

APPENDIX A – DRAWINGS

APPENDIX A – DRAWINGS

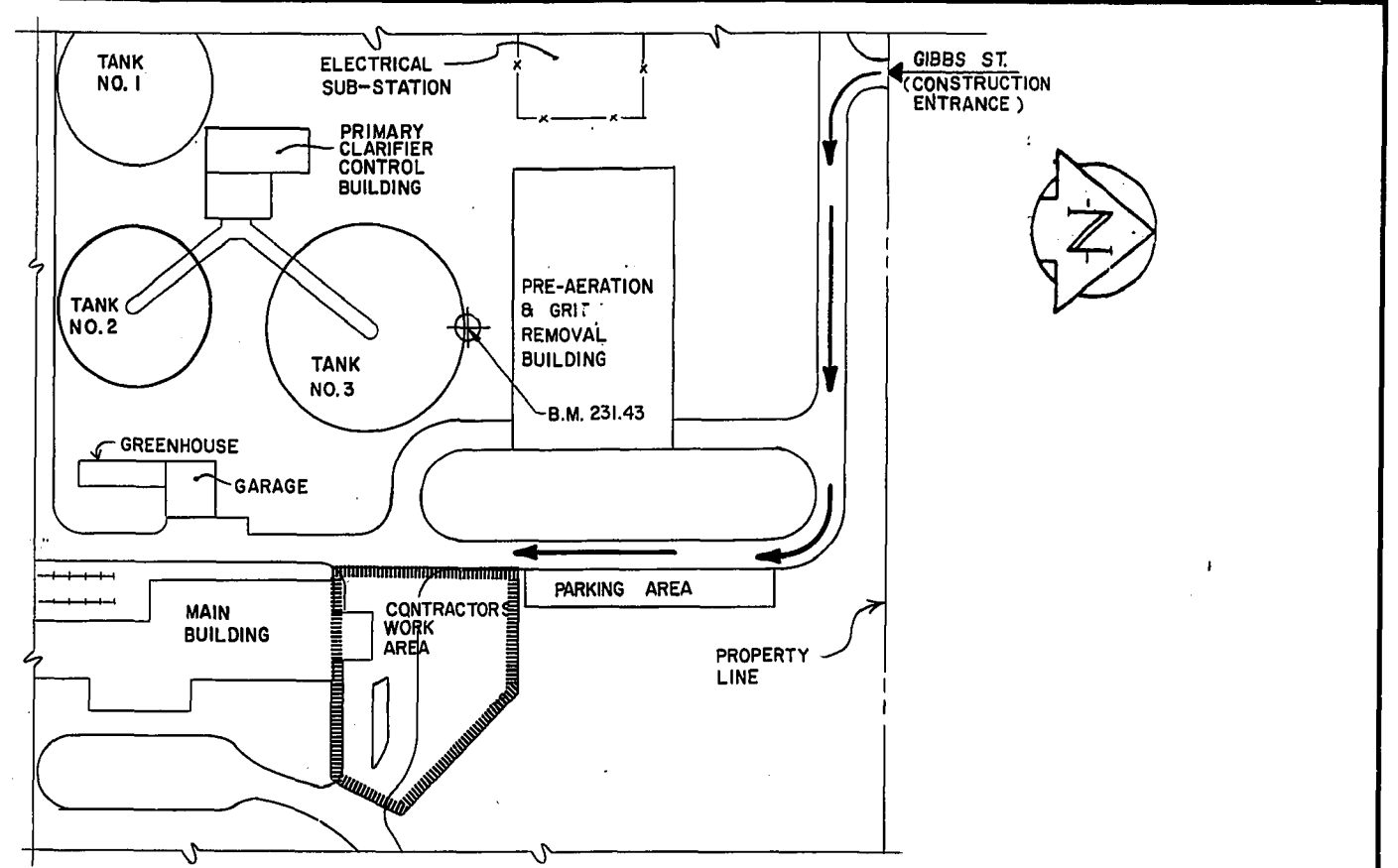
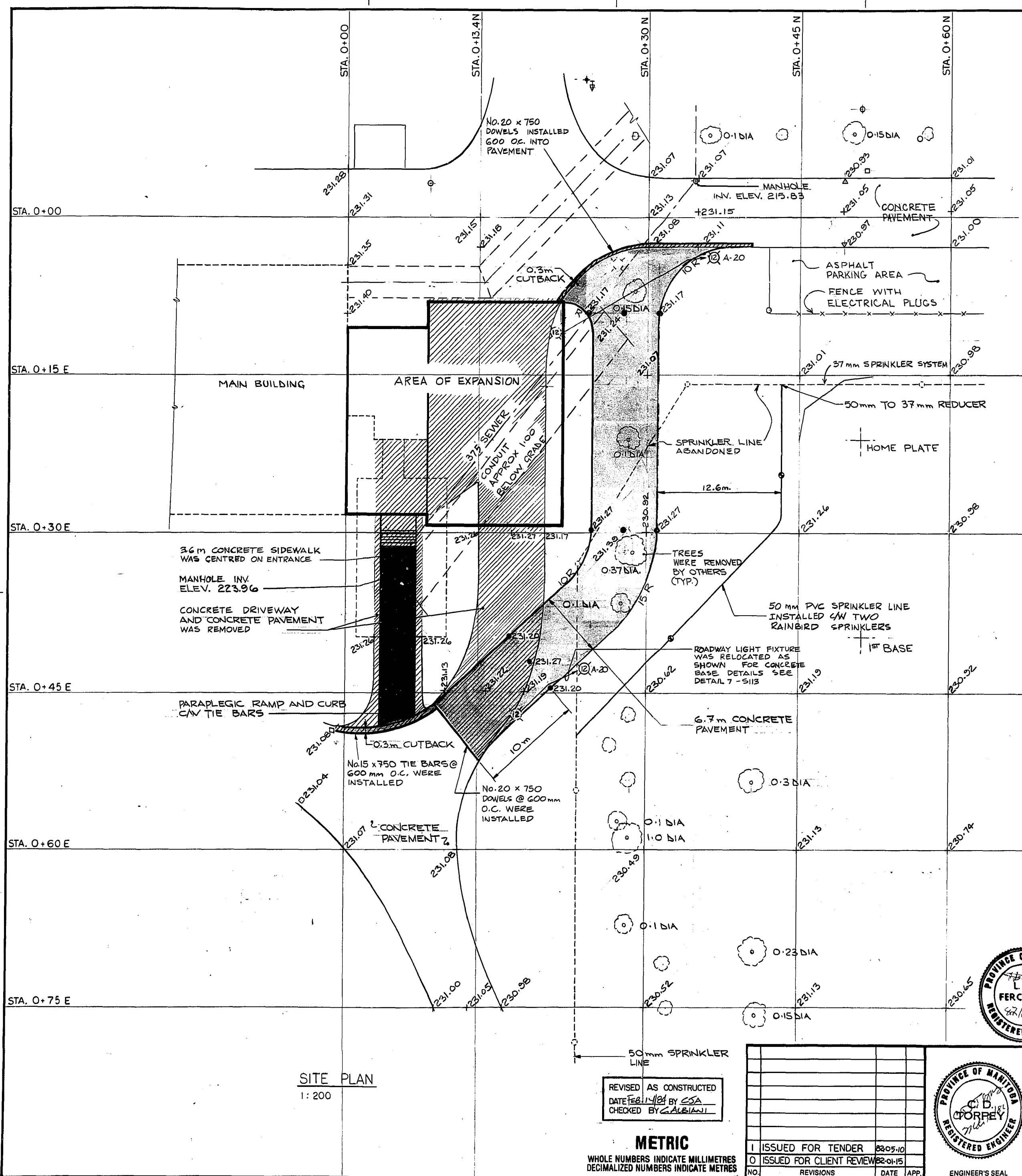
77-1982

Item Number	Drawing Number	Drawing Title
1	NEP-1006	NEWPCC - MAIN BLDG EXPANSION GENERAL ACCESS PLAN AND SITE PLAN
2	NEP-1007	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - DEMOLITION PLAN AND DETAILS
3	NEP-1008	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - FLOOR PLANS
4	NEP-1009	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - ELEVATIONS
5	NEP-1010	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - BUILDING SECTIONS
6	NEP-1011	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - WALL SECTIONS
7	NEP-1012	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - PLAN DETAILS - MAIN FLOOR
8	NEP-1013	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - PLAN DETAILS - SECOND FLOOR
9	NEP-1014	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - WALL AND WINDOW DETAILS
10	NEP-1015	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - STAIR PLANS - SECTIONS AND DETAILS
11	NEP-1016	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - INTERIOR ELEVATIONS
12	NEP-1017	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - ROOF DRAINAGE AND CRAWL SPACE PLANS
13	NEP-1018	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - REFLECTED CEILING PLANS AND DETAILS
14	NEP-1019	NEWPCC - MAIN BLDG EXPANSION ARCHITECTURAL - DOOR AND ROOM FINISH SCHEDULES AND DETAILS
15	NEP-1020	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - ROOF PLANS AND GENERAL NOTES
16	NEP-1021	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - MAIN AND SECOND FLOOR PLANS

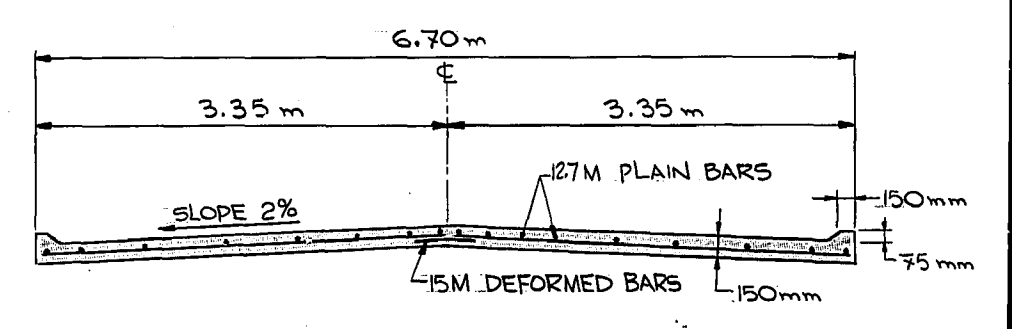
17	NEP-1022	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - FOUNDATION PLANS AND DETAILS - TIE INTO EXISTING GALLERY
18	NEP-1023	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - BUILDING SECTIONS
19	NEP-1024	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - STEEL ELEVATIONS
20	NEP-1025	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - RIGID FRAME CONNECTION AND STRUCTURAL STEEL DETAILS
21	NEP-1026	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - BASEPLATE AND ANCHOR BOLT DETAILS - STAIR FRAMING DETAILS
22	NEP-1027	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - MISCELLANEOUS STEEL DETAILS
23	NEP-1028	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - GRADE BEAM REINFORCING ELEVATIONS
24	NEP-1029	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - GRADE BEAM REINFORCING ELEVATIONS
25	NEP-1030	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - GRADE BEAM REINFORCING ELEVATIONS
26	NEP-1031	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - CONCRETE BEAM AND WALL DETAILS
27	NEP-1032	NEWPCC - MAIN BLDG EXPANSION STRUCTURAL - MISCELLANEOUS CONCRETE DETAILS
28	NEP-1033	NEWPCC - MAIN BLDG EXPANSION MECHANICAL - MAIN FLOOR HEATING AND VENTILATION PLAN
29	NEP-1034	NEWPCC - MAIN BLDG EXPANSION MECHANICAL - SECOND FLOOR HEATING AND VENTILATION PLAN
30	NEP-1035	NEWPCC - MAIN BLDG EXPANSION MECHANICAL - ROOF PLAN EXISTING LABORATORY VENTILATION AND DETAILS
31	NEP-1036	NEWPCC - MAIN BLDG EXPANSION - MAIN FLOOR PLUMBING

REF. or DRAWING NO. 800012-11-07
 DETAILS G-101
 NEP 1006

HUGHES-OWENS
 313 1101



GENERAL ACCESS PLAN
1:1000

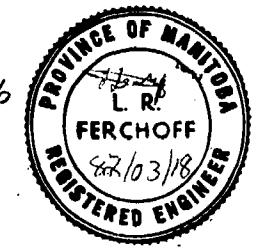


CROSS SECTION OF 6.70 m CONC. PAVEMENT
N.T.S.

LEGEND

- + SPOT ELEVATION
- PAVEMENT SPOT ELEVATION
- CONCRETE PAVEMENT INSTALLED
- SIDEWALK INSTALLED
- CONCRETE REMOVED
- SPRINKLER LINE INSTALLED
- SPRINKLER HEAD RELOCATED

- NOTES:
- ALL ELEVATIONS ON THIS DWG. ARE BASED ON B.M. = 231.43 m (GEODETIC ELEVATION)
 - ELEVATIONS ON ALL OTHER CONTRACT DWGS. ARE BASED ON TOP OF CONCRETE TOPPING - MAIN FLOOR OF BUILDING ADDITION = ARBITRARY ELEVATION 100.00 m. THIS ELEVATION IS THE SAME AS THE ELEVATION OF TOP OF FIN. CONC. IN THE ADJACENT MAIN FLOOR OF EXISTING MAIN BUILDING.
 - ARBITRARY CONTRACT ELEVATION 100.00 m = 232.35 m GEODETIC ELEVATION.
- DATA FROM FB 1259

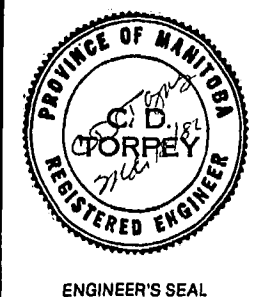


SITE PLAN
1:200

REVISED AS CONSTRUCTED
 DATE FEB 14/04 BY CSA
 CHECKED BY ALBIANI

METRIC
 WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	8205-10	
0	ISSUED FOR CLIENT REVIEW	82-01-15	



W.L. WARDROP & ASSOCIATES LTD.
 MacLAREN ENGINEERS, PLANNERS & SCIENTISTS INC.

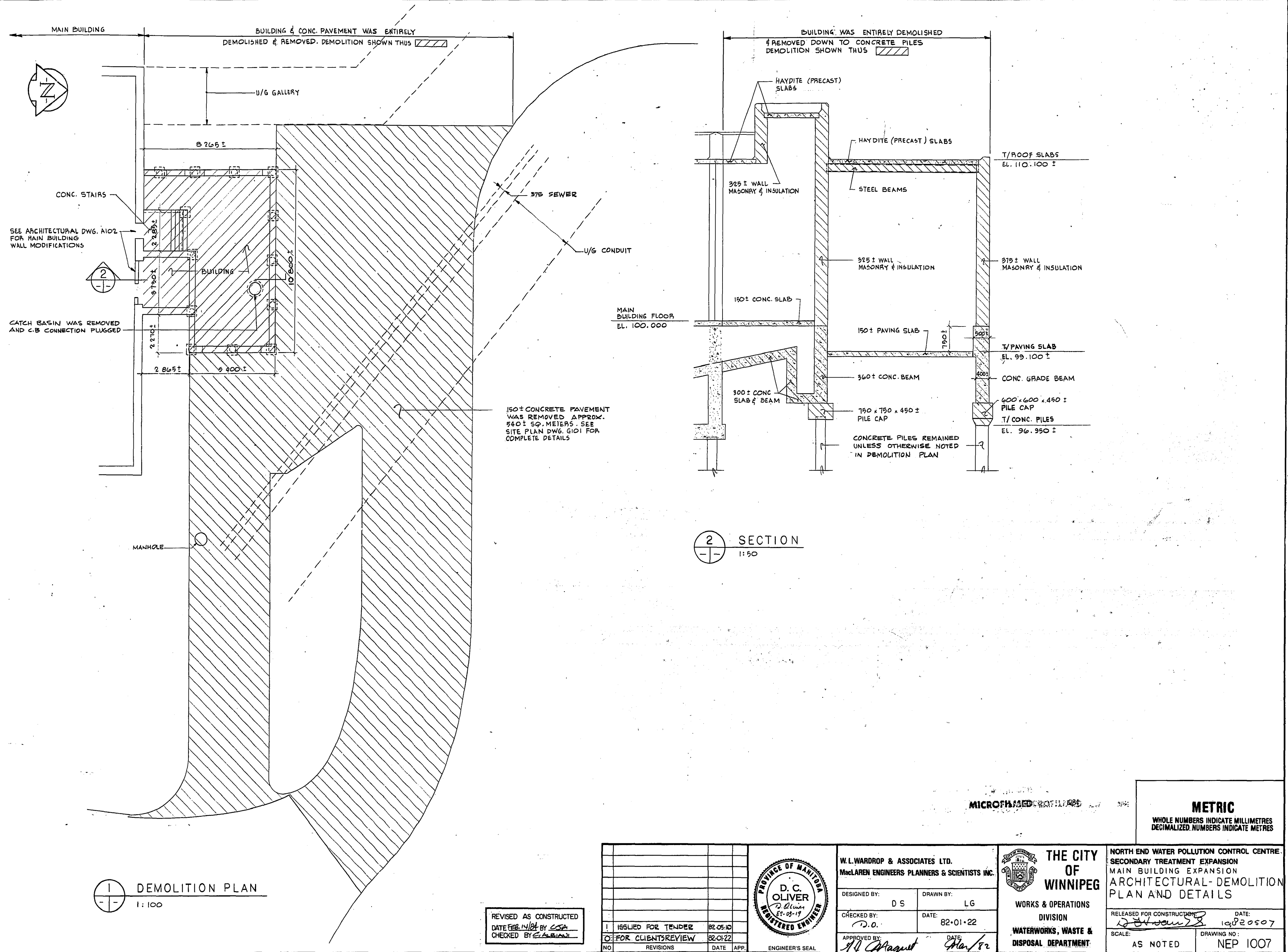
DESIGNED BY: W.R.D.
 CHECKED BY: C.W.N.
 APPROVED BY: *[Signature]*

DRAWN BY: C.W.N.
 DATE: 82-03-22
 DATE: 82-03-22

THE CITY OF WINNIPEG
 WORKS & OPERATIONS DIVISION
 WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
 SECONDARY TREATMENT EXPANSION
 MAIN BUILDING EXPANSION
 GENERAL ACCESS PLAN AND SITE PLAN

RELEASED FOR CONSTRUCTION DATE: 1982-05-07
 SCALE: AS SHOWN
 DRAWING NO.: NEP 1006



DEMOLITION PLAN
1:100

SECTION
1:50

REVISED AS CONSTRUCTED
DATE FEB. 14/84 BY CSA
CHECKED BY [Signature]

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82.05.10	
2	FOR CLIENTS REVIEW	82.01.22	



W. L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

DESIGNED BY: DS DRAWN BY: LG
CHECKED BY: D.O. DATE: 82-01-22
APPROVED BY: [Signature] DATE: [Signature]

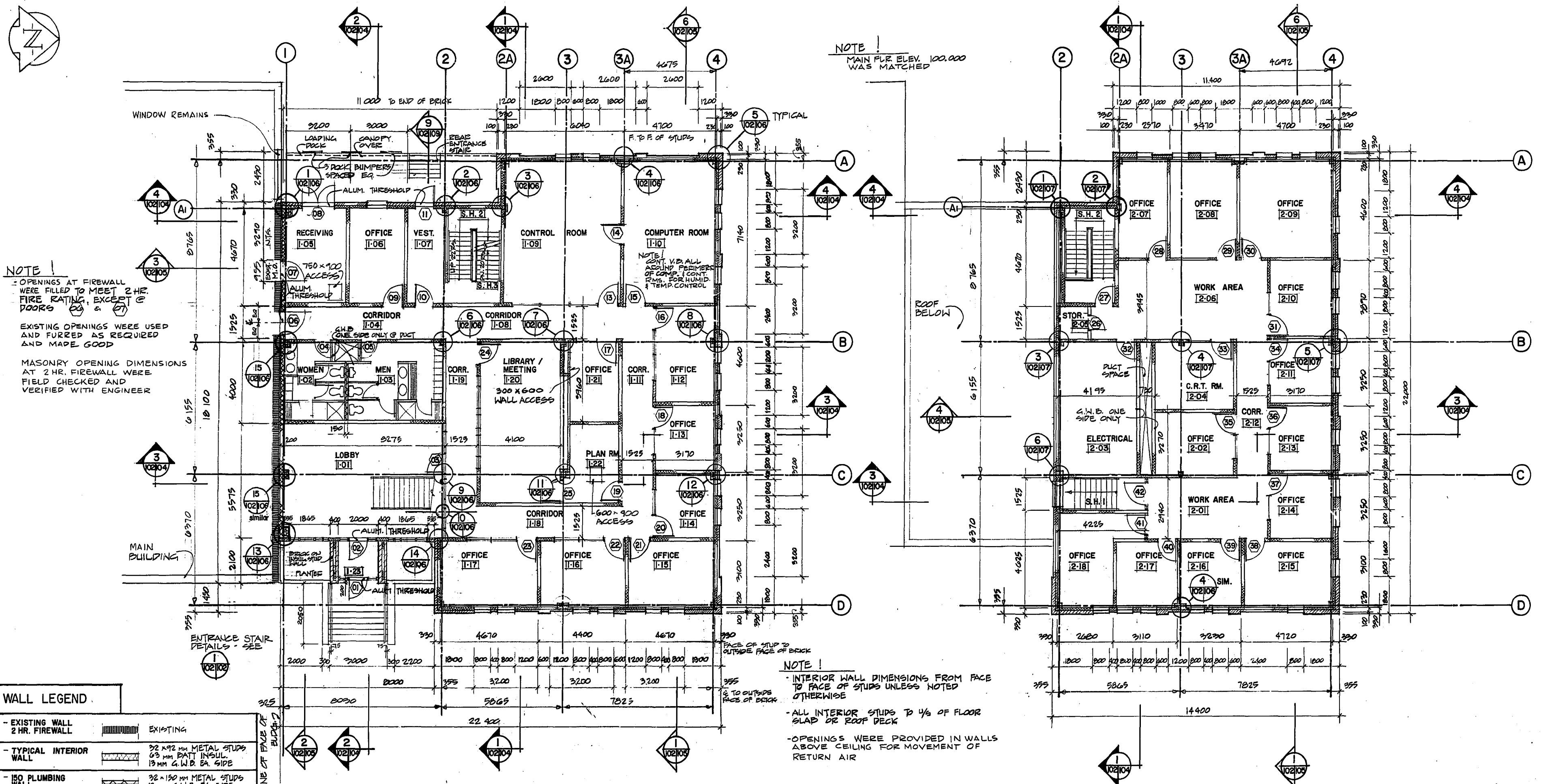
THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE.
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL-DEMOLITION PLAN AND DETAILS

RELEASED FOR CONSTRUCTION: [Signature] DATE: 19820507
SCALE: AS NOTED DRAWING NO.: NEP 1007

MICROFILMED

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES



NOTE 1
- OPENINGS AT FIREWALL WERE FILLED TO MEET 2 HR. FIRE RATING, EXCEPT @ DOORS 23 & 27
EXISTING OPENINGS WERE USED AND FURRED AS REQUIRED AND MADE GOOD
MASONRY OPENING DIMENSIONS AT 2 HR. FIREWALL WERE FIELD CHECKED AND VERIFIED WITH ENGINEER

NOTE 1
MAIN FLR ELEV. 100.000 WAS MATCHED

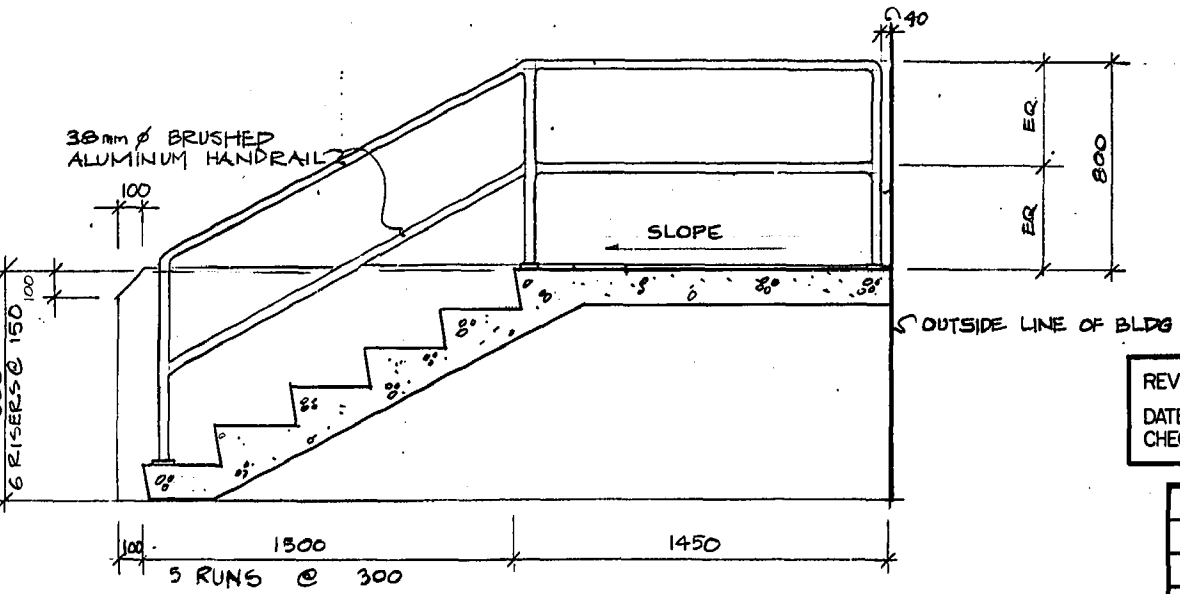
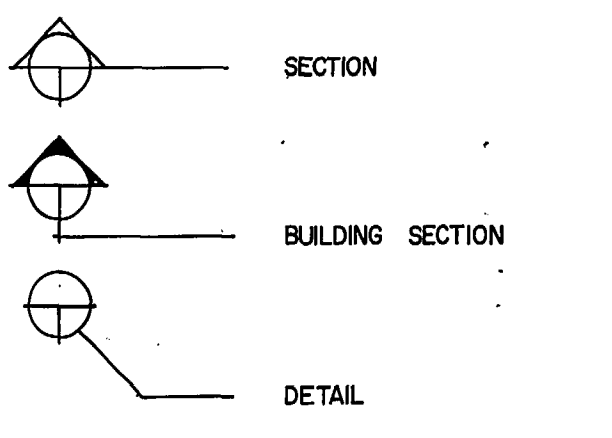
NOTE 1
- INTERIOR WALL DIMENSIONS FROM FACE TO FACE OF STUDS UNLESS NOTED OTHERWISE
- ALL INTERIOR STUDS TO 1/8 OF FLOOR SLAB OR ROOF DECK
- OPENINGS WERE PROVIDED IN WALLS ABOVE CEILING FOR MOVEMENT OF RETURN AIR

WALL LEGEND

- EXISTING WALL 2 HR. FIREWALL	EXISTING
- TYPICAL INTERIOR WALL	32 x 92 MM METAL STUDS 63 MM BATT INSUL. 13 MM G.W.B. EA. SIDE
- 150 PLUMBING WALL	32 x 150 MM METAL STUDS 13 MM G.W.B. EA. SIDE
- C.B. WALL ADJACENT TO EXISTING WALL	200 CONC. BLOCK 13 G.W.B. GLUED
- INTERIOR WALL AT WASHROOM 1-02 & 1-03	32 x 72 MM METAL STUDS 13 MM G.W.B. EA. SIDE UNLESS NOTED OTHERWISE

MAIN FLOOR PLAN
FIN. FL. ELEV. 100.000

SECOND FLOOR PLAN
FIN. FL. ELEV. 104.153



SHOP DRAWING REFERENCE

DESCRIPTION	SUPPLIER	NUMBER
Metal Access Hatch	BBC Distributors	2291

REVISED AS CONSTRUCTED
DATE FEB. 14/84 BY CTD
CHECKED BY C. ALBANI

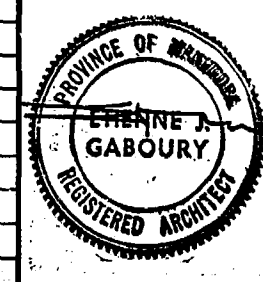
SECTIONS & DETAILS

NO. OF DETAIL	SHEET NO. WHERE DETAIL IS DRAWN	SHEET NO. WHERE DETAIL IS TAKEN FROM
102/103		

STAIR SECTION AT FRONT ENTRANCE
1:20

E. J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

NO.	REVISIONS	DATE	APP.	ENGINEER'S SEAL
1	ISSUED FOR TENDER	22/01/82		
2	FOR CLIENT REVIEW	22/01/82		



W. L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

DESIGNED BY: D.C., E.J.G.
DRAWN BY: E
CHECKED BY: D.C.
DATE: 82.03.19
APPROVED BY: M. Maguire
DATE: Mar/82

THE CITY OF WINNIPEG
WORKS & OPERATIONS
DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

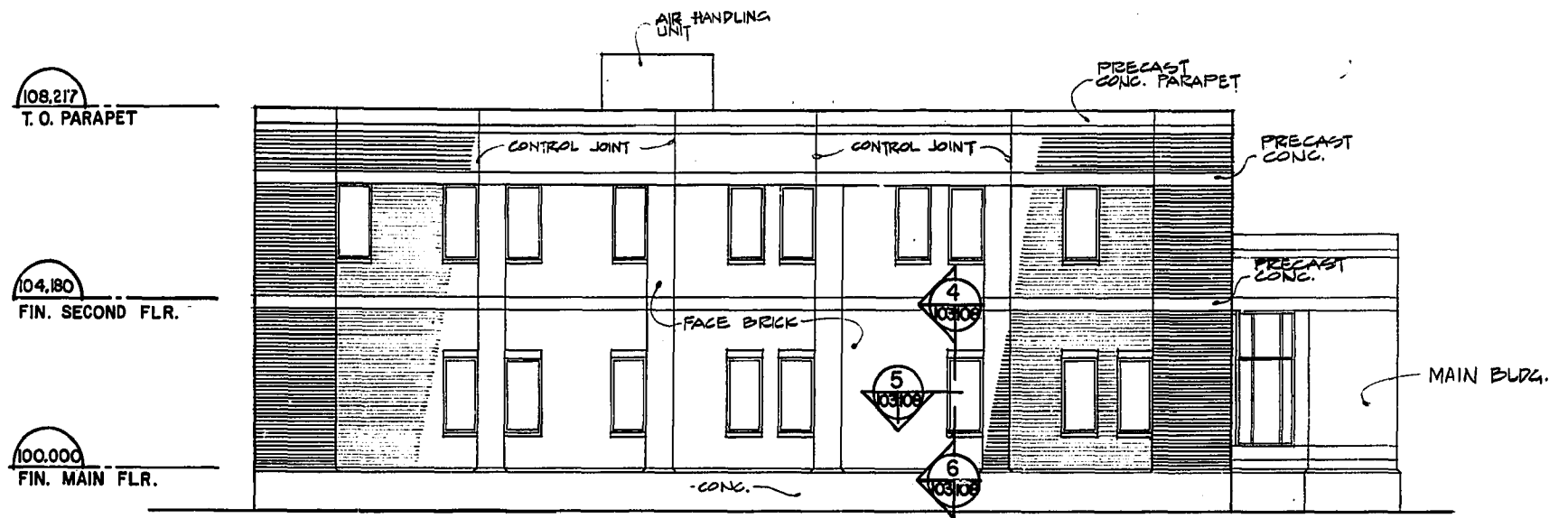
NORTH END WATER POLLUTION CONTROL CENTRE SECONDARY TREATMENT EXPANSION MAIN BUILDING EXPANSION ARCHITECTURAL - FLOOR PLANS

RELEASED FOR CONSTRUCTION: DATE: 1982.05.07
SCALE: 1:100
DRAWING NO.: NEP 1008

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

MICROFILMED
1984

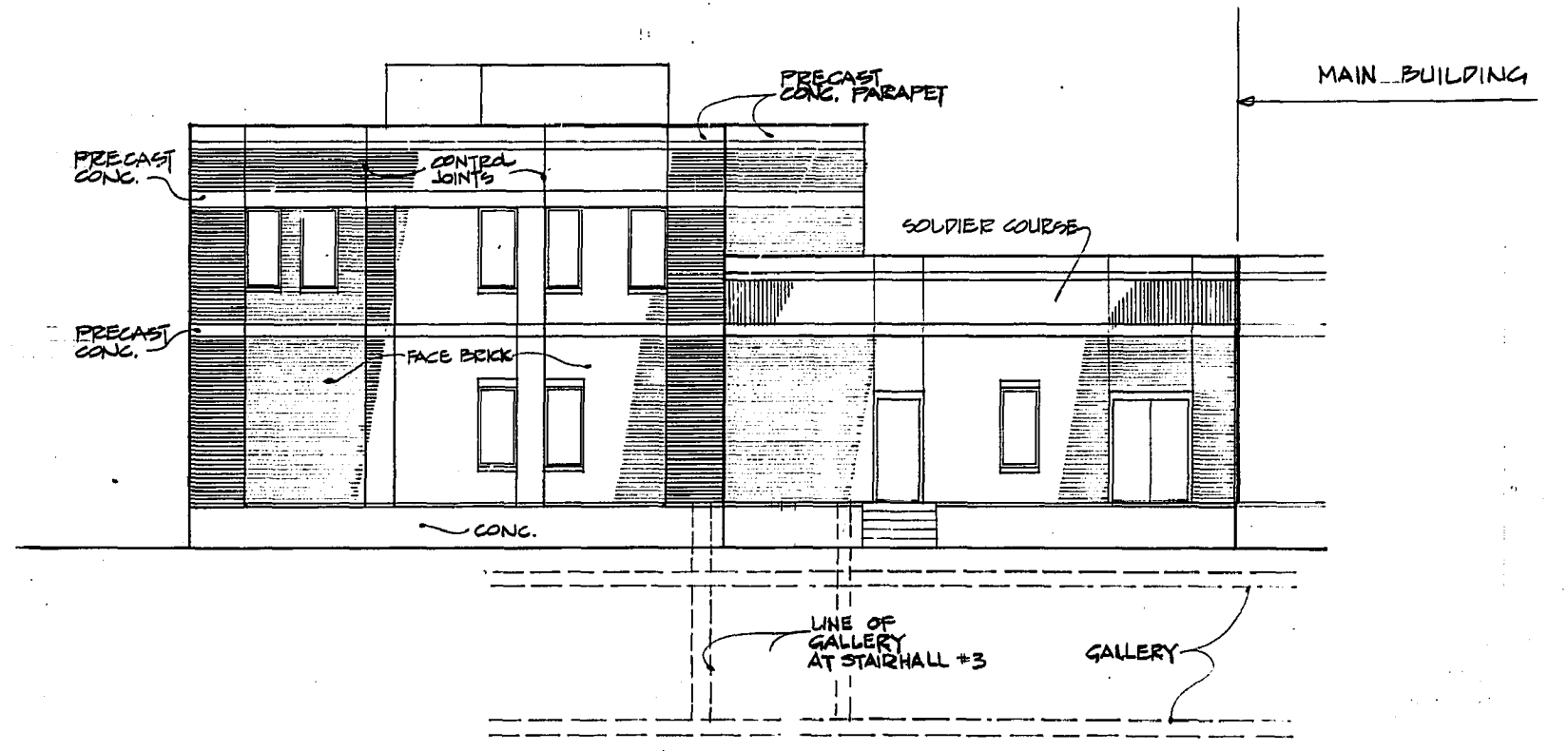
REF. or DRAWING No. 800012-11-07
DETAILS A-103
NEP 1009



1 NORTH ELEVATION
103 1:100



2 EAST ELEVATION
103 1:100



3 WEST ELEVATION
103 1:100

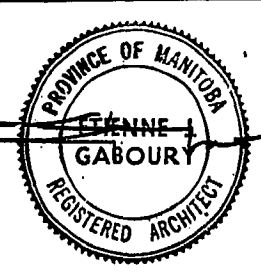
MICROFILMED
METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Precast Architectural Concrete	Genstar Structures	2280

REVISED AS CONSTRUCTED
DATE FEB 14 1984 BY STA
CHECKED BY LIA LEBLANC

E. J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	200510	
0	FOR CLIENT REVIEW	22/01/82	



W. L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

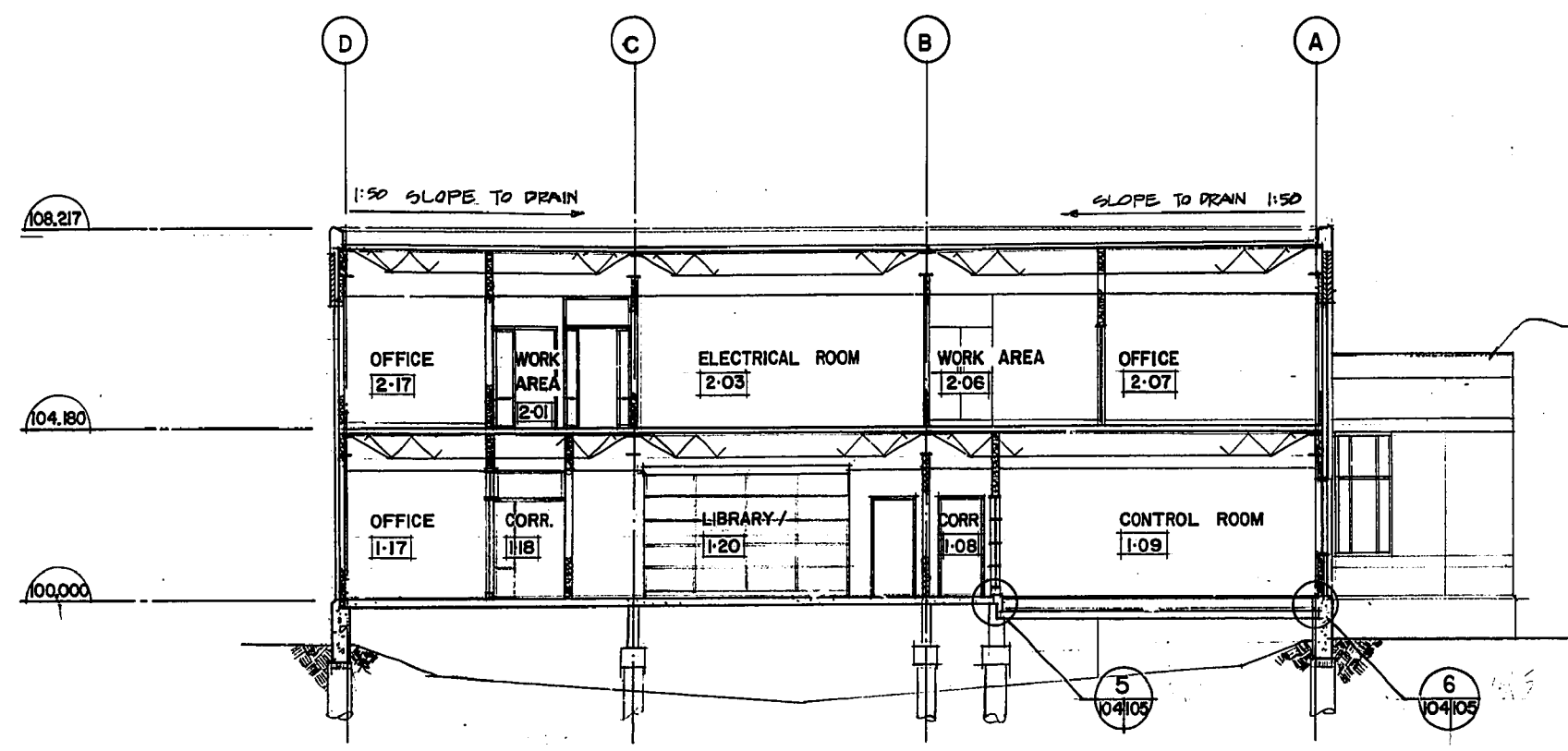
DESIGNED BY: DC, E.J.G.
DRAWN BY: PE
CHECKED BY: D.C.
DATE: 82. 03. 19

APPROVED BY: [Signature]
DATE: Mar/82

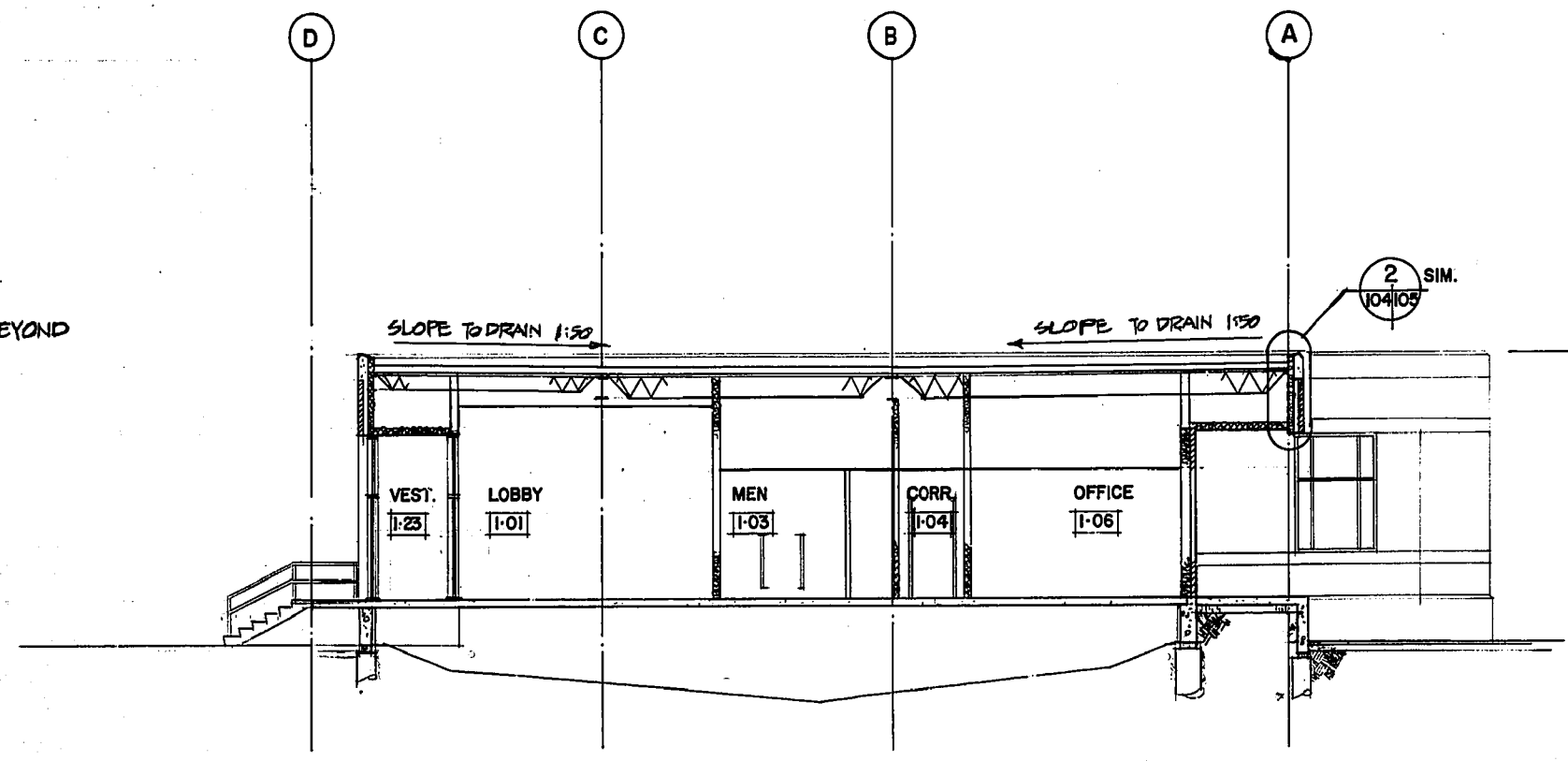
THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL - ELEVATIONS

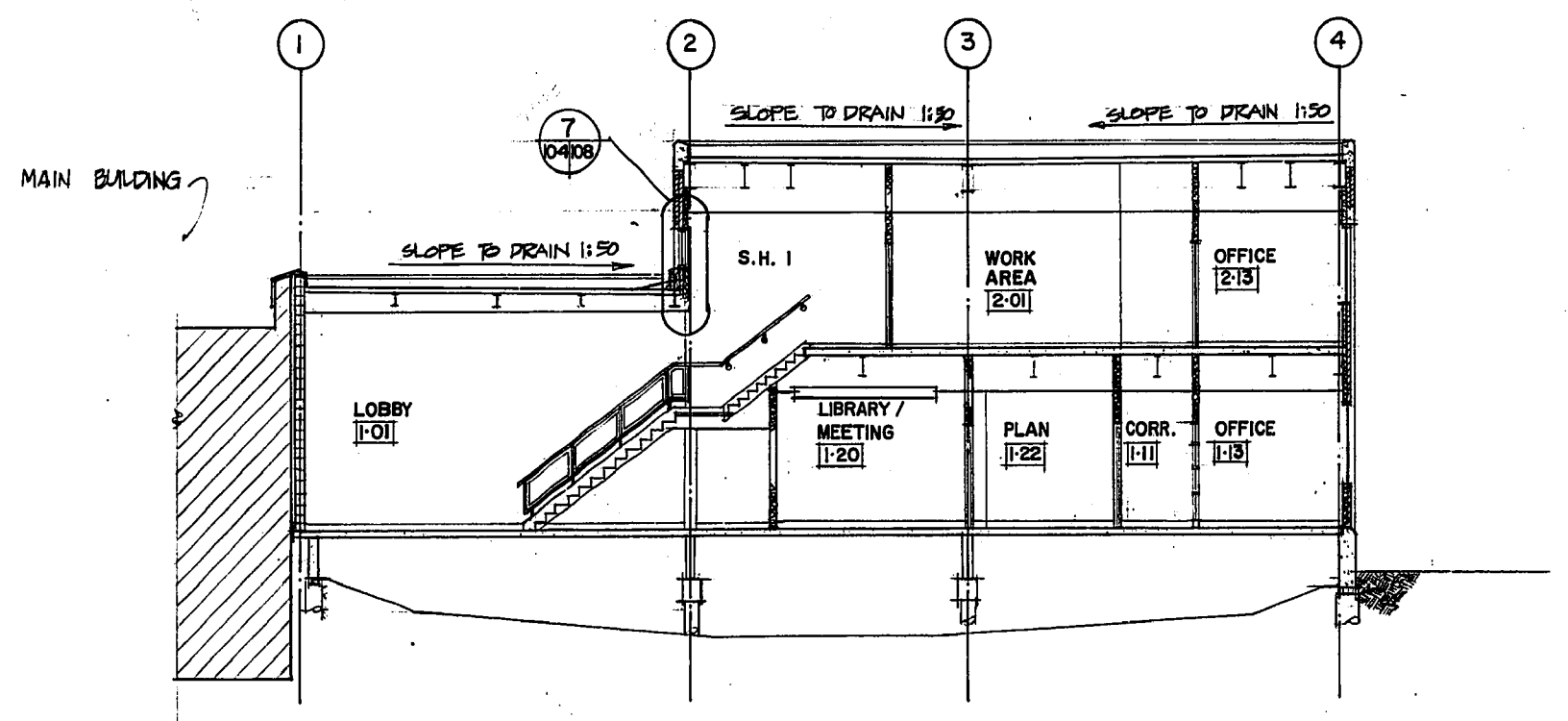
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SCALE: 1:100
DRAWING NO.: NEP 1009



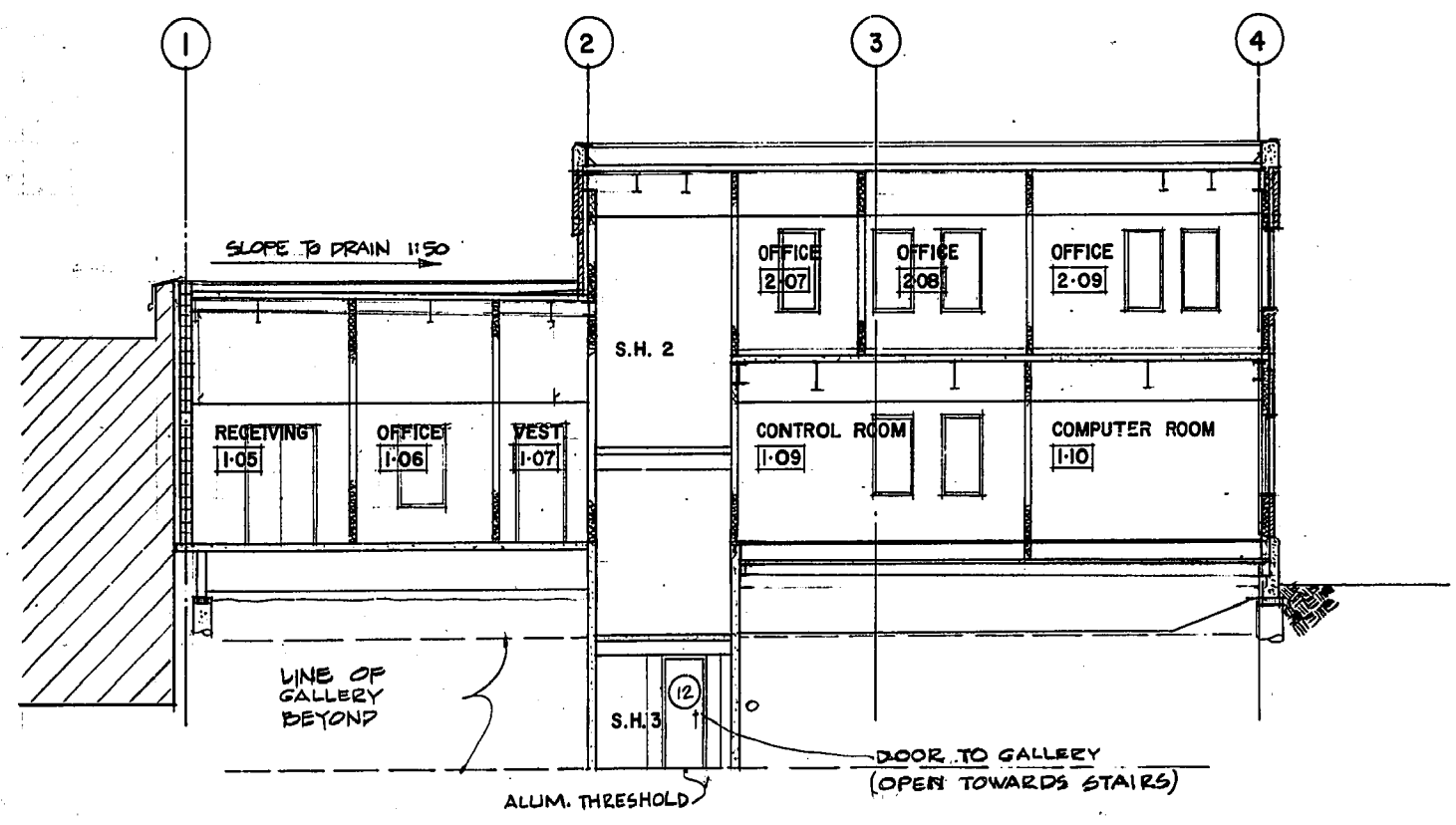
1 BUILDING SECTION
102 | 104



2 BUILDING SECTION
102 | 104



3 BUILDING SECTION
102 | 104



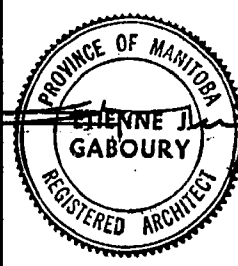
4 BUILDING SECTION
102 | 104

MICROFILMED
METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

REVISED AS CONSTRUCTED
DATE FEB 14 84 BY CTA
CHECKED BY C. CALDWELL

E. J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

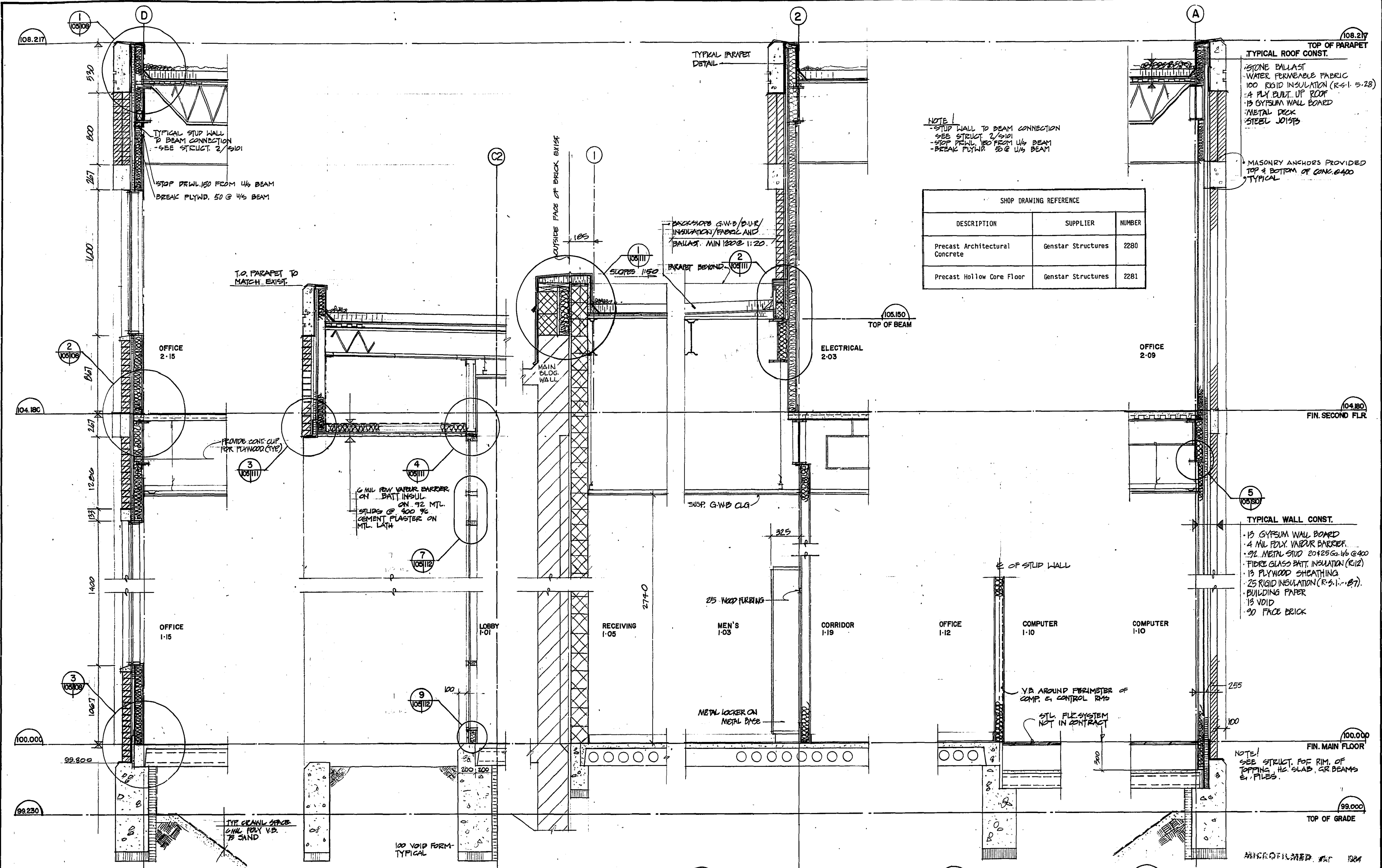
NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	22/05/80	
2	FOR CLIENT'S REVIEW	22/01/82	



W. L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.
DESIGNED BY: D.C., E.J.G.
DRAWN BY: D.F.C.
CHECKED BY: D.C.
DATE: 82.03.19.
APPROVED BY: M. Magret
DATE: Mar/82

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL - BUILDING SECTIONS
RELEASED FOR CONSTRUCTION DATE: 19820507
SCALE: 1:100
DRAWING NO.: NEP 1010



NOTE
- STUD WALL TO BEAM CONNECTION
- SEE STRUCT. 2/5101
- STOP DRWL. 150 FROM 1/4 BEAM
- BREAK PLYND. 50 G 1/4 BEAM

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Precast Architectural Concrete	Genstar Structures	2280
Precast Hollow Core Floor	Genstar Structures	2281

TYPICAL ROOF CONST.
- STONE BALLAST
- WATER PERMEABLE FABRIC
- 100 RIGID INSULATION (R-6.1 5-28)
- 4 PLY BUILT UP ROOF
- 13 GYPSUM WALL BOARD
- METAL DECK
- STEEL JOISTS

TYPICAL WALL CONST.
- 13 GYPSUM WALL BOARD
- 4 MIL POLY. VAPOUR BARRIER
- 92 METAL STUD 20x25 G. 46 G400
- FIBRE GLASS BATT. INSULATION (R12)
- 13 PLYWOOD SHEATHING
- 25 RIGID INSULATION (R-6.1 5-27)
- BUILDING PAPER
- 13 VOID
- 90 FACE BRICK

1 WALL SECTION
102 | 105

2 WALL SECTION
102 | 105

3 WALL SECTION
102 | 105

4 WALL SECTION
102 | 105

5 WALL SECTION
104 | 105

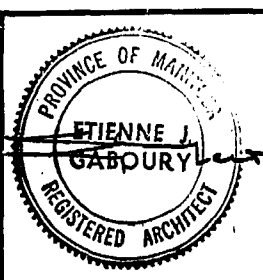
6 WALL SECTION
102 | 105

REVISED AS CONSTRUCTED
DATE FEB. 14 84 BY EJA
CHECKED BY E. ALBANI

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

E. J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

1 ISSUED FOR TENDR	21.05.80
0 FOR CLIENT REVIEW	22/01/82
NO. REVISIONS	DATE APP.



W.L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

DESIGNED BY: D.C., E.J.G.
DRAWN BY: D.F.C. R

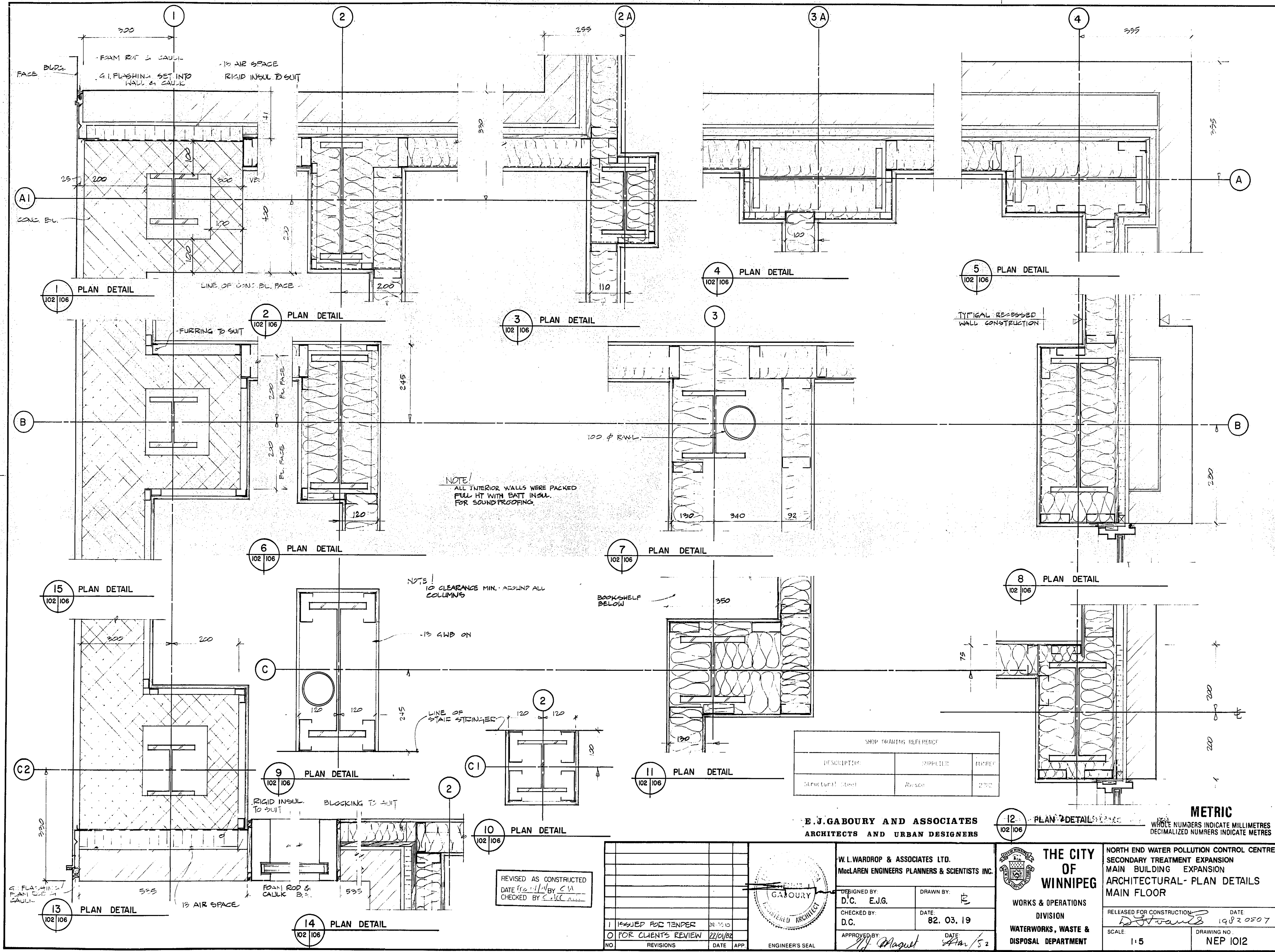
CHECKED BY: D.C.
DATE: 82.03.19

APPROVED BY: M. Maguire
DATE: Mar 82

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL - WALL SECTIONS

RELEASED FOR CONSTRUCTION DATE: 1982 05 07
SCALE: 1:20
DRAWING NO.: NEP 1011



NOTE!
ALL INTERIOR WALLS WERE PACKED
FULL HT WITH BATT INSUL
FOR SOUNDPROOFING

NOTE!
10 CLEARANCE MIN. AROUND ALL
COLUMNS

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	QUANTITY
Structural Steel	Abasco	2700

E.J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

REVISED AS CONSTRUCTED
DATE 12/1/84 BY C.H.
CHECKED BY S.C.C.

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	28/10/82	
0	FOR CLIENTS REVIEW	22/01/82	

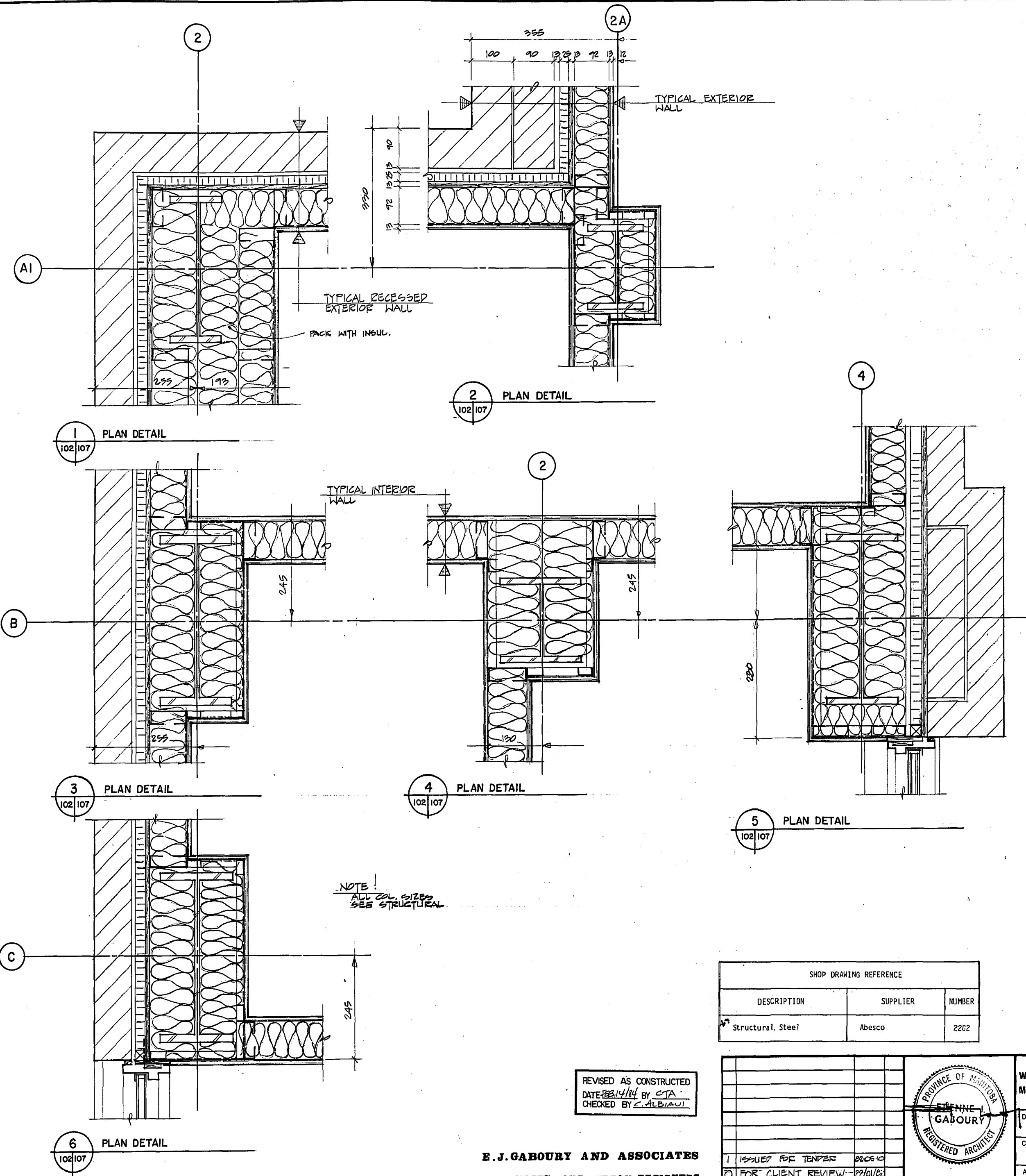
W.L. WARDROP & ASSOCIATES LTD. MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.	
DESIGNED BY: D.C. E.J.G.	DRAWN BY: J.E.
CHECKED BY: D.C.	DATE: 82.03.19
APPROVED BY: <i>[Signature]</i>	DATE: 21/1/82

THE CITY OF WINNIPEG
WORKS & OPERATIONS
DIVISION
WATERWORKS, WASTE &
DISPOSAL DEPARTMENT

**NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL- PLAN DETAILS
MAIN FLOOR**

RELEASED FOR CONSTRUCTION DATE
[Signature] 1982 05 07

SCALE: 1:5 DRAWING NO.
NEP 1012

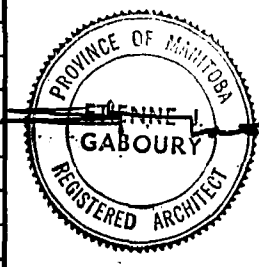


REVISED AS CONSTRUCTED
DATE: FEB 14/84 BY: CJA
CHECKED BY: E. ALBAU

E.J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Structural Steel	Abesco	2202

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	22.06.82	
2	FOR CLIENT REVIEW	22/01/82	



W.L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

DESIGNED BY: D.C., E.J.G. DRAWN BY: E

CHECKED BY: D.C. DATE: 82.03.19

APPROVED BY: *[Signature]* DATE: Mar/82

THE CITY OF WINNIPEG

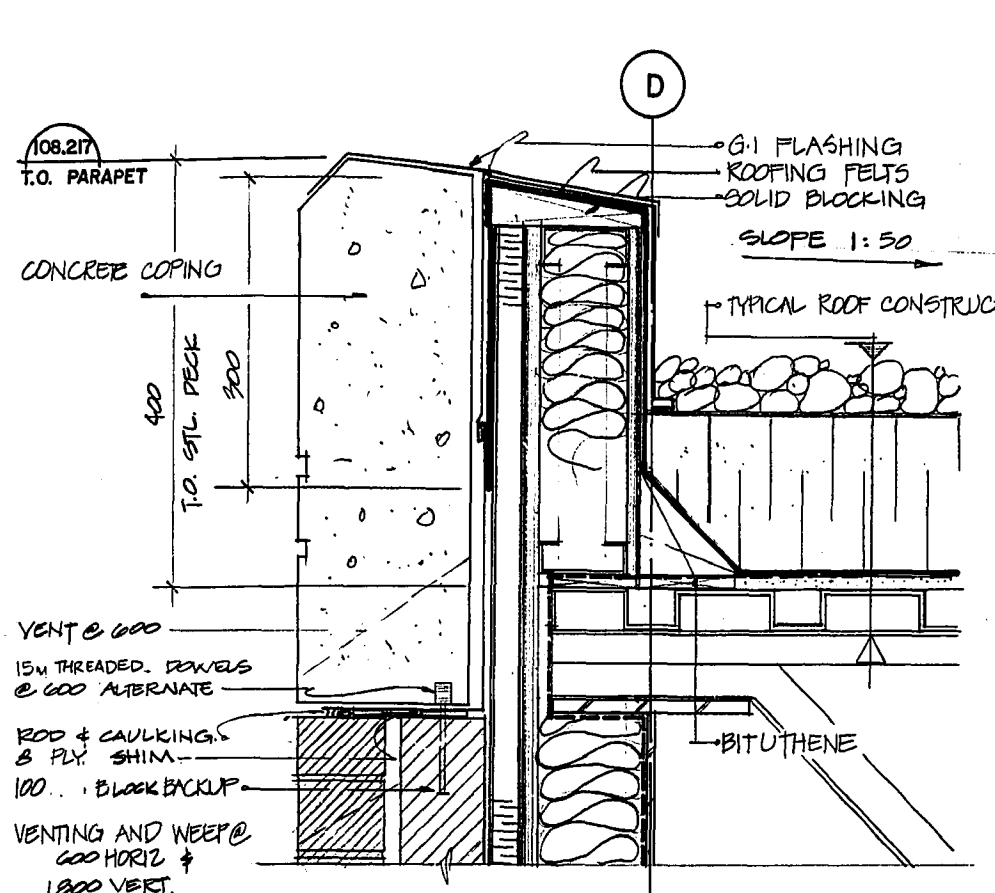
WORKS & OPERATIONS
DIVISION
WATERWORKS, WASTE &
DISPOSAL DEPARTMENT

**NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL - PLAN DETAILS
SECOND FLOOR**

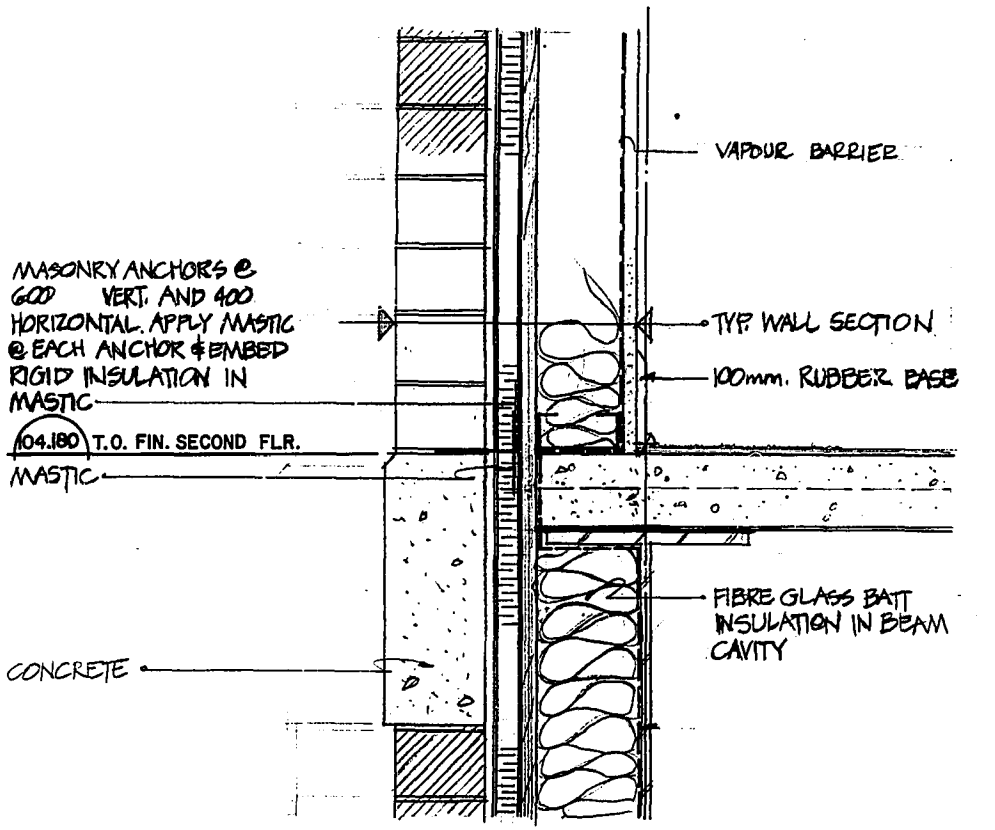
RELEASED FOR CONSTRUCTION: *[Signature]* DATE: 1982.05.07

SCALE: 1:5 DRAWING NO: NEP 1013

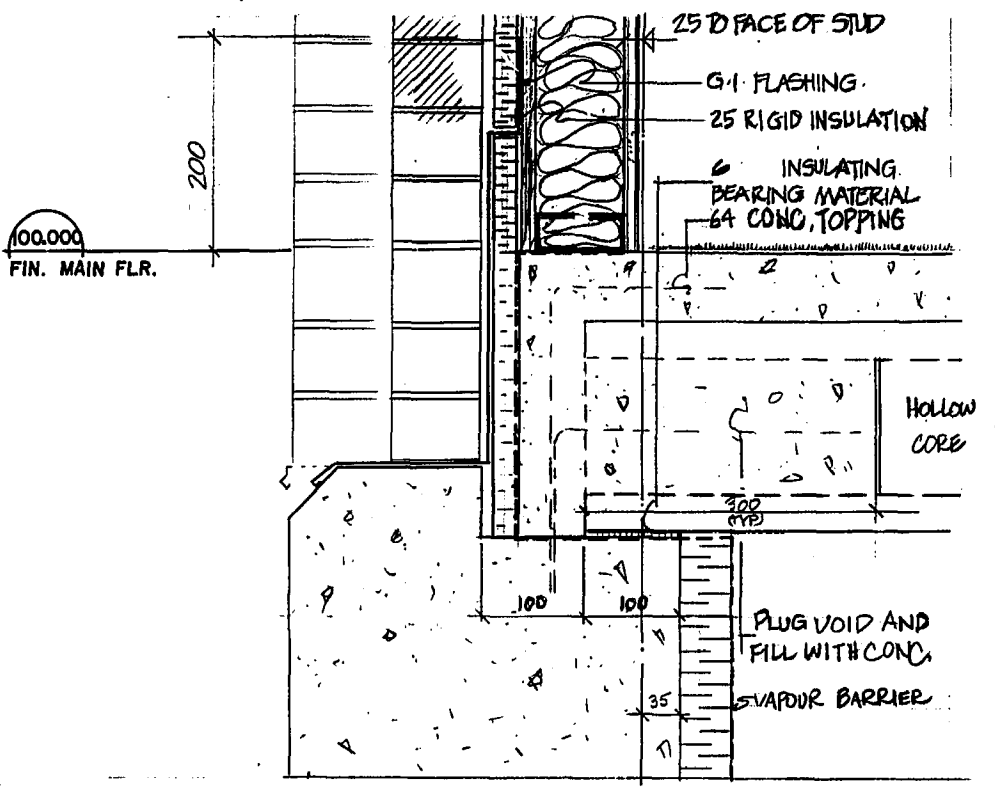
METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES



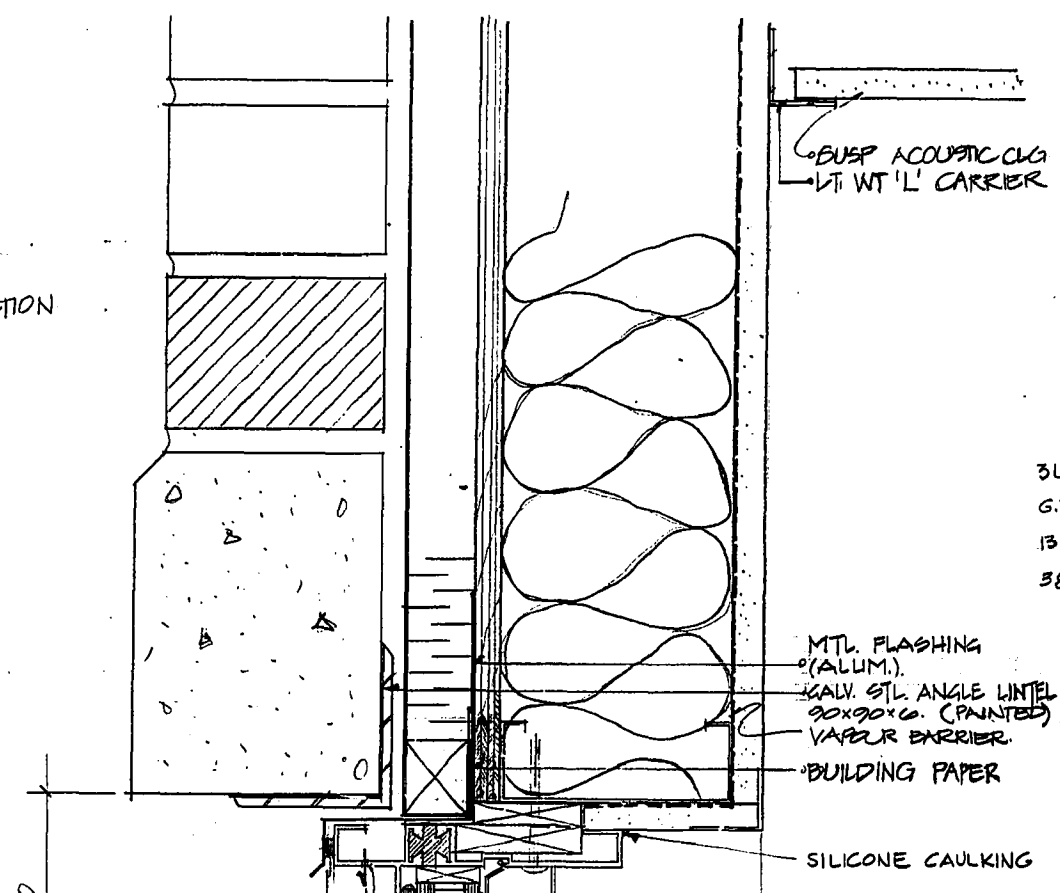
1 TYPICAL PARAPET DETAIL
108/108 1:5



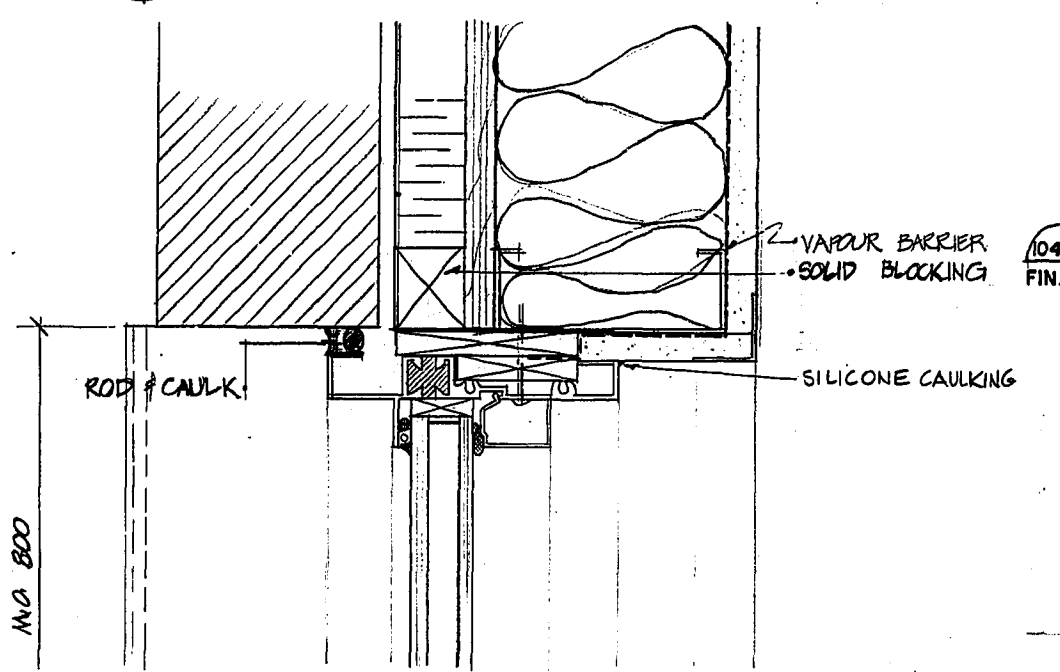
2 DETAIL AT SECOND FLOOR
105/108 1:5



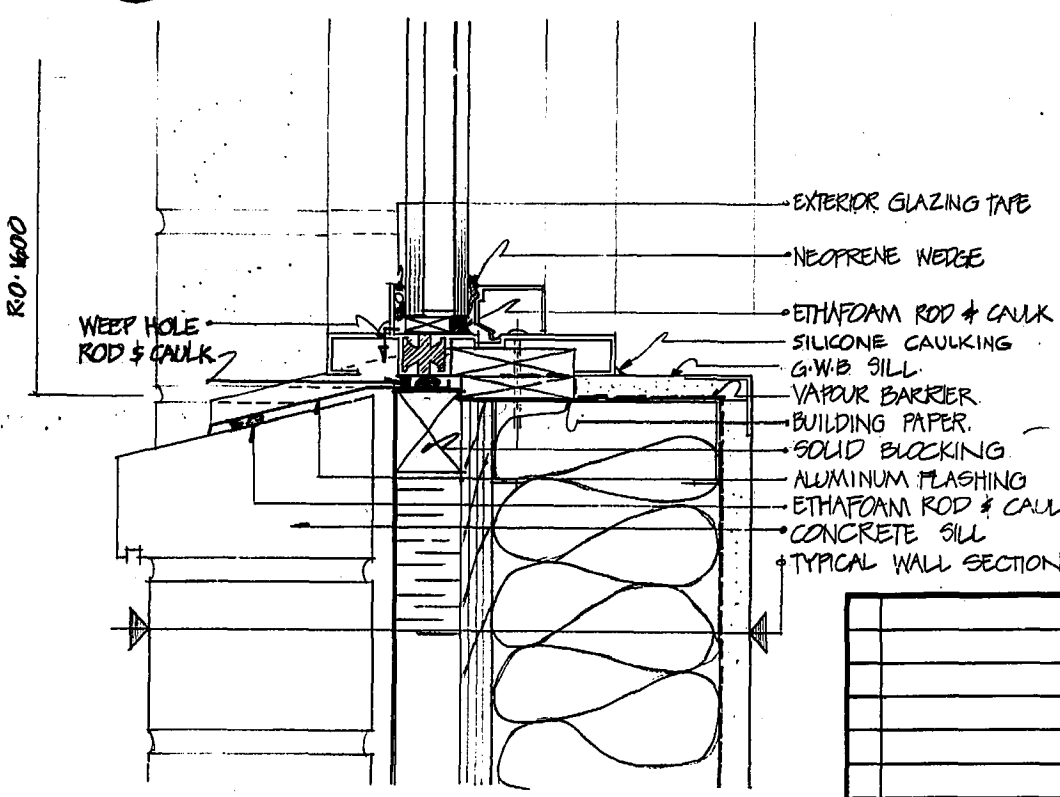
3 DETAIL AT MAIN FLOOR
105/108 1:5



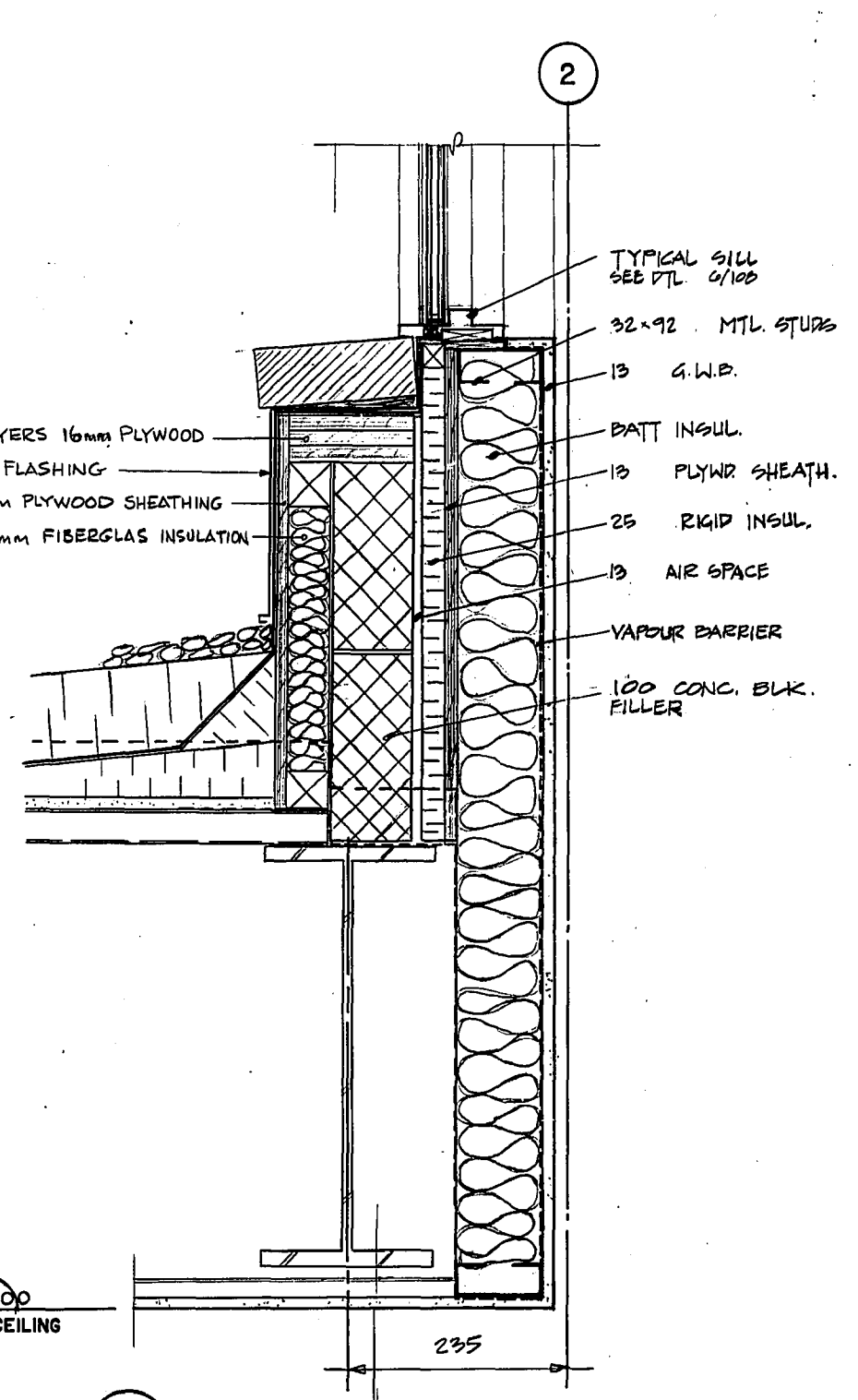
4 TYPICAL HEAD DETAIL
103/108 1:2



5 TYPICAL JAMB DETAIL
103/108 1:2



6 TYPICAL SILL DETAIL
103/108 1:2

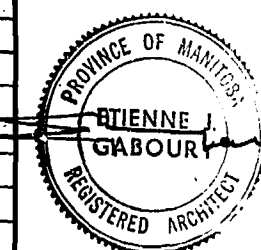


7 SECTION AT STAIR HALL I
109/108 1:5

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Precast Architectural Concrete	Genstar Structures	2280
Sealants	Grace	2286
Aluminum Doors & Windows	Border Glass	2288

REVISED AS CONSTRUCTED
DATE FEB. 14/84 BY CSA
CHECKED BY G.L.B./A.W.

NO.	REVISIONS	DATE	APP.	ENGINEER'S SEAL
1	ISSUED FOR TENDER	820510		
0	FOR CLIENTS REVIEW	22/01/82		



W.L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

DESIGNED BY: D.C., E.J.G.
DRAWN BY: D.F.C. E

CHECKED BY: D.C.
DATE: 82.03.19

APPROVED BY: [Signature]
DATE: Mar/82

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL - WALL & WINDOW DETAILS

RELEASED FOR CONSTRUCTION: [Signature] DATE: 1982 05 07
SCALE: AS NOTED
DRAWING NO.: NEP 1014

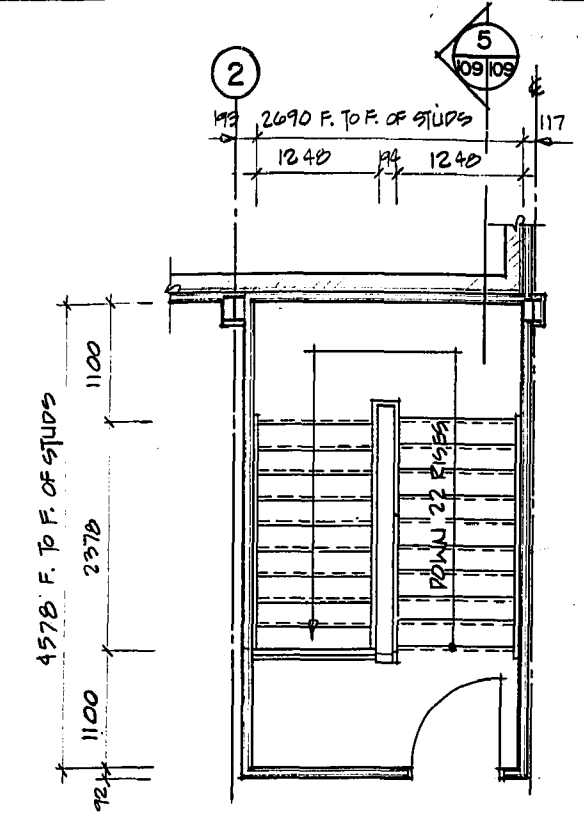
MICROFILMED

MICROFILMED 1984

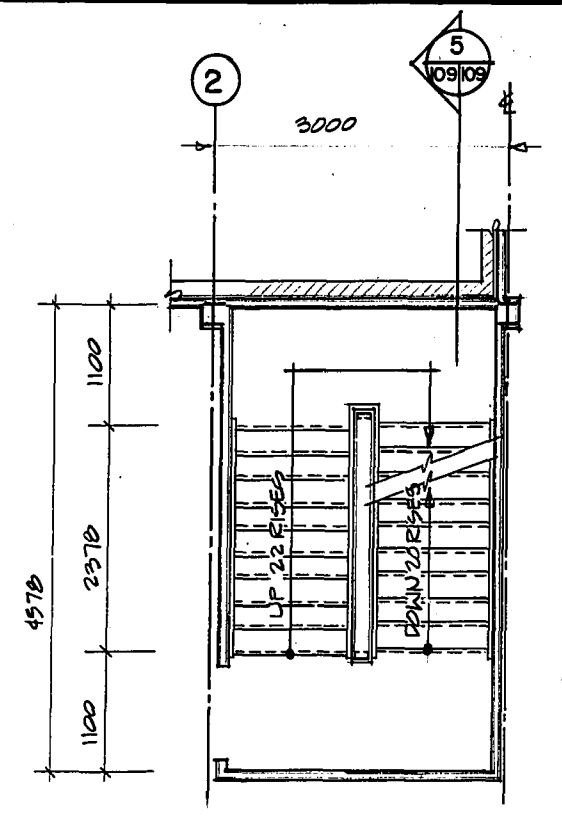
E.J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

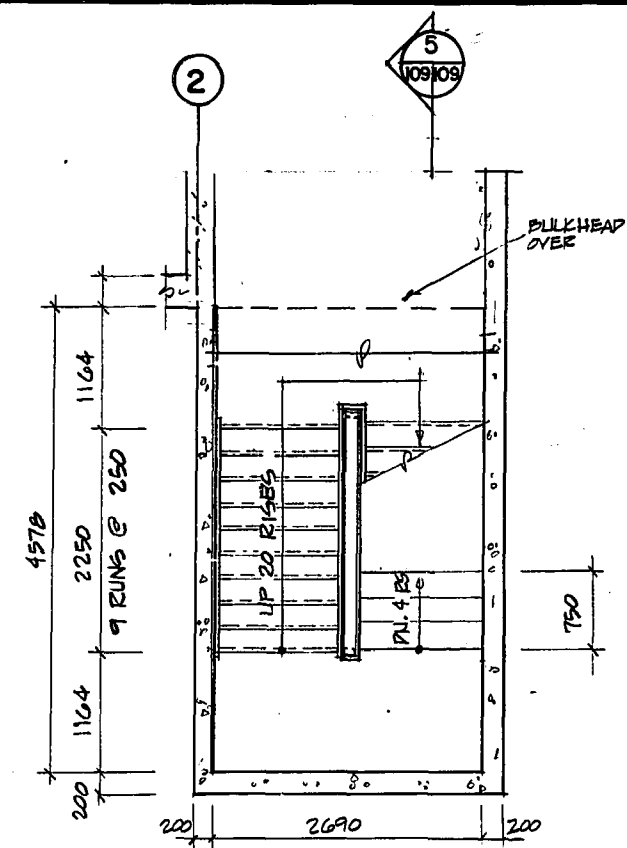
REF. or DRAWING No. 8000(2-11-07)
DETAILS A-109 NEP 1015



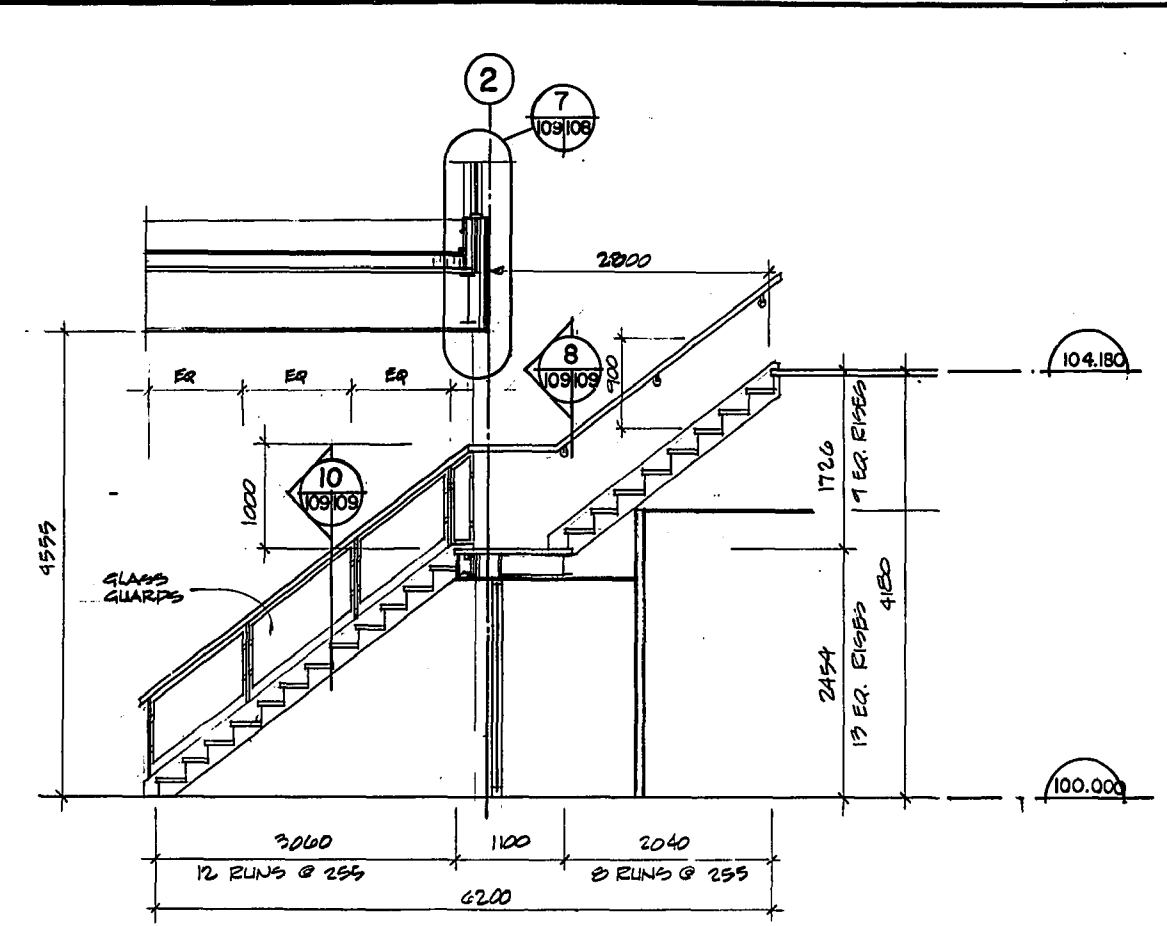
1 STAIRHALL No.2 AT 2ND. FL.
109/109 1:50



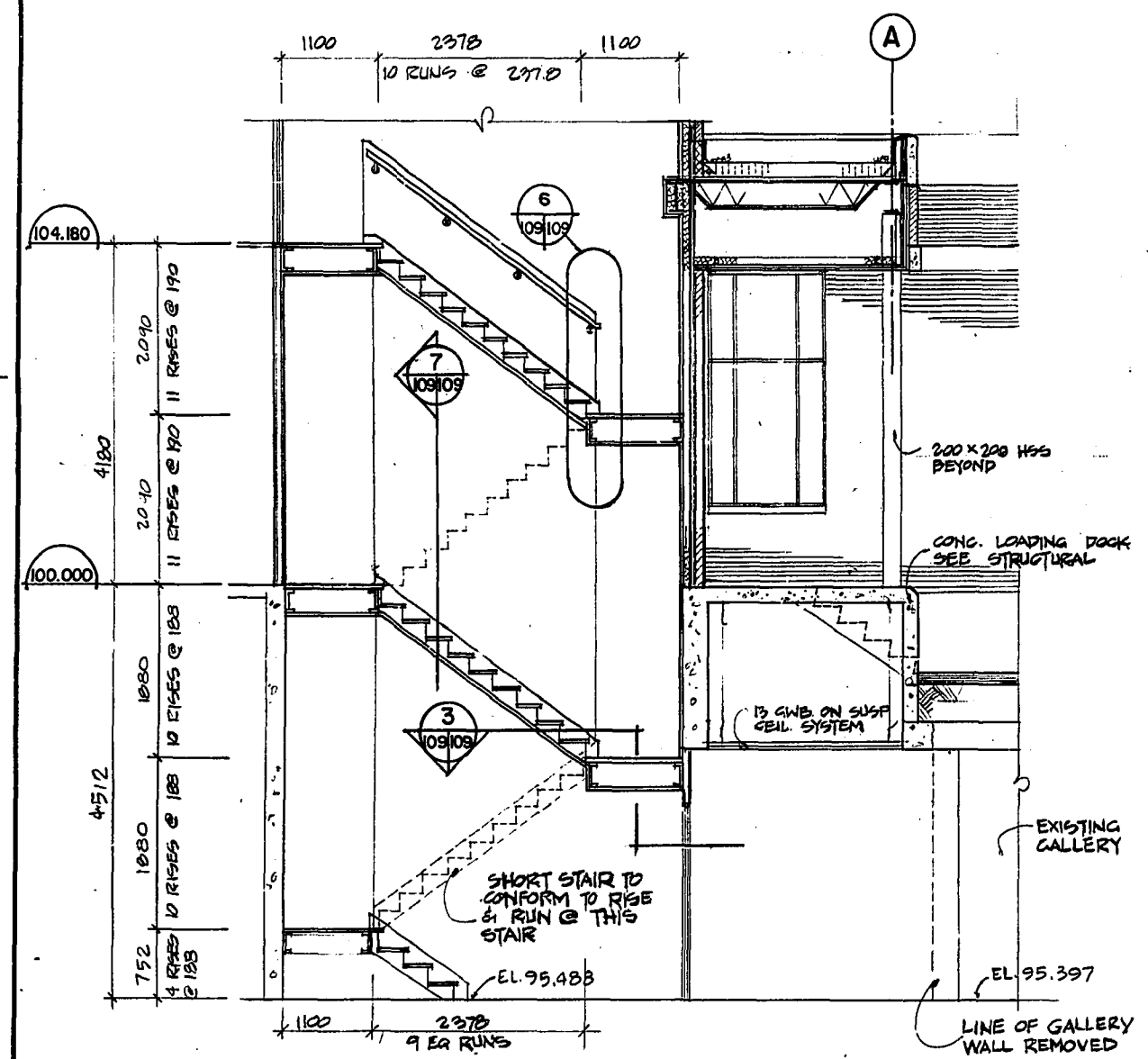
2 STAIRHALL No.2 AT MAIN FL.
109/109 1:50



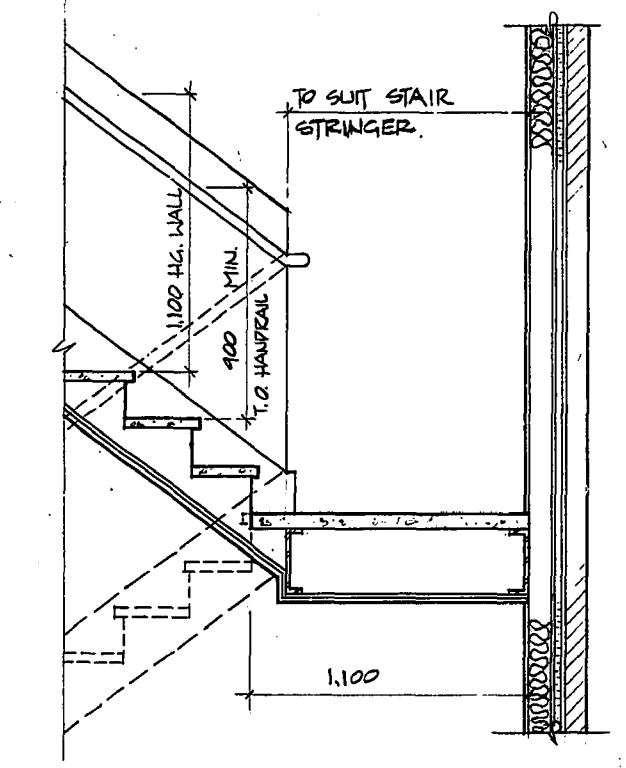
3 STAIRHALL No.3 AT GALLERY
109/109 1:50



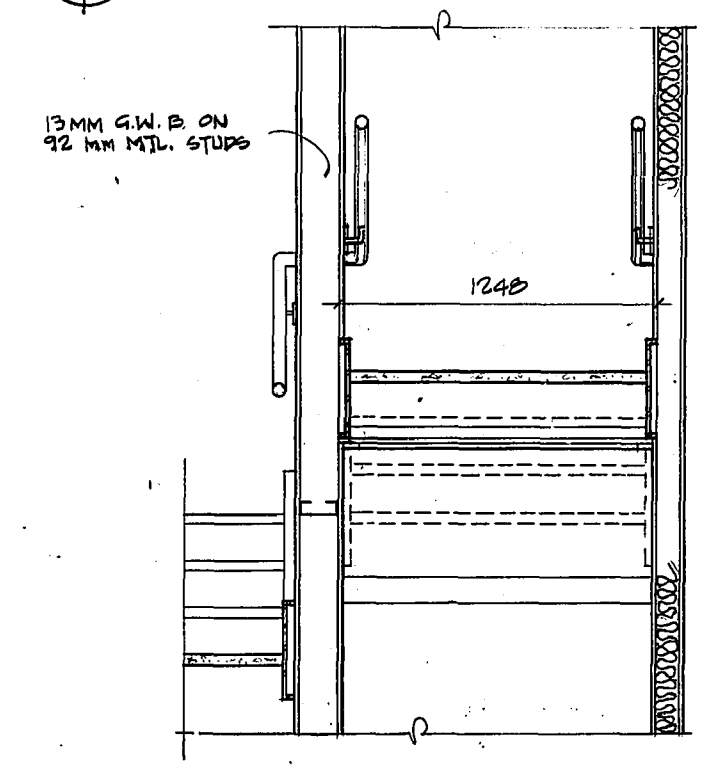
4 SECTION THRU STAIRHALL NO.1
109/109 1:50



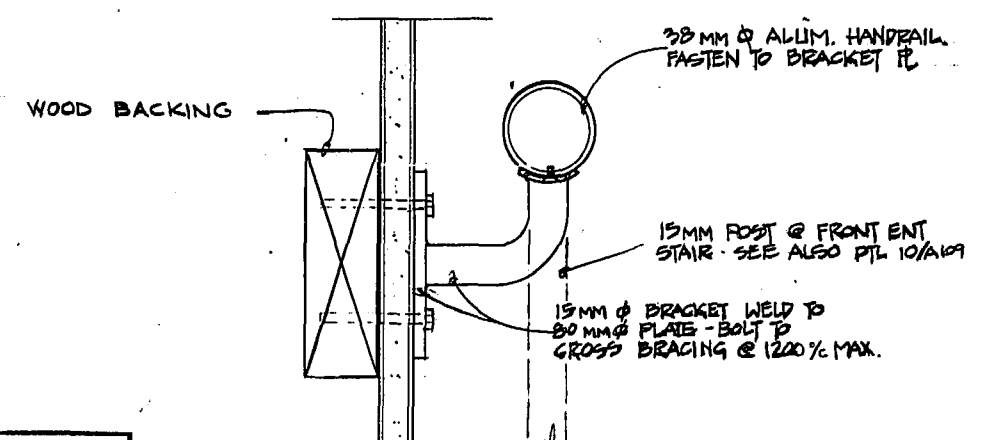
5 SECTIONS THRU STAIRHALLS 2 & 3
109/109 1:50



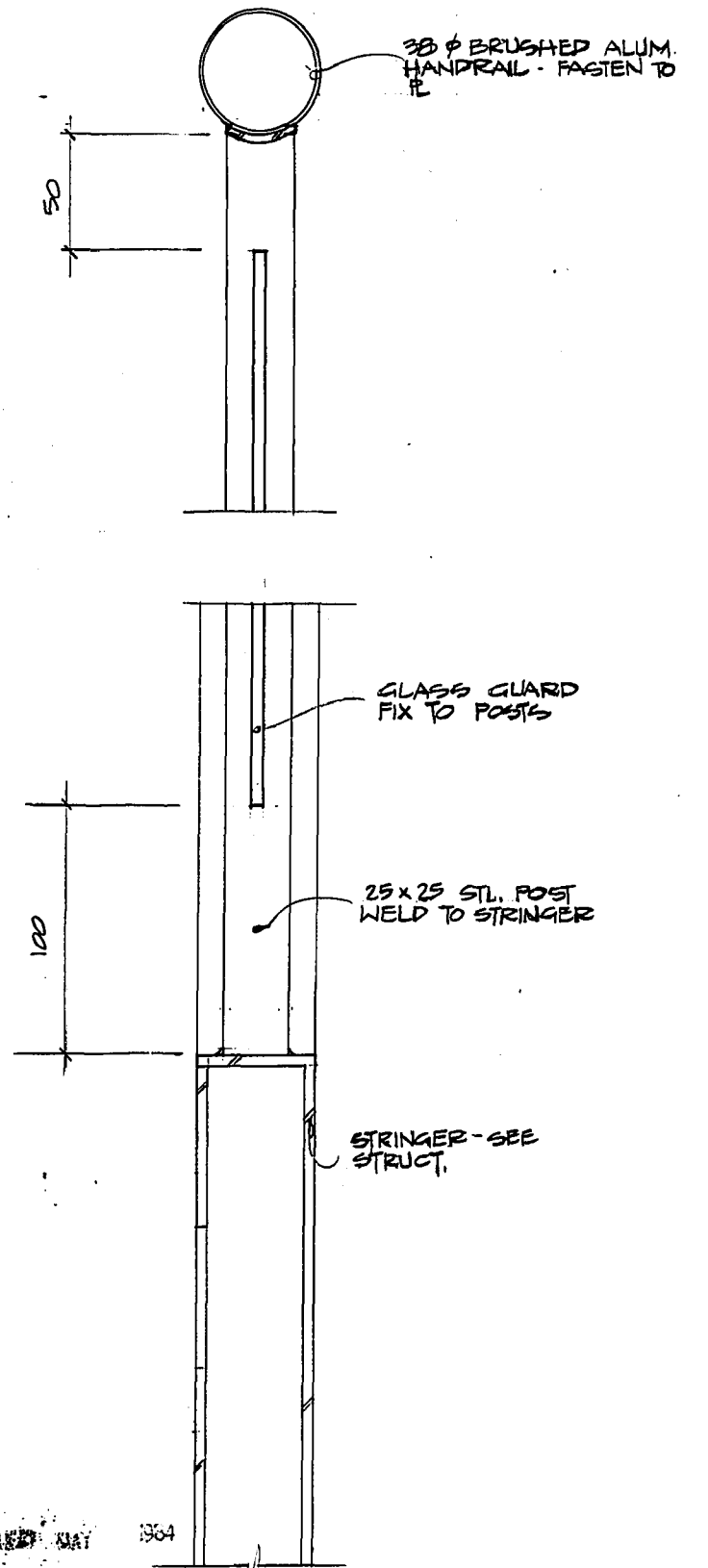
6 SECTION DETAIL
109/109 1:20



7 SECTION DETAIL
109/109 1:20

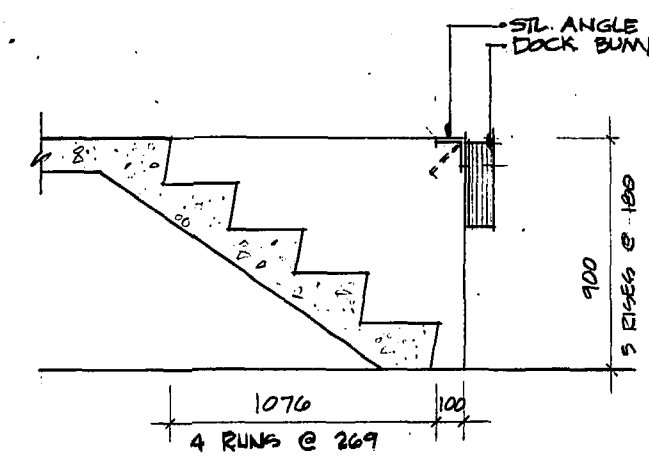


8 HANDRAIL DETAIL (TYP.)
109/109 1:2



10 GUARDRAIL POST CONNECTION
109/109 1:2

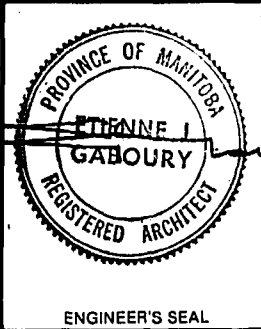
SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Steel Stairs & Handrail Details	Bison Steel	2285
Rubber Dock Bumpers	Serco	2292



9 SECTION AT REAR ENTRANCE STAIR
102/109 1:20

REVISED AS CONSTRUCTED
DATE FEB. 14/84 BY CSA
CHECKED BY G. ARJANI

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	22/05/10	
2	FOR CLIENTS REVIEW	22/01/82	



W.L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

DESIGNED BY: I.D.C., E.J.G.
DRAWN BY: [Signature]

CHECKED BY: D.C.
DATE: 82.03.19

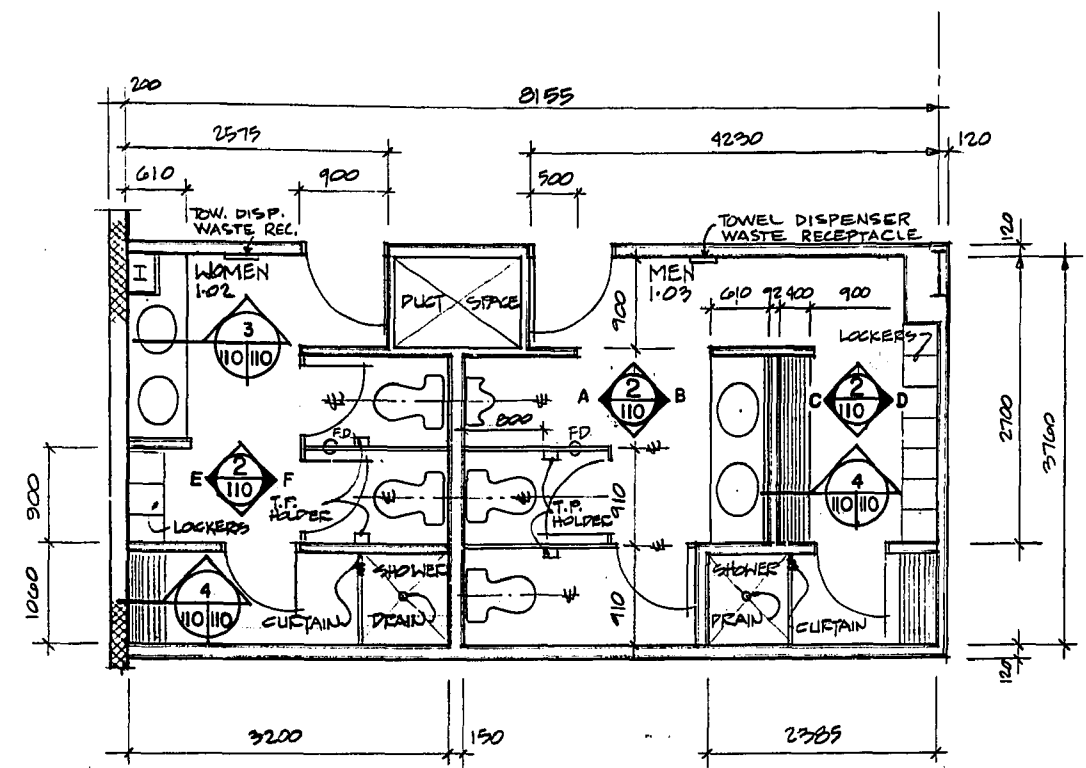
APPROVED BY: [Signature]
DATE: [Signature]



E.J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

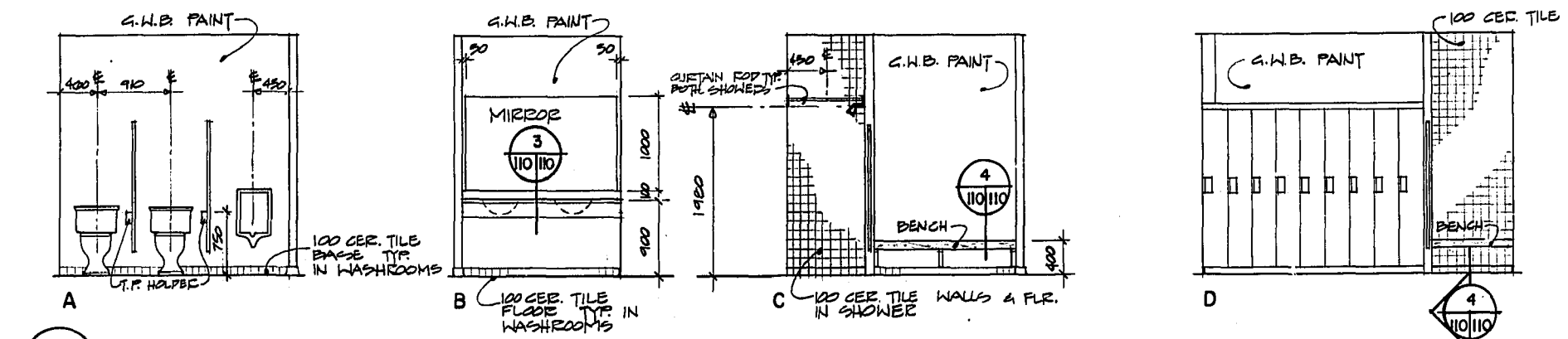
NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL - STAIR PLANS
SECTIONS & DETAILS

RELEASED FOR CONSTRUCTION DATE: 1982.05.07
SCALE: AS NOTED DRAWING NO: NEP 1015

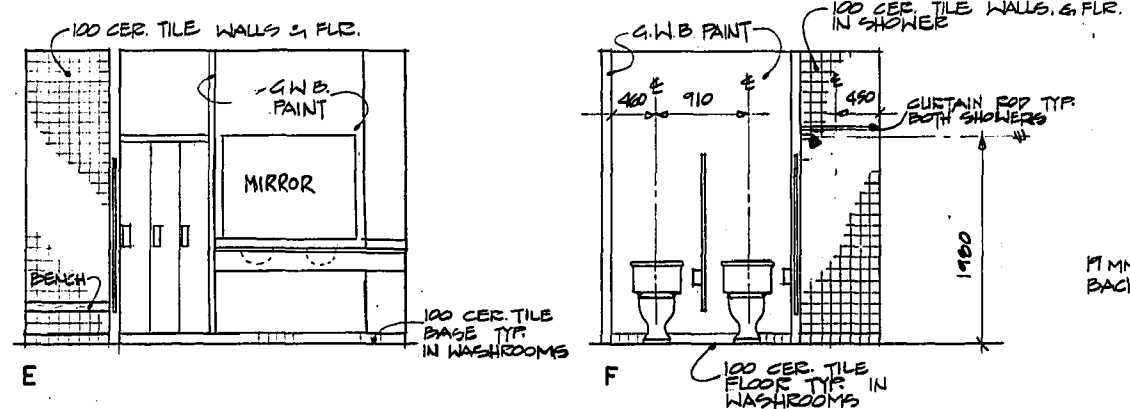


1 WASHROOM LAYOUT
1:50

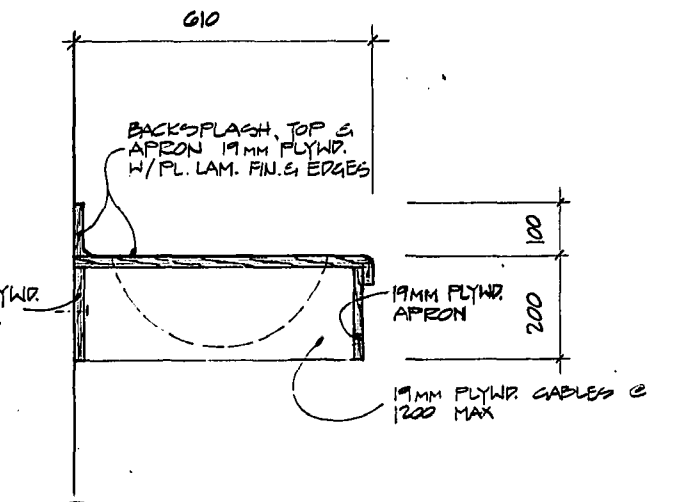
NOTE DIMENSIONS TO FACE OF STUPE



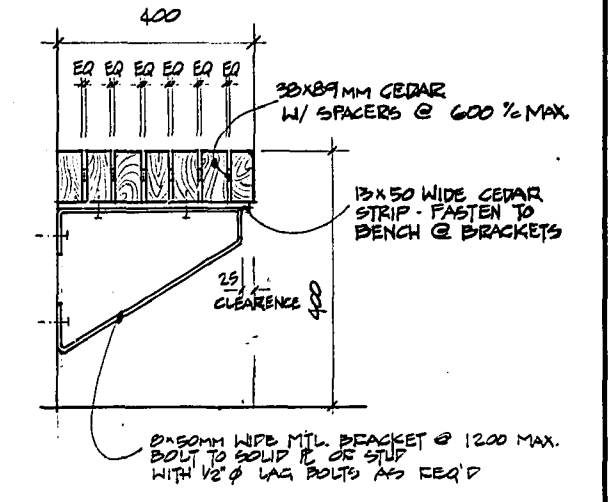
2 WASHROOM ELEVATIONS
1:50



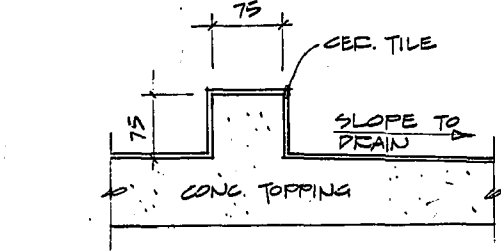
WASHROOM ELEVATIONS
1:50



3 VANITY DETAIL
1:10

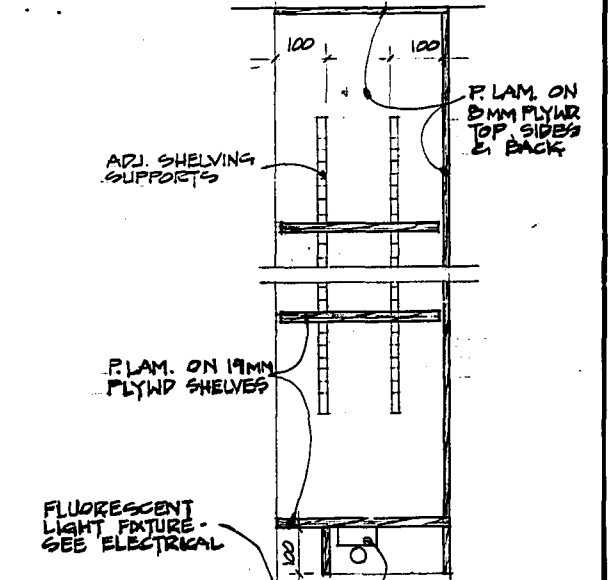


4 BENCH DETAIL
1:10

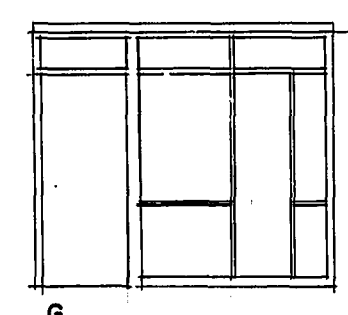


8 SHOWER CURB DETAIL
1:5

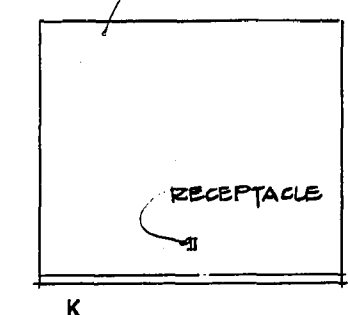
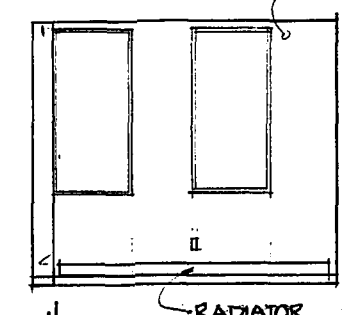
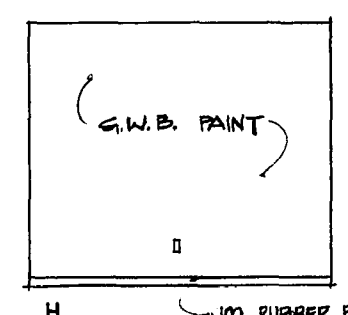
SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Hollow Metal Doors	Steldor	2287
Aluminum Doors & Windows	Border Glass	2288
Washroom Accessories	Polet Lumber	2290
Toilet Partitions	Scripline	2293
Metal Lockers and Cabinets	Scripline	2294



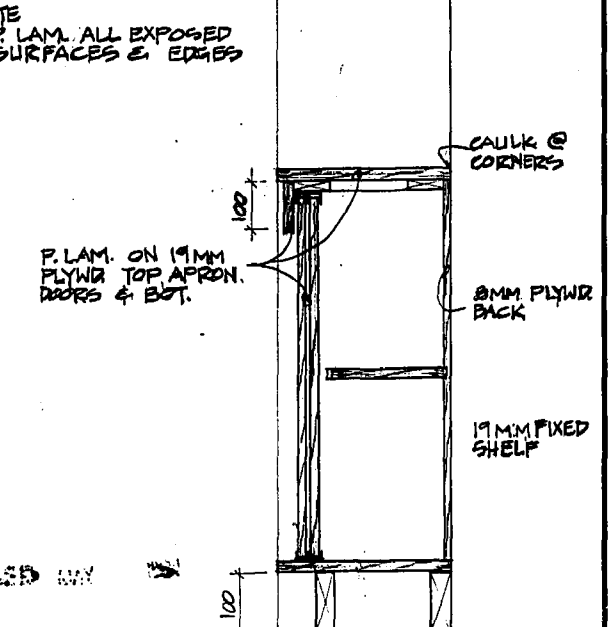
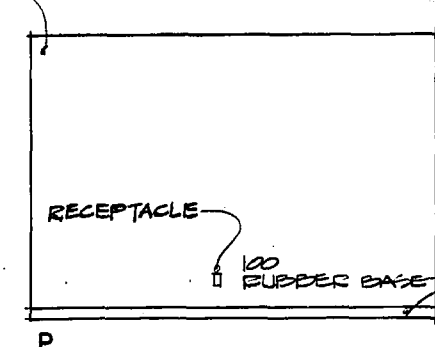
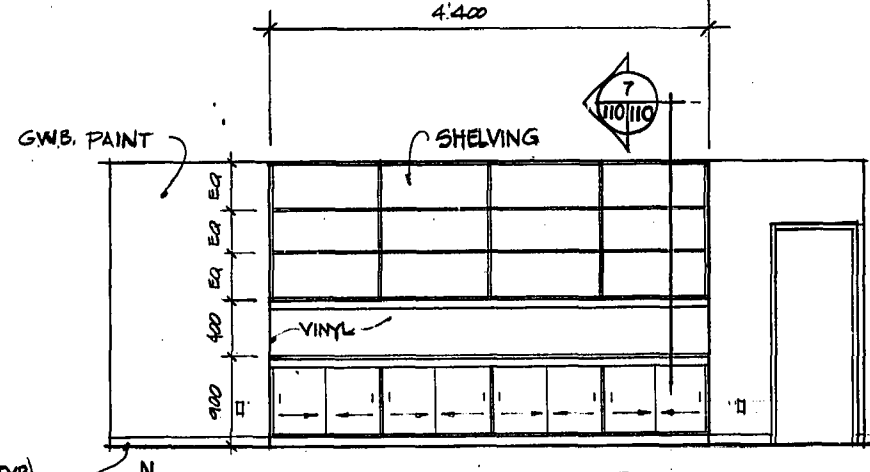
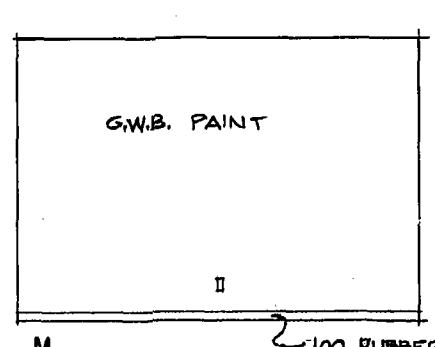
7 CABINET DETAIL
1:10



