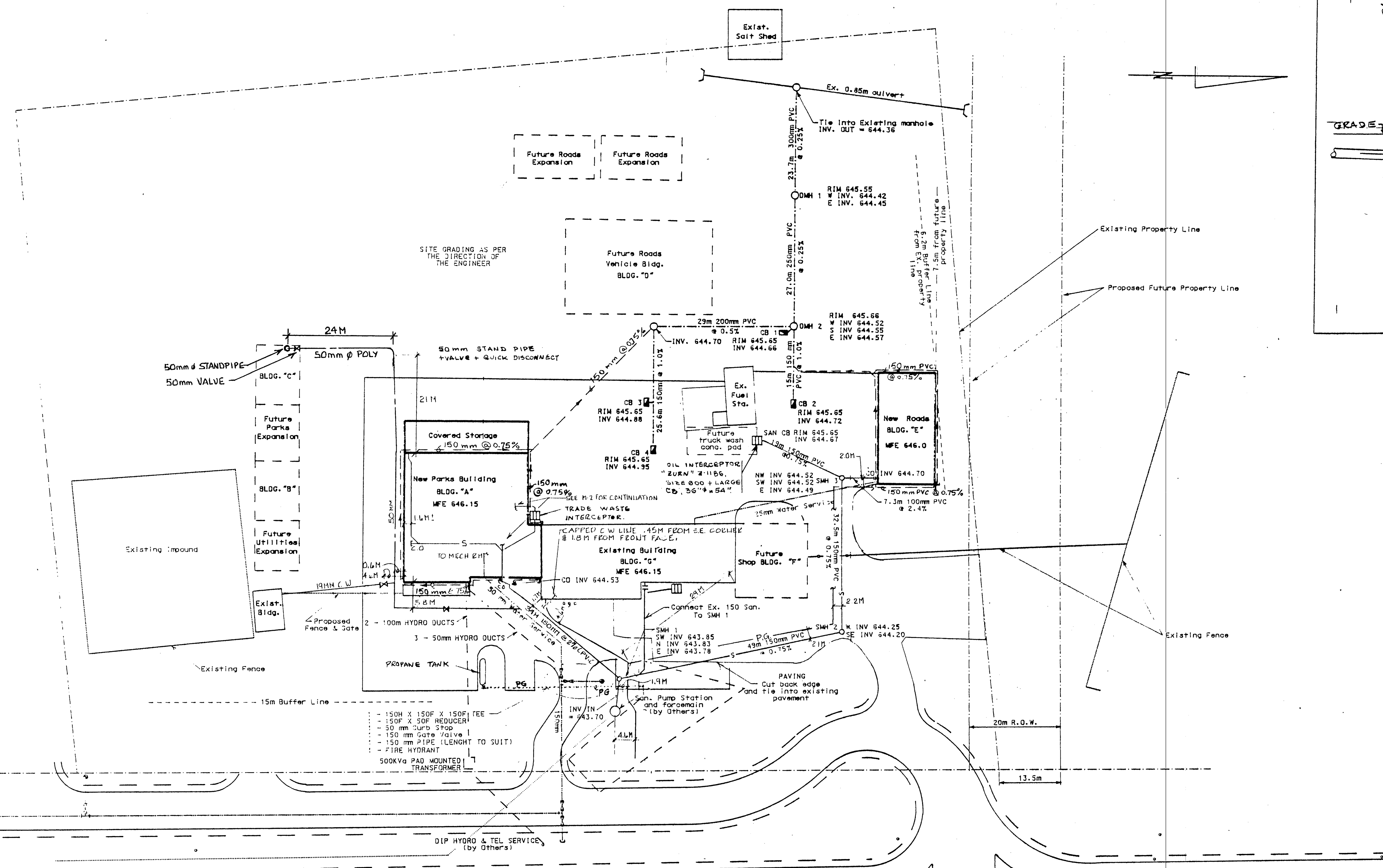
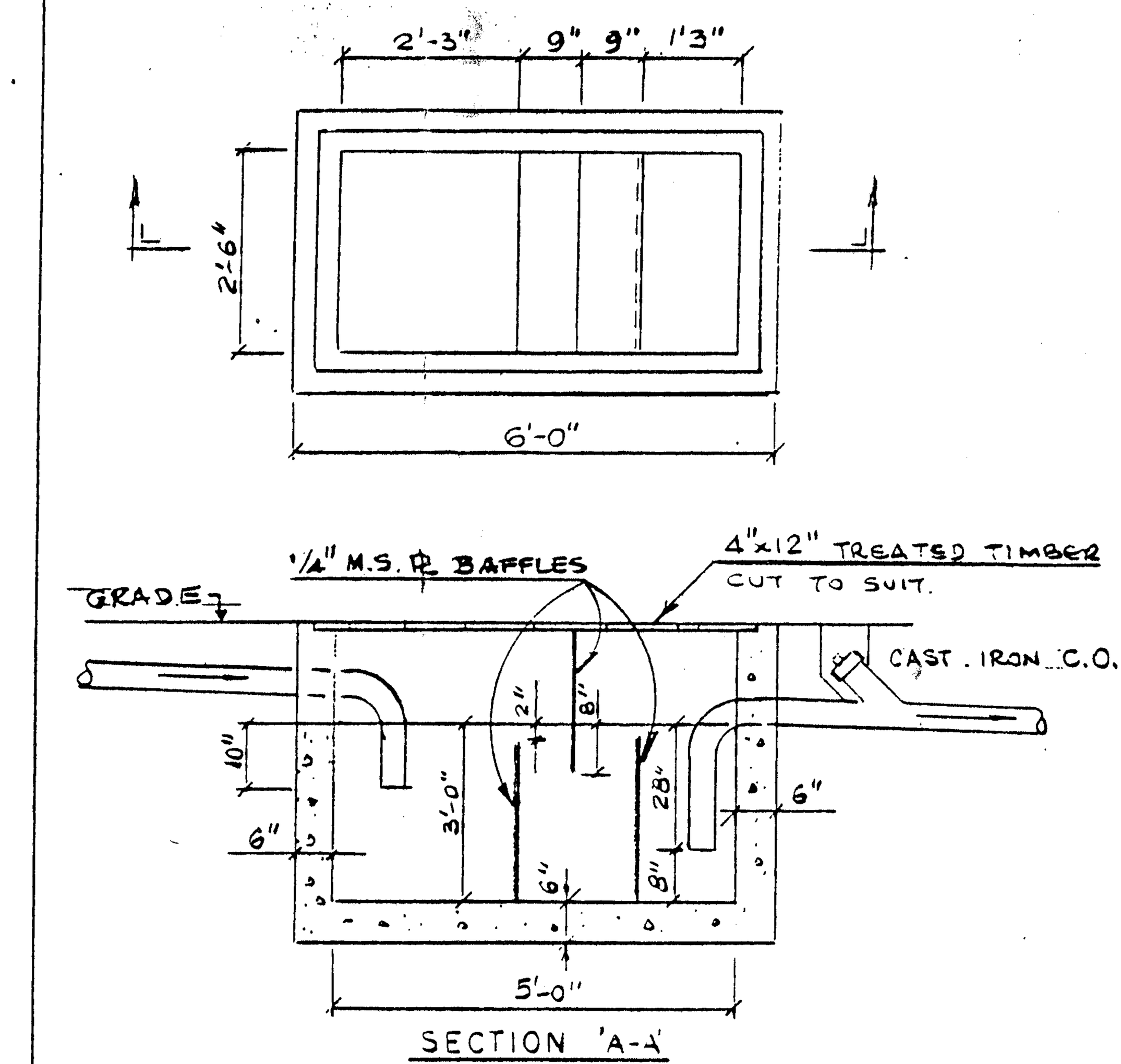




TRADE WASTE INTERCEPTOR

(N.T.S.)

NOTES:
1. REFER TO STANDARD DWG. W4 FOR ALL STAND PIPES (R.M.C.W. SPECIFICATIONS).
2. REFER TO STANDARD DWG. W3 FOR FIRE HYDRANT INSTALLATION.
3. REFER TO STANDARD DWG. W1 AND W2 FOR TRUST BLOCK APPLICATIONS.

AS BUILT
MAY 25 1993

JUN - 7 1993

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. TORRES

SNOW COUNTRY CONSULTANTS
Jonathan C. Paine, P. Eng.
Tel: (604) 932-3874 Fax: (604) 932-3764
#202-1080 Millar Creek Road, Whistler, B.C. Canada V0N 1B1

PLUMBING

SANITARY DRAIN (ABOVE GRADE)	
SANITARY DRAIN (BELOW GRADE)	
STORM DRAIN (ABOVE GRADE)	
STORM DRAIN (BELOW GRADE)	
COLD WATER	
HOT WATER	
HOT WATER RECIRC.	
VENT	V
CLEANOUT	C.O.
GAS LINE	G
HOSE BIBB	
FLOOR DRAIN	F.D.
ROOF DRAIN	R.D.

VENTILATION

- SUPPLY DUCTS (UP & DOWN)
- RETURN DUCTS (UP & DOWN)
- SUPPLY OUTLET (CEILING/WALL)
- RETURN INLET (CEILING/WALL)
- DIFFUSER
- BALANCING DAMPER
- FIRE DAMPER
- DOOR GRILLE
- ACOUSTIC LINED DUCTWORK

REVISIONS	BY
SEPT. 15, 92	C
AS-BUILTS MAY 1993	A.J

8020 NESTERS RD

NOTE:
CONTRACTOR TO CHECK ALL DRAWINGS, DIMENSIONS, SIZES, EQUIPMENT LOCATION & VERIFY CORRECT. REPORT ANY DISCREPANCY TO MECHANICAL ENGINEER PRIOR TO START OF CONSTRUCTION.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. TORRES
SEP 15 1992

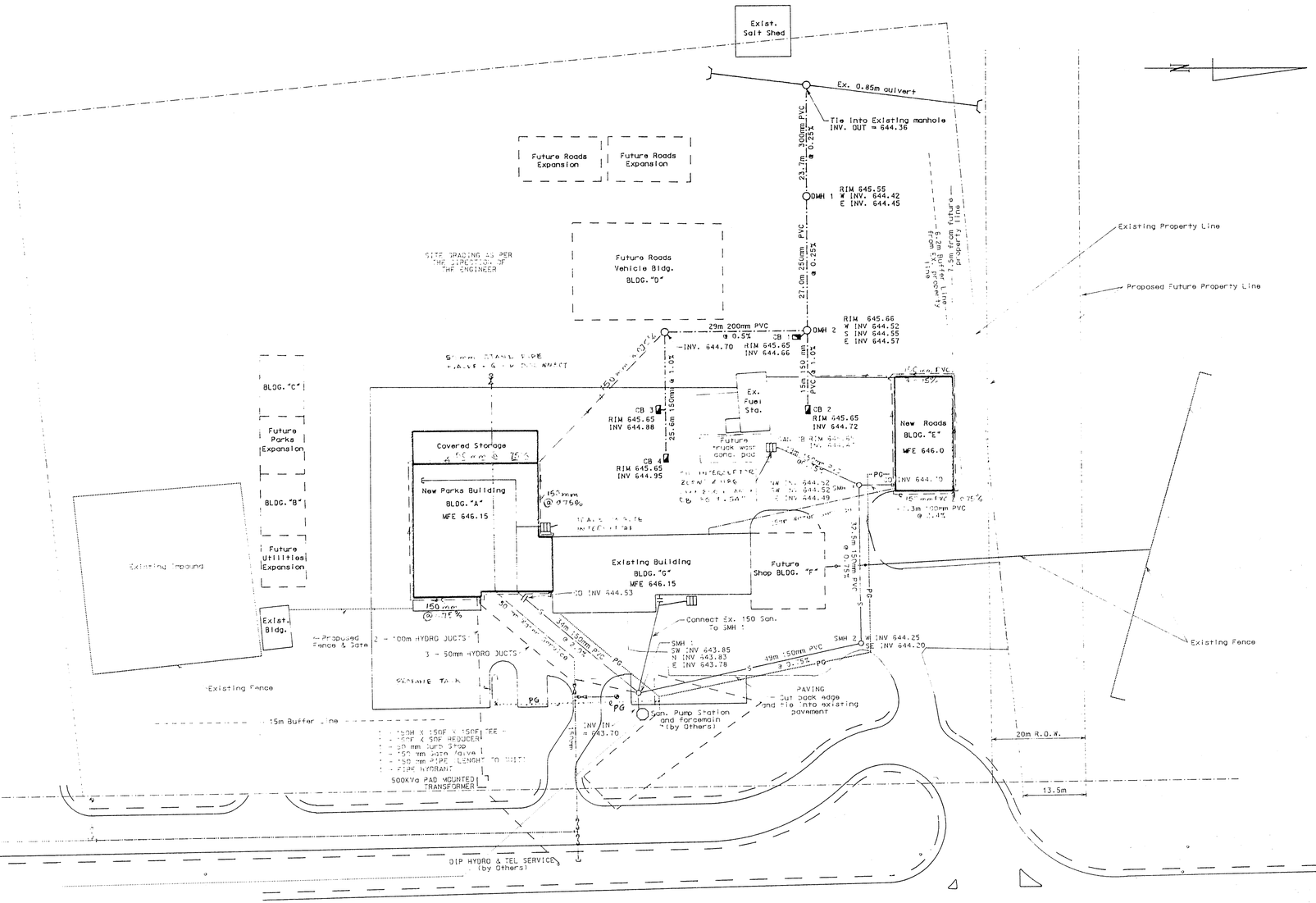
TORRES ENGINEERING LTD
240-1715 Dickson Ave.
Kelowna, B.C., V1Y 9G6
Phone: 868 - 2350
Fax: 764 - 7901

