



PARIC CORPORATION
77 Westport Plaza Suite 250
St. Louis, MO 63146
TEL: 636-561-9500
FAX: 636-561-9501

REQUEST FOR INFORMATION DATE: April 11, 2017 NO.: RFI-513

To: Cannon Design

Attn: Kelvin Patel

From: Paric Corporation

Requested By: Joe Voypick

Project Name: 15051-Webster University Interdisciplinary Science Building Project No.: 15051

Subject: fire alarm – door hold release

Response Required By: April 18, 2017

Drawing / Spec Reference:

Information Requested:

See attached drawings. For the clouded areas on E1010.B/E0102.B/E0103.B/E0104.B. Will all of these door holders release at the same time in the event of a fire or on individual alarms per floor?

Response:

All doors to release upon a general alarm.

ARCHITECT'S RESPONSE:

This information is provided as an interpretation of the Contract Documents for implementation. It is not an authorization for change to the Contract Sum or Contract Time. If this information results in a claim for a change to the Contract, the Contractor shall notify the [Construction Manager][Architect] of a change through the change process.

Answered By: Mark de la Fuente, WTA

Date: 4/11/17

THE SEAL(S) AND SIGNATURE(S) APPLY ONLY TO THE DOCUMENT TO WHICH THEY ARE AFFIXED, AND EXPRESSLY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT.

NOTE:

RELAY MODULES SHALL BE MOUNTED WITHIN THREE FEET OF THE DEVICE BEING CONTROLLED (I.E. AHU, DAMPER, ELEVATOR CAPTURE, ETC.), EXCEPTION: CIRCUITS THAT OPERATE ON LOSS OF POWER SHALL BE CONSIDERED SELF-MONITORING FOR INTEGRITY.

ADDRESSABLE DEVICES MUST BE INSTALLED WITHIN THE FOLLOWING ENVIRONMENTAL LIMITS: +32F TO +100F, 0-90% RELATIVE HUMIDITY. ADDRESSABLE DEVICES ARE NOT DESIGNED FOR OUTDOOR USE.

IMPORTANT NOTICE REGARDING FIRE MARSHAL TEST:

THIS JOB IS EQUIPPED WITH A FIRE ALARM DIGITAL COMMUNICATOR, WHICH REQUIRES (2) LOOP START BUSINESS TELEPHONE LINES AND THE OWNER TO OBTAIN A CENTRAL MONITORING CONTRACT FROM A CERTIFIED MONITORING AGENCY. THIS PANEL MUST BE PROGRAMMED AND TESTED PRIOR TO SCHEDULING THE FIRE MARSHAL TEST.

FIRE ALARM SLC LOOP NOTES:

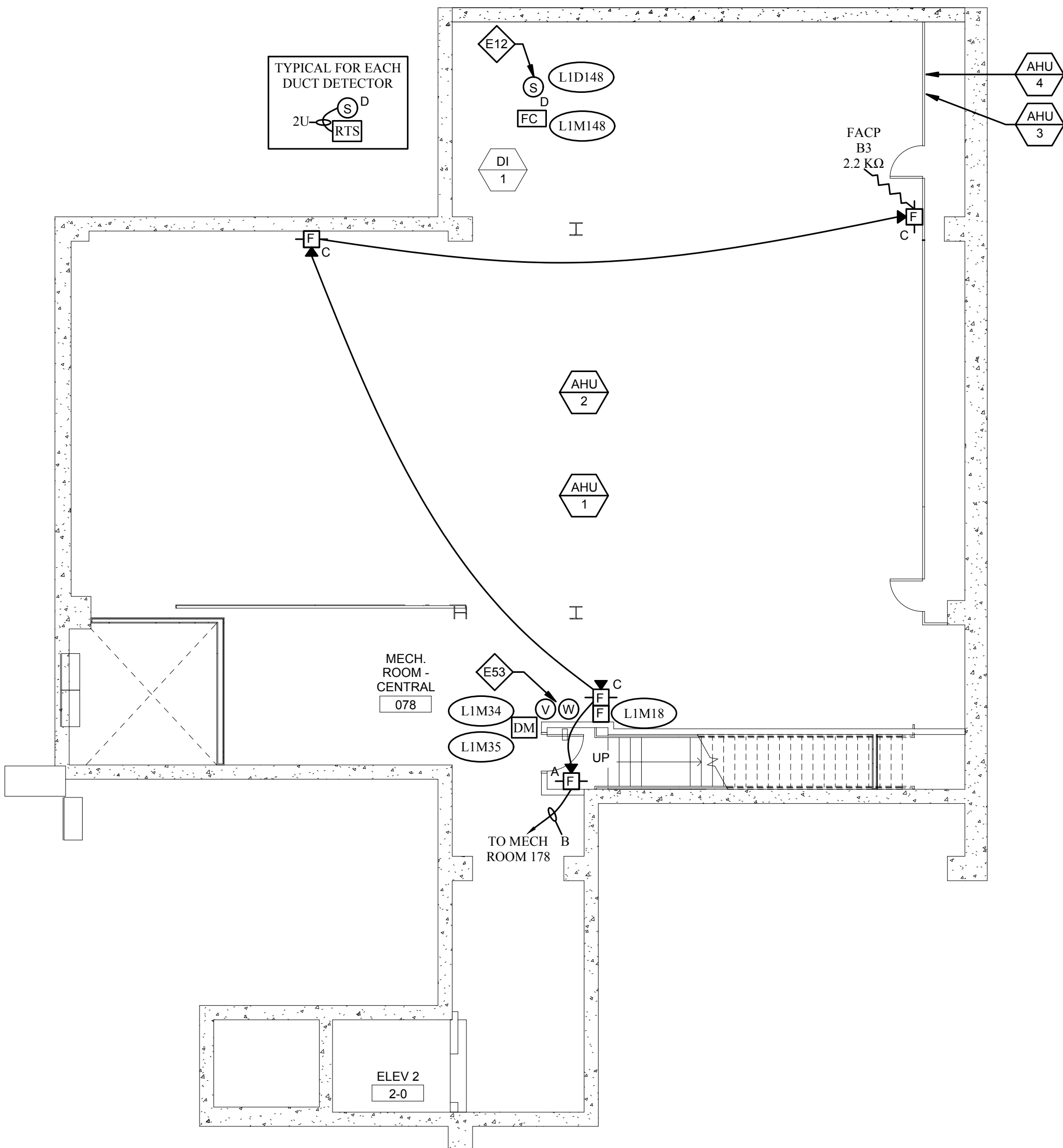
- (1) SLC LOOP WIRING ("A" CABLE) IS NOT TYPICALLY SHOWN ON THE FLOOR PLANS. IF THE SLC LOOP IS SHOWN, ITS FOR REFERENCE ONLY.
- (2) THE INSTALLING CONTRACTOR SHALL PULL AN "A" CABLE FOR EACH SLC LOOP FROM THE FIRE ALARM CONTROL PANEL TO ALL ADDRESSABLE DEVICES ON SAME SLC LOOP.
- (3) "T" TAPPING / BRANCH CIRCUITS ARE ACCEPTABLE FOR SLC LOOPS ONLY.
- (4) THE LOOP NUMBER ON THE DEVICE ADDRESS INDICATES THE SLC LOOP FOR EACH AREA AS SHOWN ON THE PLANS.
- (5) CABLE ROUTING FOR SLC LOOPS IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.
- (6) CONTACT TECH ELECTRONICS IF DEVICES CANNOT BE WIRED TO THE SLC LOOPS AS SHOWN.
- (7) INSTALLING CONTRACTOR SHALL INCLUDE "AS INSTALLED" ROUTING FOR ALL SLC CABLES ON AS-BUILT RED LINE DRAWINGS AND PROVIDE A COPY TO TECH ELECTRONICS WHEN THE PROJECT HAS BEEN COMPLETED.

GENERAL NOTES:

- DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR LOCATION AND ORIENTATION OF DEVICES. WHERE LOCATIONS ARE NOT INDICATED ON ARCHITECTURAL DRAWINGS, COORDINATE LOCATION AND ORIENTATION OF DEVICES IN FIELD WITH ARCHITECT PRIOR TO ROUGH-IN.
- ALL DEVICES SHOWN ARE NEW UNLESS NOTED OTHERWISE.
- ALL DEVICES TO REMAIN ARE INDICATED WITH A THIN SOLID LINE WEIGHT AND SUBSCRIPT "EX".
- CONTRACTOR SHALL VISIT PRIOR TO BID SUBMITTALS TO DETERMINE SITE CONDITIONS EFFECTING THE EXECUTION OF WORK. FAILURE TO BE ACQUAINTED WITH EXISTING CONDITIONS WILL NOT BE JUSTIFICATION FOR ADDITIONAL SERVICES.
- PROVIDE FACE PLATES ON ALL J-BOXES ABANDONED IN FINISHED FLOOR, WALL OR CEILINGS. COORDINATE COLOR AND FINISH WITH ARCHITECT. CONTRACTOR TO VERIFY QUANTITY IN THE FIELD.
- WHERE EXPOSED CONDUIT IS NOTED, CONTRACTOR SHALL IDENTIFY ROUTING IN FIELD AND OBTAIN ARCHITECT'S APPROVAL OF ROUTING PRIOR TO ROUGH-IN. EXPOSED CONDUIT SHALL BE ROUTED TIGHT TO STRUCTURE.
- ALL SINGLE PHASE BRANCH CIRCUITS SHOWN SHALL HAVE DEDICATED NEUTRALS TO MEET NEC SECTION 210.4 MULTI-WIRE BRANCH CIRCUIT REQUIREMENTS.
- REFER TO TECHNOLOGY DRAWINGS FOR CONDUIT ROUGH-IN OF DATA, VOICE AND A/V.
- ALL 120V BRANCH CIRCUITS ON THIS SHEET SHALL BE FED FROM PANEL **BNL1** UNLESS NOTED OTHERWISE.

KEYED NOTES

- E12** PROVIDE A DUCT MOUNTED SMOKE DETECTOR IN THE COMBINED SUPPLY DUCT OF AHU-3 & AHU-4. BOTH AIR HANDLING UNITS SHALL SHUT DOWN UPON ACTIVATION OF THE DUCT MOUNTED SMOKE DETECTOR.
- E53** COORDINATE QUANTITY AND LOCATION OF TAMPER AND FLOW SWITCHES WITH FIRE PROTECTION CONTRACTOR.



FIRE ALARM SYSTEM FUNCTION CHART

The Fire Alarm System is a Product of NOTIFIER. The Fire Alarm Control Panel is a NOTIFIER Model NFS-320. The System will Function as Shown in the Function Chart Below:

INPUT DEVICE	SMOKE DETECTORS - GENERAL AREA	HEAT DETECTOR - KITCHEN	ELEVATOR SMOKE DETECTORS LOBBY (PRIMARY LEVEL)	ELEVATOR SMOKE DETECTORS LOBBY (SECONDARY LEVEL)	ELEVATOR SMOKE DETECTORS SHUNT	ELEVATOR SMOKE DETECTORS SHUNT	ELEVATOR SMOKE DETECTORS SHUNT	ELEVATOR SMOKE DETECTORS SHUNT	ELEVATOR SMOKE DETECTORS SHUNT	DUCT DETECTORS	MANUAL STATIONS	KITCHEN HOOD	WATERFLOW SWITCH	TAMPER SWITCH	FIRE PUMP - PUMP RUNNING, PHASE REVERSAL, PUMP POWER FAILURE, AT POWER SOURCE	CO DETECTORS	TRouble CONDITION
ANNUNCIATE DEVICE ON FIRE ALARM COMMAND CENTER																	
TRANSMIT FIRE ALARM SIGNAL TO REMOTE SUPERVISING STATION																	
TRANSMIT TROUBLE SIGNAL TO REMOTE SUPERVISING STATION																	
TRANSMIT SUPERVISORY SIGNAL TO REMOTE SUPERVISING STATION																	
ACTIVATE AUDIBLE VISUAL DEVICES (NEW AND EXISTING BUILDING)																	
CLOSE DOOR HOLDER DEVICES																	
RELEASE SECURITY DOORS																	
SHUTDOWN KITCHEN MAKE UP AIR FAN & HOOD EXHAUST FAN																	
SHUTDOWN ASSOCIATED AIR HANDLER UNIT																	
GENERAL SHUTDOWN SMOKE DAMPERS																	
RECALL ELEVATOR TO PRIMARY LEVEL																	
RECALL ELEVATOR TO ALTERNATE LEVEL																	
ELEVATOR CAB WARNING																	
ACTIVATE ELEVATOR SHUNT TRIP																	

1 LEVEL 00 - AREA A - ELECTRICAL POWER PLAN

1/8" = 1'-0"

LEGEND	USAGE	TECH#	NOM. O.D.	SQ. IN.	DESCRIPTION
A	SLC - INITIATION	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
B	NAC-SIGNAL, STROBE	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
D	DOOR HOLDER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
I	DIGITAL COMMUNICATOR	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
J	DATA (ANNUNCIATOR OTHER THAN SLC)	TP272	0.170	0.0227	1 Pair, 18 AWG, Solid, Twisted, Shielded
L	ANNUNCIATOR POWER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
M	NAC SYNCHRONIZATION	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
R	DIGITAL COMMUNICATOR TO TELE-DIAGNOSTIC	TP424-SE-155	0.220	0.038	4 Pair, 24 AWG, Solid, Category SE, 155 Mhz
U	CONVENTIONAL INITIATING DEVICE	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket

Installation Notes

- 1) Tech Electronics recommends that the installing contractor use the cable listed above. Use of other cable does not guarantee specified system performance.
- 2) When purchasing cable from Tech Electronics, please specify the TECH # (e.g. TP272).
- 3) Outdoor cable may be required and not listed above. Unless otherwise specified all cable listed above is for indoor use only. Please contact Tech Electronics for help with your outdoor cable requirements.
- 4) It is NOT acceptable to use THHN wire on Fire Alarm system circuits such as SLC Loops, Audible/Visual circuits or Conventional zones. It is acceptable to use THHN wire for 120VAC, grounding and Class I circuits. Refer to NEC for more information.

FIRE ALARM DEVICE LEGEND					
SYMBOL	DESCRIPTION	PART NO.	SYMBOL	DESCRIPTION	PART NO.
	SMOKE DETECTOR	FSP-851/B210LP		CEILING HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	PC2R
	HEAT DETECTOR	FST-851/B210LP		WALL MOUNT HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	P2R
	DUCT DETECTOR	DNM/DSTXXX/FSP-851R		WALL MOUNT STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	SR
	MANUAL PULL STATION	NBG-121X		FIRE ALARM CONTROL PANEL	NFS-320/PS-12260F2
	TAMPER SWITCH	F.B.O.		FIRE ALARM ANNUNCIATION	FDU-80
	FLOW SWITCH	F.B.O.		REMOTE POWER SUPPLY WITH CONTROL MODULE	PSN-106B/PS-1270/FCM-1
	RELAY MODULE	FRM-1		DIGITAL COMMUNICATOR WITH MINI MONITOR MODULE	411UDAC/PS-1270/B280/B215/FMM-101
	MONITOR MODULE	FMM-1		CARBON MONOXIDE	CO1224T
	DUAL MONITOR MODULE	FDM-1		TRANSFORMER	599
	DOOR HOLDER	DHF-24120C			

NOTE 1: SET SYSTEM SENSOR HORN/STROBES AUDIO SELECT SETTING TO 3 (LOW TEMPORAL HORN), UNLESS OTHERWISE NOTED

NOTE 2: CANDELA SETTING: A = 15cd, B = 30cd, C = 75cd

CODE BLOCK			
MUNICIPALITY: WEBSTER GROVES			
FIRE DISTRICT: Webster Groves			
BUILDING CODE : 2009		FIRE ALARM CODE: 2007	
BUILDING USE GROUP:		FIRE SUPPRESSION: SPRINKLED	

NOTE: USE THIS SHEET FOR INSTALLATION OF THE FOLLOWING SYSTEM(S) ONLY:
FIRE ALARM SYSTEM

NO.	DATE	REVISION DESCRIPTION
1	03/07/17	ADD STROBE IN RM 332, SHEET FA-E0103-B PER ENGINEER REVIEW
2		
3		
4		

		PROJECT NAME: CUSTOMER: LOCATION: WEBSTER UNIVERSITY INTERDISCIPLINARY SCIENCE BLDG. WEBSTER GROVES, MO 63119	
SYSTEM DESCRIPTION: FIRE ALARM SYSTEM		DATE: 11/11/16	
PROJECT NO.: PJ1608310005		DRAWN BY: FA-E0100	

Webster University
Interdisciplinary Science
Building

CANNONDESIGN

1100 Clark Avenue
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F: 314.241.2570

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7955 Manchester Road, Suite 125
St. Louis, MO 63143
314.864.7600

David Mason & Associates, Inc.
Structural & Civil Engineer
800 South Vandeventer Avenue
St. Louis, MO 63110
314.534.1053

Faith Group
Technology
3101 S. Hanley Rd. Suite 100
St. Louis, MO 63143
314.991.2228

Kuhlmann Leavitt, Inc.
Environmental Graphics & Signage
7400 Pershing Ave.
St. Louis, MO 63130
314.725.8616

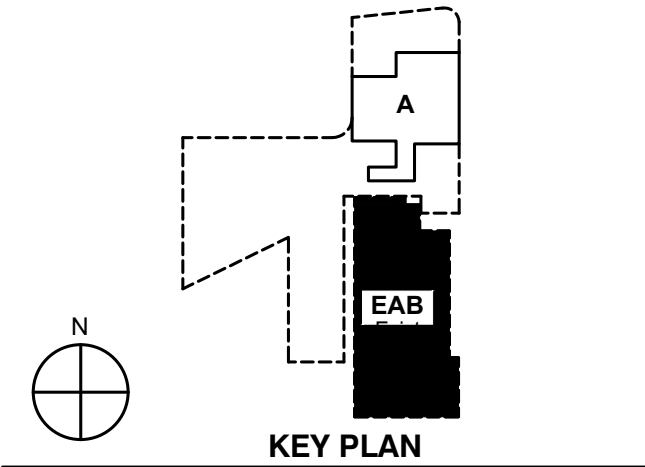
KWA Architects
Architecture
9721 Litzinger Road
St. Louis, MO 63124
314.962.2560

Spellman Brady & Company
Interior Designer
8251 Maryland Avenue, Suite 300
St. Louis, MO 63105
314.862.0070

SWT Design
Landscape Architect
7722 Big Bend Blvd.
St. Louis, MO 63119
314.644.5700

Webb Engineering Services, Inc.
Planning & Fire Protection
1400 S. 3rd Street, Suite 201
St. Louis, MO 63104
314.588.0600

