- FINAL LOCATION OF TERRACES & WEIR BOX TO BE DETERMINED IN FIELD.
- FOUR (4) HEAT TRACE CONDUITS SHALL BE FACTORY EMBEDDED INSIDE THE PRE-INSULATION OF THE PIPE AS SHOWN ON ELECTRICAL DRAWINGS. OBTAIN A COMPLETE COPY OF THE ELECTRICAL DRAWINGS AND PROVIDE ACCORDINGLY. PROVIDE PULL STRING IN ALL TRACE CONDUITS.
- EXISTING SEWER LINE DIAMETERS ARE:
  OUTSIDE: 165.1mmø (6½"ø)
  INSIDE: 133.35mmø (5¼"ø)
  INSULATION: 76.2mm (3") THICK
- THE "T" & "Y" COUPLERS WILL FIT THE EXISTING SEWER LINE TO THE NEW SEWER LINE.

REGISTERED PROFESSIONAL ENGINEER R. V. KENT N.W.T.

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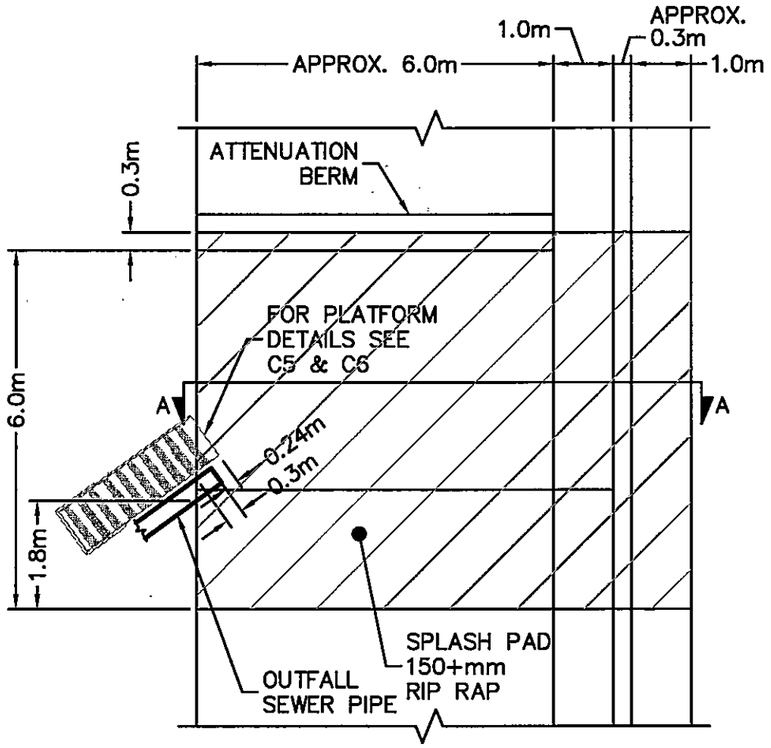
UPWIND LIMIT OF ACCUMULATED SNOW
SNOW FENCE SEE DETAILS ON C4
DIVERSION BERM TO PROTECT CABLES
TELEPHONE LINE
TREATMENT TERRACE 3
TREATMENT TERRACE 5
APPROXIMATE LOCATION OF EXISTING CABLES
DOWNWIND LIMIT OF ACCUMULATED SNOW
TREATMENT TERRACE 2
CRESCENT BERM TO SPREAD EFFLUENT
QUARTERS - LADNER
TREATMENT TERRACE 1
CHURCHILL HALL
SUBMARINE CABLE BUILDING WEST
NEW SEWER LINE FROM WATER TREATMENT PLANT TO OUTFALL INSTALL LIFE ROPE 1.5m O/S FROM PIPE CL
0+160
0+192
ATTENUATION BERM
SUBMARINE CABLE HUT EAST
SPLASH PAD SEE DETAIL 1-C2
GYMNASIUM
0+120
0+080
WALKING PATH WITH HANDRAIL ALONG NEW SEWER PIPE DETAIL 1-C7
INCINERATOR / OXIDIZER
0+040
450m PUBLIC HEALTH SET BACK LINE
SAMPLE WEIR BOX TO BE FIELD ENGINEERED
TIE EXISTING SEWER LINE WITH A INSULATED "T" CONNECTION TO THE NEW SEWER LINE
TREATMENT TERRACE 4
0+000
REMOVE EXISTING SEWER LINE FROM STATION 0+042 TO EXISTING OUTFALL
PARR INLET
WATER TREATMENT PLANT
WATER SUPPLY LINE
TIE THE EXISTING SEWER LINE WITH THE NEW SEWER LINE WITH A INSULATED "Y" CONNECTION
30m SETBACK FROM WATER SHORE

0 10 20 30 40 50 60 70 80 90 100mm

PROJECT TITLE: CFS ALERT WASTEWATER TREATMENT PLANT	CLIENT PROJECT NO.: -	FSC PROJECT NO.: 2008-1040
FSC ARCHITECTS & ENGINEERS 4910 - 53rd Street, P.O. Box 1777 Yellowknife, NT, X1A 2P4, Canada T 867.920.2882 | F 867.920.4319	LOCATION: ALERT, NU	DRAWN BY: FG / CHECKED BY: RK
	DRAWING TITLE: TREATMENT TERRACES CONCEPT DESIGN	SCALE: 1: 2000 / DATE: 2010/06/02
		DRAWING NO.: C1 OF 7

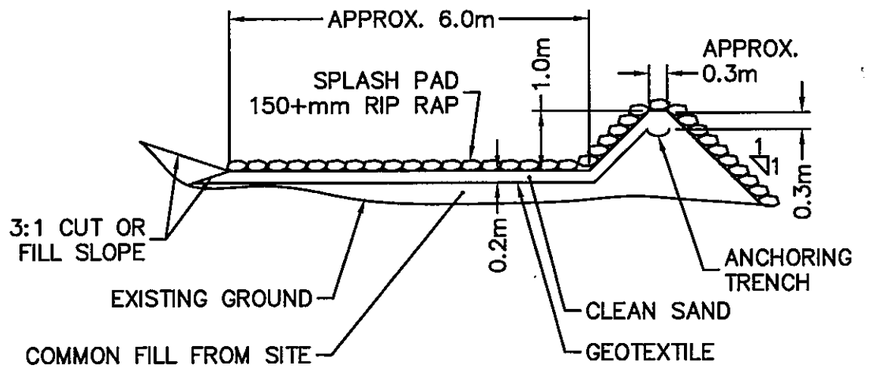
X:\ENVIRO\0 Projects\2008\1040 CFS Alert WWTP\dwg\2008\1040 Final\2008\1040 Issued for Construction 2010-06-02.dwg , C1, LastSaved: —, Plotted: 6/2/2010 11:05:16 AM, ANSI B (11.00 x 17.00 Inches), 1:1

FSC - ANSI-B_L - 11x17



1/C1 SPLASH PAD PLAN VIEW

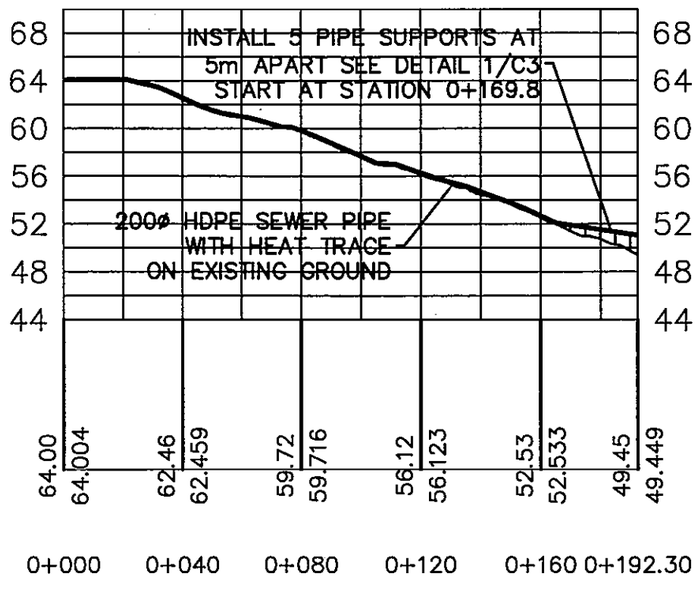
SCALE: N.T.S.



A/C1 SPLASH PAD SECTION

SCALE: N.T.S.

PROPOSED SEWER PROFILE



REGISTERED PROFESSIONAL ENGINEER N.W.T. R.J. KENT

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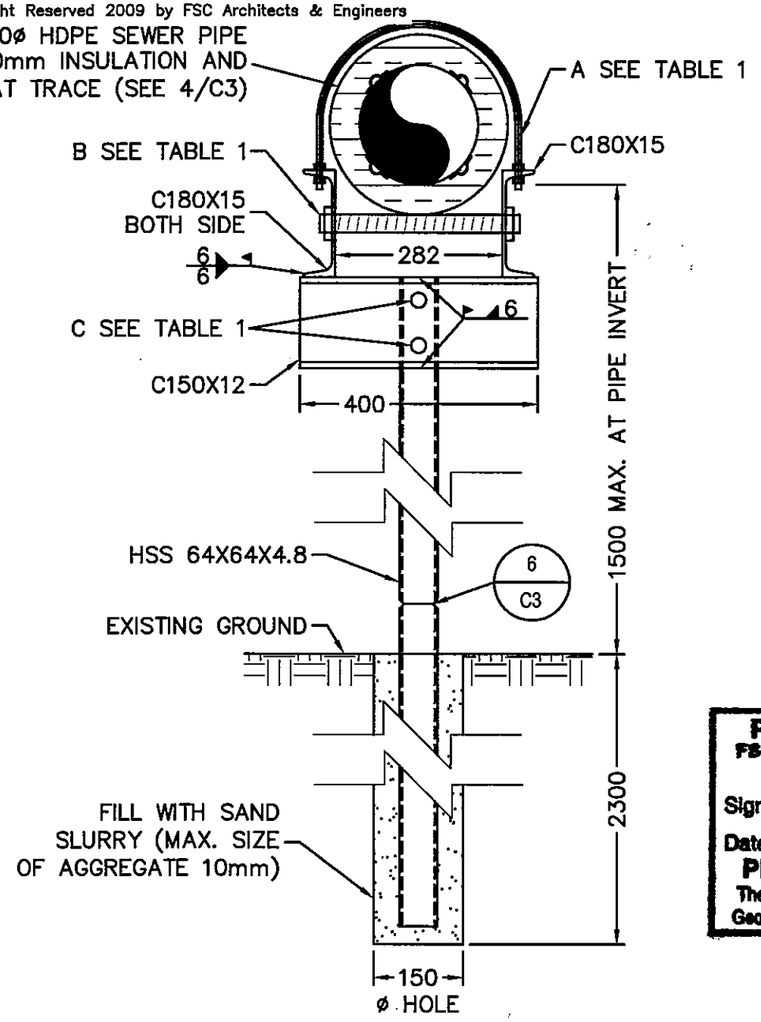
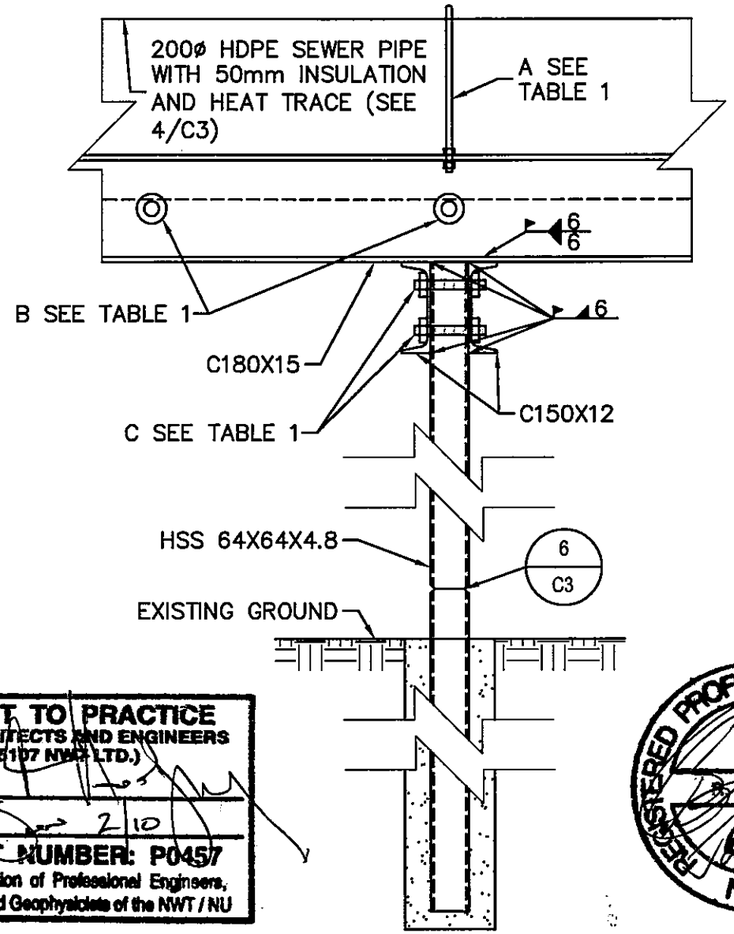
FSC ARCHITECTS & ENGINEERS 4910 - 53rd Street, P.O. Box 1777 Yellowknife, NT, X1A 2P4, Canada T 867.920.2882 | F 867.920.4319	LOCATION: ALERT, NU	DRAWN BY: FG	CHECKED BY: RK
	DRAWING TITLE: SPLASH PAD DETAILS	SCALE: N.T.S.	DATE: 2010/06/02
		DRAWING NO.: C2 OF 7	



