## SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

## **Metro Rail Project**



## IX COMMUNICATIONS Interface Data Sheets Contract A640

**APRIL 1987** 



GENERAL CONSULTANT:

METRO RAIL TRANSIT CONSULTANTS DMJM/PBQD/KE/HWA

### A640 INTERFACE DATA SHEET INDEX

IDS NUMBER	INTERFACING CO	ONTRACT	INTERFACE LOCATION
640-112-00-01	All2 Facilities E		Main Shop Panel VP-R1
640-112-00-03	11 (1		Yard Control Tower
640-112-00-03	01 10		Main Shop Building
640-112-00 <del>-</del> 04	66 91		() ()
640-112-00-05	(1	1	0 40
640-121-00-01	Al21 Facilities E	Electrical	Maintenance of Way Building
640-121-00-02	u u	ı	tj tt
640-121-00-03	A121 Facilities E	Electrical	66 - <del>2</del> 9
640-130-00-01	A130 Facilities E	Electrical	Union Station/Yard Leads CIC #5
640-136-00-01	A136 Facilities E		Union Station CIC #3 East
640-136-00-02	90 (1	<b>(</b>	" " CIC #2 West
640-136-00-03	11 11	1	" "Stationwide
640-136-00-04	19 11	1	" " Stationwide
640-136-00-05	" "	it	" CIC #4 West
641-141-00-1	A141 Facilities E	Electrical	5th/Hill/C.C. Line CICs
640-147-00-01	Al47 Facilities E	Electrical	Civic Center Station CIC #2 North
640-147-00-02	10	II .	" " CIC #2 South
640-147-00-03	11 11		" " Stationwide
640-147-00-04	(1	1	" " Stationwide
640-157-00-01	A157 Facilities E	Electrical	5th/Hill Station CIC #2 North
640-157-00-02	99 70	ı	" " CIC #2 South
640-157-00-03	tt u	il .	" " Stationwide
640-157-00-04	VI (I	1	" " Stationwide
640-167-00-01	Al67 Facilities E	Electrical	7th/Flower Station CIC #3 East
640-167-00-02	1) 11	1	" " CIC #2 West
640-167-00-03	ee a	11	" " Stationwide
640-167-00-04	10 10	II .	" " Stationwide
640-167-00-05		11	7th/Flower LRT Station CIC #4L
640-167-00-06	t# 4(	•	" " CIC #5L
640-167-00-07	tj li		" " CIC #6L
640-167 00-08	11 11	1	" " CIC #7L

03/31/87

IDS NUMBER	INTERFACING CONTRACT	INTERFACE LOCATION
640-171-00-1	A171 Facilities Electrical	Wilshire/Alvarado Line CICs
640-187-00-01	A187 Facilities Electrical	Wilshire/Alvarado Station CIC #2 East
640-187-00-02	PR 96	" " CIC #3 West
640-187-00-03	(1)	" " Stationwide
640-187-00-04	<del>11</del> (1	" " Stationwide
640-187-00-05	et ti	" " CIC #4 West
640-187-00-06	10 01	" " CIC #5 East
640-620-00-01	A620 Automatic Train Control	Union Station TC/C CIR
640-620-00-02	66 66	Civic Center Station "
640-620-00-03	A620 Automatic Train Control	5th/Hill Station "
640-620-00-04	00 10	7th/Flower Station "
640-620-00-05	49 44	Wilshire/Alvarado Station "
640-620-00-06	u n .	All Stations TC&C MDF
640-620-00-07	19 11	Union Station TC&C Power
640-620-00-08	PI H	Civic Center Station TC&C "
640-620-00-09	14 14	5th/Hill Station TC&C "
640-620-00-10	es (i	7th/Flower Station TC&C "
640-620-00-11	Pt 69	Wilshire/Alvarado Station TC&C "
640-631-00-01	A631 Traction Power Installation	Union Station CIC #1 TPSS
640-631-00-02	()	Union Station CIC #4
640-631-00-03	PE DP	Civic Center Station CIC #1 TPSS
640-631-00-04	16 0	5th/Hill Station "
640-631-00-05	***	5th/Hill Station CIC #2 North
640-631-00-06	H 11	5th/Hill Station CIC #2 South
640-631-00-07	11	7th/Flower Station CIC #1 TPSS
640-631-00-08	tt 17	Wilshire/Alvarado Station "
640-631-00-09	D1 +1	Wilshire/Alvarado Station CIC #5
640-631-00-10	tt tr	Yard CIC #1 TPSS
640-631-00-11	tt ti	Yard Control Junction Boxes
640-631-00-12	19 19	Shop CIC #1 TPSS
640-631-00-13	e e	Systemwide CIC #1 TPSS
640-650-00-01	A650 Passenger Vehicle	Passenger Vehicle Antenna
640-650-00-02	P1 91	" " Radio
640-650-00-03	Q 19	" TICU
640-650-00-04	# 0	" " CCU

IDS NUMBER	<u>IN'</u>	TERFACING O	CONTRACT	INT	ERFACE LOCATION		
640-760-00-01	A760	Signs & Gra	aphics	Union	Station Sta	ation Pla	tform
640-760-00-02		11	11	Civic	Center Station	91	11
640-760-00-03		11	11	5th/H	ill Station	**	11
640-760-00-04		11	11	7th/F	lower Station	11	11
640-760-00-05		11	11	Wilsh	ire/Alvarado Statio	on "	u
640-795-00-01	A795				Station	CIC #3	East
640-795-00-02		11		11	91	CIC #2	West
640-795-00-03		"		Civic	Center Station	CIC #2	North
640-795-00-04		19		11	11	CIC #2	South
640-795-00-05		н		5th/H	ill Station	CIC #2	North
640-795-00-06		11		11	11	CIC #2	South
640-795-00-07		89		7th/F	lower Station	CIC #3	East
640-795-00-08		11		11	91	CIC #2	West
640-795-00-09		11		Wilsh	ire/Alvarado Statio	on CIC #2	East
640-795-00-10		11		99	12	CIC #3	West
640-840-00-01	н840	Fare Collec	ction		Station	CIC #3	East
640-840-00-02		11	19	11	n	CIC #2	West
640-840-00-03		11	99	Civic	Center Station	CIC #2	
640-840-00-04		11	11	**	n	CIC #2	South
640-840-00-05		91	19	5th/H	ill Station	CIC #2	North
640-840-00-06		11	11	11	89	CIC #2	South
640-840-00-07		H	н	7th/F	lower Station	CIC #3	East
640-840-00-08		11	98	11	,• 11	CIC #2	West
640-840-00-09		"	11	Wilsh	ire/Alvarado Statio	on CIC #2	East
640-840-00-10		11	n	11	11	CIC #3	West

SUBSYST	FERENCE: TP 13	ıbsystem	LOCATION: Panel VP-R1 REFER TO INTE	INTERFACE No.: 640-112-00-1 RFACE DATA TABLE: Ma	REV: 0			
CONTRAI SUBSYST	A112	Facilities al 471	ATTACHMENTS: Attachment 1 Technical Requirements  Attachment 2 Interface Reference Drawing List					
Intercon		ace Point bet	ween RCC Communic	cations equipment electr system.	ic power			
1	AL REQUIREMEN	NTS:						
Terminat	L DESCRIPTION ion of 120/208 in the Main Sho	VAC, 3-phase		power at Vital Panel VP-	R1			
	ATION CONTAC	T:						
COMMEN	TS:							
REFEREN See Atta	NCES: chment 2							
REVISION: PREPARED		BY:	IMPLEMENTATION RESE (THIRD PARTY):	PONSIBILITY				
No.	DATE	INITIALS	DATE					
	1	<del>                                     </del>	<u> </u>	1				

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IDS-640-112-00-1
ATTACHMENTS
MAIN SHOP
Electric Power Panel VP-R1

### ATTACHMENT 1

## TECHNICAL REQUIREMENTS

### 1) Facilities Contractor A112

All2 Facilities Contractor shall furnish Vital Panel VP-R1 and terminal strips required for the power interface with A640 Communications RCC equipment.

### 2) Communications Contractor A640

A640 Contractor shall furnish 120/208 VAC power cable from the RCC Communications Equipment Room to the RCC Electrical Room and terminate the cable at Vital Panel VP-R1.

### ATTACHMENT 2

### Interface Reference Drawing List

### All2 Contract Drawings

Drawing E-327 Basement Plan, Generator Pad and Elevations

Drawing E-036 Single Line Diagram

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OUDOVOTEN	A640 Communications  Power Subsystem  CE: TP 13 Power  TP 14 Interfaces	LOCATION: Yard Control Tower  REFER TO INTER	RFACE DATA TABLE:	Yard Con- trol Tower
	Main Shop Facilities	Attachment 2		
	Interface Point bet		Tower control room a	
TECHNICAL REQU See Attachment				
			ower at Panel EPLA lo	ocated in
ORGANIZATION ( SCRTD Project E				
COMMENTS:				
REFERENCES: See Attachment	2			
REVISION:	PREPARED	BY:	IMPLEMENTATION RE	SPONSIBILITY
No. DA	TE INITIALS	DATE		

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IDS-640-112-00-02
ATTACHMENTS
YARD CONTROL TOWER
Electric Power Panel EPLA

### ATTACHMENT 1

### TECHNICAL REQUIREMENTS

### 1) Facilities Contractor Al12

All2 Facilities Contractor shall furnish and install Panel EPLA and terminal strips required for the power interface with A640 Communications equipment in the tower.

### 2) Communications Contractor A640

A640 Contractor shall furnish 120/208 VAC power cables from Communications equipment in the 2nd, 3rd and 4th floors of the Yard Control Tower and terminate the cables at Panel EPLA.

### ATTACHMENT 2

### Interface Reference Drawing List

### A112 Contract Drawings

Drawing E-218 Control Tower Power

Drawing E-036 Main Shop Single Line Diagram

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CONTRAC	CT No.: A640 Co	mmunications	LOCATION:	INTERFACE No.:	REV:
SUBSYST			Main Shop	640-112-00-03	•
3083131	Fire an	d Intrusion	Building		0
SPEC. RE	FERENCE: TP 1		REFER TO INTER	RFACE DATA TABLE:	Shop Bldg.
	TP 1	4 Interfaces			
CONTRAC	CT No:	-	ATTACHMENTS:		
JOONTHAN	O No.: A112		Attachment 1		
SUBSYST	Hail on	op Facilities	Technical Req	uirements	
SPEC. BE	Electri FERENCE: 16	cal 944	Attachment 2		
0, 20, 1,2	. 2.1.2.102. 10	944		erence Drawing List	
Ĭ				<b>-</b>	
	NAL DESCRIPTI				
				ain Shop Building fire	and
intrusi	on sensors and	fire valve pos	sition sensors.		
TECHNICA	L REQUIREMEN	ITS:			-
	achment 1				
Jee Mee					
PHYSICA	L DESCRIPTION:				
			ignal wiring at	A112 Contract furnishe	d sensors
and into	ermediate termi	nal cabinets.			
ORGANIZ	ATION CONTAC	T:			
SCRIID P	roject Engineer				
DON'TE T	roject mignieer				
COMMEN	 TS:				
COMMEN					
REFEREN					
See Att	achment 2				
REVISION	•	PREPARED E	RY:	IMPLEMENTATION RES	SPONSIBILITY
	-	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		(THIRD PARTY):	
No.	DATE	INITIALS	DATE		
140.	DATE	INITIALS	DATE		

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IDS-640-112-00-3
ATTACHMENTS
SHOP BUILDING
Fire and Intrusion

### ATTACHMENT 1

### TECHNICAL REQUIREMENTS

### 1) Facilities Contractor All2

All2 Facilities Contractor shall furnish and install valve position indicators, smoke detector backboxes, fire and intrusion system conduits and TTC cabinets including terminal strips.

### 2) Communications Contractor A640

A640 Contractor shall furnish and install smoke detectors, intrusion detection hardware, the Fire Management Panel, system wiring and terminate all wiring at system termination points including the MDF in the RCC Communications Equipment room and the fire pump vault.

### ATTACHMENT 2

### Interface Reference Drawing List

### A112 Contract Drawings

Drawing E-141 Communications Riser Diagram
Drawing E-201 thru E-208, E-211 thru E-213, E-361 thru E-363 Communications
Plans

13808 0006.0.0

SUBSYS	CT No.:A640 Cor TEM: Public A	Address	LOCATION: Main Shop Bldg		REV: 0
CONTRA SUBSYS SPEC. R	TEM	op Facilities cal 050	Attachment 2		
Interco	ONAL DESCRIPT nnection Interfa n Shop building	ace Points for	r Public Address	equipment throughout t	:he
	AL REQUIREMEN	NTS:			
Termina	AL DESCRIPTION tion of P.A. sys O Contract speak	stem wiring at	A112 Contractor	furnished junction bo	oxes
1	ZATION CONTAC	CT:			
СОММЕ	NTS:			-	
REFERE See Att	NCES: achment 2				
REVISION: PREPARED		PREPARED	BY:	IMPLEMENTATION RES	SPONSIBILITY
No.	DATE	INITIALS	DATE		
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### ATTACHMENT 1

## TECHNICAL REQUIREMENTS

### 1) Facilities Contractor A112

All2 Facilities Contractor shall furnish and install P.A. system junction boxes, speakers backboxes and system conduit.

## 2) Communications Contractor A640

A640 Contractor shall furnish and install P.A. speakers on speaker backboxes. System wiring shall be furnished and terminated at all points including the primary P.A. equipment in the Yard tower and the RCC Communications Equipment room.

### ATTACHMENT 2

### Interface Reference Drawing List

### A112 Contract Drawings

Drawing E-140 Communications Riser Diagram
Drawing E-201 thru E-208, E-211 thru E-213, E-361 thru E-363
Communication Plans

## A640 Contract Drawings

Drawing N-101 Communications Public Address Speaker

13808 0008.0.0

SUBSYST	FERENCE: TP 5	one Subsystem	LOCATION:  Main Shop Bld  REFER TO INTE	INTERFACE No g. 640-112-00-5 RFACE DATA TABLE:	Shop Bldg.
CONTRAC SUBSYST SPEC. REI	EM: Main Sh	op Facilities	Attachment 2		
Intercor	NAL DESCRIPT nnection Interf out the Main Sh	ace Point for	administrative	and emergency telepho	ones
1	L REQUIREMEN	ITS:			
Terminat	DESCRIPTION: tion of telepho	ne wiring at 1	telephones and A	112 Contract or furni	sh
	ATION CONTAC				
COMMENT	rs:				
REFEREN See Atta	CES:				
REVISION: PREPARED		PREPARED 6	3Y:	IMPLEMENTATION RE (THIRD PARTY):	ESPONSIBILITY
No.	DATE	INITIALS	DATE		

### ATTACHMENT 1

### TECHNICAL REQUIREMENTS

### 1) Facilities Contractor A112

All2 Facilities Contractor shall and install Telephone Terminal Cabinets and telephone system conduits.

### 2) Communications Contractor A640

A640 Contractor shall furnish, install and terminate telephone system wiring at all termination points including DEF telephones and the MDF in the RCC Communications Equipment room. VP-R1.

### ATTACHMENT 2

## Interface Reference Drawing List

### All2 Contract Drawings

Drawing E-141 Communications Riser Diagram
Drawing E-201 thru E-208, E-211 thru E-213, E-361 thru E-363
Communications Plans

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				_				
SUBSYST	FERENCE: TP 1	d Intrusion	LOCATION: MOW Building REFER TO INTER	INTERFACE No.: 640-121-00-1  RFACE DATA TABLE: Maintenance of Way	REV: 0 Building			
SUBSYST SPEC. RE	TEM: Buildin	g Facilities	ATTACHMENTS: Attachment 1 Technical Requirements Attachment 2 Interface Reference Drawing List					
Interco	NAL DESCRIPT nnection Interf e valve positio	ace Points for	r signals from M	OW fire and intrusion sen	sors			
	AL REQUIREMEN achment 1	ITS:						
Terminat	L DESCRIPTION tion of fire an	d intrusion w		ntractor furnished sensor	s and			
	ATION CONTAC							
COMMEN	TS:							
REFEREN See Atta	ICES: achment 2							
REVISION: PREPARED		PREPARED E	3Y:	IMPLEMENTATION RESPO (THIRD PARTY):	NSIBILITY			
No.	DATE	INITIALS	DATE					

IDS-640-121-00-01 ATTACHMENTS MOW Building Fire and Intrusion

### ATTACHMENT 1

## TECHNICAL REQUIREMENTS

### 1) Facilities Contractor A121

A121 Facilities Contractor shall furnish and install valve position indicators plus fire and intrusion conduits.

### 2) Communications Contractor A640

A121 Facilities Contractor shall furnish and install intrusion detection hardware, the Fire Management Panel and the building MDF. System wiring shall be furnished and terminated at all termination points including tie cables to the RCC Communications Equipment room.

### ATTACHMENT 2

### Interface Reference Drawing List

### A121 Contract Drawings

Drawing E-023 thru E-027 Communications Plans

13808 0012.0.0

SUBSYSTEM: SPEC. REFER	Power St	ubsystem	LOCATION: MOW Building REFER TO INTE	INTERFACE No.: 640-121-00-2 RFACE DATA TABLE: Maintenance of Way B	REV: 0
CONTRACT N SUBSYSTEM: SPEC. REFER	Maintena Building	ance of Way g Facilities cal 944	ATTACHMENTS: Attachment 1 Technical Requ Attachment 2 Interface Refe		
FUNCTIONAL Interconnect Maintenance	ion Interfa	ace Points fo	r Public Address	equipment throughout the	
TECHNICAL R See Attachme		NTS:			
PHYSICAL DE Termination backboxes.			nd installations	of P.A. speakers on A121	
ORGANIZATIO		T;			
COMMENTS:					
REFERENCES See Attachme					
REVISION:		PREPARED	BY:	IMPLEMENTATION RESPO (THIRD PARTY):	NSIBILITY
No.	DATE	INITIALS	DATE		

CONTRA SUBSYS	CT No.: <sub>A640 Co</sub>		LOCATION: MOW Building	INTERFACE No.: 640-121-00-03	REV:
	rerepho	ne Subsystem			
SPEC. RE	FERENCE: TP 5	Telepones 4 Interfaces	REFER TO INTE	RFACE DATA TABLE:  Maintenance of Way Bu	uilding
	** *	- Interraces		Haintenance of way bo	irang
CONTRA	CT No.		ATTACHMENTS:		
	Mainten	ance of Way	Attachment 1		
SUBSYST	Flectri	g Facilities	Technical Requ	irements	
SPEC, RE		944	Attachment 2	D	
			Interface Refe	rence Drawing List	
CLINATIO	NAL DECOS:0-	· · ·			
1	NAL DESCRIPT		administrative	and emergency telephones	
	tenance of Way			<b>3</b> ,	
TECHNICA	L REQUIREME	 NTS:			
1	chment 1				
PHYSICA	L DESCRIPTION	:			
Terminat	ion of telephon	ne wiring at te	elephones and at	MOW Telecom Room.	
ODC AND	ATION CONTAC	).T.			
		) i :			
SCRTD Pr	oject Engineer				
COMMEN	TS:		<del></del>		
	·				
REFEREN					
See Atta	chment 2				
					<u>.                                    </u>
REVISION: PREPARED		PREPARED 8	Y:	IMPLEMENTATION RESPON (THIRD PARTY):	ISIBILITY
No.	DATE	INITIALS	DATE		

### ATTACHMENT 1

## TECHNICAL REQUIREMENTS

### 1) Facilities Contractor A121

A121 Facilities Contractor shall furnish and install telephone system conduits.

### 2) Communications Contractor A640

A640 Contractor shall furnish, install and terminate telephone system wiring at all termination points including DEF telephones and tie cables to the YCT Communications Equipment room.

### ATTACHMENT 2

## Interface Reference Drawing List

### A121 Contract Drawings

Drawing E-023 thru E-027 Communtications Plans

13808 0016.0.0

### ATTACHMENT 1

### TECHNICAL REQUIREMENTS

### 1) Facilities Contractor A121

A121 Facilities Contractor shall furnish and install P.A. system conduits and P.A. speakers on speaker backboxes.

### 2) Communications Contractor A640

A640 Contractor shall furnish and install P.A. speakers on speaker backboxes. System wiring shall be furnished and terminated at all points including the Fire Management Panel and the tie cables to the YCT Communciations Equipment room.

### ATTACHMENT 2

### Interface Reference Drawing List

### A121 Contract Drawings

Drawing N-101 Communications Public Address Speakers

13808 0014.0.0

CONTRA	CT No.: A640 Cor	mmunications	LOCATION: CIC #1 TPSS	INTERFACE No.: 640-631-00-10	REV:		
SUBSYS	TEM: Cable T	ransmission	CIC #1 1F35	040-031-00-10	O		
SPEC. RE	FERENCE: TP 8 TP 14	.0 CTS 4 Interface	REFER TO INTE	RFACE DATA TABLE: Yard			
SUBSYS	CT No.: A631 Transtall.  TEM: System S  FERENCE: *		ATTACHMENTS:  Attachment 1 Technical Requirements  Attachment 2 Interface Reference Drawing List				
Intercor	NAL DESCRIPT mection Interf n Power, CIC #1	ace Point for	all signals to a	and from SCADA and Yard			
	AL REQUIREMENt chment 1	NTS:					
	L DESCRIPTION		sorted interposin	ng relays.			
ORGANIZ	ATION CONTAC	T:		<del></del>			
SCRTD P	roject Engineer						
COMMEN	TS:						
REFERE	ICES:						
REVISION: PREPARED		PREPARED I	BY:	IMPLEMENTATION RESPON (THIRD PARTY):	SIBILITY		
No.	DATE	INITIALS	DATE				
	1						

### ATTACHMENT 1

### TECHNICAL REQUIREMENTS

### 1) Traction Power Contractor A631

A631 Contractor shall furnish, install and terminate all SCADA input leads from the Yard traction power equipment at TPSS CIC #1 including EBPS generator supervision.

### 2) Communications Contractor A640

A640 Contractor shall furnish and install the Communication Interface Cabinet and system interposing relays. SCADA system tie cables shall be furnished, installed and terminated at CIC #1 and at the MDF in the RCC Communications Equipment room.

### ATTACHMENT 2

### Interface Reference Drawing List

### A631 Contract Drawings

Drawing P-261 thru P-265 and P-384, P-385.

