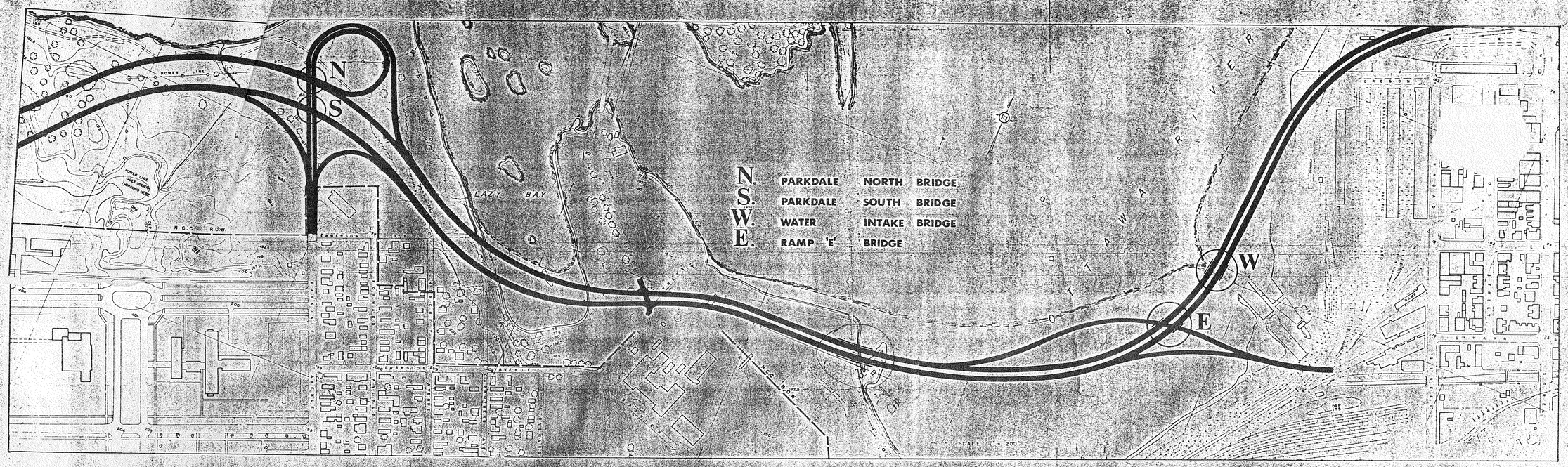
NCC - OTTAWA PARKWAY
BRIDGES H101704-3

OTTAWA RIVER PARKWAY

STRUCTURES CONTRACT



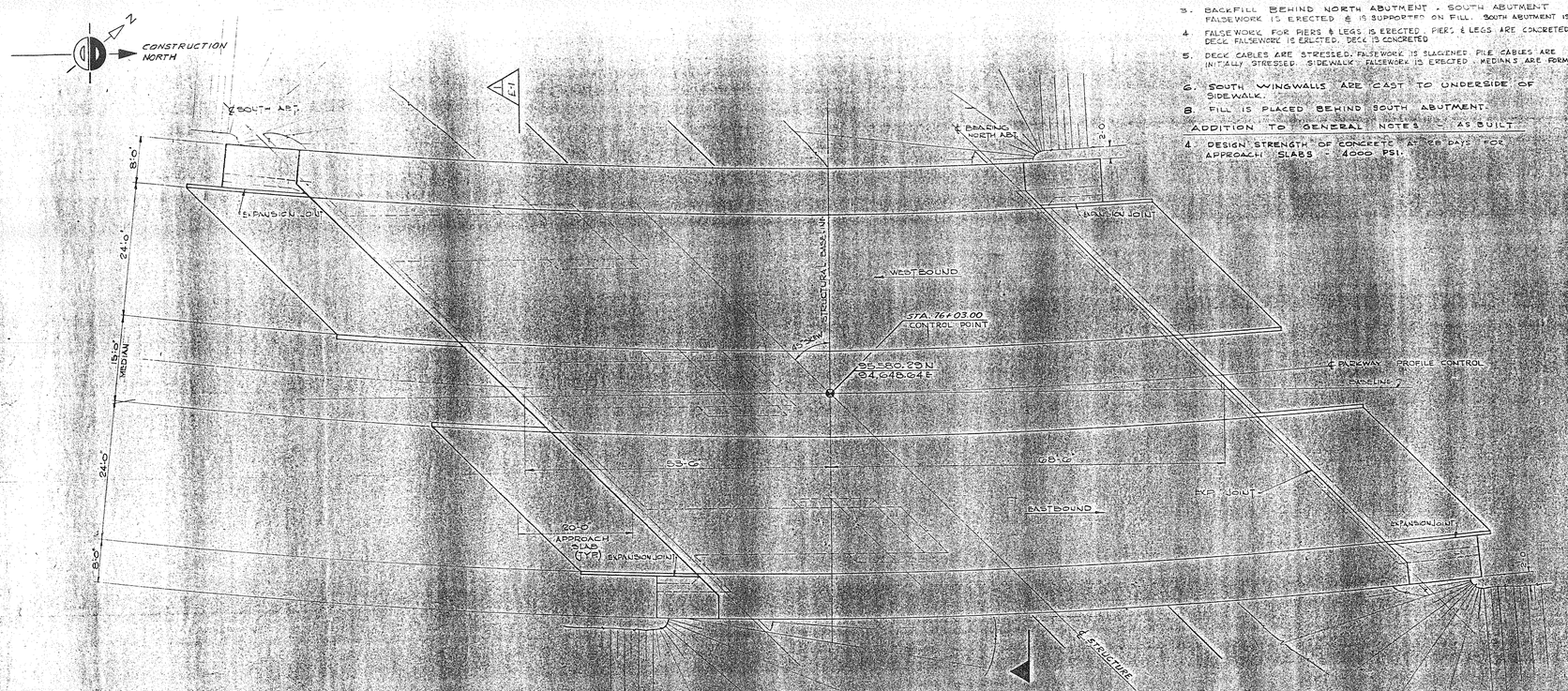
NATIONAL CAPITAL COMMISSION
OTTAWA

M.M. DILLON LIMITED

CONSULTING ENGINEERS

OTTAWA

NCC # 3951-8



DWG. NO.	DESCRIPTION
E - 1	GENERAL ARRANGEMENT
E - 2	FOUNDATION LAYOUT & PILE DETAILS
E - 3	FOUNDATION REINFORCING
E - 4	LAYOUT OF ABUTMENTS AND WINGWALLS
E - 5	ABUTMENT & WINGWALL REINFORCING
E - 6	PIER & LEG LAYOUT & REINFORCING
E - 7	DECK & APPROACH SLAB LAYOUT
E - 8	DECK & APPROACH SLAB REINFORCING
E - 9	DECK CABLE LAYOUT
E - 10	DECK CABLE PROFILES
E - 11	MISCELLANEOUS DETAILS
E - 12	REINFORCING STEEL SCHEDULE
E - 13	REINFORCING STEEL SCHEDULE
E - 14	REINFORCING STEEL SCHEDULE
E - 15	REINFORCING STEEL SCHEDULE

CONSTRUCTION SCHEDULE (IN CHRONOLOGICAL ORDER)

1. HOLES FOR PILES TO BE DRILLED THROUGH ROCK FILL AND INTO SOLID ROCK FOR LENGTHS SPECIFIED ON DRAWINGS. STEEL PIPE TO BE PLACED IN HOLE AND LOWERED DOWN TO SOLID ROCK. HOLES TO BE DEWATERED, REINFORCING AND STRAND CABLE TO BE LOWERED WITH GROUT TUBE, AND PILES TO BE CONCRETED. PILES NUMBER 2,3,4,5 TO BE STRESSED. STRESSING CABLE IS TO BE GROUTED.
2. NORTH ABUTMENT AND CENTRE FOOTINGS TO BE CONCRETED.
3. ~~FALSEWORK TO COMPLETE STRUCTURE TO BE ERECTED AND, FORMWORK STRUCK THEREON. SOUTH ABUTMENT IS SUPPORTED ON FALSEWORK WITH A 3" GAP BETWEEN THE UNDERSIDE OF THE ABUTMENT AND THE TOPS OF PILES NO. 2,3,4,5.~~
4. ~~THE LEGS, PIERS, AND DECK BETWEEN LONGITUDINAL CONSTRUCTION JOINTS AT THE SIDES AND WITHOUT THE SIDEWALKS, MEDIAN OR WINGWALLS (BUT INCLUDING THE SOUTH ABUTMENT) ARE CONCRETED. THIS MAY BE DONE IN STAGES WITH APPROVED CONSTRUCTION JOINTS TO BE SUGGESTED BY THE CONTRACTOR.~~
5. ~~THE DECK CABLES ARE STRESSED, THE DECK POUR COMPLETED TO UNDER SIDE OF SIDEWALK, AND THE FALSEWORK THEN STRUCK. THE CABLES FROM PILES 2,3,4,5 ARE PARTIALLY STRESSED AT THE TOP OF THE DECK, THE GAP AT THE TOP OF PILES 2,3,4,5 AFTER SEALING OFF THE CABLEDUCT, IS TO BE FILLED WITH DRY GROUT. THE CABLES OF PILES 2,3,4,5 ARE THEN FINALLY STRESSED.~~
6. WINGWALLS ARE CAST TO UNDERSIDE OF SIDEWALKS.
7. SIDEWALKS AND MEDIAN TO THE DECK ARE CAST AND STRESSED, AND ANCHOR BOLTS TIGHTENED AND GROUTED.
8. ~~FILL IS PLACED BEHIND ABUTMENTS.~~
9. SIDEWALKS TO WING WALLS AND APPROACH SLABS ARE CAST.

GENERAL NOTES

1. ROCK ELEVATIONS SHOWN ON THE DRAWING HAVE BEEN DERIVED FROM A SOILS REPORT, COPIES OF WHICH ARE AVAILABLE FOR EXAMINATION AT M.M.DILLON LTD., OTTAWA. M.M.DILLON LTD. IN NO WAY GUARANTEES THE ACCURACY OF THESE REPORTS.
2. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PREVENT RAIN OR SURFACE WATER FROM COLLECTING IN THE EXCAVATION UNTIL THE BACKFILL IS PLACED AND COMPACTED TO THE TOP OF FOOTING.
3. LIVE LOAD: AASHO H20-S16
4. CONCRETE CLASS:
   DESIGN STRENGTH OF CONCRETE AT 28 DAYS
   PILES, FOOTINGS & NORTH ABUTMENT WITH WINGWALLS 3000 P.S.I.
   REMAINDER 5000 P.S.I.
   STRENGTH AT TRANSFER OF PRESTRESS 4500 P.S.I.
5. CONCRETE COVER:
   FOOTINGS 3"
   DECK & SIDEWALKS 1½"
   REMAINDER 2"
6. CHAMFER: ALL EXPOSED EDGES, UNLESS OTHERWISE NOTED ¾"
7. REINFORCING STEEL: UNLESS OTHERWISE NOTED, TO BE INTERMEDIATE GRADE DEFORMED BARS.
8. DIMENSIONS, WHICH VARY WITH TEMPERATURE, ARE GIVEN AT 60°F
9. DECK ELEVATIONS ARE GIVEN TO TOP OF CONCRETE SURFACE.
10. TOP OF SIDEWALK OR CURB TO BE SET BY ELEVATIONS.

PRINT RECORD

NO.	DATE	FOR

SPECIFICATIONS

M. M. DILLON LIMITED
LONDON • TORONTO • OTTAWA • WINNIPEG • SUDBURY • WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

NATIONAL CAPITAL COMMISSION

NO.	REVISIONS	DATE	BY
1	AS-BUILT CHANGES & ADDITIONS NOTED.	16/8/67	JDES

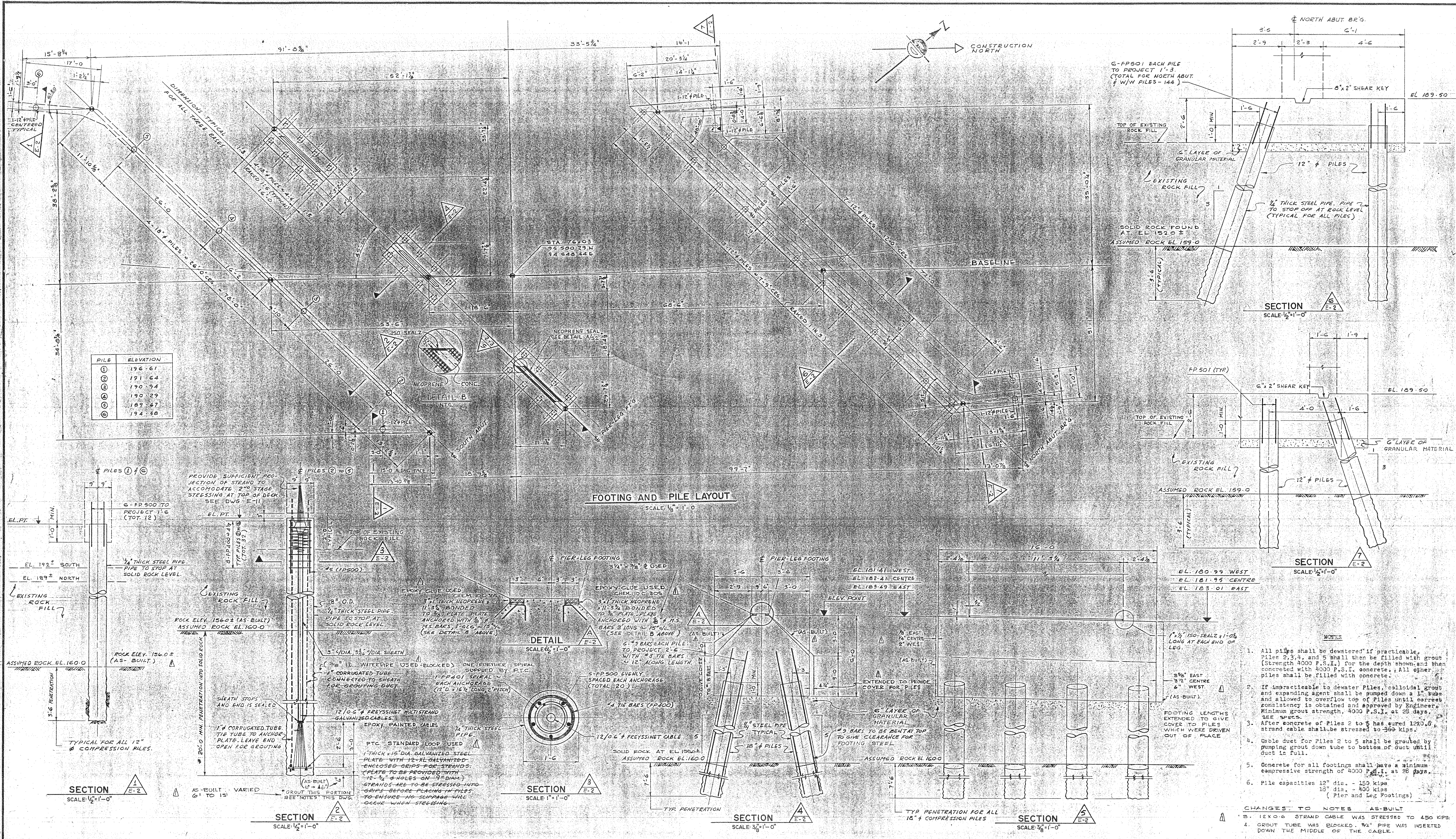
DESIGN	V.J.B.
DRAWN	C.L.S.
CHECKED	A.I.W.
APPROVED	
DATE	FEB. 66
SCALE	AS SHOWN

GENERAL ARRANGEMENT

OTTAWA RIVER PARKWAY
RAMP 'E' STRUCTURE

NCC # 205-6

PROJECT NO. 5877-20-4
SHEET NO. E-1
OF 15


FOOTING AND PILE LAYOUT
SCALE: 1/8" = 1'-0
CONSTRUCTION NORTH
BASELINE
DIMENSIONS TYPICAL FOR ALL THREE BASES
4-18" ϕ PILES @ 4'-6 RAKED 1:5 (TYPICAL) 16'-0
4-18" ϕ PILES @ 26'-0" CRS = 78'-0"
13-12" ϕ PILES @ 7'-9" CRS. (RAKED 1 IN 3)
7-12" ϕ PILES @ 12'-0" CRS = 72'-0
STA. 76+03
95 580.29 N
94 648.64 E
NEOPRENE SEAL SEE DETAIL A/S2
1-12" ϕ PILE CENTERED TYPICAL
℄ SOUTH ABUT.
℄ NORTH ABUT. BR'G.
℄ PIER-LEG FT'G
15'-0 ALONG FACE
DETAIL B
NTS.
150-SEALZ
NEOPRENE
CONC.
91'-8 5/8"
33'-5 3/4"
52'-1 7/8"
99'-7"
68'-6"
53'-6
PILE | ELEVATION
① 196·61
② 191·64
③ 190·94
④ 190·29
⑤ 189·67
⑥ 194·58
℄ PILES ① & ⑥
6-FP 500 TO PROJECT 1'-6 (TOT. 12)
EL. PT.
1/4" THICK STEEL PIPE. PIPE TO STOP AT SOLID ROCK LEVEL.
EL. 192± SOUTH
EL. 189± NORTH
EXISTING ROCK FILL
ROCK ELEV. 156.0 ± (AS-BUILT.)
ASSUMED ROCK EL. 160·0
3'-6 PENETRATION
TYPICAL FOR ALL 12" ϕ COMPRESSION PILES.
SECTION 1 E-2
SCALE: 1/2"=1'-0"
AS-BUILT VARIED 6' TO 15'
℄ PILES ② TO ⑤
PROVIDE SUFFICIENT PROJECTION OF STRAND TO ACCOMODATE 2ND STAGE STRESSING AT TOP OF DECK. SEE DWG E-11
8-FP400 @ 4 1/2 TYP. PILES ② TO ⑤ (TOT. 32)
2'-0 TYPICAL
TOP OF EXISTING ROCK FILL
#5 (FP500)
EXISTING ROCK FILL
18" O.D.
1/4" THICK STEEL PIPE. PIPE TO STOP AT SOLID ROCK LEVEL.
ROCK ELEV. 156.0 ± (AS-BUILT)
ASSUMED ROCK EL. 160.0
3" I/DIA. 3 3/16" O/DIA. SHEATH
(3/8" I.D. WATERPIPE USED-BLOCKED)
1" CORRUGATED TUBE CONNECTED TO SHEATH FOR GROUTING DUCT
SHEATH STOPS AND END IS SEALED
12/0.6" ϕ FREYSSINET MULTISTRAND GALVANIZED CABLES
EPOXY PAINTED CABLES
1" ϕ CORRUGATED TUBE. TIE TUBE TO ANCHOR PLATE. LEAVE END OPEN FOR GROUTING
* 20'-0 MIN. PENETRATION INTO SOLID ROCK
PTC STANDARD LOOP USED
1" THICK x 15" DIA. GALVANIZED STEEL PLATE WITH 12-XL GALVANIZED ENCLOSED GRIPS FOR STRANDS. (PLATE TO BE PROVIDED WITH 12-3/4" ϕ HOLES ON 9" DIAM.) STRANDS ARE TO BE STRESSED INTO GRIPS BEFORE PLACING IN PILES TO ENSURE NO SLIPPAGE WILL OCCUR WHEN STRESSING.
(AS-BUILT 6" → 46")
* GROUT THIS PORTION SEE NOTES THIS DWG.
SECTION 2 E-2
SCALE: 1/2"=1'-0"
EPOXY GLUE USED CHEM. 10C 305
3" x 1" THICK NEOPRENE x 11-3/4 BONDED TO 3/8" PLATE. PLATE ANCHORED WITH 3/8" ϕ M.S. BARS, 3'-0 LG. @ 15" c/c. (SEE DETAIL B ABOVE.)
℄ PIER-LEG FOOTING
3 1/4" x 3/8" ℞ USED
DETAIL A E-2
SCALE: 1/2"=1'-0"
ONE FURTHER SPIRAL SUPPLIED BY P.T.C.
1-FP401 SPIRAL @ EACH ANCHORAGE (12" D. x 16 1/2 LONG, 2" PITCH)
5-FP500 EVENLY SPACED EACH ANCHORAGE (TOTAL 20)
#4 TIE BARS (FP400)
1/4" THICK STEEL PIPE.
12/0.6" ϕ FREYSSINET CABLE
SECTION 3 E-2
SCALE: 1"=1'-0"
6-#9 BARS EACH PILE TO PROJECT 2'-6 WITH #3 TIE BARS @ 12" ALONG LENGTH.
1/4" STEEL PIPE TYPICAL
18" ϕ PILES
SOLID ROCK AT EL 155.0±
ASSUMED ROCK EL. 160.0
TYP. PENETRATION
#9 BARS TO BE BENT AT TOP TO GIVE CLEARANCE FOR FOOTING STEEL
6" LAYER OF GRANULAR MATERIAL
EXTENDED TO PROVIDE COVER FOR PILES
EL. 181·41 WEST
EL. 182·41 CENTRE
EL. 183·49 EAST
ELEV. POINT
1/8" EAST 1/4" CENTRE 2" WEST (AS-BUILT)
SECTION 4 E-2
SCALE: 3/8"=1'-0"
EL. 180·99 WEST
EL. 181·95 CENTRE
EL. 183·01 EAST
1" x 1/2" ISO-SEALZ x 1'-0 3/4 LONG AT EACH END OF LEG.
3 5/8" EAST 3 1/2" CENTRE 6" WEST (AS-BUILT)
FOOTING LENGTHS EXTENDED TO GIVE COVER TO PILES WHICH WERE DRIVEN OUT OF PLACE
ASSUMED ROCK EL. 160.0
TYP. PENETRATION FOR ALL 18" ϕ COMPRESSION PILES
SECTION 5 E-2
SCALE: 3/8"=1'-0"
℄ NORTH ABUT. BR'G.
6-FP501 EACH PILE TO PROJECT 1'-3. (TOTAL FOR NORTH ABUT. & W/W PILES - 144)
8" x 2" SHEAR KEY
EL 189·50
TOP OF EXISTING ROCK FILL
6" LAYER OF GRANULAR MATERIAL
12" ϕ PILES
EXISTING ROCK FILL
1/4" THICK STEEL PIPE. PIPE TO STOP OFF AT ROCK LEVEL (TYPICAL FOR ALL PILES)
SOLID ROCK FOUND AT EL 152.0 ±
ASSUMED ROCK EL. 159·0
3'-6 (TYPICAL)
SECTION 6 E-2
SCALE: 1/2"=1'-0"
FP 501 (TYP.)
6" x 2" SHEAR KEY
EL. 189·50
TOP OF EXISTING ROCK FILL
6" LAYER OF GRANULAR MATERIAL
EXISTING ROCK FILL
12" ϕ PILES
ASSUMED ROCK EL. 159.0
SECTION 7 E-2
SCALE: 1/2"=1'-0"

NOTES

1. All piles shall be dewatered if practicable. Piles 2,3,4, and 5 shall then be filled with grout (Strength 4000 P.S.I.) for the depth shown and then concreted with 4000 P.S.I. concrete. All other piles shall be filled with concrete.
2. If impracticable to dewater Piles, colloidal grout and expanding agent shall be pumped down a 1" tube and allowed to overflow top of Piles until correct consistency is obtained and approved by Engineer. Minimum grout strength, 4000 P.S.I. at 28 days. SEE SPECS.
3. After concrete of Piles 2 to 5 has cured 12x0.6 strand cable shall be stressed to ~~360~~ kips.
4. Cable duct for Piles 2 to 5 shall be grouted by pumping grout down tube to bottom of duct until duct is full.
5. Concrete for all footings shall have a minimum compressive strength of 4000 P.S.I. at 28 days.
6. Pile capacities 12" dia. - 150 kips
   18" dia. - 400 kips
   (Pier and Leg Footings)

CHANGES TO NOTES AS-BUILT

3. 12X0.6 STRAND CABLE WAS STRESSED TO 450 KIPS.
4. GROUT TUBE WAS BLOCKED. 3/4" PIPE WAS INSERTED DOWN THE MIDDLE OF THE CABLE.

