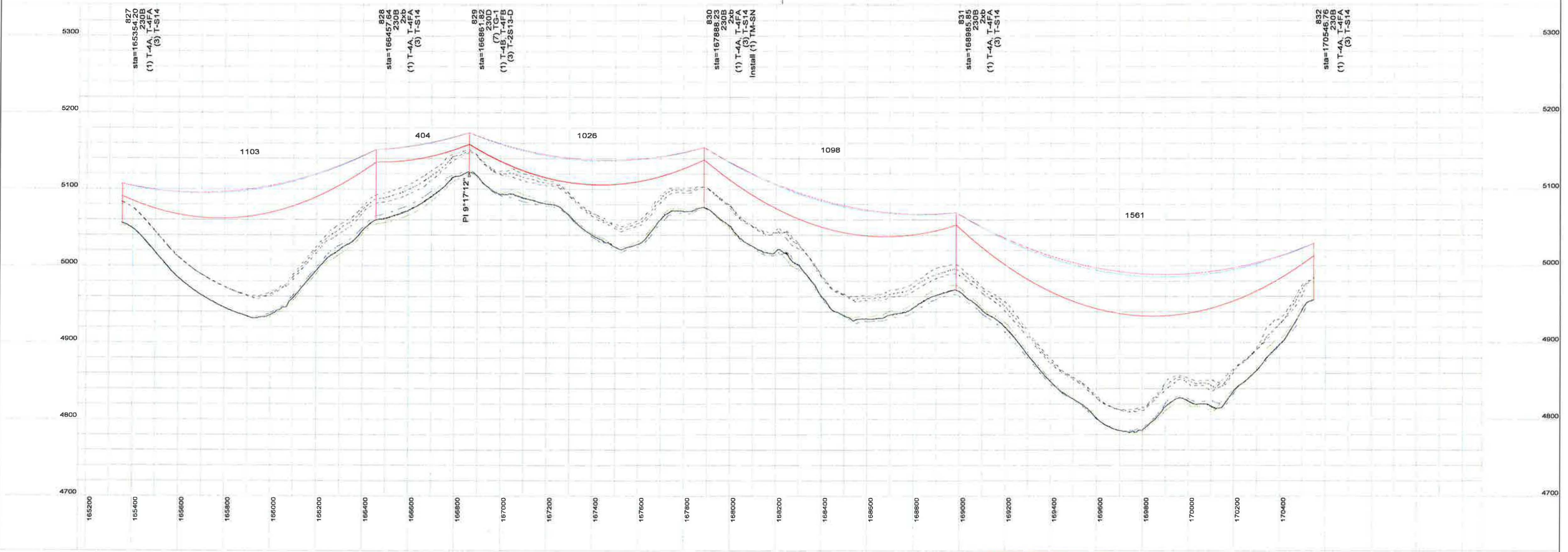


200.0 ft. Horiz. Scale  
60.0 ft. Vert. Scale

North

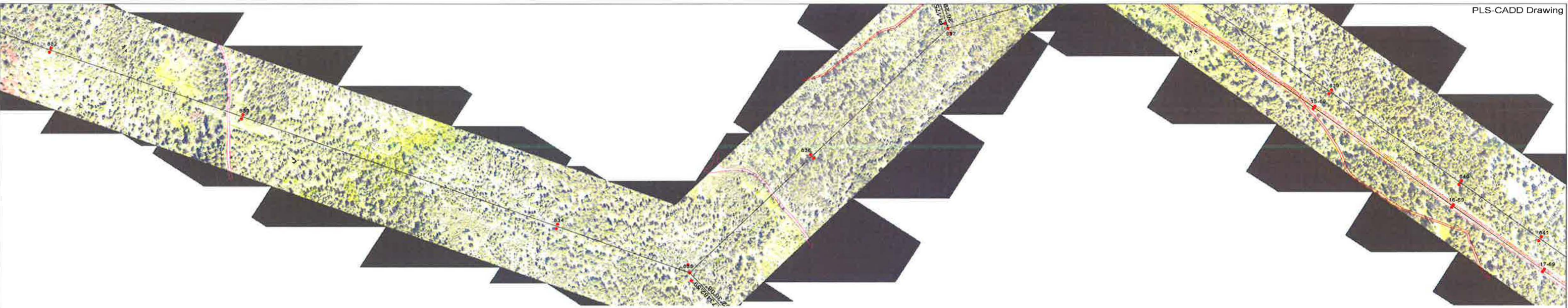
BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
5/2/2015  
Page 31/47



- NOTES:
1. BHP has dictated that all wood poles will be embedded 10% + 2 ft. No geotechnical analysis will be available to determine hole condition or to confirm pole and anchor embedment design except see FMG 1/25/16 report for Hwy 44 and SM to Lange.
  2. No geotechnical or other analysis is available to confirm the extent of soft or rock layers that may require special embedments and anchor types, including rock anchors except FMG report listed above.
  3. Pull test all TA-P1 and TA-P2 anchors to 20 kips and 40 kips ultimate capacity respectively per BHP specifications and test method. Install alternate disk, helical or rock anchors as required.
  4. Refer to BHP construction specifications for line erection and materials. Notify Engineer of any conflicts.

5. Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
6. Install guy strain rods on all 230H and J type structure shield wire guys.
7. Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
8. Install fence grounding per BHP requirements.
9. Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

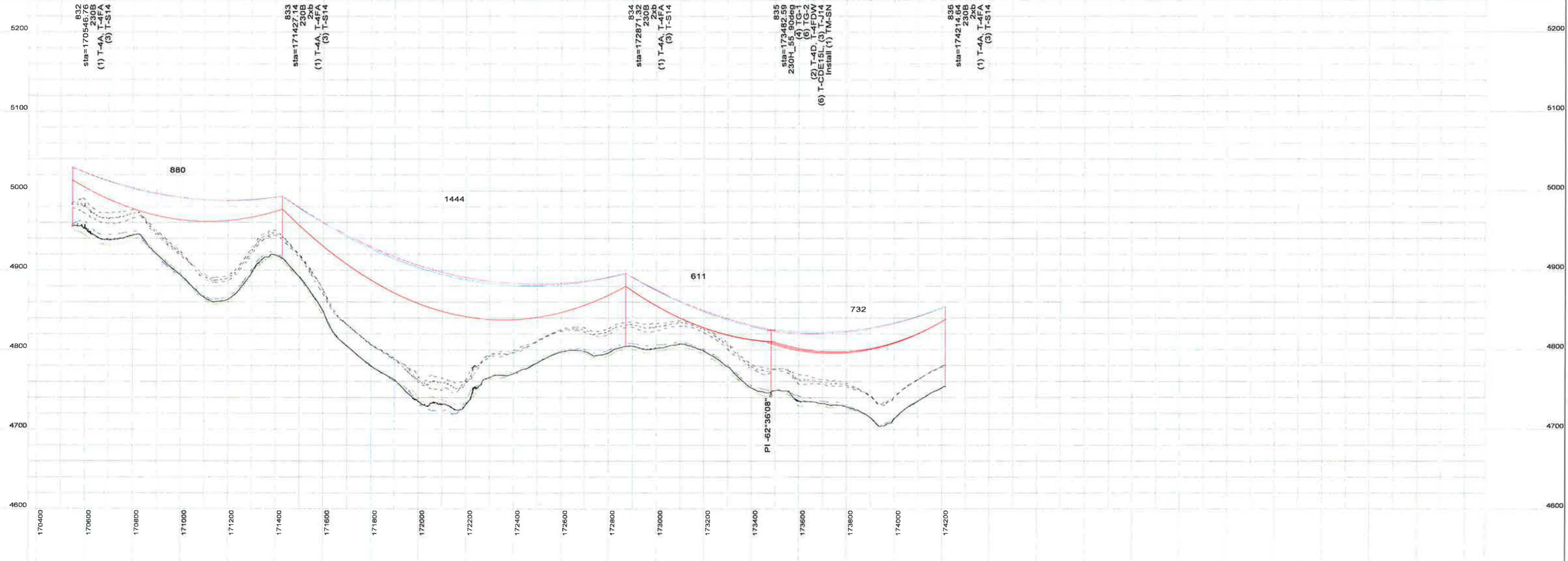
<p><b>BLACK HILLS POWER</b></p> <p>TECKLA TO LANGE 230 KV TRANSMISSION LINE STATE LINE TO LANGE LINE SEGMENT PLAN AND PROFILE</p>				<p>SHT. 31 OF 45</p>	
<p>5/01/16 DZ A MW</p> <p>DATE DRAWN BY NO. APPROVED BY</p>	<p>Issued for Construction</p> <p>REVISION DESCRIPTION</p>	<p>DRAWN BY: DZ</p> <p>APPROVED BY: MW</p>	<p>DATE: 12/27/14</p> <p>DATE: 12/27/14</p>	<p>DWG. NO. BHP-T-100</p>	<p>A</p>



