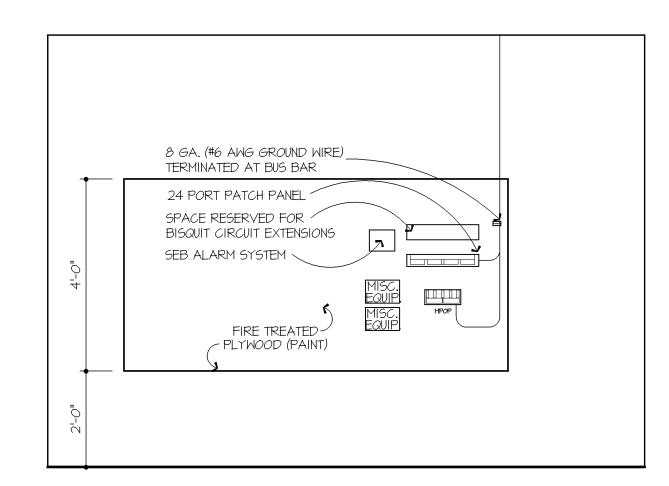
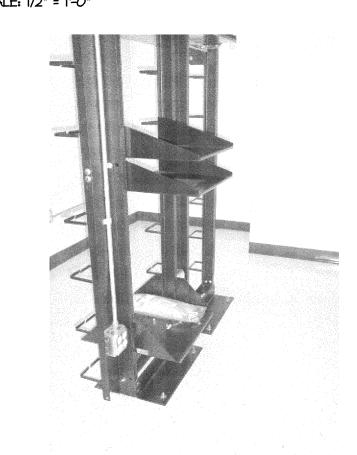


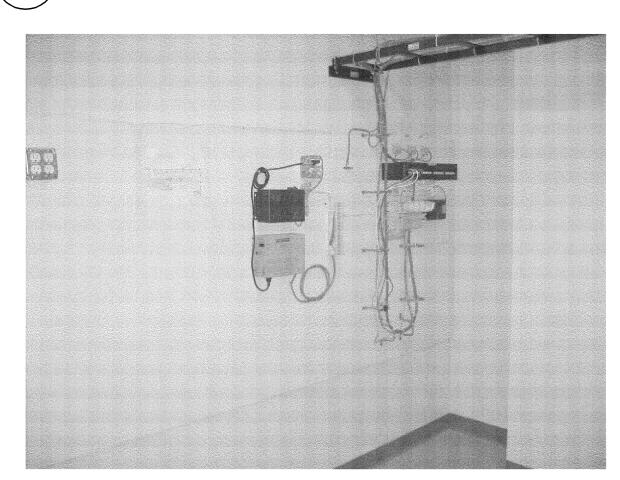
4B DETAIL @ ELECTRICAL DROP AT BACK SIDE OF RACK A401 / SCALE: N.T.S.



3A \ VOICE BACK PLANE (VOICE OVER IP) (A40| / SCALE: 1/2" = 1'-0"



/ 3B \ ELECTRICAL RACK (FOR REFERENCE ONLY) \ A40| / N.T.S.



VOICE DATA PLYWOOD WALL (FOR REFERENCE ONLY) A401 / N.T.S.

I- ORTRONICS 24 PORT PATCH PANEL (#OR-851004862) DATA CIRCUIT EXTENSIONS FROM VOICE BACKPLANE 2- ORTRONICS HORIZONTAL WIRE MANAGEMENT X5 (#OR-8080014759)(QUANTITY WILL VARY BY SIZE OF OFFICE) 3- NETWORK SWITCH (SUPPLIED BY CUSTOMER, QUANTITY WILL VARY BY SIZE OF OFFICE)

4- ROUTER (SUPPLIED BY CUSTOMER)

5- MONITOR (SUPPLIED BY CUSTOMER) 6- FLUSH MOUNT SHELF (SUPPLIED BY CABLE VENDOR)

7- KEYBOARD (SUPPLIED BY CUSTOMER) 8- SERVER (SUPPLIED BY CUSTOMER)

9- CENTER WEIGHT SHELF RATED AT 1001bs. FOR EQUIPMENT RACK(SUPPLIED BY CABLE VENDOR)