PRINT RECORD	NO.	FOR	DATE

SPECIFICATIONS

REGISTERED PROFESSIONAL ENGINEER CIVIL J. H. KEARNEY PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER V. J. BROMLEY PROVINCE OF ONTARIO

M. M. DILLON LIMITED
LONDON · TORONTO · OTTAWA · WINNIPEG · SUDBURY · WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

NATIONAL CAPITAL COMMISSION

NO.	REVISIONS	DATE	BY
△	AS-BUILT CHANGES & ADDITIONS NOTED	28/8/67	J.D.E.S

DESIGN	V. J. B.
DRAWN	J. O'N.
CHECKED	A. I. W.
APPROVED	
DATE	FEB. 66.
SCALE	AS SHOWN

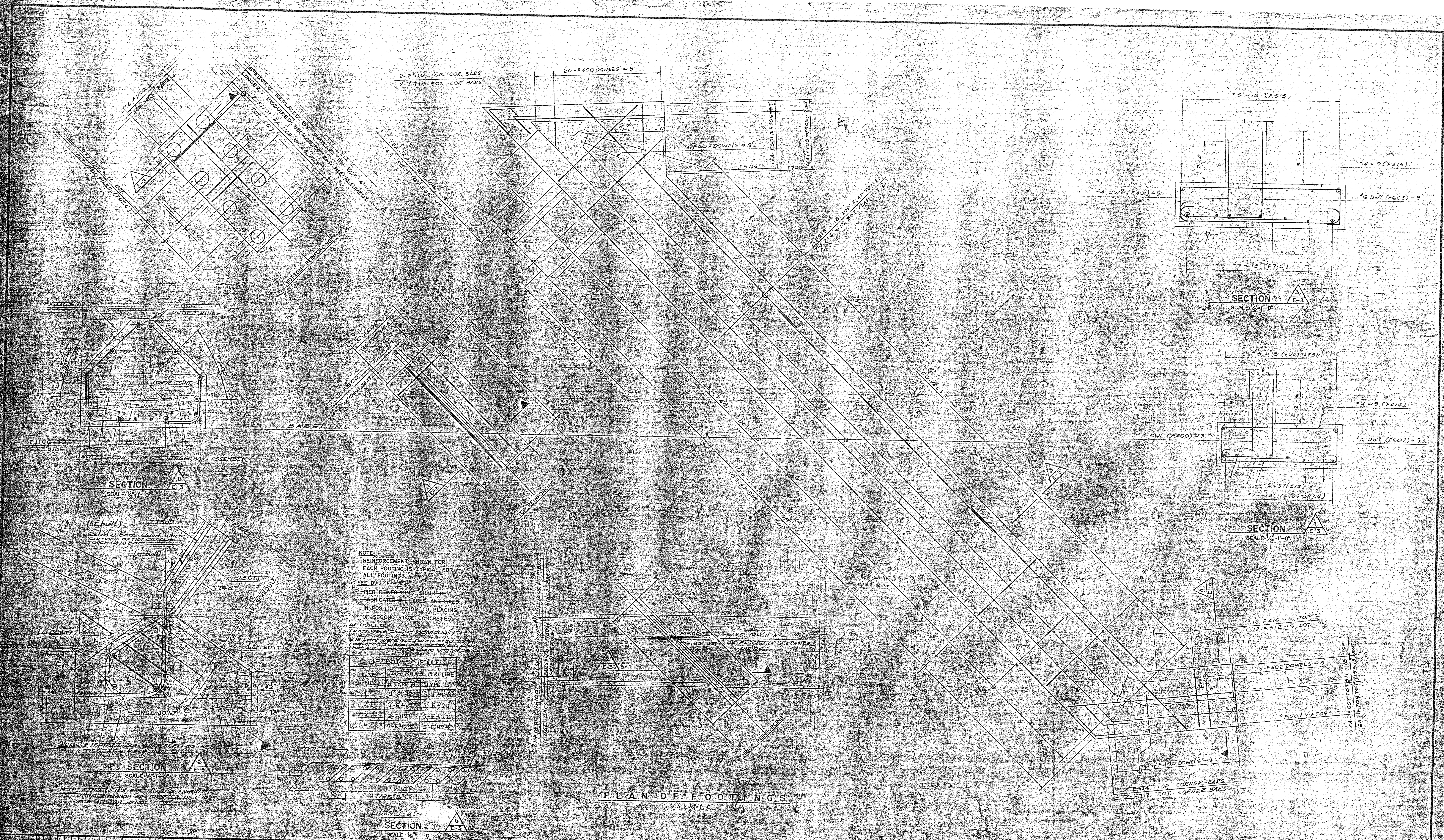
FOUNDATION LAYOUT AND PILE DETAILS

OTTAWA RIVER PARKWAY

RAMP "E" STRUCTURE

PROJECT NO. 5877-20-4
SHEET NO. E-2
OF 15

NCC #3951-8



6-F1100 SEE SECT 1/E-3
6-F1101'S REPLACED BY SIMILAR #11'S BUT 4' LONGER. REQUIRED BECAUSE OF BAD PILE ALIGNMENT
2-F1101 EA. SIDE OF EA. PILE (TOT. 16)
2-F1100 ~11 BOT BETWEEN PILES (TOT. 6)
BOTTOM REINFORCING
2-F515 TOP COR. BARS
2-F718 BOT. COR. BARS
1 EA.-F402 TO F406 ~9 TOP
1 EA.-F802 TO F806 ~9 BOT.
20-F400 DOWELS ~9
14-F602 DOWELS ~9
F506
F708
1 EA.-F501 TO F506 ~9 BOT.
1 EA.-F700 TO F708 ~12 BOT.
7-F513 ~18 TOP (LAP TOT. 21)
7-F716 ~18 BOT (LAP TOT. 21)
1 EA.-F407 TO F414 ~9 TOP
1 EA.-F807 TO F814 ~9 BOT.
123-F401 DOWELS ~9
105-F415 ~9 TOP
106-F815 ~9 BOT.
119-F603 DOWELS ~9
F600
UNDER HINGE
F601 ~12
F600
F600
CONST. JOINT
F1101
F1100 BOT EA. SIDE
F1100 ~11
BASELINE
NOTE: FOR CLARITY HINGE BAR ASSEMBLY OMITTED.
SECTION 1 E-3
SCALE: 1/2"=1'-0"
6-F600 TOP SEE SECT 1/E-3
2-F800 UNDER SEAT
TOP REINFORCING
#5 ~18 (F513)
2'-4
3'-0
#4 ~9 (F415)
#4 DWL (F401) ~9
#6 DWL (F603) ~9
F815
#7 ~18 (F716)
SECTION 3 E-3
SCALE: 1/2"=1'-0"
#5 ~18 (F507 TO F511)
2'-6
#4 ~9 (F416)
#4 DWL (F400) ~9
#6 DWL (F602) ~9
#5 ~9 (F512)
#7 ~13" (F709 TO F715)
SECTION 4 E-3
SCALE: 1/2"=1'-0"
(As built)
Extra U bars added where corners of tier did not touch #18 bars
F1800
(As built)
F1801
2 3/4 CL.
4 LINES @ 12 SEE TIE BAR SCHEDULE
(AS BUILT)
(AS BUILT)
2ND STAGE
1ST STAGE
CONST. JOINT
LINES
NOTE: F1800 & F1801 HINGE BARS TO BE TIED AT BASE & HINGE
SECTION 2 E-3
SCALE: 1/2"=1'-0"
NOTE: F1800 & F1801 BARS SHALL BE FABRICATED USING A MINIMUM PIN DIAMETER OF 1'-10 1/2" FOR ALL BAR BENDS.
TYPE "A"
EAST
WEST
TYPE "B"
LINES 1-4
SECTION 5 E-3
SCALE: 1/2"=1'-0
HINGE BARS
F1800 T.
F1801 BOT.
BARS TOUCH AND SHALL BE PLACED IN SEQUENCE SHOWN.
HINGE REINFORCING
12-F416 ~9 TOP
12-F512 ~9 BOT.
18-F602 DOWELS ~9
1 EA.-F507 TO F511 ~18 TOP
1 EA.-F709 TO F715 ~13 BOT.
F507 & F709
17-F400 DOWELS ~9
2-F514 TOP CORNER BARS
2-F717 BOT. CORNER BARS
PLAN OF FOOTINGS
SCALE: 1/4"=1'-0"

NOTE:
REINFORCEMENT SHOWN FOR EACH FOOTING IS TYPICAL FOR ALL FOOTINGS.
SEE DWG. E-6
~~PIER REINFORCING SHALL BE FABRICATED IN CAGES AND FIXED~~ IN POSITION PRIOR TO PLACING OF SECOND STAGE CONCRETE.
As built:
bars were placed individually
#18 bars were not fabricated to required tolerances as stelco claim that this cannot be done with hot bending

TIE BAR SCHEDULE		
LINE NO.	TIE BARS PER LINE TYPE "A"	TYPE "B"
1	2-F417	5-F418
2	2-F419	5-F420
3	2-F421	5-F422
4	2-F423	5-F424

PRINT RECORD

SPECIFICATIONS

REGISTERED PROFESSIONAL ENGINEER CIVIL J. H. KEARNEY PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER V. J. BROMLEY PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER CIVIL J. H. WOTHERSPOON

M. M. DILLON LIMITED
LONDON · TORONTO · OTTAWA · WINNIPEG · SUDBURY · WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

NATIONAL CAPITAL COMMISSION

NO.	REVISIONS	DATE	BY
1	AS BUILT CHANGES & ADDITIONS NOTED	28/8/67	J.S.

DESIGN V.J.B.
DRAWN J. O'N.
CHECKED A.I.W.
APPROVED
DATE FEB. 66
SCALE AS SHOWN

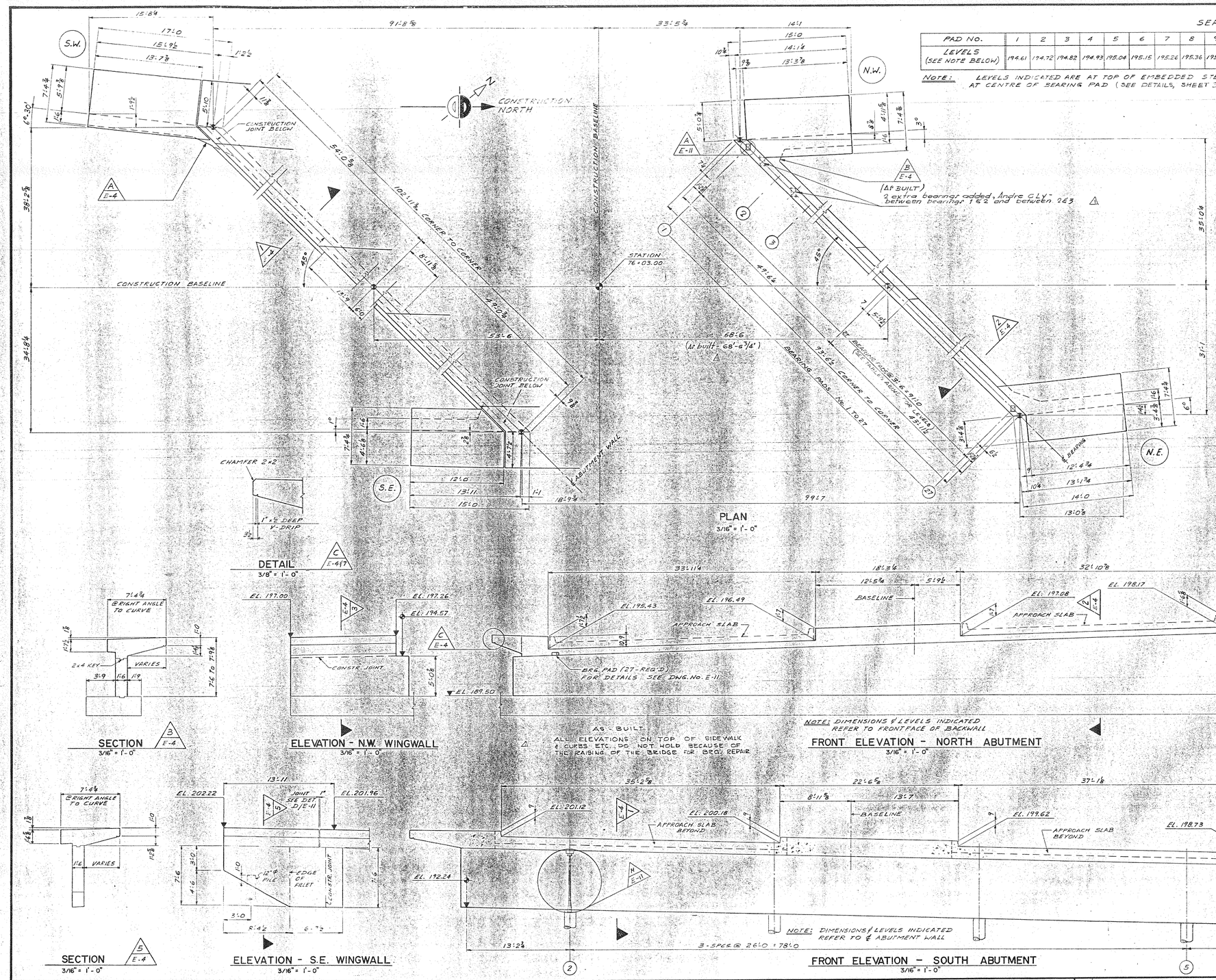
FOUNDATION REINFORCING
OTTAWA RIVER PARKWAY
RAMP 'E' STRUCTURE

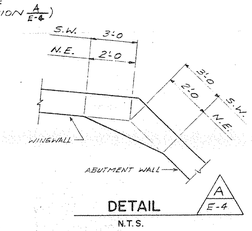
PROJECT NO. 5877-20-4
SHEET NO. E-3
OF 15

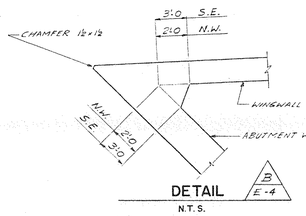
SEAT LEVEL SCHEDULE

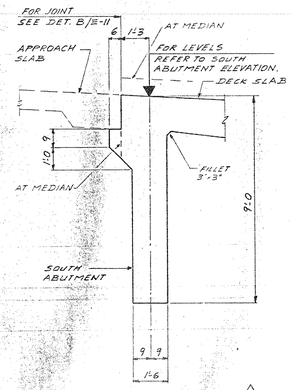
PAD NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
LEVELS (SEE NOTE BELOW)	194.61	194.72	194.82	194.93	195.04	195.15	195.26	195.36	195.47	195.58	195.69	195.79	195.90	196.01	196.13	196.25	196.36	196.48	196.60	196.72	196.83	196.95	197.07	197.19	197.30	197.42	197.54

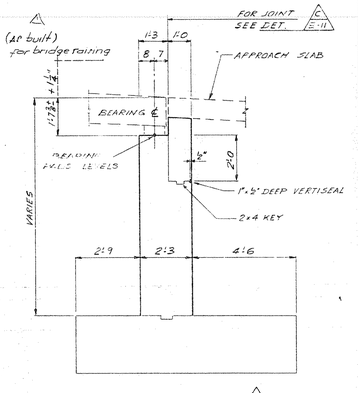
NOTE: LEVELS INDICATED ARE AT TOP OF EMBEDDED STEEL PLATE AT CENTRE OF BEARING PAD (SEE DETAILS, SHEET E-11, SECTION A/E-4)

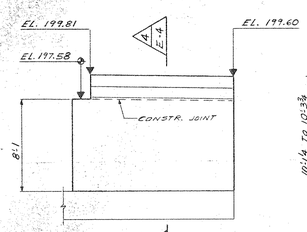


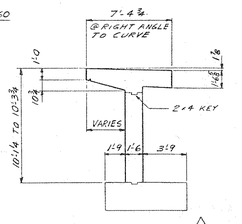




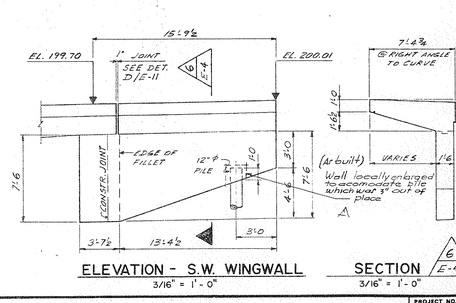








AS - BUILT
ALL ELEVATIONS ON TOP OF SIDEWALK & CURBS, ETC., DO NOT HOLD BECAUSE OF THE RAISING OF THE BRIDGE FOR BRG. REPAIR



PRINT RECORD

NO.	FOR	DATE

SPECIFICATIONS

M. M. DILLON LIMITED
LONDON · TORONTO · OTTAWA · WINNIPEG · SUDBURY · WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

NATIONAL CAPITAL COMMISSION

NO.	REVISIONS	DATE	BY
1	AS-BUILT CHANGES & ADDITIONS NOTED	28/8/67	J.S.

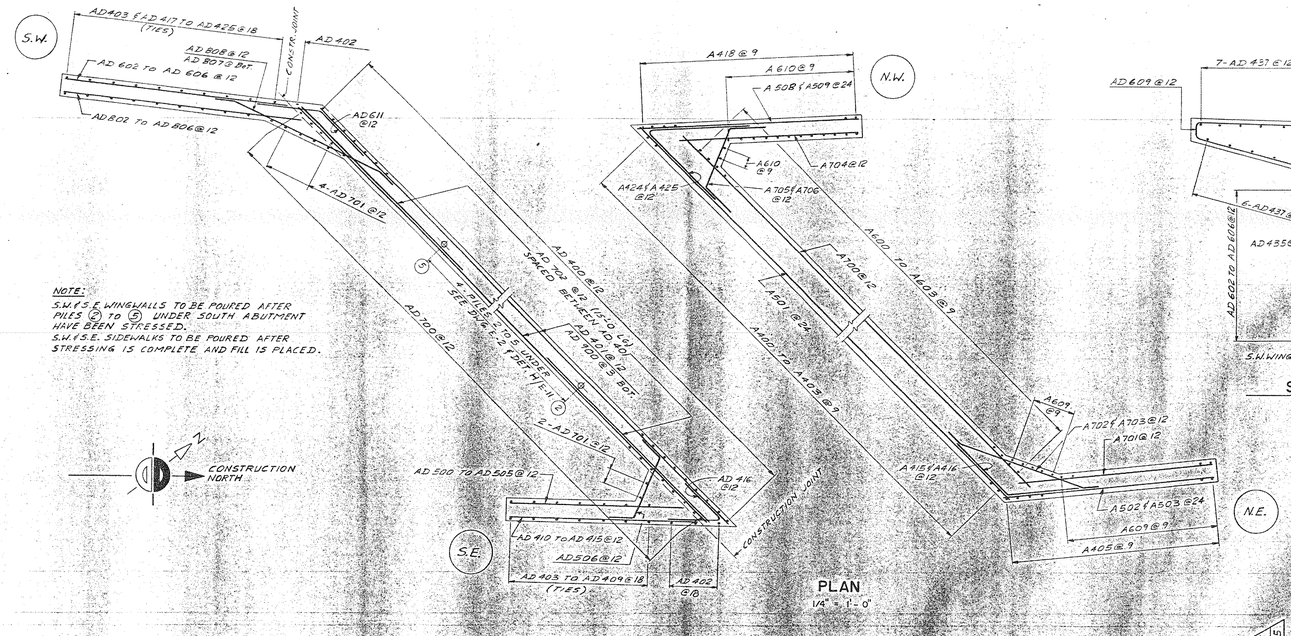
DESIGN V.J.B.
DRAWN A.F.
CHECKED I.A.W.
APPROVED
DATE Feb. 1966
SCALE AS NOTED

LAYOUT OF ABUTMENTS & WINGWALLS

OTTAWA RIVER PARKWAY

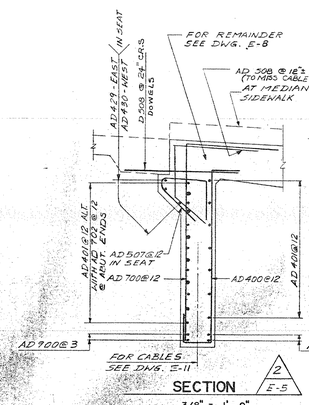
RAMP 'E' STRUCTURE

PROJECT NO. 5877-20-4
SHEET NO. E-4
OF 15

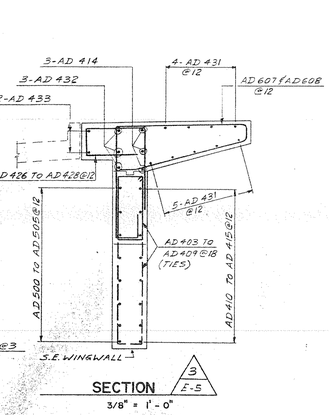


PLAN
1/4" = 1'-0"

