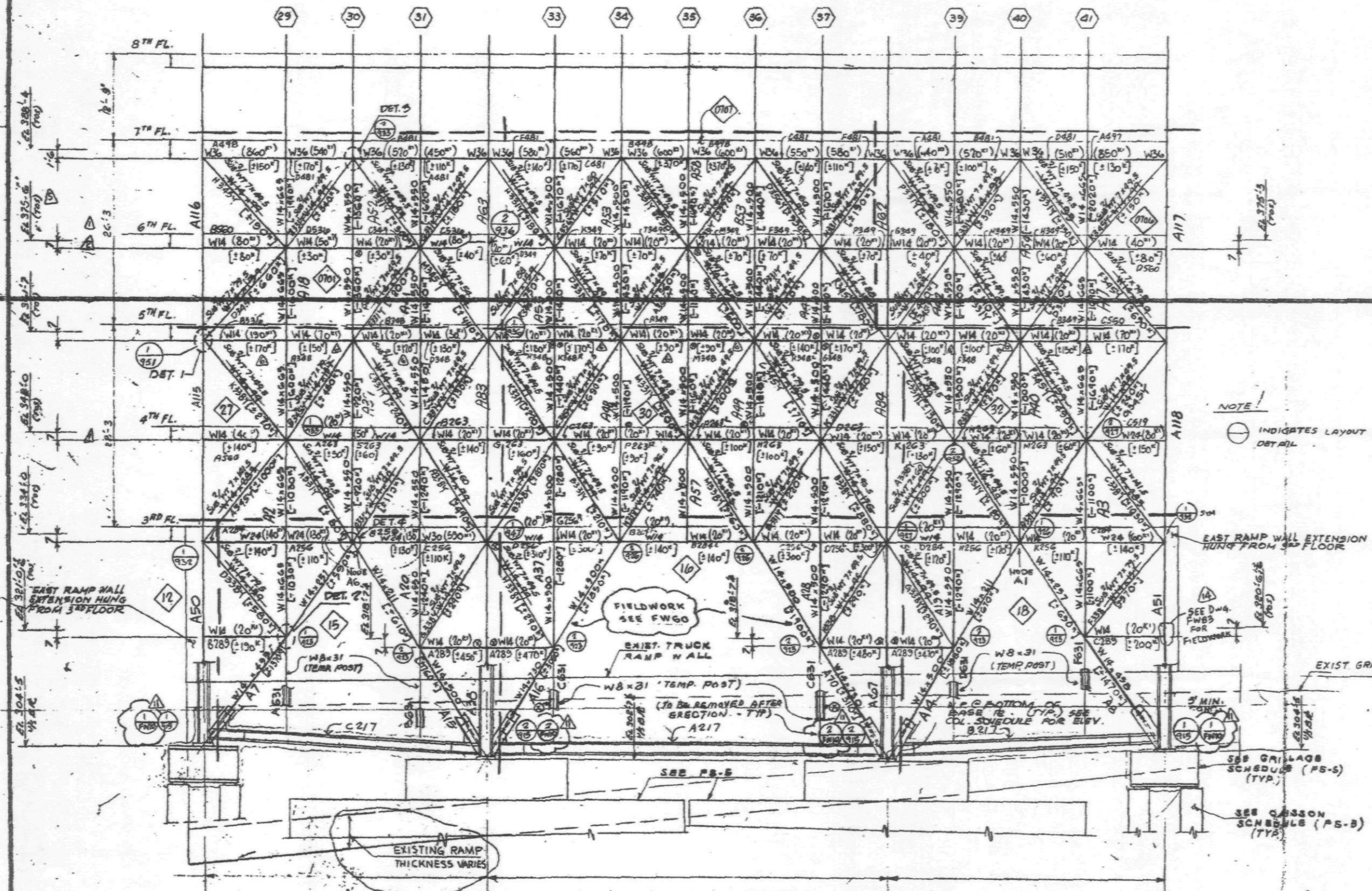


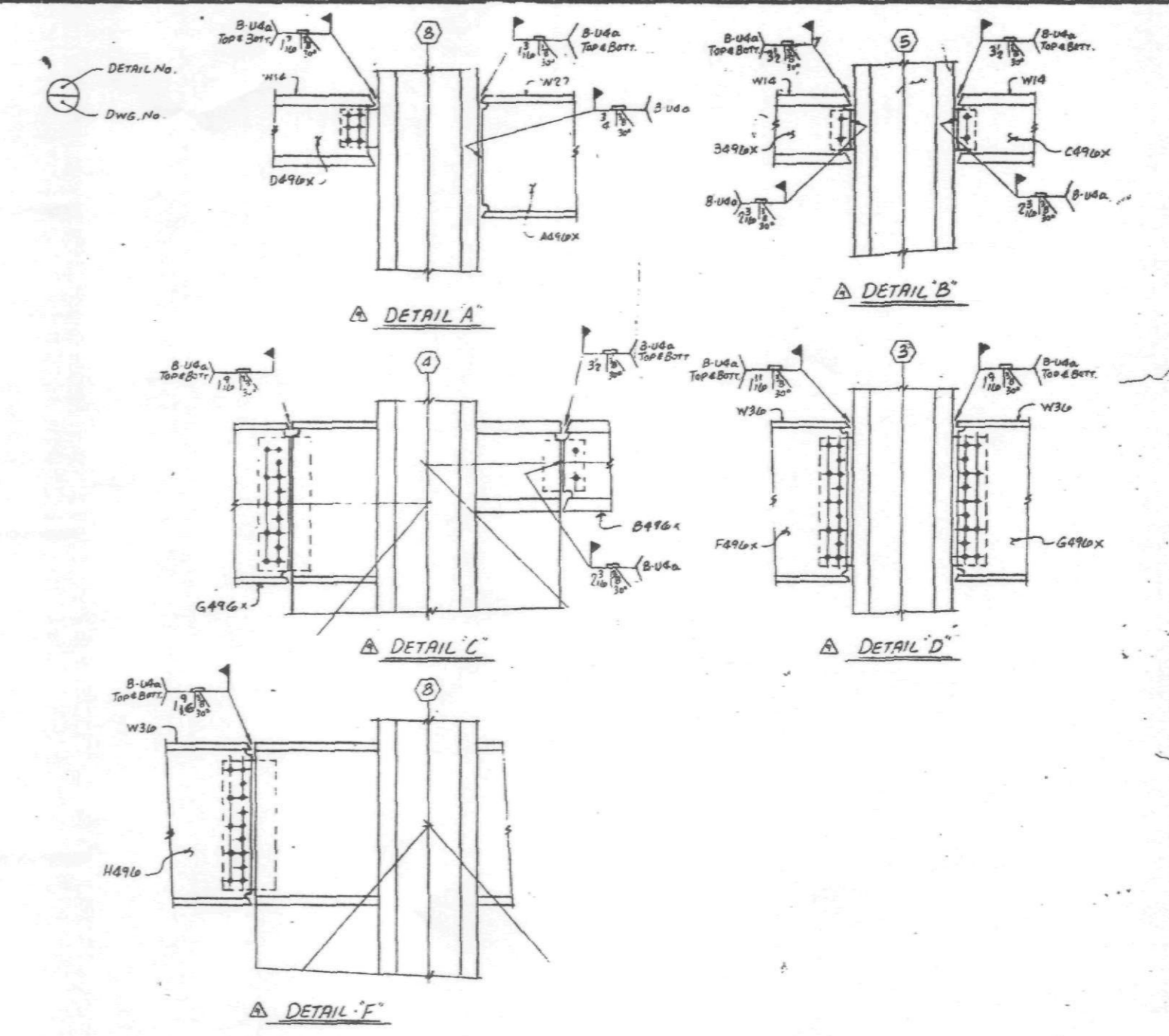
WEST ELEVATION



EAST ELEVATION

**ERECTION NOTE**  
FOR FIELD WELDING SEE  
FIELDWORK DATA LISTED BELOW

FIELDWORK DATA NO.	DATE
FW11	1.2.5
FW12	
FW13	
FW17	



**STRUCTURAL STEEL NOTES:**

- STRUCTURAL STEEL HAS BEEN DESIGNED IN ACCORDANCE WITH THE NEW YORK CITY BUILDING CODE. ALL STEEL TO BE ASTM A572 HAVING A MINIMUM YIELD POINT OF 50,000 PSI AND ASTM A-36 AS NOTED ON DRAWINGS.
- AISC SPECIFICATIONS FOR DESIGN, FABRICATION & ERECTION OF STRUCTURAL STEEL - LATEST EDITION SHALL APPLY, EXCEPT AS MODIFIED BY THE NOTES, SCHEDULES AND DETAILS SHOWN ON THE STRUCTURAL DRAWINGS OR ANY RESTRICTIVE REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE.
- THE FRAME SHALL BE CARRIED UP TRUE AND TEMPORARY BRACING SHALL BE INTRODUCED WHEREVER NECESSARY TO TAKE CARE OF ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECT, INCLUDING EQUIPMENT AND OPERATION OF SAME. SUCH BRACING SHALL BE THE RESPONSIBILITY OF THE STEEL CONTRACTOR AND SHALL BE LEFT IN PLACE AS LONG AS REQUIRED FOR SAFETY.
- ALL CONNECTIONS SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS.
- ALL WELDED CONNECTIONS SHALL CONFORM TO THE NEW YORK CITY BUILDING CODE AND AISC B-1. PROVISIONS SHALL BE MADE FOR FIELD INSPECTION AND TESTING OF WELDS. ALL SHOP WELDS SHALL BE TESTED BY ANY OF THE APPROVED METHODS AND SHALL BE CERTIFIED.
