RAWING MUST NOT BE SCALED. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUM, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED IMMEDIATELY TOO THE ARCHITECT. VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THESE DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF THE ARCHITECTS AND CAN BE REPRODUCED ONLY WITH THE PERMISSION OF THE ARCHITECTS.

BUILDING THREE CLASSIFICATION/CODE ANALYSIS

A.B.C. 3.2.2.46
- GROUP 'C', UP TO 3 STOREY, INCREASED AREA, SPRINKLERED
- BUILDING MAY BE COMBUSTIBLE OR NON-COMBUSTIBLE CONSTRUCTION
- MAXIMUM PERMITTED BUILDING AREA 2400m2 (FOR 3 STOREY)
  ACTUAL BUILDING AREA- 1982m2

A.B.C. 3.2.1.2(1)
-BASEMENT (STORAGE GARAGE) WALLS TO BE CONCRETE OR MASONRY WITH 2HRS FIRE SEPARATION. FLOOR OVER BASEMENT-2HRS FIRE SEPARATION

A.B.C. 3.2.2.46 2)(a)
- FLOORS 1HR FIRE SEPARATION
- ROOF 1HR FIRE SEPARATION WAIVED AS PER 3.2.2.18 (3)(a)
- LOADBEARING WALLS AND COLUMNS 1HR FIRE SEPARATION

LEGAL DESCRIPTION

LOT: 131
BLOCK: 7 WITHIN S.E. QUARTER OF SECTION 17, TOWNSHIP 25, RANGE 2 W5M (BASED ON PLAN PREPARED BY ED LYSTER)

SITE AREA: APPROX. 5.06 ACRE (2.048 HA.)

ZONING: EXISTING: RM4/75

DENSITY: 75 UNITS/HA
2.048 x 75 = 153.6 UNITS
= 154 UNITS

SETBACKS:
FRONT: N/A
REAR: N/A
SIDE N/A

YARD REQUIRMENTS:
FRONT: 3 m
REAR: 7.5 m
SIDE 3 m

LAND USE: APARTMENT BUILDINGS

PARKING:
PHASE ONE
SURFACE TOTAL: 123 STALLS
RV PARKING: 4 STALLS
UNDERGROUND BLDG. ONE: 70 STALLS
PHASE TWO
UNDERGROUND BLDG. THREE: 70 STALLS

UNITS:
TOTAL UNITS: 194
BUILDING ONE:
TWO BEDROOM - 53 UNITS
BUILDING TWO:
TWO BEDROOM - 48 UNITS
BUILDING THREE:
TWO BEDROOM - 53 UNITS
TOTAL 194 UNITS

MUNICIPAL ADDRESS : 8811 ROCKY RIDGE ROAD N.W.
CALGARY,ALBERTA

GARBAGE COLLECTION:

16 CONTAINERS - 3 CU. YD. IN.
2 ENCLOSED BUILDINGS
194/16 = 9.6 UNITS/CONTAINER

LANDSCAPING:

MIN. LANDSCAPE: 2.066HA x 40% =8265M2
8265/45=184 TREES REQ'D.
184/3 = 61 CONIFEROUS
184-61 = 123 DECIDUOUS

DECIDUOUS
62 - 88mm CALIPER
61 - 50mm CALIPER

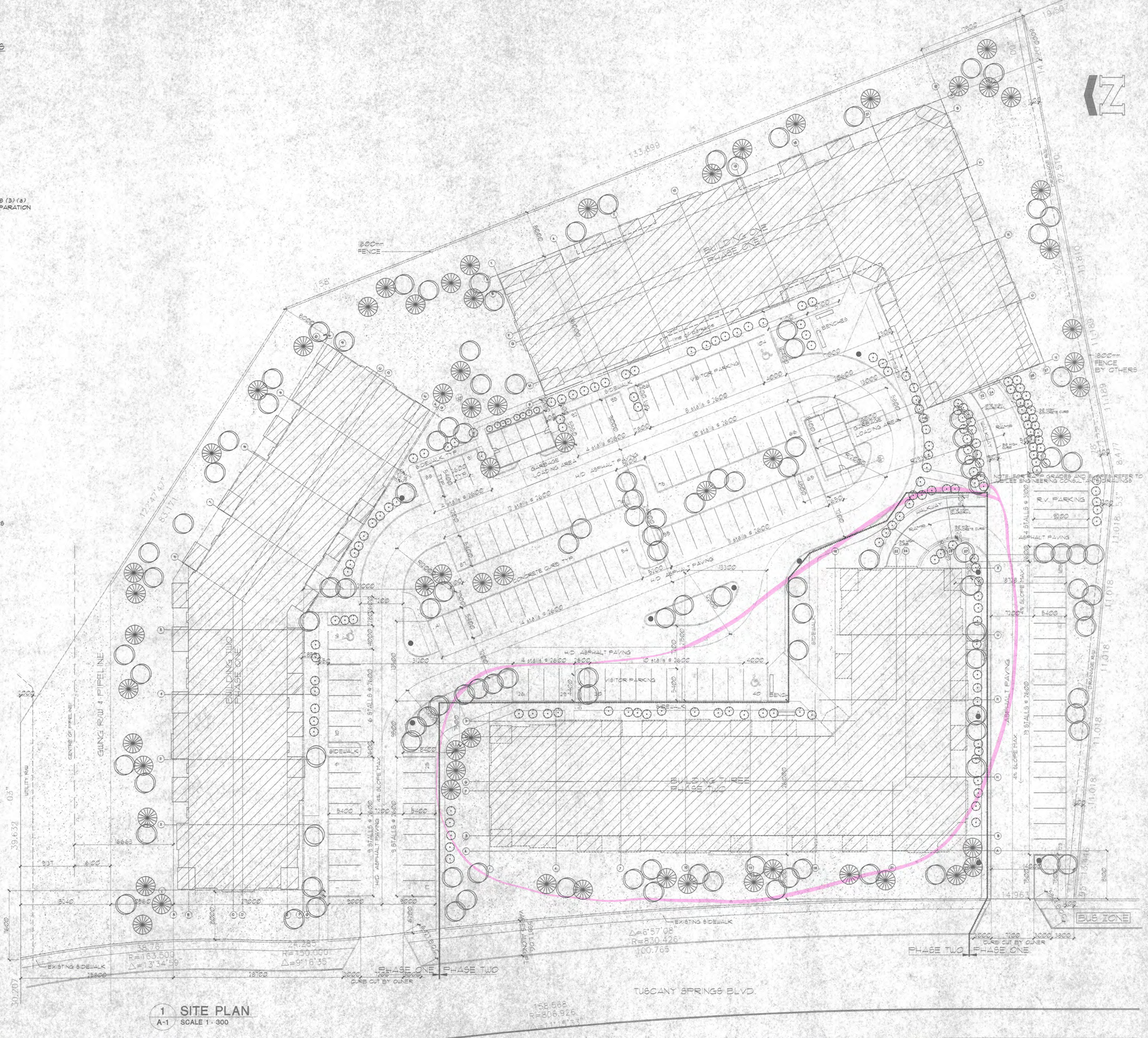
CONIFEROUS
40 - 3m HEIGHT
21- 2m HEIGHT

SHRUBS

SOD

- NO STOPPING ANYTIME
- NO PARKING ANYTIME-FIRELANE

NOTE: FOR LOCATION OF CATCH BASINS REFER TO JUBILEE ENGINEERING CONSULTANTS DRAWINGS



1 SITE PLAN
A-1 SCALE 1 : 300

architect' seal
MANU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

drawing status

description	date
issued for construction	98.10.23
issued for building permit	98.09.23
issued for tender	98.08.03
issued for development permit	
issued for owners approval	
preliminary	

revisions

description	date
REVISED BP APPLICATION	98.07.09
REVISED DP APPLICATION	98.05.12

project: TUSCARORA APARTMENTS
8811 ROCKY RIDGE ROAD N.W.
CALGARY, ALBERTA

drawing: BUILDING THREE
SITE PLAN

date 98.10.23
scale 1:300
drawn L.W. + J.S.
checked

project no. 98-MC-0645

drawing no. A-1

THIS DRAWING MUST NOT BE SCALED. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUM, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED IMMEDIATELY TOO THE ARCHITECT. VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THESE DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF THE ARCHITECTS AND CAN BE REPRODUCED ONLY WITH THE PERMISSION OF THE ARCHITECTS.

PAVING NOTES

HEAVY DUTY PAVING:

1. PREPARE SUB GRADE TO A DEPTH OF +100mm.
2. SUPPLY, PLACE & COMPACT 75 mm PIT RUN GRAVEL TO A DEPTH OF 150mm.
3. SUPPLY, PLACE & COMPACT 20 mm CRUSHED GRAVEL TO A DEPTH OF 50 mm.
4. SUPPLY & APPLY PRIME COAT @ 2 LITERS PER SQ. M.
5. SUPPLY, PLACE & COMPACT "B" MIX ASPHALT TO A DEPTH OF 100 mm.

LIGHT DUTY PAVING:

1. PREPARE SUB GRADE TO A DEPTH OF +50 mm.
2. SUPPLY, PLACE & COMPACT 75 mm PIT RUN GRAVEL TO A DEPTH OF 150 mm.
3. SUPPLY, PLACE & COMPACT 20 mm CRUSHED GRAVEL TO A DEPTH OF 50 mm.
4. SUPPLY & APPLY PRIME COAT @ 2 LITERS PER SQ. M.
5. SUPPLY, PLACE & COMPACT "B" MIX ASPHALT TO A DEPTH OF 50 mm.
6. CONCRETE CAR STOPS INSTALLED ON ASPHALT PAVING C/W/ 19 mm DOWELS, AND CONTINUOUS 15mm BARS (AS PER DETAIL 28).

NOTE:
GEOTECHNICAL REPORTS GOVERN SHOULD DISCREPANCIES EXIST.

LANDSCAPE NOTES

1. LOAM SHALL BE FERTILE, FREE OF CLAY, LUMPS, WEEDS AND OTHER EXTRANEOUS MATERIAL WITH A ph VALUE BETWEEN 5.8 AN 7 AND IN ALL WAYS CAPABLE OF SUSTAINING VIGOROUS GROWTH OF PLANTS. SOIL TESTS AT INDEPENDENT LABORATORY (CONTRACTORS RESPONSIBILITY AND EXPENSE) SHALL DETERMINE FERTILIZER TYPE AT THE RATE OF 2.5 KG/SQ. M. LOAM AND SHALL BE APPLIED TO A DEPTH OF 150mm. SOIL SHALL BE UNIFORMLY SLOPED (MAINTAIN POSITIVE DRAINAGE) BETWEEN SPECIFIED POINTS OF REFERENCE.
2. FERTILIZE SOIL IN PLANTERS WITH AN APPROVED COMMERCIAL PLANTING FERTILIZER TO ENSURE A GOOD GROWING MEDIUM FOR PLANT MATERIAL. ADD PEAT MOSS TO THE EXISTING SOIL AS REQUIRED. A SOIL TEST SHALL BE TAKEN. (CONTRACTORS EXPENSE) TO DETERMINE FERTILIZER RATE.
3. PLANT MATERIALS (MIN. SIZES) SHALL BE CAPABLE OF HEALTHY GROWTH AND CONFORM TO THE LATEST VERSION OF THE CANADIAN NURSERY TRADES ASSOCIATION FOR NURSERY STOCK. PLANTING SOIL SHALL BE FORMED AROUND PLANTS. ALL PLANTS SHALL BE NURSERY GROWN STOCK. NO SUBSTITUTES SHALL BE USED UNLESS PRIOR WRITTEN PERMISSION IS OBTAINED FROM THE ARCHITECT. PLANTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS AND MAY REQUIRE ADJUSTING (MAINTAIN MIN. SPACING) TO SUITE GRADE OBSTRUCTIONS.
4. LANDSCAPE MATERIALS TO BE GUARANTEED FOR THE PERIOD SPECIFIED IN THE GENERAL NOTES. PLANT MATERIALS AT TIME OF "FINAL ACCEPTANCE" SHALL BE AS SPECIFIED. PLANT MATERIALS NOT SHOWING SIGNS OF HEALTHY GROWTH SHALL BE REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE WITH AN EQUIVALENT "SPECIFIED" ITEM.
5. LANDSCAPE CONTRACTOR SHALL ADEQUATELY IDENTIFY WORK AND SHALL NOT BE RESPONSIBLE FOR THIRD PARTY DAMAGE AFTER "ACCEPTANCE OF COMPLETION."
6. ENSURE THAT NEW LOCATIONS FOR PLANT MATERIALS DOES NOT INTERFERE WITH EXISTING DRAINAGE.
7. PLANT MATERIALS AND LOCATIONS SHOWN ON SITE PLAN.

GENERAL NOTES

1. THE GENERAL CONTRACTOR SHALL ESTABLISH ALL PROPERTY LINES, SETBACKS, EASEMENTS, ETC. BEFORE COMMENCING CONSTRUCTION.
2. ALL WATER AND / OR ICE SHALL BE REMOVED FROM EXCAVATIONS PRIOR TO PLACING CONCRETE.
3. ALL MATERIALS SHALL BE INSTALLED AND / OR APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS.
4. THE GENERAL CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS PRIOR TO COMMENCING CONSTRUCTION.
5. GENERAL CONTRACTOR SHALL LOCATE ALL ABOVE OR BELOW GRADE SERVICES OR OBSTACLES ON OR ADJACENT TO SITE AND SHALL REPORT SUCH OBSTRUCTIONS IN WRITING TO THE ARCHITECT BEFORE COMMENCING CONSTRUCTION.
6. WHERE INDICATED ON ELECTRICAL DRAWINGS PROVIDE A 20 mm PLYWOOD BACKING TO SIZES NOTED FOR TELEPHONE AND SURFACE MOUNTED ELECTRICAL PANELS.
7. GENERAL CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT VAPOUR, AIR & FIRE BARRIER CONTINUITY IS MAINTAINED.
8. APPLY BEAD OF ACOUSTIC CAULKING AT JUNCTIONS OF FLOOR TO WALLS, WALL TO WALL, AND WALL TO CEILING AT ALL FRAMING WALLS.
9. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL ACQUAINT THEMSELVES AND BE GOVERNED BY ALL CONTRACT DOCUMENTS.
10. GENERAL CONTRACTOR SHALL ENSURE PROPER SEQUENCE OF CONSTRUCTION.
11. GENERAL CONTRACTOR TO COORDINATE THE WORK OF ALL TRADES AND SUBCONTRACTORS TO EXPEDITE PROGRESS AND AVOID INTERFERENCE.
12. GENERAL CONTRACTOR TO SUBMIT LEGAL SURVEY CERTIFICATE WITHIN TEN (10) DAYS OF COMPLETION OF FOUNDATIONS.
13. ROOFING CONTRACTOR SHALL PROVIDE AN A.R.C.A. CERTIFICATE OF ASSURANCE.
14. GENERAL CONTRACTOR SHALL PROVIDE THE ARCHITECT WITH A PRELIMINARY CONSTRUCTION SCHEDULE TO BE REFINED AND UPDATED AS THE PROJECT PROGRESSES.
15. TWO (2) COPIES OF BROCHURES OF ELECTRICAL AND MECHANICAL EQUIPMENT SHALL BE SUBMITTED TO THE OWNER UPON COMPLETION OF CONSTRUCTION.
16. GENERAL CONTRACTOR SHALL PROVIDE A HEATED AND LIGHTED FIELD OFFICE FOR USE OF CONTRACTOR'S JOB PERSONNEL, JOB MEETINGS AND ARCHITECT'S INSPECTOR, PLUS PROVIDE A TELEPHONE AND FAX MACHINE.
17. THE ARCHITECT APPRECIATES THAT THERE ARE METHODS OF CONSTRUCTION AND / OR PROCEDURES OTHER THAN THOSE DESCRIBED IN THE SPECIFICATIONS AND / OR DETAILED ON THE DRAWINGS AND WELCOMES CONSTRUCTIVE PROPOSALS FROM THE TRADES INVOLVED.
18. WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ARCHITECT SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWING. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECTS FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION.
19. FAX MACHINE REQUIRED AT JOB SITE TO FACILITATE COMMUNICATIONS.
20. CONTRACTOR SHALL CLEAR AND GRUB THE SITE. OBSTACLES NOT VISIBLE AT TIME OF TENDER SHALL BE REPORTED TO THE ARCHITECT BEFORE CONTINUING TO EXCAVATE. DO NOT OVER EXCAVATE WITHOUT PERMISSION FROM THE ARCHITECT.
21. CONTRACTOR TO VERIFY THAT ALL WOOD FRAMING MATERIAL IS GRADE STAMPED AND HAS LESS THAN 19% MOISTURE CONTENT.
22. CONTRACTOR SHALL RETAIN (AT OWNERS EXPENSE) AN INDEPENDENT ROOFING INSPECTOR TO OVERSEE THE INSTALLATION OF THE ROOFING SYSTEM. IN ADDITION TO THE MANUFACTURER'S INSPECTOR.

GENERAL DRAFTING/SYMBOLS STANDARDS

NORTH SYMBOL

GRID LINES

SECTION NO. / SHEET WHERE DRAWN — BUILDING SECTIONS

SECTION NO. / SHEET WHERE DRAWN — WALL SECTIONS

DRAWING NO. / SHEET WHERE DRAWN — DRAWINGS

DETAIL NO. / SHEET WHERE DRAWN — DETAILS

ELEVATION NO. / SHEET WHERE DRAWN — INTERIOR ELEVATIONS

ROOMNAME 101 — ROOM NAMES & NOS.

DOOR SYMBOLS

WINDOW SYMBOLS

E1 EXTERIOR WALL CONST.

W1 INTERIOR WALL CONST.

R# ROOF CONST.

F1 FLOOR CONST.

C1 CEILING CONST.

1 KEYNOTES

0.000 PROPOSED ELEV.

(0.000) EXIST. ELEV. TO REMAIN

±0.000 EXISTING ELEV.

100.850 NEW ELEV.

REVISION SYMBOL

P1 MILLWORK FINISH

MATERIALS / SYMBOLS

SOIL

GRAVEL

PRECAST CONCRETE

CONCRETE

CONCRETE BLOCK IN SECTION LARGE SCALE

BRICK IN SECTION LARGE SCALE

CONCRETE BLOCK IN PLAN SMALL SCALE

BRICK IN PLAN SMALL SCALE

STUD PARTITION IN PLAN LARGE SCALE

STUD PARTITION SMALL SCALE

EXISTING PARTITION TO BE REMOVED LARGE SCALE

BATT INSULATION LARGE SCALE

STUCCO, PLASTER, GROUT & GYPSUM WALL BD. LARGE SCALE

PLYWOOD LARGE SCALE

RIGID INSULATION

ASPHALT PAVING

VAPOUR BARRIER

WOOD BLOCKING OR ROUGH FRAME

FINISHED WOOD

STEEL

ALUMINUM

DRAWING INDEX

ARCHITECTURAL

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A1 SITE PLAN
A2 BASEMENT FLOOR PLAN
A3 MAIN FLOOR PLAN
A4 SECOND FLOOR PLAN
A5 THIRD FLOOR PLAN
A6 UNIT PLANS
A7 UNIT PLANS
A8 UNIT PLANS
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A10 ROOF PLAN
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A13 BUILDING/STAIR SECTION
A14 BUILDING SECTION
A15 BUILDING/ELEVATOR SECTION
A16 WALL SECTIONS
A17 WALL SECTIONS & DETAILS
A18 DETAILS
A19 WALL SECTION & DETAILS
A20 WINDOW & DOOR SCHEDULES
A21 GARBAGE ENCLOSURE

STRUCTURAL

S1 FOUNDATION PLAN
S2 MAIN FLOOR SLAB FORMING PLAN
S2 MAIN FLR.SLAB REINFORING PLAN
S4 GENERAL NOTES & SECTIONS
S5 MAIN FLOOR BEARING PLAN
S6 TYPICAL FLOOR FRAMING PLAN
S7 SECTIONS

WALL TYPES:

UNLESS NOTED OTHERWISE, ALL INTERIOR PARTITIONS TO EXTEND TO UNDERSIDE OF STRUCTURE ABOVE

E1 TYPICAL EXTERIOR WALL (@ SIDING)
60 MIN. RATING – 1997 ABC, APP. 'A'
TABLE A-9.10.3.1.A WALL TYPE EW1d
- VINYL SIDING
- BUILDING PAPER
- 3/8" O.S.B. SHEATHING
- 2x6 WOOD STUDS @ 16" o.c. (MAX)
- R20 FIBREGLASS BATT INSULATION
- 6 MIL POLY VAPOUR BARRIER
- 5/8" TYPE 'X' GYPSUM BOARD

E2 TYPICAL EXTERIOR WALL (@ STONE)
60 MIN. RATING – 1997 ABC, APP. 'A'
TABLE A-9.10.3.1.A WALL TYPE EW1a
- FAUX STONE VENEER
- METAL LATH
- BUILDING PAPER
- 3/8" O.S.B. SHEATHING
- 2x6 WOOD STUDS @ 16" o.c. (MAX)
- R20 FIBREGLASS BATT INSULATION
- 6 MIL POLY VAPOUR BARRIER
- 5/8" TYPE 'X' GYPSUM BOARD

E3 TYPICAL BASEMENT EXTERIOR WALL
- CEMENT PARGING ABOVE FINISH GRADE (12" BELOW)
- 2" RIGID INSULATION TO MIN. 4'-0" BELOW FINAL GRADE
- DAMP PROOFING (OUTSIDE)
- CONCRETE FOUNDATION WALL c/w REINFORCING
- SEE STRUCTURAL DRAWINGS

E4 BALCONY WALL
- VINYL SIDING
- BUILDING PAPER
- 3/8" O.S.B. SHEATHING
- 2x4 WOOD STUDS @ 16" o.c. (MAX)
- 3/8" O.S.B. SHEATHING
- BUILDING PAPER
- VINYL SIDING

W1 TYPICAL PARTY WALL
60 MIN. RATING, STC 57 – 1997 ABC, APP. 'A'
TABLE A-9.10.3.1.A, WALL TYPE W13a
- 5/8" TYPE 'X' GYPSUM BOARD
- 2x4 WOOD STUDS @ 16" o.c. (MAX)
- R12 FIBREGLASS BATT INSULATION
- 1" AIR SPACE
- 2x4 WOOD STUDS @ 16" o.c. (MAX)
- R12 FIBREGLASS BATT INSULATION
- 5/8" TYPE 'X' GYPSUM BOARD

W2 TYPICAL INTERIOR PARTITION
- 1/2" GYPSUM BOARD
- 2x4 WOOD STUDS @ 16" o.c.
- 1/2" GYPSUM BOARD (MOISTURE –RESISTANT DRYWALL AROUND BATHTUBS)

W3 TYPICAL PLUMBING WALL
INTERIOR PARTITION
- 1/2" GYPSUM BOARD
- 2x6 WOOD STUDS @ 16" o.c.
- 1/2" GYPSUM BOARD

W4 TYPICAL RATED INTERIOR WALL
60 MIN. RATING, STC 32, ABC, APP. 'A',
TABLE A-9.10.3.1.A, WALL TYPE W1a
- 5/8" TYPE 'X' GYPSUM WALL BOARD
- 2x4 WOOD STUDS @ 24" o.c. (MAX)
- 5/8" TYPE 'X' GYPSUM WALL BOARD

W5 TYPICAL CORRIDOR WALL
60 MIN. RATING, STC 55 – ABC, APP. 'A'
TABLE A-9.10.3.1.A, WALL TYPE W9b
- 2 LAYERS OF 1/2" TYPE 'X' GYPSUM BOARD
- 2x4 WOOD STUDS @ 16" o.c. (MAX) STAGGERED ON COMMON 2x6 PLATE
- R12 FIBREGLASS BATT INSULATION (ONE SIDE)
- 2 LAYERS OF 1/2" TYPE 'X' GYPSUM BOARD

W6 TYPICAL ELEVATOR / UNIT WALL
60 MIN. RATING
- 5/8" TYPE 'X' GYPSUM BOARD
- 2x4 WOOD STUDS (SEE STRUCT. FOR SPACING) UNIT SIDE CAULK TOP AND BOTTOM PLATES
- R12 FIBREGLASS BATT INSULATION
- 1" AIR SPACE
- 2x8 WOOD STUDS (SEE STRUCT. FOR SPACING)
- R25 FIBREGLASS BATT INSULATION
- 5/8" TYPE 'X' GYPSUM BOARD

W7 BASEMENT INTERIOR WALL
- 8" CONCRETE WALL OR 8" CONCRETE BLOCK WALL AS SHOWN ON FLOOR PLANS

W8 FRONT OF ELEVATOR SHAFT
60 MIN. RATING, STC 30 – ABC, APP. 'A'
TABLE A-9.10.3.1.A, WALL TYPE W1a
- 5/8" TYPE 'X' GYPSUM BOARD
- 2x4 WOOD STUDS @ 16" o.c.
- R12 FIBREGLASS BATT INSULATION
- 5/8" TYPE 'X' GYPSUM BOARD

W9 NOT USED

W10 ELEVATOR/ATTIC WALL
- 5/8" TYPE 'X' GYPSUM BOARD
- 2x6 WOOD STUDS (SEE STRUCT. FOR SPACING)
- R25 FIBREGLASS BATT INSULATION
- 6 MIL POLY VAPOUR BARRIER
- 5/8" TYPE 'X' GYPSUM BOARD (ELEVSHAFT SIDE)

Inspection of the construction of any building or part thereof shall be carried out by the designer, or by his/her suitably qualified person responsible to the designer, to ensure that the construction conforms with the design.

