

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* 201-1-2A, 201-2A, 201-3-2A
201-2HB, 201-2HB-1
201-3HB, 3HB-4, 3HB-5, 3HB-6

19-H

FEDERAL-AID ROUTE NO.	REC.	COUNTY	TOTAL SHEETS	SHEET NO.
412	*	WINNEBAGO	377	1
F. H. A. REG. NO. 4 ILLINOIS PROJECT FFD-412(1)				

P-92-026-74

SECTION 201-3HB

INCLUDES COMPLETE CONSTRUCTION OF A SIMPLE SPAN (1 AT 86'-0") WELDED PLATE GIRDER STRUCTURE CARRYING NORTHBOUND F.A. ROUTE 412 OVER TOWNSHIP ROAD 223 (LINDEN ROAD) AT STATION 2559+60.39 ALONG CENTERLINE F.A. ROUTE 412.

SECTION 201-3HB-4

INCLUDES COMPLETE CONSTRUCTION OF A SIMPLE SPAN (1 AT 103'-0") WELDED PLATE GIRDER STRUCTURE CARRYING RAMP DB OVER TOWNSHIP ROAD 223 (LINDEN ROAD) AT STATION 48+24.97 ALONG BASELINE RAMP DB.

SECTION 201-3HB-5

INCLUDES COMPLETE CONSTRUCTION OF A SIMPLE SPAN (1 AT 103'-0") WELDED PLATE GIRDER STRUCTURE CARRYING RAMP BD OVER TOWNSHIP ROAD 223 (LINDEN ROAD) AT STATION 66+69.42 ALONG BASELINE RAMP BD.

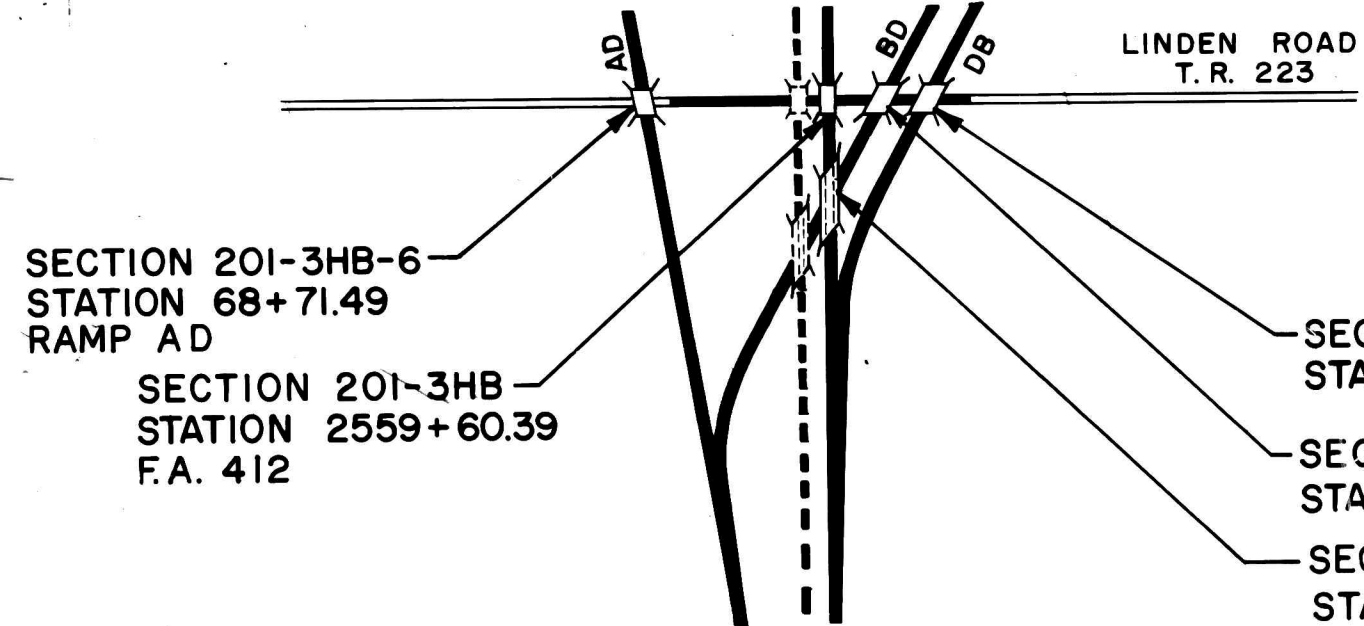
SECTION 201-3HB-6

INCLUDES COMPLETE CONSTRUCTION OF A SIMPLE SPAN (1 AT 88'-0") WELDED PLATE GIRDER STRUCTURE CARRYING RAMP AD OVER TOWNSHIP ROAD 223 (LINDEN ROAD) AT STATION 68+71.49 ALONG BASELINE RAMP AD.

SECTION 201-2HB-1

INCLUDES COMPLETE CONSTRUCTION OF A THREE SPAN (1 AT 47'-6", 1 AT 159'-0" & 1 AT 47'-6") WELDED PLATE GIRDER STRUCTURE CARRYING NORTHBOUND F.A. ROUTE 412 OVER RAMP BD AT STATION 2552+06.76 ALONG CENTERLINE F.A. ROUTE 412.

SECTION 201-2HB INCLUDES COMPLETE CONSTRUCTION OF DUAL SIMPLE SPAN (1 AT 86'-6") WELDED PLATE GIRDER STRUCTURES CARRYING F.A. ROUTE 412 OVER C.H. ROUTE 20 (BLACKHAWK ROAD) AT STATION 2468+11.84 ALONG CENTERLINE F.A. ROUTE 412.



BRIDGE SECTION LOCATION PLAN

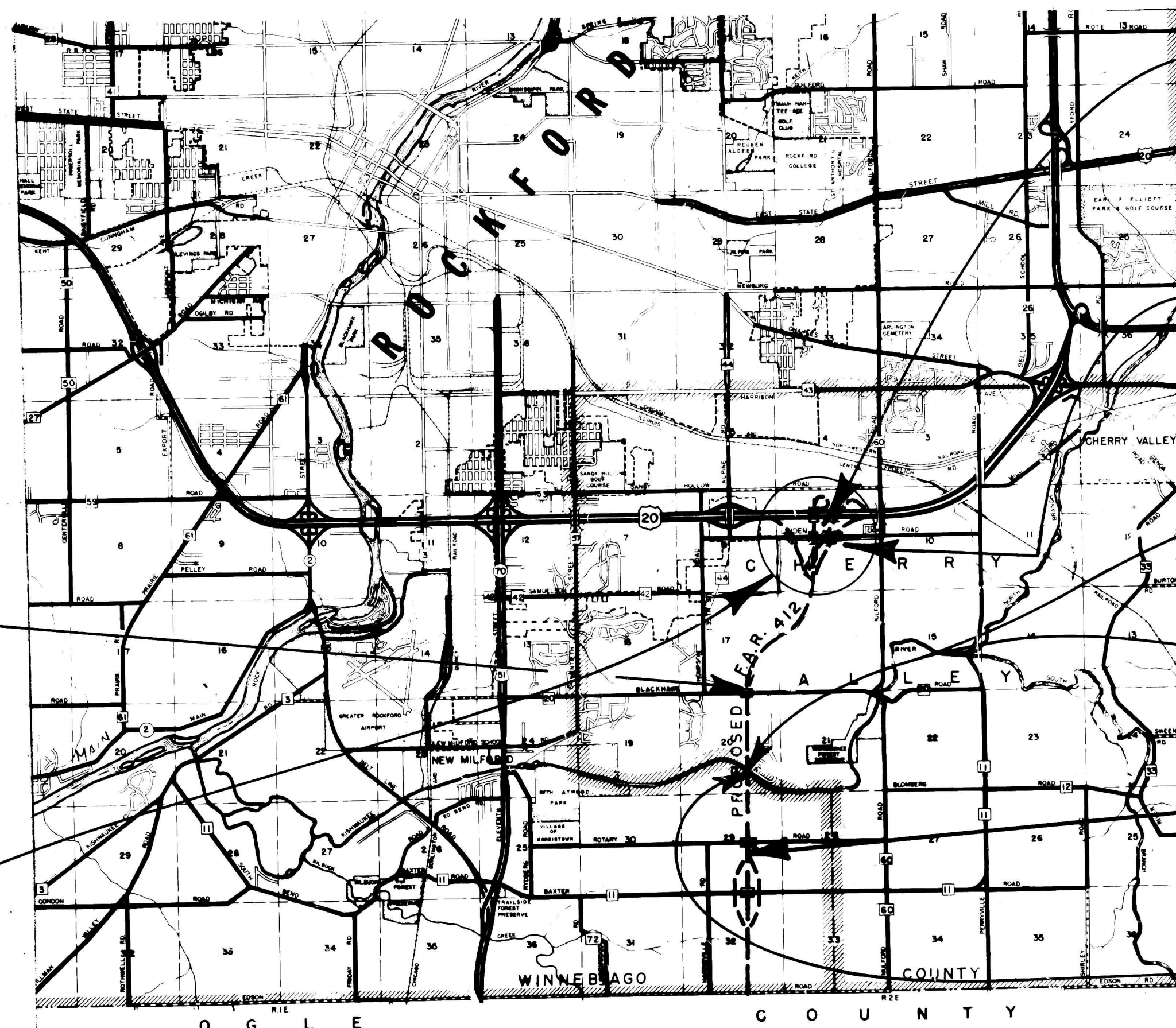
DESIGN DESIGNATION

F.A. ROUTE 412 - 3015 (95) TRUNK 17.06 (CRPCC-20)
LINDEN ROAD 180(97) COLLECTOR 0.07(BIT. CONC.-20)

SECTION 201-1-2A, 201-2A, 201-3-2A
SECTION 201-2HB, 201-2HB-1
SECTION 201-3HB, -3HB-4, -3HB-5, -3HB-6
F.A. PROJECT FFD-412-5(11)

WINNEBAGO COUNTY

C-92-157-78



LAYOUT
SCALE 1"=1 MILE

PROJECT FFD -412-5(11)
SECTION 201-3-2A ENDS
F.A. ROUTE 412
STA. 2569 + 85

SECTION 201-3-2A BEGINS
F.A. ROUTE 412
STA. 2558 + 85.39

SECTION 201-2A ENDS
F.A. ROUTE 412
STA. 2558 + 85.39

SECTION 201-2A BEGINS
F.A. ROUTE 412
STA. 2430 + 87

OMISSION FOR SECTION 201-1B
F.A. ROUTE 412
STA. 2419+16.5 TO 2430+87

PROJECT FFD -412-5(11)
SECTION 201-1-2A BEGINS
F.A. ROUTE 412
STA. 2386+50.00

SECTION 201-1-2A ENDS
F.A. ROUTE 412
STA. 2419 + 16.5



LOCATION OF SECTION INDICATED THUS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED April 9 1979