- ALL RIGID STEEL SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS, LATEST EDITION: HIGH STRENGTH BOLTS A-325; FINISHED BOLTS A-307.
- ALL BOLTS SHALL BE 1/2" DIAMETER OR LARGER 13/16" DIAMETER UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- ALL SHOP CONNECTIONS SHALL BE HIGH STRENGTH BOLTED.
- ALL COLUMN BRACES, CONNECTIONS OF BEAMS TO COLUMNS, OR CONNECTIONS WITHIN 3 FEET OF COLUMN CONNECTIONS OF BEAMS CARRYING MACHINE LOADS SHALL BE HIGH STRENGTH BOLTED IN FIELD. [TYP] FIELD CONNECTIONS MAY USE UNFINISHED BOLTS EXCEPT WHERE SPECIFICALLY SHOWN OTHERWISE IN STRUCTURAL DRAWINGS.
- IN ADDITION TO MOMENT CONNECTIONS, PROVIDE AISC STANDARD SHEAR CONNECTIONS FOR ALL BRACING AND WIND CONNECTIONS.
- CONNECTIONS FOR ALL BEAMS MUST BE TOP FOR REACTIONS FIGURED FROM AISC "ALLOWABLE UNIFORM LOAD" TABLE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- WHEN USING REACTIONS FROM AISC "ALLOWABLE UNIFORM LOAD" TABLE FOR BEAMS WITH SHEAR CONNECTIONS, VALUE FROM TABLE MUST BE INCREASED BY 50%.
- ALL SHEAR CONNECTIONS SHALL BE 1/2" HEAVY STUDS 5" EDGE U.O.N.
- ALL ENDS OF COLUMNS AT SPICES AND AT THEIR BEARING CONNECTIONS SHALL BE FILLED TO COMPLETE TRUE BEARINGS.
- FILLED STIFFENERS SHALL BE PROVIDED ON ALL COLUMN CONNECTIONS AND OVER ALL CORNERS.
- PROVISIONS SHALL BE MADE FOR CORRECT ONE OF OTHER TRADES INCLUDING CUTTING AND PURCHASING OF MATERIALS, WHERE REQUIRED, AS THE DRAWINGS OR FOR WHICH INFORMATION IS FURNISHED PRIOR TO FABRICATION.