ROOF TYPES:

R1 TYPICAL MAIN SLOPED ROOF
60 MIN. MEMBRANE RATING, 1997 ABC, APP. 'D'
TABLE D-2.3.12
- ASPHALT SHINGLES
- UNDERLAYMENT
- 3/8" OSB SHEATHING
- PRE-ENGINEERED ROOF TRUSSES @ 24" o.c.
- R40 FIBERGLASS BATT INSULATION
- 6 MIL POLY VAPOUR BARRIER
- 2 LAYERS 5/8" TYPE 'X' GYPSUM BOARD (TAPED AND SANDED) READY FOR FINISH

R2 TYPICAL MAIN FLAT ROOF
60 MIN. MEMBRANE RATING, 1997 ABC, APP. 'D'
TABLE D-2.3.12
- GRAVEL BALLAST
- FULLY ADHERED EPDM ROOFING MEMBRANE
- 1/4" DENS-DECK ROOF BOARD by GEORGIA PACIFIC (OR EAUAL)
- 1/2" EXTERIOR GRADE PLYWOOD SHEATHING
- PRE-ENGINEERED WOOD ROOF TRUSSES @ 24" o.c. SLOPE TOP CHORD 2% TO DRAIN
- R40 FIBERGLASS BATT INSULATION
- 6 MIL POLY VAPOUR BARRIER
- 2 LAYERS 5/8" TYPE 'X' GYPSUM BOARD (TAPED AND SANDED) READY FOR FINISH

FLOOR TYPES:

F1 BASEMENT FLOOR
- FLOOR FINISH
- CONCRETE SLAB-ON-GRADE c/w REINFORCEMENT, SEE STRUCTURAL DRAWINGS
- POLY VAPOUR BARRIER
- 6" COMPACTED GRAVEL, SEE STRUCTURAL DRAWINGS

F2 MAIN FLOOR OVER BASEMENT
120 MIN. RATING, STC 52 – 1997 ABC, APP. 'A'
TABLE A-9.10.3.1.B FLOOR TYPE F1b SIM.
- FLOOR FINISH (N.I.C.)
- CONCRETE SLAB c/w REINFORCING, SEE STRUCTURAL DRAWINGS
- CEILING FINISH (SEE RM.FINISH SCHED.)

F3 TYPICAL FLOOR
60 MIN. RATING, STC 57 – 1997 ABC, APP. 'A'
TABLE A-9.10.3.1.B FLOOR TYPE F5a SIMILAR
- FLOOR FINISH (SEE FLOOR PLANS)
- 1 1/2" GYPSUM TOPPING
- GLUE SEALER
- 5/8" O.S.B. T & G SHEATHING (GLUED & SCREWED)
- TJI FLOOR JOISTS, SEE STRUCTURAL DRAWINGS
- R20 FIBERGLASS BATT INSULATION (IN BATHRMS. & KITCHENS ONLY)
- SEE FLOOR TYPE F5b, STC=60
- RESILIENT CHANNELS @ 8" o.c.
- 2 LAYERS 5/8" TYPE 'X' GYPSUM BOARD
- SPANTEX TEXTURED FINISH

F4 TYPICAL BALCONY FLOOR
- VINYL DECK MEMBRANE
- 5/8" T&G PLYWOOD SUBFLOOR
- FLOOR JOISTS-SLOPED 2% (SEE STRUCTURAL)
- PREFINISHED ALUMINUM SOFFIT

F5 TYPICAL STAIR LANDING
- FINISH FLOOR
- 1 1/2" GYPSUM TOPPING
- GLUE SEALER
- 5/8" OSB SHEATHING
- FLOOR JOISTS (SEE STRUCTURAL)
- 1/2" CD GYPSUM BOARD

F6 TYPICAL ON SLAB PATIO
- 2" CONCRETE TOPPING
- 2" HIGH DENSITY RIGID INSULATION
- DELTA MS OR EQUAL (TO EXTEND DOWN WALL & OVER FOOTING)
- TORCH-ON WATERPROOF MEMBRANE (NOTE: MEMBRANE TO BE DOUBLED UP AT INSIDE CORNERS)
- CONCRETE PARKADE SLAB (SEE STRUCTURAL)

F7 TYPICAL HORIZONTAL EXTERIOR COVER @ PARKADE
- 2" PRECAST CONCRETE PAVERS
- MIN. 2" HIGH DENSITY RIGID INSULATION (SLOPED 2%)
- DELTA MS OR EQUAL (TO EXTEND DOWN WALL & OVER FOOTING)
- TORCH-ON WATERPROOF MEMBRANE (NOTE: MEMBRANE TO BE DOUBLED UP AT INSIDE CORNERS)
- CONCRETE PARKADE SLAB (SEE STRUCTURAL)

F8 TYPICAL PATIO ON GRADE
- POURED 3" CONCRETE SLAB
- MIN. 4" GRAVEL
- GRADE

F9 TYPICAL CORRIDOR FLOOR
60 MIN. RATING
- FLOOR FINISH (SEE FLOOR PLANS)
- 1 1/2" GYPSUM TOPPING
- GLUE SEALER
- 5/8" O.S.B. T & G SHEATHING (GLUED & SCREWED)
- FLOOR JOISTS, SEE STRUCTURAL DRAWINGS
- PIPE SPACE
- 2x4 CEILING JOISTS @ 16" o.c.
- 2 LAYERS 5/8" TYPE 'X' GYPSUM BOARD
- SPANTEX TEXTURED FINISH

architect' seal

MANU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

date	description
98.10.23	issued for construction
98.10.23	issued for building permit
	issued for tender
	issued for development permit
	issued for preliminary approval
	preliminary

drawing status

date	description
98.11.10	CONT. OF NEW DRAWINGS

revisions

TUSCARORA APARTMENTS
150 TUSCANY SPRINGS BLVD.NW
CALGARY, ALBERTA
project

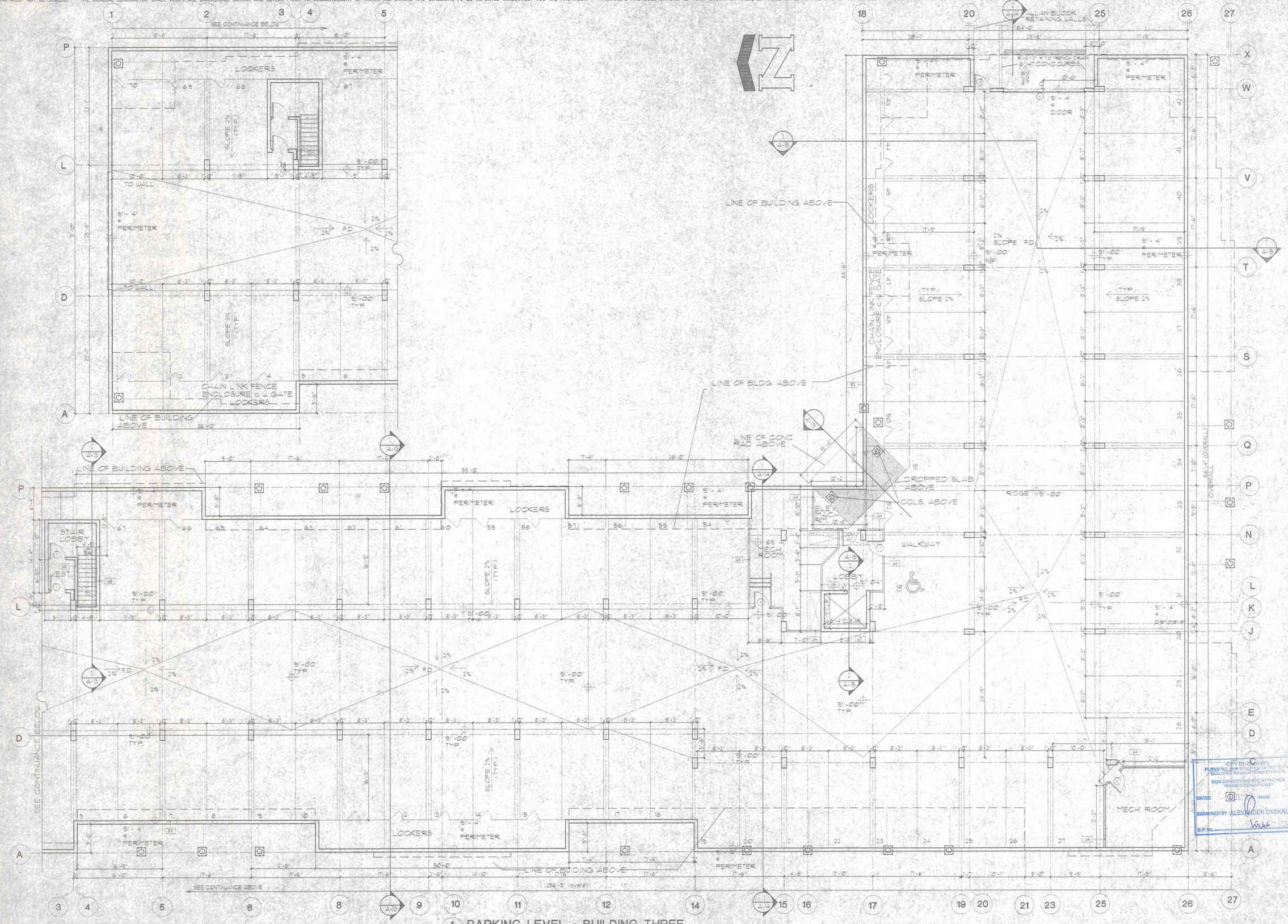
BUILDING THREE
CONSTRUCTION NOTES
drawing

date	98.10.02
scale	N.A.
drawn	M.D.S.
checked	

project no. 98-MC-0645

drawing no. A-0

DRAWING MUST NOT BE SCALED. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUM, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED IMMEDIATELY TOO THE ARCHITECT. VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THESE DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF THE ARCHITECTS AND CAN BE REPRODUCED ONLY WITH THE PERMISSION OF THE ARCHITECTS.



1 PARKING LEVEL - BUILDING THREE
A-2 SCALE 1/8" = 1'

architect's seal

MANU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

drawing status	date
issued for construction	98.10.23
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preliminary	

revisions	date
description	

project: TUSCARORA APARTMENTS
150 TUSCANY SPRINGS BLVD.
CALGARY, ALBERTA

drawing: BUILDING THREE
PARKING LEVEL

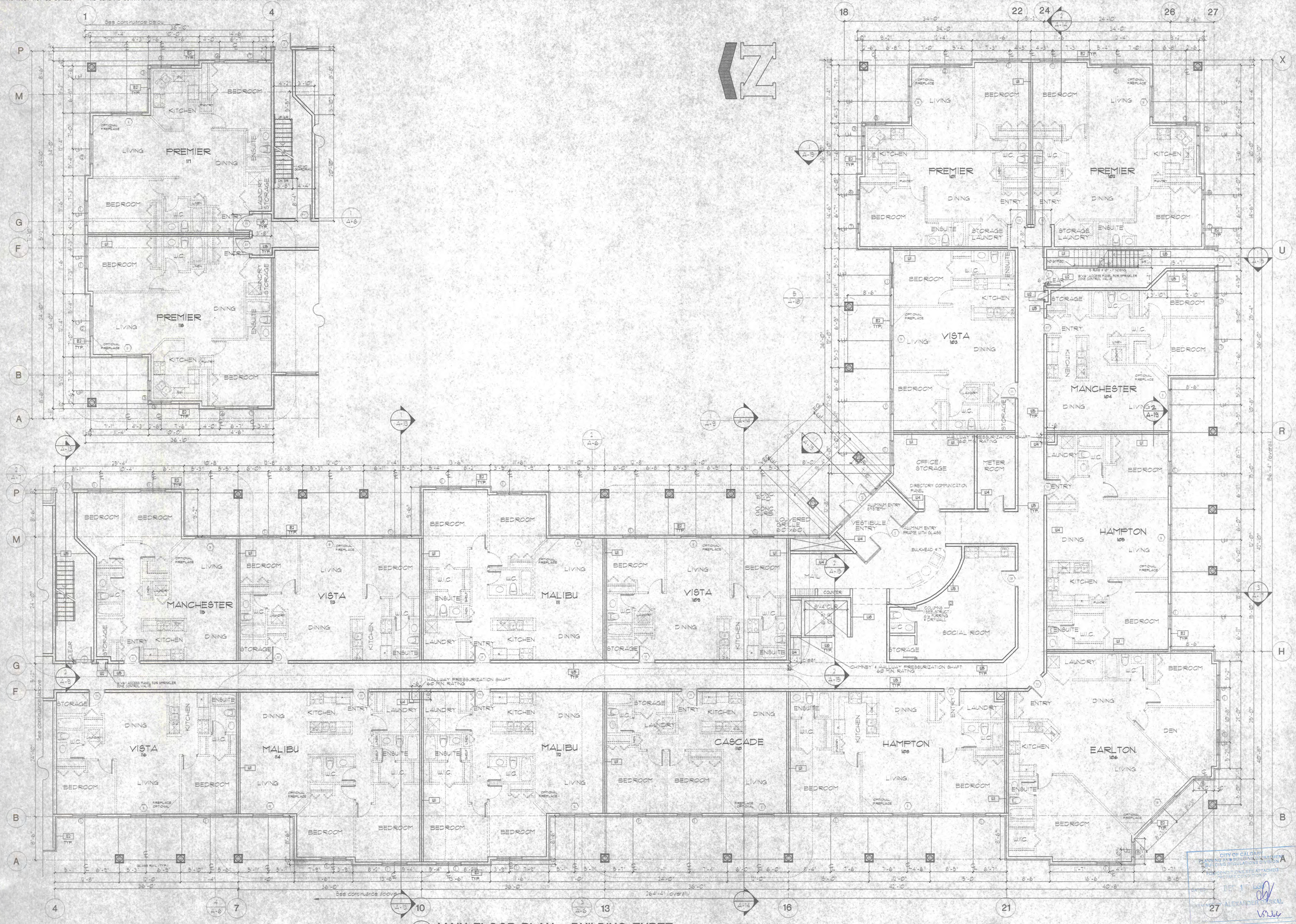
CITY OF CALGARY
PLANNING, DEVELOPMENT & ASSESSMENT
BUILDING REGULATIONS DIVISION
FOR CONDITIONS SEE ATTACHED "PERMIT CONDITIONS"
DATED
EXAMINED BY ALEXANDER DASKAL
B.P. No.

date	98.10.19
scale	1/8" = 1'
drawn	J.S. & M.D.S.
checked	

project no. 98-MC-0645

drawing no. A-2

DRAWING MUST NOT BE SCALED. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUM, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED IMMEDIATELY TOO THE ARCHITECT. VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THESE DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF THE ARCHITECTS AND CAN BE REPRODUCED ONLY WITH THE PERMISSION OF THE ARCHITECTS.



1 / A-3 MAIN FLOOR PLAN - BUILDING THREE
SCALE 1/8" = 1'

CITY OF CALGARY
PLANNING & BUILDING DEPARTMENT
BUILDING REGULATIONS DIVISION
THIS CONDITIONS SEE ATTACHED
PERMIT CONDITIONS
DEC 1 1998
APPROVED ALEXANDER RYSKAL

architect seal

MANU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

description	date
issued for construction	98.10.23
issued for building permit	98.10.23
issued for tender	
issued for development permit	
issued for owners approval	
preliminary	

drawing status

revisions

project: TUSCARORA APARTMENTS
150 TUSCANY SPRINGS BLVD.
CALGARY, ALBERTA

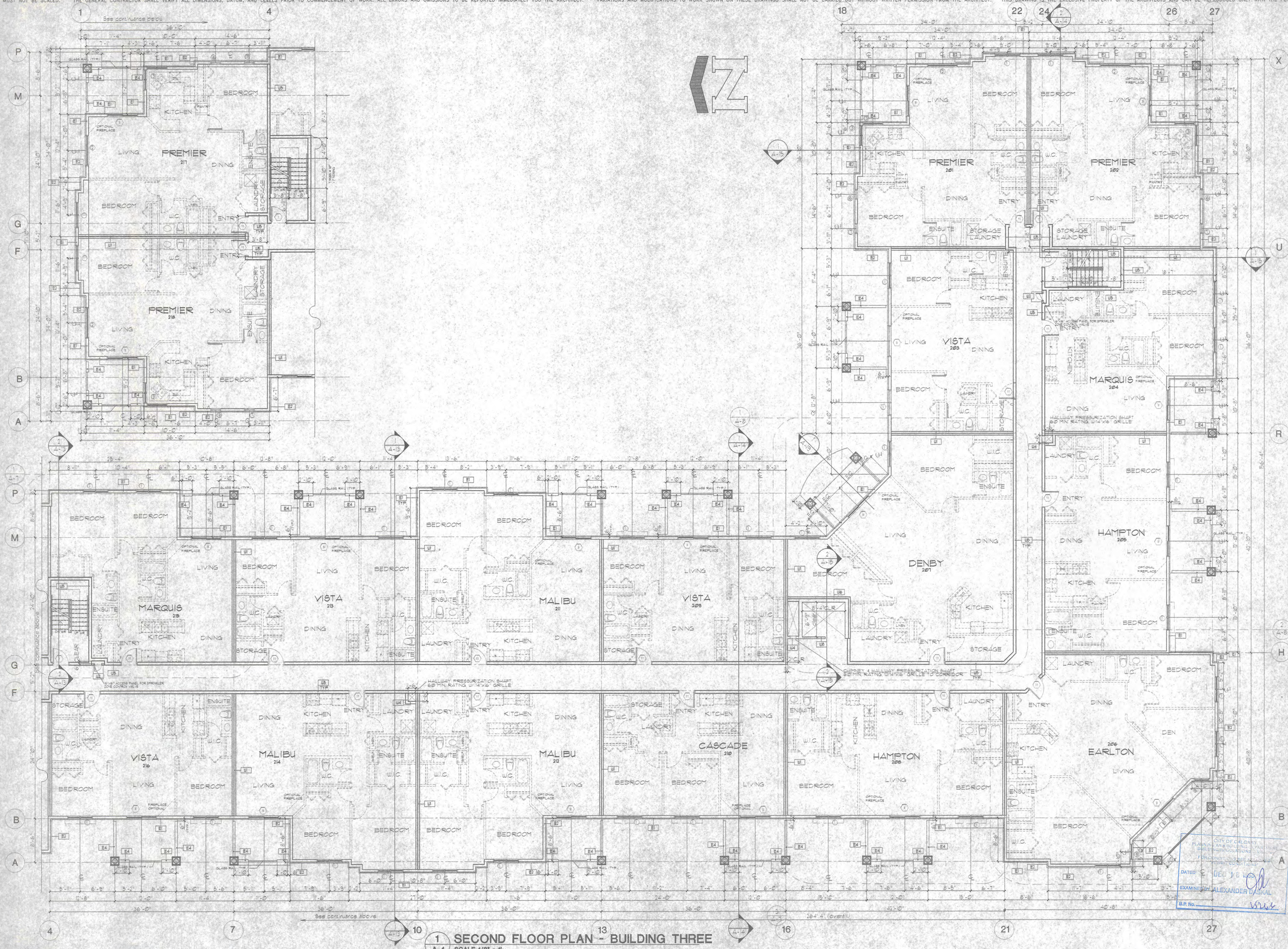
drawing: BUILDING THREE
MAIN FLOOR PLAN

date 98.10.19
scale 1/8" = 1'
drawn J.S. & M.D.S.
checked

project no. 98-MC-0645

drawing no. A-3

DRAWING MUST NOT BE SCALED. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUM, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED IMMEDIATELY TOO THE ARCHITECT. VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THESE DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF THE ARCHITECTS AND CAN BE REPRODUCED ONLY WITH THE PERMISSION OF THE ARCHITECTS.



architect's seal

MANU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

drawing status	date
issued for construction	98.10.23
issued for building permit	98.10.23
issued for tender	
issued for development permit	
issued for owners approval	
preliminary	

revisions	date
description	

TUSCARORA APARTMENTS
150 TUSCANY SPRINGS BLVD.
CALGARY, ALBERTA
project

BUILDING THREE
SECOND FLOOR PLAN
drawing

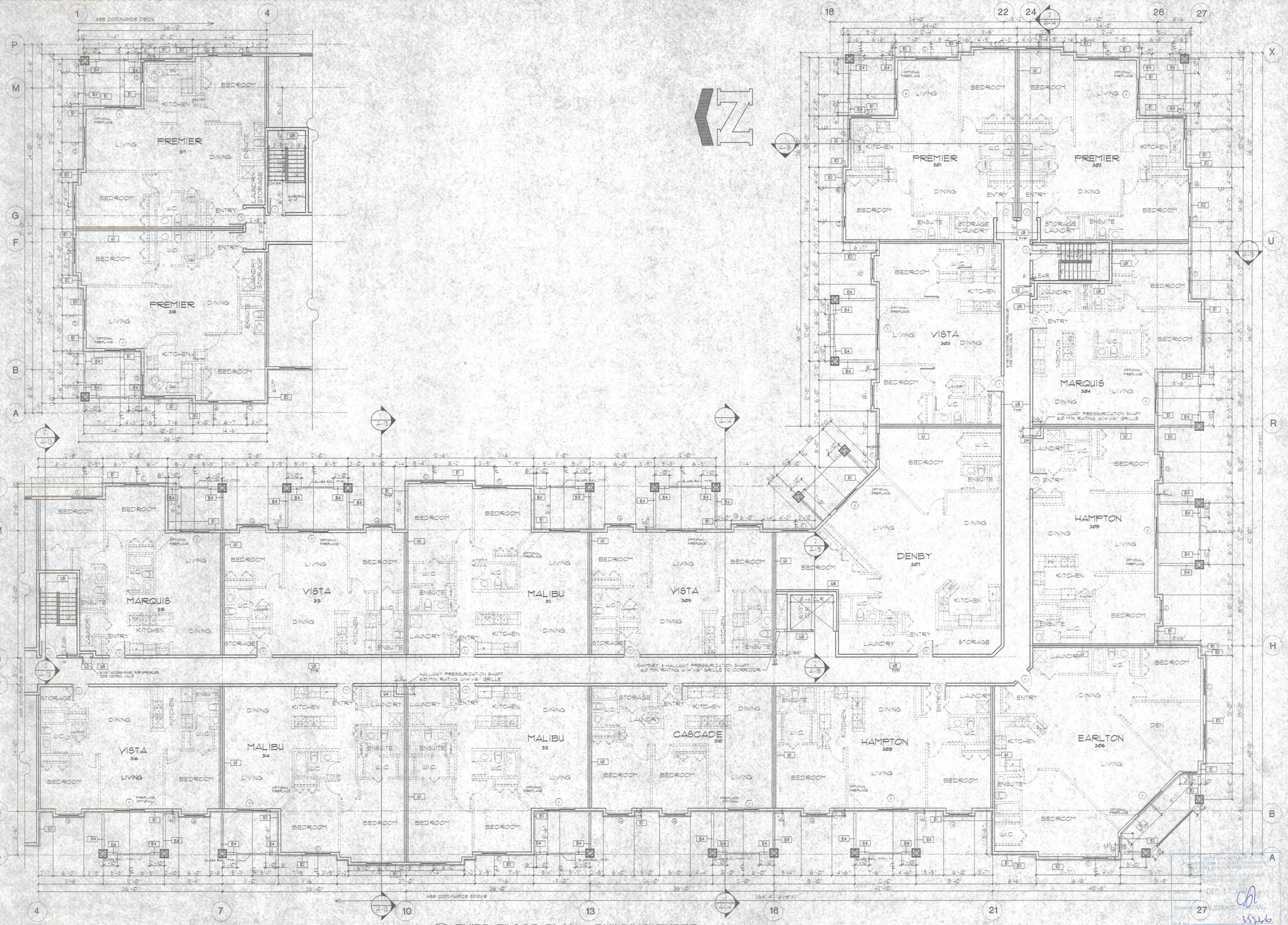
date 98.10.19
scale 1/8" = 1'
drawn J.S.
checked

CITY OF CALGARY
PLANNING & BUILDING DEPARTMENT
BUILDING APPROVED
FOR CONSTRUCTION AS PER ACCEPTED PLANS
DATED DEC 10 1998
EXAMINER ALEXANDER DASKAL
B.R No.

