CONTENTS

General

It is imperative that the recording of field data be done at the time the work was preformed and on the correct field note paper.

Field notes must be clear, concise and capable of NO MISUNDERSTANDING.

Field notes are the written and graphical record, set out in a specific method, to show all that is seen, done and heard during the progress of the survey.

Field notes are the most important part of any survey and must stand by themselves as a clear and true reflection of what was actually observed free from any ambiguities or distortions of fact.

Field notes are used by many other people:

- the OLS to ascertain the validity of the work;
- the drafting/calculator in producing the plan;
- other field staff to extend the survey fabric;
- a court of law in judging the merit of the survey.

The established criteria for good field notes are that they must be:

NEAT

LEGIBLE

CLEAR

COMPLETE

HONEST

SELF-EXPLANATORY

SELF-CHECKING

Format

The basic system in compiling field notes is to show:

(a) What is to be done and the documentary data available,
(b) The information used, evidence found and line actually run to establish the basic fabric of the survey;
(c) The monuments set and required topographic details.

Pre-printed, loose-leaf, field note paper designed to fit a 3-ring stiff leather book should have reminders as follows:

(a) The survey office logo with address and telephone number
(b) Lot
(c) Conc./Plan
(d) Municipality
(e) Type of Survey
(f) Field Party
(g) Date
(h) Weather
(i) Temperature
(j) Make, type and serial number of equipment used
(k) Vehicle used
(l) Page __ of __ pages
(m) Northpoint rosette

The Field Survey Report must always be the first page of any set of field notes.

Where the field survey data requires more than five pages, the Index Page to the notes will follow the Field Survey Report.

Where survey lines are continued on separate pages, a reference to the page on which the continuation is shown must be appended for clarity and ease of use.

Loading Tables

It is a requirement that a complete inventory of all equipment and stores be available at all time, for each vehicle, for insurance purposes.

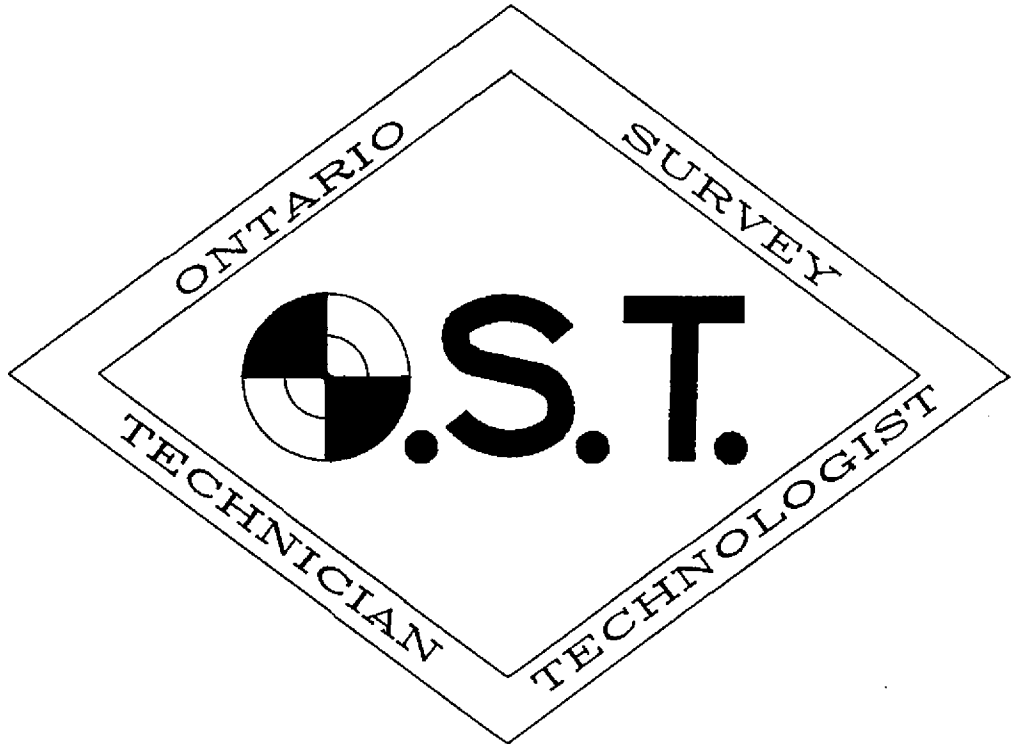
It is recommmended that the inventory be mounted under plastic (and kept with the vehicle log) and used by the field staff as a check list to ensure all required stores are in fact loaded at the beginning of each day, and used again prior to leaving each job site to ensure all stores are recovered and loaded.

A duplicate of the inventory should be held in the office.

ITEM	MAKE	MODEL	SERIAL #	QTY.	REMARKS
E.D.M.					W/CASE
REFLECTORS					
REFLECTOR HOLDERS					
RANGE POLE W/BUBBLE					
INSTRUMENT					W/CASE
TRIPODS					
LEVEL					W/CASE
TRIPOD					
LEVEL ROD					
RADIOS					
TAPES, STOOL					
REELS					
TAPE, CLOTH					
RULE, FOLDING, 6 FT.					
HAND LEVELS					W/SHEATH
PLUMB-BOBS					W/SHEATH
GAMMON REELS					
PENTAPRISMS					W/SHEATH
RANGE POLES					
TRIBRACH(S) W/PLUMMET					W/CASE
TRIBRACH(S) W.O./PLUMMET					W/CASE
TARGET(S) SIGHTING					W/CASE
BAR LOCATOR					W/CASE
TAPE THERMOMETER					W/CASE
TAPE CLAMPS					
TENSION HANDLE					
FIRST AID KIT					
VEHICLE FIRE EXTINGUISHER					
SAFETY HATS					
SAFETY BOOTS					
SURVEYOR'S BAG					
NOTEBOOK					
AXES					
SHOVELS					
PICK					
SLEDGES					
HAMMERS					
MACHETES					W/SHEATH
SAFETY GOGGLES					

NOTE KEEPING CHECK LIST

Instruction Sheet	examined		Dists. - previous surveys	compared	
Additional Instructions	examined		- existing deeds	compared	
Boundary Sketch	examined		- arrows	shown	
Title Searches	examined		- for calculations	shown	
Title - subject property	complete		- to be on plan	shown	
- adjacent properties	complete		Angles - turned	shown	
Information Obtained From	Surveyors		- read	shown	
	P U C.		- arrows	shown	
	Municipal		- balanced	shown	
(others)			- adjusted	shown	
			- to be used	shown	
Survey Report	completed		Closures - traverse	completed	
Surveyor's Certificate	completed		- calculations	completed	
Instruction Sheet	completed				
Field Note Index	completed		Heavy Outline of Limits	each Part	
Survey / Previous Notes	compared		Easements	located	
Survey / Previous Plans	compared		Rights of Ways	located	
Survey / Instructions	agree		Exceptions	located	
			Encroachments	located	
Astronomic Observation	taken		County or District	shown	
	computed		Township, Town or City	every page	
(bearing to be used)	shown		Concession or Reg'd. Plan	every page	
Bearing Reference	correct		Lots	every page	
Bearing of Major Limit	shown		Road Allowances	located	
Evid. Fd. - monumentation	located			status	
	described		Highways	located	
	identified			status	
- fences	located		Streets	located	
(type / age)	described			status	
- occupation	located		Lanes	located	
	assessed			status	
Evid. Set - monumentation	located		Property Limits	located	
	described			identified	
building ties & construction	taken		Limit Between Lots	located	
	described			identified	
others			Lot Corners	located	
				identified	
			High Water Marks	traversed	
Hanging Lines - linear	verified			monumented	
- angular	verified		Pages Numbered Consecutively	every page	
Curve Data	complete		Back of Pages	completed	



