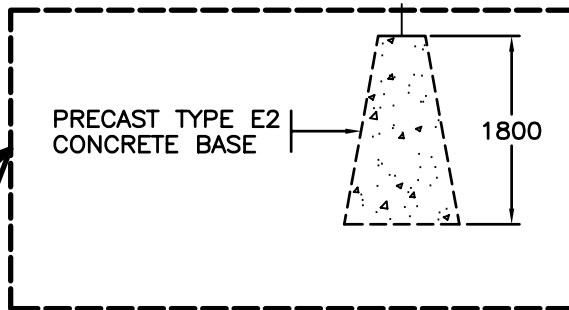


UNIT 15.1

UNIT 1.4



SCALE 1:75

NOTE:

REFER TO SCHEDULE OF QUANTITIES AND UNIT PRICES FOR DESCRIPTION OF UNITS



BRITISH COLUMBIA

Ministry of Transportation

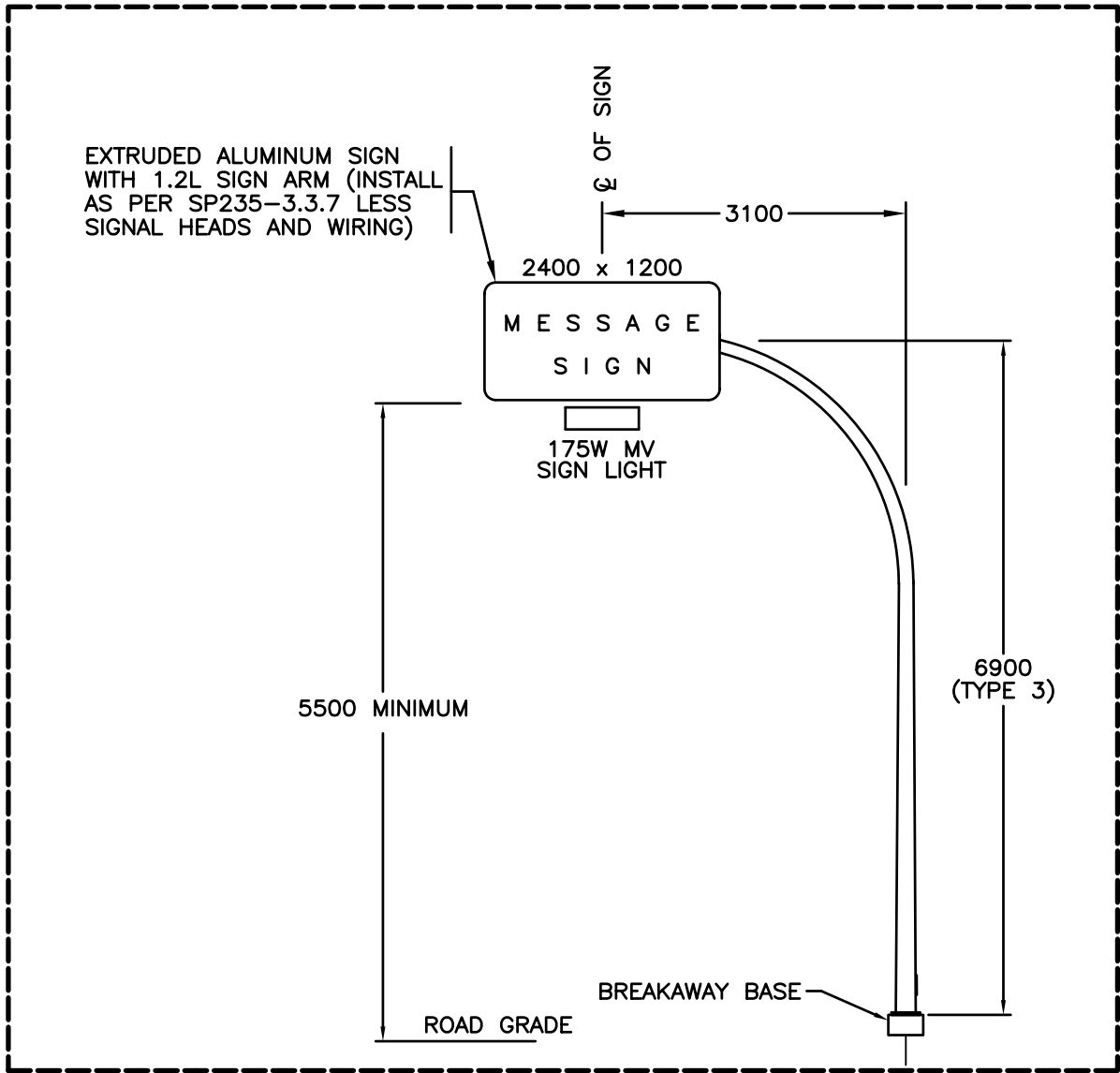
No.	Revision	Date
A	ALL HEADS ARE LED	DEC/03
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03

TYPE 3 POLE WITH 1.2m x 2.4m ADVANCE WARNING SIGN

Date _____ Approved _____

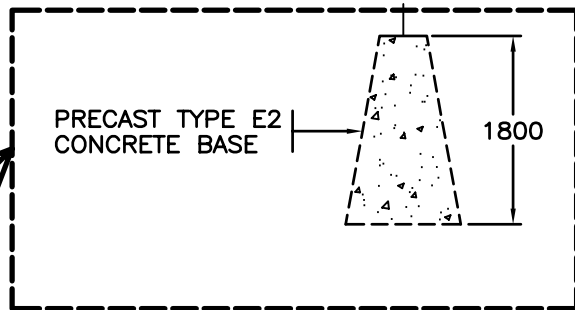
 Electrical Engineer

SPECIFICATION DRAWING No. SS-1



UNIT 15.2

UNIT 1.4



SCALE 1:75

NOTE:

REFER TO SCHEDULE OF QUANTITIES AND UNIT PRICES FOR DESCRIPTION OF UNITS

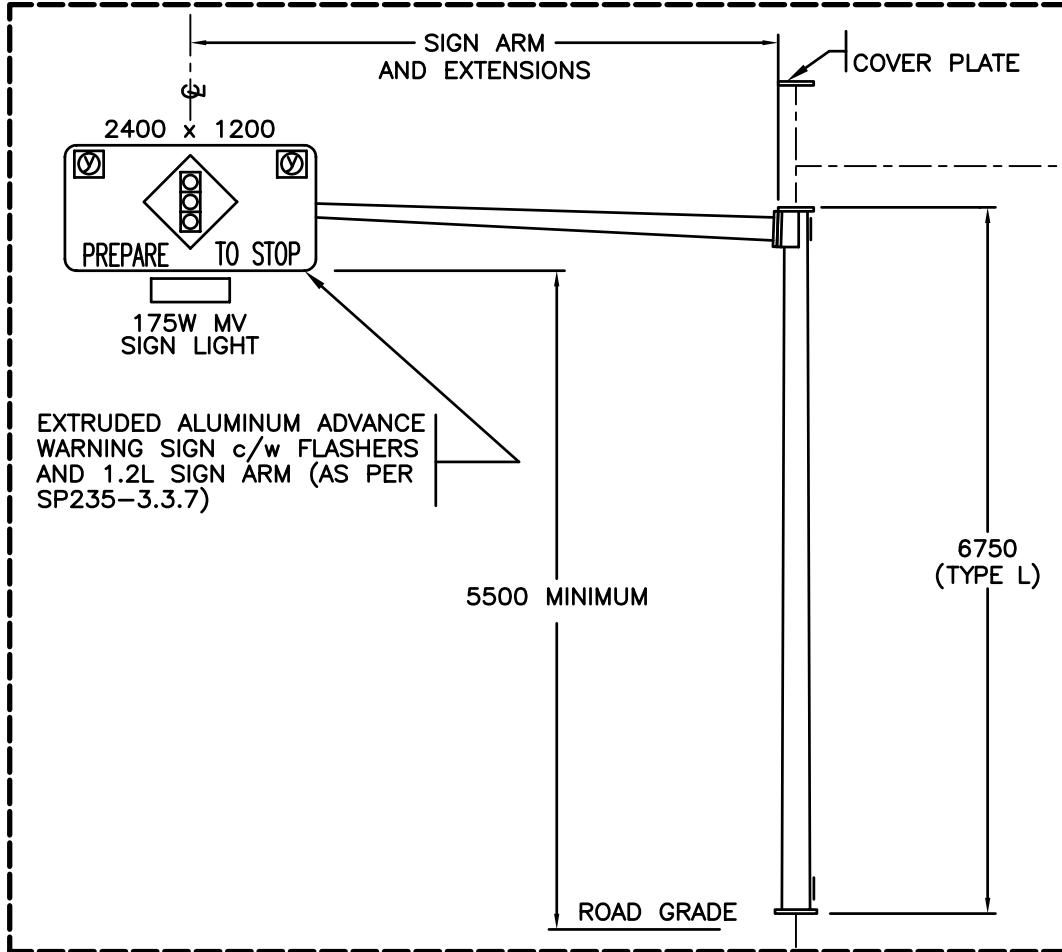
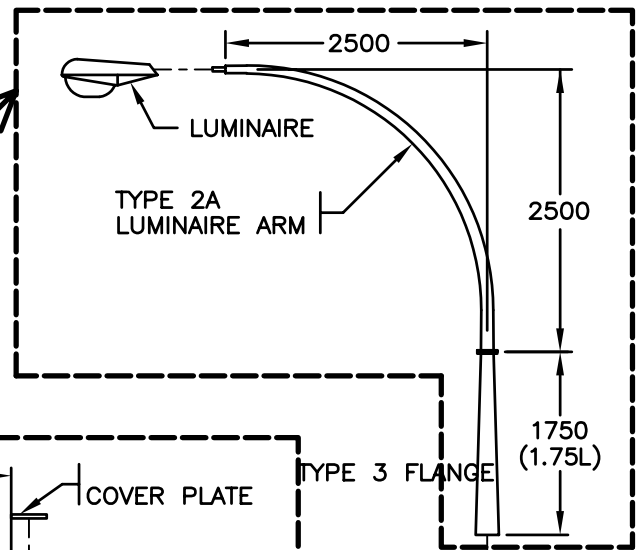