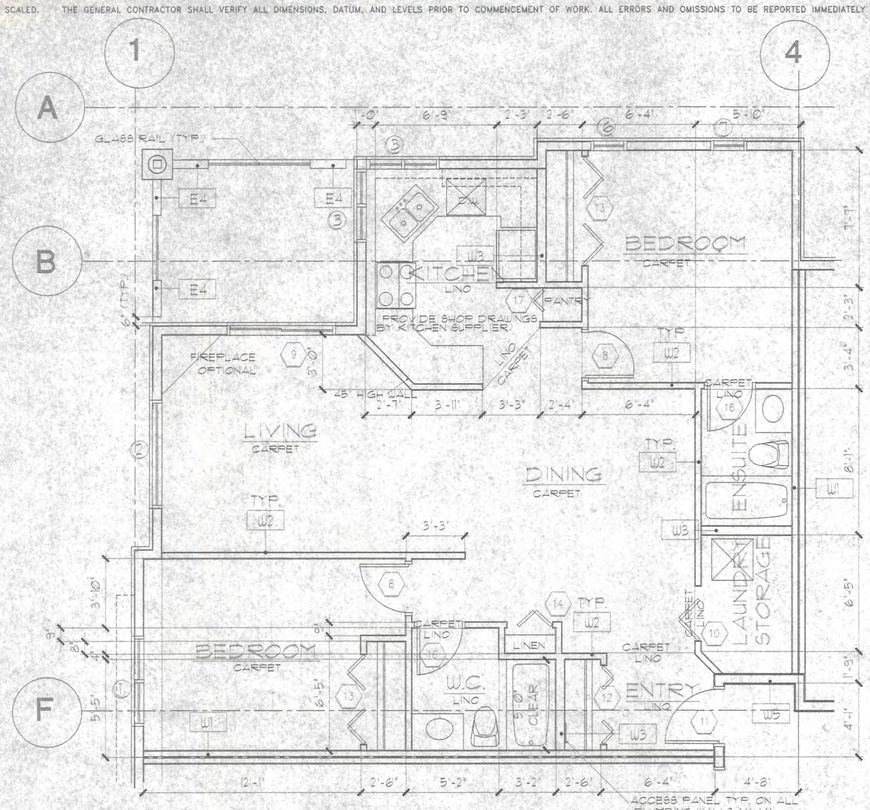
project no. 98-MC-0645

drawing no. A-4

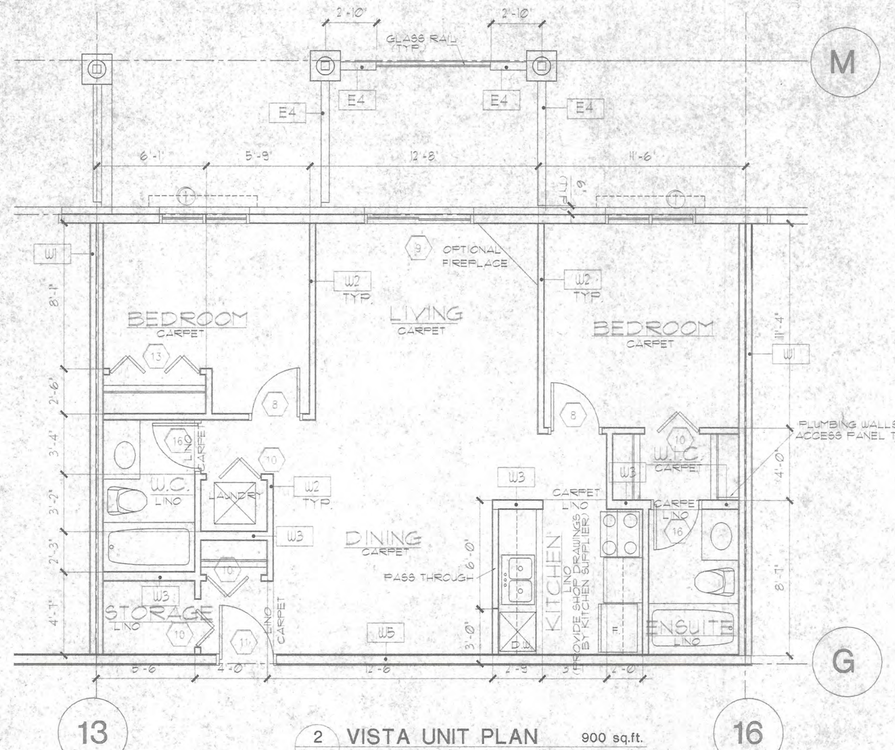
DRAWING MUST NOT BE SCALED. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUM, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED IMMEDIATELY TOO THE ARCHITECT. VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THESE DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF THE ARCHITECTS AND CAN BE REPRODUCED ONLY WITH THE PERMISSION OF THE ARCHITECTS.



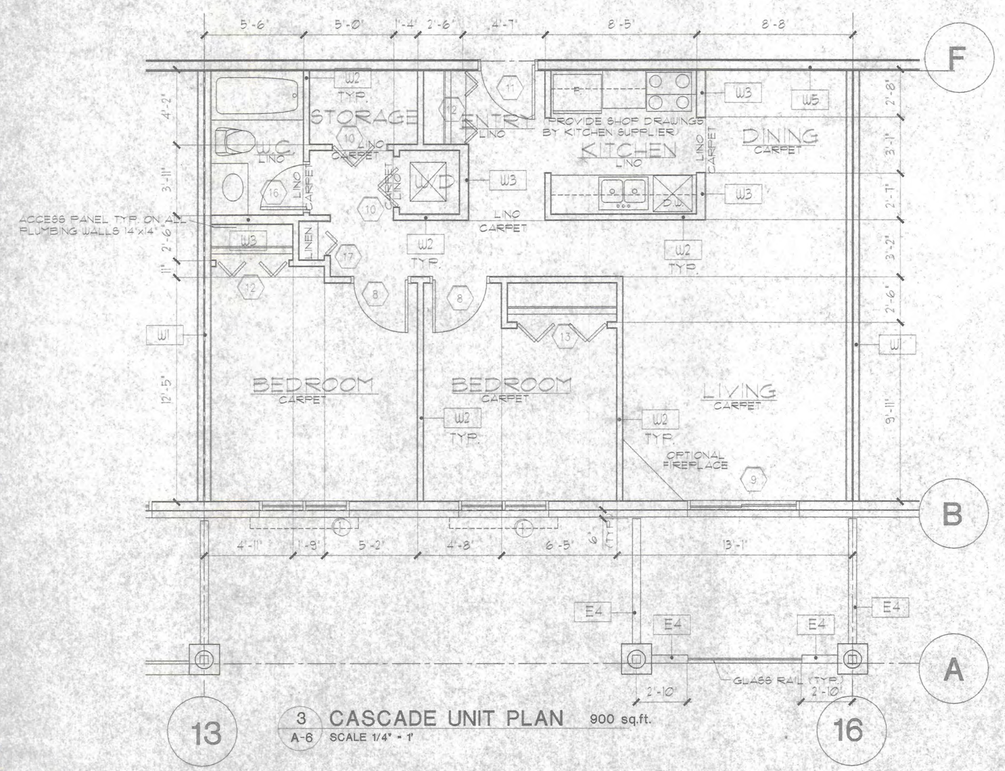
DRAWING MUST NOT BE SCALED. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUM, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED IMMEDIATELY TOO THE ARCHITECT. VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THESE DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF THE ARCHITECTS AND CAN BE REPRODUCED ONLY WITH THE PERMISSION OF THE ARCHITECTS.



1 PREMIER UNIT PLAN 1085 sq.ft.
A-6 SCALE 1/4" = 1'

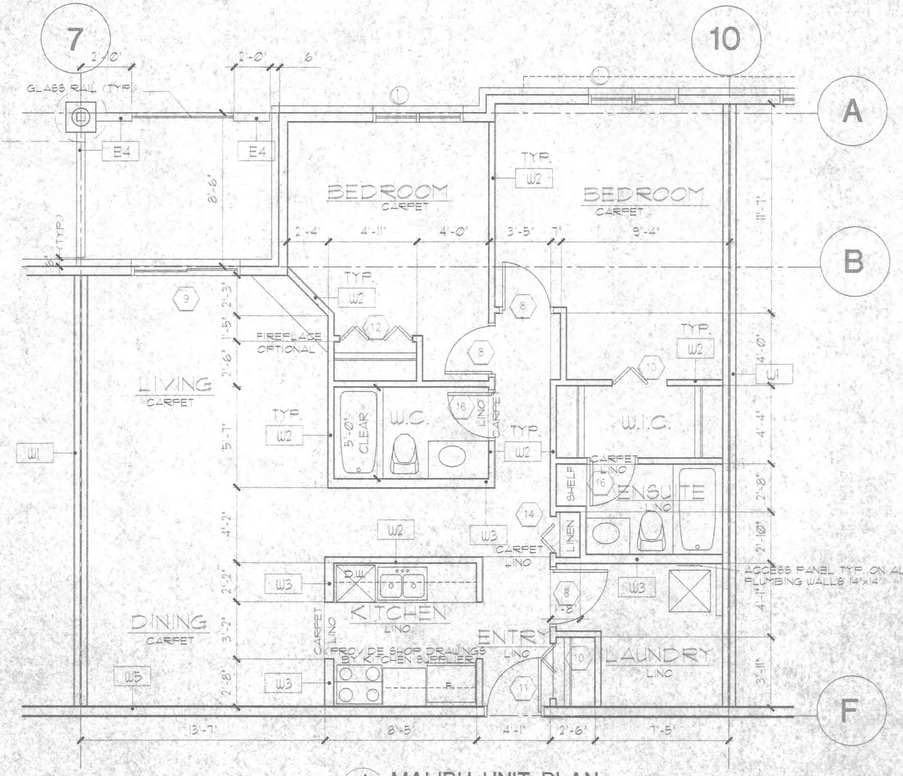


2 VISTA UNIT PLAN 900 sq.ft.
A-6 SCALE 1/4" = 1'



3 CASCADE UNIT PLAN 900 sq.ft.
A-6 SCALE 1/4" = 1'

3 A-18 7 A-18 8 A-18



4 MALIBU UNIT PLAN 1120 sq.ft.
A-6 SCALE 1/4" = 1'

architect's seal

MANU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

drawing status	date
issued for construction	98.10.23
issued for building permit	98.10.23
issued for tender	
issued for development permit	
issued for owners approval	
preliminary	
description	date

revisions

TUSCARORA APARTMENTS
150 TUSCANY SPRINGS BLVD.
CALGARY, ALBERTA
project

BUILDING THREE
UNIT PLANS
drawing

date	98.10.23
scale	1/4" = 1'
drawn	D.R.& J.S.
checked	

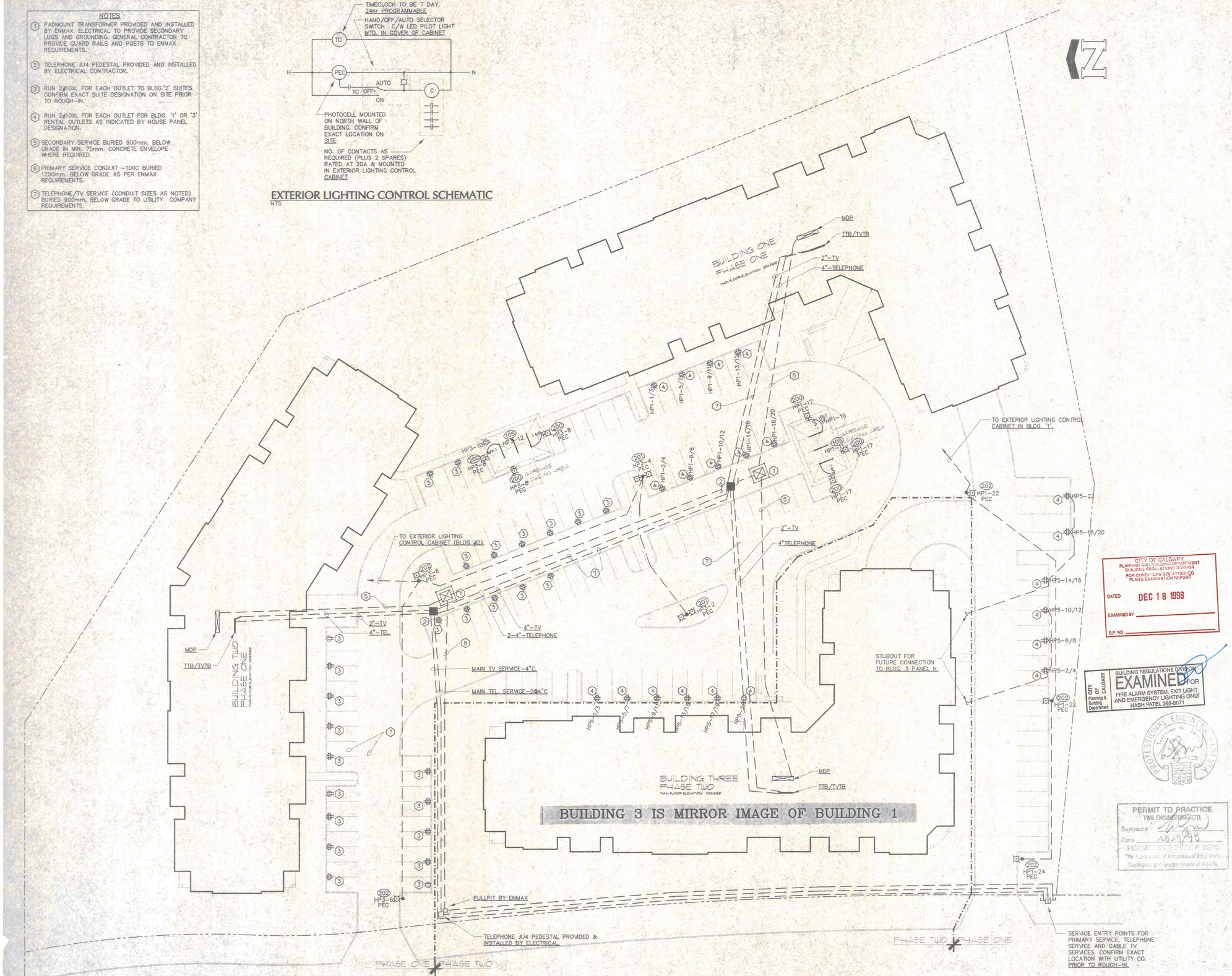
project no. 98-MC-0645

drawing no. A-6

NOTES

1. PADMOUNT TRANSFORMER PROVIDED AND INSTALLED BY ENMAX. ELECTRICAL TO PROVIDE SECONDARY LUGS AND GROUNDING. GENERAL CONTRACTOR TO PROVIDE GUARD RAILS AND POSTS TO ENMAX REQUIREMENTS.
2. TELEPHONE JU4 PEDESTAL PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
3. RUN 2#10XL FOR EACH OUTLET TO BLDG.'2' SUITES. CONFIRM EXACT SUITE DESIGNATION ON SITE PRIOR TO ROUGH-IN.
4. RUN 2#10XL FOR EACH OUTLET FOR BLDG. '1' OR '3' RENTAL OUTLETS AS INDICATED BY HOUSE PANEL DESIGNATION.
5. SECONDARY SERVICE BURIED 900mm. BELOW GRADE IN MIN. 75mm. CONCRETE ENVELOPE WHERE REQUIRED.
6. PRIMARY SERVICE CONDUIT –100C BURIED 1200mm. BELOW GRADE AS PER ENMAX REQUIREMENTS.
7. TELEPHONE/TV SERVICE (CONDUIT SIZES AS NOTED) BURIED 900mm. BELOW GRADE TO UTILITY COMPANY REQUIREMENTS.

EXTERIOR LIGHTING CONTROL SCHEMATIC
NTS



SITE PLAN
SCALE: 1:300

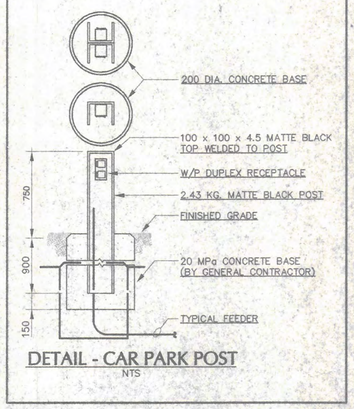
SYMBOL LEGEND

	CEILING SURFACE/SUSPENDED INCANDESCENT FIXTURE
	RECESSED INCANDESCENT FIXTURE
	WALL MOUNTED INCANDESCENT FIXTURE
	CEILING SURFACE/SUSPENDED H.I.D. FIXTURE
	WALL MOUNTED H.I.D. FIXTURE
	FLUORESCENT STRIP LIGHT FIXTURE
	CEILING SURFACE/SUSPENDED FLUORESCENT FIXTURE
	WALL MOUNTED FLUORESCENT FIXTURE
	RECESSED FLUORESCENT FIXTURE
	TRACK LIGHTING (NUMBER OF HEAD AS SHOWN)
	SITE LIGHT H.I.D. FIXTURE
	CEILING MOUNTED EXIT LIGHT
	WALL MOUNTED EXIT LIGHT
	BATTERY PACK C/W INTREGAL HEADS
	REMOTE MOUNTED EMERGENCY HEADS
(101)	DENOTES FIXTURE TYPE (101)
	SINGLE POLE SWITCH, SINGLE GANGED
	SINGLE POLE SWITCH, MULTI-GANGED
2	TWO POLE SWITCH
3	THREE WAY SWITCH
4	FOUR WAY SWITCH
LV	LOW VOLTAGE SWITCH
D	DISCONNECT SWITCH
TP	TERMAL SWITCH C/W NEON PILOT LIGHT
K	KEY OPERATED SWITCH
DIM	DIMMER SWITCH
TPK	KEYED THERMAL SWITCH C/W NEON PILOT LIGHT
V	VARIABLE SPEED SWITCH
	DUPLEX RECEPTACLE
	1/2 SWITCHED RECEPTACLE
	SPLIT RECEPTACLE
	DOUBLE DUPLEX RECEPTACLE
	ISOLATED GROUND RECEPTACLE
	GFI RECEPTACLE
	MOUNT 6" (150mm) ABOVE COUNTERTOP OR SPLASHBACK
	FLUSH FLOOR MOUNTED RECEPTACLE
	SPECIAL RECEPTACLE
	CONDU-POLE
	CLOCK
	MOTOR
	THERMOSTAT
	HUMIDISTAT
	MAGNETIC STARTER
	JUNCTION BOX
	CONTROL VALVE
	PUSHBUTTON
	TELEPHONE OUTLET
	TELEVISION OUTLET
	HEAT DETECTOR
	HEAT DETECTOR (HIGH TEMPERATURE)
	SMOKE DETECTOR
	DUCT TYPE SMOKE DETECTOR
	SMOKE ALARM
	FIRE ALARM BREAKGLASS STATION
	FIRE ALARM HORN C/W STROBE
	FIRE ALARM ISOLATOR JUNCTION BOX
	SUITE FIRE ALARM PIEZO c/w STROBE & SIGNAL SILENCE
	MAGNETIC DOOR HOLDER
	DOOR CONTACT
	CORRIDOR FIRE ALARM PIEZO c/w STROBE
	CONDUIT RUN IN WALLS OR CEILING
	NUMBER OF WIRES IN CONDUIT (3)
	CONDUIT RUN IN OR UNDER FLOOR
	CONDUIT CONTAINING LOW VOLTAGE WIRING
MDP	MAIN DISTRIBUTION PANEL
TTB	TELEPHONE TERMINAL BACKBOARD
PEC	PHOTO ELECTRIC CELL
FACP	FIRE ALARM CONTROL PANEL
N/L	NIGHT LIGHT
SDP	SUB-DISTRIBUTION PANEL
TTC	TELEPHONE TERMINAL CABINET
TVTB	TELEVISION TERMINAL BACKBOARD
TVTC	TELEVISION TERMINAL CABINET

CITY OF CALGARY
PLANNING AND BUILDING DEPARTMENT
BUILDING REGULATIONS DIVISION
FOR CONDITIONS SEE ATTACHED
PLANS EXAMINATION REPORT
DATED DEC 18 1998
EXAMINED BY
B.P. NO.

CITY OF CALGARY Planning & Building Department
BUILDING REGULATIONS DIVISION
EXAMINED FOR
FIRE ALARM SYSTEM, EXIT LIGHT, AND EMERGENCY LIGHTING ONLY
HASH PATEL 268-8071

PERMIT TO PRACTICE
TWS ENGINEERING LTD.
Signature
Date NOV 4/98
PERMIT NUMBER: P 2275
The Association of Professional Engineers, Geologists and Geophysicists of Alberta



DETAIL - CAR PARK POST
NTS

architect' seal

MANU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

TWS ENGINEERING LTD
#20 - 3115 - 12 STREET
Phone (403) 248-3777
Fax (403) 248-3779
ELECTRICAL CONSULTANTS

drawing status

description	date
issued for construction	ISSUE
issued for building permit	ISSUE
issued for tender	ISSUE
issued for development permit	
issued for owners approval	
preliminary	

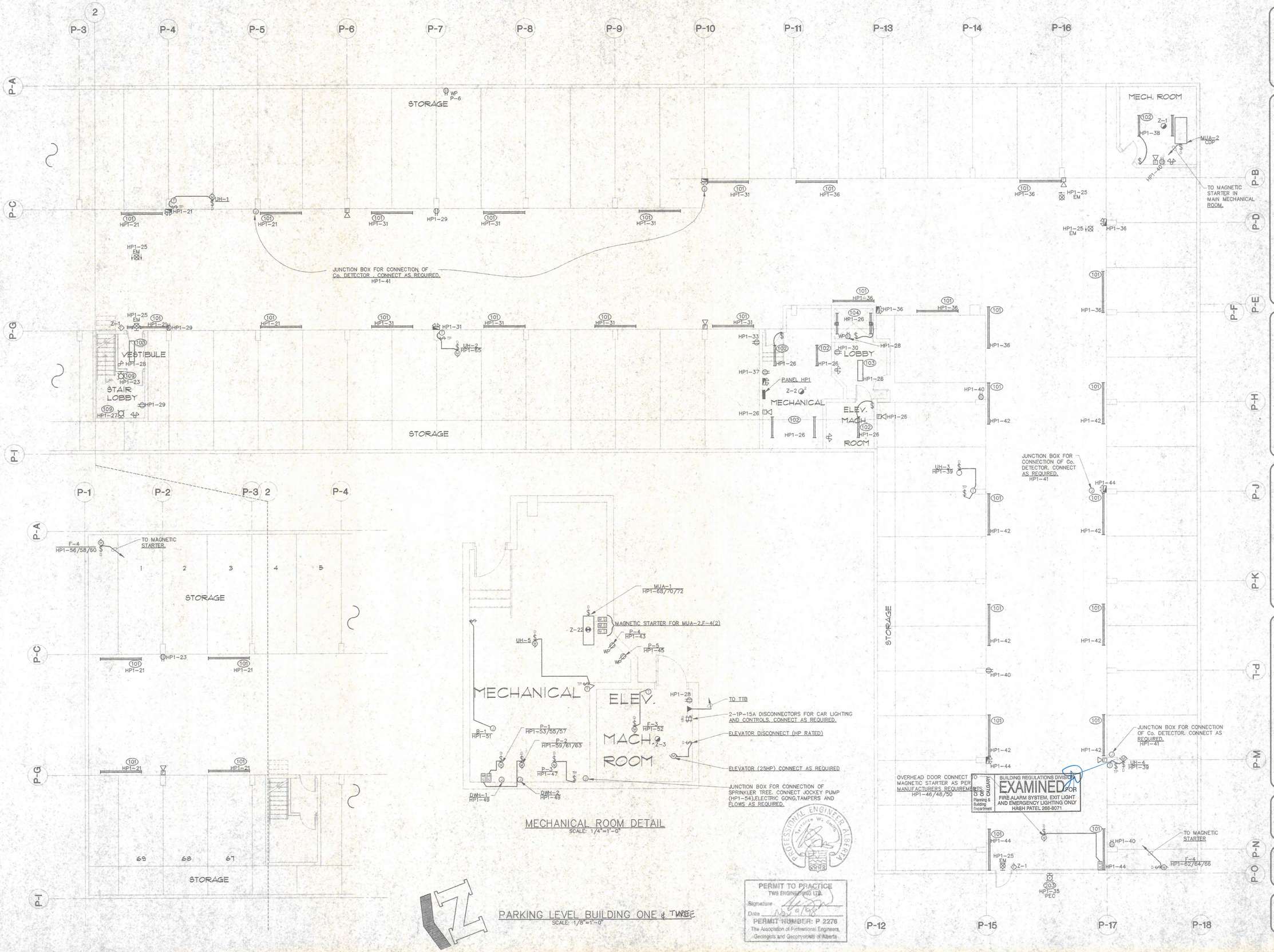
revisions

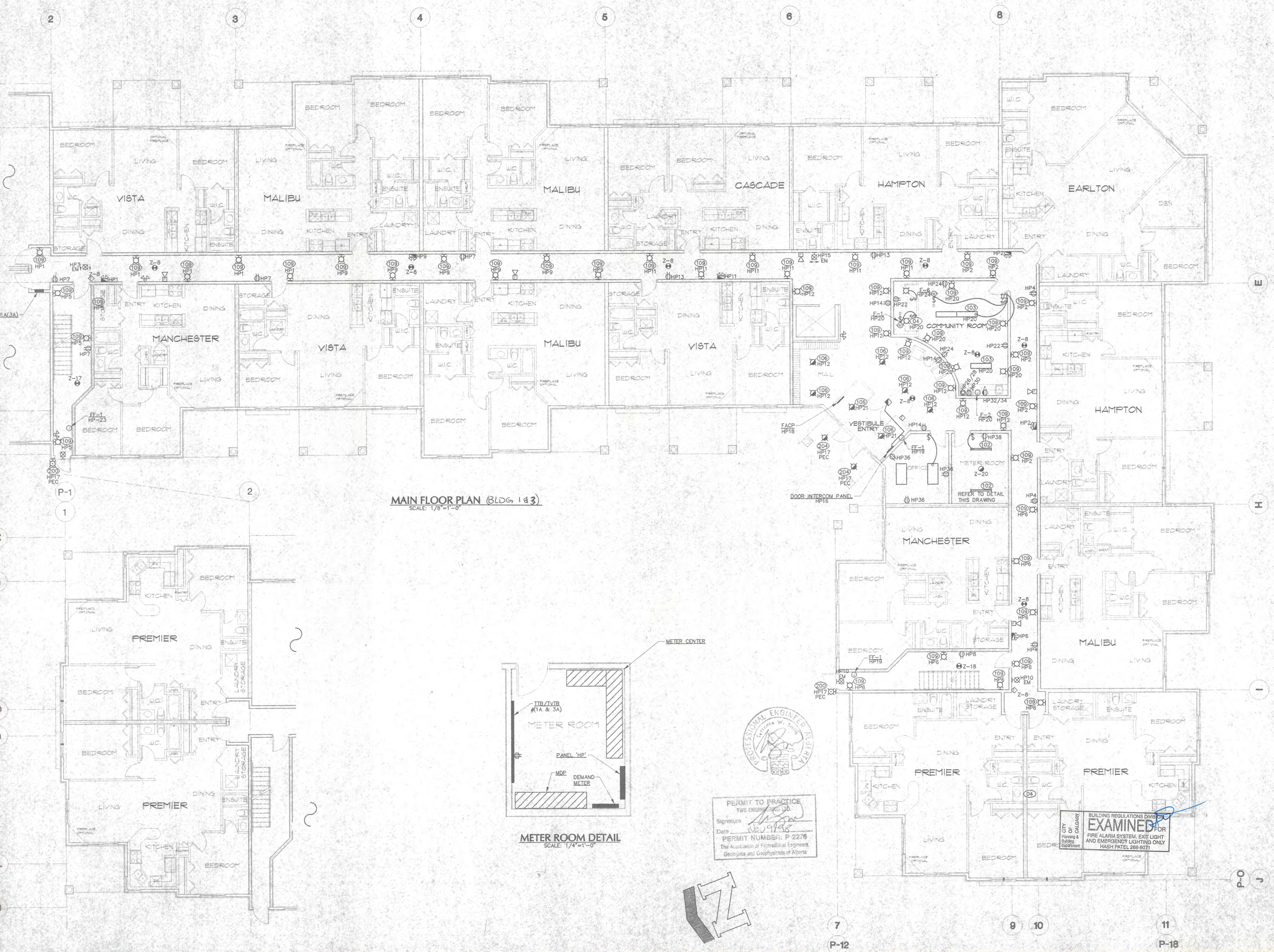
description	date

project: TUSCARORA APARTMENTS
8811 ROCKY RIDGE ROAD NW
CALGARY, AB

drawing: SITE PLAN

date	11/05/98
scale	AS SHOWN
drawn	G.H.
checked	ROH
project no.	98-724-12
drawing no.	E-1