EXAMINED May 26 1979

PASSED May 25 1979

APPROVED May 25 1979

DISTRICT ENGINEER
ENGINEER OF PLANS AND CONTRACTS
ENGINEER OF DESIGN
DIRECTOR OF HIGHWAYS

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

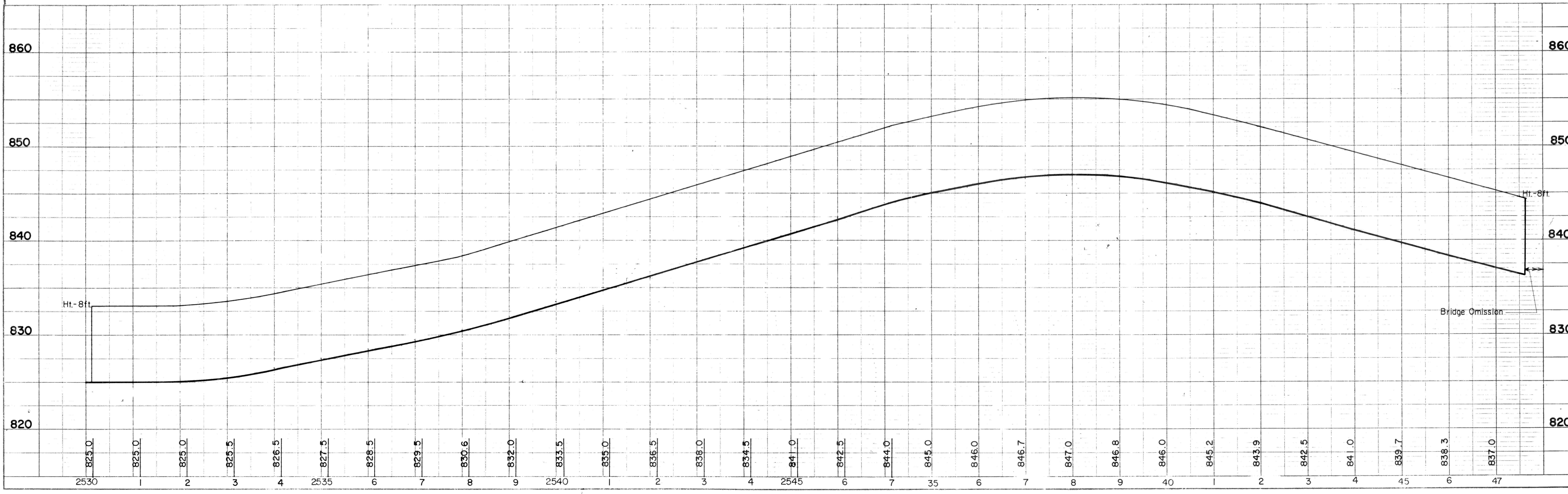
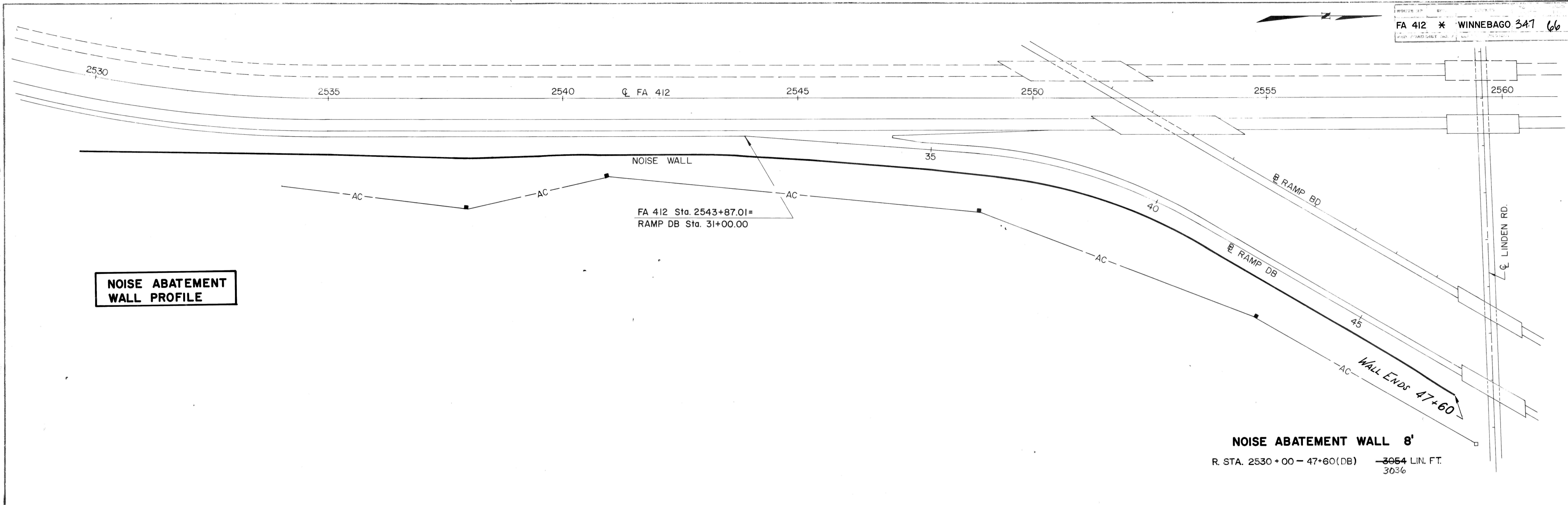
APPROVED

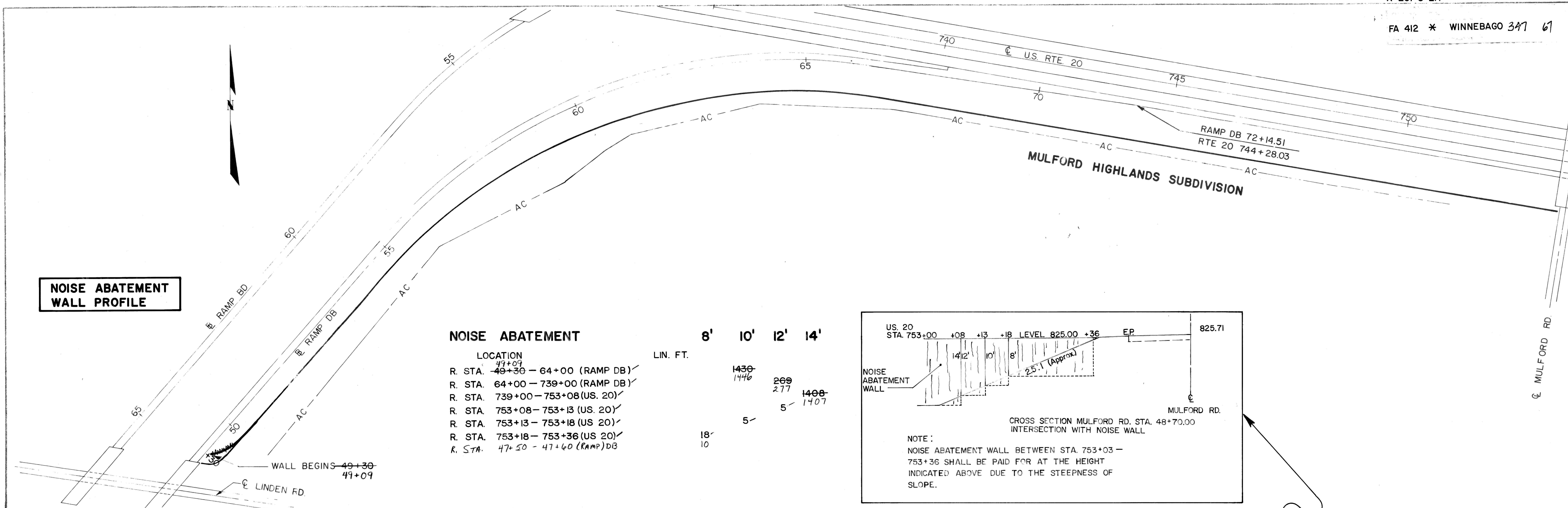
DIVISION ADMINISTRATOR DATE

REVISED SET
10-1-79

GROSS LENGTH OF IMPROVEMENT = 18,335 FEET = 3.473 MILES
NET LENGTH OF IMPROVEMENT = 17,164.5 FEET = 3.251 MILES

CONTR. NO. 4



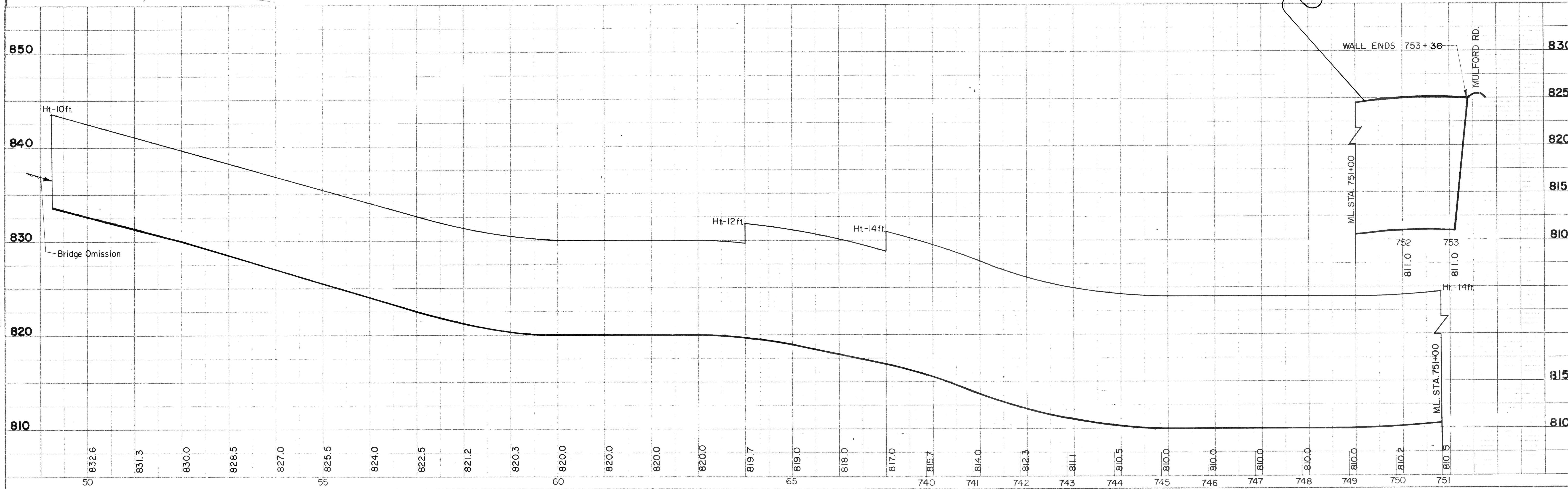
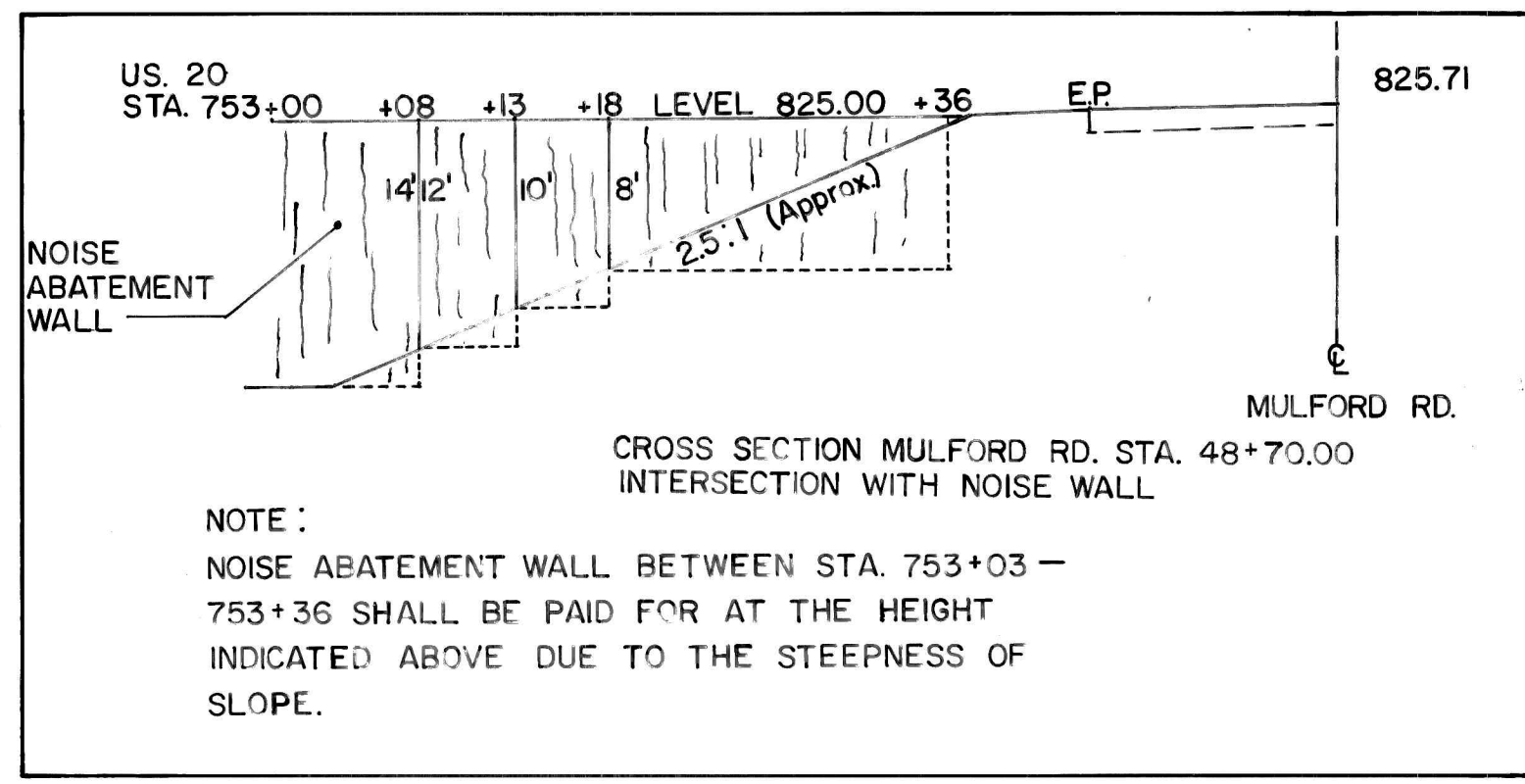