5 TYPICAL OFFICE ELEVATIONS
1:50



6 LIBRARY & MEETING RM. ELEVATIONS
1:50

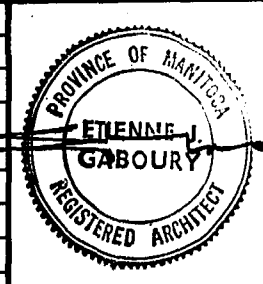


7 CABINET DETAIL
1:10

REVISED AS CONSTRUCTED
DATE FEB. 14/82 BY CSA
CHECKED BY CALIBANT

E. J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

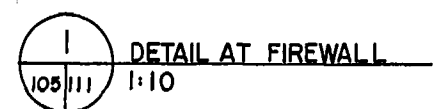
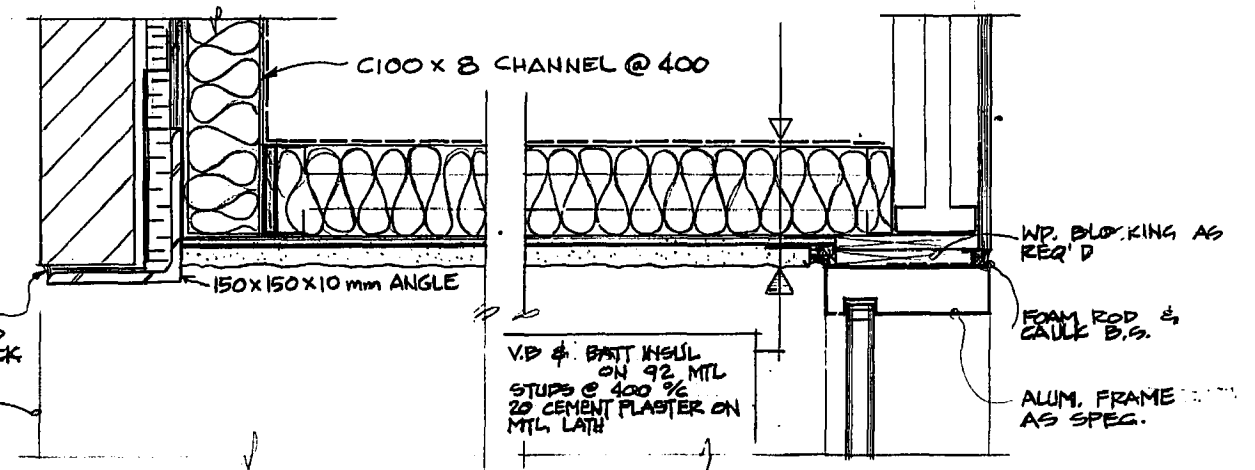
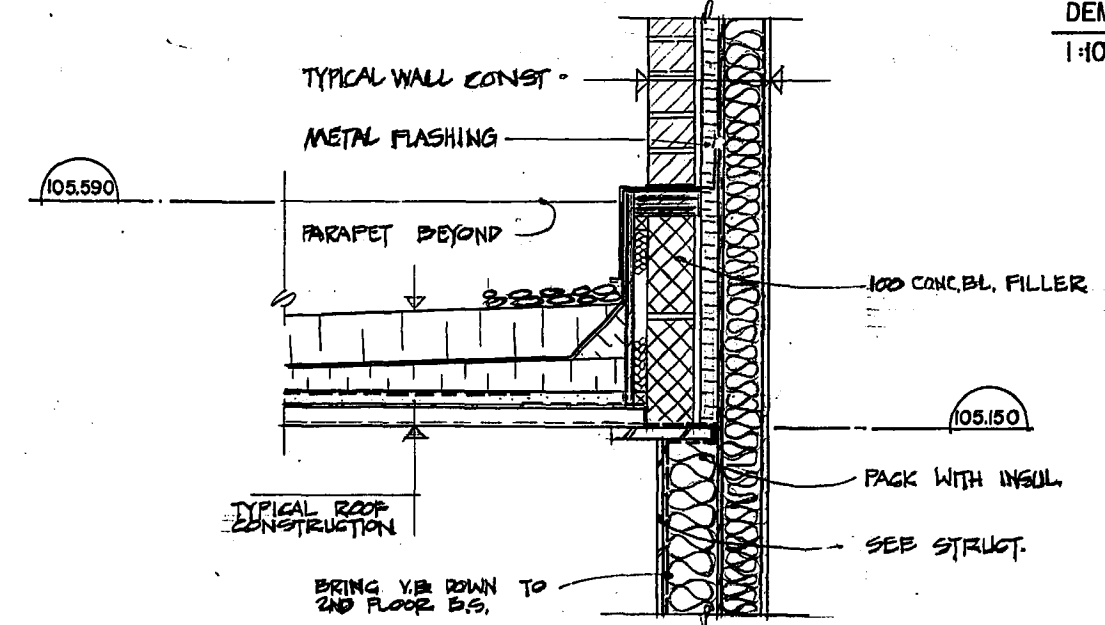
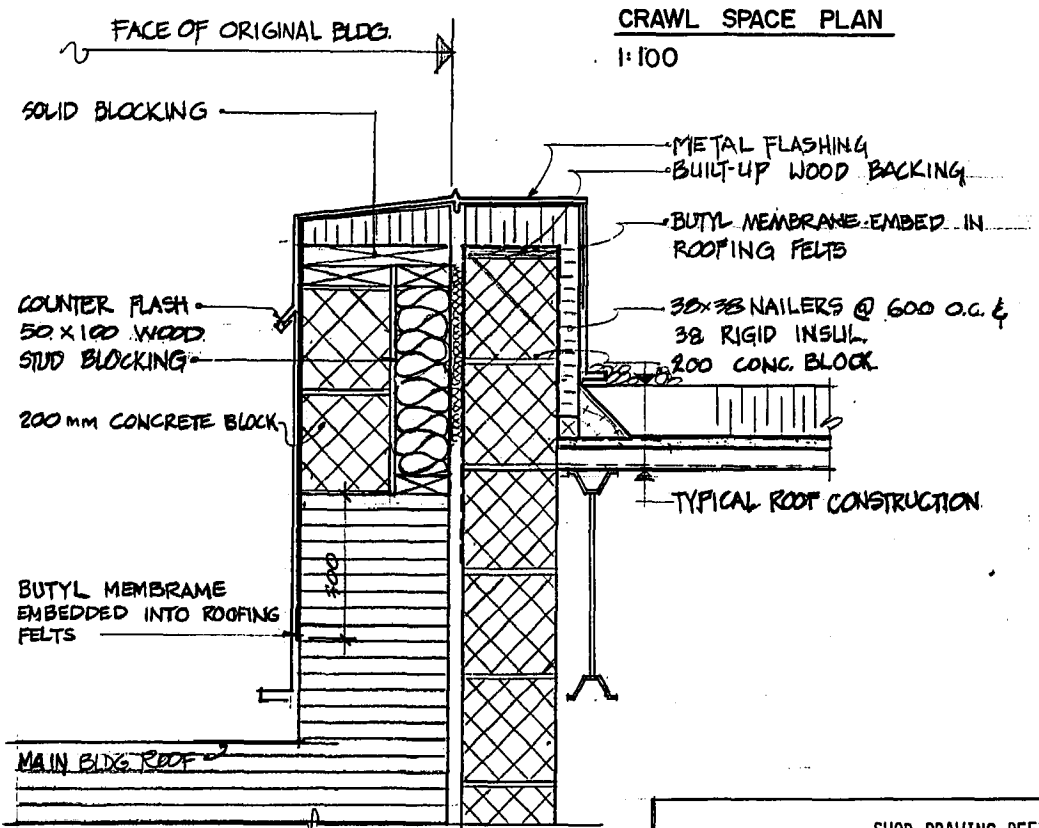
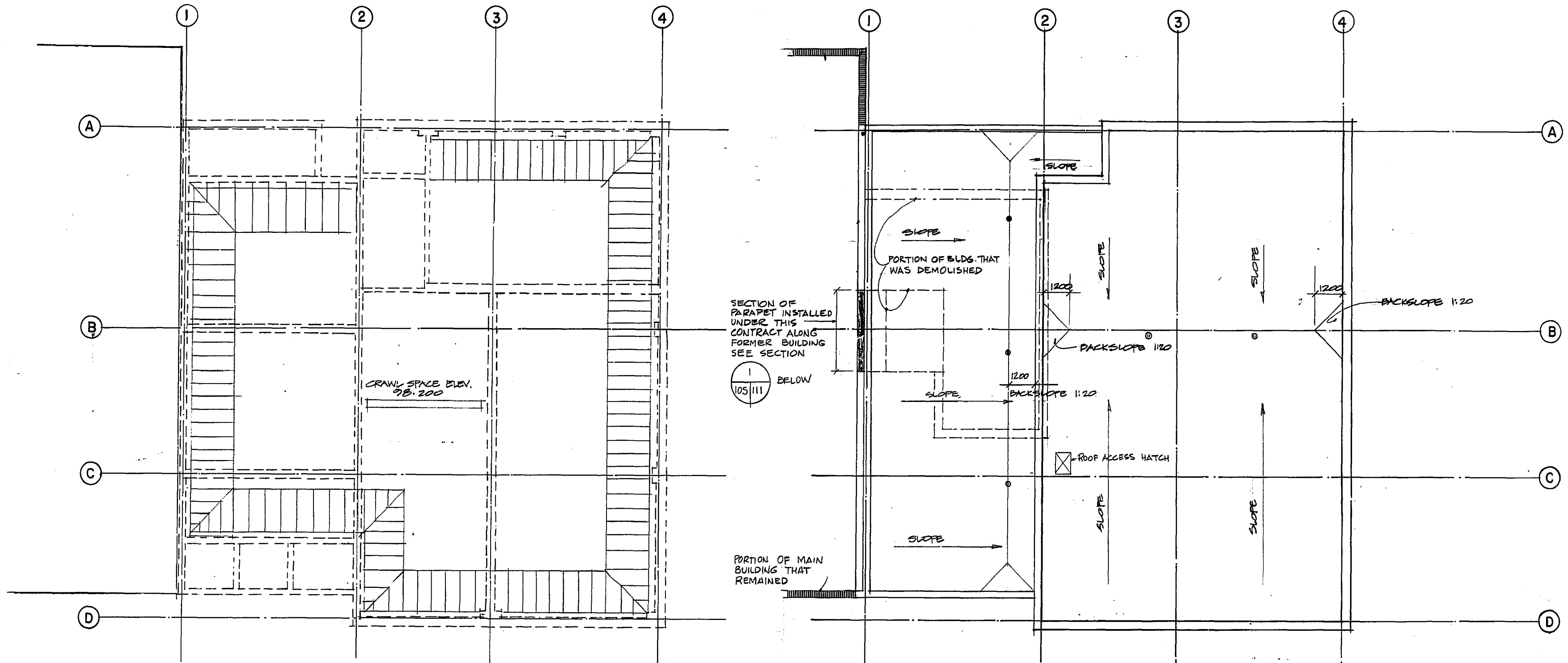
NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	22/03/82	
0	FOR CLIENTS REVIEW	22/04/82	



W. L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.
DESIGNED BY: D.C., E.J.G.
DRAWN BY: D.C.
CHECKED BY: D.C.
DATE: 82. 03. 19
APPROVED BY: J. Maguire
DATE: Mar/82

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL - INTERIOR ELEVATIONS
RELEASED FOR CONSTRUCTION: [Signature]
DATE: 1982.05.07
SCALE: AS NOTED
DRAWING NO.: NEP 1016



2 DETAIL AT ROOF/WALL CONSTRUCTION
1:10

3 DETAIL AT FRONT CANOPY
1:5

4 DETAIL AT FRONT CANOPY
1:5

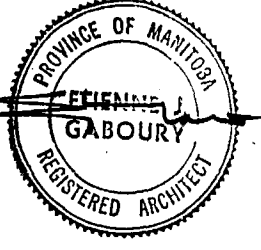
NOTE
THIS DETAIL IS ONLY APPLICABLE
OVER A 3.5 METER SECTION OF
THE ORIGINAL ROOF AS SHOWN
ON ROOF DEMOLITION PLAN ABOVE

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Sealants	Grace	2286
Metal Access Hatches	BBC Distributors	2291

REVISED AS CONSTRUCTED
DATE 22/05/82 BY CSA
CHECKED BY GABOURY

E.J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	22/05/80	
2	FOR CLIENTS REVIEW	22/06/82	



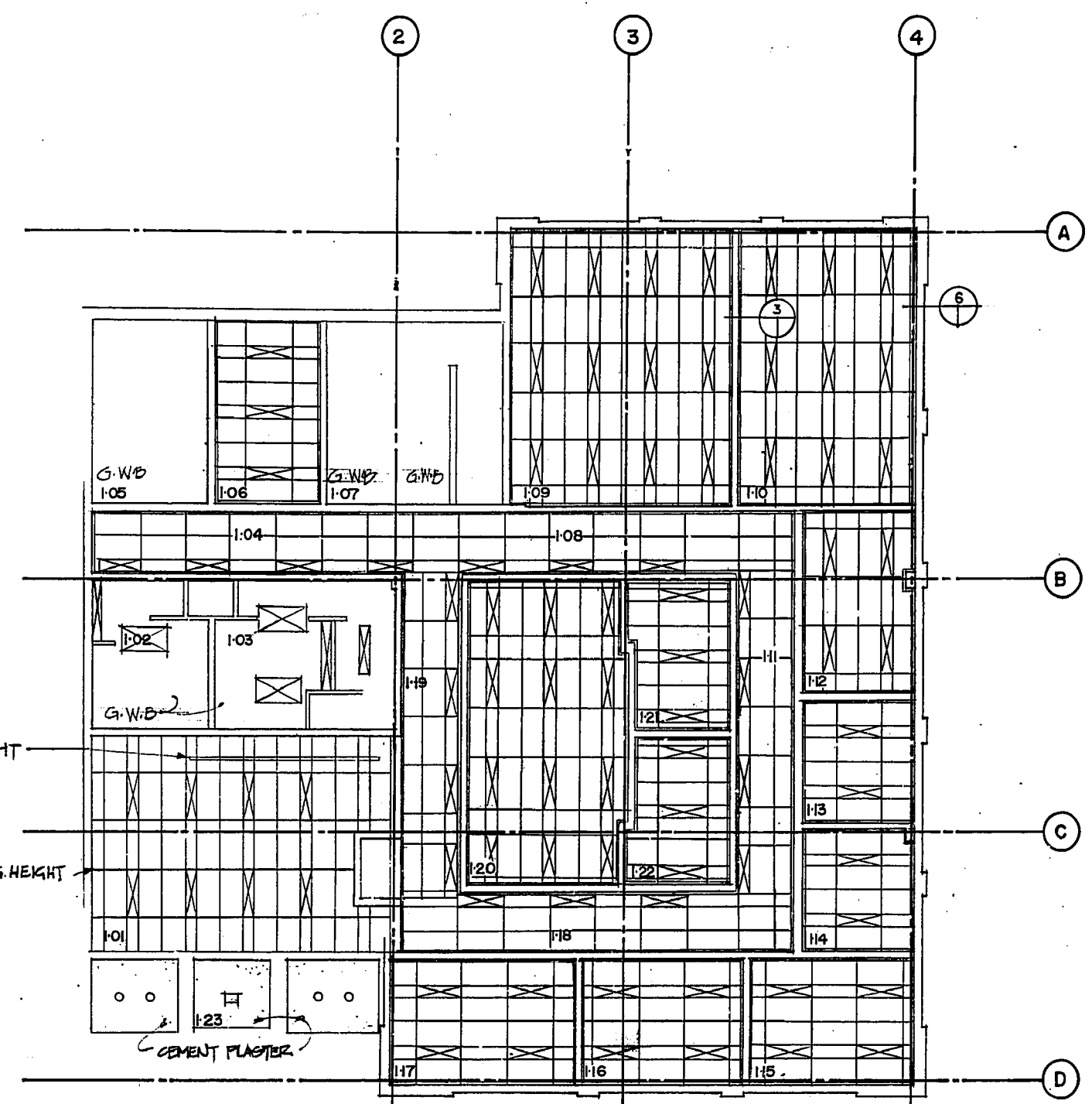
W.L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.
DESIGNED BY: D.C., E.J.G.
DRAWN BY: E
CHECKED BY: D.C.
DATE: 82.03.19
APPROVED BY: M. Maguet
DATE: Mar/82

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

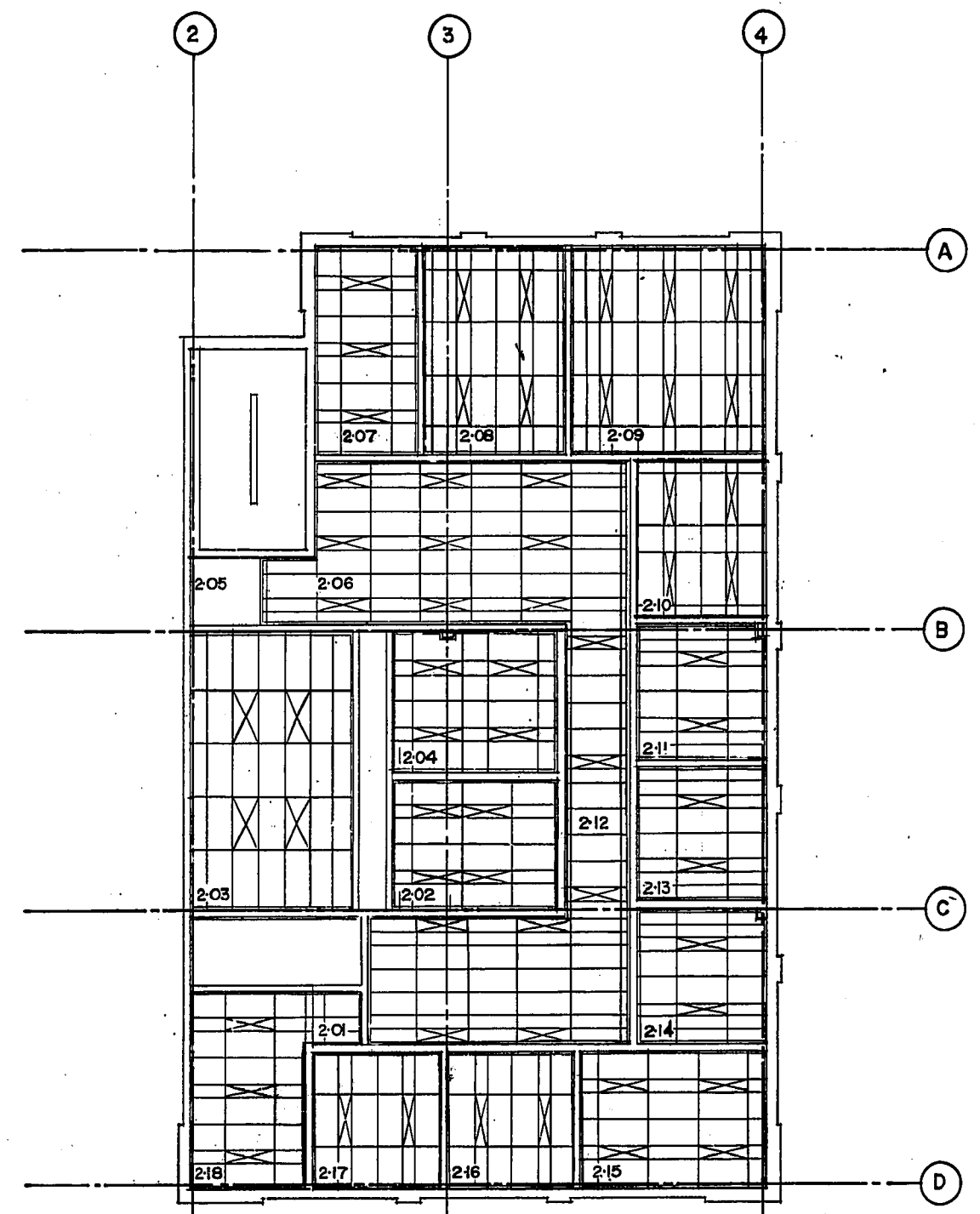
NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL - ROOF DRAINAGE & CRAWL SPACE PLANS
RELEASED FOR CONSTRUCTION DATE: 19/05/82
SCALE: AS NOTED
DRAWING NO.: NEP 1017

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

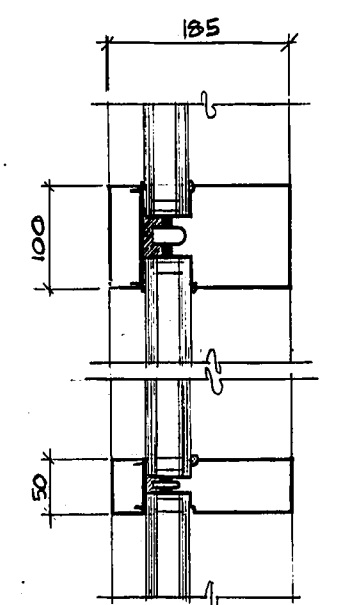
REF. or DRAWING No. 800018-11-07
DETAILS A-112
NEP-1018



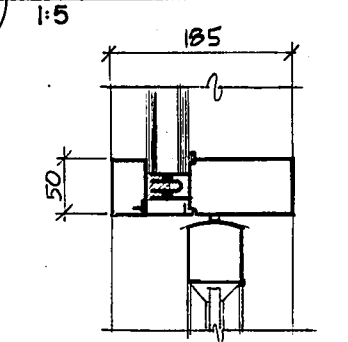
1 MAIN FLOOR REFLECTED CLG.
1:100



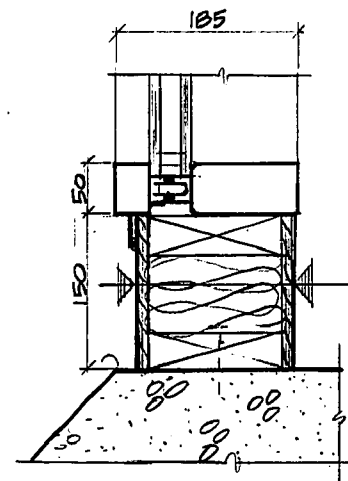
2 SECOND FLOOR REFLECTED CLG.
1:100



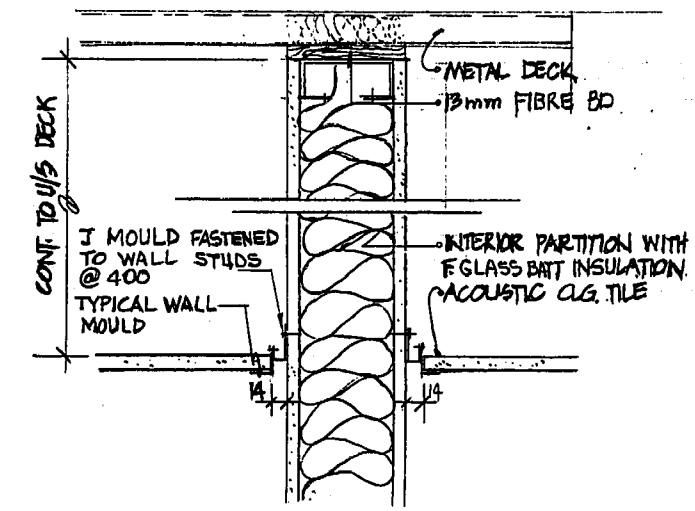
7 HORIZ MULLION DETAIL
1:5



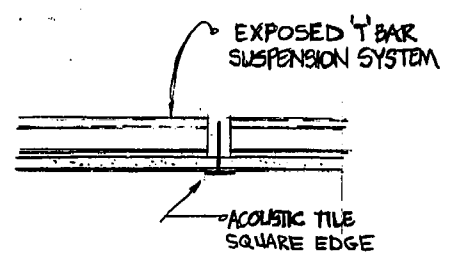
8 DOOR JAMB DETAIL
1:5



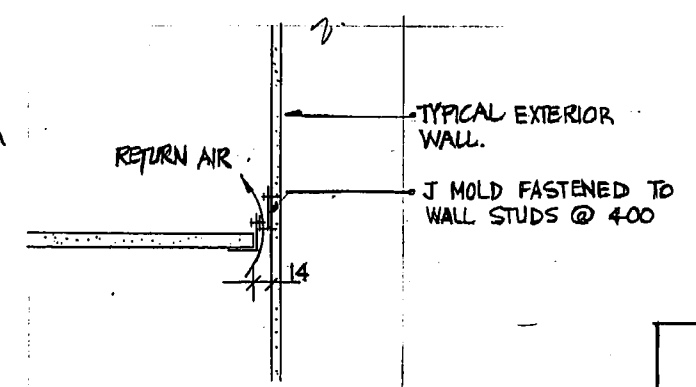
9 SILL DETAIL
1:5



3 CLG. AT INT PARTITION
1:5



5 CLG. AT TILE JOINT
1:5



6 CLG. AT EXTERIOR WALL
1:5

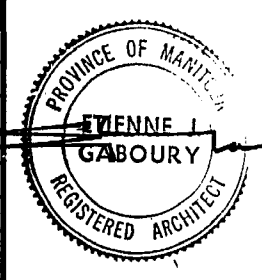
SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Aluminum Doors & Windows	Borger Glass	2288

MICROFILMED
METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

REVISED AS CONSTRUCTED
DATE FEB 14/84 BY SA
CHECKED BY CALBANJ

E.J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

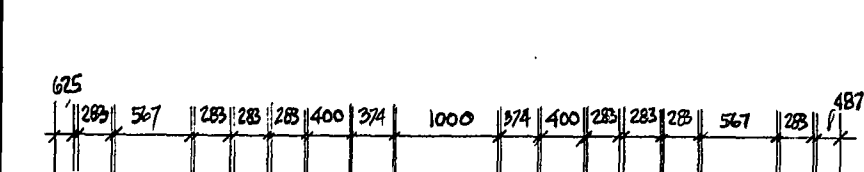
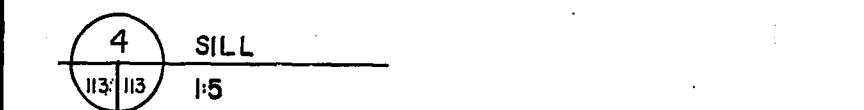
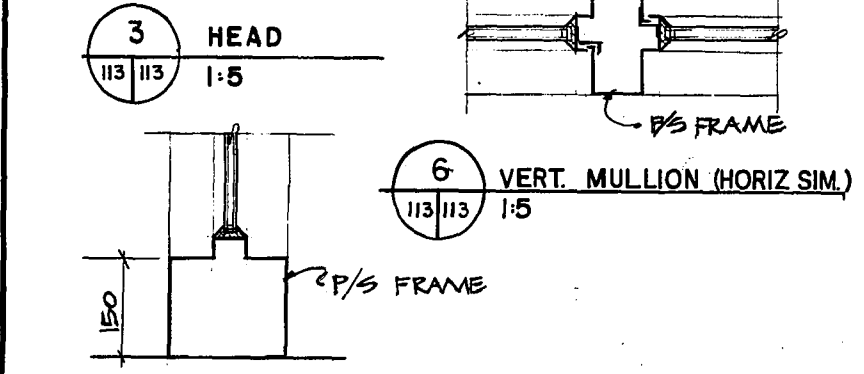
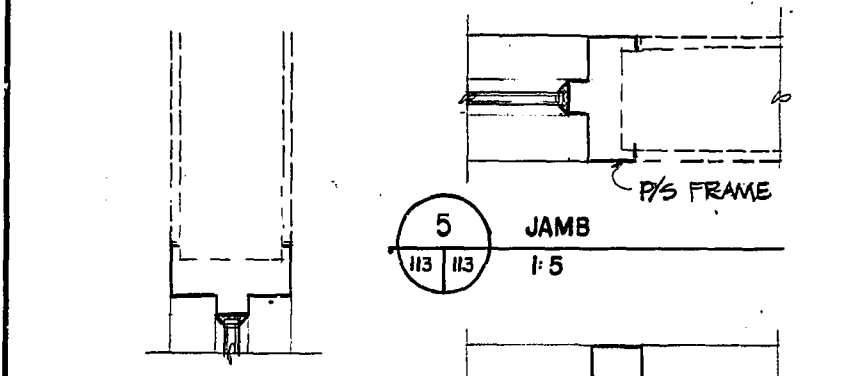
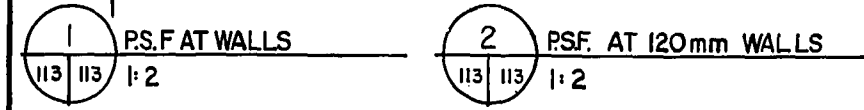
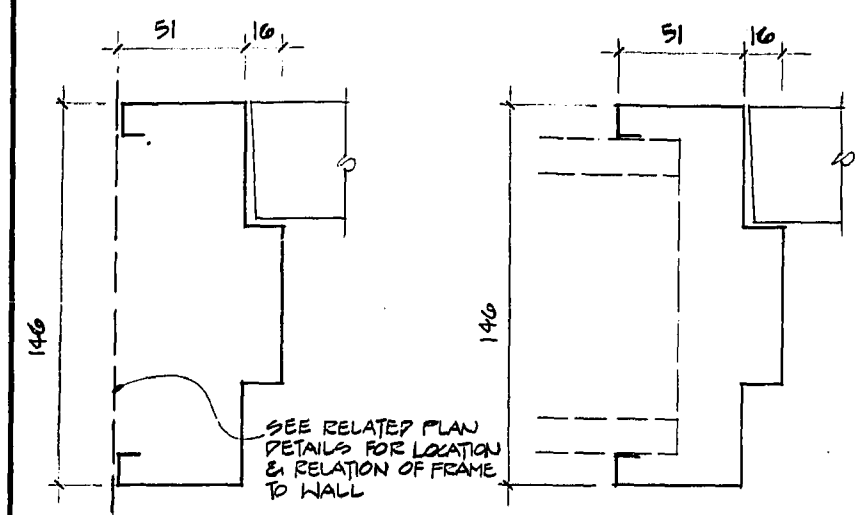
NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	22-05-80	
2	FOR CLIENTS REVIEW	22/01/82	



W.L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.
DESIGNED BY: D.C., E.J.G.
DRAWN BY: E
CHECKED BY: D.C.
DATE: 82.03.19
APPROVED BY: August
DATE: 8/1/82

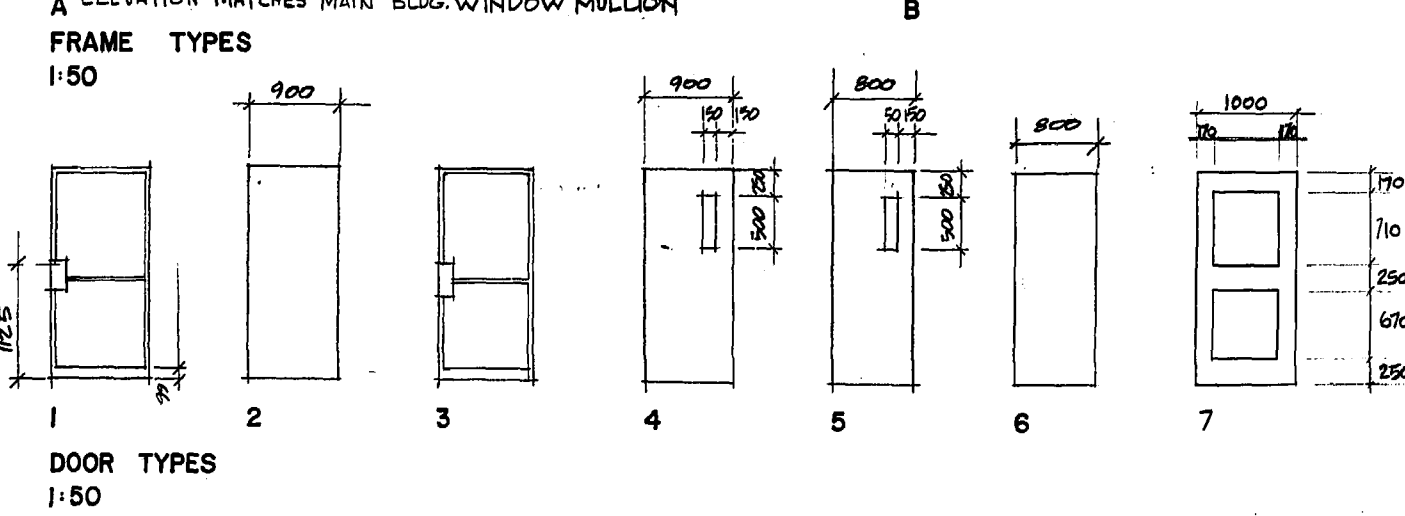
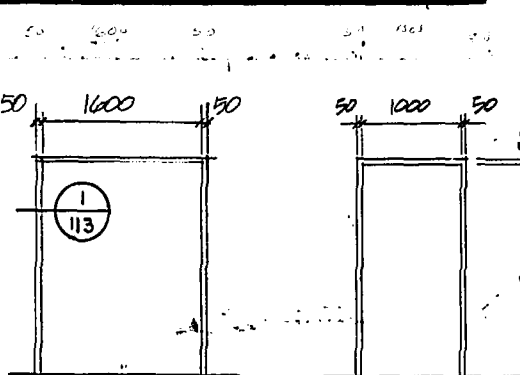
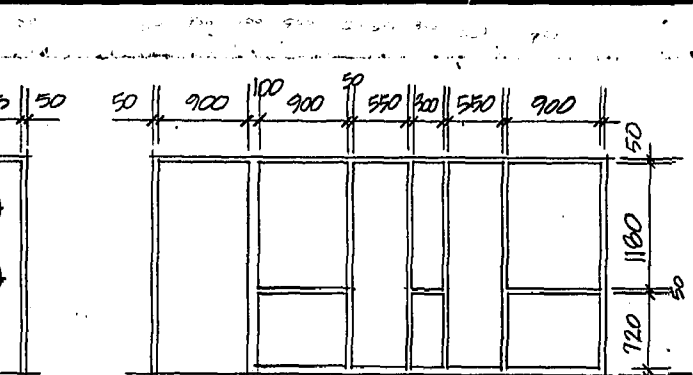
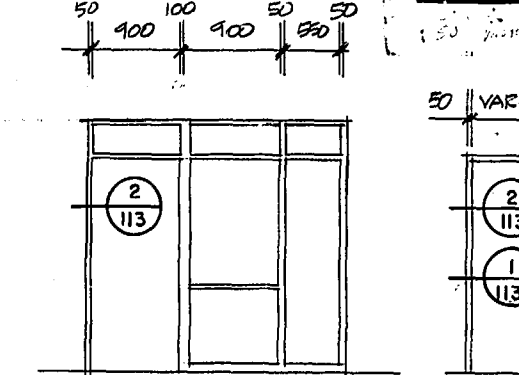
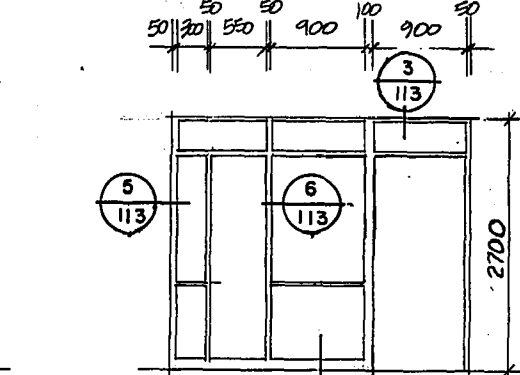
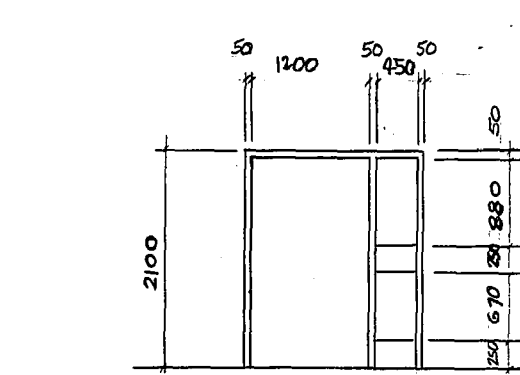
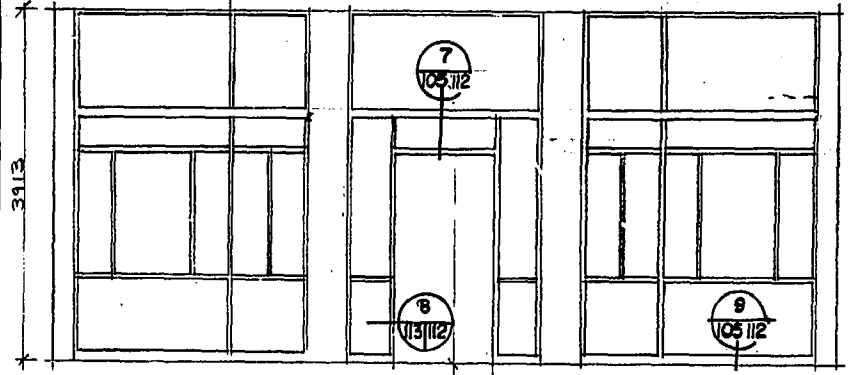
THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL REFLECTED CEILING PLANS & DETAILS
RELEASED FOR CONSTRUCTION: DATE: 1982 05 07
SCALE: AS NOTED
DRAWING NO.: NEP 1018



DOOR SCHEDULE																
DOORS										FRAMES			U.L.	HARD-WARE	GRILLE OR U. CUT	COLOR CODE
MARK	NO	WIDTH	HEIGHT	TYPE	THICKNESS	CORE	MATERIAL	GLAZING	PAINT COLOR	TYPE	MATERIAL	GLAZING	PAINT COLOR	DOOR RATING	REMARKS	
01	1000	2400	1							A						
02	1200	2400	1							A						
03	1200	2050	3							B						
04	800	2050	6							E-2				20min	3/4 hr. FRAME	
05	800	2050	6							E-2						
06	900	2050	4							E-1				1 1/2 hr	2 hr. FRAME	
07	900	2050	4							E-1				1 1/2 hr	2 hr. FRAME	
08	2	800	2050	5						E-1						
09	900	2050	2							D				20min	3/4 hr. FRAME	
10	900	2050	2							E-2						
11	900	2050	4							E-1				7		
12	900	2050	2							E-1				1 1/2 hr	2 hr. FRAME (SEE DWG A104)	
13	900	2050	2							F				6		
14	900	2050	2							E-1				4		
15	900	2050	2							E-2				4		
16	900	2050	2							C				6		
17	900	2050	2							D				6		
18	900	2050	2							D				6		
19	800	2050	2							E-2				6		
20	900	2050	2							D				6		
21	900	2050	2							E-2				6		
22	900	2050	2							C				6		
23	900	2050	2							C				6		
24	900	2050	2							E-2				6		
25	800	2050	2							E-2				6		
26	800	2050	6							E-2				6		
27	900	2050	2							E-2				6		
28	900	2050	2							D				20min	3/4 hr. FRAME	
29	900	2050	2							C				6		
30	900	2050	2							E-2				6		
31	900	2050	2							E-2				6		
32	900	2050	2							D				20min	1 hr. FRAME	
33	900	2050	2							D				6		
34	900	2050	2							D				6		
35	900	2050	2							D				6		
36	900	2050	2							D				6		
37	900	2050	2							E-2				6		
38	900	2050	2							D				6		
39	900	2050	2							D				6		
40	900	2050	2							E				6		
41	900	2050	2							E				6		
42	1000	2050	7							H				20min	3/4 hr. FRAME	

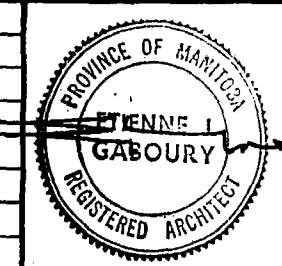
ROOM FINISH SCHEDULE														
RM. NO.	ROOM NAME	FLOOR	BASE	WALLS	CEILING	HEIGHT	COLOR CODE	REMARKS						
1.01	LOBBY													
1.02	WOMEN													
1.03	MEN													
1.04	CORRIDOR													
1.05	RECEIVING													
1.06	OFFICE													
1.07	VESTIBULE													
1.08	CORRIDOR													
1.09	CONTROL RM													
1.10	COMPUTER RM													
1.11	CORRIDOR													
1.12	OFFICE													
1.13	OFFICE													
1.14	OFFICE													
1.15	OFFICE													
1.16	OFFICE													
1.17	OFFICE													
1.18	CORRIDOR													
1.19	CORRIDOR													
1.20	MEETING AND LIBRARY													
1.21	OFFICE													
1.22	PLAN													
1.23	VESTIBULE													
2.01	WORK AREA													
2.02	OFFICE													
2.03	ELECTRICAL													
2.04	REST													
2.05	STORAGE													
2.06	WORK AREA													
2.07	OFFICE													
2.08	OFFICE													
2.09	OFFICE													
2.10	OFFICE													
2.11	OFFICE													
2.12	CORRIDOR													
2.13	OFFICE													
2.14	OFFICE													
2.15	OFFICE													
2.16	OFFICE													
2.17	OFFICE													
2.18	OFFICE													
3.11	STAIRHALL													
3.12	STAIRHALL													
3.13	STAIRHALL													



REVISED AS CONSTRUCTED
DATE FEB 14 1984 BY CSA
CHECKED BY S. ALBIAN

E. J. GABOURY AND ASSOCIATES
ARCHITECTS AND URBAN DESIGNERS

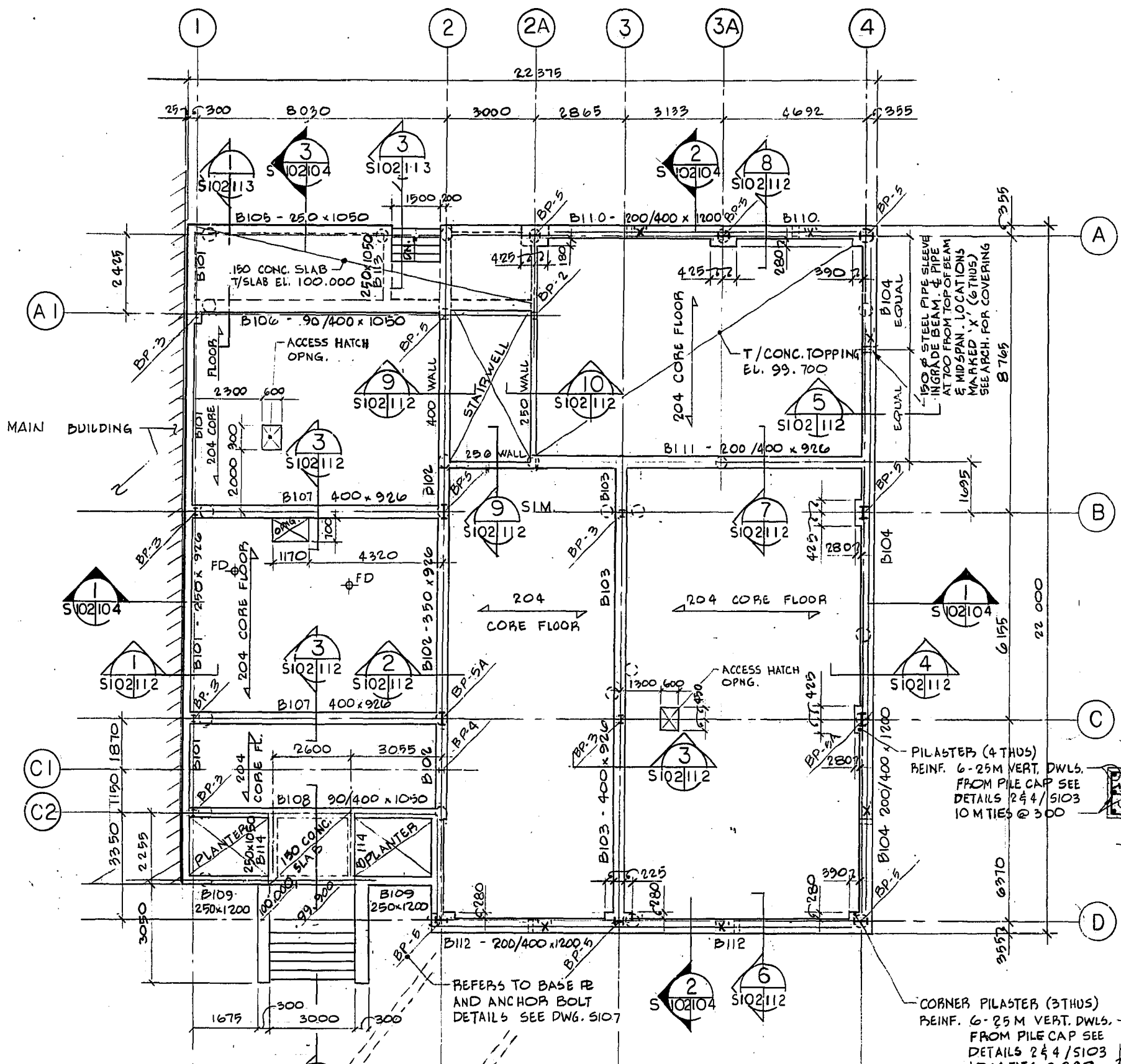
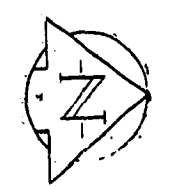
SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Hollow Metal Doors	Steldor	2287
Aluminum Doors & Windows	Border Glass	2288
Finishing Hardware	Polet Lumber	2289



W. L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.
DESIGNED BY: D.C., E.J.G.
DRAWN BY: [Signature]
CHECKED BY: D.C.
DATE: 82.03.19
APPROVED BY: [Signature]
DATE: [Signature]

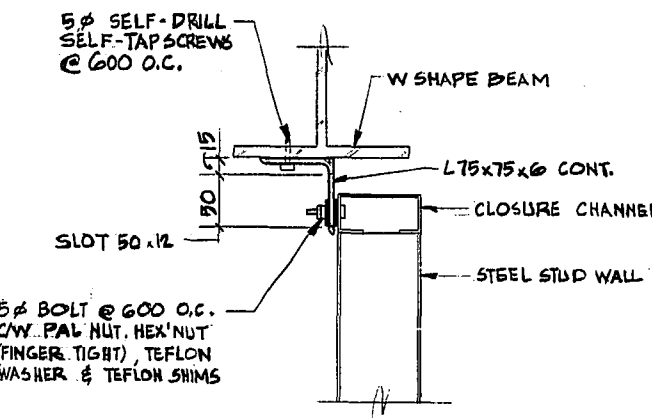
THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
ARCHITECTURAL - DOOR & ROOM FINISH SCHEDULES & DETAILS
RELEASED FOR CONSTRUCTION: [Signature] DATE: 1982 05 07
SCALE: AS NOTED
DRAWING NO: NEP 1019

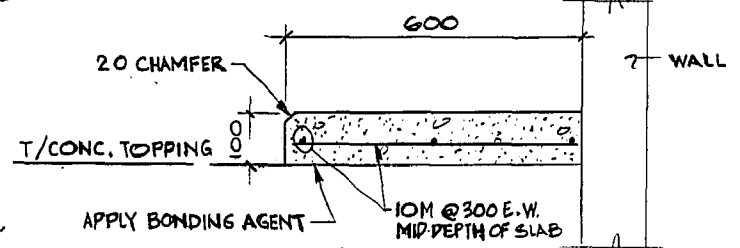


1 MAIN FLOOR PLAN
1:100

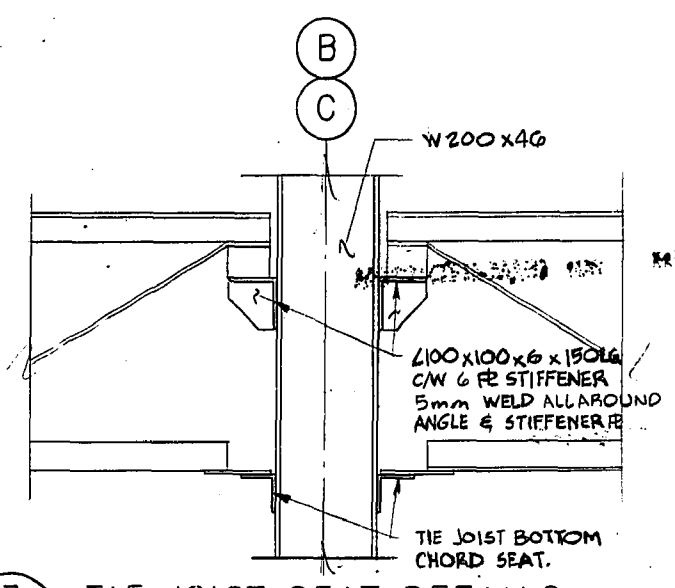
- NOTES :
- 64 CONC. TOPPING OVER CORE FLOOR C/W WWF 152.152 MW 13.3, MW 13.3
 - T/CONC. TOPPING EL. 100.000 UNLESS OTHERWISE NOTED
 - FOR BEAM REINFORCING SEE DWGS. S109 TO S113
 - FLOOR DRAINS SHOWN (FD) FOR SITE & LOCATION SEE MECH. DWG. M104.



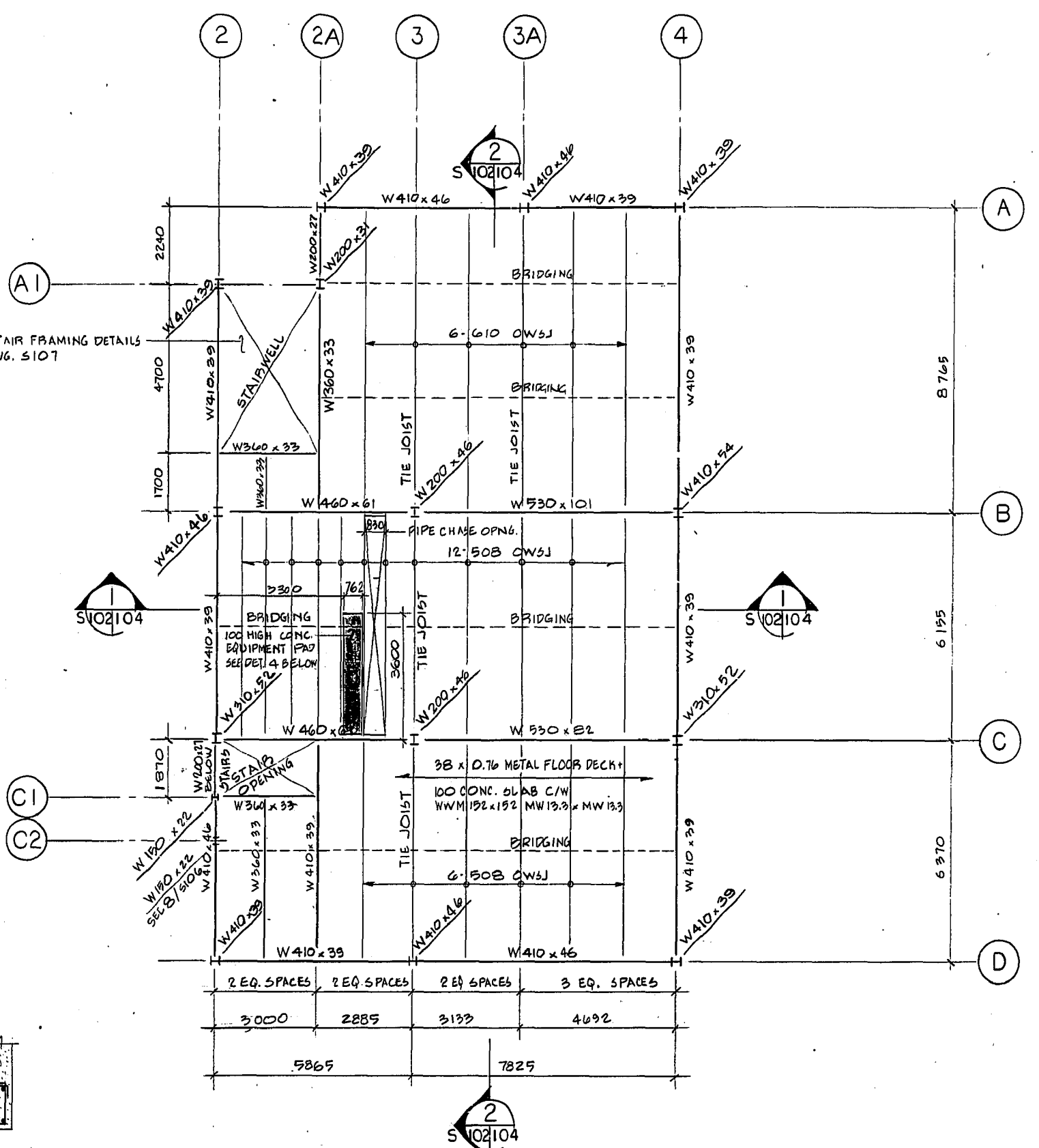
5 TYPICAL STUD WALL TO BEAM CONNECTION
1:5



4 EQUIPMENT PAD DETAILS
1:10



3 TIE JOIST SEAT DETAILS
1:10



2 SECOND FLOOR PLAN
1:100

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Precast Hollow Core Floor	Genstar Structures	2281
Structural Steel	Abesco	2282
Metal Deck	Westeel-Rosco	2284
Metal Access Hatches	BBC Distributors	2291
Steel Joists	Dominion Bridge	2283

REVISED AS CONSTRUCTED
DATE FEB 14 2004 BY CSA
CHECKED BY CALBIANI

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82-05-10	170
2	RELEASED FOR CLIENT APPROVAL	82-01-22	90

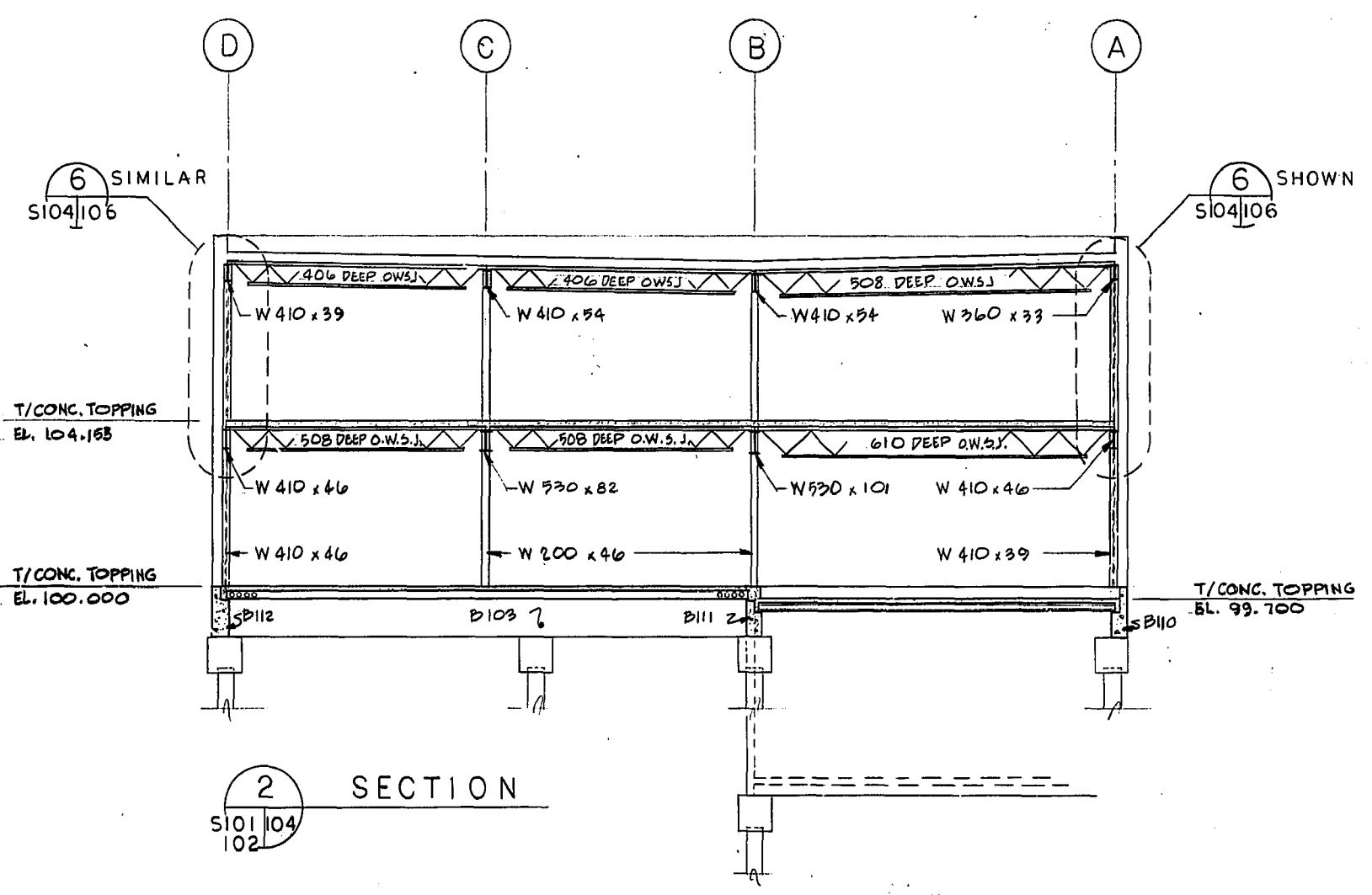
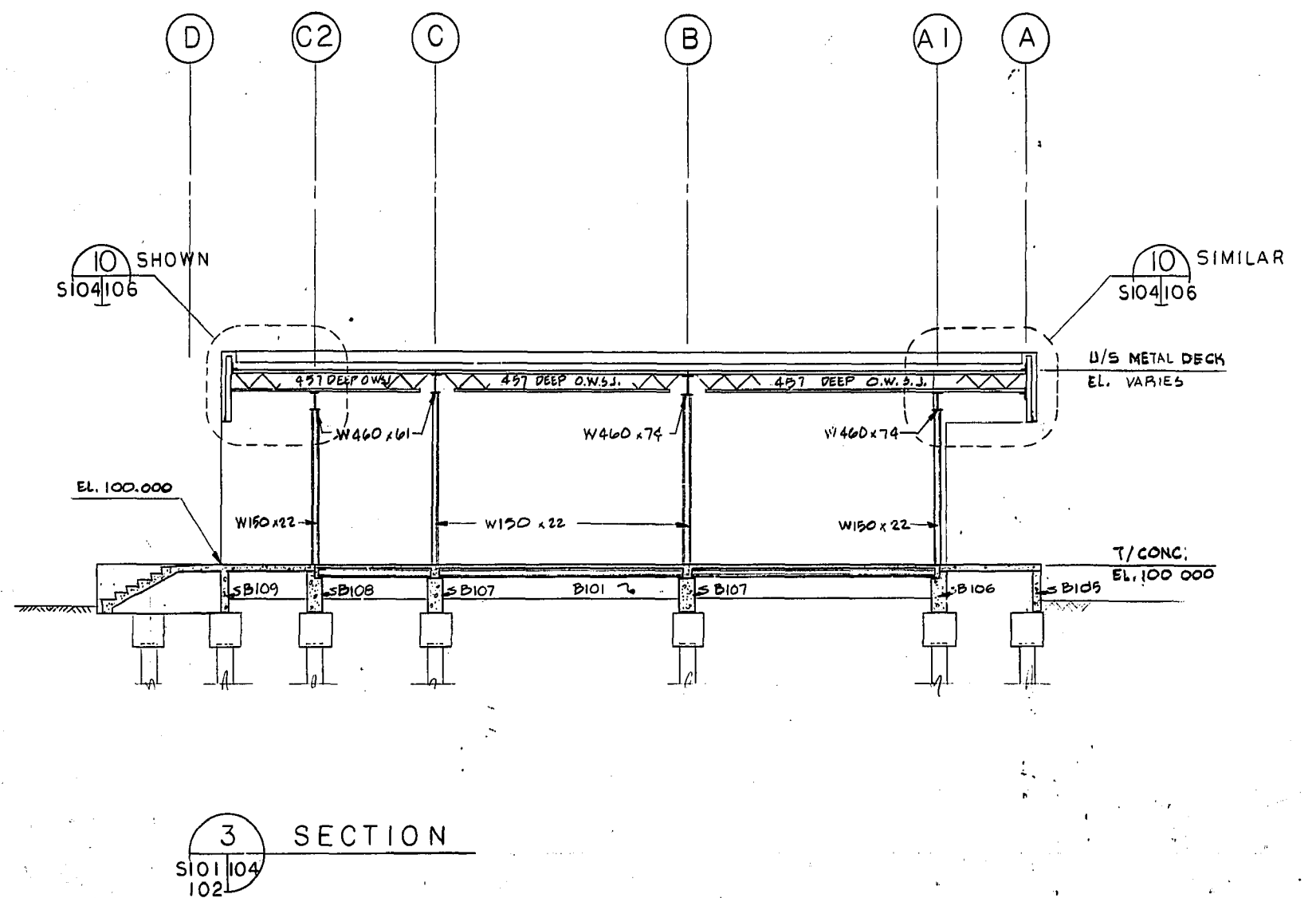
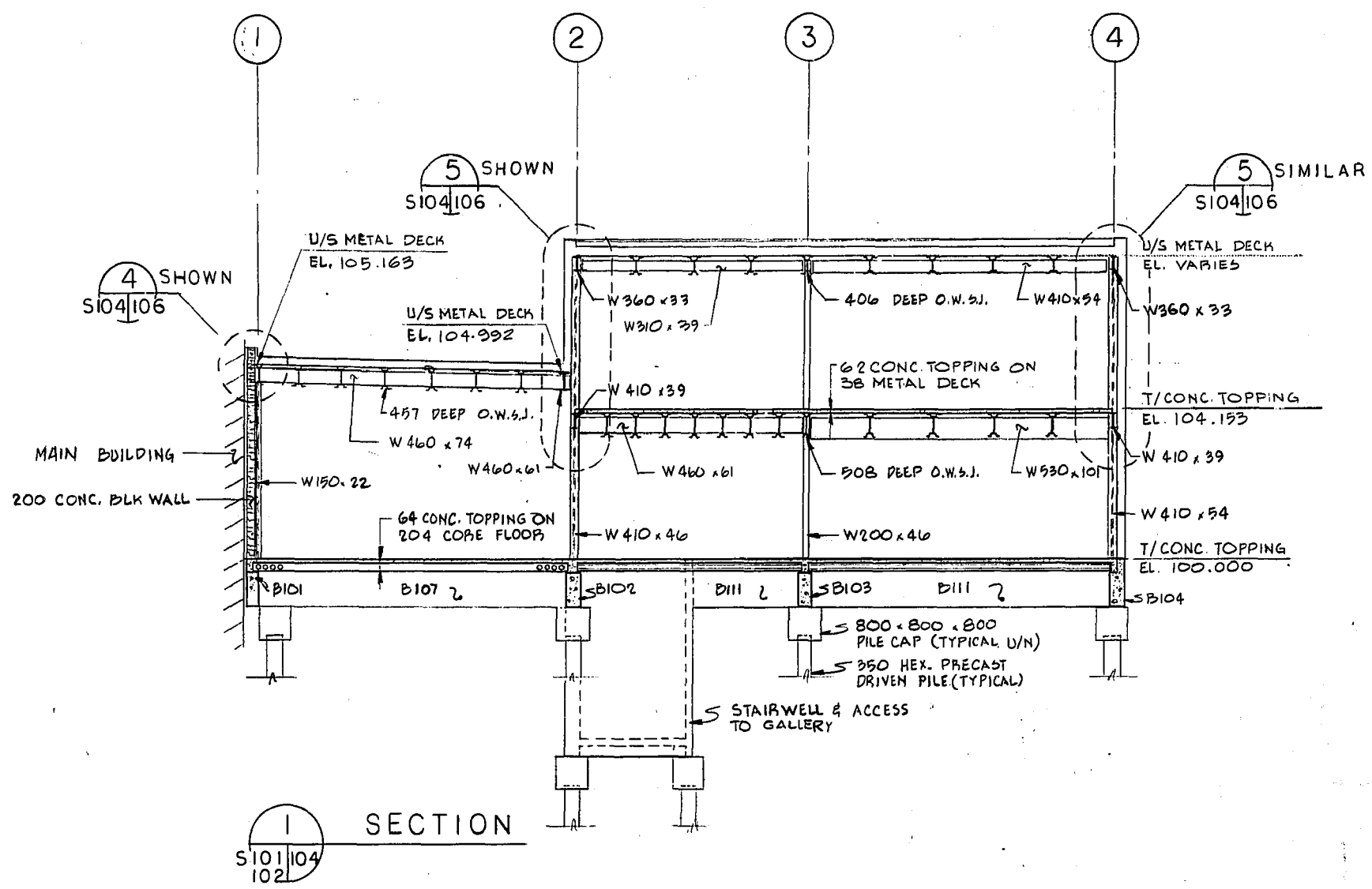


W. L. WARDROP & ASSOCIATES LTD. MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.	
DESIGNED BY: DS	DRAWN BY: JH & LG
CHECKED BY: J.D.	DATE: 82-01-22
APPROVED BY: [Signature]	DATE: [Signature]



THE CITY OF WINNIPEG WORKS & OPERATIONS DIVISION WATERWORKS, WASTE & DISPOSAL DEPARTMENT	
NORTH END WATER POLLUTION CONTROL CENTRE SECONDARY TREATMENT EXPANSION MAIN BUILDING EXPANSION STRUCTURAL - MAIN AND SECOND FLOOR PLANS	
RELEASED FOR CONSTRUCTION: [Signature]	DATE: 19820507
SCALE: AS NOTED	DRAWING NO: NEP 1021

REF. or DRAWING No. 800012-11-07
DETAILS S104
NEP 1023

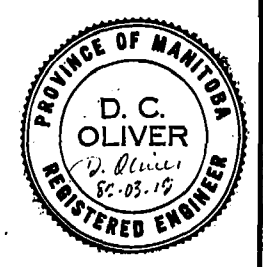


MICROFILMED
MICROFILMED

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

REVISED AS CONSTRUCTED
DATE Feb. 11/84 BY CJA
CHECKED BY E. ABELIAN

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82-05-10	LD
2	RELEASED FOR CLIENT APPROVAL	82-01-22	LD



W. L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

DESIGNED BY: DS
DRAWN BY: LG

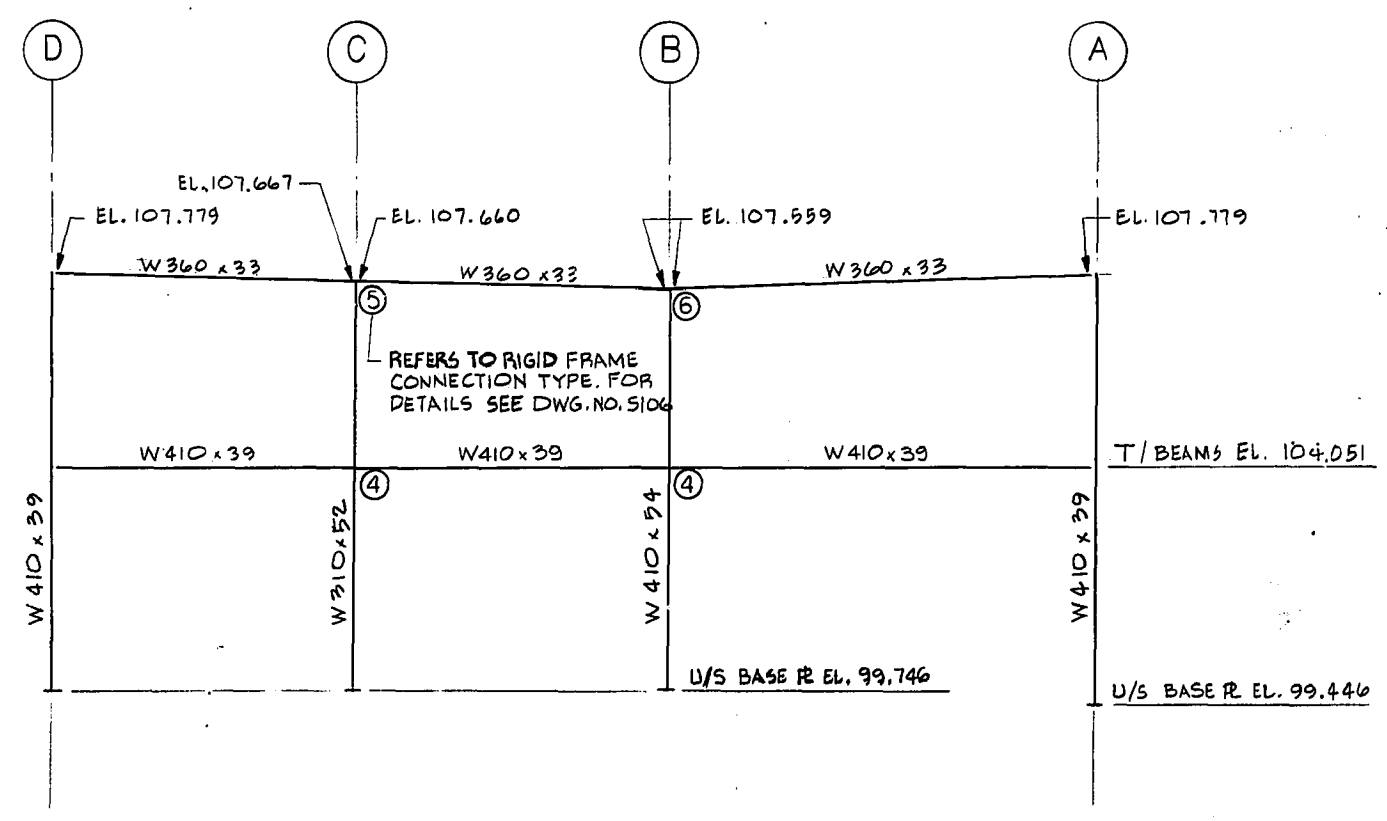
CHECKED BY: LD
DATE: 82-01-22

APPROVED BY: M. Maguire
DATE: Jan/82

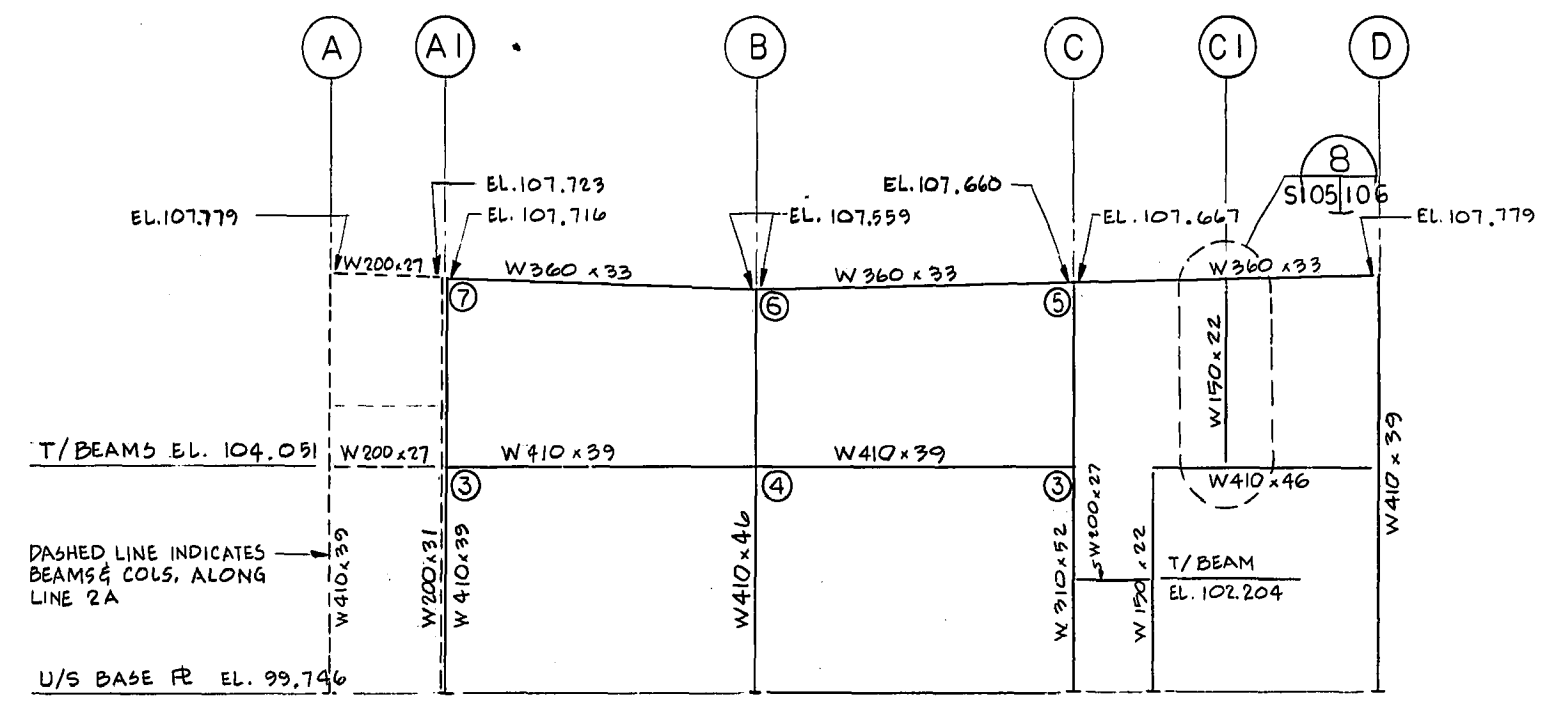
THE CITY OF WINNIPEG
WORKS & OPERATIONS
DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
STRUCTURAL - BUILDING SECTIONS

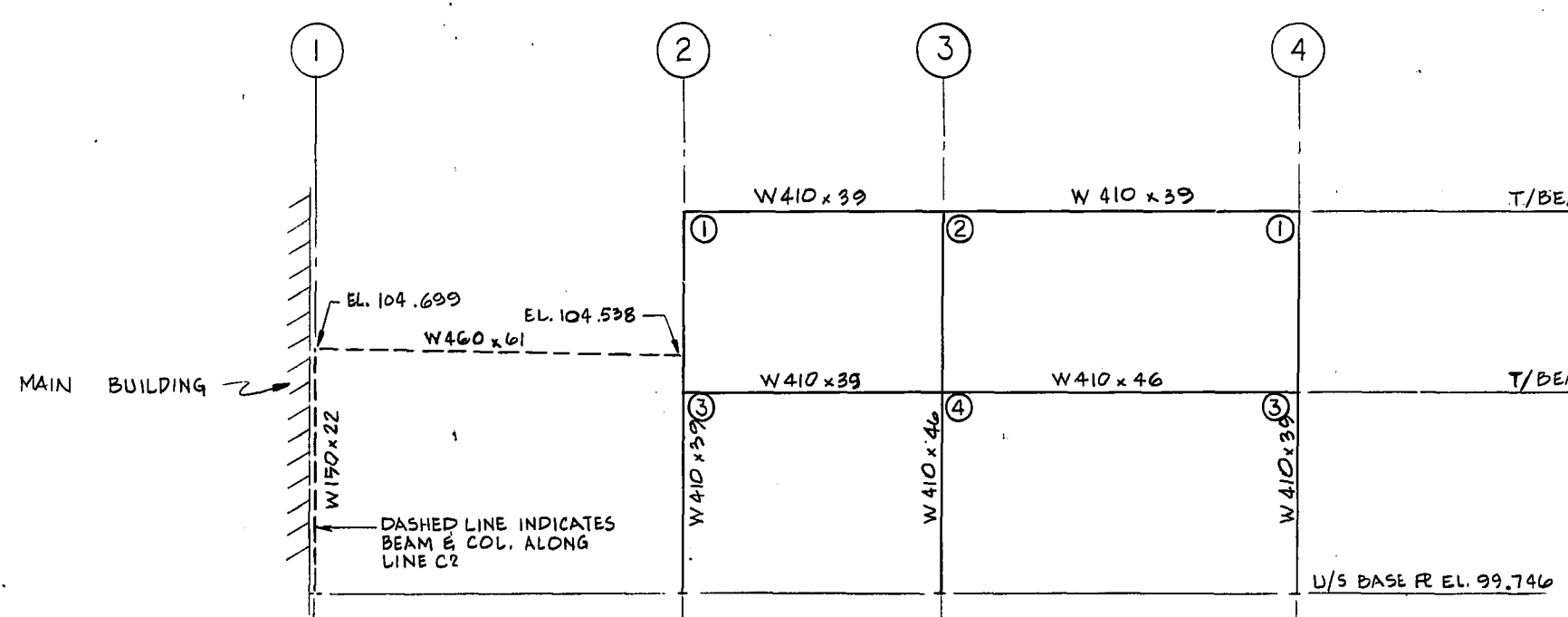
RELEASED FOR CONSTRUCTION DATE: 1982-05-07
SCALE: 1:100
DRAWING NO: NEP 1023



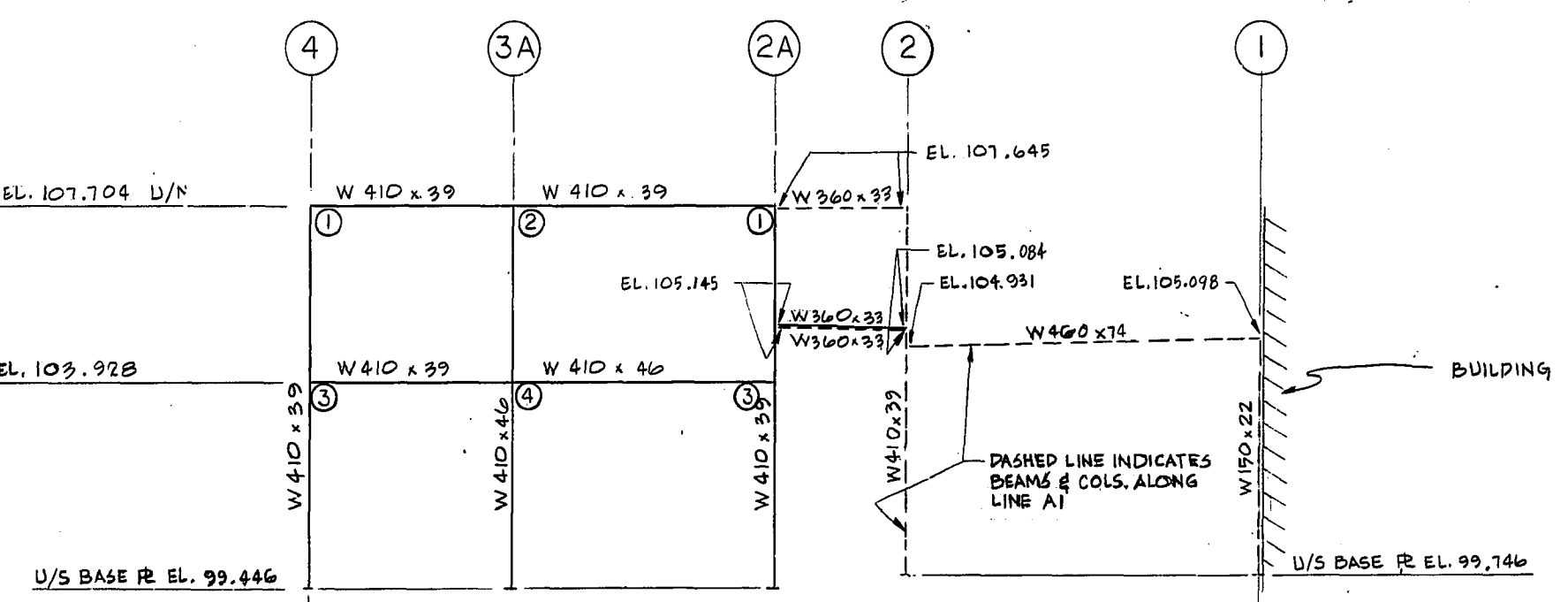
1 WALL ELEVATION-(ALONG LINE 4)



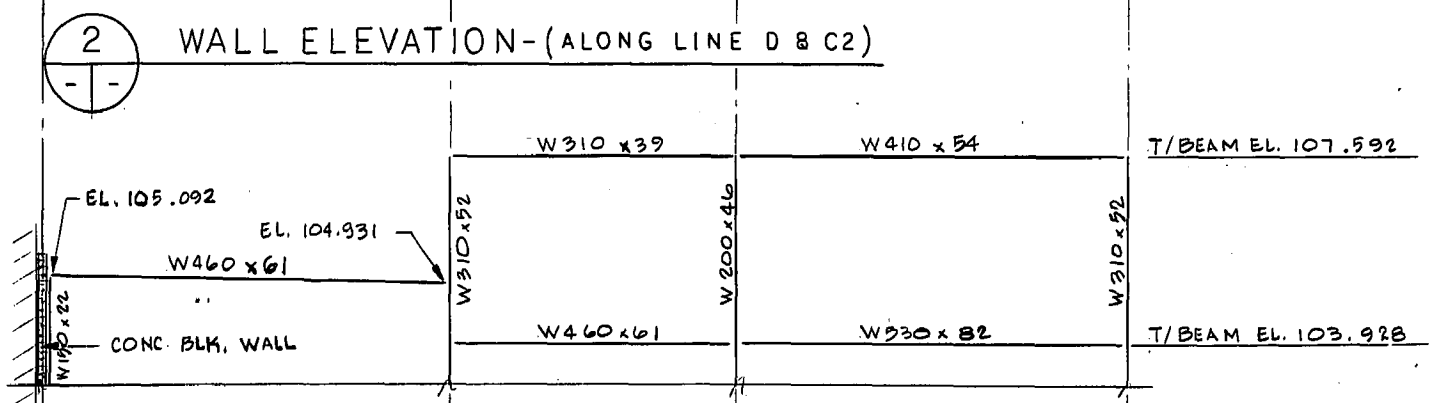
3 WALL ELEVATION-(ALONG LINE 2 & 2A)



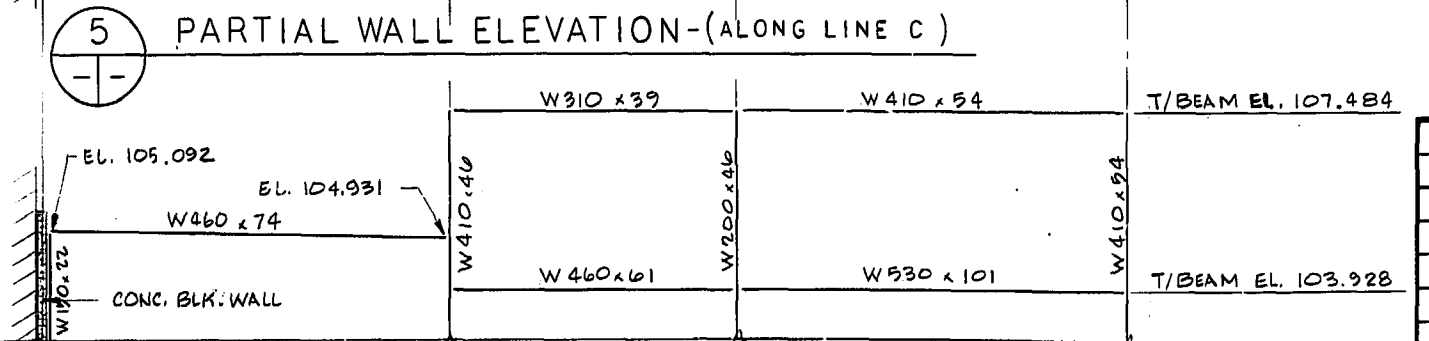
2 WALL ELEVATION-(ALONG LINE D & C2)



4 WALL ELEVATION-(ALONG LINE A & A1)



5 PARTIAL WALL ELEVATION-(ALONG LINE C)



6 PARTIAL WALL ELEVATION-(ALONG LINE B)

NOTE:
FOR WALL ELEVATIONS
ALONG LINES B & C
U/S COL. BASE R.
EL. 99.746 TYPICAL

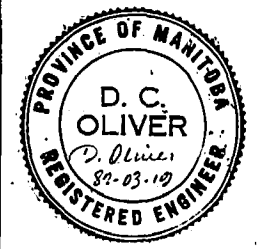
REVISED AS CONSTRUCTED
DATE FEB 11 1982 BY CIA
CHECKED BY CALBIANI

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Structural Steel	Abesco	2282

MICROFILMED MAY 1984

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82.05.10	DS
2	RELEASED FOR CLIENT APPROVAL	82.01.22	DS



W.L. WARDROP & ASSOCIATES LTD.
McLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

DESIGNED BY: DS
DRAWN BY: JH & LG
CHECKED BY: DS
DATE: 82.01.22

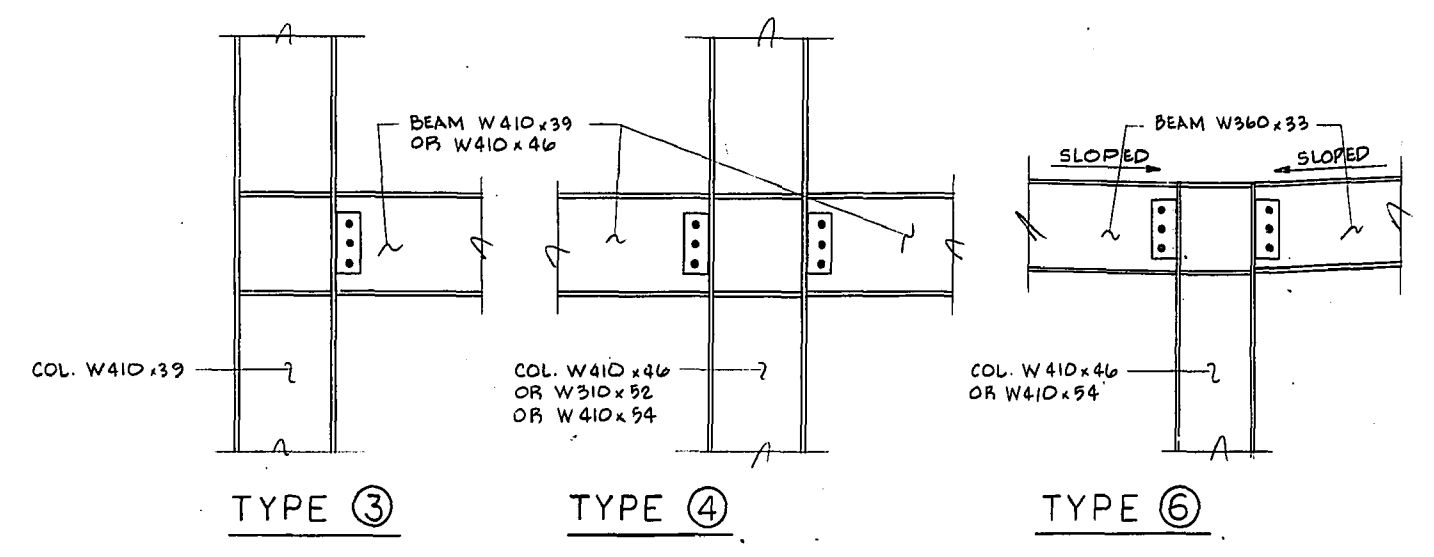
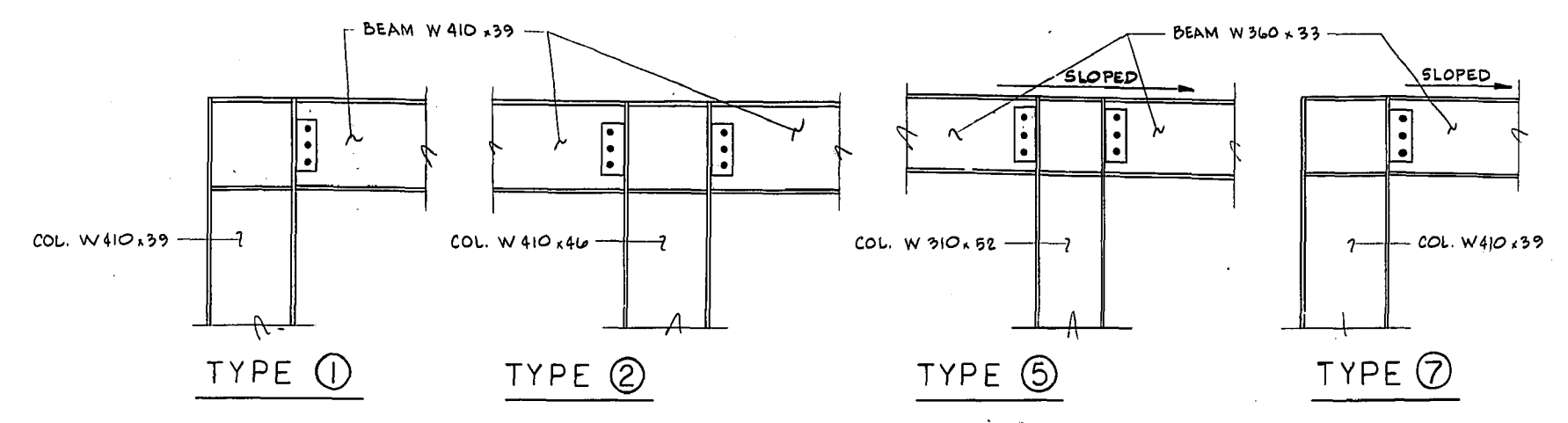
APPROVED BY: *[Signature]* DATE: *[Signature]*

THE CITY OF WINNIPEG
WORKS & OPERATIONS
DIVISION
WATERWORKS, WASTE &
DISPOSAL DEPARTMENT

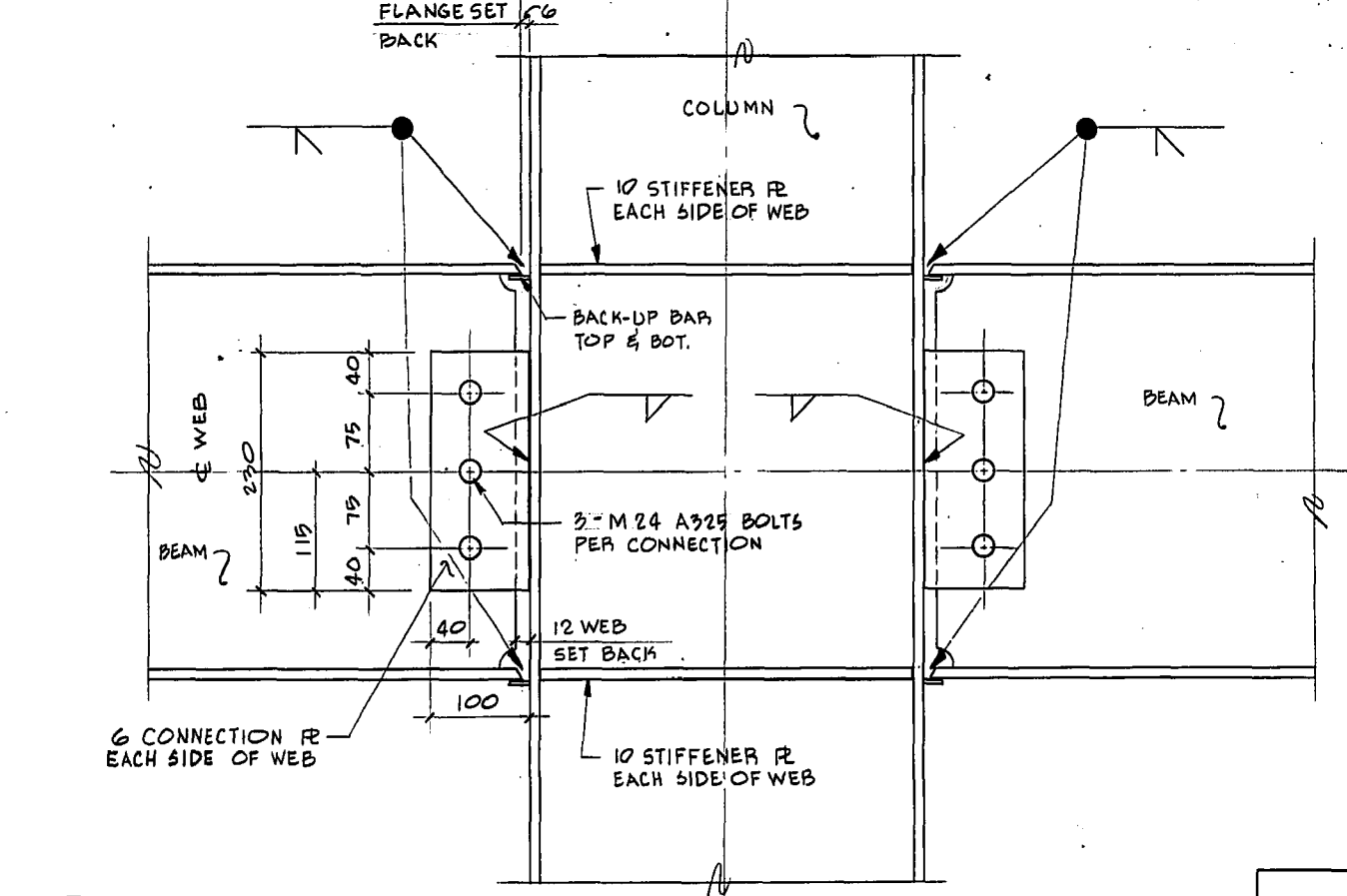
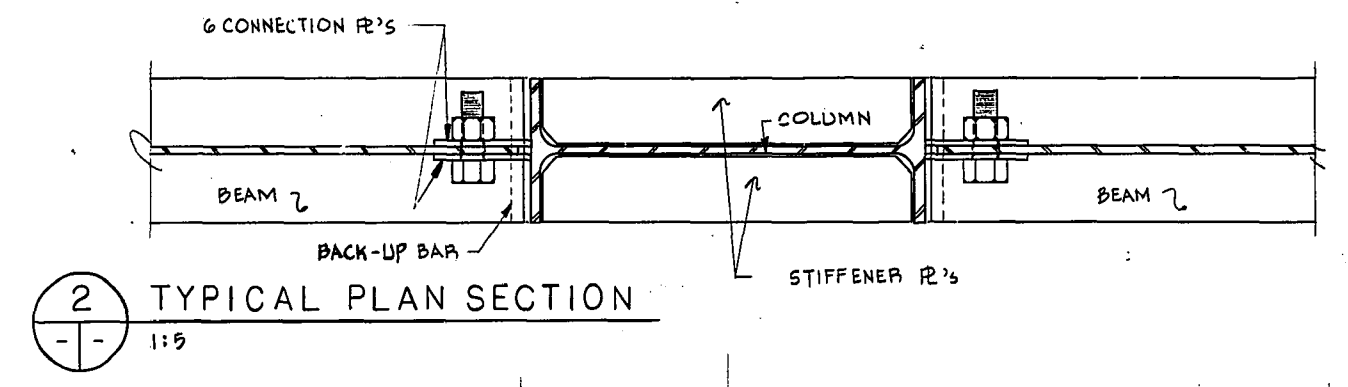
NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
STRUCTURAL-STEEL
ELEVATIONS

RELEASED FOR CONSTRUCTION DATE: 82.05.07
SCALE: 1:100
DRAWING NO.: NEP 1024

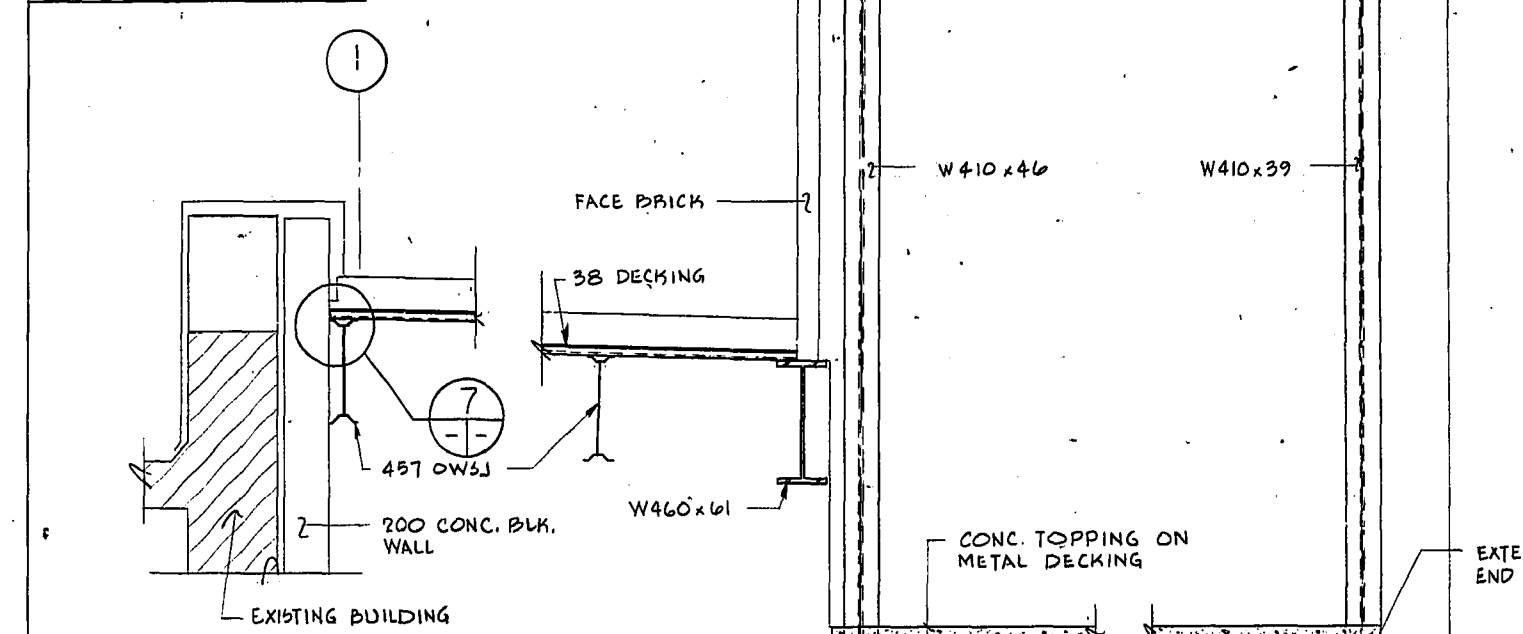
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DESCRIPTION	SUPPLIER	NUMBER
Structural Steel	Abesco	2282
Steel Joists	Dominion Bridge	2283



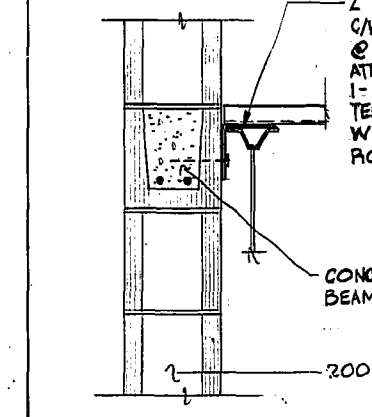
1 CONNECTION TYPES
1:20
FOR CONNECTION TYPE LOCATIONS
SEE DWG. NO. S105



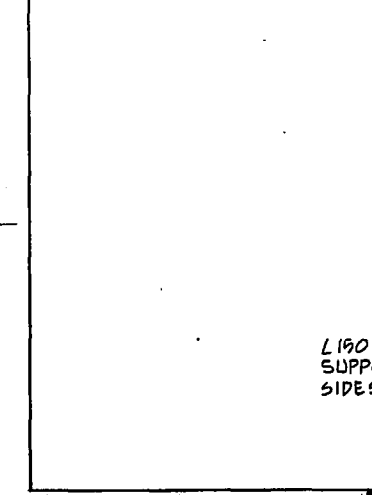
3 TYPICAL ELEVATION
1:9
RIGID FRAME CONNECTION DETAILS



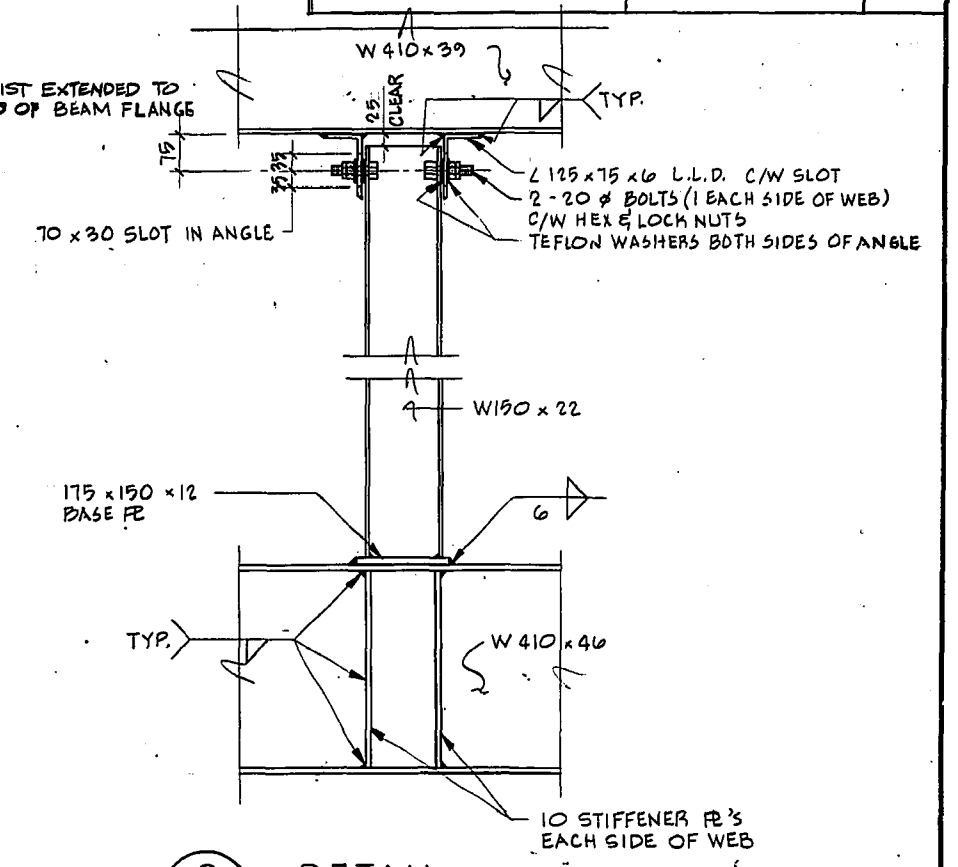
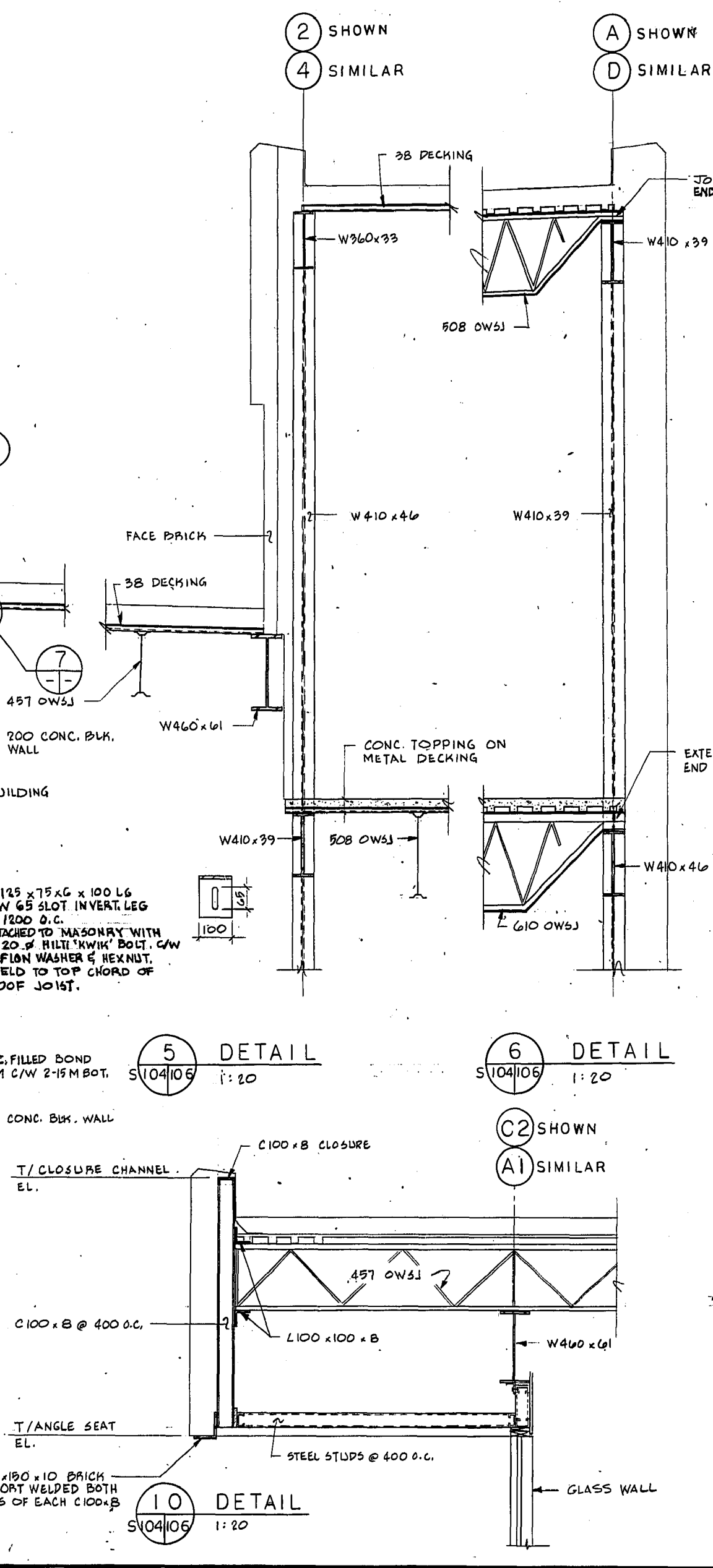
4 DETAIL
S104106 1:20



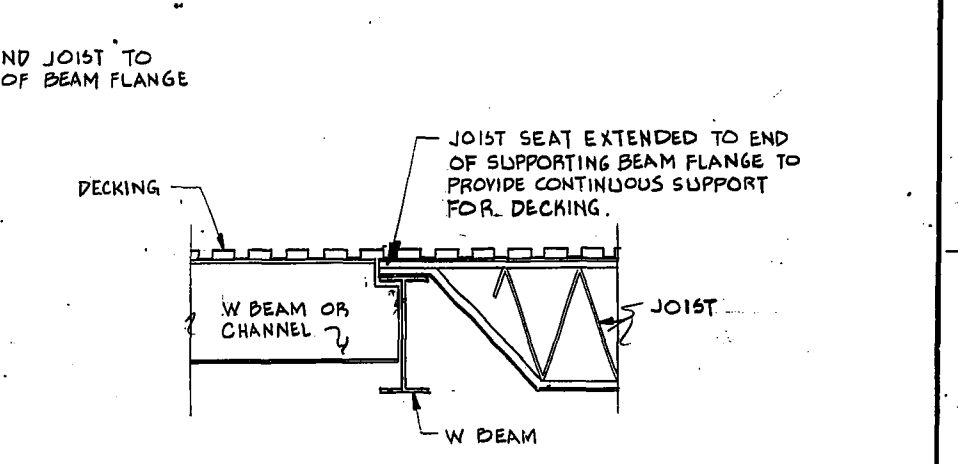
5 DETAIL
S104106 1:20



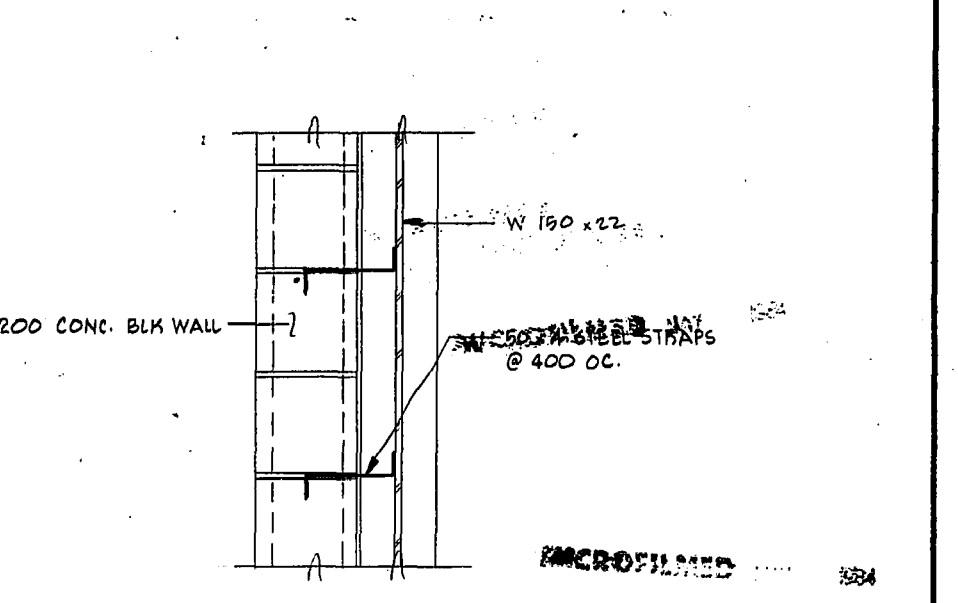
7 DETAIL
1:10



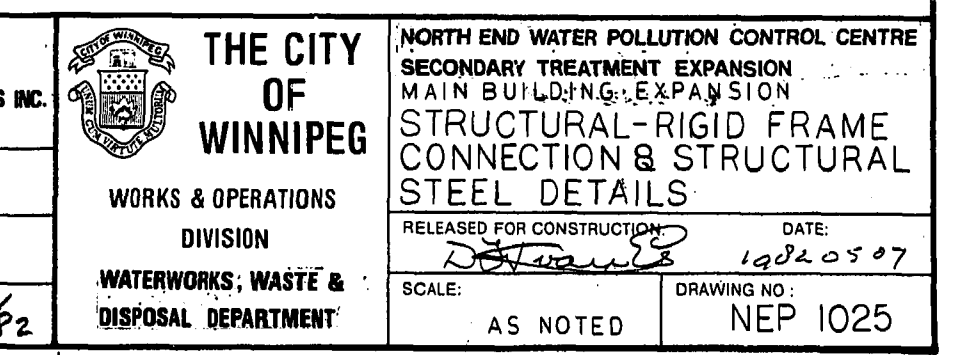
8 DETAIL
S105106 1:10



9 TYPICAL JOIST SEAT EXTENSION AT JOIST-BEAM LOCATIONS
1:20



10 DETAIL
S104106 1:20

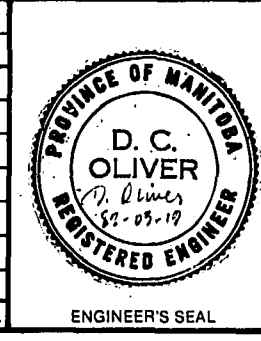


11 TYPICAL ANCHORAGE FOR MASONRY WALL AT STEEL COLUMNS ON GRID LINE 1
1:10

REVISED AS CONSTRUCTED
DATE Feb 14/84 BY CIA
CHECKED BY CALBIANI

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82-05-10	70
2	RELEASED FOR CLIENT APPROVAL	82-01-22	70

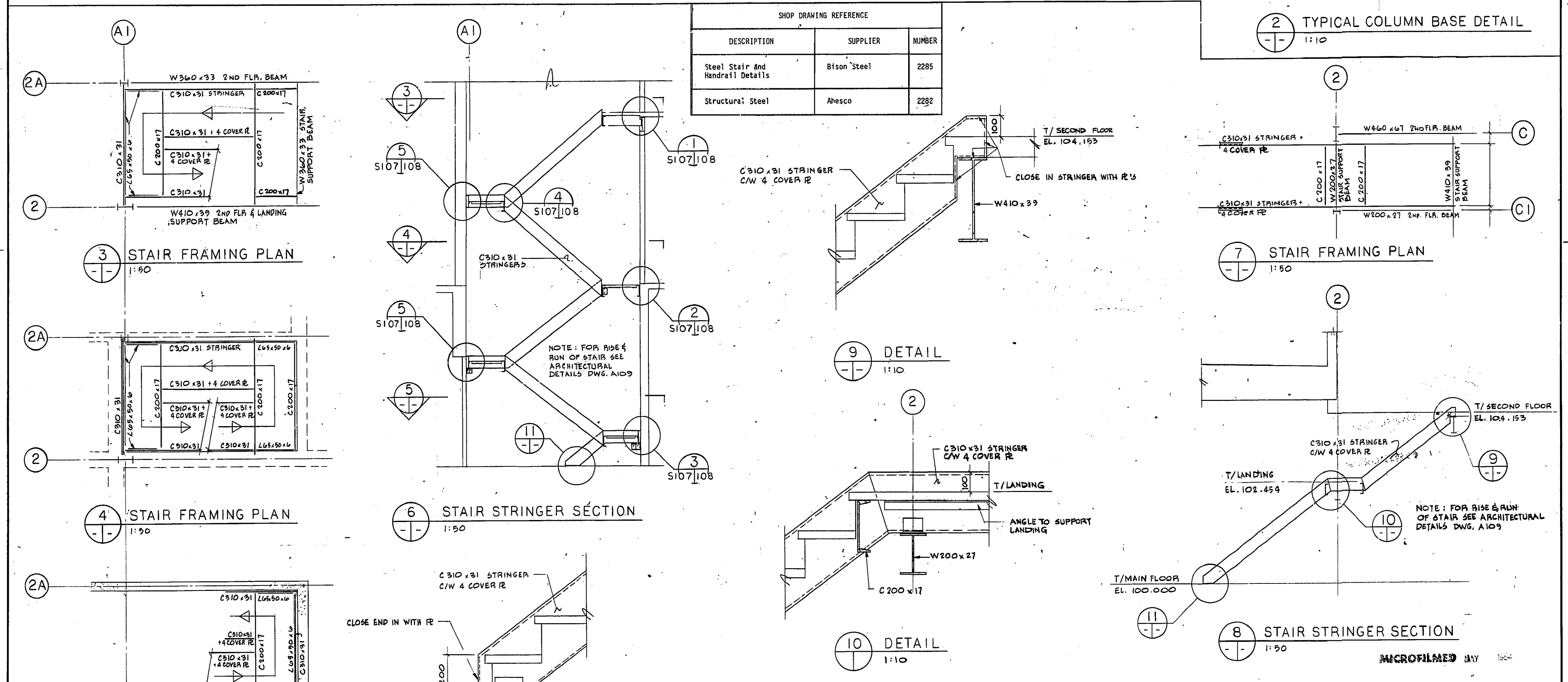
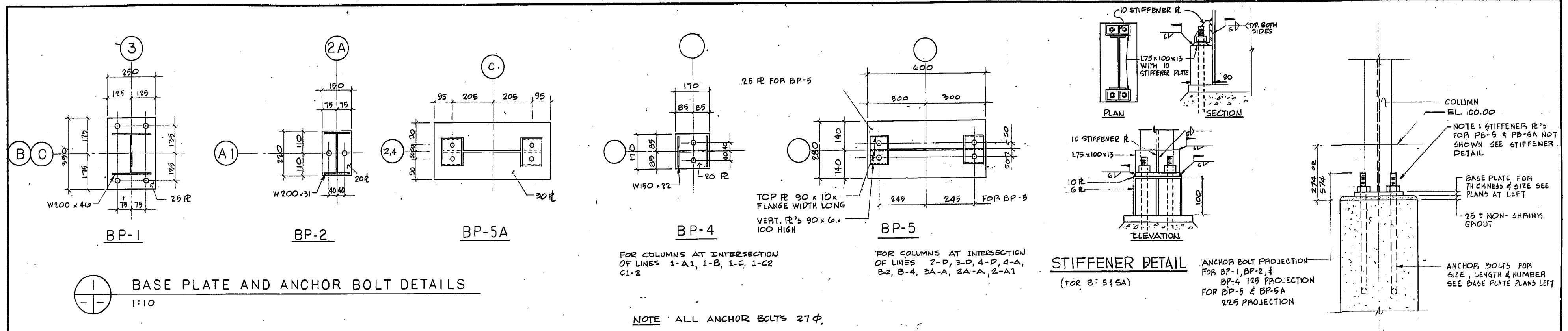


W.L. WARDROP & ASSOCIATES LTD.
McLAREN ENGINEERS PLANNERS & SCIENTISTS INC.
DESIGNED BY: DS
DRAWN BY: LG
CHECKED BY: P.O.
DATE: 82-01-22
APPROVED BY: J. Magner
DATE: Mar/82

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
STRUCTURAL-RIGID FRAME CONNECTION & STRUCTURAL STEEL DETAILS
RELEASED FOR CONSTRUCTION DATE: 1982-05-07
SCALE: AS NOTED
DRAWING NO: NEP 1025

REF. or DRAWING No. 800012-11-07
DETAILS S107
NEP 1026



REVISED AS CONSTRUCTED
DATE FEB. 11/82 BY SA
CHECKED BY CALEMAN

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

W.L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

DESIGNED BY: DS DRAWN BY: LG
CHECKED BY: D.O. DATE: 82-01-22
APPROVED BY: M. Maguire DATE: 82/1/82

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

PROVINCE OF MANITOBA
D. C. OLIVER
REGISTERED ENGINEER

ENGINEER'S SEAL

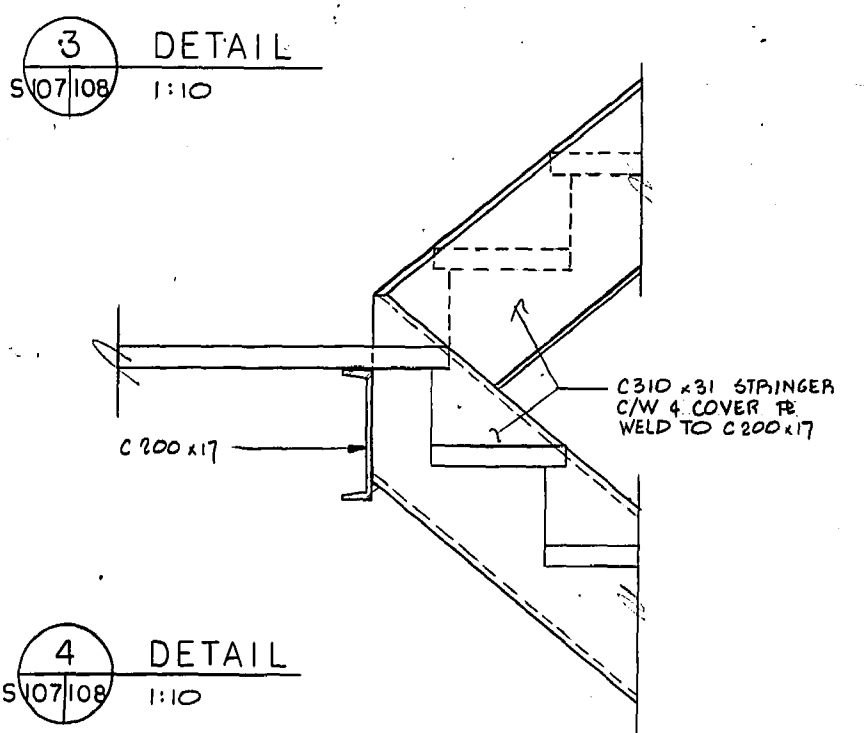
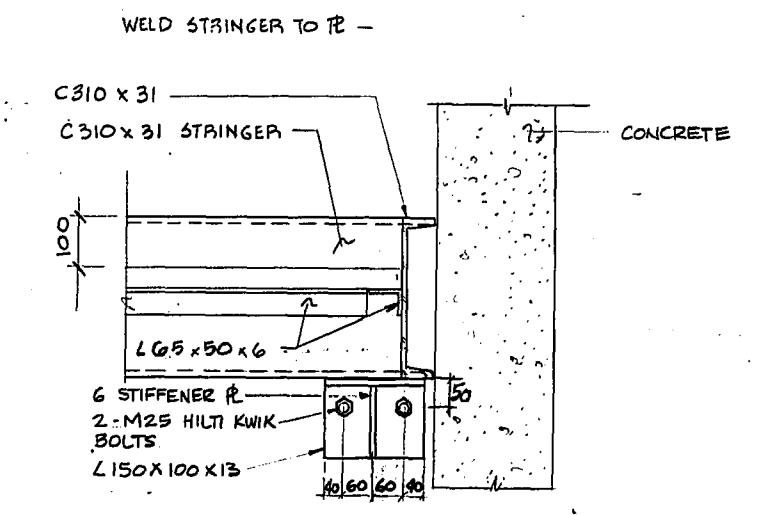
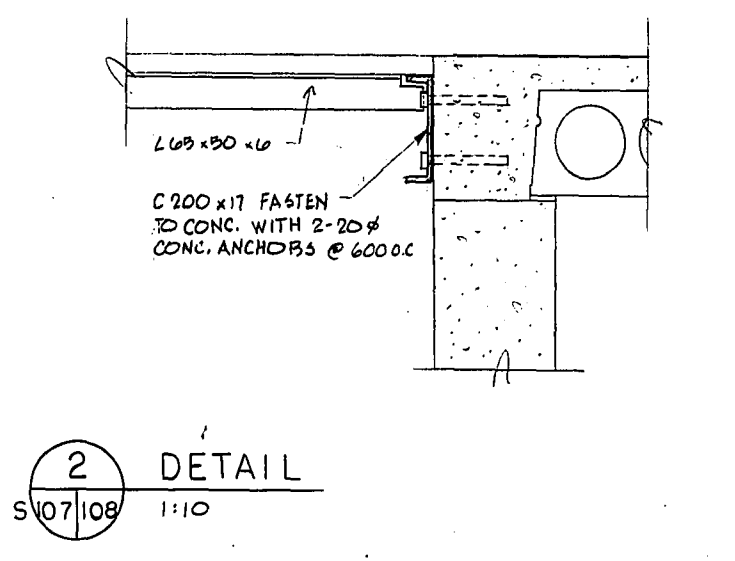
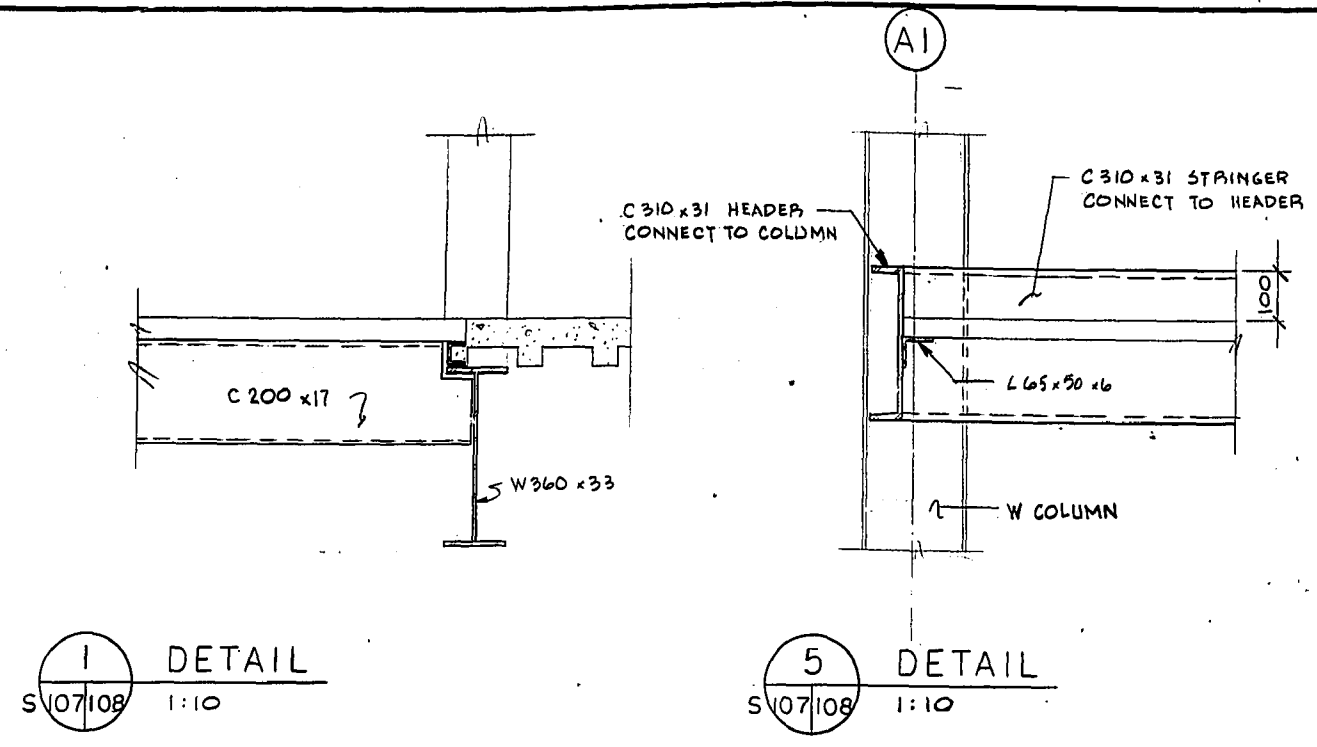
NO. REVISIONS DATE APP.