STORAGE
WP P-6
MECH. ROOM
Z-1
HP1-38
MUA-2 CDP
HP1-40
TO MAGNETIC STARTER IN MAIN MECHANICAL ROOM.
UH-1
HP1-21
HP1-29
HP1-31
HP1-36
HP1-25 EM
JUNCTION BOX FOR CONNECTION OF Co. DETECTOR. CONNECT AS REQUIRED. HP1-41
VESTIBULE
HP1-28
HP1-23
STAIR LOBBY
HP1-27
UH-2 HP1-65
LOBBY
HP1-26
HP1-39
HP1-33
HP1-37
PANEL HP1
Z-2
MECHANICAL
ELEV. MACH. ROOM
HP1-42
UH-3 HP1-39
JUNCTION BOX FOR CONNECTION OF Co. DETECTOR. CONNECT AS REQUIRED. HP1-41
HP1-44
F-4 HP1-56/58/60
TO MAGNETIC STARTER.
HP1-40
HP1-25 EM
Z-1
HP1-35 PEC
MUA-1 HP1-68/70/72
MAGNETIC STARTER FOR MUA-2,F-4(2)
Z-22
P-4 HP1-43
P-5 HP1-45
UH-5
MECHANICAL
ELEV. MACH. ROOM
Z-3
HP1-28
TO TTB
2-1P-15A DISCONNECTORS FOR CAR LIGHTING AND CONTROLS. CONNECT AS REQUIRED.
ELEVATOR DISCONNECT (HP RATED)
ELEVATOR (25HP) CONNECT AS REQUIRED
JUNCTION BOX FOR CONNECTION OF SPRINKLER TREE. CONNECT JOCKEY PUMP (HP1-54),ELECTRIC CONG,TAMPERS AND FLOWS AS REQUIRED.
B-1 HP1-51
P-1 HP1-53/55/57
P-2 HP1-59/61/63
P-3 HP1-47
DWH-1 HP1-49
DWH-2 HP1-49
F-3 HP1-52
OVERHEAD DOOR CONNECT TO MAGNETIC STARTER AS PER MANUFACTURERS REQUIREMENTS HP1-46/48/50
UH-4 HP1-39
TO MAGNETIC STARTER
F-4 HP1-62/64/66
BUILDING REGULATIONS DIVISION
EXAMINED FOR
FIRE ALARM SYSTEM, EXIT LIGHT AND EMERGENCY LIGHTING ONLY
HASH PATEL 266-8071
CITY OF CALGARY Planning & Building Department
STORAGE
STORAGE
STORAGE



MAIN FLOOR PLAN (BLDG. 1 & 3)
SCALE: 1/8"=1'-0"

METER ROOM DETAIL
SCALE: 1/4"=1'-0"

PERMIT TO PRACTICE
TWS ENGINEERING LTD.
Signature
Date NOV 9 1998
PERMIT NUMBER: P 2276
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

BUILDING 3 IS MIRROR IMAGE OF BUILDING 1

architect: seal

MANJU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

TWS ENGINEERING LTD
#100-4333-98 STREET
EDMONTON, AB T6E 5P7
PH: 438-2000 FAX: 438-2001

TUSCARORA APARTMENTS
8811 ROCKY RIDGE ROAD NW
CALGARY, AB.
project

BUILDING ONE
MAIN FLOOR PLAN
drawing

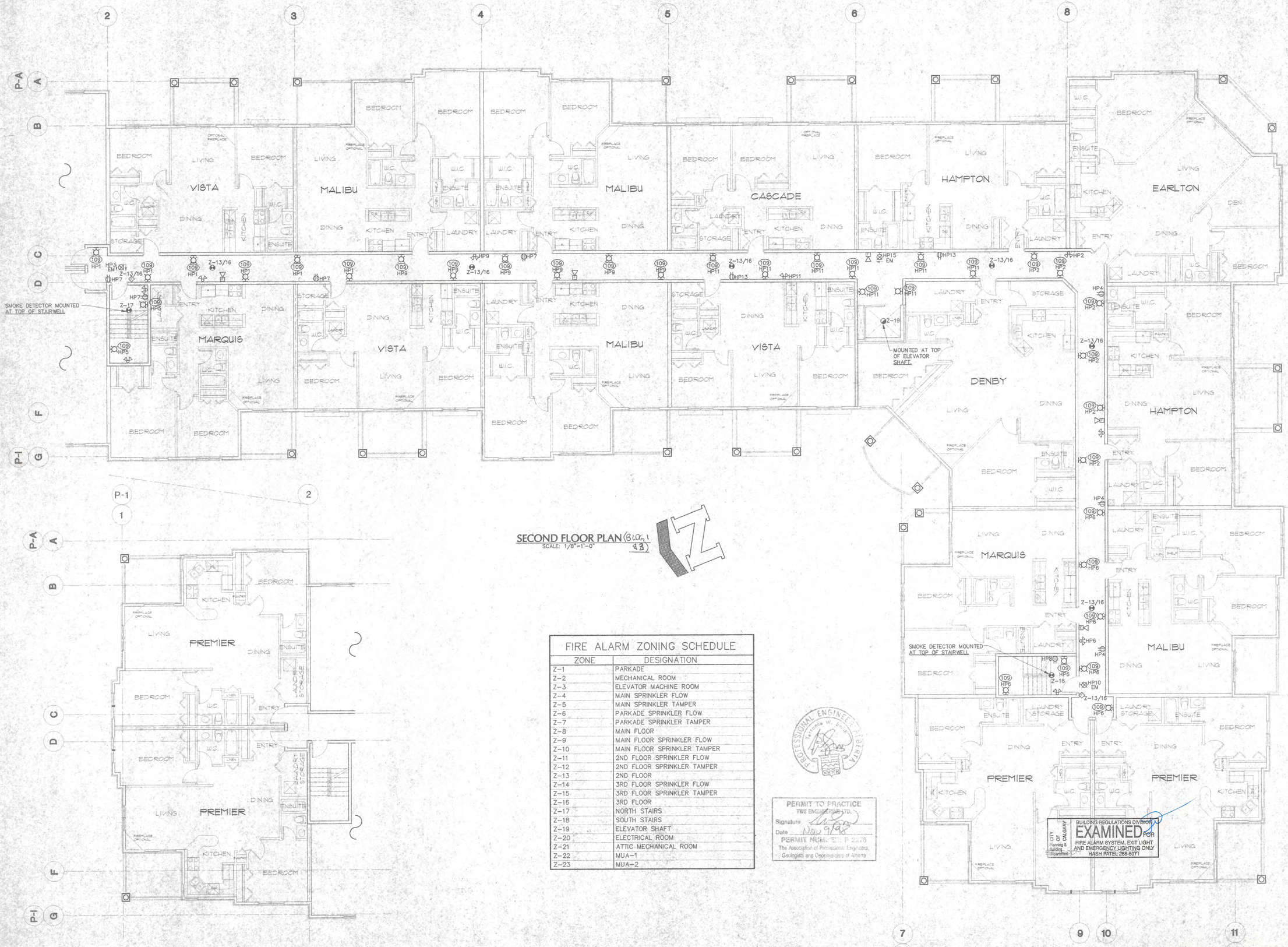
drawing status	date
issued for construction	
issued for building permit	
issued for tender	MAY 13'98
issued for development permit	
issued for owners approval	
preliminary	

revisions	date
description	

date 11/05/98
scale AS SHOWN
drawn GH
checked ROH

project no. 98-724-012

drawing no. E-3



SECOND FLOOR PLAN (BLDG. 1 #3)

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

FIRE ALARM ZONING SCHEDULE	
ZONE	DESIGNATION
Z-1	PARKADE
Z-2	MECHANICAL ROOM
Z-3	ELEVATOR MACHINE ROOM
Z-4	MAIN SPRINKLER FLOW
Z-5	MAIN SPRINKLER TAMPER
Z-6	PARKADE SPRINKLER FLOW
Z-7	PARKADE SPRINKLER TAMPER
Z-8	MAIN FLOOR
Z-9	MAIN FLOOR SPRINKLER FLOW
Z-10	MAIN FLOOR SPRINKLER TAMPER
Z-11	2ND FLOOR SPRINKLER FLOW
Z-12	2ND FLOOR SPRINKLER TAMPER
Z-13	2ND FLOOR
Z-14	3RD FLOOR SPRINKLER FLOW
Z-15	3RD FLOOR SPRINKLER TAMPER
Z-16	3RD FLOOR
Z-17	NORTH STAIRS
Z-18	SOUTH STAIRS
Z-19	ELEVATOR SHAFT
Z-20	ELECTRICAL ROOM
Z-21	ATTIC MECHANICAL ROOM
Z-22	MUA-1
Z-23	MUA-2

PROFESSIONAL ENGINEER ALBERTA — Terrence W. Smith

PERMIT TO PRACTICE
TWS ENGINEERING LTD.
Signature
Date Nov 9/98
PERMIT NUMBER: P 2276
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

BUILDING REGULATIONS DIVISION
CITY OF CALGARY — Planning & Building Department
EXAMINED FOR FIRE ALARM SYSTEM, EXIT LIGHT AND EMERGENCY LIGHTING ONLY
HASH PATEL 268-5077

7 9 10 11
P-12 P-18
P-O H I J

architect' seal
ALEXANDER CARUSO — registered ARCHITECT — ALBERTA

tws
TWS ENGINEERING LTD
#201-2420 - 17 STREET S.E. CALGARY, ALBERTA T2T 4M9 TEL: (403) 265-3922 FAX: (403) 265-3923
MECHANICAL CONSULTANTS ELECTRICAL CONSULTANTS

MANU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

drawing status	date
issued for construction	
issued for building permit	
issued for tender	MAY 13'98
issued for development permit	
issued for owners approval	
preliminary	

revisions	date

project: TUSCARORA APARTMENTS, 8811 ROCKY RIDGE ROAD NW, CALGARY, AB.

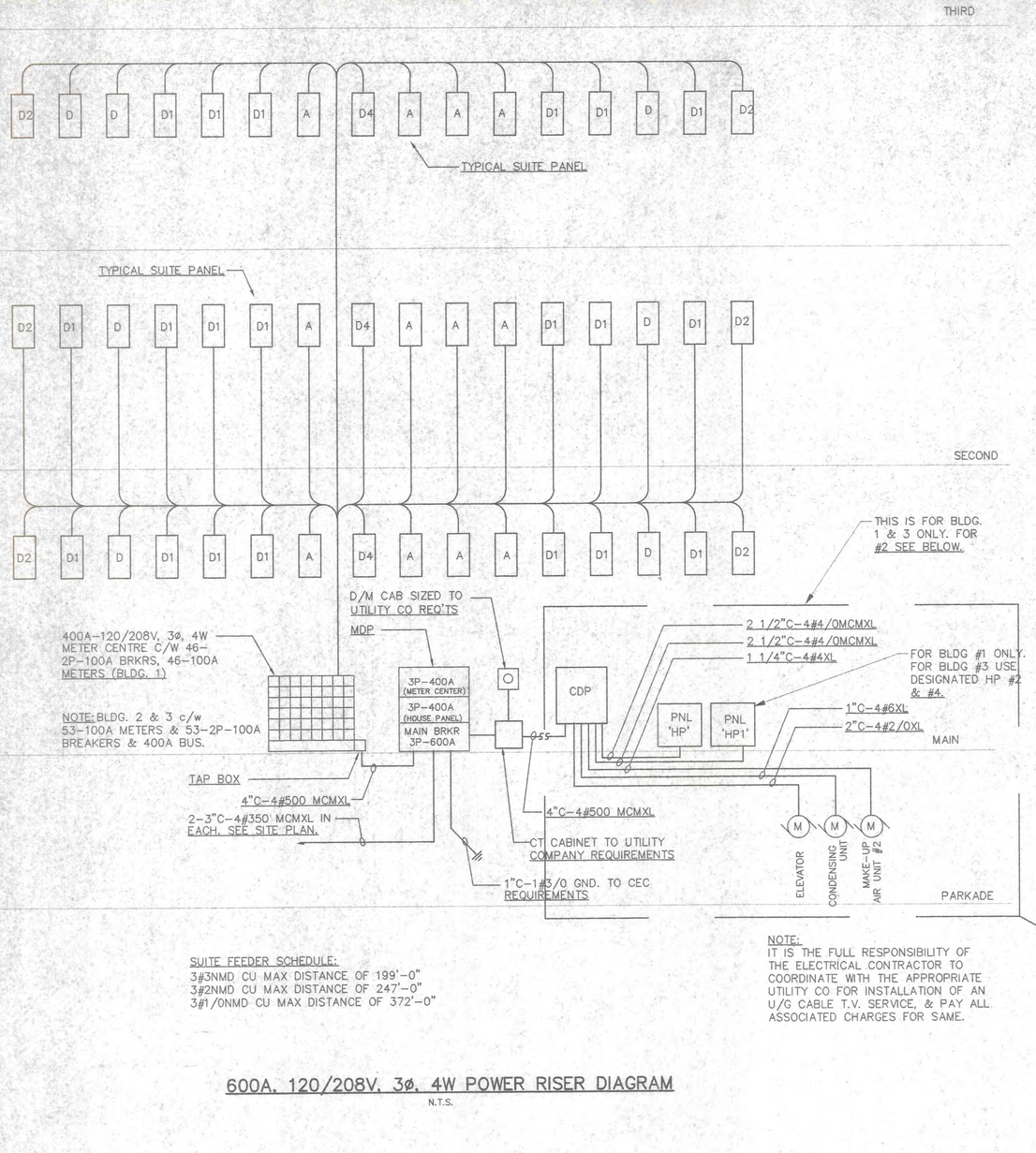
drawing: BUILDING ONE, SECOND FLOOR PLAN

date 11/05/98
scale AS SHOWN
drawn GH
checked ROH

project no. 98-724-012

drawing no. E-4

BUILDING 3 IS MIRROR IMAGE OF BUILDING 1

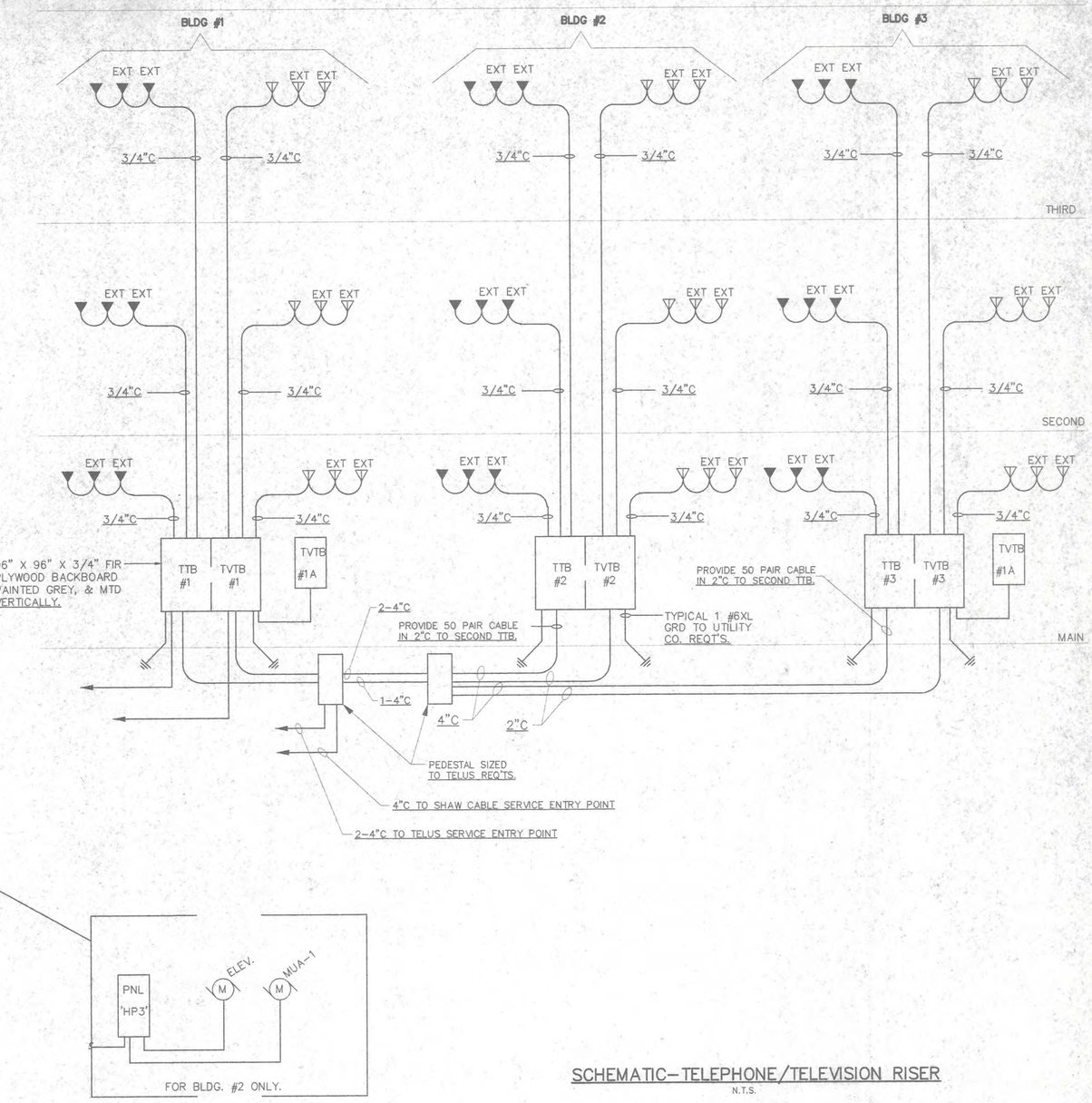


SUITE FEEDER SCHEDULE:
3#3NMD CU MAX DISTANCE OF 199'-0"
3#2NMD CU MAX DISTANCE OF 247'-0"
3#1/0NMD CU MAX DISTANCE OF 372'-0"

NOTE:
IT IS THE FULL RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITY CO FOR INSTALLATION OF AN U/G CABLE T.V. SERVICE, & PAY ALL ASSOCIATED CHARGES FOR SAME.

600A, 120/208V, 3ø, 4W POWER RISER DIAGRAM

N.T.S.



SCHEMATIC-TELEPHONE/TELEVISION RISER

N.T.S.

MOTOR SCHEDULE

NO.	EQUIPMENT	HP	#	VOLTS	CONDUIT - WIRE	CONTROL AND REMARKS :
B-1	BOILER	-	1	120	1/2"C - 2#12XL	JUNCTION BOX/ON-OFF SWITCH
P-1	PUMP	3/4	3	208	1/2"C - 3#12 XL	DISCONNECT/MAGNETIC STARTER/HOA
P-2	PUMP	3/4	3	208	1/2"C - 3#12 XL	DISCONNECT/MAGNETIC STARTER/HOA
P-3	RECIRC. PUMP	FHP	1	120	1/2"C - 2#12 XL	DISCONNECT/VARIABLE SPEED SWITCH PROVIDED BY MECHANICAL AND INSTALLED BY ELECTRICAL
P-4	PUMP	FHP	1	120	1/2"C - 2#12 XL	WEATHERPROOF DUPLEX RECEPTACLE
P-5	PUMP	FHP	1	120	1/2"C - 2#12 XL	WEATHERPROOF DUPLEX RECEPTACLE
P-6	PUMP	1/3	1	120	1/2"C - 2#12 XL	WEATHERPROOF DUPLEX RECEPTACLE
P-7	JACUZZI PUMP	1/2	1	208	1/2"C - 2#12 XL	JUNCTION BOX/120V T'STAT,TIMER/PROVIDE GROUNDING AS PER CEC
P-8	JOCKEY PUMP	1/3	1	120	1/2"C - 2#12 XL	DISCONNECT/TP SWITCH/CONNECT AS REQUIRED
DWH-1	HOT WATER HEATER	FHP	1	120	1/2"C - 3#12 XL	JUNCTION BOX,THERMOSTAT
DWH-2	HOT WATER HEATER	FHP	1	120	1/2"C - 3#12 XL	JUNCTION BOX,THERMOSTAT
UH-1	UNIT HEATER	FHP	1	120	1/2"C - 3#12 XL	DISCONNECT/TP SWITCH/THERMOSTAT
UH-2	UNIT HEATER	FHP	1	120	1/2"C - 3#12 XL	DISCONNECT/TP SWITCH/THERMOSTAT
UH-3	UNIT HEATER	FHP	1	120	1/2"C - 3#12 XL	DISCONNECT/TP SWITCH/THERMOSTAT
UH-4	UNIT HEATER	1/3	1	120	1/2"C - 3#12 XL	DISCONNECT/TP SWITCH/THERMOSTAT/HOA
UH-5	UNIT HEATER	FHP	1	120	1/2"C - 3#12 XL	DISCONNECT
FF-1	FORCE FLOW HEATER	FHP	1	120	1/2"C - 2#12 XL	DISCONNECT/THERMOSTAT
MUA-1	MAKE UP AIR UNIT	1	3	208	1/2"C - 3#12 XL	DISCONNECT/HOA/MAGNETIC STARTER/REMOTE PANEL/THERMOSTAT/DUCT DETECTOR
MUA-2	MAKE UP AIR UNIT	20	3	208	1 1/4"C - 3#1/0XL	DISCONNECT/HOA/MAGNETIC STARTER/REMOTE PANEL/DUCT DETECTOR/F.A. SHUTDOWN/INTERLOCK WITH F-4
RAD-1	ELECTRICAL RADIATOR	2KW	1	208	1/2"C - 2#10 XL	DISCONNECT/INTEGRAL THERMOSTAT
F-1	EXHAUST FAN	FHP	1	120	1/2"C - 2#12 XL	DISCONNECT/ON-OFF SWITCH
F-2	KITCHEN EXHAUSTHOOD	FHP	1	120	1/2"C - 2#12 XL	JUNCTION BOX/PROVIDE 1-75WF LAMP
F-3	EXHAUST FAN	FHP	1	120	1/2"C - 2#12 XL	DISCONNECT/3 SPEED SWITCH/COOLING THERMOSTAT
F-4	EXHAUST FAN (2)	2	3	208	1/2"C - 3#10 XL	DISCONNECT/HOA/MAGNETIC STARTER/INTERLOCK WITH MUA-2
F-5	EXHAUST FAN	FHP	1	120	1/2"C - 2#12 XL	DISCONNECT/VARIABLE SPD. CONTROLLER PROVIDED BY MECHANICAL AND INSTALLED BY ELECTRICAL
F-6	EXHAUST FAN	FHP	1	120	1/2"C - 2#12 XL	DISCONNECT/VARIABLE SPD. CONTROLLER PROVIDED BY MECHANICAL AND INSTALLED BY ELECTRICAL
F-7	EXHAUST FAN	FHP	1	120	1/2"C - 2#12 XL	DISCONNECT/3 SPEED SWITCH PROVIDED BY MECHANICAL AND INSTALLED BY ELECTRICAL
CU-1	CONDENSING UNIT	12FLA	1	208	1/2"C - 2#12 XL	DISCONNECT/JUNCTION BOX
CU-2	CONDENSING UNIT	31FLA	1	208	3/4"C - 2#8 XL	DISCONNECT/JUNCTION BOX