200.0 ft. Horiz. Scale  
 60.0 ft. Vert. Scale



BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
 5/2/2016  
 Page 32/47



- NOTES:**
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  2. No geotechnical or other analysis is available to confirm the extent of soft or rock layers that may require special embedments and anchor types, including rock anchors except FMG report listed above.
  3. Pull test all TA-P1 and TA-P2 anchors to 20 kips and 40 kips ultimate capacity respectively per BHP specifications and test method. Install alternate disk, helical or rock anchors as required.
  4. Refer to BHP construction specifications for line erection and materials. Notify Engineer of any conflicts.

5. Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
6. Install guy strain rods on all 230H and J type structure shield wire guys.
7. Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
8. Install fence grounding per BHP requirements.
9. Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

DATE	DRAWN BY	APPROVED BY	REVISION DESCRIPTION
5/01/16	DZ	A	MW
			Issued for Construction

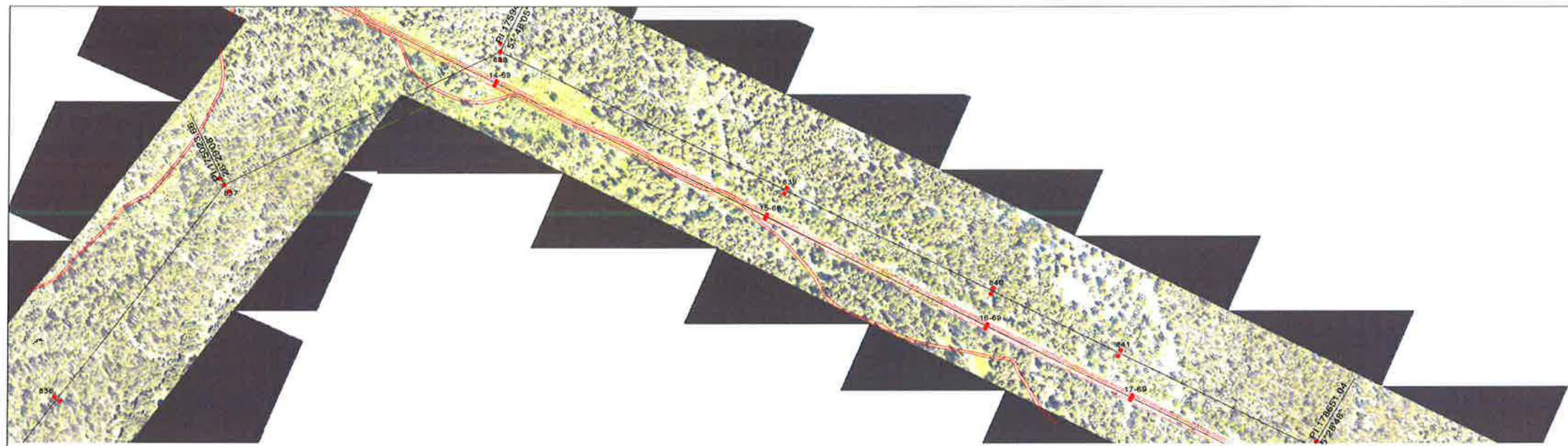
**BLACK HILLS POWER**

TECKLA TO LANGE 230 KV TRANSMISSION LINE  
 STATE LINE TO LANGE LINE SEGMENT  
 PLAN AND PROFILE

5/01/16 DZ A MW Issued for Construction  
 DATE DRAWN BY NO APPROVED BY REVISION DESCRIPTION

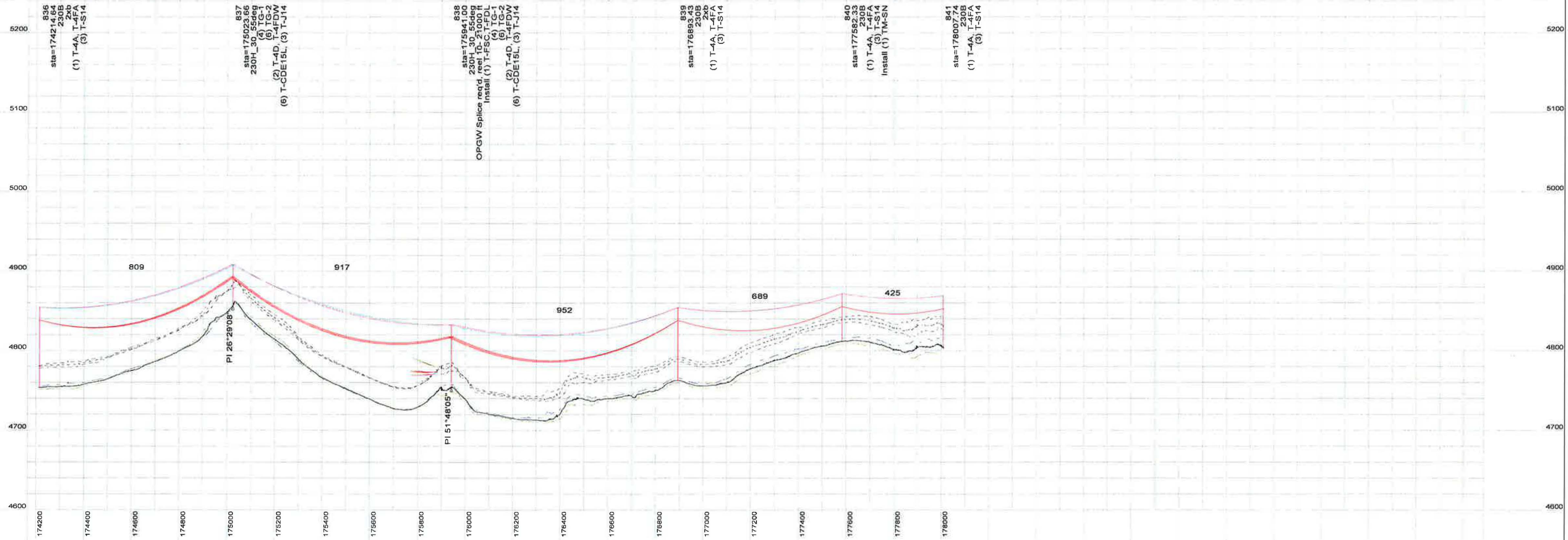
DRAWN BY DZ DATE 12/27/14  
 APPROVED BY MW DATE 12/27/14

