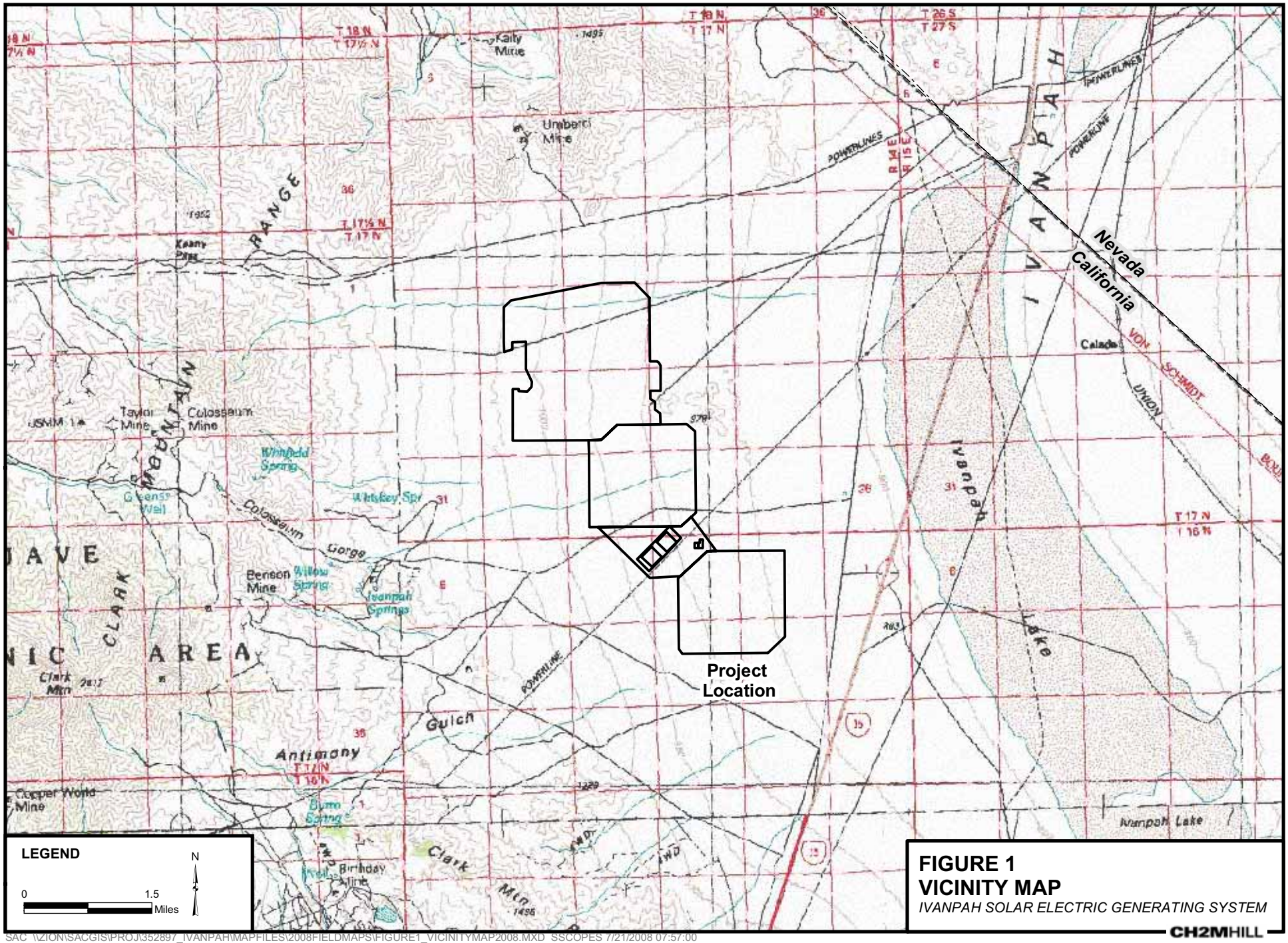
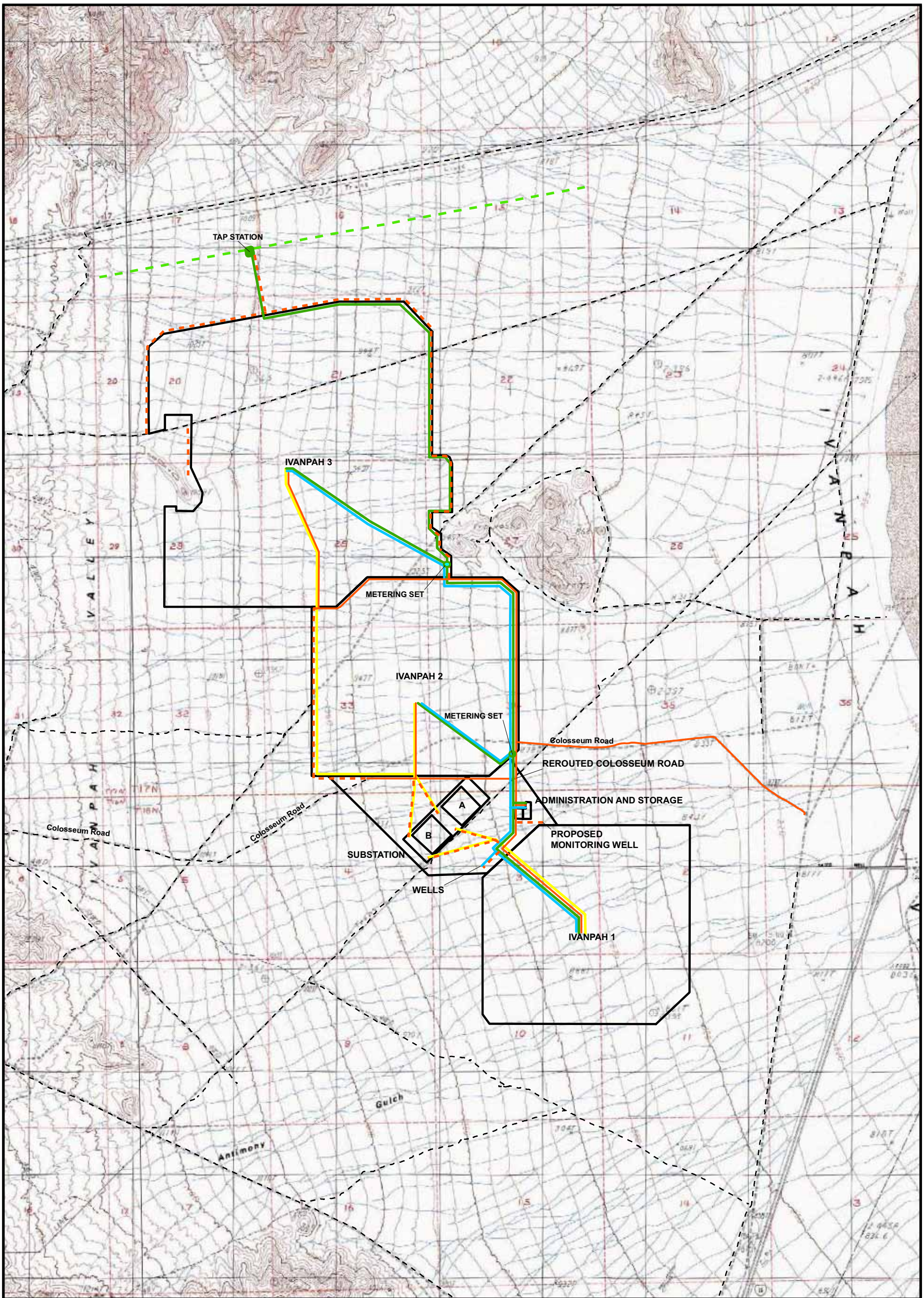