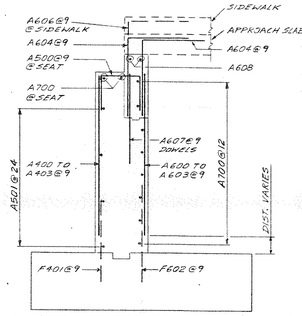
SECTION 1 E-5
3/8" = 1'-0"



SECTION 2 E-5
3/8" = 1'-0"

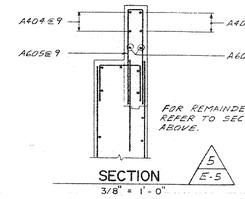


SECTION 3 E-5
3/8" = 1'-0"

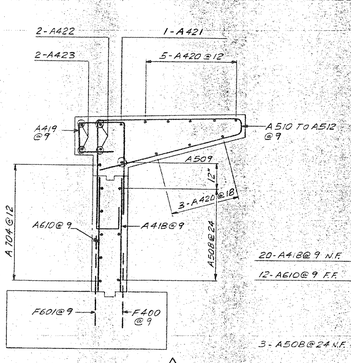


NOTE: EXERCISE CARE IN PLACING REINF. STEEL IN SEAT; TO CLEAR EMBEDDED STEEL PLATE WITH ANCHORS. SEE SECT. 1/E-11

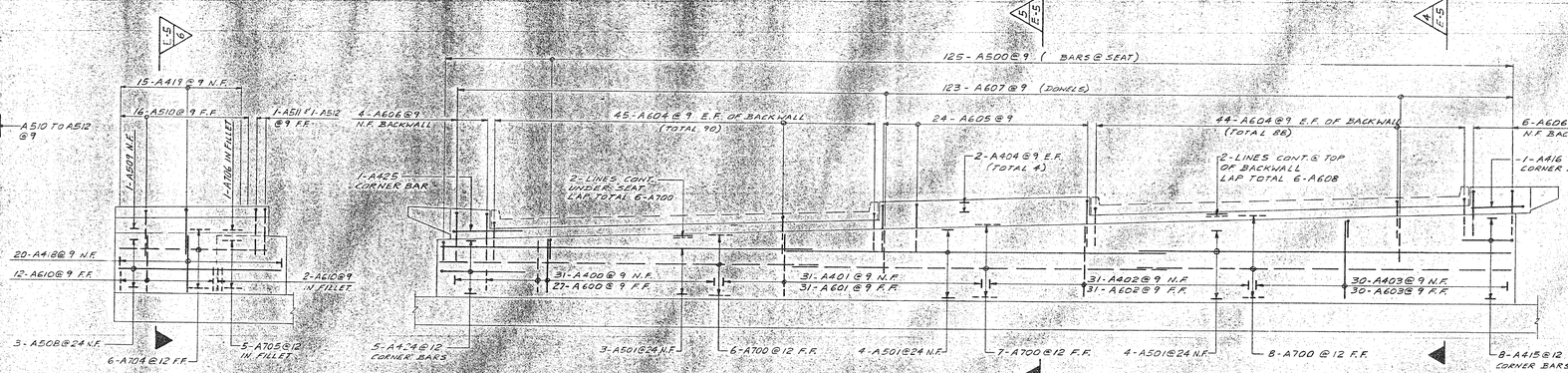
SECTION 4 E-5
3/8" = 1'-0"



SECTION 5 E-5
3/8" = 1'-0"

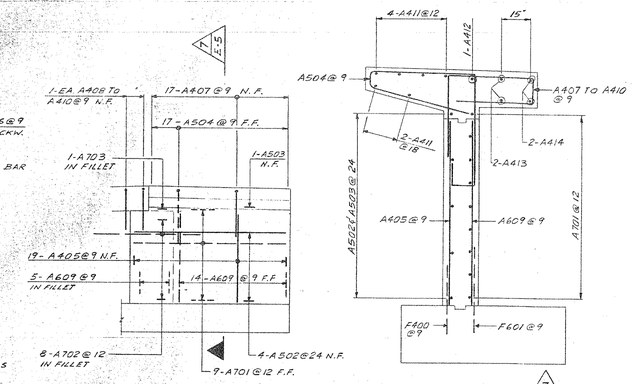


SECTION 6 E-5
3/8" = 1'-0"



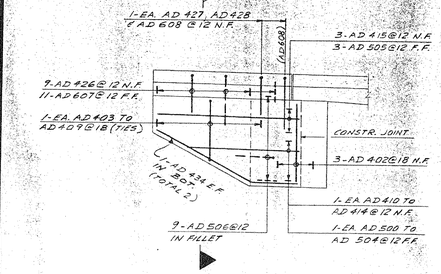
ELEVATION - N.W. WINGWALL
3/16" = 1'-0"

FRONT ELEVATION - NORTH ABUTMENT
3/16" = 1'-0"

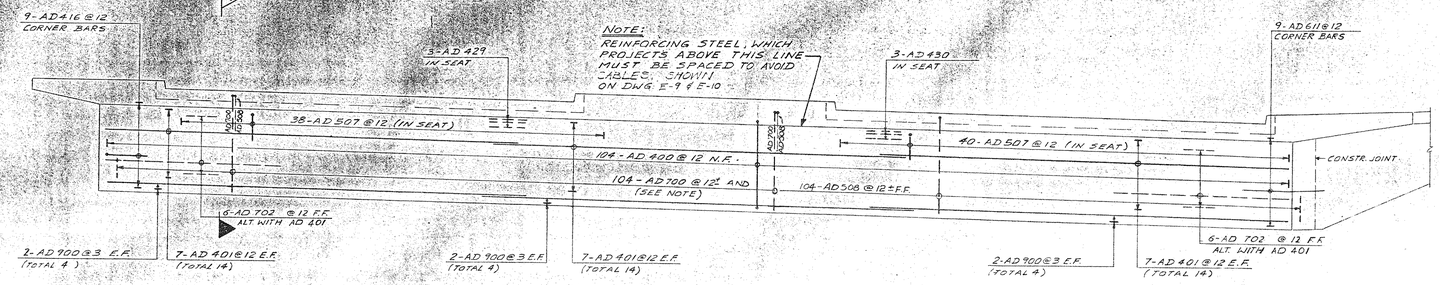


ELEVATION - N.E. WINGWALL
3/16" = 1'-0"

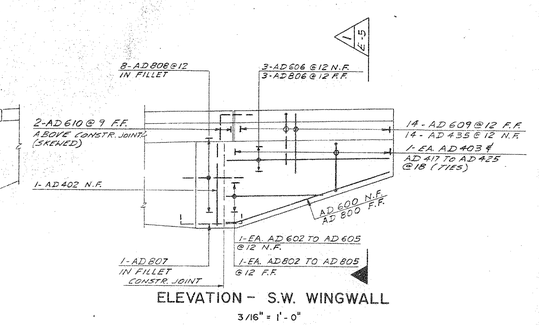
SECTION 7 E-5
3/8" = 1'-0"



ELEVATION - S.E. WINGWALL
3/16" = 1'-0"



FRONT ELEVATION - SOUTH ABUTMENT
3/16" = 1'-0"



ELEVATION - S.W. WINGWALL
3/16" = 1'-0"

SPECIFICATIONS

PRINT RECORD

NO.	FOR	DATE

REGISTERED PROFESSIONAL ENGINEER — CIVIL — J. H. KEARSLEY — PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER — V. J. BROMLEY — PROVINCE OF ONTARIO

M. M. DILLON LIMITED
LONDON • TORONTO • OTTAWA • WINNIPEG • SUDBURY • WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

NATIONAL CAPITAL COMMISSION

NO.	REVISIONS	DATE	BY

DESIGN V. J. B.
DRAWN A. F.
CHECKED A. I. W.
APPROVED
DATE FEB. 66.
SCALE AS NOTED

ABUTMENT AND WINGWALL REINFORCING

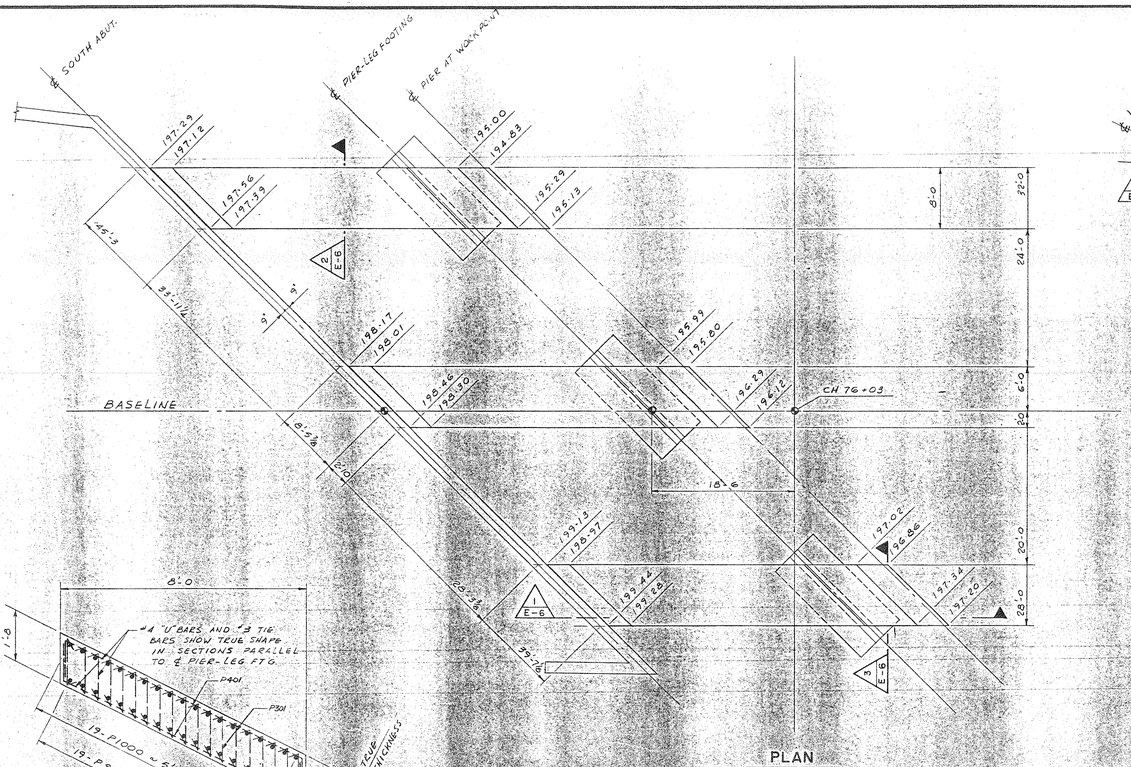
OTTAWA RIVER PARKWAY

RAMP 'E' STRUCTURE

PROJECT NO. 5877-20-4

SHEET NO. E-5

OF 15



PLAN
(FROM U/S OF DECK)
SCALE: 1/8" = 1'-0

SECTION
SCALE: 1/4" = 1'-0

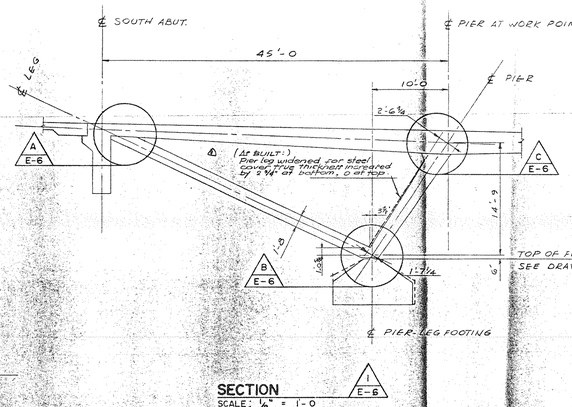
*NOTE:
P1803 & P1804 BARS SHALL BE FABRICATED USING A MINIMUM PIN DIAMETER OF 1'-10½" FOR ALL BAR BENDS

SECTION
SCALE: 1/4" = 1'-0

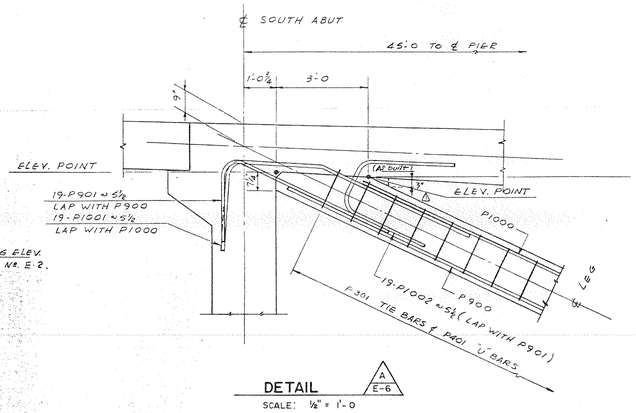
NOTE
LEG REINFORCING SHALL BE FABRICATED IN CAGES PRIOR TO ERECTION BARS FOR FOOTING POUR. SEE DWG E-3.

LINE NOS.	"U" BARS PER LINE	TIE BARS PER LINE					
		TYPE "A"	TYPE "B"	TYPE "C"	TYPE "D"	TYPE "E"	TYPE "F"
1	2-402	2-403	5-404				
2-4	2-405	2-406	5-407				
5-7	2-408	2-409	5-410				
△	2-411	2-412	5-418				
9	2-417		5-413	1-414	1-415	1-416	1-417
10	2-418		5-419	1-420	1-421	1-422	1-423
11-12	2-424		5-425	1-426	1-427	1-428	1-429
13	2-430		5-431	2-432		2-433	
14-15	2-434		5-435	2-436		2-437	
16	2-438		5-439	2-440		2-441	
17-18	2-442		5-443	2-444		2-445	
19	2-446		5-447	2-448		2-449	
20	2-450		5-451	2-452		2-453	

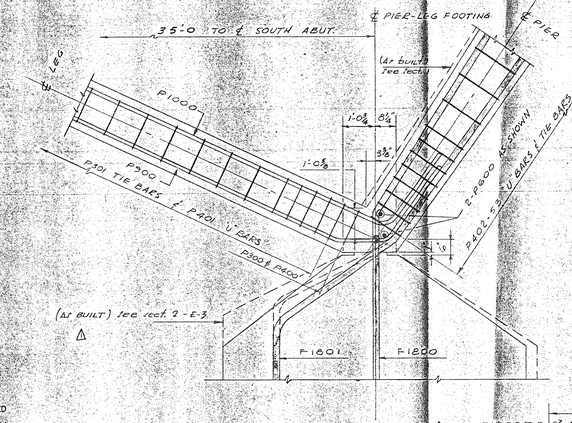
PIER REINFORCING SCHEDULE



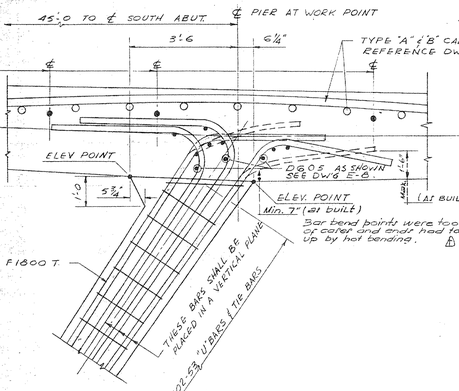
SECTION
SCALE: 1/8" = 1'-0



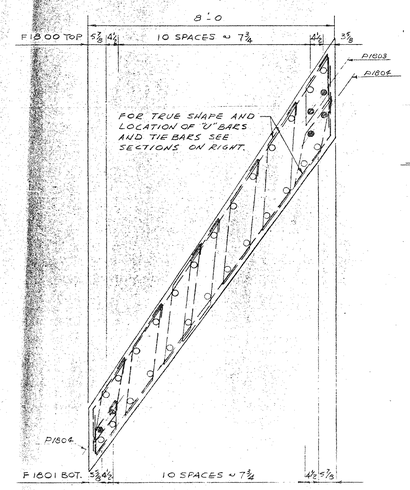
DETAIL
SCALE: 1/2" = 1'-0



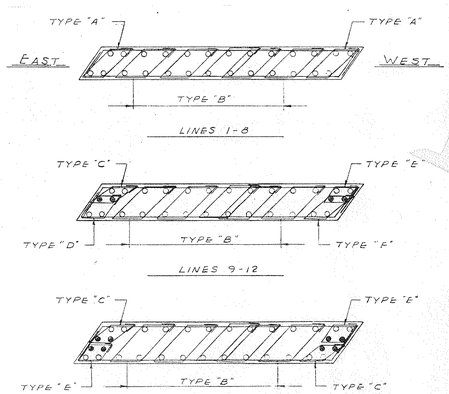
DETAIL
SCALE: 1/2" = 1'-0



DETAIL
SCALE: 1/2" = 1'-0



SECTION
SCALE: 1/2" = 1'-0



PIER TIE BAR SECTIONS
SCALE: 3/8" = 1'-0

PRINT RECORD

NO.	REVISIONS	DATE	BY
△	AS-BUILT CHANGES & ADDITIONS NOTED	28/8/67	J.S

SPECIFICATIONS

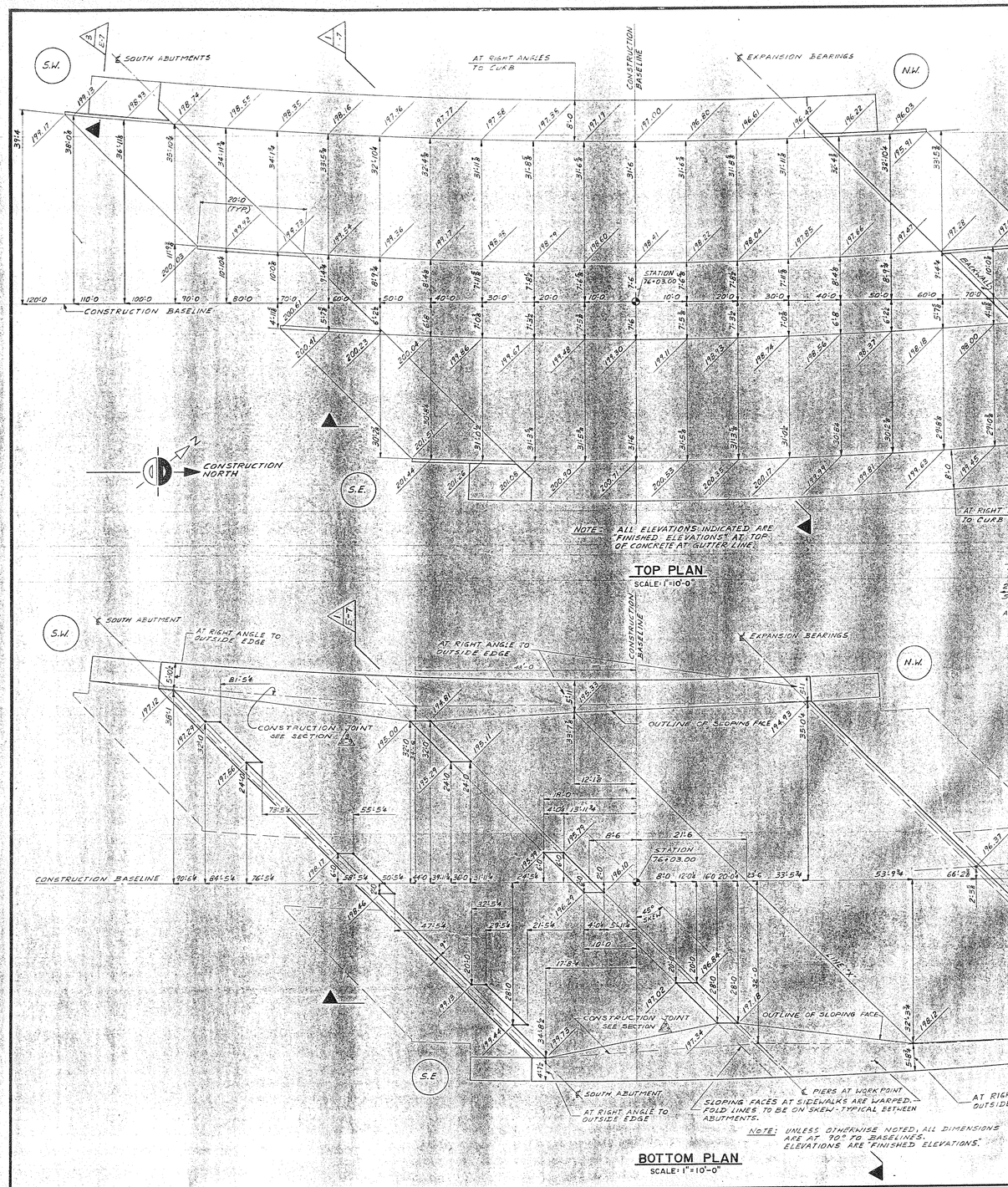
M. M. DILLON LIMITED
LONDON • TORONTO • OTTAWA • WINNIPEG • SUDBURY • WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

NATIONAL CAPITAL COMMISSION

DESIGN	V.J.B.
DRAWN	J.O.N.
CHECKED	A.I.W. V.J.B.
APPROVED	
DATE	FEB. 1966
SCALE	AS NOTED

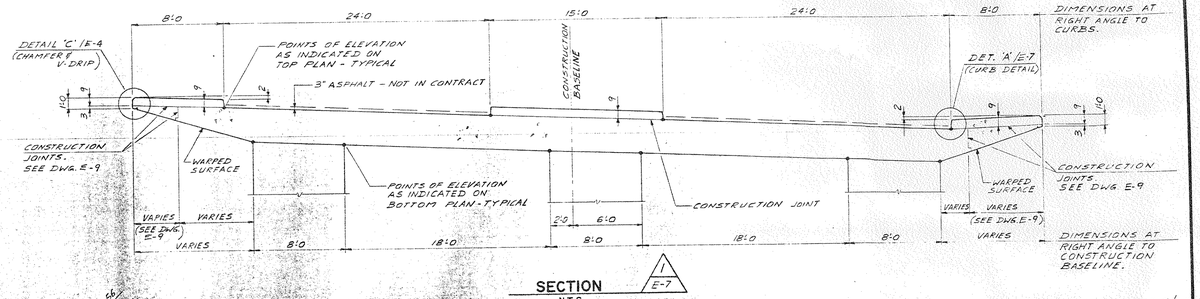
PIER AND LEG LAYOUT AND REINFORCING
OTTAWA RIVER PARKWAY
RAMP 'E' STRUCTURE

PROJECT NO. 5877-20-4
SHEET NO. E-6
OF

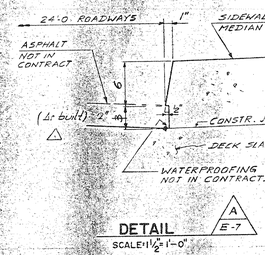


NOTE:- ALL ELEVATIONS INDICATED ARE FINISHED ELEVATIONS AT TOP OF CONCRETE AT GUTTER LINE.

