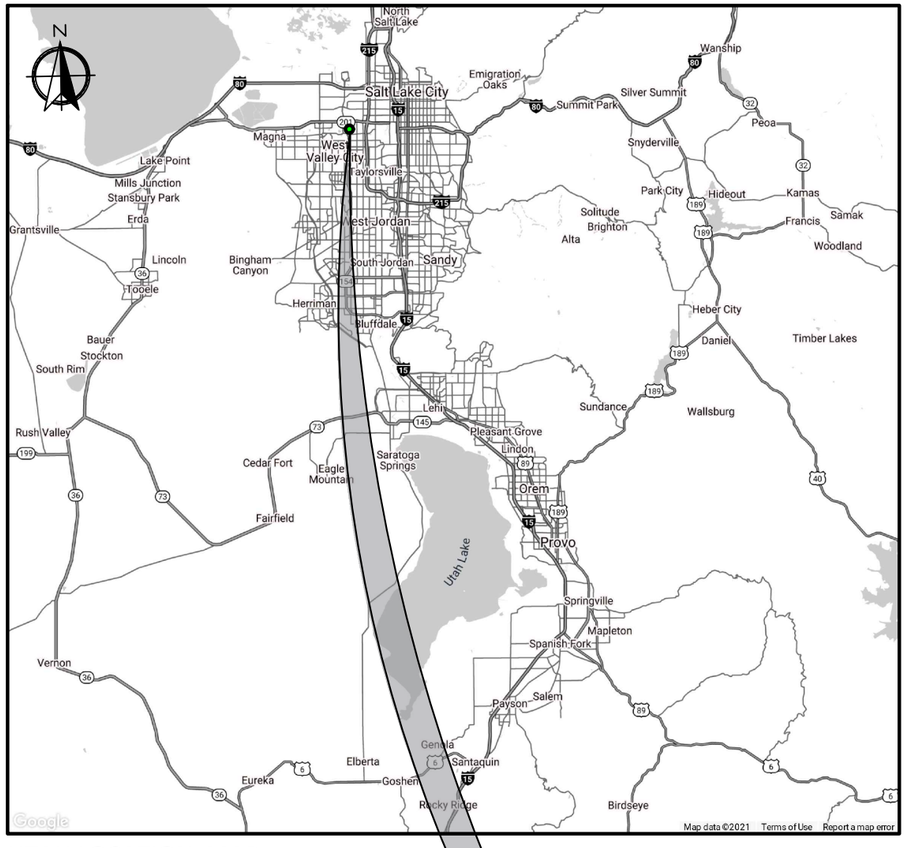
JORDAN VALLEY WATER
CONSERVANCY DISTRICT

JA3 CATHODIC PROTECTION SYSTEM

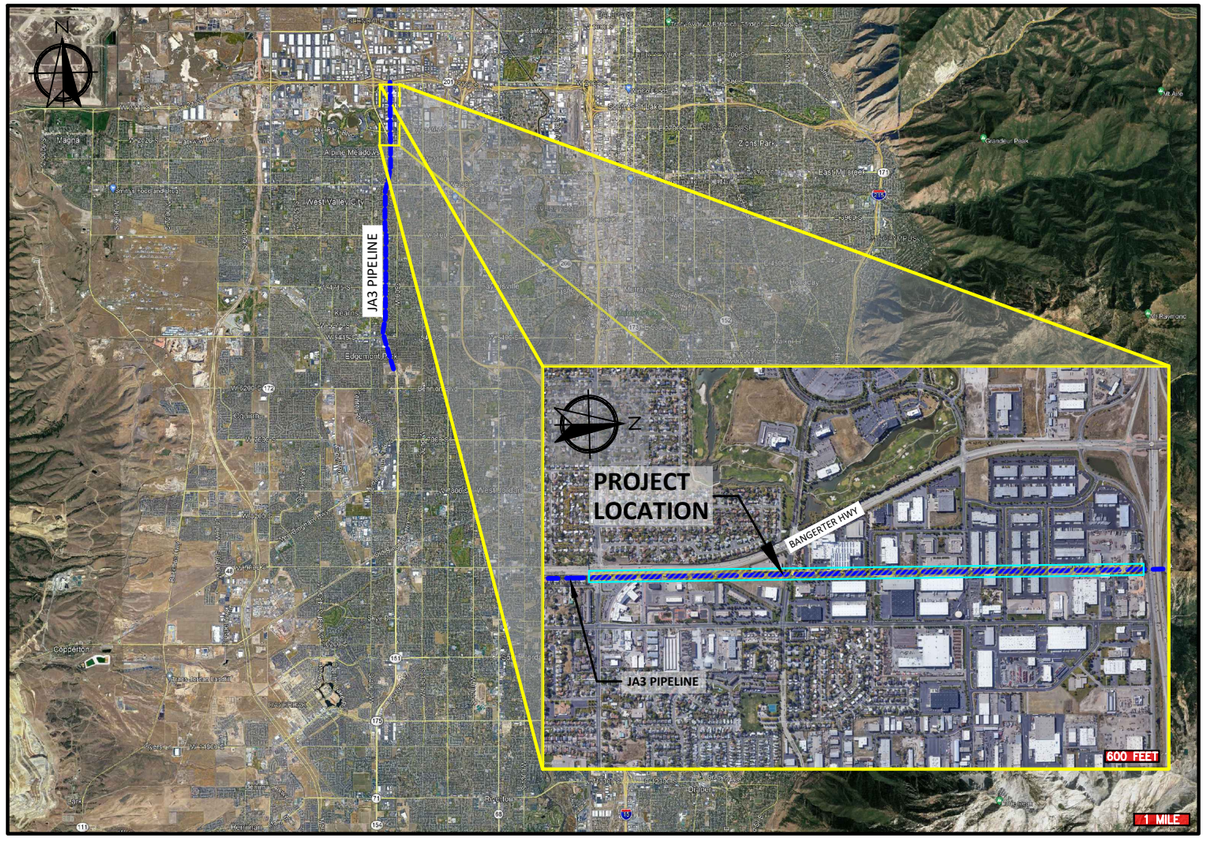
PROJECT #4223
NOVEMBER 2021



UTAH LOCATION MAP

NTS

PROJECT LOCATION



PROJECT LOCATION MAP

NTS

SHEET INDEX

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CONTACT INFORMATION

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LICENSED PROFESSIONAL ENGINEER
No. 5043798
ERIK SCOTT LLEWELLYN
11/12/2021
STATE OF UTAH

DSGN	ESL
DR	ZGS
CHK	ESL
APVD	ESL

NO.	DATE	ISSUE/REVISION	BY	APVD
1	2021-11-12			

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
0 1"

JVWCD
JORDAN AQUEDUCT - REACH 3 (JA3)

JA3 CATHODIC PROTECTION SYSTEM DESIGN PROJECT

SHEET	1 OF 8
DWG	CP1
DATE	2021-11-12
CONTRACT	JVWCD-055

NOTES:

