

LOS ALAMOS CANYON FIBER OPTIC EXTENSION

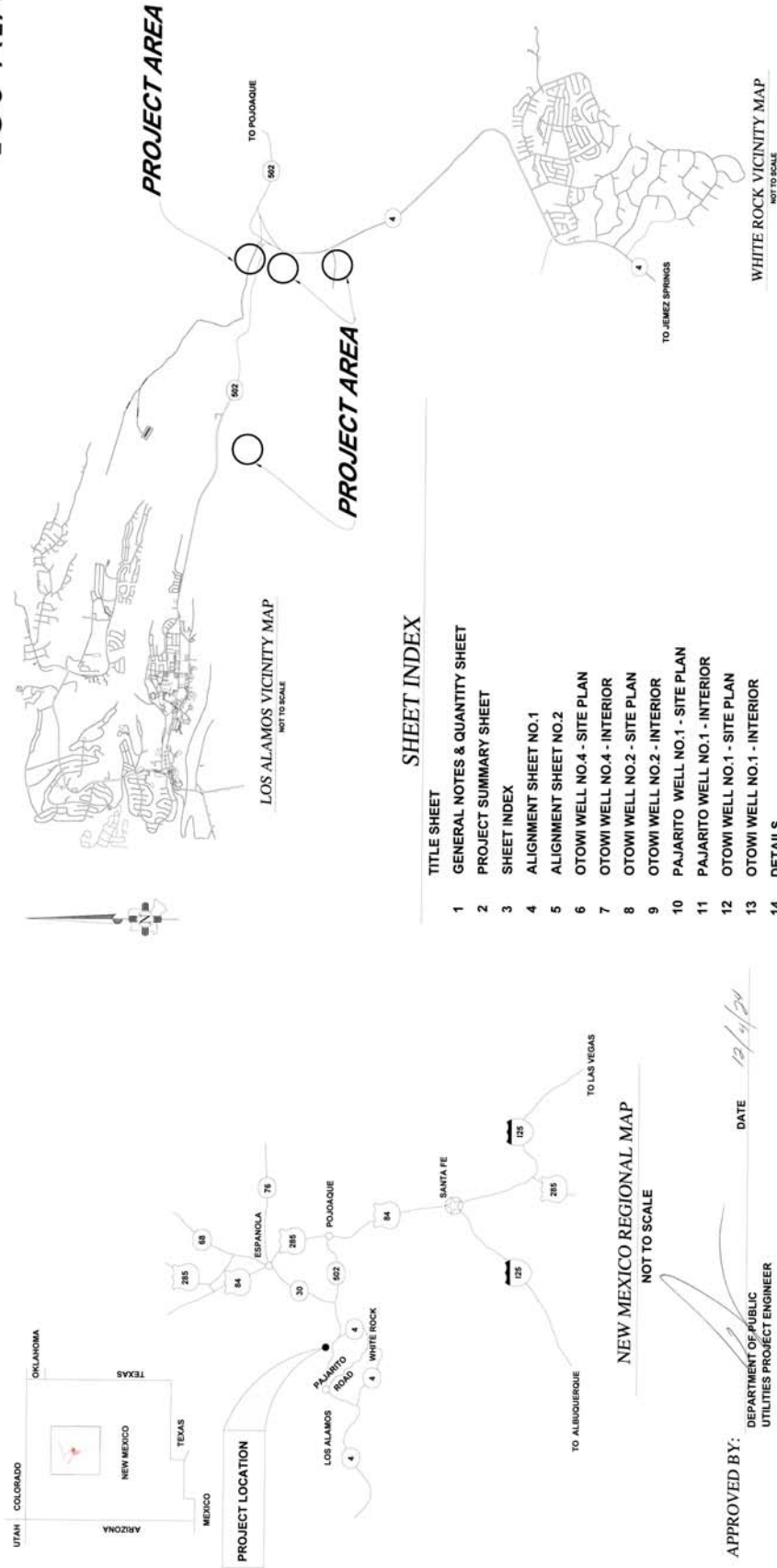
IFB-2025-33

LOS ALAMOS COUNTY - NEW MEXICO

NMED CPB FUNDING NUMBER DW-6368



LOS ALAMOS



SHEET INDEX

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APPROVED BY: DATE 12/14/2024

DEPARTMENT OF PUBLIC UTILITIES PROJECT ENGINEER

DATE 12/14/2024

DEPARTMENT OF PUBLIC UTILITIES ENGINEERING ASSOCIATE

DEPARTMENT OF ENERGY / LOS ALAMOS NATIONAL LABORATORY JURISDICTION

1. THE WORK IS LOCATED ON LANDS OWNED BY THE DEPARTMENT OF ENERGY. THE FOLLOWING PROVISIONS APPLY TO WORK IN THIS AREA.

2. THE CONTRACTOR IS RESTRICTED TO USE THE EXISTING MAINTENANCE ROADS AND PREVIOUSLY DISTRIBUTED UTILITY CORRIDORS TO ACCESS THE OVERHEAD UTILITY POLES DURING CONSTRUCTION OF THE FIBER OPTIC LINE. NO EXCEPTIONS.

3. LANL BADGE REQUIREMENT. CONTRACTOR'S STAFF IS REQUIRED TO SECURE A LOS ALAMOS NATIONAL LABORATORY (LANL) IDENTIFICATION BADGE AND HAVE ON THEIR PERSON AT ALL TIMES WHILE WORKING.

4. COMPLETE AND RETURN THE BADGE REQUEST PAPERWORK TO OBTAIN A LANL BADGE THREE WEEKS PRIOR TO ARRIVAL ON-SITE.

5. IF AN INDIVIDUAL HAS NOT PREVIOUSLY HELD A BADGE AT LANL, THEY WILL NEED TO PROVIDE PROOF OF U.S. CITIZENSHIP BY PRESENTING A VALID U.S. PASSPORT OR AN OFFICIAL STATE SEALED BIRTH CERTIFICATE.

6. AN INDIVIDUAL MUST PROVIDE PROOF OF IDENTITY TO PICK UP THEIR BADGE BY PRESENTING A VALID STATE ISSUED DRIVER'S LICENSE OR A U.S. PASSPORT.

7. CONTRACTOR'S STAFF SHALL BE AMERICAN CITIZENS.

8. CONTRACTOR SHALL HAVE A STAFF MEMBER ON-SITE AT ALL TIME WHO HAS COMPLETED THE LANL EXCAVATION SAFETY TRAINING. A LANL BADGE AND Z NUMBER IS REQUIRED TO TAKE THE TRAINING. THE TRAINING IS COMPUTER BASED AND HELD IN WHITE ROCK, NM. THE TEST TAKES LESS THAN AN HOUR.

9. THE CONTRACTOR, WITH ASSISTANCE FROM THE COUNTY'S PROJECT MANAGER, WILL SUBMIT AN APPLICATION FOR A LANL EXCAVATION PERMIT FOR GROUND DISTURBING ACTIVITIES. THE APPLICATION SHALL BE SUBMITTED ONE MONTH PRIOR TO SCHEDULED GROUND DISTURBING ACTIVITIES TO AVOID DELAYS. INSTALLATION OF PULL BOXES, GUY WIRE ANCHORS AND UNDERGROUND CONDUIT TRENCHING ARE THE GROUND DISTURBING ACTIVITIES THAT APPLY.

10. LANL'S EXCAVATION PERMIT PROCESS IS THE PROCESS TO HAVE LANL LOCATE THEIR UNDERGROUND UTILITIES.

TRAFFIC CONTROL

1. THE ONLY WORK REQUIRING TRAFFIC CONTROL WILL BE THE AERIAL CROSSING OF STATE HIGHWAY 502. THE FIBER OPTIC LINE MUST BE 25' ABOVE TRAFFIC LANES.

2. A UTILITY PERMIT MUST BE SECURED FROM NMDOT DISTRICT 5 PRIOR TO BEGINNING WORK ON THE NM-502 CROSSING. CONTRACTOR SHALL ALSO SUBMIT TRAFFIC CONTROL PLAN TO LOS ALAMOS COUNTY TRAFFIC DIVISION.

3. NMDOT REQUIREMENTS:

- a. AN APPLICATION FOR PERMIT TO INSTALL UTILITY FACILITIES WITHIN THE RIGHT OF WAY, PREPARED BY OWNER AND CONTRACTOR.
- b. NMDOT ENVIRONMENTAL CLEARANCE PREPARED BY OWNER AND CONTRACTOR.
- c. LOCATION MAP OF THE WORK AREA PREPARED BY OWNER
- d. PLAN & PROFILE TO INCLUDE TRENCH AND/OR BORE DETAILS, AERIAL VERTICAL CLEARANCES PREPARED BY OWNER
- e. TRAFFIC CONTROL PLAN SEALED BY PROFESSIONAL ENGINEER, BY CONTRACTOR.
- f. TRAFFIC CONTROL SUPERVISOR CERTIFICATION(S), BY CONTRACTOR.
- g. CERTIFICATE OF INSURANCE WITH THE NMDOT LISTED AS ADDITIONAL INSURED FROM CONTRACTOR AND OWNER.
- h. ONCE THE AUTHORIZATION TO PROCEED HAS BEEN ISSUED, THE TRAFFIC CONTROL/ROADWAY WORK PERMIT SHALL BE SUBMITTED WITH THE WORK DATES AND TIMES OF THE PROJECT. TIMES AND DATES ARE SUBJECT BY THE NMDOT TO THE LOCATION.