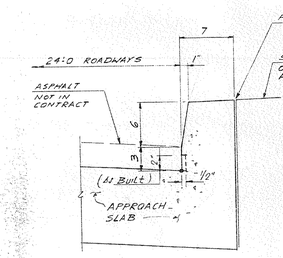
TOP PLAN
SCALE: 1"=10'-0"



SECTION
N.T.S.



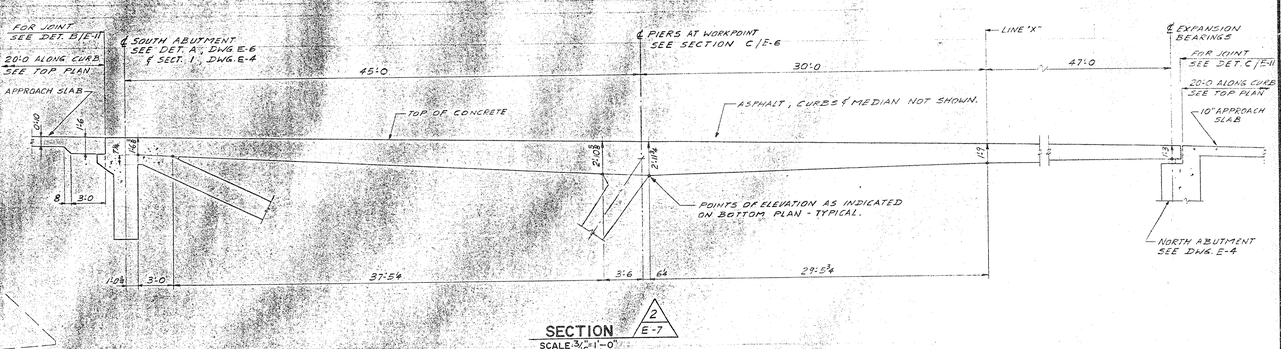
DETAIL
SCALE: 1½"=1'-0"



SECTION
SCALE: 1½"=1'-0"

NOTE: UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE AT 90° TO BASELINES. ELEVATIONS ARE FINISHED ELEVATIONS.

BOTTOM PLAN
SCALE: 1"=10'-0"



SECTION
SCALE 3/16"=1'-0"

AS BUILT:
All elevations altered by raising of North end. for bearing repair.

PRINT RECORD

NO.	FOR	DATE

SPECIFICATIONS

M. M. DILLON LIMITED
LONDON • TORONTO • OTTAWA • WINNIPEG • SUDBURY • WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

NATIONAL CAPITAL COMMISSION

NO.	REVISIONS	DATE	BY
1	AS-BUILT CHANGES & ADDITIONS NOTED	25/8/67	J.S.

DESIGN	V. J. B.
DRAWN	A. F.
CHECKED	A. I. W.
APPROVED	
DATE	FEB. 1966
SCALE	AS SHOWN

DECK AND APPROACH SLAB LAYOUT

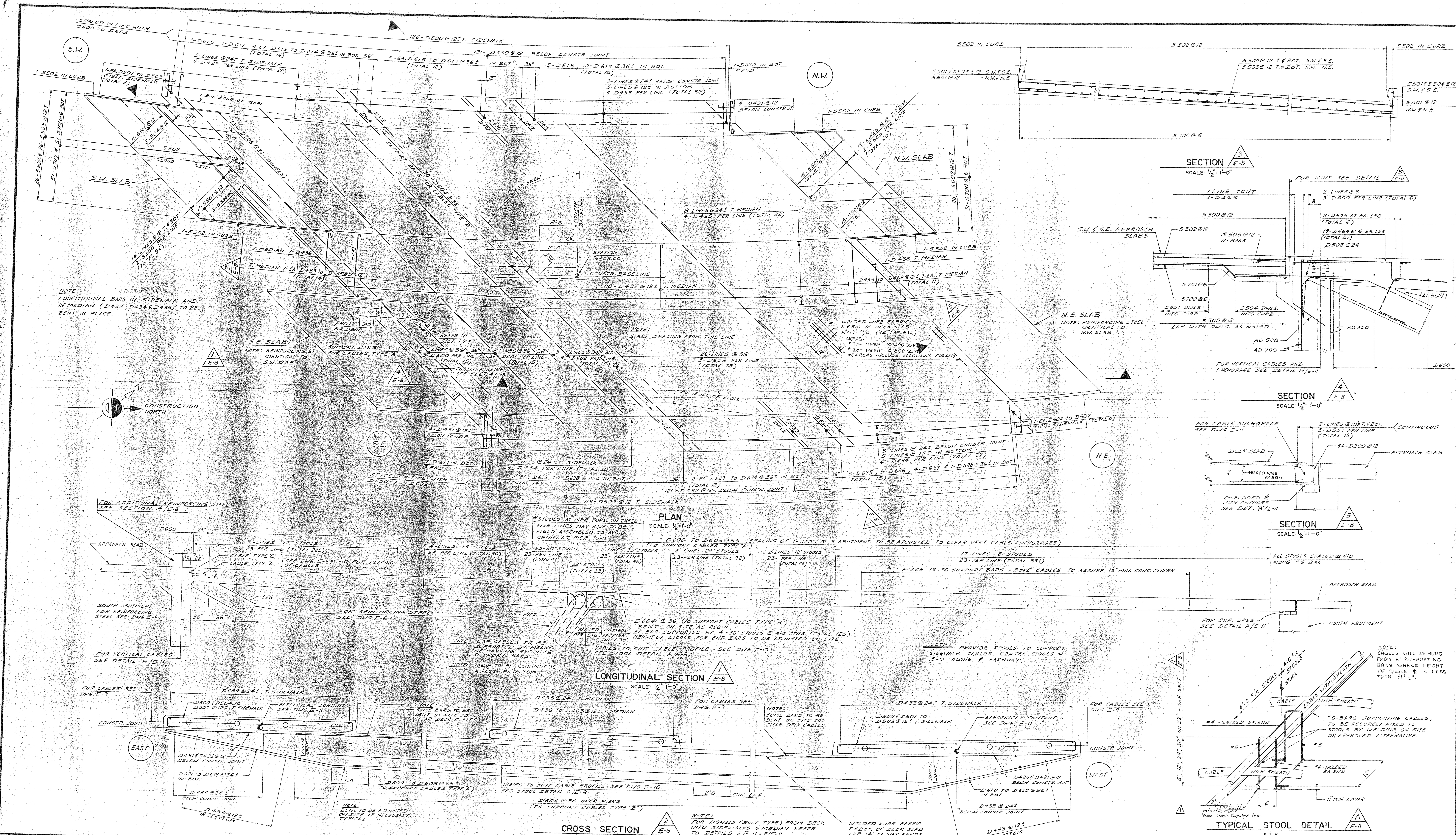
OTTAWA RIVER PARKWAY

RAMP 'E' STRUCTURE

PROJECT NO. 5877-20-4

SHEET NO. E-7

OF 15



PRINT RECORD		
NO.	FOR	DATE

SPECIFICATIONS

REGISTERED PROFESSIONAL ENGINEER — CIVIL — PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER — V. J. BROMLEY — PROVINCE OF ONTARIO

M. M. DILLON LIMITED
LONDON • TORONTO • OTTAWA • WINNIPEG • SUDBURY • WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

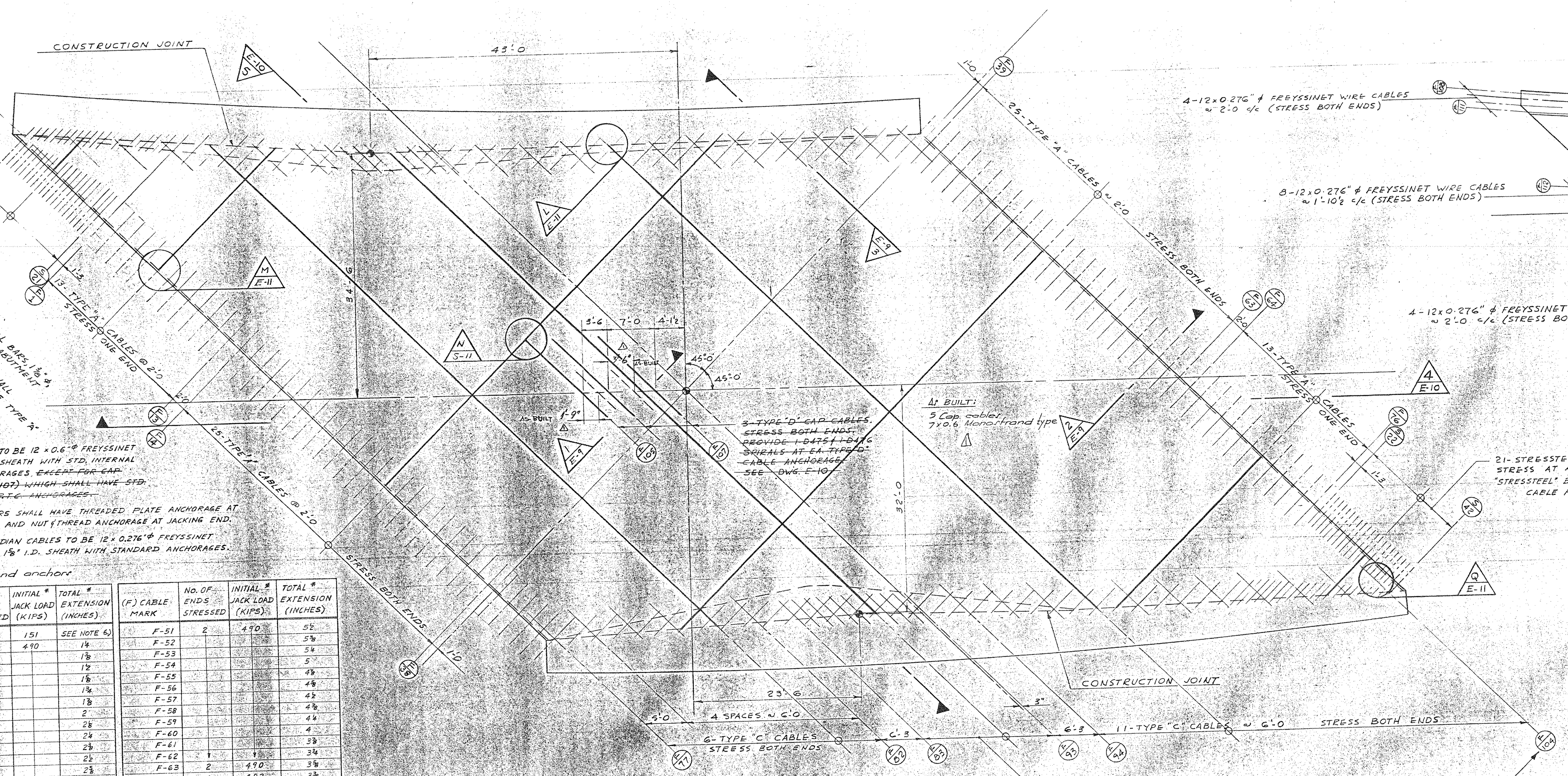
NATIONAL CAPITAL COMMISSION

NO.	REVISIONS	DATE	BY
⚠	AS BUILT CHANGES & ADDITIONS NOTED	28/8/67	J.S.

DESIGN V.J.B.
DRAWN A.F.
CHECKED A.I.W.
APPROVED
DATE FEB. 66
SCALE AS NOTED

DECK AND APPROACH SLAB REINFORCING
OTTAWA RIVER PARKWAY
RAMP 'E' STRUCTURE

PROJECT NO. 5877-20-4
SHEET NO. E-8
OF 15



PLAN OF DECK CABLES
SCALE 1/8" = 1'-0"

NOTES:
1) WHERE ANCHORAGES FROM CABLES TYPES "A" "C" INTERFERE, THE ENGINEER WILL ADJUST THEIR POSITIONS ON SITE.
2) ANCHORAGE SPACING — 12" CRS. MINIMUM
EDGE DISTANCE — 7½" MINIMUM

(As Built)
Max. movement of type C cables — 0'-1" } at anchors
" " A " 0'-2"
" " B " 1'-3"

NOTES:
1.) ALL DECK CABLES TO BE 12 × 0.6"Φ FREYSSINET STRAND IN 3" I.D. SHEATH WITH STD. INTERNAL TYPE P.T.C. ANCHORAGES. ~~EXCEPT FOR CAP CABLES (F105 TO F107) WHICH SHALL HAVE STD. EXTERNAL TYPE P.T.C. ANCHORAGES.~~
2.) "STRESSTEEL" BARS SHALL HAVE THREADED PLATE ANCHORAGE AT NON-JACKING END AND NUT & THREAD ANCHORAGE AT JACKING END.
3.) SIDEWALK AND MEDIAN CABLES TO BE 12 × 0.276"Φ FREYSSINET WIRE CABLES IN 1⅝" I.D. SHEATH WITH STANDARD ANCHORAGES.

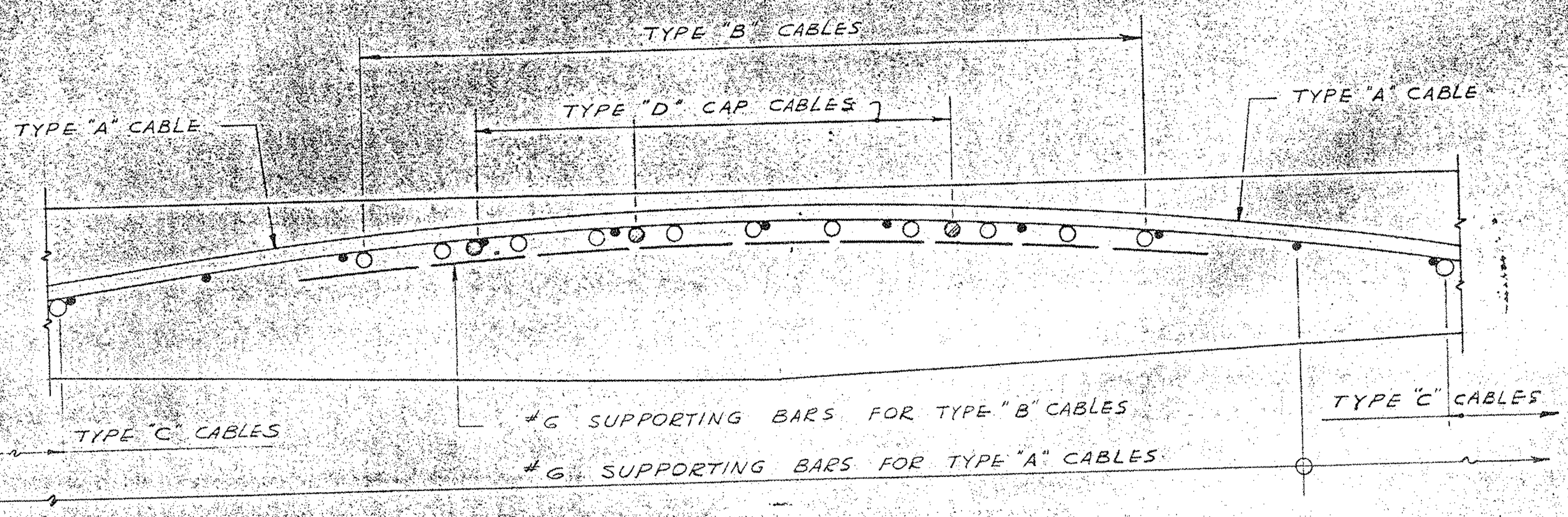
As BUILT
7×0.6 Monostrand anchors

(S) BAR OR (F) CABLE MARK	No. OF ENDS STRESSED	INITIAL * JACK LOAD (KIPS)	TOTAL * EXTENSION (INCHES)
S-1 TO S-42	1	151	SEE NOTE 6.)
F-1	1	490	1¼
F-2			1⅜
F-3			1½
F-4			1⅝
F-5			1¾
F-6			1⅞
F-7			2
F-8			2⅛
F-9			2¼
F-10			2⅜
F-11			2½
F-12			2⅝
F-13	1		2¾
F-14	2		3
F-15			3⅛
F-16			3⅜
F-17			3½
F-18			3⅝
F-19			3¾
F-20			4
F-21			4⅛
F-22			4¼
F-23			4⅜
F-24			4⅝
F-25			4¾
F-26			4⅞
F-27			5
F-28			5¼
F-29			5⅜
F-30			5½
F-31			5⅝
F-32		490	5⅞
F-33		489	6
F-34		488	6⅛
F-35		486	6¼
F-36		485	6⅜
F-37		484	6½
F-38 TO F-44		483	6⅝
F-45		484	6½
F-46		486	6⅜
F-47		487	6⅛
F-48		489	6
F-49		490	5⅞
F-50	2	490	5¾

(F) CABLE MARK	No. OF ENDS STRESSED	INITIAL * JACK LOAD (KIPS)	TOTAL * EXTENSION (INCHES)
F-51	2	490	5½
F-52			5⅜
F-53			5¼
F-54			5
F-55			4⅞
F-56			4⅝
F-57			4½
F-58			4⅜
F-59			4¼
F-60			4
F-61			3⅞
F-62			3¾
F-63	2	490	3⅝
F-64	1	482	3⅜
F-65		484	3¼
F-66		487	3⅛
F-67		490	3
F-68			2⅞
F-69			2⅝
F-70			2½
F-71			2⅜
F-72			2⅛
F-73			2
F-74			1⅞
F-75			1⅝
F-76	1	490	1½
F-77 & F-78	2	473	7⅞
F-79 & F-80		474	7¾
F-81 & F-82		475	7⅝
F-83 & F-84		481	6¾
F-85 TO F-93		482	6¾
F-94 TO F-104		477	7¼
~~F-105 TO F-107~~		~~428~~	~~1⅛~~
F-108 TO F-111		120	8¾
F-112 TO F-117			8⅝
F-118 & F-119			8½
F-120 TO F-123	2	120	8⅜

NOTES:
*4) INITIAL JACKING LOAD AND TOTAL EXTENSION INCLUDES ALLOWANCE FOR ANCHORAGE "DRAW IN" AT JACKING END(S) AS FOLLOWS: a) FOR 12 × 0.6" STRAND CABLE; FOR ONE ANCHORAGE = ⅜" b) FOR 12 × 0.276" WIRE CABLE; FOR ONE ANCHORAGE = ¼" } EXCEPT AS NOTED IN 5.)
*5) NO "DRAW IN" HAS BEEN ALLOWED FOR THE FOLLOWING:
a) FOR CAP CABLES WITH EXTERNAL ANCHORAGES.
b) FOR "STRESSTEEL" BARS
*6.) "STRESSTEEL" BAR EXTENSIONS NOT GIVEN; ~~DYNAMOMETER~~ SHALL BE USED WHEN JACKING.
(As built) [illegible]

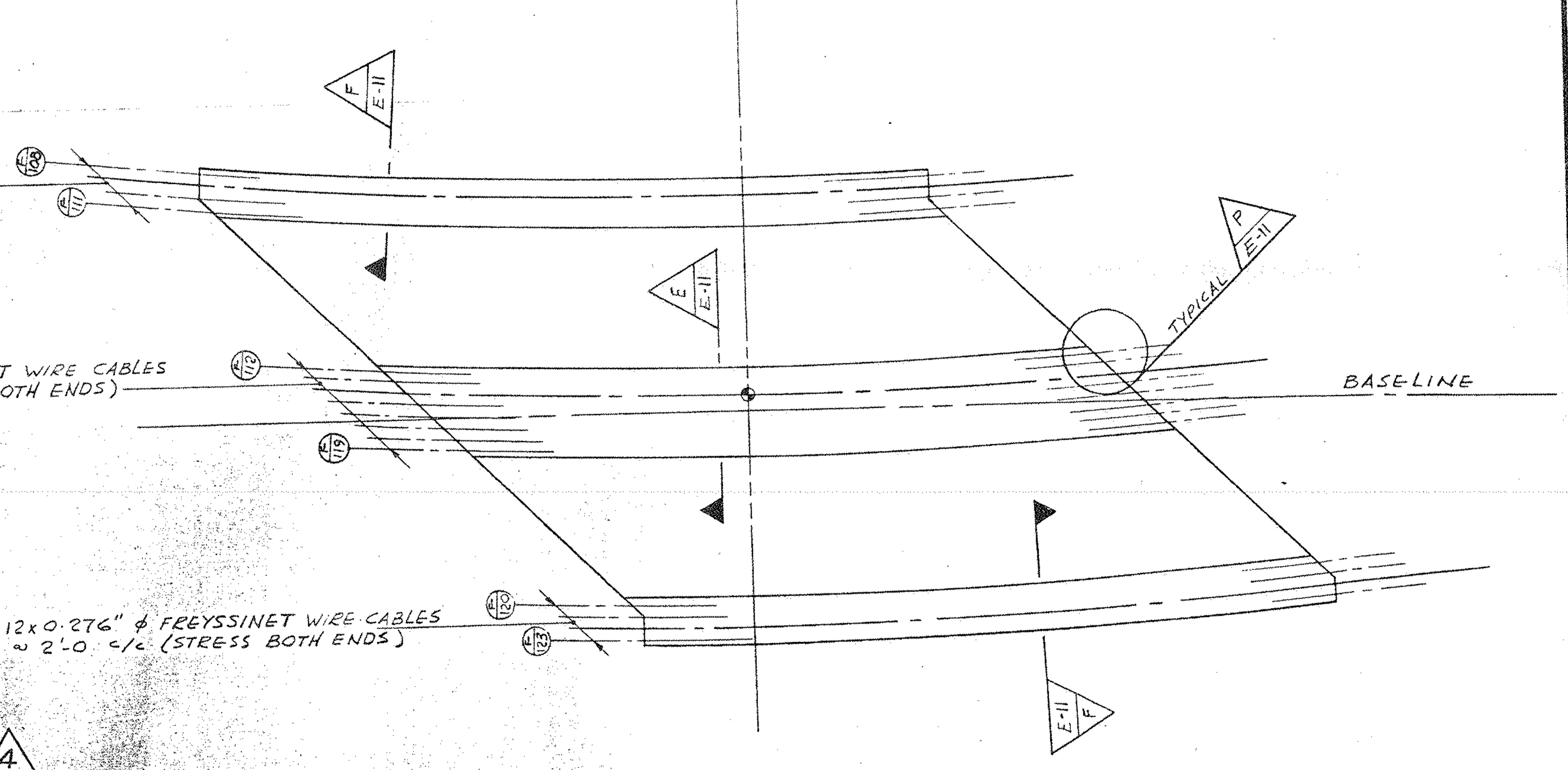
TYPE	STRAND SPECIFICATIONS	UNCOATED	GALVANIZED
0.6" dia. strand (Freyssinet)	Ultimate tensile strength	235,000 P.S.I.	210,000 P.S.I.
	Cross, sectional area	0.215 sq.in.	0.215 sq.in.
	Min. load at 1% elongation	43,350 lbs.	39,000 lbs.
0.276" dia. wire (Freyssinet)	Ultimate tensile strength	235,000 P.S.I.	
	Cross, sectional area	0.0598 sq.in.	
	Min. load at 1% elongation	11,230 lbs.	
1.375" dia. bar (Stressteel)	Ultimate tensile strength	145,000 P.S.I.	
	Cross, sectional area	1.485 sq.in.	
	Min. load at 0.7% extension	193,000 lbs.	