10- CENTER WEIGHT SHELF RATED AT 1501bs. FOR SHELF ON PATCH PANEL RACK (SUPPLIED BY CABLE VENDOR, QUANTITY WILL VARY BY SIZE OF OFFICE)

II- POWER STRIP (SUPPLIED BY CUSTOMER) 12- UPS SYSTEM (SUPPLIED BY CUSTOMER, QUANTITY WILL VARY BY SIZE OF OFFICE)

13- VERTICAL WIRE MANAGEMENT (HOMACO #VO-84-T6) 14- FREESTANDING RACK

15- ORTRONICS 48 PATCH PANEL (#OR-851000334) PORTS 1-24 SINGLE DATA LOCATIONS- PORTS 25-48 FUTURE EXPANSION LOCATIONS.

16- ORTRONICS 48 PATCH PANEL (#851000334) DATA STATION LOCATION PATCH PANELS 17- SEE 4B/A401 FOR DETAIL OF QUADRUPLEX ON BACK

SIDE OF RACK 18- PROVIDE 120V 30A INPUT WITH TWIST-LOCK ON BACK SIDE OF RACK, NEMA L5-30P (30A TWIST-LOCK)

PATCH PANEL EQUIPMENT RACK RACK CISCO ROUTER CISCO ROUTER Modem MONITOR BATTERY 3RU BATTERY 3RU APC UPS SYSTEM SYSTEM

2B \ ELEVATION @ RACKS (A401 / SCALE: N.T.S.

