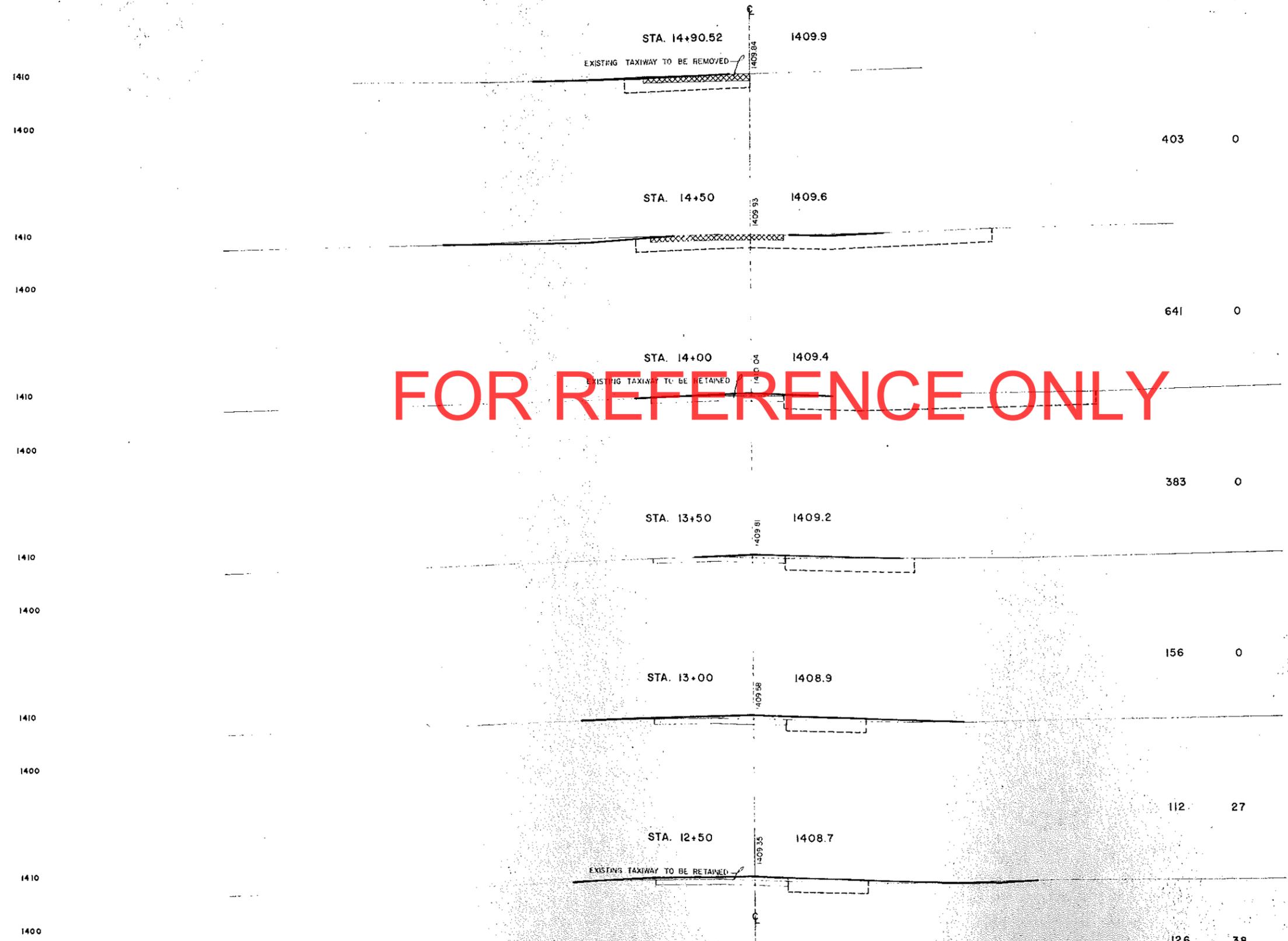
641 0

383 0

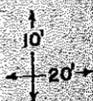
156 0

112 27

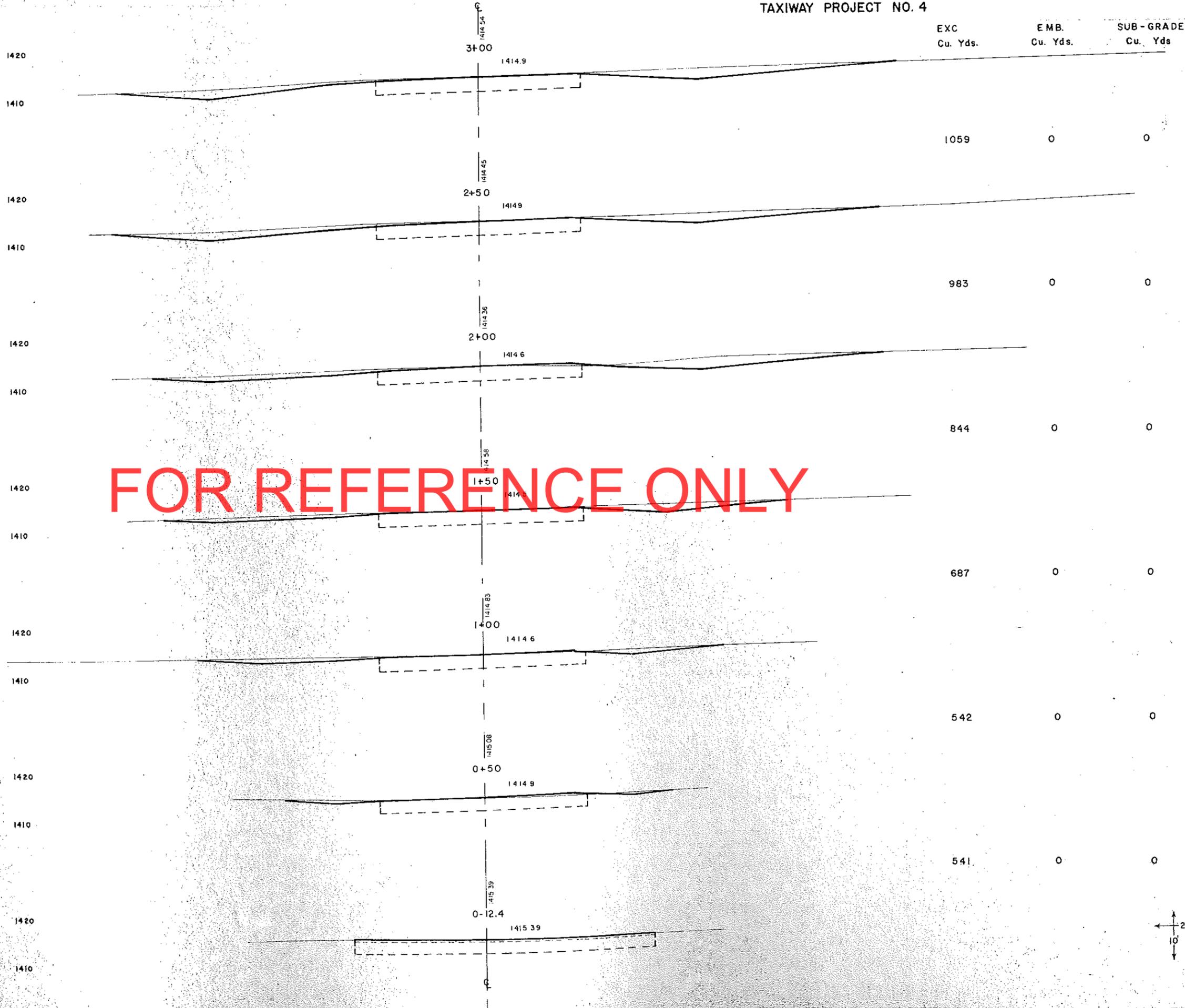
126 38



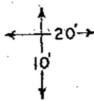
FOR REFERENCE ONLY

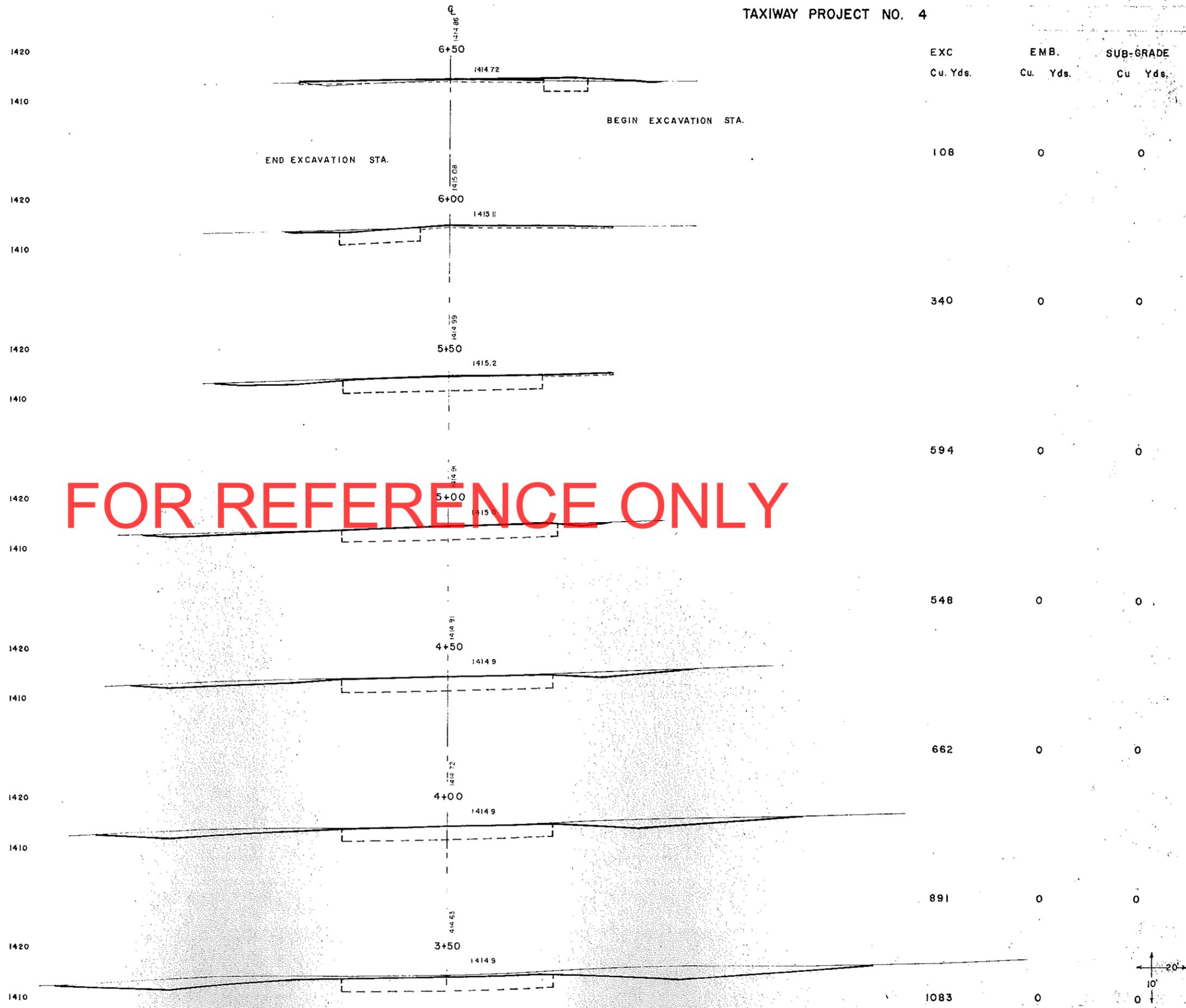


TAXIWAY PROJECT NO. 4



FOR REFERENCE ONLY

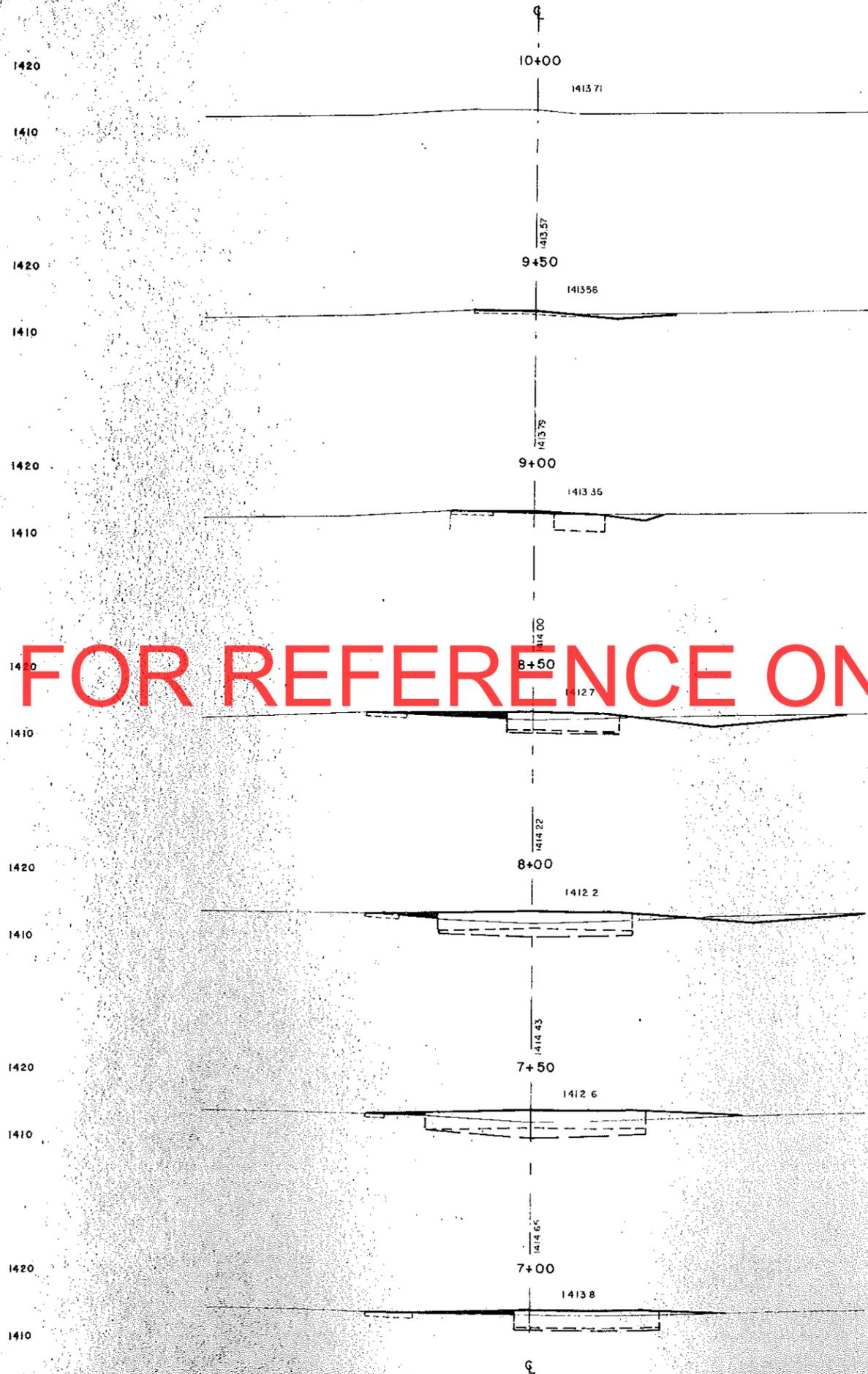




FOR REFERENCE ONLY

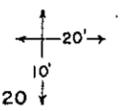
TAXIWAY PROJECT NO. 4

TAXIWAY PROJECT NO. 4  
 TOTAL SUB-GRADE EXCAVATION 301 CU. YDS.  
 TOTAL EXCAVATION 9655 CU. YDS.  
 TOTAL EMBANKMENT 0 CU. YDS.  
 SHRINKAGE FACTOR 1.25



EXC Cu. Yds.	EMB. Cu. Yds.	SUB-GRADE Cu. Yds.
-----------------	------------------	-----------------------

6	0	0
57	0	0
140	0	14
186	0	69
156	0	117
128	0	81
100	0	

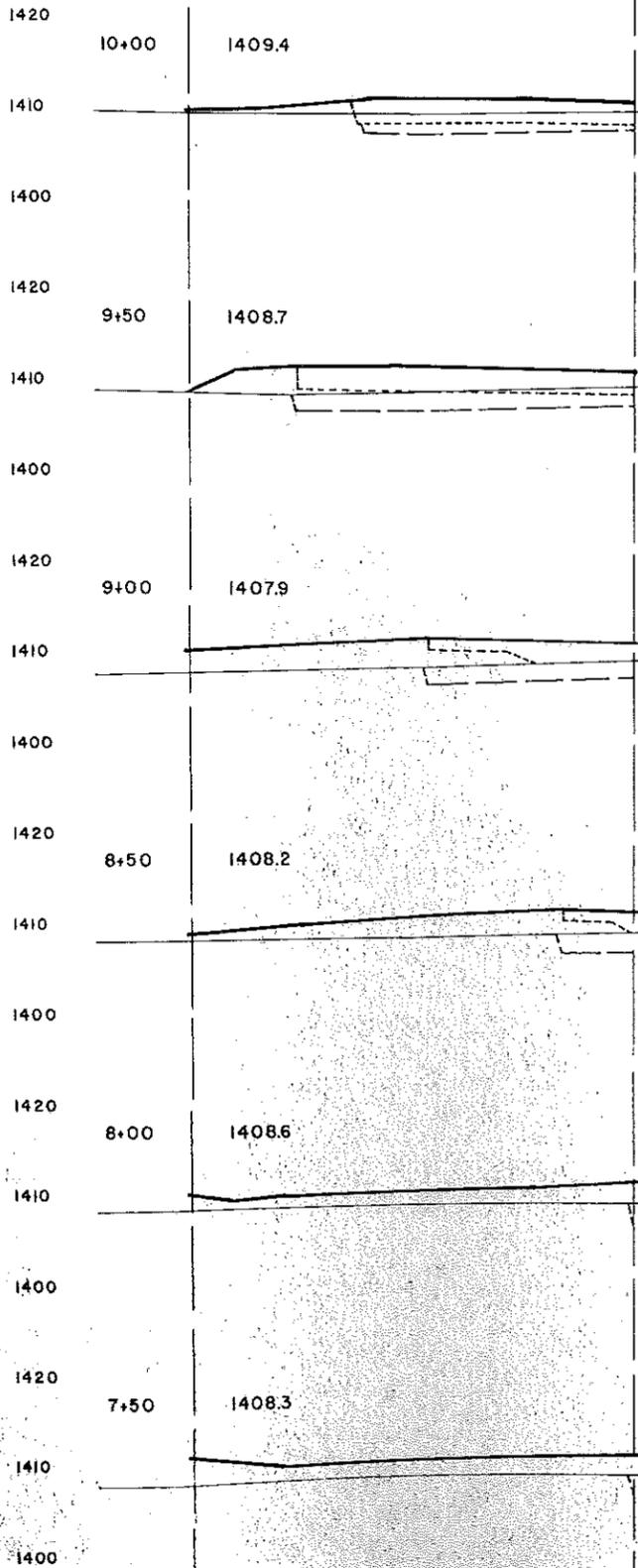


BUILDING AREA, WEST

BUILDING AREA, WEST  
 TOTAL EXCAVATION 531 CU. YDS.  
 TOTAL EMBANKMENT 1403 CU. YDS.  
 TOTAL SUB-GRADE EXCAVATION 644 CU. YDS.

EXC. EMB. SUB-GRADE

EXC. EMB. SUB-GRADE



215 41 65

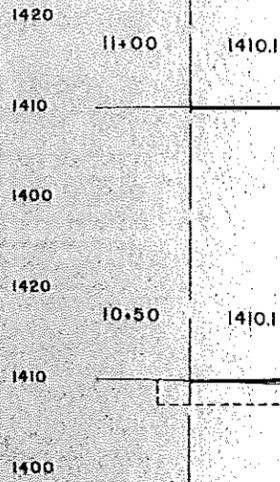
85 94 191

37 243 230

0 357 119

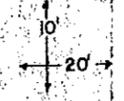
0 322 35

0 337 4



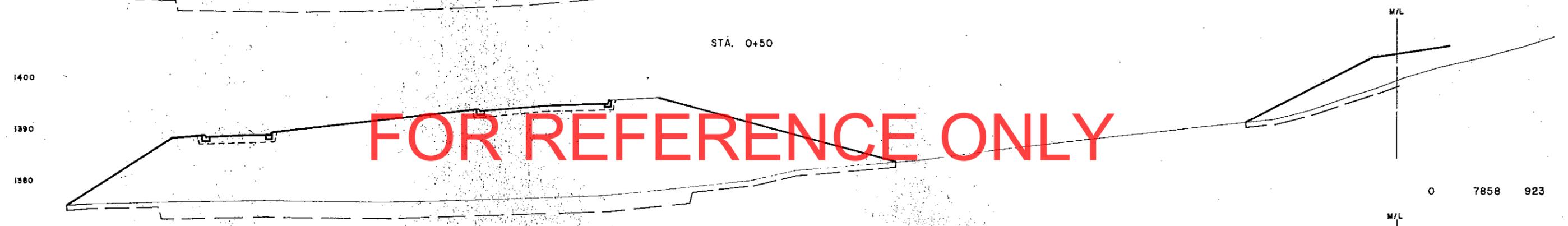
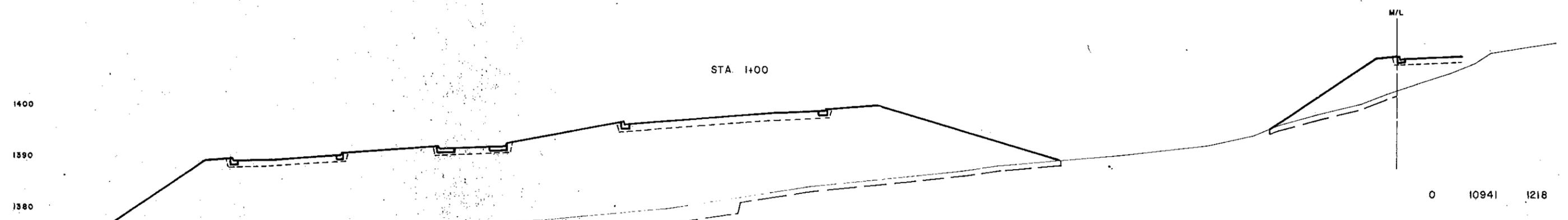
194 9 0

FOR REFERENCE ONLY

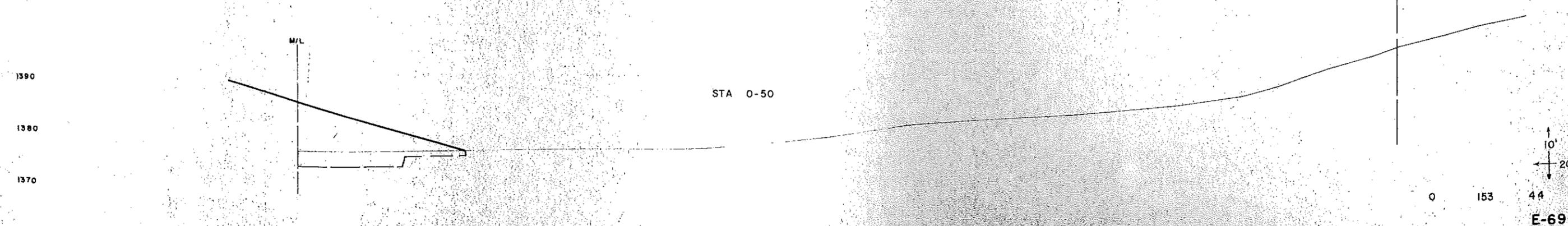
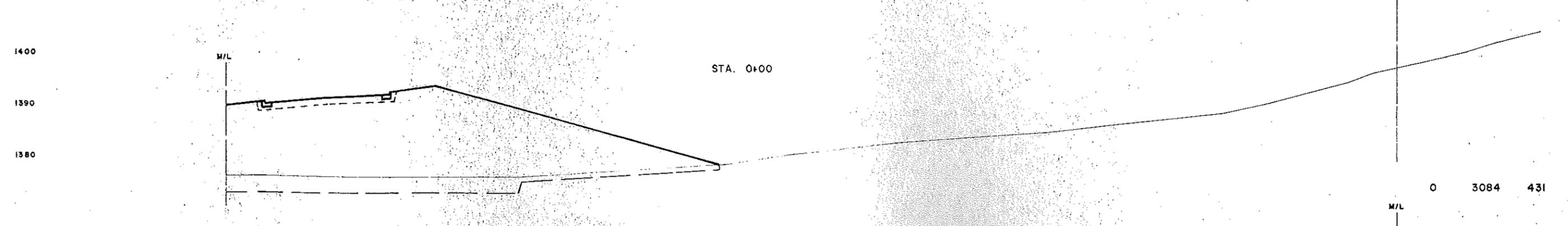


PARKING LOT

EXC. Cu. Yds.	EMB. Cu. Yds.	MUCK Cu. Yds.
------------------	------------------	------------------



FOR REFERENCE ONLY

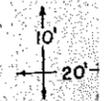


PARKING LOT

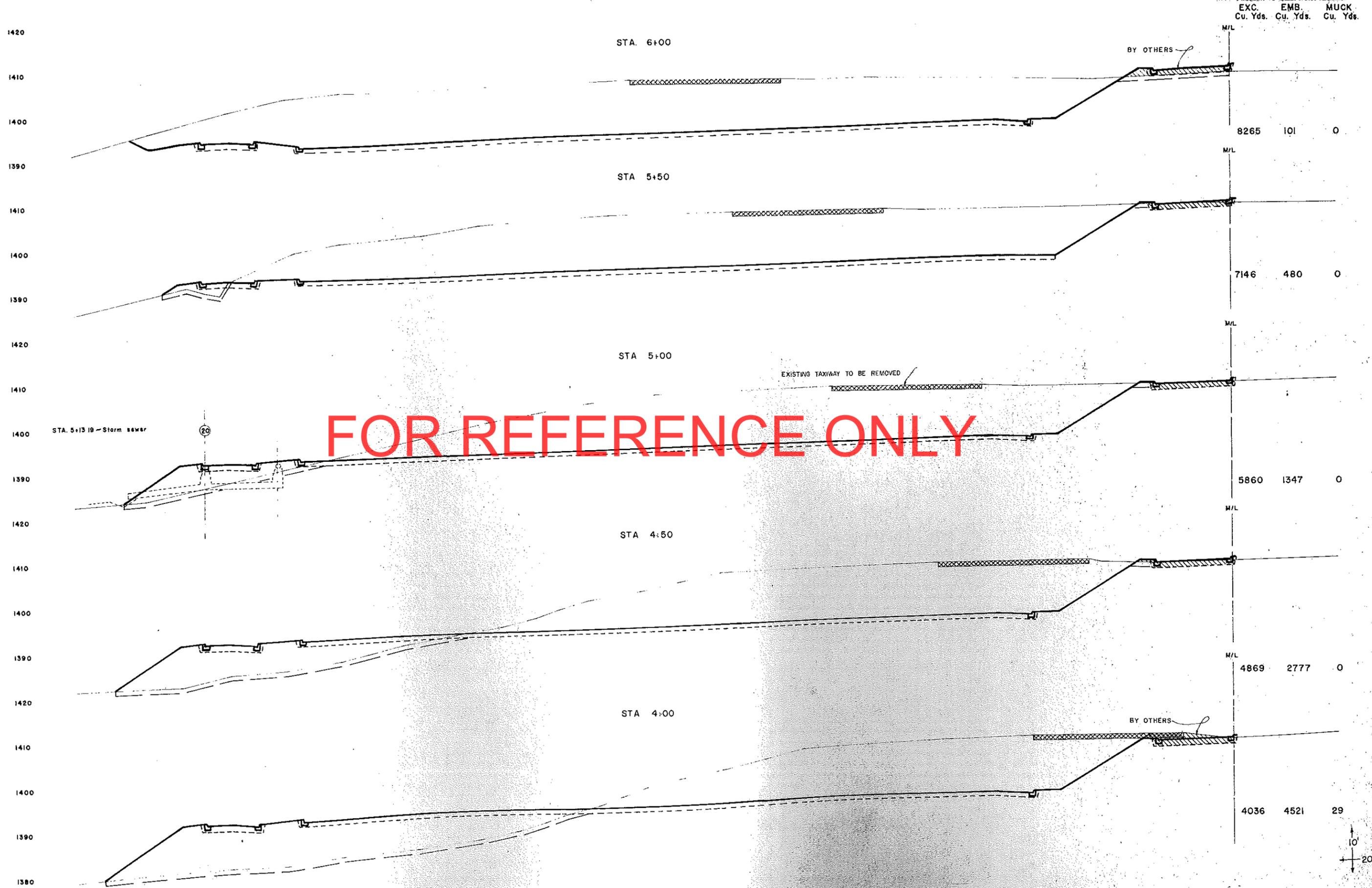
EXC. Cu. Yds.    EMB. Cu. Yds.    MUCK Cu. Yds.