ABBREVIATIONS & SYMBOLS

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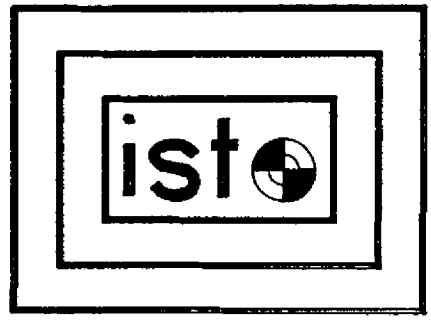

ABBREVIATIONS

CC	Cut Cross	6mm depth+bredth 75mm length x widt
IB	Iron Bar	16mm x 16mm x 60cm or 16mm x 16mm x 15cm (in rock)
RB	Rock Bar	25mm x 25mm x 15cm (in rock)
RP	Rock Post	16mm round or square x 7cm (in rock) with cap
RP	Rock Plug	16mm round or square x 7cm
SIB	Standard Iron Bar	25mm x 25mm x 120cm
SSIB	Short SIB	25mm x 25mm x 60cm

A	Arc
Ac	Acres
All'ce	Allowance
Asph	Asphalt
Ave.	Avenue
Az	Azimuth
B.C.	Beginning of Curve
Bet'n	Between
B.L.	Building Line
Bldg.	Building
Blk.	Block
Blvd.	Boulevard
B.M.	Bench Mark
B.S.	Backsight
Br.	Brick
CB	Catch Basin
Cem.	Cement
Ch.	Chord
Chkd.	Checked
CIP	Cast Iron Pipe
CLF	Chain Link Fence
CMP	Corrugated Metal Pipe
Co.	County
Conc.	Concession
Const.	Construction
C.N.	Concrete Nail
Coo	Coordinate
Con.	Concession
Cont.	Continued
Ct.	Court
Cu.	Cubic
D	Degree of curvature
Def.	Deflection
Deg.	Degree
Dia.	Diameter
Dr.	Drive
Dwg.	Drawing
D/W	Driveway
E	East
E.C.	End of curve
Elev.	Elevation
Esmt.	Easement
Fd.	Found
Fdn.	Foundation
F.H.	Fire Hydrant
Fr.	Frame
F.S.	Foresight
Ft.	Foot/Feet
Ftg.	Footing
Galv.	Galvanised
Gar.	Garage
G.B.M.	Geodetic Bench Mark
Gr.	Grade
ha	hectares
H.I.	Height of Instrument
Ho.	House
Hor.	Horizontal
H.W.M.	High Water Mark
Hwy.	Highway

ABBREVIATIONS cont'd

Inst.	Instrument
Ins.Br.	Insul Brick
IP	Iron Pipe
I.S.	Intermediate Sight
L	Length of Arc
Lat.	Latitude
L.C.	Long Chord
Long.	Longitude
L.W.M	Low Water Mark
M	Metre or Metric
Meas.	Measured
ms.	Measured
M.H.	Manhole
mm	Millimetre
Mon.	Monument
N	North
N.E.	Northeast
No.	Number
N.W.	Northwest
N&W	Nail and Washer
N.I.W.	Nail in Washer
OD	Outside Diameter
O.L.S.	Ontario Land Surveyor
O/S	Offset
O/L	On Line
O.U.	Origin Unknown
Pav.	Pavement
P.C.	Party Chief
PCC	Point of compound curve
PI	Point of Intersection
P.L.	Property Line
POC	Point on Curve
PRC	Point of Reverse Curve
Prod.	Produced
Prop.	Proportioned
Ptd.	Planted
P&WF	Post and Wire Fence
Rad.	Radius
Rd.	Road
Ref.	Reference
Rge.	Range
R.O.W.	Right—of—way
Rwy.	Railway
R.P.	Registered Plan
S	South
San.	Sanitary
S.B.	Subdivision Bar
S.E.	Southeast
Sec.	Section
S.L.	Split Level
Spk.	Spike
Sq.	Square
SRF	Snake Rail Fence
St.	Street
Sta.	Station
Stk.	Stake
Stm.	Storm
Stu.	Stucco
Sty.	Storey
S.W.	Southwest
S/W	Sidewalk
S.U.	Source Unknown
Tan	Tangent
T.B.M.	Temporary Bench Mark
Tel.	Telephone
T.L.	Traverse Line
Topo.	Topography
T.P.	Turning Point
Twp.	Township
V.C.	Vertical Curve
Ver.	Verandah
W	West
WF	Wire Fence
W.P.	Witness Post
Wit.	Witness
W/S	Wooden Stake
X—sec.	Cross Section

SYMBOLS

- ■ Survey Monument Found
- □ Survey Monument Set
- ⌀ Round or Diameter
- Brass Cap
- SIB and Cap
- Cut Cross
- Bench Mark
- Edge of foundation
- 90° turned
- Backsight of Foresight
- Station occupied
- Station set by intersection
- Instrument
- ℄ Centre Line
- Δ Delta
- Δ/2 One Half Delta
- # Number
- Π Pi
- Σ Summation
- Spot elevation
- ξ and
- Triangulation Station or Horizontal Control Marker
- Stop Sign
- Street Sign
- Railway Crossing Sign

- • LS Light Standard
- • TL Traffic Light
- • PM Parking Meter
- • T Telephone Pole
- • TLG Telegraph Pole
- • E Electric Pole
- • FP Flag Pole
- Guy and Pole
- (type) Underground marker
- FH Hydrant
- VC Valve Chamber
- Culvert
- CB Catch Basin
- CB Double Catch Basin
- MH Manhole
- Deciduous Tree
- Coniferous Tree
- Swamp or Marsh Area
- Hedge
- Depression
- ——— X ——— Fence (note type)
- ——— C ——— Cable T.V.
- ——— T ——— Telephone
- ——— H ——— Hydro
- ——— G ——— Gas
- ——— W ——— Water