2 ASI-010 21 JULY 2016
1 ADDENDUM 2-4 24 MAY 2016
ISSUED FOR CONSTRUCTION (BP2) 01 MAR 2016

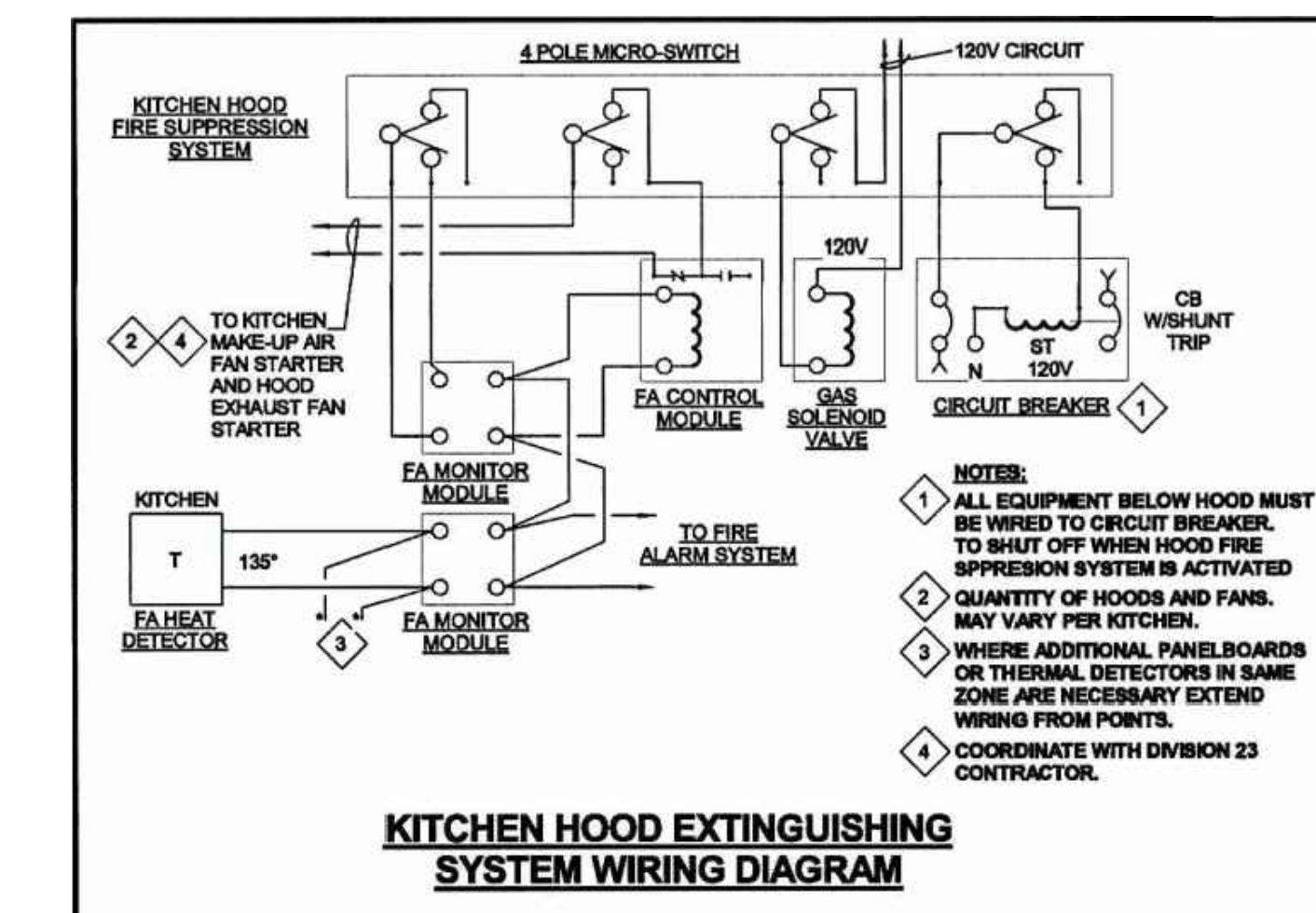


LEVEL 0 FLOOR PLAN -
ELECTRICAL

Project No.: 04561.01 Checked by:

E0100

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Webster University Interdisciplinary Science Building

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- REFER TO TECHNOLOGY DRAWINGS FOR CONDUIT ROUGH-IN CDATA, VOICE AND A/V.
- ALL 120V BRANCH CIRCUITS ON THIS SHEET SHALL BE FED FROM PANEL 1N1 UNLESS NOTED OTHERWISE.

KEYED NOTES

- E68** PROVIDE FIRE ALARM CONTROL MODULE TO RELEASE POWER TO ELECTRICALLY HELD OPEN FIRE DOOR UPON ACTIVATION OF ASSOCIATED SMOKE DETECTOR.

CABLE LEGEND FOR NOTIFIER NFS-320, NFS2-440 & NFS2-3030

LEGEND	USAGE	TECH#	NOM O.D.	SQ. IN.	DESCRIPTION
A	SLC - INITIATION	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
B	NAC-SIGNAL STROBE	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
D	DOOR HOLDER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
I	DIGITAL COMMUNICATOR	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
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M	NAC SYNCHRONIZATION	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
R	DIGITAL COMMUNICATOR TO TELL DIMARK	TP24-SE-155	0.220	0.038	4 Pair, 24 AWG, Solid, Category 5E, 155 Mhz
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Installation Notes

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FIRE ALARM DEVICE LEGEND

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	SMOKE DETECTOR	FSP-851/B210LP		CEILING HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	PC2R
	HEAT DETECTOR	FST-851/B210LP		WALL MOUNT HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	P2R
	DUCT DETECTOR	DNR/DSTXXX/FSP-851R		WALL MOUNT STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	SR
	MANUAL PULL STATION	NBG-12LX		FIRE ALARM CONTROL PANEL	NFS-320/PS-12260F2
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	RELAY MODULE	FRM-1		DIGITAL COMMUNICATOR WITH MINI MONITOR MODULE	411UDAC/PS-1270/B280/B215/FMM-101
	MONITOR MODULE	FMM-1		CARBON MONOXIDE	CO1224T
	DUAL MONITOR MODULE	FDM-1		TRANSFORMER	599
	DOOR HOLDER	DHF-24120C			

NOTE 1: SET SYSTEM SENSOR HORN/STROBES AUDIO SELECT SETTING TO 3 (LOW TEMPORAL HORN), UNLESS OTHERWISE NOTED

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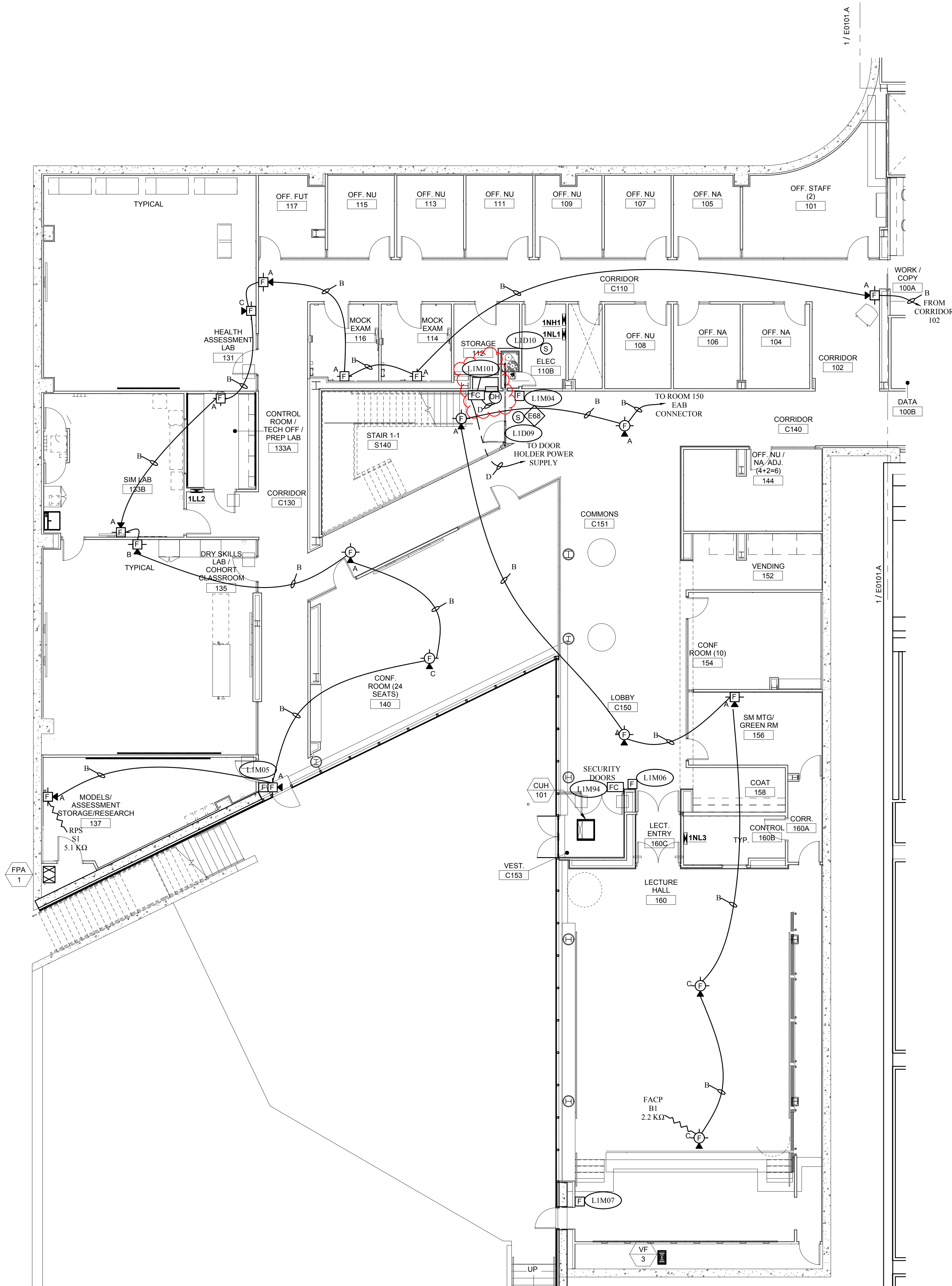
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PROJECT NAME / CUSTOMER / LOCATION:
WEBSTER UNIVERSITY
INTERDISCIPLINARY SCIENCE BLDG.
WEBSTER GROVES, MO 63119

SYSTEM DESCRIPTION:
FIRE ALARM SYSTEM

DATE: 11/11/16
DRAWING: FA-E0101-B



NOTE:
RELAY MODULES SHALL BE MOUNTED WITHIN THREE FEET OF THE DEVICE BEING CONTROLLED (I.E. AHU, DAMPER, ELEVATOR CAPTURE, ETC.). EXCEPTION: CIRCUITS THAT OPERATE ON LOSS OF POWER SHALL BE CONSIDERED SELF MONITORING FOR INTEGRITY.
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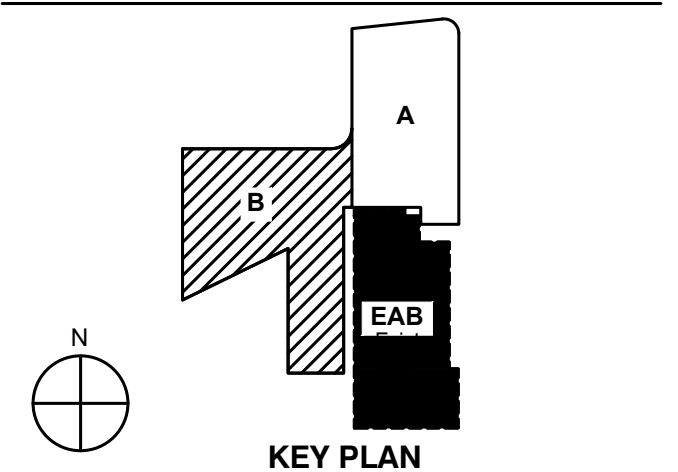
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LEVEL 01 - AREA B - FLOOR PLAN - POWER AND AUXILIARY

1/8" = 1'-0"

- | | | |
|---|-------------------------------|---------------|
| 3 | ASI-017 | TBD |
| 2 | ADDENDUM 2-2 | 19 APRIL 2016 |
| 1 | ADDENDUM 2-1 | 17 MAR 2016 |
| | ISSUED FOR CONSTRUCTION (BP2) | 01 MAR 2016 |



LEVEL 01 AREA B FLOOR PLAN - ELECTRICAL & AUXILIARY

Project No.: 04561.01

Checked by:

E0101.B

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- REFER TO TECHNOLOGY DRAWINGS FOR CONDUIT ROUGH-IN CDATA, VOICE AND AV.

KEYED NOTES

- E13** PROVIDE A DUCT MOUNTED SMOKE DETECTOR(S) AT RETURN AIR GRILLE OF AHU-1 & AHU-2. BOTH AIR HANDLING UNITS SHALL SHUT DOWN UPON ACTIVATION OF THE DUCT MOUNTED SMOKE DETECTOR(S). PROVIDE REMOTE INDICATOR LIGHT(S) IN CEILING BELOW.
- E53** COORDINATE QUANTITY AND LOCATION OF TAMPER AND FLOW SWITCHES WITH FIRE PROTECTION CONTRACTOR.

CABLE LEGEND FOR NOTIFIER NFS-320, NFS2-640 & NFS2-3030					
LEGEND	USAGE	TECH#	NOM. O.D.	SQ. IN.	DESCRIPTION
A	SLC - INITIATION	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
B	NAC-SIGNAL STROBE	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
D	DOOR HOLDER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
I	DIGITAL COMMUNICATOR	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
J	DATA (ANNUNCIATOR OTHER THAN SLC)	TP272	0.170	0.0227	1 Pair, 18 AWG, Solid, Twisted, Shielded
L	ANNUNCIATOR POWER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
M	NAC SYNCHRONIZATION	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
R	DIGITAL COMMUNICATOR TO TELE DEMARC	TP424-SE-155	0.220	0.038	4 Pair, 24 AWG, Solid, Category 5E, 155 Mhz
U	CONVENTIONAL INITIATING DEVICE	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket

Installation Notes:
1) Tech Electronics recommends that the installing contractor use the cable listed above.
Use of other cable does not guarantee specified system performance.
2) When purchasing cable from Tech Electronics, please specify the TECH # (e.g. TP272).
3) Outdoor cable may be required and not listed above. Unless otherwise specified all cable listed above is for indoor use only.
Please contact Tech Electronics for help with your outdoor cable requirements.
4) It is NOT acceptable to use THHN wire on Fire Alarm system circuits such as SLC Loops. Audible/Visual circuits or Conventional zones. It is acceptable to use THHN wire for 120V AC, grounding and Class 1 circuits. Refer to NEC for more information.

FIRE ALARM DEVICE LEGEND					
SYMBOL	DESCRIPTION	PART NO.	SYMBOL	DESCRIPTION	PART NO.
(S)	SMOKE DETECTOR	FSP-851/B210LP	(X)	CEILING HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	PC2R
(T)	HEAT DETECTOR	FST-851/B210LP	(X)	WALL MOUNT HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	P2R
(D)	DUCT DETECTOR	DNR/DSTXXX/FSP-851R	(X)	WALL MOUNT STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	SR
(F)	MANUAL PULL STATION	NBG-12LX	(FACP)	FIRE ALARM CONTROL PANEL	NFS-320/PS-12260F2
(V)	TAMPER SWITCH	F.B.O.	(FAA)	FIRE ALARM ANNUNCIATION	FDU-80
(W)	FLOW SWITCH	F.B.O.	(RPS)	REMOTE POWER SUPPLY WITH CONTROL MODULE	PSN-106B/PS-1270(CM-1)
(FC)	RELAY MODULE	FRM-1	(DAC1)	DIGITAL COMMUNICATOR WITH MINI MONITOR MODULE	411UDAC/PS-1270/B280/B215/FMM-101
(FM)	MONITOR MODULE	FMM-1	(C)	CARBON MONOXIDE	CO1224T
(DM)	DUAL MONITOR MODULE	FDM-1	(TMR)	TRANSFORMER	599
(DH)	DOOR HOLDER	DHF-24120C			

NOTE 1: SET SYSTEM SENSOR HORN/STROBES AUDIO SELECT SETTING TO 3 (LOW TEMPORAL HORN), UNLESS OTHERWISE NOTED

NOTE 2: CANDELA SETTING: A = 15cd, B = 30cd, C = 75cd

NOTE: USE THIS SHEET FOR INSTALLATION OF THE FOLLOWING SYSTEM(S) ONLY:
FIRE ALARM SYSTEM

NO.	DATE	REVISION DESCRIPTION
1	01/07/17	ADD STROBE IN RM 332, SHEET FA-E0102-B PER ENGINEER REVIEW
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1300 TECH 700

PROJECT NAME: CUSTOMER/LOCATION
WEBSTER UNIVERSITY
INTERDISCIPLINARY SCIENCE BLDG.
WEBSTER GROVES, MO 63119

SYSTEM DESCRIPTION:
FIRE ALARM SYSTEM

DATE: 11/11/16
PROJECT JOB #: P1608310005
ISSUED BY: FA-E0102-A

Webster University
Interdisciplinary Science Building

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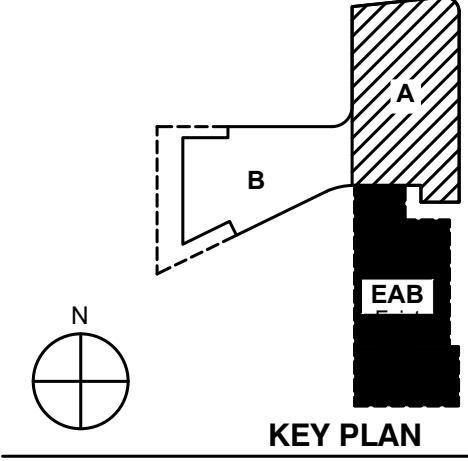
Spellman Brady & Company
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Webb Engineering Services, Inc.
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1400 S. 3rd Street, Suite 201
St. Louis, MO 63104
314.588.0600

3 ASI-017
2 ADDENDUM 2-2
1 ADDENDUM 2-1
ISSUED FOR CONSTRUCTION (BP2)

TBD
19 APRIL 2016
17 MAR 2016
01 MAR 2016

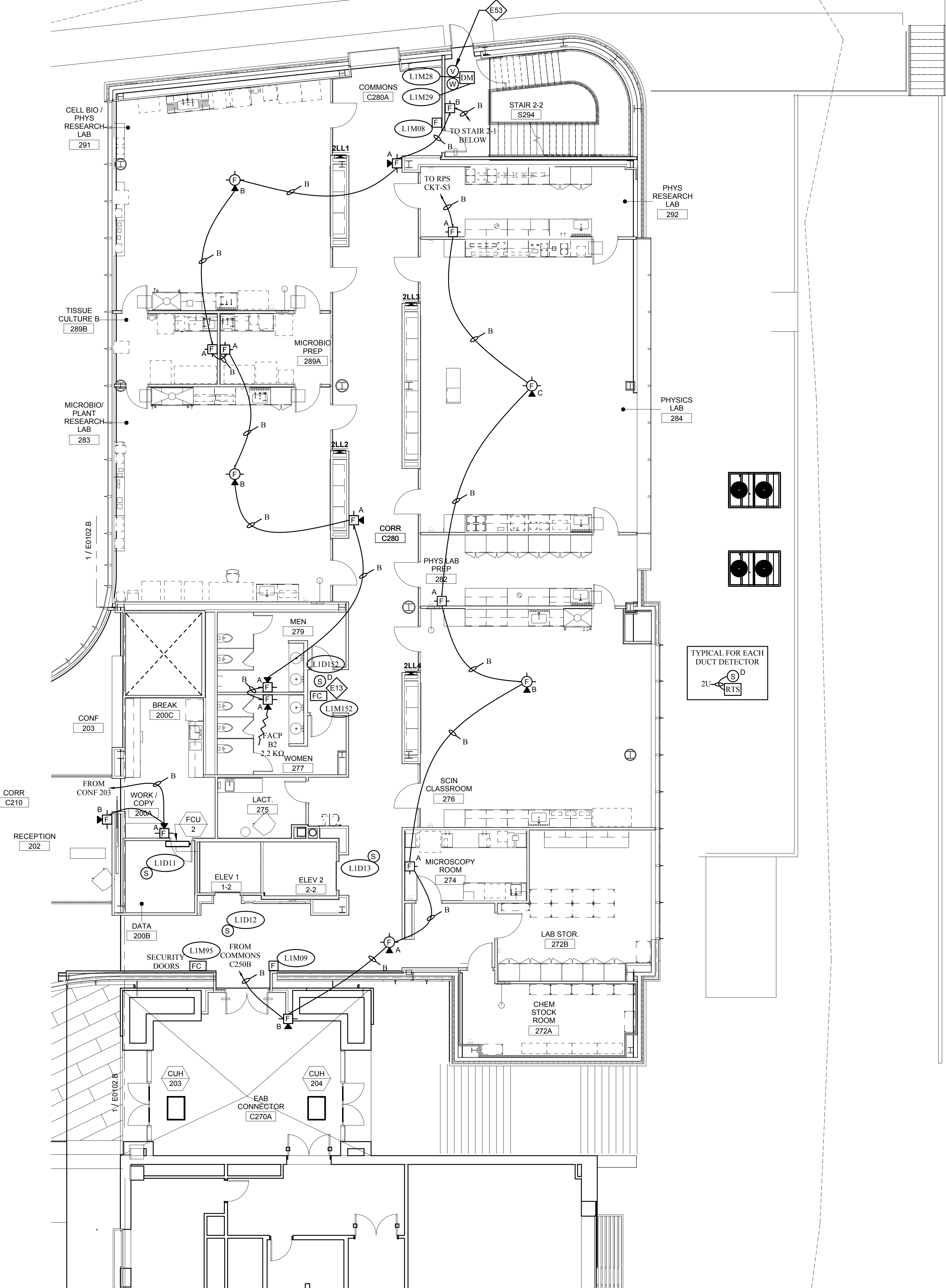


LEVEL 02 AREA A FLOOR PLAN - ELECTRICAL & AUXILIARY

Project No.: 04561.01 Checked by:

