

**ADDENDUM TO THE RECLAMATION PLAN  
TRANSMISSION INTERCONNECTION LINE**

**IMPERIAL SOLAR ENERGY CENTER SOUTH**

**LEAD AGENCY:**

**Bureau of Land Management**  
El Centro Field Office  
1661 South 4th Street  
El Centro, CA 92243

**Prepared for:**



**Prepared by:**

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**September 2013**

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## 1.0 INTRODUCTION

The purpose of this Addendum to the Reclamation Plan – Transmission Interconnection Line for the Imperial Solar Energy Center South Project (Addendum) is to address slight modifications to the Imperial Solar Energy Center South Reclamation Plan – Transmission Interconnection Line, dated July 2011 (Initial Reclamation Plan). See **Appendix A** for the Initial Reclamation Plan.

This Addendum provides the following:

- Additional constructed details (unknown when the Initial Reclamation Plan was prepared in July 2011) regarding the dismantling of the ISEC South E-W Transmission Interconnection Line on BLM-managed land only.
- Explanation as to why the ISEC South E-W Transmission Interconnection Line (E-W Line) is now being dismantled.
- Information regarding the applicant’s responsibility for the E-W Line during dismantling and restoration.
- Details regarding planned habitat restoration and subsequent monitoring, following dismantling activities of the E-W Line on BLM-managed land only.
- Anticipated schedule for dismantling and restoration activities for the E-W Line.
- Additional reference material relating to the E-W Line.

### 1.1 Project Information

The project’s location, the applicant and the Lead Agency are identified in **Table 1.1**.

**Table 1.1**  
**ISEC SOUTH E-W TRANSMISSION INTERCONNECTION LINE – PROJECT INFORMATION**

| <b>PROJECT INFORMATION</b> |   |
|----------------------------|---|
| Document Title             | Addendum to the Reclamation Plan – E-W Transmission Interconnection Line – Imperial Solar Energy Center South   |
| Project Location           | Section 19, Township 17 South and Range 13 East, San Bernardino Base and Meridian, Imperial County, California  |
| Lead Agency                | Bureau of Land Management (BLM)<br>El Centro Field Office (ECFO)<br>1661 South 4 <sup>th</sup> Street<br>El Centro, CA 92243-4561<br><a href="http://www.blm.gov/ca/st/en/fo/elcentro.html">www.blm.gov/ca/st/en/fo/elcentro.html</a> |
| Lead Agency Contact        | Peter Godfrey, Project Manager<br>BLM California Desert District<br>T: 951/697-5385<br>E: <a href="mailto:pgodfrey@blm.gov">pgodfrey@blm.gov</a>  |
| Project Applicant          | San Diego Gas & Electric Company (SDG&E) – Sempra Energy Utility<br>Edalia-Olivo Gomez<br>T: 858/637-3728<br>E: <a href="mailto:EOlivoGomez@semprautilities.com">EOlivoGomez@semprautilities.com</a>                                  |

**Source:** UltraSystems

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## 2.0 BACKGROUND INFORMATION

### 2.1 Prior Environmental Documents and BLM Determinations for the ISEC South E-W Line

The E-W Line was previously analyzed under the federal National Environmental Policy Act (NEPA) and the state California Environmental Quality Act (CEQA). The Initial Reclamation Plan was part of several environmental documents and BLM determinations, including but not limited to:

- Imperial Solar Energy Center South Draft Environmental Impact Report and Environmental Assessment, County of Imperial and BLM, December 2010
- Imperial Solar Energy Center South Final Environmental Impact Report and Environmental Assessment, County of Imperial and BLM, April 2011
- Finding of No Significant Impact, BLM, July 2011
- Decision Record for the Imperial Solar Center South Project, BLM, July 2011

The Initial Reclamation Plan was approved by the BLM on July 13, 2011 as part of the FONSI issuance. The Decision Record was signed by the BLM on July 14, 2011.

For reference, the Initial Reclamation Plan is part of the ISEC South Plan of Development (POD), as modified in November 2011 (i.e., the latest revision). The POD was prepared as part of the NEPA process and is therefore considered a “living document” by the BLM. The primary focus of the ISEC South POD was the BLM right-of-way (ROW) grant applications, which addressed the Transmission Interconnection Line and Secondary Access Road. Since this Addendum relates to the dismantling of the E-W Line, relevant information extracted from the POD (including its technical plans) specific to the dismantling activities of that line and the use of the existing BLM Secondary Access Road will be referenced in this Addendum, when applicable.

### 2.2 Chronology Leading to the Construction, Energizing, De-Energizing and Dismantling of the ISEC South E-W Line

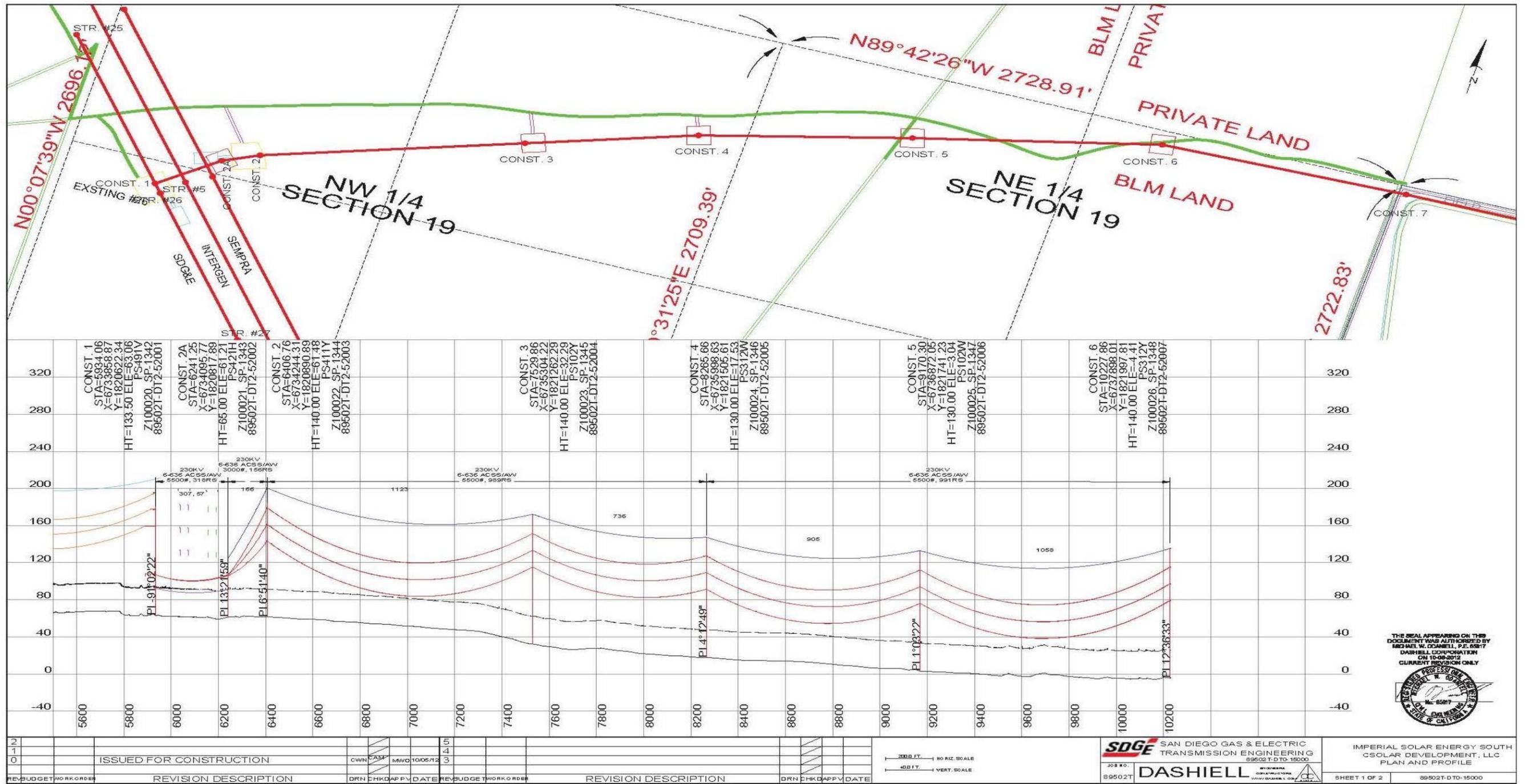
#### **July 21, 2011**

On July 21, 2011 the BLM authorized Right-of-Way Grant (Grant) serial number CACA-051645 to CSolar Development, LLC, who assigned it to CSolar IV South, LLC (CSolar) to use public lands to construct, operate, maintain and terminate an approximately 1.7-mile-long east-west segment between the Solar Energy Generating Facility and three existing lines owned by SDG&E, Intergen and Sempra.

#### **November 3, 2011**

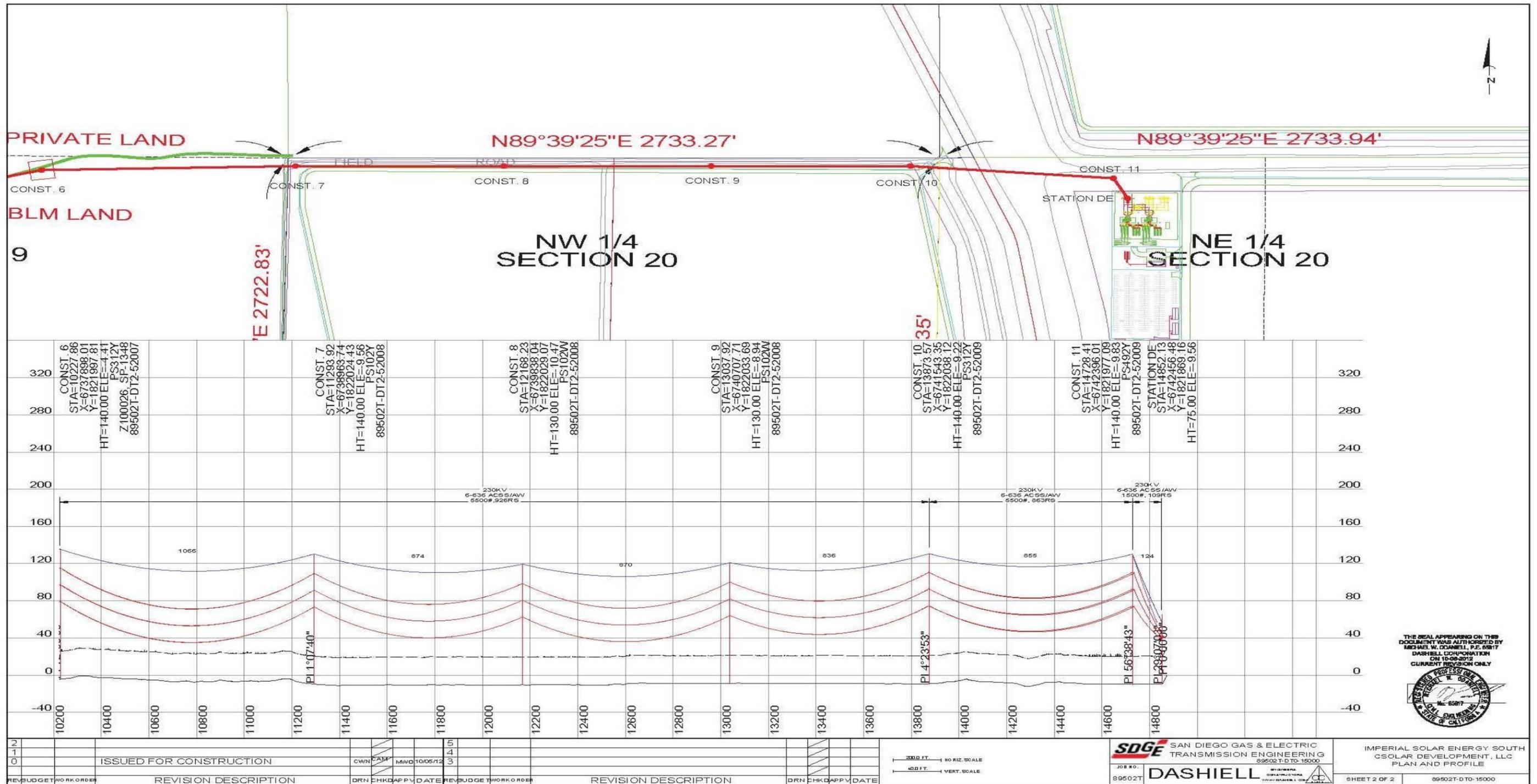
On November 3, 2011 the BLM issued a Notice to Proceed to CSolar to construct the E-W Line on BLM-managed lands. See **Figures 1-2**, ISEC South E-W Transmission Interconnection Line As-Built Condition (Plans and Profiles). The E-W Line consists of 11 structures, spur roads and two pulling stations. Information pertaining to each specific structure (both BLM-managed land and private land) is defined within **Table 3.1**. This Addendum is the subject of the E-W Line on BLM-managed land only.

**Figure 1**  
**ISEC SOUTH E-W TRANSMISSION INTERCONNECTION LINE AS-BUILT CONDITION - SECTION 19**



**SDGE** SAN DIEGO GAS & ELECTRIC TRANSMISSION ENGINEERING  
 89502T-DT0-15000  
**DASHIELL**  
 SHEET 1 OF 2 89502T-DT0-15000

**Figure 2**  
**ISEC SOUTH E-W TRANSMISSION INTERCONNECTION LINE AS-BUILT CONDITION - SECTION 20**



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY  
 MICHAEL W. DASHIELL, P.E. 65817  
 DASHIELL CORPORATION  
 ON 10-08-2012  
 CLIENT'S USE ONLY



| REV | BUDGET | NO | WORK ORDER | REVISION DESCRIPTION    | DRN | CHKD | APPV | DATE     | REV | BUDGET | NO | WORK ORDER | REVISION DESCRIPTION | DRN | CHKD | APPV | DATE |
|-----|--------|----|------------|-------------------------|-----|------|------|----------|-----|--------|----|------------|----------------------|-----|------|------|------|
| 2   |        |    |            | ISSUED FOR CONSTRUCTION |     |      |      | 10/05/12 | 5   |        |    |            |                      |     |      |      |      |
| 1   |        |    |            |                         |     |      |      |          | 3   |        |    |            |                      |     |      |      |      |
| 0   |        |    |            |                         |     |      |      |          |     |        |    |            |                      |     |      |      |      |

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### **January 10, 2012**

On January 10, 2012 the BLM authorized the POD to be modified so that CSolar could build an overhead transmission line to include an additional monopole situated between an existing tower, and a proposed monopole in the same location as the underground line within the authorized right-of-way. The BLM Grant authorizes such use until December 31, 2040 for the E-W Line and associated access roads, and until July 21, 2013 for the associated temporary work areas.

