

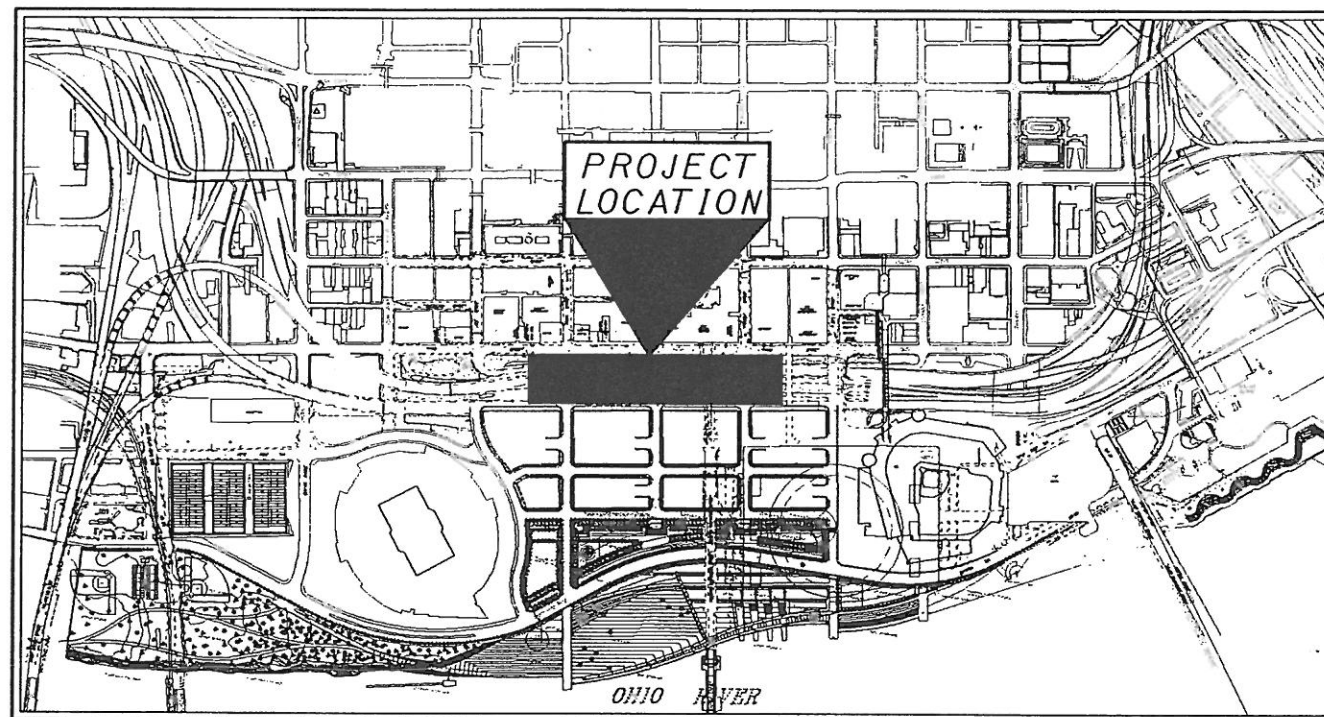
F O R T W A S H I N G T O N W A Y 2 0 0 0

CITY OF CINCINNATI DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING PROPOSED IMPROVEMENT FORT WASHINGTON WAY RECONSTRUCTION PROGRAM CONTRACT 26

DECK 4



metric
units



LOCATION MAP

Plans Reviewed By:



Plans Prepared For:



City of Cincinnati
Engineering Division
Department of Public Works

FEDERAL PROJECT NO.

PID NO.

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT

CITY OF CINCINNATI
CONTRACT No. 75X5753



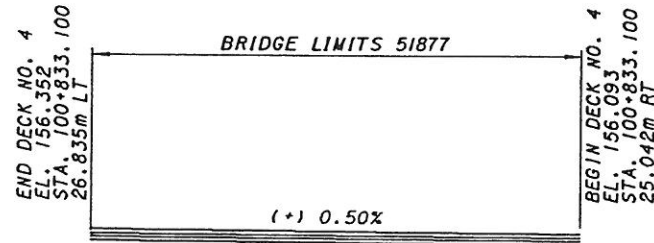


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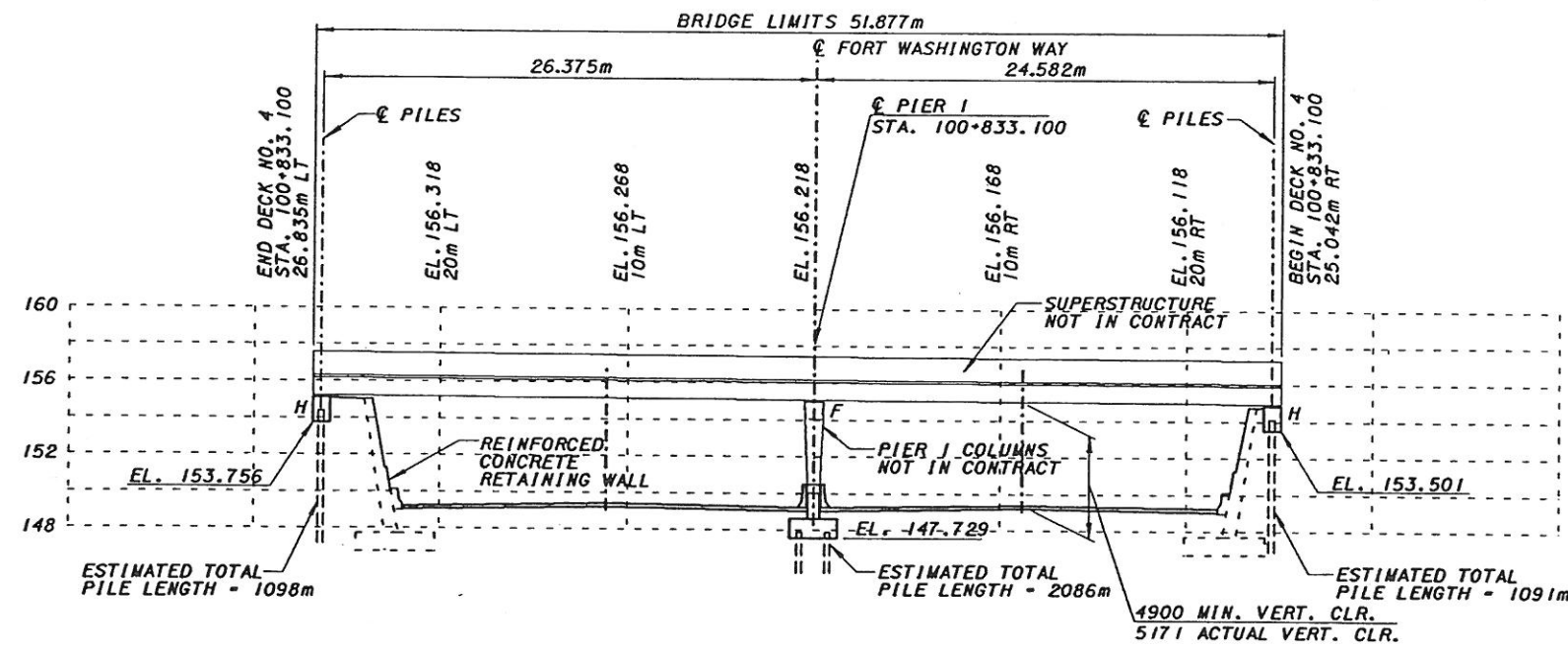
BENCH MARK
SEE GENERAL NOTES
SHEET NO. 13 OF 469
CONTRACT 8 DRAWINGS

PROPOSED STRUCTURE
TYPE: 2 SPAN PRECAST PRESTRESSED BOX GIRDERS
WITH INTEGRAL ABUTMENTS
LENGTH OF SPANS: 26.375m - 24.582m
WIDTH OF STRUCTURE: 49.6m
DESIGN LOADING: 1.22m SOIL (MAX DEPTH).
SKEW ANGLE: 0°
SUPER ELEVATION: 0.00970
WEARING SURFACE: NONE
APPROACH SLAB: NOT IN CONTRACT
ALIGNMENT: TANGENT
LATITUDE: N39°-05'-54"
LONGITUDE: W84°-30'-34"

NOTES:
1. CONTRACT 26 INCLUDES THE FOLLOWING ITEMS:
- PILES FOR ABUTMENTS AND CENTRAL PIER.
- PILE CAPS FOR ABUTMENTS AND CENTRAL PIER.
- PORTION OF PIER COLUMNS TO 1.4m ABOVE THE TOP OF FOOTING.
2. ITEMS NOT INCLUDED IN CONTRACT 24 ARE SHOWN FOR FUTURE REFERENCE TO ASSIST THE FUTURE ENGINEER TO DETERMINE STRUCTURE TYPE ASSUMED IN THE DESIGN OF FOUNDATIONS.



VERTICAL ALIGNMENT ALONG @ CONSTRUCTION DECK 4



PROFILE ALONG @ CONSTRUCTION DECK 4
(LOOKING UPSTATION)

GENERAL NOTES

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS APPLY TO THIS PROJECT:
SUPPLEMENTAL SPECIFICATION 844 : HIGH PERFORMANCE CONCRETE FOR STRUCTURES
SUPPLEMENTAL SPECIFICATION 515 : POST-TENSIONING CONCRETE
SUPPLEMENTAL SPECIFICATION : MASS CONCRETE

DESIGN SPECIFICATIONS

THIS PROJECT IS DESIGNED IN METRIC SI UNITS, ALL DIMENSIONS ARE IN MILLIMETERS (mm), AND ALL ELEVATIONS ARE IN METERS (m), UNLESS NOTED OTHERWISE.

THIS STRUCTURE CONFORMS TO

"STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, SIXTEENTH EDITION, 1996, INCLUDING THE 1997 INTERIM SPECIFICATIONS

STATE OF OHIO "BRIDGE DESIGN MANUAL"

STATE OF OHIO "CONSTRUCTION AND MATERIAL SPECIFICATIONS", 1997.

DESIGN LOADINGS

DEAD LOADS

UNIT WEIGHT OF SOIL IN PLANTERS - 19kN/m³
MAXIMUM HEIGHT OF SOIL - 1.22 METER

UNIT WEIGHT OF REINFORCED CONCRETE - 23.6 kN/m³

WEIGHT OF THE PRESTRESSED CONCRETE BOX BEAMS INCLUDING 150 mm DECK - 13.67 kN/m²

ADDITIONAL SUPERIMPOSED DEAD LOAD - 1.8 kN/m²

SNOW LOAD

SNOW LOADING - 0.72 kN/m²

THERMAL FORCES

ANTICIPATED THERMAL MOVEMENTS AND FORCES WERE CALCULATED BASED ON THE FOLLOWING:

DESIGN MEAN TEMPERATURE = 21 DEG. C (68 DEG. F.)
TEMPERATURE RISE = 19 DEG. C (35 DEG. F.)
TEMPERATURE FALL = 25 DEG. C (45 DEG. F.)
COEFFICIENT OF LINEAR EXPANSION - 0.0000108 PER DEGREE C.