SHT. 32 OF 45  
**BHP-T-100**



200.0 ft. Horiz. Scale  
 60.0 ft. Vert. Scale

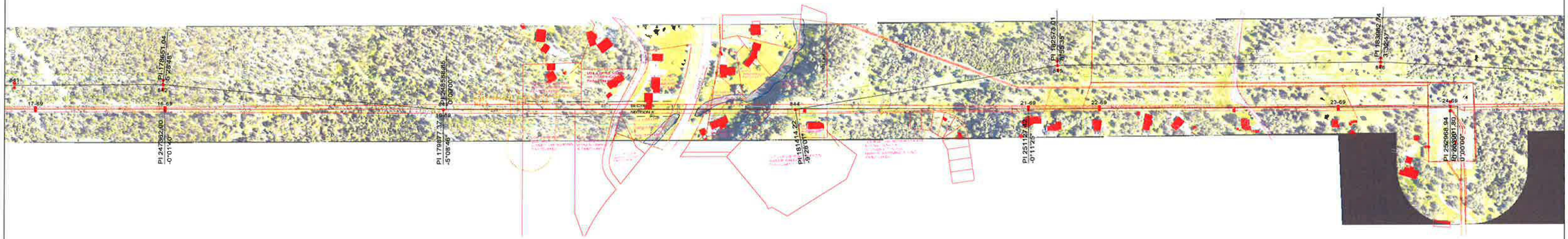
BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
 5/2/2016  
 Page 33/47



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  2. No geotechnical or other analysis is available to confirm the extent of soft or rock layers that may require special embedments and anchor types, including rock anchors except FMG report listed above.
  3. Pull test all TA-P1 and TA-P2 anchors to 20 kips and 40 kips ultimate capacity respectively per BHP specifications and test method. Install alternate disk, helical or rock anchors as required.
  4. Refer to BHP construction specifications for line erection and materials. Notify Engineer of any conflicts.

5. Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
6. Install guy strain rods on all 230H and J type structure shield wire guys.
7. Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
8. Install fence grounding per BHP requirements.
9. Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

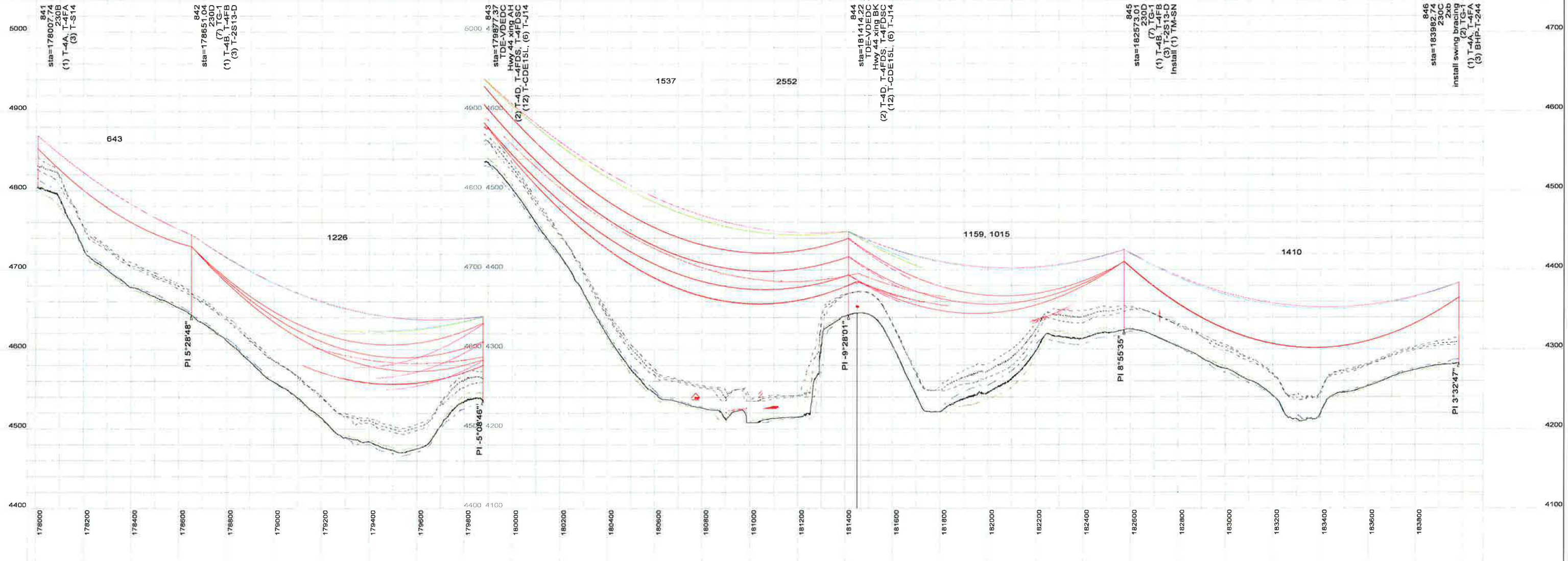
<b>BLACK HILLS POWER</b>				SHT, 33 OF 45	
TECKLA TO LANGE 230 KV TRANSMISSION LINE STATE LINE TO LANGE LINE SEGMENT PLAN AND PROFILE					
5/01/16	DZ	A	MW	Issued for Construction	
DATE	DRAWN BY	NO.	APPROVED BY	REVISION DESCRIPTION	
	DZ		MW	DATE 12/27/14	DWG NO. BHP-T-100
				DATE 12/27/14	



200.0 ft. Horiz. Scale  
60.0 ft. Vert. Scale

North

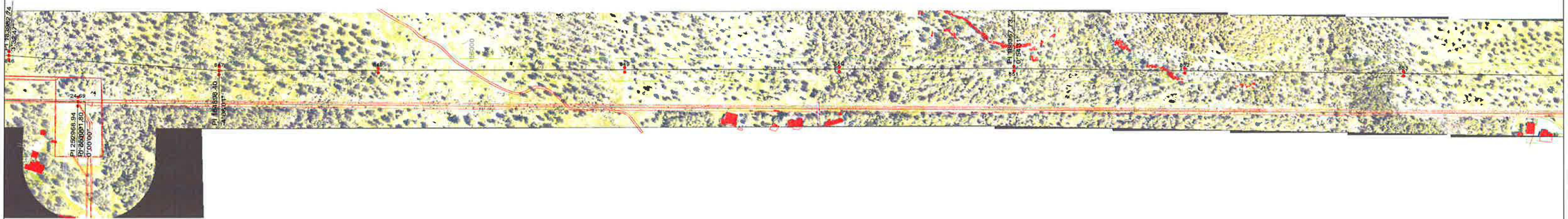
BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
5/2/2016  
Page 34/47



- NOTES:**
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  - No geotechnical or other analysis is available to confirm the extent of soft or rock layers that may require special embedments and anchor types, including rock anchors except FMG report listed above.
  - Full test all TA-P1 and TA-P2 anchors to 20 kips and 40 kips ultimate capacity respectively per BHP specifications and test method. Install alternate disk, helical or rock anchors as required.
  - Refer to BHP construction specifications for line erection and materials. Notify Engineer of any conflicts.

- Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
- Install guy strain rods on all 230H and J type structure shield wire guys.
- Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
- Install fence grounding per BHP requirements.
- Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

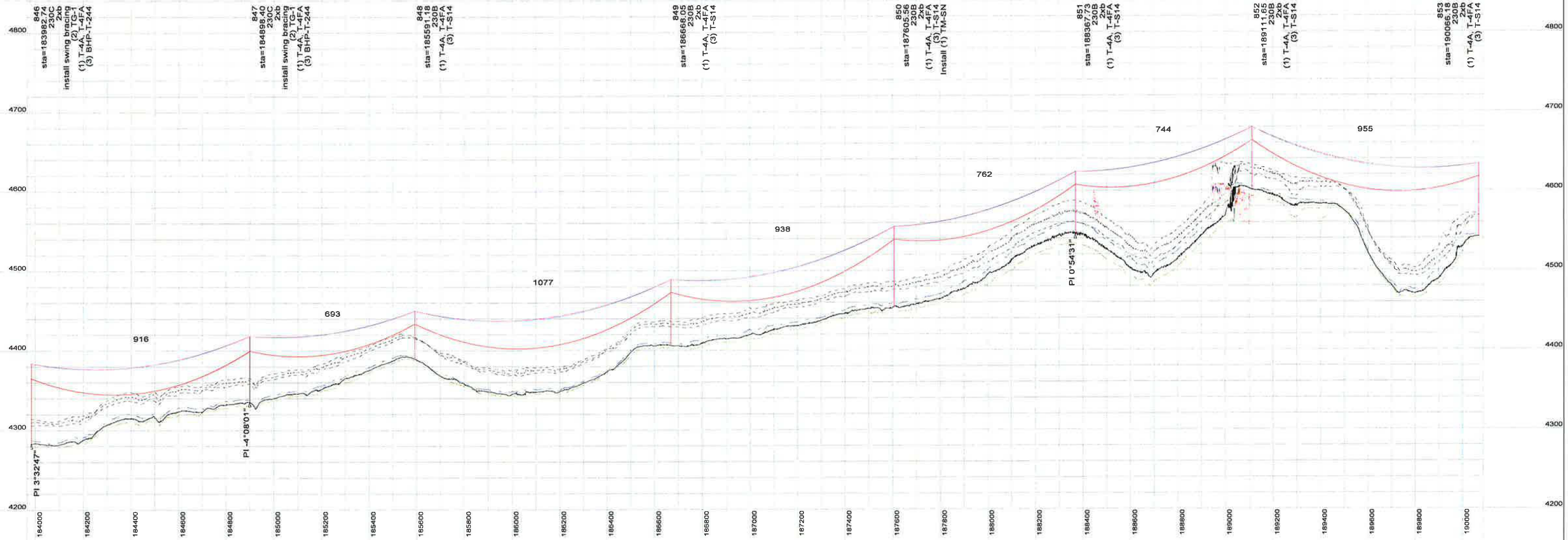
<p>5/01/16 DZ A MW DATE DRAWN BY NO. APPROVED BY</p>				<p>Issued for Construction REVISION DESCRIPTION</p>		<p>BLACK HILLS POWER <b>BHP</b> TECKLA TO LANGE 230 KV TRANSMISSION LINE STATE LINE TO LANGE LINE SEGMENT PLAN AND PROFILE</p>		<p>SHT. 34 OF 45</p>
<p>5/01/16 DZ A MW DATE DRAWN BY NO. APPROVED BY</p>				<p>Issued for Construction REVISION DESCRIPTION</p>		<p>BLACK HILLS POWER <b>BHP</b> TECKLA TO LANGE 230 KV TRANSMISSION LINE STATE LINE TO LANGE LINE SEGMENT PLAN AND PROFILE</p>		<p>SHT. 34 OF 45</p>
<p>5/01/16 DZ A MW DATE DRAWN BY NO. APPROVED BY</p>				<p>Issued for Construction REVISION DESCRIPTION</p>		<p>BLACK HILLS POWER <b>BHP</b> TECKLA TO LANGE 230 KV TRANSMISSION LINE STATE LINE TO LANGE LINE SEGMENT PLAN AND PROFILE</p>		<p>SHT. 34 OF 45</p>



200.0 ft. Horiz. Scale  
 60.0 ft. Vert. Scale

North

BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
 5/2/2016  
 Page 35/47



- NOTES:
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  3. Pull test all TA-P1 and TA-P2 anchors to 20 kips and 40 kips ultimate capacity respectively per BHP specifications and test method. Install alternate disk, helical or rock anchors as required.
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6. Install guy strain rods on all 230H and J type structure shield wire guys.
7. Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
8. Install fence grounding per BHP requirements.
9. Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

