

FIGURES

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Figure 1 Vicinity Map

Fountain Wind Project

Legend

- Existing Hatchet Ridge Wind Farm Turbine
- Project Boundary

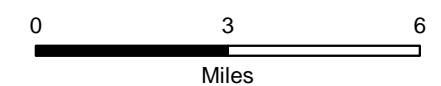
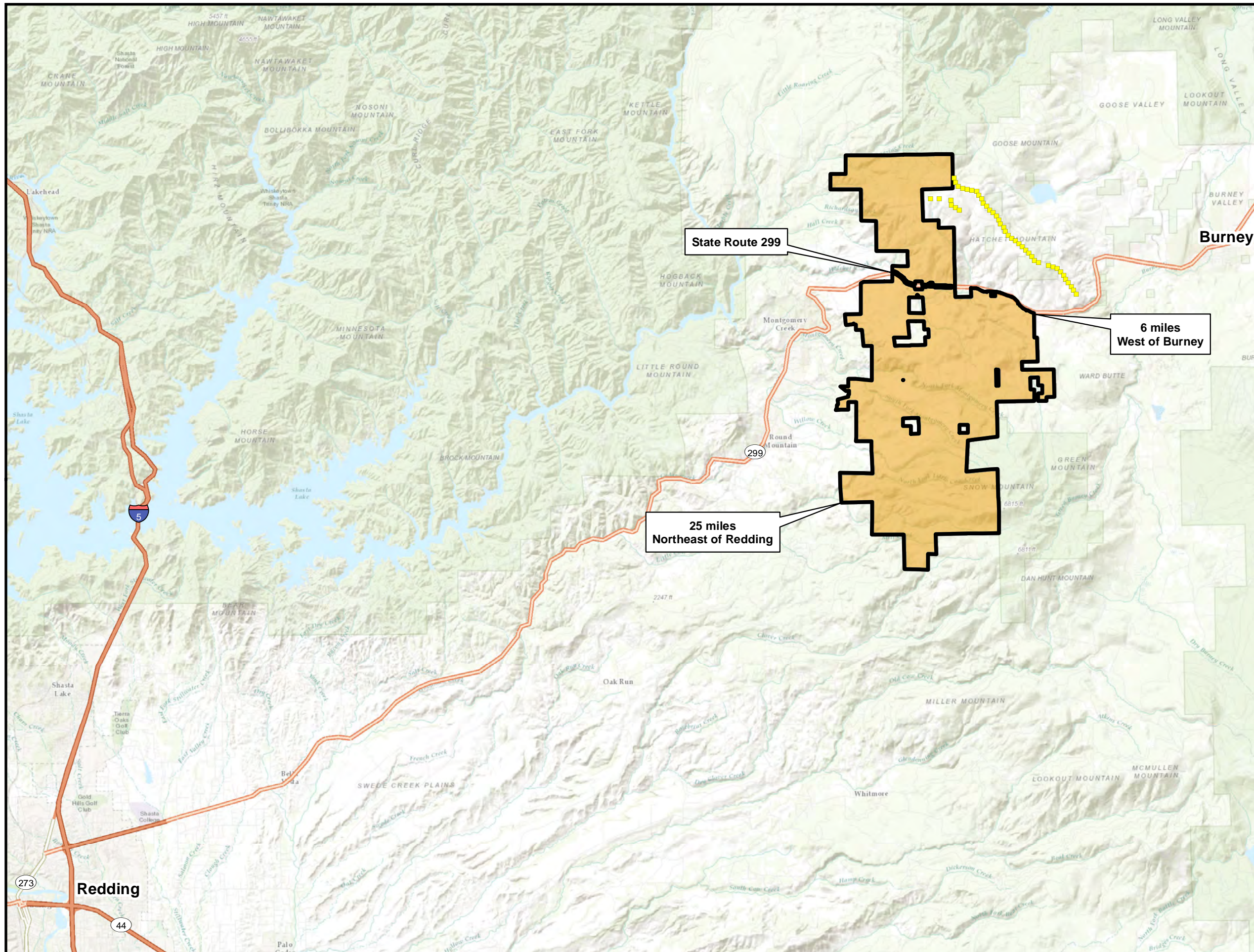




















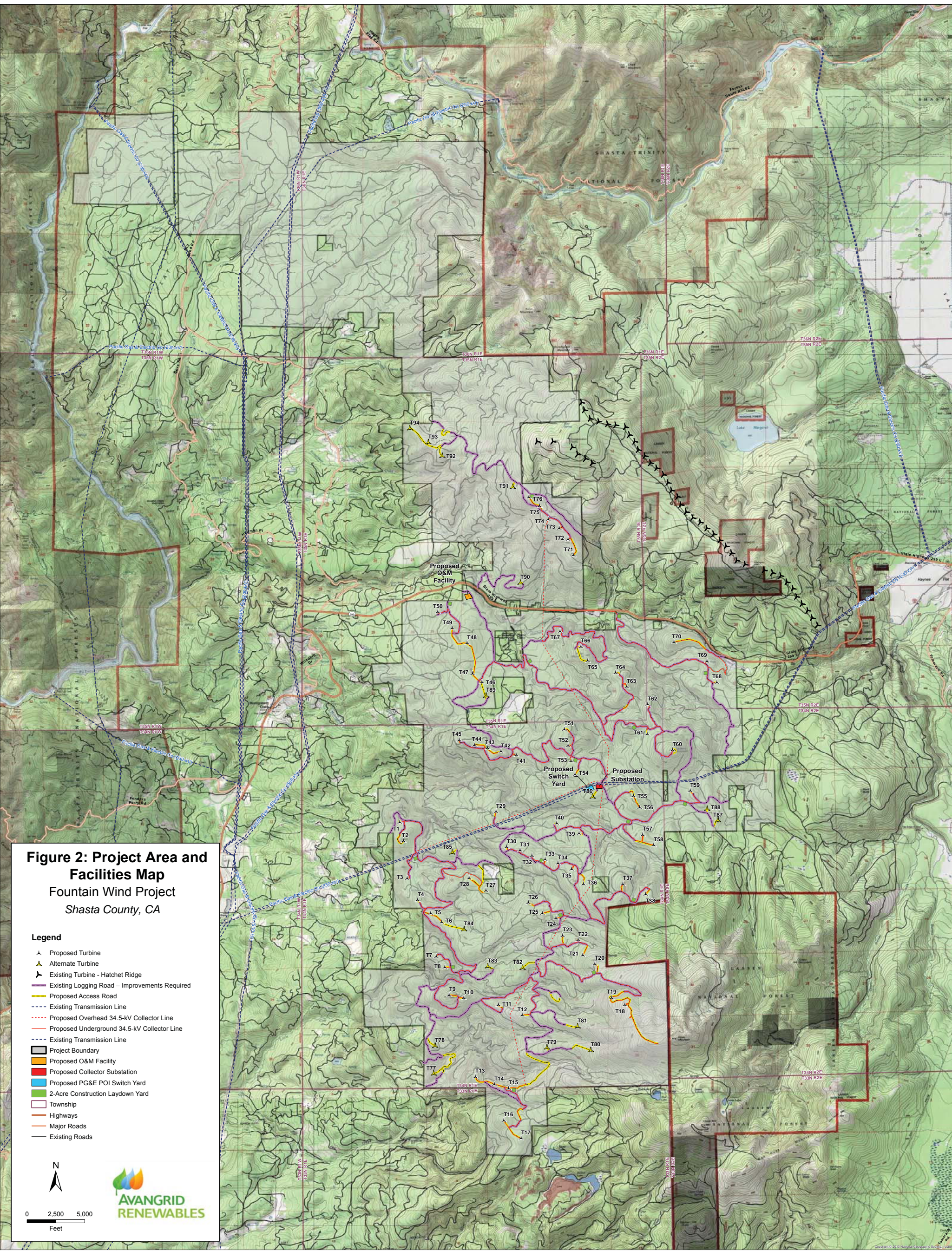
Figure 2: Project Area and Facilities Map
Fountain Wind Project
 Shasta County, CA

Legend

-  Proposed Turbine
-  Alternate Turbine
-  Existing Turbine - Hatchet Ridge
-  Existing Logging Road - Improvements Required
-  Proposed Access Road
-  Existing Transmission Line
-  Proposed Overhead 34.5-kV Collector Line
-  Proposed Underground 34.5-kV Collector Line
-  Existing Transmission Line
-  Project Boundary
-  Proposed O&M Facility
-  Proposed Collector Substation
-  Proposed PG&E POI Switch Yard
-  2-Acre Construction Laydown Yard
-  Township
-  Highways
-  Major Roads
-  Existing Roads



0 2,500 5,000
 Feet



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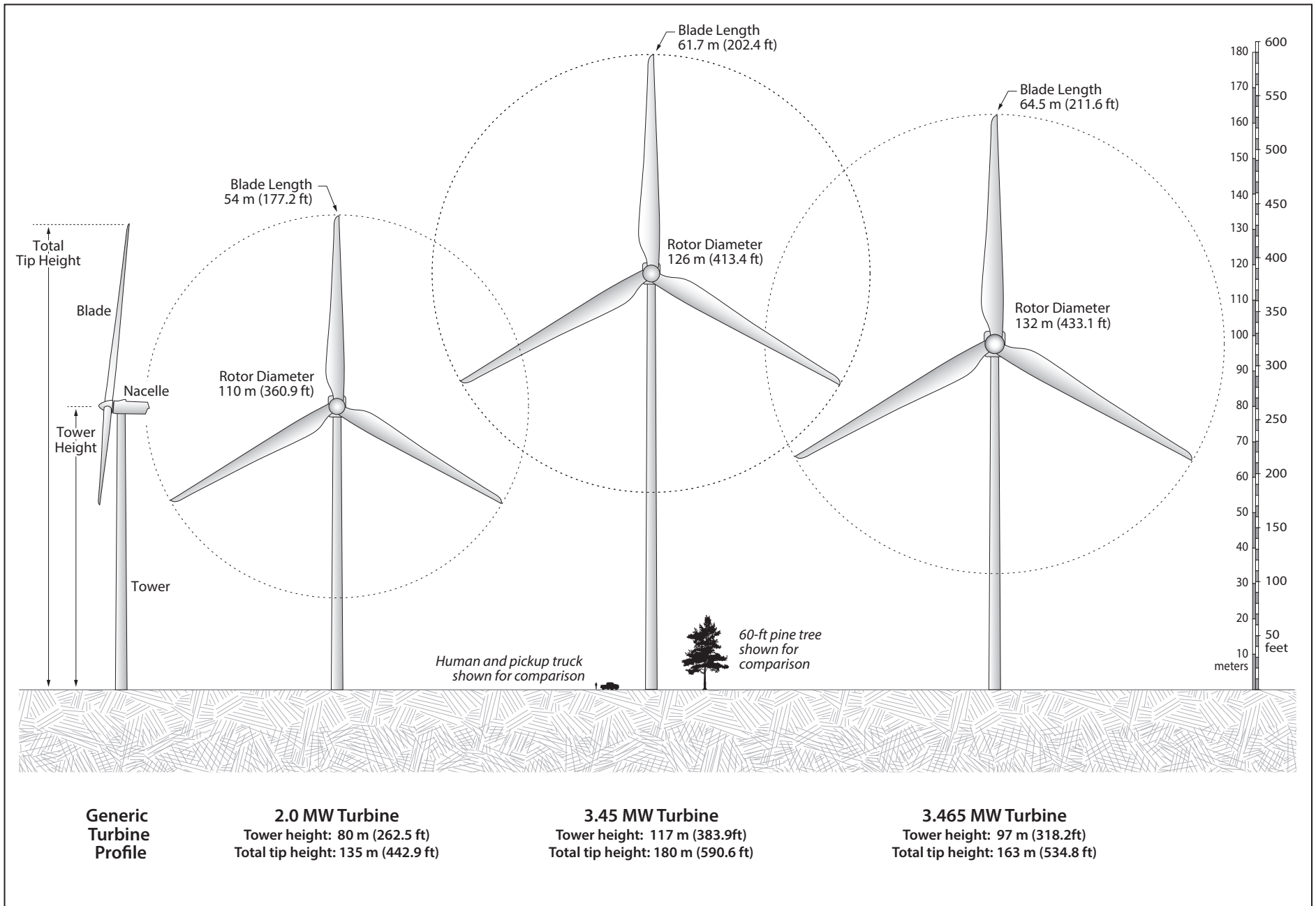
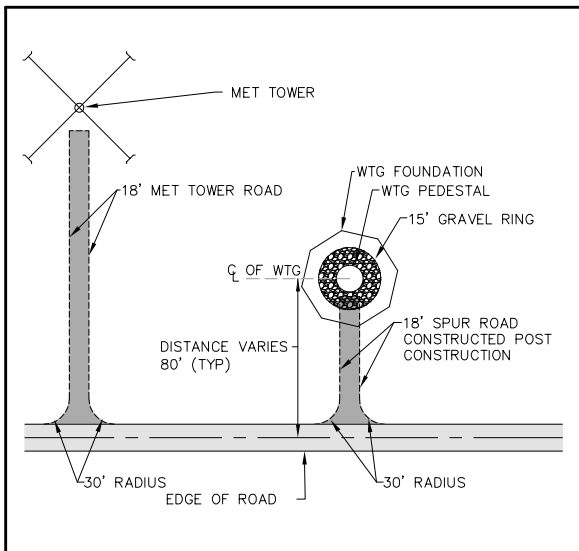
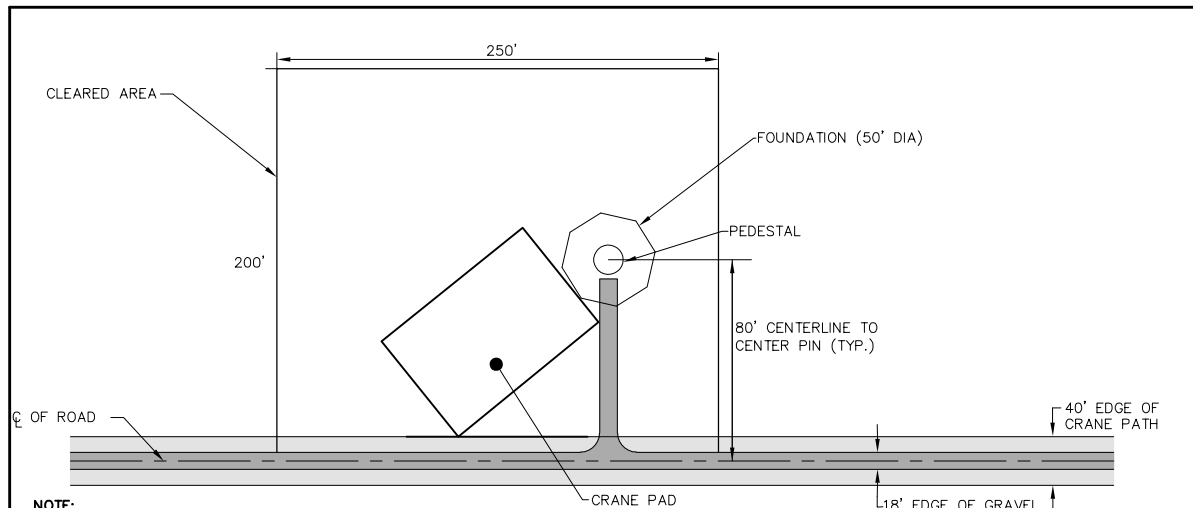