SEISMIC FORCES

SITE HORIZONTAL ACCELERATION = 0.06g. DESIGN DETAILS IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SIXTEENTH EDITION, SEISMIC PERFORMANCE CATEGORY A AND ODOT BDM, 3.1.2.1.

LOADING COMBINATIONS

LOAD FACTORS, ALLOWABLE OVERSTRESS AND LOADING COMBINATIONS ARE IN ACCORDANCE WITH AASHTO TABLE 3.22.1A.

CLEARANCE

A MINIMUM VERTICAL CLEARANCE BETWEEN THE RIDING SURFACE OF ROADWAY BELOW AND THE LOWEST POINT OF THE STRUCTURE ABOVE, IF IT ENCROACHES ONTO TRAFFIC LANES OF ROADWAY BELOW, SHALL BE 4.9 m FOR MAINLINE ROADWAYS, RAMPS AND LOCAL STREETS.

CONCRETE

MINIMUM 28-DAY COMPRESSIVE STRENGTH (f'c) SHALL BE AS FOLLOWS:
HIGH PERFORMANCE CONCRETE - COMPRESSIVE STRENGTH 38.0 MPa TO BE USED FOR PIER COLUMNS.

CONCRETE CLASS "C" - COMPRESSIVE STRENGTH 27.0 MPa TO BE USED FOR FOUNDATIONS AND ABUTMENTS.

CONSTRUCTION JOINTS IDENTIFIED ON THE DRAWINGS AS "ROUGHENED", SHALL BE CLEAN AND SHALL BE ROUGHENED TO A FULL AMPLITUDE OF APPROX. 6 mm.

REINFORCING STEEL

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615M, A616M OR A617M, GRADE 420 WITH MINIMUM YIELD STRENGTH OF 420 MPa.

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

MINIMUM CONCRETE COVER FOR REINFORCING SHALL BE SHOWN ON THE DRAWINGS. CONCRETE COVERS SHOWN ON THE DRAWINGS DO NOT INCLUDE PLACEMENT AND FABRICATION TOLERANCES, UNLESS SHOWN AS A "MINIMUM COVER".

DESIGN METHOD

POST-TENSIONED CONCRETE MEMBER SHALL BE DESIGNED IN ACCORDANCE WITH AASHTO 9.13.1.2.

REINFORCING CONCRETE MEMBERS SHALL BE DESIGNED USING THE STRENGTH DESIGN METHOD.

PROTECTION OF TRAFFIC DURING DEMOLITION

PRIOR TO THE DEMOLITION OF THE EXISTING STRUCTURE, THE CONTRACTOR SHALL SUBMIT HIS PLANS FOR THE PROTECTION OF TRAFFIC.

END BEARING PILES DRIVEN TO BEDROCK

THE ABUTMENT AND PIER PILES SHALL BE DRIVEN INTO BEDROCK A MINIMUM OF 300 mm OR TO PRACTICAL REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL MILLIMETERS AND HAVING A RESISTANCE OF 20 BLOWS PER 25 mm OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS PENETRATED BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

PILE LOADS - THE DESIGN ALLOWABLE CAPACITY FOR HP 12x53 PILES IS

980 kN IN COMPRESION.
PILES NOT BEARING ON BEDROCK WILL NOT BE ACCEPTED. AUGER SOUNDINGS MAY BE REQUIRED IF THE PILES ENCOUNTER REFUSAL SIGNIFICANTLY ABOVE DESIGN ELEVATIONS.

PILE HAMMER

THE PILE HAMMER USED TO INSTALL THE PILES SHALL HAVE A STATE'S ENERGY RATING OF NOT LESS THAN 54000 JOULES. THIS REQUIREMENT DOES NOT RELIEVE THE CONTRACTOR FROM 108.05 WHICH STATES THAT THE CONTRACTOR IS TO PROVIDE SUFFICIENT EQUIPMENT FOR PROSECUTING THE REQUIRED WORK. REFER TO "ODOT'S MANUAL OF PROCEDURES FOR STRUCTURES" TO OBTAIN THE STATE'S ENERGY RATING.

STEEL POINTS

STEEL POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED "H" PILING. THE STEEL POINTS SHALL BE FURNISHED BY THE ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BOULEVARD, CLIFTON, NEW JERSEY 07014; INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DRIVE, MATHEWS, NORTH CAROLINA 28015; OR BY A MANUFACTURER THAT CAN FINISH A STEEL POINT THAT IS ACCEPTABLE TO THE ENGINEER.

TEST PILES

THE LOCATION OF THE TEST PILE SHALL BE DETERMINED BY THE ENGINEER. THE TEST PILE SHALL BE SUBJECTED TO DYNAMIC LOAD TESTING IN ACCORDANCE WITH CMS 523.

PRODUCTION PILES

AS DIRECTED BY THE ENGINEER, PRODUCTION PILES SHALL BE DYNAMICALLY TESTED IN ACCORDANCE WITH CMS 523. THE NUMBER OF PILES AND WHICH PILES TO BE TESTED WILL BE DETERMINED BY THE ENGINEER. THE DYNAMIC TESTING SHALL BE PERFORMED DURING BOTH THE INITIAL AND RESTRIKE DRIVING. THE DYNAMIC TESTING EQUIPMENT SHOULD CONFORM TO THE REQUIREMENTS OF ASTM D-4945-89, STANDARD TEST METHOD FOR HIGH STRAIN DYNAMIC TESTING OF PILES.

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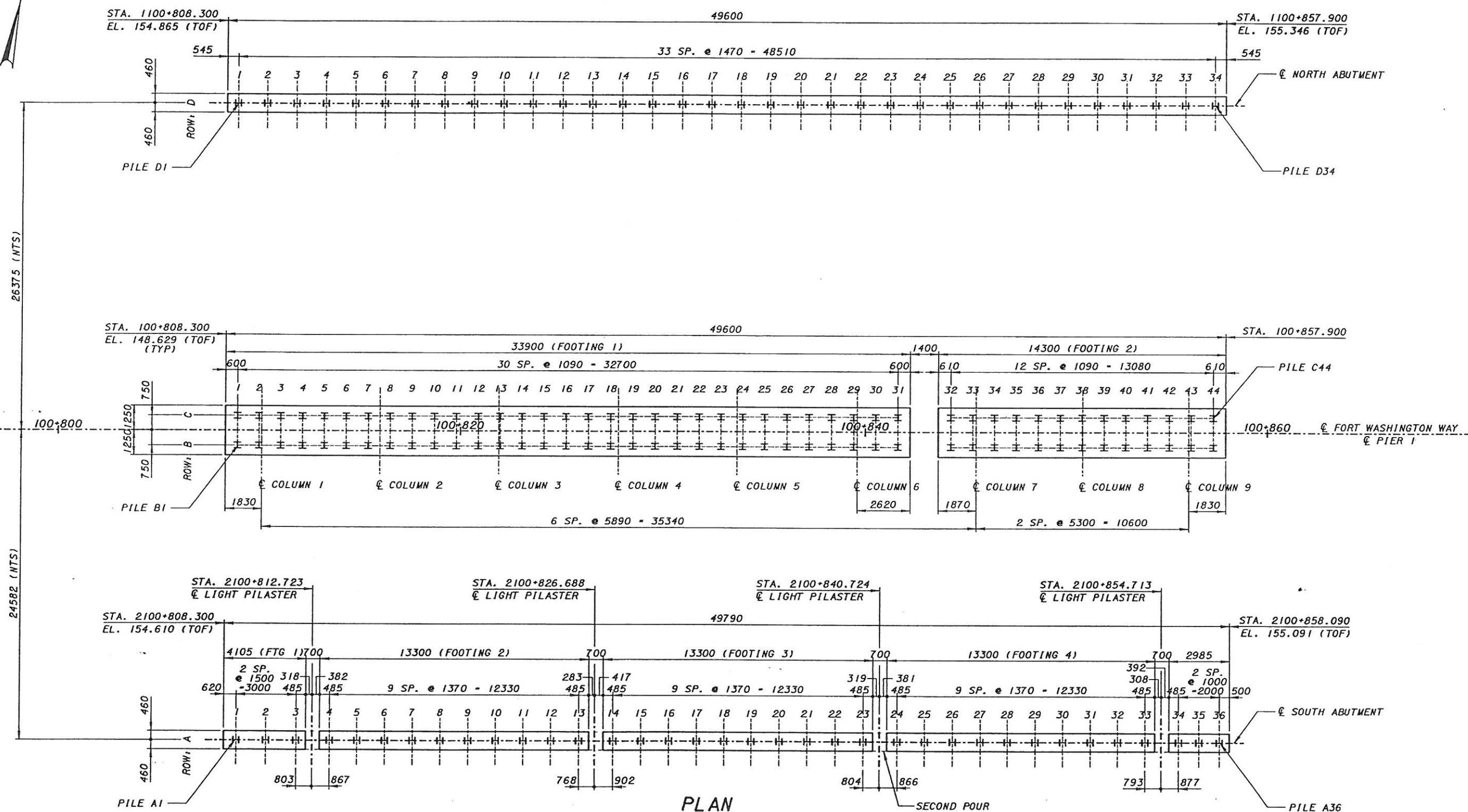
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	DATE	6-30-00
	REVISED	
	DRAWN	SRL
	CHECKED	JSH
LOCATION NAME		STA. 100+808.300 STA. 100+857.900
GENERAL NOTES		DECK NUMBER 4 OVER FORT WASHINGTON WAY
CITY OF CINCINNATI		CONTRACT NO. 75X5753
3/16		

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1/12/01

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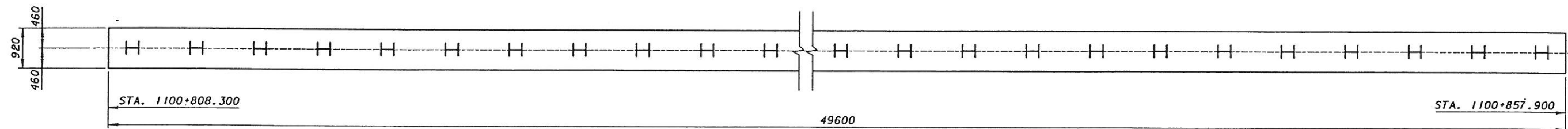


DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 318 ELM STREET, SUITE 2000 CINCINNATI, OH 45202-6720	DATE 6-30-00
	REVISED 6-30-00
	DRAWN SRL
	CHECKED JSH
STRUCTURE FILE NUMBER HAMILTON COUNTY STA. 100+808.300 STA. 100+857.900	
FOUNDATION LAYOUT DECK NUMBER 4 OVER FORT WASHINGTON WAY	
CITY OF CINCINNATI CONTRACT NO. 75X5753	
4/16	