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
STRUCTURAL-BASE PLATE AND ANCHOR BOLT DETAILS
STAIR FRAMING DETAILS

RELEASED FOR CONSTRUCTION DATE: 1982-05-07
SCALE: AS NOTED DRAWING NO: NEP 1026

AS NOTED NEP 1026

800012-11-07-S107

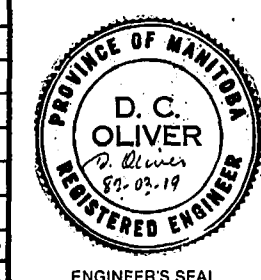


SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Steel Stair and Handrail Details	Bison Steel	2285

REVISED AS CONSTRUCTED
DATE FEB. 14/82 BY *ESA*
CHECKED BY *LALBIAN*

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82-05-20	
0	RELEASED FOR CLIENT APPROVAL	82-01-22	



W. L. WARDROP & ASSOCIATES LTD.
McLAREN ENGINEERS, PLANNERS & SCIENTISTS INC.

DESIGNED BY: DS DRAWN BY: LG
CHECKED BY: *D.O.* DATE: 82-01-22
APPROVED BY: *A. J. Magner* DATE: *Mar/82*

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

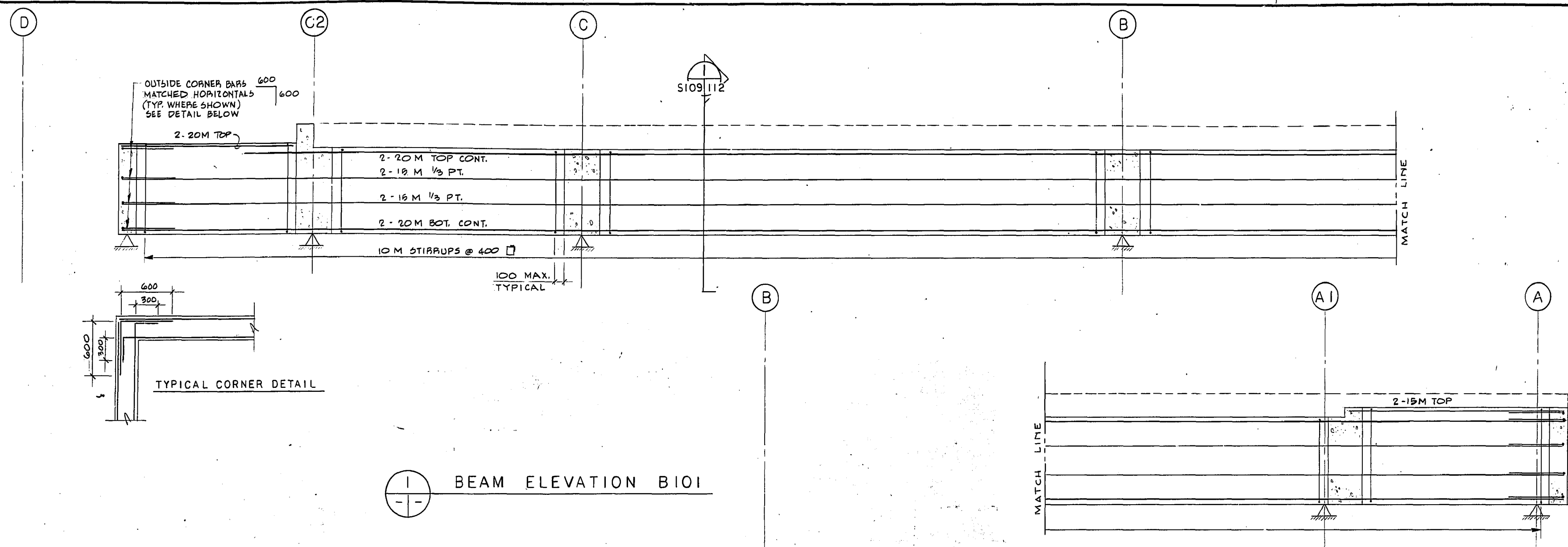
ABBREVIATIONS

C/W	COMPLETE WITH
O.C.	ON CENTRE
M.H.	MANHOLE
T & B	TOP & BOTTOM
U/M	UNLESS NOTED
CONC	CONCRETE
T/CONC	TOP OF CONCRETE
EL	ELEVATION
DWLS	DOWELS
MIN	MINIMUM
U/S	UNDERSIDE
COL	COLUMN
TYP	TYPICAL
VERT	VERTICAL
HORIZ	HORIZONTAL
PT	POINT
LG	LONG
CONT N.F.	CONTINUOUS NEAR FACE
CONT F.F.	CONTINUOUS FAR FACE
REQ'D	REQUIRED
ADDIT	ADDITIONAL
E.E.	EACH END
DIA	DIAMETER

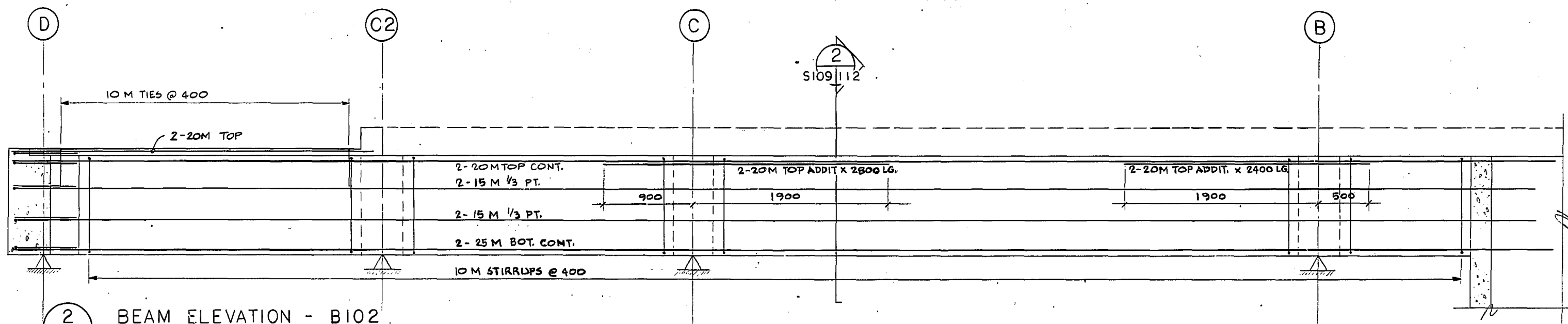
NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
STRUCTURAL - MISCELLANEOUS STEEL DETAILS

RELEASED FOR CONSTRUCTION DATE: *1982-05-07*
Devaux

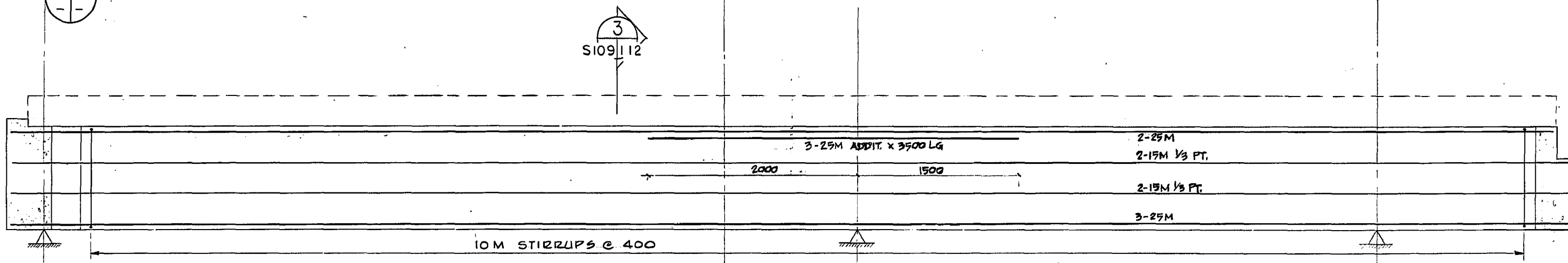
SCALE: AS NOTED DRAWING NO: NEP 1027



BEAM ELEVATION B101



BEAM ELEVATION - B102



BEAM ELEVATION - B103

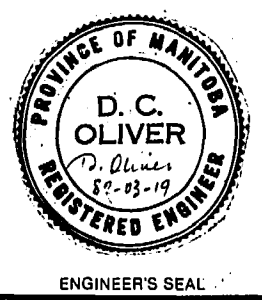
SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Grade Beam Reinforcing	Cowin Steel	2278

MICROFILMED MAY 1984

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

REVISED AS CONSTRUCTED
DATE FEB. 14/84 BY CTA
CHECKED BY CALBAJ

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82-05-10	Do.
2	RELEASED FOR CLIENT APPROVAL	82-01-22	Do.



W.L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

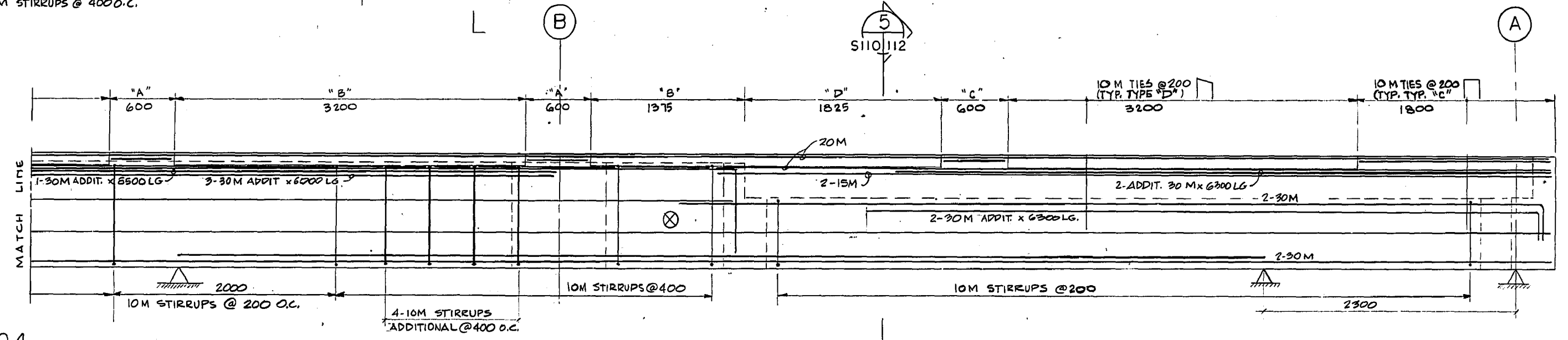
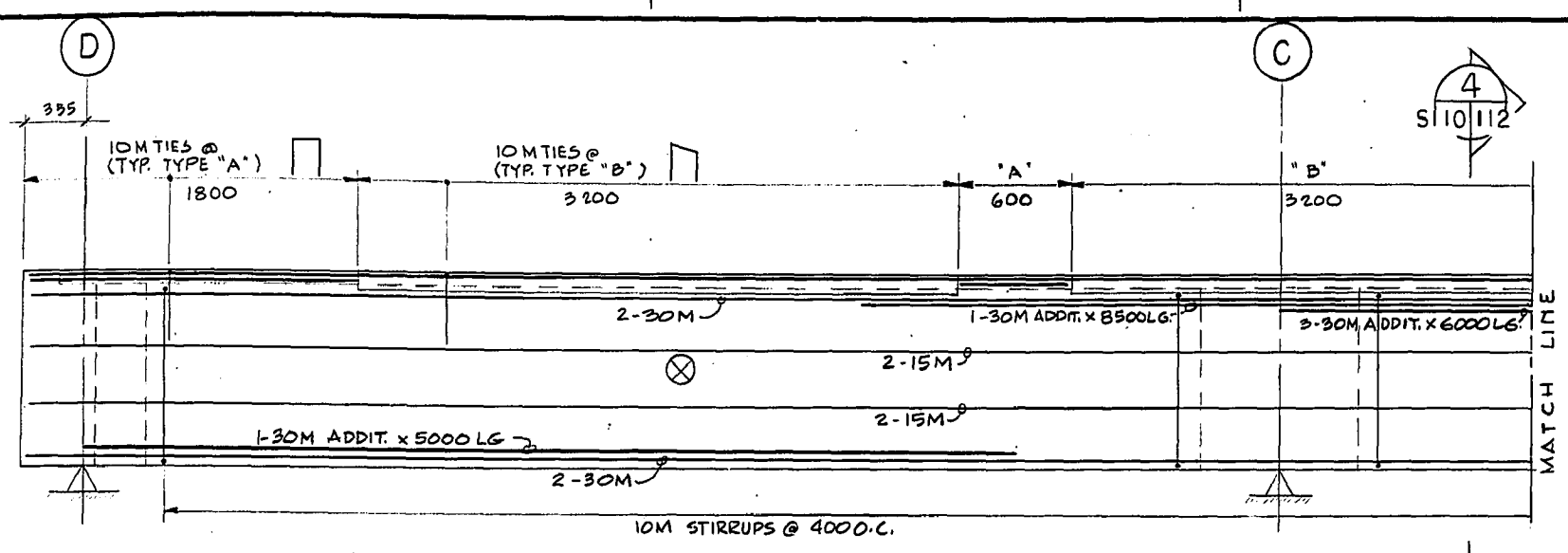
DESIGNED BY: DS DRAWN BY: LG
CHECKED BY: Do. DATE: 82-01-22
APPROVED BY: M. Magist DATE: Mar/82

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

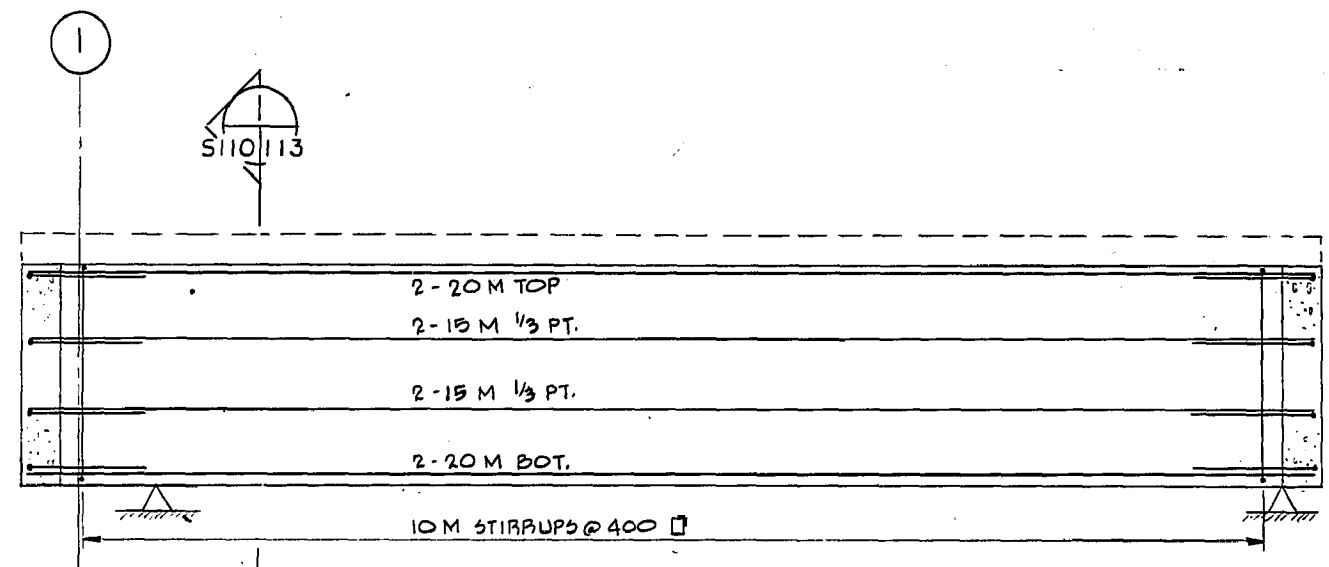
NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
STRUCTURAL - GRADE
BEAM REINFORCING ELEVATIONS

RELEASED FOR CONSTRUCTION DATE: 1982-05-07
SCALE: 1:25 DRAWING NO.: NEP 1028

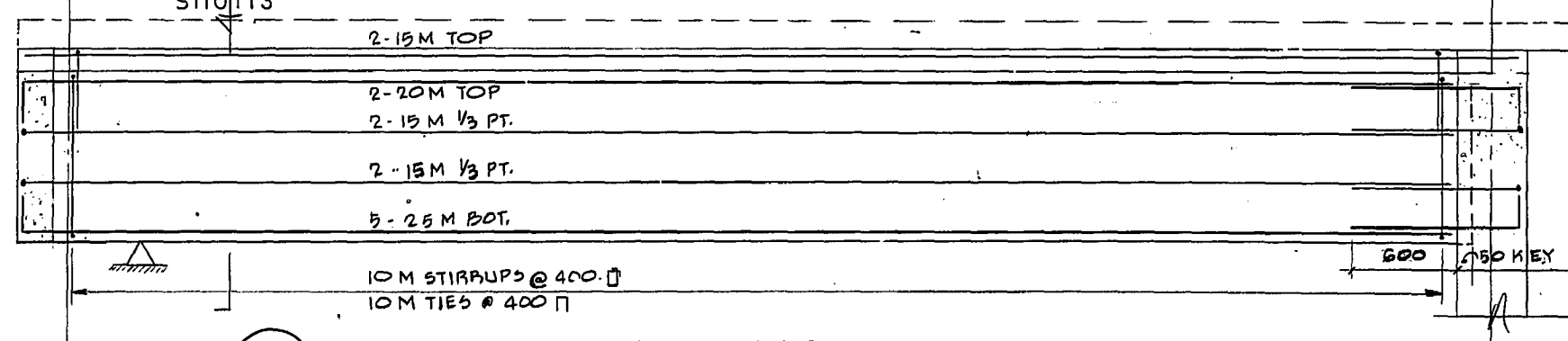
REF. or DRAWING No. 800012-11-07
DETAILS 3110
NEP 1029



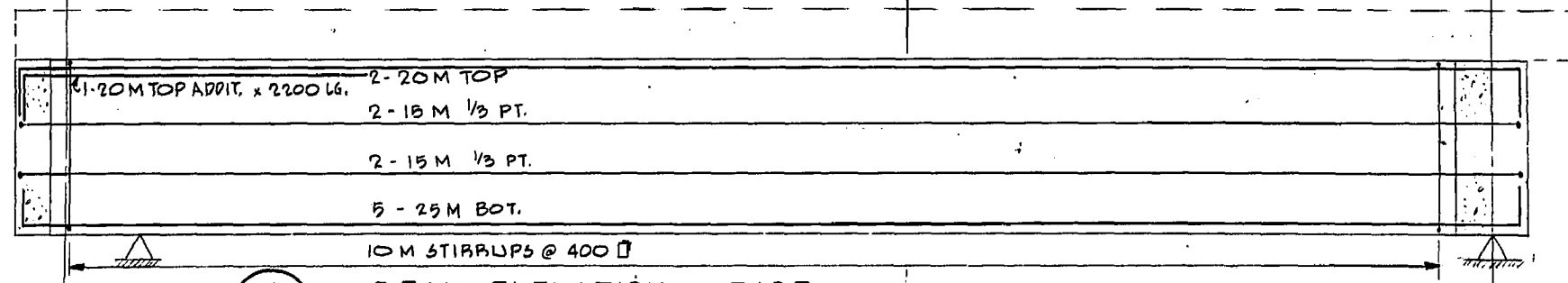
1 BEAM ELEVATION - B104



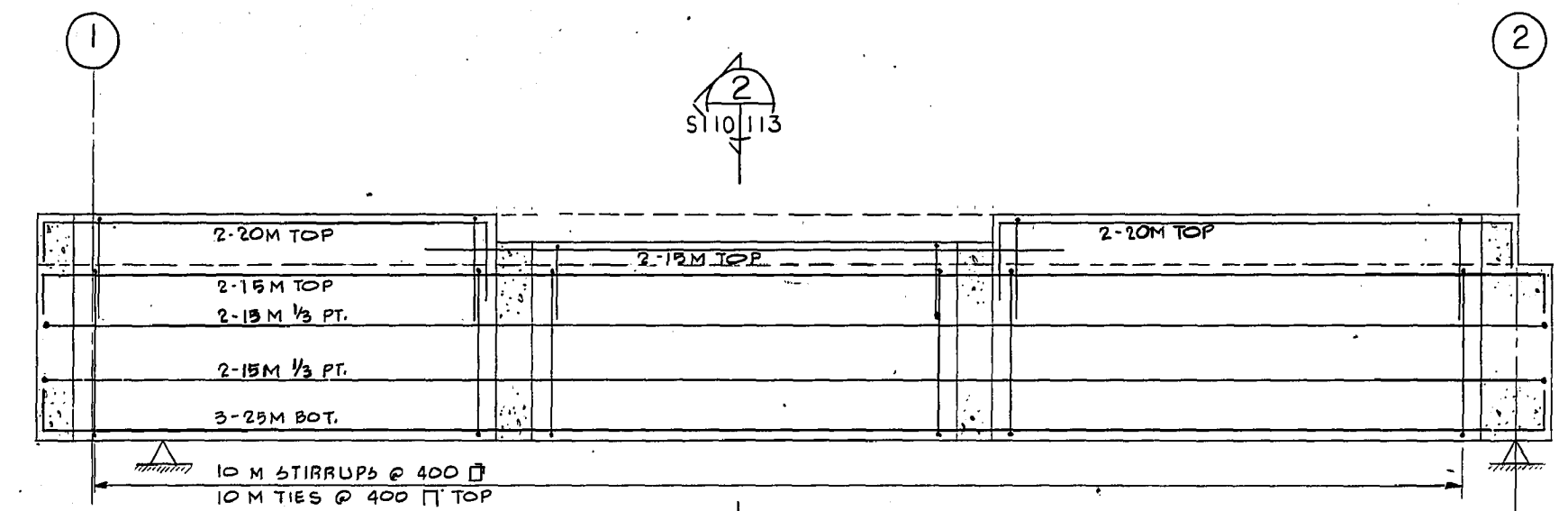
2 BEAM ELEVATION - B105



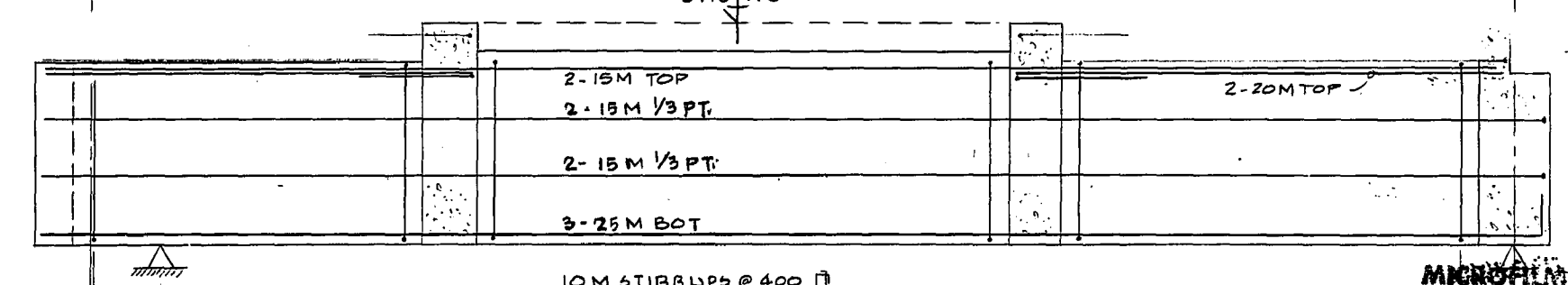
3 BEAM ELEVATION - B106



4 BEAM ELEVATION - B107



5 BEAM ELEVATION - B108



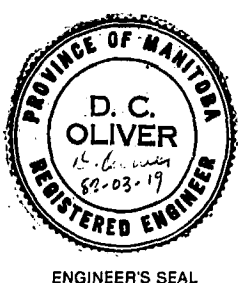
6 BEAM ELEVATION - B109

REVISED AS CONSTRUCTED
DATE FEB 1984 BY GJA
CHECKED BY E. ALBIANI

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Grade Beam Reinforcing	Cowin Steel	2278

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

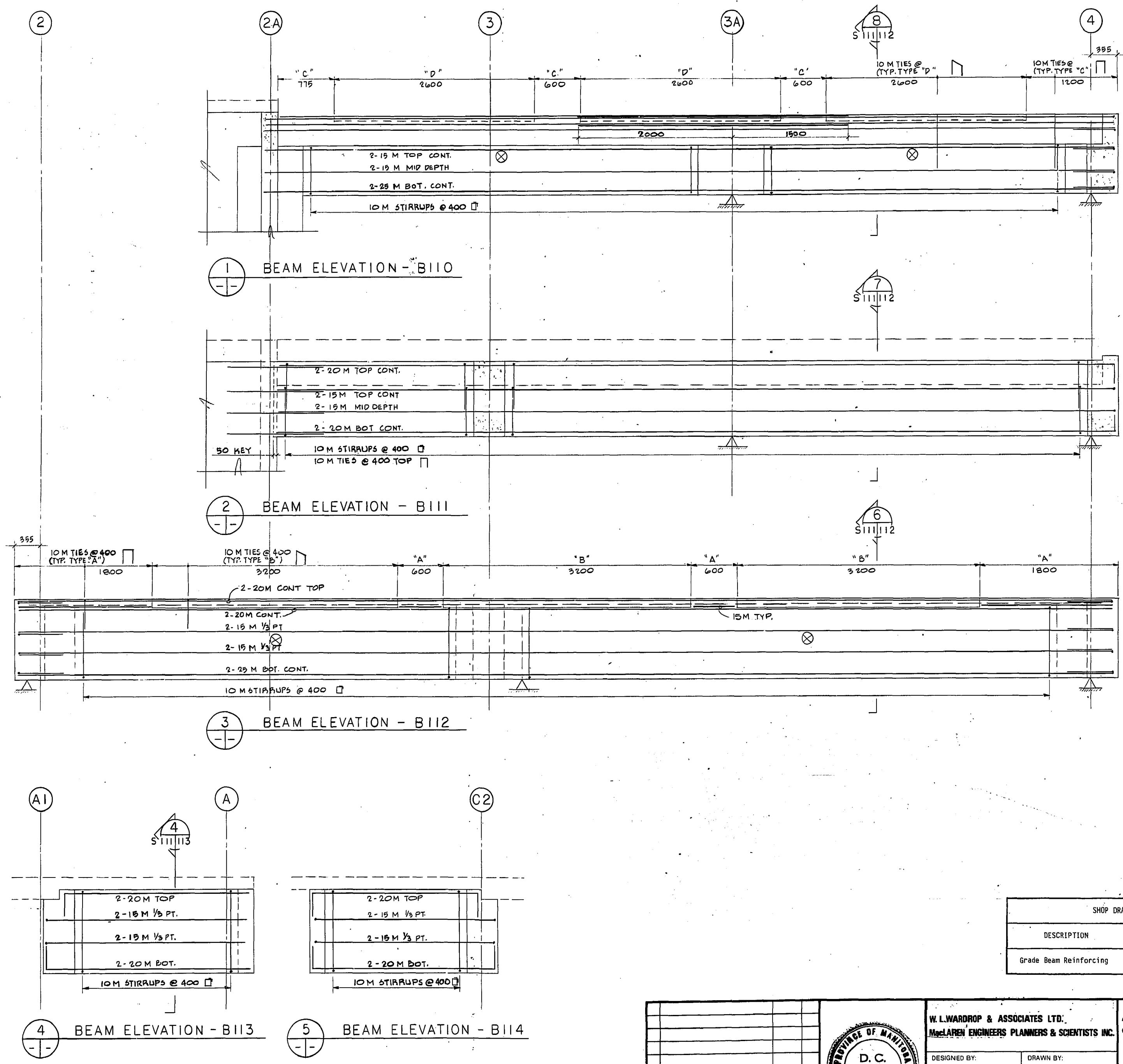
NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82-05-10	DS
2	RELEASED FOR CLIENT APPROVAL	82-01-22	LG



W.L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.
DESIGNED BY: DS
DRAWN BY: LG
CHECKED BY: DS
DATE: 82-01-22
APPROVED BY: *N.J. Magnet*
DATE: Mar 1982

THE CITY OF WINNIPEG
WORKS & OPERATIONS
DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT.

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
STRUCTURAL - GRADE BEAM REINFORCING ELEVATIONS
RELEASED FOR CONSTRUCTION: *D. Brown*
DATE: 1982 05 07
SCALE: 1:25
DRAWING NO.: NEP 1029



SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Grade Beam Reinforcing	Cowin Steel	2278

MICROFILMED MAY 1984

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

REVISED AS CONSTRUCTED
DATE FEB 14/82 BY CSA
CHECKED BY SALBIANI

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82-05-10	DA
2	RELEASED FOR CLIENT APPROVAL	82-01-22	DA



W.L. WARDROP & ASSOCIATES LTD.
 MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

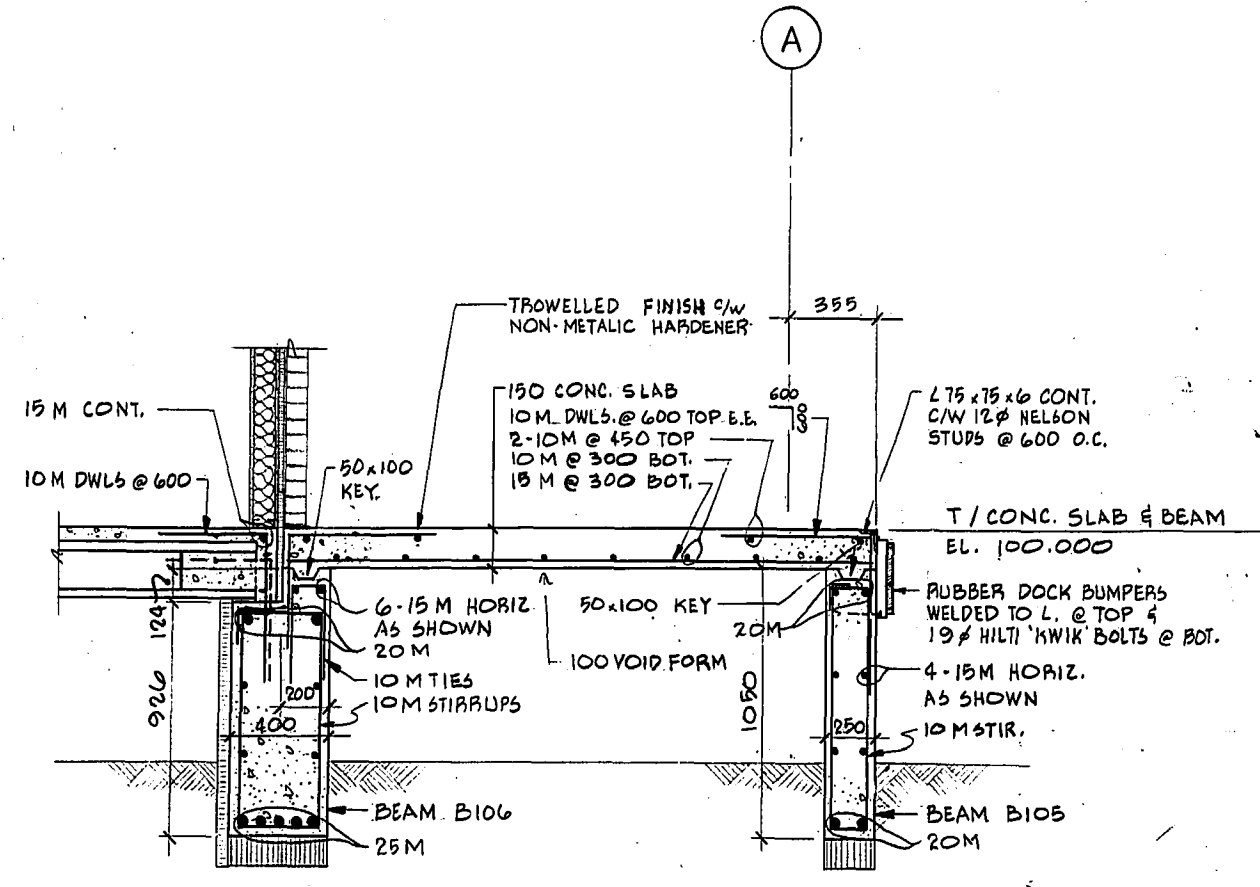
DESIGNED BY: DS DRAWN BY: LG
 CHECKED BY: [Signature] DATE: 82-01-22

APPROVED BY: [Signature] DATE: Mar 1/82

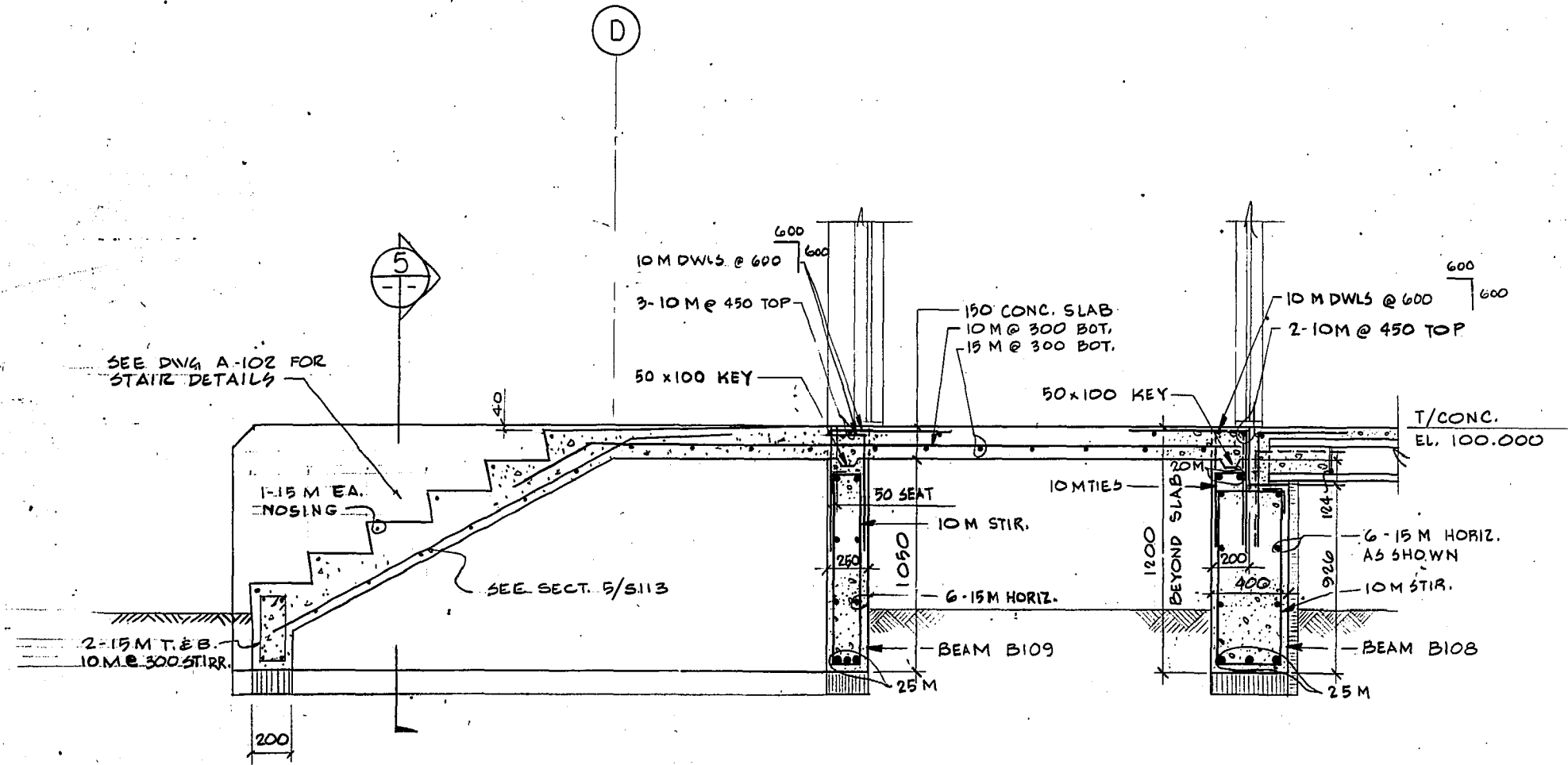
THE CITY OF WINNIPEG
 WORKS & OPERATIONS DIVISION
 WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
 SECONDARY TREATMENT EXPANSION
 MAIN BUILDING EXPANSION
 STRUCTURAL - GRADE BEAM REINFORCING ELEVATIONS

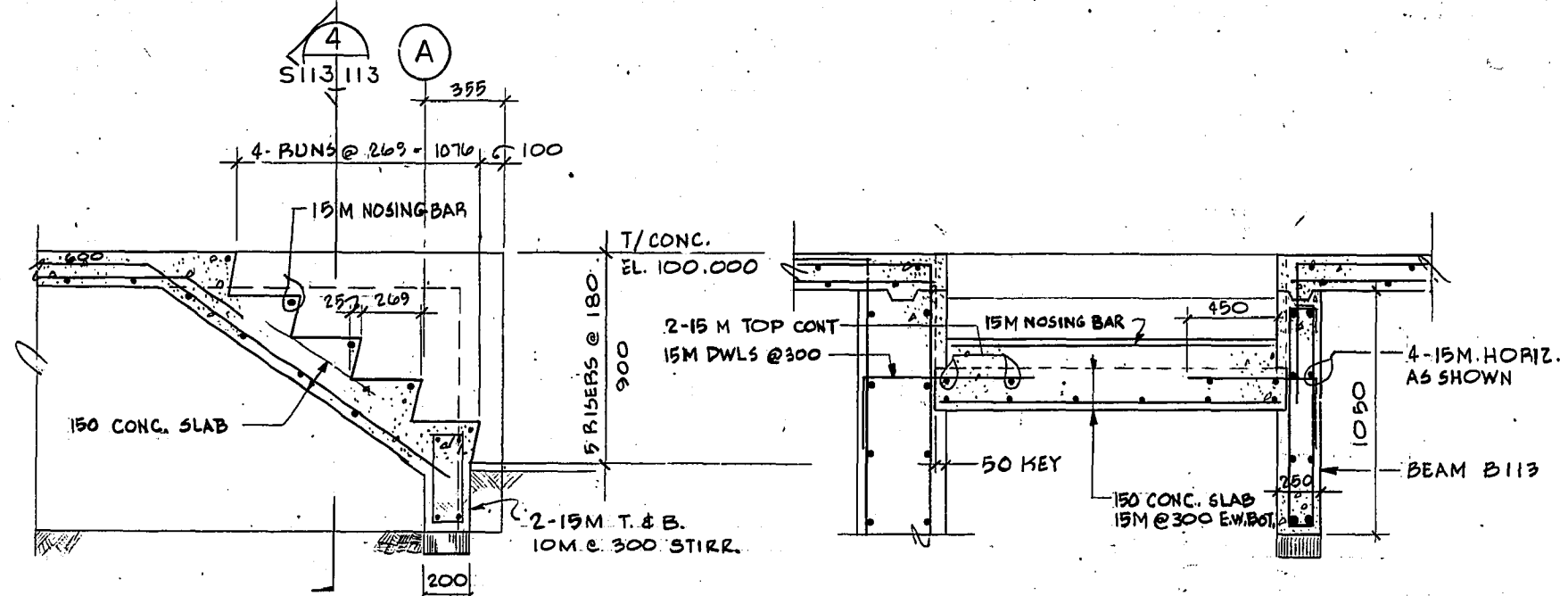
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SECTION 1
S102/113
110

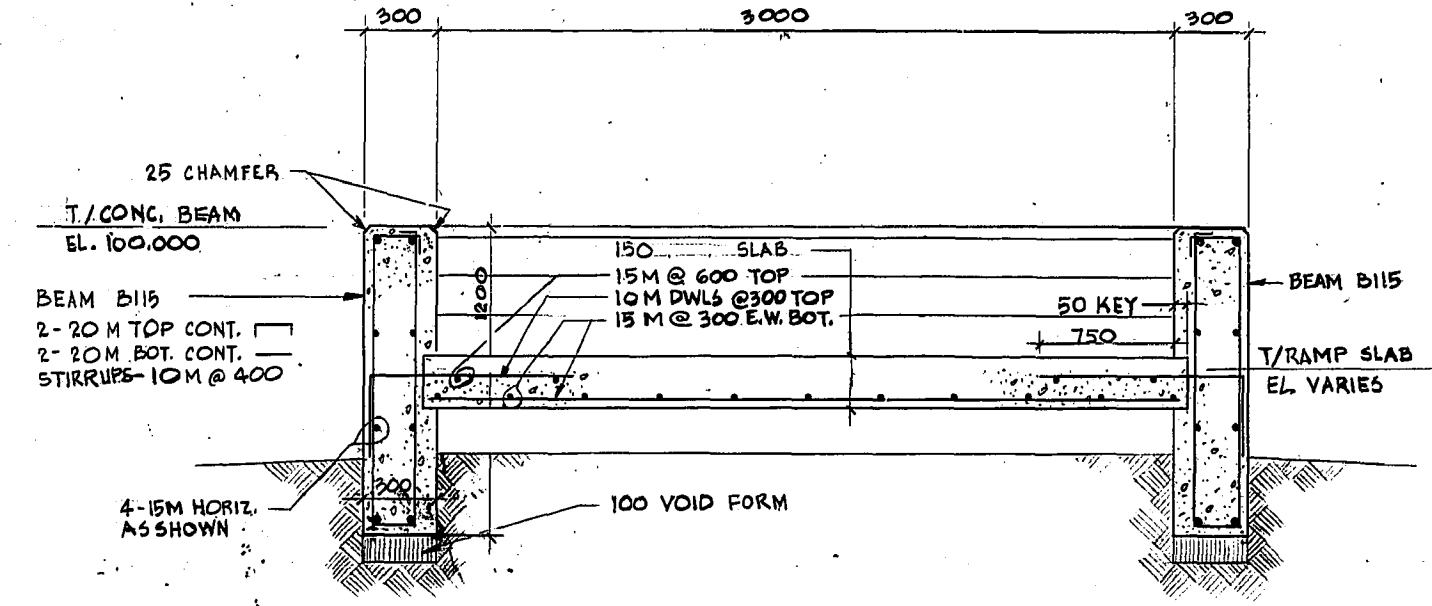


SECTION 2
S102/113
110

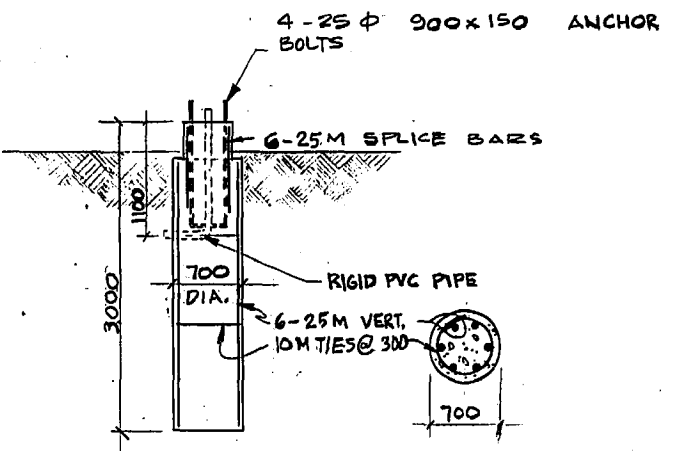


SECTION 3
S102/113

SECTION 4
S113/113
111



SECTION 5



ELEVATION SECTION

NOTE: FOR LIGHT TOWER LOCATIONS SEE DWG. 6101

SECTION 7
LIGHT TOWER BASE DETAILS
1:50

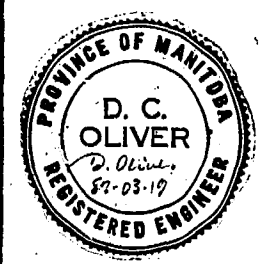
REVISED AS CONSTRUCTED
DATE FEB. 14, 84 BY CSA
CHECKED BY C. ALBIANI

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Grade Beam Reinforcing	Cowin Steel	2278
Rubber Dock Bumpers	Serco	2292

MICROFILMED MAY 1984

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

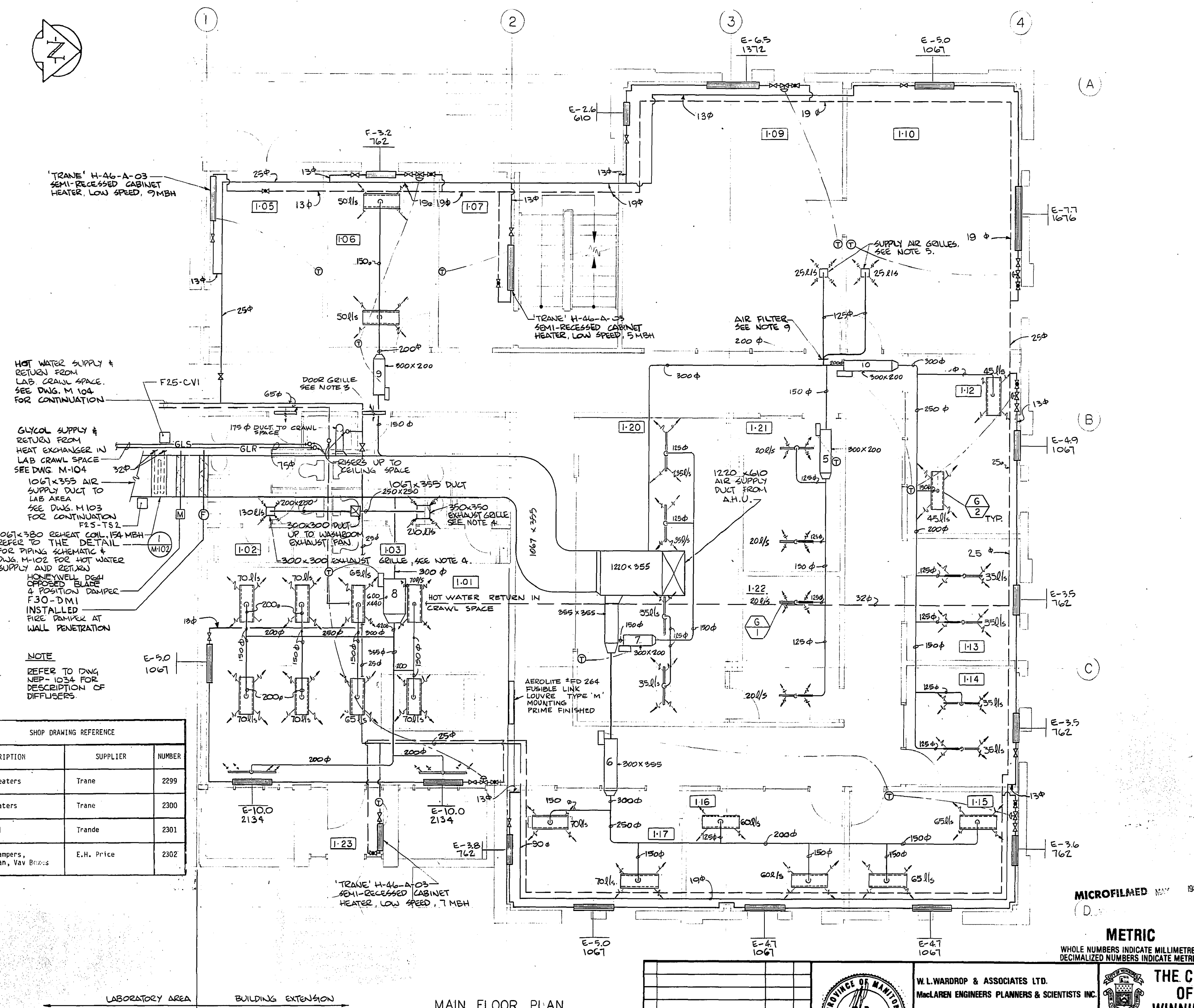
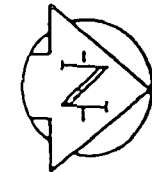
NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82-05-10	DS
2	RELEASED FOR CLIENT APPROVAL	82-01-22	DS



W.L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.
DESIGNED BY: DS
DRAWN BY: LG
CHECKED BY: DS
DATE: 82-01-22
APPROVED BY: J.F. Maguire
DATE: Mar 182

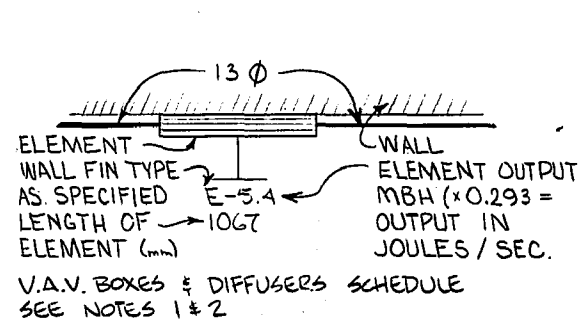
THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
STRUCTURAL - MISCELLANEOUS CONCRETE DETAILS
RELEASED FOR CONSTRUCTION: DATE: 1982-05-07
SCALE: 1:20 U/N
DRAWING NO: NEP 1032



- LEGEND**
- HOT WATER SUPPLY
 - - - HOT WATER RETURN
 - GLR- GLYCOL RETURN
 - GLS- GLYCOL SUPPLY
 - ⊕ THERMOSTAT
 - ⊖ VARIABLE AIR VOLUME BOX
 - ⊡ THERMOMETER
RANGE: HEATING, 10°C-150°C
COOLING, 4°C-50°C
 - ⊕ UNION OR FLANGED CONNECTION
 - ⊖ STRAINER
 - ⊗ GATE VALVE
 - ⊘ THROTTLING VALVE
 - ⊕ THREE-WAY CONTROL VALVE (PORTS INDICATED)

- NOTES**
1. V.A.V. BOXES ARE TITUS-ENVIRO-MASTER ESU-3000 CW ATTENUATOR
 2. DIFFUSERS ARE E.H. PRICE ENGINEERED 'PLUG IN' CEILING DIFFUSERS
 3. WASHROOM DOOR GRILLES ARE 'TITUS' 610X610-T-700-B-P1.
 4. EXHAUST GRILLES ARE: 'TITUS-C-L-50-0-0-A-65 (TYP.) SIZES AS SPECIFIED ON THE DWG.
 5. SUPPLY AIR GRILLES ARE 'TITUS'-125 mm-TMS-3-3-B5
 6. LOCATION OF DUCTWORK WAS CO-ORDINATED WITH LIGHTING LAYOUT. REFER TO DWG. E 101 & E 102.
 7. WALL FINNS ARE TRANE TYPE E SERIES 40, SE ENCLASURE, 31mm (1 1/4") STEEL ELEMENT, AVERAGE WATER TEMPERATURE 116°C, 131 mm HIGH CABINETS, SINGLE ROW.
 8. GLYCOL AND HOT WATER HEATING PIPING IS SHOWN SCHEMATICALLY FOR CLARITY.
 9. AIR FILTER SHALL BE AAF VIRI-PAK FILTER HOUSING COMPLETE WITH 305 X 610 VARICEL 90% FILTER AND PREFILTER, OR FARE EQUIVALENT
 10. DIFFUSER LOCATION WAS CO-ORDINATED WITH LIGHTING LAYOUT. REFER TO DWG. M-102 FOR PLUG-IN DIFFUSER SECTION VIEW.
 11. FIRE DAMPERS WERE PROVIDED AT FIRE SEPARATIONS AS REQUIRED BY CODE.



SHOP DRAWING REFERENCE

DESCRIPTION	SUPPLIER	NUMBER
Wall Fin Heaters	Trane	2299
Cabinet Heaters	Trane	2300
Reheat Coil	Trane	2301
Grilles, Dampers, Washroom Fan, Vav Boxes	E.H. Price	2302

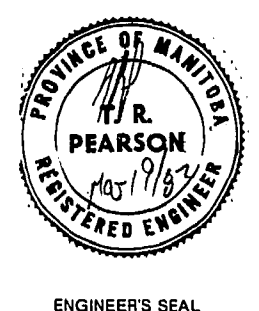
BOX No.	V.A.V. BOXES		DIFFUSERS	
	VOLUME (L/S)	SIZE	ROOM SERVED	No. REQ'D & LENGTH
5	MAX. 80	5	1.21	2-914mm
	MIN. 0		1.22	2-914mm
6	MAX. 390 MIN. 140	10	1.15	2-1220mm
			1.16	2-1220mm
			1.17	2-1220mm
8	MAX. 140 MIN. 80	6	1.20	4-914mm
8	MAX. 750 MIN. 270	14	1.01	8-1524mm
9	MAX. 100 MIN. 35	5	1.06	2-914mm
10	MAX. 230 MIN. 70	7	1.12	2-914mm
			1.13	2-914mm
			1.14	2-914mm

MICROFILMED
METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

LABORATORY AREA BUILDING EXTENSION MAIN FLOOR PLAN

REVISED AS CONSTRUCTED
DATE FEB. 14/82 BY CSA
CHECKED BY CALBAWJ

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82-05-10	
2	ISSUED FOR CLIENT REVIEW	82-01-15	



W. L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

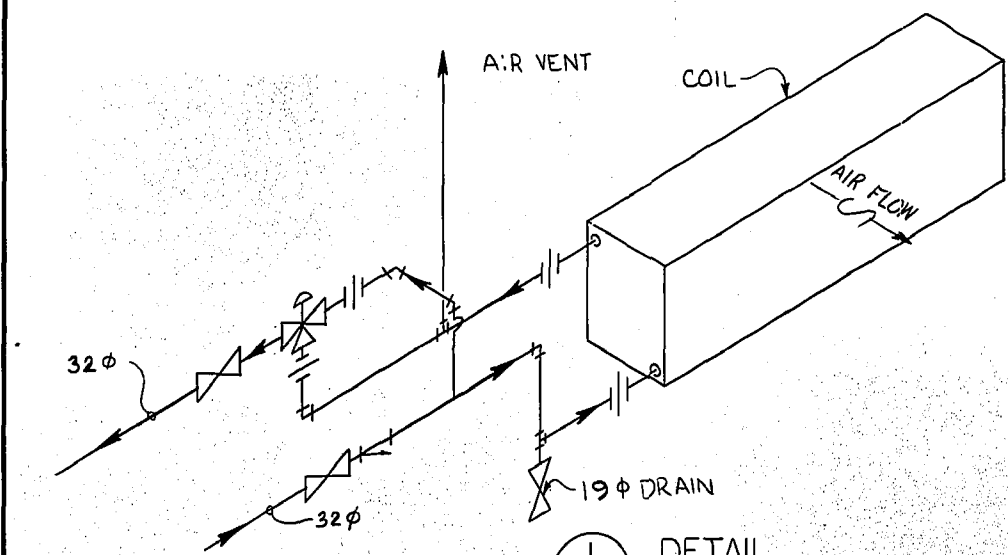
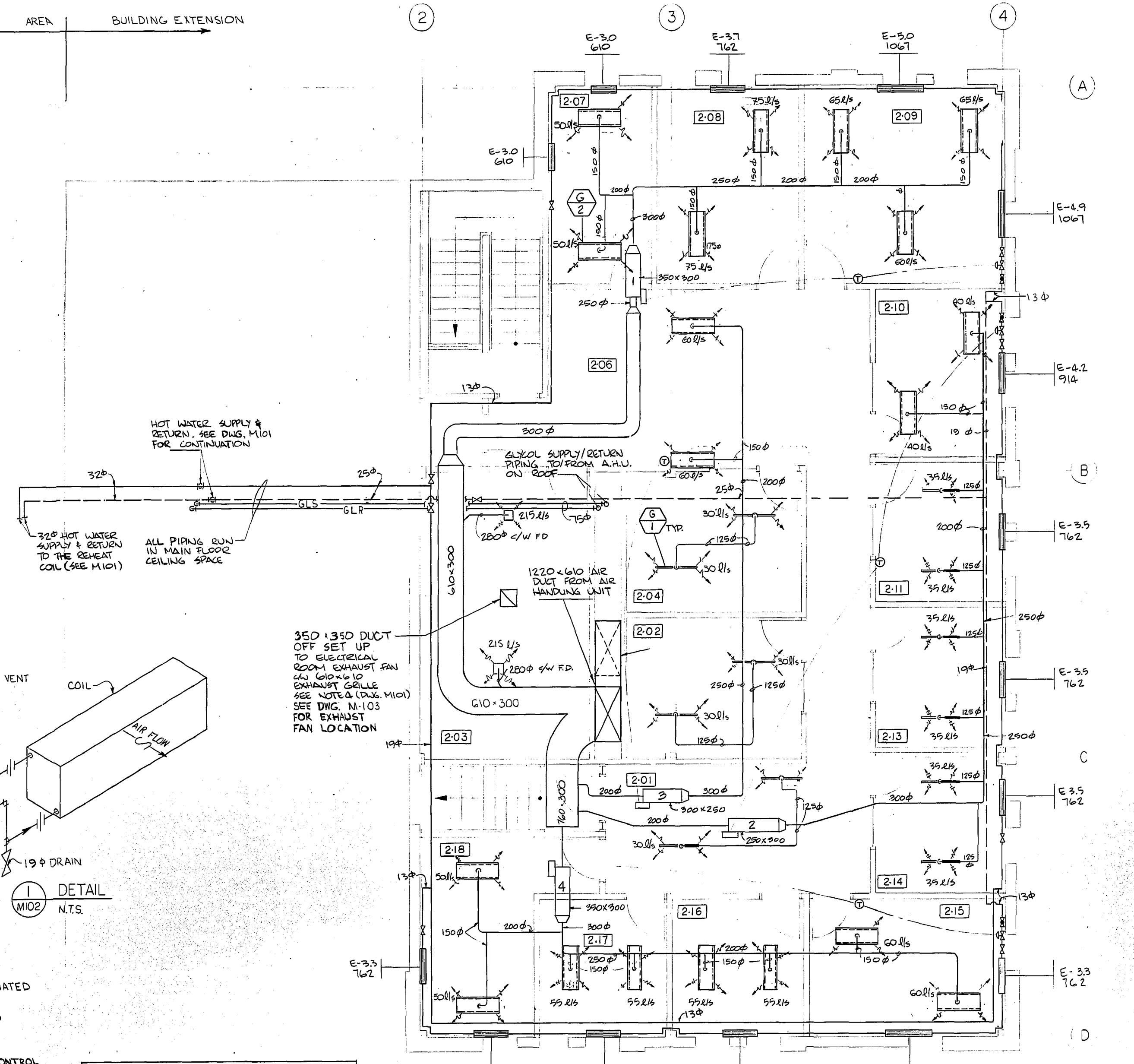
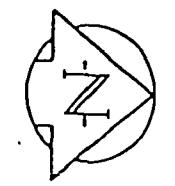
DESIGNED BY: A Y F DRAWN BY: G C
CHECKED BY: J A P DATE: 82 03 22
APPROVED BY: J Maguire DATE: Mar/82

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
MAIN FLOOR PLAN HEATING AND VENTILATION

RELEASED FOR CONSTRUCTION DATE: 1982-05-07
SCALE: 1:50 DRAWING NO: NEP-1033

LABORATORY AREA BUILDING EXTENSION



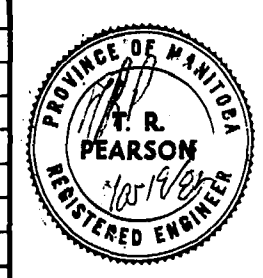
- NOTES:
1. ALL PIPING WAS INSTALLED CLEAR OF EQUIPMENT ACCESS DOORS.
 2. PIPE CONNECTIONS ARE SCHEMATIC ONLY. PIPING IS CONNECTED TO SUIT SPECIFIED COIL AND ASSOCIATED CONTROL VALVE.
 3. ALL COILS WERE GRADED TO DRAIN AND VENTED AT THE HIGH POINT.
 4. REDUCERS PROVIDED AT CONTROL VALVE. ALL ISOLATION VALVES WERE LISTED PIPE SIZE.

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Wall-Fin Heaters	Trane	2299
Grilles, Dampers, VAV Boxes	E.H. Price	2302

SECOND FLOOR PLAN

REVISED AS CONSTRUCTED
DATE FEBRUARY BY GJA
CHECKED BY ALBIANI

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82-05-10	
2	ISSUED FOR CLIENT REVIEW	82-01-15	



W.L. WARDROP & ASSOCIATES LTD.
McLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

DESIGNED BY: A.Y.F. DRAWN BY: G.C.
CHECKED BY: DATE: 82-03-02
APPROVED BY: DATE: Mar/82



NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
SECOND FLOOR HEATING AND VENTILATION PLAN

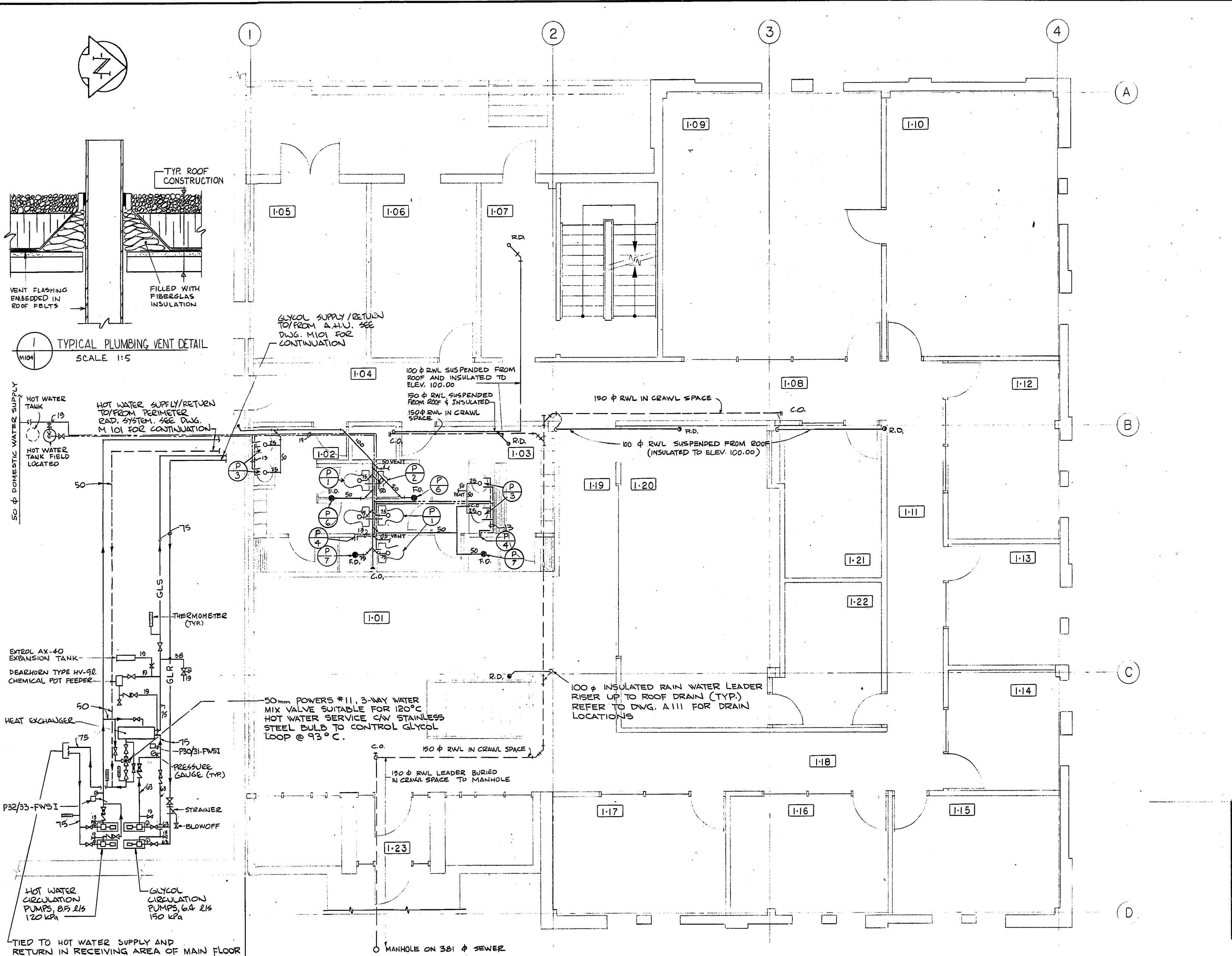
RELEASED FOR CONSTRUCTION: DATE: 1982-05-07
SCALE: 1:50 DRAWING NO.: NEP-1034

NOTES
1. REFER TO DWG. M-101 FOR LEGEND & NOTES.

V.A.V. BOXES & DIFFUSERS SCHEDULE SEE NOTES 1 & 2 (DWG. M-101)				
BOX NO.	VOLUME (L/s)	SIZE	ROOM SERVED	No. REQ'D & LENGTH
1	MAX. 440 MIN. 50	10	2-07	2-914mm
			2-08	2-1524mm
			2-09	2-1524mm
2	MAX. 290 MIN. 30	8	2-10	2-914mm
			2-11	2-914mm
			2-13	2-914mm
			2-14	2-914mm
3	MAX. 300 MIN. 0	8	2-01	2-914mm
			2-02	2-914mm
			2-04	2-914mm
			2-06	2-1220mm
			2-15	2-1220mm
4	MAX. 440 MIN. 50	10	2-16	2-1220mm
			2-17	2-1220mm
			2-18	2-1220mm

- 1 TITUS MODEL LT-10 CEILING DIFFUSER (SUPPLY)
- 2 TITUS MODEL LT-14 CEILING DIFFUSER (SUPPLY)
- 3 TITUS MODEL C2700 SLIM-LINE DIFFUSER (SUPPLY)

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES



- LEGEND**
- SANITARY PIPING
 - COLD WATER
 - HOT WATER
 - F.D. FLOOR DRAIN
 - C.O. CLEAN OUT
 - RWL- RAIN WATER LEADER
 - ◇— GATE VALVE
 - ◇— THROTTLING VALVE

- NOTES**
1. ALL PLUMBING INCLUDING DOMESTIC WATER SUPPLY, WASTE AND VENT PIPING WAS INSTALLED IN ACCORDANCE WITH APPLICABLE CODES.
 2. ALL PIPING WAS RUN IN CRAWL SPACE BENEATH BUILDING.
 3. REFER TO SPECIFICATIONS FOR PLUMBING FIXTURE SCHEDULE.
 4. ALL EQUIPMENT AND PIPING SHOWN IN LABORATORY CRAWL SPACE WAS FIELD LOCATED.
 5. ALL FLOOR DRAINS TO BE INSTALLED COMPLETE WITH TRAP PRIMERS.
 6. CONTRACTOR PROVIDED 50/50 GLYCOL/WATER MIXTURE FOR INITIAL SYSTEM FILL AFTER TESTING AND FLUSHING.

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
Glycol Pump Hot Water Pump	Bell & Gosset	2296
Glycol Temperature Regulator	Powers	2296
Plumbing Fixtures	Western Supplies	2297

MICROFILMED MAY 1984

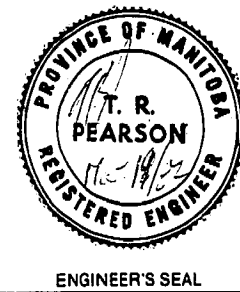
EXISTING LABORATORY AREA NEW BUILDING EXTENSION

MAIN FLOOR PLAN
SCALE 1:50

REVISED AS CONSTRUCTED
DATE FEB 14 1984 BY CSA
CHECKED BY G. ALSIANI

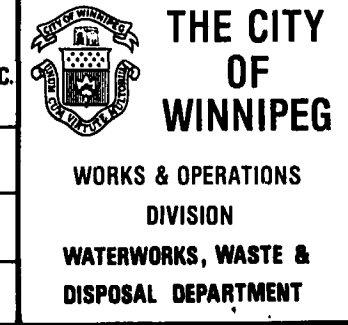
METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

NO.	REVISIONS	DATE	APP.
1	ISSUED FOR TENDER	82-05-10	
0			



W. L. WARDROP & ASSOCIATES LTD.
MacLAREN ENGINEERS PLANNERS & SCIENTISTS INC.

DESIGNED BY: KS DRAWN BY: GC
CHECKED BY: *[Signature]* DATE: 82-03-22
APPROVED BY: *[Signature]* DATE: Mar 82



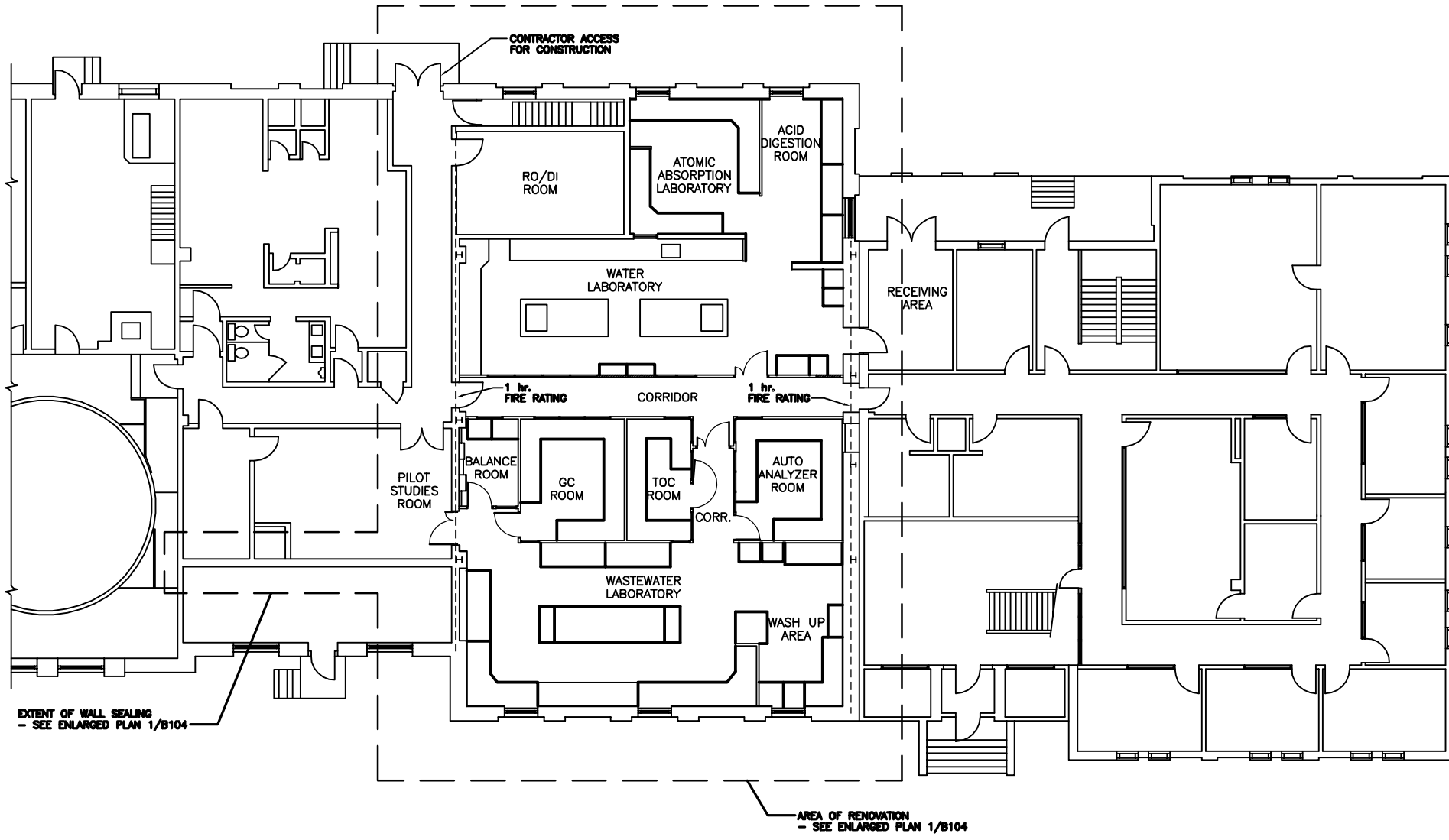
NORTH END WATER POLLUTION CONTROL CENTRE
SECONDARY TREATMENT EXPANSION
MAIN BUILDING EXPANSION
MAIN FLOOR PLUMBING

RELEASED FOR CONSTRUCTION DATE: 1982-05-07
SCALE: AS SHOWN DRAWING NO.: NEP-1036

39-1996

Item Number	Drawing Number	Drawing Title
1	NEP-2287	NEWPCC - LABORATORY RENOVATIONS - SITE PLAN
2	NEP-2289	NEWPCC - LABORATORY RENOVATIONS - BUILDING - RENOVATED FLOOR PLAN
3	NEP-2290	NEWPCC - LABORATORY RENOVATIONS - BUILDING - PARTIAL ROOF PLAN
4	NEP-2291	NEWPCC - LABORATORY RENOVATIONS - BUILDING - PARTIAL ROOF PLAN - NEW LABORATORY LAYOUT & SCHEDULES
5	NEP-2292	NEWPCC - LABORATORY RENOVATIONS - BUILDING - REFLECTED CEILING PLAN
6	NEP-2293	NEWPCC - LABORATORY RENOVATIONS - BUILDING - INTERIOR ELEVATIONS
7	NEP-2294	NEWPCC - LABORATORY RENOVATIONS - BUILDING - MISC DETAILS
8	NEP-2295	NEWPCC - LABORATORY RENOVATIONS - BUILDING - INTERIOR WALL DETAILS
9	NEP-2296	NEWPCC - LABORATORY RENOVATIONS - STRUCTURAL - AHU SUPPORT FRAME
10	NEP-2297	NEWPCC - LABORATORY RENOVATIONS - STRUCTURAL - AHU SUPPORT FRAME
11	NEP-2304	NEWPCC - LABORATORY RENOVATIONS - MECHANICAL - PARTIAL BASEMENT FLOOR PLAN - DRAINAGE PIPING - DEMOLITION
12	NEP-2304	NEWPCC - LABORATORY RENOVATIONS - MECHANICAL - PARTIAL BASEMENT FLOOR PLAN - PLUMBING SERVICES
13	NEP-2305	NEWPCC - LABORATORY RENOVATIONS - MECHANICAL - PARTIAL MAIN FLOOR PLAN - PLUMBING SERVICES
14	NEP-2306	NEWPCC - LABORATORY RENOVATIONS - MECHANICAL - PARTIAL MAIN FLOOR PLAN - HEATING & VENTILATION
15	NEP-2307	NEWPCC - LABORATORY RENOVATIONS - MECHANICAL - PARTIAL MAIN FLOOR PLAN - HOT WATER HEATING
16	NEP-2308	NEWPCC - LABORATORY RENOVATIONS - MECHANICAL - PARTIAL BASEMENT & MAIN FLOOR PLUMBING - HOT WATER HEATING & SECTIONS
17	NEP-2309	NEWPCC - LABORATORY RENOVATIONS - MECHANICAL - PARTIAL MAIN FLOOR PLAN - EXHAUST SYSTEMS
18	NEP-2310	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - ELECTRICAL INSTRUMENTATION & PROCESS SYMBOL LEGEND
19	NEP-2311	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - ELECTRICAL DEMOLITION - FLOOR PLAN
20	NEP-2312	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - ELECTRICAL DEMOLITION - FLOOR PLAN

21	NEP-2313	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - BASEMENT FLOOR PLAN - ELECTRICAL DEMOLITION & NEW EQUIPMENT
22	NEP-2314	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - EXISTING PANEL SCHEDULES
23	NEP-2315	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - LIGHTING FLOOR PLAN
24	NEP-2316	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - RECEPTACLES TELEPHONE & COMMUNICATION FLOOR PLAN
25	NEP-2317	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - MAIN BUILDING FLOOR PLAN
26	NEP-2318	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - ELECTRICAL PANEL SCHEDULES
27	NEP-2319	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - MOTOR LOCATIONS & CONTROL COMPONENTS - FLOOR PLAN
28	NEP-2320	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - MISC DETAILS
29	NEP-2321	NEWPCC - LABORATORY RENOVATIONS - ELECTRICAL - PARTIAL SINGLE LINE DIAGRAMS
30	NEP-2322	NEWPCC - LABORATORY RENOVATIONS - I & C - HVAC SYSTEMS - HOT WATER CIRCULATION PUMP - LOOP WIRING DIAGRAM M680
31	NEP-2323	NEWPCC - LABORATORY RENOVATIONS - I & C - HVAC SYSTEMS - 2 SPEED EXHAUST FAN - LOOP WIRING DIAGRAM M674
32	NEP-2324	NEWPCC - LABORATORY RENOVATIONS - I & C - HVAC SYSTEMS - LAB MAIN AIR HANDLING UNIT - LOOP WIRING DIAGRAM M639
33	NEP-2325	NEWPCC - LABORATORY RENOVATIONS - I & C - HVAC SYSTEMS - LABORATORY EXHAUST SYSTEM - LOOP WIRING DIAGRAM
34	NEP-2326	NEWPCC - LABORATORY RENOVATIONS - I & C - HVAC SYSTEMS - LABORATORY EXHAUST SYSTEM - LOOP WIRING DIAGRAM
35	NEP-2327	NEWPCC - LABORATORY RENOVATIONS - I & C - HVAC SYSTEMS - WASTEWATER LABORATORY HVAC SYSTEM P & ID
36	NEP-2328	NEWPCC - LABORATORY RENOVATIONS - I & C - HVAC SYSTEMS - WATER LABORATORY HVAC SYSTEM P & ID
37	NEP-2329	NEWPCC - LABORATORY RENOVATIONS - I & C - HVAC SYSTEMS - LABORATORY HOT WATER SYSTEM P & ID
38	NEP-2330	NEWPCC - LABORATORY RENOVATIONS - I & C - HVAC SYSTEMS - LOCKER ROOM/LAB SERVICES HVAC SYSTEM PARTIAL P & ID



CODE REVIEW - NBC 1990

1. OCCUPANCY CLASSIFICATION
 MAJOR OCCUPANCIES: WATER TREATMENT PLANT
 TOTAL BUILDING AREA: 1969m²
 WATER LABORATORY: 152m²
 WASTEWATER LABORATORY: 158m²
 TOTAL LABORATORY AREA: 368m²
 NO. OF STOREYS: 2
 NO. OF STREETS: 4
 SPRINKLERED: NO
 CLASSIFICATION(S) OF BUILDING: 3.2.2.59 INDUSTRIAL BUILDINGS, GROUP F, DIVISION 3
 MAJOR OCCUPANCY: 1 AND 2 STOREYS

2. HEIGHT AND AREA REQUIREMENTS
 TYPE OF CONSTRUCTION: COMBUSTIBLE OR NONCOMBUSTIBLE (BUILDING IS NONCOMBUSTIBLE)
 FLOOR ASSEMBLY ABOVE BASEMENT: 45 min.
 OTHER FLOOR ASSEMBLIES: 45 min.
 BALCONIES AND MEZZANINES: 45 min.
 ROOF ASSEMBLY: 45 min. OR NONCOMBUSTIBLE
 LOAD BEARING WALLS AND COLUMNS: 45 min. OR NONCOMBUSTIBLE

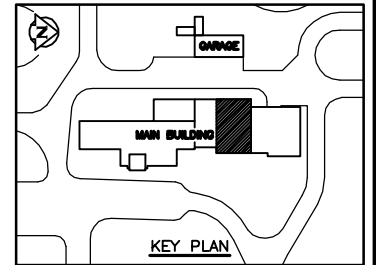
3. EXIT REQUIREMENTS
 MINIMUM REQUIRED FROM EACH LAB AREA: 3.3.1.5 AND TABLE 3.3.1.A - ONE REQUIRED (TWO PROVIDED)
 MINIMUM REQUIRED FROM THE ENTIRE LAB AREA: TABLE 3.4.2.A - TWO REQUIRED (FOUR PROVIDED)

4. FIRE SAFETY WITHIN FLOOR AREAS
 SEPARATION OF LAB AREA: 3.3.1.1 (CONFORMS TO REQUIREMENTS FOR SEPARATION OF SUITES)
 TRAVEL DISTANCE: 3.4.2.5.(1)(F) - 30m (TRAVEL DISTANCE CONFORMS)
 TRAVEL IN OPPOSITE DIRECTION TO 2 EXITS: CONFORMS

EXTENT OF WALL SEALING
 - SEE ENLARGED PLAN 1/B104

AREA OF RENOVATION
 - SEE ENLARGED PLAN 1/B104

1 PARTIAL FLOOR PLAN - LABORATORY RENOVATION
 1 : 100



AS CONSTRUCTED
 DATE 97.05.12 BY D.L.P.
 APPROVED BY _____

WARDROP ENGINEERING INC. WINNIPEG TORONTO SUDBURY ONT.		
DESIGNED BY	M.F.	CHECKED BY
DRAWN BY	D.L.P.	APPROVED BY
HOR. SCALE:	1 : 100	
VERTICAL:		
NO. REVISIONS	DATE	BY
1	97.05.12	M.F.
0	96/02	M.F.
-	95.12.00	M.F.
	DATE	DATE
	96.02.23	

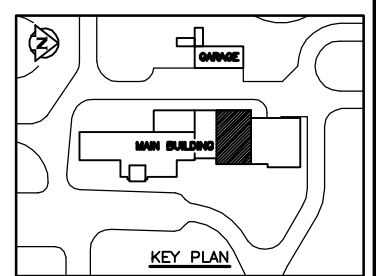
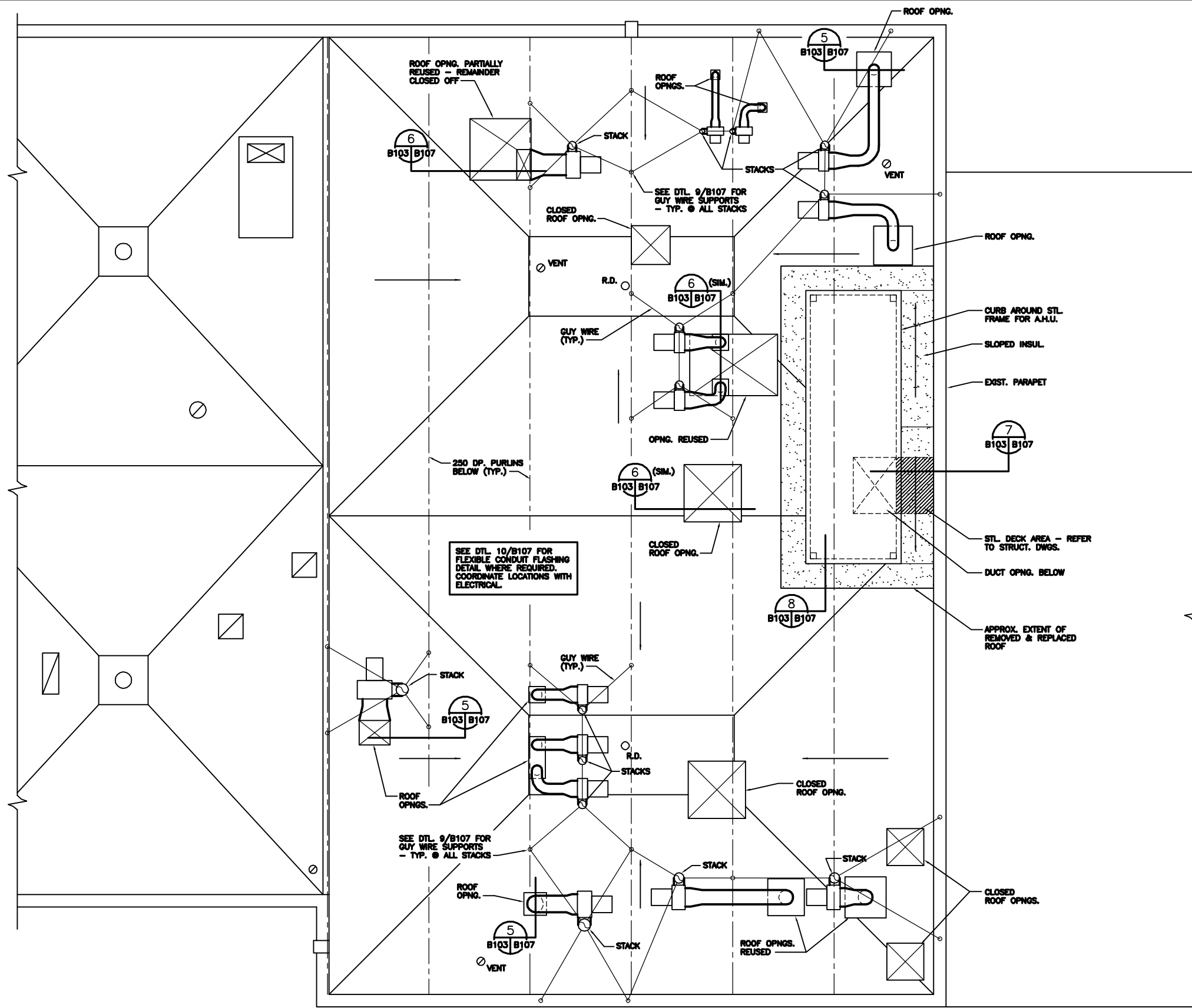
ENGINEER'S SEAL
 ORIGINAL DRAWING
 REVISION "0" SEALED BY
 D.J. KRAMBLE
 96.02.27
 CONSULTANT DRAWING NO.
 940012-03-00-B102

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
 LABORATORY RENOVATIONS - BUILDING

RENOVATED FLOOR PLAN

CITY DRAWING NUMBER
 SHEET OF
 NEP-2289



1 PARTIAL ROOF PLAN
1 : 50

AS CONSTRUCTED
DATE 97.05.12 BY D.L.P.
APPROVED BY _____

B.M. ELEV.		WARDROP ENGINEERING INC. WINNIPEG TORONTO SUDBURY MARY	
DESIGNED BY	M.F.	CHECKED BY	
DRAWN BY	D.L.P.	APPROVED BY	
1 AS CONSTRUCTED	97.05.12 M.F.	HOR. SCALE:	1 : 50
0 ISSUED FOR TENDER	96/02 M.F.	VERTICAL:	
- ISSUED FOR CITY REVIEW	95.12.08 M.F.	RELEASED FOR CONSTRUCTION:	
NO. REVISIONS	DATE	DATE	96.02.23

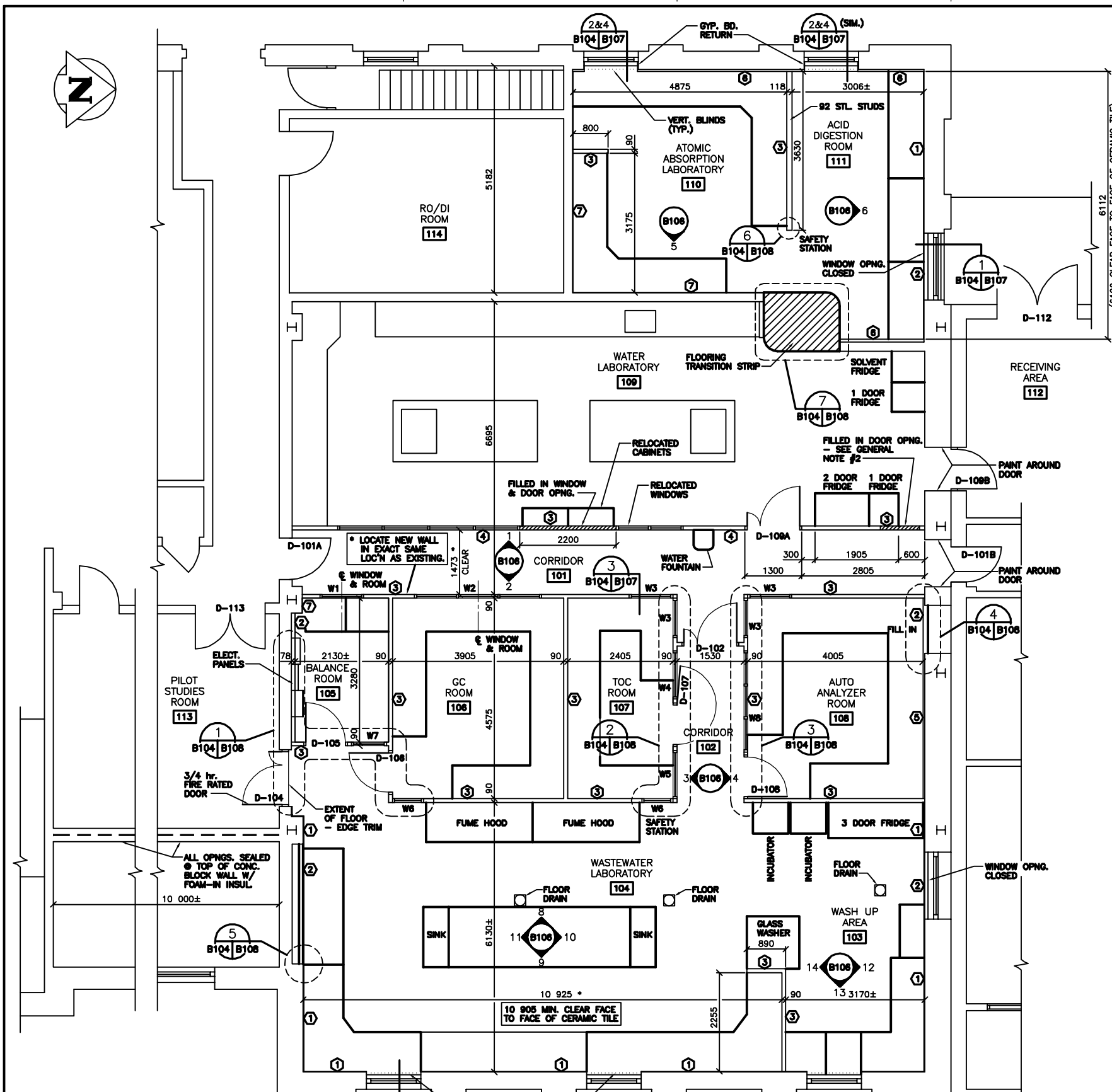
ENGINEER'S SEAL
ORIGINAL DRAWING
REVISION 01 SEALED BY
D.J. KRAMBLE
96.02.27
CONSULTANT DRAWING NO.
940012-03-00-B103

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
LABORATORY RENOVATIONS - BUILDING

PARTIAL ROOF PLAN

CITY DRAWING NUMBER
SHEET OF
NEP-2290



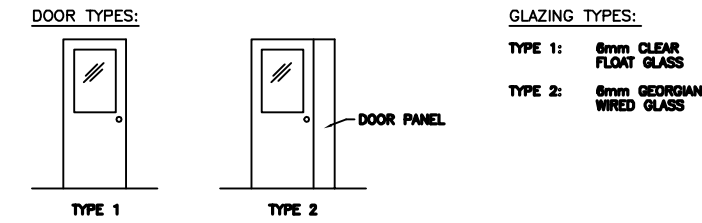
DOOR & INTERIOR WINDOW SCHEDULE:

DOOR/WINDOW No.	DOOR				FRAME				REMARKS			
	DOOR TYPE	RATING	MATERIAL	FINISH	PAINT COLOUR	SIZE	RATING	MATERIAL		FINISH	PAINT COLOUR	HARDWARE CODE
D-101A	-	-	P	5	-	-	-	-	-	-	-	-
D-101B	-	-	P	5	-	-	-	-	-	-	-	-
D-102	2	HM	P	4,5	1-900x2150x45 1-300x2150x45	3/4 HR.	PS	P	2	2	2	2
D-104	2	3/4 HR.	HM	P	1,4	1-900x2150x45 1-300x2150x45	3/4 HR.	PS	P	2	3	2
D-105	1	HM	P	4	900x2150x45	-	PS	P	2	8	1	-
D-106	1	HM	P	4	900x2150x45	-	PS	P	2	1	1	-
D-107	1	HM	P	4	900x2150x45	-	PS	P	2	1	1	-
D-108	1	HM	P	4	900x2150x45	-	PS	P	2	1	1	-
D-108A	2	HM	P	1,5	1-900x2150x45 1-300x2150x45	-	PS	P	2	2	2	-
D-108B	-	-	-	-	-	-	-	-	-	-	-	-
D-112	-	-	-	-	-	-	-	-	-	-	5	-
D-113	-	-	-	-	-	-	-	-	-	-	4	-

W#	SIZE	TYPE	GLAZING	REMARKS
W1	1000x1525	N AL	- - - 2	SEE DETAILS
W2	3000x1525	N AL	- - - 2	SEE DETAILS
W3	1000x1525	N AL	- - - 2	SEE DETAILS
W4	1150x1525	N AL	- - - 1	SEE DETAILS
W5	1150x1525	N AL	- - - 1	SEE DETAILS
W6	700x1525	N AL	- - - 1	SEE DETAILS
W7	800x1525	N AL	- - - 1	SEE DETAILS
W8	2300x1525	N AL	- - - 1	SEE DETAILS

ABBREVIATIONS:
 AL - ALUMINUM
 HM - HOLLOW METAL
 P - PAINT
 PS - PRESSED STEEL

NOTES:
 - A DASH (-) INDICATES NO WORK IS REQUIRED.



ROOM FINISH SCHEDULE:

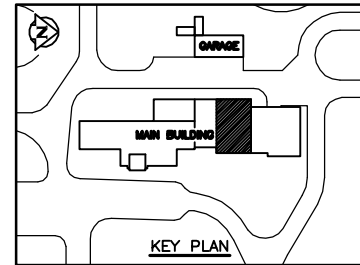
ROOM NUMBER	FLOOR				WALLS				CEILING		REMARKS			
	MATERIAL	FINISH	BASE	HEIGHT	NORTH	EAST	SOUTH	WEST	MATERIAL	FINISH				
101	C	SF	RB	-	P-2	GB	P-3	-	GB	P-3	2665	LAT	-	
102	C	SF	SF	GB	CT	-	-	GB	CT	GB	CT	2665	LAT	-
103	C	SF	SF	GB	CT	GB	CT	GB	CT	GB	CT	2665	LAT	-
104	C	SF	SF	GB	CT	GB	CT	GB	CT	GB	CT	2665	LAT	-
105	C	SF	SF	GB	P-3	GB	P-3	GB	P-3	GB	P-3	2665	LAT	-
106	C	SF	SF	GB	P-3	GB	P-3	GB	P-3	GB	P-3	2665	LAT	-
107	C	SF	SF	GB	P-3	GB	P-3	GB	P-3	GB	P-3	2665	LAT	-
108	C	SF	SF	GB	P-3	GB	P-3	GB	P-3	GB	P-3	2665	LAT	-
109	C	BF	-	-	P-2	GB	CT	-	-	-	2665	LAT	-	
110	C	SF	SF	GB	P-3	GB	P-3	GB	P-3	GB	P-3	2665	LAT	-
111	C	SF	SF	GB	P-3	GB	P-3	GB	P-3	GB	P-3	2665	LAT	-

ABBREVIATIONS:
 C - CONCRETE
 GB - CONCRETE BLOCK
 CT - CERAMIC TILE
 GB - GYPSUM BOARD
 LAT - LAY-IN ACOUSTIC TILE
 P-3 - PAINT AND COLOUR NUMBER
 RB - RUBBER BASE
 SF - SHEET FLOORING

NOTES:
 - A DASH (-) INDICATES NO WORK IS REQUIRED.

- WALL TYPES:**
- 1 CONCRETE BLOCK.
 - 2 13 GYPSUM BOARD ON 85 STEEL STUDS @ 400 O.C. TO 100 ABOVE CEILING.
 - 3 13 GYPSUM BOARD BOTH SIDES 85 STEEL STUDS (EXCEPT AS SHOWN) @ 400 O.C. TO U/S CEILING. SEE SPECIFICATION SECTION 10618.
 - 4 13 GYPSUM BOARD ON 85 STEEL STUDS TO U/S CEILING. SEE SPECIFICATION SECTION 10618.
 - 5 13 GYPSUM BOARD ON 19 STRAPPING OVER CONCRETE BLOCK TO 100 ABOVE CEILING.
 - 6 13 GYPSUM BOARD ON 38(±) STRAPPING OVER CONCRETE BLOCK.
 - 7 13 GYPSUM BOARD LAMINATED TO CONCRETE BLOCK.

- GENERAL NOTES:**
- 1. ALL DIMENSIONS SHOWN ARE FACE TO FACE OF WALL (EXCLUDING CERAMIC TILE).
 - 2. ALL DIMENSIONS SHOWN ARE APPROXIMATE.
 - 3. EXTERIOR WINDOWS RESEALED. SEE DETAIL 1/B107.



NOTE:
 FOR DETAILED LAB FURNITURE PLANS AND ELEVATIONS REFER TO DRAWINGS IN SPECIFICATION INDICATED BY ROOM NUMBER.
 i.e.: 104 and 104A etc.

1 PARTIAL FLOOR PLAN
 1 : 50

AS CONSTRUCTED
 DATE 97.05.12 BY D.L.P.
 APPROVED BY _____

DESIGNED BY	M.F.	CHECKED BY	
DRAWN BY	D.L.P.	APPROVED BY	
HOR. SCALE:	1 : 50	RELEASED FOR CONSTRUCTION:	
VERTICAL:		DATE	96.02.23

WARDROP ENGINEERING INC.
 WINNIPEG TORONTO SUDBURY ONT

ENGINEER'S SEAL

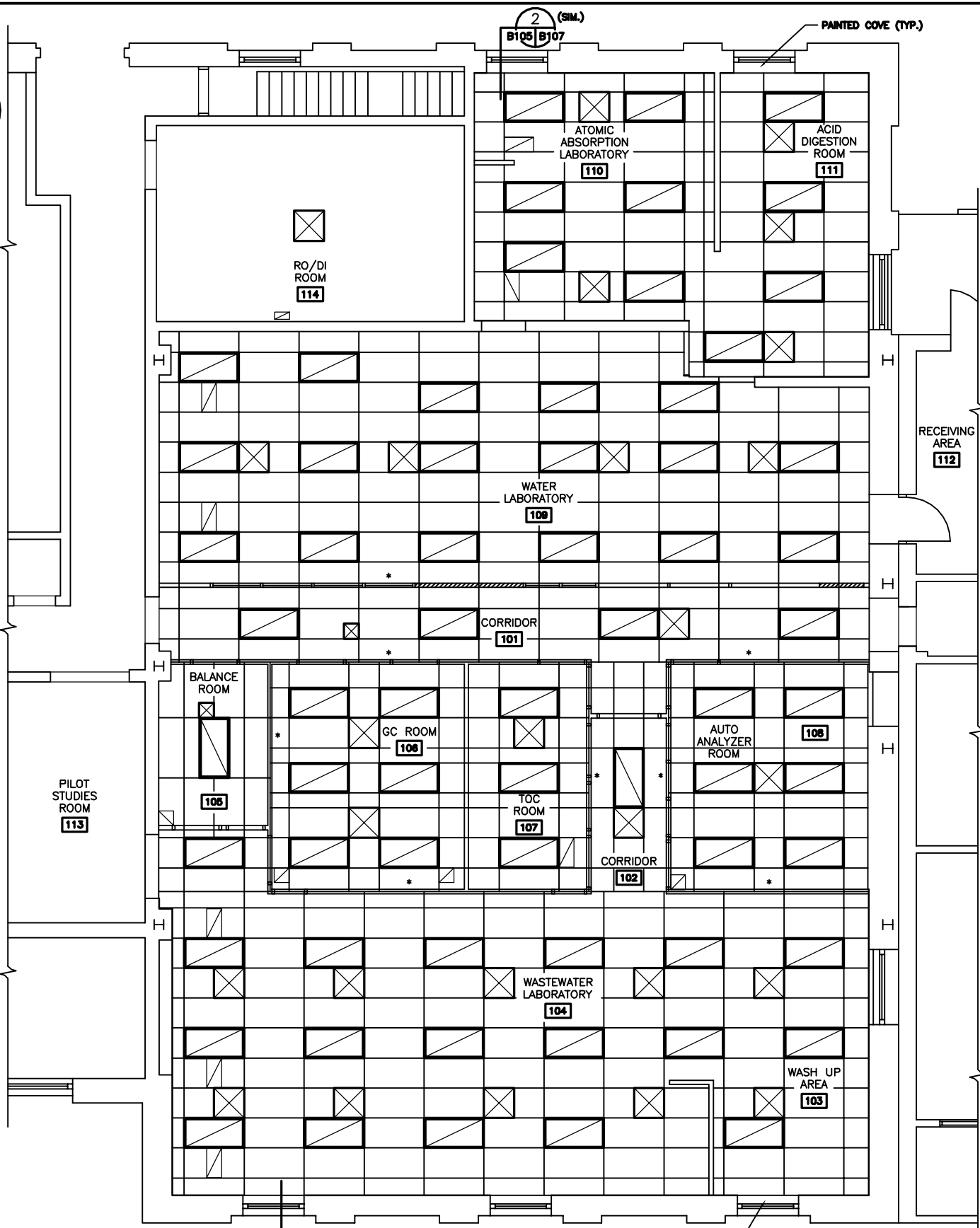
ORIGINAL DRAWING REVISION "0" SEALED BY D.J. KRAMEL 96.02.27

CONSULTANT DRAWING NO. 940012-03-00-B104

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
 LABORATORY RENOVATIONS - BUILDING
 PARTIAL FLOOR PLAN
 NEW LABORATORY LAYOUT AND SCHEDULES

CITY DRAWING NUMBER SHEET OF
 NEP-2291



- LEGEND:**
- FLUORESCENT LIGHT FIXTURE
 - SUPPLY AIR GRILLE
 - RETURN AIR GRILLE

NOTES:

- WALLS DENOTED WITH "*" HAVE CEILING SUSPENSION "TEE" RUNNING ALONG CENTER LINE OF WALL.
- REFER TO ELECTRICAL DRAWINGS FOR LIGHT FIXTURES AND LENSES.

1 REFLECTED CEILING PLAN
1 : 50

AS CONSTRUCTED
DATE 97.05.12 BY D.L.P.
APPROVED BY _____

B.M. ELEV.		WARDROP ENGINEERING INC. WINNIPEG TORONTO SUDBURY ONT.	
DESIGNED BY	M.F.	CHECKED BY	
DRAWN BY	D.L.P.	APPROVED BY	
1 AS CONSTRUCTED	97.05.12 M.F.	HOR. SCALE:	1 : 50
0 ISSUED FOR TENDER	96/02 M.F.	VERTICAL:	
- ISSUED FOR CITY REVIEW	95.12.08 M.F.	RELEASED FOR CONSTRUCTION:	
NO. REVISIONS	DATE	DATE	96.02.23

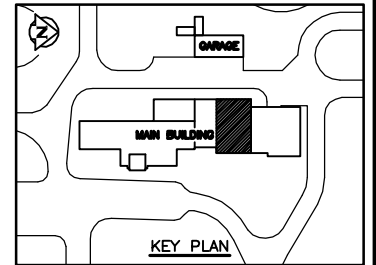
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REVISION "0" SEALED BY
D.J. KRAMBLE
96.02.27
CONSULTANT DRAWING NO.
940012-03-00-B105

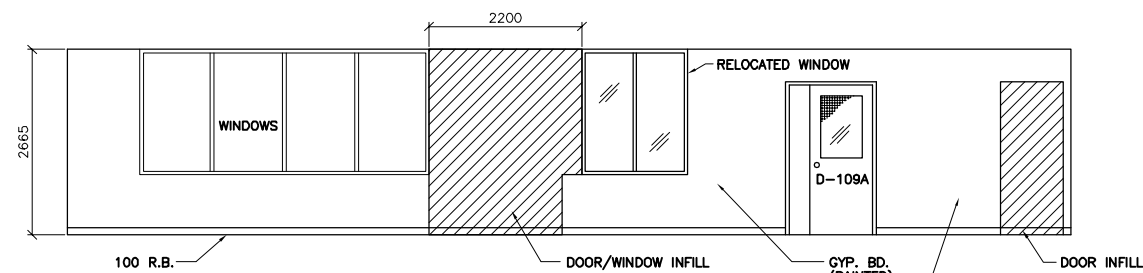
THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
LABORATORY RENOVATIONS - BUILDING

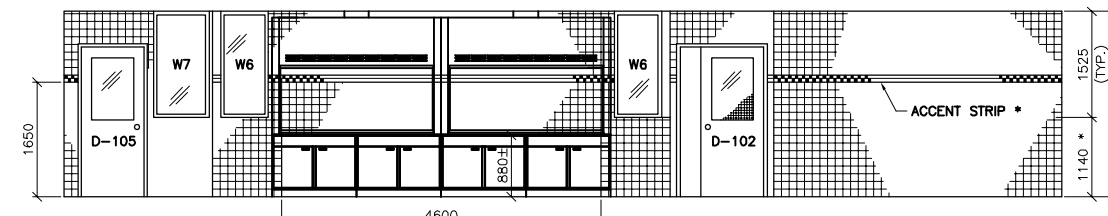
REFLECTED CEILING PLAN

CITY DRAWING NUMBER
SHEET OF
NEP-2292



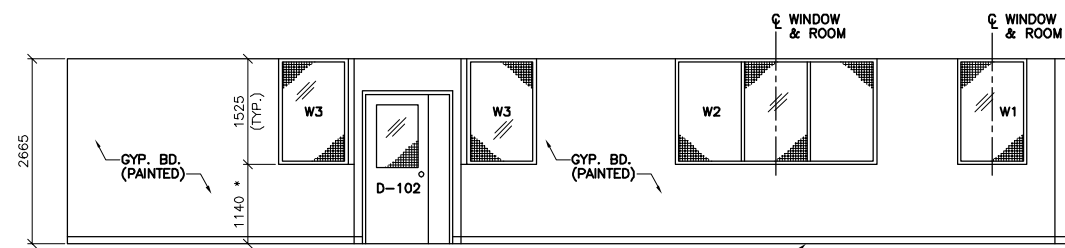


1 CORRIDOR 101 - WEST ELEVATION
B104 | B106 1 : 50



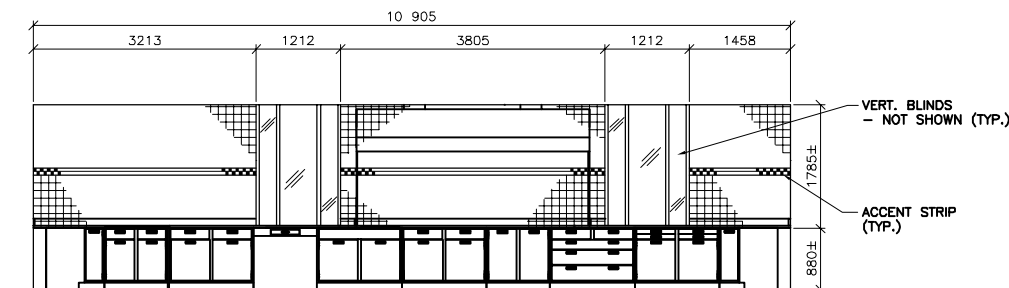
8 WASTEWATER LABORATORY - WEST ELEVATION
B104 | B106 1 : 50

* ACCENT STRIP:
ALTERNATE GREY AND RASPBERRY
TILES AS SHOWN. TYPICAL AROUND
ROOMS 102, 103 AND 104.



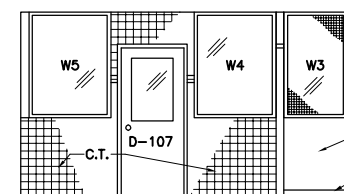
2 CORRIDOR 101 - EAST ELEVATION
B104 | B106 1 : 50

* 1140 TO U/S
ALUM. FRAME

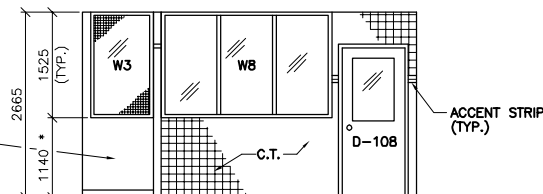


9 WASTEWATER LABORATORY - EAST ELEVATION
B104 | B106 1 : 50

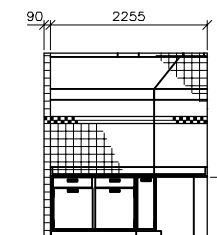
NOTE:
LAB FURNITURE SHOWN
FOR REFERENCE ONLY.
REFER TO DETAILED LAB
FURNITURE DRAWINGS IN
SPECIFICATION.



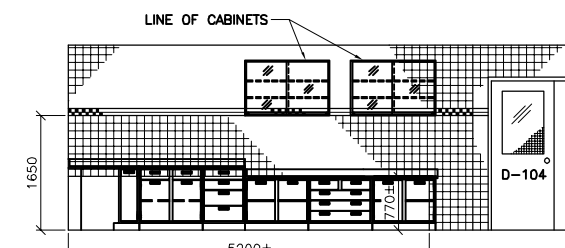
3 CORRIDOR 102 - SOUTH ELEVATION
B104 | B106 1 : 50



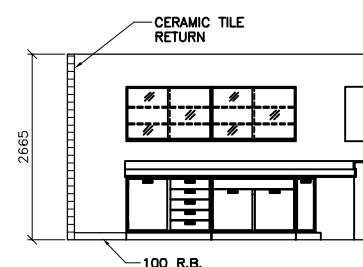
4 CORRIDOR 102 - NORTH ELEVATION
B104 | B106 1 : 50



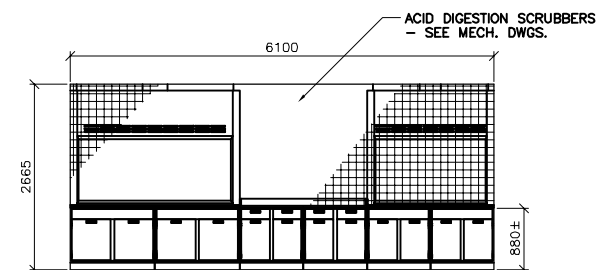
10 WASTEWATER LABORATORY - NORTH ELEVATION
B104 | B106 1 : 50



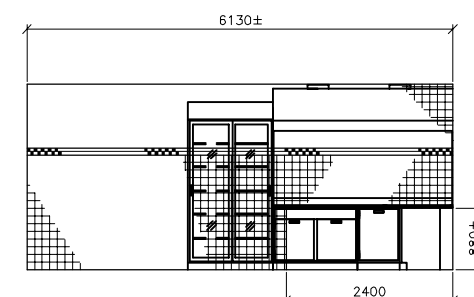
11 WASTEWATER LABORATORY - SOUTH ELEVATION
B104 | B106 1 : 50



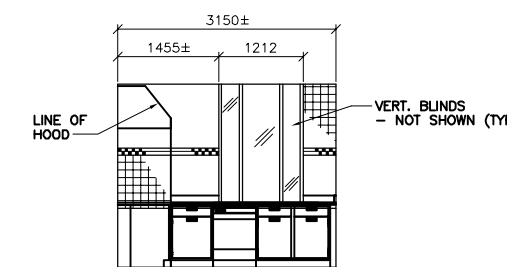
5 ATOMIC ABSORPTION LABORATORY - EAST ELEVATION
B104 | B106 1 : 50



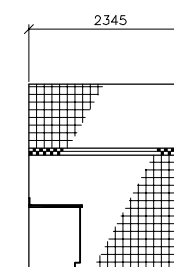
6 ACID DIGESTION ROOM - NORTH ELEVATION
B104 | B106 1 : 50



12 WASH UP AREA - NORTH ELEVATION
B104 | B106 1 : 50



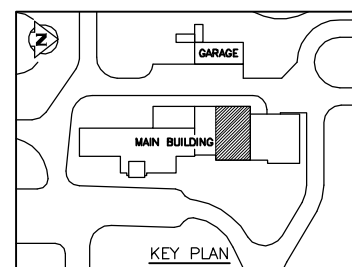
13 WASH UP AREA - EAST ELEVATION
B104 | B106 1 : 50



14 WASH UP AREA - SOUTH ELEVATION
B104 | B106 1 : 50

NOTE:
DIMENSIONS SHOWN
ARE APPROXIMATE.

AS CONSTRUCTED
DATE 97.05.12 BY D.L.P.
APPROVED BY _____



REVISIONS			DESIGNED BY			CHECKED BY		
NO.	REVISIONS	DATE	BY	DATE	BY	DATE	BY	DATE
1	AS CONSTRUCTED	97.05.12	M.F.					
0	ISSUED FOR TENDER	96/02	M.F.					
	ISSUED FOR CITY REVIEW	95.12.08	M.F.					