1/C3 PIPE SUPPORT FRONT VIEW

SCALE: N.T.S.



2/C3 PIPE SUPPORT SIDE VIEW

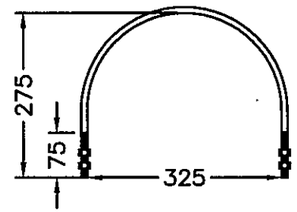
SCALE: N.T.S.

TABLE 1:

A) 10mmø ZINC PLATED U-BOLT WITH WASHER AND NUTS EVERY 2500mm. LEAVE 12.5mm BETWEEN PIPE AND U-BOLT. SEE DETAIL 5.

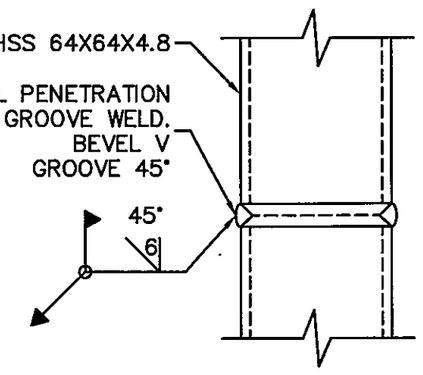
B) 25mmø ZINC PLATED BOLTS 350mm LONG WITH WASHER AND NUTS EVERY 500mm O/S.

C) M16 ZINC PLATED BOLTS, GRADE A325M 120mm LONG.



5/C3 U-BOLT DETAIL

SCALE: N.T.S.



NOTE:
—PAINT WELD WITH BLACK PAINT RUST INHIBITOR.

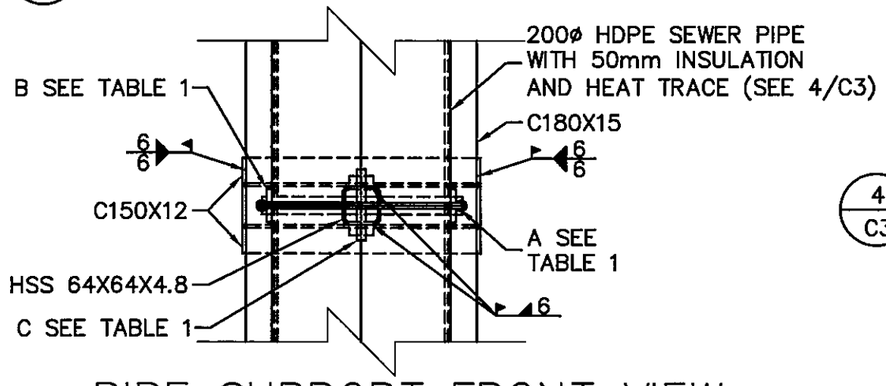
6/C3 ON SITE SPLICING

SCALE: N.T.S.

FOR HEAT TRACED PIPE DETAIL REFER TO ELECTRICAL DWGS

4/C3 HEAT TRACED SEWER PIPE

SCALE: N.T.S.



1/C3 PIPE SUPPORT FRONT VIEW

SCALE: N.T.S.

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REGISTERED PROFESSIONAL ENGINEER R.J. KENT N.W.T.

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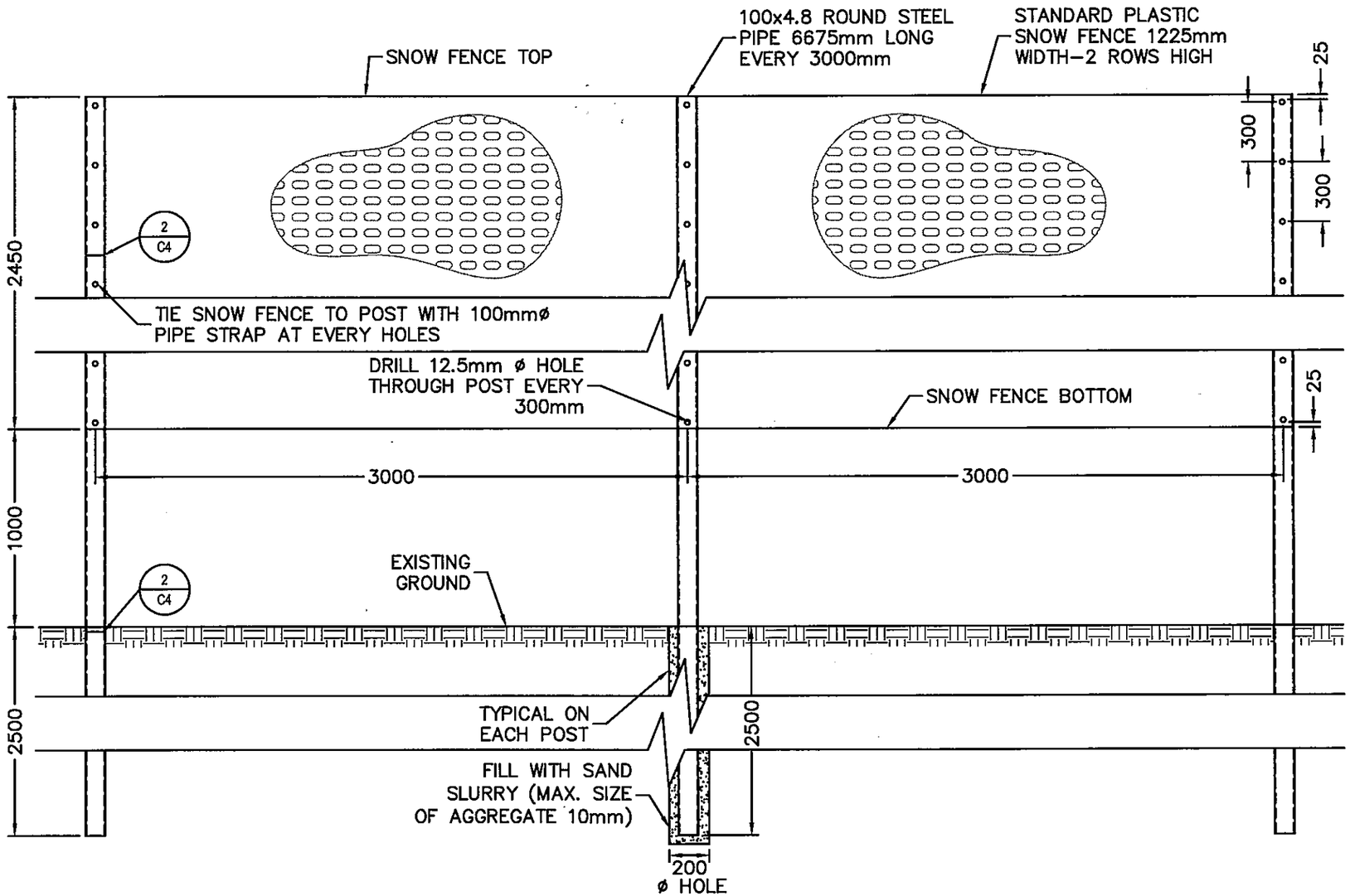
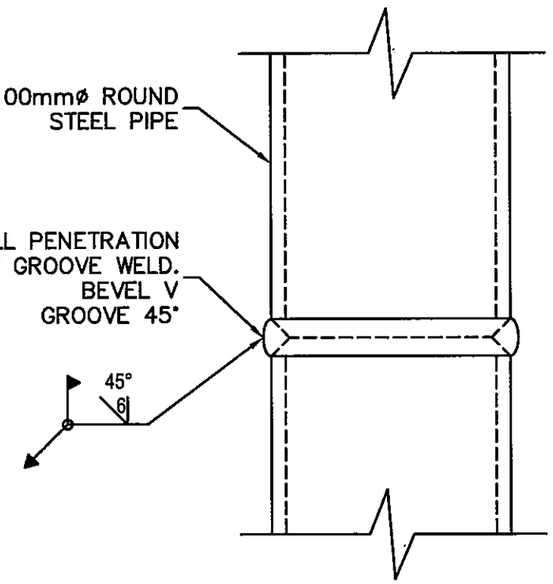
FSC ARCHITECTS & ENGINEERS 4910 - 53rd Street, P.O. Box 1777 Yellowknife, NT, X1A 2P4, Canada T 867.920.2882 | F 867.920.4319	LOCATION: ALERT, NU	DRAWN BY: FG / CHECKED BY: RK
	DRAWING TITLE: SEWER LINE SUPPORT DETAILS	SCALE: N.T.S. / DATE: 2010/06/02
		DRAWING NO.: C3 OF 7



1 C4 SNOW FENCE DETAIL
SCALE: N.T.S.



NOTE:
–PAINT WELD WITH BLACK PAINT RUST INHIBITOR.

2 C4 ON SITE SPLICING
SCALE: N.T.S.

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REGISTERED PROFESSIONAL ENGINEER
R.D. KENT
N.W.T.

