

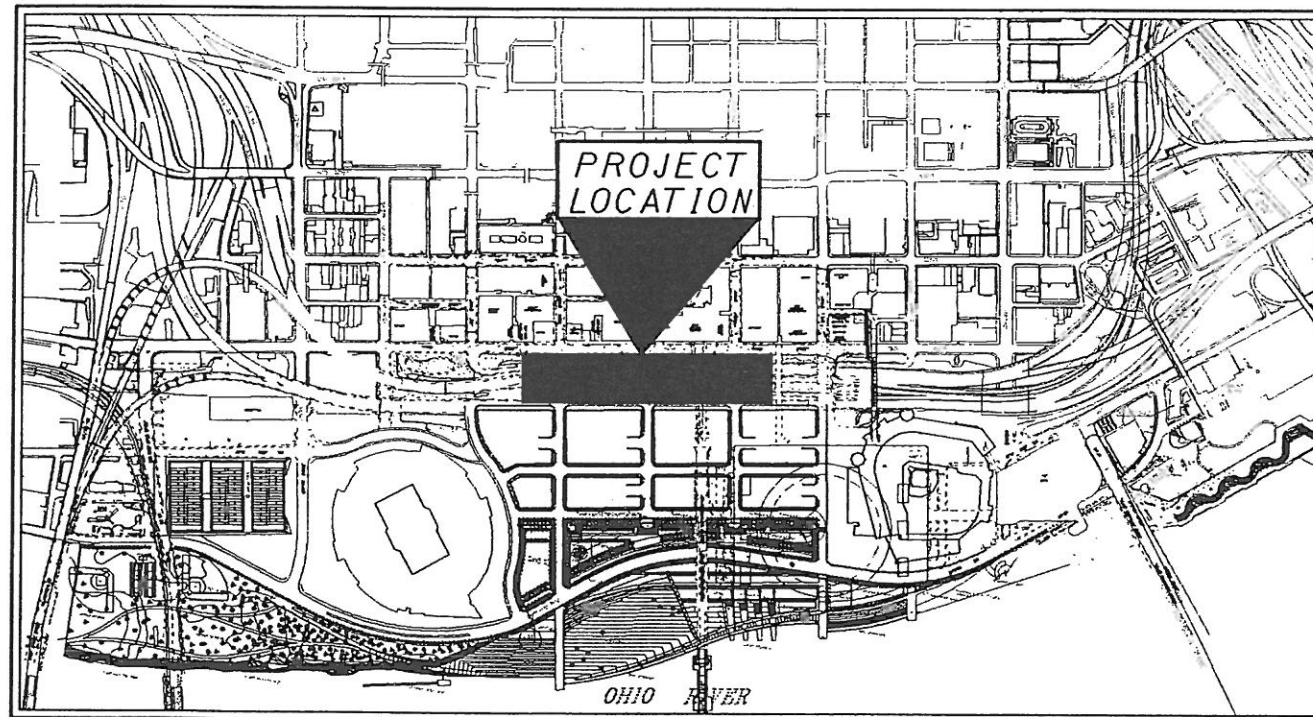
APPENDIX F

Construction Drawings

**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 1



LOCATION MAP

Plans Reviewed By:



Plans Prepared For:



City of Cincinnati
Engineering Division
Department of Public Works



metric
units

CITY OF CINCINNATI
CONTRACT No. 75X5753

RAILROAD INVOLVEMENT

CONSTRUCTION PROJECT NO.

PID NO.

FEDERAL PROJECT NO.



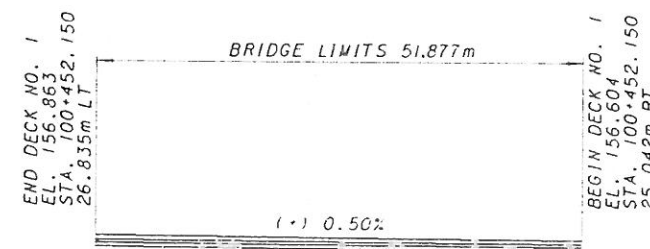
BENCH MARK
SEE GENERAL NOTES
SHEET NO. 13 OF 469
CONTRACT B DRAWINGS

PROPOSED STRUCTURE

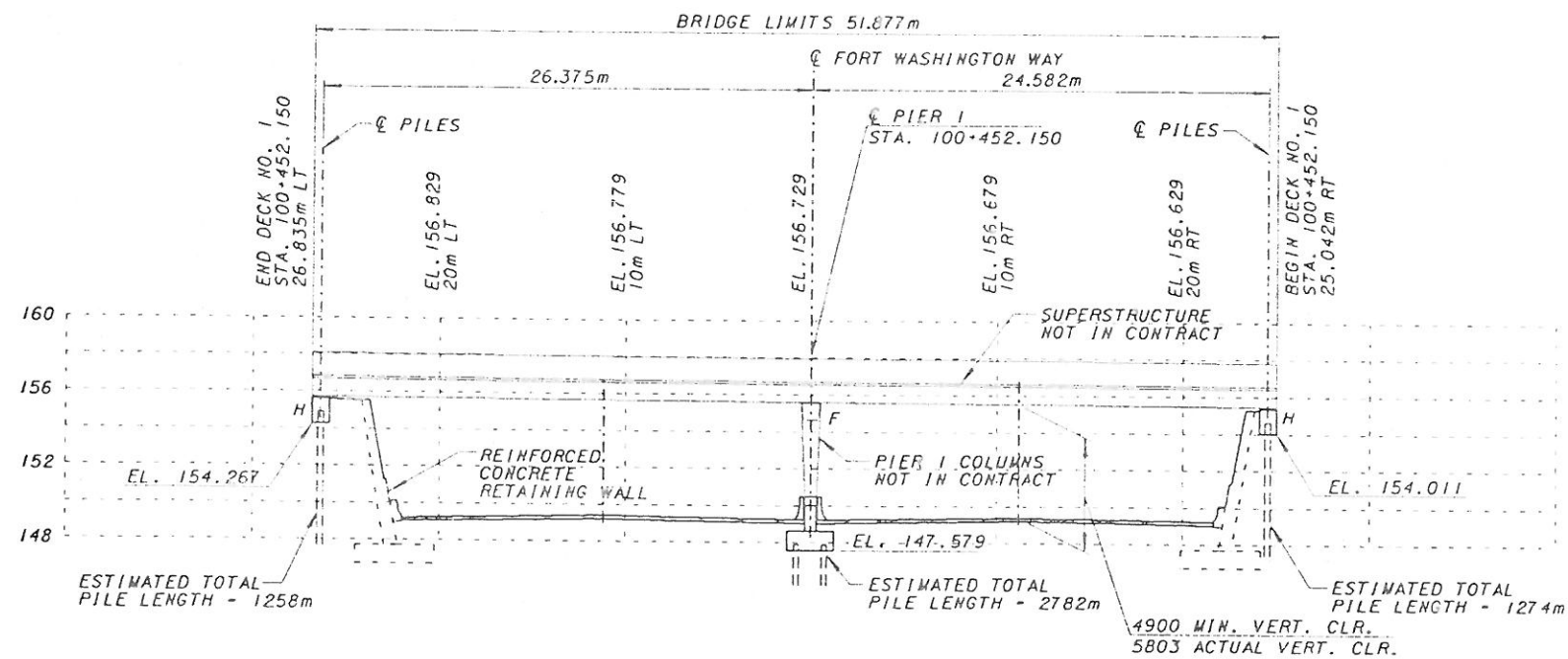
TYPE: 2 SPAN PRECAST PRESTRESSED BOX GIRDERS
WITH INTEGRAL ABUTMENTS
LENGTH OF SPANS: 26.375m - 24.582m
WIDTH OF STRUCTURE: 46.36m
DESIGN LOADING: 1.22m SOIL (MAX DEPTH).
SKEW ANGLE: 0°
SUPER ELEVATION: 0.00356
WEARING SURFACE: NONE
APPROACH SLAB: NOT IN CONTRACT
ALIGNMENT: TANGENT
LATITUDE: N39°-05'-54"
LONGITUDE: W84°-30'-50"

NOTES:

- 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.
- 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 ϕ CONSTRUCTION DECK 1



PROFILE ALONG ϕ CONSTRUCTION DECK 1

(LOOKING UPSTATION)

GENERAL NOTES

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS APPLY TO THIS PROJECT:
SUPPLEMENTAL SPECIFICATION 344 : 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 - 19.1N/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/m³

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 3.2.2.1A.

CLEARANCE

A MINIMUM VERTICAL CLEARANCE BETWEEN THE RIDING SURFACE OF ROADWAY BELOW AND THE LOWEST POINT OF THE STRUCTURE ABOVE, IF IT ENCRDACHES ONTO TRAFFIC LANES OF ROADWAY BELOW, SHALL BE 4.3 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 900 kN IN COMPRESSION.

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 102.05 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

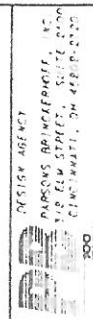
STEEL POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED "H" PILING. THE STEEL POINTS SHALL BE FURNISHED BY THE ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BOULEVARD, CLIFTON, NEW JERSEY 07014; INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DRIVE, MATHEWS, NORTH CAROLINA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



DATE: 6-30-00
PROJECT: 100-427-623
SHEET: 100-477-000

DESIGN: JSH
CHECKED: JSH
APPROVED: JSH

LOCATION NAME: STA. 100.427-623
STA. 100-477-000

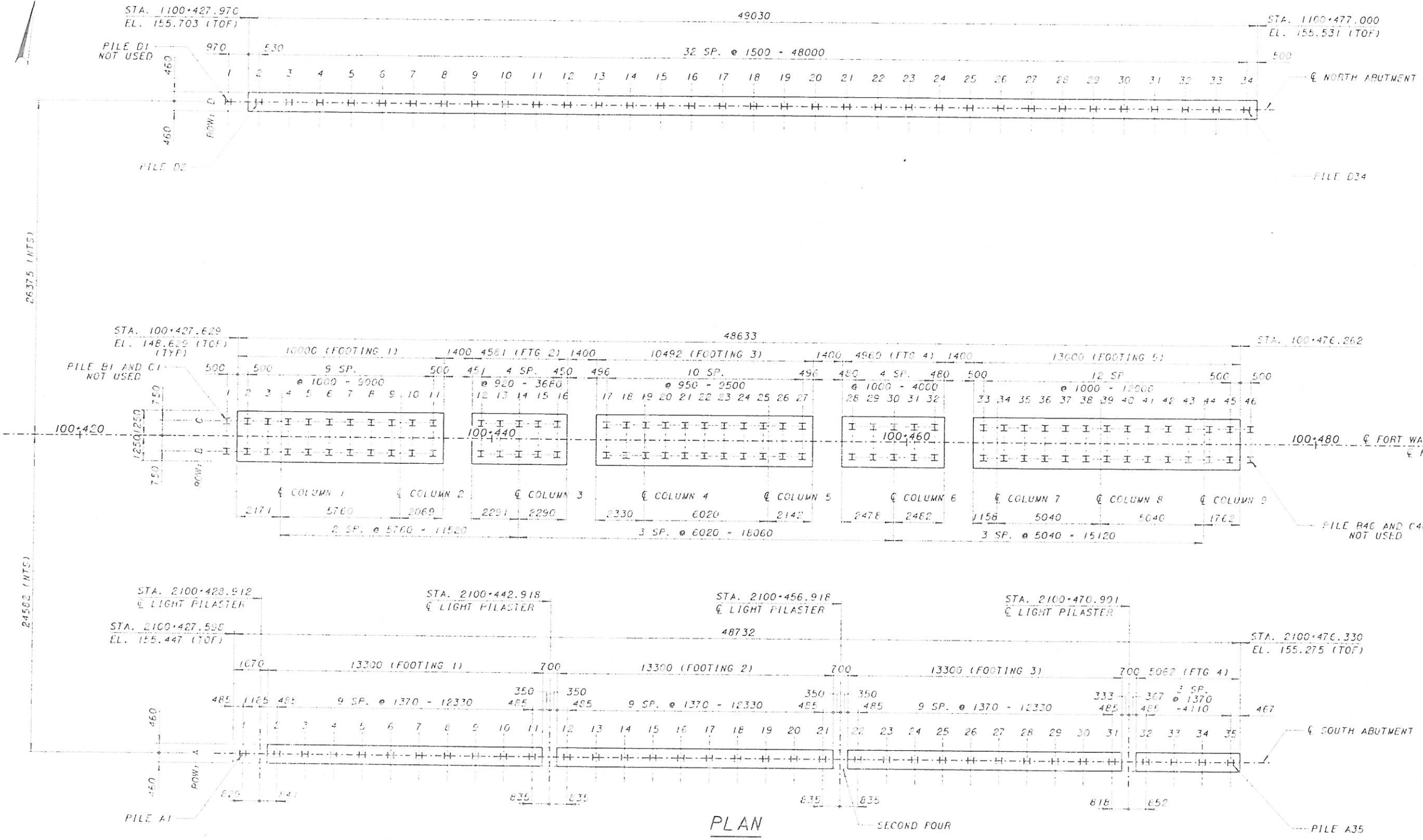
GENERAL NOTES
DECK NUMBER 1
OVER FORT WASHINGTON WAY

CITY OF CINCINNATI
CONTRACT NO. 75X5753

3/19



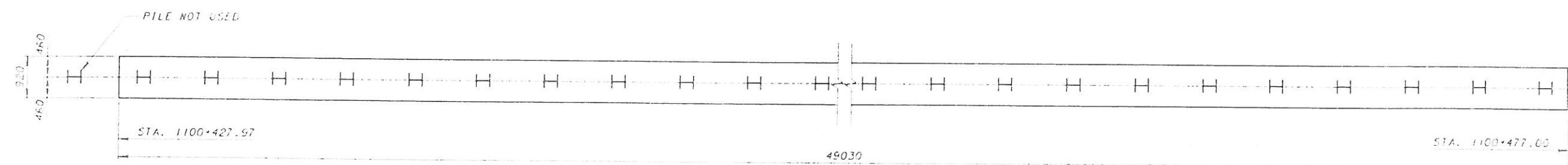
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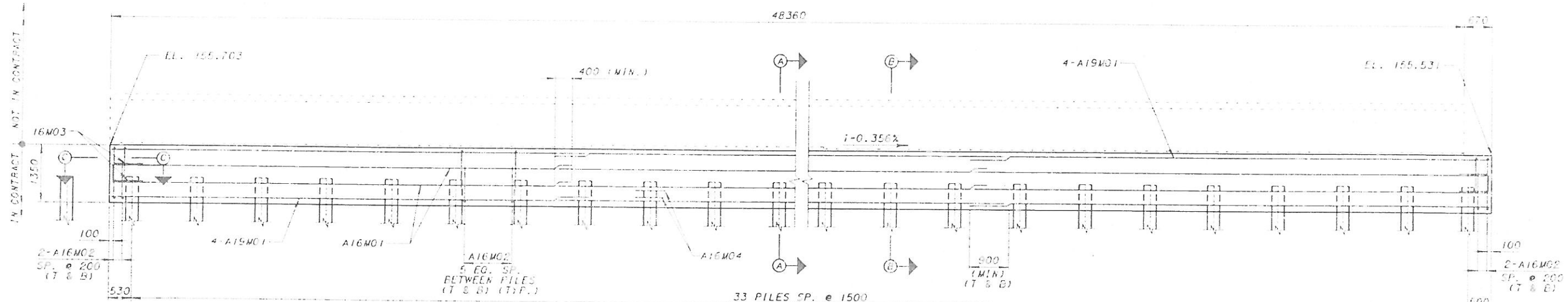
PLAN

LEGEND
H-HP 12 X 53 STEEL PILE (TYP)
DRIVEN TO ROCK
980 KN PILE CAPACITY

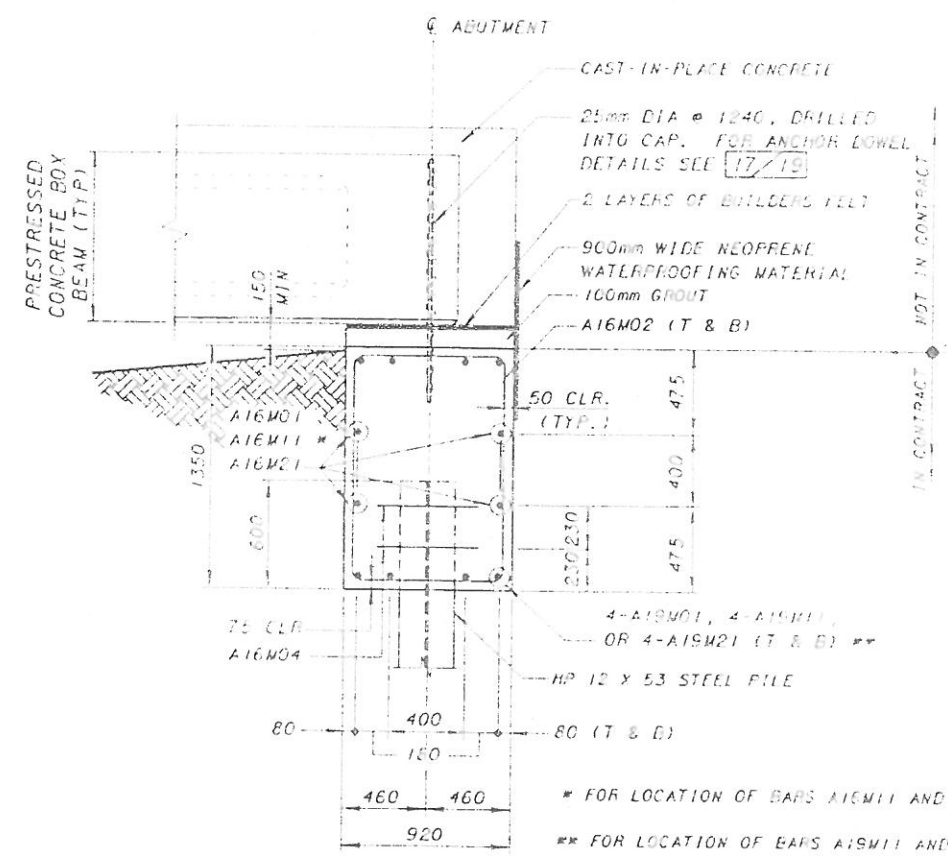
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	DATE			
	REVISED			
	DRAWN			
FILED	6-30-00	STRUCTURE FILE NUMBER	CHECKED	JSH
PREPARED	VR	FILED	FILED	FILED



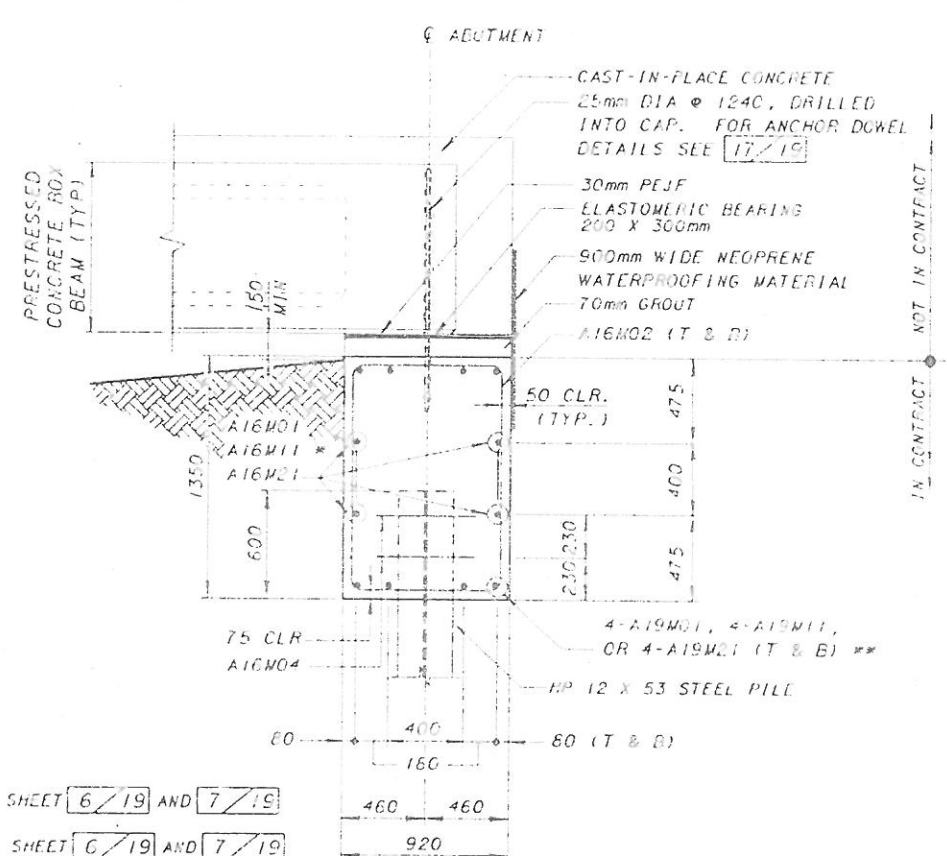
PLAN



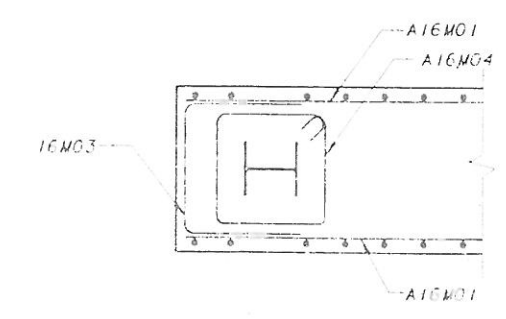
ELEVATION



SECTION A-A
(FIXED CONNECTION)



SECTION B-B
(EXPANSION CONNECTION)

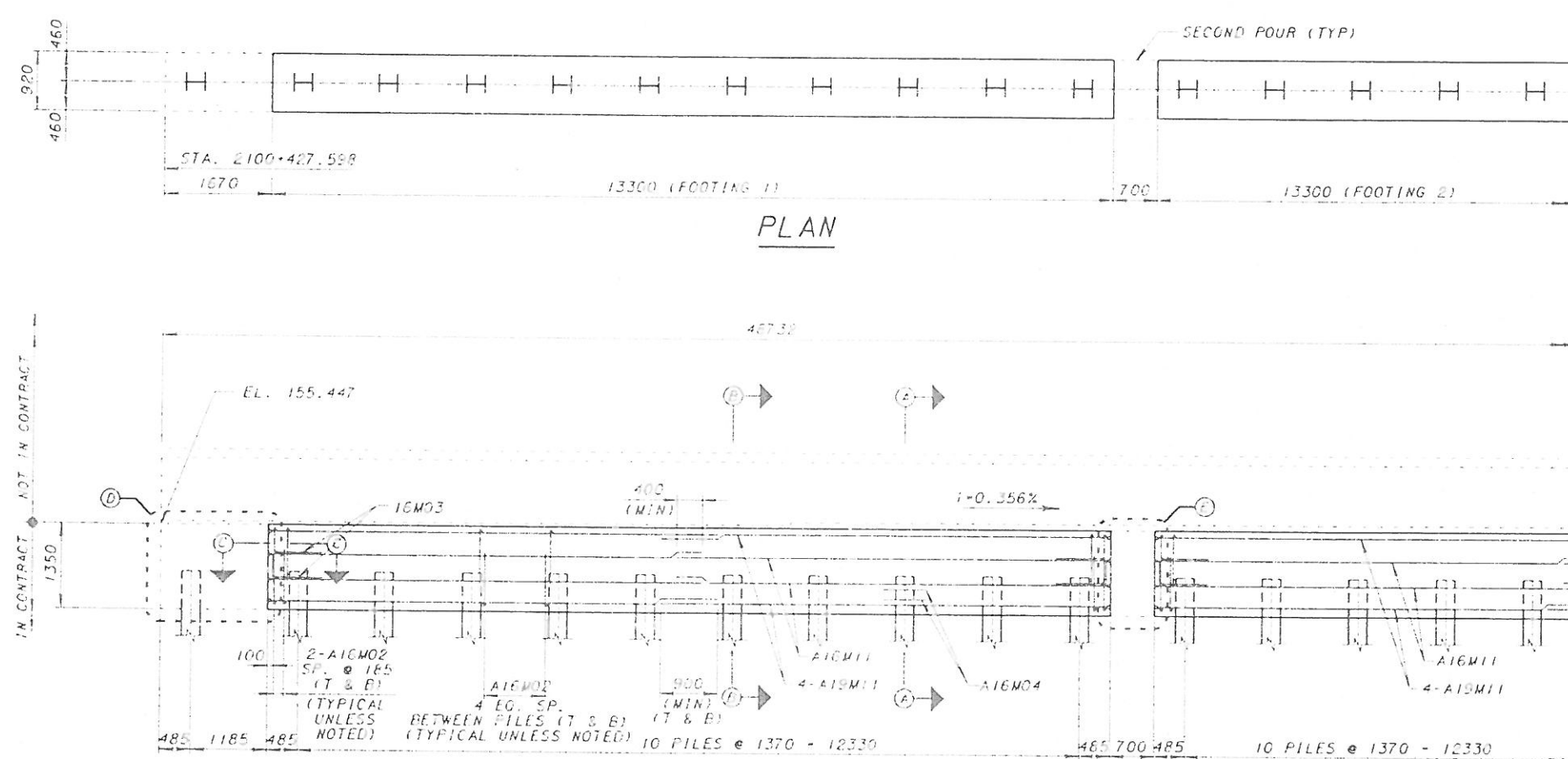


SECTION C-C

f:\nsd\mont\fx\water\bridge\sdm\contract\20\disb\2404.dgn

1/27/01

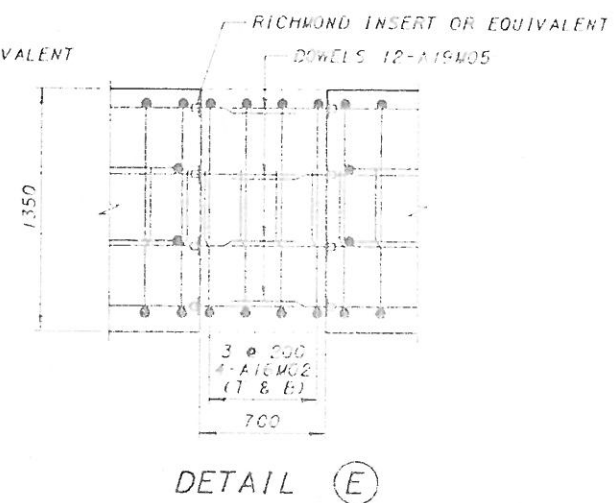
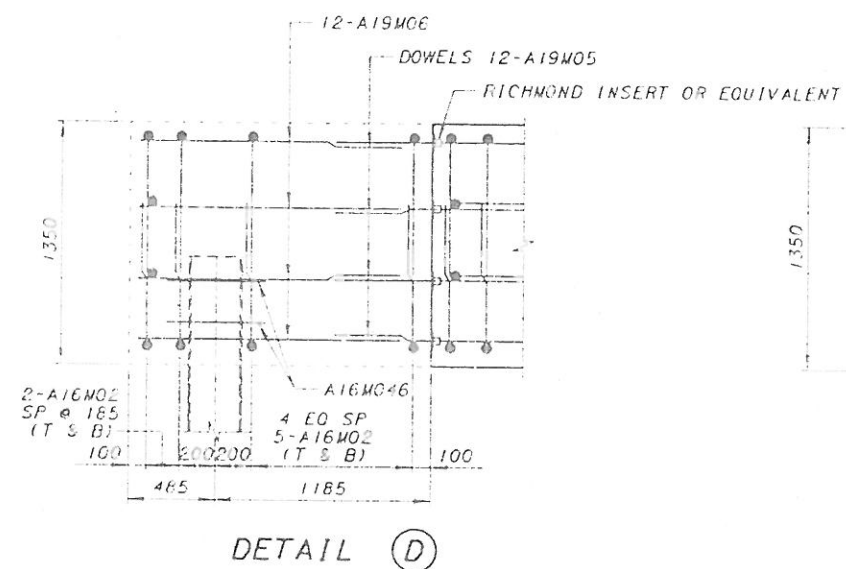
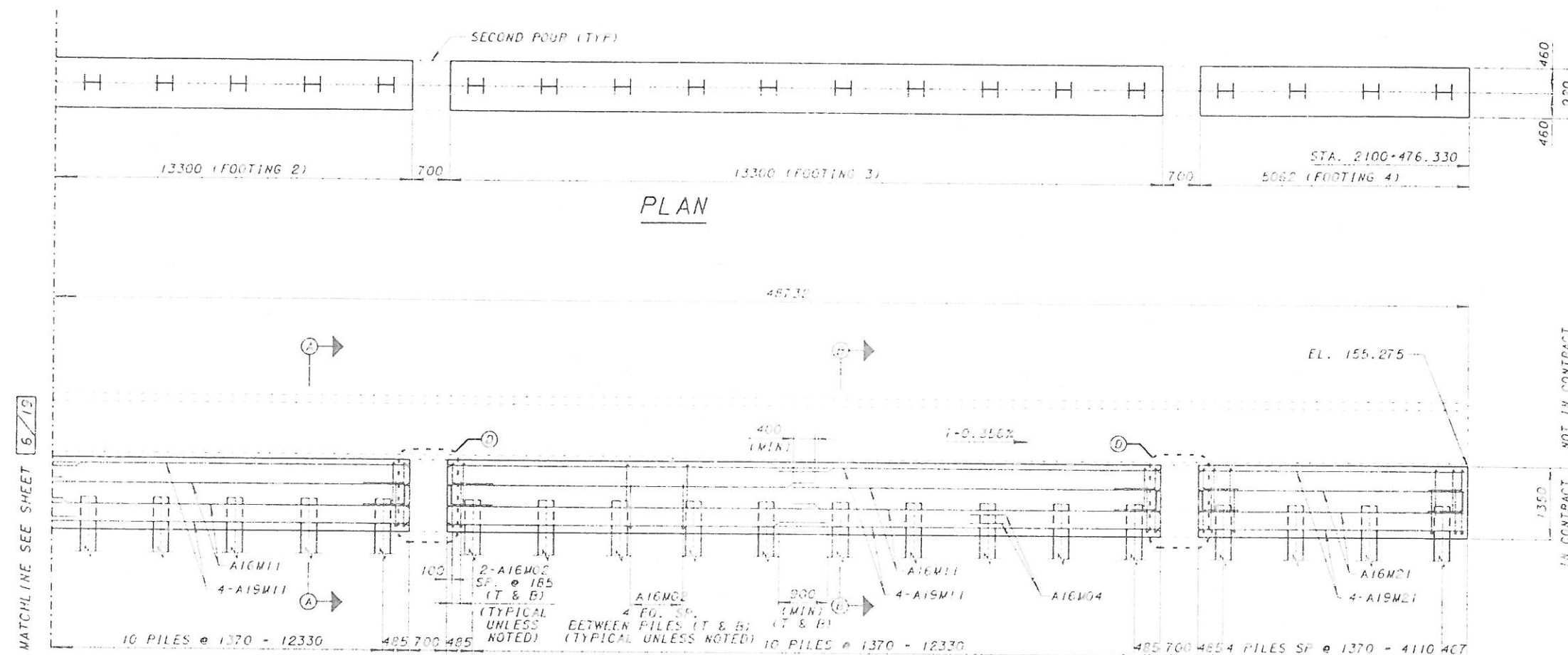
PLAN 10 079890 2000



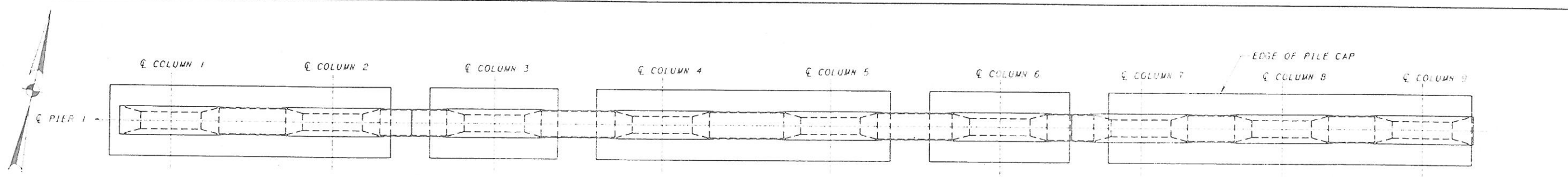
ELEVATION

NOTES:

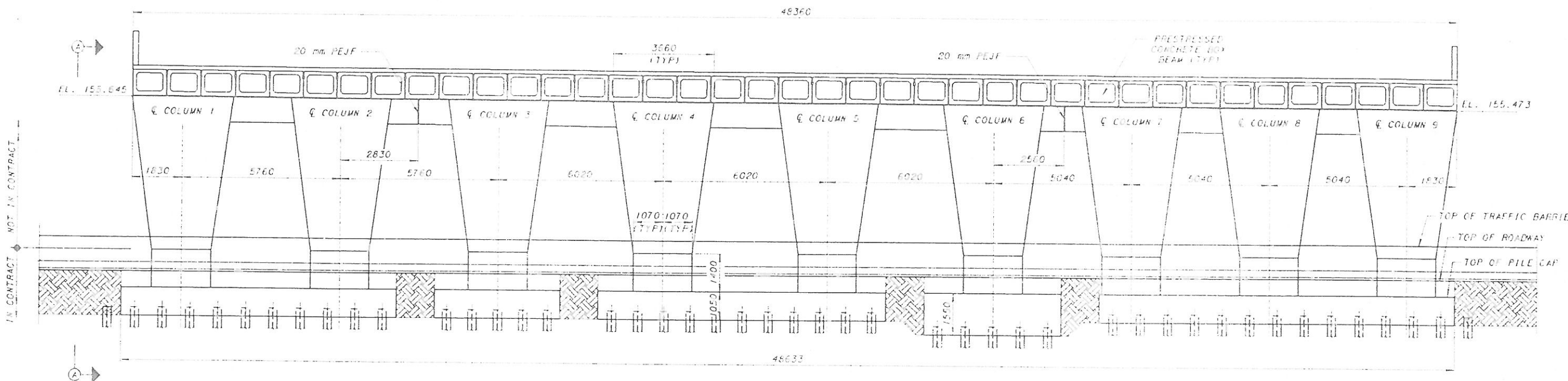
1. FOR SECTIONS A-A, B-B, AND C-C SEE SHEET 5/19



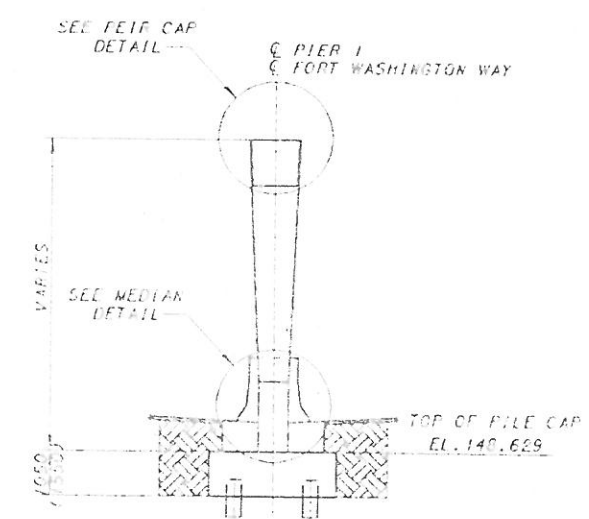
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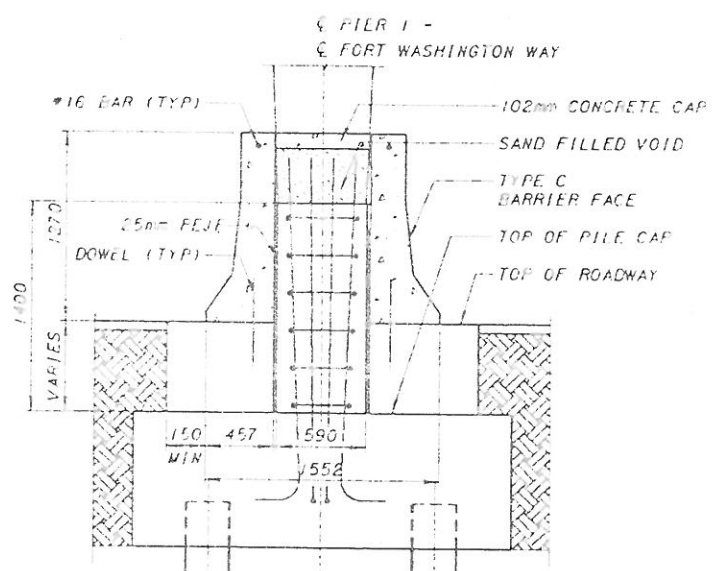
PLAN