ABBREVIATIONS cont'd

Inst.	Instrument
Ins.Br.	Insul Brick
IP	Iron Pipe
I.S.	Intermediate Sight
L	Length of Arc
Lat.	Latitude
L.C.	Long Chord
Long.	Longitude
L.W.M	Low Water Mark
M	Metre or Metric
Meas.	Measured
ms.	Measured
M.H.	Manhole
mm	Millimetre
Mon.	Monument
N	North
N.E.	Northeast
No.	Number
N.W.	Northwest
N&W	Nail and Washer
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OD	Outside Diameter
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PRC	Point of Reverse Curve
Prod.	Produced
Prop.	Proportioned
Ptd.	Planted
P&WF	Post and Wire Fence
Rad.	Radius
Rd.	Road
Ref.	Reference
Rge.	Range
R.O.W.	Right-of-way
Rwy.	Railway
R.P.	Registered Plan
S	South
Son.	Sanitary
S.B.	Subdivision Bar
S.E.	Southeast
Sec.	Section
S.L.	Split Level
Spk.	Spike
Sq.	Square
SRF	Snake Rail Fence
St.	Street
Sta.	Station
Stk.	Stake
Stm.	Storm
Stu.	Stucco
Sty.	Storey
S.W.	Southwest
S/W	Sidewalk
S.U.	Source Unknown
Tan	Tangent
T.B.M.	Temporary Bench Mark
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Ac	Acres	Def.	Deflection
All'ce	Allowance	Deg.	Degree
Asph	Asphalt	Dia.	Diameter
Ave.	Avenue	Dr.	Drive
Az	Azimuth	Dwg.	Drawing
		D/W	Driveway
B.C.	Beginning of Curve		
Bet'n	Between	E	East
B.L.	Building Line	E.C.	End of curve
Bldg.	Building	Elev.	Elevation
Blk.	Block	Esmt.	Easement
Blvd.	Boulevard		
B.M.	Bench Mark		
B.S.	Backsight	Fd.	Found
Br.	Brick	Fdn.	Foundation
		F.H.	Fire Hydrant
		Fr.	Frame
CB	Catch Basin	F.S.	Foresight
Cem.	Cement	Ft.	Foot/Feet
Ch.	Chord	Ftg.	Footing
Chkd.	Checked		
CIP	Cast Iron Pipe		
CLF	Chain Link Fence	Galv.	Galvanised
CMP	Corrugated Metal Pipe	Gar.	Garage
Co.	County	G.B.M.	Geodetic Bench Mark
Conc.	Concession	Gr.	Grade
Const.	Construction		
C.N.	Concrete Nail		
Coo	Coordinate	ha	hectares
Con.	Concession	H.I.	Height of Instrument
Cont.	Continued	Ho.	House
Ct.	Court	Hor.	Horizontal
Cu.	Cubic	H.W.M.	High Water Mark
		Hwy.	Highway

SYMBOLS

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- Centre Line
- Delta
- One Half Delta
- Number
- PI
- Summation
- Spot elevation
- and
- Triangulation Station or Horizontal Control Marker
- Stop Sign
- Street Sign
- Railway Crossing Sign
- LS Light Standard
- TL Traffic Light
- PM Parking Meter
- T Telephone Pole
- TLG Telegraph Pole
- E Electric Pole
- FP Flag Pole
- Guy and Pole
- (type) Underground marker
- FH Hydrant
- VC Valve Chamber
- Culvert
- CB Catch Basin
- CB Double Catch Basin
- MH Manhole
- Deciduous Tree
- Coniferous Tree
- Swamp or Marsh Area
- Hedge
- Depression
- X Fence (note type)
- C Cable T.V.
- T Telephone
- H Hydro
- G Gas
- W Water

ONTARIO SURVEY TECHNICIAN TECHNOLOGIST O.S.T.

ABBREVIATIONS & SYMBOLS

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FIELD NOTE EXAMPLES

FIELD NOTE REQUIREMENTS – GENERAL

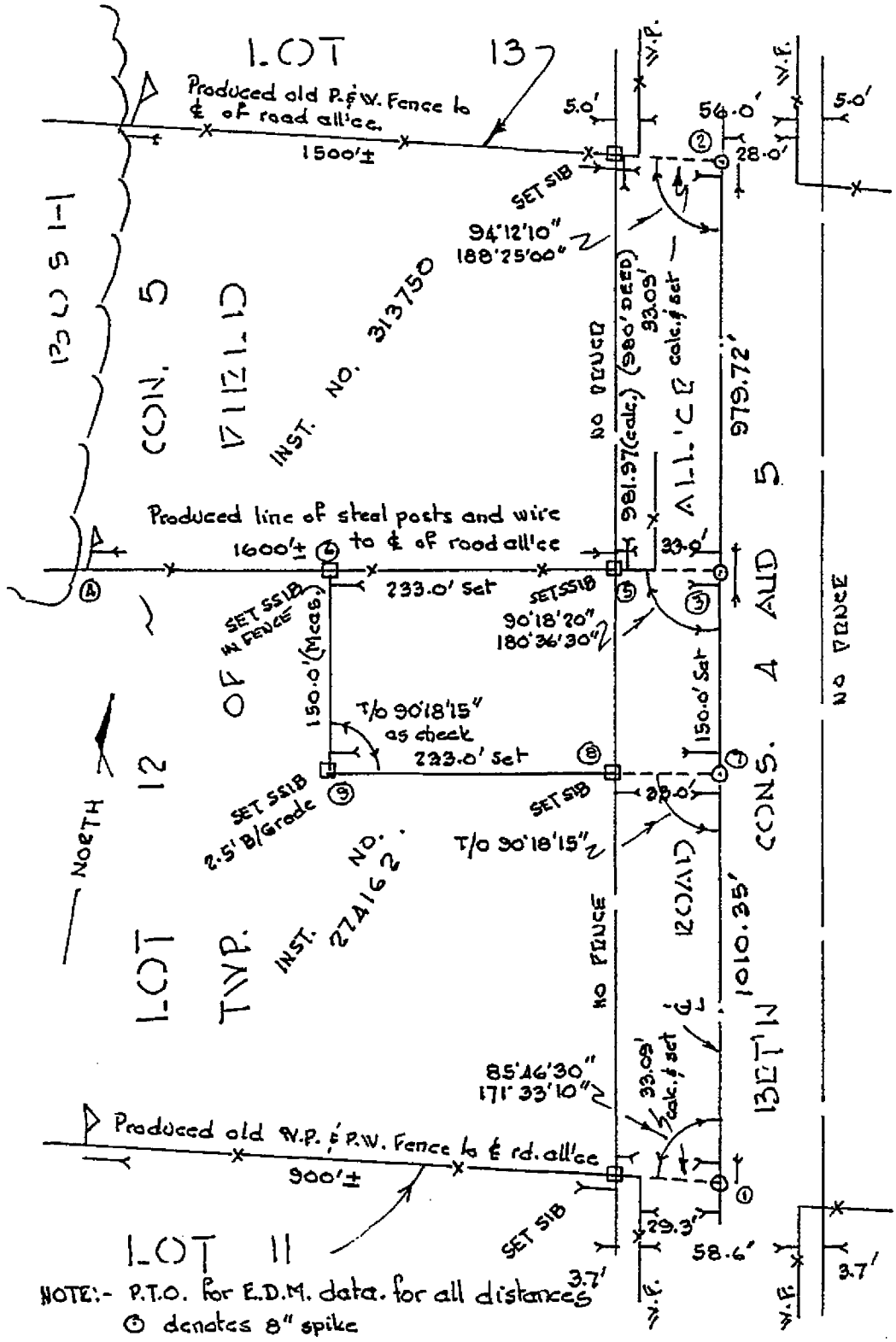
1. All field notes must be recorded on proper note paper.
2. Notes must be clear and legible – dark enough to be photocopied. Use pencil only.
3. Fill in title information such as name, date etc.
4. Indicate north on all sketches.
5. Do not crowd or cram sketches into one part of the page.
6. The field notes must contain all pertinent data so field calculations may be checked, ie. temperature correction etc.
7. It should be noted what units of measurement are being used.
8. Data entered incorrectly should be crossed out and the correct information added above. Do not erase.
9. Show measurements to accuracy intended, ie. if the measurement was read to the nearest one hundredth use 100.00 not 100 or if the angle was read to the nearest 20 seconds use 90 deg. 00' 00" not 90 deg.
10. Horizontal angles read with repeating theodolite should be booked as follows:

    1) 30 deg. 10' 20"
    2) 60 deg. 20' 40"
    4) 120 deg. 41' 20"

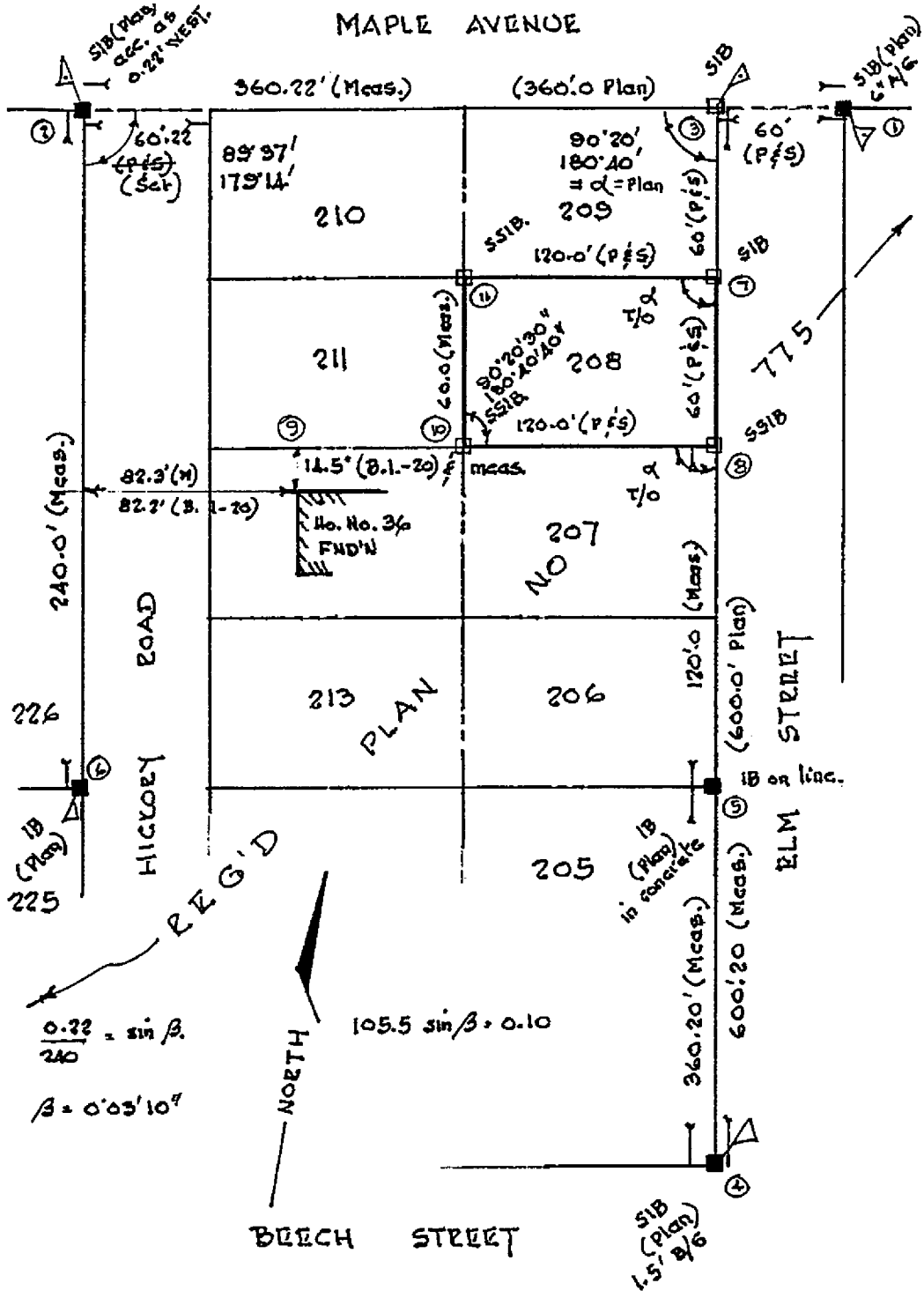
    mean = 30 deg. 10' 20"
    use =

    If the angle is part of a closed traverse, sufficient space should be left to include the "use" angle once the angular error of the traverse has been equally distributed among the angles. If the angle does not meet the required standards, it must be re-read.
    Double centering must be employed when repeating angles. Also note that angles are measured consecutively but the general rule is not to record the 3rd, 5th, etc., angles.
11. Indicate what type of monuments or hubs are used, using the proper designation as shown in the "symbols".
12. When notes are re-copied the originals must be retained and cross referenced with the copy. Mark "revised" see page ... on the original and "copied from page ..." on the copy.
13. Include a note on the page explaining the operation ie. "location and elevations for site plan."
14. A key plan (page 1) is required to identify the location and intent of survey. The key plan should show a general picture only, and not any detail or data obtained during the survey.
15. Number all pages.
16. Upon completion of the field work, write a report of survey including:
    1. Purpose of survey.
    2. A brief account of the procedures used and results attained.
    3. An explanation of any departures from normal routine.

