UNIVERSITY OF CENTRAL FLORIDA
Procurement Services
3544 Perseus Loop #160975
Orlando, FL 32816
https://procurement.ucf.edu/solicitations/
Stefanie.DelGiudice@ucf.edu

ADDENDUM I

IMPORTANT DOCUMENT – INVITATION TO BID

ITB NUMBER: 2025-11DC
ITB TITLE: Video Compression and Processing Technologies Distribution System
OPENING DATE & TIME: Friday, May 29, 2026 @ 3:30 PM

ADDENDUM NUMBER: I ADDENDUM DATE: Tuesday, May 19, 2026

Purpose of this addendum is to:

- Answer questions asked during the q/a period.
- Extend the bid deadline to Friday, May 29, 2026 @ 3:30 PM

PLEASE ACKNOWLEDGE RECEIPT OF THIS ADDENDUM AND RETURN IT WITH YOUR OFFER (I.E. UPLOAD TO BONFIRE). FAILURE TO SIGN AND RETURN WITH YOUR OFFER COULD RESULT IN REJECTION OF YOUR OFFER.

_____	_____
PROPOSERS SIGNATURE	PRINT OR TYPE PROPOSER'S NAME
_____	_____
COMPANY NAME	EMAIL ADDRESS

1. Supplier Question:

   Can I please get copies of the AutoCAD designs for current design and proposed new equipment refresh design.

   UCF Answer:

   Yes. See attached Attachment A.

2. Supplier Question:

   Is there a scope of work?

   UCF Answer:

   Yes. See attached Attachment B.

3. Supplier Question:

   Can you elaborate on what the deliverables are for Engineering Services: Pre-planning and wiring detail documentation?

   UCF Answer:

   Former engineer retired but provided drawings for the proposed new setup, as attached with this distribution. Plans need to be verified and reviewed and modified if necessary, during the pre-planning stage, with updated AutoCAD or other appropriate design software drawings and provided copies of files for future reference and in-house update.

4. Supplier Question:

   What are the demark points that we are responsible for? In other words, are we doing only the inter-wiring of the listed equipment or is this to be integrated with existing sources and destinations?

   UCF Answer:

   This will be integrated with existing sources and destinations.

5. Supplier Question:

   a. Are you asking us to connect to existing infrastructure?

      UCF Answer:

      Yes.

   b. Or, will there be someone from UCF to provide those connections?

      UCF Answer:

      No, WUCF will not be providing any necessary connections needed for this project. WUCF will facilitate any tertiary unforeseeable connectivity that me be needed for any outside project connectivity but may be assumed.

6. Supplier Question:

   Are we responsible for wiring Ethernet cables or anything else besides SDI and ASI cables? Please provide details.

   UCF Answer:

   Yes on Ethernet cables, SDI and ASI cables.

7. Supplier Question:

   Are materials defined as coax cable, BNC connectors, Ethernet cable and connectors, rack screws, wire ties/Velcro strips & wire labels?

   UCF Answer:

   Yes and ASI cables.

8. Supplier Question:

   Is the material only for interconnecting the listed equipment or also to connect to existing infrastructure?

   UCF Answer:

   Also connecting to existing infrastructure. Cables labeled each end.

9. Supplier Question:

   Engineering Services ask for a per-day cost, but Lodging Expenses and Per-Diem expenses appear to be lump sum numbers. They really should either all be per-day or lump sum.

   UCF Answer:

   Lump Sum is fine.

10. Supplier Question:

    a. Are you using ROVI currently?

       UCF Answer:

       WTLG is WUCF is not. WUCF will be changing to ROVI as this Harmonic only accepts one input.

    b. Do you have the PMCP interface license that will transfer forward? UCF Answer:

       UCF Answer:

       WTGL does and WUCF will be purchasing separately to provide for installation.

    c. Is it under current support?

       UCF Answer:

       WTGL Yes

11. Supplier Question:

    Would you consider other PSIP options?

    UCF Answer:

    No

12. Supplier Question:

    a. Where do you need the Distribution Amplifier for this system?

       UCF Answer:

       See drawing: TV TECHCORE ASI AIRCHAIN - POST HARMONIC REFRESH. See Attachment A.

    b. How does it fit into your workflow?

       UCF Answer:

       See drawing: TV TECHCORE ASI AIRCHAIN - POST HARMONIC REFRESH. See Attachment A.

13. Supplier Question:

    Do you have a DASDEC with EAS-NET License?

    UCF Answer:

    Yes Primary Online and Offline Spare

14. Supplier Question:

    Nevion Virtuoso, are you planning on using these as your Automatic Change Over Switch to Primary Backup XOS?

    UCF Answer:

    Yes, see drawing: TV TECHCORE ASI AIRCHAIN AFTER HARMONIC REFRESH PDF. See Attachment A.

15. Supplier Question:

    What is your need for the second Virtuoso?

    UCF Answer:

    Yes, see drawing: TV TECHCORE ASI AIRCHAIN AFTER HARMONIC REFRESH PDF. See Attachment A.

16. Supplier Question:

    How many ASI and IP outputs are required from the XOS?

    UCF Answer:

    We have 4 ASI outputs and 2 IP outputs currently.

17. Supplier Question:

    Do you have a separate channel share service outside of the 1.0 mux?

    UCF Answer:

    WUCF and WTGL are channel share partners. WUCF broadcasts one channel 1080i and four channels 480i. WTGL broadcast one channel 720p.

18. Supplier Question:

    a. There is a 10G High Bit-Rate Accelerator HW module spec'd in the Virtuoso unit. How will this be used?

       UCF Answer:

       WUCF currently does not use 10G in terms of ethernet.

    b. Do you have the 10G network infrastructure in place?

       UCF Answer:

       We have a 1Gb layer 2 network with Cisco 9200 switch. Plan is to future proof potential changes.

19. Supplier Question:

Install question:

Are there duplicate video/audio sources for the new encoders? The idea is to allow both old and new encoders to run in parallel prior to the cutover.

UCF Answer:

Most likely will have to take one current Harmonic chain offline to integrate new Harmonic chain and then complete secondary new Harmonic system chain once the first new chain is completed and on-air.

20. Supplier Question:

Install question:

Are there open NIC ports in the existing network system for the new equipment?

UCF Answer:

There are network port available on a Cisco switch. We do not have Network Interface Card (NIC) ports available. Assume you mean available network ports on a switch, in which case, yes.

21. Supplier Question:

Install question:

a. Will the new equipment all reside in the same rack?

UCF Answer:

Yes, see drawing: TV TECHCORE RACK ELEVATIONS NEW RACKS - POST HARMONIC. See Attachment A.

b. If not, what are the rack locations?

UCF Answer:

N/A

22. Supplier Question:

Install question:

Do you have an existing rack layout drawing?

UCF Answer:

Yes, drawings will be provided with this question/answer distribution. See Attachment A.

23. Supplier Question:

Install question:

Is the wiring through computer floor or overhead cable trays and are the racks we will be installing in directly connected via these cable routes? ?

UCF Answer:

Overhead cable trays and are directly connected. Transmitter is located next to racks. See Attachment C.

24. Supplier Question:

Install question:

What are the cable run lengths from the existing equipment to the new equipment locations? This would be for both video/audio as well as ethernet cabling.

UCF Answer:

See Attachment C.

25. Supplier Question:

Install question:

Please specify the cable sizes and colors that you plan to utilize for this project?

UCF Answer:

- Purple for SDI
- White for ASI, RG59

26. Supplier Question:

Install question:

Are there any plenum cable requirements?

UCF Answer:

No. Wiring limited to overhead racks.

27. Supplier Question:

Install question:

Under engineering services, it is mentioned including an installer and system engineer onsite. Are 2 people required for this install if one is sufficient?

UCF Answer:

The installer and system engineer can be one person if supplier deems requirements are met.

28. Supplier Question:

Invitation to bid paperwork says: *AutoCAD designs for current design and proposed new equipment refresh design will be made available as requested.*

May we please have these AutoCAD designs and new equipment refresh designs (to help us understand workflow)?

UCF Answer:

Yes. See Attachment A.