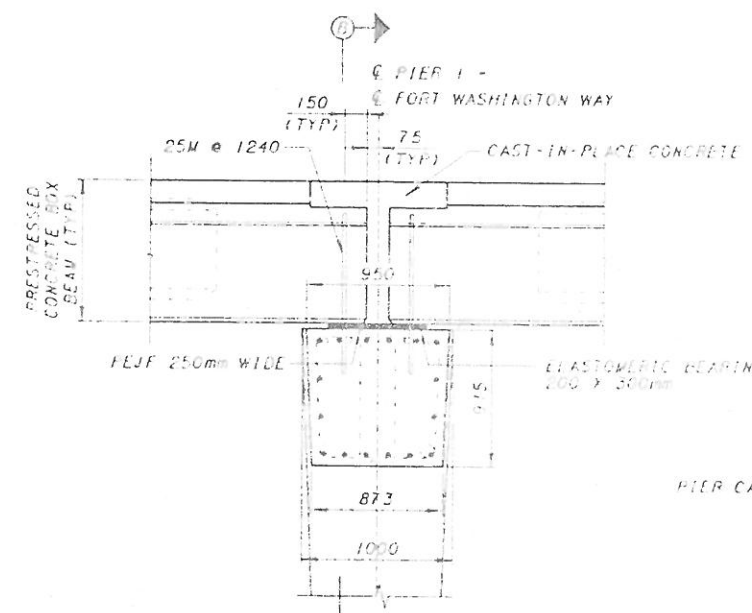
ELEVATION AT PIER 1



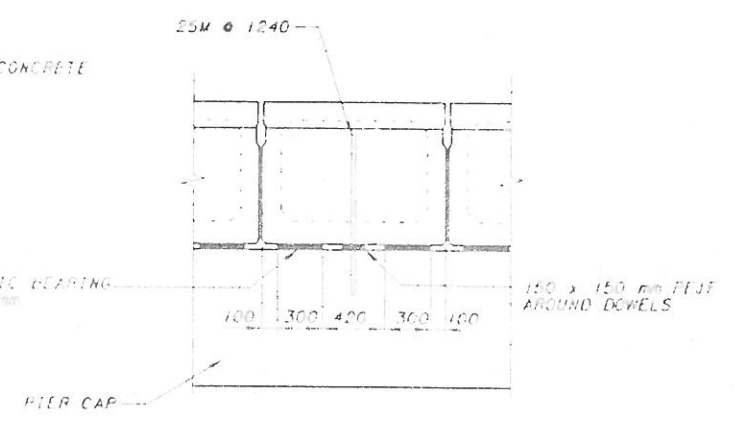
VIEW A-A



MEDIAN DETAIL



PIER CAP DETAIL

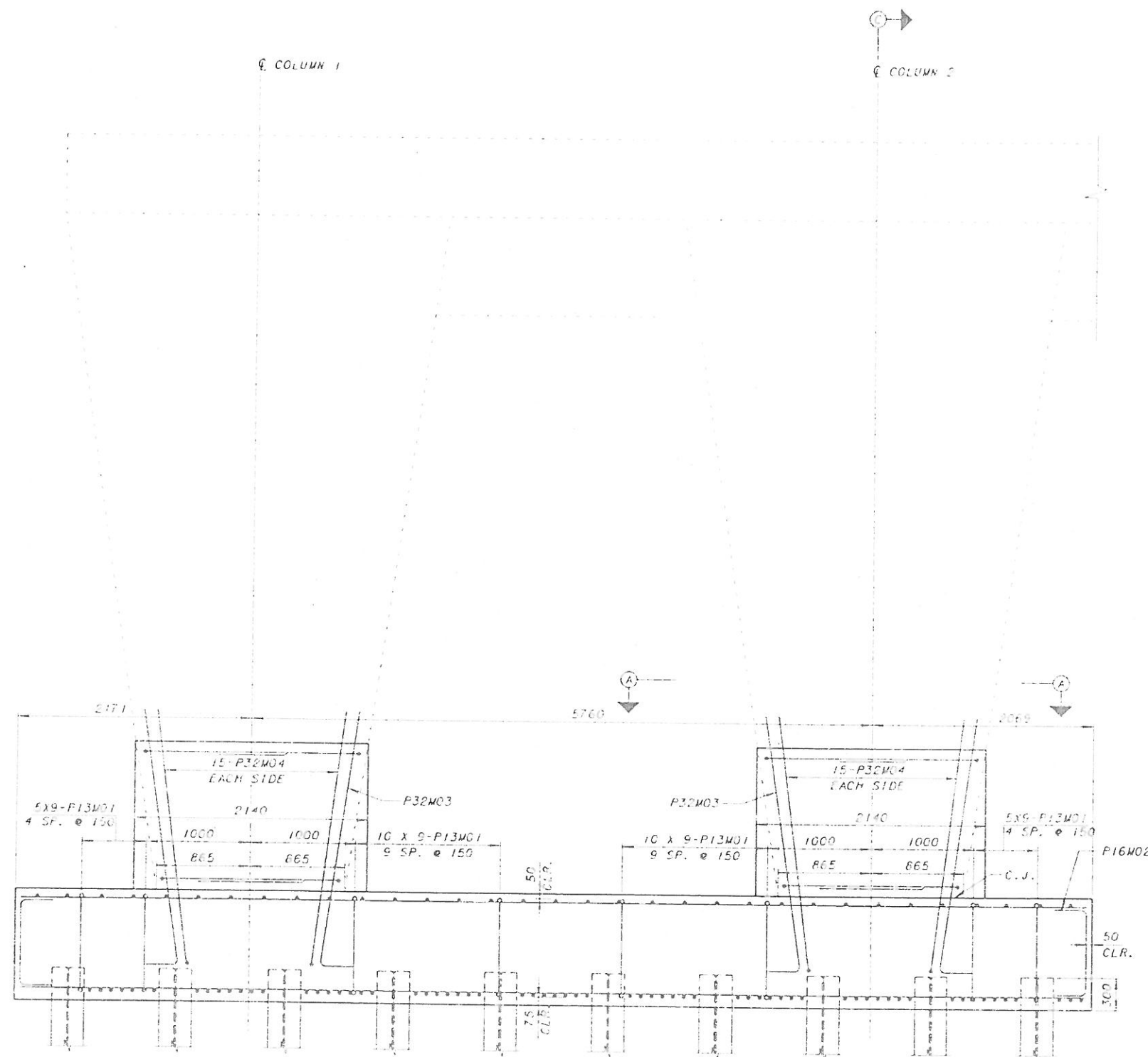


SECTION B-B

NOTES:
1. SEE NOTES 1 AND 2 ON SHEET 2/19

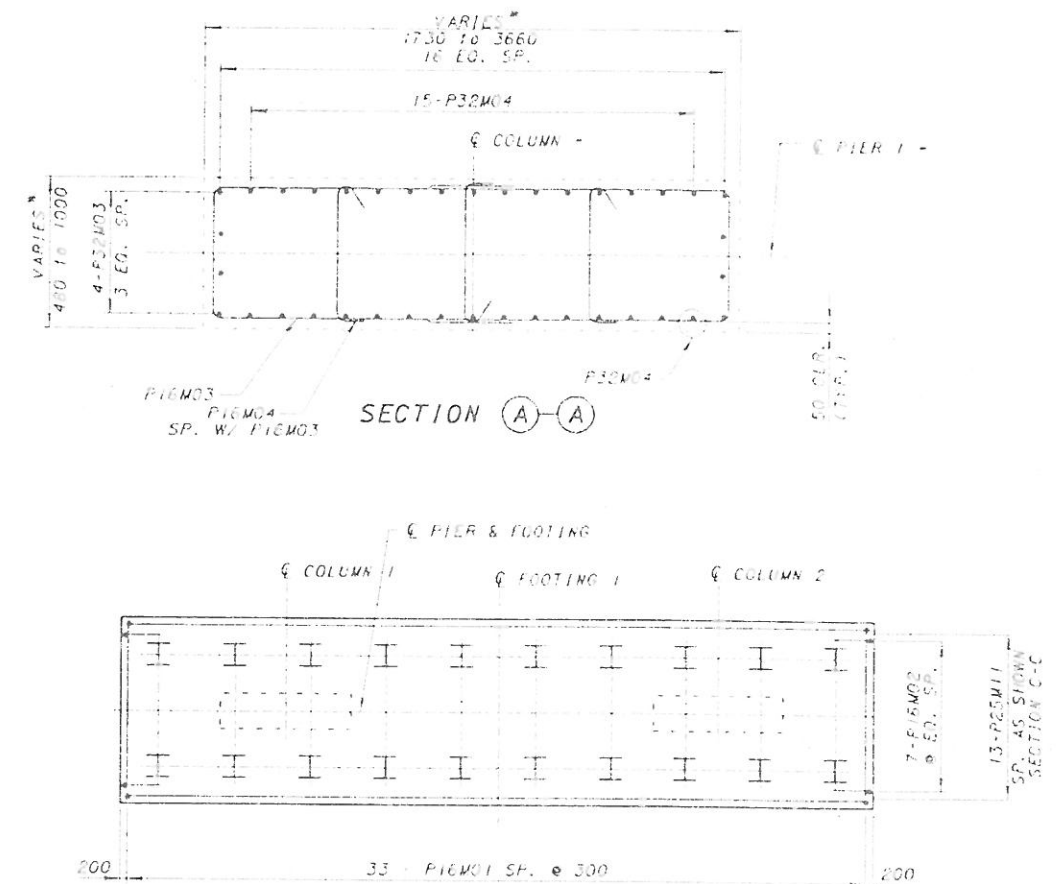
DESIGN AGENCY BRUNSON BRIDGEPORT, INC. 3100 VINE STREET CINCINNATI, OH 45202-2720 200	DATE 6-30-00	REVISED STRUCTURE FILE NUMBER	DRAWN SPL	CHECKED JSH	PREPARED V/R	HAMILTON COUNTY STA. 100+427.529 STA. 100+477.000	PIER 1 PLAN & ELEVATION DECK NUMBER 1 OVER FORT WASHINGTON WAY	CITY OF CINCINNATI CONTRACT NO. 75X5753	8/19	
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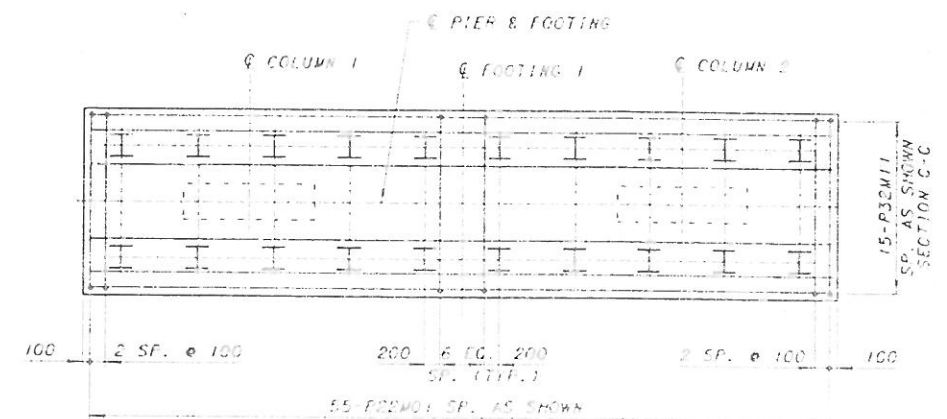


SECTION (B)-(B)

SEE SHEET 10/19 FOR LOCATION OF SECTION B-B



PLAN FOOTING & TOP REINFORCING

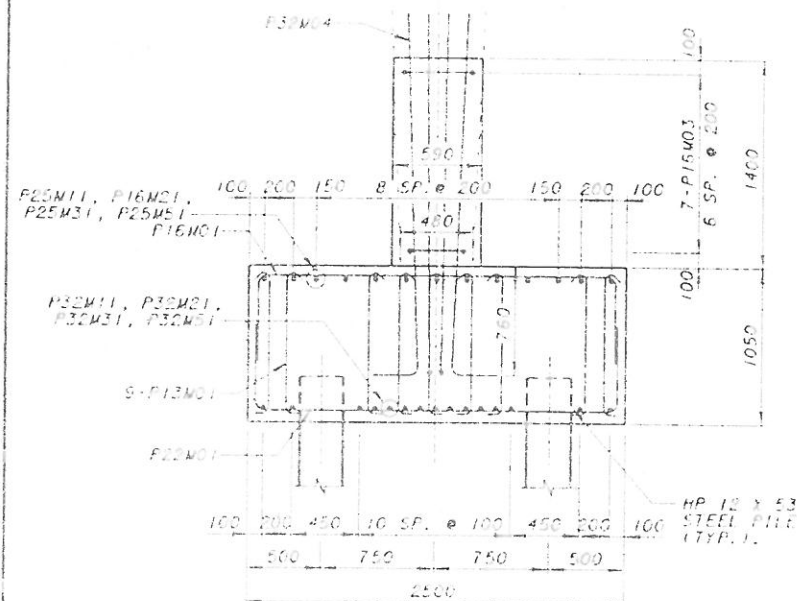


PLAN FOOTING & BOTTOM REINFORCING

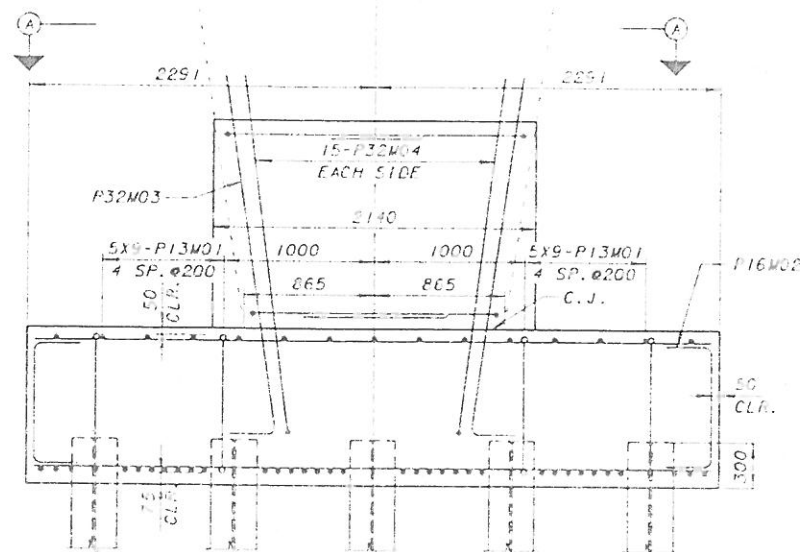
* THE SIZE OF LOWER PORTION OF THE COLUMNS IS 550 x 2140 mm.
THE 480 mm & 1730 mm DIMENSIONS ARE GIVEN TO PROPERLY
LOCATE THE DOWELS IN THE FOOTING.

PIER 1 -
FORT WASHINGTON WAY

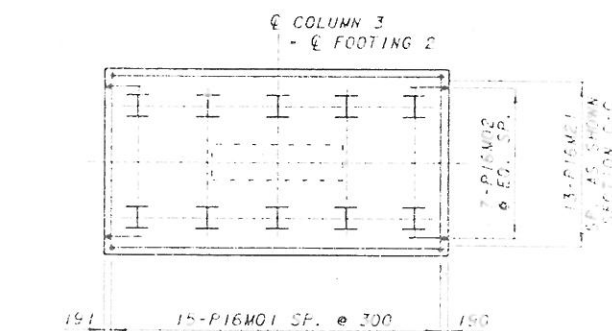
COLUMN 3



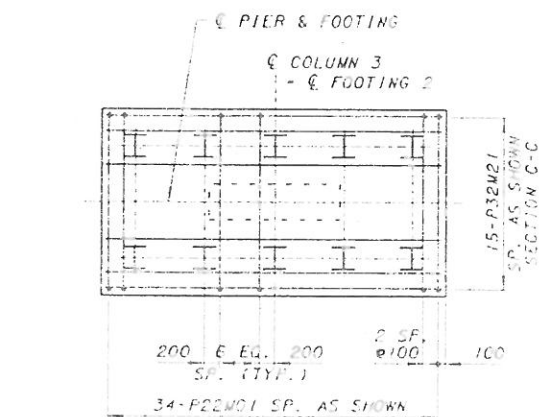
SECTION C-C



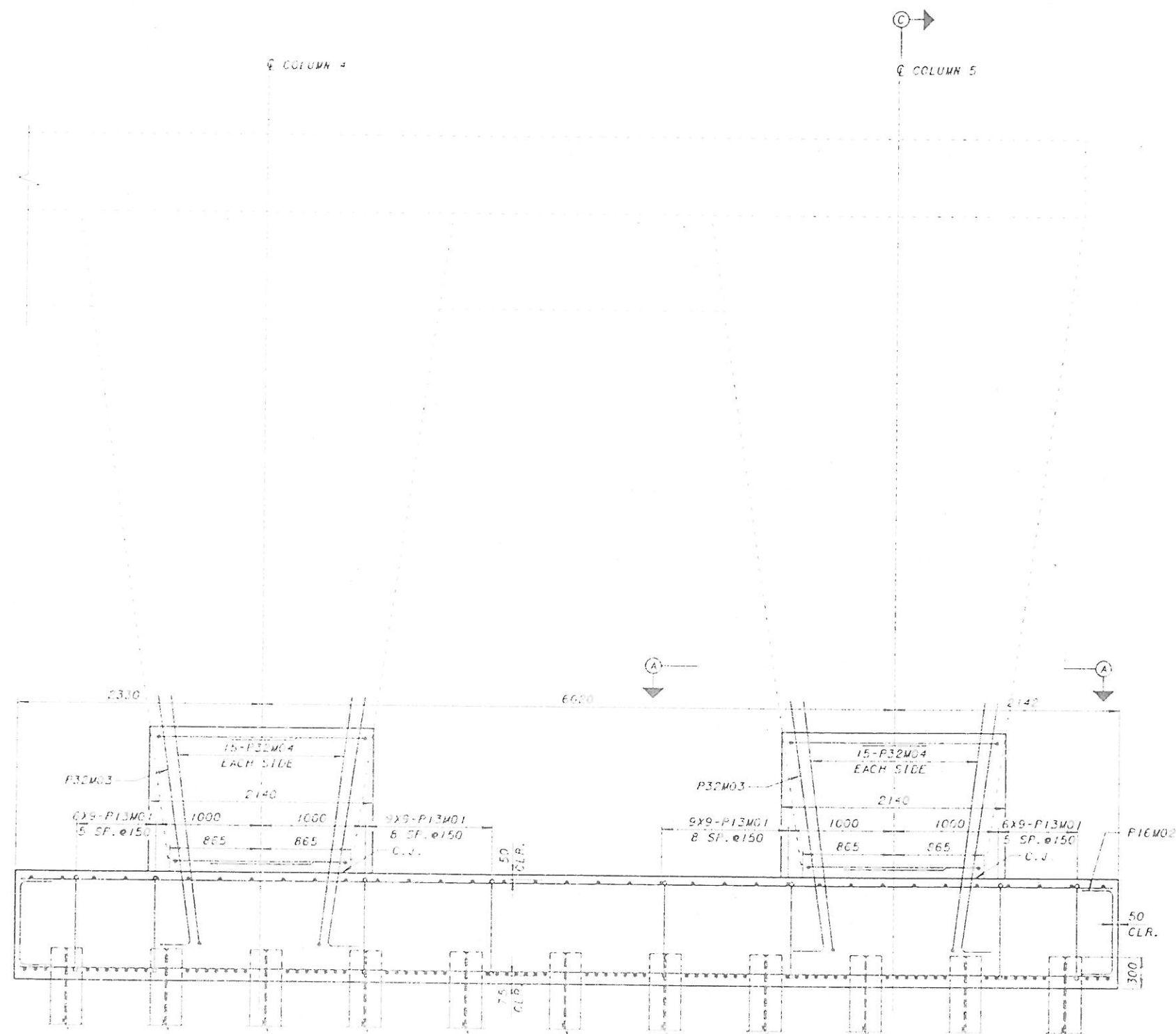
SECTION B-B
SEE SHEET 9/19 FOR SECTION A-A



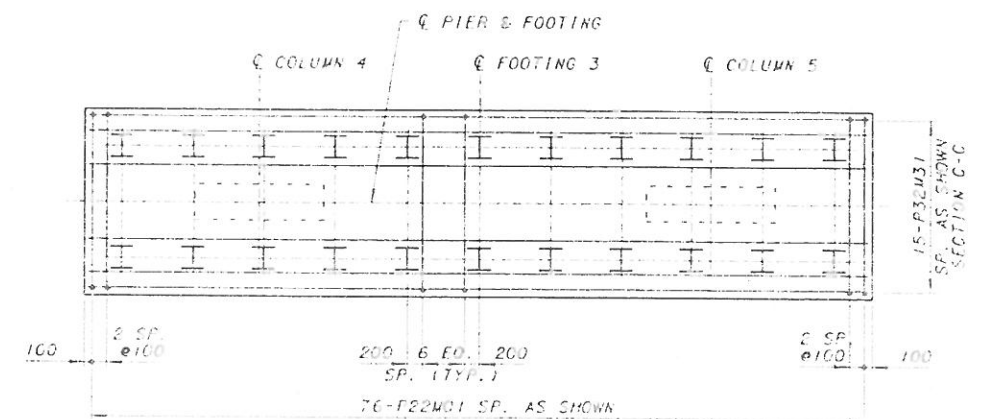
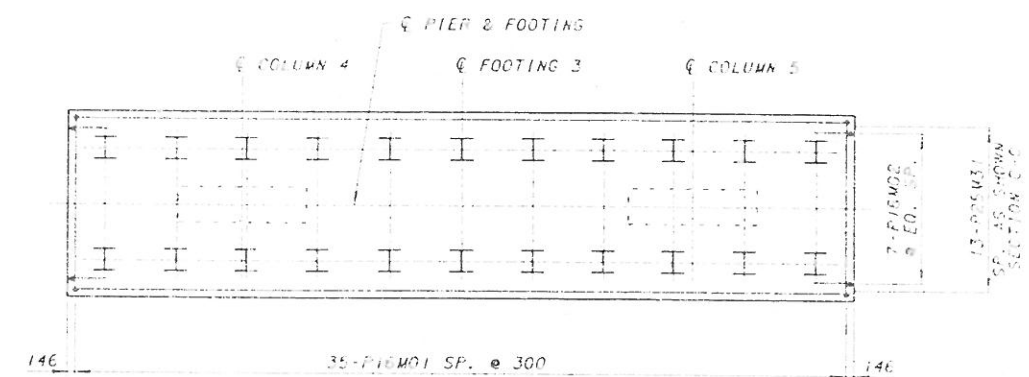
PLAN FOOTING 2 TOP REINFORCING



PLAN FOOTING 2 BOTTOM REINFORCING

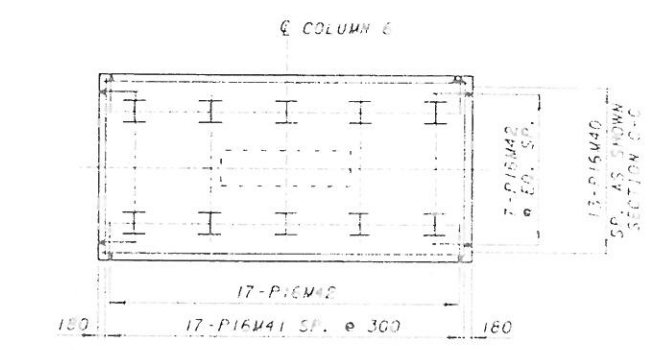
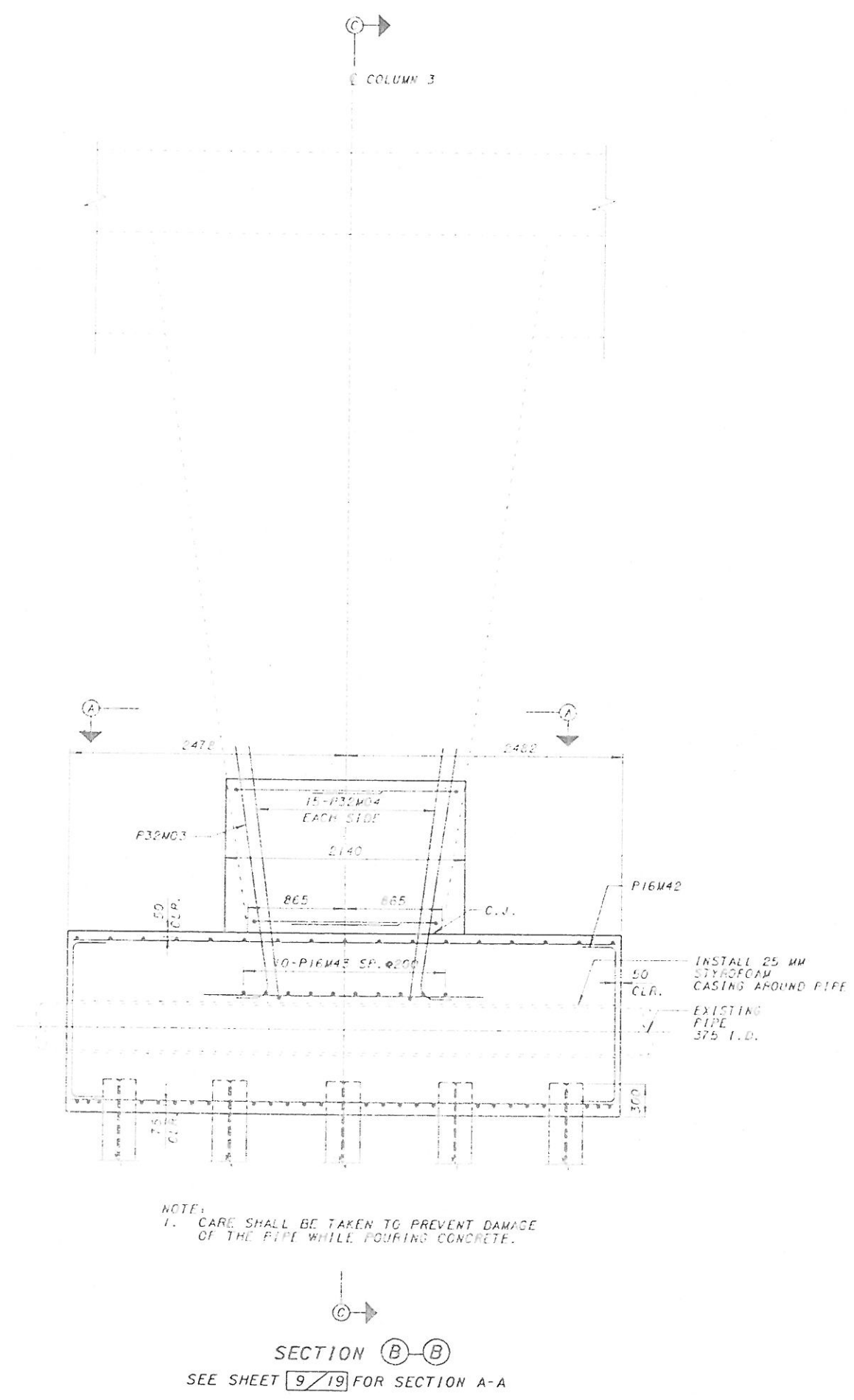
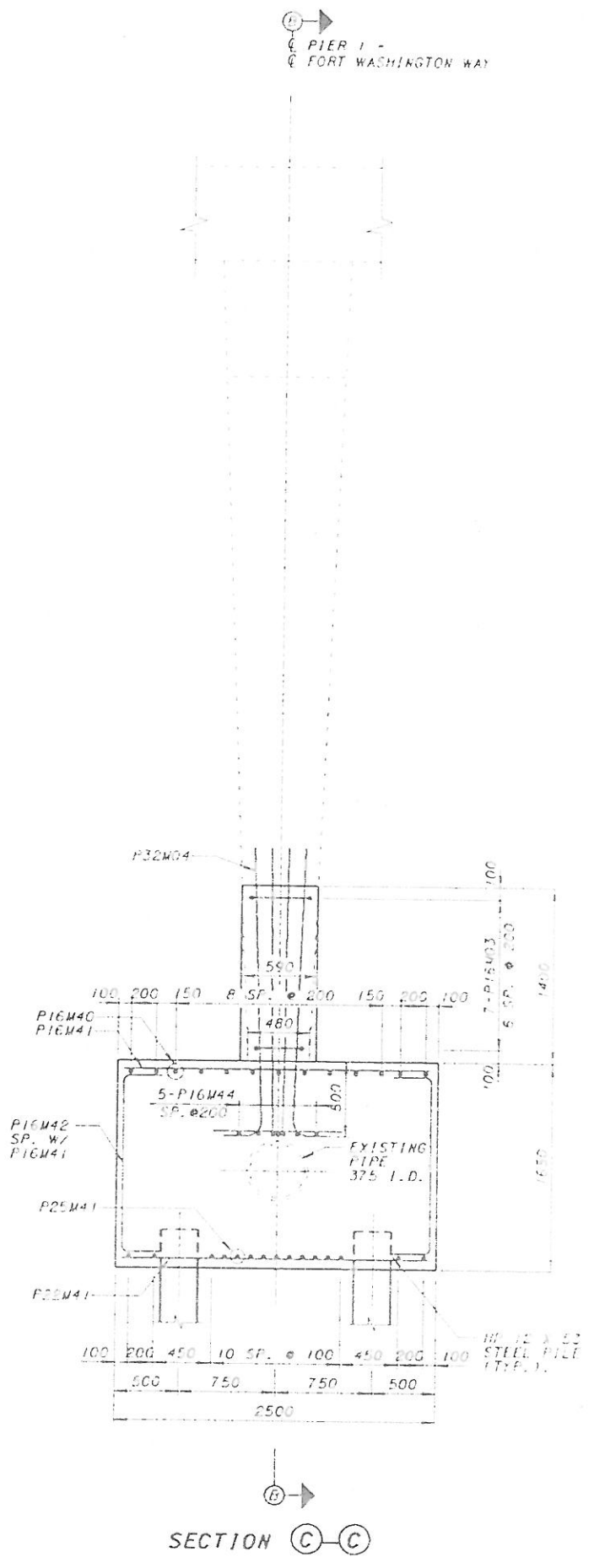


SECTION (B)-(B)
SEE SHEET 10/19 FOR LOCATION OF SECTION B-B
SEE SHEET 9/19 FOR SECTION A-A

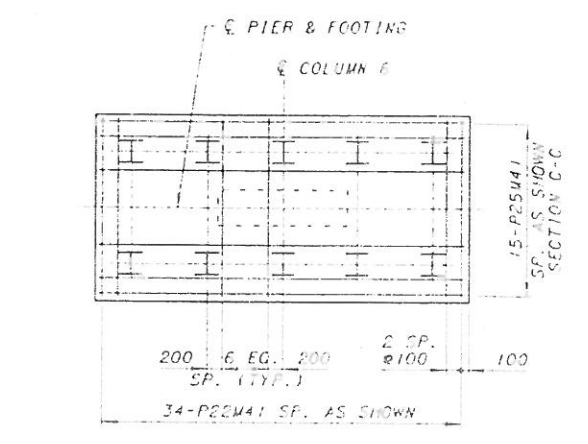


10/12/01

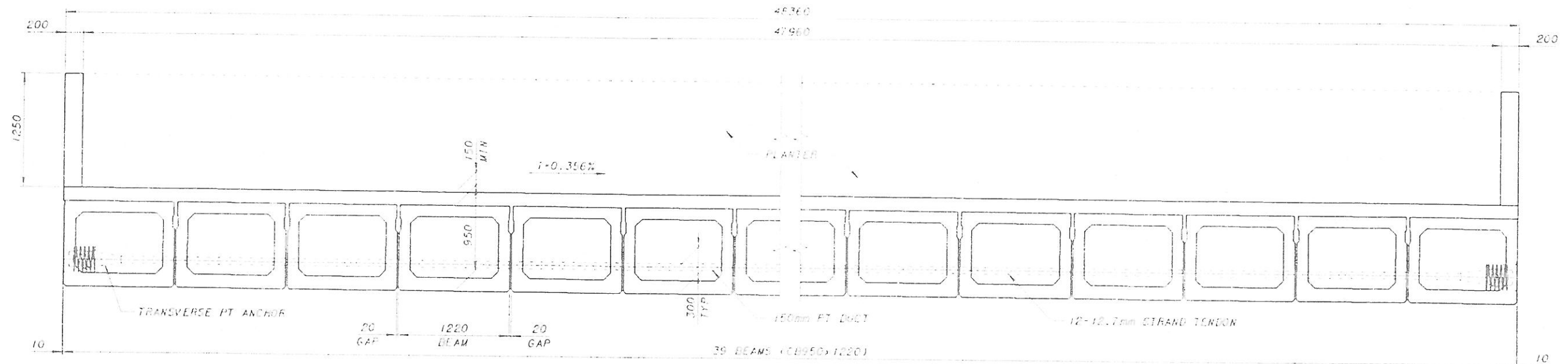
10/12/01



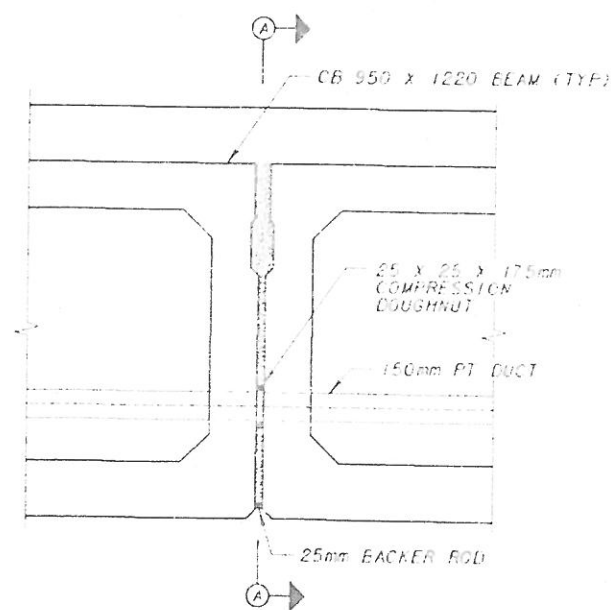
PLAN FOOTING 4 TOP REINFORCING



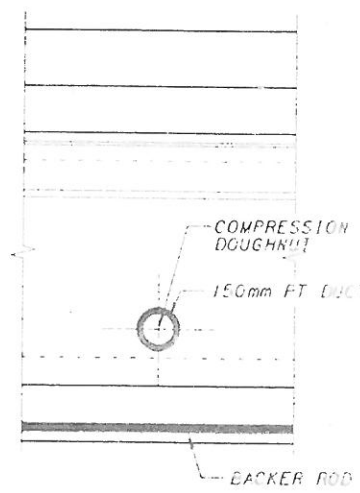
PLAN FOOTING 4 BOTTOM REINFORCING



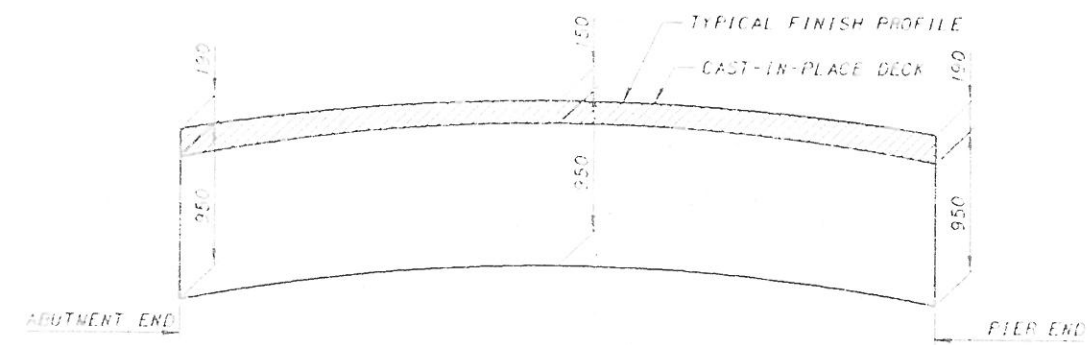
TYPICAL CROSS SECTION



BEAM DETAIL

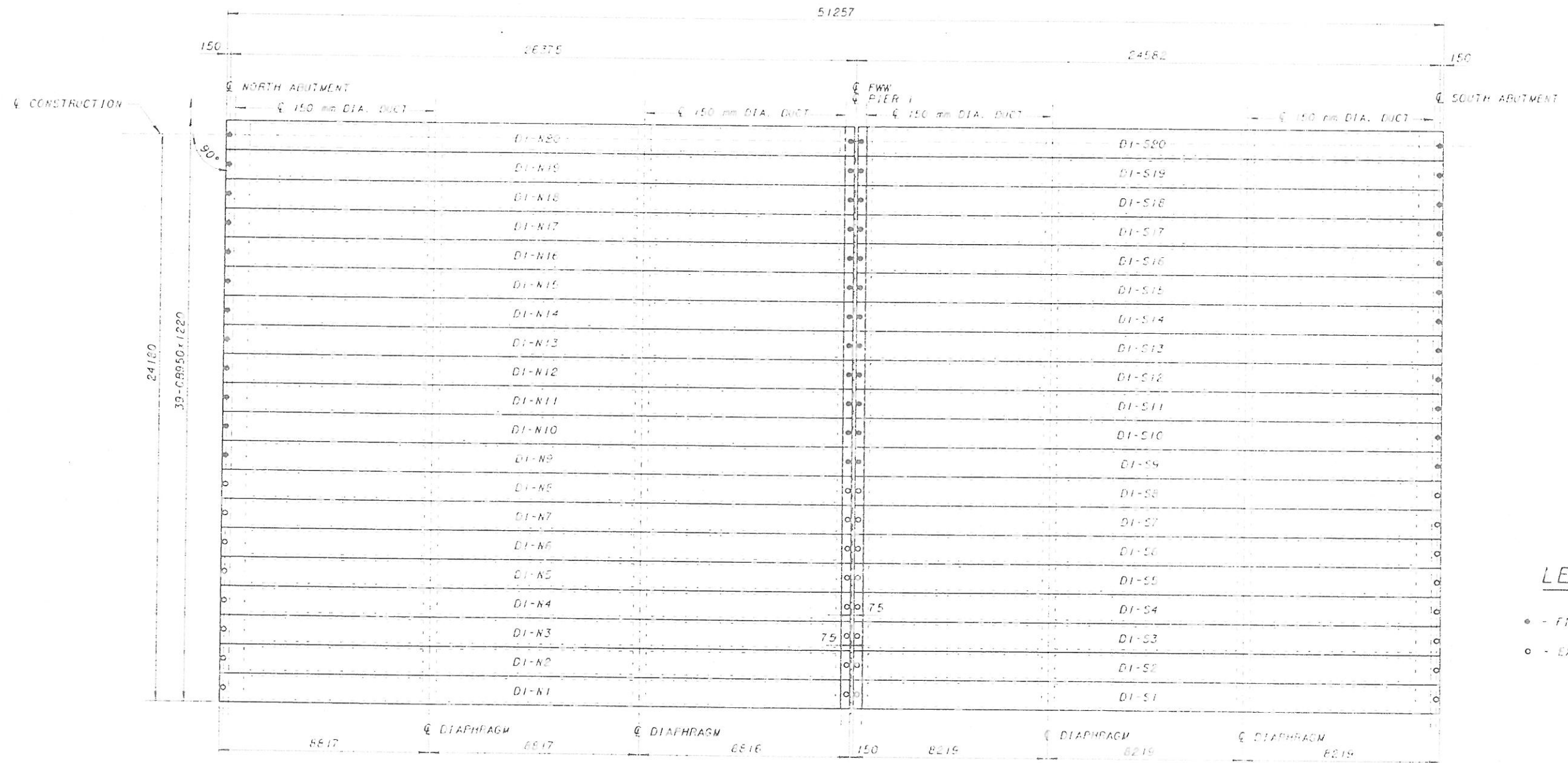


SECTION A-A



BEAM CAMBER DIAGRAM

NOTES:
1. SEE NOTES 1 AND 2 ON SHEET 2/19



FRAMING PLAN

LEGEND

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

- NOTES:
1. MINIMUM CONCRETE STRENGTH OF BEAMS AFTER 28 DAYS: 33.7 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 80, mm), ASTM A416, GRADE 270, 15-1800 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 2/13

DESIGN AGENCY
PARSONS BRINCKERHOFF, INC.
518 ELM STREET, SUITE 2500
CINCINNATI, OH 45202-2700
2025

DATE
6-30-00

REVISED
STRUCTURE FILE NUMBER

DRAWN
SRL

REVIEWED
JSH

FILED
VR

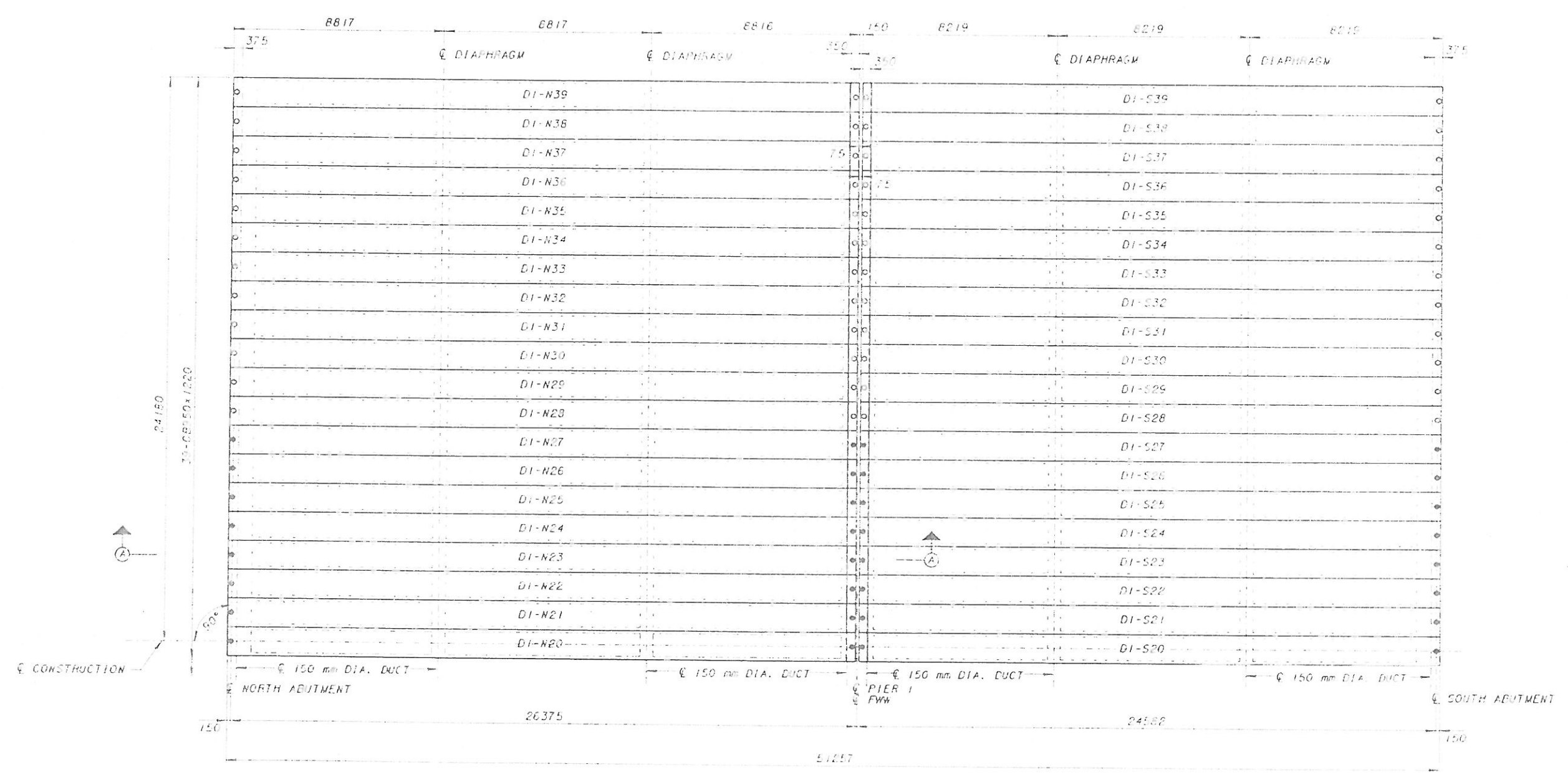
CHECKED
JSH

HAMILTON COUNTY
STA. 100+427.629
STA. 100+477.000

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

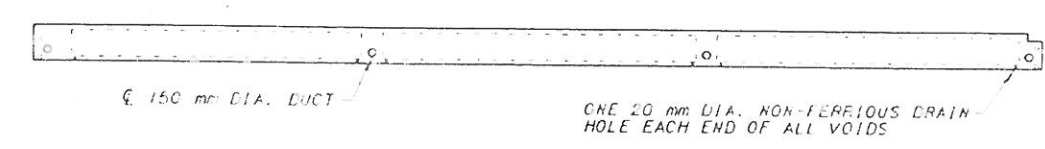
CITY OF CINCINNATI
CONTRACT NO. 75X5753

15/19



FRAMING PLAN

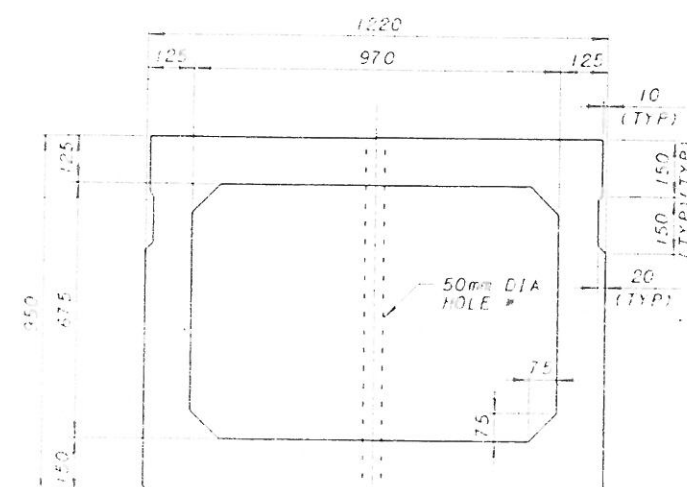
NOTES:
1. WORK TOGETHER WITH FRAMING PLAN SHEET 15/19