FIXTURE SCHEDULE

ZONE	DESCRIPTION	CATALOGUE NUMBER	LAMPS	MOUNTING AND REMARKS :
101	COLUMBIA	CS8432EB8T120	4F32T8CW	SURFACE MOUNTED/TANDEM MOUNTED/WIREGUARD
102	COLUMBIA	CS4232EB8120	2F32T8CW	SURFACE MOUNTED/WIREGUARD
103	COLUMBIA	WC4232EB8120	2F32T8CW	SURFACE MOUNTED
104	COLUMBIA	LUN4232EB8120	2F32T8CW	WALL MOUNTED IN ELEVATOR PIT
105	COLUMBIA	CS4232484OCT120	2F40T12CW	SURFACE MOUNTED/-20°C BALLAST
106	PRESCOLITE	PBX-7094B-120	2-PL13 QUAD	SURFACE MOUNTED
107	COLUMBIA	WC4332EB8120	3F32T8CW	SURFACE MOUNTED
108	SUITE CORRIDOR	-	2-PL18	CEILING MOUNTED/SUPPLIED BY OWNER AND INSTALLED BY ELECT.
109	CORRIDOR	BY OTHERS	2-PL18	WALL MOUNTED/PROVIDED BY OTHERS AND INSTALLED BY ELECT.
200	GENERAL ELECTRIC	WM1MQ7M1N	1-70W MH	WALL MOUNTED
201	GENERAL ELECTRIC	84214120BLPALFDTA	2-400W MH	POLE MOUNTED/20' ROUND POLE,PREFINISHED STEEL/TYPE '5' DISTRIBUTION
202	GENERAL ELECTRIC	84114120BLPALF	1-400W MH	POLE MOUNTED/20' ROUND POLE,PREFINISHED STEEL/TYPE '3' DISTRIBUTION
203	GENERAL ELECTRIC	WM4T25MF	1-250W MH	WALL MOUNTED
01	SUITE BALCONY	BY OTHERS	1-60WF	WALL MOUNTED/PROVIDED BY OTHERS AND INSTALLED BY ELECT.
02	SUITE CORRIDOR	WC4232EB8120	2F32T8CW	CEILING MOUNTED/PROVIDED BY OTHERS AND INSTALLED BY ELECT.
03	SUITE BEDROOM	LUN4232EB8120	2F32T8CW	CEILING MOUNTED/PROVIDED BY OTHERS AND INSTALLED BY ELECT.
04	SUITE WASHROOM	CS4232484OCT120	2F40T12CW	WALL MOUNTED/PROVIDED BY OTHERS AND INSTALLED BY ELECT.
05	SUITE KITCHEN	PBX-7094B-120	2-PL13 QUAD	CEILING MOUNTED/PROVIDED BY OTHERS AND INSTALLED BY ELECT.
06	SUITE DINING ROOM	WC4332EB8120	3F32T8CW	SURFACE MTD./PROVIDED BY OTHERS AND INSTALLED BY ELECT.
07	KEYLESS PORCELAIN LAMPHOLDER		1-100WF	CEILING MOUNTED
EM	LUMACELL	QBIC SERIES	12W QARTZ	12V BATTERY PACK/REMOTE HEADS AS NOTED
EXIT	LUMACELL	LER SERIES	LED	RED STENCIL FACE/MOUNTED AS SHOWN

PANEL SCHEDULE

PANEL HP - 120/208V/3ø,4W,84 CCT.V SURFACE MOUNTED
30 - 1P-15A BREAKERS - LIGHTING & AUXILIARY
3 - 3P-15A BREAKERS - P-1,P-2,MUA-1
1 - 2P-20A BREAKERS - CU-1
SPACES

PERMIT TO PRACTICE
TWS ENGINEERING LTD.
Signature
Date Nov 6/98
PERMIT NUMBER: P 2279
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

architect seal

TWS ENGINEERING LTD
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ELECTRICAL CONSULTANTS

MANU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

drawing status	date
issued for construction	MAY 19/98
issued for building permit	
issued for tender	
issued for development permit	
issued for owners approval	
preliminary	

revisions	date
description	

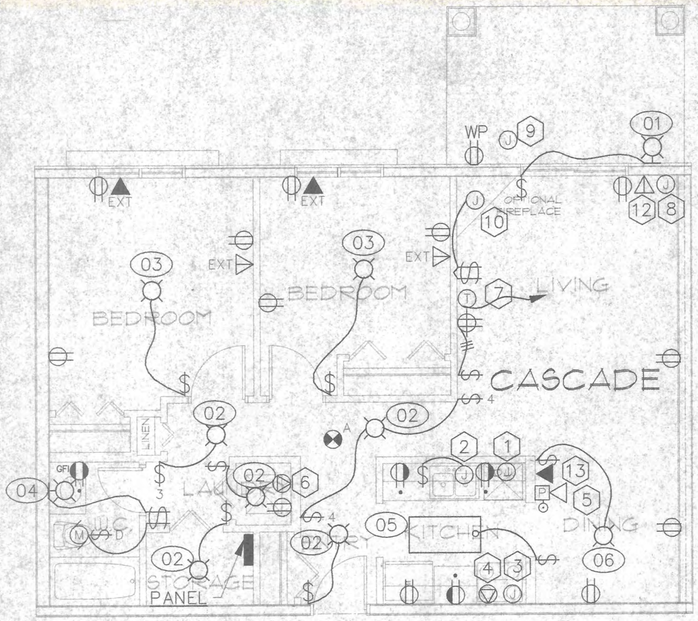
TUSCARORA APARTMENTS
8811 ROCKY RIDGE ROAD NW
CALGARY, AB
project

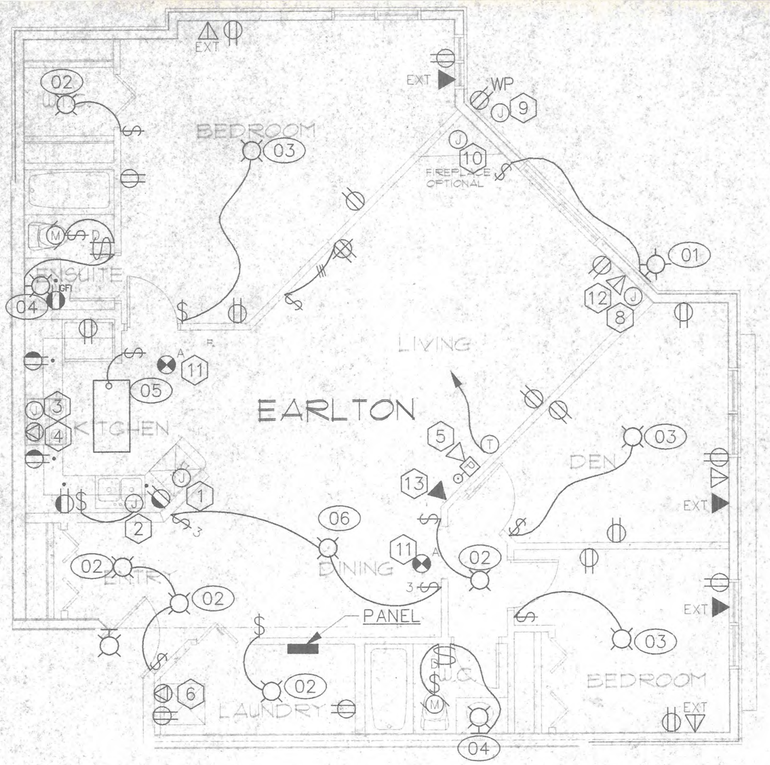
RISER DIAGRAMS
BLDG TWO
drawing

date 11/05/98
scale AS SHOWN
drawn G.H.
checked ROH

project no. 98-724-012

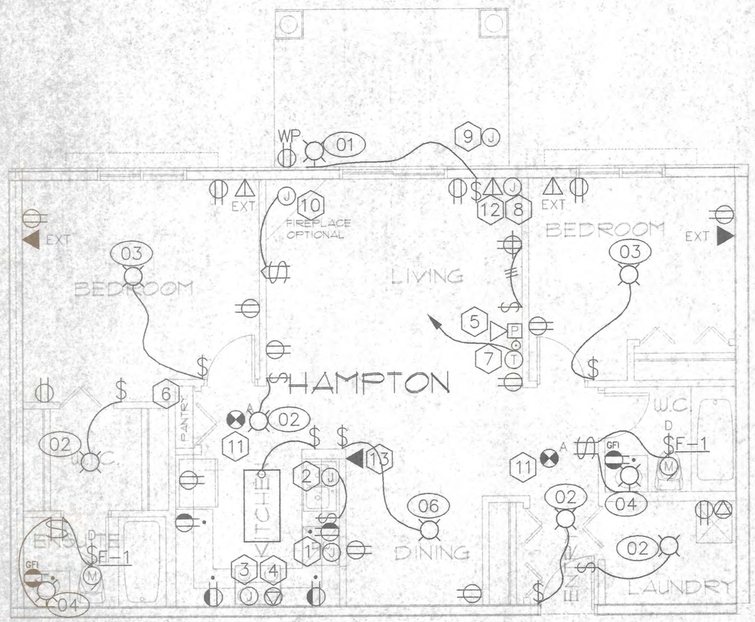
drawing no. E-7

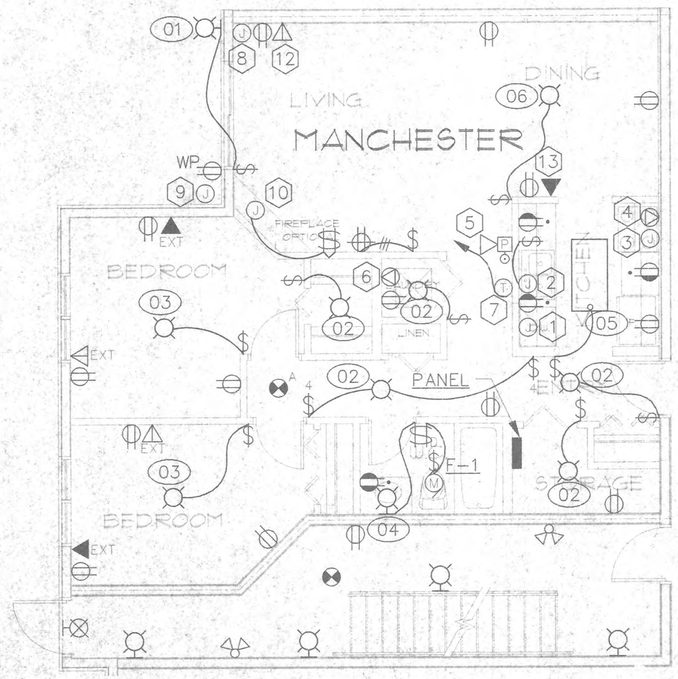




NOTES

1. JUNCTION BOX FOR CONNECTION OF DISHWASHER. CONNECT AS REQUIRED.
2. JUNCTION BOX FOR CONNECTION OF GARBURATOR. CONNECT AS REQUIRED.
3. JUNCTION BOX FOR CONNECTION OF RANGEHOOD. CONNECT AS REQUIRED.
4. SPECIAL RECEPTACLE, 40A,208V,1ø FOR RANGE.
5. FIRE ALARM PIEZO c/w STROBE & SIGNAL SILENCE. CONNECT TO CORRIDOR FIRE ALARM PIEZO BY T-TAP. (THIS SUITE DEVICE IS NOT SUPERVISED).
6. 30A,1ø,208V, SPECIAL RECEPTACLE FOR DRYER.
7. THERMOSTAT CONNECTED TO RADIATOR VALVE. CONNECT TO XMERS AS REQUIRED.
8. JUNCTION BOX FOR CONNECTION OF A/C UNIT. CONNECT AS REQUIRED.
9. JUNCTION BOX FOR CONNECTION OF CONDENSING UNIT. CONNECT AS REQUIRED.
10. JUNCTION BOX FOR CONNECTION OF FAN AND IGNITER FOR FIREPLACE.
11. SMOKE ALARM TO BE CONNECTED SUCH THAT UPON ACTIVATION OF ONE ALARM, BOTH WILL SOUND.
12. CABLE TV OUTLET. RUN SEPARATE COAX CABLE TO TVTB AND CONNECT AS REQUIRED.
13. TELEPHONE OUTLET. RUN CABLE DOWN TO TTB. REFER TO RISER.





TYPICAL SUITE PANEL SCHEDULE

DESCRIPTION	BRKR	CCT	CCT	BRKR	DESCRIPTION
EXTERIOR RECEPTACLE	15	1	2	2	KITCHEN RECEPTACLE
W/R GFI RECEPTACLE	15	3	4	15	
STORAGE RECEPTACLE	15	5	6	2	KITCHEN RECEPTACLE
DINING RECEPTACLE	15	7	8	15	
LIGHT/DINING RECEP.	15	9	10	15	DISHWASHER
LIGHT/DINING RECEP.	15	11	12	2	RANGE
LIGHT/DINING RECEP.	15	13	14	40	
LIGHT/DINING RECEP.	15	15	16	15	GARBURATOR
CONDENSER	2	17	18	15	FRIDGE
	15	19	20	2	DRYER
A/C UNIT	15	21	22	30	
SPACE		23	24	15	WASHER
SPACE	2	25	26	2	SPARE
SPACE	15	27	28	15	SPARE
SPACE	15	29	30	15	SPARE

BUILDING REGULATIONS DIVISION
CITY OF CALGARY Planning & Building Department
EXAMINED FOR FIRE ALARM SYSTEM, EXIT LIGHT AND EMERGENCY LIGHTING ONLY
HASH PATEL 268-8071

PERMIT TO PRACTICE
TWS ENGINEERING LTD.
Signature
Date NOV 17/98
PERMIT NUMBER: P 2275
The Association of Professional Engineers, Geologists & Geophysicists of Alberta

TYPICAL MAIN FLOOR PLANS
SCALE: 1/4"=1'-0"

architects' seal
REGISTERED ARCHITECT ALBERTA

TWS ENGINEERING LTD
#108-3231 34th STREET N.E. CALGARY, ALBERTA T1Y 6Z6 PH: 403 291-5977 FAX: 403 291-5977
ELECTRICAL CONSULTANTS

MANU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

	date	description
issued for construction	MAY 13'98	
issued for building permit		
issued for tender		
issued for development permit		
issued for owners approval		
preliminary		

drawing status

revisions

project: TUSCARORA APARTMENTS, 8811 ROCKY RIDGE ROAD NW, CALGARY, AB.

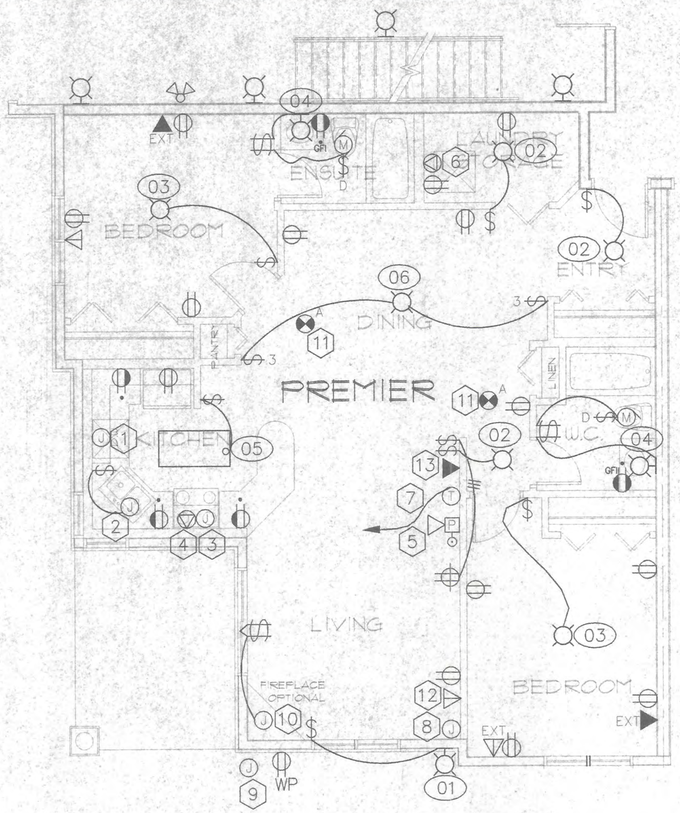
drawing: BUILDING ONE, TYPICAL FLOOR PLAN

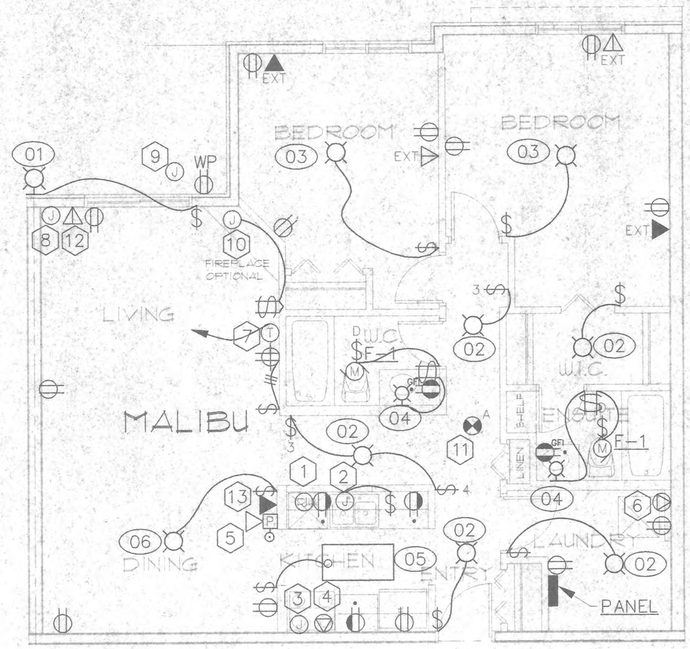
date 11/05/98
scale AS SHOWN
drawn G.H.
checked ROH

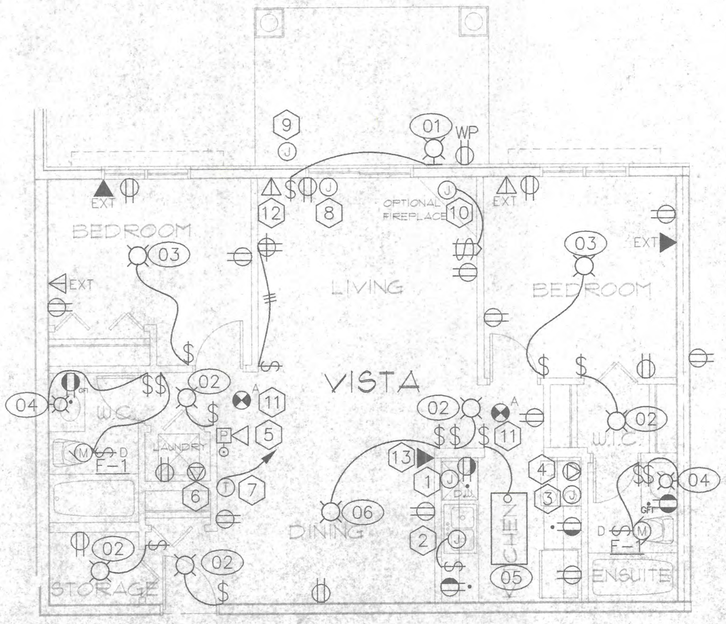
project no. 98-724-012

drawing no. E-8

BUILDING 3 IS MIRROR IMAGE OF BUILDING 1







TYPICAL SUITE FLOOR PLAN
SCALE: 1/4"=1'-0"

NOTES

1. JUNCTION BOX FOR CONNECTION OF DISHWASHER. CONNECT AS REQUIRED.
2. JUNCTION BOX FOR CONNECTION OF GARBURATOR. CONNECT AS REQUIRED.
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13. TELEPHONE OUTLET. RUN CABLE DOWN TO TTB. REFER TO RISER.

PROFESSIONAL ENGINEER — Lawrence W. Smith

PERMIT TO PRACTICE
TWS ENGINEERING LTD.
Signature
Date MAY 13/98
PERMIT NUMBER: P 2275
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

BUILDING REGULATIONS DIVISION
EXAMINED
FIRE ALARM SYSTEM, EXIT LIGHT AND EMERGENCY LIGHTING ONLY
HASH PATEL 268-5071
CITY OF CALGARY
Planning & Building Department

BUILDING 3 IS MIRROR IMAGE OF BUILDING 1

architect's seal
MANJU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada

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ELECTRICAL CONSULTANTS

drawing status

issued for	date
issued for construction	
issued for building permit	
issued for tender	
issued for development permit	MAY 13'98
issued for tsmrra approval	
preliminary	

revisions

description	date

project: TUSCARORA APARTMENTS, 8811 ROCKY RIDGE ROAD NW, CALGARY, AB.

drawing: BUILDING ONE, TYPICAL FLOOR PLAN

date	11/05/98
scale	AS SHOWN
drawn	G.H.
checked	ROH

project no. 98-72-012

drawing no. E-9

ELECTRICAL SPECIFICATIONS

DIVISION 16 – ELECTRICAL

SECTION 16A – GENERAL REQUIREMENTS

1.0 GENERAL

1.1 The General Conditions and Instructions to Bidders as set forth in the general contract specifications and all addenda thereto shall apply to, and govern all portions of the electrical work.

1.2 Points not specifically mentioned shall be in strict accordance with the Canadian Electrical Code and regulations of the Electrical Inspection Department from which the permit was obtained. The latest revisions and/or amendments to this Code, with applicable date restrictions, shall also govern work on this contract.

1.3 It is the intent that these drawings and specifications provide for an electrical installation complete and in operating condition. The Contractor shall be responsible for supplying and installing all material necessary to accomplish this, except where specifically noted that such work or material is not included.

2.0 CODES, PERMITS AND INSPECTIONS

2.1 The installation shall comply with the requirements of the current edition of the Canadian Electrical Code and the regulations of the Electrical Inspection Department having jurisdiction.

2.2 Electrical trade shall obtain all electrical permits required and after completion of the work shall furnish to the Architect a Certificate of Final Inspection and Approval from the Inspection Department. Electrical trade shall take out all permits at the beginning of the work.

2.3 The Electrical Contractor shall specifically note that he shall submit two (2) sets of drawings to the Electrical Inspection Department and shall include all costs for prints, survey, etc. in this electrical tender.

2.4 The electrical contractor shall include in his electrical tender, any Associated Plan Review charges.

3.0 STANDARDS OF WORKMANSHIP AND MATERIAL

3.1 All material supplied by the Contractor shall be new and of the quality specified. All such material shall conform to the standards of the Canadian Standards Association, and shall bear the necessary C.S.A. label. For any material not C.S.A. approved, this Contractor shall obtain the approval of the Local Inspection Authority, and shall bear all inspection charges levied and any modification costs required.

3.2 All phases of the electrical installation shall be executed in a satisfactory, workmanlike manner, and shall present a neat mechanical appearance when completed. Work not considered satisfactory to the Engineer shall be corrected at the Contractor's expense.

3.3 The contractor shall keep on the job during his progress, a competent foreman and necessary qualified tradesmen, all satisfactory to the Engineer. The foreman shall not be changed, except with the consent of the Engineer, unless he proves to be unsatisfactory and ceases to be in the employ of the Contractor.

3.4 The foreman shall represent the Contractor in his absence, and all directions given to the foreman shall be held as being given to the Contractor. The Contractor shall give efficient supervision to the work, using his best skill and attention.

4.0 SETTING OUT OF THE WORK

4.1 The electrical trade shall be responsible for correcting all work completed contrary to the intent of the drawings and specifications and shall bear all costs for same. Where the intent of the drawings and specifications is not clear, he shall obtain the clarification of the Engineer before proceeding with the work.

4.2 The electrical trade shall give the work his personal supervision, lay out his own work, do all necessary levelling and measuring or employ a competent Engineer to do so. Figures, full size and detail drawings shall take precedence over scale measurements.

4.3 Where any equipment supplied by the electrical trade must be built–in with work of other Contractors, this Contractor shall be responsible for the supplying of the equipment to be built–in or measurements to allow necessary openings to be left so as not to hold up the work.