### **April 6, 2012**

In April 2012, CSolar and the Imperial Irrigation District (IID) entered into a Generation Tie-Line Enhancement Agreement (GEA). The GEA required CSolar to abandon use of its E-W Line and instead use a North-South (N-S) Gen-tie Line from its ISEC South Switchyard to the proposed Drew 230-kV Switchyard, located south of the intersection of Highway 98 and Drew Road. The N-S Gen-tie as the “Northern Path,” was constructed by IID and is fully operational.

### **October 18, 2012**

The BLM and the County of Imperial were notified by SDG&E and CSolar of their intent to remove the E-W Line from the BLM CSolar ROW within 180 days following the occurrence of the GEA Conditions Precedent to Abandonment, and that reclamation under the initial Reclamation Plan would occur within the same time period. See **Appendix B**. At that time, SDG&E indicated that Structure No. 1 would remain in-place due to mid-span splicing. SDG&E has now determined that the entire line, including all structures within the E-W Line on BLM-managed land will be dismantled.

### **October 2012 to March 2013**

Construction of the E-W Line began in October 2012 and lasted until the line was energized in early March 2013.

### **March 2, 2013**

The ISEC South E-W Line was energized in March 2013.

### **July 20, 2013**

The redirection of power from ISEC South occurred when the Northern Path became operational in July 2013. CSolar then became obligated to remove that portion of its E-W Line which crosses IID’s Westside Main Canal. Additionally, other “Conditions Precedent to Abandonment” are in progress and expect to be completed in mid-September; these include, among other things, IID’s acquisition of all final and non-appealable approvals needed to operate the Northern Path. The Conveyance Agreement and Assumptions and Assignment Agreement between CSolar and SDG&E are currently in process, and expected to be completed by mid-September 2013.

Before SDG&E commences with any dismantling work, CSolar’s lender engineer must give certification that “legal completion” as defined in the GEA has been met. Legal completion requires that all permits and approvals including Federal Energy Regulatory Commission (FERC) acceptance for the Northern Path, as deemed final and non-appealable.

## **2.3 Initial Reclamation Plan (Approved by BLM on July 13, 2011)**

**Table 2.3** lists the sections of the Initial Reclamation Plan and indicates which sections need to be changed due to slight modifications or additional information now that the E-W Line has been built. As noted in the table below, the majority of the Initial Reclamation Plan’s sections require no modifications; therefore, they are considered “current” and “valid,” and will not be changed.

Five sections do have modifications. These sections will be discussed in more detail in this Addendum. See **Appendix A** for the entire Initial Reclamation Plan dated July 2011.

**Table 2.3**  
**PRIOR APPROVED RECLAMATION PLAN – MODIFICATIONS OR CHANGES REQUIRED**

| <b>Section Number</b>                                | <b>Title</b>  | <b>Subject to Change or Modification</b> |
|--|---|--|
| <b>1.0</b>   | <b>Introduction</b>   | NO                                       |
| <b>2.0</b>   | <b>Site Conditions</b>  | -  |
| 2.1  | Location  | NO                                       |
| 2.2  | Land Use  | NO                                       |
| 2.3  | Topography  | NO                                       |
| 2.4  | Geology   | NO                                       |
| 2.5  | Climate and Hydrology   | NO                                       |
| <b>3.0</b>   | <b>Project Description and Structures</b>                             | -  |
| 3.1  | Transmission Interconnection Line Components (slight modification)    | <b>YES</b>                               |
| 3.2  | Site Layout (To reflect "As-Built" Conditions)                        | <b>YES</b>                               |
| <b>4.0</b>   | <b>Decommissioning and Reclamation</b>                                | -  |
| 4.1  | Criteria and Planning   | NO                                       |
| 4.1.1  | Schedule for Transmission Interconnection Line (based on dismantling) | <b>YES</b>                               |
| 4.1.2  | Future Land Use   | NO                                       |
| 4.2  | Process   | NO                                       |
| 4.2.1  | Permitting Considerations   | NO                                       |
| 4.2.1.1  | Health/ Safety/ Fire/ Emergency Plan                                  | NO                                       |
| 4.2.2  | Decommissioning Process of Transmission Interconnection Line          | NO                                       |
| 4.2.2.2  | Removal of the Pole Sets  | NO                                       |
| 4.2.2.3  | Removal of the foundations and underground duct bank (modification)   | <b>YES</b>                               |
| 4.2.2.4  | Removal of Material   | NO                                       |
| <b>5.0</b>   | <b>Rehabilitation of Disturbed Site</b>                               | -  |
| 5.1  | Description of Disturbance Conditions                                 | NO                                       |
| 5.2  | Topsoil Management  | NO                                       |
| 5.3  | Seeding/Plant Establishment (slight modification)                     | <b>YES</b>                               |
| 5.4  | Erosion Control   | NO                                       |
| 5.5  | Invasive, Noxious, and Non-Native species                             | NO                                       |
| <b>6.0</b>   | <b>Reclamation Monitoring</b>   | NO                                       |
| <b>7.0</b>   | <b>Financing of Decommissioning and Restoration Activities</b>        | NO                                       |
| 7.1  | Cost Estimate for Transmission Interconnection Line Reclamation       | NO                                       |
| 7.2  | Statement of Responsibility   | NO                                       |
| <b>8.0</b>   | <b>References</b>   | NO                                       |
| <b>Number of Subsections Requiring Modifications</b> |   | <b>5</b>                                 |

**Source:** UltraSystems

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### 3.0 PROJECT DESCRIPTION

The summary below characterizes the E-W Transmission Interconnection Line and Secondary Access Road, which were part of the POD and the BLM ROW Grant.

#### 3.1 E-W Transmission Interconnection Line and Secondary Access Road – Summary

**E-W Transmission Interconnection Line.** The ISEC South E-W Line is an overhead, 6.4-mile-long, 230-kV electrical transmission interconnection line, located on private and federal BLM-managed lands. The existing E-W Line runs 1.7 miles west from the ISEC South Switchyard on monopoles, and then connects to a transmission line owned by SDG&E, which runs in a N-S direction. SDG&E's transmission line then runs northward connecting into their 500-kV Imperial Valley Substation, which is located approximately 4.7 miles to the north.

The monopoles connecting the E-W Line to SDG&E towers required an approximate 1-mile-long, 120-foot-wide ROW on BLM-managed land, comprising a total land area of 14.5 acres. Both ROWs for the constructed 1.7-mile E-W Line and the SDG&E transmission line are located within Utility Corridor "N" of the BLM's California Desert Conservation Area Plan. The E-W Line also passes under two other transmission circuits that are owned and operated by Intergen and Sempra, respectively. All three transmission lines (i.e., SDG&E, Intergen and Sempra) are located at the western terminus of the 1.7-mile E-W Line.

**Secondary Access Road.** In order to construct the E-W Line, improvements occurred to an existing 1.1-mile-long, 40-foot-wide unpaved access road (1,258 feet is the ISEC South portion of BLM access roadway covered by the ROW Grant) that traverses BLM land. Improvements included widening the road by 10 feet, adding 6 inches of certified weed-free Class II base in a 20-foot-wide swath along its entire length. This BLM access road leads from State Route 98 to the western portion of the ISEC South Solar Energy Generating Facility and to the E-W Line. The access road is located directly west of the Westside Main Canal and is part of CSolar's ROW Grant application. The access road will be used during SDG&E dismantling activities. All planned restoration monitoring activities will use the Mt. Signal Road or BLM Route 426 instead.

#### 3.2 As-Built Condition of the Transmission Interconnect Line – BLM-managed Land

The E-W Line has been constructed, energized and de-energized by CSolar. The E-W Line (BLM-managed land only) will be dismantled by SDG&E. The existing structures within the E-W Line are all monopoles with an electrical capacity of 230 kV. On BLM-managed lands, there are nine above-ground monopoles (i.e., Structure Nos. 1, 2, 2A, 3, 4, 5 and 6). Structure No. 1 is a three-pole structure, consisting of three dead-end monopoles, located toward the western terminus of the E-W Line. All three of these monopoles lie within an existing SDG&E-Intergen-Sempra 230-kV transmission line corridor. These dead-end monopoles transition the transmission line from and E-W overhead, and connect directly into the SDG&E N-S transmission line. **Table 3.2** provides an overview of each structure, whether it is located on BLM-managed land, its height, foundation diameter, foundation length and estimated projection. **Appendix C** provides current photos of each structure within the E-W Line.

#### 3.3 As-Built Condition of the Transmission Interconnect Line – Private Land

On private property (non-BLM-managed land) there are five above-ground monopoles (i.e., Structure Nos. 7, 8, 9, 10 and 11) that support overhead conductors. Structure 11 connects into the

ISEC South Switchyard which steps up the collection-level voltage to 230 kV for offsite transmission to the Northern Path, a relatively new Gen-tie Line. On private lands, CSolar has determined that only the monopoles (i.e., Structure Nos. 7, 8, 9 and 10) will be dismantled. Foundations for these structures will remain in place. Structure No. 11 will also remain in place, since it connects into the ISEC South Switchyard and is currently being used for power conveyance to IID's Northern Path transmission line.

**Table 3.2**  
**E-W TRANSMISSION INTERCONNECTION LINE STRUCTURE INFORMATION**

| Structure Number | Structure Description       | BLM Land | Structure Height (feet) | Foundation Diameter (feet) | Foundation Length (feet) | Estimated Projection (feet) |
|------------------|-----------------------------|----------|-------------------------|----------------------------|--------------------------|-----------------------------|
| Const. 1 P1      | Three-pole Dead-end         | YES      | 125                     | 9.5                        | 26                       | 2                           |
| Const. 1 P2      | Three-pole Dead-end         | YES      | 108                     | 8                          | 20                       | 2                           |
| Const. 1 P3      | Three-pole Dead-end         | YES      | 90                      | 7                          | 21                       | 2                           |
| Const. 2A        | Dead-end Tree               | YES      | 65                      | 7                          | 20                       | 2                           |
| Const. 2         | Double-circuit 20° Dead-end | YES      | 140                     | 9.5                        | 24                       | 2                           |
| Const. 3         | Tangent                     | YES      | 140                     | 8                          | 22                       | 2                           |
| Const. 4         | Strain Dead-end             | YES      | 130                     | 8.5                        | 25                       | 2                           |
| Const. 5         | Tangent                     | YES      | 130                     | 7.5                        | 22                       | 2                           |
| Const. 6         | Strain Dead-end             | YES      | 140                     | 8.5                        | 45                       | 2                           |
| Const. 7         | Tangent                     | NO       | 140                     | 7                          | 32                       | 1                           |
| Const. 8         | Tangent                     | NO       | 130                     | 7                          | 31                       | 1                           |
| Const. 9         | Tangent                     | NO       | 130                     | 7                          | 31                       | 1                           |
| Const. 10        | Strain Dead-end             | NO       | 140                     | 8                          | 40                       | 1                           |
| Const. 11        | Double-circuit Dead-end     | NO       | 130                     | 10                         | 57                       | 1                           |

**Source:** CSolar IV South, LLC

**Note:** All structures, pads and spur roads for the ISEC South E-W Transmission Interconnection Line are constructed. **Foundation Length** is the total vertical height of the poured foundation (length below ground + length above ground). **Estimated Projection** is the foundation height that rises above ground level.

### 3.4 Components of the ISEC South E-W Line

The “As-Built” conditions of the ISEC South E-W Line, including right-of way, monopole structures, spur roads and pulling stations, are included in **Figures 1 and 2**. Project design features were originally described in the Initial Reclamation Plan (see **Appendix A**); however, additional details that make up the ISEC South E-W Line are included below.

Structural components include the following:

#### **Monopole Tower**

The steel monopoles constructed within the BLM-managed land segment of the E-W Line range in height between 65 and 140 feet. Each monopole has a set of three insulator arms that range from 10 to 14 feet in span, outward from the pole. In general, each monopole has a concrete and rebar foundation ranging from 6 feet to 10 feet in diameter, and 25 to 50 feet in depth depending on the structure type and its loading. Additionally, each monopole is equipped with step bolts, safety-

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climb/fall arrest system and ground wire for lightning protection. The distance between each monopole is approximately 850 feet.

See **Figure 3**, which depicts a typical 230 kV dead-end structure. Structure 2A is noted as this type of monopole, a typical dead-end tree structure. **Figure 4** depicts a typical dual circuit monopole. Structures 2, 3, 4, 5 and 6 are dual circuit monopoles. See **Figure 5**, which depicts a three-pole monopole. Structure 1 is a three-pole monopole.

### **Conductors**

The proposed 230 kV E-W Line on federal land consist of three phases, with a two-bundle aluminum conductor, steel-supported (ACSS)-type conductor used for each phase. The double circuit structures support a total of six two-bundle ACSS conductors. Minimum conductor height above the ground for the 230 kV E-W Line is 30 feet, based on GO95 standards<sup>1</sup>. Three conductors, one for each phase of the circuit, are located on each monopole. These conductors hang from one side of the monopoles. The conductors handle a 0.636 kcmil shield wire, which is strung from monopole to monopole.<sup>2</sup>

### **Overhead Grounding**

The electric lines and monopoles are protected from lightning strikes by the shield wires installed at the end cap. The shield wire is 0.636-inch in diameter. Current from a lightning strike will be transferred from the shield wires through the structures or ground wires and into the ground. Additionally, ground rods were installed next to the structure foundations to prevent a lightning strike from damaging the overhead conductors. Each monopole has up to two grounds installed per structure.

Additional Components include the following:

### **Spur Roads**

Structure Nos. 2, 2A, 3, 4 and 5 required 12-foot-wide spur roads to be built for access to their monopoles. The distance from structures to the BLM existing access road varies. Structure 6 did not require a spur road, since it is within a BLM access road. See **Figures 1 and 2**.

