

**CITY OF SANTA FE WATER DIVISION**  
SANTA FE, NEW MEXICO  
STANDARD DETAILS

**VALVE STEM EXTENSION**

DATE: 09/15/2009  
DRAWN BY: BOBBI BUN  
CHECKED BY: BOBBI BUN  
APPROVED: BOBBI BUN

**09**

**CITY OF SANTA FE WATER DIVISION**  
SANTA FE, NEW MEXICO  
STANDARD DETAILS

**JOINT RESTRAINT TABLE**  
PVC

**THRUST RESTRAINT TABLE - PVC**  
BENDS, TEES, CAPS/VALVES, & REDUCERS  
(RESTRAINED JOINT LENGTHS IN FEET)

DIAMETER (IN.)	HORIZONTAL BENDS				CAPS / PLUGS / VALVES	SIZE (IN.) Lg/ Sm/ Run X Br.	TEES				REDUCERS		
	11-1/4" L <sub>R</sub>	22-1/2" L <sub>R</sub>	45° L <sub>R</sub>	90° L <sub>R</sub>			Run L <sub>R</sub>	Branch L <sub>R</sub>	Run L <sub>R</sub>	Branch L <sub>R</sub>			
4	2	3	6	13	34	4 X 4	FJO	29	5	8	10	FJO	N/A
6	2	4	8	18	48	6 X 6	FJO	43	5	22	10	FJO	N/A
8	3	4	10	23	63	8 X 8	FJO	26	5	FJO	10	FJO	25
10	3	6	12	27	75	8 X 8	FJO	57	5	36	10	FJO	N/A
12	4	7	14	32	89	8 X 8	FJO	41	5	13	10	FJO	27
						10 X 10	FJO	24	5	FJO	10	FJO	45
						10 X 8	FJO	70	5	49	10	FJO	N/A
						10 X 6	FJO	56	5	29	10	FJO	26
						10 X 4	FJO	39	5	4	10	FJO	46
						12 X 12	FJO	21	5	FJO	10	FJO	61
						12 X 10	FJO	83	5	62	10	35	N/A
						12 X 8	FJO	69	5	43	10	11	26
						12 X 6	FJO	55	5	22	10	FJO	47
						12 X 4	FJO	37	5	FJO	10	FJO	65
						12 X 4	FJO	19	5	FJO	10	FJO	77

Table: This table is based on the EBAA Iron Migaluis joint calculations program with the following input criteria: 3.5 ft. depth of bury (conservative); trench type 4; PVC material; GMI soil type; 150 psi burst pressure; 1.5 safety factor. Specific calculations for restrained lengths are required for conditions not covered by this table. Values for vertical bends provided assume 3.5 feet of cover on the low side.

L<sub>R</sub>: Length of restrained pipe, in feet, for each side of the fitting.

Minimum Restraint Length: A minimum restrained length of 5 ft. from the fitting joint is recommended. Vertical offsets shall be completely restrained between the top vertical fitting and the bottom vertical fitting.

FJO: Fitting Joint Only -- This includes at least a 1 ft. length of restrained pipe beyond the fitting joint.

Vertical Offset: Use 11-1/2" bends or 22-1/2" bends wherever possible due to the shorter restrained length requirements.

Caps/Plugs: Concrete blocking may be required by CoSFWD on a case-by-case basis in addition to mechanical restraint.

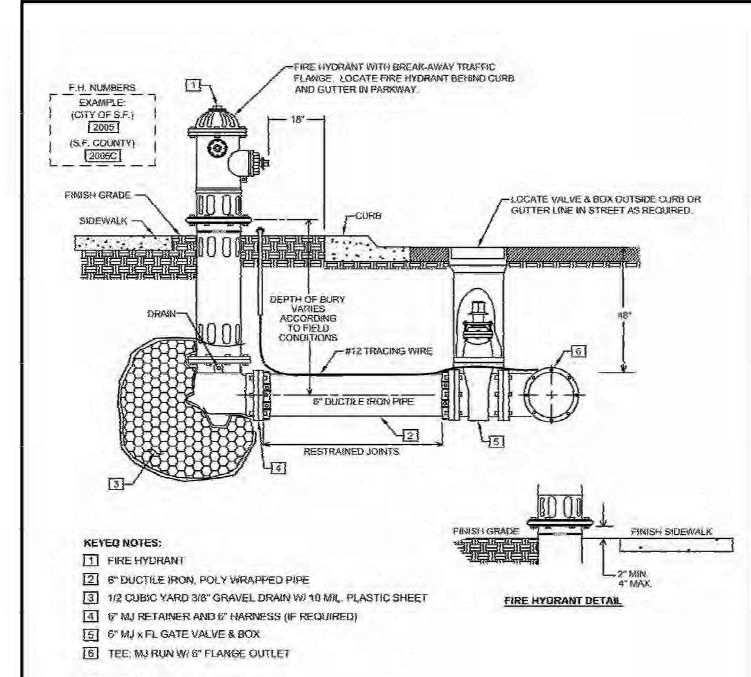
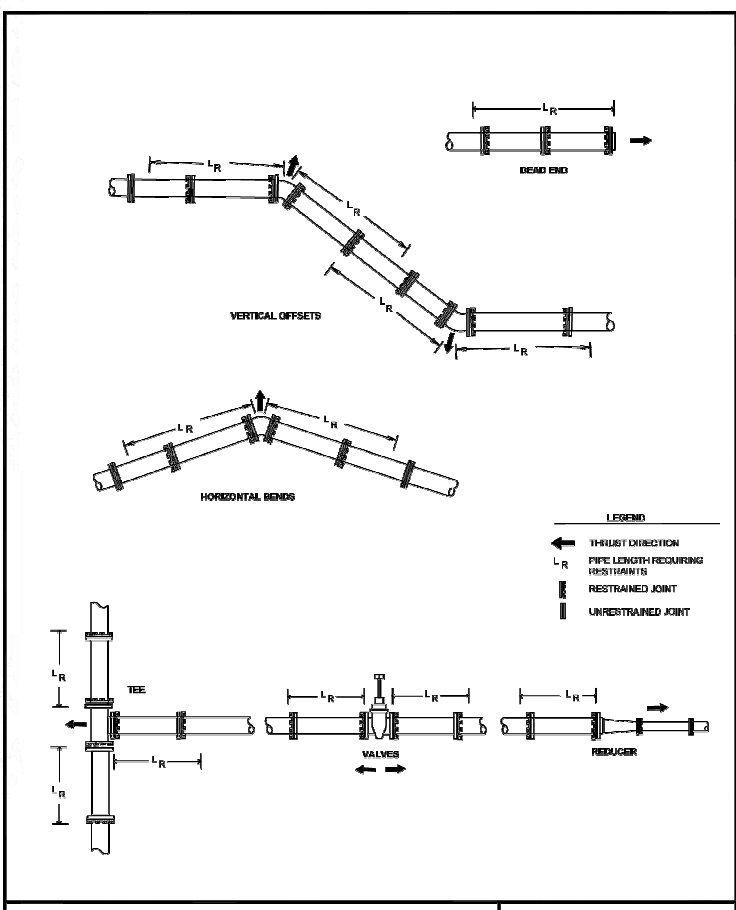
Pipe Lengths: Piping shall be laid out to minimize pipe joints near fittings. Whenever possible, full 20 ft. pipe lengths shall be utilized when connecting to fittings or valves. No pipe bell joints shall be used where fittings are less than 20 ft. apart.

**CITY OF SANTA FE WATER DIVISION**  
SANTA FE, NEW MEXICO  
STANDARD DETAILS

**JOINT RESTRAINT DETAIL**

DATE: 08/08/2008  
DRAWN BY: BOBBI BUN  
CHECKED BY: BOBBI BUN  
APPROVED: BOBBI BUN

**10B**



**CITY OF SANTA FE WATER DIVISION**  
SANTA FE, NEW MEXICO  
STANDARD DETAILS

**FIRE HYDRANT**

DATE: 08/08/2008  
DRAWN BY: BOBBI BUN  
CHECKED BY: BOBBI BUN  
APPROVED: BOBBI BUN

**07**

**WILSON & COMPANY**

4401 WASTHEAD ST. NE, SUITE 150  
ALBUQUERQUE, NM 87109  
PHONE: 505-348-4000  
FAX: 505-348-4055  
www.wilsonco.com

CONSULTANTS

WILLIAM CHAPMAN  
NEW MEXICO  
17625  
PROFESSIONAL ENGINEER  
12/27/24

PROJECT NAME

SANTA FE COUNTY  
ROMERO PARK  
WATERLINE

REV.	DATE	DESCRIPTION	BY

PROJECT NO: 23-600-155-00  
DESIGNED BY: WGC/ERC  
DRAWN BY: AC/WGC  
CHECKED BY: CAB  
DATE: OCTOBER 2024

SHEET TITLE

CITY OF SANTA FE  
STANDARD DETAILS

SHEET NO: C-505



12/17/2024 m:\MSD\23-600-155-00\09\_CADD\04\_Sheets\2361550 Connection Details.dwg

**KEYED NOTES**

- RESTRAINED DEAD END MAIN
- MJ CAP+PLUG W/ 1/2" TAP
- 2" TYPE-K COPPER
- 2" BRASS NIPPLE
- MJ CAP+PLUG
- 2" SERVICE SADDLE W/ IPS THREADS
- 2" HEAVY DUTY THREADED GATE VALVE W/ BOX
- 1/4 YARD OF GRAVEL AT DRAIN
- ADAPTER, 2" COMPRESSION x 2" MIP
- 2-1/4" POST TYPE HYDRANT WITH FLANGEABLE CONNECT.