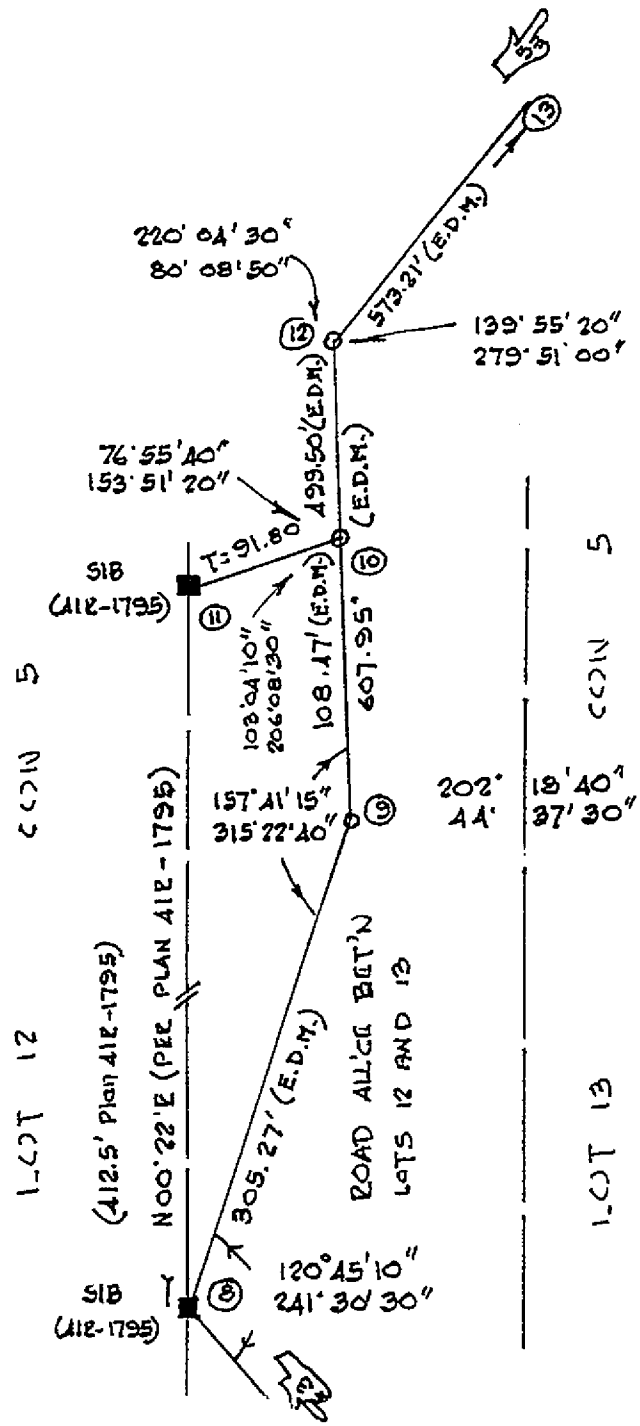
EXAMPLE: Boondary Survey Notes



EXAMPLE; Boundary Survey Notes



EXAMPLE: Traverse notes



80° 08' 50"
279 51 00
359 59 50

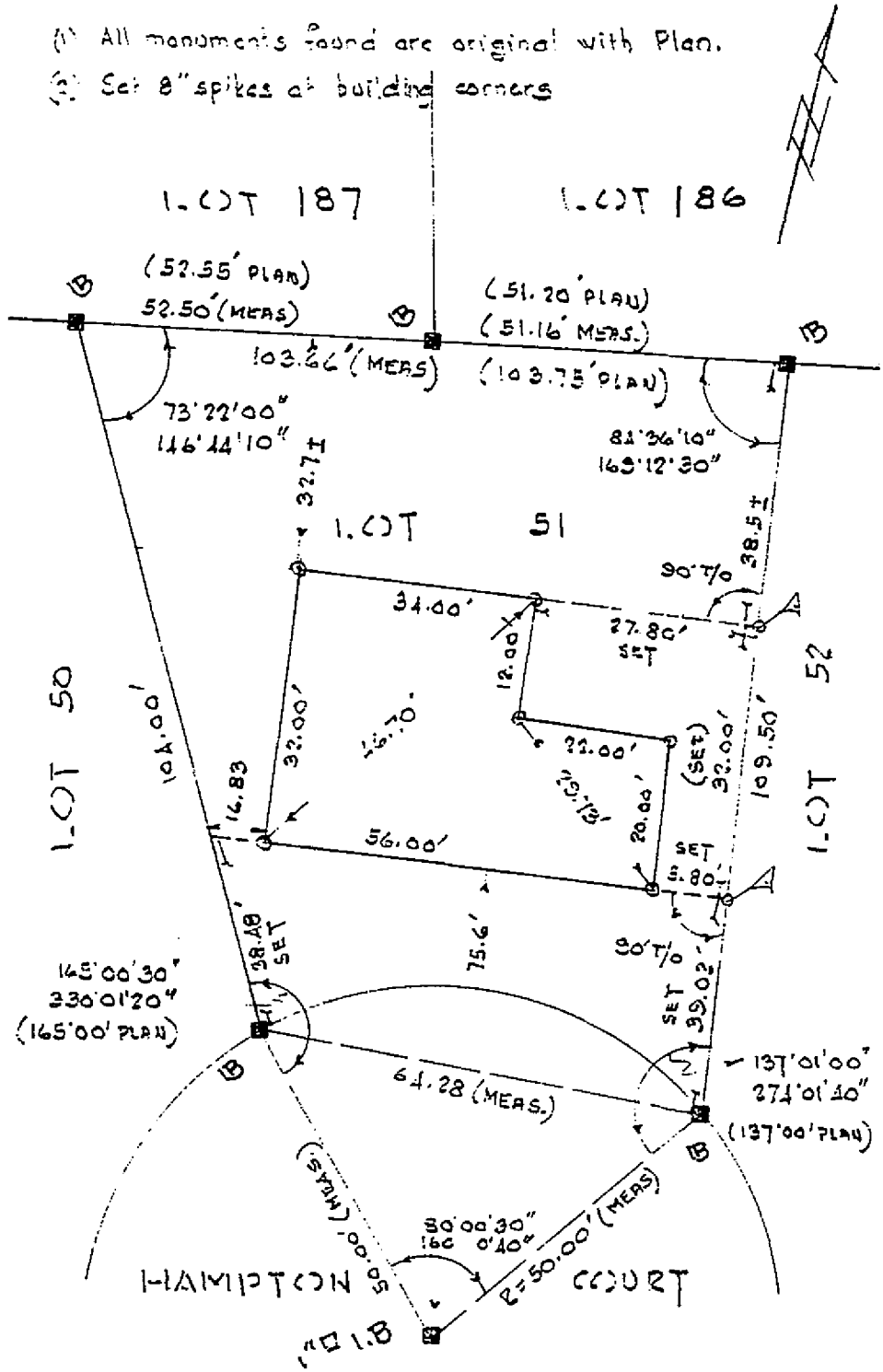
91.80 ft meas.
27.98 m meas.

315 22 40
44 37 30
360-00-10

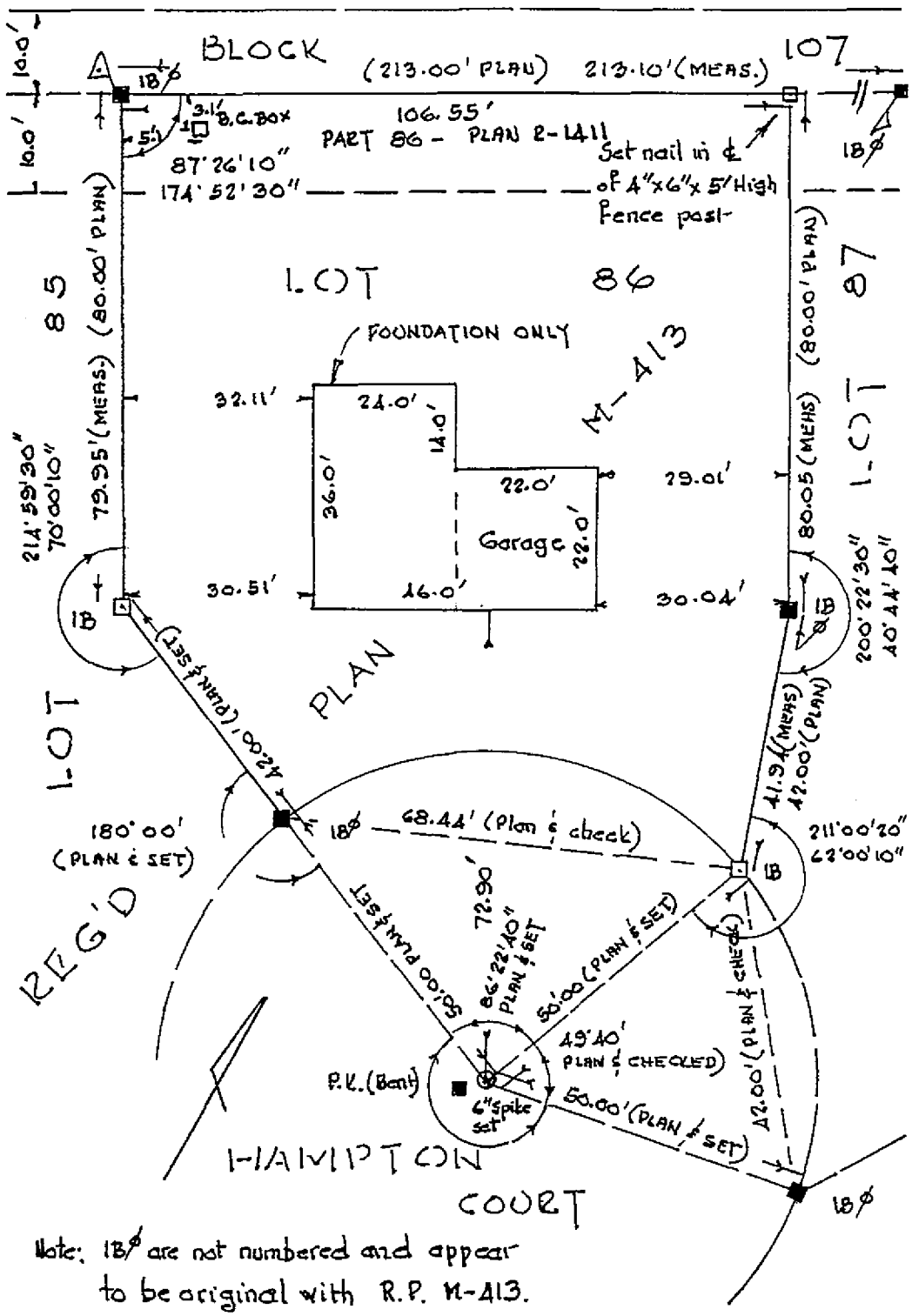
Traverse line continuing through heavy cedar swamp.