ISSUED FOR CONSTRUCTION

PROJECT TITLE
CFS ALERT WASTEWATER TREATMENT PLANT

CLIENT PROJECT NO.: -
FSC PROJECT NO.: 2008-1040

LOCATION: ALERT, NU
DRAWN BY: FG
CHECKED BY: RK

DRAWING TITLE: SNOW FENCE DETAIL
SCALE: N.T.S.
DATE: 2010/06/02

DRAWING NO.: C4 OF 7

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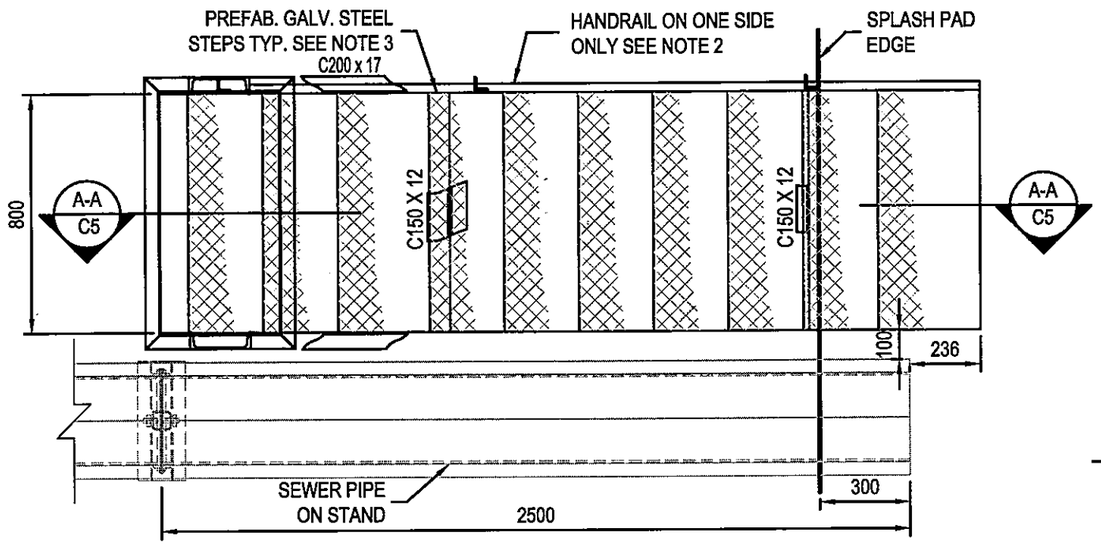
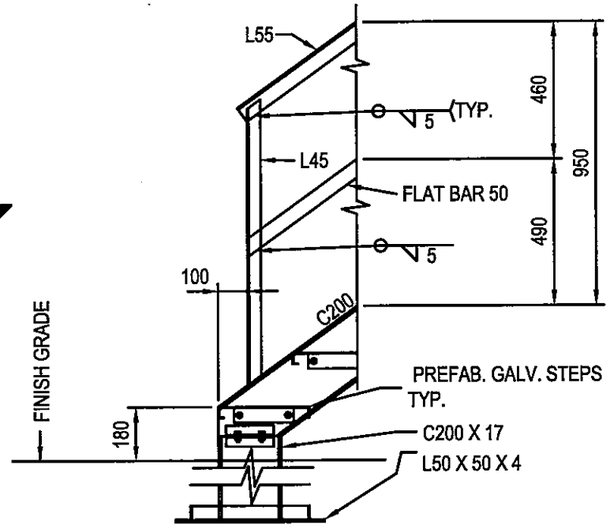


1 C5 **PLATFORM STAIRS - PLAN VIEW**

SCALE: 1:20



2 C5 **STAIR FOUNDATION**

SCALE: 1:20

NOTES:

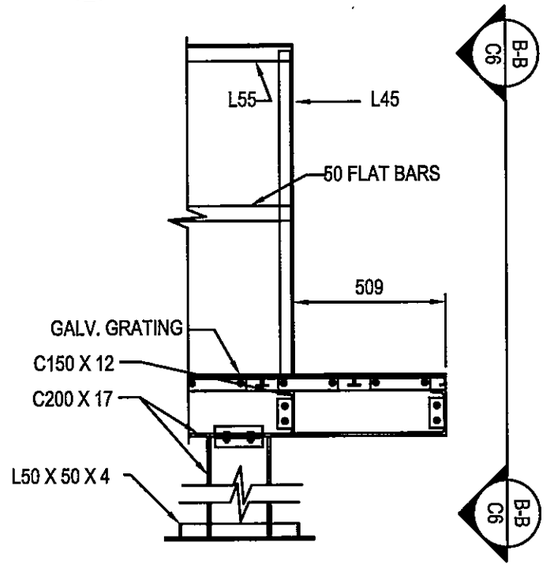
1- FOR EXISTING & FINISH GRADES SEE PARTICULAR PROJECT DRAWINGS.

2- FOR POSITION OF HANDRAIL SEE PARTICULAR PROJECT DRAWINGS.

3- FOR GRATING AND PREFABRICATED STEPS MATERIAL SEE SPECIFICATIONS.

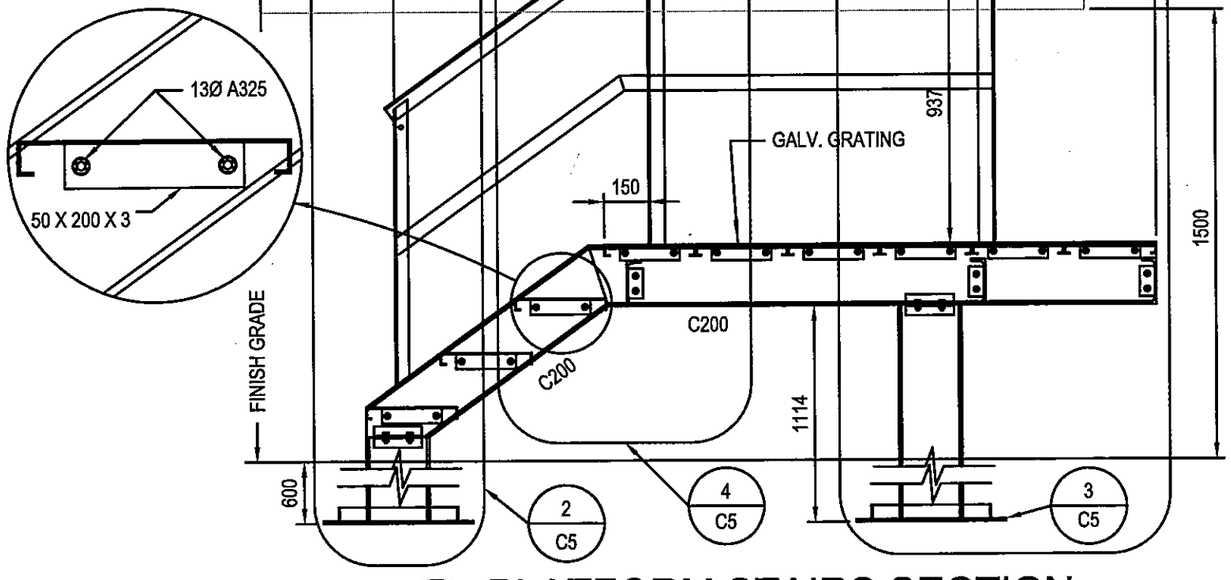
4- FOR STEEL AND REINFORCING MATERIAL SEE SPECIFICATIONS.

5- STILE FABRICATOR TO PROVIDE PROPER SHOP DRAWINGS OF STILE FOR APPROVAL PRIOR TO FABRICATION AS PER SPECIFICATIONS.



3 C5 **TOP STAIR FOUNDATION DETAIL**

SCALE: 1:20



A-A C5 **PLATFORM STAIRS SECTION**

SCALE: 1:20

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LOCATION: ALERT, NU	DRAWN BY: FG	CHECKED BY: RK
DRAWING TITLE: SAMPLING PLATFORM DETAILS	SCALE: 1: 20	DATE: 2010/06/02
		DRAWING NO.: C5 of 7

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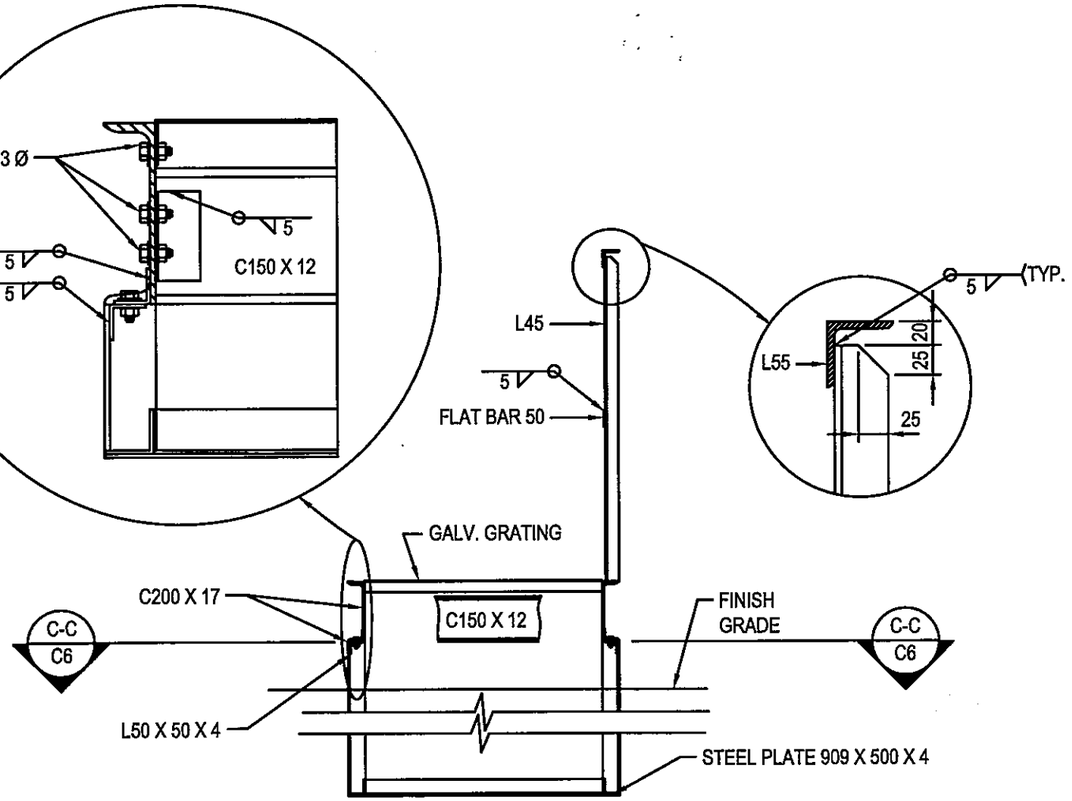
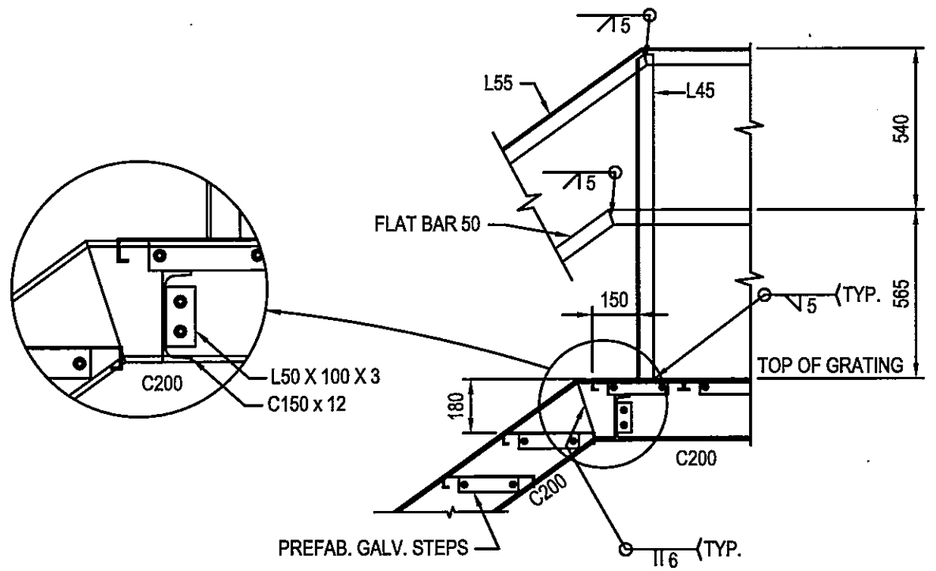


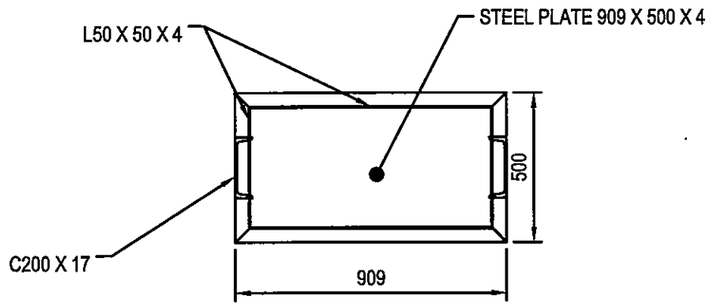
B-B / C6 STAIR BASE PLATE ASSEMBLY

SCALE: 1:20



4 / C6 STAIR ASSEMBLY

SCALE: 1:20



C-C / C6 STAIR BASE PLATE DETAILS

SCALE: 1:20

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REGISTERED PROFESSIONAL ENGINEER
N.W.T.