### A640 Contract Drawing:

### YARD SUBSTATION WIRE INTERCONNECTION SCHEDULE

		A63	31 REFER	ENCE DRAWINGS	
			INCONNEC	TION SCHEDULE	
		TERMINAL ST	RIP	DRAWING NUMBER	_
DRAWING N-	096				
	Figures:				
	Yard Substation Metering and Control	A		P-261B	
DRAWING N-	097				
	Yard Substation Metering and Control	А, В		P-262B	
DRAWING N-	098				
	Yard Substation Metering and Control	A,B, D		P-264B	

CONTRA	CT No:: A640 Co	mmunications	LOCATION: Yard	INTERFACE No.: 640-631-00-11	REV:			
SUBSYST	TEM: Cable T	ransmission	Control Junct		Ü			
SPEC. RE	FERENCE: TP 8 TP 1	.0 CTS 4 Interfaces	REFER TO INTERFACE DATA TABLE: Yard					
CONTRAC	CT No.: A631 Tr Install EM: System		ATTACHMENTS Interface Dra	: wing Utilization List				
SPEC. RE	FERENCE: *							
FUNCTIO	NAL DESCRIPT	ION:						
	nection Interf Boxes CJB #1		all signals to	and from SCADA and Yard Co	ntrol			
TECHNICA	AL REQUIREMEN	NTS: 						
1	L DESCRIPTION type terminal		orted interposi	ng relay				
0004447	4.TION 00.1.T.4.0							
	ATION CONTAC							
SCRTD Pr	oject Engineer							
COMMEN	TS:							
			rence Drawings. n Box Details					
REVISION	:	PREPARED E	3Y:	IMPLEMENTATION RESPON (THIRD PARTY):	NSIBILITY			
No.	DATE	INITIALS	DATE					
				-				

## A640 Drawing Title:

## COMMUNICATIONS SCADA/TRACTION POWER INTERFACES

		A631 REFERENCE	DRAWINGS
		INTERCONNECTION	
		TERMINAL STRIP DRA	AWING NUMBER
DRAWING	N-282		
	Figures:		
	Yard Disconnect Switches Metering and Control		
	CJB #1 - YDS 33, YDS 34 & YDS 42	A	P-230B
	- YDS 36, YDS 39 & YDS 41		P-230B
	CJB #2 - YDS 01 & YDS 02 - YDS 03	A A	P-230B P-231B
	- YDS 06, YDS 07	В	P-231B
	CJB #3 - YDS 23, YDS 25 & YDS 26	A	P-231B
DRAWING	N-283		
	Yard Disconnect Switches Metering and Control		
	CJB #6 - YDS 28, YDS 29 & YDS 30		P-231B
	- YDS 31 & YDS 32	В	P-232B P-232B
	CJB #7 - YDS 08 thru YDS 11 CJB #8 - YDS 46	A A	P-232B
	CJB #9 - YDS 47	A	P-232B

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CONTRA	CT No.: A640 Cor	nmunications	LOCATION: CIC #1 TPSS	INTERFACE No.: 640-631-00-12	REV:			
SUBSYST	TEM: Cable T	ransmission	010 #1 1155	640-631-00-12	O			
SPEC. RE	FERENCE: TP 8 TP 14	O CTS Interfaces	REFER TO INTERFACE DATA TABLE: Shop					
CONTRA	CT No. A631 Tra		ATTACHMENTS:					
SUBSYST	TEM: Installa System S	ation Supervision	Interface Draw	ving Utilization List				
SPEC. RE	FERENCE: *							
	FUNCTIONAL DESCRIPTION:							
	Interconnection Interface Point for all signals to and from SCADA and Shop Traction Power, CIC #1 TPSS							
TECHNICA	AL REQUIREMEN	 ITS:						
	L DESCRIPTION:		orted interposin					
Dairiei	cype terminar s	scrips and asso	orted interposit	ig relay				
ORGANIZ	ATION CONTAC	T:						
SCRTD Pr	oject Engineer							
COMMEN	 TS:							
REFEREN A640 Con	ICES: tract Drawings	and A640 Refer	rence Drawings.					
*A631 Dr	awing P-362 Con	omunications In	nterface Cabinet	Details				
REVISION	:	PREPARED B	Y:	IMPLEMENTATION RESPONSIBILI (THIRD PARTY):				
No.	DATE	INITIALS	DATE					

IDS-640-631-00-12 ATTACHMENT A SHOP CIC #1 TPSS

## DRAWING UTILIZATION LIST

A640 Drawing Title:

## COMMUNICATIONS SCADA/TRACTION POWER INTERFACES

A631 REFERENCE DRAWINGS

INTERCONNECTION SCHEDULE

TERMINAL STRIP DRAWING NUMBER

DRAWING N-098

Figures:

Main Shop Substation Metering and Control

P-247B

13808

CONTRA	CT No:: A640 Co	ommunications Transmission	LOCATION: CIC #5	INTERFACE No 640-130-00-01	.: REV: 0
SPEC. R		P 8.0 CTS P 14 Interface		RFACE DATA TABLE:	Union Sta./ Yard Leads
CONTRA SUBSYS SPEC. RI	Union S TEM: Leads I	Station/Yard Facilities	ATTACHMENTS Interface Dra	: wing Utilization List	
Interco	DNAL DESCRIPT	face Point for		and from SCADA and Un	ion Station/
TECHNIC	AL REQUIREME	NTS:			
PHYSICA	L DESCRIPTION	1:			
Barrier	type terminal	strips and as:	sorted interposi	ng relays.	
ORGANI	ZATION CONTA	CT:	_		
SCRTD P	roject Enginee;	F			
COMME	NTS:				
REFERE A640 Co A640 Re	ntract Drawings	s - NS-007A In gs - Union Sta	terposing Relay tion Stage II Co	Interfaces onstruction Contract A	130 Drawings
REVISIO	N:	PREPARED	BY:	IMPLEMENTATION RI	ESPONSIBILITY
No.	DATE	INITIALS	DATE		
				-	
	+			-1	

## A640 Drawing Title:

## COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A130 REFERENCE DRAWINGS			
		CONNECTION DI	AGRAM DWG. NO.	ELEMENTARY DIAGRAM	
DRAWING N-	-042				
	Figures:				
	Emergency Fan, Fan Dampers ED-011, ED-012, ED-013	TS-A, TS-B, TS-C	E-014	E-006	
DRAWING N-	-037				
	Emergency Fan #1 & #2 Auxiliary Circuits	TS-C	E-104	E-006	
	Emergency Fan #1, #2 & #3 EF-011, EF-012, EF-013	TS-A, TS-B, TS-C	E-104	E-006	
DRAWING N-	-038				
	Emergency Fan #3 Auxiliary Circuits	TS-C	E-104	E-007	
	Emergency Fan Bypass Dampers BD-011, BD-012	TS-A, TS-B	E-104	E-007	
DRAWING N-	-040				
	Duplex Sump Pumps SP-1, SP-2, SP-3, SP-4, SP-5, SP-6	TS-C, TS-D	E-104	E-103	
DRAWING N-	·04 <u>1</u>				
	Traction Power Room Supply Fans SSF-011, SSF-012,	TS-D	E-104	E-108	
	Traction Power Room Supply Fan Alarms	TS-D	E-104	E-108	

IDS-640-130-00-01 ATTACHMENT A UNION STATION/ YARD LEADS CIC #5

## DRAWING UTILIZATION LIST

		A130 REFERENCE DRAWINGS			
		CONNECTION DI	AGRAM DWG. NO.	ELEMENTARY DIAGRAM	
DRAWING N-	045				
	TC/C Battery Room Supply & Exhauts Fans, SF-10, EF-3	TS-B	E-104	E-113	
DRAWING N-	086				
	Emergency Fan Room Exhaust Fans, EF-06, EF-07	TS-A	E-104	E-113	
DRAWING (T	BD)				
	Incoming Electrical Service Room Supply Fan, SF-01	TS-D	E-104	E-112	
	Incoming Electrical Service Battery Room Exhaust Fans EF-09 A & B	TS-C	E-104	E-113	
DRAWING (T	BD)			•	
	Electrical Room Supply & Exhaus Fans SF-12, EF-02	t TS-A	E-104	E-112, E-113	
	Corridor Supply & Exhaust Fans SF-08, EF-04	TS-D	E-104	E-112	

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CONTRA SUBSYS	CT No.: A640 Co		LOCATION: CIC #3 East	INTERFACE No.: 640-136-00-01	REV:		
	Capte 1	ransmission					
SPEC. RE	EFERENCE: <sub>TP</sub> 8 TP 1	.0 CTS 4 Interface	REFER TO INTE		Union Station		
CONTRA	CT No.: A136		ATTACHMENTS:				
SUBSYS <sup>-</sup>	TEM: Union S	tation Facil-	Interface Draw	ving Utilization List			
SPEC. RE	ities E EFERENCE: 1694	lectrical 4					
	NAL DESCRIPT		11 - 1	1.6. 00174	0		
	nnection Interfies Electrical,		all signals to a	and from SCADA and Uni	on Station		
TECHNIC	AL REQUIREMEN	NTS:					
PHYSICA	L DESCRIPTION	•					
Barrier	type terminal	strips and as:	sorted interposin	ng relays.			
ORGANIZ	ATION CONTAC	T:					
SCRTD Pi	roject Engineer						
COMMEN	ITS:						
REFEREN A640 Rei	NCES: A640 Conference Drawing	ntract Drawin s - Union Sta	gs - NS-007A Inte	erposing Relay Interfa struction Contract Al	ces 36 Drawings		
REVISION	t:	PREPARED	BY:	IMPLEMENTATION RES	SPONSIBILITY		
No.	DATE	INITIALS	DATE				
			í				

## A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A136 REFERENCE DRAWINGS			
		CONNECTION DI	AGRAM DWG. NO.	ELEMENTARY DIAGRAM	
DRAWING N-	039				
	Figures:				
	Station Ventilation System AHU-1E, AHU-2E (AHU-011, AHU-012)*	TS-A, TS-D	E-137F	E-117F	
	Underplatform Exhaust Fan, UF-1E, (UF-011)	TS-A	E-137F	E-116F	
DRAWING N-	040				
	Roll-up Doors at Station Entrance D-1E	TS-D	E-137F	E-122F	
DRAWING N-	041				
	480V Main Breakers in Aux. Pwr. Rm. (two)	TS-F	E-137F	E-119F	
DRAWING N-	042				
	Smoke & Heat Exhaust Fans SE-1E & SE-2E, (SM-1E, SM-2E)	TS-C	E-137F	E-116F	
	TC/C Room Air Conditioning ACU-1, MD-4, MD-3, MD-2, ACC-1	TS-B	E-137F	E-117F	

<sup>\*</sup>Ventilation equipment designations in parenthesis are Facilities mechanical dwg. designations that differ from Facilities electrical dwg. designations (typ.).

13808 0021.0.0

		A136 REFERENCE DRAWINGS			
		CONNECTION I	DIAGRAM DWG. NO.	ELEMENTARY DIAGRAM	
		TERMINAL SIRIP	DWG. NO.	DIAGRAFI	
DRAWING N-	043				
	Elevator Controls & Indications EL-1E EL-2E (ELV #1, #2)	TS-A, TS-B	E-137F	TBD	
	Escalator Controls & Indications ES-1E, ES-2E, ES-3E, ES-4E (ESC #1, #2, #3, #4)	TS-E	E-137F	TBD	
DRAWING N-	044				
	Auxiliary Power Room Supply Exhaust Fans SF-1E, EF-2E (SF-1E, EF-1E)	TS-F	E-137F	E-111F	
	Auxiliary Power Battery Room Supply and Exhaust Fan SF-8E, EF-3E (SF-7E, EF-2E)	TS-B	E-137F	E-111F	
DRAWING N-	045 & N-048				
	TC/C Room Exhaust Fans EF-7E, EF-10E	TS-C	E-137F	E-111F	
DRAWING N-	084				
	Fire Pump P-6E	TS-D	E-137F	E-121F	
DRAWING N-	085				
	Elevator Equipment Rm. Exhaust Fan, EF-7E (EF-5E)	TS-F	E-137F	E-111F	
	Elevator Shaft Exhaust Fan, EF-12E	TS-D	E-137F	E-111F	

	A136 REFERENCE DRAWINGS			
	CONNECTION DI	AGRAM DWG. NO.	ELEMENTARY <u>DIAGRAM</u>	
DRAWING N-085A (Cont'd.)				
Ancillary Room Supply & Exhaust Fans, SF-2E, EF-9E (SF-3E, EF-4E) EF-7E, EF-8E (SF-4E, EF-6E)	TS-A, TS-E	E-137F	E-111F	
Air Supply Room Supply & Exhaust Fans, SF-5E, EF-4E (SF-5E, EF-8E)	TS-F	E-137F	E-111F	
UPE Fan Room Supply & Exhaust Fans, SF-6E, EF-5 (SF-6E, EF-9E)	TS-B, TS-C	E-137F	E-111F	
DRAWING N-086				
Chiller Room Supply & Exhaust Fans SF-3E, EF-6E (SF-2E, EF-3E	TS-A, TS-D	E-137F	E-114F	

13808

SUBSYST	FERENCE: TP 8.	ansmission	LOCATION: CIC #2 West REFER TO INTER	INTERFACE No 640-136-00-02 RFACE DATA TABLE:	0		
CONTRAC SUBSYST SPEC. RE	EM: Union St	ation Facil- ectrical	ATTACHMENTS: Interface Drawing Utilization List				
FUNCTIONAL DESCRIPTION:  Interconnection Interface Point for all signals to and from SCADA and Union Station Facilities Electrical, CIC #2 West							
TECHNICAL REQUIREMENTS:							
	L DESCRIPTION:		orted interposin	g relays.			
	ATION CONTAC	т:					
COMMENTS:							
REFEREN A640 Ref	CES: A640 Con erence Drawings	tract Drawings - Union Stati	s - NS-007A Inte ion Stage II Con	rposing Relay Interfact A	aces 136 Drawings		
REVISION	:	PREPARED B	Y:	IMPLEMENTATION RE	ESPONSIBILITY		
No.	DATE	INITIALS	DATE				

		A136 REFERENCE DRAWINGS			
		CONNECTION TERMINAL STRIP	DIAGRAM DWG. NO.	ELEMENTARY <u>DIAGRAM</u>	
DRAWING N-	039				
	Station Ventilation System AHU-1W, AHU-2W (AHU-013, AHU-014)	TS-A	E-138F	E-117F	
	Underplatform Exhaust Fan UF-1W (UF-012)	TS-A	E-139F	E-116F	
DRAWING N-	-040				
	Roll-up Doors at Station Entrance D-1W	TS-C	E-138F	E-122F	
	Duplex Sump Pumps P-1W, P-2W	TS-A	E-138F	E-114F	
DRAWING N-	·04 <u>1</u>				
	480V Main Breakers in Aux. Power Room (two)	TS-F	E-138F	E-119E	
DRAWING N-	·042				
	Smoke & Heat Exhaust Fans, SE-1W, SE-2W (SM-1W, SM-2W)*	TS-B, TS-C	E-138F	E-116E	
DRAWING N-	043				
	Escalator Controls & Indicacations ES-1W, ES-4W (ESC #5, #6)	TS-E	E-138F	TBD	
DRAWING N-	044				
	Auxiliary Power Room Supply and Exhaust Fans SF-1W, EF-2W, (SF-3W, EF-3W)	TS-A, TS-D	E-138F	E-111F	

<sup>\*</sup>Ventilation equipment designations in parenthesis are Facilities mechanical dwg. designations that differ from Facilities electrical dwg. designations (typ.).

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IDS-640-136-00-02 ATTACHMENT A UNION STATION CIC #2-Auxiliary Power Room West

## DRAWING UTILIZATION LIST

		A136 REFERENCE DRAWINGS			
		CONNECTION I	DWG. NO.	ELEMENTARY <u>DIAGRAM</u>	
DRAWING N	[-044 (Cont'd.)				
	Auxiliary Power Battery Rm. Supply and Exhaust Fans SF-4W, EF-3W (SF-2W, EF-2W)	TS-C, TS-D	E-138F	E-111F	
DRAWING N	<u>-084</u>				
	Fire Pump P-7W	TS-D	E-138F	E-121F	
DRAWING N	1-085				
	Elevator Equipment Room Exhaust Fan EF-5W	TS-B	E-138F	E-111F	
	Utility Shaft Exhaust Fan EF-6W	TS-F	E-138F	E-111F	
	Ancillary Room Supply & Exhaust Fans, SF-2W, EF-1W (SF-1W, EF-1W)	TS-F	E-138F	E-111F	
	Air Supply Room Supply & Exhaust Fans, SF-3W, EF-4W (SF-4W, EF-4W)	TS-D, TS-E	E-138F	E-111F	

13808 0026.0.0

CONTRA	ACT No.: A640 STEM: Public	Address	LOCATION: Union Station	INTERFACE No.: 640-136-00-03	REV:
SPEC. R	EFERENCE: TP		REFER TO INTER		ion ation
SUBSYS	ACT No.: A136 STEM: Elec	ctrical	ATTACHMENTS: Interface Dra	wing Utilization List	
·	ONAL DESCRIPT		provided by A64	0 into back box provided	by A136.
	AL REQUIREMENT back boxes to		as shown on Cont	ract Drawing A-023 of Co	ntract
1" con		om four (4") so		oxes and/or 9-5/8" x 9-5 ing hardware for same.	/8" x
	ZATION CONTAC				
COMME Additi		sings are inst	talled in Contra	ct A760.	
	NCES: ontract Drawings eference Drawing				
REVISIO	N:	PREPARED E	BY:	IMPLEMENTATION RESPO	ONSIBILITY
No.	DATE	INITIALS	DATE		

IDS-640-136-00-03
ATTACHMENT A
UNION STATION
ALL PUBLIC ADDRESS
SPEAKERS EXCEPT
THOSE IN LINEAR
ELEMENT

### DRAWING UTILIZATION LIST

A640 Drawing Title:

## COMMUNICATIONS PUBLIC ADDRESS/STAGE II CONTRACT INTERFACE

### DRAWING N-101

Figure 1:

Embedded Ceiling Mount

13808 0028.0.0

	ACT No.: A640		LOCATION: Union Station	INTERFACE No. 640-136-00-04	
SUBSYS	Olosed	Circuit T.V.			
SPEC. R	EFERENCE: TP 7	& TP 14	REFER TO INTER	RFACE DATA TABLE:	Union Station
CONTRA	ACT No.: A136		ATTACHMENTS:		
SUBSYS	STEM: Electri	.cal	Interface Dra	wing Utilization List	
SPEC. R	EFERENCE: 1606	0 Part 3			
Instal	ONAL DESCRIPT lation interface ts and boxes pro	for CCTV came		provided by Contract	A640 into
	AL REQUIREMEN		g the weight of	the camera.	
PHYSIC	AL DESCRIPTION	<del></del>			
l" con	duits to and fro	m a 4" square	junction box.		
ORGANI	ZATION CONTAC	T:			
SCRTD	Project Engineer				
COMME	NTS:				
	NCES: ontract Drawings eference Drawing				
REVISION: PRE		PREPARED B	SY:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY
No.	DATE	INITIALS	DATE		

IDS-640-136-00-04

ATTACHMENT A
UNION STATION/
CLOSED CIRCUIT
TELEVISION CAMERA

### DRAWING UTILIZATION LIST

## A640 Drawing Title:

### COMMUNICATIONS CCTV/STAGE II STATION CONTRACT INTERFACE

### DRAWING N-100

Figure 1

Ceiling Mount for CCTV Camera

Figure 2

Wall Mount for CCTV Camera

13808 0030.0.0

	CT No.: A640 Cor		LOCATION:	INTERFACE No 640-136-00-05	n.: REV:		
SUBSYS	IEM: Cable T:	cansmission					
SPEC. RE	EFERENCE: TP 8 TP 14	.0 CTS 4 Interface	REFER TO INTER	RFACE DATA TABLE:	Union Station		
CONTRA	CT No.: A136		ATTACHMENTS:				
CUBOVO	T. T. L.		Interface Draw	ing Utilization List			
SUBSYST	Chilon 5	tation Facil- lectrical					
FUNCTIO	NAL DESCRIPT	ION:					
	Interconnection Interface Point for all signals to and from SCADA and Union Station Facilities Electrical, CIC #4						
TECHNIC/	AL REQUIREMEN	NTS:					
PHYSICA	L DESCRIPTION	:					
Barrier	type terminal s	strips and asso	orted interposin	ng relays.			
ORGANIZ	ZATION CONTAC	T:					
SCRTD P	roject Engineer						
COMMEN	ITS:						
REFEREI A640 Res		ntract Drawings - Union Stati	s - NS-007A Inte	rposing Relay Interf struction Contract A	aces 136 Drawings		
REVISION	REVISION: PREPARED		Y:	IMPLEMENTATION RI	ESPONSIBILITY		
No.	DATE	INITIALS	DATE				

## DRAWING UTILIZATION LIST

### A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A136 REFERENCE DRAWINGS			
		CONNECTION DI	AGRAM	ELEMENTARY <u>DIAGRAM</u>	
DRAWING N-	036				
	Figures:				
	Emergency Fan Track Dampers TD-1W, TD-2W (TD-021, TD-022)*	TS-A, TS-B	E-139F	E-120F	
	Emergency Fan Dampers FD-1W, FD-2W, FD-3W (ED-021, ED-022, ED-023)	TS-A; TS-B, TS-C	E-139F	E-118F	
DRAWING N-	· <u>037</u>				
	Emergency Fan #1 & #2 Auxiliary Circuits	TS-C	E-139F	E-118F	
	Emergency Fans #1, #2, & #3, EM-1W, EM-2W, EM-3W (EF-21, EF-22, EF-23)	TS-A, TS-B, TS-C	E-139F	E-118F	
DRAWING N-		•			
	Emergency Fan #3 Auxiliary Circuits	TS-C	E-139F	E-120F	
	Emergency Fan Bypass Dampers BD-1W, BD-2W (BD-021, BD-022)	TS-A, TS-B	E-139F	E-119F	
DRAWING N-	·086				
	Emergency Fan Room Exhaust Fans, EF-11W, EF-12W (EF-9W, EF-10W)	TS-D	E-139F	E-114F	

<sup>\*</sup>Ventilation equipment designations in parenthesis are Facilities mechanical dwg. designations that differ from Facilities electrical dwg. designations (typ.).

13808 0032.0.0

CONTRA	CT No.: A640 (		LOCATION: TC&C CIR	INTERFACE No. 640-620-00-01		≣V: 0
300313	Cable 1	ransmission				
SPEC. RE	FERENCE:		REFER TO INTE	RFACE DATA TABLE:	Union	
		8.0 CTS 14 Interfaces			Station	
	11	14 Incertace				
CONTRA	CT No.: A620	,	ATTACHMENTS:			
CHDONG.	ECM.		Interface Dra	wing Utilization List		
SUBSYS	Automat	ic Train Supervision				
SPEC. RE		2 10.8				
FUNCTIO	NAL DESCRIPT	ION:		<del>-</del>		
				and from SCADA and Un	ion Station	
Automat	ic Train Contro	ol, TC/C Commun	nications Interf	ace Rack		
TECHNICA	AL REQUIREMEN			<del>_</del>		
	AL ACQUINEMEN	VI 3.				
DUVCIOA	L DECORIDEION					
	L DESCRIPTION			_		
Barrier	type terminal	strips and ass	sorted interposi	ng relays.		
0.000						
ORGANIZ	ATION CONTAC	<b>:</b>				
SCRTD P	roject Engineer	:				
	_					
COMMEN	ITS:					
REFEREN	110	40 Contract Dr	awings NS-007A	Interposing Relay Int	erfaces	_
A640 Re	ference Drawing	s - Union Stat	ion Stage II Co 56B Typical Con	nstruction Contract A	136 Drawings	s
HOOO DI	awings Q-055A,	Q-0546, and Q-	Job Typical Con	tior circuits		
REVISION	):	PREPARED B		IMPLEMENTATION RE	SPONSIBIL I	TY
		/		(THIRD PARTY):	J. 0110101E	
No.	DATE	INITIALS	DATE			
			5			

### A640 Drawing Title:

### COMMUNICATIONS SCADA/AUTOMATIC TRAIN CONTROL INTERFACES

	TERMINAL STRIPS
	UTILIZED
DRAWING N-138	
Figure:	
Union Station	TBD
DRAWING N-139	
Union Station	TBD
DRAWING N-140	
Union Station	TBD

13808 0036.0.0

SUBSYS	FERENCE:	ubsystem	Panels	INTERFACE No 640-620-00-07 RFACE DATA TABLE:	Union
	TP	13 Power 14 Interfaces			Station
SUBSYS	CT No.: A620 A Train ( TEM: ATC Ro	Control	ATTACHMENTS: Attachment 1 Technical Requ		
SPEC. RE	FERENCE: TP 4	ATC Room O Interface	Attachment 2 Interface Refe	rence Drawing List	
Intercor requirem		ace Point betw atic Train Con	trol power distr	ns equipment electri ibution equipment of	
TECHNICA	AL REQUIREMEN	NTS:			
See Atta	achment 1				
PHYSICA	L DESCRIPTION	•			
				120 VAC, single phas C&C room of Union St	
ORGANIZ	ATION CONTAC	T:			
COMMEN	ITS:				
l .	roject Engineer				
REFEREN See Atta	NCES: achment 2				
REVISION: PREPARED		PREPARED E	3Y:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY
No.	DATE	INITIALS	DATE		
			<del>                                     </del>		
<u> </u>	1	<del>                                     </del>	<del>                                     </del>		

#### ATTACHMENT 1

### TECHNICAL REQUIREMENTS

#### 1) Train Control Contractor A620

A620 Contractor shall furnish and install two power distribution panelboards in the TC&C room of Union Station. Each panel shall have essential power bus terminations for one 120V/208V, 3-phase, 4-wire circuit for a 35A load and twelve 120VAC, single-phase circuits fro 20A loads.

### 2) Communications Contractor A640

A640 Contractor shall furnish, install and terminate power cables between the power distribution panels and communications equipment of the station TC&C room.