DEPARTMENT OF ENERGY / LOS ALAMOS NATIONAL LABORATORY JURISDICTION

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3. LANL BADGE REQUIREMENT. CONTRACTOR'S STAFF IS REQUIRED TO SECURE A LOS ALAMOS NATIONAL LABORATORY (LANL) IDENTIFICATION BADGE AND HAVE ON THEIR PERSON AT ALL TIMES WHILE WORKING.

4. COMPLETE AND RETURN THE BADGE REQUEST PAPERWORK TO OBTAIN A LANL BADGE THREE WEEKS PRIOR TO ARRIVAL ON-SITE.

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- g. CERTIFICATE OF INSURANCE WITH THE NMDOT LISTED AS ADDITIONAL INSURED FROM CONTRACTOR AND OWNER.
- h. ONCE THE AUTHORIZATION TO PROCEED HAS BEEN ISSUED, THE TRAFFIC CONTROL/ROADWAY WORK PERMIT SHALL BE SUBMITTED WITH THE WORK DATES AND TIMES OF THE PROJECT. TIMES AND DATES ARE SUBJECT BY THE NMDOT TO THE LOCATION.

GENERAL NOTES

1. THE NEW FIBER OPTIC LINES WILL BE UNDERHUNG ON AN EXISTING 12.2KV POWERLINE. CONTRACTOR SHALL COMPLY WITH THE NATIONAL ELECTRIC SAFETY CODE (NESC) AND OTHER APPLICABLE CODES IN PERFORMING WORK.

2. THE NEW FIBER OPTIC LINE WILL SPLICE INTO A FIBER OPTIC LINE OWNED BY LOS ALAMOS COUNTY. TWO WEEKS PRIOR TO SPLICING THE ACTIVE FIBER OPTIC LINE THE CONTRACTOR SHALL PARTICIPATE IN A COORDINATION MEETING WITH THE PROJECT MANAGER AND A REPRESENTATIVE OF THE LOS ALAMOS COUNTY INFORMATION MANAGEMENT DIVISION WHO OPERATES THE FIBER OPTIC SYSTEM.

3. ALL TESTING OF THE NEW FIBER OPTIC LINE SHALL BE WITNESSED BY THE OWNER.

QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITY
1	144 - Strand ADSS Single Mode Fiber Optic Cable	LF	13,750
2	12 - Strand ADSS Single Mode Fiber Optic Cable	LF	11,000
3	144 - Strand Aerial Splice Box, Complete in Place	EA	3
4	35' Wood Pole, CJP	EA	1
5	4" RGC Pole Riser, Including all Connections	LF	20
6	4" x 4" x 4" Pull Box, CJP	EA	2
7	4" PVC Conduit Including Trench, Backfill, Compaction and Locate Wire	LF	200
8	Furnish and Install Multilink Fiber Distribution Box, Fiber Terminations, Conduits and Other Incidental Work Inside Well House.	EA	4
9	Fiber Drop to Well, Attached to existing Mast, Conduit, Wall Penetration and Other Incidental Work.	EA	3



- ① EXISTING AND NEW FIBER OPTIC LINES ARE OVERHEAD ATTACHED TO LANL POWERLINE
- ② 12 STRANDS WILL BE PLACED IN SERVICE DEDICATED TO WATER PRODUCTION SCADA SYSTEM

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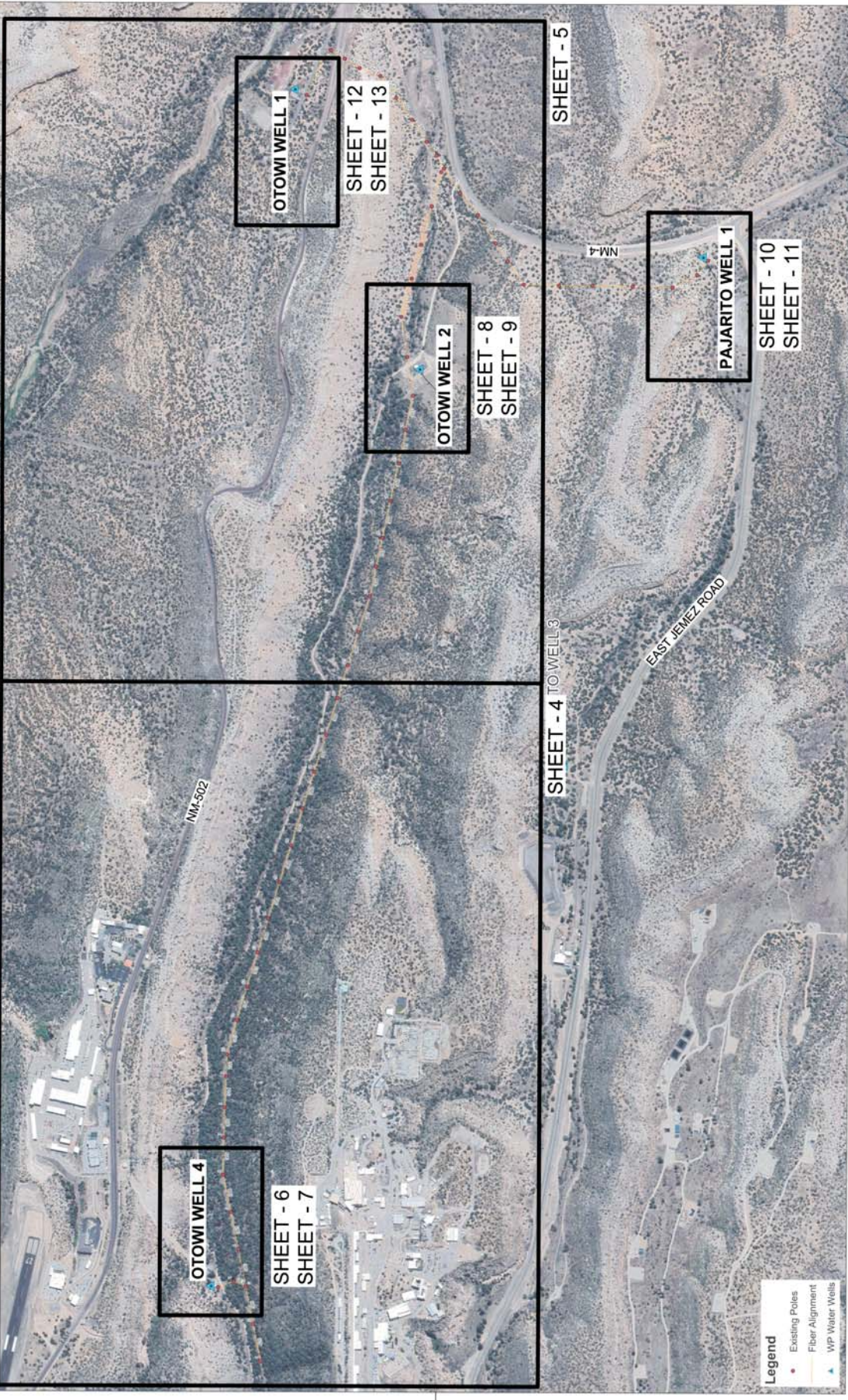
LOS ALAMOS CANYON FIBER
OPTIC EXTENSION
SHEET INDEX



INCORPORATED COUNTY
OF LOS ALAMOS
DEPARTMENT OF PUBLIC UTILITIES
1000 CENTRAL AVE., SUITE 100
LOS ALAMOS, NEW MEXICO 87544
(505) 662-8100 FAX: (505) 662-8109

SHEET
3

LOS ALAMOS



NO.	REVISION DESCRIPTION
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DESIGNED BY: SH	DATE: 10/24/2024
DRAWN BY: SH	APPROVED BY: JJA
SCALE: NOT TO SCALE	

LOS ALAMOS CANYON FIBER OPTIC EXTENSION ALIGNMENT SHEET 1



INCORPORATED COUNTY
OF LOS ALAMOS
DEPARTMENT OF PUBLIC UTILITIES
1000 CENTRAL AVE., SUITE 130
LOS ALAMOS, NEW MEXICO 87544
(505) 662-8100 FAX: (505) 662-8109



- KEYED NOTES**
- 1 EXISTING POWERLINE AND 2-EA. 144 STRAND FIBER OPTIC LINES
 - 2 SPLICE LOCATION ON POLE WITH SLACK LOOP ON EXISTING 144 STRAND FIBER. 12 STRAND FIBER WEST TO QW#4. END
 - 3 NEW 144 STRAND FIBER CONNECTION IN AERIAL SPLICE BOX.
 - 3 CONSTRUCT GUY WIRE PER DETAIL A/14

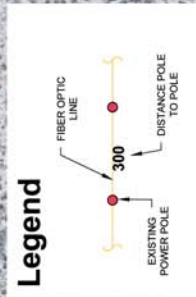
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LOS ALAMOS CANYON FIBER
OPTIC EXTENSION
ALIGNMENT SHEET 2



