

PDF !

" #	1
\$ % & ' () * + , - . /	5
1.1	5
1.2	7
1.3	8
1.4	11
0 1 2 3 4	12
2.1 /	12
2.2	12
2.3	14
2.4	14
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2.6.1	17
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8.1		84
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N	6 7 0 P > ?	99
9.1		99
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Q 0 W X Y Z [		152
12.1		152
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12.13		161
Q 5 \] R G		162
Q ; ^)		165
_ ^ ! A `		166
1.		166
2.		168
3.		169
4.		169
5.		170
_ ^ ! B ` a b c d e f G H		171
1.		171
2.		172

_ ^ ! C ` 178

1. NTS178

1mm178

0.1mm179

2. 180

3. 181

.....181

..... 182

" #

NTS-380R

NTS-380R

NTS-380R

NTS-380R₄ NTS-380R₆ NTS-380R₈ NTS-380R₁₀ N10

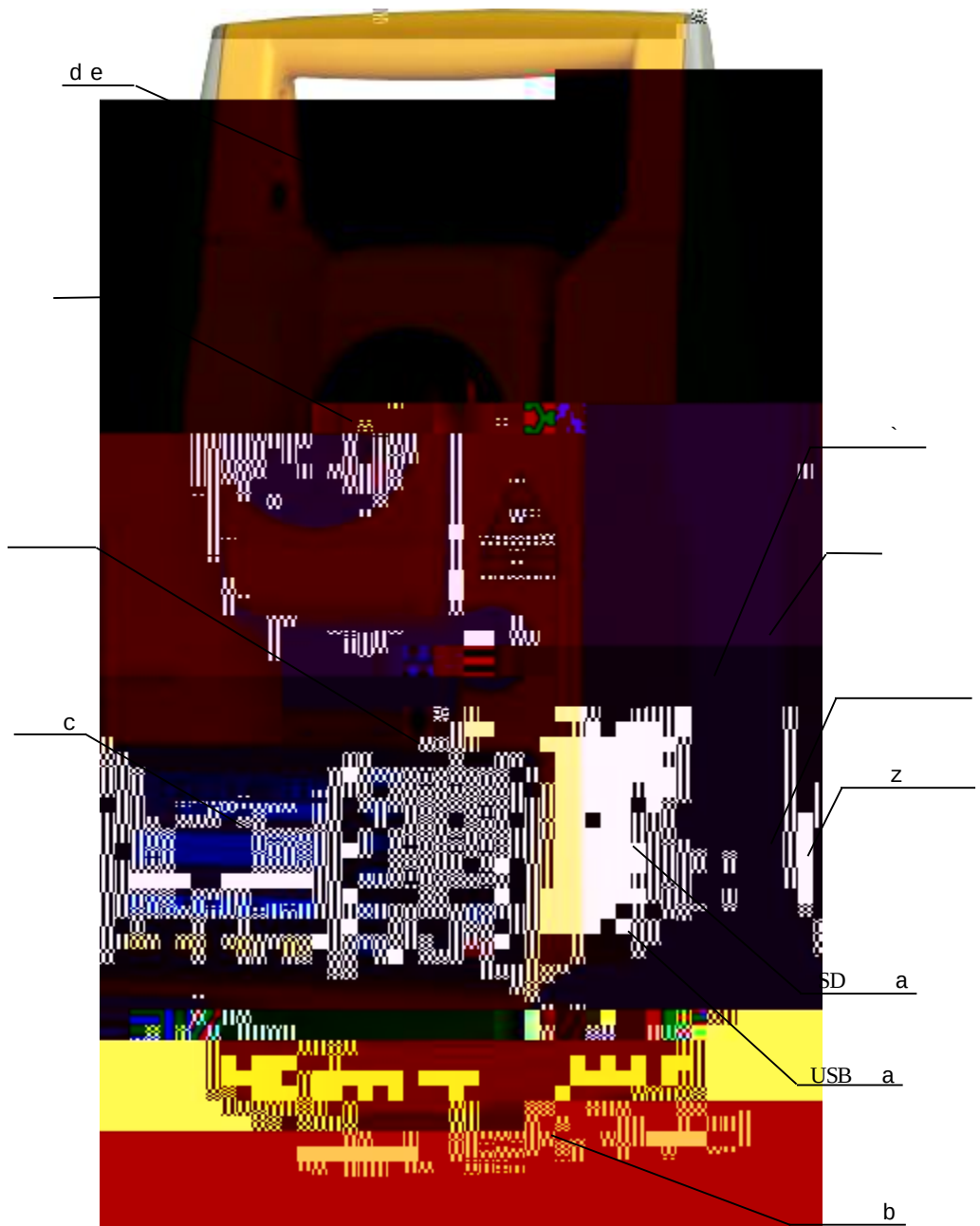


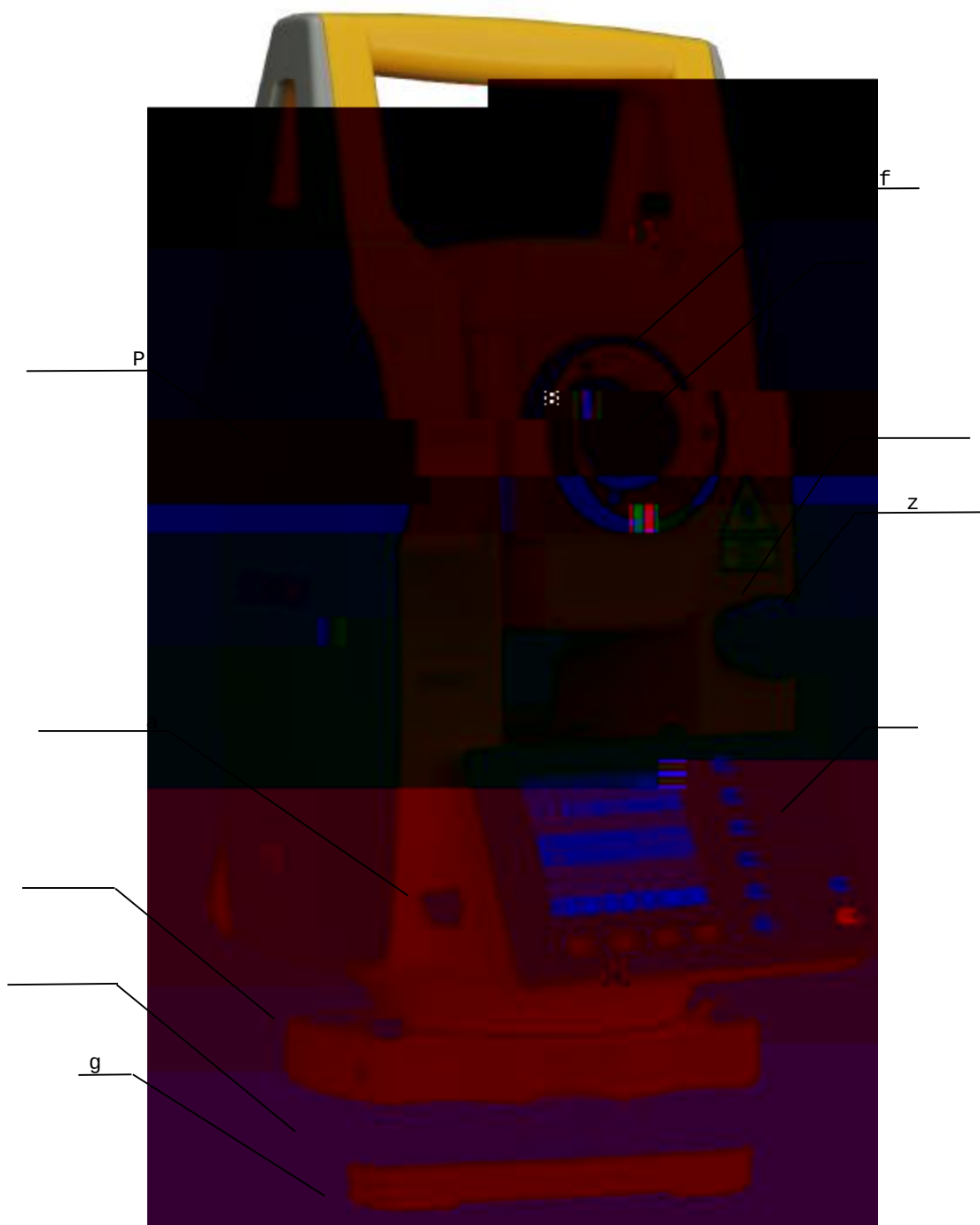
b K L M D N O P
 c : * Q R k s t % # . %
 d S * Q k & T U V W % % X (K
 L (& *) 7 k p @ Y Q %
 e % p @ " k
 f ~ S Z [\ C y G k]
 g : * Q %) C D Z 4 5 0 : ^
 Z
 * & r _ % F 2 % k ; < &

 Class 3R / a & 8 4 6 A % A B 1000m(3300ft) A B
 = Class 1(s)

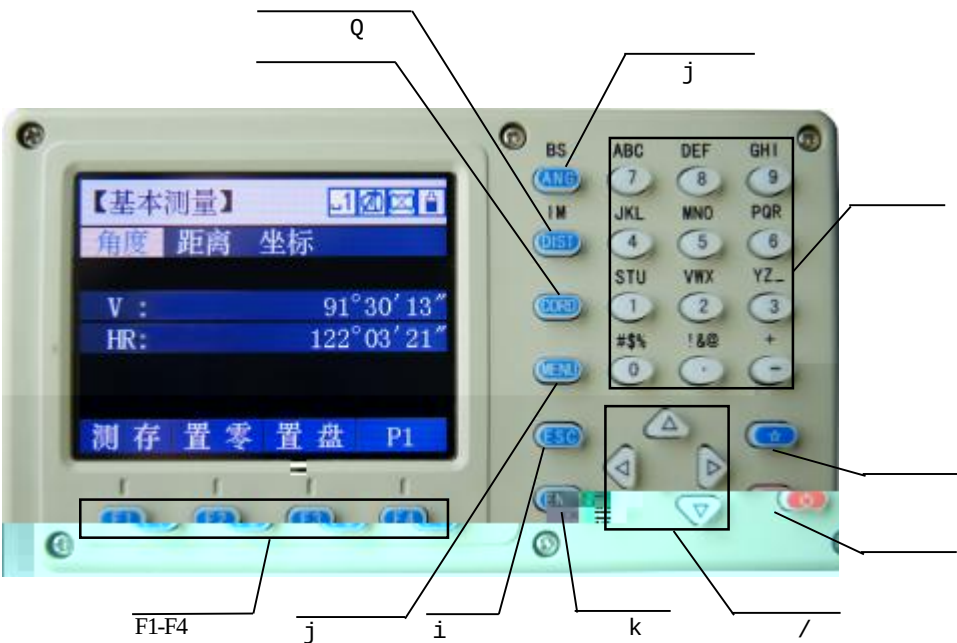
\$ % & ' () * + , - . /

1.1





1.2



h		
ANG		(i)
DIST		(Q /)
CORD		
MENU	j	j
ENT	k	f y
ESC	i	l c m c c c
		/
F1~F4		o p
0~9		j g
+/-	j	j q
★		. %

h

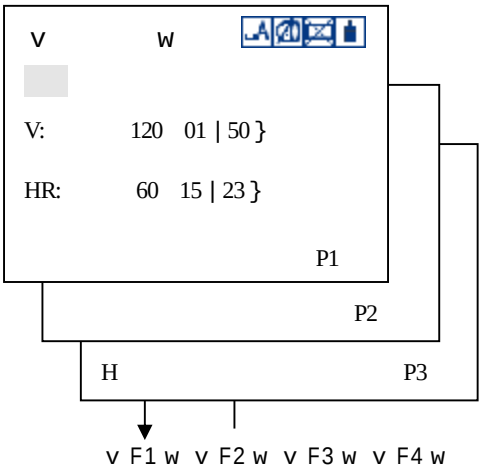
j	
V%	()
HR	()

fi

HR	()
HD	
VD	
SD	
N	r /
E	s /
Z	
m	
ft	

1.3

(t u j)



x		j	
y 1 x (P1)	F1		D (
	F2		)
	F3		
	F4	P1	y 2 x
y 2 x (P2)	F1		
	F2		
	F3		/ z { Q
	F4	P2	y 3 x
	F1	H	2 0 90 180 270 r

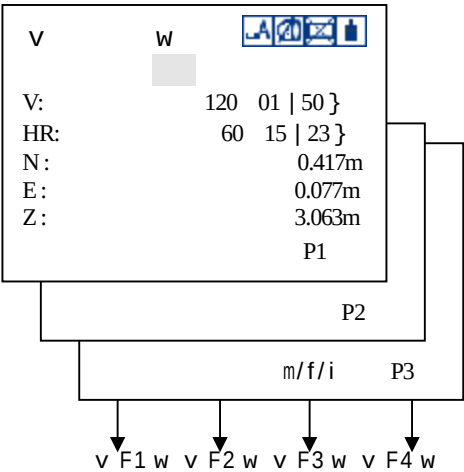
y 3 x

F2

 /
(P3)

F3

(t u j)



x		j	
y 1 x (P1)	F1		D (
	F2		)
	F3		/N / / • ,
	F4	P1	y 2 x
y 2 x (P2)	F1		
	F2		
	F3		
	F4	P2	y 3 x
y 3 x (P3)	F1		
	F2		
	F3	m/f/i	/ /
	F4	P3	y 1 x

1.4 ()

h () c

()

1 h[◀] [▶]
2

0 1 2 3 4

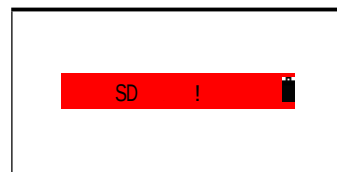
2.1 /

8

p



h
[POWER]



V

W

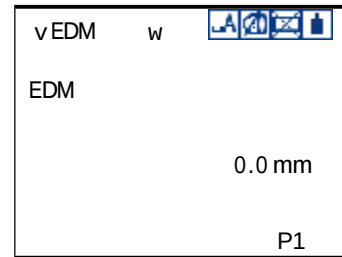


U

g (		
(5 p @ 0	(H	
' a , r ,		
E F ,		
[]		
()	[]	<div><div>v 34 w</div><div>0 2 8</div><div>100%</div><div>/ EDM i</div></div>
h[F2] ,	[F2]	<div><div>【水泡补偿】</div><div>x: -0°04'18"</div><div>y: 0°05'44"</div></div>
. h 3.2 c 1) :		<div><div>【水泡补偿】</div><div></div></div>

h[F2]()

y
1 [] () h [F3]
[F3]



v EDM w + 7 i

y h [] ,
2 [] h [◀ ▶]

y 1	[]		<div> <div>v w</div> <div>0 2 8</div> <div>100%</div> <div>/ EDM i</div> </div>
y 2	[F3] [F4]	h [F3] () h [F4] P1 x	<div> <div>v EDM w</div> <div>EDM</div> <div>0.0 mm</div> <div>P2</div> </div>
y 3	[F1]	h [F1] () Z 1 1) c	<div> <div>v EDM w</div> <div>EDM RX</div> <div>50%</div> <div>m</div> </div>
1) h [ESC] m			

2.6

!@

S !