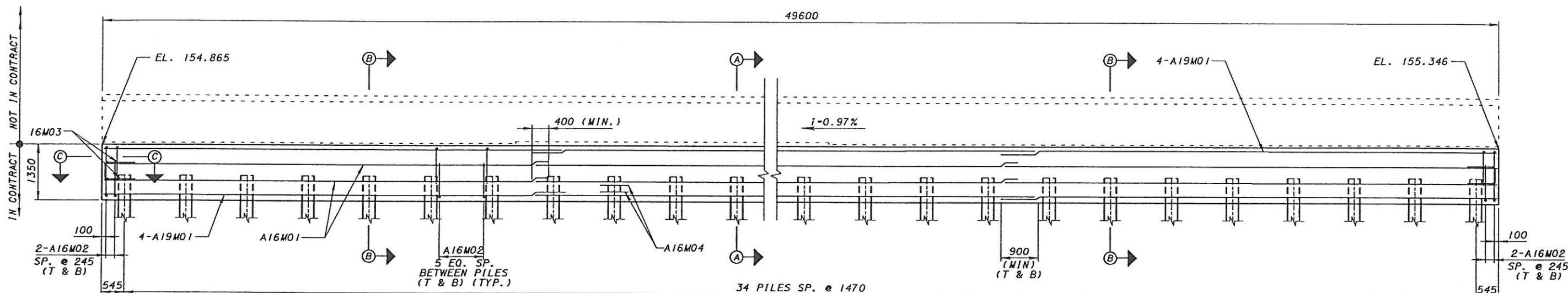
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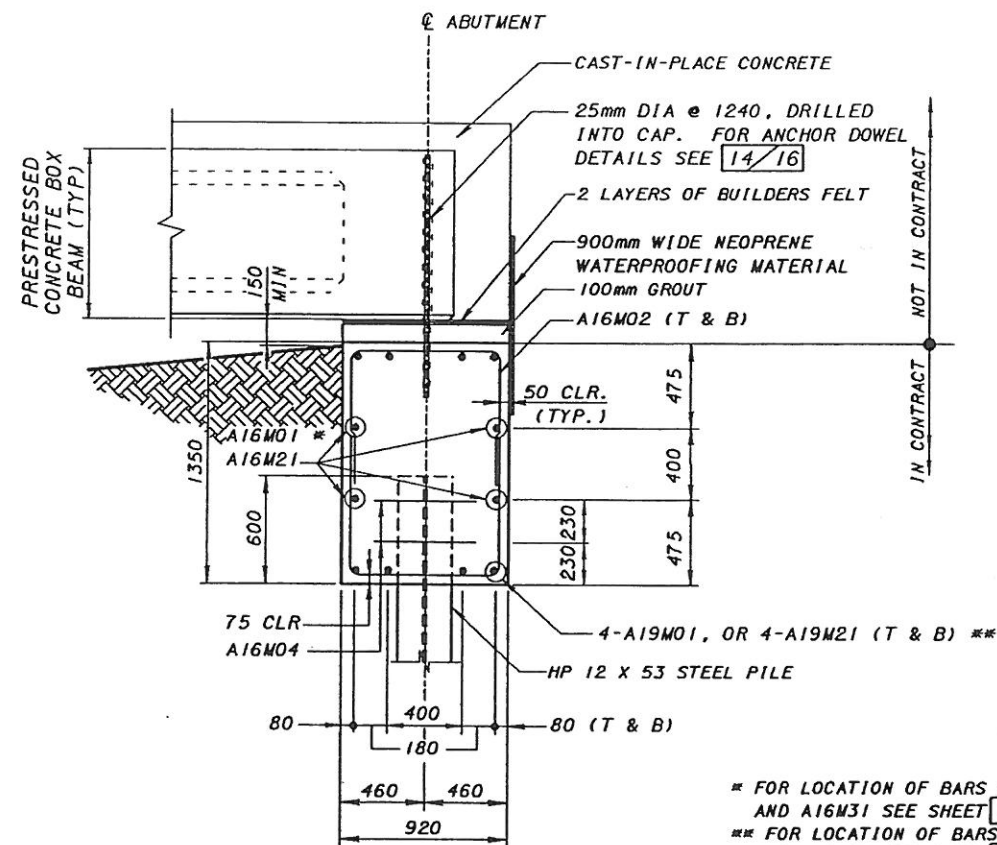
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PLAN

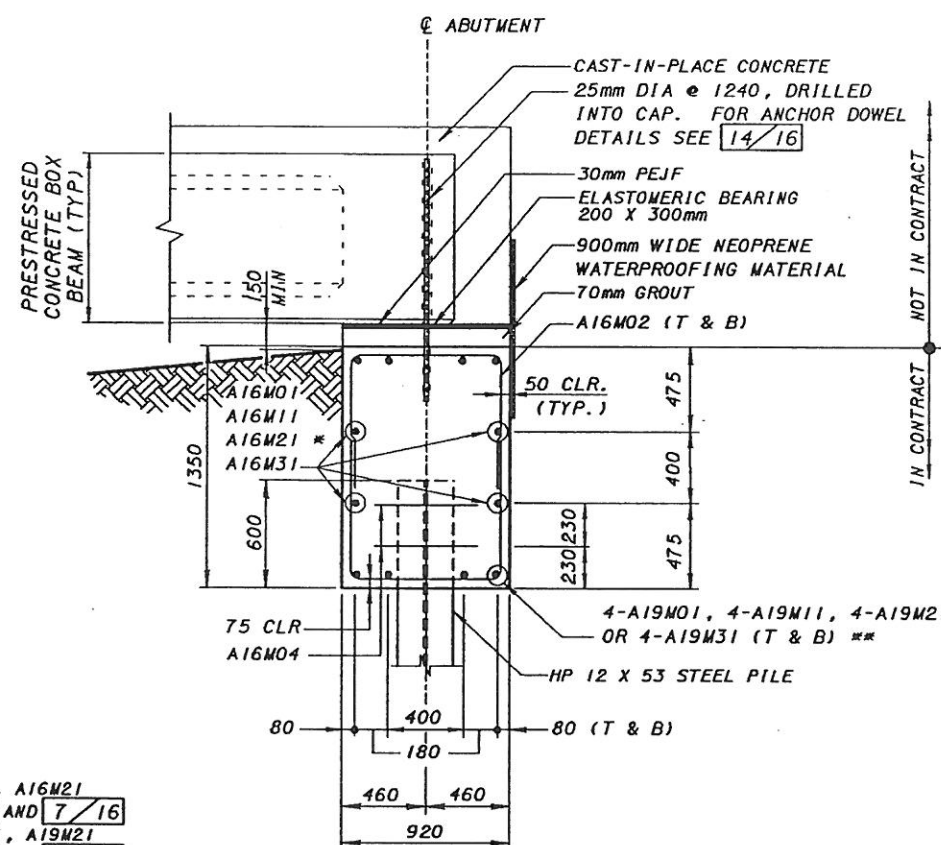


ELEVATION

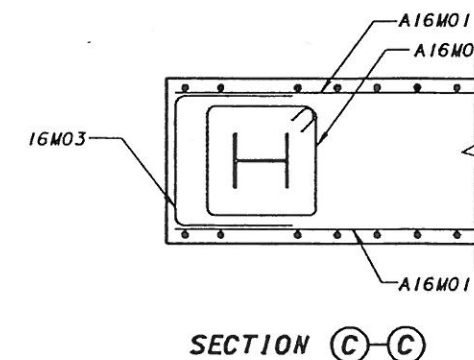


SECTION A-A
(FIXED CONNECTION)

* FOR LOCATION OF BARS A16M11, A16M21
AND A16M31 SEE SHEET 6/16 AND 7/16
** FOR LOCATION OF BARS A19M11, A19M21
AND A19M31 SEE SHEET 6/16 AND 7/16



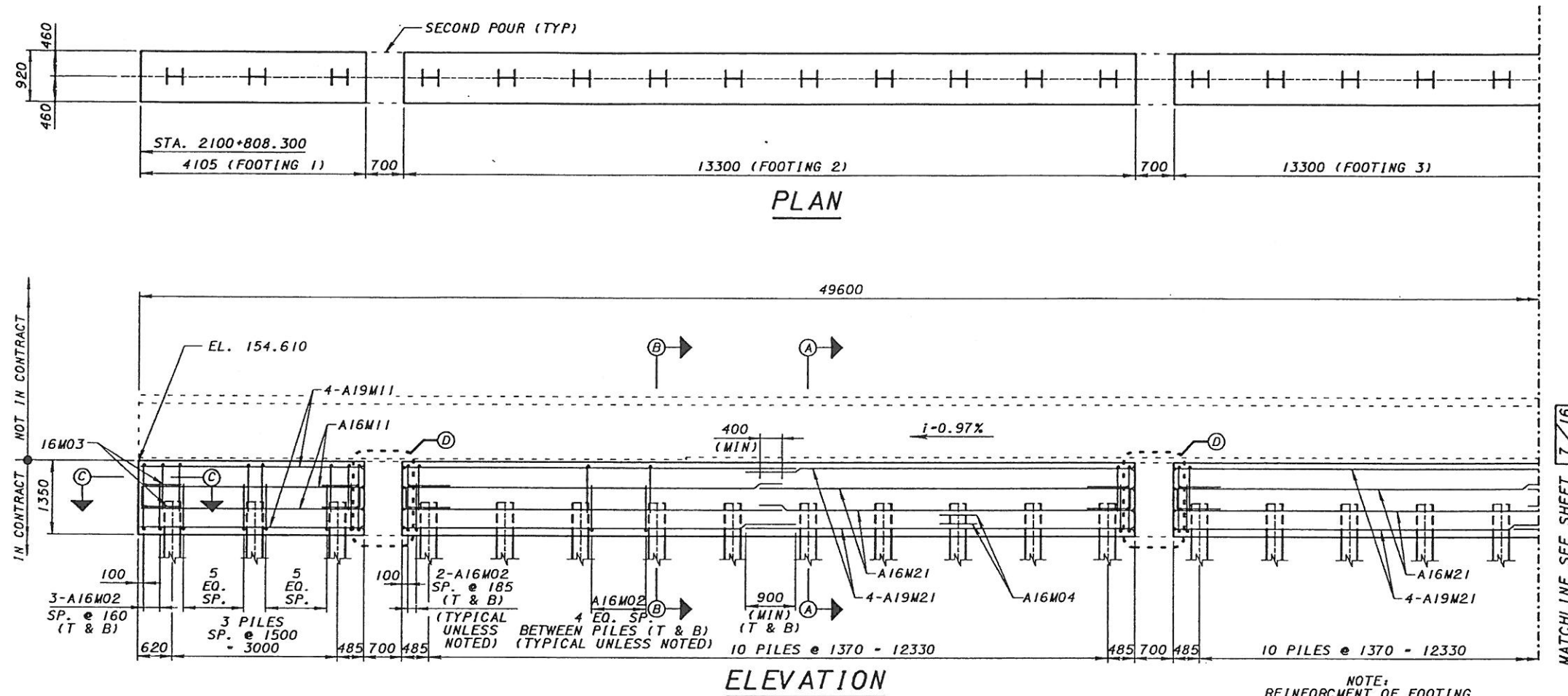
SECTION B-B
(EXPANSION CONNECTION)