SECTION A-A

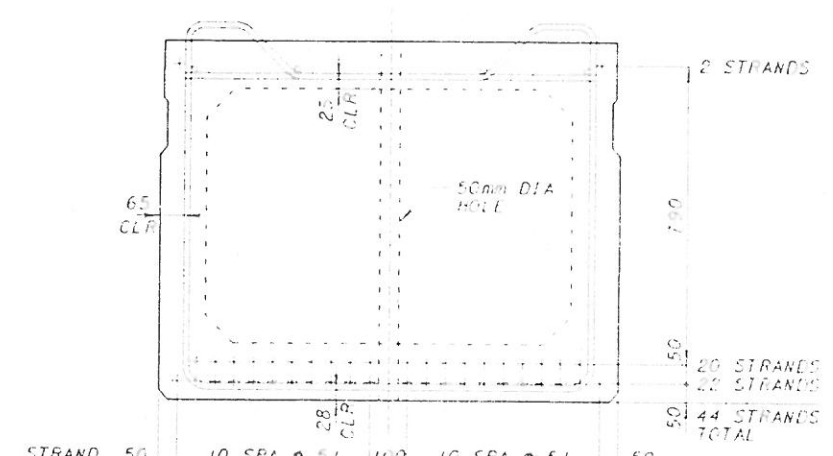
FILED IN 10-07-2019 10:00 AM
10/27/19
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	DRAWN SRL	CHECKED JSH
HAMILTON COUNTY STA. 100+427.529 STA. 100+477.000		
FRAMING PLAN (2 OF 2) DECK NUMBER 1 OVER FORT WASHINGTON WAY		
CITY OF CINCINNATI CONTRACT NO. 75X5753		
16/19		

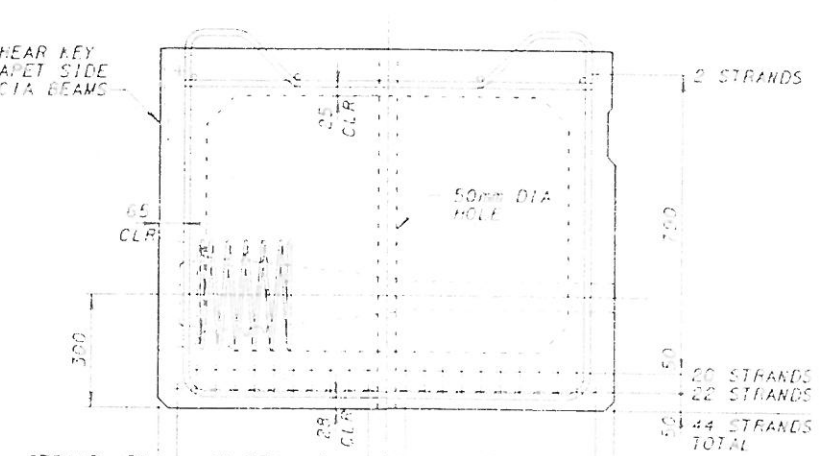


CROSS SECTION CB950x1220 BEAM

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

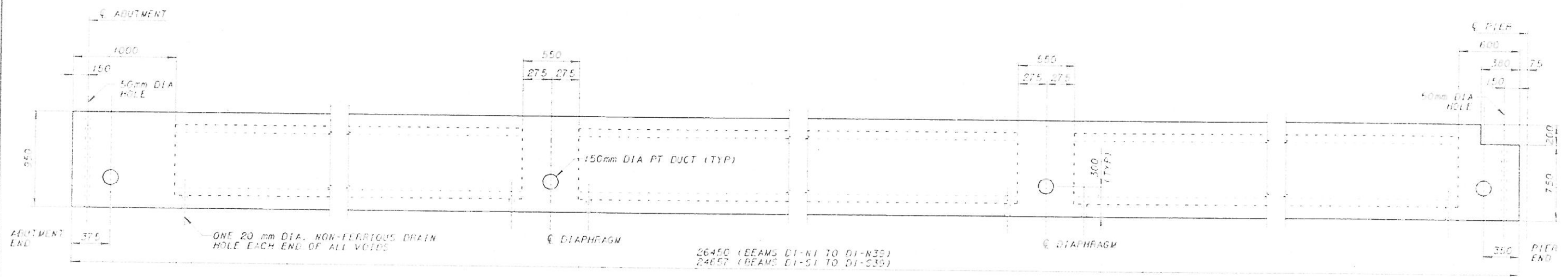


CB950x1220 TYPICAL BEAM

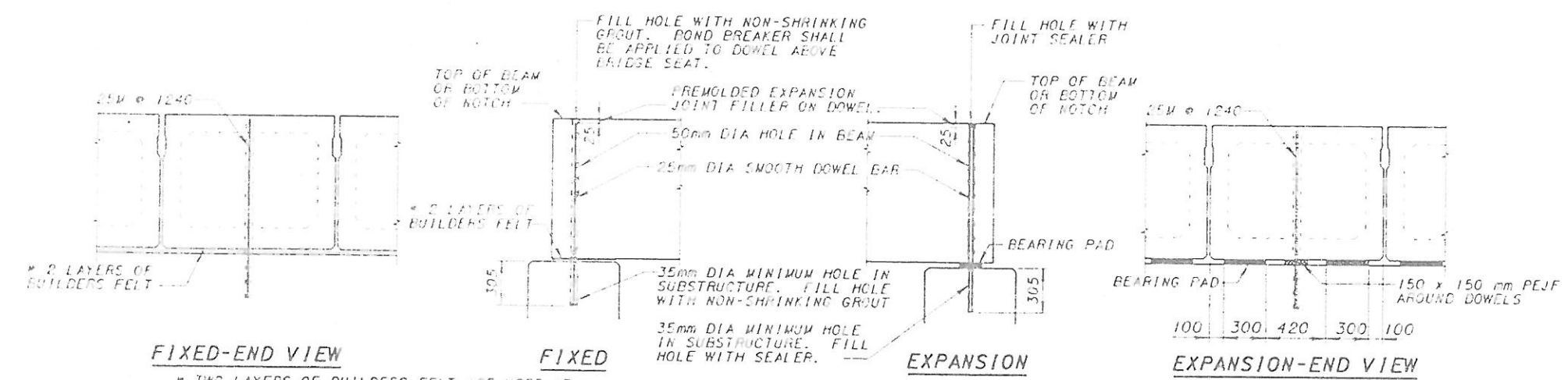


CB950x1220 END BEAM

OMIT SHEAR KEY ON PARAPET SIDE OF FASCIA BEAMS



ELEVATION



FIXED-END VIEW

FIXED

EXPANSION

EXPANSION-END VIEW

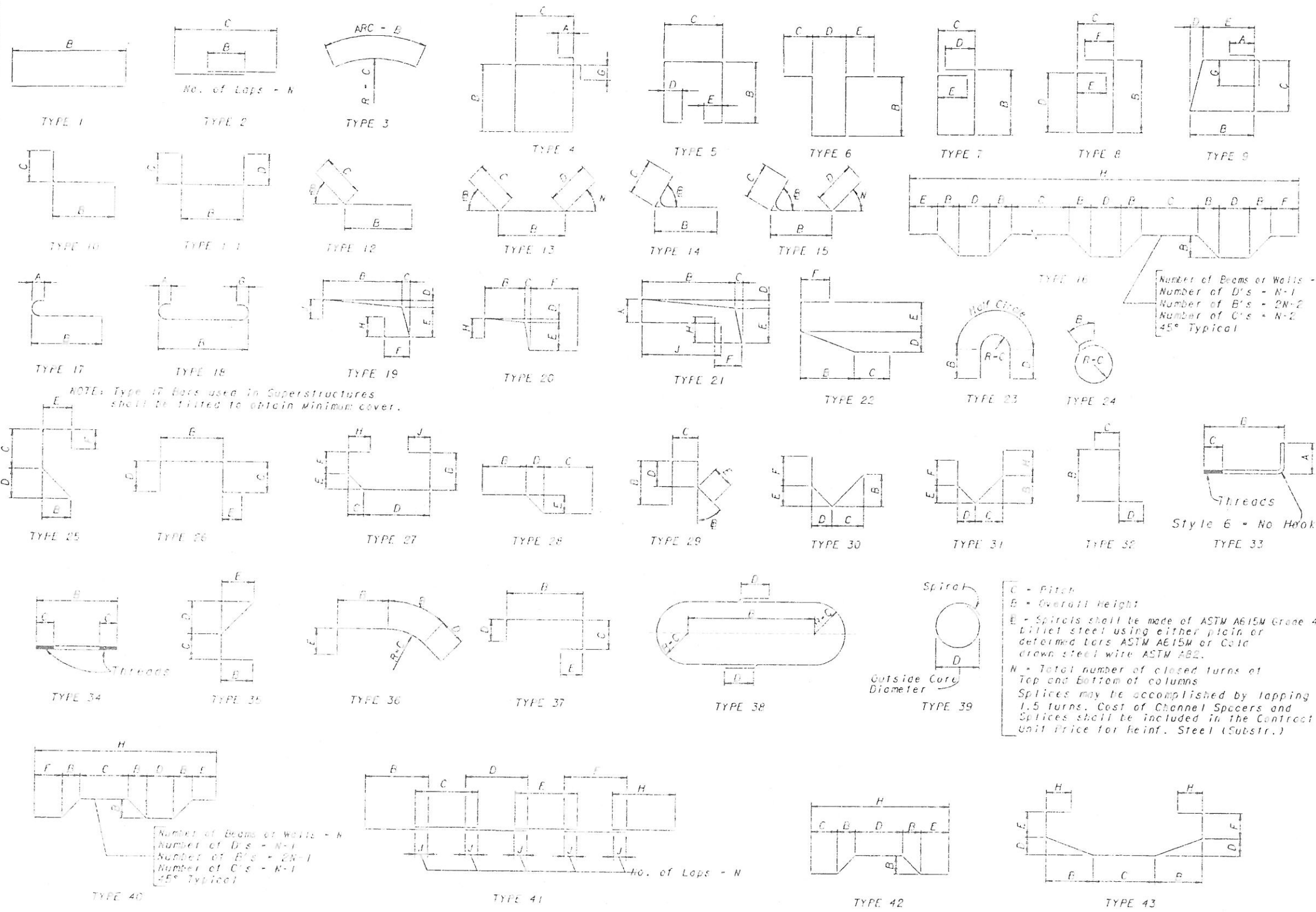
ANCHOR DOWELS

DOWEL HOLE LOCATION

* TWO LAYERS OF BUILDERS FELT ARE USED AT ABUTMENTS IN CONJUNCTION WITH FIXED ANCHOR DOWELS. BEARING PADS SHALL BE USED AT CENTRAL PIER IN CONJUNCTION WITH FIXED ANCHOR DOWELS.

NOTE: DOWEL CLEARS ELASTOMERIC BEARING

NOTES:
1. SEE NOTES 1 AND 2 ON SHEET 2/19



NOTE: For Bar Dimensions See REINFORCING BAR LIST Sheet.

Detailing Dim. Hook A or G Detailing Dim.

180° 90°

BAR SIZE	D	180° HOOKS		90° HOOKS	
		A or G	J	A or G	J
#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	
#30	275	425	335	550	
#36	305	475	375	600	
#43	465	675	550	775	
#57	610	925	725	1050	

STYLE 1 3

Detailing Dim. Hook A or G Detailing Dim.

90° 135°

STIRRUPS (TIES SIMILAR)

RECOMMENDED STIRRUP & TIE HOOK DIMENSIONS

BAR SIZE	D	90° HOOKS		135° HOOKS	
		A or G	J	A or G	H*
#10	40	105	85	105	65
#13	50	115	80	115	80
#16	65	155	95	140	95
#19	115	305	115	205	115
#22	135	355	135	230	135
#25	155	410	155	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 cut-to-out.

DESIGN AGENCY
HAMILTON COUNTY
STA. 100+427.629
STA. 100+477.000

DATE
6-30-00

REVISION
STRUCTURE FILE NUMBER

DESIGNED
SRL

CHECKED
VQ

STANDARD BAR BENDING DETAILS
DECK NUMBER 1
OVER FORT WASHINGTON WAY

CITY OF CINCINNATI
CONTRACT NO. 75X5753

16/19

1/12/01
1/12/01
1/12/01

1/12/01
1/12/01
1/12/01

MARK	TOTAL	LENGTH	WEIGHT	TYPE	STYLE	DIMENSIONS (mm)										NO	ANG	REMARKS
	NUMBER	(mm)	(kg)		A G	B	C	D	E	F	H	J	K	N	O			
PIER FOOTING																		
P13M01	900	1005	899	10	4 5	775												
P16M01	126	3750	733	11		2400	675	675										
P16M02	56	1485	129	11		885	300	300										
P16M40	13	4860	98	1		4860												
P16M41	17	2400	63	1		2400												
P16M42	48	2085	155	11		1485	300	300										
P16M43	10	1000	16	1		1000												
P16M44	5	2500	19	1		2500												
P22M01	255	3750	3800	11		2400	750	750										
P22M41	34	2400	324	1		2400												
P25M11	13	9900	511	1		9900												
P25M21	13	4480	231	1		4480												
P25M31	13	10390	537	1		10390												
P25M41	15	4860	290	1		4860												
P25M51	13	14000	723	41		6700	7300					1200		1				
P32M11	15	9900	951	1		9900												
P32M21	15	4480	430	1		4480												
P32M31	15	10390	508	1		10390												
P32M51	15	14800	1482	41		7100	7700					2000		1				
COLUMN STUB																		
P16M03	18	3635		11		485	1570	1570										
SETS OF	TO	700				70												
P16M03	7	3525		11		365	1570	1570										
P16M04	27	790		10	4 5	495												
SETS OF	TO	216				70												
P16M04	7	680		10	4 5	385												
P32M03	72	3050	1406	12		2750	300									98		
P32M04	270	3050	5214	12		2750	300									92		
NORTH ABUTMENT																		
A16M02	392	2450	1491	11		820	815	815										
A16M03	4	2085	13	11		785	650	650										
A16M04	66	3420	350	4	5 5	785	785											
A16M01	4	50530	314	2		400	48530							4				
A19M01	8	52530	939	2		900	48930							4				
SOUTH ABUTMENT																		
A16M02	332	2450	1262	11		820	815	815										
A16M03	16	2085	52	11		785	650	650										
A16M04	66	3420	361	4	5 5	785	785											
A16M11	12	13600	253	2		400	13200							1				
A16M21	4	4960	31	1		4960												
A19M11	24	14100	756	2		900	13200							1				
A19M21	8	4960	89	1		4960												

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 8.18.2.2.4 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 CASE 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, P19M01 IS A NO. 19M 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.

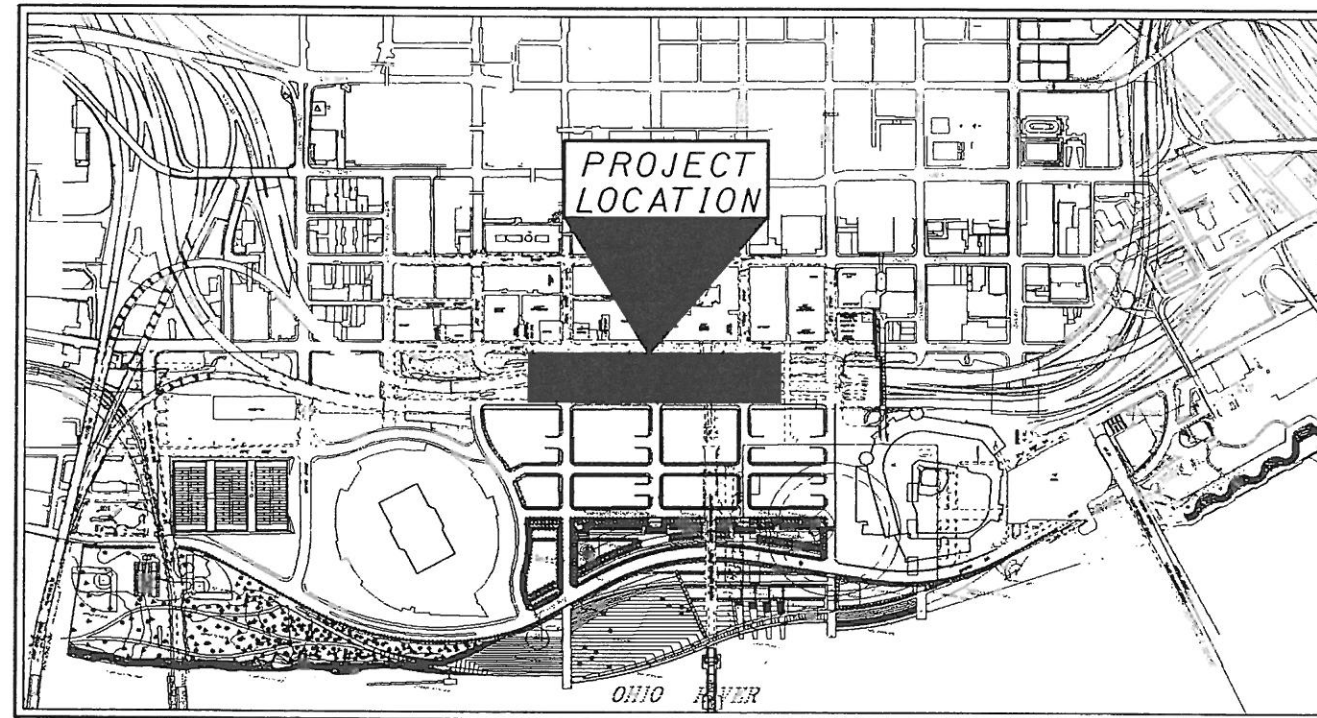
FORT WASHINGTON WAY 2000

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

DECK 2



metric
units



LOCATION MAP

Plans Reviewed By:



Plans Prepared For:



City of Cincinnati
Engineering Division
Department of Public Works

FEDERAL PROJECT NO.

PID NO.

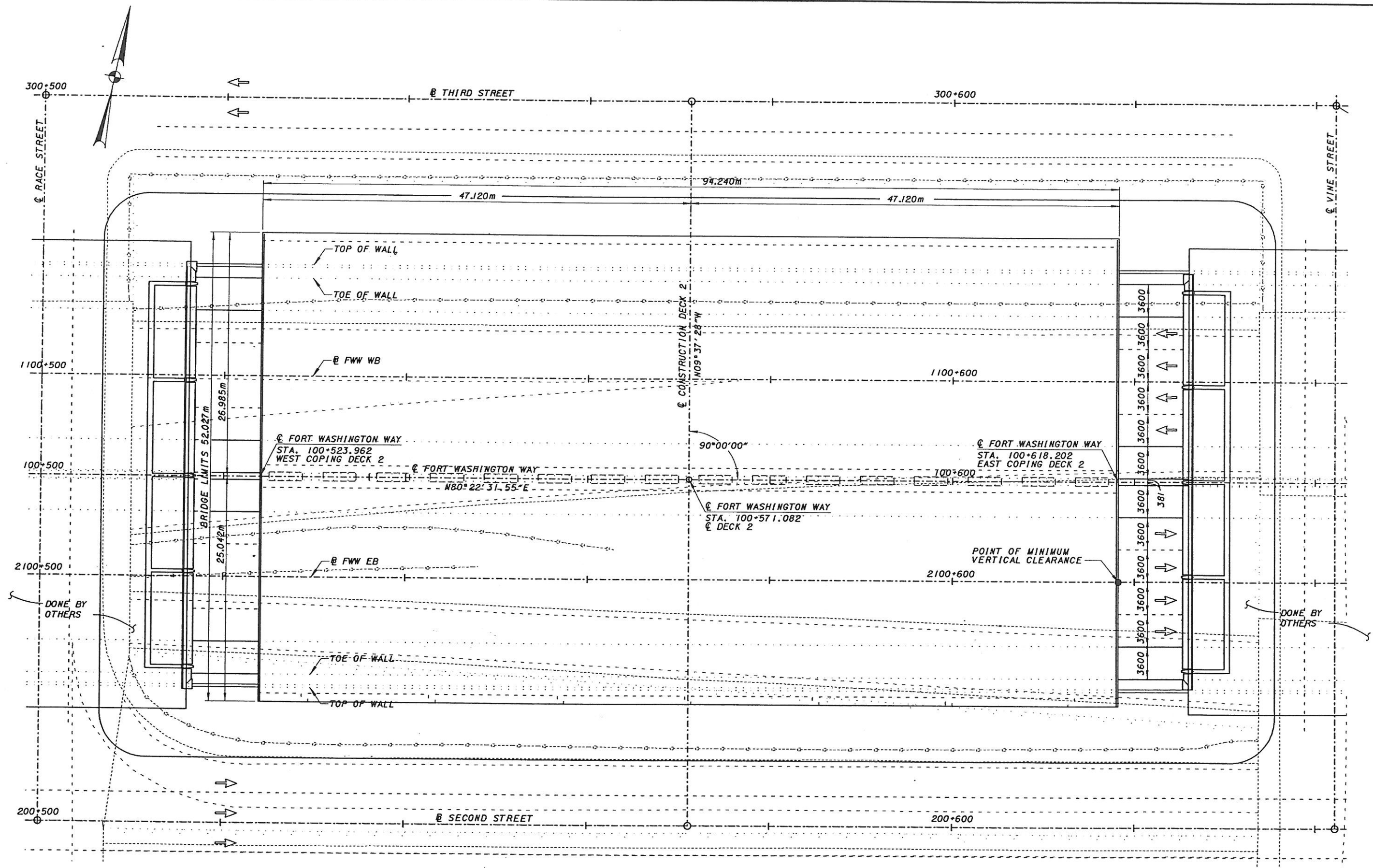
CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT

CITY OF CINCINNATI
CONTRACT No. 75X5753



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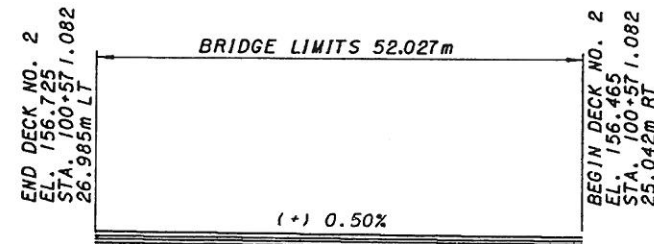
PLAN

	CITY OF CINCINNATI CONTRACT NO. 75X5753	SITE PLAN (SHEET 1 OF 2) DECK NUMBER 2 OVER FORT WASHINGTON WAY		HAMILTON COUNTY STA. 100+523.962 STA. 100+618.202	PREPARED SRL CHECKED VR	DRAWN SRL REVIEWED	REVISED DATE 6-30-00 STRUCTURE FILE NUMBER	DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 312 ELM STREET, SUITE 2500 CINCINNATI, OH 45202-2720
	1/17							

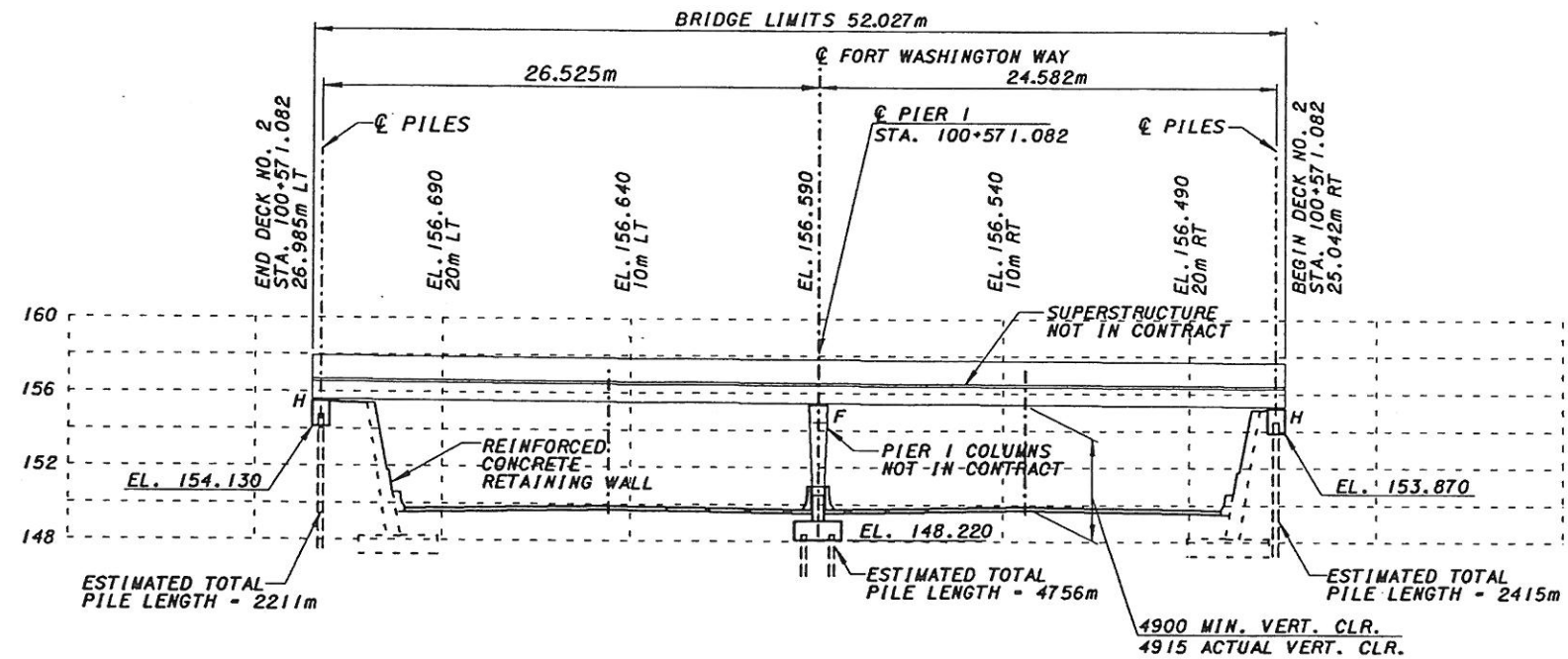
BENCH MARK
SEE GENERAL NOTES
SHEET NO. 13 OF 469
CONTRACT 8 DRAWINGS

PROPOSED STRUCTURE
TYPE: 2 SPAN PRECAST PRESTRESSED BOX GIRDERS
WITH INTEGRAL ABUTMENTS
LENGTH OF SPANS: 26.525m - 24.582m
WIDTH OF STRUCTURE: 94.24m
DESIGN LOADING: 1.22m SOIL (MAX DEPTH).
SKEW ANGLE: 0°
SUPER ELEVATION: NONE
WEARING SURFACE: NONE
APPROACH SLAB: NOT IN CONTRACT
ALIGNMENT: TANGENT
LATITUDE: N39°-05'-54"
LONGITUDE: W84°-30'-45"

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 2



PROFILE ALONG @ CONSTRUCTION DECK 2
(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 ENCLOSES 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 COMPRESSION.

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 MANUFACTURE 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.

Fri Jan 12 09:49:53 2001

1/12/01

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DESIGN AGENCY
PARSONS BRINCKERHOFF, INC.
318 ELM STREET, SUITE 2500
CINCINNATI, OH 45202-6720

DATE
6-30-00
REVISED
STRUCTURE FILE NUMBER

DRAWN
SRL
CHECKED
JSH

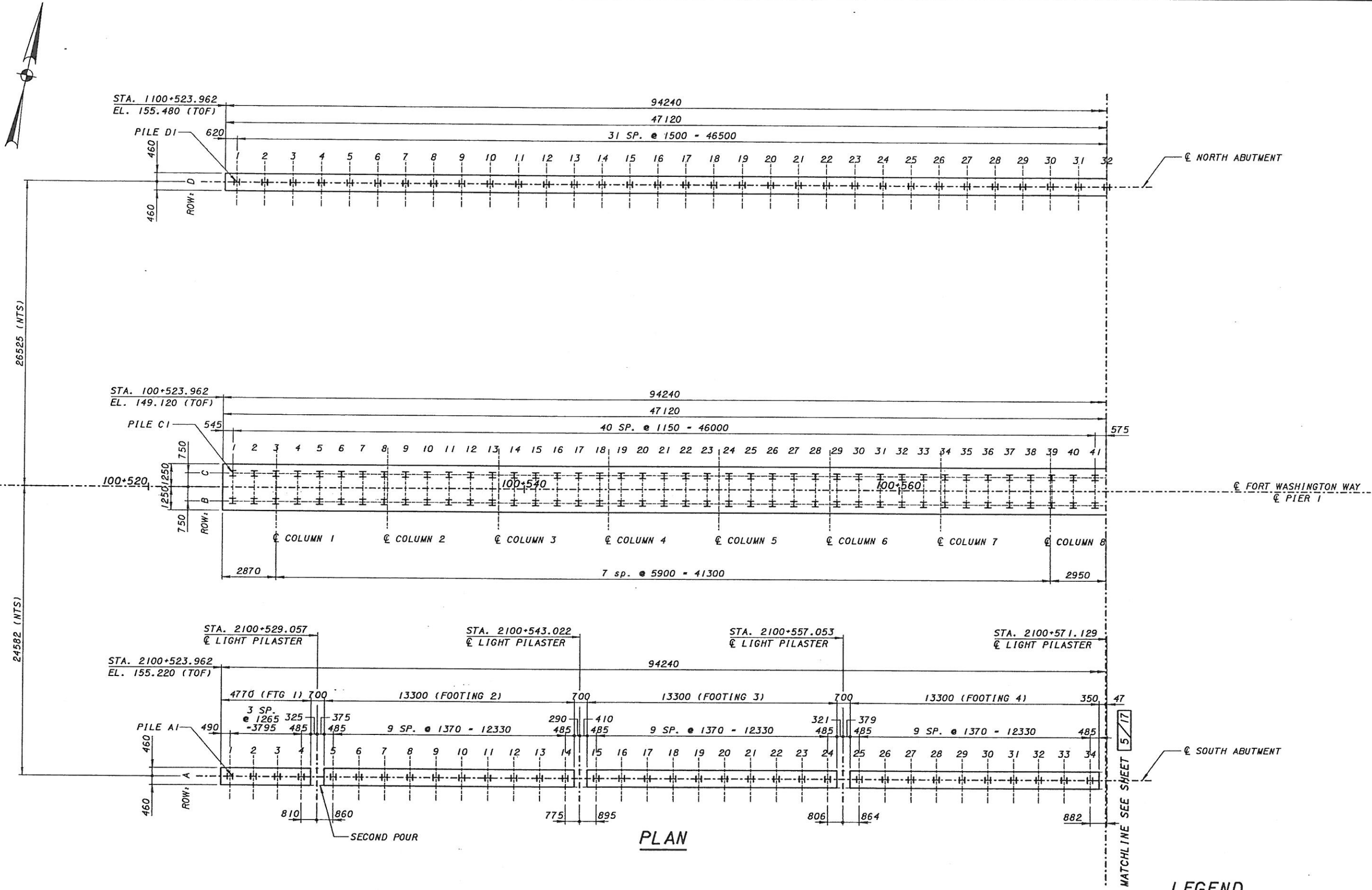
LOCATION NAME
STA. 100.523.962
STA. 100+618.202

GENERAL NOTES
DECK NUMBER 2
OVER FORT WASHINGTON WAY

CITY OF CINCINNATI
CONTRACT NO. 75X5753

3/17



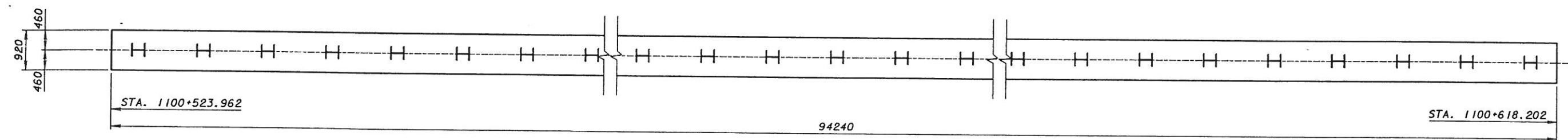


LEGEND
H-HP 12 X 53 STEEL PILE (TYP)
DRIVEN TO ROCK
980 KN PILE CAPACITY

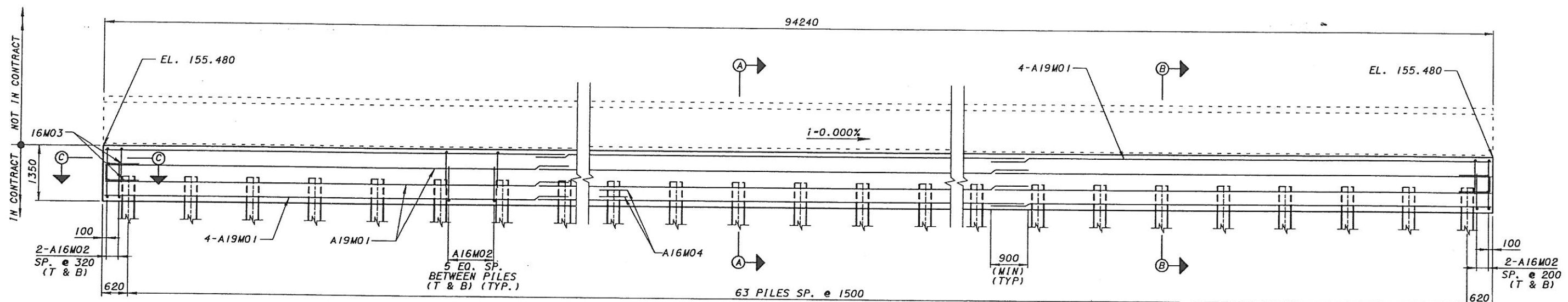
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	REVISED	STRUCTURE FILE NUMBER
	DRAWN	SRL
	PREPARED	VR
HAMILTON COUNTY STA. 100+523.962 STA. 100+618.202	CHECKED	JSH
	FOUNDATION LAYOUT (1 OF 2) DECK NUMBER 2 OVER FORT WASHINGTON WAY	
CITY OF CINCINNATI CONTRACT NO. 75X5753	4/17	



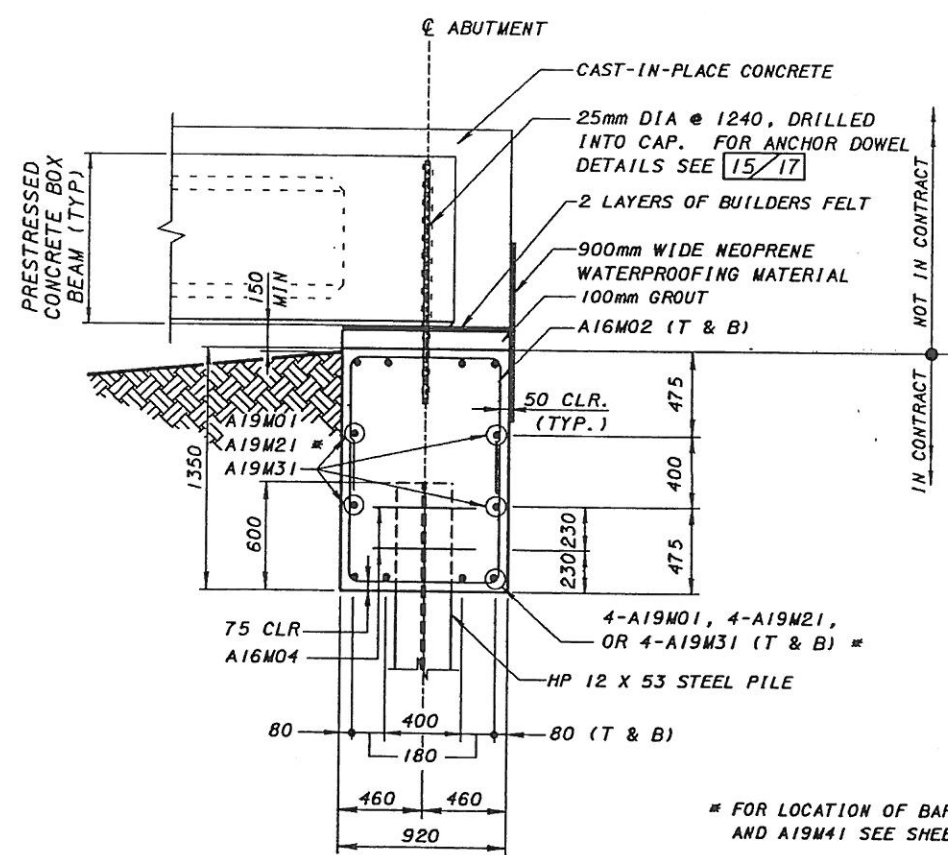
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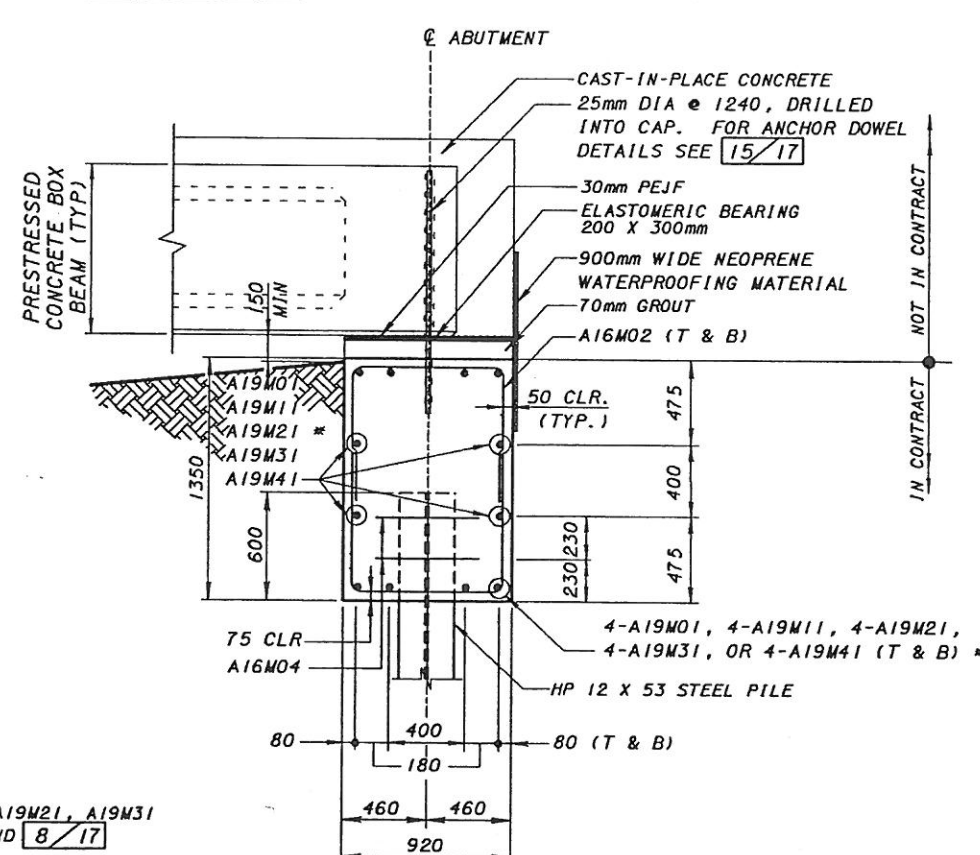
PLAN