SECTION 1/E-9
SCALE 1/2" = 1'-0

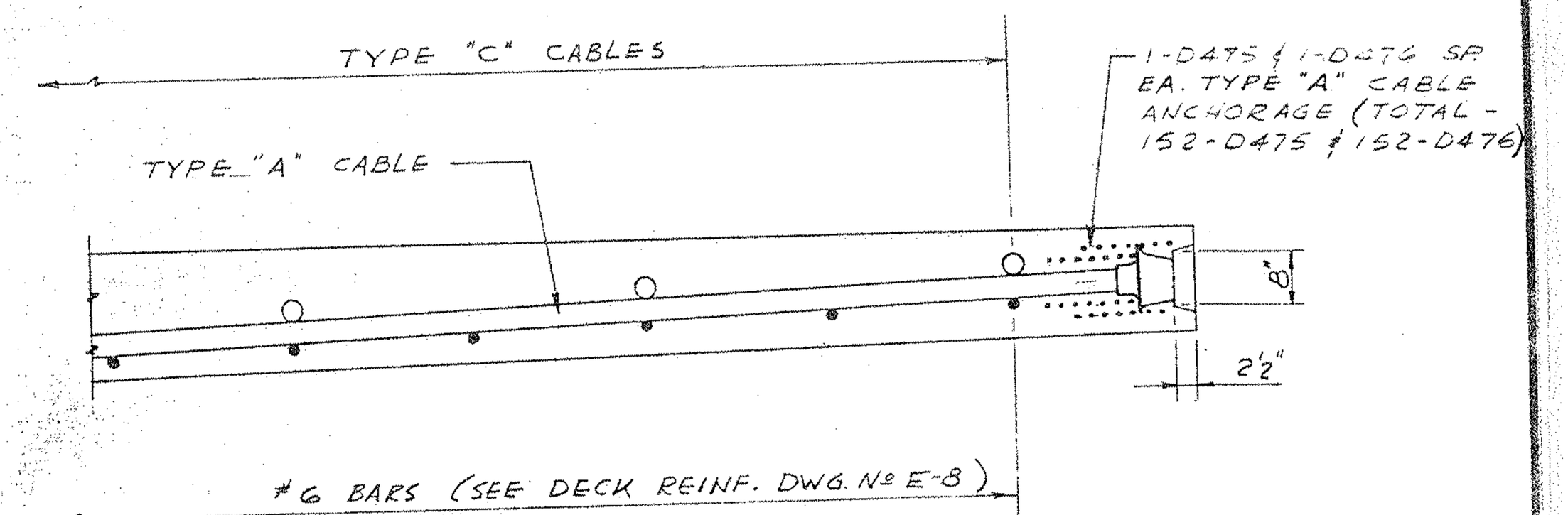
STRESSING SEQUENCE
1. F77 to F104
2. F105 to F107
3. F38 to F27
4. F39 to F50
5. F26 to F14
6. F51 to F63
7. F13 to F1
8. F64 to F76
9. S-21 to S1
10. S-22 to S42
11. F112 to F119
12. F108 to F111
13. F120 to F123

* Cables shall be stressed in ascending or decending order as noted.

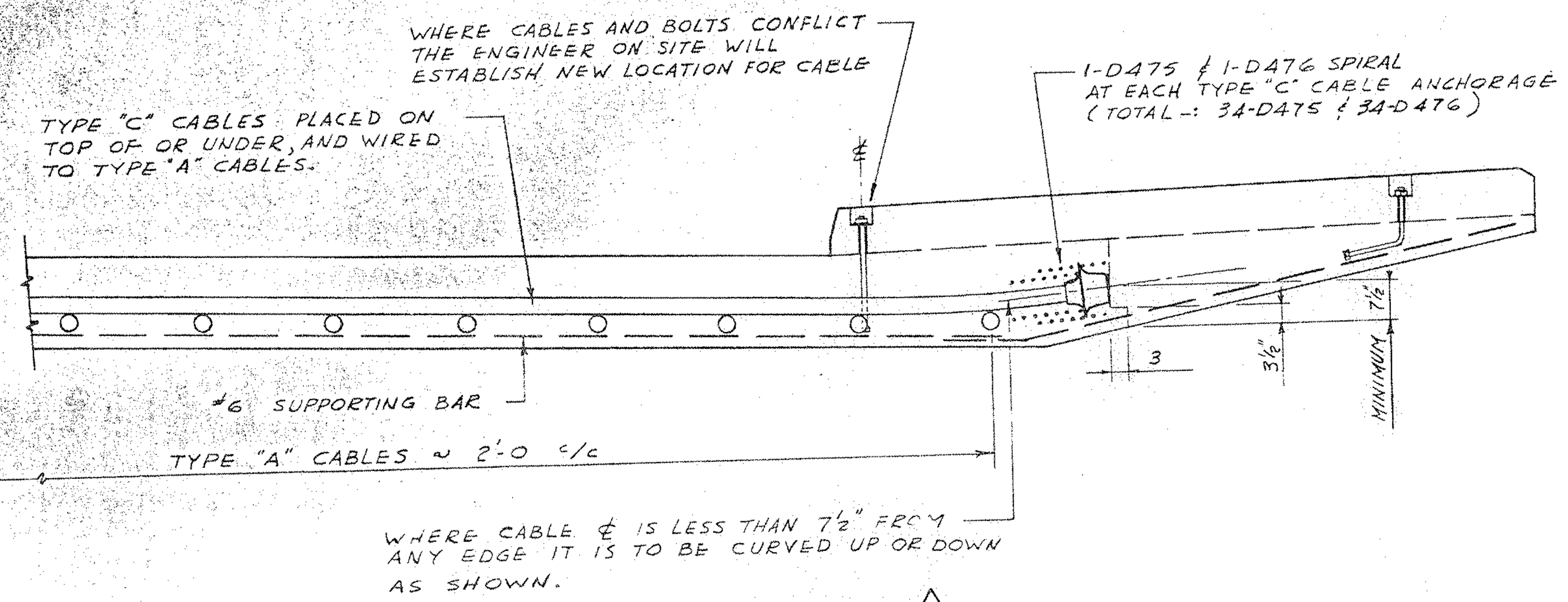


PLAN OF SIDEWALK & MEDIAN CABLES
SCALE 1" = 20'-0

NOTES:
1) RECESSES BEHIND ANCHORAGES SHALL BE MADE GOOD WITH APPROVED MORTAR OR CONCRETE.
2) CABLES SHALL BE GROUTED AFTER STRESSING ACCORDING TO SPECIFICATION.
3.) SIDEWALK AND MEDIAN CABLES HAVE A STRAIGHT LINE PROFILE.



SECTION 2/E-9
SCALE 1/2" = 1'-0"



SECTION 3/E-9
SCALE 1/2" = 1'-0"

PRINT RECORD — NO. | FOR | DATE

SPECIFICATIONS

LICENSED PROFESSIONAL ENGINEER — CIVIL — J. M. KENNEY

REGISTERED PROFESSIONAL ENGINEER — V. J. BROMLEY — PROVINCE OF ONTARIO

M. M. DILLON LIMITED
LONDON · TORONTO · OTTAWA · WINNIPEG · SUDBURY · WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

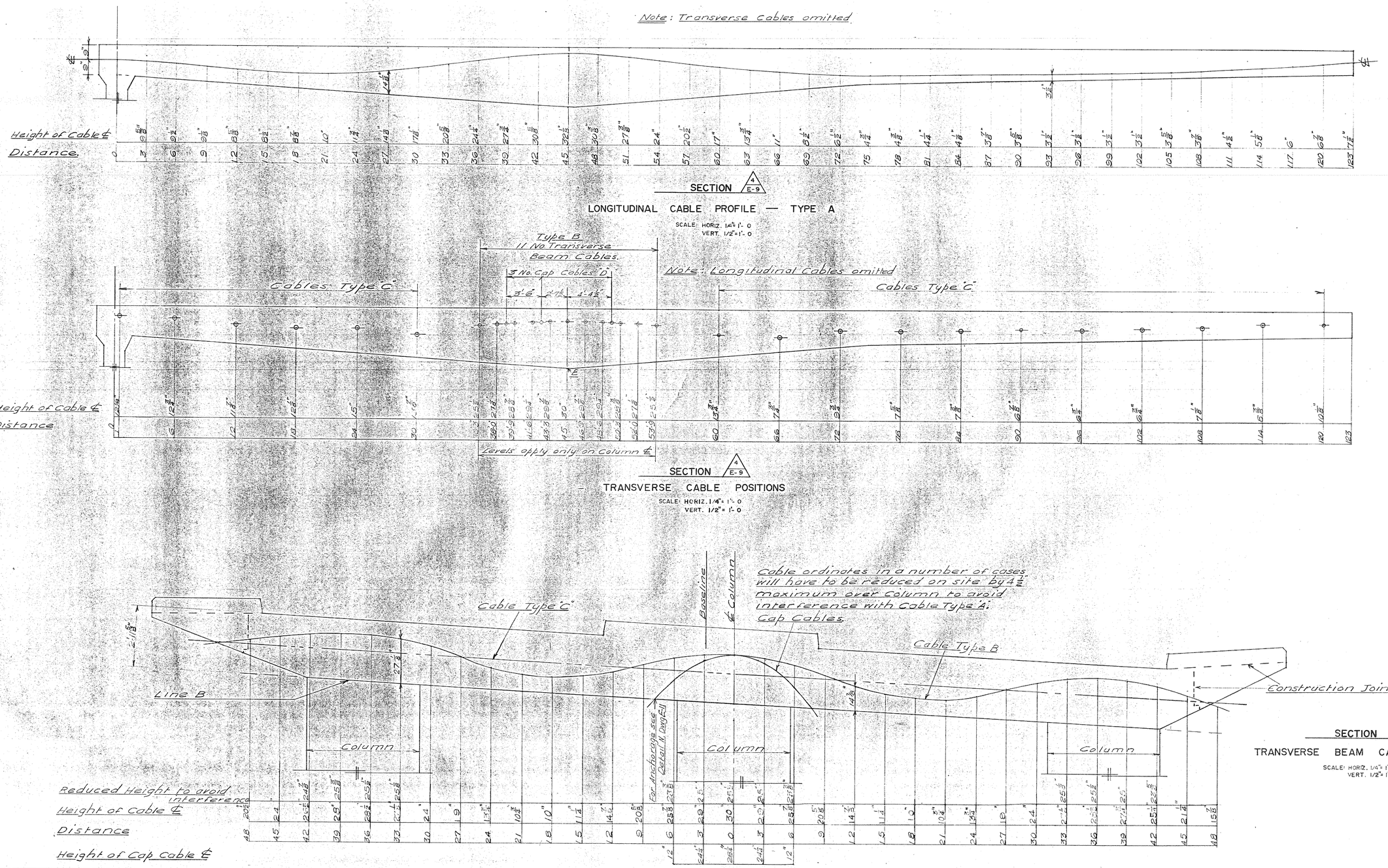
NATIONAL CAPITAL COMMISSION

NO.	REVISIONS	DATE	BY
1	AS-BUILT CHANGES & ADDITIONS NOTED	28/8/67	J.S.

DESIGN V.J.B.
DRAWN J. O'N.
CHECKED A.I.W.
APPROVED
DATE FEB. 1966
SCALE AS NOTED

DECK CABLE LAYOUT
OTTAWA RIVER PARKWAY
RAMP 'E' STRUCTURE

PROJECT NO. 5877-20-4
SHEET NO. E-9
OF 15



PRINT RECORD

NO.	FOR	DATE

SPECIFICATIONS

REGISTERED PROFESSIONAL ENGINEER — CIVIL — J. M. KEMP — PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER — A. J. BROMILEY — PROVINCE OF ONTARIO

M. M. DILLON LIMITED
LONDON · TORONTO · OTTAWA · WINNIPEG · SUDBURY · WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