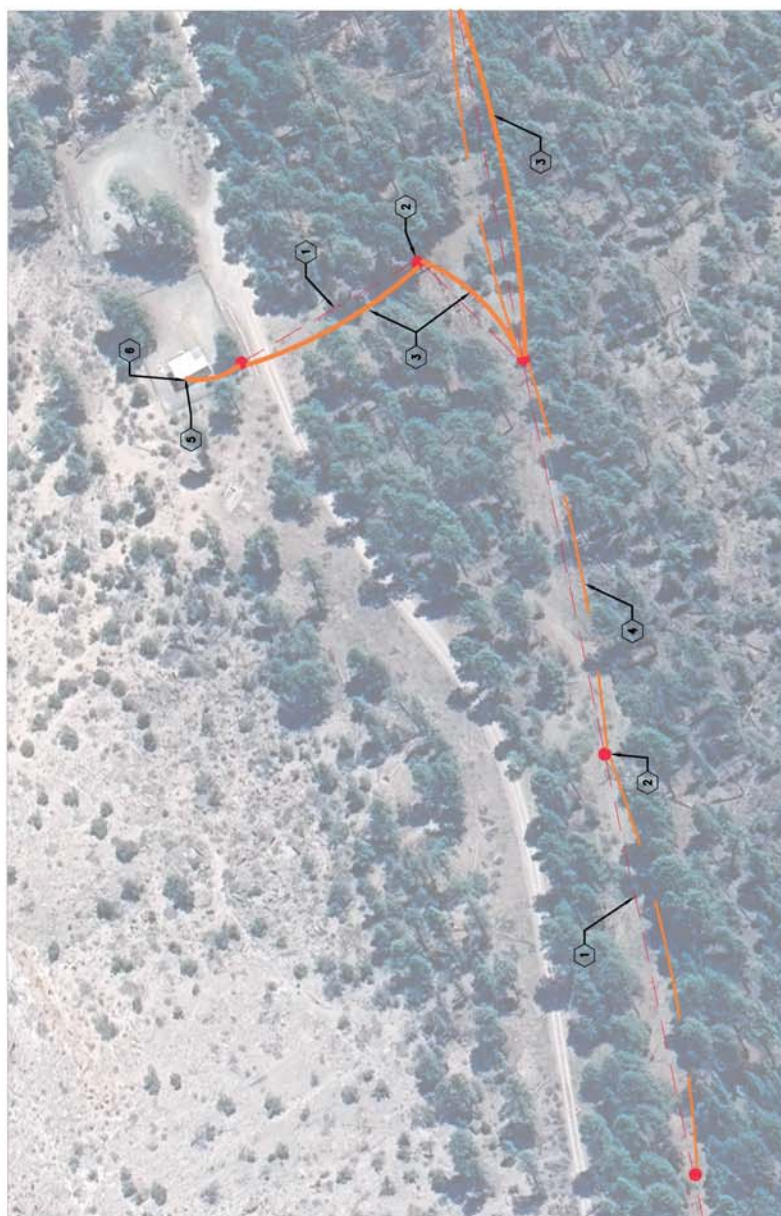
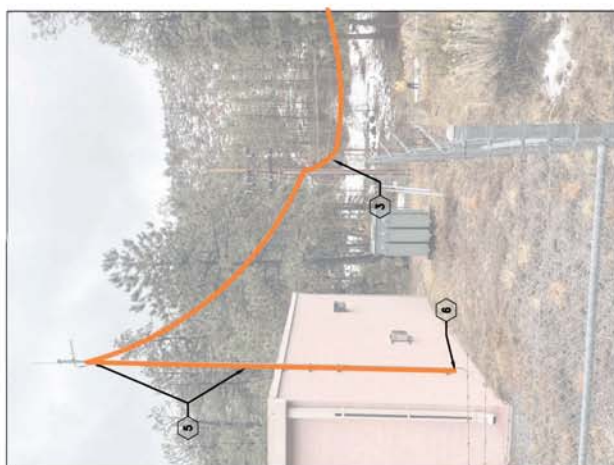
INCORPORATED COUNTY
OF LOS ALAMOS
DEPARTMENT OF PUBLIC UTILITIES
1000 CENTRAL AVE., SUITE 1300
LOS ALAMOS, NEW MEXICO 87544
(505) 662-8150 FAX: (505) 662-8109



KEYED NOTES

- 1 CONSTRUCT GUY WIRE PER DETAIL A/14
- 2 SPLICE POINT TO OW#2. OVERHEAD SPLICE 12 STRANDS TO OW#2
- 3 END 144 STRAND FOR FUTURE IN UNDERGROUND VAULT PER DETAIL F/14. SPLICE POINT 12 STRANDS OVERHEAD AND CONTINUE 12 STRAND FIBER NORTH TO OW#1 AND SOUTH TO PW#1.





KEYED NOTES

- ① EXISTING OVERHEAD ELECTRIC
- ② EXISTING WOODEN UTILITY POLE (TYPICAL).
- ③ NEW 12 STRAND FIBER LINE
- ④ EXISTING 2-EACH 144 STRAND FIBER OPTIC CABLES.
- ⑤ CONNECT NEW 12 STRAND FIBER LINE TO EXISTING SCADA POLE VIA SAG LINE. INSTALL 12 STRAND FIBER IN 1" RGS CONDUIT ATTACHED TO EXISTING POLE.
- ⑥ CONDUIT ENTERS BUILDING THROUGH NEW WALL PENETRATION.



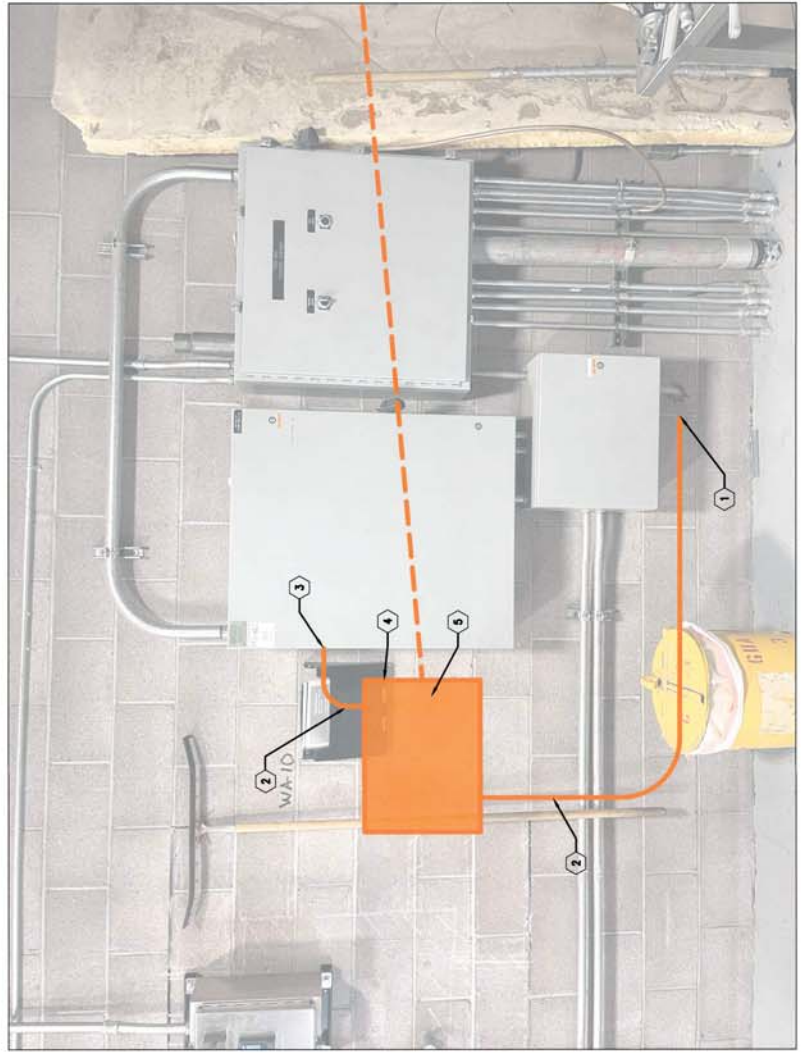
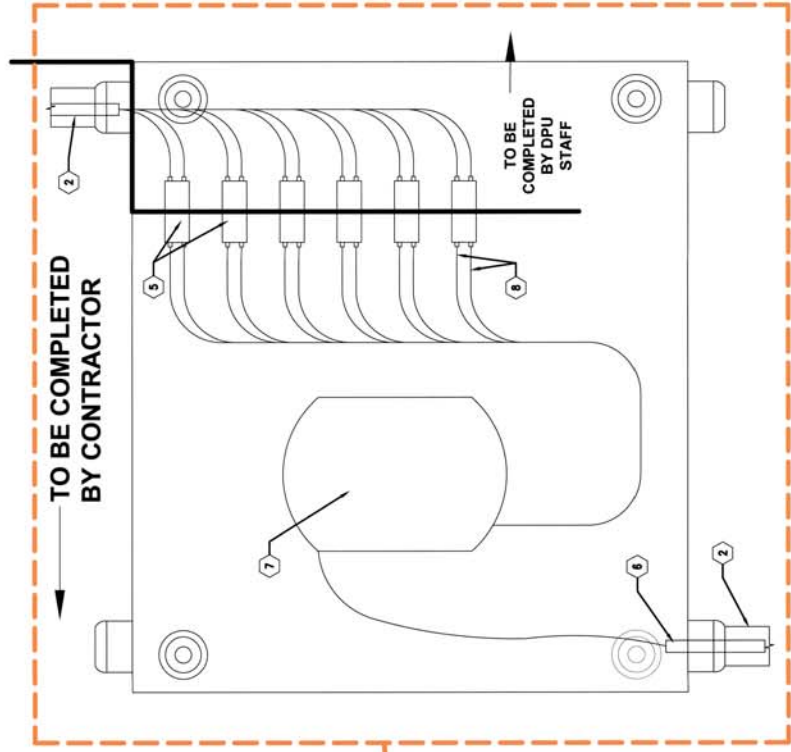
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LOS ALAMOS CANYON FIBER
 OPTIC EXTENSION
 OTOWI WELL NO. 4 - INTERIOR