4.4 The electrical trade, in setting out of his work, shall make reference to Architectural, Structural and Mechanical drawings. He shall consult with the respective trades in setting out locations for conduit runs, lighting fixtures, panel assemblies, etc. so that conflicts are avoided and symmetrical even spacing is maintained.

4.5 Before submitting tender, carefully examine the site of the proposed work so as to ascertain all existing conditions affecting the work. No extras will be allowed for work necessitated by conditions ordinarily evident on the site.

4.6 Where fluorescent fixtures, incandescent fixtures, speakers, etc. occur in acoustic tile type ceilings, the fixture or speaker positions will be coordinated with the tile pattern and shall be adjusted,if required, to suit the tile pattern.

4.7 Where receptacles are mounted above counters, benches, splashbacks, etc. location and mounting heights shall be coordinated with the built–in units. Refer to Architectural details. Where receptacles occur in outside walls where heating units occur, receptacle height shall be adjusted to coordinate with the heating units.

4.8 Switch maunting heights shall be coordinated with Architectural details and shall be adjusted, if required, to coordinate with panelling, dados, masonry course lines, etc.

4.9 Where outlets occur in exterior ceilings and walls, the electrical trade shall install "poly–vapour" hats to maintain the integrity of the vapour barrier and ensure that there is insulation behind the outlet boxes to prevent condensation through the boxes. At no additional charge, outlets can be relocated in the field plus or minus 2 m from location shown on drawings.

4.10 Outlets located in party walls shall not be closer than 3 feet apart to prevent sound transmission through adjoining rooms.

4.11 Installation of conduits, outlets and equipment in mechanical rooms shall not be proceeded with until the installation of mechanical equipment is far enough progressed to avoid conflicts. Position of electrical equipment and outlets shall be adjusted in these areas to coordinate with mechanical equipment.

5.0 EXCAVATION, BACKFILLING, ETC.

5.1 The Electrical Contractor shall be responsible for all trenching pertaining to his work and shall arrange and pay for this trenching. Requirements for site preparation and backfilling shall be as set forth in the General Conditions of the General Contract. All trenching shall be to the approval of, and as directed by, the General Contractor.

5.2 Bottoms of trenches, etc. for conduits shall be levelled with a 75 mm sand bed. Conduits not encased in concrete shall be bedded in sand and shall be painted with two coats of asphaltum paint prior to their coverage. All trenches shall be backfilled to have a coverage over conduits and/or concrete envelopes of 300 mm as protection against damage to the installation. This backfilling to be compacted to standard proctor as outlined in Division 2 of these specifications.

5.3 Final backfilling and tamping will be by the General Contractor and in his contract.

6.0 CUTTING, PATCHING, ETC.

6.1 Structural members shall not be cut without the consent of the Engineer and/or Structural Engineers on the site. For all necessary cutting, channelling, core drilling, sleeving, etc., the Electrical Contractor shall provide his own forces and necessary equipment required to complete the electrical installation.

6.2 Prior to running of ANY ducts in the slab or other concrete members, contact the Structural Engineer and obtain his consent, in writing, for doing so.

7.0 SUBSTITUTION

7.1 No substitutions will be allowed unless written acceptance has been obtained from the Engineer before tender closing.

8.0 SHOP DRAWINGS

8.1 Submit sets of manufacturer's detailed shop drawings (number of sets to be determined later), specifications, data sheets, catalogue cuts, etc. for equipment including but not limited to: panelboards, service equipment, safety switches, lighting fixtures or as may be considered necessary by the Engineer.

9.0 RECORD DRAWINGS

9.1 The Engineer will furnish one set of ozalid white prints to be used for record work as actually installed. Record on this set all changes associated with the work.

9.2 Obtain at own expense, from the Engineer's tracings, one set of mylar sepia transparencies and upon completion of the work and before final payment, hire a drafting service approved by the Engineer, to transcribe all information from the record prints to the transparencies including any changes to the original tender drawings covered by addenda, change orders, field changes, job conditions, etc. Contractor to show and dimension all underground services, feeder location, telephone/television/low voltage conduit runs, correct final mechanical equipment numbering designation (they will change), correct fixture and equipment supplier catalogue information. Transparencies shall be marked "As–Built" drawings and shall be turned over to the Engineer.

10.0 MAINTENANCE MANUALS

10.1 Before completion and acceptance of the project, furnish an electrical system operating manual in 3–post hard back binder. Each system and piece of equipment requiring adjustment or maintenance or whose operation is not readily apparent to unskilled users, or requested by the Owner's representative, shall each be covered by a separate section in the manual. Each section shall be separately tabbed and indexed.

Three such manuals are required.

10.2 Each electrical system shall be indexed and completed as follows:

.1 Name of system or equipment and manufacturer.
.2 Name and address of nearest service and parts supplier.
.3 Operating instructions.
.4 Maintenance instructions.
.5 Trouble shooting guide.
.6 Replacement parts list.
.7 Illustrations showing sizes, operation, modifications.
.8 Schematic and connection diagrams in a separate plan pocket or binder.
.9 Assembly and parts drawings in a separate plan pocket or binder.

10.3 The section on lighting fixtures shall contain information and be indexed for each type of lighting fixture as follows:

.1 Fixture type designations.
.2 Name of manufacturer.
.3 Catalogue number of fixture.
.4 Catalogue number of lamps for replacement.
.5 Catalogue number of replacement plastic diffusers or glassware.
.6 Catalogue number of ballasts for fixtures having these.
.7 Name and address of the distributor and parts suppliers.
.8 A manufacturers illustration of the fixture.
.9 A list of the rooms where the fixture has been installed.

11.0 TESTING

11.1 Perform megger tests on all feeders to ensure that the C.E.C. requirements are met. Take current readings on all feeders and if load unbalance exceeds 15%, reconnect loads to bring within balance. Take voltage readings and, if necessary, adjust the transformer tap settings.

12.0 GUARANTEE WARRANTY

12.1 The electrical trade shall furnish a written guarantee warranty countersigned and guaranteed by the general contract trade stating:

.1 That all work executed under this contract will be free from defects of workmanship and materials for a period of one (1) year from the date of final acceptance of this work.

.2 The above parties further agree that they will, at their own expense, repair and replace all such defective work and other work damaged thereby which fails or becomes defective during the term of the guarantee warranty provided that such failure is not caused by improper usage.

.3 The period of the guarantee specified above shall in no way supplant any other guarantee of a longer period but shall be binding on work not otherwise covered.

DIVISION 16 – ELECTRICAL

SECTION 16B – WORK AND MATERIALS

1.0 CONDUIT AND DUCT

1.1 Conduit in earth to be rigid metallic conduit with protective coating, rigid PVC or DBII encased in concrete where required.

1.2 Interior metal raceways to be of the EMT type except where within 1500 mm of the finished floor and are subject to injury where same shall be rigid metallic conduit.

1.3 Electrical wiring and cables piercing fire separation walls shall be installed as per Section 3.1.9.3 of the 1990 edition of the Alberta Building Code.

2.0 BRANCH CIRCUIT WIRING

2.1 Branch circuit wiring to be copper, 600 volt, minimum #12 AWG crosslink. No aluminum wiring will be permitted. Note that whenever wire sizes are not shown on the drawings, it is the Contractor's responsibility to ensure that the conductors satisfy C.E.C. Section 8–102 and the corresponding voltage drop tables.

2.2 Interior wiring shall be non–metallic sheathed cable, metallic flexible cable, metallic conduit or combinations thereof as permitted by the Local Inspection Authority. It is the Contractor's responsibility to determine where NMD–7 may be utilized. No extras will be allowed for failure to do so.

2.3 Interior wiring shall be metallic conduit throughout with flexible conduit being utilized for final fixture drops, wiring in stud walls and final connection of motors (seal–tight flexible conduit).

2.4 Main feeders and panel feeders to be copper.

3.0 WIRING DEVICES

3.1 Lighting switches shall be white in colour, Hubbell #1101. 3–way, 4–way, and 2–pole switches shall be of matching type.

3.2 Duplex receptacles shall be white in colour, Hubbell #5252, mounted vertically.
Isolated ground receptacles to be Hubbell #I.G. 5262.
Ground fault receptacles to be Hubbell #G.F. 52621.

3.3 Range outlets to be Hubbell #9430 complete with #9432 angle cord cap.

3.4 Dryer outlets to be Hubbell #9430 complete with #9432 angle cord cap.

3.5 Device plates shall be smooth white phenolic.

3.6 Weatherproof duplex receptacles to be complete with Leviton #4941 weatherproof covers.

3.7 All device outlet boxes to be of copper free, aluminum construction. No PVC FSE boxes shall be used.

4.0 MOUNTING HEIGHTS

4.1 Verify heights of all devices such as receptacles, switches, bracket lights, etc. with the Architect and/or Engineer before rough–in. In general, mounting heights shall be as follows, unless specified, to the contrary on the drawings:

.1	Duplex receptacles	450 mm
.2	Switches	1200 mm
.3	Thermostats	1550 mm
.4	Telephone/Television Outlets	450 mm
.5	Fire alarm pull stations	1500 mm
.6	Fire alarm bells	300 mm below ceiling

5.0 IDENTIFICATION

5.1 Label all starters, panels, switches and miscellaneous equipment indicating the voltage, usage and other pertinent information subject to the approval of the Engineer. Labels shall be lamicoid plates, 13 mm minimum height, "permanently" attached.

6.0 MOTOR STARTERS AND CONNECTIONS

6.1 Manual motor starters to be quick–make, quick–break with thermal overload protection, CEMA 1 enclosures unless otherwise indicated on the drawings. General Electric #CR1061 for 250 volt maximum, .75 kW or less, #CR1062 for 3–phase motors. All magnetic starters shall have control transformers, pilot lights, HOA switches and two auxiliary contacts or as specified in the wiring schematic. Combination magnetic starters are to be complete with circuit breaker type disconnect switches.

6.2 Furnish disconnects for all motors as required by the Canadian Electrical Code.

7.0 WIRING FOR MECHANICAL TRADE

7.1 All wiring as shown on drawings for mechanical trade to be by Electrical Contractor. Provide thermostat wiring, motor disconnects and circuits as shown.

8.0 TELEPHONE SYSTEM

8.1 Supply and install main service conduit and pull wire. Provide interior conduit, wiring, outlet boxes, terminal cabinets, etc., required for complete interior conduit distribution as shown on the drawings. Termination point of service on property line shall be as directed by the telephone company.

8.2 Provide outlet boxes and termination jack at each outlet location shown on the drawings and to owner's requirements.

8.3 Terminal cabinets shall be provided as shown to owner's requirements.

8.4 Coordinate service entrance with utility company and install all necessary components.

8.5 Provide one 6C#22 cable to each telephone outlet from the telephone panel. Telephone sub–panels are to be wired with adequately sized multi–conductor cables.

9.0 POWER SERVICE AND DISTRIBUTION

9.1 Provide all conduit, wire, connections, etc., required for service as indicated on the drawings.

9.2 Include in tender price all charges which may be levied by the servicing utility companies (power, telephone and cable) in servicing the project. If charges are not available, qualify the tender submission.

9.3 All the requirements of the utility companies shall govern the service installations and such utilities shall be notified at the time work is commenced on the building with drawings and specifications submitted to same if requested.

9.4 Coordinate the complete service installations with the servicing utility companies before rough–in.

9.5 Provide all grounding in accordance with the requirements of the Canadian Electrical Code.

9.6 Main distribution panel to be 120/208V, 3 phase, 4 wire, solid neutral design, floor mounted, free standing, front access, of uniform height, depth and width. Bussing is to be 600 A, of high conductivity aluminum. Switchboard to be braced for 50 KA symmetrical.

9.7 Main breaker to be (600A CTB8) complete with (600A) trip, voltmeter, ammeter, adjustable solid state trip equal to Siemens "Versatrip" or approved equal, 3 pole unit with minimum IRC of 50 KA symmetrical at 208V.

9.8 Feeder breakers to be 3 pole complete with trip rating as indicated in this schedule; 208V or 600V with minimum IRC of 50 KA symmetrical. The feeder breakers shall be Cutler–Hammer, Schneider, Siemens or Westinghouse as listed:

Siemens

0–100A CTB1
150–250A CTB4
300–800A CTB6

9.9 All equipment to be Cutler–Hammer, Schneider, Siemens or Westinghouse. All components of the assembly, except for those identified by the manufacturer in this specification shall be a regularly manufactured product of the assembler. All suppliers to submit catalogue cuts and material list prior to Tender. Switchgear manufacturer to coordinate sizing and requirements of local utility company to ensure compliance with local Codes.

10.0 LIGHTING FIXTURES

10.1 The Electrical Contractor shall supply and install light fixtures as noted on the drawings complete with lamps, hangers and miscellaneous equipment necessary for a complete and operational installation.

10.2 Where recessed fixtures are utilized in insulated ceilings, Electrical to confirm with general contractor that fixture will be boxed in with drywall as per code. No extras will be allowed for failure for doing so.

10.3 Fixtures shall be left clean at completion of the project and all lamps operational.

10.4 Self–contained emergency lighting units shall conform to CSA C22.2 no. 141 and provide minimum 30 minute power supply in the event that the regular power supply to the building is interrupted.

11.0 BRANCH CIRCUIT PANELS

11.1 All panelboards are to be of the bussing and voltage rating as specified on the drawings. Panelboards are to be equal to Federal Pioneer NBLP bolt–in breakers (10,000 AIC) complete with flush type hinges, locking doors and bolt–in breakers. Where indicated on drawings, provide isolated ground type panels and connect to building main ground.

11.2 Provide typewritten panel directories in all panels.

11.3 Individual suite panels may be of the load centre type with breakers as per schedule on the drawings.

12.0 GROUNDING

12.1 Provide all necessary grounding, whether shown on drawings or not, as per the latest Canadian Electrical Code requirements.

13.0 FIRE ALARM SYSTEM

13.1 Provide a complete and operable supervised, zoned, non–coded fire alarm as shown and in accordance with the requirements of the CEC and the CAN4–S64. All components shall operate on 24V DC and shall be as manufactured by Notifier. The FACP to be of an intelligent and programmable construction type as manufactured by Notifier. The FACP to be AFP–200C complete with LCD display or equal complete with integral 24V DC back–up battery supply. System type smoke detectors shall be equal to Notifier CPX–551, pull stations to be Notifier NFN–950B complete with MMX101 Module. Horn/strobe in parkade to be notifier MASS24A complete with integral strobe. Suite and corridor alarm piezo to be c/w strobe and signal silence and to be notifier M112–SS– 24–LS–VG–R–ULC. Duct detectors complete with ionization head to be NOTIFIER DHX501–A1 complete with sampling tube. Heat detectors to be Notifier FDX–551 (for fixed ambient areas) and Notifier FDX–551R (for rate of rise). Certification of compliance to be as per CAN4–S537. Fire alarm supplier shall employ the services of an Electrical Engineering Consultant to perform the verification duties as described in the July1985 Quarterly Bulletin of the Alberta Electrical Protection Branch. Approved suppliers are Edwards, Simplex and Cerberus Pyrotronics. All horns and piezos to be of the same sound and to have a temporal style of sound to the device.

13.2 Provide and install a fire alarm transmitter equal to Digital Alarm Communicator Transmitters (DACTS) Model D2071A. The DACT shall be installed in an approved enclosure and be complete with battery back–up such that upon fire alarm, condition unit will transmit appropriate signal to an approved monitoring station, as per NFPA–71, if this device is not included and initialized by the condo association then electrical to provide a Lamicoid at all pull stations to indicate upon emergency to call 911.

13.3 For the sprinkler system, provide the zone(s) as shown on the fire alarm schedule and connect to the flow switches which are supplied and installed by Mechanical. The annunciator(s) shall have a trouble light and buzzer entitled "Water System Anti–Tamper", and shall be connected to the anti–tamper switch(es) which are supplied and installed by Mechanical. Provide a circuit for the excess pressure pump and wire complete including a thermal switch. Install and wire, adjacent the water gong(s) any electric exterior bells that may be supplied by Mechanical.

13.4 Smoke alarms installed in each dwelling unit and in each sleeping area not within a dwelling unit to conform to CAN/ULC–S531–M "Standards for Smoke Alarms". When more than one smoke alarm is required within a dwelling unit, they shall be wired such that actuation of one alarm shall sound all alarms within the dwelling unit. Smoke alarms shall be installed on or near the ceiling and to an electrical circuit permanently with no disconnect switches between the overcurrent device and the smoke alarm.

13.5 Provide a fire alarm interlock to the corridor–pressurization air handling unit such that the unit will shut down only upon a signal from the duct type smoke detector.

14.0 INTRUSION DETECTION

14.1 Provide all necessary conduit, wire, cabinet and equipment as required for the intrusion detection system as specified below. Supply and install control panel as shown on drawings and wire to either passive infrared detector, door contacts, glass breaker sensors or remote keypads as required. Main control unit to be DSC or equal, with battery back–up and upon detection of an intruder, will automatically transmit an alarm signal via telephone lines to an owner or monitoring company. The remote keypad will allow for system On/Off operation. Provide a 20C conduit from intrusion control unit to main telephone terminal board, also separate 120V circuit to power unit. Upon completion of installation of the intrusion detection system, provide on site operation instruction of the system to the user's representative. Schedule the session at a time convenient to the user and the contractor. Provide complete shop drawings to engineer for approval prior to delivery of equipment to site. The installation to comply with applicable Codes and local regulations and where applicable, equipment shall be CSA approved and/or be listed by U.L.

15.0 CABLE TELEVISION SYSTEM

15.1 Supply and install all necessary components as required to provide television distribution system. Arrange for installation of all necessary material by the local TV company. Coordinate as required so that all wiring is installed while framing is open and accessible. Pay all charges which may be levied by the cable TV company for a complete system installation, ready for connection once tenants occupy the premises. Coordinate with telephone company to determine if cable TV service will be run along with the telephone service, and if necessary, increase the size of the entry conduit accordingly. If cable TV is run separately, install properly sized entry conduit as per cable TV company requirements.

16.0 DOOR INTERCOM SYSTEM

16.1 Provide all necessary conduit, wire, cabinets, and equipment as required for the door intercom system as specified below. Supply and install electric strike where shown on the drawings and wire to door intercom panel. Strike is to be compatible with the door hardware and of the voltage compatible with the intercom system. Door intercom panel to be complete with audio and visual signals to indicate door release, as per 3.7.1.2(3) of the 1990 Alberta Building Code. LED shall be powered from electric door lock. Main entrance panel to be equal to Mircom TCS–2000 series Telephone Access System. Main panel to be complete with number of stations as shown on the drawings. System to be complete with all necessary accessories and materials to provide for a complete and operable system.

17.0 ELEVATOR

17.1 Supply and install all necessary components to provide for a complete workable elevator system. Coordinate scope of work with elevator manufacturer. For each elevator, provide and wire complete a H.P. rated fused disconnect switch for power and a 2P–15A disconnect control and lighting switch on the latch side of the elevator machine room door. Supply and install a vapour–proof fixture and weatherproof duplex receptacle in each integral elevator shaft pit. Supply and install a telephone outlet complete with a 20 mm conduit to the main telephone board, at a location as directed by the elevator manufacturer. It is this Contractor's responsibility to coordinate the exact installation requirements and ratings with the elevator manufacturer. No extras will be allowed for failure of this coordination.

18.0 FINAL

18.1 These drawings and specifications are to be read in conjunction with the Architectural drawings and specifications and what is called for in one and/or another shall be binding on this contract.

BUILDING REGULATIONS DIVISION
EXAMINED
FIRE ALARM SYSTEM, EXIT LIGHT AND EMERGENCY LIGHTING ONLY
HASH PATEL 268-6071
Engineering & Building Department

PROFESSIONAL ENGINEER
PERMIT TO PRACTICE
THIS ENGINEERING LTD.
Signature
Date MAY 19 98
PERMIT NUMBER P 5
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

architect seal
MANU CHUGH ARCHITECT LIMITED
Calgary, Alberta, Canada
TWS ENGINEERING LTD
ELECTRICAL CONSULTANTS
#204, 2520 – 52 STREET
CALGARY, ALBERTA T1Y 4T6
PHONE (403) 248–5777
FAX (403) 248–5778

drawing status
issued for construction
issued for building permit
issued for tender
issued for development permit
issued for owners approval
preliminary
description
date
MAY 19'98

revisions
description
date

project
TUSCARORA APARTMENTS
8811 ROCKY RIDGE ROAD NW
CALGARY, AB.

drawing
BUILDING ONE
SPECIFICATIONS

date 11/05/98
scale AS SHOWN
drawn GH
checked ROH

project no. 98-724-012

drawing no. E-11

BUILDING 1 MIRROR IMAGE OF BUILDING 2

MECHANICAL SPECIFICATIONS

Overview
Rainwater leaders from flat roof must be piped directly into the storm sewer system but the perimeter eavetroughs splash to grade per owner.
Washroom fixture selection must be confirmed with Mainstreet.
Kitchen exhaust shall vent to wallcaps where kitchen exhaust is close to outside wall.
Sprinkler contractor must coordinate carefully for domed ceilings on top floor.
Corridor pressurisation shall be supplied to 3 locations each floor.
No ramp snow melting.
Radiation baseboard runs flush under patio doors pipe drops under floor level c/w vent) for upper floors but runs exposed right under the patio doors for main lower floor.
–Provide min. 7" cover over sanitary. Insulate hot boiler lines in parkade where they extend within 7' of floor. Boiler 200 deg.F. pipes exposed to loose fill cellulose must have 1/2" fiberglas insulation sleeve by mech.)
Provide checkvalve on domestic hot water supply into heaters. Provide 2" landscape sprinkler supply line c/w approved double check valve assembly through basement wall. Do not use flex exhaust duct through attic – use 22 ga. galvanized individually insulated. Parkade must drain to sanitary.