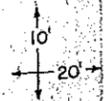
FOR REFERENCE ONLY



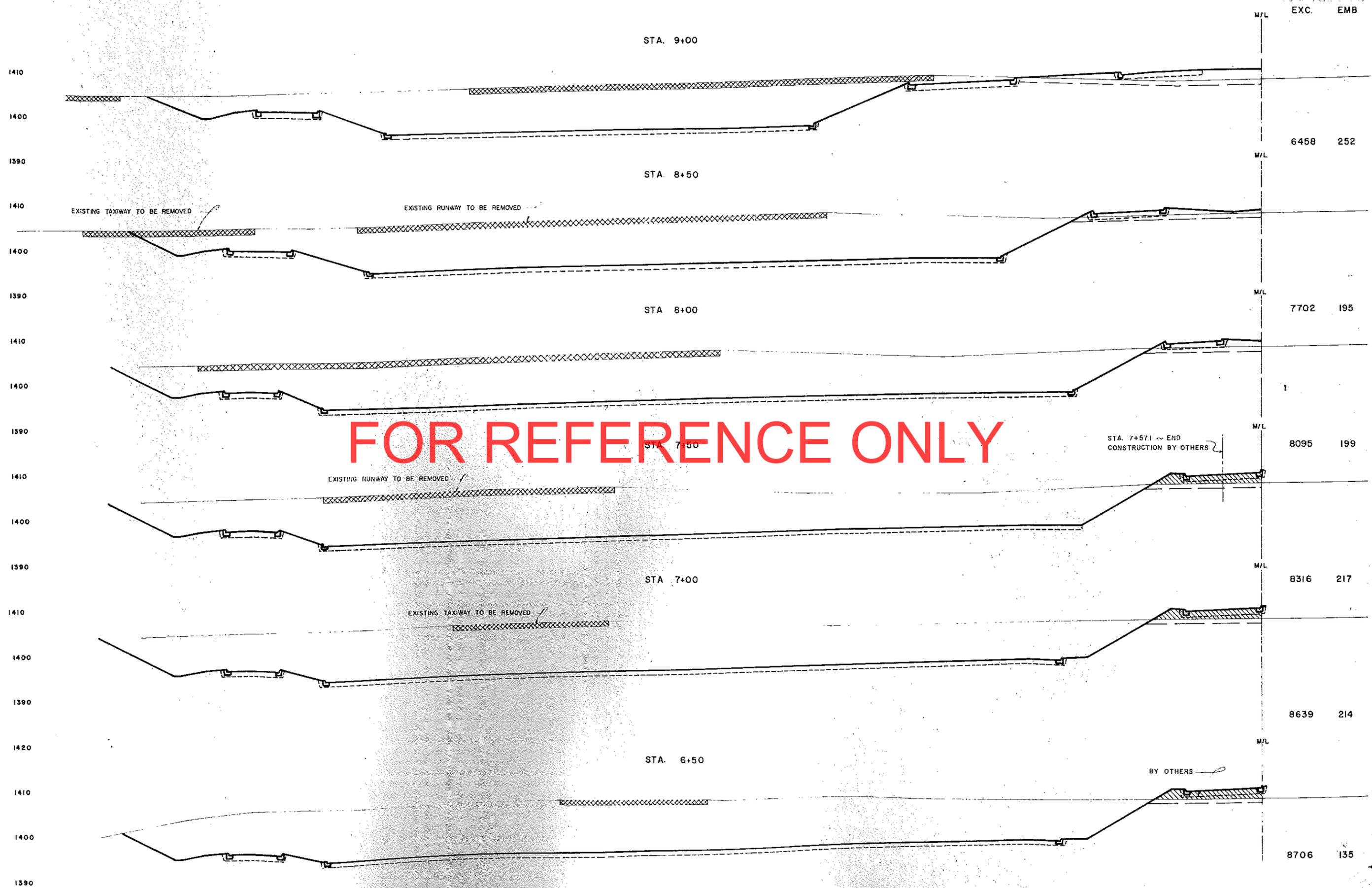
PARKING LOT



FOR REFERENCE ONLY



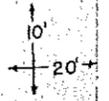
PARKING LOT



FOR REFERENCE ONLY

STA. 7+571 ~ END  
CONSTRUCTION BY OTHERS

BY OTHERS



PARKING LOT

EXC  
Cu Yds.

EMB  
Cu Yds.

EXCAVATION TOTAL			
	MUCK, S.G. OR CHAN.	EXC.	EMB.
CARGO ROAD	0	4393	7278
ACCESS ROAD	6612	465	24,846
TAXIWAY NO. 1	845	112,656	1,118
TAXIWAY NO. 2	0	10,127	0
TAXIWAY NO. 3	3,130	11,872	6,916
TAXIWAY NO. 4	301	9,855	0
BUILDING AREA WEST	644	531	1,403
PARKING LOT	6,144	90,637	74,315
CHANNEL (SHEET 18)	2,535		
TOTAL	20,211	240,336	115,876

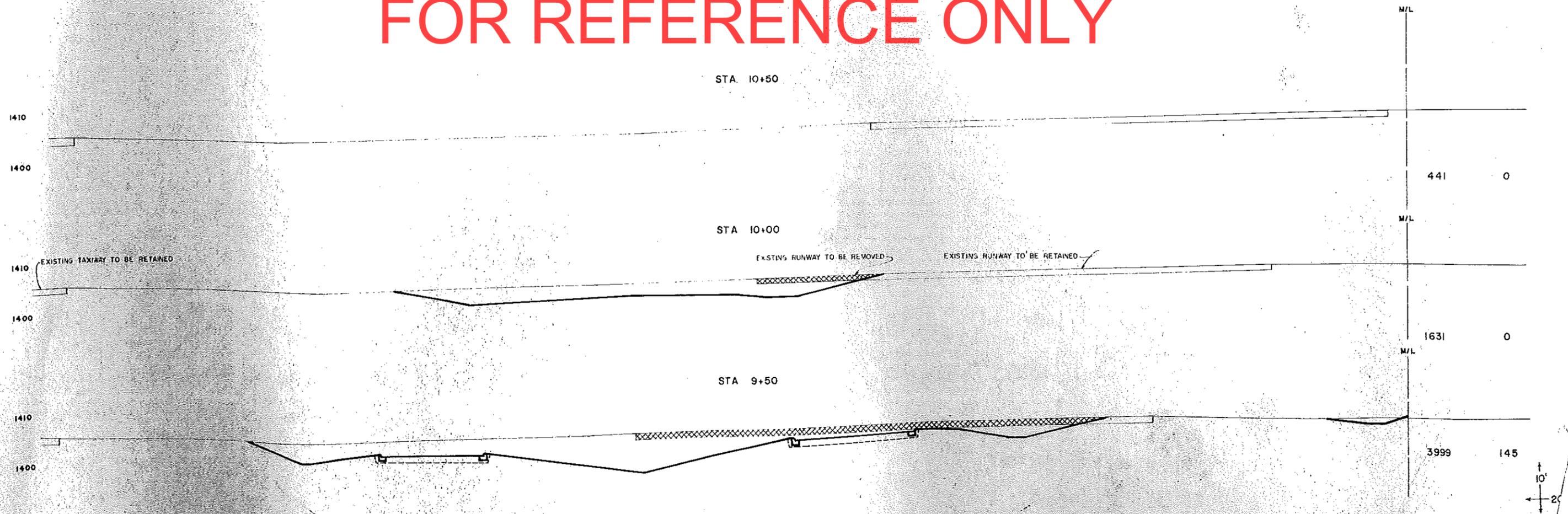
PARKING LOT  
 TOTAL MUCK EXCAVATION 6144 CU. YDS.  
 TOTAL EXCAVATION 90637 CU. YDS.  
 TOTAL EMBANKMENT 74315 CU. YDS.  
 SHRINKAGE FACTOR 1.25

TOTAL COMMON EXCAVATION	
	20,211
	240,336
	260,547
LESS SOLID ROCK EXC.	547
TOTAL	260,000

WASTE EXCAVATION

260,000
115,000
145,000

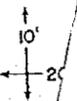
FOR REFERENCE ONLY



441 0

1631 0

3999 145



PARKING LOT

EXC  
Cu Yds.      EMB  
Cu Yds.

EXCAVATION TOTAL

	<u>MUCK, S.G. OR CHAN.</u>	<u>EXC.</u>	<u>EMB.</u>
CARGO ROAD	0	4393	7278
ACCESS ROAD	6612	465	24,846
TAXIWAY NO. 1	845	112,656	1,118
TAXIWAY NO. 2	0	10,127	0
TAXIWAY NO. 3	3,130	11,872	6,918
TAXIWAY NO. 4	301	9,655	0
BUILDING AREA WEST	644	531	1,403
PARKING LOT	6,144	90,637	74,315
CHANNEL (SHEET 18)	2,536		
<b>TOTAL</b>	<b>20,211</b>	<b>240,336</b>	<b>115,876</b>

PARKING LOT  
 TOTAL MUCK EXCAVATION 6144 CU. YDS.  
 TOTAL EXCAVATION 90637 CU. YDS.  
 TOTAL EMBANKMENT 74315 CU. YDS.  
 SHRINKAGE FACTOR 1.25

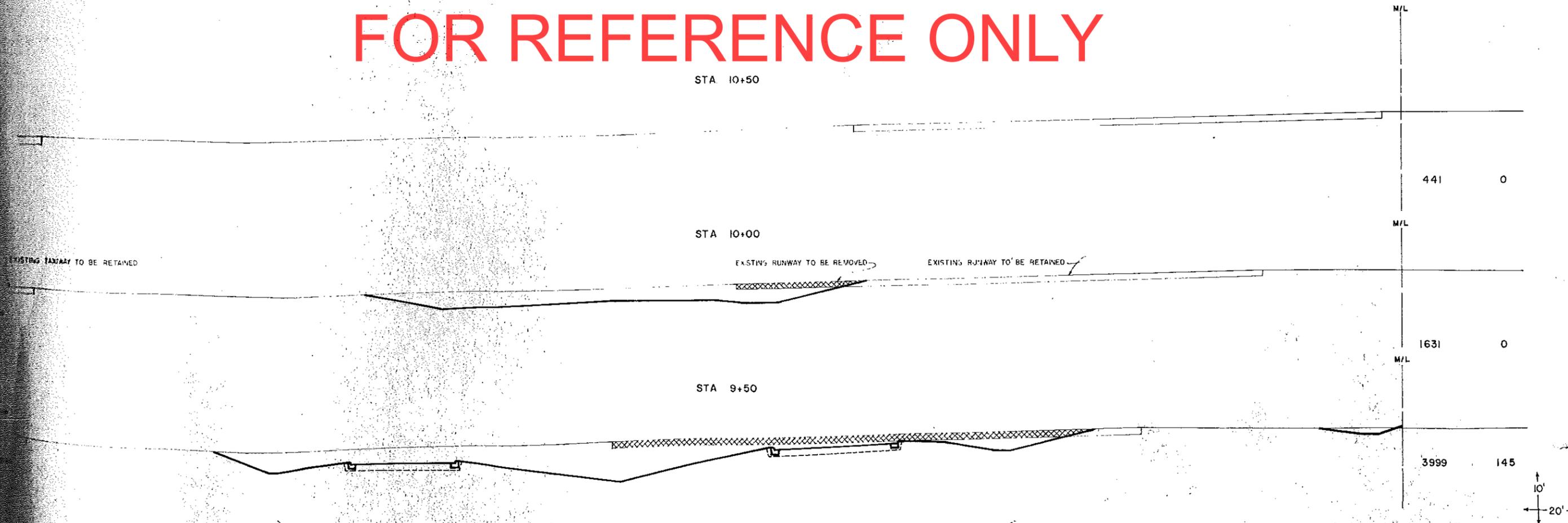
TOTAL COMMON EXCAVATION

	20,211
	240,336
	260,547
LESS SOLID ROCK EXC.	547
<b>TOTAL</b>	<b>260,000</b>

WASTE EXCAVATION

	260,000 ±
	115,000 ±
	145,000 ±

**FOR REFERENCE ONLY**



SUMMARY OF QUANTITIES						
ITEM NO.	SPEC. NO.	ITEM	UNIT	QUANTITY		
				BID	CHG.	FINAL
1	2104.501	REMOVE CONCRETE CURB & GUTTER	L.F.	930		
2	2104.503	REMOVE SIDEWALK	S.F.	12400		
3	2104.505	REMOVE BITUMINOUS PAVEMENT	S.Y.	1560		
4	2104.505	REMOVE CONCRETE PAVEMENT	S.Y.	250		
5	2104.511	SAWING CONCRETE PAVEMENT	L.F.	120		
6	2104.513	SAWING BITUMINOUS PAVEMENT	L.F.	1390		
7	2104.606	REMOVE & RESET PRECAST RET. WALL	L.F.	15		
8	2104.606	REMOVE & RESET GUARD RAIL	L.F.	20		
9	2105.501	COMMON EXCAVATION	C.Y.	950		
10	2211.503	AGGREGATE BASE PLACED, CLASS 5	C.Y.	1040		
11	2301.503	8" CONCRETE PAVEMENT	S.Y.	250		
12	2331.504	BITUMINOUS MAT'L. FOR MIXTURES	TON	40		
13	2331.514	BASE COURSE MIXTURE 2331	TON	480		
14	2341.508	WEARING COURSE MIXTURE 2341	TON	130		
15	2361.508	WEARING COURSE MIXTURE 2361	TON	80		
16	2451.511	COARSE FILTER AGGREGATE CV	C.Y.	130		
17	2451.601	3" WASHED ROCK	C.Y.	90		
18	2501.511	8" CM PIPE CULVERT	L.F.	14		
19	2501.573	12" RC PIPE APRON	EACH	1		
20	2502.541	6" PERF. PVC PIPE DRAIN	L.F.	301		
21	2502.541	4" PERF. PVC PIPE DRAIN	L.F.	118		
22	2502.601	FLUSHING & OBSERVATION RISER	EACH	3		
23	2502.601	DRAIN INLET RISER	EACH	8		
24	2502.603	20 MIL POLYETHYLENE LINER	S.Y.	450		
25	2503.511	12" RC PIPE SEWER	L.F.	736		
26	2506.508	CONSTRUCT MANHOLES, DESIGN A OR F	EACH	2		
27	2506.509	CONSTRUCT CATCH BASINS, DESIGN C OR G	EACH	1		
28	2506.522	ADJUST FRAME & RING CASTING	EACH	1		
29	2506.602	CONSTRUCT SPECIAL C.B. STRUCTURE	EACH	2		
30	2521.501	4" CONCRETE WALK	S.F.	12400		
31	2531.501	CONCRETE CURB & GUTTER, DESIGN B 624	L.F.	900		
32	2545.511	LIGHTING UNITS	EACH	2		
33	2545.515	LIGHT BASES	EACH	1		
34	2575.505	SODDING	S.Y.	400		
35		CRACK SEALING	L.F.	8000		



DRAWING INDEX	
DR. NO.	DESCRIPTION
1	VICINITY MAP, SUMMARY OF QUANTITIES
2	CONSTRUCTION PLAN & DETAILS
3	STORM DRAINAGE & DETAILS
4	BITUMINOUS CRACK REPAIR

FOR REFERENCE ONLY

## DULUTH INTERNATIONAL AIRPORT

DULUTH AIRPORT AUTHORITY in conjunction with MINNESOTA D.O.T. - DIVISION OF AERONAUTICS

"SITE IMPROVEMENTS AT THE DULUTH INTERNATIONAL AIRPORT TERMINAL COMPLEX"

MDA PROJECT NO. 6901-63

DULUTH AIRPORT AUTHORITY APPROVED _____ DATE _____	MINNESOTA DEPARTMENT OF TRANSPORTATION _____	<small>           I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY            ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A            FULLY REGISTERED PROFESSIONAL ENGINEER UNDER            THE LAWS OF THE STATE OF MINNESOTA.         </small> <i>John P. Bergson</i> DATE 5-23-86 REG. NO. 7407	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>NO.</td><td>DATE</td><td>REVISION</td><td>BY</td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>	NO.	DATE	REVISION	BY									<b>JACK D. SALO INC.</b> <small>ENGINEERS • SURVEYORS • PLANNERS</small> <small>15 East First Street • Duluth, Minnesota 55802 • Phone: (218) 727-8796</small>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>dr</td> <td>date</td> <td>5-23-86</td> </tr> <tr> <td>ck</td> <td>scale</td> <td>AS NOTED</td> </tr> <tr> <td>approv</td> <td>job no</td> <td>E-1075</td> </tr> <tr> <td>approv</td> <td>file no</td> <td> </td> </tr> <tr> <td> </td> <td>dr no</td> <td>1</td> </tr> </table>	dr	date	5-23-86	ck	scale	AS NOTED	approv	job no	E-1075	approv	file no			dr no	1
NO.	DATE	REVISION	BY																													
dr	date	5-23-86																														
ck	scale	AS NOTED																														
approv	job no	E-1075																														
approv	file no																															
	dr no	1																														



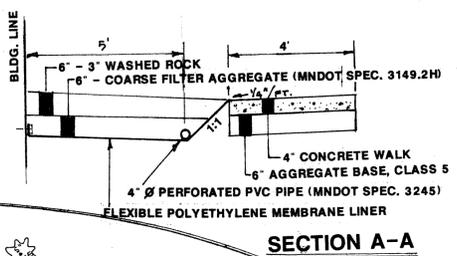
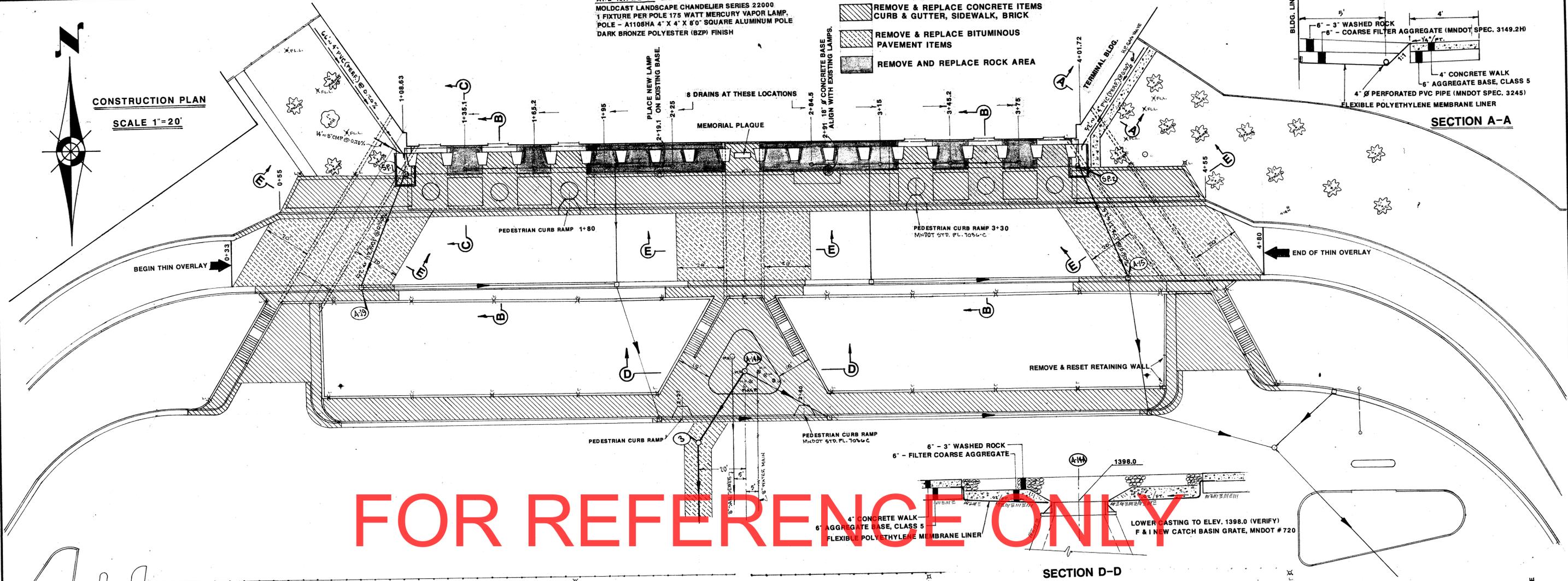
**CONSTRUCTION PLAN**

SCALE 1"=20'

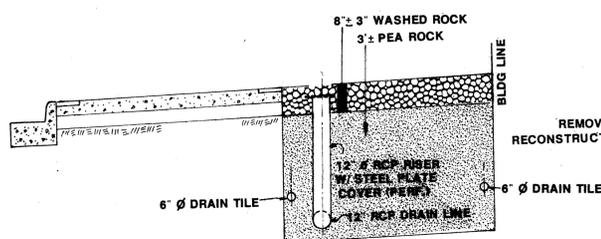
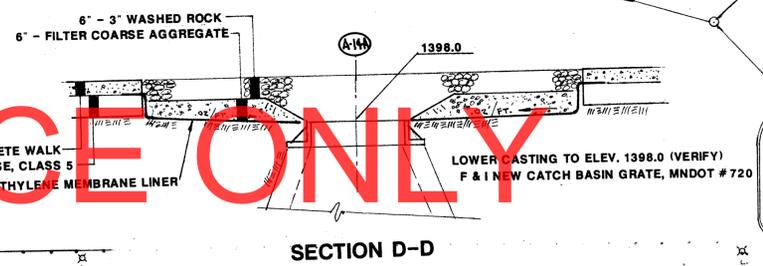
AT 2+19.1 & 2+91 LIGHTING UNITS  
MOLDCAST LANDSCAPE CHANDELIER SERIES 22000  
1 FIXTURE PER POLE 175 WATT MERCURY VAPOR LAMP,  
POLE - A1108HA 4" X 4" X 8' SQUARE ALUMINUM POLE  
DARK BRONZE POLYESTER (BZP) FINISH

**LEGEND**

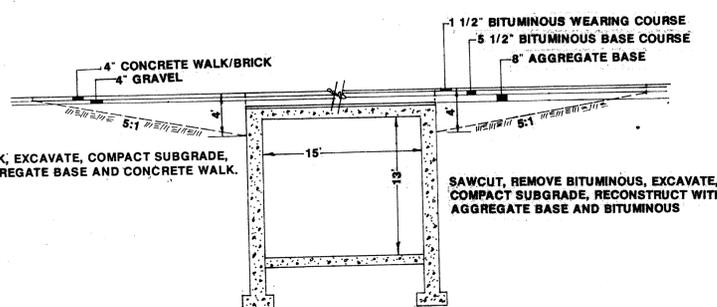
- REMOVE & REPLACE CONCRETE ITEMS  
CURB & GUTTER, SIDEWALK, BRICK
- REMOVE & REPLACE BITUMINOUS  
PAVEMENT ITEMS
- REMOVE AND REPLACE ROCK AREA



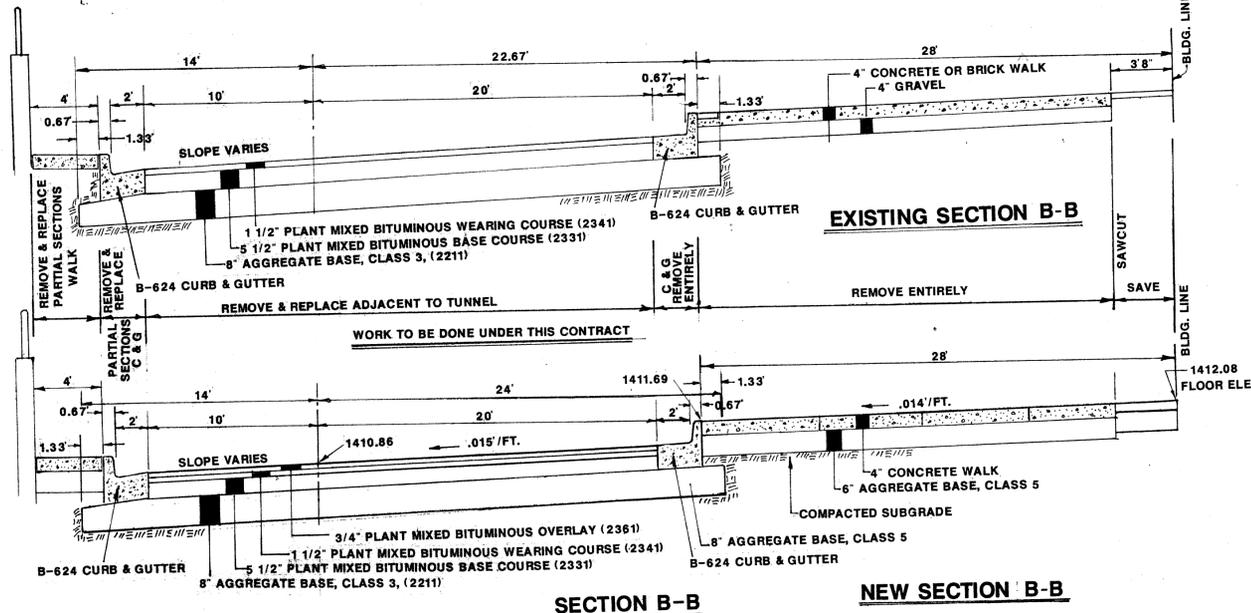
**FOR REFERENCE ONLY**



**C-C EXISTING SECTION - ROCK AREA**



**TUNNEL SECTION E-E  
EAST, WEST & CENTER**



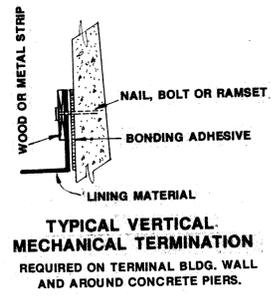
**SECTION B-B**

**NEW SECTION B-B**

**SECTION C-C**

**C-C NEW SECTION - ROCK AREA**

REMOVE 3" ROCK AND PEA ROCK TO REQ'D. DEPTH  
CLEAN 6" & 12" DRAIN LINES  
SAWCUT 12" RCP RISER TO REQUIRED HEIGHT  
POUR 4" SLAB AND INSTALL GRATE  
INSTALL POLYETHYLENE MEMBRANE LINER  
(SLOPE TO DRAIN FROM ALL DIRECTIONS @ .02'/FT. MIN.)  
BACKFILL WITH COARSE FILTER AGGREGATE  
AND 3" ROCK AS SHOWN.



**TYPICAL VERTICAL  
MECHANICAL TERMINATION**  
REQUIRED ON TERMINAL BLDG. WALL  
AND AROUND CONCRETE PIERS.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY  
ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A  
DULY REGISTERED PROFESSIONAL ENGINEER UNDER  
THE LAWS OF THE STATE OF MINNESOTA  
*John P. Bergson*  
DATE 5-23-86 REG. NO. 7407

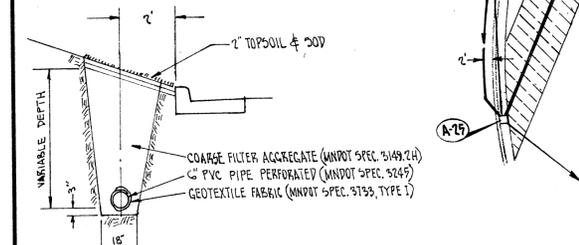
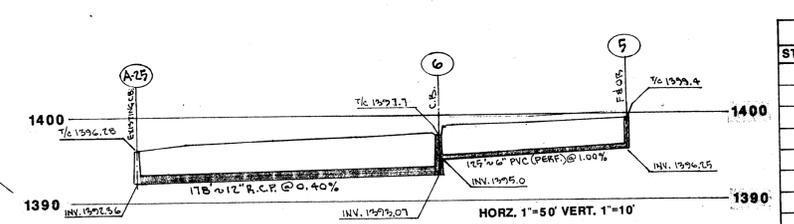
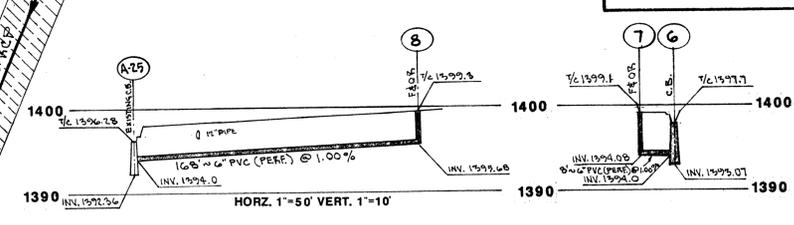
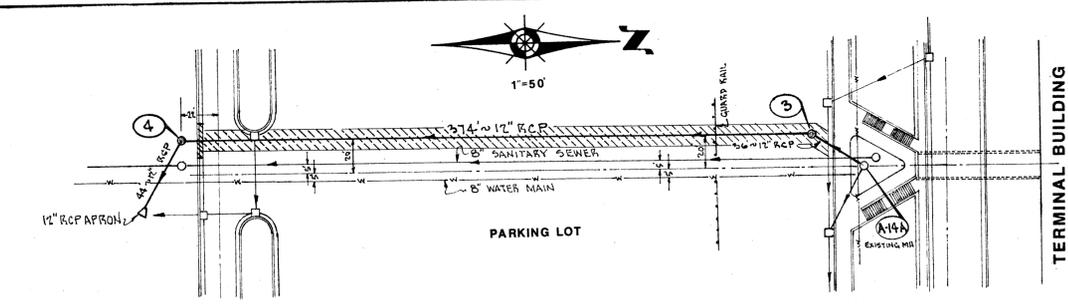
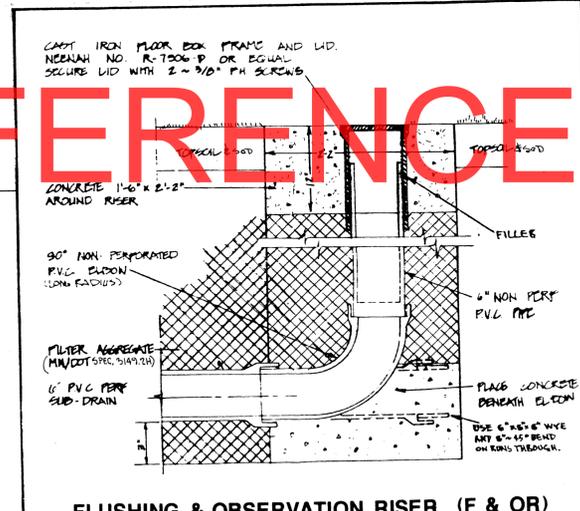
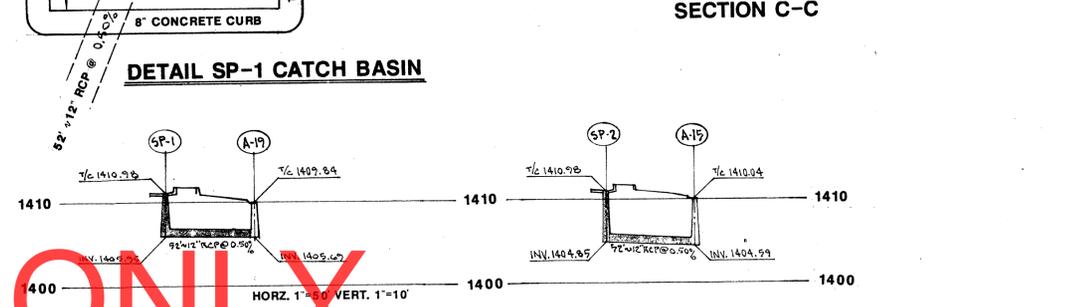
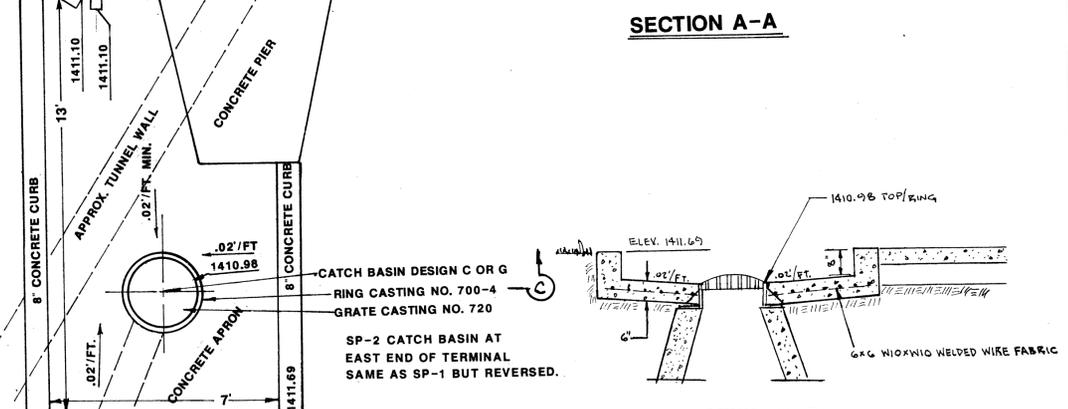
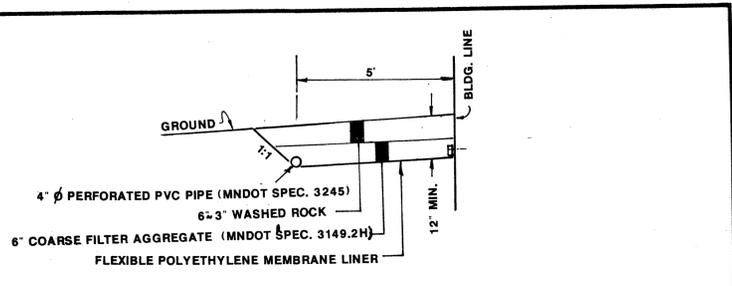
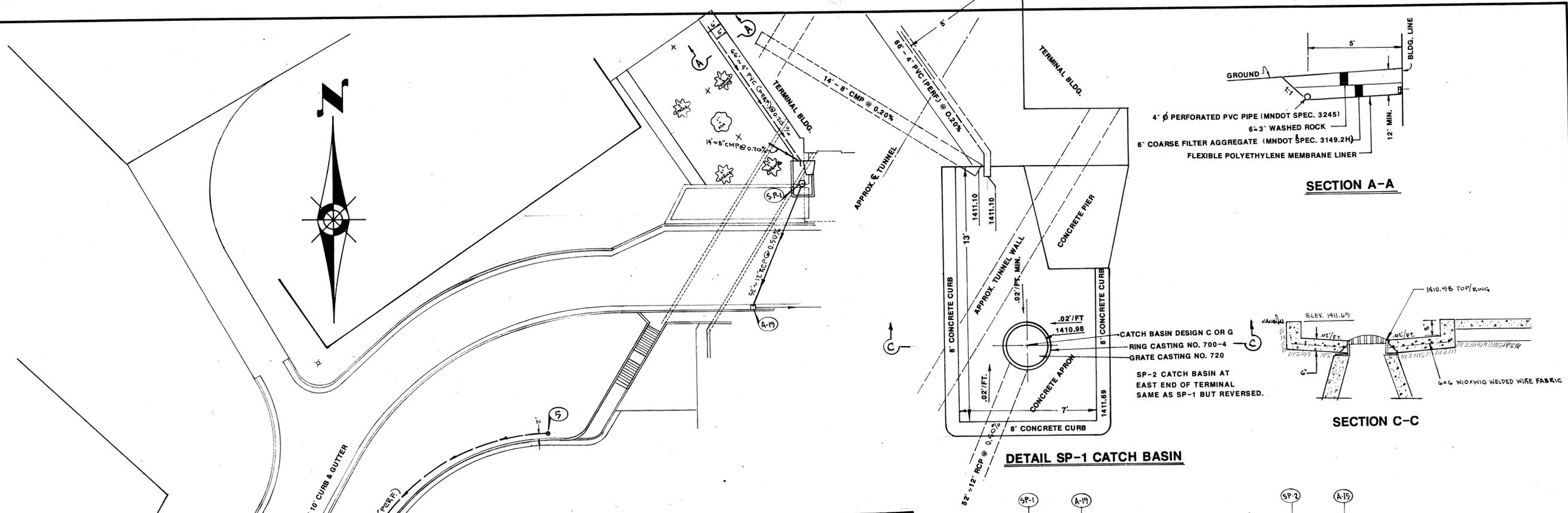
**JACK D. SALD**  
INC. ENGINEERS • SURVEYORS • PLANNERS  
15 East First Street  
Duluth, Minnesota 55802  
Phone: (218) 727-8798