INCORPORATED COUNTY
 OF LOS ALAMOS
 DEPARTMENT OF PUBLIC UTILITIES
 1000 CENTRAL AVE. SUITE 100
 LOS ALAMOS, NEW MEXICO 87544
 FAX: (505) 662-8150
 (505) 662-8150



KEYED NOTES

- ① NEW WALL PENETRATION
- ② NEW 1" RIDGED CONDUIT WITH LONG SWEET 90° FITTINGS
- ③ NEW PENETRATION INTO EXISTING RTU BOX
- ④ WALL MOUNT PATCH PANEL: MULTILINK FWM-4X-D INCLUDING 12 STRAND SPLICE TRAY
- ⑤ TERMINATE FIBER CABLES INTO DUPLEX ADAPTERS AND ATTACH TO FIXING PLATES PER MANUFACTURER'S SPECIFICATIONS
- ⑥ FIBER CABLE INPUT
- ⑦ 12 STRAND SPLICE TRAY
- ⑧ FIBER CABLE WITH LC/UPC PIGTAIL



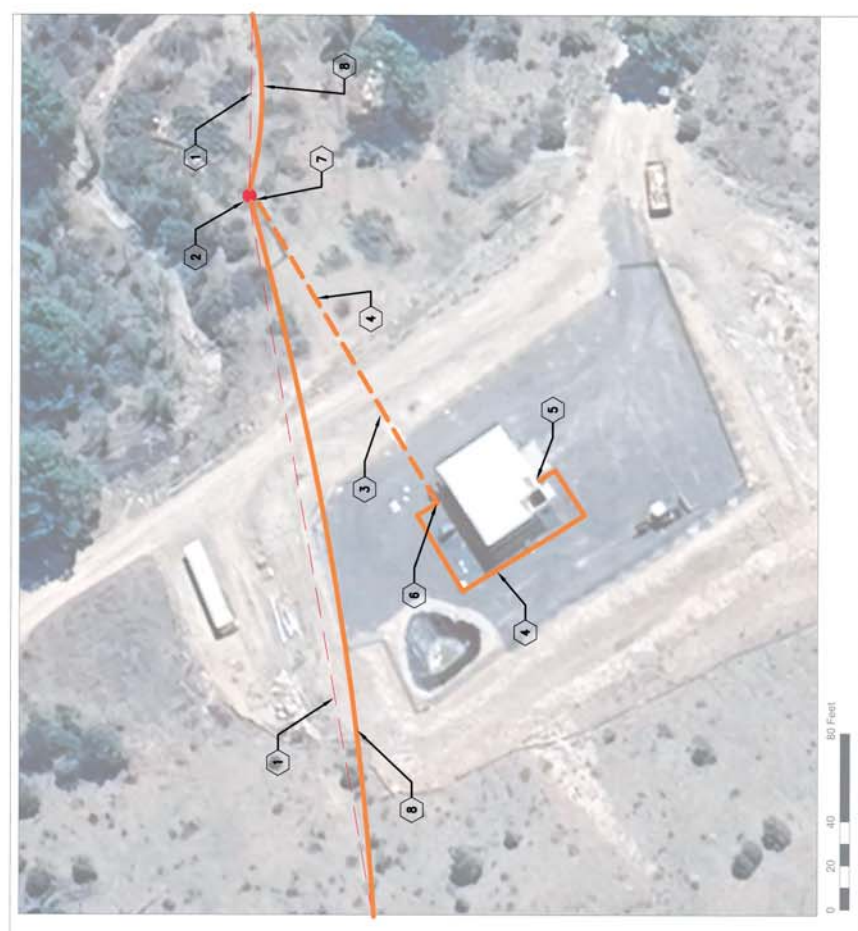
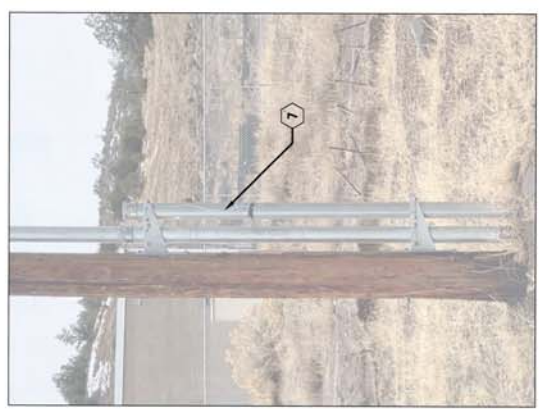
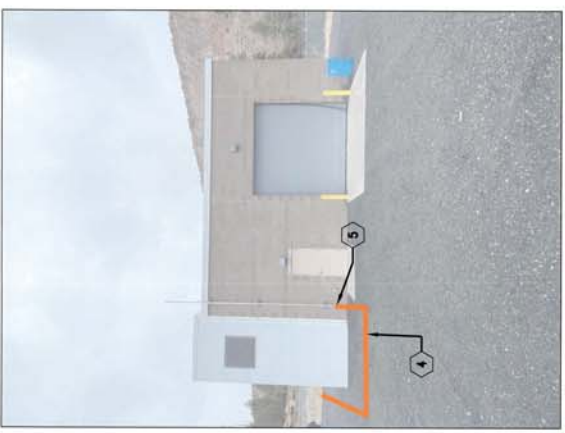
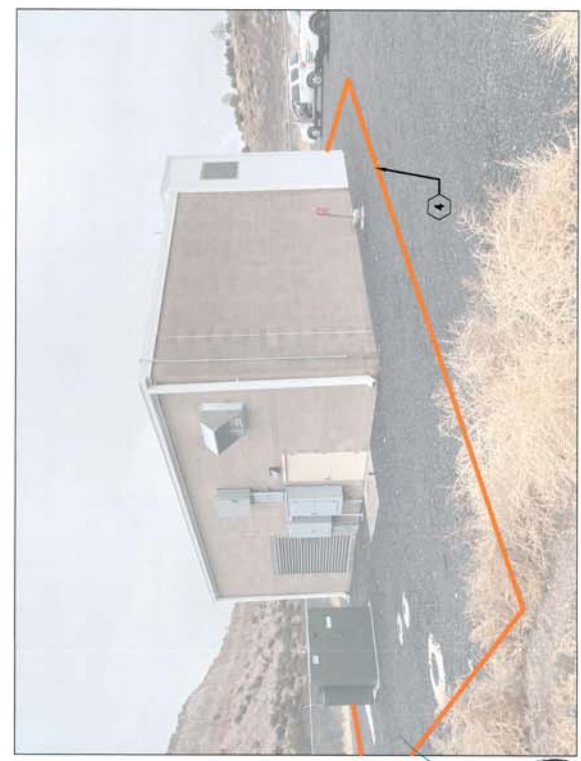
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APPROVED BY: JJA	

LOS ALAMOS CANYON FIBER OPTIC EXTENSION OTOWI WELL NO. 2 - SITE PLAN



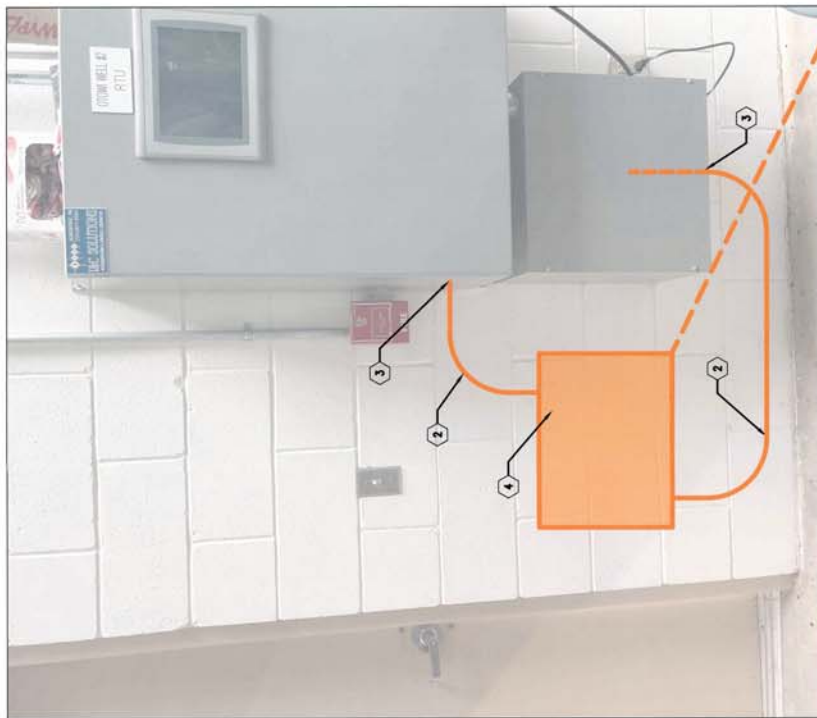
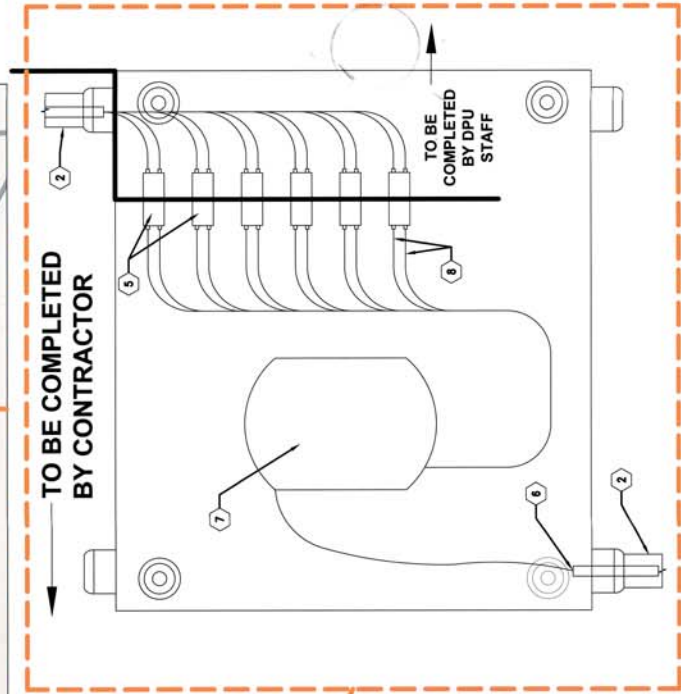
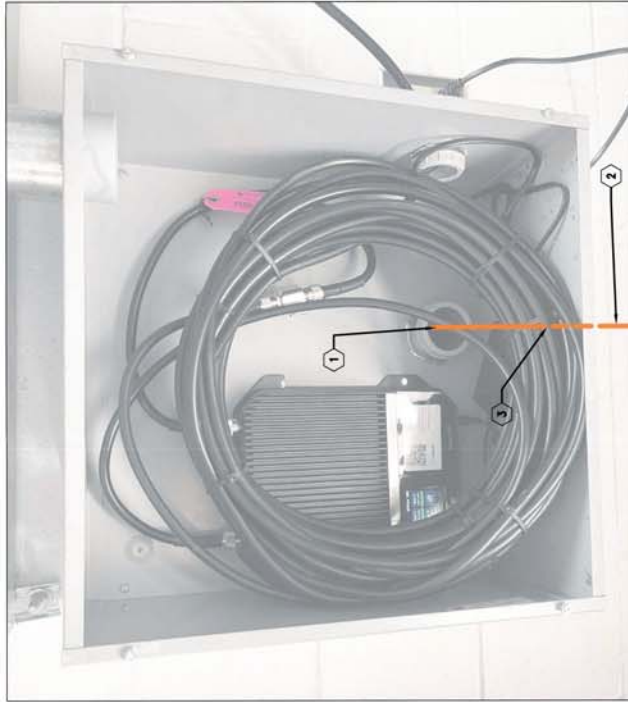
INCORPORATED COUNTY
OF LOS ALAMOS
DEPARTMENT OF PUBLIC UTILITIES
100 CENTRAL AVE., SUITE 100
LOS ALAMOS, NEW MEXICO 87544
(505) 662-8150 FAX: (505) 662-8109