### **Pulling Stations**

Two existing pulling and tensioning sites were used for stringing conductors onto the new and existing poles. Those sites were located near Structures 1 and 2A.

## **3.5 Ground Disturbance Impacts by Structure Areas – BLM-managed Lands Only**

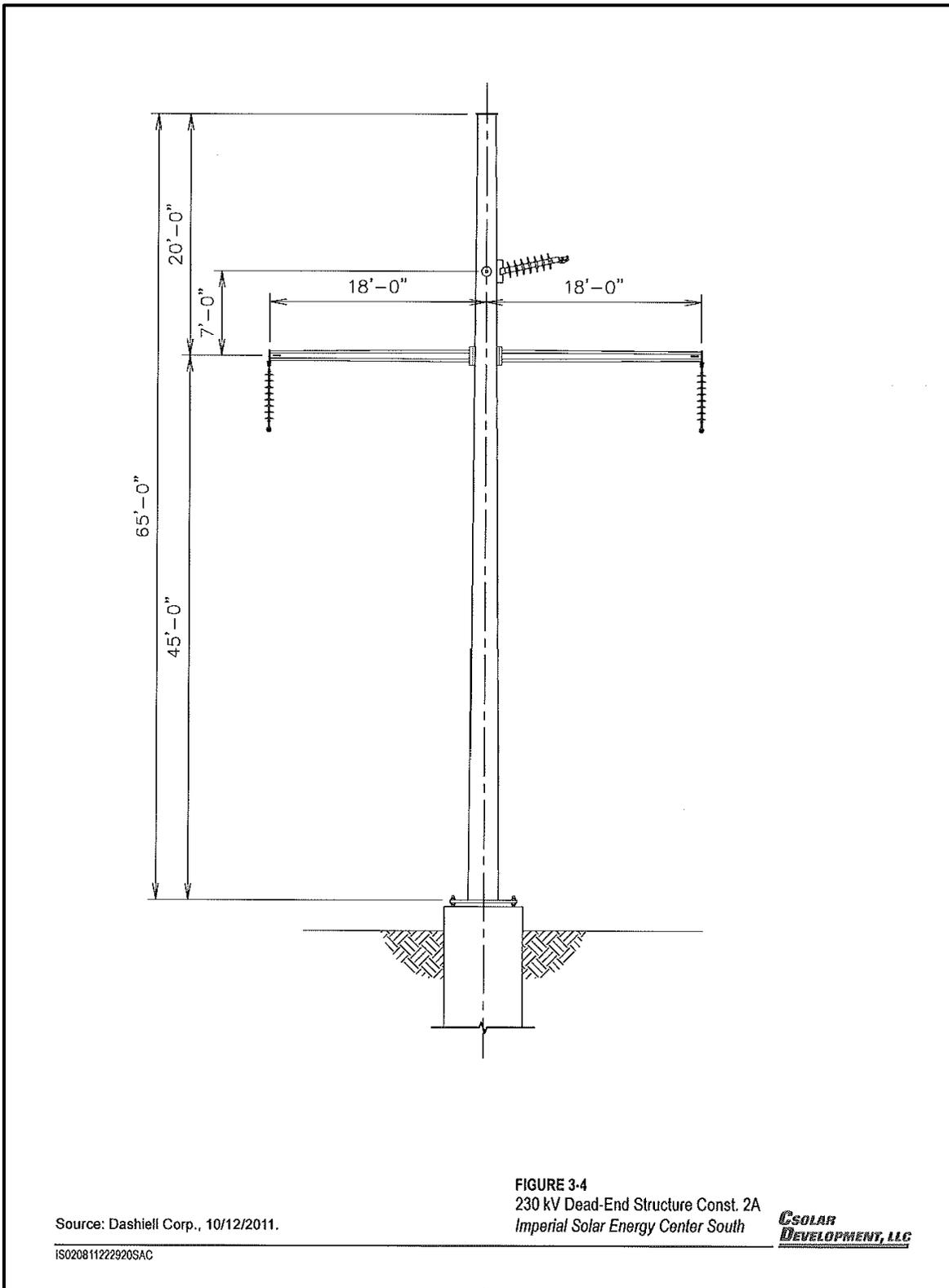
**Table 3.5** includes the known ground disturbance impacts by structure areas within BLM-managed land. All structures within BLM-managed lands will be dismantled. The disturbance areas within existing BLM access roads will not be restored, since these access roads will remain in use. Additionally, the disturbed areas and pulling sites within the existing SDG&E–Intergen–Sempra transmission line corridor will not be restored, since this is an operational utility corridor. The total impact that is planned for restoration is 1.330 acres. These disturbed areas will be restored, pursuant to the ISEC South POD and Habitat Restoration Plan.

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<sup>1</sup> State of California, Public Utilities Commission, Rules for Overhead Electric Line Construction, General Order No. 95, January 2012.

<sup>2</sup> In many National Electric Code (NEC) publications and uses, large wires may be expressed in thousands of circular mils, or abbreviated as either MCM or kcmil.

**Figure 3**  
**DEAD-END STRUCTURE**



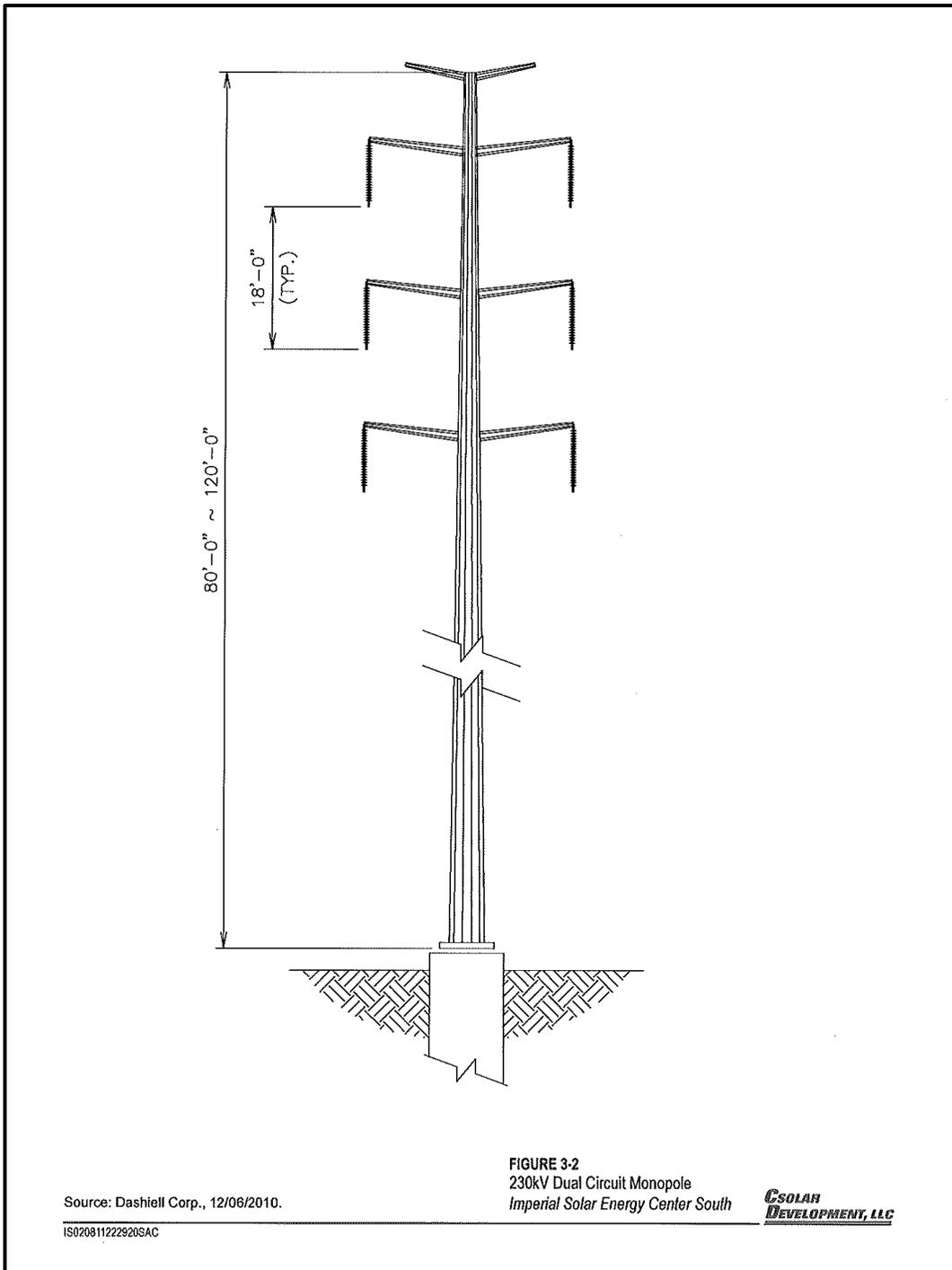
Source: Dashiell Corp., 10/12/2011.

**FIGURE 3-4**  
230 kV Dead-End Structure Const. 2A  
Imperial Solar Energy Center South

**CSOLAR**  
**DEVELOPMENT, LLC**

IS020811222920SAC

**Figure 4**  
**DUAL CIRCUIT MONOPOLE**





**Table 3.5**  
**E-W LINE - AREA OF DISTURBANCE REQUIRING RESTORATION**

| Structure Number        | Vegetation Cover Type                | Vegetation Impact Area (acres) | Area within Existing Transmission Line Corridor (acres)* | Total Area of Restoration (acres) |
|-------------------------|--------------------------------------|--------------------------------|--|-----------------------------------|
| 1<br>(P1-R, P2-C, P3-L) | Creosote Bush- White Burr Sage Scrub | 0.604                          | 0.515  | 0.089                             |
| Const. 2A               | Creosote Bush- White Burr Sage Scrub | 0.306                          | 0.186  | 0.120                             |
| Const. 2                | Creosote Bush- White Burr Sage Scrub | 0.474                          | 0  | 0.474                             |
| Const. 3                | Creosote Bush- White Burr Sage Scrub | 0.256                          | 0  | 0.256                             |
| Const. 4                | Creosote Bush- White Burr Sage Scrub | 0.009                          | 0  | 0.009                             |
| Const. 5                | Creosote Bush- White Burr Sage Scrub | 0.189                          | 0  | 0.189                             |
| Const. 6                | Mesquite Thicket                     | 0.055                          | 0  | 0.055                             |
| Const. 6                | Creosote Bush- White Burr Sage Scrub | 0.137                          | 0  | 0.137                             |
| <b>TOTAL IMPACT</b>     |                                      | <b>2.031</b>                   | <b>0.701</b>   | <b>1.330</b>                      |

**Source:** CSolar IV South, LLC and UltraSystems

**Note:** \* Ground disturbance areas that will not be restored, since the land area of disturbance lies within an existing SDG&E-Intergen-Sempra transmission corridor, or disturbance is within an existing BLM access right-of-way.

**Figure 6** provides a detailed aerial map of the E-W Line and all structure locations on BLM land and private land. **Figure 7** provides a detailed map of each structure, its area of disturbance by land coverage types.

#### 4.1 DISMANTLING AND RECLAMATION ON BLM-MANAGED LANDS ONLY

SDG&E's dismantling and reclamation activities apply to those structures, pads, and spur roads located on BLM-managed land only. SDG&E will dismantle all structures, including Structures No. 1, 2, 2A, 3, 4, 5, 6. All structures will be reclaimed by SDG&E.

Structures, pads or pulling sites located within the existing SDG&E-Intergen-Sempra 230 kV transmission corridor **will not** be restored, due to the continued operation and maintenance activities occurring within that corridor by those utilities. The information below summarizes the dismantling process that will be conducted by SDG&E.

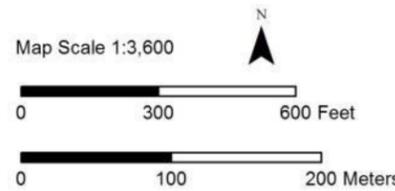
#### 4.2 Construction Work Force and Planned Schedule for Dismantling Activities

SDG&E has estimated that the duration of activities for dismantling the ISEC South E-W Line on BLM-managed land will be approximately 24 days. **Table 3.5** indicates that 1.330 acres of disturbed habitat will be restored after dismantling of the structures has occurred. All dismantling activities will be conducted within the same work area that was temporarily disturbed during the construction of the E-W Line. It is not anticipated that any new work areas will be disturbed. The dismantling process includes the following components:

**Figure 6**  
**AERIAL MAP OF THE E-W LINE**



Service Layer Credits: National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, IPC, Copyright:© 2011 Esri, DeLorme, NAVTEQ, TomTom, Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community; CSolar IV South, 2012; Recon, 2012; UltraSystems Environmental Inc., 2012-2013 August 27, 2013