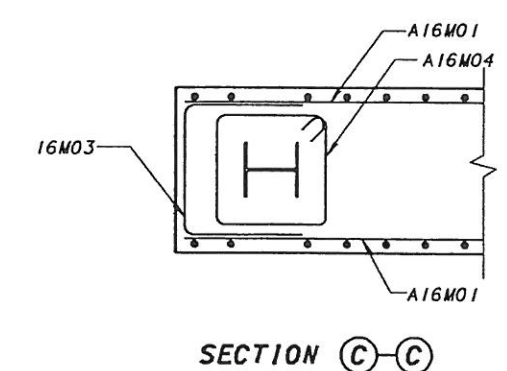
ELEVATION



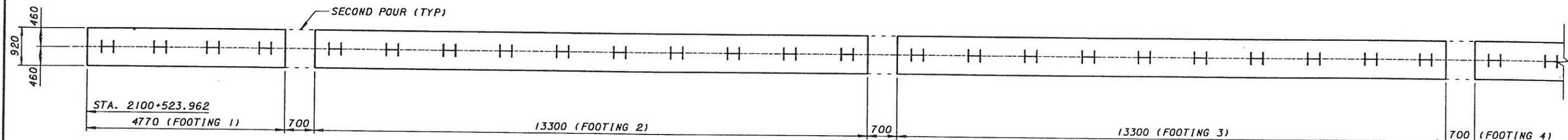
SECTION A-A
(FIXED CONNECTION)



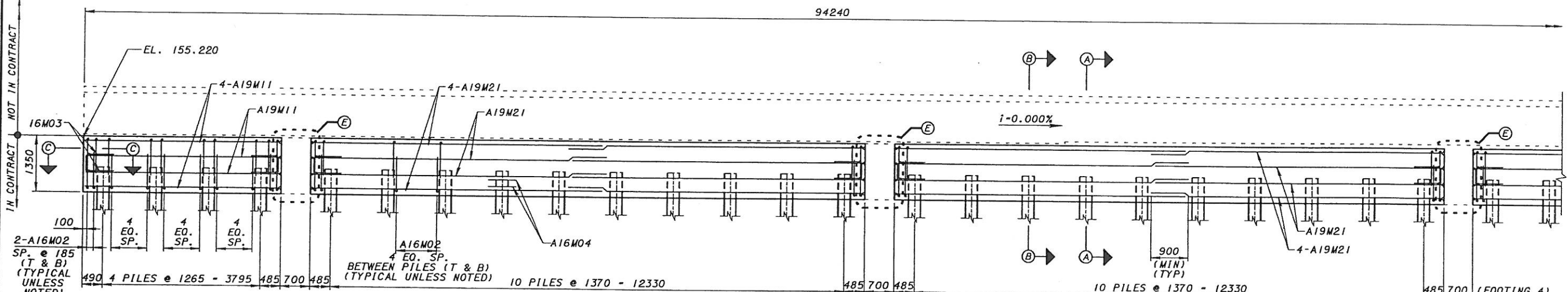
SECTION B-B
(EXPANSION CONNECTION)



DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 312 ELM STREET CINCINNATI, OH 45202-8780 PRO.	DATE 6-30-00	REVISION STRUCTURE FILE NUMBER	DRAWN SRL	CHECKED JSH	PREPARED VR	HAMILTON COUNTY STA. 100+523.962 STA. 100+618.202	NORTH ABUTMENT REINFORCEMENT DECK NUMBER 2 OVER FORT WASHINGTON WAY	CITY OF CINCINNATI CONTRACT NO. 75X5753	6/17
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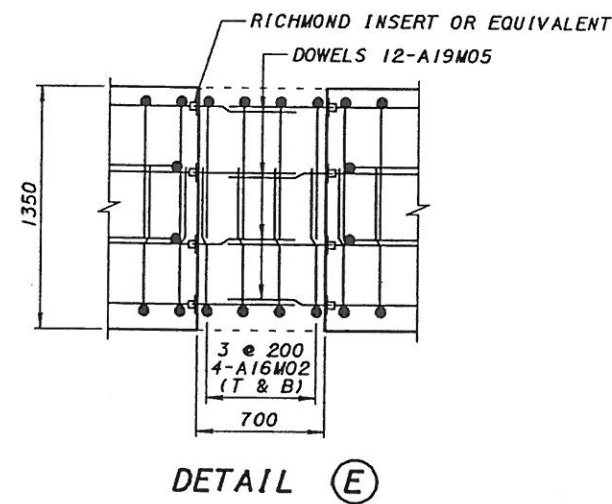
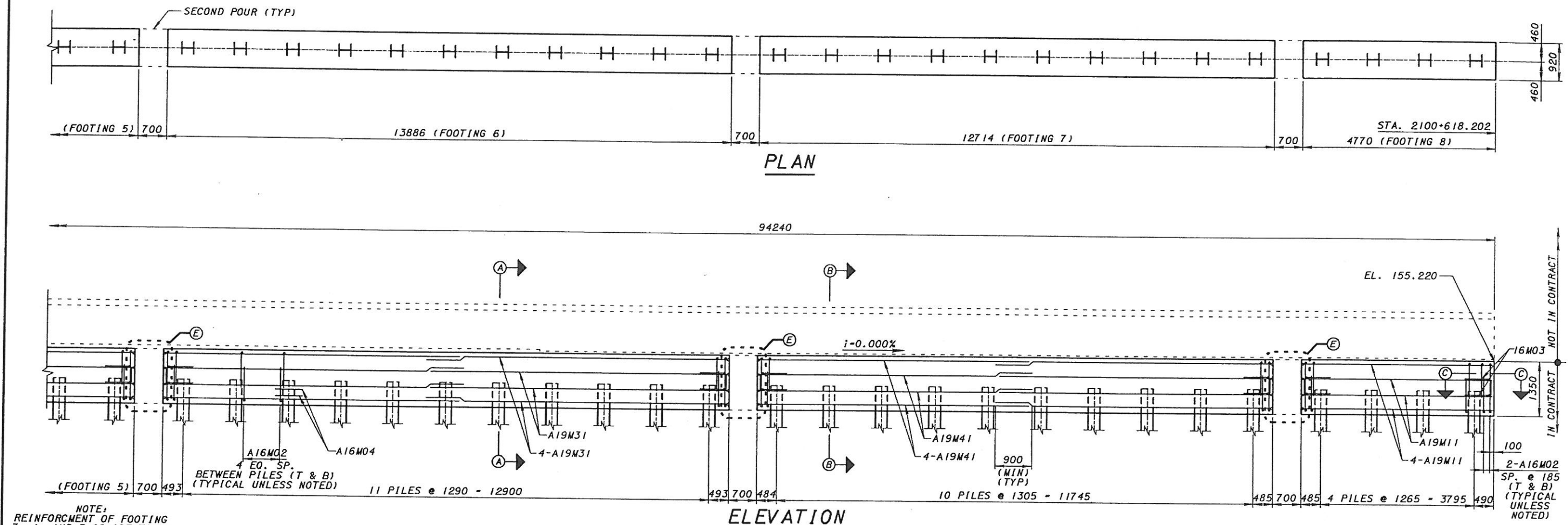
PLAN



ELEVATION

- NOTES:
1. FOR SECTIONS A-A, B-B, AND C-C SEE SHEET 6/17
 2. FOR SECTION E-E SEE SHEET 8/17

DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 1111 ELM STREET, SUITE 2500 CINCINNATI, OH 45202-1700	DATE	6-30-00
	REVISED	STRUCTURE FILE NUMBER
	DRAWN	SRL
	PREPARED	VR
HAMILTON COUNTY STA. 100+523.962 STA. 100+618.202	CHECKED	JSH
	SOUTH ABUTMENT REINFORCEMENT (SHEET 1 OF 2) DECK NUMBER 2 OVER FORT WASHINGTON WAY	
CITY OF CINCINNATI CONTRACT NO. 7.5X5753	7/17	

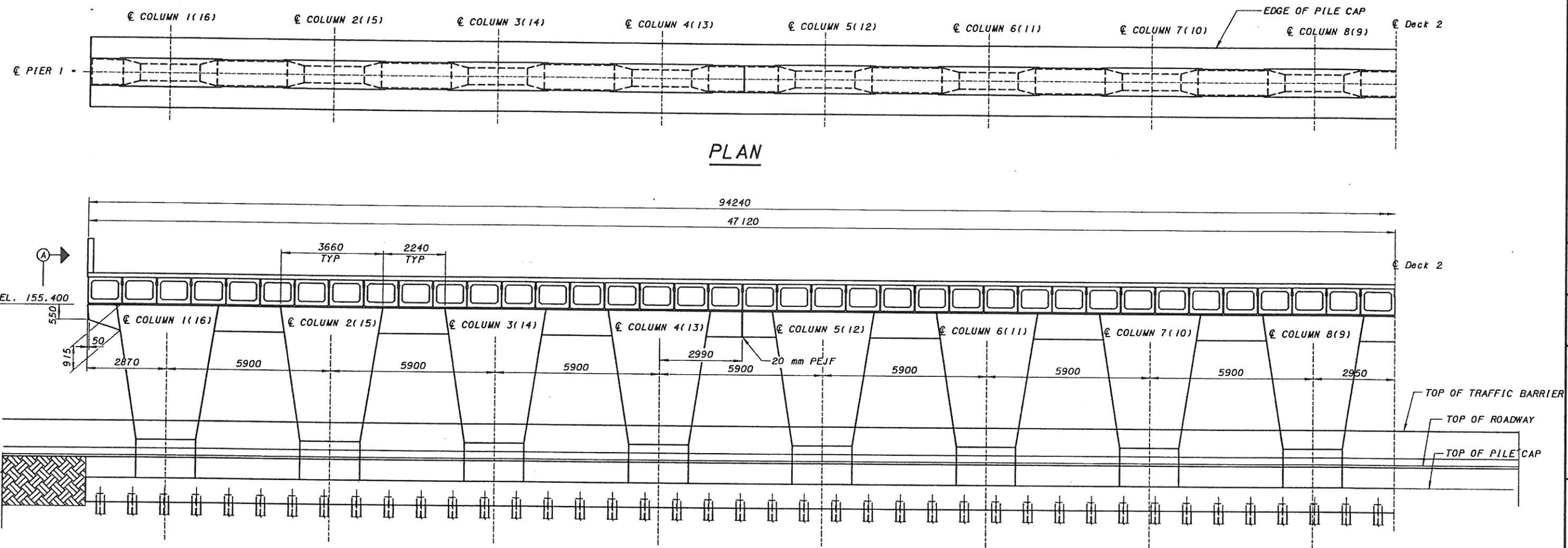


- NOTES:
1. FOR SECTIONS A-A, B-B, AND C-C SEE SHEET 6/17
 2. WORK TOGETHER WITH SOUTH ABUTMENT REINFORCEMENT SHEET 7/17

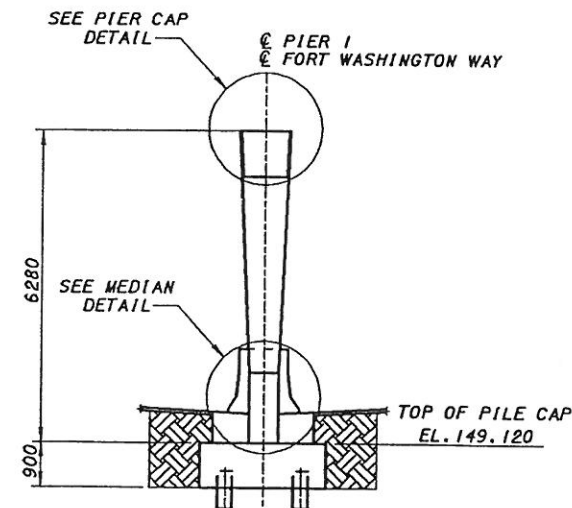
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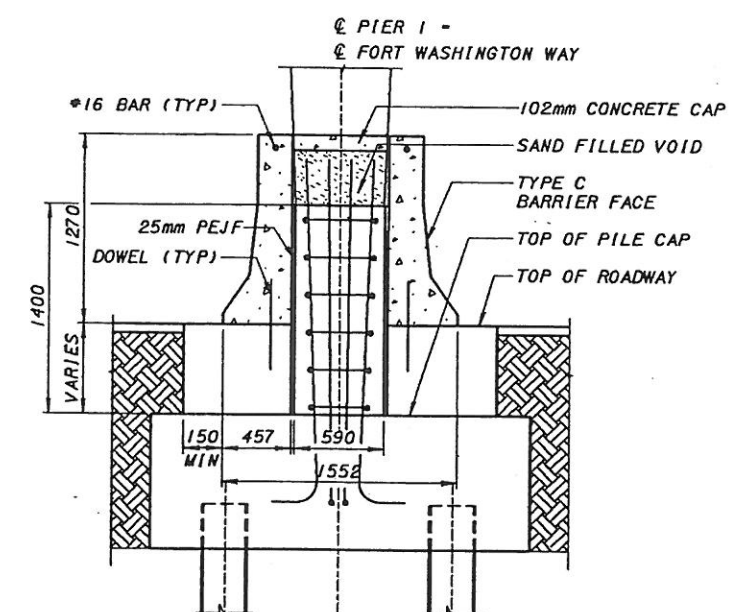
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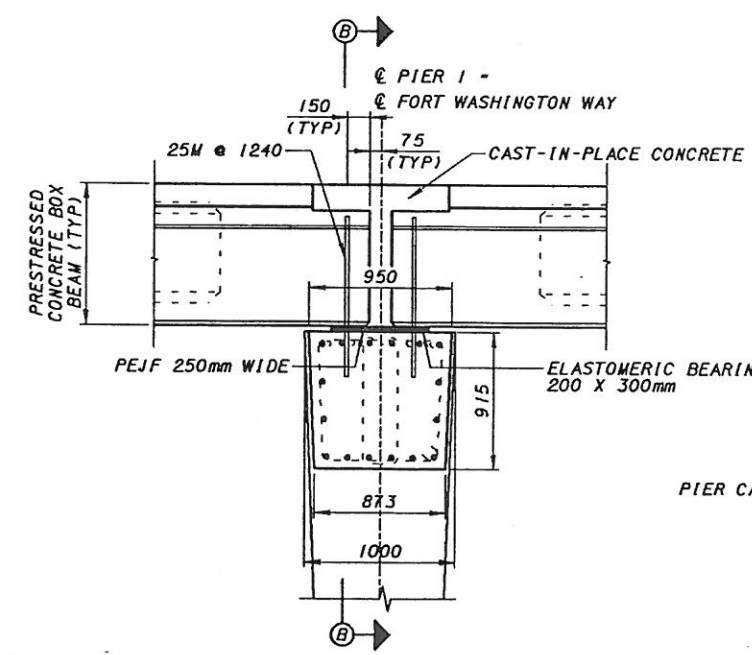
ELEVATION AT PIER 1



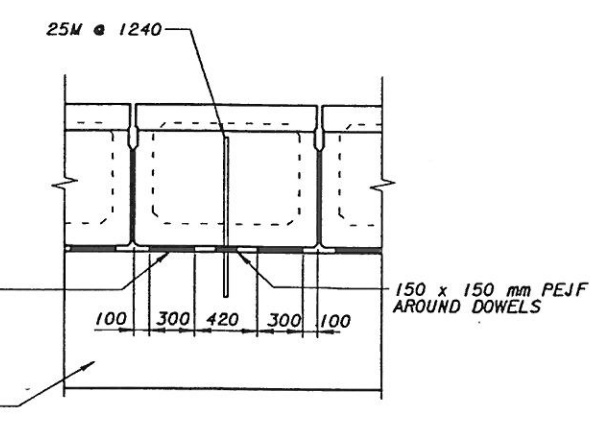
VIEW A-A



MEDIAN DETAIL



PIER CAP DETAIL

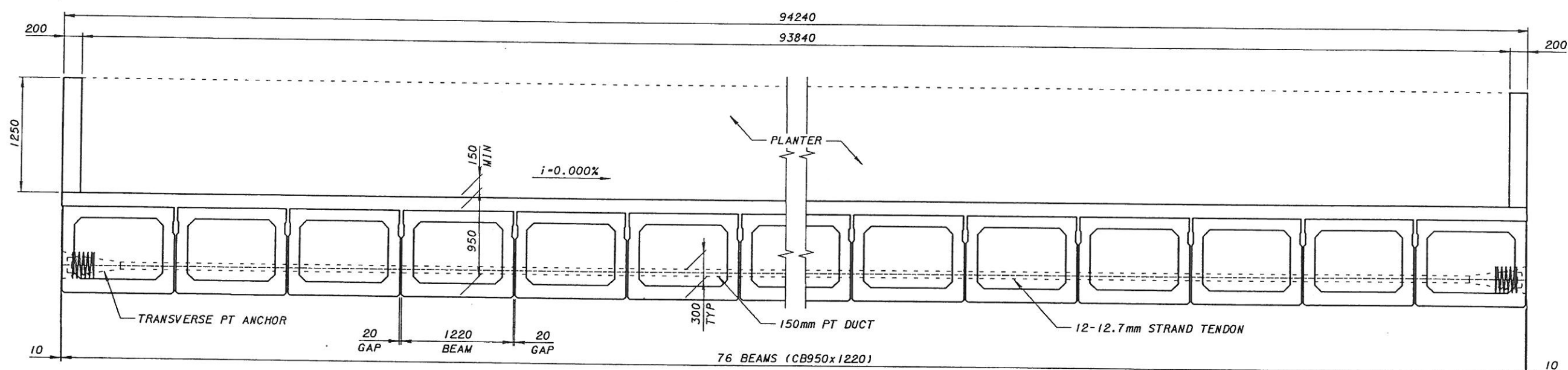


SECTION B-B

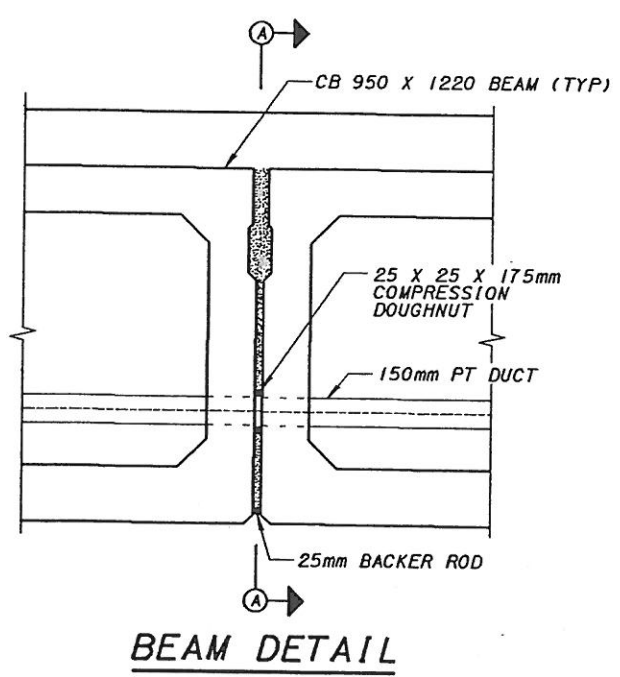
NOTES:
1. SEE NOTES 1 AND 2 ON SHEET 2/17

	DESIGN AGENCY	DATE	REVISED	DRAWN	PREPARED	HAMILTON COUNTY STA. 100+523.962 STA. 100+618.202	PIER 1 PLAN & ELEVATION DECK NUMBER 2 OVER FORT WASHINGTON WAY	CITY OF CINCINNATI CONTRACT NO. 75X5753	9/17
	PARSONS BRINCKERHOFF, INC.	6-30-00	6-30-00	SRL	VR				
	STRUCTURE FILE NUMBER	REVISED	CHECKED	JSH					

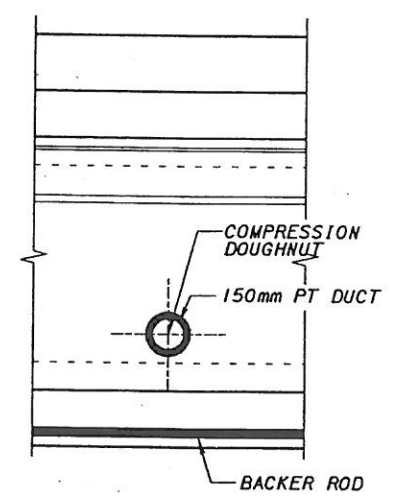
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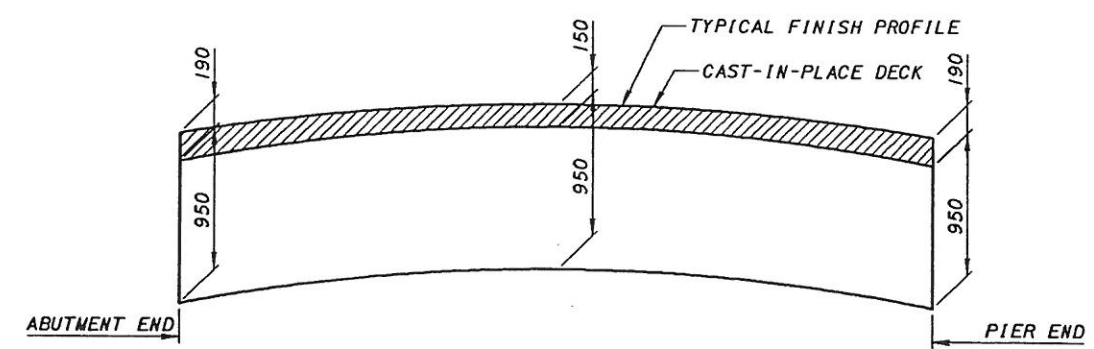
TYPICAL CROSS SECTION



BEAM DETAIL



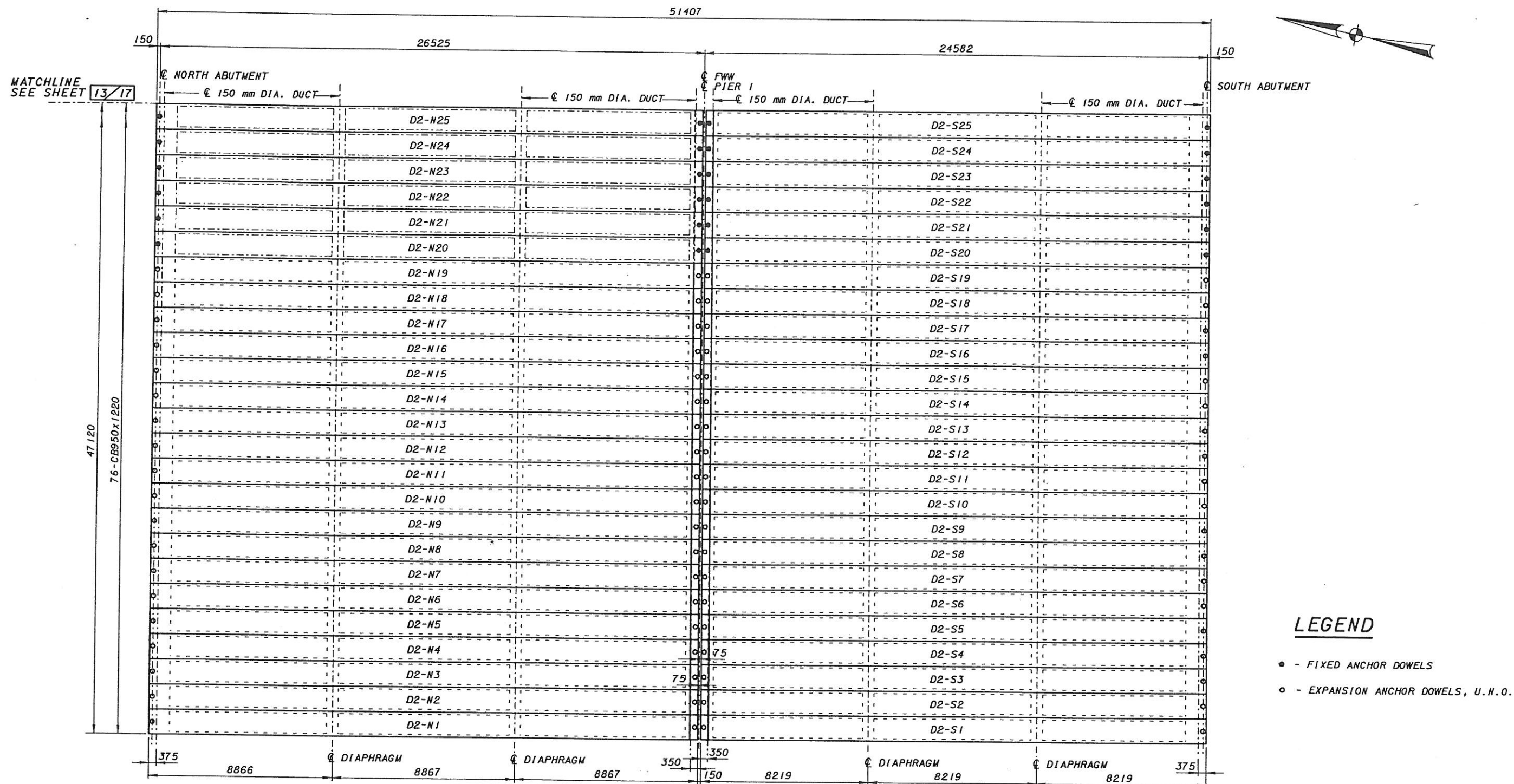
SECTION A-A



BEAM CAMBER DIAGRAM

NOTES:
1. SEE NOTES 1 AND 2 ON SHEET 2/17

 DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 312 E. STATE STREET, SUITE 1200 CINCINNATI, OH 45202-2720	DATE 6-30-00	REVISED 6-30-00	DRAWN SRL	CHECKED JSH	PREPARED VR
	STRUCTURE FILE NUMBER				
	HAMILTON COUNTY STA. 100+523.962 STA. 100+618.202				
	SUPERSTRUCTURE SECTION DECK NUMBER 2 OVER FORT WASHINGTON WAY				
CITY OF CINCINNATI CONTRACT NO. 75X5753					
11/17					



FRAMING PLAN

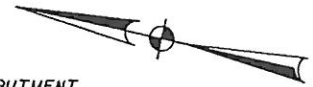
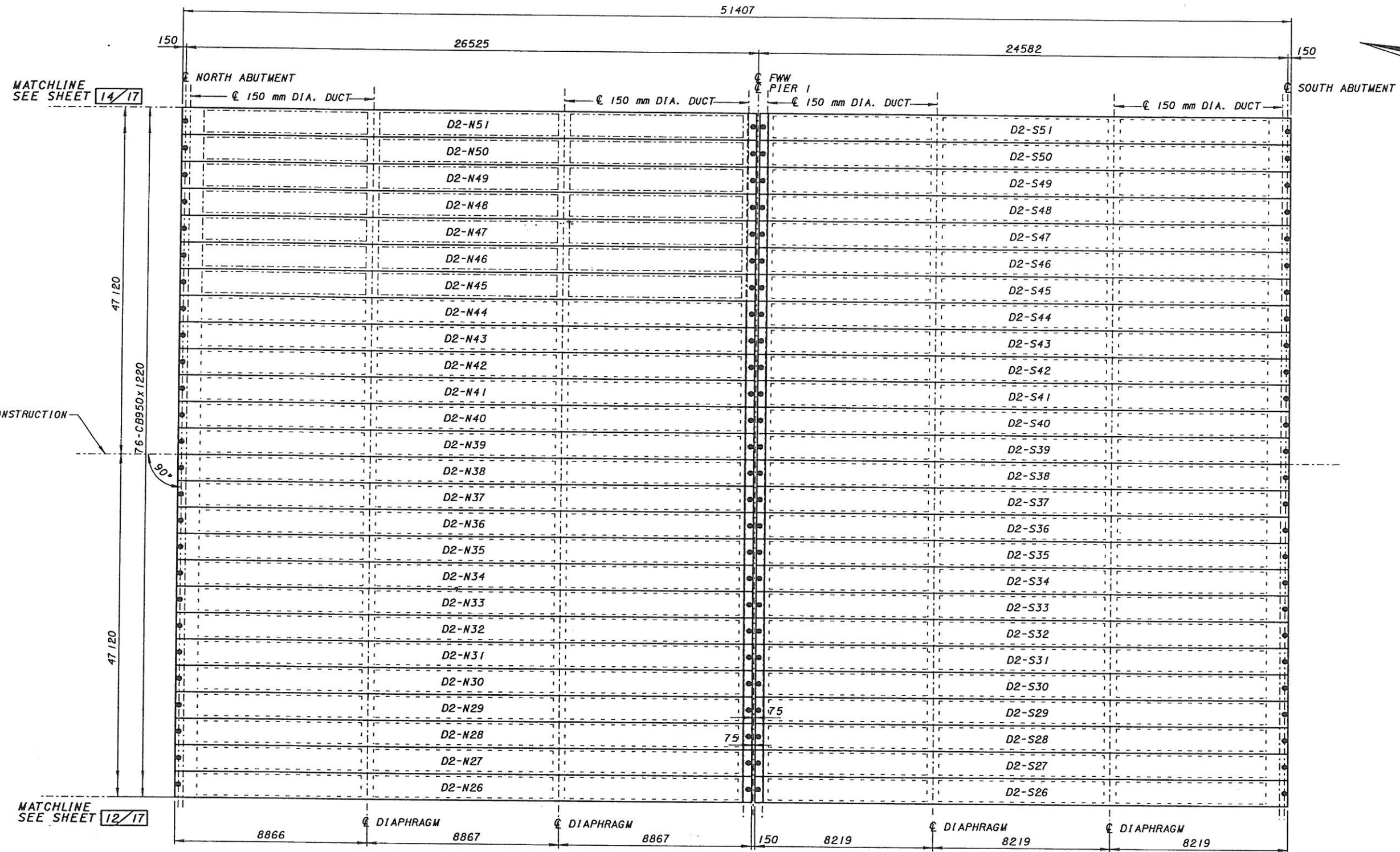
NOTES:

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 2/17

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FRAMING PLAN

NOTES:

1. WORK TOGETHER WITH FRAMING PLAN SHEET 12/17 AND 14/17

DESIGN AGENCY
PARSONS BRINCKERHOFF, INC.
312 ELM STREET, SUITE 2500
CINCINNATI, OH 45202-2720

DATE
6-30-00
REVISED
STRUCTURE FILE NUMBER

DRAWN
SRL
CHECKED
SRL

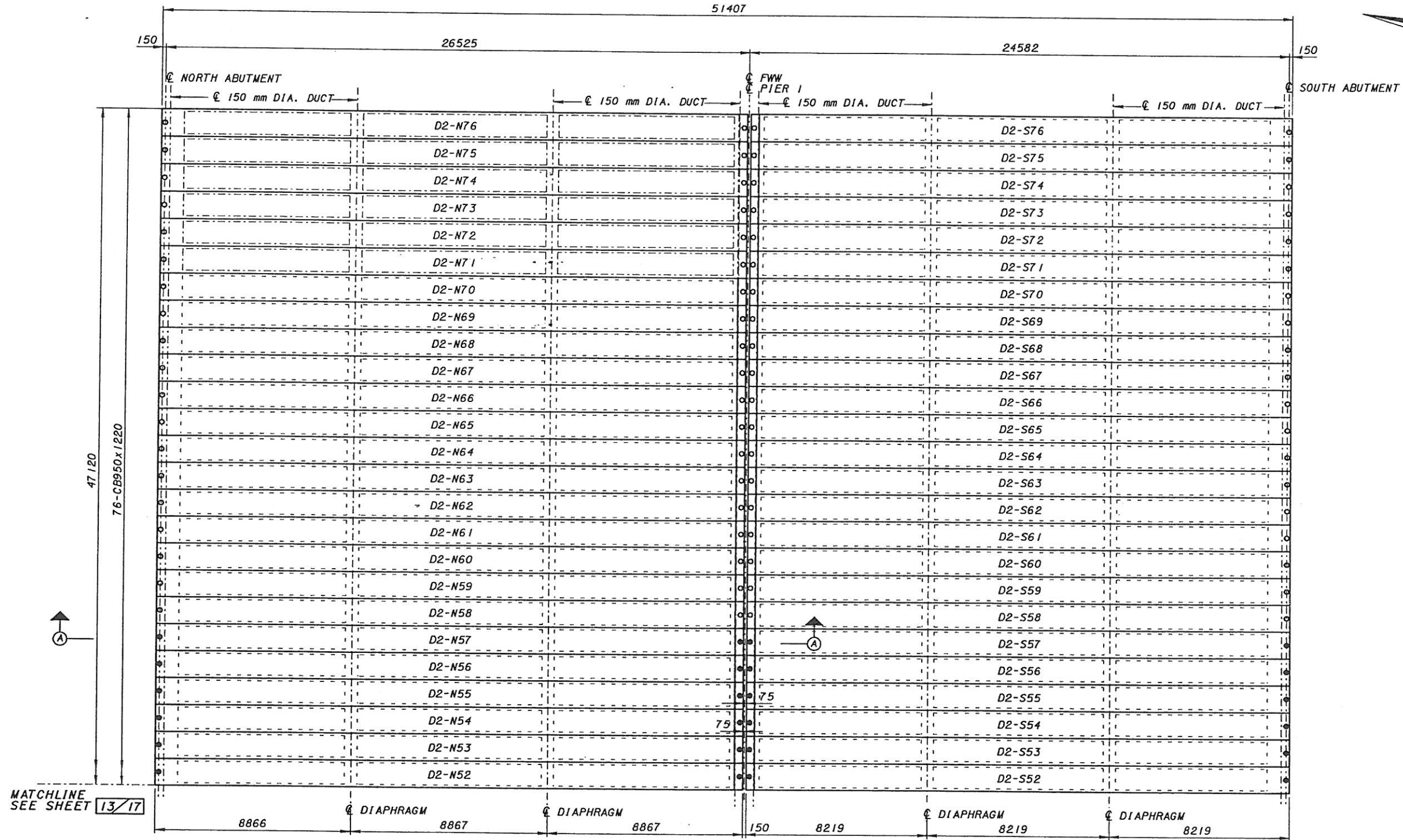
HAMILTON COUNTY
STA. 100+523.962
STA. 100+618.202

FRAMING PLAN (2 OF 3)
DECK NUMBER 2
OVER FORT WASHINGTON WAY

CITY OF CINCINNATI
CONTRACT NO. 75X5753

13/17

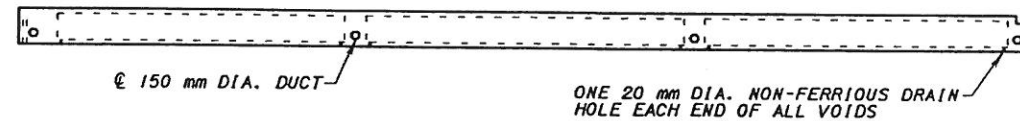




FRAMING PLAN

NOTES:

1. WORK TOGETHER WITH FRAMING PLAN SHEET 12/17 AND 13/17

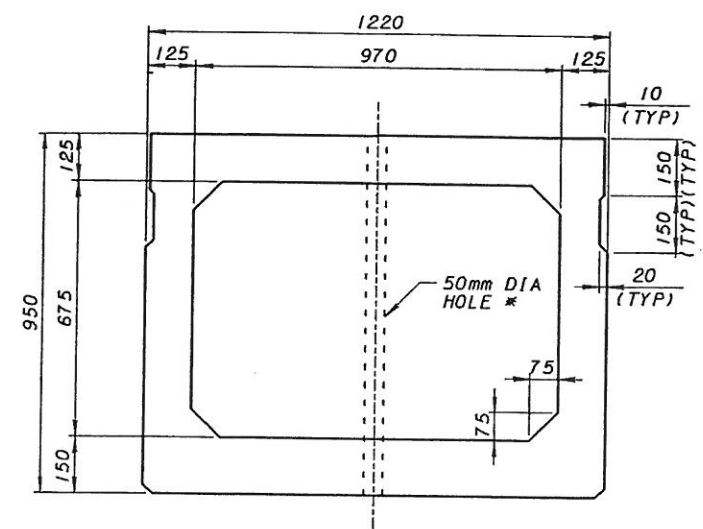


SECTION A-A

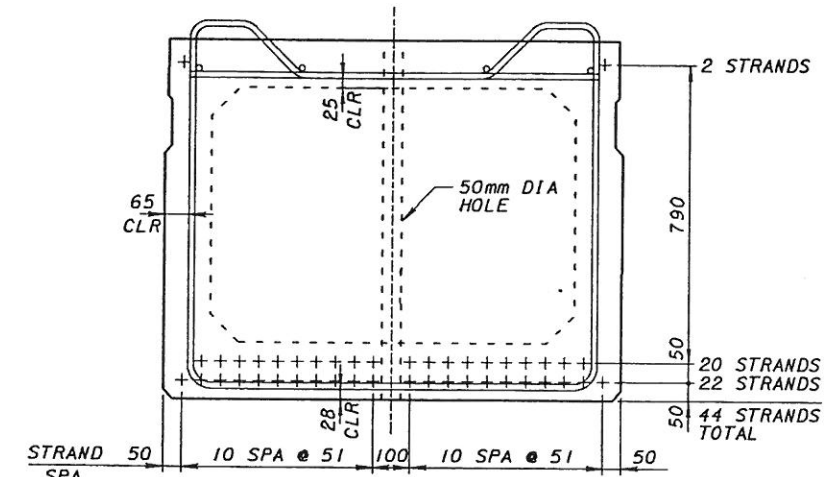
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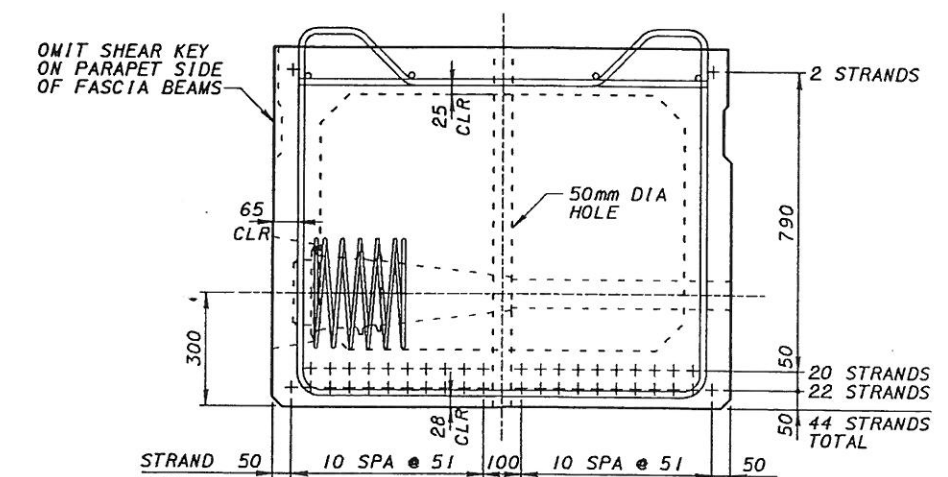
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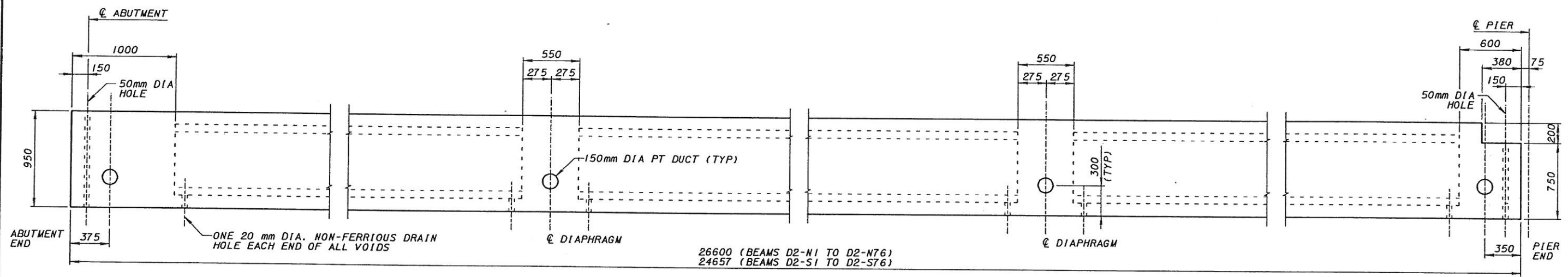
CROSS SECTION CB950x1220 BEAM
* FOR 25mm DIA SMOOTH DOWEL (L-1340)