Figure 3: Typical Wind Turbine Profile



PERMANENT SPUR AND MET TOWER ROAD (TYPICAL)

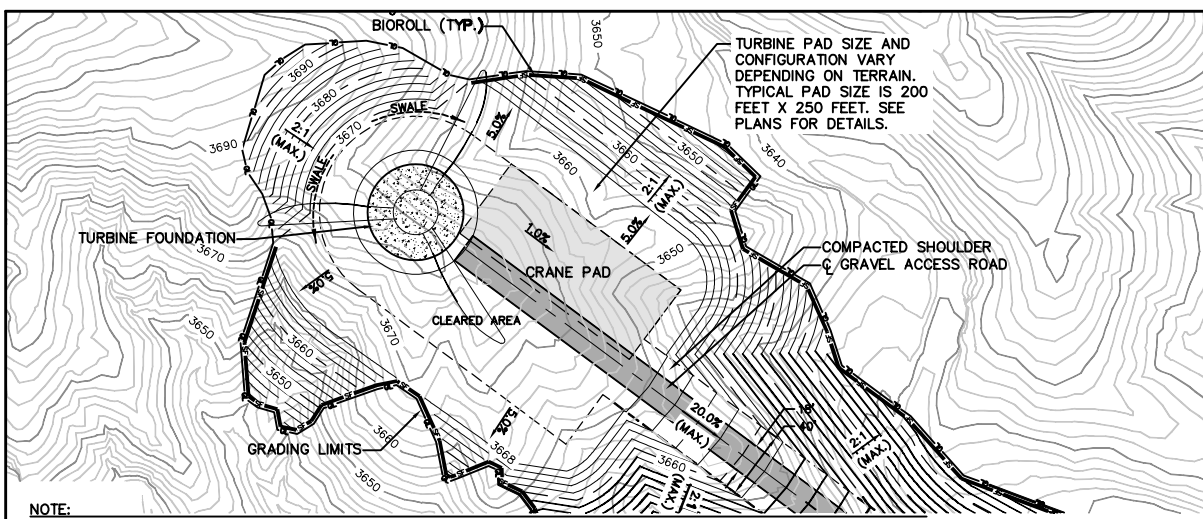
LAST REVISED: 1/11/16
 TS02



TYPICAL FLATLAND WTG SITE - PLAN VIEW

LAST REVISED: 05/07/13
 TS04-A

NOTE:
 1. CLEARED AREA TO BE GRADED AT LESS THAN 5% MAX SLOPE. TERRACE IF NECESSARY.
 2. CRANE PAD LOCATION TO BE FIELD VERIFIED. COMPACT NATIVE GROUND AND GRADE AT LESS THAN 1% MAX SLOPE.



TYPICAL HILLTOP WTG GRADING PLAN - PLAN VIEW

LAST REVISED: 05/07/13
 TS04-B

NOTE:
 1. CLEARED AREA TO BE GRADED AT LESS THAN 5% MAX SLOPE. TERRACE IF NECESSARY.
 2. CRANE PAD LOCATION TO BE FIELD VERIFIED. COMPACT NATIVE GROUND AND GRADE AT LESS THAN 1% MAX SLOPE.

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 Record Drawing by/date: _____
 Revisions:

#	DATE	DESCRIPTION

Prepared for:



Fountain Wind Project

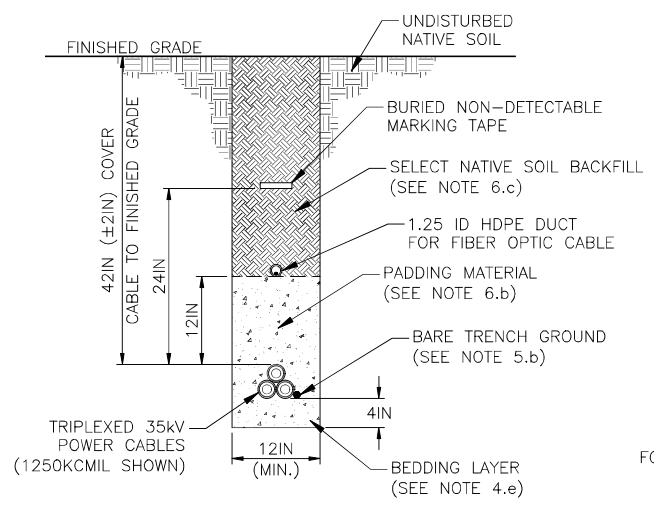
Shasta County, California

Turbine Site Details

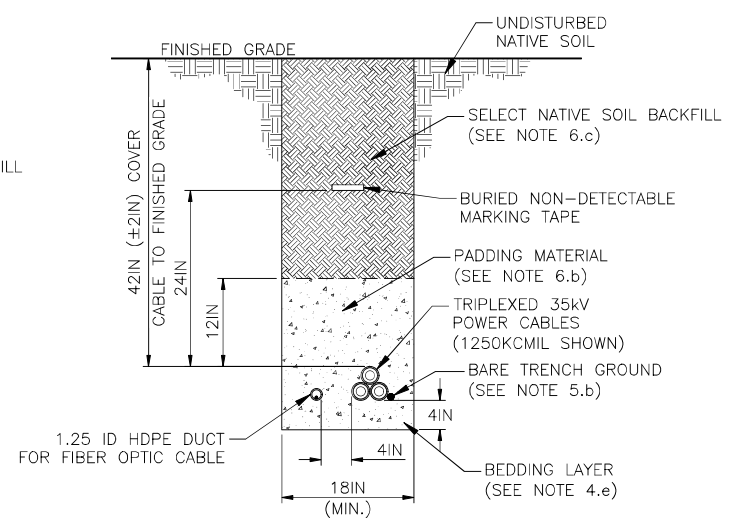
Figure 4: Typical Turbine Site

NOT FOR CONSTRUCTION

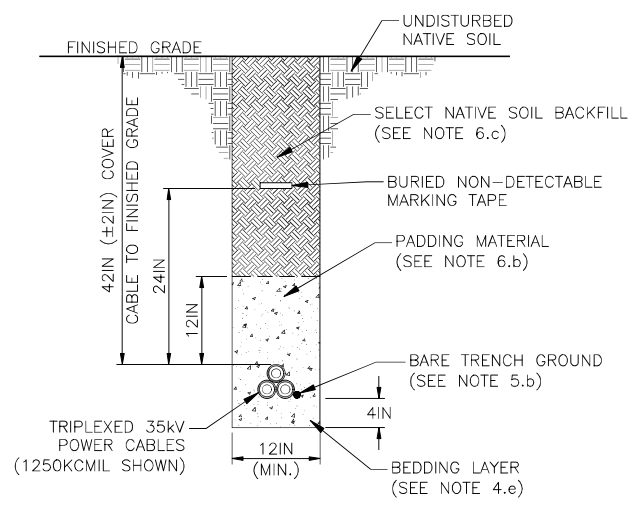
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 Sheet: 1 OF 1



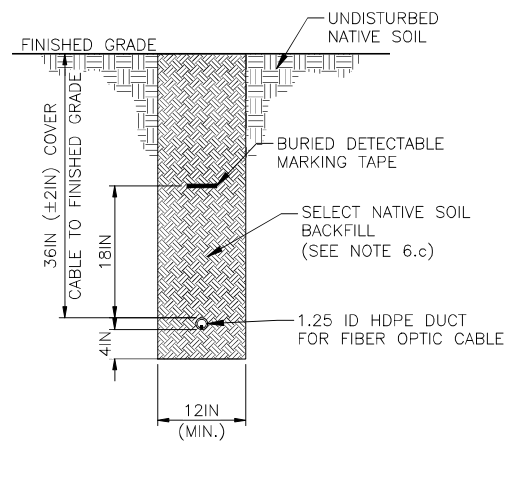
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Not to Scale



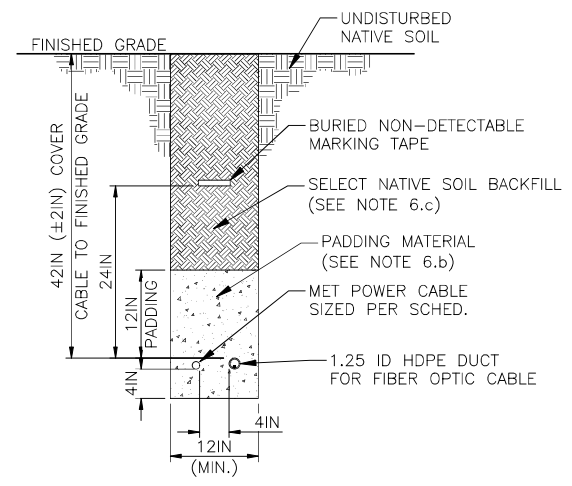
B ALTERNATE POWER & COMMUNICATIONS CABLE DITCH
Not to Scale



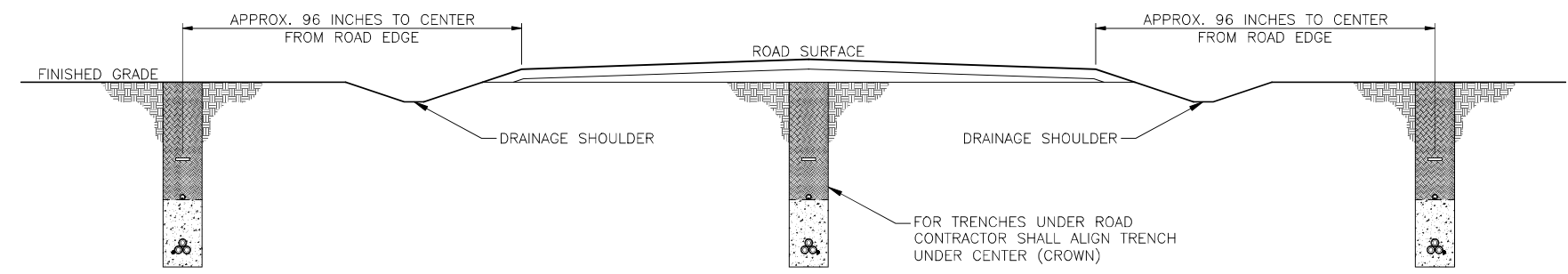
C 3-PHASE POWER ONLY CABLE DITCH
Not to Scale