SECTION C-C

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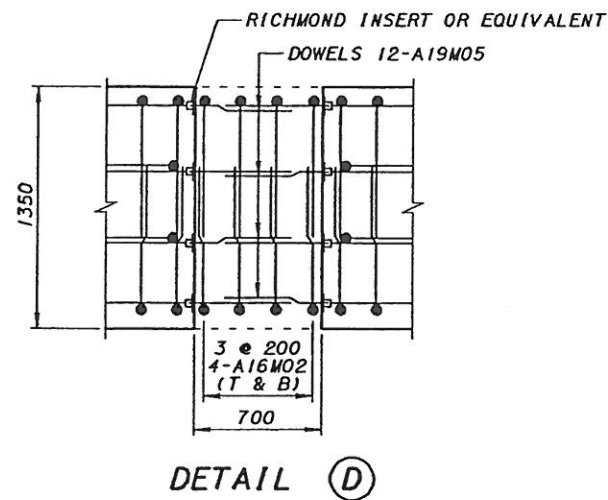
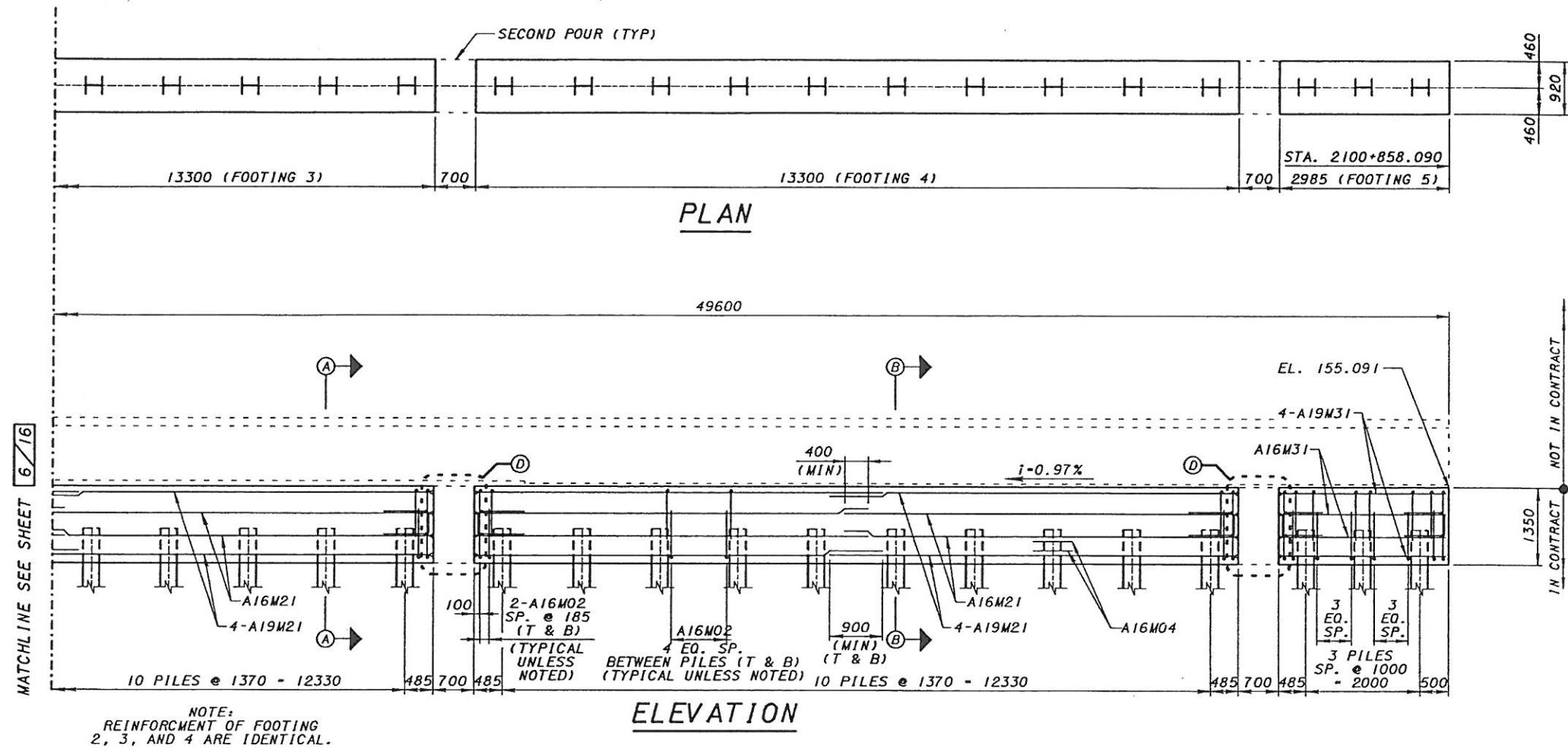
- NOTES:
1. FOR SECTIONS A-A, B-B, AND C-C SEE SHEET 5/16
 2. FOR SECTION D-D SEE SHEET 7/16

DESIGN AGENCY PP PARSONS BRINCKERHOFF, INC. 1818 STATE ROUTE 1400 CINCINNATI, OH 45202-2720	DATE 6-30-00	REVISION STRUCTURE FILE NUMBER
	DRAWN SRL	REVIEWED JSH
HAMILTON COUNTY STA. 100+808.300 STA. 100+857.900		
SOUTH ABUTMENT REINFORCEMENT (SHEET 1 OF 2) DECK NUMBER 4 OVER FORT WASHINGTON WAY		
CITY OF CINCINNATI CONTRACT NO. 75X5753	6/16	

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1/12/01

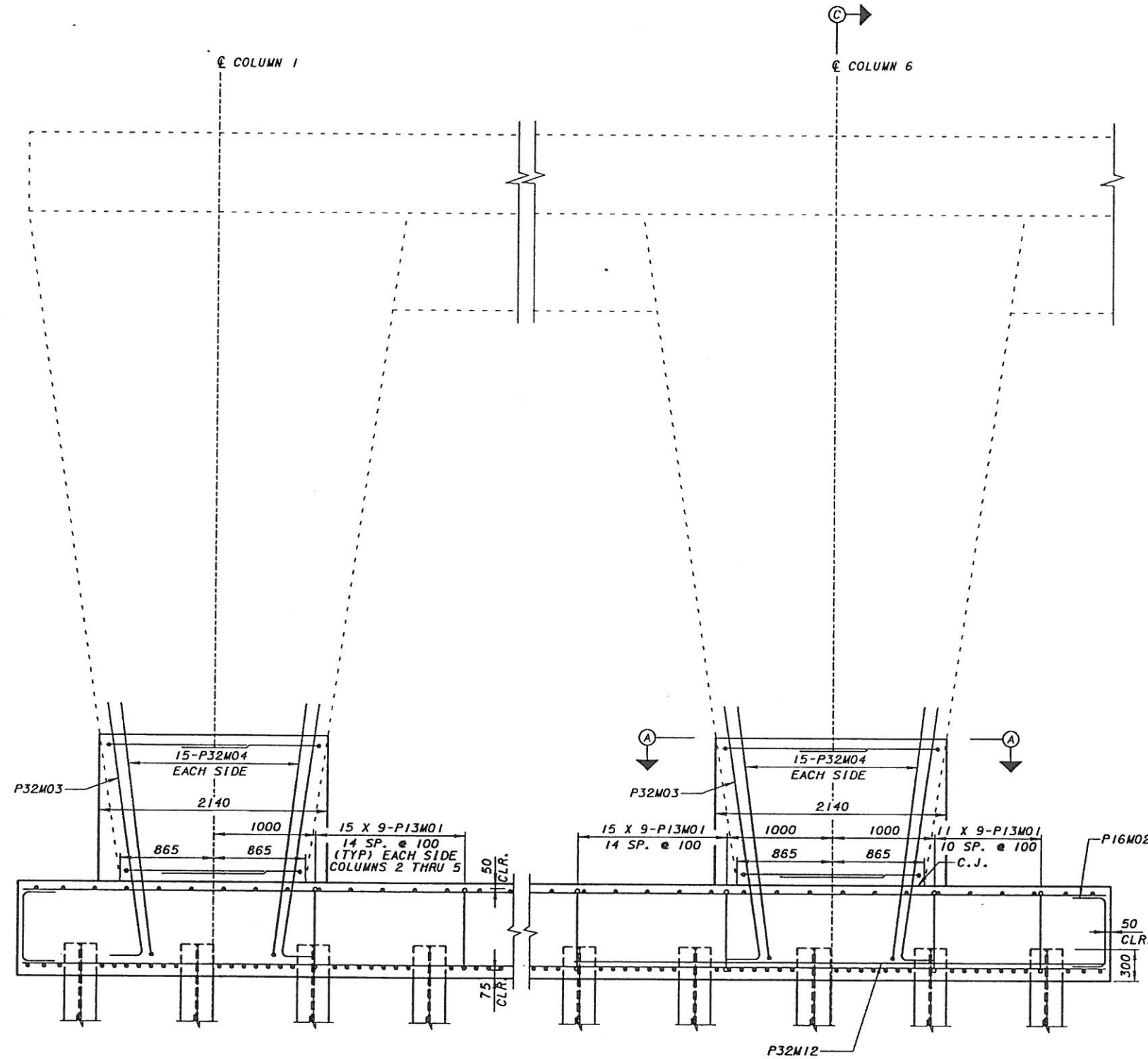
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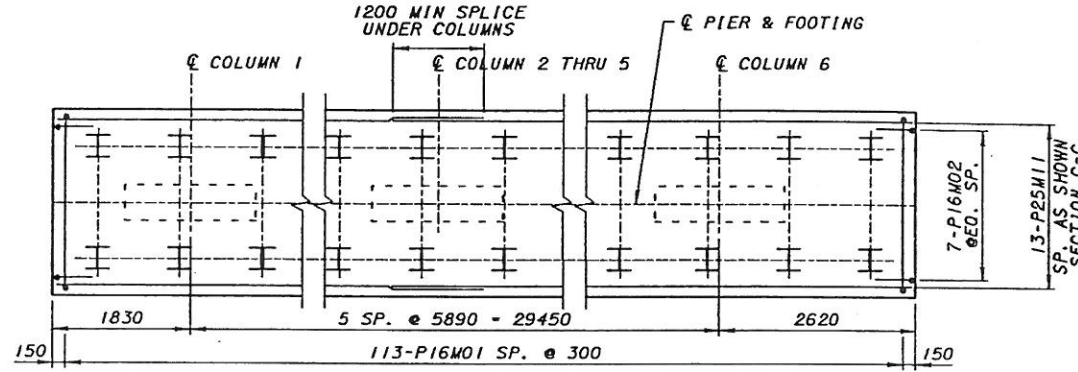
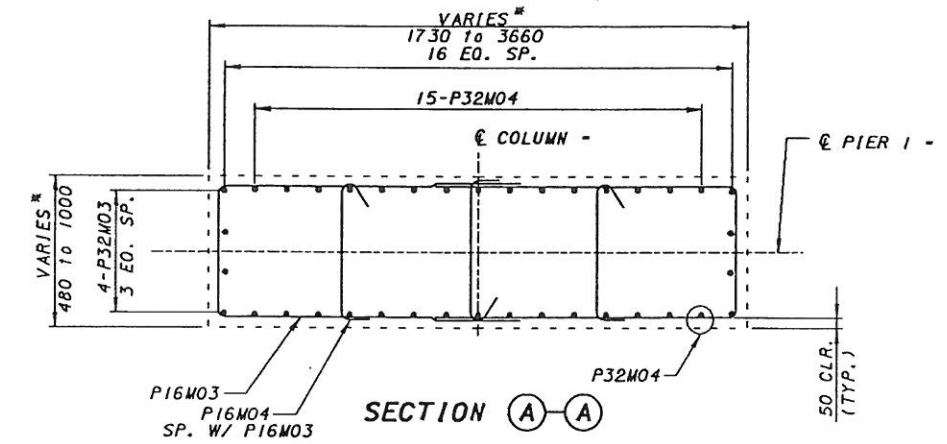
NOTES:
1. FOR SECTIONS A-A, B-B, AND C-C SEE SHEET 5/16