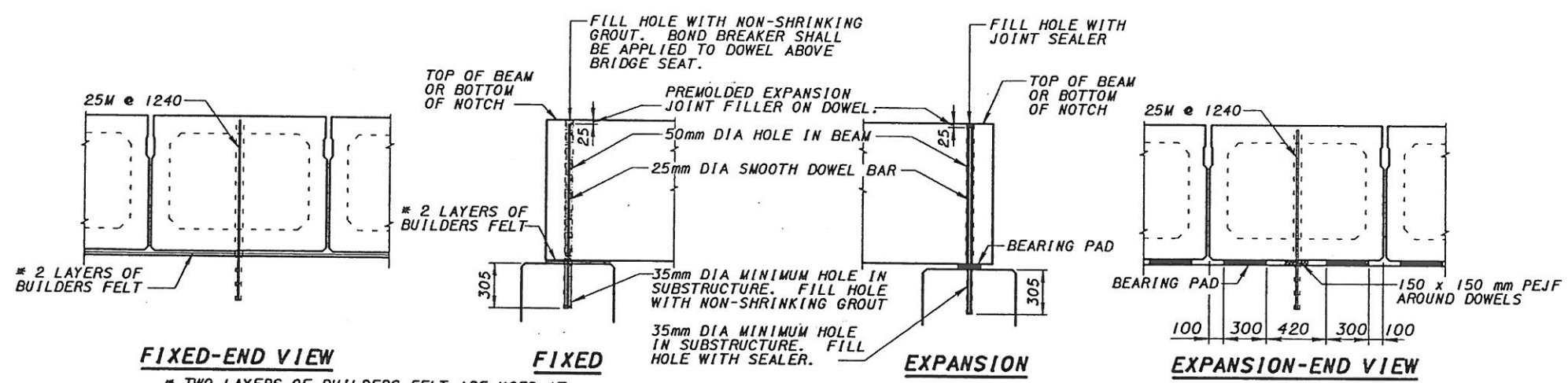
CB950x1220 TYPICAL BEAM



CB950x1220 END BEAM



ELEVATION



FIXED-END VIEW

FIXED

EXPANSION

EXPANSION-END VIEW

DOWEL HOLE LOCATION

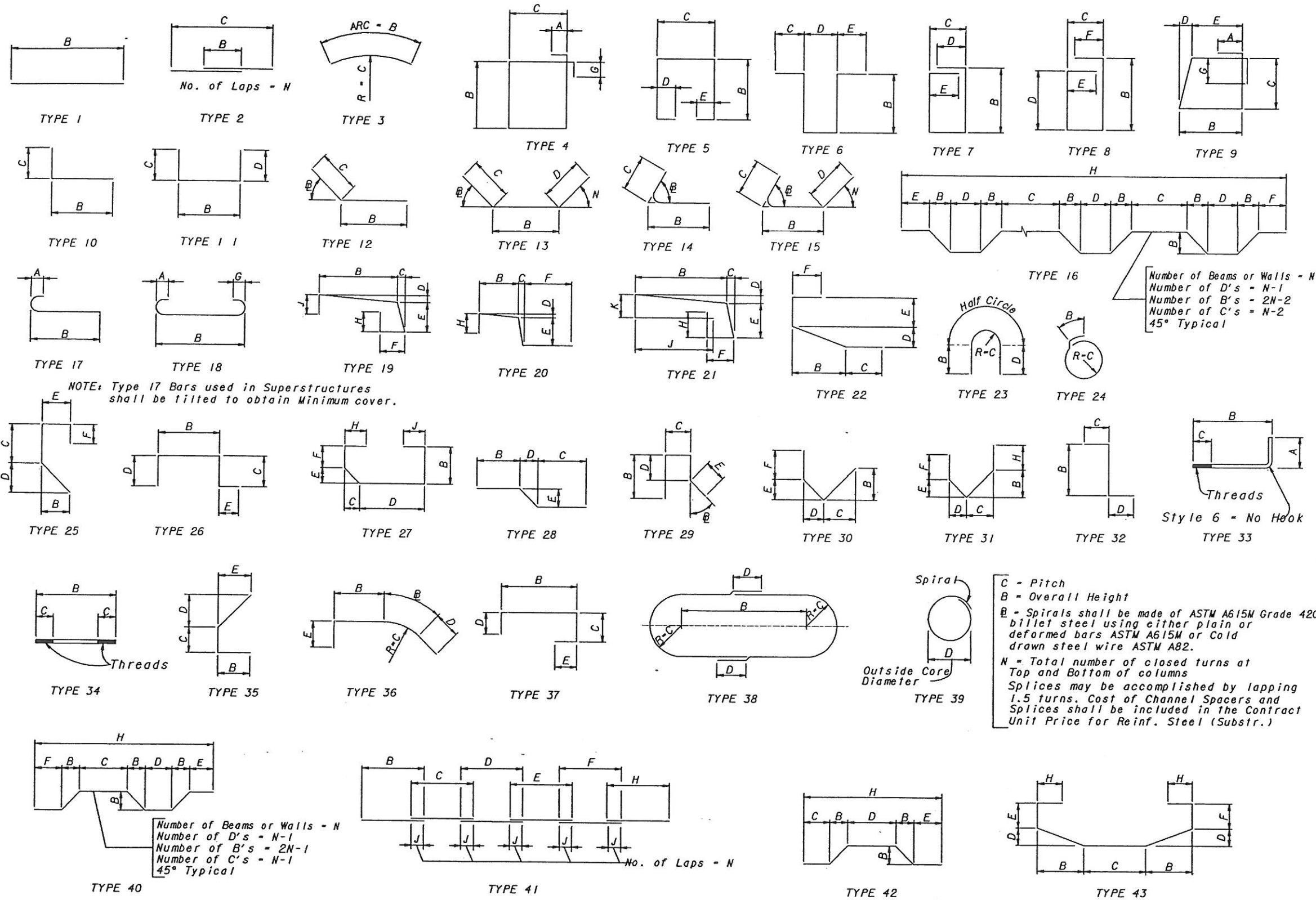
* TWO LAYERS OF BUILDERS FELT ARE USED AT ABUTMENTS IN CONJUNCTION WITH FIXED ANCHOR DOWELS. BEARING PADS SHALL BE USED AT CENTRAL PIER IN CONJUNCTION WITH FIXED ANCHOR DOWELS.

ANCHOR DOWELS

NOTE: DOWEL CLEARS ELASTOMERIC BEARING

NOTES:
1. SEE NOTES 1 AND 2 ON SHEET 2/17

	DESIGN AGENCY	DATE	REVISED	DRAWN	CHECKED	PREPARED
	PARSONS BRINCKERHOFF, INC.	6-30-00	6-30-00	SRL	JSH	VR
	STRUCTURE FILE NUMBER					
HAMILTON COUNTY STA. 100+523.962 STA. 100+618.202						
BEAM DETAILS DECK NUMBER 2 OVER FORT WASHINGTON WAY						
CITY OF CINCINNATI CONTRACT NO. 75X5753						
15/17						



<table><tr><th rowspan="2">BAR SIZE</th><th rowspan="2">D</th><th colspan="2">180° HOOKS</th><th>90° HOOKS</th></tr><tr><th>A OR G</th><th>J</th><th>A OR G</th></tr><tr><td>#10</td><td>60</td><td>125</td><td>80</td><td>150</td></tr><tr><td>#13</td><td>80</td><td>150</td><td>105</td><td>200</td></tr><tr><td>#16</td><td>95</td><td>175</td><td>130</td><td>250</td></tr><tr><td>#19</td><td>115</td><td>200</td><td>155</td><td>300</td></tr><tr><td>#22</td><td>135</td><td>250</td><td>180</td><td>375</td></tr><tr><td>#25</td><td>155</td><td>275</td><td>205</td><td>425</td></tr><tr><td>#29</td><td>240</td><td>375</td><td>300</td><td>475</td></tr><tr><td>#32</td><td>275</td><td>425</td><td>335</td><td>550</td></tr><tr><td>#36</td><td>305</td><td>475</td><td>375</td><td>600</td></tr><tr><td>#43</td><td>465</td><td>675</td><td>550</td><td>775</td></tr><tr><td>#57</td><td>610</td><td>925</td><td>725</td><td>1050</td></tr><tr><td>STYLE</td><td></td><td colspan="2">1</td><td>3</td></tr></table>				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
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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.																																																																							

DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 318 ELM STREET, CINCINNATI, OH 45202-8720 100		DATE 6-30-00	HAMILTON COUNTY STA. 100+523.962 STA. 100+618.202	STANDARD BAR BENDING DETAILS DECK NUMBER 2 OVER FORT WASHINGTON WAY	CITY OF CINCINNATI CONTRACT NO. 75X5753
		REVISED STRUCTURE FILE NUMBER			
		16	17		

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 8.18.2.2.4 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, P19M01 IS A NO. 19M 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.

FORT

WASHINGTON

WAY

2000

CITY OF CINCINNATI

DEPARTMENT OF PUBLIC WORKS

DIVISION OF ENGINEERING

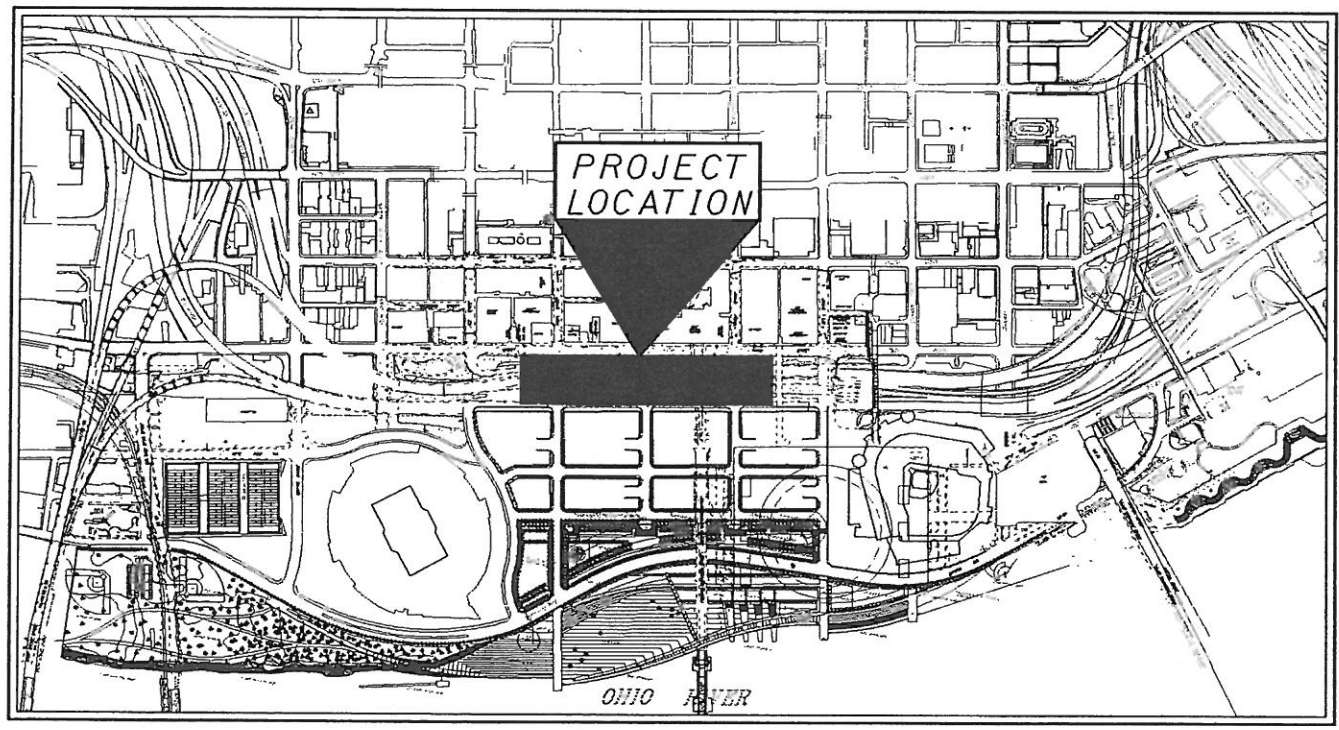
PROPOSED IMPROVEMENT

FORT WASHINGTON WAY

RECONSTRUCTION PROGRAM

CONTRACT 26

DECK 3



LOCATION MAP



Plans Prepared For:

City of Cincinnati

Engineering Division

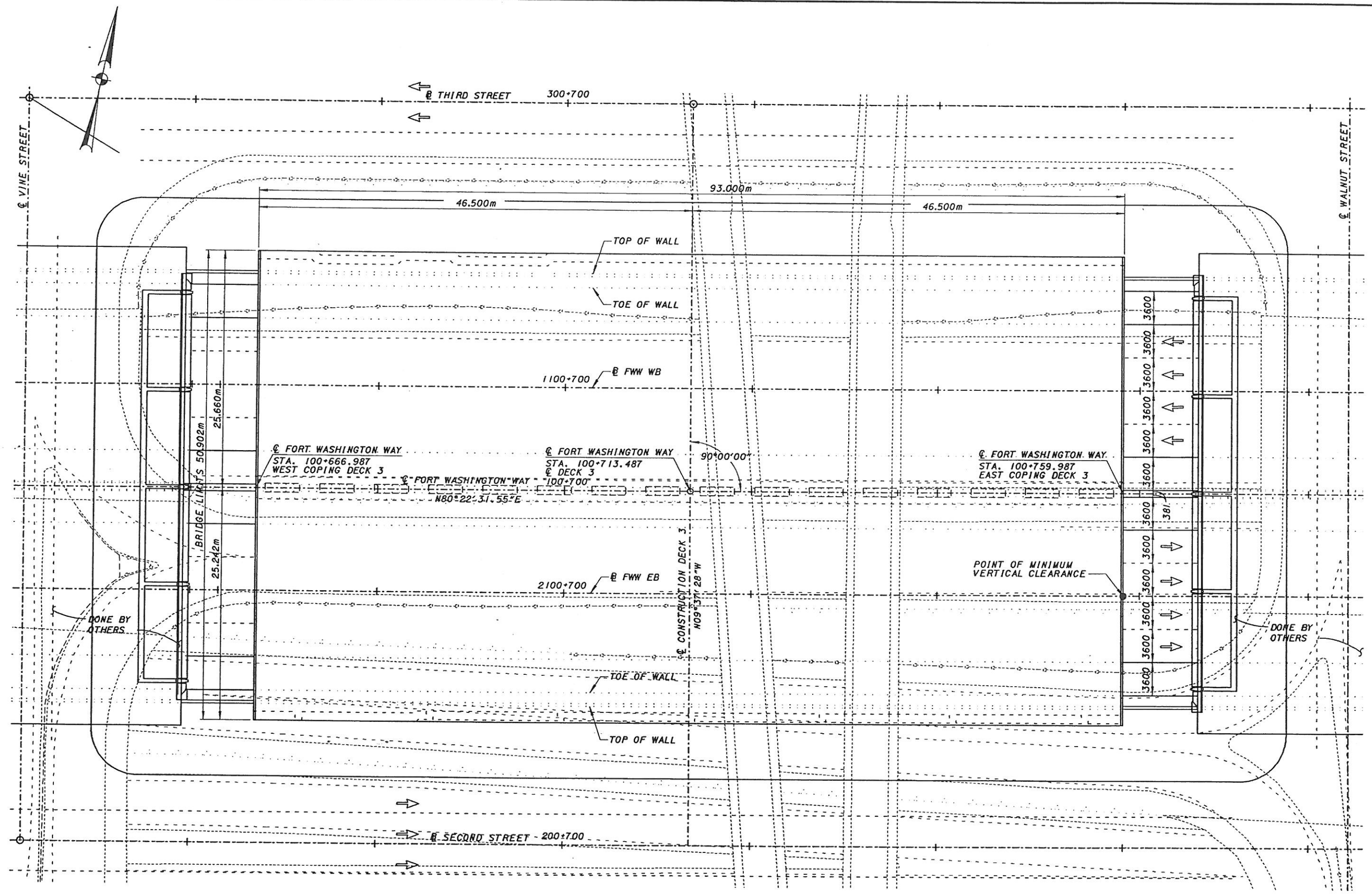
Department of Public Works

CITY OF CINCINNATI CONTRACT No. 75X5753	RAILROAD INVOLVEMENT			CONSTRUCTION PROJECT NO.	PID NO.	FEDERAL PROJECT NO.

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PLAN

	CITY OF CINCINNATI CONTRACT NO. 75X5753	SITE PLAN (SHEET 1 OF 2) DECK NUMBER 3 OVER FORT WASHINGTON WAY		HAMILTON COUNTY STA. 100+666.987 STA. 100+759.987	PREPARED SRL CHECKED VR	DRAWN SRL REVIEWED	REVISED DATE 6-30-00 STRUCTURE FILE NUMBER	DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 312 ELM STREET, SUITE 2500 CINCINNATI, OH 45202-8720
	1/19							

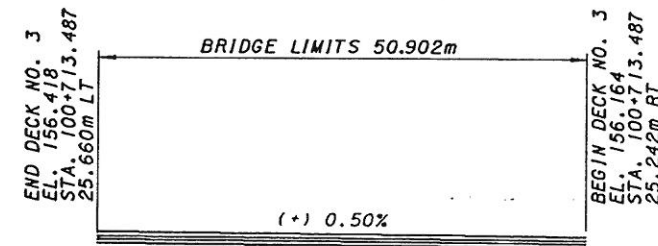
BENCH MARK
SEE GENERAL NOTES
SHEET NO. 13 OF 469
CONTRACT 8 DRAWINGS

PROPOSED STRUCTURE

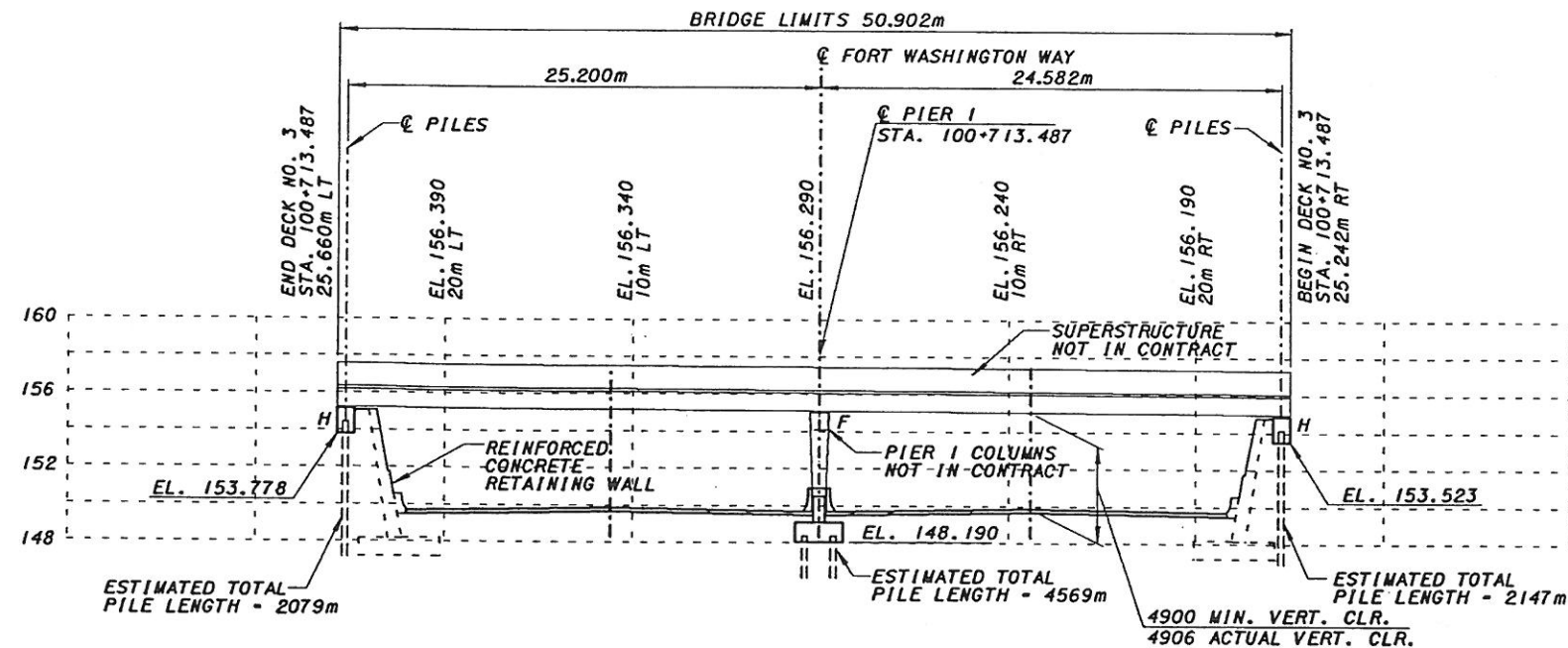
TYPE: 2 SPAN PRECAST PRESTRESSED BOX GIRDERS
WITH INTEGRAL ABUTMENTS
LENGTH OF SPANS: 25.2m - 24.582m
WIDTH OF STRUCTURE: 93.0m
DESIGN LOADING: 1.22m SOIL (MAX DEPTH).
SKEW ANGLE: 0°
SUPER ELEVATION: 0.00619
WEARING SURFACE: NONE
APPROACH SLAB: NOT IN CONTRACT
ALIGNMENT: TANGENT
LATITUDE: N39°-05'-54"
LONGITUDE: W84°-30'-39"

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 3



PROFILE ALONG @ CONSTRUCTION DECK 3

(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 COMPRESSION.

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.

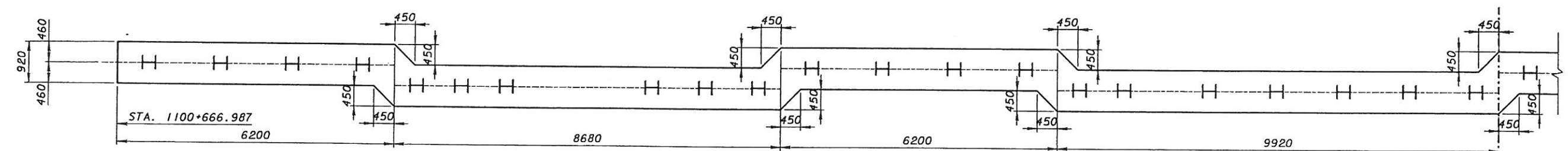
PRODUCTION PILES

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.

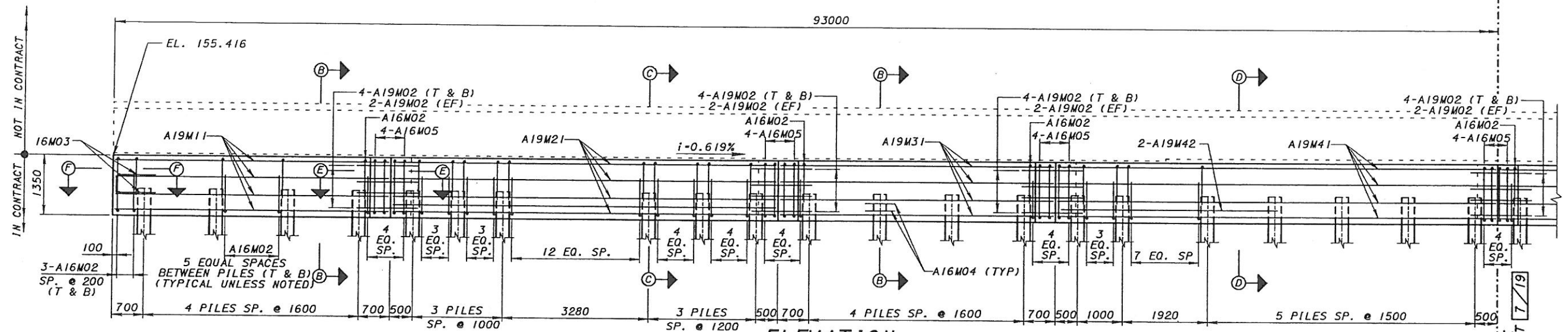


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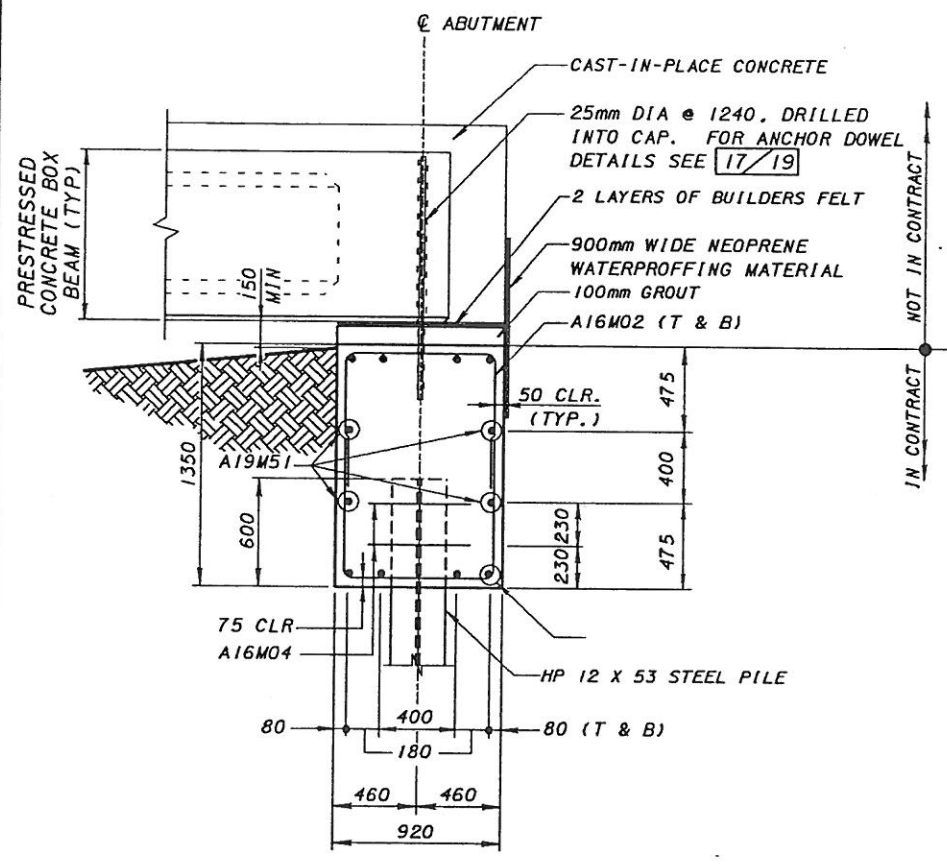


PLAN

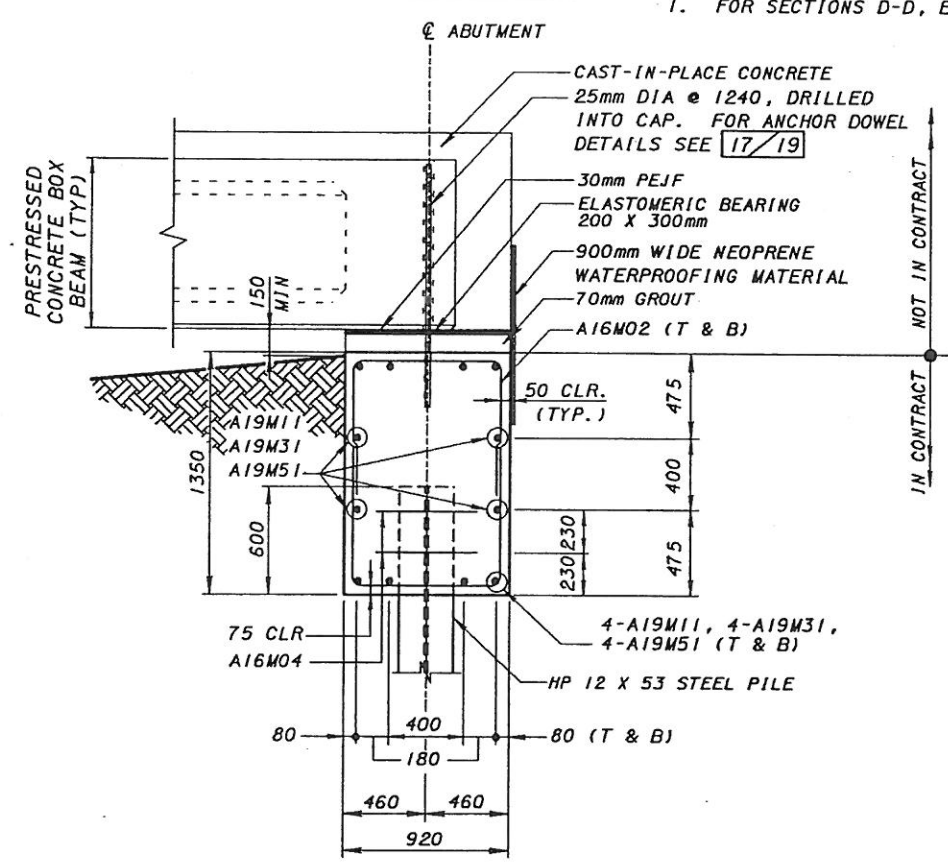


ELEVATION

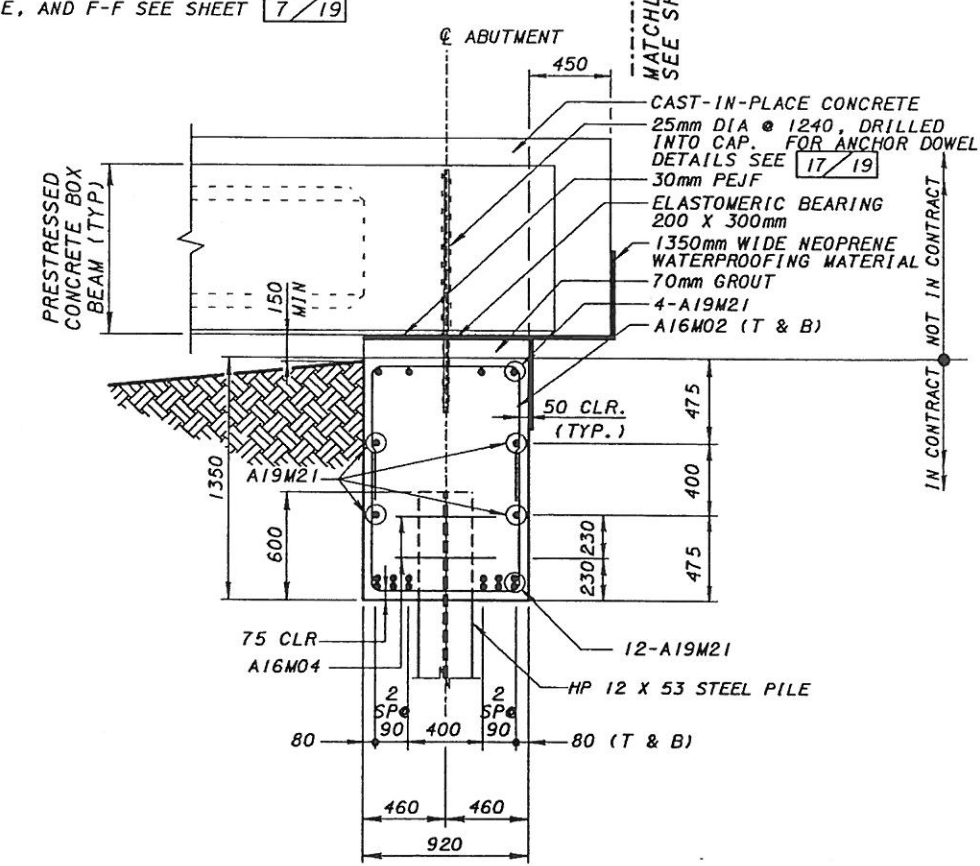
NOTES:
1. FOR SECTIONS D-D, E-E, AND F-F SEE SHEET 7/19



SECTION A-A
(FIXED CONNECTION)

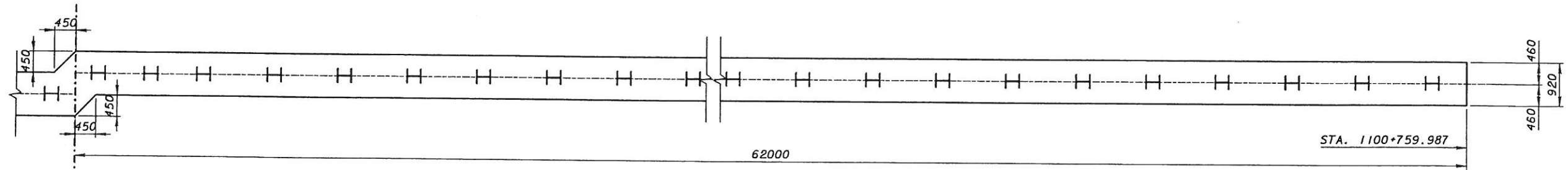


SECTION B-B
(EXPANSION CONNECTION)

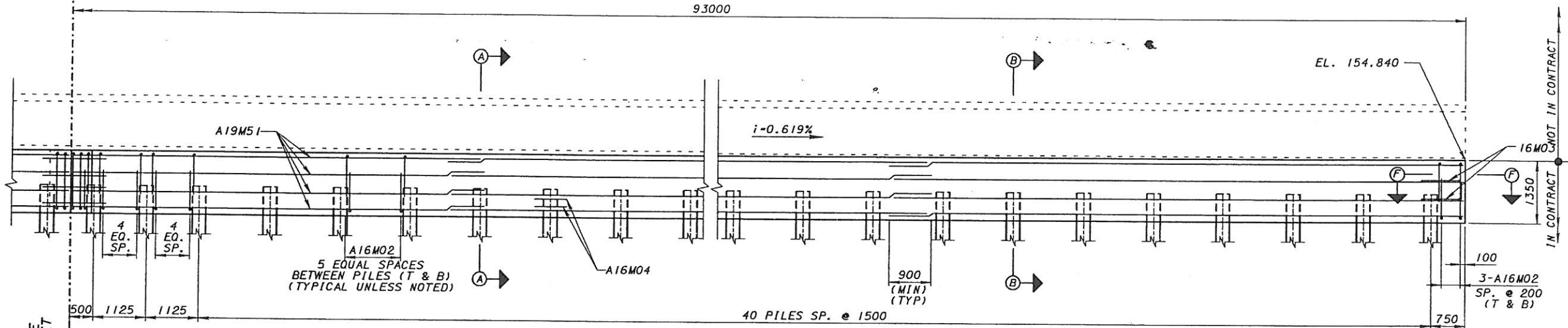


SECTION C-C
(EXPANSION CONNECTION)

DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 312 ELM STREET, SUITE 2500 CINCINNATI, OH 45202-8720	DATE 6-30-00	REVISED STRUCTURE FILE NUMBER	DRAWN SRL	CHECKED JSH	PREPARED VR	HAMILTON COUNTY STA. 100+666.987 STA. 100+759.987	NORTH ABUTMENT REINFORCEMENT (SHEET 1 OF 2) DECK NUMBER 3 OVER FORT WASHINGTON WAY	CITY OF CINCINNATI CONTRACT NO. 75X5753	6/19
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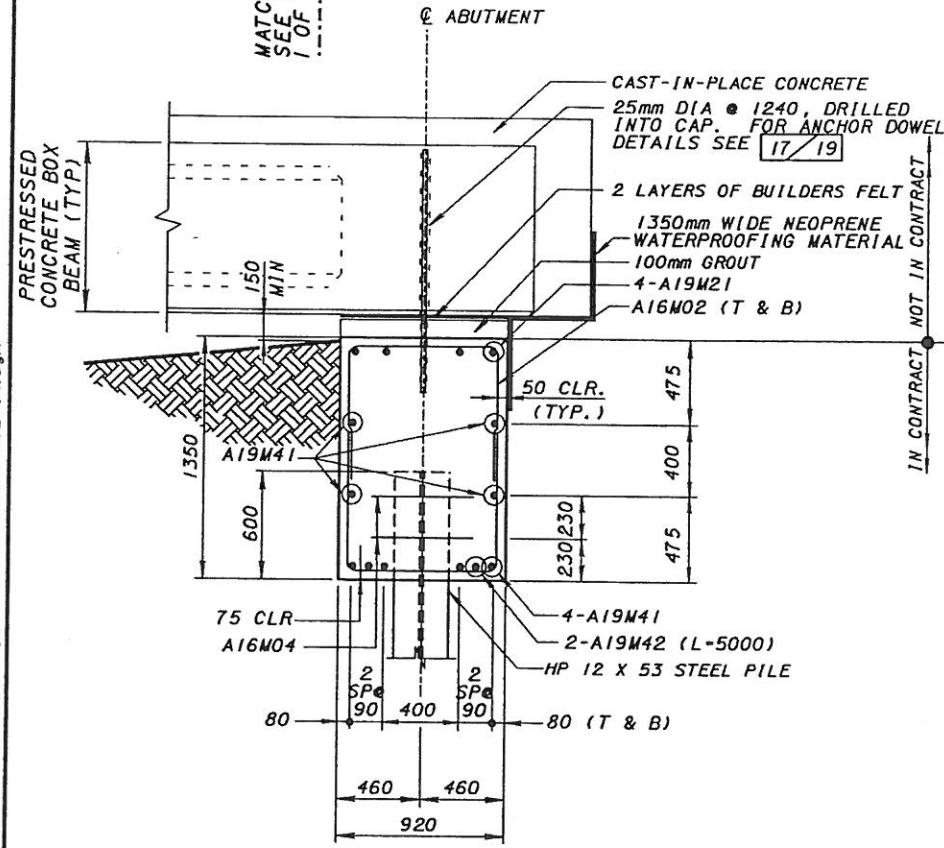
PLAN



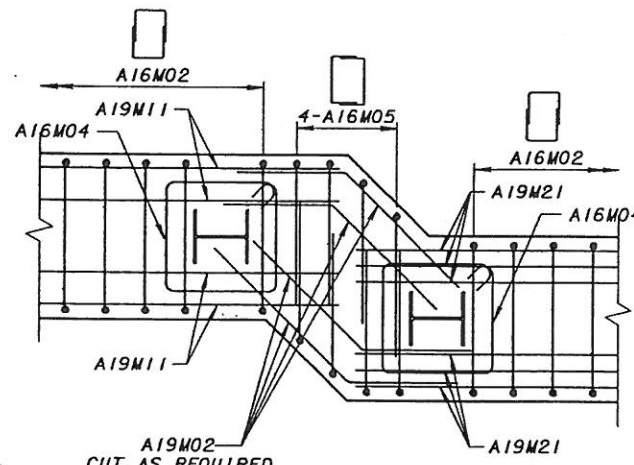
ELEVATION

NOTES:

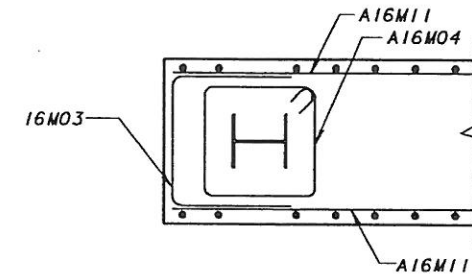
1. FOR SECTIONS A-A, B-B, AND C-C SEE SHEET 6/19



SECTION D-D
(FIXED CONNECTION)