NOISE ABATEMENT WALL PROFILE

NOISE ABATEMENT

LOCATION	
R. STA. 49+30 ⁴⁷⁺⁵⁰ - 64+00 (RAMP DB)	✓
R. STA. 64+00 - 739+00 (RAMP DB)	✓
R. STA. 739+00 - 753+08 (US. 20)	✓
R. STA. 753+08 - 753+13 (US. 20)	✓
R. STA. 753+13 - 753+18 (US. 20)	✓
R. STA. 753+18 - 753+36 (US. 20)	✓
R. STA. 47+50 - 47+60 (RAMP) DB	✓

LIN. FT.	8'	10'	12'	14'
		1430	269	1408
		1446	277	1407
	18'	5'		
	10'			



PLAN

PROFILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
412	*	WILNEBAGO	347	60	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

* 201 - (1-2A, 2A, 24B, 24B-1, 34B, 34B-4, 34B-5, 34B-6, 3-2A)

GENERAL NOTES

Design Specification: 1973 AASHTO Standard Specifications for Highway Bridges and all Interim Specifications as applicable.
Materials and Construction shall be in accordance with the State of Illinois Standard Specifications for Road and Bridge Construction, adopted July 1, 1976 unless noted.

Loading: 40 p.s.f. Wind load.

Design Stresses: Precast Prestressed Units

- $f'_c = 5,000$ psi
- $f'_{ci} = 4,000$ psi
- $f'_s = 270,000$ psi ($\frac{1}{2}$ " Strands)
- $f'_{si} = 189,000$ psi ($\frac{1}{2}$ " Strands)

- $f_s = 20,000$ psi (Structural Steel)
- $f_y = 60,000$ psi (Reinf. Steel)
- Minimum required soil pressure 1 tsf

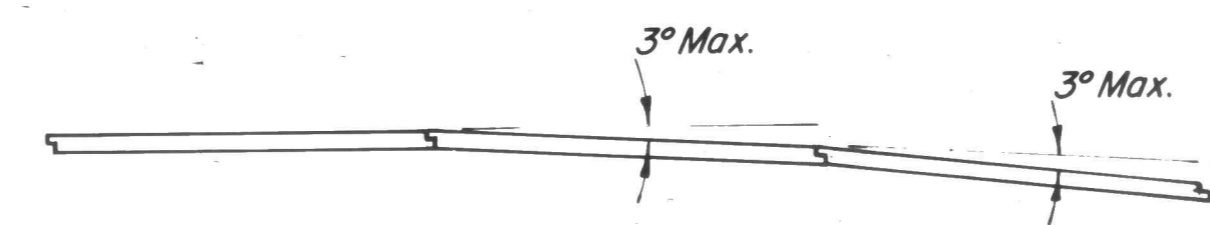
All steel shapes and plate shall conform to the requirements of AASHTO M 183 and galvanized in accordance with AASHTO M 111. Bolts, nuts, and washers shall conform to the requirements of ASTM A 307, and shall be galvanized in accordance with AASHTO M 232.

Prestressing steel shall be non-galvanized, high strength, stress relieved 7-wire strands, Grade 270. The nominal strand diameter shall be $\frac{1}{2}$ " and the nominal cross sectional area of .155 sq. in.

Prestressed strands pattern shall be approved by the Engineer prior to casting panels.
Lifting devices for handling and erection of panels shall be provided. The type and location shall be approved by the Engineer prior to casting panels.

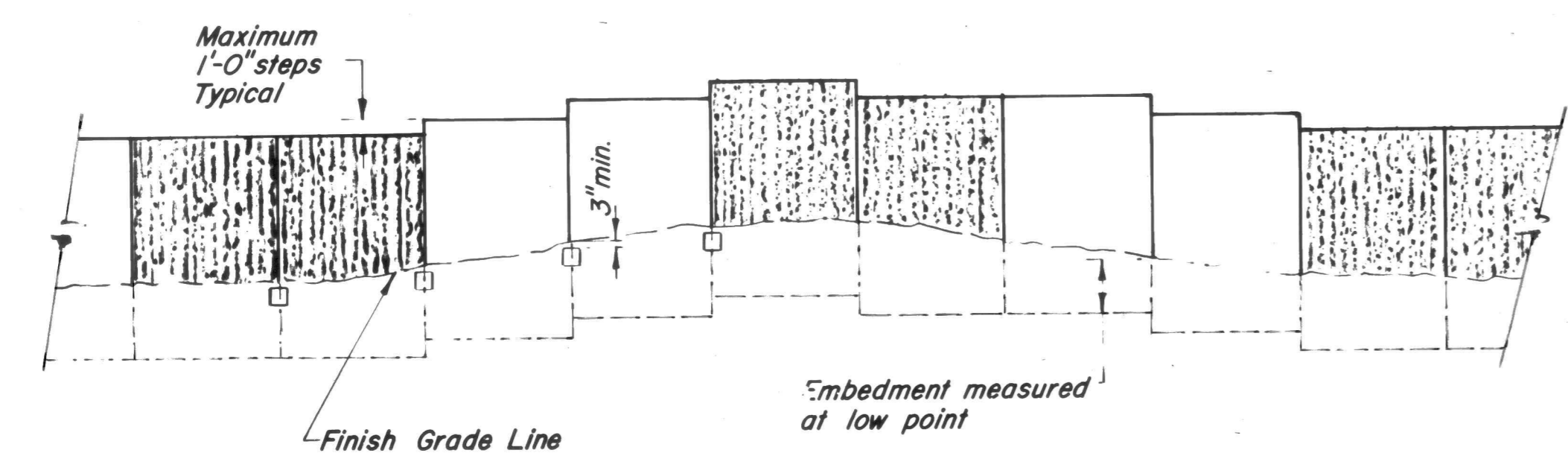
The wall panels shall be temporarily supported until backfill material is placed and properly compacted with a mechanical tamper as directed by the Engineer.

The earth upon which the base of each panel rests shall be firm and level for the entire width of that panel. Excavated material which is clean and free of organic content, or sand, shall be used to even out deviations from the horizontal at bottom of the excavation. The bottom of the excavation shall be compacted sufficiently to prevent unequal settlement of the panels as they are set in place.



PLAN

(Showing curved alignment)

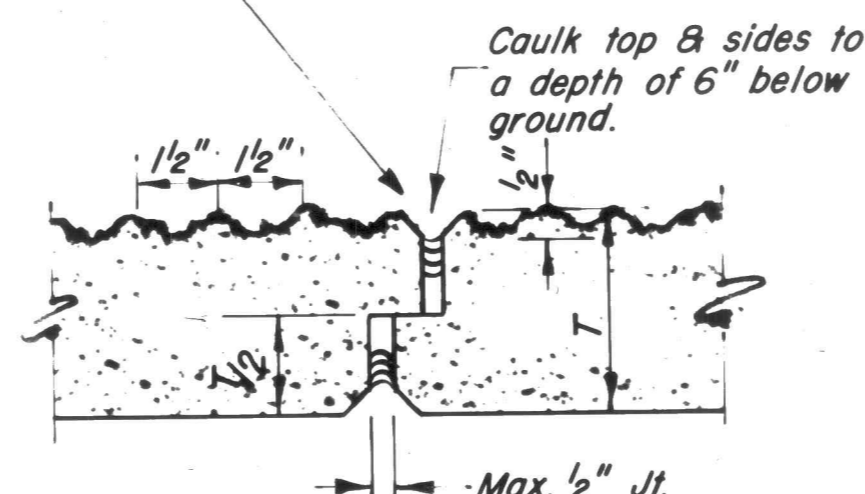


WALL ELEVATION

(Shown for illustrative purposes only)

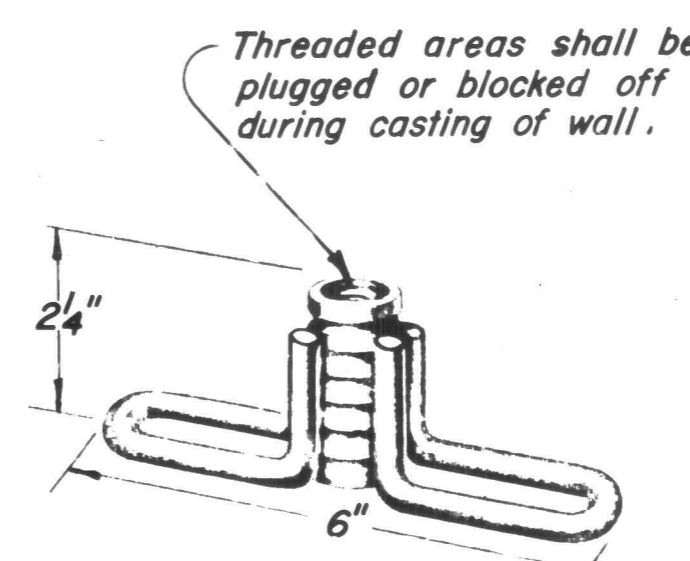
Note: The cable surfaced faces shall be placed in pairs and alternated between the road side and residential side.

Two component non-staining gray sealing compound with polysulfide liquid polymers - gun grade with primer.