See E.D.M. data on Page 18

EXAMPLE : Building Lay-out.



EXAMPLE: Building Location Survey



Note: IB's are not numbered and appear to be original with R.P. M-413.

C.L.S. LOGO

COVER SHEET
FOR
FIELD NOTES OF SURVEY
OF

LOT 61 CON. — MUNICIPALITY MIDDLETON
BLOCK — PLAN 307 COUNTY HALDIMAND-NORFOLK

FIELD PARTY W.G. Mates C. Ferrie J. Weston

TYPE OF SURVEY B.L.S.

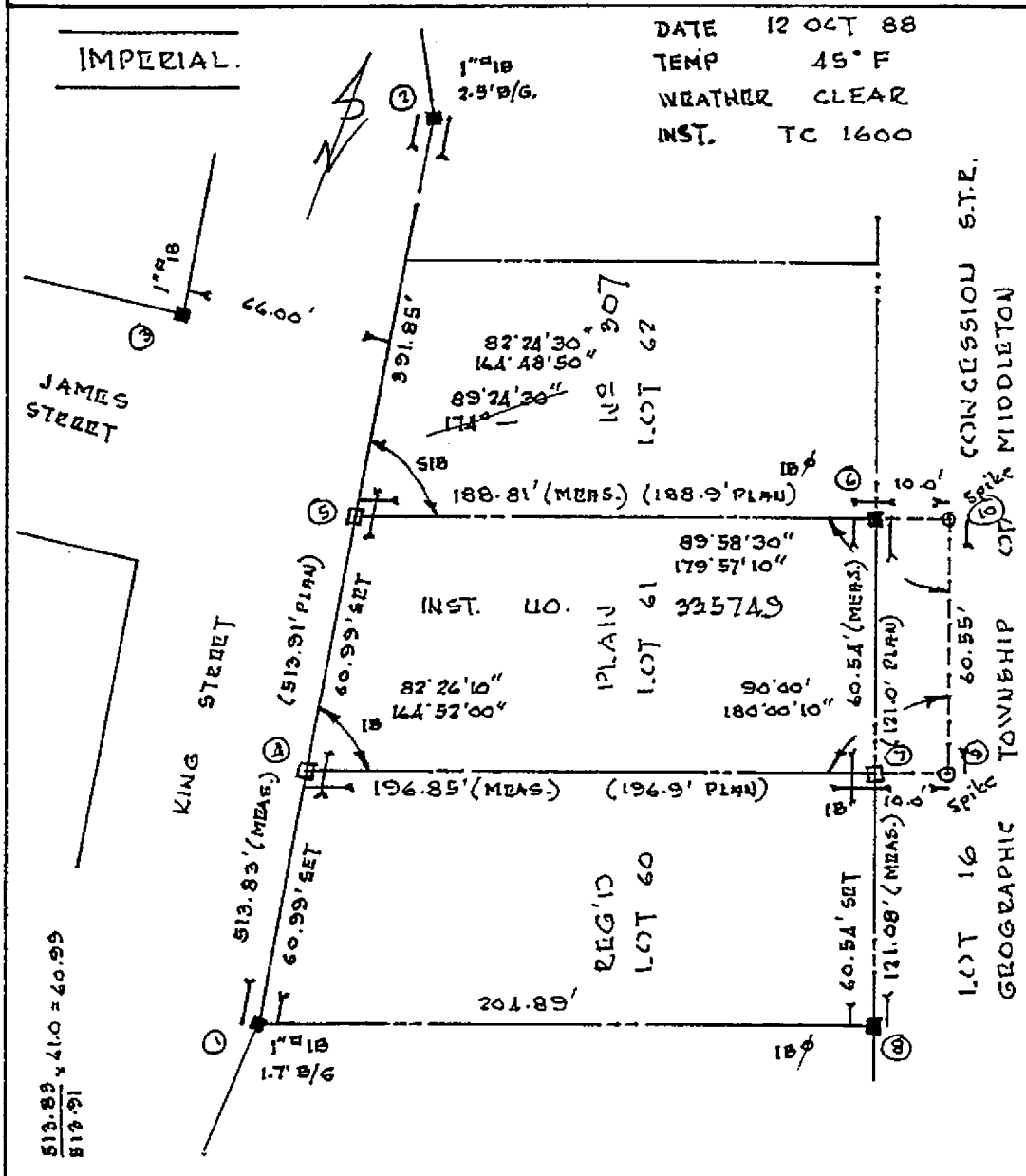
DOCUMENTARY DATA Print of R.P. # 307
Print M.T.C. P-2218-50
Search notes dated 11 Oct 88

REPORT

1. No documentary data for owner to east in search notes.
2. Accepted monuments on east side of King St as original with plan and, there being no other evidence on this line, proportioned lot frontages.
3. Accepted I.B.'s at N.E. ¼ LOT 61 and S.E. ¼ LOT 60 and proportioned between them for S.E. ¼ LOT 61.
4. None of the monuments found have numbers on them.
5. Owner of Lot 61 says the C.L.F. was erected 2 years ago.