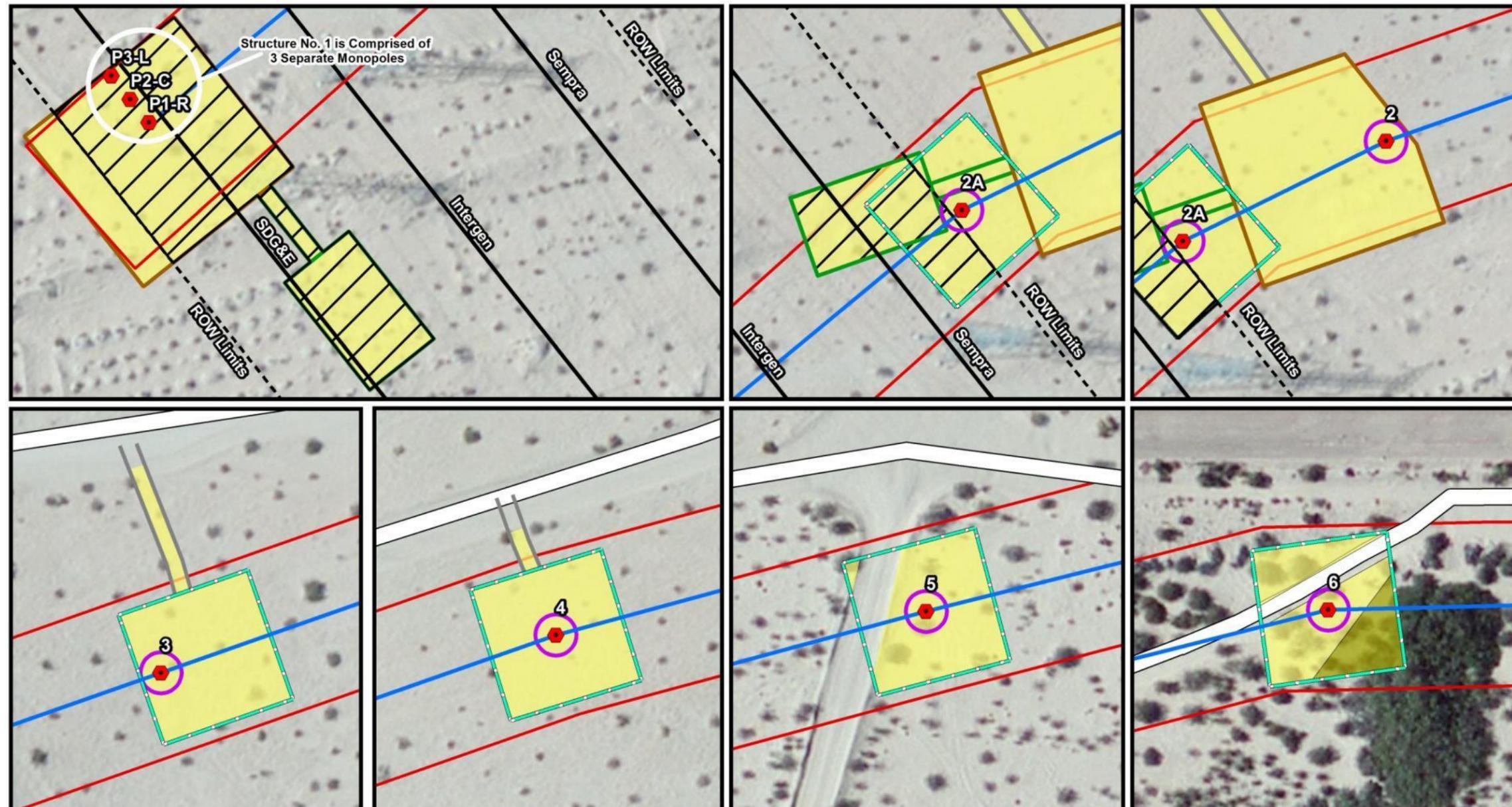


- Legend**
- Structure
  - ISEC South Project Boundary
  - New Spur Road Limits
  - Existing Access Road
  - Connector Dead-end Boundary
  - Temporary Disturbance-Pulling Site
  - Temporary Disturbance-Suspension Monopole
  - ISEC South Transmission Line (Temporary)
  - Existing Transmission Line
  - Right of Way Limits (60 feet)
  - ▨ Area Not in Need of Restoration
- Vegetation Cover Type in Disturbance Area:**
- Creosote Bush-White Burr Sage Scrub
  - Mesquite Thicket

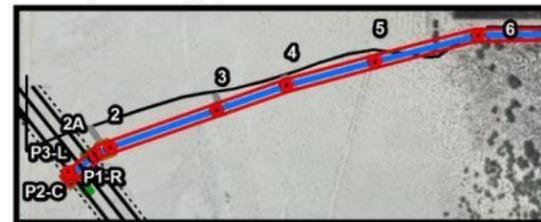
**Imperial Solar Energy Center South**  
**Aerial Map of E-W Line**  
**Overview of Disturbance Area**



**Figure 7**  
**DETAILED MAP OF EACH STRUCTURE BY DISTURBANCE AREA**



Service Layer Credits: Copyright © 2011 Esri, DeLorme, NAVTEQ, TomTom, Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community; CSolar IV South, 2012; Recon, 2012; UltraSystems Environmental Inc., 2012-2013 August 27, 2013



- Legend**
- Structure
  - ISEC South Transmission Line (Temporary)
  - ISEC South Project Boundary
  - Structure Footprint
  - New Spur Road Limits
  - Existing Access Road
  - Existing Transmission Line
  - Connector Dead-end Boundary
  - Temporary Disturbance-Pulling Site
  - Temporary Disturbance-Suspension Monopole
  - Right of Way Limits (60 feet)
  - Area Not in Need of Restoration
  - Creosote Bush-White Burr Sage Scrub
  - Mesquite Thicket

**Imperial Solar Energy Center South**  
**Detailed Map of Each Structure by Disturbance Area**

Scale 1:800

0 60 120 Feet

0 20 40 Meters

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### **Removal of the Conductor**

As noted with the Initial Reclamation Plan (pg. 6) the removal of the conductor will involve “de-stringing” the conductor rather than simply dropping it to the ground. Line crews will reset the conductor in wheel blocks, pull it back to a pulling site and rewind it on wire reels for recycling. A pulling rope will follow the conductor back through the wheel blocks to keep the end of the conductor from creating any more disturbance than necessary. This is critical to avoid any environmentally sensitive areas (ESAs) located within the E-W Line ROW. Prior to any dismantling, all identified ESAs will be staked. Conductor will be pulled from Structure Nos. 9 and 10 (since those structure are located on existing BLM access roads), and rolled onto wire reels for recycling. The reels will then be transported to SDG&E’s Drew Substation.

As an optional tool for line removal, SDG&E may deploy a helicopter (i.e., MD500) for approximately four hours. The helicopter would be used to support the end of the line while it is reeled in. The helicopter features shock-absorbing landing skid struts, a turbo-shaft engine mounted at a 45-degree angle toward the rear of the cabin pod, a fuel tank cell under the floor and the battery in the nose. The Drew Substation would be used as the take-off and landing zone location. The anticipated flight path would over existing disturbed BLM access road ROWs or IID’s Westside Main canal (i.e., waterway) to and from the Drew Substation. Helicopter safety and landing zone procedures would be implemented by SDG&E should this type of rotorcraft be used during the dismantling of the E-W Line.

### **Removal of the Monopoles**

The steel monopoles will be lowered off their foundations using a crane large enough to handle picking up and placement of the monopoles onto a semi-trailer for off-site transport. The insulators and spacing arms will then be removed from the poles and the poles will be segmented into manageable sections for transporting off-site. The construction work area for dismantling around each monopole is approximately 100 feet square. It is anticipated that the same work area used for construction of the monopoles will be used during dismantling of the E-W Line. The Secondary Access Road (near IID’s Westside Main Canal) will be used by SDG&E to transport the monopoles off-site.

### **Removal of the Foundations**

To minimize concrete debris the crew will install plastic sheeting on the ground around the foundation (10-foot diameter around pier) as well as a vertical screen (approximately 10 feet high) and approximately 270 degrees around the foundation. A water truck will be present at all times during demo work to control dust. The foundations supporting each monopole will be broken out by a track hoe-mounted jack hammer down to a depth of four feet below surface grade (bsg). The remaining foundation below four feet will be left in place and covered with soil material. All rebar used for tensioning in reinforced concrete material of the foundation will be cut off. Both the rebar and concrete material will be removed from the project site and disposed of at an approved landfill or recycled at an approved recycling center. Any concrete slurry that was used at any of the dead-end structures will also be removed. Holes where materials were removed will be back filled and contoured from soils in the immediate primary disturbance area.

### **Finish Grading of the Work Site**

The area of disturbance (i.e., spur roads, work area around foundations, stringing and pulling sites) will be de-compacted and graded to match existing contours. Top soil containing seeds and native plant material has been stored at the edge of the work area. This top soil will be spread over the disturbed area once it has been contoured.

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### **Removal of Construction Materials**

Any and all material removed during the dismantling process of the E-W Line will be hauled off-site and recycled or properly disposed by SDG&E.

### **BLM Field Inspection**

Upon completion of construction dismantling activities for the E-W Line, SDG&E will coordinate with BLM's Authorized Officer and natural resource staff to conduct a final on-the-ground inspection of E-W Line conditions. Inspections will be conducted to assure work was completed in accordance with the applicable BLM terms and conditions of the POD and ROW grant. When the BLM Authorized Officer determines that this has occurred, construction will be deemed "complete." This BLM determination will initiate the post-construction monitoring program planned by SDG&E, in accordance with associated reporting for restoration success criteria of the ISEC South Habitat Restoration Plan. SDG&E will assume responsibility for meeting BLM restoration success criteria for the BLM-managed land portion of the E-W Line.

All construction-related activities conducted by SDG&E will adhere to the ISEC South POD, the POD's applicable plans (e.g., Habitat Restoration Plan, Worker Education Plan, Dust Control Plan, Hazardous Materials Management Plan, Noxious Weed Management Plan, Avian and Bat Protection Plan, Raven Management Plan, Burrowing Owl Mitigation and Monitoring Plan) and BLM ROW Grants (i.e., Transmission Interconnection Line and Secondary Access Road) for this dismantling project.

All resource monitoring work conducted by SDG&E during preconstruction and construction-related activities will adhere to the following ISEC South POD Plans, including:

- Habitat Restoration Plan
- Worker Education Plan
- Dust Control Plan
- Hazardous Materials Management Plan
- Noxious Weed Management Plan
- Avian and Bat Protection Plan
- Raven Management Plan
- Burrowing Owl Mitigation and Monitoring Plan

## **4.2 Construction Work Force and Planned Schedule for Dismantling Activities**

It is anticipated that the duration activities for the dismantling will be approximately 24 working days. Restoration work will take another two weeks following dismantling, including all BLM-required restoration of ground disturbances. Construction crews are expected to work a maximum of six 10-hour days per week (typically Monday through Saturday), beginning work at 7:00 AM and concluding at 7:00 PM each day.

The dismantling project construction workforce will be approximately 19 workers for removal of the conductors, monopoles and foundations, and finishing the land contouring. There will be three on-site monitors during construction work activities. The detailed workforce estimates and types of equipment required during dismantling activities are depicted in **Table 4.2**. The actual quantity and type of equipment employed will depend on the contractor selected for the project.

**Table 4.2**  
**ESTIMATED CONSTRUCTION PERSONNEL AND EQUIPMENT FOR DISMANTLING ACTIVITIES**  
**FOR THE E-W LINE**

| Activity  | Primary Equipment Description                | Equipment Quantity | No. of Workers |
|---|--|--------------------|----------------|
| Construction Inspection/ Management   | Pick-Up Truck (SDG&E Management)             | 1                  | 1              |
| Dust Control  | Water Truck                                  | 1                  | 1              |
| Conductor and Structures Removal<br>(Two 4-man crews)   | Truck Crane                                  | 2                  | 8              |
|   | Bucket Truck                                 | 2                  |                |
|   | Pickup Truck                                 | 3                  |                |
|   | Flatbed Pickup (1-Ton)                       | 2                  |                |
|   | Rubber Tire Crane (90-Ton)                   | 1                  |                |
| Foundation Removal<br>(5-man crew)  | Backhoe or Excavator with Breaker Attachment | 1                  | 5              |
|   | Loader                                       | 1                  |                |
|   | Dump Truck                                   | 1                  |                |
|   | Pickup Truck                                 | 1                  |                |
| Restoration Crew, Finish Grade Contours<br>(4-man crew)   | Backhoe with Gannon Box and Ripper           | 1                  | 4              |
|   | Dump Truck                                   | 1                  |                |
|   | Pickup Truck                                 | 1                  |                |
| On-site Natural Resource Monitoring<br>(three monitors: Native American, Biological and Cultural Resources) | Pickup Truck                                 | 3                  | 3              |
| <b>TOTAL</b>  |  | <b>22</b>          | <b>22</b>      |

#### 4.3 Planned Schedule for E-W Line Dismantling Activities

The following dates and major milestones are anticipated for SDG&E's dismantling activities, and are presented in **Table 4.3**.

**Table 4.3**  
**PLANNED SCHEDULE FOR DISMANTLING ACTIVITIES**

| Critical Dates                         | Major Activities   |
|--|--|
| 9/15/13*                               | Execution of Conveyance Agreement/ Assumptions and Assignment Agreement between CSolar and SDG&E |
| 8/30/13                                | Finalize construction specification for dismantling  |
| 8/30/13*                               | SF 299 Form for BLM ROW Transfer   |
| 9/15/13                                | Level 2 Variance deemed approved by BLM  |
| 9/15/13                                | Dust control and demolition permits for the E-W Line finalized                                   |
| 9/15/13*                               | CSolar lender approval for CPs for abandonment and IID's N-S Gen-tie finalized                   |
| 9/15/13                                | SDG&E finalize/ execute contract for dismantling with contractor for the E-W Line                |
| <b>Construction-Related Activities</b> |  |
| 10/01/13                               | SDG&E starts dismantling activities on-site  |
| BLM inspection week of October 28 -    | BLM field inspection and sign-off that dismantling activities have                               |

| Critical Dates                                       | Major Activities   |
|--|--|
| before construction contractor removes equipment     | been completed   |
| 11/01/13* or sooner                                  | Construction activities completed  |
| 11/02/13   | SDG&E forwards letter to County of Imperial regarding completion of dismantling activities   |
| 11/01/13*  | SWPPP – Notice of Termination filed with State Water Resources Control Board   |
| Restoration Activities                               |  |
| 11/04/13   | Planned restoration activities begin. Restoration is based on “approved” POD, ISEC South Habitat Restoration Plan (HRP)  |
| Post-construction/ Restoration Monitoring Activities |  |
| 12/02/13*  | Following restoration, monitoring activities will be implemented to ensure seeding success of the desired vegetation cover, per BLM Standards, as identified in the POD and HRP. |

**Source:** SDG&E and CSolar IV South, LLC

**Note:** \* Anticipated Dates

## 5.1 RESTORATION

Upon completion of construction, SDG&E will provide restoration for temporary impacts to habitat that occurred during the construction and dismantling of the E-W Line. All work will be performed by SDG&E consultants in accordance with the ISEC South Habitat Restoration Plan. See **Appendix D**. This plan addresses restoration for all temporarily disturbed areas associated with the E-W Transmission Interconnection Line, which include, but are not limited to, temporary access roads, construction work temporary lay-down areas, construction equipment staging areas, pulling and tensioning sites, and disturbance associated with constructing the structures.