GENERAL

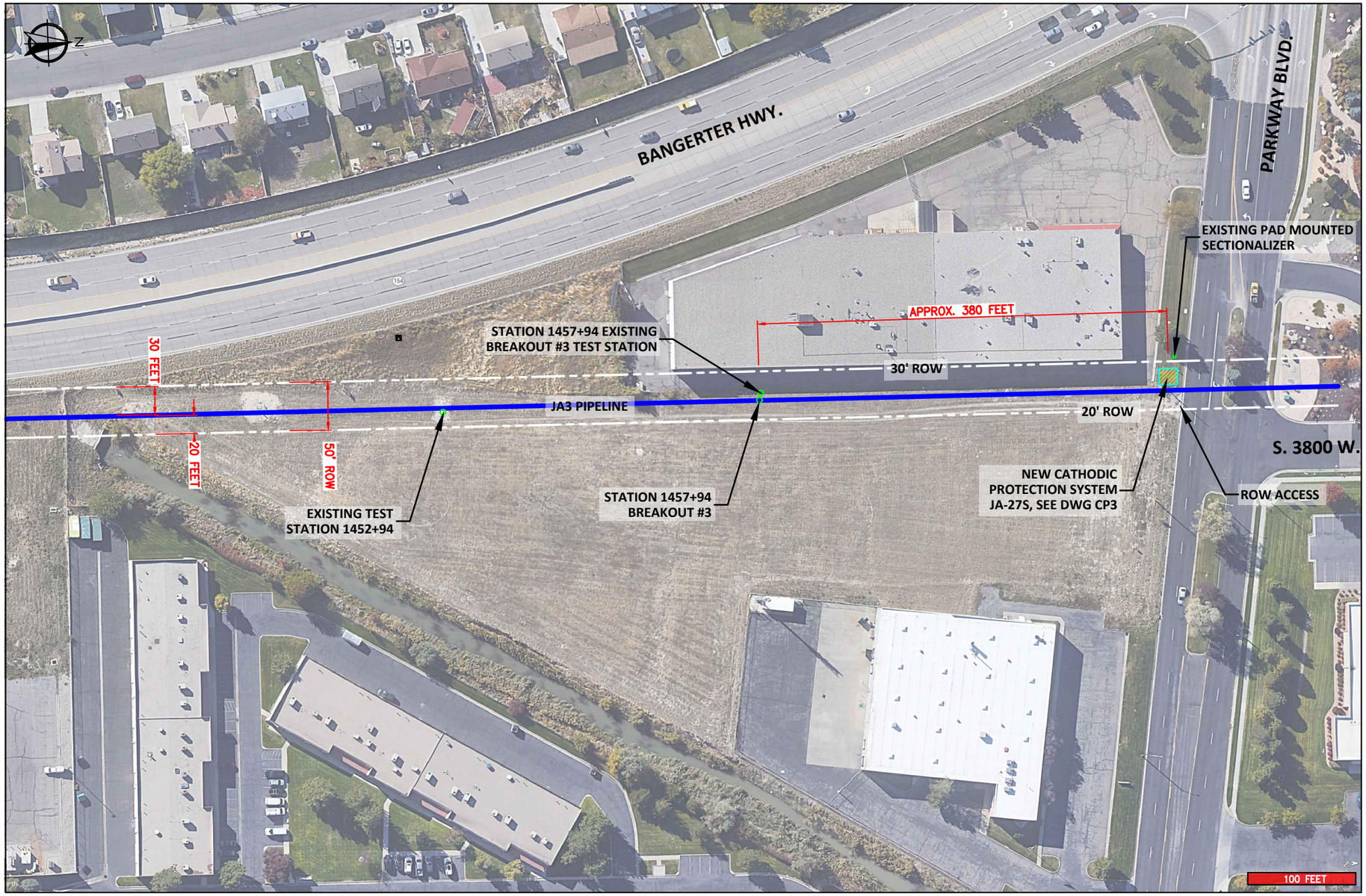
1. CONTRACTOR SHALL PROTECT EXISTING JVWCD EQUIPMENT AND COMPONENTS. DAMAGE WILL BE REPAIRED AT THE CONTRACTORS SOLE EXPENSE.
2. CONTRACTOR SHALL NOT BLOCK ACCESS OR LIMIT THE USE OF ANY PROPERTY DURING CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING SITE TO PREWORK CONDITIONS.
4. ALL WORK SHALL BE PERFORMED WITHIN DESIGNATED BOUNDARIES, CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CLAIMS TO ADJACENT PUBLIC OR PRIVATE PROPERTY.
5. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO JVWCD ENGINEERING STANDARDS UNLESS OTHERWISE SPECIFIED.
6. CONTRACTOR SHALL VERIFY THE EXTENT OF THE EASEMENT AND APPROVED WORK AREA WITH JVWCD PERSONNEL PRIOR TO BEGINNING WORK.
7. SITE INCLUDES NEARBY EXISTING PAD MOUNTED ELECTRICAL SECTIONALIZER THAT IS TO BE UTILIZED FOR NEW CATHODIC PROTECTION SYSTEM POWER.
8. ALL BURIED WIRE AND CABLE SHALL BE ROUTED INSIDE RIGID PVC CONDUIT.
9. CONTRACTOR TO LAY ROCK MULCH IN NEW CATHODIC PROTECTION AREA. SEE DWG CP8 FOR LANDSCAPING SITE PLAN.

CATHODIC PROTECTION SYSTEM

1. SEE CPS SITE PLAN FOR GENERAL LOCATION OF CATHODIC PROTECTION SYSTEM COMPONENTS.
2. CATHODIC PROTECTION INSTALLATIONS SHALL BE ORIENTED AS SHOWN ON THE DRAWINGS. MODIFICATION TO THE INSTALLATIONS SHALL BE APPROVED BY THE OWNER AND ENGINEER.
3. CONTRACTOR SHALL USE JVWCD APPROVED EXCAVATION METHODS OR AS SPECIFIED, WHICH COULD INCLUDE VACUUM EXCAVATION, FOR UPPER 9 FEET OF DEEP WELL ANODE HOLES TO VERIFY NO UTILITIES ARE PRESENT BEFORE BEGINNING DRILLING OPERATIONS.
4. ALL EXCAVATED MATERIAL, CONSTRUCTION WATER, GROUNDWATER, ETC. SHALL BE FULLY CONTAINED ON THE PROJECT SITE, WITHIN AREAS DESIGNATED BY JVWCD, AND SHALL NOT BE PERMITTED TO LEAVE THE WORK AREA OR FLOW OVER THE GROUND SURFACE. ANY SPILLAGE, EROSION OR LEAKAGE OF EXCAVATED MATERIALS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND THE SITE RESTORED TO PRE-CONSTRUCTION CONDITION. EXCAVATED MATERIAL THAT IS TEMPORARILY STOCKPILED ON SITE MAY REQUIRE WATERING OR PROTECTIVE COVERINGS TO PREVENT MATERIAL FROM BLOWING OR BEING WASHED OFF SITE.
5. DEEP ANODE GROUNDBED TO BE DRILLED BY A UTAH LICENSED WATER WELL DRILLER IN ACCORDANCE WITH THE STATE REGULATIONS FOR CATHODIC PROTECTION WELLS, EXCEPT WHERE A UTAH STATE APPROVED MODIFICATION IS SHOWN.
6. DRILLING MUD, WATER AND CUTTINGS SHALL BE FULLY CONTAINED ON THE PROJECT SITE AND SHALL NOT BE PERMITTED TO FLOW OVER THE GROUND SURFACE, ANY SPILLAGE OR LEAKAGE OF DRILLING MUD AND CUTTINGS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND THE SITE RESTORED TO ORIGINAL CONDITION.
7. CONCRETE WORK SHALL BE OF THE HIGHEST QUALITY, FORMS SHALL BE SET LEVEL AND SQUARE, CONCRETE FINISH SHALL BE TROWELLED SURFACE AND RADIUSED EDGES, ALL FORM WORK SHALL BE REMOVED FROM THE CONCRETE AFTER CURING IS COMPLETED.
8. USE STANDPIPE CONFIGURATION FOR CATHODIC WELL INSTALLATION TO ENABLE COKE BACKFILL TO BE PUMPED FROM THE BOTTOM OF THE HOLE UP. NO TOP LOADING OF COKE SHALL BE ALLOWED.