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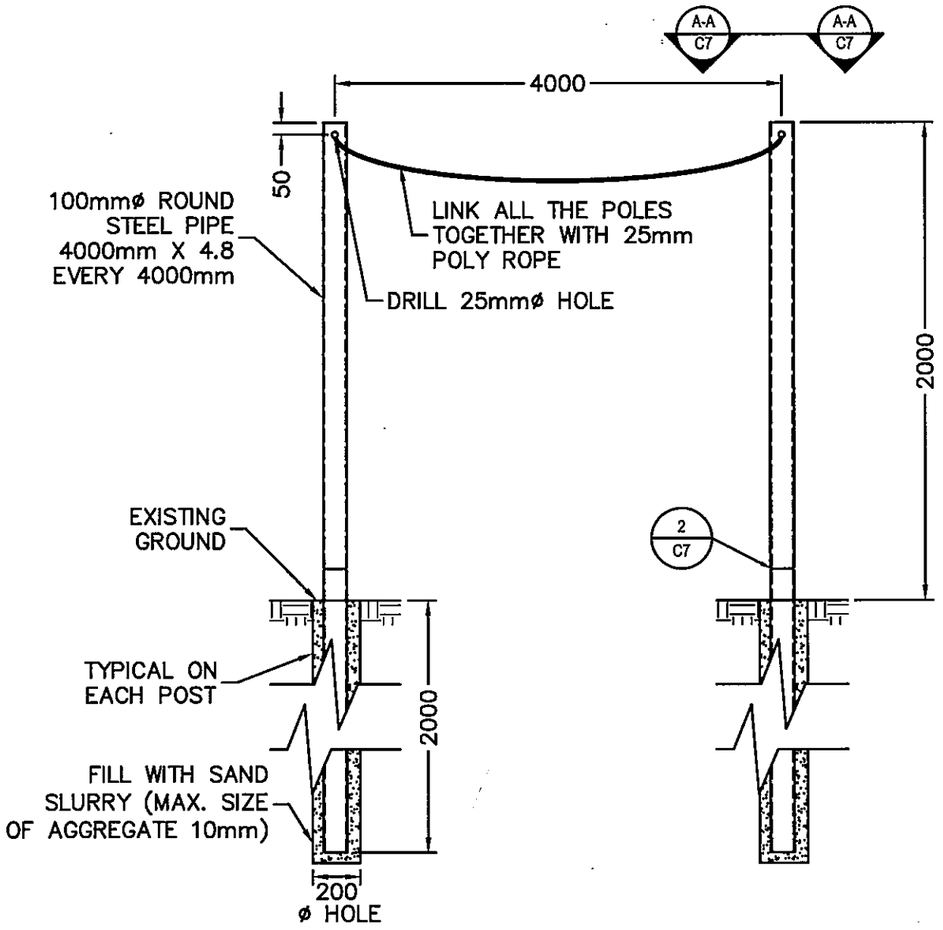
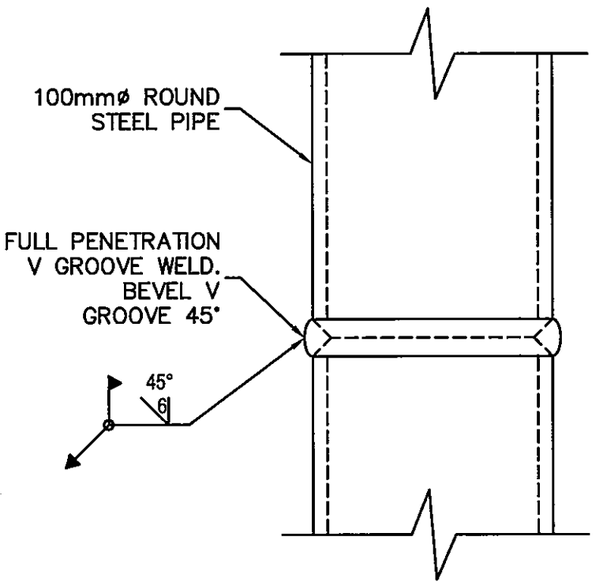
PROJECT TITLE: CFS ALERT WASTEWATER TREATMENT PLANT		CLIENT PROJECT NO.: -	FSC PROJECT NO.: 2008-1040
FSC ARCHITECTS & ENGINEERS 4910 - 53rd Street, P.O. Box 1777 Yellowknife, NT, X1A 2P4, Canada T 867.920.2882 | F 867.920.4319	LOCATION: ALERT, NU	DRAWN BY: FG	CHECKED BY: RK
	DRAWING TITLE: SAMPLING PLATFORM DETAILS	SCALE: 1:20	DATE: 2010/06/02
		DRAWING NO.: C6	OF 7

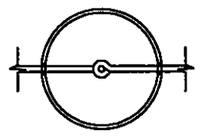


1 / C7 LIFE ROPE DETAIL
SCALE: N.T.S.



NOTE:
—PAINT WELD WITH BLACK PAINT RUST INHIBITOR.

2 / C7 ON SITE SPLICING
SCALE: N.T.S.



NOTE:
TIE A KNOT IN THE CENTER
OF THE POST EVERY 3 POST

A-A / C7 KNOT TIGHTENING
SCALE: N.T.S.

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PROJECT TITLE: CFS ALERT WASTEWATER TREATMENT PLANT		CLIENT PROJECT NO.: -	FSC PROJECT NO.: 2008-1040
FSC ARCHITECTS & ENGINEERS 4910 - 53rd Street, P.O. Box 1777 Yellowknife, NT, X1A 2P4, Canada T 867.920.2882 | F 867.920.4319	LOCATION: ALERT, NU	DRAWN BY: FG	CHECKED BY: RK
	DRAWING TITLE: LIFE ROPE DETAILS	SCALE: N.T.S.	DATE: 2010/06/02
		DRAWING NO.: C7 OF 7	

GENERAL NOTES ALL SHEETS:

1. THIS DESIGN IS PREPARED WITHOUT AN OPPORTUNITY FOR THE DSIGNER TO VISIT THE SITE, AND WITHOUT ACCESS TO AS–BUILT DRAWINGS. THEREFORE, IT SHOULD BE RELIED UPON ONLY TO THE EXTENT THAT COULD BE REASONABLY EXPECTED WITHOUT SUCH INFORMATION. BID ACCORDINGLY AND INCLUDE SUFFICIENT CONTINGENCIES TO COVER UNFORSEEABLE CONDITIONS. SITE DETERMINE THE LOCATION OF THE DEVICES SHOWN ON BUILDING AND SITE ADJUST THE ROUTING OF THE UNDERGRUND CABLE AND LIGHT POLES. THEREFORE, REQUESTS FOR INFORMATION RELATED TO EXISTING CONSITIONS ON SITE WOULD BE PROCESSED FASTER IF ADDRESSED TO THE OWNER DIRECTLY.

2. THESE DRAWINGS ARE NOT COMPLETE WITHOUT A COPY OF THE PROJECT DOCUMENTS CONTAINING THE ELECTRICAL SPECIFICATIONS.

3. SIZE WIRES CONSIDERING CEC APPLICABLE DERATING FACTORS AND VOLTAGE DROP. DO NOT USE COMMON NEUTRAL EXCEPT WHERE SHOWN ON THE DRAWINGS OR WHERE ALLOWED FOR FEEDERS PER CEC RULE 4–024.

4. PROVIDE ALL NECESSARY TOOLS, KITS AND ACCESSORIES AND FOLLOW MANUFACTURER INSTRUCTIONS IN INSTALLATION OF HEAT TRACING CABLE, CONTROLLER AND SENSORS.

5. COORDINATE LOCATION OF ELECTRICAL DEVICES AND EQUIPMENT, RACEWAY AND CABLE ROUTING, SUPPORTS AND RESTRAINTS WITH THE ACTUAL CONSTRUCTED SITE CONDITIONS, PIPING AND THE LIKE PRIOR TO ORDERING MATERIAL AND ROUGH IN. RESOLVE CONFLICTS PRIOR TO PROCEEDING WITH WORK.

6. DO NOT RUN RACEWAY THROUGH STRUCTURAL MEMBERS EVEN IF IT APPEARS LIKE THAT ON DRAWINGS.

7. PROVIDE FIRE STOP PER NBC REQUIREMENTS WHERE RACEWAY OR WIRING PENETRATES FIRE SEPARATIONS.

8. ENSURE THAT THE INTERIOR OF CONDUIT IS CLEAN OF FOREIGN PARTICLES AND DRY PRIOR TO APPLICATION OF THE MOISTURE SEALANT. APPLY THE SEALANT AS RECOMMENDED BY MANUFACTURER. SEALANT TO BE MOISTURE BARRIER TYPE, NON–TOXIC, NON–SHRINK, NON–HARDENING, PUTTY TYPE HAND APPLIED PROVIDING EFFECTIVE BARRIER UNDER SUBMERGED CONDITIONS.

9. PROVIDE PULL STRING IN EMPTY CONDUITS. CLEAN INTERIOR AND EXTERIOR END OF THE CONDUIT FROM FOREIGN MATERIAL AND PROVIDE CAP ON BOTH ENDS OF CONDUIT TO PREVENT INGRESS OF FOREIGN MATERIAL.

ELECTRICAL SYMBOLS AND ABBREVIATIONS			
	POLE MOUNT LUMINAIRE		
	BUILDING MOUNT LUMINAIRE		
	DUPLEX GFI RECEPTACLE	'WP' WEATHER PROOF	
	ALARM HORN		
⊗	JUNCTION BOX		
	SURFACE MOUNT ELECTRICAL PANEL		
-------	UNDERGROUND CONDUCTOR		
AFF	ABOVE FINISH FLOOR	CU	COPPER
AFG	ABOVE FINISH GRADE	C/W	COMPLETE WITH
C	CONDUIT	GND	GROUND

PANEL: H

VOLTS: 115/208 PHASE: 3 WIRE: 4 — LOCATION: WATER TREATMENT PLANT — FEEDER: SEE REMARK 3 — BUSS: 100 — MTG: SURFACE

CIRC.	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION	DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	CIRC
1	1P20	1250					2500				2
3	1P20		1300		LIGHTING & RECEPT.S	HEAT TRACE SYSTEM		2500		3P40	4
5	1P20			1400					2500		6
7	1P15	50			ALARM HORN	SPARE				1P15	8
9	1P15				SPARE	SPARE				1P15	10
11	1P15				SPARE	SPARE				1P20	12
13	1P20				SPARE	SPACE					14
15					SPACE	SPACE					16
17					SPACE	SPACE					18
19					SPACE	SPACE					20
21					SPACE	SPACE					22
23					SPACE	SPACE					24
TOTAL		1300	1300	1400			2500	2500	2500		TOTAL
PHASE A TOTAL =			3800								
PHASE B TOTAL =			3800								
PHASE C TOTAL =			3900								
PANEL TOTAL =			11500		@ 120/208 VOLTS 3 PHASE		31.9 AMPS				

REMARKS
1– PROVIDE INTEGRAL TVSS.
2– PROVIDE HANDLE TIE ON CISCUITS 1, 3 & 5, AND LOCK–ON DEVICE FOR CIRCUITS 2, 4, 6.
3– SITE DETERMINE THE SOURCE PANEL AND PROVIDE A THREE POLE 100A 22KAIC CIRCUIT BREAKER IN THAT PANEL.
FEEDER TO BE 4 #2 CU RW90–XLPE, 1 #6 CU GND, IN 35mm C FOR MAXIMUM 30m LENGTH OF THE FEEDER.
FOR 50m FEEDER USE 4 #1 CU RW90–XLPE, 1 #6 CU GND, IN 41mm C AND FOR 60m FEEDER USE 4 #1/0 CU RW90–XLPE, 1 #6 CU GND, IN 53mm C. FOR LONGER FEEDERS CONTACT ENGINEER.
FOR BIDDING PURPOSE PRICE 60m FEEDER. CREDIT OR COST WILL BE DUE WHEN INSTALLED.