ENGINEER'S SEAL	DESIGNED BY	DATE
ORIGINAL DRAWING REVISION "0" SEALED BY D.J. KRAMBLE 96.02.27	M.F.	
CONSULTANT DRAWING NO. 940012-03-00-B106	APPROVED BY	DATE
	D.L.P.	96.02.23

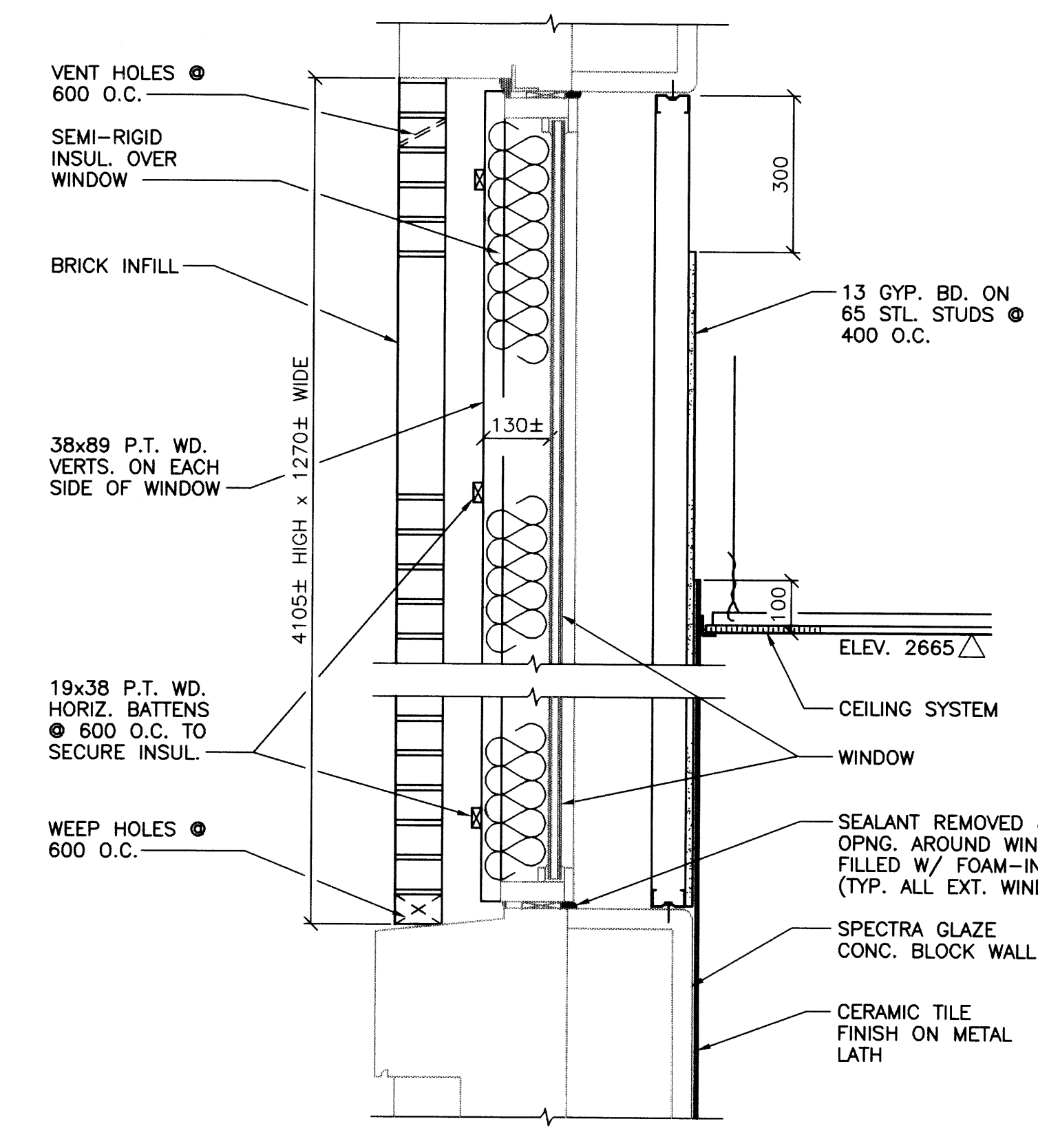
THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
LABORATORY RENOVATIONS - BUILDING

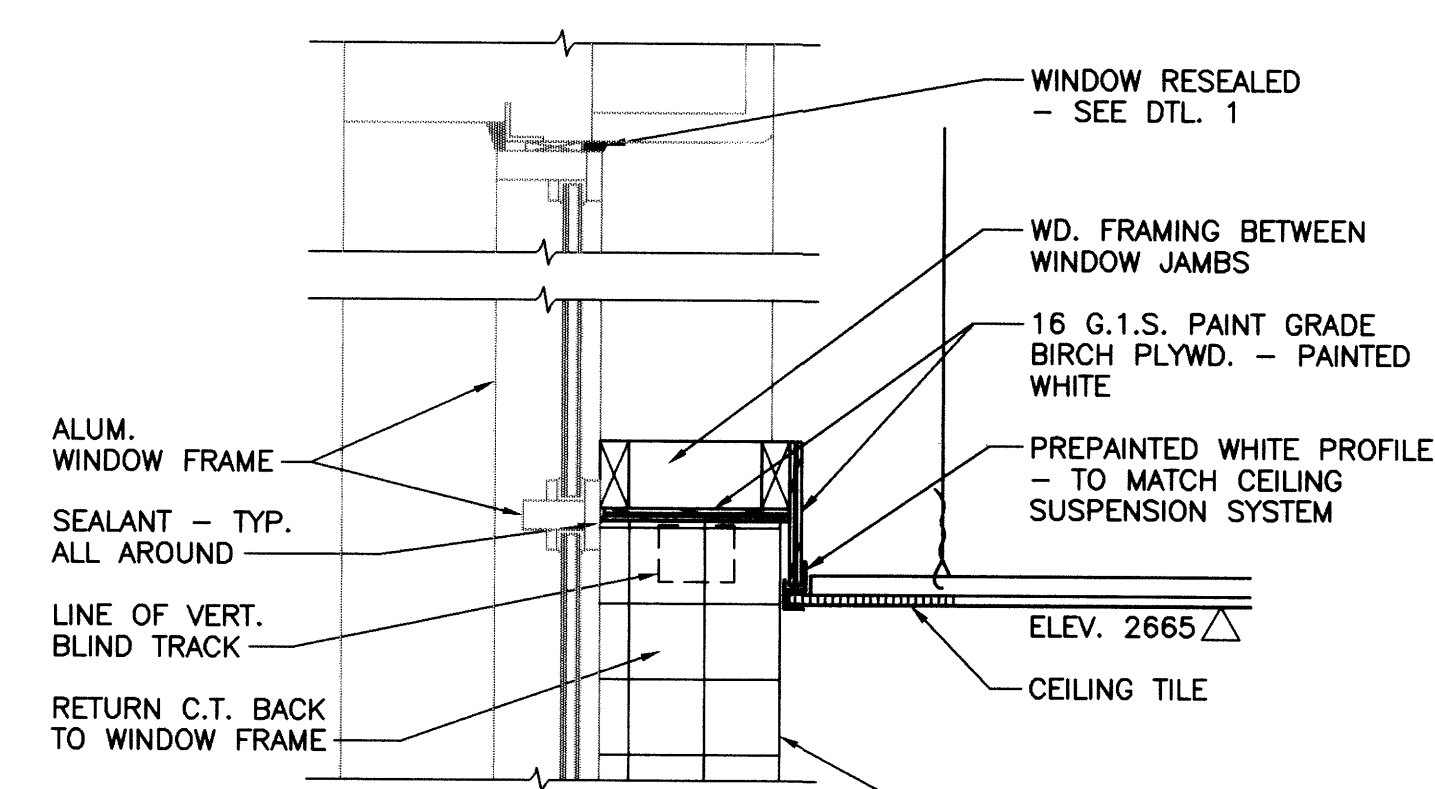
INTERIOR ELEVATIONS

CITY DRAWING NUMBER
SHEET OF
NEP-2293

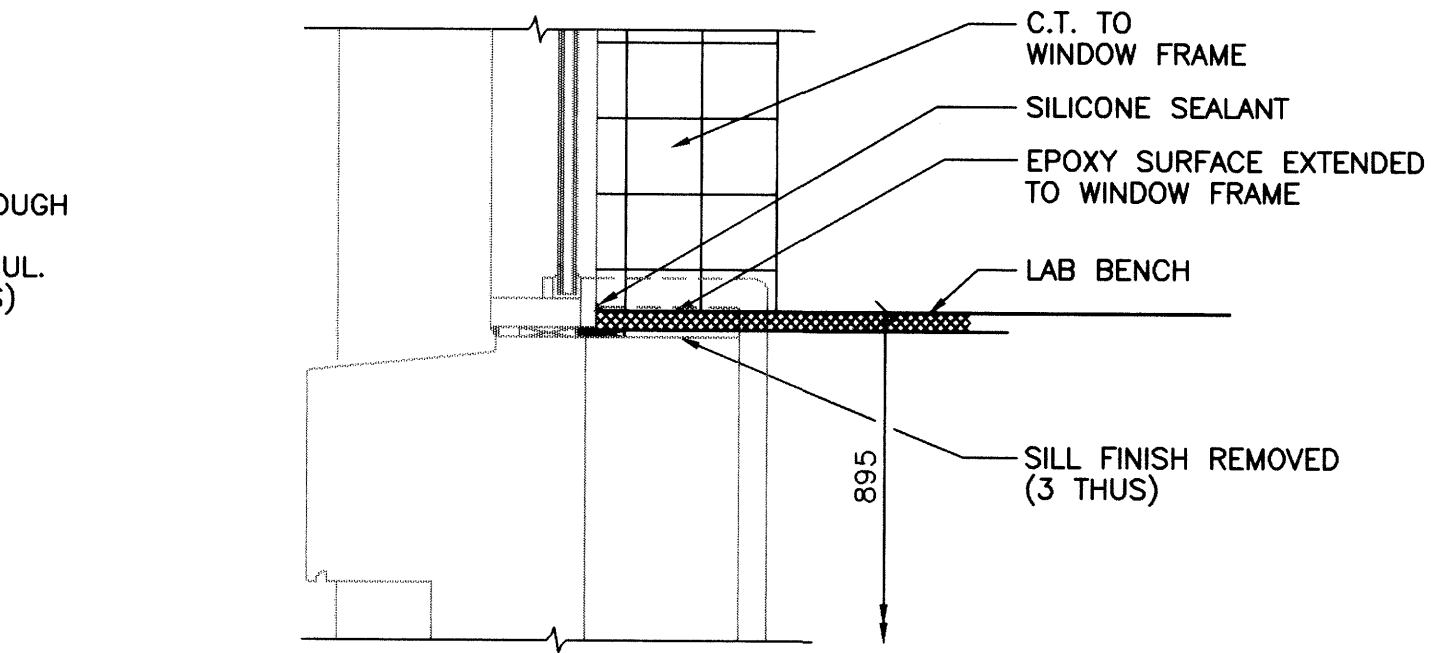
NEP-2294



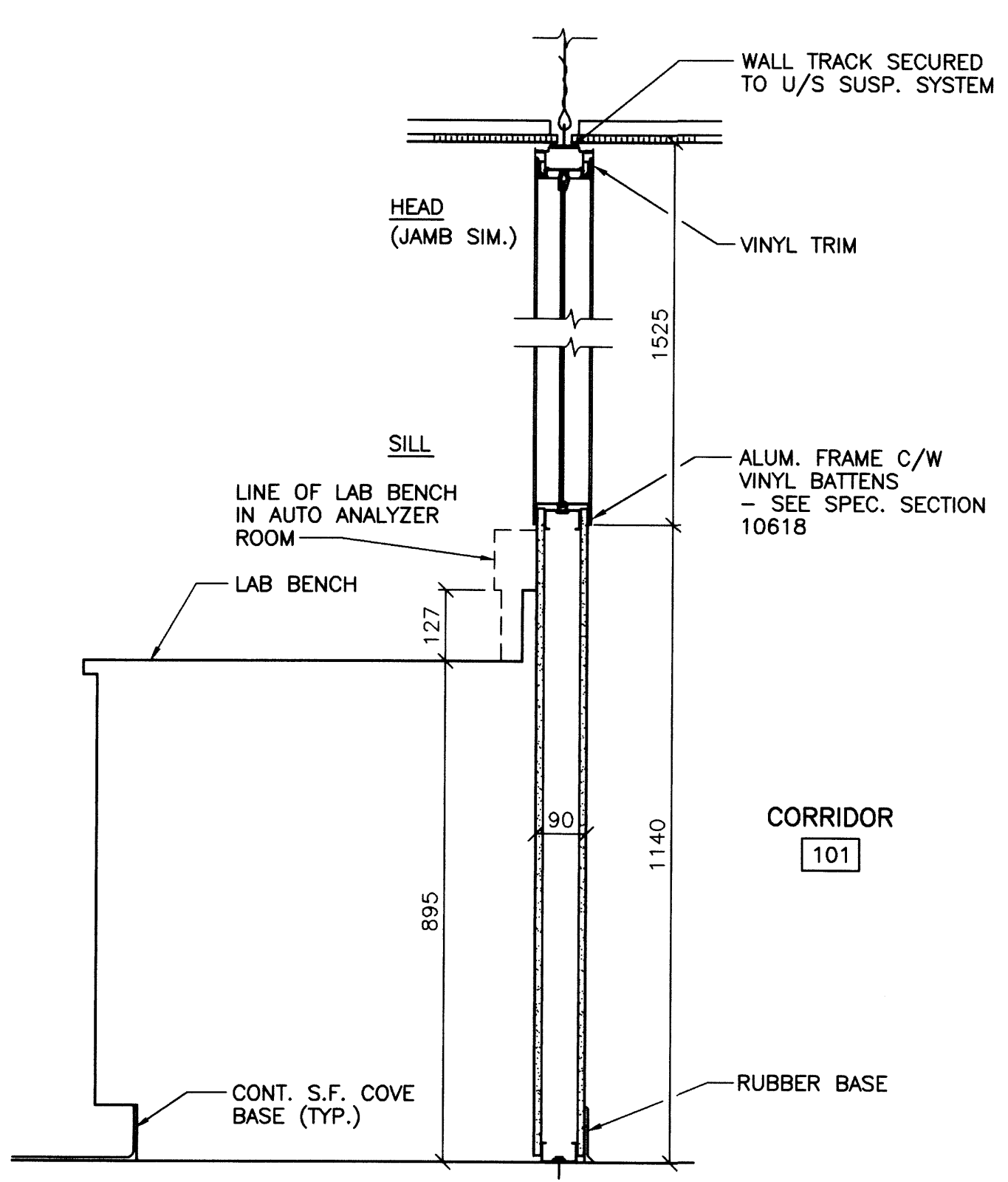
1 WINDOW INFILL DETAIL - ROOM 111
B104 B107 1:10



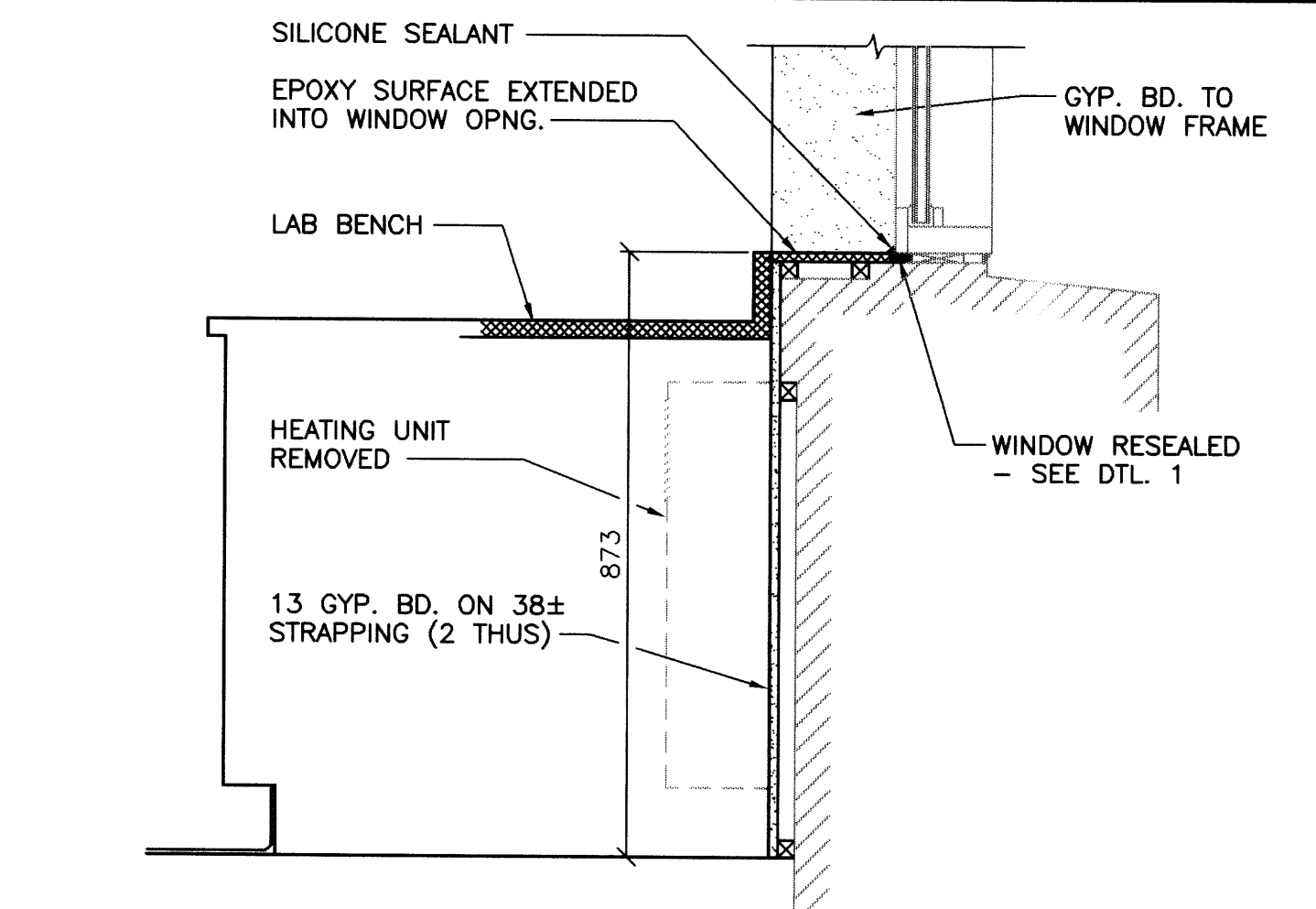
2 WINDOW COVE DETAIL
B104 B107 1:10



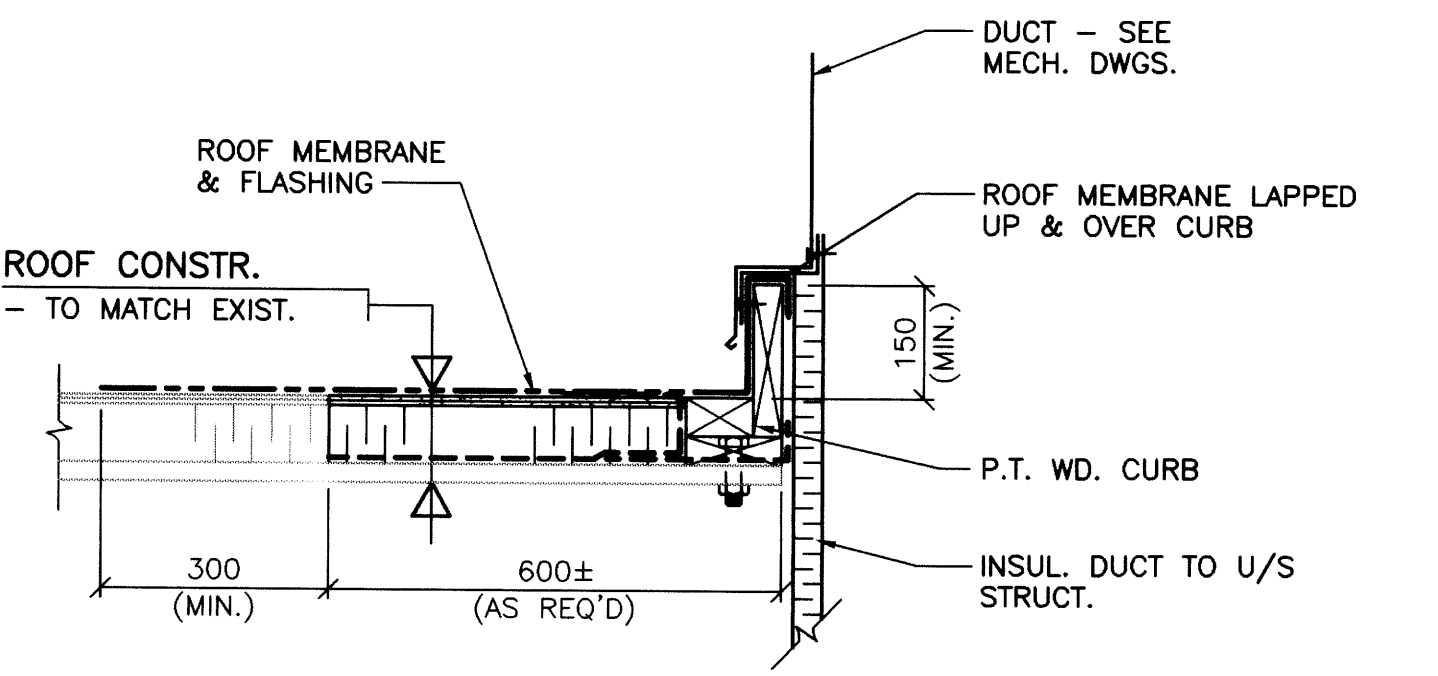
2A SECTION THRU EXIST. EXT. WINDOW - ROOM 104
B104 B107 1:10



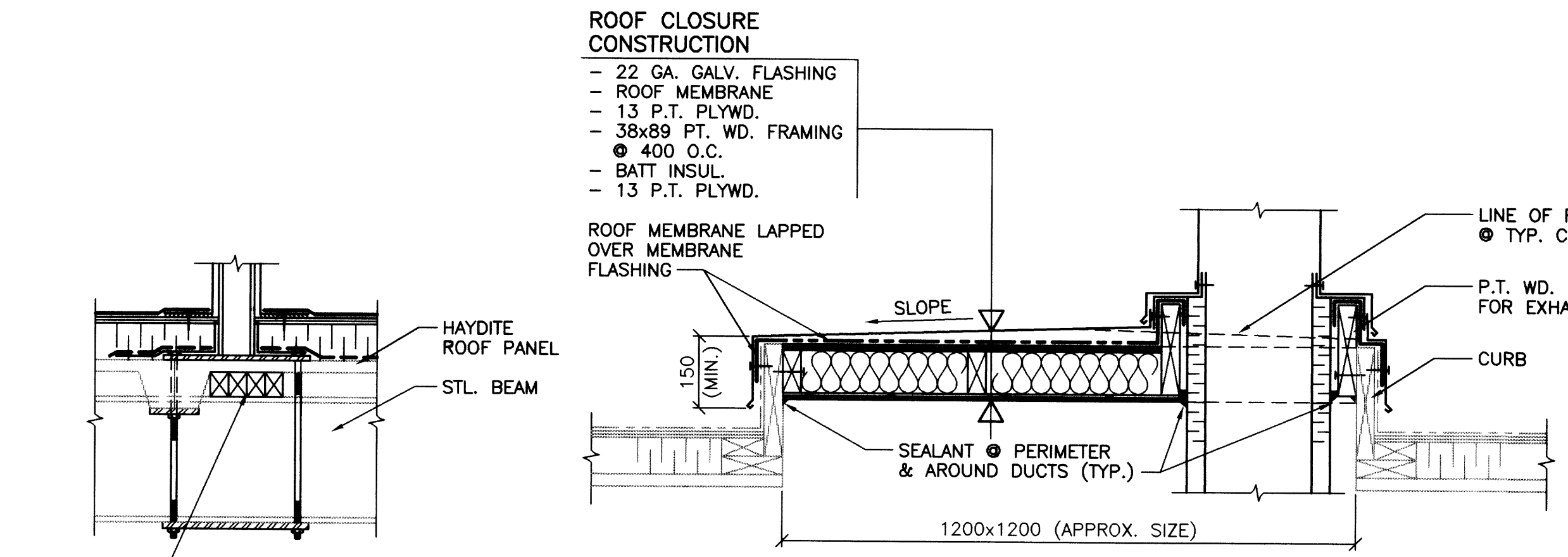
3 SECTION THRU NEW INTERIOR WALL
B104 B107 1:10



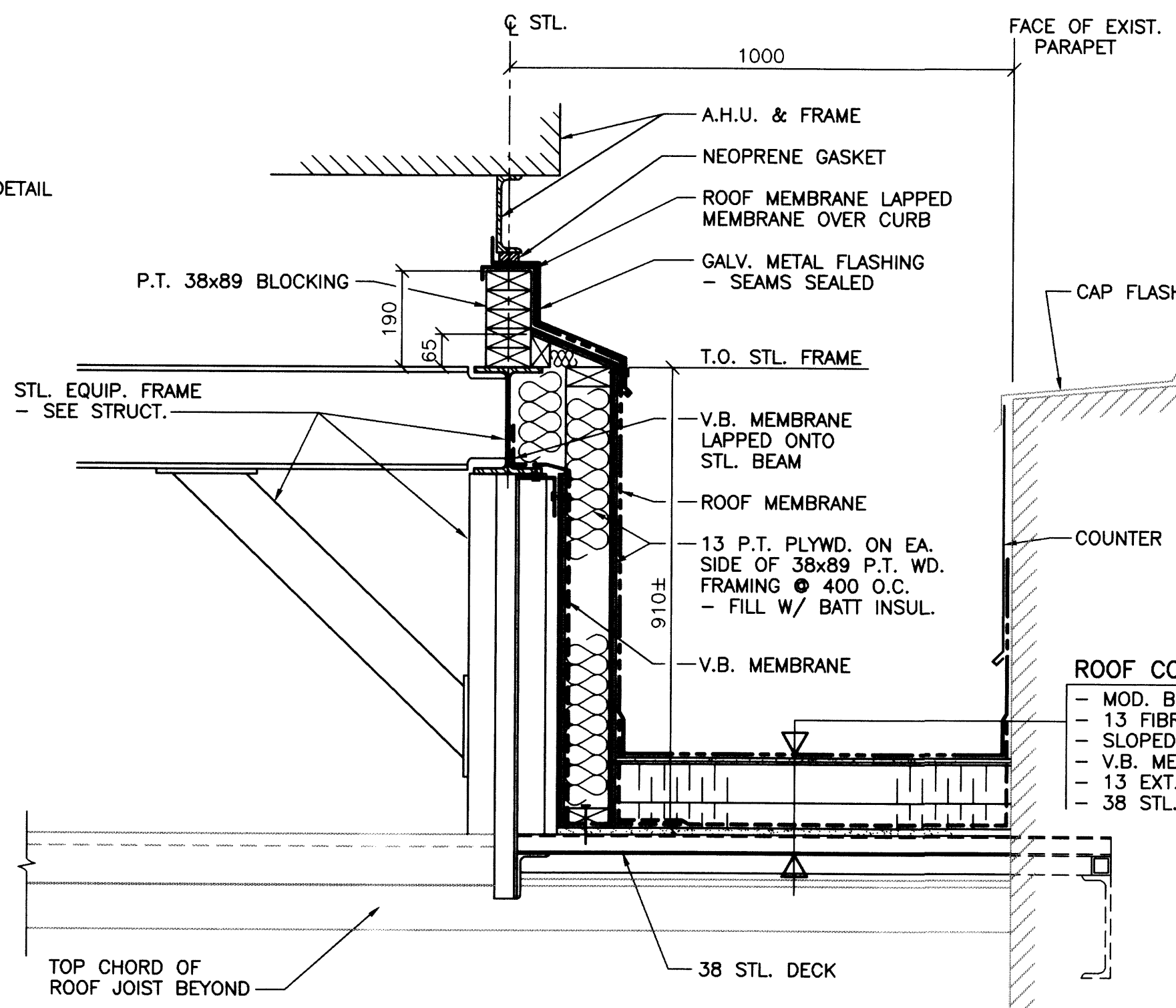
4 SECTION THRU EXIST. EXT. WINDOW - ROOM 110
B104 B107 1:10



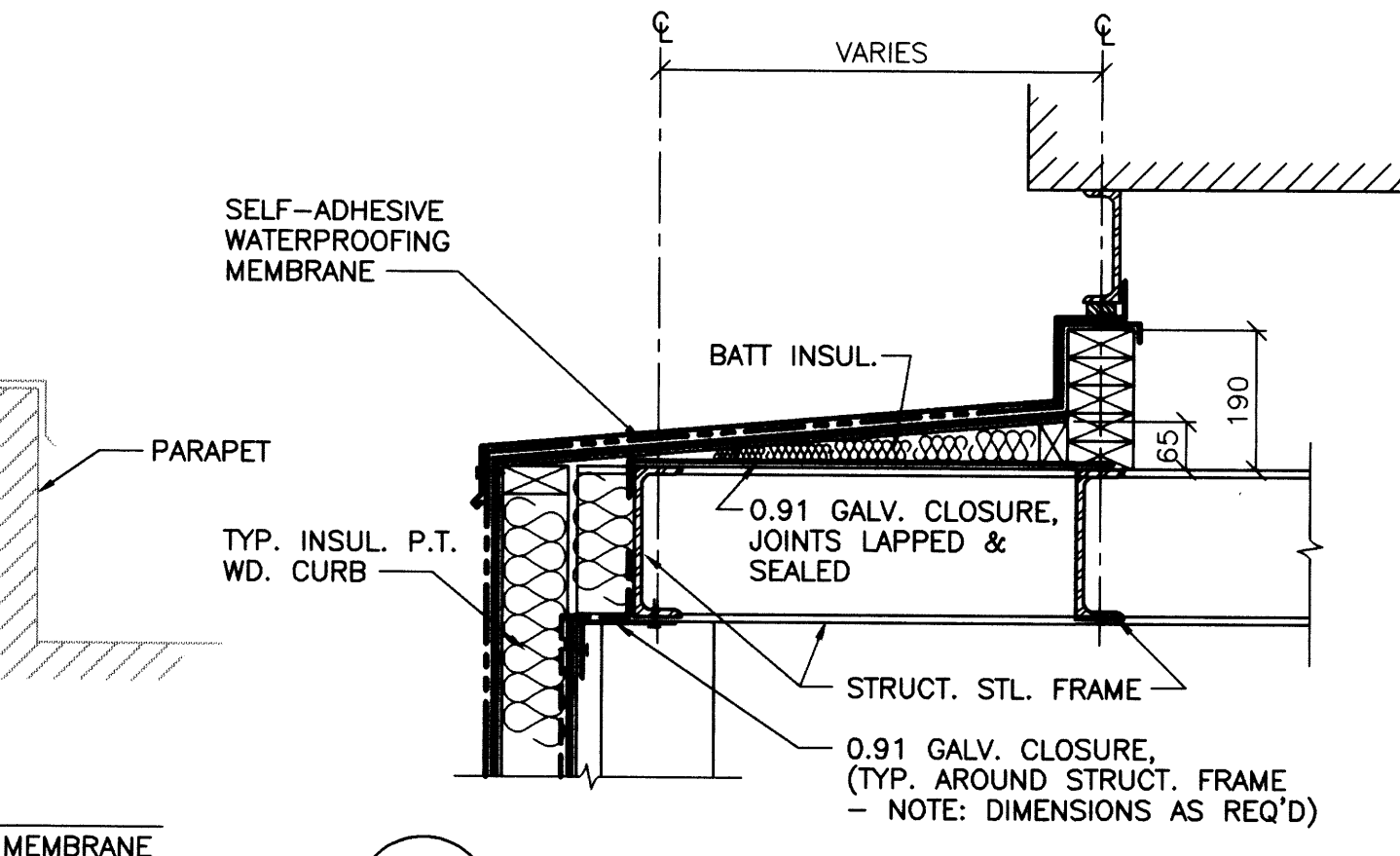
5 MECHANICAL DUCT OPENING
B103 B107 1:10



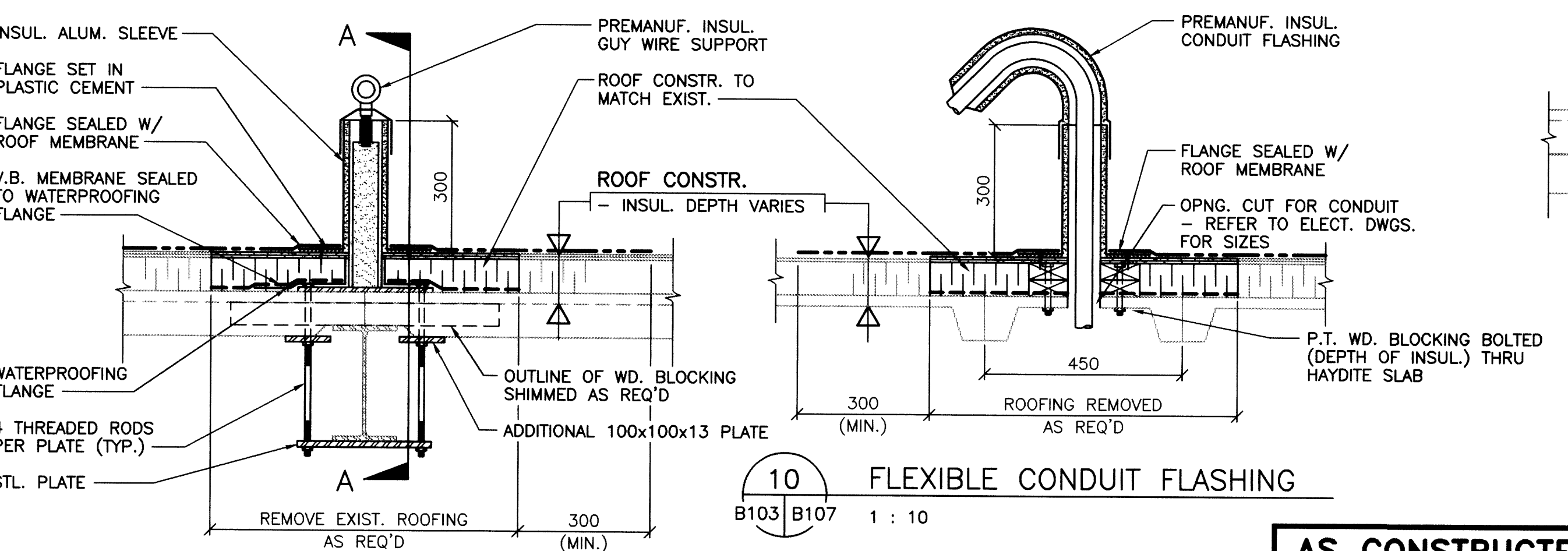
6 NEW DUCT THRU EXIST. OPNG.
B103 B107 1:10
- DETAIL SIMILAR FOR EXISTING ROOF OPENINGS TO BE CLOSED OFF.



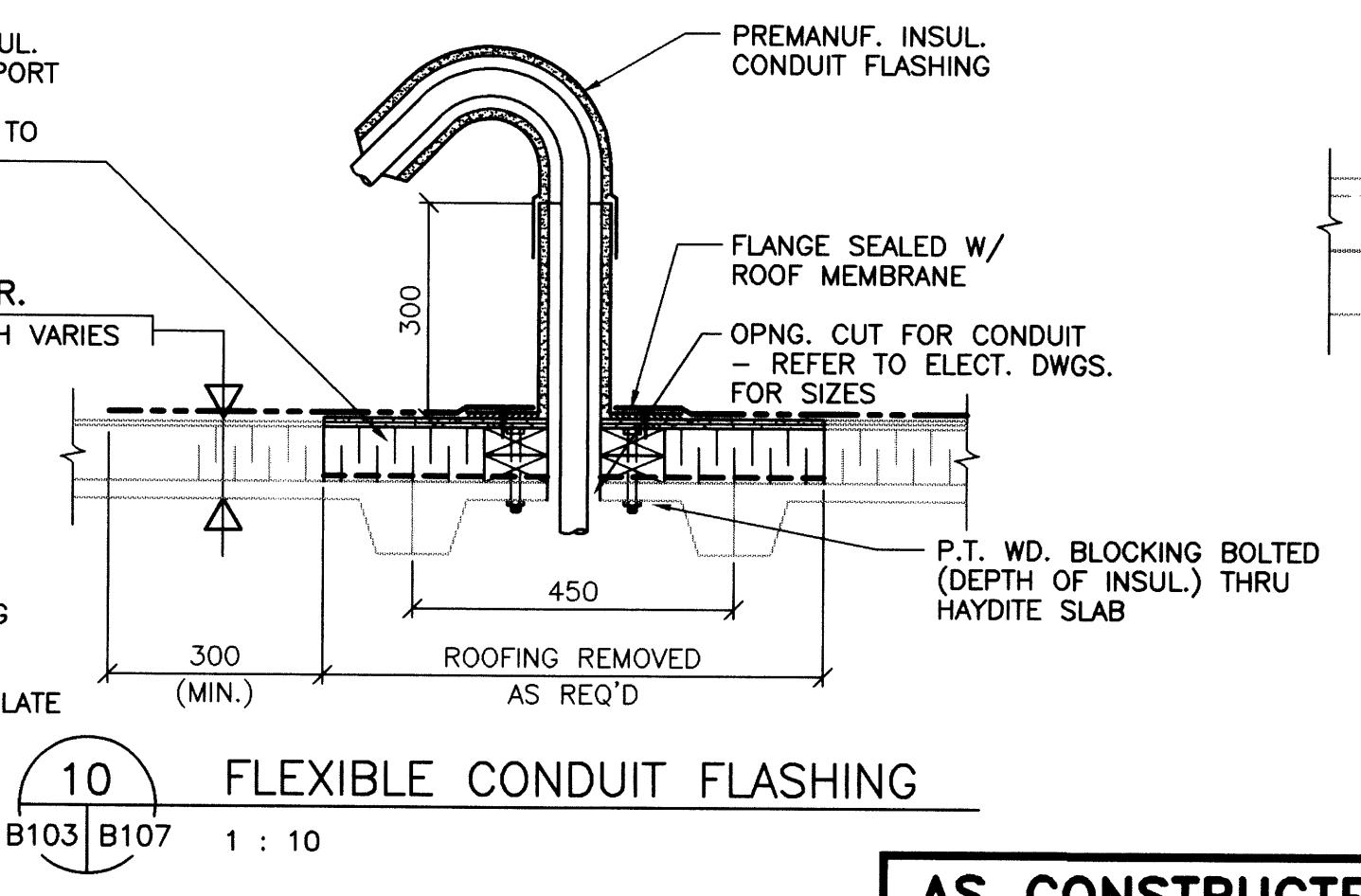
7 EQUIPMENT CURB DETAIL
B103 B107 1:10



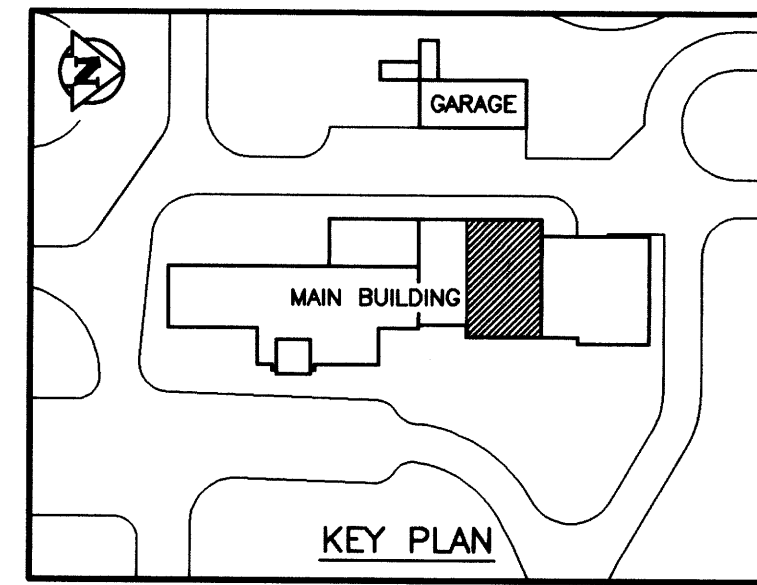
8 HORIZONTAL FLASHING DETAIL
B103 B107 1:10



9 GUY WIRE SUPPORT
B103 B107 1:10



10 FLEXIBLE CONDUIT FLASHING
B103 B107 1:10

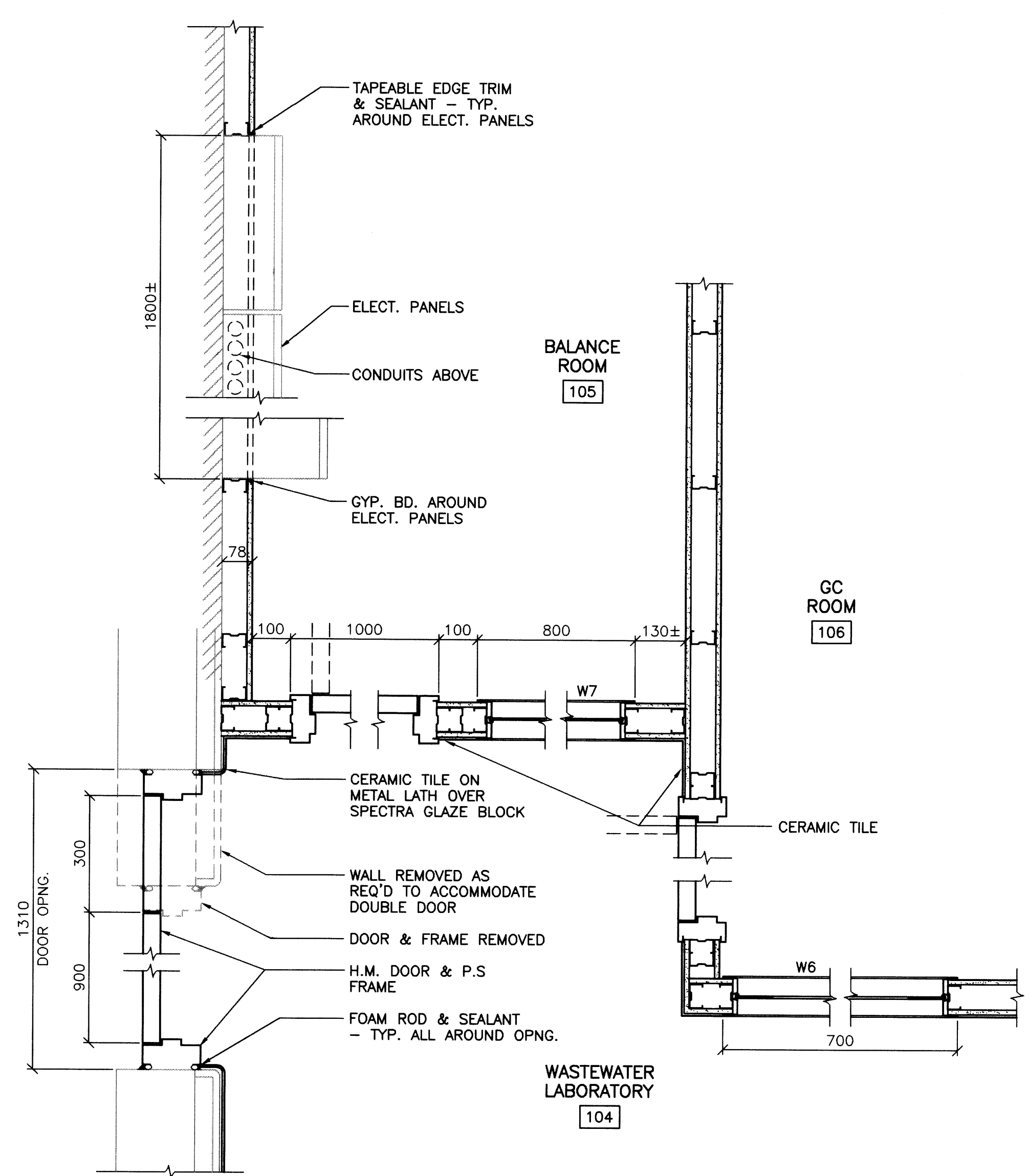


NOTE: DIMENSIONS SHOWN ARE APPROXIMATE.

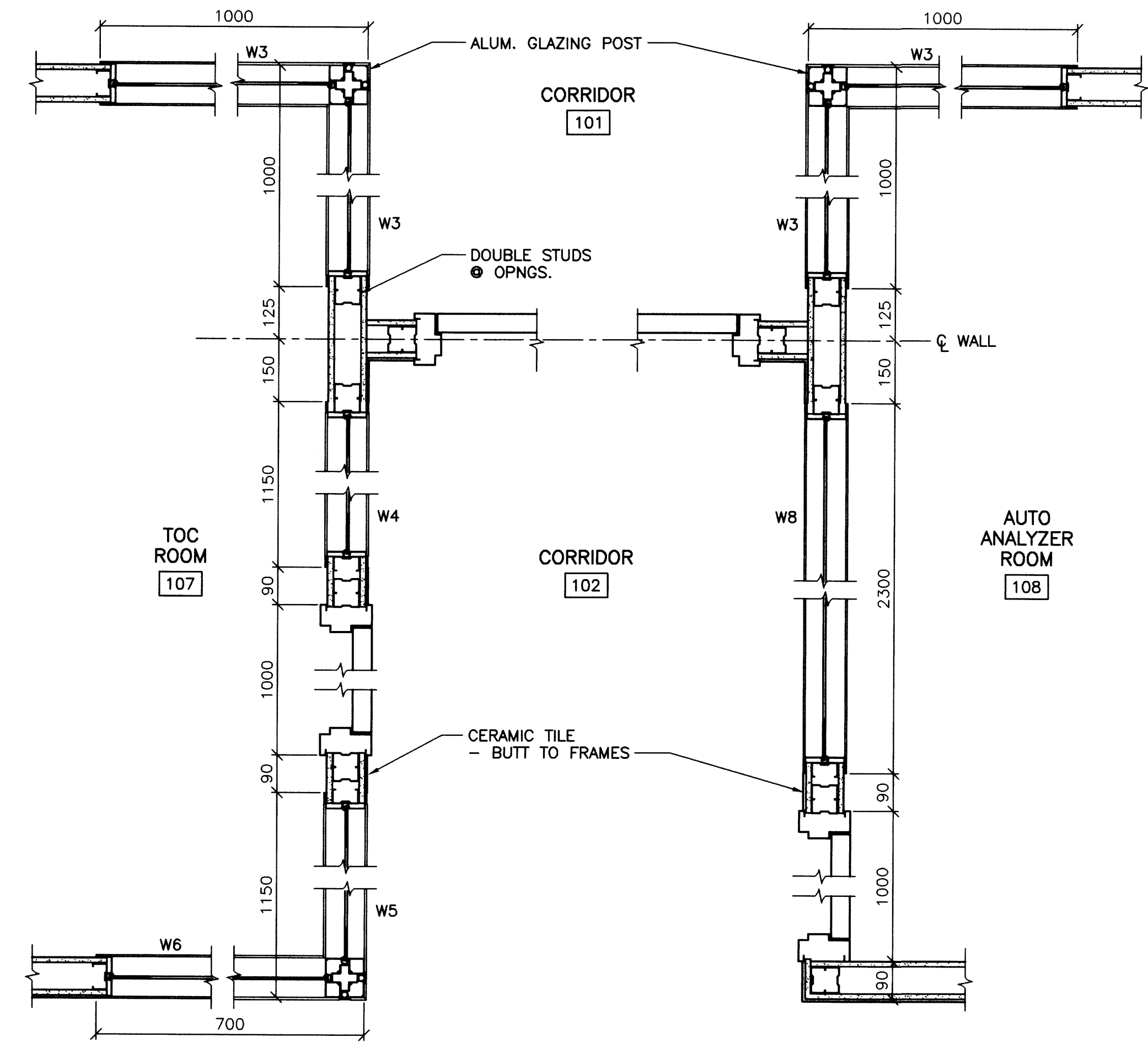
AS CONSTRUCTED
DATE 97.05.12 BY D.L.P.
APPROVED BY _____

B.M. ELEV.					
WARDROP ENGINEERING INC.					
DESIGNED BY	M.F.	CHECKED BY		ENGINEER'S SEAL	
DRAWN BY	D.L.P.	APPROVED BY		ORIGINAL DRAWING REVISION "0" SEALED BY D.J. KRAMBLE 96.02.27	
1 AS CONSTRUCTED	97.05.12	M.F.		CONSULTANT DRAWING NO. 940012-03-00-B107	
0 ISSUED FOR TENDER	96/02	M.F.		MISCELLANEOUS DETAILS	
- ISSUED FOR CITY REVIEW	95.12.08	M.F.		NORTH END WATER POLLUTION CONTROL CENTRE	
NO. REVISIONS	DATE	BY	DATE	96.02.23	

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATER AND WASTE DEPARTMENT
LABORATORY RENOVATIONS - BUILDING
CITY DRAWING NUMBER
SHEET OF
NEP-2294

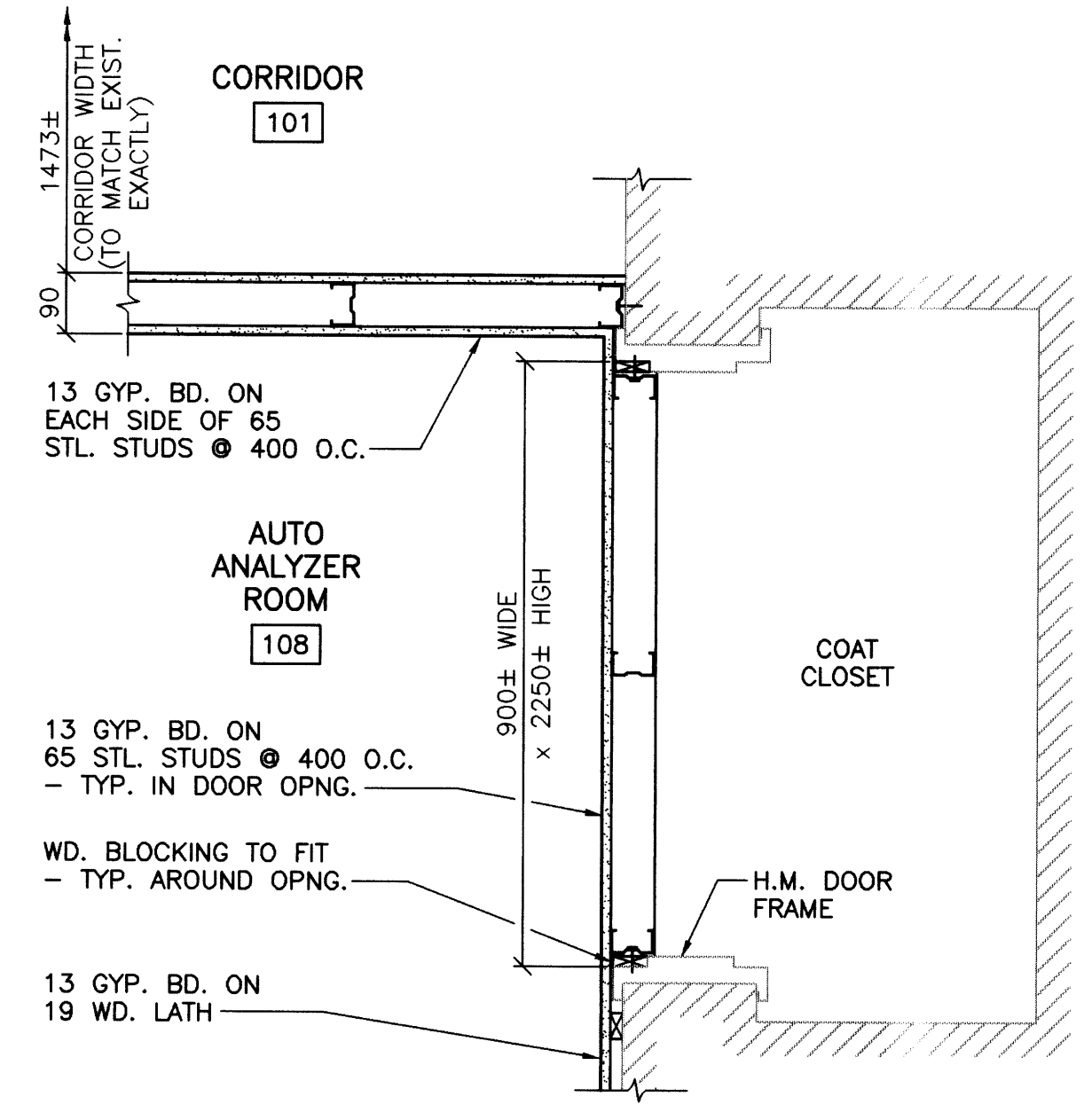


1 PLAN DETAIL
B104 B108 1:10

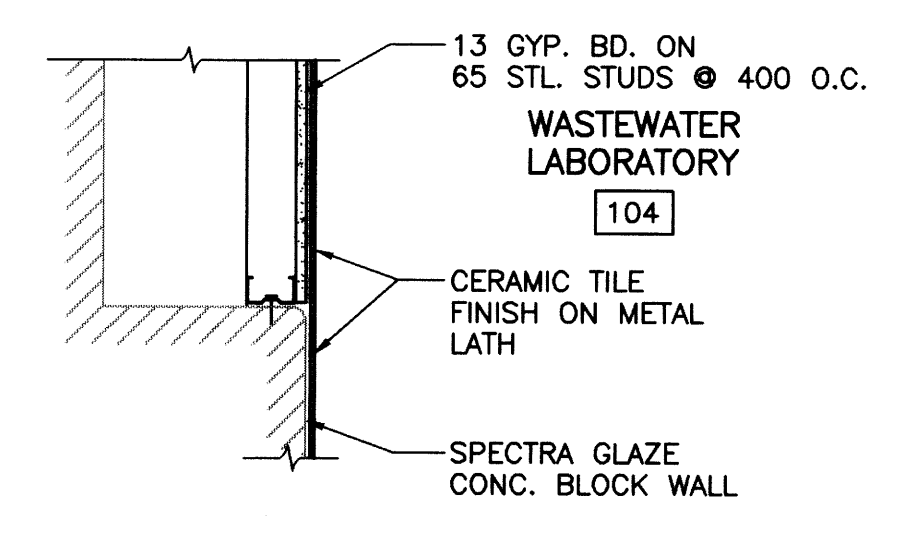


2 PLAN DETAIL
B104 B108 1:10

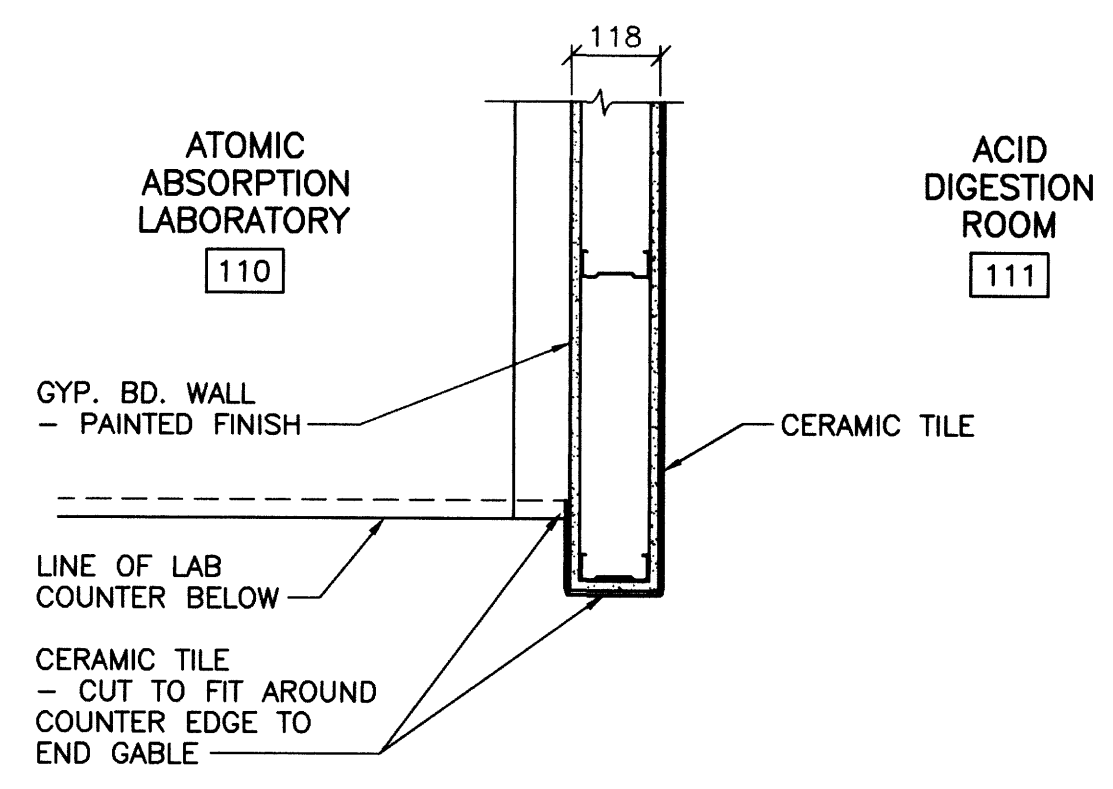
3 PLAN DETAIL
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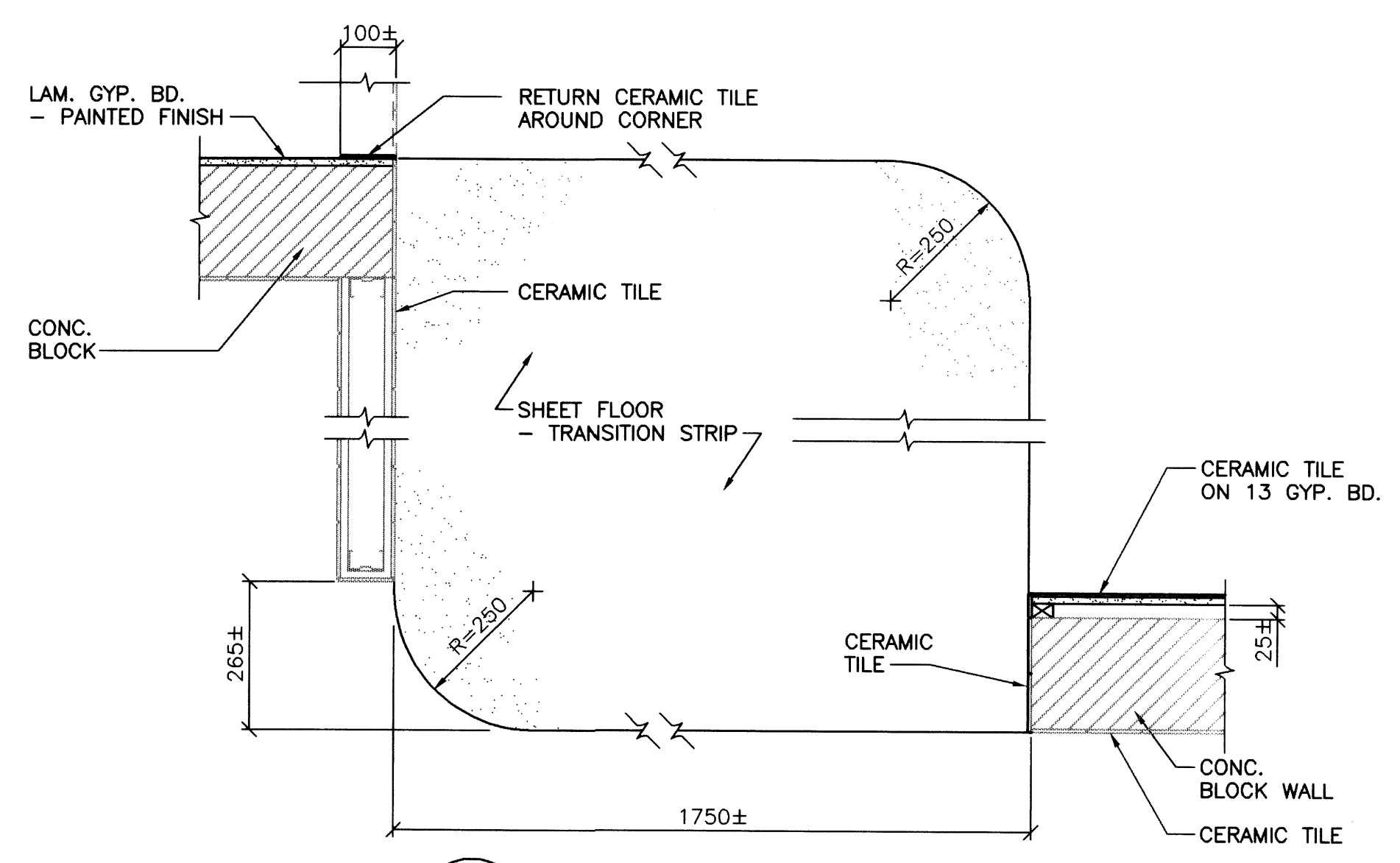
4 DOOR INFILL DETAIL
B104 B108 1:10



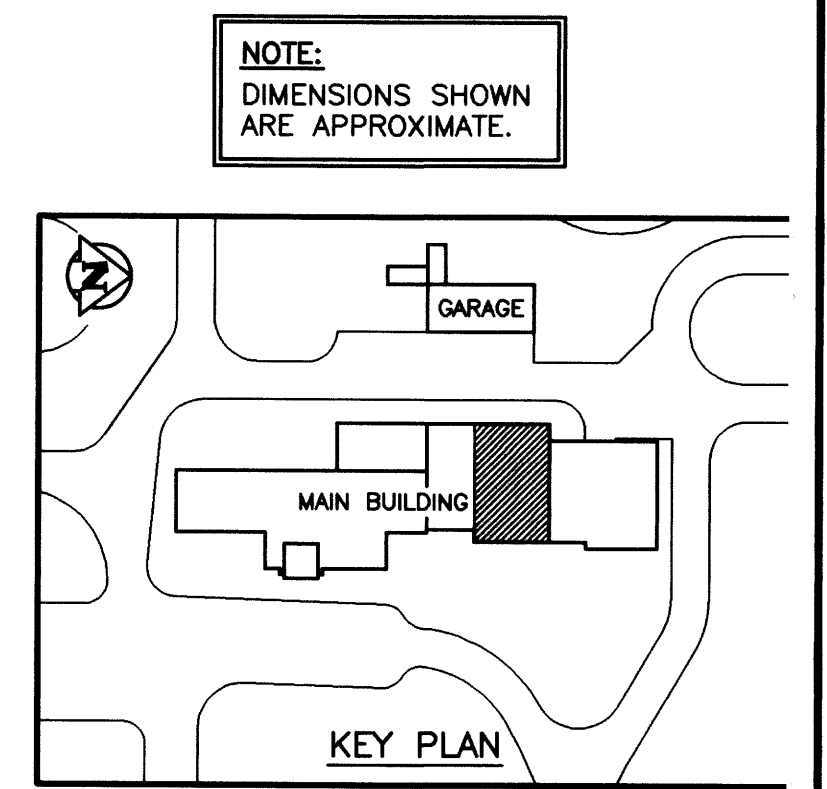
5 WALL INFILL DETAIL
B104 B108 1:10



6 PLAN DETAIL
B104 B108 1:10



7 PLAN DETAIL
B104 B108 1:10



AS CONSTRUCTED
DATE 97.05.12 BY D.L.P.
APPROVED BY _____

NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED	97.05.12	M.F.
0	ISSUED FOR TENDER	96/02	M.F.
-	ISSUED FOR CITY REVIEW	95.12.08	M.F.

WARDROP ENGINEERING INC.		ENGINEER'S SEAL	
DESIGNED BY	M.F.	CHECKED BY	
DRAWN BY	D.L.P.	APPROVED BY	
HOR. SCALE: 1:10		RELEASED FOR CONSTRUCTION:	
VERTICAL: 1:10		DATE 96.02.23	

ORIGINAL DRAWING REVISION "0" SEALED BY D.J. KRAMBLE 96.02.27	CONSULTANT DRAWING NO. 940012-03-00-B108
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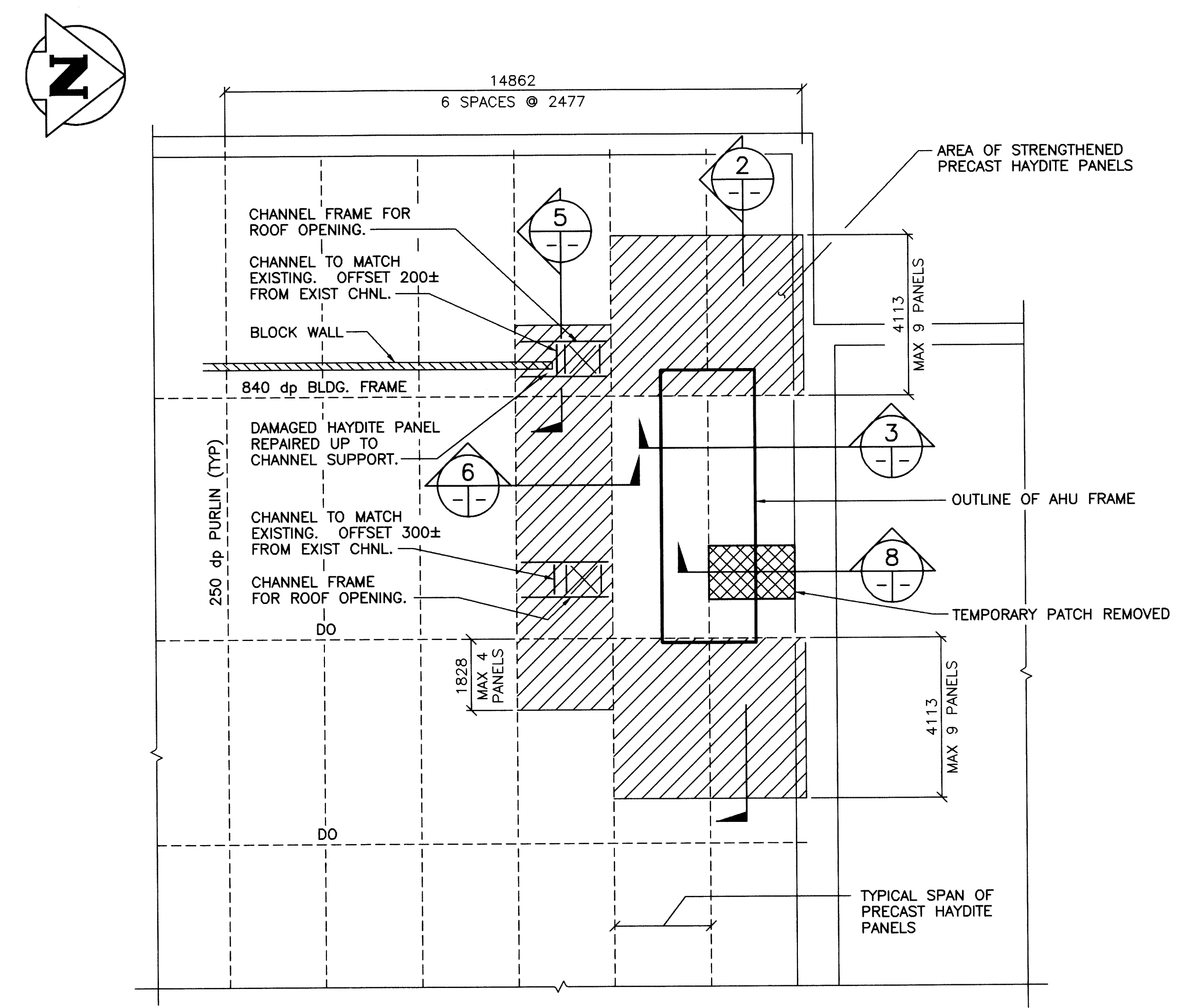
THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
LABORATORY RENOVATIONS - BUILDING

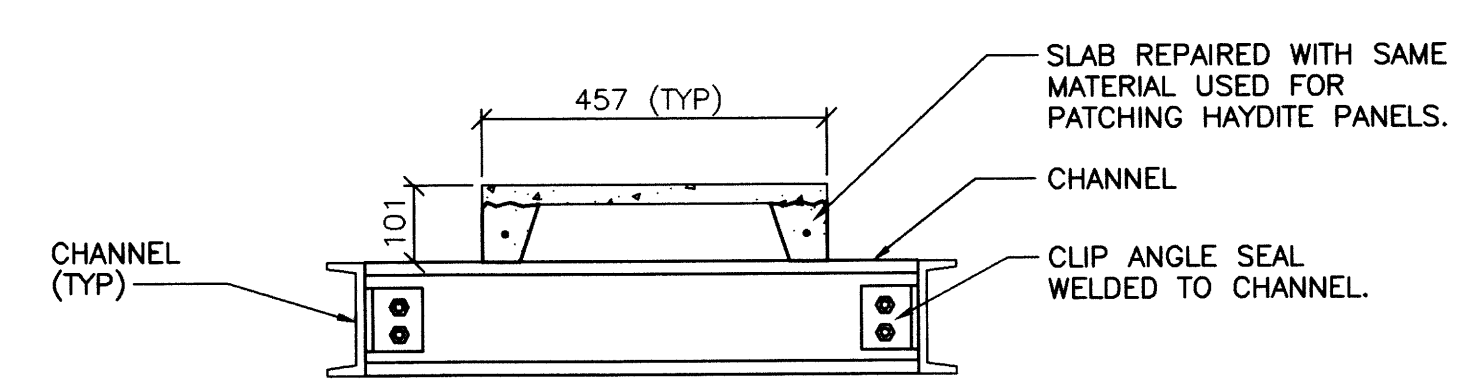
INTERIOR WALL DETAILS

CITY DRAWING NUMBER: _____
SHEET OF: _____
NEP-2295

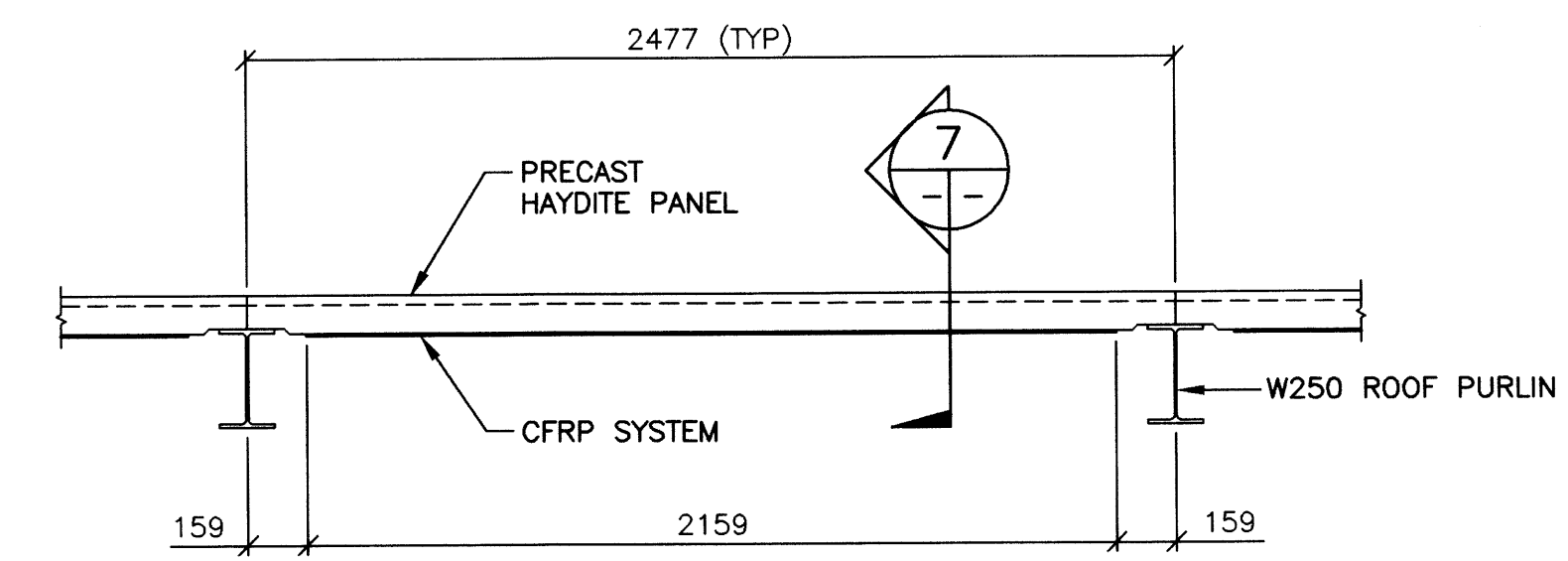
NEP-2296



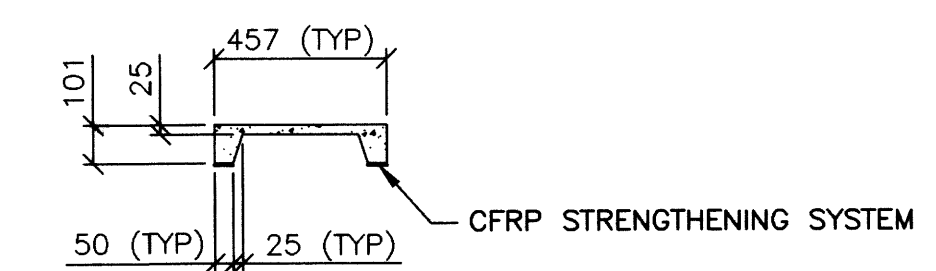
1 MAIN BUILDING ROOF PLAN
1 : 100



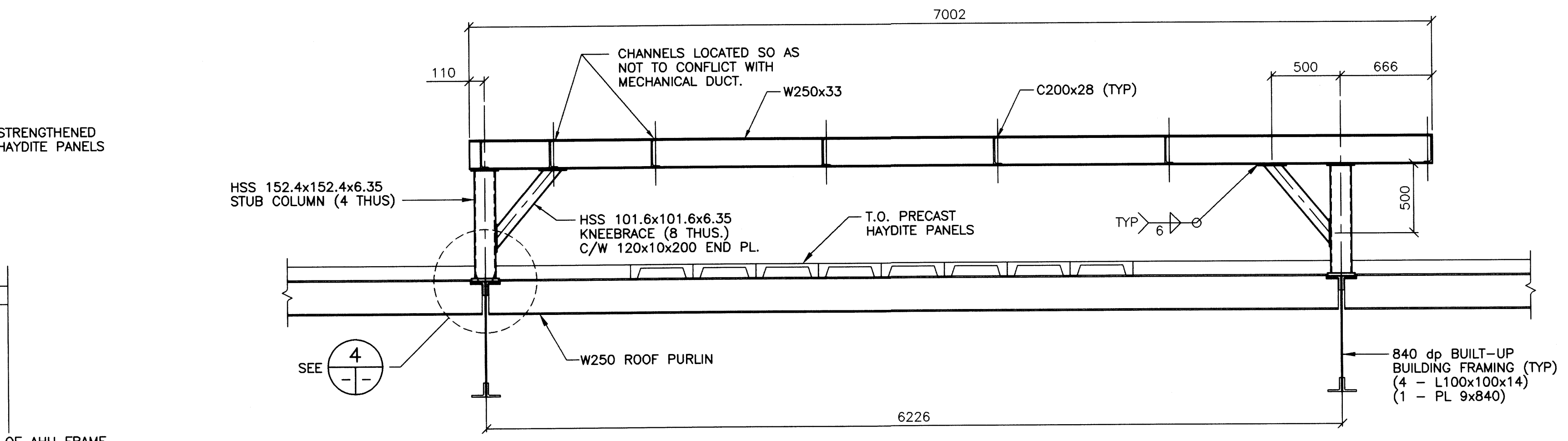
5 HAYDITE PANEL - SECTION
N.T.S.



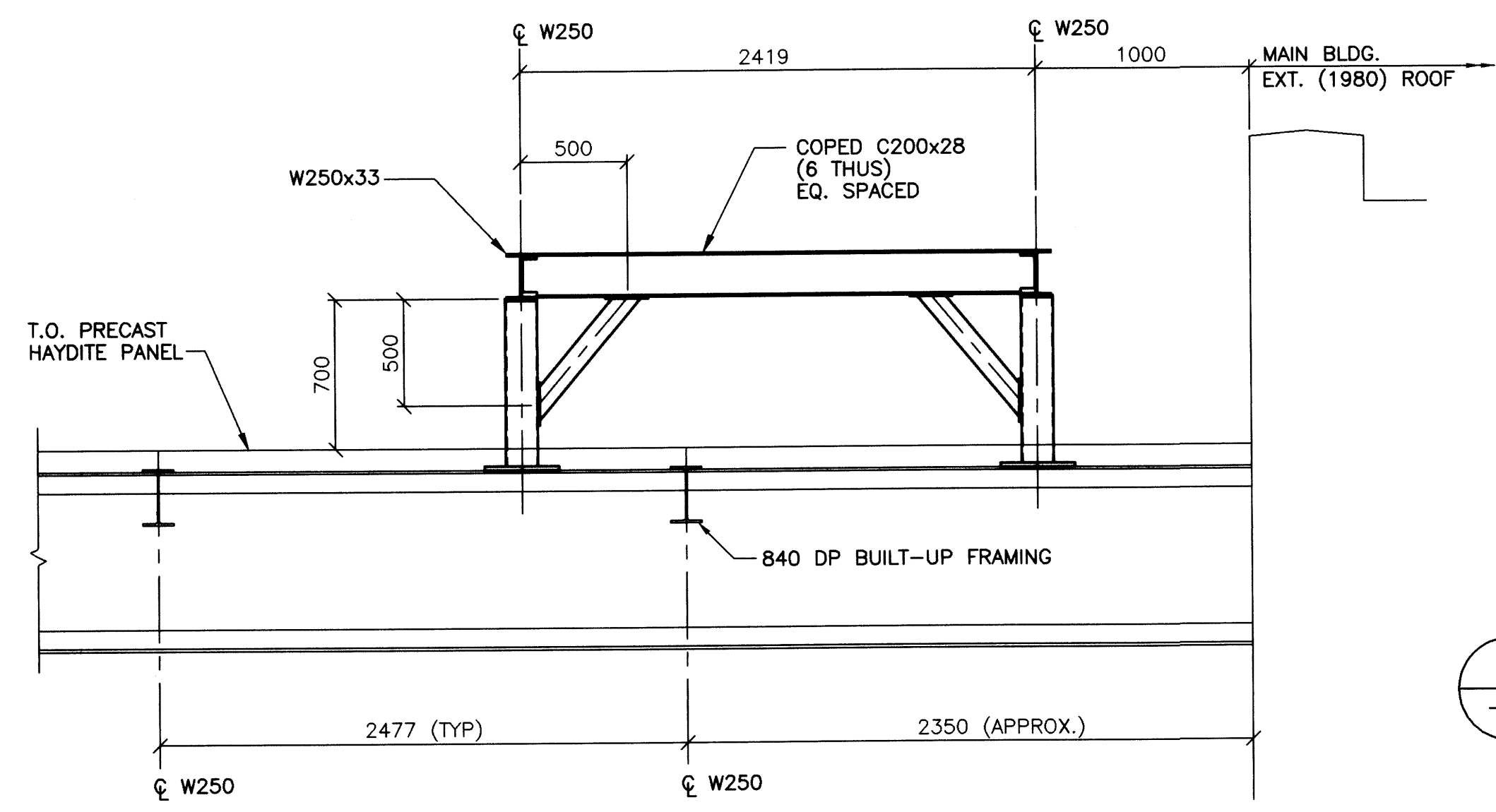
6 TYPICAL HAYDITE PANEL - SECTION
1 : 20



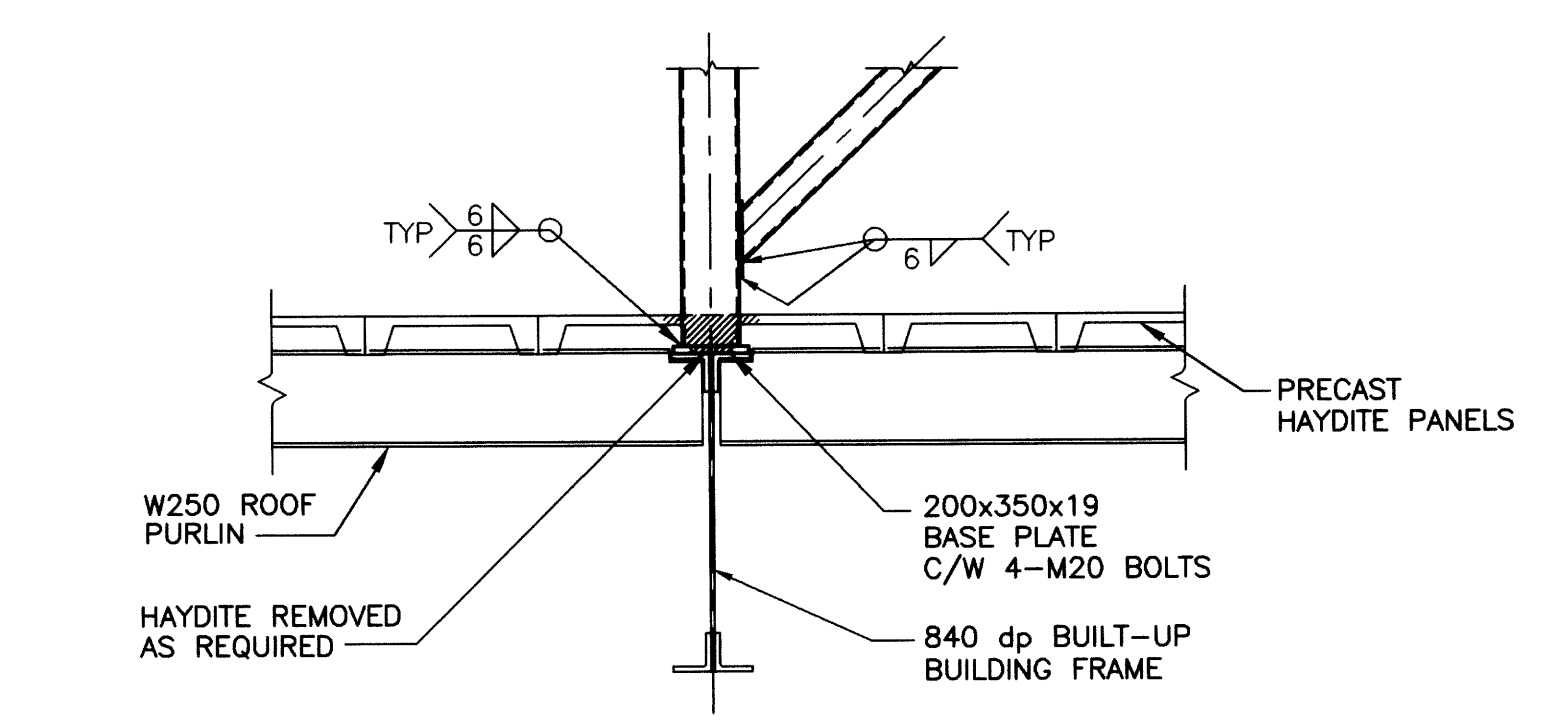
7 TYPICAL HAYDITE PANEL - SECTION
1 : 20



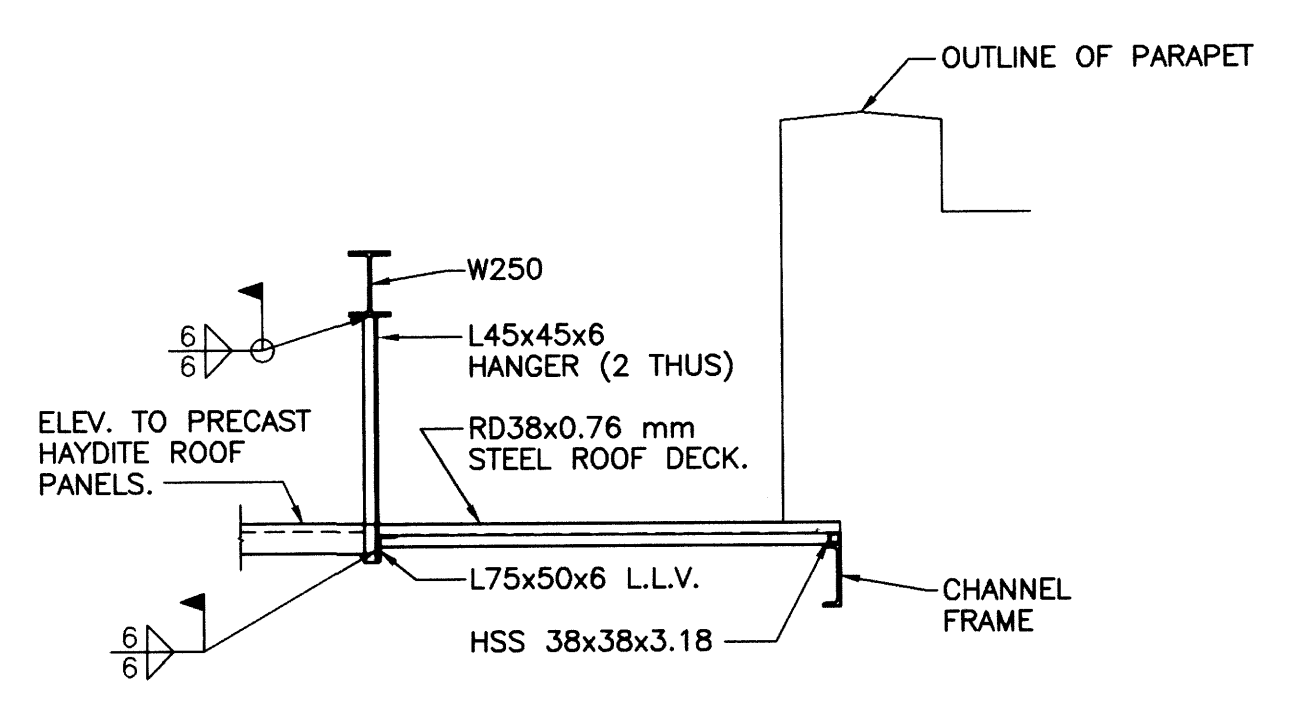
2 A.H.U. FRAME - SECTION
1 : 25
- CONTRACTOR MUST CONFIRM DIMENSIONS OF THE A.H.U. WITH SUPPLIER PRIOR TO FABRICATING A.H.U. FRAME.



3 A.H.U. FRAME - SECTION
1 : 25



4 A.H.U. FRAME TO BUILT-UP FRAME CONNECTION
1 : 20



8 A.H.U. ROOF DETAIL
1 : 25

GENERAL NOTES

1. VERIFY ALL DIMENSIONS, ELEVATIONS AND EXTENT OF WORK PRIOR TO BEGINNING CONSTRUCTION. FIELD MEASURE AS REQUIRED AND SUPPLEMENT DIMENSIONS SHOWN.
2. IF ANY UNSOUND CONDITIONS ARE OBSERVED OR CREATED DURING CONSTRUCTION REPORT THEM IMMEDIATELY TO THE ENGINEER.

SELECTIVE DEMOLITION

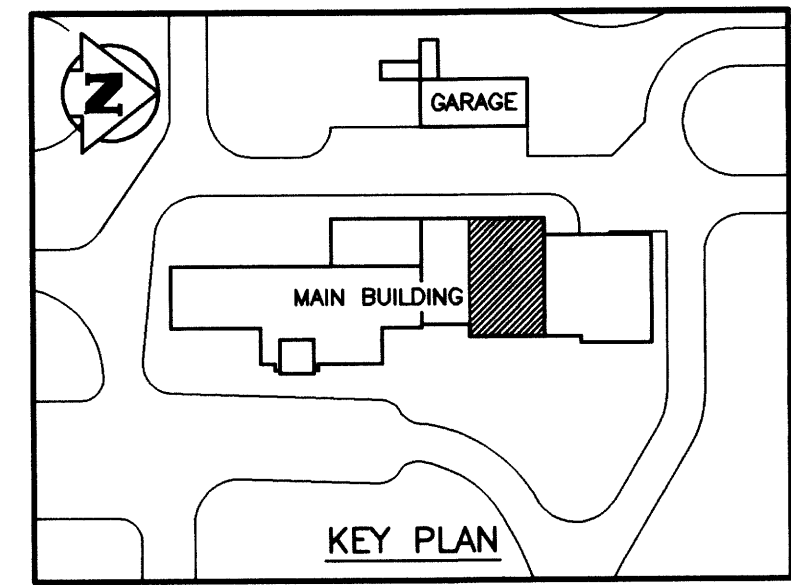
1. REMOVE ITEMS AND MATERIALS WHERE SHOWN ON DRAWINGS.
2. PROTECT WORK TO REMAIN.

STRUCTURAL ROOF DECK

1. ROOF DECK: VIC WEST RD38x0.76 mm OR APPROVED EQUIVALENT.
2. FASTENING: FUSION WELD @ 300 o.c.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL SHAPES, PLATES AND BARS SHALL CONFORM TO CSA G40.21-M300W, EXCEPT HOLLOW STRUCTURAL SECTIONS WHICH SHALL CONFORM TO CSA G40.21-M350W CLASS C.
2. ALL WELDING TO CONFORM TO CSA W59. FABRICATORS ARE TO BE CERTIFIED IN ACCORDANCE WITH CSA W47.1.



AS CONSTRUCTED
DATE 97.05.12 BY M.G.T.
APPROVED BY _____

B.M. ELEV.	DATE	BY	REVISIONS
	97.05.07	K.M.	1 AS CONSTRUCTED
	96/02	R.H.W.	0 ISSUED FOR TENDER

DESIGNED BY		CHECKED BY	
R.H.W.			
DRAWN BY		APPROVED BY	
D.O.B./M.G.T.			
HOR. SCALE:		RELEASED FOR CONSTRUCTION:	
AS NOTED			
VERTICAL:		DATE	
AS NOTED		96.01.03	

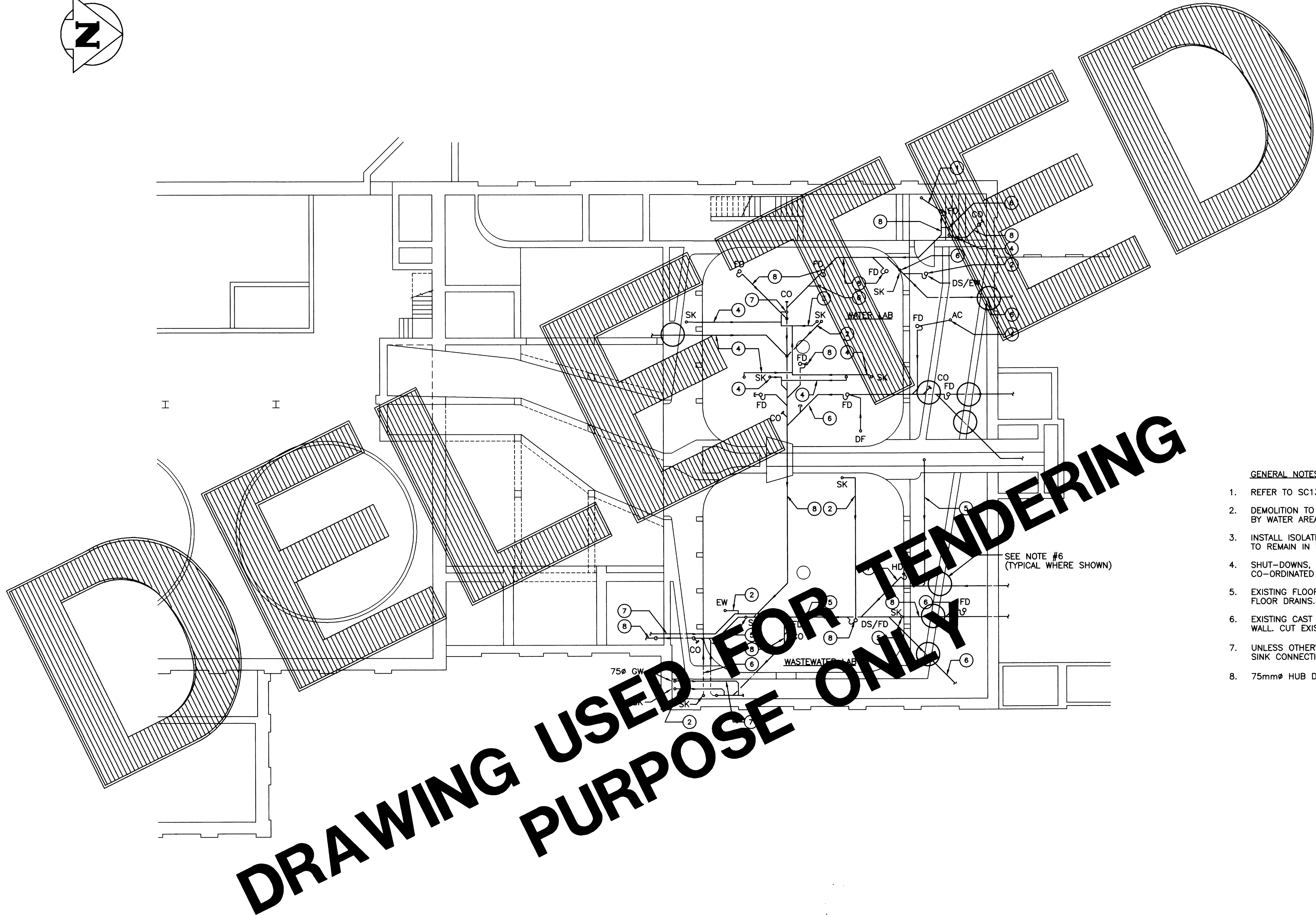
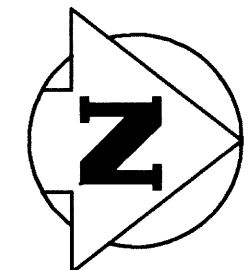
ENGINEER'S SEAL	
ORIGINAL DRAWING	REVISION "0" SEALED BY C.D. STEWART 96.02.26
CONSULTANT DRAWING NO.	940012-03-00-S101

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATER AND WASTE DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
LABORATORY RENOVATIONS - STRUCTURAL

AHU SUPPORT FRAME

CITY DRAWING NUMBER: _____
SHEET OF: _____
NEP-2296



LEGEND:

- SK SINK
- DF DRINKING FOUNTAIN
- AC AUTOCLAVE
- GW GLASS WASHER
- DW DISH WASHER
- EW EYE WASH
- DS/EW DELUGE SHOWER/EYE WASH
- DS/FD DELUGE SHOWER/FLOOR DRAIN
- FD FLOOR DRAIN
- CO CLEANOUT
- ① 25 PVC
- ② 38 PVC
- ③ 25 COPPER/SOLDERED
- ④ 38 COPPER/SOLDERED
- ⑤ 38 CAST IRON PIPE / BELL & SPIGOT
- ⑥ 50 CAST IRON PIPE / BELL & SPIGOT
- ⑦ 75 CAST IRON PIPE / BELL & SPIGOT
- ⑧ 100 CAST IRON PIPE / BELL & SPIGOT

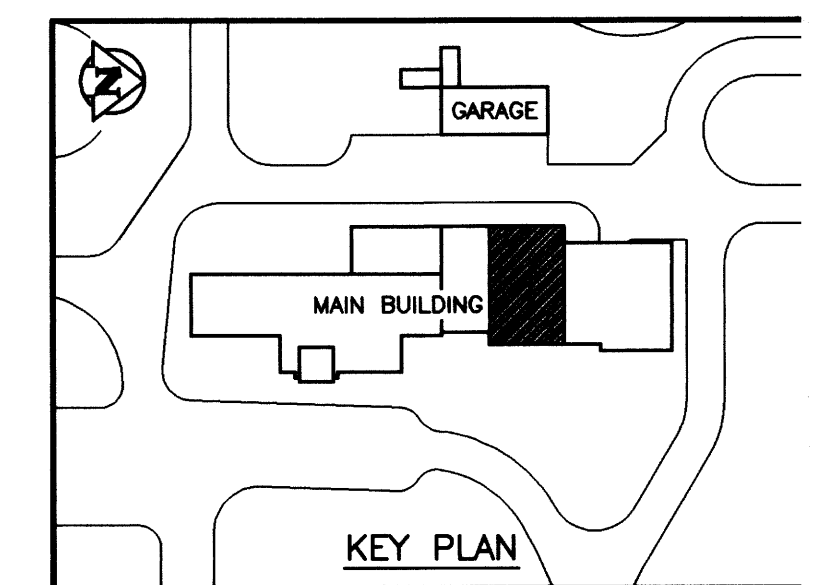
GENERAL NOTES:

1. REFER TO SC13 AND SECTION 15010 FOR SEQUENCE OF DEMOLITION AND CONSTRUCTION.
2. DEMOLITION TO BE STAGED WITH WASTEWATER AREAS PERFORMED FIRST, FOLLOWED BY WATER AREA.
3. INSTALL ISOLATION VALVES, PLUGS OR CAPS ON ALL MAINS TO PERMIT WATER AREA TO REMAIN IN SERVICE WHILE WASTEWATER AREA IS DEMOLISHED.
4. SHUT-DOWNS, TIE-INS, SERVICE INTERRUPTIONS ARE TO BE SCHEDULED AND CO-ORDINATED WITH THE CONTRACT ADMINISTRATOR AS PER STANDARD PROVISIONS.
5. EXISTING FLOOR DRAINS TO REMAIN, CONNECT NEW DRAINAGE PIPE TO EXISTING FLOOR DRAINS.
6. EXISTING CAST IRON DRAIN PIPE TO REMAIN WHERE SHOWN THROUGH CONCRETE WALL. CUT EXISTING PIPE AND TRANSITION TO NEW DRAIN PIPING.
7. UNLESS OTHERWISE NOTED ALL FLOOR DRAIN CONNECTIONS ARE 100mm ϕ AND ALL SINK CONNECTIONS ARE 38mm ϕ .
8. 75mm ϕ HUB DRAIN IN WASTE WATER LABORATORY TO BE ABANDONED.

DRAWING USED FOR TENDERING PURPOSE ONLY

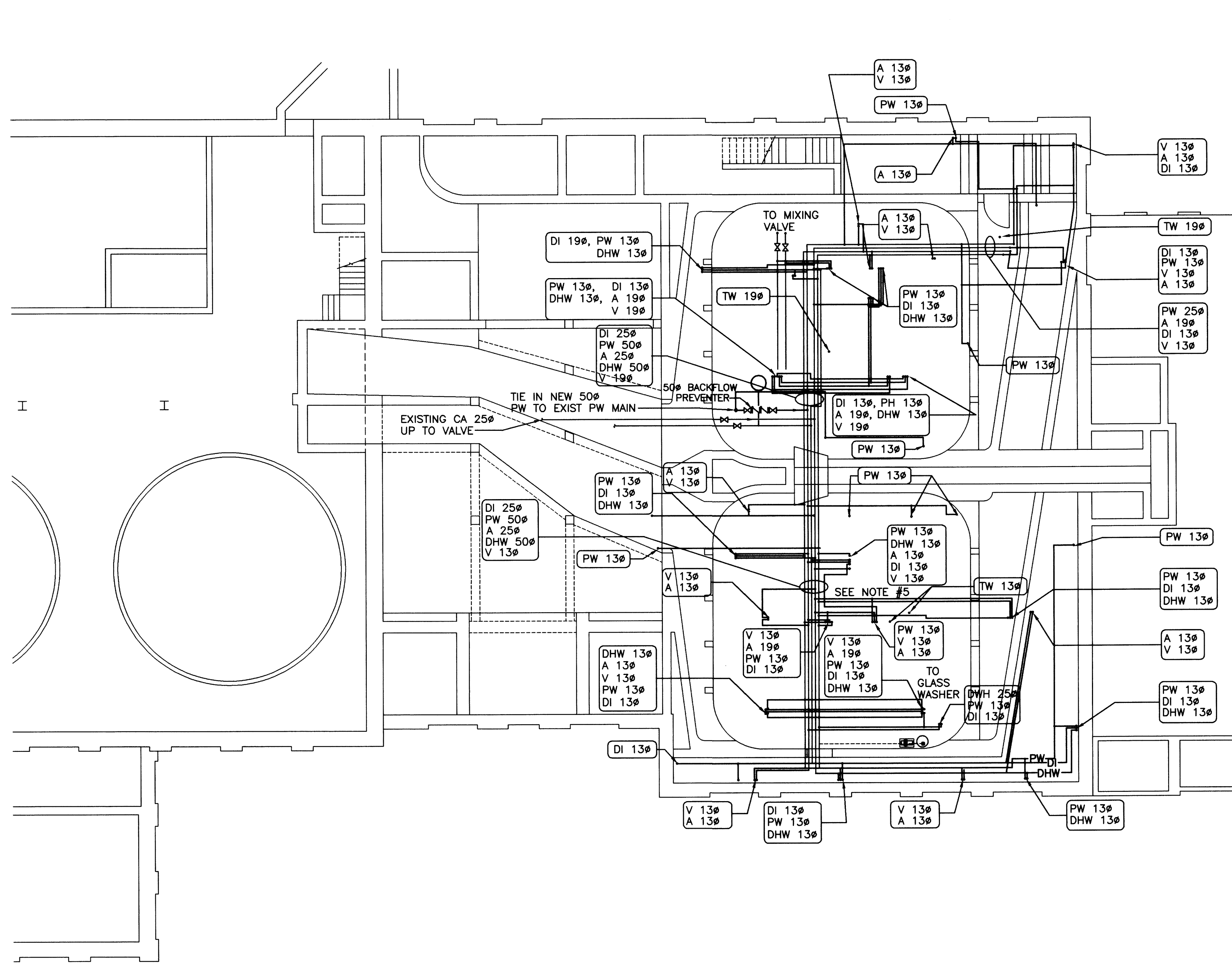
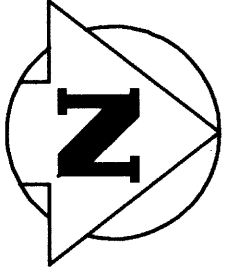
1 PARTIAL BASEMENT FLOOR PLAN
SCALE 1 : 100

NOTE:
DIMENSIONS SHOWN IN METRIC MILLIMETERS.



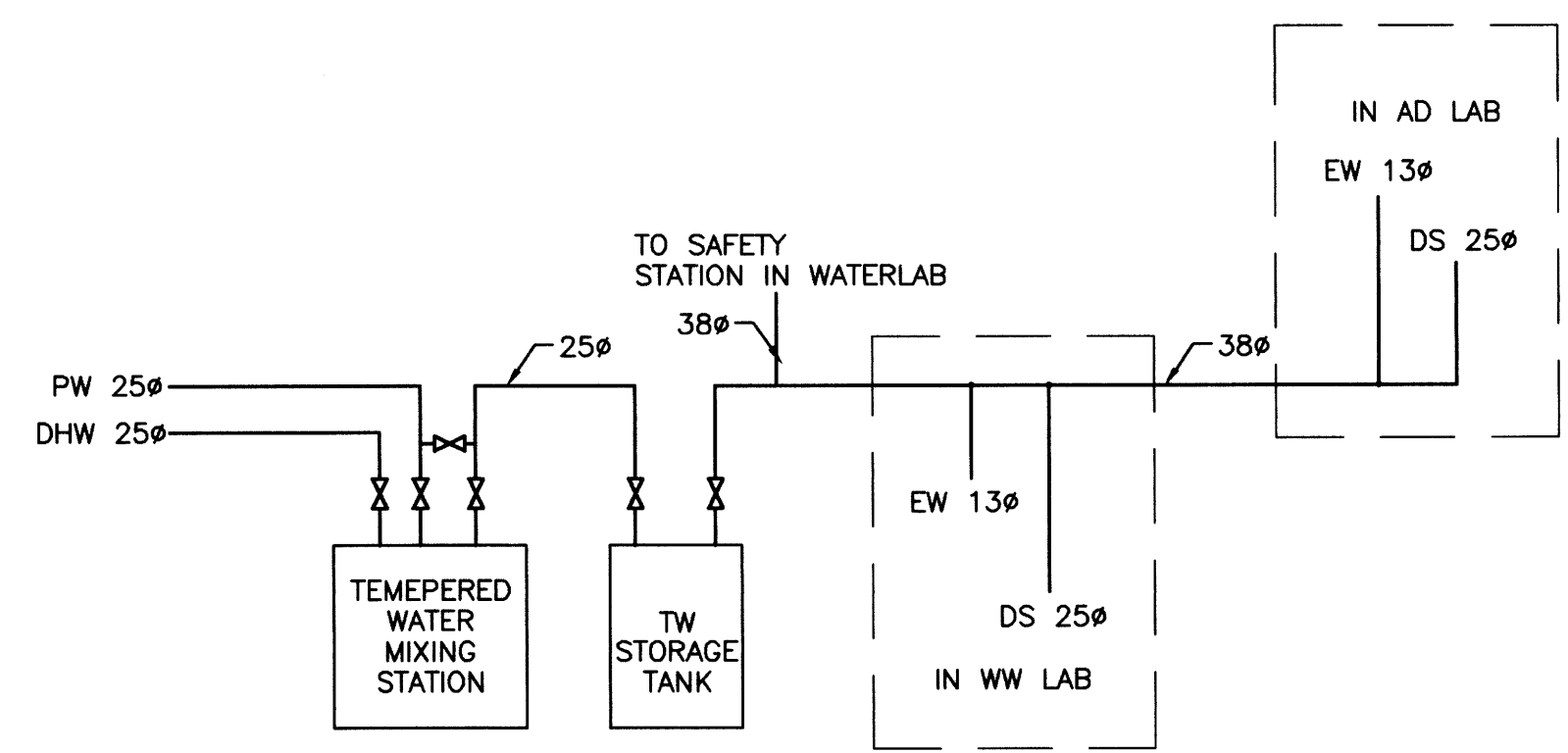
B.M. ELEV. 0 ISSUED FOR TENDER 96.02 S.Q. - ISSUED FOR CITY REVIEW 95.12.08 S.Q. NO. REVISIONS DATE BY DATE 95.12.01	WARDROP ENGINEERING INC. <small>WINNIPEG TORONTO THUNDER BAY</small>	ENGINEER'S SEAL ORIGINAL DRAWING REVISION "0" SEALED BY SEAN QUIGLEY 96.02.27	THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT NORTH END WATER POLLUTION CONTROL CENTRE LABORATORY RENOVATIONS - MECHANICAL PARTIAL BASEMENT FLOOR PLAN DRAINAGE PIPING DEMOLITION
		DESIGNED BY S.Q. CHECKED BY DRAWN BY D.C., P.O. APPROVED BY HOR. SCALE: 1 : 100 VERTICAL:	CITY DRAWING NUMBER SHEET OF NEP-2297

NEP-2297



1 PARTIAL BASEMENT FLOOR PLAN
1 : 100

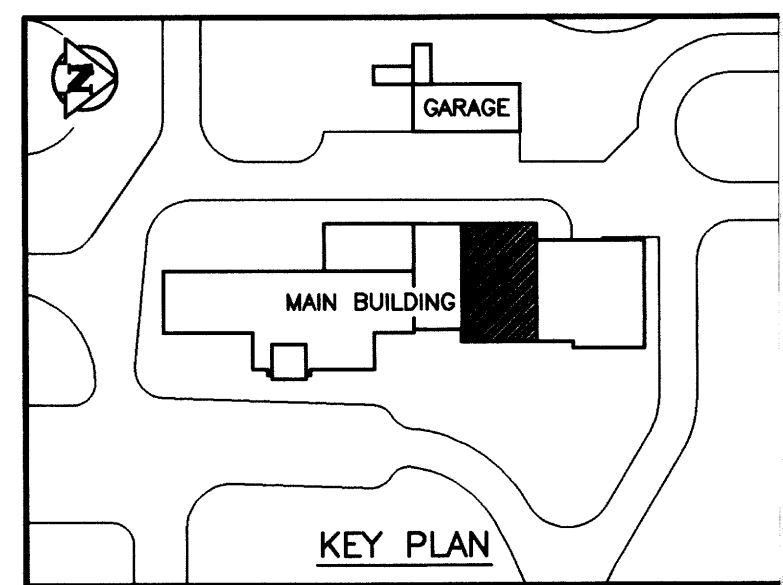
NOTE:
DIMENSIONS SHOWN IN METRIC MILLIMETERS.



2 TEMPERED WATER (TW) SCHEMATIC
N.T.S.

GENERAL NOTES

1. PLUMBING SERVICES CONSISTING OF PIPE, FITTINGS, VALVES AND HANGERS IN THE LABORATORY AND CRAWLSPACE. LOCATIONS SHOWN ARE APPROXIMATE ONLY.
2. DHW, PW, AND DI SERVICES TO THE RO/DI ROOM, TERMINATE WITH BALL VALVES.
3. REFER TO M110 FOR TERMINATION REQUIREMENTS AT NEW FUME HOODS.
4. PLUMBING SERVICES TO THE EXISTING FIXTURES IN THE WATER LABORATORY ARE TO BE CONNECTED AT THE RISERS IN THE CRAWLSPACE.
5. AIR IN GC ROOM 106 TO BE TERMINATED WITH BALL VALVE.
6. REDUCED PRESSURE BACKFLOW PREVENTER SPECIFIED IN SECTION 15430.
7. TW MIXING STATION ON UNISTRUT AGAINST THE EXISTING PIPE RACK AT THE WEST SIDE OF THE CRAWLSPACE.



AS CONSTRUCTED
DATE 97.05.12 BY D.C.
APPROVED BY _____

NO.	REVISIONS	DATE	BY	DATE
1	AS CONSTRUCTED	97.05.12	S.Q.	
0	ISSUED FOR TENDER	96/02	S.Q.	
-	ISSUED FOR CITY REVIEW	95.12.08	S.Q.	

WARDROP ENGINEERING INC.
TORONTO TORONTO TORONTO

DESIGNED BY: S.Q.	CHECKED BY:
DRAWN BY: D.C. / P.O.	APPROVED BY:
HOR. SCALE: 1 : 100	RELEASED FOR CONSTRUCTION:
DATE: 95.12.01	DATE:

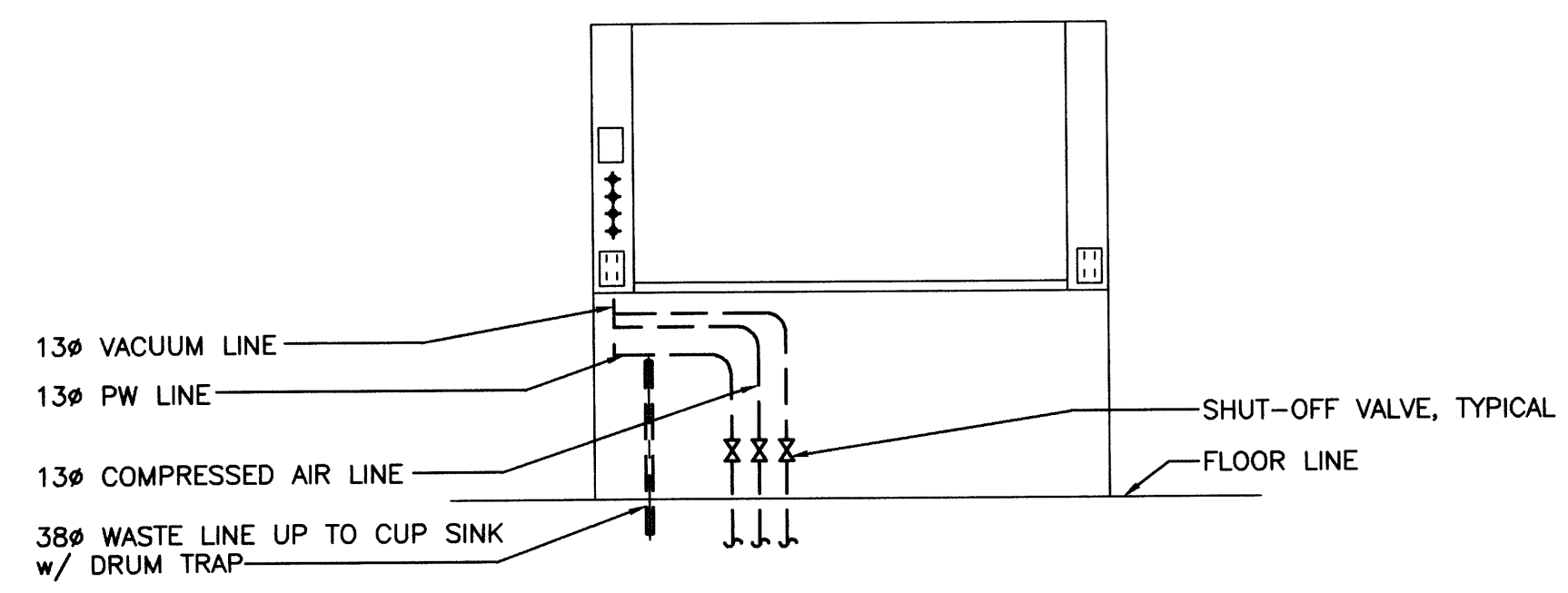
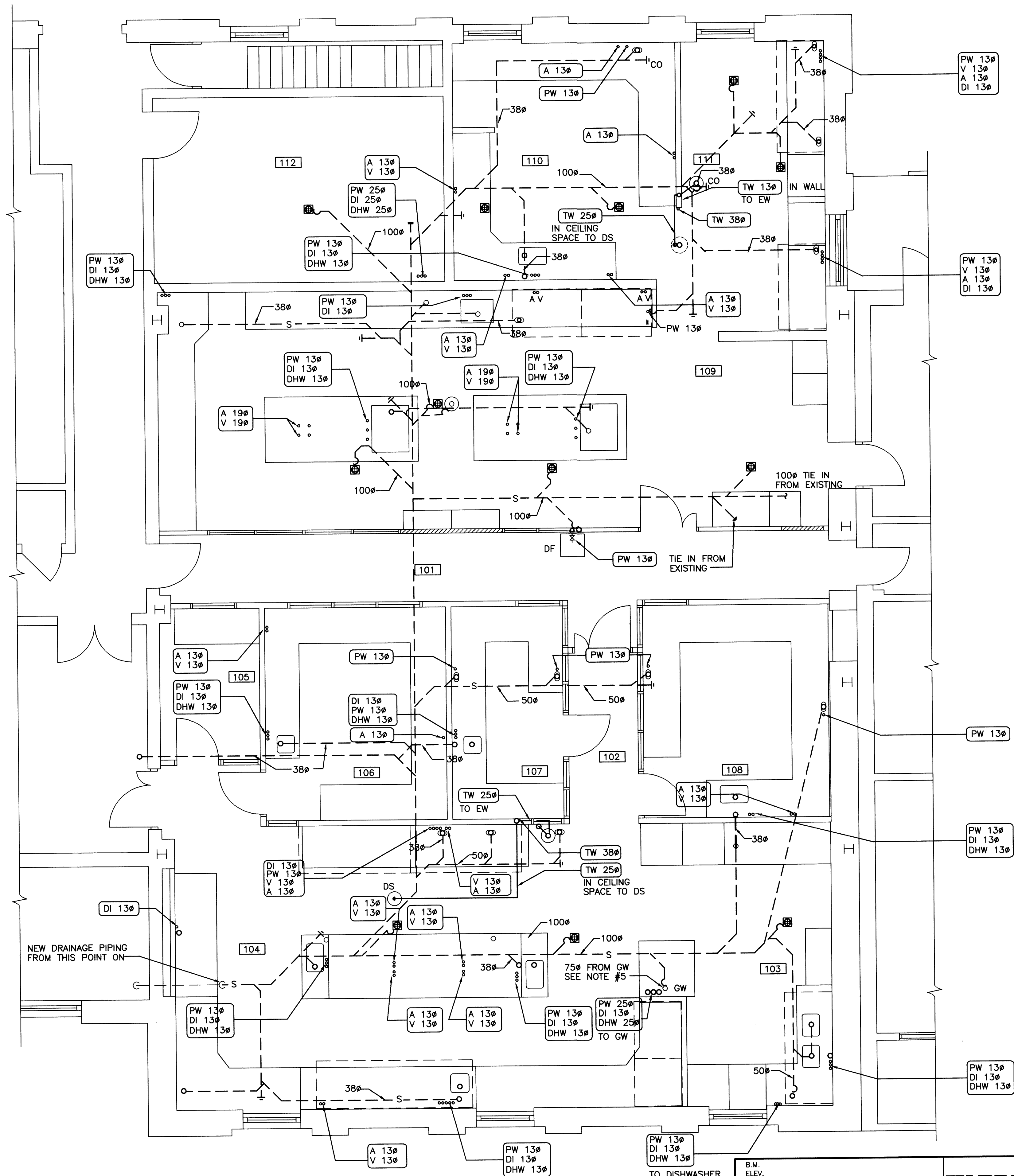
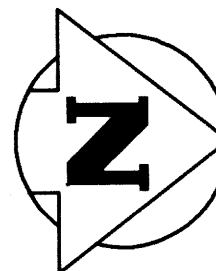
ENGINEER'S SEAL
ORIGINAL DRAWING REVISION "0" SEALED BY SEAN QUIGLEY 96.02.27
CONSULTANT DRAWING NO. 940012-03-00-M108

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
LABORATORY RENOVATIONS MECHANICAL
PARTIAL BASEMENT FLOOR PLAN
PLUMBING SERVICES

CITY DRAWING NUMBER
SHEET OF
NEP-2304

NEP-2304

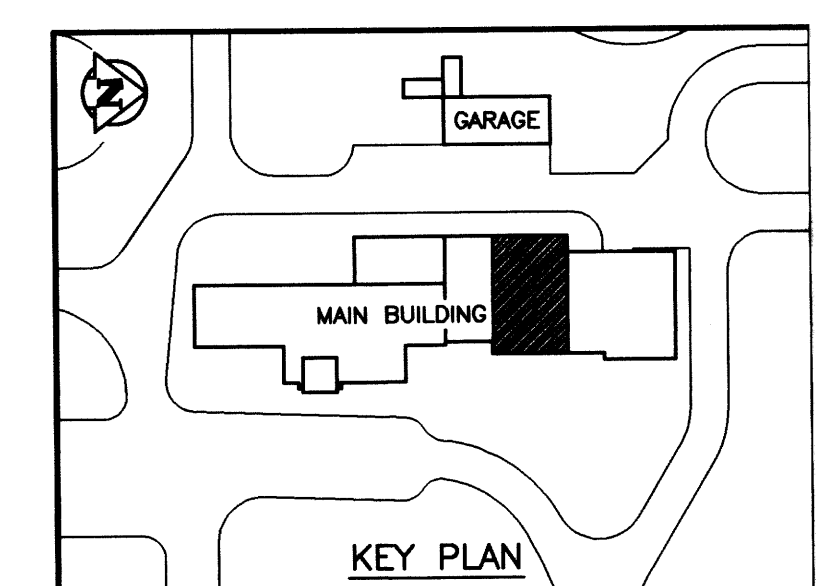


2 FUME HOOD CONNECTION DETAIL
N.T.S.

- GENERAL NOTES**
1. PIPING, VALVES UP TO UNDERSIDE OF PRE-PIPED FUME HOOD TABLE AND CONNECT TO FACTORY INSTALLED CONNECTIONS.
 2. ALL SINK CONNECTIONS ARE 38mm UNLESS OTHERWISE NOTED. ALL FLOOR DRAIN CONNECTIONS ARE 100mm UNLESS NOTED OTHERWISE.
 3. OPENING IN SLAB FOR 75mm HUB DRAIN FROM GLASS WASHER.
 4. 50mm VENT LINE IN CEILING SPACE WITH DROPS DOWN TO GLASSWASHER AND IN GC ROOM 106.
 5. 6mm PW AND 19mm DRAIN LINES FOR HUMIDIFIER IN CEILING SPACE ABOVE ROOM 105, PW LINE c/w ISOLATION VALVE.

NEW DRAINAGE PIPING FROM THIS POINT ON

AS CONSTRUCTED
DATE 97.05.12 BY D.C.
APPROVED BY _____



1 PARTIAL MAIN FLOOR PLAN
1 : 50

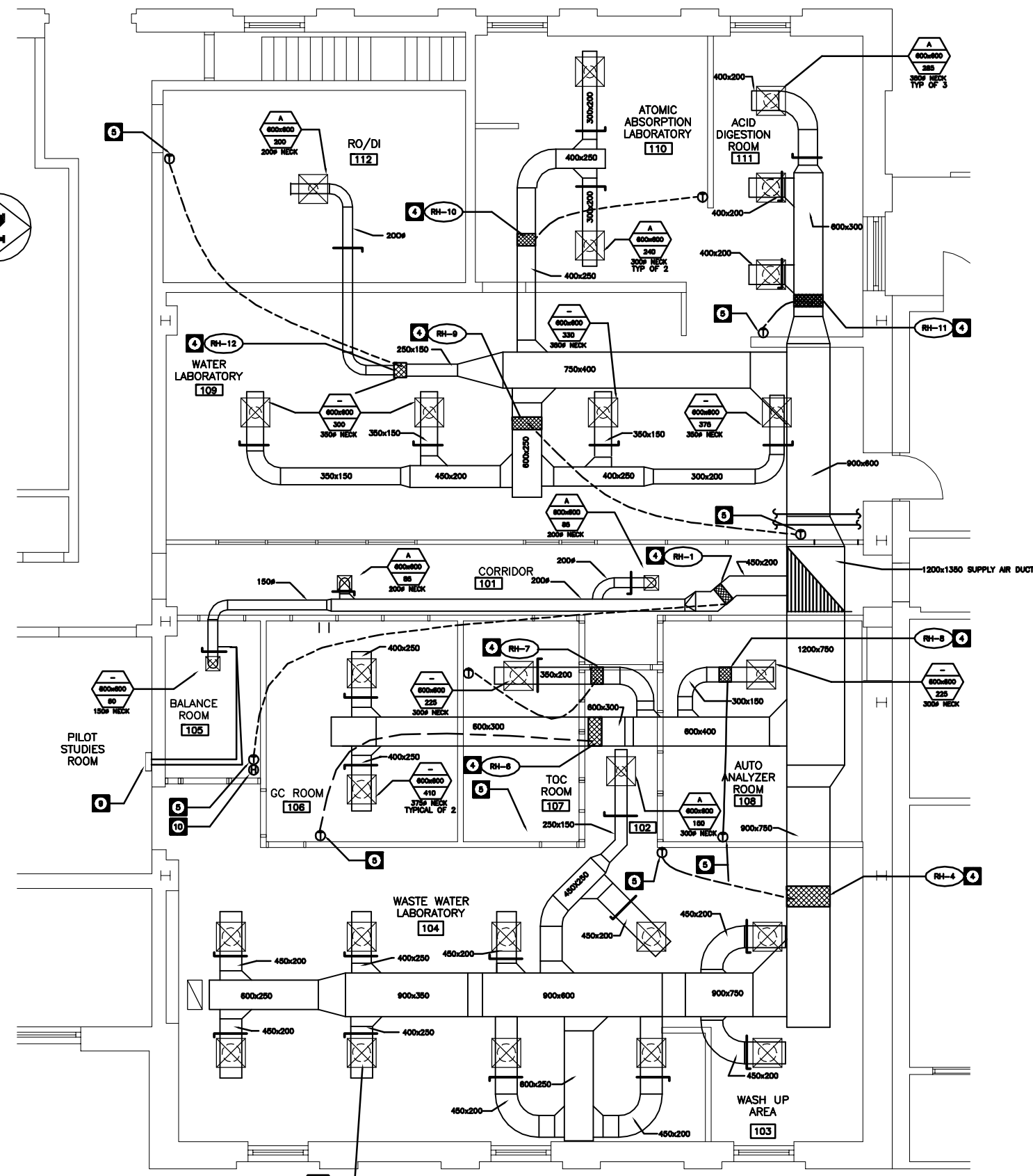
NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED	97.05.12	S.Q.
0	ISSUED FOR TENDER	96/02	S.Q.
-	ISSUED FOR CITY REVIEW	95.12.08	S.Q.

WARDROP ENGINEERING INC.	
DESIGNED BY S.Q.	CHECKED BY
DRAWN BY D.C. / P.O.	APPROVED BY
HOR. SCALE: 1 : 50	RELEASED FOR CONSTRUCTION: DATE
VERTICAL: 1 : 50	DATE 95.12.01

ENGINEER'S SEAL
ORIGINAL DRAWING REVISION "0" SEALED BY SEAN QUIGLEY 96.02.27
CONSULTANT DRAWING NO. 940012-03-00-M109

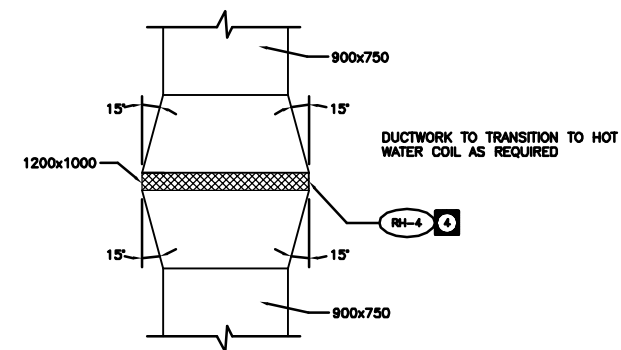
THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT	
NORTH END WATER POLLUTION CONTROL CENTRE	CITY DRAWING NUMBER
LABORATORY RENOVATIONS - MECHANICAL	SHEET OF
PARTIAL MAIN FLOOR PLAN	
PLUMBING SERVICES	NEP-2305

NEP-2305

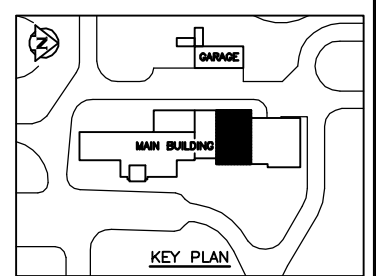


DRAWING NOTES - HVAC

- 1 1500x900 SUPPLY AIR DUCT TO RISE UP ON EXTERIOR OF WALL ENTIRELY INSULATED AND COATED WITH WEATHERPROOF COMPOUND. DUCT TO ENTER BUILDING AT CEILING SPACE LEVEL.
- 2 AIR HANDLING UNIT AHU-1 AS SPECIFIED AT GRADE LEVEL ON SUPPORT PLATFORM. REFER DETAIL ON DRAWING M-113 FOR MOUNTING AND INSTALLATION.
- 3 RUN SUPPLY AIR DUCTWORK IN MAIN FLOOR CEILING SPACE.
- 4 TYPICAL REHEAT COIL. REFER TO REHEAT COIL SCHEDULE FOR COIL SIZES AND CAPACITIES. REFER TO FLOOR PLAN MECHANICAL DRAWING M112 FOR REHEAT COIL HOT WATER HEATING PIPING CONNECTIONS. REFER TO MECHANICAL DRAWING M112 FOR DETAIL OF TYPICAL REHEAT COIL PIPING AND VALVING SCHEMATIC HOOK-UP.
- 5 PROVIDE NEW THERMOSTAT MOUNTED ON WALL WIRED TO CONTROL REHEAT COIL CONTROL VALVE (EXACT LOCATION TO BE SITE DETERMINED). REFER TO SPECIFICATION FOR SEQUENCE OF OPERATION.
- 6 REFER TO MECHANICAL DRAWING M114 FOR EXHAUST DUCT SYSTEMS FOR LABORATORY AREAS.
- 7 — DENOTES TYPICAL BALANCE DAMPER.
- 8 MECHANICAL CONTRACTOR SHALL CO-ORDINATE AND CONFIRM FINAL LOCATIONS FOR ALL GRILLES AND DIFFUSERS WITH ARCHITECTURAL REFLECTED CEILING PLAN AND LIGHTING LAYOUT. ADJUST CONNECTING DUCTWORK AS REQUIRED.
- 9 HUMIDIFIER H-1 AS SPECIFIED MOUNTED IN CEILING SPACE. CONNECT TO DISPERSION TUBING MOUNTED IN BALANCE ROOM SUPPLY AIR DUCTWORK. SEE M109 FOR PIPING FOR HUMIDIFIER.
- 10 PROVIDE HUMIDISTAT CONTROL WIRED TO CYCLE HUMIDIFIER H-1.
- 11 SUPPLY AIR DUCTWORK TO SLOPE DOWN.
- 12 CO-ORDINATE ALL DUCT RISERS WITH EXISTING STRUCTURAL BEAM.
- 13 INSTALL DRIP PANS UNDER ALL REHEAT COILS, TYPICAL.
- 14 TRANSITION DUCTWORK TO SUIT HWS/HWR PIPING AT THIS LOCATION.



2 HOT WATER COIL DUCTWORK DETAIL
SCALE 1 : 25



1 PARTIAL MAIN FLOOR PLAN
SCALE 1 : 50

AS CONSTRUCTED
DATE 97.05.12 BY D.C.
APPROVED BY _____

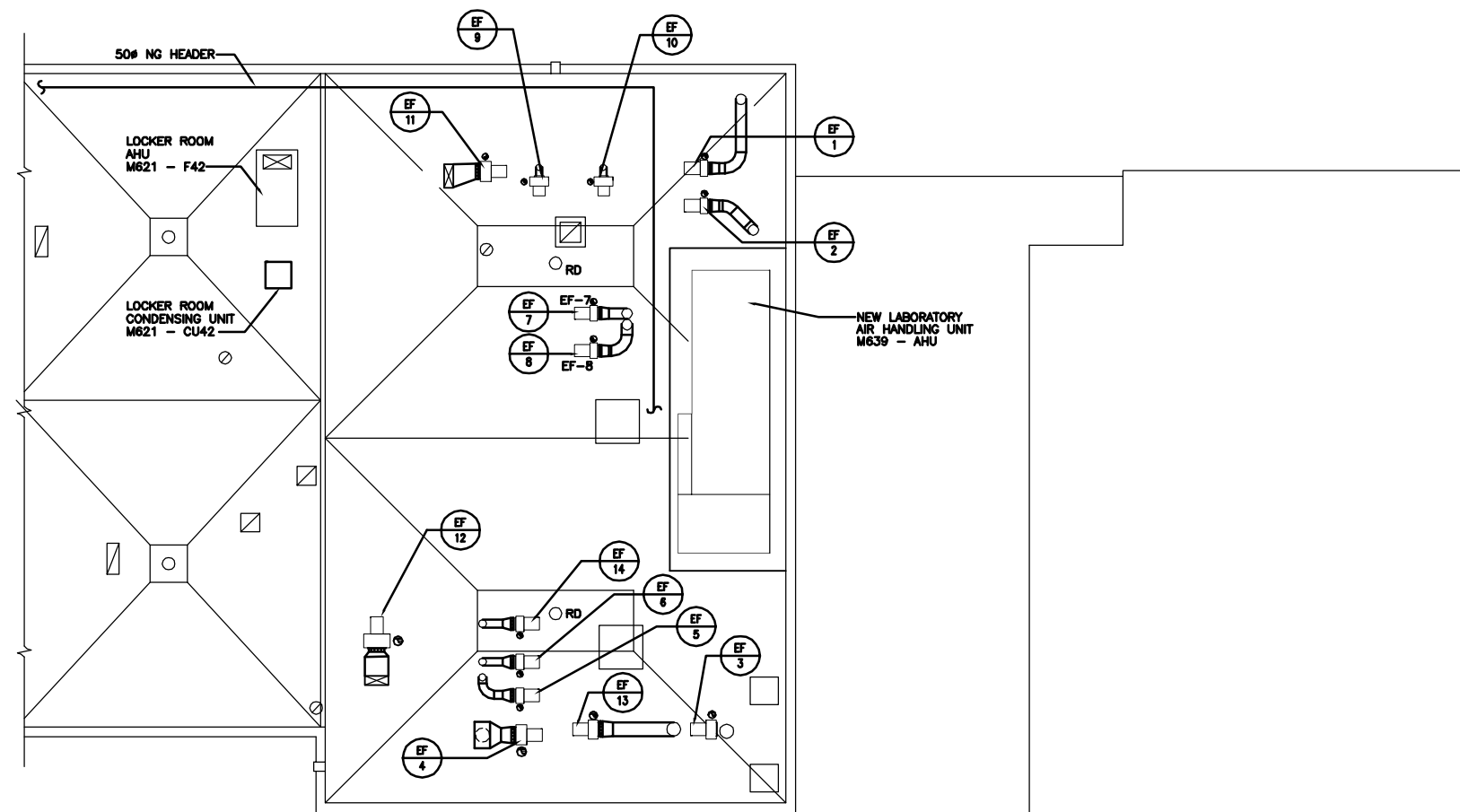
WARDROP ENGINEERING INC. <small>WINNIPEG TORONTO SUDBURY</small>	
DESIGNED BY S.Q.	CHECKED BY _____
DRAWN BY D.C., P.O.	APPROVED BY _____
HOR. SCALE: 1 : 50	RELEASED FOR CONSTRUCTION: _____
VERTICAL: _____	DATE 95.12.01
NO. REVISIONS	DATE BY
1 AS CONSTRUCTED 97.05.12 S.Q.	
0 ISSUED FOR TENDER 96.02 S.Q.	
- ISSUED FOR CITY REVIEW 95.12.08 S.Q.	

ENGINEER'S SEAL
 ORIGINAL DRAWING REVISION "0" SEALED BY SEAN QUIGLEY 96.02.27
 CONSULTANT DRAWING NO. 940012-03-00-M110

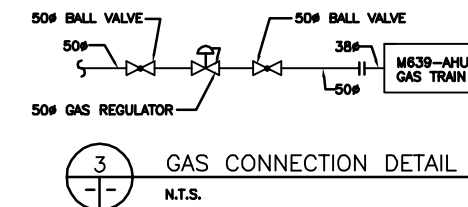
THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
 WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
 LABORATORY RENOVATIONS - MECHANICAL
 PARTIAL MAIN FLOOR PLAN
 HEATING AND VENTILATION

CITY DRAWING NUMBER _____
 SHEET _____ OF _____
 NEP-2306

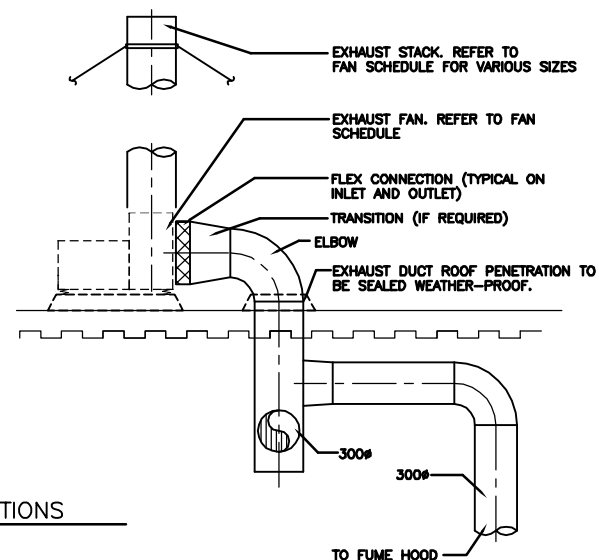
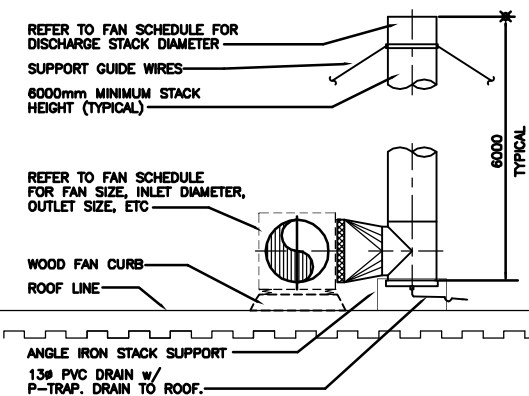


1 PARTIAL ROOF PLAN
1 : 100



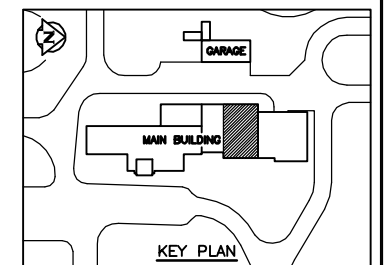
NOTES:

1. REFER TO S101 FOR LOCATION OF STEEL SUPPORT FRAME FOR M639 - AHU.
2. EXHAUST FAN STACKS ARE DOUBLE WALL CHIMNEYS AS PER DIVISION 15.
3. APPROXIMATE LOCATION OF 50mm# NATURAL GAS HEADER. NG HEADER ON WOOD BLOCKS IN ACCORDANCE WITH APPLICABLE GAS CODES.

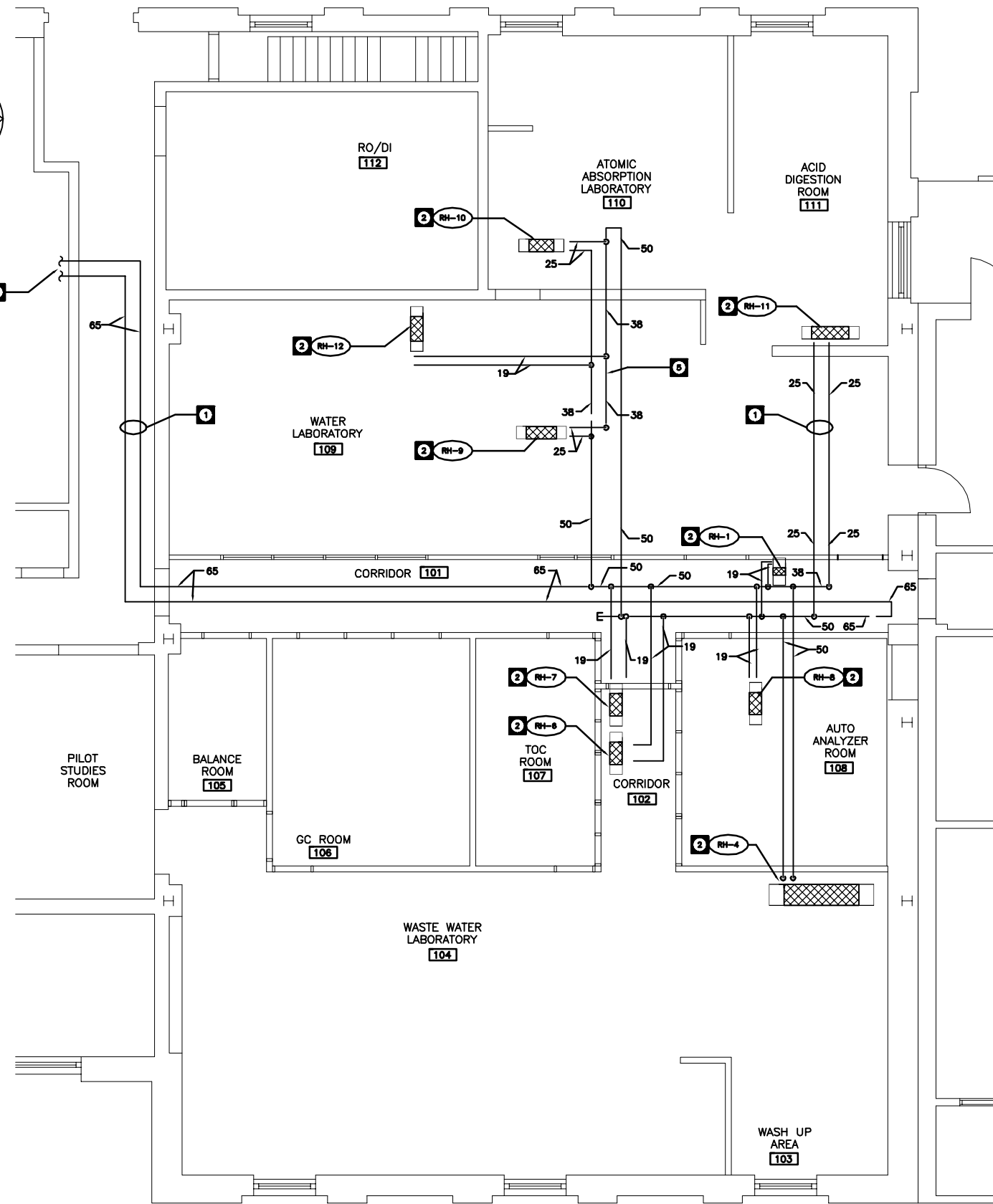


2 FAN SECTIONS
1 : 25

AS CONSTRUCTED
DATE 97.05.12 BY D.C.
APPROVED BY _____

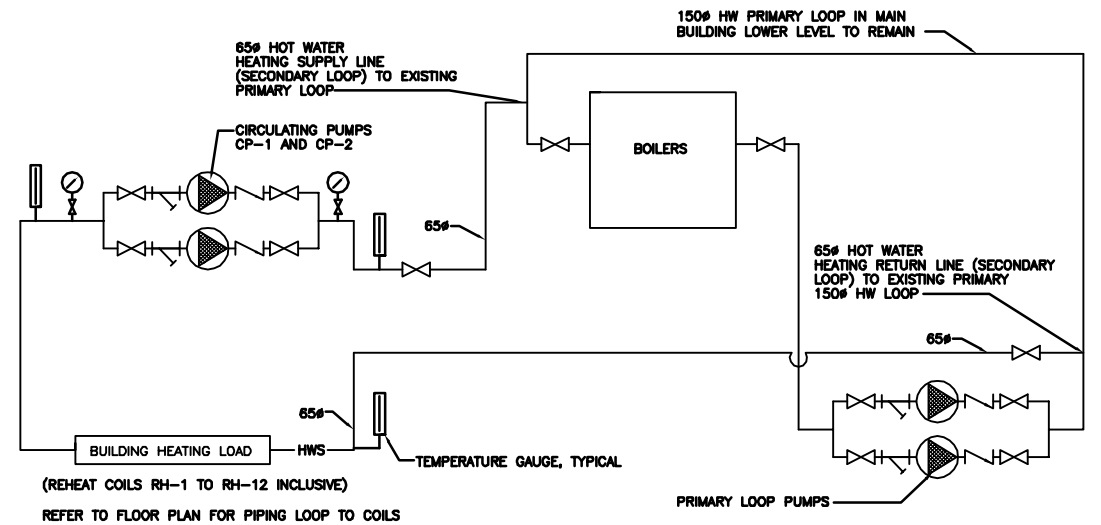


WARDROP ENGINEERING INC. <small>WINNIPEG TORONTO SUDBURY</small>		ENGINEER'S SEAL ORIGINAL DRAWING REVISION "0" SEALED BY SEAN QUIGLEY 96.02.27		THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT	
DESIGNED BY	S.Q.	CHECKED BY		NORTH END WATER POLLUTION CONTROL CENTRE	
DRAWN BY	D.C.	APPROVED BY		LABORATORY RENOVATIONS - MECHANICAL	
1 AS CONSTRUCTED 97.05.12 S.Q.		HOR. SCALE: 1 : 100		PARTIAL ROOF PLAN	
0 ISSUED FOR TENDER 96/02 S.Q.		RELEASED FOR CONSTRUCTION:		VENTILATION EQUIPMENT LAYOUT	
- ISSUED FOR CITY REVIEW 95.12.08 S.Q.		DATE 95.12.01		CONSULTANT DRAWING NO. 940012-03-00-M111	
NO. REVISIONS	DATE	BY	DATE	CITY DRAWING NUMBER	
				SHEET OF	
				NEP-2307	

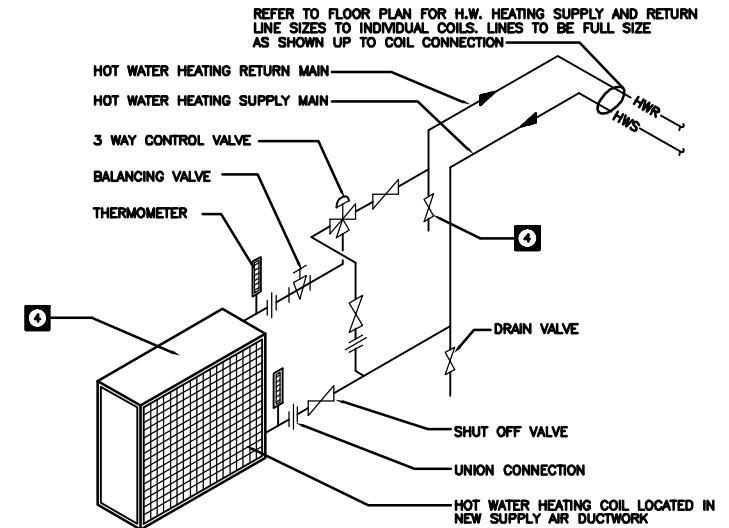


1 PARTIAL MAIN FLOOR PLAN
1 : 50

AS CONSTRUCTED
DATE 97.05.12 BY D.C.
APPROVED BY _____



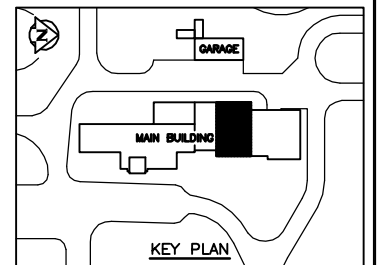
3 HOT WATER HEATING SCHEMATIC FLOW DIAGRAM
N.T.S.