- THE USE OF CUTTING TOUGH IN THE FIELD WILL NOT BE PERMITTED.
- WELDING ELECTRODES SHALL CONFORM TO AISC ELECTRODES.
- CONTRACTOR SHALL PROVIDE STIFFENERS FOR SECTION 1-15.5 OF AISC SPECIFICATIONS REGARDING THE NEED FOR COLUMN STIFFENERS 0-0.
- ALL WELDERS TO BE LICENSED IN NEW YORK CITY.
- ALL STRUCTURAL STEEL SHALL RECEIVE ONE COAT OF PRIMER AT THE FABRICATION AND CLEANING, EXCEPT ON FIELD WELDS. CONTACT SURFACES AND SURFACES TO BE ENCASED IN CONCRETE OR TO BE FINISH-PREPARED. PREPARE FOR PAINTING IN ACCORDANCE WITH SSPC-SP.

- NOTES**
- FOR INFORMATION NOT SHOWN SEE PLANS AND COL SCHEDULES.
  - TENSION AND COMPRESSION FORCES ARE SHOWN [---] FOR BRACING MEMBERS.
  - WIDE FLANGE BRACING MEMBERS MAY BE SUBSTITUTED BY DOUBLE CHANNELS OR DOUBLE T'S PROVIDED EQUIVALENT STRENGTH REQUIREMENTS ARE MET. OVERALL WIDTH & DEPTH OF SUBSTITUTE MEMBERS SHALL NOT EXCEED THE SIZES OF MEMBERS SHOWN.
  - END MOMENTS ARE SHOWN (---)

**STEEL DECK NOTES:**

- STEEL DECK SHALL CONFORM TO THE CURRENT SPECIFICATIONS FOR THE DESIGN OF LIGHT GAUGE COLD FORMED STEEL STRUCTURAL MEMBERS PER THE AISC.
- DECK SHALL BE ANCHORED TO BRACING MEMBER AND BEARER AS SHOWN ON DRAWINGS.
- OPENINGS IN DECK SHALL BE TREATED AS FOLLOWS:
  - FOR HOLES 6" OR LESS, PERPENDICULAR TO SPAN, NO REINFORCING REQUIRED.
  - FOR HOLES OVER 6", BUT NOT MORE THAN 12", PROVIDE ONE 1/2" GAUGE REINFORCING PLATE 2" x 2" AND WELD IN PLACE.
  - ALL OTHER OPENINGS TO BE FRAMED AS SHOWN ON PLAN.

