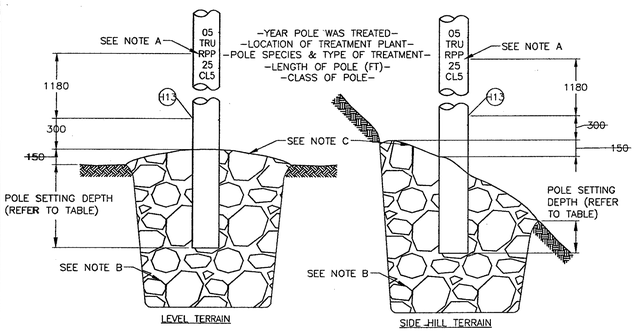
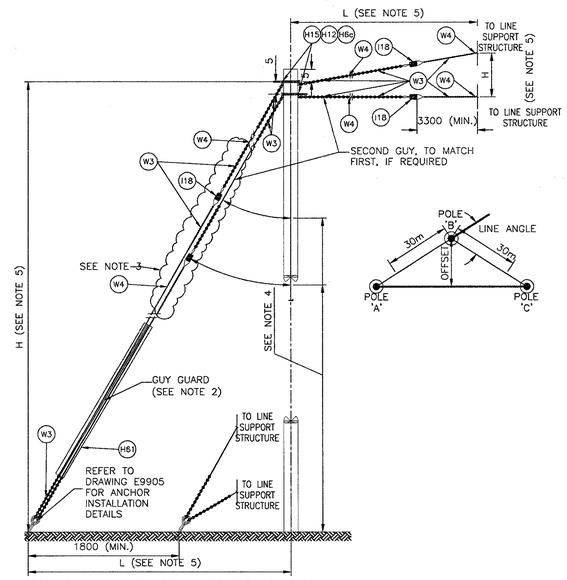


MINIMUM POLE SETTING DEPTH		
POLE LENGTH IN METRES (FEET)	SETTING DEPTH IN SOIL IN METRES (FEET)	SETTING DEPTH IN ROCK IN METRES (FEET)
7.6 (25)	1.37 (4-½)	1.07 (3-½)
9.1 (30)	1.52 (5)	1.22 (4)
10.7 (35)	1.68 (5-½)	1.37 (4-½)
12.2 (40)	1.83 (6)	1.37 (4-½)
13.7 (45)	1.98 (6-½)	1.52 (5)
15.2 (50)	2.13 (7)	1.52 (5)

BILL OF MATERIALS			
ITEM	QTY.	DESCRIPTION	STD. OF ACCEPTANCE
H13	1	POLE DATING NAIL, HOT-DIPPED GALVANIZED	CHANCE C205-year
H44	1	CORRUGATED STEEL POLE CRIBBING, HOT-DIPPED GALVANIZED, 2100mm DIA. x 1200mm LONG (MIN.)	ARMTEC
H45	4	POLE BEARING PLATE, HOT-DIPPED GALVANIZED	HYDEL 16PBP

NOTES:
- A. POLE MARKING TO BE MARKED BEFORE TREATMENT WITH 20mm HIGH LETTERING.
- B. EARTH SHALL BE TAMPED IN 250mm LAYERS.
- C. PLACE AT LEAST 150mm OF EXCESS FILL AROUND POLE TO COMPENSATE FOR SETTLING.
- D. HYDRAULIC TAMPING IS RECOMMENDED.
- E. EXCAVATE BOG TO SOLID GROUND AND ENSURE THAT THE POLE IS IN SOIL (SWAMP/BOG AND/OR SOLID GROUND) TO THE FULL RECOMMENDED POLE SETTING DEPTH. IF SOLID EARTH IS NOT REACHED WITHIN THE POLE SETTING DEPTH, THEN PLACE A MINIMUM OF 600mm OF ROCK BACKFILL UNDER THE POLE PRIOR TO BACKFILLING.
- F. SET POLE IN THE CENTRE OF THE CRIBBING, WITH POLE BEARING PLATES SECURED TO POLE AT THE APPROXIMATE FINISHED GRADE LEVEL.
- G. PLACE POLE IN THE HOLE AND BACKFILL WITH ROCK TO 300mm BELOW FINISHED GRADE. INSTALL CRIBBING AND THEN COMPLETE BACKFILLING AS INDICATED.
- H. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS INDICATED OTHERWISE.