ADDENDUM I
ATTACHMENT A

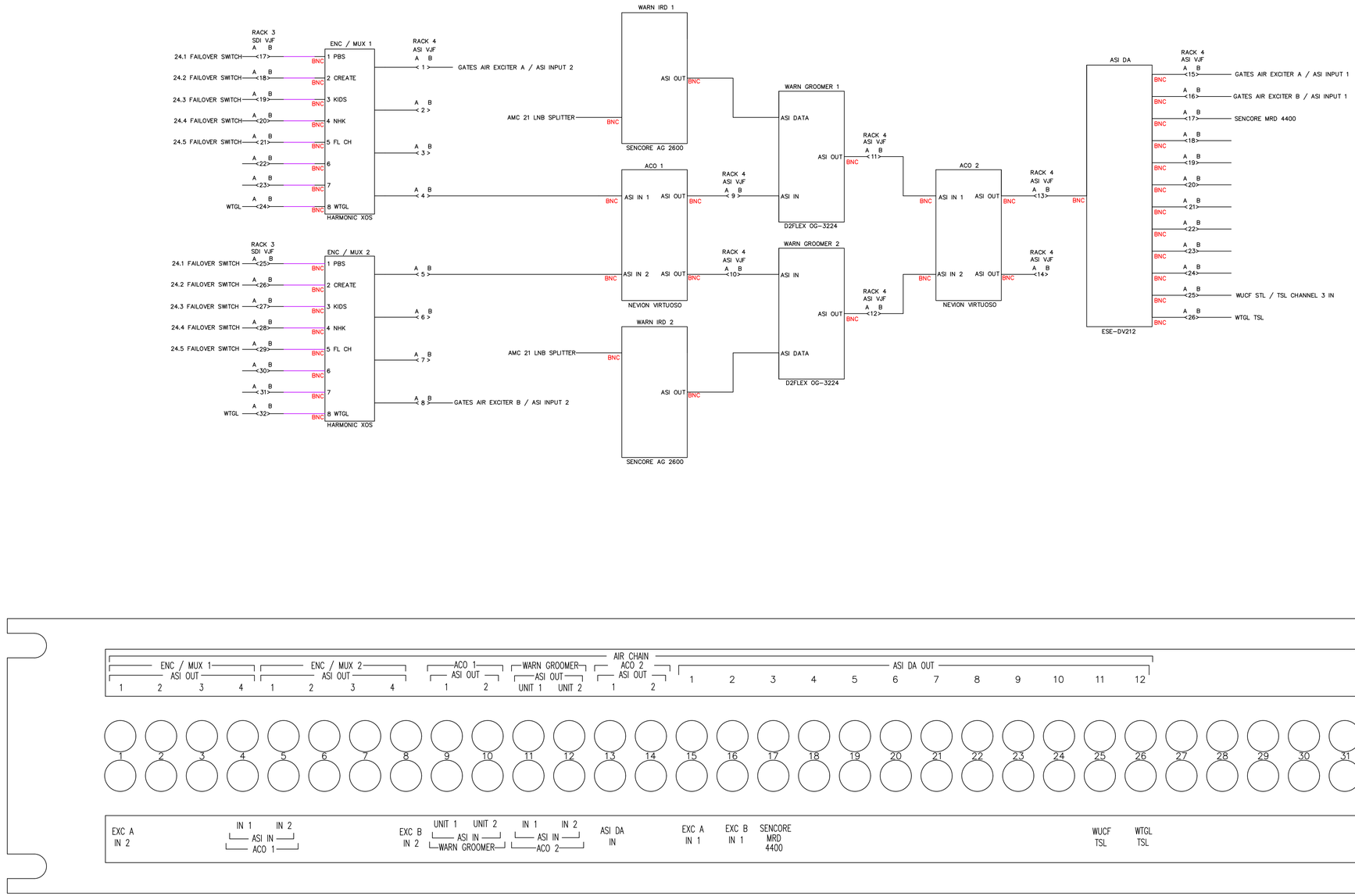
AUTOCAD DESIGNS

ITB 2025-11DC Video Compression and Processing Technologies Distribution System

---

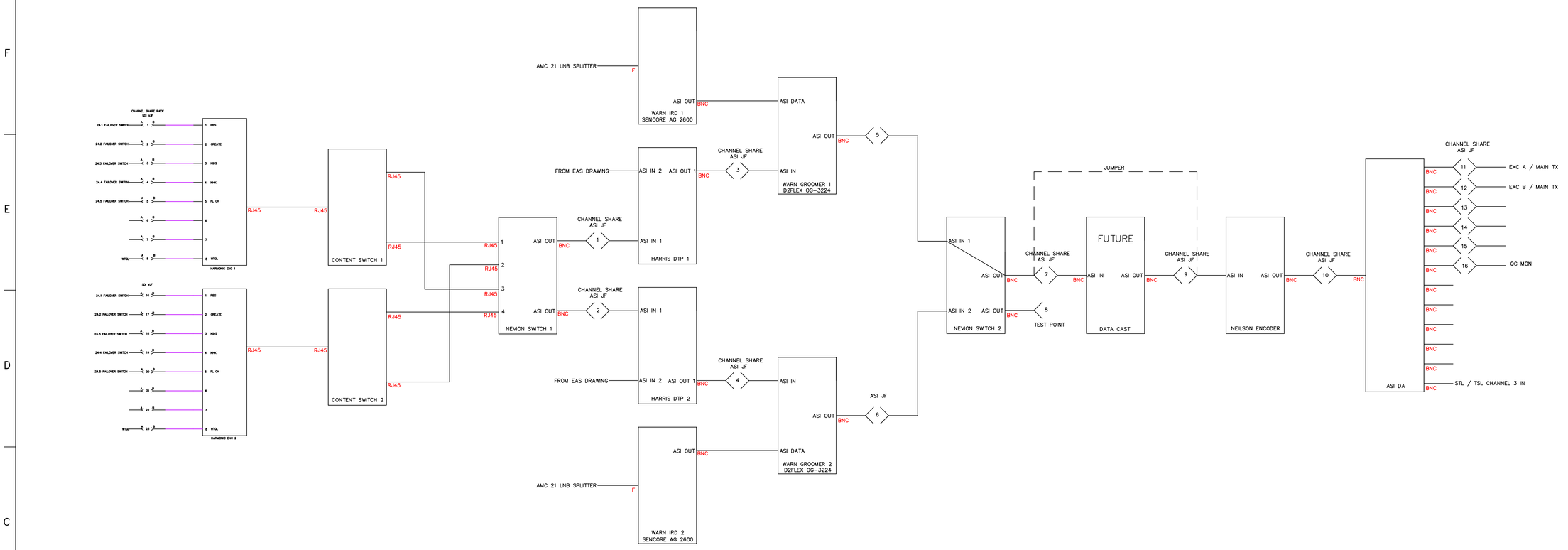
AutoCAD Designs for WUCF TV / University of Central Florida

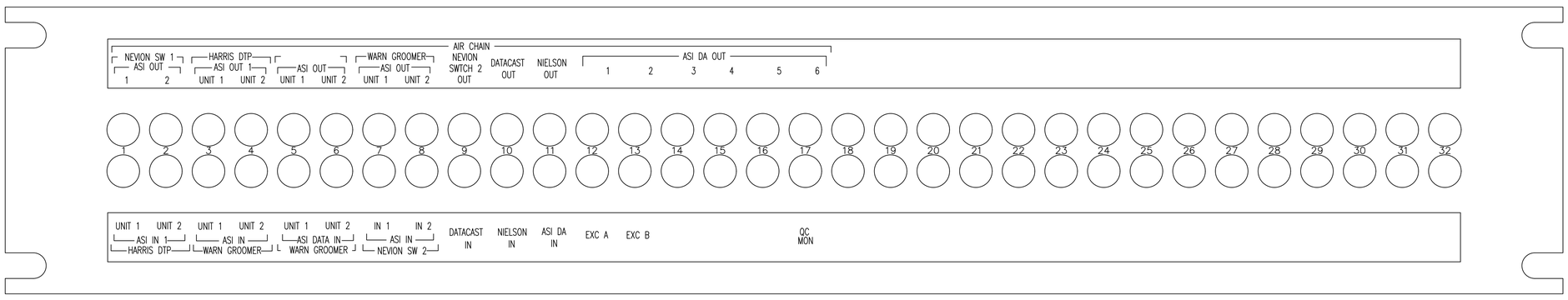
Broadcast Encoding & Transport System Replacement



WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: WUCF / WTGL AIR CHAIN	PROJECT NO. WUCF DRAWING NO. AIR CHAIN

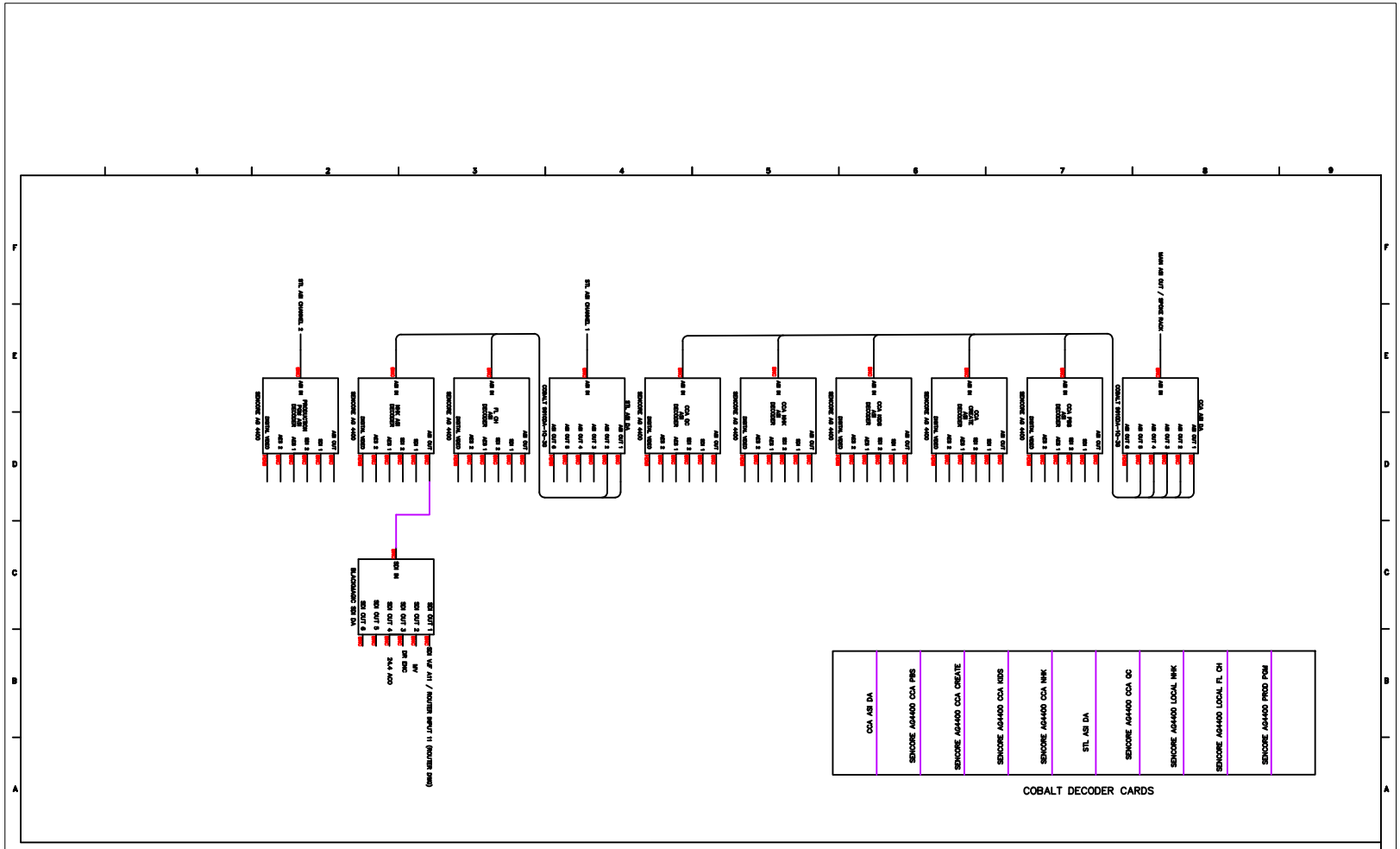
AFTER HARMONIC REFRESH



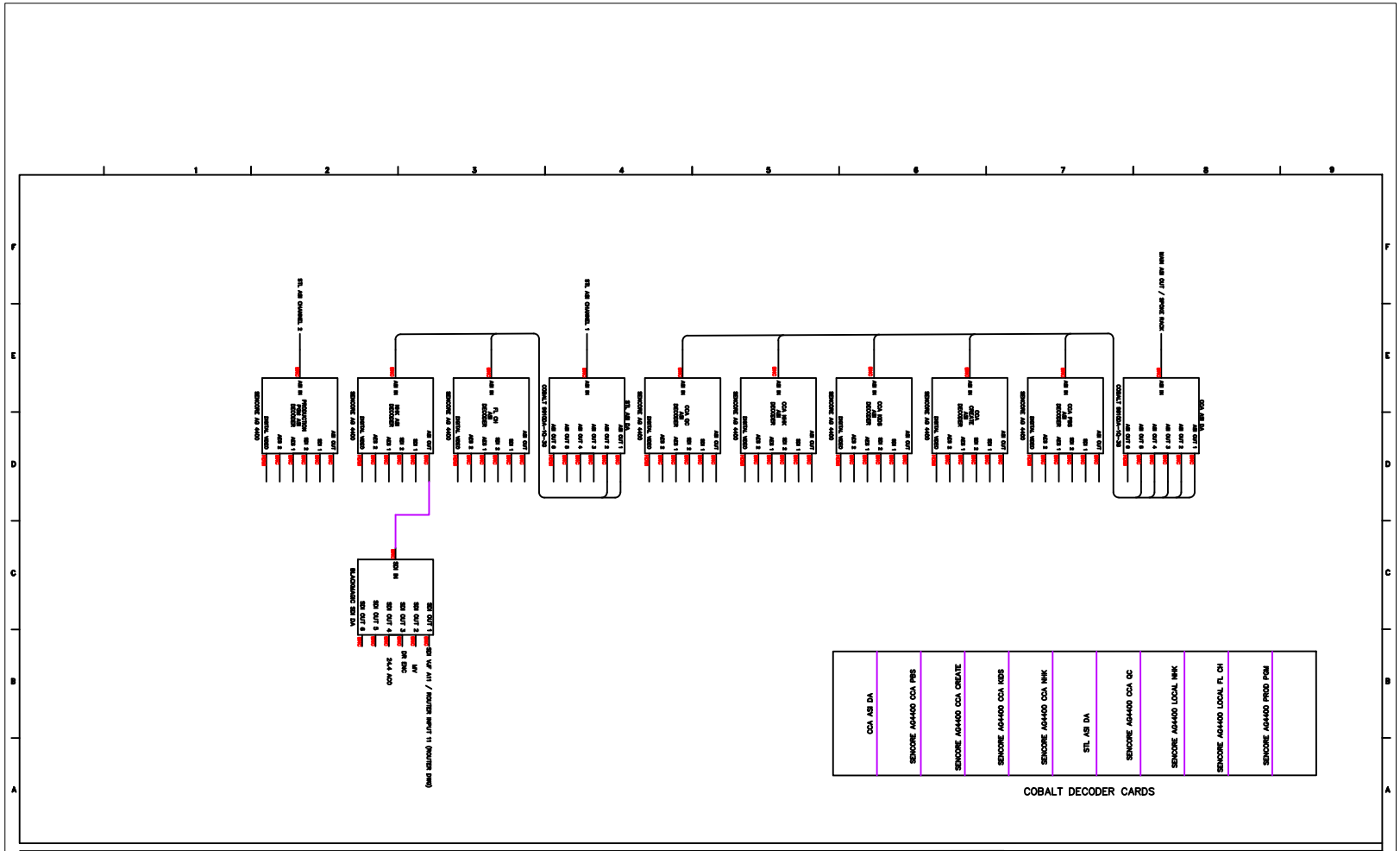


WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: WUCF / WTGL AIR CHAIN	PROJECT NO. WUCF DRAWING NO. AIR CHAIN

CURRENT

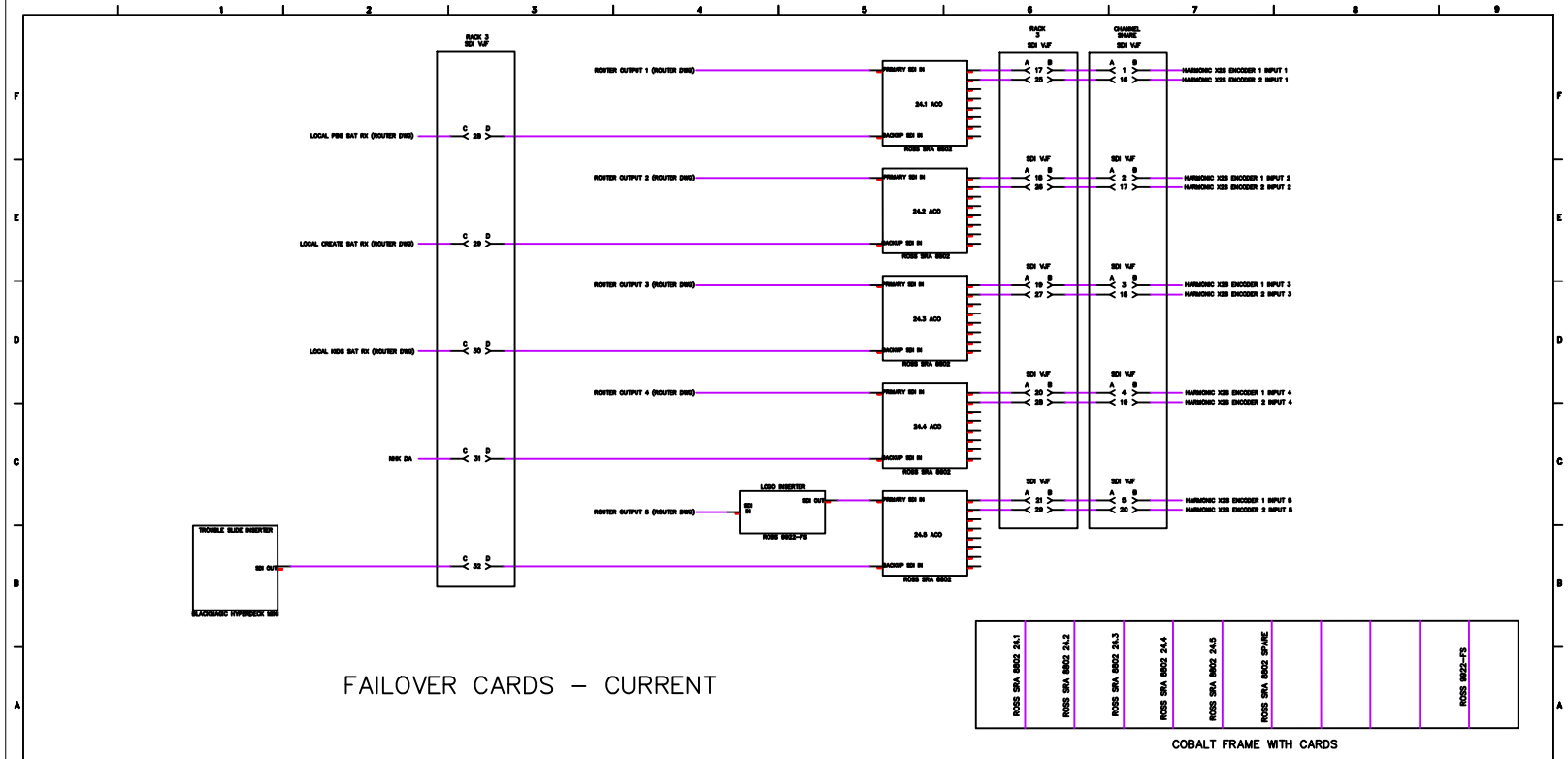


WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: TV TECHCORE COBALT DECODER CARDS	PROJECT NO.: WUCF DRAWING NO.: COBALT DECODER



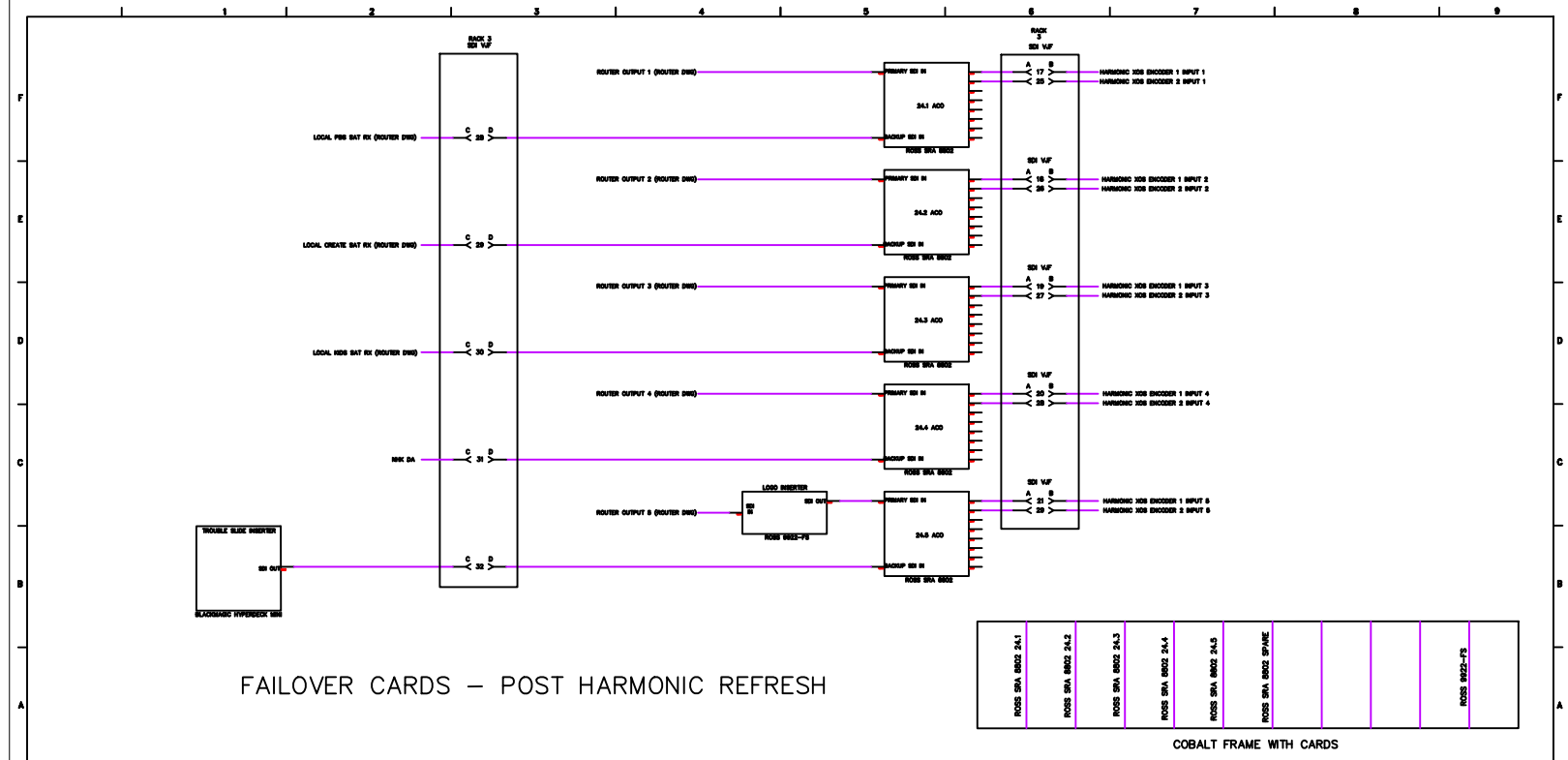
COBALT DECODER CARDS

WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: TV TECHCORE COBALT DECODER CARDS	PROJECT NO.: WUCF DRAWING NO.: COBALT DECODER