**CONSTRUCTION PLAN & DETAILS**

DATE 5-23-86  
SCALE AS NOTED  
JOB NO. E-1075  
SHEET 2  
OF SHEETS

REVISED 140207

FOR REFERENCE ONLY



STORM DRAINAGE STRUCTURE & CASTING SCHEDULE				
STRUCT NO.	EXIST.	DESIGN	CASTINGS	REMARKS
SP-1		C or G (MOD.)	700-4 & 720	
SP-2		C or G (MOD.)	700-4 & 720	
A-14A	X		700-4 & 720	REMOVE 700-9 & 711 USE ON 3
3		A or F		USE CASTINGS FROM A-14A
4		A or F	700-9 & 711	
5		F&OR	R-7506D	
6		C or G	802A, 811 & 823A	
7		F&OR	R-7506D	
8		F&OR	R-7506D	
A-25	X			

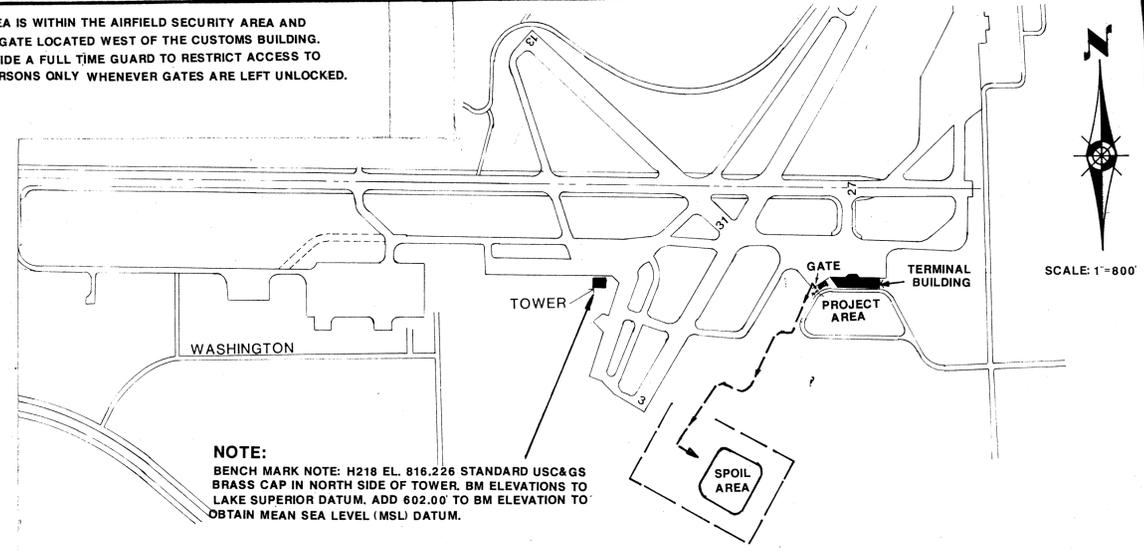
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
**John P. Bergson**  
 DATE 5-23-86 REG. NO. 07407

**JACK D. SALD**  
 INC. ENGINEERS • SURVEYORS • PLANNERS  
 15 East First Street, Duluth, Minnesota 55802  
 Phone: (218) 727-8798

**DULUTH INTERNATIONAL AIRPORT**  
 DULUTH, MINNESOTA  
 STORM DRAINAGE & DETAILS

DATE 5-23-86  
 SCALE AS NOTED  
 JOB NO. E-1075  
 SHEET 3 OF SHEETS

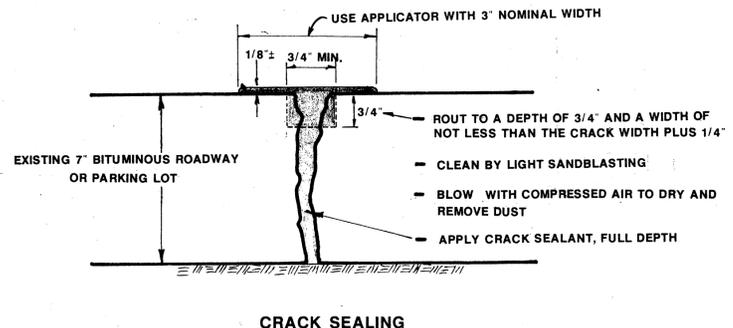
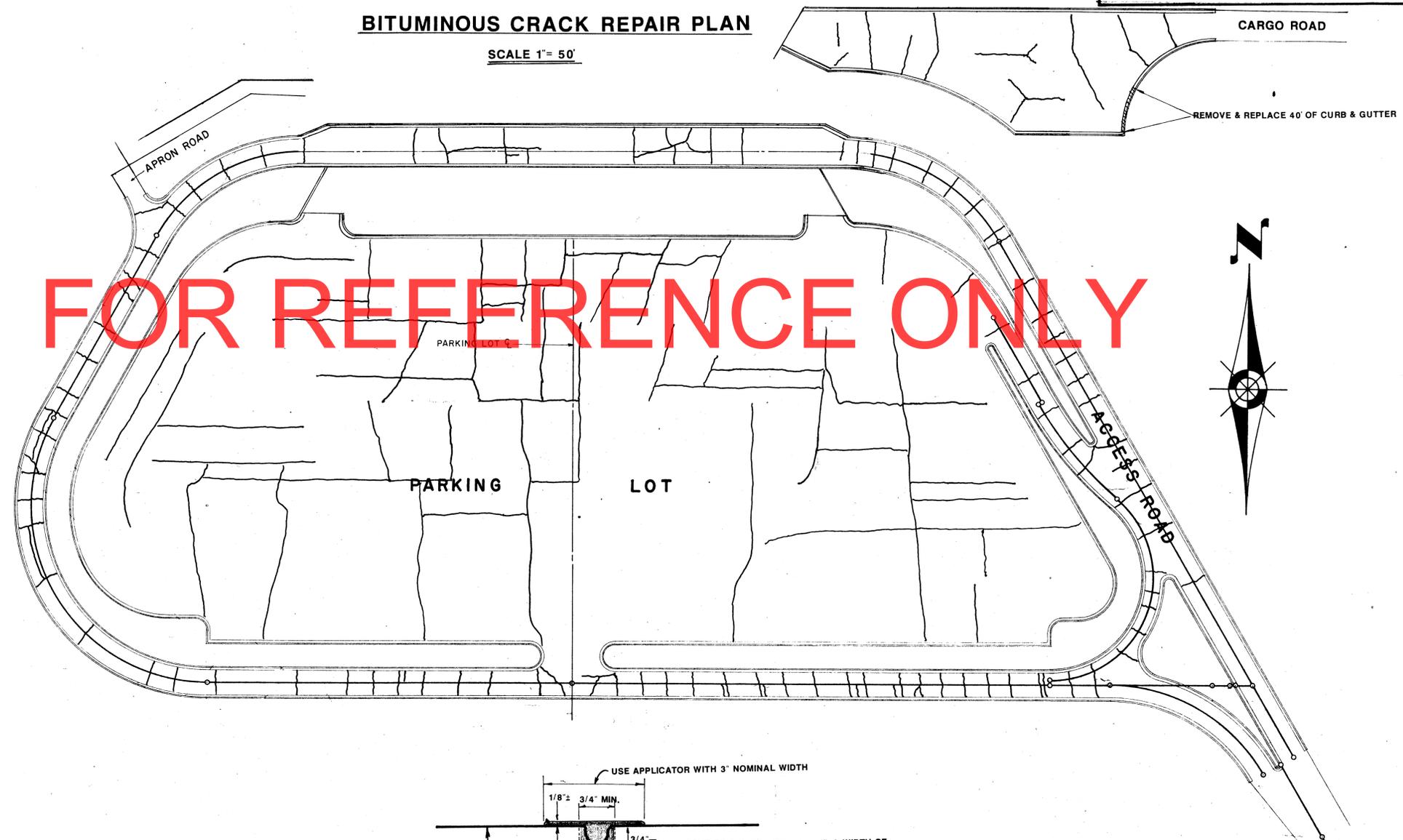
NOTE: THE DESIGNATED SPOIL AREA IS WITHIN THE AIRFIELD SECURITY AREA AND IS ACCESSIBLE VIA THE DRIVE GATE LOCATED WEST OF THE CUSTOMS BUILDING. THE CONTRACTOR SHALL PROVIDE A FULL TIME GUARD TO RESTRICT ACCESS TO AUTHORIZED VEHICLES AND PERSONS ONLY WHENEVER GATES ARE LEFT UNLOCKED.



NOTE:  
BENCH MARK NOTE: H218 EL. 816.226 STANDARD USC&GS BRASS CAP IN NORTH SIDE OF TOWER. BM ELEVATIONS TO LAKE SUPERIOR DATUM. ADD 602.00' TO BM ELEVATION TO OBTAIN MEAN SEA LEVEL (MSL) DATUM.

**BITUMINOUS CRACK REPAIR PLAN**

SCALE 1"= 50'



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. <i>John P. Bergson</i> DATE 5-23-86 REG. NO. 7407	<b>JACK D. SALD INC.</b> DULUTH INTERNATIONAL AIRPORT DULUTH, MINNESOTA ENGINEERS • SURVEYORS • PLANNERS 15 East First Street • Duluth, Minnesota 55802 • Phone: (218) 727-8796	DATE 5-23-86
		SCALE AS NOTED
BITUMINOUS CRACK REPAIR		SHEET 4 OF SHEETS

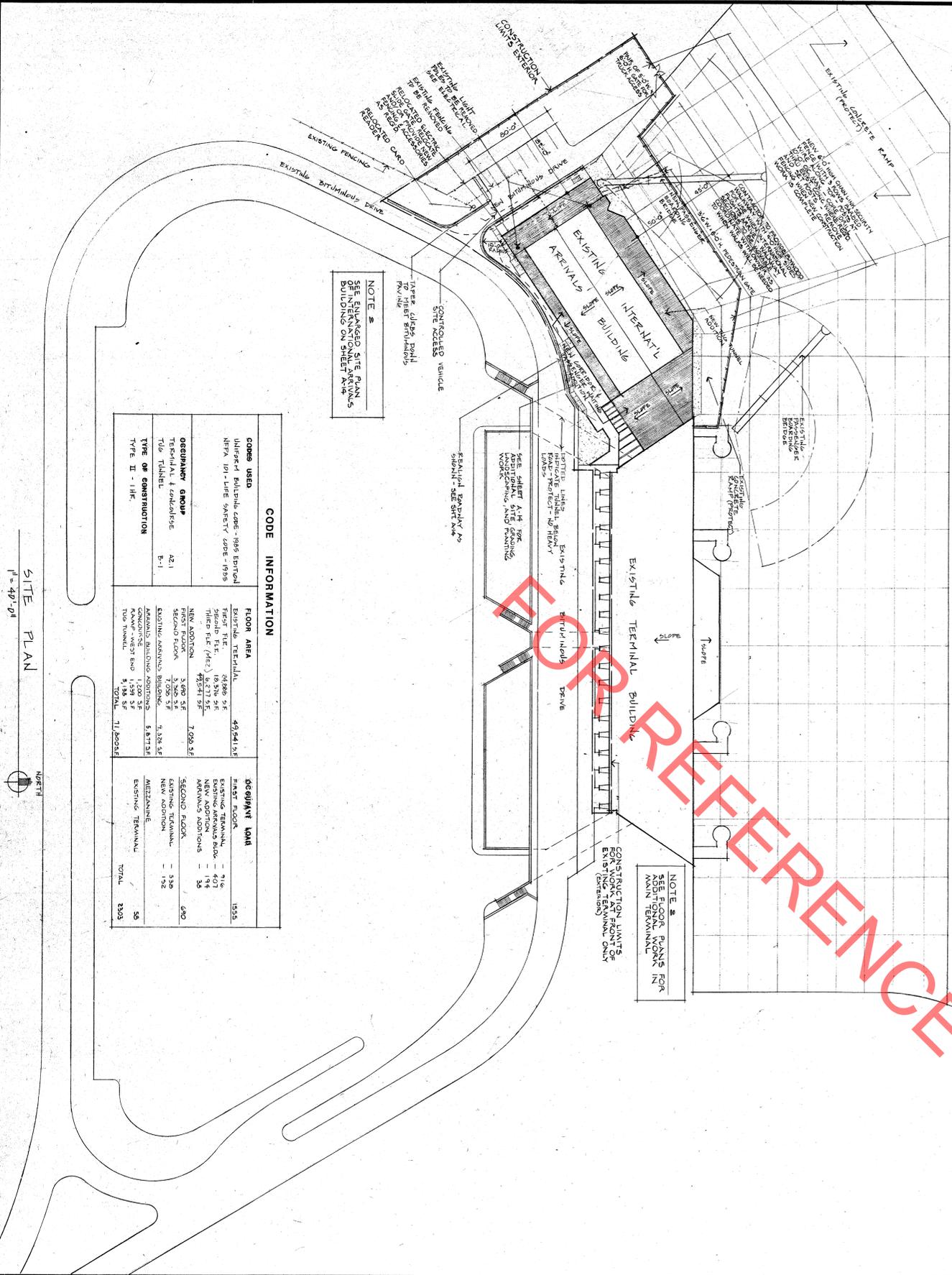
# DULUTH AIRPORT TERMINAL AND INTERNATIONAL BUILDING

## ADDITION AND RENOVATION — PHASE II

### DULUTH INTERNATIONAL AIRPORT — DULUTH MINNESOTA

AIP-03-27-0024-09

STATE AGREEMENT NO 65673  
STATE PROJECT NO 6901-78



CODE INFORMATION		
<b>CODES USED</b>	UNIMPROVED BUILDING CODE - 1995 EDITION MPCA 101 - LINE SAFETY CODE - 1998	
<b>OCCUPANCY GROUP</b>	TERMINAL & CONCOURSE TYPE II - 111F	
<b>FLOOR AREA</b>	EXISTING TERMINAL FIRST FLOOR 28,880 SF THIRD FLOOR (MEZ) 9,217 SF NEW ADDITION FIRST FLOOR 47,541 SF SECOND FLOOR 3,960 SF EXISTING ARENAL'S BUILDING CONCOURSE RAMP - WEST END 1,539 SF TOTAL 11,809 SF	<b>DEVELOPMENT LOAD</b> EXISTING TERMINAL FIRST FLOOR - 716 NEW ADDITION ARENAL'S ADDITIONS - 34 SECOND FLOOR - 690 EXISTING TERMINAL NEW ADDITION - 152 MEZZANINE EXISTING TERMINAL TOTAL 2353

SITE PLAN  
1" = 40'-0"

ARCHITECTURAL		MECHANICAL	
A-1	TITLE SHEET - SITE PLAN - INDEX - SYMBOLS - ABBREVIATIONS	M-1	BASEMENT FLOOR PLAN OF MAIN TERMINAL BUILDING
A-2	1/2" FIRST FLOOR PLAN OF ARENAL'S BUILDING	M-2	MECHANICAL PLAN OF MAIN TERMINAL BUILDING
A-3	1/2" SECOND & MEZZANINE FLOOR PLANS - ROOM FINISH SCHEDULE	M-3	FLOOR PLAN OF MEZZANINE FLOOR ADDITION
A-4	1/2" ELEVATION & EXTERIOR ELEVATIONS - INTERIOR ARENAL'S BUILDING	M-4	MECHANICAL PLAN OF MEZZANINE FLOOR ADDITION
A-5	MECHANICAL PLAN OF ARENAL'S BUILDING	M-5	MECHANICAL PLAN OF MEZZANINE FLOOR ADDITION
A-6	BUILDING SECTIONS - DETAILS - EXTERIOR EXHAUST AIRPORT	M-6	FLOOR PLAN OF TWO STORY ADDITION - VENTILATION
A-7	1/2" FLOOR PLANS OF TWO STORY ADDITION - DETAILS	M-7	MECHANICAL PLAN OF TWO STORY ADDITION
A-8	1/2" FLOOR PLANS OF TWO STORY ADDITION - DETAILS	M-8	MECHANICAL PLAN OF TWO STORY ADDITION
A-9	1/2" FLOOR PLANS OF TWO STORY ADDITION - DETAILS	M-9	MECHANICAL PLAN OF TWO STORY ADDITION
A-10	1/2" FLOOR PLANS OF TWO STORY ADDITION - DETAILS	M-10	MECHANICAL PLAN OF TWO STORY ADDITION
A-11	1/2" FLOOR PLANS OF TWO STORY ADDITION - DETAILS	M-11	MECHANICAL PLAN OF TWO STORY ADDITION
A-12	1/2" FLOOR PLANS OF TWO STORY ADDITION - DETAILS	M-12	MECHANICAL PLAN OF TWO STORY ADDITION
A-13	1/2" FLOOR PLANS OF TWO STORY ADDITION - DETAILS	M-13	MECHANICAL PLAN OF TWO STORY ADDITION
A-14	1/2" FLOOR PLANS OF TWO STORY ADDITION - DETAILS	M-14	MECHANICAL PLAN OF TWO STORY ADDITION
A-15	1/2" FLOOR PLANS OF TWO STORY ADDITION - DETAILS	M-15	MECHANICAL PLAN OF TWO STORY ADDITION
A-16	1/2" FLOOR PLANS OF TWO STORY ADDITION - DETAILS	M-16	MECHANICAL PLAN OF TWO STORY ADDITION
A-17	1/2" FLOOR PLANS OF TWO STORY ADDITION - DETAILS	M-17	MECHANICAL PLAN OF TWO STORY ADDITION
STRUCTURAL		ELECTRICAL	
S-1	FOUNDATION & FIRST FLOOR, PARTIAL RAMP FRAMING	E-1	FIRST FLOOR PLAN OF ARENAL'S BUILDING
S-2	TWO STORY & CONCOURSE ROOF FRAMING, SECOND FLOOR FRAMING	E-2	FIRST FLOOR PLAN OF MEZZANINE FLOOR ADDITION
S-3	ROOF FRAMING	E-3	FLOOR PLANS OF TWO STORY ADDITION - LIGHTING
S-4	STRUCTURAL DETAILS	E-4	FLOOR PLANS OF TWO STORY ADDITION - POWER
S-5	CONNECTION OF ARENAL'S BUILDING TO MAIN TERMINAL	E-5	FIRST FLOOR OF MAIN TERMINAL BUILDING
S-6	COLUMN SCHEDULES, GENERAL NOTES	E-6	BASEMENT FLOOR OF MAIN TERMINAL BUILDING
S-7	ESCALATOR FRAMING PLAN		

NOTES: 1. CONTRACTOR TO OBTAIN NORMAL CONSTRUCTION PERMITS FROM DULUTH AIRPORT AUTHORITY. 2. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL BUILDING CODE AND THE NATIONAL ELECTRICAL CODE. 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. 4. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES. 5. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND STRUCTURES. 6. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES. 7. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND STRUCTURES. 8. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES. 9. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND STRUCTURES. 10. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES.

DATE: 7/2/89

DESIGNED BY: [Signature]

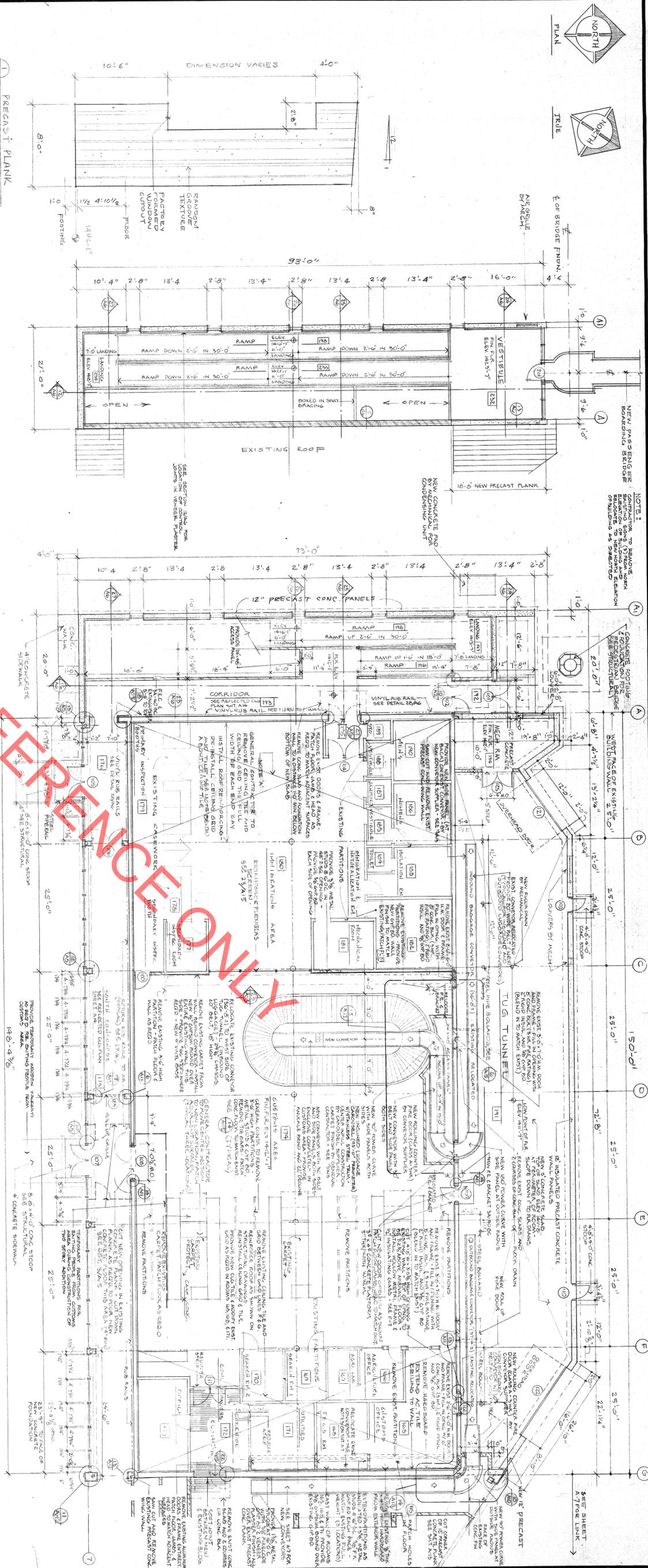
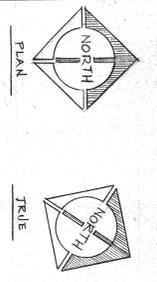
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Architects  
25 N 12TH AVENUE EAST - DULUTH, MINNESOTA 55805



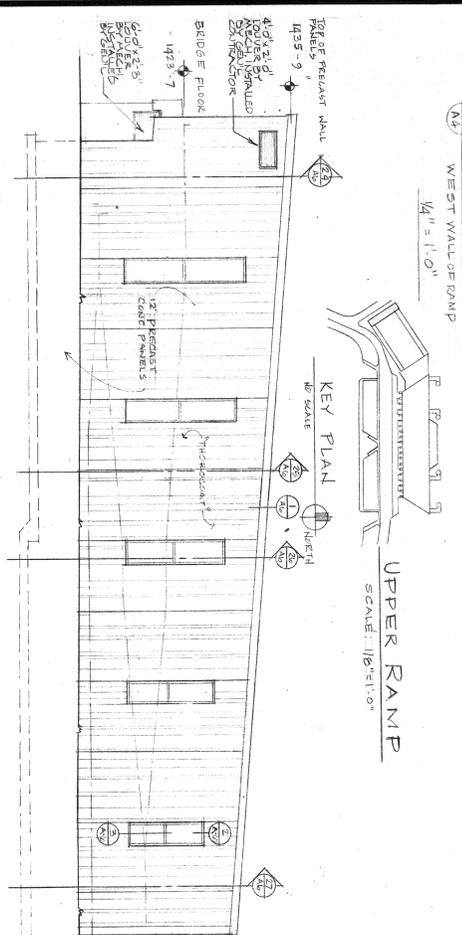






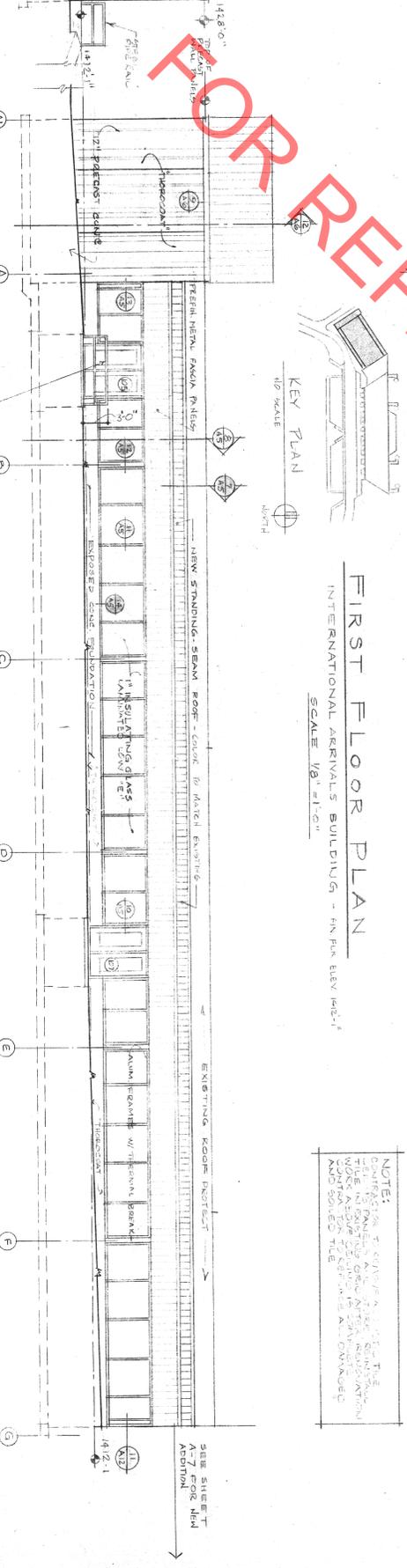
FIRST FLOOR PLAN  
INTERNATIONAL ARRIVALS BUILDING - FINISH ELEV. 102'-1"

NOTES:  
1. ALL DIMENSIONS ARE TO FACE UNLESS NOTED OTHERWISE.  
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE BUILDING CODES AND SPECIFICATIONS.  
3. ALL MATERIALS SHALL BE APPROVED BY THE ARCHITECT.  
4. ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED TIME FRAME.  
5. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.