REGISTERED PROFESSIONAL ENGINEER
Nov. 27, 09
P. MONTAKHEBI
LICENSEE
NWT/NU

PERMIT TO PRACTICE
FSC ARCHITECTS AND ENGINEERS (5107 NWT LTD)
Signature
Date Nov. 27, 2009
PERMIT NUMBER: P0457
The Association of Professional Engineers, Geologists and Geophysicists of the NWT/NU

PROJECT TITLE: **CFS ALERT WASTEWATER TREATMENT PLANT**

FSC ARCHITECTS & ENGINEERS
4910 - 53rd Street, P.O. Box 1777
Yellowknife, NT, X1A 2P4, Canada
T 867.920.2882 | F 867.920.4319

CLIENT PROJECT NO.	-
FSC PROJECT NO.	2008-1040
LOCATION	ALERT, NU
DRAWN BY	TL
CHECKED BY	PM
DRAWING TITLE	LEGEND, GENERAL NOTES AND PANEL SCHEDULE
SCALE	NA
DATE	2009/11/27
DRAWING NO.	E1 OF 8

FSC – ANSI–B_1 – 11x17

TREATMENT TERRACE 1

NEW SEWER LINE FROM WATER TREATMENT PLANT TO OUTFALL INSTALL LIFE ROPE 1.5m O/S FROM PIPE CL

END SEAL

BC
AB
CN
301

SPLASH PAD SEE DETAIL 1–C2

GYMNASIUM

HEATING CABLES IN PRE–INSULATED PIPE. SEE E4

WALKING PATH WITH HANDRAIL ALONG NEW SEWER PIPE DETAIL 1–C7

LIGHTING AND RECEPTACLE WIRING: 4–CONDUCTOR #6 CU, #8 BOND, TECK 90, –40°C. PIG TAILS INSIDE THE POLE TO BE AT LEAST #10 CU RW90–XLPE COMPLETE WITH IN–LINE WEATHERPROOF 15A FUSE ON ALL PHASE COMNDUCTORS. TYPICAL FOR ALL

301
CA
BC
AN

INCINERATOR / OXIDIZER

HEATING CABLE CONNECTION SEE E3&E4

MOUNT AT 1200MM AFG, WP

BC: CONNECT TO PHASES B&C
AN: CONNECT TO PHASE A & NEUTRAL

TREATMENT TERRACE 4

HEAT TRACE CONTROLLER SEE E3. MOUNT CENTRE AT 1500MM AFF

WP

300

LIGHTING AND RECEPTACLE WIRING: 4–CONDUCTOR #4 CU, #8 BOND, TECK 90, –40°C. FOR UNDERGROUND CONDUCTOR INSTALLATION SEE E5. TYPICAL FOR ALL

MOUNT AS HIGH AS PRACTICABLE CONNECT TO PHASES A&B

PANEL H, SEE E1 MOUNT CENTRE AT 1500MM AFF

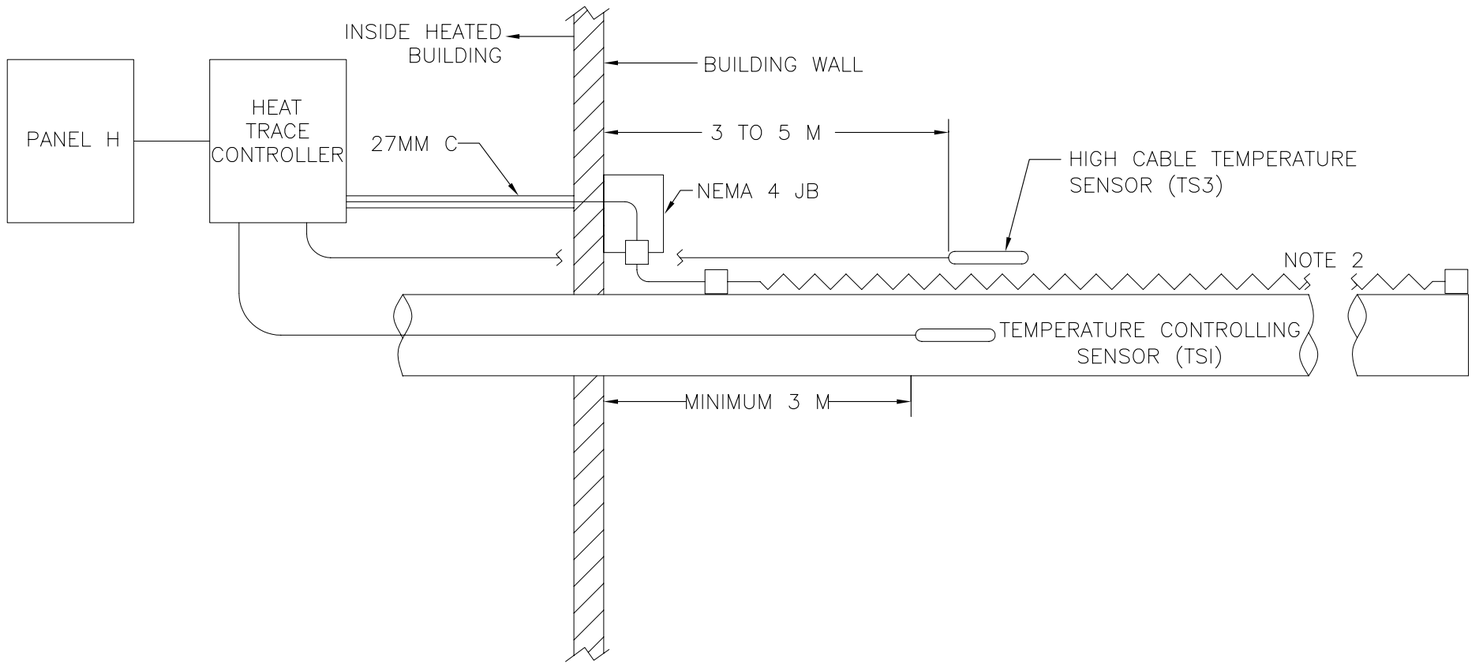
WATER TREATMENT PLANT

REGISTERED PROFESSIONAL ENGINEER
Nov. 27, 09
P. MONTAKHEBI
LICENSEE
NWT/NU

PERMIT TO PRACTICE
FSC ARCHITECTS AND ENGINEERS (5107 NWT LTD.)
Signature
Date Nov. 27, 2009
PERMIT NUMBER: P0457
The Association of Professional Engineers, Geologists and Geophysicists of the NWT/NU

PROJECT TITLE: **CFS ALERT WASTEWATER TREATMENT PLANT**		CLIENT PROJECT NO.: -	FSC PROJECT NO.: 2008-1040
FSC ARCHITECTS & ENGINEERS 4910 - 53rd Street, P.O. Box 1777 Yellowknife, NT, X1A 2P4, Canada T 867.920.2882 | F 867.920.4319	LOCATION: ALERT, NU	DRAWN BY: TL	CHECKED BY: PM
	DRAWING TITLE: ELECTRICAL PLAN AND LUMINAIRE SCHEDULE	SCALE: 1: 1000	DATE: 2009/11/27
		DRAWING NO.: E2	OF 8

FSC – ANSI–B_L – 11x17



NOTES:

1. INSTALL THE HEATING CABLE THROUGH THE TRACE CONDUITS PRE-INSTALLED ON PIPE AS SHOWN IN E4.
2. ALLOW AT LEAST 1M OF EXTRA HEATING CABLE AT EACH FLANGE.
3. INSTALL PER MANUFACTURER INSTRUCTION.

1/E3 208V HEAT TRACING CONNECTION SCHEMATIC

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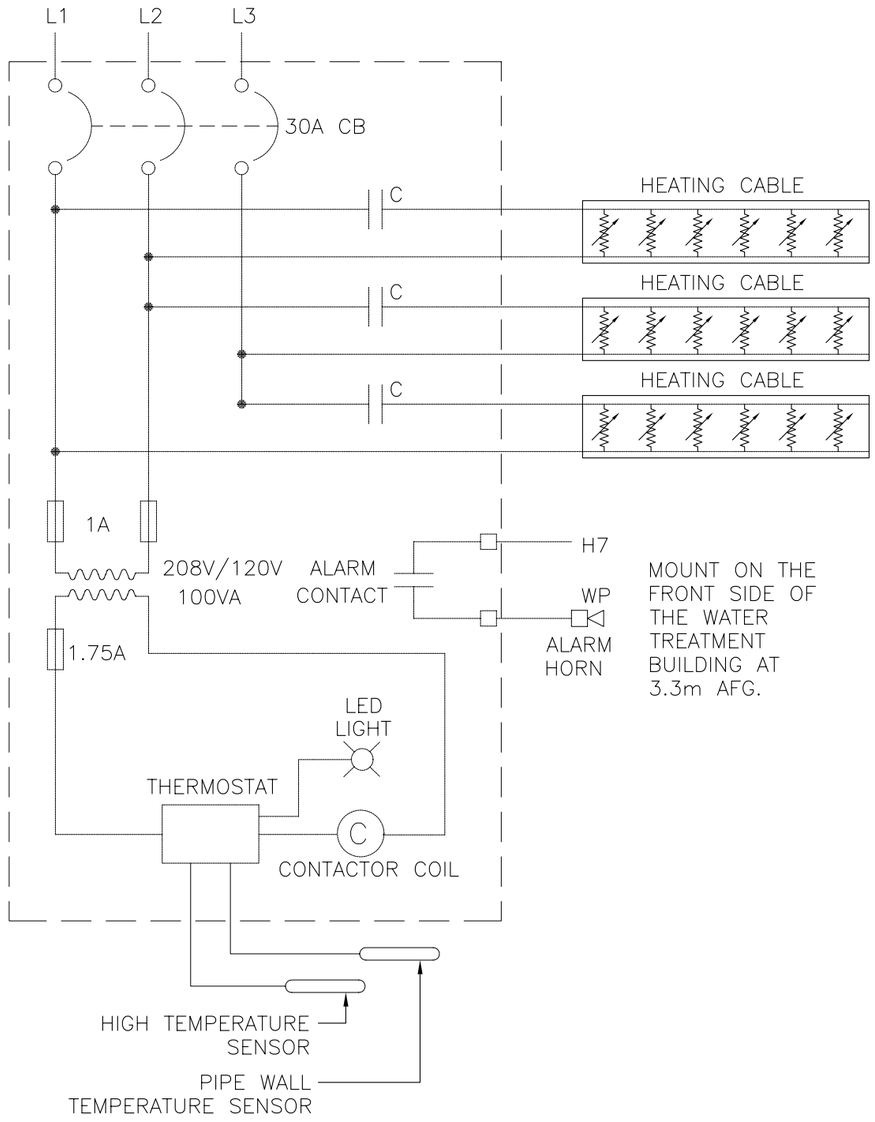