E0102.A

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1 LEVEL 02 - AREA A - FLOOR PLAN - POWER AND AUXILIARY

1/8" = 1'-0"

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GENERAL NOTES:

- DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR LOCATION AND ORIENTATION OF DEVICES. WHERE LOCATIONS ARE NOT INDICATED ON ARCHITECTURAL DRAWINGS, COORDINATE LOCATION AND ORIENTATION OF DEVICES IN FIELD WITH ARCHITECT PRIOR TO ROUGH-IN.
- ALL DEVICES SHOWN ARE NEW UNLESS NOTED OTHERWISE.
- ALL DEVICES TO REMAIN ARE INDICATED WITH A THIN SOLID LINE WEIGHT AND SUBSCRIPT "EX".
- CONTRACTOR SHALL VISIT PRIOR TO BID SUBMITTALS TO DETERMINE SITE CONDITIONS EFFECTING THE EXECUTION OF WORK. FAILURE TO BE ACQUAINTED WITH EXISTING CONDITIONS WILL NOT BE JUSTIFICATION FOR ADDITIONAL SERVICES.
- PROVIDE FACE PLATES ON ALL J-BOXES ABANDONED IN FINISHED FLOOR, WALL OR CEILINGS. COORDINATE COLOR AND FINISH WITH ARCHITECT. CONTRACTOR TO VERIFY QUANTITY IN THE FIELD.
- WHERE EXPOSED CONDUIT IS NOTED, CONTRACTOR SHALL IDENTIFY ROUTING IN FIELD AND OBTAIN ARCHITECT'S APPROVAL OF ROUTING PRIOR TO ROUGH-IN. EXPOSED CONDUIT SHALL BE ROUTED TIGHT TO STRUCTURE.
- ALL SINGLE PHASE BRANCH CIRCUITS SHOWN SHALL HAVE DEDICATED NEUTRALS. TO MEET NEC SECTION 210.4 MULTI-WIRE BRANCH CIRCUIT REQUIREMENTS.
- REFER TO TECHNOLOGY DRAWINGS FOR CONDUIT ROUGH-IN CDATA, VOICE AND A/V.
- ALL 120V BRANCH CIRCUITS ON THIS SHEET SHALL BE FED FROM PANEL **2NL**, UNLESS NOTED OTHERWISE.

KEYED NOTES

- E68** PROVIDE FIRE ALARM CONTROL MODULE TO RELEASE POWER TO ELECTRICALLY HELD OPEN FIRE DOOR UPON ACTIVATION OF ASSOCIATED SMOKE DETECTOR.

CABLE LEGEND FOR NOTIFIER NFS-320, NFS2-640 & NFS2-3030					
LEGEND	USAGE	TECH#	NOM. O.D.	SQ. IN.	DESCRIPTION
A	SLC - INITIATION	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
B	NAC-SIGNAL, STROBE	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
D	DOOR HOLDER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
I	DIGITAL COMMUNICATOR	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
J	DATA (ANNUNCIATOR OTHER THAN SLC)	TP272	0.170	0.0227	1 Pair, 18 AWG, Solid, Twisted, Shielded
L	ANNUNCIATOR POWER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
M	NAC SYNCHRONIZATION	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
R	DIGITAL COMMUNICATOR TO TIE DEMARK	TP424-SE-JS	0.220	0.038	4 Pair, 24 AWG, Solid, Category SE, 155 Mhz
U	CONVENTIONAL INITIATING DEVICE	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket

- Installation Notes**
- Tech Electronics recommends that the installing contractor use the cable listed above. Use of other cable does not guarantee specified system performance.
 - When purchasing cable from Tech Electronics, please specify the TECH # (e.g. TP272).
 - Outdoor cable may be required and not listed above. Unless otherwise specified all cable listed above is for indoor use only. Please contact Tech Electronics for help with your outdoor cable requirements.
 - It is NOT acceptable to use THHN wire on Fire Alarm system circuits such as SLC Loops, Audible/Visual circuits or Conventional zones. It is acceptable to use THHN wire for 120VAC, grounding and Class 1 circuits. Refer to NEC for more information.

FIRE ALARM DEVICE LEGEND					
SYMBOL	DESCRIPTION	PART NO.	SYMBOL	DESCRIPTION	PART NO.
	SMOKE DETECTOR	FSP-851/B210LP		CEILING HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	PC2R
	HEAT DETECTOR	FST-851/B210LP		WALL MOUNT HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	P2R
	DUCT DETECTOR	DNR/DSTXXX/FSP-851R		WALL MOUNT STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	SR
	MANUAL PULL STATION	NBG-12LX		FIRE ALARM CONTROL PANEL	NFS-320/PS-12200F2
	TAMPER SWITCH	F.B.O.		FIRE ALARM ANNUNCIATION	FDU-80
	FLOW SWITCH	F.B.O.		REMOTE POWER SUPPLY WITH CONTROL MODULE	PSN-106B/PS-1270/FCM-1
	RELAY MODULE	FRM-1		DIGITAL COMMUNICATOR WITH MINI MONITOR MODULE	411UDAC/PS-1270/B280/B215/FMM-101
	MONITOR MODULE	FMM-1		CARBON MONOXIDE	CO1224T
	DUAL MONITOR MODULE	FDM-1		TRANSFORMER	599
	DOOR HOLDER	DHF-24120C			

NOTE 1: SET SYSTEM SENSOR HORN/STROBES ALDIO SELECT SETTING TO 3 (LOW TEMPORAL HORN), UNLESS OTHERWISE NOTED
NOTE 2: CANDELA SETTING: A = 15cd, B = 30cd, C = 75cd

NOTE: USE THIS SHEET FOR INSTALLATION OF THE FOLLOWING SYSTEM(S) ONLY:
FIRE ALARM SYSTEM

NO.	DATE	REVISION DESCRIPTION
1	03/07/17	ADD STROBE IN RM 332, SHEET FA-E0102-B PER ENGINEER REVIEW
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		PROJECT NAME / CUSTOMER / LOCATION: WEBSTER UNIVERSITY INTERDISCIPLINARY SCIENCE BLDG. WEBSTER GROVES, MO 63119	
SYSTEM DESCRIPTION: FIRE ALARM SYSTEM		DATE: 11/11/16	
FILE: KH	ENG: VK	CAD: VK	PROJECT JOB #: PJ1608310005
ISSUED FOR: INSTALLATION		DRAWN BY: FA-E0102-B	

Webster University
Interdisciplinary Science
Building

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Webb Engineering Services, Inc.
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314.588.0600

3 ASI-017 TBD
2 ADDENDUM 2-2 19 APRIL 2016
1 ADDENDUM 2-1 17 MAR 2016
ISSUED FOR CONSTRUCTION (BP2) 01 MAR 2016

No.	Description	Date

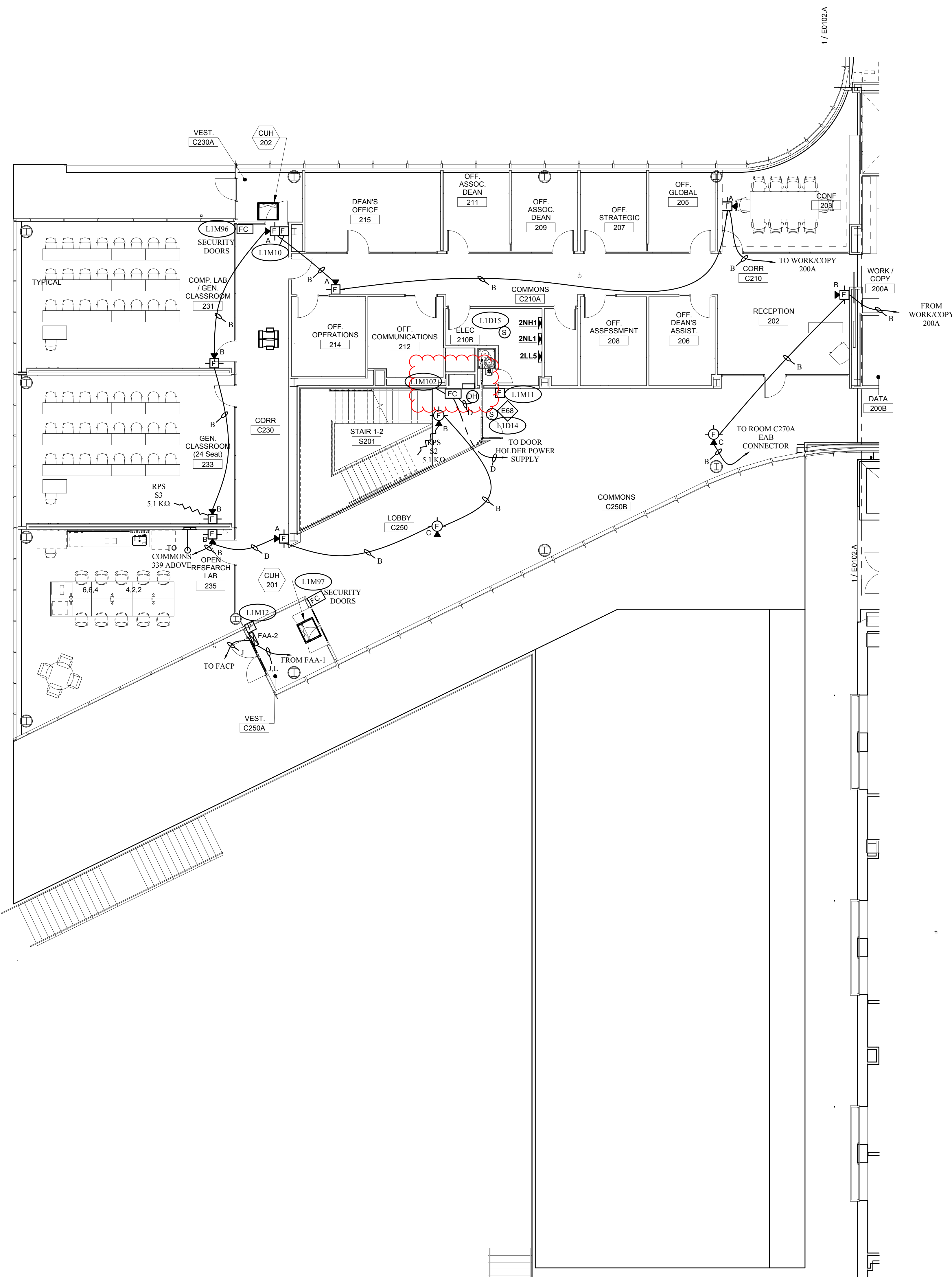
Drawing Title:

**LEVEL 02 AREA B FLOOR
PLAN - ELECTRICAL &
AUXILIARY**

Project No.: 04561.01 Checked by:

E0102.B

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NOTE:

RELAY MODULES SHALL BE MOUNTED WITHIN THREE FEET OF THE DEVICE BEING CONTROLLED (I.E. AHU, DAMPER, ELEVATOR CAPTURE, ETC.). EXCEPTION: CIRCUITS THAT OPERATE ON LOSS OF POWER SHALL BE CONSIDERED SELF-MONITORING FOR INTEGRITY.

ADDRESSABLE DEVICES MUST BE INSTALLED WITHIN THE FOLLOWING ENVIRONMENTAL LIMITS: +32F TO +100F, 0-90% RELATIVE HUMIDITY. ADDRESSABLE DEVICES ARE NOT DESIGNED FOR OUTDOOR USE.

IMPORTANT NOTICE REGARDING FIRE MARSHAL TEST:

THIS JOB IS EQUIPPED WITH A **FIRE ALARM DIGITAL COMMUNICATOR**, WHICH REQUIRES (2) LOOP START BUSINESS TELEPHONE LINES AND THE OWNER TO OBTAIN A CENTRAL MONITORING CONTRACT FROM A CERTIFIED MONITORING AGENCY. THIS PANEL MUST BE PROGRAMMED AND TESTED PRIOR TO SCHEDULING THE FIRE MARSHAL TEST.

FIRE ALARM SLC LOOP NOTES:

- SLC LOOP WIRING ("A" CABLE) IS **NOT** TYPICALLY SHOWN ON THE FLOOR PLANS. IF THE SLC LOOP IS SHOWN, ITS FOR REFERENCE ONLY.
- THE INSTALLING CONTRACTOR SHALL PULL AN "A" CABLE FOR EACH SLC LOOP FROM THE FIRE ALARM CONTROL PANEL TO ALL ADDRESSABLE DEVICES ON SAME SLC LOOP.
- "T" TAPPING / BRANCH CIRCUITS ARE ACCEPTABLE FOR SLC LOOPS ONLY.
- THE LOOP NUMBER ON THE DEVICE ADDRESS INDICATES THE SLC LOOP FOR EACH AREA AS SHOWN ON THE PLANS.
- CABLE ROUTING FOR SLC LOOPS IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.
- CONTACT TECH ELECTRONICS IF DEVICES CANNOT BE WIRED TO THE SLC LOOPS AS SHOWN.
- INSTALLING CONTRACTOR SHALL INCLUDE "AS INSTALLED" ROUTING FOR ALL SLC CABLES ON AS-BUILT RED LINE DRAWINGS AND PROVIDE A COPY TO TECH ELECTRONICS WHEN THE PROJECT HAS BEEN COMPLETED.

1 LEVEL 02 - AREA B - FLOOR PLAN - POWER AND AUXILIARY
1/8" = 1'-0"

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GENERAL NOTES:

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- B. ALL DEVICES SHOWN ARE NEW UNLESS NOTED OTHERWISE.
- C. ALL DEVICES TO REMAIN ARE INDICATED WITH A THIN SOLID LINE WEIGHT AND SUBSCRIPT "EX".
- D. CONTRACTOR SHALL VISIT PRIOR TO BID SUBMITTALS TO DETERMINE SITE CONDITIONS EFFECTING THE EXECUTION OF WORK. FAILURE TO BE ACQUAINTED WITH EXISTING CONDITIONS WILL NOT BE JUSTIFICATION FOR ADDITIONAL SERVICES.
- E. PROVIDE FACE PLATES ON ALL J-BOXES ABANDONED IN FINISHED FLOOR, WALL OR CEILINGS. COORDINATE COLOR AND FINISH WITH ARCHITECT. CONTRACTOR TO VERIFY QUANTITY IN THE FIELD.
- F. WHERE EXPOSED CONDUIT IS NOTED, CONTRACTOR SHALL IDENTIFY ROUTING IN FIELD AND OBTAIN ARCHITECT'S APPROVAL OF ROUTING PRIOR TO ROUGH-IN. EXPOSED CONDUIT SHALL BE ROUTED TIGHT TO STRUCTURE.
- G. ALL SINGLE PHASE BRANCH CIRCUITS SHOWN SHALL HAVE DEDICATED NEUTRALS TO MEET NEC SECTION 210.4 MULTI-WIRE BRANCH CIRCUIT REQUIREMENTS.
- H. REFER TO TECHNOLOGY DRAWINGS FOR CONDUIT ROUGH-IN CDATA, VOICE AND AV.

KEYED NOTES

- E13 PROVIDE A DUCT MOUNTED SMOKE DETECTOR(S) AT RETURN AIR GRILLE OF AHU-1 & AHU-2. BOTH AIR HANDLING UNITS SHALL SHUT DOWN UPON ACTIVATION OF THE DUCT MOUNTED SMOKE DETECTOR(S). PROVIDE REMOTE INDICATOR LIGHT(S) IN CEILING BELOW.
- E53 COORDINATE QUANTITY AND LOCATION OF TAMPER AND FLOW SWITCHES WITH FIRE PROTECTION CONTRACTOR.

CABLE LEGEND FOR NOTIFIER NFS-320, NFS2-640 & NFS2-3030					
LEGEND	USAGE	TECH#	NOM. O.D.	SQ. IN.	DESCRIPTION
A	SLC - INITIATION	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
B	NAC-SIGNAL, STROBE	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
D	DOOR HOLDER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
I	DIGITAL COMMUNICATOR	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
J	DATA (ANNUNCIATOR OTHER THAN SLC)	TP272	0.170	0.0227	1 Pair, 18 AWG, Solid, Twisted, Shielded
L	ANNUNCIATOR POWER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
M	NAC SYNCHRONIZATION	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
R	DIGITAL COMMUNICATOR TO TELE DEMARC	TP424-SE-155	0.220	0.038	4 Pair, 24 AWG, Solid, Category 5E, 155 Mhz
U	CONVENTIONAL INITIATING DEVICE	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket

Installation Notes

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2) When purchasing cable from Tech Electronics, please specify the TECH # (e.g. TP272).

3) Outdoor cable may be required and not listed above. Unless otherwise specified all cable listed above is for indoor use only. Please contact Tech Electronics for help with your outdoor cable requirements.

4) It is NOT acceptable to use THIN wire on Fire Alarm system circuits such as SLC Loops, Audible/Visual circuits or Conventional zones. It is acceptable to use THIN wire for 120VAC, grounding and Class 1 circuits. Refer to NEC for more information.