I EQ	UIPMENT NOT LOCATED I	in Equipme	ent roc	M	
	RECEPT.				DATA
ITEM	(QTY)	VOLTS	WATTS	HOUR	RECEPT.
LIONICE LEI OU D.C.		1100	1.0	0.00	(1)
WORKSTATION PC	I FOURPLEX EACH	115	60	203	(1)
W/ 15" MONITOR			+		
DOT MATRIX	I DUPLEX EACH	115	150	512	(1)
IMPACT PRINTER	I DOI LEX LACIT	1112	1130	712	
MINICACTERINILA					
LEXMARK LASER	I DUPLEX EACH	115	150	512	(1)
JET PRINTER	1 2 31 227 1 27 1 31 1	11.5	1.0 0	10.22	l V7
CMS TAPE	STD.	NA	NA	NA	(I) JACK
BACK-UP PC					
	EQUIPMENT LOCATED	N FOIID	MENT DO	OM	1
	LOOK TILLY LOOK TED		WEIGHT		CURRENT AT:
ITEM				(BTU/HR)	115V/ 230V (AMPS)
TTE:			(LDS)	DIOTHO	1113 \$7 230 \$ (7111 3)
COMPAQ 151 FS COLO	D MONITOD (IEII)	100 000			
	R MONITOR (13)	15.75		276	1.15/ 0.65
WAN/ LAN TRANSCEIV	ER	1.75	1.00	35	1.00/ 0.00
I US ROBOTICS V34 M	ER	1.75 3.50	1.00 3.00	35 16	1.00/ 0.00 0.09/ 0.00
I US ROBOTICS V34 M ACCULINK DSU/ CSU	ER ODEM	1.75 3.50 3.50	1.00 3.00 4.00	35 16 22	1.00/ 0.00 0.09/ 0.00 0.09/ 0.00
I US ROBOTICS V34 M ACCULINK DSU/ CSU I CABLETRON SEHI-24	ER ODEM	1.75 3.50 3.50 3.50	1.00 3.00 4.00 7.00	35 16 22 135	1.00/ 0.00 0.09/ 0.00 0.09/ 0.00 4.00/ 0.00
I US ROBOTICS V34 M ACCULINK DSU/ CSU I CABLETRON SEHI-24 I CABLETRON SEHI-24	ER ODEM	1.75 3.50 3.50 3.50 3.50	1.00 3.00 4.00 7.00	35 16 22 135 135	1.00/ 0.00 0.09/ 0.00 0.09/ 0.00 4.00/ 0.00 4.00/ 0.00
I US ROBOTICS V34 M ACCULINK D5U/ C5U I CABLETRON SEHI-24 I CABLETRON SEHI-24 I CISCO 2500 SERIES	ER ODEM	1.75 3.50 3.50 3.50 3.50 1.75	1.00 3.00 4.00 1.00 1.00 10.00	35 16 22 135 135 136	1.00/ 0.00 0.09/ 0.00 0.09/ 0.00 4.00/ 0.00 4.00/ 0.00 4.00/ 0.00
I US ROBOTICS V34 M ACCULINK D5U/ C5U I CABLETRON SEHI-24 I CABLETRON SEHI-24 I CISCO 2500 SERIES INTERNAL KEYBOARD	ER ODEM ROUTER	1.75 3.50 3.50 3.50 3.50 1.75 3.50	1.00 3.00 4.00 1.00 1.00 10.00 3.90	35 6 22 35 35 36 0	1.00/ 0.00 0.09/ 0.00 0.09/ 0.00 4.00/ 0.00 4.00/ 0.00 4.00/ 0.00 0.00/ 0.00
I US ROBOTICS V34 M ACCULINK D9U/ C9U I CABLETRON SEHI-24 I CABLETRON SEHI-24 I CISCO 2500 SERIES INTERNAL KEYBOARD PROLIANT 4500R MOI	ER ODEM ROUTER DEL 5/ 133-1 NT/ ARRAY	1.75 3.50 3.50 3.50 3.50 1.75 3.50 12.25	1.00 3.00 4.00 7.00 7.00 10.00 3.90 62.00	35 16 22 135 135 136 0 2696	1.00/ 0.00 0.09/ 0.00 0.09/ 0.00 4.00/ 0.00 4.00/ 0.00 4.00/ 0.00 0.00/ 0.00 6.40/ 3.60
I US ROBOTICS V34 M ACCULINK D5U/ C5U I CABLETRON SEHI-24 I CABLETRON SEHI-24 I CISCO 2500 SERIES INTERNAL KEYBOARD PROLIANT 4500R MOI RACK-MOUNTABLE 25	ER ODEM ROUTER DEL 5/ 133-1 NT/ ARRAY	1.75 3.50 3.50 3.50 3.50 1.75 3.50 12.25 7.00	1.00 3.00 4.00 7.00 7.00 10.00 3.90 62.00 145.00	35 16 22 135 135 136 0 2696 1229	1.00/ 0.00 0.09/ 0.00 0.09/ 0.00 4.00/ 0.00 4.00/ 0.00 4.00/ 0.00 0.00/ 0.00 6.40/ 3.60 N/A
I US ROBOTICS V34 M ACCULINK D5U/ C5U I CABLETRON SEHI-24 I CABLETRON SEHI-24 I CISCO 2500 SERIES INTERNAL KEYBOARD PROLIANT 4500R MOI RACK-MOUNTABLE 25 42U CABINET	ER ODEM ROUTER DEL 5/ 133-1 NT/ ARRAY	1.75 3.50 3.50 3.50 3.50 1.75 3.50 12.25 7.00 85.30	1.00 3.00 4.00 7.00 7.00 10.00 3.40 62.00 145.00 253.00	35 16 22 135 135 136 0 2696 1229 N/A	1.00/ 0.00 0.09/ 0.00 4.00/ 0.00 4.00/ 0.00 4.00/ 0.00 4.00/ 0.00 0.00/ 0.00 6.40/ 3.60 N/A
I US ROBOTICS V34 M ACCULINK D5U/ C5U I CABLETRON SEHI-24 I CABLETRON SEHI-24 I CISCO 2500 SERIES INTERNAL KEYBOARD PROLIANT 4500R MOI RACK-MOUNTABLE 25	ER ODEM ROUTER DEL 5/ 133-1 NT/ ARRAY OOVA UPS	1.75 3.50 3.50 3.50 3.50 1.75 3.50 12.25 7.00 85.30 ON WALL	1.00 3.00 4.00 7.00 10.00 3.90 62.00 145.00 253.00	35 16 22 135 135 136 0 2696 1229 N/A 700	1.00/ 0.00 0.09/ 0.00 4.00/ 0.00 4.00/ 0.00 4.00/ 0.00 4.00/ 0.00 0.00/ 0.00 6.40/ 3.60 N/A N/A
I US ROBOTICS V34 M ACCULINK D5U/ C5U I CABLETRON SEHI-24 I CABLETRON SEHI-24 I CISCO 2500 SERIES INTERNAL KEYBOARD PROLIANT 4500R MOI RACK-MOUNTABLE 25 42U CABINET	ER ODEM ROUTER DEL 5/ 133-1 NT/ ARRAY	1.75 3.50 3.50 3.50 3.50 1.75 3.50 12.25 7.00 85.30 ON WALL	1.00 3.00 4.00 7.00 7.00 10.00 3.40 62.00 145.00 253.00	35 16 22 135 135 136 0 2696 1229 N/A 700	1.00/ 0.00 0.09/ 0.00 4.00/ 0.00 4.00/ 0.00 4.00/ 0.00 4.00/ 0.00 0.00/ 0.00 6.40/ 3.60 N/A