1 / E4 HEAT TRACE CONTROLLER SCHEMATIC DIAGRAM

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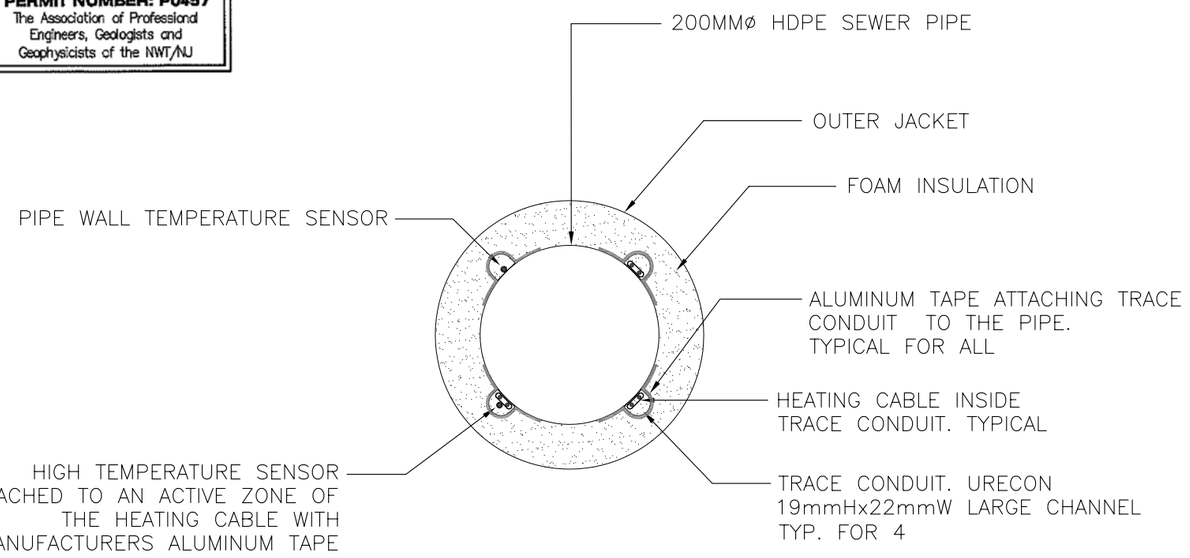

2 / E4 HEAT TRACE INSTALLATION SCHEMATIC

N.T.S.

NOTE:

1. SEWER PIPE MAINTAIN TEMPERATURE: 4°C; START–UP TEMPERATURE: 1°C; HIGH LIMIT TEMPERATURE: 65°C FOR PROTECTION OF PLASTIC PIPING.

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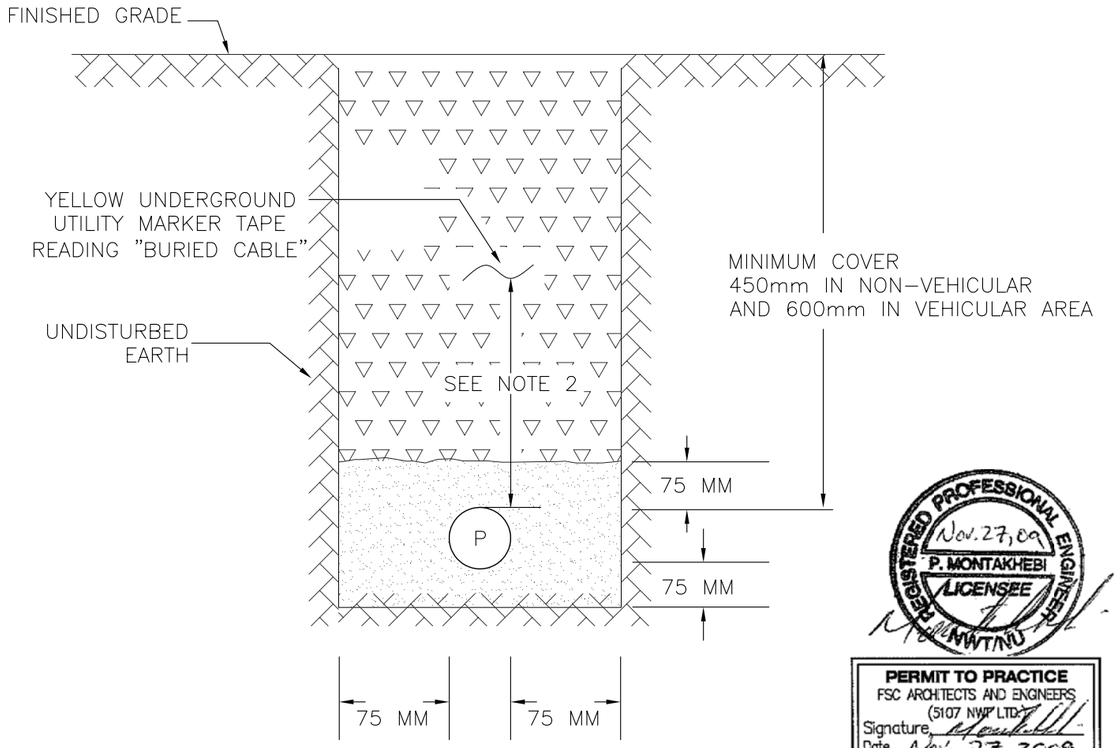
LUMINAIRE SCHEDULE

TYPE: 300	DESCRIPTION:	EXTERIOR WALL MOUNT HID
	HOUSING:	DIE–CAST ALUMINUM WITH STAINLESS STEEL HARDWARE, ALUMINUM REFLECTOR, SILICONE GASKET AND PORCELAIN SOCKET AND HINGED DOOR ASSEMBLY
	LENS:	IMPACT RESISTANT BOROSILICATE PRISMATIC GLASS
	FINISH:	DARK BRONZE POLYESTER POWDER COAT
	BALLAST:	HPF, 208V, –40°C
	LAMP:	ONE 400W HPS
	LISTING:	CSA WET
	ACCESSORIES:	INTEGRAL 208V PHOTOCONTROL, AND MOUNTING ACCESSORIES AS REQUIRED – SITE COORDINATE PRIOR TO ORDERING MATERIAL
	MANUFACTURERS:	COOPER LUMARK WL WAL–PACK OR APPROVED EQUAL
TYPE: 301	DESCRIPTION:	EXTERIOR POLE MOUNT HID
	HOUSING:	DIE–CAST ALUMINUM HOUSING AND COVER, AND ANODIZED SPUN ALUMINUM OUTER REFLECTOR HOUSING 360 DEGREE ROTATING OPTICAL ASSEMBLY AND INDICATOR HINGED AND LATCHED DIE–CAST ALUMINUM DOOR WITH SILICONE RUBBER GASKET
	LENS:	TEMPERED CONVEX GLASS
	REFLECTOR:	INNER HYDROFORMED AND ANODIZED
	OPTICS:	TYPE II
	DISTRIBUTION:	LMCO
	MOUNTING:	POLE MOUNTED ON SIDE ARM COMPETE WITH ALL NECESSARY MOUNTING ACCESSORIES
	NOTE:	ROTATE OPTICAL ASSEMBLY FOR MAXIMUM LIGHTING ALONG THE LENGTH OF THE WALKING PATH
	FINISH:	STANDARD BRONZE
	LISTING:	CSA WET
	BALLAST:	HPF, 208V, –40°C
	LAMP:	ONE 600W HPS
	ACCESSORIES:	INTEGRAL 208V PHOTOCONTROL
	MANUFACTURERS:	COOPER LUMARK HPMC, OR APPROVED EQUAL
POLE	DESCRIPTION:	9.1M HIGH, TAPERED ROUND STEEL. POLE TO WITHSTAND 160KM PER HOUR WINDS WITH A GUST FACTOR OF 1.3 WITH TWO ARM AND TOP CAP FOR SIDE MOUNT
	ARMS:	610MM LIFT 1829MM REACH ELLIPTICAL ARM
	FINISH:	SAME AS LUMINAIRE
	ACCESSORIES:	MOUNTING AS REQUIRED AND INTEGRAL 120V NEMA 5–20RA RECEPTACLE WITH WEATHERPROOF COVER
	MANUFACTURERS:	SAME AS LUMINAIRE
	NOTE:	DESIGN–BUILD THE POLE BASE PER NATIONAL AND NUNAVUT APPLICABLE CODES AND STANDARDS AND PROVIDE SATISFACTION DOCUMENTATION TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION. REQUEST ALL NECESSARY INFORMATION FROM THE OWNER AND BID ACCORDINGLY.



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(P) POWER CONDUIT OR CABLE

SAND – SHALL PASS THROUGH 6 MM SIEVE FRAME.

BACK FILL, MINIMUM 95% COMPACTED – SHALL PASS THROUGH 20 MM SIEVE FRAME.

NOTE:

1. MARKER TAPE TO BE APPROXIMATELY HALF WAY BETWEEN FINISHED GRADE AND CONDUIT OR CABLE.

1/E5 UNDERGROUND CONDUCTOR INSTALLATION

N.T.S.

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SECTION 1.0 DIVISION 16 GENERAL REQUIREMENTS

1.1.0 GENERAL MATERIALS AND LABOR

1.1.1 PERFORM ELECTRICAL INSTALLATIONS SO AS TO FORM COMPLETE AND OPERATING SYSTEMS. PROVIDE NECESSARY ACCESSORIES TO FORM A COMPLETE AND OPERATING SYSTEM EVEN IF NOT SPECIFICALLY CALLED FOR IN THESE DRAWINGS AND SPECIFICATIONS.

1.1.2 ALL INSTALLATIONS ARE TO COMPLY WITH THE CANADIAN ELECTRICAL CODE, THE NATIONAL BUILDING CODE AND THE REQUIREMENTS OF THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION.

1.1.3 OBTAIN ALL PERMITS REQUIRED BY LOCAL AUTHORITIES PRIOR TO BEGINNING WORK. PROVIDE A FINAL ACCEPTANCE CERTIFICATE FROM THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION UPON COMPLETION OF THE WORK.

1.1.4 SUBMIT TO THE LOCAL INSPECTION DEPARTMENT THE REQUIRED NUMBER OF DRAWING SETS AND INCLUDE IN THIS TENDER ALL COSTS FOR DRAWING PRINTS, PLAN REVIEWS, PERMIT COSTS AND SURVEYS.

1.1.5 NOTIFY THE OWNER OF ANY CHANGES REQUESTED BY THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION PRIOR TO MAKING SAID CHANGES.

1.1.6 THE WORD 'PROVIDE' MEANS THE SUPPLY, DELIVERY AND INSTALLATION OF DEVICE OR EQUIPMENT REFERENCED TO THE LEVEL REQUIRED TO BE COMPLETE AND OPERATIONAL. 'SUPPLY' MEANS TO OBTAIN AND DELIVER TO THE PROJECT SITE, READY FOR UNPACKING ASSEMBLY AND INSTALLATION. 'INSTALL' MEANS THE UNLOADING, UNPACKING, ASSEMBLING, ERECTING, APPLYING, FINISHING, PROTECTING, CLEANING AND SIMILAR OPERATIONS AT THE PROJECT SITE TO COMPLETE ITEMS OF WORK SUPPLIED BY OTHERS.

1.1.7 EXAMINE ALL DISCIPLINES DRAWINGS AND SPECIFICATIONS PRIOR TO SUBMITTING BID. NO EXTRAS WILL BE PROVIDED FOR WORK THAT WOULD HAVE BEEN EVIDENT UPON A THOROUGH EXAMINATION OF ENTIRE DOCUMENTS.