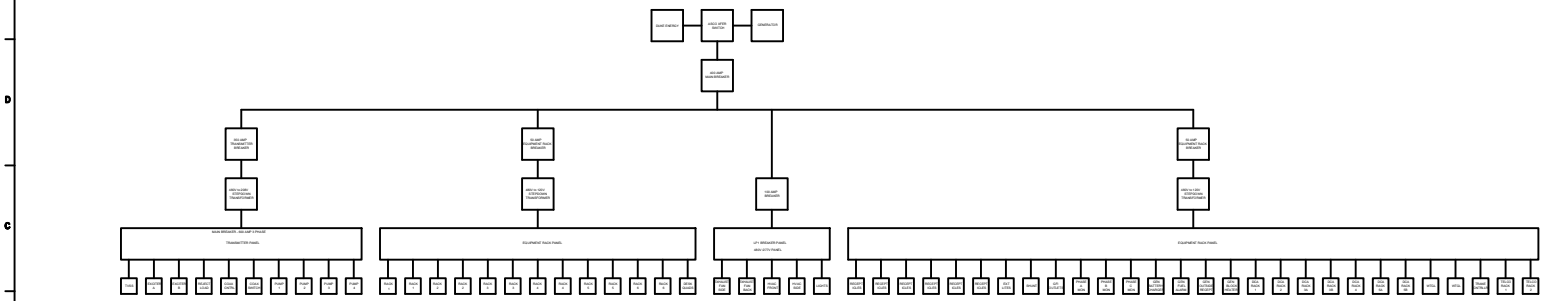
FAILOVER CARDS – CURRENT

WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: TV TECHCORE COBALT FAILOVER CARDS	PROJECT NO.: WUCF DRAWING NO.: COBALT FAILOVER

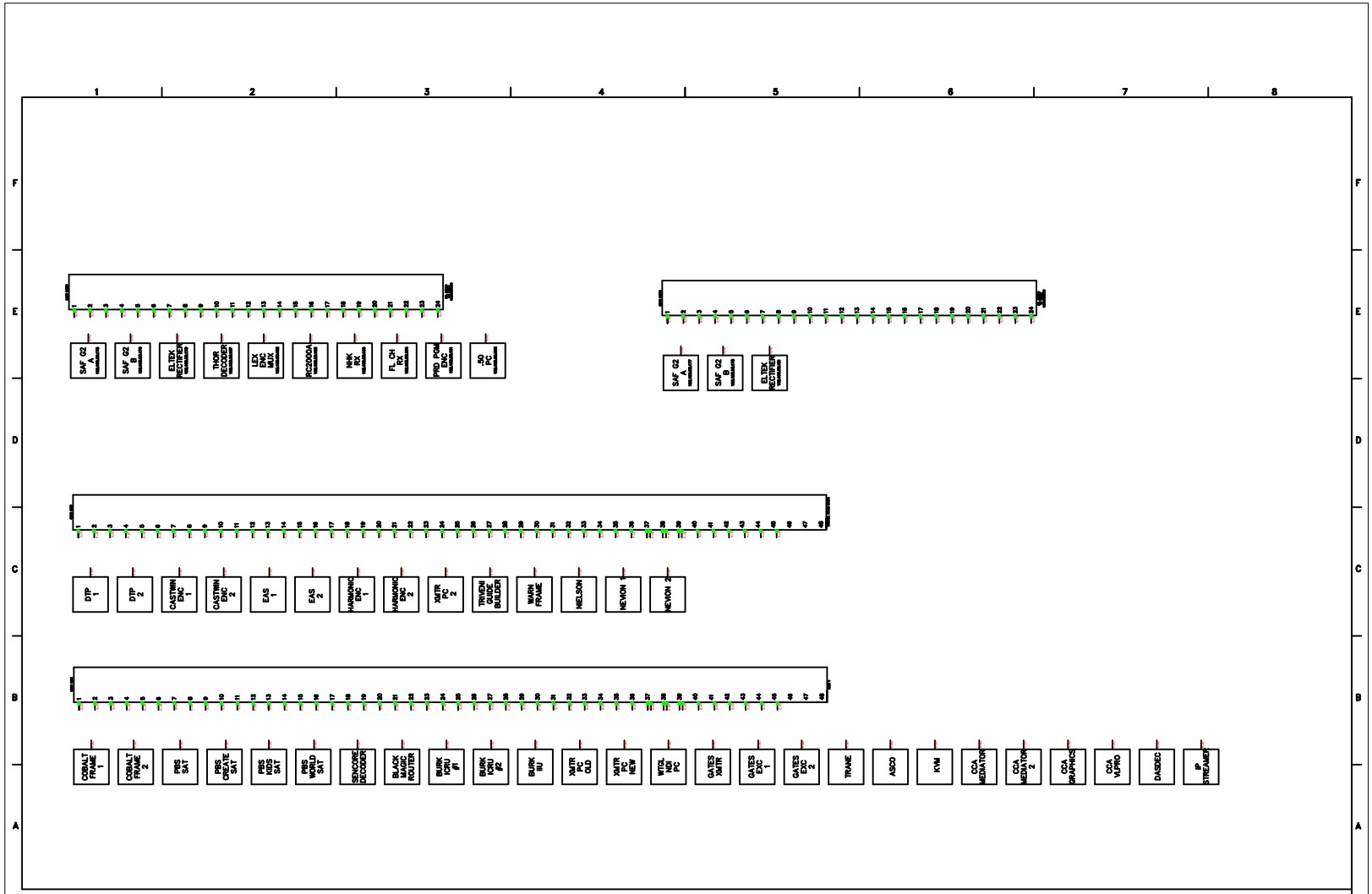


FAILOVER CARDS – POST HARMONIC REFRESH

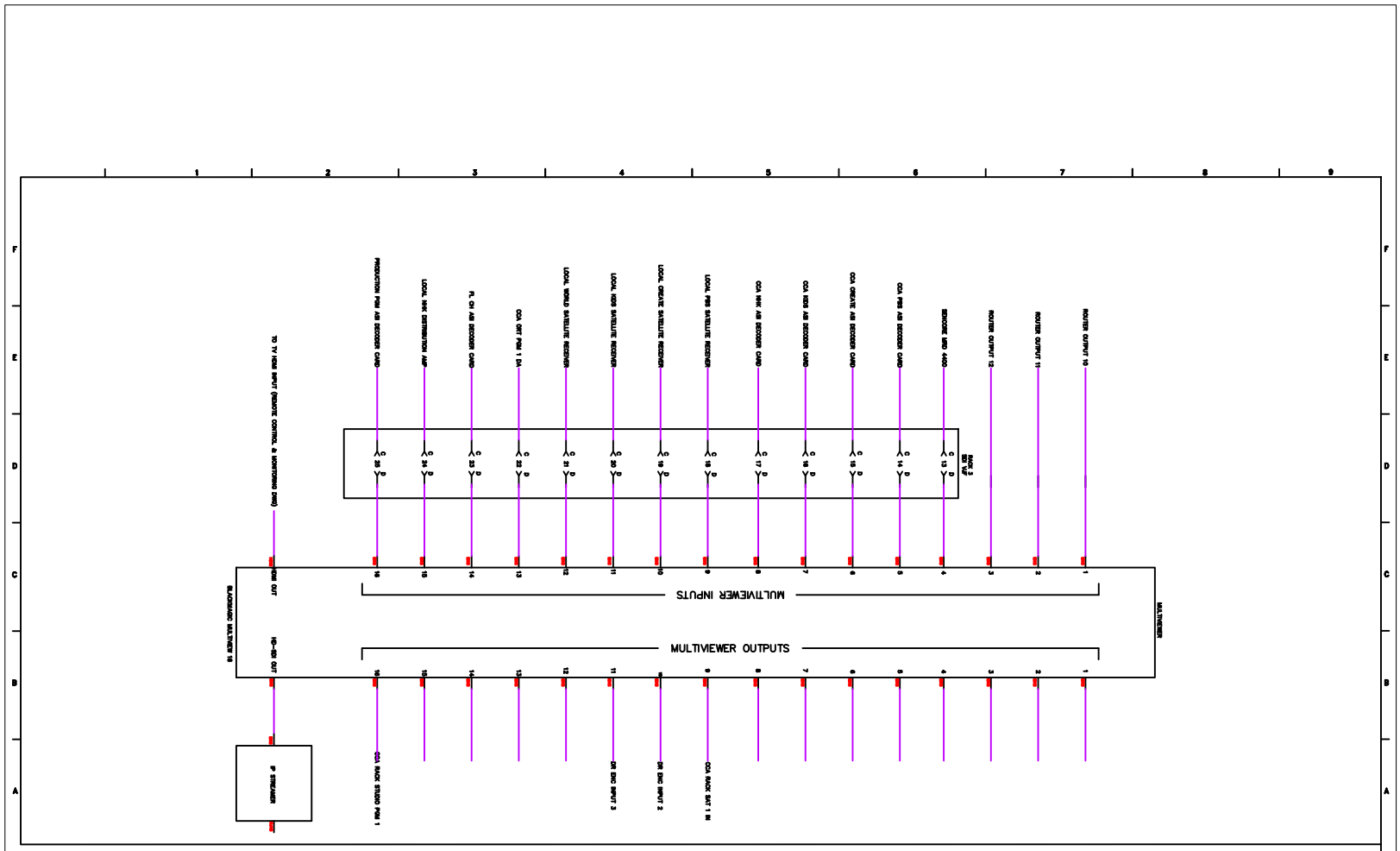
WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: TV TECHCORE COBALT FAILOVER CARDS	PROJECT NO.: WUCF DRAWING NO.: COBALT FAILOVER