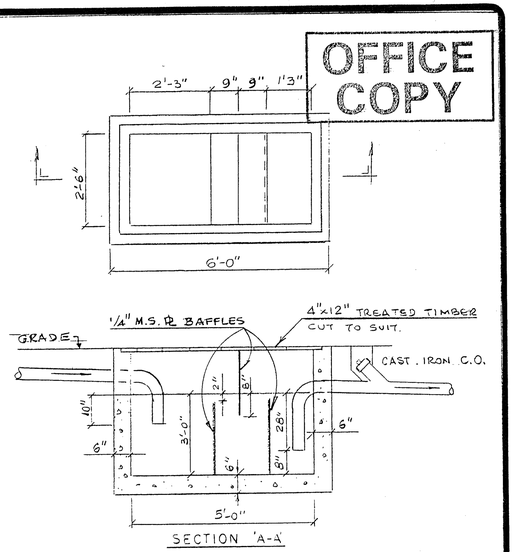
MUNICIPAL WORKS BUILDING EXPANSION WHISTLER

SITE SERVICING

DRAWN: J.T.
CHECKED:
DATE: SEPT. 15, 92
SCALE: 1:500
JOB NO.:
SHEET: M1
OF 5 SHEETS

OFFICE COPY





SECTION 'A-A'

TRADE WASTE INTERCEPTOR

(N.T.S.)

NOTES:
1. REFER TO STANDARD DWG. W4 FOR ALL STAND PIPES (R.M.C.W. SPECIFICATIONS).
2. REFER TO STANDARD DWG. W3 FOR FIRE HYDRANT INSTALLATION.
3. REFER TO STANDARD DWG. W1 AND W2 FOR TRUST BLOCK APPLICATIONS.

RESORT MUNICIPALITY OF WHISTLER
PUBLIC WORKS DRAWING REVIEW

Correct and re-submit
Approved for construction as noted
As-builts accepted

signature date

SNOW COUNTRY CONSULTANTS
Jonathan C. Paine, P. Eng.,
Tel: (604) 932-3874 Fax: (604) 932-3764
#202-1080 Millar Creek Road,
Whistler, B.C., Canada, V0N 1B1

PLUMBING

SANITARY DRAIN (ABOVE GRADE)	
SANITARY DRAIN (BELOW GRADE)	
STORM DRAIN (ABOVE GRADE)	
STORM DRAIN (BELOW GRADE)	
COLD WATER	
HOT WATER	
HOT WATER RECIRC.	
VENT	V
CLEANOUT	C.O.
GAS LINE	G
HOSE BIBB	
FLOOR DRAIN	F.D.
ROOF DRAIN	R.D.

VENTILATION

SUPPLY DUCTS (UP & DOWN)	
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SUPPLY OUTLET (CEILING/WALL)	
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DIFFUSER	
BALANCING DAMPER	
FIRE DAMPER	
DOOR GRILLE	
ACOUSTIC LINED DUCTWORK	

REVISIONS	BY
SEPT. 15, 92	J

HANG - OFFICE.

NOTE:
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PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. TORRES
SEP 15 1992

TORRES ENGINEERING LTD
240-1715 Dickson Ave.
Kelowna, B.C., V1Y 9G6
Phone: 868 - 2350
Fax: 764 - 7901

MUNICIPAL WORKS BUILDING EXPANSION WHISTLER

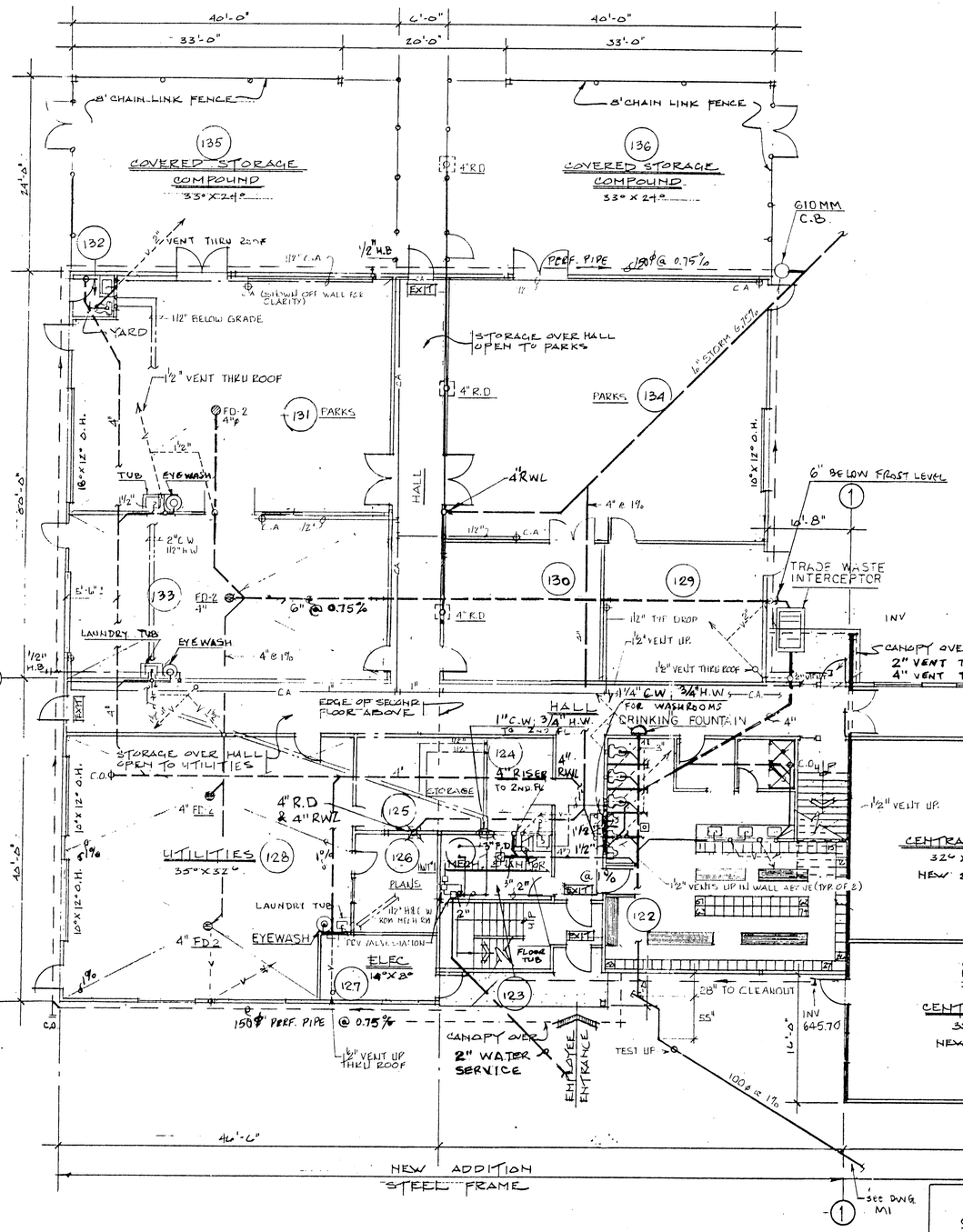
SITE SERVICING

DRAWN	J.T.
CHECKED	
DATE	SEPT. 15, 92
SCALE	1:500
JOB NO.	
SHEET	M1

OF 5 SHEETS

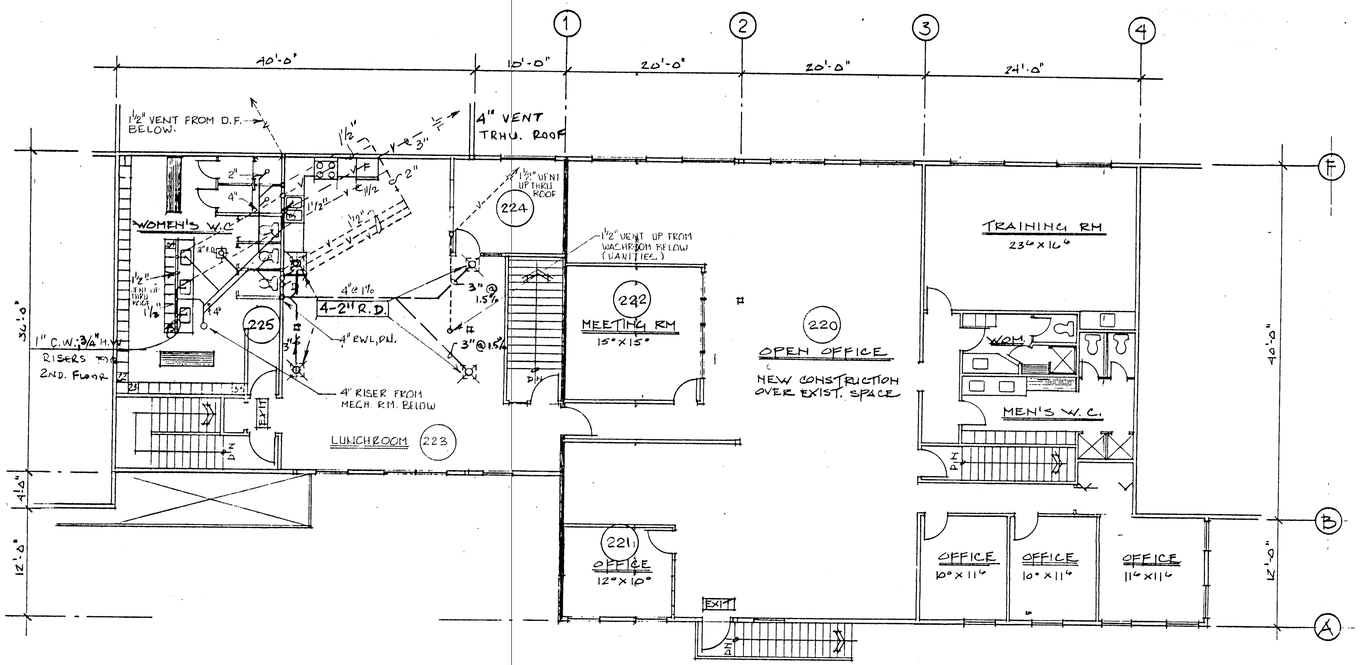
TELEDYNE POST 18AL-20 – 24 x 36

PLAN NORTH



GROUND FLOOR PLAN

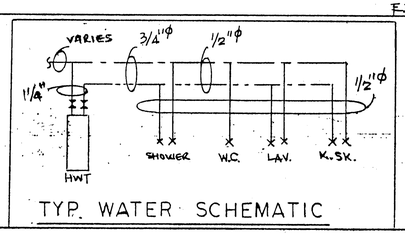
SCALE: 1/8" = 1'-0"



SECOND FLOOR PLAN

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

NOTE: FOR DOORS, WINDOW LOCATION AND DIMENSIONS FOLLOW LATEST ARCHITECTURAL DRAWINGS.