PPM
NTS (0)

1013hPa
20 C

$S = 278.44 - 0.294922 P / (1 + 0.003661T) (\text{ppm})$

S

P (hPa)
 . r mmHg h 1hPa = 0.75mmHg
 T (C)

2.6.1

] (PPM)			
y 1	[] [F3]	h [F3] (EDM)	<div><div>v EDMw</div><div>EDM</div><div>0.0 mm</div><div>P1</div></div>
y 2	[F1]	h [F1] ()	<div><div>Vw</div><div>0.14</div><div>20.0</div><div>1013.0hPa</div><div>0.0PPM</div><div>mPPM=0</div></div>
y 3	[F2] [◀ ▶] [F3]	h [F2] () , h [◀ ▶] h [F3] () c	<div><div>Vw</div><div>20.0</div><div>1013.0hPa</div><div>m</div></div>
y 3	[F4]	h [F4] () c m u PPM 1)	<div><div>Vw</div><div>0.16</div><div>27.0</div><div>1008.0hPa</div><div>7.9PPM</div><div>m</div></div>

1) 3 4	u [F3]	J u h [F3]
-----------	--------	------------

2.6.2

0]		+25	1017.5
y 1	[]		<div> v w  0 2 8 100% / EDM i </div>
y 2	[F3]	h [F3] (EDM) EDM .	<div> v EDM w  EDM 0.0 mm P1 </div>
y 3	[F1] [F4]	h [F1] () PPM 1) h ENT 5 h [F4] () c m EDM	<div> v w  0.15 20.0 1013.0hPa 1.0PPM m PPM=0 </div>
(	1) :	H 1 PPM 3.7 -99.9 n+99.9 (0.1) -99.9 n+99.9 (0.1) 0 n1066hPa(0.1hPa) 0 n1066mmHg(0.1 mmHg) 0 n1066inHg(0.1 inHg) 999.9ppm m y 2	

2.7

!

A p

q [8 A h

$$D=S * [\cos + \sin * S * \cos (K-2) / 2Re]$$

q [8 h

$$H= S * [\sin + \cos * S * \cos (1-K) / 2Re]$$

s n o

q [, a b A 8 ? :

$$D=S \cos$$

$$H=S \sin$$

? h

$$K=0.14$$

$$Re=6370 \text{ km}$$

()

F ()

S

y 1	[]		<div><div>v w</div><div>0 2 8</div><div>100%</div><div>/ EDM i</div></div>
y 2	[F3]	h [F3] (EDM) EDM .	<div><div>v EDM w</div><div>EDM</div><div>0.0 mm</div><div>P1</div></div>

, /

$$[\quad] \quad 0.1 \}$$

v	j	w
1		
2		
3		
4		
5		
6		

h[1] () [1]

<p>h h [] g</p> <p>h [◀ ▶] , h [F4] ()</p>	<p>/</p> <p>[F4]</p>	<p>v w</p> <p><></p> <p>1 <></p> <p><></p> <p>1 <></p> <p><></p> <p>hPa<></p>
<p>c m j</p>		<p>v w</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p>

2.9

R h

<p>h [MENU] , j , 5 h [5] ()</p>	<p>[MENU]</p> <p>[5]</p>	<p>v j w</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>P1</p>
<p>u</p>		<p>v w</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p>

h[4] (R)	[4]	<div><div>v R w</div><div></div><div><></div><div><></div><div>h</div><div><></div><div><></div><div><></div><div>SD/HD<></div></div>
h [◀ ▶] /20 /30 / [F4]()	/ [F4]	<div><div>v R w</div><div></div><div><></div><div><></div><div>h</div><div><></div><div><></div><div><></div><div>SD/HD<></div></div>
c m j		<div><div>v w</div><div></div><div>1</div><div>2</div><div>3</div><div>4</div><div>5 .</div><div>6 .</div></div>

2.10

h 12.9]

v w

[] j , h [F3] , EDM []
u [F3]

<div>[EDM] u h [F4](P1) . o [] g h [F2]()</div>	<div>[P1] [F2]</div>	<div>vEDM w  EDM 0.0 mm P2</div>
<div>[] u [] []] U h [F4] u m [EDM]</div>	<div>[F4]</div>	<div>v w  0.0mm 0.0 ppm m</div>
<div>1) 3.7 2) h [ESC] l</div>		

! " #
\$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B 3 4 C D 7 8 - .
/ & 0 1 (D) E F G H I J K L M 0 N O 0 1) P ? Q R S 3 4 , 6 T U V A B 3 4 C

2.11

v j w

[MENU] j h [F4](P1)
j , 5 h [1]

[MENU]
[F4]
[1]

<div>h [F1]() c p Z 2)</div>	[F1]	<div><div><div>v w</div><div>C001.SCO C002.SCO C003.SCO</div><div>D P1</div></div></div>
<div>h[] z / / h[◀ ▶] x</div>	[]	<div><div><div>v w</div><div>C001.SCO C002.SCO C003.SCO</div><div>D P1</div></div></div>
<div>h [ENT](k) , m j 2/2</div>	[ENT]	<div><div><div>v j w</div><div>1</div><div>P2</div></div></div>
<div><div>1) 3.7</div><div>2) Z 2 11.1.1 \$</div></div>		

5 6 7 " 8 9 :

3.1

= 8

S L

U) , (

3.2

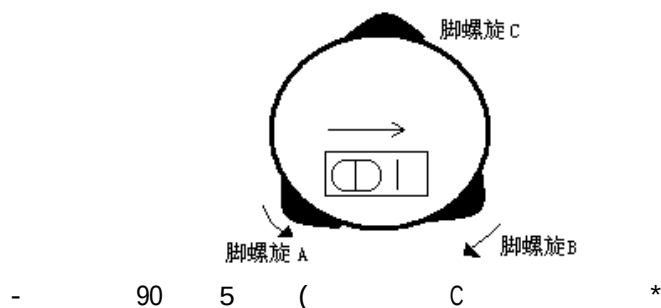
t A f G (! t A)

R h

t A f G
1 y m Y
1) A t A
0 t A 8 t A t ` t
t A ! "

` t A \$ % &
2) t A
t A : ' W (: !
A M " P ` !

3)) d
~ l (((_) > hi
~
~



2 y m & m

1) A t A

t A / f t 8 t A 7

t A % &

2)

t A ! 0 H

1 ' W (~ \ A # \$ ~

t A t i t

f

3)) d

t A t *

4))

A B !

A B *

90 A B ! C *

5) f

\$ z ! ()

f 5 \ ! 5

J g 2 f Q

3.3

 ----- 2 J 3 4 4 . 5 ' l 6
 5
 ----- C 7 B 8 %
 9 : l --_ 9 : ; < = " > M

 (? @ 3 4
 F o | c
 v 0 c
 A A G 6

S L g • t h

300-500

I ?

J K

]

J K

G 8

3.4

@

(L)

!

!

t A

5

:

u

M

N p o ~

p



3.5

!

: t

—

(

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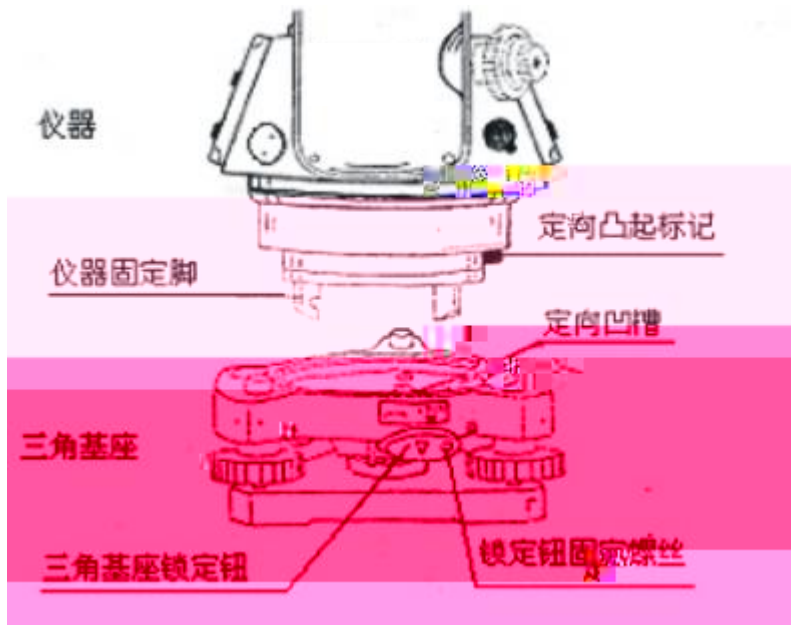
0

b

P

Q

b



"
T / R t U / ^ Q S f b 180 t 5 0
b 、

3.6

e (V W)
X Y . H (0 Z / X 5
[[Y H \) 4
) de t P] e st e 1
4
) Y 0 H 1
st U 2 Y ^ \
! # de Y X l

3.7

NTS-380R
*# \$ G %

j J 5 j


```

h[.]      |
h[2]      2 4 h[0]      0
h[F4]
J          90 10 | 20 }
*# $ %
[ 3]      SOUTH1
1      [F4] ,      u

```

```

2          u      h      [1]

```

```

3  h [DIST]      Q          h      [DIST]
Q

```

```

g h & ' (      ) % * + , # $ G %      ) G % + , # $ % *
- [ANG] ( . / )      0 1 # $ 8 %
& 2 # $ 8 % *      3 4 5 6 % * 7 $ 8      # $ - 8 9 0 6 % *
E : ; <

```

; < = 6 7 > ?

4.1

f y '

e (V W)

X Y . H (0 Z / X 5

[[Y H \) 4

) d e t P] e s t e 1

4

) Y 0 H 1

s t U

4.2 (/)

f y '

) z p :
h [P1] [P2] x

V	W	
<div></div>		
V :	120 01 50 }	
HR:	90 09 30 }	
		P1

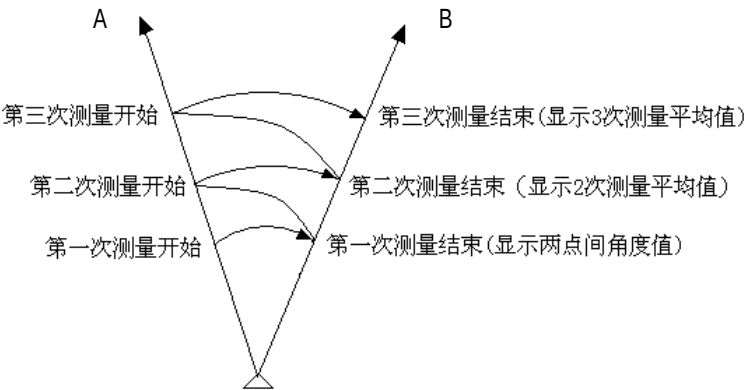
[P2] x , []

V	W	
<div></div>		
V :	120 01 50 }	
H 5		

h [F3]() 1)		[F3]	<div><div>V W</div><div></div><div>V : -57.84%</div><div>HR: 120 09 30 }</div><div>x</div></div>
1)	h [F3]()	d Q	
	90 (f)	4 (())	

4.5

()
f y ' ()



V W 

h [P1] [P2] j [F4]

h[F2]()	[F2]	<div> v w  </div> <div> 0 0 00 00 } i 0 00 00 } HR: 120 09 30 } i </div>
A h[F1]()	A [F1]	<div> v w  </div> <div> f b r </div>
h[F3](f) u	[F3]	<div> v w  </div> <div> 0 0 00 00 } i 0 00 00 } HR: 0 00 00 } i </div>
z B h [F4]()	B [F4]	<div> v w  </div> <div> 1 120 20 00 } i 120 20 00 } HR: 120 20 00 } i </div>
g z 5 A h[F4](h)	A [F4]	<div> v w  </div> <div> 1 120 20 00 } 120 20 00 } i 120 20 00 } HR: 0 00 03 } i h </div>
i z 5 B h[F4]()	B [F4]	<div> v w  </div> <div> 2 240 40 02 } i 120 20 01 } HR: 120 20 05 } i </div>

j g n i p : 6 1) 2)		<div><div>v w </div><div>6 722 00 06 } i 120 20 01 } HR: 120 20 00 } i h</div></div>
k . : i h [F2](i) h [F3](f) c m	[F2] [F3]	<div><div>v w </div><div>f i b r</div><div><div>v w </div><div><div></div><div>V : 120 01 50 } HR: 120 09 30 } P2</div></div></div></div>
1) l (3600 00 00 } -) () m 5 m l 3599 59 55 } 2) . # 8 # D 30 }		

4.6 90

n 0 (90 180 270) 4 30 | ! F . 15 }
o Q J g 1 f y '

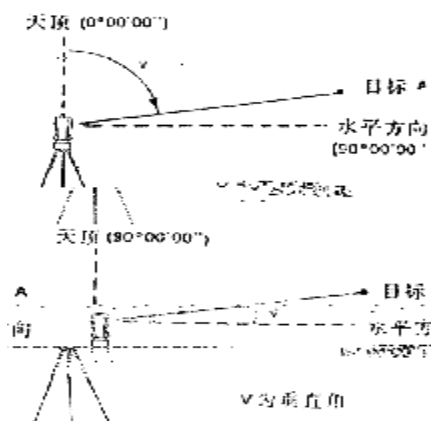
v w

[F4](P1) ~ [P3] x [F4]
~

h[F1](H)	[F1]	<div> vHA w <div> <div></div> <div>< ></div> </div> <div>m</div> </div>
h[◀ ▶] u U h m	[◀ ▶]	<div> vHA w <div> <div></div> <div>< ></div> </div> <div>m</div> </div>
u U h[] m	[F4]	<div> V w <div> <div></div> </div> <div> V: 10.30% HR: 120 09 30 } H P3 </div> </div>

4.7

p



<div>h [P1] ~ [P3] u</div>	<div>[F4] ~</div>	<div><div><div>VW<div><div></div></div></div><div>V:19 51 27 } HR:120 09 30 } P1</div></div></div>
<div>h [F3]() 1)</div>	<div>[F3]</div>	<div><div><div>VW<div><div></div></div></div><div>V:70 08 33 } HR:120 09 30 } P3</div></div></div>
<div>1) h [F3]() d Q</div>		

@ A B 6 7 > ?