1 — POLE SETTING DETAILS
SCALE : N.T.S.



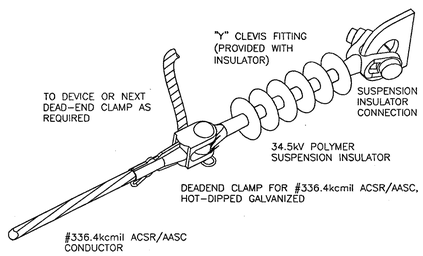
LINE ANGLE BASED ON OFFSET MEASUREMENT (APPROX.)			
OFFSET	LINE ANGLE	OFFSET	LINE ANGLE
1.3 m	5°	9.0 m	35°
2.6 m	10°	10.3 m	40°
3.9 m	15°	11.5 m	45°
5.2 m	20°	12.7 m	50°
6.5 m	25°	13.9 m	55°
7.8 m	30°	15.0 m	60°

MEASUREMENT PROCEDURE:
1. MEASURE A DISTANCE OF 30m FROM POLE 'B' TOWARDS POLE 'A' AND PLACE A MARK/STAKE.
2. MEASURE A DISTANCE OF 30m FROM POLE 'B' TOWARDS POLE 'C' AND PLACE A MARK/STAKE.
3. MEASURE THE OFFSET, i.e. THE SHORTEST DISTANCE FROM POLE 'B' TO THE STRAIGHT LINE CONNECTING THE TWO MARKS/STAKES LOCATED IN STEPS 1 & 2.
4. USE THE OFFET TO DETERMINE THE APPROXIMATE LINE ANGLE FROM TABLE.

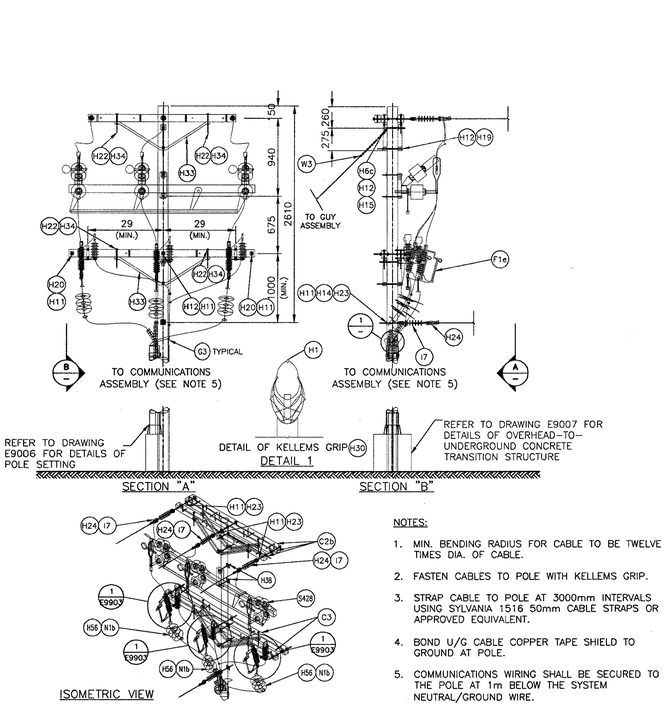
NOTES:
1. INSTALL STUB POLE PER STANDARD POLE SETTINGS DETAILS
2. INSTALL GUY GUARD AT ALL LOCATIONS WHERE THE GUY CROSSES A NORMALLY TRAVELLED AREA – INCLUDING ANY VISIBLE PEDESTRIAN, SKIER, ALL-TERRAIN VEHICLE, SNOWMOBILE, OR ANIMAL PATHS – AT LESS THAN 2.5m ABOVE THE GROUND. WHERE TWO GUY WIRES ARE INSTALLED ON A SINGLE ANCHOR, AND ONE GUARD CANNOT FIT EASILY OVER BOTH WIRES, INSTALL THE GUY GUARD ON ONLY THE UPPER WIRE.
3. WHERE A STUB POLE IS INSTALLED WITH A STRAIN INSULATOR IN THE HORIZONTAL GUY WIRE SEGMENT, THE STRAIN INSULATOR SHOWN IN THE DIAGONAL GUY WIRE SEGMENT (AND ASSOCIATED PREFORMED CONNECTORS) MAY BE OMITTED.
4. INSTALL ALL INSULATORS SUCH THAT THE POSITION OF THE INSULATOR IN THE SLACK POSITION IS AT LEAST 2500mm ABOVE GRADE.
5. GUY LEAD L SHOULD, UNLESS IMPRACTICABLE DUE TO SITE CONDITIONS, NOT BE LESS THAN HALF THE GUY HEIGHT H. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SUCH AN OCCURENCE.
6. GUY WIRES SHALL BE RUN PARALLEL TO THE TENSIONED CONDUCTORS (i.e. STRAIGHT BACK FROM THE CONDUCTOR). IF SITE CONDITIONS RENDER THIS IMPRACTICABLE, TWO GUY WIRES SHALL BE INSTALLED FROM THE SAME GUY HOOK SUCH THAT THE TENSIONED CONDUCTORS BISECT THE ANGLE BETWEEN THE GUY WIRES.