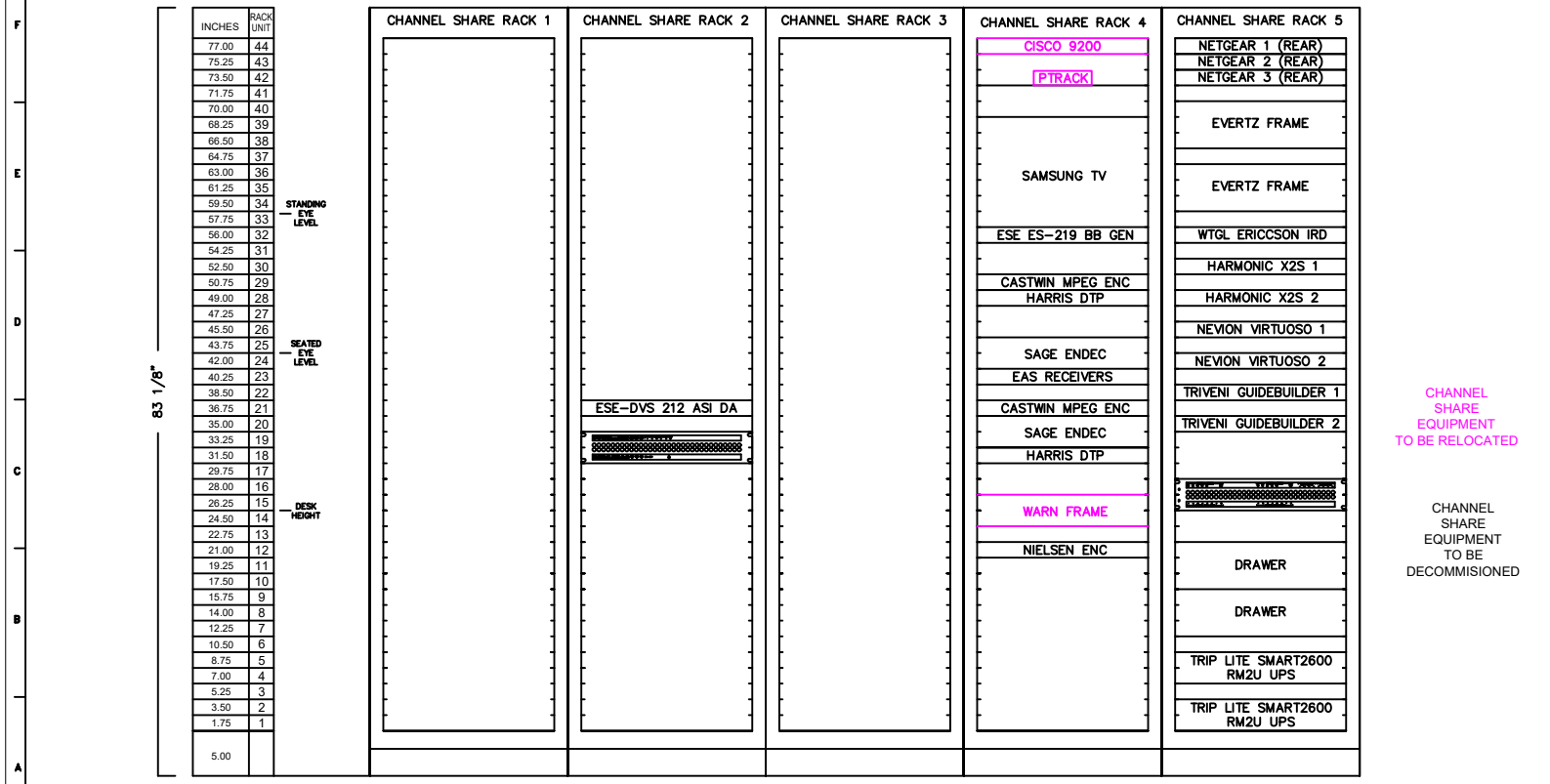
WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: ELECTRICAL	PROJECT NO. WUCF DRAWING NO. ELECTRICAL



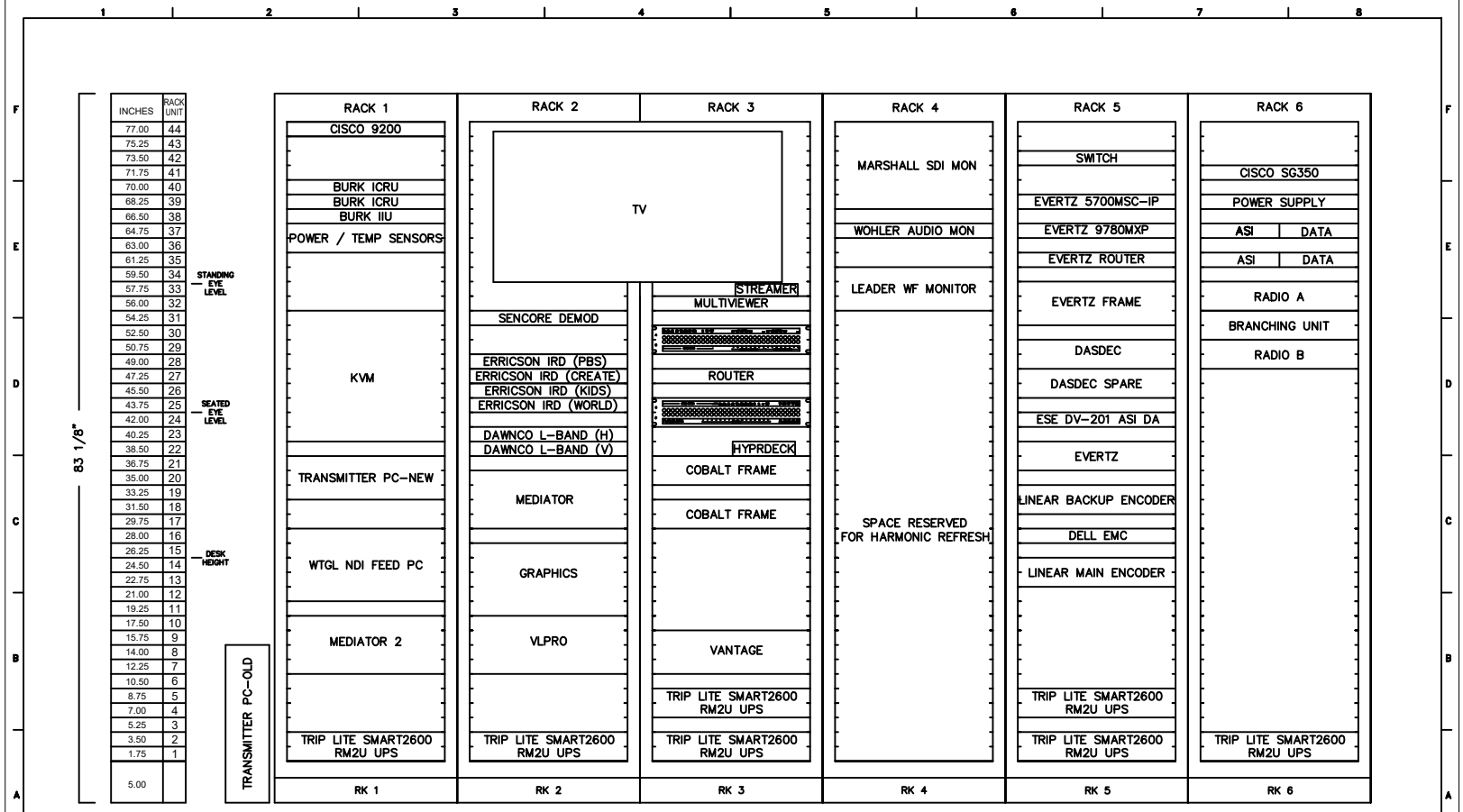
WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: TV TECHCORE NETWORK	PROJECT NO.: WUCF DRAWING NO.: IT SYSTEMS



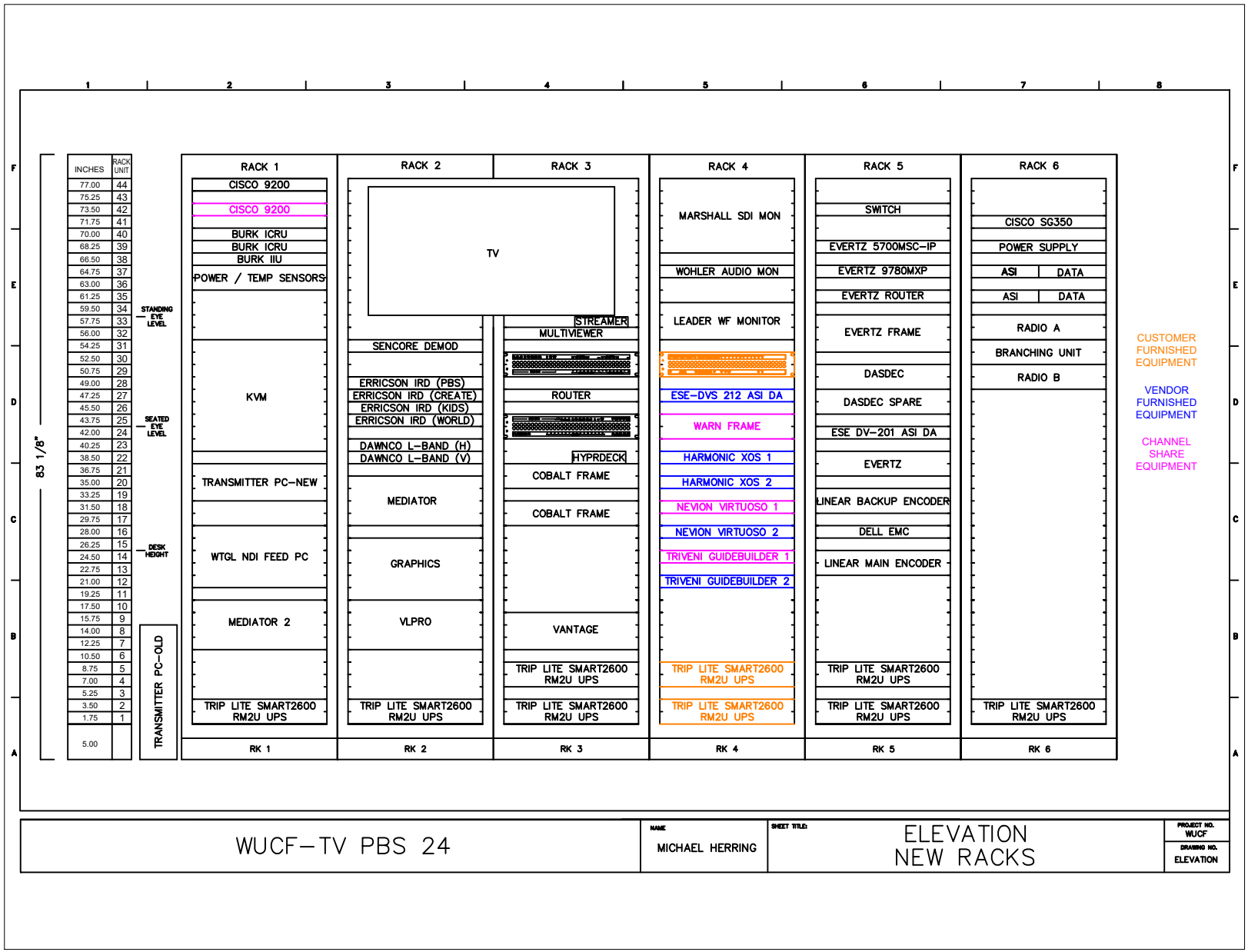
WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: TV TECHCORE BLACKMAGIC MULTIVIEWER	PROJECT NO.: WUCF DRAWING NO.: MULTIVIEWER



WUCF-TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: ELEVATION CHANNEL SHARE RACKS	PROJECT NO. WUCF DRAWING NO. ELEVATION



WUCF-TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: ELEVATION NEW RACKS	PROJECT NO.: WUCF	DRAWING NO.: ELEVATION



INCHES	RACK UNIT
77.00	44
75.25	43
73.50	42
71.75	41
70.00	40
68.25	39
66.50	38
64.75	37
63.00	36
61.25	35
59.50	34
57.75	33
56.00	32
54.25	31
52.50	30
50.75	29
49.00	28
47.25	27
45.50	26
43.75	25
42.00	24
40.25	23
38.50	22
36.75	21
35.00	20
33.25	19
31.50	18
29.75	17
28.00	16
26.25	15
24.50	14
22.75	13
21.00	12
19.25	11
17.50	10
15.75	9
14.00	8
12.25	7
10.50	6
8.75	5
7.00	4
5.25	3
3.50	2
1.75	1
5.00	