**SUPERSTRUCTURE CONCRETE NOTES:**

- NO CONCRETE OVER METAL DECK SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI X2 28 DAYS U.O.N.
- ALL CONCRETE IS TO COMPLY WITH ALL REQUIREMENTS OF CURRENT A.C.I. CODE AND ALL OTHER RELEVANT SECTIONS OF THE NEW YORK CITY BUILDING CODE.
  - PRELIMINARY TESTS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AND THE PORT AUTHORITY FOR REVIEW. NO CONCRETE SHALL BE PLACED BEFORE SUCH REVIEW HAS BEEN COMPLETED.
  - LABORATORY TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AND THE PORT AUTHORITY.

**ERECTION NOTE**  
FOR FIELD WELDING SEE  
FIELDWORK DATA LISTED BELOW

FIELDWORK DATA NO.	DATE
FW10	1.2
FW11	1.2
FW12	1.2
FW13	1.2
FW17	1.2
FW18	1.2
FW19	1.2
FW20	1.2
FW21	1.2
FW22	1.2
FW23	1.2
FW24	1.2
FW25	1.2

WTCL-280-I

FOR GENERAL NOTES SEE DWG B20

July 30/85 E  
Dwg B20  
July 24/85 E  
July 19/85 E  
July 9/85 E

NO.	DATE	BY	DESCRIPTION OF REVISION
1			SEE DWG B20 NOTE ANNOT AT COL 42
2			SEE DWG B20 NOTE ANNOT AT COL 42
3			SEE DWG B20 NOTE ANNOT AT COL 42
4			SEE DWG B20 NOTE ANNOT AT COL 42
5			SEE DWG B20 NOTE ANNOT AT COL 42
6			SEE DWG B20 NOTE ANNOT AT COL 42
7			SEE DWG B20 NOTE ANNOT AT COL 42
8			SEE DWG B20 NOTE ANNOT AT COL 42
9			SEE DWG B20 NOTE ANNOT AT COL 42
10			SEE DWG B20 NOTE ANNOT AT COL 42
11			SEE DWG B20 NOTE ANNOT AT COL 42
12			SEE DWG B20 NOTE ANNOT AT COL 42
13			SEE DWG B20 NOTE ANNOT AT COL 42
14			SEE DWG B20 NOTE ANNOT AT COL 42
15			SEE DWG B20 NOTE ANNOT AT COL 42
16			SEE DWG B20 NOTE ANNOT AT COL 42
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47			SEE DWG B20 NOTE ANNOT AT COL 42
48			SEE DWG B20 NOTE ANNOT AT COL 42
49			SEE DWG B20 NOTE ANNOT AT COL 42
50			SEE DWG B20 NOTE ANNOT AT COL 42