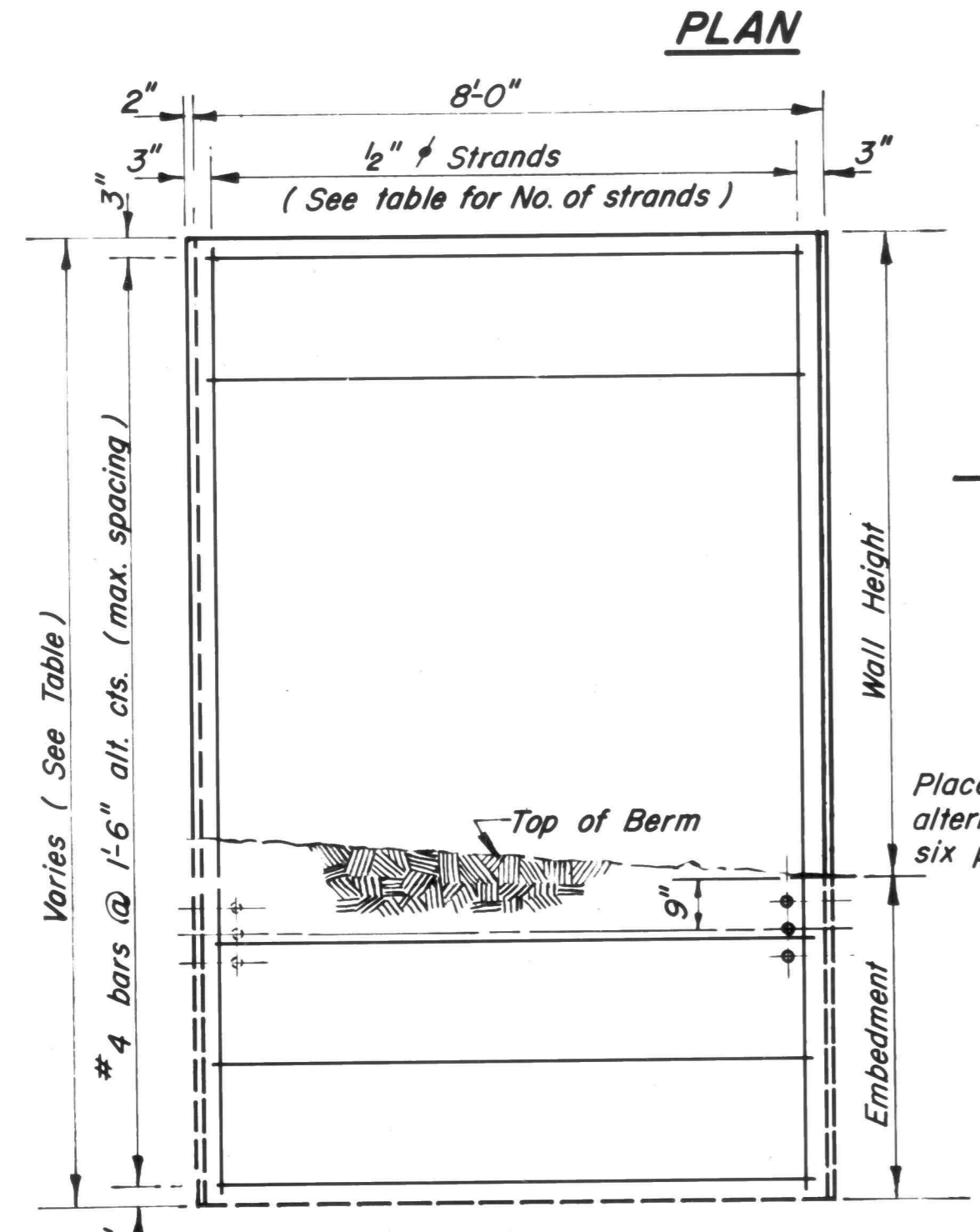


TOP VIEW

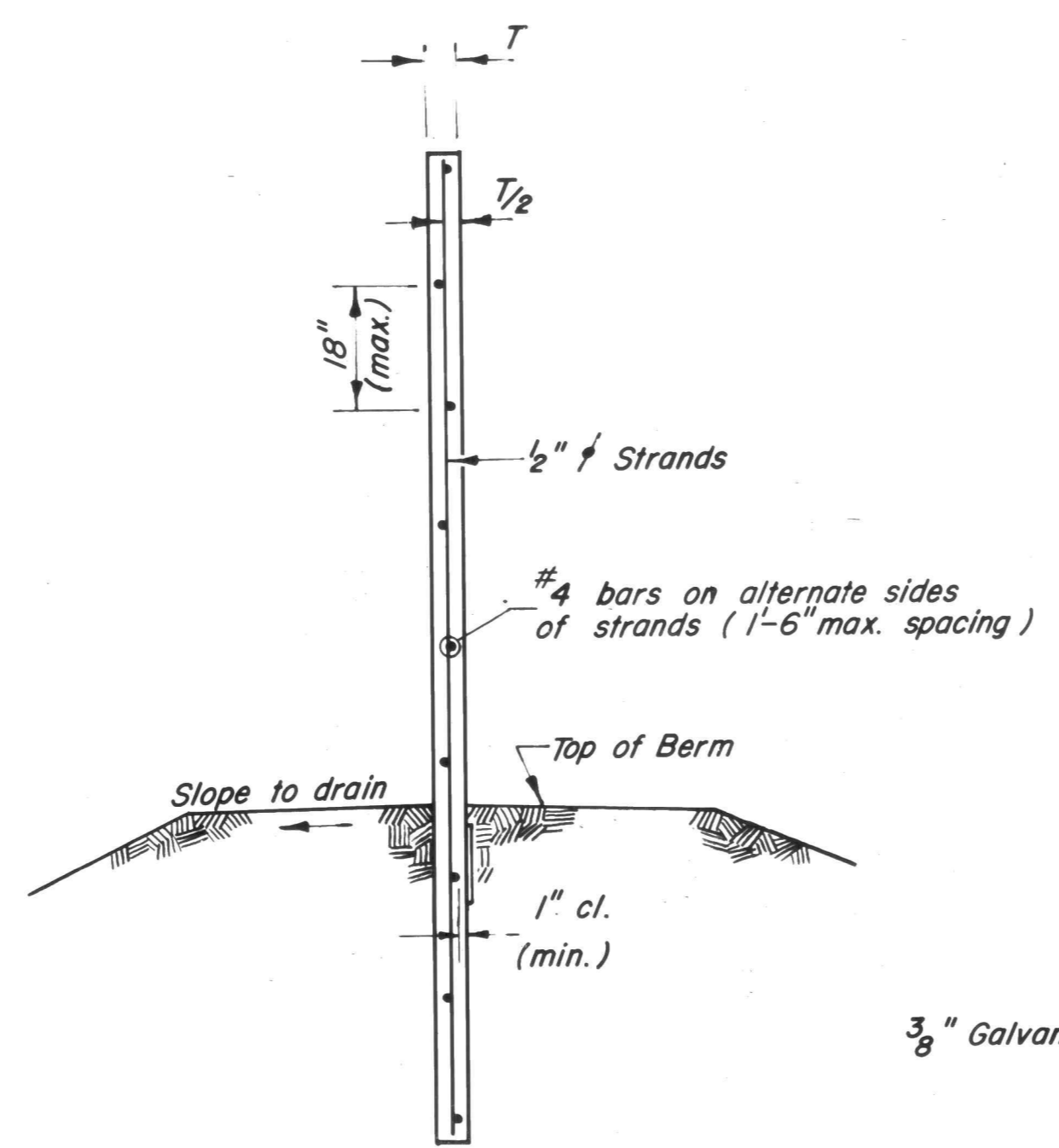
Typical Joint Detail



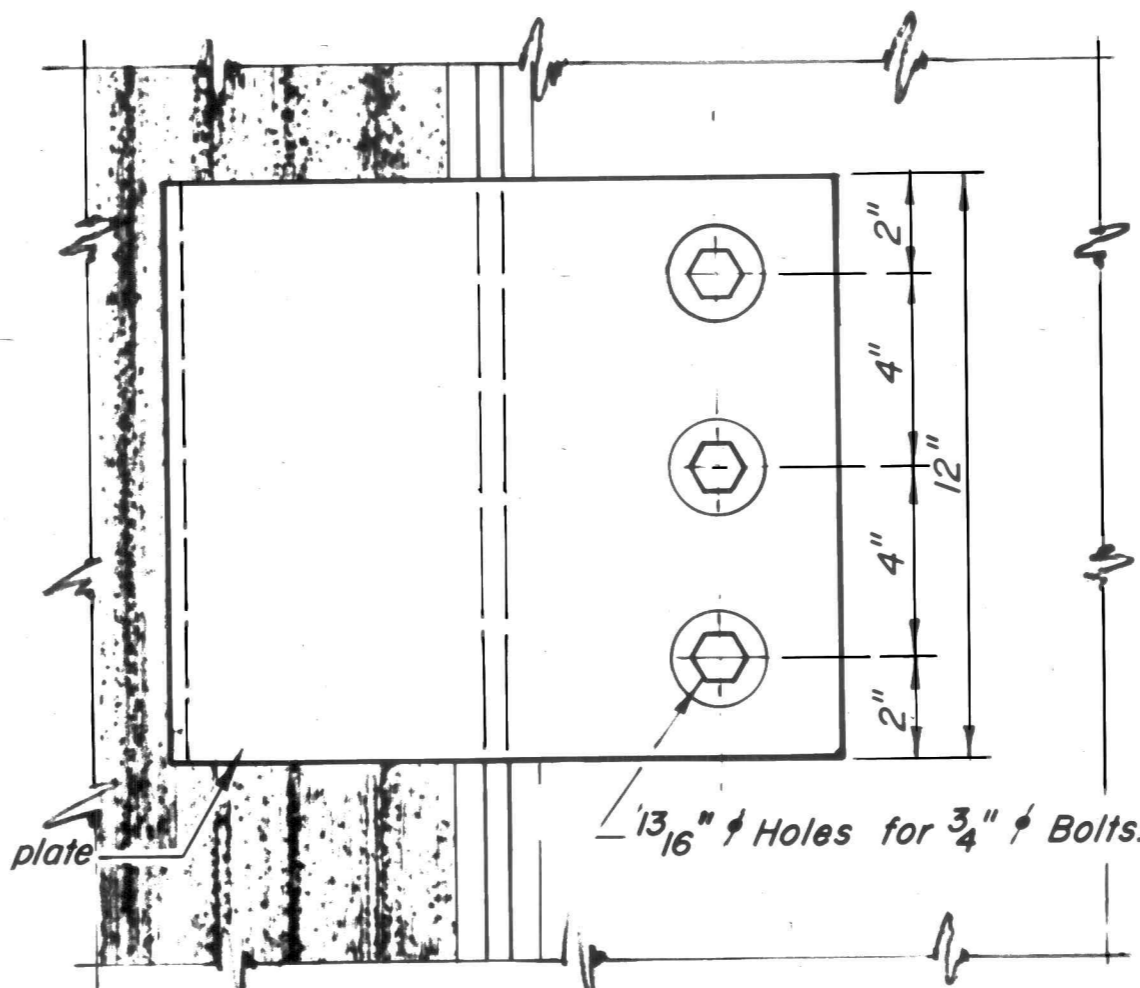
WING TYPE THREADED INSERTS



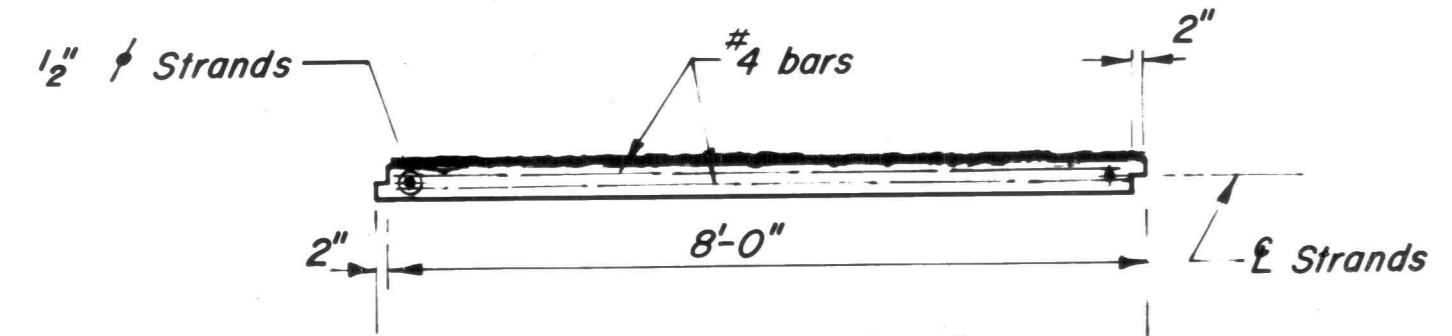
PLAN



END VIEW



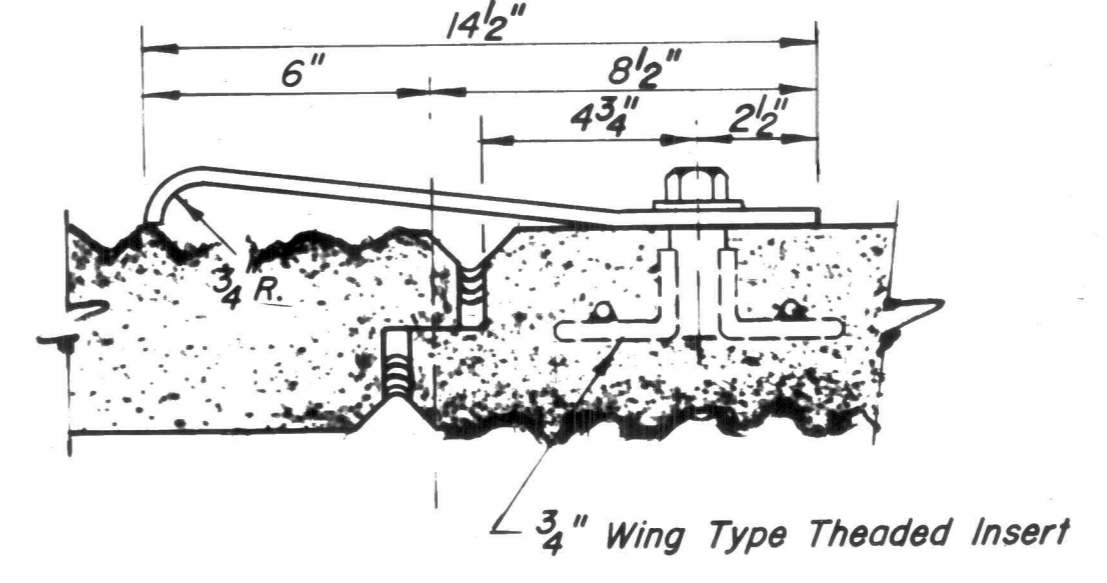
ELEVATION



SECTION A-A

NOISE ABATEMENT WALL TABLE

Wall Height (ft.)	Panel Width (ft.)	Thickness, T (in.)	No. $\frac{1}{2}$ " Strands	Embedment Depth
6	8	4	4	4'-0"
8	8	4	5	4'-6"
10	8	4	8	5'-0"
12	8	5	8	5'-9"
14	8	5	12	6'-0"



PLAN BRACKET DETAILS

**NOISE ABATEMENT WALL
PRECAST PRESTRESSED CONCRETE WALL PANELS**

DESIGNED B.R.T.
CHECKED DJR
DRAWN DJR
CHECKED DJR

September 12 1977
EXAMINED Carl E. Thurman Jr.
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED
APPROVED
ENGINEER OF DESIGN
DIRECTOR OF HIGHWAYS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
S. B. I. P. A. 412	*	WINNEBAGO	347	69	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

* 201-(1-2A, 2A, 2HB, 2HB-1, 3HB, 3HB-4, 3HB-5, 3HB-6, 3-2A)

GENERAL NOTES

Design Specification: 1973 AASHTO Standard Specifications for Highway Bridges and all Interim Specification as applicable.