#### ATTACHMENT 2

#### Interface Reference Drawing List

### A620 Contract Drawings

Drawing Q-052 Power Distribution Schematic

13808 0035.0.0

CONTRAC SUBSYST	CT No.: A640 (	Communications	LOCATION: CIC #1 TPSS	INTERFACE No 640-631-00-01	REV: 0			
SPEC. RE		0 CTS	REFER TO INTERFACE DATA TABLE: Union Station					
SUBSYST	Traction EM: Installa		ATTACHMENTS: Interface Drawing Utilization List					
Intercor	NAL DESCRIPTION Interfa	ace Point for	all signals to a	nd from SCADA and Un	nion Station			
TECHNICA	AL REQUIREMEN	TS:						
	L DESCRIPTION:		orted interposin	g relays.				
ORGANIZ	ATION CONTAC	T:						
SCRTD Pi	coject Engineer							
COMMEN	TS:							
	ntract Drawings		rence Drawings. nterface Cabinet	Details				
REVISION: PREPARED		PREPARED E	3Y:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY			
No.	DATE	INITIALS	DATE					

### DRAWING UTILIZATION LIST

### A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

	A631 REFERENCE DRAWINGS		
	INTERCONNECTION SCHEDULE TERMINAL STRIP DRAWING NUMBER		
DRAWING N-076			
Figures:			
Traction Power Type II AC Switchgear	A, B, C	P-283B, P-285B P-286B	
Traction Power DC Switchgear	В, С	P-283B, P-284B P-285B	

13808 0038.0.0

CONTRA	CT No.: A640 0	Communications	LOCATION: CIC #4	INTERFACE No 640-631-00-02	REV:		
SUBSYST	EM: Cable Tr	ansmission	010 774	040 031 00 02	v		
SPEC. RE		0 CTS Interface	REFER TO INTER	RFACE DATA TABLE:	Union Station		
CONTRAC SUBSYST SPEC. RE	Traction Installa		ATTACHMENTS: Interface Drawing Utilization List				
FUNCTIONAL DESCRIPTION: Interconnection Interface Point for all signals to and from SCADA and Union Station Traction Power, CIC #4							
TECHNICA	AL REQUIREMEN	ITS:					
PHYSICA	L DESCRIPTION:						
Barrier	type terminal s	strips and asso	orted interposin	g relays.			
ORGANIZ	ATION CONTAC	T;					
SCRTD Pr	oject Engineer						
COMMEN	TS:						
	tract Drawings		rence Drawings. nterface Cabinet	Details			
REVISION	:	PREPARED B	BY:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY		
No.	DATE	INITIALS	DATE				

13808 0039.0.0

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

A631 REFERENCE DRAWINGS

INTERCONNECTION SCHEDULE

TERMINAL STRIP DRAWING NUMBER

DRAWING N-082

Figures:

Disconnect Switches Metering C,E and Control

P-287B

13808 0040.0.0

CONTRA	CT No.: A640	ĭ	LOCATION: Union Station	INTERFACE No. 640-760-00-01	
	EFERENCE: TP	Address 6 & TP 14	REFER TO INTER	RFACE DATA TABLE:	Union Station
					_
CONTRA	CT No.: A760		ATTACHMENTS:	wing Utilization List	
SUBSYS	TEM: Signs 8	& Graphics	interrace bra	wing outlization bise	
SPEC. R	EFERENCE:				
			•		
1	ONAL DESCRIPT				
	lation interface ed by A760.	e for speakers	provided by Con	tract A640 into linea	r element
	AL REQUIREME				-
	rs to be mounted and speakers are			nd shown on A760 Draw	ring P-604.
PHYSICA	AL DESCRIPTION	•	_		
	address speaker inear element is			actor in platform lin	ear element.
ORGANI	ZATION CONTAC	CT:	_		
SCRTD	Project Engineer	c			
COMME! Additio		xes are install	led in Contract	A136.	
	NCES: ontract Drawings eference Drawing				
REVISIO	N:	PREPARED B	Y:	IMPLEMENTATION RE	SPONSIBILITY
No.	DATE	INITIALS	DATE		
	1				

IDS-640-760-00-01

ATTACHMENT A
UNION STATION/
PUBLIC ADDRESS
SPEAKERS IN LINEAR
ELEMENT

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS PUBLIC ADDRESS/SIGN & GRAPHICS

DRAWING N-076

Figure 1:

Speakers Mounted in Linear Element

13808 0046.0.0

ļ.	CT No.: A640 C	ommunications	LOCATION: CIC #3 East	INTERFACE No. 640-795-00-01	: REV:
SUBSYS	TEM: Cable	Transmission	"		
SPEC. RE	FERENCE: TP	8.0 CTS 14 Interfaces	REFER TO INTE	RFACE DATA TABLE:	Union Station
CONTRA	CT No.: A79	5	ATTACHMENTS		
SUBSYS1		Supervision	Interface Dra	wing Utilization List	
SPEC. RE	FERENCE: A79 166	5 10 Par. 2.7		•	
Interco	NAL DESCRIPT nnection Inter ruptible Power	face Point for		and from SCADA and Un	ion Station
TECHNICA	AL REQUIREME	NTS:			
	L DESCRIPTION		sorted interposi	ng relays.	-
ORGANIZ	ATION CONTAC	CT:			
SCRTD P	roject Enginee	r			
COMMEN	TS:				
REFEREN A640 Re A795 Dr	. – –	gs - Union Stat	tion Stage II Co	nterposing Relay Internstruction Contract A	rfaces 136 Drawings
REVISION: PREPARED		PREPARED E	BY:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY
No.	DATE	INITIALS	DATE		

IDS-640-795-00-01 ATTACHMENT A UNION STATION CIC #3-Auxiliary Power Room East

### DRAWING UTILIZATION LIST

A640 Drawing Title:

## COMMUNICATIONS SCADA/UPS INTERFACE

*				
		REFERENCE DRAWINGS		
		CONNECTION DIAGRAM		
		TERMINAL STRIP	DRAWING NUMBER	
DRAWING N-	048		·	
	Figure:			
	UPS Supervision	TS-F	A136, E-137F	

13808

CONTRA SUBSYS	CT No∴ <sub>A640 Cor</sub> TEM: <sub>Cable</sub> T	mmunications ransmission	LOCATION: CIC #2 West	INTERFACE No. 640-795-00-02	: REV: 0
SPEC. RE	EFERENCE: <sub>TP 8</sub>	.0 CTS 4 Interfaces	REFER TO INTER	RFACE DATA TABLE:	Union Station
CONTRA SUBSYS' SPEC. RE	TEM: UPS Supe	ervision O Par. 2.7	ATTACHMENTS: Interface Draw	ing Utilization List	
Interco	ONAL DESCRIPT mection Interfaruptible Power	ace Point for		nd from SCADA and Uni	ion Station
TECHNIC	AL REQUIREMEN	NTS:			
	L'DESCRIPTION type terminal :		sorted interposin	g relays.	
	ATION CONTAC	T:			
COMMEN	ITS:				
	1701	s - Union Stat	tion Stage II Con	Interposing Relay Instruction Contract Al	
REVISION	N:	PREPARED	BY:	IMPLEMENTATION RE	SPONSIBILITY
No.	DATE	INITIALS	DATE		_
	1				

13808 0049.0.0

IDS-640-795-00-02 ATTACHMENT A UNION STATION CIC #2-Auxiliary Power Room West

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/UPS INTERFACE

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING N-048

Figure:

UPS Supervision TS-F A136, E-138F

13808 0050.0.0

	CT No.: A640 Co	mmunications	LOCATION: CIC #3 East	INTERFACE No.: 640-840-00-01	
SUBSYS.	TEM: Cable T	ransmission	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
SPEC. RE	EFERENCE: TP 8 TP 1	CTS 4 Interface	REFER TO INTER	RFACE DATA TABLE:	Union Station
CONTRA	CT No.: H840		ATTACHMENTS:		
SUBSYS	rate co	llection	Interface Dra	wing Utilization List	
		•,			
FUNCTIO	NAL DESCRIPTI	ON:			
Interco		ace Point for	all signals to	and from SCADA and Un	ion Station
TECHNIC	AL REQUIREMEN	ITS:	_		
_					
PHYSICA	L DESCRIPTION:	;			
Barrier	type terminal	strips and ass	sorted interposi	ng relays.	
ORGANIZ	ZATION CONTAC	T:		_	
SCRTD F	Project Engineer				
COMMEN	ITS:			_	
REFEREI A640 Co		and A640 Refe	erence Drawings.		
REVISION	٠ ١:	PREPARED B	SY:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY
No.	DATE	INITIALS	DATE		

13808 0041.0.0

IDS-640-840-00-01 ATTACHMENT A UNION STATION/ CIC #3-Auxiliary Power Room East

### DRAWING UTILIZATION LIST

TBD

A640 Drawing Title:

Figure:

DRAWING N-047

### COMMUNICATIONS SCADA/FARE COLLECTION INTERFACES

Fare Collection Supervision

REFERENCE DRAWINGS CONNECTION DIAGRAM TERMINAL STRIP DRAWING NUMBER A136, E-137F

13808

No.	DATE	INITIALS	DATE		
REVISION	V:	PREPARED B	Y:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY
REFEREI A640 Co	NCES: ntract Drawings	and A640 Refer	ence Drawings.		
COMMEN	 NTS:				
	roject Engineer	1.			
	type terminal s		orted interposin	g relays.	
	AL REQUIREMEN				
Interco	ONAL DESCRIPT nnection Interfa llection, CIC #	ace Point for a	all signals to a	nd from SCADA and Un	ion Station
SUBSYS' SPEC. RE	TEM: Fare Co Supervis EFERENCE:	llection	11100111000 3101		
CONTRA	CT No.: H840		ATTACHMENTS:	ing Utilization List	
SPEC. RE	EFERENCE: TP 8 TP 14	CTS 4 Interface	REFER TO INTER	RFACE DATA TABLE:	Union Station
SUBSYS	TC14	ransmission	CIC #2 West	640-840-00-02	0
CONTINA	CT No.: A640 Cor	nmunications i	LOCATION:		

IDS-640-840-00-02 ATTACHMENT A UNION STATION/ CIC #2-Auxiliary Power Room West

### DRAWING UTILIZATION LIST

A640 Drawing Title:

## COMMUNICATIONS SCADA/FARE COLLECTION INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP

DRAWING NUMBER

DRAWING N-047

Figure:

Fare Collection Supervision

TBD

A136, E-138F

CONTRA SUBSYS	CT No.: <sub>A640</sub> Cc TEM: Cable T	mmunications ransmission	LOCATION: Cross Passage	INTERFACE No. 640-141-00-1	: REV: 0		
SPEC. RE	EFERENCE: <sub>TP 8</sub> TP 1	.0 CTS 4 Interfaces	REFER TO INTE	RFACE DATA TABLE: Civic Secti	5th & Hill/ Center Line on		
SUBSYS	Electri	ies	ATTACHMENTS: Attachment 1 Technical Req Attachment 2 Interface Dra				
Interco	FUNCTIONAL DESCRIPTION: Interconnection Interface Point for all signals to and from SCADA and 5th & Hill/Civic Center Line section Communications Interface Cabinets.						
	AL REQUIREMENtachment 1	ITS:					
Barrier	L DESCRIPTION: type terminal Communication	strips and as:		ng relays housed in t	wo cross		
	ATION CONTAC						
COMMEN	NTS:						
REFEREN See Att	NCES: achment 2						
REVISION	REVISION: PREPARED		3Y:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY		
No.	DATE	INITIALS	DATE				
	+		+				

13808

#### ATTACHMENT 1

#### 1) Communications Contractor A640

- a) A640 Contractor shall furnish two communications interface cabinets, one assigned to SCADA inputs from each tunnel. Control and indication leads from cross passage ventilation and sump equipment shall be connected to CIC terminals.
- b) When a cross passage contains a fire main valve manifold, the A640 Contractor shall furnish and install cables and conduit from the valves to the CIC and terminate the valve supervision leads at the valve position switch terminals and at the CIC terminals.

#### 2) Facilities Electrical Contractor A141

The A141 Contractor shall furnish cables and conduits from the ventilation and sump equipment to the CICs.

## ATTACHMENT 2

A640 Contract Drawing Interface Drawing Utilization List

Drawing N-084 Communications SCADA/Facilities Electrical Interfaces

13808 0052.0.0

		<del></del> _		<u> </u>	
CONTRA	ACT No.: A640 (	Communications	LOCATION:	INTERFACE No.	
SUBSYS	TEM: Cable	Transmission	CIC #2 North	640-147-00-01	0
SPEC. R	EFERENCE: TP TP	8.0 CTS 14 Interfaces		RFACE DATA TABLE:	Civic Center Station
00170	OT No		477.40.11451.70		
	ACT No.: A14 Civíc Ce TEM: <sub>Facilitie</sub>	nter Station	ATTACHMENTS: Interface Dra	wing Utilization List	
	EFERENCE: 169				
FUNCTION	ONAL DESCRIP	TION:			
	onnection Inter n Facilities El			and from SCADA and Ci	vic Center
TECHNIC	AL REQUIREME	NTS:			
_				_	
	AL DESCRIPTION				
Barrie	r type terminal	strips and as	ssorted interposi	ng relays.	
ORGANI	ZATION CONTA	 Ст:			
SCRTD 1	Project Enginee	r			
COMME	NTS:				
REFERE A640 Re	11040 0			erposing Relay Interf e II Construction Con	
REVISION: PREPARED		BY:	IMPLEMENTATION RE	SPONSIBILITY	
No.	DATE	INITIALS	DATE		
	<del>                                     </del>				
		+			

IDS-640-147-00-01

ATTACHMENT A
CIVIC CENTER STATION
CIC #2 North
Auxiliary Power Room North

## DRAWING UTILIZATION LIST

## A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

	••	A147 REFERENCE DRAWINGS		
·,		CONNECTION D	IAGRAM DWG. NO.	ELEMENTARY DIAGRAM
DRAWING N	-036			
	Figures:			
	Emergency Fan Track Dampers TD-031, TD-032	TS-A, TS-D	E-314	E-090
	Emergency Fan, Fan Dampers ED-031, ED-032	TS-B, TS-D	E-314	E-088
DRAWING N	-037			
	Emergency Fan #1 & #2 Auxiliary Circuits	TS-E	E-314	E-088
	Emergency Fans #1 & #2, EF-031, EF-032	TS-C, TS-E	E-314	E-088
DRAWING N	-038 .			
	Emergency Fan Bypass Dampers BD-031, BD-032	TS-B, TS-D	E-314	E-089
DRAWING N	-039			
	Station Ventilation System AHU-021, AHU-022	TS-A, TS-C	E-314	E-087
	Underplatform Exhaust Fan, UF-022	TS-A	E-314	E-086
DRAWING N	-040			
	Roll-up Doors at Station Entrance (one)	TS-C	E-314	E-092

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IDS-640-147-00-01

ATTACHMENT A
CIVIC CENTER STATION
CIC #2 North
Auxiliary Power Room
North

		A147 REFERENCE DRAWINGS		
		CONNECTION D	TAGRAM	ELEMENTARY
		TERMINAL STRIP	DWG. NO.	DIAGRAM
DRAWING N	-041			•
	480V Main Breakers Aux. Power Room	TS-F	E-314	E-089
DRAWING N-	-042			
	Smoke & Heat Exhaust Fan, EF-E	TS-C	E-314	E-086
	TC/C Room Air Conditioning ACU-2, MD-9, 10, 11, & 12	TS-B	E-314	E-087
DRAWING N	<del>-043</del>			
	Elevator Controls & Indications EL, #1, #2	TS-B	E-314	TBD
	Escalator Controls & Indications ESC #1, #2, #3, & #4	TS-E, TS-F	E-314	TBD
DRAWING N	•044			
	Auxiliary Power Room Supply Fan SF-2 & Exhaust Fan EF-5	TS-B, TS-F	E-314	TBD
	Auxiliary Power Battery Room Exhaust Fan EF-6	TS-A	E-314	TBD .
DRAWING N-	·045			
	TC/C Room Exhaust Fan EF-7	TS-B	E-314	E-087
DRAWING (T	TBD)			
	Elevator Equipment Room Exhaust Fan EF-1	TBD	E-314	TBD
	Toilet Exhaust Fan EF-2	TBD	E-314	TBD
DRAWING (T	BD)			
	General Supply & Exhaust Fans SF-1, EF-5	TS-E, TS-F	E-314	TBD

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IDS-640-147-00-01

ATTACHMENT A
CIVIC CENTER STATION
CIC #2 North
Auxiliary Power Room
North

### A147 REFERENCE DRAWINGS

	CONNECTION I	DIAGRAM DWG. NO.	ELEMENTARY DIAGRAM
DRAWING (TBD)			
<pre>Incoming Electrical Service Room Supply Fan, SF-3</pre>	TBD	E-314	TBD
Incoming Electrical Service Battery Room Exhaust Fans EF-8A & B	TBD	E-314	TBD

CONTRA SUBSYS	ACT No.: A640 Co	ommunications Transmission	LOCATION: CIC #2 South	INTERFACE No. 640-147-00-02	: REV:
SPEC. R	EFERENCE: TP 8	3.0 CTS .4 Interfaces	REFER TO INTE	RFACE DATA TABLE:	Civic Center Station
SUBSYS	ACT No.: A147 Civic Cer TEM: Facilities EFERENCE: 1694	ter Station Electrical	ATTACHMENTS Interface Dr	: awing Utilization List	
Interc	ONAL DESCRIPT onnection Interf n Facilities Ele	ace Point for		and from SCADA and Ci	vic Center
TECHNIC	AL REQUIREMEN	ITS:			
	AL DESCRIPTION r type terminal		sorted interpos	ing relays.	
,	ZATION CONTAC				
COMME	NTS:				
REFERE A640 R	110+0 00			terposing Relay Interf ge II Construction Con	
REVISION: PREPARED		BY:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY	
No.	DATE	INITIALS	DATE		

IDS-640-147-00-02

ATTACHMENT A
CIVIC CENTER STATION
CIC #2 South
Auxiliary Power Room South

## DRAWING UTILIZATION LIST

## A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A147 REFERENCE DRAWINGS		
		CONNECTION DI	AGRAM DWG. NO.	ELEMENTARY DIAGRAM
DRAWING N-	036			
	Figures:			
	Emergency Fan Track Dampers TD-041, TD-042	TS-B, TS-E	E-313	E-090
	Emergency Fan, Fan Dampers ED-041, ED-042	TS-B, TS-D	E-313	E-088
DRAWING N-	037			
	Emergency Fan #1 & #2 Auxiliary Circuits	TS-E TS-E	E-313	E-088
	Emergency Fans #1 & #2, EF-041, EF-042	TS-C, TS-E	E-313	E-088
DRAWING N-	038			
	Emergency Fan Bypass Dampers BD-041, BD-042	TS-B, TS-D	E-313	E-089
DRAWING N-	039			
	Station Ventilation System AHU-023, AHU-024	TS-A, TS-D	E-313	E-087
	Underplatform Exhaust Fans, UF-021	TS-A	E-313	E-086
DRAWING N-	040			
	Roll-up Doors at Station Entrance (one)	TS-D	E-313	E-092
	Duplex Sump Pumps SP-1, SP-2	TS-C	E-313	E-084

13808 0058.0.0

IDS-640-147-00-02

ATTACHMENT A
CIVIC CENTER STATION
CIC #2 South
Auxiliary Power Room
South

		A147 REFERENCE DRAWINGS			
		CONNECTION D		ELEMENTARY	
		TERMINAL STRIP	DWG. NO.	DIAGRAM	
DRAWING N-	041				
	Traction Power Room Supply Fans SSF-021, SSF-022	TS-B	E-313	E-085	
	Traction Power Room Supply Fan Alarms	TS-A	E-313	E-085	
	480V Main Breakers in Auxiliary Power Room (two)	TS-B	E-313	E-089	
DRAWING N-	042				
	Smoke & Heat Exhaust Fan EF-9	TS-C	E-313	E-086	
DRAWING N-	043				
	Escalator Controls & Indications ESC #5, #6, & #7	TS-E	E-313	TBD	
DRAWING N-	044				
	Auxiliary Power Room Supply Fan SF-5 and Exhaust Fan EF-11	TS-A, TS-B	E-313	TBD	
	Auxiliary Power Battery Room Exhaust Fan EF-12	TS-A	E-313	TBD	
DRAWING N-	086				
	Chiller Room Exhaust Fan EF-13	TS-F	E-313	TBD	
DRAWING (T	<u>'BD)</u>				
	General Supply & Exhaust Fans, SF-4, EF-10	TS-E	E-313	TBD	

No.	DATE	INITIALS	DATE			
REVISION:		PREPARED BY:		IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):		
	ntract Drawing	(Section VII) ss (Section VII	I)			
COMMEN Addition		asings are inst	alled in Contrac	et A760		
	roject Engineen	<del>.</del>				
back bo		beakers, baffle		oxes and/or 9-5/8" x hardware for same.	9-5/6 or 6	
	L DESCRIPTION				n # /ell - cll	
Speaker	AL REQUIREME back boxes to Sheet 428.		s shown on Cont	cact Drawing NS-005 o	of Contract	
	ONAL DESCRIPTE ation interface		provided by A640	) into back box prov	ided by A147	
or Lo. ni		50 Part 3				
SUBSYSTEM: Electrical  SPEC. REFERENCE: 16050 Part 3			Interface Drawing Utilization List			
CONTRA	CT No.: A14	7	ATTACHMENTS:			
SPEO. RE	EFERENCE: <sub>TP</sub> ,	5 & TP 14	REFER TO INTE	RFACE DATA TABLE:	Civic Center Station	
		Address	DECED TO INTE	RFACE DATA TABLE:		
-cupcvc			Civic Center			

IDS-640-147-00-03

ATTACHMENT A
CIVIC CENTER STATION
ALL PUBLIC ADDRESS
SPEAKERS EXCEPT THOSE
IN LINEAR ELEMENT

### DRAWING UTILIZATION LIST

A640 Drawing Title:

### COMMUNICATIONS PUBLIC ADDRESS/STAGE II CONTRACT INTERFACES

DRAWING N-101

Figure

Embedded Ceiling Mount

13808 0061.0.0

l	CT No.: A640 Co	mmunications		INTERFACE No.: Sta. 640-147-00-04	REV:		
SUBSYS	TEM: Closed	Circuit T.V.					
SPEC. REFERENCE: TP 7 & TP 14			REFER TO INTERFACE DATA TABLE: Civic Center Station				
CONTRA	CT No.: A147		ATTACHMENTS				
CHROVOTEM:			Interface Drawing Utilization List				
SDBSYSTEM: Electrical SPEC. REFERENCE: 16060 Part 3							
SPEC. NO	1606 1606	0 Part 3					
	DNAL DESCRIPT	_					
	ation interface nduits and boxe			provided by Contract A640	)		
TECHNIC	AL REQUIREMEN	NTS:					
Boxes s	hall be capable	of supporting	g the weight of	the camera.			
. ,	L DESCRIPTION				•		
1" cond	uits to and fro	m four (4") so	quare junction b	oxes.			
ORGANIZ	ZATION CONTAC	 CT:					
	roject Engineer						
JONID	roject mgmeet						
COMMEN	NTS:			<del></del>			
	•						
REFEREI	NCES: ntract Drawing	(Costion VII)					
	ference Drawing		II)		}		
	_	т —					
REVISION:		PREPARED BY:		IMPLEMENTATION RESPO	ONSIBILITY		
No.	DATE	INITIALS	DATE				
			<del> </del>				

IDS-640-147-00-04

ATTACHMENT A
CIVIC CENTER STATION
CLOSED CIRCUIT
TELEVISION CAMERA

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS PUBLIC ADDRESS/STAGE II CONTRACT INTERFACES

DRAWING N-100

Figure:

Embedded Ceiling Mount

13808 0063.0.0

CONTRAC	CT No.: A640 Co	mmunications	LOCATION: TC/C CIR	INTERFACE No.:	
SUBSYST	EM: Cable T	ransmission	10/0 CIR	040-020-00-02	Ü
SPEC. RE	FERENCE: TP 8	.0 CTS 4 Interfaces	REFER TO INTER	RFACE DATA TABLE:	Civic Center Station
				<u> </u>	
SUBSYST	Automat	ic Train upervision	ATTACHMENTS: Interface Dra	wing Utilization List	
SPEC. RE	FERENCE: TP 1	- I			
	NAL DESCRIPTI				
			all signals to ications Interf	and from SCADA and Cirace Rack	vic Center
TECHNICA	L REQUIREMEN	ITS:			
PHYSICA	L DESCRIPTION:	;			
Barrier	type terminal	strips and ass	orted interposi	ng relays.	
ORGANIZ	ATION CONTAC	T:			
SCRTD P	roject Engineer				
COMMEN.	TS:				
	•				
REFEREN A640 Re: Drawings	ference Drawing			posing Relay Interface e II Construction Con-	
		Q-054B, and $Q-$	056B Typical Co	ntrol Circuits	
REVISION: PREPARED E		PREPARED B	Y:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY
No.	DATE	INITIALS	DATE		
	_				

## A640 Drawing Title:

## COMMUNICATIONS SCADA/AUTOMATIC TRAIN CONTROL INTERFACES

TERMINAL STRIPS
UTILIZED

## DRAWING N-135

Figure:

Civic Center, 5th/Hill, 7th/Flower Stations

TBD

CONTRA SUBSYS	CT No.: A640 C	ommunications ubsystem	LOCATION: TC&C Power Panels	INTERFACE No 640-620-00-08	n: REV: 0
SPEC. RI		13 Power 14 Interfaces	REFER TO INTE	RFACE DATA TABLE:	Civic Center Station
SUBSYS	TEM: ATC Ro EFERENCE: TP	Control om	ATTACHMENTS: Attachment 1 Technical Requ Attachment 2 Interface Refe		
Intercor require		ace Point betw atic Train Cor	ntrol p <mark>o</mark> wer distr	ons equipment electri	
1	AL REQUIREME	NTS:			
Termina		8V, 3-phase, 4		120 VAC, single phas	
ORGANIZ	ZATION CONTAC	DT:			
COMMEN SCRTD P	NTS: roject Engineer				
REFERE See Att	NCES: achment 2				
REVISION: PREPARED		BY:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY	
No.	DATE	INITIALS	DATE		

13808 0066.0.0

### ATTACHMENT 1

### TECHNICAL REQUIREMENTS

### 1) Train Control Contractor A620

A620 Contractor shall furnish and install two power distribution panelboards in the TC&C room of Civic Center Station. Each panel shall have essential power bus terminations for one 120V/208V, 3-phase, 4-wire circuit for a 35A load and twelve 120VAC, single-phase circuits fro 20A loads.

### 2) Communications Contractor A640

A640 Contractor shall furnish, install and terminate power cables between the power distribution panels and communications equipment of the station TC&C room.