FRANKEL STEEL LIMITED  
100 WEST 110TH STREET, NEW YORK, N.Y. 10026

PROJECT: 7 WORLD TRADE CENTER  
DRAWING: WEST WIND BRACING ELEVATIONS  
DATE: 8-15-85  
SCALE: AS SHOWN  
SHEET: E120

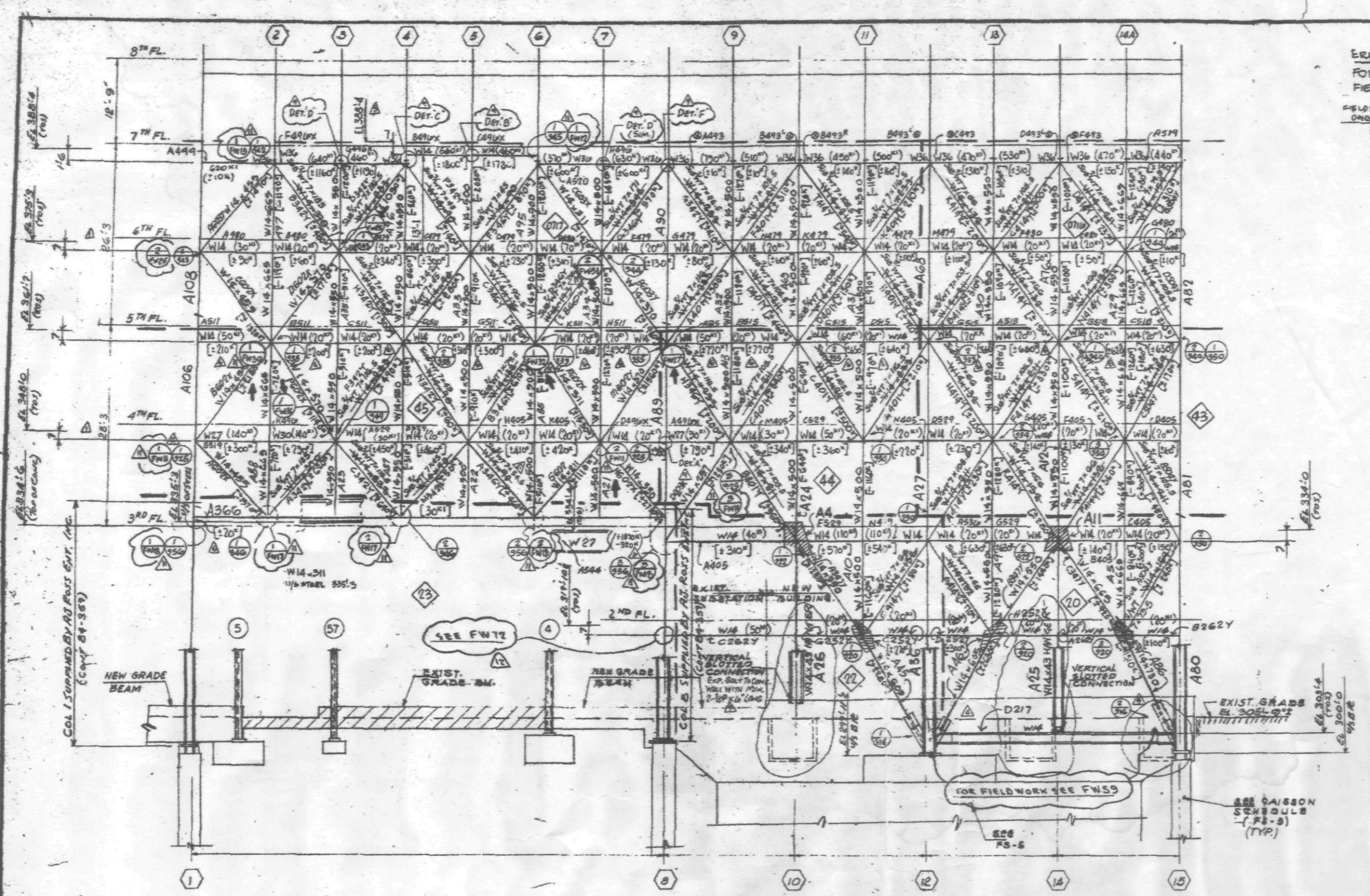
IRWIN G. CANTOR P.C.  
ARCHITECT  
84-15 WEST 81ST STREET, REGO, N.Y. 11374

EMERY ROTH & SONS P.C.  
ENGINEER  
100 WEST 110TH STREET, NEW YORK, N.Y. 10026

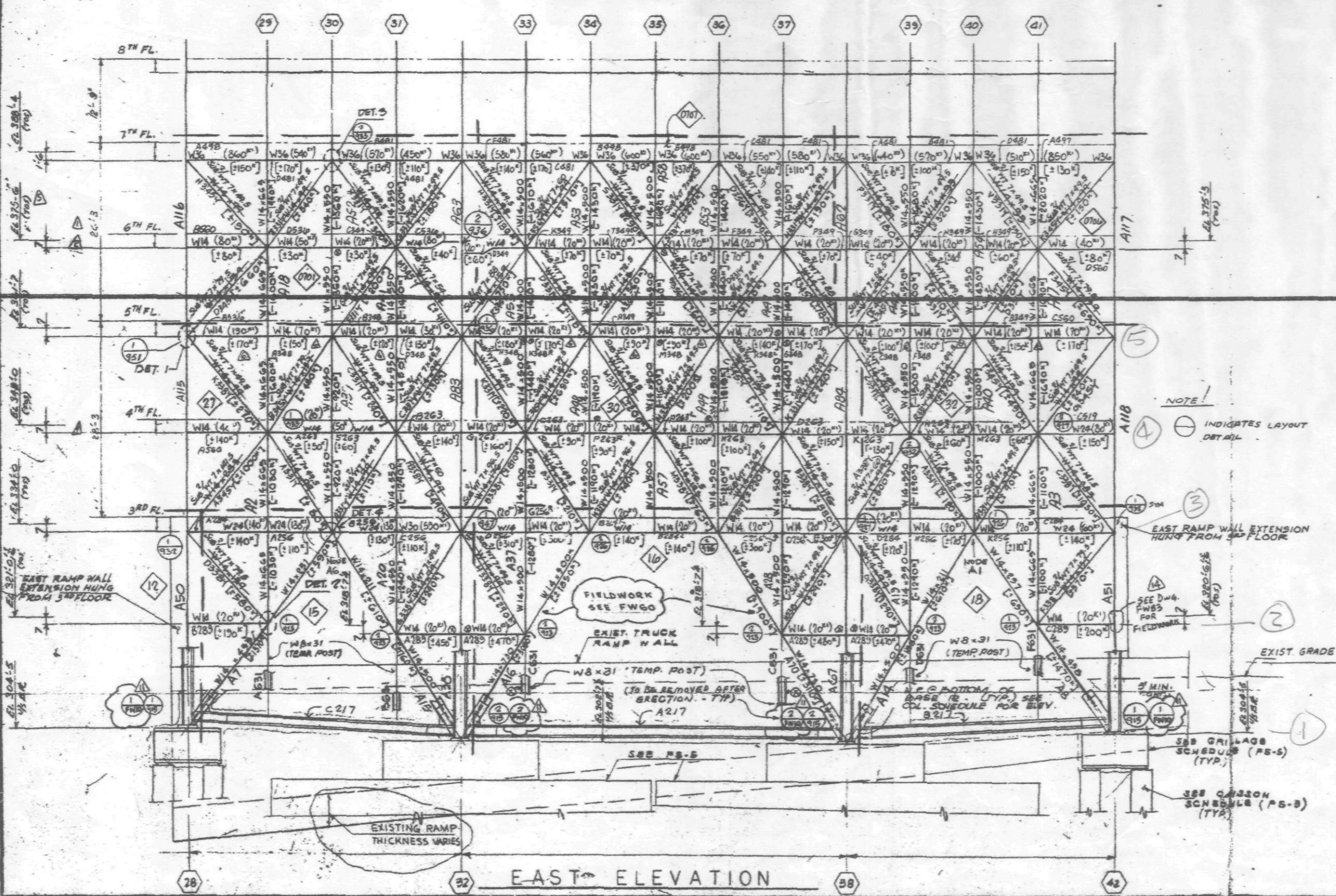
TISHMAN CONSTRUCTION  
CONTRACTOR  
100 WEST 110TH STREET, NEW YORK, N.Y. 10026

CUSTOMERS DRAWING 5-20





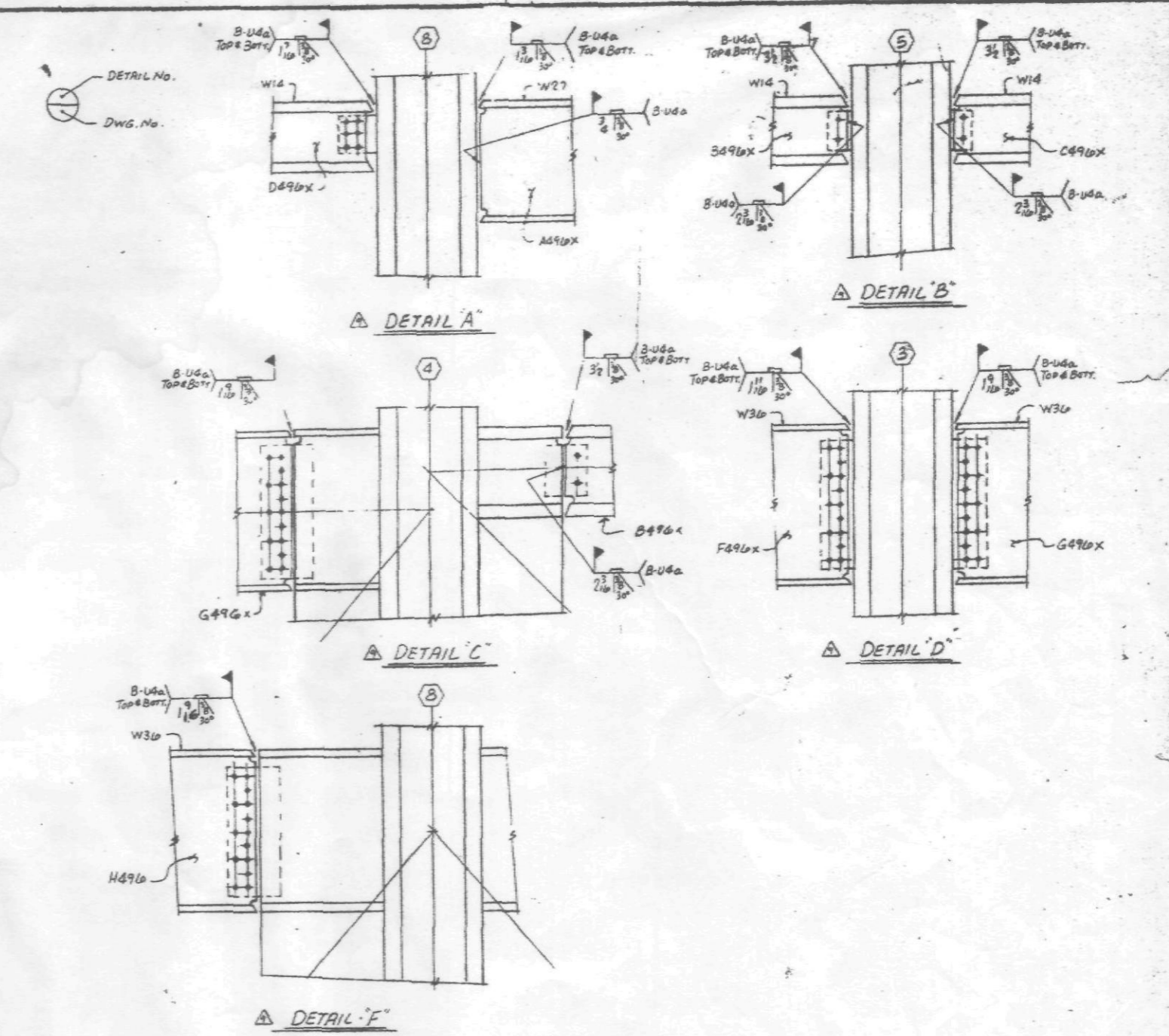
WEST ELEVATION



EAST ELEVATION

ERECTOR NOTE!  
FOR FIELD WELDING SEE  
FIELDWORK DWGS LISTED BELOW

FIELDWORK DWS #	DETAIL NO.
FW10	1, 2
FW12	1
FW17	1



**STRUCTURAL STEEL NOTES:**

- STRUCTURAL STEEL HAS BEEN DESIGNED IN ACCORDANCE WITH THE NEW YORK CITY BUILDING CODE. ALL STEEL TO BE ASTM A572 HAVING A MINIMUM YIELD POINT OF 50,000 PSI AND ASTM A-36 AS NOTED ON DRAWINGS.
- AISC SPECIFICATIONS FOR DESIGN, FABRICATION & ERECTION OF STRUCTURAL STEEL - LATEST EDITION SHALL APPLY, EXCEPT AS MODIFIED BY THE NOTES, SCHEDULES AND DETAILS SHOWN IN THE STRUCTURAL DRAWINGS OR ANY RESTRICTIVE REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE.