PAGE 1 OF 3 PAGES. PROJECT NO. 88-821

O.L.S. LOGO



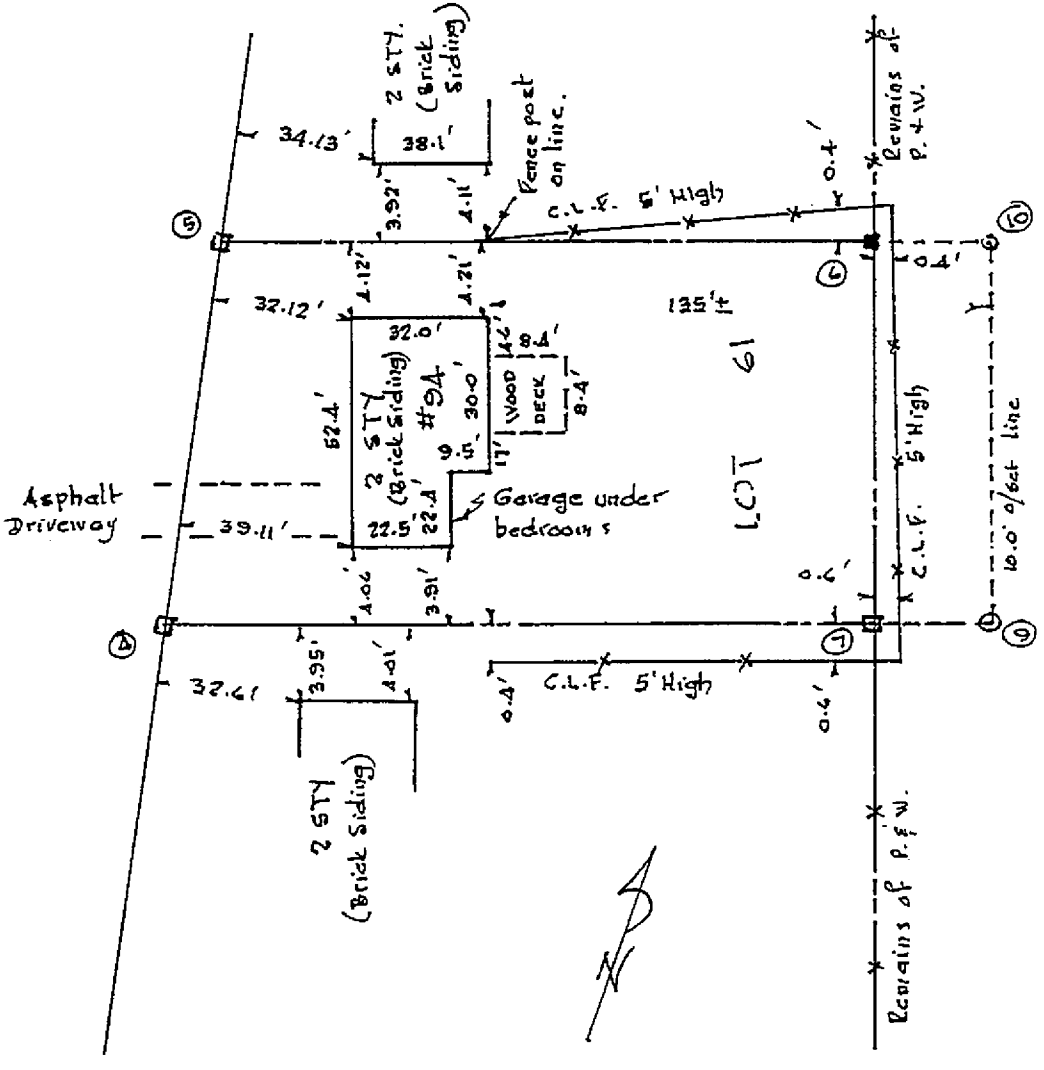
PROJECT NO. 88-821

O.L.S. LOGO

IMPERIAL

DATE 12 OCT 1988
TEMP 45°F
WEATHER CLEAR
INST. TC 1660

NOTE:- All ties are to first course of brick siding.