**CONSTRUCTION NOTES**

- DIMENSION "A" IS TYPICAL 18" BACK OF CURB TO VALVE IN PAVED AREAS AND IS MINIMUM OF 18" BEHIND BAR DITCH IN UNPAVED AREAS BUT CAN BE EXTENDED UP TO 72" TO FIT FIELD CONDITIONS.

**CITY OF SANTA FE WATER DIVISION  
SANTA FE, NEW MEXICO**

**FLUSH HYDRANT**

DATE: 08/2023  
SCALE: 1/4" = 1'-0"  
11

**USE MECHANICALLY RESTRAINED FITTINGS & PIPE JOINTS FOR THRUST RESTRAINT UNLESS CONCRETE BLOCKING IS SPECIFICALLY CALLED FOR BY SDCW.**

**THRUST BLOCK SIZING TABLE**

PIPE DIAMETER	TYPE "A" BENDS												TYPE "B" FITTINGS			
	11-1/4°			22-1/2°			45°			90°			A	B	C	
	A	B	C	A	B	C	A	B	C	A	B	C				
4"	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
6"	12	12	12	12	12	12	12	18	12	18	24	12	12	24	12	12
8"	12	12	12	12	18	12	18	24	12	24	30	18	18	30	12	12
10"	12	12	12	12	24	12	20	30	12	24	42	18	24	36	18	18
12"	12	18	12	18	24	12	24	36	18	32	48	24	24	42	18	18
14"	12	24	12	18	36	18	30	42	24	36	60	24	30	48	24	24
16"	18	24	24	24	36	24	30	40	24	42	66	24	36	54	24	24
18"	18	30	24	24	40	24	36	54	24	48	72	24	42	60	24	24
20"	20	30	24	30	42	24	42	60	24	54	80	24	42	76	24	24
24"	24	36	24	36	54	24	48	72	24	66	96	30	54	80	30	30

**CITY OF SANTA FE WATER DIVISION  
SANTA FE, NEW MEXICO**

**CONCRETE THRUST BLOCKING**

DATE: 08/2023  
SCALE: 1/4" = 1'-0"  
13

**ITEM DESCRIPTION**

- 1" OR 2" TAPPING SADDLE
- 1" OR 2" CORPORATION COCK (A.W.W.A. TAPERED THREAD)
- 1" OR 2" TYPE K COPPER
- 1" OR 2" BRASS BALL VALVE
- 1" OR 2" NPT COMBINATION AIR & VACUUM UNIT VALVE & PRESSURE UNIT, CRESPIN C10 OR C20 WITH PROTECT-TOP
- 36" x 36" -20# POLYETHYLENE METER BOX
- 38" MONITOR RING WITH 20" COVER WITH INNER LID
- 1" OR 2" ADAPTER COUPLING
- 1" OR 2" THREADED BRASS PIPE

LOCATION: WHERE WATER MAIN IS INSTALLED IN ROAD, THE AIR-VACUUM VALVE INSTALLATION SHALL BE LOCATED OUT OF THE PAVEMENT AND OUT OF BAR DITCH, BUT WITHIN RIGHT-OF-WAY OR EASEMENT.

**CITY OF SANTA FE WATER DIVISION  
SANTA FE, NEW MEXICO**

**1" AND 2" AIR-VACUUM VALVE**

DATE: 08/2023  
SCALE: 3/8" = 1'-0"  
17

**WILSON & COMPANY**  
4401 WASTHEAD ST. NE, SUITE 150  
ALBUQUERQUE, NM 87109  
PHONE: 505-348-4000  
FAX: 505-348-4055  
www.wilsonco.com

CONSULTANTS



SEAL

**SANTA FE COUNTY  
ROMERO PARK  
WATERLINE**

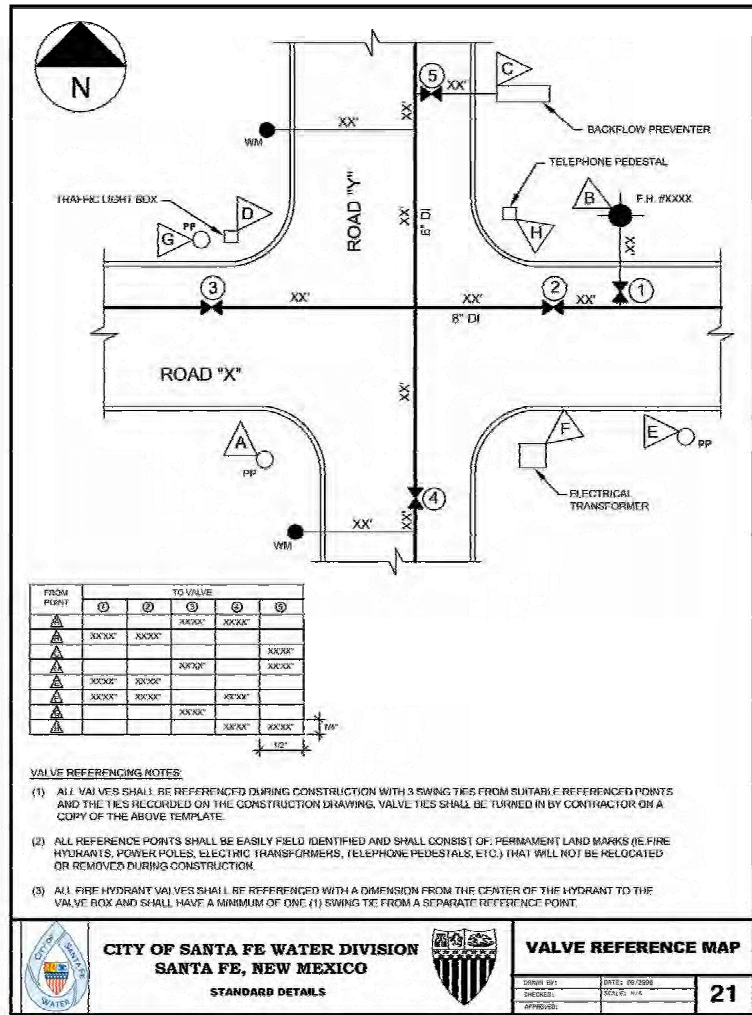
REV.	DATE	DESCRIPTION	BY

PROJECT NO: 23-600-155-00  
DESIGNED BY: WGC/ERC  
DRAWN BY: AC/WGC  
CHECKED BY: CAB  
DATE: OCTOBER 2024  
SHEET TITLE  
**CITY OF SANTA FE  
STANDARD DETAILS**

SHEET NO: **C-506**



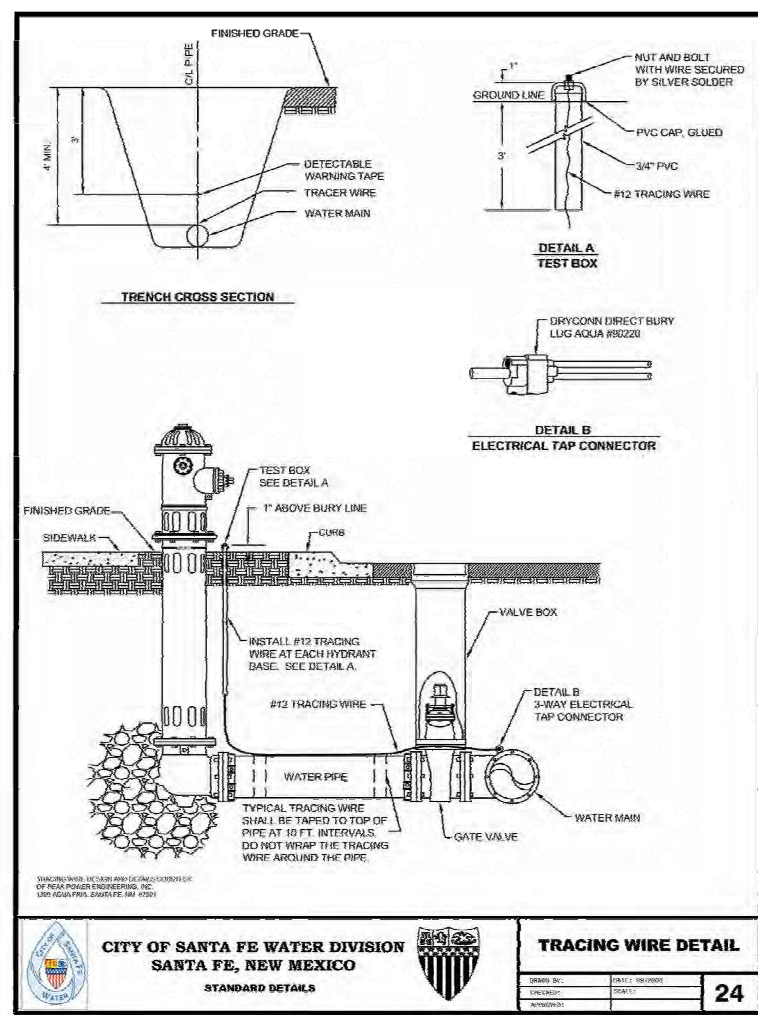
12/17/2024 m:\MSD\23-600-155-00\09\_CADD\04\_Sheets\2361550 Connection Details.dwg