FIRE ALARM DEVICE LEGEND					
SYMBOL	DESCRIPTION	PART NO.	SYMBOL	DESCRIPTION	PART NO.
	SMOKE DETECTOR	FSP-851/ B210LP		CEILING HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	PC2R
	HEAT DETECTOR	FST-851/ B210LP		WALL MOUNT HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	P2R
	DUCT DETECTOR	DMR/ DSTXXX/ FSP-851R		WALL MOUNT STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	SR
	MANUAL PULL STATION	NBG-121-X		FIRE ALARM CONTROL PANEL	NFS-320/ PS-12260F2
	TAMPER SWITCH	F.B.O.		FIRE ALARM ANNUNCIATION	FDU-80
	FLOW SWITCH	F.B.O.		REMOTE POWER SUPPLY WITH CONTROL MODULE	PSN-106B/ PS-1270FCM-1
	RELAY MODULE	FRM-1		DIGITAL COMMUNICATOR WITH MINI MONITOR MODULE	411UDAC/ PS-1270 B2B/ B215/ FMM-101
	MONITOR MODULE	FMM-1		CARBON MONOXIDE	CO1224T
	DUAL MONITOR MODULE	FDM-1		TRANSFORMER	599
	DOOR HOLDER	DHF-24120C			

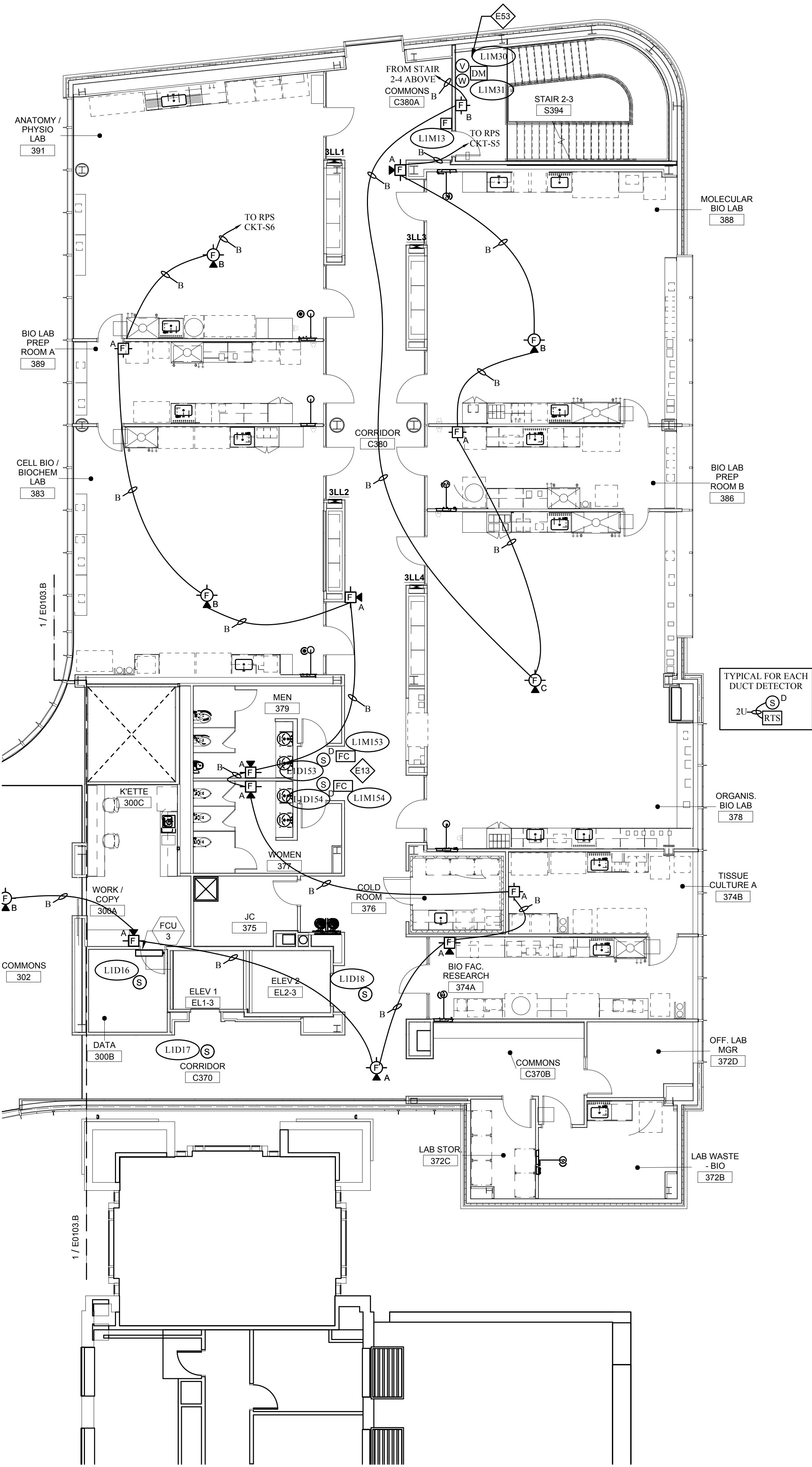
NOTE 1: SET SYSTEM SENSOR HORN/STROBES AUDIO SELECT SETTING TO 3 (LOW TEMPORAL HORN), UNLESS OTHERWISE NOTED

NOTE 2: CANDELA SETTING: A = 15cd, B = 30cd, C = 75cd

NOTE: USE THIS SHEET FOR INSTALLATION OF THE FOLLOWING SYSTEM(S) ONLY:
FIRE ALARM SYSTEM

NO.	DATE	REVISION DESCRIPTION
1	03/07/17	ADD STROBE IN RM 332, SHEET FA-E0103-B PER ENGINEER REVIEW
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		PROJECT NAME: CUSTOMER / LOCATION WEBSTER UNIVERSITY INTERDISCIPLINARY SCIENCE BLDG. WEBSTER GROVES, MO 63119	
SYSTEM DESCRIPTION FIRE ALARM SYSTEM		DATE 11/11/16	
DESIGNED BY KH	DRAWN BY VK	CHECKED BY VK	PROJECT JOB # PJ1608310005
ISSUED FOR INSTALLATION			



NOTE:
RELAY MODULES SHALL BE MOUNTED WITHIN THREE FEET OF THE DEVICE BEING CONTROLLED (I.E. AHU, DAMPER, ELEVATOR CAPTURE, ETC.). EXCEPTION: CIRCUITS THAT OPERATE ON LOSS OF POWER SHALL BE CONSIDERED SELF-MONITORING FOR INTEGRITY.

ADDRESSABLE DEVICES MUST BE INSTALLED WITHIN THE FOLLOWING ENVIRONMENTAL LIMITS: +32F TO +100F, 0-90% RELATIVE HUMIDITY. ADDRESSABLE DEVICES ARE NOT DESIGNED FOR OUTDOOR USE.

IMPORTANT NOTICE REGARDING FIRE MARSHAL TEST:

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FIRE ALARM SLC LOOP NOTES:

(1) SLC LOOP WIRING ("A" CABLE) IS **NOT** TYPICALLY SHOWN ON THE FLOOR PLANS. IF THE SLC LOOP IS SHOWN, ITS FOR REFERENCE ONLY.

(2) THE INSTALLING CONTRACTOR SHALL PULL AN "A" CABLE FOR EACH SLC LOOP FROM THE FIRE ALARM CONTROL PANEL TO ALL ADDRESSABLE DEVICES ON SAME SLC LOOP.

(3) "T" TAPPING / BRANCH CIRCUITS ARE ACCEPTABLE FOR SLC LOOPS ONLY.

(4) THE LOOP NUMBER ON THE DEVICE ADDRESS INDICATES THE SLC LOOP FOR EACH AREA AS SHOWN ON THE PLANS.

(5) CABLE ROUTING FOR SLC LOOPS IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.

(6) CONTACT TECH ELECTRONICS IF DEVICES CANNOT BE WIRED TO THE SLC LOOPS AS SHOWN.

(7) INSTALLING CONTRACTOR SHALL INCLUDE "AS INSTALLED" ROUTING FOR ALL SLC CABLES ON AS-BUILT RED LINE DRAWINGS AND PROVIDE A COPY TO TECH ELECTRONICS WHEN THE PROJECT HAS BEEN COMPLETED.

1 LEVEL 03 - AREA A - FLOOR PLAN - POWER AND AUXILLARY

1/8" = 1'-0"

Webster University
Interdisciplinary Science Building

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1100 Clark Avenue
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Kuhlmann Leavitt, Inc.
Environmental Graphics & Signage
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St. Louis, MO 63130
314.725.8616

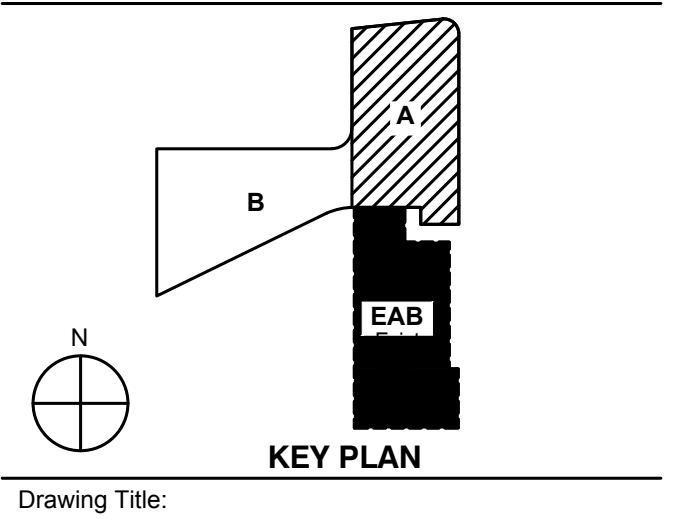
KWA Architects
Architecture
9721 Litzinger Road
St. Louis, MO 63124
314.962.2560

Spellman Brady & Company
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Plumbing & Fire Protection
1400 S. 3rd Street, Suite 201
St. Louis, MO 63104
314.588.0600

3 ASI-017 TBD
2 ADDENDUM 2-2 19 APRIL 2016
1 ADDENDUM 2-1 17 MAR 2016
ISSUED FOR CONSTRUCTION (BP2) 01 MAR 2016



LEVEL 03 AREA A FLOOR PLAN - ELECTRICAL & AUXILIARY

Project No.: 04561.01 Checked by:

E0103.A

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GENERAL NOTES:

- DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR LOCATION AND ORIENTATION OF DEVICES. WHERE LOCATIONS ARE NOT INDICATED ON ARCHITECTURAL DRAWINGS, COORDINATE LOCATION AND ORIENTATION OF DEVICES IN FIELD WITH ARCHITECT PRIOR TO ROUGH-IN.
- ALL DEVICES SHOWN ARE NEW UNLESS NOTED OTHERWISE.
- ALL DEVICES TO REMAIN ARE INDICATED WITH A THIN SOLID LINE WEIGHT AND SUBSCRIPT "EX".
- CONTRACTOR SHALL VISIT PRIOR TO BID SUBMITTALS TO DETERMINE SITE CONDITIONS EFFECTING THE EXECUTION OF WORK. FAILURE TO BE ACQUAINTED WITH EXISTING CONDITIONS WILL NOT BE JUSTIFICATION FOR ADDITIONAL SERVICES.
- PROVIDE FACE PLATES ON ALL J-BOXES ABANDONED IN FINISHED FLOOR, WALL OR CEILINGS. COORDINATE COLOR AND FINISH WITH ARCHITECT. CONTRACTOR TO VERIFY QUANTITY IN THE FIELD.
- WHERE EXPOSED CONDUIT IS NOTED, CONTRACTOR SHALL IDENTIFY ROUTING IN FIELD AND OBTAIN ARCHITECT'S APPROVAL OF ROUTING PRIOR TO ROUGH-IN. EXPOSED CONDUIT SHALL BE ROUTED TIGHT TO STRUCTURE.
- ALL SINGLE PHASE BRANCH CIRCUITS SHOWN SHALL HAVE DEDICATED NEUTRALS TO MEET NEC SECTION 210.4 MULTI-WIRE BRANCH CIRCUIT REQUIREMENTS.
- REFER TO TECHNOLOGY DRAWINGS FOR CONDUIT ROUGH-IN CDATA, VOICE AND AV.
- ALL 120V BRANCH CIRCUITS ON THIS SHEET SHALL BE FED FROM PANEL 3N1L UNLESS NOTED OTHERWISE.

KEYED NOTES

- E68 PROVIDE FIRE ALARM CONTROL MODULE TO RELEASE POWER TO ELECTRICALLY HELD OPEN FIRE DOOR UPON ACTIVATION OF ASSOCIATED SMOKE DETECTOR.

CABLE LEGEND FOR NOTIFIER NFS-320, NFS2-640 & NFS2-3030					
LEGEND	USAGE	TECH#	NOM. O.D.	SQ. IN.	DESCRIPTION
A	SLC - INITIATION	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
B	NAC-SIGNAL STROBE	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
D	DOOR HOLDER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
I	DIGITAL COMMUNICATOR	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
J	DATA (ANNUNCIATOR OTHER THAN SLC)	TP272	0.170	0.0227	1 Pair, 18 AWG, Solid, Twisted, Shielded
L	ANNUNCIATOR POWER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
M	NAC SYNCHRONIZATION	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
R	DIGITAL COMMUNICATOR TO TELL DEMARK	TP424-SE-155	0.220	0.038	4 Pair, 24 AWG, Solid, Category 5E, 155 Mhz
U	CONVENTIONAL INITIATING DEVICE	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
Installation Notes					
1) Tech Electronics recommends that the installing contractor use the cable listed above.					
2) Use of other cable does not guarantee specified system performance.					
3) When purchasing cable from Tech Electronics, please specify the TECH # (e.g. TP272).					
4) Outdoor cable may be required and not listed above. Unless otherwise specified all cable listed above is for indoor use only.					
5) Please contact Tech Electronics for help with your outdoor cable requirements.					
6) It is NOT acceptable to use THHN wire on Fire Alarm system circuits such as SLC Loops, Audible/Visual circuits or Conventional zones. It is acceptable to use THHN wire for 120VAC, grounding and Class 1 circuits. Refer to NEC for more information.					

FIRE ALARM DEVICE LEGEND					
SYMBOL	DESCRIPTION	PART NO.	SYMBOL	DESCRIPTION	PART NO.
Ⓢ	SMOKE DETECTOR	FSP-851/ B210L.P	Ⓢ ₁	CEILING HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	PC2R
Ⓢ ₂	HEAT DETECTOR	FST-851/ B210L.P	Ⓢ ₂	WALL MOUNT HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	P2R
Ⓢ ₃	DUCT DETECTOR	DNR/ DSTXXX/ FSP-851R	Ⓢ ₃	WALL MOUNT STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	SR
Ⓢ ₄	MANUAL PULL STATION	NBG-12LX	Ⓢ ₄	FIRE ALARM CONTROL PANEL	NFS-320/ PS-12260F2
Ⓢ ₅	TAMPER SWITCH	F.B.O.	Ⓢ ₅	FIRE ALARM ANNUNCIATION	FDU-80
Ⓢ ₆	FLOW SWITCH	F.B.O.	Ⓢ ₆	REMOTE POWER SUPPLY WITH CONTROL MODULE	PSN-106B/ PS-1270/FCM-1
Ⓢ ₇	RELAY MODULE	FRM-1	Ⓢ ₇	DIGITAL COMMUNICATOR WITH MINI MONITOR MODULE	411UDAC/ PS-1270/ B280/ B21S/ FMM-101
Ⓢ ₈	MONITOR MODULE	FMM-1	Ⓢ ₈	CARBON MONOXIDE	CO1224T
Ⓢ ₉	DUAL MONITOR MODULE	FDM-1	Ⓢ ₉	TRANSFORMER	599
Ⓢ ₁₀	DOOR HOLDER	DHF-24120C			
NOTE 1: SET SYSTEM SENSOR HORN/STROBES AUDIO SELECT SETTING TO 3 (LOW TEMPORAL HORN).					
NOTE 2: CANDELA SETTING: A = 15cd, B = 30cd, C = 75cd					

NOTE: USE THIS SHEET FOR INSTALLATION OF THE FOLLOWING SYSTEM(S) ONLY:
FIRE ALARM SYSTEM

NO.	DATE	REVISION DESCRIPTION
1	03/07/17	ADD STROBE IN RM 332, SHEET FA-E0103-B PER ENGINEER REVIEW
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- ALL SINGLE PHASE BRANCH CIRCUITS SHOWN SHALL HAVE DEDICATED NEUTRALS TO MEET NEC SECTION 210.4 MULTI-WIRE BRANCH CIRCUIT REQUIREMENTS.
- REFER TO TECHNOLOGY DRAWINGS FOR CONDUIT ROUGH-IN CDATA, VOICE AND A/V.

KEYED NOTES

- E13** PROVIDE A DUCT MOUNTED SMOKE DETECTOR(S) AT RETURN AIR GRILLE OF AHU-1 & AHU-2. BOTH AIR HANDLING UNITS SHALL SHUT DOWN UPON ACTIVATION OF THE DUCT MOUNTED SMOKE DETECTOR(S). PROVIDE REMOTE INDICATOR LIGHT(S) IN CEILING BELOW.
- E53** COORDINATE QUANTITY AND LOCATION OF TAMPER AND FLOW SWITCHES WITH FIRE PROTECTION CONTRACTOR.

CABLE LEGEND FOR NOTIFIER NFS-320, NFS2-640 & NFS2-3030					
LEGEND	USAGE	TECH#	NOM. O.D.	SQ. IN.	DESCRIPTION
A	SLC - INITIATION	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
B	NAC-SIGNAL, STROBE	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
D	DOOR HOLDER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
I	DIGITAL COMMUNICATOR	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
J	DATA (ANNUNCIATOR OTHER THAN SLC)	TP272	0.170	0.0227	1 Pair, 18 AWG, Solid, Twisted, Shielded
L	ANNUNCIATOR POWER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
M	NAC SYNCHRONIZATION	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
R	DIGITAL COMMUNICATOR TO TELE DEMARC	TP424-SE-155	0.220	0.038	4 Pair, 24 AWG, Solid, Category 5E, 155 Mhz
U	CONVENTIONAL INITIATING DEVICE	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket

Installation Notes:
1) Tech Electronics recommends that the installing contractor use the cable listed above.
Use of other cable does not guarantee specified system performance.
2) When purchasing cable from Tech Electronics, please specify the TECH # (e.g. TP272).
3) Outdoor cable may be required and not listed above. Unless otherwise specified all cable listed above is for indoor use only.
Please contact Tech Electronics for help with your outdoor cable requirements.
4) It is NOT acceptable to use THHN wire on Fire Alarm system circuits such as SLC Loops, Audible/Visual circuits or Conventional zones. It is acceptable to use THHN wire for 120VAC, grounding and Class 1 circuits. Refer to NEC for more information.