D FIBER ONLY DITCH
Not to Scale



E MET TOWER & COMMUNICATION DITCH
Not to Scale



F TRENCH LOCATION RELATIVE TO ACCESS ROADS
Not to Scale

NOTES

1. ALL EXISTING UTILITIES MUST BE LOCATED BEFORE ANY EXCAVATION/TRENCHING IS STARTED. REGARDLESS OF OTHER UTILITY CONTACTS, CONTRACTOR MUST NOTIFY LOCAL LOCATING CLEARING HOUSE (I.E. ONECALL) OR OTHER STATE BODY.
2. ALL GRADE SURFACES THAT ARE DISTURBED SHALL BE RESTORED TO ESSENTIALLY ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER.
3. THE CABLE ROUTE TO BE FOLLOWED BY CONTRACTOR SHALL BE AS STAKED BY THE OWNER. ALL TRENCHES SHALL FOLLOW AS STRAIGHT A LINE AS PRACTICAL. ANY DEVIATION FROM THE ROUTING PROVIDED SHALL BE DISCUSSED WITH AND APPROVED BY THE OWNER PRIOR TO CONSTRUCTION. ROCK MAY BE REMOVED BY ANY MEANS CONTRACTOR PREFERS, EXCEPT BLASTING. BLASTING WILL NOT BE PERMITTED UNLESS SPECIFICALLY AUTHORIZED BY OWNER.
4. IF THE GROUND WATER LEVEL IS ABOVE THE BOTTOM OF THE TRENCH THE CONTRACTOR AND OWNER SHALL DISCUSS AND AGREE UPON AN ALTERNATIVE CABLE INSTALLATION METHOD. IF THE GROUND WATER LEVEL IS BELOW THE BOTTOM OF THE TRENCH THE FOLLOWING REQUIREMENTS SHALL BE SATISFIED:
 - 4.a. EVERY TRENCH MUST BE A MINIMUM OF 12-INCHES WIDE (WITH PROPER SLOPE FOR WEAK SOILS), AND MUST PROVIDE SUFFICIENT SPACE TO ALLOW COMPACTION AS SPECIFIED WITH THE EQUIPMENT BEING UTILIZED. THE CONTRACTOR SHALL ENSURE THAT SUFFICIENT AMOUNT OF FINE SOIL IS ADDED ABOVE CABLE FOR BACKFILLS.
 - 4.b. THE TOP SOIL MUST BE PUSHED TO ONE SIDE OF THE TRENCH ROUTE AND KEPT SEPARATE FROM BASE MATERIAL. THE STORED TOP SOIL IS TO BE SPREAD UNIFORMLY OVER THE AREA DISTURBED BY TRENCHING FOLLOWING BACKFILL AND COMPACTION.
 - 4.c. CONTRACTOR SHALL PROTECT ALL TRENCHES AND OTHER EXCAVATIONS FROM SURFACE WATER RUNOFF. ANY WATER THAT HAS ACCUMULATED IN THE EXCAVATION SHALL BE REMOVED AND ANY SOFT TRENCH BOTTOM REMOVED AND REPLACED PRIOR TO THE INSTALLATION OF THE CABLES. THIS INCLUDES REMOVAL AND REPLACEMENT OF SAND BACKFILL THAT HAS BECOME CONTAMINATED WITH SILT, ROCKS, MUD, CLAY, ETC. THE REMOVAL OF WATER AND CORRECTION OF SOFT GROUND CONDITIONS DUE TO SURFACE WATER WILL BE THE RESPONSIBILITY OF CONTRACTOR.
 - 4.d. CONTRACTOR MUST PROTECT THE PUBLIC AND LIVESTOCK FROM ALL TRENCHES AND EXCAVATIONS BY UTILIZING SUITABLE BARRICADES OR OTHER WARNING DEVICES.
 - 4.e. ALL TRENCHES SHALL BE EXCAVATED TO DEPTH AS NECESSARY TO MAINTAIN THE SPECIFIED COVER OVER THE INSTALLED CABLE. IF THE BOTTOM OF THE TRENCH CONTAINS ROCKS, WOOD, VEGETATION MATERIAL OR OTHER HARD, ROUGH, OR SHARP MATERIALS THAT COULD DAMAGE THE CABLE, THE TRENCH SHALL BE OVER-EXCAVATED AND BACKFILLED WITH A 4-INCH LAYER OF COMPACTED FINE CLEAN SOIL (NOTHING LARGER THAN WHAT WOULD PASS THROUGH A 3/8-INCH SCREEN) OR SAND PRIOR TO THE CABLE BEING LAID IN PLACE.
5. ALL DIRECT BURIED POWER CABLES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING:
 - 5.a. 34.5KV CABLES SHALL BE PLACED IN A TRIANGULAR CONFIGURATION, WITH NO INTENTIONAL SEPARATION, SECURED TOGETHER AS NEEDED WITH CABLE TIES TO ENSURE THEY REMAIN IN THIS CONFIGURATION DURING AND AFTER INSTALLATION & BACK-FILL. PROPER TIE-WRAP TOOLS SHALL BE USED TO PREVENT OVER-TIGHTENING OF THE CABLE TIE.
 - 5.b. A 4/0 BARE COPPER WIRE SHALL RUN IN THE TRENCH WITH THE POWER CABLES. THERE SHALL BE NO INTENTIONAL SEPARATION BETWEEN THIS WIRE AND THE POWER CONDUCTORS.
 - 5.c. WHEN INSTALLED ABOVE THE POWER CABLES, THE INNERDUCT FOR FIBER OPTIC COMMUNICATION CABLE SHALL BE LAID ON TOP OF THE PADDING MATERIAL. WHEN INSTALLED AT THE SAME DEPTH AS THE POWER CABLE, THE INNERDUCT AND THE POWER CABLE SHALL BE SEPARATED BY A MINIMUM OF 4 INCHES.
 - 5.d. WHERE TWO OR MORE PARALLEL COMMUNICATION CABLES ARE REQUIRED IN TRENCH, LAY EACH INNERDUCT NEXT TO EACH OTHER WHILE STILL MAINTAINING CLEARANCES SHOWN.
6. BACKFILL AND COMPACTION REQUIREMENTS ARE AS FOLLOWS:
 - 6.a. ALL EXCAVATED AREAS, INCLUDING TRENCHES AND BELL HOLES MUST BE THOROUGHLY COMPACTED TO NO LESS THAN 85% STANDARD PROCTOR OR 105 PCF, UNLESS OTHERWISE NOTED. COMPACTION SHALL BE BY PROVEN METHODOLOGY. SPECIAL CARE MUST BE TAKEN IN THE AREAS WHERE THE THERMAL TESTING OF SOILS IN THAT AREA INDICATES A POTENTIALLY HIGH RESISTIVITY. COMPACTION BY FLOODING WILL NOT BE PERMITTED.
 - 6.b. THE FIRST 12-INCHES OF BACKFILL ABOVE THE CABLE (THIS IS THE CABLE PADDING) MUST BE FREE OF ROCKS, TOP SOIL, ROOTS, AND OTHER ORGANIC MATTER (NOTHING LARGER THAN WHAT WOULD PASS THROUGH A 3/8-INCH SCREEN). IF HEAVY STIFF CLAY IS ENCOUNTERED, THE NATIVE MATERIAL MUST BE EITHER MIXED WITH SANDY SOIL FROM OTHER STRATA IN THE SAME TRENCH, MIXED WITH FINE GRADE SAND THAT IS IMPORTED, OR REPLACED WITH IMPORTED MATERIAL.
 - 6.c. SELECT NATIVE SOIL CAN BE USED FOR THE REMAINDER OF THE TRENCH BACKFILL EXCEPT THAT LARGE CLUMPS AND ROCKS LARGER THAN 4-INCHES MUST BE EXCLUDED AND SUFFICIENT FINES PROVIDED TO ELIMINATE VOIDS.
 - 6.d. AT THE BEGINNING OF THE TRENCH BACKFILLING OPERATION, THE CONTRACTOR AND THE OWNER SHALL DETERMINE THE SUITABILITY OF THE NATIVE SOIL FOR USE AS BACKFILL, AND ANY ADDITIONAL MEASURES THAT MAY BE REQUIRED TO ENSURE ADEQUATE COMPACTION.
 - 6.e. THE CONTRACTOR SHALL FILL THE TRENCH TO PRE-CONSTRUCTION GRADE WITH THE STOCKPILED TOP SOIL AND WITH ADDITIONAL BACKFILL ADDED TO ALLOW FOR SETTLING. CONTRACTOR MAY SLIGHTLY OVERFILL TRENCH IN ORDER TO ALLOW FOR SETTLING.
7. CONTRACTOR SHALL PROVIDE AND INSTALL A PLASTIC WARNING TAPE IN ALL TRENCHES DURING BACKFILLING. THIS TAPE SHALL BE INSTALLED APPROXIMATELY 24-INCHES ABOVE THE CABLES. THE TAPE SHALL BE 6" WIDE, RED WITH BLACK LETTERS, MARKED "CAUTION - BURIED ELECTRIC LINES BELOW".
8. EXCAVATED SOIL AND ROCK THAT IS NOT REUSED IN BACKFILLING THE TRENCHES IS TO BE DISTRIBUTED ACROSS THE SITE PER THE DIRECTION OF THE OWNER.
9. ALL EXCAVATION, TRENCHING AND ELECTRICAL SYSTEM CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THE FORMAL STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR THE PROJECT.

**CONCEPTUAL DESIGN
NOT FOR CONSTRUCTION**

Figure 5: Typical Cable Trench Details

NO.	REVISIONS	DATE	BY	CHK	APR	NO.	REVISIONS	DATE	BY	CHK	APR



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ENGINEERING RECORD	DATE	FOUNTAIN WIND PROJECT UNDERGROUND COLLECTOR SYSTEM CABLE TRENCH DETAILS
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DESIGNED:		
CHECKED:		
APPROVED:		
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		SHEET
		REV