**CITY OF SANTA FE WATER DIVISION**  
SANTA FE, NEW MEXICO

**VALVE REFERENCE MAP**

DESIGNED BY:	DATE:	21
CHECKED BY:	SCALE:	
APPROVED:		



**CITY OF SANTA FE WATER DIVISION**  
SANTA FE, NEW MEXICO

**TRACING WIRE DETAIL**

DESIGNED BY:	DATE:	24
CHECKED BY:	SCALE:	
APPROVED:		

**WILSON & COMPANY**  
4401 WASTHEAD ST. NE, SUITE 150  
ALBUQUERQUE, NM 87109  
PHONE: 505-348-4000  
FAX: 505-348-4055  
www.wilsonco.com

CONSULTANTS

SEAL

PROJECT NAME

**SANTA FE COUNTY**  
**ROMERO PARK**  
**WATERLINE**

REV.	DATE	DESCRIPTION	BY

PROJECT NO: 23-600-155-00  
DESIGNED BY: WGC/ERC  
DRAWN BY: AC/WGC  
CHECKED BY: CAB  
DATE: OCTOBER 2024

SHEET TITLE

**CITY OF SANTA FE**  
**STANDARD DETAILS**

SHEET NO:

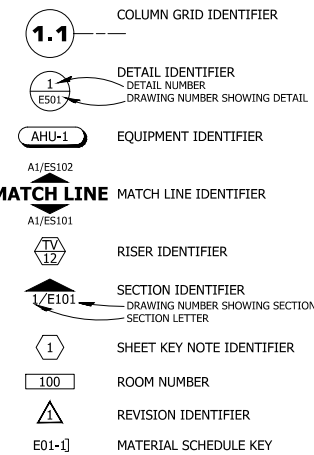
**C-507**



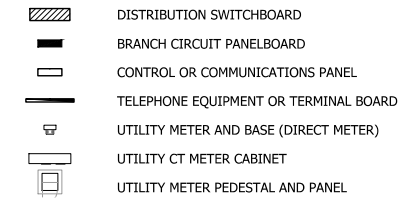
# ELECTRICAL SYMBOL LEGEND

THIS LEGEND IS A COMPREHENSIVE COLLECTION OF ELECTRICAL SYMBOLS - NOT ALL SYMBOLS REPRESENTED HERE OR ABBREVIATIONS ARE USED ON THIS SET OF DRAWINGS