Materials and Construction shall be in accordance with the State of Ill. Standard Specifications for Road and Bridge construction, adopted July 1, 1976, unless noted.

All the limestone specified or shown on plans shall be Indiana Oolitic Limestone, as quarried in Lawrence, Monroe, and Owen Counties, Indiana. Stone shall be modular wall panels having an Oyster / Buff blend with a Cable finish. Stone and workmanship quality shall be in accordance with standards and practices as set forth by the Indiana Limestone Institute of America, Inc., Bedford, Indiana.

Loading: 40 psf Wind Load
Min. Allowable Soil Pressure = 1 tsf
Design stresses:

Limestone: ultimate compressive strength = 4,000 psi
max. allowable bending stress = 90 psi

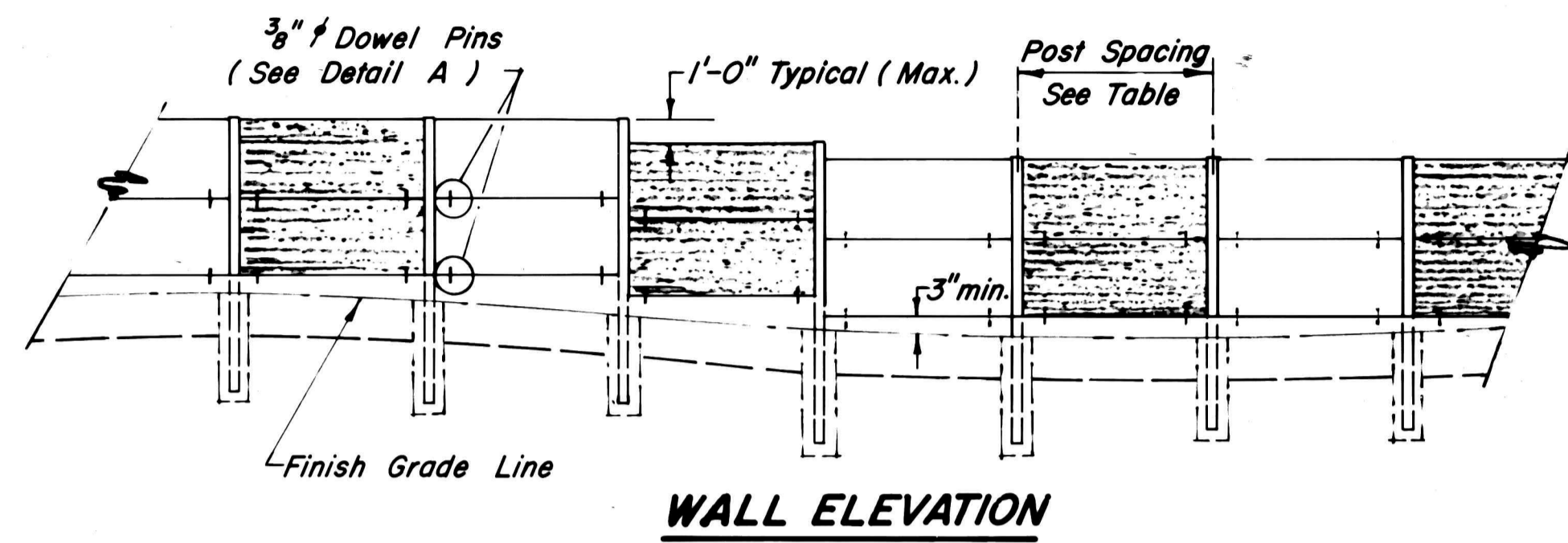
Steel: (Structural steel) fs = 20,000 psi

Lumber shall be California Redwood, No. 2 Commercial, graded under rules of the Redwood Inspection Service.

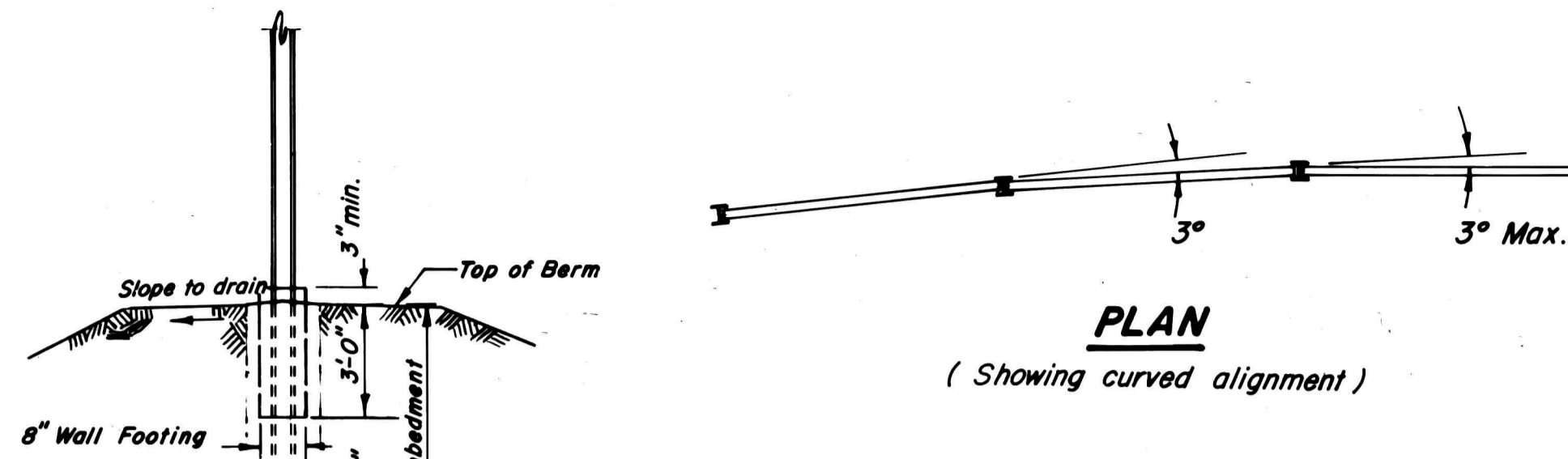
Dowel Pins shall be 3/8" and shall be Eraydo Alloy Zinc, yellow brass, commercial bronze, or stainless steel - Type 302 or 304.

Steel Posts shall conform to the requirements of AASHTO M183 and be galvanized in accordance with AASHTO M111.

Footings for posts and wall panels shall be Class X Concrete and constructed to size and depth as shown on the plan, and in accordance with Article 504 of the Standard Specifications.



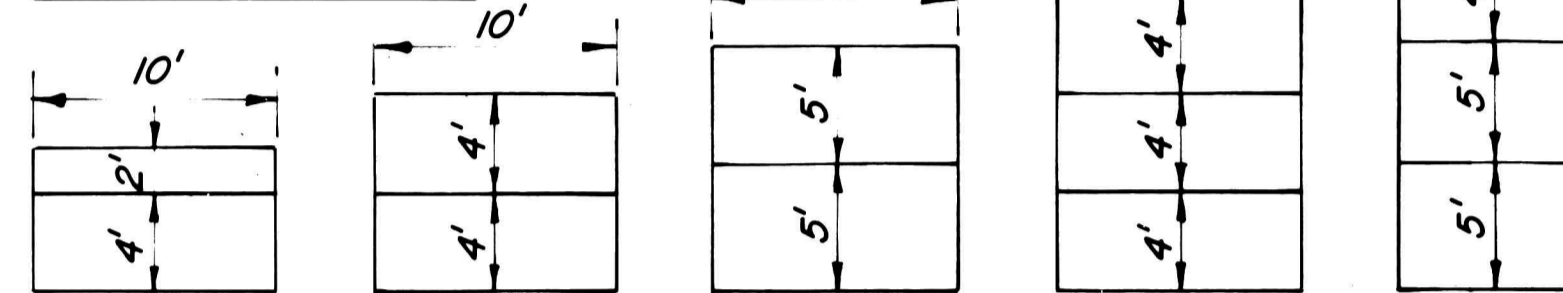
WALL ELEVATION



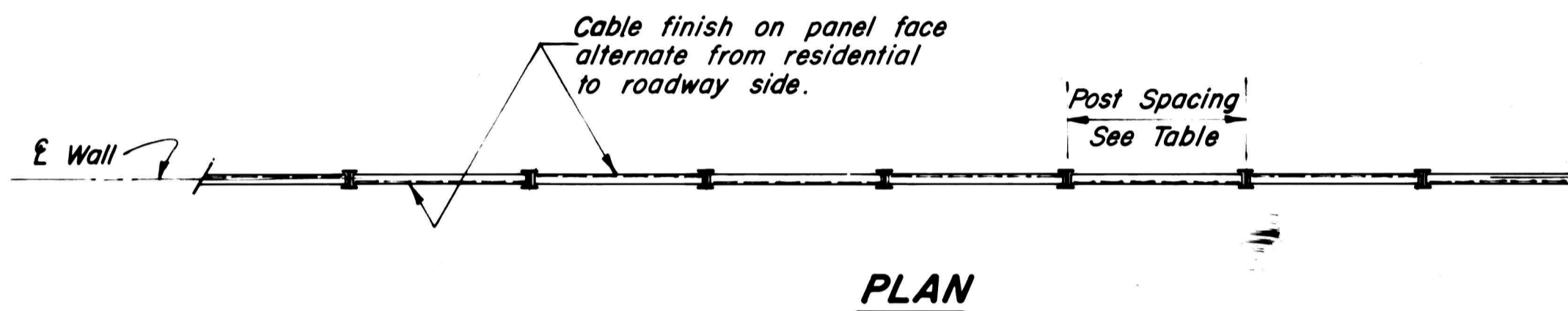
PLAN

(Showing curved alignment)