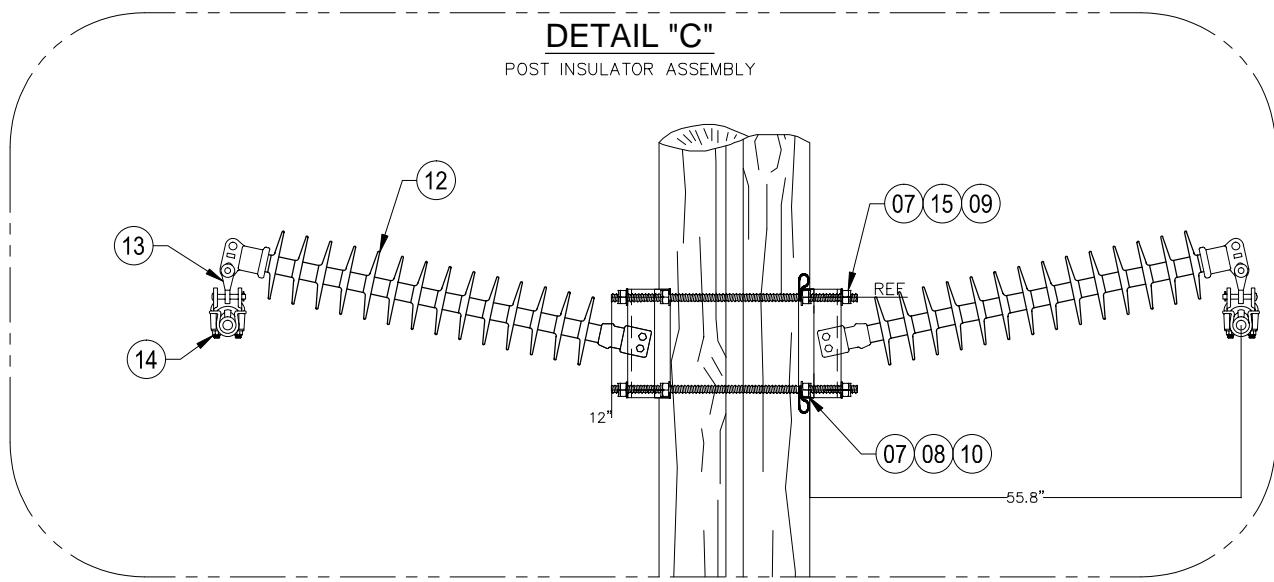
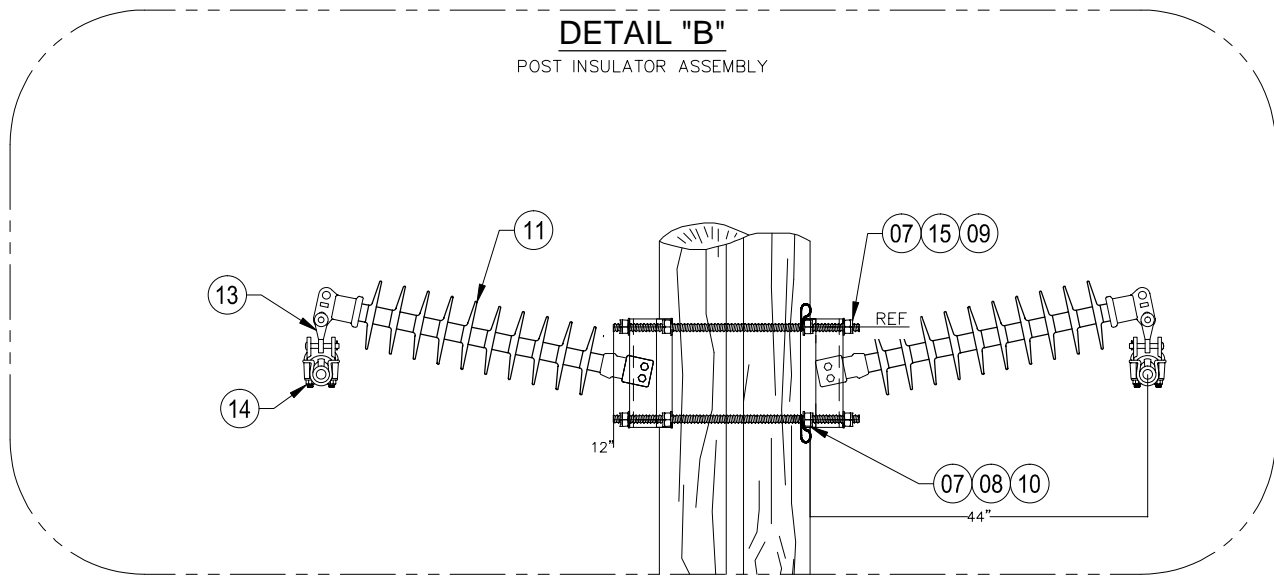
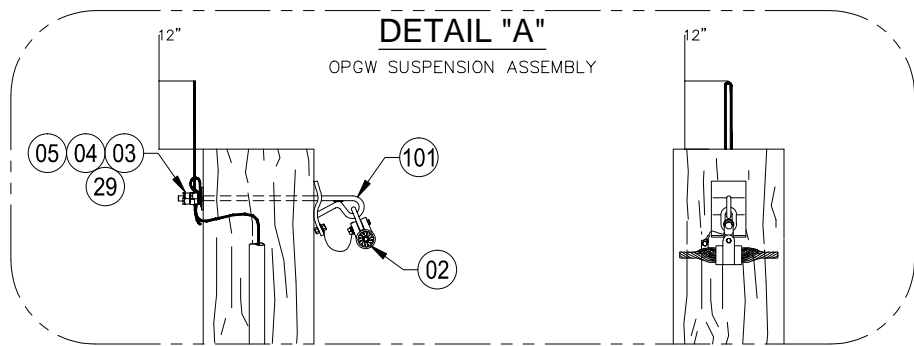
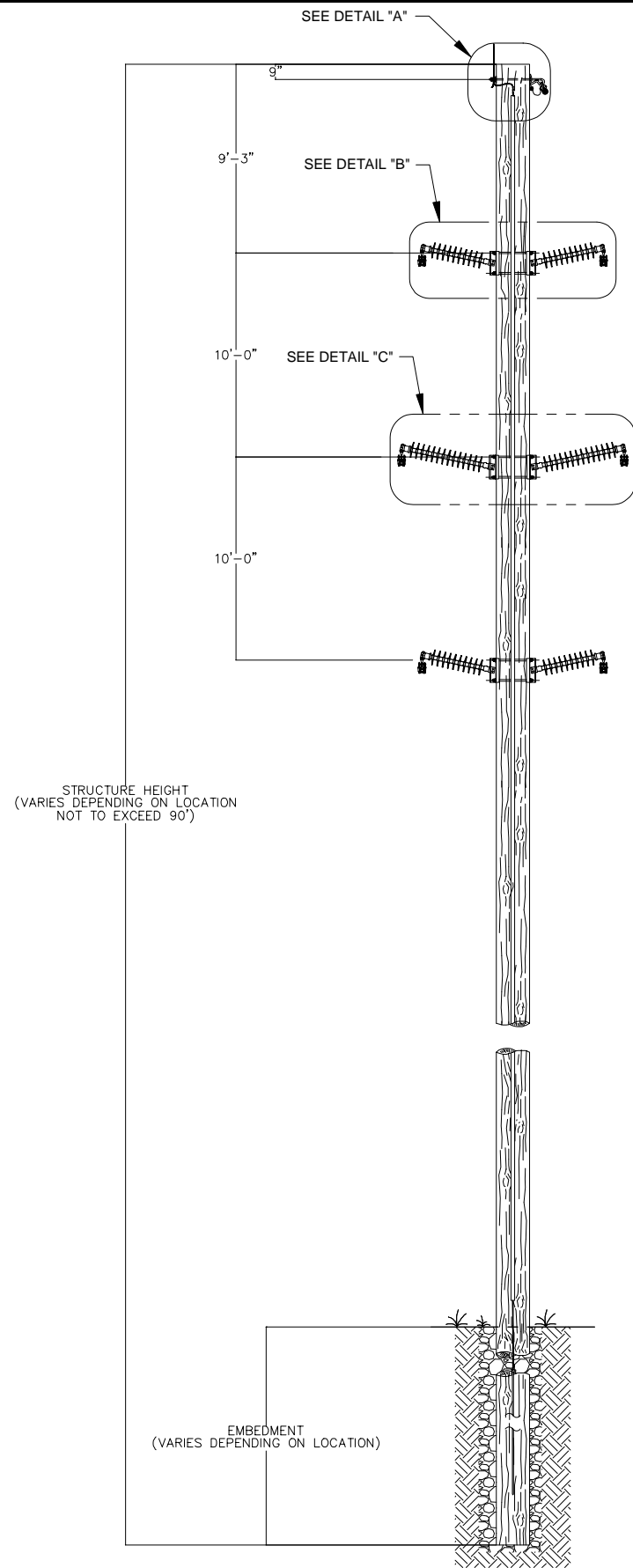


Figure 6: Typical Overhead Collector Line Pole

CONCEPTUAL DESIGN
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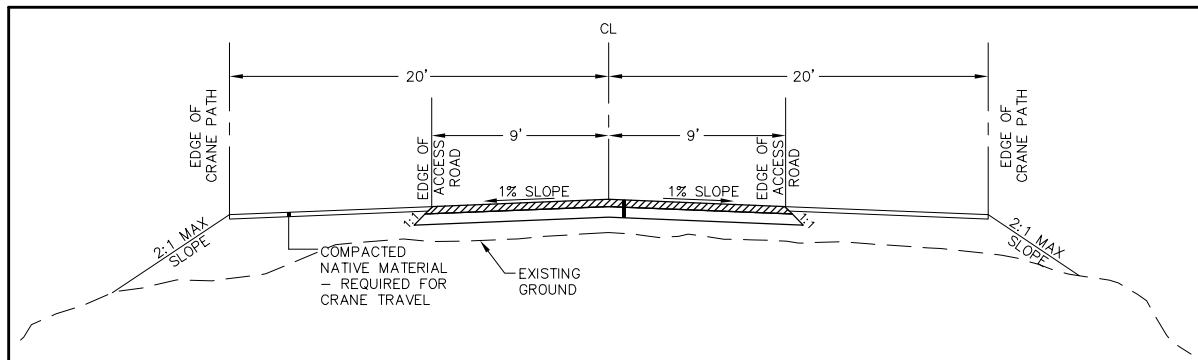


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APPROVED:	
CADFILE:	

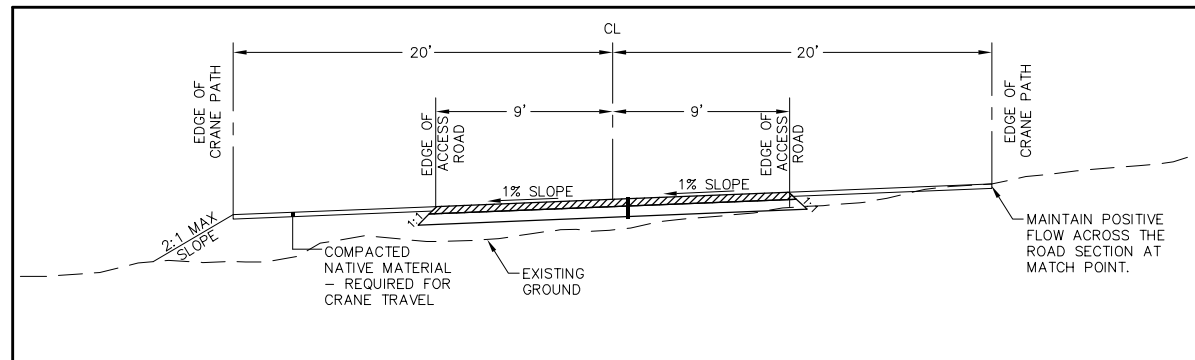
SCALE:	DWG.NO.	SHEET	REV

FOUNTAIN WIND PROJECT
OH COLLECTION
DOUBLE CIRCUIT TANGENT



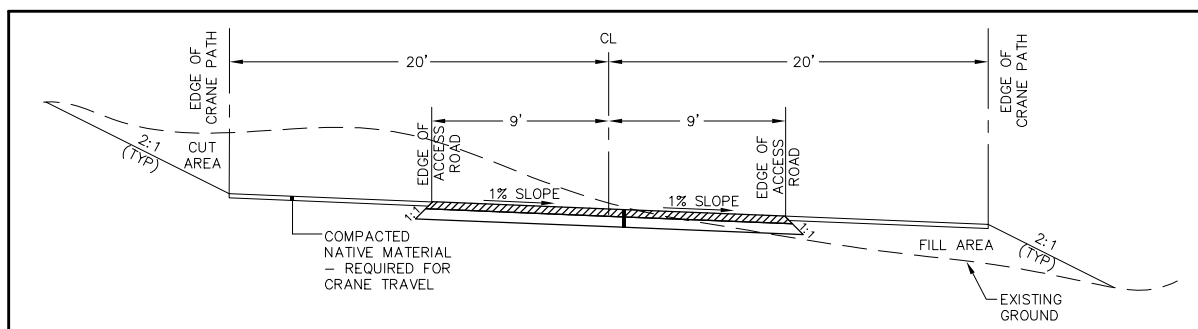
- NOTES:**
1. ROADS TO GENERALLY FOLLOW EXISTING CONTOURS
 2. MAXIMUM CROSS SLOPE FOR CRANE TRAVEL IS 1.0%
 3. ALL FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MOST RECENT VERSION OF ASTM D-698 OR AN APPROVED ALTERNATIVE STANDARD.

PRIVATE ACCESS ROAD - RIDGE SECTION
 LAST REVISED: 03/14/13
 RD01-A



- NOTES:**
1. ROADS TO GENERALLY FOLLOW EXISTING CONTOURS
 2. MAXIMUM CROSS SLOPE FOR CRANE TRAVEL IS 1.0%
 3. GRADE ROAD SURFACE AND SHOULDERS TO MAINTAIN EXISTING DRAINAGE PATTERNS AND ALLOW SHEET FLOW ACROSS THE ROAD PROFILE.
 4. ALL FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MOST RECENT VERSION OF ASTM D-698 OR AN APPROVED ALTERNATIVE STANDARD.

PRIVATE ACCESS ROAD - RELATIVELY FLAT GROUND
 LAST REVISED: 03/14/13
 RD01-B



- NOTES:**
1. ROADS TO GENERALLY FOLLOW EXISTING CONTOURS
 2. MAXIMUM CROSS SLOPE FOR CRANE TRAVEL IS 1.0%
 3. GRADE ROAD SURFACE AND SHOULDERS TO MAINTAIN EXISTING DRAINAGE PATTERNS AND ALLOW SHEET FLOW ACROSS THE ROAD PROFILE.
 4. ALL FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MOST RECENT VERSION OF ASTM D-698 OR AN APPROVED ALTERNATIVE STANDARD.

PRIVATE ACCESS ROAD - CUT SECTION
 LAST REVISED: 01/22/13
 RD01-C

Designed: _____
Checked: _____
Drawn: _____
Record Drawing by/date: _____

Revisions #	DATE	DESCRIPTION

Prepared for:



1125 NW Couch St, Suite 700
 Portland, OR 97209

Fountain Wind Project

Shasta County, California

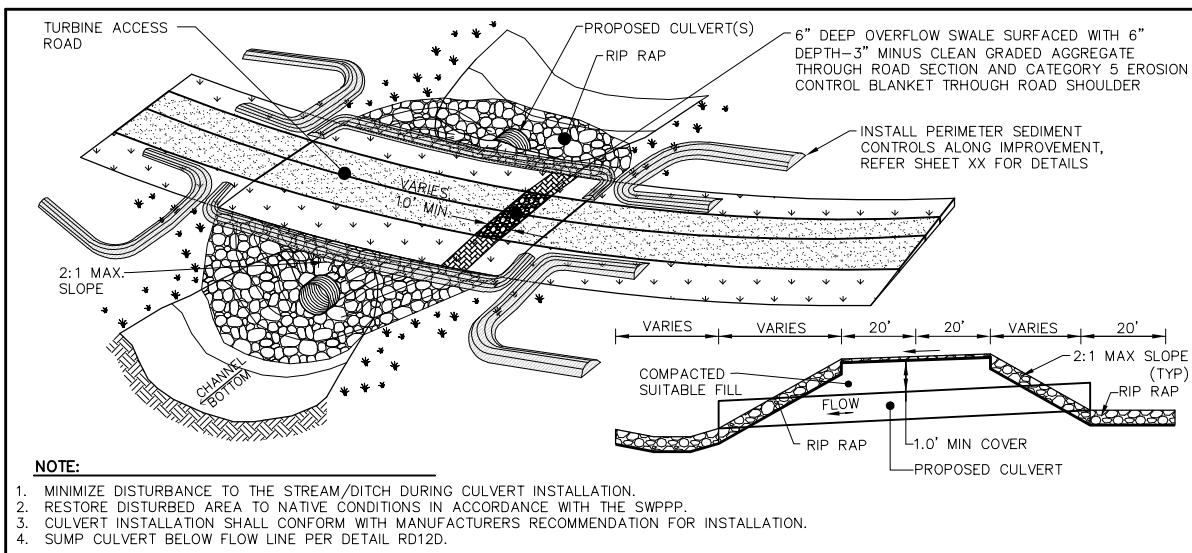
Access Road Details

Figure 7a: Access Road Cross Section Details

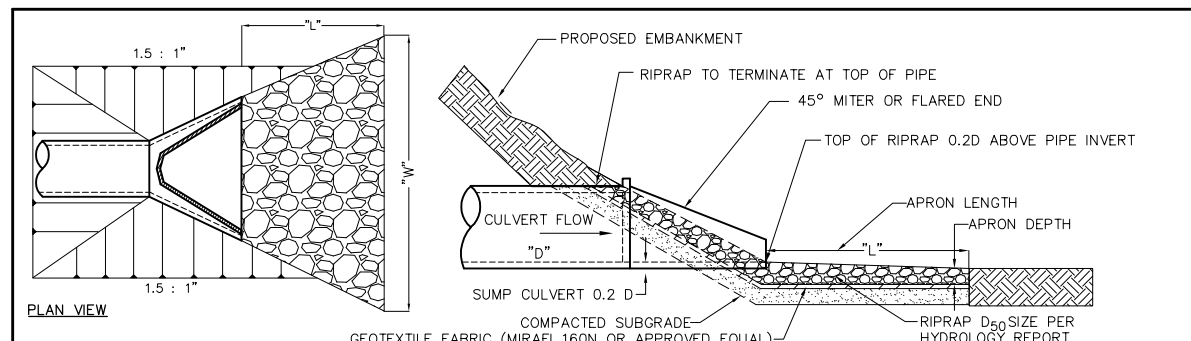
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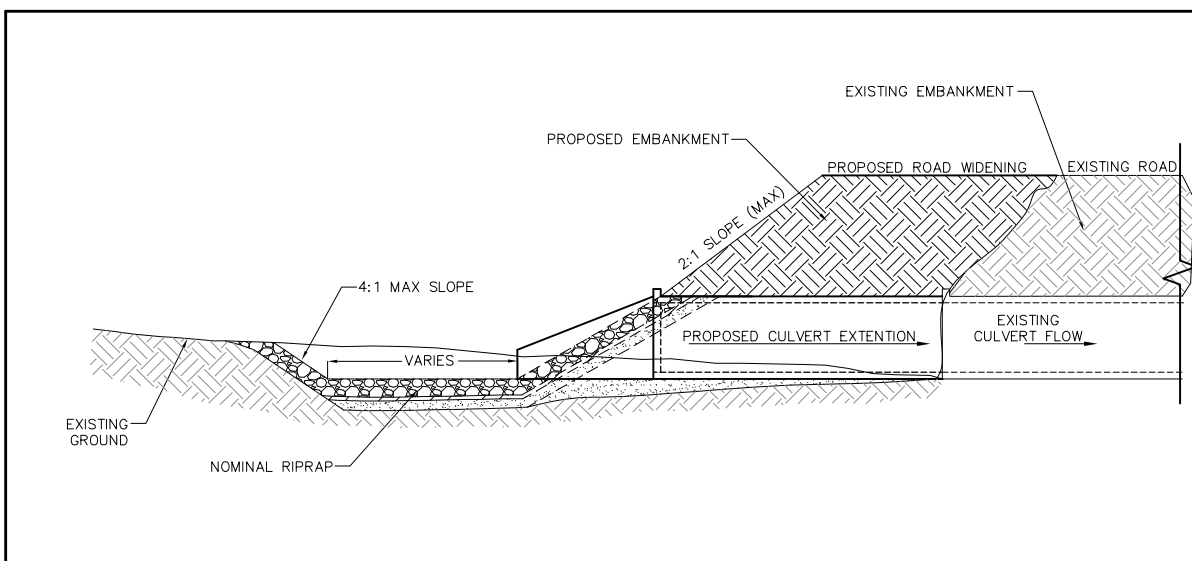
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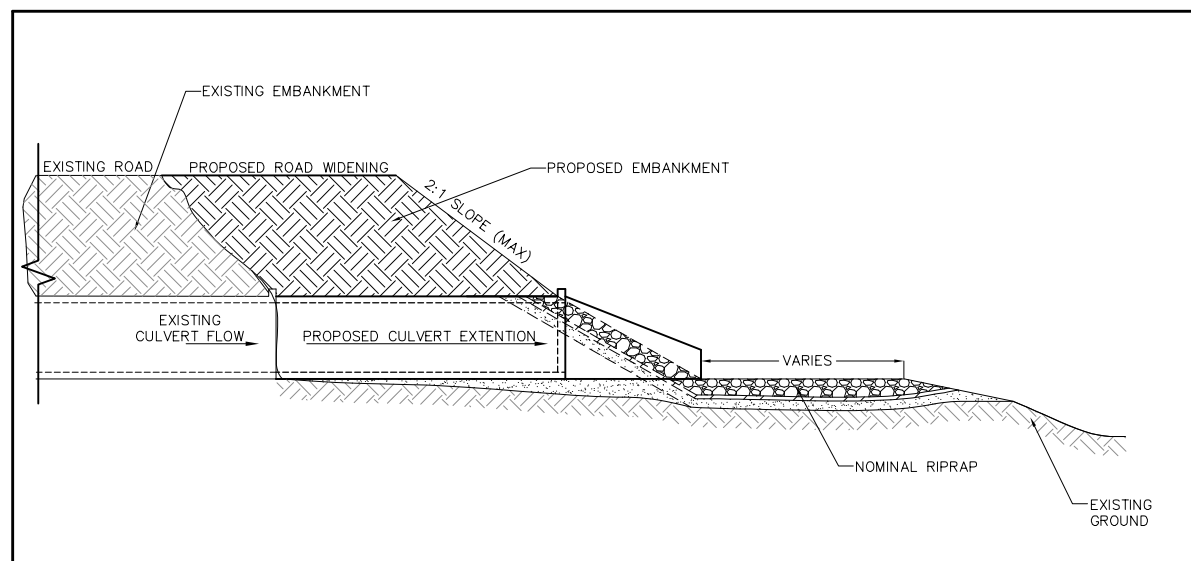
TYPICAL TURBINE ACCESS ROAD DRAINAGE CROSSING—CULVERT
 LAST REVISED: 10/14/16
 RD12-A



PIPE/CULVERT OUTLET APRON
 LAST REVISED: 4/18/17
 RD12-D



PIPE/CULVERT INLET EXTENSION AT ROAD WIDENING
 LAST REVISED: 03/14/13
 RD12-H



PIPE/CULVERT OUTLET EXTENSION AT ROAD WIDENING
 LAST REVISED: 03/14/13
 RD12-I

Designed: _____
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 Drawn: _____
 Record Drawing by/date: _____
 Revisions:

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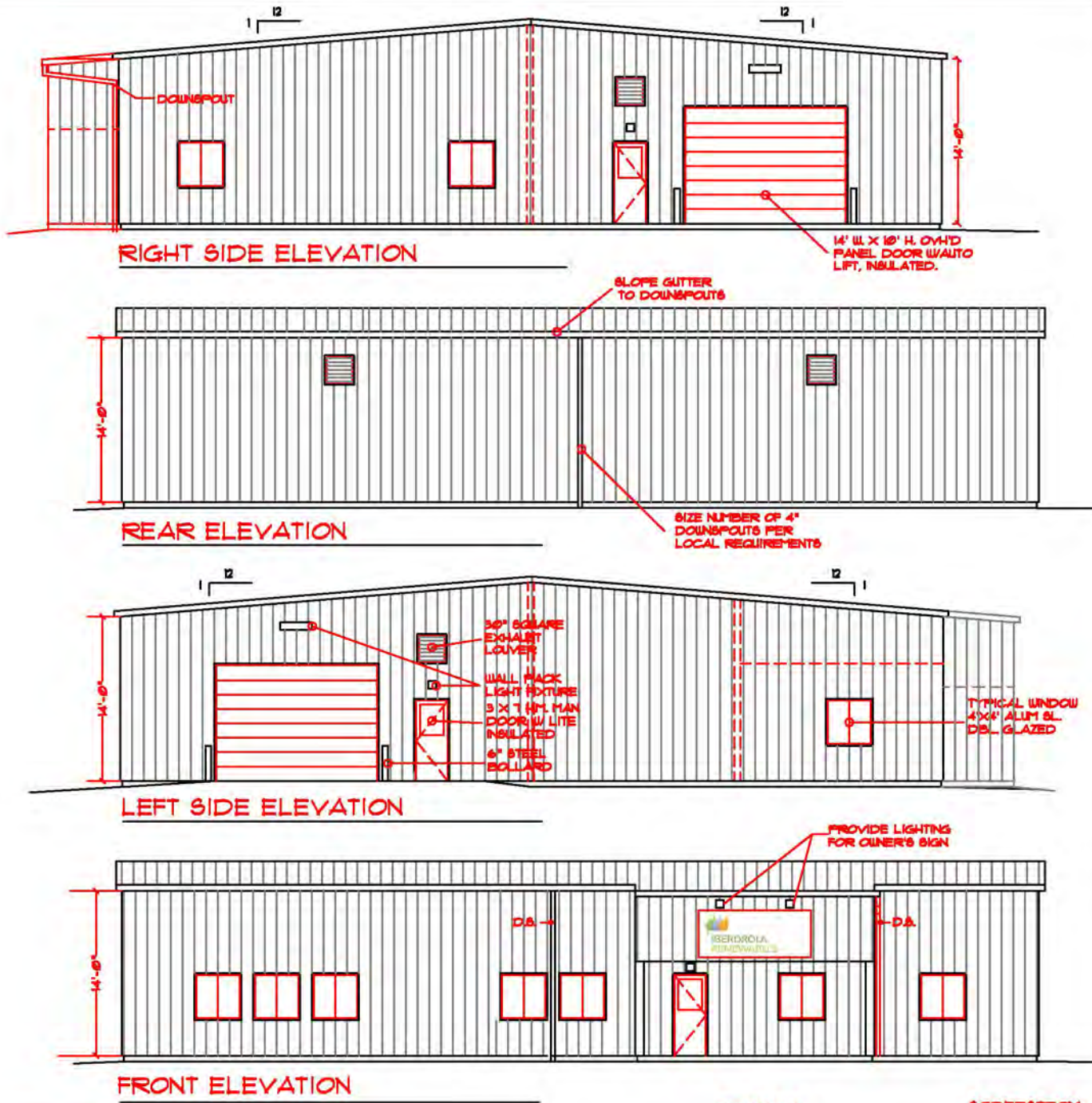
1125 NW Couch St, Suite 700
 Portland, OR 97209

Fountain Wind Project
 Shasta County, California

Drainage Details
 Figure 7b: Access Road Cross Section Details

NOT FOR CONSTRUCTION

Date: 6/19/17
 Sheet: 1 OF 1



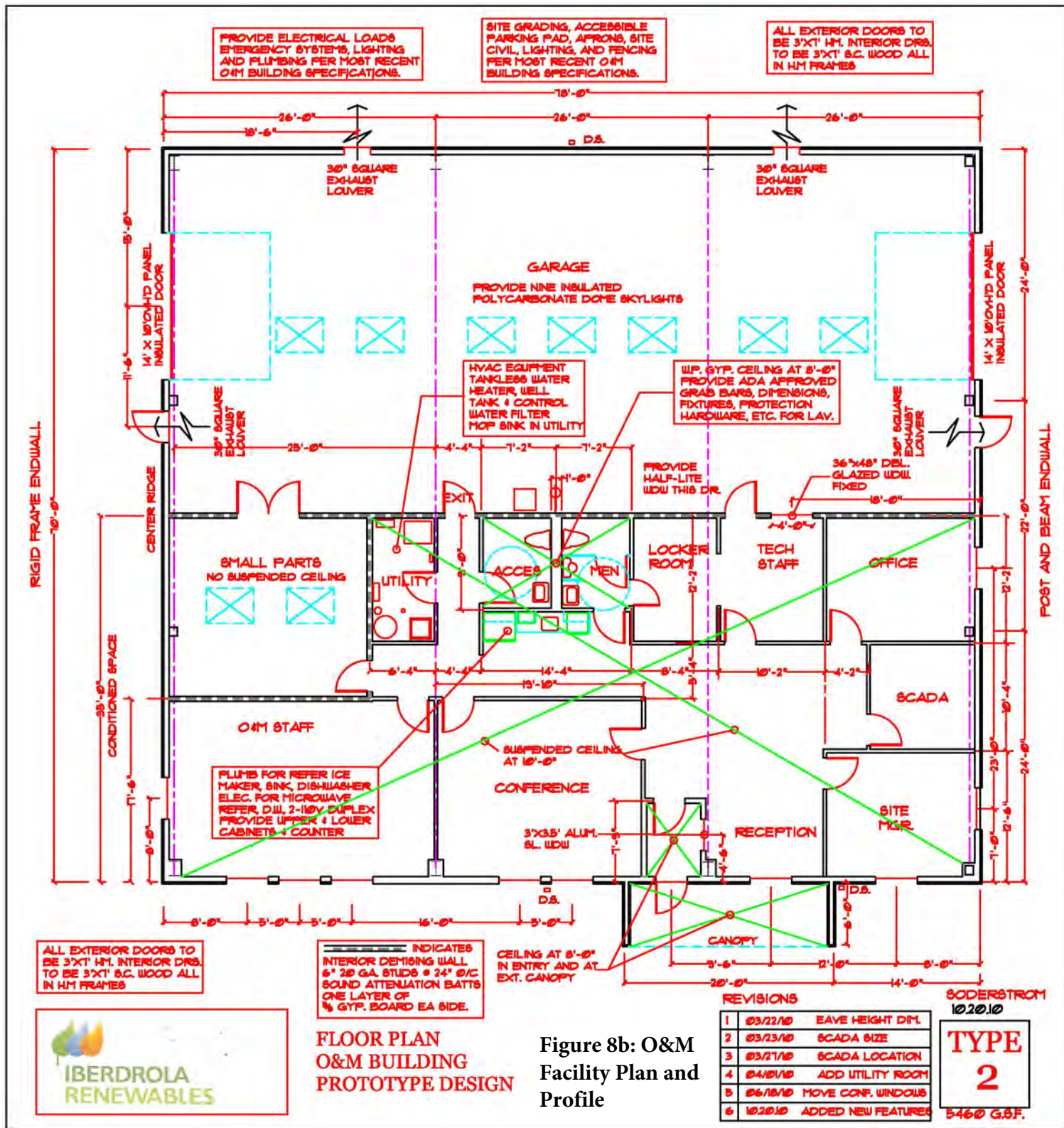
ELEVATIONS
 O&M BUILDING
 PROTOTYPE DESIGN