### ATTACHMENT 2

## Interface Reference Drawing List

### A620 Contract Drawings

Drawing Q-052 Power Distribution Schematic

13808 0067.0.0

		т			
CONTRA	CT No.: A640 Co	ommunications	LOCATION: CIC #1 TPSS	INTERFACE No. 640-631-00-03	: REV:
SUBSYS	TEM: Cable 7	Transmission	G10 #1 1100	040 031 00 03	Ŭ
SPEC. RE	FERENCE: TP 8	3.0 CTS 14 Interfaces	REFER TO INTER	RFACE DATA TABLE:	Civic Center Station
CONTRA SUBSYST Install SPEC. RE	Tractio	on Power lation	ATTACHMENTS: Interface Draw	wing Utilization List	
Interco	ONAL DESCRIPT Innection Interference of the Control	face Point for		and from SCADA and	
TECHNIC	AL REQUIREMEN	NTS:			
PHYSICA	L DESCRIPTION		_		
			sorted interposi	ng relay	
ORGANIZ	ATION CONTAC	CT:			
SCRTD P	roject Engineer	c			
COMMEN	ITS:				
	ntract Drawing		ence Drawings Interface Cabine	t Details	
REVISION: PREPARED		PREPARED	BY:	IMPLEMENTATION RE (THIRD PARTY):	ESPONSIBILITY
No.	DATE	INITIALS	DATE		

13808 0068.0.0

## A640 Drawing Title:

## COMMUNICATIONS SCADA/TRACTION POWER INTERFACES

	A631 REFERENCE DRAWINGS			
	INTERCONNECTION SCHEDULE			
DRAWING N-076	TERMINAL STRIP	DRAWING NUMBER		
Figure:				
Traction Power Type II AC Switchgear	А, В	P-300A, P-302A, P-303A		
DRAWING N-077				
Traction Power DC Switchgear	B, C	P-301A, P-302A		

				_		
CONTRA SUBSYS	CT No.: A640 Co	mmunications Address	LOCATION: Civic Center		FACE No.:	
SPEC. RI	EFERENCE: TP 6	& TP 14	REFER TO INTE	RFACE DATA	TABLE:	Civic Center Station
CONTRA SUBSYS SPEC. RE	TEM.	Graphics	ATTACHMENTS: Interface Dra	wing Utilizat	ion List	
			provided by A64	O into linear	element	provided
Speaker	AL REQUIREMENTS to be mounted and speakers are	on flange pr	ovided by A760 a A640.	nd shown on A	1760 Draw:	ing P-604.
Public	AL DESCRIPTION: address speaker inear element is	s are install	ed by A640 Contr Contract A760.	actor in plat	form line	ear element.
	ZATION CONTAC	- "				
COMMEN Additio		es are instal	led in Contract	A147.		
	NCES: ontract Drawing eference Drawing		II)			
REVISION	N:	PREPARED E	3Y:	IMPLEMENTA (THIRD PART		SPONSIBILITY
No.	DATE	INITIALS	DATE			
			<del>+</del>			

IDS-640-760-00-02

ATTACHMENT A
CIVIC CENTER STATION
PUBLIC ADDRESS
SPEAKERS THOSE IN LINEAR

## DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS PUBLIC ADDRESS/SIGNS AND GRAPHICS

DRAWING N-102

Figure:

Speakers Mounted in Linear Element

S.P.P.T.D LIPRARY

LOUDOVOTELA	A640 Communications	LOCATION: CIC #2 North	INTERFACE No. 640-795-00-03			
SPEC. REFERENC	L	REFER TO INTE	RFACE DATA TABLE:	Civic Center Station		
CONTRACT No.: SUBSYSTEM: [ SPEC. REFERENC	A795 UPS Supervision E: A795 16610 Par. 2.7	ATTACHMENTS: Utilization Drawing Utilization List				
Interconnection	FUNCTIONAL DESCRIPTION: Interconnection Interface Point for all signals to and from SCADA and Civic Center Station Uninterruptible Power Supply System, CIC #2 North					
TECHNICAL REQU	IREMENTS:					
PHYSICAL DESCE	MPTION:	orted interposin	g relay			
ORGANIZATION C						
COMMENTS:	COMMENTS:					
	awings & A640 Referer -003 UPS System Super					
REVISION:	PREPARED B	BY:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY		
No. DA	E INITIALS	DATE				

IDS-640-795-00-03

ATTACHMENT A
CIVIC CENTER STATION
CIC #2 North
Auxiliary Power Room North

## DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/UPS INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING N-048

Figure:

UPS Supervision

TS-F

A147, E-314

13808 0077.0.0

CONTRACT No.: A640 Co	ommunications Transmission	LOCATION: CIC #2 South	INTERFACE No. 640-795-00-04	•
SPEC. REFERENCE: TP 8	.0 CTS 4 Interfaces	REFER TO INTER	RFACE DATA TABLE:	Civic Center Station
SPEC. REFERENCE: A795	ervision	ATTACHMENTS: Interface Dra	wing Utilization List	
FUNCTIONAL DESCRIPTI Interconnection Interf Station Uninterruptibl	ace Point for			vic Center
TECHNICAL REQUIREMEN	ITS:			
PHYSICAL DESCRIPTION: Barrier type terminal		ssorted interposi	ng relay	
ORGANIZATION CONTAC				
COMMENTS:				
REFERENCES: A640 Contract Drawings A795 Drawing ESK-003 U				
REVISION: PREPARED		BY:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY
No. DATE	INITIALS	DATE		

IDS-640-795-00-04

ATTACHMENT A
CIVIC CENTER STATION
CIC #2 South
Auxiliary Power Room South

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/UPS INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING N-048

Figure:

UPS Supervision TS-F

A147, E-313

13808 0079.0.0

CONTRAC	CT No.: A640 Co	mmunications	LOCATION:	INTERFACE No 640-840-00-03	
SUBSYST	EM: Cable T	ransmission	CIC #2 North	640-840-00-03	Ü
SPEC. RE	FERENCE: <sub>TP 8</sub> TP 1	CTS 4 Interfaces	REFER TO INTER	RFACE DATA TABLE:	Civic Center Station
CONTRAC	11040		ATTACHMENTS:		
SUBSYST	EM: Fare Co Supervi	llection sion	Interface Dra	wing Utilization List	:
SPEC. RE	FERENCE:				
	NAL DESCRIPT				
			all signals to a, CIC #2 North	and from SCADA and	
TECHNICA	L REQUIREMEN	ITS:			_
	L DESCRIPTION:				
Barrier	type terminal	strips and ass	orted interposi	ng relay	
ORGANIZ.	ATION CONTAC	T:			
SCRTD Pr	oject Engineer				
COMMEN	TS:				
	·				
REFEREN A640 Con	CES: ntract Drawing	& A640 Referen	ce Drawings		
REVISION	:	PREPARED B	Y:	IMPLEMENTATION RE	ESPONSIBILITY
No.	DATE	INITIALS	DATE		
1					

IDS-640-840-00-03 ATTACHMENT A CIVIC CENTER STATION CIC #2 North Auxiliary Power Room North

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/FARE COLLECTION INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING N-047

Figure:

Fare Collection Supervision

TS-D

A147, E-314

13808

0071.0.0

SUBSYS	EFERENCE: TP 8	cansmission CTS	<u> </u>	INTERFACE No 640-840-00-04 RFACE DATA TABLE:	0	
	TP 14	Interfaces			Station	
CONTRA	Fare Co	llection	ATTACHMENTS: Interface Draw	ring Utilization List		
SPEC. RE	EFERENCE:					
FUNCTIONAL DESCRIPTION: Interconnection Interface Point for all signals to and from SCADA and Civic Center Station Fare Collection, CIC #2 South						
TECHNIC	AL REQUIREMEN	ITS:				
	L DESCRIPTION:		orted interposin	ng relay		
	ZATION CONTAC	T:				
COMMEN	ITS:					
REFEREI A640 Con	NCES: ntract Drawing &	. A640 Referen	ce Drawings			
REVISION	REVISION: PREPARED BY		BY:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY	
No.	DATE	INITIALS	DATE			

IDS-640-840-00-04

ATTACHMENT A
CIVIC CENTER STATION
CIC #2 South
Auxiliary Power Room South

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/FARE COLLECTION INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING N-047

Figure:

Fare Collection Supervision

TBD

A147, E-313

CONTRAC	CT No.: A640 Co	mmunications ransmission	LOCATION: CIC #2 North	INTERFACE No. 640-157-00-01		
SPEC. RE	FERENCE: TP 8 TP 1	.0 CTS 4 Interfaces	REFER TO INTER	RFACE DATA TABLE:	5th/Hill Station	
CONTRAC SUBSYST SPEC. RE	5th/Hil	l Station s Electrical	ATTACHMENTS: Interface Draw	wing Utilization List		
Interco	FUNCTIONAL DESCRIPTION:  Interconnection Interface Point for all signals to and from SCADA and 5th/Hill Station Facilities Electrical, CIC #2 North					
TECHNICA	L REQUIREMEN	TS:				
	L DESCRIPTION: type terminal		sorted interposi	ng relays.		
ORGANIZ	ATION CONTAC	T:				
SCRTD P:	roject Engineer					
COMMEN	TS:			•		
REFEREN A640 Re: Drawings	ference Drawing			sing Relay Interfaces Construction Contrac		
REVISION	:	PREPARED E	3Y:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY	
No.	DATE	INITIALS	DATE			

IDS-640-157-00-01

ATTACHMENT A

5th/HILL STATION

CIC #2 North

Auxiliary Power Room North

## DRAWING UTILIZATION LIST

## A640 Drawing Title:

## COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A157 REFERENCE DRAWINGS			
		CONNECTION DI	AGRAM DWG. NO.	ELEMENTARY DIAGRAM	
DRAWING N-	036				
	Figures:				
	Emergency Fan Track Dampers TD-051, TD-052	TS-B, TS-E	E-418	E-195	
	Emergency Fan, Fan Dampers ED-051, ED-052	TS-B, TS-D	E-418	E-193	
DRAWING N-	037				
	Emergency Fan #1 & #2 Auxiliary Circuits	TS-E	E-418	E-193	
	Emergency Fans #1 & #2, EF-051, EF-052	TS-C, TS-E	E-418	E-193	
DRAWING N-	038 .				
	Emergency Bypass Dampers BD-051, BD-052	TS-B, TS-D	E-418	E-194	
DRAWING N-	039		-		
	Station Ventilation System AHU-031, AHU-032	TS-A, TS-D	E-418	E-192	
	Underplatform Exhaust Fan, UF-031	TS-A	E-418	E-191	
DRAWING N-	040	•			
	Roll-Up Doors at Station Entrance (two)	TS-D	E-418	E-197	
	Duplex Sump Pumps EP-1	TS-F	E-418	E-189	

IDS-640-157-00-01 <u>ATTACHMENT A</u> 5th/HILL STATION CIC #2 North Auxiliary Power Room North

## DRAWING UTILIZATION LIST

	A157 REFERENCE DRAWINGS			
	CONNECTION I	DWG. NO.	ELEMENTARY <u>DIAGRAM</u>	
DRAWING N-041				
Auxiliary Power Substation Supply Fans, SSF-031, SSF-032	TS-B, TS-C	E-418	E-190	
Auxiliary Power Substation Supply Fan Alarms	TS-A	E-418	E-190	
480V Main Breakers in Auxiliary Power Room (two)	TS-F	E-418	E-194	
DRAWING N-042				
Smoke & Heat Exhaust Fan EF-1	TS-C	E-418	E-191	
DRAWING N-043				
Escalator Controls & Indications ESC #7, #8, #9, #10, #11	TS-E	E-418	TBD	
DRAWING N-044				
Axuiliary Power Battery Room Exhaust Fan EF-14	TS-A	E-418	TBD	
DRAWING N-086	•			
Chiller Room Supply & Exhaust Fans, SF-2, EF-3	TS-F	E-418	TBD	
DRAWING (TBD)				
General Supply & Exhaust Fans, SF-1, EF-2	TS-A, TS-C	E-418	TBD	
DRAWING (TBD)				
Incoming Electrical Service Room Supply Fans, SF-5 and EF-13	TS-B	E-418	TBD	
Incoming Electrical Battery Room Exhaust Fan EF-19	TBD	E-418	TBD	

CONTRAC	CT No.: A640 Co	mmunications transmission	LOCATION: CIC #2 South	INTERFACE No. 640-157-00-02				
SPEC. RE	FERENCE: <sub>TP 8</sub>	3.0 CTS 4 Interfaces	REFER TO INTER	RFACE DATA TABLE:	5th/Hill Station			
SUBSYST SPEC. RE	5th/Hil	l Station s Electrical	ATTACHMENTS: Interface Drawing Utilization List					
Interco	FUNCTIONAL DESCRIPTION:  Interconnection Interface Point for all signals to and from SCADA and 5th/Hill Station Facilities Electrical, CIC #2 South							
TECHNICA	L REQUIREMEN	ITS:						
	L DESCRIPTION: type terminal		orted interposi	ng relay				
	ATION CONTAC							
COMMEN	COMMENTS:							
REFEREN A640 Re Drawing	ference Drawing	40 Contract Dr s - 5th/Hill S	awings - NS-007 tation Stage II	A Interposing Relay I Construction Contrac	interfaces at A157			
REVISION	REVISION: PREPARED		Y:	IMPLEMENTATION RE (THIRD PARTY):	ESPONSIBILITY			
No.	DATE	INITIALS	DATE					

IDS-640-157-00-02

ATTACHMENT A

5th/HILL STATION

CIC #2 South

Auxiliary Power Room South

## DRAWING UTILIZATION LIST

## A640 Drawing Title:

## COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A157 REFERENCE DRAWINGS		
		CONNECTION DI	AGRAM I	ELEMENTARY DIAGRAM
DRAWING N-	036			
	Figures:			
	Emergency Fan Track Dampers TD-061, TD-062	TS-B, TS-D	E-419	E-195
	Emergency Fan, Fan Dampers ED-061, ED-062	TS-B, TS-D	E-419	E-193
DRAWING N-	037			
	Emergency Fan #1 & #2 Auxiliary Circuits	TS-E	E-419	E-193
	Emergency Fans #1 & #2, EF-061, EF-062	TS-C, TS-D	E-419	E-193
DRAWING N	038			
	Emergency Bypass Dampers BD-061, BD-062	TS-B, TS-D	E-419	E-194
DRAWING N-	039			
	Station Ventilation System AHU-033, AHU-034	TS-A, TS-C	E-419	E-192
	Underplatform Exhaust Fan, UF-032	TS-A	E-419	E-191
DRAWING N-	040			
	Roll-Up Doors at Station Entrance (two)	TS-C	E-419	E-197

IDS-640-157-00-02 <u>ATTACHMENT A</u> 5th/HILL STATION CIC #2 South Auxiliary Power Room South

## DRAWING UTILIZATION LIST

		A157 REFERENCE DRAWINGS			
		CONNECTION DETERMINAL STRIP	IAGRAM DWG. NO.	ELEMENTARY <u>DIAGRAM</u>	
DRAWING N	N-04 <u>1</u>				
	480V Main Breakers in Auxiliary Power Room (two)	TS-F	E-419	E-194	
DRAWING N	N-04 <u>2</u>				
	Smoke & Heat Exhaust Fan EF-5, EF-6	TS-D, TS-F	E-419	E-191	
	TC/C Room Air Conditioning, ACU-1, MD-1, 2, 3, &4, C-1	TS-D	E-419	E-192	
DRAWING N	1-043				
	Elevator Controls & Indications Elevator #1, & #2	TS-B	E-419	TBD	
	Escalator Controls & Indications ESC #1, #3, #4, & #5	TS-B, TS-D, TS-E	E-419	TBD	
DRAWING N	1-044				
	Auxiliary Power Room Supply Fan SF-4 and Exhaust Fan EF-8	TS-B, TS-E	E-419	TBD	
	Auxiliary Power Battery Room Exhaust Fan EF-9	TS-A	E-419	TBD	
DRAWING N	1-045				
	TC/C Room Exhaust Fan, EF-4	TBD	E-419	E-192	
DRAWING (	(TBD)				
	Elevator Equipment Room Exhaust Fan EF-10	TBD	E-419	TBD	
	Toilet Exhuast Fan EF-11	TBD	E-419	TBD	
DRAWING (	(TBD)				
	General Supply & Exhaust Fans, SF-3, EF-7	TK-F	E-419	TBD	

	CT No.: <sub>A640 Cc</sub>		LOCATION: 5th/Hill Stat:	INTERFACE No. 640-157-00-03			
SUBSYS	TEM: Public	Address					
SPEC. R	EFERENCE: TP 6	6 & TP 14	REFER TO INTE	RFACE DATA TABLE:	5th/Hill Station		
CONTRA	CT No.: A157	,	ATTACHMENTS:				
SUBSYS	TEM: Electri	cal	Interface Draw	ving Utilization Lis	t		
SPEC. R	EFERENCE: 1605	0 Part 3					
	DNAL DESCRIPT			\ daa had haar	ided her A157		
Install	ation interface	e for speakers	provided by A640	) into back box prov	ided by Al57		
	AL REQUIREME back boxes to		as shown on Conti	ract Drawing NOS-005	of Contract		
A157, S	heet 439.						
PHYSICA	AL DESCRIPTION	1:			•		
				oxes and/or 9-5/8" x hardware for same.	9-5/8" or 6"		
ORGANIZ	ZATION CONTAC	CT:					
SCRTD P	roject Engineer						
COMMEN	NTS:	•					
Additio	nal speaker hou	sings are inst	talled in Contrac	t A760			
REFERE	NCES:						
	ntract Drawing ference Drawing		II)	,			
REVISION: PREPARED		PREPARED	BY:	IMPLEMENTATION F	RESPONSIBILITY		
No.	DATE	INITIALS	DATE				
_							

IDS-640-157-00-03

ATTACHMENT A

5th/HILL STATION

ALL PUBLIC ADDRESS

SPEAKERS EXCEPT THOSE
IN LINEAR ELEMENT

## DRAWING UTILIZATION LIST

A640 Drawing Title:

## COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

DRAWING N-101

Figure:

Embedded Ceiling Mount

CONTRA	CT No.: A640 Cc	mmunications	LOCATION:	INTERFACE NO		
SUBSYS.	TEM: Public	Address	Sth/Hill Stat	ion 640-157-00-04	0	
SPEC. RE	EFERENCE: TP 7	& TP 14	REFER TO INTE	RFACE DATA TABLE:	5th/Hill Station	
CONTRACT No.: A157  SUBSYSTEM: Electrical  SPEC. REFERENCE: 16060 Part 3						
FUNCTIONAL DESCRIPTION:  Installation interface for CCTV cameras and cables provided by Contract A640 into conduits and boxes provided by A157						
TECHNICAL REQUIREMENTS:  Boxes shall be capable of supporting the weight of the camera.						
	L DESCRIPTION		junction box.			
	ZATION CONTAC					
COMMEN	ITS:		-			
	NCES: ontract Drawing eference Drawing					
REVISION: PREPARED		PREPARED	BY:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY	
No.	DATE	INITIALS	DATE			
	<del>                                     </del>			1		

IDS-640-157-00-04 ATTACHMENT A 5th/HILL STATION CLOSED CIRCUIT TELEVISION CAMERA

### DRAWING UTILIZATION LIST

## A640 Drawing Title:

## COMMUNICATIONS CCTV STAGE II STATION CONTRACT INTERFACE

## DRAWING N-100

## Figure:

Ceiling Mount for CCTV Camera

Wall Mount for CCTV Camera

13808 0089.0.0

CONTRAC	CT No.: A640 Com	munications	LOCATION:	INTERFACE No	REV:		
SUBSYST	EM: Cable Tr	ansmission	TC/C CIR	640-620-00-03	U		
SPEC. RE	FERENCE: TP 8. TP 14	0 CTS Interfaces	REFER TO INTERFACE DATA TABLE: 5th/Hill Station				
CONTRAC	CT No.: A631		ATTACHMENTS:				
SUBSYST	Traction EM: <sub>System</sub> Supe	Power ervision	Interface Draw	ing Utilization List			
SPEC. RE	FERENCE: TP 10	.8					
	NAL DESCRIPTI						
Interconnection Interface point for all signals to and from SCADA and 5th/Hill Station Automatic Train Control, TC/C Communications Interface Rack							
TECHNICAL REQUIREMENTS:							
PHYSICA	L DESCRIPTION:		-				
Barrier	type terminal s	trips and ass	orted interposin	g relays.			
ORGANIZ	ATION CONTAC	T:					
SCRTD Pr	oject Engineer						
COMMEN	TS:						
	-						
A640 Ref Drawings	REFERENCES: A640 Contract Drawings NS-007A Interposing Relay Interfaces A640 Reference Drawings - 5th/Hill Station Stage II Construction Contract A157 Drawings A620 Drawings Q-053A, Q-054B, and Q-056B Typical Control Circuits						
REVISION	:	PREPARED E	3Y:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY		
No.	DATE	INITIALS	DATE				

## A640 Drawing Title:

## COMMUNICATIONS SCADA/AUTOMATIC TRAIN CONTROL INTERFACES

TERMINAL STRIPS
UTILIZED

## DRAWING N-135

Figure:

Civic Center, 5th/Hill, 7th/Flower Stations

TBD

13808 0091.0.0

SUBSYST SPEC. REF	FERENCE:	ommunications absystem 13 Power 14 Interfaces	LOCATION: TC&C Power Panels REFER TO INTER	INTERFACE No 640-620-00-09 RFACE DATA TABLE:	0		
SUBSYST SPEC. REF	EM: ATC Roc		ATTACHMENTS: Attachment 1 Technical Requ Attachment 2 Interface Refe	irements rence Drawing List			
FUNCTIONAL DESCRIPTION:  Interconnection Interface Point between Communications equipment electric power requirements and Automatic Train Control power distribution equipment of the Train Control and Communications room.							
	TECHNICAL REQUIREMENTS:  See Attachment 1						
Terminat		3V, 3-phase, 4		120 VAC, single phas C&C room of 5th/Hill			
ORGANIZA	ATION CONTAC	T:					
COMMENT SCRTD Pro	TS: oject Engineer						
REFEREN See Atta							
REVISION:	REVISION: PREPARED			IMPLEMENTATION RI (THIRD PARTY):	ESPONSIBILITY		
No.	DATE	INITIALS	DATE .				

0092.0.0 PP73 IPAR7

### ATTACHMENT 1

### TECHNICAL REQUIREMENTS

### 1) Train Control Contractor A620

A620 Contractor shall furnish and install two power distribution panelboards in the TC&C room of 5th/Hill Station. Each panel shall have essential power bus terminations for one 120V/208V, 3-phase, 4-wire circuit for a 35A load and twelve 120VAC, single-phase circuits fro 20A loads.

## 2) Communications Contractor A640

A640 Contractor shall furnish, install and terminate power cables between the power distribution panels and communications equipment of the station TC&C room.

### ATTACHMENT 2

### Interface Reference Drawing List

A620 Contract Drawings

Drawing Q-052 Power Distribution Schematic

13808 0093.0.0

CONTRAC	T No.: A640 Co		LOCATION: CIC #1 TPSS	INTERFACE No.: 640-631-00-04	REV:
	ERENCE: TP 8	ransmission .0 CTS 4 Interfaces	REFER TO INTER	5th/Hill Station	
CONTRAC SUBSYSTE SPEC, REF	T No.: A631 Tractio EM: Installati System Sup ERENCE: *	n Power	ATTACHMENTS: Interface Dra	wing Utilization List	
Intercon		ace Point for	all signals to tion Power Subst	and from SCADA and 5t ation	h/Hill
TECHNICAL	REQUIREMEN	TS:			_
	DESCRIPTION:		sorted interposi	ng relay	
	TION CONTAC				
COMMENT	S:				
	tract Drawing		nce Drawings Interface Cabine	t Details	
REVISION: PREPARED		PREPARED E	BY:	IMPLEMENTATION RE	SPONSIBILITY
No.	DATE	INITIALS	DATE		

IDS-640-631-00-04 ATTACHMENT A 5TH/HILL STATION CIC #1 TPSS

## A640 Drawing Title:

## COMMUNICATIONS SCADA/TRACTION POWER ELECTRICAL INTERFACES

	A631 REF	ERENCE DRAWINGS	
	INTERCON	NECTION SCHEDULE	
	TERMINAL STRIP	DRAWING NUMBER	
DRAWING N-078			
<u>Figure</u> :			
Traction Power AC Type IV Switchgear	G	P-316A, P-317B	

13808 0095.0.0

INTERFACE No.: REV: h 640-631-00-05 0					
ERFACE DATA TABLE: 5th/Hill Station					
ATTACHMENTS: Interface Drawing Utilization List					
o and from SCADA and 5th/Hill					
sing relays.					
s. net Details					
IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):					

IDS-640-631-00-05

ATTACHMENT A
5TH/HILL STATION
CIC #2 North
Auxiliary Power Room North

## A640 Drawing Title:

### COMMUNICATIONS SCADA/TRACTION POWER INTERFACES

A631 REFERENCE DRAWINGS

INTERCONNECTION SCHEDULE
TERMINAL STRIP DRAWING NUMBER

DRAWING N-284

Figure:

Disconnect Switches Metering E P-317B and Control

13808 0097.0.0

	CT No.: A640 Co		LOCATION: CIC #2 South	INTERFACE No 640-631-00-06	
SUBSYS	IEM: Cable T	ransmission			
SPEC. RE	FERENCE: TP 8 TP 1	.0 CTS 4 Interface	REFER TO INTER	RFACE DATA TABLE:	5th/Hill Station
SUBSYST	CT No.: A631 Tr Install TEM: System		ATTACHMENTS: Interface Draw	ing Utilization List	
_	NAL DESCRIPT		all signals to a	and from SCADA and 5t	h/Hill
	Traction Power		-		
TECHNICA	AL REQUIREME	NTS:			
	L DESCRIPTION	:			
				1 a	
barrier	type terminal	strips and asso	orted interposin	g relays.	
ORGANIZ	ATION CONTAC	CT:			
SCRTD Pr	oject Engineer				
COMMEN	ITS:				
	1050				
REFEREN	NCES: itract Drawings	and A6/O Refer	tence Drawings		
			iterface Cabinet	Details	
	•				
REVISION	J:	PREPARED B	Y:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY
No.	DATE	INITIALS	DATE		
			-		
_			<del>                                     </del>		

IDS-640-631-00-06

ATTACHMENT A

5TH/HILL STATION

CIC #2 South

Auxiliary Power Room South

### A640 Drawing Title:

### COMMUNICATIONS SCADA/TRACTION POWER INTERFACES

	A631 REFI	ERENCE DRAWINGS		
	INTERCONNECTION SCHEDULE			
	TERMINAL STRIP	DRAWING NUMBER		
DRAWING N-284				
Figure:				
Disconnect Switches Metering	E	P-317B		

13808 0099.0.0

CONTRACT NO	O.: A640 Co		LOCATION: 5th/Hill Stat	INTERFACE No.: ion 640-760-00-03	REV: 0
SPEC. REFERE	NCE: <sub>TP 6</sub>	& TP 14	REFER TO INTER		h/Hill ation
CONTRACT NO SUBSYSTEM: SPEC, REFERE	Signs &	Graphics	ATTACHMENTS: Interface Dra	ving Utilization List	
FUNCTIONAL [ Installation by A760			provided by A64	O into linear element pr	ovided
	oe mounted			nd shown on A760 Drawing	P-604.
	ss speaker			actor in platform linear	element.
ORGANIZATION SCRTD Project		T:			
COMMENTS: Additional sp	peaker box	es are install	ed in Contract	A157.	
REFERENCES: A640 Contract A640 Reference	Drawing	(Section VII) s (Section VII	I)		-
REVISION:		PREPARED B	Y:	IMPLEMENTATION RESP (THIRD PARTY):	ONSIBILITY
No.	DATE	INITIALS	DATE		

13808 0104.0.0

IDS-640-760-00-03

ATTACHMENT A

5TH/HILL STATION

PUBLIC ADDRESS

SPEAKERS IN LINEAR

ELEMENT

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS PUBLIC ADDRESS/SIGNS AND GRAPHICS .

