## REQUIRED AT ALL SITE LOCATIONS WITH SUPERSTRUCTURE REFURBISMENT OR INSTALLATION OF NEW SUPERSTRUCTURE ON EXISTING PILE INCIDENTAL TO THAT WORK. LIMITS: <u>NOTES ON PILE REFURBISHMEN</u>

- ≥ SODDED & SOIL AREAS-DOWN TO 100mm BELOW GROUND SURFACE
- 3. PROCEDURE FOR PILE REFURBISHMENT: B) CONCRETE & PAVING BLOCK AREAS-TO TOP OF PAVED SURFACE
- ₹ O B SANDBLAST EXPOSED CONCRETE SURFACE AND ANCHOR BOLTS COAT ANCHOR BOLT WITH FIELD—APPLIED GALVANIZING MATERIAL AND RESTORE THREADS TO ACCOMMODATE NEW HOT DIP GALVANIZED NUTS REMOVE EXISTING GROUT PAD, BOTTOM ANCHOR BOLT NUTS, AND FORMWORK IF ANY
- INSTALL GROUND ROD AND WIRE AS SHOWN ON THIS DRAWING WHERE APPLICABLE (BY OTHERS)
- Ţ 鬥 PATCH EXPOSED VERTICAL SURFACES AND EDGES OF PILE WITH MORTAR SLURRY BOND TO PROVIDE SMOOTH UNIFORM SURFACE CONSTRUCT NEW GROUT PAD AFTER INSTALLING THE REFURBISHED SIGN STRUCTURE
- APPLY CONCRETE CURE & PROTECTION SYSTEM ON VERTICAL SURFACES OF PILE AND GROUT PAD  ${}^{\circ}$

Ξ 9

- FILL SETTLEMENT OF GROUND AROUND PILE WITH SOIL (GROUND SURFACE SHALL SLOPE AWAY FROM PILE), RESTORE SODDING AS REQUIRED AND CLEAN UP SITE
- GROUND ROD: ७≥

NEW CONCRETE OVER EXISTING

PILE

10M TIES

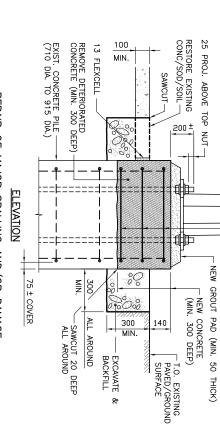
PLAN

PLAN

NEW 3-10M TIES

NEW GROUND ROD IS REQUIRED AS PER SCHEDULE GROUND ROD SUPPLIED AND INSTALLED BY TRAFFIC SIGNALS

S	S	S	S	_SI	
S659	S652	S651	S649	STRUCT. No.	
2	2	2	1	No. OF PILES	REFURBISHMENI SCHEDULE
NO	NO	NO	NO	GROUND ROD REQ'D.	NT



## REPAIR 유 MAJOR SPALLING AND/OR DAMAGE

12 DIA. × 3.05m
GALVANIZED GROUND
ROD (BY OTHERS)—

EXISTING CONC. PILE 610 - 915 DIA.

100 MIN. CONC.

RESTORE EXISTING CONC/SOD/SOIL-

1

- T.O. EXISTING PAVED/GRASS GROUND SURFACE

140

S.S. CLIPS -

GROUND WIRE ——
(MIN. 2.0m LONG)

PER ABOVE NOTES NEW GROUT PAD (MIN. 50 THK.)

## CONCRETE PILE FOUNDATION REPAIRS

## NOTES ON NEW CONCRETE PILE

- 1. REINFORCING STEEL

   CSA G30.12 GR. 400W

   VERTICAL BARS FULL LENGTH

   ALL BARS HOT DIP GALVANIZED
- ANCHORS BOLIS
  CSA G40.21 GR. 300W
  4-32 DIA x 1500 LONG + 150 HOOK
  EACH BOLT C/W 2 NUTS & 2 WASHERS
  TOP 300 THREADED
  HOT DIP GALVANIZED FULL LENGTH
- APPLY CONCRETE CURE AND PROTECTION SYSTEM FOR TOP 500 mm OF PILE. APPROVED PRODUCT HORSEY SET WOE (WAITER-DISPERSED EPOXY), MADE BY WATSON BOWMAN ACME, AS SUPPLIED BY G.D. JOHNSTON LTD
- CONCRETE MIX DESIGN
  PROPORTIONING OF FINE AGGREGATE, COARSE AGGREGATE,
  CEMENT, WAITER, AND AIR ENTRAINING AGENT SHALL BE
  SUCH AS YIELD CONCRETE HAVING THE REQUIRED
  STRENGTH AND WORKABILITY AS FOLLOWS:
- i) MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS = 35 MPa
  ii) MAXIMUM WAFER/CEMENT RATIO = 0.45
  iii) MINIMUM CEMENT CONTENT = 340 kg/m
  iv) SLUMP = 80 mm ± 30 mm
  v) AGGREGATE: 20 mm NOMINAL
  vi) AIR CONTENT: 5.0 TO 8.0 PERCENT
  vi) CEMENT TYPE 50
- SEE NEW PILE SCHEDULE FOR REQUIREMENT OF CONDUITS AND GROUND ROD

12 DIA. x 3.05m GROUND ROD TO PROJECT 75 mm ABOVE TOP OF PILE (SEE NOTE 5)

NEW CONCRETE PILE DETAIL

SECTION

75 COVER ON TIES

GALV. ANCHOR BOLTS C/W 2 NUTS & 2 WASHERS SEE NOTES FOR PILE DIA. & LENGTH 10M TIES AT 300 EXCEPT TOP 2 AT 150

100

MIN.