BILL OF MATERIALS			
ITEM	QTY.	DESCRIPTION	STD. OF ACCEPTANCE
H6c	as req'd	LOCKNUT (PALNUT), HOT-DIPPED GALVANIZED, 5/8" THREAD DIA. TO MATCH ASSOCIATED BOLT	CHANCE 3532
H12	as req'd	BOLT, MACHINE, HOT-DIPPED GALVANIZED, SQUARE HEAD, 16mm THREAD x LENGTH AS REQUIRED (AS PER CSA STD. C83 1970, ITEM B-3, "xx" = LENGTH IN INCHES), 5.6kN TENSILE STRENGTH (MIN.) c/w MATCHING NUT	CHANCE 88xx SERIES
H15	as req'd	GUY HOOK, HOT-DIPPED GALVANIZED, AS PER CSA STD. C83.100-M, TYPE 'A', No. 1	HYDEL 34GH
I18	as req'd	GUY STRAIN INSULATOR, PORCELAIN, ASA CLASS 54-4, MUNSELL GREY COLOUR, 89kN MIN. TENSILE STRENGTH, 76mm LEAKAGE DISTANCE, 40/23kV DRY/WET FLASHOVER	NGK HCP-194
W3	3	GRIP, GUY, PREFORMED FOR 5/16" GUYWIRE c/w CLASS B GALVANIZING AND CABLED LOOP PER CSA C83.129 M	PLP GDE-1108
W4	as req'd	WIRE, GUY, GALVANIZED STEEL, 7 STRAND 8mm DIAMETER, GRADE 1300, MINIMUM BREAKING STRENGTH OF 53kN IN ACCORDANCE WITH CSA Std. CAN3-G12	WIRE ROPE PERFORMANCE SERIES 100

2 — OFFSET METHOD OF MEASURING LINE ANGLES
SCALE : N.T.S.