ELECTRICAL SERVICES

1. BURY ALL UNDERGROUND PRIMARY SERVICE CONDUIT 36-INCHES MINIMUM, MARK WITH TRACEABLE WARNING TAPE.
2. CONTRACTOR SHALL PROVIDE A LICENSED ELECTRICIAN TO INSTALL AND WIRE ALL ELECTRICAL SERVICES, WHERE REQUIRED BY ELECTRICAL CODE AND/OR JVWCD.
3. CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS REQUIRED WITH THE LOCAL CITY OR COUNTY AGENCY FOR INSPECTION AND APPROVAL OF ELECTRICAL SERVICE INSTALLATION.
4. CONTRACTOR SHALL PROVIDE THE MATERIALS AND EQUIPMENT TO SUPPLY POWER TO THE NEW CATHODIC PROTECTION RECTIFIER AS SPECIFIED, AS REQUIRED BY ELECTRICAL CODE, AND LOCAL POWER COMPANY REQUIREMENTS.



JORDAN AQUEDUCT - REACH 3 CATHODIC PROTECTION SYSTEM JA-27S SITE PLAN

NTS

LICENSED PROFESSIONAL ENGINEER
No. 5043798
ERIK SCOTT LLEWELLYN
11/12/2021
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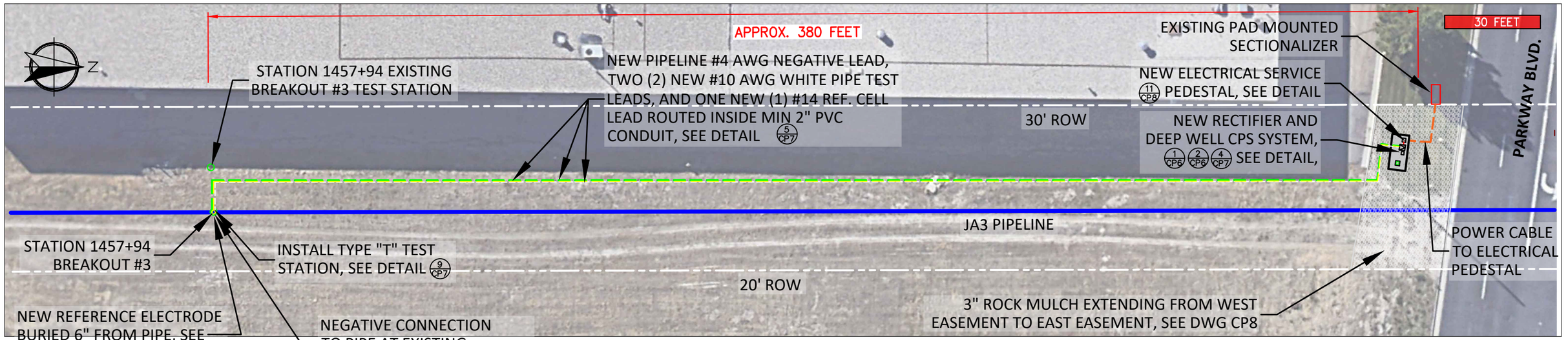
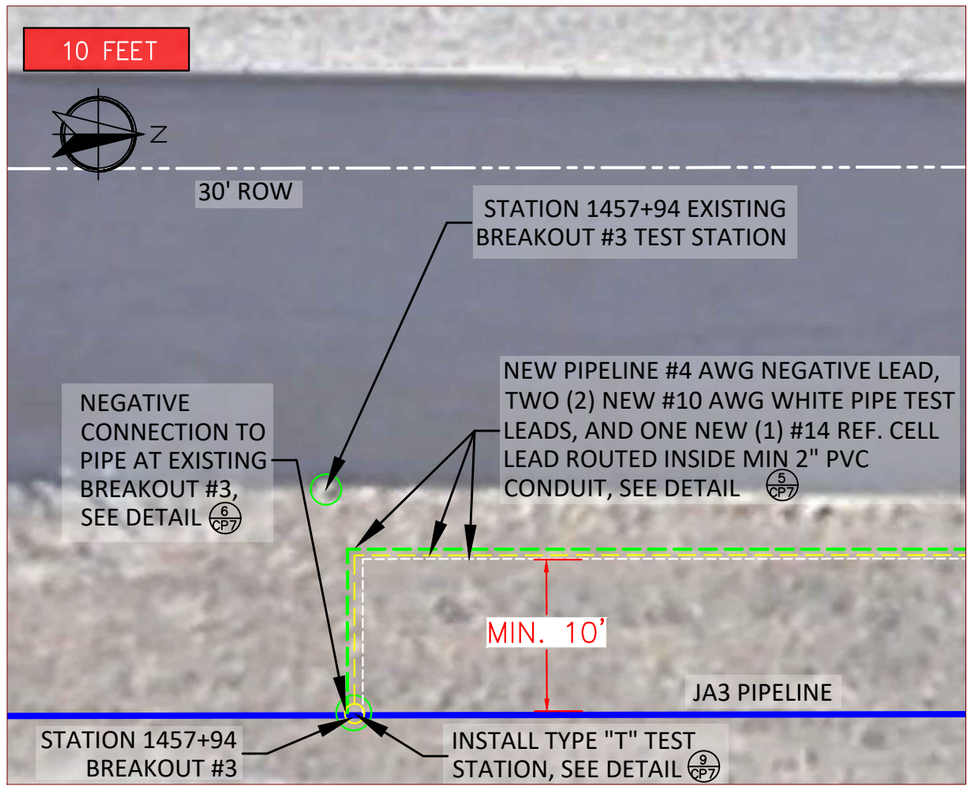
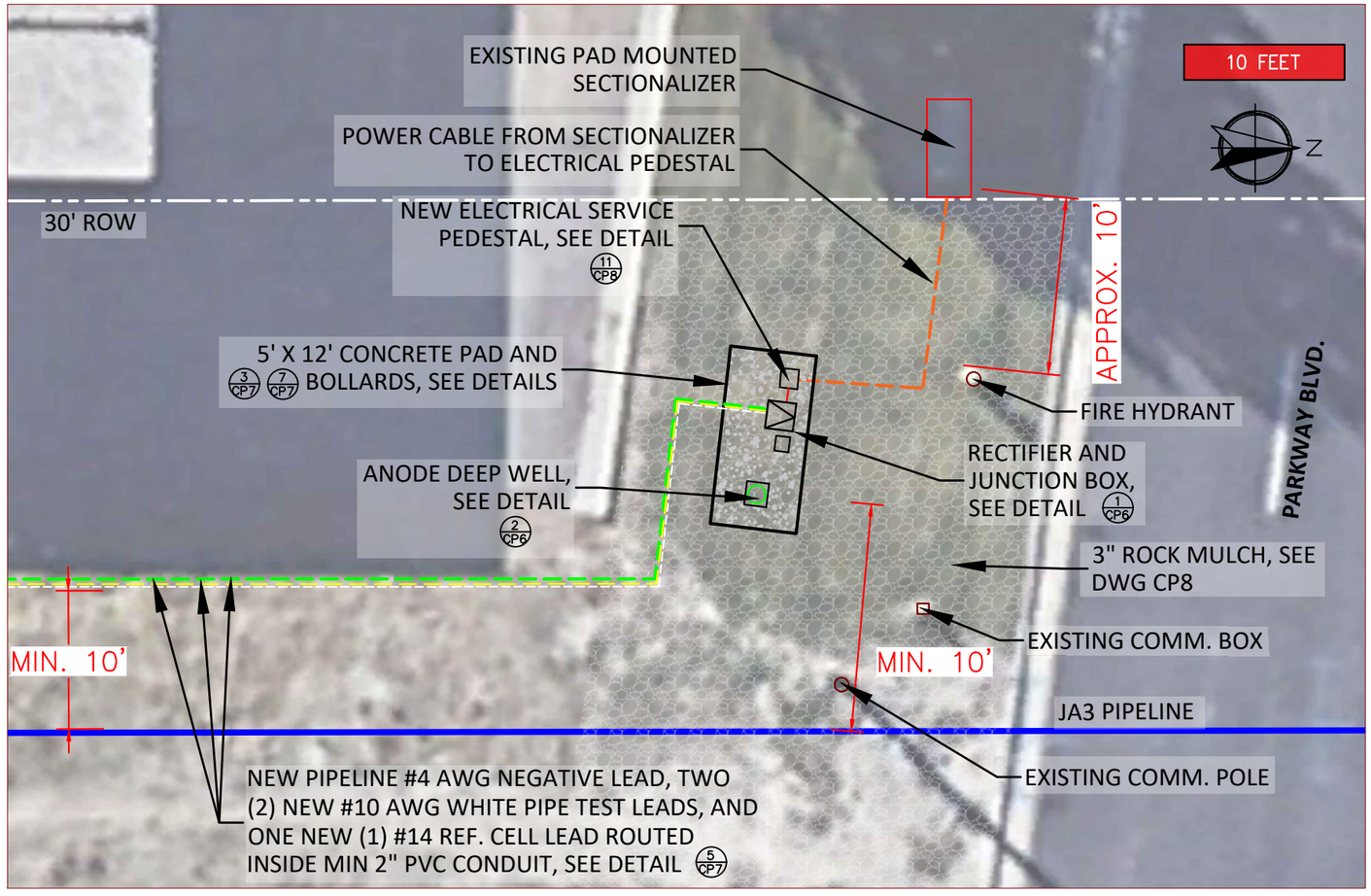
JORDAN AQUEDUCT - REACH 3 (JA3)