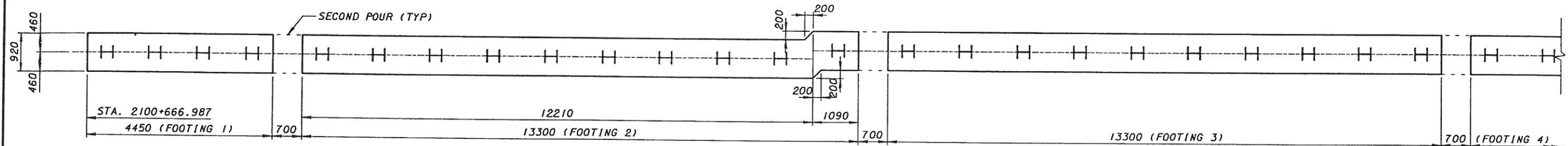
SECTION E-E



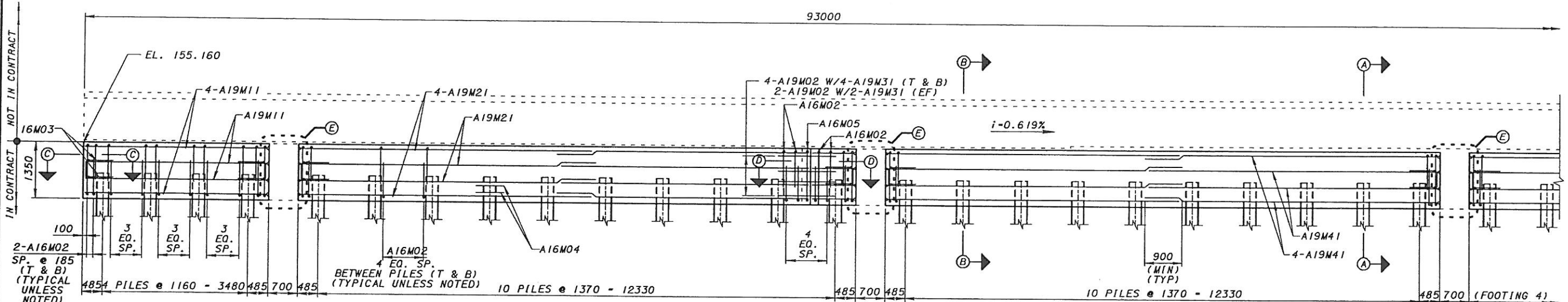
SECTION F-F

1/12/01
Fri Jan 12 10:03:19 2001

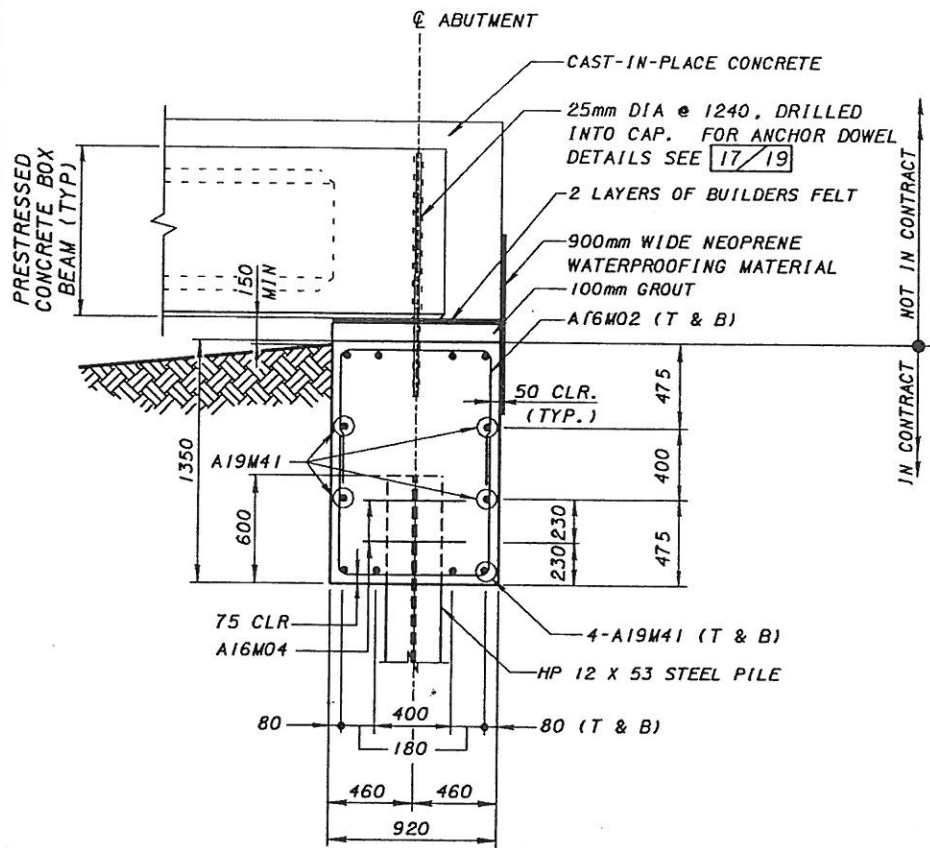
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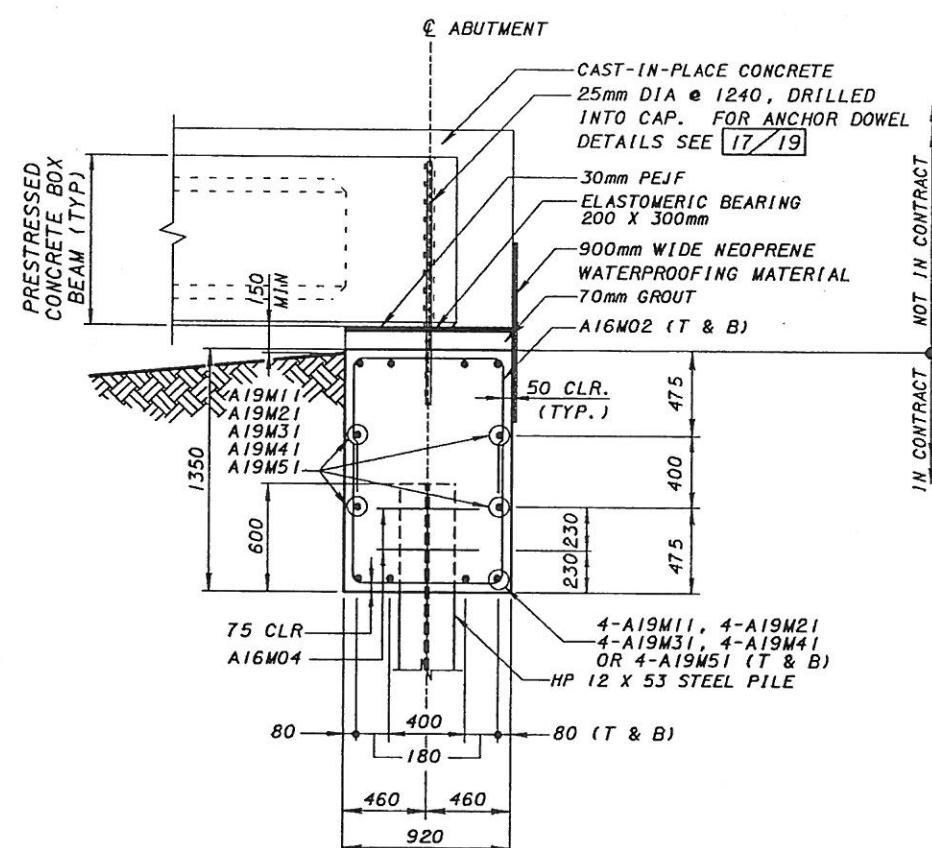
PLAN



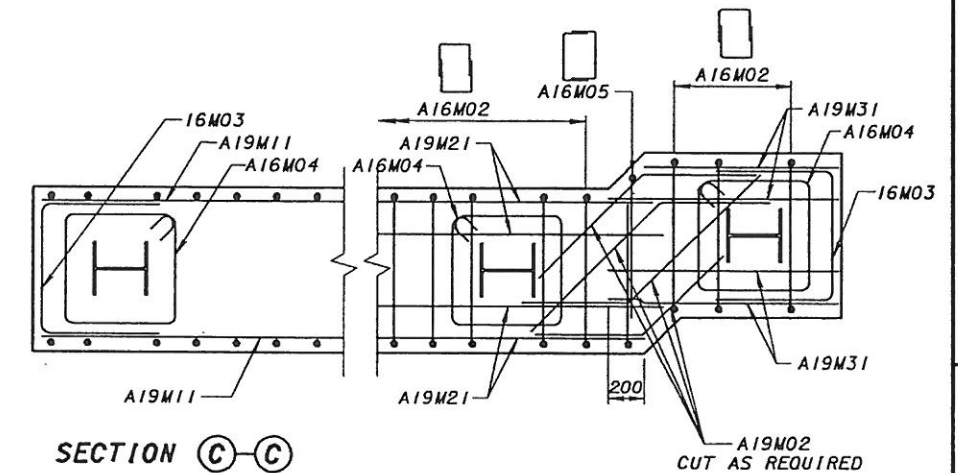
ELEVATION



SECTION A-A
(FIXED CONNECTION)



SECTION B-B
(EXPANSION CONNECTION)

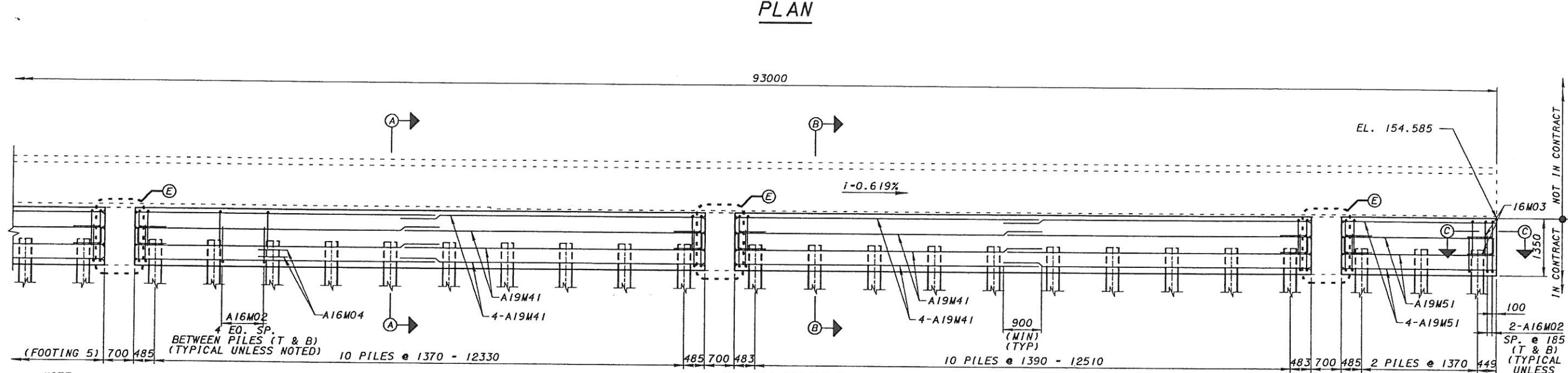
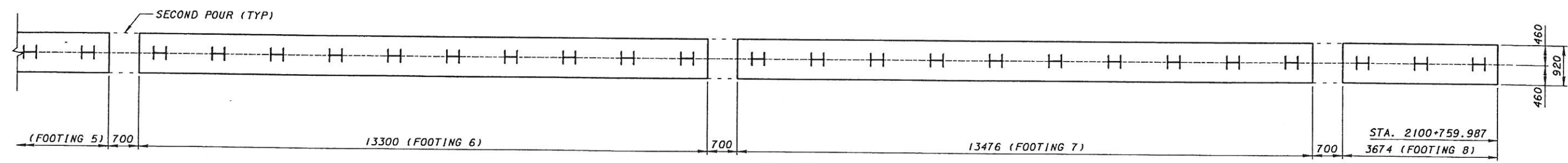


SECTION C-C

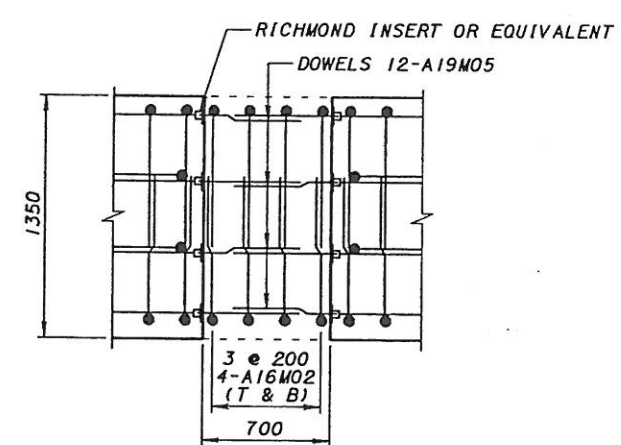
SECTION D-D

NOTES:
1. FOR SECTION E-E SEE SHEET 9/19

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1/12/01
Fr1 Jan 12 10:03:17 2001



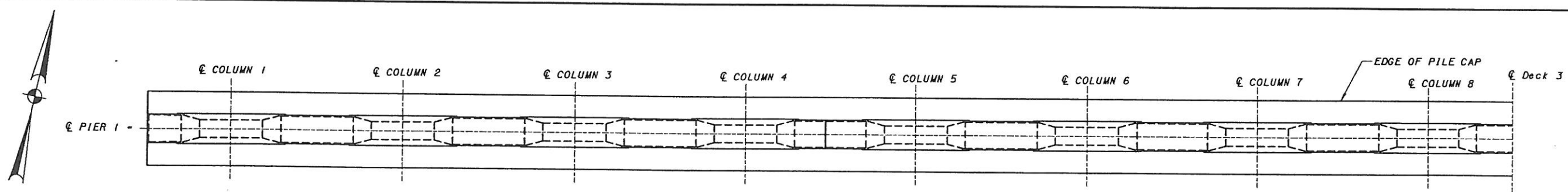
NOTE:
REINFORCEMENT OF FOOTING
4, 5, AND 6 IS IDENTICAL
TO FOOTING 6



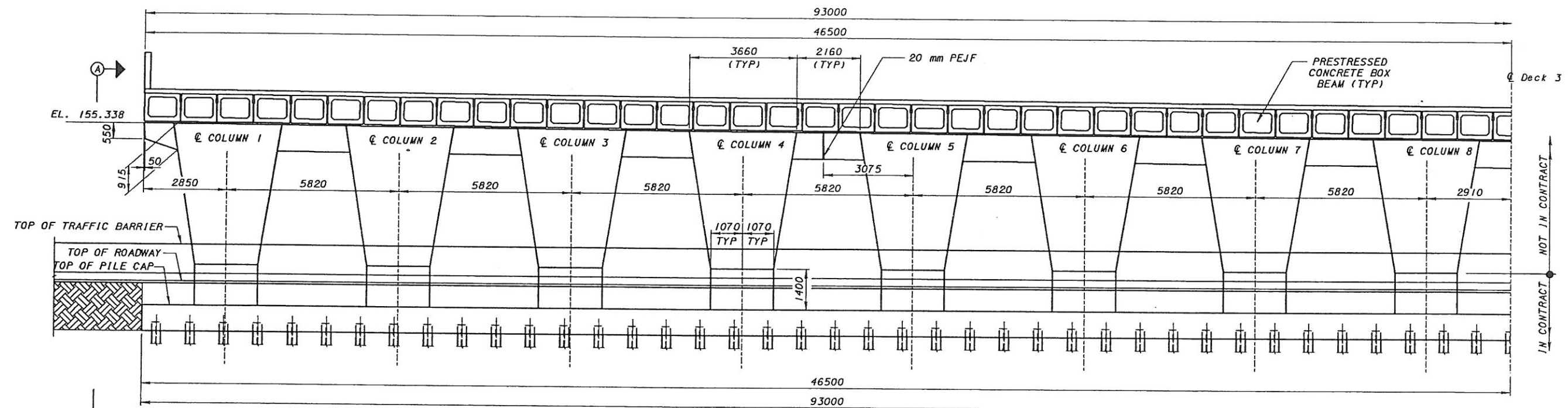
NOTES:
1. FOR SECTIONS A-A, B-B, C-C, AND D-D SEE SHEET 8/19

 DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 312 ELM STREET, SUITE 2500 CINCINNATI, OH 45202-8720	DATE	6-30-00
	REVISED	STRUCTURE FILE NUMBER
	DRAWN	SRL
	CHECKED	JSH
HAMILTON COUNTY STA. 100+666.987 STA. 100+759.987	PREPARED	VR
	CHECKED	JSH
SOUTH ABUTMENT REINFORCEMENT (SHEET 2 OF 2) DECK NUMBER 3 OVER FORT WASHINGTON WAY		
CITY OF CINCINNATI CONTRACT NO. 75X5753		
9/19		

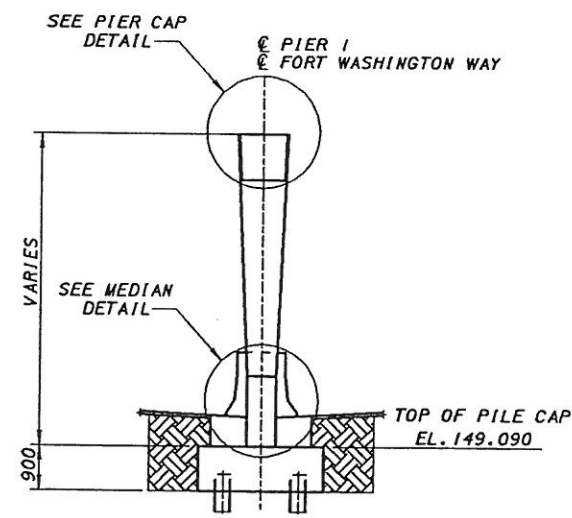
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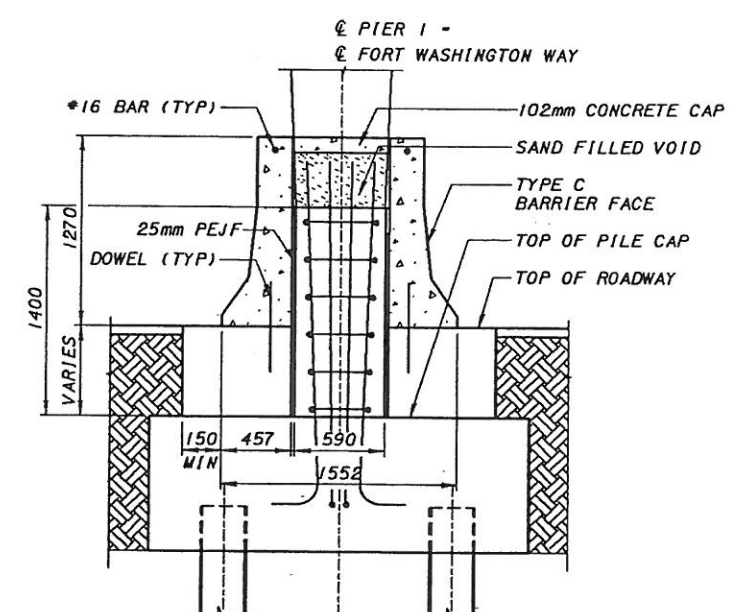
PLAN



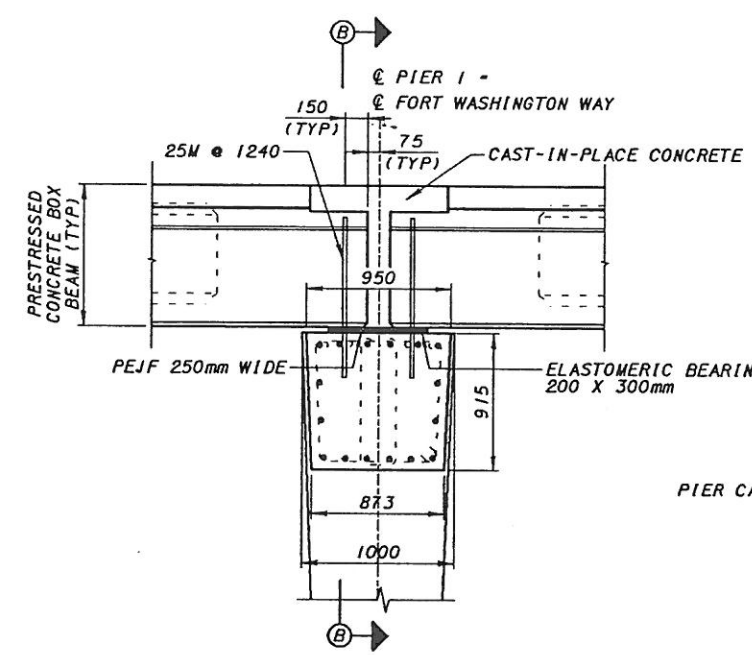
ELEVATION AT PIER 1



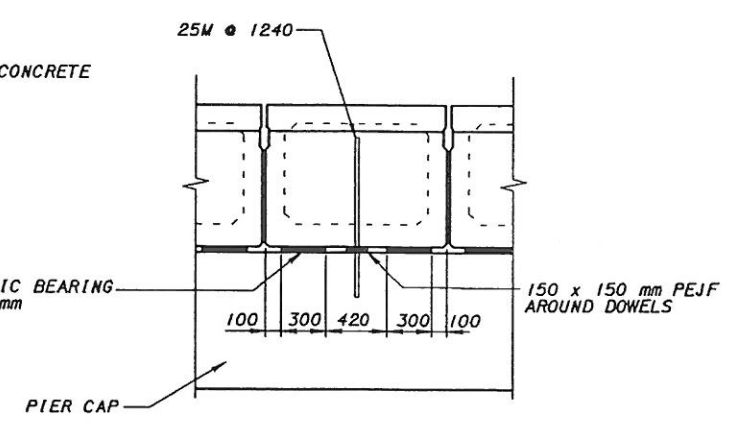
VIEW A-A



MEDIAN DETAIL



PIER CAP DETAIL



SECTION B-B

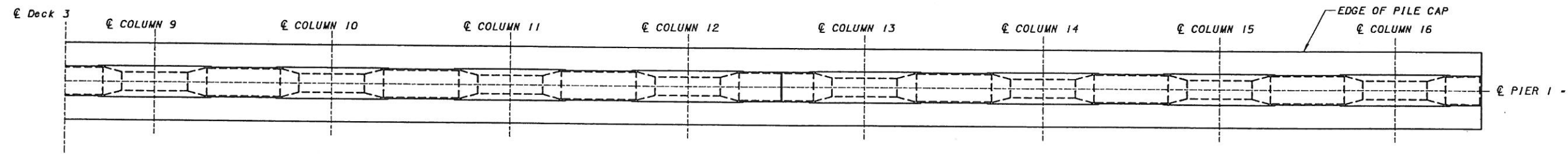
NOTES:
1. SEE NOTES 1 AND 2 ON SHEET 2/19

HAMILTON COUNTY STA. 100+666.987 STA. 100+759.987			
	PIER 1 PLAN & ELEVATION (1 OF 2) DECK NUMBER 3 OVER FORT WASHINGTON WAY		
	CITY OF CINCINNATI CONTRACT NO. 75X5753		
	10/19		

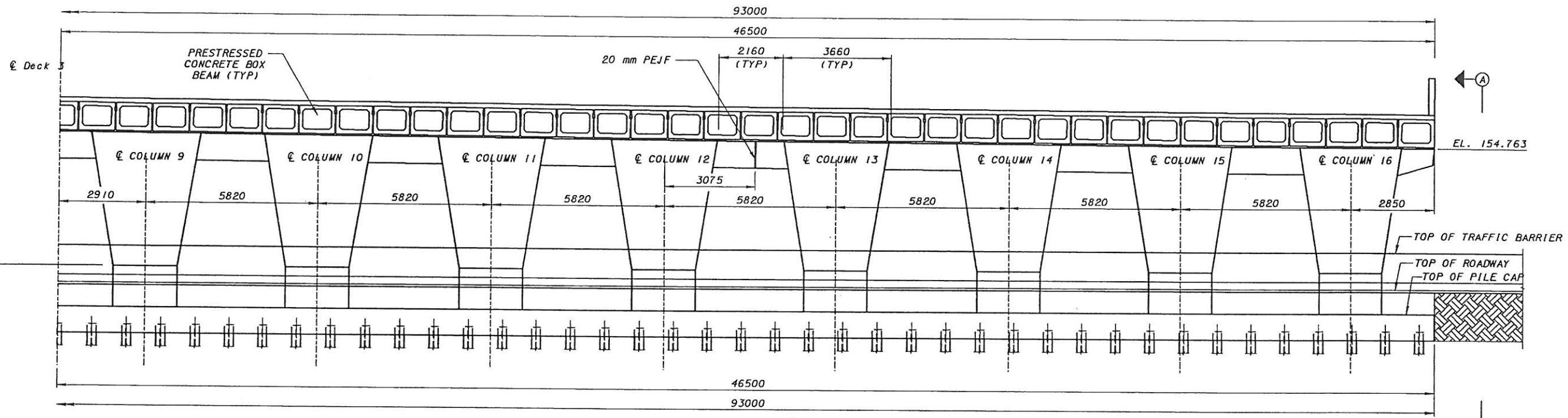
f:\segment\fw\brldges\contract_24\3pr2412.dgn 1/12/01 Fri Jan 12 10:03:52 2001



IN CONTRACT NOT IN CONTRACT



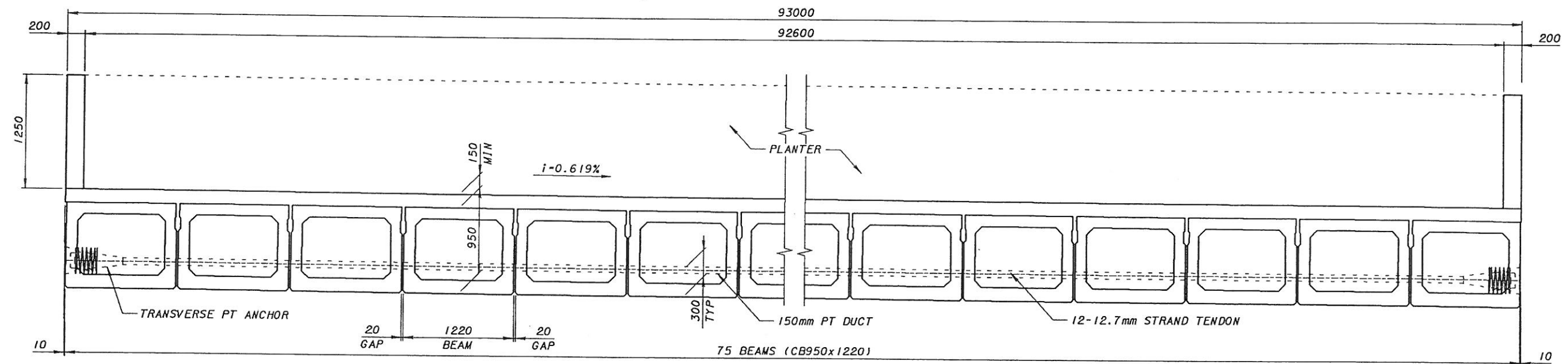
PLAN



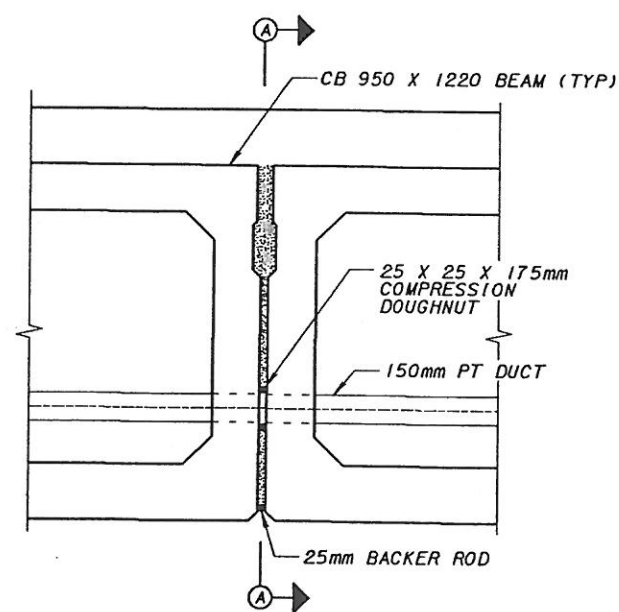
ELEVATION AT SECTION A-A

NOTES:
1. FOR SECTION A-A SEE SHEET 10/19

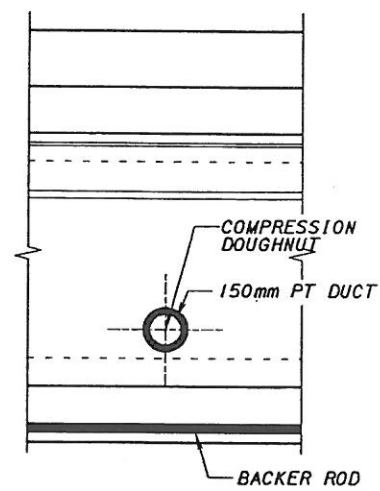
CITY OF CINCINNATI CONTRACT NO. 75X5753	PIER 1 PLAN & ELEVATION (2 OF 2) DECK NUMBER 3 OVER FORT WASHINGTON WAY	HAMILTON COUNTY STA. 100+666.987 STA. 100+759.987	DESIGN AGENCY PARSONS BRINCKERHOFF, INC. CINCINNATI, OH 45202-2720	DATE 6-30-00	REVISED STRUCTURE FILE NUMBER
			DRAWN SRL	REVIEWED JSH	
			PREPARED VR	CHECKED JSH	
			EL. 154.763		



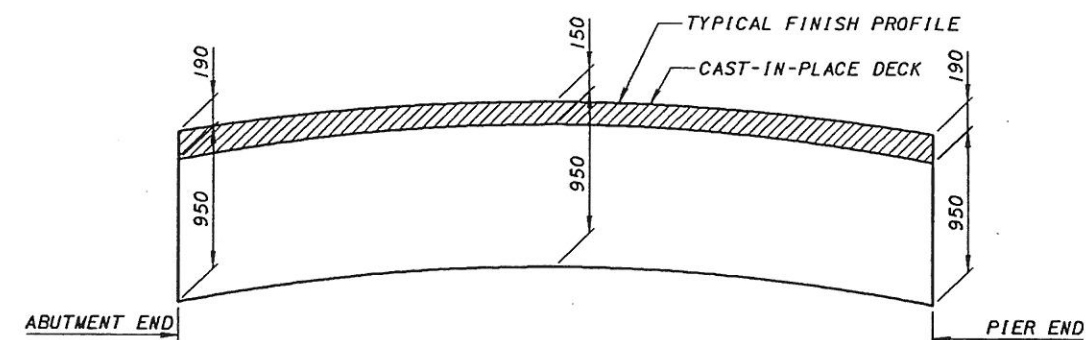
TYPICAL CROSS SECTION



BEAM DETAIL



SECTION A—A



BEAM CAMBER DIAGRAM

NOTES:

1. SEE NOTES 1 AND 2 ON SHEET

2 / 19



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

FRAMING PLAN

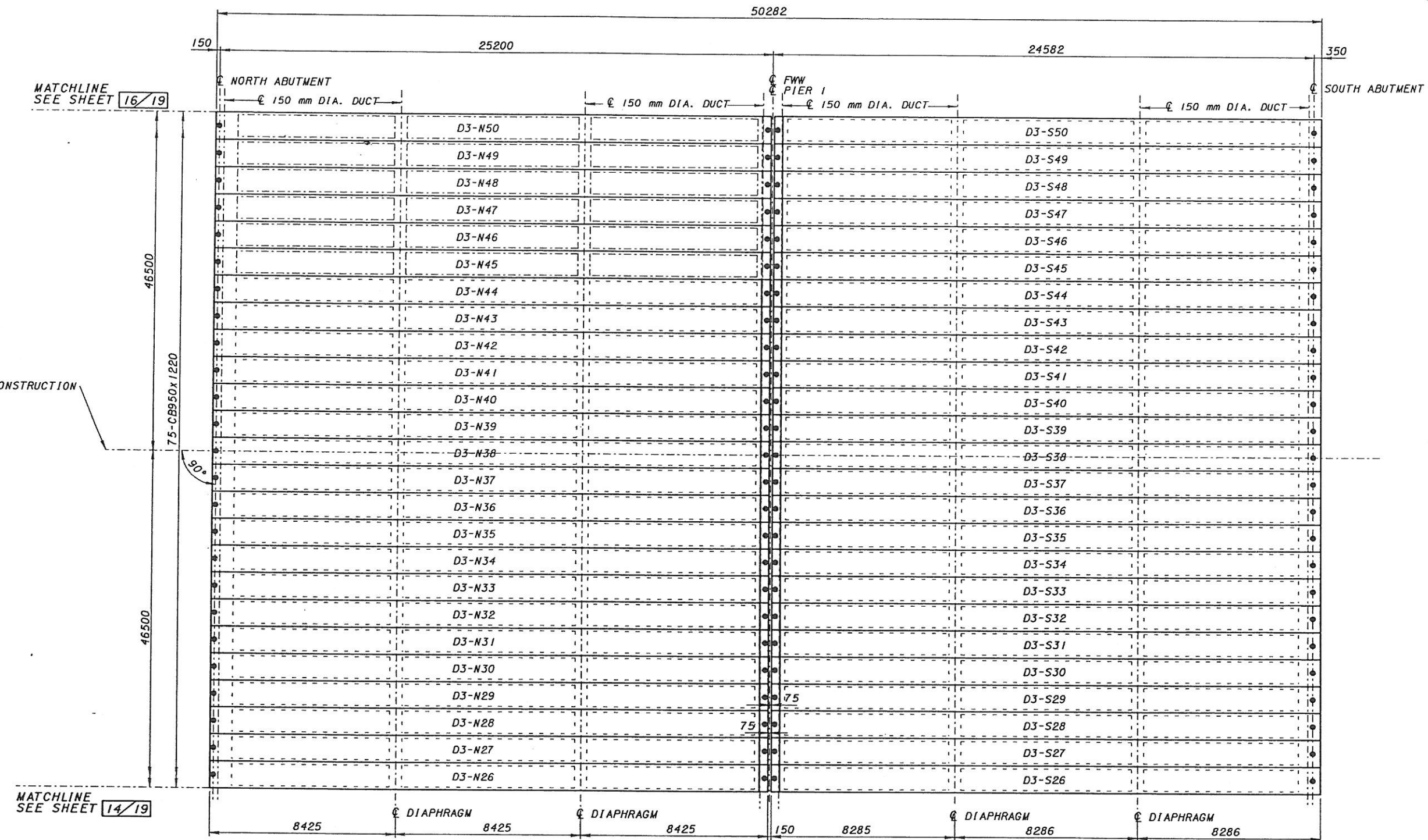
NOTES:

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 ($A_s = 108 \text{ sq. mm}$), ASTM A416, GRADE 270,
 $f_s = 1860 \text{ MPa}$, INITIAL STRESS = $0.75 f_s = 1400 \text{ MPa}$.
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 2/19

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1/12/01

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FRAMING PLAN

NOTES:

1. WORK TOGETHER WITH FRAMING PLAN SHEET 14/19 AND 16/19

DESIGN AGENCY
PARSONS BRINCKERHOFF, INC.
312 ELM STREET, SUITE 2500
CINCINNATI, OH 45202-2720

DATE
6-30-00
REVISED
STRUCTURE FILE NUMBER

DRAWN
SRL
REVIEWED
JSH

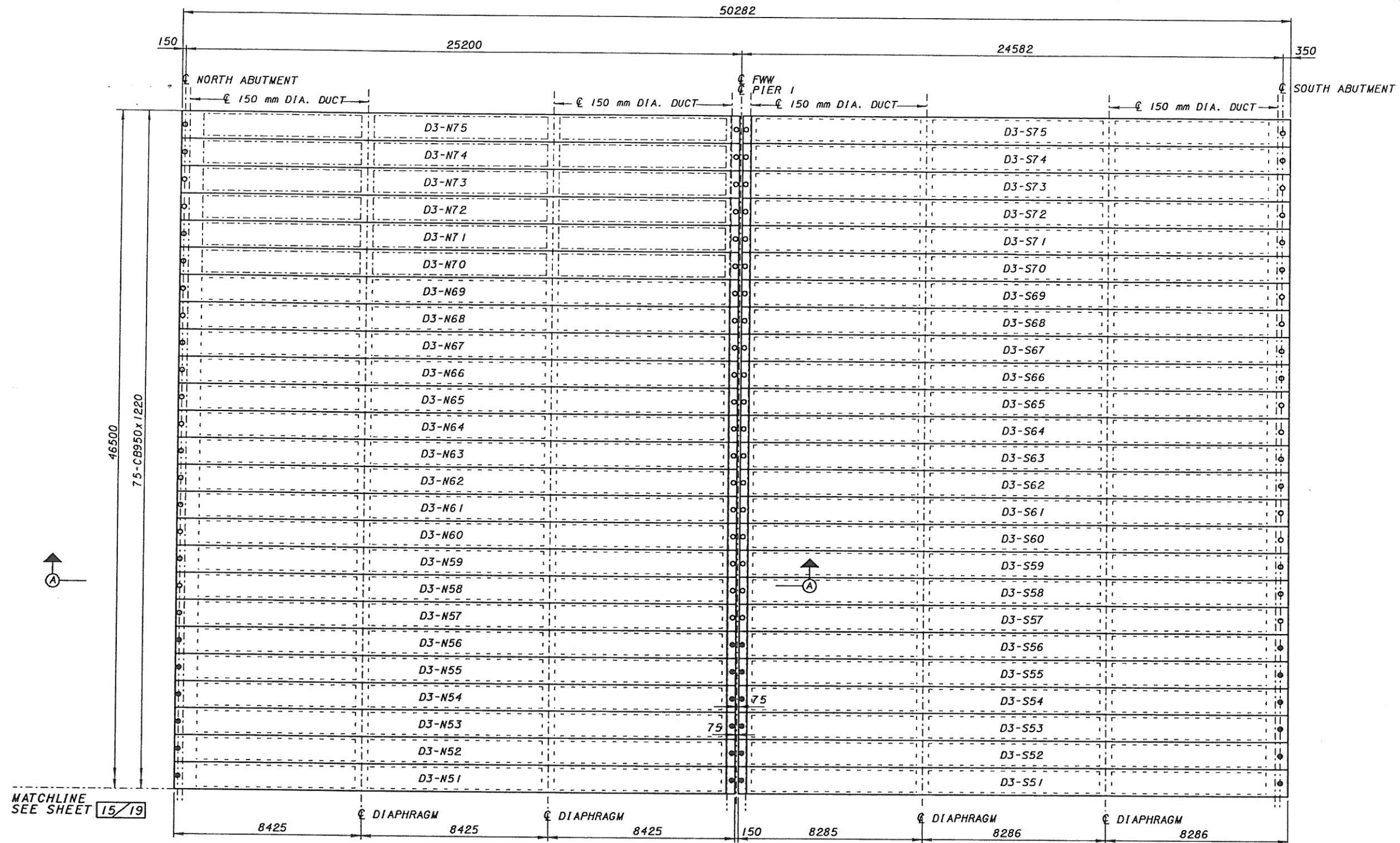
HAMILTON COUNTY
STA. 100+666.987
STA. 100+759.987

FRAMING PLAN (2 OF 3)
DECK NUMBER 3
OVER FORT WASHINGTON WAY

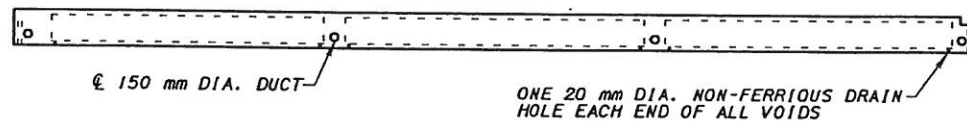
CITY OF CINCINNATI
CONTRACT NO. 75X5753

15/19





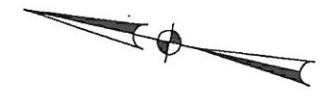
FRAMING PLAN

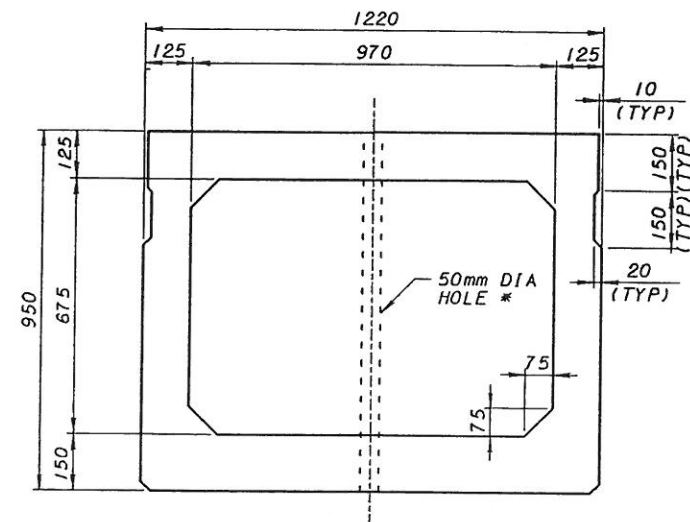


SECTION A-A

NOTES:

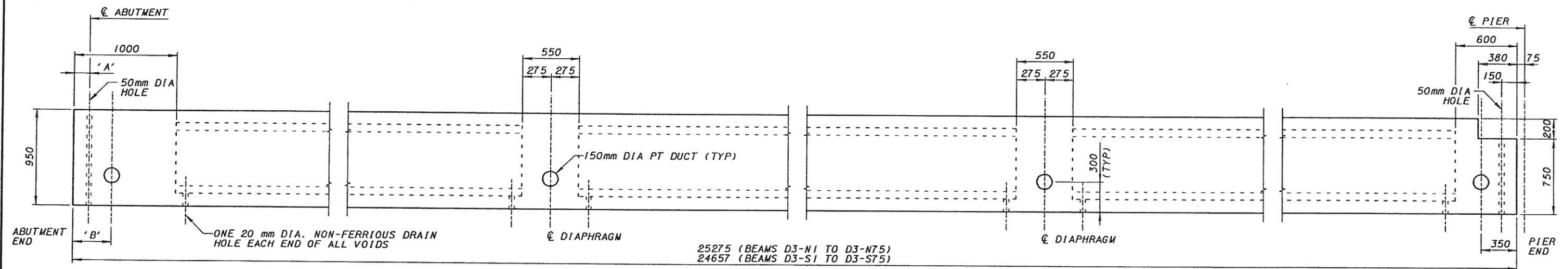
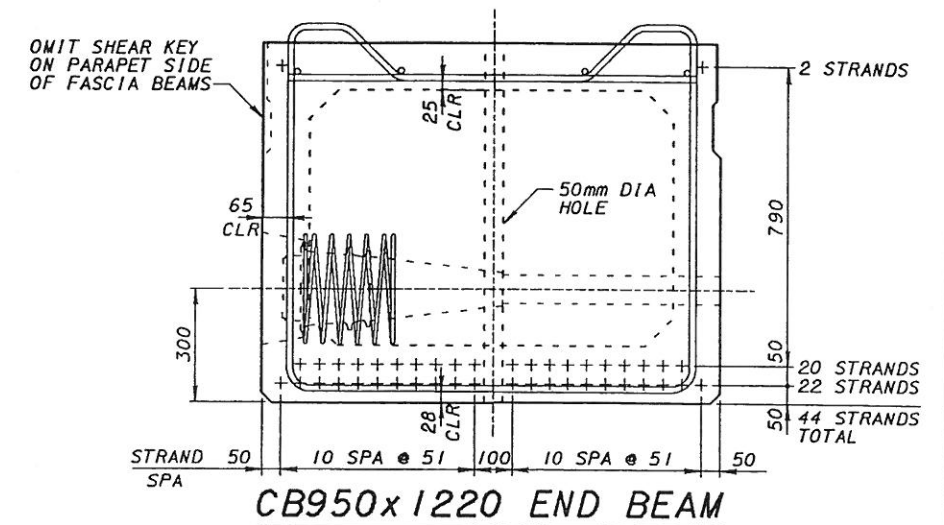
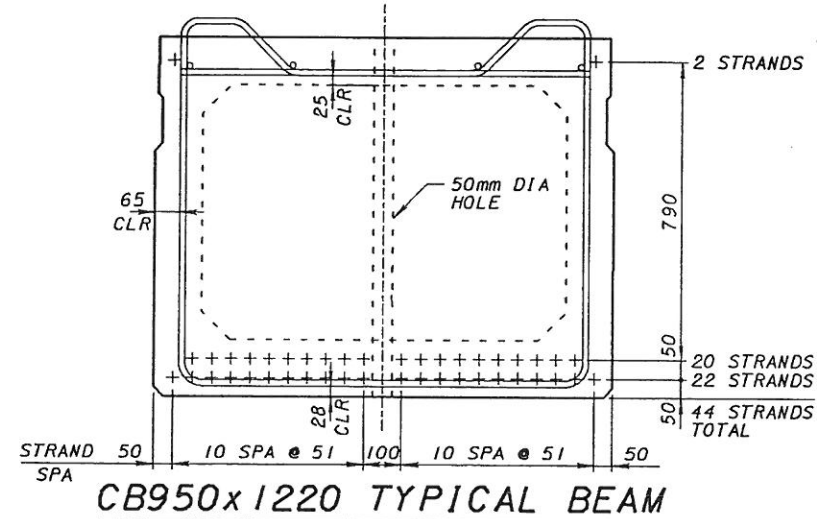
1. WORK TOGETHER WITH FRAMING PLAN SHEET 14/19 AND 15/19



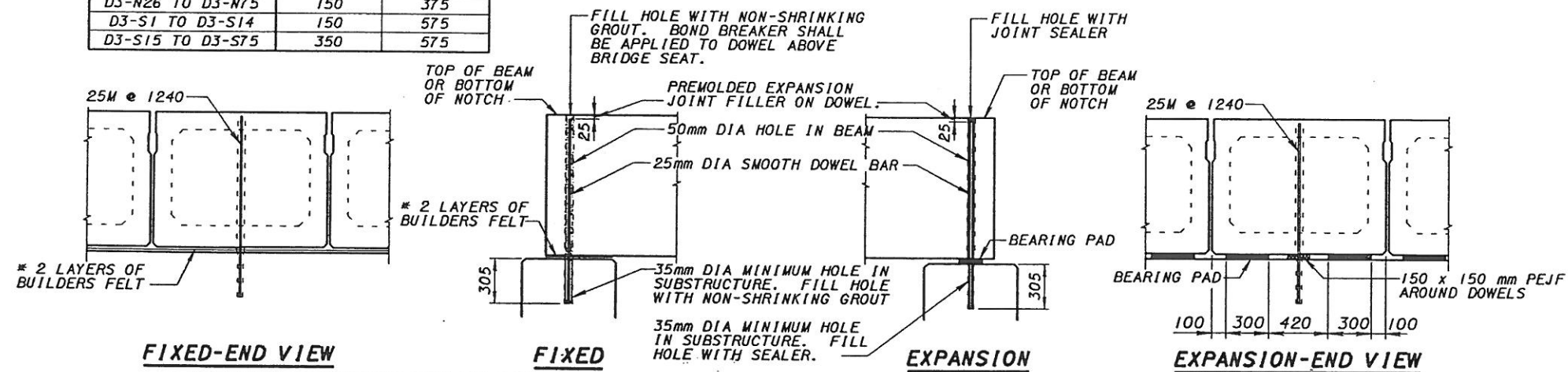


CROSS SECTION CB950x1220 BEAM

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

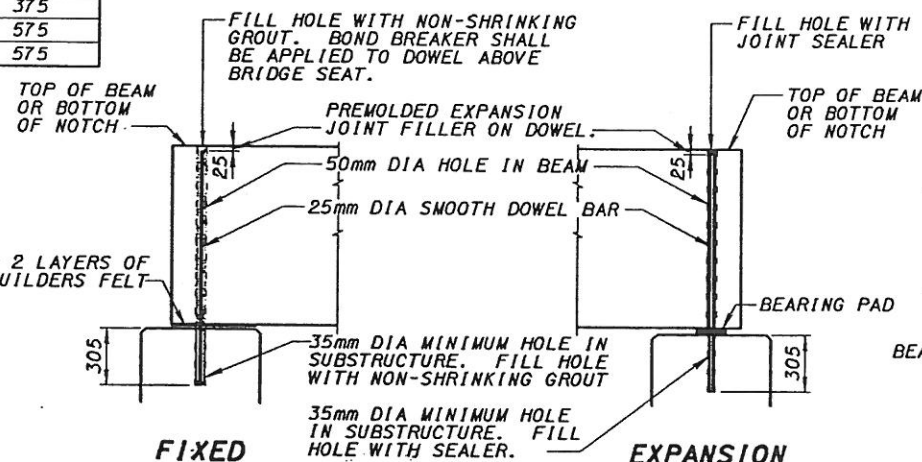


GIRDER VARIABLES		
GIRDER	DIM 'A'	DIM 'B'
D3-N1 TO D3-N5	150	375
D3-N6 TO D3-N12	600	375
D3-N13 TO D3-N17	150	375
D3-N18 TO D3-N25	600	375
D3-N26 TO D3-N75	150	375
D3-S1 TO D3-S14	150	575
D3-S15 TO D3-S75	350	575

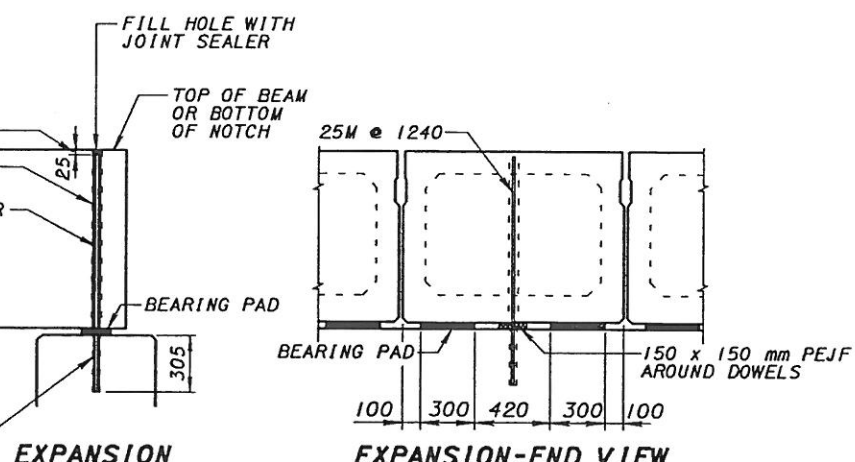


FIXED-END VIEW

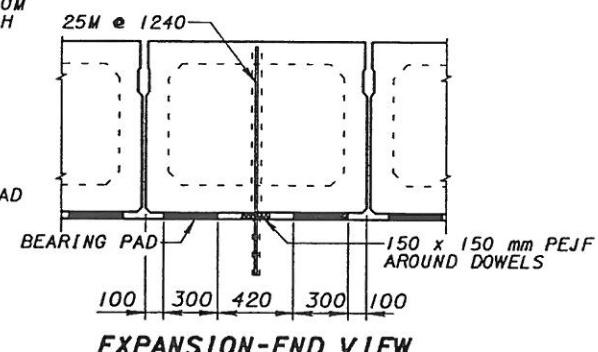
* TWO LAYERS OF BUILDERS FELT ARE USED AT ABUTMENTS IN CONJUNCTION WITH FIXED ANCHOR DOWELS. BEARING PADS SHALL BE USED AT CENTRAL PIER IN CONJUNCTION WITH FIXED ANCHOR DOWELS.



FIXED

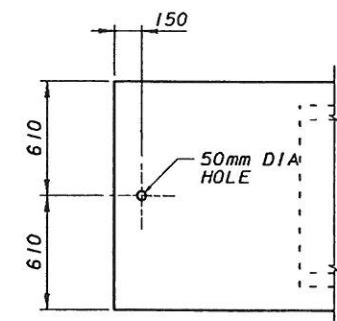


EXPANSION



EXPANSION-END VIEW

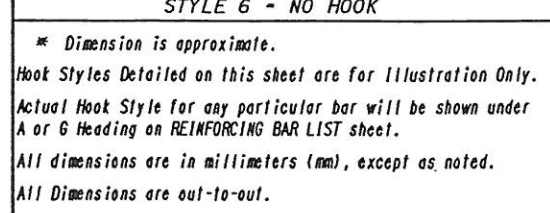
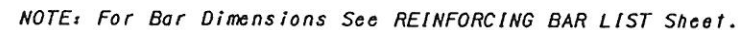
NOTE: DOWEL CLEARS ELASTOMERIC BEARING



DOWEL HOLE LOCATION

NOTES:

1. SEE NOTES 1 AND 2 ON SHEET



MARK	TOTAL	LENGTH	WEIGHT	TYPE	STYLE		DIMENSIONS (mm)										NO	ANG	REMARKS
	NUMBER	(mm)	(kg)		A	G	B	C	D	E	F	H	J	K	N	O			
PIER FOOTING																			
P13M01	4320	1005	4316	18	4	5	775												
P16M01	314	3600	1754	11			2400	600	600										
P16M02	14	1335	29	11			735	300	300										
P22M01	573	3600	6275	11			2400	600	600										
P25M01-A	19	91260	6890	2			1200	76860							12				
P25M01-B	38	9570	1445	1			9170												
P32M01-A	17	101660	11068	2			2000	77660							12				
P32M01-B	34	9570	2084	1			9570												
P32M02	12	5000	384	1			5000												
COLUMN STUB																			
P16M03	32	3635		11			495	1570	1570										
	SETS OF	T0	1245				T0												
P16M03	7	3525		11			385	1570	1570										
P16M04	48	790		18	4	5	495												
	SETS OF	T0	383				T0												
P16M04	7	680		18	4	5	385												
P32M03	128	3050	2500	12			2750	300								98			
P32M04	480	3050	9375	12			2750	300								92			
NORTH ABUTMENT																			
A16M02	694	2450	2639	11			820	815	815										
A16M03	4	2085	13	11			785	650	650										
A16M04	126	3420	669	4	5	5	785	785											
A16M05	32	2895	144	11			1225	835	835										
A19M02	48	1600	172	12			600	1000								45			
A19M11	12	6100	164	1			6100												
A19M21	20	8580	384	1			8580												
A19M31	12	6100	164	1			6100												
A19M41	12	9820	263	1			9820												
A19M42	2	5000	22	1			5000												
A19M51	12	66400	1781	2			900	61900							5				
SOUTH ABUTMENT																			
A16M02	646	2450	2456	11			820	815	815										
A16M03	32	2085	104	11			785	650	650										
A16M04	132	3420	701	4	5	5	785	785											
A16M05	2	2895	9	11			1225	835	835										
A19M02	12	1600	43	12			600	1000								45			
A19M11	12	4350	117	1			4350												
A19M21	12	12110	325	1			12110												
A19M31	12	990	27	1			990												
A19M41	48	14100	1513	2			900	13200							1				
A19M41	12	14275	383	2			900	13375							1				
A19M51	12	3570	96	1			3570												
							</												

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 8.18.2.2.4 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.

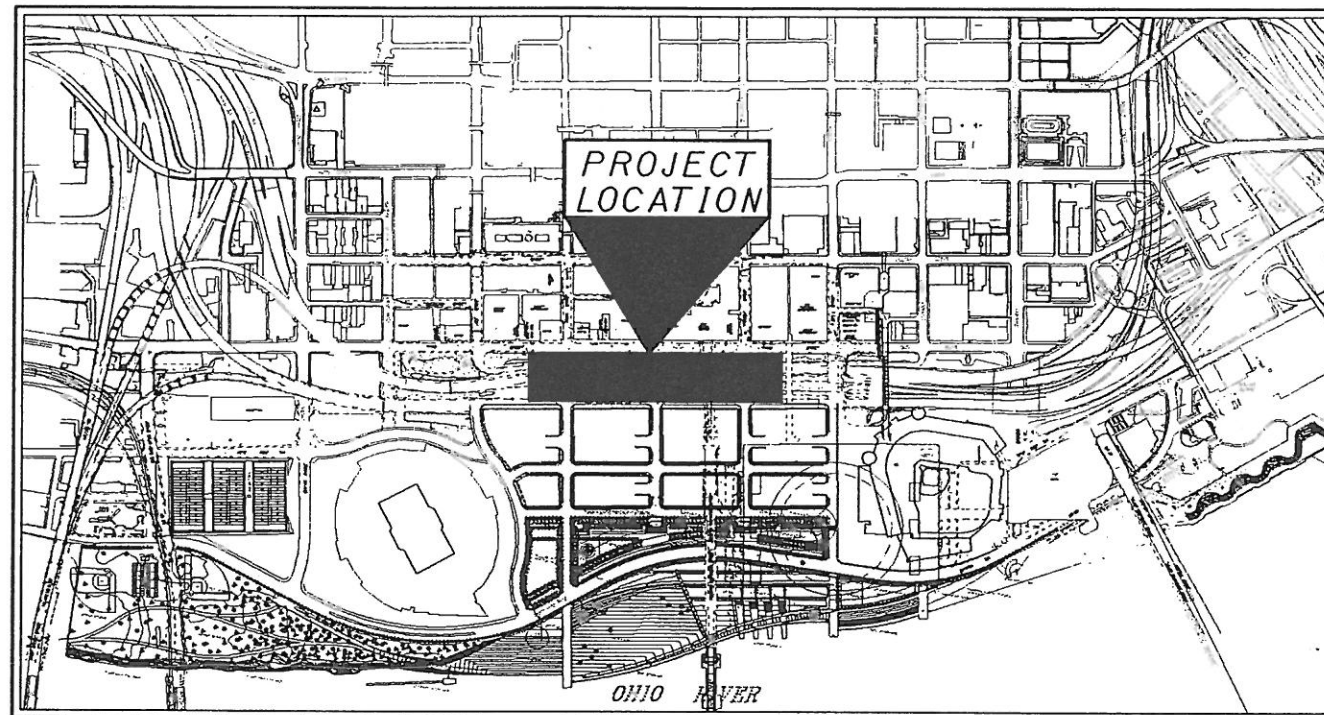
F O R T **W A S H I N G T O N** **W A Y** **2 0 0 0**

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.

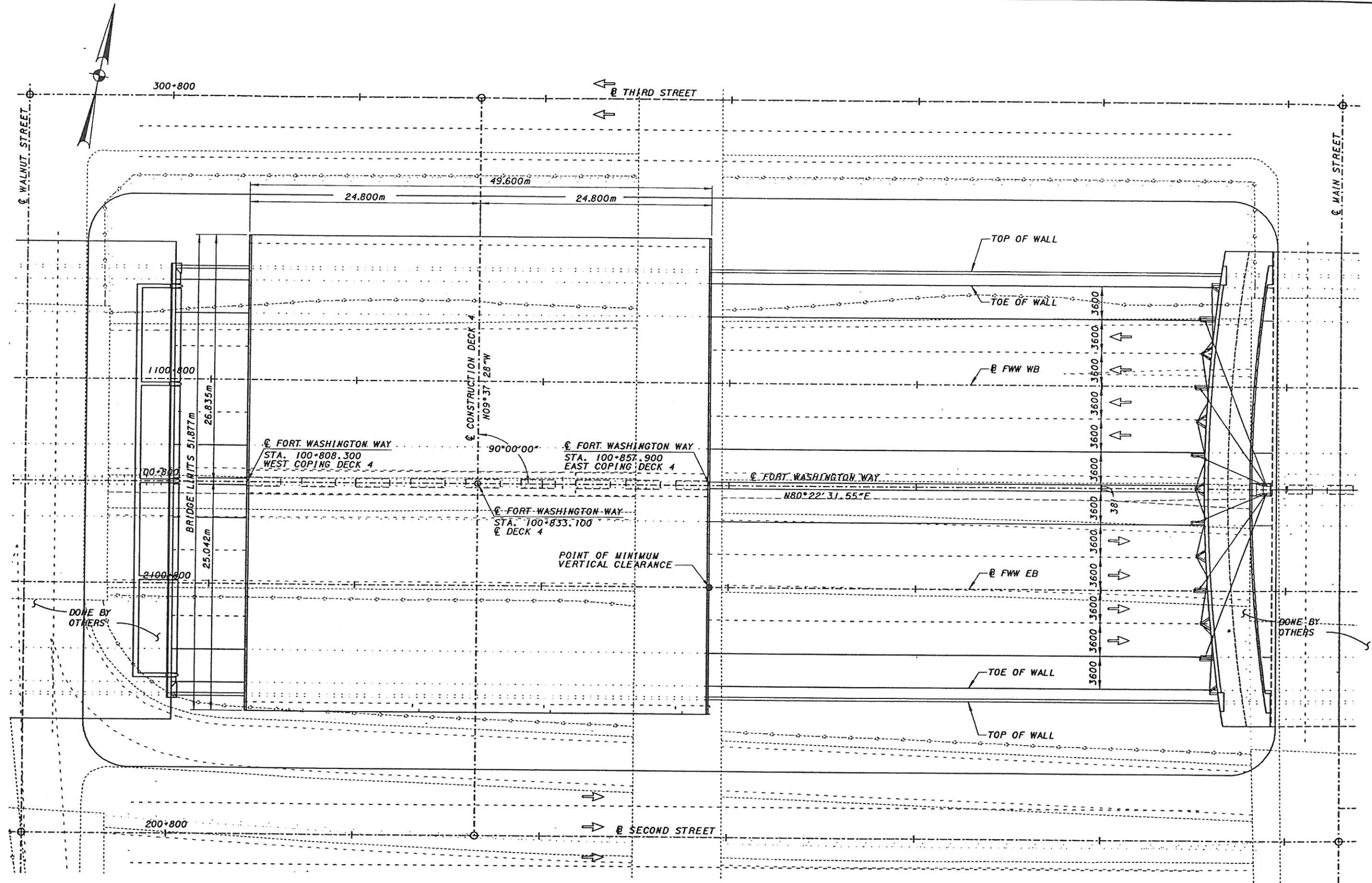
PID NO.

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT

CITY OF CINCINNATI
 CONTRACT No. 75X5753





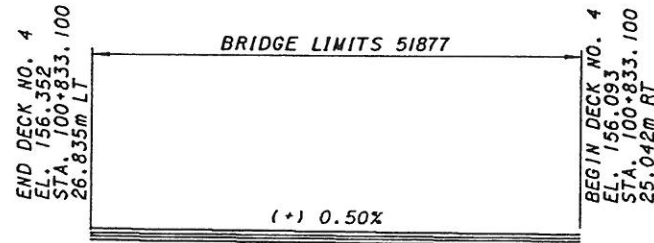
PLAN

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1/12/01
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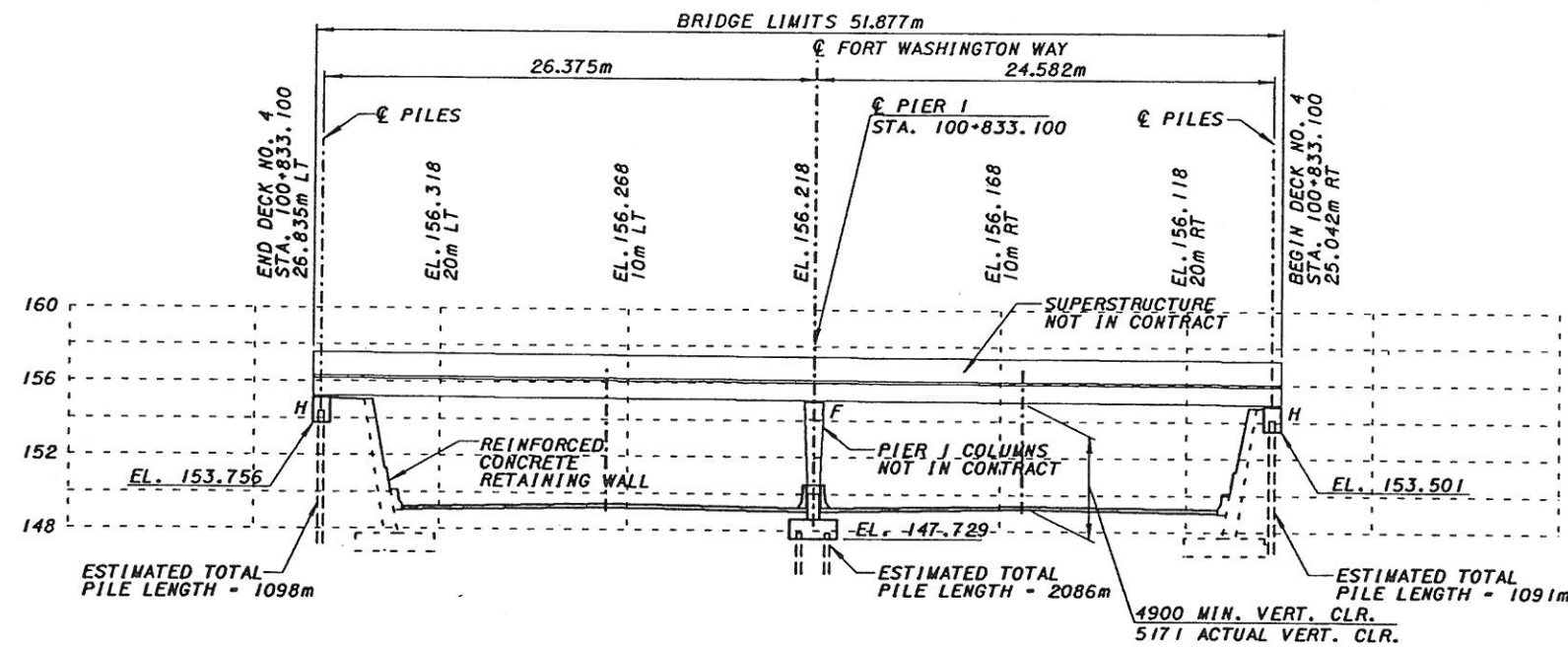
BENCH MARK
SEE GENERAL NOTES
SHEET NO. 13 OF 469
CONTRACT 8 DRAWINGS

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 MANUFACTURE 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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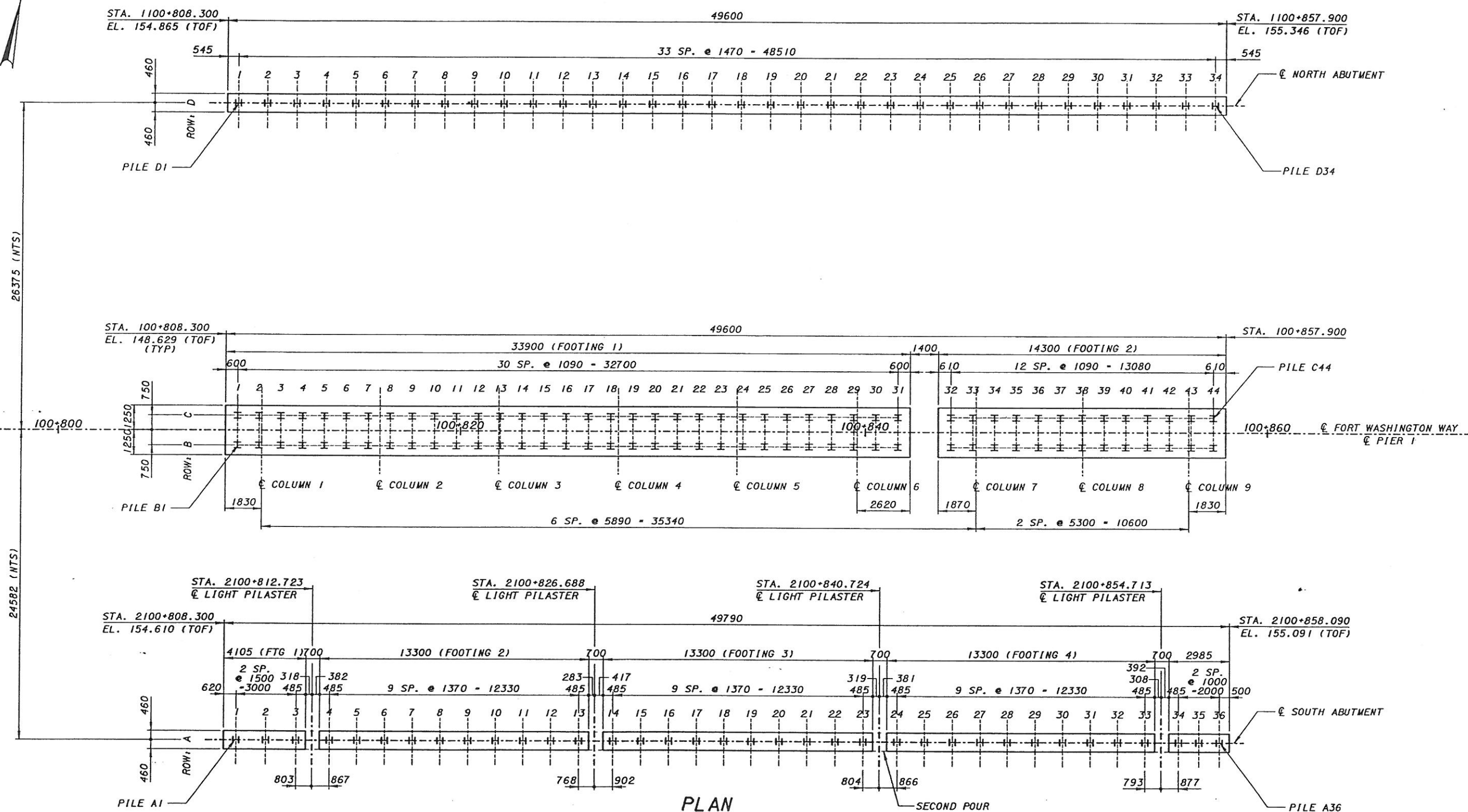
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DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 318 ELM STREET, SUITE 4500 CINCINNATI, OH 45202-6720	DATE 6-30-00	REVISED	DRAWN SRL	CHECKED JSH	PREPARED VR	LOCATION NAME STA. 100.808.300 STA. 100+857.900	GENERAL NOTES DECK NUMBER 4 OVER FORT WASHINGTON WAY	CITY OF CINCINNATI CONTRACT NO. 75X5753	3/16
	FILE NUMBER	STRUCTURE	REVIEWED	CHECKED	FILED				

Fri Jan 12 10:16:16 2001

1/12/01

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PLAN

LEGEND

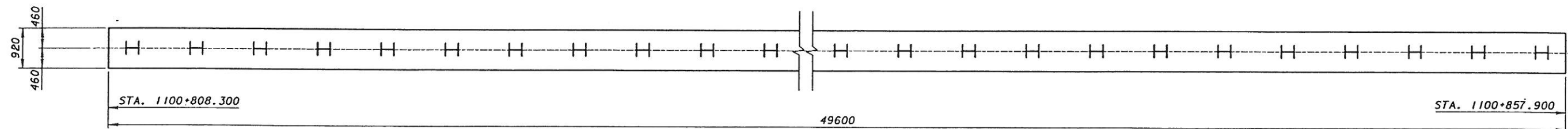
H-HP 12 X 53 STEEL PILE (TYP)
DRIVEN TO ROCK
980 kN PILE CAPACITY

DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 318 ELM STREET, SUITE 2000 CINCINNATI, OH 45202-2720	DATE	6-30-00
	REVISED	
	DRAWN	SRL
	CHECKED	JSH
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		

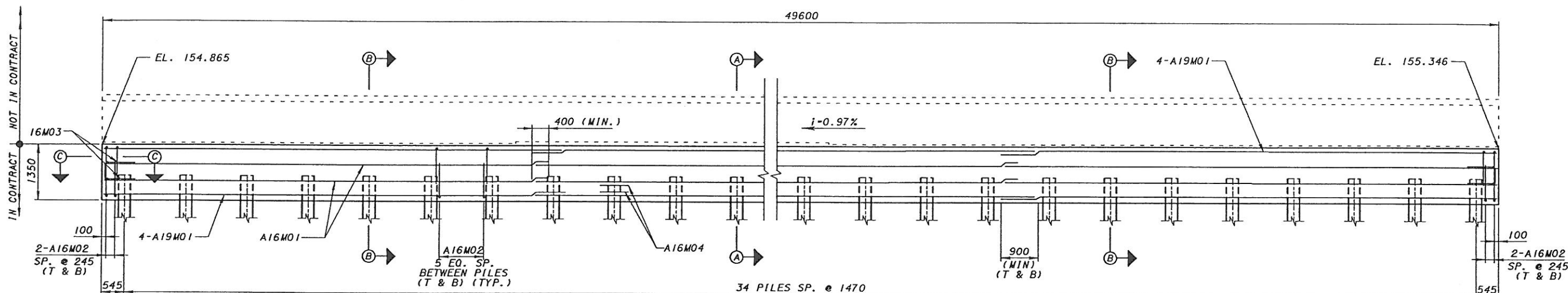
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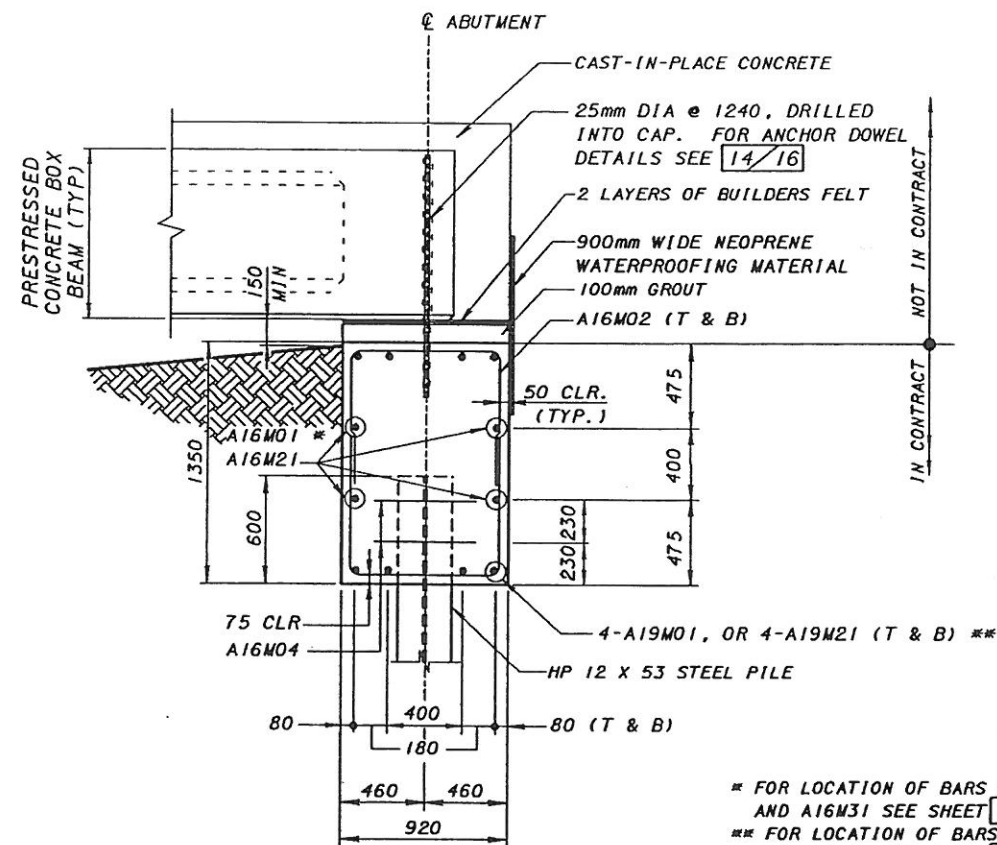
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PLAN

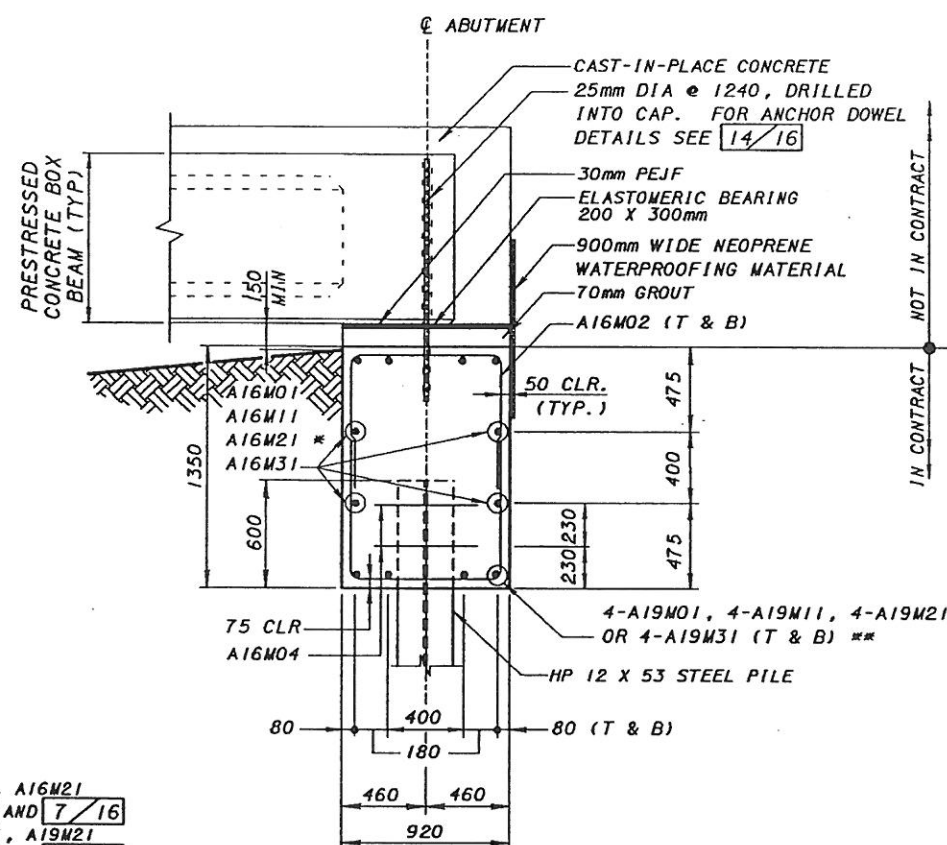


ELEVATION

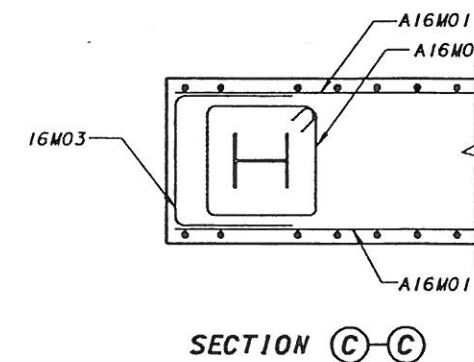


SECTION A-A
(FIXED CONNECTION)

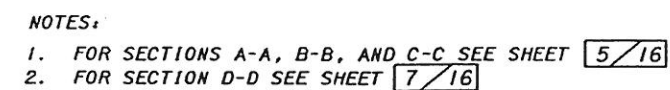
* FOR LOCATION OF BARS A16M11, A16M21
AND A16M31 SEE SHEET 6/16 AND 7/16
** FOR LOCATION OF BARS A19M11, A19M21
AND A19M31 SEE SHEET 6/16 AND 7/16



SECTION B-B
(EXPANSION CONNECTION)