**FIGURE 1**
**VICINITY MAP**
*IVANPAH SOLAR ELECTRIC GENERATING SYSTEM*

CH2MHILL

SAC \\ZION\SACGIS\PROJ\352897_IVANPAH\MAPFILES\2008FIELDMAPS\FIGURE1_VICINITYMAP2008.MXD SSCOPES 7/21/2008 07:57:00




**LEGEND**

- DIRT ROAD
- PAVED ROAD
- UTILITIES CORRIDOR
- NATURAL GAS LINE
- GEN-TIE LINE
- KERN RIVER GAS LINE
- 4WD TOURING/TRAILS
- PROJECT SITE

0 3,000 Feet

N

**FIGURE 2**
**SITE LOCATION**
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

CH2MHILL

SAC \\ZION\SACGIS\PROJ\352897_IVANPAH\MAPFILES\2008FIELDMAPS\FIGURE_2_SITELOCATION08.MXD SSCOPES 7/21/2008 08:04:09

**FIGURE 3-1**
**EPHEMERAL WASHES MAP**
**IVANPAH 1**
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

CH2MHILL

SAC \\ZION\SACGIS\PROJ\352897_IVANPAH\MAPFILES\WETALANDS_SITE1.MXD SSCOPES 7/21/2008 13:25:27

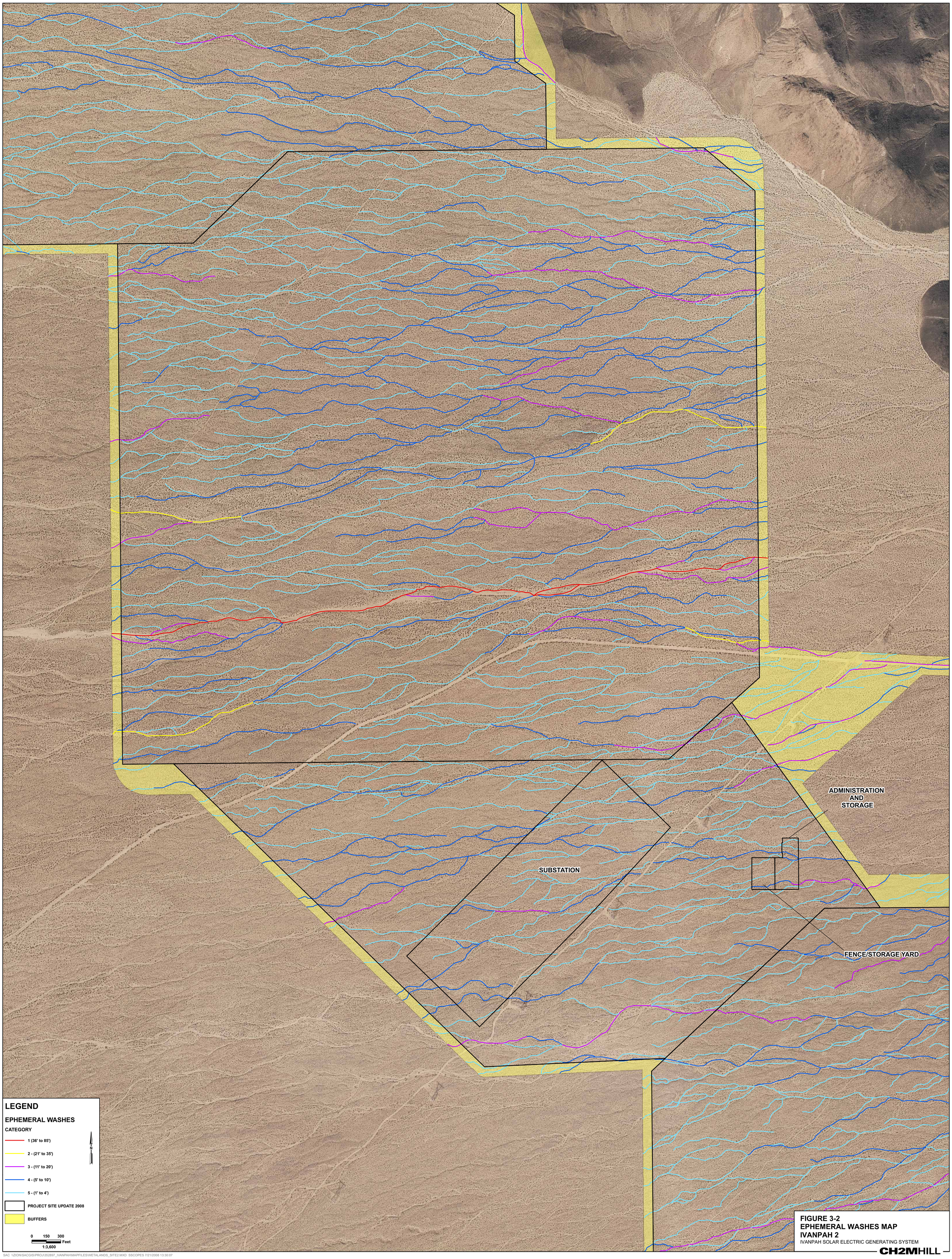



**FIGURE 3-2**
**EPHEMERAL WASHES MAP**
**IVANPAH 2**
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

CH2MHILL

SAC \\ZION\SACGIS\PROJ\352897_IVANPAH\MAPFILES\WETALANDS_SITE2.MXD SSCOPES 7/21/2008 13:30:07

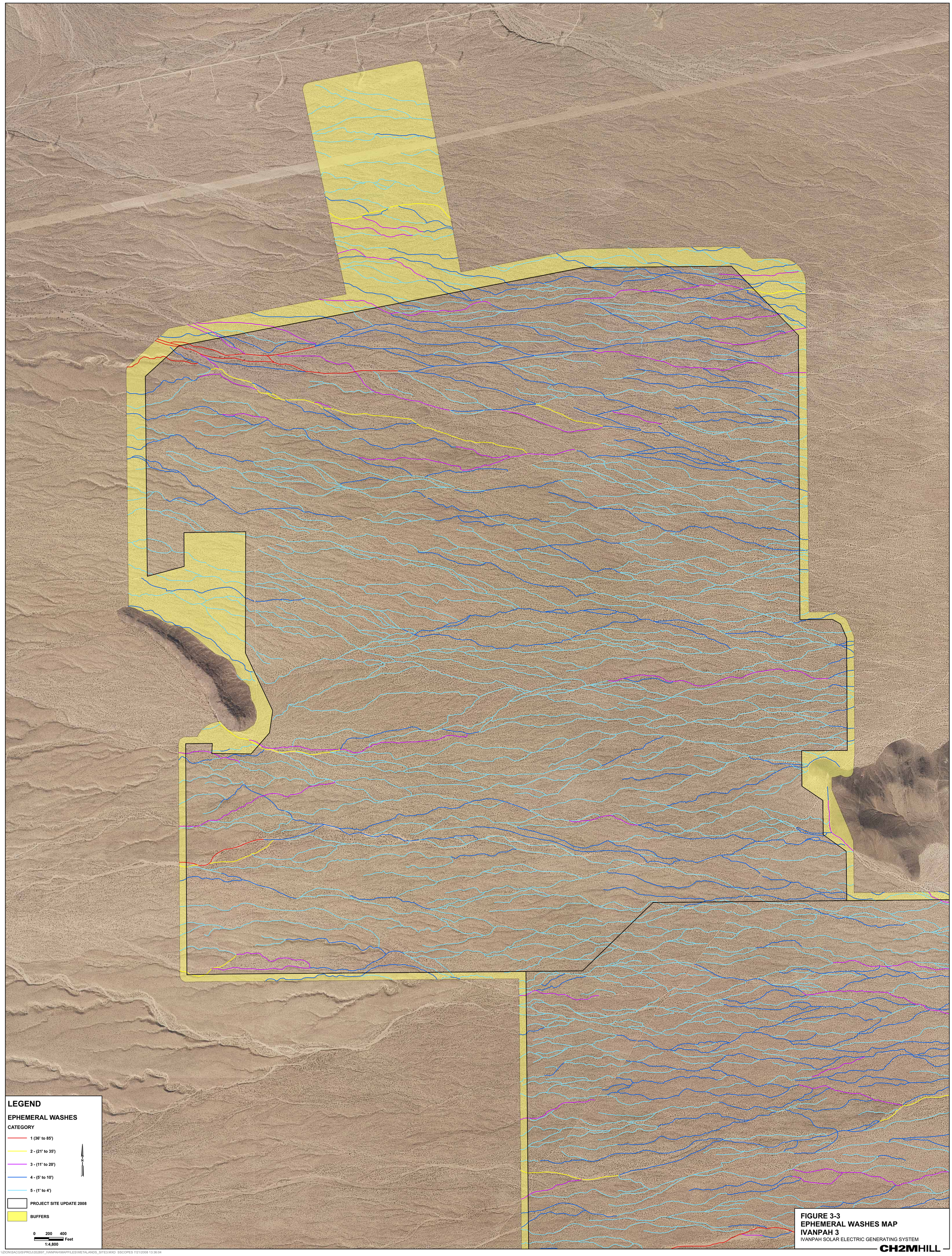



**FIGURE 3-3**
**EPHEMERAL WASHES MAP**
**IVANPAH 3**
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