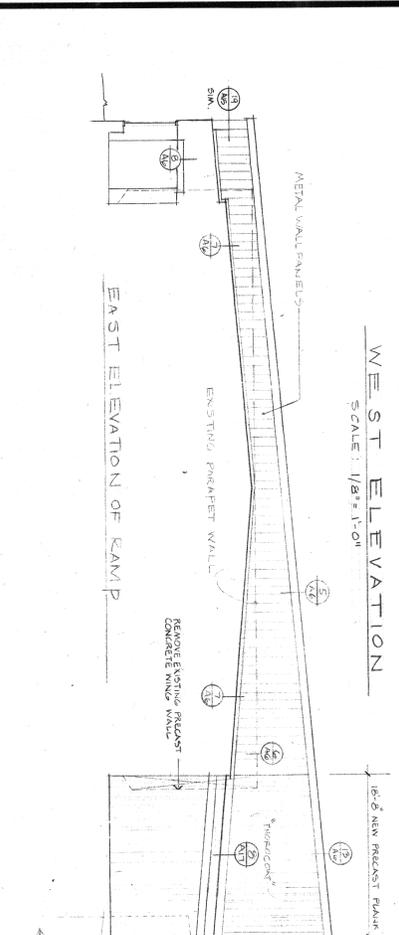
WEST ELEVATION  
SCALE: 1/8" = 1'-0"

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

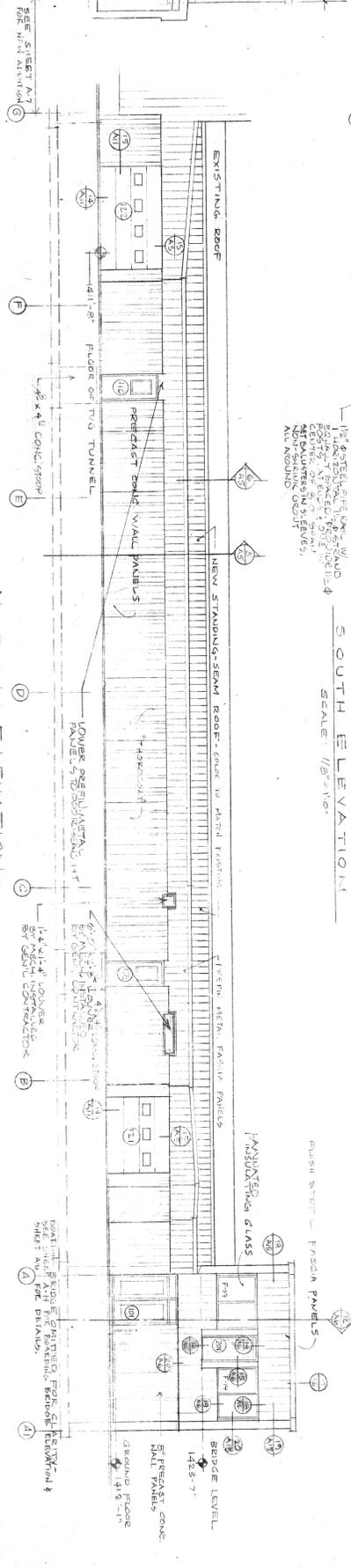


WEST ELEVATION  
SCALE: 1/8" = 1'-0"

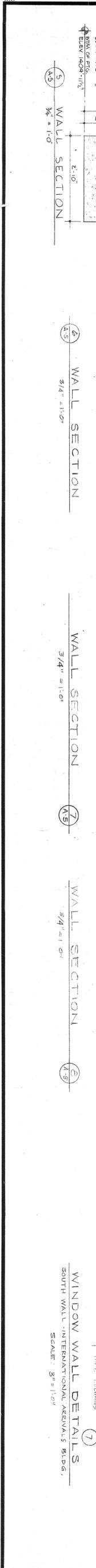
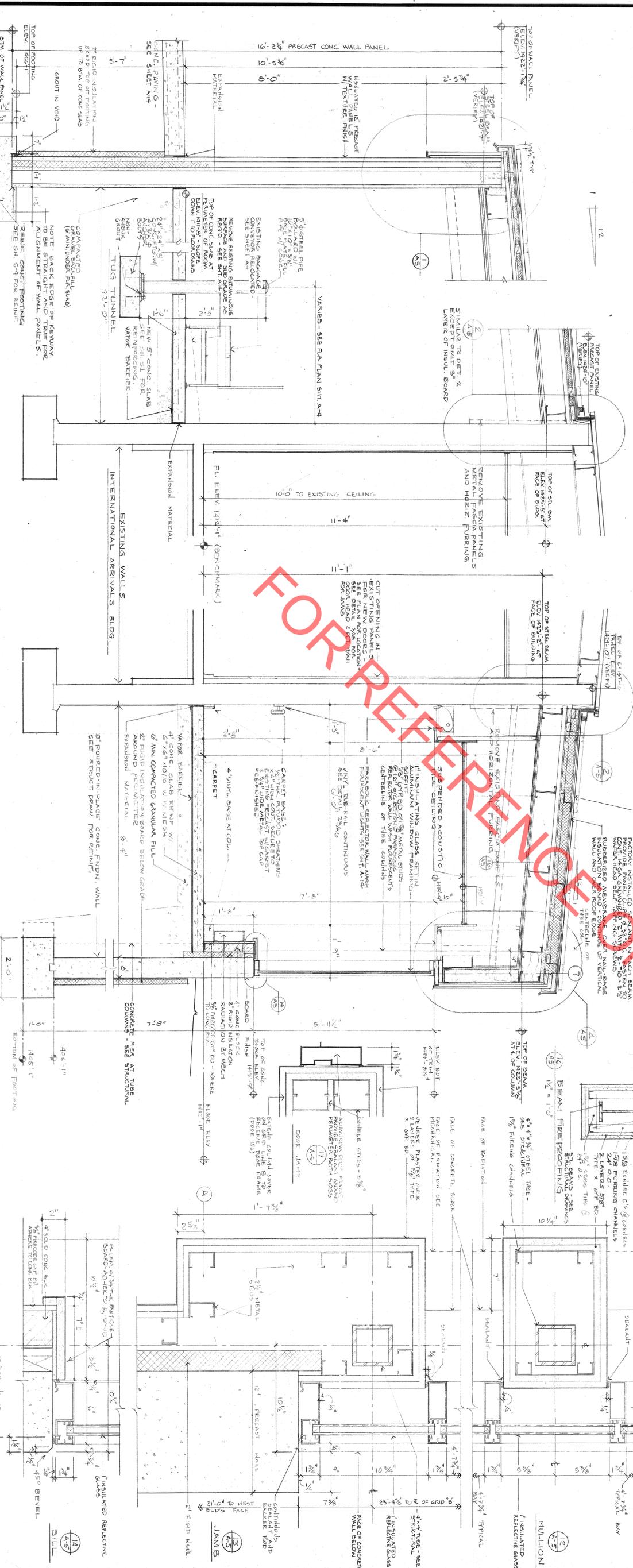
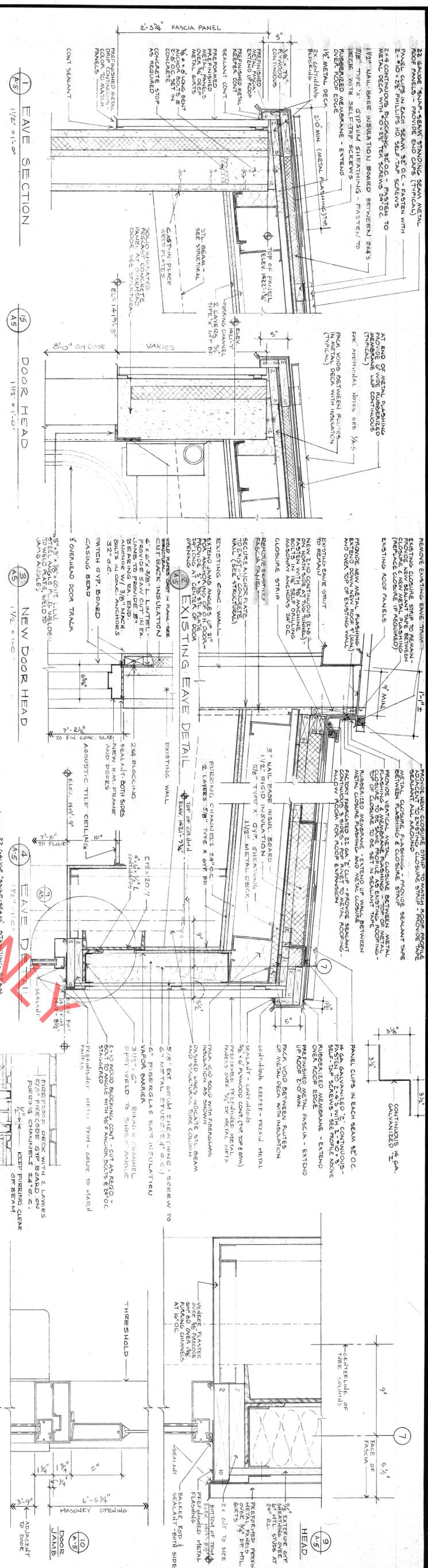
UPPER RAMP  
SCALE: 1/8" = 1'-0"

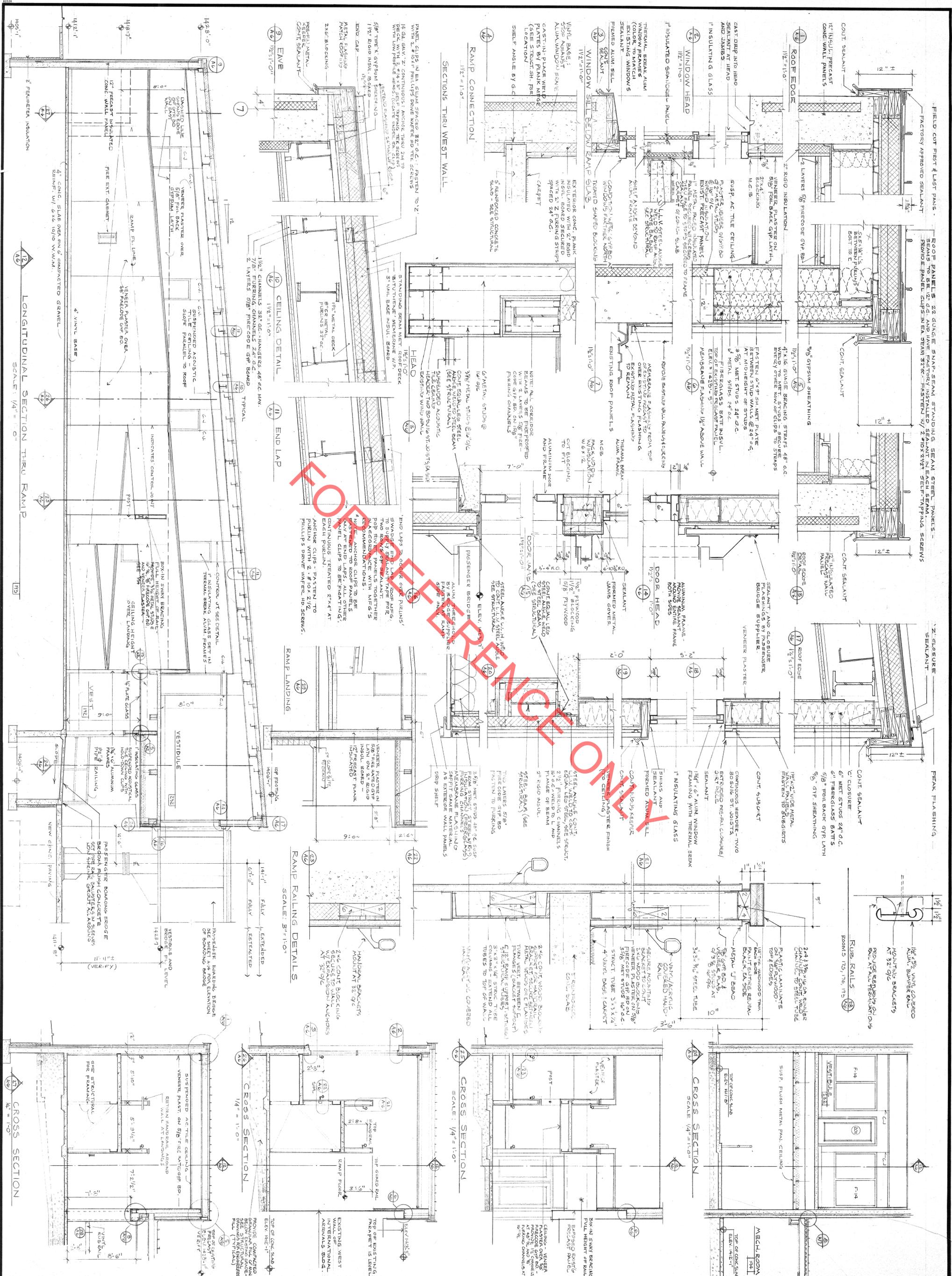


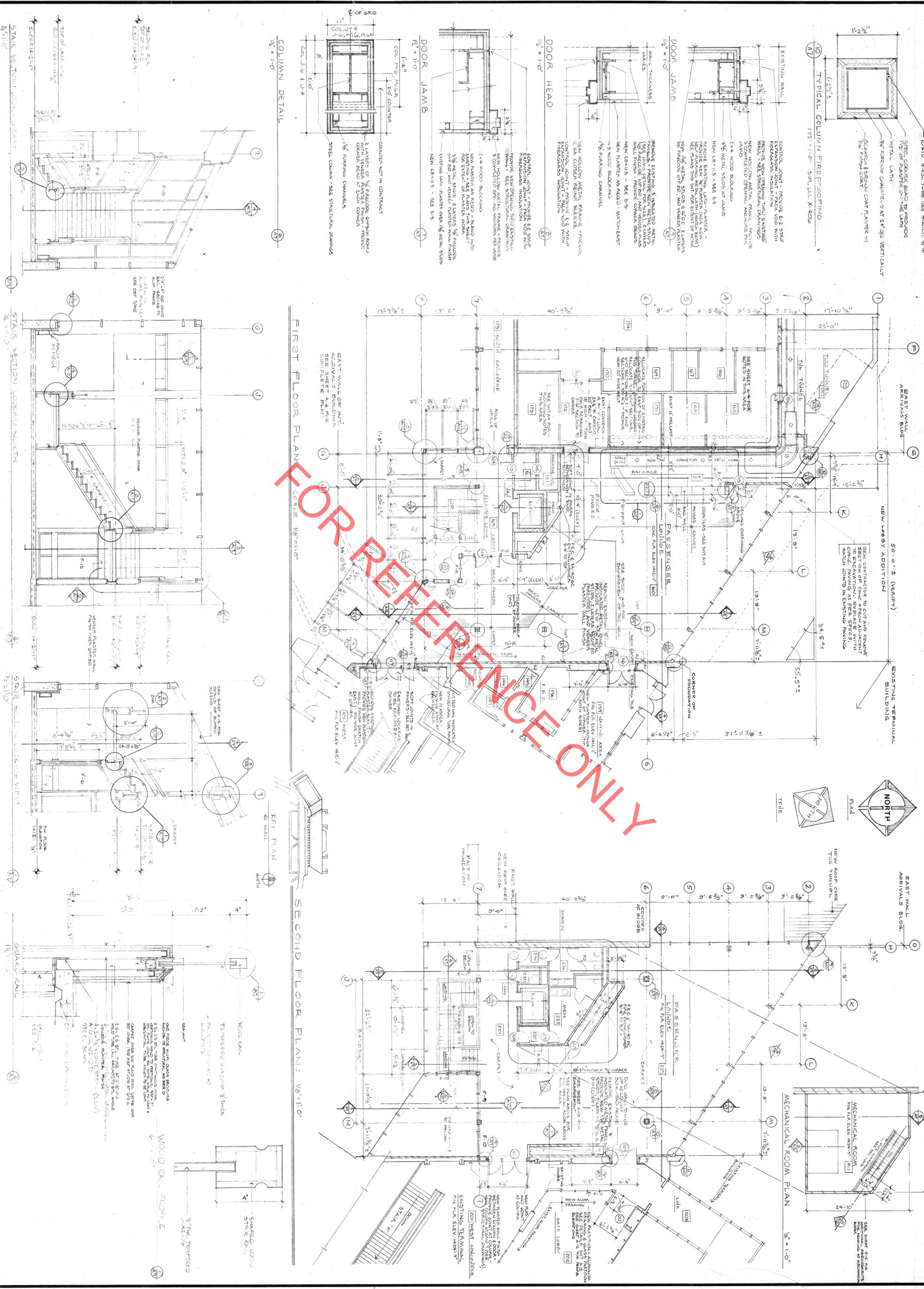
EAST ELEVATION OF RAMP



NORTH ELEVATION







FOR REVIEW ONLY

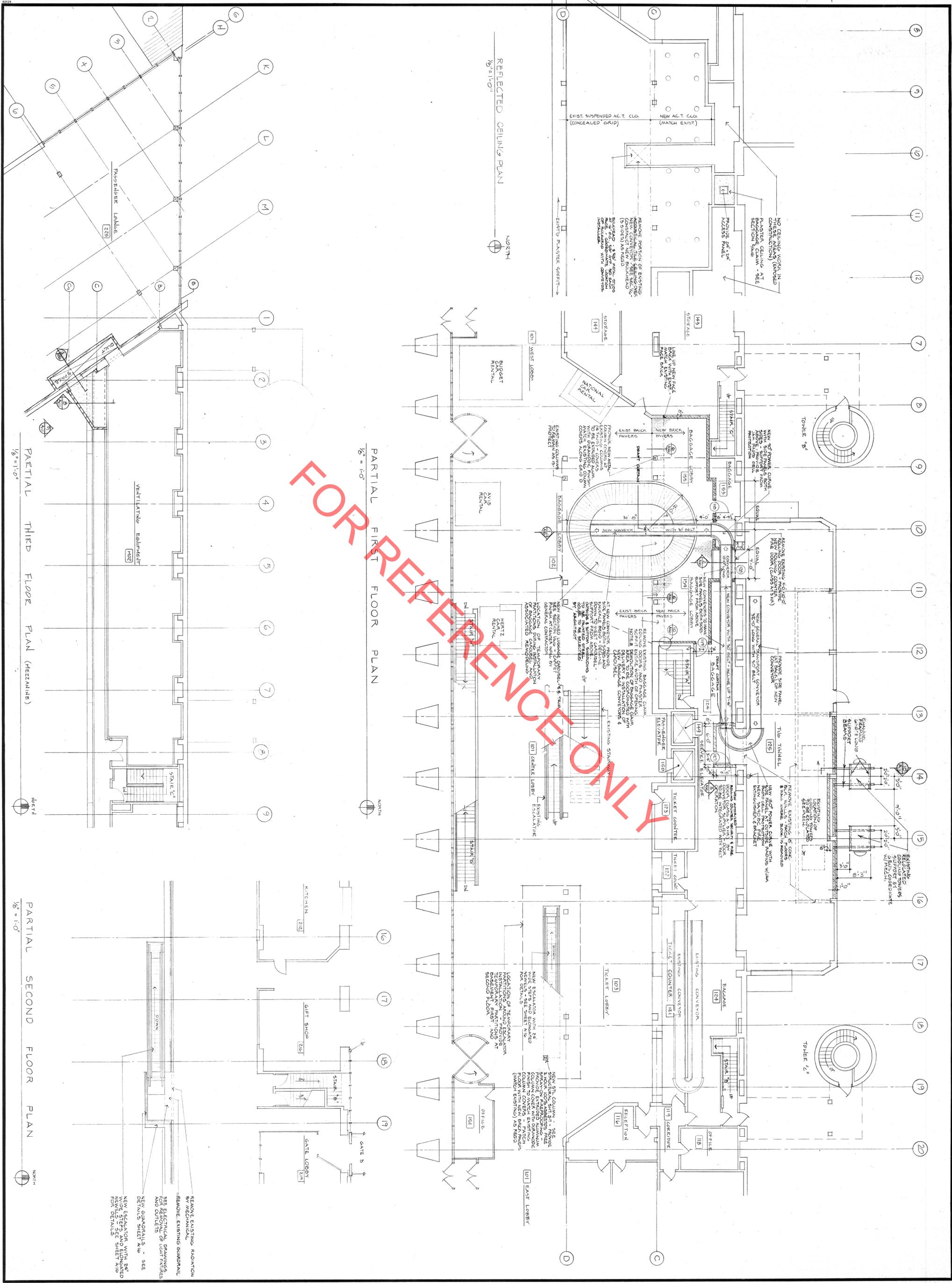
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**Russell E. Rutz**  
 2/2/89 REG. NO. 15860

**SHEET**  
**A-7**  
 OF 17

RENOVATION AND ADDITIONS TO MAIN TERMINAL AND INTERNATIONAL ARRIVALS BUILDINGS  
 DULUTH INTERNATIONAL  
 DULUTH, MINNESOTA

1<sup>ST</sup> FLOOR PLANS OF TWO STORY ADDITION - DETAILS  
 DRAWN BY  
 CHECKED BY

**Architects IV**  
 25 N. 12TH AVENUE EAST - DULUTH, MINNESOTA 55805 - 218-728-5124



FOR REFERENCE ONLY

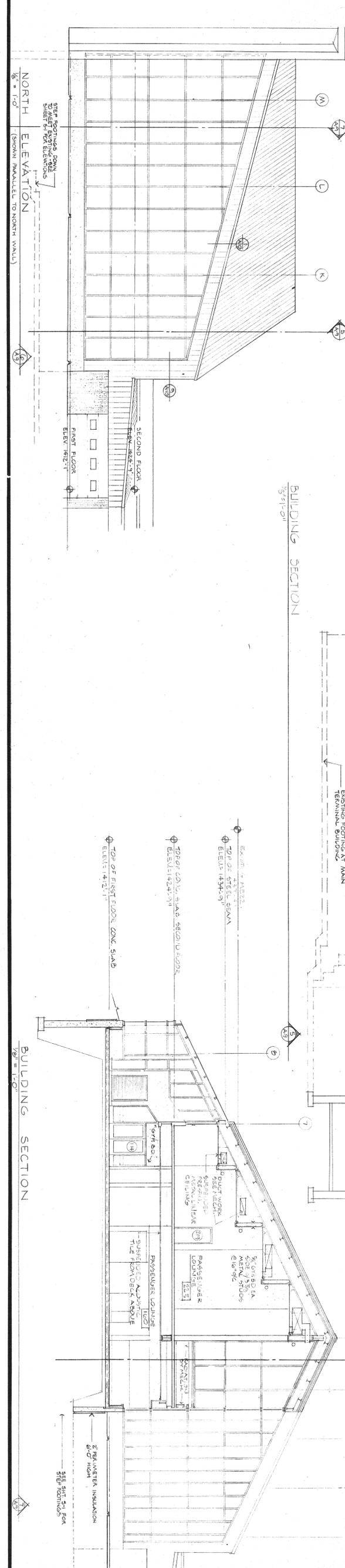
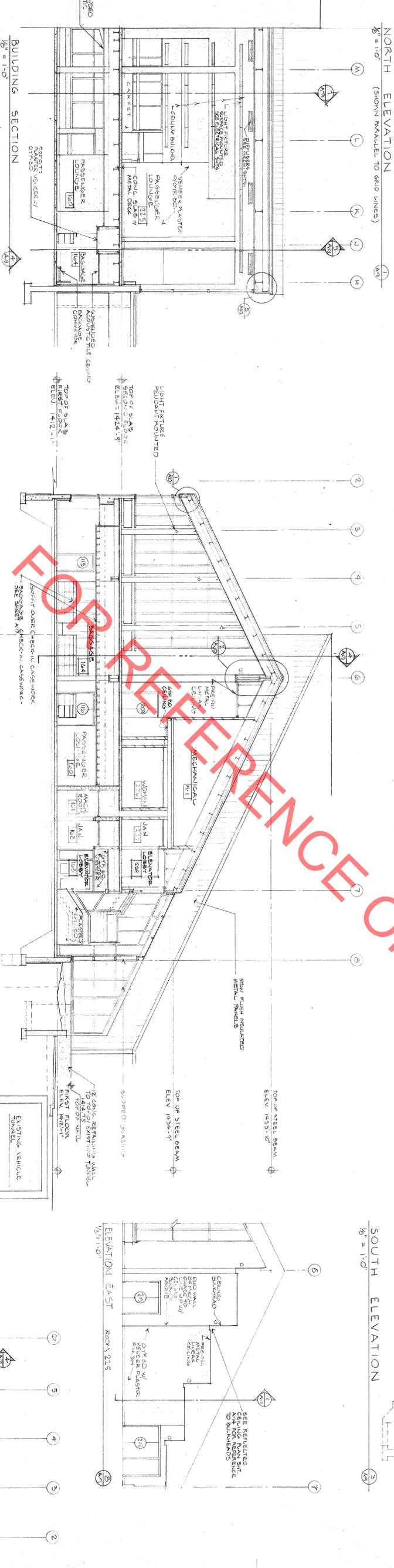
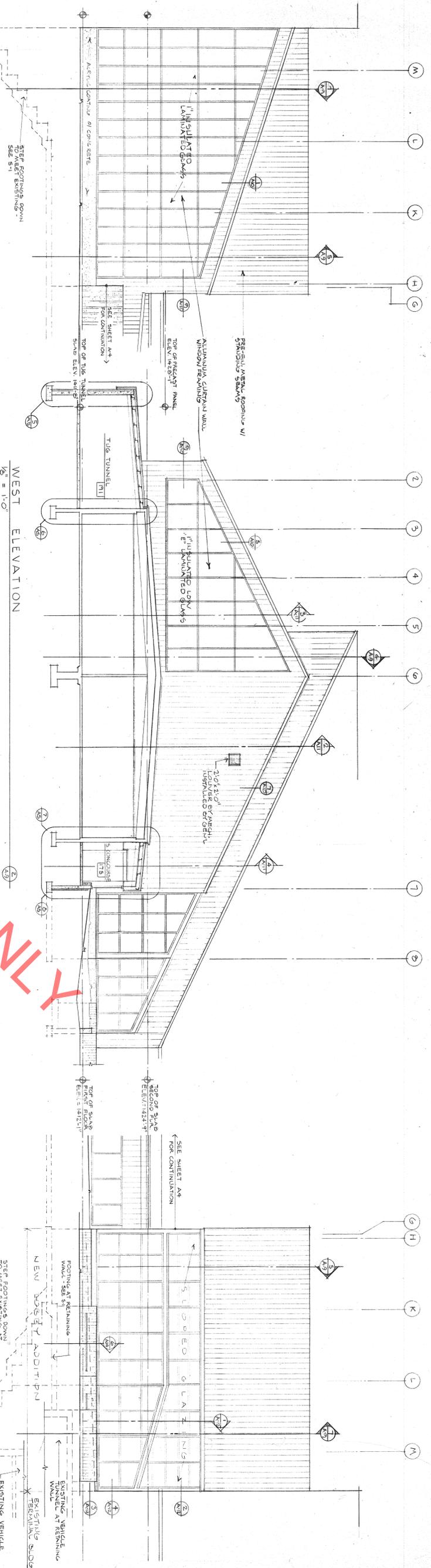
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*Edward E. O'Leary*  
 2/2/89 REG. NO. 15860

**SHEET**  
**A-8**  
 OF 17

RENOVATION AND ADDITIONS TO  
 MAIN TERMINAL AND INTERNATIONAL ARENALS BUILDINGS  
 AIRPORT  
 DULUTH  
 INTERNATIONAL  
 DULUTH,  
 MINNESOTA

1/8" PARTIAL FIRST FLOOR PLAN OF MAIN TERMINAL BUILDING  
 DRAWN BY  
 CHECKED BY

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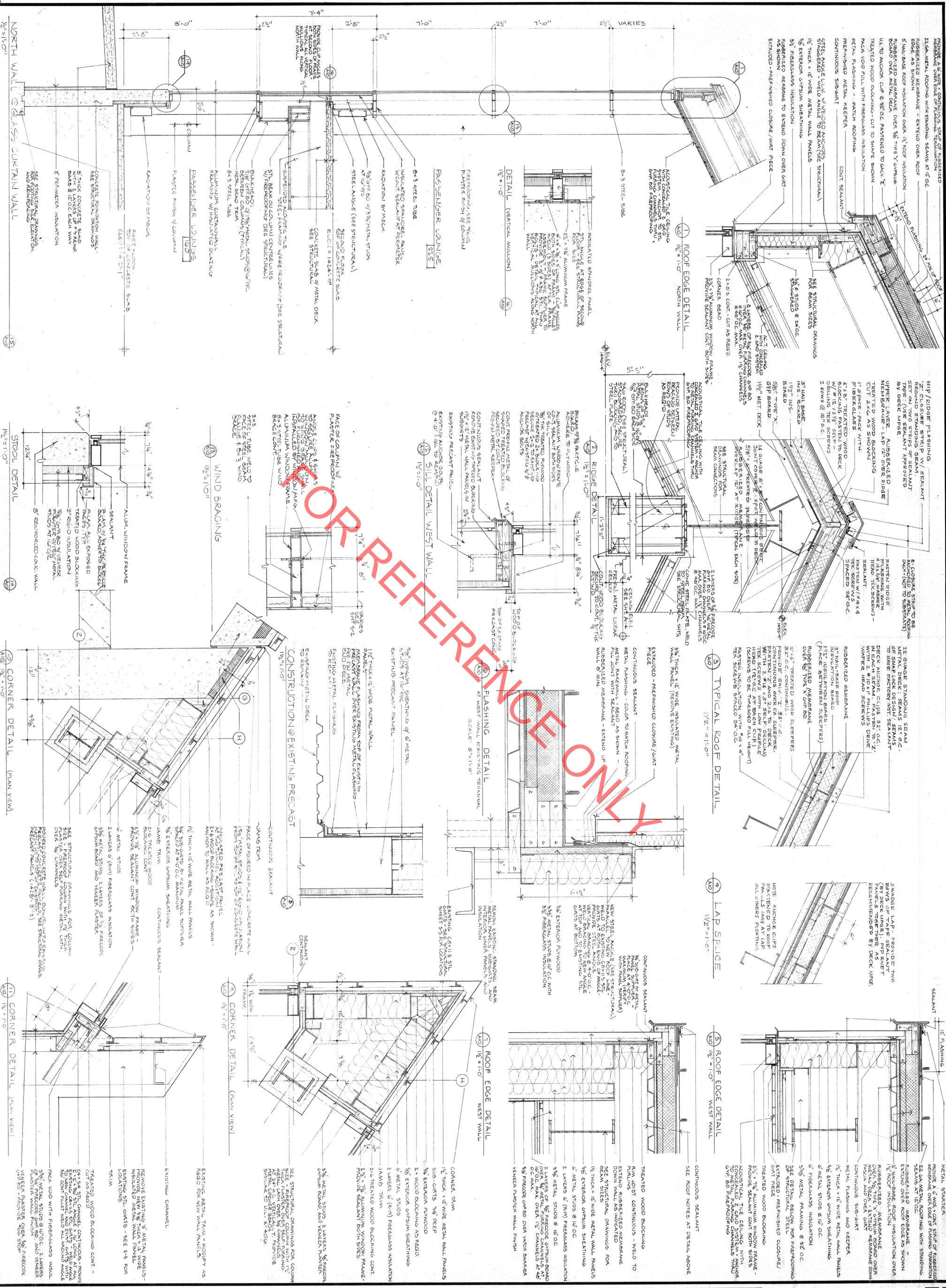
FOR REFERENCE ONLY