Figure 8a: O&M Facility Plan and Profile

REVISIONS

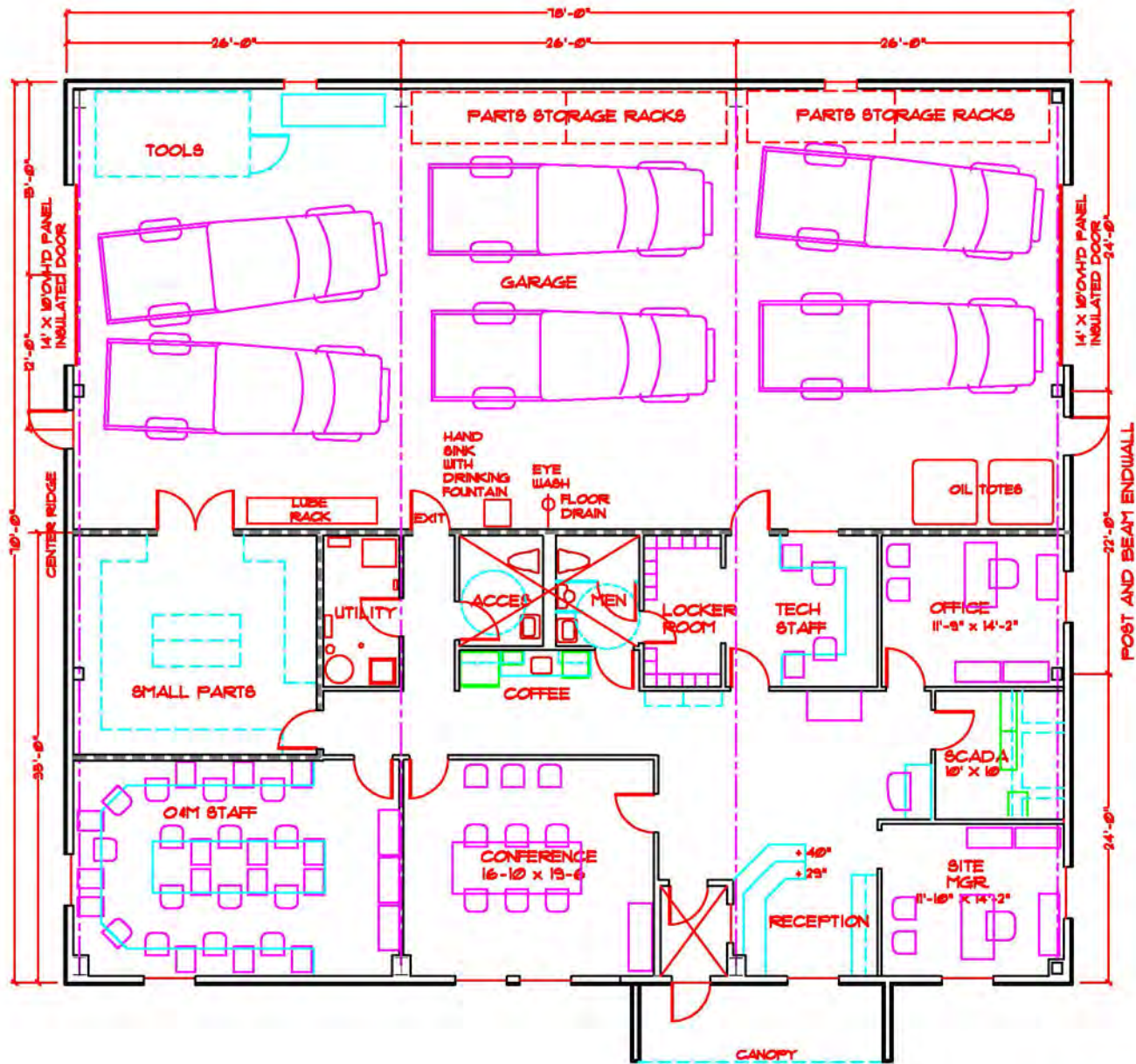
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2	03/23/10	SCADA SIZE
3	03/27/10	SCADA LOCATION
4	04/01/10	ADD UTILITY ROOM
5	06/18/10	MOVE CONF. WINDOWS
6	10/20/10	ADDED NEW FEATURES

60DER8TR0M
 1020.10
TYPE
2
 5460 G.S.F.



FLOOR PLAN O&M BUILDING PROTOTYPE DESIGN

Figure 8b: O&M Facility Plan and Profile



**USE PLAN
O&M BUILDING
PROTOTYPE DESIGN**

**Figure 8c: O&M
Facility Plan and
Profile**

REVISIONS

1	03/22/10	EAVE HEIGHT DIM.
2	03/23/10	SCADA SIZE
3	03/27/10	SCADA LOCATION
4	04/01/10	ADD UTILITY ROOM
5	06/18/10	MOVE CONF. WINDOWS
6	10/20/10	ADDED NEW FEATURES

**SODERSTROM
102010**

**TYPE
2**

5460 G.S.F.

Figure 9: Site Plan O&M Facility



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Checked: _____

Drawn: _____

Record Drawing by/date: _____

Revisions #	DATE	DESCRIPTION

Prepared for:



1125 NW Couch St, Suite 700
Portland, OR 97209



Fountain Wind Project

Shasta County, California

O&M Exhibit

NOT FOR CONSTRUCTION

Date: 09/05/17

Sheet: 1 OF 1



NOTES

1. DESIGN SHOWN IS CONCEPTUAL ONLY. BIDDER IS RESPONSIBLE FOR A FINAL DESIGN THAT ADHERES TO ALL APPLICABLE CODES AND STANDARDS.
2. THE COLLECTOR SUBSTATION IS SHOWN FOR REFERENCE ONLY. REFER TO SUBSTATION PACKAGE FOR COMPLETE INFORMATION.

Figure 10: Site Plan Collector Substation and PG&E Point of Interconnect Switchyard

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NO.	REVISIONS	DATE	BY	CHK	APR



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ENGINEERING RECORD	DATE
DRAWN:	
DESIGNED:	
CHECKED:	
APPROVED:	

FOUNTAIN WIND PROJECT 34.5kV COLLECTOR SUBSTATION PRELIMINARY SITE PLAN	
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REV	