CH2MHILL

SAC \\ZION\SACGIS\PROJ\352897_IVANPAH\MAPFILES\WETALANDS_SITE3.MXD SSCOPES 7/21/2008 13:36:04

## SHEET INDEX


1. IVAN-0-DW-048-111-001 PLAN OF DEVELOPMENT SITE GENERAL ARRANGEMENT PLAN
2. IVAN-1-DW-024-112-002 IVANPAH 1 PLAN OF DEVELOPMENT DRAINAGE PLAN
3. IVAN-2-DW-024-112-003 IVANPAH 2 PLAN OF DEVELOPMENT DRAINAGE PLAN
4. IVAN-3-DW-024-112-004 IVANPAH 3 PLAN OF DEVELOPMENT DRAINAGE PLAN
5. IVAN-1-DW-024-112-005 IVANPAH 1 PLAN OF DEVELOPMENT GRADING PLAN
6. IVAN-2-DW-024-112-006 IVANPAH 2 PLAN OF DEVELOPMENT GRADING PLAN
7. IVAN-3-DW-024-112-007 IVANPAH 3 PLAN OF DEVELOPMENT GRADING PLAN


NORTH

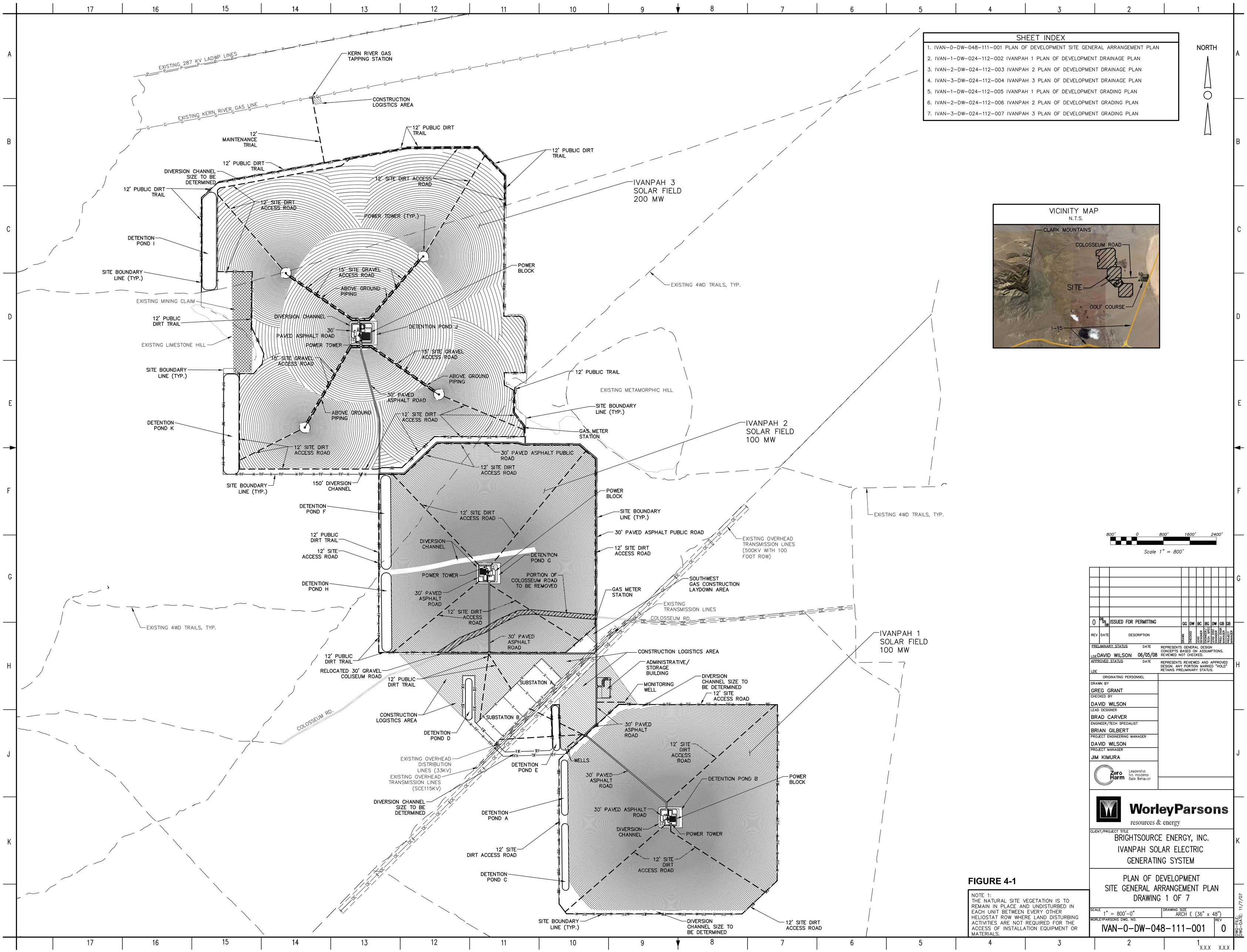



**FIGURE 4-1**

NOTE 1:
THE NATURAL SITE VEGETATION IS TO REMAIN IN PLACE AND UNDISTURBED IN EACH UNIT BETWEEN EVERY OTHER HELIOSTAT ROW WHERE LAND DISTURBING ACTIVITIES ARE NOT REQUIRED FOR THE ACCESS OF INSTALLATION EQUIPMENT OR MATERIALS.

| REV | DATE | DESCRIPTION | DRAWN | CHECKED | LEAD DESIGNER | ENGINEER/ TECH. SPEC. | PROJECT ENGINEER | PROJECT MANAGER |
|---|---|---|---|---|---|---|---|---|
| 0 | 06 05 08 | ISSUED FOR PERMITTING | GG | DW | BC | BG | DW | GB | GB |