NTS-380R

(F) p : p : p f
& - 6 7 % & > m d 8 E n o A B 6 7
k q k r s t %
8 f
u : % \ u v % v

? @ A 6 A

f % \ w R
EDM J x y z
(q k] { r | } - ~) EDM p r y z
% ! r • %
J 5 f f %
(o 12.11)
: ~

m @ A B C 6 A D I E 9 > ? (@ A > ?)

E F G H I J 6 A

G : % 7
C f (o 12.11)

K k s 7 H I @ A 8 [K ^ L G

c : f y 5
c h

5.1

--	--	--

h [DIST]

u

[DIST]

1)

V	W	
V :	87 25 25 }	
HR:	120 09 30 }	
:	----.---m	
:	----.---m	
:	----.---m	
		P1

[F2]

V	W	
V:	87 25 25 }	
HR:	120 09 30 }	
:	241.551m	
:	235.343m	
:	36.551m	
		P2

U

p

u

2)

3)

V

W



1)	(EDM)	u	[F4][o Q] i	u
2)	Z	m ()	ft ()	fi () e -
3)	8	!		
4)	7.6			

5.2

NTS-380R | V / 2 / 3 / 4 / 5 / !
" / • 5 :

v w 

h [DIST] u [DIST]

V

W



① [P1]

[P2]

u

[F4]

g 2 0m Q		<div> <div>V</div> <div>W</div> <div> </div> </div> <div> 3 : 0 </div> <div> V 99 55 36 } </div> <div> HR 141 29 34 } </div> <div> : 2.164m </div> <div> dHd: 0m </div> <div> : 1.250m </div> <div> EDM i </div>
----------	--	--

5.5

1q

2q

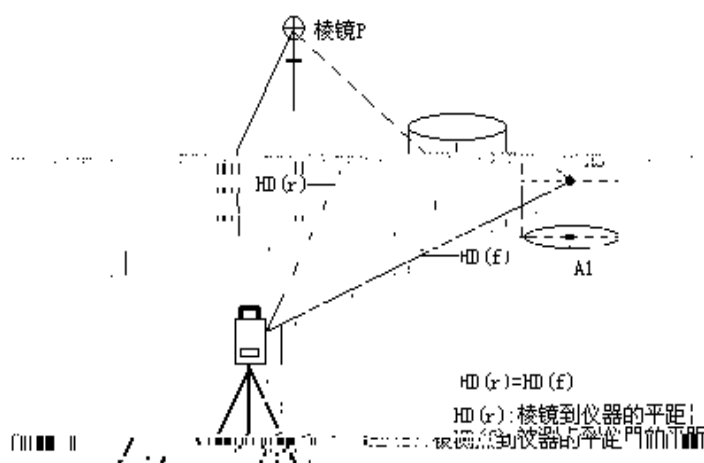
3q

4q

5.5.1

A J r s : :
D P /] \

A0 A1 /
A0 : (0)



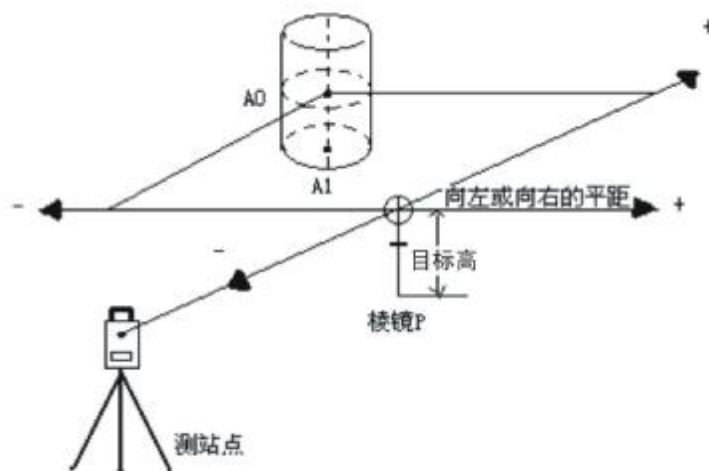
c /
6.2

u h [F4] (P1) [P2] x	[F4]	<div><div>v w</div><div><div>V 99 55 36 }</div><div>HR 141 29 34 }</div><div>:</div><div>:</div><div>:</div><div>P1</div><div>m/f/i P2</div></div></div>
[F1] () u	[F1]	<div><div>v w</div><div>1 q</div><div>2 q</div><div>3 q</div><div>4 q</div></div>

) z A0 A0	A0	<div> <div>V W</div> <div> <div>V 99 55 36 }</div> <div>HR 141 29 34 }</div> <div>3.564 m</div> <div>2.175 m</div> <div>1.278 m</div> </div> </div>
g A0 A1 h [] 2)	[]	<div> <div>V W</div> <div> <div>V 99 55 36 }</div> <div>HR 141 29 34 }</div> <div>N 0.257 m</div> <div>E 0.165 m</div> <div>Z -0.802 m</div> </div> </div>
1) h [F1] () m 4 2) h [ESC] m u		

5.5.2

s : P0
p oHD P1 c
P0



o 6.2

h [F4](P1) [P2] x [F4]
u

V	W	
V	99 55 36 }	
HR	141 29 34 }	
:	----.---m	
:	----.---m	
:	----.---m	
	P1	
	m/f/i	P2

[1] u [F1]

V	W
1 q	
2 q	
3 q	
4 q	

h [2]() , [

V

W



P1 h[F1]()

. h[F4](o Q) 8

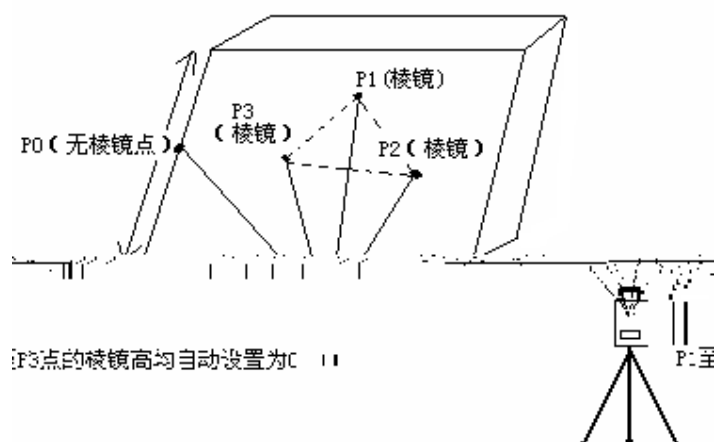
%

P1

[F1]

8 %

8

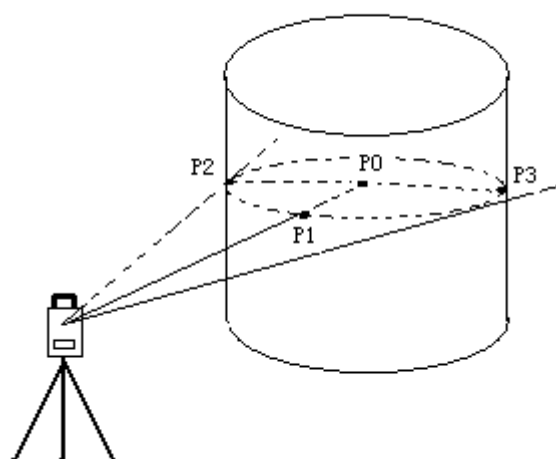


6.2

u h [F4] (P1) P2 [

<p>h y c y t</p>	<p>P2 [F1]</p>	<div> <div> V W  </div> <div> 1 V 99 55 36 } HR 141 29 34 } : 0.556m : 0.588m : -0.534m f </div> </div> <div> <div> V W  </div> <div> 2 V 108 23 34 } HR 141 29 34 } : 0.378m : 0.358m : -0.119m f </div> </div>
<p>g</p>		<div> <div> V W  </div> <div> 3 V 108 23 34 } HR 141 29 34 } : 0.378m : 0.358m : -0.119m f </div> </div>
<p>i] P3 h [f] (P0)</p>	<p>P0</p>	<div> <div> V W  </div> <div> V 93 49 37 } HR 90 09 34 } : 0.457m : 0.456m : -0.030m m i </div> </div>
<p>j h [] P0 1)</p>	<p>[]</p>	<div> <div> V W  </div> <div> V 93 49 37 } HR 90 09 34 } N: -0.001m E: 0.456m Z: -0.031m m i </div> </div>
<p>1) h [ESC] m u h () _</p>		

5.5.4



h [4)] (

V

W



i . : PO

h []

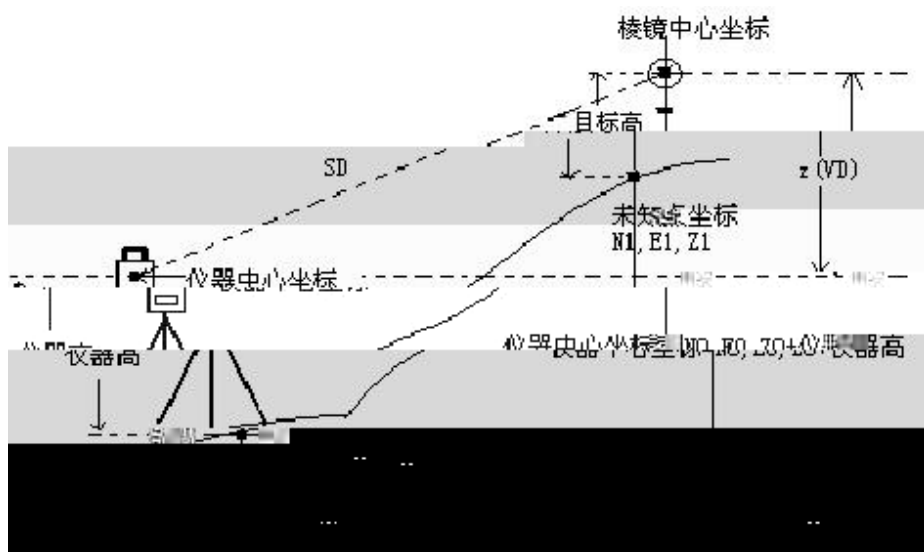
[]

1)

C D E 6 7 > ?