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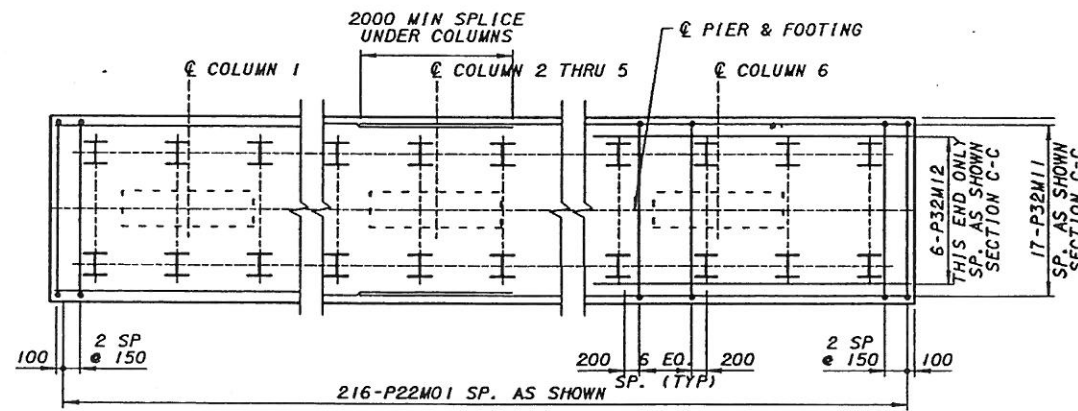
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SECTION B-B
SEE SHEET 10/16 FOR LOCATION OF SECTION B-B



PLAN FOOTING 1 TOP REINFORCING



PLAN FOOTING 1 BOTTOM REINFORCING

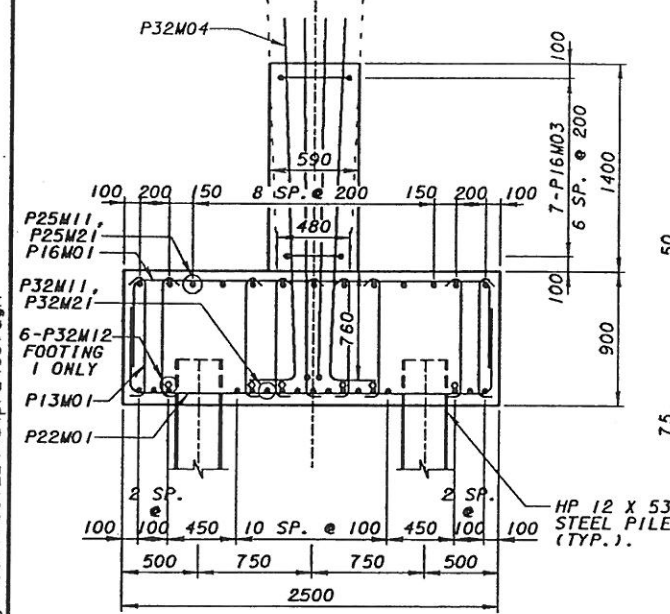
* THE SIZE OF LOWER PORTION OF THE COLUMNS IS 590 x 2140 mm. THE 480 mm & 1730 mm DIMENSIONS ARE GIVEN TO PROPERLY LOCATE THE DOWELS IN THE FOOTING.

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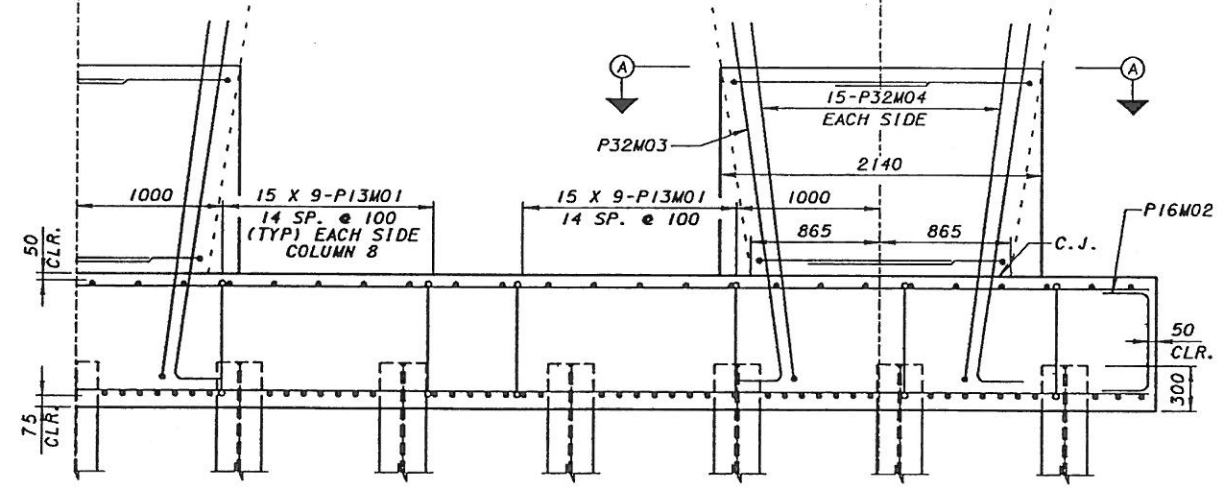
PIER 1 -
FORT WASHINGTON WAY