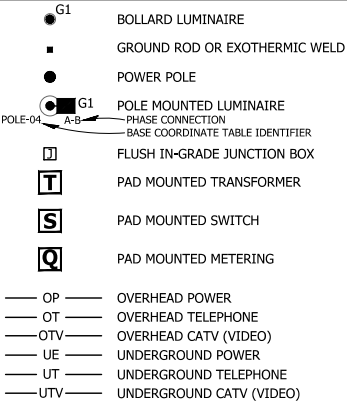
## GENERAL



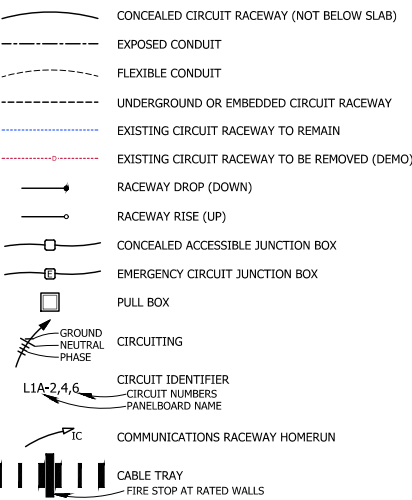
## SERVICE and DISTRIBUTION



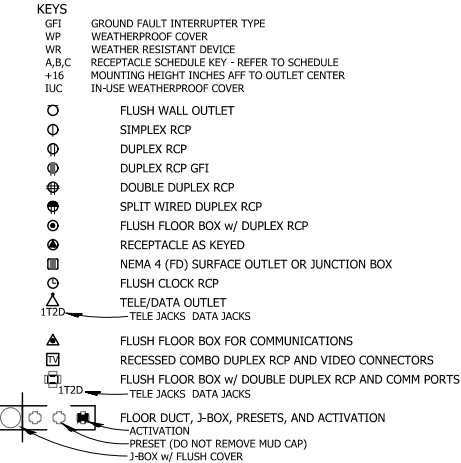
## SITE



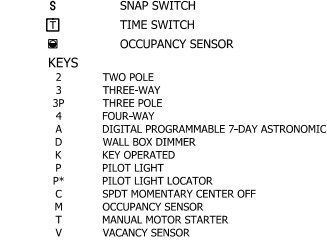
## CIRCUITS



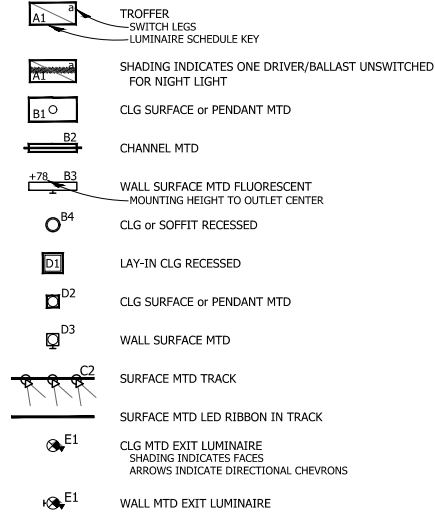
## OUTLETS and DEVICES



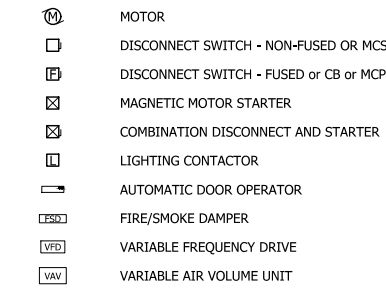
## SWITCHES



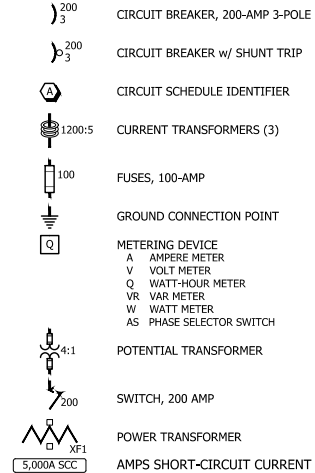
## LIGHTING



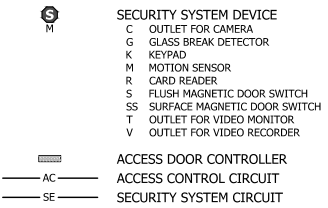
## EQUIPMENT



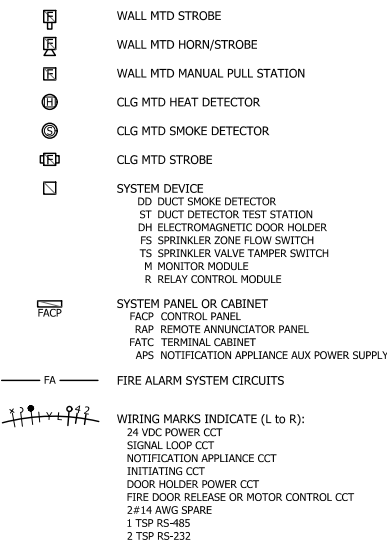
## DISTRIBUTION DIAGRAMS



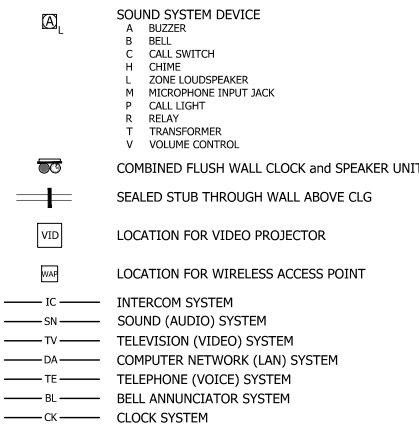
## SECURITY and ACCESS



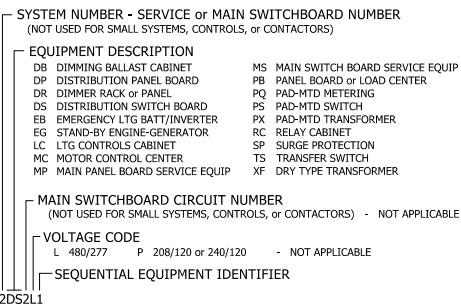
## FIRE ALARM



## COMMUNICATION and SIGNAL



## NAMING CONVENTION



## ABBREVIATIONS

A AMPERE	LT LIQUID-TIGHT
AC ABOVE COUNTER or ALTERNATING CURRENT	LTG LIGHTING
AFG ABOVE FINISH FLOOR	MAX MAXIMUM
AFG ABOVE FINISH GRADE	MBJ MAIN BONDING JUMPER
AFI ARC FLASH INTERRUPT	MCC MOTOR CONTROL CENTER
AHJ AUTHORITY HAVING JURISDICTION	MCM THOUSAND CIRCULAR MILS
AIC AMPS INTERRUPTING CAPACITY	MDC MAIN DISTRIBUTION CENTER
BAS BUILDING AUTOMATION SYSTEM	MH METAL HALIDE
BFG BELOW FINISH GRADE	MIN MINIMUM
C CONDUIT	MLO MAIN LUGS ONLY
CB CIRCUIT BREAKER	MTD MOUNTED
CCT CIRCUIT	NC NORMALLY CLOSED
CLG CEILING	NEC NATIONAL ELECTRICAL CODE
CJ COPPER	NEMA NATIONAL ELECTRICAL MANUFACTURER'S ASSOC.
DN DOWN	NIC NOT IN CONTRACT
DWG DRAWING	NO NORMALLY OPEN
EGC EQP GROUNDING CONDUCTOR	NTS NOT TO SCALE
ELE ELECTRICAL	OC ON CENTER
EMT ELECTRICAL METALLIC TUBING	P PHASE, POLE
EQP EQUIPMENT	PB PULL BOX
EXT EXTERIOR	PNL PANEL BOARD
FLEX FLEXIBLE CONDUIT	PPC POLYESTER POWDER COAT
FLU FLUORESCENT	PROV PROVISION
FSD FIRE-SMOKE DAMPER	PVC POLYVINYL CHLORIDE
FT FEET	RCP RECEPTACLE
FVNR FULL-VOLTAGE NON-REVERSING	RTE REQUEST TO EXIT
G,GND GROUND	SE SERVICE EQUIPMENT
GA GAUGE	SPD SURGE PROTECTION DEVICE
GEC GND ELECTRODE CONDUCTOR	SPEC SPECIFICATIONS
GFI GND FAULT INTERRUPT	SQ SQUARE
GRC GALVANIZED RIGID CONDUIT	S/S STAINLESS STEEL
HID HIGH INTENSITY DISCHARGE	TB TELEPHONE EQUIPMENT BOARD
HOA HAND-OFF-AUTO	TEL TELEPHONE
HP HORSEPOWER	TTB TELEPHONE TERMINAL BOARD
HPS HIGH-PRESSURE SODIUM	TV TELEVISION
IN INCH	TYP TYPICAL
INC INCANDESCENT	UG UNDERGROUND
INT INTERIOR	UL UNDERWRITER'S LABORATORIES
ISP INTERNET SERVICE PROVIDER	UTR UP THROUGH ROOF
IUC IN-USE COVER	V VOLT
JB JUNCTION BOX	VAV VARIABLE AIR VOLUME
KCMIL THOUSAND CIRCULAR MILS	VFD VARIABLE FREQUENCY DRIVE
KV KILOVOLT	W WIRE
KVA KILOVOLT-AMPERE	w/o WITHOUT
KW KILOWATT	WP WEATHERPROOF
LED LIGHT EMITTING DIODE	XF TRANSFORMER

## GENERAL NOTES

- THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS SEALED, SIGNED, AND DATED
- THIS PLAN MAY NOT BE FULL SIZE - ADJUST SCALE ACCORDINGLY
- ADOBE ACROBAT® READER 8.0 OR LATER OR OTHER VIEWER IS REQUIRED TO VIEW ALL PORTIONS OF THESE DOCUMENTS AS A PDF
  - THE FOLLOWING NOTES APPLY TO ALL ELECTRICAL WORK INCLUDED IN THE CONTRACT UNLESS NOTED OTHERWISE
  - THE WORD PROVIDE SHALL MEAN TO FURNISH AND INSTALL - EXCEPTIONS SHALL BE NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS
  - DO NOT SCALE THE DRAWINGS TO DETERMINE THE LOCATION OF LUMINAIRES, OUTLETS, OR EQUIPMENT - REFER TO THE OTHER DRAWINGS IN THIS SET (ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL, ETC) AND FIELD MEASUREMENTS FOR ALL PROJECT DIMENSIONS
  - COORDINATE ALL SYSTEM DOWNTIME AND DISCONNECTION WITH THE OWNER'S REPRESENTATIVE - ALLOW A MINIMUM 2-DAY NOTICE
  - ALL EXPOSED CONDUIT, FITTINGS, BOXES, HANGERS, SUPPORTS, CLIPS, ETC IN FINISHED AND EXTERIOR AREAS SHALL BE PAINTED REFER TO THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS
  - ALL PROTECTIVE DEVICES IN THIS PROJECT HAVE INTERRUPTING RATINGS GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT AT THE LOCATION OF THE DEVICE - "ENGINEERED SERIES COMBINATION SYSTEM" OR "TESTED SERIES COMBINATION SYSTEM" DESIGN IS NOT USED FOR THIS PROJECT
  - SPACES FOR INFORMATION TECHNOLOGY SYSTEMS AND OTHER COMMUNICATION SYSTEMS IN THIS PROJECT COMPLY WITH CHAPTERS 1 THROUGH 4 OF THE NEC - NEC ARTICLE 645 "INFORMATION TECHNOLOGY EQUIPMENT" IS NOT UTILIZED FOR THIS PROJECT
  - THE LOCATION AND ROUTING OF EXISTING ELECTRICAL ITEMS ARE SHOWN APPROXIMATE BASED ON THE BEST AVAILABLE INFORMATION - ACTUAL LOCATIONS AND CIRCUIT ROUTING MAY BE DIFFERENT - ALL LOCATIONS AND ROUTING OF EXISTING ELECTRICAL ITEMS AND CIRCUITS MUST BE FIELD VERIFIED BY THE CONTRACTOR - CIRCUIT NUMBERS SHOWN ARE FROM THE RECORD DRAWINGS AND HAVE NOT BEEN VERIFIED
  - EXISTING ELECTRICAL ITEMS THAT ARE TO REMAIN ARE SHOWN IN BLUE COLOR - EXISTING ELECTRICAL ITEMS THAT ARE TO BE REMOVED ARE SHOWN IN RED COLOR - EXISTING ELECTRICAL ITEMS THAT ARE NOT INVOLVED WITH THE WORK OF THIS CONTRACT MAY NOT BE SHOWN
  - EXISTING ELECTRICAL ITEMS THAT ARE TO REMAIN OR BE RELOCATED ARE SHOWN AS TYPE "X" AND MAY BE KEY NOTED
  - EXPOSED, CONCEALED, AND BURIED RACEWAY ARE SHOWN BY DRAWING LINE TYPE - REFER TO THE ELECTRICAL SYMBOL LEGEND FOR LINE TYPE DEFINITIONS
  - REFER TO DEMOLITION PLANS IN THIS SET OF DRAWINGS FOR ELECTRICAL WORK NOT SHOWN ON THE ELECTRICAL DRAWING SHEETS

**WILSON & COMPANY**  
 2600 THE AMERICAN RD. SE SUITE 100  
 RIO RANCHO, NM 87124  
 PHONE: 505-898-6021  
 FAX: 505-898-6501  
 www.wilsoncc.com

**AAE**  
 ELECTRICAL ENGINEERING  
 4001 HERRINGTON BLVD. SUITE 100  
 ALBUQUERQUE, NM 87114  
 Copyright © 2024  
 12/19/2024

NEW MEXICO  
 PROFESSIONAL ENGINEER  
 12/19/2024  
 PAUL S. L. WETTER  
 3726

SANTA FE COUNTY  
 ROMERO PARK  
 WATERLINE

## ELECTRICAL DRAWINGS

No.	TITLE
E001	GENERAL INFORMATION
E101	SITE PLAN - ELECTRICAL
E501	DIAGRAMS DETAILS AND SCHEDULES
I501	INSTRUMENTATION DIAGRAMS
I502	INSTRUMENTATION DETAILS AND SCHEDULES