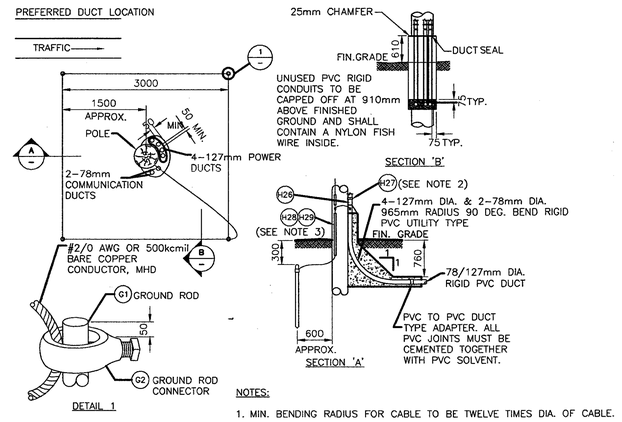


7 — OVERHEAD CABLE TERMINATION DETAIL
SCALE : N.T.S.



NOTES:
1. MIN. BENDING RADIUS FOR CABLE TO BE TWELVE TIMES DIA. OF CABLE.
2. FASTEN CABLES TO POLE WITH KELLEMS GRIP.
3. STRAP CABLE TO POLE AT 3000mm INTERVALS USING SYLVANIA 1516 50mm CABLE STRAPS OR APPROVED EQUIVALENT.
4. BOND U/G CABLE COPPER TAPE SHIELD TO GROUND AT POLE.
5. COMMUNICATIONS WIRING SHALL BE SECURED TO THE POLE AT 1m BELOW THE SYSTEM NEUTRAL/GROUND WIRE.

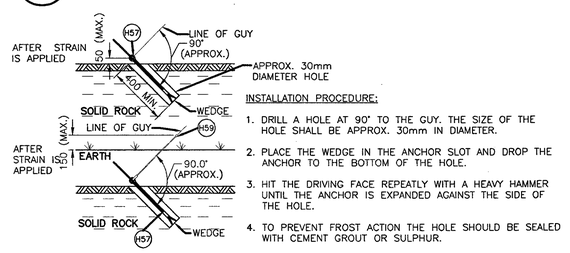
6 — OVERHEAD LINE POLE DETAILS
SCALE : N.T.S.



NOTES:
1. MIN. BENDING RADIUS FOR CABLE TO BE TWELVE TIMES DIA. OF CABLE.
2. CONTRACTOR SHALL SECURE CABLE GUARD (B.O.M. #H26) USING ALUMINUM STRAPS (B.O.M. #H27) AT 1200mm INTERVALS, OVER ALL THREE UNDERGROUND POWER CABLES AND CONNECT TO THE GROUND WIRE.
3. STAPLE GROUND WIRE MOULDING TO POLE AT 600mm INTERVALS.
4. REFER TO DRAWING Exxx FOR DETAILS OF OVERHEAD CONSTRUCTION.

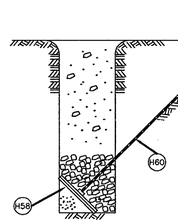
BILL OF MATERIALS			
ITEM	QTY.	DESCRIPTION	STD. OF ACCEPTANCE
H26	1	2400mm x 130mm STRAIGHT ALUMINUM CABLE GUARD c/w FLARED BASE	ALMAT A48-14-A
H27	as req'd	ALUMINUM POLE STRAP	ALMAT A48-26A
H28	1	TREATED WOODEN MOULDING FOR GROUND WIRE, 22mm DIA. x 2440mm	HYDEL 701W
H29	as req'd	GALVANIZED STEEL WOOD STAPLES, 4mm DIA. x 50mm x 16mm	HYDEL 703
G10	3	COPPER-CLAD STEEL GROUND ROD, 19mm DIA. x 3000mm	ERICO/CADWELD 611300
G12	3	GROUND ROD TO GRID CONNECTOR, COMPRESSION	BURNDY YGLR-C

3 — TERMINAL POLE DETAIL
SCALE : N.T.S.