TYP. WATER SCHEMATIC

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J. TORRES
JUN - 7 1993

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J. TORRES
MAY 20 1992

AS BUILTS MAY 6 1993

AS BUILTS	MAY	93	
1 FOR CONSTRUCTION	SEPT	92	
DRAWN/REVISED	DATE	ISSUED	BY

VERIFY LATEST REVISION DATE, DESTROY OR MARK VOID ALL EARLIER PRINTS. USE ONLY FOR PURPOSES SHOWN. DO NOT USE FOR CONSTRUCTION UNLESS MARKED "ISSUED FOR CONSTRUCTION".
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TORRES ENGINEERING LTD
240-1715 Dickson Ave.
Kelowna, B.C., V1Y 9G6
Phone: 868 - 2350

PROJECT: MUNICIPAL WORKS BLDG. EXPANSION

SCALE:	DATE:	DWN. BY:
1/8"=1'-0"	MAY 14,92	J.T.

SHEET: PLUMBING — M2 — OF 5

PLAN NORTH
GROUND FLOOR PLAN
SCALE: 1/8" = 1'-0"
SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"
COVERED STORAGE COMPOUND
33'0" x 24'0"
8' CHAIN LINK FENCE
2" (SEE DWG. M1)
2" VENT THRU ROOF
610 MM C.B.
PERF. PIPE
6" @ 0.75%
(SEE DWG 1)
YARD W.C.
STORAGE OVER HALL OPEN TO PARKS
4" R.D.
4" RWL
TUB
EYEWASH
LAUNDRY TUB
FD2
6" BELOW FROST LEVEL
TRADE WASTE INTERCEPTOR
CANOPY OVER
2" VENT THRU 1ST. FL.
4" VENT THRU ROOF.
EDGE OF SECOND FLOOR ABOVE
HALL
1 1/4" C.W. 3/4" H.W. FOR WASHROOMS
DRINKING FOUNTAIN
STORAGE OVER HALL OPEN TO UTILITIES
UTILITIES
35'0" x 32'0"
4" R.D. & 4" RWL
STORAGE
HWT
MEN'S W.C.
PRV VALVE
ELEC
14'x 8'0"
150Ø PERF. PIPE @ 0.75%
CANOPY OVER
2" WATER SERVICE
EMPLOYEE ENTRANCE
CONNECTION OF 1 1/2" C.W. TO EXISTING 1 1/2" WATER SUPPLY
COUNTER WITH LOCKING SLIDING DOOR
CENTRAL STORES
32'0" x 24'0"
NEW 8' CEILING
CENTRAL STORES
30' x 19'
NEW 8' CEILING
SHOP
23'0" x 19'0"
SHOP
51' x 39'
SHOP
23'0" x 31'
HANDI
WC
MECH. & JAN.
RECEPTION
13' x 17'
PUBLIC ENTRANCE
COMP. RM
ELEC.
EXIT
NEW ADDITION
STEEL FRAME
EXISTING BUILDING
WOOD FRAME
EXISTING 6"
SEE DWG M1
NOTE: FOR DOORS, WINDOW LOCATION AND DIMENSIONS FOLLOW LATEST ARCHITECTURAL DRAWINGS.
4" VENT THRU. ROOF
WOMEN'S W.C.
2" VENT FROM 1ST. FL.
LUNCH RM.
4-2" R.D.
4" RWL
4" RISER
1" C.W. 3/4" H.W. RISERS FOR 2ND. FLOOR
MEETING RM
15' x 15'
OPEN OFFICE
NEW CONSTRUCTION OVER EXIST. SPACE
TRAINING RM
23'0" x 16'0"
WOM.
MEN'S W.C.
OFFICE
12' x 10'
OFFICE
10' x 11'
OFFICE
10' x 11'
OFFICE
11' x 11'
TYP. WATER SCHEMATIC
VARIES
SHOWER
W.C.
LAV
K.SK
PROFESSIONAL ENGINEER
J. TORRES
SEP 15 1992
MAY 20 1992
FOR CONSTRUCTION
SNOW COUNTRY CONSULTANTS
Jonathan C. Paine, P. Eng.
PROJECT: MUNICIPAL WORKS BLDG EXPANSION
SCALE: 1/8" = 1'-0"
DATE: MAY 14.92
SHEET: PLUMBING
M2

NOTE: FIRE DAMPERS MUST BE INSTALLED WHENEVER DUCT PENETRATES FIRE SEPARATION (VERTICAL OR HORIZONTAL).

PLAN NORTH

SECOND FLOOR PLAN

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

GROUND FLOOR PLAN

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

DETAIL 1

SPECIFICATION FOR THERMOSTATS AND NIGHTSTATS:

1. ALL UNIT HEATERS (T3) AND BASEBOARD THERMOSTATS SHALL BE CHROMALOX, LOW VOLTAGE T86A.
2. ALL 'T' THERMOSTATS SHALL BE CHROMALOX, 2 STAGE (HEAT &COOL) T874A, WIRED FOR COOLING ONLY.
3. ALL T4 THERMOSTATS SHALL BE SUPPLIED BY MECHANICAL CONTRACTOR FOR CO-RAY-VAC SYSTEM.
4. NIGHTSTATS SHALL BE CHROMALOX, LOW VOLTAGE, T631A.
5. ALL THERMOSTATS & NIGHTSTATS SHALL BE INSTALLED 5 FT. ABOVE FLOOR.

AS BUILT	APR 8/93	
FOR CONSTRUCTION	SEPT 15/92	
DRAWN/ISSUED	DATE	ISSUED

VERIFY LATEST REVISION DATE. DESIGN ON MAIN VOID ALL EARLIER PRINTS. USE ONLY FOR PURPOSES SHOWN. DO NOT USE FOR CONSTRUCTION UNLESS MARKED "ISSUED FOR CONSTRUCTION".
VERIFY ALL DIMENSIONS ON SITE BEFORE BEGINNING WORK.
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SNOW COUNTRY CONSULTANTS
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4003-1080 Millar Creek Road,
Whistler, B.C., Canada, V0N 1B1

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. TORRES — JUN 27 1992

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. TORRES — MAY 20 1992

TORRES ENGINEERING LTD
240-1715 Dickson Ave.
Kelowna, B.C., V1Y 9G6
Phone: 868 - 2350

PROJECT: MUNICIPAL WORKS BLDG. EXPANSION

SCALE: 1/8"=1'-0" | DATE: MAY 10,92 | DWN. BY: J.T.

SHEET: MAKE UP AIR, VENTILATION RADIANT HEATING

M3 OF 5

NOTE: FIRE DAMPERS MUST BE INSTALLED WHENEVER DUCT PENETRATES FIRE SEPARATION (VERTICAL OR HORIZONTAL).

PLAN NORTH

SECOND FLOOR PLAN

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

GROUND FLOOR PLAN

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

DETAIL 1

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FOR CONSTRUCTION	SEPT/1992	
DRAWN/REVISED	DATE	ISSUED

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Tel: (604) 932-3874 Fax: (604) 932-3764
#202-1060 Millar Creek Road,
Whistler, B.C., Canada, V0N 1B1

PROJECT: MUNICIPAL WORKS BLDG. EXPANSION

SCALE:	DATE:	DWN. BY:
1/8" = 1'-0"	MAY 10,92	J.T.

SHEET: MAKE UP AIR, VENTILATION & RADIANT HEATING — M3 OF 5

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. TORRES — SEP 15 1992

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. TORRES — MAY 20 1992

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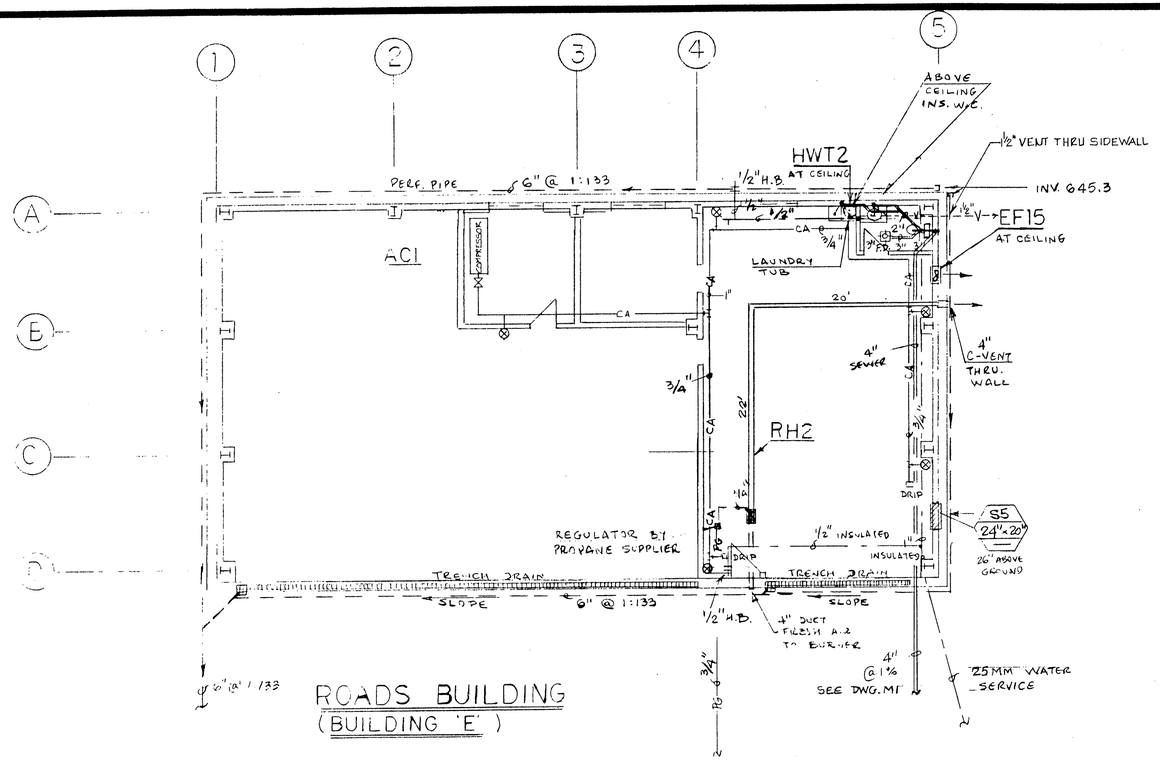
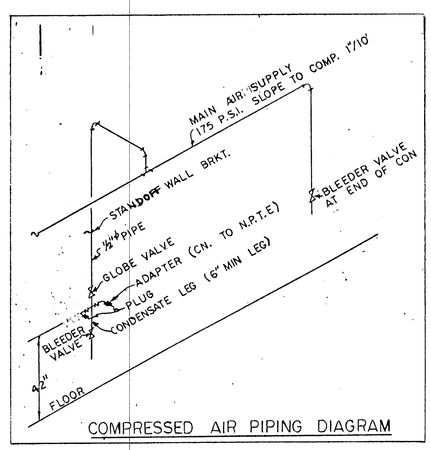
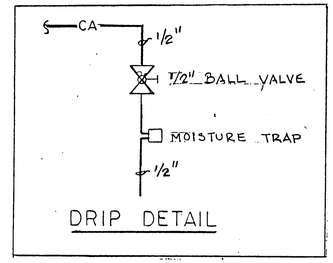
Kelowna, B.C., V1Y 9G6
Phone: 868-2250