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Ministry of Transportation

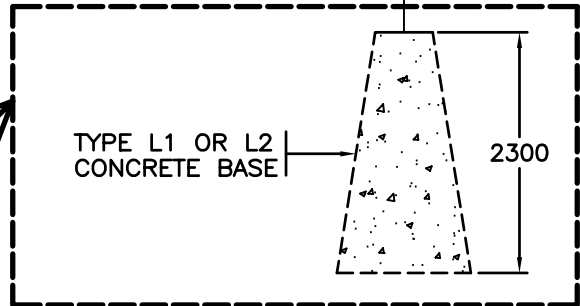
No.	Revision	Date	TYPE 3 POLE WITH 1.2m x 2.4m MESSAGE SIGN	
A	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03	Date	Approved
			SPECIFICATION DRAWING No.	
			SS-2	
			Electrical Engineer	

UNIT 16.12



UNIT 15.3

UNIT 1.6 OR 1.7



SCALE 1:75

NOTE:
REFER TO SCHEDULE OF QUANTITIES AND UNIT PRICES FOR DESCRIPTION OF UNITS



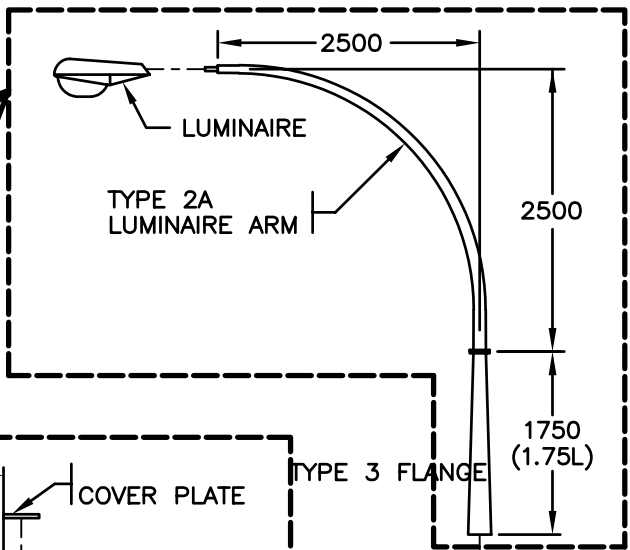
BRITISH COLUMBIA

Ministry of Transportation

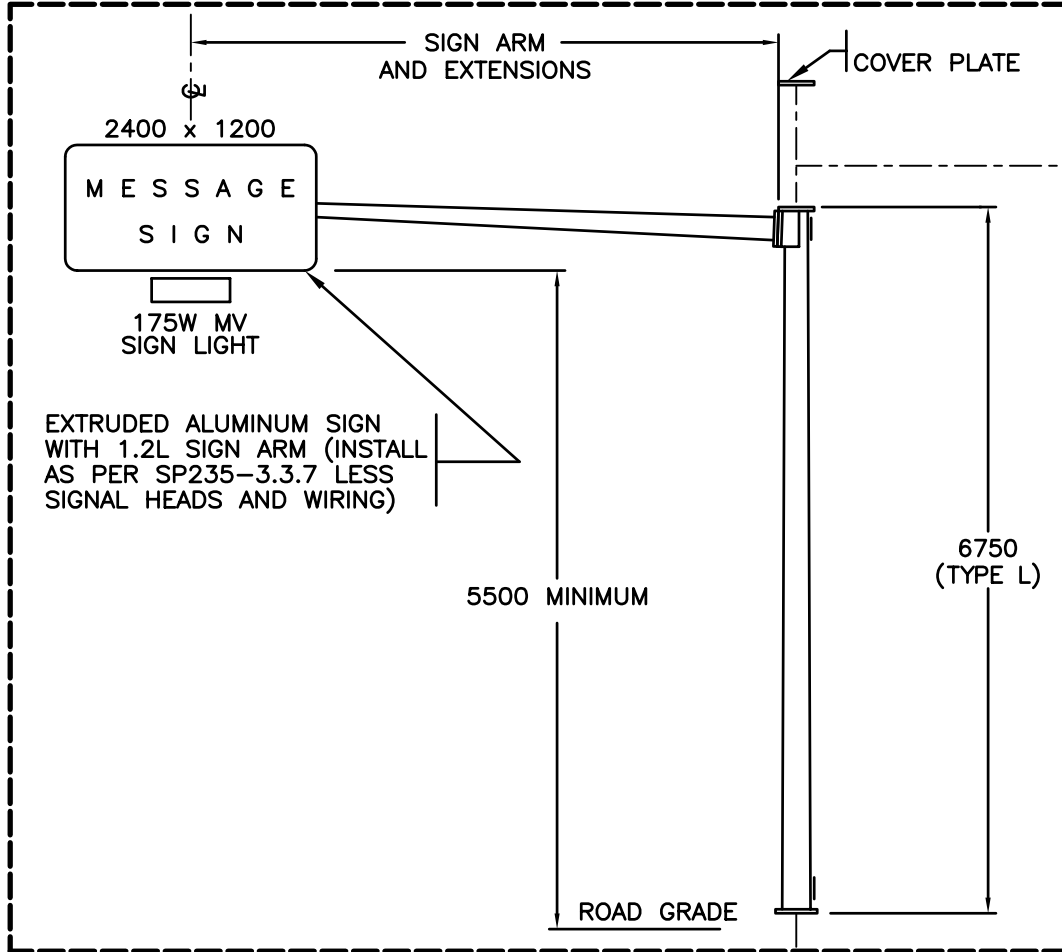
No.	Revision	Date
A	ALL HEADS ARE LED	DEC/03
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03

TYPE L POLE WITH 1.2m x 2.4m ADVANCE WARNING SIGN		Date _____ Approved _____ Electrical Engineer	SPECIFICATION DRAWING No. SS-3

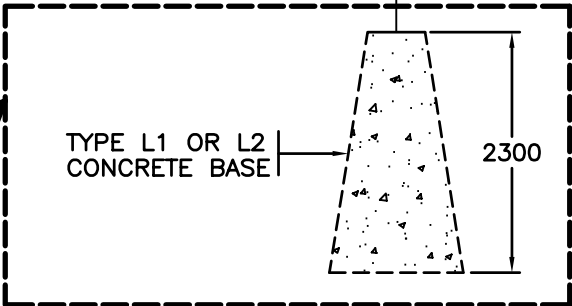
UNIT 16.12



UNIT 15.4



UNIT 1.6 OR 1.7



SCALE 1:75

NOTE:
REFER TO SCHEDULE OF QUANTITIES AND UNIT PRICES FOR DESCRIPTION OF UNITS

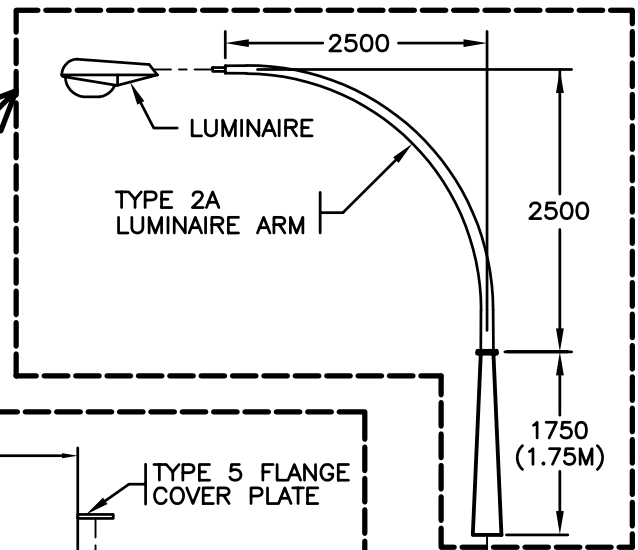


BRITISH COLUMBIA

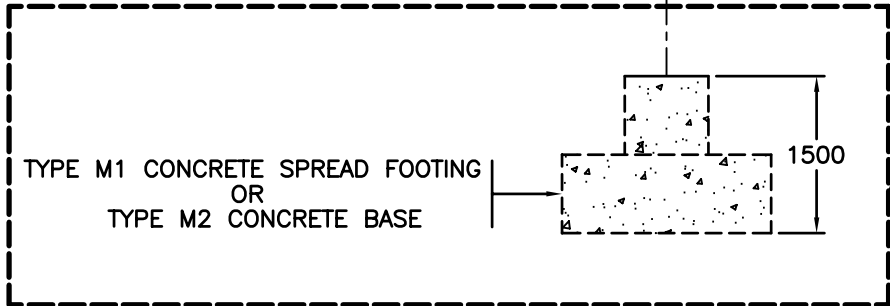
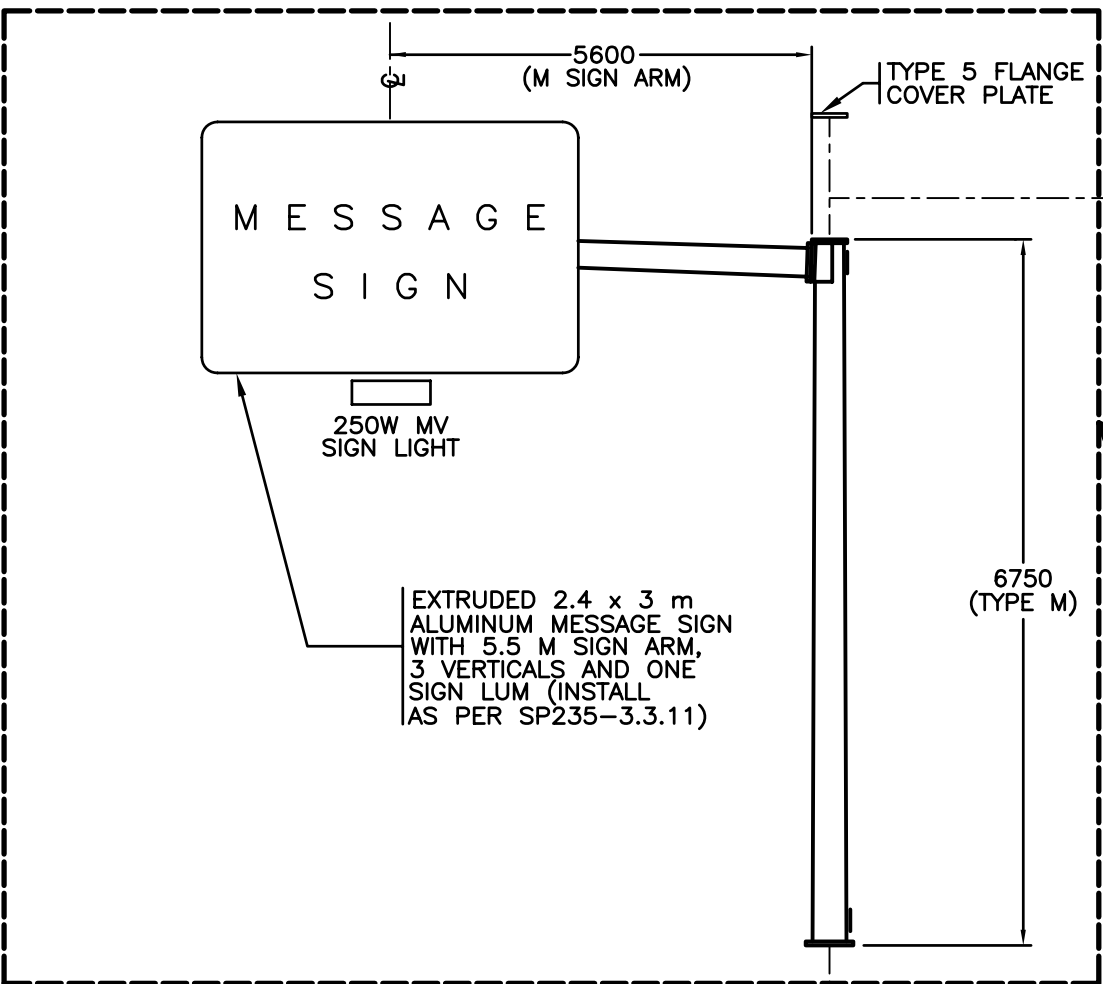
Ministry of Transportation