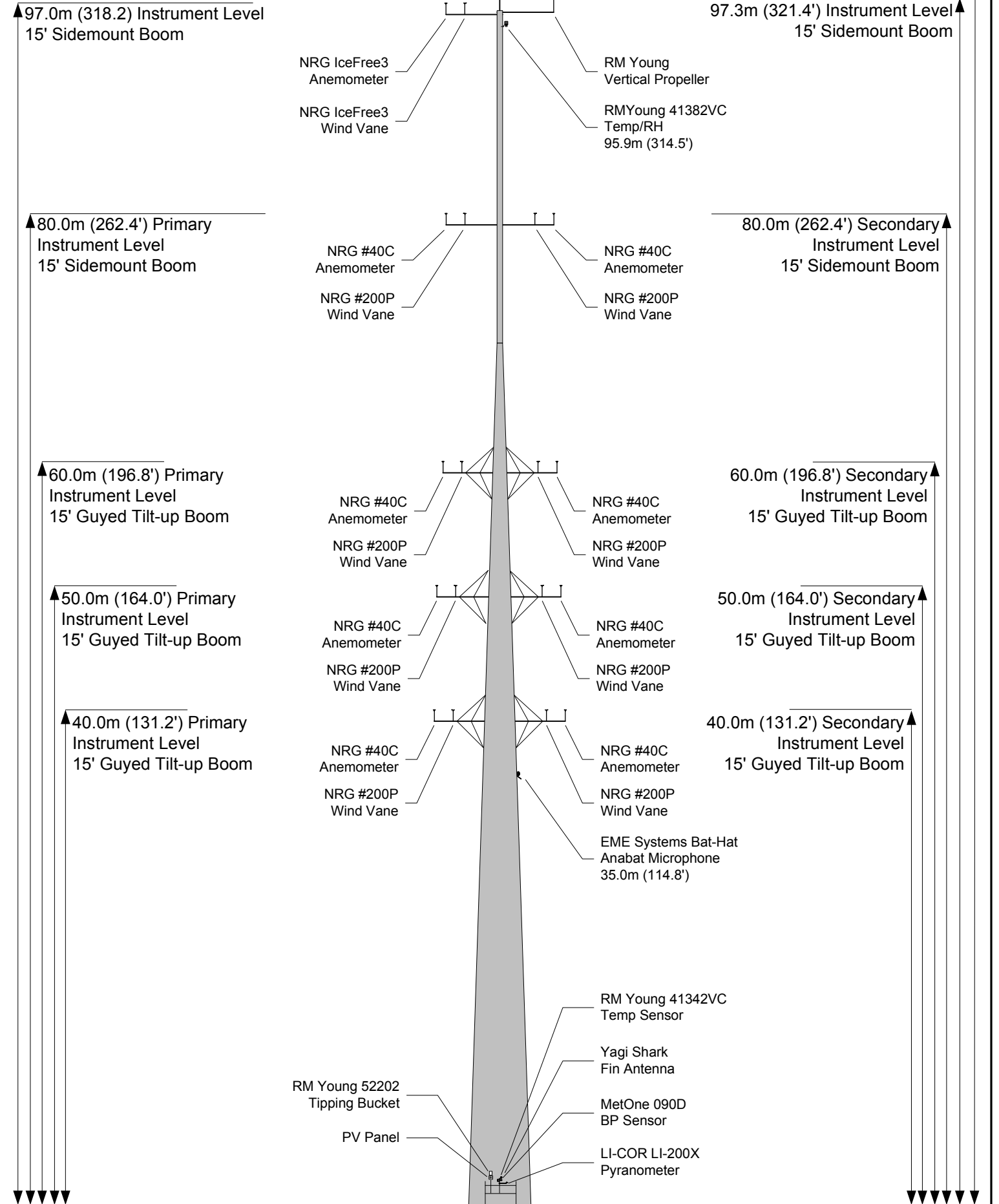
Figure 11: Met tower profile

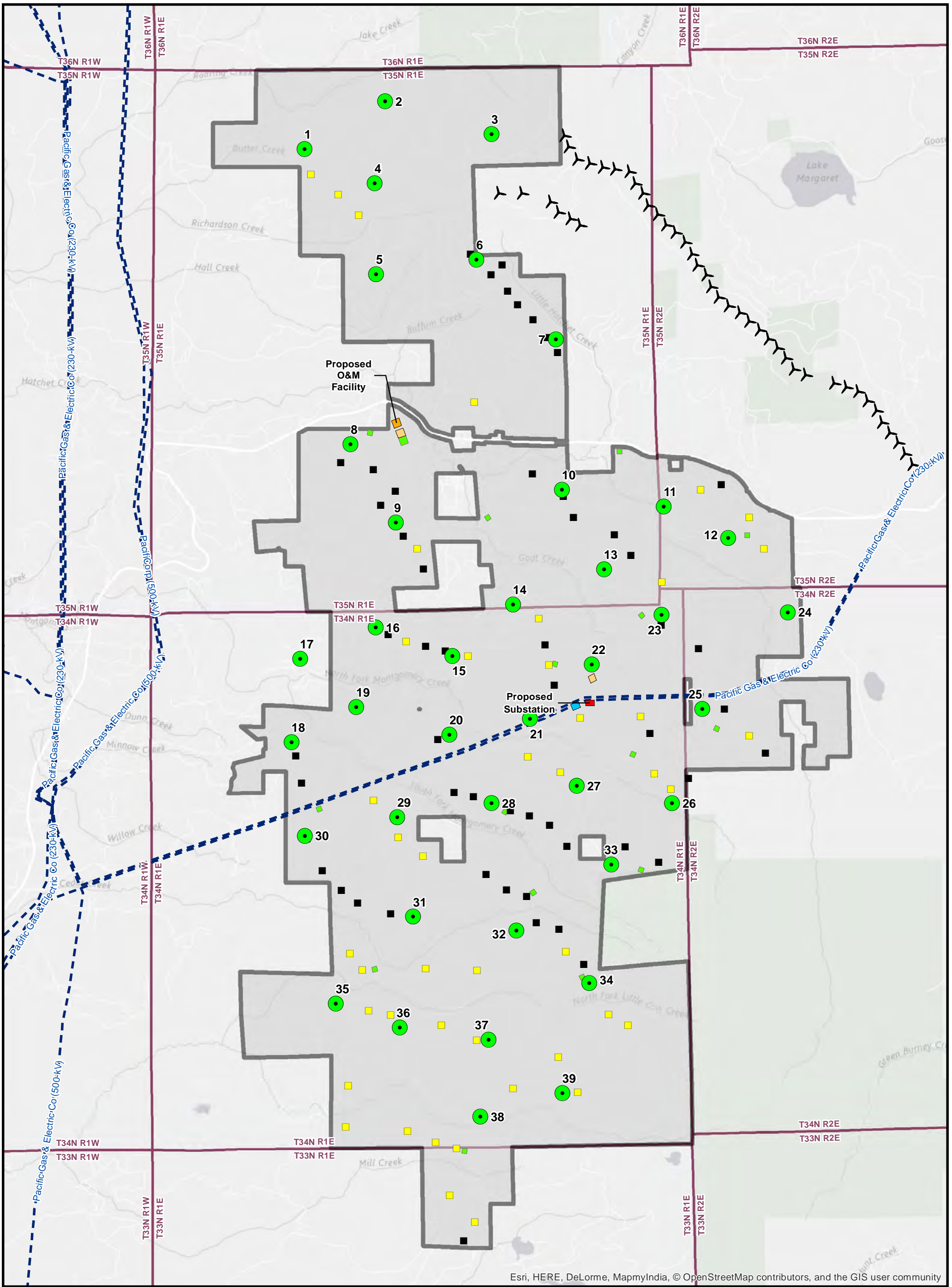


Appendix A.2

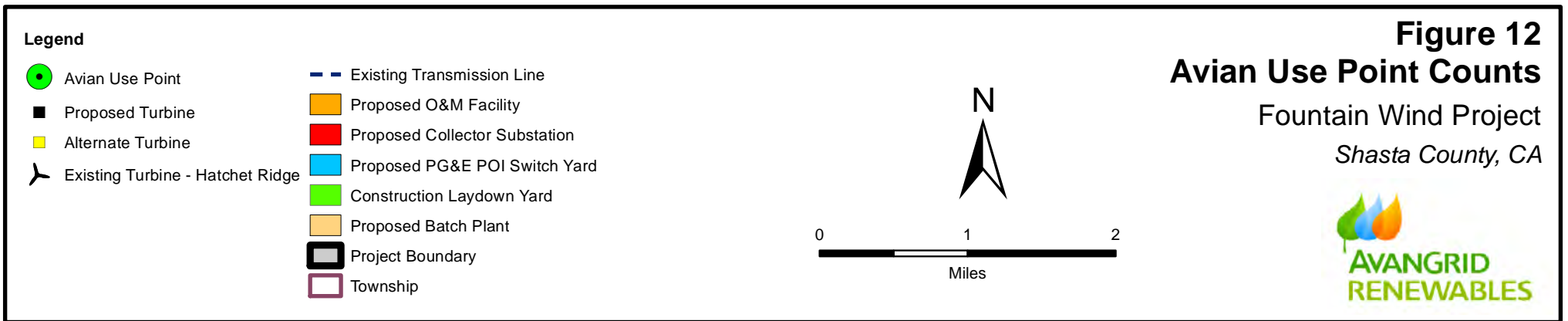
Tower Elevation Drawing

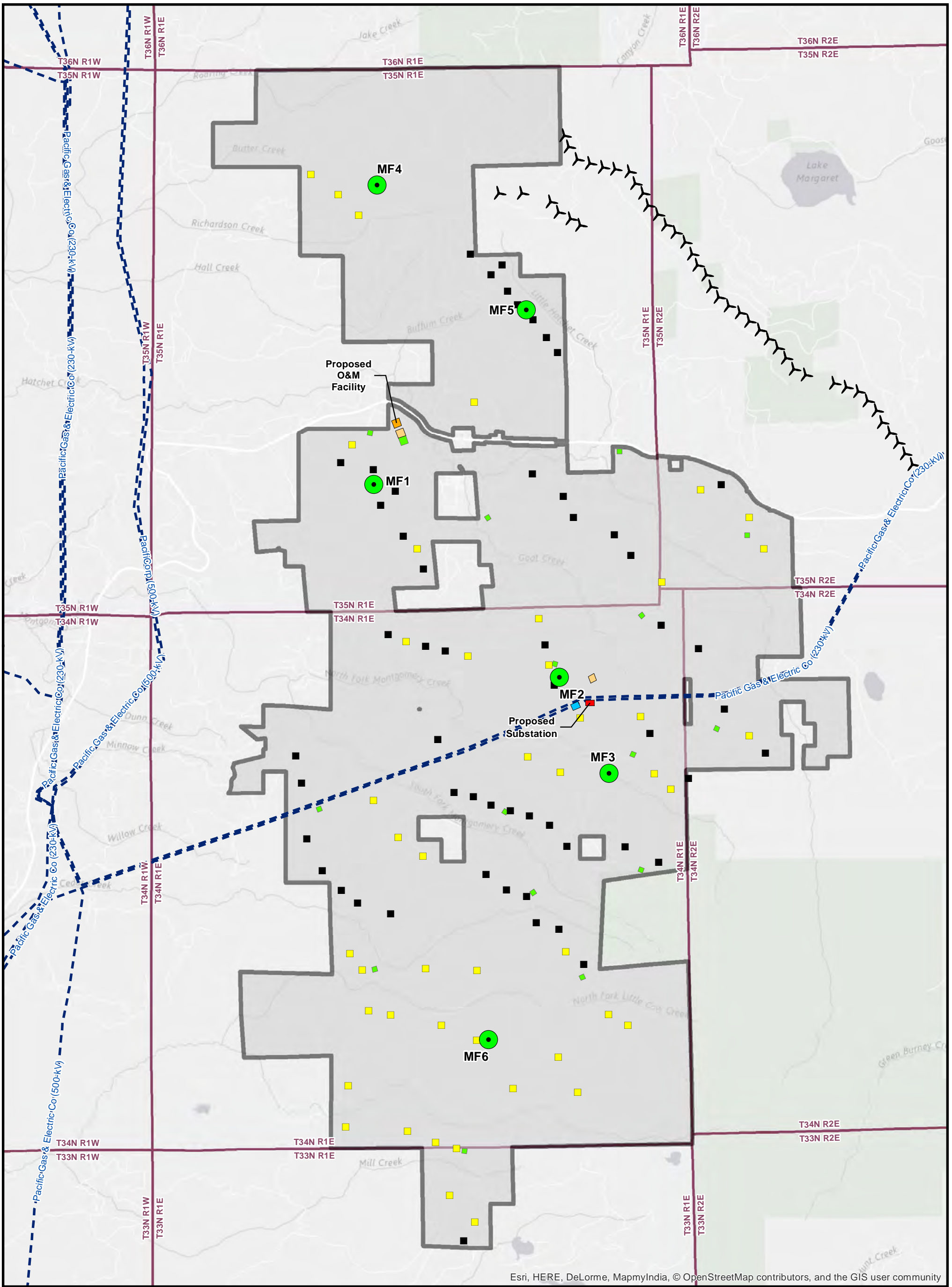
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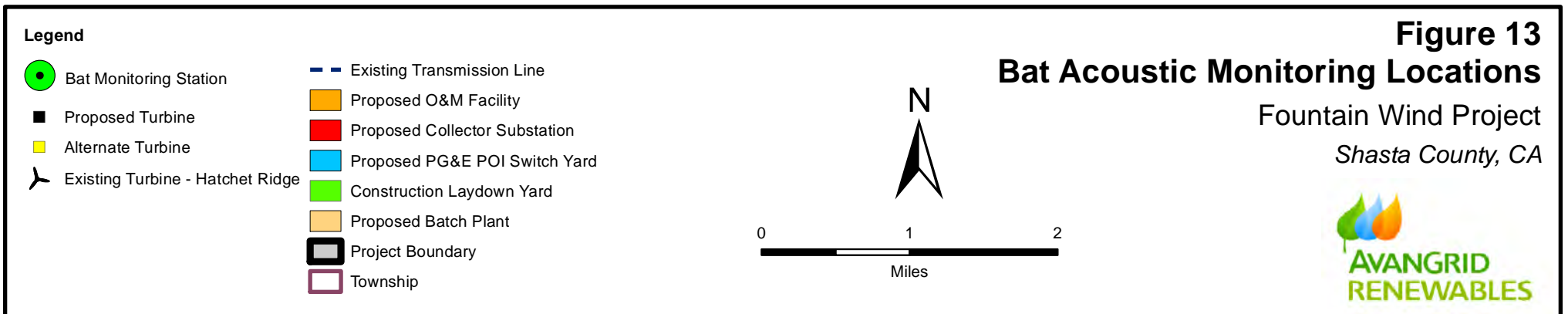


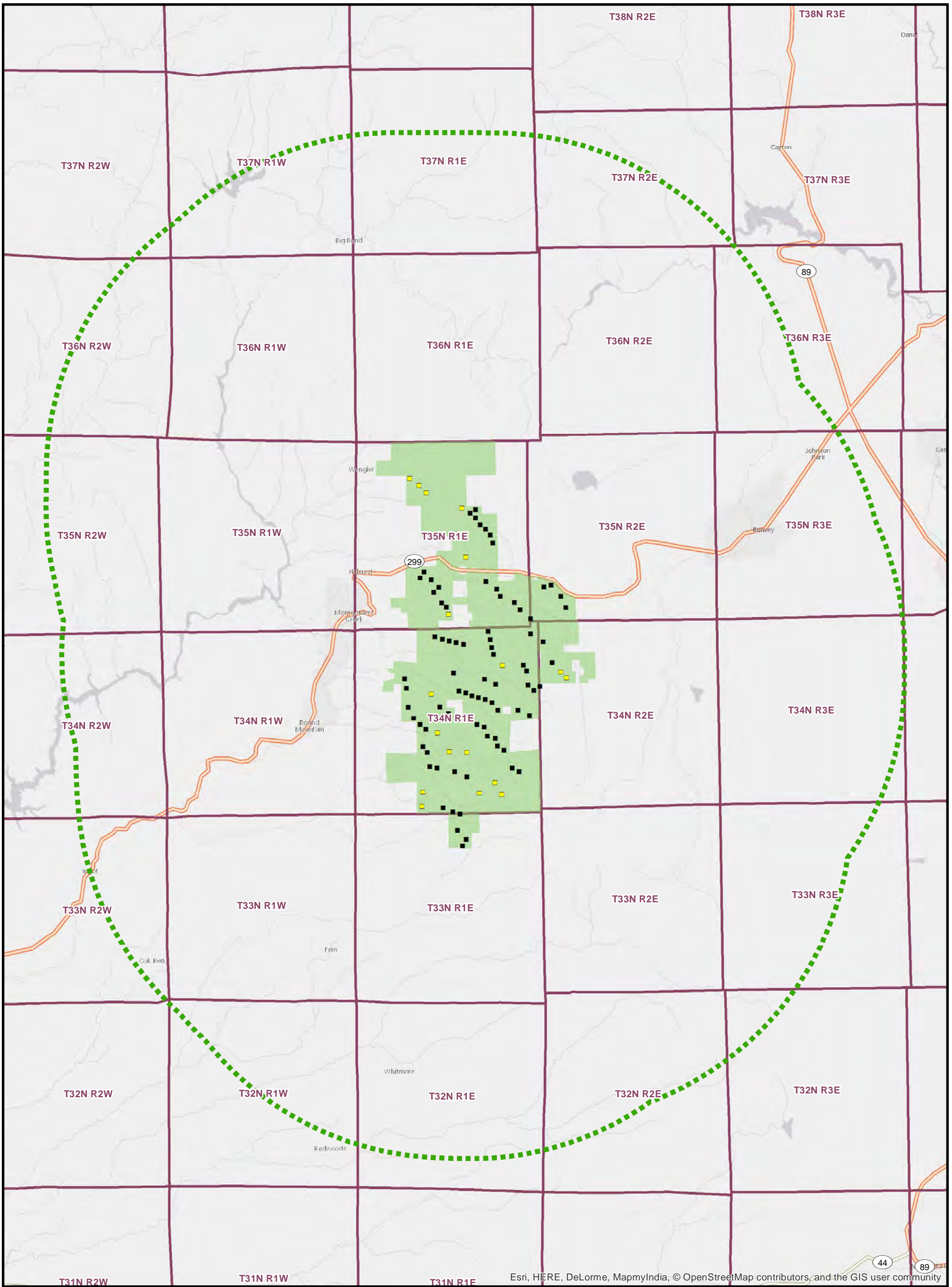
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Legend