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE DAVID WILSON 06/05/08

APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
LDE

ORIGINATING PERSONNEL
DRAWN BY: GREG GRANT
CHECKED BY: DAVID WILSON
LEAD DESIGNER: BRAD CARVER
ENGINEER/TECH SPECIALIST: BRIAN GILBERT
PROJECT ENGINEERING MANAGER: DAVID WILSON
PROJECT MANAGER: JIM KIMURA

Zero Harm — Leadership, No Incidents, Safe Behavior

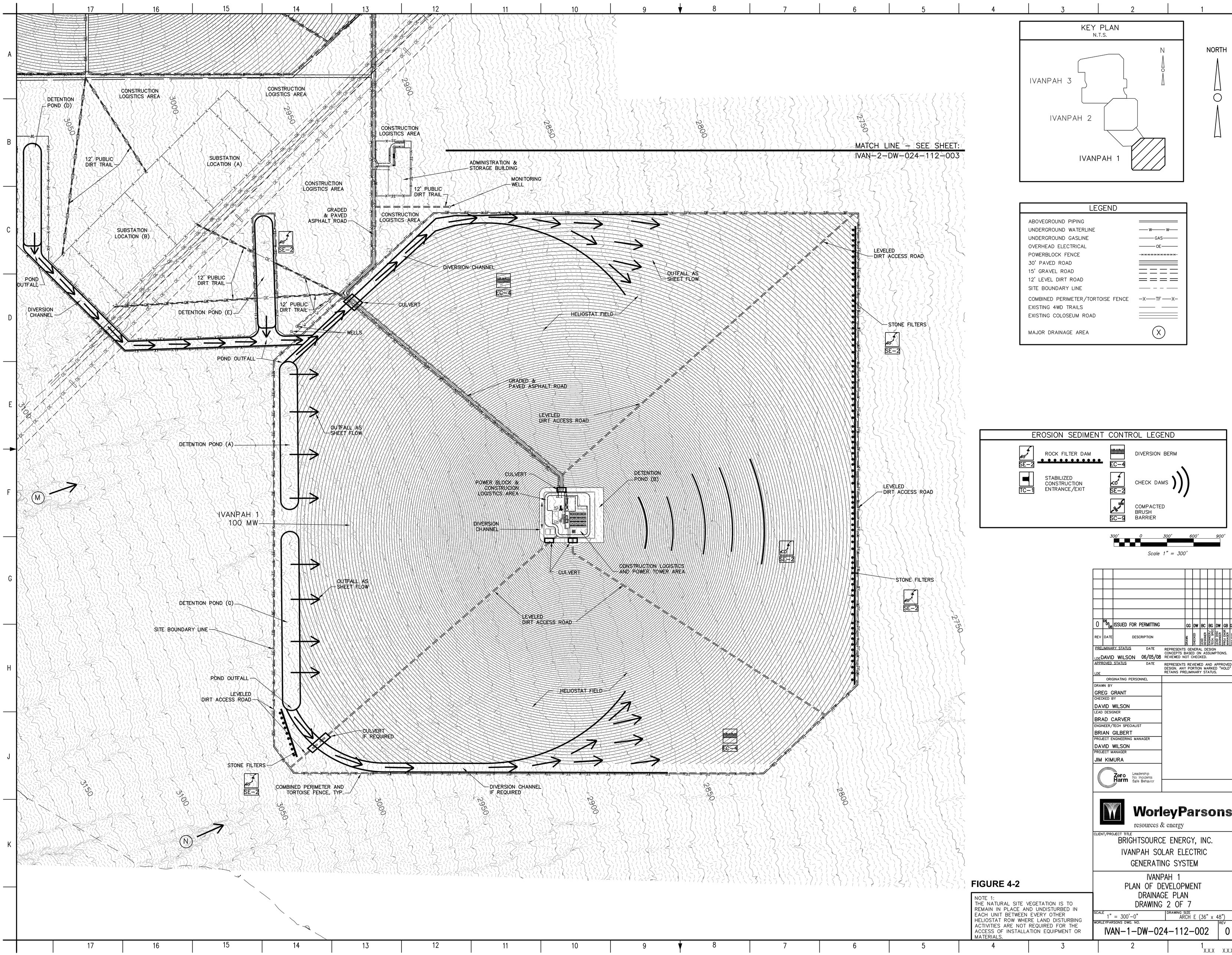
WorleyParsons resources & energy

CLIENT/PROJECT TITLE
BRIGHTSOURCE ENERGY, INC.
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

PLAN OF DEVELOPMENT
SITE GENERAL ARRANGEMENT PLAN
DRAWING 1 OF 7

SCALE 1" = 800'-0" — DRAWING SIZE ARCH E (36" x 48")
WORLEYPARSONS DWG. NO. IVAN-0-DW-048-111-001 — REV 0

DWG-FILE: DWG-DATE: 11/7/07




## KEY PLAN
N.T.S.




NORTH

## LEGEND

| | |
|---|---|
| ABOVEGROUND PIPING | |
| UNDERGROUND WATERLINE | —W—W— |
| UNDERGROUND GASLINE | —GAS— |
| OVERHEAD ELECTRICAL | —OE— |
| POWERBLOCK FENCE | |
| 30' PAVED ROAD | |
| 15' GRAVEL ROAD | |
| 12' LEVEL DIRT ROAD | |
| SITE BOUNDARY LINE | |
| COMBINED PERIMETER/TORTOISE FENCE | —X—TF—X— |
| EXISTING 4WD TRAILS | |
| EXISTING COLOSEUM ROAD | |
| MAJOR DRAINAGE AREA | X |

## EROSION SEDIMENT CONTROL LEGEND

| | | | |
|---|---|---|---|
| SE-2 | ROCK FILTER DAM | EC-4 | DIVERSION BERM |
| TC-1 | STABILIZED CONSTRUCTION ENTRANCE/EXIT | SE-2 | CHECK DAMS |
| SC-9 | COMPACTED BRUSH BARRIER | | |

300' 0 300' 600' 900'

Scale 1" = 300'

| REV | DATE | DESCRIPTION | DRAWN | CHECKED | LEAD DESIGNER | ENGINEER/TECH SPEC | LEAD DISC ENGINEER | PROJ ENGR MANAGER | PROJECT MANAGER |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 06 05 08 | ISSUED FOR PERMITTING | GG | DW | BC | BG | DW | GB | GB |

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

LDE DAVID WILSON 06/05/08

APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

LDE

ORIGINATING PERSONNEL

DRAWN BY: GREG GRANT
CHECKED BY: DAVID WILSON
LEAD DESIGNER: BRAD CARVER
ENGINEER/TECH SPECIALIST: BRIAN GILBERT
PROJECT ENGINEERING MANAGER: DAVID WILSON
PROJECT MANAGER: JIM KIMURA

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CLIENT/PROJECT TITLE
BRIGHTSOURCE ENERGY, INC.
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