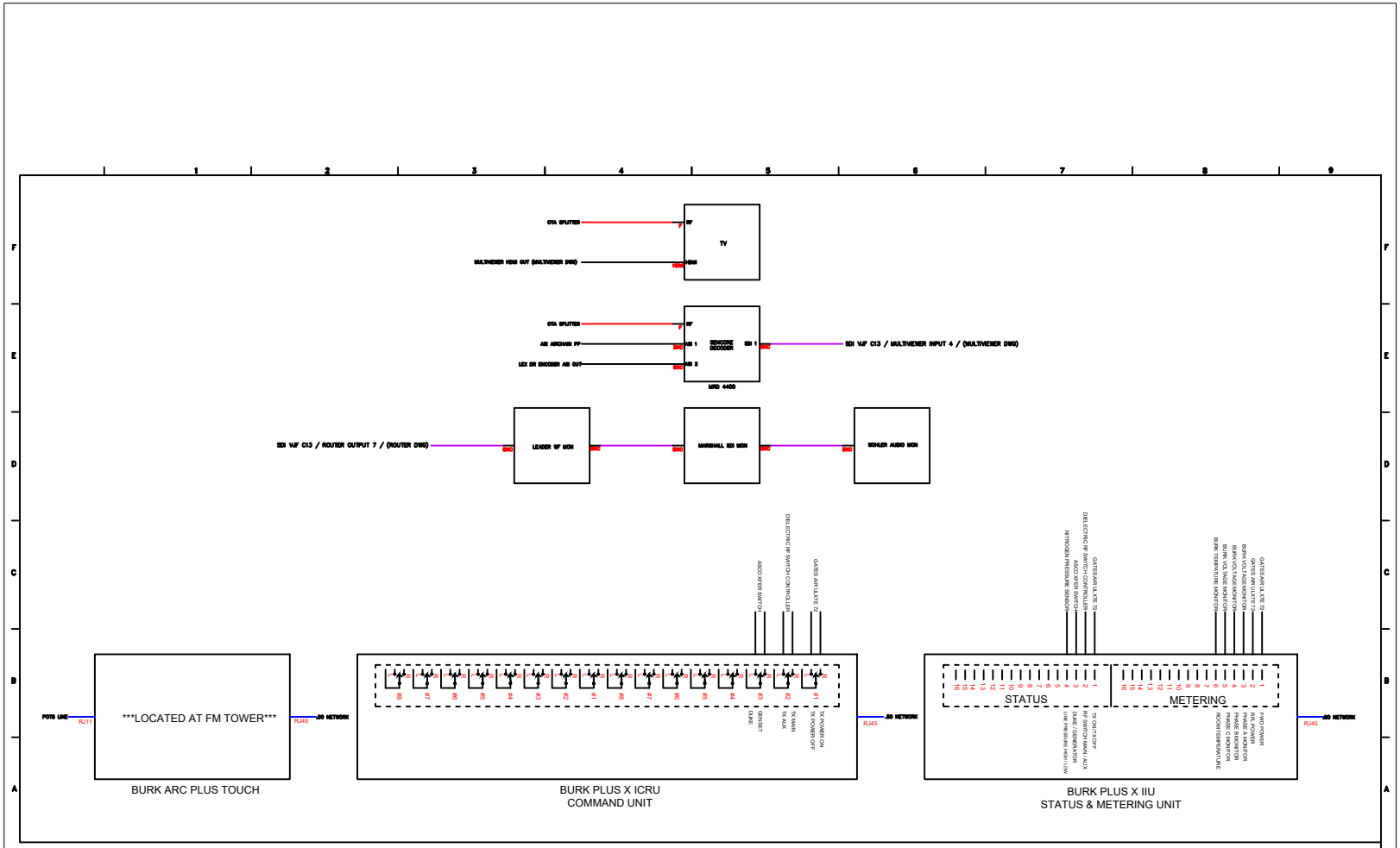
WUCF-TV PBS 24

NAME: MICHAEL HERRING

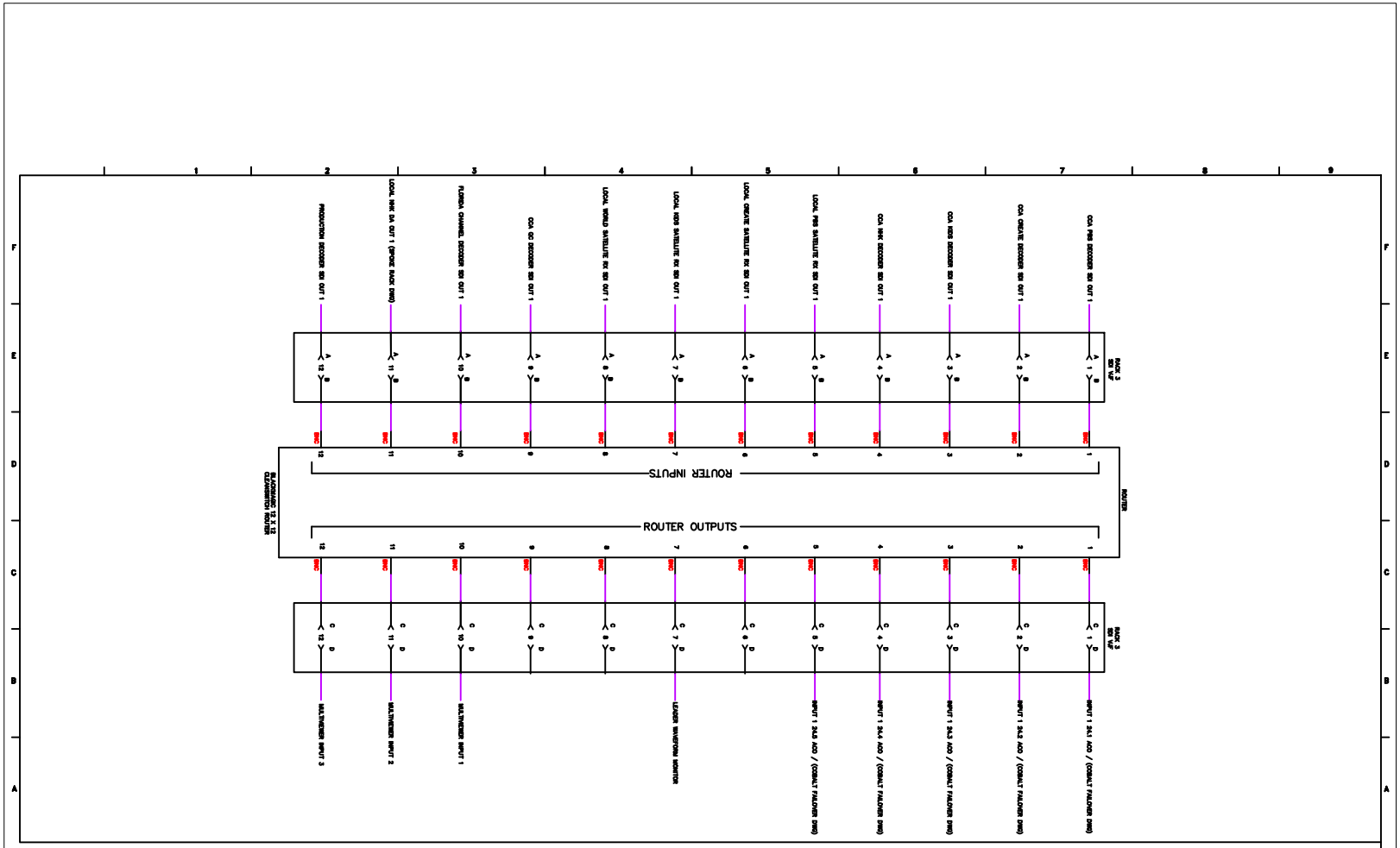
SHEET TITLE: ELEVATION NEW RACKS

PROJECT NO.: WUCF

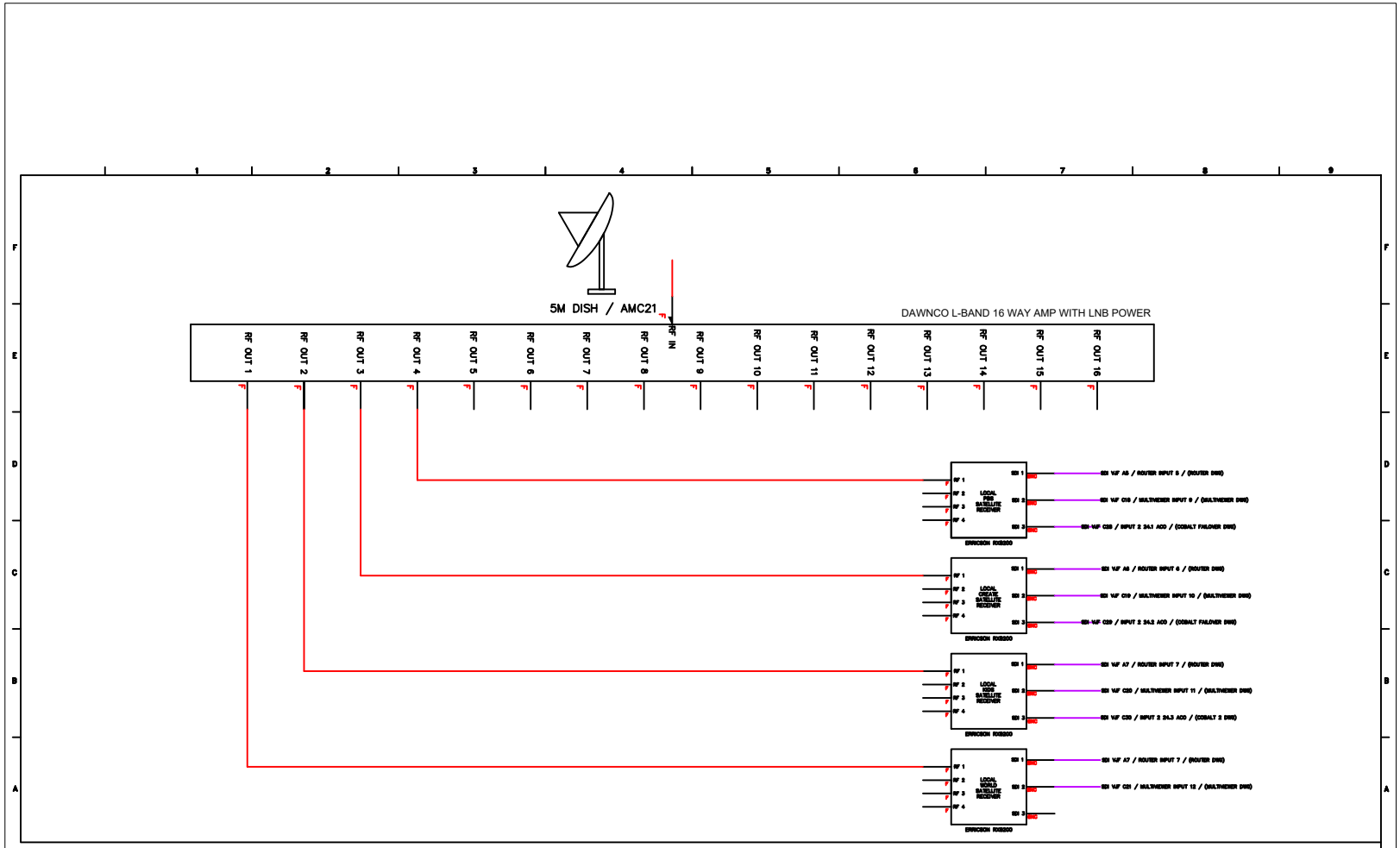
DRAWING NO.: ELEVATION



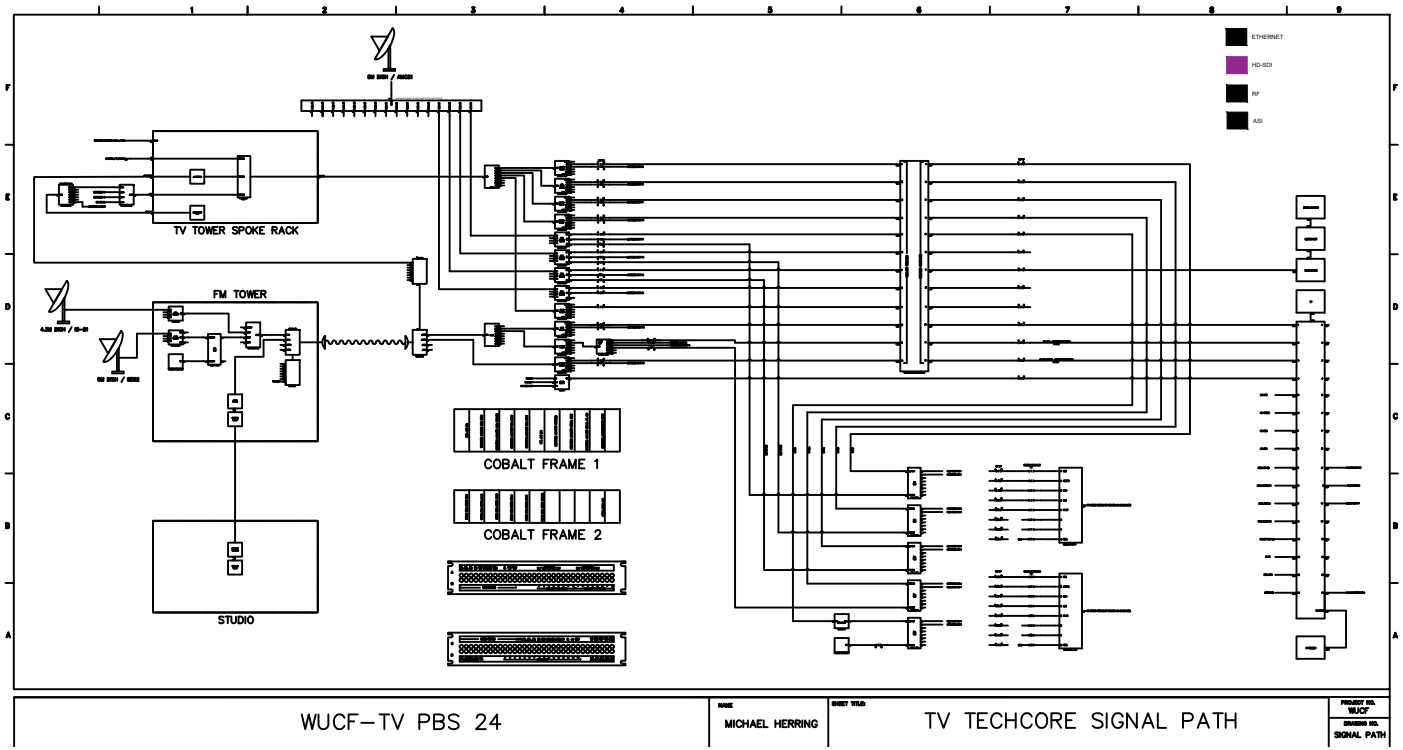
WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: REMOTE CONTROL & MONITORING	PROJECT NO.: WUCF DRAWING NO.: REMOTE