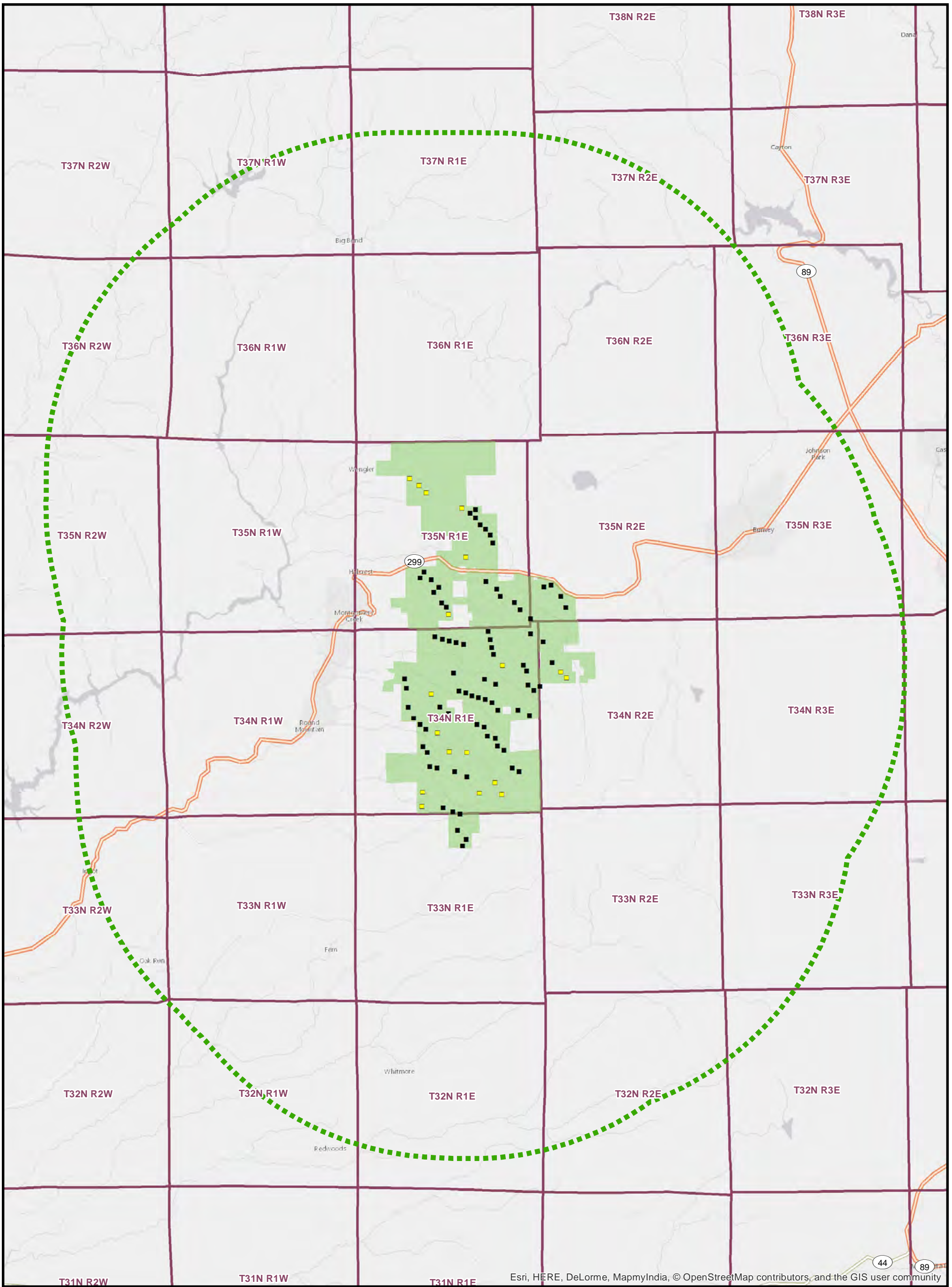
-  Survey Area (10-mile Turbine buffer)
-  Proposed Turbine
-  Alternate Turbine
-  Permit Boundary
-  Township








Figure 14
Eagle Nest Survey Area
 Fountain Wind Project
 Shasta County, CA





Legend

-  Study Area (10-mile Turbine Buffer)
-  Proposed Turbine
-  Alternate Turbine
-  Permit Boundary
-  Township

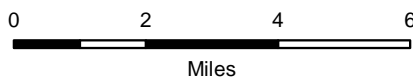
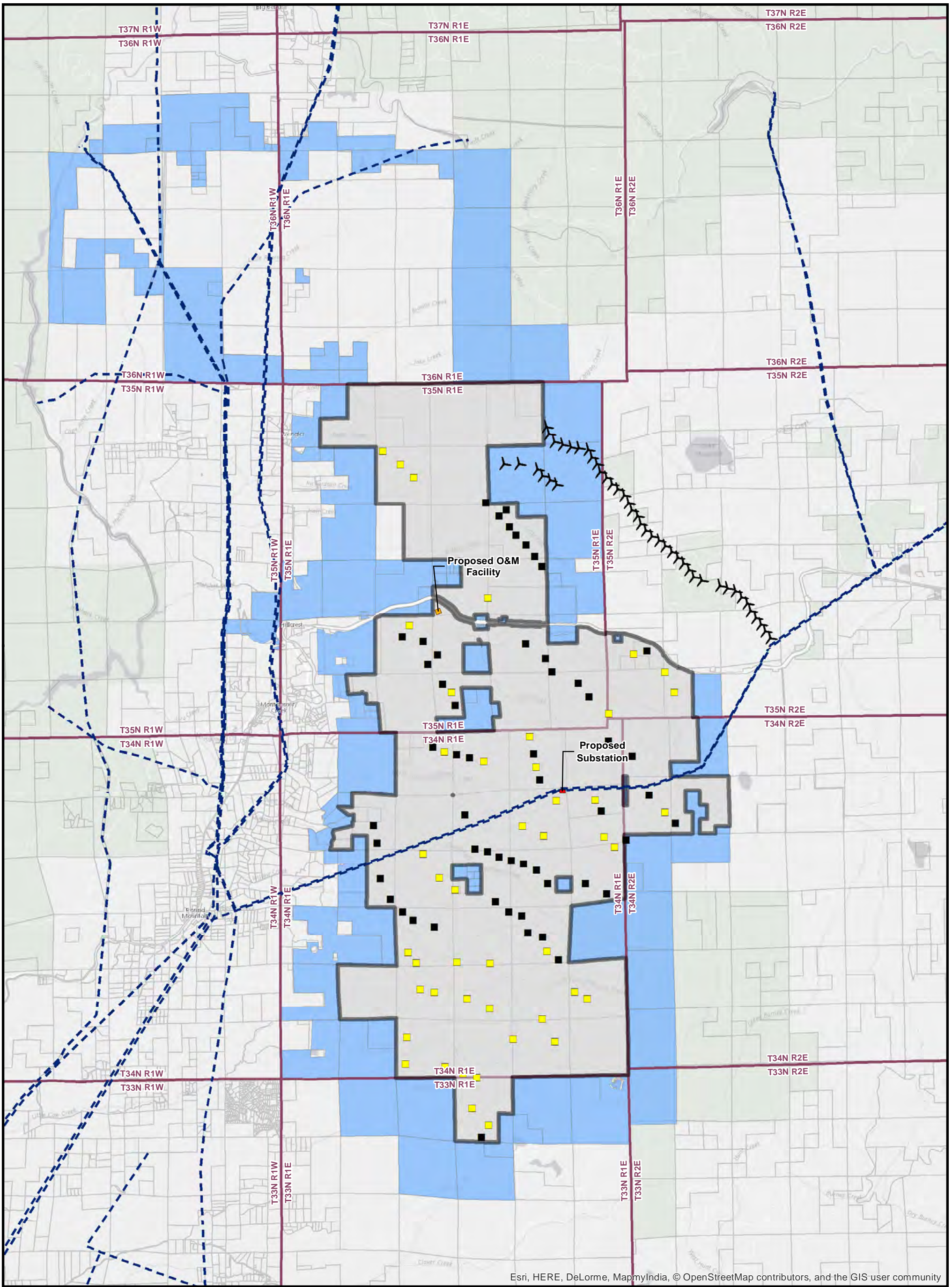


Figure 15
Visual Impact Assessment Area
 Fountain Wind Project
 Shasta County, CA





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- Legend**
- Proposed Turbine
 - Alternate Turbine
 - ⚡ Existing Turbine - Hatchet Ridge
 - - - Existing Transmission Line
 - Proposed O&M Facility
 - Proposed Collector Substation
 - ▭ Project Boundary
 - ▭ Township
 - ▭ Neighboring Parcels

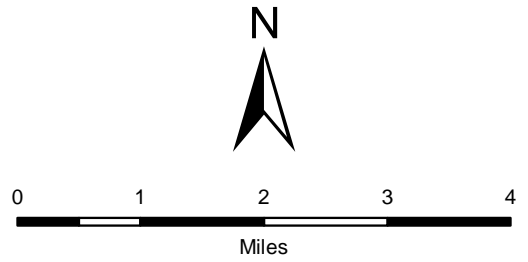
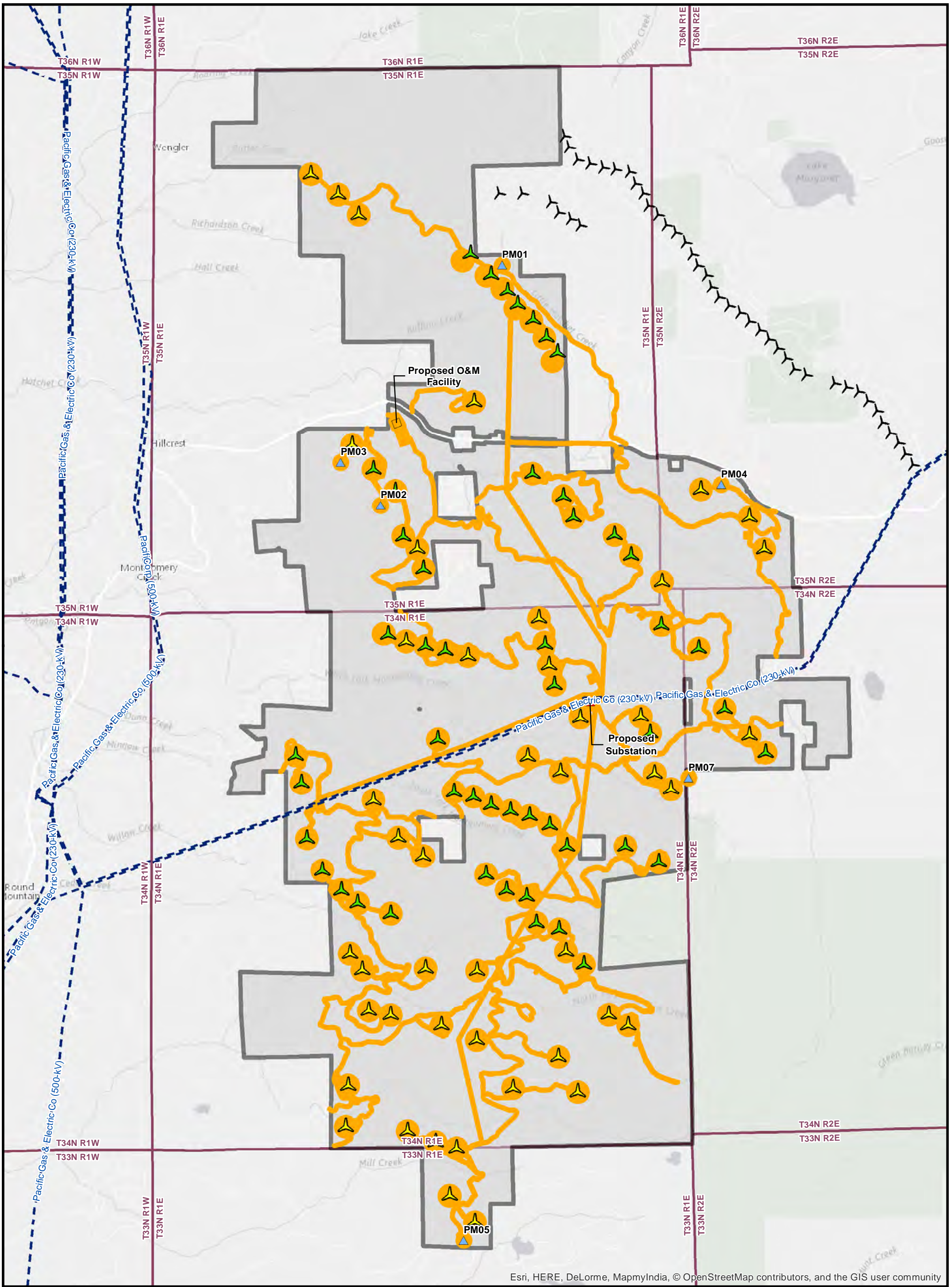


Figure 16
Sound Impact Assessment Area
 Fountain Wind Project
 Shasta County, CA





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Legend

- Environmental Survey Corridor
- Existing Transmission Line
- Existing Turbine - Hatchet Ridge
- Proposed O&M Facility
- Proposed Turbine
- Proposed Collector Substation
- Alternate Turbine
- Proposed PG&E POI Switch Yard
- Proposed Permanent Met Tower
- Project Boundary
- Township

N

0 1 2

Miles

Figure 17

Environmental Survey Corridors

Fountain Wind Project

Shasta County, CA