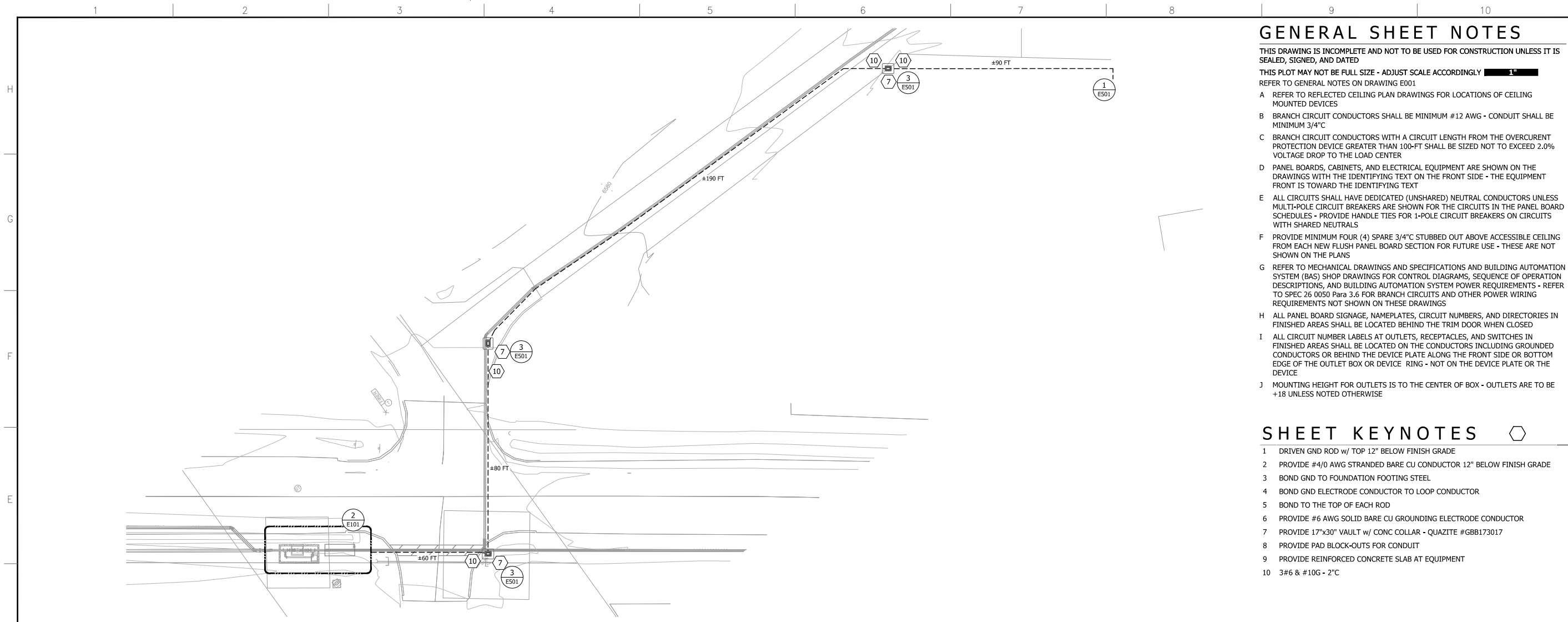
NOTICE OF EXTENDED PAYMENT PROVISION:  
 THIS CONSTRUCTION CONTRACT SPECIFICALLY PROVIDES FOR A PAYMENT LATER THAN 21 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT. THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

PROJECT NAME	DESCRIPTION	DATE	REV.	BY

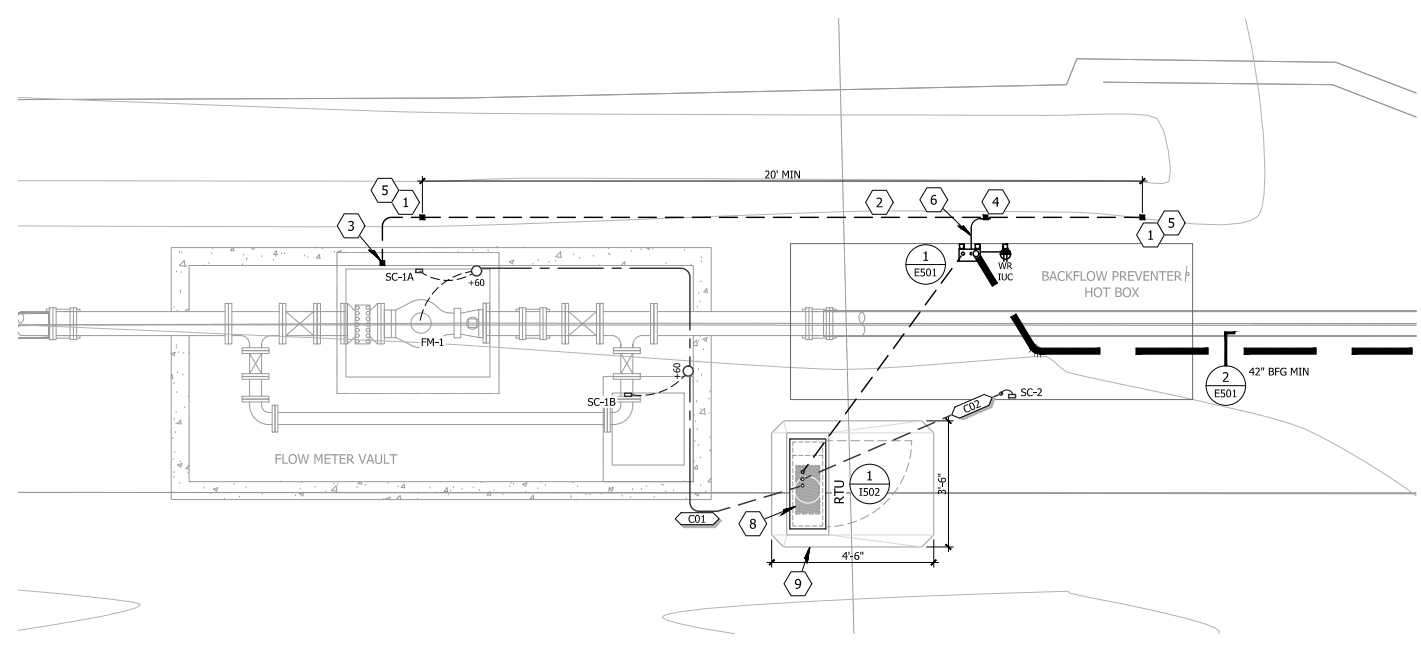
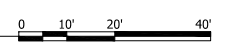
PROJECT NO:	23-600-155-00
DESIGNED BY:	DLW
DRAWN BY:	DLW
CHECKED BY:	DLW
DATE:	12/19/2024

SHEET TITLE  
**ELECTRICAL GENERAL INFORMATION**  
 SHEET NO:  
**E001**

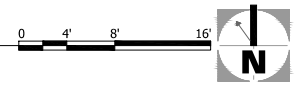




**1 SITE PLAN - ELECTRICAL**  
SCALE: 1" = 20'



**2 SITE PLAN - ELECTRICAL**  
SCALE: 3/8" = 1'-0"



**GENERAL SHEET NOTES**

- THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS SEALED, SIGNED, AND DATED  
 THIS PLOT MAY NOT BE FULL SIZE - ADJUST SCALE ACCORDINGLY  
 REFER TO GENERAL NOTES ON DRAWING E001
- A REFER TO REFLECTED CEILING PLAN DRAWINGS FOR LOCATIONS OF CEILING MOUNTED DEVICES
  - B BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG - CONDUIT SHALL BE MINIMUM 3/4" C
  - C BRANCH CIRCUIT CONDUCTORS WITH A CIRCUIT LENGTH FROM THE OVERCURRENT PROTECTION DEVICE GREATER THAN 100-FT SHALL BE SIZED NOT TO EXCEED 2.0% VOLTAGE DROP TO THE LOAD CENTER
  - D PANEL BOARDS, CABINETS, AND ELECTRICAL EQUIPMENT ARE SHOWN ON THE DRAWINGS WITH THE IDENTIFYING TEXT ON THE FRONT SIDE - THE EQUIPMENT FRONT IS TOWARD THE IDENTIFYING TEXT
  - E ALL CIRCUITS SHALL HAVE DEDICATED (UNSHARED) NEUTRAL CONDUCTORS UNLESS MULTI-POLE CIRCUIT BREAKERS ARE SHOWN FOR THE CIRCUITS IN THE PANEL BOARD SCHEDULES - PROVIDE HANDLE TIES FOR 1-POLE CIRCUIT BREAKERS ON CIRCUITS WITH SHARED NEUTRALS
  - F PROVIDE MINIMUM FOUR (4) SPARE 3/4" C STUBBED OUT ABOVE ACCESSIBLE CEILING FROM EACH NEW FLUSH PANEL BOARD SECTION FOR FUTURE USE - THESE ARE NOT SHOWN ON THE PLANS
  - G REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS AND BUILDING AUTOMATION SYSTEM (BAS) SHOP DRAWINGS FOR CONTROL DIAGRAMS, SEQUENCE OF OPERATION DESCRIPTIONS, AND BUILDING AUTOMATION SYSTEM POWER REQUIREMENTS - REFER TO SPEC 26 0050 Para 3.6 FOR BRANCH CIRCUITS AND OTHER POWER WIRING REQUIREMENTS NOT SHOWN ON THESE DRAWINGS
  - H ALL PANEL BOARD SIGNAGE, NAMEPLATES, CIRCUIT NUMBERS, AND DIRECTORIES IN FINISHED AREAS SHALL BE LOCATED BEHIND THE TRIM DOOR WHEN CLOSED
  - I ALL CIRCUIT NUMBER LABELS AT OUTLETS, RECEPTACLES, AND SWITCHES IN FINISHED AREAS SHALL BE LOCATED ON THE CONDUCTORS INCLUDING GROUNDED CONDUCTORS OR BEHIND THE DEVICE PLATE ALONG THE FRONT SIDE OR BOTTOM EDGE OF THE OUTLET BOX OR DEVICE RING - NOT ON THE DEVICE PLATE OR THE DEVICE
  - J MOUNTING HEIGHT FOR OUTLETS IS TO THE CENTER OF BOX - OUTLETS ARE TO BE +18 UNLESS NOTED OTHERWISE