DRAWING N-102

Figure:

Speakers Mounted in Linear Element

13808 0105.0.0

CONTRA	CT No.:A640 Cor	nmunications ransmission	LOCATION: CIC #2 North	INTERFACE No.: 640-795-00-05	REV: 0		
	FERENCE: TP 8		REFER TO INTE		Sth/Hill Station		
CONTRAI SUBSYST SPEC. RE	8773	ervision	ATTACHMENTS: Interface Drawing Utilization List				
Intercor		ace Point for	all signals to a System, CIC #2	and from SCADA and 5th/ North	'Hill		
TECHNICA	AL REQUIREMEN	NTS:					
	L DESCRIPTION		orted interposin	ng relay			
	ATION CONTAC	PT:					
COMMEN	iTS:						
	NCES: ntract Drawings awing ESK-003 U						
REVISION	1:	PREPARED E	3Y:	IMPLEMENTATION RES	SPONSIBILITY		
No.	DATE	INITIALS	DATE				
			•				
<u> </u>	-	-					

13808 0106.0.0

IDS-640-795-00-05

ATTACHMENT A

5TH/HILL STATION

CIC #2 North

Auxiliary Power Room North

A640 Drawing Title:

COMMUNICATIONS SCADA/UPS INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING N-048

Figure:

UPS Supervision TS-F A157, E-418

13808 0107.0.0

SUBSYST	FERENCE: TP 8.	ansmission		INTERFACE No 640-795-00-06 RFACE DATA TABLE:	0
CONTRAC SUBSYST SPEC. RE	E/75	rvision	ATTACHMENTS: Interface Draw	ing Utilization List	
Intercon		ce Point for a	all signals to a System, CIC #2	nd from SCADA and 5t South	h/Hill
TECHNICA	L REQUIREMEN	TS:			
	L DESCRIPTION:		orted interposin	g relay	
	ATION CONTAC	T:			
COMMEN	TS:				
	110	- 5th/Hill St	ation Stage II	Interposing Relay I Construction Contrac	
REVISION	:	PREPARED B	Y:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY
No.	DATE	INITIALS	DATE .		

IDS-640-795-00-06

ATTACHMENT A

5TH/HILL STATION

CIC #2 South

Auxiliary Power Room South

#### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/UPS INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING N-048

Figure:

UPS Supervision TS-F A157, E-419

13808 0109.0.0

	CT No.: A640 Co	mmunications	LOCATION: CIC #2 North	INTERFACE No 640-840-00-05		√:
SUBSYST	EM: Cable T	ransmission	010 ,, 1 1,0101	010 010 00	· ·	
SPEC. RE	FERENCE: TP 8 TP 1	CTS 4 Interfaces	REFER TO INTER	RFACE DATA TABLE:	5th/Hill Station	
CONTRA	CT No.: H840		ATTACHMENTS:			
SUBSYST	Fare Co	llection		ring Utilization List		
SPEC. RE	FERENCE:					
FUNCTIO	NAL DESCRIPT	ION:				
Intercon		ace Point for a		and from SCADA and 5t	h/Hill	
Station	rare Collection	n CIC #2 North				
TECHNICA	L REQUIREME!	NTS:				
		_				
PHYSICA	L DESCRIPTION	•				
Barrier	type terminal	strips and asso	orted interposin	g relay		
ORGANIZ	ATION CONTAC	 DT:				
SCRTD Pr	oject Engineer					
COMMEN	TS:		_			
REFEREN	ICES:					
	tract Drawing	& A640 Referenc	ce Drawings			
REVISION	:	PREPARED B	Y:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY	Y
No.	DATE	INITIALS	DATE			

IDS-640-840-00-05

ATTACHMENT A
5th/HILL STATION
CIC #2 North
Auxiliary Power Room North

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/FARE COLLECTION INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING N-047

Figure:

Fare Collection Supervision TBD

A157, E-418

13808

0101.0.0

CONTRA	CT No:: <sub>A640 Co</sub>	mmunications	LOCATION:	INTERFACE No	
SUBSYST	TEM: Cable T	ransmission	CIC #2 South	640-840-00-06	0
SPEC. RE	FERENCE: TP 8	CTS 4 Interfaces	REFER TO INTE	RFACE DATA TABLE:	5th/Hill Station
CONTRA	CT No.: H840		ATTACHMENTS:		
SUBSYST	Fare Co Supervi	llection sion	Interface Draw	ving Utilization List	
SPEC. RE	FERENCE:				
FUNCTIO	NAL DECORIE	JON:			
Intercor		ace Point for		and from SCADA and 5t	h/Hill
Station	Fare Collectio	n CIC #2 South			
TECHNICA	L REQUIREMEN	NTS:			
PHYSICA	L DESCRIPTION				
ľ			orted interposin	ng relay	
	ATION CONTAC				
SCRTD Pr	oject Engineer				
COMMEN	TS:				
REFEREN	ICES:				
	tract Drawing	& A640 Referenc	ce Drawings		
REVISION	:	PREPARED B	Y:	IMPLEMENTATION RE (THIRD PARTY):	ESPONSIBILITY
No.	DATE	INITIALS	DATE		<u>,                                     </u>

IDS-640-840-00-06

ATTACHMENT A

5th/HILL STATION

CIC #2 South

Auxiliary Power Room South

#### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/FARE COLLECTION INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP

DRAWING NUMBER

DRAWING N-0.47

Figure:

Fare Collection Supervision

TBD

A157, E-419

13808

CONTRA	CT No.: A640 C	Communications	LOCATION: CIC #3 East	INTERFACE No.: 640-167-00-01	REV:
SUBSYST	TEM: Cable	Transmission	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
SPEC. RE	FERENCE: TP TP	8.0 CTS 14 Interfaces	REFER TO INTE	RFACE DATA TABLE:	7th/Flower Station
CONTRAC	CT No.: A16	7	ATTACHMENTS		
SUBSYST		ower Station	Interface Dr	awing Utilization List	
SPEC. RE	FERENCE: 169	44			
FUNCTIO	NAL DESCRIPT	rion:			
		face Point for ectrical, CIC		and from SCADA and 7t	h/Flower
TECHNICA	L REQUIREME	NTS:			
PHYSICA	L DESCRIPTION			•	
Barrier	type terminal	strips and as	sorted interpos	ing relays.	
ORGANIZ	ATION CONTAC				
SCRTD P	roject Enginee	r			
COMMEN	TS:				
REFEREN A640 Re Drawing	ference Drawin	640 Drawings - gs - 7th/Flowe	NS-007A Interport Station Stage	osing Relay Interfaces II Construction Contr	act A167
REVISION	;	PREPARED E	3Y:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY
No.	DATE	INITIALS	DATE		

#### DRAWING UTILIZATION LIST

### A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A167 REFERENCE DRAWINGS			
			CONNECTION DIA	AGRAM DWG. NO.	ELEMENTARY DIAGRAM
DRAWING (TBD)					
Emergency Fans #1 6 EM-1E, EM-2E (EF-7		TS-C,	TS-E	E-067	E-045
DRAWING (TBD)					
Emergency Fan, Fan FD-1E, FD-2E (FD-7		TS-B,	TS-D	E-067	E-045
DRAWING (TBD)					
Emergency Fan Bypa: BD-1E, BD-2E (BD-7		TS-B,	TS-D	E-067	E-046
DRAWING (TBD)					
Station Ventilation AHU-1E, AHU-2E, (A		TS-A,	TS-D	E-067	E-044
Underplatform Exhauter UF-1E, (UF-41)	ust Fan	TS-A		E-067	E-043
DRAWING (TBD)					
Roll-Up Doors D-1		TS-D		E-067	E-061
DRAWING (TBD)					
480V Main Breakers Auxiliary Power Ro		TS-F		E-067	E-046

<sup>\*</sup>Ventilation equipment designations in parenthesis are Facilities mechanical dwg. designations that differ from Facilities electrical dwg. designations (typ.).

IDS-640-167-00-01

ATTACHMENT A
7th/FLOWER STATION
CIC #3 East
Auxiliary Power Room
East

### DRAWING UTILIZATION LIST

		A167 REFERENCE DRAWINGS			
		CONNECTION DI	AGRAM DWG. NO.	ELEMENTARY <u>DIAGRAM</u>	
DRAWING (T	BD)				
	Smoke & Heat Exhaust Fan, MF-1E (EF-6)	TS-C	E-067	E-043	
	TC/C Room Ventilation AC-1E (ACU-1), EF-16E (EF-16)	TS-B	E-067	E-044, E-060	
DRAWING (T	BD)				
	Escalator Controls & Indications ESC #1, 4, 5, 8 (ES-1E, 4E, 5E, 8E)	TS-E, TS-F	E-067	TBD	
DRAWING (T	BD)				
	Emergency Fan #1 & #2 Auxiliary Circuits	TS-E	E-067	E-045	
	Emergency Fan Track Dampers TD-1E, TD-2E (TD-71, TD-72)	TS-B, TS-E	E-067	E-047	
DRAWING (T	<u>BD)</u> .				
	General Supply & Exhaust Fans SF-1E, CA-1 (SF-7, CA-1)	TS-F	E-067	. E-059	
DRAWING (T	BD)				
	TC/C Battery Room Exhaust Fan EF-3E2 (EF-2)	TS-A	E-067	E-233	
	Auxiliary Power Battery Room Exhaust Fan EF-3E1 (EF-1)	TS-A	E-067	E-233	

13808 0112.0.0

CONTRAC	CT No.: A640 C	ommunications	LOCATION:	INTERFACE NO	
SUBSYST	EM: Cable	Transmission	CIC #2 West	640-167-00-02	0
SPEC. RE	FERENCE: TP	8.0 CTS 14 Interfaces	REFER TO INTE	RFACE DATA TABLE:	7th/Flower Station
CONTRAC	CT No:	<del>,                                    </del>	ATTACHMENTS:		
	Tho: A16 7th/Fl EM: Facilitie	OWAT		wing Utilization List	:
SPEC. RE	FERENCE: 169	44			
		:			
			_		
1	NAL DESCRIPT				
		face Point for ectrical, CIC ;		and from SCADA and 7t	:h/Flower
TECHNICA	L REQUIREME!	NTS:			
PHYSICAL	L DESCRIPTION	l:			
Barrier	type terminal	strips and ass	sorted interposi	ng relay	
ORGANIZ.	ATION CONTAC	CT:			
SCRTD P	roject Enginee	r			
COMMEN.				<del></del>	
	10.				
REFEREN A640 Res Drawings	ference Drawin	640 Contract Di gs - 7th/Flower	rawings - NS-007 r Station Stage	A Interposing Relay I II Construction Contr	nterfaces act A167
REVISION	n	PREPARED E		IMPLEMENTATION RE	SPONSIBILITY
				(THIRD PARTY):	
No.	DATE	INITIALS	DATE		

IDS-640-167-00-02

ATTACHMENT A
7th/FLOWER STATION
CIC #2
Auxiliary Power Room West

### DRAWING UTILIZATION LIST

### A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A167 REFERENCE DRAWINGS			
		CONNECTION DI		ELEMENTARY	
		TERMINAL STRIP	<u>DWG. NO.</u>	DIAGRAM	
DRAWING (	TBD)				
	Figures:				
	Emergency Fans #1 & #2 EM-1W, EM-2W (EF-081, EF-082)*	TS-C, TS-E	E-068	E-045	
DRAWING (	TBD)				
	Emergency Fan, Fan Dampers ED-1W, ED-2W (ED-081, ED-082)	TS-B, TS-D	E-068	E-045	
DRAWING (	TBD)				
	Emergency Fan Bypass Dampers BD-1W, BD-2W (BD-081, BD-082)	TS-B, TS-D	E-068	E-046	
DRAWING (	TBD)				
	Station Ventilation System AHU-1W, AHU-2W (AHU-43, AHU-44)	TS-A, TS-C	E-068	E-044	
	Underplatform Exhaust Fan UF-1W (UF-42)	TS-A	E-068	E-043	
DRAWING (	TBD)				
	Roll-Up Doors at Station Entrance D-2	TS-C	E-068	E-061	
	Duplex Sump Pump P-1W, P-2W (SP-1)	TS-A	E-068	E-041	

<sup>\*</sup>Ventilation equipment designations in parenthesis are Facilities mechanical dwg. designations that differ from Facilities electrical dwg. designations (typ.).

13808 0114.0.0

IDS-640-167-00-02 <u>ATTACHMENT A</u> 7th/FLOWER STATION CIC #2 Auxiliary Power Room West

### DRAWING UTILIZATION LIST

		A167 REFERENCE DRAWINGS			
		CONNECTION TERMINAL STRIP	DIAGRAM DWG. NO.	ELEMENTARY <u>DIAGRAM</u>	
DRAWING (	TBD)				
	480V Main Breakers in Auxiliary Power Room (two)	TS-F	E-068	E-046	
	Traction Power Room Supply Fans SF-1W, SF-2W (SSF-41, SSF-42)	TS-B	E-068	E-042	
	Traction Power Room Ventila- tion Alarms	TS-B	E-068	E-042	
DRAWING (	TBD)				
	Smoke & Heat Exhaust Fan, MF-1W (EF-7)	TS-C	E-068	E-043	
DRAWING (	TBD)				
	Elevator Controls & Indicacations ELV #1 & #2	TBD	TBD	TBD	
	Escalator Controls & Indica- ECS #2, 3, 6, 7, 9, 10 (ES-1W, 2W, 3W, 4W, 5W, 6W)	TS-E, TS-F	E-068	TBD	
DRAWING (	TBD)				
	Emergency Fan #1 & #2 Auxiliary Fans	TS-E	E-068	E-045	
	Emergency Fan Track Dampers TD-1W, TD-2W (TD-081, TD-082)	TS-B, TS-D	E-068	E-047	
DRAWING (	TBD)				
	General Supply & Exhaust Fans SF-4W, EF-2W (SF-8, EF-15)	TS-D	E-068	E-059	
	Chiller Room Supply & Exhaust Fans SF-10W, EF-6W (SF-10, EF-5	TS-F	E-068	E-059	

IDS-640-167-00-02

ATTACHMENT A
7th/FLOWER STATION
CIC #2
Auxiliary Power Room West

### DRAWING UTILIZATION LIST

		A167 REFE	RENCE DRAWINGS	
		CONNECTION DI TERMINAL STRIP	AGRAM DWG. NO.	ELEMENTARY <u>DIAGRAM</u>
DRAWING (7	<u>CBD)</u>			
	Incoming Electrical Service Room Supply Fan SF-3W (SF-9)	TS-E	E-068	E-059
	Incoming Electrical Service Battery Room Exhaust Fans EF-1AW, EF-1BW (EF-18A & B)	TS-B, TS-E	E-068	E-233
	West Electrical Room Supply & Exhaust Fans, SF-19, EF-20	TBD	E-068	TBD
DRAWING (T	TBD)			
	Auxiliary Power Battery Room Exhaust Fan EF-3W (EF-3)	TS-A	E-068	E-233
DRAWING (T	<u> BD)</u>			
	West Auxiliary Power Room Exhaust Fan EF-2W (EF-15)	TS-D	E-068	E-059

CONTRACT No.: A640 Communications SUBSYSTEM: Public Address SPEC. REFERENCE: TP 6 & TP 14  REFER TO INTERFACE DATA TABLE: 7th/Flower Station  CONTRACT No.: A167 SUBSYSTEM: Electrical SPEC. REFERENCE: 16050 Part 3  FUNCTIONAL DESCRIPTION: Installation interface for speakers provided by A640 into back box provided by A167  TECHNICAL REQUIREMENTS: Speaker back boxes to be installed as shown on Contract Drawing NS-005 of Contract A167, Sheet 264.  PHYSICAL DESCRIPTION: I" conduits to and from four (4") square junction boxes and/or 9-5/8" x 9-5/8" or 6" back boxes. Wires, speakers, baffles, and mounting hardware for same.  ORGANIZATION CONTACT: SCRTD Project Engineer  COMMENTS: Additional speaker housings are installed in Contract A760  REFERENCES: A640 Contract Drawing (Section VII) A640 Reference Drawings (Section VIII)  REVISION:  PREPARED BY:  IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):						
CONTRACT No.: A167 SUBSYSTEM: Electrical SPEC. REFERENCE: 16050 Part 3  FUNCTIONAL DESCRIPTION: Installation interface for speakers provided by A640 into back box provided by A167  TECHNICAL REQUIREMENTS: Speaker back boxes to be installed as shown on Contract Drawing NS-005 of Contract A167, Sheet 264.  PHYSICAL DESCRIPTION: 1" conduits to and from four (4") square junction boxes and/or 9-5/8" x 9-5/8" or 6" back boxes. Wires, speakers, baffles, and mounting hardware for same.  ORGANIZATION CONTACT: SCRTD Project Engineer  COMMENTS: Additional speaker housings are installed in Contract A760  REFERENCES: A640 Contract Drawing (Section VIII) A640 Reference Drawings (Section VIII)  REVISION: PREPARED BY:  IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):						<del>-</del> -
SUBSYSTEM: Electrical  SPEC. REFERENCE: 16050 Part 3  FUNCTIONAL DESCRIPTION: Installation interface for speakers provided by A640 into back box provided by A167  TECHNICAL REQUIREMENTS: Speaker back boxes to be installed as shown on Contract Drawing NS-005 of Contract A167, Sheet 264.  PHYSICAL DESCRIPTION: 1" conduits to and from four (4") square junction boxes and/or 9-5/8" x 9-5/8" or 6" back boxes. Wires, speakers, baffles, and mounting hardware for same.  ORGANIZATION CONTACT: SCRTD Project Engineer  COMMENTS: Additional speaker housings are installed in Contract A760  REFERENCES: A640 Contract Drawing (Section VII) A640 Reference Drawings (Section VIII)  REVISION: PREPARED BY: IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):	SPEC. RE	EFERENCE: TP 6	& TP 14	REFER TO INTER	RFACE DATA TABLE:	/ CII/ I TOWCI
TECHNICAL REQUIREMENTS: Speaker back boxes to be installed as shown on Contract Drawing NS-005 of Contract A167, Sheet 264.  PHYSICAL DESCRIPTION: 1" conduits to and from four (4") square junction boxes and/or 9-5/8" x 9-5/8" or 6" back boxes. Wires, speakers, baffles, and mounting hardware for same.  ORGANIZATION CONTACT: SCRTD Project Engineer  COMMENTS: Additional speaker housings are installed in Contract A760  REFERENCES: A640 Contract Drawing (Section VII) A640 Reference Drawings (Section VIII)  REVISION:  PREPARED BY:  IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):	SUBSYS	TEM: Electric			ing Utilization Lis	t
Speaker back boxes to be installed as shown on Contract Drawing NS-005 of Contract A167, Sheet 264.  PHYSICAL DESCRIPTION:  1" conduits to and from four (4") square junction boxes and/or 9-5/8" x 9-5/8" or 6" back boxes. Wires, speakers, baffles, and mounting hardware for same.  ORGANIZATION CONTACT:  SCRTD Project Engineer  COMMENTS: Additional speaker housings are installed in Contract A760  REFERENCES: A640 Contract Drawing (Section VII) A640 Reference Drawings (Section VIII)  REVISION:  PREPARED BY:  IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):				provided by A640	into back box prov	ided by A167
1" conduits to and from four (4") square junction boxes and/or 9-5/8" x 9-5/8" or 6" back boxes. Wires, speakers, baffles, and mounting hardware for same.  ORGANIZATION CONTACT:  SCRTD Project Engineer  COMMENTS: Additional speaker housings are installed in Contract A760  REFERENCES: A640 Contract Drawing (Section VII) A640 Reference Drawings (Section VIII)  REVISION:  PREPARED BY:  IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):	Speaker	back boxes to b				of Contract
COMMENTS: Additional speaker housings are installed in Contract A760  REFERENCES: A640 Contract Drawing (Section VII) A640 Reference Drawings (Section VIII)  REVISION:  PREPARED BY:  IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):	1" cond	uits to and from	n four (4") sq			9-5/8" or 6"
Additional speaker housings are installed in Contract A760  REFERENCES: A640 Contract Drawing (Section VII) A640 Reference Drawings (Section VIII)  REVISION:  PREPARED BY:  IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):	•		Т:			
A640 Contract Drawing (Section VII) A640 Reference Drawings (Section VIII)  REVISION: PREPARED BY: IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):			sings are inst	alled in Contrac	et A760	
(THIRD PARTY):	A640 Co	ntract Drawing (		I)		
No. DATE INITIALS DATE .	REVISIO	N:	PREPARED E	3Y:		RESPONSIBILITY
	No.	DATE	INITIALS	DATE		

13808 0117.0.0

IDS-640-167-00-03 ATTACHEMENT A 7th/FLOWER STATION ALL PUBLIC ADDRESS SPEAKERS EXCEPT THOSE IN LINEAR ELEMENT

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

DRAWING N101

Figure:

Embedded Ceiling Mount

13808 0118.0.0

CONTRACT No.: A640 Communication SUBSYSTEM: Closed Circuit T.V.  SPEC. REFERENCE: TP 7 & TP 14  CONTRACT No.: A167 SUBSYSTEM: Electrical SPEC. REFERENCE: 16060 Part 3  FUNCTIONAL DESCRIPTION: Installation interface for CCTV cameras and cables provided by Contract A640 into conduits and boxes provided by A167  TECHNICAL REQUIREMENTS: Boxes shall be capable of supporting the weight of the camera.  PHYSICAL DESCRIPTION: 1" conduits to and from a 4" square junction box.  ORGANIZATION CONTACT: SCRTD Project Engineer  COMMENTS:		
SPEC. REFERENCE: TP 7 & TP 14  REFER TO INTERFACE DATA TABLE: 7th/Flower Station  CONTRACT No.: A167 SUBSYSTEM: Electrical SPEC. REFERENCE: 16060 Part 3  FUNCTIONAL DESCRIPTION: Installation interface for CCTV cameras and cables provided by Contract A640 into conduits and boxes provided by A167  TECHNICAL REQUIREMENTS: Boxes shall be capable of supporting the weight of the camera.  PHYSICAL DESCRIPTION: 1" conduits to and from a 4" square junction box.  ORGANIZATION CONTACT: SCRTD Project Engineer		
CONTRACT No.: A167 SUBSYSTEM: Electrical SPEC. REFERENCE: 16060 Part 3  FUNCTIONAL DESCRIPTION: Installation interface for CCTV cameras and cables provided by Contract A640 into conduits and boxes provided by A167  TECHNICAL REQUIREMENTS: Boxes shall be capable of supporting the weight of the camera.  PHYSICAL DESCRIPTION: 1" conduits to and from a 4" square junction box.  ORGANIZATION CONTACT: SCRTD Project Engineer	A: Closed Circuit T.V.	BSYSTE
SUBSYSTEM: Electrical  SPEC. REFERENCE: 16060 Part 3  FUNCTIONAL DESCRIPTION: Installation interface for CCTV cameras and cables provided by Contract A640 into conduits and boxes provided by A167  TECHNICAL REQUIREMENTS: Boxes shall be capable of supporting the weight of the camera.  PHYSICAL DESCRIPTION: 1" conduits to and from a 4" square junction box.  ORGANIZATION CONTACT: SCRTD Project Engineer	RENCE: TP 7 & TP 14	EC. REFE
SUBSYSTEM: Electrical  SPEC. REFERENCE: 16060 Part 3  FUNCTIONAL DESCRIPTION:  Installation interface for CCTV cameras and cables provided by Contract A640 into conduits and boxes provided by A167  TECHNICAL REQUIREMENTS:  Boxes shall be capable of supporting the weight of the camera.  PHYSICAL DESCRIPTION:  1" conduits to and from a 4" square junction box.  ORGANIZATION CONTACT:  SCRTD Project Engineer	No.: A167	NTRACT
FUNCTIONAL DESCRIPTION: Installation interface for CCTV cameras and cables provided by Contract A640 into conduits and boxes provided by A167  TECHNICAL REQUIREMENTS: Boxes shall be capable of supporting the weight of the camera.  PHYSICAL DESCRIPTION: 1" conduits to and from a 4" square junction box.  ORGANIZATION CONTACT: SCRTD Project Engineer	M: Electrical	BSYSTE
Installation interface for CCTV cameras and cables provided by Contract A640 into conduits and boxes provided by A167  TECHNICAL REQUIREMENTS:  Boxes shall be capable of supporting the weight of the camera.  PHYSICAL DESCRIPTION:  1" conduits to and from a 4" square junction box.  ORGANIZATION CONTACT:  SCRTD Project Engineer	RENCE: 16060 Part 3	EC. REFE
Installation interface for CCTV cameras and cables provided by Contract A640 into conduits and boxes provided by A167  TECHNICAL REQUIREMENTS:  Boxes shall be capable of supporting the weight of the camera.  PHYSICAL DESCRIPTION:  1" conduits to and from a 4" square junction box.  ORGANIZATION CONTACT:  SCRTD Project Engineer		
Boxes shall be capable of supporting the weight of the camera.  PHYSICAL DESCRIPTION:  1" conduits to and from a 4" square junction box.  ORGANIZATION CONTACT:  SCRTD Project Engineer	ion interface for CCTV can	nstallat
1" conduits to and from a 4" square junction box.  ORGANIZATION CONTACT:  SCRTD Project Engineer		
SCRTD Project Engineer		
	ION CONTACT:	RGANIZA
COMMENTS:	ect Engineer	CRTD Pro
	:	OMMENTS
REFERENCES: A640 Contract Drawings (Section VII) A640 Reference Drawings (Section VIII)	ract Drawings (Section VII	640 Cont
REVISION: PREPARED BY: IMPLEMENTATION RESPONSIBIL (THIRD PARTY):	PREPARED	VISION:
No. DATE INITIALS DATE	DATE INITIALS	١٥.