INSTALLATION PROCEDURE:
1. DRILL A HOLE AT 90° TO THE GUY. THE SIZE OF THE HOLE SHALL BE APPROX. 30mm IN DIAMETER.
2. PLACE THE WEDGE IN THE ANCHOR SLOT AND DROP THE ANCHOR TO THE BOTTOM OF THE HOLE.
3. HIT THE DRIVING FACE REPEATLY WITH A HEAVY HAMMER UNTIL THE ANCHOR IS EXPANDED AGAINST THE SIDE OF THE HOLE.
4. TO PREVENT FROST ACTION THE HOLE SHOULD BE SEALED WITH CEMENT GROUT OR SULPHUR.

4 — ROCK ANCHOR INSTALLATION
SCALE : N.T.S.



INSTALLATION PROCEDURE:
1. DIG VERTICAL HOLE EITHER BY HAND OR BY USING POWER AUGER OR BACKHOE.
2. CUT SLOT FOR ANCHOR.
3. ASSEMBLE ANCHOR TO ANCHOR ROD AND LOWER INTO HOLE WITH EDGE MARKED 'TOP SIDE' UP.
4. THE PLATE OF THE ANCHOR SHOULD BE HARD AGAINST THE EDGE OF THE HOLE.
5. BACKFILL HOLE, FIRST PUTTING 100mm-150mm (APPROX. SIZE) ROCKS ABOVE THE ANCHOR. TAMP FIRMLY, PREFERABLY USING A HYDRAULIC TAMPER.

NOTES:
1. CONTRACTOR SHALL CHOOSE THE ANCHOR METHOD DEPENDANT ON FIELD CONDITIONS. ALTERNATE ANCHORING (i.e. LOG, ROCK, OR SCREW) MAY BE USED DEPENDANT ON FIELD CONDITIONS IN CONSULTATION WITH THE ENGINEER.
2. INSTALL A MAXIMUM OF TWO GUYS PER ANCHOR.

BILL OF MATERIALS			
ITEM	QTY.	DESCRIPTION	STD. OF ACCEPTANCE
H57	1	ANCHOR, ROCK, HOT-DIPPED GALVANIZED, DOUBLE THIMBLE SIDE EYE (PER CSA Std. C83.24M, No. 2)	CHANCE R315
H58	1	ANCHOR, PLATE STEEL, HOT-DIPPED GALVANIZED OR PAINTED BLACK (PER CSA Std. C83.72M, ANCHOR No. 20)	HYDEL 250SAP
H59	1	EXTENSION, ROCK ANCHOR, HOT-DIPPED GALVANIZED, 1200mm LONG, DOUBLE THIMBLE EYE (PER CSA Std. C83.114M ROD No. 2)	CHANCE 12696
H60	1	ROD, ANCHOR, DOUBLE THIMBLE EYE (PER CSA Std. C83.75M ROD No. 20 x 2130)	CHANCE 5357

5 — PLATE ANCHOR INSTALLATION
SCALE : N.T.S.

REGISTERED PROFESSIONAL ENGINEER — Province of New Brunswick — #M6830 Troy M. Langlois — Signature — November 29th, 2013 — Date — INGÉNIEUR IMMATRICULÉ

Public Works and Government Services Canada / Travaux Publics et Services gouvernementaux Canada

CBCL LIMITED
Consulting Engineers

revisions		date
0	ISSUED FOR TENDER	NOV/29 2013

project / projet
NEW FOOD SERVICES BUILDING
WESTMORLAND INSTITUTION
DORCHESTER, NB

drawing / dessin
ELECTRICAL SITE DETAILS

designed MM — conçu
date Aug. 3, 2013
drawn MM — dessiné
date Aug. 3, 2013
approved TL — approuvé
date Nov. 29, 2013
Tender — Soumission
PWGSC Project Manager — Administrateur de projets TPSGC
13-12-10

project number / no. du projet
R.061828.001

drawing no. / no. du dessin
E1.2

PWGSC B1 (2004)

E-DRM/GDD-E: 441442 Version 1