NATIONAL CAPITAL COMMISSION

NO.	REVISIONS	DATE	BY

DESIGN	V. J. B.
DRAWN	V. J. B.
CHECKED	A. I. W.
APPROVED	
DATE	FEB. 1966
SCALE	AS NOTED

DECK CABLE PROFILES

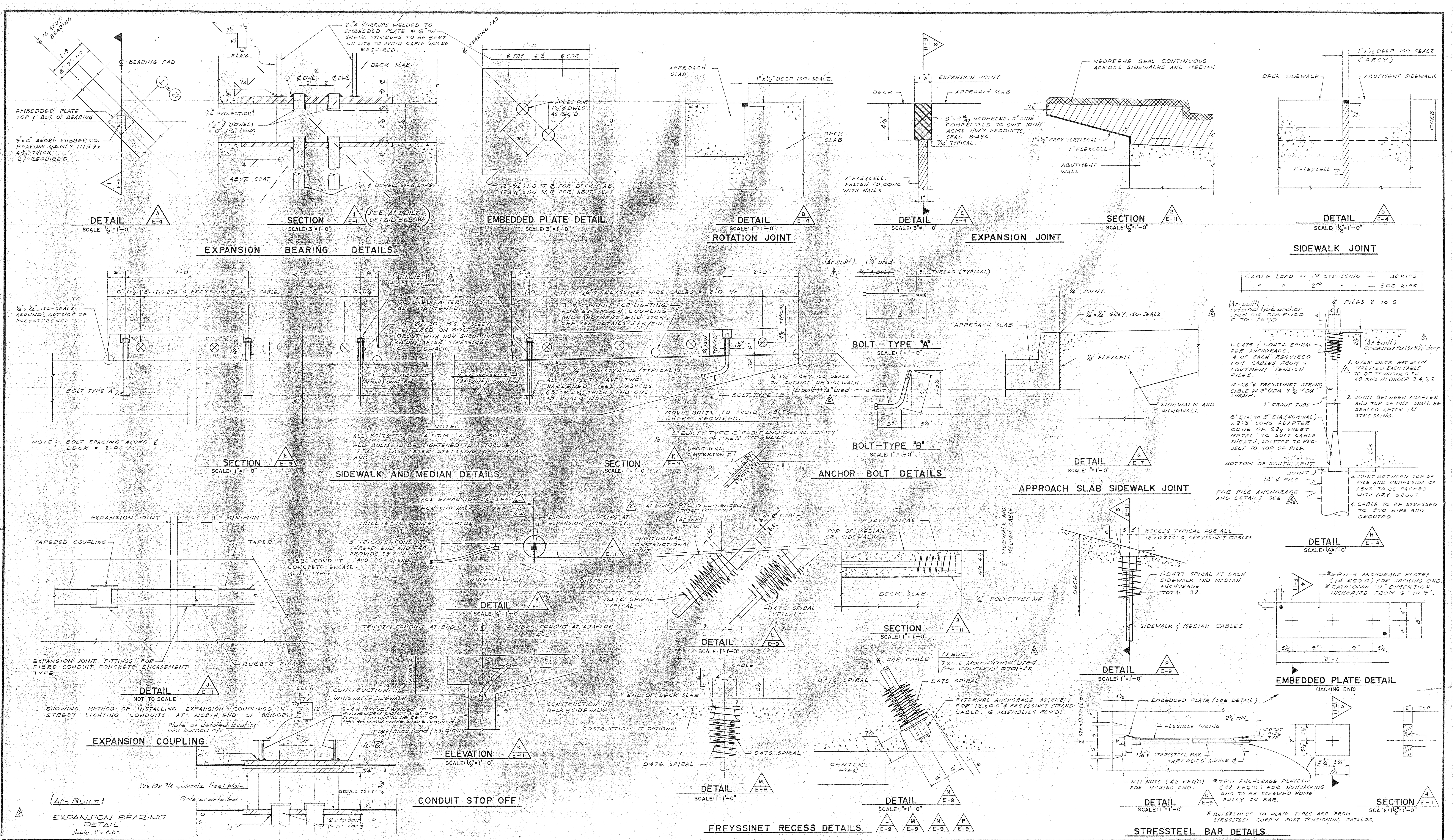
OTTAWA RIVER PARKWAY

RAMP 'E' STRUCTURE

PROJECT NO. 5877-20-4

SHEET NO. E-10

OF 15



℄ N. ABUT. BEARING
℄ BEARING PAD
EMBEDDED PLATE TOP & BOT. OF BEARING
9"x6" ANDRÉ RUBBER CO. BEARING No. GLY 11159 x 4 3/8" THICK. 27 REQUIRED.
DETAIL A E-4 SCALE: 1/2"=1'-0"
2-#4 STIRRUPS WELDED TO EMBEDDED PLATE @ 6" ON SKEW. STIRRUPS TO BE BENT ON SITE TO AVOID CABLE WHERE REQUIRED.
ELEV.
DECK SLAB
℄ DWL
1/16" PROJECTION
1 1/4" ϕ DOWELS x 0'-1 3/4" LONG
ABUT. SEAT
1 1/4" ϕ DOWELS x 1'-6 LONG
SECTION 1 E-11 SCALE: 3"=1'-0"
(SEE AS-BUILT DETAIL BELOW)
EXPANSION BEARING DETAILS
℄ BEARING PAD
℄ STIR. ℄ ℄ ℄ STIR.
HOLES FOR 1 1/4" ϕ DWLS. AS REQ'D.
12"x3/4"x1'-0 ST. PL FOR DECK SLAB
12"x1/2"x1'-0 ST. PL FOR ABUT. SEAT
EMBEDDED PLATE DETAIL. SCALE: 3"=1'-0"
APPROACH SLAB
1"x1/2" DEEP ISO-SEALZ
DECK SLAB
DETAIL B E-4 SCALE: 1"=1'-0"
ROTATION JOINT
EXPANSION JOINT
DECK
APPROACH SLAB
3"x3 13/32 NEOPRENE. 3" SIDE COMPRESSED TO SUIT JOINT. ACME HW'Y PRODUCTS, SEAL B-496.
7/16" TYPICAL
1" FLEXCELL. FASTEN TO CONC. WITH NAILS
DETAIL C E-4 SCALE: 3"=1'-0"
NEOPRENE SEAL CONTINUOUS ACROSS SIDEWALKS AND MEDIAN.
1"x1/2" GREY VERTISEAL
1" FLEXCELL
ABUTMENT WALL
SECTION 2 E-11 SCALE: 1/2"=1'-0"
EXPANSION JOINT
1"x1/2 DEEP ISO-SEALZ (GREY)
DECK SIDEWALK
ABUTMENT SIDEWALK
CURB
1" FLEXCELL
DETAIL D E-4 SCALE: 1 1/2"=1'-0"
SIDEWALK JOINT
6-12x0.276" ϕ FREYSSINET WIRE CABLES @ 1'-10 1/2 c/c
1/4"x1/4" ISO-SEALZ AROUND OUTSIDE OF POLYSTYRENE.
(As built:) 5"ϕ x 3" deep
3"x3"x– DEEP RECESS TO BE GROUTED AFTER NUTS ARE TIGHTENED.
1 1/2x2 1/4"x20g. M.S. PL SLEEVE CENTERED ON BOLT. GROUT WITH NON-SHRINKING GROUT AFTER STRESSING OF SIDEWALK.
1/4"x1/4" ISO-SEALZ (As built) omitted
BOLT TYPE "A"
NOTE:- BOLT SPACING ALONG ℄ DECK = 2'-0" c/c.
SECTION E E-9 SCALE: 1"=1'-0"
NOTE
ALL BOLTS TO BE A.S.T.M. A325 BOLTS.
ALL BOLTS TO BE TIGHTENED TO A TORQUE OF 150 FT-LBS. AFTER STRESSING OF MEDIAN AND SIDEWALKS.
SIDEWALK AND MEDIAN DETAILS
4-12x0.276" ϕ FREYSSINET WIRE CABLES @ 2'-0 c/c
3" ϕ CONDUIT FOR LIGHTING. FOR EXPANSION COUPLING AND ABUTMENT END STOP OFF, SEE DETAILS J & K/E-11.
1/4" POLYSTYRENE (TYPICAL)
ALL BOLTS TO HAVE TWO HARDENED STEEL WASHERS (3" SQ x 1/4" THICK) AND ONE STANDARD NUT.
1/4"x1/4" GREY ISO-SEALZ ON OUTSIDE OF SIDEWALK
BOLT TYPE "B" (As built) 1 1/4" used
MOVE BOLTS TO AVOID CABLES WHERE REQUIRED.
As BUILT: TYPE C CABLE ANCHORS IN VICINITY OF STRESS STEEL BARS
LONGITUDINAL CONSTRUCTION JT.
12" max.
SECTION F E-9 SCALE: 1"=1'-0
(As Built) 1 1/4" used
3/4"ϕ BOLT
THREAD (TYPICAL)
BOLT – TYPE "A" SCALE: 1"=1'-0"
ϕ BOLT
BOLT – TYPE "B" SCALE: 1"=1'-0"
ANCHOR BOLT DETAILS
1/4" JOINT
1/4"x1/4" GREY ISO-SEALZ
APPROACH SLAB
1/4" FLEXCELL
SIDEWALK AND WINGWALL
DETAIL G E-7 SCALE: 1"=1'-0"
APPROACH SLAB SIDEWALK JOINT
CABLE LOAD ~ 1ST STRESSING — 40 KIPS.
" " 2ND " — 300 KIPS.
℄ PILES 2 TO 5
(As-built) External type anchor used see CONENCO C 701-SK20
(As-built) Recesses 12x13x8 1/2" deep
1-D475 & 1-D476 SPIRAL PER ANCHORAGE. 4 OF EACH REQUIRED FOR CABLES FROM S. ABUTMENT TENSION PILES.
12x0.6" ϕ FREYSSINET STRAND CABLE IN 3" I/DIA. 3 3/16 O/DIA. SHEATH.
1" GROUT TUBE
8" DIA. TO 3" DIA. (NOMINAL) x 2'-3" LONG ADAPTER CONE OF 22g SHEET METAL TO SUIT CABLE SHEATH. ADAPTER TO PROJECT TO TOP OF PILE.
BOTTOM OF SOUTH ABUT.
JOINT
18" ϕ PILE
FOR PILE ANCHORAGE AND DETAILS SEE 2 E-2
1. AFTER DECK HAS BEEN STRESSED EACH CABLE TO BE TENSIONED TO 40 KIPS IN ORDER 3, 4, 5, 2.
2. JOINT BETWEEN ADAPTER AND TOP OF PILE SHALL BE SEALED AFTER 1ST STRESSING.
3. JOINT BETWEEN TOP OF PILE AND UNDERSIDE OF ABUT. TO BE PACKED WITH DRY GROUT.
4. CABLE TO BE STRESSED TO 300 KIPS AND GROUTED
DETAIL H E-4 SCALE: 1/2"=1'-0"
EXPANSION JOINT
1" MINIMUM
TAPERED COUPLING
TAPER
FIBRE CONDUIT. CONCRETE ENCASEMENT TYPE.
EXPANSION JOINT FITTINGS FOR FIBRE CONDUIT. CONCRETE ENCASEMENT TYPE.
RUBBER RING
DETAIL J E-11 NOT TO SCALE
SHOWING METHOD OF INSTALLING EXPANSION COUPLINGS IN STREET LIGHTING CONDUITS AT NORTH END OF BRIDGE.
EXPANSION COUPLING
FOR EXPANSION JT. SEE C E-4
FOR SIDEWALK JT. SEE D E-4
TRICOTE TO FIBRE ADAPTOR
3" TRICOTE CONDUIT. THREAD END AND CAP. PROVIDE #9 FISH WIRE AND TIE TO END.
EXPANSION COUPLING AT EXPANSION JOINT ONLY.
WINGWALL
CONSTRUCTION JT.S
DETAIL K E-11 SCALE: 1/4"=1'-0"
TRICOTE CONDUIT AT END OF W/W ℄
℄ FIBRE CONDUIT AT ADAPTOR
VARIES
CONSTRUCTION JT. WINGWALL-SIDEWALK
CONSTRUCTION JT. DECK-SIDEWALK
ELEVATION K E-11 SCALE: 1/2"=1'-0"
CONDUIT STOP OFF
(As-Built)
EXPANSION BEARING DETAIL
Scale 3"=1'-0"
2-4# Stirrups welded to embedded plate @ 6" on skew. Stirrups to be bent on site to avoid cable where required.
Plate as detailed. locating pins burned off
epoxy/silica sand (1:3) grout
deck slab
12x12x 3/4 galvaniz. steel plate
Plate as detailed
As built: PTC recomended larger recesses
LONGITUDINAL CONSTRUCTIONAL JOINT
℄ CABLE
D476 SPIRAL TYPICAL
D475 SPIRAL TYPICAL
DETAIL L E-9 SCALE: 1"=1'-0"
END OF DECK SLAB
COSTRUCTION JT. OPTIONAL
D475 SPIRAL
D476 SPIRAL
DETAIL M E-9 SCALE: 1"=1'-0"
D477 SPIRAL
TOP OF MEDIAN OR SIDEWALK
DECK SLAB
1/4" POLYSTYRENE
℄ SIDEWALK AND MEDIAN CABLE
SECTION 3 E-11 SCALE: 1"=1'-0"
℄ CAP CABLE
As BUILT: 7x0.6 Monostrand used see CONENCO 0701-SK
EXTERNAL ANCHORAGE ASSEMBLY FOR 12x0.6"ϕ FREYSSINET STRAND CABLE. 6 ASSEMBLIES REQ'D.
CENTER PIER
DETAIL N E-9 SCALE: 1"=1'-0"
FREYSSINET RECESS DETAILS L E-9 M E-9 N E-9 P E-9
RECESS TYPICAL FOR ALL 12x0.276" ϕ FREYSSINET CABLES
DECK
1-D477 SPIRAL AT EACH SIDEWALK AND MEDIAN ANCHORAGE. TOTAL 32.
℄ SIDEWALK & MEDIAN CABLES
DETAIL P E-9 SCALE: 1"=1'-0"
*EP11-3 ANCHORAGE PLATES (14 REQ'D) FOR JACKING END.
*CATALOGUE "D" DIMENSION INCREASED FROM 6" TO 9".
EMBEDDED PLATE DETAIL (JACKING END)
EMBEDDED PLATE (SEE DETAIL)
℄ STRESSTEEL BAR
FLEXIBLE TUBING
GROUT PIPE TYP.
1 3/8"ϕ STRESSTEEL BAR
THREADED ANCHOR PL
N11 NUTS (42 REQ'D) FOR JACKING END.
*TP11 ANCHORAGE PLATES (42 REQ'D) FOR NONJACKING END TO BE SCREWED HOME FULLY ON BAR.
DETAIL Q E-9 SCALE: 1"=1'-0"
SECTION 4 E-11 SCALE: 1 1/2"=1'-0"
* REFERENCES TO PLATE TYPES ARE FROM STRESSTEEL CORP'N POST TENSIONING CATALOG.
STRESSTEEL BAR DETAILS

PRINT RECORD		
NO.	FOR	DATE

SPECIFICATIONS

REGISTERED PROFESSIONAL ENGINEER CIVIL

REGISTERED PROFESSIONAL ENGINEER V. BROMLEY

M. M. DILLON LIMITED
LONDON • TORONTO • OTTAWA • WINNIPEG • SUDBURY • WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

NATIONAL CAPITAL COMMISSION

NO.	REVISIONS	DATE	BY
2	AS-BUILT CHANGES & ADDITIONS NOTED	28/8/67	J.S.
1	NOTE ON ABUT. CABLES ADDED	DEC.23,66	C.H.G.

DESIGN V. J. B.
DRAWN J. O'N.
CHECKED A. I. W.
APPROVED
DATE Feb. 66
SCALE AS SHOWN

MISCELLANEOUS DETAILS

OTTAWA RIVER PARKWAY

RAMP 'E' STRUCTURE

PROJECT NO. 5877-20-4
SHEET NO. E-11
OF 15

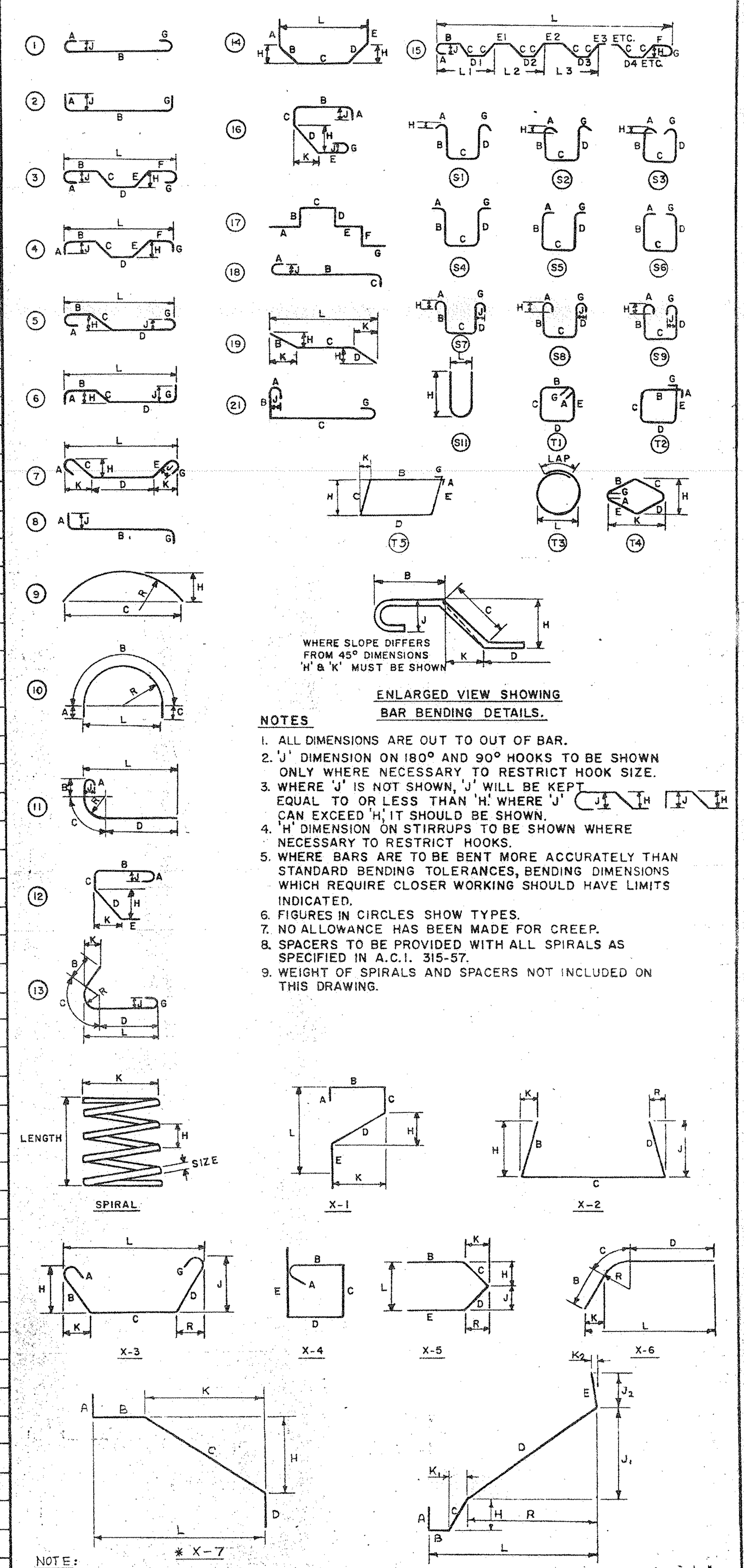
REINFORCING GRADE: INTER. — A.S.T.M.: A15-64

MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	R	SHAPE	WEIGHT	LOCATION
						FOUNDATION PILES													
FP-400	32	#4	5'-2	T3											1'-3				
FP-401	4	#4		SPIRAL								2"		1'-0	1'-4½				
FP-500	32	#5	3'-0	STR															
FP-501	144	#5	2'-6	STR															
						PIER-LEG FOOTINGS													
F 417	6	#4	4'-8	T5	6"	11"	11"	11"	11"		6"	7½"		8"					
F 418	15	#4	5'-4	T5	6"	1'-3	11"	1'-3	11"		6"	7½"		8"					
F 419	6	#4	6'-10	T5	6"	11"	2'-0	11"	2'-0		6"	1'-6½		1'-3½					
F 420	15	#4	7'-6	T5	6"	1'-3	2'-0	1'-3	2'-0		6"	1'-6½		1'-3½					
F 421	6	#4	8'-10	T5	6"	11"	3'-0	11"	3'-0		6"	2'-4½		1'-9½					
F 422	15	#4	9'-6	T5	6"	1'-3	3'-0	1'-3	3'-0		6"	2'-4½		1'-9½					
F 423	6	#4	10'-4	T5	6"	11"	3'-9	11"	3'-9		6"	3'-0		2'-2½					
F 424	15	#4	11'-0	T5	6"	1'-3	3'-9	1'-3	3'-9		6"	3'-0		2'-2½					
F 600	27	#6	15'-6	STR.															
F 601	51	#6	11'-4	14	1'-3	4'-0	10"	4'-0	1'-3			2'-10			6'-6				
F 800	6	#8	16'-6	STR.															
F 1101	18	#11	15'-6	STR.															
F 1101	66	#11	11'-0	2	2'-3	6'-6					2'-3		2'-8						
*F 1800	39	#18S	29'-3	X-7	2'-9	6'-0	16'-6	4'-0				9'-0		13'-11½	19'-11½				
*F 1801	39	#18S	31'-11	X-8	2'-9	2'-4	4'-7	18'-3	4'-0			3'-10	J₁ 10'-4 J₂ 3'-11	K₁ 2'-6 K₂ 0'-9	19'-9	4'-11			
* THESE BARS SHALL BE SUPPLIED AND BENT BY STEEL CO. OF CANADA LTD. OR EQUAL																			
						NORTH ABUTMENT FOOTING													
F 400	39	#4	6'-6	2	4'-0	2'-6													
F 401	123		8'-7	2	4'-7	4'-0													
F 402	1		12'-8	S6	8	2'-0	10'-0												
F 403	1		13'-5	S6	8	2'-0	10'-9												
F 404	1		14'-5	S6	8	2'-0	11'-9												
F 405	1		15'-5	S6	8	2'-0	12'-9												
F 406	1		16'-2	S6	8	2'-0	13'-6												
F 407	1		16'-11	S6	8	2'-0	14'-3												
F 408	1		16'-2	S6	8	2'-0	13'-6												
F 409	1		15'-5	S6	8	2'-0	13'-0												
F 410	1		14'-11	S6	8	2'-0	12'-3												
F 411	1		14'-5	S6	8	2'-0	11'-9												
F 412	1		13'-8	S6	8	2'-0	11'-0												
F 413	1		13'-2	S6	8	2'-0	10'-6												
F 414	1		12'-5	S6	8	2'-0	9'-9												
F 415	105		14'-4	S6	8	2'-0	9'-0	2'-0			8								
F 416	12		11'-10	S6	8	2'-0	6'-6	2'-0			8								
F 501	1	#5	19'-3	STR															
F 502	1		18'-0	STR															
F 503	1		16'-6	STR															
F 504	1		15'-3	STR															
F 505	1		13'-9	STR															
F 506	1		12'-6	STR															
F 507	1		15'-9	STR															
F 508	1		17'-0	STR															
F 509	1		18'-6	STR															
F 510	1		19'-9	STR															
F 511	1		21'-0	STR															
F 512	12		7'-8	1	7"	6'-6					7								
F 513	21		34'-6	STR															
F 514	2		6'-0	19		3'-0	3'-0					2'-4		1'-11	4'-11				
F 515	2		6'-0	X-2		3'-0	3'-0					2'-3		2'-0					

*A.S.T.M. A432 60,000 P.S.I. MIN. YIELD STRENGTH OF DEFORMED BARS AND SHALL BE COLD BENT. ROUND PIN DIAMETER 1'-10 1/2 MINIMUM.

REINFORCING GRADE: INTER. — A.S.T.M.: A15-64

MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	R.	SHAPE	WEIGHT	LOCATION
						NORTH ABUTMENT FOOTING (CONT'D.)													
F 602	32	#6	8'-3	21	8"	2'-10	4'-9												
F 603	119	#6	10'-6	21	8	4'-7	5'-3												
F 700	1	#7	19'-3	STR															
F 701	1		18'-9																
F 702	1		17'-6																
F 703	1		16'-9																
F 704	1		16'-0																
F 705	1		15'-3																
F 706	1		14'-3																
F 707	1		13'-3																
F 708	1		12'-3																
F 709	1		15'-9																
F 710	1		16'-3																
F 711	1		17'-3																
F 712	1		18'-0																
F 713	1		18'-9																
F 714	1		19'-3																
F 715	1		21'-0																
F 716	21		34'-6																
F 717	2		6'-0	19		3'-0	3'-0					2'-4		1'-11	4'-11				
F 718	2		6'-0	X-2		3'-0	3'-0					2'-3		2'-0					
F 802	1	#8	12'-2	1	1'-1	10'-0					1'-1								
F 803	1		12'-11	1	1'-1	10'-9					1'-1								
F 804	1		13'-11	1	1'-1	11'-9					1'-1								
F 805	1		14'-8	1	1'-1	12'-6					1'-1								
F 806	1		15'-8	1	1'-1	13'-6					1'-1								
F 807	1		16'-5	1	1'-1	14'-3					1'-1								
F 808	1		15'-8	1	1'-1	13'-6					1'-1								
F 809	1		15'-2	1	1'-1	13'-0					1'-1								
F 810	1		14'-5	1	1'-1	12'-3					1'-1								
F 811	1		13'-11	1	1'-1	11'-9					1'-1								
F 812	1		13'-2	1	1'-1	11'-0					1'-1								
F 813	1		12'-8	1	1'-1	10'-6					1'-1								
F 814	1		11'-11	1	1'-1	9'-9					1'-1								
F 815	105		11'-2	1	1'-1	9'-0					1'-1								



NOTES

1. ALL DIMENSIONS ARE OUT TO OUT OF BAR.
2. 'J' DIMENSION ON 180° AND 90° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE.
3. WHERE 'J' IS NOT SHOWN, 'J' WILL BE KEPT EQUAL TO OR LESS THAN 'H'. WHERE 'J' CAN EXCEED 'H', IT SHOULD BE SHOWN.
4. 'H' DIMENSION ON STIRRUPS TO BE SHOWN WHERE NECESSARY TO RESTRICT HOOKS.
5. WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS WHICH REQUIRE CLOSER WORKING SHOULD HAVE LIMITS INDICATED.
6. FIGURES IN CIRCLES SHOW TYPES.
7. NO ALLOWANCE HAS BEEN MADE FOR CREEP.
8. SPACERS TO BE PROVIDED WITH ALL SPIRALS AS SPECIFIED IN A.C.I. 315-57.
9. WEIGHT OF SPIRALS AND SPACERS NOT INCLUDED ON THIS DRAWING.

NOTE: TYPE X-7 & X-8 BARS SHALL BE FABRICATED USING A MIN. PIN DIAMETER OF 1'-10½".

ALL FABRICATION MUST BE IN ACCORDANCE WITH A.C.I. 315-65

HARD GRADE BARS SHALL CONFORM WITH A.S.T.M. A432-64 SPECIFICATIONS AND AS NOTED. ALL INTERMEDIATE GRADE BARS SHALL CONFORM TO A.S.T.M. A15-64 AND A408-64 SPECIFICATIONS AS NOTED.

NO.	REVISIONS	DATE	BY

NO.	FOR	DATE

PRINT RECORD

A. L. WOLFENDEN (stamp)

M. M. DILLON LIMITED
LONDON • TORONTO • OTTAWA • WINNIPEG • SUDBURY • WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

OTTAWA RIVER PARKWAY
RAMP 'E' STRUCTURE
REINFORCING STEEL SCHEDULE

LOCATION: FOOTINGS

REFER TO DRWG NO:

DRAWN J.O'N.
CHECKED L.M.F.
APPROVED
DATE FEB. 1966

NATIONAL CAPITAL COMMISSION

PROJECT NO. 5877-20-4
SHEET NO. E-12
OF 15

REINFORCING
GRADE ASTM
INTER. A15-64

PIER AND LEG

MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	R	SHAPE	WEIGHT	LOCATION
P 300	57	*5	3'-2	X-11	1'-0	1'-2					1'-0								
P 301	2103	*5	3'-5	X-11	1'-0	1'-5					1'-0								
P 400	6	*4	13'-2	X-12	1'-1	11'-0					1'-1	1'-0½		0'-4½					
P 401	222		13'-8		1'-4	11'-0					1'-4	1'-5		0'-5½					
P 402	6		13'-2		1'-1	11'-0					1'-1	0'-10½		0'-7½					
P 403	6		5'-6	X-13	0'-6	0'-11	1'-4	0'-11	1'-4		0'-6	1'-0		0'-13½					
P 404	15		6'-2	X-13	0'-6	1'-3	1'-4	1'-3	1'-4		0'-6	1'-0		0'-10½					
P 405	18		13'-8	X-12	1'-4	11'-0					1'-4	1'-1		0'-9					
P 406	18		2'-0	X-13	0'-6	0'-11	1'-7	0'-11	1'-7		0'-6	1'-2½		1'-0½					
P 407	45		2'-8	X-13	0'-6	1'-5	1'-7	1'-3	1'-7		0'-6	1'-2½		1'-0½					
P 408	18		13'-10	X-12	1'-5	11'-0					1'-5	1'-2		0'-9½					
P 409	18		2'-2	X-13	0'-6	0'-11	1'-8	0'-11	1'-8		0'-6	1'-3		1'-1½					
P 410	45		2'-10	X-13	0'-6	1'-3	1'-8	1'-3	1'-8		0'-6	1'-3		1'-1					
P 411	12		14'-0	X-12	1'-6	11'-0					1'-6	1'-3		0'-10½					
P 412	6		3'-4	X-13	0'-6	0'-11	1'-9	0'-11	1'-9		0'-6	1'-4		1'-1½					
P 413	30		7'-0		0'-6	1'-3	1'-9	1'-3	1'-9		0'-6	1'-4		1'-1½					
P 414	3		4'-6		0'-6	0'-11	0'-10	0'-11	0'-10		0'-6	0'-7		0'-7½					
P 415	3		5'-2		0'-6	0'-11	1'-2	0'-11	1'-2		0'-6	1'-0		0'-7½					
P 416	3		4'-4		0'-6	0'-11	0'-9	0'-11	0'-9		0'-6	0'-7½		0'-5					
P 417	3		5'-4		0'-6	0'-11	1'-3	0'-11	1'-3		0'-6	0'-11		0'-10½					
P 418	6		14'-2	X-12	1'-7	11'-0					1'-7	1'-3½		0'-11					
P 419	15		7'-2	X-13	0'-6	1'-3	1'-10	1'-3	1'-10		0'-6	1'-5		1'-2					
P 420	3		4'-6		0'-6	0'-11	0'-11	0'-11	0'-11		0'-6	0'-7½		0'-8					
P 421	3		5'-2		0'-6	0'-11	1'-2	0'-11	1'-2		0'-6	1'-0		0'-7½					
P 422	3		4'-4		0'-6	0'-11	0'-9	0'-11	0'-9		0'-6	0'-7½		0'-5					
P 423	3		5'-6		0'-6	0'-11	1'-4	0'-11	1'-4		0'-6	1'-0½		0'-11½					
P 424	12		14'-4	X-12	1'-8	11'-0					1'-8	1'-4½		0'-11½					
P 425	30		7'-4	X-13	0'-6	1'-5	1'-11	1'-5	1'-11		0'-6	1'-6		1'-2½					
P 426	6		4'-8		0'-6	0'-11	0'-11	0'-11	0'-11		0'-6	0'-7½		0'-8					
P 427	3		5'-4		0'-6	0'-11	1'-3	0'-11	1'-3		0'-6	1'-0½		0'-8					
P 428	3		4'-4		0'-6	0'-11	0'-9	0'-11	0'-9		0'-6	0'-7½		0'-5					
P 429	3		5'-8		0'-6	0'-11	1'-5	0'-11	1'-5		0'-6	1'-0½		0'-11½					
P 430	6		14'-0	X-12	1'-9	11'-0					1'-9	1'-5		1'-0					
P 431	15		7'-6	X-13	0'-6	1'-3	2'-0	1'-3	2'-0		0'-6	1'-6½		1'-3					
P 432	6		4'-10		0'-6	0'-11	0'-11	0'-11	0'-11		0'-6	0'-7½		0'-8					
P 433	6		4'-6		0'-6	0'-11	0'-10	0'-11	0'-10		0'-6	0'-6½		0'-8½					
P 434	12		14'-8	X-12	1'-10	11'-0					1'-10	1'-6½		1'-0½					
P 435	30		7'-8	X-13	0'-6	1'-3	2'-1	1'-3	2'-1		0'-6	1'-7½		1'-2½					
P 436	12		4'-10		0'-6	0'-11	1'-0	0'-11	1'-0		0'-6	0'-8½		0'-9½					
P 437	12		4'-6		0'-6	0'-11	0'-10	0'-11	0'-10		0'-6	0'-8½		0'-8½					
P 438	6		14'-10	X-12	1'-11	11'-0					1'-11	1'-7		1'-1½					
P 439	15		7'-10	X-13	0'-6	1'-3	2'-2	1'-3	2'-2		0'-6	1'-8½		1'-4					
P 440	6		4'-10		0'-6	0'-11	1'-0	0'-11	1'-0		0'-6	0'-8½		0'-9½					
P 441	6		4'-6		0'-6	0'-11	0'-10	0'-11	0'-10		0'-6	0'-8½		0'-8½					
P 442	12		15'-0	X-12	2'-0	11'-0					2'-0	1'-7½		1'-1½					
P 443	30		8'-0	X-13	0'-6	1'-3	2'-3	1'-3	2'-3		0'-6	1'-9		1'-5					
P 444	12		4'-10		0'-6	0'-11	1'-0	0'-11	1'-0		0'-6	0'-8½		0'-9½					
P 445	12		4'-8		0'-6	0'-11	0'-11	0'-11	0'-11		0'-6	0'-8½		0'-8½					
P 446	6		15'-2	X-12	2'-1	11'-0					2'-1	1'-8½		1'-2½					
P 447	15		8'-2	X-13	0'-6	1'-3	2'-4	1'-3	2'-4		0'-6	1'-10		1'-5½					
P 448	6		4'-10		0'-6	0'-11	1'-0	0'-11	1'-0		0'-6	0'-8½		0'-9½					
P 449	6		4'-8		0'-6	0'-11	0'-11	0'-11	0'-11		0'-6	0'-8½		0'-8½					
P 450	6		16'-2	X-12	2'-7	11'-0					2'-7	1'-10		1'-10					
P 451	15		9'-2	X-13	0'-6	1'-3	2'-10	1'-3	2'-10		0'-6	1'-10½		2'-1½					
P 452	6		5'-4		0'-6	0'-11	1'-3	0'-11	1'-3		0'-6	0'-9		1'-0					
P 453	6		5'-0		0'-6	0'-11	1'-1	0'-11	1'-1		0'-6	0'-9		0'-9					