1. GENERAL

–Regulations– All work shall be as per local codes and regulations.
–Examine Site– The contractor shall visit the site prior to submitting his price to familiarize himself with the work involved and to include in his price any additions that may be required to make his installation a complete and operating system.
–Complete System– The mechanical contractor shall provide all labor and equipment, pay all fees, carry insurance coverage and obtain all permits required to provide a complete mechanical system without additional charges after award of contract.
–Extra Charges– Any discrepancies and omissions discovered shall be reported to the engineer immediately and prior to tender closing for rectification by addendum. Charge orders after tender shall have max. 5% mechanical mark-up and disputed pricing shall be finalized from "Means Mechanical Cost Data".
–Shop Drawings– Submit 8 copies to the engineer for approval. The contractor shall ensure that equals for the major equipment fit in the allocated space and meet codes and specifications.
–Maintenance manuals– Contractor shall provide 3@ 3 ring binder copies c/w shop drawings, maintenance and installation instructions and the list of suppliers. As built drawings shall also be provided showing location of access doors, clean–outs and any deviation from design drawings. Provide on–site operating seminar for the owner.
–Warranty– mechanical contractor shall provide a written warranty on his system for one full year from time of acceptance by the owner. The 1 year warranty period may commence only after the mechanical contractor confirms in writing to mechanical engineer that each single item of the mechanical deficiency lists have been cleared up.
–Services– Provide sewer and water services. Jubilee Engineering provides services to within 5' of building. Ensure that these can be properly connected with sufficient slope for drainage and adequate cover to avoid freezing.
–Excavation– Mechanical contractor shall excavate for his work and backfill to 12" above pipes with sand provided by gen'l. Backfilling, cutting and patching shall be by gen'l. Coordinate elevations and locations of gas, water and sewer services and provide 10 feet separation from gas, elect. and tel. before installing.
–As–Built Drawings– Mechanical contractor shall keep on site an extra set of drawings and specifications on which changes shall be noted daily.
–Electrical Co–ordination– Motor disconnect switches and starters (including magnetic starters for interlocking and 3 phase) shall be by elect. unless otherwise specified. Disconnects for packaged makeup air units shall be by elect. Electrical contractor shall wire in line voltage thermostats, electric heaters and control transformers provided by mech'l. Electrician shall particularly wire up boiler controls, parkade fan controls, over ride timers and interlocks with his own conduit and relays. Mech'l contractor shall complete his own other controls wiring which he may separately contract the elect. contractor to do for him. CONFIRM VOLTAGES ON SITE BEFORE ORDERING EQUIPMENT.
–Thrust Blocks– Water services 6" and larger shall have concrete thrust blocks at every change of direction and dead end.
–Water Services– Provide water meter space 5'x4.5' for 2" dia. Water services 40mm or greater shall be chlorinated with detailed written records, flushed and have bacteriological tests completed at U of A. by mech. The trenching contractor must include in his mechanical tender the extra cost of having the tests witnessed on site and approved by his Professional Engineer.
Fire lines shall be certified 200psi hydrostatic for 2 hours or 50psi air for 1 hour. Inside domestic water lines shall hold 100 psi air for 2 hour.
–Isolate– each plumbing fixture with "MiniBall" shutoff valves. Use quick opening "Red White/Toyo or Kitz" full port ball (not reduced bore) valves for up to 2" including domestic water and gas branches, fire, hydronics and at the base of every riser.
Install Dielectric couplings on water heaters.
–Sprinklers– The mechanical contractor shall include in his mechanical tender the extra cost of having the Engineered, sealed sprinkler shop drawings approved.
–Frost Cover– provide min. 5' over storm, 6' above sanitary and 8' above water lines outside building.
–Gas– service complete to supply side of gas meters. Plumber shall provide low pressure gas lines to appliances c/w aluminized paint coating on pipe where exposed to outdoors. Lines concealed shall be brazed seamless copper K or L (up to 1.25") or welded steel. Provide gas barbecue outlets on balconies/decks and gas fireplace connections – no couplers. Provide barbecue outlets no closer than 36" to patio door and steel piping fixed solid within 20" of outlet. Plumber uses 2 psi gas and pays for regulators + upcharges in gas service. Gas meter free space 1500 deep x2100 wide x 2400 high (for up to 6000 mbh).
–Weeping tile– connections shall be provided to a sump and pumped to storm system c/w back water valve and clean out.
–Expansion Sleeves– shall be provided on all plumbing stacks and vents, caulked with acoustic sealant.
–Plastic Sewer Pipe– may be used underground for drainage but not within ceiling return air plenums or through fire ratings (including roofs, walls and floors). Drainage within building shall be SDR41, Underground within building shall be SDR35, Between building and property line sanitary shall be BSP DR35 and storm shall be UltraRib. Cast iron sewer stacks must be used to reduce noise problems. Plastic is substandard and not acceptable. Cast iron sewer stacks shall be used in apartments because they are quieter than plastic. Plastic is substandard.
–Fire Proof Caulking– All penetrations for pipes and ducts through rated walls shall be sealed by mech. contr. with fire rated silicone based caulking similar to "Metacaulk #950" or "Flame–X" minimum 7mm thick tight around openings.
–Plastic Water Pipe– outside water services 4" to 8" shall be DR18 PVC, 3" and 2" shall be Series 160 PVC or Polyethylene, 2" or under may be copper or Kitec.
Underground water lines within building shall be "K" soft copper with joints underground accessible via cleanouts.
–Home Run– Provide domestic hot and cold water isolating ball valves for each suite within wall behind non–rated storage room or laundry room door. Install at max. 5' above floor behind hinged 12"x12" access door. Lamacoid label the door "WATER SHUTOFF VALVES" with minimum 1/4" high lettering. Provide access doors similar to "Acudor" hinged DW14 for drywall. Run "Cross Linked Polyethylene" home run system from domestic hot and cold water "Sioux Chief" manifolds. Poly lines must be firestopped with "Metacaulk" where penetrating ceiling ratings.
–Backflow Preventers – High Hazard applications shall have "Reduced Pressure Backflow Preventers" including boiler feedlines, glycol sprinkler lines, Moderate Hazard shall have "Double Check Valve Assembly" including sprinkler tree. Provide a check valve for the domestic water service.
Suppliers Watts tel. 496–9495, Febco (Ames is not allowed). All outside landscaping hose bibbs similar to "Orbit 51054".
–Plastic Water Pipe– outside water services over 50mm shall be C–900DR25 100 class and 50mm or under shall be copper or Kitec. Underground water lines within building shall be "K" soft copper with joints underground accessible via cleanouts.
–Coordination and Sleeving– Mechanical contractor shall be on site to coordinate measurements, clearances and openings with other subtrades. If, in the Engineer's opinion, work interferes with the work of others or is poor workmanship it shall be taken out and redone.
Completion– Upon completion of the work, remove all surplus and waste material from the premises, clean daily and leave all items in perfect order and ready for operation.
–Windows– owner will install R2 double pane, infiltration will be less than "A–3", .55=.1 cfm/ft for openable and .25=.046 cfm/ft for fixed per CSA–A440 window code. Owner shall thoroughly caulk with Hilti foam and/or tape with Tuck Tape 11955 per installation instructions and inspect.
–Design Documents – These design documents are prepared solely for the use by the party with whom the design professional has entered into a contract and there are no representations of any kind made by the design professional to any party with whom the design professional has not entered into a contract.

2. PLUMBING EQUIPMENT SCHEDULE

LAV–1– Mansfield 267–4 oval China basin, 4" centers, 17x20" outside size, c/w Delta 502 single lever taps and mechanical waste.
WC–1– Mansfield, 130–160 low flush toilet (1.6 gal/flush) white, Olsonite seat #90 white with cover.
SK–1– Kinder Mainline ML–3031, double compartment sink, single lever tap Delta 100 single hole. Provide all sinks with dishwasher connections. Rough in water line and drain and hook up. Rough in for garburettor.
SK–2 –(community room) standard single sink KIL QSL–2020, 410x460x178 deep bowl with tap ledge, 520 long x510 wide overall size, c/w Taps: Delta 2100 lever
BATH–1– Kohler Confidante, White, Slip resistant c/w single lever Delta 1348 pressure balanced taps, tub diverter, fixed shower and rubber stopper. Coordinate opening box for studs so that if future problems occur 12"x12"x3/16" screwed on smooth plyboard wall access can be cut for each trap/brass by gen'l who will provide 150 mm plumbing walls for sewer stacks.
Hosebibbs exterior– Waltec Non–freeze type c/w vacuum breaker for outdoors, c/w 3/4" with removable operating key.
–Isolate each plumbing fixture with shutoff valves. Use quick opening "Henderson Newman Superball" valves for water & gas.
Floordrains– Ancon model FD–200, FD–100 c/w membrane flange for frame floors, Nickalloy grate for finished areas, iron grate for unfinished areas.
–Patio Drains – Kern AFD–3 3", flush ABS, grate lays in on sleeve glued inside plastic pipe. Drain pipe is cut flush with surface.
Parkade Ancon model FD–460–AF 12"x12" with cast iron grate heavy duty. Provide drains for main floor patios which drain to weeping tile.
–Floor drains and cleanouts must be carefully coordinated flush with floor so no birdbaths occur.
Trench drain ZURN Z–812–80 "Flo–Thru", 6" wide glass filled polyester fiberglas drain channel. Heavy duty Dura coated steel top angle frames c/w Extra Heavy duty Dura–coated cast iron slotted grate, pre–formed, pre–sloped assembly, Minimum .6% molded bottom slopes. Installation shall include all required anchor straps, levelling devices, caps, outlet dampers, supports, grating and frame. Maximum 7.5" depth at outlet.
–Pipe up rainwater leaders.
Cleanouts– Ancon model CO–200–R round nickel top (no membrane). For the parkade provide "Extra Heavy" covers.
Washing Machine and dryer rough in shall be provided in each suite per Architectural locations. Provide plastic "Oatey" laundry Mate connector console on wall within 14"x12" wall opening 36" from floor. Connections shall have hot/cold handles in finished wall 6" above machine and hub drain and 3/4" hose connections.
DWH–1,2–Jetglas 75T–300, 300 MBH GAS input, 307 gph recovery @ 55 deg. C. 75 gal. storage, 72" high, 28" dia., 6" vent, 1.5" water, 3/4" gas, standing pilot, 110 volt stat.
P–3– Domestic Recirc. pump. Grundfos Model UP18. 4 speed, bronze, 4 GPM @ 13.5' head, 90 Watts, 0.4 Amp. 120–1–60.
P–4– (Weeping tile sump)– &
P–5– (Elevator sump)– Sump pump Little Giant 5–MSP, fract. HP, 120 V/1 phase, 10' cord, 8 gpm @ 20' head, submersible c/w piggyback RS–5 float switch (on at 7", off at 1"), pump suspended by chain and connected via 25mm dia. discharge line to sewer.
P–6– (parkade entry Trench drain)– Sump pump Barnes SSB41 373 Watts, 120 V/1 phase, 38 dia discharge, 43 GPM @ 20', submersible c/w float switch, 63424 diaphragm level control, high level alarm, pump suspended by chain and connected via 50mm rubber flex hose plugged in below pit cover.

3. HYDRONIC PIPING

B–1 –Raypak 1468, 1 pass, copper tube, 1468 mbh input/1095 HA mbh output, 83% eff., 121 gpm @ 4.5' P.D., 75" wide x 32" deep x 76" high, 18" vent, 925 lb.
–At patio man doors upper floors (not sliders) the heating line shall be dropped in Kitec under the door. Mech. shall provide air vent at every drop point.
–Boiler c/w digital indoor outdoor controller Tekmar 255 c/w 070 outdoor sensor and 071 supply sensor c/w all relays for warm weather pump shutdown, transformer.
Water Treatment – Heating piping shall be flushed 8 hours with 3% non–foaming, phosphate–free detergent and water treated with corrosion inhibitor and pH adjustment by qualified water treatment contractor.
–Sidewall Filter– "Ametek" red fiberglass c/w 12@ extra 25 micron "Aqua Pure AP111H/C" cartridges, Model 200 flow indicator,
–Pumps shall be within 5' of floor for easy maintenance access.
–Piping must be suspended with clevis hangers. Perforated strapping is not permitted. –Mechanical room piping shall have pipe hangers to prevent pressure on boilers.
–Air Vents –Provide in–suite valves c/w manual air vent to isolate each suite radiation.
– Honeywell EA67A1009 float auto air vents c/w 9AS auto closing adapter at all high points.
–Branch takeoffs off heating pipes shall be off the top half of mains.
–Trim all structure min 18mm away from heating pipes to avoid future binding and noises. Install plastic grommet spacers.
–Radiation Cabinets c/w hinged access doors for valves and prime coated for painting on site.
–Ball valves– Isolating and balancing valves 1/4" to 3" must be bronze ball valves similar to "Red & White", not gate or globe.
–Electric motorized radiation zone valves shall be low voltage Honeywell V8043D1080, threaded flare onto 18 mm. sweat adapter, Normally Open, 24 volt c/w transformers.
–All hydronic copper lines shall be soldered 95% zinc / 5% lead.
P–1,2– Pumps Grundfos Dual UPCD 50–160, 120 gpm at 30' 208 volt/3 phase both pumps running, each 3/4 HP, 560 watts, 2", 10" rough in, 92 lb., 230V/ 3 phase.
Each of two heating pumps sized for 66% of full circulation when on high speed
TK–1– Tank Extrol SX60V 32 gal., accepts 11.5 gal., 43" high x 15" dia. high x 22" dia., c/w floot vent, air purger, automatic fill valve and tank.
"A" Radiation –Hoyden (residential) 8" high, 880 BTU/ft. at 190 deg.F. water, 3" wide cabinets, with back panel, room damper.
"B" Radiation –PU–12 Rosemex, 12" high, 4.88" wide, 1421 BTU/ft. at 190 deg.F. @ 4" x 4" element, (20 gauge standard front) no dampers.
"C" Radiation Bare fin for behind kitchen sink cabinets, 810 BTU/ft. at 190 deg.F. water, 2" x 3" element, 3/4" diameter.
UH–1,2,3– Parkade Unit heater, Rosemex R–18–B, 50 mbh output at 200 deg.F. water, 1/25 hp fan, 1550 RPM, 850 cfm, 21" wide x 18" high, 73 lb weight.
UH–4– Parkade entry door –Unit heater, Rosemex R–32–B, 131 mbh output at 200 deg.F. water, 1/3 hp fan, 1100 RPM, 2600 cfm, 31" wide x 26" high, 135 lb weight.
UH–5 – Mechanical Room Unit heater Rosemex R–12–B, 29 mbh output at 200 deg.F. water, 1/25 hp fan, 1550 RPM, fan runs continuous, thermostat cycles hot water valve, 19" wide x 18" high, 55 lb weight.
FF–1– entrance Forced flow heater, Rosemex R–40–3, 22.7 mbh output at 190 deg.F. water, 26"H x 28"W x 9.5"D, 1/20 hp fan, 1050 RPM, 335 cfm.

4. HEATING AND VENTILATING

Duct Gauge– galvanized 26 gauge for up to 12" wide or 8" dia, 24 gauge for 13" to 30" wide or 9" to 30" dia, all fittings to meet SMACNA design Standards.
–Turning vanes – Construct tees, bends, and elbows with radius of not less than 1? times width of duct on centre line. Where not possible and where rectangular elbows used, provide approved type air foil turning vanes of individual vane radius 50 mm and spacing each 32 mm.
–Transitions –increase duct sizes at maximum 15 degrees divergence. Maximum divergence upstream of equipment shall be 30 degrees and 45 degrees convergence downstream.
Flex Connections– provide flex connections 1/4" Durodyne Canflex PVC coated polyester at inlet and outlets of all makeup air units.
Smoke Detectors– by elect., mounted in main makeup air supply ducts shall stop supply fan and signal fire panel when actuated.
Air Balance– report shall be done by independent Certified NEBB or AABC Air Balance Contractor and submitted in triplicate at +–10% of specified c/w design vs. actual readings:
.1 Fans – supply and exhaust fans, air systems amps, RPM, L/s, suction and discharge static pressure.
.2 Grilles – supply and exhaust air volumes.
.3 Sketch layout of duct systems showing details of balance.
Approved Air Balancers are Thermo Mechanical tel. 451–4762, Chalet 461–9127, (not RA Bruce, Shiva or Envirometrics).
–Combustion air– shall terminate with eskimo trap and baffle to diffuse cold air and protect water lines.
–Fire Dampers – shall be Type "B", ULC labelled, with damper blades fully clear of the air stream, seal with Dow Corning RTV silicone foam.
–Mechanical Room Pressurization– MUA–1 shall have 8" dia. supply air outlet c/w balancing damper set at 200 cfm.
–Door Undercuts– 20 min. doors may be undercut a full 6 mm + 3 mm other sides for air transfer of 60 cfm. Assure no rugs restrict.
–Drier Vents – Provide max. 40' length for 4" dia. by subtracting 8' length per elbow. Eg. with 2 elbows 16' is allowed. Increase to 5" dia. for longer lengths. Driers connected by Gen'l.
–Provide sheet metal fire stops tight around ducts passing through fire separations and ceilings.
–"B" gas vent shall be in a 1 hour rated fire enclosure (eg. ULC–W301: 2 layers of 5/8" type "X" drywall) to 9.5 FT above eave elevation. Provide minimum 1" clearance from combustibles for "B" vent and 6" for single wall vent connectors.
– Sewer and exhaust vents shall not penetrate roof toward front or within 900 mm of center ridge.
–Access Doors–shall be provided for each fire damper or duct heater, Nailor Hart 0810 12"x6" hinged with sash locks.
–Fire Dampers – shall be Type "B", ULC labelled, with damper blades fully clear of the air stream, seal with Dow Corning RTV silicone foam.
–Suite Exhaust Shafts– shall use rated 5/8" type "X" drywall and not regular unrated drywall.

HEATING AND VENTILATING EQUIPMENT SCHEDULES

5. GRILLES

S–1 (corridor pressurization) –Ceiling Supply E.H. Price 520D/F/S/–/A/B13 off white Double Deflection, aluminum, c/w balancing damper.
S–2 (ceiling curved van diffuser) –Ceiling Supply E.H. Price CVD–C–4S–B13, 4–way, 36"x14" @ 936 cfm, off white, Double Deflection, c/w balancing damper.
S–3 –Floor Supply EH Price LBPH 15A –VCS4/K (combination fire–balancing damper) –750 (lay in 18mm border)–66 brushed aluminum, bars 6 mm spaced, 0 deg. 100 wide. Heavy Duty.
T–1 –Kitchen counter top + toe – Linear Supply–EH Price LBP 27B, 268 border, Type C fastening, PC15 prime coat for site painting, 0 deg. deflection, bars 6 mm sparced.
T–2 –Transfer Grille Steel E.H.Price 530/F/L/A/B13 off white, no damper.
T–3 –Crawlspace vent Tradewinds TR 86L OB–BS c/w birdscreen and damper aluminum.
Louvers– Airolite K609 Extruded Aluminum c/w 1/2" birdscreen, confirm color before ordering, prime coat for painting on site. Factory baked enamel finish, confirm color by Architect.– extend the duct separation between combustion and fresh air direct to outside surface of louver blades to eliminate potential short cycling.

6. MAKEUP FURNACES

–Indirect fired Makeup Air– Shall be c/w 1" throwaway filters, ductstat w/ modulating gas valve, Stainless heat exchanger, auto reset low limit, disconnect, remote panel with temperature dial, Provide internal plus external spring vibration isolation, condensate drain.
MUA–1 – indirect heating furnace I.C.E. UPB Indoor–12–500, 500 MBH input, 370 MBH H.A. output, 2845 cfm fresh air, stainless heat exchanger, modulating gas valve, DX cooling section but no coil, filter section, 124" long x 52" wide x 44" high, 2@ 9" vents, up discharge, 1" throwaway filter, 1/2" S.P., 1 hp., 208 volt, 3 phase, 1450 lb. weight.
–Direct fired Makeup Air– Shall be c/w 1" throwaway filters, Fan c/w internal spring isolation, remote panel with temperature dial thermostat, ductstat, auto resetting low limit, disconnect, inlet damper
MUA–2 –parkade indoor Makeup air unit ICE BMA–122, 2257 mbh Input @ 100 deg.F. rise, 17,303 cfm @ 1" externsl, single 22" blower, motor 20 HP, 208–3–60 c/w ductstat, auto resetting low limit, disconnect, inlet damper, 2730 mm long x 2210 wide x 1016 high, 52 wide x 46 high x 90" long + 34" filter section, inlet 34x43, outlet 27x27", 1,800 lb. weight, interlock with 2@ parkade exhaust fans F–4, 1650 lb. weight.
Equal suppliers include Equal suppliers include I.C.E. t# 461–7860, Temprite t# 279–5675, Enerex t# 458–9258, Engineered Air, Scott Springfield t#448–9509, Reznor tel 452–3110/453–2865, SystemAir 259–4088, Madine Lennox tel. 440–1555, GasMaster (from B.C.).

7. FANS

F–1 –Bathroom –Broan 650, 25 L/s, 3 sones, 120 V, 3" dia duct, 8" sq. x 4" deep.
F–2 –Kitchen Exhaust fan Nutone economy LL6130WHC, white, 75 W. bulb, (confirm 30" width and color on site before ordering) to 150 CFM 120 V./1 phase 93 Watts, 2 speed.
F–3–Elevator machine Rm &.
F–7 Electrical room – Delhi D–530, 200 cfm @ .3", 1/30 HP, direct drive, 1550 RPM, 9"x10"x 4" wide, 4"x4" outlet to 8" duct to wall cap, c/w 3 speed switch and cooling stat.
F–4– 2@ parkade –Penn BBK36 propeller wall exhauster North fan is 10,000 cfm 1.5 hp, west fan is 8000 cfm 1.5 hp, 208 volt 3 phase, wall sleeve, 40"x40"x21" deep c/w louver, belt drive, wall sleeve, c/w protective 1/2" birdscreen rear guard, louver and motorized backdraft damper. Fan interlocked with MUA–2.
F–5–(manager's office) – Exhaust fan Broan 360 50 L/s 120 V./ 1 phase, 0.7 Amps, 1.5 sones, c\w #57 speed controller, 3.25 x 10" outlet ducted 6" dia., grille.
F–6 –(social room) Exhaust fan Broan 363 150 L/s @ .1" SP, 120 V./ 1 phase, 2.3 Amps, 4.5 sones, 57 dB, 1625 rpm, face 8"x16"x 9.5" deep, 3 1/4"x10" outlet to 8" duct, c\w Broan #57 speed controller, grille.

8. INSULATION

Piping –Domestic hot water and recirc lines shall be 1/2" economy insulated complete in the parkade and mech't room. Insulate water lines within 10' of cold crawlspace vents. Hot water heating mains shall not be insulated in mechanical room or parkade ceiling. Do not insulate boiler lines in parkade if unacessible over 7' above floor level (incl. unit heater leads).
Plumbing vents within 6' of attic or cold roof or cold wall shall have 1" insulation c/w foil faced vapour barrier. Do not insulate the cold water domestic within the parkade.
Ductwork –Exhaust ducts, within 6' of cold attic or cold roof or cold wall shall have 1" insulation c/w foil faced vapour barrier complete throughout attic and cold spaces for all exhausts including toilet, kitchen and driers.
–Cold outside air supply ducts and combustion air all the way shall have 2" thermal insulation c/w foil faced vapour barrier.
–Caulking – shall be completed by the gen't tight around pipes and ducts penetrating sound rated walls.
–Firestopping caulking by plumber around all metal pipes penetrating fire separations shall be minimum 1/4" depth Metacaulk #950 or equivalent on top of "Thermo–fiber" tight around piping.

9. FIRE PROTECTION

–Fire Extinguishers – Mechanical contractor shall provide portable fire extinguishers as per plans. ABC–5 (2A–10BC rating) c/w inside recessed fire hose cabinet (for 150mm dia.) for the corridors. ABC–10 (10lb., 4A–60BC rating) for mechanical room. ABC–5 (3A–10BC) for electrical room. ABC–10 (10lb CO2) for the parkade.
–Sprinklers – Mechanical contractor shall contract a qualified sprinkler contractor who shall provide a complete NFPA 13 wet sprinkler system c/w approved engineered drawings. System shall have an approved double check valve assembly, a sprinkler tree c/w control valves, main drain piped to floor drain, 1/3 HP, 120 V./ Albony excess pressure pump, siamese connection c/w ball drip valve and standpipes. Final sprinkler head type and locations shall be varified by the architect.

A. Residential NFPA 13R within the suites (c/w low profile residential Omega R–1 pendent and HEC–12 sidewalls or Reliable F1/RES/2 20'x20' pendant or F1/RES horizontal sidewall 16'x20').
B. Parkades, storage, stairwells, mech'l room and lobby shall be NFPA–13 with standard sprinklers.
c. Ordinary hazard Group 1 system for Parkade.
d. Plastic CPVC Blazemaster may be used in Light Hazard wet systems where allowed by code and concealed behind 1/2" drywall, acoustic ceiling tile or plywood. It may be run through fire rated walls and return air plenums.
e. Provide antifreeze loop as required for freeze protection near parkade overhead door. Provide reduced pressure backflow preventor on antifreeze loop. Reduced pressure backflow preventor shall be c/w drain funnel piped down to within 8" of parkade floor.
f High temperature heads shall be installed above hot equipment such as, boilers, unit heaters, etc.
g Note: combustible fiberglas plumbing fixtures may be used so the sprinkler contractor cannot delete heads from the washrooms < 54 sf.

10. CONTROLS

–Thermostats 24 Volt shall be supplied and installed by Mech'l Contractor.
–Elevator machine room shall have reverse acting 110 volt cooling thermostat controlling ventilation fan.
–MUA–1 shall lockout when building is in fire mode.
–Carbon Monoxide Detector –Provide QEL model QAS–1002 (or Armstrong), 2 sensors, located as per plans (1 for every 7,500 square feet) and 1200mm above floor. Detector shall engage MUA–2 and the interlocked exhaust fans F–4 at 50 ppm carbon monoxide. 100 ppm CO shall sound the alarm. Provide remote sensors QS–1800 for CO. Provide written certified calibration after startup.

11. MECHANICAL PRICES

Mechanical contractor shall present price breakouts and list each subtrade in the following order;

11..1 Plumbing within building to 3' outside
Site services from 3' outside of building
Service charges payable to Municipality and Gas Co.
If gas charges are not ready at tender
PC sum for Gas @ $40/m = $ 0
11..2 Sheet Metal
11..3 Insulation
11..4 Sprinklers and Fire Protection
11..5 Controls
11..6 Full service contract 1 year
11..7 TOTAL for a complete operational system $, .00

Provide the owner with separate breakout prices from the mechanical contract price:

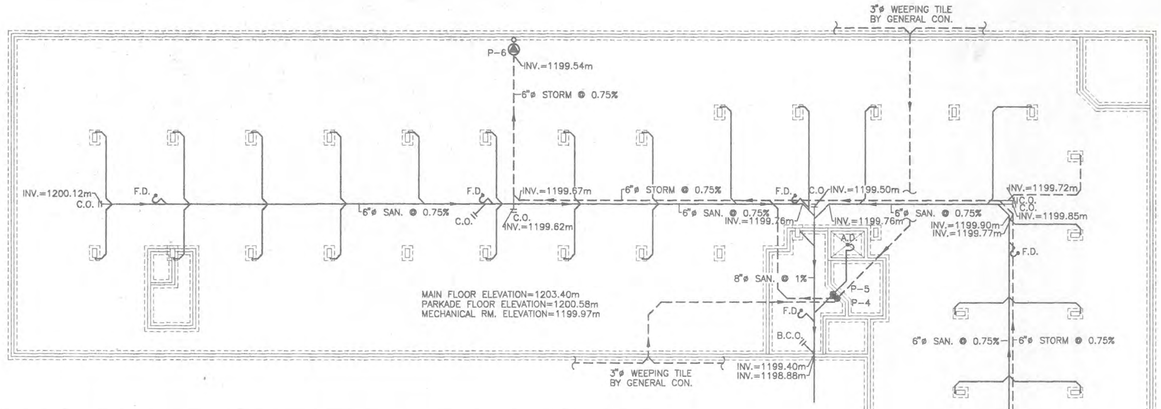
12. SEPARATE COST ITEMS

12..1 Provide extra cost associated with installing 1/2" foam rubber "Armaflex" length of 3" insulation around all plumbing drainage stacks at each support point.
12..2 Provide a price savings for the owner if the electrician were to do all the controls work.
12..3 Provide extra cost associated with installing suite cooling:

Mitsubishi wall mount allmine unit c/w condensor on patio, condensate c/w drain pipe outlet. Wireless remote controller, Fan cycles on only upon call for cooling.