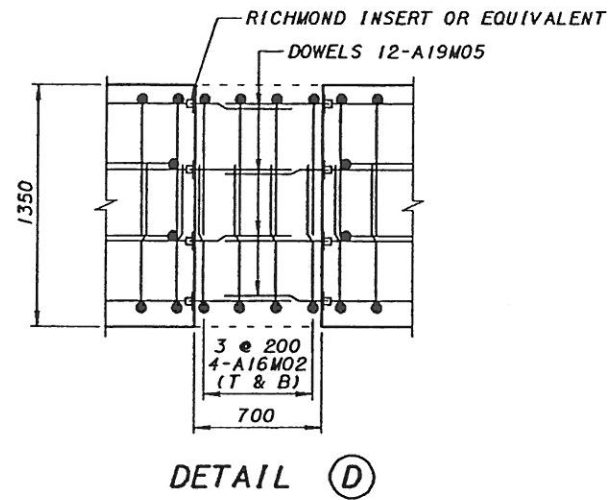
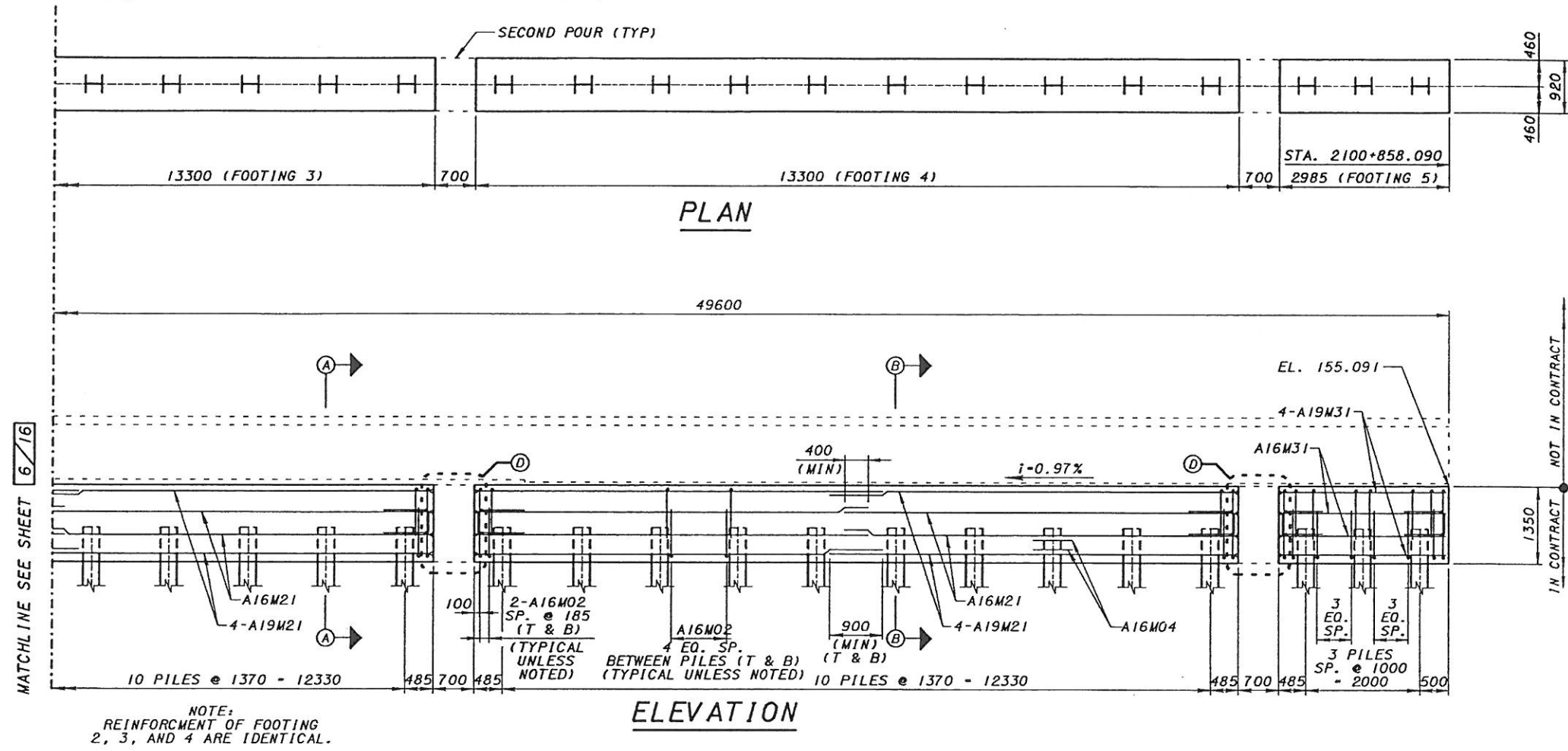
SECTION C-C



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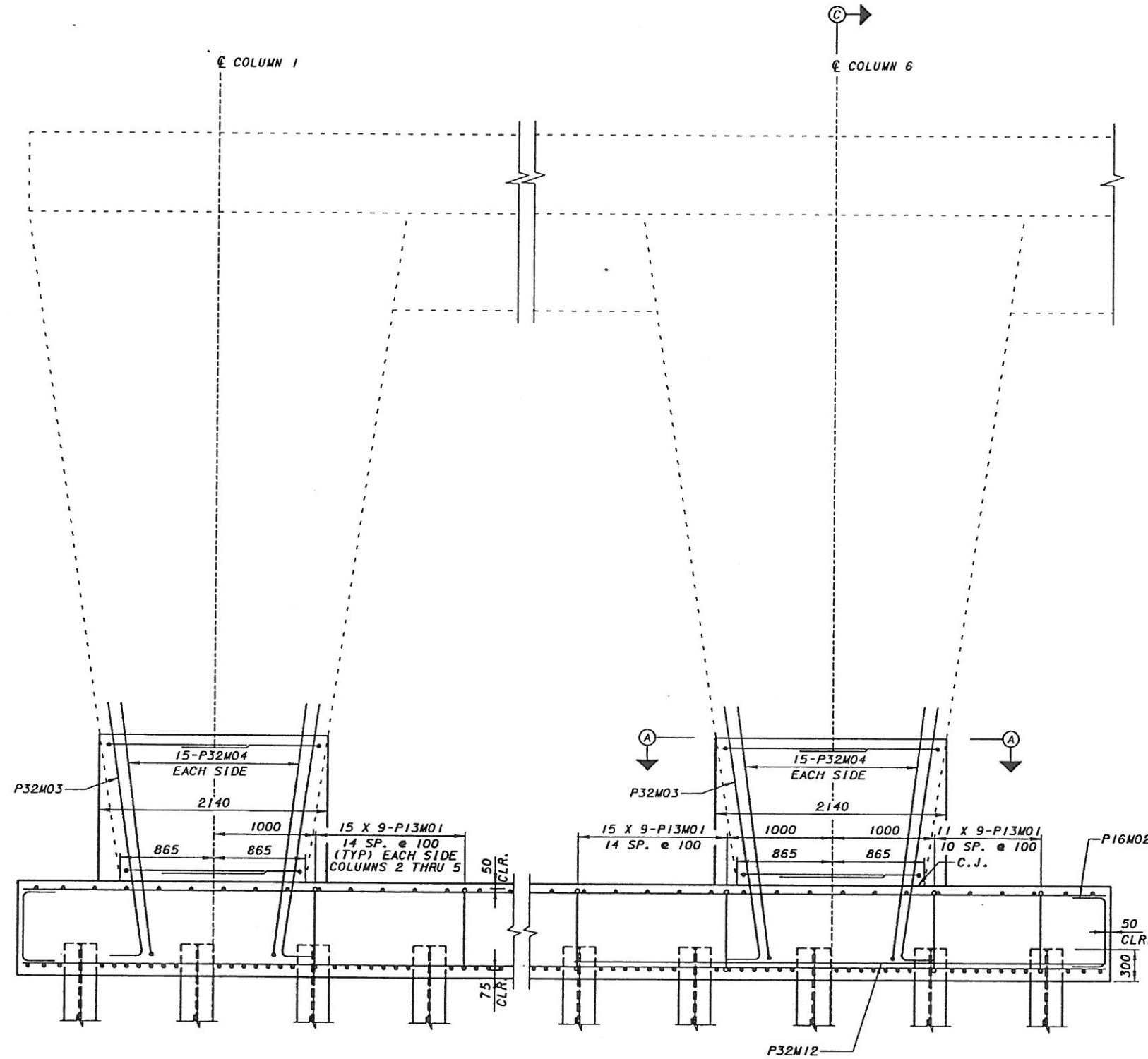


NOTES:
1. FOR SECTIONS A-A, B-B, AND C-C SEE SHEET 5/16

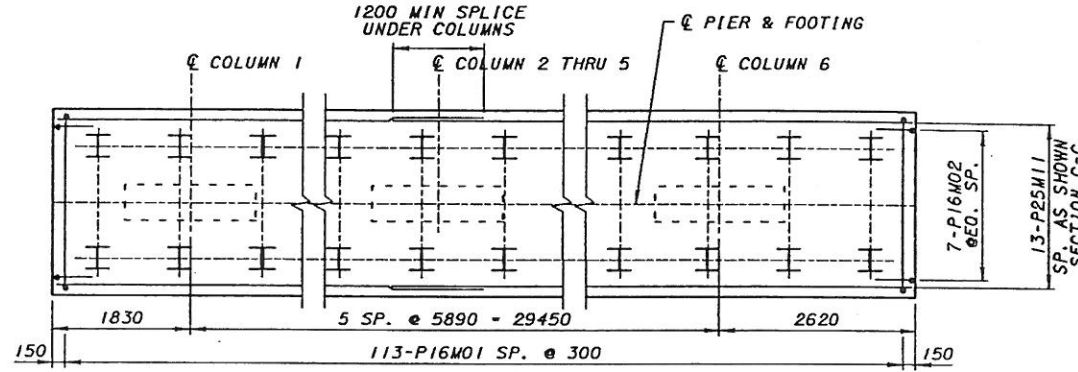
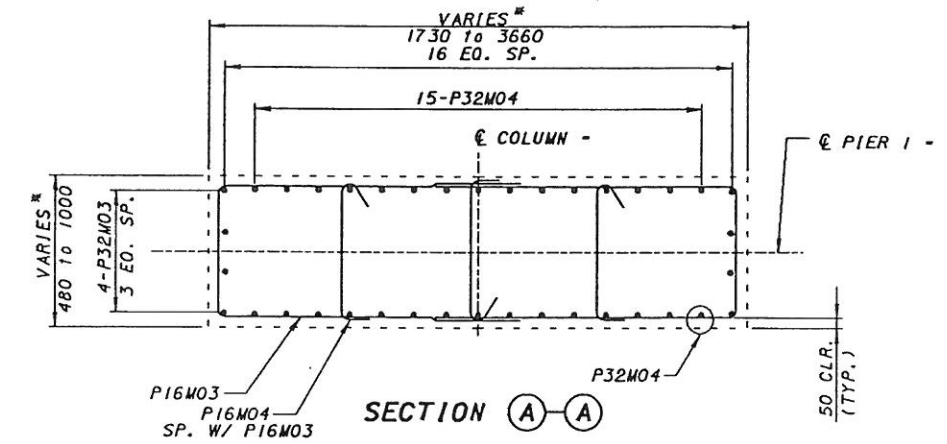
CITY OF CINCINNATI CONTRACT NO. 75X5753	SOUTH ABUTMENT REINFORCEMENT (SHEET 2 OF 2) DECK NUMBER 4 OVER FORT WASHINGTON WAY				HAMILTON COUNTY STA. 100+808.300 STA. 100+857.900	PREPARED VR	DRAWN SRL	REVIEWED JSH	REVISOR FILE NUMBER	DATE 6-30-00	DESIGN AGENCY PARSONS BRINCKERHOFF, INC. 318 ELM STREET, SUITE 2500 CINCINNATI, OH 45202-2720
											7/16

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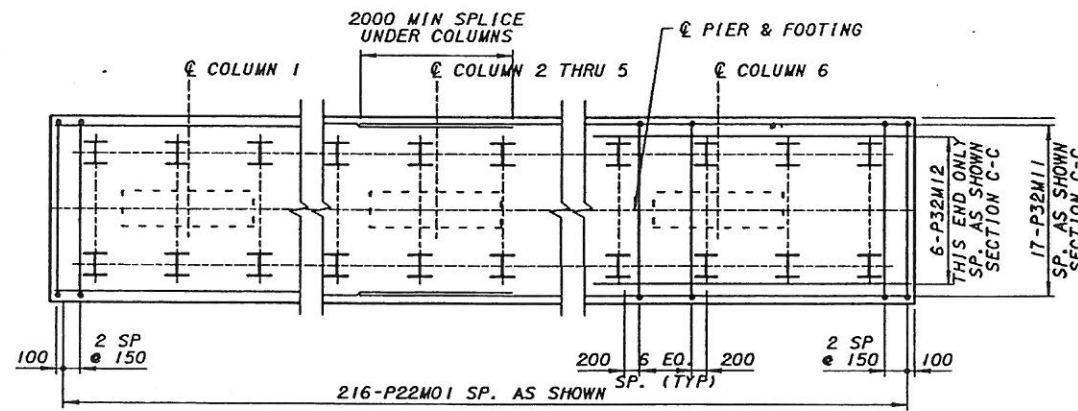
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SECTION B-B
SEE SHEET 10/16 FOR LOCATION OF SECTION B-B



PLAN FOOTING 1 TOP REINFORCING



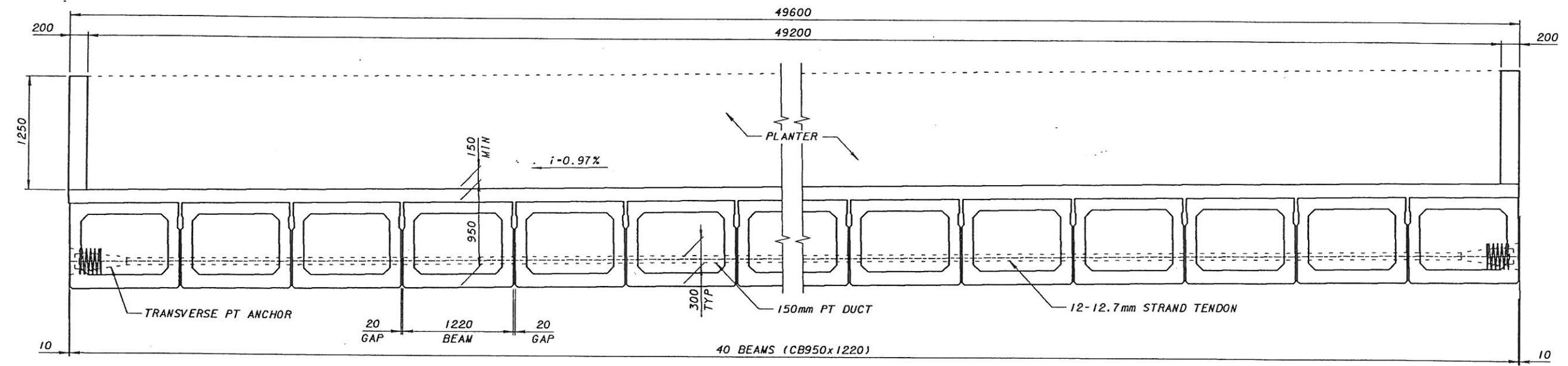
PLAN FOOTING 1 BOTTOM REINFORCING

* 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.

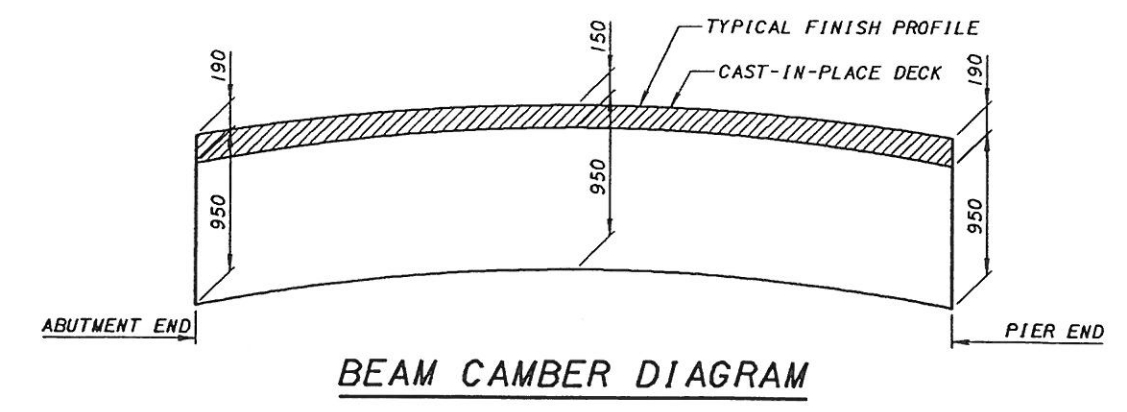
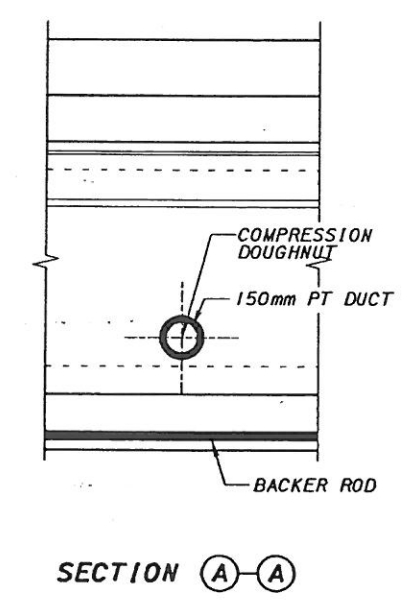
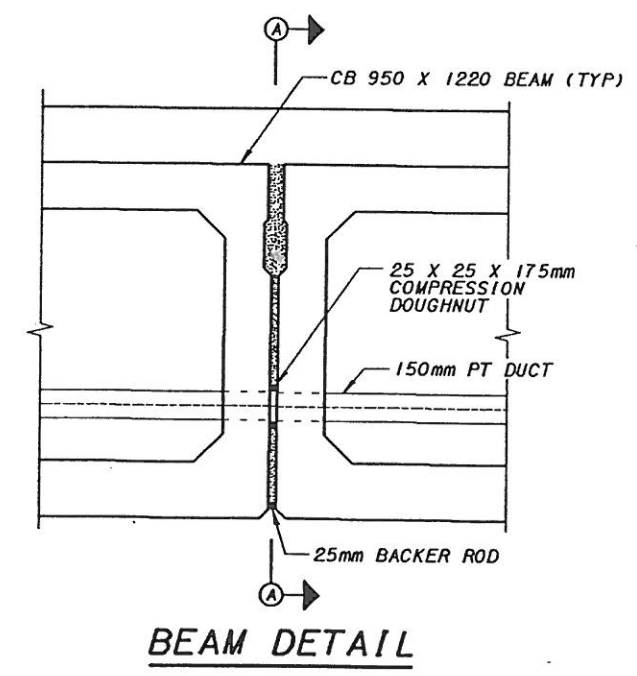
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TYPICAL CROSS SECTION



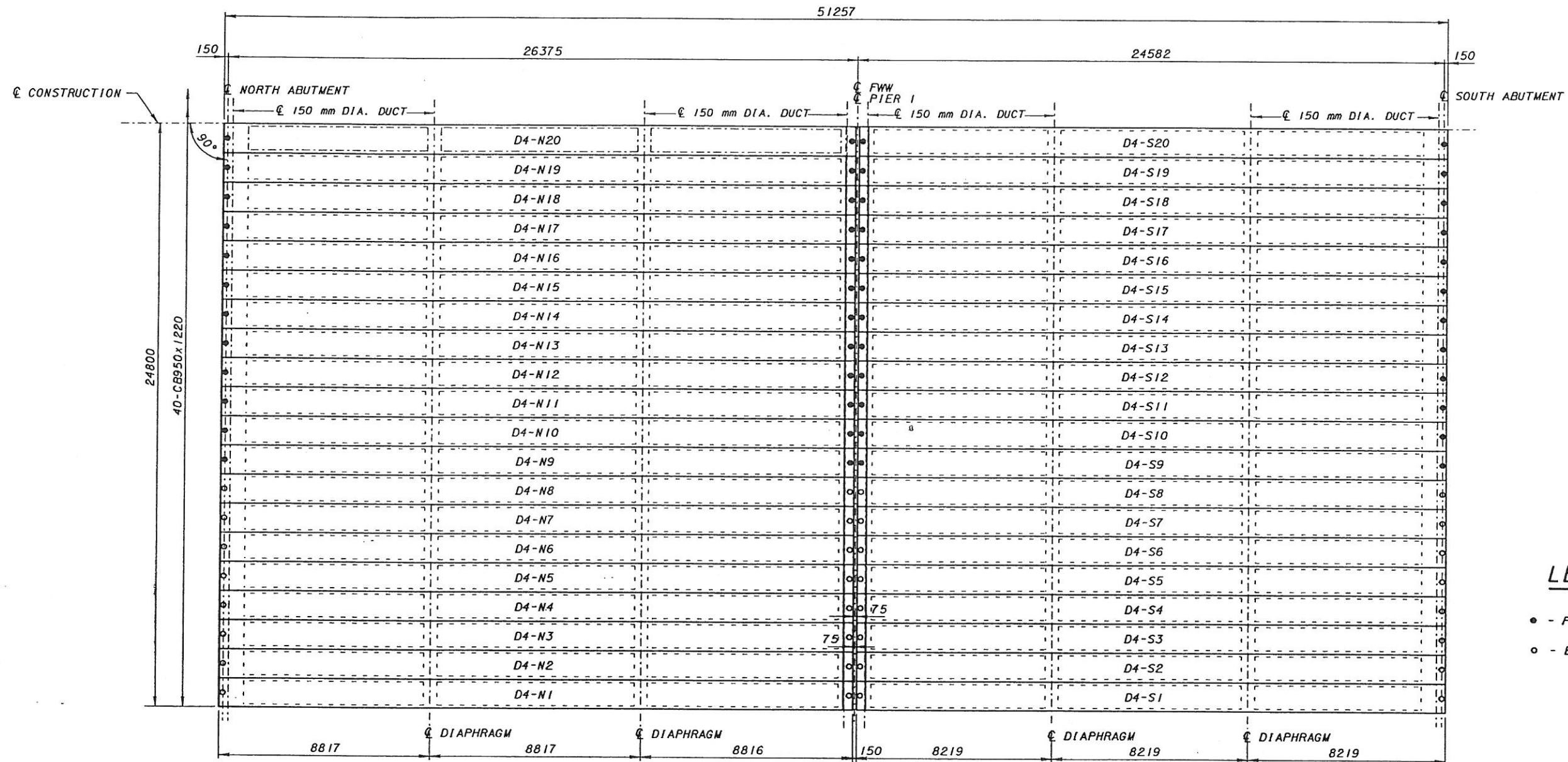
NOTES:
1. SEE NOTES 1 AND 2 ON SHEET 2/16

	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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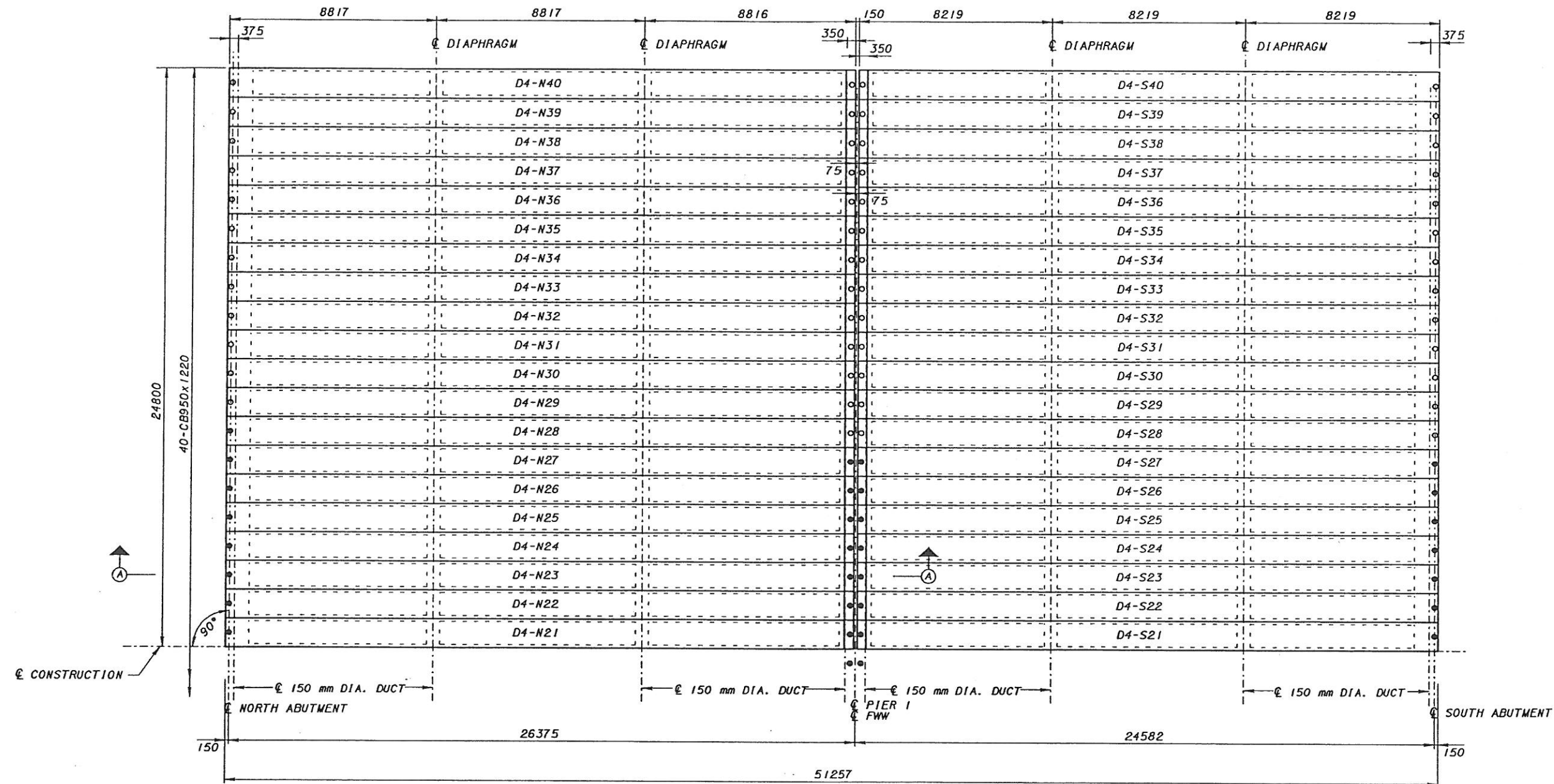
FRAMING PLAN

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

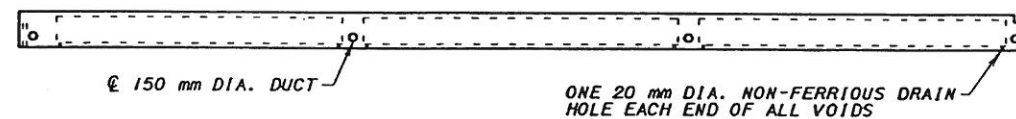
- - FIXED ANCHOR DOWELS
- - EXPANSION ANCHOR DOWELS, U.N.O.



FRAMING PLAN

NOTES:

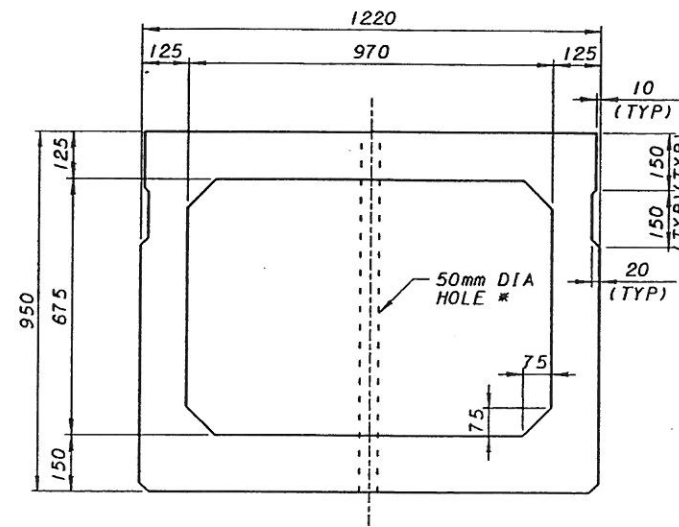
1. WORK TOGETHER WITH FRAMING PLAN 12/16



SECTION A-A

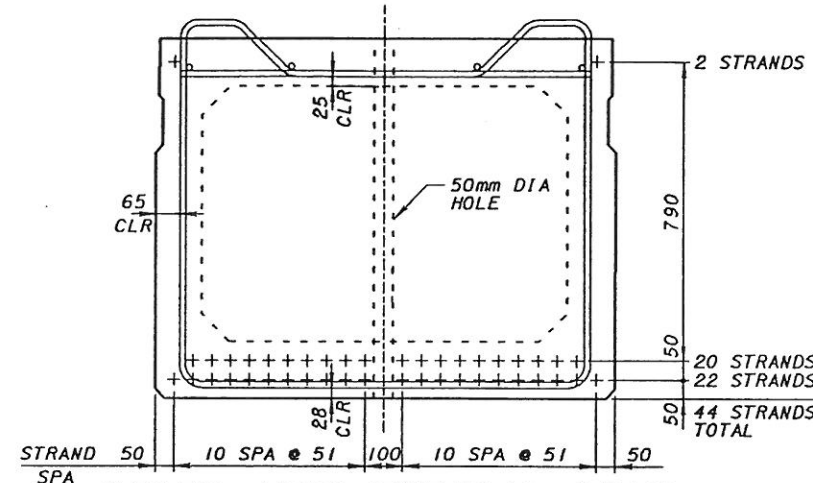
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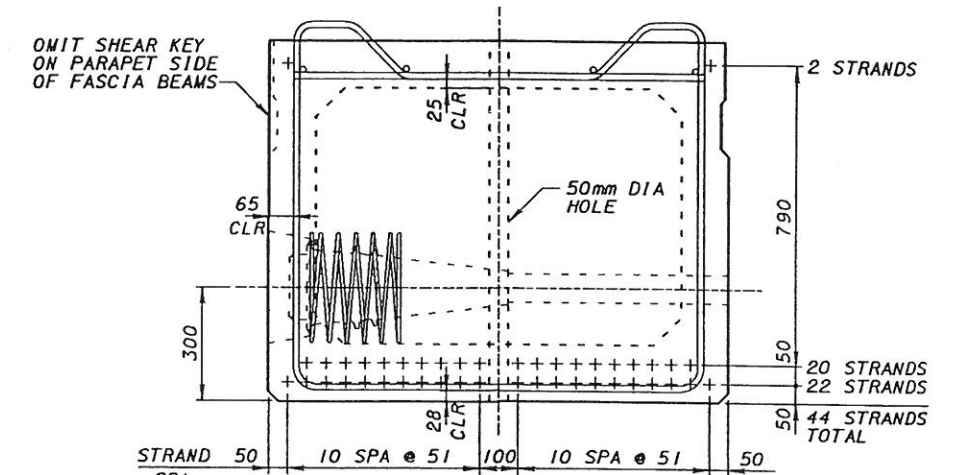


CROSS SECTION CB950x1220 BEAM

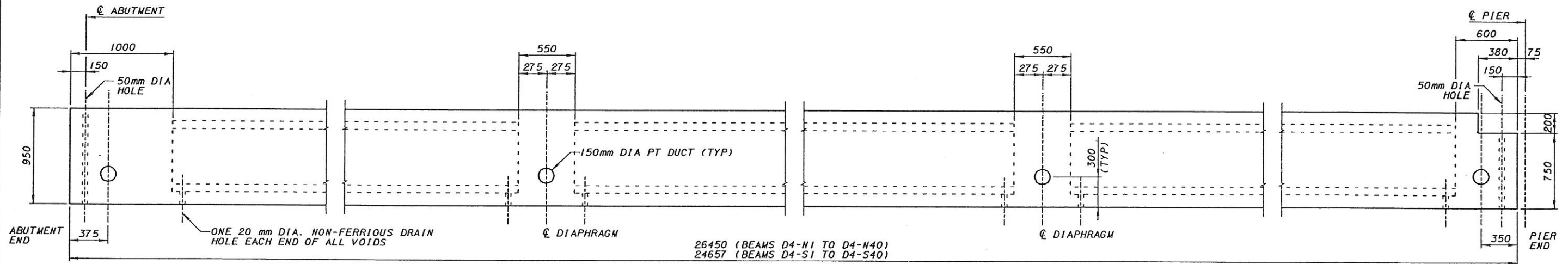
* FOR 25mm DIA SMOOTH DOWEL (L=1340)



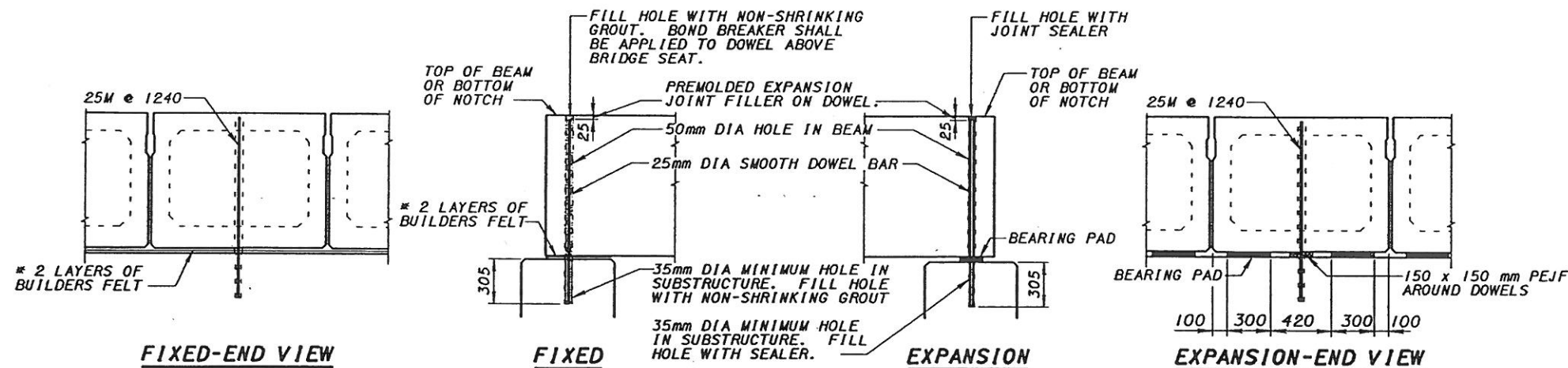
CB950x1220 TYPICAL BEAM



CB950x1220 END BEAM



ELEVATION



FIXED-END VIEW

FIXED

EXPANSION

EXPANSION-END VIEW

NOTE: DOWEL CLEARS ELASTOMERIC BEARING

DOWEL HOLE LOCATION

NOTES:

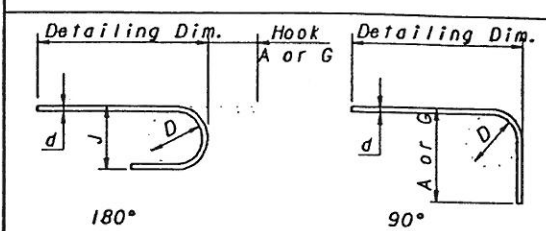
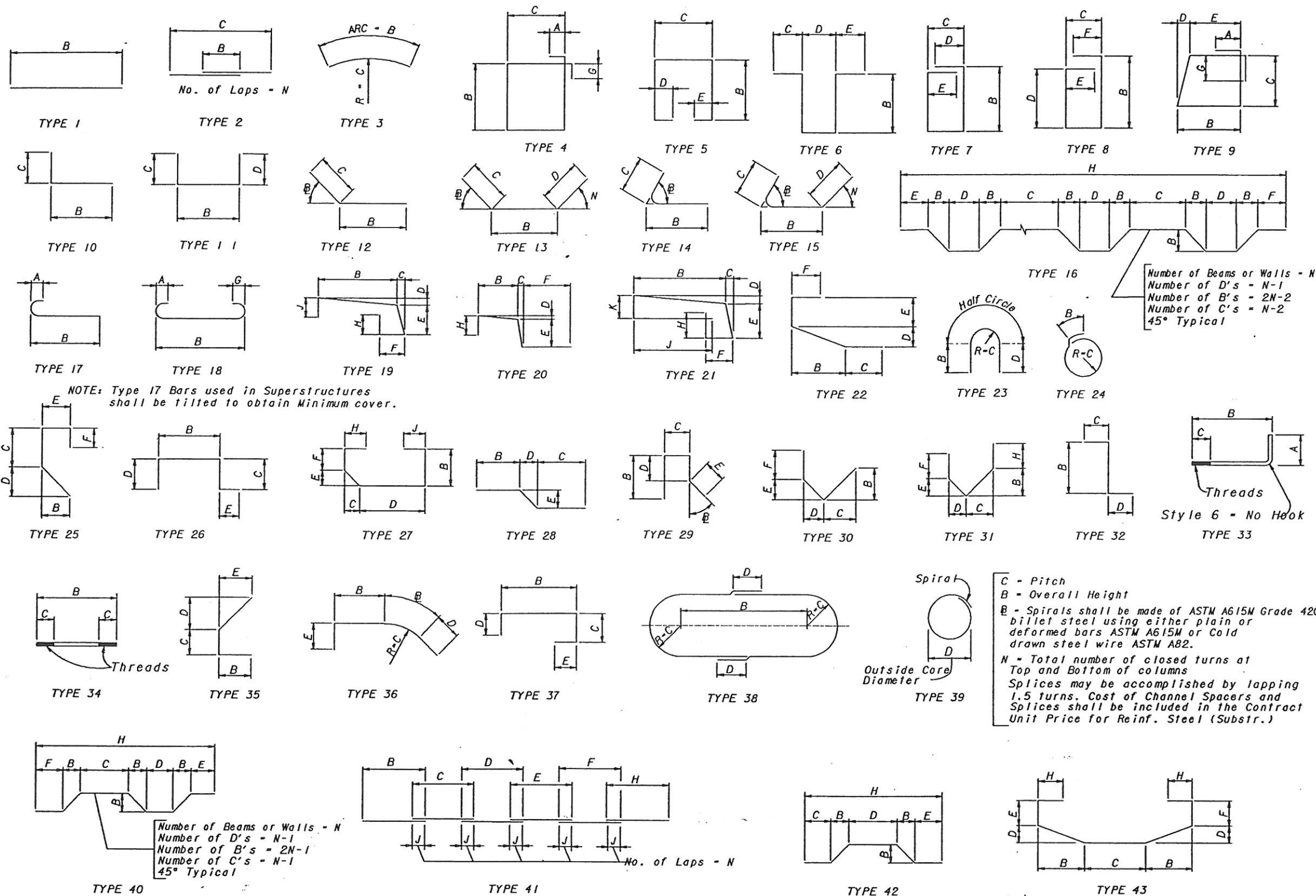
1. SEE NOTES 1 AND 2 ON SHEET

2/16

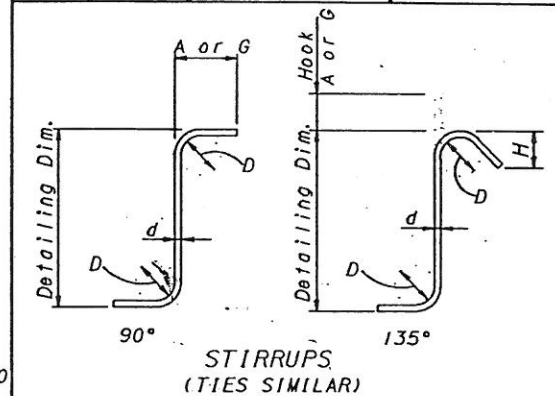
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BAR SIZE	D	180° HOOKS		90° HOOKS	
		A OR G	J	A OR G	
#10	60	125	80	150	
#13	80	150	105	200	
#16	95	175	130	250	
#19	115	200	155	300	
#22	135	250	180	375	
#25	155	275	205	425	
#29	240	375	300	475	
#32	275	425	335	550	
#36	305	475	375	600	
#43	465	675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

MARK	TOTAL	LENGTH	WEIGHT	TYPE	STYLE		DIMENSIONS (mm)								NO	ANG	REMARKS
	NUMBER	(mm)	(kg)		A	G	B	C	D	E	F	H	J	K	N	O	
PIER FOOTING																	
P13M01	1989	1005	1987	18	4	5	775										
P16M01	161	3600	900	11			2400	600	600								
P16M02	28	1335	58	11			735	300	300								
P22M01	306	3600	3351	11			2400	600	600								
P25M11	13	38600	1994	41			8270	7090	7090	7090	9060		1200				
P25M21	13	15400	796	2			1200	14200							1		
P32M11	17	41800	4551	41			8670	7890	7890	7890	9460		2000				
P32M12	6	5000	192	1			5000										
P32M21	17	16200	1764	2			2000	14200							1		
COLUMN STUB																	
P16M03	18	3635		11			495	1570	1570								
	SETS OF	T0	700				T0										
P16M03	7	3525		11			385	1570	1570								
P16M04	27	790		18	4	5	495										
	SETS OF	T0	216				T0										
P16M04	7	680		18	4	5	385										
P32M03	72	3050	1406	12			2750	300								98	
P32M04	270	3050	5274	12			2750	300								92	
NORTH ABUTMENT																	
A16M02	404	2450	1536	11			820	815	815								
A16M03	4	2085	13	11			785	650	650								
A16M04	68	3420	361	4	5	5	785	785									
A16M01	4	51100	317	2			400	49500							4		
A19M01	8	53100	949	2			900	49500							4		
SOUTH ABUTMENT																	
A16M02	352	2450	1338	11			820	815	815								
A16M03	20	2085	65	11			785	650	650								
A16M04	72	3420	382	4	5	5	785	785									
A19M11	4	4005	36	1			4005										
A19M21	12	13600	365	2			400	13200							1		
A19M31	4	2885	26	1			2885										
A19M11	8	4005	72	1			4005										
A19M21	24	14100	756	2			900	13200							1		
A19M31	8	2885	52	1			2885										

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 8.18.2.2.4 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, P19M01 IS A NO. 19M BAR.
7. FOR STYLE OF HOOK "A" OR "G" AND HOOK DIMNESIONS REFER TO THE STANDARD BAR BENDING DETAILS. TOTAL LENGTH AND WEIGHT OF BARS INCLUDE HOOKS.