6.1

$\backslash$
 $\begin{matrix} : & o & 6.2 \\ : & o & 6.3 & 6.4 \\ : & 1 & f & , \end{matrix}$
 $\backslash$ 1
 $(N_0 \ E_0 \ Z_0) \ D \ (n \ e \ z)$
 $\backslash \ (N_1 \ E_1 \ Z_1)$
 $Z(VD)$
 $N_1 = N_0 + n$
 $E_1 = E_0 + e$
 $Z_1 = Z_0 + \quad + Z -$
 $((N_0 \ E_0 \ Z_0 + \quad)$



$g \cdot h \quad u 3 4 6 M D E \quad \% \& \quad E \quad , \quad N 0 = <$

<div>①A h [F2]() [F1]() 78 %+1 2 H</div>	<div>[F2] [F1]</div>	<div><div><div>v w</div><div></div><div>V99 55 36 } HR141 29 34 } N: ----.---m E: ----.---m Z: ----.---m P1</div></div><div><div>v w</div><div>:</div><div>1 SOUTH 0.000m N : ----.---m E : ----.---m Z : ----.---m ` a</div></div></div>
<div>p</div>		<div><div>v w</div><div></div><div>V99 55 36 } HR141 29 34 } N36.001 m E49.180 m Z23.834 m P1</div></div>

6.2

() D \ ()

u

h [F4](P1)

P2

[F4]

V

W

V

99 55 | 36 }

HR

141 29 | 34 }

N:

-----m

E:

-----m

Z:

-----m

P1

P2

h [F3]()

[F3]

V

W

NO

0.000 m

EO

0.000 m 0 m 0 m

U h [F4] c m	<div><div>VW</div><div></div><div>V 99 55 36 } HR 141 29 34 } N: ----.---m E: ----.---m Z: ----.---m P2</div></div>
1) o 3.7 -99999999.9999 N E Z +99999999.9999 m -99999999.9999 N E Z +99999999.9999 ft -99999999.11.7 N E Z +99999999.11.7 ft+inch	

6.3

注:

VW

h [F4] (P1) (P2) [F4]

u

1)	3.7	
	-9999.9999	+9999.9999 m
	-9999.9999	+9999.9999 ft
	-9999.11.7	+9999.11.7 ft+inch

6.4

J g	Z	
①	h [F4] P2	<div><div>VW</div><div></div><div>V 99 55 36 } HR 141 29 34 } N: ----.---m E: ----.---m Z: ----.---m P2</div></div>
h [F1]() , h /	[F1]	<div><div>VW</div><div>1.453 m 2.000 m</div><div>m</div></div>
h [F4]() 1)	[F4]	<div><div>VW</div><div>1.453 m 2.000 m</div><div>m</div></div>
1)	3.7	
	-9999.9999	+9999.9999 m
	-9999.9999	+9999.9999 ft
	-9999.11.7	+9999.11.7 ft+inch

F G H I J

j h h [MENU] j 1/2
h [1]()

[ESC]

[MENU]

v j w	   
1	
2	
3	
4	
5	
6	
P1	

v 8

w



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7.1

1 p
2
3 (, J)
4
5 / f
6

7.2

7.2.1

θ p @
c J j
v j w 

h [MENU] j y x h [MENU]
[1]() [1]

V

W



h[] z /

3)

[]

v 8 w

h 7.2.1

j h [1](),	[1]	<div><div>v w</div><div>1q</div><div>2q</div><div>3q</div><div>4q</div><div>5q ` a</div></div>
h [F3]()	[F3]	<div><div>v w</div><div>StrnName</div><div>StrnCode</div><div>0.000m</div><div>NO 100.000m</div><div>EO 100.000m</div><div>ZO 100.000m</div><div>` a</div></div>
. [F4]() h [F4]() M	[F1] [F4] [ENT]	<div><div>v Z w</div><div>1</div><div>2</div><div>3</div><div>4</div></div> <div><div>v w</div><div>5</div><div>Code</div><div>N 36.001 m</div><div>E 49.180 m</div><div>Z 23.834 m</div><div>m</div></div> <div><div>v Z w</div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div></div>

V

W



) [F2]()

h [ENT](f)

[F4]

1) 4 J u

h [F3]()

[F3]

V	W	
	BsName	
	Code	
		2.000m
NBS		0.000m
EBS		0.000m
ZBS		0.000m
NE/AZ		

V

Z W



.

[F4]()

[F1]

[F4]

h [F4]()

M

[ENT]

v w u
[]
0 /

V

W



g U \
h [ESC] 8 %

7.4.2

9

6

v w



8

Code

0.000m

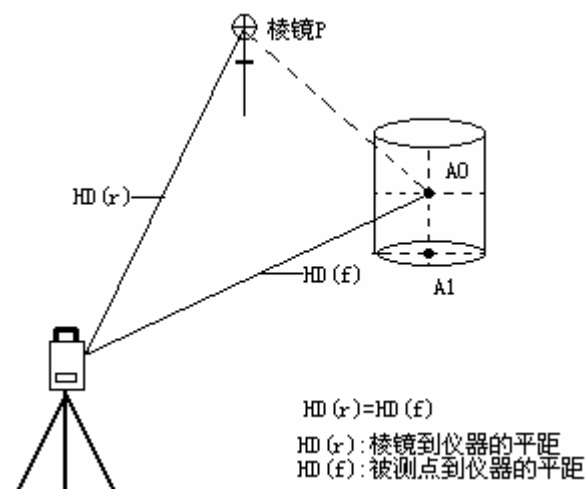
<

h[]

` a

v

w



A0 D (

A1 /
A0 : (0)

h [3](

V

W

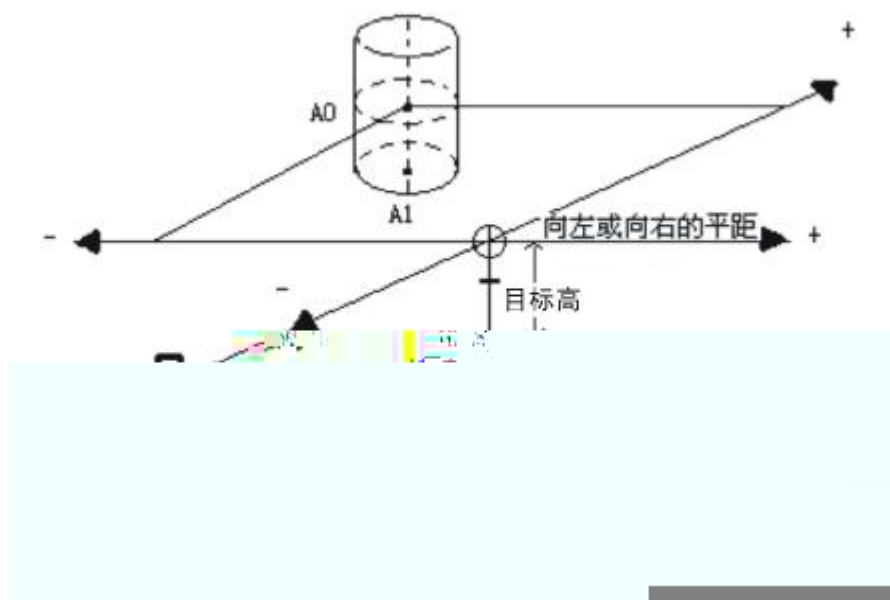


Z

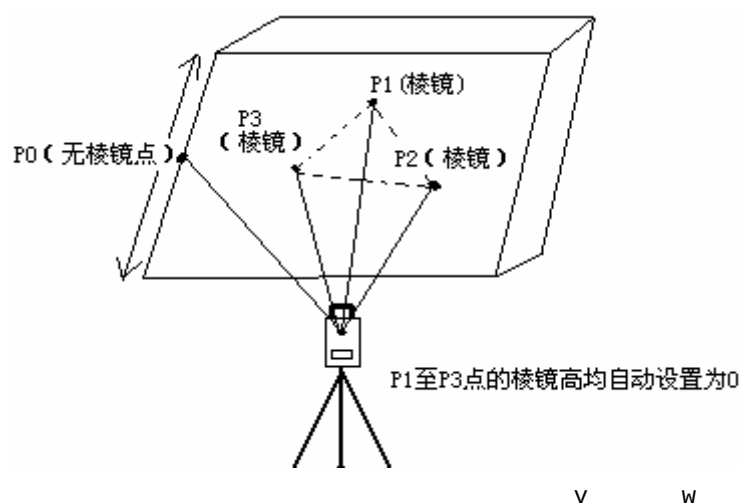
A0

A0

A0



<p>j h [3]()</p>	<p>[3] [F3]</p>	<p>v w </p> <p>5 SOUTH 1.000 m <></p> <p>a</p>
<p>h [2]()</p>	<p>[2]</p>	<p>v w </p> <p>1q 2q 3q 4q</p>
<p>[F4](f y) / / c h</p>	<p>[F4]</p>	<p>v w </p> <p>1.000m 2.000m</p> <p>c f</p>



- ③ , h [F4] () A0
[F4]

J 0) t (P1 P2 P3) f \

P0

h [F4] (o Q)	[F4]	<div> <div>VW</div> <div>1</div> <div>V 99 55 36 }</div> <div>HR 141 29 34 }</div> <div>:</div> <div>:</div> <div>:</div> <div>o Q</div> </div>
8 % c y c h y c y t	P2 [F1] P3 [F1]	<div> <div>VW</div> <div>2</div> <div>V 99 55 36 }</div> <div>HR 141 29 34 }</div> <div>:</div> <div>:</div> <div>:</div> <div>f</div> </div> <div> <div>VW</div> <div>3</div> <div>V 108 23 34 }</div> <div>HR 141 29 34 }</div> <div>:</div> <div>:</div> <div>:</div> <div>f</div> </div>
g 8 % S \	P0	<div> <div>VW</div> <div>V 93 49 37 }</div> <div>HR 90 09 34 }</div> <div>:</div> <div>:</div> <div>:</div> <div>m i</div> </div>
h [F4] (f) c (P0) h [F4] () 3)	[F4]	
i 8 % 8		<div> <div>VW</div> <div>V 93 49 37 }</div> <div>HR 90 09 34 }</div> <div>:</div> <div>:</div> <div>:</div> <div>i</div> </div>

V

W



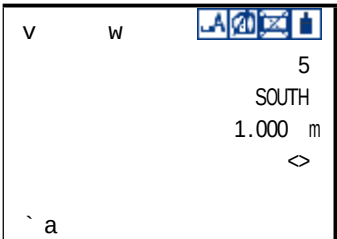
j h[]

[]

E C F 4 - 1 8 (6 f 9 6 0 4 w 3 2 2 0 9 6 4 0 7 f 3 0 1 6 2 0 2 2 f 3 2 9 0 7 9 1 3 4 0 7 4 8 6 9 6 / f 3 6 9 4 f 3 8 9 0 / f 1 6 7 2 0 3 2 5 6 1 3 6 4 4) 8 6 2 9 9 2 3 6 5 0 1 2 8 f 8 5 6 4 9

6.2

j h [3]([3]
h [F3]([F3]



V

W



8 % c | (P3) P3
[F4]
(P3) h [F4](f)

f y	1q 2q	

: > g 0

K L M

~)
r r _

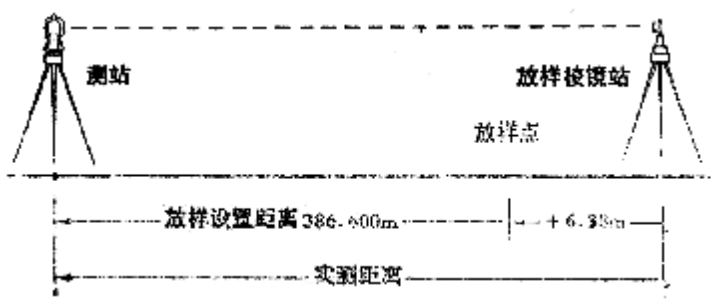
—

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V

\

e o



8.1

>

1q

2q

3q

4q

p

f

8.2

8.2.1

1)

$$\begin{aligned} &= R / (R + \dots) \\ R &\dots i \\ &\dots i \\ 2) &\{ \\ \{ &\dots \{ \\ 3) & \\ &= \{ \end{aligned}$$

1)
 $HD_g = HD$
 HD_g
 HD
2)
 $HD = HD_g /$

P W 3 4 D E X Y Z [

<div>h [] v w h [F3] (EDM) v EDM w</div>	<div>v EDM w</div>	<div><div><div>v w </div><div>8 0 2 100%</div></div><div>/ EDM i</div><div><div>v EDM w </div><div>EDM</div><div>0.0 mm</div><div>P1</div></div></div>

h F2		<div><div>v w</div><div><div>{</div><div>i</div><div>m</div></div><div><div>1.000000</div><div>0.000m</div><div>1.000000</div></div></div>
1)	3.7	
	-9999 2+9999m(-32805 2+32805ft)	
{	0.990000 2 1.010000	

8.2.2

9 0 : p

9 h

v j w y x h [2]()	[2]	<div><div>v j w</div><div>1q</div><div>2q</div><div>3q</div><div>4q</div><div>5q</div><div>6q</div><div>P1</div></div>
h [F1]() 1)	[F1]	<div><div>v 8 w</div><div>south2</div><div>f y</div></div>
Z 2)		<div><div>v w</div><div>SOUTH1.SCD []</div><div>SOUTH2.SCD []</div><div>D P1</div></div>

h [] [] z /

[] []

V	W	
SOUTH.SCD	[]	
SOUTH2.SCD	[]	
D		x

v w 

h[ENT](k) \ c m [ENT]
j

<div><div></div><div>1) h [F3](h [F4](</div><div>) 8 %</div></div>		<div><div>[F3] [F4]</div><div><div><div>vZw</div><div>1 2 3 4</div></div><div><div>v w</div><div>NO50.000m EO50.000m ZO50.000m 1.450m</div></div></div></div>
1) o 3.7		

8.21

h [F4] f

/

[F4]

99.000m

4

V

W



h [1]

V

W U

[1]

g v w u h [F3] , v

V	W	
N:		50.000m
E:		50.000m
Z:		99.500m
		1.500m

V	W	
---	---	---

V	W	
	1.500m	
	0	
	South	
N:	0.000m	
E:	0.000m	
Z:	0.000m	

V	Z W	
---	-----	--

1	
2	
3	
4	

h [F3] () c
Z p h [F3]
[ENT] [ENT]

V	W	
---	---	--

<p>p 1)</p>		<div><div>v 8w<div></div></div><div>south1</div><div>f y</div><div>v w<div></div></div><div>6</div><div>1.500m</div><div>N: ----,---m</div><div>E: ----,---m</div><div>Z: ----,---m</div></div>
<p>g i</p>		<div><div>v w<div></div></div><div>J1</div><div>1.630m</div><div>N: ----,---m</div><div>E: ----,---m</div><div>Z: ----,---m</div></div>
<p>h [F1]() 8</p> <p>% h [F4]()</p> <p>1</p>	<p>[F1]</p> <p>[F4]</p>	<div><div>v w<div></div></div><div>J1</div><div>1.630m</div><div>N: 99.098m</div><div>E: 98.787m</div><div>Z: 101.257m</div><div>v w<div></div></div><div>J2</div><div>1.630m</div><div>N: 99.098m</div><div>E: 98.787m</div><div>Z: 101.257m</div></div>

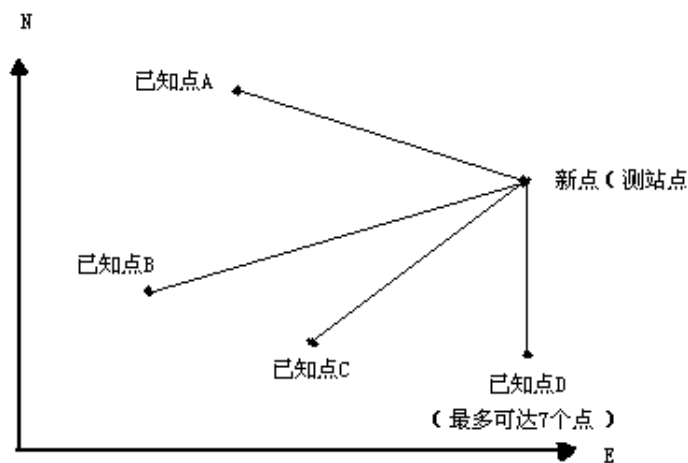
1) $h[F_4](f y) \setminus f y 4 h[F] h[F_2]$
o y

8.4.2

#

	7	7	
	2	7	
	3	7	
h	c	h	(
c		)	

. : # 3



j h [5]()	[5]	<div> v w  </div> <div> 1q 2q 3q 4q 5q </div> <hr/> <div> v w  </div> <div> STN1 1.450m f </div>
h [F3]() 8 % \	[F4] [F3]	<div> v w  </div> <div> H1 1.200m f </div> <hr/> <div> v w  </div> <div> y N 0.000m E 0.000m Z 0.000m 2.000m </div>



V

W

 y

N

9.169m

E

7.851m

$$Z$$

12.312m

1.200

 y

h [F1]

h [F4]

[F1]

V

W

 f_y

[F4]

(mm)

V		W	
SD(n)	=	4	mm
SD(e)	=	-6	mm
SD(z)	=	1	mm

g h [F4] ()

() [F3] (r)

h [F4]

N 6 7 0 P > ?

h [MENU]

j

J

9.1

S]

: @

A

p !