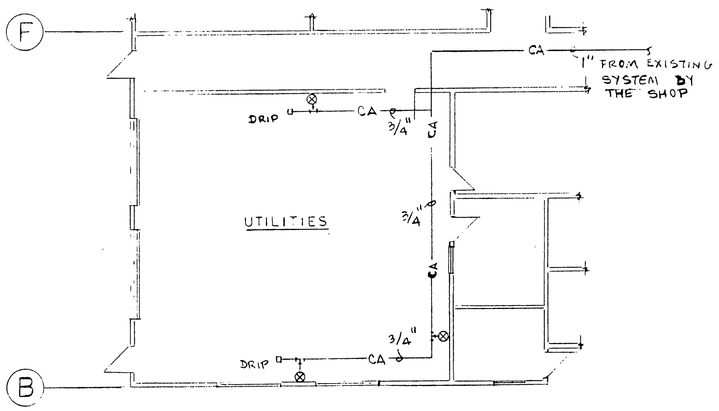
ROADS BUILDING (BUILDING 'E')



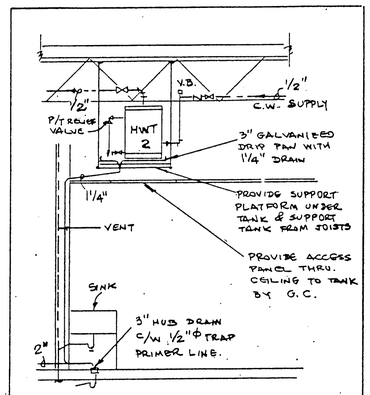
COMPRESSED AIR PIPING DIAGRAM



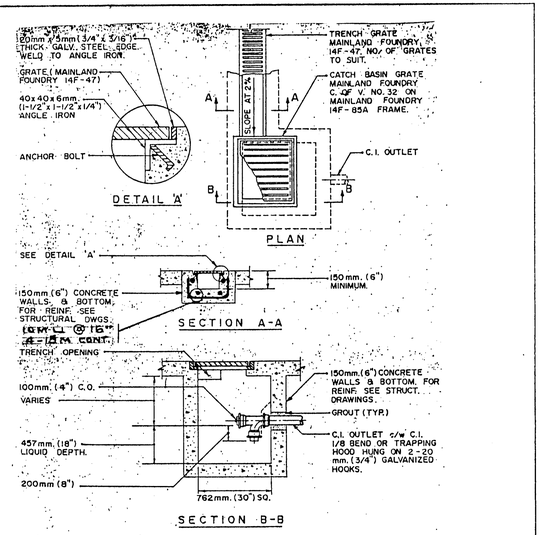
DRIP DETAIL



BUILDING 'A'



HOT WATER TANK DETAIL



DETAIL OF TRENCH DRAIN

AS BUILT
MAY 4 1993

REVISIONS	BY
FOR CONSTRUCTION SEPT. 15 92	J.
AS-BUILTS MAY 93	A.T

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. TORRES
JUN - 7 1993

PROFESSIONAL ENGINEER
J. TORRES
MAY 20 1992

TORRES ENGINEERING LTD
240-1715 Dickson Ave.
Kelowna, B.C., V1Y 9G6
Phone: 868 - 2350

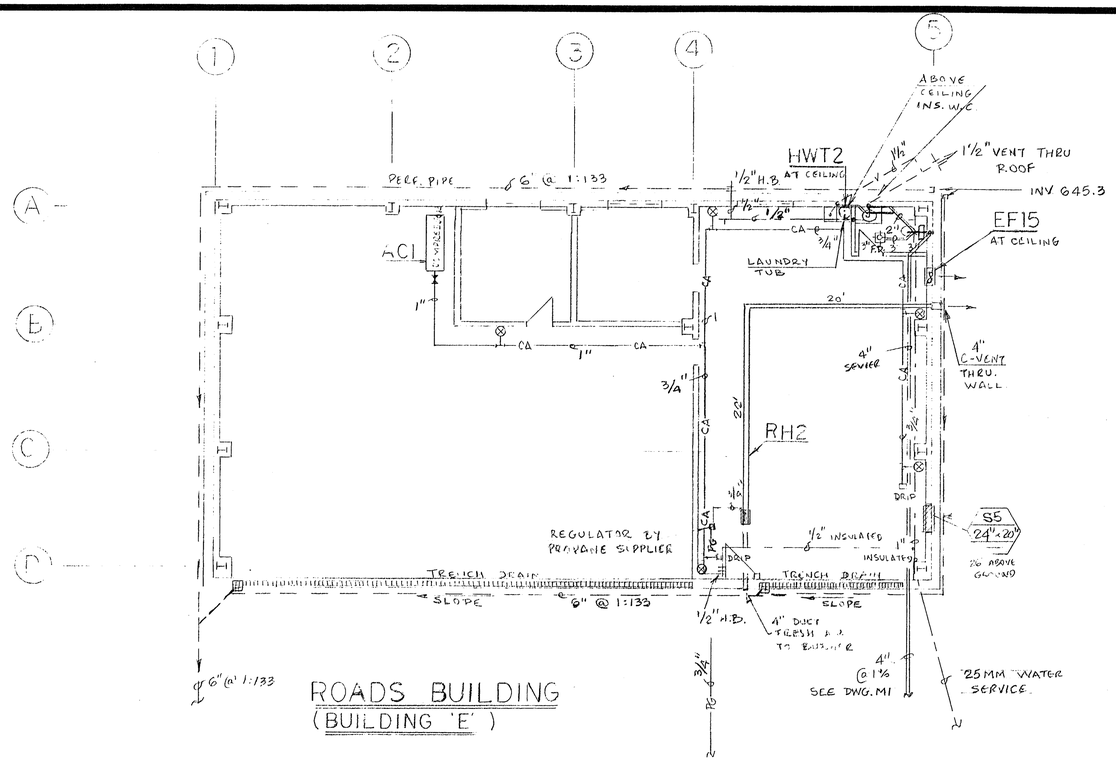
MUNICIPAL WORKS BUILDING EXPANSION WHISTLER.

ROADS BUILDING (BUILDING 'E')

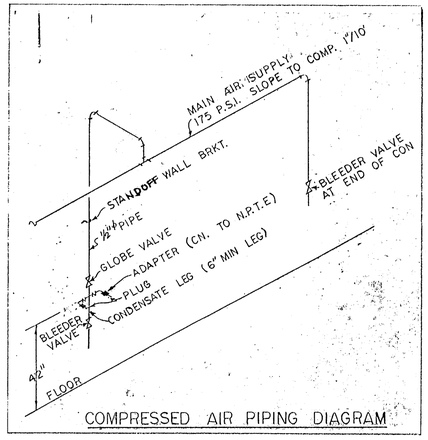
DRAWN	J.T.
CHECKED	
DATE	MAY 13, 92
SCALE	1/8" = 1'-0"
JOB NO.	
SHEET	M4

OF 5 SHEETS

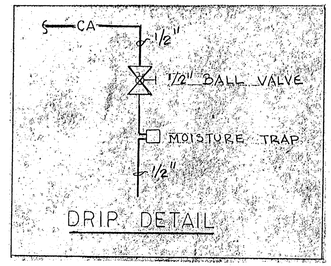
TELEDYNE POST 18AL-20 — 24 x 36



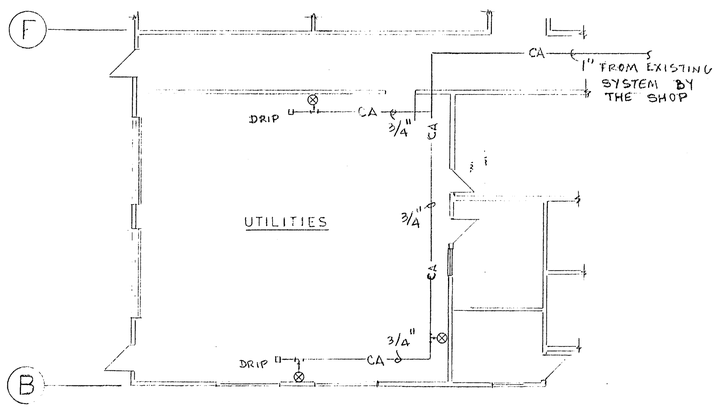
ROADS BUILDING
(BUILDING 'E')



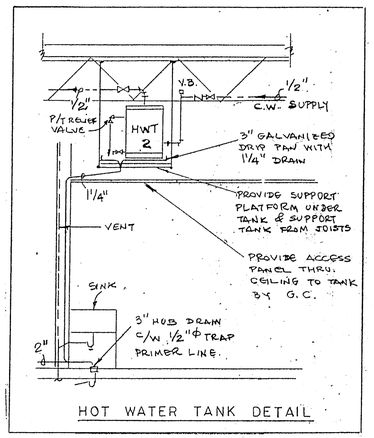
COMPRESSED AIR PIPING DIAGRAM



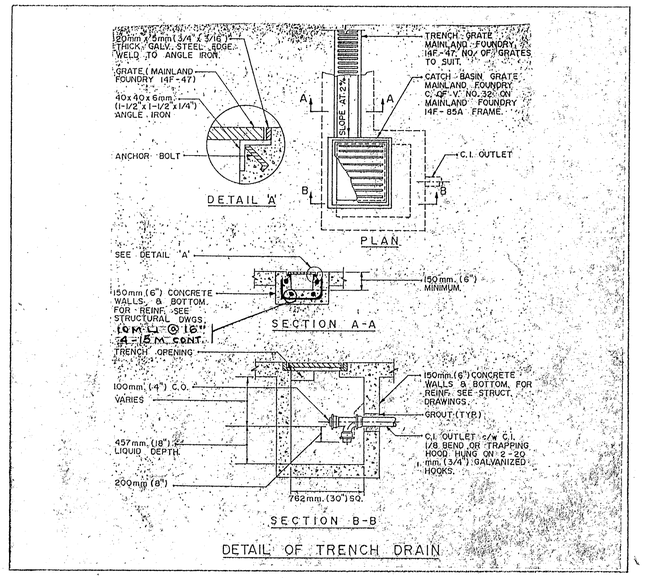
DRIP DETAIL



BUILDING 'A'



HOT WATER TANK DETAIL



DETAIL OF TRENCH DRAIN

REVISIONS	BY
FOR CONSTRUCTION SEPT. 15, 92	J.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. TORRES
SEP 15 1992

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. TORRES
MAY 20 1992

TORRES ENGINEERING LTD
2405-1715 Dickson Ave.
Kelowna, B.C. V1Y 9G6
(604) 862-2525

MUNICIPAL WORKS BUILDING EXPANSION WHISTLER.

ROADS BUILDING (BUILDING 'E')

DRAWN	J.T.
CHECKED	
DATE	MAY 13, 92
SCALE	1/8"=1'-0"
JOB NO.	
SHEET	M4

OF 5 SHEETS

MECHANICAL SPECIFICATIONS

1. MECHANICAL GENERAL PROVISIONS

1.1 The Mechanical Contractor shall supply all material, permits and labour mentioned herein or indicated on drawings for a complete and operational system.

1.2 The Mechanical Contractor will include incidental accessories and details not usually shown or specified.

1.3 The Mechanical Contractor shall advise the Engineer, should he believe any equipment or material to be inadequate or unsuitable, in violation of laws, ordinances, rules or regulations of authorities having jurisdiction, or should any necessary items of work be omitted.

1.4 The Mechanical Contractor is responsible to check drawings of all trades to verify space and headroom limitations for work to be installed. Make changes to facilitate a more satisfactory installation. Deviations from drawings altering the design intent or involving additional expense, shall not be made without the Architect's approval.

1.5 Where installed work interferes with or modifies the architectural design, make necessary changes as directed by the Architect, at no extra cost to the Owner.

1.6 Place no unusual erection loads on the building structure without the Structural Engineer's approval.

2. WORKMANSHIP AND TRADESMAN QUALIFICATIONS

2.1 Workmanship shall be the best of its kind known to the trade. Only tradesman holding a valid Provincial Qualification Certificate shall be employed, and they shall only perform work permitted under this certificate.