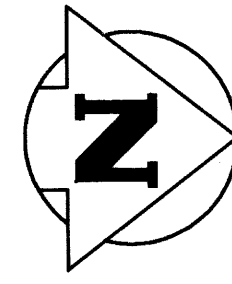
2 HOT WATER REHEAT COIL DETAIL
N.T.S.

DRAWING NOTES

- 1 65# HOT WATER HEATING SUPPLY AND RETURN LINES IN MAIN FLOOR CEILING SPACE
- 2 TYPICAL REHEAT COIL. REFER TO SCHEDULE FOR COIL SPECIFICATION. SEE DETAIL 2 FOR TYPICAL PIPING AND VALVING HOOK-UP.
- 3 65# REHEAT LOOP HOT WATER HEATING SUPPLY AND RETURN LINES TO EXISTING GALLERY LOCATION.
- 4 REFER TO SPECIFICATION FOR COIL AND VALVE SCHEDULES
- 5 REHEAT COIL REVERSE RETURN HOT WATER LINE.



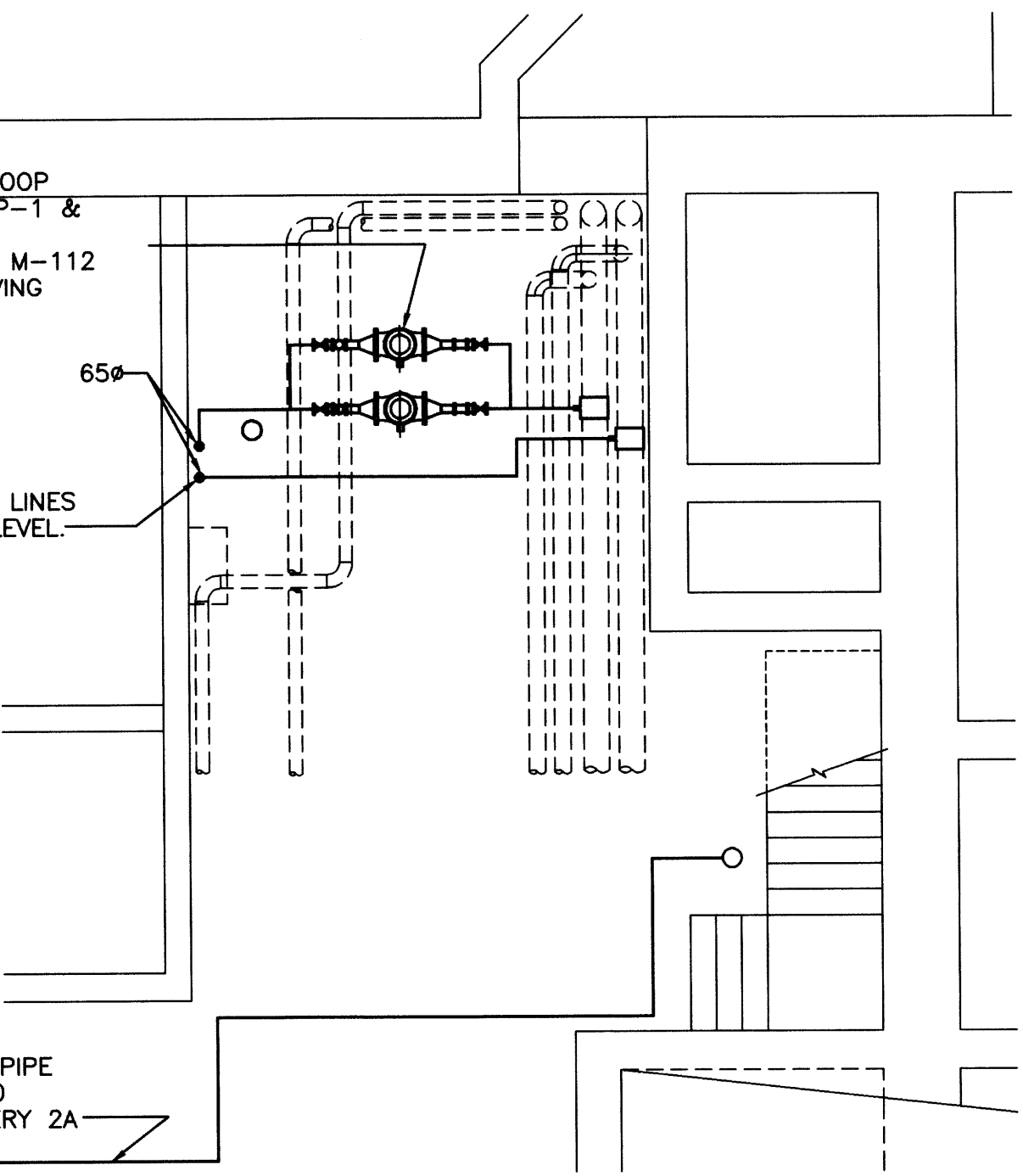
B.M. ELEV.		WARDROP ENGINEERING INC. WINNIPEG TORONTO SUDBURY		ENGINEER'S SEAL		THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT	
				ORIGINAL DRAWING REVISION "0" SEALED BY SEAN QUIGLEY 96.02.27			
DESIGNED BY	S.Q.	CHECKED BY		CONSULTANT DRAWING NO. 940012-03-00-M112		NORTH END WATER POLLUTION CONTROL CENTRE LABORATORY RENOVATIONS - MECHANICAL PARTIAL MAIN FLOOR PLAN HOT WATER HEATING	
DRAWN BY	D.C. / P.O.	APPROVED BY				CITY DRAWING NUMBER	
HOR. SCALE:	1 : 50	RELEASED FOR CONSTRUCTION:				SHEET OF	
VERTICAL:		DATE	95.12.01			NEP-2308	
NO. REVISIONS	DATE	BY					



HOT WATER REHEAT LOOP
CIRCULATING PUMPS CP-1 &
CP-2 . REFER TO
MECHANICAL DRAWING M-112
FOR PIPING AND VALVING
SCHEMATIC DIAGRAM

65# H.W. HEATING
SUPPLY AND RETURN LINES
UP TO MAIN FLOOR LEVEL.

50# NG HEADER, IN PIPE
RACK, CONNECTED TO
NG HEADER IN GALLERY 2A

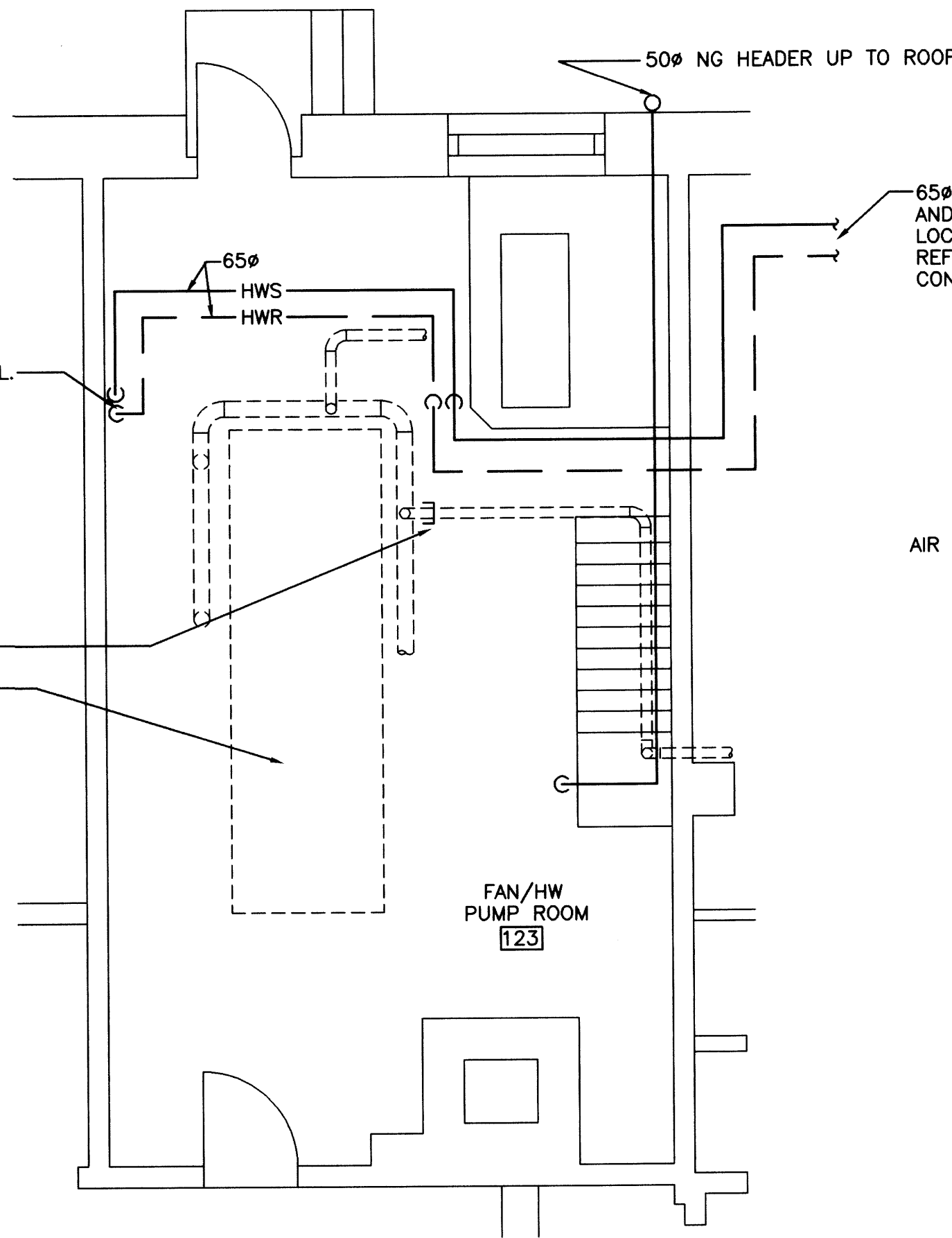


1 PARTIAL GALLERY FLOOR PLAN
1 : 50

65# HOT WATER HEATING SUPPLY AND
RETURN LINES DOWN TO BASEMENT LEVEL.

HOT WATER HEATING SUPPLY LINE
CAPPED AT MAIN
EXISTING AIR HANDLING UNIT

FAN/HW
PUMP ROOM
123



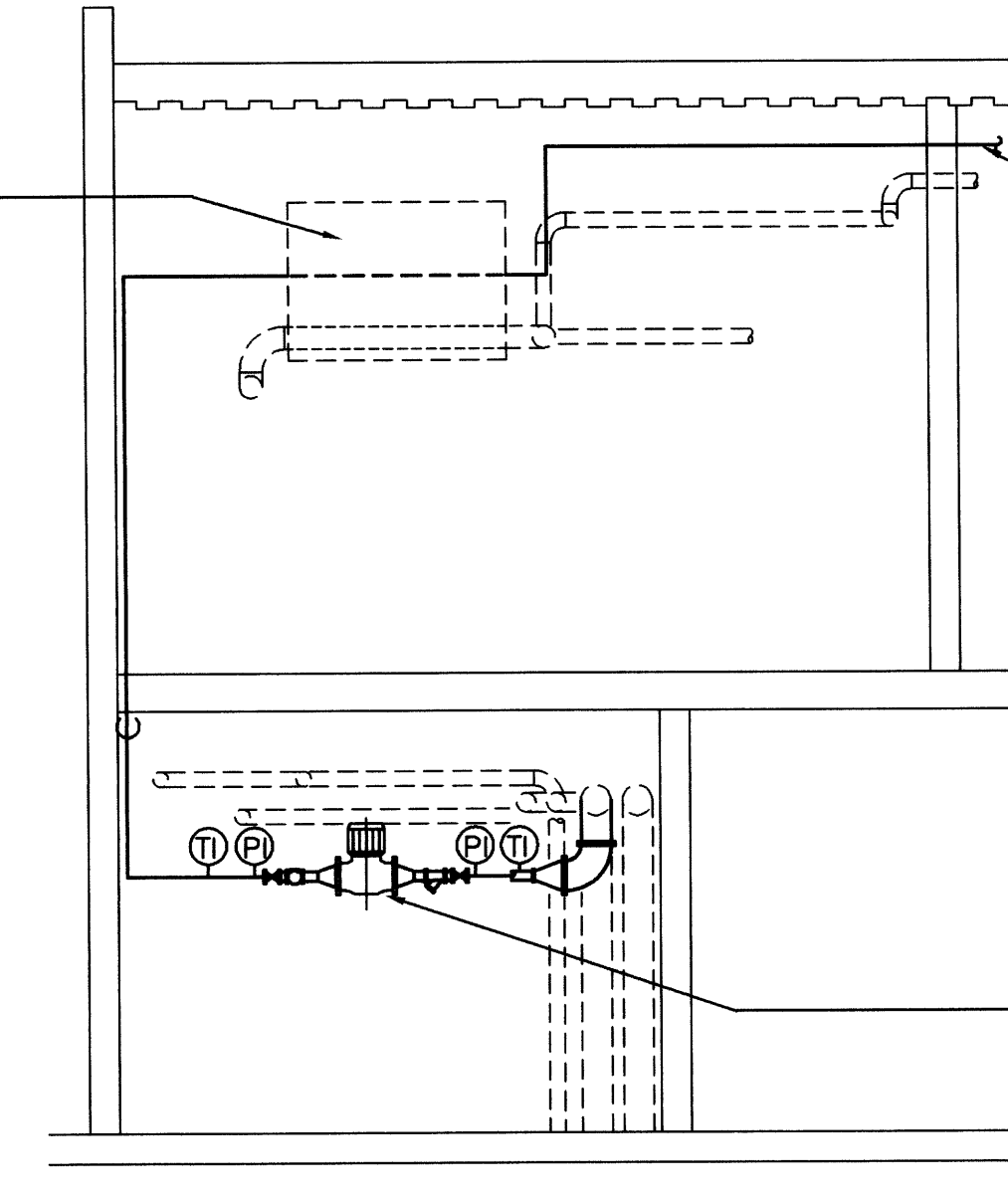
2 PARTIAL MAIN FLOOR PLAN
1 : 50

65# HOT WATER HEATING SUPPLY
AND RETURN LINES ACROSS CHANGE ROOM/
LOCKER ROOM FACILITY (IN CEILING SPACE).
REFER TO MECHANICAL DRAWING M-112 FOR
CONTINUATION OF LINES IN LABORATORY AREA.

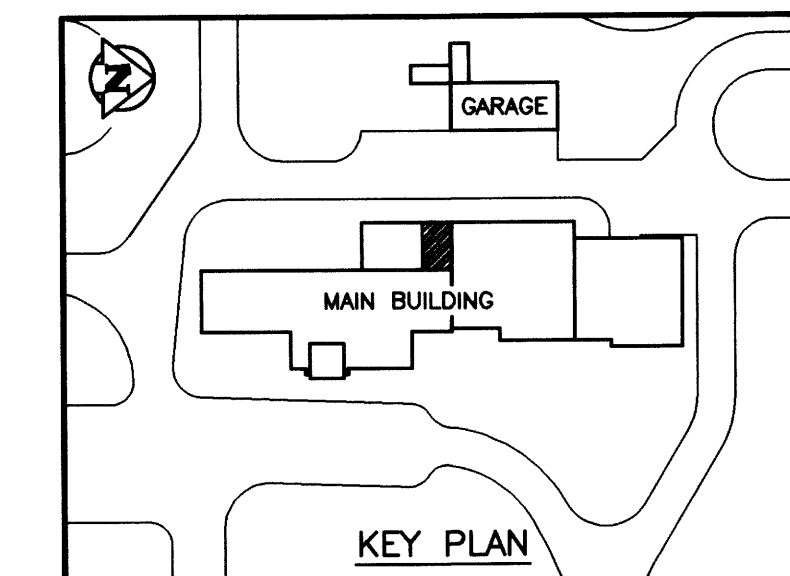
AIR HANDLING UNIT

65# REHEAT COIL LOOP HOT WATER
HEATING SUPPLY AND RETURN LINES

REHEAT COIL LOOP CIRCULATING PUMPS
CP-1 AND CP-2 MOUNTED SUSPENDED
FROM UNDERSIDE OF STRUCTURE c/w
VIBRATION ISOLATION HANGERS



3 SECTION
1 : 50



AS CONSTRUCTED
DATE 97.05.12 BY D.C.
APPROVED BY _____

NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED	97.05.12	S.Q.
0	ISSUED FOR TENDER	96/02	S.Q.
-	ISSUED FOR CITY REVIEW	95.12.08	S.Q.

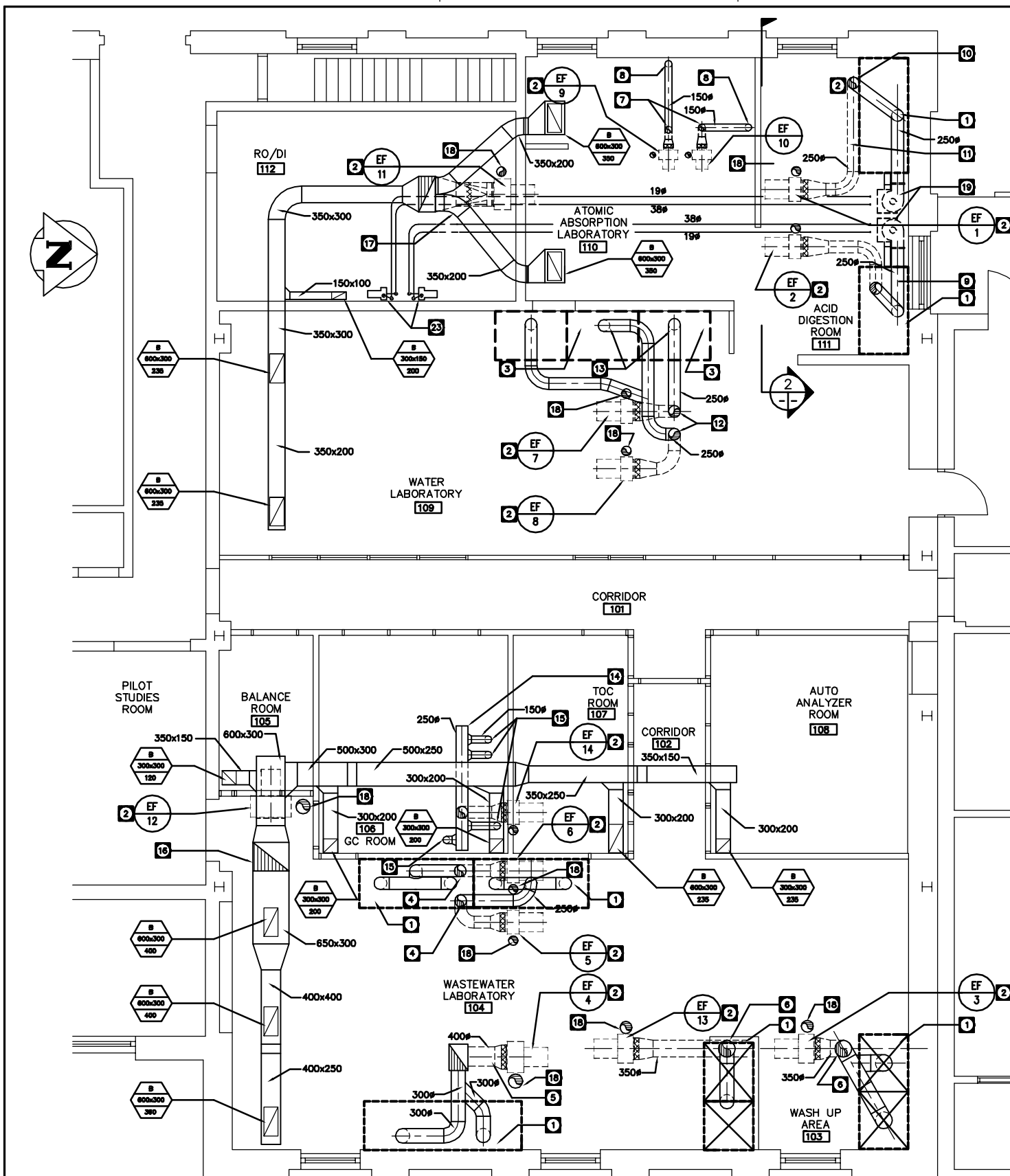
WARDROP ENGINEERING INC. WINNIPEG TORONTO THUNDER BAY	
DESIGNED BY S.Q.	CHECKED BY
DRAWN BY D.C.	APPROVED BY
HOR. SCALE: 1 : 50 VERTICAL:	
DATE 95.12.01	DATE

ENGINEER'S SEAL
ORIGINAL DRAWING REVISION "0" SEALED BY SEAN QUIGLEY 96.02.27
CONSULTANT DRAWING NO. 940012-03-00-M113

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT
NORTH END WATER POLLUTION CONTROL CENTRE
LABORATORY RENOVATIONS - MECHANICAL
PARTIAL BASEMENT & MAIN FLOOR
PLUMBING - HOT WATER HEATING
AND SECTIONS

CITY DRAWING NUMBER	NEP-2309
SHEET OF	

NEP-2309

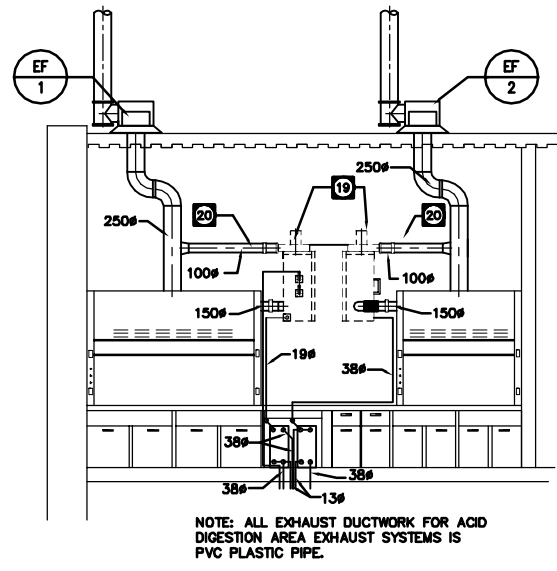


1 PARTIAL MAIN FLOOR PLAN
1 : 50

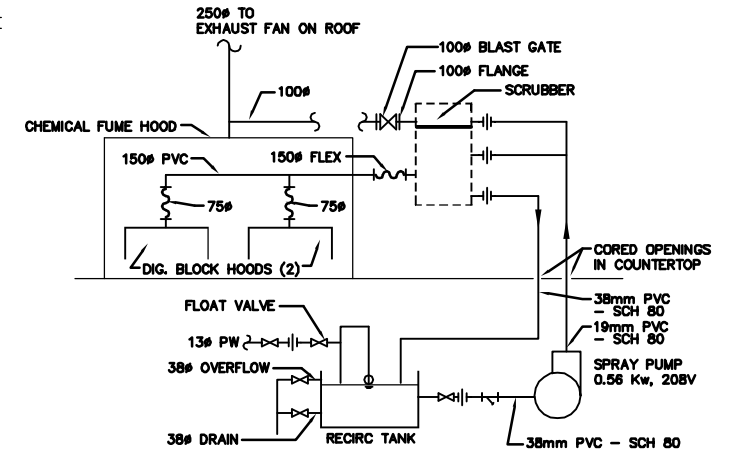
AS CONSTRUCTED
DATE 97.05.12 BY D.C.
APPROVED BY _____

DRAWING NOTES:

- 1 EXHAUST CANOPY HOOD. REFER TO OWNER EQUIPMENT SCHEDULE FOR PHYSICAL SIZES, MOUNTING HEIGHTS AND OUTLET SIZES & LOCATIONS. MECHANICAL CONTRACTOR SHALL CONNECT EXHAUST DUCTS TO OUTLET COLLARS.
- 2 EXHAUST FAN ON ROOF. REFER TO FAN SCHEDULE FOR FAN MODEL NUMBERS, SIZES, AND CAPACITIES. REFER TO EXHAUST FAN DETAIL FOR TYPICAL INSTALLATION AND HOOK-UPS ON DWG M113.
- 3 EXISTING EXHAUST CANOPY HOOD RELOCATED.
- 4 250# EXHAUST DUCT UP THROUGH ROOF OPENING CONNECTING TO EXHAUST FAN c/w FLEX CONNECTION.
- 5 400# EXHAUST DUCT UP THROUGH ROOF OPENING CONNECTING TO EXHAUST FAN EF-4 c/w FLEX CONNECTION.
- 6 350# EXHAUST DUCT UP THROUGH ROOF OPENING CONNECTING TO EXHAUST EF-3 c/w FLEX CONNECTION.
- 7 150# EXHAUST DUCT UP THROUGH ROOF CONNECTING TO EXHAUST FAN c/w FLEX CONNECTION.
- 8 150# FLEXIBLE EXHAUST DUCT ARM CONNECTING TO CONE HOOD (MOVEABLE SWING ARM).
- 9 250# EXHAUST DUCT UP THROUGH ROOF OPENING CONNECTING TO EXHAUST FAN EF-2 c/w FLEX CONNECTION.
- 10 250# EXHAUST DUCT UP THROUGH ROOF OPENING CONNECTING TO EXHAUST FAN EF-1 c/w FLEX CONNECTION.
- 11 250# EXHAUST DUCT IN MAIN FLOOR CEILING SPACE BELOW SUPPLY AIR DUCT MAIN.
- 12 250# EXHAUST DUCT UP THROUGH ROOF OPENING CONNECTING TO EXHAUST FAN c/w FLEX CONNECTION.
- 13 350# EXHAUST DUCTWORK TO RELOCATED EXHAUST CANOPY HOOD OUTLET COLLAR.
- 14 250# EXHAUST DUCT UP THROUGH ROOF OPENING CONNECT TO EXHAUST FAN EF-14 c/w FLEX CONNECTION.
- 15 150# EXHAUST DUCT CONNECTING TO EXHAUST CONE ARM.
- 16 650x350 EXHAUST DUCT UP THROUGH ROOF OPENING CONNECT TO EXHAUST FAN EF-12 c/w FLEX CONNECTION.
- 17 750x300 EXHAUST DUCT UP THROUGH ROOF OPENING CONNECT TO EXHAUST FAN EF-11 c/w FLEX CONNECTION.
- 18 EXHAUST STACK MIN 6000mm HIGH c/w GUIDE WIRES. SEE DETAIL 2/M111. REFER TO FAN SCHEDULE FOR STACK SIZES.
- 19 AIR SCRUBBERS LOCATED ON SHELF SECURED TO WALL.
- 20 BLAST GATE.
- 21 ALL EXHAUST DUCTWORK FOR EXHAUST FAN SYSTEM EF-3, EF-4, EF-5, EF-6, EF-7, EF-8, EF-9, EF-10, EF-13, & EF-14 SHALL BE SECURITY CHIMNEY MODEL CI PIPING c/w HIGH TEMPERATURE SILICONE SEALANT, LOCKING BANDS AND GUIDE WIRE SUPPORT.
- 22 EXHAUST DUCTWORK FOR DISCHARGE STACK ON EXHAUST FAN EF-11 AND EF-12 SHALL BE SECURITY CHIMNEY. EXHAUST DUCTWORK FOR INLET SIDE OF EXHAUST FANS EF-11 AND EF-12 SHALL BE SHEET METAL DUCTWORK GAUGE AS PER SPECIFICATIONS.
- 23 SCRUBBER SPRAY PUMPS, PIPE RUN IN CRAWLSPACE.



2 SECTION
1 : 50



3 SCRUBBER SCHEMATIC
N.T.S.

B.M. ELEV.		WARDROP ENGINEERING INC. WINNIPEG TORONTO SUDBURY ONT		ENGINEER'S SEAL		THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT	
DESIGNED BY S.Q.		CHECKED BY		ORIGINAL DRAWING REVISION "0" SEALED BY SEAN QUIGLEY 96.02.27		NORTH END WATER POLLUTION CONTROL CENTRE LABORATORY RENOVATIONS - MECHANICAL PARTIAL MAIN FLOOR PLAN EXHAUST SYSTEMS	
DRAWN BY D.C.		APPROVED BY		CONSULTANT DRAWING NO. 940012-03-00-M114		CITY DRAWING NUMBER SHEET OF	
1 AS CONSTRUCTED 97.05.12 S.Q.		HORIZ. SCALE: 1 : 50		RELEASSED FOR CONSTRUCTION:		NEP-2310	
0 ISSUED FOR TENDER 96/02 S.Q.		DATE 95.12.01		DATE		SHEET OF	
- ISSUED FOR CITY REVIEW 95.12.08 S.Q.		NO. REVISIONS		DATE BY		SHEET OF	

SYMBOL LEGEND

**INSTRUMENT & DEVICE IDENTIFICATION TABLE
(CITY OF WINNIPEG STANDARD)**

	INSTRUMENT SYMBOL LOCAL		FAN OR PUMP
	INSTRUMENT SYMBOL ON PANEL		AIR INTAKE DAMPER
	INSTRUMENT SYMBOL ON SWITCHGEAR		COOLING COIL WATER
	COMPUTER / OFF / HAND SWITCH		HEATING COIL
	LOCK OFF STOP PUSHBUTTON		MECHANICAL COOLING
	OPEN / CLOSE		THREWAY CONTROL VALVE , PNEUMATIC
	COMPUTER / HAND		DRIVE MOTOR
	LOCAL / REMOTE		UNIT HEATER
	SPEED DECREASE		TRANSFORMER
	SPEED INCREASE		PNEUMATIC LINE , SIGNAL
	EMERGENCY STOP		ELECTROMAGNETIC OR SONIC SIGNAL
	COMPUTER SYMBOL (TO DCS)		CAPILLARY TUBING - FILLED SYSTEM
	COMPUTER SYMBOL (FROM DCS)		ELECTRICAL CONNECTION (ANALOG SIGNAL)
	PILOT LIGHT PANEL MOUNTED		ELECTRICAL CONNECTION
	DAMPER ACTUATOR		PRIMARY PROCESS LINE
	RESTRICTOR		ROTARY PLUG VALVE & ACTUATOR
	MANUAL BALANCE DAMPER		PROGRAMMABLE LOGIC CONTROLLER INPUT
	CWR COLD WATER RETURN CWS COLD WATER SUPPLY HWR HOT WATER RETURN HWS HOT WATER SUPPLY GS GLYCOL RETURN GR GLYCOL SUPPLY		PROGRAMMABLE LOGIC CONTROLLER OUTPUT
	PNEUMATIC MINIMUM POSITION SWITCH		MANUAL VALVE
	PROCESS CONTINUATION(TO/FROM) SYMBOL		CHECK VALVE
	CONTROL CONTINUATION(TO/FROM) SYMBOL		SOLENOID VALVE
			PNEUMATIC VALVE (PROCESS)
			ELECTRIC / PNEUMATIC VALVE (SIGNAL)
			COMPLEX INTERLOCK

LETTER	FIRST LETTER VARIABLE	SECOND AND SUCCEEDING LETTERS
A	ANALYSIS OR SAMPLER	ALARM OR TROUBLE
B	BURNER FLAME	CLOSE OR DECREASE
C	CONDUCTIVITY	CONTROL
D	DENSITY	OPEN OR INCREASE
E	VOLTAGE (EMF)	PRIMARY ELEMENT
F	FLOW RATE	FAILURE
G	GAS	GAUGE/ULTRASONIC GEN.
H	HAND (MANUAL)	HIGH
I	CURRENT (ELEC.)	INDICATE
J	POWER	LIGHT
K	TIME	CONTROL STATION
L	LEVEL	LOW
M	MOTOR	OPERATE OR ON/OFF
N	MOISTURE	START
O	TORQUE	OVERLOAD OR STOP
P	PRESSURE OR VACUUM	PNEUMATIC OR PRESSURE
Q	COMMON	TOTALIZE OR INTEGRATE
R	RADIOACTIVITY	RECORDER
S	SPEED OR FREQUENCY	SWITCH OR SAFETY
T	TEMPERATURE	TRANSMITTER
U	MULTIVARIABLE	MULTIFUNCTION
V	VALVE OR DAMPER	VALVE
W	WEIGHT OR FORCE	WELL
X	UNCLASSIFIED	UNCLASSIFIED
Y	COMPUTER	RELAY OR COMPUTE
Z	POSITION	DRIVE, ACTUATE OR FINAL CONTROL ELEMENT

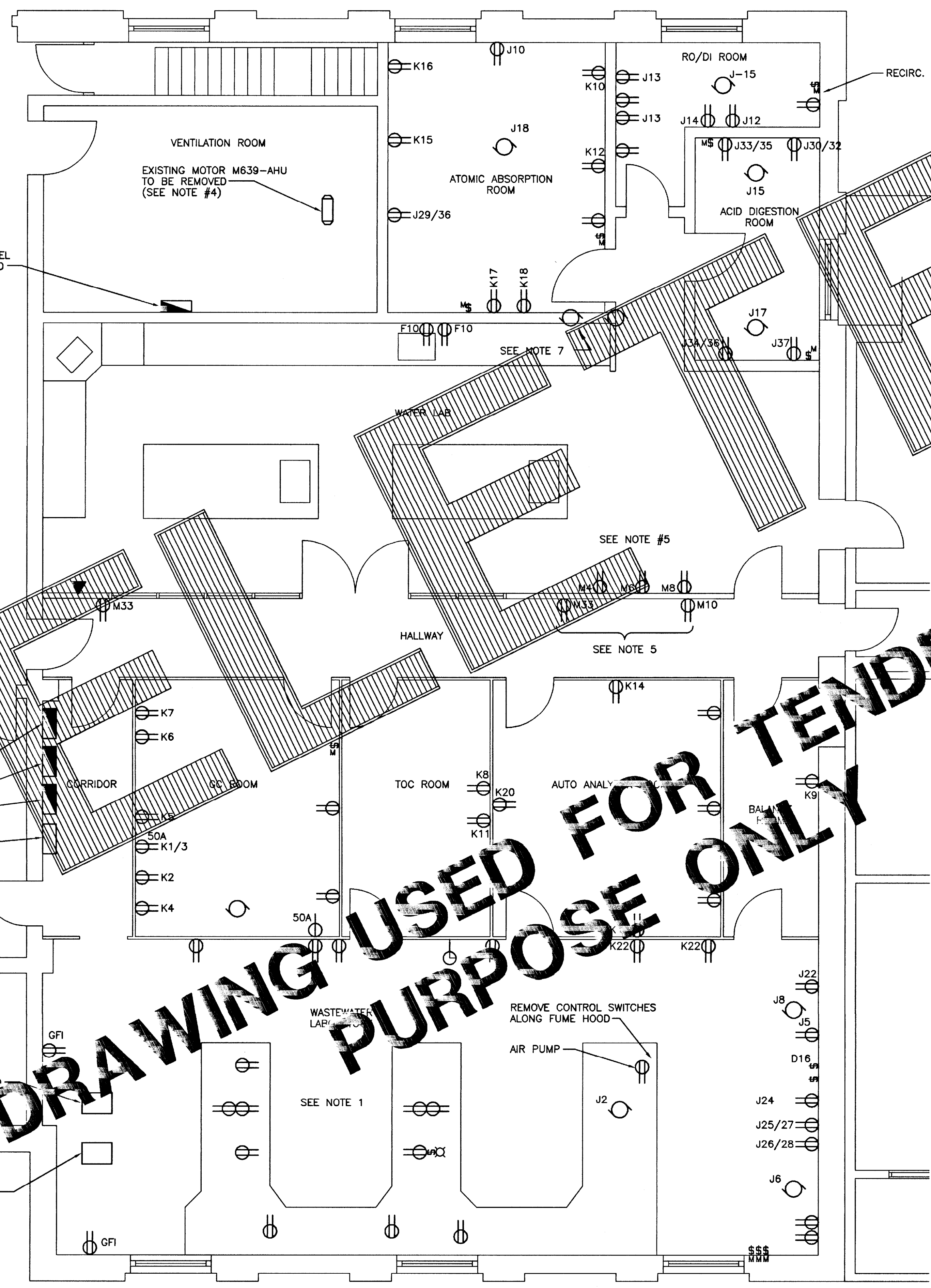
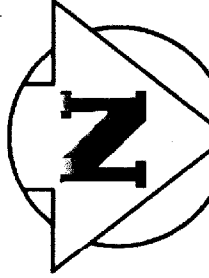
ELECTRICAL SYMBOL LEGEND

	CONDUIT RUN CONCEALED IN CEILING OR WALL
	CONDUIT RUN CONCEALED IN FLOOR OR BELOW GRADE
	CONDUIT RUN EXPOSED
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	INDICATES NUMBER OF WIRES
	ELECTRICAL PANEL LOCATION
	LIGHTING FIXTURE - FLUORESCENT
	LIGHTING FIXTURE - CEILING MOUNTED
	LIGHTING FIXTURE - WALL MOUNTED
	EXIT LIGHT - CEILING MOUNTED
	EXIT LIGHT - WALL MOUNTED
	CLOCK OUTLET
	SINGLE POLE SWITCH
	THREE WAY SWITCH
	SWITCHES IN MULTIPLE
	SWITCH WITH PILOT LIGHT
	DIMMER SWITCH
	PHOTOCELL
	FIRE ALARM HORN
	FIRE ALARM BREAKGLASS STATION
	FIRE ALARM GONG
	FIRE DETECTOR - RATE OF RISE
	FIRE DETECTOR - FIXED TEMPERATURE
	SMOKE DETECTOR
	EMERGENCY LIGHTING BATTERY PACK
	EMERGENCY LIGHTING SINGLE REMOTE HEAD
	EMERGENCY LIGHTING DOUBLE REMOTE HEAD
	COMMUNICATION OUTLET FOR LAN
	TELEPHONE OUTLET
	SIGNAL PUSHBUTTON
	MOTOR LOCATION - 3 PHASE
	MOTOR LOCATION - SINGLE PHASE
	MANUAL MOTOR STARTER
	STOP/START PUSHBUTTON STATION
	DISCONNECT SWITCH - LOCKABLE
	DESIGNATES WEATHERPROOF
	THERMOSTAT LOCATION - REMOTE
	THERMOSTAT LOCATION - BUILT IN
	ELECTRIC HEATING UNIT
	SINGLE RECEPTACLE
	DUPLEX RECEPTACLE
	SWITCHED RECEPTACLE - TOP HALF ONLY
	DUPLEX RECEPTACLE - AMPERE RATING AS SHOWN
	DUPLEX RECEPTACLE - SPLIT FED
	FLUSH FLOOR OUTLET
	600 VOLT OUTLET
	JUNCTION BOX
	SPEAKER HORN
	P.A. SPEAKER SILENCE SWITCH
	RECESSED P.A. SPEAKER
	208 VOLT OUTLET
	DIGITAL WIRING
	ANALOG WIRING

AS CONSTRUCTED
DATE 97/02 BY D.C.
APPROVED BY _____

B.M. ELEV.	WARDROP ENGINEERING INC. WINNIPEG TORONTO THUNDER BAY		ENGINEER'S SEAL	 THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT
DESIGNED BY B.T.	CHECKED BY	ORIGINAL DRAWING REVISION '0' SEALED BY W.B. TODD 96.02.26	NORTH END WATER POLLUTION CONTROL CENTRE	
DRAWN BY D.C.	APPROVED BY	HOR. SCALE: N.T.S.	LABORATORY RENOVATIONS - ELECTRICAL	CITY DRAWING NUMBER
1 AS CONSTRUCTED 97/02 B.T.	RELEASED FOR CONSTRUCTION:	VERTICAL: N.T.S.	ELECTRICAL INSTRUMENTATION AND PROCESS SYMBOL LEGEND	SHEET OF
0 ISSUED FOR TENDER 96/02 B.T.	CONSULTANT DRAWING NO. 940012-03-00-E101	DATE 95.07.24		NEP-2311
- ISSUED FOR CITY REVIEW 95/12 B.T.				
NO. REVISIONS	DATE	BY		

NEP-2311



NOTES:

1. ELECTRICAL EQUIPMENT SHOWN WITHOUT CIRCUIT DESIGNATIONS IS FED FROM EXISTING PANELS "E", "F", AND "SUB-F".
2. IN ADDITION TO ALL ELECTRICAL EQUIPMENT SHOWN, DISCONNECT AND REMOVE ALL ELECTRICAL EQUIPMENT (INCLUDING LIGHT FIXTURES, SWITCHES, RECEPTACLES, MANUAL MOTOR STARTERS, TELEPHONE OUTLETS, WIRING AND CONDUIT BACK TO SOURCES OF SUPPLY) LOCATED IN THE FOLLOWING EXISTING ROOMS:
 - A) WASTEWATER LABORATORY
 - B) BALANCE ROOM
 - C) AUTO ANALYZER ROOM
 - D) TOC ROOM
 - E) GC ROOM
 - F) CORRIDOR
 - G) ACID DIGESTION ROOM
 - H) ATOMIC ABSORPTION ROOM
 - I) RO/DI ROOM (DEMOLITION TO TAKE PLACE ONLY AFTER CITY HAS RELOCATED RO/DI EQUIPMENT)
 - J) VENTILATION ROOM
3. EXISTING LIGHT FIXTURES IN WATER LABORATORY AND IN HALLWAY SHALL BE REUSED. CONTRACTOR TO SECURE EXISTING SUSPENDED CEILING MOUNTED LIGHT FIXTURES IN THESE AREAS TO THE UNDERSIDE OF CEILING TO PREVENT DAMAGE DURING RENOVATIONS. AFTER COMPLETION OF NEW SUSPENDED CEILING, CONTRACTOR SHALL REPOSITION FIXTURES TO FORMER LOCATIONS.
4. DISCONNECT AND REMOVE ALL ELECTRICAL AND CONTROL COMPONENTS ASSOCIATED WITH THE EXISTING LABORATORY AIR HANDLING UNIT M639-AHU LOCATED IN THE EXISTING VENTILATION ROOM. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
 - A) POWER WIRING FROM EXISTING MCC "M" IN THE MAIN ELECTRICAL ROOM TO THE FAN MOTOR.
 - B) LOCAL CONTROL PANEL MHV-1
 - C) PNEUMATIC AND ELECTRIC FIELD CONTROL COMPONENTS INCLUDING ALL ROOM THERMOSTATS
 - D) ALL EXISTING PNEUMATIC TUBING BACK TO AIR SUPPLY SOURCE
 - E) CONTROL WIRING FROM UNIT TO EXISTING FIELD DEVICE PANEL "FDP-M" IN CONTROL ROOM
 - F) CONTROL COMPONENTS AND WIRING IN FDP-M
 - G) EXISTING WIRING BETWEEN FDP-M AND BAILEY NET90 TO REMAIN AND TAGGED AS SPARE
 - H) PROVIDE BLANKING PLATES FOR DEVICES REMOVED FROM FDP-M FACEPLATE.
5. EXISTING FRIDGE RECEPTACLES IN WATER LAB AND EXISTING RECEPTACLES IN HALLWAY TO BE REMOVED AND RELOCATED TO ACCOMMODATE INSTALLATION OF NEW WINDOWS AND DOORS AND NEW FRIDGE LOCATIONS.
6. DISCONNECT AND REMOVE ALL ELECTRICAL AND CONTROL COMPONENTS ASSOCIATED WITH THE REMOVAL OF THE SUPPLEMENTAL AIR SYSTEM TO THE LABORATORY FROM EXISTING AIR HANDLING UNIT M652-AHU. M652-AHU SUPPLIES THE ADMINISTRATION BUILDING OFFICES. SUPPLEMENTAL AIR FROM M652-AHU IS PRESENTLY BROUGHT INTO THE LABORATORY THROUGH A FOUR POSITION MOTORIZED DAMPER (F30-DM1) LOCATED IN THE DUCTWORK BETWEEN THE LABORATORY AND THE ADMINISTRATION BUILDING. PRESENTLY THE POSITION OF THE DAMPER CHANGES AS MORE EXHAUST FANS ARE STARTED. ALL EXISTING CONTROL COMPONENTS ASSOCIATED WITH THIS DAMPER SHALL BE DISCONNECTED AND REMOVED. THIS DEMOLITION INCLUDES EXISTING CONTROL PANEL MHV-16 LOCATED IN THE ADMINISTRATION BUILDING ELECTRICAL ROOM. EXACT LOCATIONS OF EQUIPMENT TO BE DEMOLISHED CAN BE CONFIRMED DURING PRE-TENDER SITE VISIT. COORDINATE ALL DEMOLITION WORK WITH MECHANICAL TRADES.
7. DISCONNECT AND REMOVE ALL ELECTRICAL AND CONTROL COMPONENTS ASSOCIATED WITH THE EXISTING WATER LAB FUME HOOD EXHAUST FANS (LOCATED ON THE ROOF). EXISTING EXHAUST FANS ARE PRESENTLY FED FROM PANEL "M" IN MECHANICAL ROOM IN MAIN BUILDING. DISCONNECT AND REMOVE EXISTING WIRING AND CONDUIT BACK TO PANEL "M". COORDINATE DEMOLITION WITH MECHANICAL TRADES.
8. DISCONNECT AND REMOVE ALL ELECTRICAL COMPONENTS ASSOCIATED WITH MECHANICAL DEMOLITION OUTLINED IN DIVISION 15. NOTE THAT DEMOLITION WILL BE STAGED WITH WASTEWATER AREA DEMOLISHED FIRST AND WATER AREA NEXT.

NEP-2312

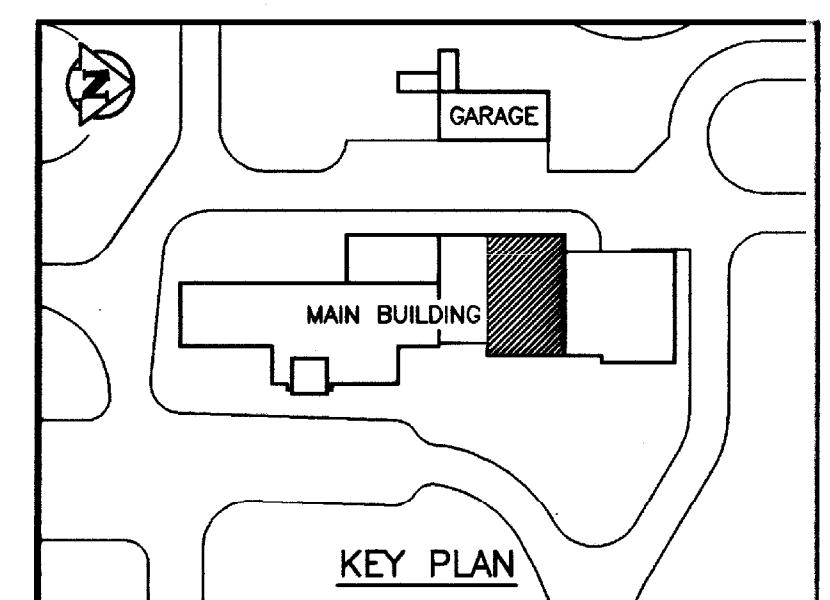
DRAWING USED FOR TENDERING PURPOSE ONLY

EXISTING PANEL "F" TO BE REMOVED
 EXISTING PANEL "E" TO BE REMOVED
 EXISTING PANEL "C" TO REMAIN
 EXISTING CONTROL PANEL MHV-18 TO REMAIN

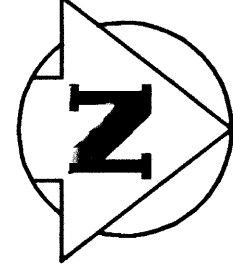
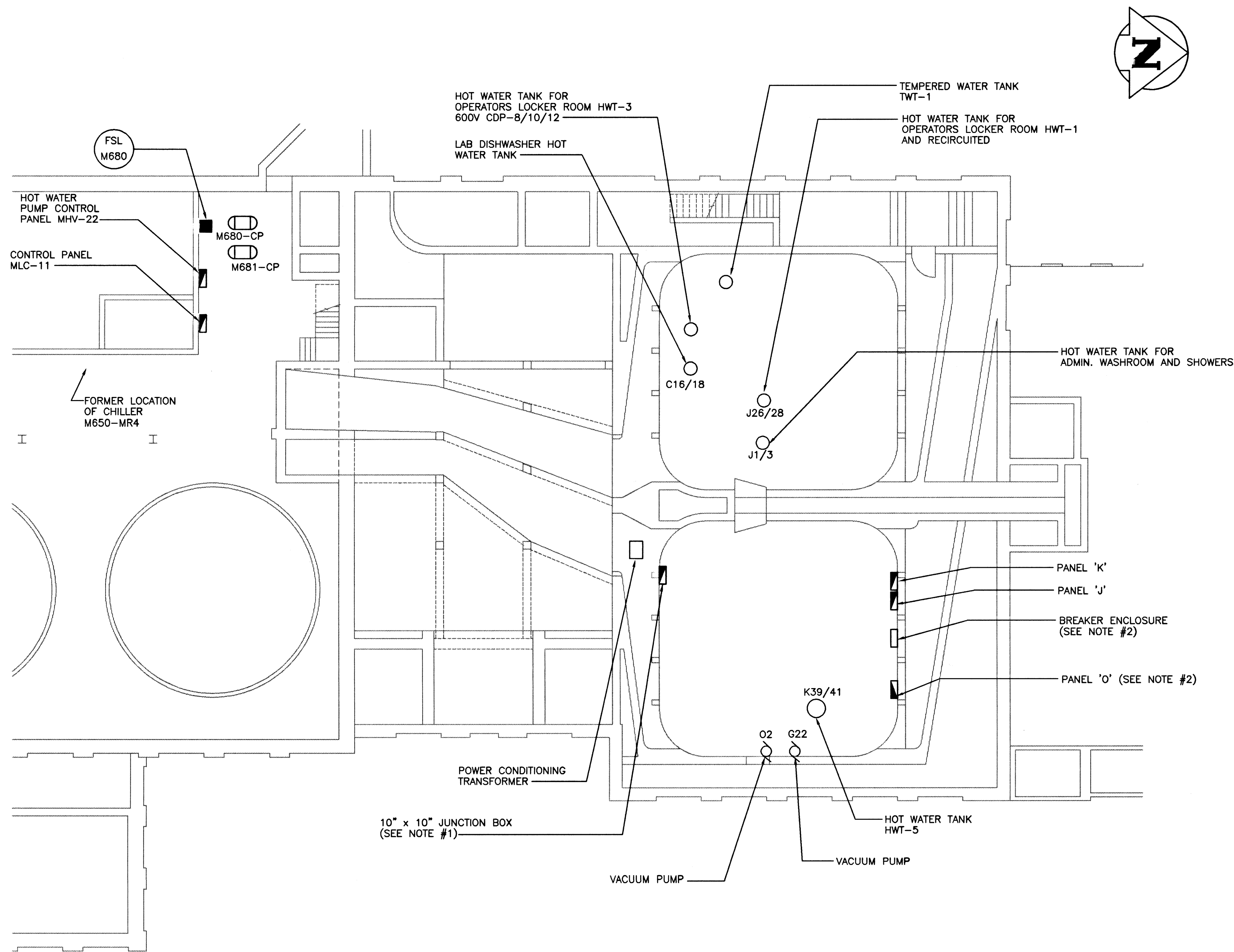
DISHWASHER TO BE RELOCATED

DISHWASHER TO BE REMOVED

1 PARTIAL FLOOR PLAN
 1:50

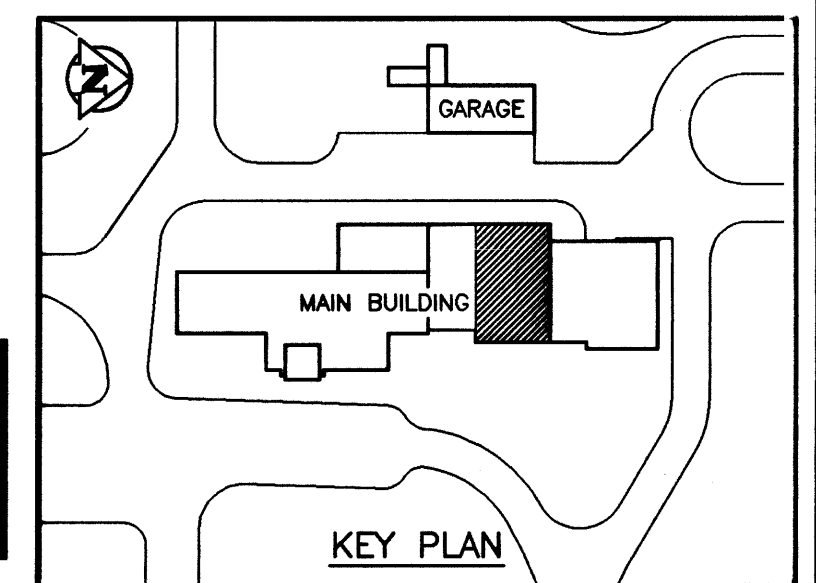


B.M. ELEV.		WARDROP ENGINEERING INC. WINNIPEG TORONTO VICTORIA BAY		ENGINEER'S SEAL		THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTEWATER DEPARTMENT	
DESIGNED BY B.T.		CHECKED BY		ORIGINAL DRAWING REVISION "0" SEALED BY W.B. TODD 96/02/26		NORTH END WATER POLLUTION CONTROL CENTRE CITY DRAWING NUMBER	
DRAWN BY H.P.C.C.		APPROVED BY		LABORATORY RENOVATIONS - ELECTRICAL		SHEET OF	
0 ISSUED FOR TENDER 96/02 B.T.		HOR. SCALE: 1:50 U/N		CONSULTANT DRAWING NO. 940012-03-00-0102		ELECTRICAL DEMOLITION FLOOR PLAN	
- ISSUED FOR CITY REVIEW 95/12 B.T.		VERTICAL:		RELEASED FOR CONSTRUCTION:		NEP-2312	
NO. REVISIONS		DATE BY		DATE 95.07.24		DATE	



1 ELECTRICAL EQUIPMENT LAYOUT
SCALE: 1:100

AS CONSTRUCTED
DATE 97/02 BY D.C.
APPROVED BY _____



B.M. ELEV.		WARDROP ENGINEERING INC. WINNIPEG TORONTO TULINGER BAY		ENGINEER'S SEAL		THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT	
		DESIGNED BY R.M.		ORIGINAL DRAWING REVISION "D" SEALED BY W.B. TODD 96.02.26		NORTH END WATER POLLUTION CONTROL CENTRE	
		DRAWN BY H.P.C.C./D.C.		CHECKED BY		LABORATORY RENOVATIONS - ELECTRICAL	
				APPROVED BY		CITY DRAWING NUMBER	
1 AS CONSTRUCTED B.T.		HOR. SCALE: 1:100		RELEASED FOR CONSTRUCTION:		SHEET OF	
0 ISSUED FOR TENDER 96/02 B.T.		VERTICAL:				NEP-2313	
- ISSUED FOR CITY REVIEW 95/12 B.T.		DATE 95.07.24		CONSULTANT DRAWING NO. 940012-03-00-E103		NEW EQUIPMENT	
NO. REVISIONS		DATE BY		DATE			

PANEL 'K' 120/240 V, 1 ϕ , 3W, 225 A MAINS

FEEDER	DESCRIPTION	WATT			C.T.	BRK AMP	A	B	C	DESCRIPTION	FEEDER
		A	B	C							
	HEWLETT PACKARD G.C. ROOM			1	20				CABLE G.C. ROOM		
	SPARE			3	15				G.C. ACCESSORIES		
	CARBON ANALYZER TOC ROOM			5	15				G.C. ROOM RECEPTACLE		
	CARBON ANALYZER TOC ROOM			7	20				TOC ROOM COUNTER PLUG		
	BALANCE ROOM RECEPTACLE			9	15				ATOMIC ABSORP - NORTHWALL RCPT		
	TOC ROOM POWER BAR			11	15				ATOMIC ABSORP - NORTHWALL RCPT		
	AUTO ANALYSER RM EASTWALL RCPT			13	15				AUTO ANALYZER RM EASTWALL		
	ATOMIC ABSORP PHOTOMETER STHWALL			15	15				ATOMIC ABSORP PHOTOMETER STHWALL		
	ATOMIC ABSORP PHOTOMETER ESTWALL			17	15				ATOMIC ABSORP PHOTOMETER ESTWALL		
	SPARE			19	15				AUTO ANALYZER ROOM SOUTHWALL		
	OUTSIDE RECEPTACLE WEST WALL			21	15				W/W LAB WESTWALL		
	OUTSIDE RECEPTACLE WEST WALL			23	15				SPARE		
	OUTSIDE RECEPTACLE LAB. WALL			25	15				SPARE		
	OUTSIDE RECEPTACLE LAB. WALL			27	15				SPARE		
	W/W LAB DISHWASHER			29	15				GASCHROMATOGRAPH - GC ROOM		
	SPARE			31	15				SPACE		
	HOT WATER TANK - W/W LAB SINKS			33	30				SPACE		
	SPARE			35	30				SPACE		
	SPARE			37	30				SPACE		
	HOT WATER TANK - OPERATORS LOCKER ROOM			39	30				SPACE		
	SPARE			41	30				SPACE		

PANEL 'J' 120/240 V, 1 ϕ , 3W, 225 A MAINS

FEEDER	DESCRIPTION	WATT			C.T.	BRK AMP	A	B	C	DESCRIPTION	FEEDER
		A	B	C							
2 #8	WATER HEATER ADMIN. WASHROOM & SHOWERS	4500	4500	3	30				MAIN W/W FUME CANOPY EXH. FAN		
	W/W LAB - NORTHWALL RECEPT.			5	30				SPARE		
	SPARE			7	15				W/W AUX. HEAT REMOVAL EXH FAN		
	SPARE			9	15				W/W HEAT REMOVAL CANOPY EXH FAN		
	RO/DI ROOM RECEPTACLES			11	15				ATOMIC ABSORPTION WESTWALL RECEPT		
	RO/DI ROOM RECEPTACLES			13	15				RO/DI ROOM RECEPTACLES		
	FUME HOOD ACID DIGESTION			15	15				RO/DI ROOM RECEPTACLES		
	FUME HOOD ACID DIGESTION			17	15				DAMPER MOTOR		
	SPARE			19	15				ACID DIGEST HEAT HOOD EXH FAN		
	SPARE			21	15				BASEMENT LIGHTS		
	SPARE			23	30				W/W LAB NORTH WALL RECEPT		
	SPARE			25	30				W/W LAB DRYING OVEN		
	MUFFLE OVEN RECEPTACLE			27	30				MUFFLE OVEN RECEPTACLE		
	ATOMIC ABSORPTION RECEPTACLE			29	30				ACID DIGEST FUME HOOD RECEPTACLE WESTWALL		
	ACID DIGESTION RM RECEPT WESTWALL			31	30				ACID DIGEST FUME HOOD RECEPTACLE EASTWALL		
	ACID DIGESTION RM RECEPT EASTWALL			33	20				SPARE		
	SPACE			35	20				SPACE		
	SPACE			37	50				SPACE		
	SPACE			39	40				SPACE		
	SPACE			41	42				SPACE		

SUB-PANEL 'F' 120/208V, 3 ϕ , 4W, 225 A MAINS

FEEDER	DESCRIPTION	PHASE WATT			C.T.	BRK AMP	A	B	C	DESCRIPTION	FEEDER
		A	B	C							
	W/W LAB - NORTH BENCH			1	15				VACUUM PUMP - DRAWSPACE		
	W/W LAB - INCUBATOR/FREEZR			3	15				SPARE		
	W/W LAB - LAB FRIDGE RCPT			5	15				W/W LAB - OROB CANOPY, 3 SWITCHES		
	TEMP TRAILER IN REAR OF LAB	2500		7	15				SPARE		
	220V BENCH PLUG			9	15				SPARE		
	EFFLUENT SAMPLER	1200	1200	11	15				HEAT TRACE FOR AIRLINE SAMPLER SHACK		
	SPARE			13	15				RECATOR NH3 DISTILLER		
	SPARE			15	15				W/W LAB FRIDGE - ALUMINUM		
	SPARE			17	15				SPARE		
	SPARE			19	15				FRIDGE		
	SPARE			21	15				SPACE		
	SPARE			23	15				SPACE		
	SPARE			25	15				SPACE		
	SPARE			27	15				SPACE		
	SPARE			29	15				SPACE		

PANEL 'E' 120/208V, 3 ϕ , 4W, 225 A MAINS

FEEDER	DESCRIPTION	PHASE WATT			C.T.	BRK AMP	A	B	C	DESCRIPTION	FEEDER
		A	B	C							
	220V RCPT - AUTO ANALYZER			1	20				RECEPTACLE		
	RECEPTACLE			3	20				RECEPTACLE		
	RECEPTACLE			5	15				AUTO ANALYZER RECEPTACLE		
	AUTO ANALYZER RECEPTACLE			7	15				SPARE		
	SPARE			9	15				CLOCK RECEPTACLE		
	AUTO ANALYZER RECEPTACLE			11	15				RECEPTACLE		
	UTILITY PLUG			13	15				RECEPTACLES - W/W LAB		
	FUME HOOD HOT PLATE			15	15				RECEPTACLE		
	CENTRIFUGE			17	20				RECEPTACLE		
	PANEL RECEPTACLE			19	20				W/W LAB NORTHWALL RECEPT.		
	SPARE			21	20				SPARE		
	SPARE			23	15				SPARE		
	DISTILLER - 220V RECEPTACLE			25	20				SPARE		
	RO/DI ROOM			27	20				SPARE		
	RECEPT. CEM. OFFICE			29	15				SPARE		

PANEL 'F' 120/208V, 3 ϕ , 4W, 225 A MAINS

FEEDER	DESCRIPTION	PHASE WATT			C.T.	BRK AMP	A	B	C	DESCRIPTION	FEEDER
		A	B	C							
	SPARE			1	15				SPARE		
	SPARE			3	15				RECEPT - COUNTER WATER LAB	*	
	SPARE			5	15				RECEPT - COUNTER WATER LAB	*	
	SPARE			7	30				RECEPT - COUNTER WATER LAB	*	
	SPARE			9	30				RECEPT - NEW FUME HOOD	*	
	SPARE			11	15				RECEPT - NEW FUME HOOD	*	
	SPARE			13	15				RECEPT - ISLAND WATER LAB	*	
	SPARE			15	15				RECEPT - ISLAND WATER LAB	*	
	SPARE			17	15				RECEPT - ISLAND WATER LAB	*	
	SPARE			19	15				RECEPT - ISLAND WATER LAB	*	
	SPARE			21	15				RECEPT - OLD FUME HOOD	*	
	SPARE			23	15				RECEPT - OLD FUME HOOD	*	
	SPARE			25	30				LIGHTS - OLD FUME HOOD	*	
	SPARE			27	15				SPARE	*	
	SPARE			29	15				SPARE	*	

PANEL 'O' 120/208V, 3 ϕ , 4W, 225 A MAINS

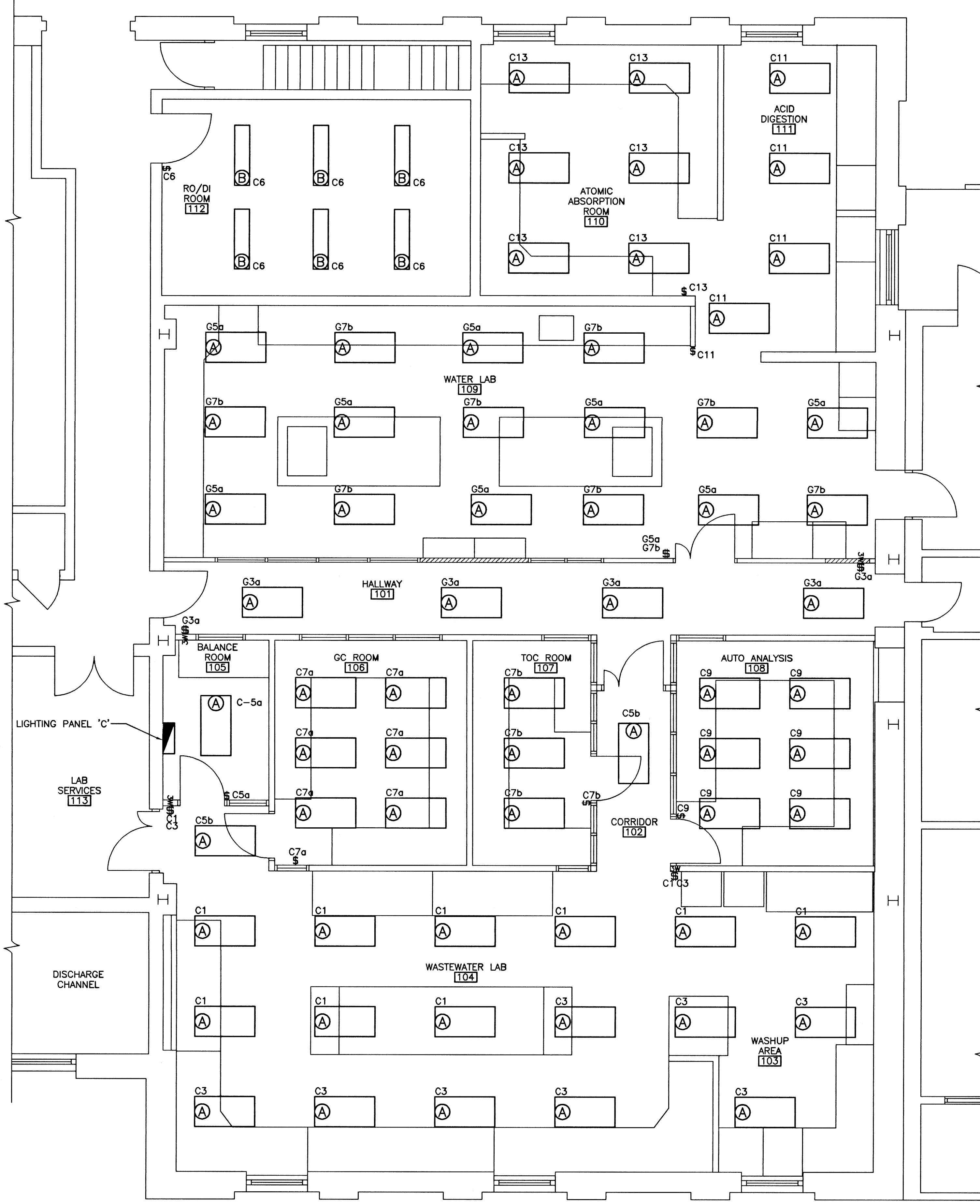
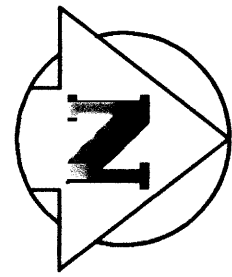
FEEDER	DESCRIPTION	PHASE WATT			C.T.	BRK AMP	A	B	C	DESCRIPTION	FEEDER
		A	B	C							
	W/W LAB LIGHTING			1	15				240V ACID HOOD		
	W/W LAB LIGHTING			3	15				EXHAUST FAN		
	ELECTRICAL RM. LIGHTING			5	15				VENTILATION RM LIGHTS		
	GC/TOC ROOM LIGHTING			7	15				BASEMENT NEW AREA LIGHTS	*	
	AUTO ANALYZER LAB LIGHTING			9	15				BASEMENT NEW AREA LIGHTS	*	
	BAL/ACID DIGEST LIGHTING			11	15				STOREROOM LIGHTS	*	
	ATOMIC ABSORP./RO/DI LGHTS			13	15				STOREROOM LIGHTS	*	
	SPACE			15	15				LAB WATER HEATER	*	
	SPACE			17	15				LAB WATER HEATER	*	
	SPACE			19	20				208V RECEPT. - PUMP WELL	*	
	SPACE			21	20				SPACE		
	SPACE			23	20				SPACE		
	SPACE			25	20				SPACE		
	SPACE			27	20				SPACE		
	SPACE			29	20				SPACE		
	SPACE			31	20				SPACE		
	SPACE			33	20				SPACE		
	SPACE			35	20				SPACE		
	SPACE			37	20				SPACE		
	SPACE			39	20				SPACE		
	SPACE			41	20				SPACE		

DRAWING USED FOR TENDERING PURPOSE ONLY

- GENERAL NOTES:**
- ALL PANELS SHOWN ARE EXISTING. ALL EXISTING WIRING AND CONDUITS INDICATED "*" SHALL REMAIN. ALL EXISTING WIRING, CONDUIT & CIRCUIT BREAKERS ASSOCIATED WITH ALL OTHER CIRCUITS SHALL BE REMOVED.
 - SOME EXISTING WASTEWATER LAB EQUIPMENT IS ALSO FED FROM PANEL 'D' IN MAIN ELECTRICAL ROOM.
 - EXISTING PANEL 'SUB-F' TO BE REMOVED. ALL CIRCUITS INDICATED "*" TO BE RECONNECTED TO NEW PANEL 'O'. SEE DWG. NEP-2314.
 - EXISTING PANELS 'E' AND 'F' SHALL BE DISCONNECTED, REMOVED AND REPLACED WITH NEW PANELS.
 - EXISTING PANELS 'C', 'J' AND 'K' SHALL REMAIN.
 - WIRING FOR SUBPANEL F, CCTS 23/25/27 IS PRESENTLY TERMINATED IN CEILING SPACE ABOVE WATER LAB.
 - EXISTING HOT WATER TANK PREVIOUSLY REMOVED BY CITY.

B.M. ELEV.	WARDROP ENGINEERING INC. WINNIPEG TORONTO THUNDER BAY		ENGINEER'S SEAL	THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT
			ORIGINAL DRAWING REVISION "0" SEALED BY W.B. TODD 96.02.26	
DESIGNED BY B.T.	CHECKED BY	DRAWN BY D.C.	APPROVED BY	NORTH END WATER POLLUTION CONTROL CENTRE
HOR. SCALE: N.T.S.	RELEASED FOR CONSTRUCTION:	CONSULTANT DRAWING NO. 940012-03-00-E104	EXISTING PANEL SCHEDULES	CITY DRAWING NUMBER
NO. REVISIONS	DATE	DATE	DATE	SHEET OF
0 ISSUED FOR TENDER 96/02 B.T.				
- ISSUED FOR CITY REVIEW 95/12 B.T.				
	DATE 95.07.24			NEP-2314

NEP-2314



LIGHT FIXTURE SCHEDULE		
TYPE	DESCRIPTION	MOUNTING
A	2'x4' 3-32 WATT, 120V FLUORESCENT FIXTURE	T-BAR
B	1'x4' 2-32 WATT, 120V FLUORESCENT FIXTURE	SUSPENDED FROM CEILING TO 8ft. FROM FLOOR

NOTES:

1. CO-ORDINATE INSTALLATION OF NEW LIGHT FIXTURES WITH NEW CEILING AND NEW MECHANICAL DUCTWORK.
2. FOR DETAILED DESCRIPTION OF LIGHT FIXTURES, REFER TO SPECIFICATIONS AND OPERATIONS & MAINTENANCE MANUALS.
3. LIGHTING PANEL "G" IS LOCATED IN MAIN BUILDING MECHANICAL ROOM NORTH OF LUNCHROOM.

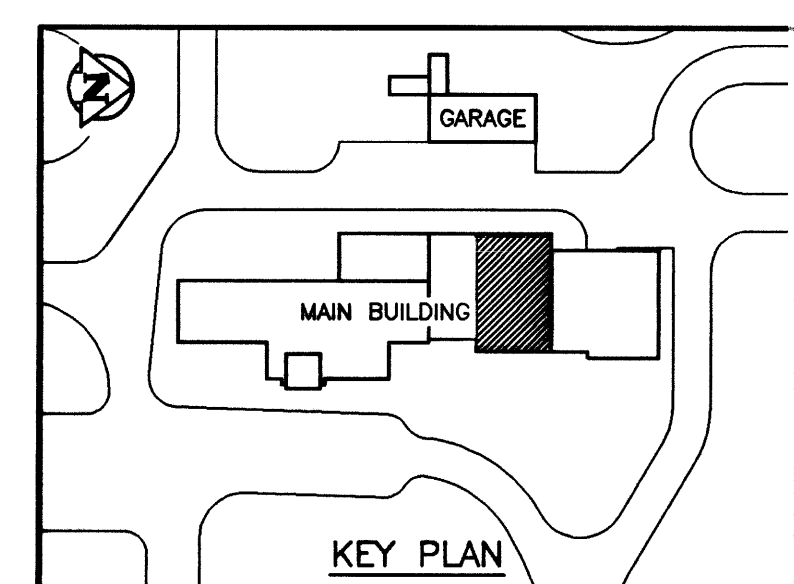
NEP-2315

LIGHTING PANEL "C"

LAB SERVICES (113)

DISCHARGE CHANNEL

AS CONSTRUCTED
 DATE 97/02 BY D.C.
 APPROVED BY _____



NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED	97/02	B.T.
0	ISSUED FOR TENDER	96/02	B.T.
-	ISSUED FOR CITY REVIEW	95/12	B.T.

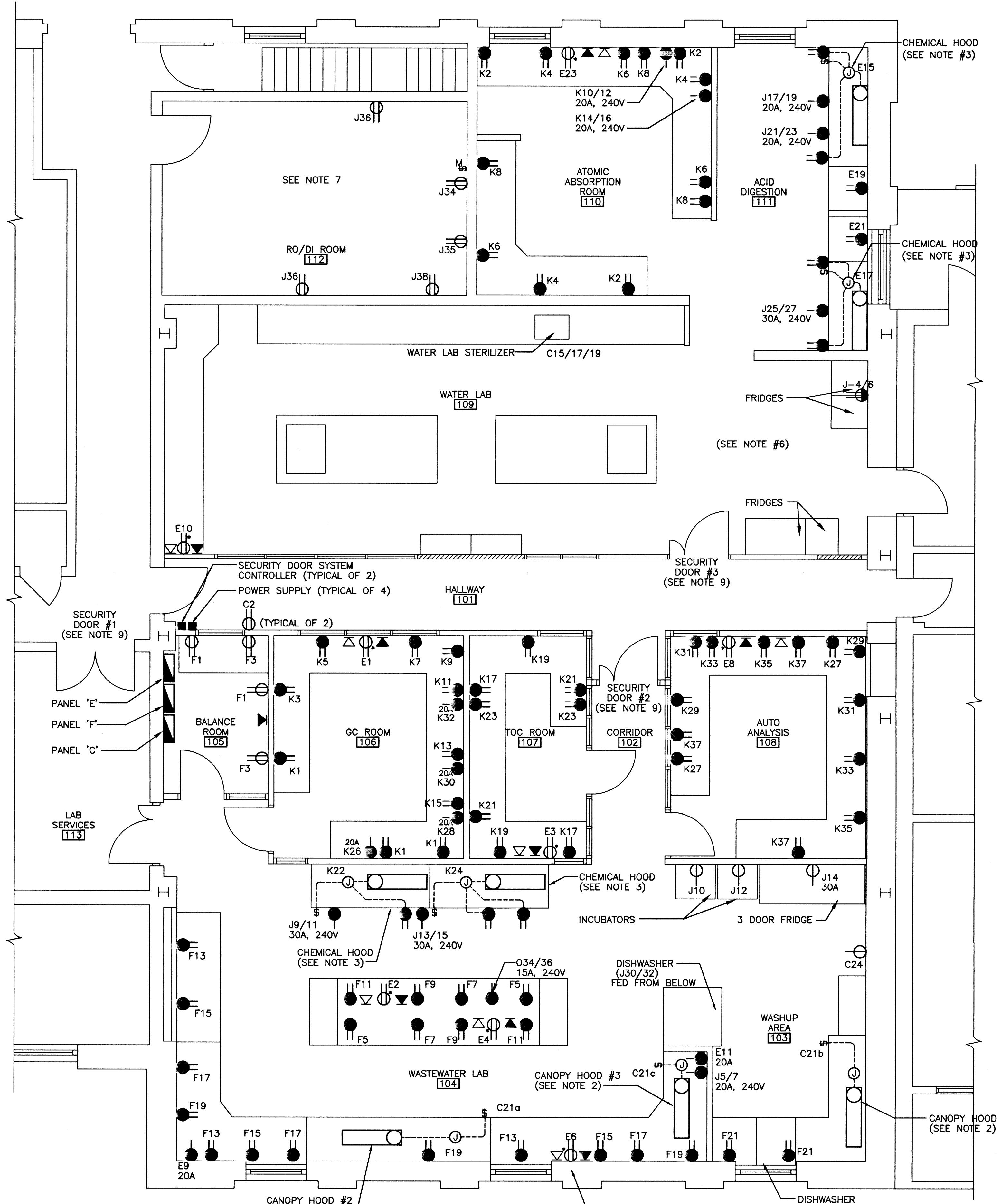
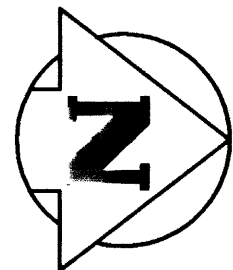
WARDROP ENGINEERING INC.
 WINNIPEG TORONTO THUNDER BAY

DESIGNED BY R.M./B.T.	CHECKED BY
DRAWN BY H.P.C.C./D.C.	APPROVED BY
HOR. SCALE: 1:50 U/N	
VERTICAL:	
RELEASED FOR CONSTRUCTION:	DATE

ENGINEER'S SEAL
 ORIGINAL DRAWING
 REVISION "D" SEALED BY
 W.B. TODD
 96.02.26
 CONSULTANT DRAWING NO.
 940012-03-00-E105

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
 LABORATORY RENOVATIONS - ELECTRICAL
 LIGHTING FLOOR PLAN
 CITY DRAWING NUMBER
 SHEET OF
 NEP-2315

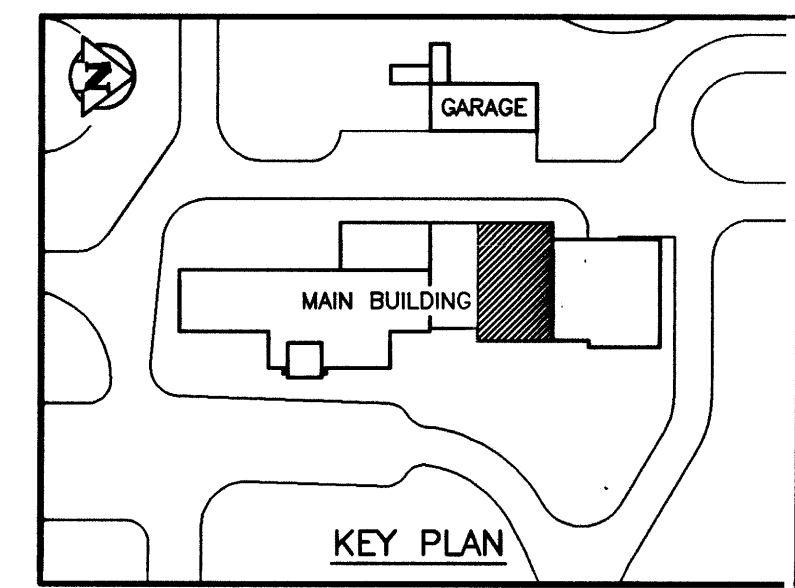


NOTES:

1. ALL RECEPTACLES SHOWN SHADED SUPPLIED AS PART OF THE LABORATORY FURNITURE BY THE LABORATORY FURNITURE MANUFACTURER. THIS CONTRACTOR SHALL SUPPLY AND INSTALL ALL WIRING AND CONDUIT FROM PANELS FOR CONNECTION TO THESE RECEPTACLES, AS INDICATED. RECEPTACLES SHOWN NOT SHADED SUPPLIED AND INSTALLED BY CONTRACTOR.
2. THE LABORATORY EQUIPMENT SUPPLIER SUPPLIED THE FUME HOODS COMPLETE WITH A FLUORESCENT LIGHT FIXTURE AND SWITCH PRE-WIRED TO A JUNCTION BOX AS SHOWN. THIS CONTRACTOR SHALL SUPPLY AND INSTALL ALL WIRING AND CONDUIT FROM THE PANELS FOR CONNECTION TO THE JUNCTION BOXES, AS INDICATED.
3. THE LABORATORY EQUIPMENT SUPPLIER WILL SUPPLY THE ACID HOODS SHOWN IN THE ACID DIGESTION ROOM AND THE FUME HOODS SHOWN ON THE WEST WALL OF THE WASTE WATER LAB COMPLETE WITH A FLUORESCENT LIGHT FIXTURE, SWITCH, AND 120 V RECEPTACLES PRE-WIRED TO A JUNCTION BOX. THE LABORATORY EQUIPMENT SUPPLIER WILL SUPPLY THE 240 V RECEPTACLES FOR THESE HOODS FOR INSTALLATION IN THE BASE CABINETS BY THIS CONTRACTOR. THIS CONTRACTOR SHALL SUPPLY AND INSTALL ALL WIRING AND CONDUIT FROM PANELS TO THE JUNCTION BOXES AND FROM PANELS TO 240 V RECEPTACLES, AS INDICATED.
4. REFER TO LABORATORY FURNITURE SPECIFICATIONS FOR ADDITIONAL DETAILS, AND BECOME FAMILIAR WITH LAB EQUIPMENT SUPPLIED, PRIOR TO COMMENCING WORK.
5. COORDINATE WITH MTS AND CITY OF WINNIPEG REGARDING INSTALLATION OF TELEPHONE AND LAN SYSTEM EMPTY CONDUITS AND ASSOCIATED OUTLETS.
6. EXISTING RECEPTACLES IN THE WATER LAB RELOCATED TO ACCOMODATE RELOCATED FRIDGES.
7. COORDINATE INSTALLATION OF RECEPTACLES IN RO/DI ROOM WITH LOCATIONS OF RELOCATED EQUIPMENT FROM EXISTING RO/DI ROOM.
8. RECEPTACLES INDICATED AS "*" SHALL BE USED TO FEED NEW UNINTERRUPTIBLE POWER SUPPLIES.
9. FOR DOOR ACCESS SECURITY SYSTEM DETAIL, REFER TO DRAWING NEP-2320. CONTROLLERS, POWER SUPPLIES, AND RECEPTACLES MOUNTED IN CEILING SPACE.
10. K10 REPRESENTS PANEL "K", CIRCUIT #10 (TYPICAL).

NEP-2316

AS CONSTRUCTED
 DATE 97/02 BY T.G.
 APPROVED BY _____



NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED	97/02	B.T.
0	ISSUED FOR TENDER	96/02	B.T.
-	ISSUED FOR CITY REVIEW	95/12	B.T.

WARDROP ENGINEERING INC.
 WINNIPEG TORONTO THUNDER BAY

DESIGNED BY R.M./B.T.	CHECKED BY
DRAWN BY H.P.C.C./D.C.	APPROVED BY
HOR. SCALE: VERTICAL: 1:50 U/N	RELEASED FOR CONSTRUCTION:
DATE 95.07.24	DATE

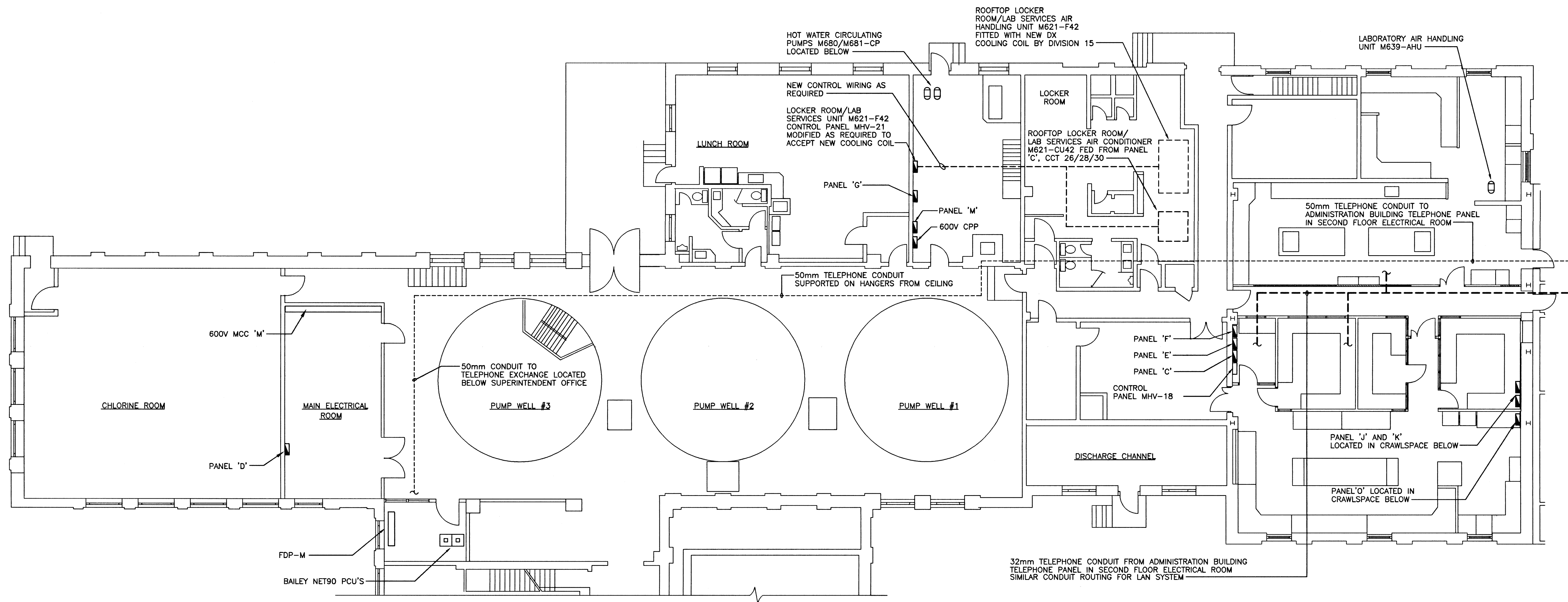
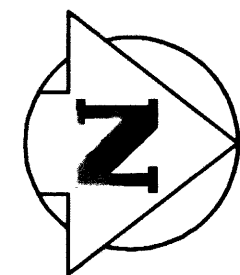
ENGINEER'S SEAL
ORIGINAL DRAWING REVISION "0" SEALED BY W.B. TODD 96.02.26
CONSULTANT DRAWING NO. 940012-03-00-1106

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
 LABORATORY RENOVATIONS - ELECTRICAL

RECEPTACLES, TELEPHONE AND COMMUNICATION FLOOR PLAN

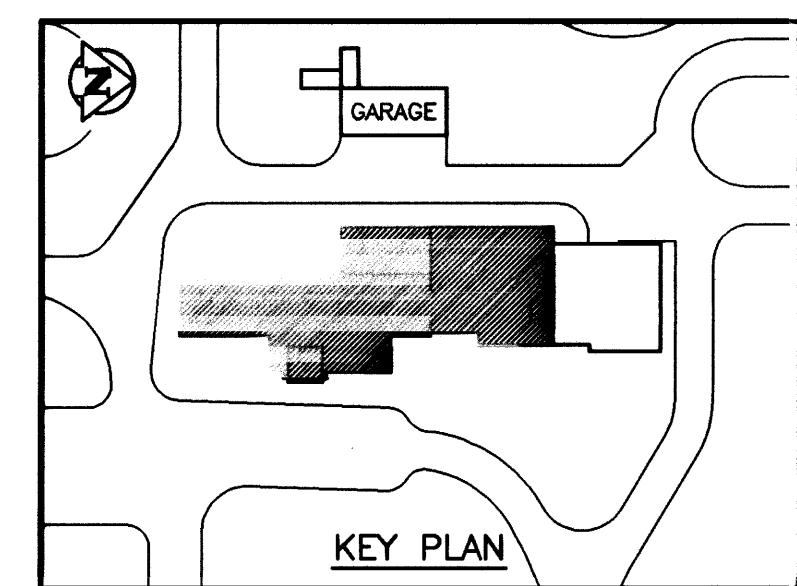
CITY DRAWING NUMBER
 SHEET OF
 NEP-2316



PARTIAL MAIN BUILDING FLOOR PLAN

NEP-2317

AS CONSTRUCTED
 DATE 97/02 BY D.C.
 APPROVED BY _____



WARDROP ENGINEERING INC. <small>WINNIPEG TORONTO THUNDER BAY</small>			ENGINEER'S SEAL ORIGINAL DRAWING REVISION 'D' SEALED BY W.B. TODD 96.02.26		THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT	
DESIGNED BY R.M./B.T. CHECKED BY _____ DRAWN BY H.P.C.C./D.C. APPROVED BY _____			NORTH END WATER POLLUTION CONTROL CENTRE LABORATORY RENOVATIONS - ELECTRICAL		CITY DRAWING NUMBER SHEET OF	
1 AS CONSTRUCTED 97/02 B.T. 0 ISSUED FOR TENDER 96/02 B.T. - ISSUED FOR CITY REVIEW 95/12 B.T.			HOR. SCALE: 1:100 U/N VERTICAL: _____ RELEASED FOR CONSTRUCTION: _____		MAIN BUILDING FLOOR PLAN NEP-2317	
NO. REVISIONS DATE BY DATE 95.07.24			CONSULTANT DRAWING NO. 940012-03-00-E107			

EXISTING PANEL 'C', 120/208 V, 3Ø, 4W, 225 A MAINS														
FEEDER	DESCRIPTION	WATT			CCT	BRK	AMP	A	B	C	CCT	BRK	AMP	FEEDER
		A	B	B										
	W/W LAB LIGHTING	900			1	15								NOTE 3
	W/W LAB LIGHTING		800		3	15								
	BALANCE RM & CORRIDOR LIGHTING			400	5	15								
	GC/TOC ROOM LIGHTING	900			7	15								
	AUTO ANALYZER LAB LIGHTING		600		9	15								
	ACID DIGEST LIGHTING			400	11	15								
	ATOMIC ABSORPTION LIGHTS	600			13	15								
SEE NOTE #2	WATER LAB STERILIZER (AUTOCLAVE)		5000		15									
				5000	17	50								
		5000			19									
	W/W LAB FUME HOOD LIGHTS		200		21	15								
	208V RECEPTACLE			2000	23									
	OUTSIDE DISCHARGE CHAMBER	2000			25									
*	RECEPTACLE - DRINKING FOUNTAIN		200		27	15								
*	RECEPTACLE - DEEP WELL			200	29	15								
	SPARE				31									
	SPARE				33									
	SPARE				35									
	SPARE				37									
	SPARE				39	15								
	SPARE				41	15								

- NOTES:
 1. * - INDICATES EXISTING WIRING AND CONDUIT TO REMAIN.
 2. WATER LAB STERILIZER FORMERLY FED FROM PANEL 'F'. CONTRACTOR TO RE-FEED FROM PANEL 'C' AS INDICATED. EXISTING WIRING AND CONDUIT CAN BE RE-USED AS MUCH AS POSSIBLE.
 3. PROVIDE LOCKDOG ON CCT#2.

NEW PANEL 'E' 120/208V, 3Ø, 4W, 225 A MAINS														
FEEDER	DESCRIPTION	PHASE WATT			CCT	BRK	AMP	A	B	C	CCT	BRK	AMP	FEEDER
		A	B	C										
	GC ROOM UPS	1000			1	15								
	TOC ROOM UPS		700		3	15								
	RECEPTACLE				5	15								
	RECEPTACLE				7	15								
	CENTRIFUGE		500		9	20								
	W/W SMALL OVEN			1000	11	20								
	SPARE				13	30								
	ACID DIGESTION HOOD (WEST)		500		15	15								
	ACID DIGESTION HOOD (EAST)			500	17	15								
	ACID DIGESTION RCPT (MICROWAVE)	1000			19	15								
	ACID DIGESTION RCPT (MICROWAVE)		1000		21	15								
	ATOMIC ABSORPTION UPS			700	23	15								
	ACID DIGEST SCRUBBER #1	400			25	15								
	ACID DIGEST SPRAY PUMP #2		500		27	15								
	ACID DIGEST SPRAY PUMP #1			500	29	15								
	SPACE				31									
	SPACE				33									
	SPACE				35									
	SPACE				37									
	SPACE				39									
	SPACE				41									

EXISTING PANEL 'J' 120/240 V, 1Ø, 3W, 225 A MAINS														
FEEDER	DESCRIPTION	WATT			CCT	BRK	AMP	A	B	C	CCT	BRK	AMP	FEEDER
		A	B	B										
#8	WATER HEATER ADMIN. WASHROOM & SHOWERS	2500			1	30								
			2500		3									
	W/W LAB - LARGE DRYING OVEN	2000			5									
			2000		7									
#10	W/W LAB - 240V RECEPTACLE MUFFLE OVEN #1	2500			9									
			2500		11									
#10	W/W LAB - 240V RECEPTACLE MUFFLE OVEN #2	2500			13									
			2500		15									
	ACID DIGESTION - 240V RECEPTACLE CHEM FUME HOOD	1500			17									
			1500		19									
	ACID DIGESTION - 240V RECEPTACLE CHEM FUME HOOD	1500			21									
			1500		23									
#10	ACID DIGESTION - 240V RECEPTACLE CHEM FUME HOOD	2500			25									#6
			2500		27									
	OUTSIDE RECEPTACLE	1200			29	15								#6
	OUTSIDE RECEPTACLE		1200		31	15								
	SPACE				33									
	RO/DI RECEPTACLE		1000		35	15								
	W/W LAB WASH-UP DISHWASHER	1200			37	15								
	OUTSIDE RECEPTACLE		1200		39	15								
	OUTSIDE RECEPTACLE			1200	41	15								

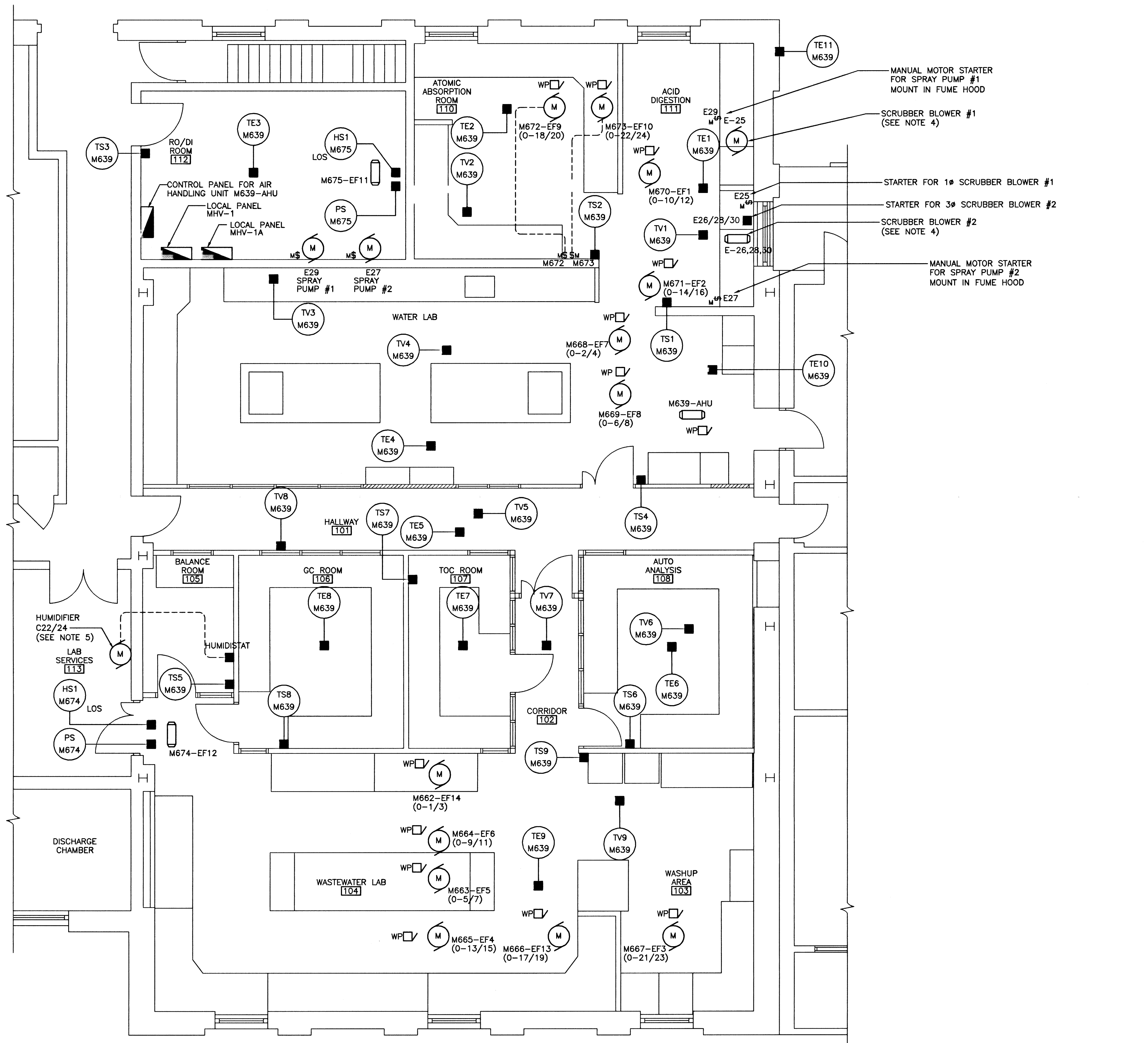
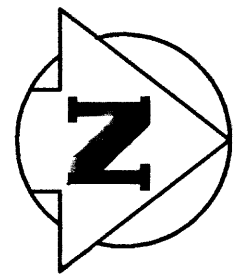
NEW PANEL 'F' 120/208V, 3Ø, 4W, 225 A MAINS														
FEEDER	DESCRIPTION	PHASE WATT			CCT	BRK	AMP	A	B	C	CCT	BRK	AMP	FEEDER
		A	B	C										
	RECEPTACLE - BALANCE ROOM	200			1	15								
	RECEPTACLE - BALANCE ROOM		200		3	15								
	RECEPT. - W/W LAB ISLAND			200	5	15								
	RECEPT. - W/W LAB ISLAND	200			7	15								
	RECEPT. - W/W LAB ISLAND		200		9	15								
	RECEPT. - W/W LAB ISLAND			200	11	15								
	RECEPTACLE - W/W LAB	300			13	15								
	RECEPTACLE - W/W LAB		300		15	15								
	RECEPTACLE - W/W LAB			300	17	15								
	RECEPTACLE - W/W LAB	300			19	15								
	RECEPTACLE - W/W LAB		300		21	15								
	RECEPTACLE - W/W LAB			300	23	15								
	SPARE				25	15								
	RECEPTACLE WATER LAB	300			27	15								
	SPARE				29	15								
	SPARE				31									

- NOTES:
 1. CIRCUITS INDICATED * ARE EXISTING AND WERE RECONNECTED TO NEW PANEL 'F' EXISTING WIRING AND CONDUIT TO BE RE-USED AS MUCH AS POSSIBLE.

NEW PANEL 'O' 120/240 V, 1Ø, 3W, 225 A MAINS														
FEEDER	DESCRIPTION	WATT			CCT	BRK	AMP	A	B	C	CCT	BRK	AMP	FEEDER
		A	B	B										
	GC ROOM CANOPY FAN M662-EF14 (1/3 HP)	300			1	15								
			300		3									
	W/W LAB FUME HOOD EXHAUST FAN M663-EF5 (1/3 HP)	300			5									
			300		7									
	W/W LAB FUME HOOD EXHAUST FAN M664-EF6 (1/3 HP)	300			9									
			300		11									
	W/W LAB ODOUR HOOD EXHAUST FAN M665-EF4 (3/4 HP)	700			13									
			700		15									
	W/W LAB OVEN HOOD EXHAUST FAN M666-EF13 (1/3 HP)	300			17									
			300		19									
	W/W LAB ACID HOOD EXHAUST FAN M667-EF3 (3/4 HP)	700			21									
			700		23									
	SPACE				25									
					27									
*	EFFLUENT SAMPLER	1000			29									
			1000		31									
	SPACE				33									
	SPACE				35									
	SPACE				37									
	SPACE				39									
	SPACE				41									

- NOTES:
 1. CIRCUITS INDICATED * RE-ROUTED TO NEW PANEL 'O' AS INDICATED. RE-USE EXISTING WIRING AND CONDUIT AS MUCH AS POSSIBLE. SEE DRAWING NEP-2314.

EXISTING PANEL 'K' 120/240 V, 1Ø, 3W, 225 A MAINS														
FEEDER	DESCRIPTION	WATT			CCT	BRK	AMP	A	B	C	CCT	BRK	AMP	FEEDER
		A	B	B										
	GC ROOM RECEPTACLES	400			1	15								
			300		3	15								
	GC ROOM RECEPTACLES	300			5	15								
			300		7	15								
	GC ROOM RECEPTACLES	300			9	15								
			300		11	15								
	GC ROOM RECEPTACLES	300			13	15								



NOTES:

1. AIR HANDLING UNIT M639-AHU, ALL EXHAUST FANS, AND ASSOCIATED DISCONNECTS ARE LOCATED ON THE ROOF. COORDINATE EXACT LOCATIONS WITH DIVISION 15. INSULATED CABLE SLEEVES FOR ROOF PENETRATIONS TO BE SUPPLIED AND INSTALLED BY ARCHITECTURAL TRADES. COORDINATE WITH ARCHITECTURAL TO ENSURE CORRECT SIZES FOR SLEEVES ARE PROVIDED. SUPPLY AND INSTALL LIQUID TIGHT FLEX FROM FAN MOTOR THROUGH SLEEVE AND INTO BUILDING.
2. LOCATION OF ALL FIELD CONTROL COMPONENTS IS APPROXIMATE ONLY. FOR EXACT LOCATIONS, COORDINATE WITH ACTUAL SITE CONDITIONS AND WITH THE CONTRACT ADMINISTRATOR.
3. ALL ROOF MOUNTED 1 PHASE EXHAUST FANS ARE FED FROM PANEL 'O'. REFER TO PANEL SCHEDULE FOR CIRCUITING.
4. SCRUBBERS ARE PACKAGED UNITS, SUPPLIED AND INSTALLED BY DIVISIONS 11 & 15.
5. COORDINATE INSTALLATION OF BALANCE ROOM HUMIDIFIER WITH DIVISION 15.
6. FOR EXACT LOCATIONS OF M639-AHU, REFER TO MECHANICAL DRAWINGS.

MANUAL MOTOR STARTER FOR SPRAY PUMP #1 MOUNT IN FUME HOOD

SCRUBBER BLOWER #1 (SEE NOTE 4)

STARTER FOR 1# SCRUBBER BLOWER #1

STARTER FOR 3# SCRUBBER BLOWER #2

SCRUBBER BLOWER #2 (SEE NOTE 4)

MANUAL MOTOR STARTER FOR SPRAY PUMP #2 MOUNT IN FUME HOOD

NEP-2319

HUMIDIFIER C22/24 (SEE NOTE 5)

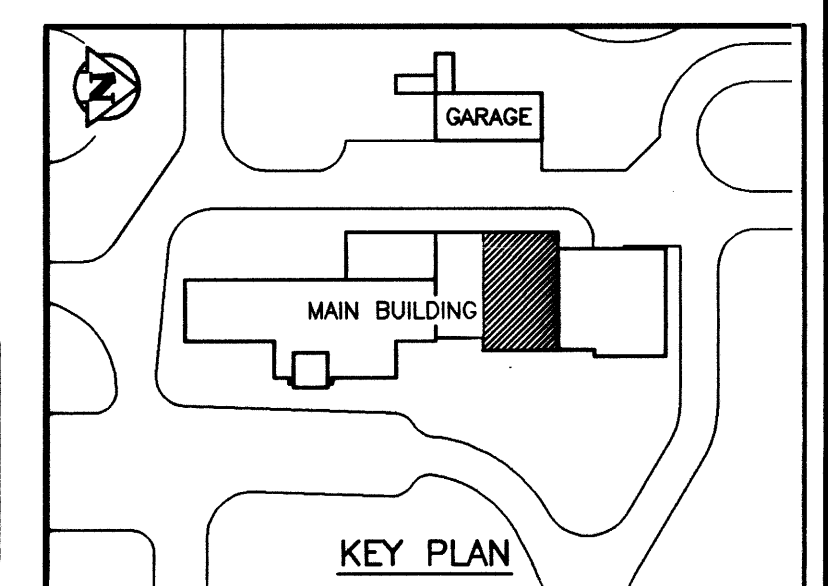
LAB SERVICES T13

HS1 M674

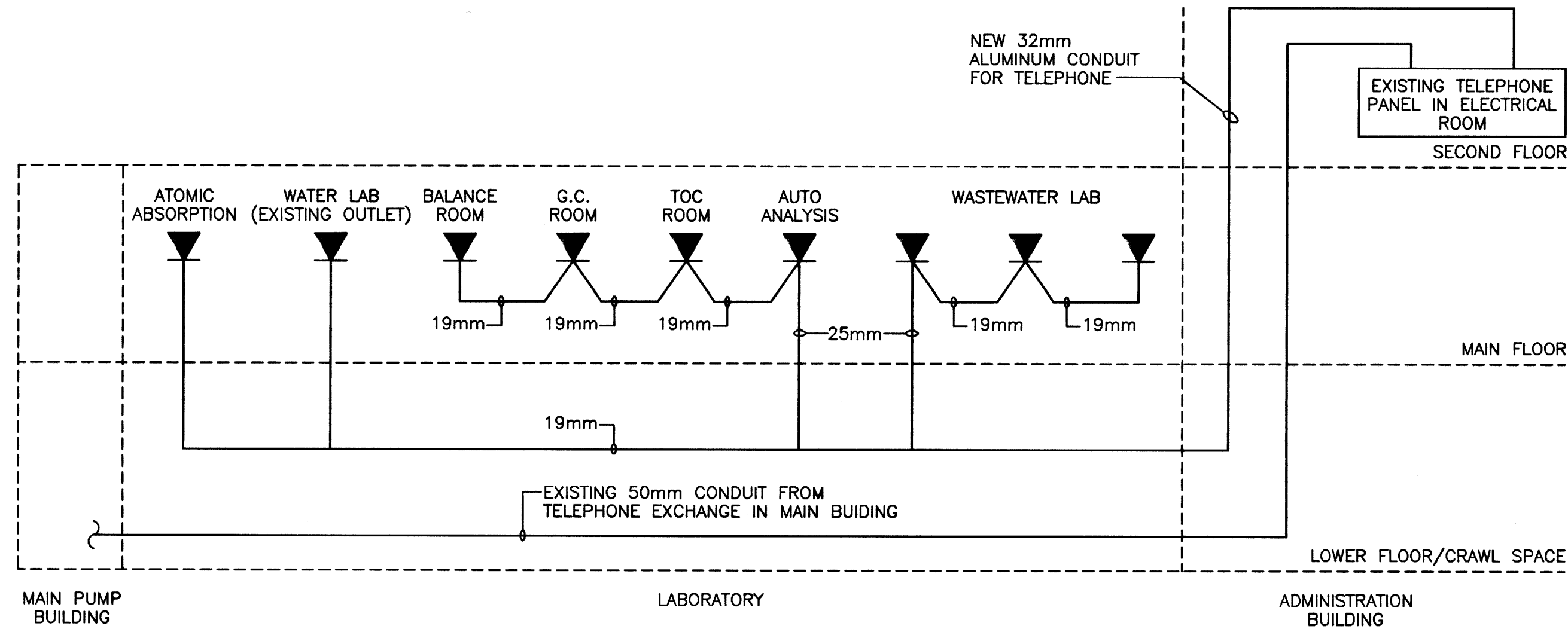
PS M674

DISCHARGE CHAMBER

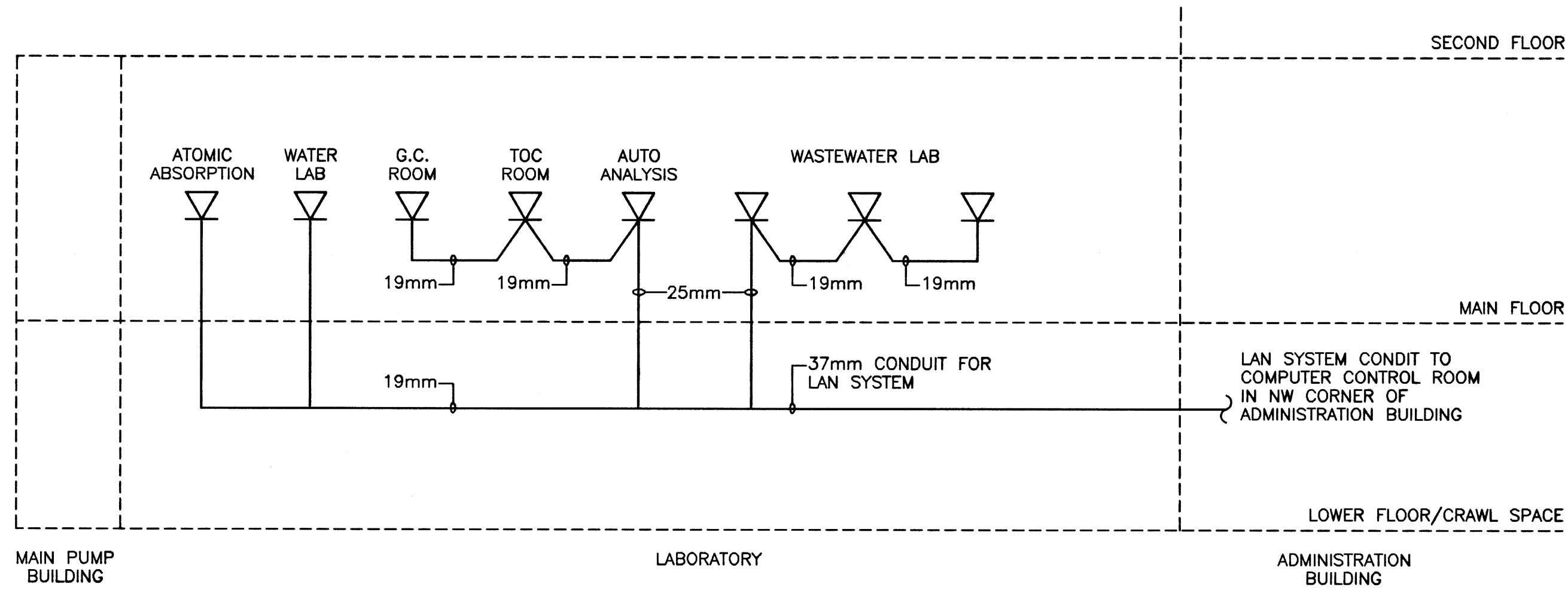
AS CONSTRUCTED
 DATE 97/02 BY D.C.
 APPROVED BY _____



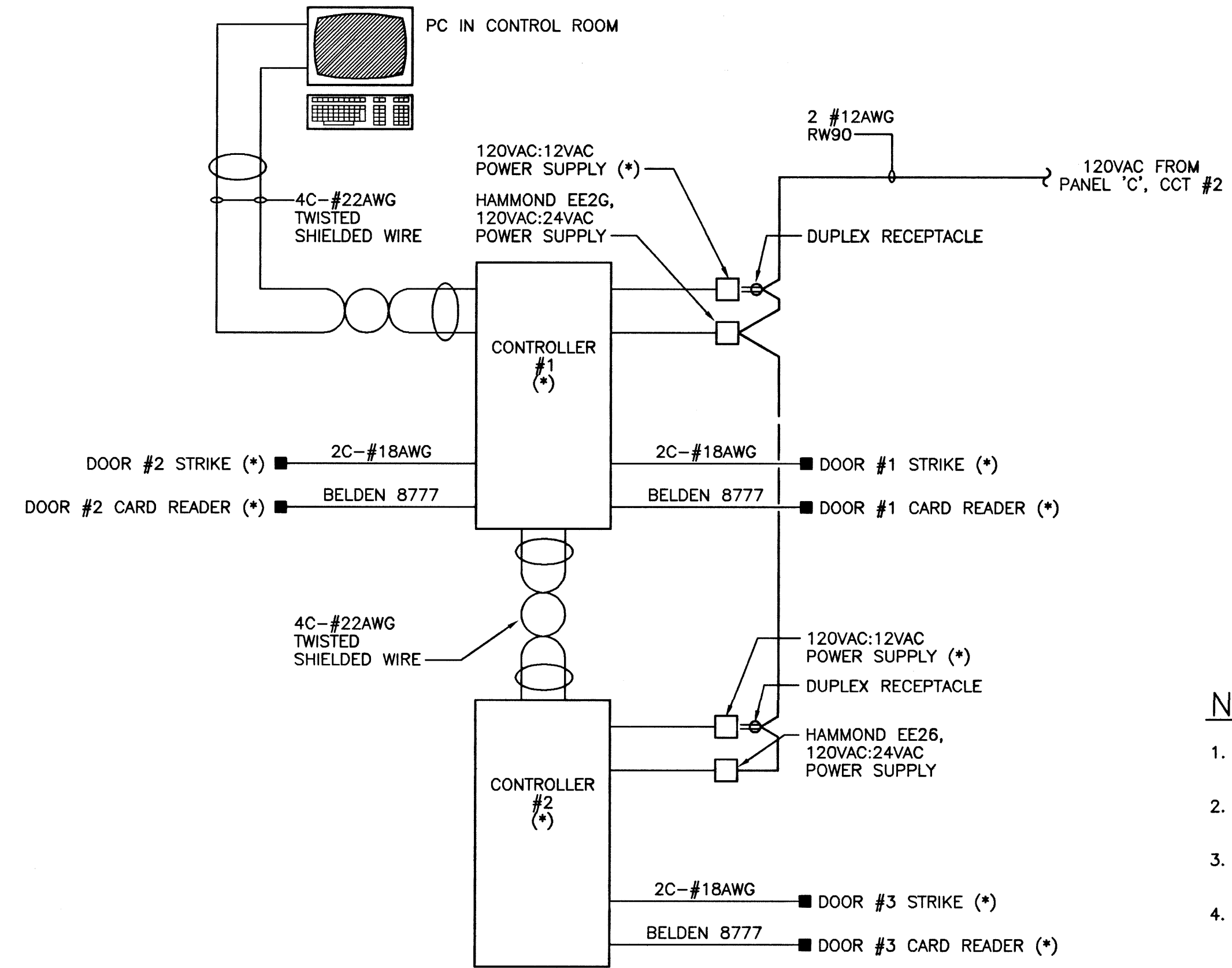
B.M. ELEV.		WARDROP ENGINEERING INC. WINNIPEG TORONTO THUNDER BAY		ENGINEER'S SEAL		THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT	
DESIGNED BY B.T.		CHECKED BY		ORIGINAL DRAWING REVISION "0" SEALED BY W.B. TODD 96.02.26		NORTH END WATER POLLUTION CONTROL CENTRE CITY DRAWING NUMBER	
DRAWN BY H.P.C.C./D.C.		APPROVED BY		LABORATORY RENOVATIONS - ELECTRICAL		SHEET OF	
1 AS CONSTRUCTED 97/02 B.T.		HOR. SCALE: 1:50 U/N		RELEASSED FOR CONSTRUCTION:		LABORATORY RENOVATIONS - ELECTRICAL CONTROL COMPONENTS FLOOR PLAN	
0 ISSUED FOR TENDER 96/02 B.T.		VERTICAL:		CONSULTANT DRAWING NO. 940012-03-00-E109		NEP-2319	
- ISSUED FOR CITY REVIEW 95/12 B.T.		DATE 95.12.04		DATE			
NO. REVISIONS		DATE		DATE			



TELEPHONE SYSTEM SCHEMATIC



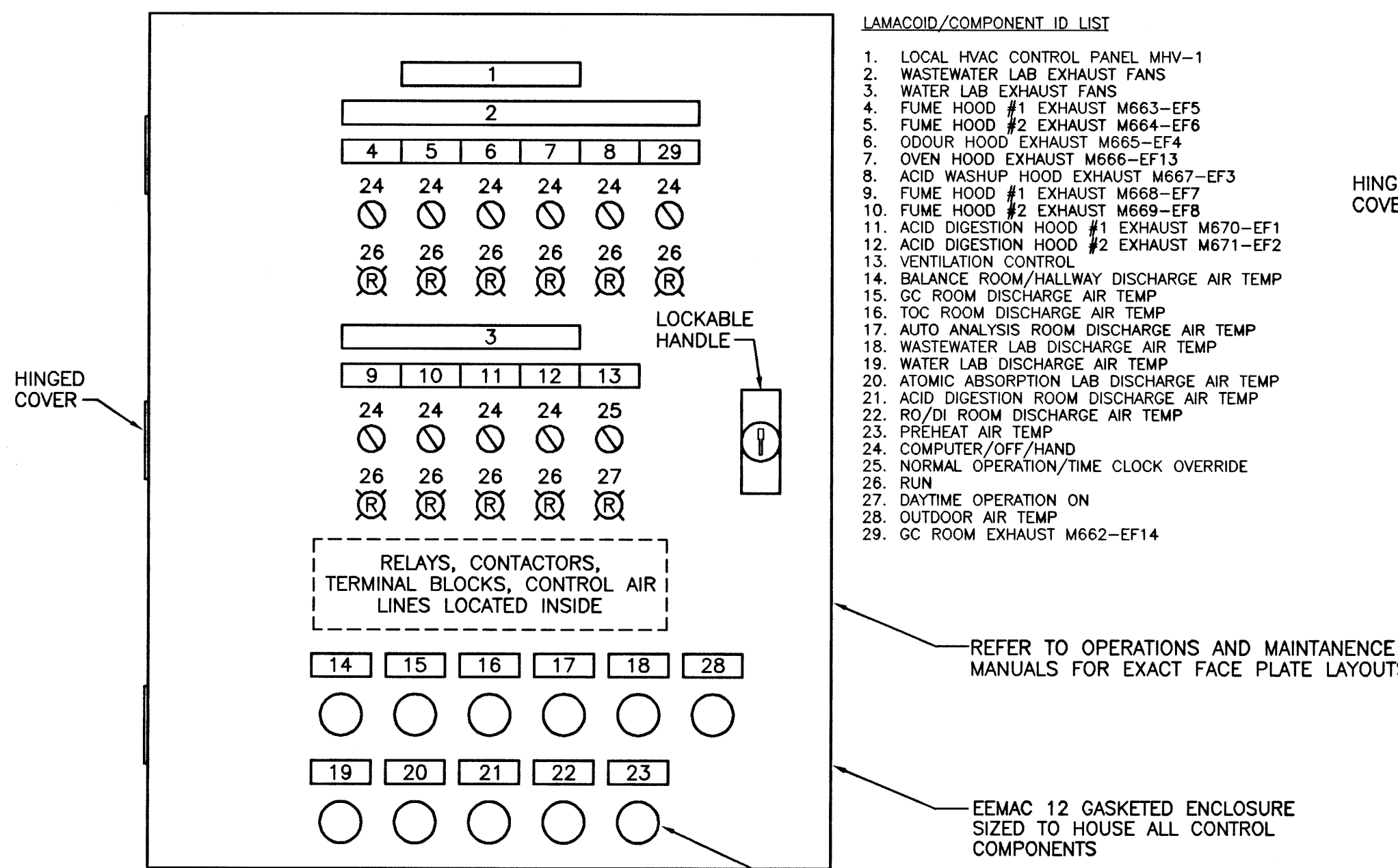
LAN SYSTEM SCHEMATIC



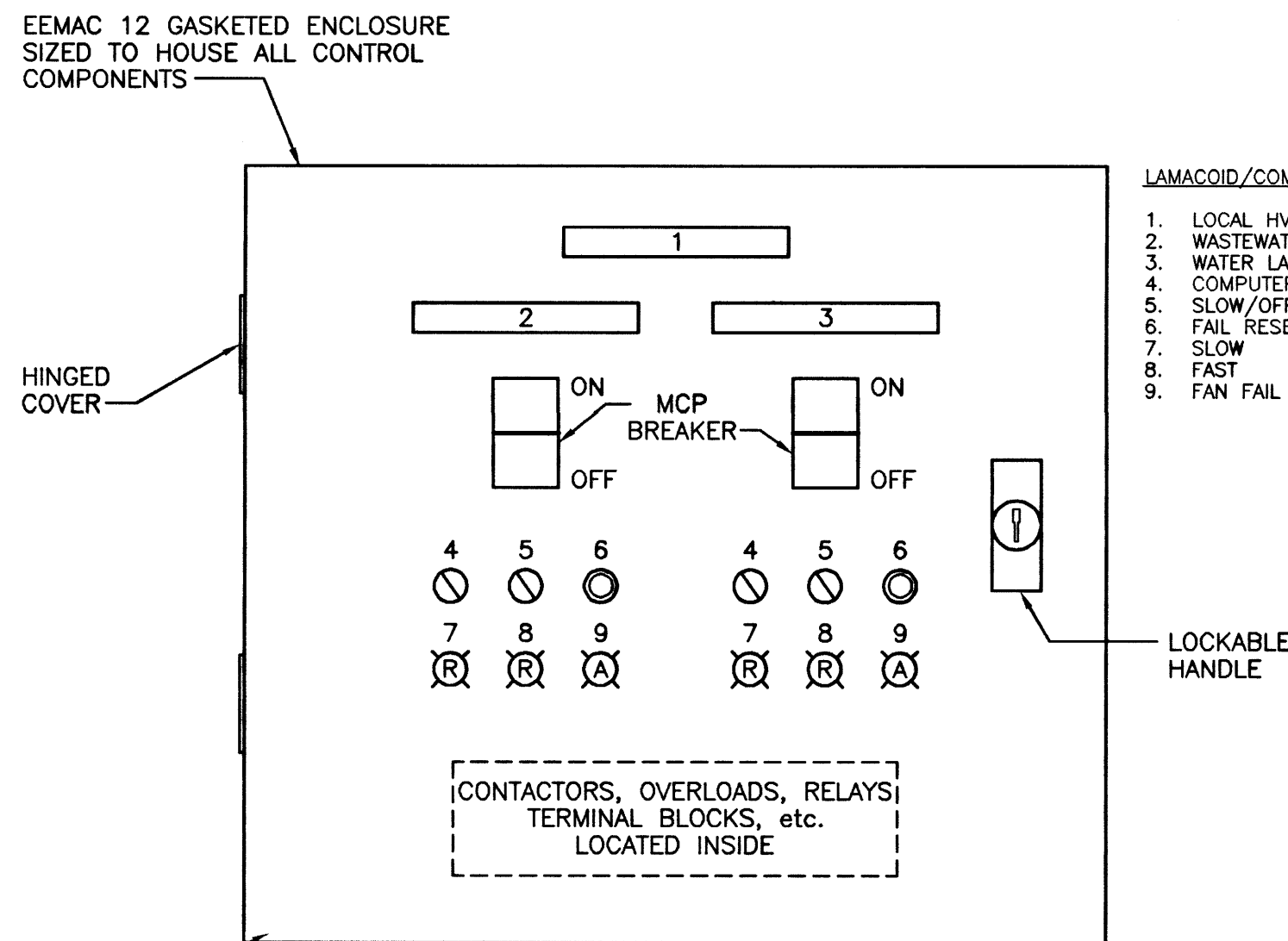
DOOR ACCESS CONTROL SCHEMATIC

NOTES:

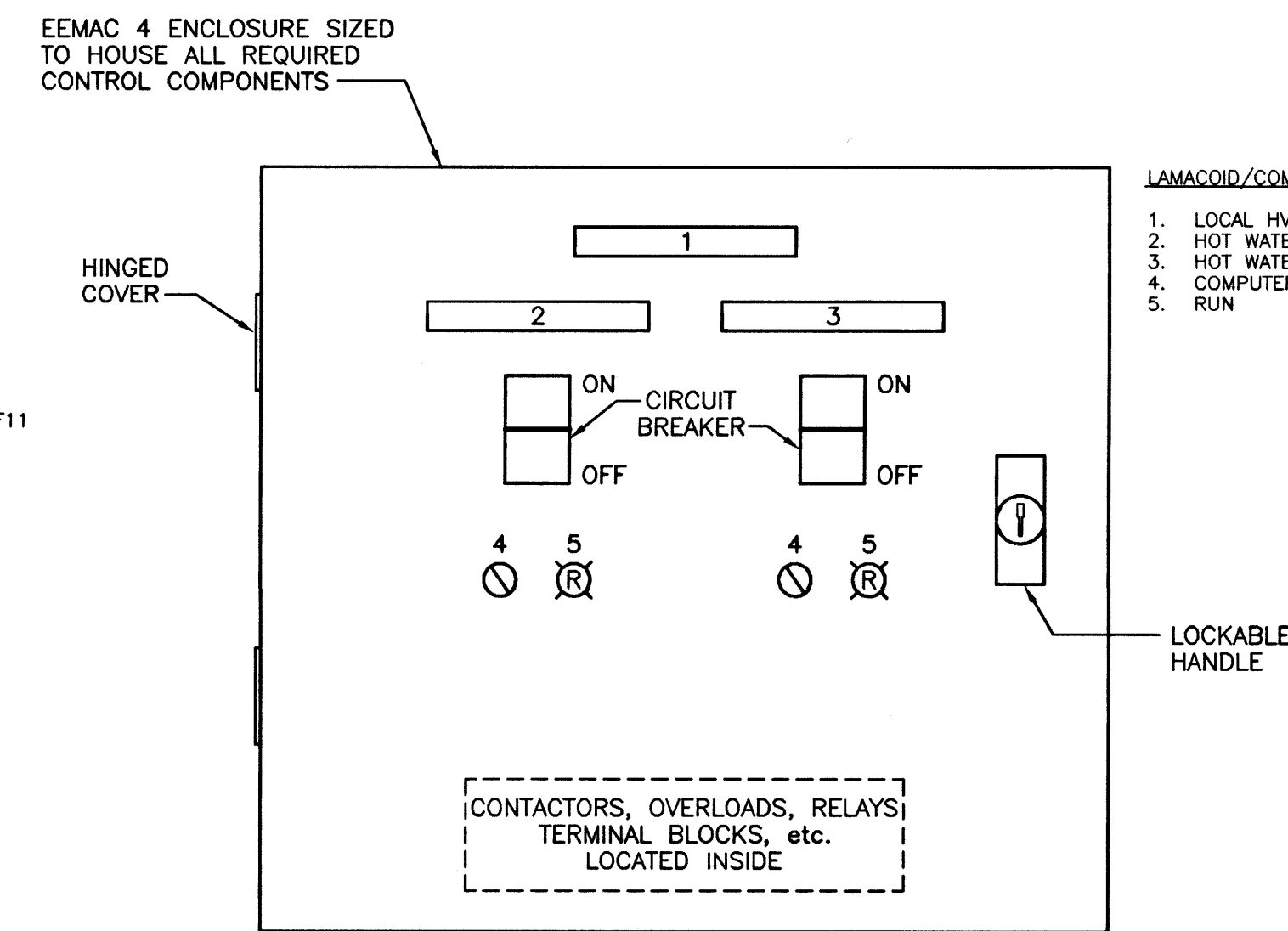
1. ALL WIRING IN EMT UNLESS INDICATED OTHERWISE.
2. ALL INDICATED (*) SUPPLIED BY DOOR HARDWARE SUPPLIER.
3. LOCATE CONTROLLERS, POWER SUPPLIES, AND DUPLEX RECEPTACLES IN CEILING SPACE.
4. REFER TO MANUFACTURER'S SHOP DRAWINGS IN OPERATIONS AND MAINTENANCE MANUAL FOR DETAILED CONNECTIONS.