KEYED NOTES

- 1 EXISTING OVERHEAD ELECTRIC
- 2 EXISTING WOODEN UTILITY POLE
- 3 EXISTING 4" UG CONDUIT - USE FOR NEW 12 STRAND FIBER LINE
- 4 NEW 12 STRAND UG FIBER LINE
- 5 EXISTING CONDUIT PENETRATION - TO BE USED FOR NEW FIBER LINE
- 6 PULL BOX INTERCEPT - END EX. CONDUIT. START NEW 4" CONDUIT. INSTALL PER TRENCH DETAIL A/15. NEW FIBER OPTIC PULL BOX PER DETAIL B/15.
- 7 EXISTING 4" CONDUIT RISER - 6' ABOVE FINISHED GRADE. CONNECT TO NEW 12 STRAND FIBER LINE PER DETAIL C/14. SPLICE 12 STRANDS AND EXTEND TO WELL.
- 8 NEW 144 STRAND OVERHEAD FIBER LINE.





KEYED NOTES

- ① PULL 12 STRAND FIBER CABLE THROUGH EXISTING WALL PENETRATION
- ② NEW 1" RIDGED CONDUIT WITH LONG SWEEP 90° FITTINGS
- ③ NEW PENETRATION INTO EXISTING RTU BOX
- ④ WALL MOUNT PATCH PANEL: MULTILINK FWM-4X-D INCLUDING 12 STRAND SPLICE TRAY
- ⑤ TERMINATE FIBER CABLES INTO DUPLEX ADAPTERS AND ATTACH TO FIXING PLATES PER MANUFACTURER'S SPECIFICATIONS
- ⑥ FIBER CABLE INPUT
- ⑦ 12 STRAND SPLICE TRAY.
- ⑧ FIBER CABLE WITH LC/UPC PIGTAIL

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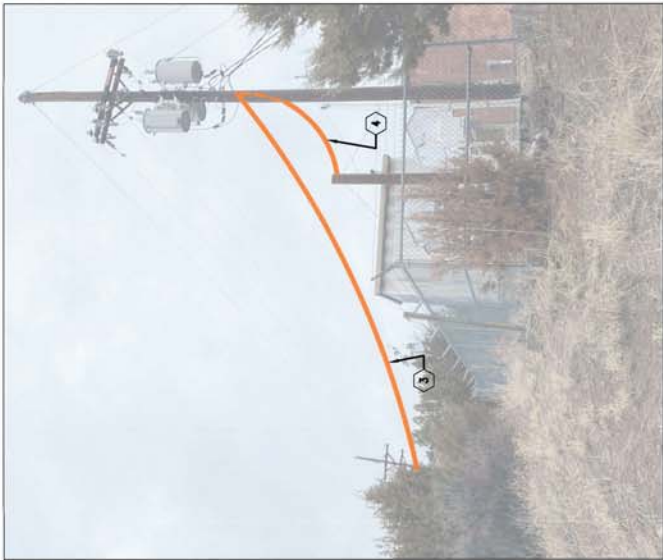
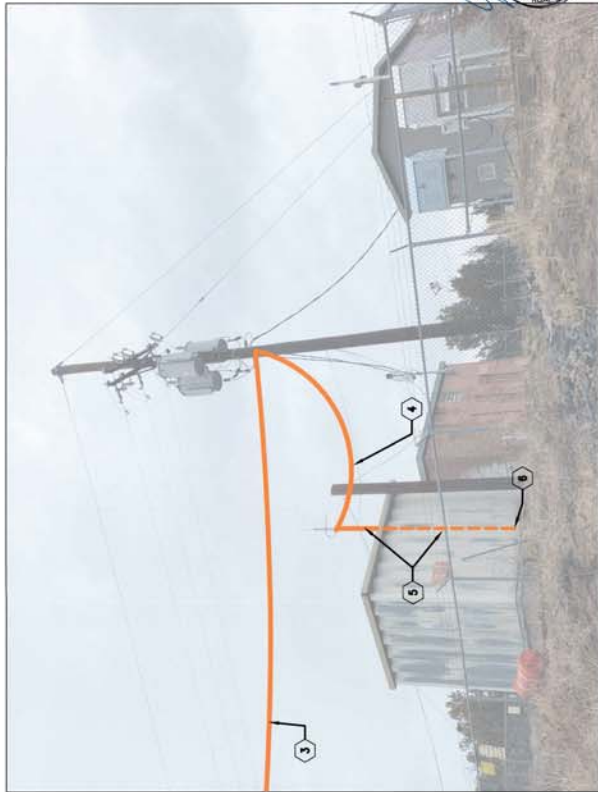
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APPROVED BY:	JJA
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SCALE:	NOT TO SCALE