3. CODES AND PERMITS

3.1 Work shall be done in accordance with the 1985 National Building Code of Canada, local by-laws and Provincial regulations. Submit plans and specifications for approval to authorities having jurisdiction. Obtain permits and pay all necessary fees, including connection fees for sewer and water.

4. DRAWINGS

4.1 Drawings are generally diagrammatic and indicate the general arrangement of the work. Do not scale drawings. Notes and figured dimensions take precedence over scaled dimension.

5. C.S.A. APPROVAL

5.1 Electrical motors, equipment and components shall bear a C.S.A. approval label.

6. MATERIALS

6.1 Materials and equipment furnished shall be new and of the quality specified, furnished and completed in all details. 6.2 Request for approval of products other than those specified shall be submitted in writing at least eight days prior to the closing of tender.

7. CUTTING AND PATCHING

7.1 Arrange with the General Contractor and be responsible for the lay out of all work requiring cutting and patching.

8. CANNINGS AND OPENINGS

8.1 Provide all necessary sleeves, caulking and flashing required to make roof openings absolutely watertight.

9. ACCESS DOORS

9.1 Provide access doors where required to properly service all equipment, balancing and fire dampers, valves, plumbing cleanouts, etc. Minimum access size 12"x12".

10. SYSTEM TEST

10.1 Perform all tests required under this specification or by authorities having jurisdiction. This includes test for water, gas, soil, waste, vent and drainage piping.

10.2 Balance all air systems to provide air quantities shown on drawings and to provide even temperatures, all to the satisfaction of authorities. Balance and test report must be submitted to the Owner/Tenant.

11. PROJECT RECORD DOCUMENTS

11.1 Record accurately and neatly on one set of white prints all changes made to the Contract due to site conditions and by Change Orders.

11.2 At the completion of the project and prior to final inspection, purchase from the Engineer one set of vellum, and neatly transfer all "as built" notations from the set of white prints to the transparencies using standard drafting technique. Certify and sign each drawing to be correct. Submit both sets to Engineer.

12. PLACING IN SERVICE

12.1 Submit two copies of Operating and Maintenance Manuals containing a list of names of the Contractor and Subcontractors employed on the work, together with addresses, telephone numbers and the job they performed.

12.2 After completion of the job, demonstrate to the Owner's representative a complete operation and maintenance procedure.

12.3 Notify the Architect and the Engineer when final inspection of the work completed may be made. In the event that defects or deficiencies are found, they shall be corrected to the satisfaction of the Architect and/or Engineer and without extra cost to the Owner.

13. BASIC MATERIALS & METHODS

13.1 Pipe Materials

13.1.1 Domestic Water - Above Ground: Copper, Type L95/5 solder joint. Underground: 2" dia. and over: ductile iron. Tyton joint; under 2" dia., Copper Type 'K', silver solder joints.

13.1.2 Sanitary Vents & Drainage and Storm Drainage:
a) Inside building:
- Underground: cast iron or fibre-reinforced cement pipe with mechanical joints. ABS piping to CSA B 181.1
- Above Ground: 1-1/2" dia. and under: copper type 'DWV'; 50/50 tin antimony solder joints.
- Above Ground: over 1-1/2" dia.: Mechanical joint cast iron soil pipe and fittings, Class 4000.

13.1.3 Natural Gas Piping: black steel to CAN 1-B149.

13.2. Valves
13.2.1 Gate: Up to 2": Red-white 206A or 207A
13.2.2 Glove: Up to 2": Red-white 211 or 212
13.2.3 Check: Up to 2": screwed-Red-white 213, 236 or 237
13.2.4 Balance: Up to 2": DeZurik 425 with Fig.487, adjustable stop

14. INSULATION

14.1 Quality Assurance: The B.C. Insulation Constractor's Association (BCICA) Quality Standards Manual for mechanical insulation, 1987 Rev.Ed., together with authorized additions and amendments shall be used as a reference standard and shall form part of this Section.

14.2 Work included:
14.2.1 All domestic hot and cold water piping including mains and branches(where required), 1" pre-formed pipe insulation.
14.2.2 All cast iron and copper rain water leaders, including cast iron fittings on fibre-reinforced cement piping(where required), 1" pre-formed pipe covering.
14.2.3 All supply ductwork located within suspended ceiling, 1" flexible fibreglass duct insulation with foil faced vapour seal.
14.2.4 All ductwork shown cross-hatched, 1" rigid coated ductliner, except ductwork above roof, which requires 2".

14.3 Products:
- Pre-formed Pipe Covering-Fibreglass ASJ with integral Jacket or equivalent Manson.
- Flexible Duct Insulation: Fibreglass with RFFRK facing.
- Rigid Duct Insulation: Fibreglass Rigid Coated Ductliner.

15. PLUMBING & DRAINAGE

15.1 Work included: Water supply and distribution system from existing services; sanitary and storm drainage system within and under building; structures to existing services; plumbing fixtures including trim and plumbing specialties such as floor and roof drains; all cast iron pipes, valves and fittings in connection with the outside drainage appurtenance; cleanouts from perimeter drains (supply only, installation by General Contractor).

15.2 Air chambers & Vents: Main cold water risers shall be fitted with air chambers of ample size to prevent water hammer. Air chambers shall be two sizes larger than the supply main and shall not be less than 36" in length. Provide 12" long air chambers on all fixture connections, both hot and cold water.

15.3 Install cleanouts as required under the Plumbing Code, whether or not shown on the drawings. Cleanouts shall be easily accessible, and where in concealed locations, they shall be extended to finished floors, walls, or to grade with access covers as specified.

15.4 Install cleanouts in all drains and soil pipe lines where obstruction might occur. Generally, at changes of direction, at ends of all long horizontal pipes, at 15 ft. intervals in sink wastes, at the base of every waste stack and rainwater leader, and where drains leave the building. Cleanouts shall be full size on pipes up to 4" dia. and no less than 4" dia. on larger pipes.

15.5 Grade horizontal piping at uniform slope of 0.2% to low points for drainage. At bottom of risers and at low points provide 1" brass valves with nipple and cap.

15.6 Arrange and install piping approximately as indicated, straight, plumb and as direct as possible; form right angles or parallel lines with building walls. Keep pipes close to walls, partitions and ceilings; offset only where necessary to follow walls as directed.

15.7 Isolate all water piping from building structure and other piping and pipe hangers with resilient padding or plastic tape. Seal all gaps with resilient material or caulking where pipes pass through floors.

15.8 Sleeves shall be set for all piping passing through floors, walls, beams and ceilings using 24 gauge galvanized steel except through structural sections where schedule 40 pipe shall be used. Sleeve sized shall provide 1/2" clearance all around pipe.

15.9 Where any fixtures come in contact with a wall and/or floor, the joint shall be made watertight with Dow 780 caulking, beaded smooth in a neat and workman-like manner.

15.10 Where fixtures are supplied by owners, provide all required services, including water and waste to make them operational.

15.11 No portion of the plumbing system shall be concealed or covered before it is inspected and approved by the Mechanical Engineer and authorities having jurisdiction.

15.12 Sanitary drainage system shall be tested by water pressure with 10 ft minimum head of water for 8 hours. All underground drainage system to be tested before backfilling of trenches.

15.13 Domestic water piping system shall be tested by water at a pressure of 150 psi for 8 hours. Test shall be carried out before pipe insulation is applied.

16. DUCTWORK

16.1 Fabricate and install ductwork in accordance with ASHRAE Handbook 1988 Equipment, Chapter 1, or SMACNA HVAC Duct Construction Standards, 1985.

16.2 Rectangular ductwork shall be galvanized steel manufactured in accordance with the following schedule:

Max. Side, in	U.S.S.G. Steel
Up to 12"	26
13" to 30"	24
31" to 54"	22

16.3 Round ductwork shall be galvanized spiral conduit manufactured in accordance with the following schedule:

Duct Diameter	Duct Gauge	Fitting Gauge
Up to 8"	26	22
9" to 26"	24	22

16.4 Install and make the necessary connections for complete supply, re-circulation and exhaust systems indicated on drawings, including ductwork, grilles, intake housing, connections, fasteners, hangers and other items required. Seal joints to provide an air-tight system.

16.5 Install adjustable volume damper in supply and exhaust ducts where shown.

16.6 Wherever obstruction requires a change in duct shape, maintain equivalent areas.

16.7 Duct elbows shall be right angle type with elbow turns or turning vanes or shall have a centreline radious of 1-1/2 times the duct width.

16.8 Ducts which are insulated on the interior shall be increased in dimensions by the thickness of the insulation.

16.9 Air Balancing: Engage the services of an independent Testing Agency to balance the supply and exhaust air system to within 10% of the design quantities shown. Submit balancing reports with the Maintenance Manuals.

16.10 Electrical Wiring: The Electrical Contractor will provide the power wiring and connect equipment. All remaining wiring, including low voltage and temperature control wiring, shall be the responsibility of the Mechanical Contractor.

17. NATURAL GAS PIPING

17.1 All piping, fittings, valves, regulators, etc. and connections to gas fired units and hot water tanks shall be performed by a certified gas fitter and must be approved by the authorities having jurisdiction in accordance with the Natural Gas Installation Code and local regulations.

18. GUARANTEES: Guarantee all work for one (1) year, following final acceptance. This guarantee shall include all problems caused by improper installation of equipment or equipment failure. Equipment failure due to neglect, misuse or normal "wear and tear" shall be excluded from this guarantee.

19. INSPECTIONS: All work shall be subject to inspection and approval by the consultant at all times. In the event that a final inspection reveals deficiencies and the contractor is asked to correct these deficiencies; prior to reinspecting the work the consultant will ask the contractor whether or not all deficiencies have been corrected. If the contractor's reply indicated that all deficiencies have been corrected, but the re-inspection reveals they have not, then the contractor shall reimburse the consultant for the wanted trip at the consultant's normal hourly rates plus reimbursable expenses.

PLUMBING FIXTURES

FLOOR DRAIN F.D. : "ZURN" MODEL ZXN-211 W/6X6 Y STRAINER BODY WITH HEAVY DUTY SQUARE HEAD. ALL FLOOR DRAINS IN THE WASHROOMS SHOULD BE CONNECTED WITH TRAP PRIMER.

ROOF DRAINS R.D. : "ZURN" MODEL Z-121, DURA-COATED CAST IRON BODY, DOME STRAINER, CLAMPING COLLAR GRAVEL GUARD, SUMP RECEIVER, AND UNDERDECK CLAMP.

HOSE BIBBS (NON-FREEZE) H.B. : "WALTEC" MODEL 32-W-161, 1/2" MALE I.P. COPPER INLET, 204MM (8") LONG; C/W "WATTS" No. NF-8 HOSE BIBB VACUUM BREAKER.

HOT WTR. TANK HWT1 : "STATE", MODEL SB6-120-30IFE ELECTRIC WATER TANK, 120 U.S.GALS. STORAGE CAPACITY, 6 ELEMENTS, 5 KW PER ELEMENT, TOTAL CONNECTED LOAD 30 KW, 208-3-60. RECOVERY @ 100 °F RISE 123 U.S. GALS.

HOT WTR. TANK HWT2 : "RHEEM" MODEL TE12 ELECTRIC WATER TANK, 12 IMP. GALS. STORAGE CAPACITY, 3KW, 240 V.

W.C. WOMEN'S : "CRANE" 3-154 WITH CHECK-DRIP TANK No.3-576 "NEU-HYMONT" VITREOUS CHINA, SIPHON JET, CLOSED-COUPLED CLOSET COMBINATION WITH ELONGATED RIM BOWL 18" HIGH-SELF DRAINING JET OR EQUIVALENT APPROVED BY B.C. CODE.
SUPPLY PIPE: 3/8" ANGLE SUPPLY PIPE WITH STOP AND ESCUTCHEON.
SEAT: MOLDEX OR OLSONITE, OPEN FRONT C/W SELF-SUSTAINING HINGE LESS COVER OR EQUIVALENT.