- THE FRAME SHALL BE CARRIED BY TRUE AND TEMPORARY BRACING SHALL BE INTRODUCED WHERE NECESSARY TO TAKE CARE OF ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED, INCLUDING EQUIPMENT AND OPERATOR'S SALES. SUCH BRACING SHALL BE THE RESPONSIBILITY OF THE STEEL CONTRACTOR AND SHALL BE LEFT IN PLACE IN CASE AS REQUIRED FOR SAFETY.
- ALL CONNECTIONS SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS.
- ALL WELDED CONNECTIONS SHALL CONFORM TO THE NEW YORK CITY BUILDING CODE AND AISC B-1. PROVISIONS SHALL BE MADE FOR FIELD INSPECTION AND TESTING OF WELDS. ALL SHOP WELDS SHALL BE TESTED BY ANY OF THE APPROVED METHODS AND SHALL BE CERTIFIED.
- ALL RIGID STEEL SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS, LATEST EDITION: HIGH STRENGTH BOLTS A-325; UNFINISHED BOLTS A-307.
- ALL BOLTS SHALL BE 1/2" DIAMETER OR 1/2" DIAMETER UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- ALL SHOP CONNECTIONS SHALL BE HIGH STRENGTH BOLTED OR WELDED.
- ALL COLUMN SPICERS, CONNECTIONS OF BEAMS TO COLUMNS, OR CONNECTIONS WITHIN 3 FEET OF COLUMN CONNECTIONS OF BEAMS CARRYING RACKING LOADS SHALL BE HIGH STRENGTH BOLTED IN FIELD. (IF FIELD CONNECTIONS MAY USE UNFINISHED BOLTS EXCEPT WHERE SPECIFICALLY SHOWN OTHERWISE IN STRUCTURAL DRAWINGS.)
- IN ADDITION TO MOMENT CONNECTIONS, PROVIDE AISC STANDARD SHEAR CONNECTIONS FOR ALL GRAVITY AND WIND LOADS.