No.	Revision	Date	TYPE L POLE WITH 1.2m x 2.4m MESSAGE SIGN	
A	ALL HEADS ARE LED	DEC/03	Date _____ Approved _____ Electrical Engineer _____	
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03		
			SPECIFICATION DRAWING No.	SS-4

**UNIT
16.12**



**UNIT
15.5**



**UNIT 1.8
OR 1.9**

SCALE 1:75

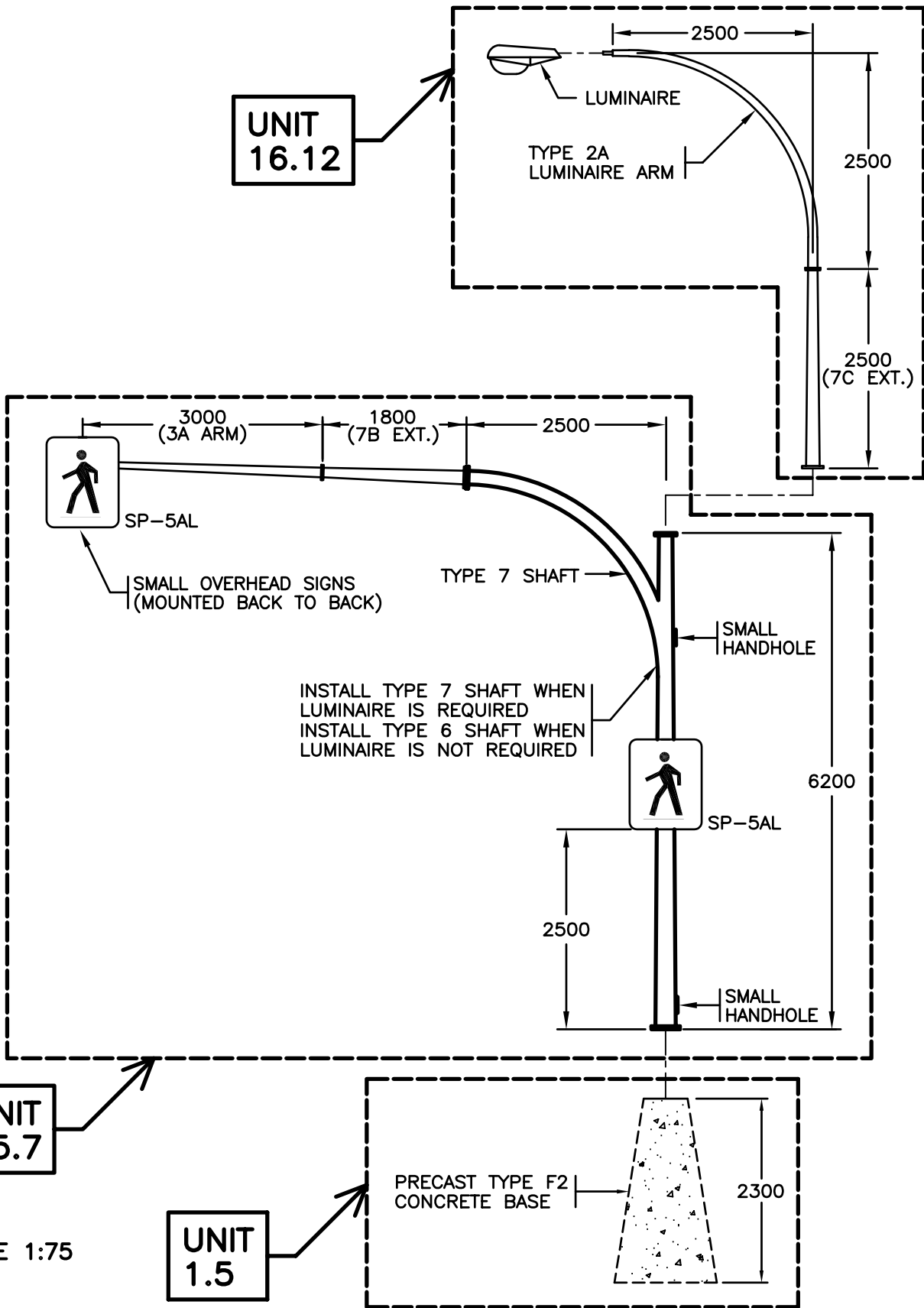
NOTE:
REFER TO SCHEDULE OF QUANTITIES AND
UNIT PRICES FOR DESCRIPTION OF UNITS



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COLUMBIA

Ministry of
Transportation

No.	Revision	Date	TYPE M POLE WITH 2.4m x 3.0m MESSAGE SIGN	
A	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03		
			Date	Approved
			_____ Electrical Engineer	
			SPECIFICATION DRAWING No. SS-5	



UNIT 15.7

UNIT 16.12

UNIT 1.5

SCALE 1:75

NOTE:
REFER TO SCHEDULE OF QUANTITIES AND UNIT PRICES FOR DESCRIPTION OF UNITS

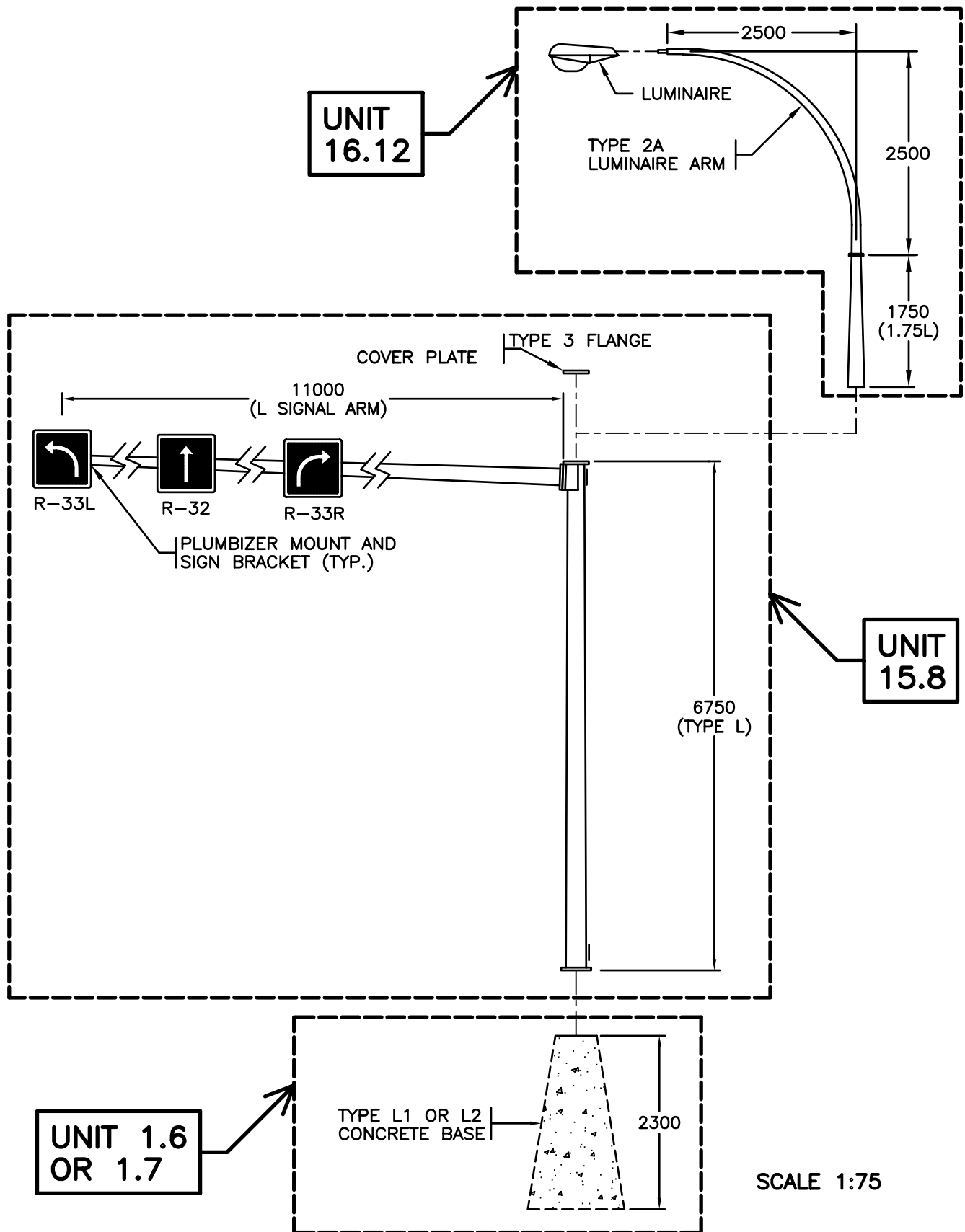


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Ministry of Transportation

No.	Revision	Date
A	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03

TYPE 6 OR TYPE 7 POLE WITH SMALL OVERHEAD SIGN		SPECIFICATION DRAWING No. SS-6
Date	Approved	
_____ Electrical Engineer		



NOTE:

REFER TO SCHEDULE OF QUANTITIES AND UNIT PRICES FOR DESCRIPTION OF UNITS



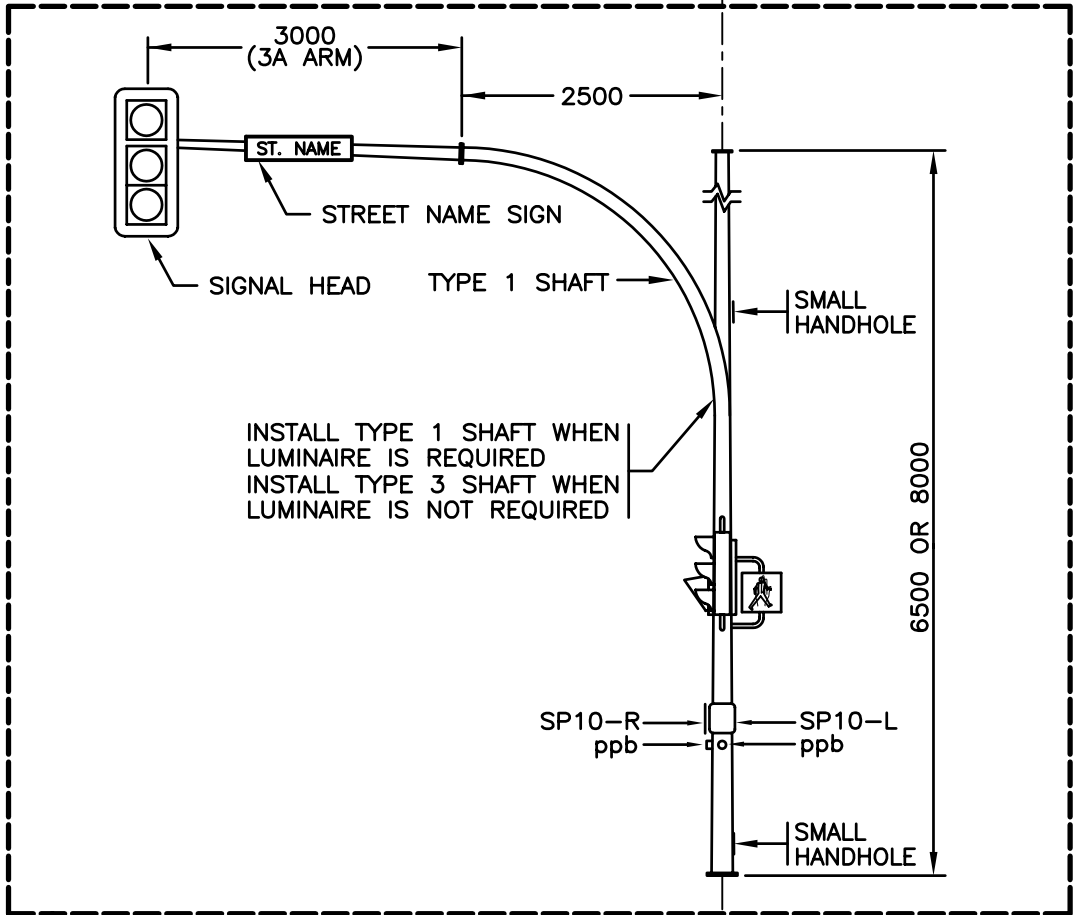
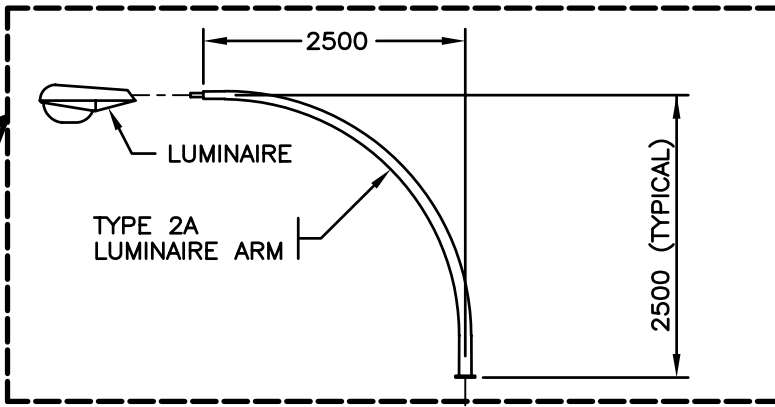
BRITISH COLUMBIA

Ministry of Transportation

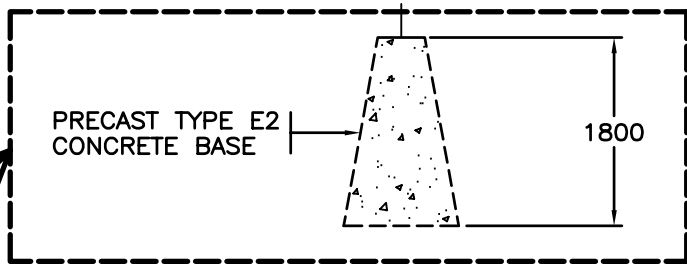
No.	Revision	Date	TYPE L POLE WITH SMALL OVERHEAD SIGNS
A	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03	
		Date	Approved

			Electrical Engineer
			SPECIFICATION DRAWING No. SS-7

**UNIT
16.12**



**UNIT
14.1**



**UNIT
1.4**

SCALE 1:75

NOTE:
REFER TO SCHEDULE OF QUANTITIES AND
UNIT PRICES FOR DESCRIPTION OF UNITS



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COLUMBIA

Ministry of
Transportation

No.	Revision	Date
A	ALL HEADS ARE LED	DEC/03
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03

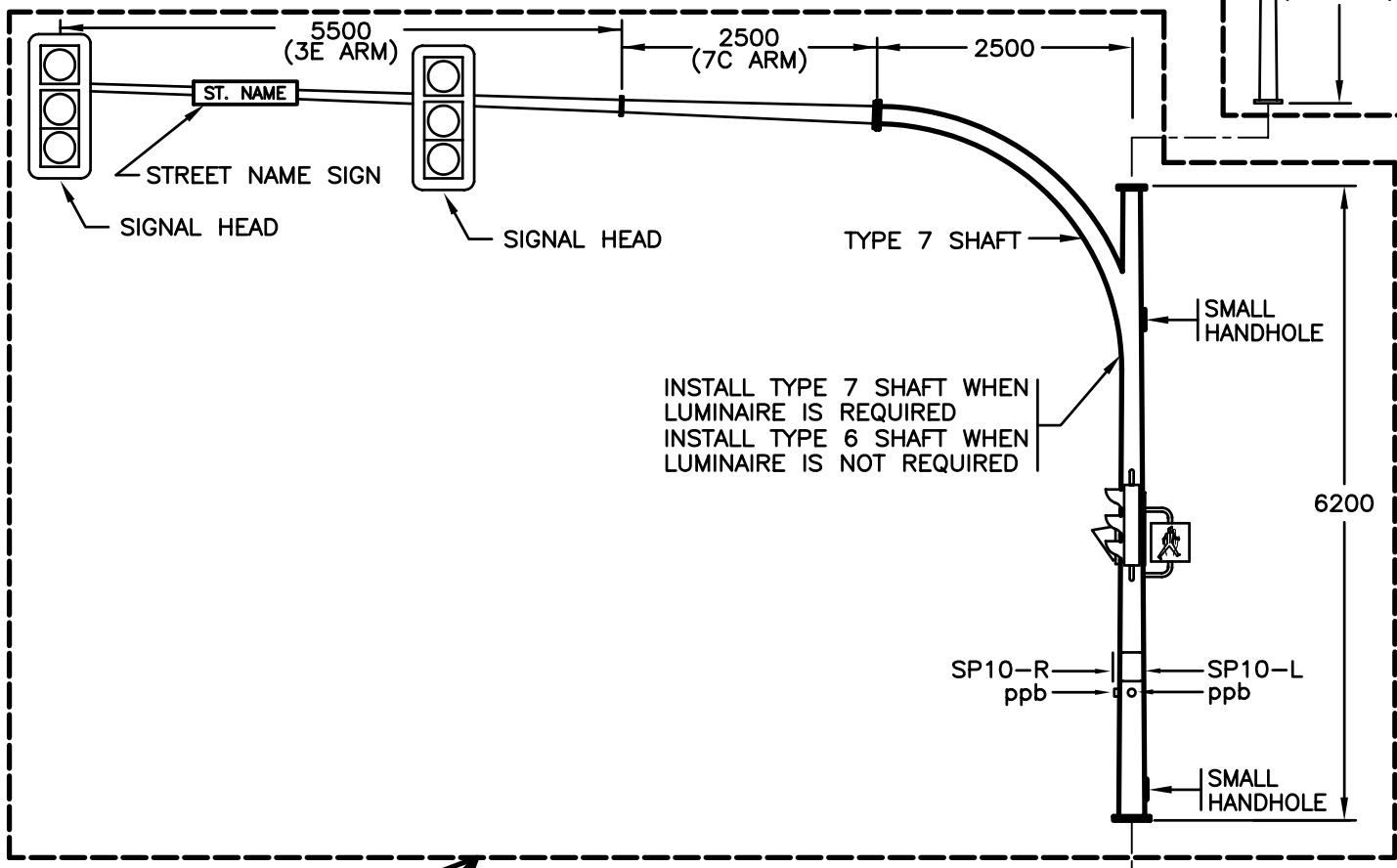
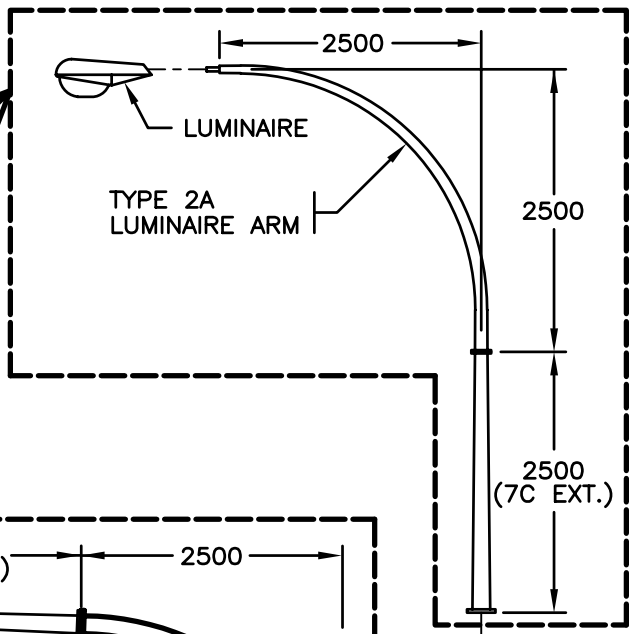
TYPE 1 OR TYPE 3 SIGNAL POLE