1^ E (h) # \$ 8 _ ` (a h=1.3m)

V	W	
		1.300m
V :	94 59 57 }	
HR:	85 44 24 }	
		11.548m
		1.300m
		i

v w

1q

2q

V

W



K

() 1)

[F4]

[] MLM-1(A-B A-C)
MLM-2(A-B B-C) MLM-1 D

j h [2]()	[2]	<div><div>v w</div><div>1q</div><div>2q</div><div>3qZ</div><div>4q</div><div>5q</div><div>6q</div></div>
p	[F4]	<div><div>v 8 w</div><div>south</div><div>f y</div></div>
h [1] A-B A-C	[1]	<div><div>v w</div><div>1q A-B A-C</div><div>2q A-B B-C</div></div>
A h [F1]() 1)	A [F1]	<div><div>vA-B A-Cw</div><div>y</div><div>N : 0.000m</div><div>E : 0.000m</div><div>Z : 0.000m</div><div>: 1.500m</div></div>
8 % A h [F4]	[F4]	<div><div>vA-B A-Cw</div><div>y</div><div>N : 100.164m</div><div>E : 100.144m</div><div>Z : 99.908m</div><div>: 1.500m</div></div>

g B h[F1](

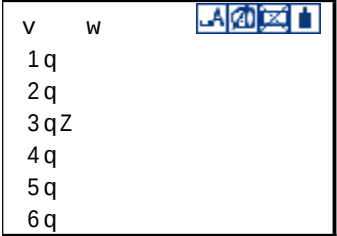
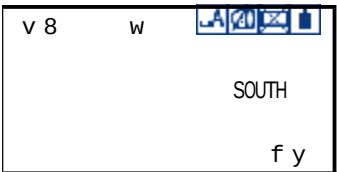
vA-B A-Cw		
y		
N :		0.000m
E :		0.000m
Z :		0.000m
:		1.500m

y h F3]() A [F3] v Z w

<p>p</p>		<div> <div>v 8w</div> <div> </div> <div> <div>south</div> <div>f y</div> </div> </div>
<p>h [1]()</p>	<p>[1]</p>	<div> <div>vZw</div> <div> </div> <div> <div>1.</div> <div>2.</div> </div> </div>
<p>f 1) h [F4]</p>	<p>[F1] [F4]</p>	<div> <div>v w</div> <div> </div> <div> <div>StrnName</div> <div>StrnCode</div> <div>1.450m</div> <div>NO 100.000m</div> <div>E0 100.000m</div> <div>Z0 100.000m</div> <div>i f</div> </div> </div>

2) **d w | 6 7 G H a b Z D E**

[]

j h [3](Z)	[3]	
h [ENT] [ESC] r [h [ESC] ,]	[ESC]	

h	[2]()	[2]	<div>Z 1q 2q</div>
			<div>Z y 1 N 0.000 m E 0.000 m Z 0.000 m i f y</div>
h [F4] (f y)			[F4]

$$k \quad / \quad c \quad h[F_4](r) \qquad [F_4] \qquad HR \quad 45 \quad 00 | 00\}$$
$$\backslash \qquad \qquad \qquad [] \quad [r]$$

<p>h [F3]() 1</p> <p>h [F4]()</p>	<p>[F3]</p> <p>[F4]</p>	<div data-bbox="875 200 1215 469"> <p>V W </p> <p>0</p> <p>0.000m^2</p> <p>0.000m</p> <p>N 0.000m</p> <p>E 0.000m</p> <p>Z 0.000m</p> </div> <div data-bbox="875 469 1215 739"> <p>V W </p> <p>1</p> <p>0.000m^2</p> <p>0.000m</p> <p>N 100.000m</p> <p>E 100.000m</p> <p>Z 100.000m</p> </div>
<p>2</p> <p>! p 7 \ 4</p> <p>3 ! p 7</p> <p>\</p>		<div data-bbox="875 826 1215 1097"> <p>V W </p> <p>3</p> <p>516.000m^2</p> <p>123.637m</p> <p>N 145.000m</p> <p>E 134.000m</p> <p>Z 102.000m</p> </div>
<p>1) h [F2]() _</p> <p>2) h [F2]()</p>		

9.4.2

--	--	--



v



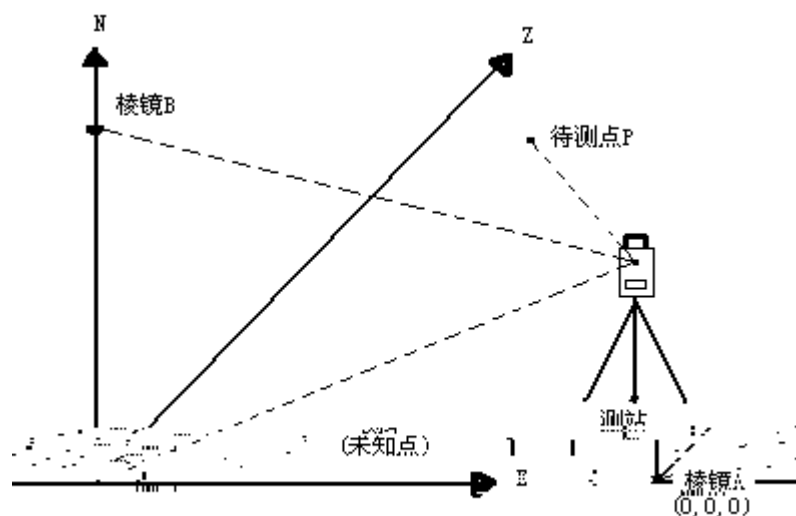
y

1

1

h[F1]() 1)

[F1]



h [MENU] j 1/2, 5 h [4],	[MENU] [4]	<div> v j w 1 2 3 4 5 6 P1 </div>
h [5]()	[5]	<div> v w 1q 2q 3qZ 4q 5q 6q </div>
p :	[F4]	<div> v 8 w south1 f y </div>

h

P1()

h [F1]()

P1

[F1]

V

W

y

HR

0 00 | 00 }

0.000m

0.000m

1.450m

1.500m

f

V

W

y

HR

246 45 | 12 }

4.562m

4.013

1.450m

1.500m

f

U

P1

h [F4](f)

[F4]

g

]

P2

h [F4](f)

j . h [F4]()

. h [F1]()

h [F1]() [F4] [F1]

1)

V	W	
NO	4.315m	
EO:	5.110m	
ZO:	-11.035m	
	m	
V	W	

h [6]()	[6]	<div> v w  </div> <div> 1q 2q 3qZ 4q 5q 6q </div>
j [1] Z, p , 5 h [F4](f y) [ENT](k)	[1] [F4]	<div> v w  </div> <div> 1q 2q 3q </div>
h [ENT](k)	[ENT]	<div> v w  </div> <div> SOUTH.SHL D P2 </div>
Z J Z h [F4]()	[F4]	<div> v Z w  </div>
g F N E h [F4]()	N E	<div> v F w  </div> <div> F 1 1000.000m N 1.500m E 2.000m </div>
i J c 1) h [F4] ()	[F4]	<div> v Z w  </div> <div> F </div>

c	[F4]	<div><div>v</div><div>w</div><div></div><div>1</div><div>1000.000m</div><div>0 00 00 }</div></div>
1) h [F2]		

c c ' Q
| V S
e o h [f y]
m c J R h [ESC] i c 4 :
0 c p @ g :

f
F R 7
q

v w c h [F1]()
c [F1]

v

w



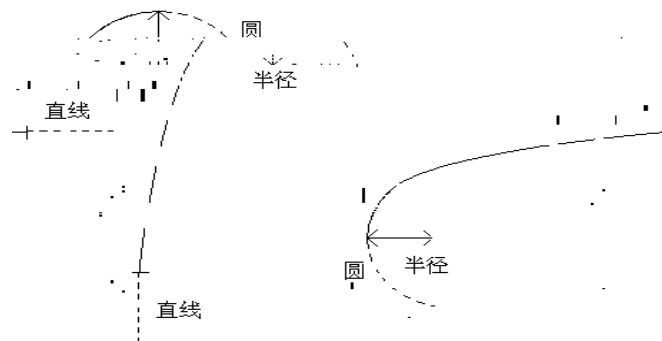
1

1000.000m

0 00 | 00 }

v

h [F4](f y)
[F4]



c h[F3]()
q q

c h[F3]() [F3]
c

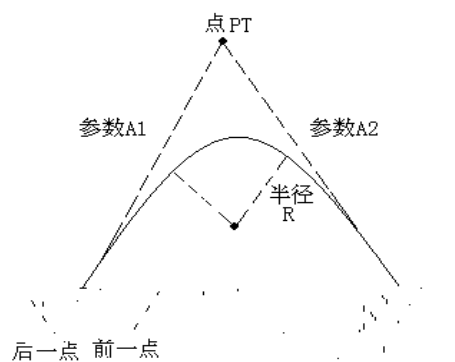
V	W	
		3
		1071.561m
		91 17 38 }

y) h[F4](f [F4]

V	W	
		4
		0.000m
		0.000m
		f y

m c

V W



c h[F4]()

[F4]

c

100.000
0 00 00 }
04

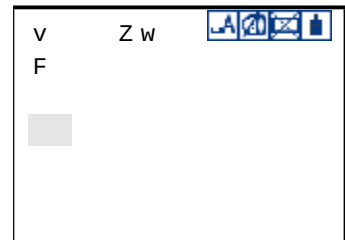
N E

A1 A2

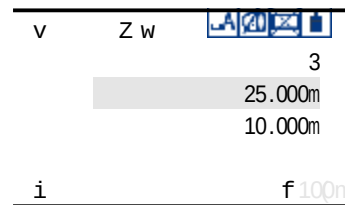
9.6.1.2

j

:
) c 5 h [F1]([F1]



h : c

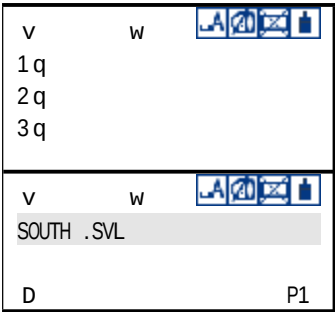


i u 3 - 11 T j / 0 1 / F 4 + 3 9

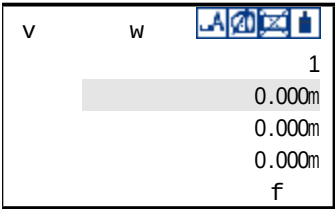
1000	1300	1800	2300
50	70	60	90
0	300	300	0

c D h R U h[f y]
c 4 h[ESC] i c

j h [2]
Z, p ,[ENT]
Z,
5 h[ENT] 1)
[2]
[F4]
[ENT]



h[F4]() c [F4]
h[F4](f
y) [F4]



v w M

j

h

,

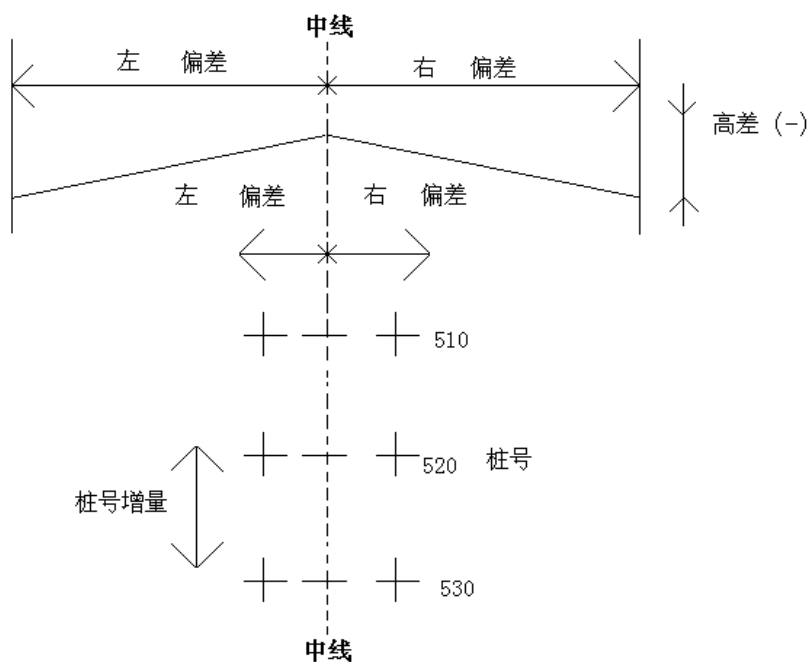
[F2]() ,

,

, h[F1]