IVANPAH 1
PLAN OF DEVELOPMENT
DRAINAGE PLAN
DRAWING 2 OF 7

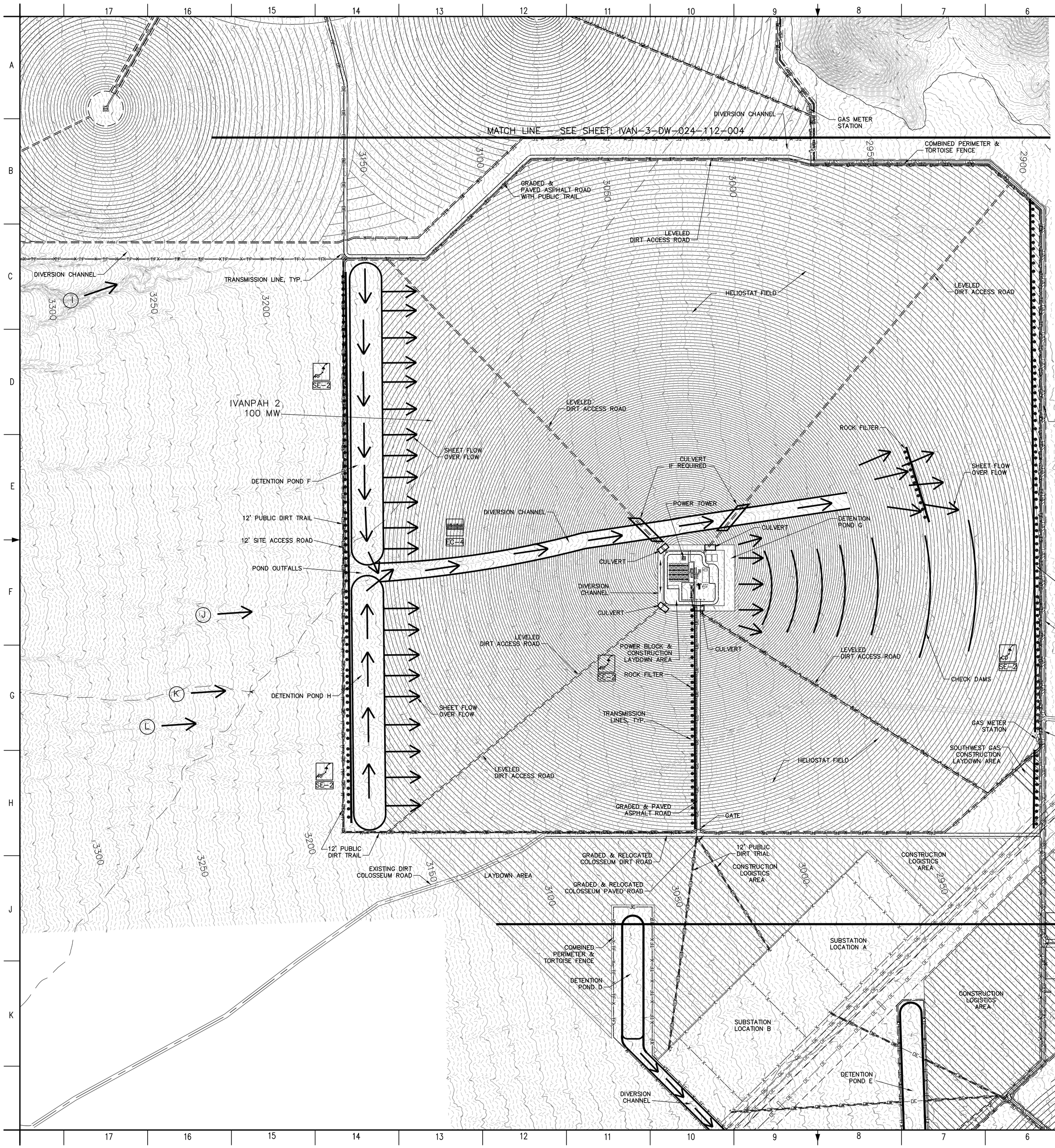
SCALE 1" = 300'-0" — DRAWING SIZE ARCH E (36" x 48")

WORLEYPARSONS DWG. NO. IVAN-1-DW-024-112-002 — REV 0

DWG-FILE: DWG-DATE: 11/7/07

**FIGURE 4-2**

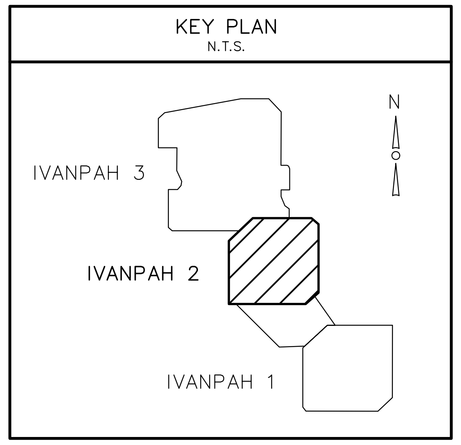
NOTE 1:
THE NATURAL SITE VEGETATION IS TO REMAIN IN PLACE AND UNDISTURBED IN EACH UNIT BETWEEN EVERY OTHER HELIOSTAT ROW WHERE LAND DISTURBING ACTIVITIES ARE NOT REQUIRED FOR THE ACCESS OF INSTALLATION EQUIPMENT OR MATERIALS.




## LEGEND

| | |
|---|---|
| ABOVEGROUND PIPING | |
| UNDERGROUND WATERLINE | —W—W— |
| UNDERGROUND GASLINE | —GAS— |
| OVERHEAD ELECTRICAL | —OE— |
| POWERBLOCK FENCE | |
| 30' PAVED ROAD | |
| 15' GRAVEL ROAD | |
| 12' DIRT ROAD | |
| SITE BOUNDARY LINE | |
| COMBINED PERIMETER/TORTOISE FENCE | —X—TF—X— |
| EXISTING 4WD TRAILS | |
| EXISTING COLLOSEUM ROAD | |
| MAJOR DRAINAGE AREA | (X) |

## KEY PLAN
N.T.S.




NORTH

## EROSION SEDIMENT CONTROL LEGEND

| | |
|---|---|
| RF SE-2 | ROCK FILTER DAM |
| EC-4 | DIVERSION BERM |
| TC-1 | STABILIZED CONSTRUCTION ENTRANCE/EXIT |
| CD SE-2 | CHECK DAMS |
| SC SC-9 | COMPACTED BRUSH BARRIER |

**FIGURE 4-3**

NOTE 1:
THE NATURAL SITE VEGETATION IS TO REMAIN IN PLACE AND UNDISTURBED IN EACH UNIT BETWEEN EVERY OTHER HELIOSTAT ROW WHERE LAND DISTURBING ACTIVITIES ARE NOT REQUIRED FOR ACCESS FOR THE INSTALLATION EQUIPMENT OR MATERIALS.

300' 0 300' 600' 900'
Scale 1" = 300'

| REV | DATE | DESCRIPTION | DRAWN | CHECKED | LEAD DESIGNER | ENGINEER/TECH SPECIALIST | PROJECT ENGINEER | PROJECT MANAGER |
|---|---|---|---|---|---|---|---|---|
| 0 | 06 05 08 | ISSUED FOR PERMITTING | GG | DW | BC | BC | DW | GB |

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE DAVID WILSON 06/05/08
APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
LDE

ORIGINATING PERSONNEL
DRAWN BY: GREG GRANT
CHECKED BY: DAVID WILSON
LEAD DESIGNER: BRAD CARVER
ENGINEER/TECH SPECIALIST: BRIAN GILBERT
PROJECT ENGINEERING MANAGER: DAVID WILSON
PROJECT MANAGER: JIM KIMURA

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WorleyParsons resources & energy

CLIENT/PROJECT TITLE
BRIGHTSOURCE ENERGY, INC.
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

IVANPAH 2
PLAN OF DEVELOPMENT
DRAINAGE PLAN
DRAWING 3 OF 7

SCALE 1" = 300'-0" — DRAWING SIZE ARCH E (36" x 48")
WORLEYPARSONS DWG. NO. IVAN-2-DW-024-112-003 — REV 0

DWG-FILE: DWG-DATE: 11/7/07

APPROXIMATELY 2,248' TO INTERCONNECT POINT AT KERN RIVER GAS LINE

12' PUBLIC TRAIL

DIVERSION CHANNEL

POND OUTFALL

12' SITE ACCESS ROAD

LEVELED DIRT ACCESS ROAD

SHEET FLOW OVER FLOW

ROCK FILTER

HELIOSTAT FIELD

RECEIVER

EC-4

IVANPAY 3
200 MV

POND I

EXISTING MINING CLAIM

EXISTING LIMESTONE HILL

LEVELED GRAVEL ACCESS ROAD

PIPELINES, TYP.