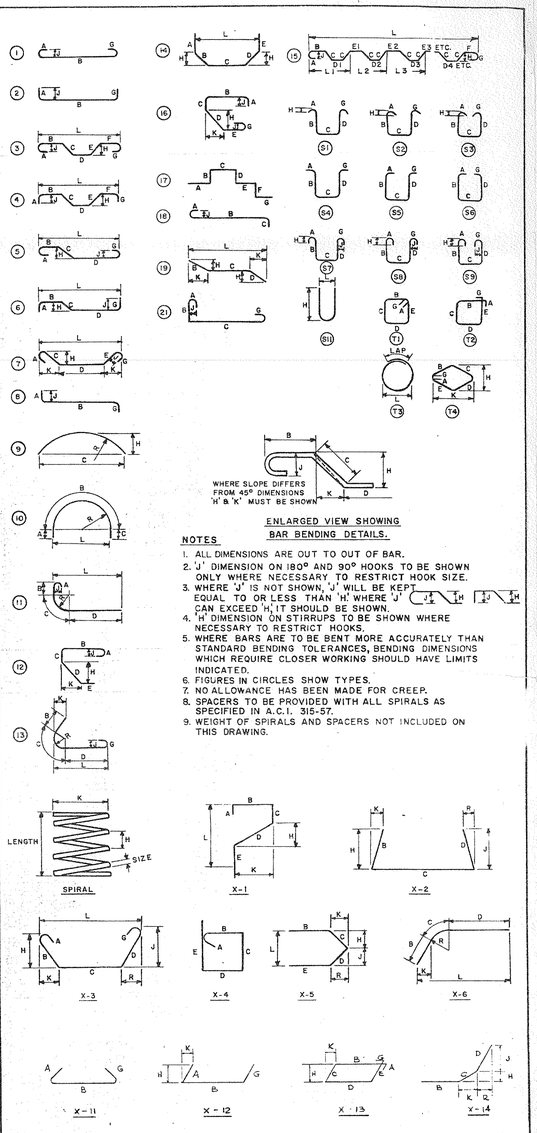
REINFORCING
GRADE ASTM
INTER. A15-64

* A.S.T.M. A 432 60,000 P.S.I. MIN. YIELD STRENGTH DEFORMED BARS AND SHALL BE COLD BENT. ROUND PIN DIAMETER 1'-10½ MIN.

PIER AND LEG (CONT'D)

MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	R.	SHAPE	WEIGHT	LOCATION
P 600	6	*6	11'-0	STR.															
P 900	57	*9	40'-11	X-14		36'-3	1'-8	3'-0				0'-8½	2'-11½	1'-6		0'-6½			
P 901	57	*9	9'-0	X-2		3'-0	6'-0					2'-8½		1'-4½					
P 1000	57	*10	38'-3	X-3				35'-3	3'-0				2'-11½		35'-9½	0'-6½			
P 1001	57		11'-5	X-1		3'-0	3'-2	5'-3				4'-10		2'-1					
P 1002	57		7'-9	X-1		3'-0	1'-9	3'-0				1'-2		2'-10					
* P 1803	12	*18	19'-3	X-2		6'-0	13'-3					5'-1		3'-2					
* P 1804	12	*18	16'-3	X-2		6'-0	10'-3					5'-1		3'-3½					

* THESE BARS SHALL BE SUPPLIED AND BENT BY STEEL CO. OF CANADA LTD. OR EQUAL



ENLARGED VIEW SHOWING BAR BENDING DETAILS.

NOTES

1. ALL DIMENSIONS ARE OUT TO OUT OF BAR.
2. 'J' DIMENSION ON 180° AND 90° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE.
3. WHERE 'J' IS NOT SHOWN, 'J' WILL BE KEPT EQUAL TO OR LESS THAN 'H' WHERE 'J' CAN EXCEED 'H', IT SHOULD BE SHOWN.
4. 'H' DIMENSION ON STIRRUPS TO BE SHOWN WHERE NECESSARY TO RESTRICT HOOKS.
5. WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS WHICH REQUIRE CLOSER WORKING SHOULD HAVE LIMITS INDICATED.
6. FIGURES IN CIRCLES SHOW TYPES.
7. NO ALLOWANCE HAS BEEN MADE FOR CREEP.
8. SPACERS TO BE PROVIDED WITH ALL SPIRALS AS SPECIFIED IN A.C.I. 315-57.
9. WEIGHT OF SPIRALS AND SPACERS NOT INCLUDED ON THIS DRAWING.

ALL FABRICATION MUST BE IN ACCORDANCE WITH A.C.I. 315-65

HARD GRADE BARS SHALL CONFORM WITH A.S.T.M. A432-64 SPECIFICATIONS AND AS NOTED. ALL INTERMEDIATE GRADE BARS SHALL CONFORM TO A.S.T.M. A15-64 AND A408-64 SPECIFICATIONS AS NOTED.

NO.	REVISIONS	DATE	BY

NO.	FOR	DATE

PRINT RECORD

M. M. DILLON LIMITED
LONDON · TORONTO · OTTAWA · WINNIPEG · SUDBURY · WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

OTTAWA RIVER PARKWAY
RAMP 'E' STRUCTURE
REINFORCING STEEL SCHEDULE

LOCATION: PIERS AND LEGS
REFER TO DRWG NO:

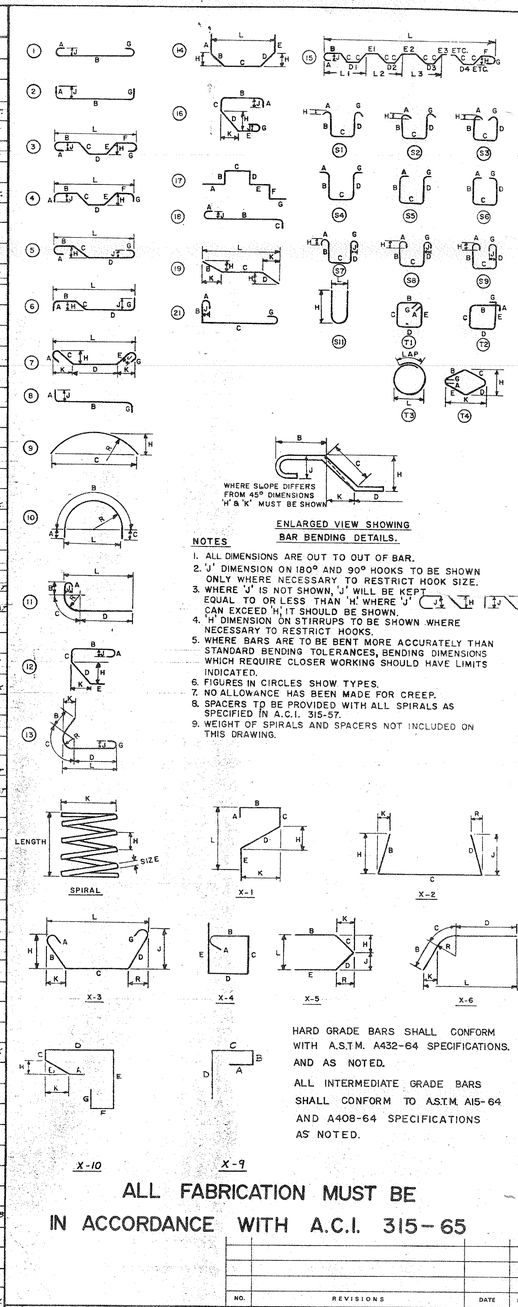
DRAWN J.O'N.	NATIONAL CAPITAL COMMISSION	PROJECT NO. 5877-20-4
CHECKED R.V.D. / M.F.R.		SHEET NO. E-13
APPROVED		OF 15
DATE FEB 1966		

REINFORCING GRADE INTER. ASTM A15-64

MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	R	SHAPE	WEIGHT	LOCATION
						SOUTH ABUTMENT & WINGWALLS - DWG. E-5													
AD 400	104	#4	11'-5	17	1'-3	7'-9	1'-2	1'-3	—	—	—								ABUTM. VERT.
AD 401	42		35'-6	STR.															ABUTM. HORIZ.
AD 402	4		7'-3	STR.															3-S.E.W.W. 1-S.W.W.W. VERT.
AD 403	2		17'-5	T1	4½	1'-2	7'-2	1'-2	7'-2		4½								1-S.E.W.W. 1-S.W.W.W. VERT.
AD 404	1		16'-9		4½	1'-2	6'-10	1'-2	6'-10		4½								S.E.W.W. VERT.
AD 405	1		15'-1		4½	1'-2	6'-0	1'-2	6'-0		4½								
AD 406	1		13'-5		4½	1'-2	5'-2	1'-2	5'-2		4½								
AD 407	1		11'-9		4½	1'-2	4'-4	1'-2	4'-4		4½								
AD 408	1		10'-1		4½	1'-2	3'-6	1'-2	3'-6		4½								
AD 409	1		8'-5		4½	1'-2	2'-8	1'-2	2'-8		4½								
AD 410	1		4'-0	STR.															HORIZ.
AD 411	1		5'-9																
AD 412	1		7'-6																
AD 413	1		9'-3																
AD 414	4		11'-0																1-S.E.W.W. 3-S.E.W.W. HORIZ. SIDEWLK.
AD 415	3		12'-3																S.E.W.W. HORIZ.
AD 416	9		10'-0	X-2		5'-0	5'-0	—				3'-6	—	3'-7					S.E. CORNER HORIZ.
AD 417	1		16'-2	T1	4½	1'-2	6'-8	1'-2	6'-8		4½								S.W.W.W. VERT.
AD 418	1		15'-5		4½	1'-2	6'-2	1'-2	6'-2		4½								
AD 419	1		14'-5		4½	1'-2	5'-8	1'-2	5'-8		4½								
AD 420	1		13'-5		4½	1'-2	5'-2	1'-2	5'-2		4½								
AD 421	1		12'-5		4½	1'-2	4'-8	1'-2	4'-8		4½								
AD 422	1		11'-3		4½	1'-2	4'-2	1'-2	4'-2		4½								
AD 423	1		10'-5		4½	1'-2	3'-8	1'-2	3'-8		4½								
AD 424	1		9'-5		4½	1'-2	3'-2	1'-2	3'-2		4½								
AD 425	1		8'-5		4½	1'-2	2'-8	1'-2	2'-8		4½								
AD 426	9		9'-7	X-9	2'-0	1'-2	2'-6	3'-11											S.E.W.W. SIDEWLK.
AD 427	1		8'-9	X-9	1'-7	1'-2	2'-1	3'-11											
AD 428	1		6'-3	17	—	3'-11	1'-2	1'-2											
AD 429	3		38'-6	STR.															ABUTM. (SEAT) HORIZ. EAST
AD 430	3		40'-0																WEST
AD 431	9		11'-8																S.E.W.W. SIDEWALK
AD 432	3		10'-0																
AD 433	2		8'-6																
AD 434	2		12'-3	19		2'-9	9'-6	—				1'-3½		2'-5					SLOPE
AD 435	14		5'-3	STR.															S.W.W.W. VERT.
AD 436	3		14'-3																SIDEWALK
AD 437	13		13'-3																
AD 500	1	#5	2'-9	STR.															S.E.W.W. HORIZ.
AD 501	1		4'-6																
AD 502	1		6'-3																
AD 503	1		8'-0																
AD 504	1		9'-9																
AD 505	3		11'-0																
AD 506	9		6'-0	7	—	2'-0	1'-8	4'-8	1'-8		—	1'-7	—	7½	5'-11				S.E. FILLET HORIZ.
AD 507	78		6'-3	X-10	—	2'-0	0'-6	2'-1	1'-5	—	—	1'-5		1'-8					ABUTM. (APPR. SL. SEAT)
AD 508	104		7'-9	X-10	—	2'-0	2'-3	3'-6	—	—	—	1'-3		1'-5					
AD 600	1	#6	15'-3	19		1'-6	13'-9	—				0'-6		1'-5½					S.W.W.W. SLOPE
AD 601	NOT USED																		NOT USED
AD 602	1		3'-6	STR.															S.W.W.W. HORIZ.
AD 603	1		6'-6																
AD 604	1		9'-6																
AD 605	1		12'-6																
AD 606	3		14'-6																
AD 607	11		18'-10	X-10	1'-0	4'-9	0'-8	5'-8	4'-9	1'-0	1'-0	1'-1		4'-7½					S.E.W.W. SIDEWALK
AD 608	1		18'-10		1'-0	4'-9	0'-8	4'-8	4'-9	—	—	1'-1		4'-7½					
AD 609	14		21'-9		1'-0	6'-1	0'-8	7'-0	5'-0	1'-0	1'-0	1'-5½		5'-10					S.W.W.W.
AD 610	2		5'-3	17	—	2'-3	3'-0	—	—	—	—								
AD 611	9		8'-0	19		4'-0	4'-0	—				2'-6½		3'-2					S.W. CORNER HORIZ.
AD 700	104	#7	13'-2	X-2		4'-6	8'-8	—				—	—	0'-3		—			ABUTM. VERT.
AD 701	6		7'-0	STR.															4-S.W. FILLET 2-S.E. FILLET
AD 702	12	#7	15'-0	STR.															ABUTM. HORIZ.
AD 800	1	#8	16'-6	19		2'-9	13'-9	—				0'-10		2'-4½					S.W.W.W. SLOPE
AD 801	NOT USED																		NOT USED
AD 802	1		4'-9	STR.															S.W.W.W. HORIZ.
AD 803	1		7'-9																
AD 804	1		10'-9																

REINFORCING GRADE INTER. ASTM A15-64

MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	R	SHAPE	WEIGHT	LOCATION
						CONT'D SOUTH ABUTMENT & WINGWALLS - DWG. E-5													
AD 805	1	#8	13'-9	STR.															S.W.W.W. HORIZ.
AD 806	3		15'-9																
AD 807	1		14'-2	17	—	2'-6	9'-2	2'-6	—	—	—								S.W. FILLET HORIZ. BOT.
AD 808	8		13'-5	7	—	—	1'-0	11'-5	1'-0		—	0'-4	—	0'-11	13'-3				HORIZ.
AD 900	12	#9	36'-3	STR.															ABUTM. HORIZ. BOT.
						NORTH ABUTMENT & WINGWALLS - DWG. E-5													
A 400	31	#4	4'-9	STR.															ABUTM VERT.
A 401	31		5'-6																
A 402	31		6'-3																
A 403	30		7'-0																
A 404	4		17'-11																BACKWALL HORIZ.
A 405	19		7'-9																N.E.W.W. VERT.
A 406	NOT USED																		NOT USED
A 407	17		11'-9	X-9	3'-2	1'-2	3'-8	3'-9											N.E.W.W. SIDEWALK
A 408	1		10'-0		2'-3	1'-2	2'-10	3'-9											
A 409	1		7'-9		1'-2	1'-2	1'-8	3'-9											
A 410	1		6'-6		0'-6	1'-2	1'-1	3'-9											
A 411	6		12'-0	STR.															HORIZ. SIDEWALK
A 412	1		12'-9																
A 413	2		13'-9																
A 414	2		14'-9																
A 415	8		10'-0	19		5'-0	5'-0	—				3'-0½		3'-2					N.E. CORNER HORIZ. BELOW SEAT
A 416	1		9'-0	19		4'-6	4'-6	—				3'-5½		2'-10					HORIZ. ABOVE SEAT
A 417	NOT USED																		NOT USED
A 418	20		4'-9	STR.															N.W.W.W. VERT.
A 419	15		9'-0	X-9	1'-5	1'-4	2'-0	4'-3											SIDEWALK
A 420	8		13'-0	STR.															HORIZ. SIDEWALK
A 421	1		12'-6																
A 422	2		11'-6																
A 423	2		10'-9																
A 424	5		14'-6	X-2		7'-3	7'-3	—				5'-5	—	4'-10		—			N.W. CORNER HORIZ. BELOW SEAT
A 425	1		11'-6	X-2		5'-9	5'-9	—				4'-3½	—	3'-10		—			HORIZ. ABOVE SEAT
A 500	125	#5	5'-3	17	—	1'-8	1'-11	1'-8	—	—	—								ABUTM. SEAT
A 501	11		32'-3	STR.															HORIZ.
A 502	4		13'-6																N.E.W.W. HORIZ.
A 503	1		12'-0																
A 504	17		16'-6	X-10	—	4'-7	0'-8	4'-6	4'-9	1'-0	1'-0	1'-1		4'-6					SIDEWALK
A 508	3		14'-8	STR.															N.W.W.W. HORIZ.
A 509	1		12'-9	STR.															
A 510	16		19'-10	X-10	—	6'-3	0'-8	6'-2	4'-9	1'-0	1'-0	1'-6		6'-1					SIDEWALK
A 511	1		19'-4		—	6'-3	0'-8	5'-8	4'-9	1'-0	1'-0	1'-6		6'-1					
A 512	1		18'-10		—	6'-3	0'-8	5'-2	4'-9	1'-0	1'-0	1'-6		6'-1					
A 600	27	#6	5'-0	STR.															ABUTM. VERT.
A 601	31		5'-9																
A 602	31		6'-6																
A 603	30		7'-3																
A 604	178		6'-10	17	—	3'-3	2'-9	—	—	—	—								DWL'S APPR. SLAB
A 605	24		8'-8		—	4'-0	0'-8	4'-0	—	—	—								CAP BARS MED.
A 606	10		6'-9		—	4'-0	2'-9	—	—	—	—								DWL'S SIDEWLK.
A 607	123		4'-0	STR.															DWL'S BACKWALL
A 608	6		32'-6																TOP HORIZ. BACKWALL
A 609	19		7'-9																N.E.W.W. VERT.
A 610	14		4'-9																N.W.W.W. VERT.
A 700	27	#7	33'-0	STR.															ABUTM. HORIZ. ROUNDED SEAT
A 701	9		12'-9	STR.															N.E.W.W. HORIZ.
A 702	8		12'-0	7	—		1'-0	10'-0	1'-0		—	0'-5	—	0'-11	11'-10				N.E. FILLET HORIZ. BELOW SEAT
A 703	1		9'-8	7	—		1'-3	7'-2	1'-3		—	0'-6½	—	1'-1½	9'-5				HORIZ. ABOVE SEAT
A 704	6		11'-6	STR.															N.W.W.W. HORIZ.
A 705	5		8'-6	7	—		1'-9	5'-0	1'-9		—	1'-7	—	0'-8	6'-4				N.W. FILLET HORIZ. BELOW SEAT
A 706	1		8'-1	7	—		2'-3	3'-7	2'-3		—	2'-1	—	0'-11	5'-5				HORIZ. ABOVE SEAT



ENLARGED VIEW SHOWING BAR BENDING DETAILS.

NOTES

1. ALL DIMENSIONS ARE OUT TO OUT OF BAR.
2. 'J' DIMENSION ON 180° AND 90° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE.
3. WHERE 'J' IS NOT SHOWN, 'J' WILL BE KEPT EQUAL TO OR LESS THAN 'H'. WHERE 'J' CAN EXCEED 'H', IT SHOULD BE SHOWN.
4. 'H' DIMENSION ON STIRRUPS TO BE SHOWN WHERE NECESSARY TO RESTRICT HOOKS.
5. WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS WHICH REQUIRE CLOSER WORKING SHOULD HAVE LIMITS INDICATED.
6. FIGURES IN CIRCLES SHOW TYPES.
7. NO ALLOWANCE HAS BEEN MADE FOR CREEP.
8. SPACERS TO BE PROVIDED WITH ALL SPIRALS AS SPECIFIED IN A.C.I. 315-57.
9. WEIGHT OF SPIRALS AND SPACERS NOT INCLUDED ON THIS DRAWING.