[F2]

[F1] ? M n



9-1

9.6.2.1

0

V

<div> <div>j</div> <div>[3]</div> <div>j</div> <div>[1]</div> </div>	<div>[3]</div> <div>[1]</div>	<div> <div>v</div> <div>w</div> <div>1q</div> <div>2q</div> <div>3q</div> </div> <div> <div>v</div> <div>w</div> <div>1q</div> <div>2q</div> <div>3q</div> <div>4q</div> </div>
<div> <div>)</div> <div>1)</div> <div>h [3] (</div> </div>	<div>[3]</div>	<div> <div>1q</div> <div>2q</div> <div>3q</div> </div>

<div>c</div> <div>:</div> <div>—</div>		<div><div>SOUTH</div></div> <div>i f y</div>
<div>h [F2]() Z ,</div> <div>p , h [F4] [ENT] ,</div> <div>2) 3)</div>	<div>[F2]</div> <div>[F4]</div>	<div><div>SOUTH.SCD []</div><div>S0001 [DIR]</div><div>DATA.SCD []</div></div> <div>D i x</div>
<div>h [] [] z / /</div>	<div>[] []</div>	<div><div>SOUTH.SCD []</div><div>S0001 [DIR]</div><div>DATA.SCD []</div></div> <div>D i x</div>
<div>g h [F4](f y) \ h [ESC]</div> <div>m j</div>	<div>[F4]</div>	<div>1q</div> <div>2q</div> <div>3q</div> <div>4q</div>
<div>1) h [1] [2] :</div> <div>2)</div> <div>3) h [F4](x) y c x ,</div>		

9.6.2.2

— — r h

— r N E Z

j [3] [3]

j [2]

[2]

V

W



0

0/W

C

j [3] [3]
j [3] [3]

v	w	
1q		
2q		
3q		

c h [F1] (NE/AZ) [F3]

v	w	
		0.000 m
		0.000 m
		1.500 m
NE/AZ		f

v w

h [F2]()

2) y D E e N

r h

— r N E Z

v w

j [3]
j [3]

[3]

[3]

9.6.2.4

S

j

[4]

[4]

c

F

q >E>E

v	w	
1q		
2q		
3q		
4q		

V

W



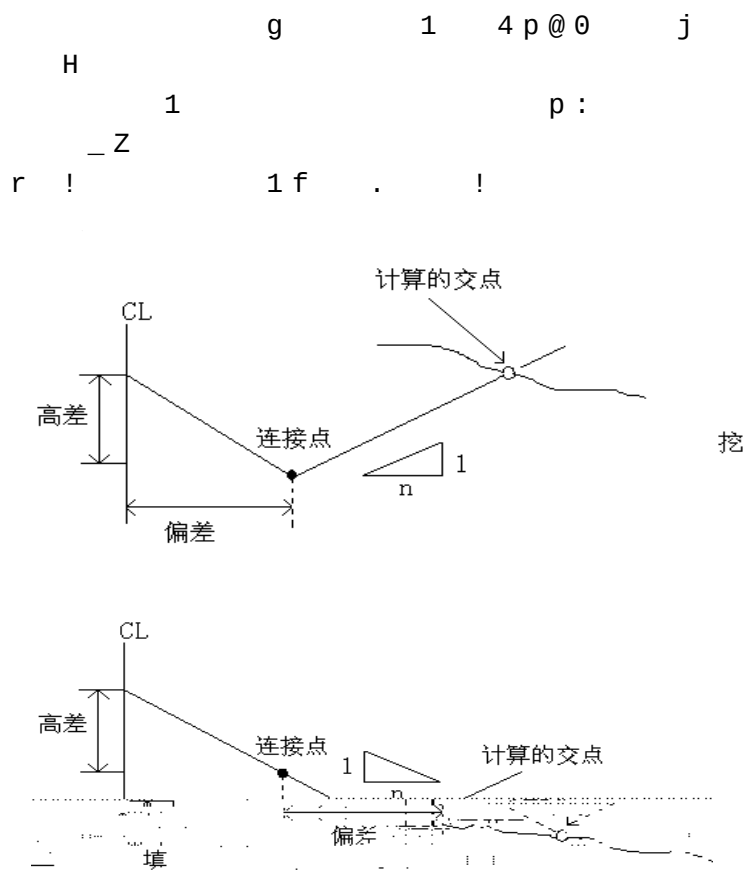
g

HR

HD

$$\begin{aligned}
 k &= h \\
 h &= l \\
 m &= h \cdot n \cdot l \\
 \blacktriangleleft h &= o \cdot p \\
 \blacktriangleright h &= q \cdot p \\
 &= 4h \\
 &= 4h \\
 R &= h \cdot [ESC] \cdot m \\
 4 &= c \cdot h \cdot [ESC] \cdot m \cdot c
 \end{aligned}$$

9.6.2.5



--	--	--

c h [F2]()	[F2]	<div> v w  1000.000m 0.000 m 0.000 m 0.000 m </div>
) h [F4](f	[F4]	<div> v w  0.000m 0.000m 0.000m 0.000m f </div>
[F2]() [F3]()	[F2] [F3]	<div> v w  2.150m 0.000m 2.150m 0.000m </div>
c		<div> v w  C -----m -----m -----m HR 180 13 25 } </div>
w \ h [F4]() - c , \ , 4Z -	[F4]	<div> v w  / 3.398 m / 3.321 m 2.546 m HR 180 13 25 } </div>
g h c h [F4]() / / 0 Z	[F4]	<div> v w  / 0.000 m / 0.001 m 1.546 m HR 140 13 25 } </div>

i h [ESC] m _ y		<div><div>v</div><div>w</div><div></div><div>2.150m</div><div>0.000m</div><div>2.150m</div><div>0.000m</div></div>
--------------------	--	---

() 1) . Z !
2)

Q R G 3 4

j u h [5]

v w

1 h (= 3 4 :1m=3.2803333333333ft

j	g	
	1 q (360) 2 q (400G) 3 q (6400M)	DEG/GON/MIL(/ /)
	1 q 2 q 3 q	m / ft / ft+in (/ /)
	1 q C / F 2 q hPa /mmHg/inHg	C / F hPa /mmHg/inHg

2 h r s 3 4

j	g	
	1 q 2 q	:1m=3.280839895013123ft :1m=3.2803333333333ft

3. D E 3 4

j	g	
U	1 q NEZ 2 q ENZ	U N/E/Z E/N/Z

4. - t 3 4

j	g	
	1 q 2 q	- / /
	1. 2.	r

h	1.	h
	2.	
	1q	
	2q	
	3q	

1.
22c ((45) Tj-215.76 -37.56 TD -0.84 Tc (4) Tj-1.f Tc (

5. G H I J 3 4

6. u v 3 4

r

Q \$ S T U V > ?

J	g			
1)	/	/	/	/
2)	/		/	
	/			
3)	SD		SD	
4)		SD	SD	

h[F1](D) , . p < , 2	[F1]	<div> v D w  </div> <div> A FAT12 0.06 M 31.86 M 31.92 M i </div>
④ h[F2](\$) , p p f y \$ h[F3] \$ U c \$ U h f m Z 2)	[F2] [F3]	<div> v 8 w  </div> <div> r \$ r v 8 w  </div> <div> \$ f </div>
1) h[F4](f y) [ENT](k) 8 p (SD 2) h[F1](l) m Z	SD	Z

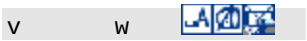
11.1.2

建

[MENU]) v j w u h[3](j	[MENU] [3]	<div> v w  </div> <div> 1. 2. 3. 4. </div>
h[1]() , c h[1] [6] h[2] h f y u	[1] [2]	<div> v w  </div> <div> 1. 2. 3. 4. 5. 6. p </div>

z h [F4] (P1) y c x	[F4]	<div><div>v w</div><div></div></div>
		<div><div>v w</div><div>SOUTH.SMD []</div><div>SOUTH2 [DIR]</div><div>SOUTH3.SMD []</div><div>P2</div></div>
<div><div>[▶]</div><div>u , [◀]</div><div>/ / / /</div><div>h [F4] f</div></div>	[F4]	<div><div>v w</div><div></div><div>NewFile ◁</div><div>m f y</div></div>
<div><div>1) 3.7</div><div>2)</div><div>3) h [ESC] m z</div></div>		

11.1.3



h [] []

[] []

h[F2]()

[F2]

v	K	w	
		:	S0010
i		f y	

h[F4](f y) ,
1) n 3)

[F4]

v	w	
SOUTH.SMD		[]
SOUTH2		[DIR]
S0010.SMD		[]
P2		

```

V          W
SOUTH.SMD          [  ]
SOUTH2             [DIR]

```

#

v	w
1.	
2.	
3.	
4.	
5.	h \$

V W

1.

2.

3.

4.

5.

6. p

v 8 w 

Disk A >

D \$ f y

<div>h [] [] : , 5 h</div> <div>[ENT](k)</div>	<div>[ENT]</div>	<div><div><div>v w</div><div>SOUTH.SCD []</div><div>SOUTH2 [DIR]</div><div>D P1</div></div></div>
<div>[F1]() 1)</div>	<div>[F1]</div>	<div><div><div>v Z w</div><div>C000</div><div>C001</div><div>C002</div><div>C003</div><div>C004</div></div></div>
<div>g c p h [F1]()</div>	<div>[F1]</div>	<div><div><div>v w</div><div>C001</div><div>CODE1</div><div>N 0.000 m</div><div>E 0.000 m</div><div>Z 0.000 m</div><div>m</div></div></div>
<div>i : h</div> <div>[F2]() ,</div> <div>U h [F4](3)</div>	<div>[F4]</div>	<div><div><div>v w</div><div>C001</div><div>CODE1</div><div>N 0.000 m</div><div>E 0.000 m</div><div>Z 0.000 m</div><div>m</div></div></div>
<div>1) h [F2]() , h [F3]() p</div> <div>h [F4]() ,</div> <div>2) h [] []</div> <div>3) 3.7</div>		

11.2 导

J	D	> J

V

W



[MENU]
)

v j w u h [3] (
j

[MENU]
[3]

11.2.1 : ewxy/z {X?

J g : 0 U J ~ g r /

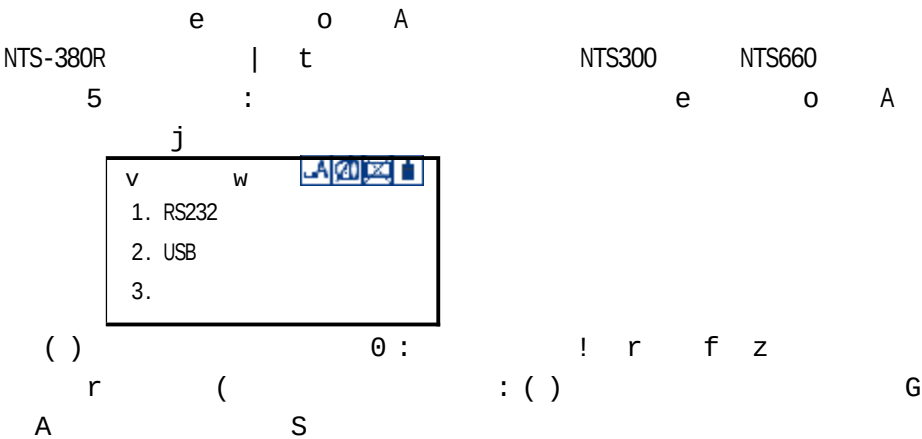
11.2 y , h[4]() , [4]

v	w	
1. 300		
2. 660		
3.		
4.		

v U w

U j h[] [] r
D [1] [5] : g 5
h [] [] , U /N/E/Z/
Q

11.4 迅



11.4.1 讯
RS232 4800

		v w 1. 2. 3. 4. 5. h \$
j h[2]()	[2]	
h[1](RS232)	[1]	v w 1. RS232 2. USB 3.
h[3]()	[3]	v a w 1. 2. 3.