## 5.2 Description of Disturbance Conditions

Disturbance during dismantling activities is related to the need to position equipment to remove the monopoles, conductors, foundations, spur roads and other features. The BLM area of disturbance is noted in **Table 3.5**. Disturbed area is estimated at approximately one quarter acre, all located within the approved right-of-way. Existing access roads will be used to allow trucks, cranes and workers to access the monopole locations. **Figures 1 and 2** depict the access road locations relative to the permanent road and the structure locations. Around each structure, an area within the approved right-of-way will be used for the laydown of monopoles and positioning of necessary construction equipment. Disturbance for dismantling the E-W Line will follow POD requirements.

### **Topsoil Management**

When the E-W Line was constructed and where blading of topsoil along access roads or in laydown area occurred, topsoil was banked. As SDG&E indicated, this topsoil will be re-spread over disturbed areas during the de-compaction/ re-contouring process by construction personnel. Prior to the re-spreading of topsoil, the first 12 inches of disturbed soil will be de-compacted. This process includes a light “ripping” of the exposed soil using a backhoe. The topsoil spread over the disturbed areas will be “roughened” over the de-compacted surface to provide micro-conditions favorable for seed establishment. Those sites where disturbance is minimal may not need to be mechanically treated, if the disruption to the ground surface is considered counterproductive to ultimate restoration and/or establishment efforts. These would be those areas where the existing

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vegetation would continue to thrive without additional aid, and the natural topography has not been modified. This type of decision (“leave it be”) will be made collectively by SDG&E and the BLM.

**Seeding / Plant Establishment**

Seeding is not a requirement of the Habitat Restoration Plan; however, SDG&E may choose to apply seed to the temporarily disturbed areas associated with the E-W Line. If seeding by SDG&E is pursued, a proposed seed mix will be submitted to the BLM for approval. The seed mix would be hand-broadcast following construction (i.e., early November 2013). This time of year is the most favorable time for desert seed germination and establishment, according to the BLM. This time of year is also optimal, since it is considered prior to the rainy season in Imperial County. Additional seed may be hand-broadcast, as necessary, during the restoration monitoring phase.

**Erosion control**

A storm water pollution prevention plan (SWPPP) was established when the E-W Line was constructed. Applicable BLM best management practices (BMPs) are still being deployed on-site, since the structures are still in place. The BMPs will continue to be deployed until the SWPPP can be closed.

**Invasive, Noxious and Non-Native Species**

The ISEC South POD Weed Management Plan has established procedures for the eradication of noxious and undesirable plant species within the E-W Transmission Interconnection Line corridor. SDG&E will adhere to all POD requirements for weed management and weed control during construction, restoration and post-construction restoration monitoring.

**Re-contouring of Slopes and Grades**

Areas disturbed by the dismantling of the E-W Line on BLM-managed lands will be contoured to match the surrounding topographical features, as required pursuant to the ISEC South POD. The intent is to leave the site with topography features that do not adversely affect hydrological flow in the area and to avoid creating erosion issues in the future. It is anticipated that no major grading by SDG&E on-site will be needed to accomplish this goal.

**Planned Personnel for Restoration**

Anticipated restoration personnel for this project are noted below.

**Table 4.4**  
**RESTORATION PERSONNEL AND EQUIPMENT QUANTITY**

| <b>Activity</b> | <b>Primary Equipment Description</b> | <b>Equipment Quantity</b> | <b>No. of Workers</b> |
|-----------------|--------------------------------------|---------------------------|-----------------------|
| Restoration     | Pickup Truck                         | 1                         | 2                     |

**6.0 RESTORATION MONITORING**

Based on the ISEC South POD (p. 68) and ISEC South Habitat Restoration Plan (p. 16), monitoring of the restoration effort following post-dismantling efforts will involve monitoring the success of the desired vegetation cover for the BLM-managed land that is considered disturbed by the E-W Line. Based on BLM success criteria, ground cover must be 70 percent of ground cover at reference population based on result of a line or belt. The formal sampling procedures will follow those

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described in *Sampling Vegetation Attributes, Interagency Technical Reference* (1996, BLM/RS/ST-96/002+1730).

**Monitoring and Reporting Requirements**

Formal monitoring by SDG&E of the E-W Line disturbed site locations will occur every year at the end of the growing season for the first three years, following restoration efforts. If the 70 percent goal of cover has not been reached at the end of three years, BLM and SDG&E will decide on a plan of action to meet the cover goals of 70 percent.

Biologists would utilize the Mt. Signal Road (BLM Route 426) to access the restoration site areas during restoration and monitoring activities. Therefore, it is not anticipated that any biologists would use the ISEC South Secondary Access Road after dismantling activities occurred.

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**APPENDIX A**

**ISEC SOUTH RECLAMATION PLAN  
TRANSMISSION INTERCONNECTION LINE  
JULY 2011**

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**Reclamation Plan**

**TRANSMISSION INTERCONNECTION LINE**

**Associated with  
Imperial Solar Energy Center, South**

*Prepared for Submittal to*  
**U. S. Bureau of Land Management**  
El Centro Field Office

*Prepared for:*

***CSOLAR  
DEVELOPMENT, LLC***

*By BAF  
P. O. Box 669  
Pendleton, Oregon 97801*

*July 2011*

## 1.0 Introduction

This reclamation plan is prepared for the portion of the Imperial Solar Energy Center South project (ISEC South) constructed as a Transmission Interconnection Line across BLM lands. The Transmission Interconnection Line being addressed by this plan is Alternative B (the Transmission Interconnection Line) for the Transmission Interconnection Line construction in the Plan of Development (POD) submitted to BLM by CSOLAR Development, LLC. The Transmission Interconnection Line is located in section 19 of township 17S and range 13E. The complete description of the ISEC South project is in the POD.

### 1.1 The purpose of this plan is to:

- Describe components of the proposed project on BLM lands that will require reclamation.
- Describe the process of reclamation after the cessation of commercial activities on the project.
- Describe the schedule of the reclamation process.
- Provide an estimate of costs (in current dollars) associated with removal of facilities and consequent reclamation of soils and habitat for the portion of the project occurring on BLM lands.
- Describe and propose a form of financial assurance to bond the activities of reclamation.

## 2.0 Site Conditions

### 2.1 Location

The proposed project location lies in southern California in Imperial County. The Transmission Interconnection Line portion of the project is comprised of six transmission pole sets and their temporary access roads built on lands administered by BLM. The Proposed BLM Administered Project Area lies within the Imperial Valley, approximately 10.5 miles west of Calexico, less than 1 mile north of the U.S.-Mexico border and a little more than 1 mile south from California State Highway 98. Area disturbed by Transmission Interconnection Line project features on BLM lands during operations total approximately 0.9 acres of project related disturbance.

### 2.2 Land Use

The Transmission Interconnection Line corridor through BLM land will be located within an area currently designated by BLM's California Desert Conservation Area (CDCA) Plan as Utility Corridor "N."

### 2.3 Topography

The topography of the land in the proposed corridor of the Transmission Interconnection Line is a gentle slope from the high point on the western end of the Transmission Interconnection Line with only a 75 ft. elevation drop over 1 mile to the eastern end.

#### 2.4 Geology

A Geotechnical Investigation Report prepared by Landmark Consultants, Inc. (2010) indicates soils dominated by clay with some imbedded silt, and sand-silt components. The areas for reclamation related to this project are found in the Salton Trough physiographic province of Southern California.

#### 2.5 Climate and Hydrology

The reclamation of the project features will not adversely affect runoff or change hydrological features in any appreciable way. Reshaping to match the average slopes in the area will minimize post-reclamation disturbance of soils by hydrological processes. Vegetation establishment after seeding will minimize runoff from post-reclamation sites.

### 3.0 Project Description and Structures

#### 3.1 Transmission Interconnection Line Components

The CSOLAR Development, LLC project transmission interconnection line (TL) will be a monopole design carrying 230kV conductor. There will be a total of six above ground structures on BLM land: four poles that support the overhead conductors from the project on non-BLM and two dead end poles toward the western end of the line. These dead end structures will transition the project TL from overhead to an underground duct bank area. The TL conductor will then run through an underground duct bank underneath the existing Sempra and Intergen overhead transmission lines to a point underneath the San Diego Gas and Electric (SDG&E) transmission line, at which point the project TL will transition above ground and interconnect into the SDG&E line.

Map 1 shows the location of the pole structures, the proposed project TL rights-of-way, and the location of the underground duct bank for the underground portion. Each pole will have a concrete and rebar foundation ranging from six (6) feet to ten (10) feet in diameter and 25-50 feet in depth depending on the structure type and loading.

Steel poles used in the BLM lands segment of the Transmission Interconnection Line will be between 130 and 140 feet in height. Each pole will have a set of three insulator arms that range from 10 to 14 feet in span out from the pole. Three conductors, one for each phase of the circuit, will hang from one side of the poles.

The Transmission Interconnection Line will use two types of conductors. The overhead conductor will be 636 kcmil in size and the duct bank extents will be 4000 kcmil.

#### 3.2 Site Layout

Map 1 shows the location of the six transmission structures on this segment of the Transmission Interconnection Line on an aerial photograph base and the existing transmission lines on BLM lands. The map shows areas of temporary disturbance that will be used during the decommissioning phase of reclamation. All temporary areas of disturbance will be within the granted transmission right of way (ROW) for the project. The areas of temporary disturbance are around the temporary access roads, underground duct bank, and area around the towers for equipment placement and materials handling, dismantling and loading.

#### 4.0 Decommissioning and Reclamation

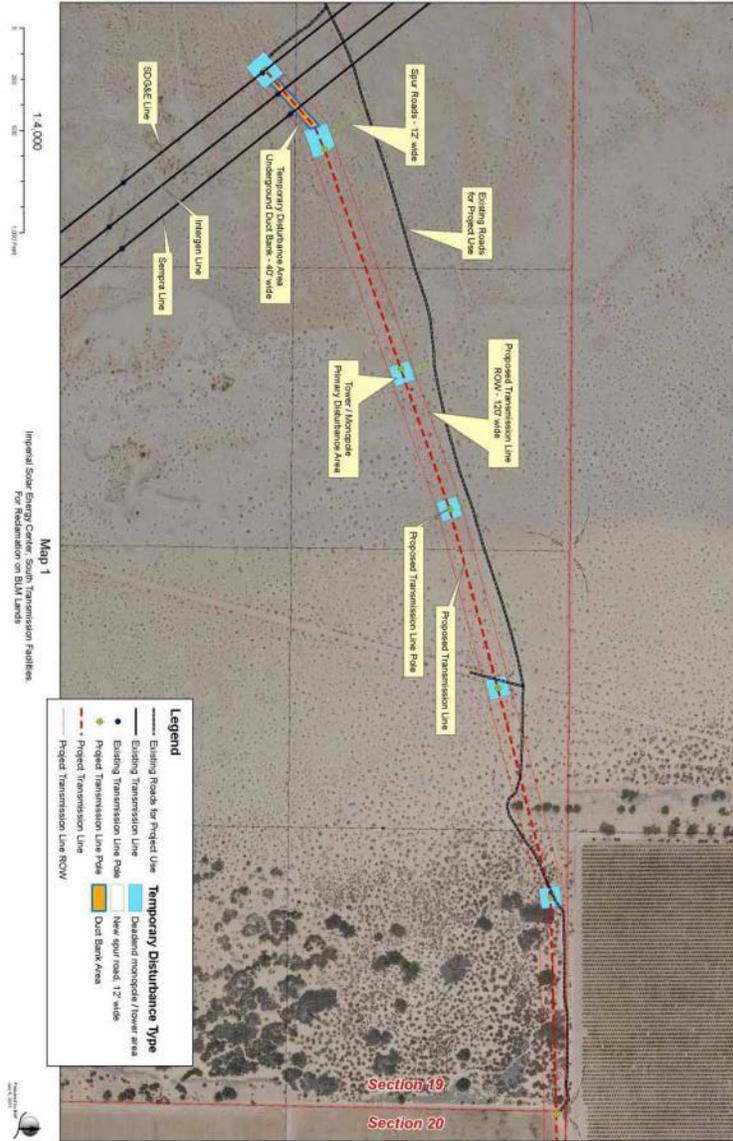
##### 4.1 Criteria and Planning

##### 4.1.1 Schedule for Transmission Interconnection Line

Within 120 days prior to the expiration of the ROW term, the reclamation process will begin. The following table provides an indicative schedule of the decommissioning/ reclamation process for the Transmission Interconnection Line portion of the ISEC South project constructed on BLM lands.

| Reclamation Process                               | Estimated Timeframe (work days) |
|---|---------------------------------|
|   |                                 |
| Permits   | 1                               |
| Removal of Conductor                              | 2                               |
| Dismantling Pole structures                       | 4                               |
| Removal of Foundations to 4 foot depth            | 8                               |
| Load and haul off foundation and pole material    | 4                               |
| Contouring and soil preparation for re-vegetation | 1                               |
| Re-vegetation of disturbed soils                  | 8                               |

Map 1: Location of the Transmission Interconnection Line across section 19 and disturbance areas associated with reclamation of line.



#### 4.1.2 Future land use

This site can return to its current use once reclamation is finished. Current use is native desert environment and reclamation of the transmission line will allow for the site's current land use.

#### 4.2 Process

##### 4.2.1 Permitting considerations

All construction permits necessary to support the de-construction activities will be obtained prior to beginning restoration. The BLM will be notified at least 24 hours prior to any activities beginning, related to restoration.

##### 4.2.1.1 Health/Safety/Fire/Emergency plan

Health and safety plans will follow those outlines in the Plan of Development (POD) as submitted to the BLM for the original solar project. Fire and emergency plans will be vetted through local responsible entities, including BLM, prior to beginning work on the reclamation.

##### 4.2.2 Decommissioning process of Transmission Interconnection Line

The decommissioning process for the Transmission Interconnection Line is estimated to disturb approximately 2 acres of land. The disturbance area will be within the same area that was temporarily disturbed during the construction of the Transmission Interconnection Line. The process of decommissioning varies based on the component being removed.