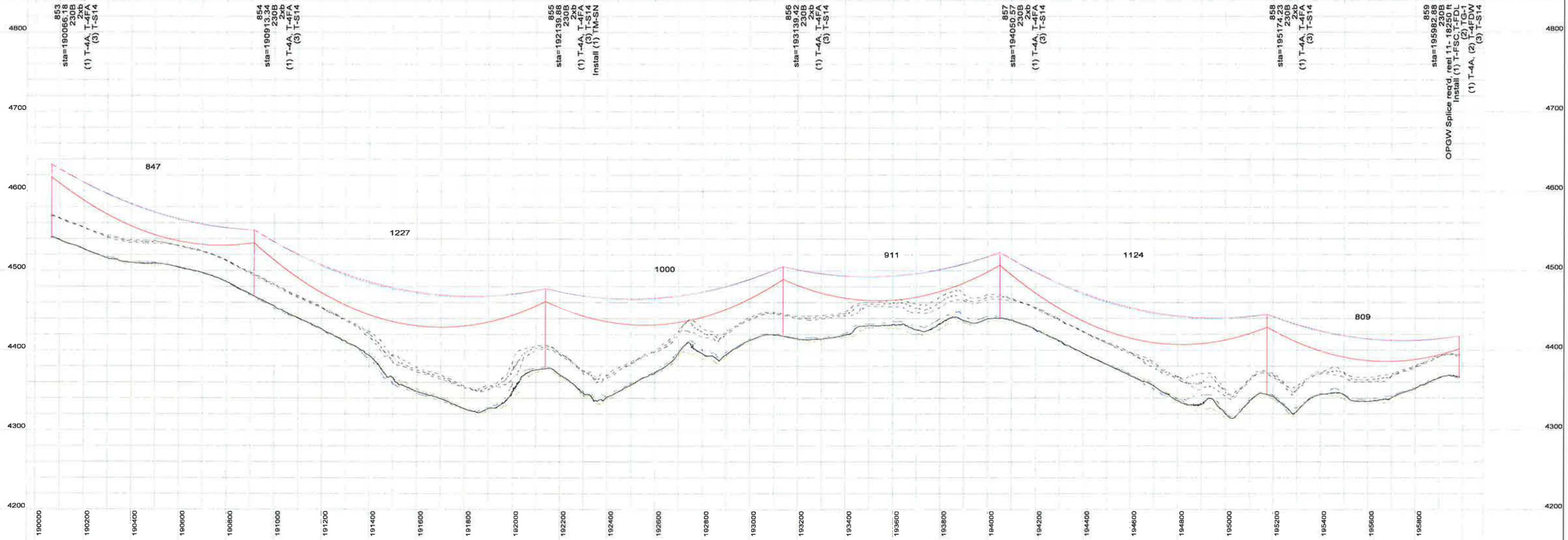
5/01/16				DZ A MW				Issued for Construction			
DATE	DRAWN BY	NO	APPROVED BY	DATE	DRAWN BY	NO	APPROVED BY	DATE	DRAWN BY	NO	APPROVED BY
								BLACK HILLS POWER <b>BHP</b>			
								TECKLA TO LANGE 230 KV TRANSMISSION LINE			
								STATE LINE TO LANGE LINE SEGMENT			
								PLAN AND PROFILE			
								SHT. 35 OF 45			
								BHP-T-100			



200.0 ft. Horiz. Scale  
60.0 ft. Vert. Scale

North

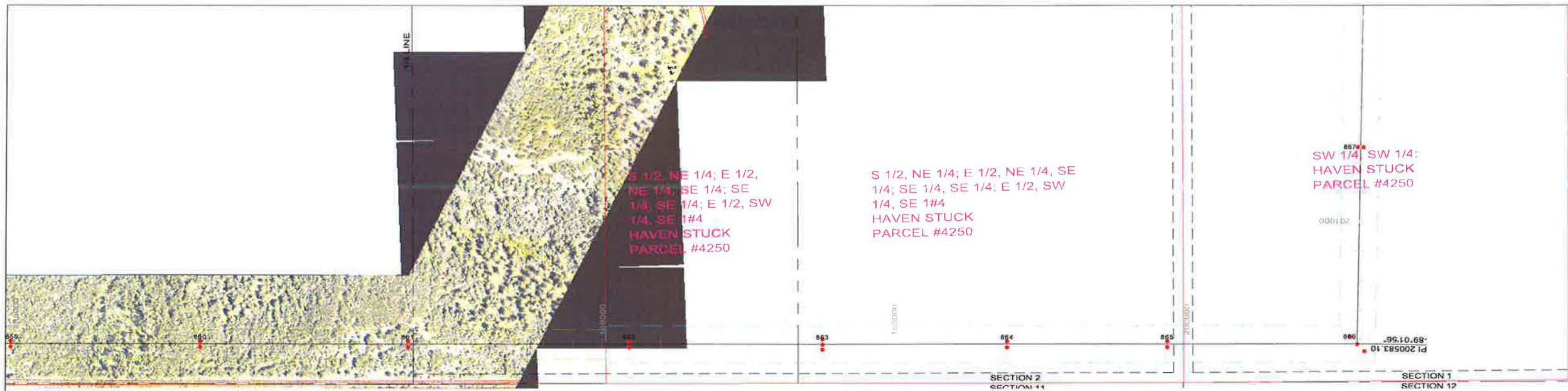
BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
5/2/2016  
Page 36/47



- NOTES:**
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  4. Refer to BHP construction specifications for line erection and materials. Notify Engineer of any conflicts.

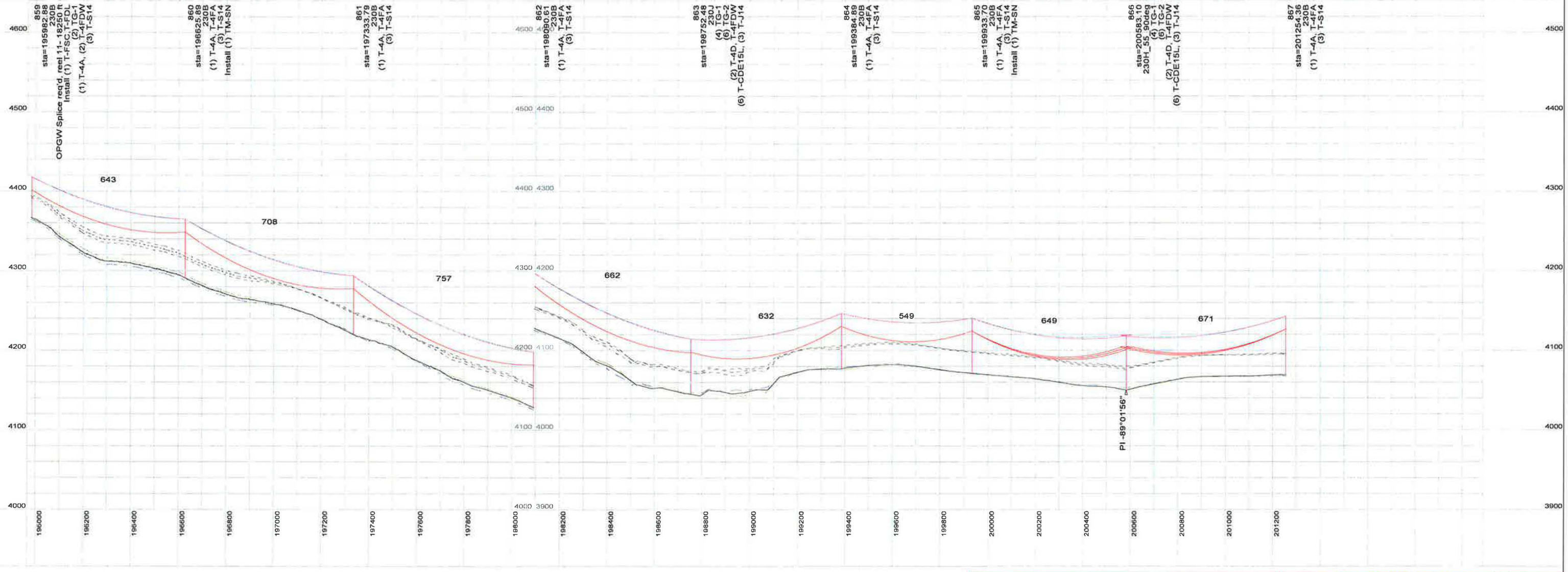
5. Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
6. Install guy strain rods on all 230H and J type structure shield wire guys.
7. Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
8. Install fence grounding per BHP requirements.
9. Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