HARD GRADE BARS SHALL CONFORM WITH A.S.T.M. A432-64 SPECIFICATIONS, AND AS NOTED.

ALL INTERMEDIATE GRADE BARS SHALL CONFORM TO A.S.T.M. A15-64 AND A408-64 SPECIFICATIONS AS NOTED.

ALL FABRICATION MUST BE IN ACCORDANCE WITH A.C.I. 315-65

NO.	REVISIONS	DATE	BY

NO.	FOR	DATE
	PRINT RECORD	

REGISTERED PROFESSIONAL ENGINEER — CIVIL — J. H. KEARNEY — PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER — V. I. BROMLEY — PROVINCE OF ONTARIO

M. M. DILLON LIMITED
LONDON • TORONTO • OTTAWA • WINNIPEG • SUDBURY • WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

OTTAWA RIVER PARKWAY
RAMP 'E' STRUCTURE
REINFORCING STEEL SCHEDULE

LOCATION: ABUTMENTS AND WINGWALLS

REFER TO DRWG NO:

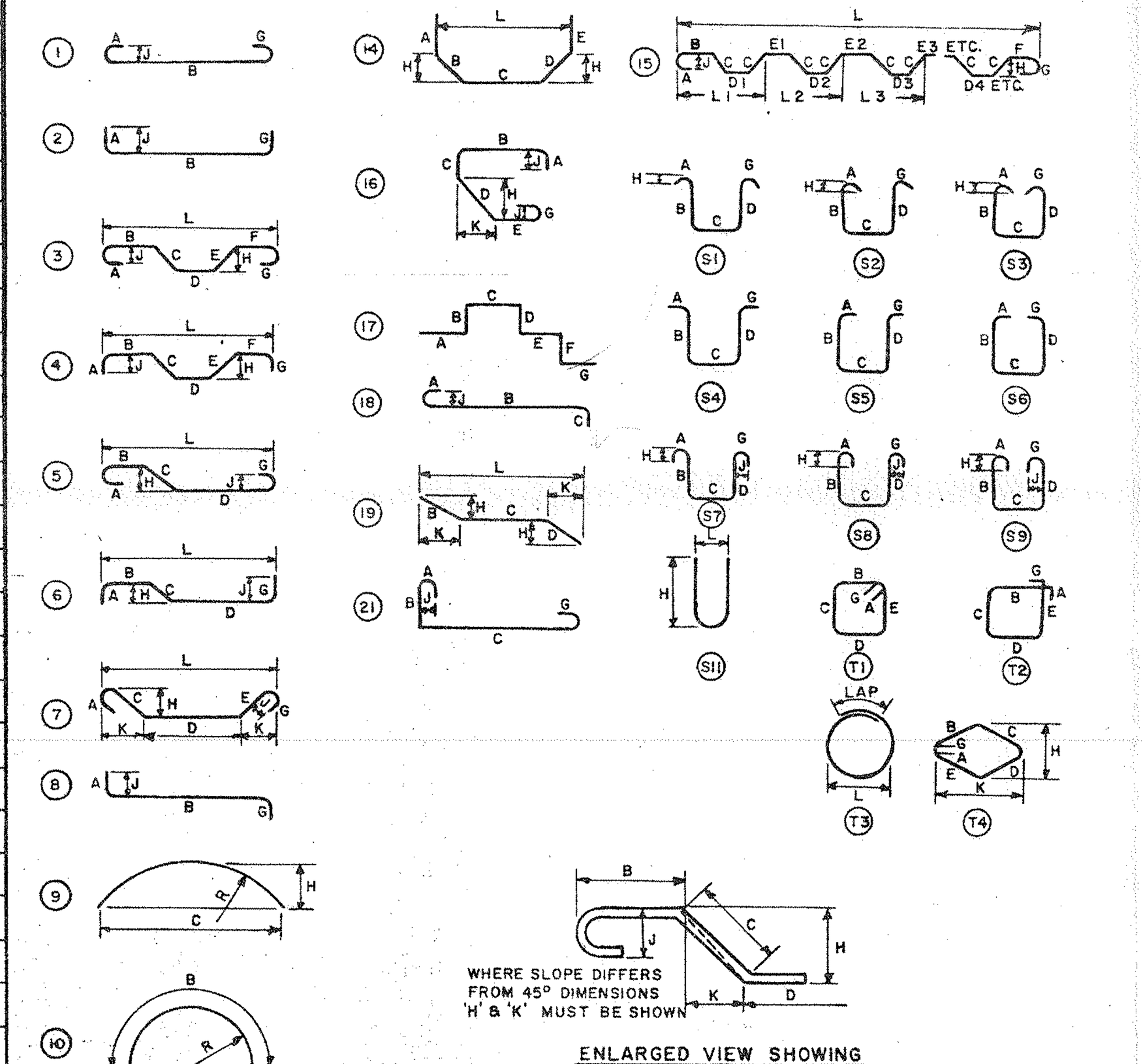
DRAWN	A.F.
CHECKED	L.M.T. J.O.N.
APPROVED	
DATE	FEB. 1966

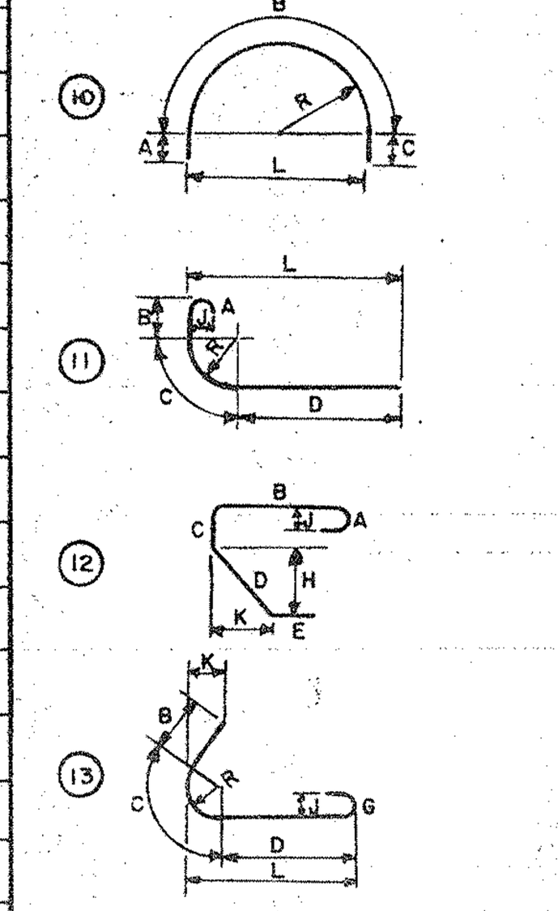
NATIONAL CAPITAL COMMISSION

PROJECT NO. 5877-20-4
SHEET NO. E-14
OF 15

REINFORCING GRADE	A.S.T.M.	MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	R	SHAPE	WEIGHT	LOCATION
		DECK SLAB - DWG. E-8																			
INTER.	A15-64	D 610	1	#6	4'-3	19		2'-0	2'-3	—				0'-6		1'-11	—				WEST SIDEWALK BOT.
		D 611	1		8'-9			2'-0	6'-9	—				0'-6		1'-11	—				
		D 612	4		12'-0			2'-0	10'-0	—				0'-6		1'-11	—				
		D 613	4		13'-0			2'-0	11'-0	—				0'-6		1'-11	—				
		D 614	4		14'-0			2'-0	12'-0	—				0'-6		1'-11	—				
		D 615	4		14'-6			2'-0	12'-6	—				0'-6		1'-11	—				
		D 616	4		12'-9			2'-0	10'-9	—				0'-6		1'-11	—				
		D 617	4		11'-0			2'-0	9'-0	—				0'-6		1'-11	—				
		D 618	5		10'-0			2'-0	8'-0	—				0'-6		1'-11	—				
		D 619	10		9'-6			2'-0	7'-6	—				0'-6		1'-11	—				
		D 620	1		7'-0			2'-0	5'-0	—				0'-7½		1'-10½	—				
		D 621	1		6'-6			2'-0	4'-6	—				0'-4½		1'-11½	—				EAST SIDEWALK BOT.
		D 622	2		9'-0			2'-0	7'-0	—				0'-4		1'-11½	—				
		D 623	2		10'-3			2'-0	8'-3	—				0'-4		1'-11½	—				
		D 624	2		11'-9			2'-0	9'-9	—				0'-4		1'-11½	—				
		D 625	2		13'-0			2'-0	11'-0	—				0'-4		1'-11½	—				
		D 626	2		14'-6			2'-0	12'-6	—				0'-4		1'-11½	—				
		D 627	2		15'-9			2'-0	13'-9	—				0'-4		1'-11½	—				
		D 628	2		17'-0			2'-0	15'-0	—				0'-4		1'-11½	—				
		D 629	2		17'-6			2'-0	15'-6	—				0'-4		1'-11½	—				
		D 630	2		16'-9			2'-0	14'-9	—				0'-4		1'-11½	—				
		D 631	2		15'-0			2'-0	13'-0	—				0'-4		1'-11½	—				
		D 632	2		13'-6			2'-0	11'-6	—				0'-4		1'-11½	—				
		D 633	2		12'-0			2'-0	10'-0	—				0'-4		1'-11½	—				
		D 634	2		10'-0			2'-0	8'-0	—				0'-4		1'-11½	—				
		D 635	5		9'-3			2'-0	7'-3	—				0'-4		1'-11½	—				
		D 636	5		8'-6			2'-0	6'-6	—				0'-4		1'-11½	—				
		D 637	4		7'-3			2'-0	5'-3	—				0'-4		1'-11½	—				
		D 638	1		5'-6			2'-0	3'-6	—				0'-4		1'-11½	—				
		D 430	121	#4	15'-6	STR.															WEST SIDEWALK BELOW CONSTR. JT.
		D 431	8		11'-0																4/WEST SIDEWALK 4/EAST SIDEWALK
		D 432	121		14'-6																EAST SIDEWALK
		D 433	52		33'-0																WEST T.& BOT.
		D 434	52		31'-6																EAST T.& BOT.
		D 435	32		32'-3																MEDIAN
		D 436	1		24'-3	X-10	0'-9	0'-6	21'-9	0'-6	0'-9										MEDIAN
		D 437	110		17'-0		0'-9	0'-6	14'-6	0'-6	0'-9										
		D 438	1		21'-9		0'-9	0'-6	19'-3	0'-6	0'-9										
		D 439	1		3'-3		0'-9	0'-6	2'-0	—	—										MEDIAN AT SOUTH
		D 440	1		4'-0		0'-9	0'-6	2'-9	—	—										
		D 441	1		5'-0		0'-9	0'-6	3'-9	—	—										
		D 442	1		5'-9		0'-9	0'-6	4'-6	—	—										
		D 443	1		6'-9		0'-9	0'-6	5'-6	—	—										
		D 444	1		7'-9		0'-9	0'-6	6'-6	—	—										
		D 445	1		8'-6		0'-9	0'-6	7'-3	—	—										
		D 446	1		9'-6		0'-9	0'-6	8'-3	—	—										
		D 447	1		10'-3		0'-9	0'-6	9'-0	—	—										
		D 448	1		11'-3		0'-9	0'-6	10'-0	—	—										
		D 449	1		12'-0		0'-9	0'-6	10'-9	—	—										
		D 450	1		13'-0		0'-9	0'-6	11'-9	—	—										
		D 451	1		13'-9		0'-9	0'-6	12'-6	—	—										
		D 452	1		14'-9		0'-9	0'-6	13'-6	—	—										
		D 453	1		14'-9		0'-9	0'-6	13'-6	—	—										AT NORTH
		D 454	1		13'-6		0'-9	0'-6	12'-3	—	—										
		D 455	1		12'-6		0'-9	0'-6	11'-3	—	—										
		D 456	1		11'-6		0'-9	0'-6	10'-3	—	—										
		D 457	1		10'-3		0'-9	0'-6	9'-0	—	—										
		D 458	1		9'-0		0'-9	0'-6	7'-9	—	—										
		D 459	1		8'-0		0'-9	0'-6	6'-9	—	—										
		D 460	1		6'-9		0'-9	0'-6	5'-6	—	—										
		D 461	1		5'-9		0'-9	0'-6	4'-6	—	—										
		D 462	1		4'-6		0'-9	0'-6	3'-3	—	—										
		D 463	1		3'-6		0'-9	0'-6	2'-3	—	—										
		D 464	57		3'-6	X-11	0'-7½						0'-7½	1'-1			0'-4				OVER LEGS AT SOUTH
		D 465	3		35'-6	STR.															TOP AT SOUTH ABUT.
		D 475	218	#4		SPIRAL								0'-2	0'-10		1'-0				AT TYPE A,B,C,&D CABLE ANCHORAGES AND S. ABUT. ANCHORAGES ② TO ⑤.
		D 476	218	#4		SPIRAL								0'-2	0'-7½		1'-0				
		D 477	32	#4		SPIRAL								0'-2	0'-6"		1'-0				ANCHORAGES FOR S/W & MEDIAN CABLES

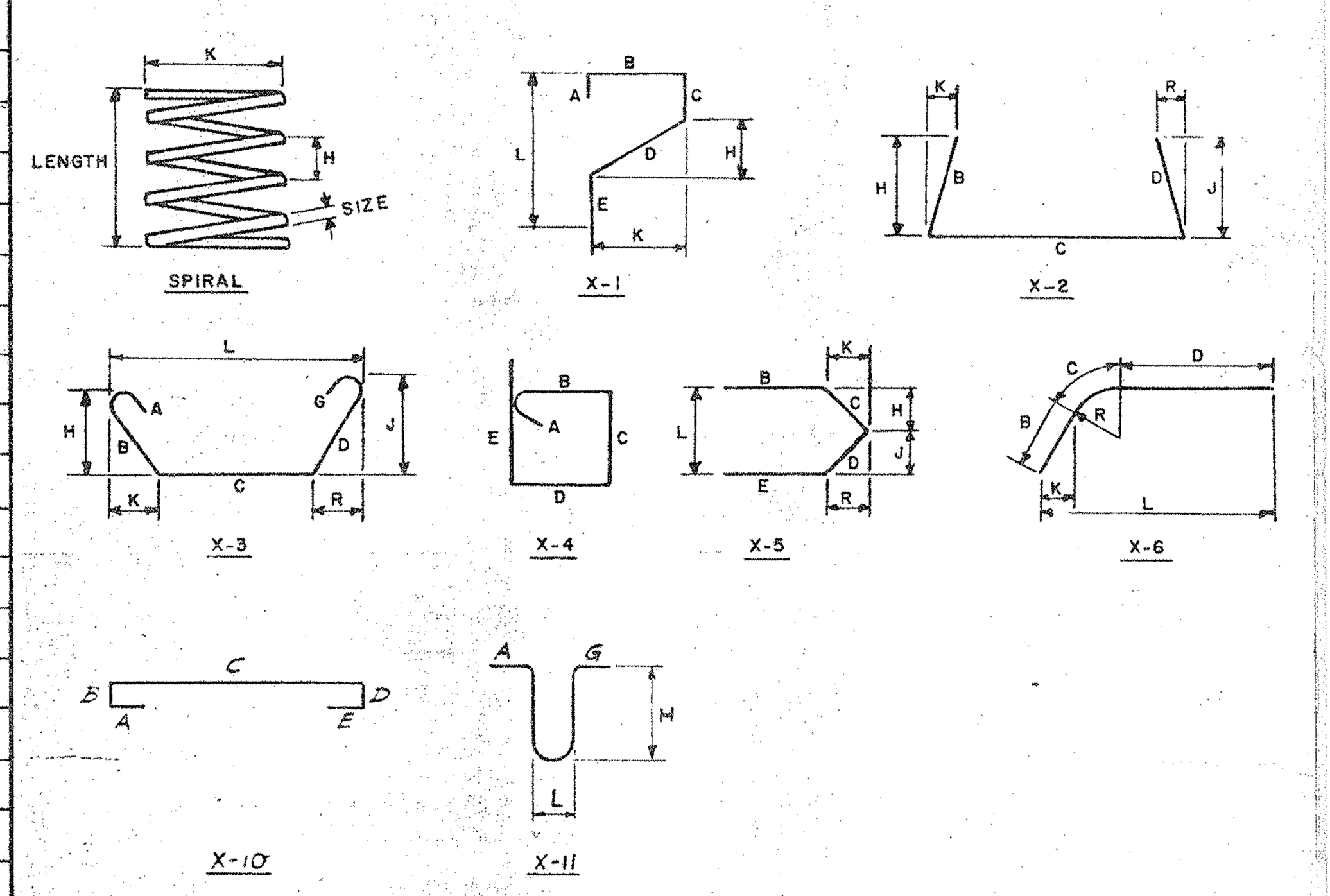
REINFORCING GRADE	A.S.T.M.	MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	R	SHAPE	WEIGHT	LOCATION
		DECK SLAB - CONT'D DWG. E-8																			
INTER.	A15-64	D 500	244	#5	10'-0	X-10	0'-9	0'-6	7'-6	0'-6	0'-9										126 - WEST SIDEWALK 118 - EAST SIDEWALK
		D 501	1		6'-6		0'-9	0'-6	5'-3	—	—										WEST SIDEWALK @ SOUTH
		D 502	1		7'-3		0'-9	0'-6	6'-0	—	—										
		D 503	1		8'-0		0'-9	0'-6	6'-9	—	—										
		D 504	1		7'-9		0'-9	0'-6	6'-6	—	—										EAST SIDEWALK @ NORTH
		D 505	1		6'-6		0'-9	0'-6	5'-3	—	—										
		D 506	1		5'-3		0'-9	0'-6	4'-0	—	—										
		D 507	1		4'-3		0'-9	0'-6	3'-0	—	—										
		D 508	26		6'-0	STR.															APPR. SL. DWLS. @ SOUTH
		D 509	12		32'-3	STR.															NORTH END OF DECK
		D 600	15	#6	36'-0	STR.															SUPPORT FOR TYPE "A" CABLES
		D 601	15		35'-0																
		D 602	15		34'-0																
		D 603	78		33'-0																
		D 604	30		20'-0																SUPPORT FOR "TYPE "B" CABLES
		D 605	36		15'-6																2 - OVER EACH LEG 10 - OVER EACH PIER
		D 300	94	#3	4'-6	T2	0'-3	1'-0	1'-0	1'-0	1'-0		0'-3								NORTH END OF DECK
		D 800	6	#8	36'-6"	STR.															AT S. ABUTM. HORIZ.
		MESH		6"x12" % (14" LAP E.W) TOTAL AREA = 21,200 SQ. FT. (INCLUDES ALLOWANCE FOR LAP)																	TOP & BOTTOM OF DECK SLAB
		CABLE SUPPORT STOOLS	391		8" HIGH																
			271		12" HIGH																
			188		24" HIGH																
			*92		30" HIGH		* SECTION 1/S-8 } SEE NOTE FOR THESE STOOLS.														
			*23		32" HIGH		* SECTION 1/S-8														
		APPROACH SLABS - DWG. E-8																			
		S 500	112	#5	20'-0	STR.															S.W.&S.E. T.&BOT.
		S 501	104		2'-9	17	—	1'-3	1'-6	—	—	—	—								22-EA. S.W.&S.E. 30-EA. N.W.&N.E. DOWELS
		S 502	112		19'-6	STR.															28-EA. SLAB T.
		S 503	120		17'-6	STR.															N.W.&N.E. T.&BOT.
		S 504	12		3'-6	17	—	1'-11	1'-7	—	—	—	—								S.W.&S.E.@HAUNCH, DWLS.
		S 505	52		4'-3	17	—	1'-7	1'-1	1'-7	—	—	—								S.W.&S.E.@HAUNCH.
		S 700	204	#7	19'-6	STR.															EA. SLAB BOT.
		S 701	102		6'-5	X-1	—	—	2'-9	0'-11	2'-9			0'-8		0'-8					S.W.&S.E. BOT.





NOTES

1. ALL DIMENSIONS ARE OUT TO OUT OF BAR.
2. 'J' DIMENSION ON 180° AND 90° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE.
3. WHERE 'J' IS NOT SHOWN, 'J' WILL BE KEPT EQUAL TO OR LESS THAN 'H'. WHERE 'J' CAN EXCEED 'H', IT SHOULD BE SHOWN.
4. 'H' DIMENSION ON STIRRUPS TO BE SHOWN WHERE NECESSARY TO RESTRICT HOOKS.
5. WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES, BENDING DIMENSIONS WHICH REQUIRE CLOSER WORKING SHOULD HAVE LIMITS INDICATED.
6. FIGURES IN CIRCLES SHOW TYPES.
7. NO ALLOWANCE HAS BEEN MADE FOR CREEP.
8. SPACERS TO BE PROVIDED WITH ALL SPIRALS AS SPECIFIED IN A.C.I. 315-57.
9. WEIGHT OF SPIRALS AND SPACERS NOT INCLUDED ON THIS DRAWING.



ALL FABRICATION MUST BE IN ACCORDANCE WITH A.C.I. 315-65

HARD GRADE BARS SHALL CONFORM TO A.S.T.M. A432-64 SPECIFICATIONS AND AS NOTED. ALL INTERMEDIATE GRADE BARS SHALL CONFORM TO A.S.T.M. A15-64 AND A408-64 SPECIFICATIONS AS NOTED.

NO.	REVISIONS	DATE	BY

NO.	FOR	DATE

PRINT RECORD

REGISTERED PROFESSIONAL ENGINEER CIVIL J. H. KEARNEY PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER V. J. BROMLEY PROVINCE OF ONTARIO

M. M. DILLON LIMITED
LONDON • TORONTO • OTTAWA • WINNIPEG • SUDBURY • WINDSOR
CONSULTING ENGINEERS
PROJECT OFFICE: OTTAWA

OTTAWA RIVER PARKWAY
RAMP 'E' STRUCTURE
REINFORCING STEEL SCHEDULE

LOCATION: DECK AND APPROACH SLABS

REFER TO DRWG NO:

DRAWN A.F.
CHECKED L.M.F. M.F.R.
APPROVED
DATE FEB. 1966

NATIONAL CAPITAL COMMISSION

PROJECT NO. 5877-20-4
SHEET NO. E-15
OF 15