- CONNECTIONS FOR ALL BEAMS MUST BE FOR REACTIONS FIGURED FROM AISC "ALLOWABLE UNIFORM LOAD" TABLE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- WHEN USING REACTIONS FROM AISC "ALLOWABLE UNIFORM LOAD" TABLE FOR BEAMS WITH SHEAR BOLTS, VALUE FROM TABLE MUST BE INCREASED BY 50%.
- ALL BEAM CONNECTIONS SHALL BE 1/2" HEADED STUDS 5" CIRC. U.O.M.
- ALL ENDS OF COLUMNS AT SPICES AND AT OTHER BEARING CONNECTIONS SHALL BE BOLTED TO COMPLETE THESE BEARINGS.
- FILLED STIFFENERS SHALL BE PROVIDED UNDER ALL COLUMN CONNECTIONS AND OVER ALL CHANNELS.
- PROVISIONS SHALL BE MADE FOR CORRECT ONE OF OTHER TRADES INCLUDING CUTTING AND PURCHASING OF STRUCTURAL MEMBERS. THESE MEMBERS AS SHOWN ON DRAWINGS OR FOR WHICH INFORMATION IS OBTAINED PRIOR TO FABRICATION.
- THE USE OF CUTTING TORCH IN THE FIELD WILL NOT BE PERMITTED.
- WELDING ELECTRODES SHALL CONFORM TO E10X ELECTRODES.
- CONTRACTOR SHALL PROVIDE STIFFENERS FOR SECTION 1-15.5 OF AISC SPECIFICATIONS REGARDING THE NEED FOR COLUMN STIFFENERS U-O-M.
- ALL WELDERS TO BE LICENSED IN NEW YORK CITY.
- ALL STRUCTURAL STEEL SHALL RECEIVE ONE COAT OF PAINT AFTER FABRICATION AND CLEARING, EXCEPT OF FIELD WELD AREAS. CONTACT SURFACES AND SURFACES TO BE ENCASED IN CONCRETE OR TO BE PAINT-FIREPROOFED. PREPARE FOR PAINTING IN ACCORDANCE WITH SSPC-SP.