1.2.0 MATERIALS AND WORKMANSHIP

1.2.1 EQUIPMENT AND MATERIAL TO BE NEW AND CERTIFIED BY AN ACCREDITED CERTIFICATION BODY OF THE STANDARDS COUNCIL OF CANADA (SCC). WHERE THERE IS NO ALTERNATIVE TO SUPPLYING EQUIPMENT WHICH IS NOT SCC APPROVED, OBTAIN SPECIAL APPROVAL FROM THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION AND PAY ALL ASSOCIATED FEES. NOTIFY ENGINEER PRIOR TO SUPPLYING MATERIAL THAT IS NOT SCC APPROVED.

1.2.2 KEEP A COMPETENT FOREMAN AND TRADESMEN QUALIFIED FOR WORK IN NUNAVUT AT ALL TIMES DURING WORK IN PROGRESS. ALL WORKERS ON THE SITE ARE TO BE SATISFACTORY TO THE OWNER.

1.2.3 OBTAIN CLARIFICATION FROM THE ENGINEER WHERE THE INTENT OF THE DRAWINGS OR SPECIFICATIONS IS NOT CLEAR. MAKE CORRECTIONS TO WORK PERFORMED CONTRARY TO THE INTENT OF THE DRAWINGS OR SPECIFICATIONS AND BEAR ALL COSTS FOR MAKING SAID CORRECTIONS.

1.2.4 COORDINATE ALL WORK DESCRIBED BY THESE DRAWINGS AND SPECIFICATIONS WITH THAT OF OTHER TRADES WORKING ON THE SITE SO AS TO NOT HOLD UP THE PROGRESS OF OTHER TRADES.

1.2.5 NO SUBSTITUTION OF MATERIALS IS PERMITTED WITHOUT THE WRITTEN ACCEPTANCE OF THE ENGINEER 10 DAYS PRIOR TO TENDER CLOSING.

1.3.0 CUTTING, PATCHING, EXCAVATION & BACKFILLING

1.3.1 ARRANGE AND PAY FOR ALL CUTTING, PATCHING, EXCAVATION AND BACKFILLING COSTS RELATED TO THE WORK OF THIS CONTRACT.

1.3.2 RESTORE ALL EXCAVATIONS TO ORIGINAL CONDITION SUBSEQUENT TO COMPLETION OF ELECTRICAL INSTALLATIONS DESCRIBED IN THESE DRAWINGS AND SPECIFICATIONS.

1.3.3 SURROUND ALL CABLES OR CONDUITS INSTALLED IN TRENCHES WITH SAND OR 6MM SCREENED EARTH AS INDICATED ON DETAILS AND AS REQUIRED BY THE C.E.C.

1.3.4 SEAL ALL PENETRATIONS OF FIRE RATED ASSEMBLIES WITH A ULC–APPROVED FIRE STOP SYSTEM ACCORDING TO THE REQUIREMENTS OF THE NATIONAL BUILDING CODE OF CANADA.

1.4.0 SUBMITTALS

1.4.1 SUBMIT SHOP DRAWINGS CLEARLY INDICATING DETAILS OF MATERIAL FABRICATION, LAYOUT, DIMENSIONS, CAPACITIES, PERFORMANCE CHARACTERISTICS, CERTIFICATION STANDARDS, WEIGHT, WIRING DIAGRAMS AND OTHER PERTINENT INFORMATION.

1.4.2 PROVIDE SHOP DRAWINGS FOR ALL EQUIPMENT INCLUDED. SHOP DRAWINGS SUBMITTED TO THE ENGINEER ARE TO HAVE THE PRIOR APPROVAL STAMPS OF THE CONTRACTOR.

1.4.3 THE OWNER WILL PROVIDE ONE SET OF BLUELINE DRAWINGS TO BE USED AS RECORD DRAWINGS ON SITE. MAINTAIN A DAILY RECORD OF REVISIONS AND ADDITIONS TO THE ORIGINAL WORK. ALL MARKINGS ARE TO BE DONE NEATLY IN A COLOR OTHER THAN BLUE OR GRAY PENCIL. PRESENT THE RECORD MARK–UPS TO CONSULTANT AT THE TIME OF SUBSTANTIAL COMPLETION.

1.4.4 UPON COMPLETION OF WORK AND PRIOR TO FINAL COMPLETION, TRANSCRIBE ALL INFORMATION FROM RECORD PRINTS TO COMPUTER DISK, INCLUDING ALL CHANGES TO CONTRACT DOCUMENTS, IN AUTOCAD FORMAT USING THE SAME VERSION TO MATCH TENDER DOCUMENTS AND TURN THE DISK OVER TO THE OWNER. INCLUDE A COPY OF THE DISK AND THE HARD COPY MARK–UP IN THE O&M MANUALS. PAY ALL ASSOCIATED COSTS.

1.4.5 PROVIDE TO THE OWNER TWO (2) COPIES OF OPERATING AND MAINTENANCE MANUALS THREE WEEKS PRIOR TO SUBSTANTIAL COMPLETION. MANUALS TO INCLUDE:

.1 INDEX OF CONTENTS
.2 HARD PAPER DIVIDERS BETWEEN SECTIONS
.3 LIST OF SUPPLIERS WITH ADDRESSES, PHONE NUMBERS AND CONTACTS
.4 HEAVY DUTY, 3–POST EXPANDABLE BINDERS WITH EMBOSSED PROJECT TITLE, PROJECT LOCATION, DATE OF COMPLETION, NAME AND ADDRESS OF CONSULTANTS, NAME AND ADDRESS OF CONTRACTORS
.5 CONTRACTOR'S WARRANTY
.6 ALL CERTIFICATIONS INCLUDING INSPECTION DEPARTMENT CERTIFICATES AND ANY OTHER REQUIRED APPROVALS
.7 ALL SHOP DRAWINGS SEPARATED BY SECTIONS
.8 DESCRIPTION OF SYSTEM OPERATIONS
.9 ALL MANUFACTURER'S OPERATING AND MAINTENANCE INFORMATION FOR EACH RELEVANT PIECE OF EQUIPMENT
.10 COPY OF ALL TEST REPORTS
.11 HARD COPY OF RECORD MARK–UPS AND A COPY OF THE RECORD DISK
.12 SPARE PARTS LIST

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1.5.0 TESTING

1.5.1 PROVIDE TO THE OWNER THE RESULTS OF ALL TESTS IN WRITTEN FORM.

1.5.2 PERFORM TESTS ON ALL EQUIPMENT AS RECOMMENDED BY THE MANUFACTURER.

1.5.3 MEGGER TEST ALL FEEDERS PRIOR TO ENERGIZING AND ENSURE THAT THE REQUIREMENTS OF THE C.E.C. ARE MET.

1.5.4 MEASURE LOAD CURRENTS ON PANELBOARD AND RECONNECT IF LOAD ON ANY ONE PHASE EXCEEDS 15% OF THE AVERAGE OF ALL OTHER PHASES.

1.6.0 WARRANTY

1.6.1 PROVIDE A WRITTEN WARRANTY GUARANTEEING THAT THE WORK PERFORMED WILL BE FREE OF DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE AND THAT ANY DEFECTIVE WORK OR MATERIAL WILL BE REPAIRED OR REPLACED WITHOUT COST TO THE OWNER DURING THIS PERIOD PROVIDED THAT SUCH FAILURES ARE NOT DUE TO IMPROPER USAGE OR NEGLECT.

1.6.2 THE WARRANTY SHALL STATE THAT THE PERIOD OF GUARANTEE WILL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OF A LONGER PERIOD.

SECTION 2.0 PRODUCTS AND EXECUTION

2.1.0 WIRING AND CONDUIT

2.1.1 BUILDING WIRING TO BE COPPER RW90 XLPE INSTALLED IN EMT CONDUIT EXCEPT WHERE OTHERWISE INDICATED ON THESE DRAWINGS.

2.1.2 TECK CABLE TO BE RW90, 1000 VOLT, COPPER WITH GROUNDING CONDUCTOR AND ALUMINUM INTERLOCKING ARMOUR. CABLE IS TO BE ROUTED INSIDE SUITABLY SIZED RIGID STEEL CONDUIT WHERE TECK CABLE IS EXPOSED TO MECHANICAL INJURY.

2.1.3 ENSURE THAT CONDUIT IS DRY PRIOR TO WIRING INSTALLATION. SEAL CONDUIT THAT MAY BECOME EXPOSED TO MOISTURE.

2.1.4 RUN CONDUIT PARALLEL TO BUILDING LINES EXCEPT WHERE SPECIFICALLY INDICATED.

2.1.5 DO NOT CUT STRUCTURAL MEMBERS EXCEPT WHERE SPECIFICALLY INDICATED.

2.1.6 PROVIDE PULL CORD IN ALL EMPTY CONDUIT RUNS.

1.7.0 LANGUAGE AND EQUAL PRODUCT

1.7.1 ALL CORRESPONDENCE AND DOCUMENTS SHALL BE SUBMITTED IN FLUENT ENGLISH.

1.7.2 EQUAL OR EQUIVALENT PRODUCTS: WHERE ONE OF THESE TERMS IS USED TO REFERENCE ACCEPTABLE MATERIAL OR WHERE AN EQUAL SUBSTITUTION IS REQUESTED, PROOF OF EQUALITY IN THE FORM OF MANUFACTURER'S REPRESENTATIVE SUPPLIED ITEMIZED TABLE OR LETTER, TO ILLUSTRATE OR CERTIFY THAT THE PRODUCT MEETS OR EXCEEDS EACH AND EVERY SPECIFICATION ITEM IS REQUIRED FOR REVIEW PRIOR TO APPROVAL. MANUFACTURER CATALOG PAGES ARE NOT ACCEPTABLE SUBSTITUTE FOR THE ABOVE-INDICATED TABLE OR LETTER AND WILL BE RETURNED AS INSUFFICIENT FOR REVIEW.

2.2.0 WIRING DEVICES AND LUMINAIRE

2.2.1 DUPLEX RECEPTACLE: CSA 5-20RA PATTERN, 125V, 15A, U-GROUND, SUITABLE FOR #10 WIRING, BREAK-OFF LINKS FOR SPLIT RECEPTACLE CONVERSION, WEATHER PROOF COVER. HUBBELL 5262 SERIES OR LEVITON 5261 SERIES.

2.2.2 PROVIDE LUMINAIRE AS INDICATED ON LUMINAIRE SCHEDULE. LUMINAIRE TO BE COMPLETE WITH ALL TERMINATIONS, BALLAST AND LAMP SHALL BE LEFT CLEAN AT PROJECT COMPLETION.

2.2.3 HID BALLAST: HIGH POWER FACTOR, CONSTANT WATTAGE TYPE, VOLTAGE AS INDICATED FOR SPECIFIC FIXTURE. STARTUP CURRENT TO BE LESS THAN 110% OF FULL LOAD RUNNING CURRENT.

2.3.0 PHOTOCELL

2.3.1 WALL MOUNTED, CAPABLE OF SWITCHING THE CONTACTOR LOAD AT 120 VOLTS, OPERATING TEMPERATURE RANGE OF -40 TO +40 DEGREES CELSIUS, TWIST-LOCK TYPE RECEPTACLE, ADJUSTABLE SENSITIVITY. KEENE P400-A WITH P400-R RECEPTACLE OR EQUAL.

2.4.0 IDENTIFICATION

2.4.1 LABEL PANEL, SWITCHES, HEAT TRACING BOXES, THERMOSTAT CONTROL PANEL AND SPECIAL EQUIPMENT WITH PERMANENTLY ATTACHED, LAMACOID LABELS INDICATING RELEVANT INFORMATION. LABELS TO HAVE WHITE 13.5 MM (1/2") LETTERING ON BLACK BACKGROUND.