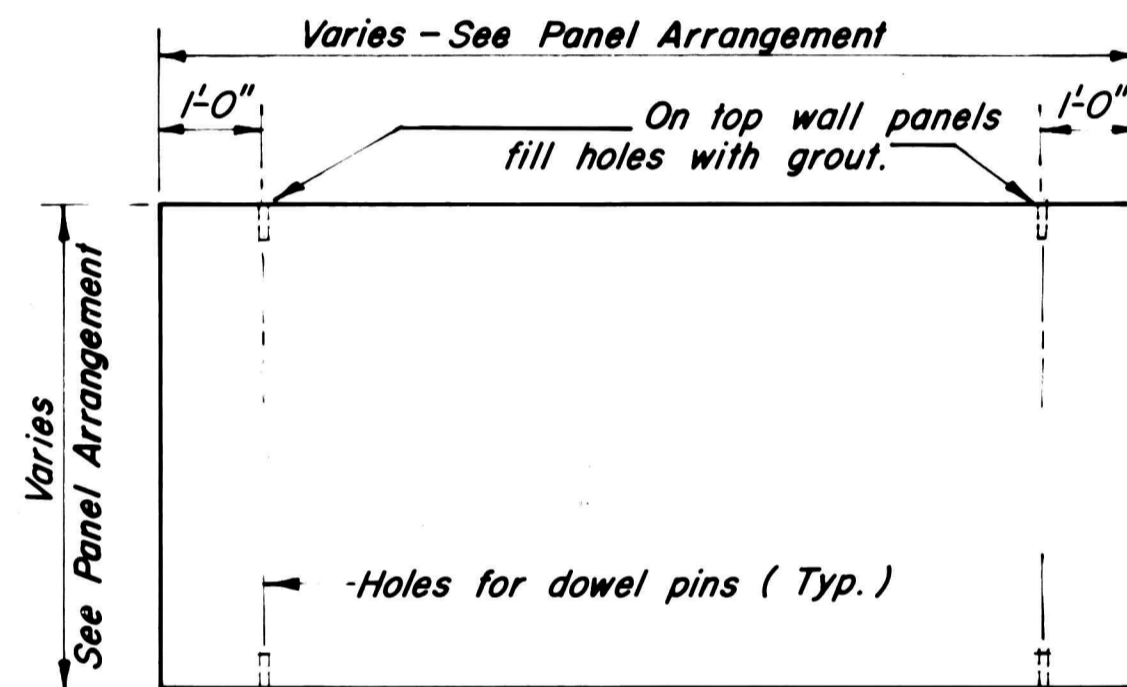
SEC. THRU BERM



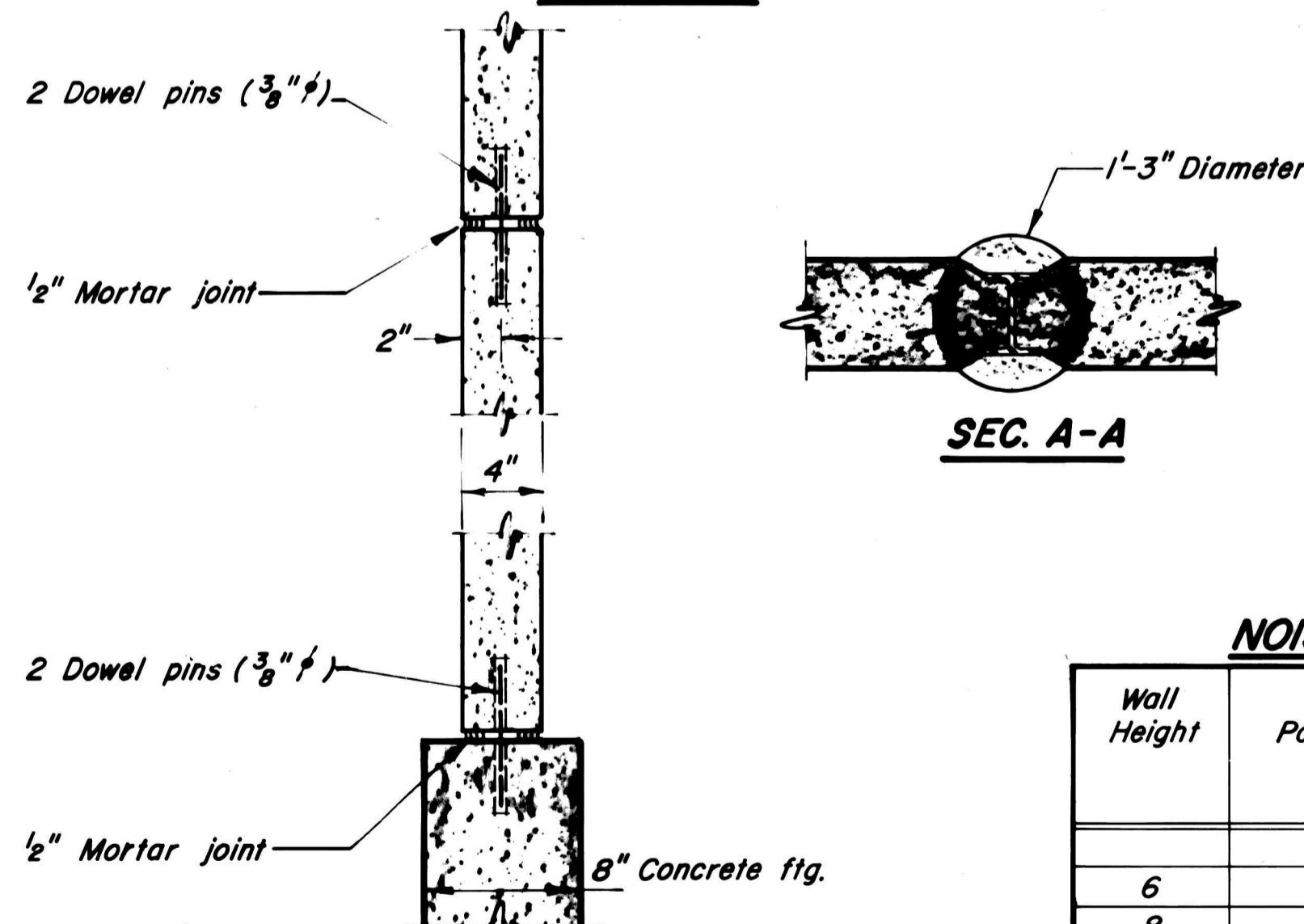
**LIMESTONE PANEL ARRANGEMENT
for WALL HEIGHTS from 6' to 14'**



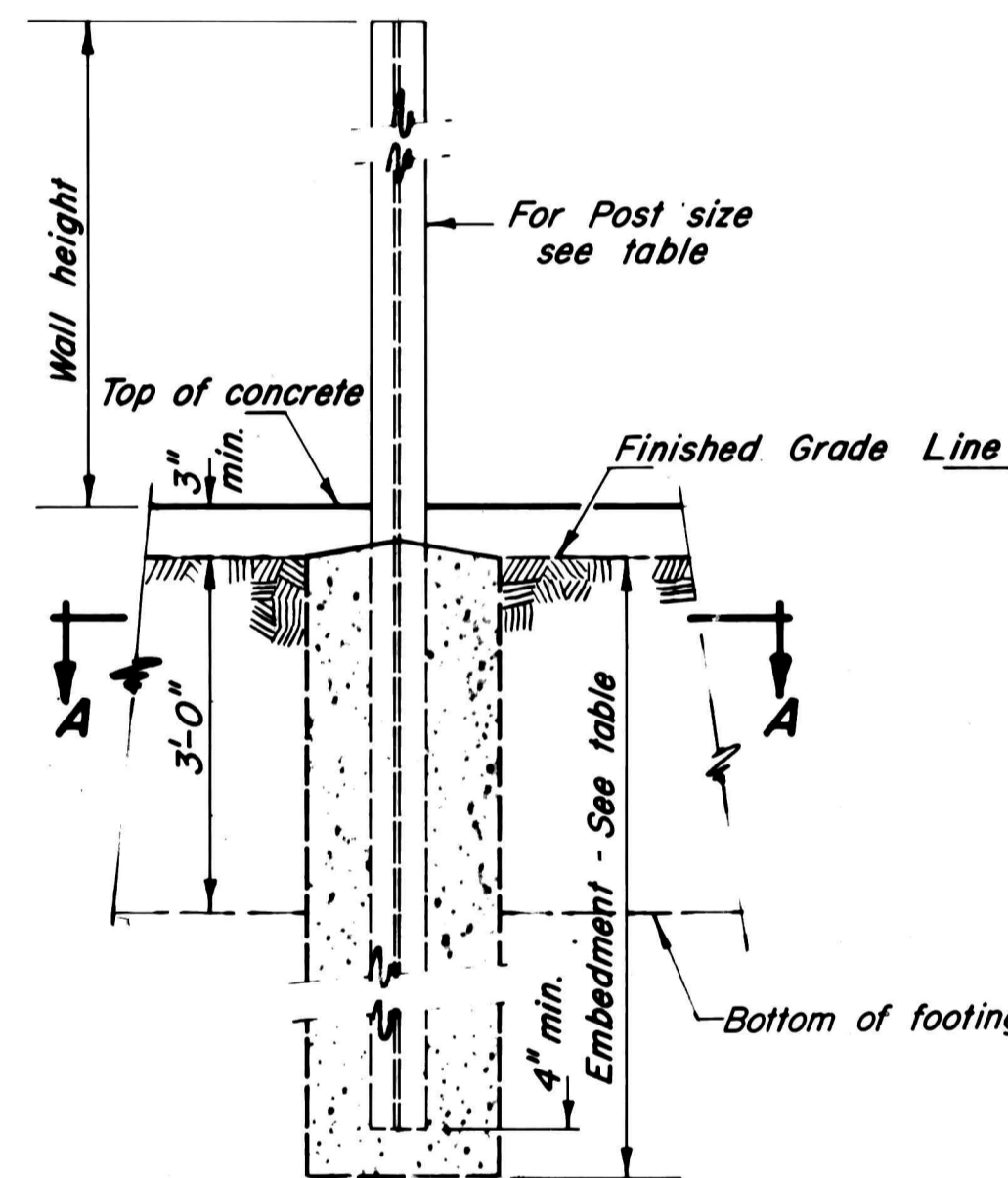
PLAN



SIDE VIEW

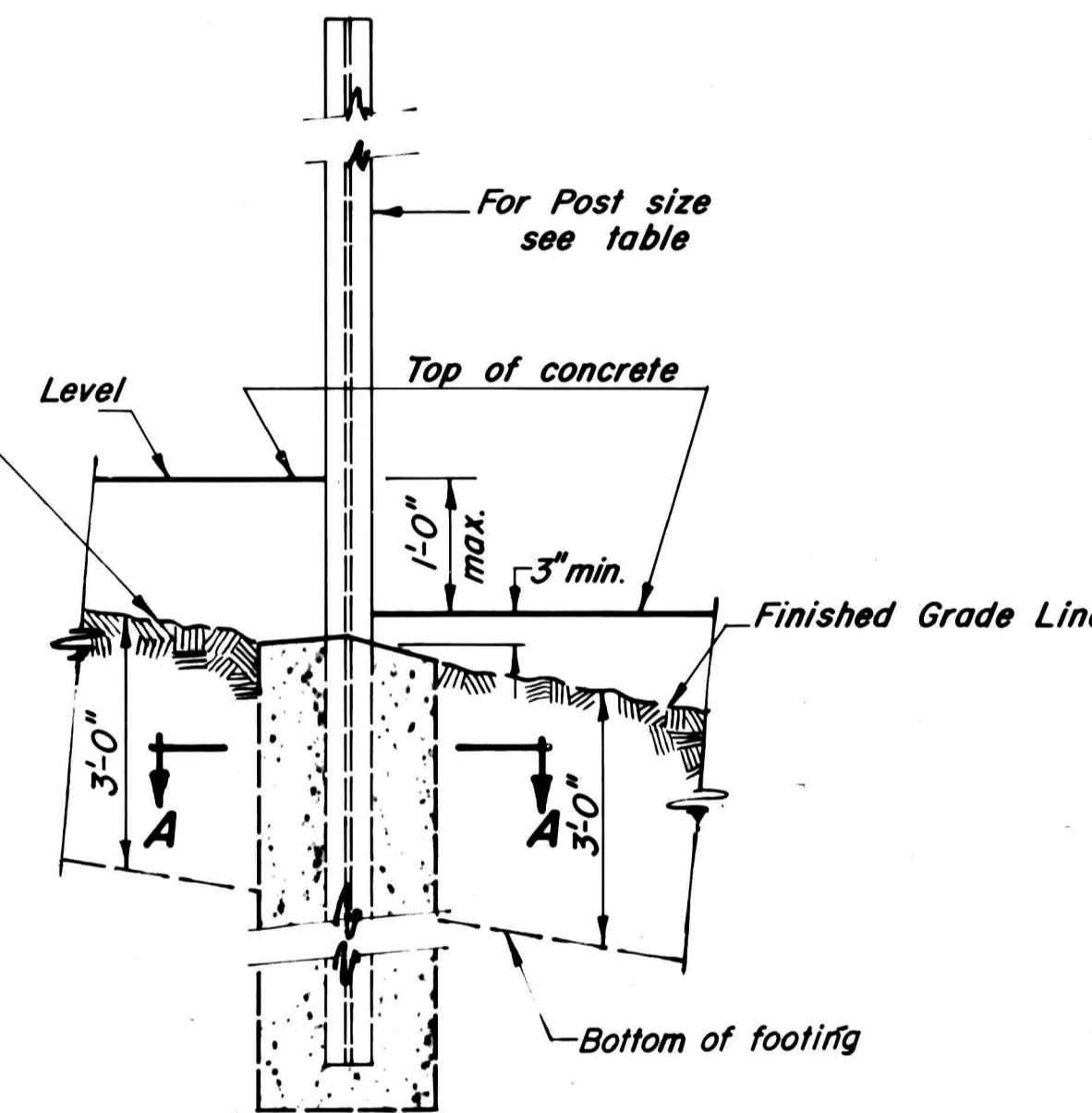


DETAIL "A"