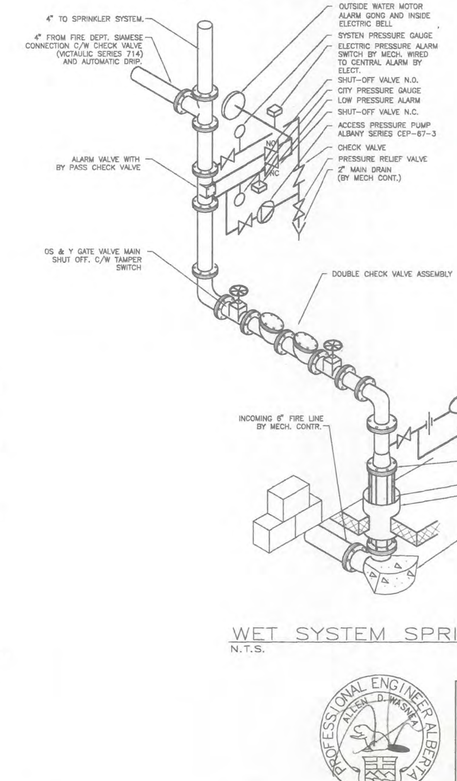
CU–1 1.5 ton Mitsubishi PKL18EK indoor wall unit 15" high x 9" deep x 60" long, 120 volt, 1 amp, 68 lb., 43 dB. Outdoor condensing unit PUL18EK, 230 volt/1 phase, compressor 12 FLA, 37 LRA, 16 ampacity, 34"w x 12" x 33" high, 50 dB, 130 lb. or
CU–1 2 ton Mitsubishi PKL24EK indoor wall unit 15" high x 9" deep x 60" long, 120 volt, 1 amp, 68 lb., 43 dB. Outdoor condensing unit PUL18EK, 230 volt/1 phase, compressor 12 FLA, 54 LRA, 16 ampacity, 34"w x 12" x 50" high, 50 dB, 207 lb.
–Equivalent suppliers include Friedrich tel. 479–1946, Mitsubishi, Sanyo.

12..4 Provide extra cost associated with adding gas fireplace outlet per patio.
12..5 Provide extra cost to insulate the boiler supply and return mains running down the center of the parkade, in the event that the the owner finds the parkade gets too warm.
12..6 Provide extra cost to install 36x48" shower.
12..7 Provide extra cost to install whirlpool bathtub.
12..8 Provide extra cost to install Barbecue outlet.
12..9 Provide extra cost to install fireplace outlet gas connection.
12..10 Provide extra cost to add small cooling unit to each suite living room CU–3– –Room Air Conditioner 1.0 Ton Carrier CMC 1121 Thru–the Wall 115 volt, 1305 Watts, 12 Amps c/w wall mounting sleeve, integral thermostat, 12,000 BTU Total Cooling Capacity at 35 deg.C. outdoors, 145 lb. weight. 18" high x 25" wide x 28" deep.
12..11 Provide extra cost to add 7.5 ton cooling system to the corridor makeup air.CU––7.5 Ton Lennox LSA090C Air Cooled Condensing unit, recip. EER=9.3, sound rating 87dB, 208–3–60, Each of 2 compressors is 15.5 FLA + 103 LRA, unit 43.9 MCA.
12..12 Provide extra cost to add recirc domestic hot water piping to under the top floor to recirc top of risers.



FOUNDATION PLAN

SCALE: 1/16"= 1'–0"



WET SYSTEM SPRINKLER TREE

N.T.S.

ALL GAS INSTALLATIONS SHALL COMPLY WITH CAN/CGA–B 149.1/B 149.2 M95

ALL PLUMBING INSTALLATIONS SHALL COMPLY WITH THE NATIONAL PLUMBING CODE

DEC 23 1998

CITY OF CALGARY
BUILDING REGULATIONS DIVISION
HVAC INSPECTION SECTION
DATED: DEC 21 1998
VIEWED BY D.C. HICKEY, CITY P.ENG
P No.

PROFESSIONAL ENGINEER ALLEN D. WASNEA ALBERTA

PERMIT TO PRACTICE
ALLEN WASNEA ENGINEERING LTD.
Signature
Date Sept 22
PERMIT NUMBER: P 2900
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PLOT DATE 09/22/98

ALLEN WASNEA ENGINEERING LTD.
MECHANICAL CONSULTING
101 – 9904 – 105 Street
Edmonton, Alberta T5K–1B2
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revisions
date | description
Issued for construction
Issued for building permit
Issued for tender
Issued for development permit
Issued for owners approval
Preliminary

drawing status

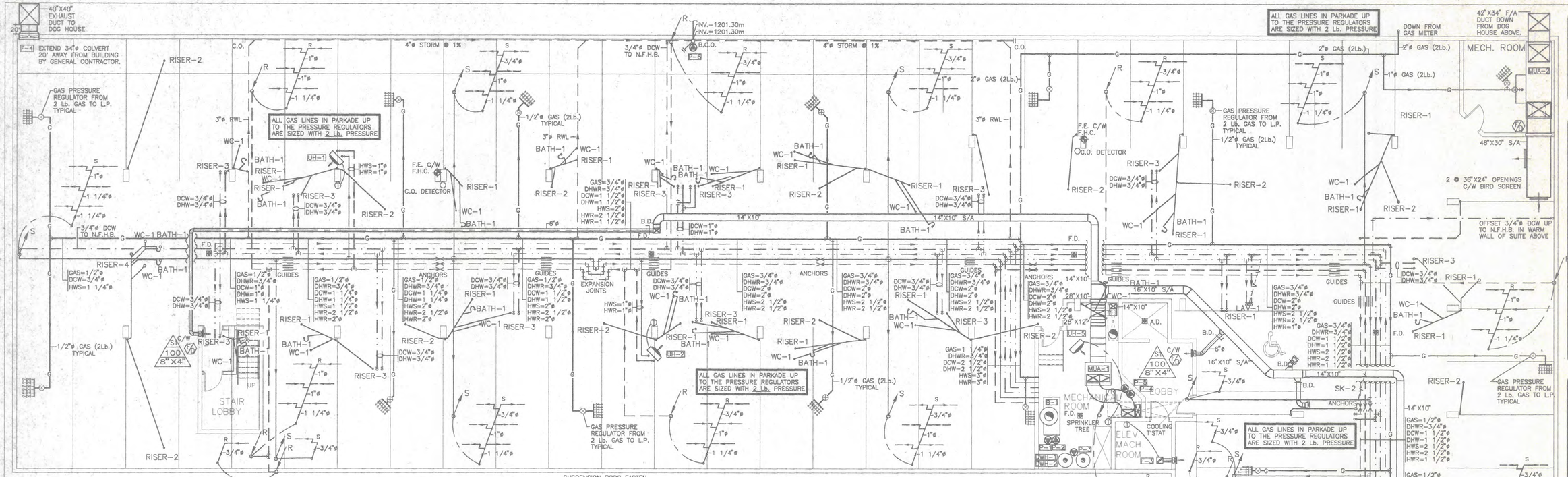
POINT OF VIEW
project

FOUNDATION PLAN
BUILDING ONE
drawing

date 09/22/98
scale AS SHOWN
drawn B.R.
checked A.W.

project no. 9858

drawing no. M1 OF 8



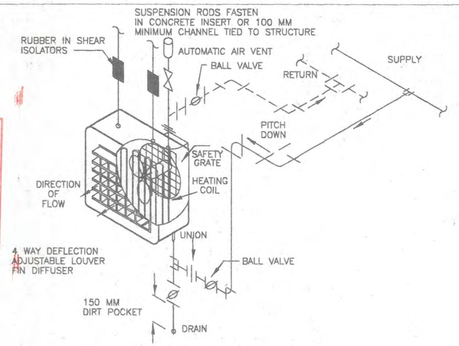
PARKADE PLAN

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

DUAL DOMESTIC WATER HEATER SCHEMATIC

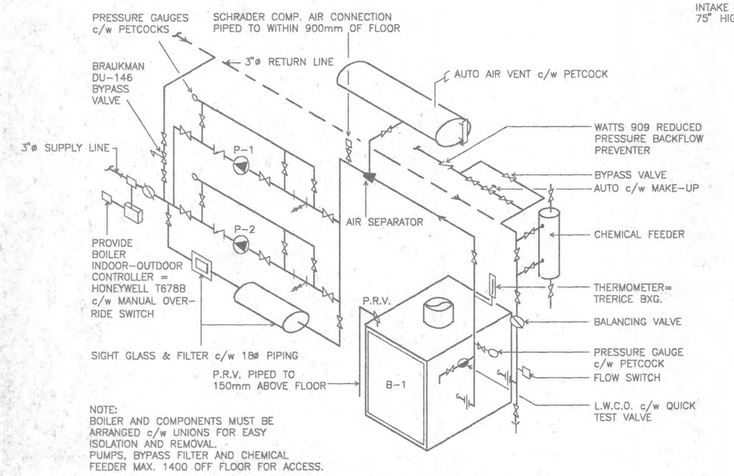
N.T.S.

ALL GAS INSTALLATIONS SHALL COMPLY WITH CAN/CGA B 149.1/B 149.2 M95
ALL PLUMBING INSTALLATIONS SHALL COMPLY WITH THE NATIONAL PLUMBING CODE
DEC 23 1998



UNIT HEATER

N.T.S.



BOILER PIPING SCHEMATIC

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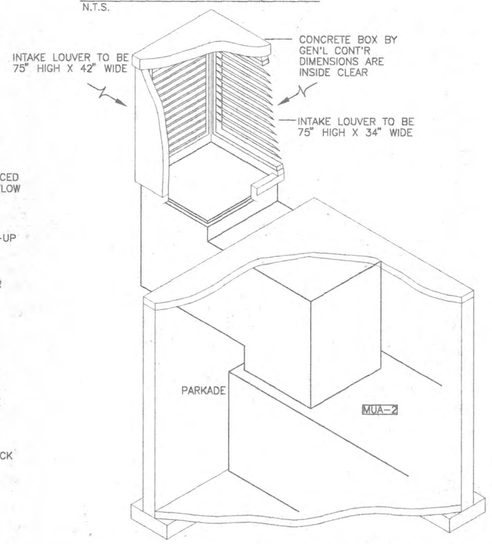
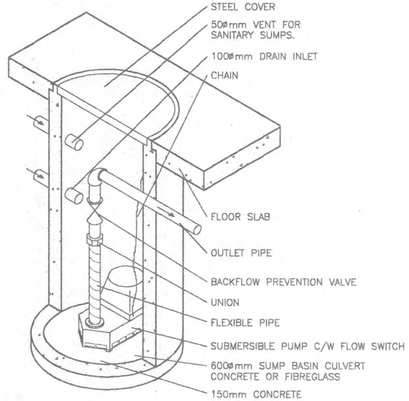


MUA-2 INTAKE DOG HOUSE

N.T.S.



SUMP AND PUMP DETAIL

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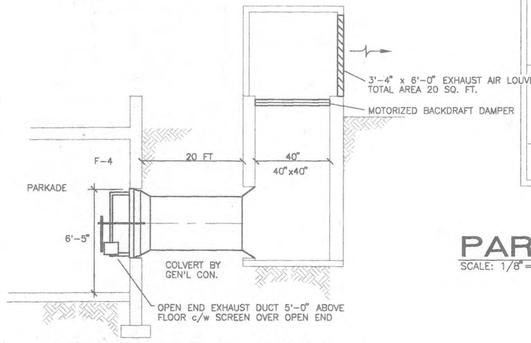
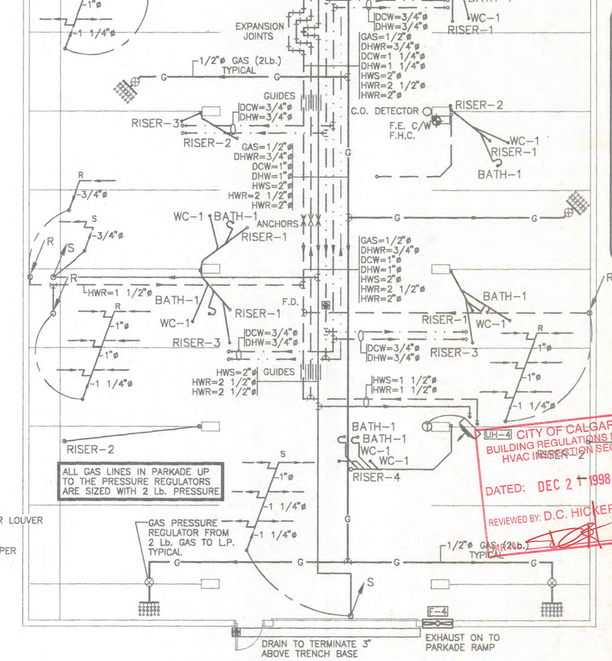


PARKADE E/A DETAIL

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



PARKADE PLAN

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

ALLEN WASNEA ENGINEERING LTD.
MECHANICAL CONSULTING
101 — 9804 Beaverdam Road N.E.
CALGARY, Alberta T3J 5P2
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date	description
MAY 13/98	issued for coordination
	issued for building permit
	issued for tender
	issued for development permit
	issued for province approval
	preliminary

drawing status

revisions

POINT OF VIEW project

PARKADE FLOOR PLAN BUILDING ONE drawing

date 09/22/98
scale AS 1/8"x1'-0"
drawn B.R.
checked A.W.

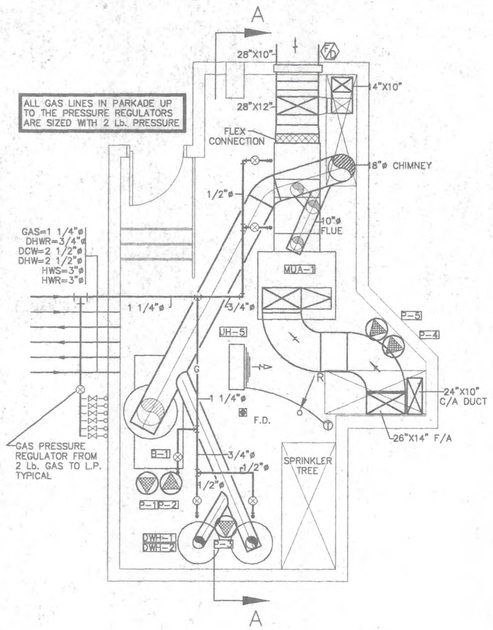
project no. 9858

drawing no. M2 OF 8

PROFESSIONAL ENGINEER ALBERTA ALLEN D. WASNEA

PERMIT TO PRACTICE / ALLEN WASNEA ENGINEERING LTD.
Signature
Date Sept 22/98
PERMIT NUMBER: P 2900
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PLOT DATE 09/22/98



MECH. ROOM LAYOUT(BLDG.-1)
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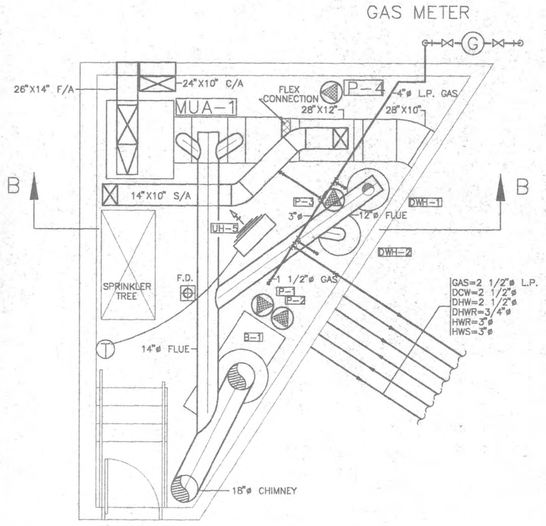

MECH. ROOM LAYOUT(BLDG.-2)
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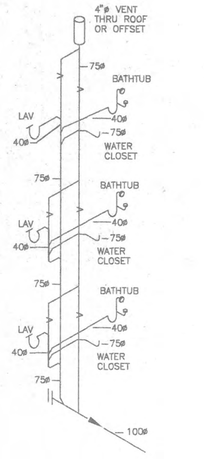

RISER 1 SINGLE BATH SANITARY
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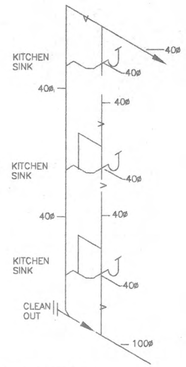

RISER 2 KITCHEN SINK SANITARY
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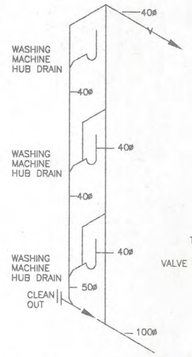

RISER 3 CLOTHES WASHERS SANITARY
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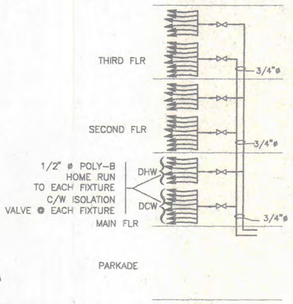

WATER SUPPLY RISER
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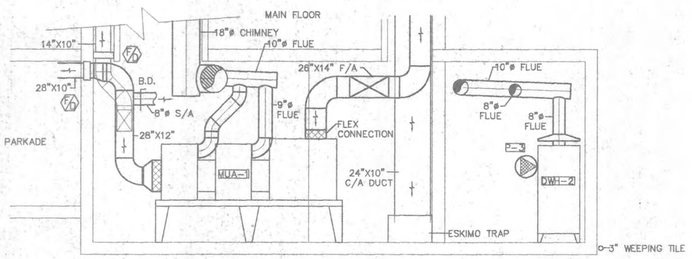

SECTION A-A
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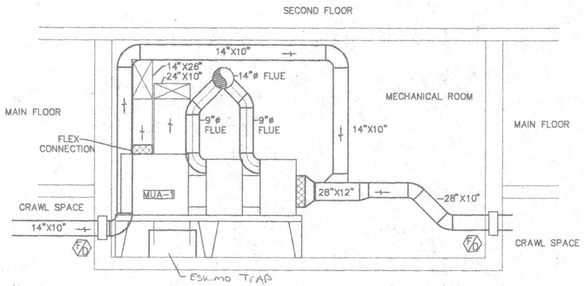

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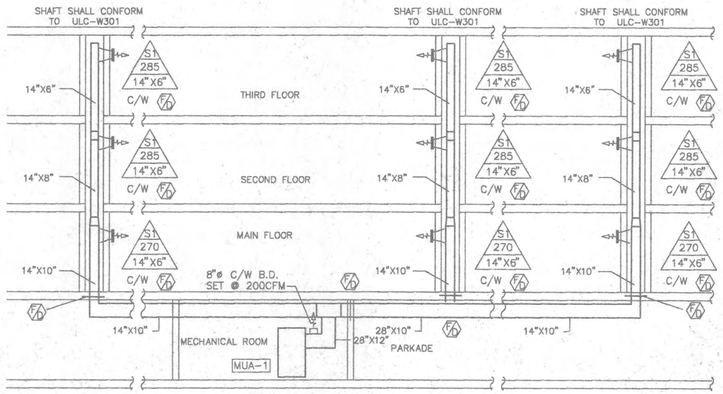

HALL PRESSURIZATION RISER
N.T.S.

ALL GAS PIPING SHALL COMPLY WITH CAN/CGA B 149.1/B 149.2 MOD

ALL PLUMBING INSTALLATIONS SHALL COMPLY WITH THE NATIONAL PLUMBING CODE 1995
DEC 23 1998

CITY OF CALGARY
BUILDING REGULATIONS DIVISION
HVAC INSPECTION SECTION
DATED: DEC 21 1998
REVIEWED BY: D.C. HICKERTY, P. ENG
MP No.

ALLEN WASNEA ENGINEERING LTD.
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drawing status
issued for construction
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issued for development permit
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preliminary
MAY 1998

revisions
description
date

POINT OF VIEW
project

DETAILS
drawing

date 09/22/98
scale AS 1/8"=1'-0"
drawn B.R.
checked A.W.

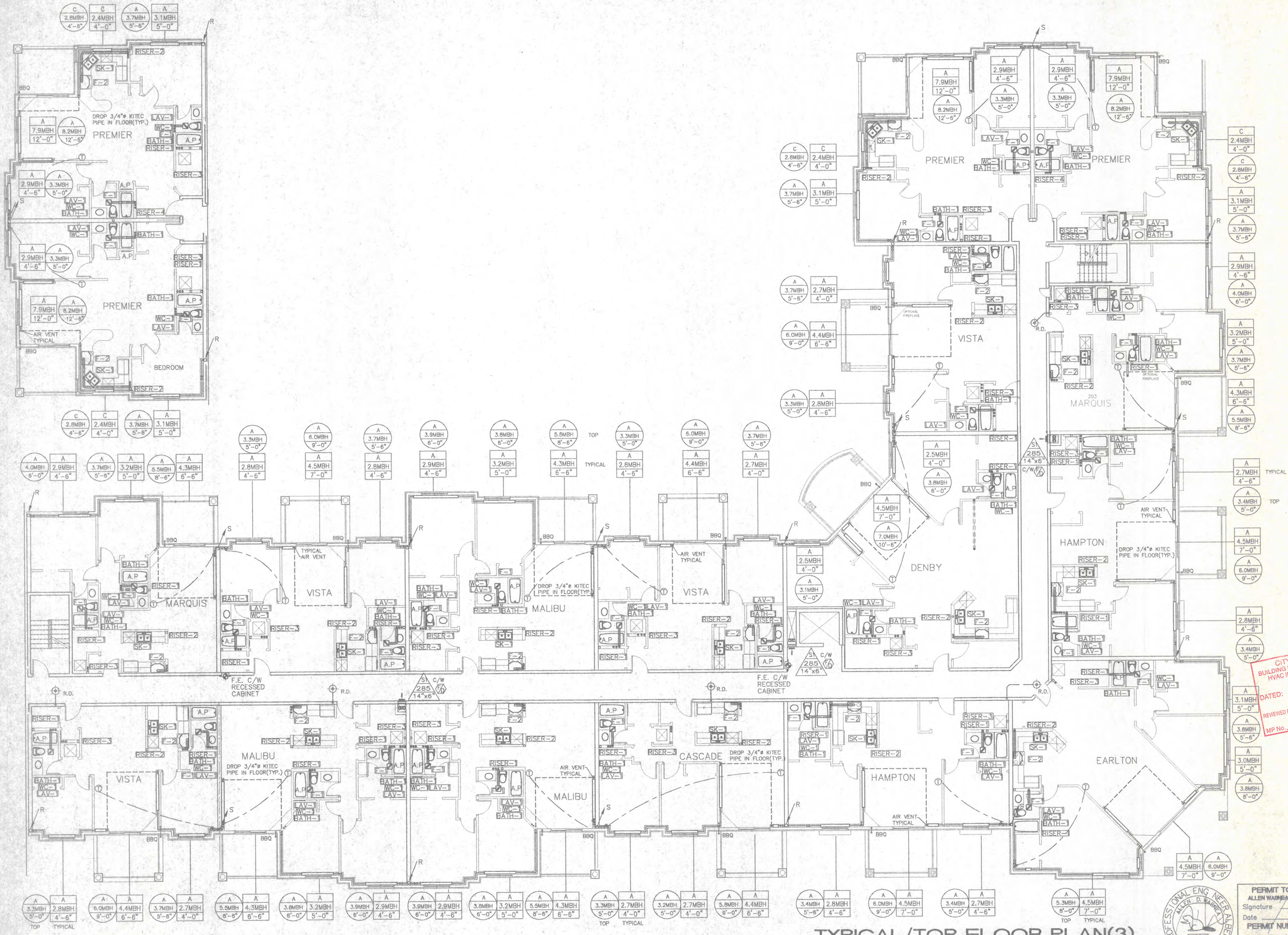
project no. 9858

drawing no. M8 OF 8

PROFESSIONAL ENGINEER ALLEN D. WASNEA ALBERTA

PERMIT TO PRACTICE
ALLEN WASNEA ENGINEERING LTD.
Signature
Date Sept 22/98
PERMIT NUMBER: P 2900
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PLOT DATE 09/22/98



TYPICAL/TOP FLOOR PLAN(3)

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

ALLEN WASNEA ENGINEERING LTD.
MECHANICAL CONSULTING
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Edmonton, Alberta T5K–1B2
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CITY OF CALGARY
BUILDING REGULATIONS DIVISION
HVAC INSPECTION SECTION
DATED: DEC 21 1998
REVIEWED BY: D.C. HICKERTY, P. ENG
MP No. 1077

PERMIT TO PRACTICE
ALLEN WASNEA ENGINEERING LTD.
Signature
Date Dec 17/98
PERMIT NUMBER: P 2900
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PROFESSIONAL ENG NEER ALBERTA ALLEN D. WASNEA

PLOT DATE 10/27/98

drawing status
POINT OF VIEW
project
TYPICAL FLOOR PLAN
BUILDING THREE
drawing
date 10/27/98
scale AS 1/8"=1'-0"
drawn B.R.
checked A.W.
project no. 9858
dwg no. M1
OF 11