IDS-640-167-00-04

ATTACHMENT A
7th/FLOWER STATION
CLOSED CIRCUIT
TELEVISION CAMERA

### DRAWING UTILIZATION LIST

### A640 Drawing Title:

### COMMUNICATIONS CCTV/STAGE II STATION CONTRACT INTERFACE

### DRAWING N-100

### Figures

Ceiling Mount for CCTV Camera

Wall Mount for CCTV Camera

13808 0120.0.0

CONTRA	CT No.: A640 Co	ommunications	LOCATION: CIC #4 L	INTERFACE NO		
SUBSYST	TEM: Cable 1	Cransmission	UIC #4 L	640-167-00-05	0	
SPEC. RE	FERENCE: TP 8	6.0 CTS L4 Interface	REFER TO INTE	RFACE DATA TABLE:	7th/Flower Station	
CONTRA	CT No:		ATTACHMENTS:			
	AIO	wer Station		wing Utilization List		
SPEC. RE	FERENCE: 16	5944				
FUNCTIO	NAL DESCRIPT	ION:	<u> </u>			
Interco		ace Point for		and from SCADA and 7t	h/Flower	
TECHNICA	AL REQUIREMEN	JTS:	_			
PHYSICA	L DESCRIPTION	:				
Barrier	type terminal	strips and ass	orted interposi	ng relays.		
ORGANIZ	ATION CONTAC	T:				
SCRTD P	roject Engineer	•				
COMMEN	TS:					
A640 Re:	REFERENCES: A640 Contract Drawings - NS-007A Interposing Relay Interfaces A640 Reference Drawings - 7th/Flower Station Stage II Construction Contract A167 Drawings					
REVISION	:	PREPARED B	Y:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY	
No.	DATE	INITIALS	DATE			
			·			
			<u> </u>			

IDS-640-167-00-05 ATTACHMENT A 7th/FLOWER LIGHT RAIL STATION CIC #4L Auxiliary Power Room

### DRAWING UTILIZATION LIST

### A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A167 REF	ERENCE DRAWINGS	<u> </u>
		CONNECTION D TERMINAL STRIP	IAGRAM DWG. NO.	ELEMENTARY DIAGRAM
DRAWING (	TBD)			
	Figure:			
	Roll-Up Doors (two)	TBD	TBD	E-061
DRAWING (	TBD)			
	LRT Battery Room Exhaust Fan EF-1L	TBD	TBD	E-232
	Auxiliary Power Room Supply & Exhaust Fans AHU-1L, CA-1L	TBD	TBD	TBD
DRAWING (	TBD)			
	Signal and Communications Room Ventilation, ACI-1, EF-2L	TBD	TBD	TBD

13808 0122.0.0

	ACT No.: A640 Cor	mmunications	LOCATION: CIC #5L	INTERFACE No 640-167-00-06	REV:
SUBSYS SPEC. RI	TEM: Cable To EFERENCE: TP 8	ransmission	REFER TO INTER	RFACE DATA TABLE:	7th/Flower
		4 Interface			Station
SUBSYS	TEM: Facilities		ATTACHMENTS: Interface Draw	ving Utilization List	
SPEC, R	EFERENCE: <sub>1694</sub> ,	4			
Interco	ONAL DESCRIPT nnection Interfaci	ace Point for		and from SCADA and 7t	h/Flower
TECHNIC	AL REQUIREMEN	ITS:			
	AL DESCRIPTION type terminal:		orted interposin	ng relays.	
ORGANI	ZATION CONTAC	T:			
SCRTD P	roject Engineer				
COMME	NTS:		<del>.</del>		
REFERE A640 Re Drawing	ference Drawing			A Interposing Relay I	
REVISIO	N:	PREPARED E	3Y:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY
No.	DATE	INITIALS	DATE		
			· ·		

13808 0123.0.0

IDS-640-167-00-06

ATTACHMENT A
7th/FLOWER LIGHT RAIL
STATION
CIC #5L
South West Electrical Room

### DRAWING UTILIZATION LIST

### A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A167 REFERENCE DRAWINGS			
		CONNECTION D	IAGRAM DWG. NO.	ELEMENTARY <u>DIAGRAM</u>	
DRAWING N	-115 <u>A</u>				
	Figure:				
	Emergency Vent Fans, EM-4L (EVF-4)*	TS-C	E-234	E-045	
	Subway Vent Fan, SEM-2L (SVF-2)	TS-B	E-234	E-045	
DRAWING (	TBD)				
	Emergency Vent Fan, Fan Dampers FD-6L	TS-C	E-234	E-045	
	Subway Vent Fan, Fan Damper FD-5L	TS-B	E-234	E-045	
DRAWING (	TBD) .				
	Emergency Fan Bypass Dampers BD-4L	TS-B	E-234	E-046	
DRAWING (	TBD)				
	Emergency Vent Fan Auxiliary Circuits	TS-C	E-234	E-045	
	Subway Vent Fan Auxiliary Circuits	TBD	TBD	TBD	
DRAWING (	TBD)				
	Overhead Track Exhaust Fan OTE-2L	TS-A	E-234	E-232	

<sup>\*</sup>Ventilation equipment designations in parenthesis are Facilities mechanical dwg. designations that differ from Facilities electrical dwg. designations (typ.).

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IDS-640-167-00-06

ATTACHMENT A
7th/FLOWER LIGHT RAIL
STATION
CIC #5L
South West Electrical
ROOM

### DRAWING UTILIZATION LIST

		A167 REI	TERENCE DRAWING	S
		CONNECTION I	DIAGRAM DWG. NO.	ELEMENTARY <u>DIAGRAN</u>
DRAWING (	TBD)			
	Elect. & Mech. Equip. Room Exhaust Fan EF-6L	TBD	TBD	E-323
	Toilet & Valve Room Exhaust Fan EF-8L	TBD	TBD	TBD
DRAWING (	TBD)			
	Elevator Controls & Indications ELV #6 (EL-4L)	TBD	TBD	TBD
	Escalator Controls & Indications ESC #13 (ES-11L)	TBD	TBD ·	TBD

13808 0125.0.0

CONTRAC	CT No.: A640 Cc	ommunications	LOCATION: CIC #6L	INTERFACE No.: 640-167 <b>-</b> 00-07	
SUBSYST	TEM: Cable T	ransmission	010 7701	040 107 00 07	v
SPEC. RE	FERENCE: TP 8	6.0 CTS 4 Interface	REFER TO INTER	RFACE DATA TABLE:	7th/Flower Station
1	CT No.: A167 7th/Flo EM: Facilities	wer Electrical	ATTACHMENTS: Interface Dra	wing Utilization List	
Interco	NAL DESCRIPTION Interference Facil Station Fac	ace Point for	•	and from SCADA and 7t	h/Flower
TECHNICA	AL REQUIREMEN	ITS:	•		
	L DESCRIPTION		sorted interposi	ng relays.	
ORGANIZ	ATION CONTAC	T:			
SCRTD P	roject Engineer	:			
COMMEN	TS:				
REFEREN A640 Re Drawing	ference Drawing			A Interposing Relay I II Construction Contr	
REVISION	]:	PREPARED	BY:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY
No.	DATE	INITIALS	DATE		
1					

13808 0126.0.0

IDS-640-167-00-07

ATTACHMENT A
7th/FLOWER LIGHT RAIL
STATION
CIC #6L
North Electrical Room

### DRAWING UTILIZATION LIST

### A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A167 REFERENCE DRAWINGS			
		CONNECTION D	IAGRAM DWG. NO.	ELEMENTARY DIAGRAM	
DRAWING (T	CBD)				
	Figure:				
	Emergency Vent Fans, EM-1L, EM-2L (EVF-1L, EVF-2L)*	TS-A, TS-B	E-235	E-045	
	Subway Vent Fan, SEM-1L SVF-1L)	TS-C	E-235	E-045	
DRAWING (T	BD)	·			
	Emergency Vent Fan, Fan Dampers FD-1L, FD-2L	TS-A, TS-B	E-235	E-045	
	Subway Vent Fan, Fan Damper FD-3L	TS-C	E-235	E-045	
DRAWING (7	TBD)				
	Emergency Fan Bypass Dampers BD-1L, BD-2L	TS-A, TS-B	E-235	E-046	
DRAWING (T	BD)				
	Emergency Vent Fan Auxiliary Circuits	TS-C	E-235	E-045	
	Subway Vent Fan Auxiliary Auxiliary Circuits	TS-C	E-235	E-045	

<sup>\*</sup>Ventilation equipment designations in parenthesis are Facilities mechanical dwg. designations that differ from Facilities electrical dwg. designations (typ.).

13808 0127.0.0

IDS-640-167-00-07 <u>ATTACHMENT A</u> 7th/FLOWER LIGHT RAIL STATION CIC #6L North Electrical Room

### DRAWING UTILIZATION LIST

## A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A167 RE	FERENCE DRAWING	S
		CONNECTION TERMINAL STRIP	DIAGRAM DWG. NO.	ELEMENTARY <u>DIAGRAM</u>
DRAWING (TBD)				
Emer EF-4	rgency Fan Room Exhaust, 4L	TBD	TBD	E-232
	l Track Mechanical Room aust, EF-SL	TBD	TBD	E-232

13808 0128.0.0

CONTRAC	CT No.: A640 Co	mmunications	LOCATION:	INTERFACE No.:			
SUBSYST	EM: Cable T	ransmission	CIC #7L	640-167-00-08	0		
SPEC. RE	FERENCE: <sub>TP</sub> 8 TP 1	.0 CTS 4 Interface	REFER TO INTER	RFACE DATA TABLE:	7th/Flower Station		
l	CT No.: A167 7th/Flo EM: Facilities FERENCE: <sub>1694</sub>	wer Electrical	ATTACHMENTS: Interface Drawing Utilization List				
FUNCTIONAL DESCRIPTION:  Interconnection Interface Point for all signals to and from SCADA and 7th/Flower Light Rail Station Facilities Electrical CIC #7L							
TECHNICAL REQUIREMENTS:							
. ,	L DESCRIPTION:		sorted interposi	ng relays.			
ORGANIZ	ATION CONTAC	T:					
SCRTD P	roject Engineer				·		
COMMEN	TS:						
REFEREN A640 Re Drawing	ference Drawing			A Interposing Relay In Interposite A Interposite II Construction Control			
REVISION	:	PREPARED E	3Y:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY		
No.	DATE	INITIALS	DATE				

13808 0129.0.0

IDS-640-167-00-08

ATTACHMENT A
7th/FLOWER LIGHT RAIL
STATION
CIC #7L
South East Electrical Room

### DRAWING UTILIZATION LIST

### A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A167 REFERENCE DRAWINGS			
		CONNECTION D	IAGRAM DWG. NO.	ELEMENTARY DIAGRAM	
DRAWING_	(TBD)		<u> </u>		
	Figure:				
•	Emergency Vent Fan EM-3L (EVF-3)	TS-A	E-236	E-045	
DRAWING (	(TBD)				
	Emergency Vent Fan, Fan Damper FD-4L	TS-A	E-236	E-045	
	Emergency Fan Bypass Damper BD-3L	TS-A	E-236	E-046	
DRAWING (	(TBD)				
	Mechanical Room Exhaust EF-7L	TBD	TBD	E-232	
DRAWING_	(TBD)				
	Elevator Controls & Indications ELV #5, #4 (EL-5L, 6L)	TBD	TBD	TBD	
	Escalator Controls & Indications ESC #12, #13 (ES-12L, 13L)	TBD	TBD	TBD	

13808 0130.0.0

CONTRA	CT No.: A640 Cc	mmunications	LOCATION:	INTERFACE No.		
SUBSYST	ΓΕΜ: Cable T	ransmission	TC/C CIR	640-620-00-04	0	
SPEC. RE	FERENCE: TP 8	4 Interface	REFER TO INTER	RFACE DATA TABLE:	7th/Flower Station	
SUBSYST	Supervi	Control	ATTACHMENTS: Interface Drawing Utilization List			
Interco		ace Point for		and from SCADA and 7t s Interface Rack	h/Flower	
TECHNIC	AL REQUIREMEN	NTS:				
	L DESCRIPTION		sorted interposi	ng relays.		
ORGANIZ	ATION CONTAC	T:			•	
SCRTD P	roject Engineer					
COMMEN	TS:					
Drawing	ference Drawing s	s - 7th/Flower	rawings NS-007A r Station Stage -056B Typical Co	Interposing Relay Int II Construction Contr ntrol Circuits	erfaces act A165	
REVISION: PREPARED		3Y:	IMPLEMENTATION RE	SPONSIBILITY		
No.	DATE	INITIALS	DATE			

### A640 Drawing Title:

### COMMUNICATIONS SCADA/AUTOMATIC TRAIN CONTROL INTERFACES

TERMINAL STRIPS
UTILIZED

### DRAWING N-135

Figures:

Civic Center, 5th/Hill, 7th/Flower Stations

TBD

13808 0132.0.0

CONTRA SUBSYS	CT No.: A640 C	ommunications ubsystem	LOCATION: TC&C Power Panels	INTERFACE No. 640-620-00-10	: REV: 0
SPEC. R		13 Power 14 Interfaces	REFER TO INTER	RFACE DATA TABLE:	7th/Flower Station
SUBSYS	NTRACT No.: A620 Automatic Train Control ATC Room  EC. REFERENCE: TP 4 ATC Room TP 10 Interface  ATTACHMENTS: Attachment 1 Technical Requirements  Attachment 2 Interface Reference Drawing List				
Interco require		ace Point beto atic Train Co	ntrol power dist	ons equipment electric	
	AL REQUIREMENT achment 1	NTS:			
Termina		8V, 3-phase,		120 VAC, single phase CC&C room of 7th/Flower	
ORGANI	ZATION CONTAC	OT:			
COMMEN SCRTD P	NTS: roject Engineer				
REFERE See Att	NCES: achment 2				
REVISION: PREPARED		BY:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY	
No.	DATE	INITIALS	DATE		

#### ATTACHMENT 1

#### TECHNICAL REQUIREMENTS

#### 1) Train Control Contractor A620

A620 Contractor shall furnish and install two power distribution panelboards in the TC&C room of 7th/Flower. Each panel shall have essential power bus terminations for one 120V/208V, 3-phase, 4-wire circuit for a 35A load and twelve 120VAC, single-phase circuits fro 20A loads.

### 2) Communications Contractor A640

A640 Contractor shall furnish, install and terminate power cable between the power distribution panels and communications equipment of the station TC&C room.

#### ATTACHMENT 2

### Interface Reference Drawing List

#### A620 Contract Drawings

Drawing Q-052 Power Distribution Schematic

13808 0134.0.0

CONTRAC	CT No.: A640 Co	mmunications	LOCATION: CIC #1 TPSS	INTERFACE No.: 640-631-00-07	REV:
SUBSYST	EM: Cable T	ransmission	010 771 1100	040 031 00 07	Ÿ
SPEC. RE	FERENCE: TP 8 TP 1	.0 CTS 4 Interface	REFER TO INTER	RFACE DATA TABLE:	7th/Flower Station
CONTRAC	CT No.: A631 Tr	action Power	ATTACHMENTS:		
SUBSYST	Install		Interface Draw	wing Utilization List	
SPEC. RE	FERENCE: *				
Interco	NAL DESCRIPTION Interf Traction Power	ace Point for	all signals to	and from SCADA and 7t	h/Flower
TECHNICA	L REQUIREMEN	ITS:			
	L DESCRIPTION:		orted interposi	ng relays.	
ORGANIZ	ATION CONTAC	T:			
SCRTD P	roject Engineer				
COMMEN	TS:				
	ntract Drawings		rence Drawings. nterface Cabine	t Details	
REVISION	:	PREPARED B	Y:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY
No.	DATE	INITIALS	DATE		

13808 0135.0.0

# A640 Drawing Title:

## COMMUNICATIONS SCADA/TRACTION POWER INTERFACES

	A631 REFERENCE DRAWINGS			
	INTERCO	NNECTION SCHEDULE DRAWING NUMBER		
DRAWING N-077				
Figures:		•		
Traction Power DC Switchgear Supervision	B, C, D	P-330A, P-331A, P-338A P-332A, P-321A		
DRAWING N-076				
Traction Power Type II AC Switchgear	A, B, D	P-330A, P-332A P-333A, P-339A		
DRAWING N-284				
Disconnect Switches Metering and Control	С	P-333A		

13808 0136.0.0

CONTRA SUBSYS	CT No.: A640 TEM: Public		LOCATION: 7th/Flower St	INTERFACE No 640-760-00-04	
SPEC. RE	EFERENCE: TP 6	& TP 14	REFER TO INTEF	FACE DATA TABLE:	7th/Flower Station
CONTRA SUBSYS' SPEC. RE	A/00	Graphics	ATTACHMENTS: Interface Dra	ving Utilization List	
Install	ONAL DESCRIPTI ation interface d by A760.		provided by Con	tract A640 into linea	r element
Speaker	AL REQUIREMEN s to be mounted and speakers are	on flange pro		nd shown on A760 Draw	ving P-604.
Public	AL DESCRIPTION: address speaker near element is	s are installe		actor in platform lir	near element.
	ZATION CONTAC Project Engineer				
COMMEN		es are install	ed in Contract .	A167.	
	NCES: ontract Drawings eference Drawing				
REVISION: PREPARED		PREPARED B	Y:	IMPLEMENTATION RE (THIRD PARTY):	ESPONSIBILITY
No.	DATE	INITIALS	DATE .		
	-				

13808 0141.0.0

IDS-640-760-00-04 <u>ATTACHMENT A</u> 7TH/FLOWER STATION PUBLIC ADDRESS SPEAKERS IN LINEAR ELEMENT

## DRAWING UTILIZATION LIST

A640 Drawing Title:

## COMMUNICATIONS PUBLIC ADDRESS/SIGN & GRAPHICS

## DRAWING N-102

Figure 1:

Speakers Mounted in Linear Element

13808 0142.0.0

CONTRAC	CT No.: A640 Com	munications L	OCATION: CIC #3 East	INTERFACE No 640-795-00-07	.: REV:	
SUBSYST	EM: Cable Tr	ansmission	oro mo nao	0.0 7.2 00 0.		
SPEC. RE	FERENCE: <sub>TP</sub> 8. TP 14	0 CTS Interfaces	REFER TO INTER	RFACE DATA TABLE:	7th/Flower Station	
SUBSYST SPEC. REI	EM: UPS Supe		ATTACHMENTS: Interface Drawing Utilization List			
Intercon	NAL DESCRIPTI nection Interfa Uninterruptible	ce Point for a		nd from SCADA and 7t	h/Flower	
TECHNICA	L REQUIREMEN	TS:				
PHYSICAL	DESCRIPTION:					
Barrier	type terminal s	trips and asso	orted interposin	g relays.		
ORGANIZ	ATION CONTAC	T:				
SCRTD Pro	oject Engineer					
COMMEN	TS:					
Drawings	220	- 7th/Flower	Station Stage I	Interposing Relay I I Construction Contr		
REVISION	:	PREPARED B	Y:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY	
No.	DATE	INITIALS	DATE			

13808 0143.0.0

IDS-640-795-00-07
ATTACHMENT A
7TH/FLOWER STATION
CIC #3
Auxiliary Power Room East

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/UPS INTERFACE

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING 048

Figure:

UPS Supervision

TS-F

A167, E-067

13808

CONTRA	CT No.: A640 Cc	emmunications L	OCATION:	INTERFACE No.:	
SUBSYST	TEM: Cable 1	ransmission	CIC #2 West	640-795-00-08	0
SPEC, RE	FERENCE: TP 8	3.0 CTS 4 Interfaces	REFER TO INTER	RFACE DATA TABLE:	7th/Flower Station
CONTRAC	CT No.: A795		ATTACHMENTS:		
SUBSYST	T 6 4 -	ervision	Interface Dra	wing Utilization List	
SPEC. RE	FERENCE: A795		,		
1	NAL DESCRIPTI				
	nnection Interf Uninterruptibl			and from SCADA and 7t	h/Flower
TECHNICA	L REQUIREMEN	ITS:			_
PHYSICA	L DESCRIPTION:			-	
Barrier	type terminal	strips and ass	ort <b>e</b> d interposi	ng relays.	
ORGANIZ	ATION CONTAC	T:	-		_
SCRTD P	roject Engineer	•			
COMMEN	TS:		· · · · · ·		
Drawing	ference Drawing	s - 7th/Flower	Station Stage	A Interposing Relay I II Construction Contr	
REVISION	:	PREPARED B	Y:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY
No.	DATE	INITIALS	DATE		

13808 0145.0.0

IDS-640-795-00-08
ATTACHMENT A
7th/FLOWER STATION
CIC #2
Auxiliary Power Room West

## DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/UPS INTERFACE

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING N-048

Figure:

UPS Supervision TS-F A167, E-068

13808 0146.0.0

munications	LOCATION:	INTERFACE No	.: REV:		
ł	CIC #3 East	640-840-00-07	0		
	REFER TO INTER	FACE DATA TABLE:	7th/Flower Station		
lection	ATTACHMENTS: Interface Drawing Utilization List				
ice Point for a		nd from SCADA and			
TECHNICAL REQUIREMENTS:					
	orted interposin	g relay			
T:					
. A640 Referenc	ce Drawings				
PREPARED B	Υ:	IMPLEMENTATION RE	ESPONSIBILITY		
INITIALS	DATE				
	CTS Interfaces Collection Consion  ON: Collection Colle	CTS Interfaces  ATTACHMENTS: Interface Draw  ON: ace Point for all signals to a collection, CIC #3 East  TTS:  A640 Reference Drawings  PREPARED BY:	CIC #3 East 640-840-00-07  REFER TO INTERFACE DATA TABLE:  ATTACHMENTS: Interface Drawing Utilization List  ON: ace Point for all signals to and from SCADA and accollection, CIC #3 East  ITS:  Strips and assorted interposing relay  T:  A640 Reference Drawings  PREPARED BY: IMPLEMENTATION RE (THIRD PARTY):		

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IDS-640-840-00-07

ATTACHMENT A
7th/FLOWER STATION
CIC #3
Auxiliary Power Room East

## DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/FARE COLLECTION INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM
TERMINAL STRIP DRAWING NUMBER

DRAWING N-047

Figure:

Fare Collection Supervision TBD A167, E-067

13808 0138.0.0

_					
CONTRA	CT No.: A640 Co	ommunications	LOCATION: CIC #2 West	INTERFACE No. 640-840-00-08	: REV:
SUBSYST	TEM: Cable 7	Cransmission	CIC #2 West	640-640-00-06	U
SPEC. RE	FERENCE: TP 8	S CTS 14 Interfaces	REFER TO INTER	RFACE DATA TABLE:	7th/Flower Station
CONTRA	CT No.: H840		ATTACHMENTS:		
SUBSYST	Fare Co Supervi	ollection ision	Interface Dra	wing Utilization List	
SPEC. RE	FERENCE:				
FUNCTIO	NAL DESCRIPT	ION:			
	nnection Interf wer Station Far			and from SCADA and	
TECHNICA	AL REQUIREMEN	TS:			
PHYSICA	L DESCRIPTION:	•			<u> </u>
			sorted interposi	ng relay	
	ATION CONTAC				
SCRTD P	roject Engineer				
COMMEN	TS:				
				-	
REFEREN	ICES:				
	ntract Drawing	& A640 Referen	nce Drawings		
DEVICION		DDEDARED 5	,	INADI ENGENITATION DE	CDONCIBILITY
REVISION		PREPARED E	5 Y :	IMPLEMENTATION RE (THIRD PARTY):	OLOMOIRITH A
No.	DATE	INITIALS	DATE		
			•		

IDS-640-840-00-08

ATTACHMENT A
7th/FLOWER STATION
CIC #2

Auxiliary Power Room West

### DRAWING UTILIZATION LIST

A640 Drawing Title:

## COMMUNICATIONS SCADA/FARE COLLECTION INTERFACES

	REFEREN	CE DRAWINGS	
	CONNECTION DIAGRAM		
•	TERMINAL STRIP	DRAWING NUMBER	
DRAWING N-047			
Figure:			
Fare Collection Supervision	TBD	A167, E-068	

13808 0140.0.0

CONTRAC	CT No.: A640 Co	mmunications ransmission	LOCATION: Cross Passage	INTERFACE No.: 640-171-00-1	REV: 0
SPEC. RE	FERENCE: TP 8 TP 1	.0 CTS 4 Interfaces		RFACE DATA TABLE: Wilsh Alvarado Line S	nire/ Section
CONTRAC	CT No.: A171 Li	ne Section	ATTACHMENTS:		
SUBSYST	racitat		Attachment 1 Technical Req	uirements	
SPEC. RE	Electri FERENCE: 16	cal 944	Attachment 2 Interface Dra	wing Utilization List	
	•				
Interco		ace Point for	r all signals to ns Interface Cabi	and from SCADA and Wilshirenets.	e/
Į.	AL REQUIREMEN achment 1	ITS:			
Barrier	L DESCRIPTION: type terminal Communication	strips and as		ng relays housed in two cro	oss
ORGANIZ	ATION CONTAC	T:			
SCRTD P	roject Engineer				
COMMEN	TS:		-		
REFEREN See Att	ICES: achment 2				
REVISION	: ·	PREPARED	BY:	IMPLEMENTATION RESPON (THIRD PARTY):	SIBILITY
No.	DATE	INITIALS	DATE		
		I .			