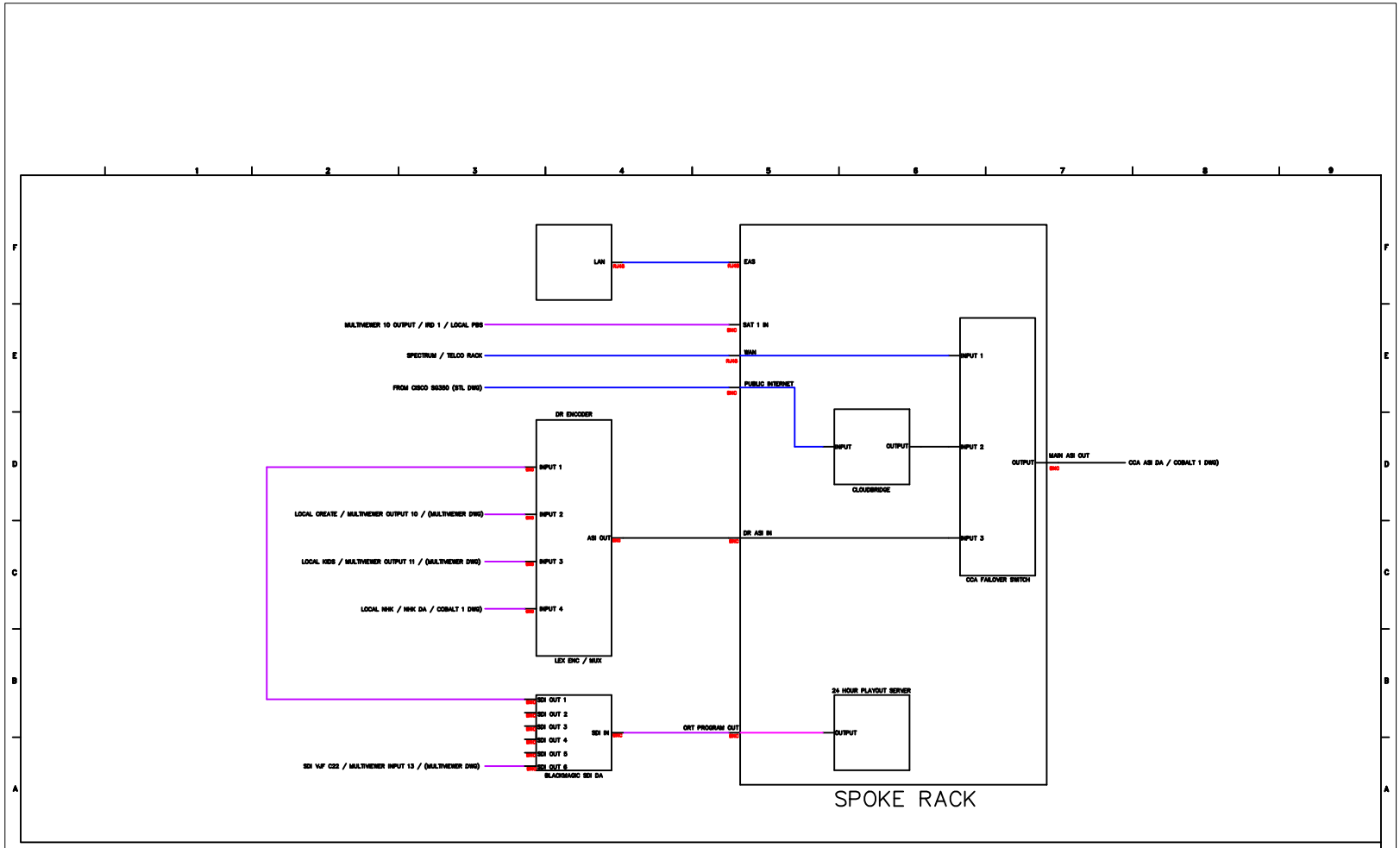


WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: TV TECHCORE ROUTER	PROJECT NO.: WUCF DRAWING NO.: ROUTER

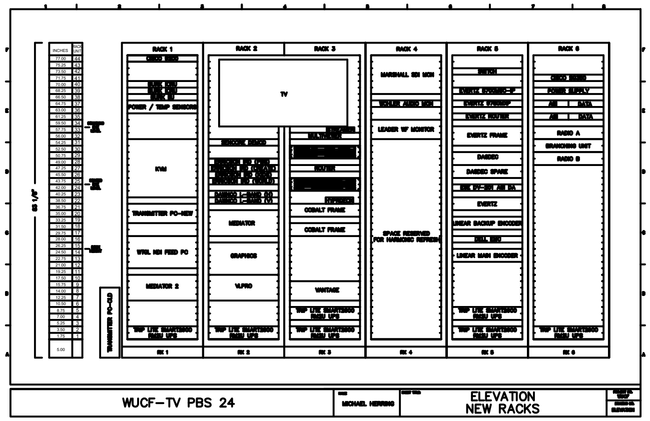


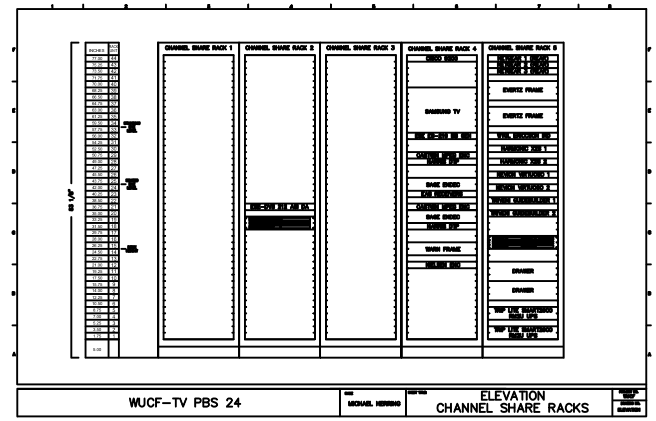
WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: TV TECHCORE SATELLITE	PROJECT NO.: WUCF DRAWING NO.: SATELLITE