JA3 CATHODIC PROTECTION SYSTEM DESIGN PROJECT

SHEET	2 OF 8
DWG	CP2
DATE	2021-11-12
CONTRACT	JVWCD-055







JVWCD JA3 CPS SITE PLAN OVERVIEWS

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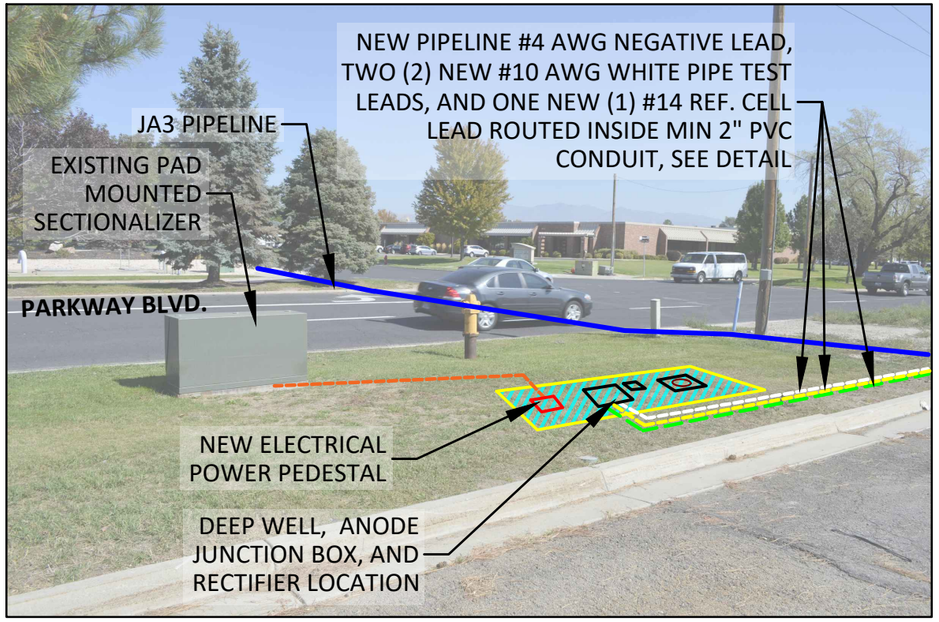
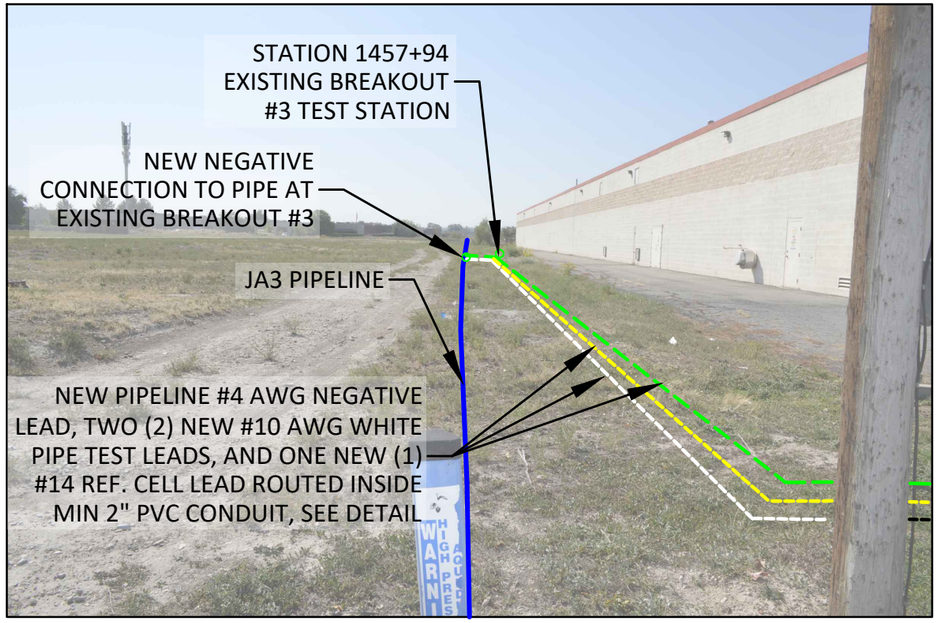
JA3 CATHODIC PROTECTION SYSTEM DESIGN PROJECT