W.C. MEN'S : "CRANE" 3-253 WITH ELONGATED RIM AND HIGH TANK No. 3-582 "RADCLIFFE" VITREOUS CHINA, WHIRLPOOL ACTION, CLOSE-COUPLED CLOSET COMBINATION WITH ELONGATED RIM BOWL-SELF DRAINING JET.
SUPPLY PIPE: C-3016, 3/8" ANGLE SUPPLY PIPE WITH STOP AND ESCUTCHEON.
SEAT: OLSONITE OR SPERZEL, WHITE, OPEN FRONT, C/W SELF SUSTAINING HINGE LESS COVER.

LAVATORY : "CRANE" 1-342 SONNET, VIT. CHINA, SELF-RIMMING COUNTER TOP LAVATORY (OVAL) OR EQUIVALENT.
TRIM: C-1113 CITADEL COMB. SUPPLY/WASTE ASSY.
SUPPLIES: C-1151 3/8" ANGLE SUPPLIES WITH STOPS. C-1160 1/4" MALE TAILPIECE.

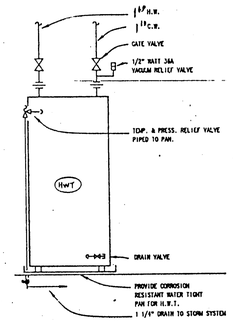
URINALS : "WASHBROOK" AF-6500 WALL HANG URINAL (WHITE) OR APPROVED UNIT, C/W STRAINER GH-6328, OUTLET GH-6489, TANK AF-4104-LOOO BOTTOM SUPPLY, 3 GALLONS REGULATOR.

KITCHEN SINK : "KIL" MODEL E68/10 GRADE 18-8 HEAVY GA. S/S COUNTER TOP S/S SINK (SELF-RIMMING).
TRAP: 1 1/2" P-TRAP C/W C.O. & WALL FLANGE.
STRAINER: KIL # 1130 CRUMB CUP ASSEMBLIES.
SUPPLIES: 3/8" R.B. COMPRESSION WITH STOPS.

SHOWER : 36"x36"x75" HIGH SHOWER STALL (FIBRE GLASS) C/W DOOR, MIXING VALVE, HEAD AND 2" TRAP.

EYEWASH : "WESTERN EMERGENCY EQUIPMENT" PEDESTAL MOUNTED, STAINLESS STEEL BOWL MODEL W421 C/W HEADS, ACTION VALVE AND FLOW CONTROL. WATER SUPPLY 1/2"IPS, WASTE 1 1/4"IPS.

AIR COMPRESSOR: AC1 : "SANBORN" TWO STAGE COMPRESSOR, 18 @ 100 PSI/16.0 @ 175 PSI AIR DELIVERY CFM, 80 GALS. TANK, 5 HP, 230-3-60, C/W MAGNETIC MOTOR STARTER.



ELECTRIC D.W.T. TANK DETAIL
N.T.S.

GRILLE AND DIFFUSERS — TYPE / SIZE / CFM — GRILLE AND DIFFUSERS ARE "TITUS", EQUALS: "H.PRICE", "AIR CONTROL", "KRUEGER".

S1 : CEILING SUPPLY AIR DIFFUSER (4 WAY),MODEL TMS-3-24x24 SURFACE MOUNTED, ADJUSTABLE PATTERN, FINISH: WHITE ENAMEL #25, C/W VOLUME DAMPER.

S2 : CEILING SUPPLY AIR DIFUSSER (4 WAY), MODEL TMS-12x12 SURFACE MOUNTED, ADJUSTABLE PATTERN, FINISH: WHITE ENAMEL #25, C/W VOLUME DAMPER.

S3 : SUPPLY GRILLE, MODEL 301FL, SINGLE DEFLECTION, HORIZONTAL BLADES, FINISH #25 WHITE.

S4 : "AIROLITE" VENTILATING LOUVERS MODEL K638, 36"x24" C/W BIRD SCREEN 1/4"X1/4". WALL MOUNTED.

S5 : "AIROLITE" VENTILATING LOUVERS MODEL 663A, VARIOUS SIZES, C/W BIRD SCREEN 1/4"X1/4", MOTOR AND ACTUATOR. WALL MOUNTED, 26" ABOVE GROUND.

EXHAUST FANS

PARKS EF4 : REUSE "POWERLINE" MODEL 16DW7A, 1510 CFM @ 1/8"S.P., 1050 RPM, 1/8 HP, 115-1-60.

OFFICES EF5 : REUSE "POWERLINE" MODEL 12DW8X, 912 CFM @ 1/8"S.P., 1550 RPM, 1/15 HP, 115-1-60. INTERLOCKED WITH F1 & MD2.

MEETING RM. EF10 : "PENN ZEPHYR ZB" @ 240 CFM @ 1/8" S.P., 860 RPM, 1/12 HP, 115-1-60, DIRECT DRIVE, C/W BACKDRAFT DAMPER.

LUNCH RM. EF11 : "PENN ZEPHYR Z12" @ 600 CFM CAPACITY @ 1/8"S.P., 1150 RPM, 1/12 HP, 115-1-60, DIRECT DRIVE, C/W BACKDRAFT DAMPER.

MEN'S W.C. EF12 : "ACME" MODEL PW110, 700 CFM CAPACITY @ 1/8"S.P., 1320 RPM, 1/12 HP, 115-1-60, DIRECT DRIVE, C/W BACKDRAFT DAMPER.

WOMEN'S W.C. EF13 : "PENN ZEPHYR Z10" @ 500 CFM CAPACITY @ 1/8"S.P., 1300 RPM, 1/12 HP, 115-1-60, DIRECT DRIVE, C/W BACKDRAFT DAMPER.

PARKS EF14 : "ACME" MODEL PW126E4, 1400 CFM CAPACITY @ 1/8"S.P., 1550 RPM, 1/4 HP, 115-1-60, BELT DRIVEN, C/W BACKDRAFT DAMPER.

LAWN MOWER SHOP & BULGE EF15 : "ACME" MODEL PW110, 915 CFM CAPACITY @ 1/8"S.P., 1550 RPM, 1/12 HP, 115-1-60, BELT DRIVEN, C/W BACKDRAFT DAMPER.

UTILITIES EF16 : SAME AS EF14 (PARKS)

WELD'G BENCH: UTILITIES EF17 : "GENERAL RESOURCE CORP.", FLEX-O-WAY MODEL 612 FUME EXTRACTOR, BLOWER DS-9", 300 CFM CAPACITY @ 1" S.P., 1 HP, 1725 RPM, 230-1-60, C/W WALL MOUNTED BRACKET,10' ARM , 6" DIA. TUBING AND FIBREGLASS HOOD.

KITCHEN EF18 : "BROAN" MODEL 48000, 160 CFM CAPACITY @ 0.25"S.P., 1.06A, 115-1-60, C/W BACKDRAFT DAMPER.

JANITOR RM. EF19 : "BROAN" MODEL 684, 75 CFM CAPACITY @ .2"S.P., 0.75A, 115-1-60, C/W BACKDRAFT DAMPER.

SMOKER'S (SF30) : "PENN ZEPHYR ZB" 150 CFM @ 0.19"S.P., 1A, 115-1-60. AND ELECTRICAL RM.

DUCT HEATERS

DH1 & DH2 : "THERMOLEC" MODEL DHF-30X12-48 KW, APART C/W PROPORTIONING THERMOSTAT T991A C/W CONTROL PANEL (WITH FOUR BACK-UP AND FIVE OPERATING CONTACTORS).

FANS & BLOWERS

F1 & F2 : "LAU" DUCT BLOWER MODEL DUA12 RATED FOR 1700 CFM @ 0.5"S.P., 3/4 HP, 230-1-60, 2 SPEED MOTOR, 646 RPM MOUNTED AT HIGH LEVEL. INTERLOCKED WITH EF5 & MD2 FOR F1 AND EF11 & MD4 FOR F2.

BLDG MAINT. & SIGN SHOP, B2 : "TORIN" BLOWER MODEL AM-U130, 107 CFM @ 1/8"S.P., 1550 RPM, 1/70 HP, 115-1-60,

UNIT HEATERS

STORES UH1 & UH2 : "CHROMALOX" MODEL BUH-03D, 3 KW, 1/200 HP, 1200 RPM, 600-1-60, 250 CFM.

STORAGE, BLDG. MAINT. SIGN UH3, UH4. : "CHROMALOX" MODEL BUH-02D, 2 KW, 1/200 HP, 1200 RPM, 600-1-60, 250 CFM.

RADIANT HEATERS

RH1 : "ROBERTS GORDON" CO-RAY-VAC SYSTEM SERIES B, 60,000 BTUH HEATING CAPACITY, 4" PIPE, 13 GA., C/W HANGERS, SUPPORTS SHIELDS, THERMOSTATS AND CONTROL PANEL AND ALL NECESSARY COMPONENTS FOR PROPER OPERATION.

VACUUM PUMP : "ROBERTS GORDON" CO-RAY-VAC VACUUM PUMP FOR ABOVE, 3/4 HP, 115-1-60.

RH2 : "ROBERTS GORDON", VANTAGE-II, MODEL CHT-125, 125,000 BTUH CAPACITY, 42' L.O.A., 4" C-VENT AND 4" FRESH AIR INTAKE.

IMPORTANT NOTES

1. DUCT HEATER DH1 AND DH2 SHALL BE CONTROLLED BY DUCT THERMOSTAT SET AT 72°F AND INTERLOCKED WITH F1 AND F2 RESPECTIVELY.
2. F1 OPERATES AT LOW SPEED EXCEPT WHEN EF5 IN ON POSITION. INTERLOCKED F1 WITH MD1.
3. EF5 SHALL BE INTERLOCKED WITH DAMPER MD2. WHEN EF5 IS IN ON POSITION, MD2 IS IN OPEN POSITION & VICE-VERSA.
4. ALL THERMOSTATS AND FAN SWITCHES SHALL BE ON 7 DAYS PROGRAMABLE THERMOSTAT. (ONE FOR MAKE UP AIR CONTROL SYSTEM, ONE FOR REST OF SYSTEM.)
5. INSTALLATION AND WIRING OF LOW VOLTAGE THERMOSTAT AND CONTROLS ARE RESPONSIBILITY OF MECH. CONTRACTOR.

REVISIONS	BY
FOR CONSTRUCTION SEPT. 15/92	J.
AS BUILT APRIL 8 1993	DLD.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. TORRES
JUN - 7 1993

NOTE:

CONTRACTOR TO CHECK ALL DRAWINGS, DIMENSIONS, SIZES, EQUIPMENT LOCATION & VERIFY CORRECT. REPORT ANY DISCREPANCY TO MECHANICAL ENGINEER PRIOR TO START OF CONSTRUCTION.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. TORRES
MAY 20 1992

TORRES ENGINEERING LTD.
240-1715 Dickson Ave.
Kelowna, B.C., V1Y 9G6
Phone: 868 - 2250
Faxi 764 - 7901

PROJECT
MUNICIPAL WORKS BUILDING EXPANSION WHISTLER

DRAWING TITLE
MECHANICAL SPECIFICATIONS & EQUIPMENT

DRAWN	J.T.
CHECKED	
DATE	MAY 20/92
SCALE	N.T.S.
JOB NO.	
SHEET	M5
OF	5 SHEETS

TELLEDYNE POST 18.AL.20 - 24 x 36

MECHANICAL SPECIFICATIONS

1. MECHANICAL GENERAL PROVISIONS

1.1 The Mechanical Contractor shall supply all material, permits and labour mentioned herein or indicated on drawings for a complete and operational system.

1.2 The Mechanical Contractor will include incidental accessories and details not usually shown or specified.

1.3 The Mechanical Contractor shall advise the Engineer, should he believe any equipment or material to be inadequate or unsuitable, in violation of laws, ordinances, rules or regulations of authorities having jurisdiction, or should any necessary items of work be omitted.