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## ATTACHMENT 1

#### 1) Communications Contractor A640

- a) A640 Contractor shall furnish two communications interface cabinets, one assigned to SCADA inputs from each tunnel. Control and indication leads from cross passage ventilation and sump equipment shall be connected to CIC terminals.
- b) When a cross passage contains a fire main valve manifold, the A640 Contractor shall furnish and install cables and conduit from the valves to the CIC and terminate the valve supervision leads at the valve position switch terminals and at the CIC terminals.

### 2) Electrical Contractor A171

The A171 Contractor shall furnish cables and conduits from the ventilation and sump equipment to the CICs.

#### ATTACHMENT 2

A640 Contract Drawing Interface Drawing Utilization List

Drawing N-084 Communications SCADA/Facilities Electrical Interfaces

13808 0148.0.0

	CT No.: A640 Cc	mmunications	LOCATION: CIC #2 East	INTERFACE No. 640-187-00-01	
SUBSYS	TEM: Cable T	Cransmission			
SPEC. RE	EFERENCE: TP 8	3 CTS 4 Interface	REFER TO INTER	RFACE DATA TABLE:	Wilshire/ Alvarado Station
CONTRA	CT No:		ATTACHMENTS:		
	8107	e/Alvarado		wing Utilization List	
SPEC. RE	EFERENCE: 1694	<b>.</b> 4	  - 		
FUNCTIO	NAL DESCRIPT	ION:			
			r all signals to ical, CIC #2 East	and from SCADA and Wi	lshire/
TECHNIC	AL REQUIREMEN	ITS:			
120111107	TE TIEGOTTETTE				
PHYSICA	L DESCRIPTION	•			
Barrier	type terminal	strips and a	ssorted interposi	ng relays.	
ORGANIZ	ZATION CONTAC	T:			
SCRTD F	Project Engineer	7			
COMMEN	 ITS:				
	· -				
REFEREI A640 Re A187 Dr	eference Drawing			erposing Relay Interf Stage II Constructio	
REVISION	٧:	PREPARED	BY:	IMPLEMENTATION RE	SPONSIBILITY
No.	DATE	INITIALS	DATE		
			·		
	<del>                                     </del>				

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IDS-640-187-00-01

ATTACHMENT A
WILSHIRE/ALVARADO STATION
CIC #2
Auxiliary Power Room East

### DRAWING UTILIZATION LIST

## A640 Drawing Title:

## COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A187 REFERENCE DRAWINGS			
		CONNECTION I		ELEMENTARY	
		TERMINAL STRIP	DWG. NO.	DIAGRAM	
DRAWING N	-039				
	Station Ventilation System AHU-051, AHU-052,	TS-A, TS-D	E-121	E-022	
	Underplatform Exhaust Fans, UF-051	TS-A	E-121	E-024	
DRAWING N	-041			,	
	Traction Power Room Supply Fans SSF-051, SSF-052	TBD	TBD	E-021	
	Traction Power Room Supply Fan Alarms	TBD	TBD	E-021	
	480V Main Breakers in Aux. Room (two)	TS-F	E-121	E-111	
DRAWING N	-042				
	Smoke & Heat Exhaust Fan, SE-1E	TS-C	E-121	E-023	
	TC/C Room Air Conditioning AHU-1	TS-B	E-121	E-026	
DRAWING N	-044				
	Auxiliary Power Room Supply & Exhaust Fans SF-1E, EF-2E	TS-B	E-121	E-019, E-020	
	Auxiliary Power Battery Room Supply & Exhaust Fans SF-3E, EF-3E	TS-A	E-121	E-018	

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IDS-640-187-00-01
ATTACHMENT A
WILSHIRE/ALVARADO
STATION
CIC #2
Aux. Power Room East

## DRAWING UTILIZATION LIST

## A640 Drawing Title:

## COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A187 REFERENCE DRAWINGS		
		CONNECTION DI	AGRAM DWG. NO.	ELEMENTARY <u>DIAGRAM</u>
DRAWING N-	045			
	TC/C Room Exhaust Fans, EF-16E, EF-19E, MD-5, MD-17	TS-A, TS-B	E-121	E-026
	TC/C Battery Room Supply & Exhaust Fans, SF-10E, EF-10E	TS-D, TS-F	E-121	E-018
DRAWING N-	085			
	Valve Room Exhaust Fan EF-12E	TS-D	E-121	E-018
DRAWING N-	086			
	Chiller Room Supply & Exhaust Fans, SF-6E, EF-6E	TS-C, TS-D	E-121	E-019, E-020
DRAWING (T	BD)			
	Ancillary Room Supply & Exhaust Fans SF-10E & SF-10E, SF-15E & EF-15E	TS-C, TS-D, TS-F	E-121	E-019, E-020
	Gas Mitigation Supply & Exhaust Fans SF-5E, EF-5E	TS-B, TS-C	E-121	E-018
DRAWING (T	BD)			
	Air Supply Room Supply & Exhaust Fans SF-4E, EF-4E	TS-D, TS-E	E-121	E-019, E-020
DRAWING (T	BD)			
	<pre>Incoming Elec. Service Room Supply &amp; Exhaust Fans, SF-11E, EF-11E</pre>	TS-F	E-121	E-019, E-020
	Incoming Elec. Service Batt. Room Exhaust Fans, EF-18E 1 & 2	TS-D	E-121	E-018

13808 0151.0.0

CONTRA	CT No.: A640 Co	mmunications ransmission	LOCATION: CIC #2 West	INTERFACE No. 640-187-00-02	
SPEC. RE	EFERENCE: <sub>TP 8</sub>	CTS 4 Interface	REFER TO INTER	RFACE DATA TABLE:	Wilshire/ Alvarado Station
	A107	e/Alvarado Electrical	ATTACHMENTS: Interface Dra	wing Utilization List	
Interco		ace Point for	all signals to cal, CIC #2 West	and from SCADA and Wi	lshire/
TECHNIC	AL REQUIREMEN	ITS:			
	L DESCRIPTION:		sorted interposi	ng relays.	
	ZATION CONTAC				
SCRTD I	Project Engineer				
COMMEN	NTS:				
REFEREI A640 Re A187 Dr	eference Drawing			erposing Relay Interf Stage II Constructio	
REVISION	N:	PREPARED E	ЗҮ:	IMPLEMENTATION RE	SPONSIBILITY
No.	DATE	INITIALS	DATE		
			·		

#### DRAWING UTILIZATION LIST

### A640 Drawing Title:

## COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A187 REFERENCE DRAWINGS		
		CONNECTION DI	AGRAM DWG. NO.	ELEMENTARY <u>DIAGRAM</u>
DRAWING N-	036			
	Figures:			
	Emergency Fan Track Dampers TD-101, TD-102	TS-B, TS-D	E-122	E-028
	Emergency Fan, Fan Dampers ED-101, ED-102	TS-B, TS-D	E-122	E-027
DRAWING N-	037			
	Emergency Fan #1 & #2 Auxiliary Circuits	TS-E	E-122	E-027
	Emergency Fans #1 & & #2 EM-101, EM-102 (EF-101, EF-102)	TS-C, TS-E	E-122	E-027
DRAWING N-				
	Emergency Fan Bypass Dampers BD-101, BD-102	TS-B, TS-D	E-122	E-028
DRAWING N-	039			
	Station Ventilation System AHU-053, AHU-054	TS-A, TS-C	E-122	E-022
	Underplatform Exhaust Fan, UF-52	TS-A	E-122	E-025
DRAWING N-	<u>040</u>			
	Duplex Sump Pumps P-1W, P-2W (WP-1, WP-2)	TS-A	E-122	E-024

<sup>\*</sup>Ventilation equipment designations in parenthesis are Facilities mechanical dwg. designations that differ from Facilities electrical dwg. designations (typ.).

13808

IDS-640-187-00-02
ATTACHMENT A
WILSHIRE/ALVARADO
STATION
CIC #3
Auxiliary Power Room
West

# DRAWING UTILIZATION LIST

		A187 REFERENCE DRAWINGS		
		CONNECTION DI	AGRAM DWG. NO.	ELEMENTARY DIAGRAM
DRAWING N-	·04 <u>1</u>			
	480V Main Breakers in Auxiliary Power Room (two)	TS-F	E-122	E-111
DRAWING N-	042			
	Smoke & Heat Exhaust Fan, SE-1W	TS-C	E-122	E-023
DRAWING N-	· <u>043</u>			
	Elevator Controls & Indications EL-2W (ELV #2)	TS-B	E-122	TBD
	Escalator Controls & Indications ES-1W, ES-4W (ESC #1 & 4)	TS-E	E-122	TBD
DRAWING N-	· <u>044</u>			
	Auxiliary Power Room Supply Fan & Exhaust Fans SF-1W, EF-2W	TS-B, TS-E	E-122	E-019, E-020
	Auxiliary Power Battery Room Supply & Exhaust Fans SF-3W, EF		E-122	E-018
DRAWING N-	-085			
	Elevator Equipment Room Exhaust Fan EF-7W	TS-D	E-122	E-020
	Elevator Shaft Exhaust Fan, EF-14W	TS-E	E-122	E-018
	Trash Room Exhaust Fan, EF-13W	TS-C	E-122	E-018
DRAWING (7	TBD)			
	Gas Mitigation Supply & Exhaust Fans, SF-17W, EF-17W	TS-D	E-122	E-018

13808 0154.0.0

IDS-640-187-00-02 ATTACHMENT A WILSHIRE/ALVARADO STATION CIC #3 Auxiliary Power Room West

## DRAWING UTILIZATION LIST

	A187 REFERENCE DRAWINGS		
	CONNECTION TERMINAL STRIP	DIAGRAM DWG. NO.	ELEMENTARY DIAGRAM
DRAWING (TBD)			
Air Supply Room Supply & Exhuast Fans, SF-4W, EF-4W	TS-F	E-122	E-019, E-020

13808 0155.0.0

CONTRAC SUBSYST	CT No.: A640 TEM: Public	,		INTERFACE No.: REV arado Sta. 640-187-00-03 0		
SPEC. RE	FERENCE: TP 6	& TP 14	REFER TO INTER	RFACE DATA TABLE:	Wilshire/ Alvarado Station	
1	2107	e Alvarado Electrical	ATTACHMENTS: Interface Dra	wing Utilization List		
	NAL DESCRIPTI ation interface		provided by A64	O into back box provi	ded by A187.	
Speaker	AL REQUIREMEN back boxes to heet 227.		as shown on Cont	ract Drawing NS-005 c	of Contract	
1" cond		m four (4") so		oxes and/or 9-5/8" x hardware for same.	9-5/8" x 6"	
	ATION CONTAC			·		
COMMEN Additio		sings are ins	talled in Contra	ct A760.		
	NCES: ntract Drawings ference Drawing					
REVISION	REVISION: PREPARED		3Y:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY	
No.	DATE	INITIALS	DATE			
	T	· -	<del>-</del> i			

13808 0156.0.0

IDS-640-187-00-03
ATTACHMENT A
WILSHIRE/ALVARADO STATION
ALL PUBLIC ADDRESS
SPEAKERS EXCEPT
THOSE IN LINEAR
ELEMENT

### DRAWING UTILIZATION LIST

A640 Drawing Title:

### COMMUNICATIONS PUBLIC ADDRESS/STAGE II CONTRACT INTERFACE

DRAWING N-101

Figure 1:

Embedded Ceiling Mount

13808 0157.0.0

INU.	BATE	INTIALO	DATE	-	
No.	DATE	INITIALS	DATE	(111110) 7711110.	
REVISION: PREPARE		PREPARED B	Y:	IMPLEMENTATION F	RESPONSIBILITY
	NCES: ontract Drawings eference Drawing				
COMMEN	ITS: 				
SCRTD F	Project Engineer	c			
ORGANIZ	ZATION CONTAC	T:			
	L DESCRIPTION		nction boxes.		
	AL REQUIREMENT Shall be capable		the weight of	the camera.	
Install	ONAL DESCRIPT ation interface s and boxes pro	e for CCTV came	ras and cables	provided by Contract	: A640 into
0. 20,	1006	ou rait 3			
		ce Alvarado Electrical	Interface Dra	awing Utilization Lis	st
CONTRA	CT No.: A187	,	ATTACHMENTS		
SPEC. RE	FERENCE: TP	7 & TP 14	REFER TO INTE	RFACE DATA TABLE:	Wilshire/ Alvarado Station
	010364	Circuit T.V.			
SUBSYS	TEM: at 1		WIISHIIC/ HIVE	arado Sta. 640-187-	00 01

13808 0158.0.0

IDS-640-187-00-04

ATTACHMENT A
WILSHIRE/ALVARADO STATION
CLOSED CIRCUIT
TELEVISION CAMERA

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS CCTV/STAGE II STATION CONTRACT INTERFACE

## DRAWING N-100

Figures:

Ceiling Mount for CCTV Camera

Wall Mount for CCTV Camera

13808 0159.0.0

SUBSYSTEM: Cable Transmission  SPEC. REFERENCE: TP 8 CTS	CONTRACT No.: A640 Co	ommunications L	OCATION:	INTERFACE No	
TP 14 Interface  TP 14 Interface  TP 14 Interface  TP 14 Interface  Alvarado Station  ATTACHMENTS: Interface Drawing Utilization List  FUNCTIONAL DESCRIPTION: Interconnection Interface Point for all signals to and from SCADA and Wilshire/ Alvarado Station Facilities Electrical, CIC #4 West  TECHNICAL REQUIREMENTS:  PHYSICAL DESCRIPTION: Barrier type terminal strips and assorted interposing relays.  ORGANIZATION CONTACT: SCRTD Project Engineer  COMMENTS:  REFERENCES: A640 Contract Drawings - NS-007A Interposing Relay Interfaces	SUBSYSTEM: Cable T	ransmission	GIC #4 West	640-187-00-05	0
Wilshire/Alvarado SUBSYSTEM: Facilities Electrical SPEC. REFERENCE: 16944  FUNCTIONAL DESCRIPTION: Interconnection Interface Point for all signals to and from SCADA and Wilshire/ Alvarado Station Facilities Electrical, CIC #4 West  TECHNICAL REQUIREMENTS:  PHYSICAL DESCRIPTION: Barrier type terminal strips and assorted interposing relays.  ORGANIZATION CONTACT: SCRTD Project Engineer  COMMENTS:  REFERENCES: A640 Contract Drawings - NS-007A Interposing Relay Interfaces		1 010	REFER TO INTER	RFACE DATA TABLE:	Alvarado
Interconnection Interface Point for all signals to and from SCADA and Wilshire/ Alvarado Station Facilities Electrical, CTC #4 West  TECHNICAL REQUIREMENTS:  PHYSICAL DESCRIPTION: Barrier type terminal strips and assorted interposing relays.  ORGANIZATION CONTACT: SCRTD Project Engineer  COMMENTS:  REFERENCES: A640 Contract Drawings - NS-007A Interposing Relay Interfaces	Wilshir SUBSYSTEM: Facilities	ce/Alvarado Electrical			
PHYSICAL DESCRIPTION:  Barrier type terminal strips and assorted interposing relays.  ORGANIZATION CONTACT:  SCRTD Project Engineer  COMMENTS:  REFERENCES: A640 Contract Drawings - NS-007A Interposing Relay Interfaces	Interconnection Interf	ace Point for a	_	and from SCADA and Wi	lshire/
Barrier type terminal strips and assorted interposing relays.  ORGANIZATION CONTACT:  SCRTD Project Engineer  COMMENTS:  REFERENCES: A640 Contract Drawings - NS-007A Interposing Relay Interfaces	TECHNICAL REQUIREMEN	NTS:			
SCRTD Project Engineer  COMMENTS:  REFERENCES: A640 Contract Drawings - NS-007A Interposing Relay Interfaces			orted interposin	ng relays.	
REFERENCES: A640 Contract Drawings - NS-007A Interposing Relay Interfaces			_		
no to commune promises the country and popular metal inscrinces	COMMENTS:				
A640 Reference Drawings - Wilshire/Alvarado Station Stage II Construction Contract A187 Drawings	A640 Reference Drawing				
REVISION: PREPARED BY: IMPLEMENTATION RESPONSIBILITY (THIRD PARTY):	REVISION:	PREPARED B	Y:		ESPONSIBILITY
No. DATE INITIALS DATE	No DATE		DATE		
	No.	INITIALS	DATE .		

13808 0160.0.0

### DRAWING UTILIZATION LIST

### A640 Drawing Title:

### COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

	A187 REFERENCE DRAWINGS		
	CONNECTION TERMINAL STRIP	DIAGRAM  DWG. NO.	ELEMENTARY DIAGRAM
DRAWING N-040			
Roll-up Doors at Station Entrance D-1W, D-2W	TS-B	E-123	E-113
DRAWING N-043			
Elevator Controls & Indications EL-1W (ELV #1)*	TS-A	E-123	TBD
Escalator Controls & Indications ES-1E, ES-2E, ES-2W, ES-3W (ESC #2, 3, 5, 6)	TS-A	E-123	TBD

<sup>\*</sup>Ventilation equipment designations in parenthesis are Facilities mechanical dwg. designations that differ from Facilities electrical dwg. designations (typ.).

13808 0161.0.0

CONTRA	CT No.: A640 Cor	mmunications	LOCATION:	INTERFACE No 640-187-00-06	
SUBSYS	TEM: Cable T	ransmission	Olo #5 Lasc	040 107 00 00	0
SPEC. RI	EFERENCE: TP 8 TP 14	CTS 4 Interface	REFER TO INTER	RFACE DATA TABLE:	Wilshire/ Alvarado Station
	CT No.: A187 Wilshire TEM: Facilities	e/Alvarado Electrical	ATTACHMENTS: Interface Dra	wing Utilization List	
SPEC. RI	EFERENCE: <sub>1694</sub> ,	4			
Interco	DNAL DESCRIPTION  Connection Interfaction Facility	ace Point for		and from SCADA and Wi	lshire/
TECHNIC	AL REQUIREMEN	TS:			
	AL DESCRIPTION:	strips and ass	orted interposi	ng relays.	
ORGANI	ZATION CONTAC	Т:			
SCRTD I	Project Engineer				
COMME	NTS:				
REFERE A640 Re A187 Di	eference Drawings	~		erposing Relay Interf Stage II Constructio	
REVISIO	N:	PREPARED B	BY:	IMPLEMENTATION RE	SPONSIBILITY
No.	DATE	INITIALS	DATE		
	1	1			

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IDS-640-187-00-06

ATTACHMENT A
WILSHIRE/ALVARADO STATION
CIC #5
Electrical Room Equipment
East

# DRAWING UTILIZATION LIST

## A640 Drawing Title:

## COMMUNICATIONS SCADA/FACILITIES ELECTRICAL INTERFACES

		A187 REFERENCE DRAWINGS		
		CONNECTION D	IAGRAM DWG. NO.	ELEMENTARY DIAGRAM
DRAWING N	-040			
	Emergency Fan Track Dampers TD-091, TD-092	TS-A, TS-B	E-124	E-028
٠	Emergency Fan, Fan Dampers ED-091, ED-092, ED-093	TS-A, TS-B, TS-C	E-124	E-027
DRAWING N	-037			
	Emergency Fan #1 & E2 Auxiliary Circuits	TS-C	E-124	E-027
	Emergency Fans #1 & #2 & #3 EF-091, EF-092, EF-093	TS-A, TS-B, TS-C	E-124	E-027
DRAWING N	-038			
	Emergency Fan #3 Auxiliary Circuits	TS-C	E-124	E-028
	Emergency Fan Bypass Dampers BD-091, BD-092	TS-A, TS-B	E-124	E-028

13808 0163.0.0

CONTRA	CT No.: A640 Co	mmunication	LOCATION:	INTERFACE No.			
SUBSYST	EM: Cable T	ransmission	TC&C CIR	640-620-00-05	0		
SPEC. RE	FERENCE: <sub>TP 8</sub> TP 1	4 Interfaces	REFER TO INTER	RFACE DATA TABLE:	Wilshire/ Alvarado Station		
CONTRAC SUBSYST SPEC, RE	A020	ic Train	ATTACHMENTS: Interface Drawing Utilization List				
Install		Point for all		from SCADA and Wilsh s Interface Rack	ire/Alvarado		
TECHNICA	L REQUIREMEN	ITS: 					
	L DESCRIPTION: type terminal		orted interposi	ng relays.			
ORGANIZ	ATION CONTAC	T:					
SCRTD P:	roject Engineer						
COMMEN	TS:						
A187 Dra	ference Drawing awings	s - Wilshire/A	wings NS-007A I lvarado Station 056B Typical Co	nterposing Relay Inter Stage II Construction ntrol Circuits	cfaces n Contract		
REVISION	:	PREPARED B	Y:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY		
No.	DATE	INITIALS	DATE				

IDS-640-620-00-05 ATTACHMENT A WILSHIRE/ALVARADO STATION TC&C CIR ...

#### DRAWING UTILIZATION LIST

## A640 Drawing Title:

## COMMUNICATIONS SCADA/AUTOMATIC TRAIN CONTROL INTERFACES

TERMINAL STRIPS UTILIZED

DRAWING N-136

Figure:

Wilshire/Alvarado Station TBD

DRAWING N-137

Wilshire/Alvarado Station TBD

13808 0165.0.0

	CT No.: A640 C	ommunications	LOCATION: TC&C Power	INTERFACE No. 640-620-00-11	: REV:
SUBSYS	TEM: Power	Subsystem	1000		
SPEC. RE		3 Power 4 Interfaces	REFER TO INTER	RFACE DATA TABLE:	Wilshire/ Alvarado Station
CONTRA SUBSYST	Train		ATTACHMENTS: Attachment 1 Technical Req		·
		4 ATC Room 10 Interface	Attachment 2 Interface Ref	erence Drawing List	
FUNCTIO	NAL DESCRIPT	ΓΙΟΝ:			
require		matic Train Co	ontrol power dist	ons equipment electri	
TECHNIC	AL REQUIREME	NTS:			
See Att	achment 1				
PHYSICA	L DESCRIPTION	1:			_
	furnished pow			120 VAC, single phas TC&C room of Wilshire	
ORGANIZ	ATION CONTA	Ст:			
COMMEN SCRTD P	ITS: roject Enginee	r			
REFEREN See Att	NCES: achment 2				
REVISION	1:	PREPARED	BY:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY
No.	DATE	INITIALS	DATE		
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13808 0166.0.0

IDS-640-620-00-11

ATTACHMENTS
WILSHIRE/ALVARADO STATION
TC&C Power Panels

#### ATTACHMENT 1

#### TECHNICAL REQUIREMENTS

#### 1) Train Control Contractor A620

A620 Contractor shall furnish and install two power distribution panelboards in the TC&C room of Wilshire/Alvarado Station. Each panel shall have essential power bus terminations for one 120V/208V, 3-phase, 4-wire circuit for a 35A load and twelve 120VAC, single-phase circuits fro 20A loads.

#### 2) Communications Contractor A640

A640 Contractor shall furnish, install and terminate power cables between the power distribution panels and communications equipment of the station TC&C room.