<div>h[] / 2 ' g 5 h</div> <div>[] [], p h [F4]()</div> <div>1) 2)</div>	<div>[]</div> <div>[] []</div> <div>[F4]</div>	<div>v w</div> <div>Ack/Nak</div> <div>' : 4800 b/s</div> <div>j 8</div>
<div>c m RS232 j</div>		<div>v a w</div> <div>1.</div> <div>2.</div> <div>3.</div>
<div>1) h []</div> <div>2) J u</div> <div>p</div>	<div>4 h []</div> <div>j h [] []</div> <div>2 p :</div>	<div>l h [ESC]</div> <div>g 5 h [] [],</div>

USB None

j h [2](USB) [2]

h [3]

v w
1. RS232
2. USB
3.

j h[2]() [2]		<div> <div>v w</div> <div>1.</div> <div>2.</div> <div>3.</div> <div>4.</div> <div>5. h \$</div> </div>
<div> <div>USB</div> <div>t RS232</div> <div>h[1] (RS232)</div> </div>	[1]	<div> <div>v w</div> <div>1. RS232</div> <div>2. USB</div> <div>3.</div> </div>

h[1] (), c

h[2] (2&

11.4.3



USB

j h[2]() [2]

V	W	
1.		
2.		
3.		
4.		
5.	h \$	

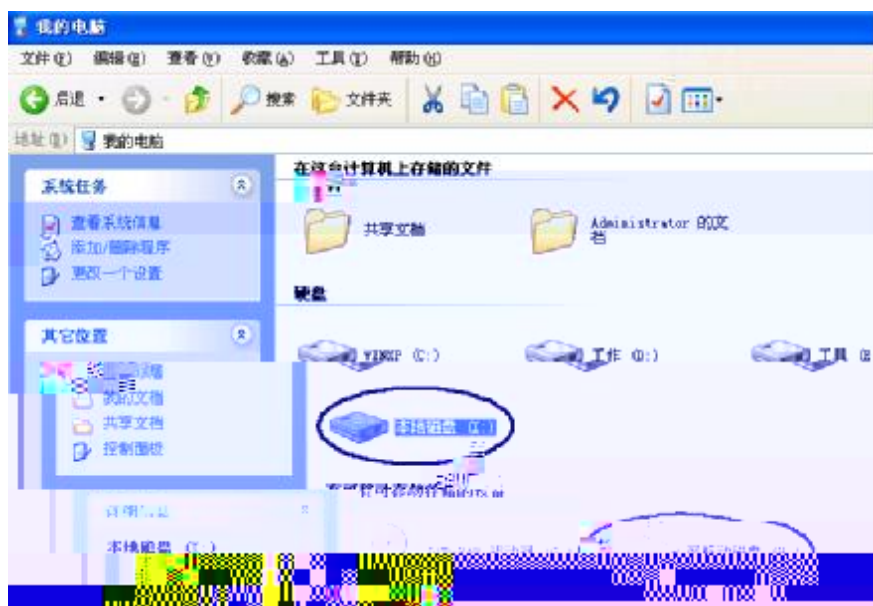
g m 8 % , c j 3) 8 %!		<div>[USB] A: SOUTH.SCD 102 o Q</div>
1) 3.7 2) h [F1] o 11.2.1 / 3) l h [F4](o Q)		

11.4.4

> J

v w 

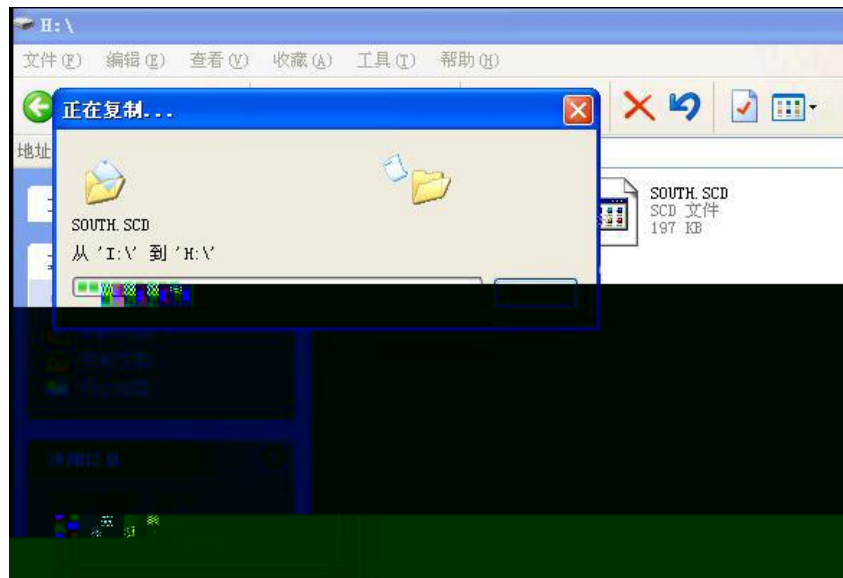
j h [2]() [2]



I H (I) : 5
j



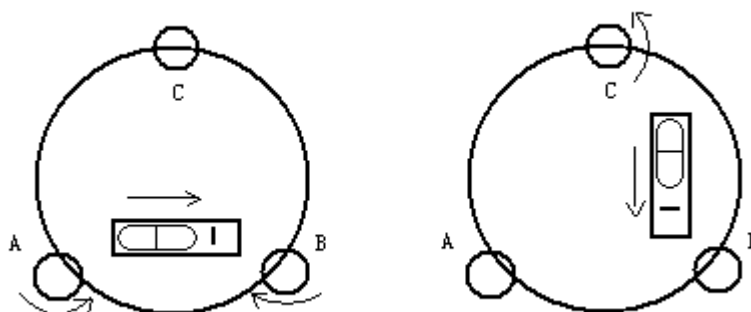
g H 8 j { , p
j : m j ,
h[F4](i) , S !



Q 0 W X Y Z [

4 \$ 8 i C j : C 9 3
! J K c i
g f

12.1



W X

o 3.2 f

Z [

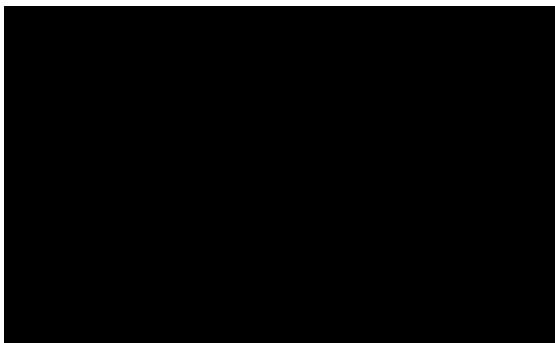
$\frac{*}{2} \cdot \frac{*}{180} S \theta Q ()$
 $\frac{*}{2} \cdot \frac{*}{180} r \cdot ()^2$
 $\frac{*}{2} \cdot \frac{90}{2} y t \cdot \frac{*}{2} R / \frac{*}{2} i Q$

12.2

WX
 $f \cdot \frac{*}{p}$
 $Z [\cdot \frac{*}{0} \frac{*}{t} Q " \# \frac{*}{\$ i} \cdot \frac{*}{/}$

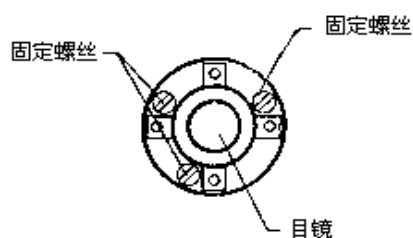
12.3

WX
 $\frac{*}{\%} \frac{*}{\%}$
 $\frac{*}{z} \frac{*}{\%} \frac{2}{\&} \frac{(\% |)}{p}$
 $\frac{!}{\%} \frac{\cdot}{\%} \frac{r}{\% |}$



$Z [\frac{0}{Y}$

! i ' , 5 + 8
(



12.4 ()

WX

1 < 100 ' % 3 f

8

2 %

) * 10 13 | 10 }

3 % c 、

+ * 190 13 | 40 }

(, *) - (+ 180) * - 30 } . 20 }

Z [

Ah

u h [MENU] h [6]	[MENU] [6]	<div> v j w <div> </div> 1 2 3 4 5 6 <div>P1</div> </div>
h [6]() 5 [2] ()	[1] [2]	<div> v j w <div> </div> 1. 2. 3. 4. </div>

V

W



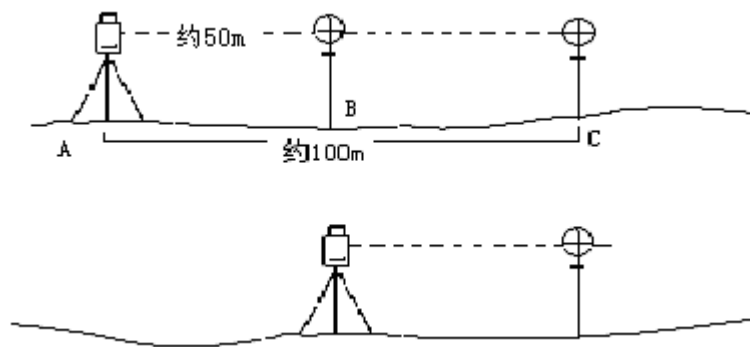
) () f h [F4] ([F4]

3 / [[X 2 10 4 4 D e -
\$ l 5 Z ! |
/ 6 x u I # \$ Z

v j w



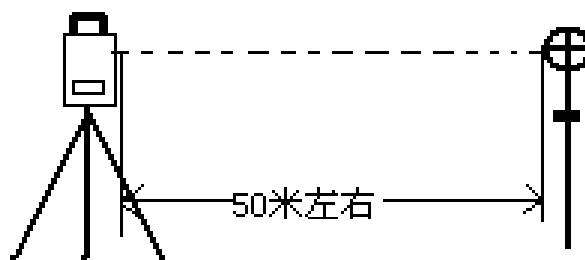
h [6]() 5 [3] ([1]
) [2]



Z [C G K 7 o \$ 5 @
h E K
/ % = , t = : \$
H 1
= r r G : 3 J =
t A ~ t F ! t A
=

12.10

发



W X
1 50 '
2 f
3 8 h [] ([

z G 9 K
4 r y
z [
@ H

12.11

1 % r
% ! I + \$
% c % /
h
r 6 7
h
: % 0 k k] 8
w \ h
f e | V [/ 5 20 ')
e J 1 2
k s . o _ D #
\$
2 S p
(H
f] : d [1

12.12

` \$ Q

12.13

!
! r f o 12.1
12.7 2
12. K p , 0] M , , : ~

% L M 0 % N O L , M *

% ,]

P > / I % L > 2

J , > ~ i

(= J / I % M

> ,

C % = ~ . J *

t * 2

5 2 ~ / 7 * # Q

Q 5 \] R G

AB 6 7 (

NTS-382/5R4/6/8/10/12

O

Q '
EDM

0.650 0.690 Rm

0.1mm

S

< 7 T 14 T / 20m
< 10 T 20 T / 50m
9

9 / / -
99999999.999 m 0.1 mm
2 n5 i

i
9 K =

| } m NTS-382/5R4 u ~

(2 0 2 10⁻⁶ D) 4 4 20.3s
• (5 0 2 10⁻⁶ D) 4 4 20.1s
(2 0 2 10⁻⁶ D) 4 4 20.3s
(U [: 90%)
<200m (3 0 2 10⁻⁶ D) 4 4 J 0.3-3 -3

<200m (5 0 2 10⁻⁶ D

(U [: 90%)

	<300m	(3 0 2 10 ⁻⁶ D) 4 4	J 0.3-3 10
	>300m	(5 0 2 10 ⁻⁶ D) 4 4	10
•	<300m	(10 0 2 10 ⁻⁶ D) 4 4	J 0.3-3 10
•	>300m	(10 0 2 10 ⁻⁶ D) 4 4	10

| } m NTS-382/5R3 u ~

	(2 0 2 10 ⁻⁶ D) 4 4	2 0.3s
•	(5 0 2 10 ⁻⁶ D) 4 4	2 0.1s
	(2 0 2 10 ⁻⁶ D) 4 4	2 0.3s

(U [: 90%)

	<400m	(3 0 2 10 ⁻⁶ D) 4 4	J 0.3-3 10	J
	>400m	(5 0 2 10 ⁻⁶ D) 4 4	10	
•	<400m1s	• <400m	2 10 ⁻⁶ D)	10

		$(2.0 \pm 10^{-6} \text{ D}) 4.4$	20.3s
•		$(5.0 \pm 10^{-6} \text{ D}) 4.4$	20.1s
		$(2.0 \pm 10^{-6} \text{ D}) 4.4$	20.3s
(U [: 90%)			
	<600m	$(3.0 \pm 10^{-6} \text{ D}) 4.4$	J 0.3-3 10
	>600m	$(5.0 \pm 10^{-6} \text{ D}) 4.4$	10
•	<600m	$(10.0 \pm 10^{-6} \text{ D}) 4.4$	J 0.3-3 10
•	>600m	$(10.0 \pm 10^{-6} \text{ D}) 4.4$	10
6.0			
} m NTS-382/5R ₄ u ~			
			(60*60)mm
V ~	o < 40	5000m	400m
		:	1
V ~	o < 40	400m	[0.18 2
} m NTS-382/5R ₆ u ~			
			(60*60)mm
V ~	o < 40	5000m	600m
		:	1
V ~	o < 40	600m	[0.18 2
} m NTS-382/5R ₈ u ~			
			(60*60)mm
V ~	o < 40	5000m	800m
		:	1
V ~	o < 40	800m	[0.18 2
} m NTS-382/5R ₁₀ u ~			
			(60*60)mm
V ~	o < 40	5000m	1000m

	:	1 [0.18 2
V ~ o < 40	1000m	500m
} m NTS-382/5R12 u ~		
		(60*60)mm
V ~ o < 40	5000m	1200m
	:	1 [0.18 2
V ~ o < 40	1200m	600m
1 U [: 90% 2 U [[18%		

 - t R G

	NTS-382R4/6/8/10/12	NTS-385R4/6/8/10/12
< = 6 7		
	! "	
	79mm	
	0.1} / 1} / 5}	
f	2}	5}
W		
•补A		
0	0	
3 T	48 4 4	
+	! 7	
&	! 7	
Y	1.2 4	
: ; 偿水&		
	3	
x	1}	
(9 &		
	30} 9 2 4 4	
	8 9 2 4 4	
m &		
0	0	
+	3	
Y	0.5 4 n X	

Q ; ^)

Q

SD 64 64 1 •

USB

"

Q %

X Y

— f

" 、 f

V W

% & a b

G •

1 •

 20 20 30 30,40 40,60 60 1

$_ \wedge ! A \`$

1

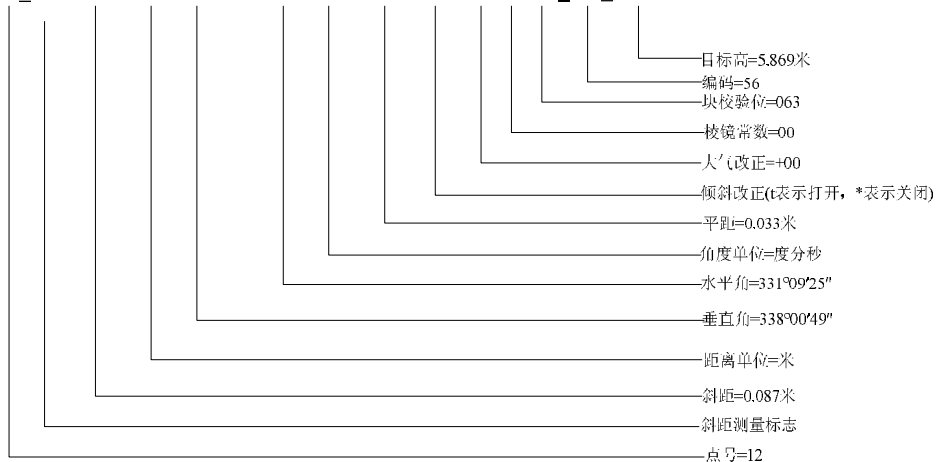
+9<3283639+3310927-00d014_*56_5.869
 目标高=5.869米
 编码=56
 块校验位=014
 角度单位=度分秒
 倾斜改正=00'58"
 水平角=331°09'27"
 垂直角=328°36'39"
 角度测量标志
 点号=9