%; %;

300

MIN.

EXCAVATE& BACKFILL

300 ĭ Z

ALL AROUND

- PLASTIC PLUG (TYP.)

RESTORE EXISTING CONC/SOD/SOIL

200±

FORM WITH SONOTUBE (600 mm FROM THE TOP)

T.O. EXISTING PAVED/GRASS GROUND SURFACE

GROUT PAD (MIN. 50 THICK)

50 DIA. PLASTIC CONDUIT (SEE NOTE 5) TEMPORARY STEEL TEMPLATE (MIN. 10 THICK)

25 PROJECTION ABOVE TOP NUT-

PLASTIC PLUG (TYP.) -

GROUND WIRE

Ø

0

SAWCUT-

(SEE NOTE 5) 6 - 20M VERTICAL BARS 75 COVER ON TIES-

PLAN

4 - 32 DIA. ANCHOR BOLTS

CONCRETE PILE

50 DIA. PLASTIC CONDUITS (SEE NOTE 5)

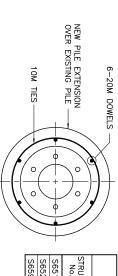
10M TIES

PILE FOUNDATION REFURBISHMENT (INCIDENTAL TO FULL REFURBISHMENT)

ELEVATION

13 FLEXCELL -20M VERT. BARS

NONE REQUIRED	STRUCT. No.	PILE
EQUIRE	No. OF PILES	FOUNDATION R SCHEDULI
D	STRUCT. No. OF LOCATION	PILE FOUNDATION REPAIR SCHEDULE
10M TESS	NEW PILE EXTENSION OVER EXISTING PILE  ST	6-20M DOWELS



//		+		
2659	S652	1598	STRUCT. N	P
_	1	1	No. OF PILES	SCHE
BI S	MEDIAN	MEDIAN	LOCATION	PILE EXTENSION SCHEDULE

D ANCHOR BOLT EXTENSION C/W 2 WASHERS (AVE. 38 DIA.)  SROUT PAD (MIN. 50 THICK)  - NEW PILE EXTENSION  (MIN. 300 DEEP)  T.O. EXISTING PAVED/GROUND SURFACE  BACKFILL  SAWCUT 20 DEEP  ALL AROUND 6-20M DOWELS 400 EMBEDMENT INTO EXIST. PILE ± COVER  STONE	REMOVE 15 MIN. CONCRETE FROM  TOP OF EXISTING PILE  25 PROJECTION  ABOVE TOP NUT  ABOVE TOP NUT  CONC/SOD/SOIL  SAWCUT  13 FLEXCELL  13 FLEXCELL  15 TLEXCELL  16 GALVANIZED ANCHOR BOLT EXTENSION C/W  CONCRETE FILE  17 O DIA. TO 915 DIA.)  NEW GROUT PAD (MIN. 300 DEEP)  (MIN. 300 DEEP)  (MIN. 300 DEEP)  (MIN. 300 DEEP)  SURFACE  BACKFILL  300 ALL AROUND  ALL AROUND  T55 ± COVER  ELEVATION  CONSTRUCTION OF PILE EXTENSION  CONSTRUCTION OF PILE EXTENSION
---	--

PILE
FOUNDATION
REPAIR
NOTES:

- 1. EXISTING DETAILS CONDUITS NOT SHOWN IN PILE REPAIR & EXTENSION FOR CLARITY
- EXTEND CLEAN EXPOSED CONCRETE SURFACE, EXISTING ANCHOR BOLTS AND REBAR BY SANDBLASTING CONDUITS THROUGH NEW CONCRETE AS REQUIRED
- APPLY CONCRETE CURE & PROTECTION SYSTEM ON VERTICAL SURFACES AND GROUT PAD
- INCREASE AT LOCA DEPTH OF PILE EXTENSION TO 600mm BELOW GRADE TONS WHERE NEW CONDUITS ARE TO BE INSTALLED

		No.	STRUCT	
		No. REQ'D.		
		DIA.	PILE DATA	NEW
		LENGTH	DATA	NEW PILE SCHEDULE
		VERT. REINF.		SC E
		SIZE	ANCHOR	HEDU
		BCD	ANCHOR BOLTS	J
		REQ'D.	CONDUITS &	

		04-3144-1000		CITY BRIDGE ENGINEER	ВҮ	DATE
	SHEET 1 OF 3	ON ZIA IOOO		•		
	MISCELLANEOUS DETAILS	CONCILITANT BBO ICCT NO	DATE:	AUTHORIZED BY:		
-	1000	**************************************		DATE: JULY 2004		
SHEET 4 OF	2004 PROGRAM	Sept.	CONSCITING	VERT.		
OHSS-04-04	STRUCTURE MAINTENANCE WORKS	J.S.F.		SCALE: HORZ. AS SHOWN		1
CITY DRAWING NUMBER	OVERHEAD SIGN SUPPORT	選 RIHAL IR		APPROVED BY:		
			\			
	Winnipeg	ARC ARC		CHECKED BY: S.S.R.		
RTMENT	PUBLIC WORKS DEPARTMENT	MCE OF MANY		DRAWN BY: N.B.G.		1
Z						
		ENGINEER'S SEAL		DESIGNED BY: S.S.R.		