<b>BLACK HILLS POWER</b>			
TECKLA TO LANGE 230 KV TRANSMISSION LINE STATE LINE TO LANGE LINE SEGMENT PLAN AND PROFILE			
5/01/16	DZ	A	MW
DATE	DRAWN BY	NO.	APPROVED BY
			Issued for Construction
			REVISION DESCRIPTION
DRAWN BY	DZ	DATE 12/27/14	DWG NO.
APPROVED BY	MW	DATE 12/27/14	<b>BHP-T-100</b>
			SHT. 36 OF 45 <b>A</b>



200.0 ft. Horiz. Scale  
60.0 ft. Vert. Scale

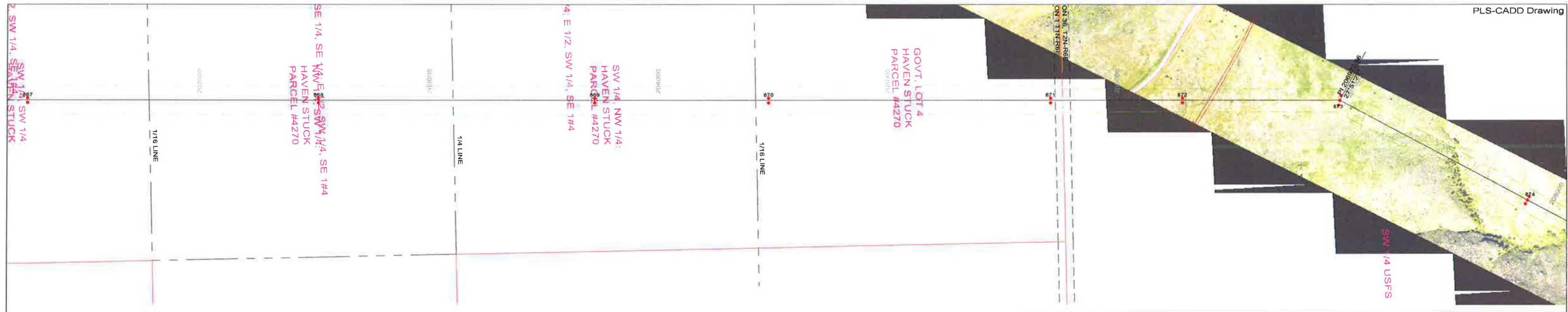
BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
5/2/2016  
Page 37/47



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  - Refer to BHP construction specifications for line erection and materials. Notify Engineer of any conflicts.

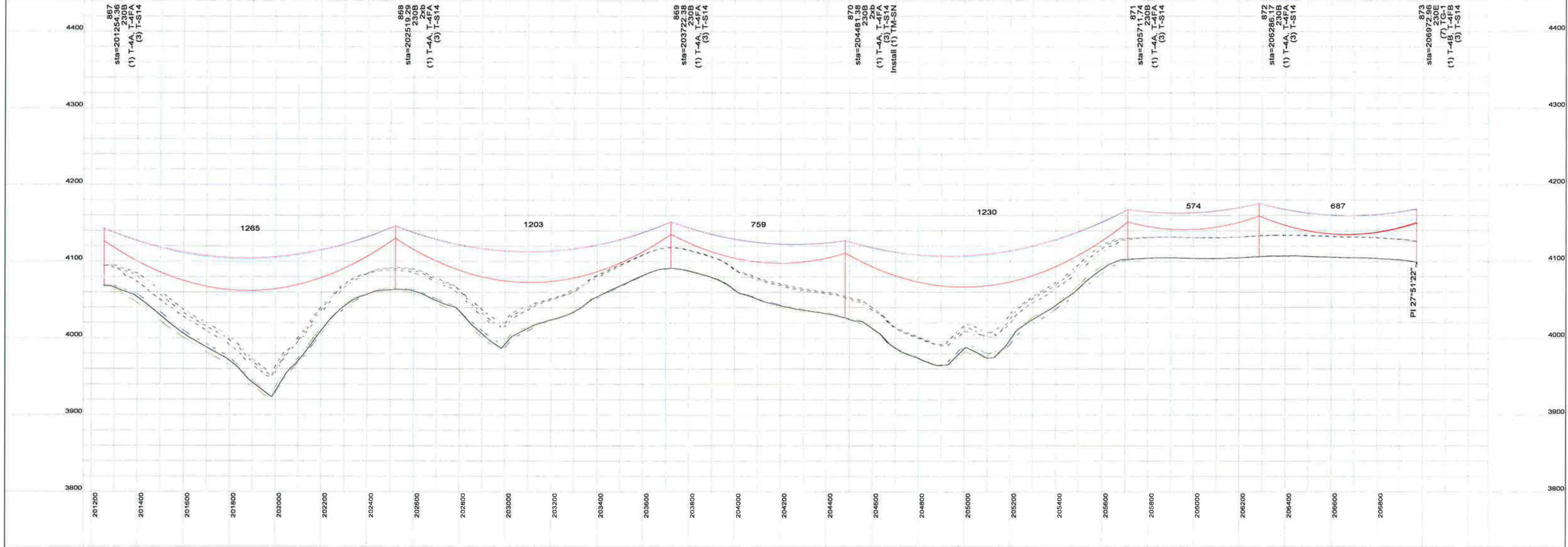
- Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
- Install guy strain rods on all 230H and J type structure shield wire guys.
- Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
- Install fence grounding per BHP requirements.
- Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

5/01/16				DZ				A				MW				Issued for Construction			
DATE				DRAWN BY				NO.				APPROVED BY				REVISION DESCRIPTION			
																DRAWN BY			
																DATE 12/27/14			
																DATE 12/27/14			
																DWG NO			
																BHP-T-100			
																SHT. 37 OF 45			
																A			



200.0 ft. Horiz. Scale  
 60.0 ft. Vert. Scale

BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
 5/2/2016  
 Page 38/47

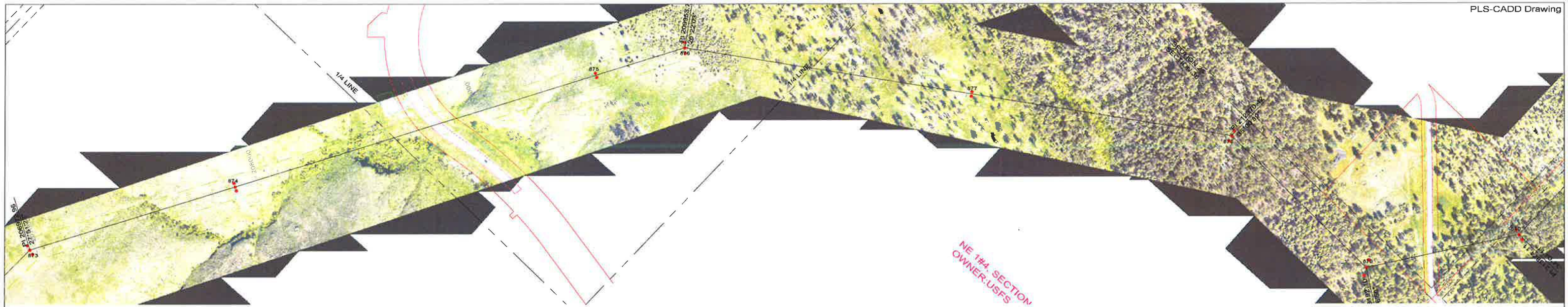


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- Install fence grounding per BHP requirements.
- Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