SHEET	3 OF 8
DWG	CP3
DATE	2021-11-12
CONTRACT	JVWCD-055

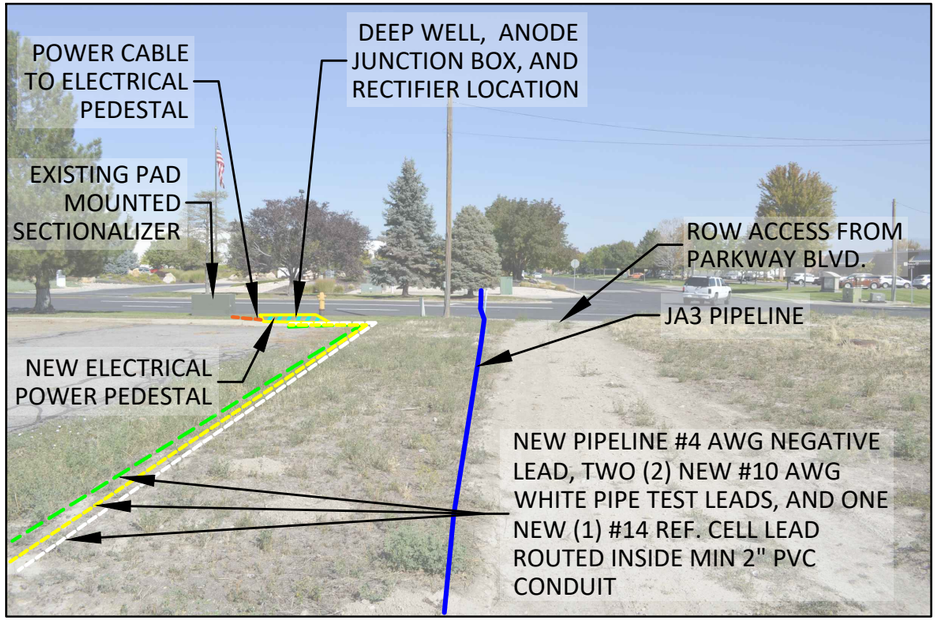
JA3 CPS SITE PHOTOS



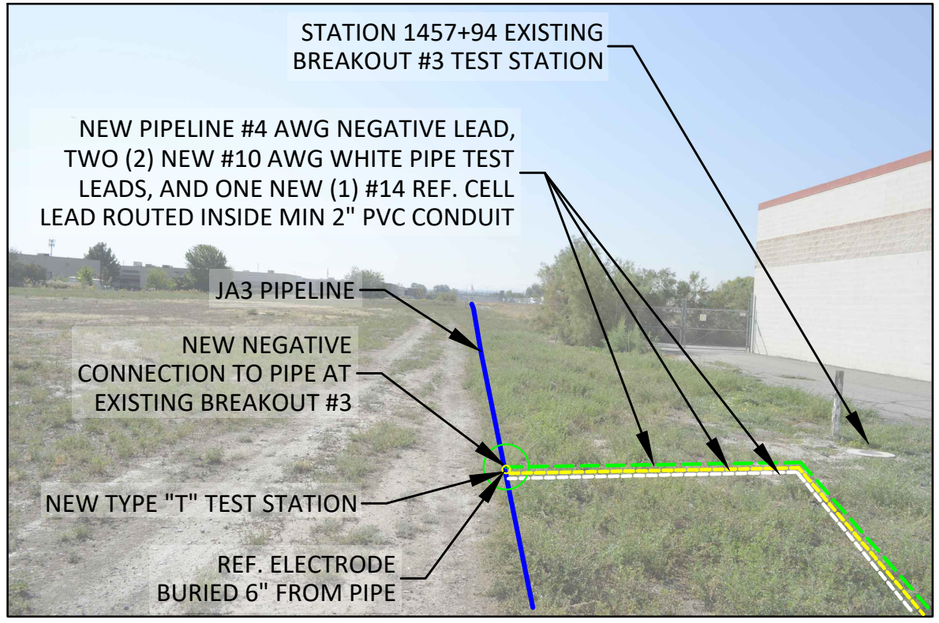
(1) **VIEW FACING NORTHEAST TOWARD PAD MOUNTED SECTIONALIZER, NEW ELECTRICAL POWER PEDESTAL, AND PROPOSED NEW RECTIFIER AND DEEP WELL LOCATION.**



(2) **VIEW FACING SOUTH ALONG JA3 PIPELINE FROM PROPOSED DEEP WELL LOCATION, TOWARD BREAKOUT #3.**



(3) **VIEW FACING NORTH TOWARD PROPOSED NEW RECTIFIER AND DEEP WELL LOCATION**



(4) **VIEW FACING SOUTH TOWARD NEW NEGATIVE CONNECTION AT BREAKOUT #3 STA. 1457+94.**

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JORDAN AQUEDUCT - REACH 3 (JA3)

JA3 CATHODIC PROTECTION SYSTEM DESIGN PROJECT

SHEET	4 OF 8
DWG	CP4
DATE	2021-11-12
CONTRACT	JVWCD-055

JVWCD JA3 NEW TEST STATION AND TEST STATION POST INSTALLATION OVERVIEW

NTS

JA3 TEST STATION INSTALLATION SCHEDULE

LOCATION #	PIPE STATION	LATITUDE	LONGITUDE	STYLE	LOCATION/NOTES
1	1437+36	40.70441	-111.97977	POST	VAULT AT AMERICAN PREP ACADEMY. TEST LEADS INSTALLED 2021
2	1451+03	40.70818	-111.97985	POST	TEST LEADS INSTALLED 2021
3	1454+11	40.70902	-111.97983	POST	TEST LEADS INSTALLED 2021
4	1463+55	40.71158	-111.97985	POST	VAULT AT DEPARTMENT OF HEALTH AND HUMAN SERVICES. TEST LEADS INSTALLED 2021
5	1466+83	40.71250	-111.97981	POST	USANA HEALTH BUILDING. TEST LEADS INSTALLED 2021
6	1481+76	40.71843	-111.97991	POST	TEST LEADS INSTALLED 2021
7	1513+34	40.72521	-111.97992	POST	AMES CONSTRUCTION. TEST LEADS INSTALLED 2021
8	1457+94	40.71022	-111.97984	POST	NEW TYPE "T" TEST STATION TO BE INSTALLED NEAR BREAKOUT #3 STATION 1457+94. SEE CPS SITE PLAN OVERVIEW, DWG CP3

NOTES:

1. NEW TEST LEADS INSTALLED IN 2021 AT LOCATION #'S 1-7 LISTED IN THE ABOVE TEST STATION SCHEDULE. INSTALL NEW TEST POST AT EACH LOCATION. SEE DETAIL. 8/CP7
2. NEW TYPE "T" TEST STATION TO BE INSTALLED AT LOCATION #8, STATION 1457+94, SEE DETAIL 9/CP7

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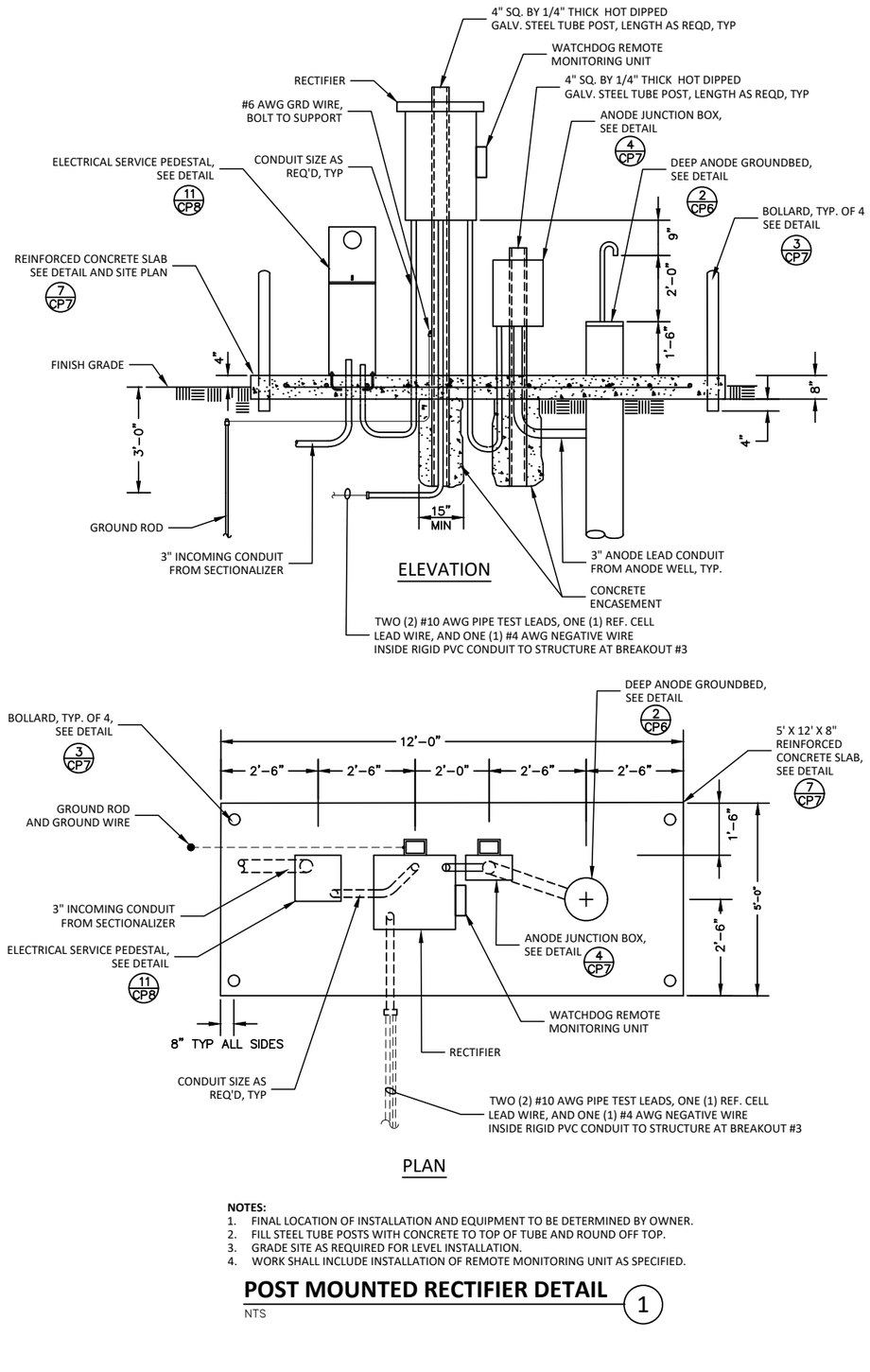
JA3 CATHODIC PROTECTION SYSTEM DESIGN PROJECT