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**Russell E. Rutz**  
 2/2/89 REG. NO. 15360

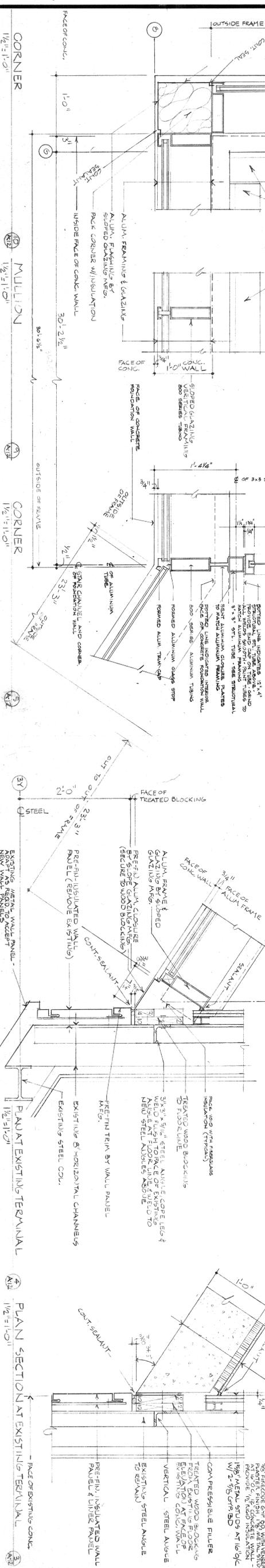
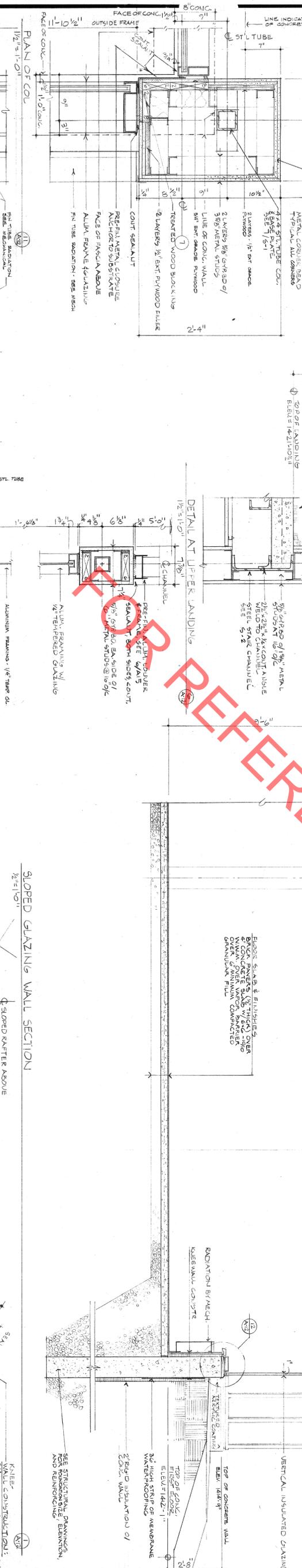
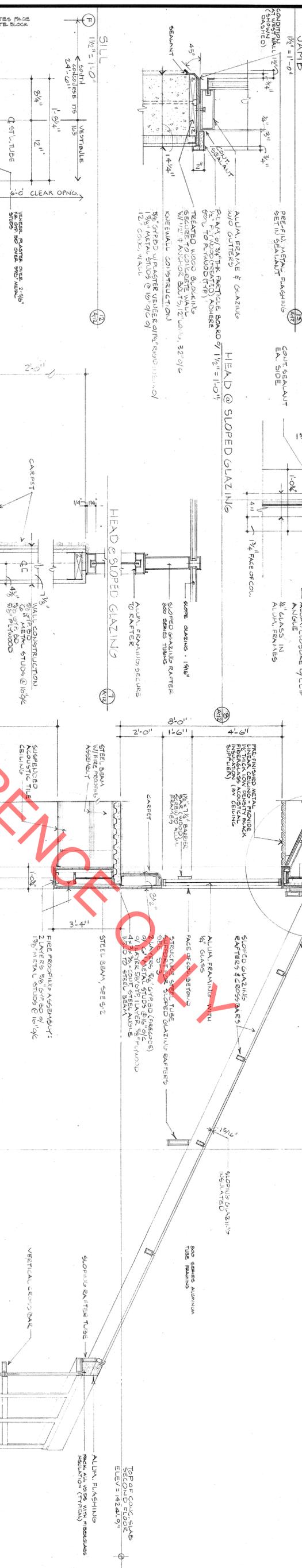
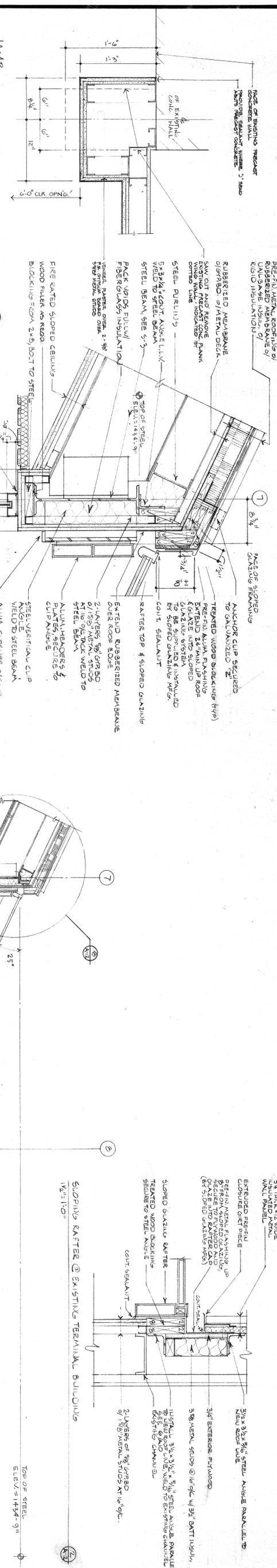
**RENOVATION AND ADDITIONS TO MAIN TERMINAL AND INTERNATIONAL AREALS BUILDING DULUTH INTERNATIONAL**  
 JOB NO. 7650-A  
 DATE FEB. 2, 89  
 REVISIONS

**EXTERIOR ELEVATIONS - BUILDING SECTIONS**  
 DRAWN BY  
 CHECKED BY

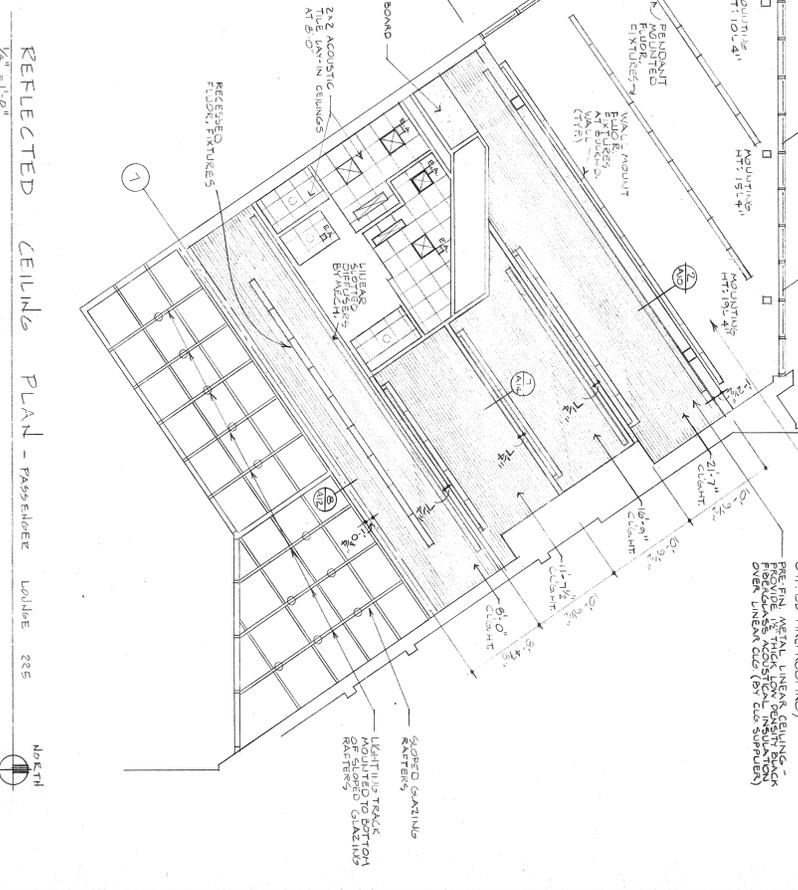
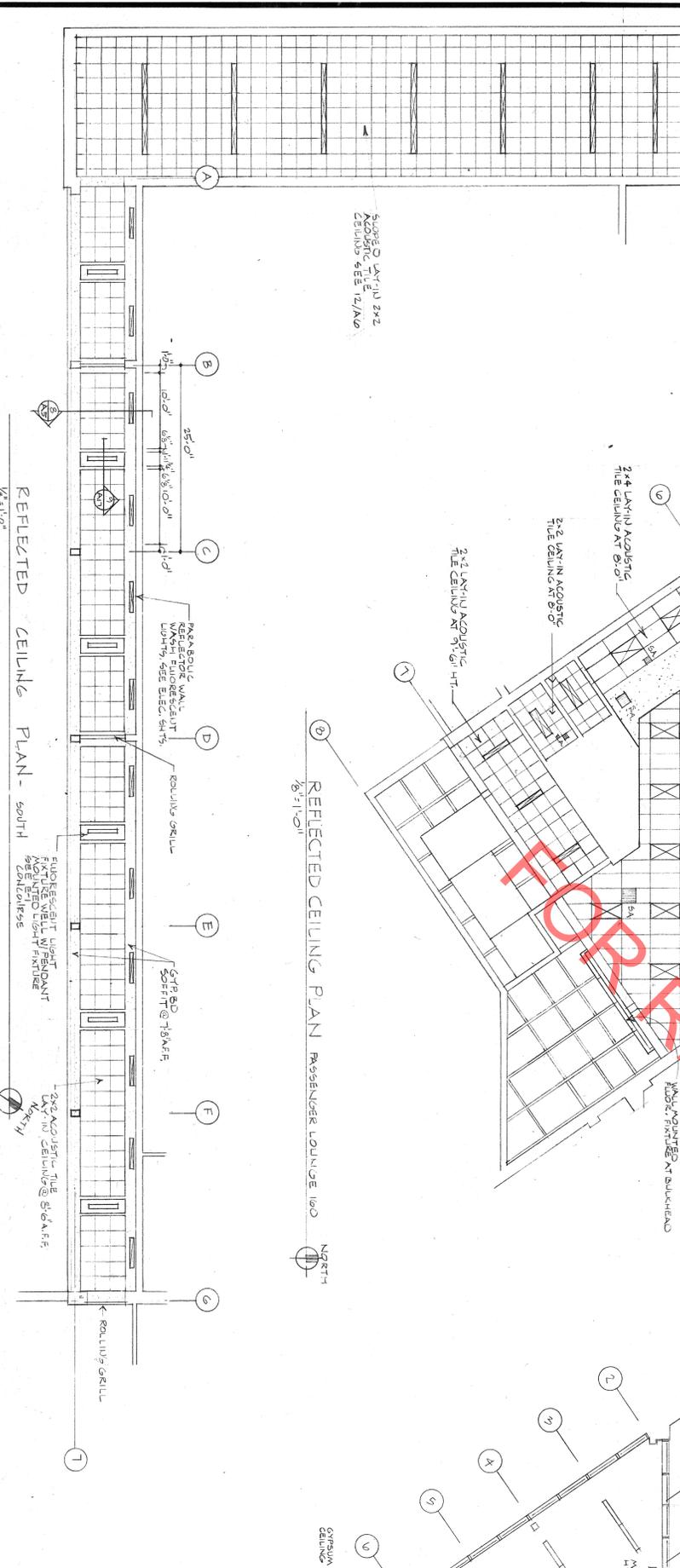
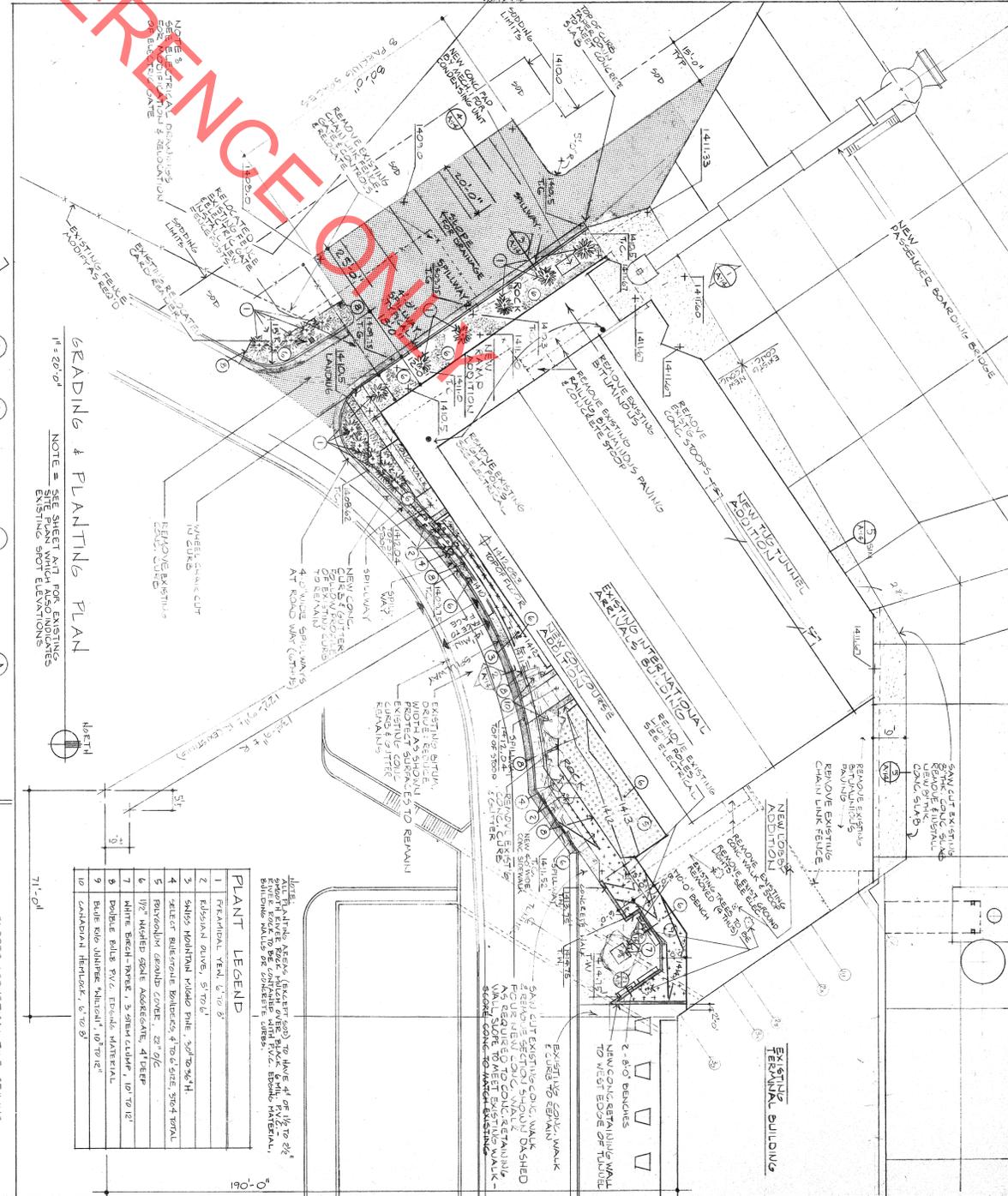
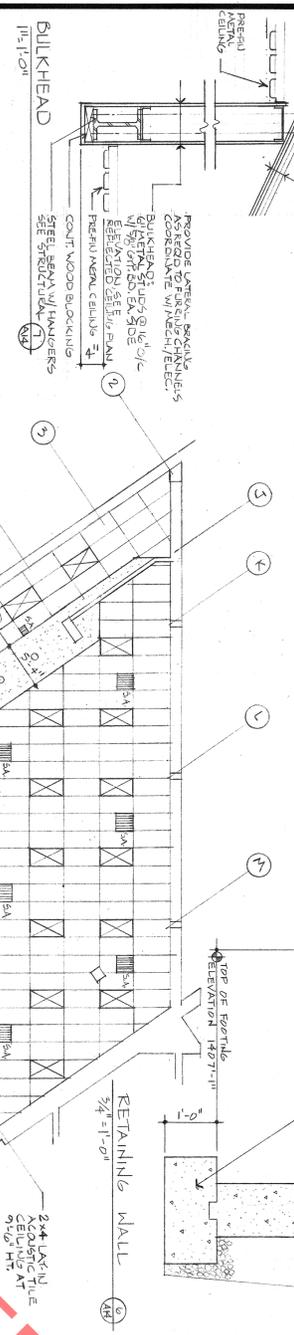
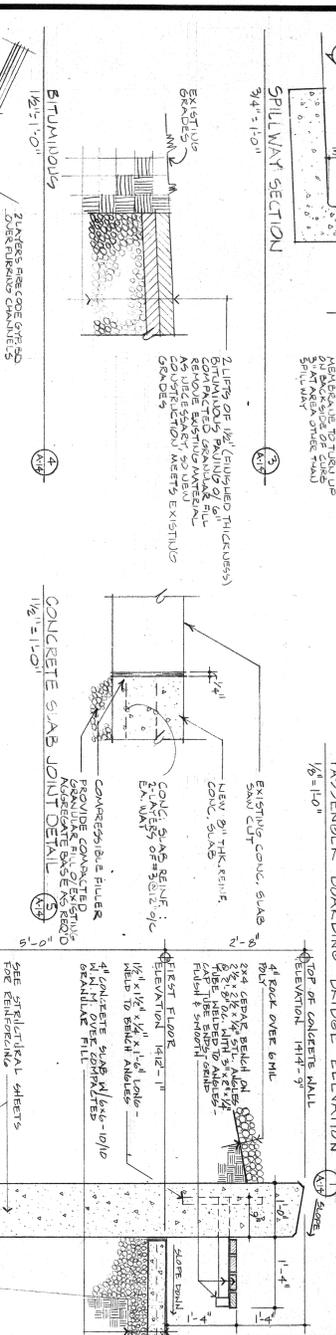
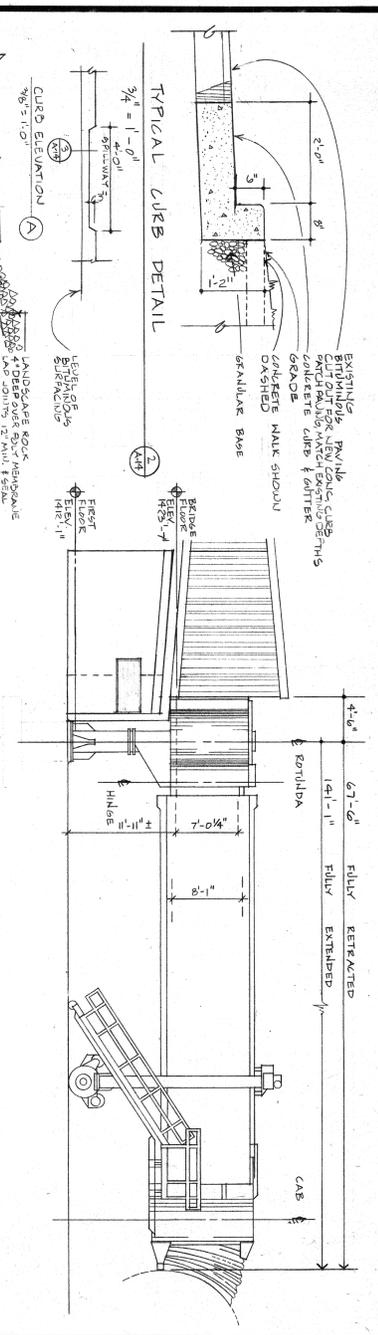
**Architects IV**  
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*Russell E. Borch*  
 2/2/87 REG. NO. 15460

SHEET  
**A-14**  
 OF 17

JOB NO.  
 2500-A  
 DATE  
 FEB 21 87  
 REVISIONS

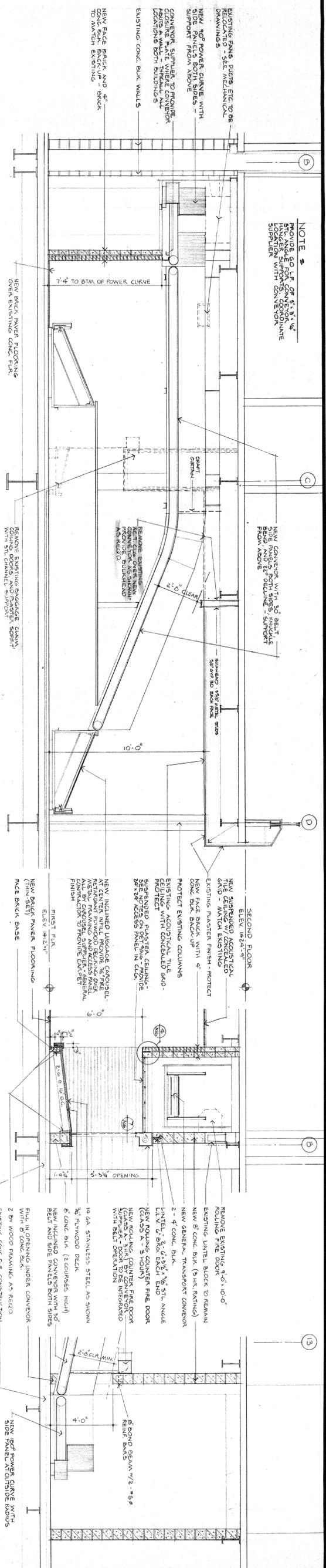
RENOVATION AND ADDITIONS TO  
 MAUI TERMINAL AND INTERNATIONAL ARENALS BUILDING  
 DULUTH INTERNATIONAL AIRPORT  
 DULUTH, MINNESOTA

ARENALS BUILDING SITE PLAN - REFLECTED CEILING  
 PLANS - DETAILS  
 DRAWN BY  
 CHECKED BY

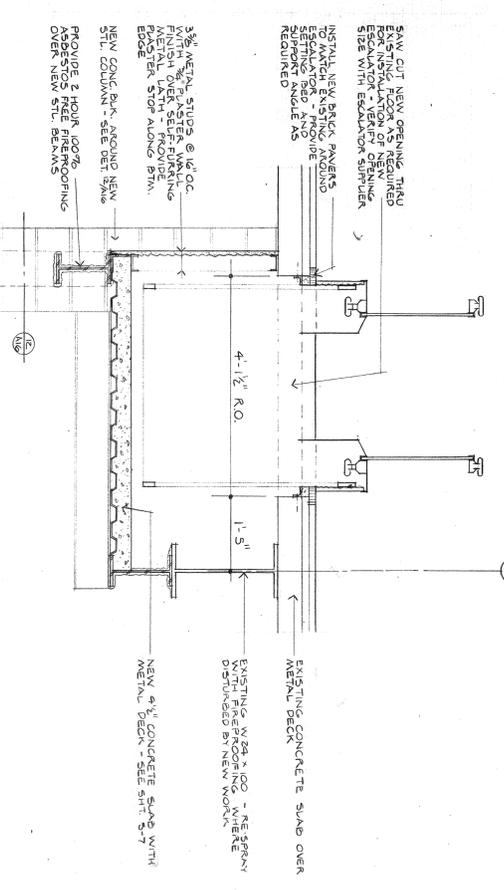
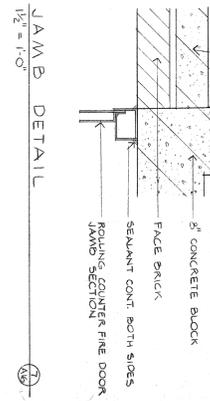
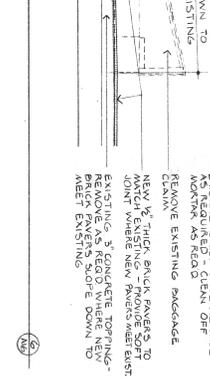
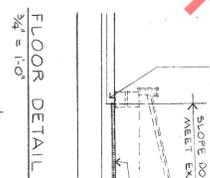
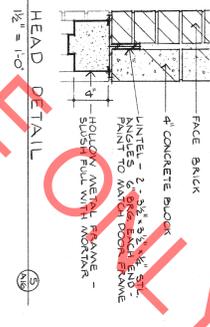
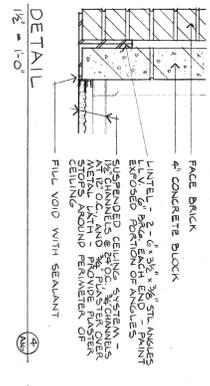
**Architects IV**  
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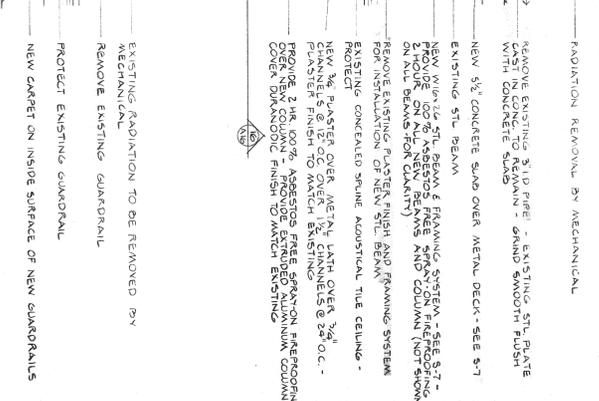
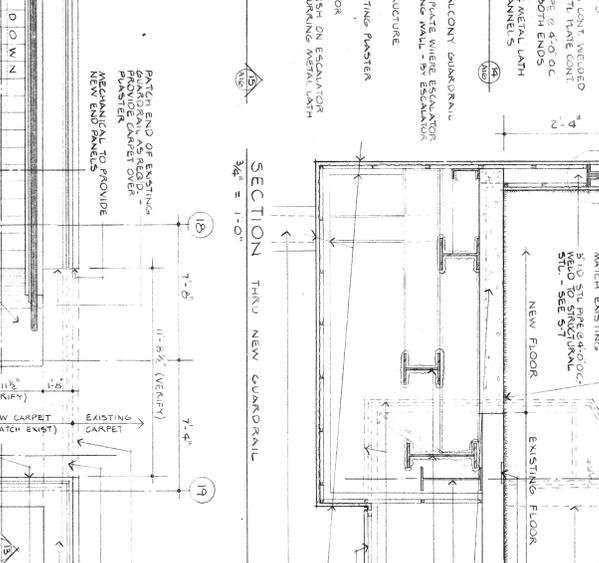
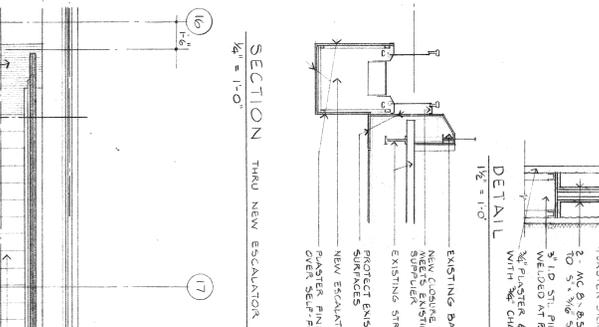
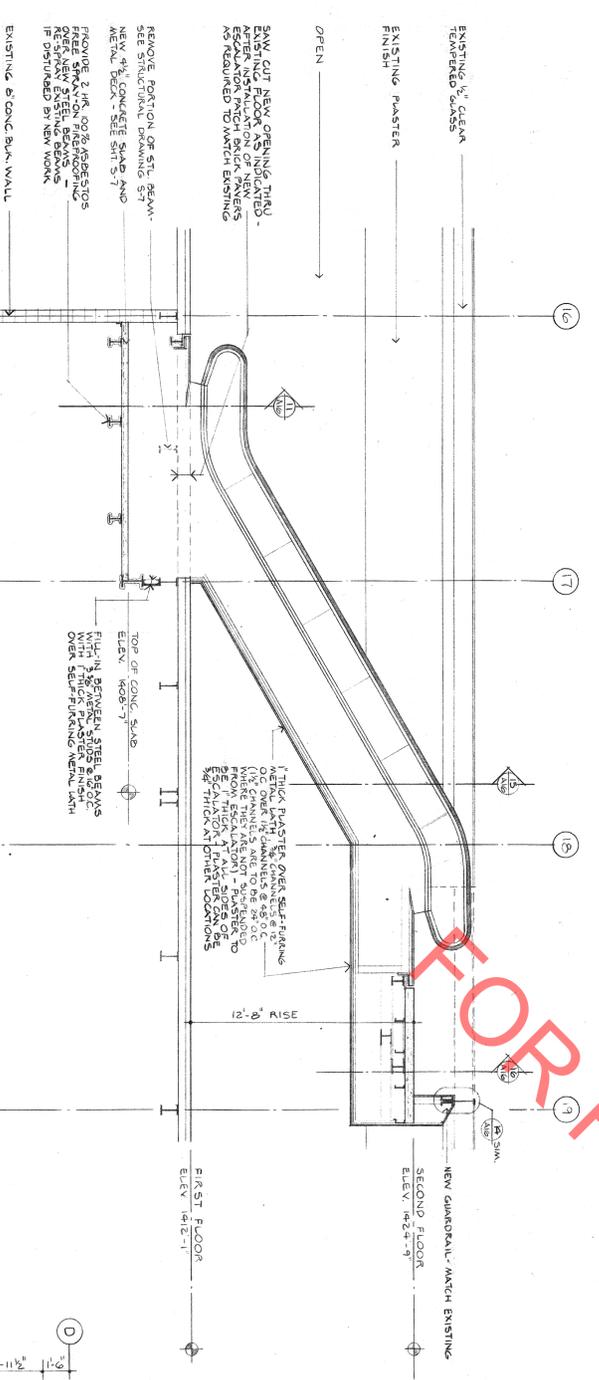
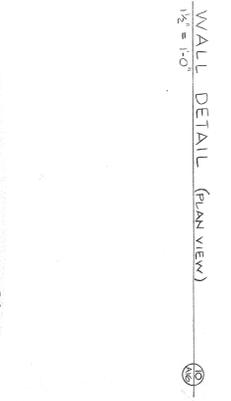
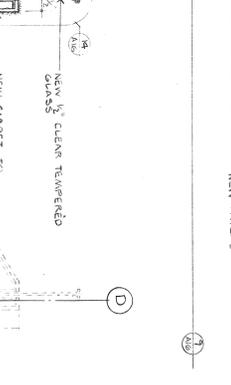
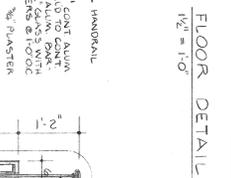
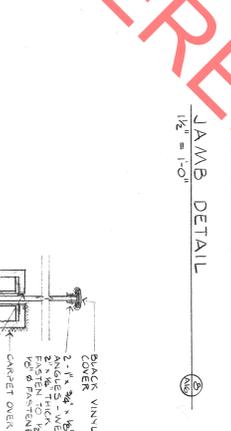
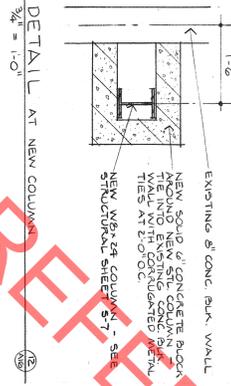
NOTE 1  
 PROVIDE 30' L.F. OF 5" x 8" x 1/2" STEEL ANGLE FROM CONCRETE UNIT LOCATION WITH CONVEYOR TO SUPPORT