##### 4.2.2.1 Removal of the conductor

The removal of the conductor will involve "de-stringing" the conductor rather than simply dropping it to the ground. Line crews will reset the conductor in wheel blocks and will pull the conductor back to a pulling site and rewind the conductor on wire reels for recycling. A pulling rope will follow the conductor back through the wheel blocks to keep the end of the conductor from creating any more disturbance than necessary. This is critical to avoid any environmentally sensitive areas (ESAs) located within the transmission ROW. These ESAs will be identified and staked prior to decommissioning and restoration of the project area. Conductor from the duct banks will be pulled from one of the sites adjacent to the dead end structures and rolled onto wire reels for recycling.

##### 4.2.2.2 Removal of the pole sets

The steel monopoles will be lowered off the foundations using a crane large enough to handle picking up and careful placement of the towers. The insulators and spacing arms will then be removed from the poles and the poles segmented into manageable sections for haul out. The work area around each pole has been identified as an approximate 100' x 100' square around each pole (somewhat larger area at deflection point). It will be in this area where the primary reclamation disturbance will occur.

#### 4.2.2.3 Removal of the foundations and underground duct bank

The foundations supporting the monopoles will be broken out by a track hoe mounted jack hammer down to a depth of four feet below grade. The remaining foundation below four feet will be left in place and covered with soil material. Rebar will be cut off and the concrete removed for recycling. Any concrete slurry used in the setting of the duct banks at each of the dead end structures will be removed along with duct material it contains to a depth of 4 feet. Holes where materials were removed will be filled and contoured from soils in the immediate primary disturbance area. The duct banks are estimated to require a 40' strip of land for removal. It will be in this area where the primary disturbance will occur.

#### 4.2.2.4 Removal of material

All material removed from the installed project will be hauled from site and recycled. The haul costs are included in the cost estimates provided later but those cost estimates do not include value from recycling the transmission tower materials. It is anticipated that the value received from recycling may substantially offset much of the material haul away costs.

### 5.0 Rehabilitation of disturbed site

#### 5.1 Description of disturbance conditions

Disturbance during reclamation is related to the need to position equipment to remove the transmission facilities. This disturbed area is estimated at approximately one quarter acre in size all located within the approved right-of-way. Existing access roads will be upgraded to allow trucks, cranes and workers to access the actual pole locations. Map 1 shows these access road locations relative to the permanent road and the pole locations. Around the poles, an area within the approved right-of-way will be used for laydown of poles and positioning of equipment. Disturbance for decommissioning the Transmission Interconnection Line will follow that proposed in the POD.

#### 5.2 Topsoil management

Where blading of topsoil along access roads or in laydown disturbance area occurs, any topsoil will be banked and re-spread over the area in the later re-contouring effort described below. Prior to spreading of topsoil, de-compaction of the first twelve inches of disturbed soil through a light "ripping" process using a backhoe will take place. The soils spread over the disturbed areas will be "roughened" over their surface to provide micro-conditions favorable for seed establishment. Sites where disturbance is minimal may not be mechanically treated if the disruption of existing established plant species is counterproductive to ultimate establishment efforts. These would be areas where the existing vegetation could continue to thrive without additional aid and the natural topography has not been modified. This "leave it be" decision will be made in consultation with the BLM.

### 5.3 Seeding / Plant Establishment

Where possible, a native plant seed mix will be selected in consultation with the BLM. The seed mix will be broadcast at the appropriate time of year that is most favorable to seed germination and establishment, usually just prior to the rainy season. Any non-native species used will be documented and rationale explained. Seedling establishment of shrub and brush species will be planted to match surrounding habitat as much as possible. Cages to discourage herbivore predation will be used around seedlings.

### 5.4 Erosion control

A storm water pollution prevention plan (SWPPP) will be developed as part of the normal permitting process prior to decommissioning efforts. The SWPPP will incorporate applicable BLM best management practices (BMP) and follow steps outlined in section 8.1.3 of the POD for the ISEC South project for post-construction disturbance restoration.

### 5.5 Invasive, Noxious, and Non-Native species

Steps (outlined under section 8.2 of the POD submitted for the ISEC South project) will be taken to assure that there is no establishment of noxious and undesirable plants.

### 5.6 Re-contouring

The disturbed areas resulting from the decommissioning of the Transmission Interconnection Line will be shaped to match surrounding topographical contours as much as possible. The intent is to leave the site with topography that will not adversely affect hydrological flows and to avoid creating erosional issues in the future. No major grading of the site will be needed to accomplish these goals.

### 6.0 Reclamation Monitoring

Monitoring of the reclamation effort post decommissioning efforts will involve the monitoring of the success of the desired vegetation cover for the disturbed sites. A successful cover standard will be 70 percent perennial plant cover. Any formal sampling procedures will follow those described in Sampling Vegetation Attributes, Interagency Technical Reference (1996, BLM/RS/ST-96/002+1730). Formal monitoring of the site will occur every year at the end of the growing season for the first 3 years after re-seeding efforts have been made. If the 70 percent goal of cover has not been reached at the end of three years, BLM and the operator will meet to decide on a plan of action to meet the cover goals.

### 7.0 Financing of Decommissioning and Restoration Activities

#### 7.1 Cost Estimate for Transmission Interconnection Line Reclamation

Attached is the Solar Energy Project Decommissioning and Site Reclamation Cost Estimate Summary Sheet showing the estimated costs in present value dollars. This cost estimate addresses pre-reclamation activities, the removal of above-ground transmission line structures, the removal of foundation structures to a depth of four feet below grade and the restoration of

vegetation over disturbed soils. Additionally, restoration of the temporary disturbance areas is included in the cost in the attached cost estimate. Staged activities described in section 4.0 and 5.0 above were placed into the BLM categories for estimation.

Values used in this plan are derived from current construction trends and were vetted through contractors with experience performing this kind of work.

No salvage values or recycling returns were used to offset costs. However, it is likely that salvage value of steel and recycling of the conductor material will offset much of the cost for the material hauling and removal.

Labor costs expressed in the calculations are based on estimates that exceed Davis Bacon wage rates for this area.

**Solar Energy Project Decommissioning and Site  
Reclamation Cost Estimation Summary Sheet**

| <b>A. Earthwork/Recontouring</b>     | <b>Labor<sup>(1)</sup></b> | <b>Equipment</b> | <b>Materials</b> | <b>Total</b> |
|--------------------------------------|----------------------------|------------------|------------------|--------------|
| Solar Field Areas                    |                            |                  |                  |              |
| Foundation & Buildings Areas         | 1300                       | 600              |                  | \$1,900.00   |
| Roads                                |                            |                  |                  | \$0.00       |
| Yards, Etc.                          |                            |                  |                  | \$0.00       |
| Landfills                            |                            |                  |                  | \$0.00       |
| Well Abandonment                     |                            |                  |                  | \$0.00       |
| Ponds                                |                            |                  |                  | \$0.00       |
| Drainage & Sediment Control          |                            |                  |                  | \$0.00       |
| Other                                |                            |                  |                  | \$0.00       |
| <b>Subtotal</b>                      |                            |                  |                  | \$0.00       |
| Mob/Demob                            | 100                        | 500              |                  | \$600.00     |
| <b>Subtotal "A"</b>                  |                            |                  |                  | \$2,500.00   |
|                                      |                            |                  |                  |              |
| <b>B. Revegetation/Stabilization</b> | <b>Labor<sup>(1)</sup></b> | <b>Equipment</b> | <b>Materials</b> | <b>Total</b> |
| Solar Field Areas                    |                            |                  |                  | \$0.00       |
| Foundation & Buildings Areas         | 3360                       | 1680             | 3960             | \$9,000.00   |
| Roads                                | 2240                       | 1120             | 2640             | \$6,000.00   |
| Yards, Etc.                          |                            |                  |                  | \$0.00       |
| Landfills                            |                            |                  |                  | \$0.00       |
| Well Abandonment                     |                            |                  |                  | \$0.00       |
| Ponds                                |                            |                  |                  | \$0.00       |
| Drainage & Sediment Control          |                            |                  |                  | \$0.00       |
| Other                                |                            |                  |                  | \$0.00       |
| <b>Subtotal "B"</b>                  |                            |                  |                  | \$15,000.00  |

| <b>C. Detoxification/Water Treatment/Disposal of Wastes</b> | <b>Labor<sup>(1)</sup></b> | <b>Equipment</b> | <b>Materials</b> | <b>Total</b> |
|---|----------------------------|------------------|------------------|--------------|
| Ponds/Sludge  |                            |                  |                  |              |
| Dumps (Waste & Landfill)                                    |                            |                  |                  |              |
| Surplus Water Disposal                                      |                            |                  |                  |              |
| Monitoring  |                            |                  |                  |              |
| Miscellaneous   |                            |                  |                  |              |
| Solid Waste - On Site                                       |                            |                  |                  |              |
| Solid Waste - Off Site                                      |                            |                  |                  |              |
| Hazardous Materials <sup>(2)</sup>                          |                            |                  |                  |              |
| Hydrocarbon Contaminated Soils                              |                            |                  |                  |              |
| Other   |                            |                  |                  |              |
| <b>Subtotal "C"</b>   |                            |                  |                  |              |
| <b>D. Structure, Equipment and Facility Removal</b>         | <b>Labor<sup>(1)</sup></b> | <b>Equipment</b> | <b>Materials</b> | <b>Total</b> |
| Solar Field Component Removal                               |                            |                  |                  | \$0.00       |
| Foundation & Building Removal                               | 7360                       | 6080             |                  | \$13,440.00  |
| Other Demolition  |                            |                  |                  | \$0.00       |
| Equipment Removal   |                            |                  |                  | \$0.00       |
| Fence Removal   |                            |                  |                  | \$0.00       |
| Fence Installation  |                            |                  |                  | \$0.00       |
| Pipe & Culvert Removal                                      |                            |                  |                  | \$0.00       |
| Powerline Removal   | 5840                       | 7560             |                  | \$13,400.00  |
| Transformer Removal   |                            |                  |                  | \$0.00       |
| Rip-rap, rock lining, gabions                               |                            |                  |                  | \$0.00       |
| Other Misc. Costs: Haul of Material                         | 7040                       |                  |                  | \$7,040.00   |
| Other: Mobilization for Removal                             | 1000                       | 4400             |                  | \$5,400.00   |
| <b>Subtotal "D"</b>   |                            |                  |                  | \$39,280.00  |
| <b>E. Monitoring</b>  | <b>Labor<sup>(1)</sup></b> | <b>Equipment</b> | <b>Materials</b> | <b>Total</b> |
| Reclamation Monitoring and Maintenance                      | 16800                      |                  |                  | \$16,800.00  |
| Ground and Surface Water Monitoring                         |                            |                  |                  | \$0.00       |
| <b>Subtotal "E"</b>   |                            |                  |                  | \$16,800.00  |
| <b>F. Construction Management &amp; Support</b>             | <b>Labor<sup>(1)</sup></b> | <b>Equipment</b> | <b>Materials</b> | <b>Total</b> |
| Construction Management                                     | 3000                       |                  |                  | \$3,000.00   |
| Construction Support  |                            |                  |                  | \$0.00       |
| Road Maintenance  |                            |                  |                  | \$0.00       |

7/6/2011

|   |                             |                  |                  |              |
|---|-----------------------------|------------------|------------------|--------------|
| Other: Permitting                             | 1500                        |                  |                  | \$1,500.00   |
| <b>Subtotal "F"</b>                           |                             |                  |                  | \$4,500.00   |
| <b>G. Operational &amp; Maintenance Costs</b> | <b>Labor <sup>(1)</sup></b> | <b>Equipment</b> | <b>Materials</b> | <b>Total</b> |
| <b>Subtotal A through F</b>                   |                             |                  |                  | \$78,080.00  |

| Indirect Costs                                      | Include? | Total        |
|---|----------|--------------|
| 1. Engineering, Design and Construction (ED&C) Plan |          | \$4,684.80   |
| 2. Contingency                                      |          | \$7,808.00   |
| 3. Insurance  |          | \$259.50     |
| 4. Performance Bond                                 |          | \$0.00       |
| 5. Contractor Profit                                |          | \$7,808.00   |
| 6. Contract Administration                          |          | \$7,808.00   |
| 7. BLM Indirect Cost                                |          | \$16,396.80  |
| <b>Subtotal Add-On Costs</b>                        |          | \$44,765.10  |
| <b>Grand Total</b>                                  |          | \$122,845.10 |

#### 7.2 Statement of Responsibility

To ensure that funds are available for the activities described in this plan, CSOLAR will provide a bond to be maintained until restoration of disturbed areas has been completed. The bond amount is to be calculated from the estimate of restoration included in this plan and include indirect costs as defined by BLM worksheets.

#### 8.0 References

*Plan of Development, Transmission Line and Secondary Access Road Associated with Imperial Solar Energy Center, South*, CH2M Hill, LLC, June 2011

*Geotechnical Investigation Report Imperial Solar Energy Center South*, Landmark Consultants, Inc., May 2010.

*Final EIR/EA for the Imperial Solar Energy Center South*, BRG Consulting, Inc., April 2011.

[www.blm.gov/nstc/library/techref.htm](http://www.blm.gov/nstc/library/techref.htm) , Accessed June 19, 2011, Technical Report number 1730-1

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**APPENDIX B**

**SDG&E AND CSOLAR IV SOUTH, LLC  
LETTER TO COUNTY AND BLM  
OCTOBER 2012**



Bureau of Land Management  
1661 S. 4<sup>th</sup> Street  
El Centro, CA 92243  
Attention: Ms. Margaret Goodro  
Manager, El Centro Field Office

County of Imperial  
Natural Resources Development  
940 Main St., Suite 208  
El Centro, CA 92243  
Attention: Mr. Andrew Horne  
Deputy County Executive Officer

October 18, 2012

**Re: CSOLAR South, LLC Transmission Line to be Constructed Across BLM Right of Way  
Grant Serial Number CACA – 51645 (BLM CSOLAR RoW)**

Dear Ms. Goodro and Mr. Horne:

The BLM CSOLAR RoW and the BLM November 3, 2011 Notice to Proceed authorize CSOLAR South, LLC (**CSOLAR**) to construct a portion of an East-West transmission line that will traverse BLM land (the **E-W Line**). Both San Diego Gas & Electric Company (**SDG&E**) and CSOLAR had hoped that construction of this line might not be necessary based on the effort to complete an alternative Northern path by the end of this year, but unavoidable delays in completion of the alternative Northern path have made it necessary that CSOLAR proceed with construction of the E-W Line.