Date _____ Approved _____

Electrical Engineer

SPECIFICATION
DRAWING No.
TS-1

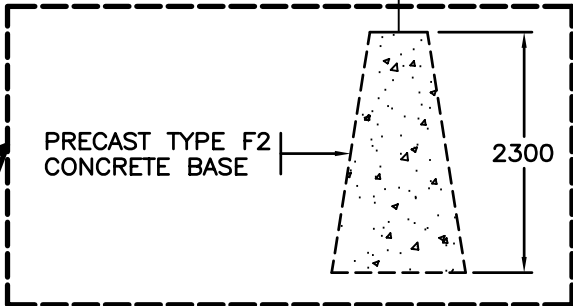
**UNIT
16.12**



**UNIT
14.2**

SCALE 1:75

**UNIT
1.5**



NOTE:
REFER TO SCHEDULE OF QUANTITIES AND UNIT PRICES FOR DESCRIPTION OF UNITS



BRITISH COLUMBIA

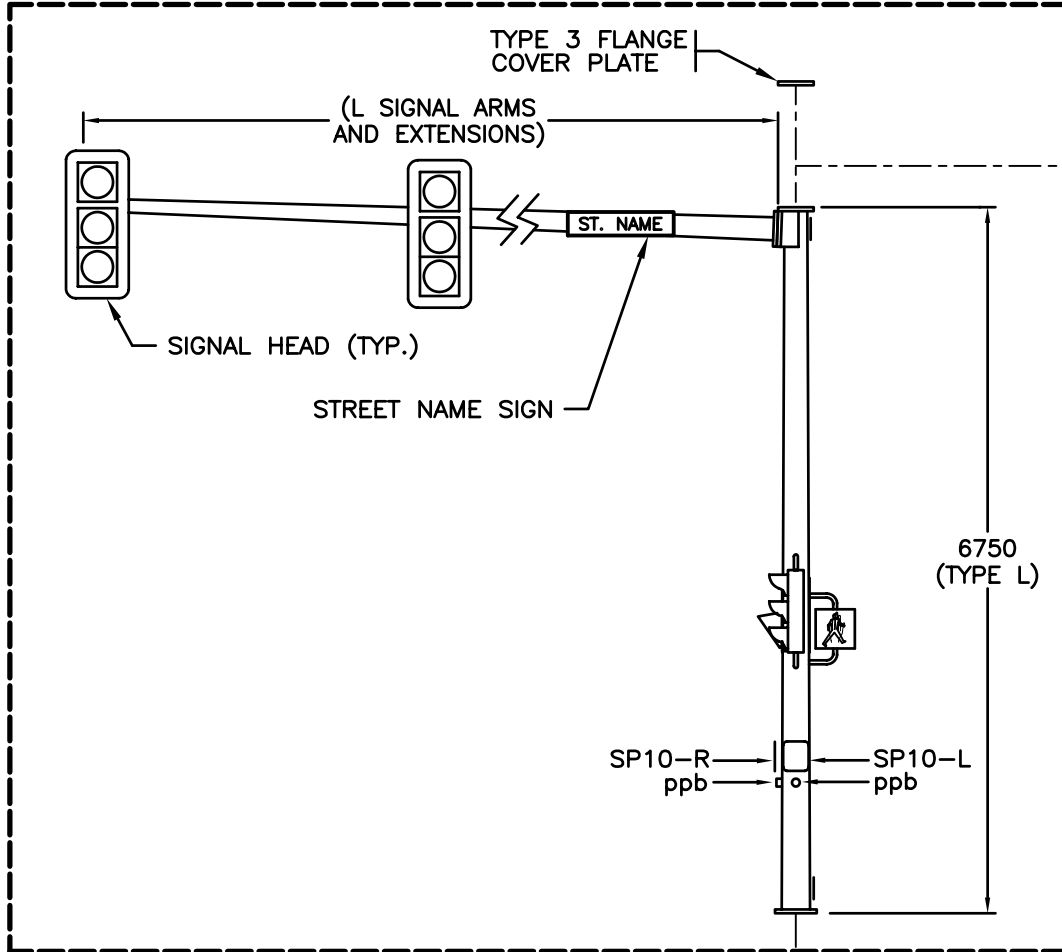
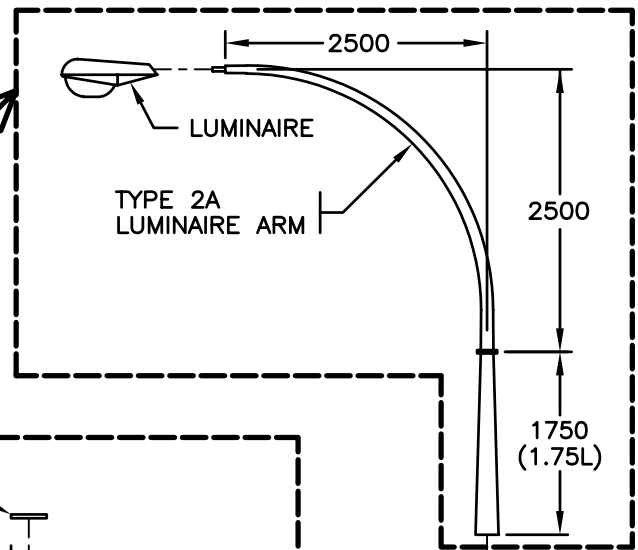
Ministry of Transportation

No.	Revision	Date
A	ALL HEADS ARE LED	DEC/03
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03

TYPE 6 OR TYPE 7 SIGNAL POLE		SPECIFICATION DRAWING No. TS-2
Date	Approved	

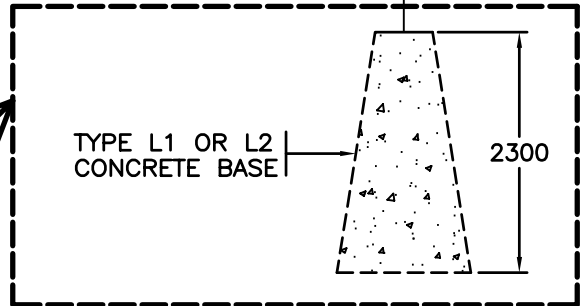
Electrical Engineer		

**UNIT
16.12**



**UNIT
14.3**

**UNIT 1.6
OR 1.7**



SCALE 1:75

NOTE:
REFER TO SCHEDULE OF QUANTITIES AND
UNIT PRICES FOR DESCRIPTION OF UNITS



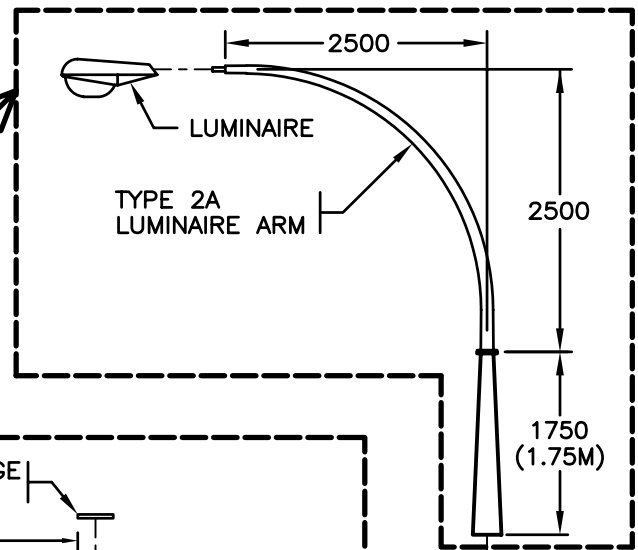
BRITISH
COLUMBIA

Ministry of
Transportation

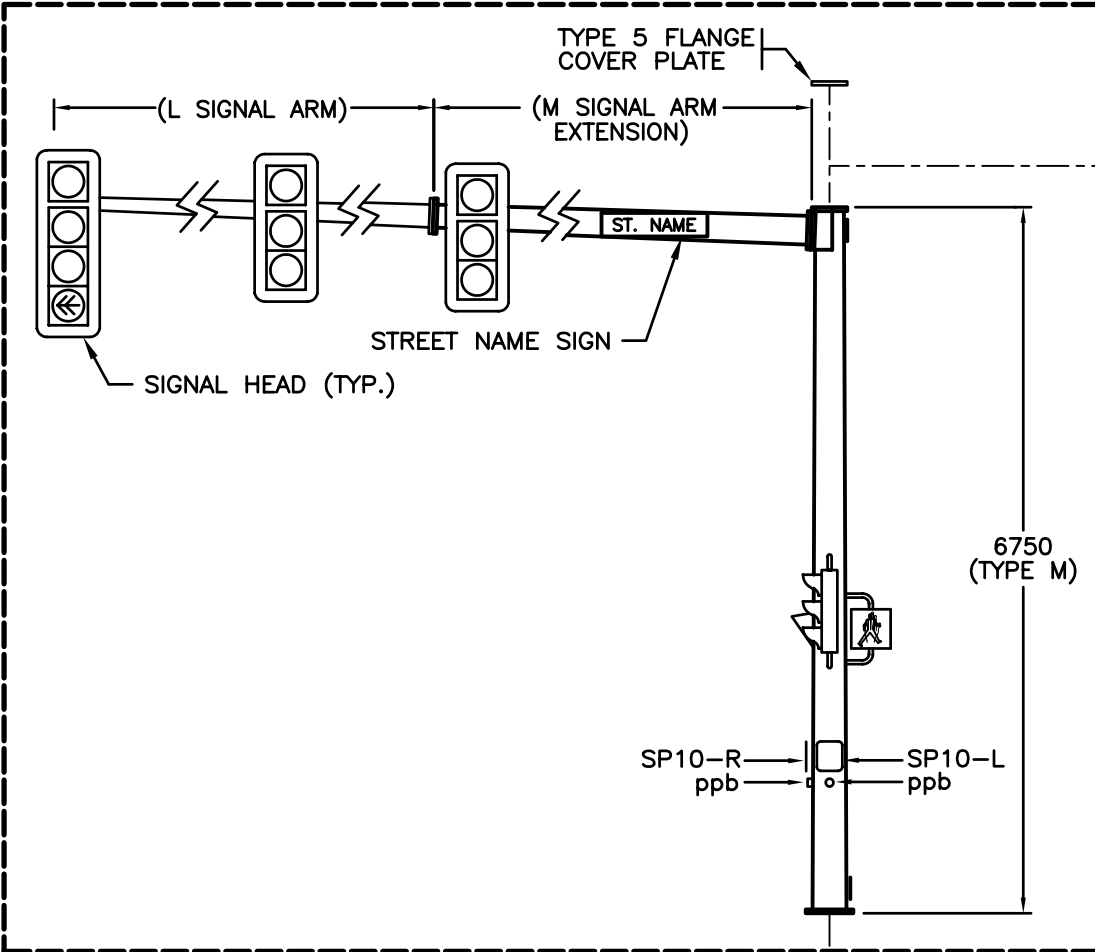
No.	Revision	Date
A	ALL HEADS ARE LED	DEC/03
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03