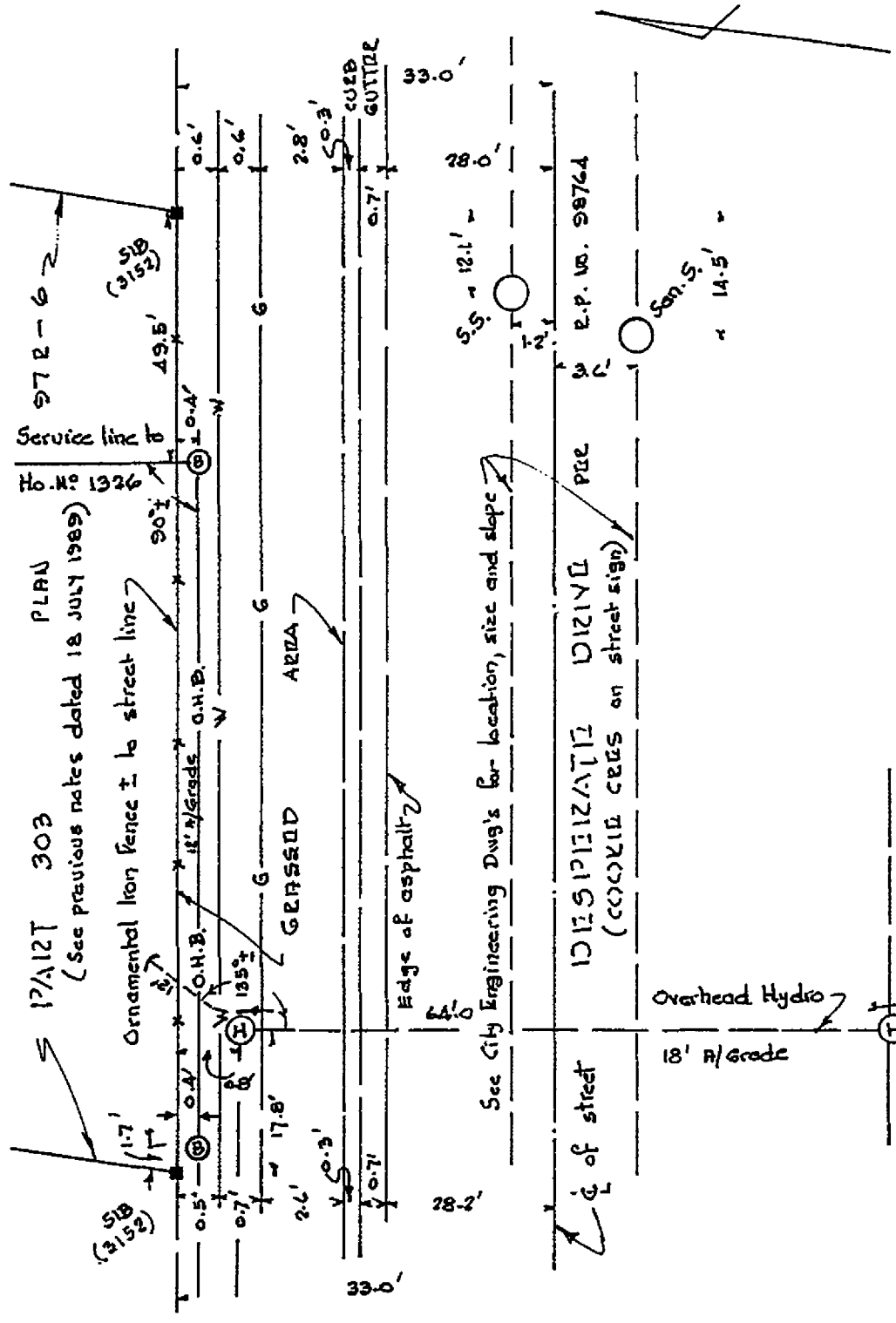


PROJECT NO. 88-821

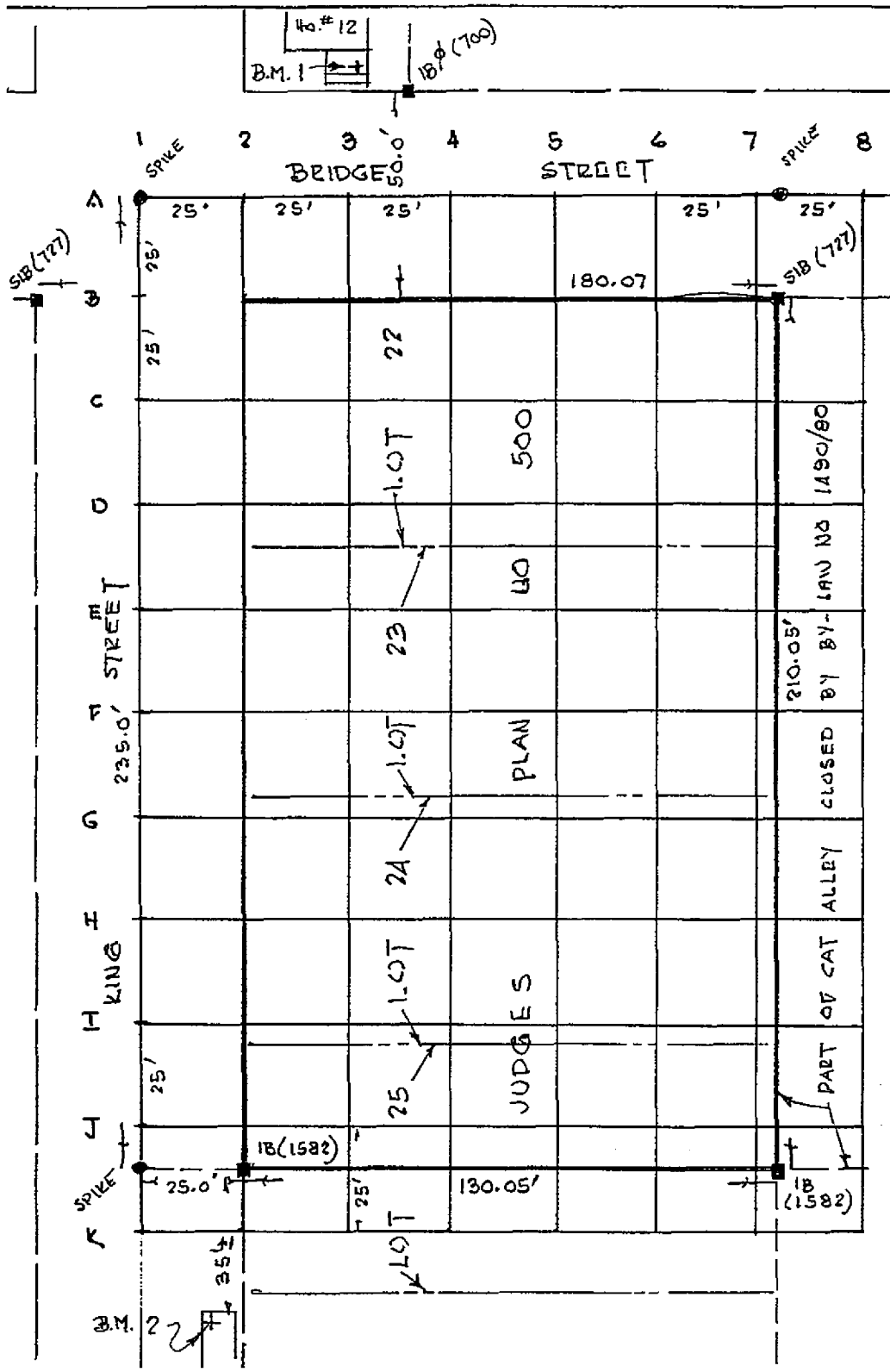
FIELD NOTE REQUIREMENTS - LEVELLING

1. The starting bench mark must be fully described in the notes.
2. Bench marks being established must be fully described and identified in such a way that it may be found by anyone who hasn't been there before. In other words state what it is, where it is, how far from the site it is and in what direction.
3. B.M. established shall be adjusted using a closed loop or a run between two different bench marks before it is used for a profile or subsequent level loop for establishing other bench marks. Adjustments of error of closure shall be proportional to the loop distance between bench marks. Adjusted values shall be clearly shown in the notes with "use" after them. It is suggested that these values be shown in red.
4. A sketch of B.M. may be drawn if the written description appears vague or ambiguous. The page numbers shall be cross referenced to the level notes. It must show sufficient clarity to lead someone else to the general vicinity of the bench mark.
5. Each page shall be reduced, checked and signed. If possible, the person who reduces the notes shall not be the person who checks the notes.
6. Upon reducing notes, an arithmetic check of the reduction is required. It is the responsibility if the reducer to make sure that the difference in elevation between the first and last B.M, agrees with the difference in height between the total backsights and foresights.
7. Each turning point established during a level loop should be marked on the notes under the station column as T.P.
8. When intermediate sights are taken, the location of each point should be noted in the remarks column ie. top of curb, top of ground, etc.
9. When establishing elevations of water level, ground water table, waters' edge, etc., always record date when reading was taken.
10. Levels should be reduced as the work proceeds, if practical, or immediately after the work is completed, so that any errors can be corrected before the crew has left the site.
11. A report of survey should be made stating:
    1. The reason the survey is being done.
    2. Type of accuracy required and achieved.
    3. Datum used.
    4. Type of equipment used.
12. Unless otherwise specified all elevations determined will be shown in field notes as follows:
    Imperial = 175.35 (two decimal places)
    Metric = 105.567 (three decimal places)

EXAMPLE: Topographic Notes



EXAMPLE:- Level notes showing grid system



EXAMPLE:- Setting site Bench Marks

B.S.	F.S.	I.S.	H.I.	ELEV.	REMARKS
				807.12'	COUNTY B.M. 701-A-73 See County Dwg 416/73 Top of brass plug in culvert at King and Main Streets.
4.98			812.10		
	0.75			811.35	T.P.
4.67			816.02		
	0.84			815.18	T.P.
5.02			820.20		
	4.65			815.55	Site B.M.#1. C.C. at S.E. corner of top step at 12 Bridge Street.
4.73			820.28		
	4.08			816.20	Site B.M.#2. C.C. at N. end of concrete base of O.H. box.
5.98			822.18		
	6.15			816.03	T.P.
4.75			820.78		
	7.18			813.60	COUNTY B.M. 701-B-73 = 813.58 per County DWG. 416/73. Top of brass plug in N.W. bridge abutment at Otter Creek on Talbot Street.
30.13 -	23.65 =	6.48			
			813.60		
			- 807.12		
			= 6.48		

EXAMPLE :- Cross sections.

B.S.	F.S.	I.S.	H.I.	ELEV.	REMARKS.
				815.55	B.M. 1
3.25			818.80		
		5.25		13.55	A.1. Spike
		5.35		13.45	A.2
		5.45		13.35	A.3
		5.55		13.25	A.4
		5.65		13.15	A.5
		5.75		13.05	A.6
		5.85		12.95	A.7
		5.95		12.85	A.8
13.80	13.37	14.33	13.79		B.1
5.00	4.83	4.47	5.01		
+ 16	+ 17	+ 21	+ 25		
Gutter	T. of curb	℄ of S.W.	P.L=B.2.		
13.80	14.00	14.40	13.87		C.1.
5.00	4.80	4.40	4.93		
+16	+17	+21	+25		
13.85	14.07	14.49	13.98		D.1.
4.95	4.73	4.31	4.82		
+16	+17	+21	+25		
		5.20		13.60	B.1
		5.33		13.47	B.2
		5.42		13.38	B.3
		5.49		13.31	B.4
		5.56		13.24	B.5
		5.64		13.16	B.6
		5.93		12.87	B.7
		5.96		12.84	B.8
	5.20			813.60	B.M.2.