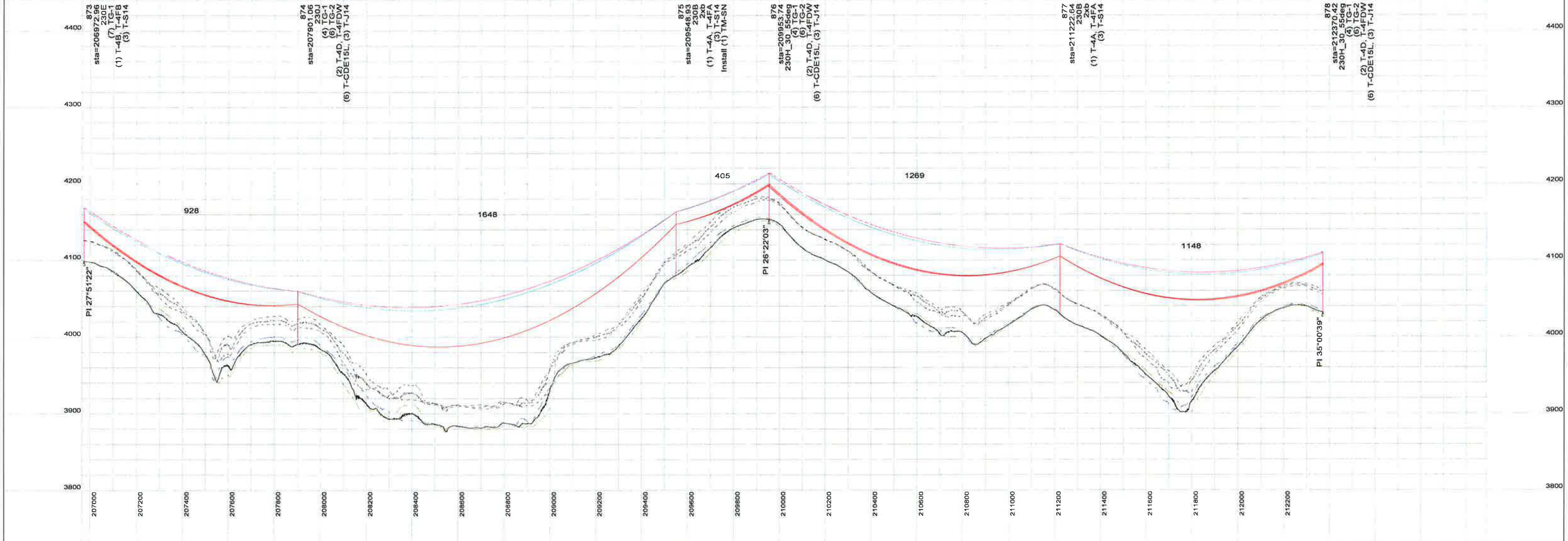
<p><b>BLACK HILLS POWER</b></p> <p>TECKLA TO LANGE 230 KV TRANSMISSION LINE          STATE LINE TO LANGE LINE SEGMENT          PLAN AND PROFILE</p>				<p>SHT. 38 OF 45</p>	
<p>5/01/16 DATE</p>	<p>DZ DRAWN BY</p>	<p>A NO</p>	<p>MW APPROVED BY</p>	<p>Issued for Construction REVISION DESCRIPTION</p>	<p>DATE 12/27/14 DATE 12/27/14</p>
<p>BHP-T-100</p>				<p>A</p>	





200.0 ft. Horiz. Scale  
 60.0 ft. Vert. Scale

BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
 5/2/2016  
 Page 39/47



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  4. Refer to BHP construction specifications for line erection and materials. Notify Engineer of any conflicts.

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8. Install fence grounding per BHP requirements.
9. Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

DATE	DRAWN BY	APPROVED BY	NO.	REVISION DESCRIPTION
5/01/16	DZ	A	MW	Issued for Construction

**BLACK HILLS POWER**

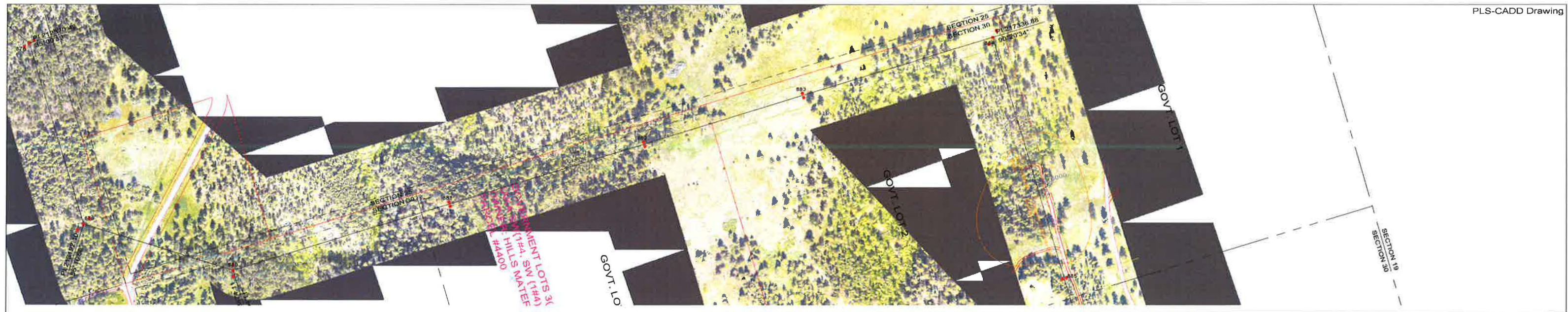
TECKLA TO LANGE 230 KV TRANSMISSION LINE  
 STATE LINE TO LANGE LINE SEGMENT  
 PLAN AND PROFILE

