SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1		S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	
CMU CHANNEL NO.	1		2	13	3	4	14	5	6	15	7	8	16	Ⓑ
PHASE	1		2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	Ⓒ
SIGNAL HEAD NO.	11	82	21,22 23	P21, P22	NU	41,42	NU	51	61,62 63	P61, P62	NU	81,82	NU	Ⓓ
RED			128			101			134			107		Ⓔ
YELLOW			129			102			135			108		Ⓔ
GREEN			130			103			136			109		Ⓔ
RED ARROW	125							131						Ⓕ
YELLOW ARROW	126	126						132						Ⓕ
GREEN ARROW	127	127						133						Ⓕ
				113						119				Ⓖ
				115						121				Ⓖ

NU = NOT USED

Ⓗ

Ⓗ Extra column - if more than one type of signal head is attached to the same load switch, a second column is added to the chart as shown above. In this example, both a 3-section all left arrow head and the arrow portion of a 5-section head are to run on phase 1.

2070 Signal Head Hook-Up Chart

The chart shown at left appears on all 2070 electrical details. Its purpose is to provide a user-friendly reference on connecting the signal heads to the cabinet field terminals.

Features:

Ⓐ Load Switch No. - displays the load switch designation.

Ⓑ CMU Channel No. - displays the conflict monitor unit channel number for each corresponding load switch position.

Ⓒ Phase - lists the function of the load switch. The load switch function can be reassigned in the controller programming. The default settings are shown at left.

Ⓓ Signal Head No. - lists the signal heads that should have connections made to the field terminals for this load switch. Note that a 4- or 5- section head may appear in two different columns because the red, yellow, and green balls are controlled by one load switch while the arrow indications are controlled by another.

Ⓔ Red, Yellow, Green - lists the field terminal number to which the red, yellow, and green ball indications for the signal heads listed in the row above should be tied.

Ⓕ Red, Yellow, and Green arrows - red, yellow, and green arrow indications for the signal heads should be tied to the field terminals that appear in these rows.

Ⓖ Pedestrian Signal Indications - the 'Hand' and the 'Man' indications of the pedestrian signal heads should be connected to the field terminals indicated. If no pedestrian signals are used, these two rows may be removed from the drawing.

2070 Signal Head Hook–Up Chart

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STD. NO.
3.0
SHEET 1 OF 2

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SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	61	21,22	NU	NU	41,42	NU	21	61,62	NU	41	81,82	NU	23,24	63,64	NU	43,44	NU	NU
RED	✳	128			101		✳	134			107		A121	A124		A114		
YELLOW		129			102			135		✳	108		A122	A125		A115		
GREEN		130			103			136			109		A123	A126		A116		
RED ARROW																		
YELLOW ARROW	126						132											
GREEN ARROW	127						133			124								

NU = NOT USED

✳ Denotes install load resistor. See load resistor installation detail this page.

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Ⓙ

Features (cont.):

Ⓘ Load Resistor note - if there is not a field indication for each of the three outputs on a given load switch, a note referring to the load resistor installation detail should appear below the field hook-up chart. An asterisk is to be placed in the chart to show where a load resistor needs to be installed. If only the green and yellow indications of the load switch are used (common with 5-section heads on protected/permissive left turns), an asterisk referring to the note should be placed in the 'red' row. If only the green arrow indication is used, the asterisk should appear in the 'yellow' row. This scenario can occur when a 4-section head is used to display a left turn that is only used during a preemption. See STD. NO. 4.0 for more information.

Ⓙ Auxiliary Output file - if overlaps are used, an auxiliary output file is installed providing additional load switch capacity for up to six overlaps. The default load switch to function relationships for the auxiliary output file are as follows:

AUX S1 ——— OVERLAP A
AUX S2 ——— OVERLAP B
AUX S3 ——— SPARE
AUX S4 ——— OVERLAP C
AUX S5 ——— OVERLAP D
AUX S6 ——— SPARE

Spare load switches AUX S3 and AUX S6 can be used as overlaps (e.g. overlap E and overlap F). To do so, the controller outputs assigned to their slots must first be reprogrammed as overlaps.