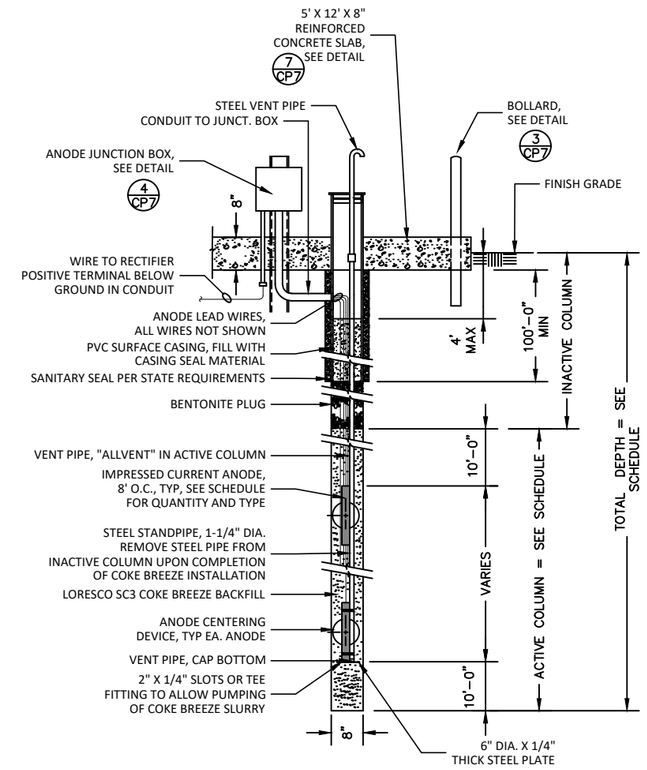
SHEET	5 OF 8
DWG	CP5
DATE	2021-11-12
CONTRACT	JVWCD-055



NOTES:
1. FINAL LOCATION OF INSTALLATION AND EQUIPMENT TO BE DETERMINED BY OWNER.
2. FILL STEEL TUBE POSTS WITH CONCRETE TO TOP OF TUBE AND ROUND OFF TOP.
3. GRADE SITE AS REQUIRED FOR LEVEL INSTALLATION.
4. WORK SHALL INCLUDE INSTALLATION OF REMOTE MONITORING UNIT AS SPECIFIED.

POST MOUNTED RECTIFIER DETAIL 1

NTS



NOTES:
1. FOR GROUNDBED AND CONDUIT TERMINATIONS SEE DETAIL. 4/CP7

DEEP ANODE GROUNDBED 2

NTS

CPS SCHEDULE

CATHODIC PROTECTION SCHEDULE	
DEEP ANODE GROUNDBED	
NUMBER OF ANODES	12
ANODE TYPE	TA3 CHROMIUM HIGH SILICON TUBULAR ANODES, 63 LBS, 84" LONG, 2.66" DIAMETER EACH
TOTAL GROUNDBED LENGTH	300'
ACTIVE COLUMN LENGTH	115'
LORESCO SC3 BACKFILL FOR ACTIVE COLUMN	115'
BENTONITE FOR INACTIVE COLUMN	185'
ANODE SPACING	8' ON CENTER (O.C.)
VENT PIPE STYLE	ALL-VENT
BELOW GRADE PVC SURFACE CASING LENGTH	100' MIN.
WELL HOLE DIAMETER	8"

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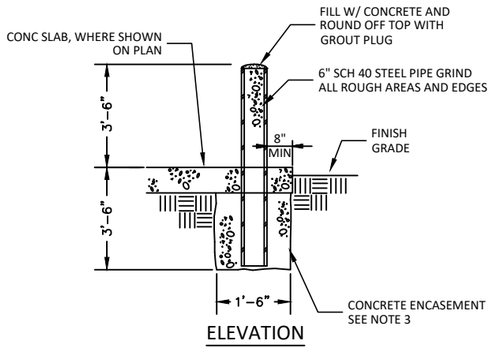
JA3 CATHODIC PROTECTION SYSTEM DESIGN PROJECT

SHEET	6 OF 8
DWG	CP6
DATE	2021-11-12
CONTRACT	JVWCD-055



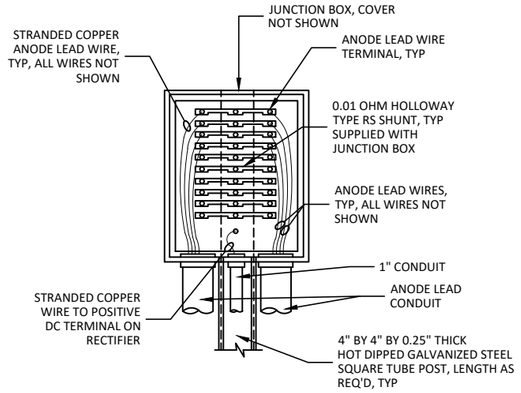
ELEVATION

NOTES:
1. HOT DIPPED GALVANIZE STEEL POSTS, WITH 4-INCH WIDE SELF ADHESIVE REFLECTIVE STRIPS APPLIED AROUND TOP OF POST.
2. POSTS TO BE PLACED AS SHOWN ON THE PLANS.
3. CONCRETE SLAB USE SHOWN, FOR NON-SLAB REQUIREMENTS, EXTEND CONCRETE ENCASEMENT TO FINISH GRADE AND SLOPE TO DRAIN WATER AWAY FROM POST.

DEEP ANODE GROUNDBED BOLLARDS

3

NTS

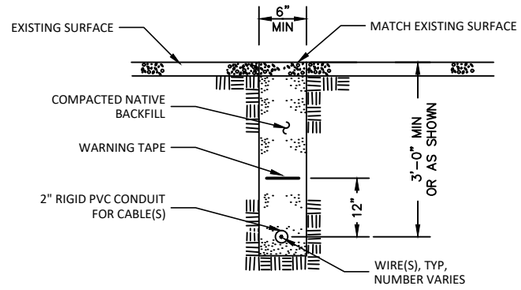


NOTES:
1. MOUNT ANODE JUNCTION BOX ON GALVANIZED STEEL SQUARE TUBE ADJACENT TO RECTIFIER.
2. SIZE ANODE LEAD CONDUIT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. PROVIDE ONE CONDUIT WITH UP TO 15 ANODES, TWO WITH 16 TO 32 ANODES.
3. EXTEND SQUARE TUBE POST POST INTO GROUND MINIMUM OF 3'. SECURE SQUARE TUBE POST WITH CONCRETE FOOTER.
4. SQUARE TUBE POST TO BE FILLED WITH CONCRETE AND ROUNDED AT TOP.