**SHEET KEYNOTES**

- 1 DRIVEN GND ROD w/ TOP 12" BELOW FINISH GRADE
- 2 PROVIDE #4/0 AWG STRANDED BARE CU CONDUCTOR 12" BELOW FINISH GRADE
- 3 BOND GND TO FOUNDATION FOOTING STEEL
- 4 BOND GND ELECTRODE CONDUCTOR TO LOOP CONDUCTOR
- 5 BOND TO THE TOP OF EACH ROD
- 6 PROVIDE #6 AWG SOLID BARE CU GROUNDING ELECTRODE CONDUCTOR
- 7 PROVIDE 17"x30" VAULT w/ CONC COLLAR - QUAZITE #G8B173017
- 8 PROVIDE PAD BLOCK-OUTS FOR CONDUIT
- 9 PROVIDE REINFORCED CONCRETE SLAB AT EQUIPMENT
- 10 3#6 & #10G - 2" C

**WILSON & COMPANY**  
 2600 THE AMERICAN RD. SE SUITE 100  
 RIO RANCHO, NM 87124  
 PHONE: 505-898-8021  
 FAX: 505-898-8501  
 www.wilsoncc.com

**AAE**  
 CONSULTANTS  
 ELECTRICAL ENGINEERING  
 400 HANCOCK BLVD SUITE 109  
 ALBUQUERQUE, NM 87102  
 505.413.1310  
 Copyright © 2024

12/19/2024  
**PAUL L. WETTER**  
 NEW MEXICO  
 8726  
 REGISTERED PROFESSIONAL ENGINEER

PROJECT NAME  
**SANTA FE COUNTY  
 ROMERO PARK  
 WATERLINE**

REV.	DATE	DESCRIPTION	BY

PROJECT NO: 23-600-155-00  
 DESIGNED BY: DLW  
 DRAWN BY: DLW  
 CHECKED BY: DLW  
 DATE: 12/19/2024

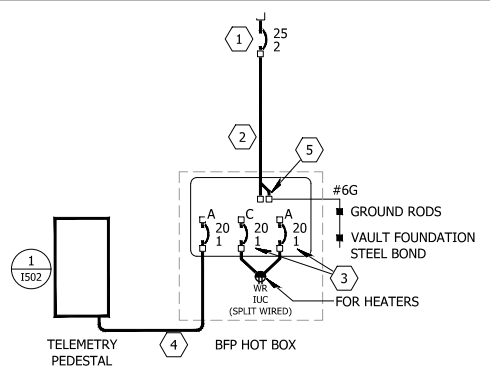
SHEET TITLE  
**ELECTRICAL  
 SITE PLAN**

SHEET NO:  
**E101**

**nm811**  
 Homeowner's Best Friend  
 Call before you dig  
 TWO WORKING DAYS  
 BEFORE YOU DIG CALL  
 811 OR 285-1000

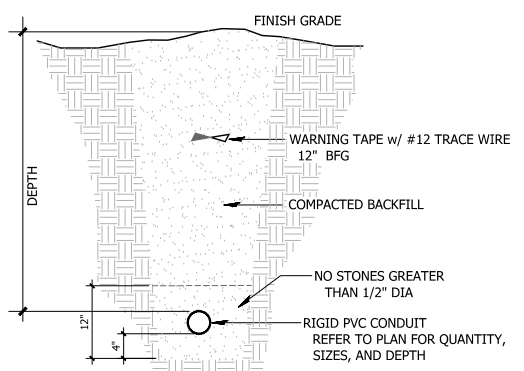
NOTICE OF EXTENDED PAYMENT PROVISION:  
 THIS CONSTRUCTION CONTRACT SPECIFICALLY PROVIDES FOR A PAYMENT LATER THAN 21 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT. THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.



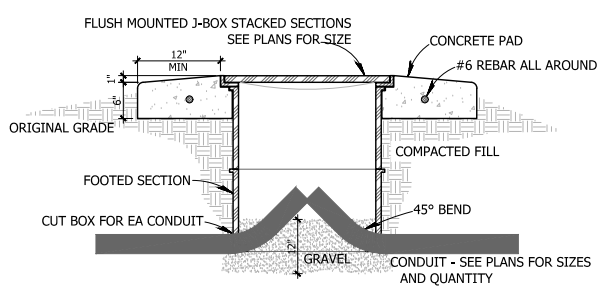


**1 DIAGRAM**  
DISTRIBUTION  
NOT TO SCALE

**BONDING LEGEND**  
 ■ EXOTHERMIC WELD  
 □ BOLTED BRONZE CLAMP



**2 SECTION**  
BURIED CONDUIT (NOT ENCASED)  
NO SCALE



**3 DETAIL**  
EXTERIOR J-BOX w/ CONCRETE PAD  
NO SCALE

**GENERAL SHEET NOTES**

THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS SEALED, SIGNED, AND DATED  
 THIS PLOT MAY NOT BE FULL SIZE - ADJUST SCALE ACCORDINGLY  
 REFER TO GENERAL NOTES ON DRAWING E001

**GROUNDING ELECTRODE CONDUCTOR SIZE**

SERVICE PHASE CONDUCTOR SIZE	MINIMUM GEC SIZE	EQUIVALENT AWG	KCMIL
CU	AL	CU	
<=2	<=1/0	8	66.4
1 - 1/0	2/0 - 3/0	6	105.6
2/0 - 3/0	4/0 - 250	4	133.1
>3/0 - 350	>250 - 500	2	167.8
>350 - 600	>500 - 900	1/0	211.6
>600 - 1100	>900 - 1750	2/0	
>1100	>1750	3/0	

USE TOTAL CONDUCTOR AREA PER PHASE FOR PARALLEL CONDUCTORS  
 NEC TABLE 250.66

**SHEET KEY NOTES**

- 1 PROVIDE CB FOR SPACE IN EXISTING PANEL BOARD AT FIRE STATION
- 2 PROVIDE 3#6 & #10G - 2"
- 3 PROVIDE TWO GFCI CB IN 120/240V 1-PHASE MLO LOAD CENTER w/ NEMA 3R ENCLOSURE - SQ-D #Q0612L100RB w/ PK7GTA (6 SPACES) - LOCATE INSIDE HOT BOX - ROUTE CIRCUIT NEUTRALS THROUGH GFCI CBs
- 4 2#12 & #12G - 1"
- 5 DO NOT BOND NEUTRAL TO GND

**WILSON & COMPANY**  
 2600 THE AMERICAN RD. SE SUITE 100  
 RIO RANCHO, NM 87124  
 PHONE: 505-898-8021  
 FAX: 505-898-8501  
 www.wilsoncc.com

**AAE**  
 CONSULTANTS  
 ELECTRICAL ENGINEERING  
 400 HANCOCK BLVD. SUITE 109  
 ALBUQUERQUE, NM 87102  
 Phone: 505-413-1310  
 Copyright © 2024