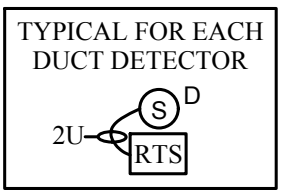
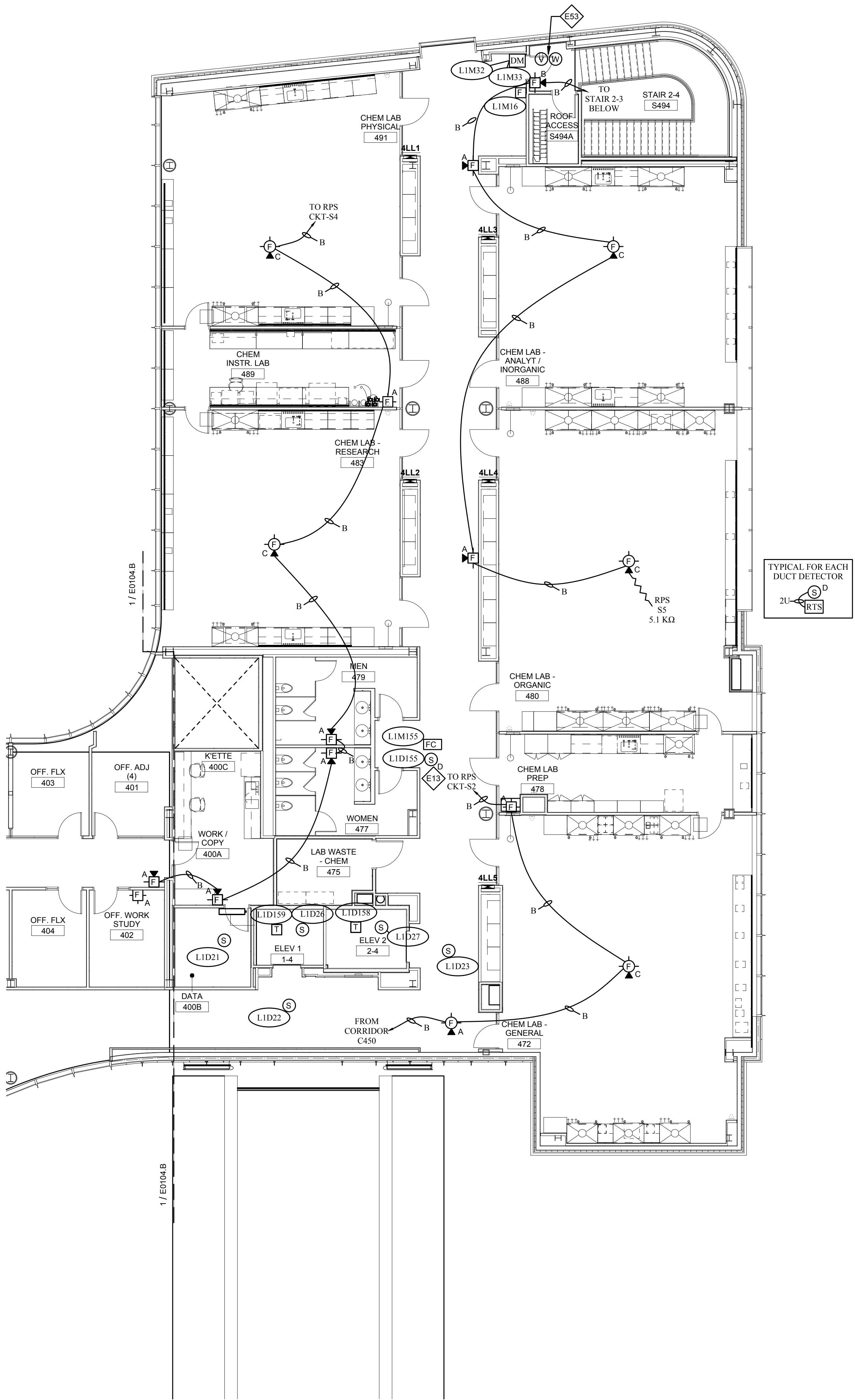
FIRE ALARM DEVICE LEGEND					
SYMBOL	DESCRIPTION	PART NO.	SYMBOL	DESCRIPTION	PART NO.
(S)	SMOKE DETECTOR	FSP-851/B210LP	(X)	CEILING HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	PC2R
(T)	HEAT DETECTOR	FST-851/B210LP	(X)	WALL MOUNT HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	P2R
(S) _D	DUCT DETECTOR	DNR/DSTXXX/FSP-851R	(X)	WALL MOUNT STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	SR
(F)	MANUAL PULL STATION	NBG-12LX	(FACP)	FIRE ALARM CONTROL PANEL	NFS-320/PS-12260F2
(V)	TAMPER SWITCH	F.B.O.	(FAA)	FIRE ALARM ANNUNCIATION	FDU-80
(W)	FLOW SWITCH	F.B.O.	(RPS)	REMOTE POWER SUPPLY WITH CONTROL MODULE	PSN-106B/PS-1270/FCM-1
(FC)	RELAY MODULE	FRM-1	(DAC)	DIGITAL COMMUNICATOR WITH MINI MONITOR MODULE	41UDAC/PS-1270/B260/B215/FMM-10
(FM)	MONITOR MODULE	FMM-1	(C)	CARBON MONOXIDE	CO1224T
(DM)	DUAL MONITOR MODULE	FDM-1	(NFM)	TRANSFORMER	599
(DH)	DOOR HOLDER	DHF-24120C			

NOTE 1: SET SYSTEM SENSOR HORN/STROBES AUDIO SELECT SETTING TO 3 (LOW TEMPORAL HORN), UNLESS OTHERWISE NOTED
NOTE 2: CANDELA SETTING: A = 15cd, B = 30cd, C = 75cd

NOTE: USE THIS SHEET FOR INSTALLATION OF THE FOLLOWING SYSTEM(S) ONLY:
FIRE ALARM SYSTEM

NO.	DATE	REVISION DESCRIPTION
1	03/07/17	ADD STROBE IN RM 332, SHEET FA-E0104-B PER ENGINEER REVIEW
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TECH ELECTRONICS The Power of Connection and Protection®		PROJECT NAME / CUSTOMER LOCATION WEBSTER UNIVERSITY INTERDISCIPLINARY SCIENCE BLDG. WEBSTER GROVES, MO 63119	
St. Louis, Missouri Chicago, Illinois Columbia, Missouri Springfield, Missouri www.tech-electronics.com 1.800.TECH.789		PROJECT JOB # P1608310005 DATE 11/11/16 DESIGNED BY INSTALLED BY	



NOTE:

RELAY MODULES SHALL BE MOUNTED WITHIN THREE FEET OF THE DEVICE BEING CONTROLLED (I.E. AHU, DAMPER, ELEVATOR CAPTURE, ETC.), EXCEPTION: CIRCUITS THAT OPERATE ON LOSS OF POWER SHALL BE CONSIDERED SELF MONITORING FOR INTEGRITY.

ADDRESSABLE DEVICES MUST BE INSTALLED WITHIN THE FOLLOWING ENVIRONMENTAL LIMITS: +32° TO +100°, 0-90% RELATIVE HUMIDITY. ADDRESSABLE DEVICES ARE NOT DESIGNED FOR OUTDOOR USE.

IMPORTANT NOTICE REGARDING FIRE MARSHAL TEST:

THIS JOB IS EQUIPPED WITH A FIRE ALARM DIGITAL COMMUNICATOR, WHICH REQUIRES (2) LOOP START BUSINESS TELEPHONE LINES AND THE OWNER TO OBTAIN A CENTRAL MONITORING CONTRACT FROM A CERTIFIED MONITORING AGENCY. THIS PANEL MUST BE PROGRAMMED AND TESTED PRIOR TO SCHEDULING THE FIRE MARSHAL TEST.

FIRE ALARM SLC LOOP NOTES:

- SLC LOOP WIRING ("A" CABLE) IS NOT TYPICALLY SHOWN ON THE FLOOR PLANS. IF THE SLC LOOP IS SHOWN, ITS FOR REFERENCE ONLY.
- THE INSTALLING CONTRACTOR SHALL PULL AN "A" CABLE FOR EACH SLC LOOP FROM THE FIRE ALARM CONTROL PANEL TO ALL ADDRESSABLE DEVICES ON SAME SLC LOOP.
- "T" TAPPING / BRANCH CIRCUITS ARE ACCEPTABLE FOR SLC LOOPS ONLY.
- THE LOOP NUMBER ON THE DEVICE ADDRESS INDICATES THE SLC LOOP FOR EACH AREA AS SHOWN ON THE PLANS.
- CABLE ROUTING FOR SLC LOOPS IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.
- CONTACT TECH ELECTRONICS IF DEVICES CANNOT BE WIRED TO THE SLC LOOPS AS SHOWN.
- INSTALLING CONTRACTOR SHALL INCLUDE "AS INSTALLED" ROUTING FOR ALL SLC CABLES ON AS-BUILT RED LINE DRAWINGS AND PROVIDE A COPY TO TECH ELECTRONICS WHEN THE PROJECT HAS BEEN COMPLETED.

LEVEL 04 - AREA A - FLOOR PLAN - POWER AND AUXILLARY

1/8" = 1'-0"

Webster University Interdisciplinary Science Building

CANNONDESIGN

1100 Clark Avenue
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St. Louis, MO 63143
314.991.2228

Kuhlmann Leavitt, Inc.
Environmental Graphics & Signage
7400 Pershing Ave.
St. Louis, MO 63130
314.725.8616

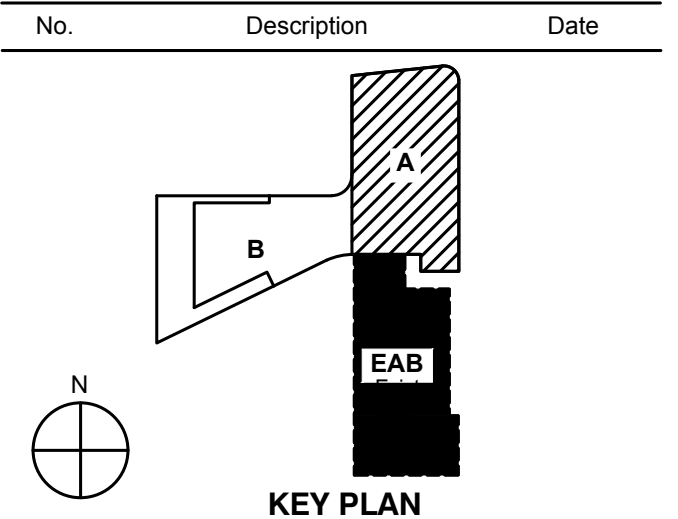
KWA Architects
Architecture
9721 Litzinger Road
St. Louis, MO 63124
314.962.2560

Spellman Brady & Company
Interior Designer
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SWT Design
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St. Louis, MO 63119
314.644.5700

Webb Engineering Services, Inc.
Plumbing & Fire Protection
1400 S. 3rd Street, Suite 201
St. Louis, MO 63104
314.588.0600

- 3 ASI-017 TBD
2 ADDENDUM 2-2 19 APRIL 2016
1 ADDENDUM 2-1 17 MAR 2016
ISSUED FOR CONSTRUCTION (BP2) 01 MAR 2016



LEVEL 04 AREA A FLOOR PLAN - ELECTRICAL & AUXILIARY

Project No.: 04561.01

Checked by:

E0104.A

THE SEAL(S) AND SIGNATURE(S) APPLY ONLY TO THE DOCUMENT TO WHICH THEY ARE AFFIXED, AND EXPRESSLY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT.



NOTE:
RELAY MODULES SHALL BE MOUNTED WITHIN THREE FEET OF THE DEVICE BEING CONTROLLED (I.E. AHU, DAMPER, ELEVATOR CAPTURE, ETC.). EXCEPTION: CIRCUITS THAT OPERATE ON LOSS OF POWER SHALL BE CONSIDERED SELF-MONITORING FOR INTEGRITY.
ADDRESSABLE DEVICES MUST BE INSTALLED WITHIN THE FOLLOWING ENVIRONMENTAL LIMITS: +32F TO +100F, 0-90% RELATIVE HUMIDITY. ADDRESSABLE DEVICES ARE NOT DESIGNED FOR OUTDOOR USE.

IMPORTANT NOTICE REGARDING FIRE MARSHAL TEST:
THIS JOB IS EQUIPPED WITH A FIRE ALARM DIGITAL COMMUNICATOR, WHICH REQUIRES (2) LOOP START BUSINESS TELEPHONE LINES AND THE OWNER TO OBTAIN A CENTRAL MONITORING CONTRACT FROM A CERTIFIED MONITORING AGENCY. THIS PANEL MUST BE PROGRAMMED AND TESTED PRIOR TO SCHEDULING THE FIRE MARSHAL TEST.

FIRE ALARM SLC LOOP NOTES:
(1) SLC LOOP WIRING ("A" CABLE) IS **NOT** TYPICALLY SHOWN ON THE FLOOR PLANS. IF THE SLC LOOP IS SHOWN, ITS FOR REFERENCE ONLY.
(2) THE INSTALLING CONTRACTOR SHALL PULL AN "A" CABLE FOR EACH SLC LOOP FROM THE FIRE ALARM CONTROL PANEL TO ALL ADDRESSABLE DEVICES ON SAME SLC LOOP.
(3) "T" TAPPING / BRANCH CIRCUITS ARE ACCEPTABLE FOR SLC LOOPS ONLY.
(4) THE LOOP NUMBER ON THE DEVICE ADDRESS INDICATES THE SLC LOOP FOR EACH AREA AS SHOWN ON THE PLANS.
(5) CABLE ROUTING FOR SLC LOOPS IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.
(6) CONTACT TECH ELECTRONICS IF DEVICES CANNOT BE WIRED TO THE SLC LOOPS AS SHOWN.
(7) INSTALLING CONTRACTOR SHALL INCLUDE "AS INSTALLED" ROUTING FOR ALL SLC CABLES ON AS-BUILT RED LINE DRAWINGS AND PROVIDE A COPY TO TECH ELECTRONICS WHEN THE PROJECT HAS BEEN COMPLETED.

GENERAL NOTES:

- DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR LOCATION AND ORIENTATION OF DEVICES. WHERE LOCATIONS ARE NOT INDICATED ON ARCHITECTURAL DRAWINGS, COORDINATE LOCATION AND ORIENTATION OF DEVICES IN FIELD WITH ARCHITECT PRIOR TO ROUGH-IN.
- ALL DEVICES SHOWN ARE NEW UNLESS NOTED OTHERWISE.
- ALL DEVICES TO REMAIN ARE INDICATED WITH A THIN SOLID LINE WEIGHT AND SUBSCRIPT "EX".
- CONTRACTOR SHALL VISIT PRIOR TO BID SUBMITTALS TO DETERMINE SITE CONDITIONS EFFECTING THE EXECUTION OF WORK. FAILURE TO BE ACQUAINTED WITH EXISTING CONDITIONS WILL NOT BE JUSTIFICATION FOR ADDITIONAL SERVICES.
- PROVIDE FACE PLATES ON ALL J-BOXES ABANDONED IN FINISHED FLOOR, WALL OR CEILINGS. COORDINATE COLOR AND FINISH WITH ARCHITECT. CONTRACTOR TO VERIFY QUANTITY IN THE FIELD.
- WHERE EXPOSED CONDUIT IS NOTED, CONTRACTOR SHALL IDENTIFY ROUTING IN FIELD AND OBTAIN ARCHITECT'S APPROVAL OF ROUTING PRIOR TO ROUGH-IN. EXPOSED CONDUIT SHALL BE ROUTED TIGHT TO STRUCTURE.
- ALL SINGLE PHASE BRANCH CIRCUITS SHOWN SHALL HAVE DEDICATED NEUTRALS TO MEET NEC SECTION 210.4 MULTI-WIRE BRANCH CIRCUIT REQUIREMENTS.
- REFER TO TECHNOLOGY DRAWINGS FOR CONDUIT ROUGH-IN CDATA, VOICE AND AV.
- ALL 120V BRANCH CIRCUITS ON THIS SHEET SHALL BE FED FROM PANEL 4NLL UNLESS NOTED OTHERWISE.

KEYED NOTES

- E68** PROVIDE FIRE ALARM CONTROL MODULE TO RELEASE POWER TO ELECTRICALLY HELD OPEN FIRE DOOR UPON ACTIVATION OF ASSOCIATED SMOKE DETECTOR.

CABLE LEGEND FOR NOTIFIER NFS-320, NFS2-640 & NFS2-3030					
LEGEND	USAGE	TECH#	NOM. O.D.	SQ. IN.	DESCRIPTION
A	SLC - INITIATION	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
B	NAC-SIGNAL, STROBE	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
D	DOOR HOLDER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
I	DIGITAL COMMUNICATOR	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket
J	DATA (ANNUNCIATOR OTHER THAN SLC)	TP272	0.170	0.0227	1 Pair, 18 AWG, Solid, Twisted, Shielded
L	ANNUNCIATOR POWER	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
M	NAC SYNCHRONIZATION	TP1690	0.215	0.0363	1 Pair, 14 AWG, Solid, Overall Jacket
R	DIGITAL COMMUNICATOR TO TELE DEMARC	TP424-SE-155	0.220	0.038	4 Pair, 24 AWG, Solid, Category 5E, 155 Mhz
U	CONVENTIONAL INITIATING DEVICE	TP1682	0.161	0.0189	1 Pair, 18 AWG, Solid, Twisted, Overall Jacket

Installation Notes
1) Tech Electronics recommends that the installing contractor use the cable listed above.
Use of other cable does not guarantee specified system performance.
2) When purchasing cable from Tech Electronics, please specify the TECH # (e.g. TP272).
3) Outdoor cable may be required and not listed above. Unless otherwise specified all cable listed above is for indoor use only.
Please contact Tech Electronics for help with your outdoor cable requirements.
4) It is NOT acceptable to use THHN wire on Fire Alarm system circuits such as SLC Loops, Audible/Visual circuits or Conventional zones. It is acceptable to use THHN wire for 120VAC, grounding and Class 1 circuits. Refer to NEC for more information.

FIRE ALARM DEVICE LEGEND					
SYMBOL	DESCRIPTION	PART NO.	SYMBOL	DESCRIPTION	PART NO.
	SMOKE DETECTOR	FSP-851/B210LP		CEILING HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	PC2R
	HEAT DETECTOR	FST-851/B210LP		WALL MOUNT HORN/STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	P2R
	DUCT DETECTOR	DNR/DSTXXX/FSP-851R		WALL MOUNT STROBE (X = CANDELA SETTING) (SEE NOTE 1 & 2 BELOW)	SR
	MANUAL PULL STATION	NBG-12LX		FIRE ALARM CONTROL PANEL	NFS-320/PS-12260F2
	TAMPER SWITCH	F.B.O.		FIRE ALARM ANNUNCIATION	FDU-80
	FLOW SWITCH	F.B.O.		REMOTE POWER SUPPLY WITH CONTROL MODULE	PSN-106B/PS-1270/FCM-1
	RELAY MODULE	FRM-1		DIGITAL COMMUNICATOR WITH MINI MONITOR MODULE	411UDAC/PS-1270/B280/B215/FMM-101
	MONITOR MODULE	FMM-1		CARBON MONOXIDE	CO1224T
	DUAL MONITOR MODULE	FDM-1		TRANSFORMER	599
	DOOR HOLDER	DHF-24120C			

NOTE 1: SET SYSTEM SENSOR HORN/STROBES AUDIO SELECT SETTING TO 3 (LOW TEMPORAL HORN).
NOTE 2: CANDELA SETTING: A = 15cd, B = 30cd, C = 75cd

NOTE: USE THIS SHEET FOR INSTALLATION OF THE FOLLOWING SYSTEM(S) ONLY:
FIRE ALARM SYSTEM

NO.	DATE	REVISION DESCRIPTION
1	01/07/17	ADD STROBE IN RM 332, SHEET FA-E0104-B PER ENGINEER REVIEW
2		
3		
4		

		PROJECT NAME / CUSTOMER / LOCATION WEBSTER UNIVERSITY INTERDISCIPLINARY SCIENCE BLDG. WEBSTER GROVES, MO 63119	
SYSTEM DESCRIPTION: FIRE ALARM SYSTEM		DATE 11/17/16	
DESIGNED BY KH	ENGR. VK	PROJECT JOB # PJ1608310005	DATE 11/17/16
CHECKED BY KH		DATE 11/17/16	

1300 TECH 700

Webster University
Interdisciplinary Science Building

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314.534.1053

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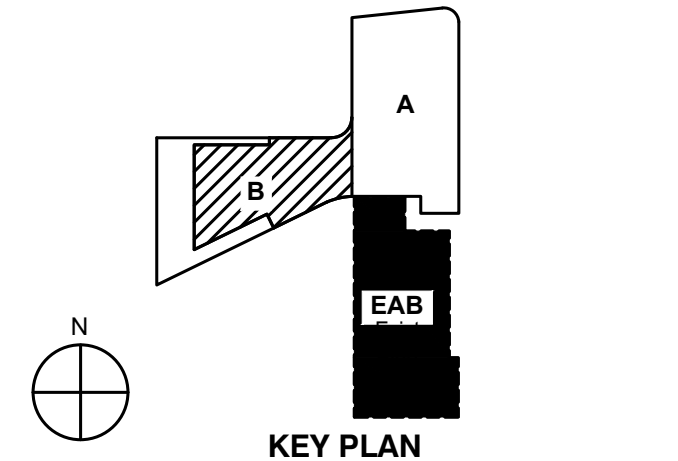
KWA Architects
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2 ADDENDUM 2-2 19 APRIL 2016
1 ADDENDUM 2-1 17 MAR 2016
ISSUED FOR CONSTRUCTION (BP2) 01 MAR 2016



LEVEL 04 AREA B FLOOR PLAN - ELECTRICAL & AUXILIARY

Project No.: 04561.01 Checked by:

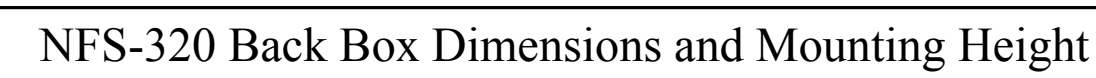
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LEVEL 04 - AREA B - FLOOR PLAN - POWER AND AUXILIARY

1/8" = 1'-0"

NOTE: In order to meet UL wiring requirements, please install grounding straps as shown below.