CULVERT

BOILER

POWER BLOCK & CONSTRUCION LOGISTICS AREA

POWER TOWER

DETENTION POND J

CHECK DAMS

12' SITE DIRT ACCESS ROAD

DIVERSION BERM CHANNEL

GRADED & PAVED ASPHALT ROAD

12' SITE ACCESS ROAD

WATER LINE, TYP.

GAS METER STATION

EXISTING METAMORPHIC HILL

POND K

GRADED & PAVED ASPHALT ROAD WITH PUBLIC TRAIL

CULVERT IF REQUIRED

POND OUTFALL

FENCE, TYP.

12' PUBLIC DIRT TRAIL

12' PUBLIC ACCESS ROAD

MATCH LINE – SEE SHEET:
IVAN-2-SK-024-112-003

## KEY PLAN
N.T.S.

IVANPAH 3
IVANPAH 2
IVANPAH 1

NORTH

## EROSION SEDIMENT CONTROL LEGEND

- ROCK FILTER DAM (RF, SE-2)
- DIVERSION BERM (EC-4)
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (TC-1)
- CHECK DAMS (CD, SE-2)
- COMPACTED BRUSH BARRIER (SC-9)

## LEGEND

- ABOVEGROUND PIPING
- UNDERGROUND WATERLINE (W)
- UNDERGROUND GASLINE (GAS)
- OVERHEAD ELECTRICAL (OE)
- POWERBLOCK FENCE
- 30' PAVED ROAD
- 15' GRAVEL ROAD
- 12' DIRT ROAD
- SITE BOUNDARY LINE
- COMBINED PERIMETER/TORTOISE FENCE (X TF X)
- EXISTING 4WD TRAILS
- EXISTING COLLOSEUM ROAD
- MAJOR DRAINAGE AREA (X)

**FIGURE 4-4**

NOTE 1:
THE NATURAL SITE VEGETATION IS TO REMAIN IN PLACE AND UNDISTURBED IN EACH UNIT BETWEEN EVERY OTHER HELIOSTAT ROW WHERE LAND DISTURBING ACTIVITIES ARE NOT REQUIRED FOR THE ACCESS OF INSTALLATION EQUIPMENT OR MATERIALS.

300' 0 300' 600' 900'
Scale 1" = 300'

| REV | DATE | DESCRIPTION | DRAWN | CHECKED | LEAD DESIGNER | ENGINEER/TECH. SPECIALIST | PROJECT ENGINEER | PROJECT MANAGER |
|---|---|---|---|---|---|---|---|---|
| 0 | 06/05/08 | ISSUED FOR PERMITTING | GG | DW | BC | BG | DW | GB |

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE DAVID WILSON 06/05/08
APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
LDE

ORIGINATING PERSONNEL
DRAWN BY: GREG GRANT
CHECKED BY: DAVID WILSON
LEAD DESIGNER: BRAD CARVER
ENGINEER/TECH SPECIALIST: BRIAN GILBERT
PROJECT ENGINEERING MANAGER: DAVID WILSON
PROJECT MANAGER: JIM KIMURA

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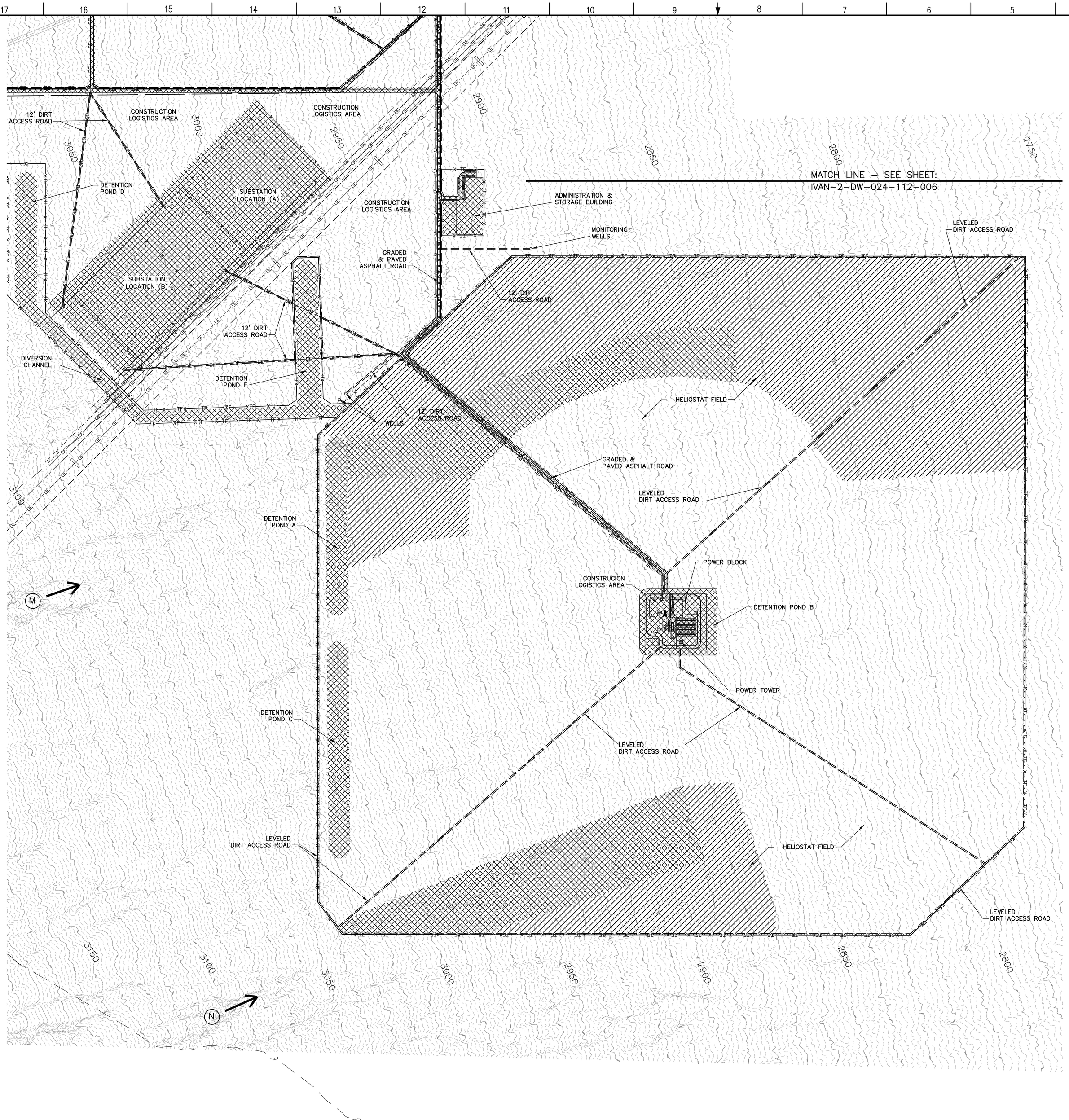
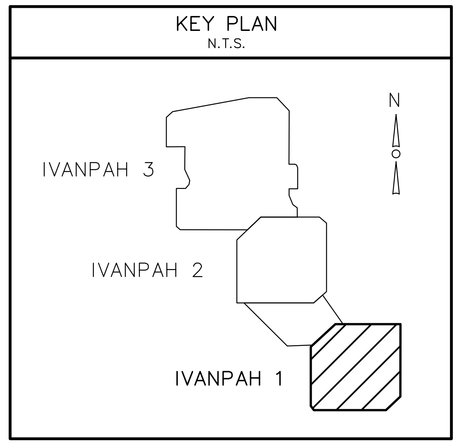
CLIENT/PROJECT TITLE
BRIGHTSOURCE ENERGY, INC.
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