2.5.0 GROUNDING

2.5.1 PROVIDE GROUNDING INSTALLATIONS NECESSARY TO MEET THE REQUIREMENTS OF THE CURRENT CANADIAN ELECTRICAL CODE AND ADDITIONAL REQUIREMENTS INDICATED ON THESE DRAWINGS OR SPECIFICATIONS.

2.6.0 PANELBOARD

2.6.1 120/208V: 240V WITH BUS RATED FOR CONTINUOUS CURRENT AS INDICATED ON SCHEDULE AND FULLY RATED 10,000 AMPS FAULT WITHSTAND CAPACITY. SEQUENCE STYLE COPPER BUSSING WITH ODD NUMBERED BOLT-ON BREAKERS ON THE LEFT AND EVEN ON THE RIGHT WITH EACH CIRCUIT IDENTIFIED BY PERMANENT IDENTIFICATION AS TO THE CIRCUIT NUMBER. LOCKING PANEL DOOR WITH TWO KEYS FOR EACH PANEL. CUTLER-HAMMER POW-R-LINE 1 OR SQUARE D TYPE NQOD. PROVIDE TYPEWRITTEN PANEL DIRECTORY. PANELBOARD TO HAVE INTEGRAL DIRECT-BUS-CONNECTED SURGE PROTECTION DEVICE WITH MINIMUM 120,000 AMP SURGE CURRENT RATING.

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2.7.0 HEAT TRACE SYSTEM

2.7.1 HEATING CABLE: 13W/M, 240V, PARALLEL CONSTANT WATT HEATING CABLE WITH TINNED COPPER GROUNDING BRAID, FLUOROPOLYMER OVER JACKET. URECON C13–240–CQJ OR EQUAL. TO BE COMPLETE WITH FACTORY–SUPPLIED COLD LEAD KIT, POWER CONNECTION KIT, END TERMINATION KIT, ALUMINUM TAPE AND OTHER INSTALLATION COMPONENTS AS NECESSARY.

2.7.2 CONTROLLER: 208V THREE PHASE, COMPLETE WITH 30A THREE POLE CIRCUIT BREAKER, LOAD RATED CONTACTOR, ELECTRONIC THERMOSTAT WITH INTEGRAL GROUND FAULT PROTECTION (ALARM AND TRIP SET FOR 30MA). FOR PLASTIC PIPE FREEZE PROTECTION. NEMA 4 PAINTED STEEL ENCLOSURE, WITH TWO CONTROLLING SENSORS FOR PIPE WALL TEMPERATURE CONTROL AND CABLE HIGH TEMPERATURE CUTOFF. CONTROL TEMPERATURE RANGE OF –5°C TO 75°C. URECON TYPE 2230 OR EQUAL.

2.7.3 TWO TEMPERATURE SENSORS FOR PIPE TEMPERATURE CONTROL (TS1) AND HIGH TEMPERATURE LIMIT (TS3) FOR PLASTIC PIPE PROTECTION. PLATINUM RTD TYPE SENSORS COMPLETE WITH 15M EXTENSION LEAD WIRE GRAY FOR TS1 AND RED FOR TS3.

2.7.4 ALARMS:
- GROUND FAULT;
- LOW TEMPERATURE ALARM ON TS1;
- HIGH TEMPERATURE ALARM AND TRIP ON TS3;
- SENSOR SHORT CIRCUIT ALARM; AND
- SENSOR OPEN CIRCUIT ALARM.

2.7.5 AUTO–CYCLE FUNCTION TO MOMENTARILY TURN THE HEATING CABLE ON AT 24 HOUR INTERVALS TO MONITOR GROUND FAULT CONDITION OF THE LOAD.

2.7.6 ON–OFF CONTROL WITH 1°C DEADBAND.

2.7.7 THREE–COLOUR LED INDICATOR LIGHT.

2.7.8 NON–VOLATILE MEMORY TO RETAIN PROGRAMMED PARAMETERS IN THE EVENT OF POWER OUTAGE.

2.7.9 ALARM OUTPUT: 1A MAX, 240VAC MAX, 60HZ, SPDT FORM C RELAY OUTPUT CONFIGURED FOR FAIL SAFE OPERATION.

2.7.10 REMOTE OVERRIDE: PROVIDE AN OVERRIDE PUSH BUTTON ON THE ENCLOSURE DOOR WITH NAMEPLATE FOR THE USER TO FORCE THE UNIT ON FOR 48 HOURS.

2.7.11 PROVIDE A COMPLETE ULC OR CSA LISTED HEAT TRACING SYSTEM.

2.7.12 THE HEATING CABLE SHALL BE SUITABLE FOR USE ON NONMETALLIC PIPING. THE HEATING CABLE SHALL BE DRAWN INTO METALLIC CONDUIT OF TYPE RECOMMENDED BY MANUFACTURER AND ATTACHED TO THE PIPE WITH MANUFACTURER SUPPLIED ALUMINUM TAPE AT 0.5M INTERVALS THROUGHOUT THE LENGTH.

2.7.13 ALL HEATING CABLE CORE SHALL BE PERMANENTLY MARKED WITH THE MANUFACTURER'S IDENTIFICATION NUMBER FOR TRACEABILITY.

2.7.14 MANUFACTURER SHALL DEMONSTRATE EXPERIENCE MANUFACTURING AND DESIGNING FREEZE PROTECTION SYSTEMS WITH HEAT TRACING CABLES FOR AT LEAST 10 YEARS. MANUFACTURER'S QUALITY ASSURANCE PROGRAM SHALL BE CERTIFIED TO THE ISO 9001 STANDARD.

2.7.15 ALARM HORN: WEATHERPROOF NEMA 4X RATED CSA CERTIFIED 120V 60Hz ADJUSTABLE VOLUME 78dB–103dB AT 3M VIBRATING HORN WITH DIE CAST BOX AND BONDERIZED SAGE GRAY FINISH. EDWARDS ADAPTAHORN 876–N5 COMPLETE WITH 1995 YARD HOOD. ADJUST TO MAXIMUM dB.

2.7.16 INSTALLATION
- .1 REFER TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND GUIDE FOR PROPER INSTALLATION AND LAYOUT METHODS. DEVIATIONS FROM THESE INSTRUCTIONS COULD RESULT IN PERFORMANCE CHARACTERISTICS DIFFERENT THAN INTENDED.
- .2 ALL INSTALLATIONS AND TERMINATION MUST CONFORM TO THE CANADIAN ELECTRICAL CODE AND ANY OTHER APPLICABLE NATIONAL OR LOCAL CODE REQUIREMENTS.
- .3 ALLOW THE EXTRA HEATING CABLE LENGTH FOR FLANGES, PIPE SUPPORTS AND COMPONENT INSTALLATION PER MANUFACTURER'S INSTRUCTIONS.
- .4 INSTALL THE THERMOSTAT IN AN APPROPRIATE LOCATION WITHIN 6m (20ft) OF THE PIPELINE.
- .5 DO NOT ENERGIZE HEATING CABLE WHEN IT IS COILED OR ON THE REEL.
- .6 THE TRACE CONDUITS OF PRE–INSULATED PIPE ARE SHOWN ON THE DRAWINGS, INSTALL THE HEATING CABLE THROUGH THE CONDUIT.
- .7 THE SECTION OF CABLE BETWEEN THE LAST INDENTATION AND THE END CAP IS NON–HEATING, IT'S "COLD END". ENSURE THAT THE "COLD END" ON THE CABLE IS AS SHORT AS POSSIBLE.

2.7.17 SPARE PARTS: INCLUDE AS FOLLOWS:
- .1 TWO POWER CONNECTION KITS;
- .2 THREE SPLICE KITS;
- .3 60M OF HEATING CABLE;
- .4 ONE EXTRA SENSOR OF EACH TYPE;
- .5 TWO END TERMINATION KITS;
- .6 OTHER MANUFACTURER RECOMMENDED SPARE PARTS.

2.7.18 TEST: THE FOLLOWING TESTS MUST BE DONE PER MANUFACTURER'S INSTRUCTIONS DURING AND AFTER THE INSTALLATION:

- .1 VISUAL INSPECTION: VISUALLY INSPECT THE PIPE, INSULATION, AND CONNECTIONS TO THE HEATING CABLE FOR PHYSICAL DAMAGE. CHECK THAT NO MOISTURE IS PRESENT, ELECTRICAL CONNECTIONS ARE TIGHT AND GROUNDED, INSULATION IS DRY AND SEALED, AND CONTROL AND MONITORING SYSTEM ARE OPERATIONAL AND PROPERLY SET. DAMAGED HEATING CABLE MUST BE REPLACED.
- .2 INSULATION RESISTANCE: INSULATION RESISTANCE (IR) TESTING IS USED TO VERIFY THE INTEGRITY OF THE HEATING CABLE INNER AND OUTER JACKETS. IR TESTING IS ANALOGOUS TO PRESSURE TESTING A PIPE AND DETECTS IF A HOLE EXISTS IN THE JACKET. PERFORM PER MANUFACTURER INSTRUCTIONS USING MANUFACTURER RECOMMENDED INSTRUMENTS. RECORD RESULTS AND INCLUDE A COPY IN THE O&M MANUALS.
- .3 CIRCUIT LENGTH VERIFICATION (CAPACITANCE TEST): THE INSTALLED CIRCUIT LENGTH IS VERIFIED THROUGH A CAPACITANCE MEASUREMENT OF THE HEATING CABLE. COMPARE THE CALCULATED INSTALLED LENGTH AGAINST THE SYSTEM DESIGN. IF THE CALCULATED LENGTH IS SHORTER THAN THE SYSTEM DESIGN. CONFIRM ALL CONNECTIONS ARE SECURE AND THE GROUNDING BRAID IS CONTINUOUS. PERFORM PER MANUFACTURER INSTRUCTIONS USING MANUFACTURER RECOMMENDED INSTRUMENTS. RECORD RESULTS AND INCLUDE A COPY IN THE O&M MANUALS.
- .4 POWER CHECK: THE POWER CHECK IS USED TO VERIFY THAT THE SYSTEM IS GENERATING THE CORRECT POWER OUTPUT. THIS TEST IS USED TO CONFIRM THAT THE CIRCUIT IS FUNCTIONING CORRECTLY. PERFORM PER MANUFACTURER INSTRUCTIONS USING MANUFACTURER RECOMMENDED INSTRUMENTS. RECORD RESULTS AND INCLUDE A COPY IN THE O&M MANUALS. FOR ONGOING MAINTENANCE, COMPARE THE POWER OUTPUT TO PREVIOUS READINGS.
- .5 GROUND–FAULT TEST: PERFORM PER MANUFACTURER INSTRUCTIONS USING MANUFACTURER RECOMMENDED INSTRUMENTS. RECORD RESULTS AND INCLUDE A COPY IN THE O&M MANUALS.

REGISTERED PROFESSIONAL ENGINEER
Nov. 27, 09
P. MONTAKHEBI
LICENSEE
NWT/NU

PERMIT TO PRACTICE
FSC ARCHITECTS AND ENGINEERS
(5107 NWT LTD.)
Signature
Date Nov. 27, 2009
PERMIT NUMBER: P0457
The Association of Professional Engineers, Geologists and Geophysicists of the NWT/NU

PROJECT TITLE: CFS ALERT WASTEWATER TREATMENT PLANT		CLIENT PROJECT NO.: -	FSC PROJECT NO.: 2008-1040
FSC ARCHITECTS & ENGINEERS 4910 - 53rd Street, P.O. Box 1777 Yellowknife, NT, X1A 2P4, Canada T 867.920.2882 | F 867.920.4319	LOCATION: ALERT, NU	DRAWN BY: TL	CHECKED BY: PM
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