SECTION AT INCLINED LUGGAGE CAROUSEL AND POWER CURVE  
 1/8" = 1'-0"



SECTION THRU NEW ESCALATOR  
 3/4\"/>



NOTE 2  
 ALL DIMENSIONS RELATING TO NEW ESCALATOR TO BE VERIFIED BY ESCALATOR SUPPLIER

ESCALATOR SECTION  
 1/4" = 1'-0"

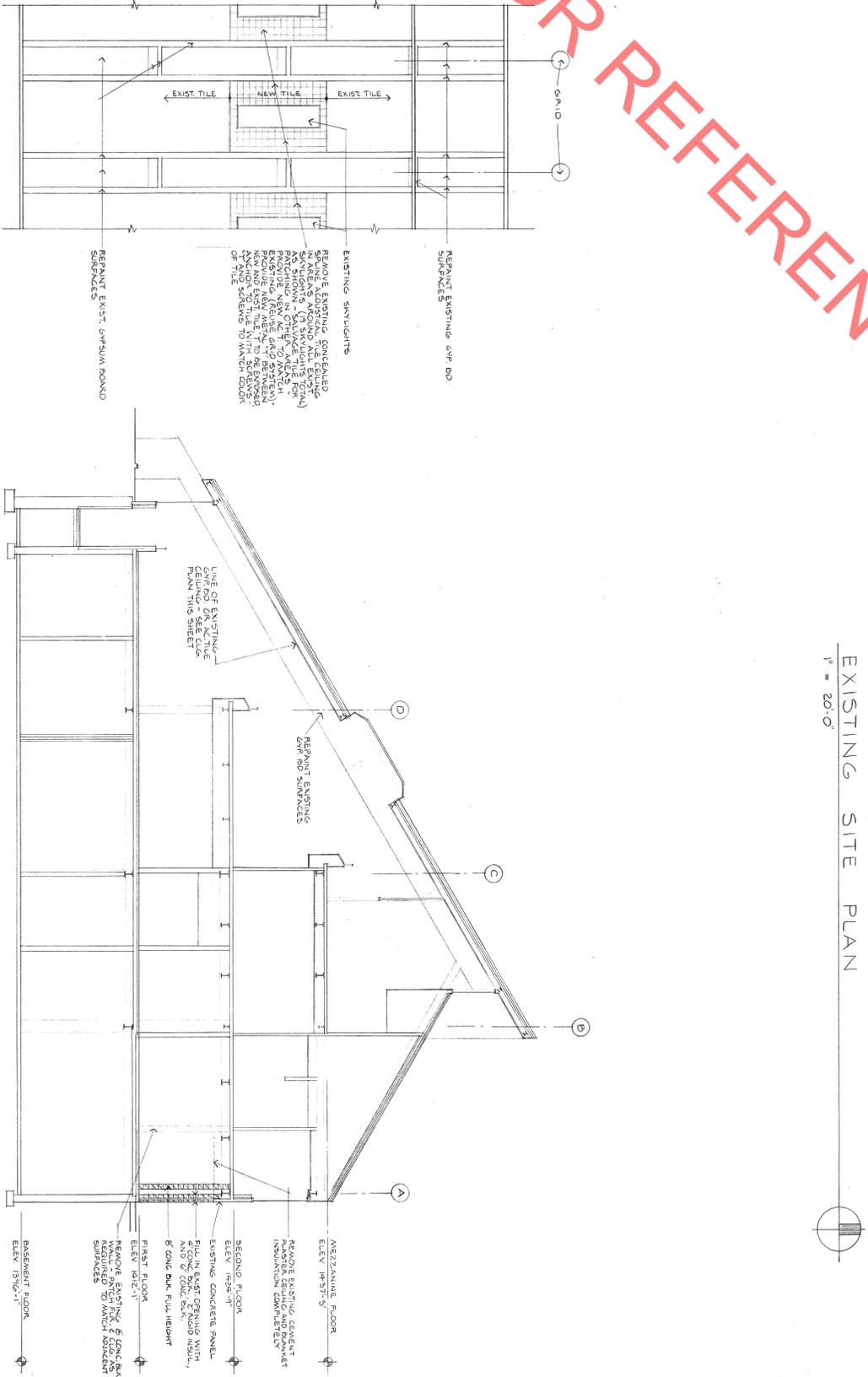
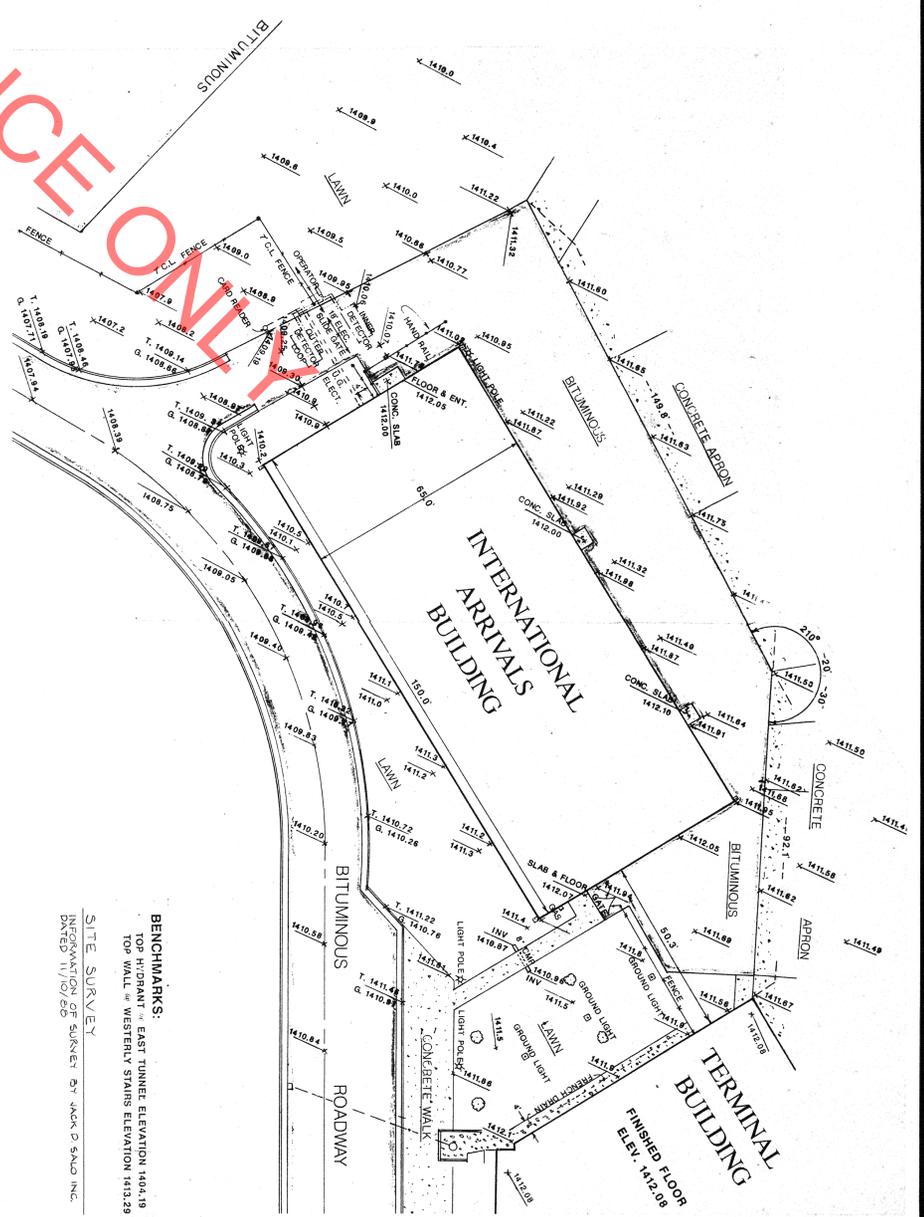
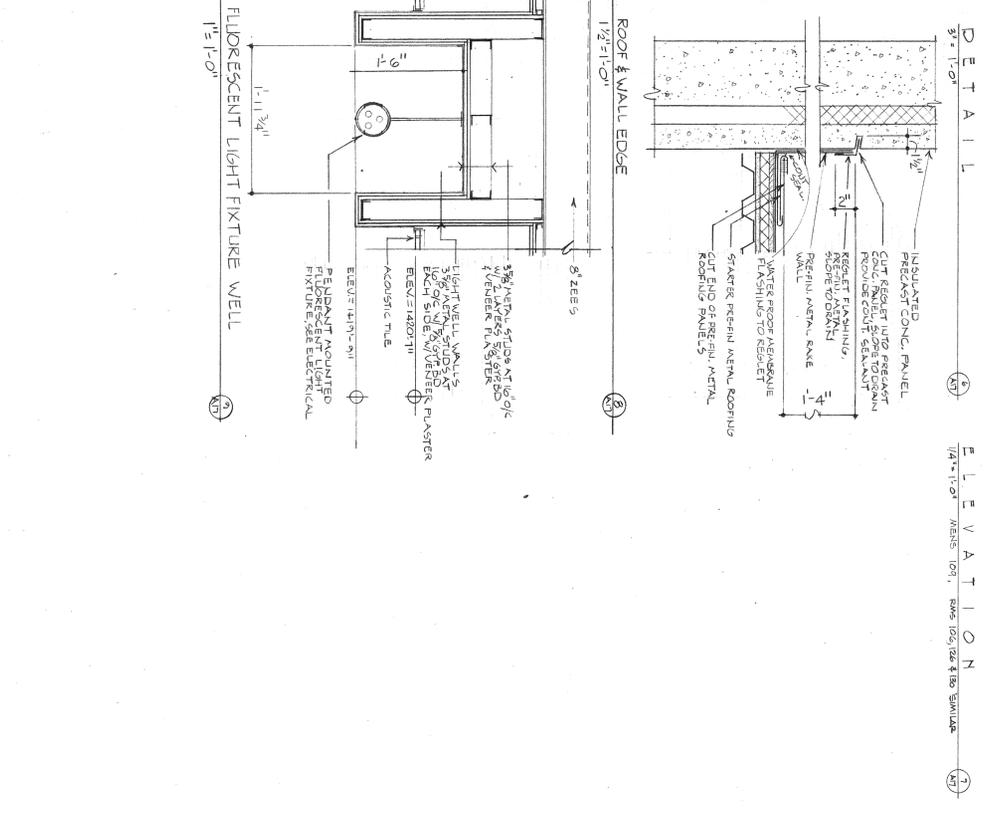
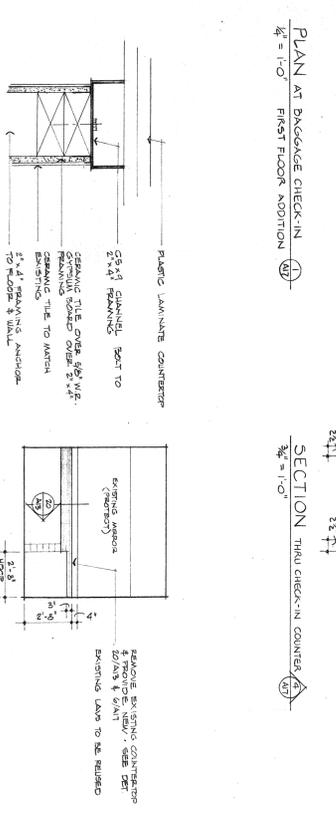
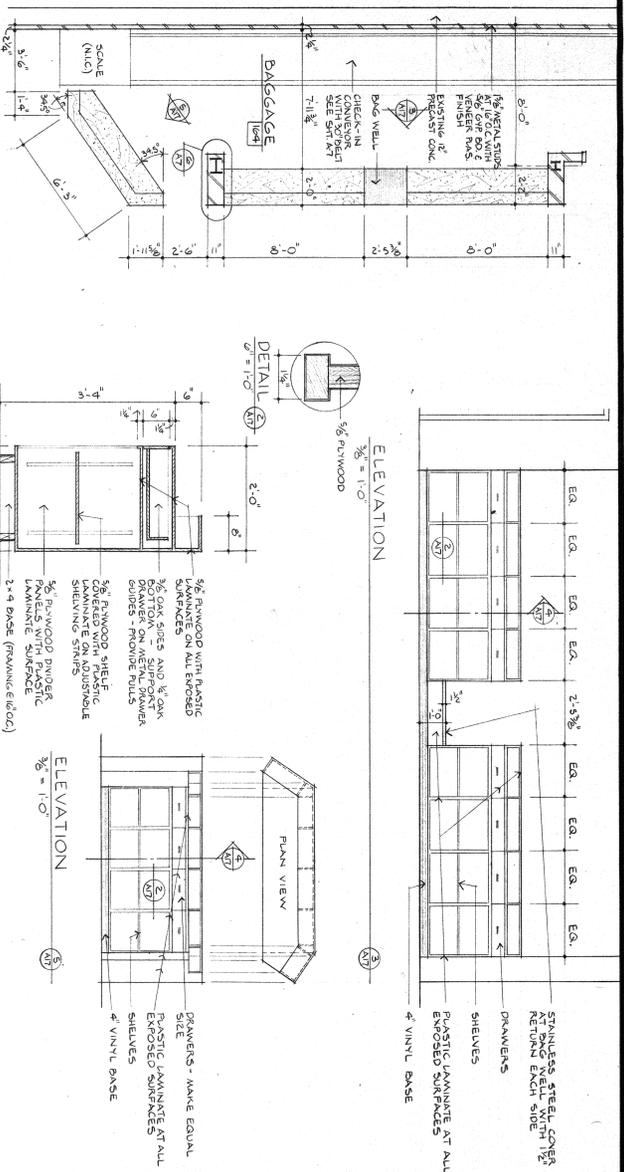
ESCALATOR PLAN  
 1/4" = 1'-0"

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM AN A.D. REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA  
**Russell G. Ritz**  
 2/2/89 REG. NO. 15360

RENOVATION AND ADDITIONS TO  
 MAIN TERMINAL AND INTERNATIONAL ARRIVALS BUILDINGS  
 DULUTH AIRPORT  
 DULUTH, MINNESOTA

BAGGAGE CAROUSEL & ESCALATOR SECTIONS -  
 DETAILS  
 DRAWN BY  
 CHECKED BY

**Architects IV**  
 25 N. 12TH AVENUE EAST - DULUTH, MINNESOTA 55805 - 218-728-5124



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*Russell E. Potts*  
 2/15/87 REG. NO. 15860

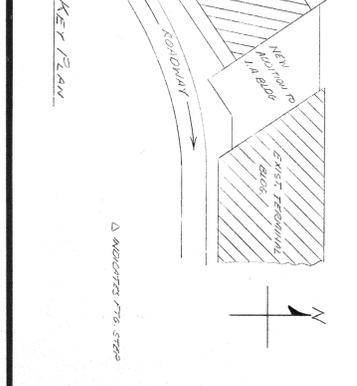
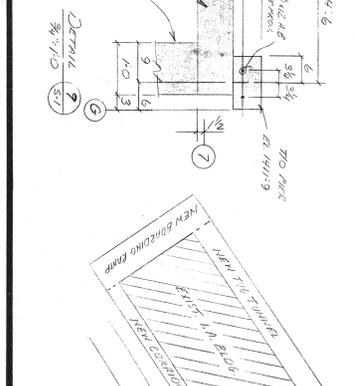
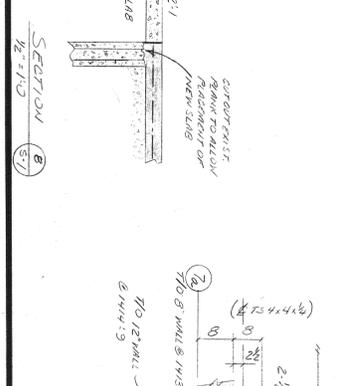
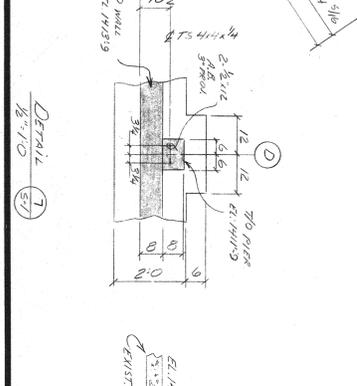
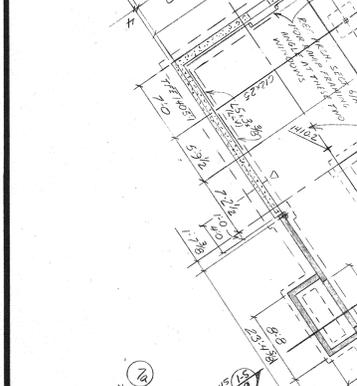
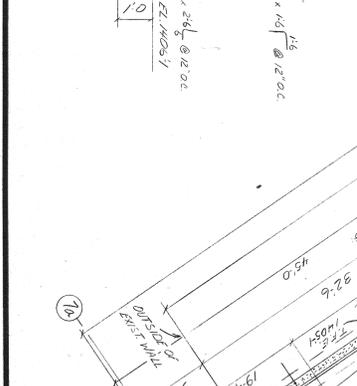
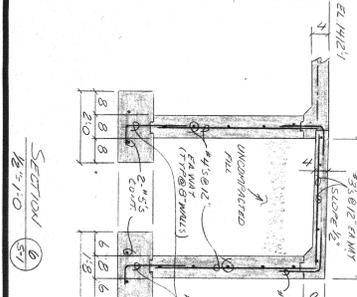
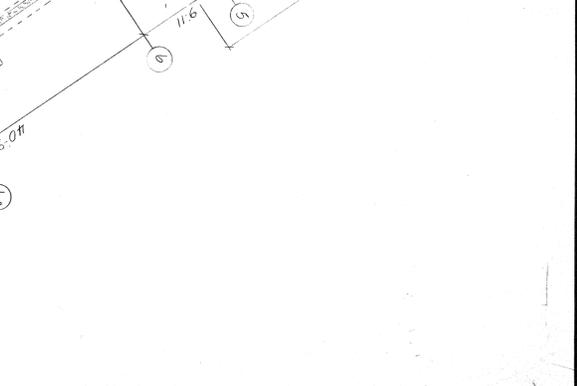
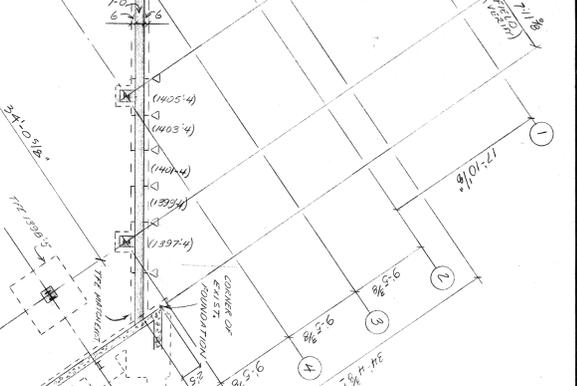
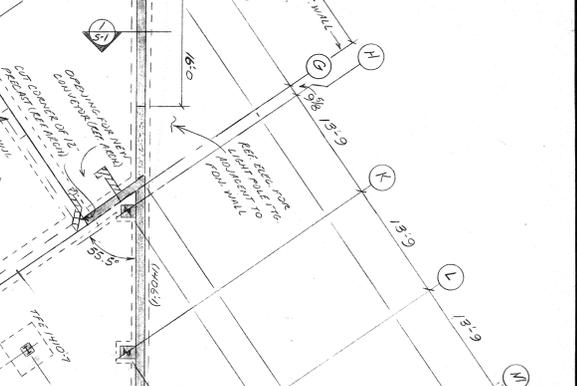
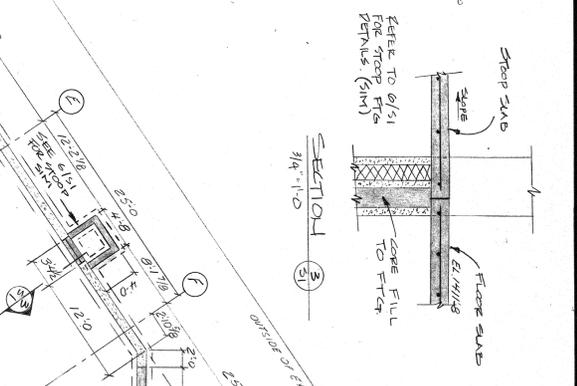
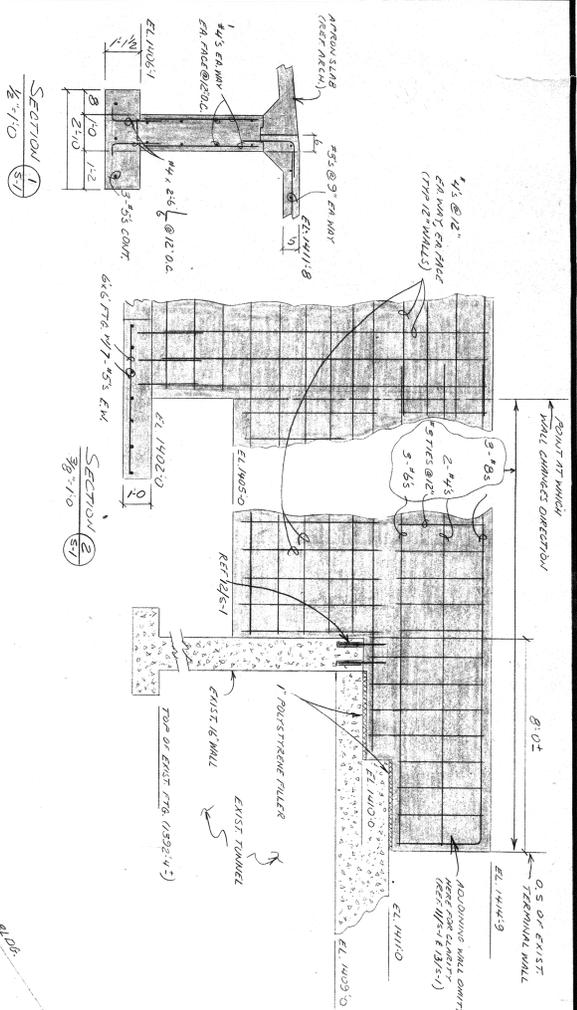
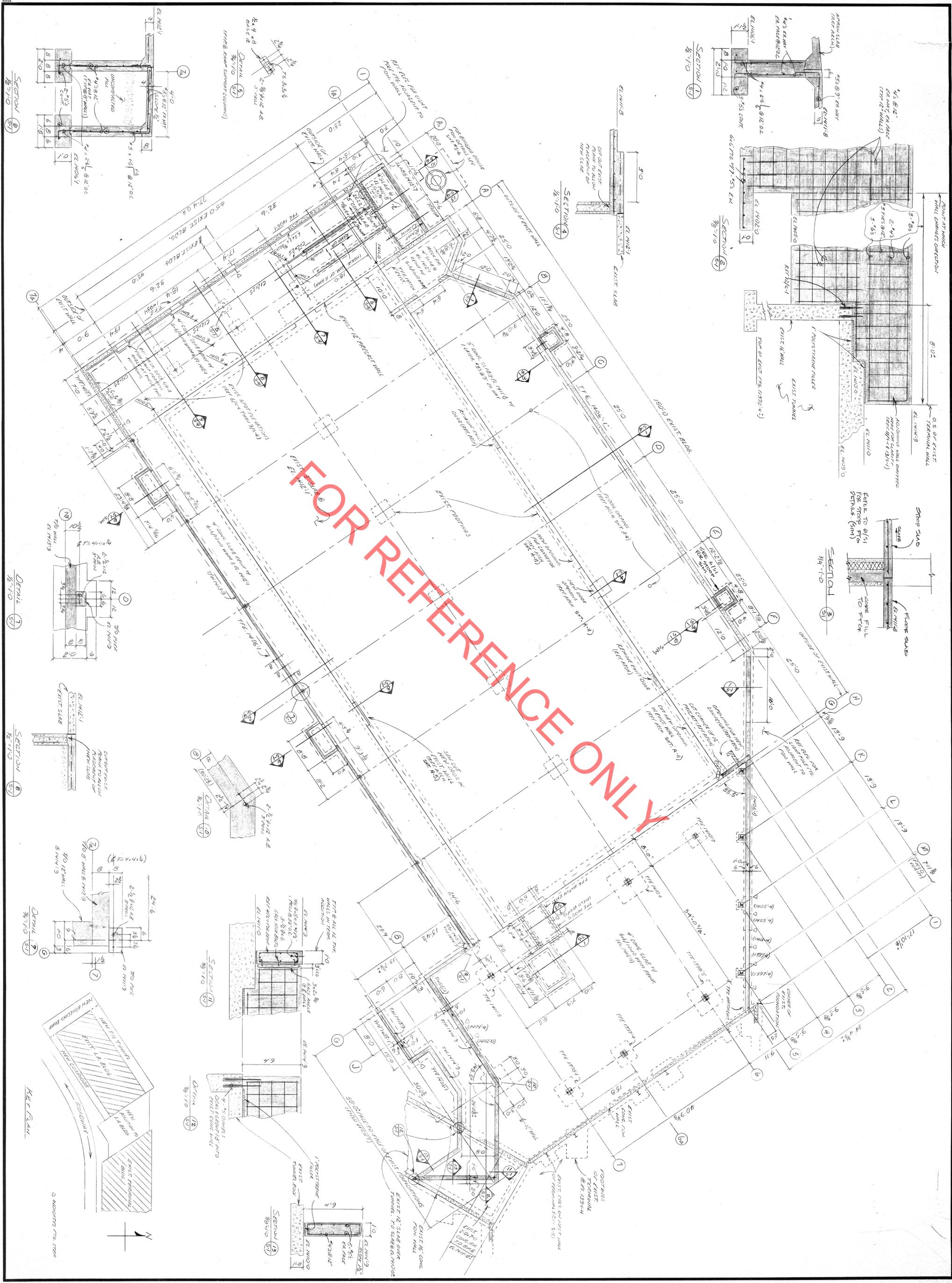
**SHEET A-17**  
 JOB NO. 20000-A  
 DATE FEB. 9, 88  
 REVISIONS

RENOVATION AND ADDITIONS TO MAIN TERMINAL AND INTERNATIONAL ARRIVALS BUILDINGS  
 DULUTH INTERNATIONAL  
 DULUTH MINNESOTA

BUILDING SECTION - MISCELLANEOUS  
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SHEET S-1 OF 7  
DATE  
REVISIONS

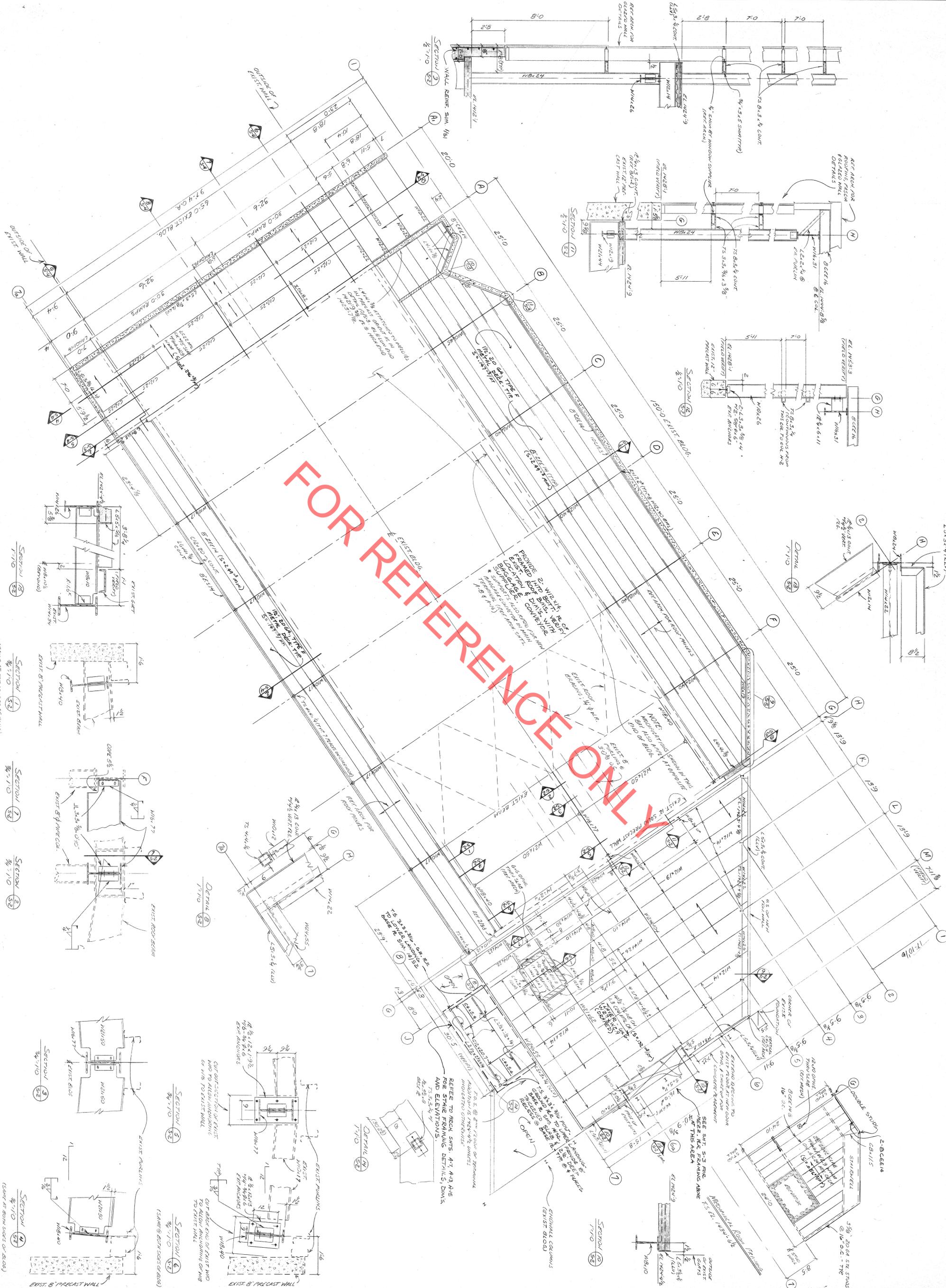
RENOVATIONS & ADDITIONS TO MAIN TERMINAL & INTL. ARRIVALS BLDG. DULUTH INTERNATIONAL AIRPORT DULUTH, MINN.