COLUMN 8

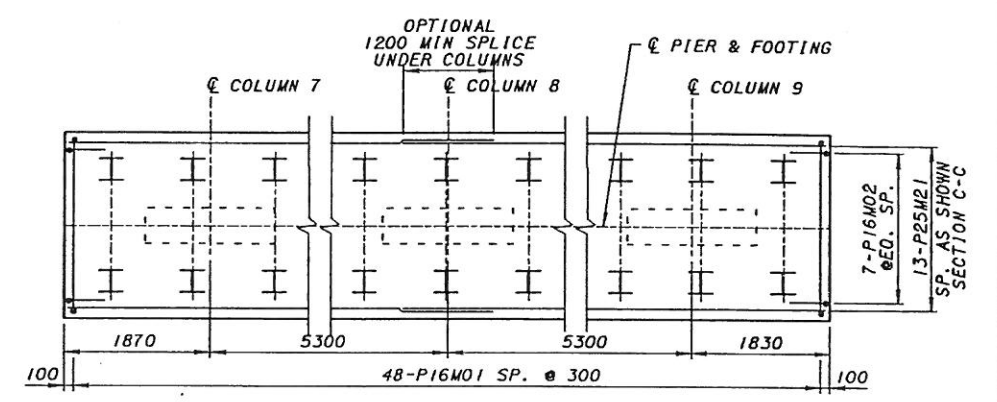
COLUMN 9



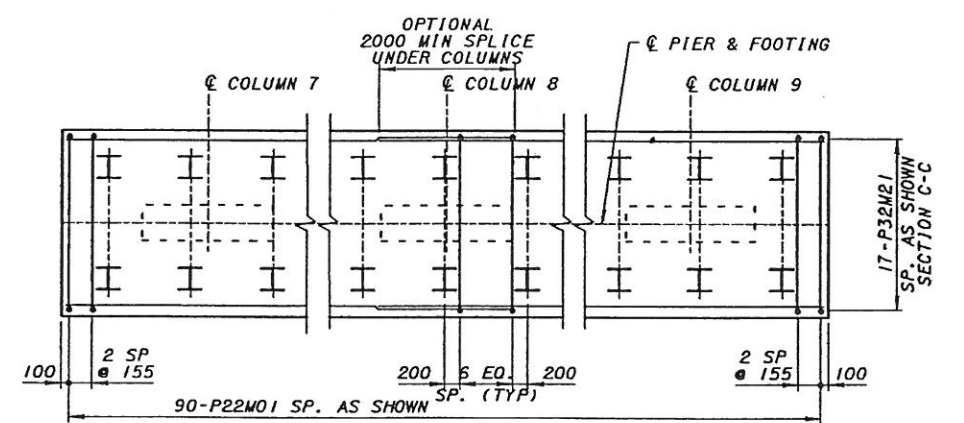
SECTION C-C



SECTION B-B
SEE SHEET 9/16 FOR SECTION A-A



PLAN FOOTING 2 TOP REINFORCING



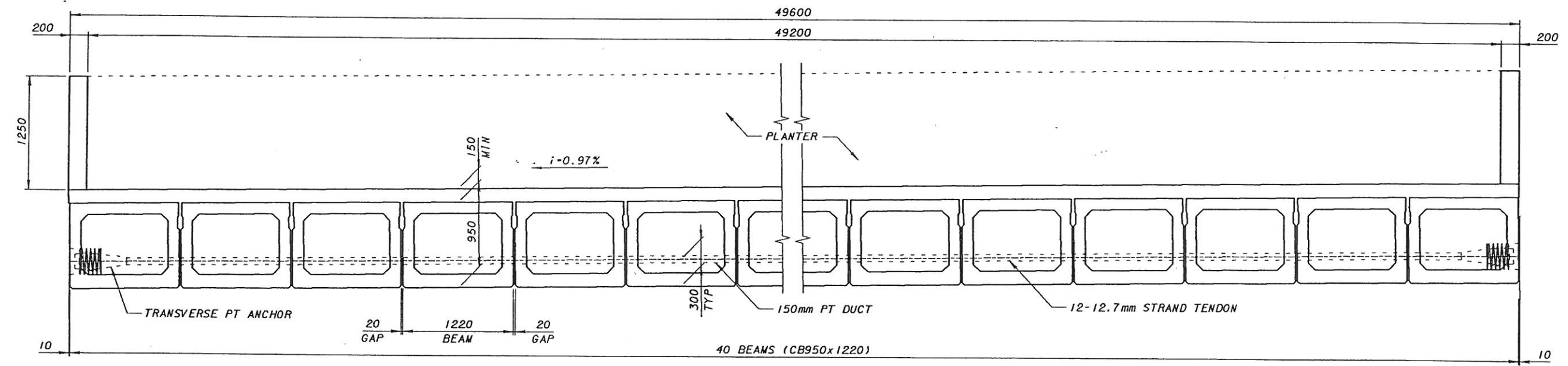
PLAN FOOTING 2 BOTTOM REINFORCING

	DESIGN AGENCY	DATE	REVISED	DRAWN	CHECKED	PREPARED	HAMILTON COUNTY STA. 100+808.300 STA. 100+857.900
	PARSONS BRINCKERHOFF, INC.	6-30-00		SRL	JSH	VR	
	STRUCTURE FILE NUMBER						
PIER 1 REINFORCEMENT (2 OF 2) DECK NUMBER 4 OVER FORT WASHINGTON WAY							CITY OF CINCINNATI CONTRACT NO. 75X5753
10/16							

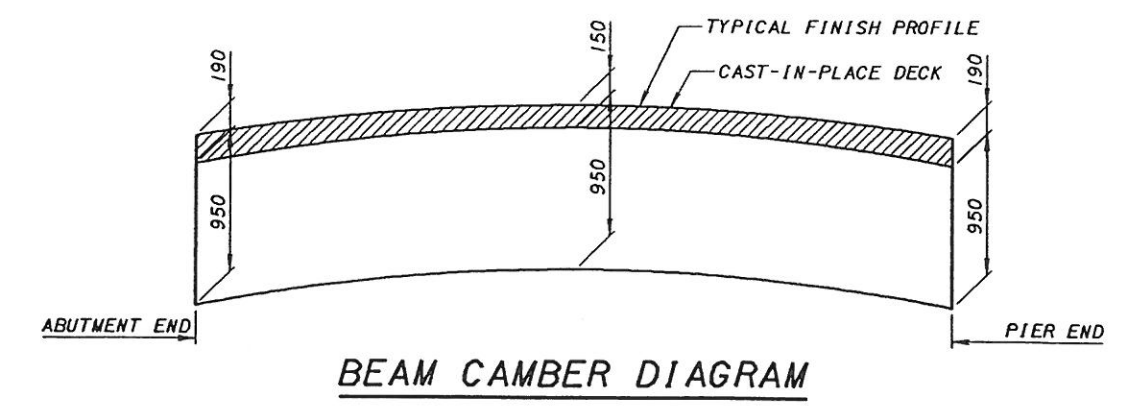
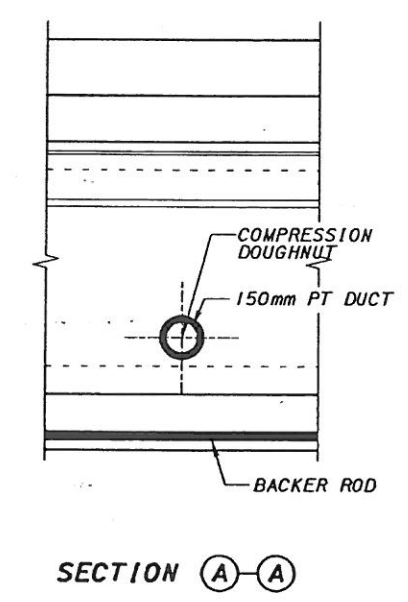
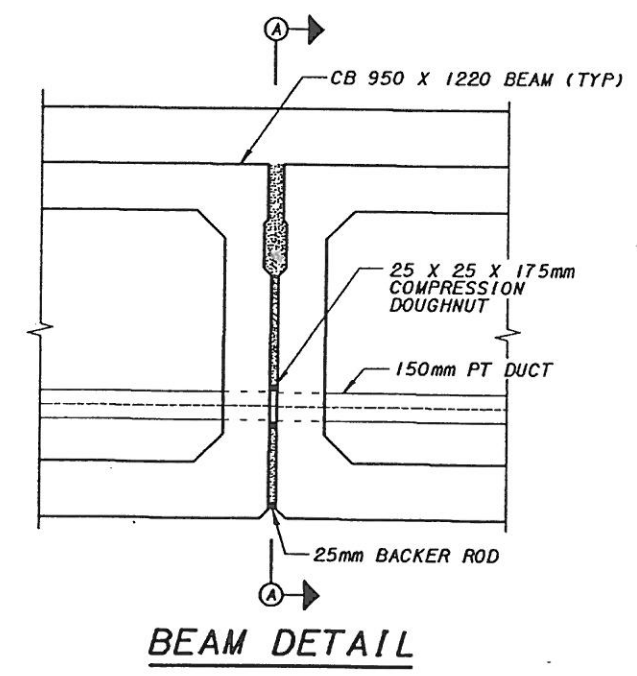
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TYPICAL CROSS SECTION



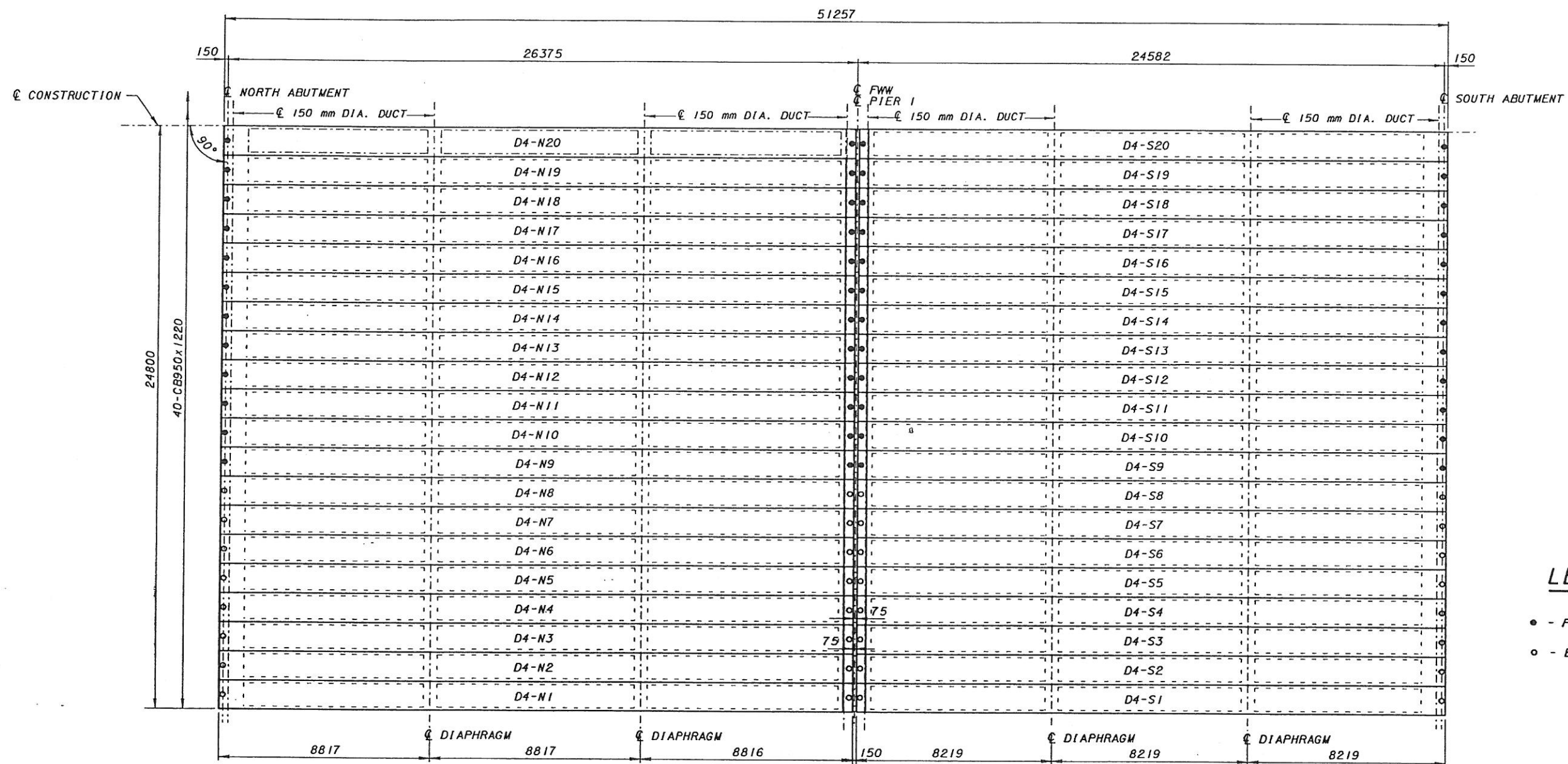
NOTES:
1. SEE NOTES 1 AND 2 ON SHEET 2/16

	DATE	6-30-00
	REVISED	
	DRAWN	SRL
	CHECKED	JSH
STRUCTURE FILE NUMBER		
HAMILTON COUNTY		
STA. 100+808.300		
STA. 100+857.900		
SUPERSTRUCTURE SECTION		
DECK NUMBER 4		
OVER FORT WASHINGTON WAY		
CITY OF CINCINNATI		
CONTRACT NO. 75X5753		
11/16		

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1/12/01

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FRAMING PLAN

NOTES:

1. MINIMUM CONCRETE STRENGTH OF BEAMS AFTER 28 DAYS: 58.7 MPa, MINIMUM CONCRETE STRENGTH AT RELEASE: 37.2 MPa.
2. PRESTRESSING STRAND TO BE UNCOATED, LOW RELAXATION 12.7 mm DIA., SEVEN WIRES (As=108 sq. mm), ASTM A416, GRADE 270, $f_s=1860$ MPa, INITIAL STRESS = $0.75 f_s = 1400$ MPa.
3. REINFORCING STEEL TO BE ASTM A615M OR A617M GRADE 400.
4. TOP OF BEAMS ARE TO BE SCORED TRANSVERSELY AT ABOUT 75 mm CENTERS WITH A POINTED TOOL (MAX. DEPTH OF SCORING TO BE 6 mm)
5. OMIT KEYWAY ON EXTERIOR BEAMS.
6. SEE NOTES 1 AND 2 ON SHEET 2/16

LEGEND

- - FIXED ANCHOR DOWELS
- - EXPANSION ANCHOR DOWELS, U.N.O.