POST

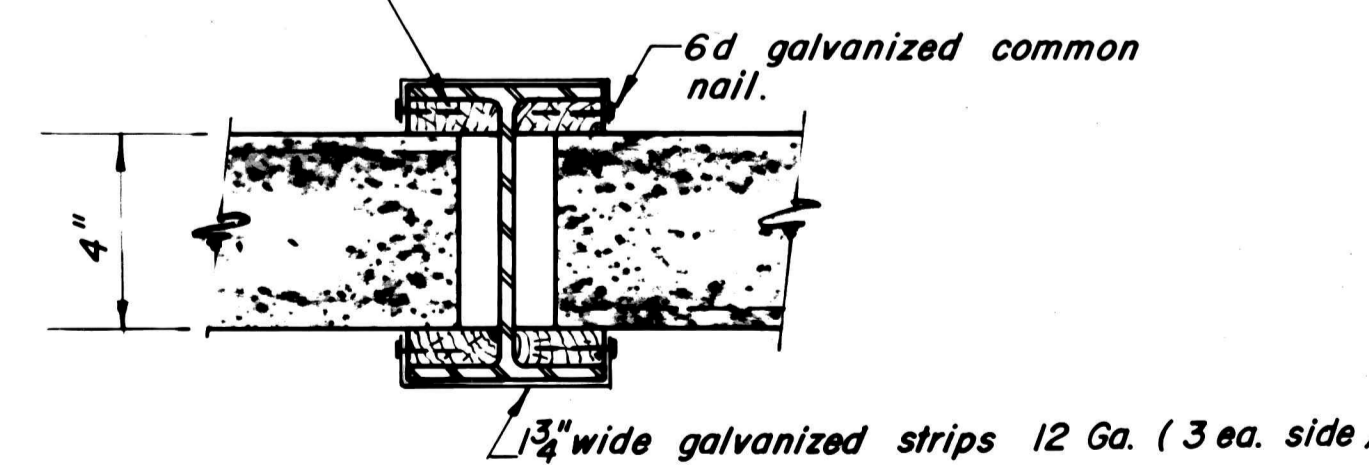
(Level Ground)



POST

(Sloping Ground)

California Redwood - Nominal 1" thick (S4S)
(To be placed after panels are in place)



SEC. THRU POST

NOISE ABATEMENT WALL TABLE

Wall Height	Post Spacing	Post Size	Embedment Depth and Footing Dia.
6	10'-2"	W6 x 9	4'-6" x 1'-3" φ
8	10'-2"	W6 x 12	5'-6" x 1'-3" φ
10	10'-2"	W6 x 16	6'-0" x 1'-6" φ
12	10'-2"	W6 x 25	7'-0" x 1'-9" φ
14	8'-2"	W6 x 25	7'-0" x 1'-9" φ
* 12	10'-2"	W6 x 25	6'-0" x 2'-0" φ
* 14	8'-2"	W6 x 25	6'-0" x 2'-0" φ

* When required an alternate embedment depth may be used

DESIGNED	BRT
CHECKED	DJK
DRAWN	[Signature]
CHECKED	DJK

EXAMINED
September 12, 1977
Carl E. Thurman Jr.
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

**NOISE ABATEMENT WALL
TEXTURED LIMESTONE WALL PANELS**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
412	*	WINNEBAGO	3A1	70
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

* 201 - (1-2A, 2A, 2HB, 2HB-1, 3HB, 3HB-4, 3HB-5, 3HB-6, 3-2A)

GENERAL NOTES

Design Specification: 1973 AASHTO Standard Specifications for Highway Bridge and all Interim Specification as applicable.

Material and construction shall be in accordance with the State of Illinois Standard Specifications for Road and Bridge Construction, adopted July 1, 1976 and the Specifications of the Fanwall Sales Corporation (Box 868, 655 Concord Street, Farmingham, Massachusetts. 01701)

Design Stresses: Precast Panels.

$f'_c = 4,500$ psi

$f_c = 1,800$ psi

$n = 8$

$f_s = 20,000$ psi (Structural Steel)

$f_y = 60,000$ psi (Reinf. Steel)

Maximum Earth Pressure = 2,500 p.s.f.

Loading: 40 p.s.f. Wind Load.

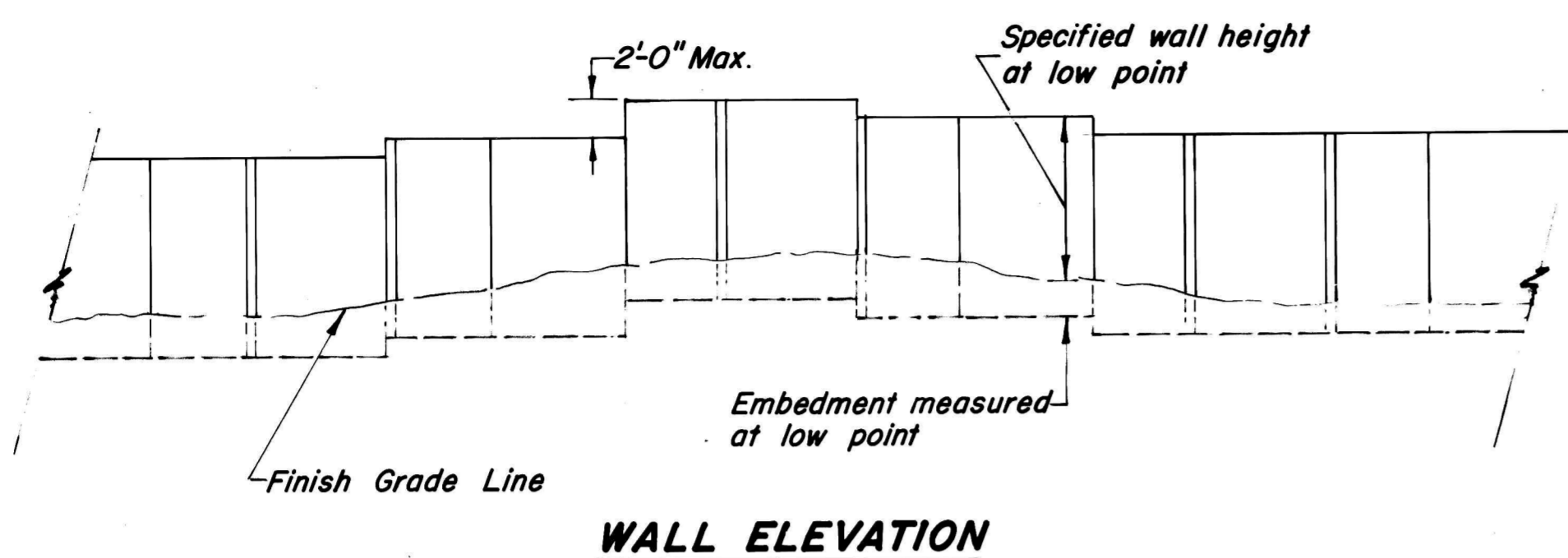
Lifting devices for handling and erection of panels shall be provided. The type and location shall be approved by the Engineer prior to casting panels.

The wall panels shall be temporarily supported until cable connector assembly is in place.

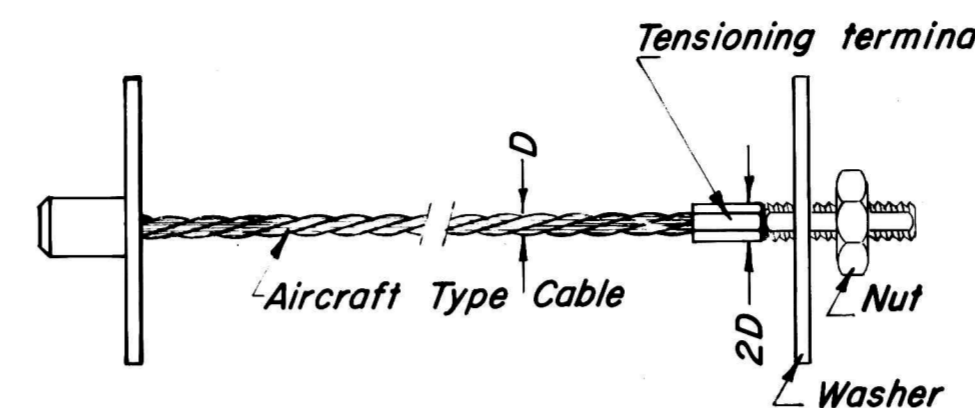
The berm or embankment upon which the wall panels rest shall be constructed in accordance with Section 207 of the Illinois Standard Specifications. A two inch minimum levelled and compacted sand bed shall be used to even out deviations of the embankment prior to placing the wall panels.

Noise Abatement Wall shall be measured for payment in lineal feet. The length paid for shall be the overall length along the center line of wall.

The Fanwall noise abatement wall system is manufactured by the Fanwall Sales Corporation (See address above.) and is available from that corporation or its licensee only.