2070 Signal Head Hook-Up Chart

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TRANSPORTATION MOBILITY AND SAFETY DIVISION
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STD. NO. 3.0

SIGNAL HEAD HOOK-UP CHART FOR 4-SECTION FYA PPLT SIGNAL HEADS USED IN A 332 BASE MOUNTED CABINET

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1		S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1		2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1		2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11★	82	21,22	NU	31★	41,42	NU	51★	61,62	NU	71★	81,82	NU	11★	31★	NU	51★	71★	NU
RED		✳	128			101			134			107							
YELLOW			129		✳	102		✳	135		✳	108							
GREEN			130			103			136			109							
RED ARROW														A121	A124		A114	A101	
YELLOW ARROW		126												A122	A125		A115	A102	
FLASHING YELLOW ARROW														A123	A126		A116	A103	
GREEN ARROW	127	127			118			133			124								

NU = NOT USED

✳ Denotes install load resistor. See load resistor installation detail this page.

★ See pictorial of head wiring in detail below.

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2070 Signal Head Hook-Up Chart

The chart shown at left appears on all 2070 electrical details. Its purpose is to provide a user-friendly reference on connecting the signal heads to the cabinet field terminals.

Features:

Ⓐ Auxiliary Output file - the cabinet must be wired such that for each Flashing Yellow Arrow (FYA) approach, the solid green protected arrow is driven by a load switch monitored on channels 1, 3, 5, and 7. The associated solid red arrow, solid yellow arrow, and flashing yellow arrow (overlap phase) must be driven by a load switch monitored on channels 9, 10, 11, and 12 respectively. The signal monitor makes the following associations when FYA monitoring is enabled for each approach:

Channel 1 with 9
Channel 3 with 10
Channel 5 with 11
Channel 7 with 12

Overlaps are used to drive the solid red arrow, solid yellow arrow, and flashing yellow arrow. The display sequence is further controlled by logic statements programmed in the controller.

Ⓑ Any load switch that only drives the solid green arrow on a 4-section FYA head will have a load resistor installed on its associated yellow field terminal on the output file. Additionally, the SSM switch for that channel will remain in the OFF position on the conflict monitor.

Ⓒ In addition to the hookup information shown in this chart, every electrical plan utilizing FYA heads will have a FYA signal wiring detail showing a pictorial relationship of the signal head to output file wiring.

2070 Signal Head Hook–Up Chart For FYA

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STD. NO.
3.1
SHEET 1 OF 2

SIGNAL HEAD HOOK-UP CHART FOR 4-SECTION FYA PPLT SIGNAL HEADS USED IN A 336 POLE MOUNTED CABINET

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3		S4	S5	S6	S7	S8	S9		S10	S11	S12	
CMU CHANNEL NO.	1	2	9	13	3	4	14	5	6	11	15	7	8	12	16
PHASE	OLA	2	1 GRN	2 PED	3	4	4 PED	OLC	6	5 GRN	6 PED	OLD	8	7 GRN	8 PED
SIGNAL HEAD NO.	11★	21,22	11★	NU	NU	41,42	NU	51★	61,62	51★	NU	71★	81,82	71★	NU
RED		128				101			134				107		
YELLOW		129				102			135				108		
GREEN		130				103			136				109		
RED ARROW	125							131				122			
YELLOW ARROW	126							132				123			
FLASHING YELLOW ARROW	127							133				124			
✋															
GREEN ARROW			114							120				111	
🚶				✳							✳				✳

✳ Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail below.

NOTE: Load switches S1, S3, S7, S9, S10, and S12 require output remapping. See sheets x through y for details.

Features:

Ⓓ Load switch outputs that drive the solid red arrow, solid yellow arrow, and flashing yellow arrow will have to be remapped to function as vehicle overlaps.

Unused ped yellow loadswitch outputs will have to be remapped to drive the left turn green arrows.

Ⓔ FYA operation when using a 336 pole mounted cabinet operates in compact mode. The FYA compact mode switch on the conflict monitor must be set to the ON position. Further details are found in STD. NO. 7.0. The cabinet must be wired such that the (unused) ped yellow load switch outputs are wired to the conflict monitor as follows:

2-PY to Channel 9 Green (CMU pin 13, logical Channel 9)
4-PY to Channel 9 Yellow (CMU pin 16, logical Channel 10)
6-PY to Channel 10 Green (CMU pin R, logical Channel 11)
8-PY to Channel 10 Yellow (CMU pin U, logical Channel 12)

For all cabinets, this is accomplished through a keyed plug connection found on the inside panel of the output file. Plug together the two connectors labeled as shown below:

1-2PY	1-CMU-13
2-4PY	2-CMU-16
3-6PY	3-CMU-R
4-8PY	4-CMU-U

Ⓕ Unused ped 'Walk' load switch outputs must be terminated with a load resistor.

2070 Signal Head Hook–Up Chart For FYA

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STD. NO. 3.1

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