Scale: NTS

PROJECT NAME / CUSTOMER / LOCATION:

WEBSTER UNIVERSITY
INTERDISCIPLINARY SCIENCE BLDG.

GARDEN AVE.
WEBSTER GROVES, MO 63119

SYSTEM DESCRIPTION

FIRE ALARM SYSTEM

P.M.:	ENG.:	CAD:
KH	VK	V

DRAWING #:

FA-RCK

PROJECT	PJ1460831000
---------	--------------

DATE: 11/11/2015

DATE:	11/11/16
ISSUED	INSTALLATION

FOR: INSTALLATION

INSTALLATION REQUIREMENTS

- Adherence to the following will aid in a problem-free installation with long-term reliability:
- Locate the Central Processor - Control Panel in an area where the temperature is within 60 - 90 degrees Fahrenheit and free of condensation, moisture, dust, etc. Keep out of close proximity of large motors and transformers.
 - Consult with Tech Electronics before purchasing any cable for this system.
 - This system, like all solid state electronic devices, may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. Consult with Tech Electronics Engineering Department if any problems are anticipated or encountered.
 - Micro-Processor systems contain static-sensitive components. Always ground yourself before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.
 - Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries as indicated on shop drawings. Before making modifications, verify that they will not interfere with the battery, transformer, or printed circuits board location.
 - Required Test Equipment for this system is a Volt-Ohm Meter rated at or higher than 20,000 ohms per volt. With the VOM meter set on the highest ohm scale, the cable test should consist of testing between each cable and ground, shield and ground and between each cable. The ohm readings should be higher than (1) mega ohms. This test is to be conducted before the operational check of the system.
 - Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits. When applying power to the control panel, always connect AC power first, followed by secondary (battery) power. When removing power, always disconnect the batteries first, followed by AC power.
 - Splice shield / drain wires through at each device and or junction box. Apply tape to avoid any contact with ground. At last device on cable run, cut shield / drain wire and apply tape. Shield / drain wire is to be grounded at control panel only!! Follow the NEC when running cables.
 - AC power for this system should be a dedicated 20 ampere circuit. A separate ground cable should be run and connected to service entrance ground according to the NEC.
 - Cable running from building to building: All outside cabling must include lightning protection. All cabling installed under ground, even when in conduit, MUST be rated for underground usage.

TECH ELECTRONICS
Installation_Requirements.dwg:A
05/08/09

FIRE ALARM SYSTEM CHECKLIST FOR ELECTRICAL CONTRACTOR

The following items are the responsibility of the Electrical Contractor and must be completed prior to requesting final connection of the fire alarm panel:

1. All initiating circuits are free of:
 - a grounds
 - b shorts
2. All signal circuits are free of:
 - a grounds
 - b shorts
3. All control circuits are free of:
 - a grounds
 - b shorts
4. End-of-line resistor is the proper size and can be measured on all circuits.
5. All tamper and waterflow switches have been connected and tested for activation.
6. All duct detectors provided by others have been installed and connected.
7. All door holders have been connected.
8. All dampers and air handling equipment has been connected.
9. All energy management interfaces have been connected.
10. All elevator control functions have been connected.

Notify Tech Electronics if Tech Electronics is to perform head-end connections at the panel.

If Tech Electronics is not contracted to perform head-end connections at the panel; notify Tech Electronics when all conductors have been terminated prior to applying power to the main panel. Tech Electronics will visit site or advise to apply power once panel termination's are completed.

The following items are the responsibility of the Electrical Contractor:

1. Test each initiating device on the system:
 - a Smoke detectors
 - b Pull stations
 - c Waterflow and tamper switches
 - d Duct detectors
2. Check the operation of all signal devices:
 - a Horns
 - b Horn-strokes
 - c Speakers
3. Check the operation of all control devices:
 - a Air handling control
 - b Door holder release
 - c Damper control
 - d Elevator control
 - e Energy management interface
4. Labels all zones and circuits. (This is performed by Tech Electronics if final connections were part of Tech Electronics contract).

Notify Tech Electronics when the system is ready for checkout:

- Tech Electronics will:
- b Test the main panel completely.
 - b Test randomly selected devices to determine system operation
 - c Check signal devices to insure proper operation
 - b Check output circuits to insure they are activating properly

TECH ELECTRONICS
Installation_Requirements.dwg:A
05/08/09

Wiring Connection for Correct Device Connection

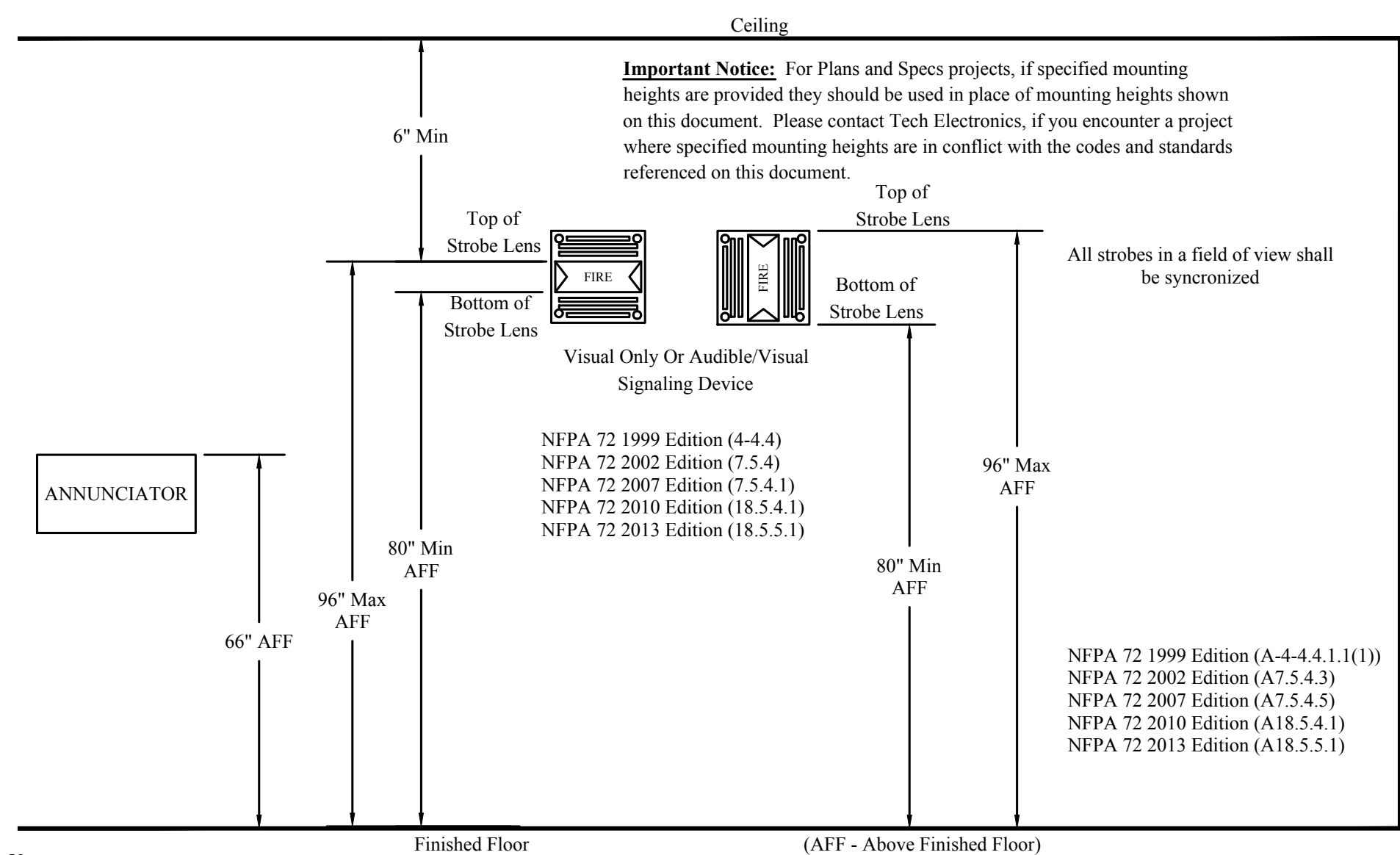
IN ORDER TO MAINTAIN PROPER SUPERVISION, CUT WIRES BEFORE TERMINATING AT EACH DEVICE.

DO NOT WRAP INCOMING AND OUTGOING WIRES AROUND TERMINAL SCREWS.



TECH ELECTRONICS
Correct_Wiring.dwg:A
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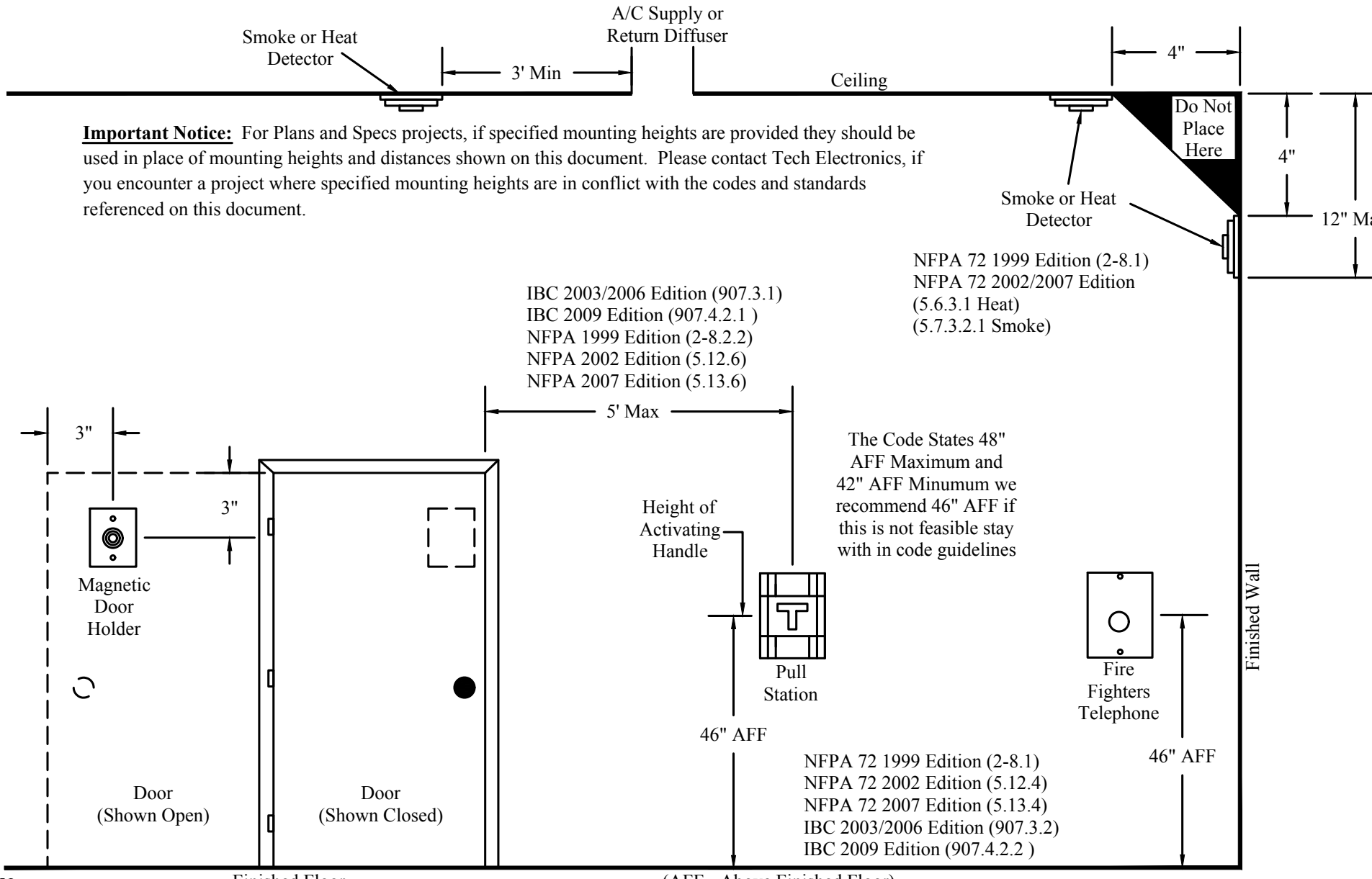
RECOMMENDED MOUNTING HEIGHTS AND LIMITATIONS



- Note:
1. Contact Tech Electronics if you have questions concerning these instructions or if your specific conditions require a solution not addressed by this document.
 2. Refer to the proper device installation instructions for backbox mounting height

TECH ELECTRONICS
Heights_and_Mounting.dwg:A
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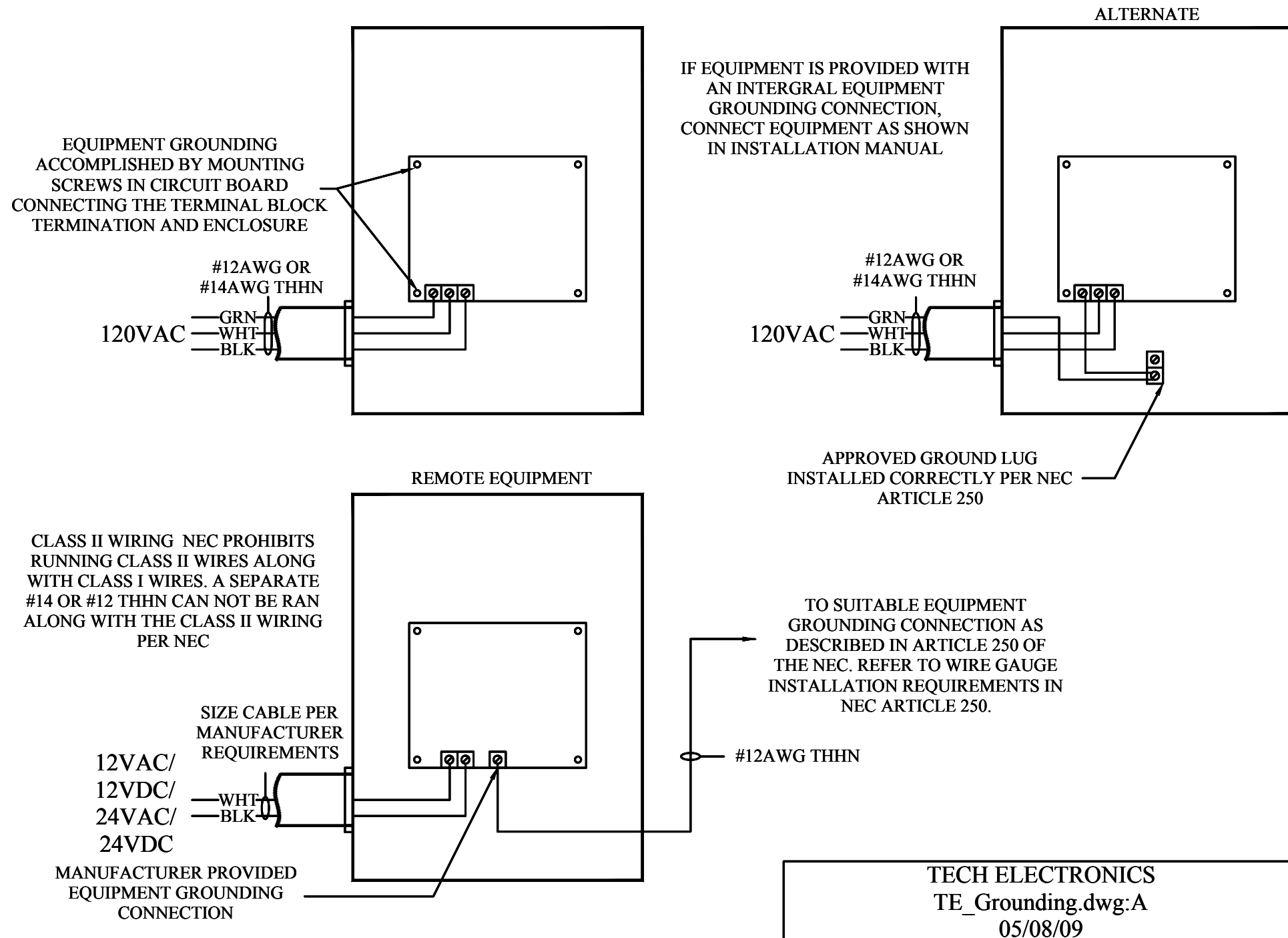
RECOMMENDED MOUNTING HEIGHTS AND LIMITATIONS



- Note:
1. Contact Tech Electronics if you have questions concerning these instructions or if your specific conditions require a solution not addressed by this document.
 2. Refer to the proper device installation instructions for backbox mounting height

TECH ELECTRONICS
Heights_and_Mounting.dwg:B
02/05/10

COMMUNICATION SYSTEMS GROUNDING TYPICAL DRAWING

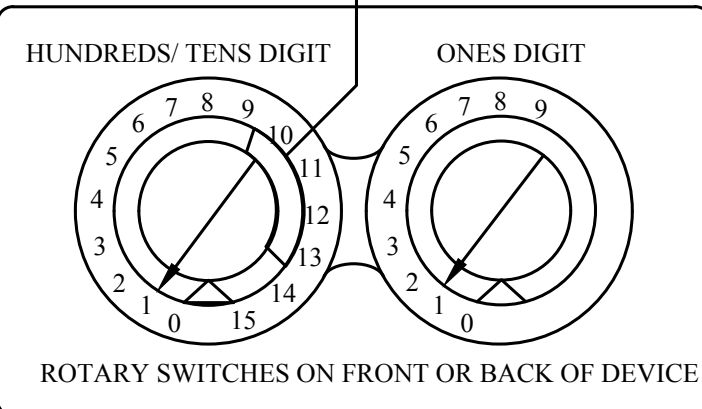


TECH ELECTRONICS
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05/08/09

NOTIFIER ADDRESSABLE FIRE ALARM SYSTEM PROGRAMMING

EACH INTELLIGENT DEVICE IS UNIQUELY IDENTIFIED BY THE FIRE ALARM CONTROL PANEL AND MUST BE PROGRAMMED AT TIME OF INSTALLATION. REFER TO THE DRAWINGS PROVIDED WITH THE PROJECT FOR THE UNIQUE ADDRESS OF EACH DEVICE.