Based on discussions and negotiations that began in November of last year, CSOLAR has entered into a Generation Tie-Line Enhancement Agreement (**GEA**) with the Imperial Irrigation District (**IID**). The GEA was approved at an April 3, 2012 IID Board meeting. The GEA requires that CSOLAR switch over from using its East - West interconnection to the alternative Northern path interconnection once the alternative Northern path is complete and ready for use, and then to remove the portion of the interconnection facilities that cross the Westside Main Canal once the "Conditions Precedent to Abandonment" occur. The Conditions Precedent to Abandonment include that the alternative Northern path is complete and all approvals necessary for its use are not only issued but are final and non-appealable.

(For the complete language of this definition, please see the GEA posted on the IID web-site with the April 3 Board meeting documents.)

Under the Large Generator Interconnection Agreement that governs the construction of the E-W Line, CSOLAR is to transfer title to the portion of E-W Line on the BLM CSOLAR RoW to SDG&E upon completion.

At recent meetings, representatives of the County of Imperial and the Bureau of Land Management have asked whether the E-W Line will be removed following the completion of the alternative Northern path. The purpose of this letter is to confirm our intent that the E-W Line will be removed from the BLM CSOLAR RoW within 180 days following the occurrence of the GEA Conditions Precedent to Abandonment, and that reclamation as provided under the CSOLAR Reclamation Plan dated July 2011 will be completed within this same 180 day period. There is one exception under the reclamation plan that SDG&E would like to note. In order to avoid the unnecessary mid-span splicing of the conductors, SDG&E will not remove the last structure, which is within the existing SDG&E RoW, connecting to SDG&E's transmission line. We recognize that this timing for removal of the E-W line is considerably earlier than otherwise required under the referenced ROW Grant.

Very Truly Yours

SAN DIEGO GAS & ELECTRIC CO.

By   
James P. Avery  
Senior Vice President – Power Supply

CSOLAR SOUTH, LLC

By   
Barton D. Ford  
Vice President

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**APPENDIX C**

**ISEC SOUTH E-W TRANSMISSION INTERCONNECTION LINE  
PHOTOS OF STRUCTURES**

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ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH  
Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos

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**Structure No. 1**

Overview of Disturbance Area - Facing SE from NW corner of the Disturbance Area



Existing Three Pole Deadend Monopoles



Existing Three Pole Deadend Monopoles



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August 2013

ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH  
Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos

|   |   |
|---|---|
| <p><b>Disturbance Area</b> - Facing NW from the SE corner</p>    | <p><b>Disturbance Area</b> - Facing West from the SE corner</p>                 |
| <p><b>Spur Road</b> - Facing SE from the Existing BLM Road</p>  | <p><b>Spur Road</b> - Facing NW from the Structure No. 1 Disturbance Area</p>  |
| <p><b>Structure BMPs</b></p>                                   | <p><b>Structure BMPs</b></p>    |

August 2013

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ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH  
Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos

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**Structure Nos. 2 & 2A**

Overview of Disturbance Area - Facing South from the North Side of the Disturbance Area



Structure 2 Existing DC 20° Deadend Monopole



Structure 2A Existing Deadend Tree Monopole



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August 2013

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**ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH**  
**Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos**

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|   |  |
|---|--|
| <p><b>Structure 2 Disturbance Area</b> – Facing S/SE from the NE corner</p>  A photograph showing a wide, flat, sandy area in a desert landscape. A tall, white transmission tower stands in the middle ground, casting a long shadow to the right. The sky is clear and blue. | <p><b>Structure 2A Disturbance Area</b> - Facing NE from the SW corner</p>  A photograph showing a sandy area with a transmission tower in the foreground on the left. The ground is mostly flat and sandy, with some sparse vegetation in the distance. |
| <p><b>Spur Road</b> - Facing SE from Existing BLM Road</p>  A photograph of a long, straight dirt road in a desert environment. The road is flanked by rows of straw bales used for erosion control. Power lines and towers are visible in the background.                    | <p><b>Spur Road</b> - Facing NW from the Structure No. 2 Disturbance Area</p>  A photograph of a dirt road similar to the one in the previous image, showing straw bales for erosion control and power lines in the background.                         |
| <p><b>Structure BMPs</b></p>  A close-up photograph of a straw bale erosion control measure installed next to a concrete foundation of a transmission tower.   | <p><b>Structure BMPs</b></p>  A photograph showing a straw bale erosion control measure with a pile of blue crushed rock or aggregate material placed on top of it.  |

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August 2013

ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH  
Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos

**Structure No. 3**

Overview of Disturbance Area - Facing N/NE from SW corner of the Disturbance Area



Existing Tangent Monopole



Existing Tangent Monopole



August 2013

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**ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH**  
**Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos**

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|  |   |
|--|---|
| <p><b>Disturbance Area</b> - Facing North from the SW corner</p>  | <p><b>Disturbance Area</b> Facing NE from the SW corner</p>                     |
| <p><b>Spur Road</b> - Facing SE from the Existing BLM Road</p>   | <p><b>Spur Road</b> - Facing NW from the Structure No. 3 Disturbance Area</p>  |
| <p><b>Structure BMPs</b></p>                                    | <p><b>Structure BMPs</b></p>    |

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August 2013

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ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH  
Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos

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**Structure No. 4**

Overview of Disturbance Area - Facing S/SE from North Side of the Disturbance Area



Existing Strain Deadend Monopole



Existing Strain Deadend Monopole



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August 2013

ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH  
Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos

|   |   |
|---|---|
| <p><b>Disturbance Area</b> - Facing SE from the Existing BLM Road</p>  | <p><b>Disturbance Area</b> - Facing SW from the Existing BLM Road</p>           |
| <p><b>Spur Road</b> - Facing SE from the Existing BLM Road</p>        | <p><b>Spur Road</b> - Facing NW from the Structure No. 4 Disturbance Area</p>  |
| <p><b>Structure BMPs</b></p>   | <p><b>Structure BMPs</b></p>    |

August 2013

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ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH  
Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos

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**Structure No. 5**

Overview of Disturbance Area - Facing South from the Existing BLM Road



Existing Tangent Monopole



Existing Tangent Monopole



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August 2013

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**ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH**  
**Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos**

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|   |  |
|---|--|
| <p><b>Disturbance Area</b> - Facing SW from the NW corner</p>  | <p><b>Disturbance Area</b> - Facing SW from the NW corner</p>  |
| <p><b>Existing BLM Road (No Spur Road)</b> - Facing N/NE</p>  | <p><b>Existing BLM Road (No Spur Road)</b> - Facing S/SW</p>  |
| <p><b>Structure BMPs</b></p>                                 | <p><b>Structure BMPs</b></p>                                 |

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August 2013

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ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH  
Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos

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**Structure No. 6**

Overview of Disturbance Area - Facing NE from the Existing BLM Road



Existing Strain Deadend Monopole



Existing Strain Deadend Monopole



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August 2013

ADDENDUM TO THE RECLAMATION PLAN – ISEC SOUTH  
Appendix B: ISEC South E-W Transmission Interconnection Line Structure Photos

|   |  |
|---|--|
| <p><b>Disturbance Area</b> - Facing S/SW from the Existing BLM Road</p>  | <p><b>Disturbance Area</b> - Facing NE from the Existing BLM Road</p>  |
| <p><b>Existing BLM Road (No Spur Road)</b> - Facing SW</p>              | <p><b>Existing BLM Road (No Spur Road)</b> - Facing NE</p>            |
| <p><b>Structure BMPs</b></p>   | <p><b>Structure BMPs</b></p>   |

August 2013

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**APPENDIX D**

**ISEC SOUTH HABITAT RESTORATION PLAN  
NOVEMBER 2011**

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*Final*

**HABITAT RESTORATION PLAN  
IMPERIAL SOLAR ENERGY CENTER  
SOUTH**

*Prepared for*

**Bureau of Land Management**  
El Centro Field Office

*Prepared by*

***CSOLAR***  
***DEVELOPMENT, LLC***

*With technical assistance from*

**CH2MHILL®**  
2485 Natomas Park Drive  
Suite 600  
Sacramento, CA 95833

*November 2011*



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## Attachment

Restoration Monitoring Report Data Site Form



# Acronyms and Abbreviations

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|                    |  |
|--------------------|--|
| BLM                | U.S. Bureau of Land Management   |
| CEQA               | California Environmental Quality Act   |
| CSOLAR             | CSOLAR Development, LLC  |
| FEIR/EA ISEC South | <i>Final Environmental Impact Report and Environmental Assessment for the Imperial Solar Energy Center South</i> |
| SEC South          | Imperial Solar Energy Center South Project   |
| kV                 | kilovolt(s)  |
| NEPA               | National Environmental Policy Act  |
| O&M                | operations and maintenance   |
| Plan               | Habitat Restoration Plan   |
| PV                 | photovoltaic   |
| ROW                | right-of-way   |
| SDG&E              | San Diego Gas & Electric Company   |

## SECTION 1

# Introduction

---

### 1.1 Introduction

CSOLAR Development, LLC (CSOLAR), also referred to as the project owner, is constructing the Imperial Solar Energy Center South project (the ISEC South project, or the project), which includes construction and operation of a solar energy generating facility and electric transmission interconnection line in Imperial County, California.

This Habitat Restoration Plan (Plan) addresses restoration of the temporary areas of disturbance associated with the project. The ISEC South project has been evaluated in accordance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) in the *Final Environmental Impact Report and Environmental Assessment for the Imperial Solar Energy Center South* (FEIR/EA ISEC South) (DOI, 2011). The United States Bureau of Land Management (BLM) is the lead agency under NEPA and Imperial County is the lead agency under CEQA.

The Plan is required in the FEIR/EA ISEC South as part of Mitigation Measure B9, which addresses measures taken to protect the flat-tailed horned lizard during project construction. In accordance with the FEIR/EA ISEC South, the plan “will be implemented when conducting construction activities on the transmission line and within the creosote bush-white burr sage scrub vegetation in the southwestern corner of the solar energy facility.”

### 1.2 Project Description

The ISEC South project includes the solar energy facility, transmission line, and associated access roads. The ISEC South solar energy facility will be located on approximately 946.6 acres of privately owned land. The solar energy facility site is located on the western and southern fringe of lands zoned for agricultural use in Imperial County, California. Federal lands managed by BLM are located west of the solar energy facility, the U.S. international border with Mexico is located adjacent to and south of the solar energy facility, and Pulliam Road bisects the solar energy facility. Pulliam Road is an existing paved Imperial County road that traverses south from State Route 98 to the solar energy facility.

The solar energy facility site is designated by the County of Imperial General Plan as “Agriculture” and is zoned Heavy Agriculture (A-3) and General Agricultural Rural Zone (A-2-R). The ISEC South project requires issuance of a Conditional Use Permit by the County of Imperial to allow for the construction and operation of the solar power plant on a project site consisting of six legal parcels zoned A-2-R and A-3.

The ISEC South project will generate up to 200 megawatts of electricity and will consist of photovoltaic (PV) solar modules, inverters and transformers, an electrical collection system, a switchyard, an operations and maintenance (O&M) building, and safety and security equipment. The solar energy facility will connect with San Diego Gas & Electric Company’s (SDG&E) existing Imperial Valley substation via a new, approximately 6-mile-long electrical transmission line. Primary access to the solar energy facility is via State Route 98 and Pulliam Road.

The solar energy facility will interconnect to SDG&E's grid at the 230-kilovolt (kV) side of the Imperial Valley substation via a 6.4-mile transmission interconnection line, all but 1 mile of which will be located on an existing set of transmission towers within an existing right-of-way (ROW) held by SDG&E. The Imperial Valley substation and the associated transmission line are located on federal lands managed by BLM; therefore, the project requires ROW approval from BLM for a 1-mile-long, 120-foot-wide ROW for the transmission interconnection line. The ISEC South project transmission interconnection line will exit the Imperial Valley substation on new H-frame structures replacing existing monopole structures and then run for approximately 5 miles on the vacant arms of the towers supporting an existing SDG&E transmission line. The line will transition off the SDG&E towers onto two dead-end monopole support structures for an overhead crossing under two adjacent transmission lines owned by Sempra and Intergen, then onto new suspension monopoles along the new 1-mile-long ROW to terminate at the solar energy facility.

For the ISEC South project as approved, 1.8 acres of land will be temporary disturbed during construction of the transmission interconnection line. No temporary disturbance of creosote bush-white burr sage scrub vegetation will occur within the solar energy facility, therefore, this Plan is applicable solely to the 1.8 acres of temporary disturbance caused by the construction of the new monopole structures within the 1-mile-long new ROW for the transmission interconnection line, plus pulling and tensioning sites use for stringing conductors onto the new and existing poles.

### **1.3 Goal and Objective**

#### *1.3.1 Goal*

The goal of this Plan is to establish measures to restore areas that have been temporarily disturbed by construction or other activities associated with construction of the ISEC South project. Restoration of permanently disturbed areas during decommissioning of the project at the end of its useful lifetime will be conducted in accordance with restoration procedures recommended by BLM and other agencies at that time.

#### *1.3.2 Objective*

The objective of this Plan is to document the restoration measures that will be implemented for the ISEC South project. The FEIR/EA ISEC South (DOI, 2011) stipulates that temporarily disturbed areas associated with construction of the project will be revegetated according to this Plan, portions of which require coordination with and approval by BLM.

## SECTION 2

# Areas and Activities Subject to the Plan

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This section discusses the ISEC South project areas and activities that are subject to the provisions of this Plan. Temporary disturbance will occur at the equipment laydown and assembly areas, and at areas used for staging and other construction activities within the 1-mile-long, 120-foot-wide new ROW extending from the western boundary of the solar energy facility to the existing SDG&E transmission line that leads to the Imperial Valley substation to accommodate the transmission interconnection. The total area of project-related temporary disturbance is 1.8 acres, all of which is designated creosote bush–white burr sage vegetation community. The habitat restoration practices for these areas are discussed in Section 3.