1.4 The Mechanical Contractor is responsible to check drawings of all trades to verify space and headroom limitations for work to be installed. Make changes to facilitate a more satisfactory installation. Deviations from drawings altering the design intent or involving additional expense, shall not be made without the Architect's approval.

1.5 Where installed work interferes with or modifies the architectural design, make necessary changes as directed by the Architect, at no extra cost to the Owner.

1.6 Place no unusual erection loads on the building structure without the Structural Engineer's approval.

2. WORKMANSHIP AND TRADESMAN QUALIFICATIONS

2.1 Workmanship shall be the best of its kind known to the trade. Only tradesman holding a valid Provincial Qualification Certificate shall be employed, and they shall only perform work permitted under this certificate.

3. CODES AND PERMITS

3.1 Work shall be done in accordance with the 1985 National Building Code of Canada, local by-laws and Provincial regulations. Submit plans and specifications for approval to authorities having jurisdiction. Obtain permits and pay all necessary fees, including connection fees for sewer and water.

4. DRAWINGS

4.1 Drawings are generally diagrammatic and indicate the general arrangement of the work. Do not scale drawings. Notes and figured dimensions take precedence over scaled dimension.

5. C.S.A. APPROVAL

5.1 Electrical motors, equipment and components shall bear a C.S.A. approval label.

6. MATERIALS

6.1 Materials and equipment furnished shall be new and of the quality specified, furnished and completed in all details. 6.2 Request for approval of products other than those specified shall be submitted in writing at least eight days prior to the closing of tender.

7. CUTTING AND PATCHING

7.1 Arrange with the General Contractor and be responsible for the lay out of all work requiring cutting and patching.

8. CANNINGS AND OPENINGS

8.1 Provide all necessary sleeves, caulking and flashing required to make roof openings absolutely watertight.

9. ACCESS DOORS

9.1 Provide access doors where required to properly service all equipment, balancing and fire dampers, valves, plumbing cleanouts, etc. Minimum access size 12"x12".

10. SYSTEM TEST

10.1 Perform all tests required under this specification or by authorities having jurisdiction. This includes test for water, gas, soil, waste, vent and drainage piping.

10.2 Balance all air systems to provide air quantities shown on drawings and to provide even temperatures, all to the satisfaction of authorities. Balance and test report must be submitted to the Owner/Tenant.

11. PROJECT RECORD DOCUMENTS

11.1 Record accurately and neatly on one set of white prints all changes made to the Contract due to site conditions and by Change Orders.

11.2 At the completion of the project and prior to final inspection, purchase from the Engineer one set of vellum, and neatly transfer all "as built" notations from the set of white prints to the transparencies using standard drafting technique. Certify and sign each drawing to be correct. Submit both sets to Engineer.

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12.1 Submit two copies of Operating and Maintenance Manuals containing a list of names of the Contractor and Subcontractors employed on the work, together with addresses, telephone numbers and the job they performed.

12.2 After completion of the job, demonstrate to the Owner's representative a complete operation and maintenance procedure.

12.3 Notify the Architect and the Engineer when final inspection of the work completed may be made. In the event that defects or deficiencies are found, they shall be corrected to the satisfaction of the Architect and/or Engineer and without extra cost to the Owner.

13. BASIC MATERIALS & METHODS

13.1 Pipe Materials

13.1.1 Domestic Water- Above Ground: Copper, Type L95/5 solder joint. Underground: 2" dia. and over: ductile iron. Tyton joint; under 2" dia., Copper Type 'K', silver solder joints.

13.1.2 Sanitary Vents & Drainage and Storm Drainage:
a) Inside building:
- Underground: cast iron or fibre-reinforced cement pipe with mechanical joints. ABS piping to CSA B 181.1
- Above Ground: 1-1/2" dia. and under: copper type 'DWV'; 50/50 tin antimony solder joints.
- Above Ground: over 1-1/2" dia.: Mechanical joint cast iron soil pipe and fittings, Class 4000.

13.1.3 Natural Gas Piping: black steel to CAN 1-B149.

13.2. Valves
13.2.1 Gate: Up to 2": Red-white 206A or 207A
13.2.2 Glove: Up to 2": Red-white 211 or 212
13.2.3 Check: Up to 2": screwed-Red-white 213, 236 or 237
13.2.4 Balance:Up to 2":DeZurik 425 with Fig.487, adjustable stop

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14.1 Quality Assurance: The B.C. Insulation Constractor's Association (BCICA) Quality Standards Manual for mechanical insulation, 1987 Rev.Ed., together with authorized additions and amendments shall be used as a reference standard and shall form part of this Section.

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14.2.1 All domestic hot and cold water piping including mains and branches(where required), 1" pre-formed pipe insulation.
14.2.2 All cast iron and copper rain water leaders, including cast iron fittings on fibre-reinforced cement piping(where required), 1" pre-formed pipe covering.
14.2.3 All supply ductwork located within suspended ceiling, 1" flexible fibreglass duct insulation with foil faced vapour seal.
14.2.4 All ductwork shown cross-hatched, 1" rigid coated ductliner, except ductwork above roof, which requires 2".

14.3 Products:
- Pre-formed Pipe Covering-Fibreglass ASJ with integral Jacket or equivalent Manson.
- Flexible Duct Insulation: Fibreglass with RFFRK facing.
- Rigid Duct Insulation: Fibreglass Rigid Coated Ductliner.

15. PLUMBING & DRAINAGE

15.1 Work included: Water supply and distribution system from existing services; sanitary and storm drainage system within and under building structures to existing services; plumbing fixtures including trim and plumbing specialties such as floor and roof drains; all cast iron pipes, valves and fittings in connection with the outside drainage appurtenance; cleanouts from perimeter drains (supply only, installation by General Contractor).

15.2 Air chambers & Vents: Main cold water risers shall be fitted with air chambers of ample size to prevent water hammer. Air chambers shall be two sizes larger than the supply main and shall not be less than 36" in length. Provide 12" long air chambers on all fixture connections, both hot and cold water.

15.3 Install cleanouts as required under the Plumbing Code, whether or not shown on the drawings. Cleanouts shall be easily accessible, and where in concealed locations, they shall be extended to finished floors, walls, or to grade with access covers as specified.

15.4 Install cleanouts in all drains and soil pipe lines where obstruction might occur. Generally, at changes of direction, at ends of all long horizontal pipes, at 15 ft. intervals in sink wastes, at the base of every waste stack and rainwater leader, and where drains leave the building. Cleanouts shall be full size on pipes up to 4" dia. and no less than 4" dia. on larger pipes.

15.5 Grade horizontal piping at uniform slope of 0.2% to low points for drainage. At bottom of risers and at low points provide 1" brass valves with nipple and cap.

15.6 Arrange and install piping approximately as indicated, straight, plumb and as direct as possible; form right angles or parallel lines with building walls. Keep pipes close to walls, partitions and ceilings; offset only where necessary to follow walls as directed.

15.7 Isolate all water piping from building structure and other piping and pipe hangers with resilient padding or plastic tape. Seal all gaps with resilient material or caulking where pipes pass through floors.

15.8 Sleeves shall be set for all piping passing through floors, walls, beams and ceilings using 24 gauge galvanized steel except through structural sections where schedule 40 pipe shall be used. Sleeve sized shall provide 1/2" clearance all around pipe.

15.9 Where any fixtures come in contact with a wall and/or floor, the joint shall be made watertight with Dow 780 caulking, beaded smooth in a neat and workman-like manner.

15.10 Where fixtures are supplied by owners, provide all required services, including water and waste to make them operational.

15.11 No portion of the plumbing system shall be concealed or covered before it is inspected and approved by the Mechanical Engineer and authorities having jurisdiction.

15.12 Sanitary drainage system shall be tested by water pressure with 10 ft minimum head of water for 8 hours. All underground drainage system to be tested before backfilling of trenches.

15.13 Domestic water piping system shall be tested by water at a pressure of 150 psi for 8 hours. Test shall be carried out before pipe insulation is applied.

16. DUCTWORK

16.1 Fabricate and install ductwork in accordance with ASHRAE Handbook 1988 Equipment, Chapter 1, or SMACNA HVAC Duct Construction Standards, 1985.

16.2 Rectangular ductwork shall be galvanized steel manufactured in accordance with the following schedule:

Max. Side, in	U.S.S.G. Steel
Up to 12"	26
13" to 30"	24
31" to 54"	22

16.3 Round ductwork shall be galvanized spiral conduit manufactured in accordance with the following schedule:

Duct Diameter	Duct Gauge	Fitting Gauge
Up to 8"	26	22
9" to 26"	24	22

16.4 Install and make the necessary connections for complete supply, re-circulation and exhaust systems indicated on drawings, including ductwork, grilles, intake housing, connections, fasteners, hangers and other items required. Seal joints to provide an air-tight system.

16.5 Install adjustable volume damper in supply and exhaust ducts where shown.

16.6 Wherever obstruction requires a change in duct shape, maintain equivalent areas.

16.7 Duct elbows shall be right angle type with elbow turns or turning vanes or shall have a centreline radious of 1-1/2 times the duct width.

16.8 Ducts which are insulated on the interior shall be increased in dimensions by the thickness of the insulation.

16.9 Air Balancing: Engage the services of an independent Testing Agency to balance the supply and exhaust air system to within 10% of the design quantities shown. Submit balancing reports with the Maintenance Manuals.

16.10 Electrical Wiring: The Electrical Contractor will provide the power wiring and connect equipment. All remaining wiring, including low voltage and temperature control wiring, shall be the responsibility of the Mechanical Contractor.

17. NATURAL GAS PIPING

17.1 All piping, fittings, valves, regulators, etc. and connections to gas fired units and hot water tanks shall be performed by a certified gas fitter and must be approved by the authorities having jurisdiction in accordance with the Natural Gas Installation Code and local regulations.

18. GUARANTEES: Guarantee all work for one (1) year, following final acceptance. This guarantee shall include all problems caused by improper installation of equipment or equipment failure. Equipment failure due to neglect, misuse or normal "wear and tear" shall be excluded from this guarantee.

19. INSPECTIONS: All work shall be subject to inspection and approval by the consultant at all times. In the event that a final inspection reveals deficiencies and the contractor is asked to correct these deficiencies; prior to reinspecting the work the consultant will ask the contractor whether or not all deficiencies have been corrected. If the contractor's reply indicated that all deficiencies have been corrected, but the re-inspection reveals they have not, then the contractor shall reimburse the consultant for the wanted trip at the consultant's normal hourly rates plus reimbursable expenses.

PLUMBING FIXTURES

FLOOR DRAIN F.D. : "ZURN" MODEL ZXN-211 W/6X6 Y STRAINER BODY WITH HEAVY DUTY SQUARE HEAD. ALL FLOOR DRAINS IN THE WASHROOMS SHOULD BE CONNECTED WITH TRAP PRIMER.

ROOF DRAINS R.D. : "ZURN" MODEL Z-121, DURA-COATED CAST IRON BODY, DOME STRAINER, CLAMPING COLLAR GRAVEL GUARD, SUMP RECEIVER, AND UNDERDECK CLAMP.

HOSE BIBBS (NON-FREEZE) H.B. : "WALTEC" MODEL 32-W-161, 1/2" MALE I.P. COPPER INLET, 204MM (8") LONG; C/W "WATTS" No. NF-8 HOSE BIBB VACUUM BREAKER.

HOT WTR. TANK HWT1 : "STATE", MODEL SB6-120-30IFE ELECTRIC WATER TANK, 120 U.S.GALS. STORAGE CAPACITY, 6 ELEMENTS, 5 KW PER ELEMENT, TOTAL CONNECTED LOAD 30 KW, 208-3-60. RECOVERY @ 100 °F RISE 123 U.S. GALS.

HOT WTR. TANK HWT2 : "RHEEM" MODEL TE12 ELECTRIC WATER TANK, 12 IMP. GALS. STORAGE CAPACITY, 3KW, 240 V.