REMOVE TAB WHEN ADDRESS IS GREATER THAN 99



DEVICE ADDRESS NUMBER AS SHOWN ON PLANS

LOOP NUMBER ——— L01M01 ——— MODULE ADDRESS NUMBER

LOOP NUMBER ——— L01D01 ——— DEVICE ADDRESS NUMBER

TWO DIGIT NUMBER SET ON DEVICE

- | | | |
|-----------|----------------|---|
| AFP-200 | 1 SLC LOOP | (DEVICE AND MODULE ADDRESS 1 TO 99) |
| AFP-300 | 1 SLC LOOP | (DEVICE AND MODULE ADDRESS 1 TO 99) |
| AFP-400 | 1-2 SLC LOOPS | (DEVICE AND MODULE ADDRESS 1 TO 99 PER LOOP) |
| AFP-1010 | 1-4 SLC LOOPS | (DEVICE AND MODULE ADDRESS 1 TO 99 PER LOOP) |
| AM-2020 | 1-10 SLC LOOPS | (DEVICE AND MODULE ADDRESS 1 TO 99 PER LOOP) |
| NFW-50 | 1 SLC LOOP | (DEVICE AND MODULE MAXIMUM OF 50 ADDRESSES) |
| NFW-100 | 1 SLC LOOP | (DEVICE AND MODULE ADDRESS 1 TO 99) |
| NFS-320 | 1 SLC LOOP | (DEVICE AND MODULE ADDRESS 1 TO 159) |
| NFS2-640 | 1-2 SLC LOOPS | (DEVICE AND MODULE ADDRESS 1 TO 159 PER LOOP) |
| NFS2-3030 | 1-10 SLC LOOPS | (DEVICE AND MODULE ADDRESS 1 TO 159 PER LOOP) |

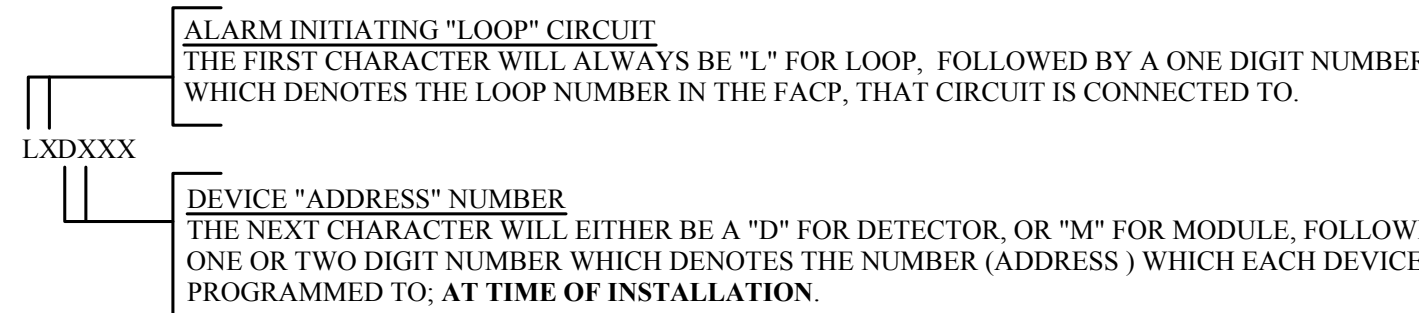
TECH ELECTRONICS
Device_Address_Notes.dwg:A
05/24/11

NOTIFIER GENERAL NOTES AND LEGENDS

FIRE ALARM SYSTEM-GENERAL NOTES

1. NO 120VAC WIRING OR WIRING FOR ANY OTHER SYSTEM IS ALLOWED TO BE PULLED IN SAME CONDUIT WITH FIRE ALARM SYSTEM.
2. THE RELAY MODULES WHICH ARE USED FOR AHJ, ELEVATOR CONTROL, PROVIDES TWO (2) SETS OF SPDT (FORM C) CONTACTS RATED AT:
 - RESISTIVE: 2 AMPS MAXIMUM @ 30VDC.
 - INDUCTIVE: 1 AMP MAXIMUM @ 30VDC, OR 0.5 AMP @ 120VAC.IF A CONTROL FUNCTION REQUIRES ADDITIONAL CONTACTS OR EXCEEDS THIS CURRENT RATING FOR ANY REASON, ELECTRICAL CONTRACTOR IS TO FURNISH AND INSTALL REMOTE RELAYS AND POWER SOURCE RATED AS REQUIRED, TO PERFORM THE SPECIFIC CONTROL FUNCTION.
3. EACH FIRE ALARM DEVICE HAS A UNIQUE ADDRESS THAT MUST BE SET AT THE TIME OF INSTALLATION. REFER TO THE DEVICE LABEL LEGEND ON THIS DRAWING TO LEARN HOW TO READ THE ADDRESS NUMBER.
4. ADDRESSABLE DEVICES MUST BE INSTALLED WITHIN THE FOLLOWING ENVIRONMENTAL LIMITS: +32 TO +100 EGRES F, 0-90% RELATIVE HUMIDITY. ADDRESSABLE DEVICES ARE NOT DESIGNED FOR OUTDOOR USE.

FIRE ALARM DEVICE-LABEL LEGEND



- | | | |
|-----------|----------------|---|
| AFP-200 | 1 SLC LOOP | (DEVICE AND MODULE ADDRESS 1 TO 99) |
| AFP-300 | 1 SLC LOOP | (DEVICE AND MODULE ADDRESS 1 TO 99) |
| AFP-400 | 1-2 SLC LOOPS | (DEVICE AND MODULE ADDRESS 1 TO 99 PER LOOP) |
| AFP-1010 | 1-4 SLC LOOPS | (DEVICE AND MODULE ADDRESS 1 TO 99 PER LOOP) |
| AM-2020 | 1-10 SLC LOOPS | (DEVICE AND MODULE ADDRESS 1 TO 99 PER LOOP) |
| NFW-50 | 1 SLC LOOP | (DEVICE AND MODULE MAXIMUM OF 50 ADDRESSES) |
| NFW-100 | 1 SLC LOOP | (DEVICE AND MODULE ADDRESS 1 TO 99) |
| NFS-320 | 1 SLC LOOP | (DEVICE AND MODULE ADDRESS 1 TO 159) |
| NFS2-640 | 1-2 SLC LOOPS | (DEVICE AND MODULE ADDRESS 1 TO 159 PER LOOP) |
| NFS2-3030 | 1-10 SLC LOOPS | (DEVICE AND MODULE ADDRESS 1 TO 159 PER LOOP) |

TECH ELECTRONICS
General_Notes.dwg:A
05/24/11

PROJECT NAME / CUSTOMER LOCATION:

WEBSTER UNIVERSITY
INTERDISCIPLINARY SCIENCE BLDG.
GARDEN AVE.
WEBSTER GROVES, MO 63119

SYSTEM DESCRIPTION

FIRE ALARM SYSTEM

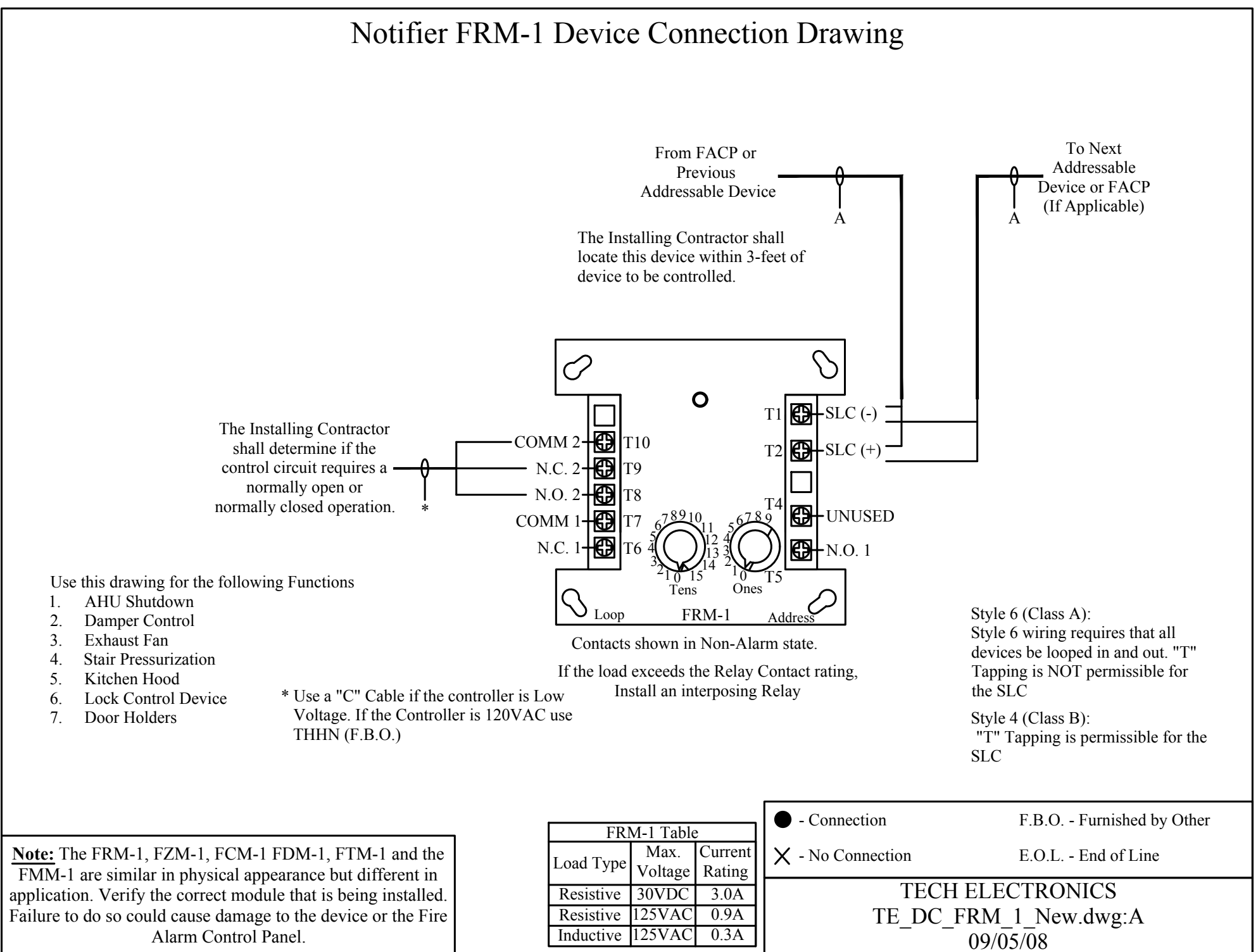
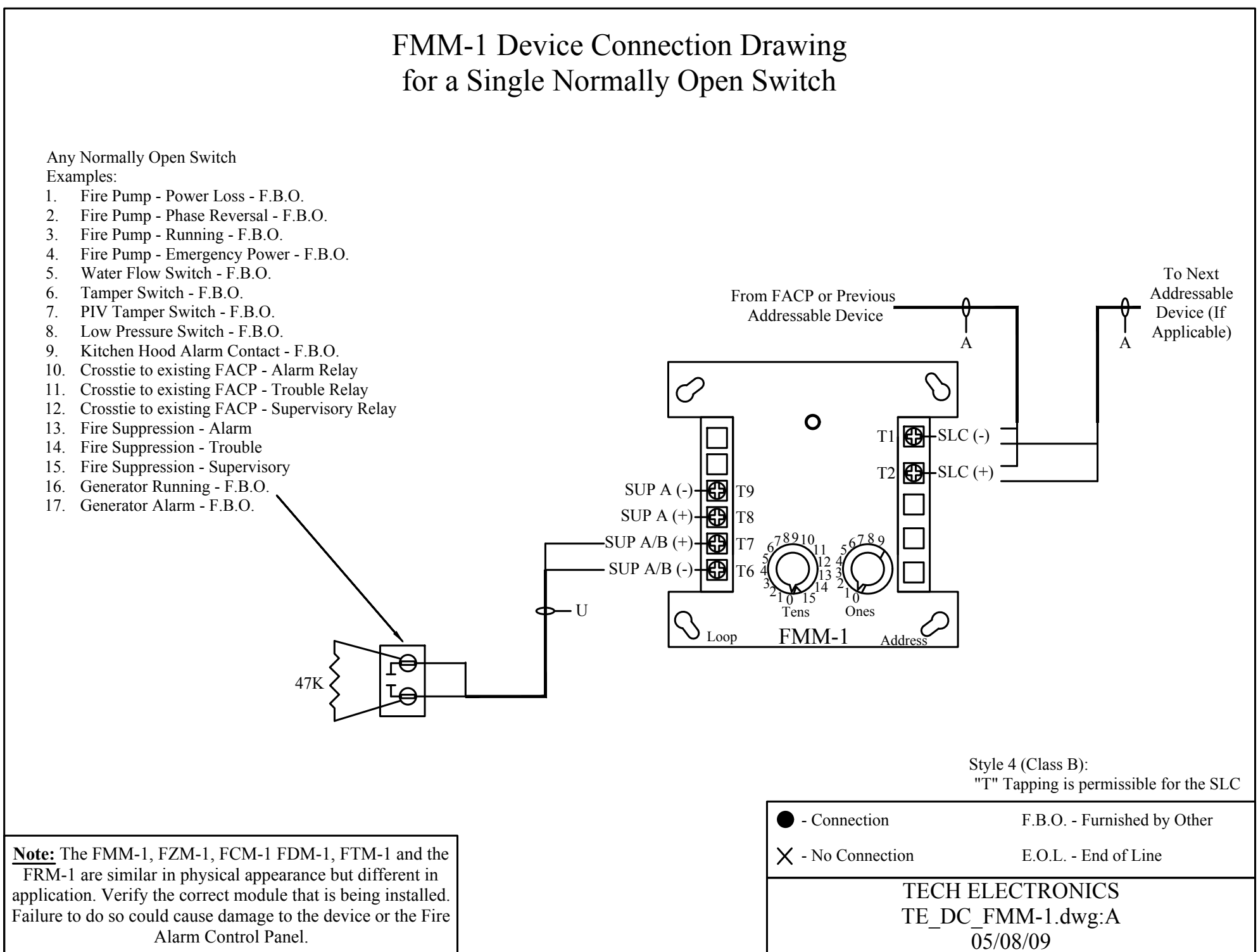
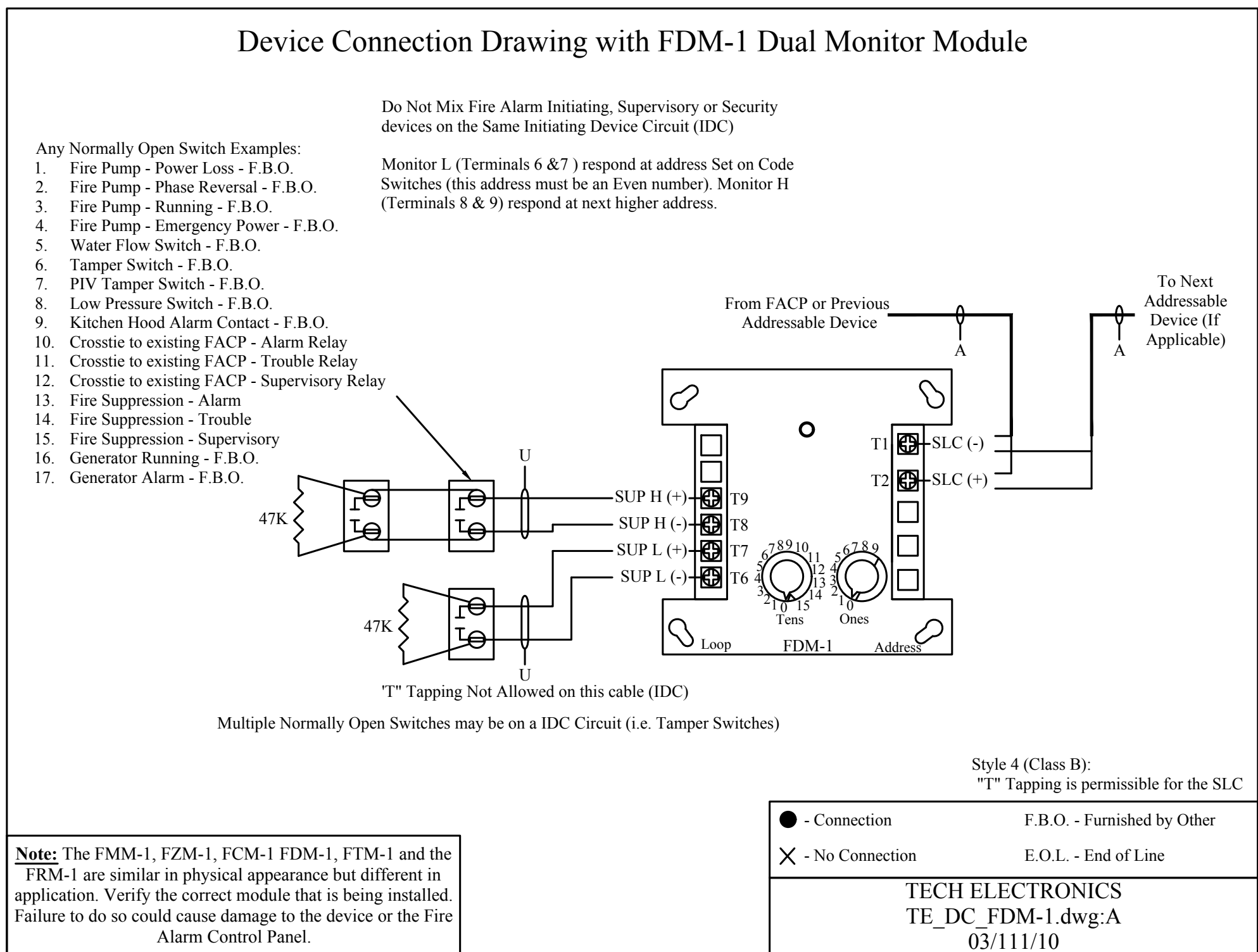
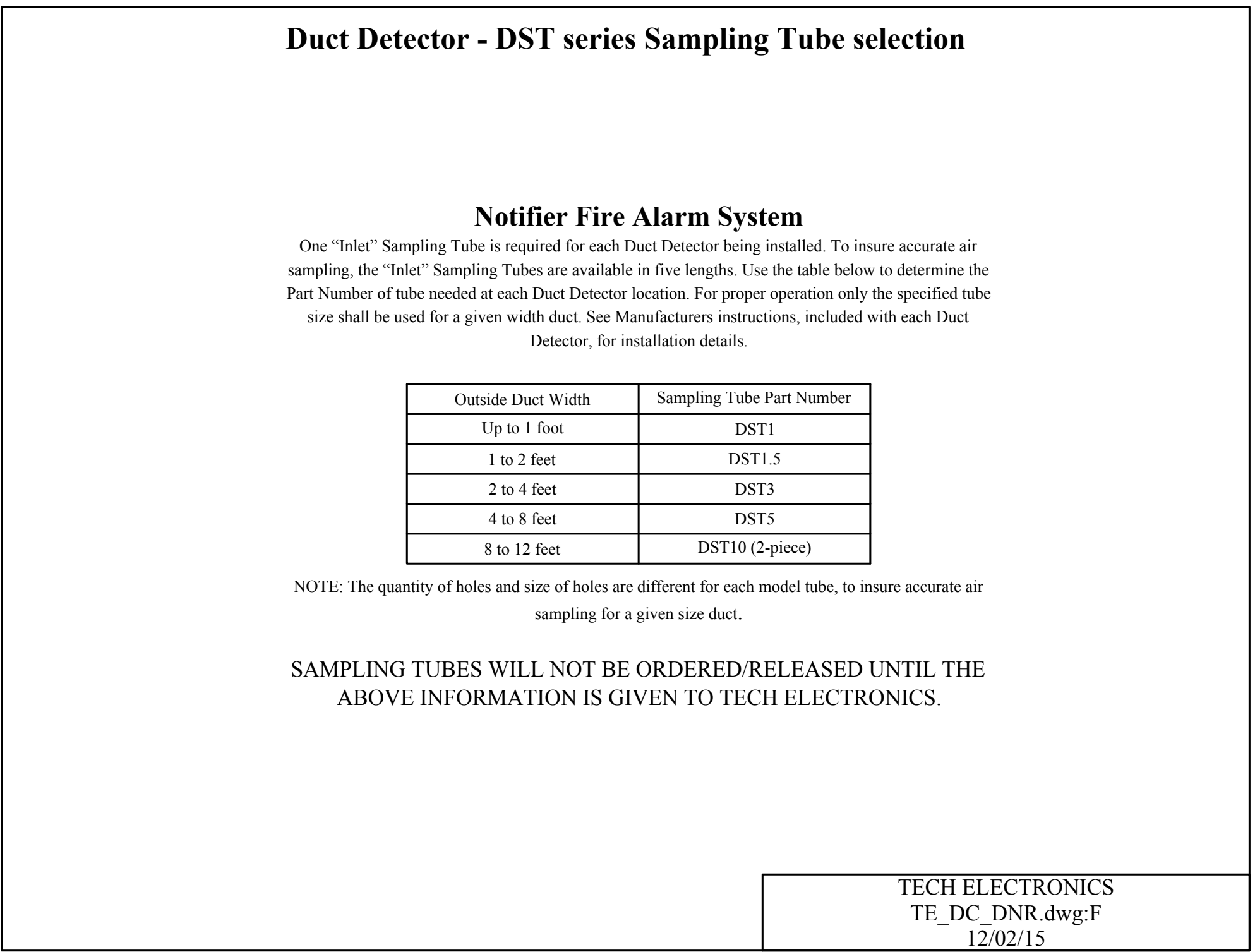
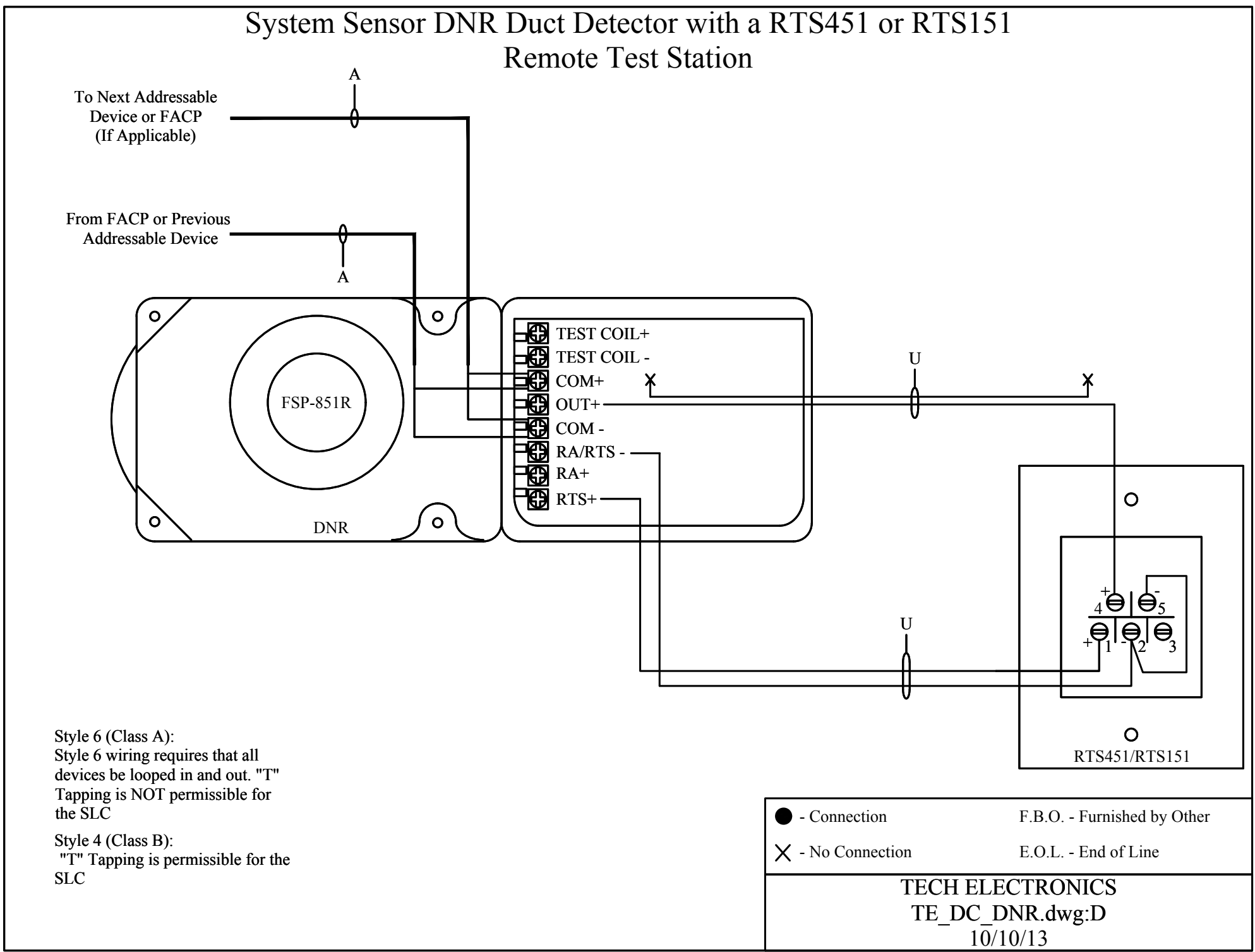
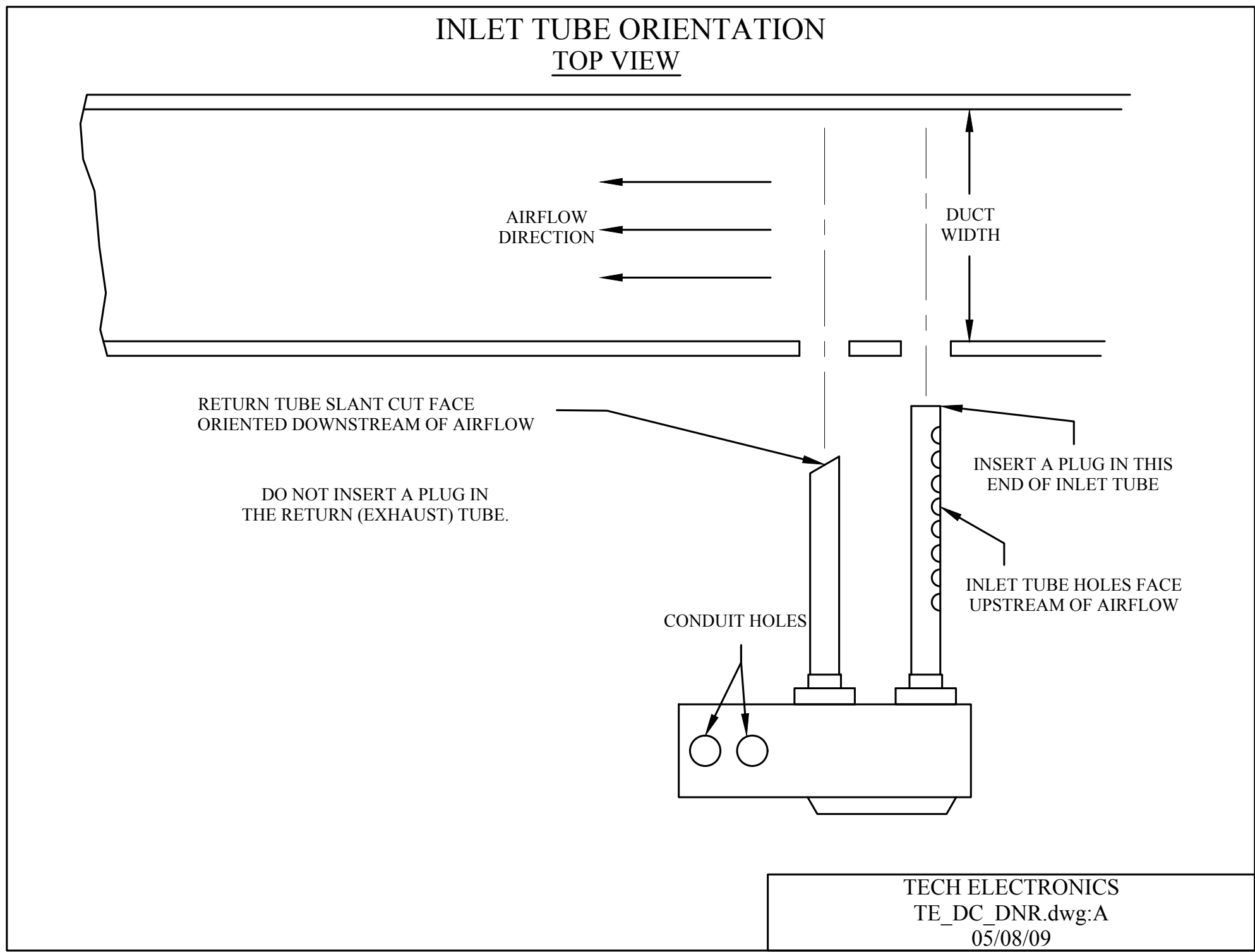
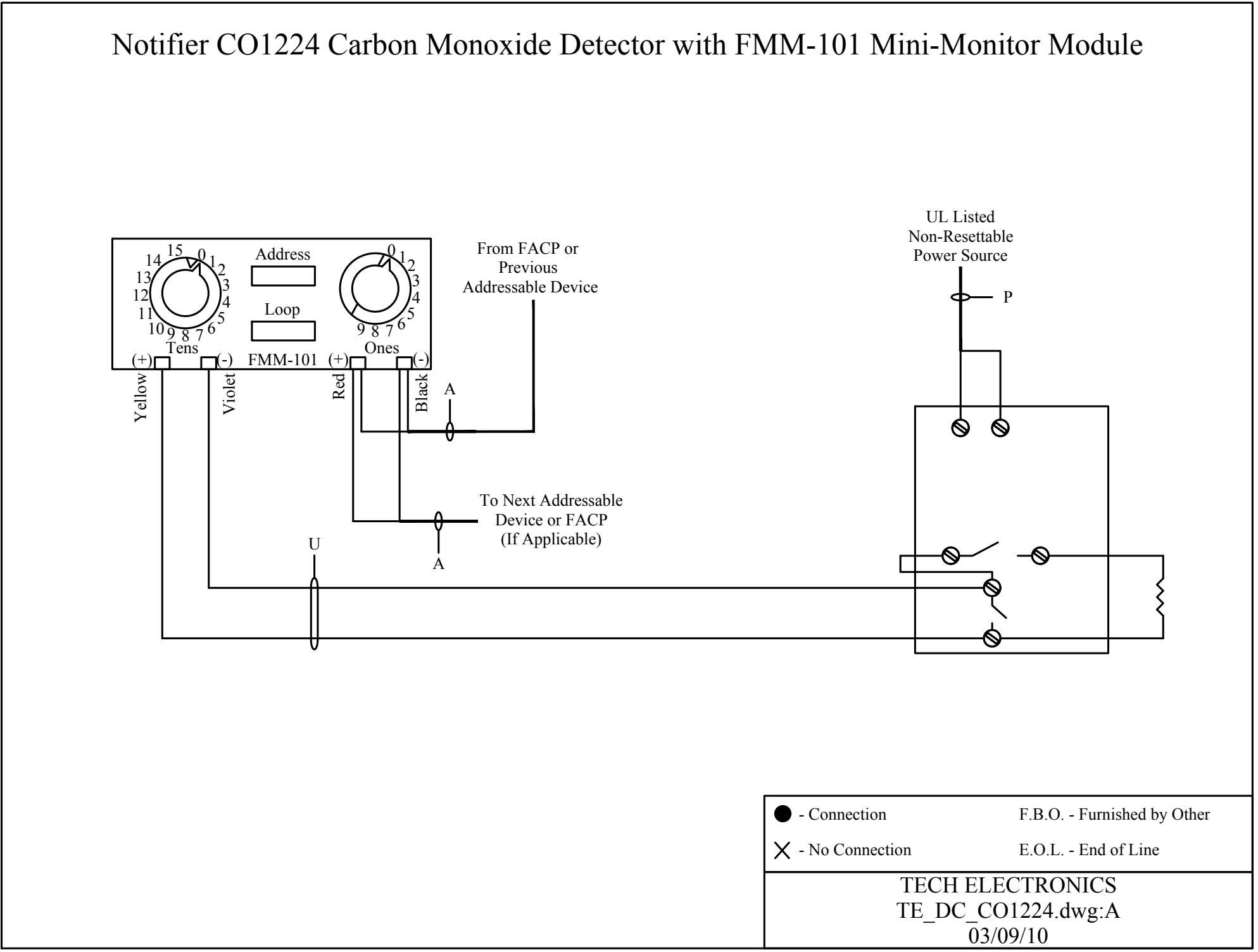
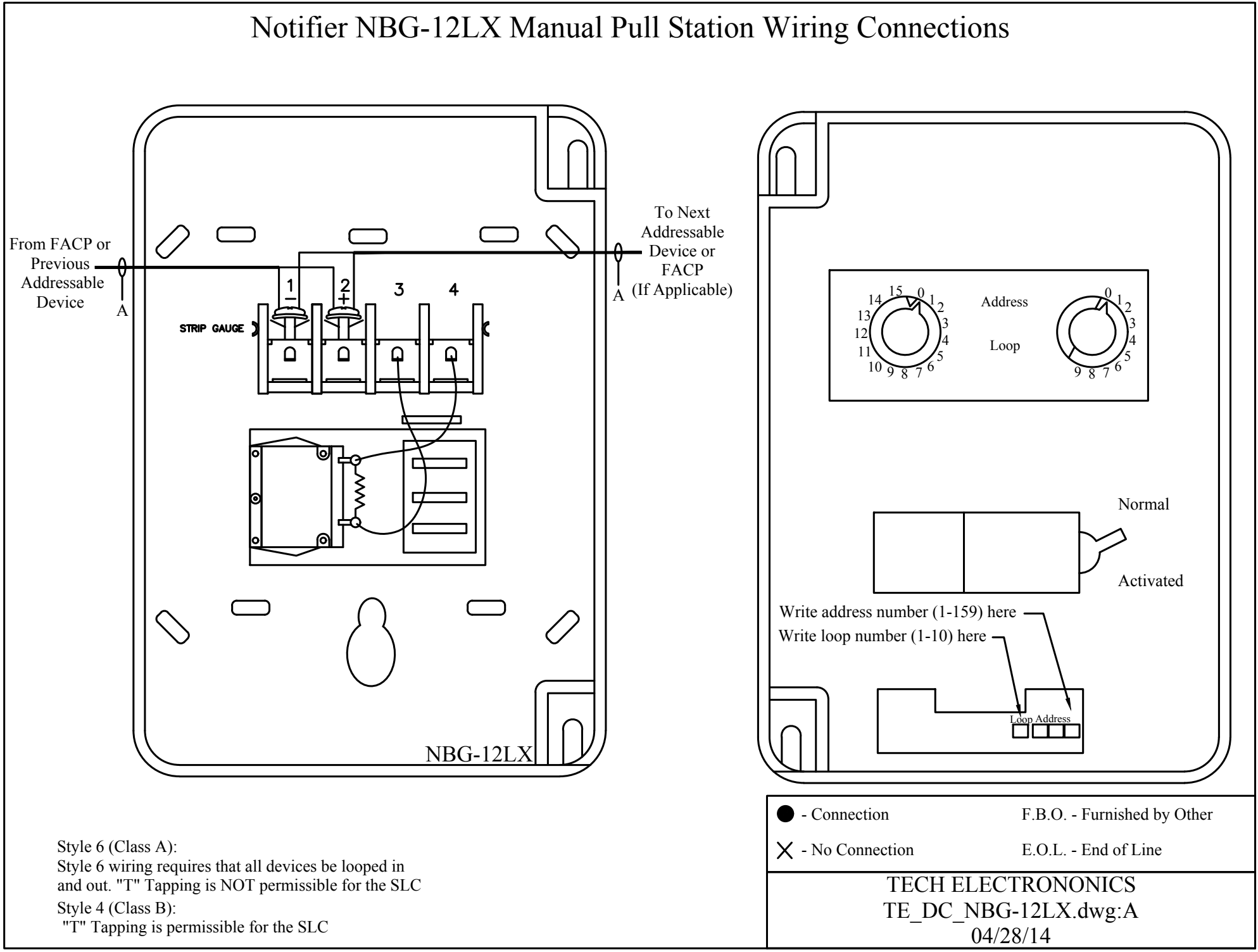
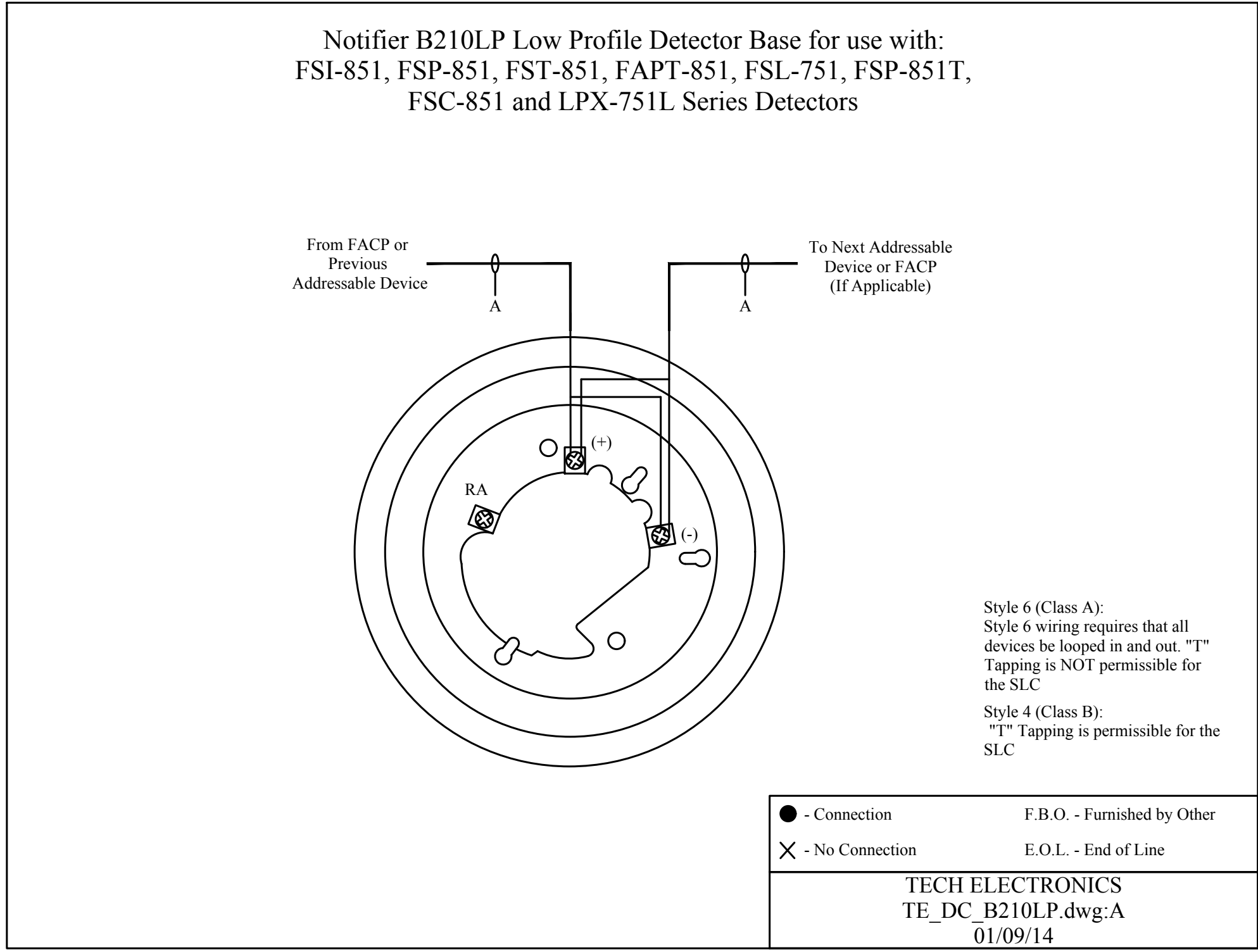
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DRAWING #: FA-DC1

PROJECT JOB#: PJ14608310005

DATE: 11/11/16

ISSUED FOR: INSTALLATION



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