LOS ALAMOS CANYON FIBER OPTIC EXTENSION PAJARITO WELL NO. 1 - SITE PLAN



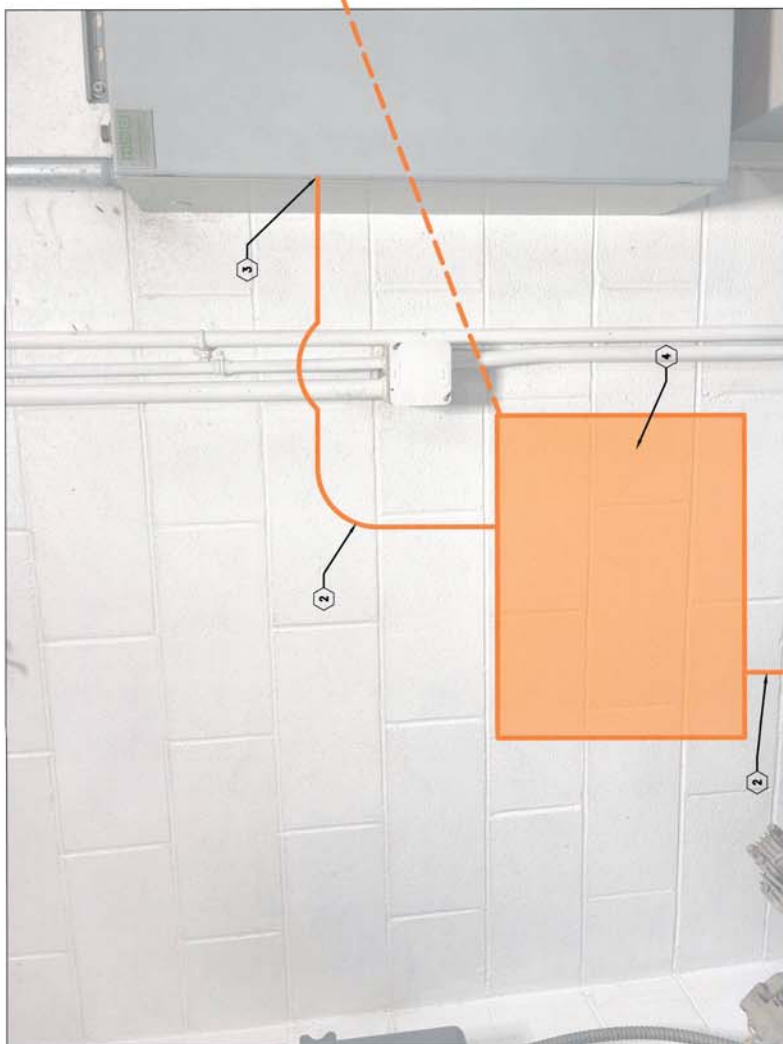
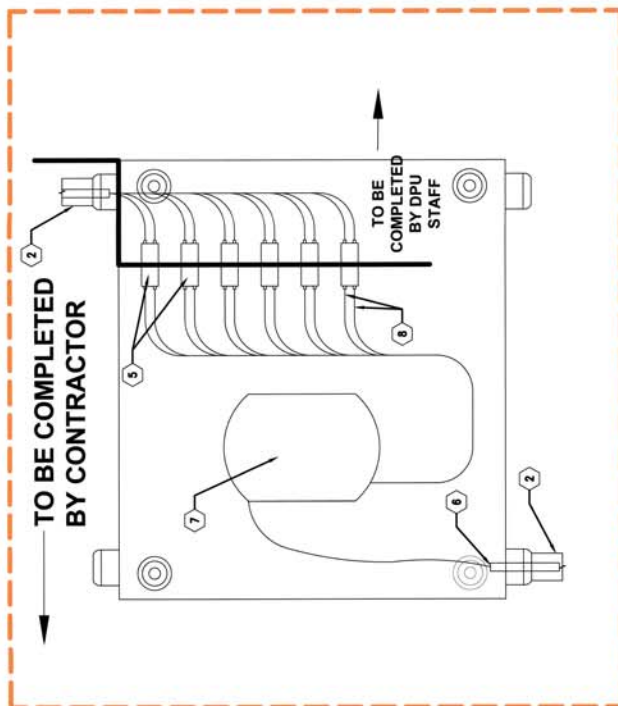
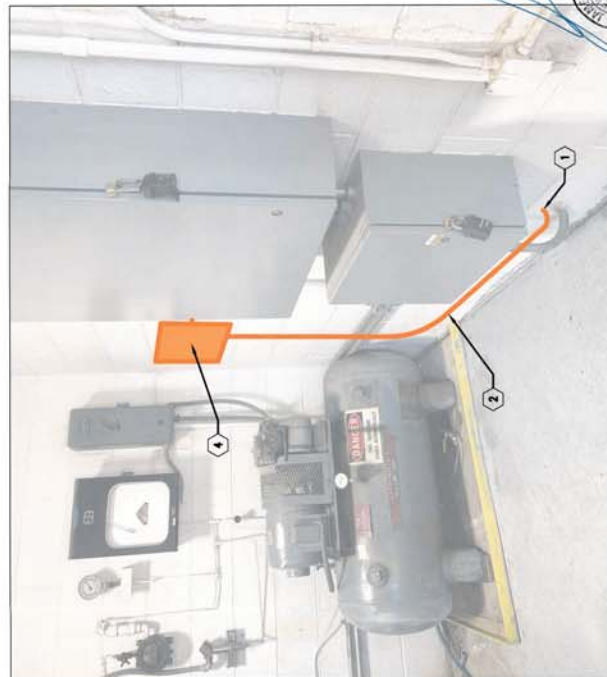
INCORPORATED COUNTY
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1000 CENTRAL AVE., SUITE 130
LOS ALAMOS, NEW MEXICO 87544
(505) 662-8100 FAX: (505) 662-8109

10
SHEET



KEYED NOTES

- ① EXISTING OVERHEAD ELECTRIC
- ② EXISTING WOODEN UTILITY POLE.
- ③ NEW 12 STRAND FIBER LINE
- ④ NEW FIBER SAG LINE FROM NEW FIBER POLE TO EXISTING 2" SCADA MAST.
- ⑤ NEW 1" FIBER CONDUIT ATTACHED TO EXISTING 2" SCADA MAST
- ⑥ NEW WALL PENETRATION



KEYED NOTES

- ① NEW WALL PENETRATION
- ② NEW 1" RIDGED CONDUIT WITH LONG SWEEP 90° FITTINGS
- ③ NEW PENETRATION INTO EXISTING RTU BOX
- ④ WALL MOUNT PATCH PANEL: MULTILINK FWM-4X-D INCLUDING 12 STRAND SPLICE TRAY
- ⑤ TERMINATE FIBER CABLES INTO DUPLEX ADAPTERS AND ATTACH TO FIXING PLATES PER MANUFACTURER'S SPECIFICATIONS
- ⑥ FIBER CABLE INPUT
- ⑦ 12 STRAND SPLICE TRAY.
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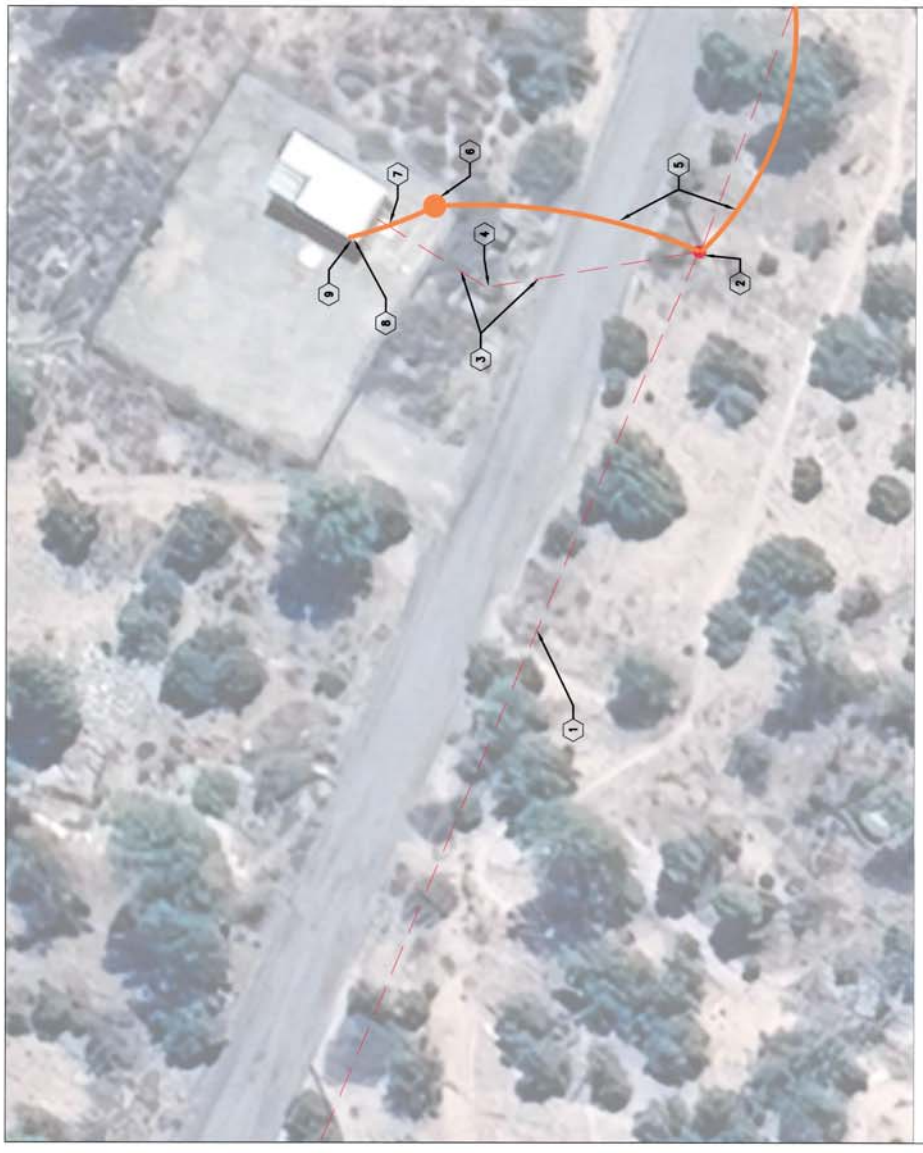
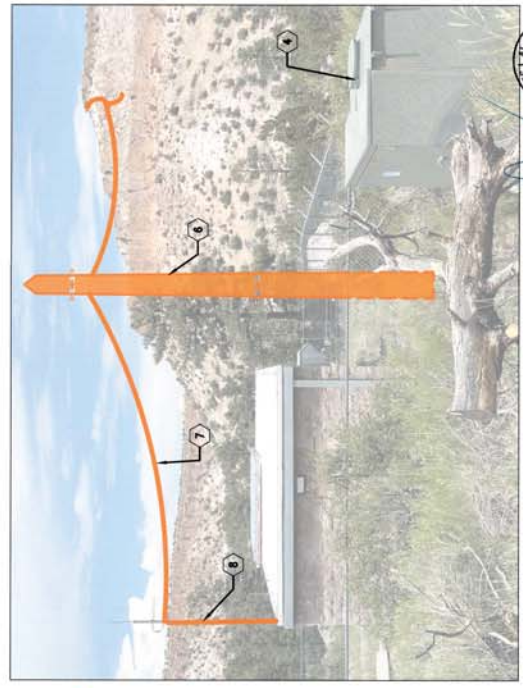
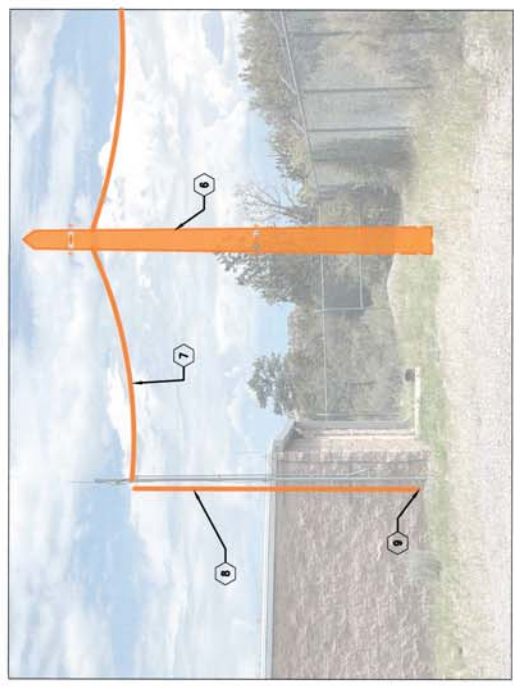
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LOS ALAMOS CANYON FIBER OPTIC EXTENSION OTOWI WELL NO. 1 - SITE PLAN