12/19/2024  
**PAUL L. WETTER**  
 NEW MEXICO  
 8726  
 REGISTERED PROFESSIONAL ENGINEER

**SANTA FE COUNTY  
 ROMERO PARK  
 WATERLINE**

REV.	DATE	DESCRIPTION	BY

PROJECT NO: 23-600-155-00  
 DESIGNED BY: DLW  
 DRAWN BY: DLW  
 CHECKED BY: DLW  
 DATE: 12/19/2024

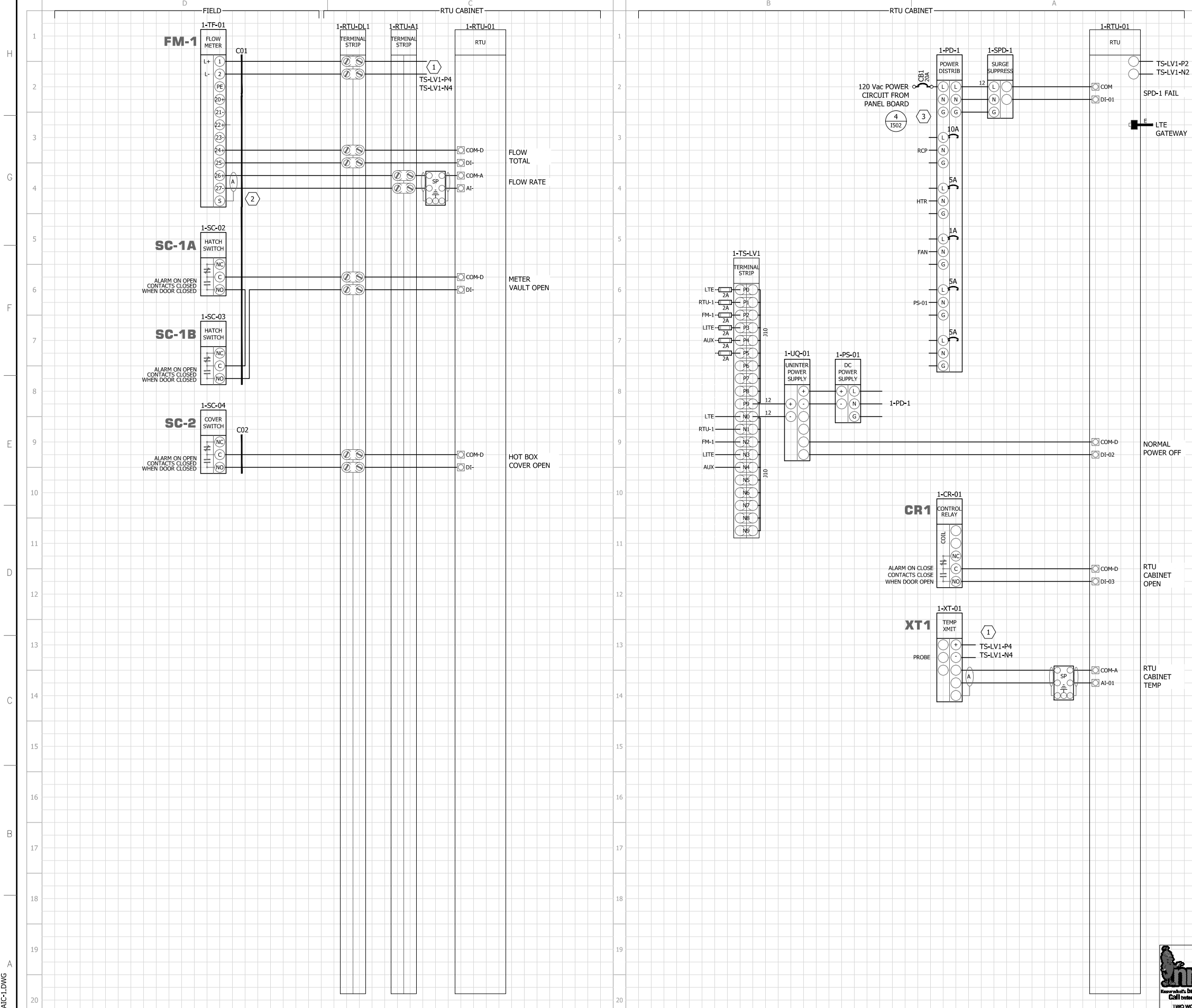
SHEET TITLE  
**ELECTRICAL  
 DIAGRAMS DETAILS  
 AND SCHEDULES**

SHEET NO:  
**E501**



**NOTICE OF EXTENDED PAYMENT PROVISION:**  
 THIS CONSTRUCTION CONTRACT SPECIFICALLY PROVIDES FOR A PAYMENT LATER THAN 21 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT. THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

CONTINUED FROM THE RIGHT SIDE OF THIS SHEET



**GENERAL SHEET NOTES**

THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS SEALED, SIGNED, AND DATED  
 THIS PLOT MAY NOT BE FULL SIZE - ADJUST SCALE ACCORDINGLY  
 REFER TO GENERAL NOTES ON DRAWING E001

**SHEET KEY NOTES**

- 1 PROVIDE AUXILIARY POWER FOR DEVICE
- 2 CONNECT CONDUCTOR SHIELDS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS
- 3 DO NOT BOND N-G AT CABINET

**CONDUCTOR SCHEDULE**

KEY	DESCRIPTION
A	#18TPS (2C) STRANDED TINNED CU TWISTED PAIR SHIELDED
B	SHIELDED (FURNISHED BY INSTRUMENT SUPPLIER)
C	DOUBLE SHIELDED (FURNISHED BY INSTRUMENT SUPPLIER)
D	#18TPS (3C) STRANDED TINNED CU TWISTED PAIR SHIELDED w/ GROUND
E	4#24 UTP CAT 5e ETHERNET BLUE JACKET PLENUM RATED
F	COAXIAL ANTENNA CABLE RG-6U
12	#12 AWG SOLID CU THHN/THWN-2 600V
14	#14 AWG STRANDED CU MTW 300V
16	#16 AWG STRANDED CU MTW 300V
6	#6 AWG SOLID CU GND (GREEN THHN/THWN-2) 600V

FOMxx MULTI-MODE FIBER OPTIC BUNDLE xx = STRAND COUNT  
 FOSxx SINGLE-MODE FIBER OPTIC BUNDLE xx = STRAND COUNT

ALL SIGNAL CONDUCTORS TO BE KEY 16 UNLESS INDICATED OTHERWISE

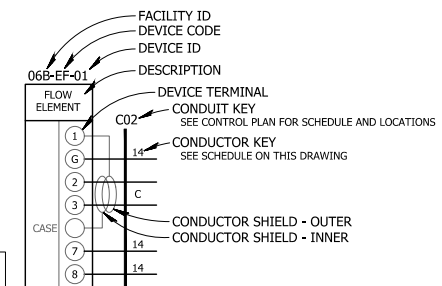
TYPE	INSULATION JACKET COLOR
120/208-240 Vac	BLACK (A) / RED (B) / BLUE (C) PHASE - WHITE (N)
277/480 Vac	BROWN (A) / ORANGE (B) / YELLOW (C) PHASE - GRAY (N)
G	GREEN
IG	GREEN w/ YELLOW STRIPE
120-277 Vac DI	PINK or WHITE w/ BLACK, RED, OR BLUE STRIPE
120-277 Vac DO	TAN or WHITE w/ BLACK, RED, OR BLUE STRIPE
0-30 Vdc DI	PURPLE or BLACK, RED, or BLUE w/ WHITE STRIPE
0-30 Vdc DO	BLACK w/ WHITE STRIPE
AI	BLACK
AO	BLACK
E	LT. BLUE (CAT5e) LIME (CAT6)
FOM	ORANGE
FOS	YELLOW

**CONDUIT SCHEDULE**

KEY	SIZE	FROM	TO	NOTE
C01	1"	RTU	METER VAULT	
C02	1"	RTU	BFP HOT BOX	

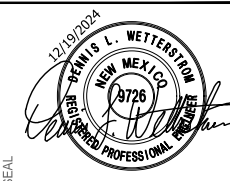
NOTES  
 1

**LEGEND**



NOTICE OF EXTENDED PAYMENT PROVISION:  
 THIS CONSTRUCTION CONTRACT SPECIFICALLY PROVIDES FOR A PAYMENT LATER THAN 21 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT. THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

**WILSON & COMPANY**  
 2600 THE AMERICAN RD. SE SUITE 100  
 RIO RANCHO, NM 87124  
 PHONE: 505-898-8021  
 FAX: 505-898-8501  
 www.wilsoncc.com