IVANPAH 3
PLAN OF DEVELOPMENT
DRAINAGE PLAN
DRAWING 4 OF 7

SCALE 1" = 300'-0" — DRAWING SIZE ARCH E (36" x 48")
WORLEYPARSONS DWG. NO. IVAN-3-DW-024-112-004 — REV 0

DWG-FILE:
DWG-DATE: 11/7/07




NORTH

## LEGEND

| | |
|---|---|
| POWERBLOCK FENCE (TYP) | |
| 30' PAVED ROAD | |
| 15' GRAVEL ROAD | |
| 12' DIRT ROAD | |
| SITE BOUNDARY LINE | |
| COMBINED PERIMETER/TORTOISE FENCE | –X—TF—X– |
| EXISTING 4WD TRAILS | |
| EXISTING COLLOSEUM ROAD | |
| CLEARING (REMOVE VEGITATION ONLY) TO MINOR LEVELING & GRADE AS REQUIRED | NO HATCH (GRADE LINES ONLY) |
| MAJOR LEVELING TO LIGHT GRADING | |
| MAJOR GRADING | |
| MAJOR DRAINAGE AREA | X |

300' 0 300' 600' 900'

Scale 1" = 300'

| REV | DATE | DESCRIPTION | DRAWN | CHECKED | LEAD DESIGNER | ENGINEER/ TECH. SPEC. | LEAD DISC ENGINEER | PROJ. ENGR MANAGER | PROJECT MANAGER |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 06 05 08 | ISSUED FOR PERMITTING | GG | DW | BC | BG | DW | GB | GB |

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE DAVID WILSON 06/05/08

APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
LDE

ORIGINATING PERSONNEL

DRAWN BY: GREG GRANT
CHECKED BY: DAVID WILSON
LEAD DESIGNER: BRAD CARVER
ENGINEER/TECH SPECIALIST: BRIAN GILBERT
PROJECT ENGINEERING MANAGER: DAVID WILSON
PROJECT MANAGER: JIM KIMURA

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WorleyParsons resources & energy

CLIENT/PROJECT TITLE
BRIGHTSOURCE ENERGY, INC.
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

IVANPAH 1
PLAN OF DEVELOPMENT
GRADING PLAN
DRAWING 5 OF 7

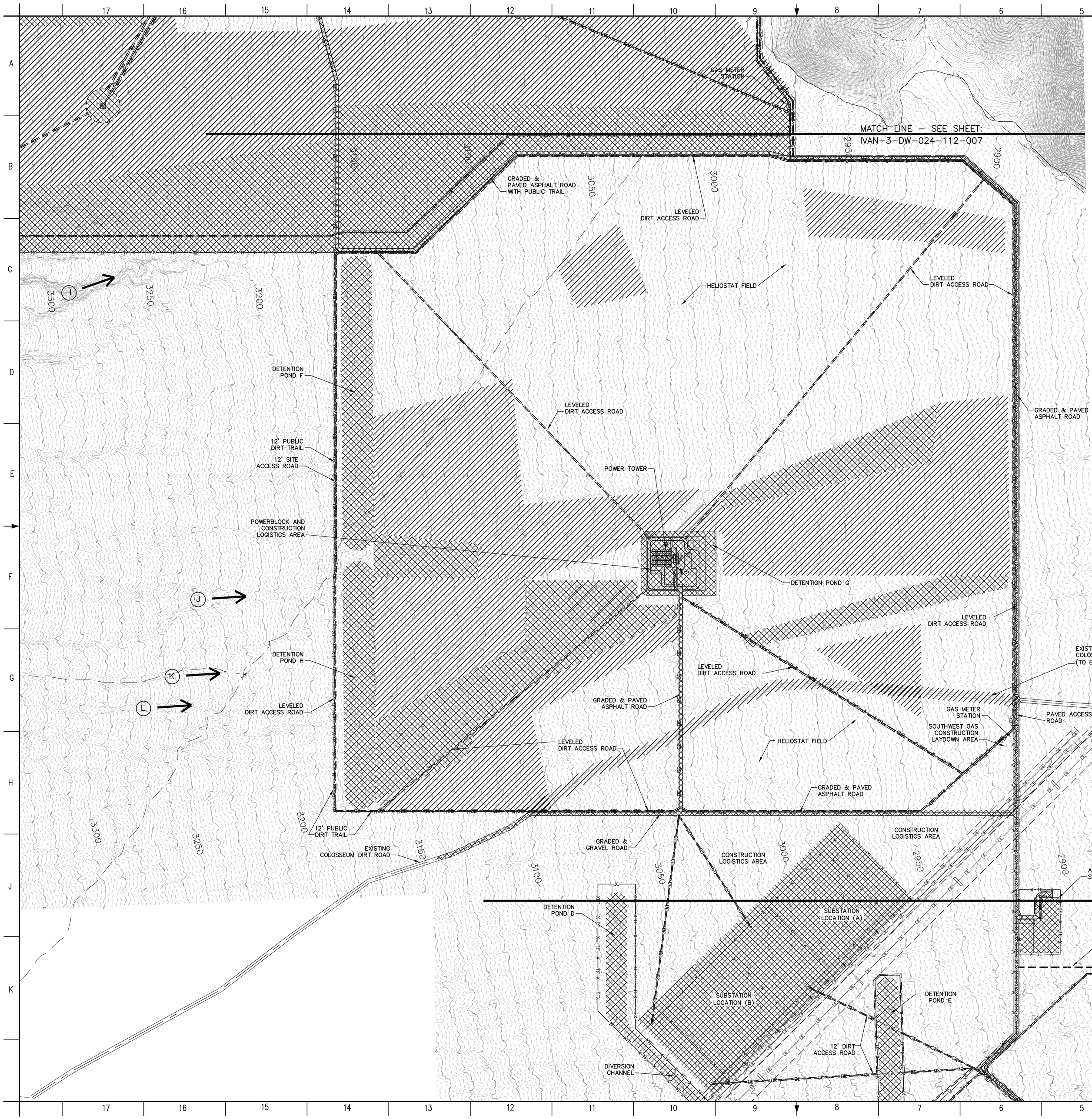
SCALE 1" = 300'-0" — DRAWING SIZE ARCH E (36" x 48")

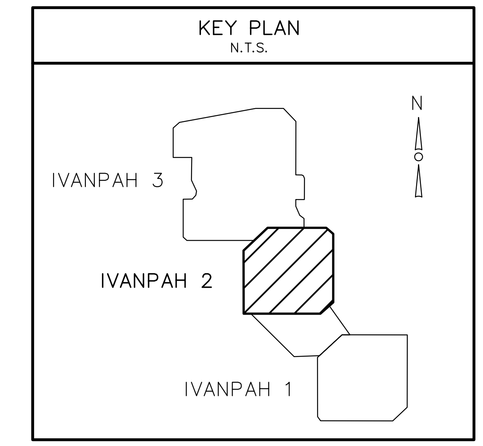
WORLEYPARSONS DWG. NO. IVAN-1-DW-024-112-005 — REV 0

DWG-FILE: DWG-DATE: 11/7/07

**FIGURE 4-5**

NOTE 1:
THE NATURAL SITE VEGETATION IS TO REMAIN IN PLACE AND UNDISTURBED IN EACH UNIT BETWEEN EVERY OTHER HELIOSTAT ROW WHERE LAND DISTURBING ACTIVITIES ARE NOT REQUIRED FOR THE ACCESS OF INSTALLATION EQUIPMENT OR MATERIALS.