FOUNDATION & FIRST FLOOR; I.A. BLDG. RAMP TRAINING TO EL. 111B.2  
DRAWN BY H.S.J. CHECKED BY

Krech & Ojard Consulting Engineers, P.A.

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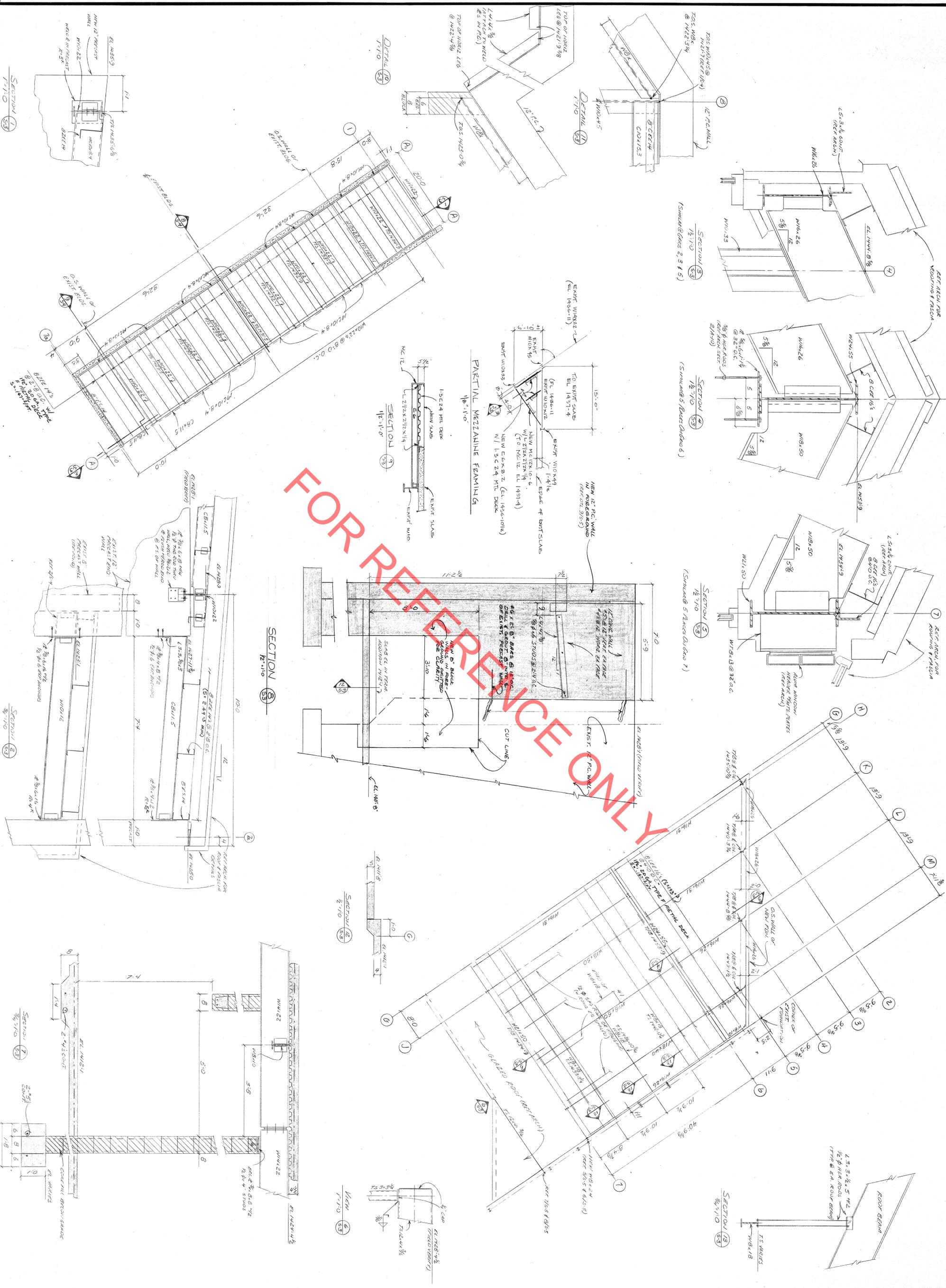
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULUTH REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 Michael J. Krech  
 7/2/89 REG. NO. 11320

SHEET 5-2 OF 7  
 REVISIONS  
 DATE  
 JOB NO.  
 REVISIONS & ADDITIONS TO MAIN TERMINAL & INTL. AIRRIVAL BLDG. DULUTH INTERNATIONAL AIRPORT DULUTH, MINN.

TUG TUNNEL / CORRIDOR ROOF FRAMING; REINFORCING OF EXIST. ROOF; RAMP SUPPORT FRAMING SECOND FLOOR FRAMING; MECH. ROOM FRAMING  
 DRAWN BY HS  
 CHECKED BY

Krech & Ojard Consulting Engineers, P.A.  
 209 W. 1st St., Room 202, Duluth, MN 55802 (218) 727-5282

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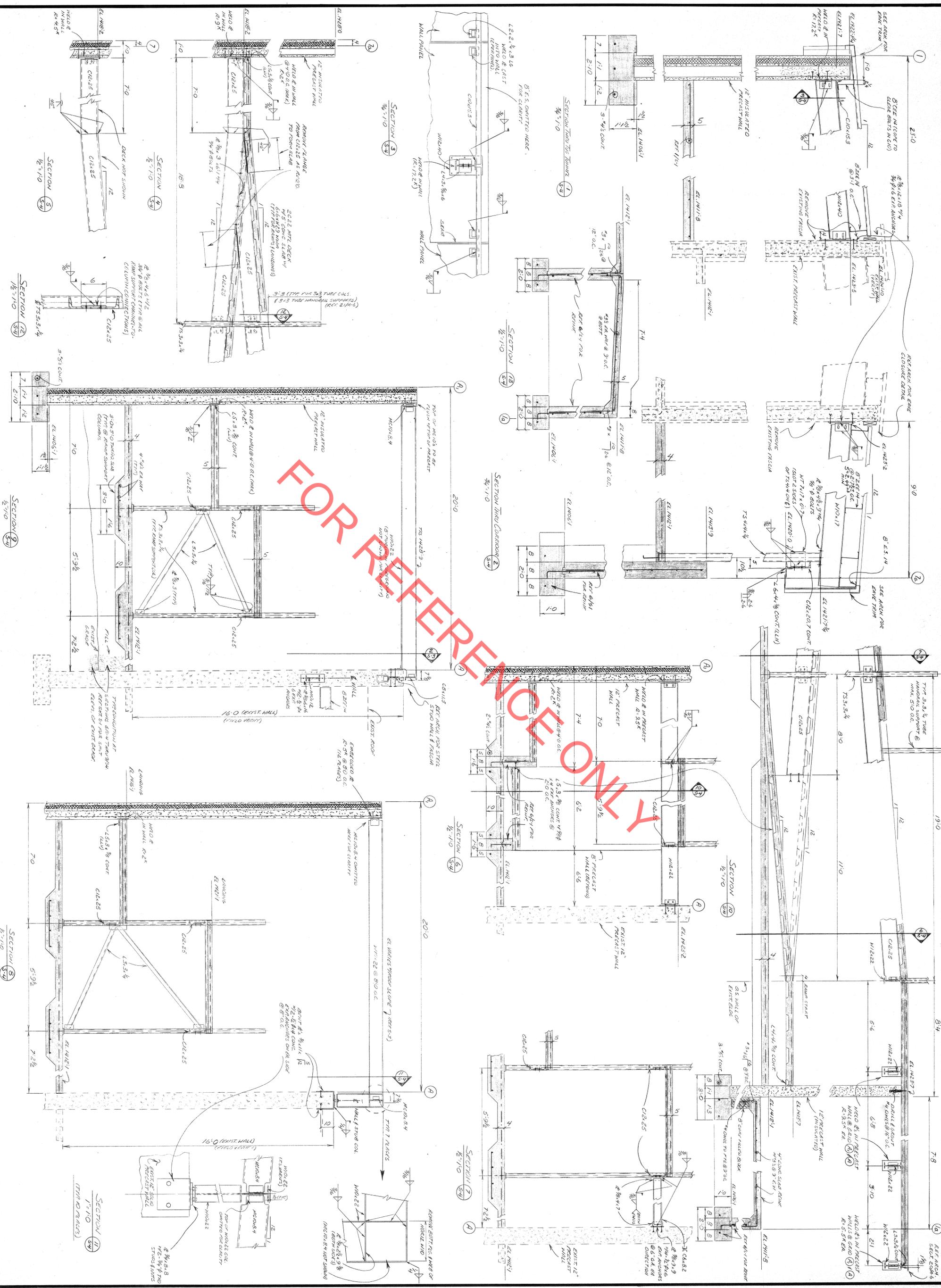
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 REVISIONS  
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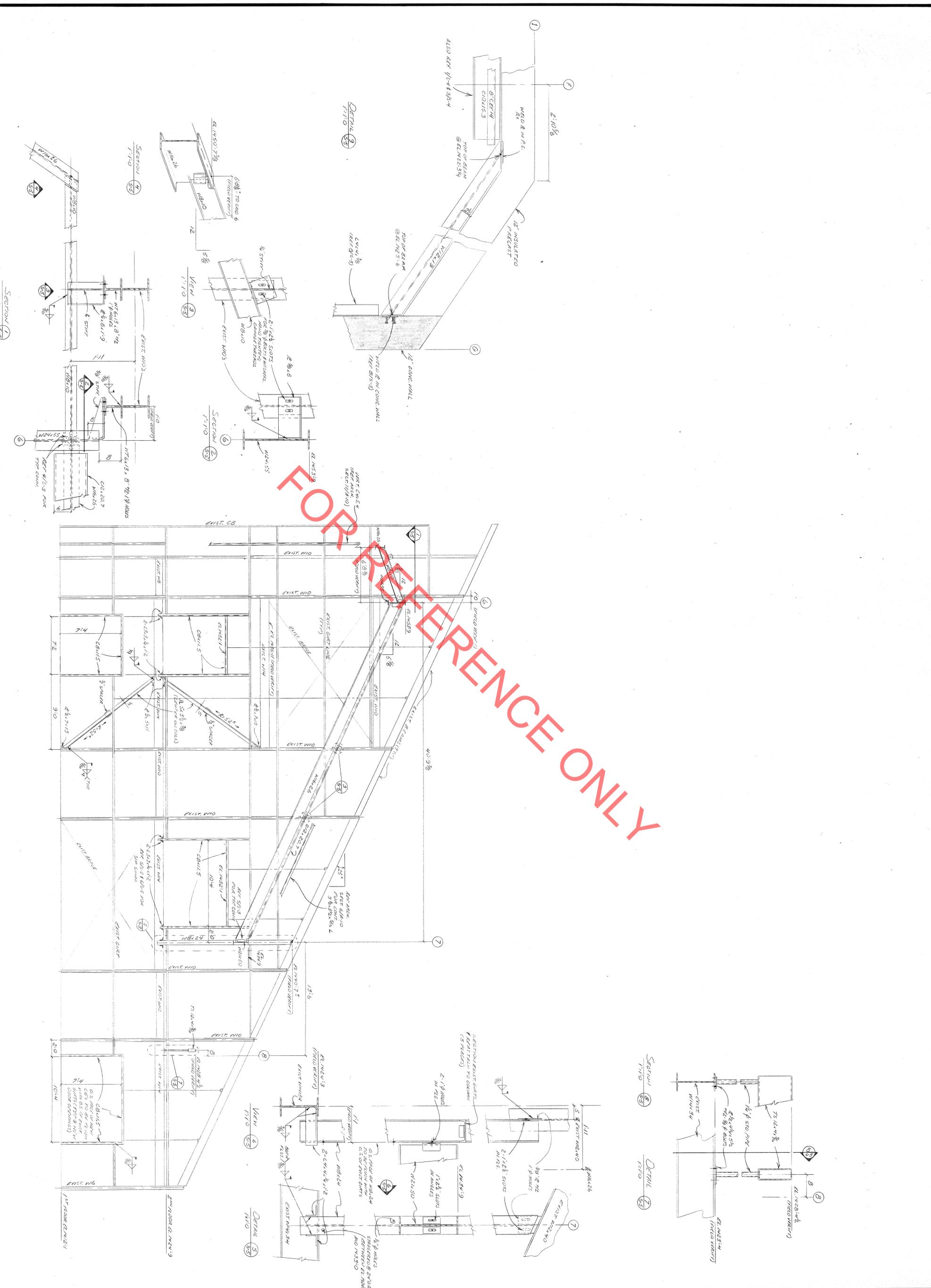
ROOF FRAMING  
 DRAWN BY HSJ  
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**David W. Krech**  
 2/21/87 REG. NO. 11320

SHEET  
 5-5  
 OF 7

REVISIONS  
 DATE  
 JOB NO.

RENOVATION & ADDITIONS TO  
 MAIN TERMINAL & INT'L ARRIVALS BLDG.  
 DULUTH INTERNATIONAL AIRPORT  
 DULUTH, MINN.

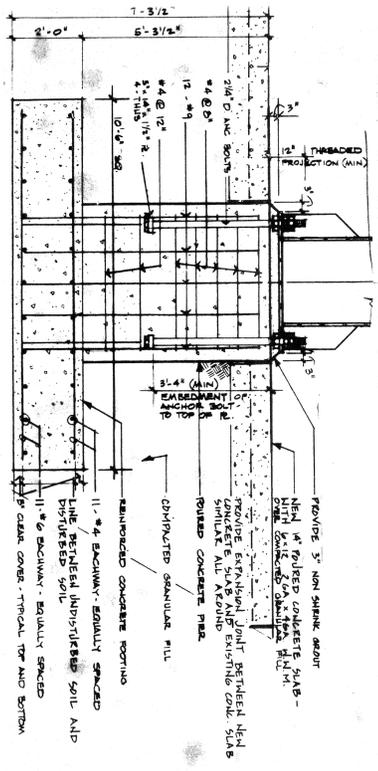
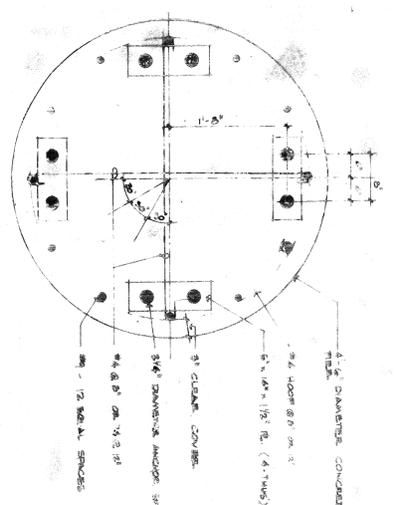
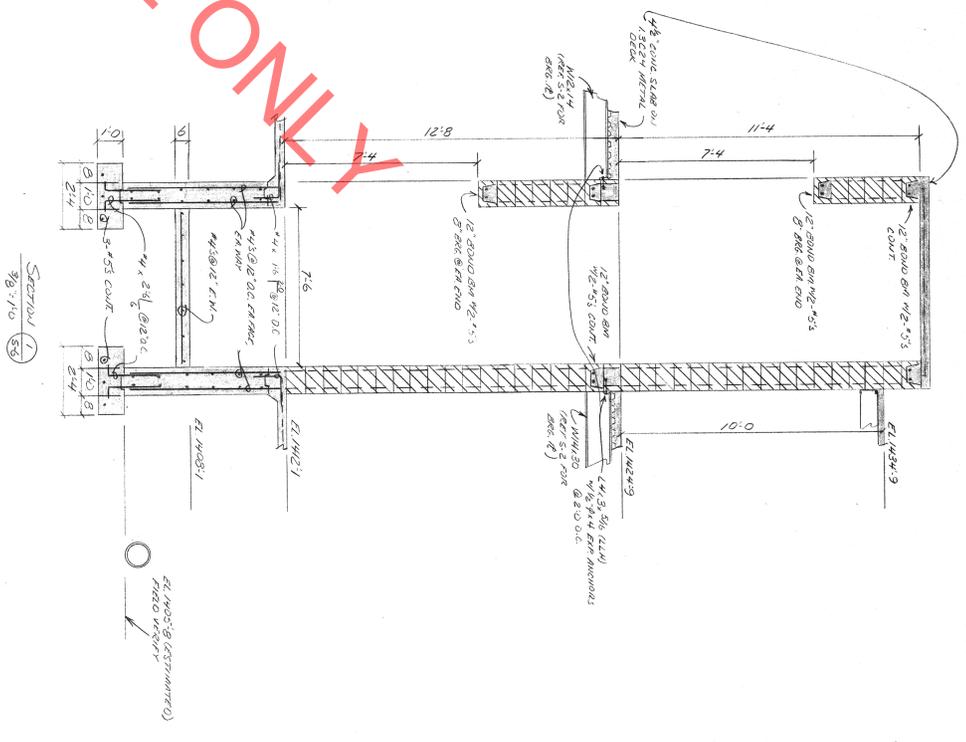
FRAMING LAYOUT & DETAILS, WEST WALL OF  
 EXIST. TERMINAL  
 DRAWN BY **HJS**  
 CHECKED BY

**Krech & Ojard**  
 Consulting Engineers, P.A.  
 208 W. 1st St., Room 202 Cl. Duluth, MN 55802 Cl. Phone: (218) 727-3362

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 25 N. 12TH AVENUE EAST - DULUTH, MINNESOTA 55805 - 218-720-5124

								<p>TO SLAB          FL. 1/24'-9"</p>
<p>20'x20'          8" #5 @ 12" O.C.          3" @ 2' @ 1' O</p>	<p>20'x20'          8" #5 @ 12" O.C.          3" @ 2' @ 1' O</p>	<p>20'x20'          8" #5 @ 12" O.C.          3" @ 2' @ 1' O</p>	<p>16'x16'          4" #5 @ 12" O.C.          4" #5 @ 12" O.C.</p>	<p>16'x16'          4" #5 @ 12" O.C.          4" #5 @ 12" O.C.</p>	<p>16'x16'          4" #5 @ 12" O.C.          4" #5 @ 12" O.C.</p>	<p>16'x16'          4" #5 @ 12" O.C.          4" #5 @ 12" O.C.</p>	<p>16'x16'          4" #5 @ 12" O.C.          4" #5 @ 12" O.C.</p>	<p>BASE # 4          ANCHOR BOLTS          PIER ELEV.          PIER SIZE          &amp; SETTING          FOOTING SIZE          &amp; SETTING</p>

FOR REFERENCE ONLY



**GENERAL NOTES**

- VERIFY ALL ARCH, MECH, & ELECTRICAL OPENINGS FOR SIZE, LOCATION AND NUMBER IN THE STRUCTURE W/ACCOMPANY PLANS.
- THE STRUCTURE SHALL BE ADEQUATELY BRACED & SHORED DURING CONSTRUCTION FOR IN-PLACE LOADS.
- MINIMUM CONCRETE COVER ON REINFORCEMENT SHALL BE AS FOLLOWS:
  - a. EXPOSED TO WEATHER
  - b. EXPOSED TO EARTH OR WEATHER
  - c. EXPOSED TO EARTH OR WEATHER
  - d. EXPOSED TO EARTH OR WEATHER
- SLAB ON GRADE FLOORS SHALL BE 5" CONCRETE SLAB W/ 6" @ 6" OR 4" @ 6" REINFORCING PLACED IN CENTER OF SLAB THICKNESS W/WM OR

**REINFORCED CONCRETE:**

**DESIGN STRESSES:**

- CONCRETE # 28 DAYS
- EXPOSED CONC. F.C. = 3000 PSI AIR ENTRAINMENT

**REINFORCING STEEL:**

- ASTM A615-60 Fy = 60,000 PSI
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1953

**STRUCTURAL STEEL:**

- STRUCTURAL STEEL TO BE A.S.T.M. A-36
- STEEL TUBING SHALL CONFORM TO A.S.T.M. A500, GR. B
- FABRICATION & ERECTION OF STRUCTURAL STEEL MEMBERS IS TO BE IN ACCORDANCE WITH A.I.S.C. CODE OF STANDARD PRACTICE.
- ALL CONNECTIONS SHALL BE BOLTED OR WELDED AND SHALL DEVELOP THE FULL STRENGTH OF THE STRUCTURAL MEMBERS, UNLESS NOTED OTHERWISE.
- ALL WELDING SHALL BE E70XX.
- ALL WELDING TO BE DONE BY QUALIFIED WELDERS AND SHALL CONFORM TO THE A.W.S.
- FIELD CONNECTIONS ARE TO BE BOLTED. USE 3/4" DIA. HIGH STRENGTH BOLTS AND NUTS (A325) UNLESS SHOWN OTHERWISE ON PLANS.
- TAIL STEEL BEAMS BEARING ON MASONRY SHALL HAVE ALL THE CORNERS OF SMALL CORNERS OF 1" SQUARE, 2" @ 1/2" FINE AGGREGATE, 2" PEA GRAVE.
- ALL STRUCTURAL STEEL AND MISCELLANEOUS METALS SHALL BE PRIME PAINTED AFTER ERECTION.

**DESIGN**

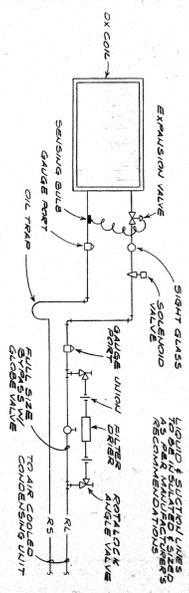
- DESIGNED IN ACCORDANCE WITH THE FOLLOWING CODES:
  - a. MN BLDG. CODE
  - b. ACT 318-17
  - c. ALSO LATEST ADDITION

**DESIGN LOADS**

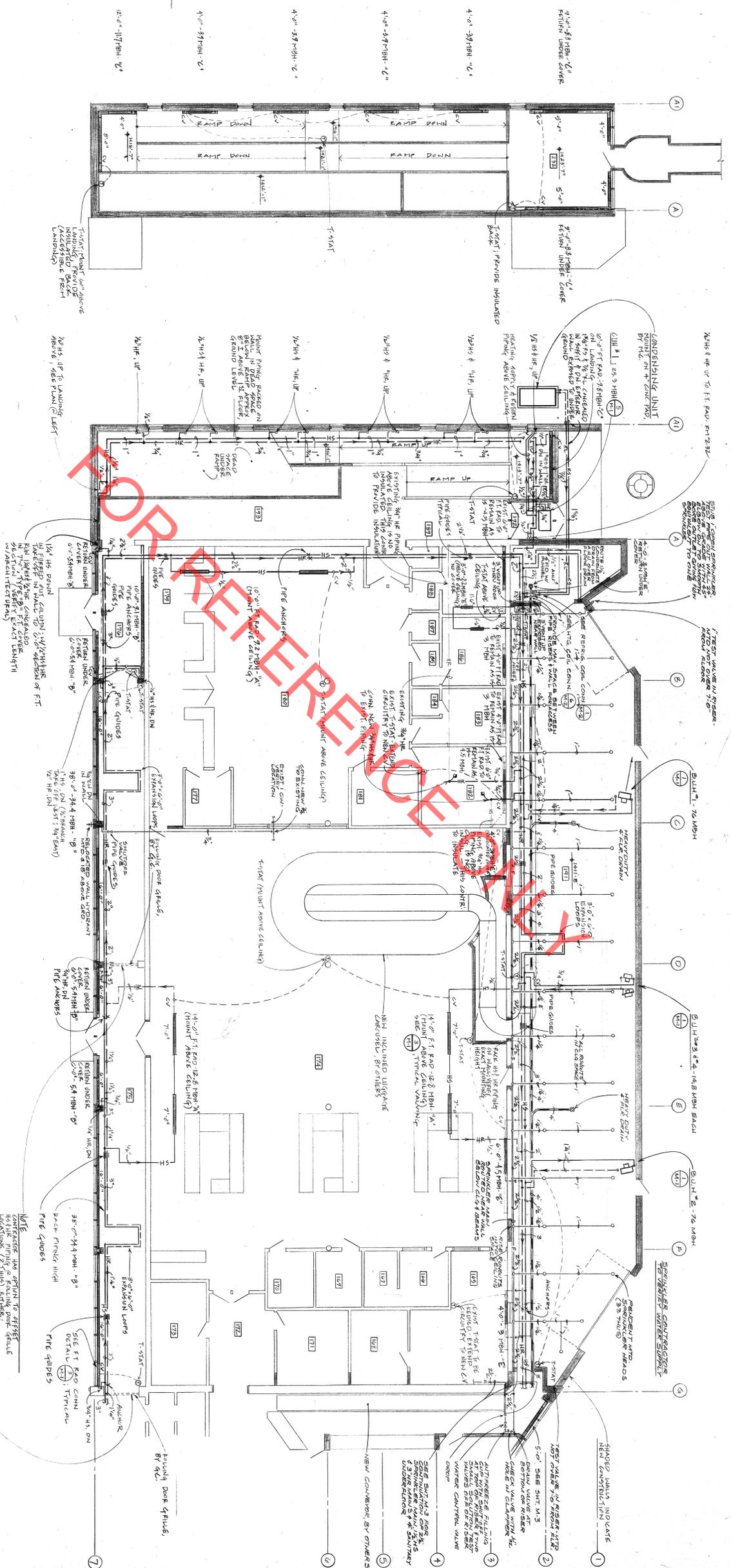
- 100 PSF FLOORS
- 50 PSF MECH ROOM FLOOR
- 40 PSF ROOF SNOW LOAD (SURE 50 (80 PSF AT NORTH WALL))
- SOIL BEARING PRESSURE 3000 PSF