ANODE JUNCTION BOX

4

NTS

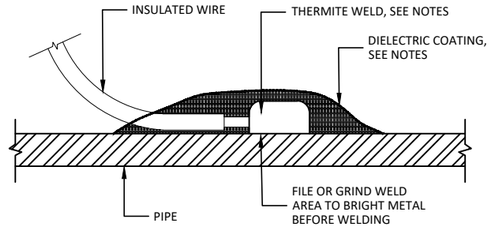


NOTES:
1. SIZE CONDUIT AS REQUIRED TO ACCOMMODATE THE CONDUCTOR(S), MINIMUM CONDUIT DIAMETER 2".
2. DETAIL APPLIES TO ALL NEW CABLE/WIRE INSTALLATIONS AND ANODE HEADER CABLE INSTALLATIONS.

TYPICAL TRENCH DETAIL

5

NTS

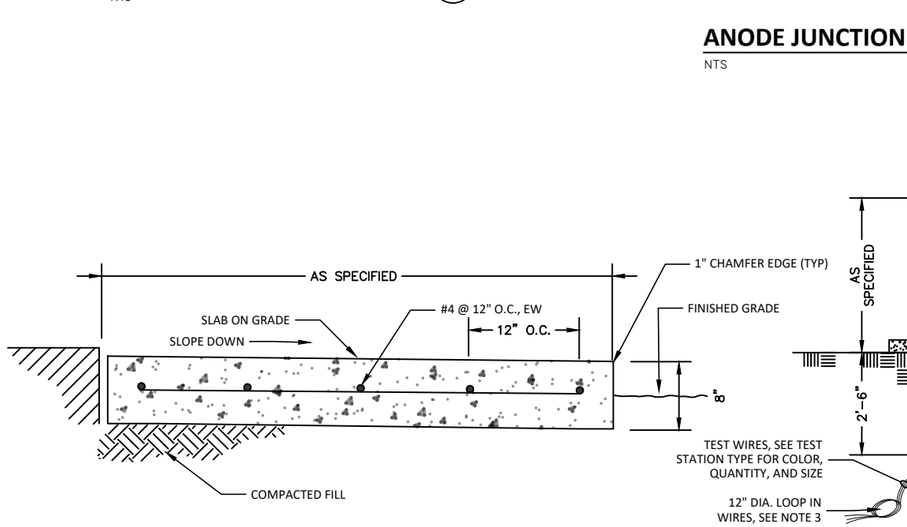


NOTES:
1. MAKE WIRE CONNECTION TO PIPE AT FIELD JOINT WHERE HOLDBACK OCCURS ON PIPELINE COATING.
2. MAINTAIN SEPARATION BETWEEN MULTIPLE TEST WIRE CONNECTIONS OF ONE PIPE DIA OR 24", WHICHEVER IS LESS.
3. COPPER SLEEVE REQUIRED FOR #2 AWG JOINT BONDS OR FOR #12 AWG OR SMALLER TEST WIRES.
4. WELDER AND CARTRIDGE SIZE VARIES ACCORDING TO PIPE SIZE AND PIPE MATERIAL, CONSULT WELDER MANUFACTURER FOR RECOMMENDED WELDER AND CARTRIDGE
5. COAT COMPLETED CONNECTIONS AS SHOWN AND SPECIFIED.
6. PIPELINE JOINT COATING NOT SHOWN FOR CLARITY.

STEEL AND DUCTILE IRON PIPE WIRE CONNECTION

6

NTS

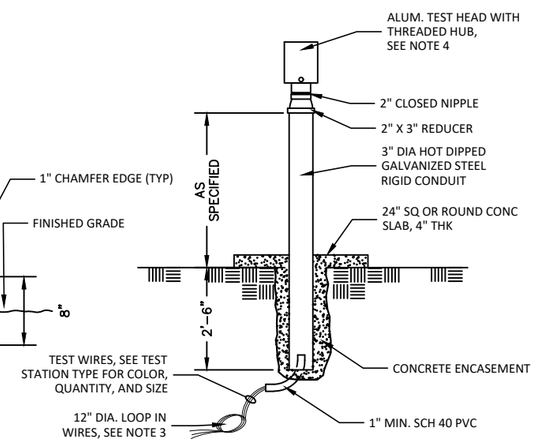


NOTES:
1. SLOPE FINISH GRADE TO DRAIN AWAY FROM SLAB.

REINFORCED CONCRETE SLAB

7

NTS

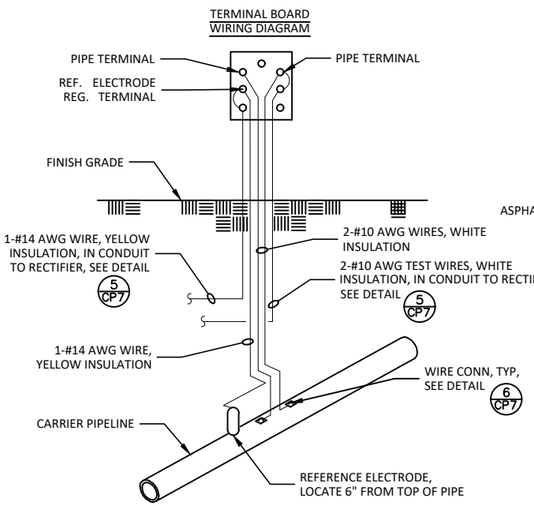


NOTES:
1. QUANTITY OF TERMINALS AND WIRING CONNECTIONS VARIES, SEE APPLICABLE TEST STATION DETAILS FOR TYPE OF TEST STATION.
2. PROVIDE WIRE LOOP AT BASE OF POST MOUNTED TEST STATION TO MINIMIZE SETTLEMENT STRESSES ON WIRE.
3. TEST WIRES TO BE RUN BACK TO REMOTE MONITORING UNIT AT RECTIFIER IN SCH. 40 PVC WHERE CALLED OUT ON DRAWINGS.
4. TESTOX SERIES 700 TEST STATION FOR A TEST STATION WITH THREADED HUBS.
5. CORROSION RESISTANT TAPE WRAP TO BE APPLIED TO BURIED SECTION OF GALVANIZED STEEL POST. EXTEND TAPE TO 6" ABOVE GROUND.

POST MOUNTED, GALVANIZED STEEL POST

8

NTS

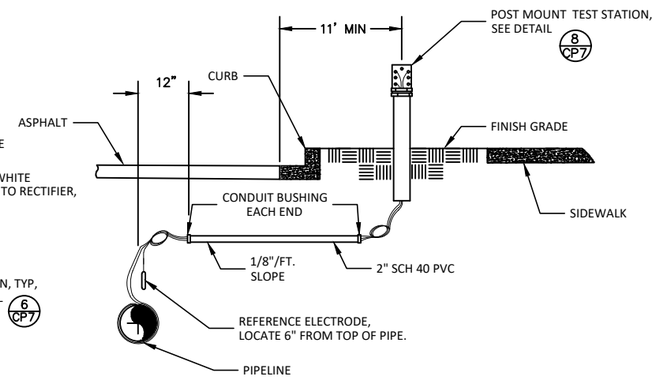


NOTES:
1. WHERE TEST STATION OFFSET IS REQUIRED, SEE DETAIL. 10 CP7

TYPE T TEST STATION

9

NTS



NOTES:
1. FILL BOTH ENDS OF CONDUIT WITH DUCT PUTTY.
2. ALL WIRES WILL BE SPLICED USING THE SAME COLOR CODE AS EXISTING WIRES, AND THE SAME TYPE WIRE.