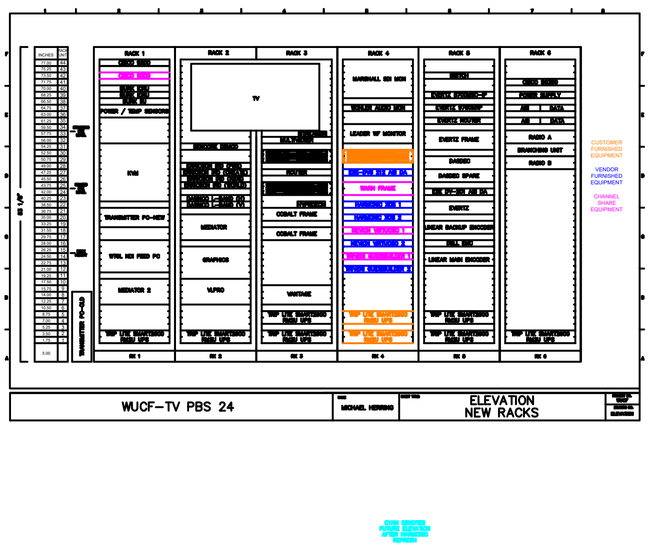

ETHERNET
HD-SDI
RF
ASI
TV TOWER SPOKE RACK
FM TOWER
COBALT FRAME 1
COBALT FRAME 2
STUDIO
WUCF-TV PBS 24
MICHAEL HERRING
TV TECHCORE SIGNAL PATH
WUCF
SIGNAL PATH

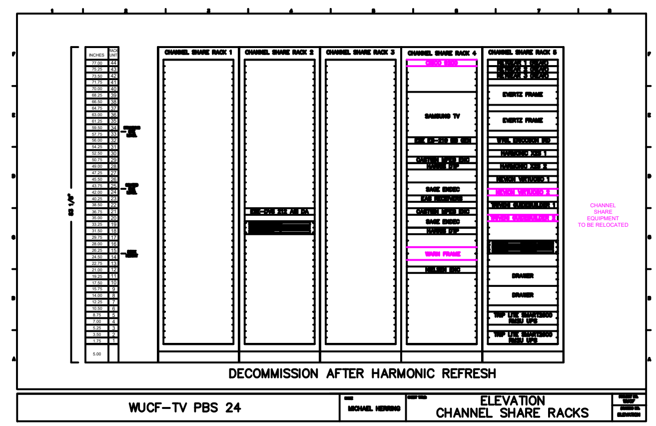


WUCF–TV PBS 24	NAME: MICHAEL HERRING	SHEET TITLE: TV TECHCORE SPOKE RACK	PROJECT NO.: WUCF DRAWING NO.: SPOKE RACK


WUCF–TV PBS 24
ELEVATION
NEW RACKS


WUCF–TV PBS 24
ELEVATION
CHANNEL SHARE RACKS


CUSTOMER FURNISHED EQUIPMENT
VENDOR FURNISHED EQUIPMENT
CHANNEL SHARE EQUIPMENT
WUCF–TV PBS 24
ELEVATION
NEW RACKS


CHANNEL SHARE EQUIPMENT TO BE RELOCATED
DECOMMISSION AFTER HARMONIC REFRESH
WUCF–TV PBS 24
ELEVATION
CHANNEL SHARE RACKS

ADDENDUM I
ATTACHMENT B

SCOPE OF WORK

ITB 2025-11DC Video Compression and Processing Technologies Distribution System

---

Scope of Work (SOW) for WUCF TV / University of Central Florida

Broadcast Encoding & Transport System Replacement

---

1. Project Overview

This project will replace the station's existing ATSC encoding and transport infrastructure with a fully integrated system based on:

- **Harmonic XOS V2 Encoding Platform**
- **Nevion Virtuoso Transport Stream Processing**
- **Triveni Digital GuideBuilder PSIP System (Primary & Backup)**
- Associated distribution, monitoring, and support components

The upgraded system will support **high-quality HD and SD broadcast services, ATSC-compliant transport streams, PSIP generation, and regulatory requirements (EAS, CALM Act, Nielsen watermarking)**.

---

2. Project Objectives

- Replace legacy encoders with **Harmonic XOS software-based encoding platform**
- Support **2 HD + 4 SD program streams**
- Enable **statistical multiplexing and ATSC transport stream generation**
- Provide **fully redundant PSIP generation (Primary/Backup)**
- Improve compliance with:
    - ATSC standards

    - CALM Act (loudness control)
    - EAS requirements
- Enable monitoring and failover via Nevion Virtuoso
- Deliver a **reliable, redundant 24/7 broadcast chain**

---

3. Detailed Scope of Work

3.1 System Supply (No Substitutions) See Complete list of System Requirements on Invitation to Bid (ITB) on pages 4-7 of the ITB document.

3.1.1 Harmonic Encoding System

Supply and deploy **2 complete Harmonic XOS V2 Encoding Systems**, each including:

- HPE DL360 Gen11 1RU server (dual PSU)
- OCP Quad 1Gb RJ45 network interface
- Dual 8-port SDI/ASI cards
- BNC adapter kit

Licensing to include:

- 2x HD service encoding licenses
- 4x SD service encoding licenses
- Dolby audio support (per service):
    - Dolby E, Digital, Digital+, AC-4, Atmos
- Dolby audio upmixing (1 service)
- EAS processing (1 channel)
- Automatic Loudness Control (6 services)
- Nielsen watermarking (4 services)
- TS multiplexing with PSI/SI and statistical multiplexing (6 services)

3.1.2 Nevion Virtuoso System

Supply **2 fully redundant Nevion Virtuoso nodes**, including:

- 1RU 6-slot media node appliances (redundant PSU)
- TS/IP and ASI I/O licensing (8 streams per node)
- Automatic input switching (2 instances)
- Advanced TS monitoring (4 licenses)
- 10G Ethernet SFP+ optics
- High Bit-Rate Accelerator modules (2 units)

Capabilities include:

- Transport stream routing and switching
- Input failover (alarm-based switching)
- ETSI TR 101 290 monitoring (priority 1 and advanced)
- SDI/ASI/IP gateway functionality

3.1.3 Triveni Digital PSIP System

Primary System

- GuideBuilder RE 1RU fault-tolerant server (RAID-1, dual PSU)
- Supports 3+ major channel numbers
- Includes:
    - Transport stream carouseling outputs (Harmonic integration)
    - Rovi (Gracenote) guide data integration (subscription by station)

Backup System

- Identical GuideBuilder RE backup server
- Full license replication and redundancy

Both systems include:

- License migration from existing platform

- PMCP interface module (if required)
- Dongle return compliance for legacy system

3.1.4 Distribution System

- 2x ESE 1x12 3G/HD/SD reclocking distribution amplifiers
- Used for SDI signal fanout and redundancy paths

3.1.5 Support Contracts

- Harmonic: 84-month support (60 + 24 extension, if extension available)
- Nevion: 84-month 24/7 premium support (60 + 24 extension, if extension available)
- Triveni: 84-month Enhanced Service Support Plan (ESSP) (60 + 24 extension, if extension available)

3.2 System Design & Engineering

Engineering services shall include:

- System architecture design:
    - SDI/ASI/IP signal flow
    - Encoding and multiplexing topology
    - PSIP insertion and redundancy
- Rack elevation drawings
- Wiring documentation and labeling standards

3.3 Installation & Integration

Physical Installation

- Rack and mount all supplied equipment
- Install SDI, ASI, and IP interconnects
- Install distribution amplifiers and cabling

- Ensure proper grounding and power redundancy

System Integration

- Configure Harmonic encoders:
    - HD/SD encoding profiles
    - Bitrate allocation and statmux pools
    - Dolby audio and loudness control
    - EAS insertion
    - Nielsen watermarking
- Configure Nevion Virtuoso:
    - TS monitoring
    - Automatic input switching
    - Transport stream routing
    - IP/ASI conversion
- Configure Triveni GuideBuilder:
    - PSIP tables (VCT, EIT, STT, etc.)
    - Channel mapping
    - Rovi/Gracenote integration
    - Redundant failover operation

3.4 Migration & Cutover

- Develop detailed cutover plan
- Conduct parallel operation with legacy system
- Validate:
    - Transport stream integrity
    - PSIP accuracy
    - RF output compliance
- Execute controlled cutover with minimal downtime

3.5 Testing & Commissioning

Pre-Commissioning

- Signal verification (SDI/ASI/IP)
- Encoder output validation

System Testing

- End-to-end transport stream validation
- ATSC compliance checks
- Dolby audio verification
- Loudness compliance testing (CALM Act)

Nevion Monitoring Validation

- TR 101 290 alarms
- Input failover testing

PSIP Validation

- Channel lineup accuracy
- Guide data population
- Receiver compatibility testing

3.6 Harmonic Commissioning Service

- **Onsite** commissioning
- Includes:
    - System optimization
    - Workflow validation
    - Operational handoff support

3.7 Training

Provide training for:

- Engineering staff (system configuration, troubleshooting)
- Operations staff (basic monitoring and alarms)

3.8 Documentation

Deliver:

- As-built system diagrams
- Configuration backups
- SOPs for:
    - Encoder operation
    - TS monitoring
    - PSIP management
- Support escalation procedures

---

4. Deliverables

- Fully operational encoding and transport system
- Redundant PSIP generation (Primary/Backup)
- Configured monitoring and failover system
- Complete documentation package
- Training completion
- Acceptance test report

---

5. Project Timeline (Typical)

Phase	**Milestone**
Kickoff	Requirements validation
Engineering	Design approval
Install	Equipment deployment

Integration	System configuration complete
Testing	Acceptance testing complete
Go-Live	Cutover complete
Closeout	Documentation & sign-off

---

6. Roles & Responsibilities

Vendor / Integrator

- Provide all specified equipment (no substitutions)
- Perform installation, integration, and testing
- Deliver documentation and training
- Coordinate commissioning with Harmonic

Station

- Provide rack space, power, and cooling
- Provide network infrastructure
- Procure Rovi/Gracenote subscription
- Participate in testing and acceptance
- Ensure legacy license transfer readiness

---

7. Assumptions

- Existing RF chain and transmitter remain unchanged
- SDI/ASI infrastructure is available and serviceable
- IP network supports required bandwidth
- Station maintains regulatory compliance obligations

---

8. Constraints

- No substitutions allowed in equipment

- Pricing valid for minimum **90 days after bid opening**
- Limited downtime window for cutover
- Lead times on specialized broadcast equipment

---

9. Acceptance Criteria

- All 2 HD and 4 SD channels operational
- Transport stream passes ATSC compliance
- PSIP fully functional with guide data
- Audio meets CALM Act requirements
- Failover systems operate correctly
- Monitoring alarms function as designed

---

10. Additional Costs (By Station)

- Rovi/Gracenote annual subscription (per call sign)
- Optional interface modules (if required)
- Travel, lodging, and per diem (as listed)
- Electrical or facility upgrades (if needed)

ADDENDUM I
ATTACHMENT C

PICTURES

ITB 2025-11DC Video Compression and Processing Technologies Distribution System

---

Pictures for WUCF TV / University of Central Florida Broadcast

Encoding & Transport System Replacement

CABLE TRAY FROM RACK TO XMITTER

RACKS BACK

WUCF RACKS LEFT XMITTER RIGHT RACK TOP

WUCF RACKS