W.C. WOMEN'S : "CRANE" 3-154 WITH CHECK-DRIP TANK No.3-576 "NEU-HYMONT" VITREOUS CHINA, SIPHON JET, CLOSED-COUPLED CLOSET COMBINATION WITH ELONGATED RIM BOWL 18" HIGH-SELF DRAINING JET OR EQUIVALENT APPROVED BY B.C. CODE.
SUPPLY PIPE: 3/8" ANGLE SUPPLY PIPE WITH STOP AND ESCUTCHEON.
SEAT: MOLDEX OR OLSONITE, OPEN FRONT C/W SELF-SUSTAINING HINGE LESS COVER OR EQUIVALENT.

W.C. MEN'S : "CRANE" 3-253 WITH ELONGATED RIM AND HIGH TANK No. 3-582 "RADCLIFFE" VITREOUS CHINA, WHIRLPOOL ACTION, CLOSE-COUPLED CLOSET COMBINATION WITH ELONGATED RIM BOWL-SELF DRAINING JET.
SUPPLY PIPE: C-3016, 3/8" ANGLE SUPPLY PIPE WITH STOP AND ESCUTCHEON.
SEAT: OLSONITE OR SPERZEL, WHITE, OPEN FRONT, C/W SELF SUSTAINING HINGE LESS COVER.

LAVATORY : "CRANE" 1-342 SONNET, VIT. CHINA, SELF-RIMMING COUNTER TOP LAVATORY (OVAL) OR EQUIVALENT.
TRIM: C-1113 CITADEL COMB. SUPPLY/WASTE ASSY.
SUPPLIES: C-1151 3/8" ANGLE SUPPLIES WITH STOPS. C-1160 1/4" MALE TAILPIECE.

URINALS : "WASHBROOK" AF-6300 WALL HANG URINAL (WHITE) OR APPROVED UNIT, C/W STRAINER GH-6328, OUTLET GH-6489, TANK AF-4104-LOOD BOTTOM SUPPLY, 3 GALLONS REGULATOR.

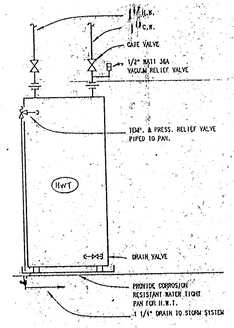
KITCHEN SINK : "KIL" MODEL E68/10 GRADE 18-8 HEAVY GA. S/S COUNTER TOP S/S SINK (SELF-RIMMING).
TRAP: 1 1/2" P-TRAP C/W C.O. & WALL FLANGE.
STRAINER: KIL # 1130 CRUMB CUP ASSEMBLIES.
SUPPLIES: 3/8" R.B. COMPRESSION WITH STOPS.

SHOWER : 36"x36"x75" HIGH SHOWER STALL (FIBRE GLASS) C/W DOOR, MIXING VALVE, HEAD AND 2" TRAP.

EYEWASH : "WESTERN EMERGENCY EQUIPMENT" PEDESTAL MOUNTED, STAINLESS STEEL BOWL MODEL W421 C/W HEADS, ACTION VALVE AND FLOW CONTROL. WATER SUPPLY 1/2"IPS, WASTE 1 1/4"IPS.

AIR COMPRESSOR: "BANBORN" TWO STAGE COMPRESSOR, 18 @ 100 PSI/16.0 @ 175 PSI AIR DELIVERY CFM, 80 GALS. TANK, 5 HP, 230-3-60, C/W MAGNETIC MOTOR STARTER.

AC1



ELECTRIC D.W.T. TANK DETAIL
N.T.S.

GRILLE AND DIFFUSERS

TYPE / SIZE / CFM — GRILLE AND DIFFUSERS ARE "TITUS". EQUALS: "H.PRICE", "AIR CONTROL", "KRUEGER".

S1 : CEILING SUPPLY AIR DIFFUSER (4 WAY), MODEL TMS-3-24x24 SURFACE MOUNTED, ADJUSTABLE PATTERN, FINISH: WHITE ENAMEL #25, C/W VOLUME DAMPER.

S2 : CEILING SUPPLY AIR DIFUSSER (4 WAY), MODEL TMS-12x12 SURFACE MOUNTED, ADJUSTABLE PATTERN, FINISH: WHITE ENAMEL #25, C/W VOLUME DAMPER.

S3 : SUPPLY GRILLE, MODEL 301FL, SINGLE DEFLECTION, HORIZONTAL BLADES, FINISH #25 WHITE.

S4 : "AIROLITE" VENTILATING LOUVERS MODEL K63B, 36"x24" C/W BIRD SCREEN 1/4"X1/4". WALL MOUNTED.

S5 : "AIROLITE" VENTILATING LOUVERS MODEL 663A, VARIOUS SIZES, C/W BIRD SCREEN 1/4"X1/4", MOTOR AND ACTUATOR. WALL MOUNTED, 26" ABOVE GROUND.

EXHAUST FANS

PARKS EF4 : REUSE "POWERLINE" MODEL 16DW7A, 1510 CFM @ 1/8"S.P., 1050 RPM, 1/8 HP, 115-1-60.

OFFICES EF5 : REUSE "POWERLINE" MODEL 12DW8X, 912 CFM @ 1/8"S.P., 1550 RPM, 1/15 HP, 115-1-60. INTERLOCKED WITH F1 & MD2.

MEETING RM. EF10 : "ACME" MODEL PW100, 240 CFM @ 1/8" S.P., 860 RPM, 1/12 HP, 115-1-60, DIRECT DRIVE, C/W BACKDRAFT DAMPER.

LUNCH RM. EF11 : "ACME" MODEL PW110, 600 CFM CAPACITY @ 1/8"S.P., 1150 RPM, 1/12 HP, 115-1-60, DIRECT DRIVE, C/W BACKDRAFT DAMPER.

MEN'S W.C. EF12 : "ACME" MODEL PW110, 700 CFM CAPACITY @ 1/8"S.P., 1320 RPM, 1/12 HP, 115-1-60, DIRECT DRIVE, C/W BACKDRAFT DAMPER.

WOMEN'S W.C. EF13 : "ACME" MODEL PW100, 500 CFM CAPACITY @ 1/8"S.P., 1300 RPM, 1/12 HP, 115-1-60, DIRECT DRIVE, C/W BACKDRAFT DAMPER.

PARKS EF14 : "ACME" MODEL PW126E4, 1400 CFM CAPACITY @ 1/8"S.P., 1330 RPM, 1/4 HP, 115-1-60, BELT DRIVEN, C/W BACKDRAFT DAMPER.

LAWN MOWER SHOP & BUILDG EF15 : "ACME" MODEL PW110, 915 CFM CAPACITY @ 1/8"S.P., 1550 RPM, 1/12 HP, 115-1-60, BELT DRIVEN, C/W BACKDRAFT DAMPER.

UTILITIES EF16 : SAME AS EF14 (PARKS)

WELD'G BENCH UTILITIES EF17 : "GENERAL RESOURCE CORP.", FLEX-D-WAY MODEL 612 FUME EXTRACTOR, BLOWER DB-3-9", 900 CFM CAPACITY @ 1" S.P., 1 HP, 1725 RPM, 230-1-60, C/W WALL MOUNTED BRACKET, 10' ARM, 6" DIA. TUBING AND FIBREGLASS HOOD.

KITCHEN EF18 : "BROAN" MODEL 48000, 160 CFM CAPACITY @ 0.25"S.P., 1.06A, 115-1-60, C/W BACKDRAFT DAMPER.

JANITOR RM. EF19 : "BROAN" MODEL 684, 75 CFM CAPACITY @ .2"S.P., 0.75A, 115-1-60, C/W BACKDRAFT DAMPER.

SHOKER'S (6630) AND ELECTRIC RM. : "BROAN" MODEL 509, 180 CFM @ 0.125"S.P., 1A, 115-1-60.

DUCT HEATERS

DH1 & DH2 : "CHROMALOX" MODEL DHF-30X12-24 KW, TWO LOCATED 8' APART C/W PROPORTIONING THERMOSTAT T991A C/W CONTROL PANEL (WITH FOUR BACK-UP AND FIVE OPERATING CONTACTORS).

FANS & BLOWERS

F1 & F2 : "LAU" DUCT BLOWER MODEL (DUA12 RATED FOR 1700 CFM @ 0.5"S.P., 3/4 HP, 230-1-60, 2 SPEED MOTOR, 646 RPM MOUNTED AT HIGH LEVEL, INTERLOCKED WITH EF5 & MD2 FOR F1 AND EF11 & MD4 FOR F2.

BLDG MAINT. & SIGN SHOP, B1 & B2 : "TORIN" BLOWER MODEL AM-U130, 107 CFM @ 1/8"S.P., 1550 RPM, 1770 HP, 115-1-60, C/W CHROMALOX DH1BX6-1 DUCT HEATER, 1 KW, 115-1-60.

UNIT HEATERS

STORES UH1 & UH2 : "CHROMALOX" MODEL BUH-03D, 3 KW, 1/200 HP, 1200 RPM, 600-1-60, 250 CFM.

STORAGE, BLDG. MAINT. SIGN UH3, UH4 : "CHROMALOX" MODEL BUH-02D, 2 KW, 1/200 HP, 1200 RPM, 600-1-60, 250 CFM.

RADIANT HEATERS

RH1 : "ROBERTS GORDON" CO-RAY-VAC SYSTEM SERIES B, 60,000 BTUH HEATING CAPACITY, 4" PIPE, 18 GA., C/W HANGERS, SUPPORTS SHIELDS, THERMOSTATS AND CONTROL PANEL, AND ALL NECESSARY COMPONENTS FOR PROPER OPERATION.

VACUUM PUMP : "ROBERTS GORDON" CO-RAY-VAC VACUUM PUMP FOR ABOVE, 3/4 HP, 115-1-60.

RH2 : "ROBERTS GORDON", VANTAGE-II, MODEL CHT-125, 125,000 BTUH CAPACITY, 42' L.O.A., 4" C-VENT AND 4" FRESH AIR INTAKE.

IMPORTANT NOTES

1. DUCT HEATER DH1 AND DH2 SHALL BE CONTROLLED BY DUCT THERMOSTAT SET AT 72°F AND INTERLOCKED WITH F1 AND F2 RESPECTIVELY.
2. F1 OPERATES AT LOW SPEED EXCEPT WHEN EF5 IN ON POSITION, INTERLOCKED F1 WITH MD1.
3. EF5 SHALL BE INTERLOCKED WITH DAMPER MD2. WHEN EF5 IS IN ON POSITION, MD2 IS IN OPEN POSITION & VICE-VERSA.
4. ALL THERMOSTATS AND FAN SWITCHES SHALL BE ON 7 DAYS TIME CLOCK C/W NIGHTSTAT (ONE FOR MAKE-UP AIR CONTROL SYSTEM, ONE FOR REST OF SYSTEM).
5. INSTALLATION AND WIRING OF LOW VOLTAGE THERMOSTAT AND CONTROLS ARE RESPONSIBILITY OF MECH. CONTRACTOR.

REVISIONS	BY
FOR CONSTRUCTION SEPT. 15,92	J.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. TORRES — SEP 15 1992

NOTE:

CONTRACTOR TO CHECK ALL DRAWINGS, DIMENSIONS, SIZES, EQUIPMENT LOCATION & VERIFY CORRECT. REPORT ANY DISCREPANCY TO MECHANICAL ENGINEER PRIOR TO START OF CONSTRUCTION.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. TORRES — MAY 20 1992

TORRES ENGINEERING LTD.
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Kelowna, B.C., V1Y 9G6
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Fax: 764 - 7901

PROJECT
MUNICIPAL WORKS BUILDING EXPANSION WHISTLER

DRAWING TITLE
MECHANICAL SPECIFICATIONS & EQUIPMENT

DRAWN	J.T.
CHECKED	
DATE	MAY 20 92
SCALE	N.T.S.
JOB NO.	
SHEET	M5

OF 5 SHEETS

TELEDYNE POST 18AL-20 — 24 x 36