COMMUNICATION EQUIPMENT NOTES: (FOR ELECTRICAL CONTRACTOR)

THE FOLLOWING ARE THE REQUIREMENTS FOR WAN/LAN AND RELATED COMMUNICATIONS EQUIPMENT:

- * EQUIPMENT FOR ALL ITEMS LISTED IN THE EQUIPMENT ROOM SHOULD BE ON 20 AMP. II5 + 10% AT 60 CYCLES +0.75% SINGLE PHASE. THIS MUST BE A CONTINUOUS GROUND AND DEDICATED CIRCUIT POWERED AT ALL TIMES. CONDUIT GROUND CONNECTIONS ARE NOT ACCEPTABLE GROUNDS.
- * FOR SPECIFIC INFORMATION REGARDING CENTRAL TELECOMMUNICATIONS EQUIPMENT IN THIS AREA, CONTACT P.M. LISTED ON SHEET GIOO.

CABLING/COMMUNICATIONS NOTES:

- I. ALL OUTLET COVERS TO BE WHITE.
- 2. ALL NEW OUTLETS TO BE MOUNTED 18" A.F.F. AT CENTER, UNLESS OTHERWISE NOTED.
- 3. ALL COMPUTER OUTLETS TO BE CONNECTED IN HOME RUN TO THE PATCH PANEL IN THE TELE/ DATA ROOM #1505.
- 4. DRAWING IS DIAGRAMMATIC AND INTENDED TO SHOW APPROXIMATE LOCATIONS.

CABLING REQUIREMENTS FOR WAN/LAN: (FOR CABLING CONTRACTOR)

- A. THE TENANT SUPPLIES THE CABLE THROUGH TENANT'S NETWORK VENDOR. CABLE TO BE UTP LEVEL 5, (TWISTED PAIR COPPER) CABLED IN HOME RUN TO THE PATCH PANEL RACK LOCATED IN THE EQUIPMENT ROOM AND TERMINATED ONTO 110 MODULAR PATCH PANEL FOR 10 BASE T-RJ45. CABLING SHALL BE PLENUM RATED 25/50.
- B. CABLING IS THE BE INSTALLED BY TENANT'S NETWORK VENDOR TO TENANT SPECIFICATIONS.
- C. THE WAN EQUIPMENT IN THE EQUIPMENT REQUIRES ONE "IFB" PHONE LINE FOR DIAGNOSTICS. —
- D. PROVIDE ONE "64KB" (MINIMUM) DIGITAL CIRCUIT AND ONE "SW56" OR "ISDN" CIRCUIT FOR BACK-UP. THESE LINES SHALL BE TERMINATED ON "IIO BLOCKS" EXTENDED TO THE WAN
- E. ONE "IFB" TO BE TERMINATED ON "IIO BLOCK" FOR CMS TAPE BACK-UP UNIT LOCATED IN THE GENERAL OFFICE AREA. VERIFY EXACT LOCATION WITH BRANCH COORDINATOR.
- ** ANY QUESTIONS REGARDING THE CABLING OR EQUIPMENT ROOM LAYOUT SHOULD BE DIRECTED TO THE P.M. LISTED ON SHEET GIOO.

AIR CONDITIONING REQUIREMENTS:

- THE EQUIPMENT IN THE EQUIPMENT ROOM REQUIRES A NOMINAL OPERATING TEMPERATURE RANGE OF 50 DEGREES F TO 80 DEGREES F AND A RELATIVE HUMIDITY OF 20% TO 60% NON- CONDENSING AT ALL TIMES. STRICT ATTENTION IS REQUIRED TO INSURE ADEQUATE AIR CIRCULATION AND HEAT DISSIPATION FOR THIS ROOM. NOTE:
 - MUST BE 24HR/7 DAY.
- 2. CONTRACTOR MUST VERIFY PHONE SYSTEM'S IMPACT ON AIR CONDITIONING REQUIREMENTS IN THE EQUIPMENT ROOM.