TYPE L SIGNAL POLE		SPECIFICATION DRAWING No.
Date	Approved	TS-3
_____ Electrical Engineer		

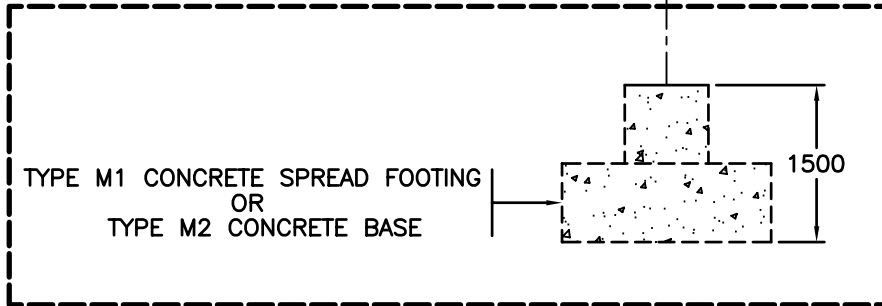
**UNIT
16.12**



**UNIT
14.4**



**UNIT 1.8
OR 1.9**



SCALE 1:75

NOTE:
REFER TO SCHEDULE OF QUANTITIES AND
UNIT PRICES FOR DESCRIPTION OF UNITS



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COLUMBIA

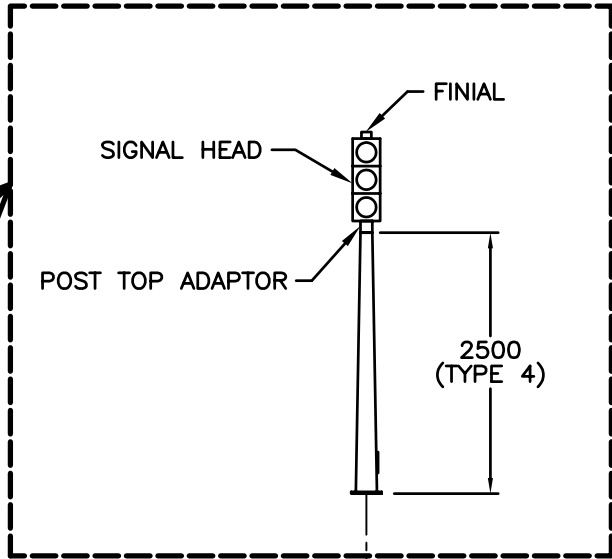
Ministry of
Transportation

No.	Revision	Date
A	ALL HEADS ARE LED	DEC/03
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03

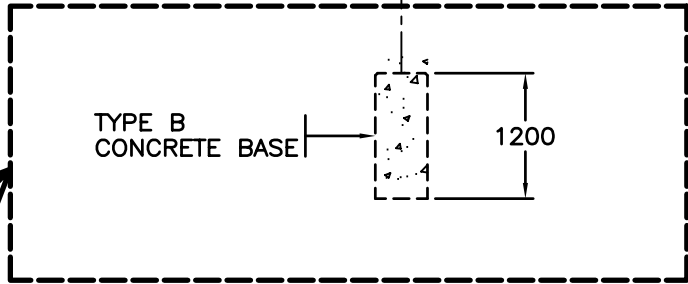
TYPE M SIGNAL POLE		SPECIFICATION DRAWING No. TS-4
Date	Approved	

Electrical Engineer		

**UNIT
14.5**



**UNIT
1.1**



SCALE 1:75

NOTE:

REFER TO SCHEDULE OF QUANTITIES AND UNIT PRICES FOR DESCRIPTION OF UNITS

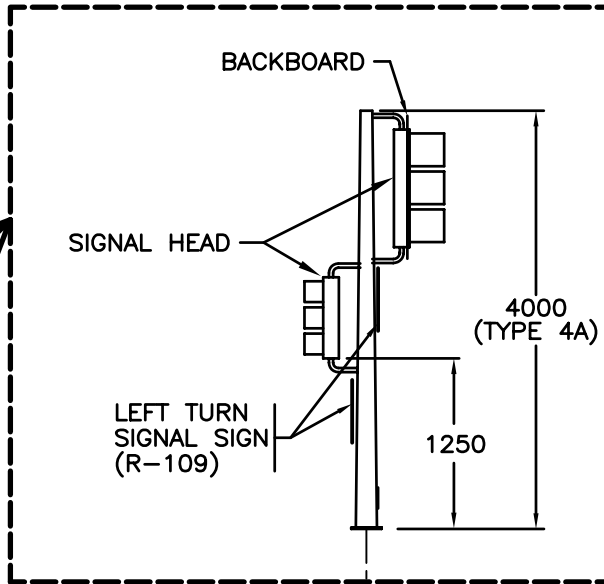


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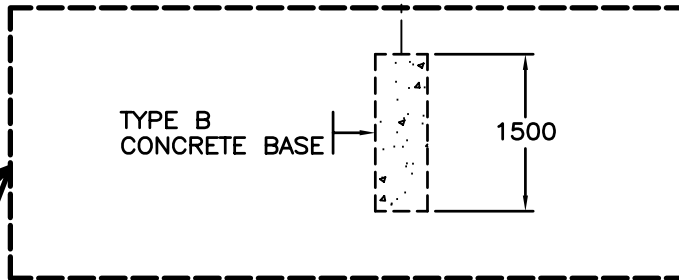
Ministry of
Transportation

No.	Revision	Date	TYPE 4 SIGNAL POLE WITH ONE HEAD	
A	ALL HEADS ARE LED	DEC/03	<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p>Date _____</p> <p>Approved _____</p> <p>_____</p> <p>Electrical Engineer</p> </div> <div style="width: 35%; text-align: center;"> <p>SPECIFICATION DRAWING No. TS-5</p> </div> </div>	
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03		

**UNIT
14.6**



**UNIT
1.1**



SCALE 1:75

NOTE:

REFER TO SCHEDULE OF QUANTITIES AND UNIT PRICES FOR DESCRIPTION OF UNITS

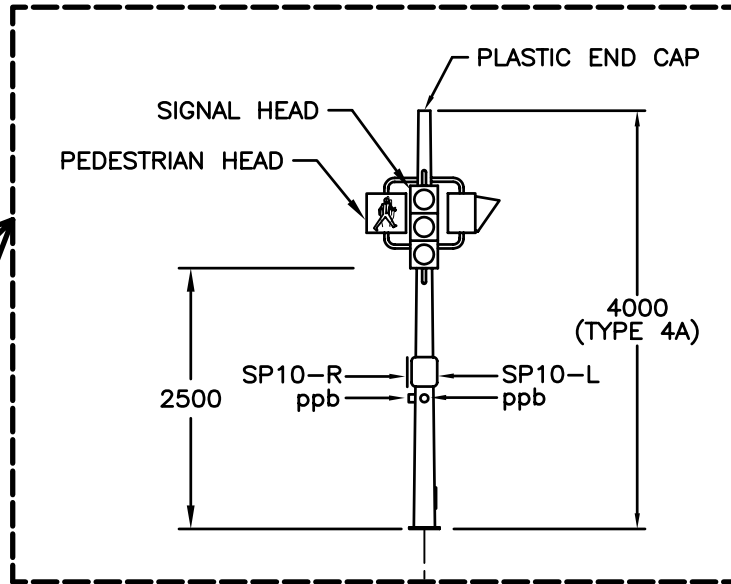


BRITISH
COLUMBIA

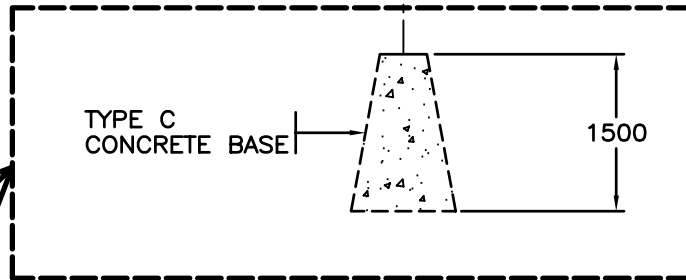
Ministry of
Transportation

No.	Revision	Date	TYPE 4A SIGNAL POLE WITH TWO HEADS		
A	ALL HEADS ARE LED	DEC/03	Date	Approved	
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03	<div style="text-align: center;"> _____ Electrical Engineer </div>		
					SPECIFICATION DRAWING No. TS-6

**UNIT
14.7**



**UNIT
1.2**



SCALE 1:75

NOTE:

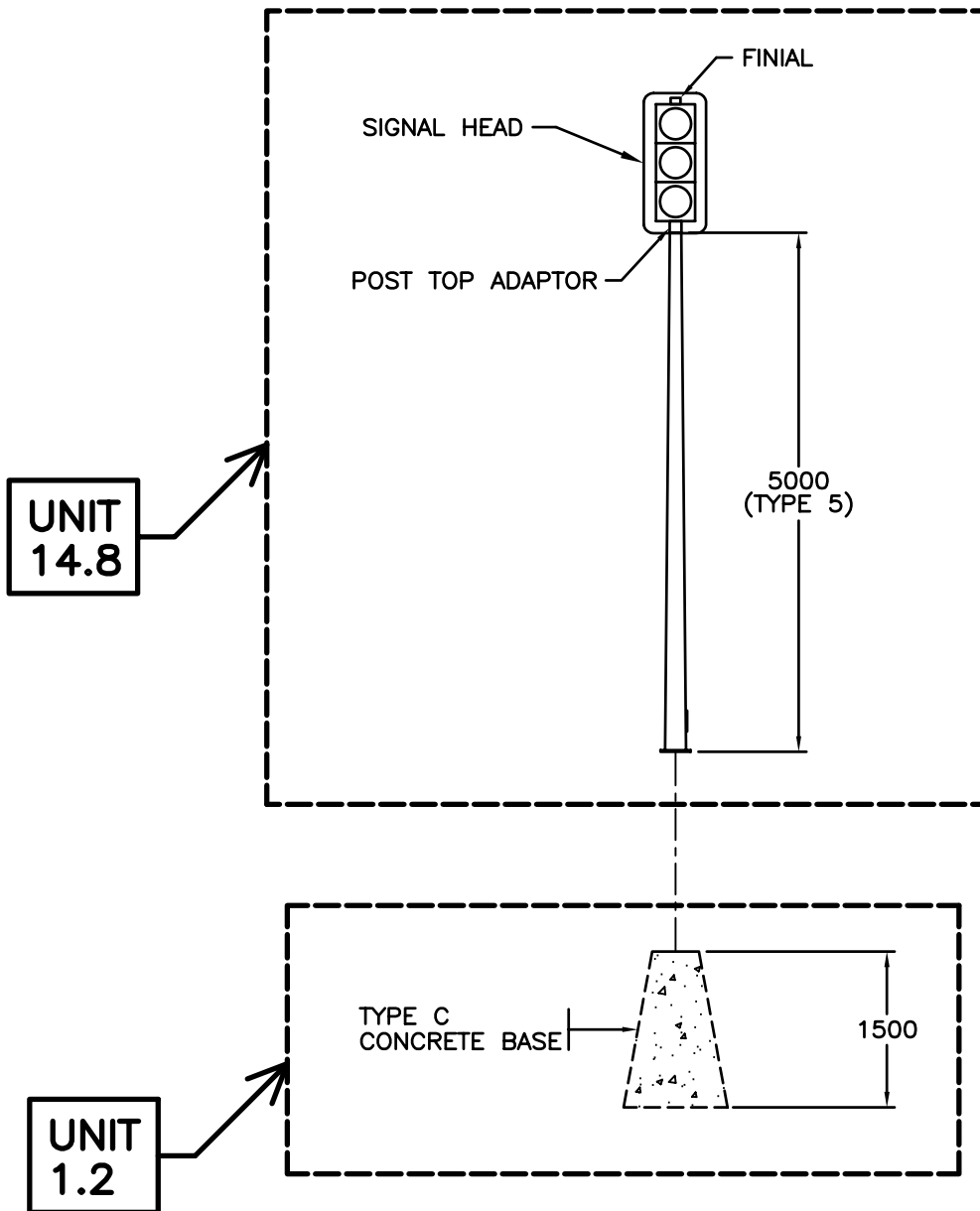
REFER TO SCHEDULE OF QUANTITIES AND UNIT PRICES FOR DESCRIPTION OF UNITS



BRITISH COLUMBIA

Ministry of Transportation

No.	Revision	Date	TYPE 4A SIGNAL POLE WITH THREE HEADS	
A	ALL HEADS ARE LED	DEC/03	Date	Approved
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03	_____	
			Electrical Engineer	
			SPECIFICATION DRAWING No. TS-7	



SCALE 1:75

NOTE:

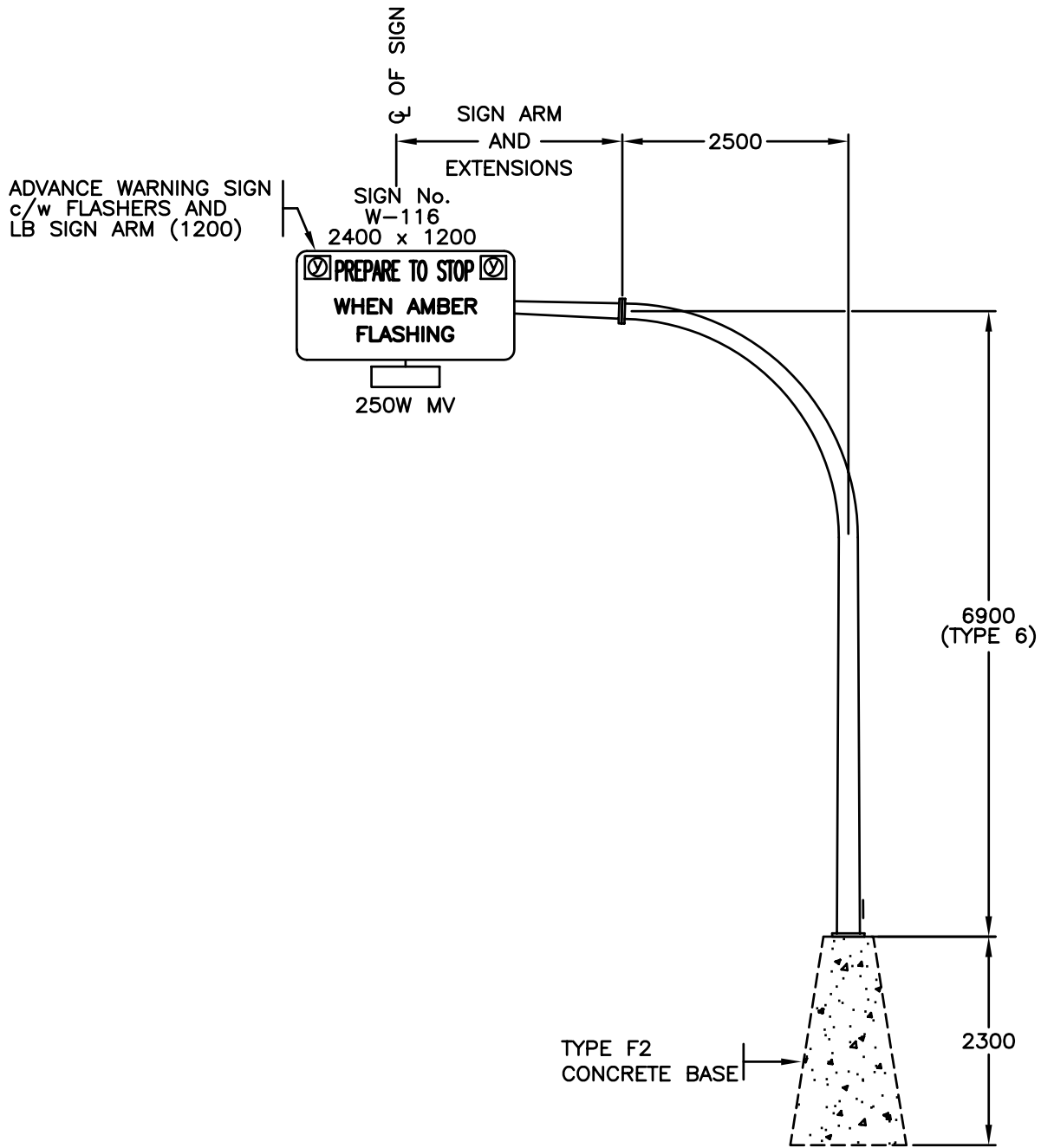
REFER TO SCHEDULE OF QUANTITIES AND UNIT PRICES FOR DESCRIPTION OF UNITS



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Ministry of Transportation

No.	Revision	Date	TYPE 5 SIGNAL POLE WITH PRIMARY HEAD	
A	ALL HEADS ARE LED	DEC/03	Date	Approved
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03	_____	
			Electrical Engineer	
				SPECIFICATION DRAWING No. TS-8



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COLUMBIA

Ministry of
Transportation

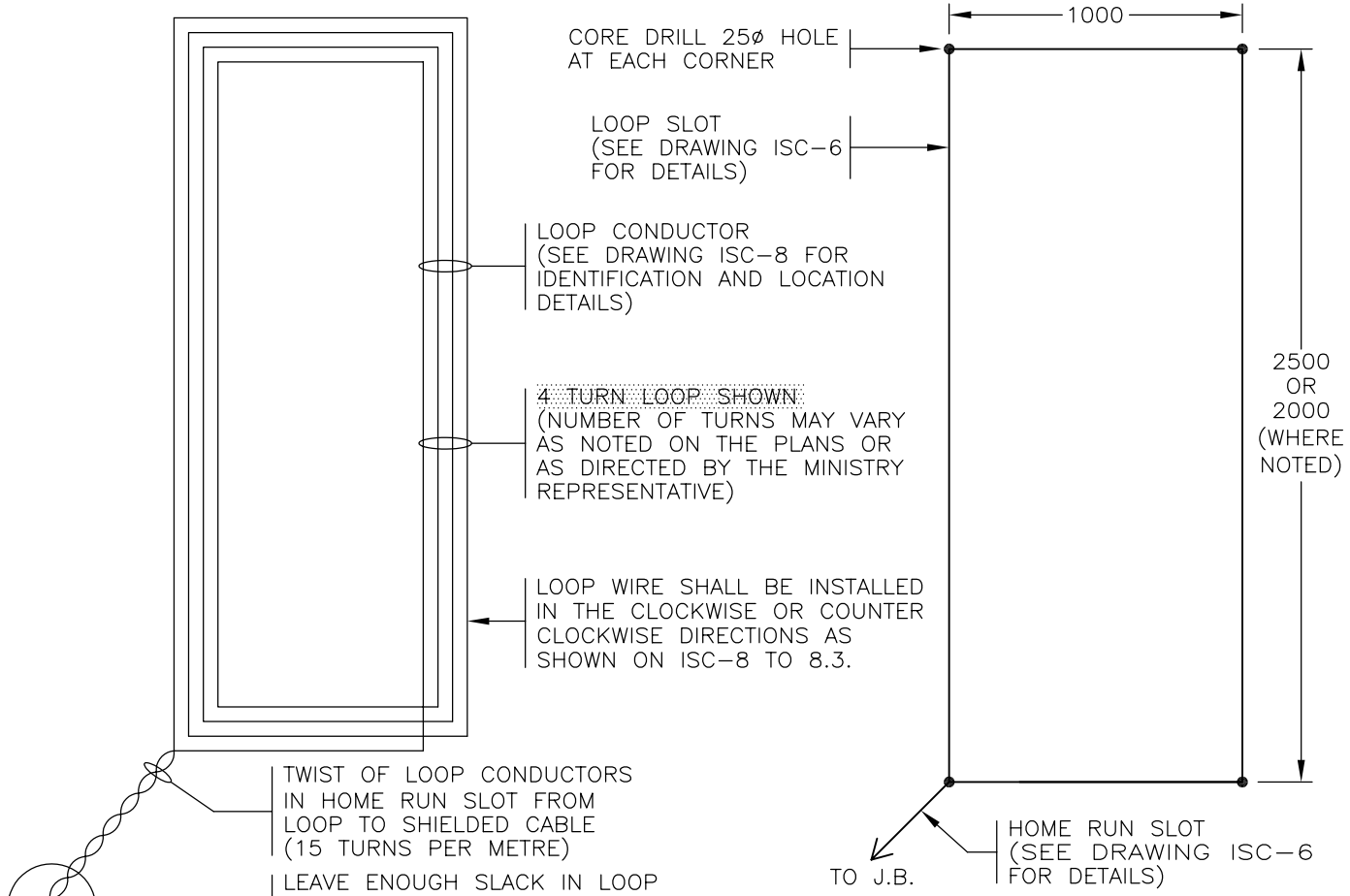
No.	Revision	Date
A	ALL HEADS ARE LED	DEC/03
B	ALL MOUNTING TO CURRENT MINISTRY STANDARDS	DEC/03