SANTA FE COUNTY  
 ROMERO PARK  
 WATERLINE

REV.	DATE	DESCRIPTION	BY

PROJECT NO: 23-600-155-00  
 DESIGNED BY: DLW  
 DRAWN BY: DLW  
 CHECKED BY: DLW  
 DATE: 12/19/2024

SHEET TITLE  
**ELECTRICAL INSTRUMENTATION DIAGRAMS**

SHEET NO:  
**1501**

026EAC-L.DWG

CONTINUED TO THE LEFT SIDE OF THIS SHEET



# INSTRUMENTATION and CONTROL SCHEDULE

ID	DESCRIPTION	LOCATION	FIELD										PLC					NOTES	
			POWER			INPUTS/OUTPUTS							CONTROL						
			V-P	FROM	CCT	TYPE	SEQ	DESCRIPTION	TO/ FROM	V	PORT ID RACK SLOT PORT	WIRE TAG	CONDUIT TAG	SIZE	FUNCTION	CRITERIA	ACTIONS		TO
1-TF-01	FM1 FLOW METER	METER VAULT	24DC	RTU		AI	1	FM1 FLOW RATE	24	0 2 1	1-TF-01-AI-1			RQI-01				GPM	
						DI	1	FM1 FLOW TOTAL	RTU	24	0 3 1	1-TF-01-DI-1	CO1	3/4				165 GAL	
						DI	2	FM1 FAULT	RTU	24	0 3 2	1-TF-01-DI-2			YA-01		ALARM VAULT-01	SCADA	FM1 FAULT
1-SC-01	SC-1A/SC-1B HATCH SWITCHES	METER VAULT				DI	1	VAULT HATCHES	RTU	24	0 3 3	1-SC-01-DI-1	CO1	3/4	YE-01		ALARM VAULT-02	SCADA	VAULT HATCH OPEN
1-SC-02	SC-2 COVER SWITCH	BFP HOT BOX				DI	1	HOT BOX COVER	RTU	24	0 3 4	1-SC-02-DI-1	CO2	3/4	YE-03		ALARM BFP-01	SCADA	HOT BOX COVER OPEN
1-SC-03	RTU CABINET SWITCH	RTU				DI	1	DOOR OPEN	RTU	24	0 3 5	1-SC-03-DI-1	-	-	YE-04		ALARM RTU-01	SCADA	RTU DOOR OPEN
1-UQ-01	RTU UPS	RTU				DI	1	UPS FAULT	RTU	24	0 3 6	1-UQ-01-DI-1	-	-	YE-05		ALARM RTU-02	SCADA	RTU UPS FAULT
1-SPD-1	RTU SURGE	RTU				DI	1	SURGE FAULT	RTU	24	0 3 7	1-SPD-1-DI-1	-	-	YE-06		ALARM RTU-03	SCADA	RTU SURGE FAULT

**NOTES**

GENERAL  
 Lxxx = LOGIC RELAY  
 X = MEASURED LEVEL  
 SP = SET POINT  
 PLC = PLC AT RTU  
 R/O = REMOTE I/O  
 CONDUIT SIZES ARE FOR SINGLE DEVICE - SEE PLANS FOR I&C CONDUITS

NUMBERED

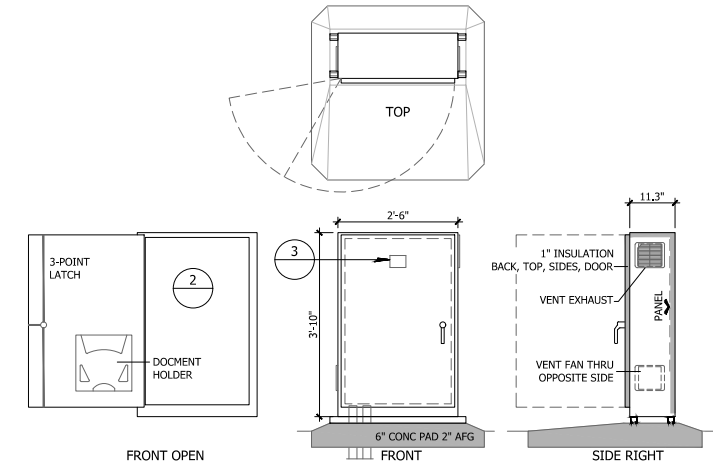
## SCADA ALARM SCHEDULE

ALARM ID	DESCRIPTION/DISPLAY	ACTIONS	LOG	NOTE
VAULT-01	FM1 FAULT			
VAULT-02	VAULT HATCH OPEN			
BFP-01	HOT BOX COVER OPEN			
RTU-01	RTU DOOR OPEN			
RTU-02	RTU UPS FAULT			
RTU-03	RTU SURGE FAULT			

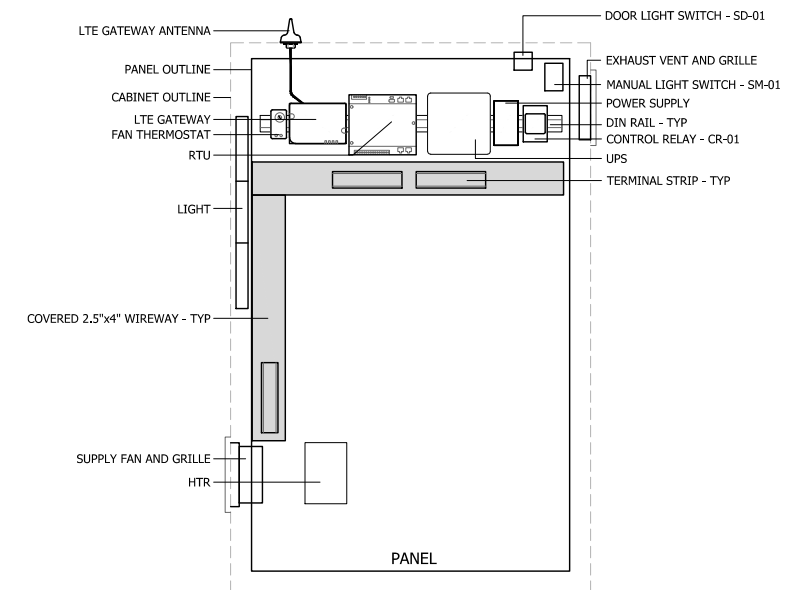
**NOTES**

GENERAL  
 ALL ALARMS TO BE DISPLAYED ON HMI  
 ALL ALARMS AND END OF ALARMS ARE TO BE LOGGED w/ DATE & TIME  
 ALL ALARMS AND END OF ALARMS ARE TO BE TRANSMITTED TO WATER OPERATIONS SCADA

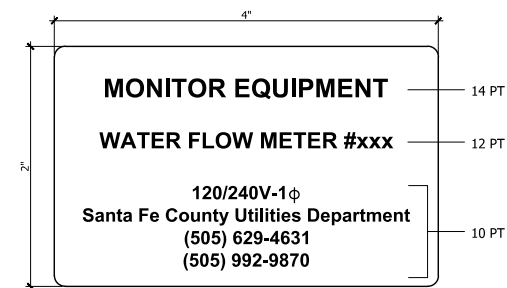
NUMBERED



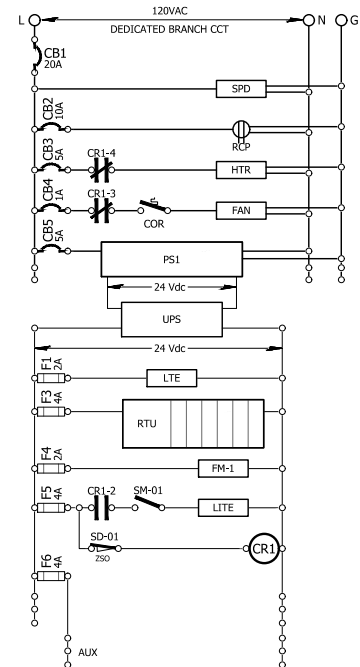
**1** DETAIL  
 RTU CABINET  
 SCALE: 1/2" = 1'-0"



**2** DETAIL  
 RTU INTERIOR  
 SCALE: 1+1/2" = 1'-0"



**3** DETAIL  
 RTU IDENTIFICATION NAMEPLATE  
 NO SCALE

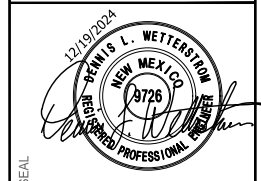
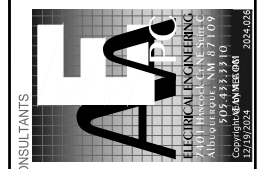


**4** DIAGRAM  
 METER STATION MONITOR PANEL - POWER  
 NO SCALE



NOTICE OF EXTENDED PAYMENT PROVISION:  
 THIS CONSTRUCTION CONTRACT SPECIFICALLY PROVIDES FOR A PAYMENT LATER THAN 21 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT. THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

**WILSON & COMPANY**  
 2600 THE AMERICAN RD. SE SUITE 100  
 RIO RANCHO, NM 87124  
 PHONE: 505-898-8021  
 FAX: 505-898-8501  
 www.wilsoncc.com



SANTA FE COUNTY  
 ROMERO PARK  
 WATERLINE

REV.	DATE	DESCRIPTION	BY

PROJECT NO: 23-600-155-00  
 DESIGNED BY: DLW  
 DRAWN BY: DLW  
 CHECKED BY: DLW  
 DATE: 12/19/2024

SHEET TITLE  
**ELECTRICAL INSTRUMENTATION DETAILS AND SCHEDULES**

SHEET NO:  
**1502**