DESIGN AGENCY
PARSONS BRINCKERHOFF, INC.
1000 PINE STREET, SUITE 2500
CINCINNATI, OH 45202-1000

DATE
6-30-00

REVISED
STRUCTURE FILE NUMBER

DRAWN
SRL

PREPARED
VR

CHECKED
JSH

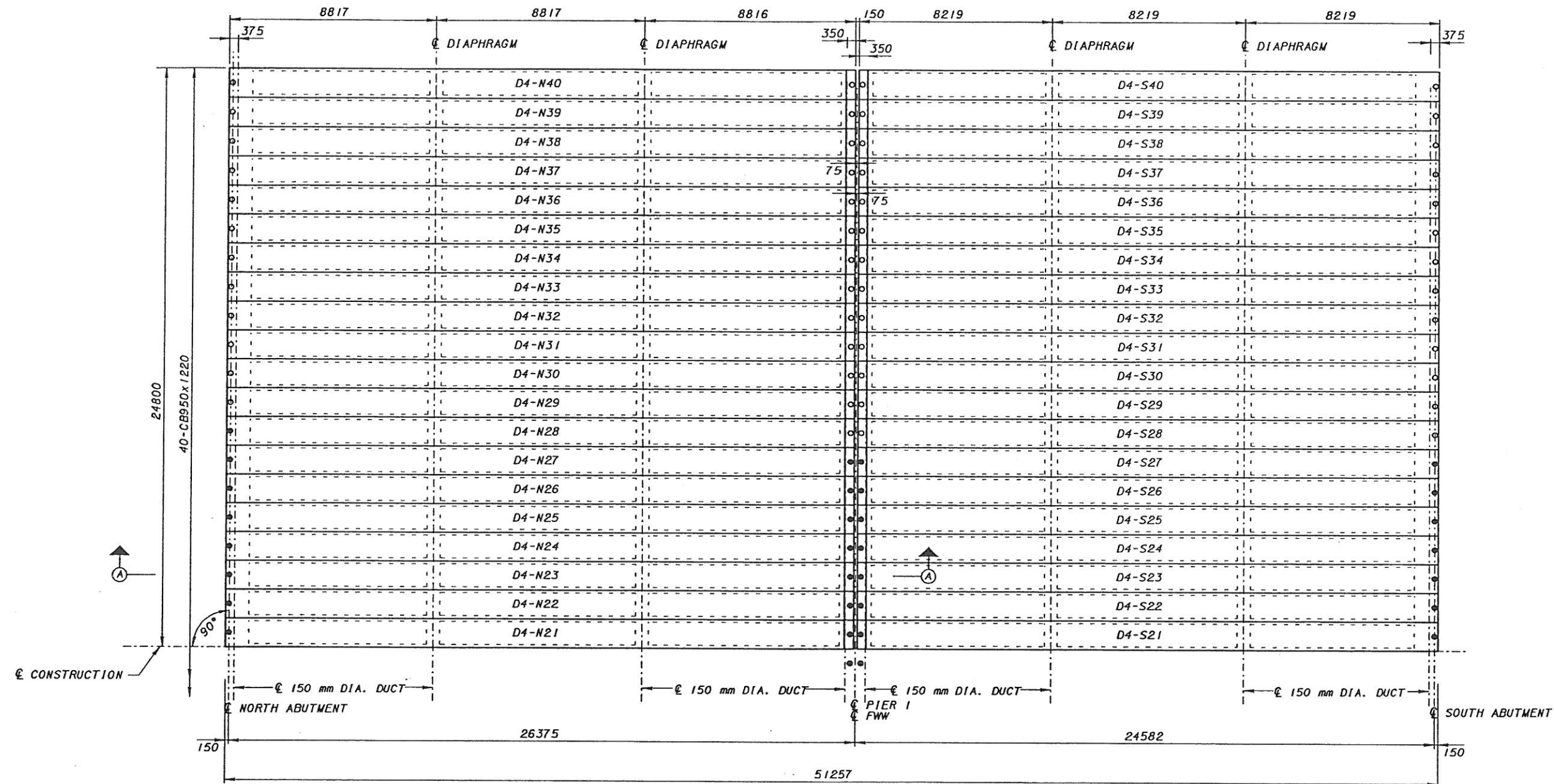
REVIEWED

HAMILTON COUNTY
STA. 100+808.300
STA. 100+857.900

FRAMING PLAN (1 OF 2)
DECK NUMBER 4
OVER FORT WASHINGTON WAY

CITY OF CINCINNATI
CONTRACT NO. 75X5753

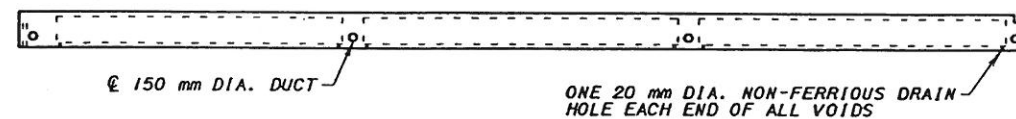
12/16



FRAMING PLAN

NOTES:

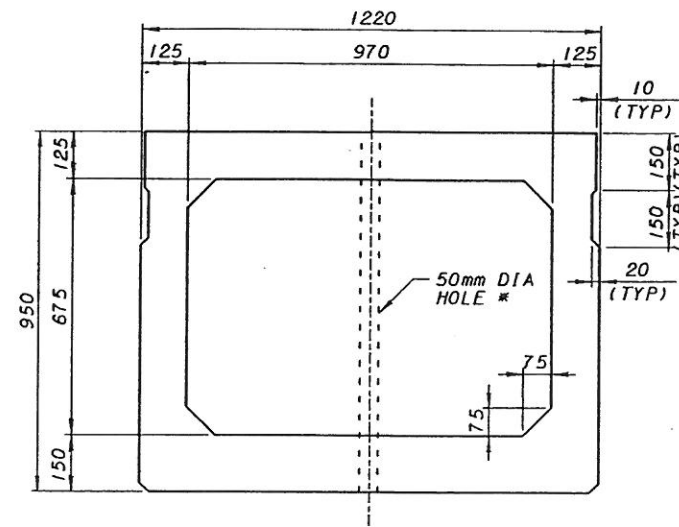
1. WORK TOGETHER WITH FRAMING PLAN 12/16



SECTION A-A

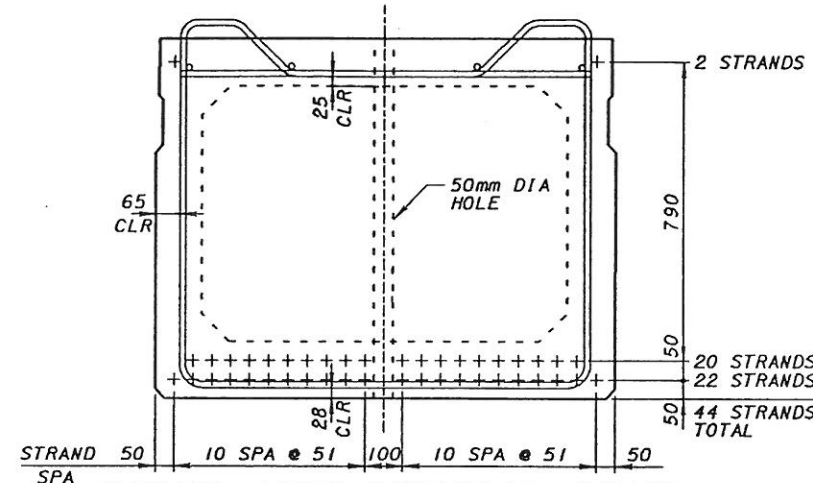
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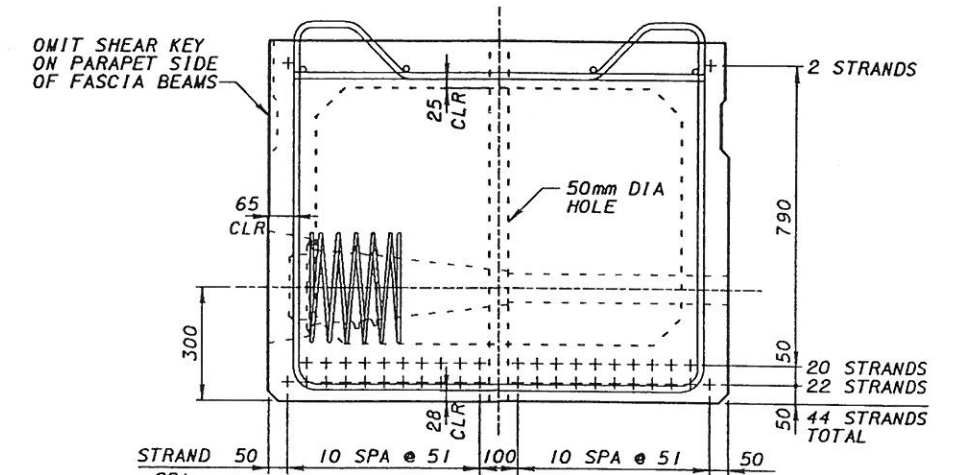


CROSS SECTION CB950x1220 BEAM

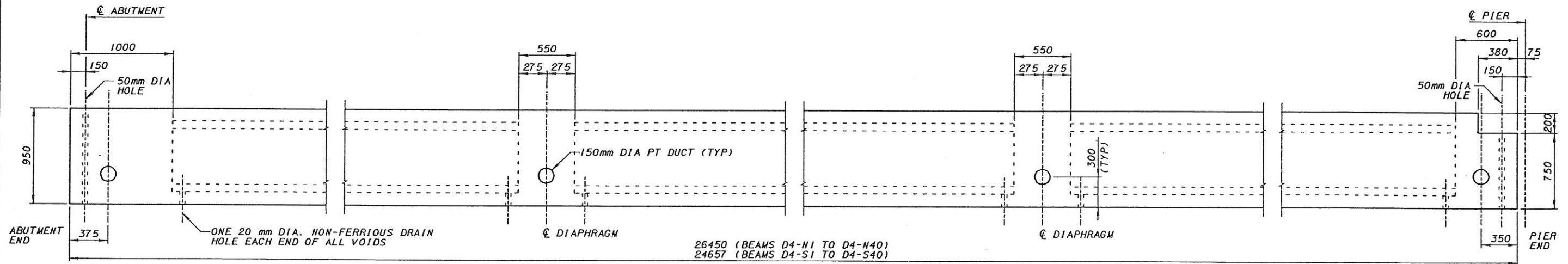
* FOR 25mm DIA SMOOTH DOWEL (L=1340)