TYPE 6 POLE WITH ADVANCE WARNING SIGN

Date _____ Approved _____

Chief Highway Engineer

SPECIFICATION
DRAWING No.
SK-29



LOOP SLOT PATTERN

LOOP INDUCTANCE FORMULA (μH)
(LESS SHIELDED LEAD-IN CABLE INDUCTANCE)

$$L = P/4 (3.28)(N^2 + N)$$

L = LOOP INDUCTANCE (μH)
P = PERIMETER (METRES)
N = NUMBER OF TURNS

LOOP INDUCTANCE SHOULD BE EQUAL TO OR GREATER THAN THE SHIELDED CABLE INDUCTANCE. (A 2:1 RATIO IS PREFERABLE) SHIELDED CABLE INDUCTANCE IS 0.56 μH PER METRE

LOOP CONDUCTOR LAYOUT

NOTES

1. SEE STANDARD SPECIFICATIONS & SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
3. LOOP CONDUCTORS SHALL BE INSTALLED IN THE SLOTTED SAWCUT.
4. LOOP INSTALLATION PROCEDURES & RULES SHALL BE FOLLOWED IN ACCORDANCE WITH DRAWINGS ISC-10 AND -11.
5. ALL RECTANGULAR DETECTOR LOOPS SHALL BE 4 TURN UNLESS OTHERWISE NOTED.
6. LOOP SHALL BE INSTALLED WITHIN 2mm OF ALL GIVEN DIMENSIONS.

NOT TO SCALE

REV.E (SHOWN SHADED)

INTERSECTION SAFETY CAMERA
DETAILS SHOWN ON THIS DRAWING ARE
ACCEPTABLE TO THE CAMERA VENDOR

NAME: _____ COMPANY: _____
SIGNATURE: _____ DATE: _____

REVIEWED BY ISC IMPLEMENTATION
TEAM LEADER

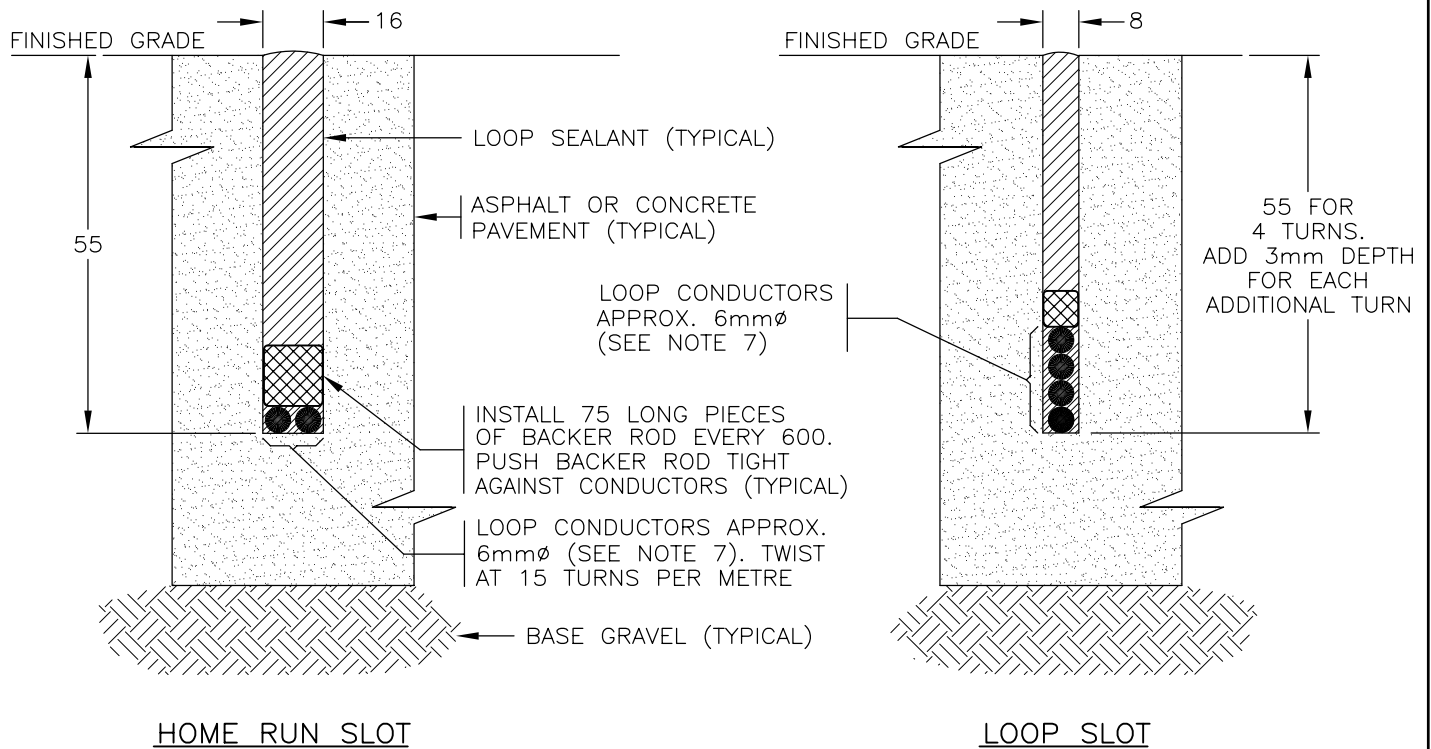
NAME: _____ SIGNATURE: _____
DATE: _____



**SHAFLIK
ENGINEERING LTD.**
CONSULTING ENGINEERS

**INTERSECTION SAFETY CAMERA
DETECTOR LOOP DETAILS**

DES. D.S.M.	DATE 98-10-02	DRAWING NUMBER
DRAWN R.F.	QUALITY CONTROL	ISC-5



HOME RUN SLOT

LOOP SLOT

NOTES

1. SEE STANDARD SPECIFICATIONS & SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
3. LOOPS IN ASPHALT SHALL BE SEALED WITH ELSRO HOT POUR CRACK FILLER No. 1190 OR B.P. BURFALT 16607 170, TYPE 2. LOOPS AND LEADS IN CONCRETE SHALL BE SEALED WITH 3M SCOTCHCOAT DP125 EPOXY ADHESIVE. APPLY WITH EXP PLUS APPLICATOR. ALTERNATE PRODUCTS MUST MEET ICBC APPROVAL.
4. APPROVED BACKER RODS ARE DETECTOR SYSTEMS BR-625. ALTERNATE PRODUCTS MUST MEET MINISTRY APPROVAL.
5. ONLY ONE LOOP SHALL BE INSTALLED IN EACH HOME RUN SLOT.
6. WHERE ASPHALT AND CONCRETE MEET, SEAL JOINT WITH ASPHALT SEALANT.
7. LOOP CONDUCTOR SHALL BE BSCC No.14 AWG CALTRANS TYPE 2 600V, 150°C LOOP DETECTOR WIRE.

INTERSECTION SAFETY CAMERA DETAILS SHOWN ON THIS DRAWING ARE ACCEPTABLE TO THE CAMERA VENDOR	
NAME: _____	COMPANY: _____
SIGNATURE: _____	DATE: _____
REVIEWED BY ISC IMPLEMENTATION TEAM LEADER	
NAME: _____	SIGNATURE: _____
DATE: _____	

NOT TO SCALE

REV.C



**SHAFLIK
ENGINEERING LTD.**
 ■ CONSULTING ENGINEERS ■

INTERSECTION SAFETY CAMERA
LOOP & HOME RUN SLOT DETAILS

DES. D.S.M.	DATE 99-09-27	DRAWING NUMBER
DRAWN R.F.	QUALITY CONTROL	ISC-6

REFER TO RULE 8 ON DRAWING
ISC-11 FOR MINIMUM ALLOWABLE
GROUND TO RESISTANCE AND MAXIMUM
VARIATION IN INDUCTANCE VALUES.

Intersection: _____

Date: _____ Drawing No. _____ ICBC Rep.: _____

Electrician\Contractor: _____ Company: _____

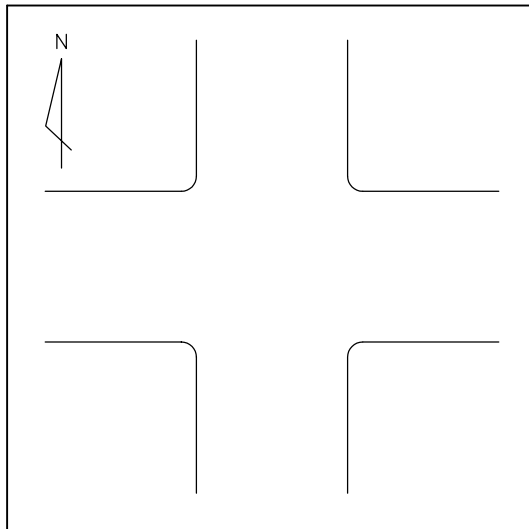
Loop Sealant Used: _____ Pavement Conditions*: _____

Weather Conditions: Air Temp: _____ Precipitation: _____

Loop # as per DWG		ISC-1	ISC-3	ISC-2	ISC-4	ISC-5	ISC-6
Phase assignment as per controller							
Resistance to ground** (ohms)	at loop						
	at camera pole						
Loop Resistance (ohms)	at loop						
	at camera pole						
Loop Inductance (micro Henrys)	at loop						
	at camera pole						

* example of possible pavement conditions: good, cracked, sealed cracked, ruts at stop bar, pavement patches

** megger test - max 250V DC



<small>INTERSECTION SAFETY CAMERA DETAILS SHOWN ON THIS DRAWING ARE ACCEPTABLE TO THE CAMERA VENDOR</small>	
NAME: _____	COMPANY: _____
SIGNATURE: _____	DATE: _____
<small>REVIEWED BY ISC IMPLEMENTATION TEAM LEADER</small>	
NAME: _____	SIGNATURE: _____
DATE: _____	

REV.B



**SHAFLIK
ENGINEERING LTD.**
CONSULTING ENGINEERS

INTERSECTION SAFETY CAMERA
LOOP CHECK SHEET

DES. D.S.M.

DATE 98-10-02

DRAWING
NUMBER

DRAWN R.F.

QUALITY
CONTROL

ISC-12