INCORPORATED COUNTY
 OF LOS ALAMOS
 DEPARTMENT OF PUBLIC UTILITIES
 1000 CENTRAL AVE., SUITE 130
 LOS ALAMOS, NEW MEXICO 87544
 (505) 662-8150 FAX: (505) 662-8100



KEYED NOTES

- ① EXISTING OVERHEAD ELECTRIC
- ② EXISTING WOODEN UTILITY POLE
- ③ EXISTING UNDERGROUND ELECTRIC
- ④ EXISTING ELECTRIC TRANSFORMER
- ⑤ NEW 12 STRAND FIBER LINE
- ⑥ NEW 35' WOOD POLE
- ⑦ NEW FIBER SAG LINE FROM NEW FIBER POLE TO EXISTING 2" SCADA MAST.
- ⑧ NEW 1" RGS FIBER CONDUIT ATTACHED TO EXISTING SCADA MAST.
- ⑨ NEW WALL PENETRATION

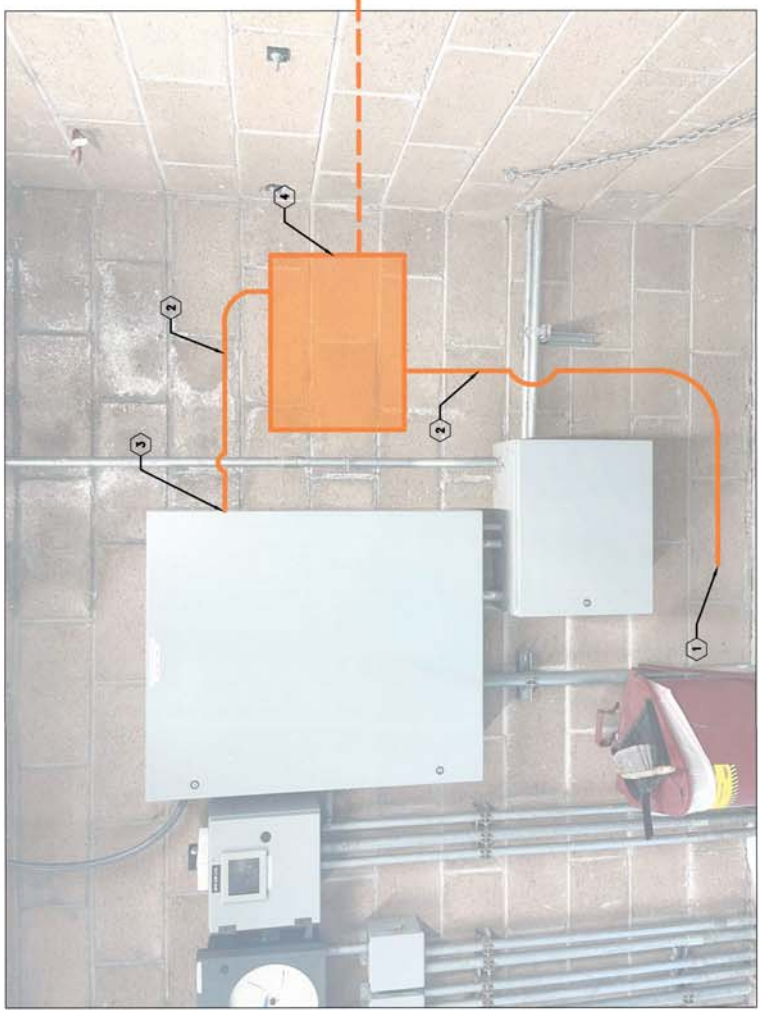
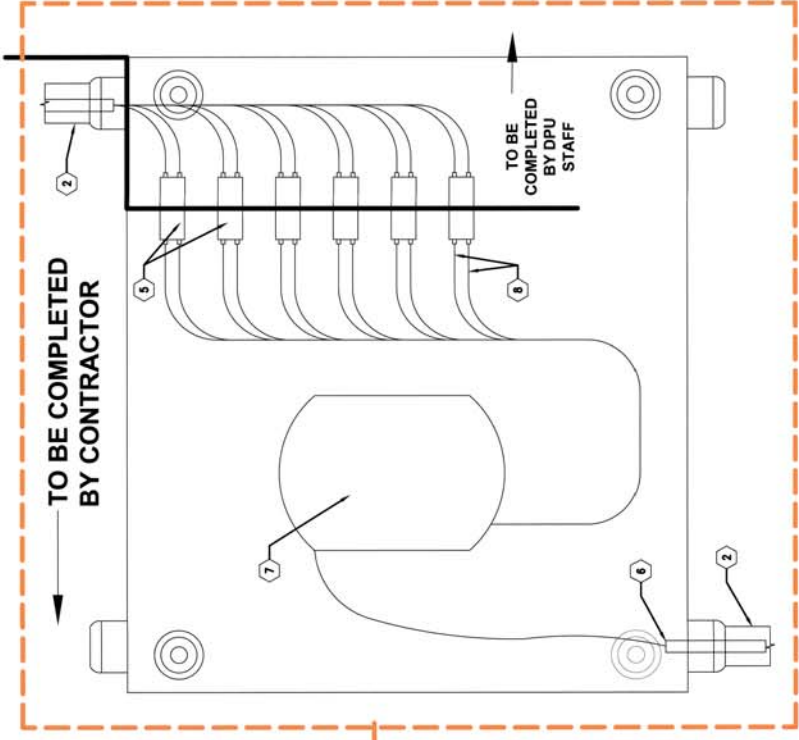
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LOS ALAMOS CANYON FIBER OPTIC EXTENSION OTOWI WELL NO. 1 - INTERIOR



INCORPORATED COUNTY
OF LOS ALAMOS
DEPARTMENT OF PUBLIC UTILITIES
1000 CENTRAL AVE., SUITE 100
LOS ALAMOS, NEW MEXICO 87544
(505) 662-8100 FAX: (505) 662-8109

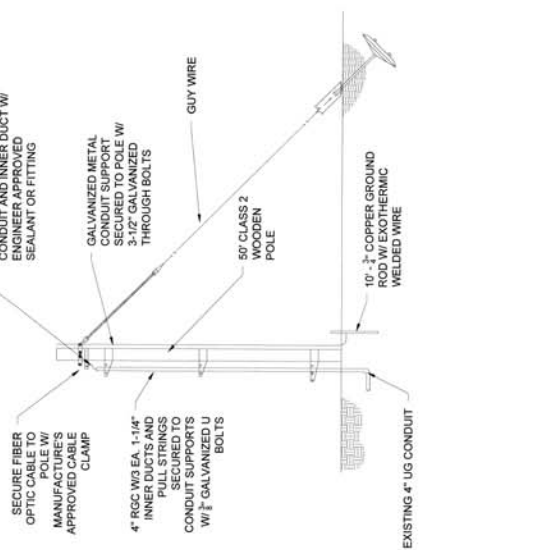
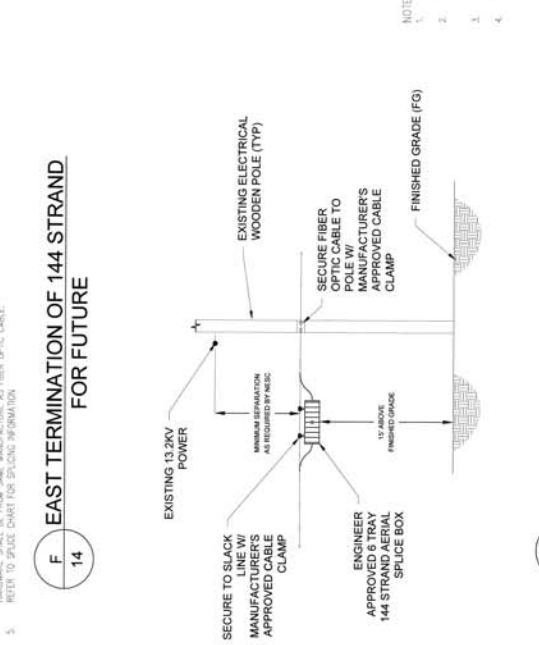
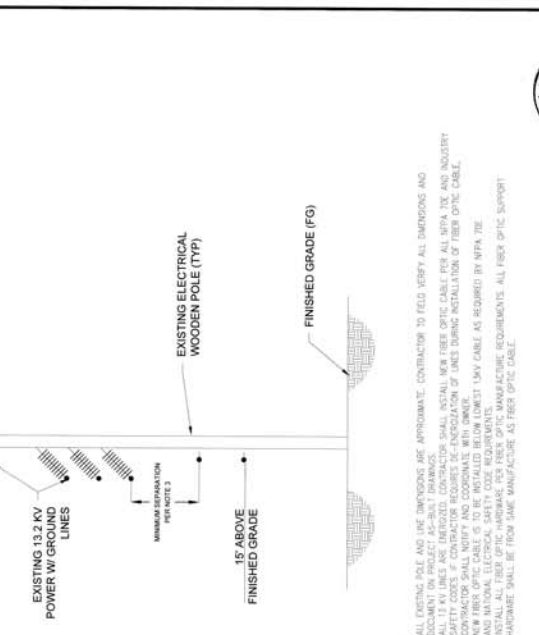