- NOTES**
- FOR INFORMATION NOT SHOWN SEE PLANS AND COL SCHEDULE.
  - TENSION AND COMPRESSION FORCES ARE SHOWN [T-C] FOR BRACING MEMBERS.
  - WIDEN DRACING MEMBERS MAY BE SUBSTITUTED BY DOUBLE CHANNELS OR DOUBLE T'S PROVIDED EQUIVALENT STRENGTH REQUIREMENTS ARE MET. OVERALL WIDTH & DEPTH OF SUBSTITUTE MEMBERS SHALL NOT EXCEED THE SIZES OF MEMBERS SHOWN.
  - END MOMENTS ARE SHOWN (...)

**STEEL DECK NOTES:**

- STRUCTURAL STEEL AT MAXIMUM SPACING OF 12" WITH MINIMUM BEARING OR END LAP OF 2".
- OPENINGS IN DECK SHALL BE TREATED AS FOLLOWS:
  - FOR HOLES 6" OR LESS, PERPENDICULAR TO SPAN, NO REINFORCING REQUIRED.
  - FOR HOLES OVER 6", BUT NOT MORE THAN 12", PROVIDE ONE 1/4" GAUGE REINFORCING PLATE 24" x 24" AND WELD IN PLACE.
  - ALL OTHER OPENINGS TO BE FRAMED AS SHOWN ON PLAN.

**SUPERSTRUCTURE CONCRETE NOTES:**

- ALL CONCRETE OVER METAL DECK SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5500 PSI AT 28 DAYS U-O-M.
- ALL CONCRETE IS TO COMPLY WITH ALL REQUIREMENTS OF CURRENT ACI CODE AND ALL OTHER RELEVANT SECTIONS OF THE NEW YORK CITY BUILDING CODE.
  - PRELIMINARY TESTS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AND THE PORT AUTHORITY FOR REVIEW. NO CONCRETE SHALL BE PLACED BEFORE SUCH REVIEW HAS BEEN COMPLETED.
  - LABORATORY TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AND THE PORT AUTHORITY.

ERECTOR NOTE  
FOR FIELD WELDING SEE  
FIELDWORK DWGS LISTED BELOW

FIELDWORK DWS #	DETAIL NO.
FW10	1, 2
FW12	1
FW17	1
FW18	1, 2
FW19	1, 2
FW20	1
FW21	2
FW22	1, 2
FW23	1, 2

FOR GENERAL NOTES SEE DWG 520

July 30/85  
May 22/85  
May 4/85  
Apr 9/85

NO.	DATE	BY	DESCRIPTION OF REVISION
1			SEE DWG. 520 FOR REVISIONS TO COL. 42
2			SEE DWG. 520 FOR REVISIONS TO COL. 42
3			SEE DWG. 520 FOR REVISIONS TO COL. 42
4			SEE DWG. 520 FOR REVISIONS TO COL. 42
5			SEE DWG. 520 FOR REVISIONS TO COL. 42
6			SEE DWG. 520 FOR REVISIONS TO COL. 42
7			SEE DWG. 520 FOR REVISIONS TO COL. 42
8			SEE DWG. 520 FOR REVISIONS TO COL. 42
9			SEE DWG. 520 FOR REVISIONS TO COL. 42
10			SEE DWG. 520 FOR REVISIONS TO COL. 42

FRANKEL STEEL LIMITED  
120 AVENUE 20TH STREET, REGINA, ONTARIO, CANADA

7 WORLD TRADE CENTER  
TISHMAN CONSTRUCTION  
EMERY ROTH & SONS P.C.  
IRWIN G. CANTOR P.C.

NO. DATE BY DESCRIPTION OF REVISION

84-15 SHEET 1/20