DETAIL - LOCAL CONTROL PANEL MHV-1



DETAIL - LOCAL CONTROL PANEL MHV-1A



DETAIL - LOCAL CONTROL PANEL MHV-22

AS CONSTRUCTED

DATE 97/02 BY D.C.
APPROVED BY _____

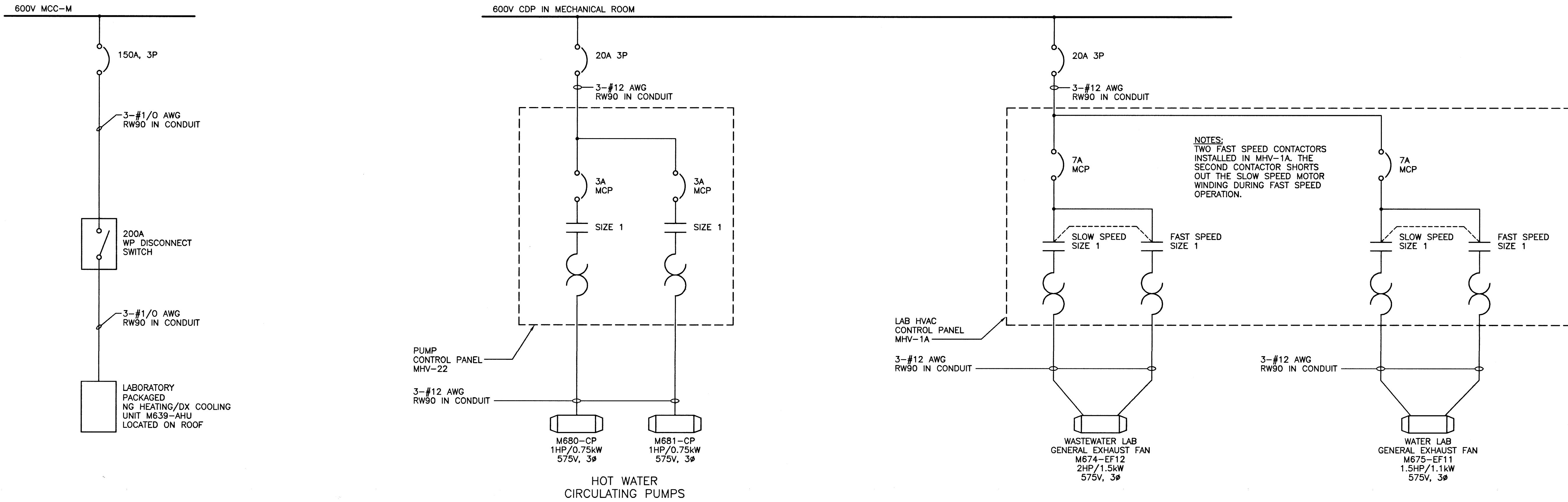
NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED	97/02	B.T.
0	ISSUED FOR TENDER	96/02	B.T.
-	ISSUED FOR CITY REVIEW	95/12	B.T.

WARDROP ENGINEERING INC.	
DESIGNED BY B.T.	CHECKED BY
DRAWN BY H.P.C.C.	APPROVED BY
HOR. SCALE: N.T.S.	RELEASED FOR CONSTRUCTION:
VERTICAL: N.T.S.	DATE 95.12.04

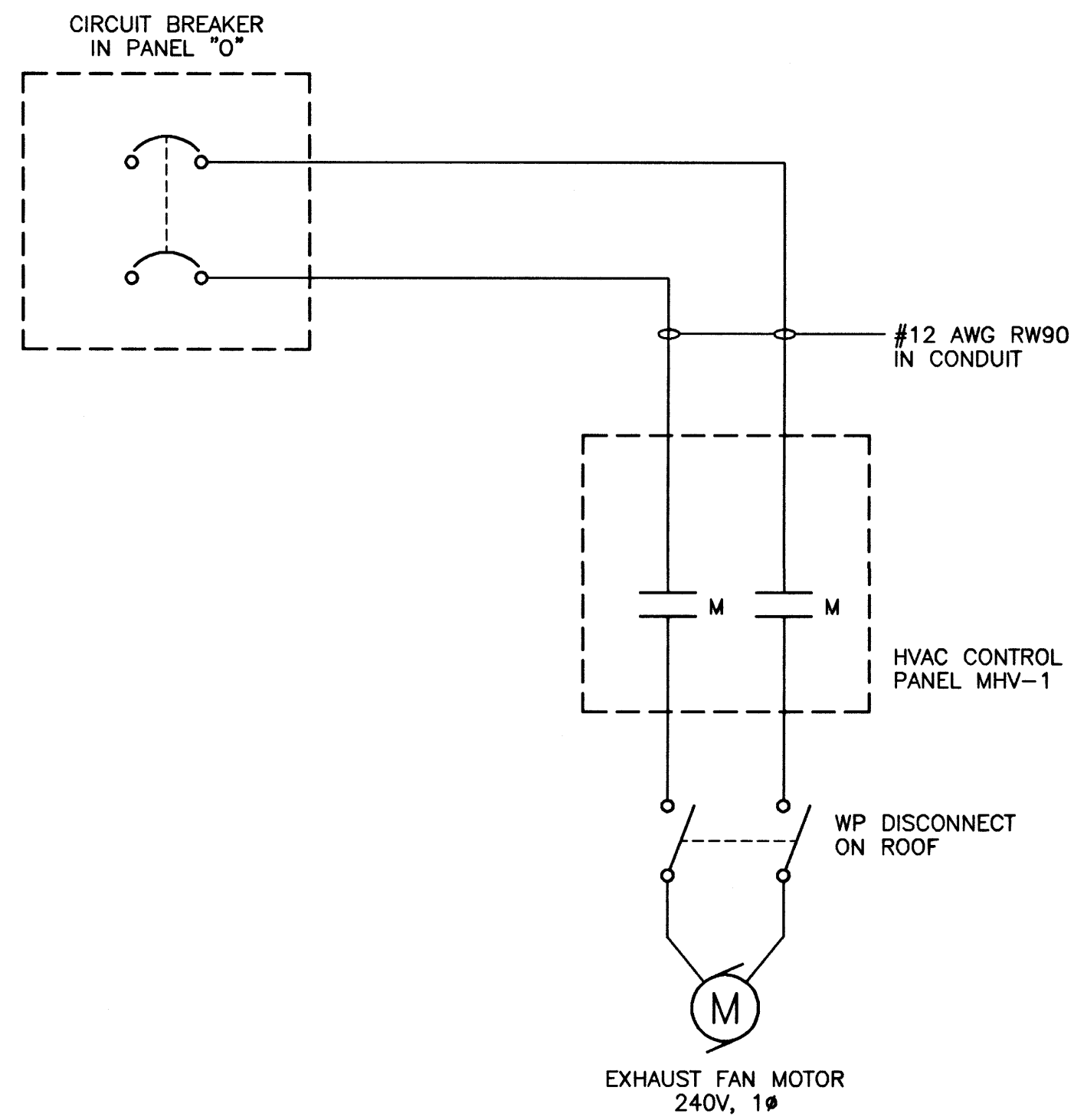
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CONSULTANT DRAWING NO. 940012-03-00-E110

THE CITY OF WINNIPEG	
WORKS AND OPERATIONS DIVISION	
WATER AND WASTE DEPARTMENT	
NORTH END WATER POLLUTION CONTROL CENTRE	CITY DRAWING NUMBER
LABORATORY RENOVATIONS - ELECTRICAL	SHEET OF
MISCELLANEOUS DETAILS	NEP-2320

NEP-2320



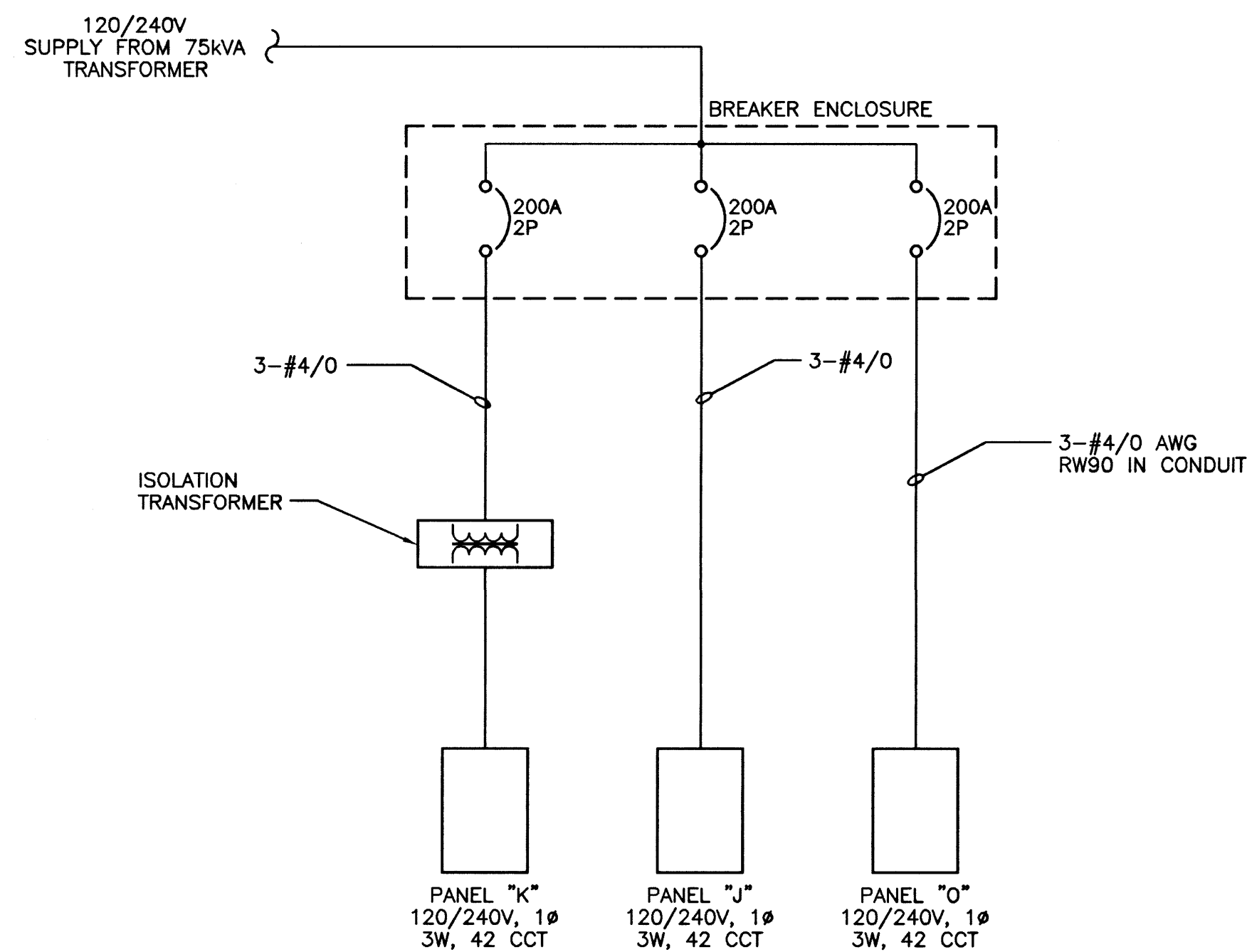
PARTIAL SINGLE LINE DIAGRAM



TYPICAL LABORATORY EXHAUST FAN WIRING DIAGRAM

NOTES:

- REFER TO LOOP WIRING DIAGRAM FOR CONTROL REQUIREMENTS.
- THIS DETAIL IS TYPICAL FOR EXHAUST FANS M662/M663/M664/M665/M666/M667/M668/M669/M670/M671-EF. FOR EXHAUST FANS M672/M673 SUPPLY AND INSTALL A 240V MANUAL MOTOR STARTER AND LOCATE STARTER AS INDICATED ON FLOOR PLAN.



LABORATORY CRAWL SPACE PARTIAL SINGLE LINE DIAGRAM

AS CONSTRUCTED
DATE 97/02 BY D.C.
APPROVED BY _____

NEP-2321

B.M. ELEV.			WARDROP ENGINEERING INC.		ENGINEER'S SEAL		THE CITY OF WINNIPEG	
			DESIGNED BY B.T.		CHECKED BY W.B. TODD		WORKS AND OPERATIONS DIVISION	
			DRAWN BY H.P.C.C.		APPROVED BY		WATER AND WASTE DEPARTMENT	
1 AS CONSTRUCTED 97/02 B.T.			HOR. SCALE: N.T.S.		RELEASED FOR CONSTRUCTION:		NORTH END WATER POLLUTION CONTROL CENTRE	
0 ISSUED FOR TENDER 96/02 B.T.			VERTICAL:				LABORATORY RENOVATIONS - ELECTRICAL	
- ISSUED FOR CITY REVIEW 95/12 B.T.			DATE 95.12.04		DATE		CITY DRAWING NUMBER	
NO. REVISIONS			DATE		DATE		SHEET OF	
					CONSULTANT DRAWING NO. 940012-03-00-E111		PARTIAL SINGLE LINE DIAGRAMS	
							NEP-2321	

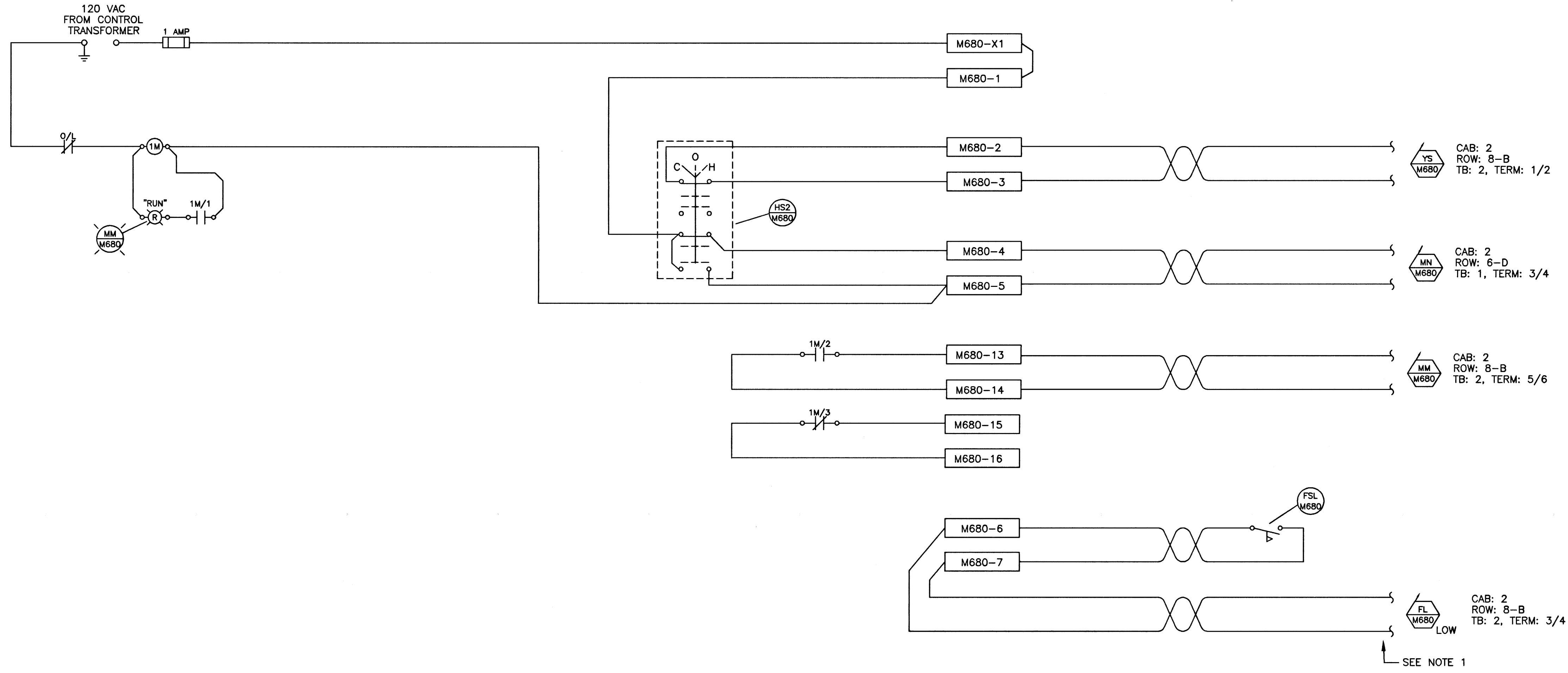
HOT WATER CIRCULATING PUMP M680-CP

LOCAL CONTROL PANEL MHV-22

FIELD

NET90 DCS

PCU "MA"



- 1 M680-HS1. LOCKABLE STOP PUSHBUTTON.
- 2
- 3
- 4 M680-1M. MAGNETIC CONTACTOR.
- 5 M680-YS. SWITCH IN COMPUTER INPUT TO DCS.
- 6 M680-MM. PUMP RUN PILOT LIGHT.
- 7 M680-HS2. COMPUTER OFF HAND SWITCH.
- 8 M680-MN. PUMP START OUTPUT FROM DCS.
- 9
- 10 M680-MM. PUMP RUN INPUT TO DCS.
- 11
- 12
- 13
- 14
- 15 M680-FSL. HOT WATER LOW FLOW SWITCH INITIATES STARTING OF STANDBY PUMP. DELETE FOR LOOP M681.
- 16
- 17 M680-FL. LOW FLOW INPUT TO DCS.
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27
- 28
- 29
- 30
- 31
- 32
- 33
- 34

AS CONSTRUCTED
DATE 97/02 BY D.C.
APPROVED BY _____

<p>B.N. ELEV.</p>	<p>WARDROP ENGINEERING INC. <small>WINNIPEG TORONTO TRUENBER BAY</small></p>	<p>ENGINEER'S SEAL</p> <p>ORIGINAL DRAWING REVISION "0" SEALED BY W.B. TODD 96/02/26</p>	<p>THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT</p> <p>NORTH END WATER POLLUTION CONTROL CENTRE LABORATORY RENOVATIONS - I & C HVAC SYSTEMS HOT WATER CIRCULATION PUMP LOOP WIRING DIAGRAM M680</p>																																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>REVISIONS</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>AS CONSTRUCTED</td> <td>97/02</td> <td>B.T.</td> </tr> <tr> <td>1</td> <td>ISSUED FOR CONSTRUCTION</td> <td>96/06</td> <td>B.T.</td> </tr> <tr> <td>0</td> <td>ISSUED FOR TENDER</td> <td>96/02</td> <td>B.T.</td> </tr> <tr> <td>-</td> <td>ISSUED FOR CITY REVIEW</td> <td>96/01</td> <td>B.T.</td> </tr> </tbody> </table>	NO.	REVISIONS	DATE	BY	2	AS CONSTRUCTED	97/02	B.T.	1	ISSUED FOR CONSTRUCTION	96/06	B.T.	0	ISSUED FOR TENDER	96/02	B.T.	-	ISSUED FOR CITY REVIEW	96/01	B.T.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DESIGNED BY</td> <td>B.T.</td> <td>CHECKED BY</td> <td></td> </tr> <tr> <td>DRAWN BY</td> <td>D.T.</td> <td>APPROVED BY</td> <td></td> </tr> <tr> <td>HOR. SCALE:</td> <td>N.T.S.</td> <td>RELEASED FOR CONSTRUCTION:</td> <td></td> </tr> <tr> <td>VERTICAL:</td> <td>N.T.S.</td> <td></td> <td></td> </tr> <tr> <td>DATE</td> <td>96.01.05</td> <td>DATE</td> <td></td> </tr> </table>	DESIGNED BY	B.T.	CHECKED BY		DRAWN BY	D.T.	APPROVED BY		HOR. SCALE:	N.T.S.	RELEASED FOR CONSTRUCTION:		VERTICAL:	N.T.S.			DATE	96.01.05	DATE		<p>CONSULTANT DRAWING NO. 940012-03-00-E112</p>	<p>CITY DRAWING NUMBER</p> <p>SHEET 1 OF 1</p> <p>NEP-2322</p>
NO.	REVISIONS	DATE	BY																																								
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1	ISSUED FOR CONSTRUCTION	96/06	B.T.																																								
0	ISSUED FOR TENDER	96/02	B.T.																																								
-	ISSUED FOR CITY REVIEW	96/01	B.T.																																								
DESIGNED BY	B.T.	CHECKED BY																																									
DRAWN BY	D.T.	APPROVED BY																																									
HOR. SCALE:	N.T.S.	RELEASED FOR CONSTRUCTION:																																									
VERTICAL:	N.T.S.																																										
DATE	96.01.05	DATE																																									

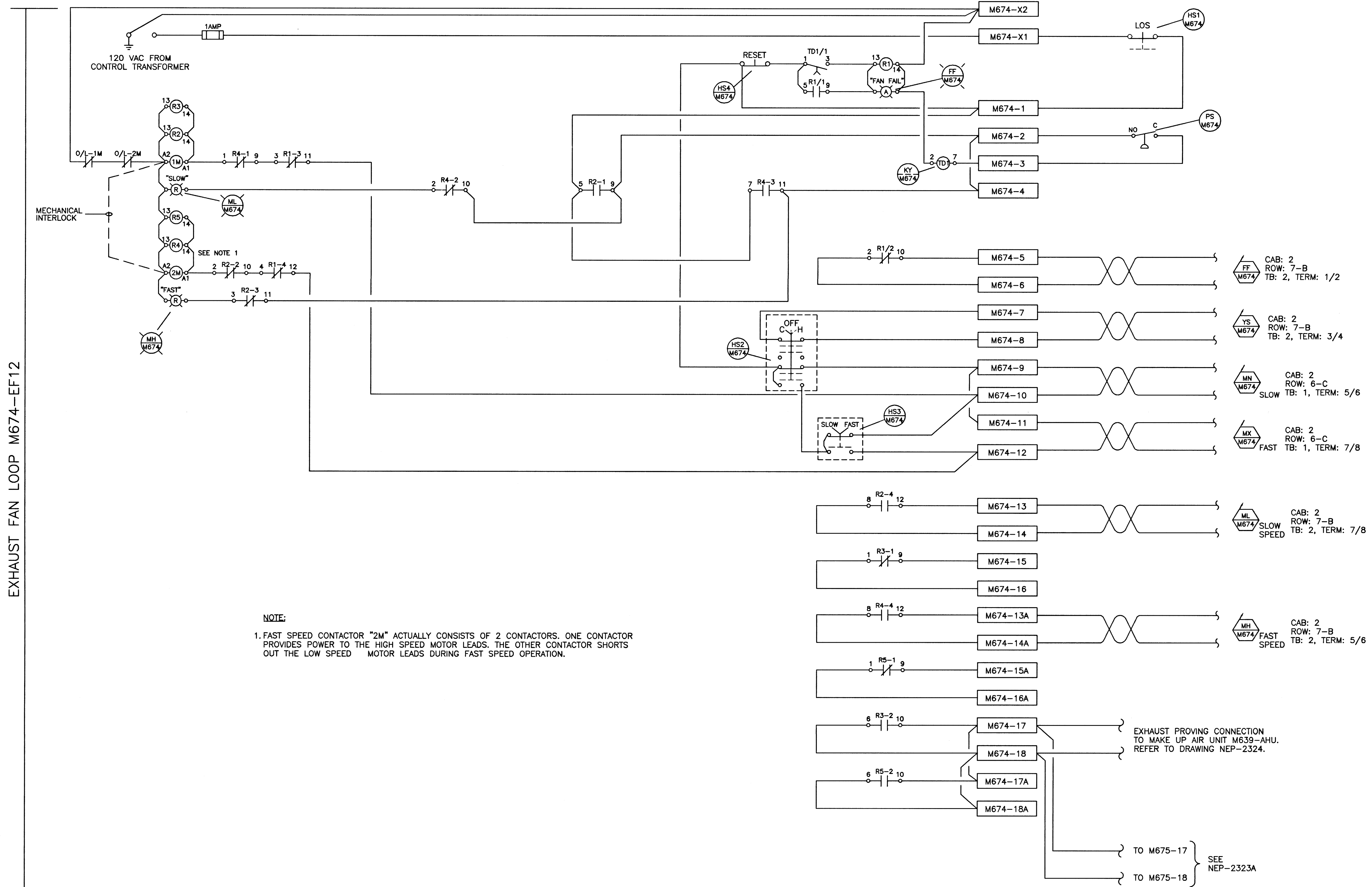
NEP-2322

LOCAL CONTROL PANEL MHV-1A

FIELD

NET90 DCS

PCU "MA"



- 1 M674-HS1. LOCKABLE STOP PUSHBUTTON.
- 2 M674-R1. LOSS OF FLOW THROUGH FAN RELAY
- 3 M674-HS4. FAIL RESET BUTTON.
- 4 M674-FF. FAIL FAN PILOT LIGHT.
- 5 M674-R2/R3/R4/R5. AUXILIARY RELAYS
- 6 M674-PS. PRESSURE DIFFERENTIAL SWITCH.
- 7 M674-KY. TIME DELAY RELAY FOR M674-PS.
- 8 M674-ML. SLOW SPEED PILOT LIGHT.
- 9 M674-1M/2M. SLOW/FAST CONTACTOR
- 10 M674-FF. FAIL INPUT TO DCS.
- 11 M674-MH. FAST SPEED PILOT LIGHT.
- 12
- 13 M674-YS. SWITCH IN COMPUTER INPUT TO DCS.
- 14 M674-HS2. COMPUTER/OFF/HAND SELECTOR SWITCH.
- 15 M674-MN. START SLOW OUTPUT FROM DCS.
- 16 M674-HS3. SLOW/FAST SELECTOR SWITCH.
- 17 M674-MX. START FAST OUTPUT FROM DCS.
- 18
- 19
- 20 M674-ML. SLOW SPEED INPUT TO DCS.
- 21
- 22
- 23
- 24 M674-MH. FAST SPEED INPUT TO DCS.
- 25
- 26
- 27
- 28
- 29
- 30
- 31
- 32
- 33
- 34
- 35

NOTE:
 1. FAST SPEED CONTACTOR "2M" ACTUALLY CONSISTS OF 2 CONTACTORS. ONE CONTACTOR PROVIDES POWER TO THE HIGH SPEED MOTOR LEADS. THE OTHER CONTACTOR SHORTS OUT THE LOW SPEED MOTOR LEADS DURING FAST SPEED OPERATION.

AS CONSTRUCTED
 DATE 97/02 BY D.C.
 APPROVED BY _____

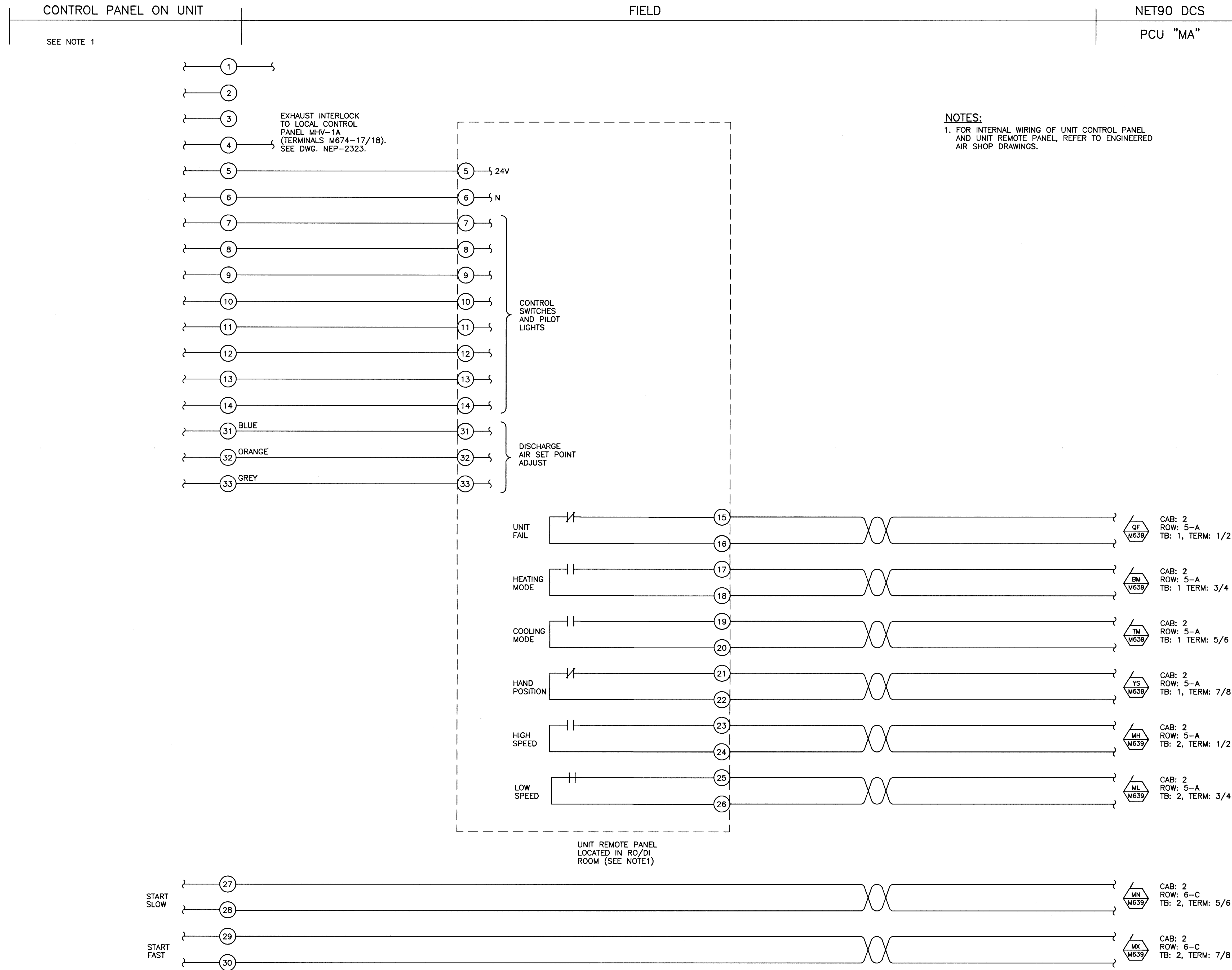
EXHAUST FAN LOOP M674-EF12

NEP-2323

<p>B.M. ELEV.</p>			<p>WARDROP ENGINEERING INC. WINNIPEG TORONTO THUNDER BAY</p>			<p>ENGINEER'S SEAL</p>			<p>THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT</p>		
<p>DESIGNED BY B.T.</p>			<p>CHECKED BY</p>			<p>ORIGINAL DRAWING REVISION "D" SEALED BY W.B. TODD 96/02/26</p>			<p>NORTH END WATER POLLUTION CONTROL CENTRE</p>		
<p>DRAWN BY D.T.</p>			<p>APPROVED BY</p>			<p>CONSULTANT DRAWING NO. 940012-03-00-E113</p>			<p>CITY DRAWING NUMBER</p>		
<p>HOR. SCALE: N.T.S.</p>			<p>RELEASED FOR CONSTRUCTION:</p>			<p>LABORATORY RENOVATIONS - I & C</p>			<p>SHEET 1 OF 2</p>		
<p>VERTICAL: N.T.S.</p>			<p>DATE 96.01.05</p>			<p>2 SPEED EXHAUST FAN LOOP WIRING DIAGRAM M674</p>			<p>NEP-2323</p>		

LABORATORY AIR HANDLING UNIT M639-AHU

NEP-2324



NOTES:
 1. FOR INTERNAL WIRING OF UNIT CONTROL PANEL AND UNIT REMOTE PANEL, REFER TO ENGINEERED AIR SHOP DRAWINGS.

UNIT REMOTE PANEL LOCATED IN RO/DI ROOM (SEE NOTE1)

START SLOW
START FAST

AS CONSTRUCTED
 DATE 97/02 BY D.C.
 APPROVED BY _____

NO.	REVISIONS	DATE	BY	DATE
2	AS CONSTRUCTED	97/02	B.T.	
1	ISSUED FOR CONSTRUCTION	96/06	B.T.	
0	ISSUED FOR TENDER	96/02	B.T.	
-	ISSUED FOR CITY REVIEW	96/01	B.T.	

WARDROP ENGINEERING INC. WINNIPEG TORONTO THUNDER BAY	
DESIGNED BY B.T.	CHECKED BY
DRAWN BY D.T.	APPROVED BY
HOR. SCALE: N.T.S.	RELEASED FOR CONSTRUCTION:
VERTICAL:	DATE
DATE 96.01.05	DATE

ENGINEER'S SEAL
ORIGINAL DRAWING REVISION "0" SEALED BY W.B. TODD 96/02/26
CONSULTANT DRAWING NO. 940012-03-00-E114

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
 WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
 LABORATORY RENOVATIONS - I & C
 HVAC SYSTEMS
 LAB MAIN AIR HANDLING UNIT
 LOOP WIRING DIAGRAM M639

CITY DRAWING NUMBER
 SHEET 1 OF 1
 NEP-2324

FIELD

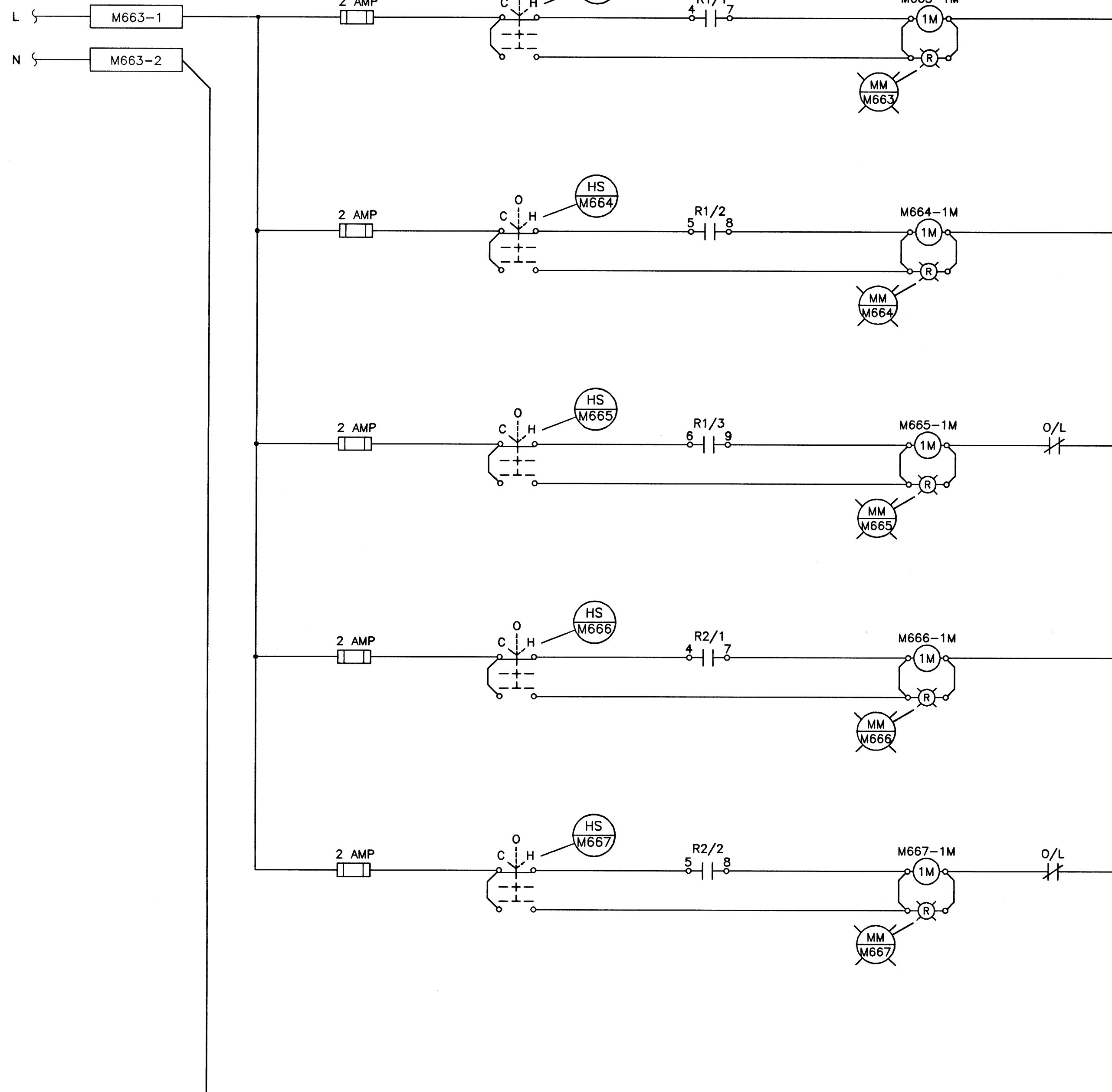
LOCAL CONTROL PANEL MHV-1

FIELD

NET90 DCS

PCU "MA"

120 VAC FROM
PANEL 'C' CCT #30



- 1 M663-HS. COMPUTER/OFF/HAND SELECTOR SWITCH.
- 2 M663-1M. MAGNETIC CONTACTOR FOR EF.
- 3 M663-MM. EF RUN PILOT LIGHT.
- 4
- 5
- 6 M664-HS. COMPUTER/OFF/HAND SELECTOR SWITCH.
- 7 M664-1M. MAGNETIC CONTACTOR FOR EF.
- 8 M664-MM. EF RUN PILOT LIGHT.
- 9
- 10
- 11 M665-HS. COMPUTER/OFF/HAND SELECTOR SWITCH.
- 12 M665-1M. MAGNETIC CONTACTOR FOR EF.
- 13 M665-MM. EF RUN PILOT LIGHT.
- 14
- 15
- 16 M666-HS. COMPUTER/OFF/HAND SELECTOR SWITCH.
- 17 M666-1M. MAGNETIC CONTACTOR FOR EF.
- 18 M666-MM. EF RUN PILOT LIGHT.
- 19
- 20
- 21 M667-HS. COMPUTER/OFF/HAND SELECTOR SWITCH.
- 22 M667-1M. MAGNETIC CONTACTOR FOR EF.
- 23 M667-MM. EF RUN PILOT LIGHT.
- 24
- 25
- 26
- 27
- 28
- 29
- 30
- 31
- 32
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- 34
- 35

LOOPS M663/M664/M665/M666/M667

NEP-2326

NOTES:

- 1. RELAYS R1 & R2 ARE SHOWN ON DWG NEP-2325.
- 2. EXHAUST FANS M663/M664/M666 ARE INTERNALLY PROTECTED. REFER TO EXHAUST FAN MANUFACTURING DATA.


AS CONSTRUCTED

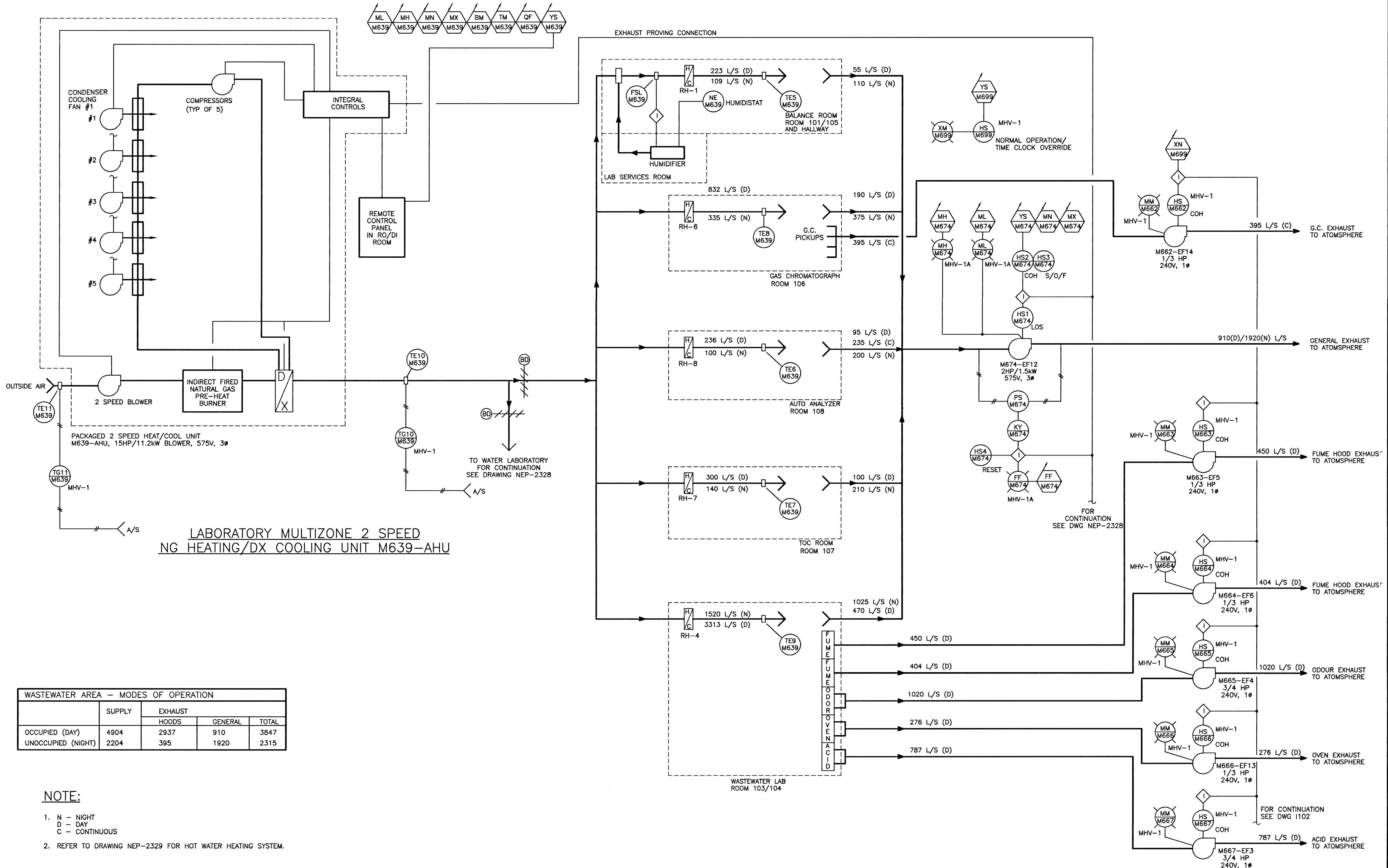
DATE 97/02 BY D.C.
APPROVED BY _____

NO.	REVISIONS	DATE	BY
2	AS CONSTRUCTED	97/02	B.T.
1	ISSUED FOR CONSTRUCTION	96/06	B.T.
0	ISSUED FOR TENDER	96/02	B.T.
-	ISSUED FOR CITY REVIEW	96/01	B.T.

WARDROP ENGINEERING INC. <small>WINNIPEG TORONTO THUNDER BAY</small>	
DESIGNED BY: B.T.	CHECKED BY:
DRAWN BY: D.T.	APPROVED BY:
HOR. SCALE: N.T.S.	RELEASED FOR CONSTRUCTION:
VERTICAL:	
DATE: 96.01.05	DATE:

ENGINEER'S SEAL
ORIGINAL DRAWING REVISION "0" SEALED BY W.B. TODD 96/02/26
CONSULTANT DRAWING NO. 940012-03-00-E116

 THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT	
NORTH END WATER POLLUTION CONTROL CENTRE LABORATORY RENOVATIONS - I & C HVAC SYSTEMS LABORATORY EXHAUST SYSTEM LOOP WIRING DIAGRAM	CITY DRAWING NUMBER SHEET 2 OF 2 NEP-2326



LABORATORY MULTIZONE 2 SPEED NG HEATING/DX COOLING UNIT M639-AHU

WASTEWATER AREA - MODES OF OPERATION				
	SUPPLY	EXHAUST		
		HOODS	GENERAL	TOTAL
OCCUPIED (DAY)	4904	2937	910	3847
UNOCCUPIED (NIGHT)	2204	395	1920	2315

- NOTE:
- N - NIGHT
D - DAY
C - CONTINUOUS
 - REFER TO DRAWING NEP-2329 FOR HOT WATER HEATING SYSTEM.

AS CONSTRUCTED
DATE 97/02 BY T.G.
APPROVED BY _____

NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED	97/02	BT
0	ISSUED FOR TENDER	96/02	B.T.
-	ISSUED FOR CITY REVIEW	95/12	B.T.

WARDROP ENGINEERING INC.
WINNIPEG TORONTO TRURO BAY

DESIGNED BY: B.T. CHECKED BY: _____
DRAWN BY: S.P./D.C. APPROVED BY: _____
HOR. SCALE: N.T.S. VERTICAL: N.T.S.
RELEASED FOR CONSTRUCTION: _____ DATE: 95.07.24

ENGINEER'S SEAL
ORIGINAL DRAWING REVISION "0" SEALED BY W.B. TODD 96.02.26
CONSULTANT DRAWING NO. 940012-03-00-1101

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATER AND WASTE DEPARTMENT

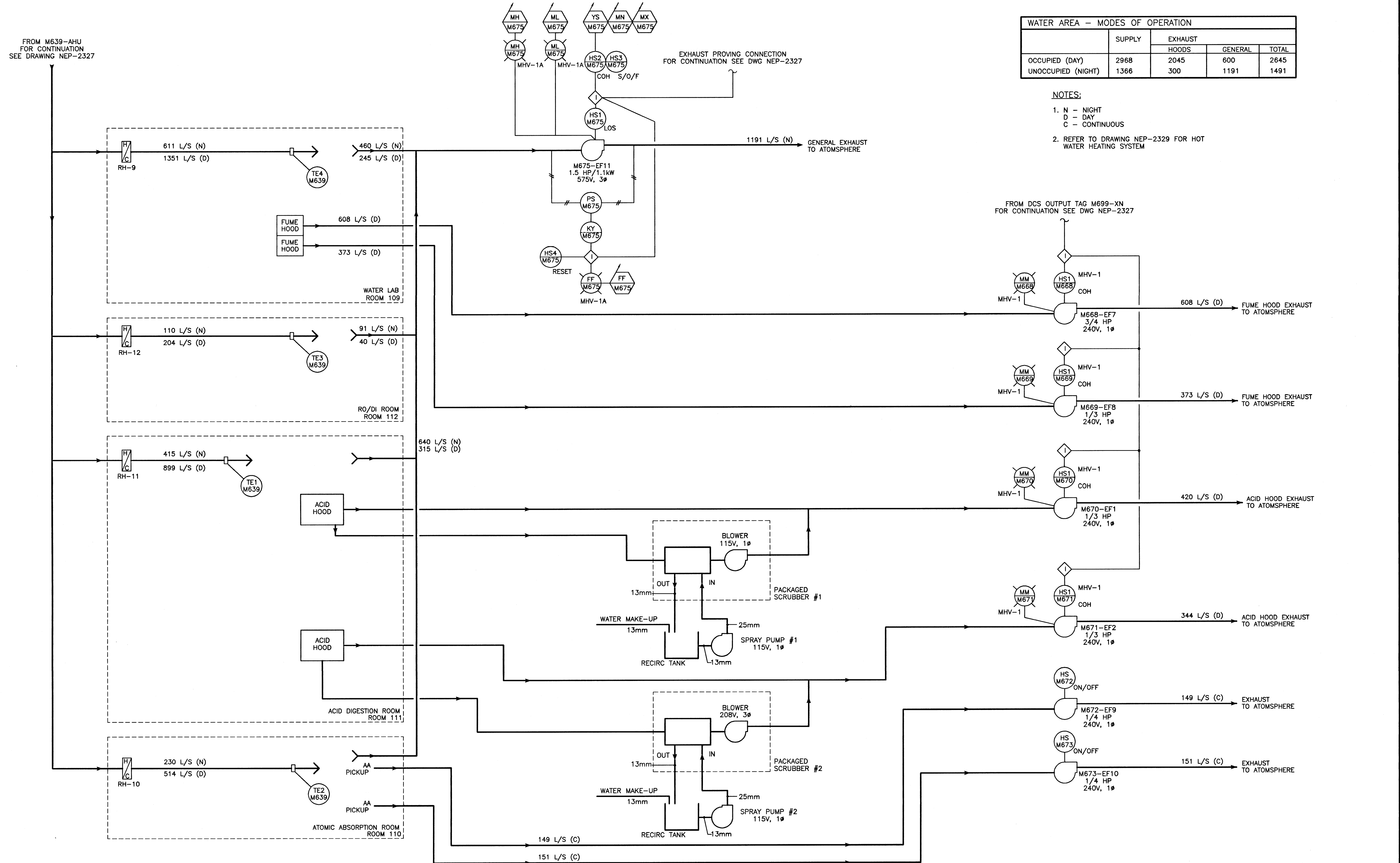
NORTH END WATER POLLUTION CONTROL CENTRE
LABORATORY RENOVATIONS - I & C
WASTEWATER LABORATORY
HVAC SYSTEM
P & ID

CITY DRAWING NUMBER
SHEET OF
NEP-2327

NEP-2327

	SUPPLY	EXHAUST		
		HOODS	GENERAL	TOTAL
OCCUPIED (DAY)	2968	2045	600	2645
UNOCCUPIED (NIGHT)	1366	300	1191	1491

- NOTES:
1. N - NIGHT
D - DAY
C - CONTINUOUS
 2. REFER TO DRAWING NEP-2329 FOR HOT WATER HEATING SYSTEM



NEP-2328

AS CONSTRUCTED
 DATE 97/02 BY T.G.
 APPROVED BY _____

NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED	97/02	B.T.
0	ISSUED FOR TENDER	96/02	B.T.
-	ISSUED FOR CITY REVIEW	95/12	B.T.

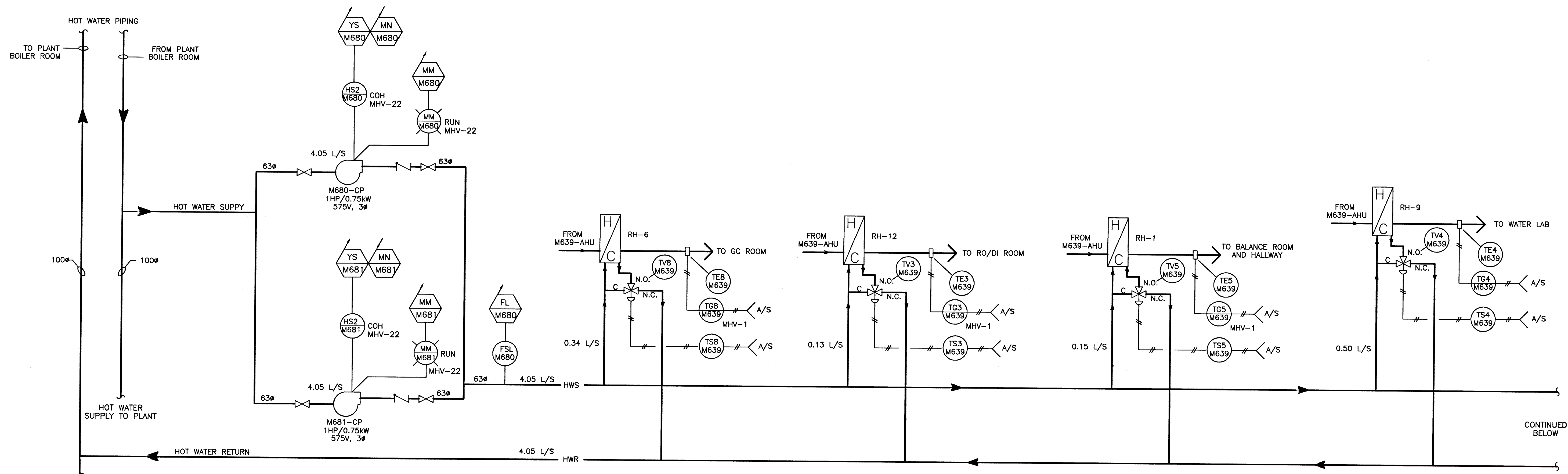
WARDROP ENGINEERING INC.	
DESIGNED BY B.T.	CHECKED BY _____
DRAWN BY S.P./D.C.	APPROVED BY _____
HOR. SCALE: N.T.S.	RELEASED FOR CONSTRUCTION: _____
VERTICAL: _____	DATE 95.07.24

ENGINEER'S SEAL
ORIGINAL DRAWING REVISION "0" SEALED BY W.B. TODD 96.02.26
CONSULTANT DRAWING NO. 940012-03-00-1102

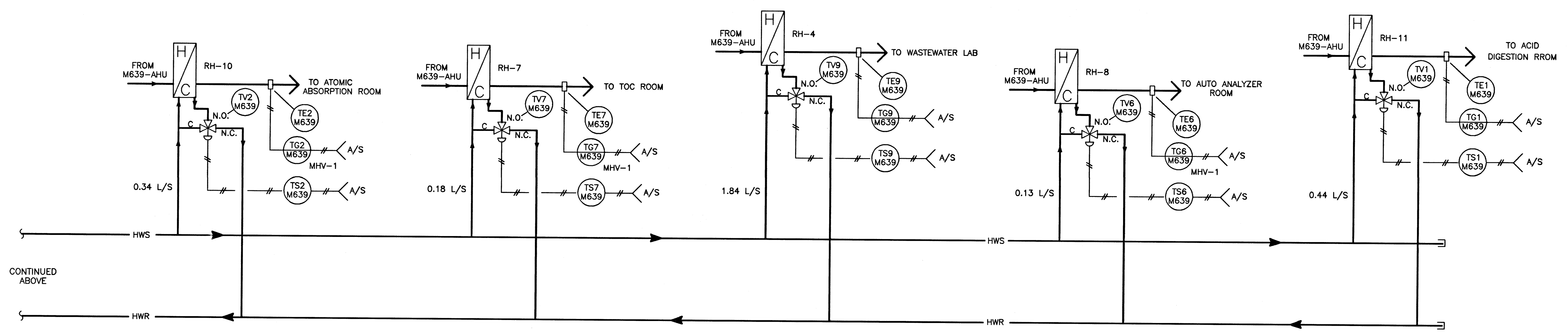
THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
 LABORATORY RENOVATIONS - I & C
 WATER LABORATORY
 HVAC SYSTEM
 P & ID

CITY DRAWING NUMBER _____
 SHEET OF _____
 NEP-2328



NEW HOT WATER CIRCULATING PUMPS



NEP-2329

AS CONSTRUCTED
 DATE 97/02 BY T.G.
 APPROVED BY _____

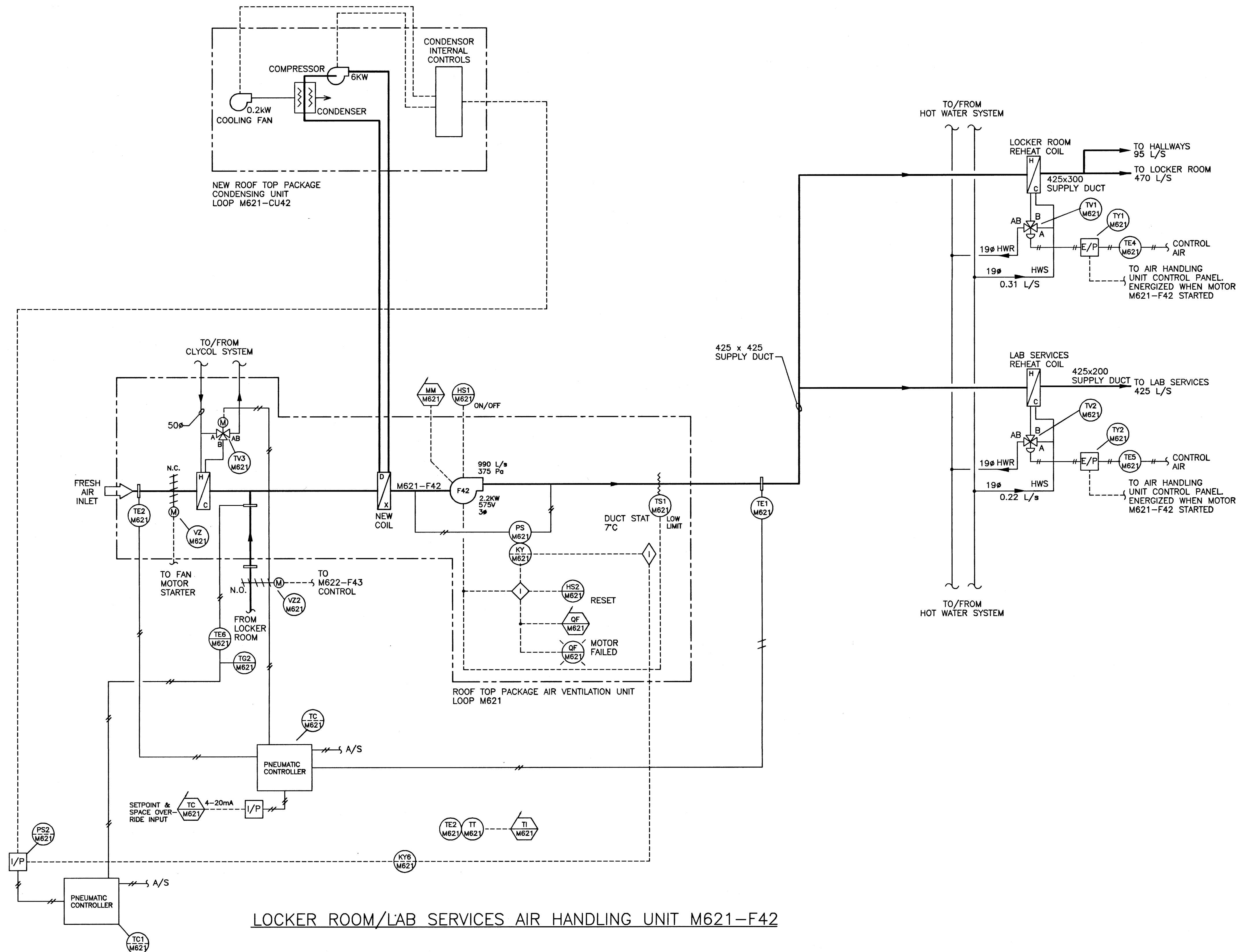
NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED	97/02	B.T.
0	ISSUED FOR TENDER	96/02	B.T.
-	ISSUED FOR CITY REVIEW	95/12	B.T.

WARDROP ENGINEERING INC. WINNIPEG TORONTO THUNDER BAY	
DESIGNED BY B.T.	CHECKED BY
DRAWN BY S.P./D.C.	APPROVED BY
HOR. SCALE: N.T.S.	RELEASED FOR CONSTRUCTION:
VERTICAL:	DATE 95.07.24

ENGINEER'S SEAL
ORIGINAL DRAWING REVISION "0" SEALED BY W.B. TODD 96.02.26
CONSULTANT DRAWING NO. 940012-03-00-1103

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
 NORTH END WATER POLLUTION CONTROL CENTRE
 LABORATORY RENOVATIONS - I & C
 LABORATORY HOT WATER SYSTEM
 P & ID

CITY DRAWING NUMBER _____
 SHEET _____ OF _____
 NEP-2329



NEP-2330

NOTE:

1. THIS P&ID IS BASED ON EXISTING CITY OF WINNIPEG DRAWING NEP-1544. ALL EQUIPMENT IS EXISTING UNLESS NOTED OTHERWISE.

AS CONSTRUCTED

DATE 97/02 BY D.C.

APPROVED BY _____

S.N.	ELEV.	DATE	BY
1		97/02	B.T.
0		96/02	B.T.
-		95/12	B.T.
NO.	REVISIONS	DATE	BY

WARDROP ENGINEERING INC. <small>WINNIPEG TORONTO THUNDER BAY</small>	
DESIGNED BY <u>B.T.</u>	CHECKED BY
DRAWN BY <u>H.P.C.C.</u>	APPROVED BY
HOR. SCALE: <u>N.T.S.</u>	RELEASED FOR CONSTRUCTION:
VERTICAL:	DATE
DATE <u>95.12.04</u>	

ENGINEER'S SEAL
ORIGINAL DRAWING REVISION "D" SEALED BY <u>W.B. TODD</u> 96.02.26
CONSULTANT DRAWING NO. <u>940012-03-00-1104</u>

THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPARTMENT	
NORTH END WATER POLLUTION CONTROL CENTRE LABORATORY RENOVATIONS - I & C LOCKER ROOM/LAB SERVICES HVAC SYSTEM PARTIAL P & ID	
CITY DRAWING NUMBER	SHEET OF
NEP-2330	

253-2011

Item Number	Drawing Number	Drawing Title
1	1-0101M-B0001-001	NEWPCC - LAB RENOVATIONS - TITLE PAGE
2	1-0101M-B0002-001	NEWPCC - LAB RENOVATIONS - DEMOLITION / RENOVATION / REFLECTED CEILING PLAN
3	1-0101M-B0003-001	NEWPCC - LAB RENOVATIONS - LARGE SCALE PLAN / INTERUOR ELEVATIONS / MISCELLANEOUS DETAILS
4	1-0101M-E0022-001	NEWPCC - LAB RENOVATIONS - LARGE SCALE ELECTRICAL PLANS
5	1-0101M-H0001-001	NEWPCC - LAB RENOVATIONS - EXISTING PLUMBING DEMOLITION PLAN
6	1-0101M-H0002-001	NEWPCC - LAB RENOVATION - EXISTING VENTILATION DEMOLITION PLAN
7	1-0101M-H0003-001	NEWPCC - LAB RENOVATIONS - PLUMBING MODIFICATIONS PLANS
8	1-0101M-H0004-001	NEWPCC - LAB RENOVATIONS - NEW VENTILATION PLANS
9	1-0101M-H0005-001	NEWPCC - LAB RENOVATIONS - NEW VENTILATION DETAILS
10	1-0101M-P0004-001	NEWPCC - LAB RENOVATIONS - NEW VENTILATION - FLOW DIAGRAM
11	1-0101M-P0005-001	NEWPCC - LAB RENOVATIONS - NEW VENTILATION - EQUIP, I/O LIST AND NARRATIVE
12	1-0101M-P0006-001	NEWPCC - LAB RENOVATIONS - NEW VENTILATION - CONTROLS SITE PLAN
13	1-0101M-S0006-001	NEWPCC - LAB RENOVATIONS - PARTIAL ROOF FRAMING PLAN

North End Water Pollution Control Centre Lab Renovation

Winnipeg, Manitoba

ARCHITECT

LM Architectural Group

STRUCTURAL CONSULTANT

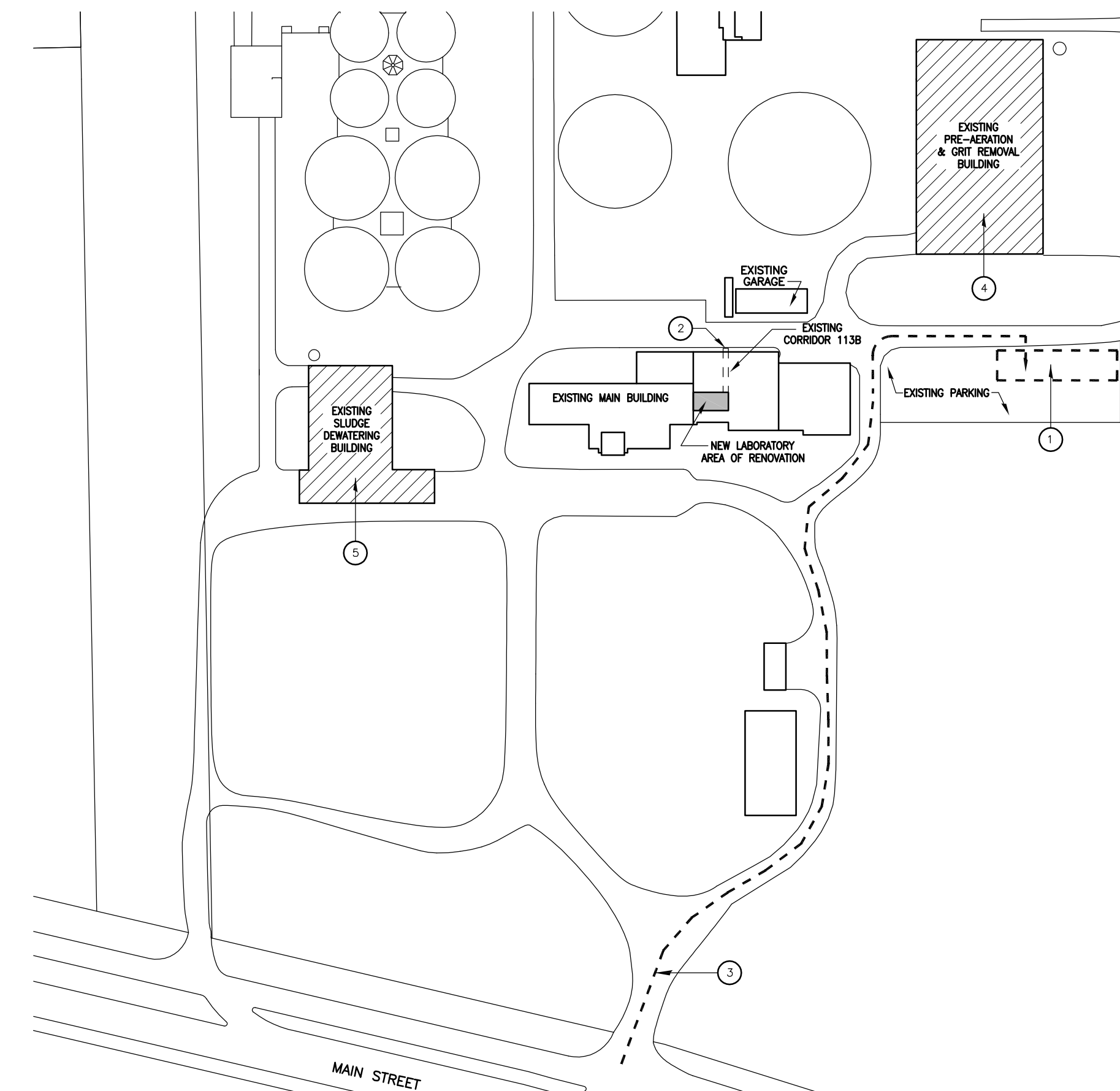
CROSIER KILGOUR AND PARTNERS LIMITED

MECHANICAL CONSULTANT

ALLIANCE ENGINEERING SERVICES

ELECTRICAL CONSULTANT

MCW/AGE CONSULTING PROFESSIONAL ENGINEERS



North End Water Pollution Control Centre Site Location Map NTS

MASTER ABBREVIATIONS LIST

&	AND	FF	FORCE FLOW UNIT	O.H.	OVERHEAD
⊙	AT	AT	FIRE HOSE CABINET	OSIC	OWNER SUPPLIED
⊕	CENTERLINE	FIN	FINISHED	IN	IN CONTRACT INSTALLATION
∅	DIAMETER	FLR.	FLOOR	OX	OXYGEN
#	NUMBER	F.S.	FULL SIZE	PL.LAM (P)	PLASTIC LAMINATE
ACS	ACOUSTIC CEILING SYSTEM	G.	NATURAL GAS	PLBO.	PLUMBING
ADJ.	ADJUSTABLE	GA.	GAUGE	P.L.	PLASTIC LAMINATE PANNELLING
ADD	AUTOMATIC DOOR OPERATOR	G.B.	GYPNUM BOARD	P.F.	PREFABRICATED
A.F.F.	ABOVE FINISH FLOOR	GD	GLOW DISPENSER (NIC)	PREFIN.	PREFINISHED
ALUM.	ALUMINUM	GL	GLAZING	PTD.	PAINTED
ANOD.	ANODIZED	GRT	GRAIN DIRECTION	R.T.	ROOF DRAIN
APPROX.	APPROXIMATE	GOR	GROUSET	REIN.	REINFORCING, REINFORCED
BD.	BOARD	H.B.	HOSE BIB	RECV.	REQUIRED
BGL.	BUMPER GUARD, LOWER	H.M.	HOLLOW METAL	REV.	REVERSED OR REVISION
BGU.	BUMPER GUARD, UPPER	HSEZ.	HORIZONTAL	R.V.	ROUGH OPENING
BLDG.	BUILDING	HR	HANDRAIL	R.V.	RIGID VINYL
BM.	BEAM	H.S.S.	HOLLOW STEEL SECTION	RWL	RAIN WATER LEADER
B.S.	BOTH SIDES	H.	HEIGHT	S.M.	SIMLAR
BSMT.	BASEMENT	HWT.	HOT WATER TANK	S.L.	SLOPE
CA	COMPRESSED AIR	I.C.	IN CONTRACT	S.M.	SURFACE MOUNTED
CG	CORNER GUARD	ICC	IN CONTRACT COORDINATION	S/A	SQUARE
CJ	CONTROL JOINT	I.D.	INSIDE DIAMETER	S.S. (SS)	STAINLESS STEEL
CLG.	CEILING	INSUL.	INSULATION	ST.	STEEL
C/M	CEILING MOUNTED	INT.	INTERIOR	STL.	STRUCTURAL
COL.	COLUMN	JAN.	JANITOR	SUSP.	SUSPENDED
CONC.	CONCRETE	KB	KEYBOARD TRAY (NIC)	T & G	TONGUE AND GROOVE
CONSTR.	CONSTRUCTION	LAV.	LAVATORY	TB	TACK BOARD
CONT.	CONTINUOUS	LUM.	LINOLEUM	TL	TASK LIGHT
CORST.	CORNER	LN	LINEUM	T.S.	TACK STRIP
CT OR C.T.	CERAMIC TILE	MAX	MAXIMUM	T.O.	TOP OF
CU	CONCRETE UNIT MASONRY	MB	MOUNTING BOARD & HOOKS	TS	TYPICAL
C/W	COMPLETE WITH	MECH.	MECHANICAL	TYP.	TYPICAL
DF	DRINKING FOUNTAIN	MEZZ.	MEZZANINE	U/C	UNDER COUNTER
DIA.	DIAMETER	M.H.	MANHOLE	ULC	UNDERWATERS LABORATORIES OF CANADA
DNL	DOWN	MISC.	MISCELLANEOUS	U/S	UNDERSIDE
DWG.	DRAWING	M.L.	MILLIMETER	V	VACUUM
E OR ELECT.	ELECTRICAL	M.O.	MASONRY OPENING	V.B.	VAPOUR BARRIER
ELEV.	ELEVATION	M.P.	MASTER SYSTEM CLOCK	VO	VOICE DATA OUTLET
EP	ELECTRICAL PANEL	M.TD	MOUNTED	VERT.	VERTICAL
EPB	EMERGENCY PANIC BUTTON	N	NITROGEN	VEST.	VESTIBULE
EQ	EQUAL	N2O	NITROUS OXIDE	VS	VALANCE LIGHT
ES	EQUIPMENT RAIL SYSTEM	NO.	NUMBER	VS	VENT SHEET
ESU	EXPOSED STRUCTURE	N.I.C./N.C.	NOT IN CONTRACT	W/B	WHITE BOARD
EXT.	EXISTING	NP	NAPKIN SHELF RECESSED	W/M	WALL MOUNTED
EXT.	EXISTING EXTERIOR	NSR	NIGHT TO SCALE	W/R	WASHROOM
FD	FLOOR DRAIN	N.T.S.	NOT TO SCALE	X	EXISTING
F(-S)(-F)	FIRE EXTINGUISHER(SDMI-RECESSED) (FULLY-RECESSED)	O/C	ON CENTER		
		O.D.	OUTSIDE DIAMETER		
		OFF	OWNER FINISHED PRODUCT, IN CONTRACT INSTALLATION		

REFERENCE SYMBOLS

DETAIL:		Detail number
		Drawing where detail is located *
WALL SECTION:		Wall section number
		Drawing where section is initially referenced from
INTERIOR ELEVATIONS:		Drawing where interior elevations are drawn
		Interior elevation numbers
		Detail located in Project Manual Architectural Section AP2
		Drawing where detail is initially referenced from

* When REFERENCE SYMBOL includes the letters "AP" or is referenced as AP2.5; it indicates the detail is located in the PROJECT MANUAL.

List of Drawings

Architectural

A0	TITLE SHEET
A1	DEMOLITION/RENOVATION/REFLECTED CEILING PLAN
A2	LARGE SCALE PLAN/INTERIOR ELEVATIONS/ MISCELLANEOUS DETAILS

Structural

S.1	PARTIAL ROOF FRAMING PLAN
-----	---------------------------

Mechanical

M1.1	EXISTING PLUMBING - DEMOLITION PLANS
M1.2	EXISTING VENTILATION - DEMOLITION PLANS
M2.1	PLUMBING MODIFICATIONS - PLANS
M2.2	NEW VENTILATION - PLANS
M2.3	NEW VENTILATION - PLANS
P2.1	NEW VENTILATION - FLOW DIAGRAM
P2.2	NEW VENTILATION EQUIP. I/O LIST AND NARRATIVE
P2.3	NEW VENTILATION - CONTROLS SITE PLAN

Electrical

E1.1	LARGE SCALE ELECTRICAL PLANS
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BUILDING CODE SUMMARY

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE RENOVATION OF THE EXISTING PILOT STUDIES ROOM AND SOILS ROOM IN THE CITY OF WINNIPEG'S NORTH END WATER POLLUTION CONTROL CENTRE. THIS BUILDING IS LOCATED ON THE WEST SIDE OF NORTH MAIN STREET IN WINNIPEG, MANITOBA.

THE RENOVATION OF THE SPACES INTO A NEW LABORATORY WITHIN AN EXISTING LABORATORY FACILITY IS APPROXIMATELY 49.00 SQ. M. (529 SQ. FT.).

THE EXISTING BUILDING IS CLASSIFIED TO THE FOLLOWING, BASED ON THE NATIONAL BUILDING CODE OF CANADA 2010

ARTICLE 3.2.2.81 GROUP F, DIVISION 3 (LOW HAZARD INDUSTRIAL OCCUPANCY) UP TO 4 STOREYS, NONSPRINKLERED THIS EXISTING BUILDING IS 3, 505 SQ. M. (538, 265 SQ. FT.)

THE ENTIRE EXISTING BUILDING IS 2 STOREYS IN BUILDING HEIGHT WITH A PARTIAL BASEMENT AND CRAWL SPACE, AND IS NONSPRINKLERED. THE PORTION OF THE BUILDING THAT WILL CONTAIN THE NEW LABORATORY IS 223.19 SQ. M. (2402 SQ. FT.).

THE BUILDING SHALL BE OF NONCOMBUSTIBLE OR COMBUSTIBLE CONSTRUCTION.

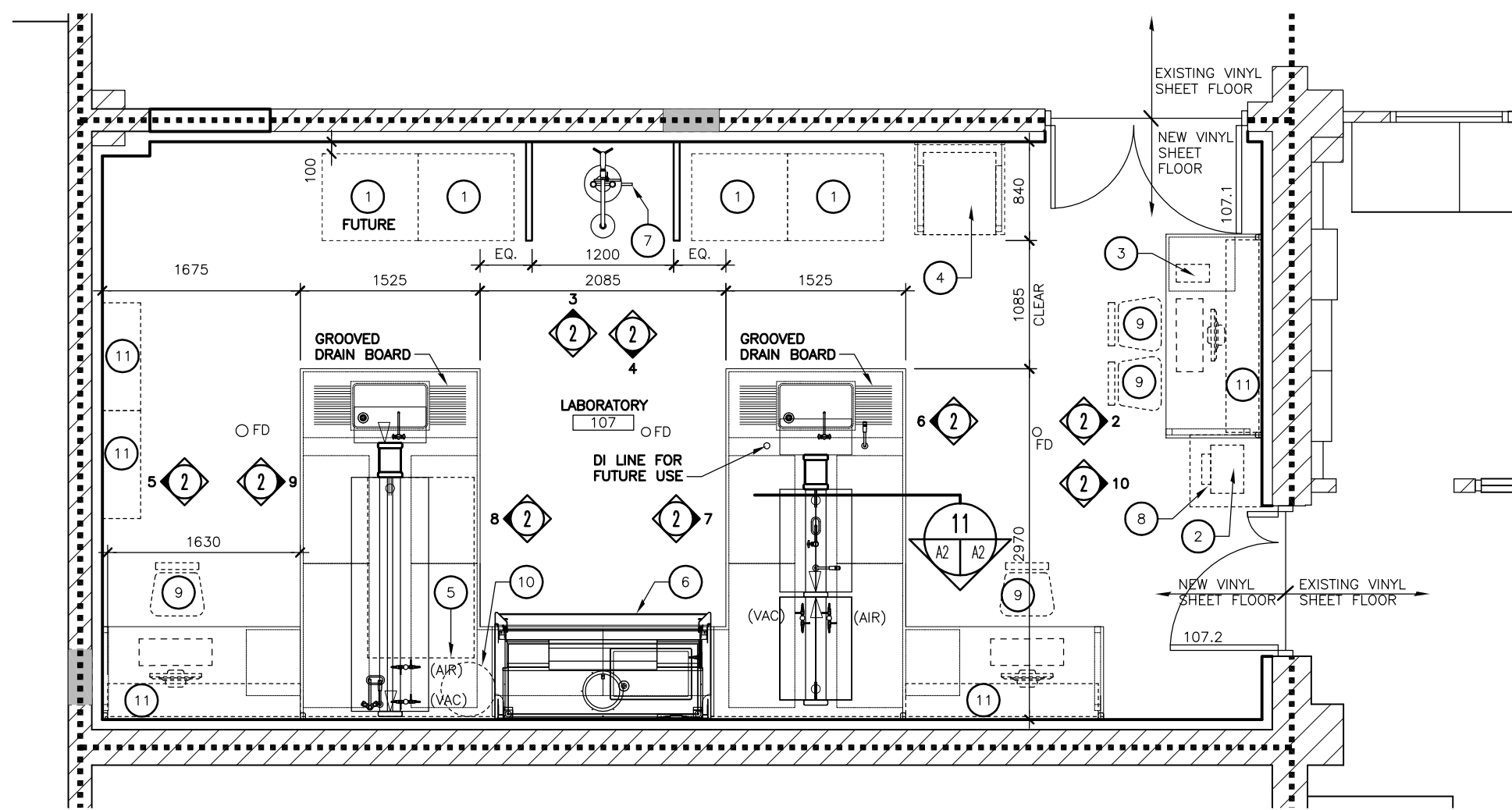
FLOOR ASSEMBLIES SHALL BE FIRE SEPARATIONS WITH A 45 MIN. FIRE RESISTANCE RATING. ALL LOAD BEARING WALLS, COLUMNS ETC. SHALL HAVE A FIRE RESISTANCE RATING EQUAL TO THE SUPPORTED ASSEMBLY. COLUMNS ETC. SUPPORTING THE FIRST FLOOR ASSEMBLY SHALL HAVE A 45 MIN. FIRE RESISTANCE RATING AND COLUMNS SUPPORTING THE ROOF ASSEMBLY ARE NOT REQUIRED TO BE RATED.

SITE NOTES:

- DESIGNATED AREA FOR GENERAL CONTRACTOR'S PARKING AND LAYDOWN AREA. COORDINATE REQUIRED ACCESS TIME FOR CONSTRUCTION WITH THE OWNER.
- ACCESS TO THE AREA OF RENOVATION FOR THE NEW LAB IS THROUGH THE EXISTING WEST EXIT DOOR AND EXISTING CORRIDOR - 113B. NOTE THAT THE DOOR IS KEY LOCKED. THE GENERAL CONTRACTOR IS TO COORDINATE WITH THE OWNER FOR KEYS.
- DESIGNATED VEHICULAR ACCESS ROUTE FOR THE GENERAL CONTRACTOR AND SUPPLIERS.
- REFER TO DRAWING A1 - EQUIPMENT REMOVAL NOTES. EQUIPMENT AND FURNISHINGS AS INDICATED IN ITEM NOS 1, 15, 17, 20, 21, 23, 24 AND 25 TO BE REMOVED BY THE GENERAL CONTRACTOR AND PLACED IN THE EXISTING STORAGE ROOM IN THE EXISTING GRT REMOVAL BUILDING. COORDINATE WITH OWNER.
- REFER TO DRAWING A1 - EQUIPMENT REMOVAL NOTES. EQUIPMENT AND FURNISHINGS AS INDICATED IN NOTE 18 TO BE REMOVED BY THE GENERAL CONTRACTOR AND TO BE PLACED IN THE STORAGE ROOM OF THE EXISTING SLUDGE Dewatering BUILDING - COORDINATE WITH OWNER.

RECORD DRAWING

B.M. ELEV.	FIELD BOOK #:	LM Architectural Group 500-136 Market Ave Winnipeg Manitoba Canada R3B 0P4 t: (204) 942.0681 f: (204) 943.8676 www.lm-architects.com	SEAL ORIGINAL DRAWING SEALED BY TERRY W. DANIELLEY AND DATED AUGUST 25, 2011	THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT
POSTED TO LBIS		DESIGNED BY VK	CHECKED BY	NORTH END WATER POLLUTION CONTROL CENTRE - LAB RENOVATIONS
		DRAWN BY JM	APPROVED BY	CITY DRAWING NUMBER
3 AS CONSTRUCTED 29/08/13 JM		HOR. SCALE	RELEASED FOR CONSTRUCTION	TITLE PAGE
2 ISSUED FOR FINAL REVIEW 30/08/11 JM		VERTICAL	DATE	
1 ISSUED FOR REVIEW 06/06/11 JM				
NO. REVISIONS	DATE BY	DATE	DATE	
			CONSULTANT DRAWING NO. A0	
				1-0101M-B0001-001



1 FIXTURE PLAN
SCALE: 1:50

FINISH SCHEDULE ABBREVIATIONS

G.B.	DRYSPIN BOARD	08 28 00	VS8	VINYL SHEET ROLLED BASE	09 65 00
P	PAINT	09 90 00	VCT	VINYL COMPOSITION TILE	09 65 00
			VS	VINYL SHEET	09 65 00

NOTES - FINISH SCHEDULE

N1	PROVIDE ROLLED SELF COVERED BASE
N2	PROVIDE PAINT FINISH FOR PLASTER RETURNS TO NEW DOOR FRAMES ON ALL SIDES
N3	PROVIDE SMOOTH SURFACE ON EXISTING BLOCK WALL FOR CT. MATCH ADJACENT LEVEL OF CT.
N4	APPLY PLASTER FINISH OVER INFILL. FEATHER OUT TO ADJACENT PLASTER SURFACES.
N5	AFTER THE NEW CONC. BLOCK IS IN PLACE REPAINT ENTIRE WALL.

ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR	BASE	NORTH WALL	EAST WALL	SOUTH WALL	WEST WALL	REMARKS
100	EXISTING PUMP ROOM	TERRAZZO	-	PLAST	P	EXIST	P	N4
104	EXISTING WASTEWATER LAB	EXIST. VS	-	EXIST. VS	-	-	EX. PLASTER	CT
107	LABORATORY	VS	-	ROLLED VS	-	CT	-	CT
113A	EXISTING CORRIDOR	EXIST. VT	-	ROLLED VS	EX.	-	-	-

NOTES - DOOR SCHEDULE

N1	DOOR AND FRAME TYPE TO BE HOLLOW METAL (H.M.) WELDED.
N2	HOLLOW METAL FRAMES UNLESS OTHERWISE NOTED ARE TO MATCH THE POSITION OF THE EXISTING DOOR FRAME LOCATION.
N3	COORDINATE ELECTRICAL REQUIREMENTS TO DOOR FRAMES - SEE ELECTRICAL DRAWINGS
N4	DOOR TO RECEIVE RELOCATED CARD ACCESS BY OWNER. GENERAL CONTRACTOR TO COORDINATE ROUGH-IN REQUIREMENTS WITH ELECTRICAL CONTRACTOR AND OWNER.

DOOR STYLE

FRAME STYLE

HARDWARE GROUP

DOOR NO.	WIDTH	HEIGHT	THICK	TYPE	FINISH	STYLE	PROT.	TYPE	FINISH	STYLE	PROT.	FIRE RATING	H.W.G. GROUP	REMARKS
107.1	679mm/915mm	2150mm	45mm	H.M.	P	B & A		H.M.	P	1		45 MIN.	1	N1, N2, N3, N4
107.2	273mm/915mm	2150mm	45mm	H.M.	P	B & A		H.M.	P	1		45 MIN.	2	N1, N2

DOOR SCHEDULE

DOOR NO.	WIDTH	HEIGHT	THICK	TYPE	FINISH	STYLE	PROT.	TYPE	FINISH	STYLE	PROT.	FIRE RATING	H.W.G. GROUP	REMARKS
107.1	679mm/915mm	2150mm	45mm	H.M.	P	B & A		H.M.	P	1		45 MIN.	1	N1, N2, N3, N4
107.2	273mm/915mm	2150mm	45mm	H.M.	P	B & A		H.M.	P	1		45 MIN.	2	N1, N2

EQUIPMENT SCHEDULE ABBREVIATIONS

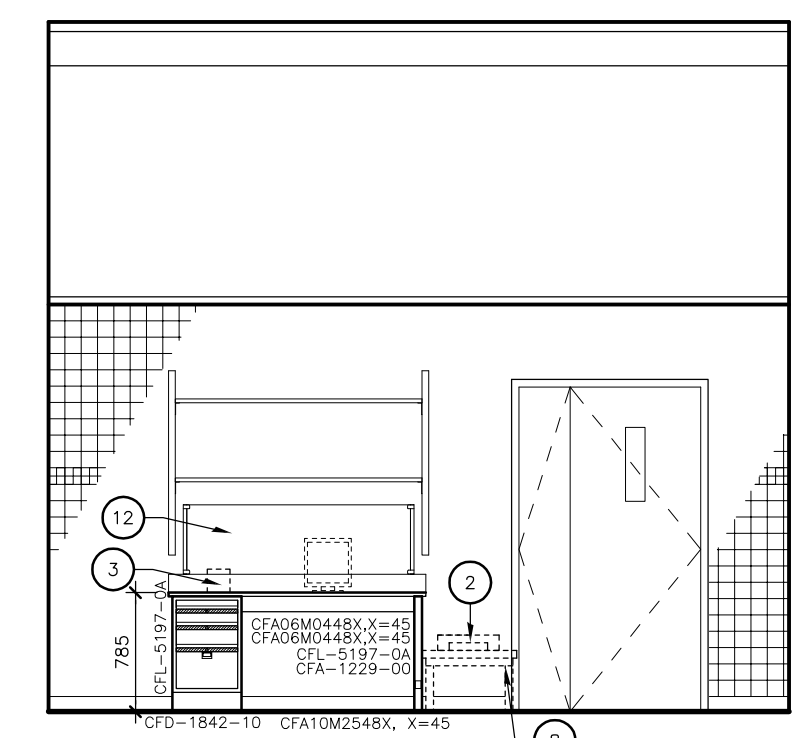
CM	CEILING MOUNT	REL	EXISTING RELOCATED
IC	IN CONTRACT	W/M	WALL MOUNT
OPF	OWNER FURNISHED PRODUCT	U/C	UNDER COUNTER
NC	NOT IN CONTRACT		

TYPICAL NOTES:
All interface including structural, support, mechanical, electrical and IT services are by the general contractor.

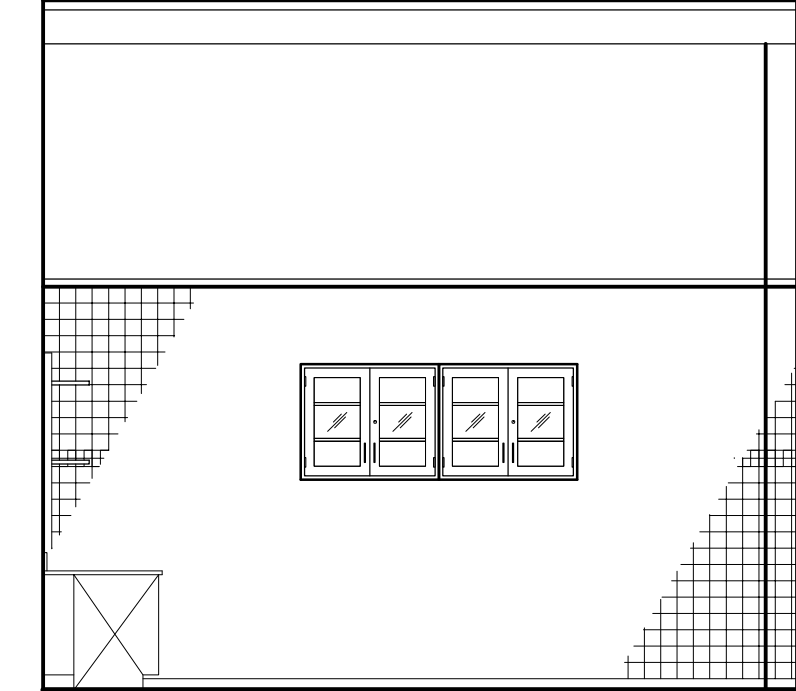
REMARKS:
N1 ITEMS INDICATED ARE INSTALLED BY THE GENERAL CONTRACTOR.
N2 ITEMS IN CONTRACT AND TO BE INSTALLED BY THE GENERAL CONTRACTOR.
N3 ITEMS TO BE INSTALLED BY OWNER.

EQUIPMENT SCHEDULE

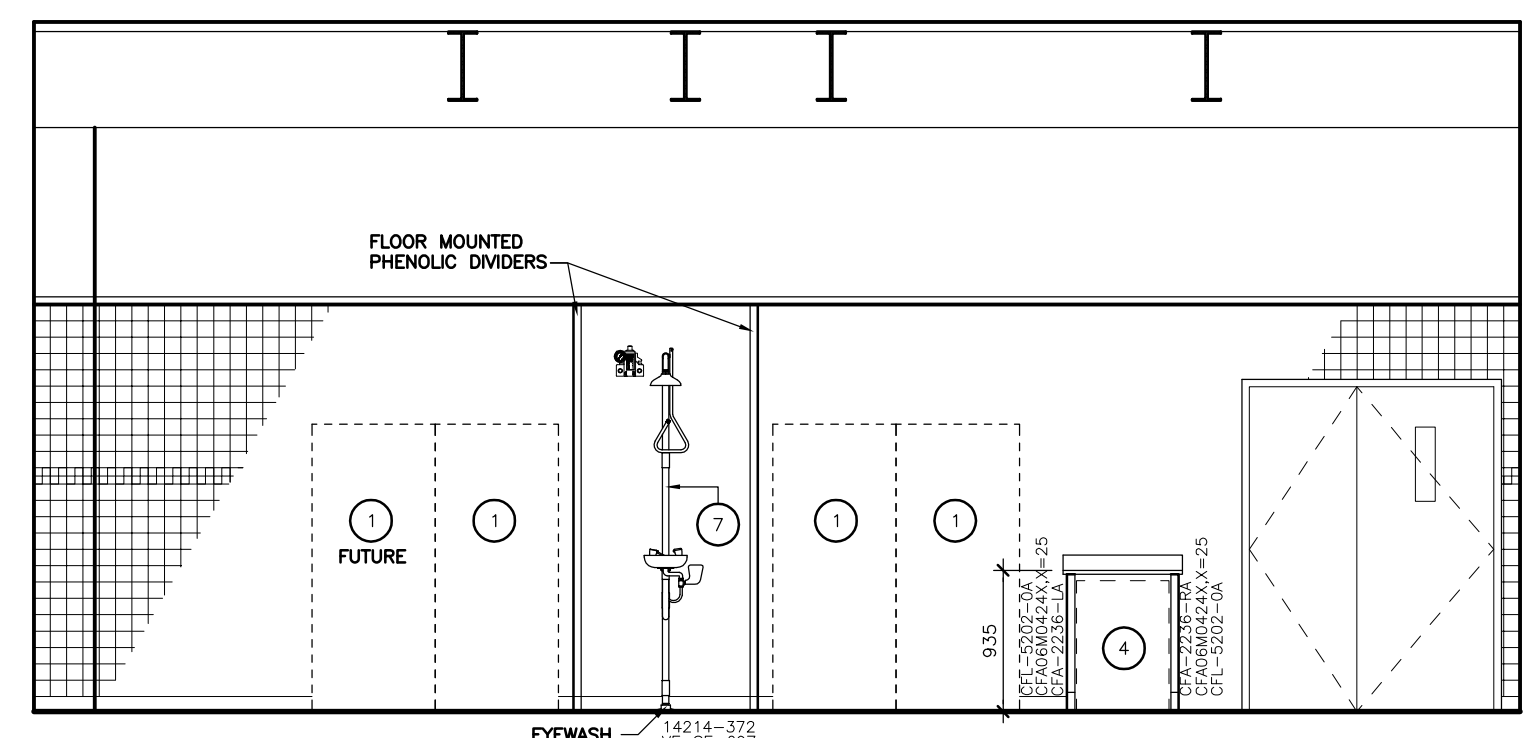
EQUIP. NO.	STATUS	SPEC. SECTION	DESCRIPTION	QTY.	RELOC.	NEW
1	OPF		EXISTING INCUBATOR	3	X	N1
2	OPF		EXISTING BALANCE 1	1	X	N3
3	OPF		EXISTING LABEL PRINTER	1	X	N3
4	IC/U/C		DISHWASHER	1	X	N2
5	OPF		WATER ANALYZER	1	X	N3
6	IC		FUME HOOD	1	X	N2
7	IC		EYEWASH/SHOWER DELUGE	1	X	N2
8	OPF		TABLE	1	X	N3
9	NIC		CHAIR	4		
10	OPF		WATER SUPPLY HOLDING TANK FOR THE WATER ANALYZER	1	X	N3
11	NIC		SHELF	3		
12	NIC		TACK BOARD	3		



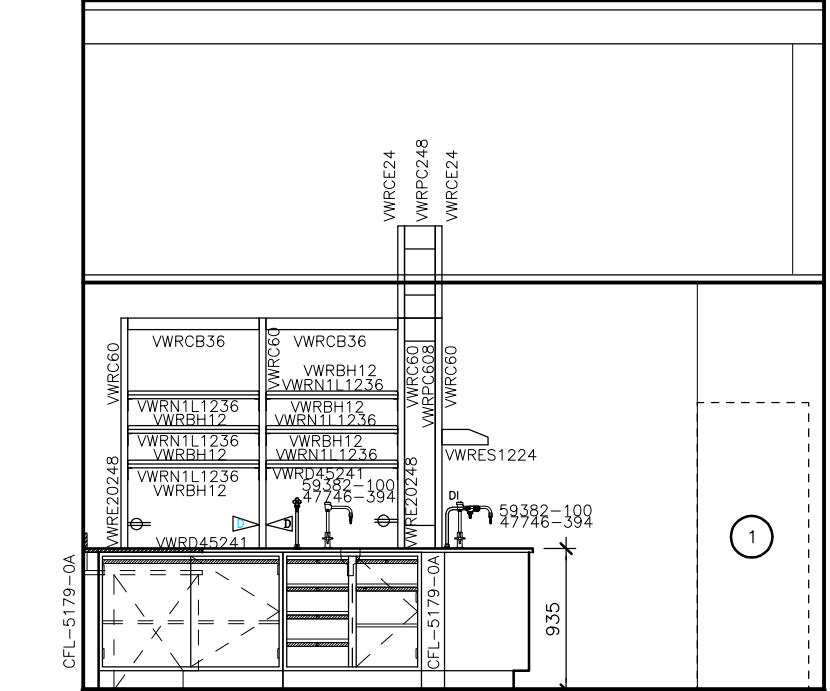
2 LABORATORY - 107
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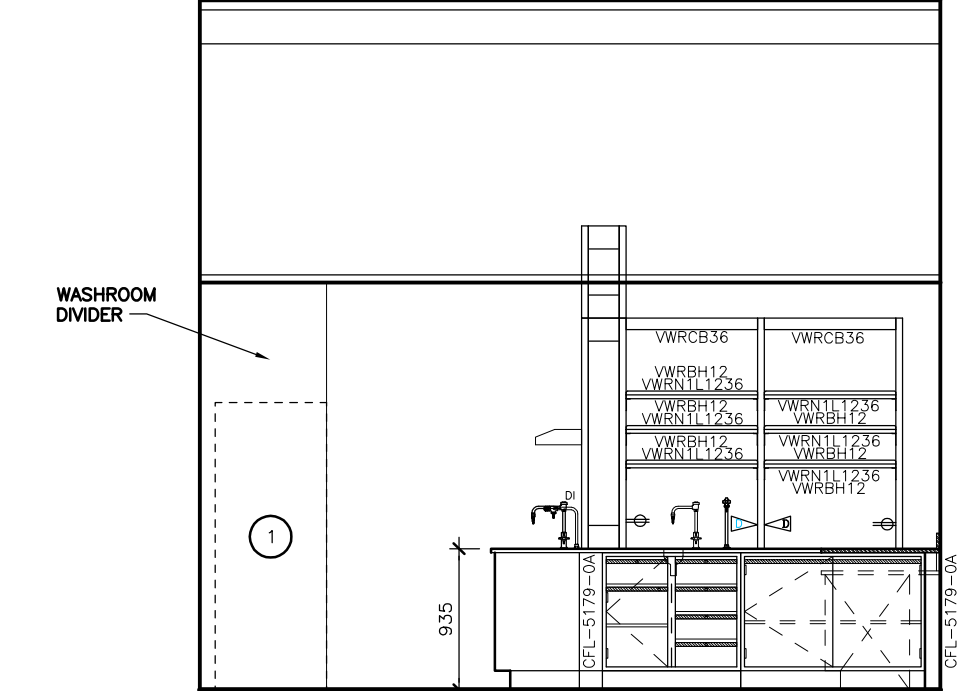
5 LABORATORY - 107
SCALE: 1:50



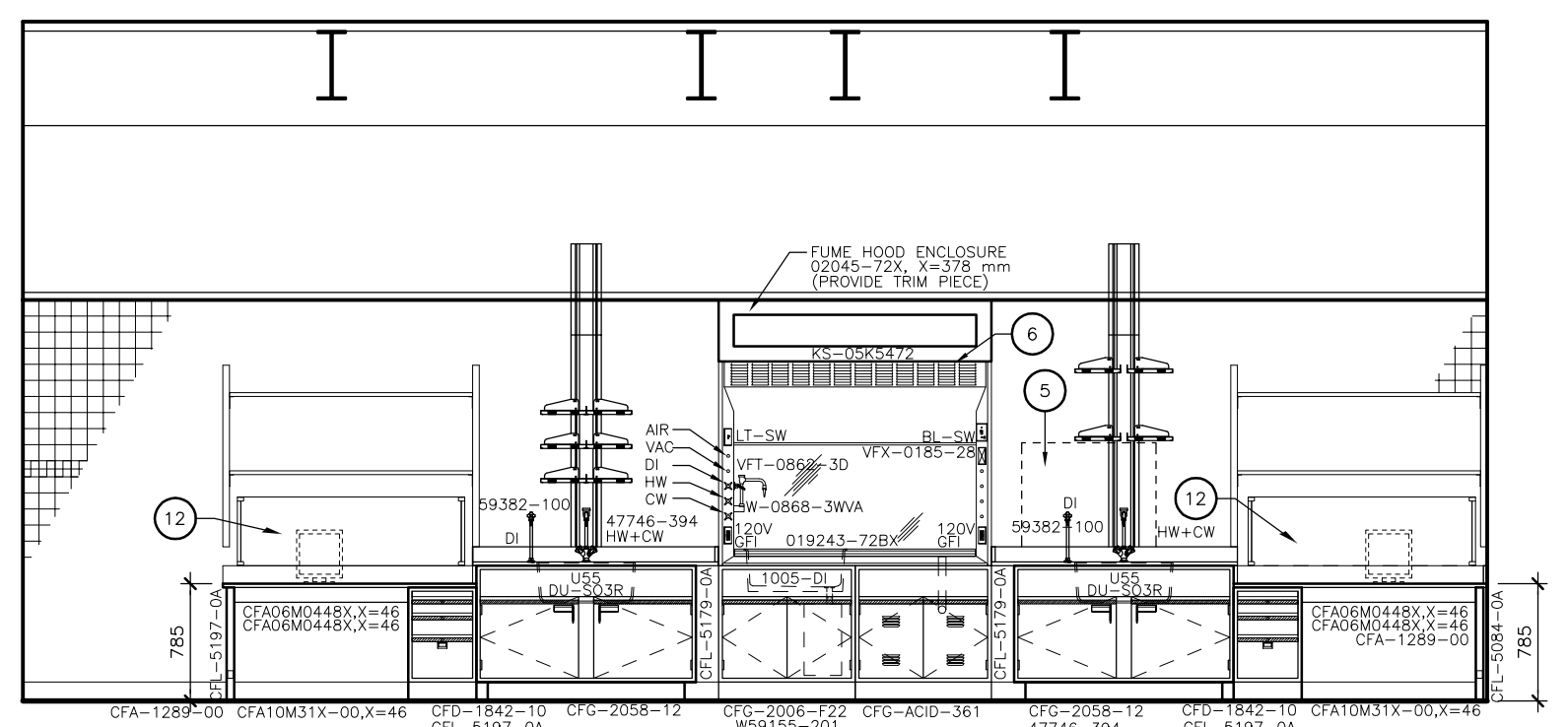
3 LABORATORY - 107
SCALE: 1:50



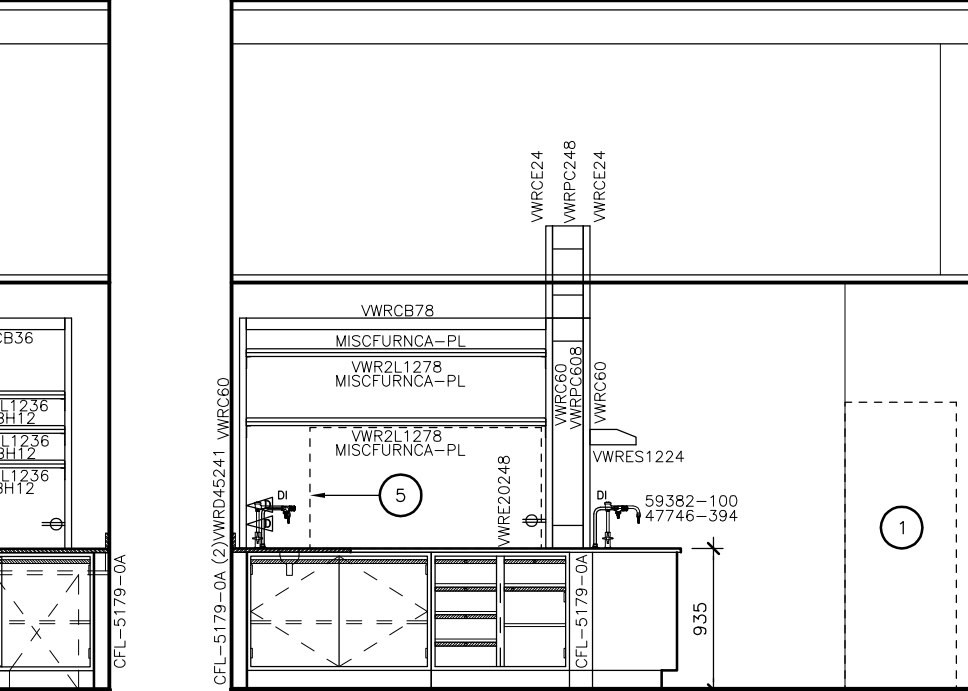
6 LABORATORY - 107
SCALE: 1:50



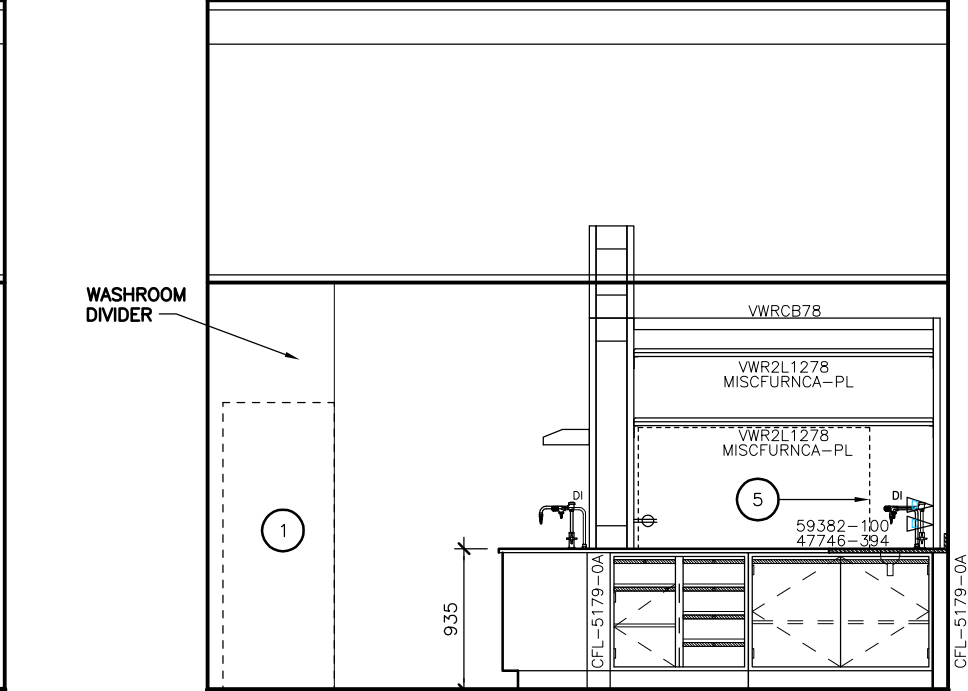
7 LABORATORY - 107
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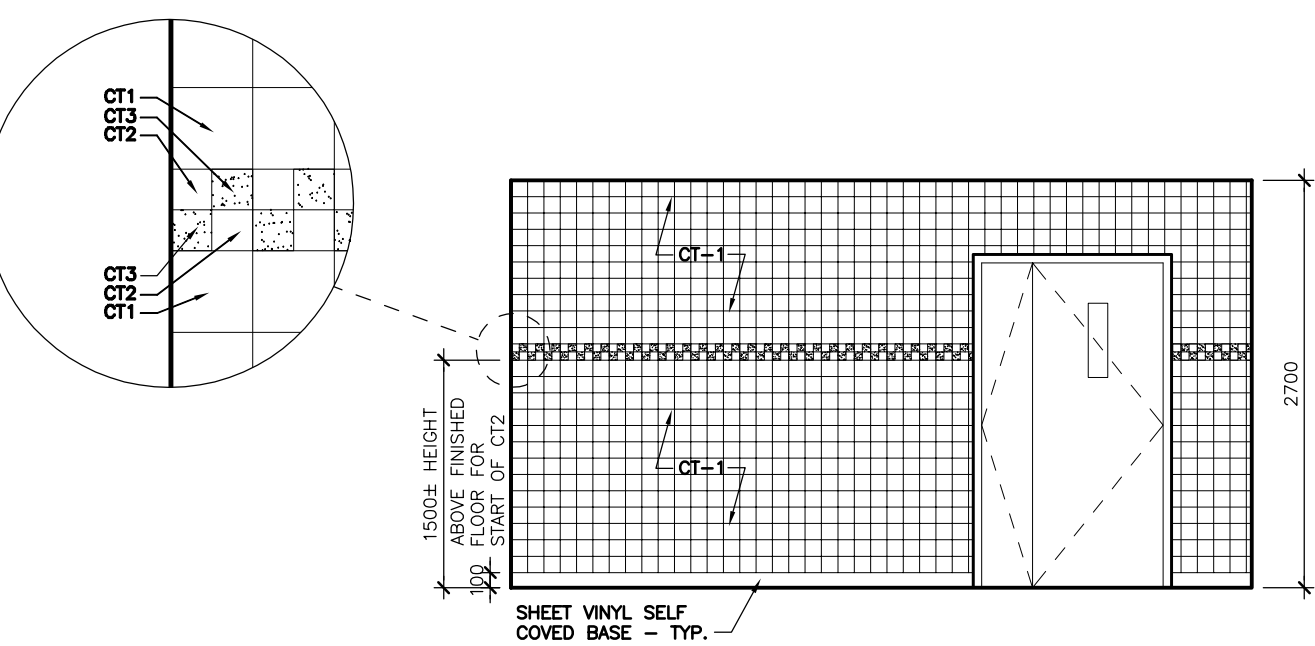
4 LABORATORY - 107
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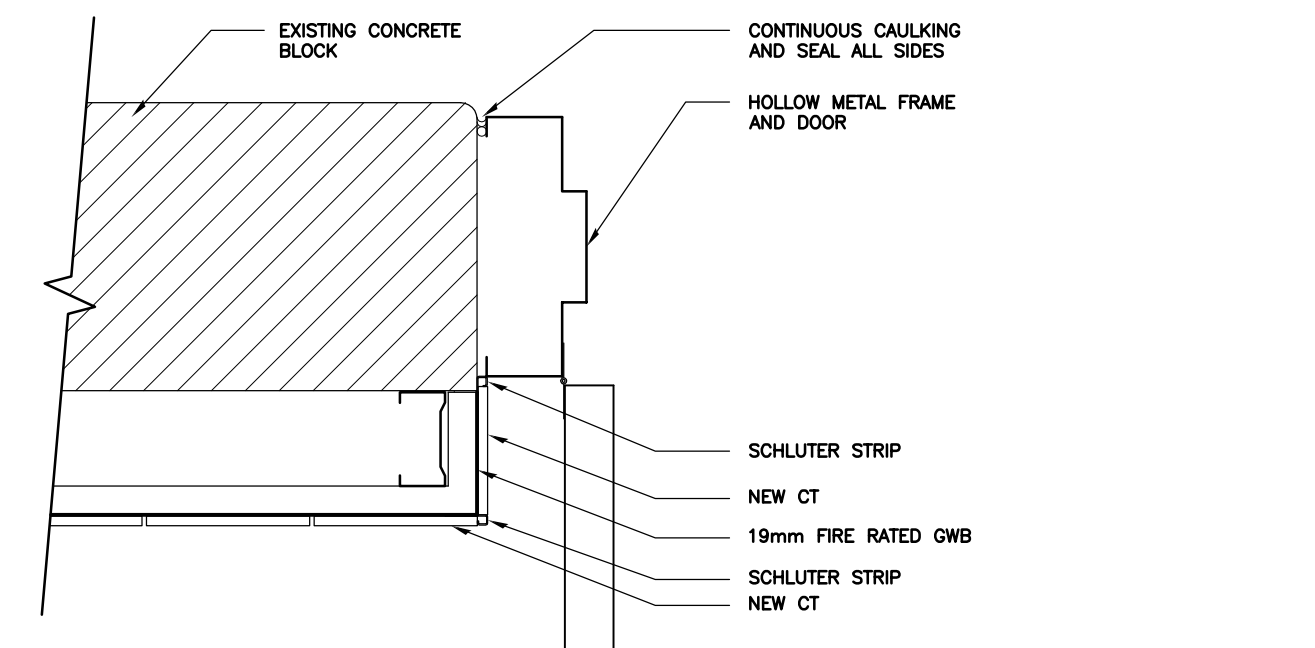
8 LABORATORY - 107
SCALE: 1:50



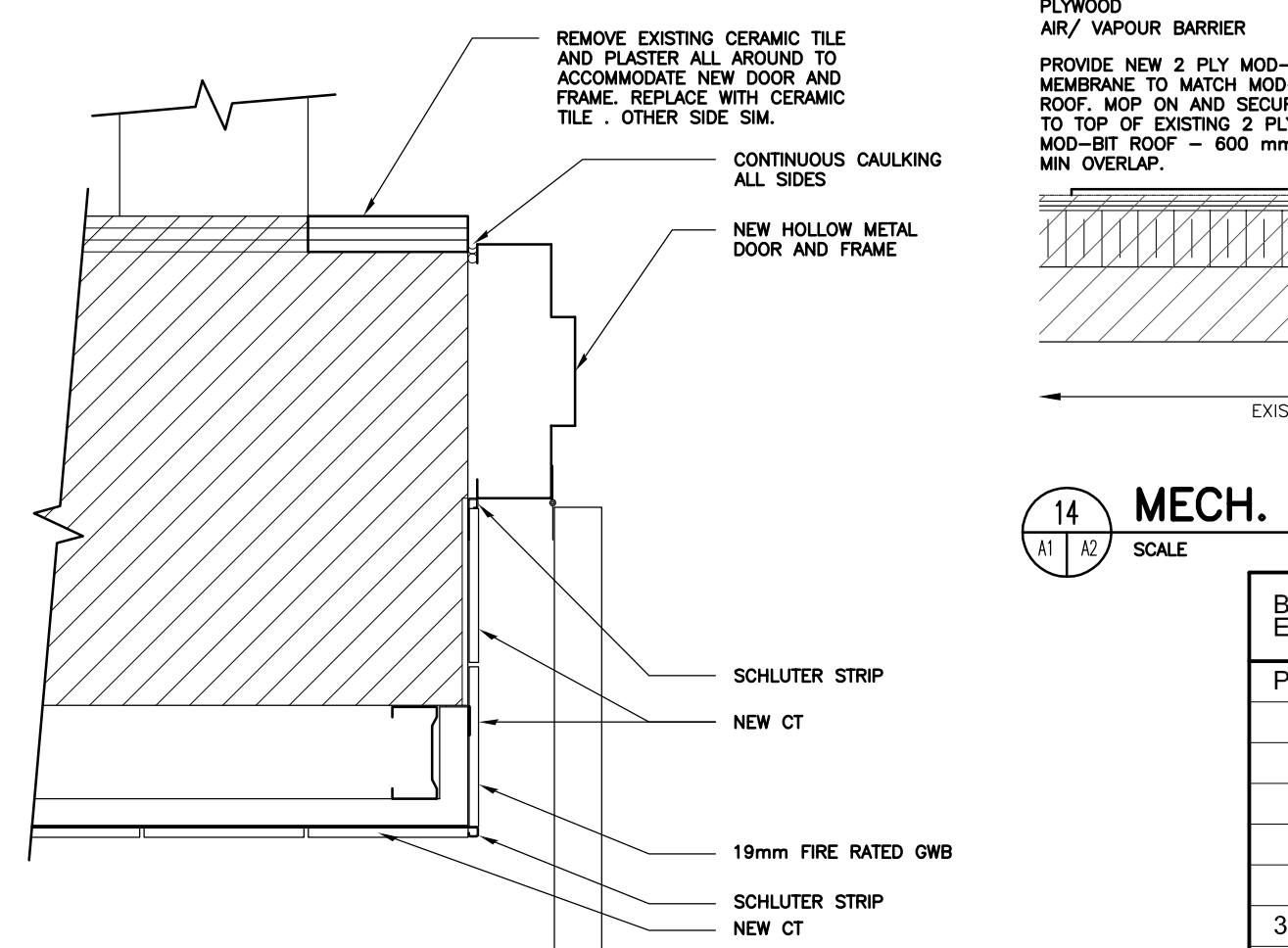
9 LABORATORY - 107
SCALE: 1:50



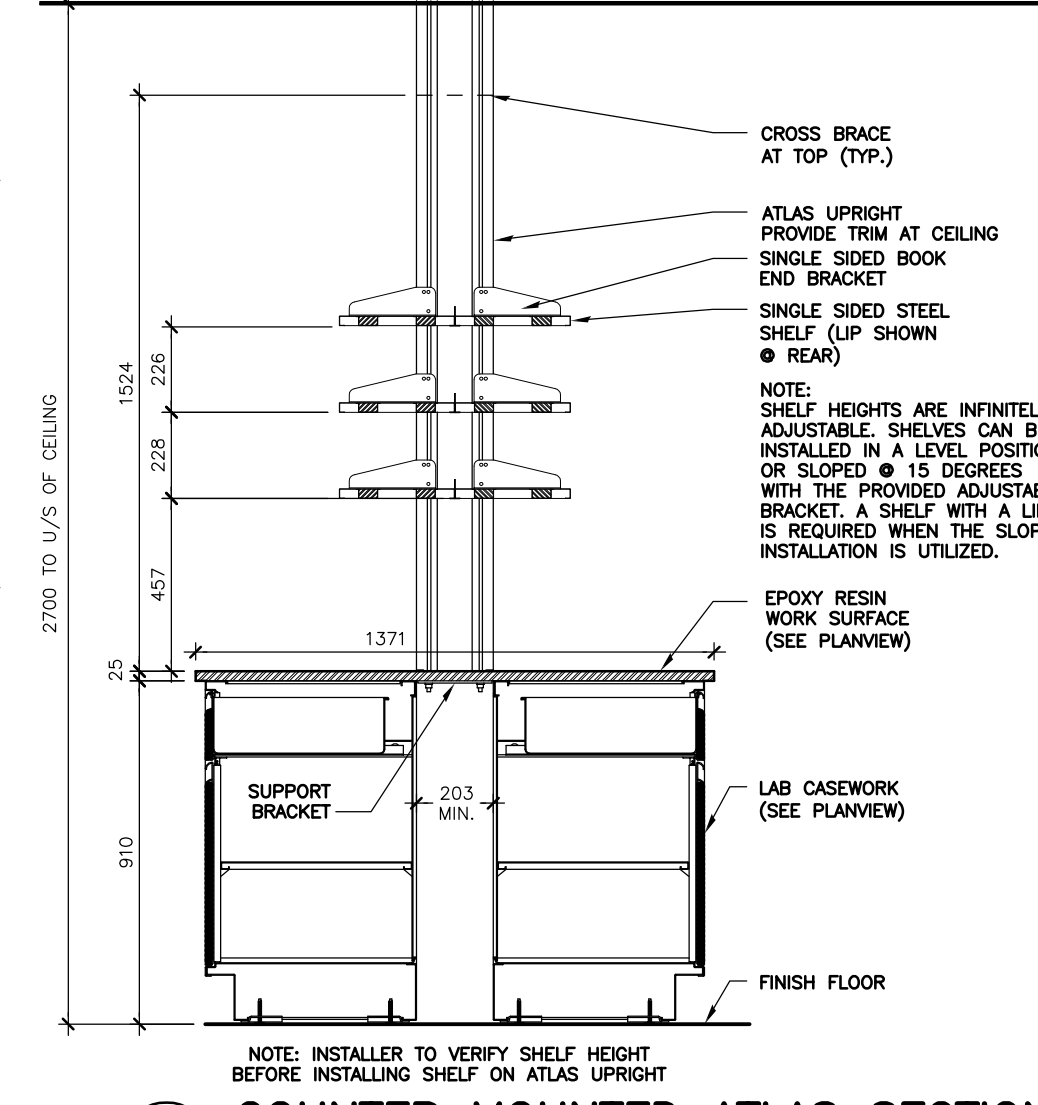
10 CERAMIC TILE LAYOUT - TYP.
SCALE: 1:50



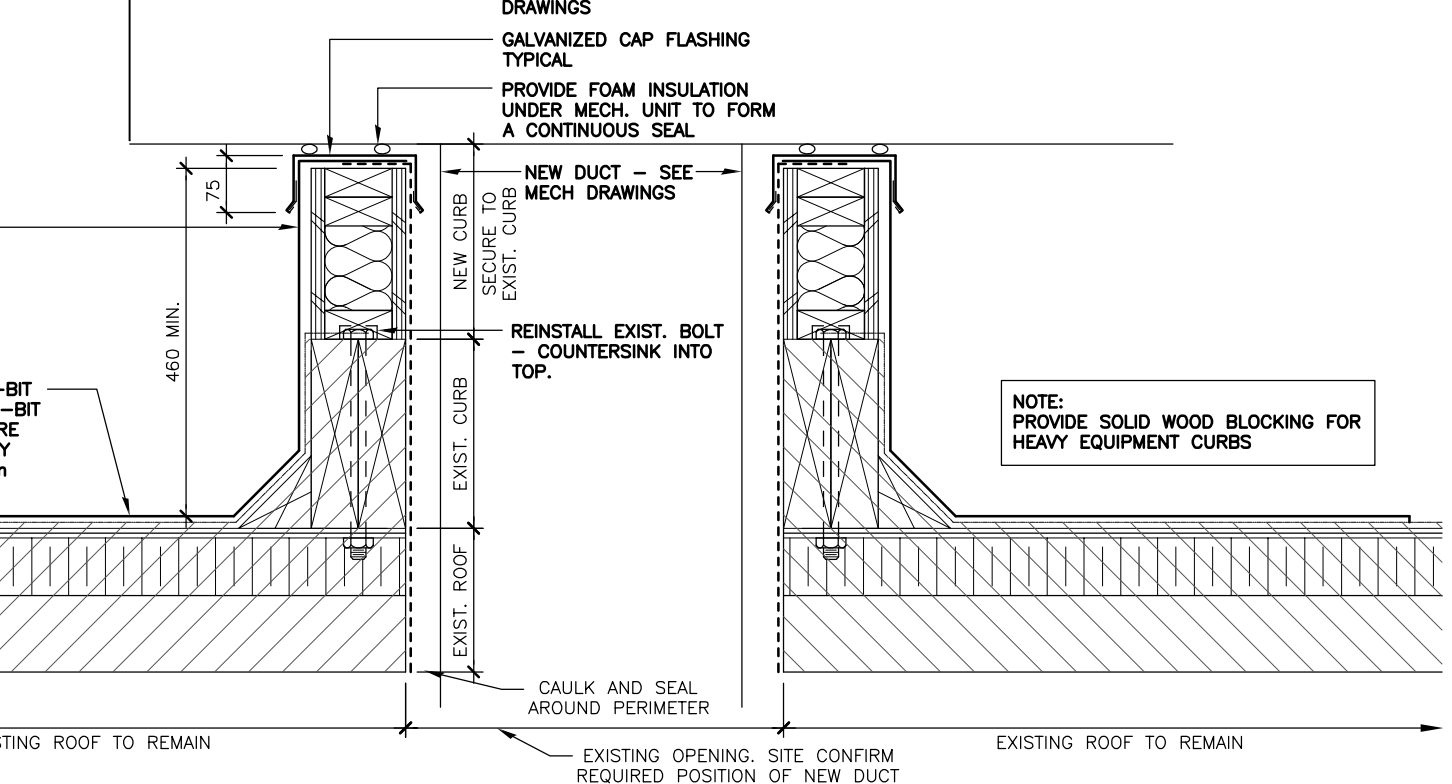
12 ENLARGED WALL DETAIL
SCALE: 1:5



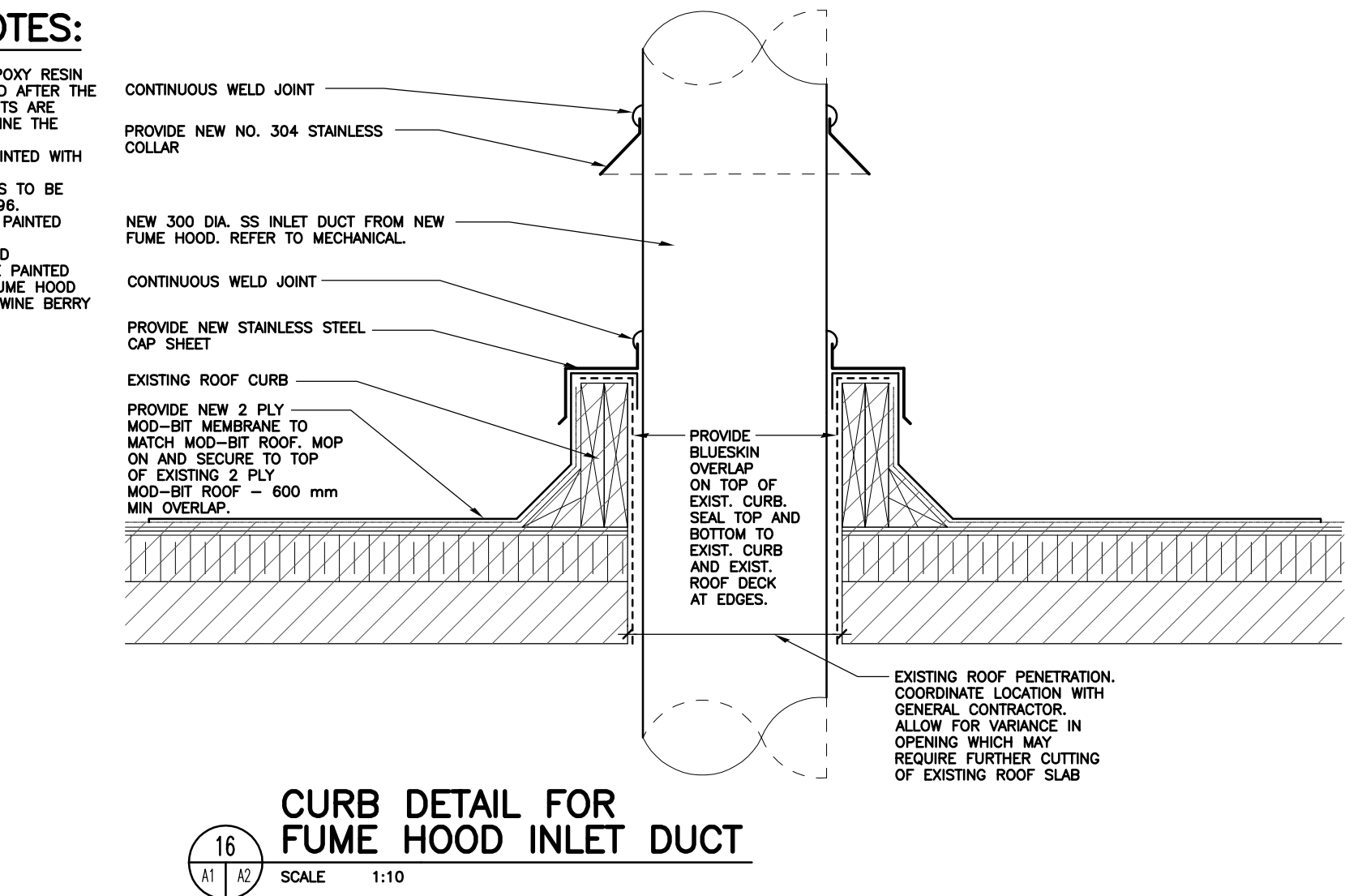
13 ENLARGED WALL DETAIL
SCALE: 1:5



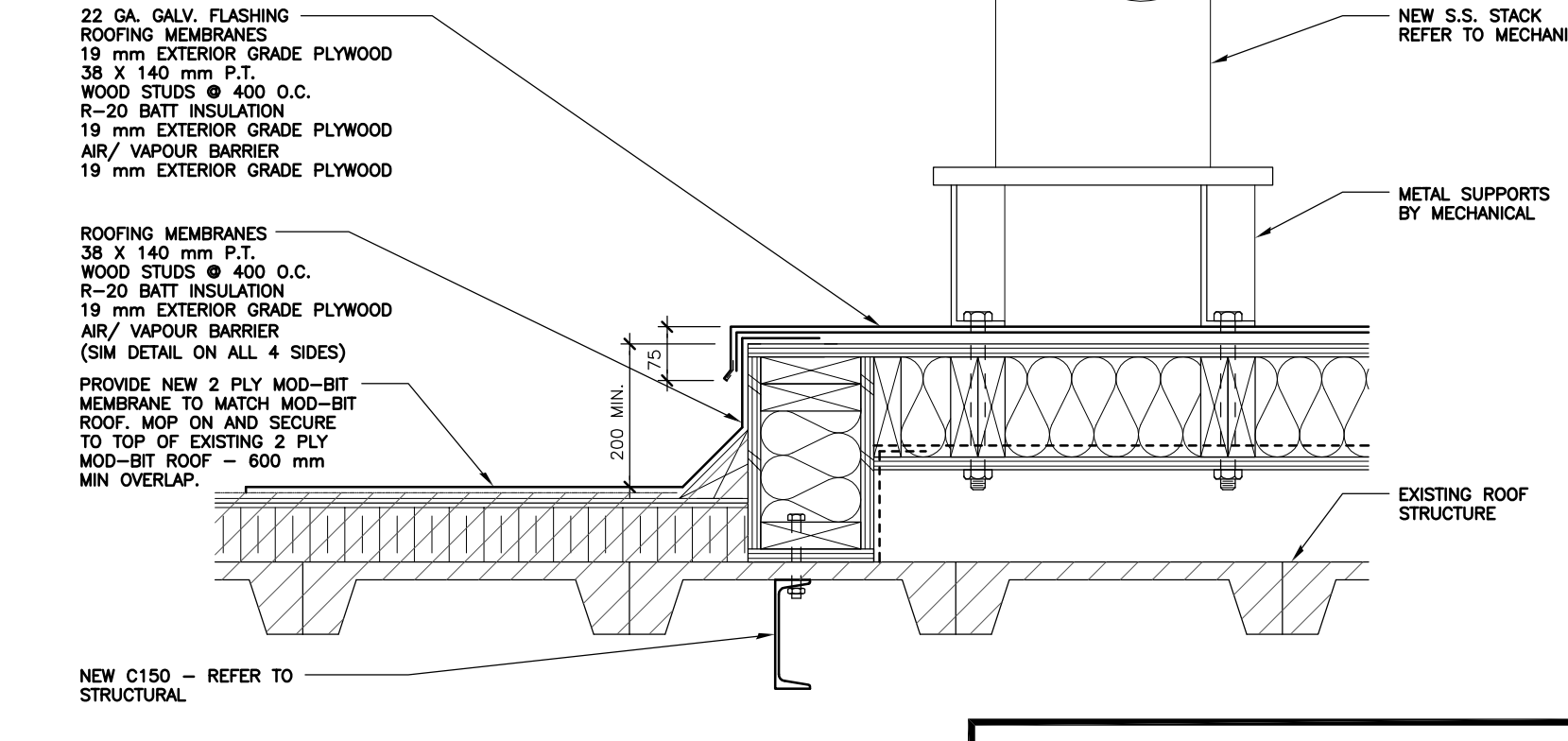
11 COUNTER MOUNTED ATLAS SECTION
SCALE: 1:20



14 MECH. CURB DETAIL
SCALE: 1:10



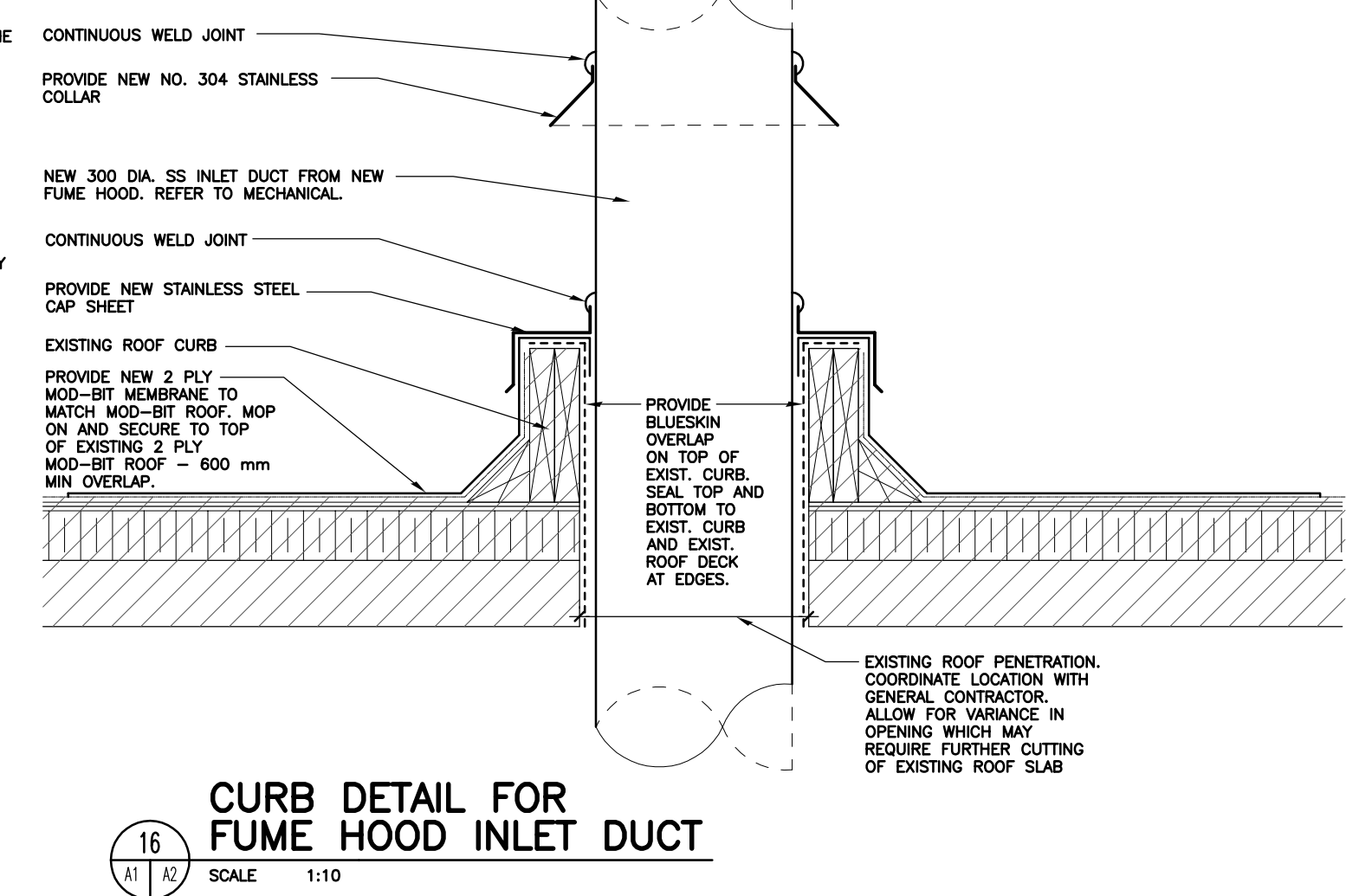
16 CURB DETAIL FOR FUME HOOD INLET DUCT
SCALE: 1:10



15 MECH. CURB DETAIL
SCALE: 1:10

LAB BENCH NOTES:

- WORK SURFACE IS A 25mm EPOXY RESIN SURFACE TO BE SITE MEASURED AFTER THE COMBINATION OF THE BASE UNITS ARE VERIFIED IN ORDER TO DETERMINE THE EXACT DIMENSIONS.
- ALL CABINET BODIES TO BE PAINTED WITH LIGHT NEUTRAL NO. 61.
- ALL DOOR AND DRAWER FRONTS TO BE PAINTED WITH WINEBERRY NO. 96.
- ALL CABINET INTERIORS TO BE PAINTED WITH LIGHT NEUTRAL NO. 61.
- FUME HOOD BODY INTERIOR AND ENCLOSURE AT THE TOP TO BE PAINTED LIGHT NEUTRAL NO. 61. THE FUME HOOD DOOR FRONTS TO BE PAINTED WINE BERRY NO. 96.