KEYED NOTES

- 1 NEW WALL PENETRATION
- 2 NEW 1" RIDGED CONDUIT WITH LONG SWEEP 90° FITTINGS
- 3 NEW PENETRATION INTO EXISTING RTU BOX
- 4 WALL MOUNT PATCH PANEL: MULTILINK FWM-4X-D INCLUDING 12 STRAND SPLICE TRAY
- 5 TERMINATE FIBER CABLES INTO DUPLEX ADAPTERS AND ATTACH TO FIXING PLATES PER MANUFACTURER'S SPECIFICATIONS
- 6 FIBER CABLE INPUT
- 7 12 STRAND SPLICE TRAY.
- 8 FIBER CABLE WITH LC/UPC PIGTAIL



14



5	REVISION DESCRIPTION
4	
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2	
1	
NO.	
DESIGNED BY:	SH
DRAWN BY:	SH
APPROVED BY:	JJA
DATE:	10/24/2024
SCALE:	N/A

LOS ALAMOS CANYON FIBER OPTIC EXTENSION DETAILS



INCORPORATED COUNTY
OF LOS ALAMOS
DEPARTMENT OF PUBLIC UTILITIES
1000 CENTRAL AVE., SUITE 130
LOS ALAMOS, NM 87544
(505) 662-8150 FAX: (505) 662-8109

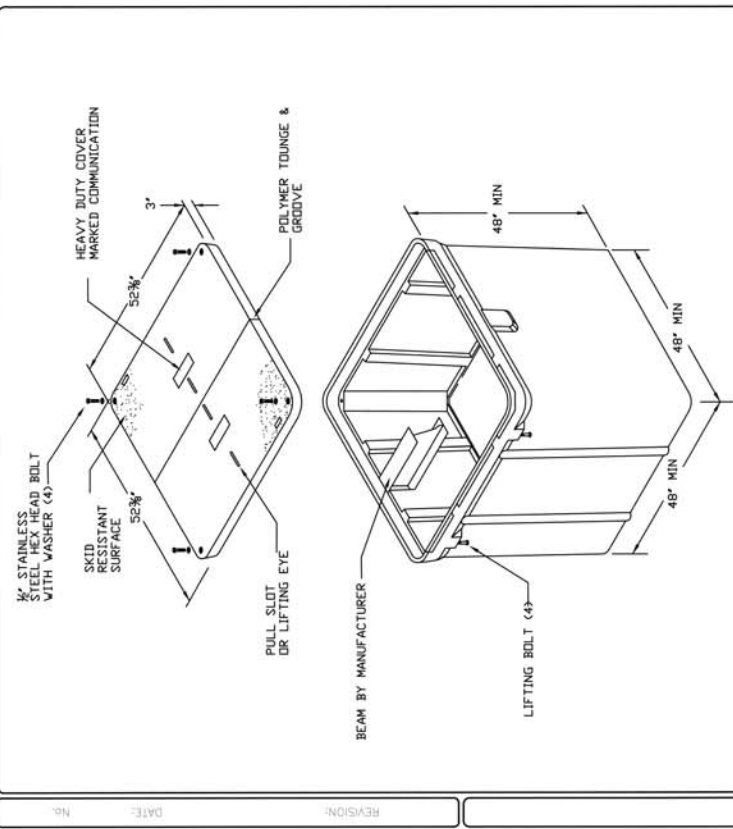
15
SHEET



PULL BOX DETAIL

B 15

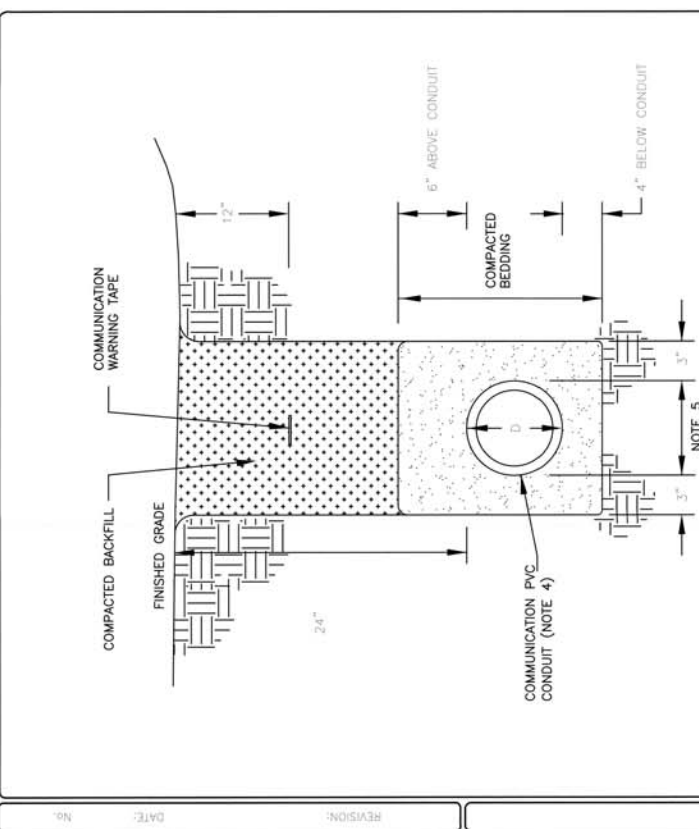
UTILITY CONSTRUCTION STANDARDS - UTILITY SERVICES
48" x 48" x 48"
OPEN BOTTOM POLYMER CONCRETE VAULT 4038



VAULT CONSTRUCTION NOTES

- 1.) VAULT TO BE USED FOR H-20 TRAFFIC DESIGN. ALL LIVE LOADS SHALL BE FOR HS-20-44 (MS-18) AS PER AASHTO STANDARD SPECIFICATION, DIV 1, SEC. 3
- 2.) VAULT EXCAVATION AND BACKFILL TO CONFORM TO LOS ALAMOS COUNTY UTILITIES SPECIFICATIONS
- 3.) BUTYL RUBBER OR NEOPRENE GASKET SEAL REQUIRED BETWEEN VAULT SECTION AND DR EXTENSIONS
- 4.) LIDS TO BE MARKED "COMMUNICATION"
- 5.) ALL WEIGHTS TO BE CLEARLY MARKED
- 6.) DELIVERY OF THE VAULT REQUIRES COORDINATION WITH LOS ALAMOS COUNTY UTILITIES ENGINEERING
- 7.) POLYMER CONCRETE VAULTS SHALL COMPLY WITH LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION - SPECIFICATION 401. UNDERGROUND DUCTBANK SYSTEMS.
- 8.) FIELD CUT BOX AS NEEDED TO RECEIVE CONDUITS.

UTILITY CONSTRUCTION STANDARDS - UTILITY SERVICES
COMMUNICATION TRENCH DETAIL 4030



NOTES:

- 1.) 95% COMPACTION REQUIRED UNDER PAVED ROADS, SIDEWALK AND CURB, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION - SPECIFICATION 202.
- 2.) 85% COMPACTION REQUIRED AT ALL LOCATIONS NOT IN NOTE 1, PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION - SPECIFICATION 202.
- 3.) CONDUIT PER LOS ALAMOS COUNTY UTILITIES CONSTRUCTION STANDARD, SECTION - SPECIFICATION 401.
- 4.) NUMBER AND SIZE OF CONDUITS AS SHOWN ON PLANS.
- 5.) TRENCH WIDTH SHALL BE DISTANCE FROM OUTSIDE FACE OF OUTER MOST CONDUITS PLUS 6 INCHES.

TRENCH DETAIL

A 15

NO.	REVISION DESCRIPTION
1	
2	
3	
4	
5	

DESIGNED BY:	SH
DRAWN BY:	SH
APPROVED BY:	JJA
DATE:	10/24/2024
SCALE:	N/A

LOS ALAMOS CANYON FIBER OPTIC EXTENSION SPLICE LOCATIONS



INCORPORATED COUNTY
OF LOS ALAMOS
DEPARTMENT OF PUBLIC UTILITIES
1000 CENTRAL AVE. SUITE 130
SOUTH PLAZA, NEW MEXICO 87544
(505) 662-8100 FAX: (505) 662-8109



NO.	1
REVISION DESCRIPTION	
2	
3	
4	
5	

DESIGNED BY:	SH
DRAWN BY:	SH
APPROVED BY:	JJA
DATE:	10/24/2024
SCALE:	N/A

LOS ALAMOS CANYON FIBER OPTIC EXTENSION SLACK LOOP LOCATIONS



INCORPORATED COUNTY
OF LOS ALAMOS
DEPARTMENT OF PUBLIC UTILITIES
1000 CENTRAL AVE., SUITE 150
LOS ALAMOS, NEW MEXICO 87544
(505) 662-8150 FAX: (505) 662-8109