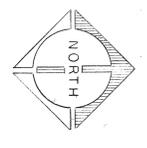


1) DX REFRIGERANT COIL LOOP.  
1/8" = 1'-0" SCALE

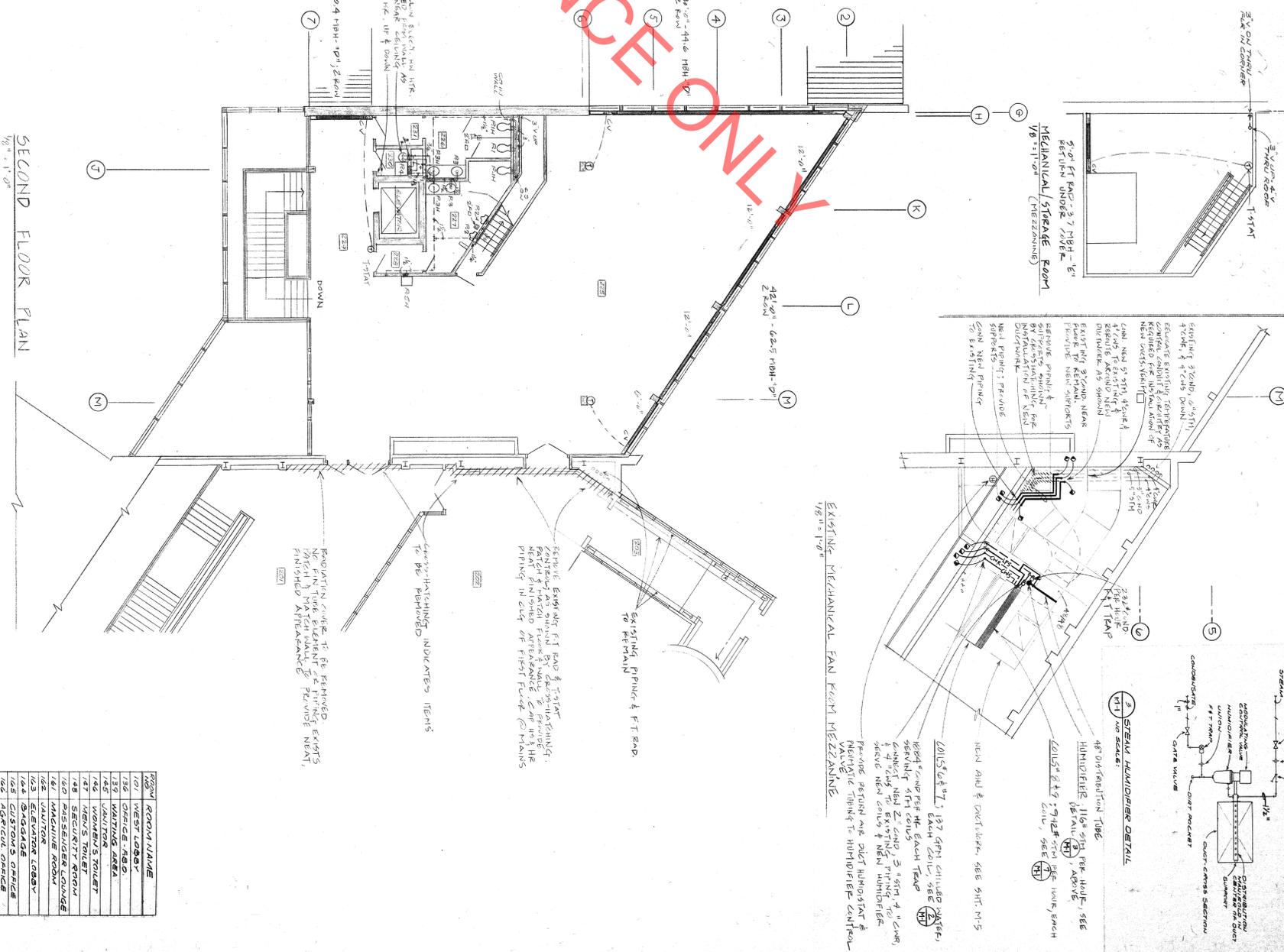
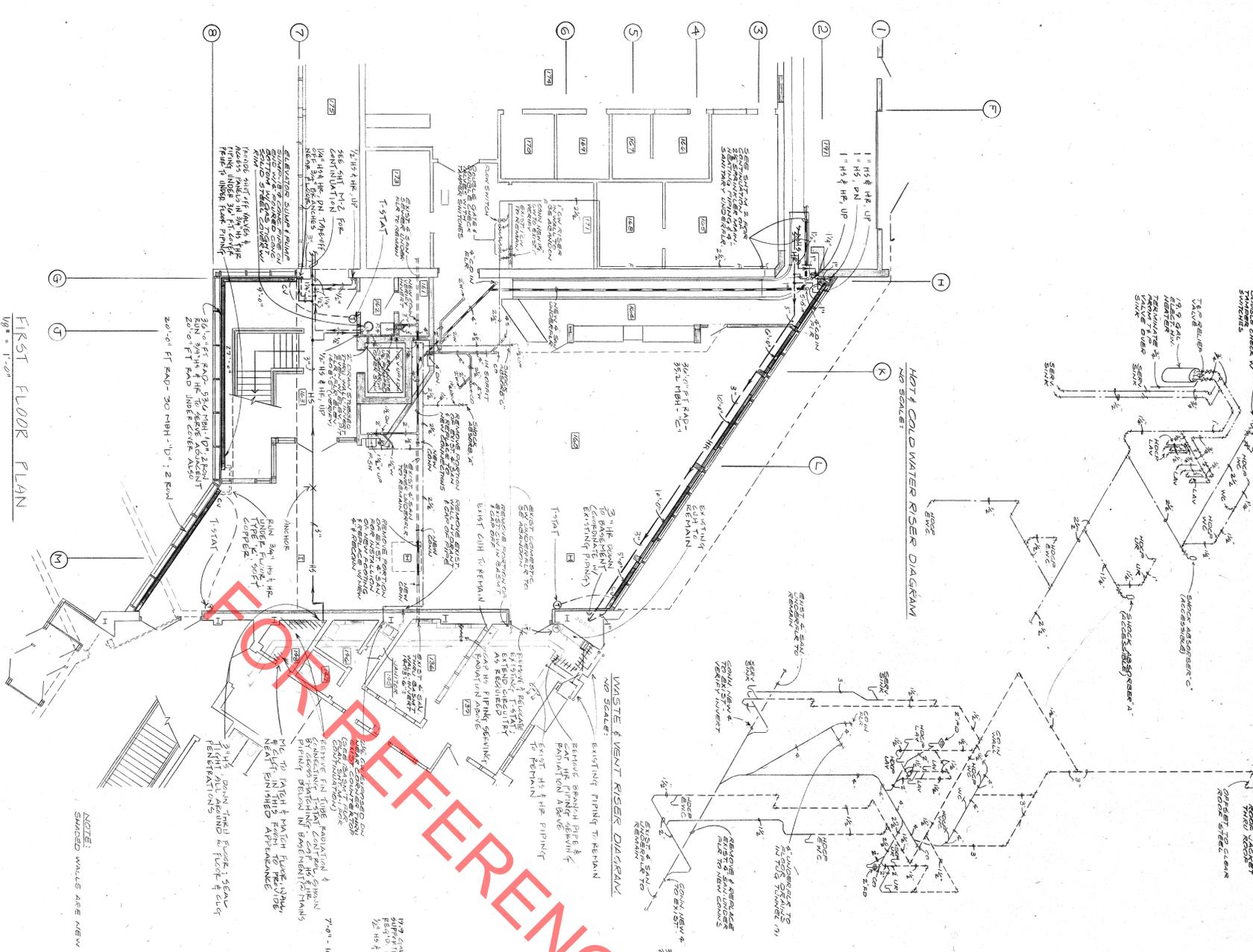
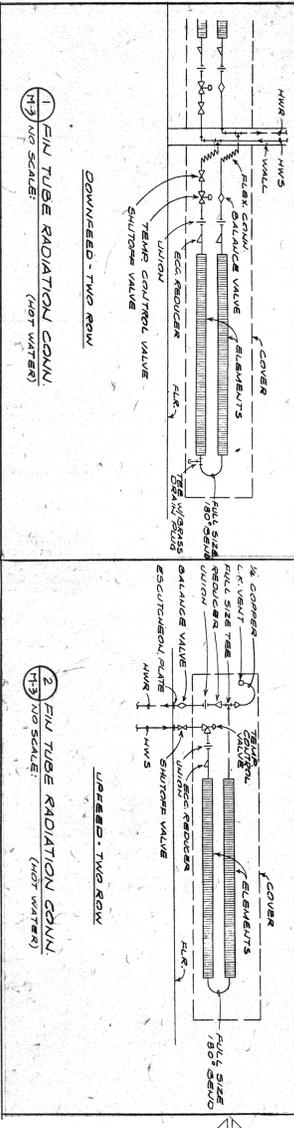


UPPER RAMP  
1/8" = 1'-0"

FIRST FLOOR PLAN  
1/8" = 1'-0"  
INTERNATIONAL ARRIVALS BLDG

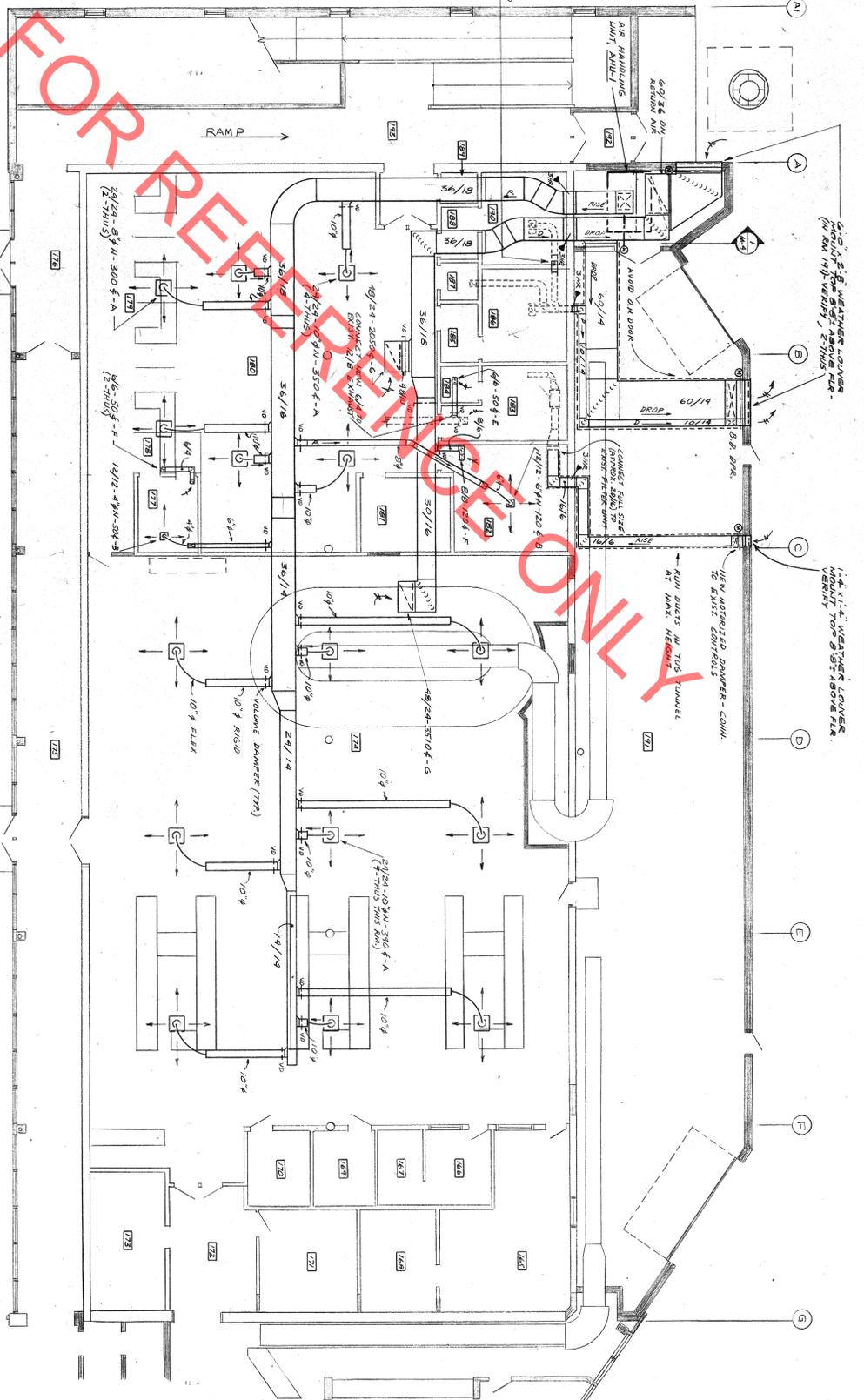
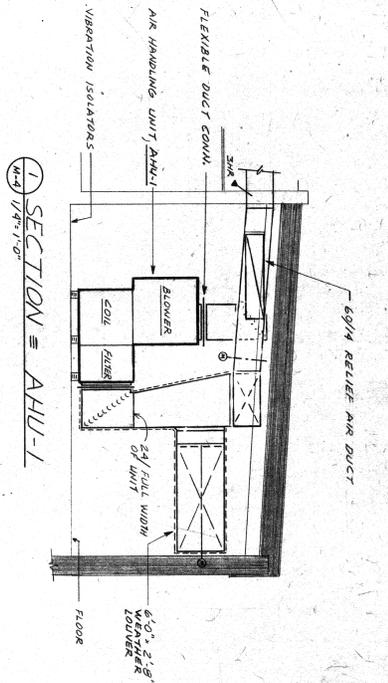
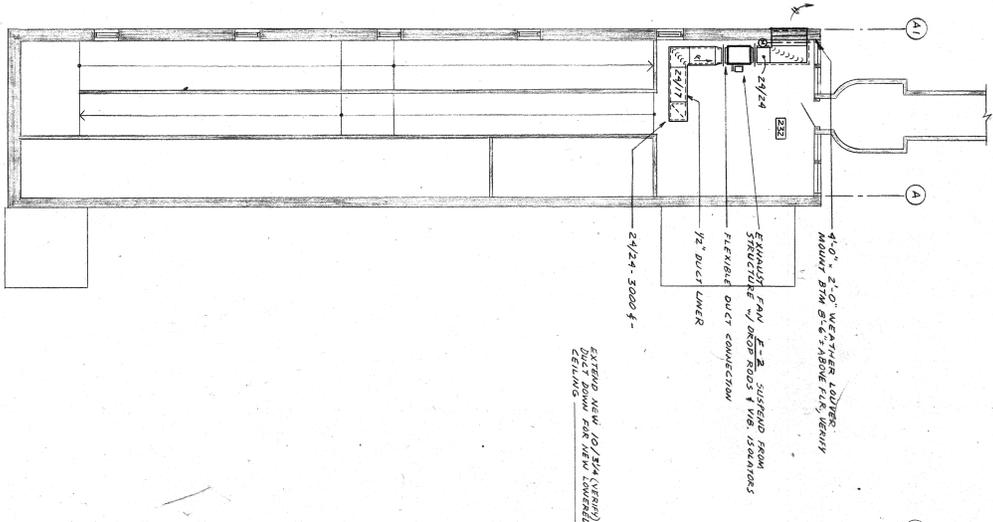


ROOM NUMBER	ROOM NAME
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103	RECEPTION
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122	RECEPTION



ROOM	ROOM NUMBER
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UPPER RAMP  
SCALE: 1/8" = 1'-0"



**NOTE:**  
CONTRACTOR SHALL CORROBORATE NEW DUCTS / DAMPERS, ETC. & MAKE ANY MODIFICATIONS AS NECESSARY TO AVOID PANS, ETC. EXISTING DUCTS TO BE REMOVED AND REPLACED WITH NEW DUCTS AND FLEXIBLE DUCTS. TILE BETWEEN GRIDS B & Y TO BE REMOVED & REPLACED WITH NEW TILE. ALL EXISTING DUCTS TO BE REMOVED & REPLACED WITH NEW DUCTS. ETC. SHALL BE BY THIS CONTRACTOR.

**GENERAL MECHANICAL NOTES:**

1. ALL PIPING AND DUCTWORK SHALL BE RUN CONCEALED IN SCHEDULED CEILING SPACES AND IN SPACES PROVIDED, UNLESS NOTED OTHERWISE. CONCEALMENT SHALL BE BY THE CONTRACTOR. ALL PIPING AND DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MECHANICAL CODES AND ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE MECHANICAL CODES. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE MECHANICAL CODES. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE MECHANICAL CODES.

2. ALL PIPING OF EXISTING CONSTRUCTION WHERE MECHANICAL SERVICES ARE REMOVED SHALL BE BY THIS CONTRACTOR. FROM POINTS OF EXISTING TO NEW SERVICE POINTS, ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE MECHANICAL CODES. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE MECHANICAL CODES.

3. ALL PIPING AND DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MECHANICAL CODES. ALL PIPING AND DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MECHANICAL CODES. ALL PIPING AND DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MECHANICAL CODES.

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FIRST FLOOR PLAN  
INTERNATIONAL ARRIVALS BUILDING  
SCALE: 1/8" = 1'-0"



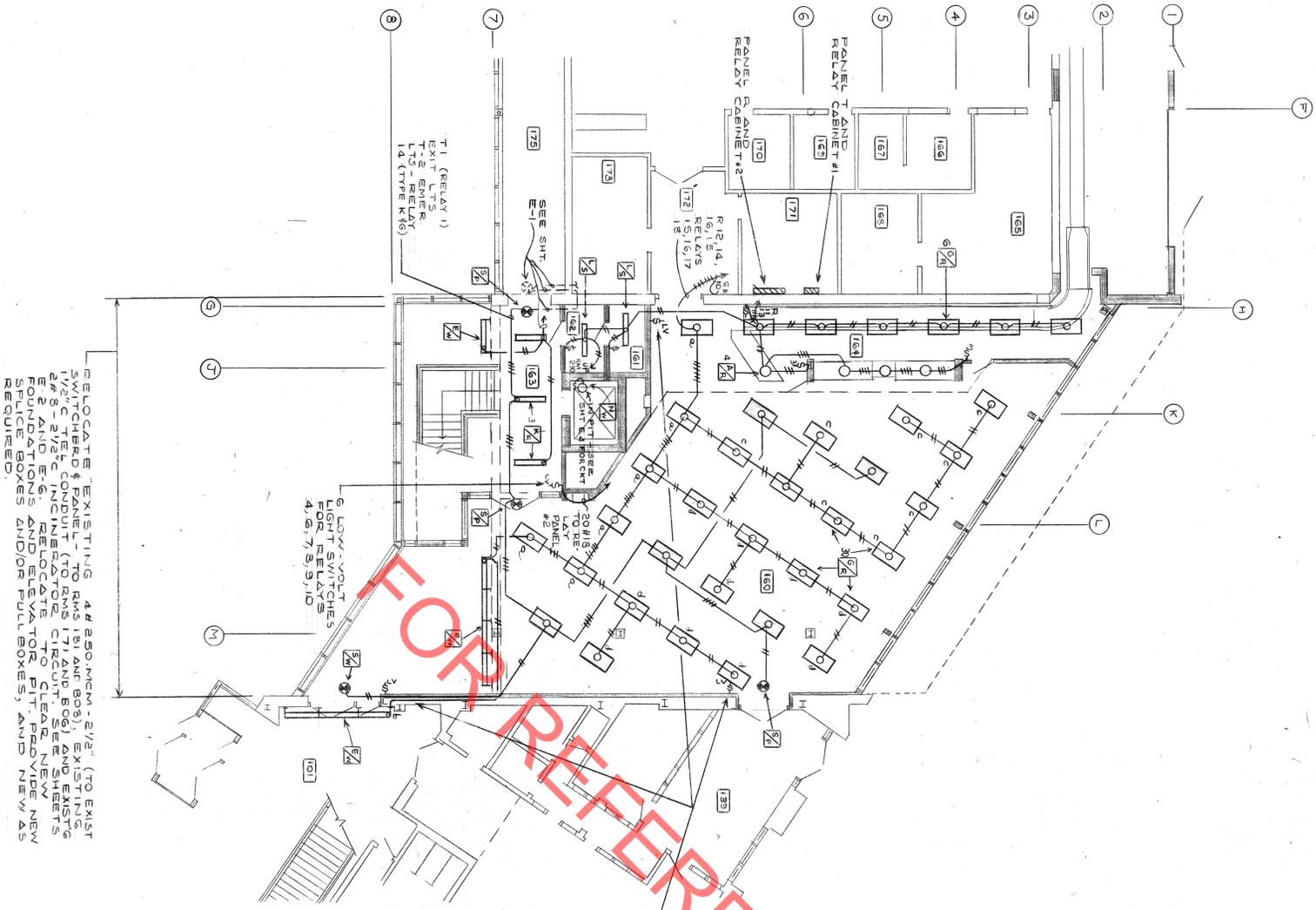
160	ROOM NAME
161	CUSTOMS OFFICE
162	AGRICULT. OFFICE
163	RESTROOM
164	SEARCH RM. 1
165	SEARCH RM. 2
166	TOILET
167	TOILET
168	TOILET
169	TOILET
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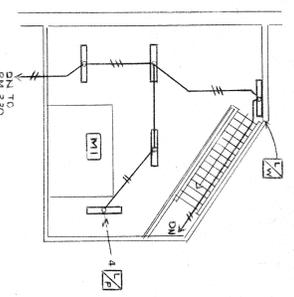
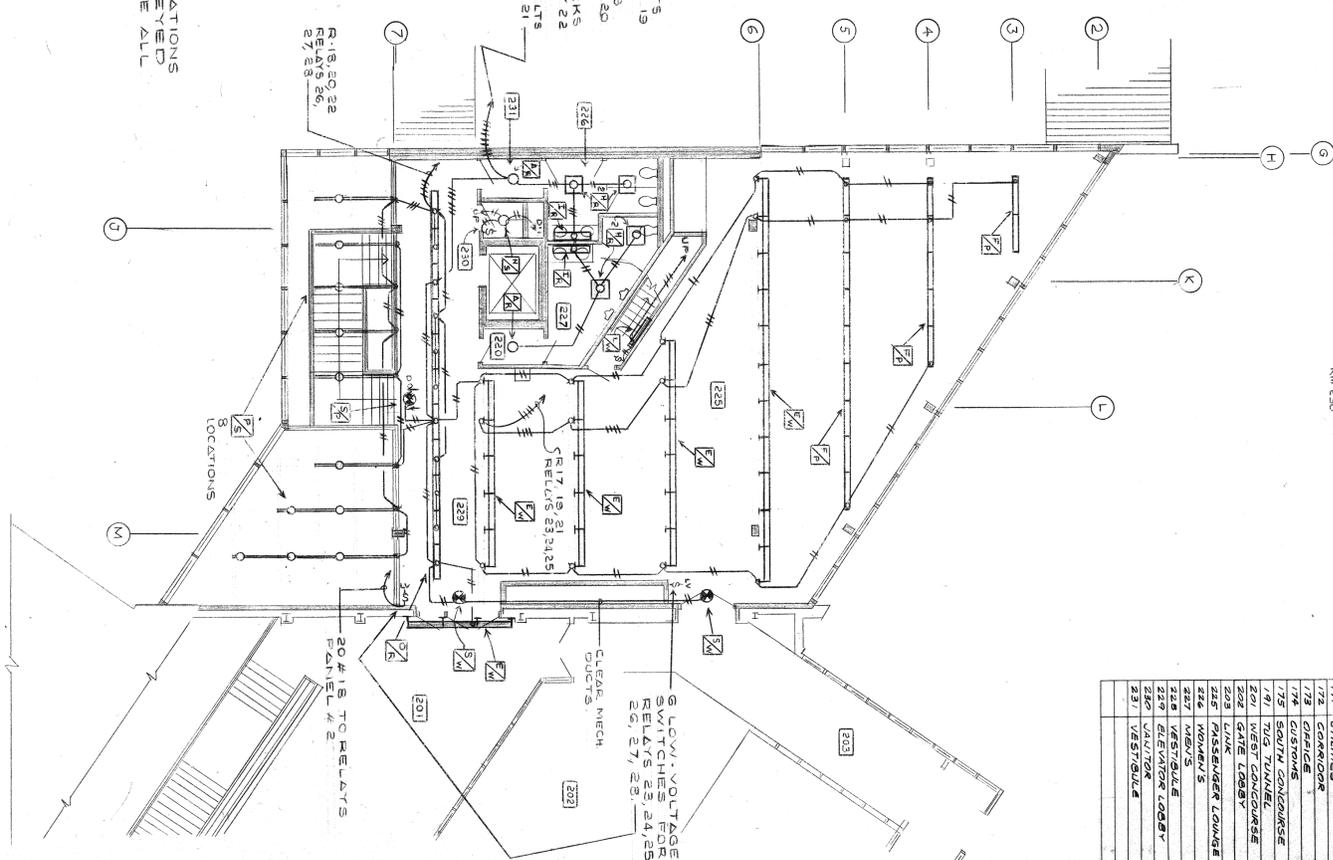
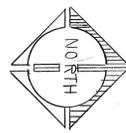


RELOCATE EXISTING 4# 250 MCM - 2 1/2" (TO EXIST SWITCHBOARD & PANEL - TO RMS 181 AND BOB). EXISTING 1/2" 312.5 CONDUIT TO RMS 17 AND BOB. EXISTING #2 AND #6 RELOCATE TO CLEAR NEW FOUNDATIONS AND ELEVATOR PIT. PROVIDE NEW SPICE BOXES AND/OR PULLBOXES, AND NEW AS REQUIRED.

NOTE:  
1) LOW-VOLTAGE SWITCH STATIONS IN PUBLIC AREAS TO HAVE KEYPAD LOCK-OUT SWITCH TO DISABLE ALL SWITCHES AT LOCATIONS.

FOUR (4) LOW-VOLT SWITCHES FOR RELAYS 15, 16, 17, 18, 14# IS TO RELAY #1.

T 4 EXIT LTS  
RELAY 19  
TOILETS  
RELAY 20  
T 7  
4 TRACKS  
RELAY 22  
RELAY 25  
RELAY 21

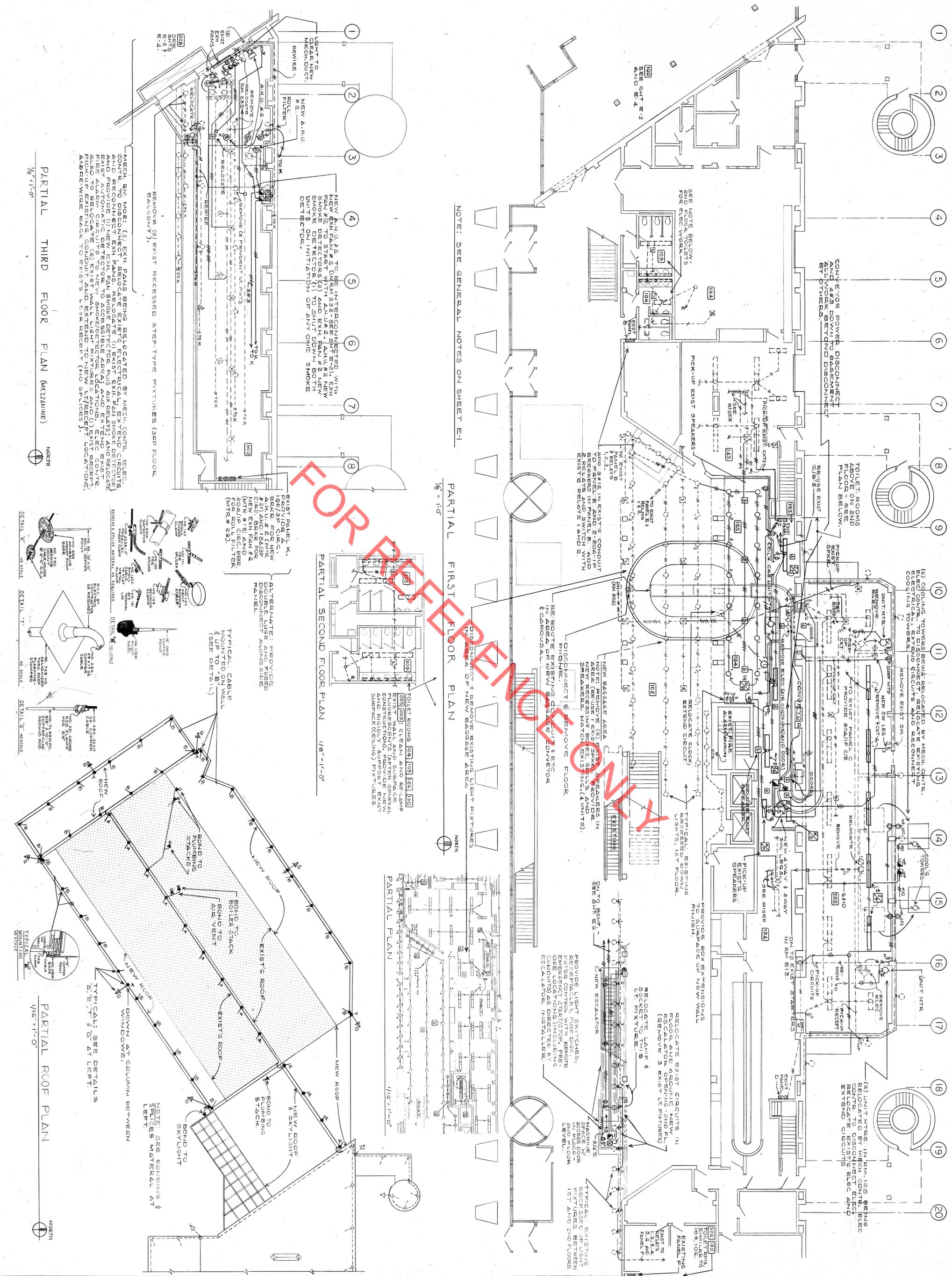


ROOM NAME	ROOM NO.
WEST LOBBY	101
OFFICE - A80	102
WAITING AREA	103
WOMEN'S TOILET	104
MEN'S TOILET	105
SECURITY ROOM	106
PASSENGER LOBBY	107
AUTOMATED LOBBY	108
SHOPSIDE	109
CUSTOMER SERVICE	110
AGRICULTURAL LAB	111
TRUCK ROOM	112
SEARCH RM # 1	113
SEARCH RM # 2	114
OFFICE	115
CONCOURSE	116
SOUTH CONCOURSE	117
WEST CONCOURSE	118
GATE LOBBY	119
LINK	120
PASSENGER LOBBY	121
WOMEN'S	122
MEN'S	123
ELEVATOR LOBBY	124
AUTOMATED	125
VESTIBULE	126
RESTROOM	127
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FIRST FLOOR PLAN

SECOND FLOOR PLAN





I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULUTH REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

*William A. Hill*

4/24/87 REG. NO. 6128

SHEET  
E-5  
OF 6

LOG NO.  
6914

DATE  
2/28/87

REVISIONS

RENOVATION & ADDITIONS TO  
MAIN TERMINAL & INTERNATIONAL ARRIVALS BLDGS.  
DULUTH INTERNATIONAL AIRPORT  
DULUTH MINNESOTA

FIRST FLOOR OF MAIN TERMINAL

DRAWN BY U.S.  
CHECKED BY A.H.

FOSTER, JACOBS & JOHNSON, INC.  
PROFESSIONAL ENGINEERS  
3857 2840 LAKE AVENUE SO.  
DULUTH, MINNESOTA 55802

**Architects IV**  
25 N. 12TH AVENUE EAST - DULUTH, MINNESOTA 55805 - 218-728-5124



**DULUTH INTERNATIONAL AIRPORT**

Closer to everywhere.

**PRE-BID CONFERENCE SIGN-IN SHEET**  
**"Duluth International Airport – New Passenger Terminal"**  
**"Bid Package 2C-Wayfinding Signage Rebid & Hazardous Materials Abatement"**  
**Afterburner Conference Room – 2<sup>nd</sup> Floor Duluth Airport Terminal**  
**September 20, 2012, at 2:00 p.m.**

Name	Company	Address	Phone Number	Fax Number	E-Mail Address	Bidding Work Scope(s)
1 John E. Hippchen	RS&H	4525 Airport Approach Rd Duluth MN 55811	218-722-1227	218-722-1052	john.hippchen@rsandh.com	2.21C, 15.21C
2 Andy Hines	ECCO MIDWEST INC.	10255 INVERGROVE TRL, INVERGROVE HTS, MN	651 600-8636 (218) 626-1586	651 788-9562	AHINES@ECCOMIDWEST.COM	17.10C
3 John Krosky	Mauv Systems	2385 Becks Rd Duluth, MN 55810	(218) 626-1586	(218) 626-1584	JKrosky@MAUV.COM	17.10C
4 Rick Grivette	GRIVETTE ENVIRONMENTAL MGMT	416 FAHAL RD STE C EVELETH, MN 55734	218-741-0242	218-741-0242	GEMO242@HOTMAIL.COM	17.10C
5 Chuck Deye	Bay West Inc.	1106 88 <sup>th</sup> Ave West Duluth, MN	651-592-0167		Cdeye@baywest.com	17.10C
6 Steve Proulx	ACCT, Inc.	7290 mortis Thomas Rd. Cloquet, mn. 55720	218-879-2241	218-879-1108	proulxacct@yahoo.com	17.10C
7 Rick VanAllen	Bay west	5 Empire, St. Paul 55103	651-291-3441		RICKV@baywest.com	17.10C
8 WARREN OLSEN	SUMMIT SIGNS	5051 MILLER TRUNK HWY	218-390-6839	218-728-2163	WOLSEN@SUMMIT-SIGNS.COM	1022C
9 Misty Marsden	Summit Signs	5051 Miller Trunk Hwy	218-740-2754		Misty@summit-signs.com	1022C
10 Todd Johnson	Architectural Graphics	2655 International Pkwy Virginia Beach VA				1022C



**DULUTH INTERNATIONAL AIRPORT**

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**PRE-BID CONFERENCE SIGN-IN SHEET**  
"Duluth International Airport – New Passenger Terminal"  
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Afterburner Conference Room – 2<sup>nd</sup> Floor Duluth Airport Terminal  
September 20, 2012, at 2:00 p.m.

	Name	Company	Address	Phone Number	Fax Number	E-Mail Address	Bidding Work Scope(s)
11	John Matalanaki	Lakehead Sign	1600 29 <sup>th</sup> S Clapnet, MN		715-394-6460	johnm@lakeheadsign.com	1022C
12	Scott Lodico	Environmental Plant Services, Inc	2315 Hampden Ave STP 55114	651 644 4441	651 644 4838	slodico@eps.vg	ASB 17.10C
13	DAVE LITECKY	DULUTH SIGN	116 W. SUPERIOR ST.	722-2569 / 218-	722-3211 / 218-	DLITECKY@	1022C
14	Andy Hanson	Sign Source	7660 Quattro Dr @hanhassen, MN	55317	F 952 908-9142	andrew@sign-source.com	1022C
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