RECORD DRAWING

B.M. ELEV.	FIELD BOOK #:	LM Architectural Group	SEAL
POSTED TO LBIS		500-136 Market Ave Winnipeg Manitoba Canada R3B 0P4 t: (204) 942.0681 f: (204) 943.8676 www.lm-architects.com	ORIGINAL DRAWING SEALED BY TERRY W. DANIELLEY AND DATED AUGUST 25, 2011
		DESIGNED BY VK	CHECKED BY
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		HOR. SCALE	RELEASED FOR CONSTRUCTION
		VERTICAL	DATE
3 AS CONSTRUCTED 29/08/13 JM			
2 ISSUED FOR FINAL REVIEW 30/08/11 JM			
1 ISSUED FOR REVIEW 06/06/11 JM			
NO. REVISIONS	DATE	BY	DATE

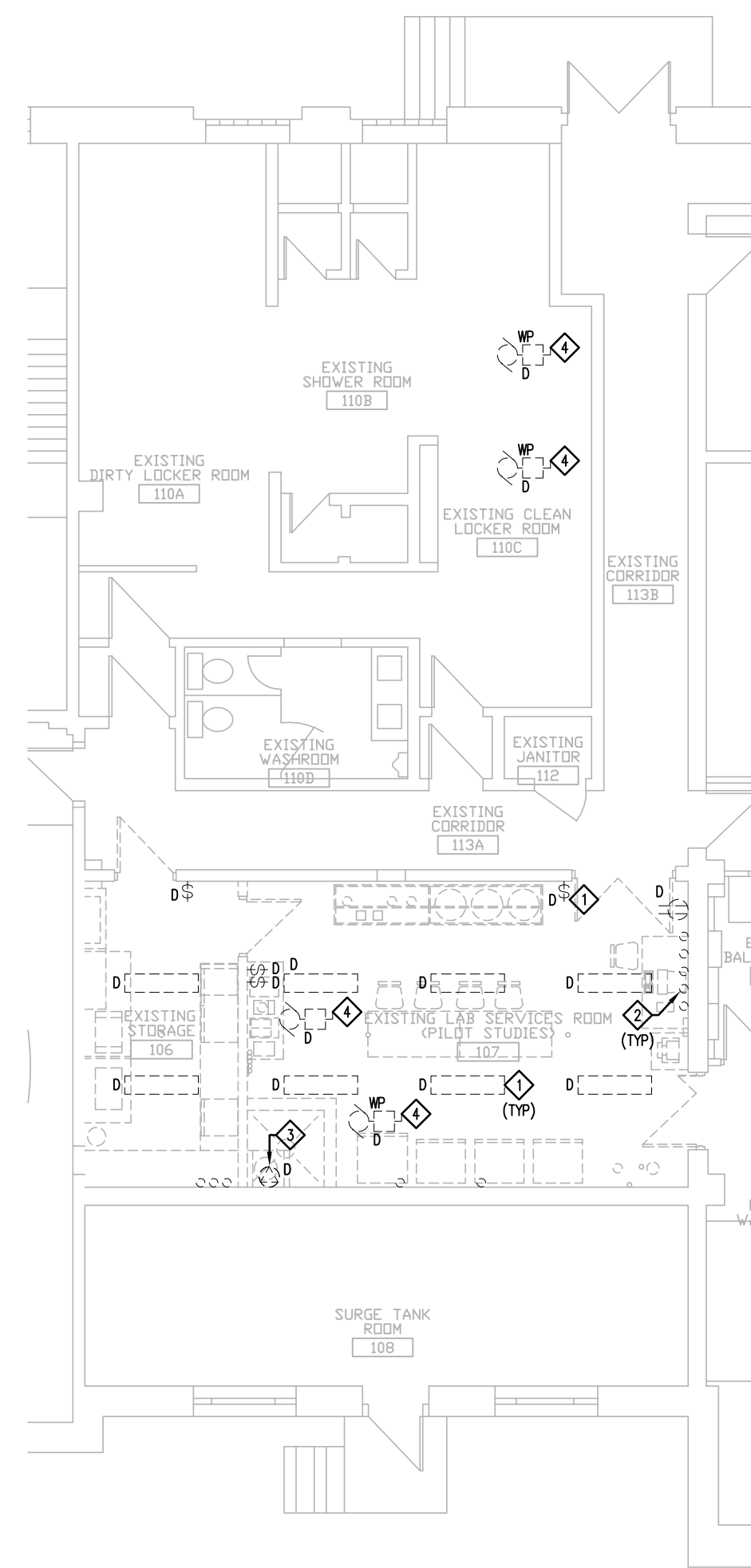
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

Winnipeg

NORTH END WATER POLLUTION CONTROL CENTRE - LAB RENOVATIONS

LARGE SCALE PLAN/ INTERIOR ELEVATIONS/ MISCELLANEOUS DETAILS

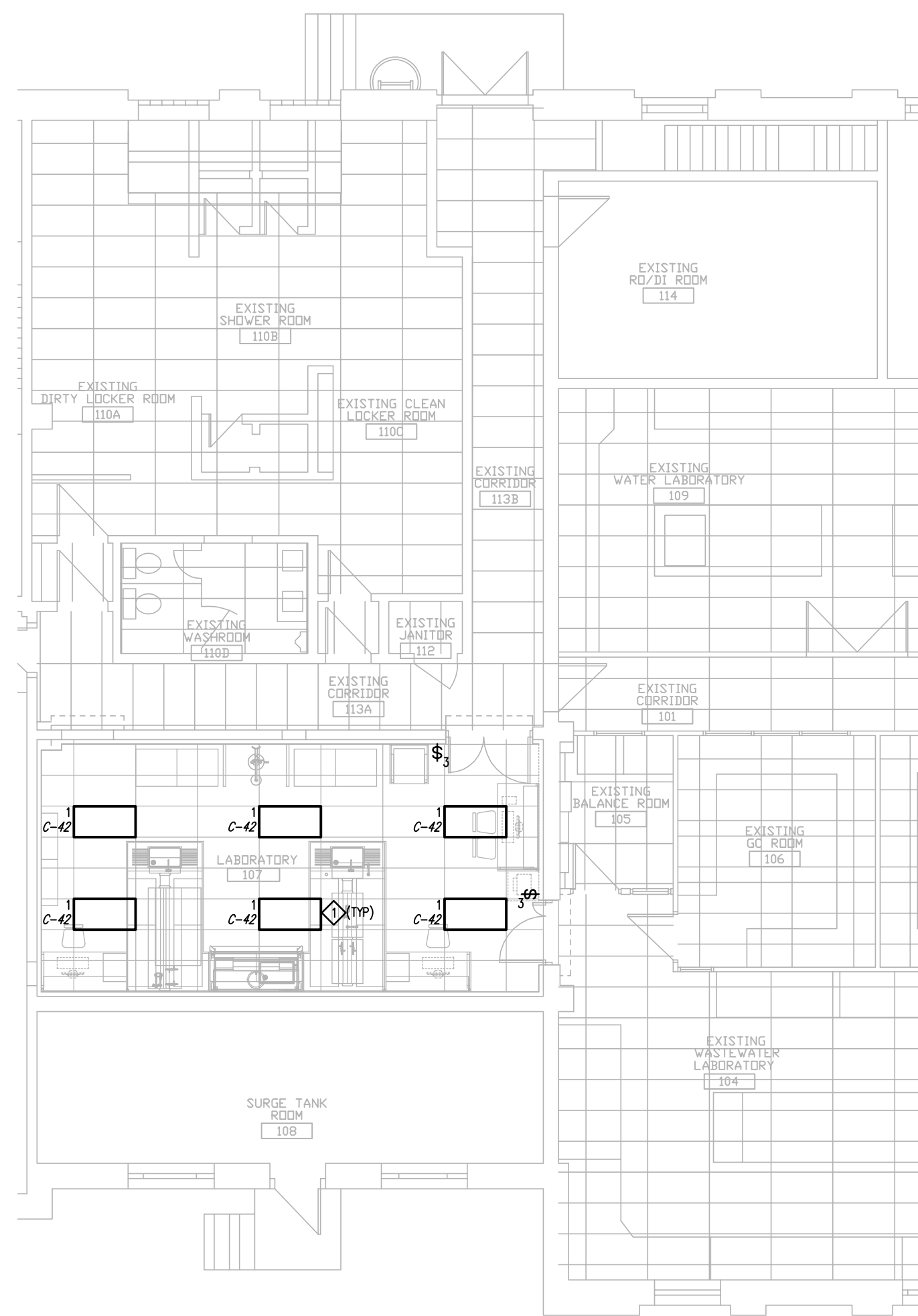
CITY DRAWING NUMBER: 1-0101M-B0003-001



1 PARTIAL MAIN FLOOR ELECTRICAL DEMOLITION
E1.1 SCALE: 1:100

DEMOLITION NOTES:

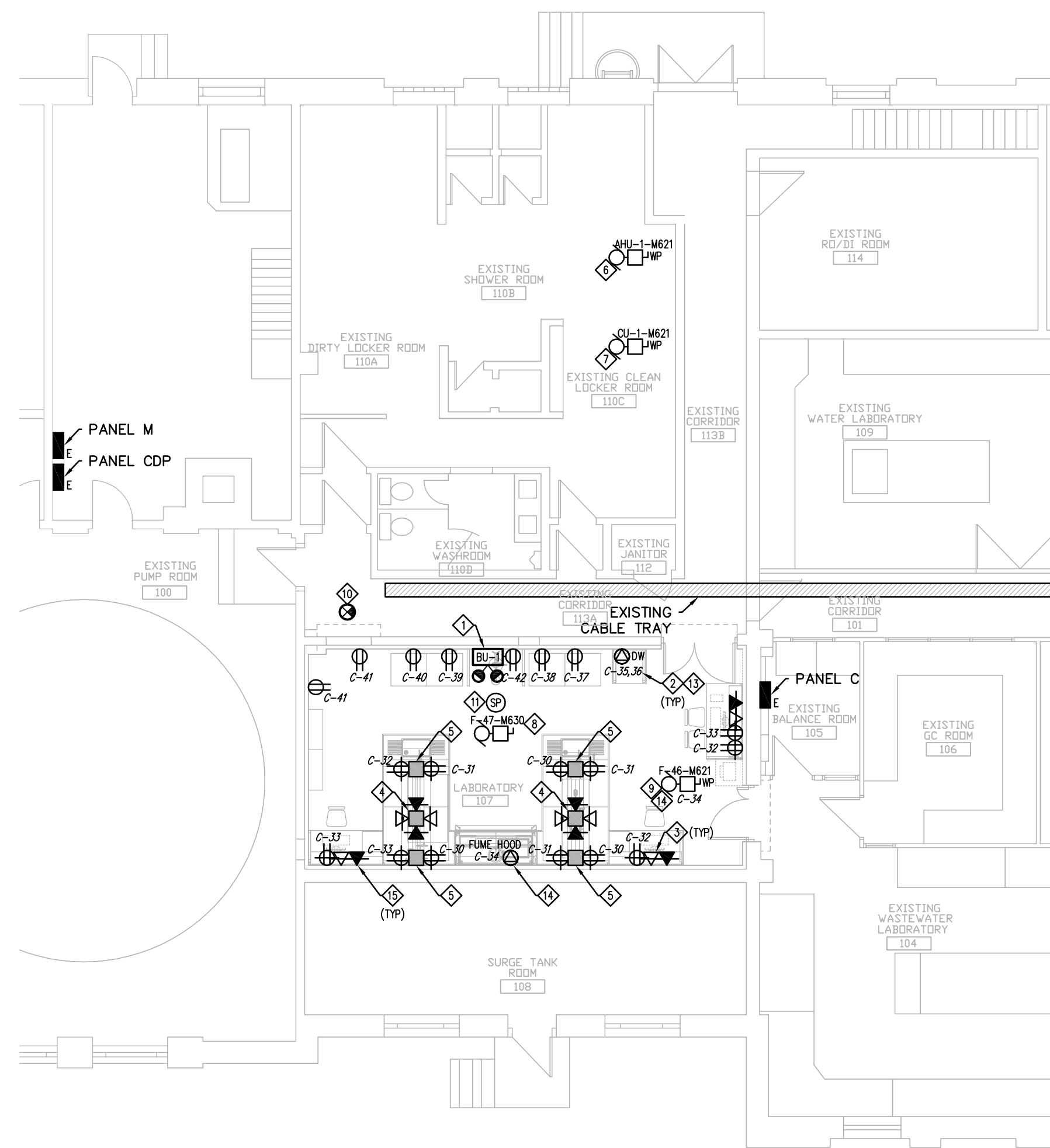
- DISCONNECT AND REMOVE ALL EXISTING LUMINAIRES AND SWITCHING. CONTRACTOR SHALL DISPOSE LUMINAIRES, MAINTAIN EXISTING LIGHTING CIRCUIT AND UTILIZE IN NEW LIGHTING LAYOUT.
- DISCONNECT AND REMOVE ALL CONDUIT, WIRING, DEVICES AND ASSOCIATED ELECTRICAL EQUIPMENT. MAINTAIN CIRCUIT IN ACCESSIBLE CEILING SPACE FOR UTILIZATION IN NEW LAYOUT.
- DISCONNECT AND REMOVE CONDUIT AND WIRING INTO ACCESSIBLE CEILING SPACE FROM HOT WATER TANK, AS REMOVED BY OTHERS.
- DISCONNECT AND REMOVE ASSOCIATED WIRING FROM DELETED MECHANICAL EQUIPMENT. MAINTAIN CIRCUIT FOR NEW MECHANICAL EQUIPMENT AS SHOWN IN NEW LAYOUT.



2 PARTIAL MAIN FLOOR LIGHTING PLAN
E1.1 SCALE: 1:100

LIGHTING NOTES:

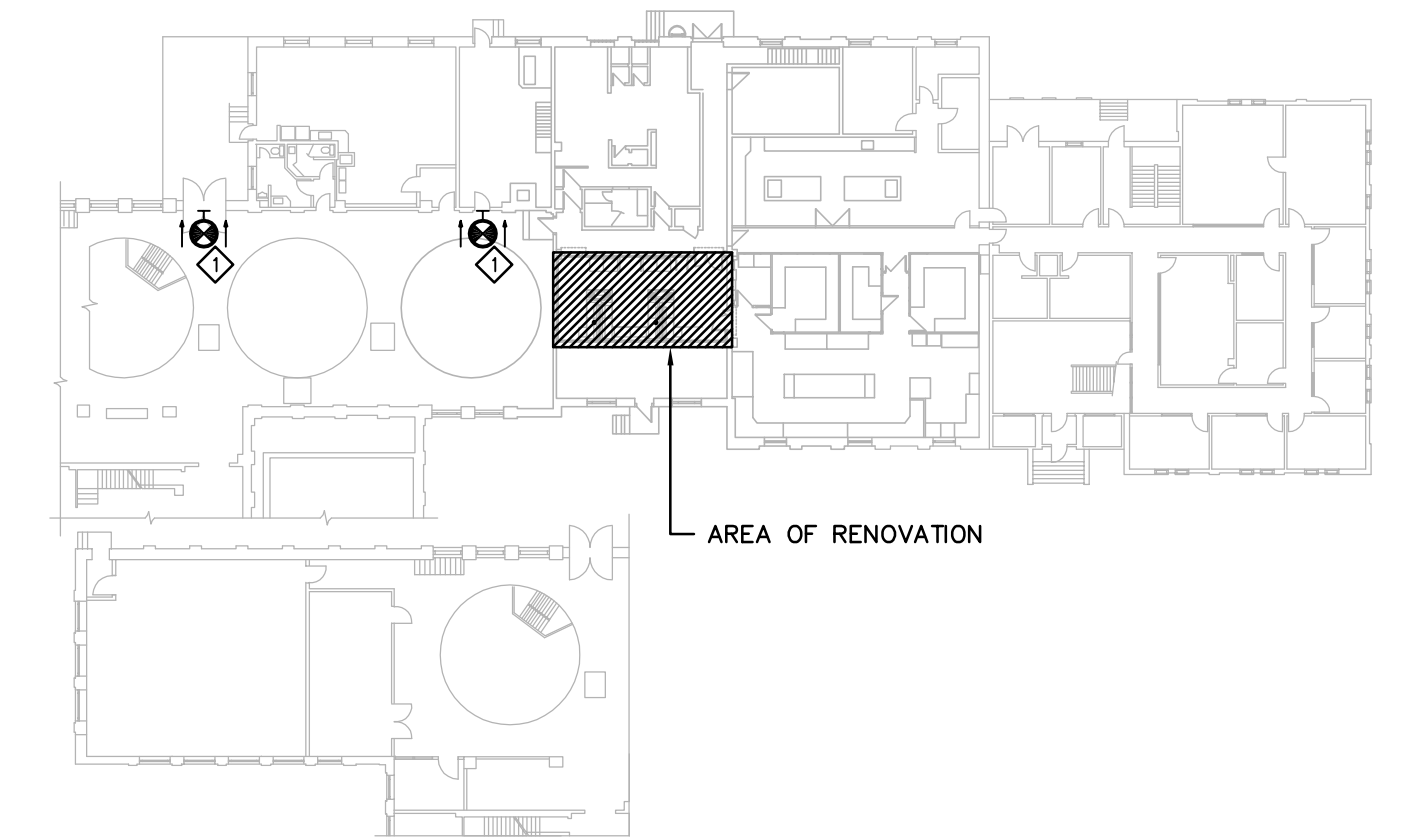
- CIRCUITING IS REPRESENTATIONAL ONLY. CONTRACTOR TO CONFIRM SPARE CAPACITY OF CIRCUIT PRIOR TO UTILIZATION. PROVIDE NEW IF REQUIRED.



3 PARTIAL MAIN FLOOR POWER AND SYSTEMS PLAN
E1.1 SCALE: 1:100

POWER AND SYSTEMS NOTES:

- CONNECT BU-1 RECEPTACLE TO LIGHTING CIRCUIT C/W APPROPRIATE VOLTAGE SENSING REPLAYS SO UPON POWER OUTAGE TO LIGHTING CIRCUIT BU-1 IS ENERGIZED.
- CIRCUITING IS REPRESENTATIONAL ONLY. CONTRACTOR TO CONNECT TO EXISTING PANEL C UTILIZING NEXT AVAILABLE CIRCUIT.
- PROVIDE 21mm EMPTY CONDUIT FOR DATA OUTLET C/W DEEP 4x4 SQ BOX AND APPROPRIATE SINGLE GANG DRYWALL RING. INSTALL PULL STRING AND GROUNDING AS REQUIRED.
- UTILIZING SURFACE RACEWAY AS SUPPLIED BY OTHERS. PROVIDE 27mm CONDUIT FROM SURFACE RACEWAY TERMINATING ABOVE CEILING TO EXISTING CABLE TRAY IN CORRIDOR 113A. INSTALL PULL STRING AND GROUNDING AS REQUIRED.
- UTILIZING SURFACE RACEWAY AS SUPPLIED BY OTHERS. WIRE AND CONNECT RECEPTACLES AS SHOWN. REFER TO ARCHITECTURAL DRAWING A2 FOR FURTHER REQUIREMENTS.
- WIRE AND CONNECT AHU-M621 (LOCATED ON ROOF) TO PANEL CDP WITH 15A/3P BREAKER C/W 3#12 RW90 IN 21MM CONDUIT. PROVIDE FOR WIRING AND CONNECTION OF MECHANICALLY SUPPLIED ADJUSTABLE FREQUENCY DRIVE ASSOCIATED WITH AHU-M621. PROVIDE FOR CONDUIT AND CABLING AS IDENTIFIED ON MECHANICAL DRAWINGS. COORDINATE WITH MECHANICAL AND CONTROLS CONTRACTOR AS REQUIRED. REFER TO MECHANICAL DRAWING P2.3 FOR LOCATIONS.
- WIRE AND CONNECT CU-1-M621 (LOCATED ON ROOF) TO PANEL CDP WITH 15A/3P BREAKER C/W 3#10 RW90 IN 21MM CONDUIT. UTILIZATION OF EXISTING CIRCUIT IS ACCEPTABLE IF IT MEETS THE AFORE MENTIONED REQUIREMENTS.
- WIRE AND CONNECT F-47-M630 (LOCATED ABOVE CEILING) TO PANEL M WITH 15A/3P BREAKER C/W 3#12 RW90 IN 21MM CONDUIT.
- WIRE AND CONNECT F-46-M621 (LOCATED ON ROOF) TO PANEL C WITH 20A/1P BREAKER C/W 2#12 RW90 IN 21MM CONDUIT.
- PROVIDE NEW EXIT LIGHT AND CONNECT TO EXISTING EXIT LIGHT CIRCUITING.
- CONNECT NEW PAGING SPEAKER TO EXISTING PAGING SYSTEM.
- CONNECT NEW SMOKE DETECTOR TO EXISTING FIRE ALARM SYSTEM AND PROVIDE VERIFICATION AS REQUIRED.
- PROVIDE 208V/1Ø C/W 20A/2P BREAKER FOR DISHWASHER.
- PROVIDE 120V 20A CIRCUIT FOR FUME HOOD. CONTRACTOR SHALL INSTALL TWO (2) RECEPTACLES AND TWO (2) SWITCHES AS SUPPLIED BY OTHERS. COORDINATE WITH SUPPLIER. PROVIDE INTERCONNECTION BETWEEN FUME HOOD SWITCH AND F-46-M621 SO THAT SWITCH INSTALLED ON FUME HOOD TURNS FAN ON/OFF. REFER TO ARCHITECTURAL DRAWING A2 FOR MOUNTING DETAILS.



4 KEY PLAN
E1.1 SCALE: N.T.S.

KEY PLAN NOTES:

- PROVIDE NEW 2 SIDED EXIT LIGHT AND MOUNT PERPENDICULAR TO WALL. CONNECT TO EXISTING EXIT LIGHT CIRCUITING.

NOTE:
NOT ALL SYMBOLS SHOWN ON THIS LEGEND ARE NECESSARILY USED ON THIS PROJECT.

ELECTRICAL SYMBOL LEGEND

LIGHTING	GENERAL POWER	ABBREVIATIONS
LINEAR FLUORESCENT LUMINAIRE, TYPE 'A' AS SPECIFIED. HATCHING DENOTES CONNECTED TO EMERGENCY/NIGHT LIGHTING CIRCUIT	15A, U-GROUND DUPLEX RECEPTACLE	BU - BATTERY UNIT
EMERGENCY LIGHTING BATTERY UNIT C/W DUPLEX RECEPTACLE AND DOUBLE REMOTE HEADS. TYPE 'BU-1' AS SPECIFIED.	15A, U-GROUND DUPLEX RECEPTACLE - MOUNTED ABOVE COUNTER	D - DELETE
CEILING MOUNTED SINGLE FACED EXIT LIGHT AND DIRECTIONAL ARROWS AS INDICATED. SHADED AREAS DENOTE DIRECTION OF FACE OF EXIT SIGN.	DIRECT CONNECTION - 120 OR 208V AS SPECIFIED	E - EXISTING
LIGHTING CONTROL	FIRE ALARM SYSTEM	LTG - LIGHTING
ONE, TWO, THREE AND FOUR GANG SINGLE POLE TOGGLE SWITCHES	SMOKE DETECTOR - CEILING MOUNTED	MV - EXISTING TO BE MOVED
3-WAY SWITCH	COMMUNICATIONS	MW - MOUNTED IN MILLWORK
4-WAY SWITCH	TELEPHONE OUTLET - WALL MOUNTED OR MOUNTED ABOVE COUNTER	NIC - NOT IN CONTRACT
EQUIPMENT CONNECTIONS AND CONTROLS	DATA OUTLET - WALL MOUNTED OR MOUNTED ABOVE COUNTER	NTS - NOT TO SCALE
DIRECT CONNECTION - 120 OR 208V AS SPECIFIED	FLUSH MOUNTED AUXILIARY SOUND SYSTEM SPEAKER - CEILING MOUNTED	R - RELOCATE(D)
SURFACE MOUNTED ELECTRICAL PANEL	MISCELLANEOUS	TYP - TYPICAL
	INDICATES EXISTING DEVICE TO BE DEMOLISHED	
	ELECTRICAL DRAWING NOTES	

LUMINAIRE SCHEDULE					
TYPE	MANUFACTURER	CATALOGUE NO.	VOLTS	LAMPS	REMARKS
1	CFI OR APPROVED EQUAL	VRA2G18LP332 120 Ø3	120	3-F32T8	2x4 RECESSED DEEP CELL PARABOLIC FLUORESCENT.

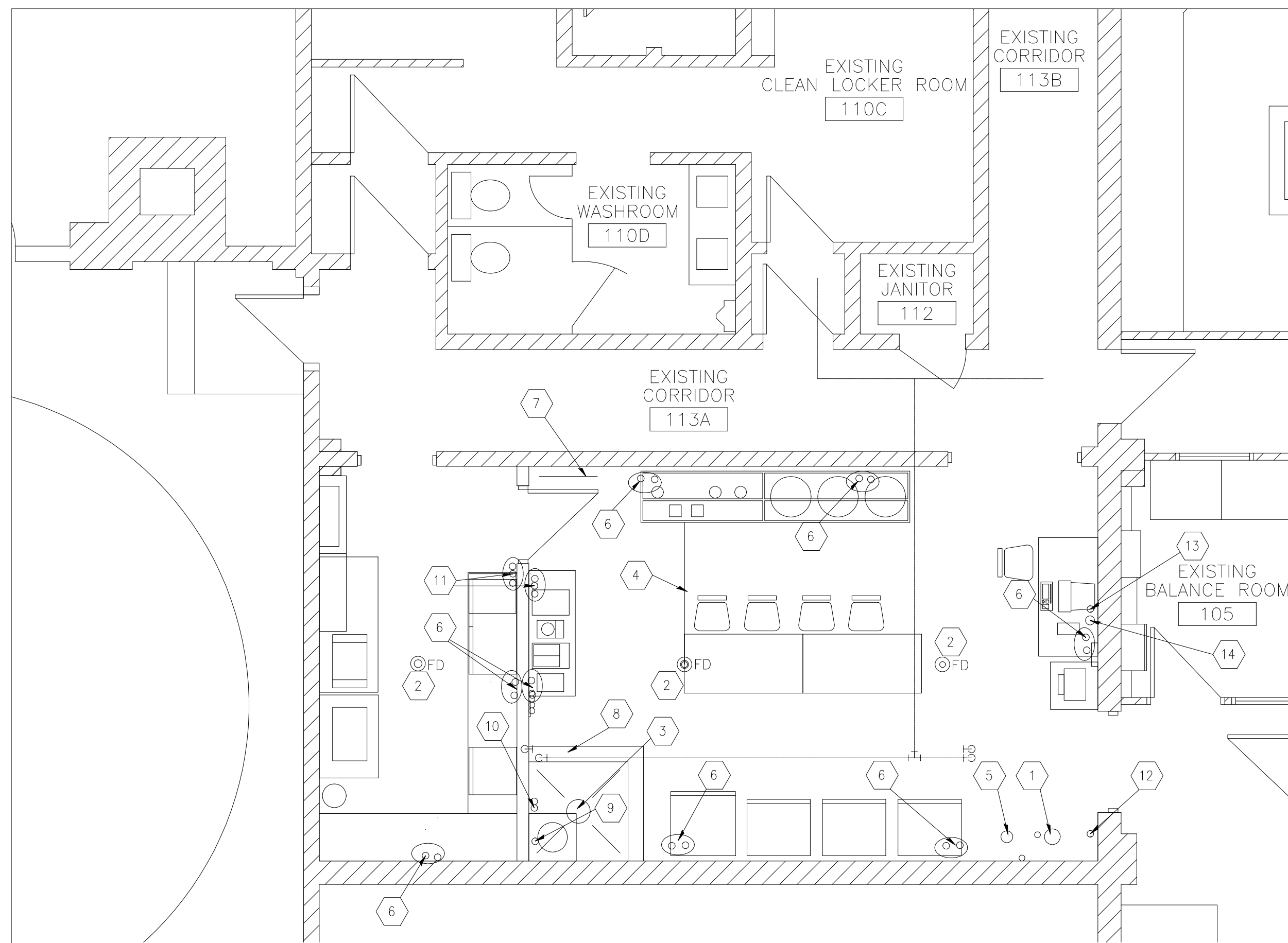
AS CONSTRUCTED
October 4, 2013
THIS DRAWING HAS BEEN UPDATED WITH CHANGES DOCUMENTED BY CHANGE ORDERS AND AS-BUILT INFORMATION PROVIDED BY THE CONTRACTOR. THE INFORMATION ON THIS DRAWING MAY NOT REFLECT ACTUAL SITE CONDITIONS. THE USER OF THIS DRAWING IS ADVISED TO RELY ONLY ON INFORMATION THAT BEEN CONFIRMED ON SITE.

MCW / AGE
Consulting Professional Engineers
210-1511 Wellington Avenue
Winnipeg, Manitoba, R2N 0G4
Phone: (204) 778-7900 Fax: (204) 778-1119
E-Mail: mcw_age@mcw.com

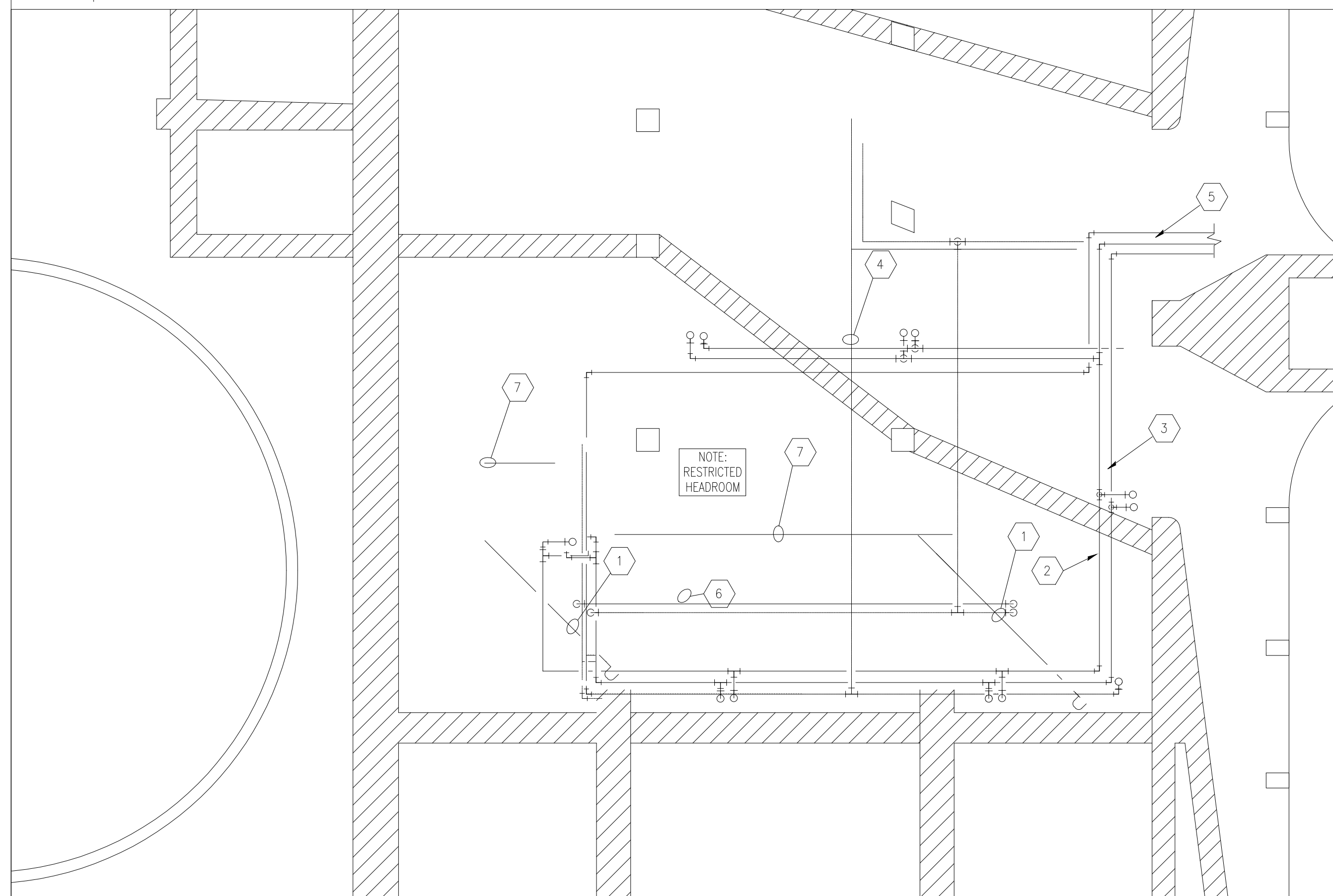
B.M. ELEV.	FIELD BOOK #:	LM Architectural Group 300-136 Market Ave Winnipeg, Manitoba, Canada R3B 0P4 t: (204) 943.0821 f: (204) 943.0676 www.lm-architects.com	
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6 AS CONSTRUCTED 2013.10.04		DRAWN BY JE	APPROVED BY
4 ISSUED FOR ADDENDUM #1 2011.09.23 EG		HOR. SCALE	RELEASED FOR CONSTRUCTION
5 ISSUED FOR FINAL REVIEW 2011.08.30 GD		VERTICAL AS SHOWN	DATE
3 ISSUED FOR 100% REVIEW 2011.06.06 GD		DATE 2011.09.23	DATE
2 ISSUED FOR REVIEW 2011.05.20 GD			
1 ISSUED FOR REVIEW 2011.05.11 GD			
NO. REVISIONS	DATE	BY	DATE

SEAL
ORIGINAL DRAWING SEALED BY ELLIOTT H. GARFINKEL AND DATED OCTOBER 3, 2011
CONSULTANT DRAWING NO. E1.1

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
NORTH END WATER POLLUTION CONTROL CENTRE - LAB RENOVATIONS
SHEET 1 OF 1
CITY DRAWING NUMBER
LARGE SCALE ELECTRICAL PLANS
1-0101M-E0022-001



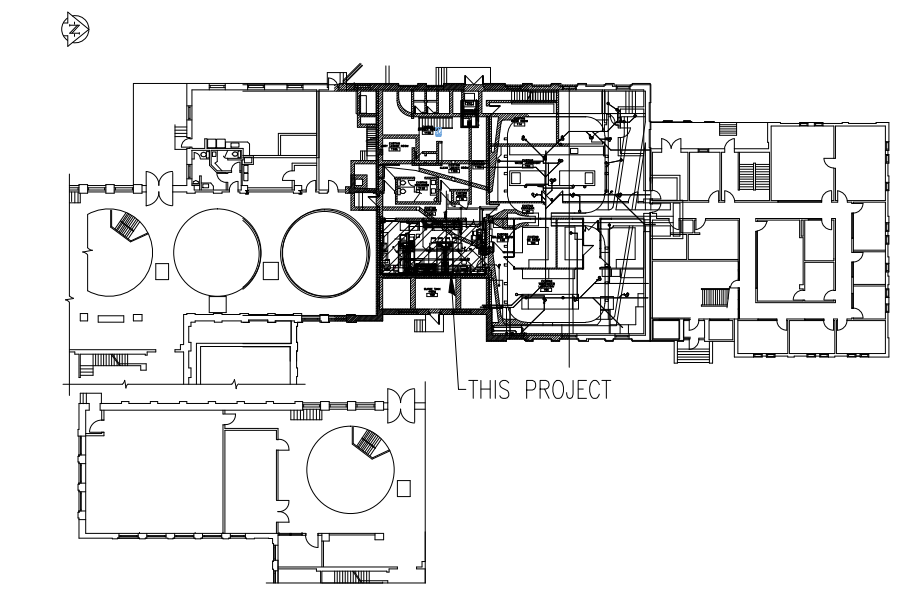
1 EXISTING WATER & LAB SERVICES ROOM EXISTING PLUMBING – DEMOLITION PLAN
SCALE 1:50



2 EXISTING WATER & LAB SERVICES – BASEMENT EXISTING CONDITIONS & DEMOLITION
SCALE 1:50

KEY NOTES

- 1 EXISTING EMERGENCY EYEWASH STATION AREA FLOOR DRAIN TO BE REMOVED; CAP EXISTING 75# SAN. DRAIN UNDER FLOOR CLOSE TO MAIN. PATCH FLOOR TO MATCH NEW FLOOR FINISH BY G.C.
- 2 EXISTING FLOOR DRAINS TO BE REPLACED.
- 3 EXISTING SERVICE SINK FLOOR DRAIN TO BE REMOVED UP TO MAIN TRUNK; CAP STUB; CONCRETE FLOOR CURB REMOVED BY GENERAL CONTRACTOR. PATCH FLOOR TO MATCH NEW FLOOR FINISH, BY G.C.
- 4 EXISTING WATER FILTER UNIT DRAIN LINE, LOCATED ABOVE FLOOR, TO BE REMOVED.
- 5 REMOVE EXISTING EYE WASH STATION; DISCONNECT DCW SUPPLY AND CAP BELOW FLOOR; PATCH CORED HOLE.
- 6 REMOVE EXISTING 13# COMPRESSED AIR & 13# VACUUM SERVICE; PATCH IN CORED HOLES; CAP BELOW FLOOR.
- 7 REMOVE EXPOSED 25# DCW LINE TO FILTERS; TERMINATE LINE BELOW FLOOR C/W ICAP.
- 8 REMOVE EXISTING DOMESTIC HOT WATER STORAGE TANK AND ALL ASSOCIATED PIPING.
- 9 REMOVE EXISTING 25# DCW LINE, C/W BACKFLOW PREVENTER TO FILTERS; VALVE AND CAP BELOW FLOOR; PATCH HOLE
- 10 REMOVE 13# DHW & 13# DCW WASH STATION LINES, FITTINGS AND VALVES (RISERS THRU DEMOLISHED WALL) CAP AND VALVE BELOW FLOOR; REMOVE ALL PIPING ABOVE FLOOR; PATCH ALL FLOOR CORED HOLES
- 11 REMOVE 13# DHW & 13# DCW, 13# DI; RISERS WITHIN DEMOLISHED WALL, STATIONS ON BOTH SIDES OF WALL; REMOVE ALL PIPING, FITTINGS AND VALVES ABOVE FLOOR; PATCH CORED HOLES; TERMINATE LINES WITH CAPS BELOW FLOOR.
- 12 REMOVE 32# TEMPERED DW 32# WASTE RISERS TO EXISTING SHOWER/EYEWASH STATION; FILL CORED OPENINGS, TERMINATE LINES BELOW FLOOR C/W END CAPS.
- 13 REMOVE EXISTING HUMIDIFIER & TURN OVER TO CITY; REMOVE EXISTING 13# DCW SUPPLY, ABOVE FLOOR; PATCH CORED OPENING; CAP LINE BELOW FLOOR C/W VALVE.
- 14 REMOVE EXISTING 20# HUMIDIFIER DRAIN LINE BACK TO MAIN DRAIN TRUNK; CAP END OF LINE; PATCH CORED OPENING



KEY PLAN
SCALE NTS

GENERAL NOTES

1. PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND CITY INSPECTIONS REQUIREMENTS.
2. COORDINATE WORKS WITH OTHER SUB-TRADES. REFER TO SPECIFIC DETAILS FOR CUTTING AND SEALING PENETRATIONS THROUGH OPENINGS & FIRE SEPARATIONS.
3. REFER TO TECHNICAL SPECIFICATIONS FOR EQUIPMENT AND MATERIAL SPECIFICATIONS AND INSTALLATION AND CONSTRUCTION REQUIREMENTS.
4. INSULATE PLUMBING PIPES AND DUCTWORK WHERE INDICATED AND AS SPECIFIED.
5. SUPPORT ALL PLUMBING LINES AND DUCTWORK TO MEET CODE REQUIREMENTS & ESTABLISHED INDUSTRY TRADE PRACTICES, (SMACNA, ASHRAE).
6. INVESTIGATE SITE PRIOR TO CONSTRUCTION TO CONFIRM ALL DIMENSIONS AND INSTALLATION REQ'S.
7. PERFORM ALL CUTTING & PATCHING NECESSARY FOR ANY REQUIRED OPENINGS THRU WALLS, ROOF AND FLOOR.
8. PROVIDE TAB TO ENSURE AIR DISTRIBUTION TO VOLUMES INDICATED.
9. NOT ALL EQUIPMENT/PIPING, ETC. IS SHOWN.
10. PROVIDE FIRE STOPS AT ALL FIRE RATED WALLS/FLOOR OPENINGS TO MATCH EXISTING RATING
11. DURING DEMOLITION PHASE, TERMINATE ALL LINES INDICATED FOR REMOVAL BELOW LAB FLOOR AND CAP. CONFIRM LINES WILL NOT INTERFERE WITH LINES BEING INSTALLED. PATCH IN CORED HOLES AND FINISH TO MATCH EXISTING FLOOR.

KEY NOTES

- 1 REMOVE EXISTING SAN. DRAIN & FITTINGS, SERVING EXISTING FIXTURES TO BE REMOVED IN ROOMS 106 & 107 & CAP AT RISER.
- 2 EXISTING 19# COMPRESSED AIR HEADER TO REMAIN IN SERVICE; SEE EXISTING SERVICE LAB PLAN FOR ALL WORK RELATED TO REMOVAL OF CA LINES THRU FLOOR.
- 3 EXISTING 19# VACUUM HEADER TO REMAIN IN SERVICE; SEE SERVICE LAB PLAN FOR ALL WORK RELATED TO REMOVAL OF VACUUM LINES THRU FLOOR.
- 4 EXISTING 38# DCW LINE TO REMAIN IN SERVICE
- 5 EXISTING 19# DI LINE TO REMAIN IN SERVICE; SEE SERVICE LAB PLAN FOR ALL WORK RELATED TO REMOVAL OF DI LINES THRU FLOOR.
- 6 EXISTING UNTRAPPED UNUSED DRAIN LINE (UNDER REFRIGERATOR); REMOVE & PATCH FLOOR
- 7 EXISTING 75# SANITARY DRAIN TO REMAIN

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5	RECORD DRAWING RE-ISSUED WITH CLIENT COMMENTS	2013/09-04	AS
4	RECORD DRAWING BASED ON INFIRM SUPPLIED BY CONTRACTOR	2012/09-01	AS
3	ISSUED FOR PRE-TENDER REVIEW	2011/06-30	AG
2	ISSUED FOR REVIEW	2011/06-06	AG
1	ISSUED FOR REVIEW	2011/05-20	AG
A	ISSUED FOR CO-ORDINATION	2011/05-05	AG

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HOR. SCALE VERTICAL	RELEASED FOR CONSTRUCTION DATE

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A.F.G. GOSSEN
AND DATED
SEPT. 04, 2013
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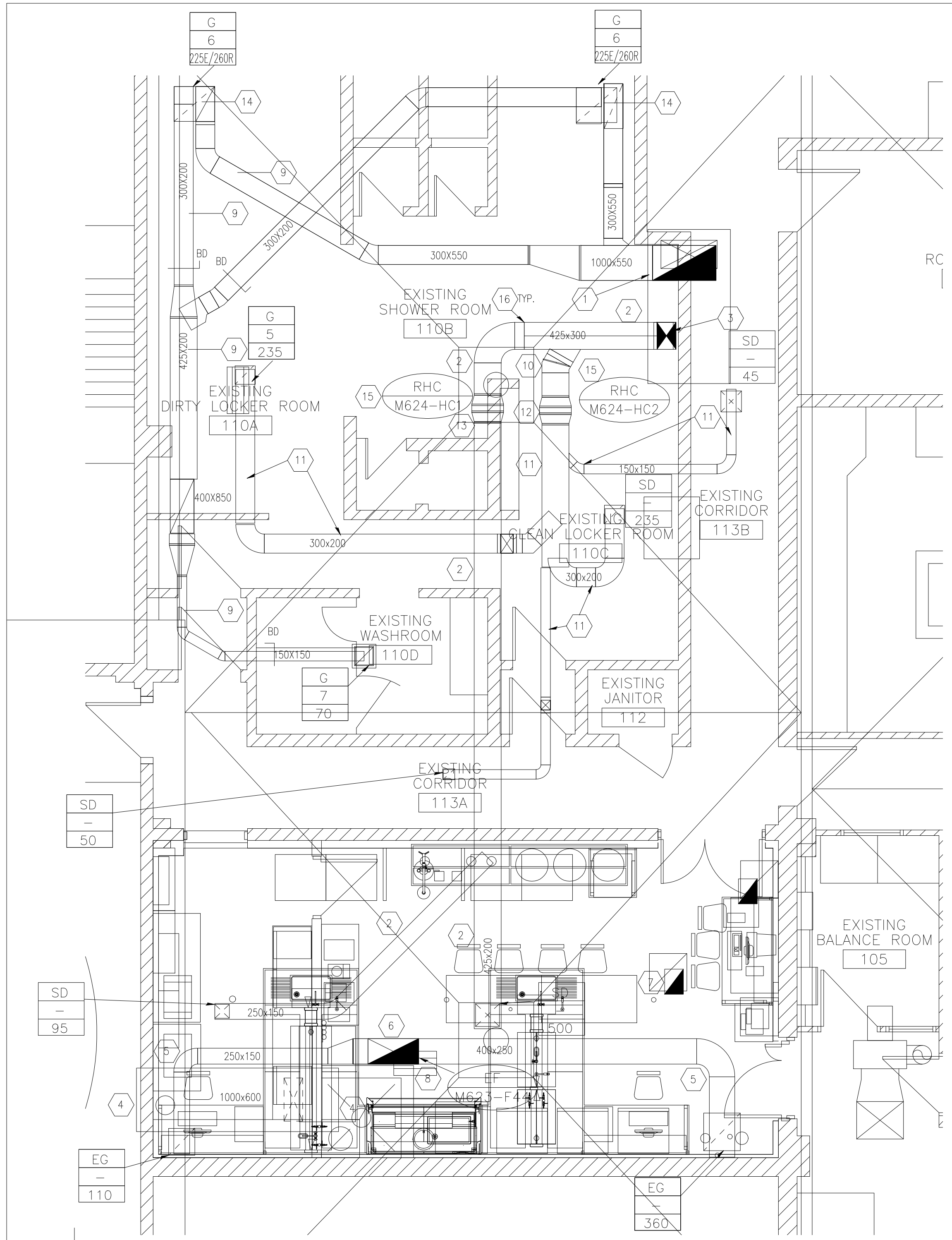
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
NORTH END WATER POLLUTION CONTROL CENTRE
- LAB RENOVATIONS

Winnipeg

SHEET 1 OF 1
CITY DRAWING NUMBER
1-0101M-H0001-001

EXISTING PLUMBING DEMOLITION PLANS

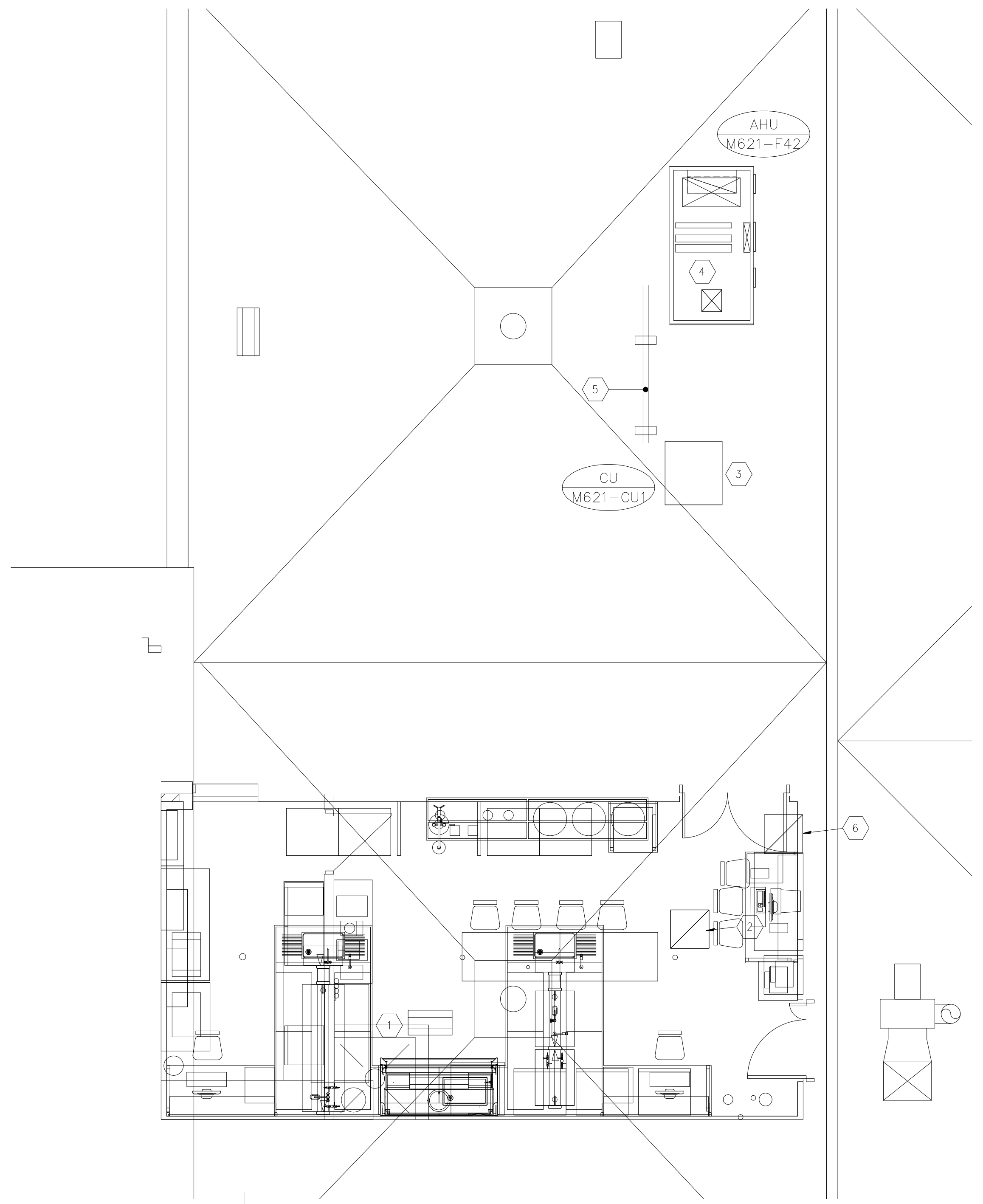
RECORD DRAWING



1 EXISTING VENTILATION - DEMOLITION PLAN
SCALE 1:50
KEY NOTES

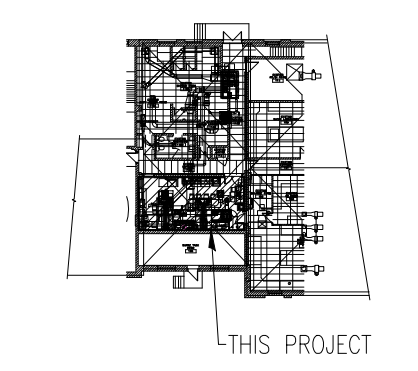
- 1 EXISTING 1000x550 R/A DUCT TO EXISTING AIR HANDLING UNIT; DUCT TO REMAIN IN SERVICE UP TO VERTICAL ELBOW TO UNIT; REMOVE VERTICAL SECTION AS REQUIRED FOR NEW AIR HANDLING UNIT INSTALLATION; NOTE EXISTING ROOF TOP UNIT R/A SIZE 762x254; FIELD CONFIRM
- 2 EXISTING S/A DUCT, TO BE REMOVED. REMOVE VERTICAL DUCT TO EXISTING AIR HANDLING UNIT; NOTE DUCT REMOVAL SHALL INCLUDE AIR TERMINALS (SUPPLY DIFFUSERS), DUCT SUPPORTS, BALANCING DAMPERS AND FIRE DAMPERS WHERE REQUIRED BY NEW DUCT SIZE
- 3 EXISTING AIR HANDLING UNIT SUPPLY AIR OPENING, 343x311; ROOF OPENING WILL SUIT NEW UNIT SUPPLY AIR OPENING, 349x314.
- 4 EXISTING MAKE-UP AIR DUCT, FROM PUMP ROOM TO BE REMOVED, INCLUDING BACKDRAFT DAMPER AND SUPPLY GRILLE, DUCT SUPPORTS. WALL TO BE FILLED IN, TO MATCH EXISTING WALL FIRE RATING.
- 5 EXISTING EXHAUST DUCT, E/A GRILLES, DUCT SUPPORTS, BALANCING DAMPERS AND ALL RELATED COMPONENTS TO BE REMOVED.
- 6 EXISTING CABINET EXHAUST FAN TO BE REMOVED; DISCONNECT POWER SUPPLY
- 7 EXISTING ROOF OPENING TO BE USED FOR NEW FUME HOOD EXHAUST.
- 8 EXISTING ROOF CURB OPENING & ROOF VENT TO BE RE-USED FOR NEW RELIEF FAN
- 9 EXISTING R/A & EXHAUST DUCTWORK IN LOCKER ROOM AREA, TO REMAIN IN SERVICE, NOT SHOWN ENTIRELY, NIC
- 10 REMOVE EXISTING DUCT TO REMAIN IN SERVICE CONNECTION TO EXISTING DUCT TO BE REMOVED; REMOVE BACK TO SUIT NEW LARGER DUCT.
- 11 EXISTING DUCTWORK, AIR TERMINALS, BALANCING DAMPERS TO REMAIN IN SERVICE, WHERE NOTED, TYP. RECONNECT TO NEW DUCT MAIN.
- 12 EXISTING REHEAT COIL TO REMAIN IN SERVICE; PROVIDED WITH NEW 3-WAY TEMPERATURE CONTROL VALVE
- 13 EXISTING REHEAT COIL TO BE REMOVED & REPLACED; ENSURE NO SPILL WILL AFFECT SPACE BELOW; DISCONNECT EXISTING HYDRONIC PIPING TO COIL.
- 14 REMOVE EXISTING G-6 GRILLES, 600x600 AT LOCATIONS SHOWN.
- 15 REMOVE ALL PNEUMATIC CONTROLS AND TUBING SERVICING REHEAT COILS, TYP.

16 CAUTION: MASTIC DUCT SEALANT CONTAINING ASBESTOS; SEE ASBESTOS ASSESSMENT APPENDIX A, SAMPLE 003 IN BIDDING OPPORTUNITY. REMOVE ASBESTOS CONTAINING MATERIALS IN ACCORDANCE WITH MANITOBA WORKPLACE SAFETY AND HEALTH REGULATIONS.



2 EXISTING ROOF HVAC EQUIPMENT - DEMOLITION PLAN
SCALE 1:50
KEY NOTES

- 1 EXISTING ROOF CURB AND GOOSENECK TO REMAIN, USED FOR NEW RELIEF/EXHAUST FAN, EF-2 DISCHARGE.
- 2 EXISTING ROOF CURBED OPENING TO BE RE-USED FOR NEW FUME HOOD EXHAUST DUCT
- 3 EXISTING AIR HANDLING UNIT CONDENSING UNIT TO BE REMOVED, INCLUDING ROOF SLEEPERS.
- 4 DISCONNECT POWER SUPPLY & REFRIGERANT PIPING; EXISTING AIR HANDLING UNIT TO BE REMOVED, INCLUDING ROOF CURB.
- 5 REMOVE EXISTING REFRIGERATION LINES BETWEEN EXISTING CONDENSING UNIT AND AIR HANDLER UNIT
- 6 EXISTING COVERED CURBED ROOF PENETRATION, TO REMAIN; VISUALLY INSPECT COVER AND ENSURE COVER IS WATER TIGHT.



KEY PLAN
SCALE NTS

GENERAL NOTES

1. PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND CITY INSPECTIONS REQUIREMENTS.
2. COORDINATE WORKS WITH OTHER SUB-TRADES. REFER TO SPECIFIC DETAILS FOR CUTTING AND SEALING PENETRATIONS THROUGH OPENINGS & FIRE SEPARATIONS.
3. REFER TO TECHNICAL SPECIFICATIONS FOR EQUIPMENT AND MATERIAL SPECIFICATIONS AND INSTALLATION AND CONSTRUCTION REQUIREMENTS.
4. INSULATE PLUMBING PIPES AND DUCTWORK WHERE INDICATED AND AS SPECIFIED.
5. SUPPORT ALL PLUMBING LINES AND DUCTWORK TO MEET CODE REQUIREMENTS & ESTABLISHED INDUSTRY TRADE PRACTICES. (SMACNA, ASHRAE).
6. INVESTIGATE SITE PRIOR TO CONSTRUCTION TO CONFIRM ALL DIMENSIONS AND INSTALLATION REQ'S.
7. PERFORM ALL CUTTING & PATCHING NECESSARY FOR ANY REQUIRED OPENINGS THRU WALLS, ROOF AND FLOOR.
8. PROVIDE TAB TO ENSURE AIR DISTRIBUTION TO VOLUMES INDICATED.
9. NOT ALL EQUIPMENT/PIPING, ETC. IS SHOWN.
10. PROVIDE FIRE STOPS AT ALL FIRE RATED WALLS/FLOOR OPENINGS TO MATCH EXISTING RATING

NOTE

THE CITY OF WINNIPEG PERSONNEL REQUIRES THE USE OF EXISTING SHOWER ROOM (110B) AND EXISTING CLEAN LOCKER ROOM (110C) AT THE BEGINNING AND END OF EACH WORK DAY FOR CITY PERSONNEL TO SHOWER AND CHANGE. WORK IN ROOMS 110B, 110C, 110D IS RESTRICTED TO BETWEEN 8:00 AND 15:30 HOURS TO ACCOMMODATE CITY USE OF THE FACILITY. CLEANUP WASTE AND DEBRIS AT THE END OF EACH WORK DAY AND LEAVE THE ROOMS CLEAN AND IN WORKING ORDER. ALTERNATING WORK IN ROOMS 110B, 110C, 110D CAN BE PERFORMED IN THE EVENING OR WEEKEND.

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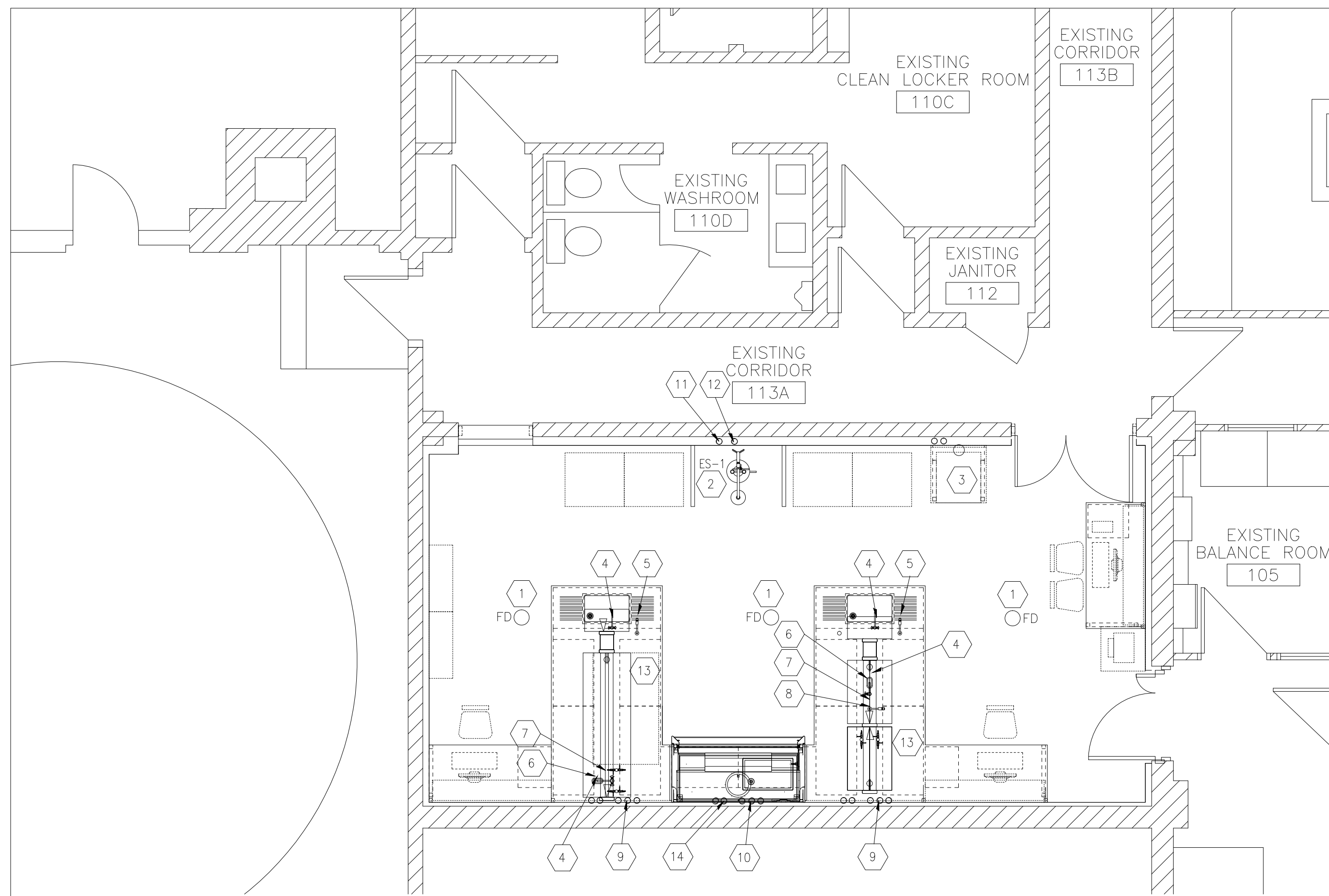
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5 RECORD DRAWING RE-ISSUED WITH CLIENT COMMENTS	2013/09-04 AS		
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1 ISSUED FOR REVIEW	2011-05-20 AG		
A ISSUED FOR PROJECT COORDINATION	2011-05-06 AG		
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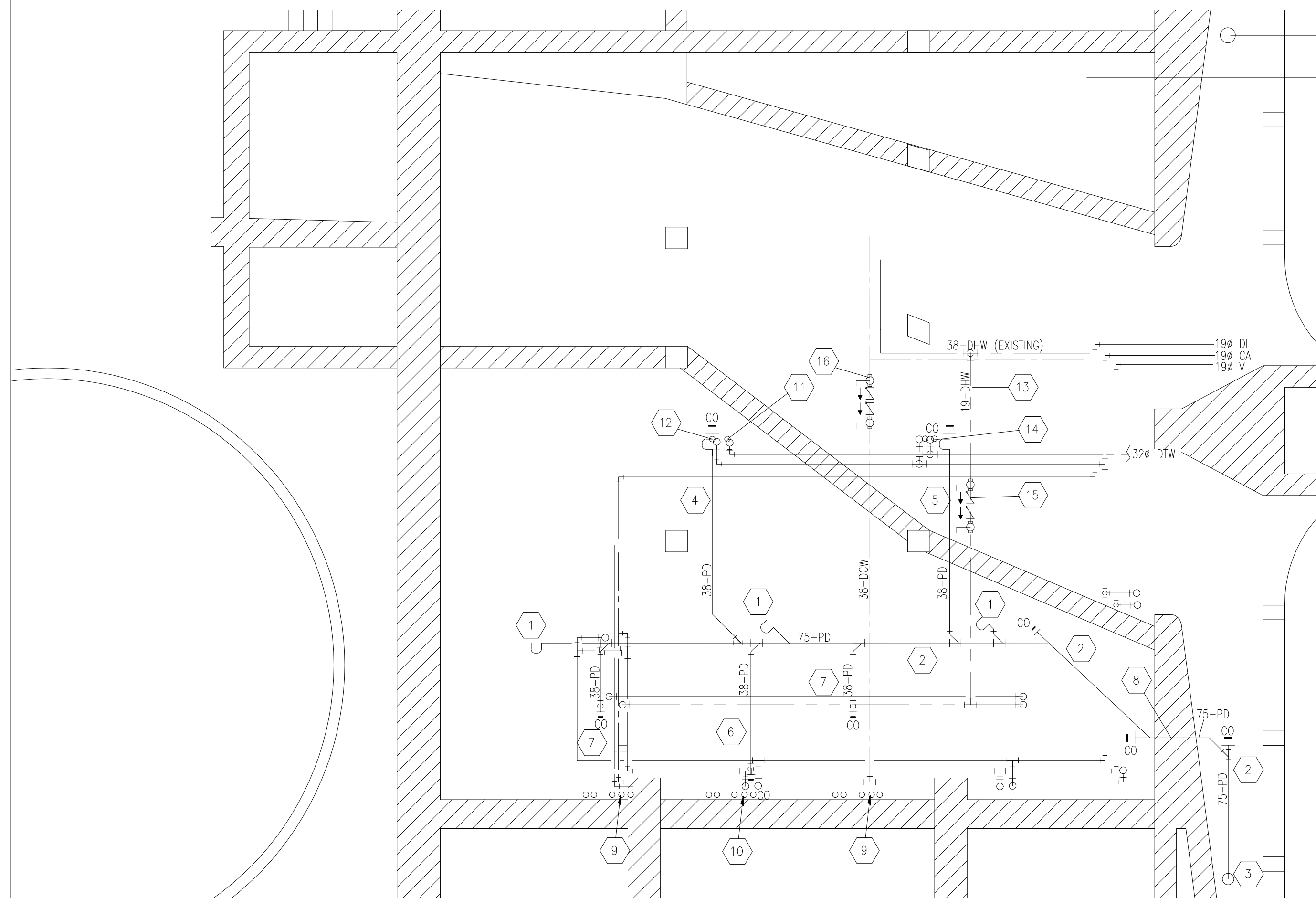
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A.F.G. GOSSEN
AND DATED
SEPT. 04, 2013
CONSULTANT DRAWING NO.
M1.2

THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 NORTH END WATER POLLUTION CONTROL CENTRE
 - LAB RENOVATIONS
EXISTING VENTILATION DEMOLITION PLANS
 SHEET 1 OF 1
 CITY DRAWING NUMBER
 1-0101M-H0002-001



LABORATORY — NEW PLUMBING ABOVE FLOOR
SCALE 1:50



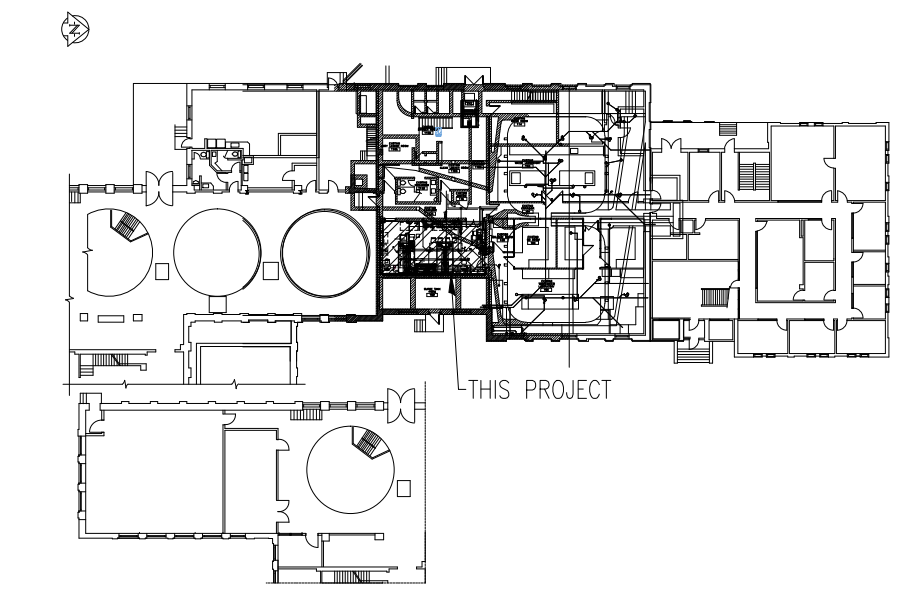
LABORATORY — NEW PLUMBING IN CRAWL SPACE
SCALE 1:50

KEY NOTES

- 1 NEW FLOOR DRAINS TO REPLACE EXISTING, TO SUIT FLOOR FINISH (VINYL SHEET); CONNECT TO EXISTING SANITARY PIPE U/S FLOOR; SEE SPECIFICATIONS FOR DETAILS.
- 2 NEW COMBINATION EMERGENCY DELUGE SHOWER/EYE WASH. SEE ARCHITECTURAL
- 3 NEW DISHWASHER: PROVIDE 130 DCW & DHW & 130 DI RISERS FROM MAINS IN THE BASEMENT, C/W ISOLATION BALL VALVE; RISERS RUN WITHIN DRY WALL FURRING; PROVIDE 380 DRAIN LINE
- 4 130 DCW & DHW TO SINK FROM WORK BENCH CHASE, C/W ISOLATION VALVES
- 5 NEW 130 DI WATER LINE TO DI FAUCET FROM WORK BENCH PIPE CHASE.
- 6 130 DI WATER TO CUP SINK WITHIN BASE CABINET CHASE, C/W ISOLATION VALVE
- 7 130 CA TO CA BIB, C/W ISOLATION VALVE UNDER COUNTER.
- 8 130 VACUUM TO VACUUM BIB, C/W ISOLATION VALVE UNDER COUNTER.
- 9 NEW 130 PROCESS & DOMESTIC LINES TO WORK BENCH PIPE CHASE; LINES AS FOLLOWS:
-130 DCW
-130 DHW
-130 DI
-130 CA
-130 VACUUM
CORE NEW FLOOR OPENINGS, TO SUIT; ALL LINES WILL BE C/W ISOLATION VALVES ABOVE FLOOR PIPE PENETRATIONS TO MATCH FLOOR RATING; LINES TIGHT TO BLOCK WALL WITHIN NEW FURRING
- 10 NEW 130 PROCESS & DOMESTIC LINES TO FUME HOOD; LINES AS FOLLOWS:
-130 DCW
-130 DHW
-130 DI
-130 CA
-130 VACUUM
CORE NEW FLOOR OPENINGS, TO SUIT; ALL LINES WILL BE C/W ISOLATION VALVES ABOVE FLOOR PIPE PENETRATIONS TO MATCH FLOOR RATING; LINES TIGHT TO BLOCK WALL WITHIN NEW FURRING
- 11 320 DTW (DOMESTIC TEMPERED WATER) FROM BASEMENT, THRU NEW WALL FURRING; PROVIDE ISOLATION VAVE ABOVE FLOOR; PIPE PENETRATION TO MATCH FLOOR RATING
- 12 380 PROCESS DRAIN LINE FROM ES-1 COLUMN (EYEWASH DRAIN), THRU FLOOR TO NEW ROOM PROCESS DRAIN
- 13 380 PROCESS DRAIN LINE; RUN INSIDE BENCH PIPE CHASE, FROM SERVICE SINK AND CUP SINK RUN THRU FLOOR AND CONNECT TO NEW 750 PROCESS DRAIN; RUN 380 VENT UP INTO CEILING SPACE; CONNECT TO NEW COMMON 500 VENT
- 14 380 PROCESS DRAIN LINE; RUN INSIDE FUME HOOD BASE CABINET THRU FLOOR TO CRAWL SPACE; CONNECT TO NEW 750 PROCESS DRAIN MAIN, TO SERVICE SINK AND CUP SINK; RUN 380 VENT UP INTO CEILING SPACE; CONNECT TO NEW COMMON 500 VENT
- 15 NEW 500 VENT STACK TO SERVICE ALL VENTED FIXTURES IN NEW LAB; PROVIDE NEW PITCH POCKET AND EXTEND THRU ROOF; INCREASE PIPE SIZE TO 750 BELOW ROOF; TERMINATE 150mm ABOVE PITCH POCKET

KEY NOTES

- 1 CONNECT NEW FLOOR DRAINS TO EXISTING SANITARY DRAIN LINE
- 2 NEW 750 PROCESS DRAIN; SLOPE DN 1%; SUPPORT LINE WITH PIPE HANGERS FROM FLOOR ABOVE; PROVIDE IN LINE CLEANOUTS AT ALL CHANGES IN DIRECTION
- 3 CONNECT NEW 750 PROCESS DRAIN TO EXISTING PROCESS DRAIN STACK
- 4 380 DELUGE SHOWER/EYEWASH DRAIN; SLOPE DN 1%
- 5 380 DISHWASHER DRAIN; SLOPE DN 1%
- 6 380 WORK FUME HOOD DRAIN LINE; SLOPE DN 1%
- 7 380 BENCH DRAIN LINE; SLOPE DN 1%
- 8 CORE OPENING TO SUIT NEW PROCESS DRAIN OD
- 9 NEW 130 PROCESS & DOMESTIC LINES TO WORK BENCH PIPE CHASE; LINES AS FOLLOWS:
-130 DCW
-130 DHW
-130 DI
-130 CA
-130 VACUUM
CORE NEW FLOOR OPENINGS, TO SUIT; PIPE PENETRATIONS TO MATCH FLOOR RATING; LINES TIGHT TO BLOCK WALL WITHIN NEW FURRING
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-130 DCW
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- 11 320 DTW (DOMESTIC TEMPERED WATER) TO NEW LAB, THRU WALL FURRING; PIPE PENETRATION TO MATCH FLOOR FIRE RATING
- 12 380 PROCESS DRAIN LINE FROM ES-1 COLUMN (EYEWASH DRAIN), NEW LAB ABOVE TO NEW LAB PROCESS DRAIN MAIN; SLOPE DN 1%
- 13 FIELD RUN 190 DHW FROM EXISTING 380 DHW IN CRAWL SPACE, TO NEW RISERS TO NEW LAB FIXTURES AT LOCATIONS SHOWN (SEE KEY NOTES 9, 10 & 14), TYP.
- 14 NEW 130 DCW, DHW & DI RISERS TO DISHWASHER THRU FLOOR PIPE PENETRATIONS
- 15 NEW REDUCED PRESSURE ZONE ASSEMBLY BACKFLOW PREVENTER ON DHW LINE TO LAB FIXTURES, SIZE 3/4", WATTS SERIES CU-909-0THW
- 16 NEW REDUCED PRESSURE ZONE ASSEMBLY BACKFLOW PREVENTER ON DCW LINE TO LAB FIXTURES, SIZE 1", WATTS SERIES CU-909-0T



KEY PLAN
SCALE NTS

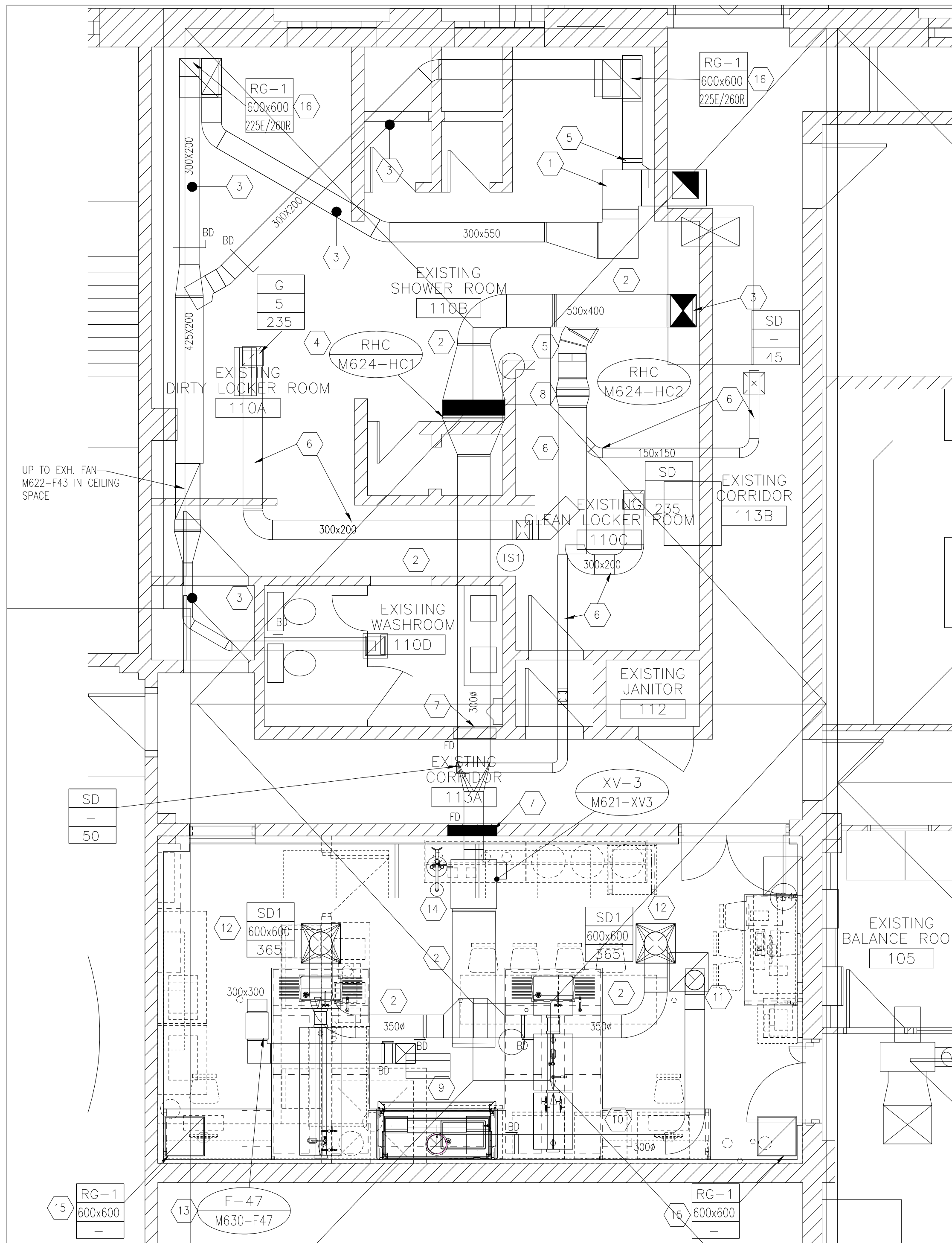
GENERAL NOTES

1. PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND CITY INSPECTIONS REQUIREMENTS.
2. COORDINATE WORKS WITH OTHER SUB-TRADES. REFER TO SPECIFIC DETAILS FOR CUTTING AND SEALING PENETRATIONS THROUGH OPENINGS & FIRE SEPARATIONS.
3. REFER TO TECHNICAL SPECIFICATIONS FOR EQUIPMENT AND MATERIAL SPECIFICATIONS AND INSTALLATION AND CONSTRUCTION REQUIREMENTS.
4. INSULATE PLUMBING PIPES AND DUCTWORK WHERE INDICATED AND AS SPECIFIED.
5. SUPPORT ALL PLUMBING LINES AND DUCTWORK TO MEET CODE REQUIREMENTS & ESTABLISHED INDUSTRY TRADE PRACTICES, (SMACNA, ASHRAE).
6. INVESTIGATE SITE PRIOR TO CONSTRUCTION TO CONFIRM ALL DIMENSIONS AND INSTALLATION REQ'S.
7. PERFORM ALL CUTTING & PATCHING NECESSARY FOR ANY REQUIRED OPENINGS THRU WALLS, ROOF AND FLOOR.
8. PROVIDE TAB TO ENSURE AIR DISTRIBUTION TO VOLUMES INDICATED.
9. NOT ALL EQUIPMENT/PIPING, ETC. IS SHOWN.
10. PROVIDE FIRE STOPS AT ALL FIRE RATED WALLS/FLOOR OPENINGS TO MATCH EXISTING RATING
11. ALL DW TO BE ACID RESISTANT, SEE SPECIFICATIONS.
12. ALL DI WATER SUPPLY TUBING TO BE SCH. 80 CPVC, SEE SPECIFICATIONS.
13. CHECK SHOP DRAWINGS FOR ALL NEW LAB PLUMBING FIXTURES, TO CONFIRM NUMBER AND SIZE OF FITTINGS SUPPLIED BY LAB EQUIPMENT SUPPLIER AND CONNECTION SIZE FOR ALL SERVICES TO FIXTURES.

ALLIANCE
Engineering Services Inc.

RECORD DRAWING

 Certificate of Authorization Alliance Engineering Services Inc. No.2906 Date: _____	B.M. ELEV. FIELD BOOK #: POSTED TO LBIS	 LM Architectural Group 900-136 Market Ave Winnipeg Manitoba Canada R3B 0P4 t: (204) 942.0681 f: (204) 943.8676 www.lm-architects.com	SEAL ORIGINAL DRAWING SEALED BY A.F.G. GOSSEN AND DATED SEPT. 04, 2013	 THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT NORTH END WATER POLLUTION CONTROL CENTRE - LAB RENOVATIONS	SHEET 1 OF 1 CITY DRAWING NUMBER 1-0101M-H0003-001																																			
	<table border="1"> <tr> <th>NO.</th> <th>REVISIONS</th> <th>DATE</th> <th>BY</th> </tr> <tr> <td>5</td> <td>RECORD DRAWING RE-ISSUED WITH CLIENT COMMENTS</td> <td>2013/09-04</td> <td>AS</td> </tr> <tr> <td>4</td> <td>RECORD DRAWING BASED ON INFIRM SUPPLIED BY CONTRACTOR</td> <td>2012/09-01</td> <td>AS</td> </tr> <tr> <td>3</td> <td>ISSUED FOR PRE-TENDER REVIEW</td> <td>2011/06-30</td> <td>AS</td> </tr> <tr> <td>2</td> <td>ISSUED FOR REVIEW</td> <td>2011/06-03</td> <td>AS</td> </tr> <tr> <td>1</td> <td>ISSUED FOR REVIEW</td> <td>2011/05-20</td> <td>AS</td> </tr> <tr> <td>A</td> <td>ISSUED FOR CO-ORDINATION</td> <td>2011/05-05</td> <td>AG</td> </tr> </table>					NO.	REVISIONS	DATE	BY	5	RECORD DRAWING RE-ISSUED WITH CLIENT COMMENTS	2013/09-04	AS	4	RECORD DRAWING BASED ON INFIRM SUPPLIED BY CONTRACTOR	2012/09-01	AS	3	ISSUED FOR PRE-TENDER REVIEW	2011/06-30	AS	2	ISSUED FOR REVIEW	2011/06-03	AS	1	ISSUED FOR REVIEW	2011/05-20	AS	A	ISSUED FOR CO-ORDINATION	2011/05-05	AG	<table border="1"> <tr> <td>DESIGNED BY</td> <td>CHECKED BY</td> </tr> <tr> <td>DRAWN BY</td> <td>AS</td> </tr> <tr> <td>HOR. SCALE</td> <td>VERTICAL</td> </tr> <tr> <td>DATE</td> <td>DATE</td> </tr> </table>	DESIGNED BY	CHECKED BY	DRAWN BY	AS	HOR. SCALE	VERTICAL
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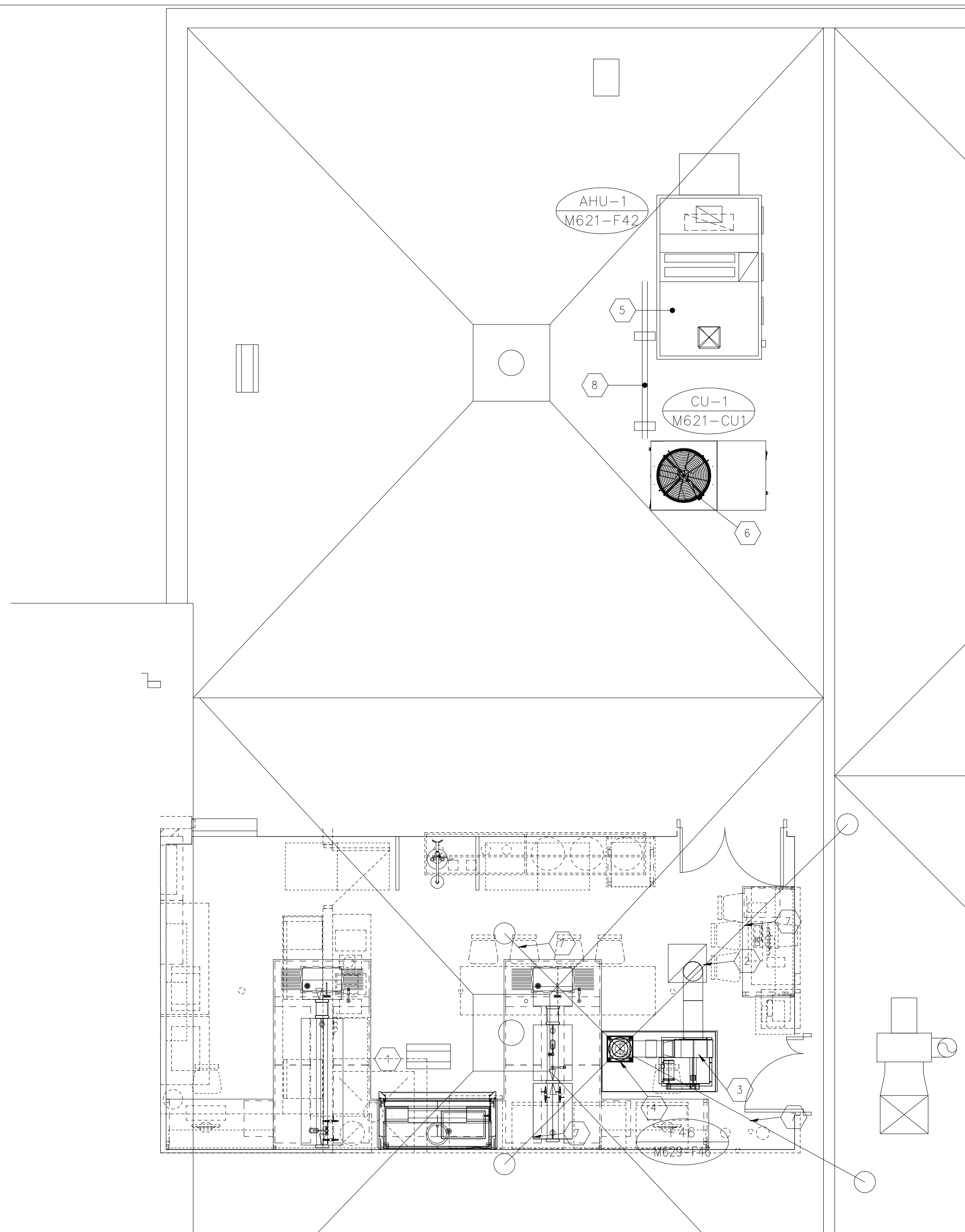


1 NEW VENTILATION - PLAN
SCALE 1:50

KEY NOTES

- 1 EXISTING 1000x550 R/A DUCT TO EXISTING ROOF TOP UNIT; DUCT TO REMAIN IN SERVICE TO MAX. EXTENT POSSIBLE; PROVIDE NEW DUCTWORK TO SUIT TIE-IN TO NEW AIR HANDLING UNIT; NEW AIR HANDLING RETURN AIR OPENING, 406x254, CHECK SHOP DRAWINGS BEFORE TRANSITION FABRICATION.
- 2 NEW AIR SUPPLY DUCTWORK FROM NEW AIR HANDLING UNIT THRU OUT CEILING SPACE, AS SHOWN; DUCT INSULATED; PROVIDE BASE ELBOW GRIP PAN, SOLDERED WATER TIGHT.
- 3 EXISTING R/A & EXHAUST DUCTWORK IN LOCKER ROOM AREA, TO REMAIN IN SERVICE, NOT SHOWN ENTIRELY, N/C.
- 4 NEW REHEAT COIL, APPROX. DIMS 1000mm WIDE x 525mm HIGH, AT APPROX. SAME LOCATION; RE-CONNECT PIPING TO NEW REHEAT COIL, C/W NEW 3-WAY TEMPERATURE CONTROL VALVE. PROVIDE NEW DUCT TRANSITIONS TO SUIT RE-CONNECT EXISTING DUCT BRANCHES TO NEW DUCTWORK.
- 5 EXISTING DUCTWORK, AIR TERMINALS, BALANCING DAMPERS TO REMAIN IN SERVICE, WHERE NOTED, TYP.
- 6 1 HOUR FIRE RATED WALL; PROVIDE FIRE DAMPER TO MATCH WALL RATING.
- 7 EXISTING REHEAT COIL TO REMAIN IN SERVICE; INSTALL NEW 3-WAY TEMPERATURE CONTROL VALVE.
- 8 NEW LAB FUME HOOD.
- 9 NEW FUME HOOD S. STEEL EXHAUST DUCT, THRU CEILING SPACE TO EXISTING OPENING TO BE RE-USED. PROVIDE BALANCING DAMPER (BDD).
- 10 EXISTING ROOF OPENING & ROOF CURB TO BE RE-USED FOR NEW FUME HOOD DUCT.
- 11 NEW HIGH VOLUME AIR SUPPLY DIFFUSERS; CO-ORDINATE LOCATION WITH CEILING TILES AND LIGHTING LAYOUT.
- 12 NEW EXHAUST/RELIEF FAN, F-47 (M630-F47), LOCATED IN CEILING SPACE; SUPPORT FAN FROM ROOF JOIST; INLET DUCT TO SUIT SIZE AS SHOWN; PROVIDE BALANCING DAMPER AND INLET SCREEN.
- 13 NEW VAV BOX, VAV-1, 2 POSITIONS, 50% & 100%, C/W DISCHARGE SILENCER BOX; SUPPORT AIR VALVE FROM ROOF JOISTS.
- 14 NEW RETURN AIR GRILLES, RG-1, FINAL LOCATION TO BE CO-ORDINATED WITH CEILING LAYOUT.
- 15 NEW 600x600 RETURN GRILLE, RG-1; CONNECTED TO EXISTING DUCTS.

DIFFUSER/GRILLE SCHEDULE			
TAG	MANUFACTURER	MODEL	COMMENTS
SD-1	E.H. PRICE	350/600x600/SCDA/3/3C/B12	
RG-1	E.H. PRICE	300x300/80/3/3C/B12	



2 ROOF NEW HVAC EQUIPMENT - PLAN
SCALE 1:50

KEY NOTES

- 1 EXISTING ROOF CURB AND RELIEF HOOD, TO BE RE-USED FOR NEW EXHAUST/RELIEF FAN, F-47 (M623-F47); PROVIDE DUCT TRANSITION TO EXISTING TO SUIT.
- 2 EXISTING ROOF CURBED OPENING TO BE RE-USED FOR NEW FUME HOOD EXHAUST DUCT; PROVIDE NEW CURB CAP AND DUCT FLASHING TO SUIT.
- 3 NEW FUME HOOD EXHAUST FAN, F-46 (M629-F46); INSTALLED ON NEW ROOF CURB, COVERED WITH FLASHING; SEE ARCHITECTURAL DETAILS FOR ROOF CURB.
- 4 FUME HOOD EXHAUST STACK, MIN. 3000mm HEIGHT, C/W EXIT VELOCITY CONE; STACK CONSTRUCTED WITH PS SS CHIMNEY PIPE & FITTINGS; SEE MECHANICAL DETAIL.
- 5 NEW AIR HANDLING UNIT, AHU-1 (M621-F42) AT SAME LOCATION AS THE REMOVED UNIT; LOCATE UNIT IN SUCH MANNER THAT NEW SUPPLY AND RETURN OPENINGS ARE APPROX. AT SAME LOCATIONS AS PREVIOUS UNIT OPENINGS; REWORK ROOF OPENING AS REQUIRED TO SUIT; ROOF CURB, 450mm HIGH TO SUIT NEW UNIT; ROOF CURB DETAIL BY ARCHITECTURAL.
- 6 NEW CONDENSING UNIT, CU-1 (M621-CU1); PROVIDE NEW ROOF RECYCLED RUBBER PAD; SEE ARCHITECTURAL FOR DETAILS. FINAL LOCATION TO BE CO-ORDINATED WITH STRUCTURAL.
- 7 PROVIDE NEW GUY WIRES, TYP.x4, ANCHORED TO EXISTING ROOF ANCHORS.
- 8 FIELD RUN REFRIGERATION LINES BETWEEN CU-1 & AHU-1 DX COIL; SUPPORT LINE ON ROOF SLEEPERS.

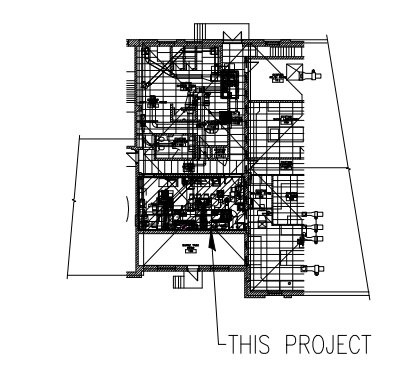
ALLIANCE
Engineering Services Inc.

RECORD DRAWING

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	5 RECORD DRAWING RE-ISSUED WITH CLIENT COMMENTS 2013/09-04 AS 4 RECORD DRAWING BASED ON INFIRM SUPPLIED BY CONTRACTOR 2012/09-01 AS 3 ISSUED FOR PRE-TENDER REVIEW 2011-06-30 AG 2 ISSUED FOR REVIEW 2011-06-03 AG 1 ISSUED FOR REVIEW 2011-05-20 AG A ISSUED FOR PROJECT COORDINATION 2011-05-06 AG		NO. REVISIONS DATE BY

SEAL
ORIGINAL DRAWING SEALED BY
A.F.G. GOSSEN
AND DATED
SEPT. 04, 2013
CONSULTANT DRAWING NO.
M2.2

THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 NORTH END WATER POLLUTION CONTROL CENTRE
 LAB RENOVATIONS
 SHEET 1 OF 1
 CITY DRAWING NUMBER
 1-0101M-H0004-001



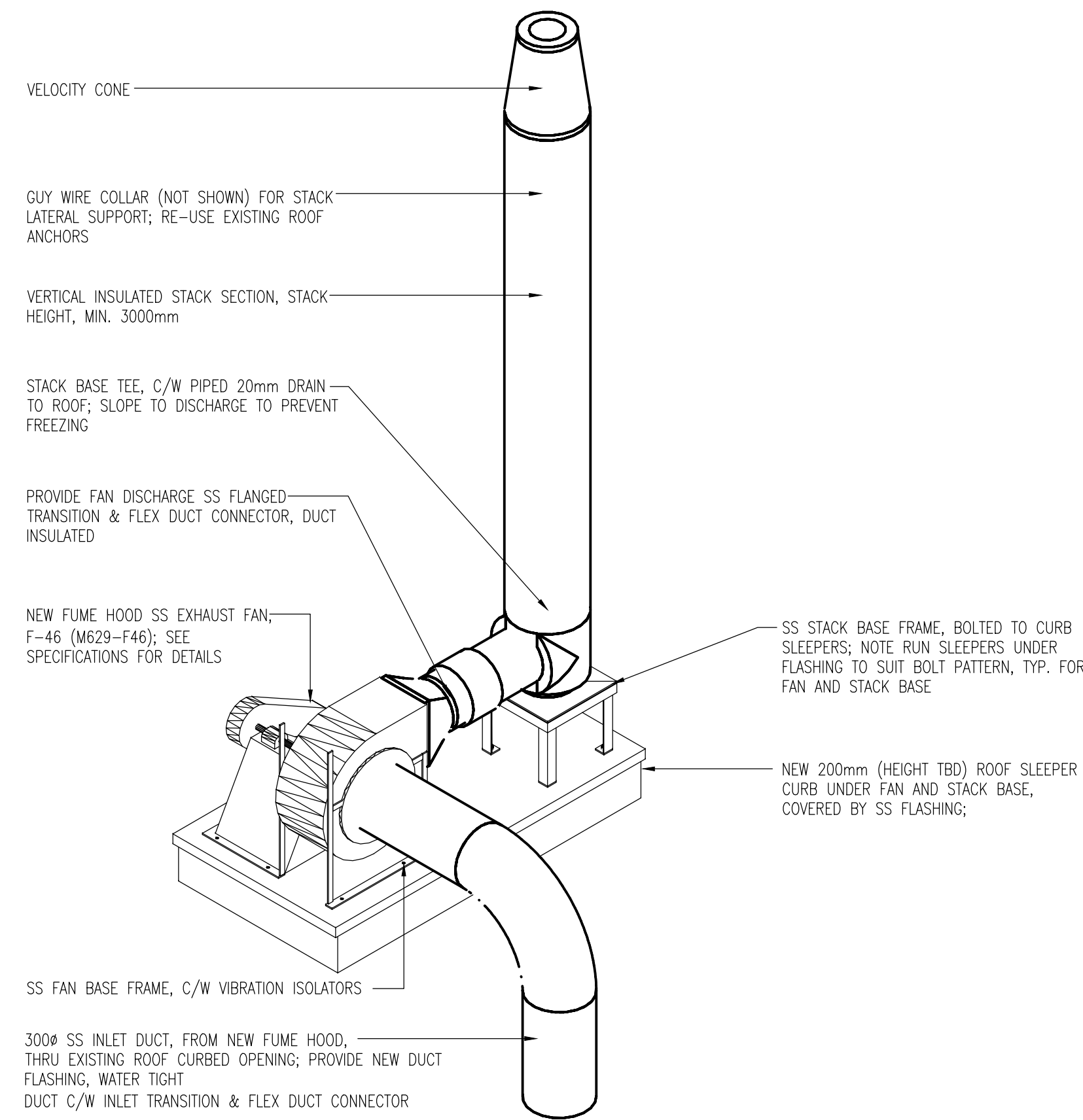
KEY PLAN
SCALE NTS

GENERAL NOTES

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2. COORDINATE WORKS WITH OTHER SUB-TRADES. REFER TO SPECIFIC DETAILS FOR CUTTING AND SEALING PENETRATIONS THROUGH OPENINGS & FIRE SEPARATIONS.
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6. INVESTIGATE SITE PRIOR TO CONSTRUCTION TO CONFIRM ALL DIMENSIONS AND INSTALLATION REQ'S.
7. PERFORM ALL CUTTING & PATCHING NECESSARY FOR ANY REQUIRED OPENINGS THRU WALLS, ROOF AND FLOOR.
8. PROVIDE TAB TO ENSURE AIR DISTRIBUTION TO VOLUMES INDICATED.
9. NOT ALL EQUIPMENT/PIPING, ETC. IS SHOWN.
10. PROVIDE FIRE STOPS AT ALL FIRE RATED WALLS/FLOOR OPENINGS TO MATCH EXISTING RATING.
11. ALL NEW SUPPLY AND EXHAUST DUCT INSULATED, SEE SPECIFICATIONS FOR DETAILS.
12. PRIOR TO TESTING AND BALANCING NEW SYSTEM, CONSISTING OF EXISTING AND NEW DUCTWORK, VISUALLY INSPECT AND CLEAN EXISTING DUCTWORK REMAINING IN SERVICE.

NOTE

THE CITY OF WINNIPEG PERSONNEL REQUIRES THE USE OF EXISTING SHOWER ROOM (110B) AND EXISTING CLEAN LOCKER ROOM (110D) AT THE BEGINNING AND END OF EACH WORK DAY FOR CITY PERSONNEL TO SHOWER AND CHANGE. WORK IN ROOMS 110B, 110C, 110D IS RESTRICTED TO BETWEEN 8:00 AND 15:30 HOURS TO ACCOMMODATE CITY USE OF THE FACILITY. CLEANUP WASTE AND DEBRIS AT THE END OF EACH WORK DAY AND LEAVE THE ROOMS CLEAN AND IN WORKING ORDER. ALTERNATING WORK IN ROOMS 110B, 110C, 110D CAN BE PERFORMED IN THE EVENING OR WEEKEND.



DETAIL - EXHAUST FAN F-46
SCALE: 1/4" = 1'-0" NTS

GENERAL NOTES

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7. PERFORM ALL CUTTING & PATCHING NECESSARY FOR ANY REQUIRED OPENINGS THRU WALLS, ROOF AND FLOOR.
8. PROVIDE TAB TO ENSURE AIR DISTRIBUTION TO VOLUMES INDICATED.
9. NOT ALL EQUIPMENT/PIPING, ETC. IS SHOWN.
10. PROVIDE FIRE STOPS AT ALL FIRE RATED WALLS/FLOOR OPENINGS TO MATCH EXISTING RATING
11. ALL NEW SUPPLY AND EXHAUST DUCT INSULATED. SEE SPECIFICATIONS FOR DETAILS.

RECORD DRAWING

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APEGM
Certificate of Authorization
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No.2906 Date: _____

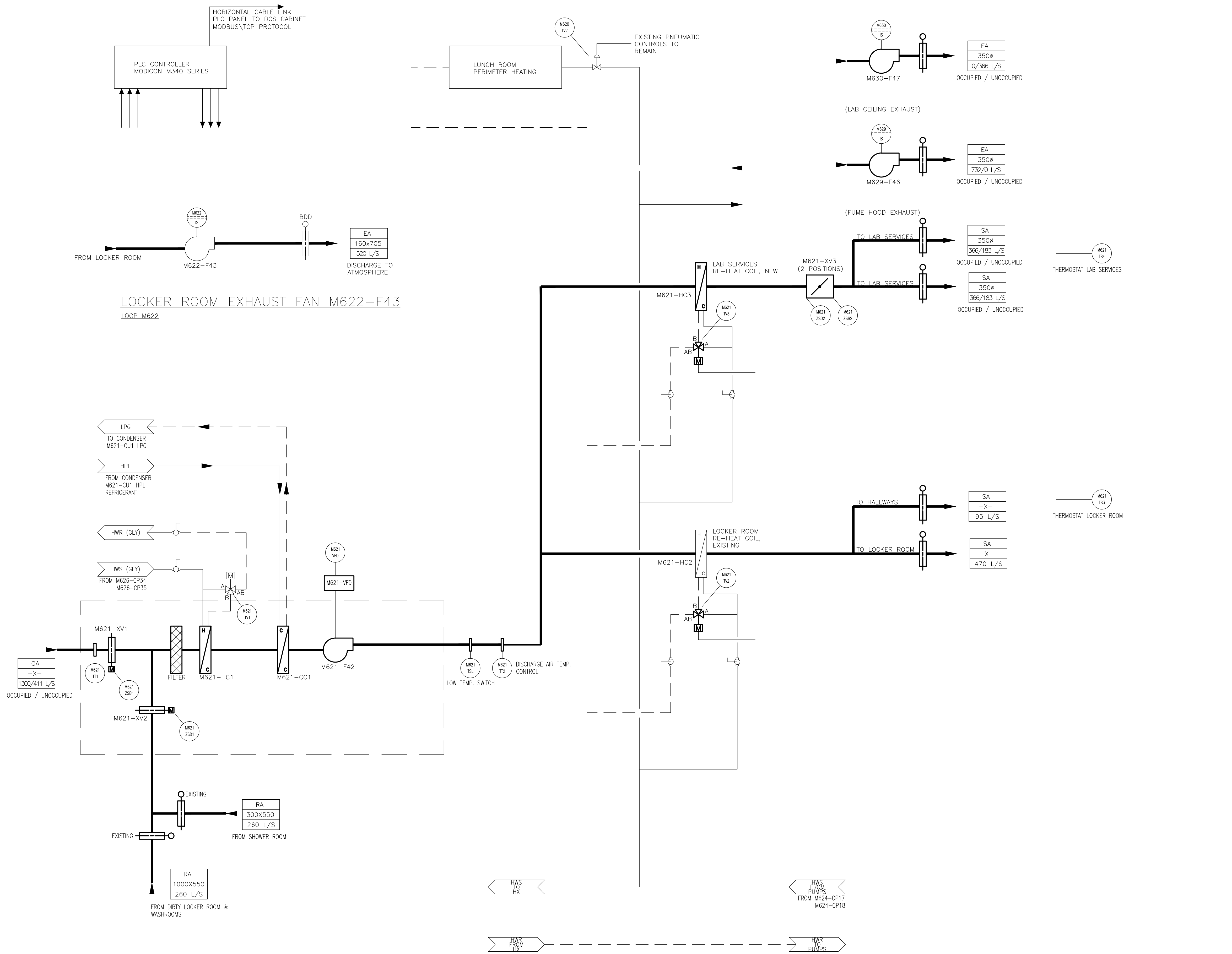
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3	ISSUED FOR PRE-TENDER REVIEW	2011-06-30	AG
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1	ISSUED FOR REVIEW	2011-05-20	AG
A	ISSUED FOR PROJECT COORDINATION	2011-05-06	AG

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VERTICAL	DATE		

SEAL
ORIGINAL DRAWING SEALED BY A.F.G. GOSSEN AND DATED SEPT. 04, 2013
CONSULTANT DRAWING NO. **M2.3**

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
NORTH END WATER POLLUTION CONTROL CENTRE - LAB RENOVATIONS
SHEET 3 OF 3
CITY DRAWING NUMBER
1-0101M-H0005-001

NEW VENTILATION DETAILS



LOCKER ROOM EXHAUST FAN M622-F43
LOOP M622

- NOTES**
- REFER TO P2.2 FOR EQUIPMENT LIST, I/O LIST, AND NARRATIVE.
 - REFER TO P2.3 FOR A SITE PLAN SHOWING THE CABLE ROUTING AND EQUIPMENT LOCATIONS FOR THE NEW PLC AND EXISTING DCS.

RECORD DRAWING

ALLIANCE
Engineering Services Inc.

APECA
Certificate of Authorization
Alliance Engineering Services Inc.
No.2906 Date: _____

NO.	REVISIONS	DATE	BY
4	RECORD DRAWING ISSUED WITH CLIENT COMMENTS	2013-09-04	AS
3	ISSUED FOR PRE-TENDER REVIEW	2011-06-29	AG
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1	ISSUED FOR REVIEW	2011-05-20	AG
A	ISSUED FOR PROJECT COORDINATION	2011-05-06	AG

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DATE		DATE	

SEAL
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A.F.G. GOSSEN
AND DATED
SEPT. 04, 2013
CONSULTANT DRAWING NO.
P2.1

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
LAB RENOVATIONS

SHEET 1 OF 1
CITY DRAWING NUMBER
1-0101M-P0004-001

NEW VENTILATION FLOW DIAGRAM

REFERENCE DRAWING NEP-1544 REV2

EQUIPMENT LISTING				
TAG	DESCRIPTION	TYPE		NOTES
M621-F42	LAB & LOCKERROOM AIR HANDLING UNIT SUPPLY FAN	NEW		WITH INVERTER DUTY MOTOR
M621-XV1	AIR HANDLING UNIT O/A DAMPER C/W ACTUATOR	NEW		SUPPLIED WITH UNIT, INSULATED
M621-XV2	AIR HANDLING UNIT R/A DAMPER C/W ACTUATOR	NEW		SUPPLIED WITH UNIT
M621-VFD	F42 VARIABLE FREQUENCY DRIVE	NEW		USED FOR 2-SPEED FAN OPERATION
M621-HC1	AIR HANDLING UNIT HOT WATER (GLY) HEATING COIL	NEW		SUPPLIED WITH UNIT
M621-HC3	LAB HOT WATER (GLY) REHEAT COIL	NEW		
M621-HC2	LOCKERROOM HOT WATER (GLY) REHEAT COIL	EXIST		RE-USED
M621-CC1	DIRECT EXPANSION EVAPORATOR (AC) COIL	NEW		SUPPLIED WITH UNIT, PACKAGED CONTROLS
M621-CU1	SPLIT CONDENSING UNIT	NEW		SUPPLIED WITH UNIT, LOCATED REMOTE, PACKAGED CONTROLS
M622-F43	LOCKERROOM EXHAUST FAN	EXIST		RE-USED
M629-F46	LAB FUME HOOD EXHAUST FAN	NEW		
M630-F47	LAB CEILING PLENUM EXHAUST FAN	NEW		
M621-XV3	LAB AIR SUPPLY VAV TERMINAL UNIT	NEW		2-POSITION OPERATION INTERLOCKED TO M629-F46

DEVICE LISTING				
TAG	DESCRIPTION	TYPE	ACTION/SIGNAL	NOTES
M621-TT1	OUTSIDE AIR TEMPERATURE SENSOR		ANALOG	
M621-XV1	OUTSIDE AIR DAMPER ACTUATOR	PTO/SC	OCC/UNOCC	ELECTRIC, SET MINIMUM POSITION TO PROVIDED UNOCCUPIED AIR FLOW SHOWN
M621-XV2	RETURN AIR DAMPER ACTUATOR	PTC/SO	OCC/UNOCC	ELECTRIC
M621-ZSB1	DAMPER LIMIT SWITCH		D	PROVE OPEN SWITCH
M621-ZSD1	DAMPER LIMIT SWITCH		D	PROVE CLOSED SWITCH
M621-TV1	AIR HANDLING UNIT TEMPERATURE CONTROL VALVE	3-WAY, MIXING, FTCS	MOD, A	ELECTRIC
M621-TV2	LOCKERROOM HOT WATER (GLY) REHEAT COIL TEMPERATURE CONTROL VALVE	3-WAY, MIXING, FTCS	MOD, A	ELECTRIC, REMOVE EXIST PNEU
M621-TV3	LAB HOT WATER (GLY) REHEAT COIL TEMPERATURE CONTROL VALVE	3-WAY, MIXING, FTCS	MOD, A	ELECTRIC, REMOVE EXIST PNEU
M621-TT2	INDUCT DISCHARGE TEMPERATURE SENSOR		ANALOG	ELECTRIC, DISCHARGE AIR TEMP CNTRL
M621-TSL	INDUCT DISCHARGE TEMPERATURE SENSOR - LOW LIMIT	AVERAGING	ON/OFF	ELECTRIC, INTERLOCK TO AHU M621
M621-XV3	LAB AIR SUPPLY VAV TERMINAL UNIT DAMPER	PTO/PTC	OCC/UNOCC	2-POSITION OPERATION
M621-VFD	SUPPLY FAN ADJUSTABLE FREQUENCY DRIVE		A, D	DISCRETE INPUT/OUTPUTS FOR OCC/UNOCC CONTROL, ANALOG OUTPUTS TO CONFIRM OPERATING STATUS
M621-ZSD2	VAV DAMPER LIMIT SWITCH		D	PROVE MINIMUM POSITION SWITCH
M621-ZSB2	VAV DAMPER LIMIT SWITCH		D	PROVE OPEN SWITCH
M621-TT4	LAB SERVICES THERMOSTAT HEAT/COOL		A	ROOM THERMOSTAT USED FOR LAB REHEAT COIL CONTROL, AND AC COIL CONTROL
M621-TT3	LOCKERROOM THERMOSTAT		A	ROOM THERMOSTAT USED FOR LOCKERROOM REHEAT COIL CONTROL
M622-IS	CURRENT SENSING RELAY		D	CONFIRMS OPERATING STATUS OF FAN AND ABNORMAL OPERATION
M629-IS	CURRENT SENSING RELAY		D	CONFIRMS OPERATING STATUS OF FAN AND ABNORMAL OPERATION
M630-IS	CURRENT SENSING RELAY		D	CONFIRMS OPERATING STATUS OF FAN AND ABNORMAL OPERATION

ABBREVIATIONS:

PNEU - Pneumatic	FTCBP - Fail to coil bypass	D - Digital
PTO/SC - Power to open, spring closed	MOD - Modulating	A - Analog
PTC/SO - Power to close, spring open	O/A - Outside air	
NC - Normally closed	R/A - Return air	
NO - Normally open	S/A - Supply air	
FTCS - Fail to coil supply	MAT - Mixed air temperature	

SEQUENCE OF OPERATIONS

GENERAL:

NEW LABORATORY AND EXISTING LOCKERROOM HVAC CONTROLS OPERATE ON AN OCCUPIED/UNOCCUPIED TIME SCHEDULE; UNOCCUPIED MODE CAN BE OVERRIDEN THROUGH OPERATION OF NEW FUME HOOD EXHAUST FAN M629-F46.

NOTE: THE IMPLICATION OF THE OVERRIDE IS THAT IF THE FUME HOOD IS SWITCHED ON AND LEFT ON THE HVAC SYSTEM WILL NEVER SWITCH TO UNOCCUPIED MODE; PLEASE REVIEW AND CONFIRM IF THIS IS ACCEPTABLE, I.E. DO YOU ANTICIPATE NEEDING TO OPERATE THE FUME HOOD AFTER HOURS.

UNOCCUPIED MODE:

AIR HANDLING UNIT SUPPLY FAN M621-F42 OPERATES CONTINUOUSLY ON LOW SPEED (UNOCCUPIED) THROUGH M621-VFD VARIABLE FREQUENCY DRIVE

LAB FUME HOOD EXHAUST FAN M629-F46 IS DE-ENERGIZED TO OFF

LAB CEILING PLENUM EXHAUST FAN M630-F47 IS ENERGIZED TO OPERATE CONTINUOUSLY

EXISTING LOCKERROOM EXHAUST FAN M622-F43 IS DE-ENERGIZED TO OFF

AIR HANDLING UNIT OUTSIDE AIR DAMPERS M621-XV1 IS DE-ENERGIZED TO DRIVE O/A DAMPERS TO MINIMUM POSITION

AIR HANDLING UNIT RETURN AIR DAMPERS M621-XV2 IS DE-ENERGIZED TO DRIVE R/A DAMPERS TO FULL OPEN

LAB AIR SUPPLY VAV TERMINAL UNIT DAMPER ACTUATOR M621-XV3 IS DRIVEN TO ITS MINIMUM POSITION SETPOINT

HEATING MODE: HEATING MODE IS INITIATED AT OUTSIDE AIR TEMPERATURES BELOW 13 °C AS SENSED BY M621-TT1, PLC HMI SHALL ALSO INCLUDE A MANUAL OVERRIDE SWITCH THAT FORCES THE SYSTEM INTO SELECTABLE HEATING OR COOLING MODE

AIR HANDLING UNIT TEMPERATURE CONTROL VALVE M621-T.V1 MODULATES TO MAINTAIN A DISCHARGE AIR TEMPERATURE OF 16 °C AS SENSED BY IN DUCT TEMPERATURE SENSOR M621-TT2

LAB AND LOCKERROOM REHEAT COIL TEMPERATURE CONTROL VALVES M621-TV2 AND M621-TV3 RESPECTIVELY MODULATE TO MAINTAIN A SPACE TEMPERATURE SETPOINT AS SENSED BY LAB AND LOCKERROOM SPACE THERMOSTATS M621-TT3 & TT4.