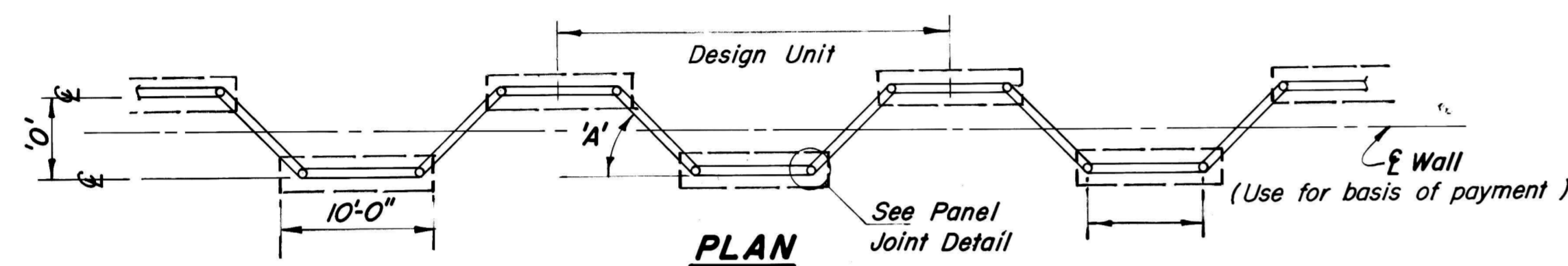


WALL ELEVATION

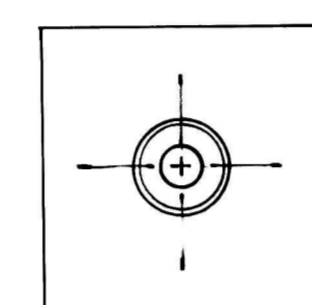


CABLE CONNECTOR ASSEMBLY

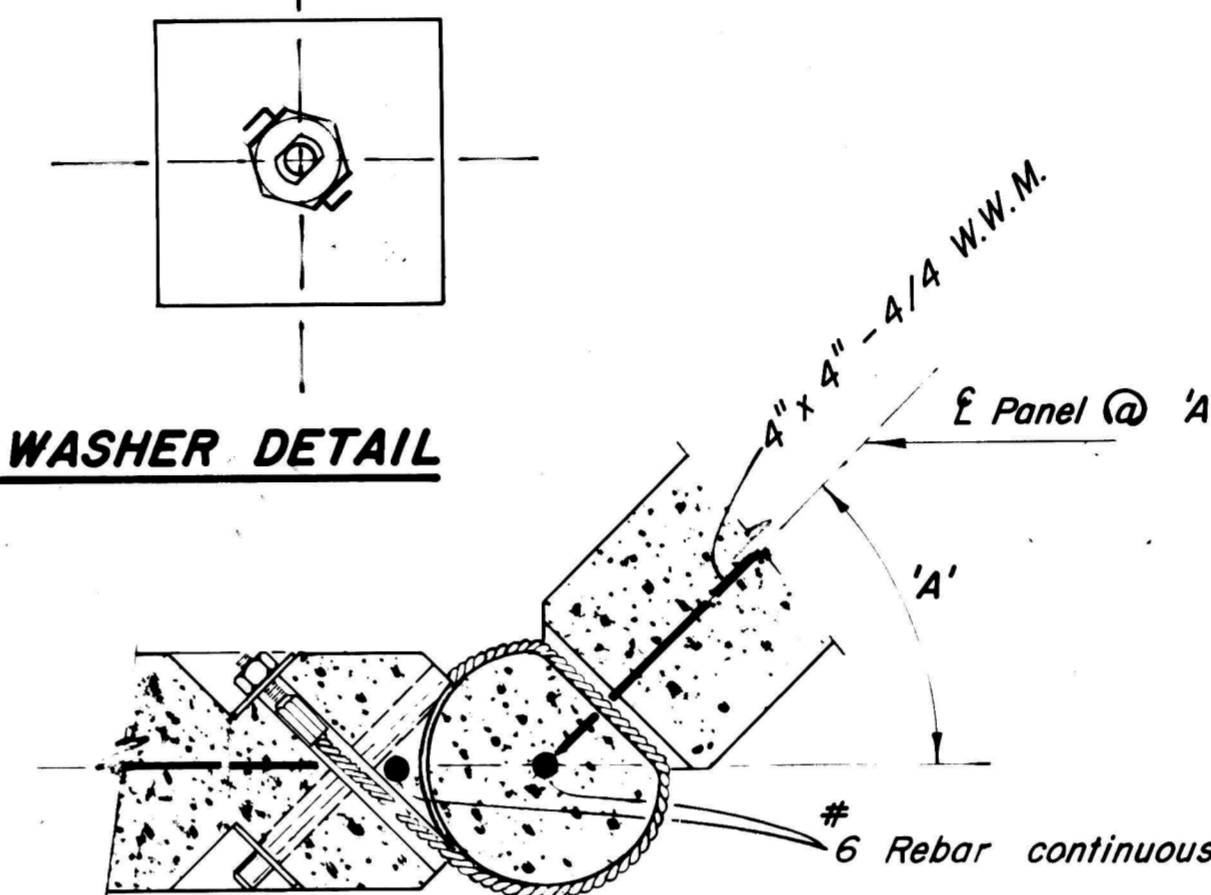
(All parts stainless steel)



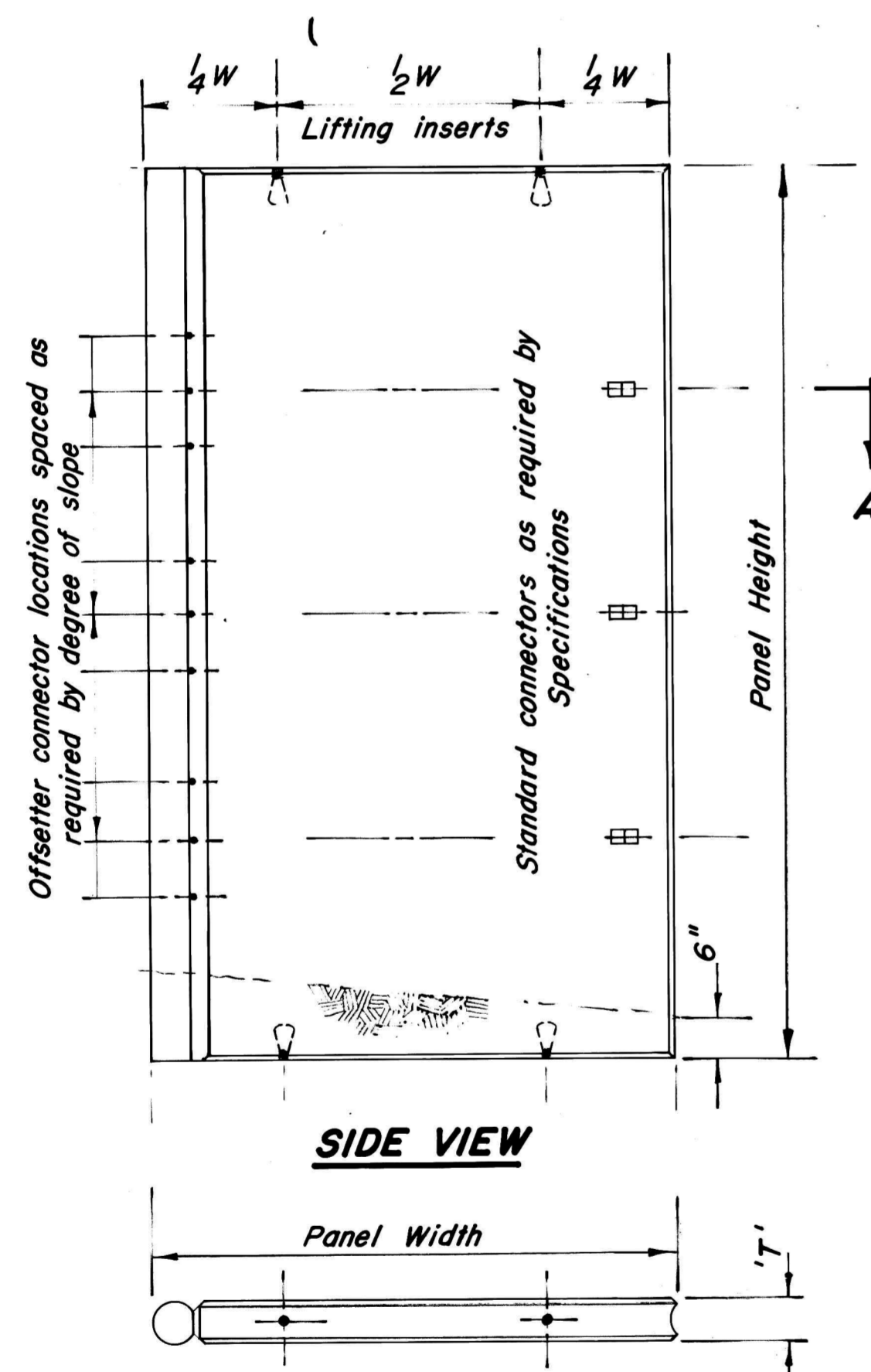
PLAN



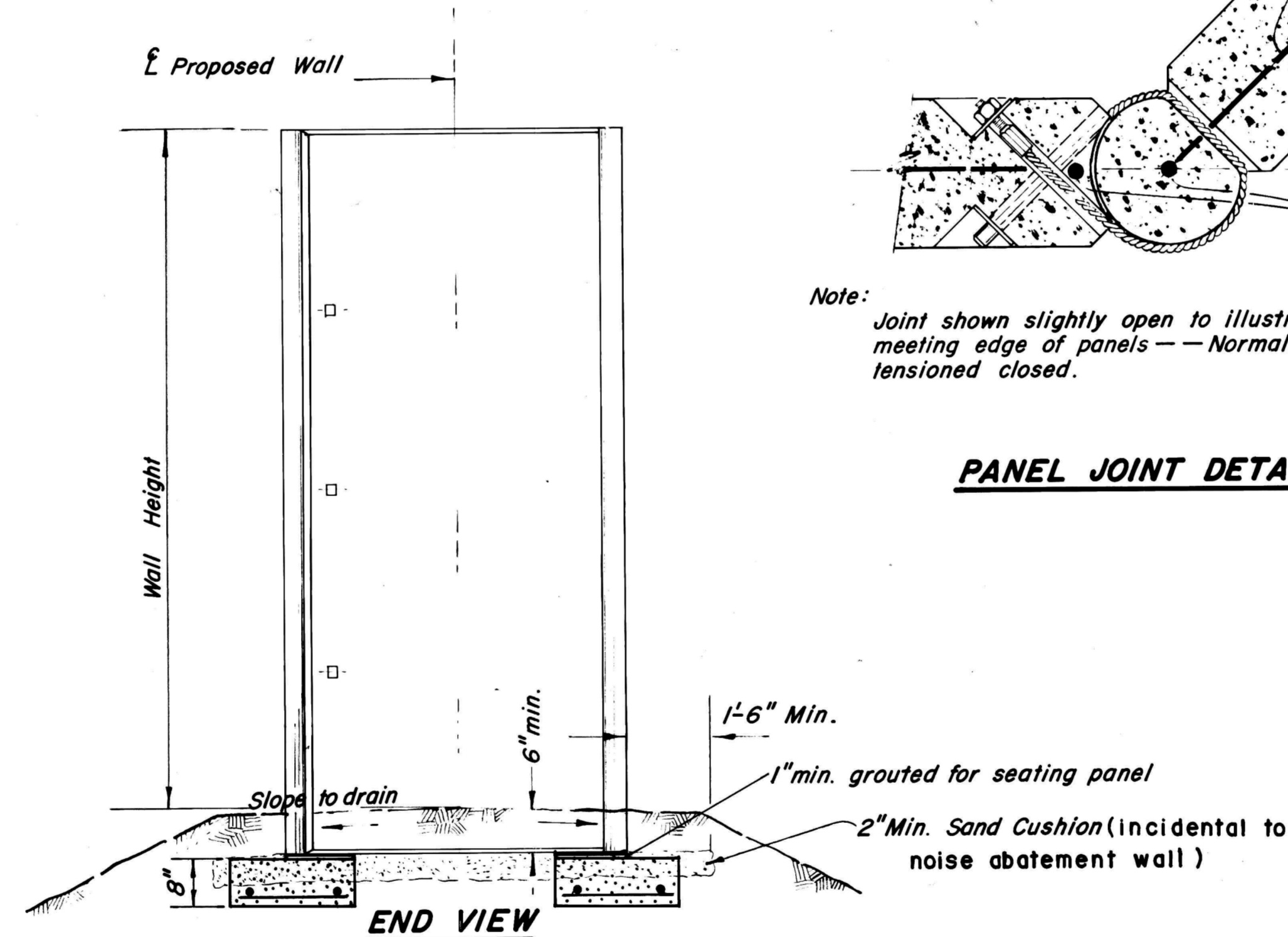
ANTI-ROTATIONAL WASHER DETAIL



PANEL JOINT DETAIL



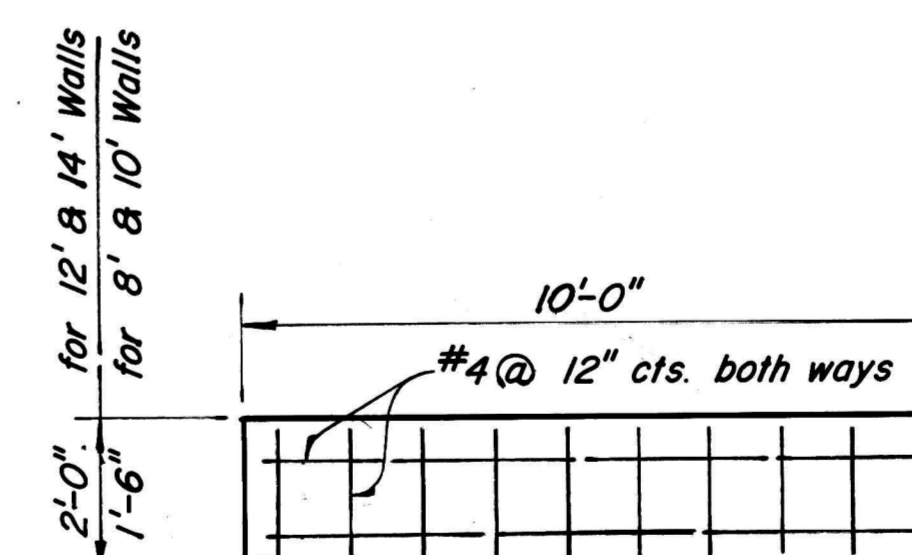
SIDE VIEW



END VIEW

NOISE ABATEMENT WALL TABLE

Wall Height	Panel Height	Panel Width	Thickness 'T'	Offset 'O'	Angle 'A'	Cable Connector size 'D'	Max. Soil Pressure P.S.F.
6'	6'-6"	8'	8"	1"			
8'	8'-6"	8'	8"	4'-5"			
10'	10'-6"	8'	8"	5'-2"			
12'	12'-6"	8'	8"	5'-11"			
14'	14'-6"	8'	8"	6'-2"			



PRECAST CONCRETE FOOTING

**NOISE ABATEMENT WALL
FANWALL WALL PANELS**

SECTION A-A

DESIGNED *BRT*
CHECKED *DJK*
DRAWN *[Signature]*
CHECKED *DJK*

EXAMINED *September 12 1977*
Carl E. Hummer
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED
APPROVED
DIRECTOR OF HIGHWAYS