TEST STATION OFFSET

10

NTS

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DWG	CP7
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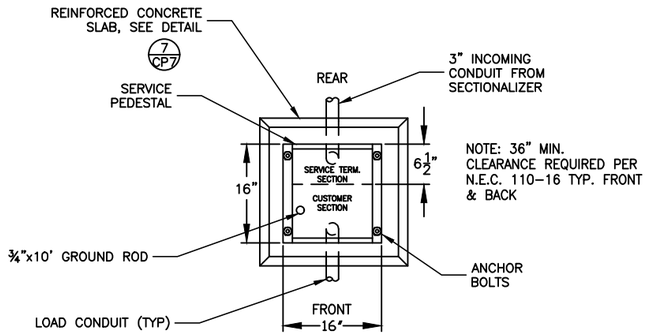
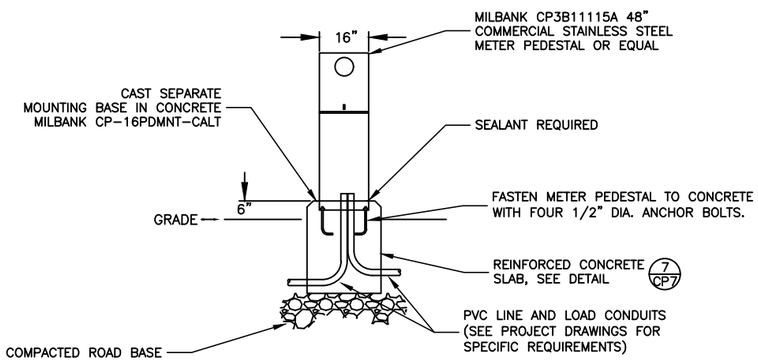


ELECTRICAL SERVICE PEDESTAL PLAN VIEW
ENLARGED

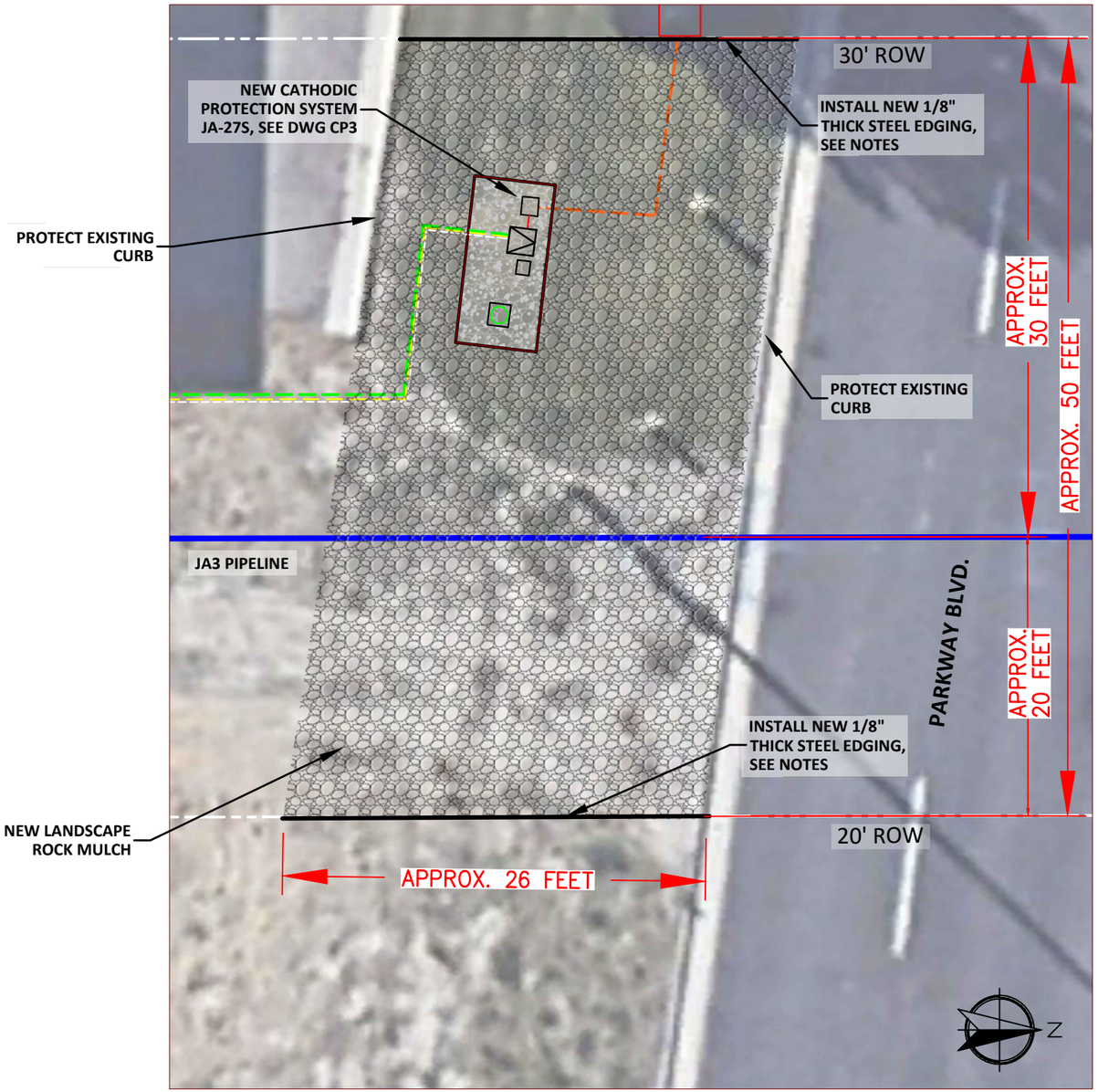


ELECTRICAL SERVICE PEDESTAL ELEVATION

NOTES:
1. ELECTRICAL SERVICE PEDESTAL TO BE INSTALLED ADJACENT TO RECTIFIER IN REINFORCED CONCRETE SLAB.

ELECTRICAL POWER PEDESTAL 11

NTS



NOTES:

1. ROCK MULCH TO EXTEND FROM JVWCD EAST EASEMENT TO WEST EASEMENT. EASEMENT EXTENDS APPROXIMATELY 30 FEET TO THE WEST AND 20 FEET TO THE EAST OF THE JA3 PIPELINE.
2. TOTAL AREA FOR NEW ROCK MULCH IS APPROXIMATELY 1300 SQUARE FEET. CONTRACTOR TO VERIFY WITH JVWCD PERSONNEL PRIOR TO BEGINNING WORK.
3. ROCK MULCH TO BE 3" DIAMETER. SUBMIT SAMPLE TO OWNER PRIOR TO PROCUREMENT.
4. ROCK MULCH TO BE 4" DEEP.
5. EXISTING GRASS TURF TO BE REMOVED PRIOR TO COVERING AREA WITH NEW ROCK MULCH.
6. RELOCATE ALL SPRINKLER HEADS IN PROJECT AREA TO WATER REMAINING GRASS TURF TO WEST OF SITE.
7. WEED COVER TO BE APPLIED BELOW ROCK MULCH.
8. NEW 1/8" THICK STEEL EDGING WITH BLACK POWDER COAT FINISH, MANUFACTURED BY COL-MET OR APPROVED EQUAL, TO BE USED WHERE THERE IS NO EXISTING CURB.
9. EXISTING CURBS TO BE PROTECTED.
10. AREAS NOT COVERED IN ROCK MULCH TO BE RESTORED TO PRE-CONSTRUCTION CONDITION.

JVWCD JA3 CPS LANDSCAPING PLAN

NTS

LICENSED PROFESSIONAL ENGINEER
No. 5043798
ERIK SCOTT LLEWELLYN
11/12/2021
STATE OF UTAH

DSGN	ESL
DR	ZGS
CHK	ESL
APVD	ESL

NO.	DATE	ISSUE/REVISION	BY	APVD
1	2021-11-12			

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

JVWCD
JORDAN AQUEDUCT - REACH 3 (JA3)

JA3 CATHODIC PROTECTION SYSTEM DESIGN PROJECT

SHEET	8 OF 8
DWG	CP8
DATE	2021-11-12
CONTRACT	JVWCD-055