COOLING MODE: COOLING MODE IS INITIATED AT OUTSIDE AIR TEMPERATURES ABOVE 16 °C AS SENSED BY M621-TT2, PLC HMI SHALL ALSO INCLUDE A MANUAL OVERRIDE SWITCH THAT FORCES THE SYSTEM INTO SELECTABLE HEATING OR COOLING MODE

SPLIT CONDENSING UNIT M621-CU1 THROUGH ITS PACKAGED CONTROLS STAGES ON-OFF IN RESPONSE TO LAB SPACE THERMOSTAT SETPOINT IF THE SYSTEM IS IN COOLING MODE

OCCUPIED MODE:

AIR HANDLING UNIT SUPPLY FAN M621-F42 OPERATES CONTINUOUSLY ON HIGH SPEED (OCCUPIED) THROUGH M621-VFD VARIABLE FREQUENCY DRIVE

LAB CEILING PLENUM EXHAUST FAN M630-F47 IS DE-ENERGIZED OFF

EXISTING LOCKERROOM EXHAUST FAN M622-F43 IS ENERGIZED TO OPERATE CONTINUOUSLY

LAB FUME HOOD EXHAUST FAN M629-F46 IS ENERGIZED TO OPERATE CONTINUOUSLY

AIR HANDLING UNIT OUTSIDE AIR DAMPERS M621-XV1 IS ENERGIZED TO DRIVE O/A DAMPERS OPEN

AIR HANDLING UNIT RETURN AIR DAMPERS M621-XV2 IS ENERGIZED TO DRIVE R/A DAMPERS CLOSED

LAB AIR SUPPLY VAV TERMINAL UNIT DAMPER ACTUATOR M621-XV3 IS DRIVEN TO ITS MAXIMUM OPEN POSITION SETPOINT

HEATING MODE: HEATING MODE IS INITIATED AT OUTSIDE AIR TEMPERATURES BELOW 13 °C AS SENSED BY M621-TT1, PLC HMI SHALL ALSO INCLUDE A MANUAL OVERRIDE SWITCH THAT FORCES THE SYSTEM INTO SELECTABLE HEATING OR COOLING MODE

AIR HANDLING UNIT TEMPERATURE CONTROL VALVE M621-TV1 MODULATES TO MAINTAIN A DISCHARGE AIR TEMPERATURE OF 16 °C AS SENSED BY IN DUCT TEMPERATURE SENSOR M621-TT2

LAB AND LOCKERROOM REHEAT COIL TEMPERATURE CONTROL VALVES M621-TV2 AND M621-TV3 RESPECTIVELY MODULATE TO MAINTAIN A SPACE TEMPERATURE SETPOINT AS SENSED BY LAB AND LOCKERROOM SPACE THERMOSTATS M621-TT3 & TT4.

COOLING MODE: COOLING MODE IS INITIATED AT OUTSIDE AIR TEMPERATURES ABOVE 16 °C AS SENSED BY M621-TT2, PLC HMI SHALL ALSO INCLUDE A MANUAL OVERRIDE SWITCH THAT FORCES THE SYSTEM INTO SELECTABLE HEATING OR COOLING MODE

SPLIT CONDENSING UNIT M621-CU1 THROUGH ITS PACKAGED CONTROLS STAGES ON-OFF IN RESPONSE TO LAB SPACE THERMOSTAT SETPOINT IF THE SYSTEM IS IN COOLING MODE

OTHER:

SYSTEM STATUS MONITORING SHALL BE PROVIDED ON THE PLC-HMI AND AS A MINIMUM SHALL DISPLAY THE FOLLOWING SYSTEM, EQUIPMENT & DEVICE STATUS POINTS;

SYSTEM MODE: OCCUPIED OR OCCUPIED




FAN OPERATING STATUS - NORMAL OR ALARM; AS SENSED BY RESPECTIVE MOTOR CSR DEVICES FOR: M621-VFD, M622-F43, M629-F46, M630-F47

DEVICE OPERATING STATUS - NORMAL OR ALARM; AS SENSED BY RESPECTIVE DEVICES SWITCHES FOR: M621-ZSB1, M621-ZSD1, M621-ZSD2, M621-ZSB2

TEMPERATURE STATUS - ACTUAL AND ALARM; AS SENSED BY RESPECTIVE DEVICES FOR: M621-TT1, M621-TT2, M621-TS3, M621-TS4

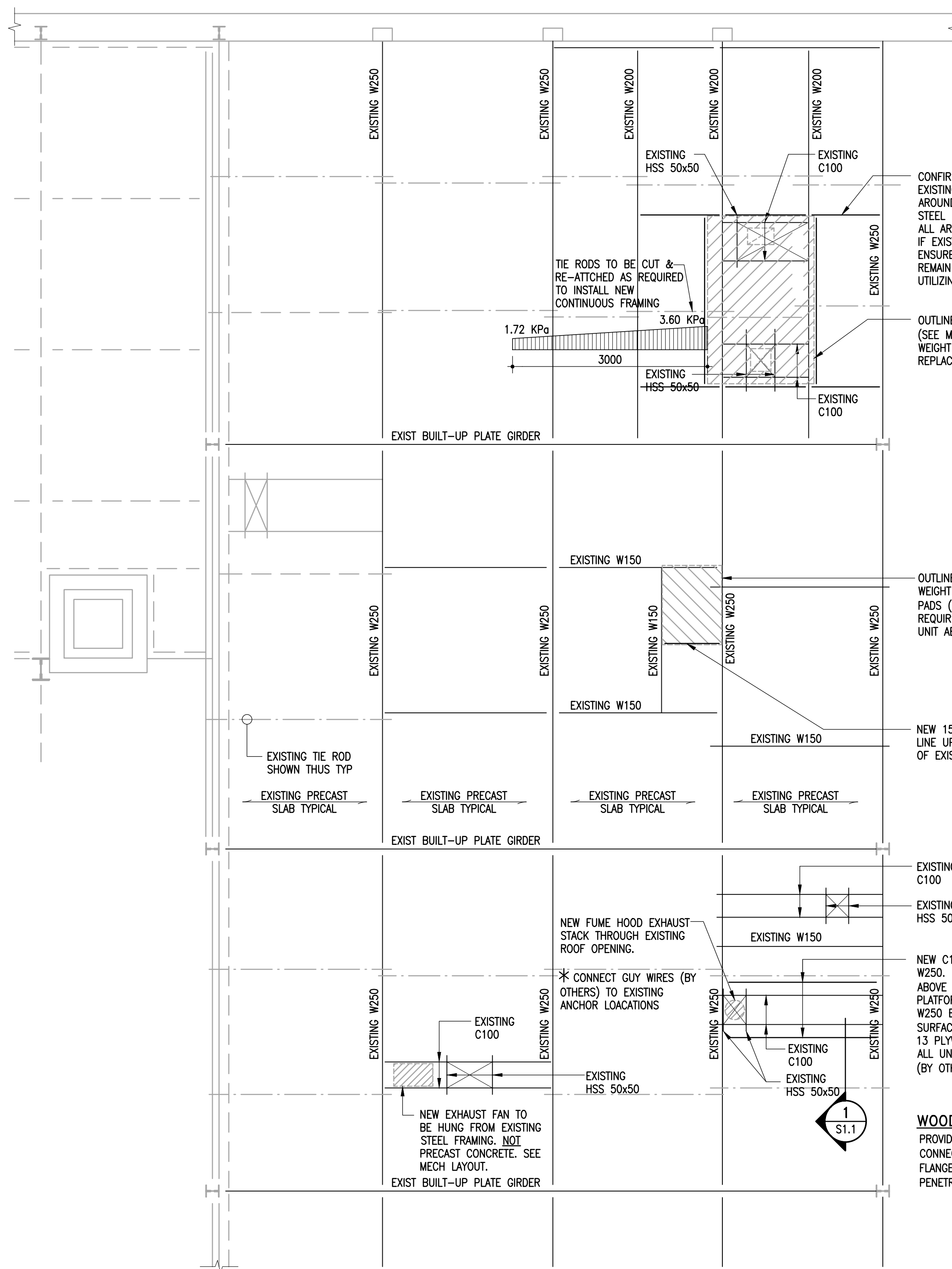
SYSTEM SHUT-DOWN: UPON SENSING A LOW DISCHARGE AIR TEMPERATURE (5 °C) AS SENSED BY M621-TSL AIR HANDLING UNIT FAN M621-F42 IS DENERGIZED AND THE AIR HANDLING UNIT O/A AND R/A DAMPERS REVERT TO THEIR UNOCCUPIED POSITIONS, GENERAL ALARM IS GENERATED ON THE PLC-HMI

RECORD DRAWING

 Certificate of Authorization Alliance Engineering Services Inc. No.2906 Date: _____	B.M. ELEV.	FIELD BOOK #:	 LM Architectural Group 500-136 Market Ave Winnipeg, Manitoba, Canada R3B 0P4 t: (204) 942.0681 f: (204) 943.8676 www.lm-architects.com	SEAL	 THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT NORTH END WATER POLLUTION CONTROL CENTRE - LAB RENOVATIONS	SHEET 1 OF 1 CITY DRAWING NUMBER 1-0101M-P0005-001
	POSTED TO LBIS			DESIGNED BY		
			DRAWN BY AS	APPROVED BY	ORIGINAL DRAWING SEALED BY A.F.G. GOSSEN AND DATED SEPT. 04, 2013 CONSULTANT DRAWING NO. P2.2	
			HOR. SCALE VERTICAL	RELEASED FOR CONSTRUCTION		
			NO. REVISIONS	DATE		

ALLIANCE
Engineering Services Inc.

**NEW VENTILATION
EQUIP, I/O LIST & NARRATIVE**



CONFIRM LOCATION OF NEW UNIT WITH RESPECT TO EXISTING STEEL FRAMING. PROVIDE C150x12 ALL AROUND PERIMETER OF UNIT TIED INTO EXISTING STEEL BEAMS AS SHOWN. PROVIDE NEW C100x8 ALL AROUND NEW OPENINGS AS REQUIRED TO SUIT IF EXISTING OPENING FRAMING DOES NOT WORK. ENSURE THAT ALL EDGES OF EXISTING OPENING REMAIN FULLY SUPPORTED IN NEW CONDITION UTILIZING EXISTING C100 OR NEW

OUTLINE OF NEW AHU (SEE MECHANICAL) WEIGHT 1,956lbs TO REPLACE EXISTING.

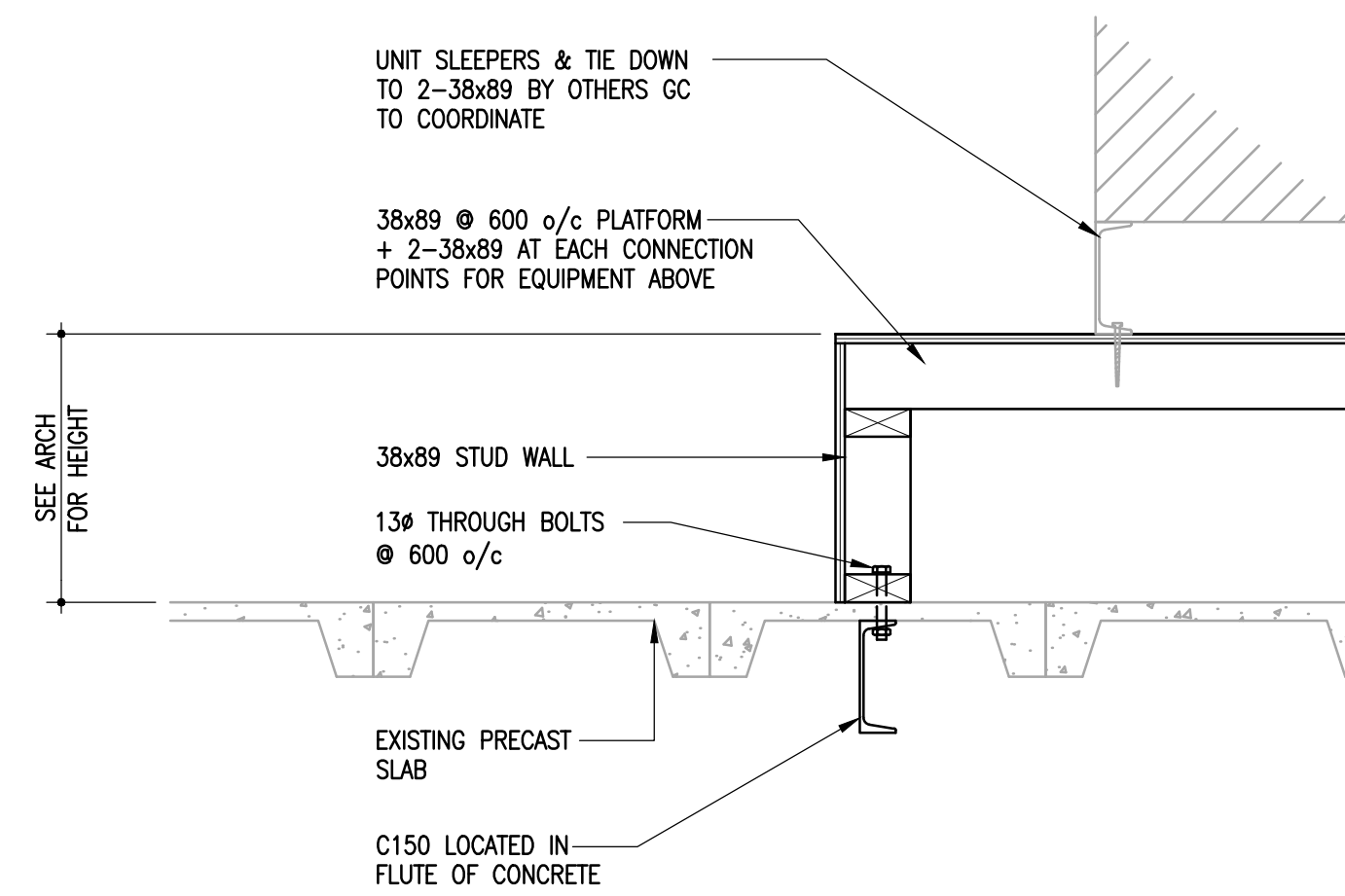
OUTLINE OF NEW CU-1 (SEE MECHANICAL) WEIGHT 560lbs ON RECYCLED RUBBER PADS (SEE ARCH) + SLEEPERS AS REQUIRED. CONFIRM LOCATION & CENTRE UNIT ABOVE EXISTING STEEL FRAMING

NEW 150x12 AT EDGE OF NEW UNIT LINE UP UNIT TO SIT ON REMAINDER OF EXIST BEAMS

EXISTING C100
EXISTING HSS 50x50

NEW C150x12 CONNECTED TO EXISTING W250. PROVIDE WOOD CURB WALL ABOVE (SEE NOTES) @ ALL EDGES OF PLATFORM TO LINE UP WITH C150 & W250 BELOW. FRAME PLATFORM SURFACE WITH 38x89 @ 600 o/c c/w 13 PLYWOOD SHEATHING & 2-38x89 @ ALL UNIT ANCHORAGE LOCATION POINTS (BY OTHERS)

WOOD CURB WALL
PROVIDE 38x89 (MIN) @ 400 o/c c/w 13mm PLYWOOD SHEATHING. CONNECT STUD WALL BOTTOM PLATE TO STEEL FRAMING (TOP FLANGE) BELOW WITH 13# THROUGH BOLT @ 600 o/c. SEAL ALL PENETRATIONS. SEE SECTION 1/S1.1



1 SECTION
S1.1 1 : 10

GENERAL NOTES

- STRUCTURAL DESIGN BASED ON THE NATIONAL MANITOBA BUILDING CODE OF CANADA 2010 2011 EDITION.
 - IMPORTANCE CATEGORY: NORMAL
 - GROUND SNOW LOAD: SS = 1.9 KPA
 - ASSOCIATED RAIN LOAD: SR = 0.2 KPA
- DO NOT SCALE DRAWINGS.
- ALL DIMENSIONS ARE TO BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS AND EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION.
- THESE STRUCTURAL DRAWINGS SHOW THE COMPLETED STRUCTURE AND DO NOT INDICATE ALL COMPONENTS NECESSARY FOR SAFETY DURING CONSTRUCTION. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY ON AND AROUND THE JOBSITE DURING CONSTRUCTION.
- THE CITY REQUIRES USE OF EXISTING SHOWER ROOM (110B), EXISTING LOCKER ROOM (110C), AND EXISTING WASHROOM (110D) AT THE BEGINNING AND END OF EACH WORK DAY FOR CITY PERSONNEL TO SHOWER AND CHANGE. WORK IN ROOM 110B, 110C, 110D IS RESTRICTED TO BETWEEN 8:00 AND 15:30 HOURS TO ACCOMMODATE CITY USE OF THE FACILITY. CLEAN UP WASTE AND DEBRIS AT THE END OF EACH WORK DAY AND LEAVE THE ROOM IN WORKING ORDER. ALTERNATIVELY WORK IN (110B, 110C, 110D) CAN BE PERFORMED IN THE EVENING AND/OR WEEKEND.

STRUCTURAL STEEL

- STRUCTURAL STEEL TO CONFORM TO CSA-G40.21, "STRUCTURAL QUALITY STEELS" AND CSA-G40.20 "GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL".
- ALL ROLLED OR STEEL STRUCTURAL SECTIONS SHALL BE G40.21-50W. ALL ANGLES, CHANNELS AND PLATES SHALL BE G40.21-44W.
- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE PERFORMED IN ACCORDANCE WITH CAN/CSA S18-09, "STEEL STRUCTURES FOR BUILDINGS".
- ALL WELDING SHALL CONFORM TO THE LATEST EDITION OF CSA W59, "WELDED STEEL CONSTRUCTION". FABRICATORS SHALL BE PROPERLY CERTIFIED IN ACCORDANCE WITH CSA W47.1, "CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL STRUCTURES".
- ALL BOLTED CONNECTIONS TO USE A325 HIGH STRENGTH BOLTS. MINIMUM CONNECTION SHALL CONSIST OF 2 BOLTS.
- ALL STRUCTURAL STEEL IS TO RECEIVE ONE COAT OF CISC/CPMA 1-73A QUICK DRYING SHOP PRIMER. STEEL RECEIVING FINISH PAINTING TO HAVE ONE COAT OF CISC/CPMA 2-75 QUICK DRYING SHOP PRIMER. STEEL TO BE CLEANED IN CONFORMANCE WITH SSPC-SP7.
- FABRICATOR TO NOTIFY ENGINEER OF ANY PROPOSED MEMBER SUBSTITUTIONS AND CHANGED CONNECTION DETAILS.
- THE STRUCTURAL STEEL SUPPLIER SHALL PROVIDE AND BE RESPONSIBLE FOR ALL HOLES IN STEEL SECTIONS REQUIRED BY OTHER TRADES. SECTION SHALL BE STRENGTHENED WHERE REQUIRED TO GUARANTEE THE ORIGINAL STRENGTH OF THE BEAM. ANY CUTTING OF STEEL AT THE JOB SITE SHALL BE DONE ONLY AS DIRECTED AND APPROVED BY THE ENGINEER.
- STRUCTURAL STEEL SUPPLIER IS TO SUBMIT ENGINEERING DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA COVERING THE DESIGN OF CONNECTIONS, TO THE PROJECT DESIGN ENGINEER FOR REVIEW PRIOR TO FABRICATION. CONNECTION DESIGN TO INCLUDE FOR ALL ADJUSTABLE CONNECTIONS REQUIRED TO SUITE FABRICATION AND ERECTION PROCEDURES AND TOLERANCES.

PARTIAL ROOF FRAMING PLAN

SCALE: 1:50

- SITE CONFIRM LOCATION OF ALL EXISTING ROOF FRAMING WITH RESPECT TO NEW UNITS TO BE INSTALLED & COORDINATE LOCATION OF NEW OPENINGS.
- SHOULD NEW OPENINGS NOT BE ABLE TO BE ACCOMMODATED BY EXISTING FRAMING, PROVIDE C100x11 ALL AROUND PERIMETER OF OPENING CONNECTED TO EXISTING STEEL BEAM FRAMING.
- SHIM/DRYPACK ABOVE NEW STEEL FRAMING TO PRECAST SLAB RIB ABOVE TO ENSURE SOLID BEARING.
- SEE ARCH/MECH FOR UNIT PLACEMENTS - GC TO COORDINATE.
- CONTACT CONSULTANT SHOULD SITE CONDITIONS VARY FROM THOSE NOTED.
- DESIGN LIVE LOAD = 1.72 KPa + SNOW BUILT-UP AS NOTED.

300-275 Carlton Street
Winnipeg, Manitoba R3C 5R6
T 204. 943. 7501
F 204. 943. 7507
2010-0156



Crosier Kilgour & Partners Ltd.
CONSULTING STRUCTURAL ENGINEERS

B.M. ELEV.	FIELD BOOK #:	LM Architectural Group	
POSTED TO LBIS		500-136 Market Ave Winnipeg, Manitoba Canada R3B 0P4 t: (204) 942.0681 f: (204) 943.8676 www.lm-architects.com	
		DESIGNED BY RDM	CHECKED BY RDM
4 RECORD DRAWING	03/09/13	RDM	
3 ISSUED FOR FINAL REVIEW	30/08/11	RDM	
2 ISSUED FOR REVIEW	03/06/11	RDM	
1 ISSUED FOR REVIEW	20/05/11	RDM	
NO. REVISIONS	DATE	BY	DATE
			30 Aug, 2011

SEAL

ORIGINAL DRAWING SEALED BY H.J. LOUKA AND DATED AUGUST 30, 2011

CONSULTANT DRAWING NO. **S1.1**

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE - LAB RENOVATIONS

PARTIAL ROOF FRAMING PLAN

CITY DRAWING NUMBER 1-0101M-S0006-001

RECORD DRAWINGS ARE BASED ON INFORMATION SUPPLIED BY CONTRACTOR

Main Building Renovations Electrical 1991

Item	City Drawing No	Description
1	NEP 1538	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 SYMBOL LEGEND ELECTRICAL AND INSTRUMENTATION
2	NEP 1539	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 MAIN FLOOR PLAN LIGHTING LAYOUT
3	NEP 1539A	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 SECOND FLOOR PLAN POWER AND EQUIPMENT LAYOUT
4	NEP 1540	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 MAIN FLOOR POWER AND EQUIPMENT LAYOUT
5	NEP 1540A	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 ELECTRICAL SUBFEED LAYOUT CRAWL SPACE
6	NEP 1541	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 FIRE ALARM PA SYSTEM AND TELEPHONE LAYOUT
7	NEP 1542	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 SINGLE LINE DIAGRAMS AND MCC "M" SCHEDULE AND ELEVATION
8	NEP 1542A	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 MCC "M1" LAYOUT AND SCHEDULE
9	NEP 1543	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 PANEL SCHEDULE
10	NEP 1543A	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 PANEL SCHEDULE
11	NEP 1543B	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 MOTOR AND EQUIPMENT LAYOUT CRAWL SPACE AND ROOF AREAS
12	NEP 1543C	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 RISER DIAGRAMS
13	NEP 1543E	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 GLYCOL CIRCULATION PUMPS LOOP WIRING DIAGRAM
14	NEP 1543F	NEWPCC - MAIN BLDG RENOVATIONS ELECTRICAL 1991 HOT WATER CIRCULATION PUMPS LOOP WIRING DIAGRAMS

SYMBOL LEGEND

	INSTRUMENT SYMBOL LOCAL		FAN OR PUMP
	INSTRUMENT SYMBOL PANEL MOUNTED		AIR INTAKE DAMPER
	COMPUTER / OFF / HAND SWITCH		COOLING COIL WATER
	LOCK-OFF-STOP PUSHBUTTON		HEATING COIL
	OPEN / CLOSE		MECHANICAL COOLING
	COMPUTER / HAND		THREEWAY CONTROL VALVE , PNEUMATIC
	LOCAL / REMOTE		DRIVE MOTOR
	SPEED DECREASE		UNIT HEATER
	SPEED INCREASE		TRANSFORMER
	EMERGENCY STOP		PNEUMATIC LINE , SIGNAL
	COMPUTER SYMBOL (TO COMPUTER)		ELECTROMAGNETIC OR SONIC SIGNAL
	COMPUTER SYMBOL (FROM COMPUTER)		CAPILLARY TUBING - FILLED SYSTEM
	COMPLEX INTERLOCK		ELECTRICAL CONNECTION
	PILOT LIGHT PANEL MOUNTED		INTERNAL COMPUTER SOFTWARE COMPLEX INTERLOCK
	DAMPER ACTUATOR		PRIMARY PROCESS LINE
	RESTRICTOR		ROTARY PLUG VALVE & ACTUATOR
	MANUAL BALANCE DAMPER		PROGRAMMABLE LOGIC CONTROLLER INPUT/OUTPUT
	CWR COLD WATER RETURN CWS COLD WATER SUPPLY HWR HOT WATER RETURN HWS HOT WATER SUPPLY GS GLYCOL SUPPLY GR GLYCOL RETURN		MANUAL VALVE
			CHECK VALVE
			SOLENOID VALVE
			PNEUMATIC VALVE (PROCESS)
			ELECTRIC / PNEUMATIC VALVE (SIGNAL)

**INSTRUMENT & DEVICE IDENTIFICATION TABLE
(CITY OF WINNIPEG STANDARD)**

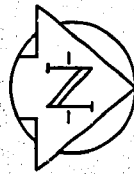
LETTER	FIRST LETTER VARIABLE	SECOND AND SUCCEEDING LETTERS
A	ANALYSIS OR SAMPLER	ALARM OR TROUBLE
B	BURNER FLAME	CLOSE OR DECREASE
C	CONDUCTIVITY	CONTROL
D	DENSITY	OPEN OR INCREASE
E	VOLTAGE (EMF)	PRIMARY ELEMENT
F	FLOW RATE	FAILURE
G	GAS	GAUGE/ULTRASONIC GEN.
H	HAND (MANUAL)	HIGH
I	CURRENT (ELEC.)	INDICATE
J	POWER	LIGHT
K	TIME	CONTROL STATION
L	LEVEL	LOW
M	MOTOR	OPERATE OR ON/OFF
N	MOISTURE	START
O	TORQUE	OVERLOAD OR STOP
P	PRESSURE OR VACUUM	PNEUMATIC OR PRESSURE
Q	COMMON	TOTALIZE OR INTEGRATE
R	RADIOACTIVITY	RECORDER
S	SPEED OR FREQUENCY	SWITCH OR SAFETY
T	TEMPERATURE	TRANSMITTER
U	MULTIVARIABLE	MULTIFUNCTION
V	VALVE OR DAMPER	VALVE
W	WEIGHT OR FORCE	WELL
X	UNCLASSIFIED	UNCLASSIFIED
Y	COMPUTER	RELAY OR COMPUTE
Z	POSITION	DRIVE, ACTUATE OR FINAL CONTROL ELEMENT

ELECTRICAL SYMBOL LEGEND

	CONDUIT RUN CONCEALED IN CEILING OR WALL
	CONDUIT RUN CONCEALED IN FLOOR OR BELOW GRADE
	CONDUIT RUN EXPOSED
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	INDICATES NUMBER OF WIRES
	ELECTRICAL PANEL LOCATION
	LIGHTING FIXTURE - FLUORESCENT
	LIGHTING FIXTURE - CEILING MOUNTED
	LIGHTING FIXTURE - WALL MOUNTED
	EXIT LIGHT - CEILING MOUNTED
	EXIT LIGHT - WALL MOUNTED
	CLOCK OUTLET
	SINGLE POLE SWITCH
	THREE WAY SWITCH
	SWITCHES IN MULTIPLE
	SWITCH WITH PILOT LIGHT
	DIMMER SWITCH
	PHOTOCELL
	FIRE ALARM HORN
	FIRE ALARM BREAKGLASS STATION
	FIRE ALARM GONG
	FIRE DETECTOR - RATE OF RISE
	FIRE DETECTOR - FIXED TEMPERATURE
	SMOKE DETECTOR
	EMERGENCY LIGHTING BATTERY PACK
	EMERGENCY LIGHTING SINGLE REMOTE HEAD
	EMERGENCY LIGHTING DOUBLE REMOTE HEAD
	TELEPHONE OUTLET
	SIGNAL PUSHBUTTON
	MOTOR LOCATION - 3 PHASE
	MOTOR LOCATION - SINGLE PHASE
	MANUAL MOTOR STARTER
	STOP/START PUSHBUTTON STATION
	DISCONNECT SWITCH - LOCKABLE
	DESIGNATES WEATHERPROOF
	THERMOSTAT LOCATION - REMOTE
	THERMOSTAT LOCATION - BUILT IN
	ELECTRIC HEATING UNIT
	SINGLE RECEPTACLE
	DUPLEX RECEPTACLE
	SWITCHED RECEPTACLE - TOP HALF ONLY
	DUPLEX RECEPTACLE - AMPERE RATING AS SHOWN
	DUPLEX RECEPTACLE - SPLIT FED
	FLUSH FLOOR OUTLET BOX
	600 VOLT OUTLET
	JUNCTION BOX
	SPEAKER HORN
	P.A. SPEAKER SILENCE SWITCH
	RECESSED P.A. SPEAKER
	208 VOLT OUTLET
	DIGITAL WIRING
	ANALOG WIRING

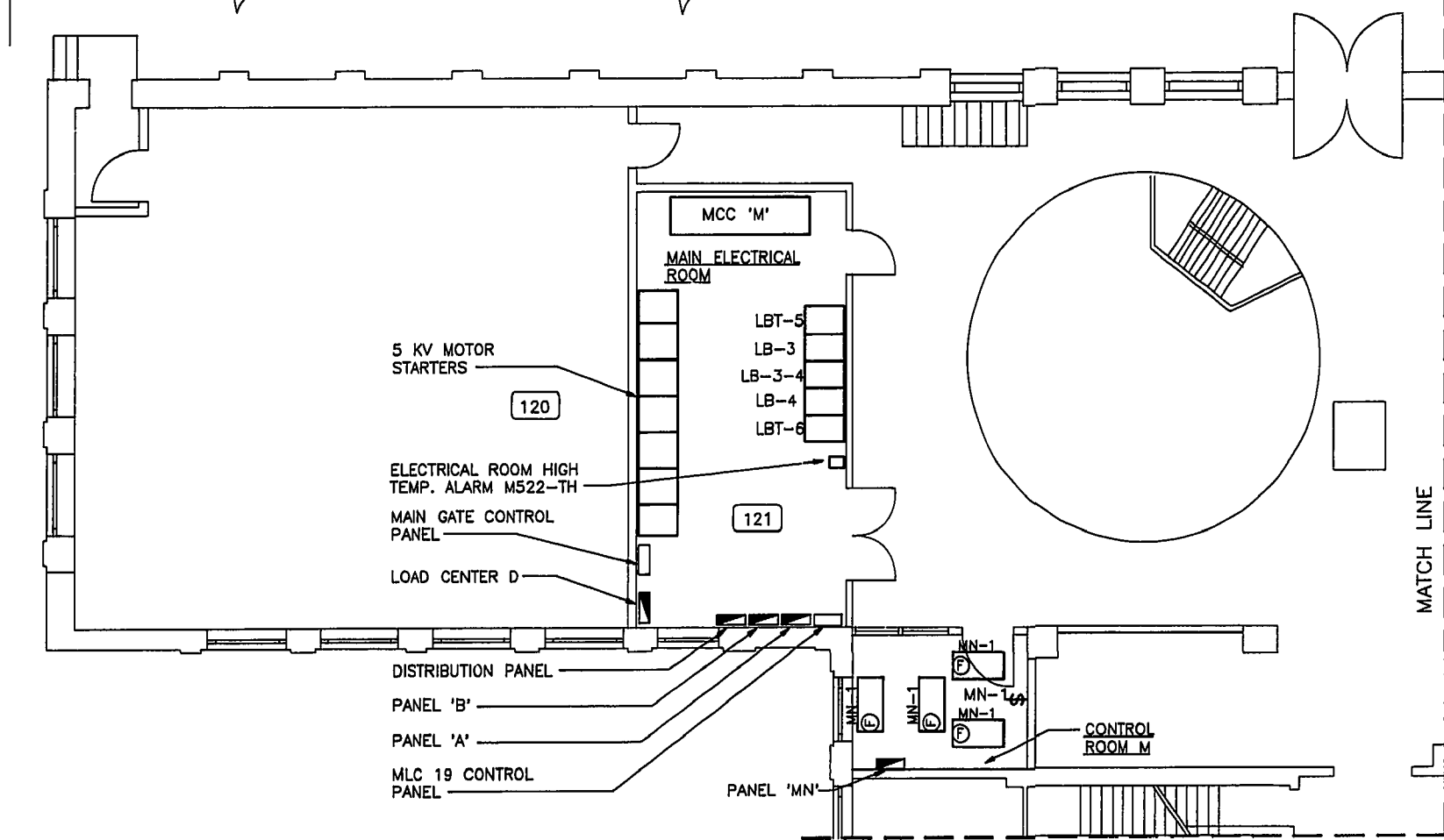
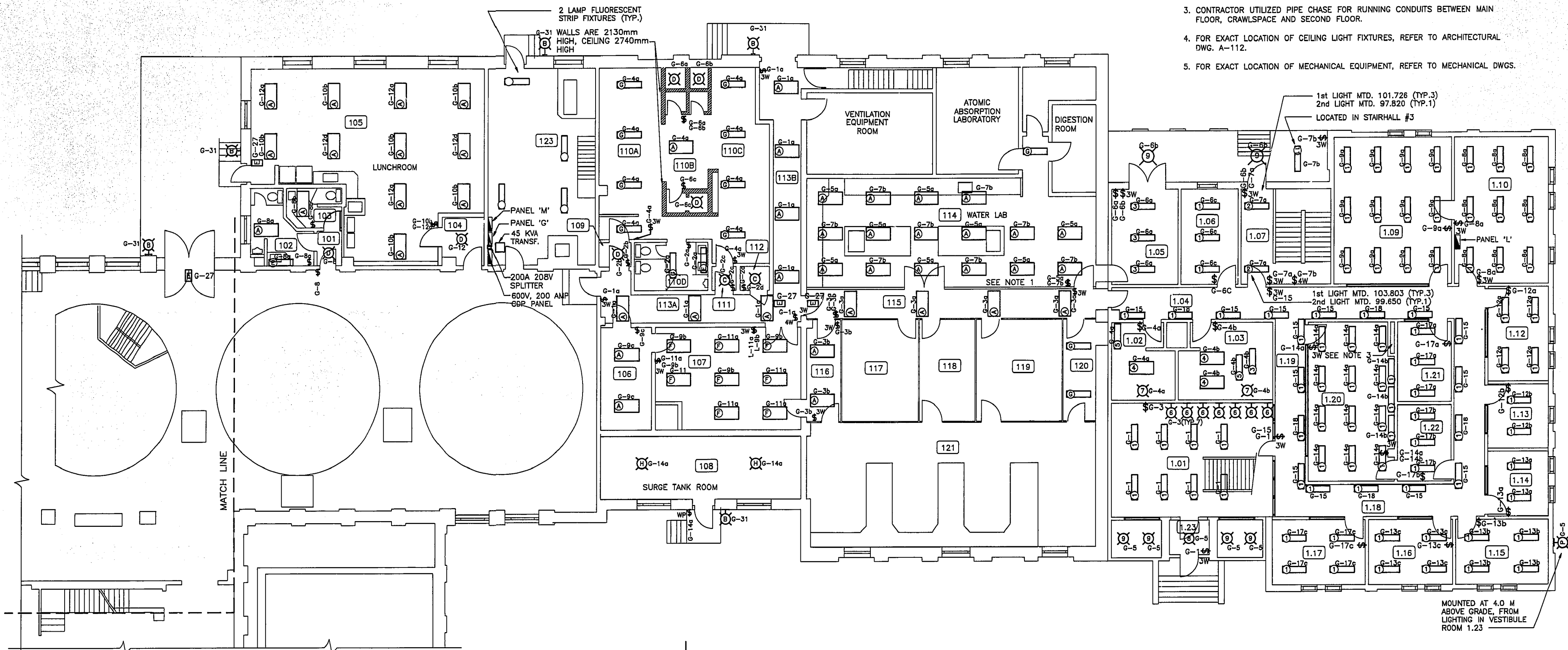
AS-BUILT
DATE JULY/91 BY R.A.H.
CHECKED BY *[Signature]*

B.M. ELEV.		Wardrop-MacLaren ENGINEERING CONSULTANTS		ENGINEER'S SEAL REGISTERED PROFESSIONAL ENGINEER	THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS, WASTE & DISPOSAL DEPARTMENT
DESIGNED BY W.L./A.S.					
DRAWN BY N.B.		APPROVED BY <i>[Signature]</i>		NORTH END WATER POLLUTION CONTROL CENTRE CITY DRAWING NUMBER	
HDR. SCALE: VERTICAL: N.T.S.		RELEASED FOR CONSTRUCTION:		MAIN BUILDING RENOVATIONS-ELECTRICAL SHEET OF	
NO. REVISIONS		DATE		SYMBOL LEGEND ELECTRICAL AND INSTRUMENTATION	
DATE JUNE/91		DATE		NEP-1538	
		CONSULTANT DRAWING NO. 880012-01-03			



NOTES:

1. PROVIDE SURFACE MOUNTED METAL RACEWAY SYSTEM WIREMOLD 2000 SERIES FROM JUNCTION BOX IN CEILING SPACE TO LIGHT SWITCHES.
2. REFER TO SPECIFICATION (SECT. 16503) FOR LIGHTING FIXTURE SCHEDULE.
3. CONTRACTOR UTILIZED PIPE CHASE FOR RUNNING CONDUITS BETWEEN MAIN FLOOR AND CRAWLSPACE AND SECOND FLOOR.
4. FOR EXACT LOCATION OF CEILING LIGHT FIXTURES, REFER TO ARCHITECTURAL DWG. A-112.
5. FOR EXACT LOCATION OF MECHANICAL EQUIPMENT, REFER TO MECHANICAL DWGS.

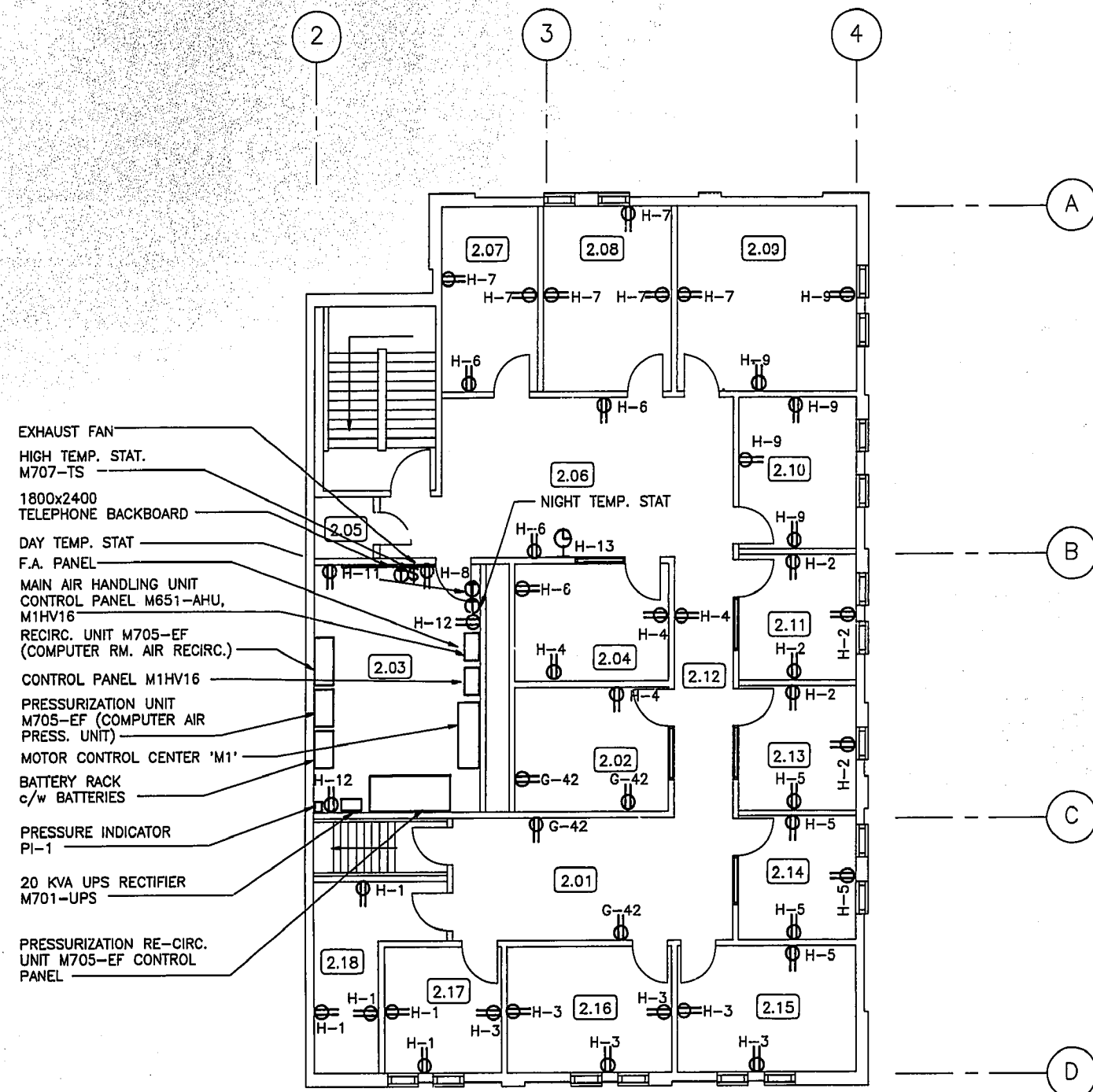


MAIN FLOOR PLAN
1:100

SHOP DRAWING REFERENCE		
DESCRIPTION	SUPPLIER	NUMBER
LIGHT FIXTURE TYPE '1'	SYLVANIA	2305
LIGHT FIXTURE TYPE '2'	SYLVANIA	2306
LIGHT FIXTURE TYPE '3 & 4'	SYLVANIA	2307
LIGHT FIXTURE TYPE '5'	SYLVANIA	2308
LIGHT FIXTURE TYPE '6'	SYLVANIA	2309
LIGHT FIXTURE TYPE '7'	SYLVANIA	2310
LIGHT FIXTURE TYPE '8'	SYLVANIA	2311
LIGHT FIXTURE TYPE '9'	SYLVANIA	2312
LIGHT FIXTURE TYPE '11'	SYLVANIA	2313

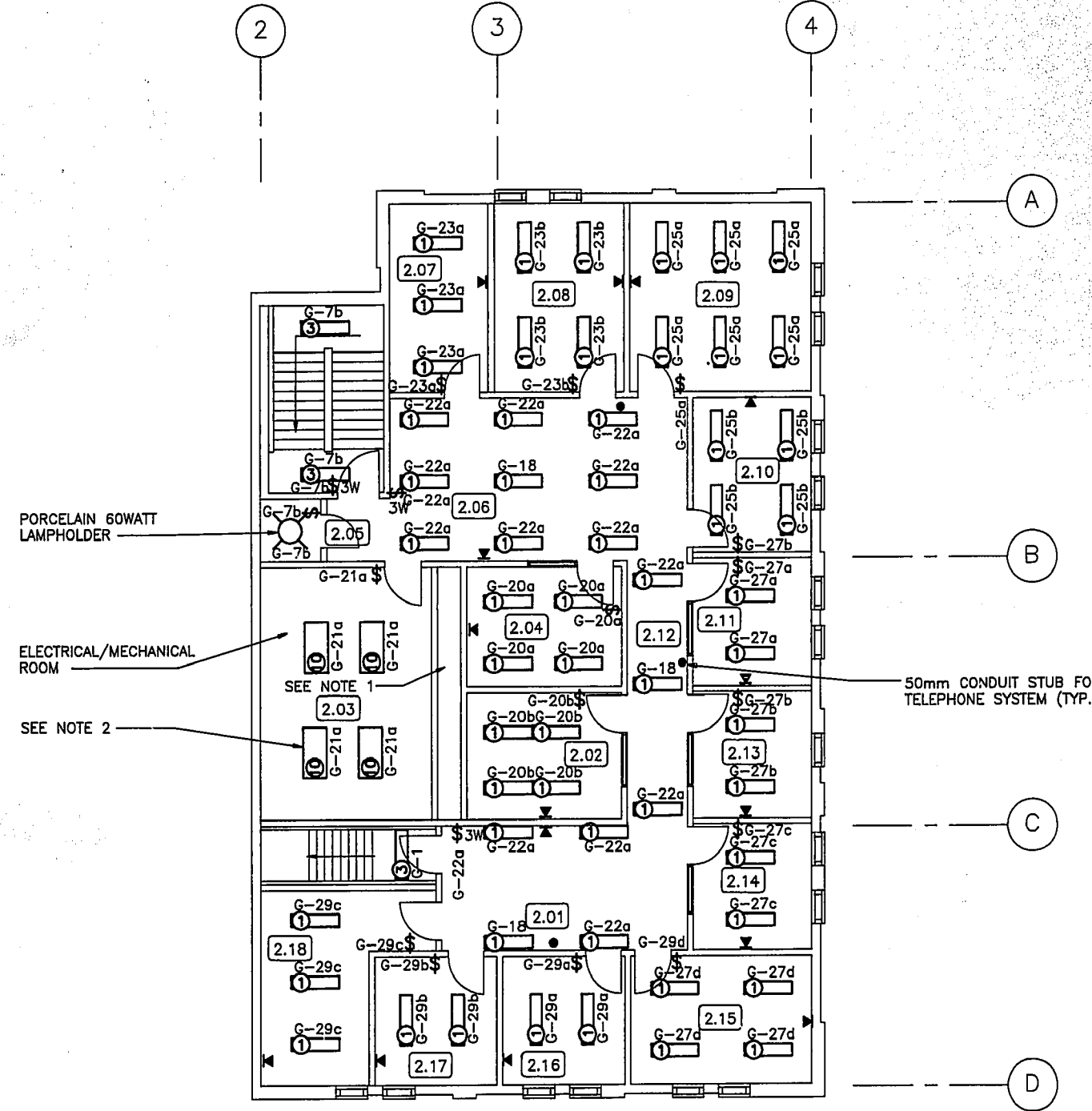
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DATE JULY/91 BY R.A.H.
CHECKED BY *[Signature]*

B.M. ELEV. 3 AS CONSTRUCTED 91/07 R.A.H. 2 AS CONSTRUCTED 89/08 1 REISSUED FOR TENDER 88/01 A.S. 0 ISSUED FOR TENDER 88/08 A.S. NO. REVISIONS DATE BY	Wardrop-MacLaren ENGINEERING CONSULTANTS		ENGINEER'S SEAL CONSULTANT DRAWING NO. 880012-01-03	THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS, WASTE & DISPOSAL DEPARTMENT NORTH END WATER POLLUTION CONTROL CENTRE CITY DRAWING NUMBER MAIN BUILDING RENOVATIONS-ELECTRICAL SHEET OF MAIN FLOOR PLAN LIGHTING LAYOUT NEP-1539
	DESIGNED BY R.A.H.	CHECKED BY		
	DRAWN BY N.B.	APPROVED BY <i>[Signature]</i>		
	HOR. SCALE: 1:100 VERTICAL:	RELEASED FOR CONSTRUCTION: DATE		



NOTE:
CONTROL PANEL M1HV16 WAS SUPPLIED BY MECHANICAL TRADES, INSTALLED BY ELECTRICAL CONTRACTOR

SECOND FLOOR POWER & MISC. LAYOUT
1:100

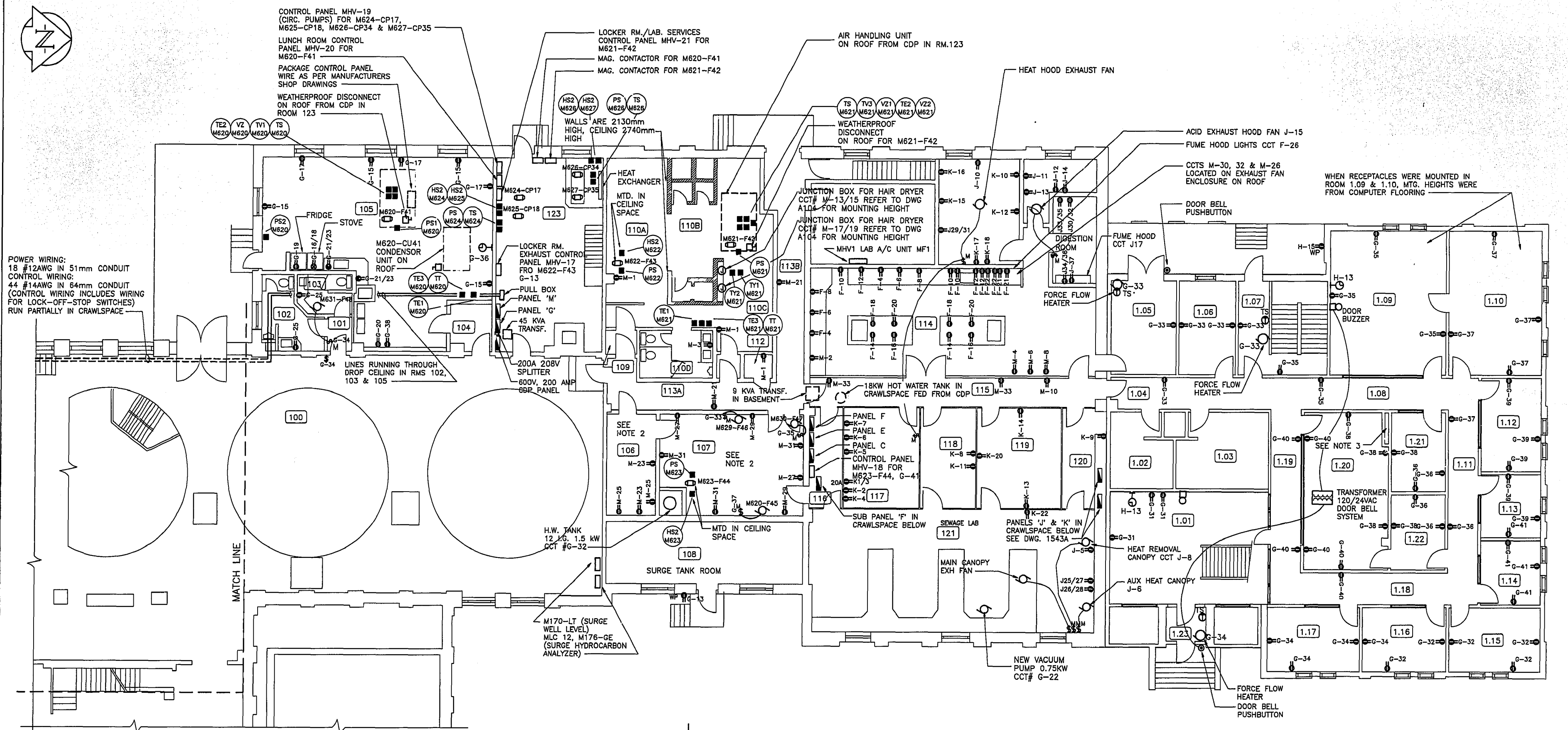
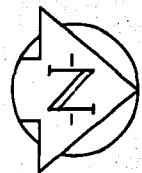


NOTE:
1. CONTRACTOR UTILIZED PIPE CHASE FOR RUNNING CONDUITS BETWEEN MAIN & SECOND FLOOR.
2. FIXTURES TYPE 10 ARE SYLVANIA 2314

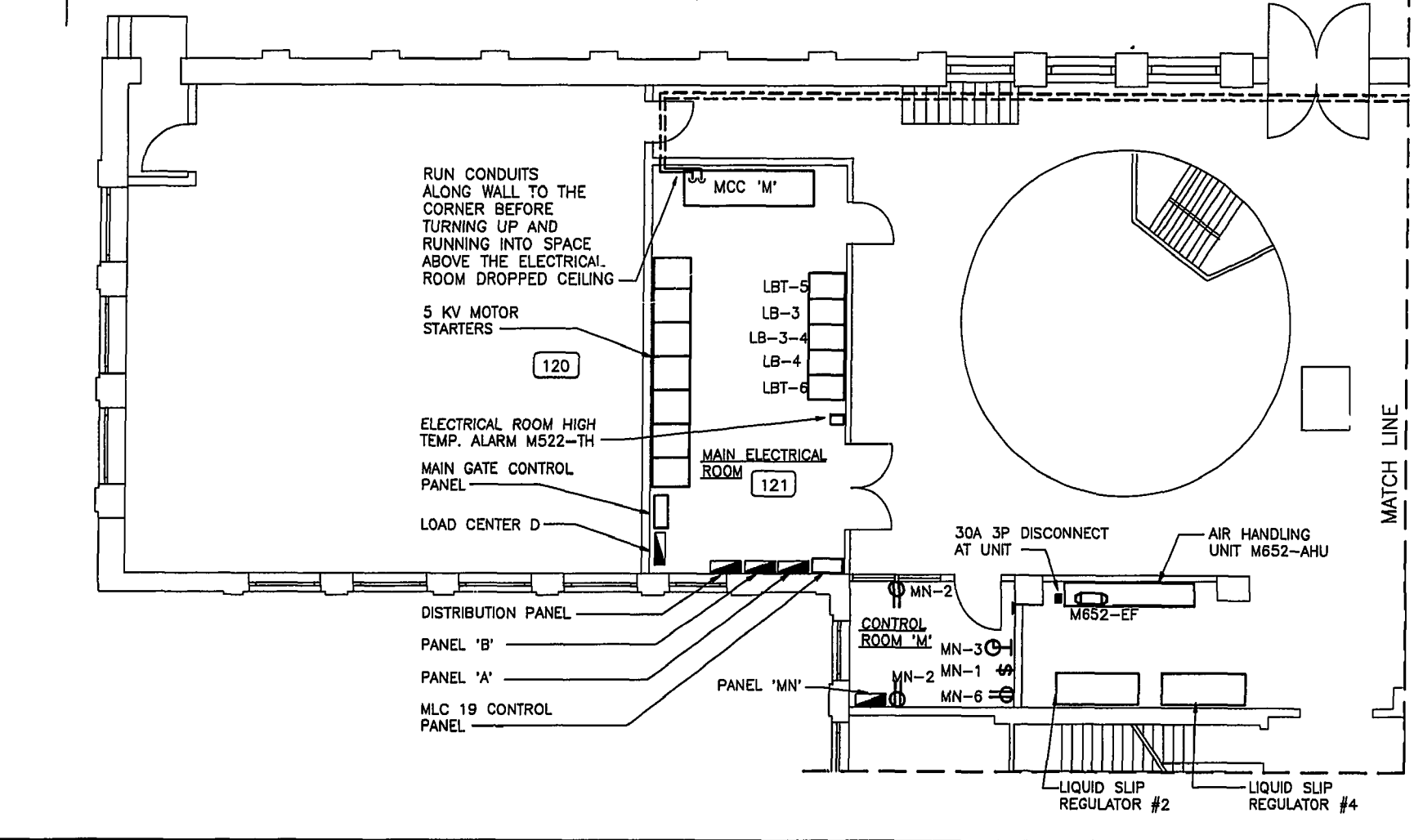
SECOND FLOOR LIGHTING & TELEPHONE LAYOUT
1:100

AS-BUILT
DATE JULY/91 BY R.A.H.
CHECKED BY *R.H.*

S.M. ELEV.	Wardrop-MacLaren ENGINEERING CONSULTANTS		ENGINEER'S SEAL CONSULTANT DRAWING NO. 880012-01-03	THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS, WASTE & DISPOSAL DEPARTMENT	
	DESIGNED BY R.A.H.	CHECKED BY		NORTH END WATER POLLUTION CONTROL CENTRE CITY DRAWING NUMBER	
	DRAWN BY N.B.	APPROVED BY <i>R.A.H.</i>		MAIN BUILDING RENOVATIONS-ELECTRICAL SHEET OF	
	HOR. SCALE: 1:100 VERTICAL:	RELEASED FOR CONSTRUCTION:		SECOND FLOOR PLAN LIGHTING & POWER LAYOUT	
0 AS CONSTRUCTED NO. REVISIONS	91/07 DATE	R.A.H. BY	JUNE/91 DATE	NEP-1539A	



POWER WIRING:
18 #12AWG IN 51mm CONDUIT
CONTROL WIRING:
44 #14AWG IN 64mm CONDUIT
(CONTROL WIRING INCLUDES WIRING
FOR LOCK-OFF-STOP SWITCHES)
RUN PARTIALLY IN CRAWLSPACE



MAIN FLOOR PLAN
1:100

- NOTES:
- RECEPTACLES MOUNTED AT 1200mm ABOVE FINISHED FLOOR IN ROOMS 106 & 107.
 - RECEPTACLE PROVIDED FOR RELOCATED DRINKING FOUNTAIN.
 - CONTRACTOR UTILIZED PIPE CHASE FOR RUNNING CONDUITS BETWEEN MAIN FLOOR, CRAWLSPACE AND SECOND FLOOR.

AS-BUILT
DATE JULY/91 BY R.A.H.
CHECKED BY [Signature]

B.M. ELEV.	NO.	REVISIONS	DATE	BY
	3	AS CONSTRUCTED	91/07	R.A.H.
	2	AS CONSTRUCTED	89/08	
	1	REISSUED FOR TENDER	89/01	A.S.
	0	ISSUED FOR TENDER	88/08	A.S.

Wardrop-MacLaren
ENGINEERING CONSULTANTS

DESIGNED BY: R.A.H.
DRAWN BY: N.B.

HOR. SCALE: 1:100
VERTICAL: 1:100

DATE: JUNE/91

ENGINEER'S SEAL

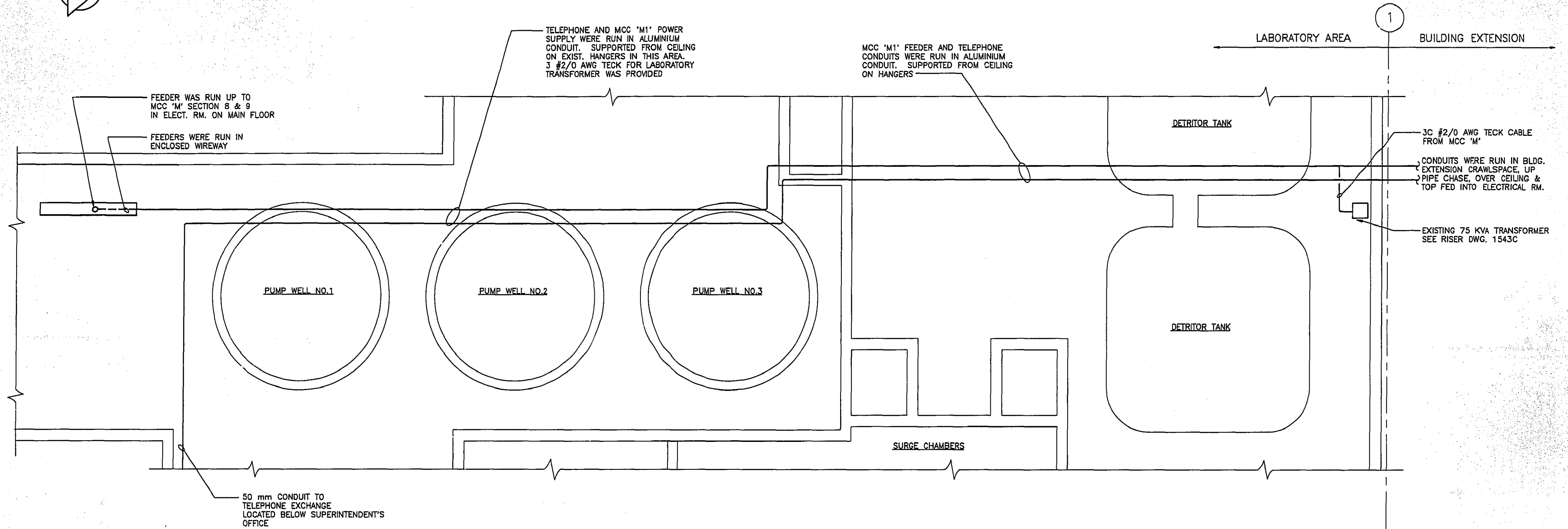
CONSULTANT DRAWING NO. 880012-01-03

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
MAIN BUILDING RENOVATIONS-ELECTRICAL
MAIN FLOOR PLAN
POWER & EQUIPMENT LAYOUT

CITY DRAWING NUMBER: _____
SHEET OF: _____

NEP-1540

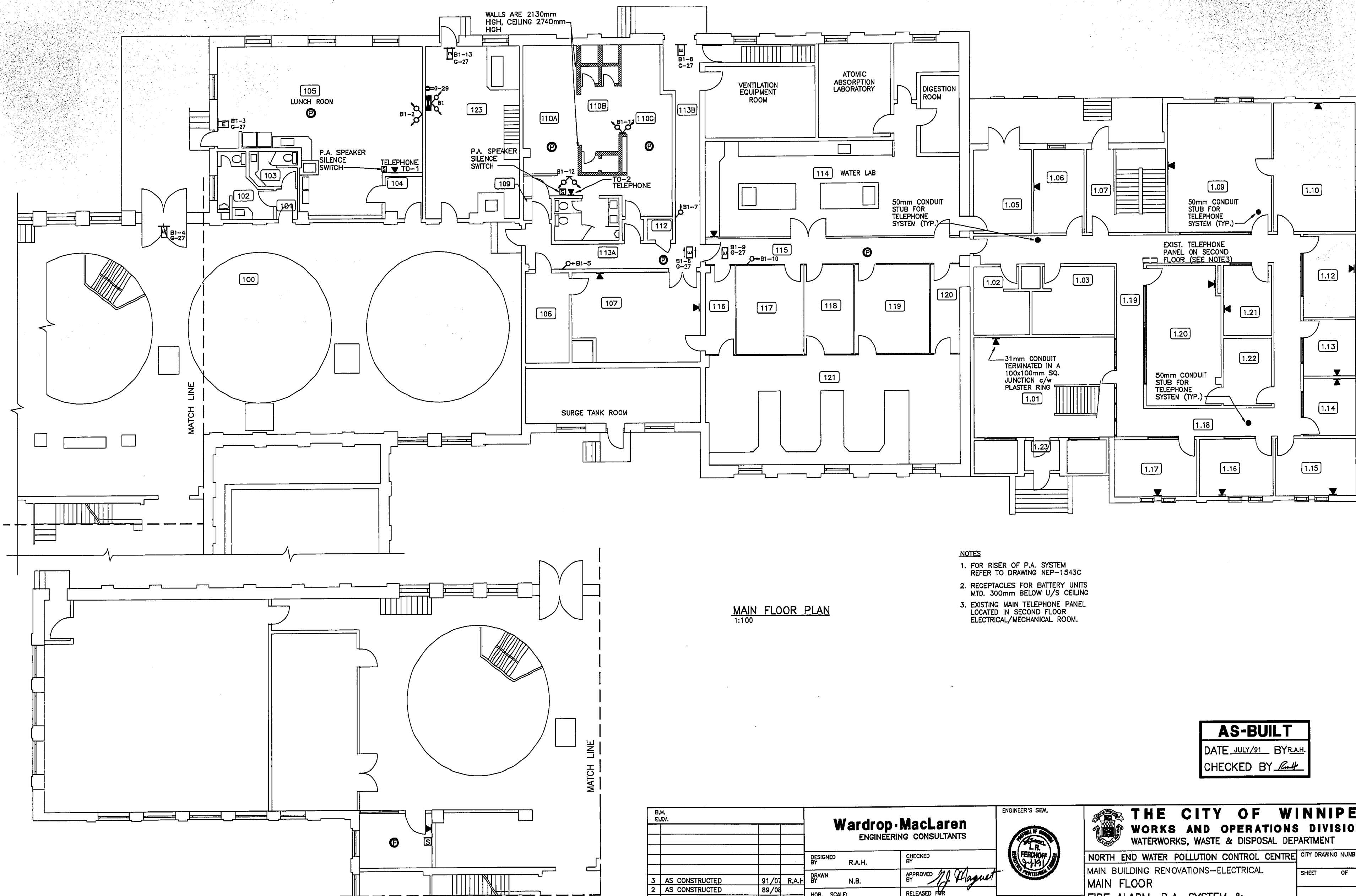
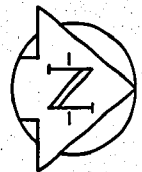


ELECTRICAL SUB-FEED LAYOUT - CRAWLSPACE (IN PART)

NOTE:
 1. CONTRACTOR VERIFIED BY FIELD INSPECTION THE CORRECT LENGTH AND ROUTING OF FEEDER AND TELEPHONE CONDUIT REQUIRED.

AS-BUILT
 DATE JULY/91 BY R.A.H.
 CHECKED BY *[Signature]*

B.M. ELEV.		Wardrop-MacLaren ENGINEERING CONSULTANTS		ENGINEER'S SEAL 	THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS, WASTE & DISPOSAL DEPARTMENT
DESIGNED BY R.A.H.	CHECKED BY	DRAWN BY N.B.	APPROVED BY <i>[Signature]</i>	CONSULTANT DRAWING NO. 880012-01-03	
HOR. SCALE: N.T.S.	RELEASED FOR CONSTRUCTION:	VERTICAL:	DATE JUNE/91	DATE	NORTH END WATER POLLUTION CONTROL CENTRE MAIN BUILDING RENOVATIONS-ELECTRICAL ELECTRICAL SUB-FEED LAYOUT CRAWLSPACE
0 AS CONSTRUCTED	89/07	R.A.H.			CITY DRAWING NUMBER SHEET OF NEP-1540A



MAIN FLOOR PLAN
1:100

- NOTES**
1. FOR RISER OF P.A. SYSTEM REFER TO DRAWING NEP-1543C
 2. RECEPTACLES FOR BATTERY UNITS MTD. 300mm BELOW U/S CEILING
 3. EXISTING MAIN TELEPHONE PANEL LOCATED IN SECOND FLOOR ELECTRICAL/MECHANICAL ROOM.

AS-BUILT
DATE JULY/91 BY R.A.H.
CHECKED BY *[Signature]*


NO.	REVISIONS	DATE	BY
3	AS CONSTRUCTED	91/07	R.A.H.
2	AS CONSTRUCTED	89/08	
1	REISSUED FOR TENDER	89/01	A.S.
0	ISSUED FOR TENDER	88/08	A.S.

Wardrop-MacLaren
ENGINEERING CONSULTANTS

DESIGNED BY R.A.H. CHECKED BY
DRAWN BY N.B. APPROVED BY *[Signature]*

HOR. SCALE: 1:100
VERTICAL: RELEASED FOR CONSTRUCTION:
DATE JUNE/91

ENGINEER'S SEAL



CONSULTANT DRAWING NO. 880012-01-03

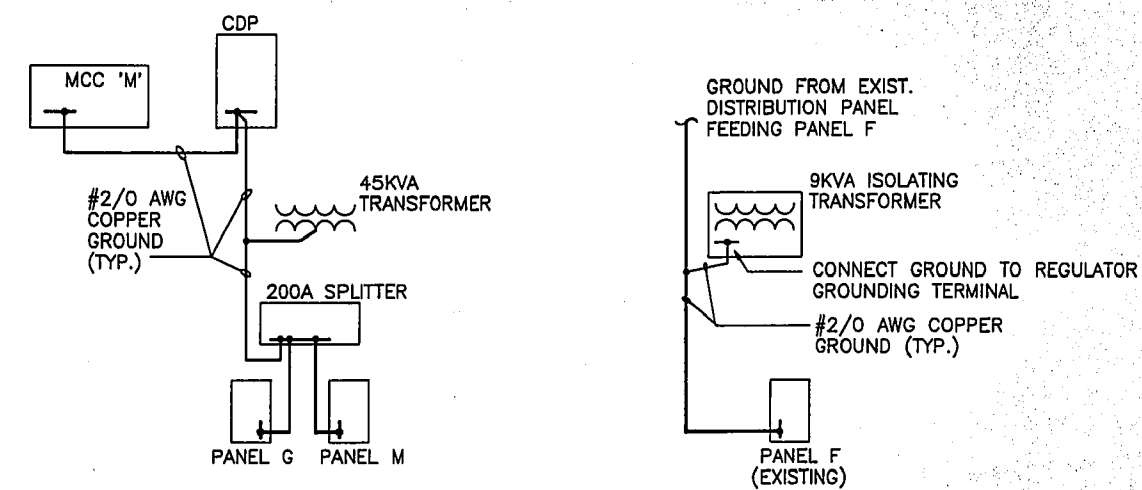
THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATERWORKS, WASTE & DISPOSAL DEPARTMENT

NORTH END WATER POLLUTION CONTROL CENTRE
MAIN BUILDING RENOVATIONS-ELECTRICAL
MAIN FLOOR
FIRE ALARM, P.A. SYSTEM & TELEPHONE LAYOUT

CITY DRAWING NUMBER
SHEET OF
NEP-1541

MOTOR CONTROL 'M' SCHEDULE 600 VOLT (IN PART)

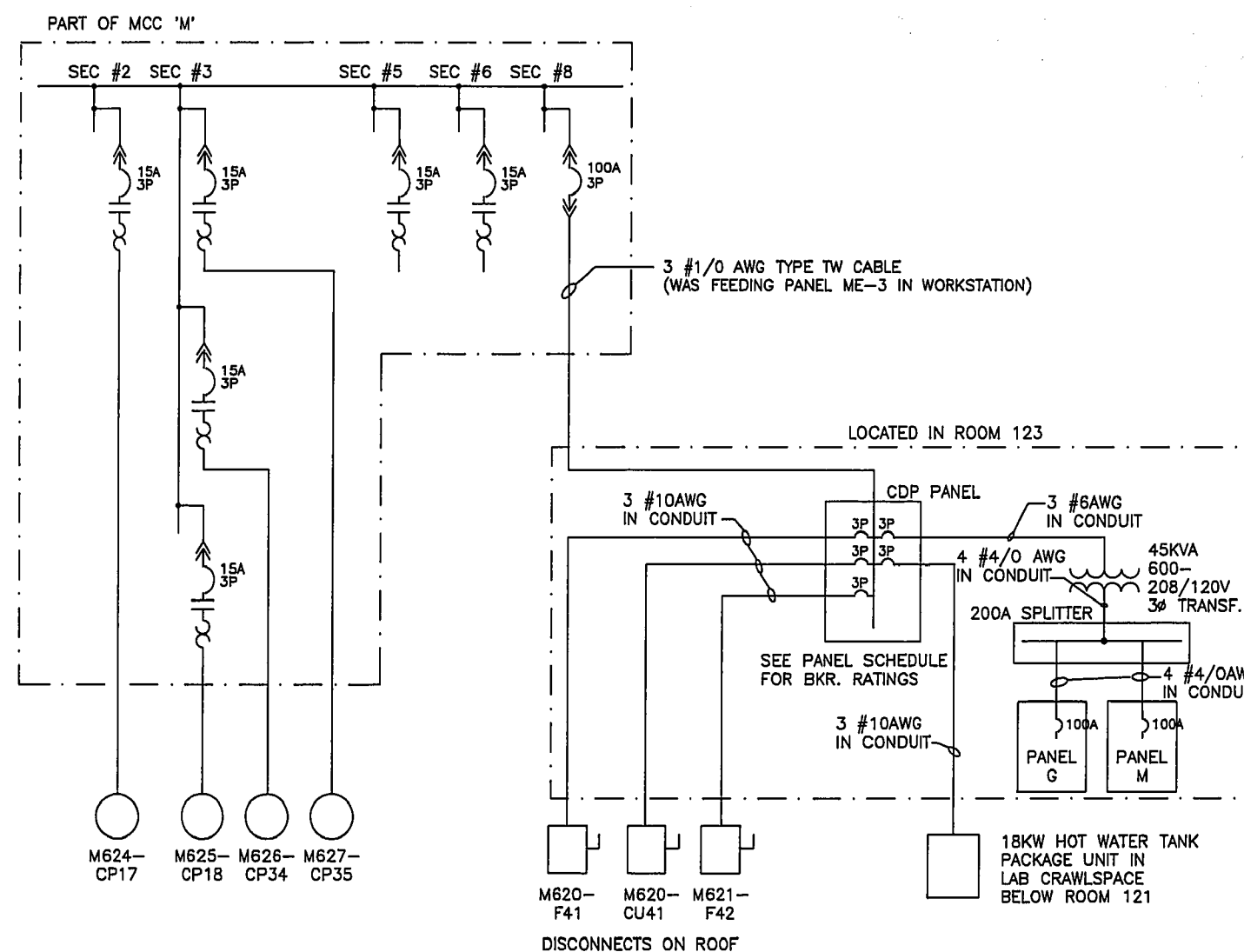
MOTOR								STARTER			FEEDER		CIRC. PROT			CONTROLS				REMARKS
MCC NO.	EQUIP. NO.	DESCRIPTION	LOCATION	FLA	HP	KW	VOLT	EEMAC	TYPE	UNIT NO.	CAPACITY IN AMPS	SIZE	TYPE	CONT. RATE	TRIP SET	FRAME SIZE	TYPE OF CONTROL	AT MCC	AT MOTOR	
F1-1	M624-CP17	HOT WATER CIRC. PUMP	ROOM 123	2.0	2.2	1.82	600	1	CMFVNR	7	14	3 #12 AWG	RW90	7	-	MCP	-	RPL	LOS	
F2-6	M625-CP18	HOT WATER CIRC. PUMP	ROOM 123	2.0	2.2	1.82	600	1	CMFVNR	16	14	3 #12 AWG	RW90	7	-	MCP	-	RPL	LOS	
F3-3	M652-EF	RECIRC. VENTILATION UNIT	SEE REMARKS	2.8	2	1.5	600	1	CMFVNR		20	3 #12 AWG	RW90	5	-	MCP	-	-	-	WEST OF LIQUID SLIP REGULATORS
F3-4	M626-CP34	GLYCOL CIRC. PUMP	ROOM 123	0.7	0.76	0.56	600	1	CMFVNR	17	14	3 #12 AWG	RW90	3	-	MCP	-	RPL	LOS	
F3-5	M627-CP35	GLYCOL CIRC. PUMP	ROOM 123	0.7	0.76	0.56	600	1	CMFVNR	18	14	3 #12 AWG	RW90	3	100	MCP	-	RPL	LOS	
F8-4A		CDP PANEL	ROOM 123	-	-	-	600	-	-	50	125	3 #4/0 AWG	TW	100	-	F	-	-	-	SEE SINGLE LINE



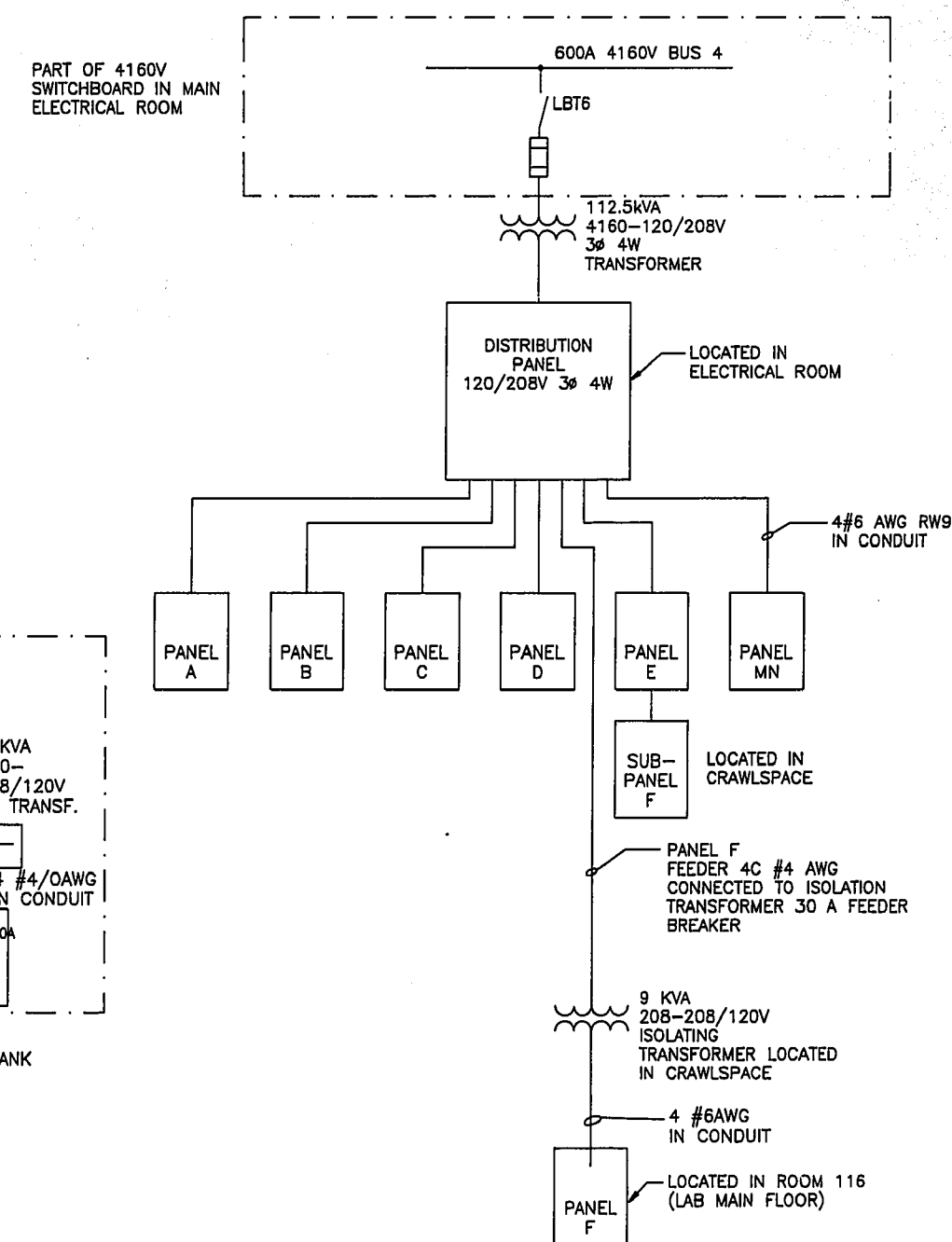
NOTES:
1. ALSO REFER TO CDP PANEL FOR ADDITIONAL 600V DISTRIBUTION

SEC. F1	SEC. F2	SEC. F3	SEC. F4	SEC. F5	SEC. F6	SEC. F7	SEC. F8	SEC. F9	SEC. F10
M624-CP17 HOT WATER CIRC. PUMP 1	MP-18 VENT COIL & UNIT HTRS (STBY) 1	M645-F13 MAIN FLR. SOUTH HEATING 1	M639-F1 LAB AREA HEAT/VENT 1	M502-C2 CHLORINE EVAPORATOR 1	HR. METERS O O O 1	MP-9 SUMP PUMP 1	LAB 75 KVA TRANSF. BREAKER 1	METERING EQUIPMENT 1	
M629-P13 LAB. CIRC. RAD. PUMP 2	M642-F16 CHLOR. RM AIR SUPPLY 2	M638-F8 PUMP WELL #1 AIR COND. 2	M503-C3 INSTRUMENT AIR COMPRESSOR 2	MP-10 SUMP PUMP 2	M172 MOT SLUICE GATE 2	M173 MOT SLUICE GATE 2	M121 FV MTR. SUCT. VALVE 2A	M121 FV MTR. SUCT. VALVE 2B	MAIN BREAKER 1
M628-P14 OFFICE & LOCKER RM CIRC. PUMP 3	M644-F18 CHLOR. RM EXHAUST FAN 3	M652-EF AREA 'M' CONTROL RM VENT 3	M643-F9 PUMP WELL #2 AIR COND. 3	ME-1 AUTOMATIC ALTERNATOR 3	ELECT. GATE OPERATOR 3	RM 123 CDP PNL BKR 3	M121 FV MTR. SUCT. VALVE 3A	M121 FV MTR. SUCT. VALVE 3B	MAIN BREAKER 2
CAP BKR 4A	M649-F19 CHLOR. RM EMERG. EXH. FAN 4	M626-CP34 GLYCOL CIRC. PUMP 4	M640-F10 PUMP WELL #3 AIR COND. 4	UNIT HTR. CHLORINE ROOM 4	M506-R2 INSTRUMENT AIR COMPRESSOR 4	MF15 OFFICE A/C 5A	MR4 AIR COMP A/C UNIT 5B	MCC M1 FEEDER BREAKER 5	M131 FV MTR SUCT VALVE PUMP #3 4A
CAPACITORS 5	MP-19 SUMP PUMP 5	M627-CP35 GLYCOL CIRC. PUMP 5	M661-F11 DISCHARGE RM EXH. FAN 5		45KVA TRANS PARK GAR. 6A	ME-4 WELD PLUGS 6B	M174 MOT BYPASS VALVE 6A	ML-1 ELEV. BKR. 6B	M151 FV MTR SUCT VALVE PUMP #5 5A
	M625-CP18 HOT WATER CIRC. PUMP 6	M632-P16 STANDBY CIRC. PUMP 6		M641-F7 PUMP WELL SUPPLY VENT UNIT 7	M526-P12 WELL PUMP 6			M161 FV MTR SUCT VALVE PUMP #6 5B	
	MP-20 CIRC. PUMP 7	MP-17 VENT COIL (UNIT HTRS) CIRC. PUMP 8	M501-C1 CHLORINE EVAPORATOR 8						

MCC 'M' FRONT ELEVATION



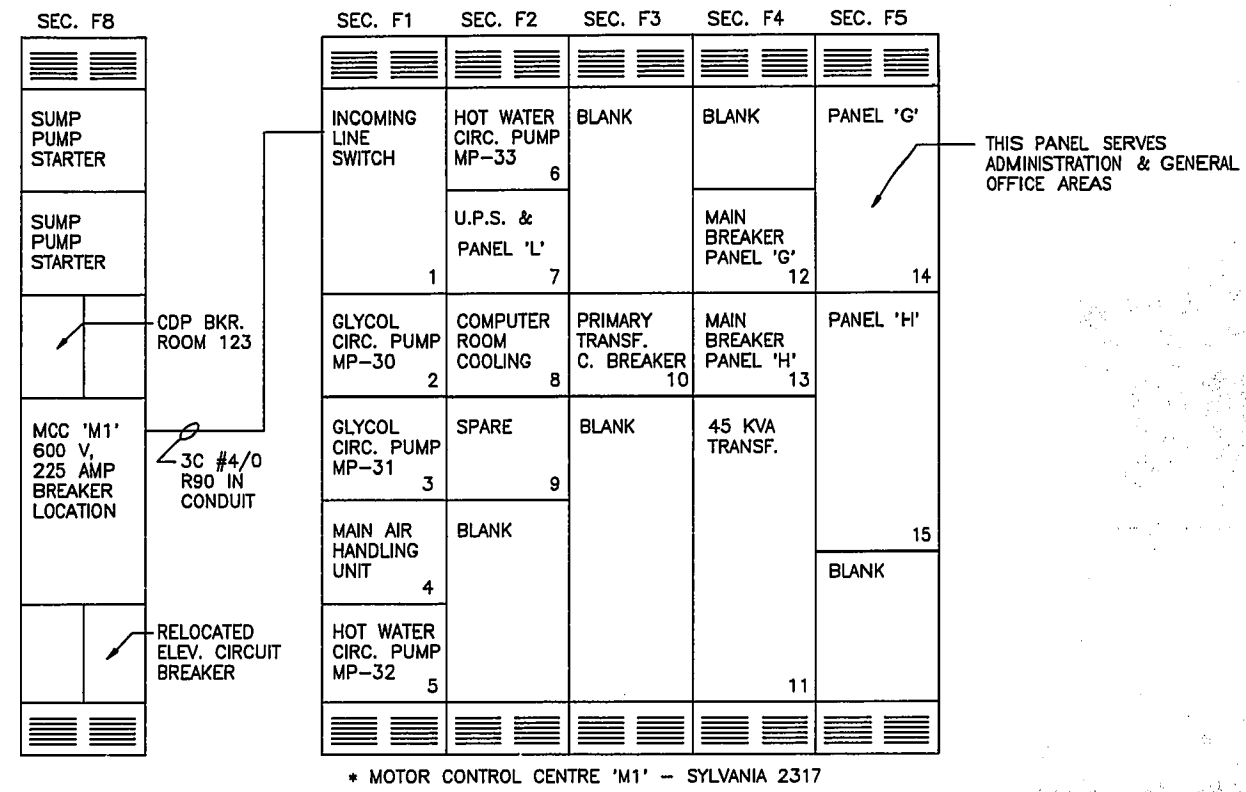
PARTIAL SINGLE LINE DIAGRAM



PARTIAL SINGLE LINE DIAGRAM

AS-BUILT
DATE JULY/91 BY R.A.H.
CHECKED BY [Signature]

B.M. ELEV.	Wardrop-MacLaren ENGINEERING CONSULTANTS		ENGINEER'S SEAL	THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS, WASTE & DISPOSAL DEPARTMENT	
	DESIGNED BY R.A.H.	CHECKED BY		NORTH END WATER POLLUTION CONTROL CENTRE CITY DRAWING NUMBER	
	DRAWN BY N.B.	APPROVED BY [Signature]		MAIN BUILDING RENOVATIONS-ELECTRICAL SHEET OF	
3 AS CONSTRUCTED 91/07 R.A.H.	HOR. SCALE:	RELEASED FOR CONSTRUCTION:	CONSULTANT DRAWING NO. 880012-01-03		SINGLE LINE DIAGRAMS AND MCC 'M' SCHEDULE AND ELEVATION
2 AS CONSTRUCTED 89/08	VERTICAL: N.T.S.	DATE	NEP-1542		
1 REISSUED FOR TENDER 89/01 A.S.					
0 ISSUED FOR TENDER 88/08 A.S.					
NO. REVISIONS	DATE	BY			



PART OF MCC 'M'

MCC 'M1' FRONT ELEVATION 600V, 600A

MOTOR CONTROL CENTRE 'M1' SCHEDULE 600 VOLT, 600 AMP BUS																		
EQUIP. NO.	DESCRIPTION	LOCATION	MOTOR		STARTER		FEEDER			CIRC. PROT			CONTROLS				REMARKS	
			HP	KW	EEMAC	TYPE	CAPACITY IN AMPS	SIZE	TYPE	CONT. RATE	TRIP SET	FRAME SIZE	TYPE OF CONTROL	AT MCC	AT MOTOR	AT CONTROL PANEL		
1	INCOMING LINE SWITCH							230	3C #4/0	RW90	400-3P	225	LB					AS PER SPECIFICATION
4	MAIN AIR HANDLING UNIT	ROOF TOP					150	3 #1/0	RW90	200-3P	150	KA	AUTO CYCLING					CONTROL PANEL SUPPLIED WITH UNIT
9	SPARE				1	CFVNR												
12	MAIN BREAKER PANEL 'G'										250-3P	225	KA					SEE PANEL SCHEDULE
14	PANEL 'G'			26.2														
2	GLYCOL CIRC. PUMP MP-30	LABORATORY CRAWLSPACE		2.2	1	CFVNR	20	3 #12	RW90	15-3P	7 MCP	15	AUTO CYCLING	LOS	DUTY SELECTION			
7	U.P.S. SYSTEM (AND PANEL 'L')	ELECTRICAL ROOM		30 KVA						40-3P	40	FB						
8	COMPUTER ROOM																	(PANEL 'L' IN COMPUTER ROOM)
15	PANEL 'H'			4.0														SEE PANEL SCHEDULE
3	GLYCOL CIRC. PUMP MP-31	LABORATORY CRAWLSPACE		2.2	1	CFVNR	20	3 #12	RW90	15-3P	7 MCP	15	AUTO CYCLING	LOS	DUTY SELECTION			
5	HOT WATER CIRC. PUMP MP-32	LABORATORY CRAWLSPACE		2.2	1	CFVNR	20	3 #12	RW90	15-3P	7 MCP	15	AUTO CYCLING	LOS	DUTY SELECTION			
6	HOT WATER CIRC. PUMP MP-33	LABORATORY CRAWLSPACE		2.2	1	CFVNR	20	3 #12	RW90	15-3P	7 MCP	15	AUTO CYCLING	LOS	DUTY SELECTION			
10	PRIMARY TRANSFORMER BREAKER									70-3P	70	FB						
11	45 KVA TRANSFORMER			45 KVA														600-120/208 V, 3 PHASE
13	MAIN BREAKER PANEL 'H'									250-3P	225	KA						

AS-BUILT
 DATE JULY/91 BY R.A.H.
 CHECKED BY *[Signature]*

B.M. ELEV.	Wardrop-MacLaren ENGINEERING CONSULTANTS		ENGINEER'S SEAL 	THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS, WASTE & DISPOSAL DEPARTMENT
DESIGNED BY R.A.H.	CHECKED BY	APPROVED BY <i>[Signature]</i>	CONSULTANT DRAWING NO. 880012-01-03	NORTH END WATER POLLUTION CONTROL CENTRE CITY DRAWING NUMBER
DRAWN BY N.B.	HOR. SCALE: N.T.S.	RELEASED FOR CONSTRUCTION:	DATE JUNE/91	MAIN BUILDING RENOVATIONS-ELECTRICAL SHEET OF
0 AS CONSTRUCTED	91/07 R.A.H.			MCC 'M1' LAYOUT & SCHEDULE
NO. REVISIONS	DATE BY			NEP-1542A

(THIS PANEL SERVES LUNCHROOM, LOCKER ROOM AND SOME LAB AREAS)

PANEL 'G' 208/120 VOLT 3 Ø 4 WIRE 225A MAINS C/W 100A MAIN BKR.												CONN: 23400W DEMAND: 14000KW	
FEEDER	DESCRIPTION	PHASE WATT			CCT.	BRK/AMP	A	B	C	BRK/AMP	CCT.	DESCRIPTION	FEEDER
		A	B	C									
	LTC. - RM.113A, 113B	700			1	15				15	2	LTC. - RM.109,110D,111,112	3 #8
	LTC. - CORRID. 115, 116	500			3	15				15	4	LTC. - RM.110A, 110B, 110C	
	LTC. - RM. 114			800	5	15				15	6	LTC. - MENS SHOWERS	
	LTC. - RM. 107, 106	800			7	15				15	8	LTC. - RM.101, 102, 103	
	LTC. - RM.107			1000	9	15				15	10	LTC. - RM.104, 105	
	M622-F43 EXHAUST FAN	500			11	15				15	12	LTC. - RM. 105	
	RECEPT. - RM.105			1000	13	15				15	14	LTC. - SURGE TANK	
	RECEPT. - RM.105			1000	17	15				15	16	RECEPT. - STOVE RM.105	
	RECEPT. - FRIDGE RM.105	300			19	15				15	20	RECEPT. - VENDORS RM.105	
	RECEPT. - COUNTER RM.105			600	21	15				15	22	RM.121 VACUUM PUMP	
	RECEPT. - COUNTER RM.105			600	23	15				15	24	RCPT-WATER FOUNTAIN RM105	
*	RECEPT. - RM.102, 103	500			25	15				15	26	SPACE	
	EXIT LIGHTS			130	27	15				15	28	SPACE	
	EMERG. BAT. UNIT B1			200	29	15				15	30	SPACE	
	LTC-EXTERIOR	500			31	15				15	32	LAB. HOT WATER TANK	
	EXH. FAN M629-F46			530	33	15				15	34	EXHAUST FAN M631-F48	
	EXH. FAN M630-F47			730	35	15				15	36	CLOCK RECEPT. RM. 105	
	EXH. FAN M628-F45	530			37	15				15	38	RECEPT. - RM. 105	
	RECEPTACLE, EXTERIOR				39	15				15	40	SPARE	
*	M623-F44 EXHAUST FAN				41	15				15	42	SPARE	

NOTES: 1. ALL WIRING TO BE #12AWG RW90 UNLESS NOTED OTHERWISE
* - INDICATES GROUNDFAULT INTERRUPTER BREAKER

PANEL 'M' 208/120 VOLT 3 Ø 4 WIRE 225A MAINS C/W 100A MAIN BKR.												CONN: 14800W DEMAND: 8880W	
FEEDER	DESCRIPTION	PHASE WATT			CCT.	BRK/AMP	A	B	C	BRK/AMP	CCT.	DESCRIPTION	FEEDER
		A	B	C									
*	RECEPT. - RM.110A,110C,112	500			1	15				15	2	RECEPT. - DESK RM.114	3 #8
	RECEPT. - RM.110D			200	3	15				15	4	RECEPT. - FRIDGE RM.114	
					5	15				15	6	RECEPT. - FRIDGE RM.114	
					7	15				15	8	RECEPT. - FRIDGE RM.114	
					9	15				15	10	RECEPT. - RM.115	
					11	15				15	12	SPARE	
					13	15				15	14	SPARE	
	HAIR DRYER RM.110C	1000			15	15				15	16	SPARE	
	HAIR DRYER RM.110C			1000	17	15				15	18	SPARE	
				1000	19	15				15	20	SPARE	
	RECEPT. - RM.113A, 113B			800	21	15				15	22	SPARE	
	RECEPT. - RM.106			500	23	15				15	24	SPARE	
	RECEPT. - RM.106	1000			25	15				15	26	EXHAUST FAN-FUME HOOD	
*	RECEPT. - RM.107			800	27	15				15	28	SPARE	
*	RECEPT. - RM.107			800	29	15				15	30	EXHAUST FAN-FUME HOOD	
*	RECEPT. - RM.107	1000			31	15				15	32	ROOF FAN HOUSING-LIGHTS	
	RECEPT. - RM.115			500	33	15				15	34	SPARE	
	SPARE				35	15				15	36	SPARE	
	SPARE				37	15				15	38	SPARE	
	SPARE				39	15				15	40	SPARE	
	SPARE				41	15				15	42	SPARE	

* - INDICATES GROUNDFAULT INTERRUPTER BREAKER
ALL WIRING TO BE #12AWG RW90 UNLESS NOTED OTHERWISE

CDP 600 VOLT 3Ø 3W 200 AMP 24 CCT							CONN: 80400W DEMAND: 64000W		
FEEDER	CIRCUIT DESCRIPTION	CON-NECTED LOAD	BRK AMP	A	B	C	BRK AMP	CON-NECTED LOAD	FEEDER
3C#12AWG	AIR HANDLING UNIT M620-F41 ON ROOF ABOVE RM.105	2.2KW	15				60	45KVA	3C#6AWG
3C#10AWG	CONDENSOR M620-CU41 ON ROOF ABOVE RM.105	13KW	30				30	18KW	3C#10AWG
3C#12AWG	AIR HANDLING UNIT M621-F42 ON ROOF ABOVE RM.110C	2.2KW	15						
	SPARE		15						

PANEL 'F' 208/120 VOLT 3 Ø 4 WIRE 225A MAINS 36CCT PANELBOARD												CONN: 9000W DEMAND: 5400W	
FEEDER	DESCRIPTION	PHASE WATT			CCT.	BRK/AMP	A	B	C	BRK/AMP	CCT.	DESCRIPTION	FEEDER
		A	B	C									
	SPARE				1	15				15	2	SPARE	3 #8
	SPARE				3	15				15	4	RECEPT. - COUNTER RM.114	
	SPARE				5	15				15	6	RECEPT. - COUNTER RM.114	
	SPARE				7	15				15	8	RECEPT. - COUNTER RM.114	
	SPARE				9	15				15	10	RECEPT. - COUNTER RM.114	
	SPARE				11	15				15	12	RECEPT. - COUNTER RM.114	
	SPARE				13	15				15	14	RECEPT. - ISLAND RM.114	
	SPARE				15	15				15	16	RECEPT. - ISLAND RM.114	
	SPARE				17	15				15	18	RECEPT. - ISLAND RM.114	
	SPARE				19	15				15	20	RECEPT. - ISLAND RM.114	
	SPARE				21	15				15	22	RECEPT. - OLD FUME HOOD	
	SPARE				23	15				15	24	RECEPT. - OLD FUME HOOD	
	SPARE				25	15				15	26	LIGHTS - OLD FUME HOOD	
	SPARE				27	15				15	28	SPARE	
	SPARE				29	15				15	30	SPARE	
	SPARE				31	15				15	32	SPARE	
	SPARE				33	15				15	34	SPARE	
	SPARE				35	15				15	36	SPARE	

ALL WIRING #12AWG RW90 UNLESS NOTED OTHERWISE

PANEL 'G' 120/208 V, 3Ø, 4W, 225A MTD. IN MCC 'M1' TYPE NBLP												CONN: 31.9 kW DEMAND: 26.3 kW	
FEEDER	DESCRIPTION	PHASE WATT			CCT.	BRK/AMP	A	B	C	BRK/AMP	CCT.	DESCRIPTION	FEEDER
		A	B	C									
	LIGHT, ROOM 1.01			900	1	15				15	2	SPARE	3 #8
	LIGHT, ROOM 1.01 (WALL)			1050	3	15				15	4	LIGHT, RM 1.02, 1.03	
	LIGHT, ROOM 1.23, OUTDOOR			750	5	15				15	6	LIGHT, RM 1.05, 1.06, OUTSIDE	
	LIGHT, ROOM 1.07, SH.2, SH.3			960	7	15				15	8	LIGHT, RM 1.10	
	LIGHT, ROOM 1.09			1200	9	15				15	10	CONDENSER OIL HEATER	
	F.A. PANEL				11	15				15	12	LIGHT, RM 1.12, 1.13	
	LIGHT, RM 1.14, 1.15, 1.16			1000	13	15				15	14	LIGHT, RM 1.20	
	LIGHT, RM 1.04, 1.08, 1.18, 1.19			1300	15	15				15	16	SPARE	
	LIGHT, RM 1.17, 1.21, 1.22			1000	17	15				15	18	NIGHT LIGHT	
	SPARE				19	15				15	20	LIGHT, RM 2.02, 2.04	
	LIGHT, ROOM 2.03			800	21	15				15	22	LIGHT, RM 2.06, 2.12, 2.01	
	LIGHT, ROOM 2.07, 2.08			700	23	15				15	24	A/C DRAIN LINE HEAT TRACE	
	LIGHT, ROOM 2.09, 2.10			1000	25	15				15	26	CONTROL RM ALARM LEVEL PNL	
	LIGHT RM 2.11, 2.12, 2.14, 2.15			1000	27	15				15	28	DOOR MONITOR TRANSFORMER	
	LIGHT RM 2.16, 2.17, 2.18			700	29	15				15	30	RECEPTION ENTRANCE	
*	RCPT, RM 1.01, 1.02, 1.03			1000	31	15				15	32	RCPT, RM 1.15, 1.16	
	RCPT, RM 1.04, 1.05, 1.06, 1.07			1100	33	15				15	34	RCPT, RM 1.16, 1.17	
	RCPT, RM 1.07, 1.09, 1.08			1000	35	15				15	36	COPIER RM 1.21, 1.22	
	RCPT, RM 1.10, 1.11			1000	37	15				15	38	RCPT, RM 1.20, 1.21, 1.22	
	RCPT, RM 1.12, 1.13			1000	39	15				15	40	RCPT, RM 1.20, 1.18, 1.19	
	RCPT, RM 1.14, 1.13			800	41	15				15	42	RCPT, RM 2.01, 2.02	

NOTE: 1. ALL FEEDERS ARE #12AWG R90 IN CONDUIT UNLESS OTHERWISE NOTED.
* -INDICATES GROUND FAULT BREAKER

PANEL 'H' 120/208 V, 3Ø, 4W, 225 A, FLUSH MOUNTED, TYPE NBLP												CONN: 12.3 kW DEMAND: 4.0 kW	
FEEDER	DESCRIPTION	PHASE WATT			CCT.	BRK/AMP	A	B	C	BRK/AMP	CCT.	DESCRIPTION	FEEDER
		A	B	C									
	RCPT, RM 2.17, 2.18			1000	1	15				15	2	RCPT, RM 2.11, 2.13	3 #8
	RCPT, RM 2.15, 2.16			1200	3	15				15	4	RCPT, RM 2.02, 2.04	
	RCPT, RM 2.13, 2.14, 2.15			1000	5	15				15	6	RCPT, RM 2.04, 2.06, 2.07, 2.08	
	RCPT, RM 2.07, 2.08, 2.09			1200	7	15				15	8	TELEPHONE RECEPTACLE	
	RCPT, RM 2.09, 2.10			1000	9	15				15	10	SPARE	
	TELEPHONE PANEL RECEPTACLE			1000	11	15				15	12	ELECTRICAL ROOM RECEPTACLE	
	CLOCK RECEPTACLE			300	13	15				15	14	DOOR BUZZER TRANSFORMER	
*	OUTSIDE WEST RECEPTACLE			1200	15	15				15	16	SPARE	
	SPARE				17	15				15	18	SPARE	
	SPARE				19	15				15	20	SPARE	
	ELECT./WASHROOM EXHAUST FAN			800	21	15				15	22	SPARE	
	SPARE				23	15				15	24	QUARTZ F. LIGHT N.W. CORNER	
	SPARE				25	15				15	26		

PANEL 'E' 120/208V, 3 ϕ , 4W														
FEEDER	DESCRIPTION	PHASE WATT			CCT.	BRK AMP	A	B	C	BRK AMP	CCT.	PHASE WATT	DESCRIPTION	FEEDER
		A	B	C										
	HOT PLATE CENTER RM				1	20				70	2			
	RECEPTACLE				3	15				6	4			
	RECEPTACLE				5	15				8	5			
	OVEN INST. ROOM				7	15				10	6			
	RECEPTACLE				9	15				12	7			
	RECEPTACLE INST. ROOM				11	15				14	8			
	UTILITY PLUG				13	15				16	9			
	FUME HOOD HOT PLATE				15	15				18	10			
	PANEL RECEPTACLE				17	20				20	11			
	SPARE				19	20				24	12			
	SPARE				21	20				26	13			
	SPARE				23	15				28	14			
	DISTILLER				25	20				30	15			
	RECEPT. CEM. OFFICE				27	20				30	16			
					29	15								

PANEL 'J' 120/240 V, 1 ϕ , 3W, 225 AMP SURFACE MTD. PANEL TYPE NBLP													CONNECTED: 54.3 KW DEMAND: 40.0 KW	
FEEDER	DESCRIPTION	WATT		CCT.	BRK AMP	A	B	C	BRK AMP	CCT.	WATT		DESCRIPTION	FEEDER
		A	B								A	B		
2 #8	WATER HEATER (9.0 KW)	4500		1	30				30	2	1400		MAIN W/W FUME CANOPY EXH. FAN	
	ROOM 131 RECEPTACLE	1200		3	30				30	4	1400		ACID HOOD EXHAUST FAN	
	ROOM 133 RECEPTACLE	1200		5	30				15	6	600		AUX. HEAT REMOVAL EXHAUST FAN	
	ROOM 133 RECEPTACLE	1200		7	15				15	8	600		HEAT REMOVAL CANOPY EXHAUST FAN	
	ROOM 136 RECEPTACLE	1200		9	15				15	10	1000		ROOM 135 TEST LABORATORY	
	ROOM 136 RECEPTACLES	800		11	15				15	12	800		ROOM 136 RECEPTACLES	
	ROOM 136 RECEPTACLES	900		13	15				15	14	1200		ROOM 136 RECEPTACLES	
	DIGESTION FUME HOOD			15	15				15	16			DAMPER MOTOR	
	DIGESTION FUME HOOD			17	15				15	18	600		HEAD HOOD EXHAUST FAN (0.187 KW)	
	SPARE			19	15				15	20			SPARE	
	SPARE			21	15				15	22			DRYING OVEN	
	SPARE			23	30				15	24			MICROWAVE OVEN	
	ROOM 131 OVEN RECEPTACLE	3000		25	30				30	26	3000		ROOM 131 OVEN	
	ROOM 135 RECEPTACLE	3000		27	30				20	28	3000		FUME HOOD RECEPTACLE	
	DIGESTION ROOM RECEPTACLE	2000		29	30				20	30	2000		FUME HOOD RECEPTACLE	
	FUME HOOD RECEPTACLE	1200		31	50				20	32	2000		BLANK	
	BLANK			33					20	34	2000		BLANK	
	BLANK			35					20	36	2000		BLANK	
	BLANK			37					20	38			BLANK	
	BLANK			39					20	40			BLANK	
	BLANK			41					20	42			BLANK	

NOTES: 1. ALL FEEDERS ARE #12 R90 IN CONDUIT AWG UNLESS OTHERWISE NOTED.
2. PANEL c/w BOLT ON BRANCH BREAKERS

SUB-PANEL 'F' 120/208V, 3 ϕ , 4W (LOCATED IN CRAWLSPACE)														
FEEDER	DESCRIPTION	PHASE WATT			CCT.	BRK AMP	A	B	C	BRK AMP	CCT.	PHASE WATT	DESCRIPTION	FEEDER
		A	B	C										
	HOT PLATE				1	20				15	2		VACUUM PUMP	
	LAB FRIDGE RECEPTACLE				3	15				15	4		CIRCULATING PUMP	
	LAB FRIDGE RECEPTACLE				5	15				6	5		STEAM BATH HEATERS	
	INSTR. ROOM				7	15				8	6		WATER PUMP CHEM. FEED SURGE WALL RECEPTACLE	
	220V BENCH PLUG				9	30				10	7		HEAT TRACE FOR AIRLINE SAMPLER SHACK	
	EFFLUENT SAMPLER				11	30				12	8		220V HOT PLATE	
	SPARE				13	15				14	9		FRIDGE	
	LAB. BENCH PLUG				15	15				16	10		220V FUME HOOD RECEPTACLE	
	LAB. BENCH PLUG				17	15				18	11		SPACE	
	LAB. BENCH PLUG				19	15				20	12			
					21	30				22	13			
					23	15				24	14			
					25	15				26	15			
					27	15				28	16			
					29	15				30	17			

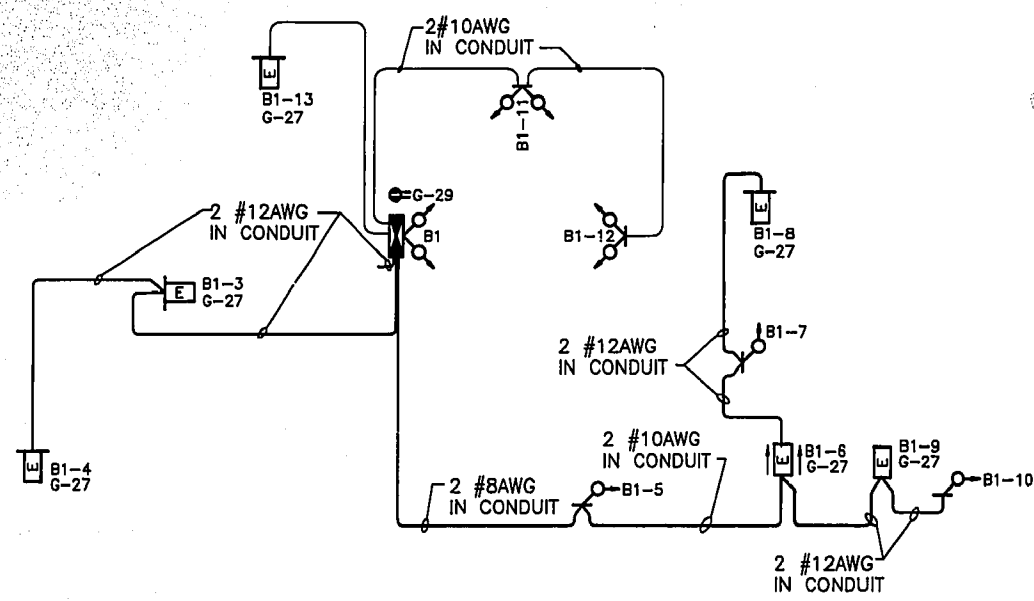
PANEL 'K' 120/240 V, 1 ϕ , 3W, 225 AMP MAINS c/w 200 A MAIN BREAKER													CONNECTED: 25.2 KW DEMAND: 25.2 KW	
FEEDER	DESCRIPTION	WATT		CCT.	BRK AMP	A	B	C	BRK AMP	CCT.	WATT		DESCRIPTION	FEEDER
		A	B								A	B		
	HEWLETT PACKARD G.C. RM 128	1800		1	20				15	2	1200		CABLE G.C. RM 128	
	HEWLETT PACKARD G.C. RM 128	1800		3	20				15	4	1200		G.C. ACCESSORIES RM 128	
	CARBON ANALYZER RM 128	1200		5	15				15	6	1200		BALANCE ROOM	
	CARBON ANALYZER RM 128	1200		7	20				15	8	1200		CARBON LAB COUNTER PLUG RM 129	
	HALLWAY	1200		9	15				15	10			RECEPTACLE RM 135	
	CARBON LAB. POWER BAR RM 129	1200		11	15				15	12			RECEPTACLE RM 135	
	AUTO ANALYSER RM 130	1200		13	15				15	14	1200		AUTO ANALYZER RM 130	
	PHOTOMETER RM 130	1200		15	15				15	16	1200		SPECTROPHOTOMETER RM 135	
	SPECTROPHOTOMETER RM 135	1200		17	15				15	18	1200		SPECTROPHOTOMETER RM 135	
	SPARE			19	15				15	20	1200		INSTRUMENT ROOM S. WALL RM 130	
	OUTSIDE RECEPTACLE WEST WALL			21	15				15	22	1200		SEWAGE LAB W. WALL RM 131	
	OUTSIDE RECEPTACLE WEST WALL			23	15				15	24			SPARE	
	OUTSIDE RECEPTACLE LAB. WALL			25	15				15	26			SPARE	
	OUTSIDE RECEPTACLE LAB. WALL			27	15				15	28			SPARE	
	SPACE			29					30				GASMATOGRAPH	
	SPACE			31					32				SPACE	
	SPACE			33					34				SPACE	
	SPACE			35					36				SPACE	
	SPACE			37					38				SPACE	
	SPACE			39					40				SPACE	
	SPACE			41					42				SPACE	

NOTES: 1. ALL FEEDERS ARE #12 R90 IN CONDUIT AWG UNLESS OTHERWISE NOTED.
2. PANEL c/w BOLT ON BRANCH BREAKERS
3. PANEL IS SURFACE MOUNTED TYPE NBLP.

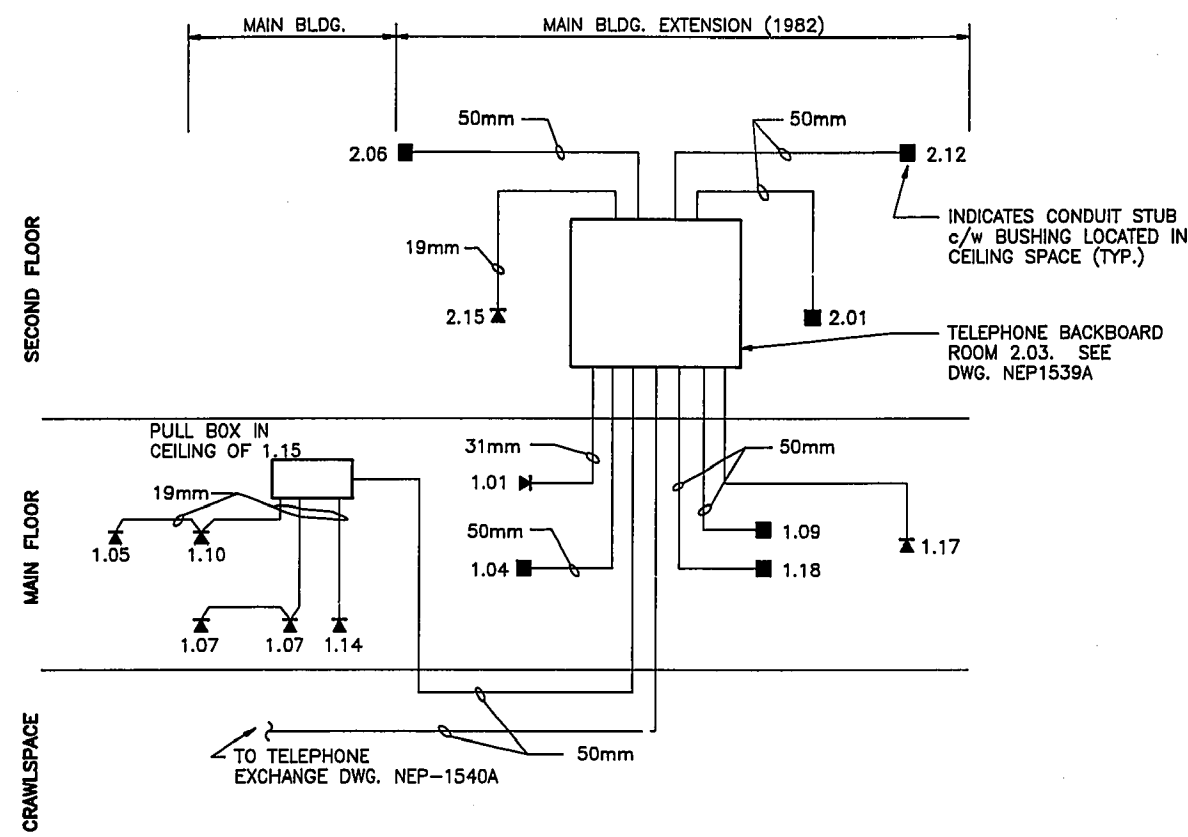
PANEL 'MN' 120/208 V, 3 ϕ , 4W, 100A MAINS c/w 100A MAIN BREAKER													CONNECTED: 15.0 KW DEMAND: 10.5 KW	
FEEDER	DESCRIPTION	PHASE WATT			CCT.	BRK AMP	A	B	C	BRK AMP	CCT.	PHASE WATT	DESCRIPTION	FEEDER
		A	B	C										
	CONTROL ROOM LIGHTING	400			1	15				15	2	600	CONTROL ROOM RECEPTACLES	
	FDP-CONTROLS	1200			3	15				15	4	600	CLOCK/SMOKE DETECTORS	
	FDP-RECEPTACLE & LIGHT			1200	5	15				15	6	1000	CONTROL ROOM RECEPTACLES	
	FLOW TUBE M110	1600			7	15				15	8	1600	FLOW TUBE M140	
	FLOW TUBE M120		1600		9	15				15	10	1600	FLOW TUBE M150	
	FLOW TUBE M130			1600	11	15				15	12	1600	FLOW TUBE M160	
	SPARE				13	15				15	14		SPARE	
	SPACE				15					16			SPACE	
	SPACE				17					18			SPACE	
	SPACE				19					20			SPACE	
	SPACE				21					22			SPACE	
	SPACE				23					24			SPACE	

AS-BUILT
DATE JULY/91 BY R.A.H.
CHECKED BY *[Signature]*

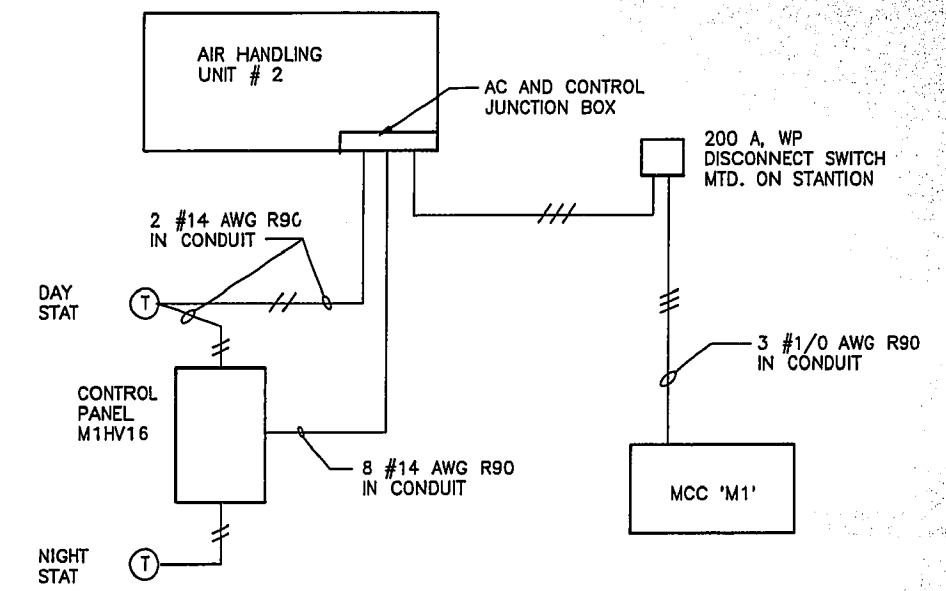
B.M. ELEV.	Wardrop-MacLaren ENGINEERING CONSULTANTS		ENGINEER'S SEAL	THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS, WASTE & DISPOSAL DEPARTMENT	
DESIGNED BY R.A.H.	CHECKED BY <i>[Signature]</i>	APPROVED BY <i>[Signature]</i>		NORTH END WATER POLLUTION CONTROL CENTRE CITY DRAWING NUMBER	
DRAWN BY N.B.	RELEASED FOR CONSTRUCTION DATE	DATE JUNE/91		MAIN BUILDING RENOVATIONS-ELECTRICAL SHEET OF	
0 AS CONSTRUCTED 91/07 R.A.H.	DATE BY	DATE	CONSULTANT DRAWING NO. 880012-01-03	PANEL SCHEDULES	
NO. REVISIONS	DATE	BY		NEP-1543A	



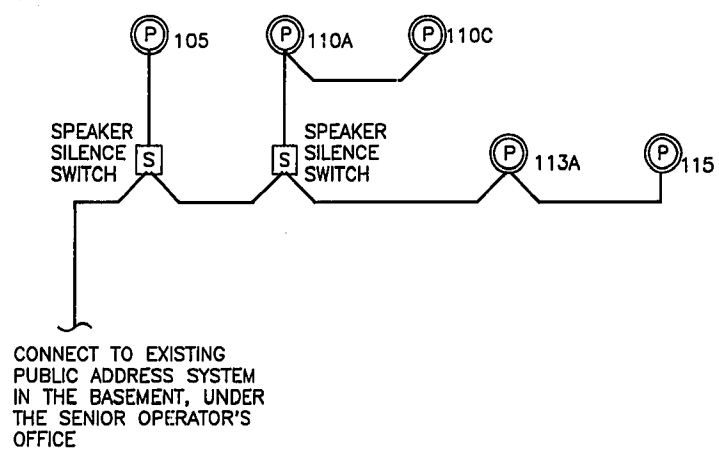
EMERGENCY LIGHTING RISER DIAGRAM



TELEPHONE CONDUIT RISER DIAGRAM

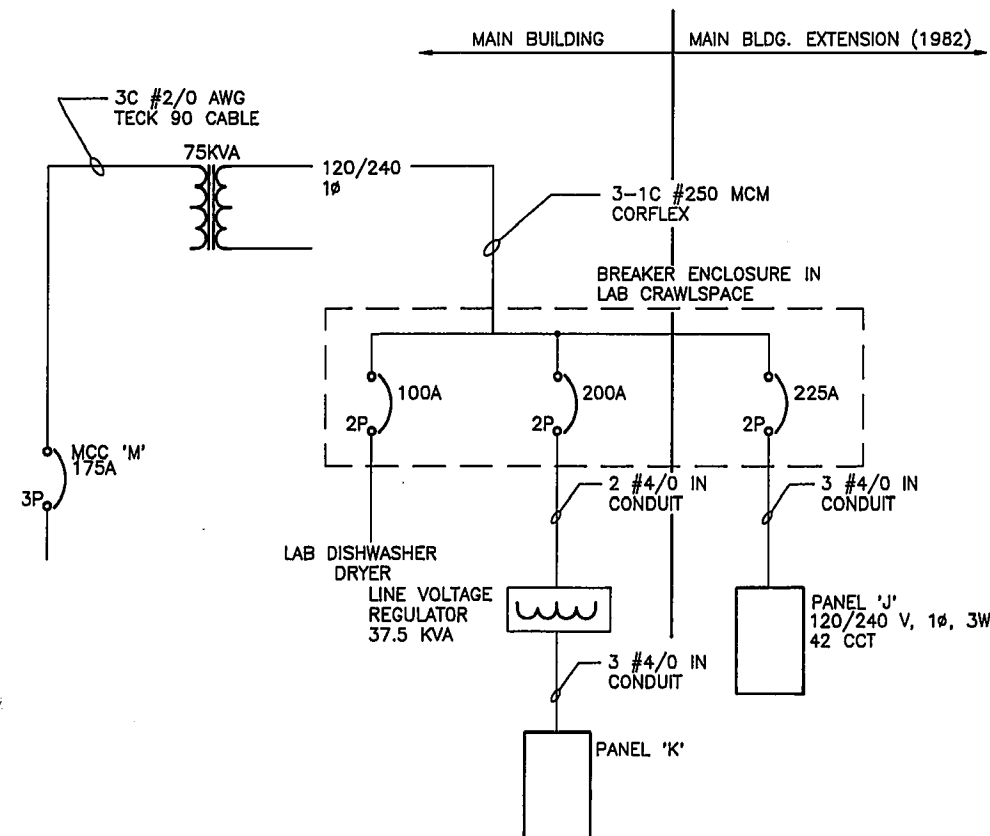


AIR HANDLING UNIT RISER DIAGRAM



NOTE: ALL CONDUIT 19mm

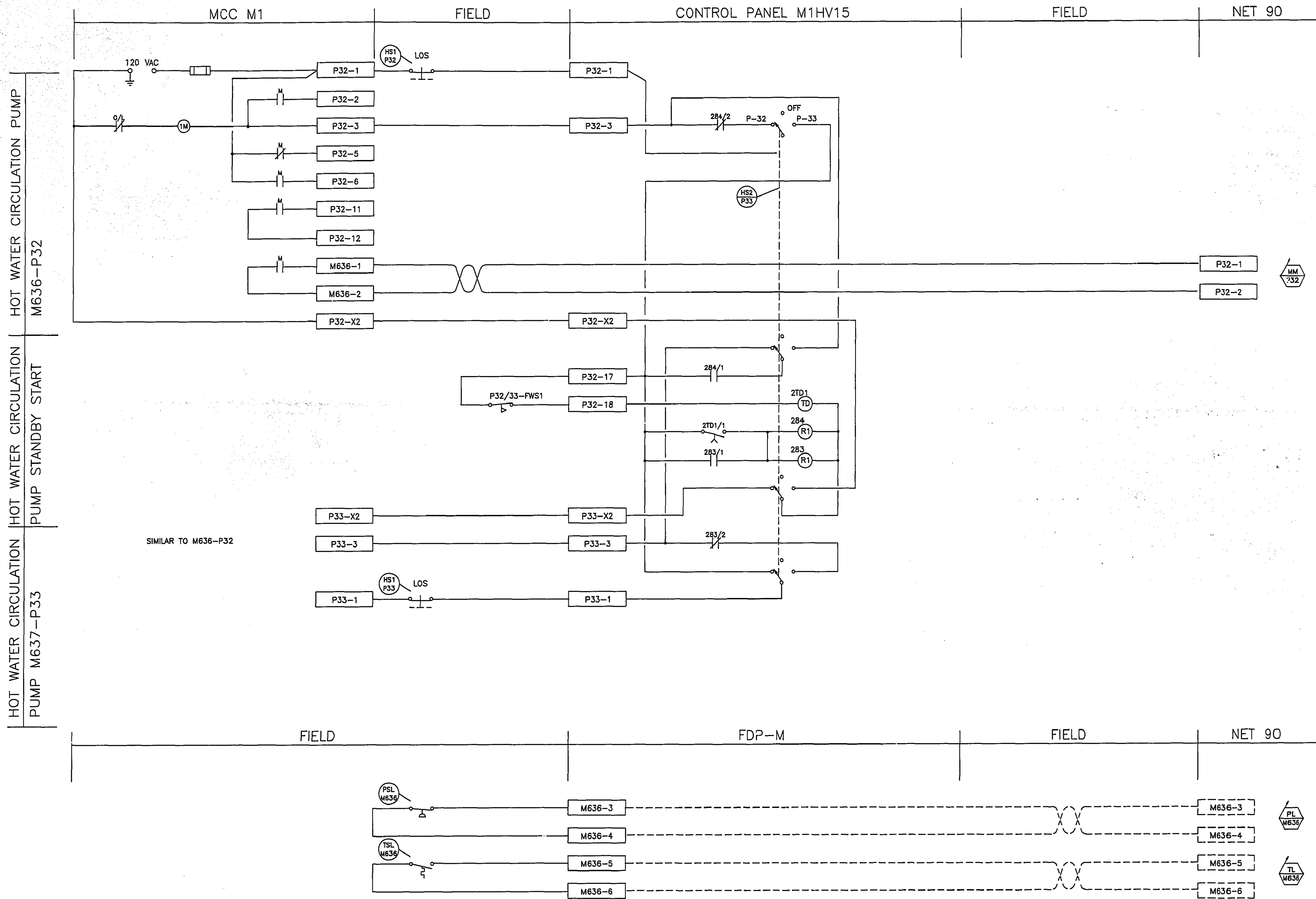
P.A. SYSTEM RISER DIAGRAM (IN PART)



LABORATORY SUB-FEED RISER DIAGRAM

AS-BUILT
 DATE JULY/91 BY R.A.H.
 CHECKED BY *R.A.H.*

B.M. ELEV.		Wardrop-MacLaren ENGINEERING CONSULTANTS		ENGINEER'S SEAL		THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS, WASTE & DISPOSAL DEPARTMENT	
				DESIGNED BY R.A.H. CHECKED BY DRAWN BY N.B. APPROVED BY <i>[Signature]</i> HOR. SCALE: N.T.S. RELEASED FOR CONSTRUCTION: VERTICAL:			
0 AS CONSTRUCTED		91/07 R.A.H.		CONSULTANT DRAWING NO. 880012-01-03		SHEET OF NEP-1543C	
NO. REVISIONS		DATE BY		DATE			



- 1 P32-PB1. LOCK-OFF-STOP PUSHBUTTON
- 2
- 3 M637-HS2. DUTY SELECTOR SWITCH
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13 P32/33-FWS1. FLOW SWITCH, OPENS TO INDICATE FLOW
- 14 2TD1-TD. TIME DELAY ON RELAY SET @ 15 SEC.
- 15 284-R1. ALARM RELAY
- 16 283-R1. ALARM RELAY
- 17
- 18
- 19
- 20 P33-PB1. LOCK-OFF-STOP PUSHBUTTON
- 21
- 22
- 23
- 24
- 25

NOTES:
 1. CONTROLS - HONEYWELL #2304
 2. ABOVE MOTORS ARE LOCATED IN LAB. CRAWLSPACE

AS-BUILT
 DATE JULY/91 BY R.A.H.
 CHECKED BY [Signature]

B.M. ELEV.	Wardrop-MacLaren ENGINEERING CONSULTANTS		ENGINEER'S SEAL CONSULTANT DRAWING NO. 880012-01-03	 THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS, WASTE & DISPOSAL DEPARTMENT	
	DESIGNED BY R.A.H.	CHECKED BY			NORTH END WATER POLLUTION CONTROL CENTRE CITY DRAWING NUMBER MAIN BUILDING RENOVATIONS-ELECTRICAL SHEET OF HOT WATER CIRCULATION PUMPS LOOP WIRING DIAGRAMS NEP-1543F
	DRAWN BY N.B.	APPROVED BY <u>[Signature]</u>			
	HOR. SCALE: N.T.S.	RELEASED FOR CONSTRUCTION:			
0 AS CONSTRUCTED 91/07 R.A.H.	DATE BY DATE JUNE/91	DATE			