WAN AND RELATED COMMUNICATIONS EQUIPMENT

- I. IF O/A FILE SERVER SPECIFIED IS A TOWER PC, LOCATE ADJACENT TO WAN EQUIPMENT RACK. IF AN O/A FILE SERVER SPECIFIED IN NOT A TOWER PC, THEN LOCATE ON WAN
- 2. CABLE HUB EQUIPMENT TO BE RACK MOUNTED ON PATCH PANEL RACK.
- 3. ALL OTHER WAN/LAN EQUIPMENT TO BE RACK MOUNTED OR SHELVED ON WAN EQUIPMENT —

CONDUIT SIZING GUIDELINES AND NOTES:

CC	NDUIT SIZING) :	
	NUMBER OF CABLES	SIZE OF CONDUIT	
	3	3/4"	
	4-6	"	
	7-10	/4"	
	11-15	1 1/2"	
	16-20	2"	
	21-30	2 1/2"	

31-40 3"

- NO MORE THAN 100 FEET OR TWO (2) 90 DEGREE BENDS BETWEEN A PULL OR SPLICE BOX. NO REVERSE BENDS IN THE RUN
- CONDUIT SHALL BE REAMED TO ELIMINATE SHARP EDGES AND TERMINATED WITH AN INSULATED BUSHING • CONDUIT PROTRUDING THROUGH THE FLOOR SHALL BE TERMINATED I TO 2" ABOVE THE FLOOR SURFACE
- THE INSIDE RADIUS OF A BEND IN CONDUIT SHALL BE AT LEAST 6 TIMES THE INTERNAL DIAMETER. WHEN THE CONDUIT SIZE IS GREATER THAN 2", THE INSIDE RADIUS SHALL BE AT LEAST IO TIMES THE INTERNAL DIAMETER OF THE CONDUIT. FOR FIBER OPTIC CABLE, THE INSIDE RADIUS OF A BEND SHALL ALWAYS BE AT LEAST IO

TIMES THE INTERNAL DIAMETER OF THE CONDUIT.

- 2. ONE (I) I" DEDICATED CONDUIT WITH A BACKBOX SHOULD BE INSTALLED FOR EACH HARD WALL WORKSTATION LOCATION.
- 3. ONE (I) I" DEDICATED CONDUIT WITH A BACKBOX SHOULD BE INSTALLED FOR EACH PARTIAL HEIGHT WALL OR FURNITURE SYSTEMS WORKSTATION LOCATION. THE CONDUIT SHOULD EXTEND TO THE PLENUM CEILING SPACE FOR ACCESS. NO MORE THAN 100 FEET OR (2) 90 DEGREE BENDS BETWEEN A PULL OR SPLICE BOX. NO REVERSE BENDS IN THE
- 4. TO DETERMINE THE NUMBER OF WORKSTATIONS THAT A CONDUIT CAN FEED, MULTIPLY THE NUMBER OF WORKSTATIONS BY THE NUMBER OF CABLES PER WORKSTATION AND REFER TO THE CONDUIT SIZING CHART ABOVE.

THE INFORMATION STATED ABOVE IS BASED ON THE EIA/TIA-569 COMMERCIAL BUILDING STANDARD FOR TELECOMMUNICATIONS PATHWAYS AND SPACES

Suite #300 900 2nd. Avenue South Minneapolis, MN. 55402 612.338.8799

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Ohio.

DENNIS WALSH

Date: 11.29.07 License No. A7706007

■ [DESIGN]

• [SUSTAINABLE]







TENANT IMPROVEMENTS FOR:

RBC Capital Markets One Columbus Center 15th Floor- Suite 1550 10 West Broad St. Columbus, OH 43215



RBC Capital Markets Corporation • Member NYSE/SIPC

11.29.07	ISSUE FOR BID/PERMIT

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SHEET TITLE:

VOIP POWER/ COMMUNICATION NOTES & DETAILS - REF. ONLY

Darker	11 00 07
Date:	11.29.07
Comm. No:	8528.295
In Charge:	D.W.
Drawn By:	K.M.
Checked By:	P.P.