### 2.1 Equipment Laydown and Worker Parking Areas

Initial construction activities include establishing laydown areas within the solar energy facility site for staging and assembly of the solar facility and transmission line components, and parking areas for construction worker and heavy equipment parking. Laydown and assembly areas will also be established near the new transmission monopole structures within the 1-mile-long new ROW on BLM land. All areas temporarily disturbed within the solar energy facility for parking or laydown activities will later become permanently disturbed by construction of the PV modules. Following construction, the temporarily disturbed areas within the ROW will be restored to preconstruction condition. During use of the laydown and parking areas, any needed weed control will be conducted in accordance with the Weed Management Plan. Post-construction restoration of areas within the new 1-mile-long ROW will include allowing the current seed mix to revegetate the laydown areas.

### 2.2 Solar Energy Generating Facility

The solar energy facility site is flat and currently consists of flood-irrigated agricultural fields. The final project grading plan will be determined based on the final project design. Minimal grading is expected based on the historical disturbance and tilling from agricultural use at the site. The proposed construction methods will retain the basic topographical features and minimize native vegetation removal and disturbance.

The solar energy facility will be constructed using First Solar PV modules mounted on fixed-tilt tables on embedded post foundations. The mounting system for the fixed-tilt module includes steel posts driven into the ground, with steel table frames bolted to the driven posts. The modules are then mechanically fastened to the tables. The facility will also include a perimeter fence, access gates and gatehouse, a security system, lighting system, O&M building, access roads, a fire protection system, stormwater detention/retention basins, a worker parking area, meteorological station(s), and a water supply, treatment and storage system.

Within the solar module areas, disk-and-roll site preparation techniques will be used to prepare the ground surface for PV panel and foundation installation. Under the disk-and-roll approach, solar module areas will be prepared using rubber-tired tractors with disking equipment and drum rollers, with limited use of box scrapers to perform micrograding within sections of the solar module areas. This approach will maintain the macro-level topography and existing drainage pattern across the site. Contrary to conventional grading techniques where the site is

prepared to meet a set of pre-engineered, finished grade contours, the disk-and-roll approach follows the existing contours without a pre-designed finished grade requirement. The disk-and-roll approach preserves the topsoil and seed stock, allowing for the re-growth of native vegetation.

All disturbances for the project components within the solar module areas are considered permanent disturbances and are not subject to this plan.

### **2.3 Access Road Improvement**

The primary access road to the solar energy facility will be via Pulliam Road, an existing paved Imperial County road that travels south from State Route 98 to the solar energy facility. The existing road will provide access to all of the major areas of the solar energy facility, including O&M and auxiliary facilities, the switchyard, and the majority of the solar modules. No improvements will be made to this road.

During site construction, an existing 1.1-mile unpaved access road will be improved (widened) and used for access via State Route 98 to the remainder of the solar arrays. A 1,258-foot portion of this road traverses BLM-managed lands. Both access roads will remain in service for the life of the project and are considered to be long-term disturbances associated with development of the ISEC South project, and therefore are not subject to this Habitat Restoration Plan.

### **2.4 Transmission Interconnection Line**

The solar energy facility will interconnect to the utility grid at the 230-kV side of the Imperial Valley substation via an approximately 6.4-mile-long, 230-kV transmission line, all but 1.6 miles of which will be placed on a vacant arm of existing transmission towers supporting a line owned by SDG&E. New monopole structures will be constructed for the remaining portion of the line, including on a 1-mile segment between the SDG&E line and the solar energy generating facility on private land. The 1-mile-long new ROW for the electrical transmission line is 120 feet wide, and is located within Utility Corridor "N" as designated in BLM's California Desert Conservation Area Plan. The existing transmission line support structures consist of steel lattice towers and H-frame structures, and the new structures will be monopoles anchored to concrete foundations at the base.

Areas of temporary disturbance within the transmission corridor will include work areas used to erect the monopoles or crossing structures, pull sites, and laydown areas for the monopoles. In some places, areas of temporary disturbance will overlap with areas previously disturbed by prior transmission pole installation. Long-term disturbances within the transmission interconnection line ROW include the transmission tower foundations, an existing access road along the line, and several new spur roads from existing access roads that will be used to access structure locations during construction and for O&M activities throughout the life of the project.

## SECTION 3

# Habitat Restoration Practices

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This Plan establishes best management practices for restoration of areas that are temporarily disturbed during construction of the ISEC South facilities.

Monitoring is required for the restored area for a period of 5 years (or less if the restoration meets all success criteria as determined by BLM for lands under its jurisdiction). However, monitoring may continue past 5 years if restoration techniques prove unsuccessful and additional measures are required.

Implementing the restoration practices described below will rehabilitate temporarily disturbed areas comparable to surrounding conditions. Restoration is necessary to:

- Control erosion and sedimentation load, thereby protecting soil and water resources
- Control dust
- Minimize impacts to adjacent land uses
- Return disturbed areas to a condition comparable to the surrounding area
- Control non-native invasive weeds

The timing and formula of any herbicide used for controlling non-native invasive weeds will be in accordance with the project's Weed Management Plan, which conforms to BLM guidelines and standards to minimize impacts to sensitive biological resources.

### 3.1 General Restoration Measures

Restoration techniques will vary depending on the characteristics of the disturbed area, and will be implemented based on BLM guidance and best management practices. Restoration of project-construction-related temporary use areas will include one or more of the following:

- Restoring disturbed surfaces to the original contour of the land surface to the extent determined by BLM
- Scarifying, tilling, harrowing, pitting, or imprinting, as appropriate to decompact the soil. The depth of decompaction will depend on site-specific conditions. The sites will be left adequately rough after surface soil placement to provide microsites for seed germination and to reduce soil movement.
- If natural reseeding techniques prove ineffective, the following measures can be applied to revegetate areas with native plants, if appropriate, as approved by BLM and U.S. Fish and Wildlife Service, prior to start of operation:
  - Planting seedlings in the spring with herbivory cages
  - Using seed that is tested to be free of non-native invasive weeds and complies with state seed laws for common weeds

- Conferring with BLM personnel to determine appropriate seed mixes where reseeding is required
- Using mixes or species recommended by agency personnel (native and/or introduced species will be used according to BLM recommendations)

### **3.2 Reseeding and Seedling Plantings**

Following construction, temporarily disturbed areas will be prepared to allow natural reseeding of the areas. If this proves to be inadequate, the area may be seeded with BLM-approved mixtures, or seedlings may be planted directly. Seeding will be coordinated with other rehabilitation activities to occur as soon after seedbed preparation as possible.

If needed, seed will be broadcast using manually operated cyclone-type bucket spreaders, mechanical seed spreaders, blowers, hydroseeders, or rubber-tired all-terrain vehicles equipped with mechanical broadcast spreaders. Seed in the spreader hoppers will be mixed to discourage separation of the component seed types. Where broadcast seeding is employed, seeded areas will be raked or harrowed to cover the seed.

Use of planting seedlings that have acquired the necessary root mass to survive without water will be considered as a habitat restoration option. Planting seedlings in the spring will require use of herbivory cages to protect the plantings.

### **3.3 Habitat Restoration Area Signs**

All habitat restoration areas will have signs installed at regular intervals to deter vehicular traffic from these areas.

## SECTION 4

# Monitoring and Maintenance

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Habitat restoration measures will be monitored to evaluate the recovery status of restoration, identify the need for additional restoration, and to make a final determination regarding restoration success. Seeding efforts will be monitored during the first year after seeding to assess initial vegetation establishment, distribution, soil stability, and erosion control. Monitoring will take place annually during each successive growing season and cease when restoration meets the criteria for success. Criteria for determining this condition will consider site-specific considerations, such as soil and site capabilities, composition and condition of adjacent plant communities, and potential land use.

### 4.1 During the First Growing Season

During the first growing season (defined as late winter through early fall) for areas subject to restoration, CSOLAR will coordinate with BLM to select representative locations for site-specific monitoring of the rehabilitated areas. At these monitoring locations, CSOLAR will monitor germination and growth of plants.

All restoration areas will be visually inspected to: (1) detect areas that require attention, such as areas in which erosion is occurring or non-native invasive weeds are evident and (2) confirm the representativeness of the monitoring sites and identify areas that may require additional measures. CSOLAR will detect and control non-native invasive weeds in all areas and will notify BLM prior to treatment. If initial restoration techniques prove ineffective in achieving the restoration criteria, additional measures will be implemented by CSOLAR to encourage vegetation growth/establishment. Temporary fencing, where necessary, will be installed to avoid adverse effects to restoration efforts, such as vehicular use of these areas during growth establishment.

### 4.2 Following Each Growing Season

Following each growing season, CSOLAR will visually inspect all restoration areas to confirm the representativeness of the monitoring sites and identify areas that may require additional measures. A site-specific vegetation monitoring report for the monitored locations will be prepared and submitted to BLM. The report will identify areas requiring additional measures to encourage vegetation growth/establishment and will include site-specific prescription for actions to be implemented including:

- Reseeding
- Soil stabilization
- Weed control needs
- Mulching/fertilization or other cultivating practices prescribed for the following season

### 4.3 Criteria for Restoration Success

Field monitoring will be conducted using line or belt transects as well as quadrat or circular plot techniques. Line transects will provide effective cover data, while data from quadrats or circular plots more effectively evaluate density, richness, and diversity of the plant community.

The transect length and quadrat/plot area will be representative of the plant community and large enough to capture 90 percent of the species that are present in the immediate vicinity. Initially, the California Native Plant Society (CNPS) methodology recommendation of a 400-square-meter plot for richness data within shrublands will be used (CNPS, 2000). Data for each monitoring location and the adjacent undisturbed natural area will be collected and include measures of ground cover, species composition and soil compaction.

Soil compaction will be determined based on soil bulk density, a measure of how tightly the soil particles are arranged relative to each other, that provides a measure of soil compaction. Higher bulk density tends to indicate higher compaction. Soil bulk density will be measured using ASTM Method D2937-04 (ASTM International, 2004). Soil infiltration rates will be determined using single-ring infiltrometers as described by Herrick et al. (2005). This method involves using multiple single-ring devices to measure the rate that water infiltrates into soil. Given the naturally high variability of infiltration rates in desert soils, six infiltrometers will be established along a transect spaced at 5-foot intervals. The average infiltration rate as determined from the replicate infiltrometers will then be used to determine the average infiltration rates and classified according to the U.S. Natural Resources Conservation Service infiltration rate classification system (Schoeneberger et al., 2002).

Presence or absence of non-native, invasive weeds and erosional features will be documented via visual inspection of the restoration site. Planned treatments will be recorded to address reseeding, weed control, soils stabilization, and other needs. Soil infiltration and compaction will be measured before and after restoration using double-ring infiltrometer tests and a drive sampler, respectively.

Restoration will be considered successful for each monitored site when all of the following conditions are met; these criteria are based on surveys of adjacent undisturbed natural ground cover and species composition conducted in the first growing season:

- Ground cover = 70 percent of adjacent undisturbed natural vegetation community
- Non-native invasive weeds = Equal to or less than disturbed natural area to surrounding area
- Erosion = Features equal to or less than adjacent undisturbed natural area
- Soil compaction= no statistically significant difference in soil compaction between preconstruction and restoration activities as measured by soil bulk density
- Soil infiltration as determined by the Natural Resources Conservation Service infiltration rate class, will be similar to conditions prior to construction

After a restored area meets these criteria, as determined by BLM, rehabilitation will be considered complete and rehabilitation monitoring will cease. If the restoration area is not successfully restored or otherwise requires further management activities to establish vegetation, such actions will be implemented and monitoring will continue until the restoration criteria are met.

Restoration success monitoring will qualitatively assess the effectiveness of temporary and permanent erosion control structures in stabilizing disturbed areas and controlling runoff. Sites requiring remedial work will be identified, and any additional erosion control work will be

performed. It is anticipated that any active erosion problems would be apparent during the first year or two following restoration or after the first major storm or runoff event.

## SECTION 5

# Reporting and Schedule

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The project's Designated Biologist or delegate will consult with BLM on the selection of revegetation success monitoring sites and scheduling of monitoring efforts to determine successful revegetation. A BLM-approved "Rehabilitation Monitoring Report Form" that can be used to annually document and report site rehabilitation progress/success to BLM is provided as an attachment to this Plan. The Designated Biologist will prepare and submit to BLM annual reports on the rehabilitation monitoring sites, including copies of completed site review forms and a summary of monitoring data and results, individual site data for each selected site, the sites proposed for the end of monitoring, and identification of sites successfully restored by restoration year. Monitoring and reporting will continue until BLM determines that the restoration criteria have been met.

## SECTION 6

# References

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California Native Plant Society (CNPS). 2000. Relevé Protocol. CNPS Vegetation Committee. August 23, 2007 revision, available online at:  
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United States Department of the Interior, Bureau of Land Management (DOI). 2011. *Final Environmental Impact Report and Environmental Assessment for the Imperial Solar Energy Center South*.

**Attachment  
Rehabilitation Monitoring Report Data  
Site Form**

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# Rehabilitation Monitoring Report Data Site Form

|                       |   |
|-----------------------|---|
|                       | <i>Site ID/Name</i>   |
| <i>General</i>        | <i>Location (Qtr, Qtr Sec, T, R, County, State)</i>           |
|                       | <i>Area of Site (acres)</i>                                   |
| <i>Disturbance</i>    | <i>Disturbance Dates (Start/End)</i>                          |
|                       | <i>Disturbance Type</i>                                       |
| <i>Rehabilitation</i> | <i>Rehabilitation Type</i>                                    |
|                       | <i>Earthwork Contractor Name</i>                              |
|                       | <i>Earthwork Completion Date</i>                              |
|                       | <i>Soil Prep/Ripping Depth</i>                                |
| <i>Seeding</i>        | <i>Seeding Contractor</i>                                     |
|                       | <i>Seeding Date</i>   |
|                       | <i>Seed Bed Preparation Method (Disc, Harrow, Depths)</i>     |
|                       | <i>Seeding Method (Drill, Broadcast, Depths)</i>              |
|                       | <i>Copy of Seed Tag (Species, %, Purity %, Germination %)</i> |
|                       | <i>Seeding Rate (lb/acre)</i>                                 |
| <i>Other</i>          | <i>Soil Amendments Used (Describe)</i>                        |
|                       | <i>Mulching/Erosion Netting/Tackifier (Describe)</i>          |
|                       | <i>Fencing (Describe)</i>                                     |
| <i>Weeds</i>          | <i>Type(s) of Weed Treated</i>                                |