NORTH

## LEGEND

| | |
|---|---|
| ABOVEGROUND PIPING | |
| POWERBLOCK FENCE | |
| 30' PAVED ROAD | |
| 15' GRAVEL ROAD | |
| 12' DIRT ROAD | |
| SITE BOUNDARY LINE | |
| COMBINED PERIMETER/TORTOISE FENCE | –X—TF—X– |
| EXISTING 4WD TRAILS | |
| EXISTING COLOSEUM ROAD | |
| CLEARING (REMOVE VEGITATION ONLY) TO MINOR LEVELING & GRADE AS REQUIRED | NO HATCH (GRADE LINES ONLY) |
| MAJOR LEVELING TO LIGHT GRADING | |
| MAJOR GRADING | |
| MAJOR DRAINAGE AREA | X |

**FIGURE 4-6**

NOTE 1:
THE NATURAL SITE VEGETATION IS TO REMAIN IN PLACE AND UNDISTURBED IN EACH UNIT BETWEEN EVERY OTHER HELIOSTAT ROW WHERE GRADING OR LAND DISTURBING ACTIVITIES ARE NOT REQUIRED FOR THE ACCESS OF INSTALLATION EQUIPMENT OR MATERIALS.

| REV | DATE | DESCRIPTION | DRAWN | CHECKED | LEAD DESIGNER | ENGINEER/TECH SPECIALIST | PROJECT ENGINEER | PROJECT MANAGER |
|---|---|---|---|---|---|---|---|---|
| 0 | 06/05/08 | ISSUED FOR PERMITTING | GG | DW | BC | BG | DW | GB |

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE DAVID WILSON 06/05/08
APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
LDE

ORIGINATING PERSONNEL

DRAWN BY: GREG GRANT
CHECKED BY: DAVID WILSON
LEAD DESIGNER: BRAD CARVER
ENGINEER/TECH SPECIALIST: BRIAN GILBERT
PROJECT ENGINEERING MANAGER: DAVID WILSON
PROJECT MANAGER: JIM KIMURA

Zero Harm — Leadership, No Incidents, Safe Behavior

WorleyParsons resources & energy

CLIENT/PROJECT TITLE
BRIGHTSOURCE ENERGY, INC.
IVANPAH SOLAR ELECTRIC GENERATING SYSTEM

IVANPAH 2 PLAN OF DEVELOPMENT
GRADING PLAN
DRAWING 6 OF 7

SCALE 1" = 300'-0" | DRAWING SIZE ARCH E (36" x 48")
WORLEYPARSONS DWG. NO. IVAN-2-DW-024-112-006 | REV 0

DWG-FILE:
DWG-DATE: 11/7/07

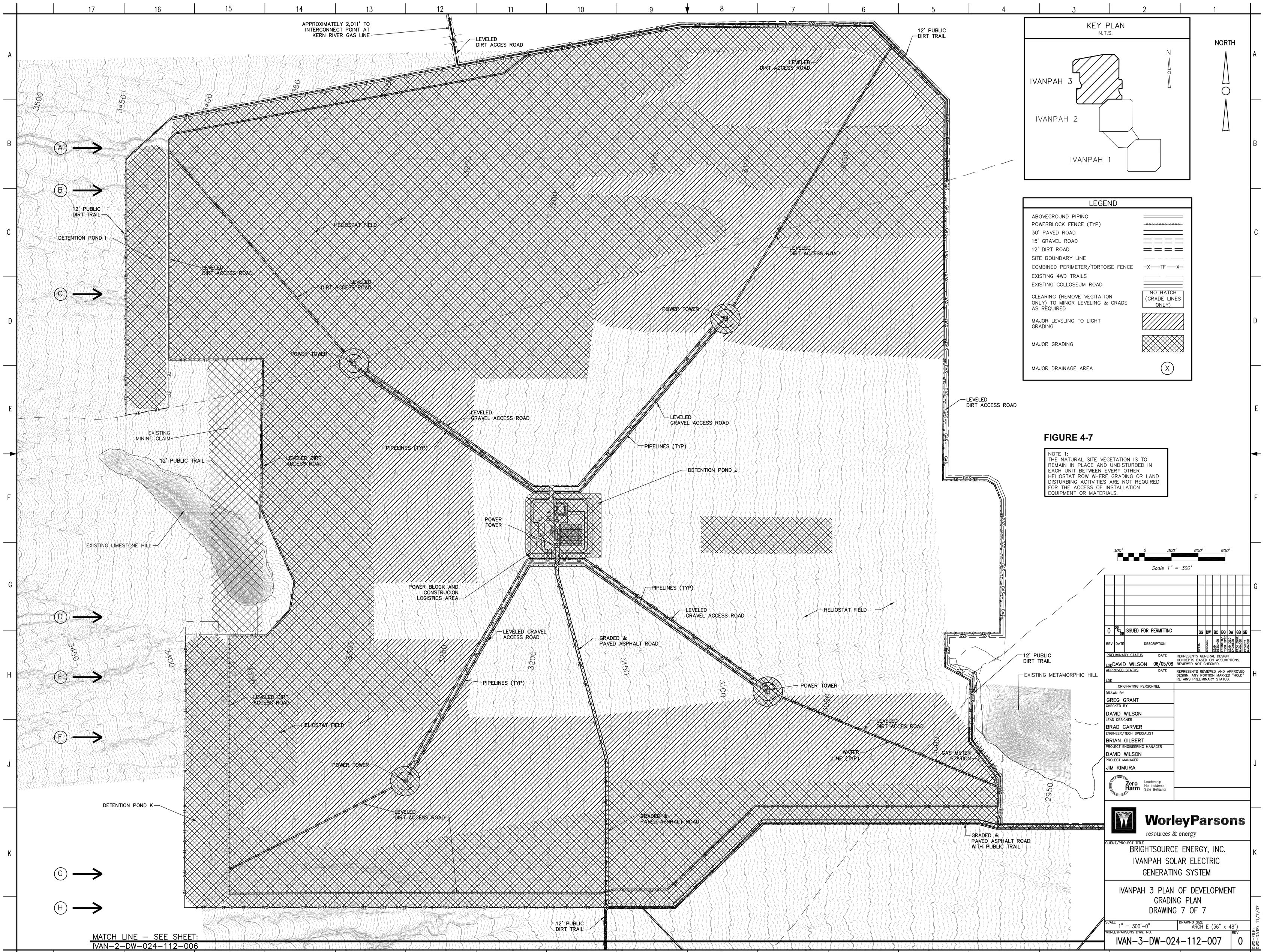



**FIGURE 4-7**

NOTE 1:
THE NATURAL SITE VEGETATION IS TO REMAIN IN PLACE AND UNDISTURBED IN EACH UNIT BETWEEN EVERY OTHER HELIOSTAT ROW WHERE GRADING OR LAND DISTURBING ACTIVITIES ARE NOT REQUIRED FOR THE ACCESS OF INSTALLATION EQUIPMENT OR MATERIALS.