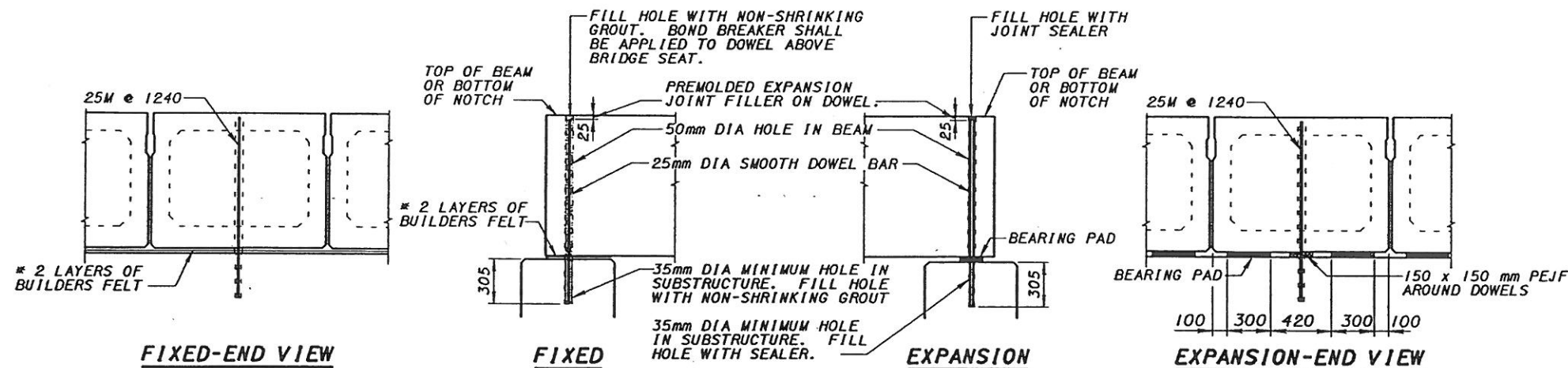
CB950x1220 TYPICAL BEAM



CB950x1220 END BEAM



ELEVATION



FIXED-END VIEW

FIXED

EXPANSION

EXPANSION-END VIEW

NOTE: DOWEL CLEARS ELASTOMERIC BEARING

DOWEL HOLE LOCATION

NOTES:

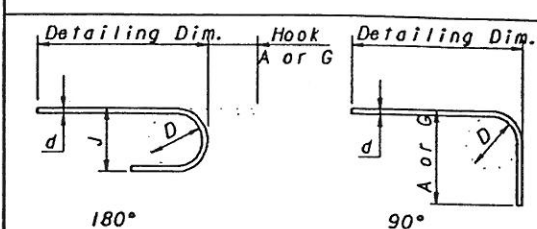
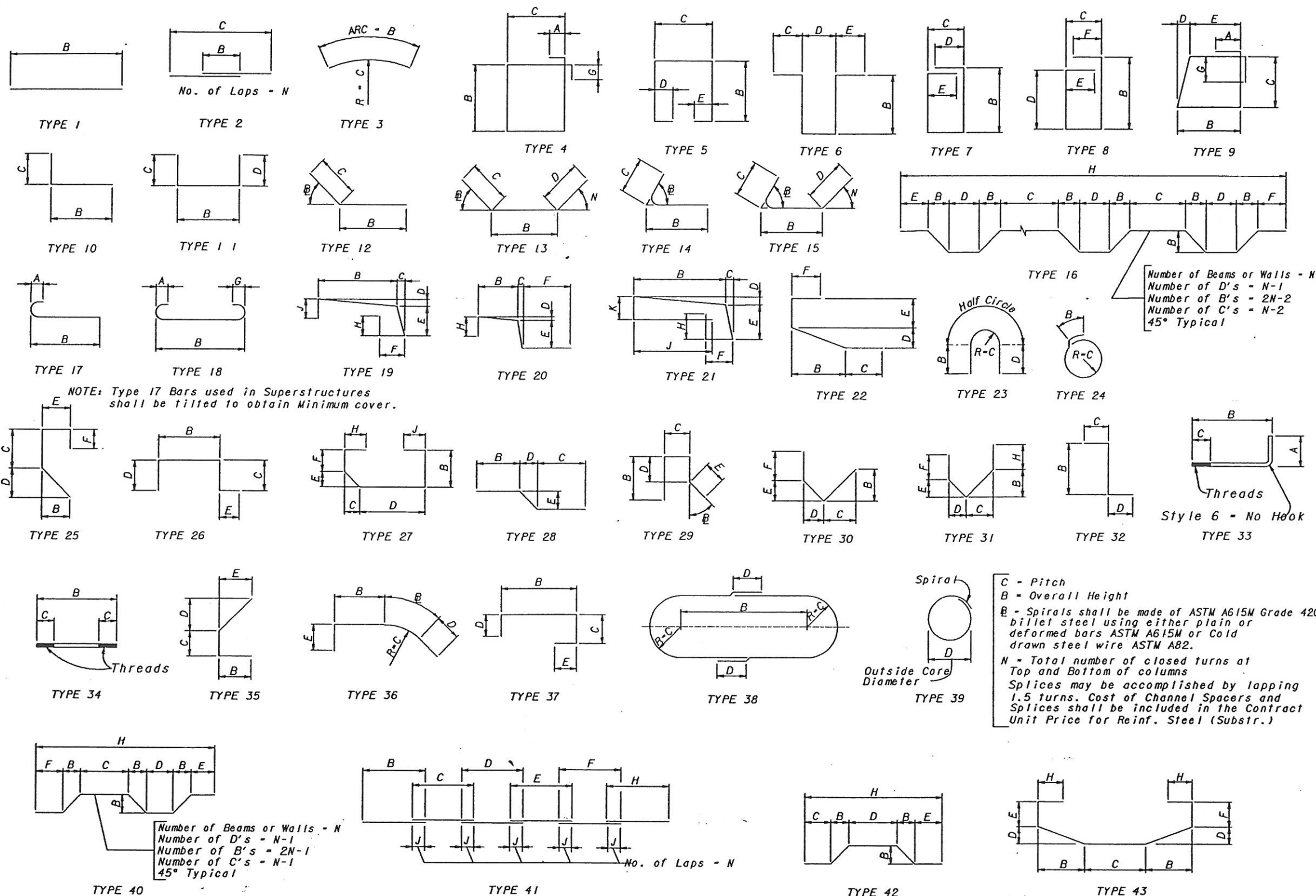
1. SEE NOTES 1 AND 2 ON SHEET

2/16

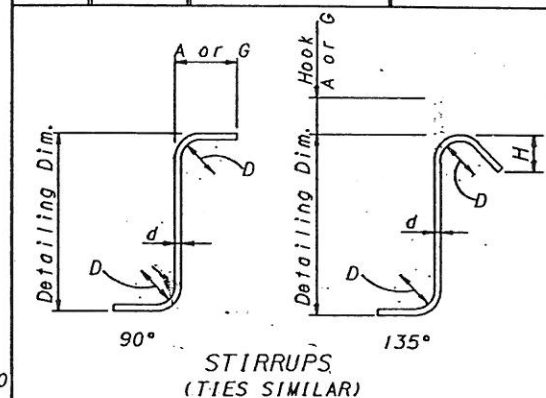
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BAR SIZE	D	180° HOOKS		90° HOOKS	
		A OR G	J	A OR G	
#10	60	125	80	150	
#13	80	150	105	200	
#16	95	175	130	250	
#19	115	200	155	300	
#22	135	250	180	375	
#25	155	275	205	425	
#29	240	375	300	475	
#32	275	425	335	550	
#36	305	475	375	600	
#43	465	675	550	775	
#57	610	925	725	1050	
STYLE		1		3	



RECOMMENDED STIRRUP & TIE HOOK DIMENSIONS				
BAR SIZE	D	90° HOOKS		135° HOOKS
		A or G	A or G	H*
#10	40	105	105	65
#13	50	115	115	80
#16	65	155	140	95
#19	115	305	205	115
#22	135	355	230	135
#25	155	410	270	155
STYLE		4		5

STYLE 6 - NO HOOK

* Dimension is approximate.

Hook Styles Detailed on this sheet are for Illustration Only.

Actual Hook Style for any particular bar will be shown under A or G heading on REINFORCING BAR LIST sheet.

All dimensions are in millimeters (mm), except as noted.

All Dimensions are out-to-out.

NOTE: For Bar Dimensions See REINFORCING BAR LIST Sheet.

[illegible]

NOTES:

1. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT ON STANDARD 90°, 135° AND 180° HOOKS.
2. DIMENSIONS ON HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD HOOKS ARE TO BE USED.
3. ALL BENDS SHOWN ARE BENT AROUND A STANDARD MANDREL. EXCEPT WHERE RADIUS OR DIAMETER IS INDICATED.
4. ALL BARS ARE EPOXY COATED.
5. SP BARS ARE SPIRAL BARS. THE WEIGHT OF THE SPIRAL INCLUDES 11 KILOGRAMS FOR 3 ADDITIONAL COILS, 1½ COILS AT EACH END PER AASHTO 8.18.2.2.1 THE WEIGHT OF THE SPIRAL INCLUDES 13.6 KILOGRAMS FOR 3 ADDITIONAL COILS. 1½ COILS AT EACH END PER AASHTO 8.18.2.2.4. CONCRETE SPACERS OR OTHER APPROVED NON-CORROSIVE SPACING DEVICES SHALL BE USED AT SUFFICIENT INTERVALS (NEAR THE BOTTOM AND AT INTERVALS NOT EXCEEDING 3.050m) TO INSURE CONCENTRIC SPACING FOR THE ENTIRE CAGE LENGTH. SPACERS SHALL BE CONSTRUCTED OF APPROVED MATERIAL EQUAL IN QUALITY AND DURABILITY TO THE CONCRETE SPECIFIED FOR THE COLUMN. THE SPACERS SHALL HAVE ADEQUATE DIMENSIONS TO ENSURE A MINIMUM 75mm CLEAR SPACE BETWEEN THE OUTSIDE OF THE REINFORCING CAGE AND THE DESIGN DIMENSION OF THE COLUMN. CYLINDRICAL CONCRETE FEET (BOTTOM SUPPORTS) SHALL BE PROVIDED TO ENSURE THAT THE BOTTOM OF THE CAGE IS MAINTAINED AT THE PROPER DISTANCE ABOVE THE BASE.
6. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST TWO DIGITS INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, P19W01 IS A NO. 19W BAR.
7. FOR STYLE OF HOOK "A" OR "G" AND HOOK DIMENSIONS REFER TO THE STANDARD BAR BENDING DETAILS. TOTAL LENGTH AND WEIGHT OF BARS INCLUDE HOOKS.