#### ATTACHMENT 2

Interface Reference Drawing List

A620 Contract Drawings

Drawing Q-052 Power Distribution Schematic

13808 0167.0.0

1	CT No.: A640 Cor	nmunications	LOCATION: CIC #1 TPSS	INTERFACE No 640-631-00-08	.: REV:			
SUBSYS	TEM: Cable T	ransmission						
SPEC. RE	EFERENCE: TP 8 TP 14	.0 CTS 4 Interface	REFER TO INTERFACE DATA TABLE: Wilshire/ Alvarado Station					
SUBSYS.	CT No.: A631 Tra Installa TEM: System S EFERENCE:	action Power ation Supervision	ATTACHMENTS: Interface Drawing Utilization List					
Interco	ONAL DESCRIPT nnection Interface Station Tract	ace Point for		and from SCADA and Wi	lshire/			
PHYSICA	L DESCRIPTION	:	orted interposi	ng relays.				
	ATION CONTAC	T:						
SCRTD P	roject Engineer							
COMMEN	ITS:				<u>-</u>			
	ntract Drawings		rence Drawings. nterface Cabine	. Details				
REVISION: PR		PREPARED E	3Y:	IMPLEMENTATION RI (THIRD PARTY):	ESPONSIBILITY			
No.	DATE	INITIALS	DATE					

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# A640 Drawing Title:

## COMMUNICATIONS SCADA/TRACTION POWER INTERFACES

	A631 REFERENCE DRAWINGS				
	INTERCONNECTION SCHEDULE				
	TERMINAL STRIP	DRAWING NUMBER			
DRAWING N-076					
Figures:					
Traction Power Type II AC Switchgear	А, В	P-347A, P-349A P-350A			
DRAWING N-077					
Traction Power DC Switchgear	В, С	P-347A, P-348A P-349A			
DRAWING N-284					
Disconnect Switches Metering and Control	С	P-350A			

13808 0169.0.0

CONTRAC	CT No.: A640 Co	mmunications	LOCATION:	INTERFACE No. 640-631-00-09	: REV:			
SUBSYST	EM: Cable T	ransmission	CIC #5	640-631-00-09	J			
SPEC. RE	FERENCE: <sub>TP 8</sub> TP 1	.0 CTS 4 Interface	REFER TO INTER	RFACE DATA TABLE:	Wilshire/ Alvarado Station			
CONTRAC	CT No: A631 Tr	action Power	ATTACHMENTS:					
Installation SUBSYSTEM: System Supervision			Interface Drawing utilization List					
SPEC. RE	FERENCE: *							
FUNCTIONAL DESCRIPTION:								
Interconnection Interface Point for all signals to and from SCADA and Wilshire/ Alvarado Traction Power, CIC #5								
TECHNICAL REQUIREMENTS:								
PHYSICAL DESCRIPTION:								
Barrier	type terminal	strips and as	sorted interposi	ng relays.				
ORGANIZ	ATION CONTAC	Т:						
SCRTD Pi	roject Engineer							
COMMEN.	 TS:							
	ntract Drawings		erence Drawings. Interface Cabine					
				<u> </u>				
REVISION:		PREPARED BY:		IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY			
No.	DATE	INITIALS	DATE					
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IDS-640-631-00-09 <u>ATTACHMENT A</u> WILSHIRE/ALVARADO STATION CIC #5

## A640 Drawing Title:

### COMMUNICATIONS SCADA/TRACTION POWER INTERFACES

A631 REFERENCE DRAWINGS

INTERCONNECTION SCHEDULE
TERMINAL STRIP DRAWING NUMBER

DRAWING N-284

Figures:

Disconnect Switches Metering C, D P-350A, P-351B and Control

13808 0171.0.0

CONTRA SUBSYS	CT No.:A640 Co	1	LOCATION: Wilshire/Alvar Station	INTERFACE No ado 640-760-00-05	D.: REV: 0
SPEC. RE	FERENCE: <sub>TP</sub> 6	& TP 14	REFER TO INTER	FACE DATA TABLE:	Wilshire/ Alvarado Station
CONTRA SUBSYST	A700	Graphics	ATTACHMENTS: Interface Draw	ing Utilization List	:
	NAL DESCRIPT		provided by A640	into linear element	provided
Speakers	AL REQUIREMENT to be mounted are	on flange pro		d shown on A760 Draw	ving P-604.
Public a	L DESCRIPTION address speaker near element is	s are installe		ctor in platform lir	near element.
	ATION CONTAC				
COMMEN Addition		es are install	ed in Contract A	187.	
	NCES: ntract Drawing ference Drawing		· I)		
REVISION	1:	PREPARED E	BY:	IMPLEMENTATION R (THIRD PARTY):	ESPONSIBILITY
No.	DATE	INITIALS	DATE .		
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13808 0176.0.0

IDS-640-760-00-05

ATTACHMENT A
WILSHIRE/ALVARADO STATION
PUBLIC ADDRESS
SPEAKERS IN LINEAR ELEMENT

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS PUBLIC ADDRESS/SIGNS & GRAPHICS

DRAWING N-102

Figure:

Speakers Mounted in Linear Element .

13808 0177.0.0

CONTRA	CT No.: A640 C	ommunications	LOCATION: CIC #2 East	INTERFACE No.:	
SUBSYST	TEM: Cable	Transmission	CIC #2 East	040-793-00-09	0
SPEC. RE	FERENCE: TP	8 CTS 14 Interfaces	REFER TO INTER	RFACE DATA TABLE:	Wilshire/ Alvarado Station
CONTRAC	CT No.: A79	5 UPS	ATTACHMENTS:		
SUBSYST	EM: UPS Su	pervision	Interface Dra	wing Utilization List	
SPEC. RE	FERENCE: A79	5 10 Par. 2.7			
FUNCTIO	NAL DECORIO	101			
Interco		face Point for	all signals to wer Supply Syste	and from SCADA and Wi m, CIC #2 East	lshire/
TECHNICA	L REQUIREME	NTS:			
PHYSICA	L DESCRIPTION	I;			•
Barrier	type terminal	strips and ass	sorted interposi	ng relays.	
ORGANIZ	ATION CONTAC	DT:			
SCRTD P	roje <b>ct Engine</b> e	r			
00.005					
COMMEN	TS:				
	ICES: ntract Drawing awing ESK-003 (				
REVISION	;	PREPARED E	3Y:	IMPLEMENTATION RE	SPONSIBILITY
No.	DATE	INITIALS	DATE		

IDS-640-795-00-09
ATTACHMENT A
WILSHIRE/ALVARADO STATION
CIC #2
Auxiliary Power Room East

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/UPS INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING, NUMBER

DRAWING N-048

Figure:

UPS Supervision

TS-F

A187, E-121

13808 0179.0.0

CONTRA	CT No.: A640 Co	ommunications Fransmission	LOCATION: CIC #3 West	INTERFACE No. 640-795-00-10	REV:
SPEC. RE	EFERENCE: TP 8	L	REFER TO INTER	RFACE DATA TABLE:	Wilshire/ Alvarado Station
CONTRA SUBSYS SPEC. RE	TEM: UPS Sur EFERENCE: A795	5 UPS Dervision 5 10 Par. 2.7	ATTA CHMENTS: Interface Dra	wing Utilization List	
Interco		ace Point for	all signals to wer Supply Syste	and from SCADA and Wi m, CIC #3 West	lshire/
PHYSICA	AL REQUIREMENT AL DESCRIPTION type terminal	:	sorted interposi	ng relay	
	ZATION CONTAC Project Engineer				
	NCES: ontract Drawings rawing ESK-003 [				
REVISION	N:	PREPARED E	3Y:	IMPLEMENTATION RE (THIRD PARTY):	SPONSIBILITY
No.	DATE	INITIALS	DATE		
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IDS-640-795-00-10
ATTACHMENT A
WILSHIRE/ALVARADO STATION
CIC #3
Auxiliary Power Room West

## DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/UPS INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM
TERMINAL STRIP DRAWING NUMBER

DRAWING N-048

Figure:

UPS Supervision

TS-F

A187, E-122

CONTRA	CT No.: A640 Cou	nmunications ransmission	LOCATION: CIC #2 East	INTERFACE No 640-840-00-09	.: REV: 0			
SPEC. RE	FERENCE: TP 8 TP 1-	CTS 4 Interface	REFER TO INTE	RFACE DATA TABLE:	Wilshire/ Alvarado Station			
SUBSYST SPEC. RE	11040	llection	ATTACHMENTS: Interface Drawing Utilization List					
Intercor	FUNCTIONAL DESCRIPTION: Interconnection Interface Point for all signals to and from SCADA and Wilshire/ Alvarado Station Fare Collection, CIC #2 East							
TECHNICA	AL REQUIREMEN	ITS:	-					
	L DESCRIPTION:		orted interposi	ng relays.				
ORGANIZ	ATION CONTAC	T:						
SCRTD Pi	roject Engineer							
COMMEN	TS:							
REFEREN A640 Cor	ICES: ntract Drawings	and A640 Refe	rence Drawings.					
REVISION	:	PREPARED B	Y:	IMPLEMENTATION RE	ESPONSIBILITY			
No.	DATE	INITIALS	DATE					
		_						

13808 0172.0.0

IDS-640-840-00-09
ATTACHMENT A
WILSHIRE/ALVARADO STATION
CIC #2
Auxiliary Power Room East

#### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/FARE COLLECTION INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING N-047

Figure:

Fare Collection Supervision

TBD

A187, E-121

13808

		1		<del></del>			
CONTRA	CT No.: A640 Cor	nmunications	LOCATION: CIC #3 West	INTERFACE No 640-840-00-10	.: REV:		
SUBSYS	TEM: Cable To	cansmission	oro 45 mest	040 040 00 10	· ·		
SPEC. RE	FERENCE: TP-8 TP 14	CTS Interface	REFER TO INTERFACE DATA TABLE: Wilshire/Alvarado Station				
CONTRA SUBSYST	11040		ATTACHMENTS: Interface Draw	ring Utilization List			
FUNCTIONAL DESCRIPTION: Interconnection Interface Point for all signals to and from SCADA and Wilshire/ Alvarado Station Fare Collection, CIC #3 West							
TECHNIC	AL REQUIREMEN	ITS:					
PHYSICA	L DESCRIPTION:		<del>_</del>				
Barrier	type terminal s	strips and asso	orted interposin	g relays.			
ORGANIZ	ATION CONTAC	T:					
SCRTD P	roject Engineer						
COMMEN	ITS:		· · · · · · · · · · · · · · · · · · ·				
REFEREN A640 Con	NCES: ntract Drawings	and A640 Refer	rence Drawings.				
REVISION	1:	PREPARED B	Υ:	IMPLEMENTATION RI	ESPONSIBILITY		
No.	DATE	INITIALS	DATE				

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IDS-640-840-00-10
ATTACHMENT A
WILSHIRE/ALVARADO STATION
CIC #3
Auxiliary Power Room West

### DRAWING UTILIZATION LIST

A640 Drawing Title:

COMMUNICATIONS SCADA/FARE COLLECTION INTERFACES

REFERENCE DRAWINGS

CONNECTION DIAGRAM

TERMINAL STRIP DRAWING NUMBER

DRAWING N-047

Figure:

Fare Collection Supervision TBD A187, E-122

13808 0175.0.0

CONTRAC	CT No.: <sub>A640</sub> Co	1	LOCATION: Station	INTERFACE No.: 640-620-00-06	REV: 0			
	Cable .	[ransmission	TC&C MDF	TREACE BATA TABLE.				
SPEC. RE	FERENCE: TP (	3.0 CTS 14 Interfaces	REFER TO INTE	ERFACE DATA TABLE: Train				
CONTRAC	MUZ1	) Automatic	ATTACHMENTS	::	•			
SUBSYST	Tra: EM: <sub>Interface</sub>	in Control Requirements	Attachment 1 Technical Rec	uirements				
SPEC. RE	FERENCE: TP	10 Interfaces						
FUNCTIO	NAL DESCRIP	TION:						
Intercon	nection Inter	face Point betw	een Corrosion C	ontrol test signals and SCA	ADA.			
TECHNICA	AL REQUIREME	INTS:						
See Atta	chment 1							
		N: t signal lead t com of each sta		the Main Distribution Frame	3			
	ATION CONTA				_			
COMMEN	TS:	•						
					~			
REFEREN See Atta				<del></del>				
REVISION	:	PREPARED 6	3Y: 	IMPLEMENTATION RESPON (THIRD PARTY):	NSIBILITY			
No.	DATE	INITIALS	DATE					
			+					

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#### TECHNICAL REQUIREMENTS

### 1) Train Control Contractor A620

A620 Contractor shall provide and install corrosion control test signal cable from the running rail weld connection to the main distribution frame of each TC&C room. Each station will have two pair of track-to-earth resistance leads. Stations with special trackwork will have an additional pair of leads.

## 2) Communications Contractor A640

A640 Contractor shall provide the main distribution frame for each TC&C room and designate terminal strips and specific terminals for connecting the corrosion control test leads.

#### ATTACHMENT 2

#### Interface Reference Drawing List

#### A620 Contract Drawings

Drawing N-049 Communications Corrosion Control Schematic

13808 0183.0.0

SUBSYS	FERENCE: TP 8	ransmission	CIC #1 TPSS	INTERFACE No. 640-631-00-13 RFACE DATA TABLE:	REV: 0		
SUBSYS <sup>-</sup>	CONTRACT No.: A631 Traction Power  SUBSYSTEM: Installation DC Switchgear  SPEC. REFERENCE:   Attachment 1 Technical Requirements  Attachment 2 Interface Reference Drawing List						
Interco		ace Point of e		ignals entering Tract ircuit breakers.	ion		
1	AL REQUIREMEN achment 1	ITS:					
Interra	L DESCRIPTION: Term ce Cabinets in ilding and in t	the itaction i	rgency trip (BL ower Substation	S) signal leads at Cons at passenger station	mmunications ns, at the		
ORGANIZ	ATION CONTAC	T:					
COMMEN SCRTD P	TS: roject Engineer			-			
REFEREN	NCES:						
REVISION	l:	PREPARED B	Y:	IMPLEMENTATION RE	SPONSIBILITY		
No.	DATE	INITIALS	DATE				

#### TECHNICAL REQUIREMENTS

#### 1) Traction Power Contractor A631

A631 Contractor shall furnish, install and terminate emergency trip signal cable from the CIC to the 750~V dc switchgear cabinets.

## 2) Communications Contractor A640

- a. A640 Contractor shall furnish and install the CIC in the TPSS including system interposing relays housed in the CIC.
- b. A640 Contractor shall furnish, install and terminate signal cables from the TC&C room MDF to the TPSS CIC including circuit compontents housed in the MDF.
- c. A640 Contractor shall furnish, install and terminate Blue Light Staitons (BLS) as required in stations, crosspassages, the Shop and in the Yard including signal cables from the BLS to the nearest CIC.

#### ATTACHMENT 2

## Interface Reference Drawing List

#### A640 Contract Drawings

Drawing N-064 Emergency Trip Switch Schematic Diagram

13808 0192.0.0

CONTRA	CT No.: A640		LOCATION:	INTERFACE No.:	REV:			
SUBSYS	TEM:	ications	Communications Antenna/Vehic		0			
SPEC. RE	EFERENCE: TP 4	Radio	REFER TO INTE	RFACE DATA TABLE: Passenger Vehicle				
SUBSYST SPEC. RE	Passeng TEM: Sect Interfa FERENCE: TP 4	er Vehicle ion 4	ATTACHMENTS: Attachment 1 Technical Requirements  Attachment 2 Interface Drawing Utilization List					
Interfac	ONAL DESCRIPT ce between A640 nna and equipme	Contractor-fu	rnished antenna	and A650 Contractor instal	lation			
1	AL REQUIREMENT AL AL REQUIREMENT 1.	NTS:						
Radio ar		nna radome asse	embly for the coicle of each dep	ommunications radio shall be	e			
	ATION CONTAC							
COMMEN	ITS:		-					
REFEREN See Atta	NCES: achment 2.							
REVISION	1:	PREPARED B	Y:	IMPLEMENTATION RESPON (THIRD PARTY):	ISIBILITY			
No.	DATE	INITIALS	DATE		_			

#### 1) PASSENGER VEHICLE CONTRACTOR A650

A650 Contractor shall provide the following:

- a) Provide space for two antennae on one car of each dependent pair.
- b) Install one antenna at an approved location, including mounting supports, hardware, and sealing of roof. Provide and install coaxial cable, including both halves of cable connectors, from antenna to radio.
- c) Provide space and approved installation provisions for second future antenna and coaxial transmission cable into the cab.

#### 2) COMMUNICATION CONTRACTOR A640

A640 Contractor shall furnish radio antennae and redio antenna radomes as shown on A640 Contract Drawing N-095. A640 Contractor shall provide required mounting detail drawings and installation instructions (CDRL per 4.14).

### ATTACHMENT 2

Interface Drawing Utilization List A640 Contract Drawings

Drawing N-095

Communications
Passenger Vehicle
Mechanical Interfaces

13808 0194.0.0

CONTRA	CT No.: <sub>A640</sub>		LOCATION:	INTERFACE No.:	REV:			
SUBSYST	TEM: Communic Radio Si	cations ubsystem	Communication: Radio/Vehicle		0			
SPEC. RE	FERENCE: Sect.	ion 4	REFER TO INTE	RFACE DATA TABLE:				
		o Subsystem	Passenger Vehicle					
CONTRA	A030		ATTACHMENTS					
Passenger Vehicle Attachment 1 SUBSYSTEM: Section 17 Technical Requirements								
SPEC. BE		ications						
01 20. 112		.2.3 t Furnished	Attachment 2 Interface Draw	ving Utilization List				
•	Carborn	e Equipment						
FUNCTIO	NAL DESCRIPT	<u>l</u> ION:						
Interfac	e between A640		rnished communic	cation radio and A650 Contr	actor			
installa	tion.							
TECHNICA	L REQUIREMEN	NTS:			<del></del>			
See Atta	chment 1.							
				·				
PHYSICA	L DESCRIPTION	:	<del>.</del>					
				n approved naturally ventil	ated			
cabinet	in the operato:	r cab of one v	vehicle of a depe	endent pair.				
ORGANIZ	ATION CONTAC	CT:	-		_			
SCRTD Pr	oject Engineer							
COMMEN	TS:				_			
	-							
REFEREN	ICES: chment 2.							
See Atta	Chiment 2.							
		1						
REVISION		PREPARED	BY:	IMPLEMENTATION RESPON (THIRD PARTY):	NSIBILITY			
No.	DATE	INITIALS	DATE	C				
		1						
			-					

#### 1) PASSENGER VEHICLE CONTRACTOR A650

A650 Contractor shall provide the following:

- a) Provide space for two radios. Space for each shall be not less than 15-in. deep by 19-in. wide by 10-in, high.
- b) Install one radio and power supply. Provide power cable, both halves of connectors, installation hardware and interconnection wiring to LVPS. Install female connectors to car wiring. Provide male chassis-mounted connectors for installation on radio by A640 Contractor.
- c) Install approved provisions for second future radio including wireway for power from Low-Voltage Circuit Breaker Panel.

## 2) COMMUNICATION CONTRACTOR A640

A640 Contractor shall furnish one communications radio as shown on A640 Contract Drawing N-095. A640 Contractor shall provide connector requirement information, mounting detail drawings of equipment and installation instructions (CDRL per 4.1.4).

#### ATTACHMENT 2

Interface Drawing Utilization List A640 Contract Drawings

Drawing N-095 Communications

Passenger Vehicle Mechanical Interfaces

CONTRAC	CT No.: A640	-	LOCATION:	INTERFACE No.:	REV:				
SUBSYST	Commun	ications Subsystem	Communcations TICU/Vehicle	S	0				
SPEC. RE		4.2.10 dentification rol Unit		RFACE DATA TABLE:					
SUBSYST	Passen FEM: Sec Commun FERENCE: TP Distri	ger Vehicle	ATTACHMENTS: Attachment 1 Technical Requirements Attachment 2 Interface Drawing Utilization List						
Interfa	NAL DESCRIPT ce between A64 and A650 Contr	O Contractor-		identification and control	unit				
1	AL REQUIREME achment 1.	NTS:							
TICU fu	L DESCRIPTION rnished by A64 ach of seated	O Contractor :	shall be located	in the vehicle operator ca	ab within				
ORGANIZ	ATION CONTA	CT:							
SCRTD P:	roject Enginee	r							
COMMEN	 TS:		_						
REFEREN See Atta	ICES:								
REVISION	:	PREPARED	BY:	IMPLEMENTATION RESPON	NSIBILITY				
No.	DATE	INITIALS	DATE						
1									

### TECHNICAL REQUIREMENTS

### 1) PASSENGER VEHICLE Contractor A650

A650 Contractor shall install TICU, and furnish and install interfacing hardware, interconnecting wiring on both halves of required connectors.

### 2) COMMUNICATIONS Contractor A640

A640 Contractor shall furnish TICU equipment and provide installation instructions to A650 Contractor (CDRL per TP Paragraph 4.1.4).

#### ATTACHMENT 2

Interface Drawing Utilization List A640 Contract Drawings

Drawing N-095

Communications Passenger Vehicle Mechanical Interfaces

13808 0198.0.0

CONTRA	CT No.: A640		LOCATION:	INTERFACE No.:	REV:		
SUBSYST		cations Subsystem	CCU to Radio Control	ls 640-650-00-04	0		
SPEC. RE	FERENCE: <sub>TP</sub> 4 Radio S	Gubsystem	REFER TO INTE Passenger Veh	RFACE DATA TABLE:			
CONTRACT No.: A650  Passenger Vehicle SUBSYSTEM: Section 17 Communications SPEC. REFERENCE: TP 4.2.3 District-Furnished Carborne Equipment  ATTACHMENTS: Attachment 1 Technical Requirements							
A640 Co face co	FUNCTIONAL DESCRIPTION: Interfaces between Communication radio furnished by A640 Contractor and Communication Control Unit furnished by A650 Contractor. Interface connections are at the radio volume control, channel selector switch, RCC to PA switch and radio push-to-talk switch.						
	AL REQUIREMEN	NTS:					
nel sel		Volum CCC to PA swit		ne cab radio speaker, radioush-to-talk switch shall boacle CCU.			
ORGANIZ	ATION CONTAC	T:					
SCRTD P	roject Engineer	:					
COMMEN	TS:						
REFEREN	ICES:						
REVISION: PREPARED			BY:	IMPLEMENTATION RESPO	NSIBILITY		
No.	DATE	INITIALS	DATE				
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#### TECHNICAL PROVISIONS

#### 1) PASSENGER VEHICLE CONTRACTOR A650

A650 Contractor shall furnish the following:

- a) Provide and install RADIO VOLUME control and wiring per Technical Provisions Section 9. Base design upon potentiometer in parallel with Communications radio volume control furnished by A640 Contractor.
- b) Provide and install CHANNEL SELECTOR switch and wiring per Technical Provisions Section 9. Base design upon a nine wire interface with the radio furnished by A640.
- c) Provide and install RADIO PUSH-TO-TALK switch and wiring per Technical Provisions Section 9.
- d) Provide and install RCC to PA switch which connects the radio to the PA system. Base design on four wire inteface.

#### 2) COMMUNICATION CONTRACTOR A640

A640 Contractor shall furnish Communication radio and required interface detail drawings for installation of A650 Contractor-furnished Radio Volume control, Channel Selector switch, RCC to PA switch and RADIO PUSH-TO-TALK switch (CDRL per TP Paragraph 4.1.4).

13808 0200.0.0

CONTRA	CT No:A620 Au Train C [EM: Install	ontrol	LOCATION: Tunnels	INTERFACE No.: 620-640-00-01	REV: 0		
Installa	FERENCE: 12.1 tion of Distri d Cable and Tu	ct-	REFER TO INTERFACE DATA TABLE:				
SUBSYST	TEM: Cable FERENCE: 15.1	cations	ATTACHMENTS: Attachment 1 - Technical Requirements Attachment 2 - Interface Drawing Utilization List				
Installa	PNAL DESCRIPTION of A640 Contractor.	CION:	ables and tube	es in tunnels			
TECHNICA	AL REQUIREME See Att	NTS: achment 1.					
A620 Con	ections, inclu	ls Communicatio		tubes in the cable trough in from TC&C room to trough and			
ORGANIZ	ATION CONTA		-				
COMMEN	TS:						
REFEREN See Atta	NCES: achment 2.						
REVISION	l:	PREPARED B	Y:	IMPLEMENTATION RESPON (THIRD PARTY):	SIBILITY		
No.	DATE	INITIALS	DATE				
		_	+	-			

#### TECHNICAL REQUIREMENTS

## 1) ATC Contractor - A620

- a) Contractor shall install CATV coaxial cables, fiber optic cables, telephone cables, and gas sample lines (tubing) in tunnels per installation information provided by Communications Contractor and Technical Provisions, Article 12.11.5. Fiber optic cables shall be installed in continuous runs with no splices between TC&C equipment rooms. CATV coaxial cables shall have intermediate terminations at every other crosspassage. Telephone cables shall have intermediate terminations at every crosspassage. Gas sample lines shall be installed in continuous runs from TC&C rooms to tunnel crosspassages or intermediate conduit stub-ups, as indicated. Terminations will be made by the District.
- b) Contractor shall test cables and tubes after installation per test details provided by Communications Contractor and Technical Provisions, Article 13.7.2.G.2.

#### 2) Communications Contractor - A640

- a) Contractor shall furnish CATV coaxial cables, fiber optic cables, and telephone cables per Technical Provisions, Article 20.3, Wire and Cable. Contractor shall furnish gas sample lines per Technical Provisions, Section 11, Gas Monitoring and Seismic Event Subsystem.
- b) Contractor shall furnish installation information and test details per Technical provisions, Article 15.1.4, Documentation. (CDRL)

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#### INTERFACE DRAWING UTILIZATION LIST

#### A620 Contract Drawings

Drawing Q-124 - Communication Cable Installation

#### A640 Contract Drawings

Drawing N-150 - Gas Monitoring, MOS-1, Probe Locations

Drawing N-152 - Gas Monitoring, Union Station Probe Locations, Sheet 2

Drawing N-153 - Gas Monitoring, Union Station Probe Schedule

Drawing N-155 - Gas Monitoring, Civic Center Probe Locations, Sheet 2

Drawing N-156 - Gas Monitoring, Civic Center Probe

Drawing N-158 - Gas Monitoring, 5th/Hill Probe Locations, Sheet 2

Drawing N-159 - Gas Monitoring, 5th/Hill Probe Schedule

Drawing N-165 - Gas Monitoring, Gas Monitoring, Wilshire/Alvarado Probe Locations, Sheet 2

Drawing N-166 - Gas Monitoring, Wilshire/Alvarado Probe Location Schedule

Drawing N-167 - Gas Monitoring, Gas Monitoring, Probe Location Details

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## SAMPLE LINES TO BE INSTALLED BY A620 CONTRACTOR

Passenger Station	Probe Numbers
Union Station	1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 2-1, 3-6, and 3-7
Civic Center	1-1 and 1-2
5th/Hill	1-1, 1-3, 2-1, and 2-3
Wilshire/Alvarado	1-1 and 1-3

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