3

_+10_R+00000032m3380049+3310926d+00000080t00+00+00000_*56_5.869
 _+10_R+00000032m3380049+3310926d+00000080t00+00+00000_*56_5.869
 目标高=5.869米
 编码=56
 块校验位=000
 棱镜常数=00
 人' t改正=+00
 倾斜改正(t表示打开, *表示关闭)
 高差=0.080米
 角度单位=度分秒
 水平角=331°09'26"
 垂直角=338°00'49"
 距离单位=米
 平距=0.032米
 平距测量标志
 点号=10

+12?+00000087m3380055+3310925d+00000033t00+00+00063_*56_5.869

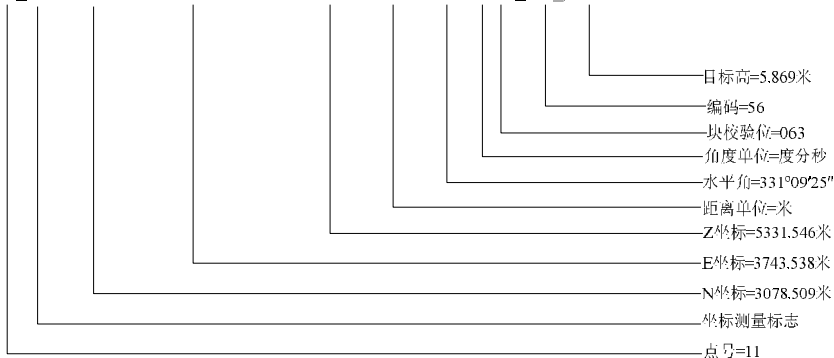
+12 ?+00000087m3330055+3310925d+00000033t00+00+00063_*56_5.869



4

+11 U+00003078509+00003743538+00005331546m+3310925d086_*56_5.869

+11 U+00003078509+00003743538+00005331546m+3310925d086_*56_5.869



2

/

NTS660 X ? h

E N Z

- 1, 1000.000,1000.000,1000.000, STN
- 2, 990.000,1010.000,100.000, STN
- 101,994.890,1000.964,100.113, STN
- 102,993.936,1007.799,100.800, STN
- 103,998.515,1009.639,100.426, STN
- 104,1002.068,1002.568,100.342, STN
- 1001,1004.729,997.649,100.1153, PT

1002,1003.702,990.838,100.799, PT
1003,7911.990,990.358,100.403, PT
1004,997.311,998.236,100.354, PT

NTS300 X ? h

_+1 _ x+01111107396_ y+00000005457_ z+00000003612_+2 _
x+01111107397_ y+00000005457_ z+00000003612_+3 _ x+01111107395_
y+00000005457_ z+00000003612_+4 _ x+00000108916_ y+00000101580_
z+00000100118_

3

G

k 1 Y Q

START(F) E N
STRAIGHT()
ARC()
SPIRAL()
PT() E N[A1 A2]
 (A1 A2:)

1

START(F) 1000.000,1050.000,1100.000
STRAIGHT() 25.000,48.420
SPIRAL() 20.000,20.000
ARC() 20.000,23.141
SPIRAL() 20.000,20.000
STRAIGHT() 148.300,54.679

2

START(F) 1000.000,1050.000,1100.000
PT() 1750.000,1300.000,100.000,80.000,80.000
PT() 1400.000,1750.000,200
PT() 1800.000,2000.000

5

 e —
F Y Q

1000.000,50.000,0.000
1300.000,70.000,300.000
1800.000,70.000,300.000
2300.000,90.000,0.000

$_ \wedge ! B ` \quad a b c$

j () h

		0
	N	1100.000
	E	1050.000
h [ENT]	5 h [F4] () h	

N	1300.000
E	1750.000
R	100.000
A1	80.000
A2	80.000

h +

N	1750.000
E	1400.000
R	200.000
A1	0.000
A2	0.000

N	2000.000
E	1800.000
R	0.000
A1	0.000
A2	0.000

+ —

```
START 0.000 1050.000 1100.000 CRLF
PT 1750.000 1300.000 100.000 80.000 80.000 CRLF
PT 1400.000 1750.000 200.000 0.000 0.000 CRLF
PT 1800.000 1800.000 2000.000 CRLF
```

2

g

$$L_{1,2} = \frac{A_{1,2}^2}{R}$$

$L_{1,2} :$

$A_{1,2} :$

k l ΔR

$$\Delta R = E - R(1 - \cos t)$$

$$\Delta R = 6.777 - 100(1 - \cos 18.20^\circ) = 1.700$$

j $\Delta R_1 = \Delta R_2$

m j

$$N_m = N - R \sin t = 63.348 - 100 \sin 18.20^\circ = 31.891$$

j $N_{m1} = N_{m2}$

n Q

$$D_1 = R \tan\left(\frac{LA}{2}\right) + \Delta R_2 \operatorname{cosec}(LA) - \Delta R_1 \cot(LA) + N_{m1}$$

$$LA = +111.55^\circ \quad \operatorname{cosec} = \frac{1}{\sin}, \quad \cot = \frac{1}{\tan}$$

$$D_1 = 100 * \tan(111.55^\circ / 2) + 1.7(1 / \sin 111.55^\circ)$$

$$\begin{aligned} & 1.7(1 / \tan 111.55^\circ) + 31.891 \\ & = 148.06015 + 1.8326 + 0.6844 + 31.891 \\ & = 182.468 \end{aligned}$$

$$D_1 = D_2$$

o KA1

$$N_{KA1} = N_{IP1} - D_1 \cdot \cos a_1$$

$$E_{KA1} = E_{IP1} - D_1 \cdot \sin a_1$$

_ BP IP1 $\Rightarrow a_1 = 74.03^\circ \pm 16.6'$

$$N_{KA1} = 1300 - 182.468 * \cos 74.03^\circ \pm 16.6' = 1249.872 \text{ m}$$

$$E_{KA1} = 1750 - 182.468 * \sin 74.03 = 16.6$$

$$2 \quad \cdot \sin a_3$$

$$\text{KA2-BC} = \sqrt{(1575.068 - 1444.032)^2 + (1536.058 - 1637.976)^2} = 166.005 \text{ m}$$

$$EC \quad EP = \sqrt{(2000 - 1867.456)^2 + (1800 - 1587.929)^2} = 250.084 \text{ m}$$

F	(BP)
N	1100.000 m
E	1050.000 m
BP	KA1
	74 03 16.6 }
	545.543 m
KA1	KE1
	j
	-100 m (- Z - Y / /)
	64 m
KE1	KE2
	-100 m (- Z - Y / /)
	131.354 m
KE2	KA2
	j
	-100 m (- Z - Y / /)
	64 m
KA2	BC
	322 07 30.1 }
	166.004 m
BC	EC
	200 (j Z - Y / /)
	334.648 m
EC	EP
	57 59 40.6 }
	250.084 m

_ ^ ! C `

1 NTS

出

1mm

1) (SD)

?+00002157m2675319+0320026d+00002156*00+00+00062EXT(CRLF)

ID	SD	m/f/i	V	H	d/g/m	HD	t/*L	P	O	BCC

块校验符=062

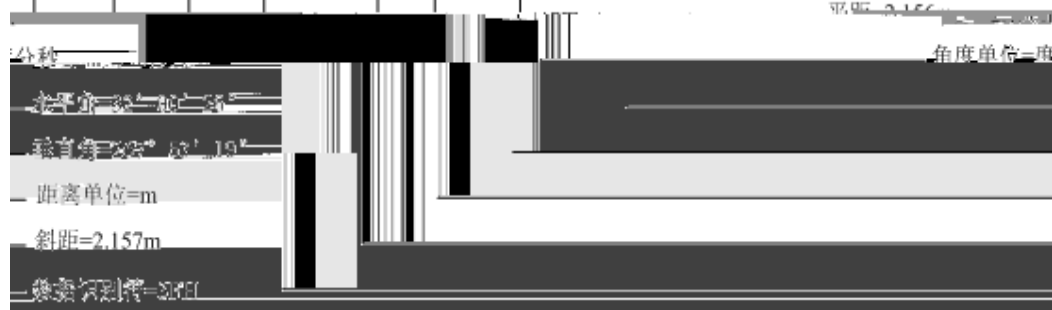
棱镜常数=-00

大气改正=+00

0值

倾斜改正(t表示打
开,*表示关闭)

距离=2.157m



2) / (HD/VD)

R+00002175m2682307+3470701d-00000061t00+00+00008EXT(CRLF)

HD	m/f/i	V	H	d/g/m	VD	t/*L	P	O	BCC	ID

高差=-0.061m

数据识别符=52H

3) (H/V)

I	I	I	I	I	I
ID	V	H	TILT	d/g/m	BCC

地址: 00'~38' 倾斜度

区别符=3CH 数据

U+00000002121-00000000485+00000000548m+3470702d095EXT(CRLF)

ID N E Z m/f/i H d/g/m BCC

±标=-0.548m	Z标
±标=-0.485m	E标
±标=2.121m	N标
据识别符=55H	数:

0.1mm

2020年12月26日

斜距=2.1760m
数据识别符=28H

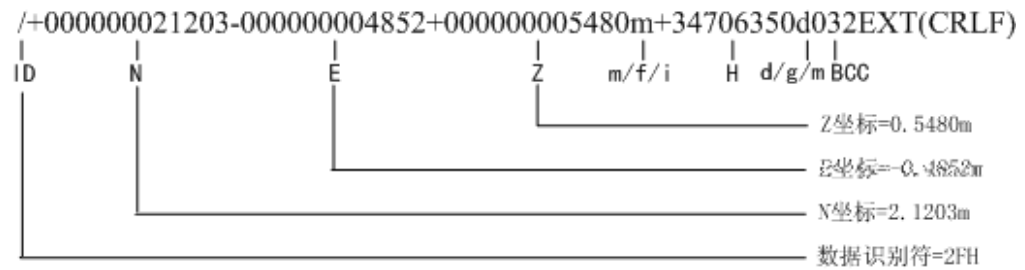
```
*=000001751,26922425,24706255,1000000616,00,0000,0000*064EY(TGPIJ)
```

ID SD m/f/i V H d/g/m VD t/*L P 0 BCC
 高差=-0.0616
 数据识别符=2

3) (H/V)



4) (N/E/Z)



2

y

		C	067	ETX	CRLF	
ASCII	43H	30H	36H	37H	03H	0DH 0AH
y c	r		r	3		
		ACK	006	ETX	CRLF	3
ASCII	06H	30H	30H	36H	03H	0DH 0AH
		NAK	021	ETX	CRLF	3
ASCII	14H	30H	32H	31H	03H	0DH 0AH
y t						

	Z10	091	ETX	CRLF		H/V
ASCII	5AH	31H	30H	30H	39H	31H 03H 0DH 0AH
	Z12	089	ETX	CRLF		HR
ASCII	5AH	31H	32H	30H	39H	31H 03H 0DH 0AH
	Z13	088	ETX	CRLF		HL
ASCII	5AH	31H	33H	30H	39H	31H 03H 0DH 0AH
	Z32	091	ETX	CRLF		SD d
ASCII	5AH	33H	32H	30H	39H	31H 03H 0DH 0AH
	Z34	093	ETX	CRLF		SD
ASCII	5AH	33H	34H	30H	39H	33H 03H 0DH 0AH

	Z35	092	ETX	CRLF		SD			
ASCII	5AH	33H	35H	30H	39H	32H	03H	0DH	0AH
	Z42	092	ETX	CRLF		HD	d		
ASCII	5AH	34H	32H	30H	39H	32H	03H	0DH	0AH
	Z44	090	ETX	CRLF		HD			
ASCII	5AH	34H	34H	30H	39H	30H	03H	0DH	0AH
	Z45	091	ETX	CRLF		HD			
ASCII	5AH	34H	35H	30H	39H	31H	03H	0DH	0AH
	Z62	094	ETX	CRLF		NEZ	d		
ASCII	5AH	36H	32H	30H	39H	34H	03H	0DH	0AH
	Z64	088	ETX	CRLF		NEZ			
ASCII	5AH	36H	34H	30H	38H	38H	03H	0DH	0AH
	Z65	089	ETX	CRLF		NEZ			
ASCII	5AH	36H	35H	30H	38H	39H	03H	0DH	0AH

3 讯

r ! ()

元次并

次(复67>? 次 肩①补变② 肱②补变 补补重元补补变补②补补补② 肩识补补补② 肩补变补②

```

<--- C 067 ETX
      ( r)          --->
<--- C 067 ETX
      ( r)          --->
      t
      t
      7
  
```

```

      --->
<--- ( r)
      --->
<--- ( r)
      t
      t
      7
  
```

变q讯67>?8v U0

- 1) / y *
- 2) C BCC . f 0.05 / s y
ACK 4 . f / r
- 3) . 0.05 \ 1 s y ACK p @ 5
D
- 4) 3) 7 10 J

NTS

```

<--- y *
      ACK 006 ETX          --->
<--- y *
      ( r)          --->
<--- y *
      ( r)          --->
      t
      t
      7
  
```

u v 010-67805689
r w t x (N