5/2/2016 DATE  
 DZ DRAWN BY  
 MW APPROVED BY

12/27/14 DATE  
 DZ DRAWN BY  
 MW APPROVED BY

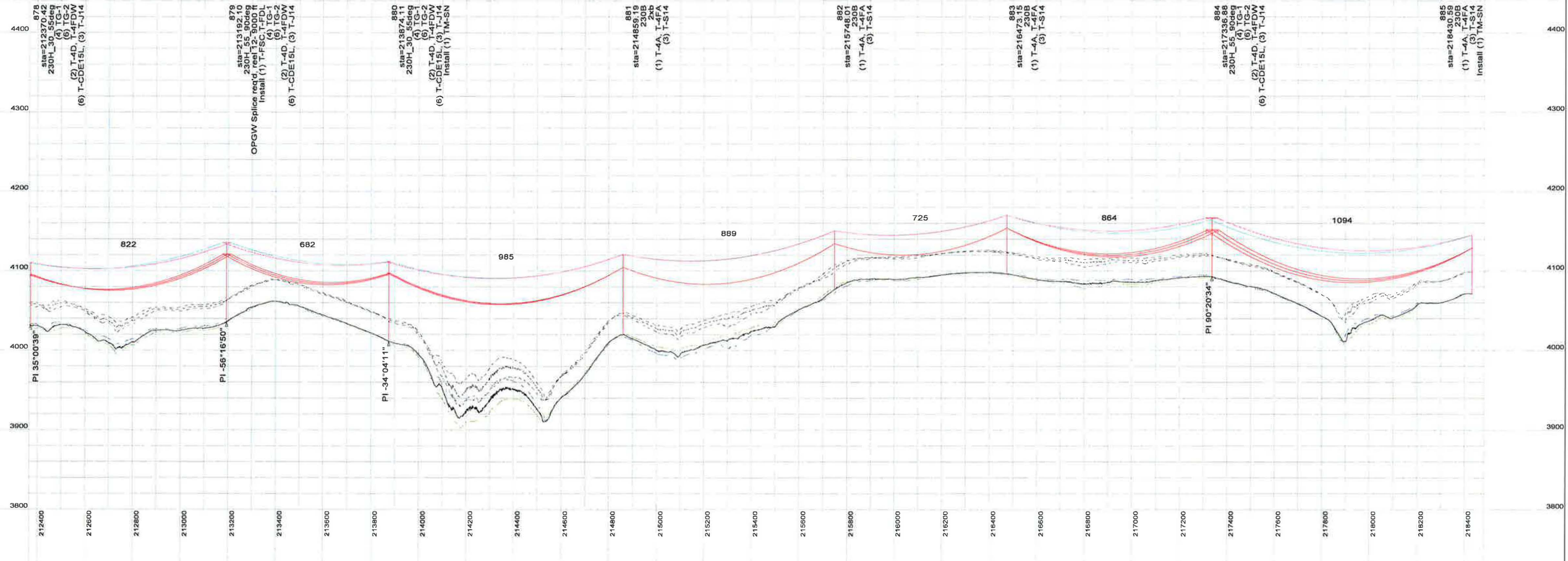
BHP-T-100

SHT. 39 OF 45



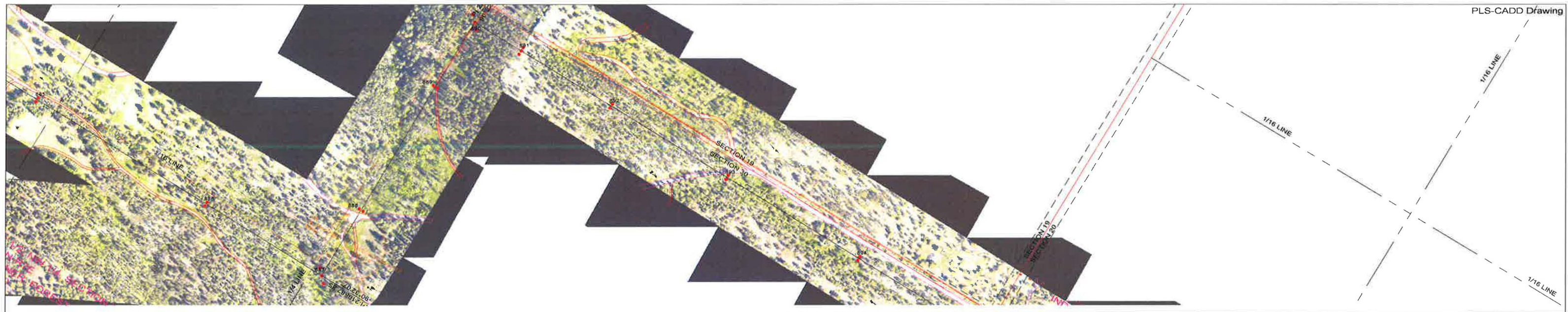
200.0 ft. Horiz. Scale  
 60.0 ft. Vert. Scale

BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
 5/2/2016  
 Page 40/47



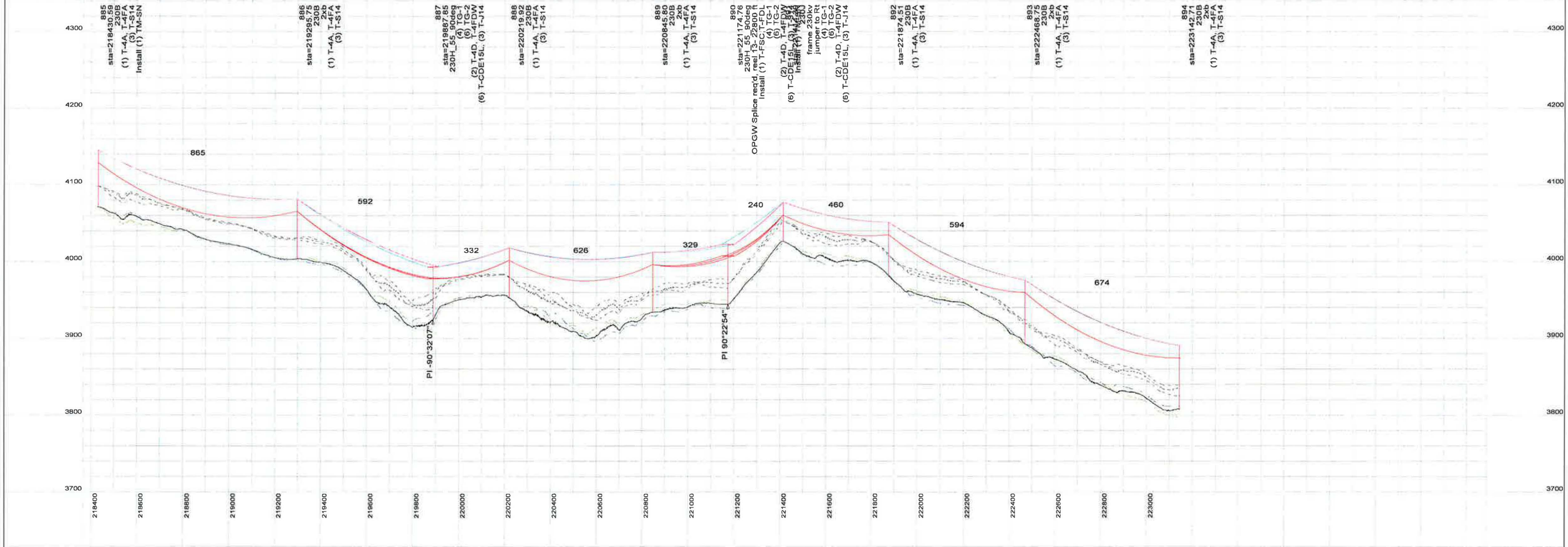
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  5. Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
  6. Install guy strain rods on all 230H and J type structure shield wire guys.
  7. Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
  8. Install fence grounding per BHP requirements.
  9. Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

<p>5/01/16 DZ A MW          DATE DRAWN BY NO APPROVED BY</p>				<p>Issued for Construction          REVISION DESCRIPTION</p>	
<p>BLACK HILLS POWER <b>BHP</b></p>				<p>TECKLA TO LANGE 230 KV TRANSMISSION LINE          STATE LINE TO LANGE LINE SEGMENT          PLAN AND PROFILE</p>	
<p>DRAWN BY DZ          APPROVED BY MW</p>		<p>DATE 12/27/14          DATE 12/27/14</p>		<p>DWG NO. BHP-T-100          SHT. 40 OF 45  <b>A</b></p>	



200.0 ft. Horiz. Scale  
 60.0 ft. Vert. Scale

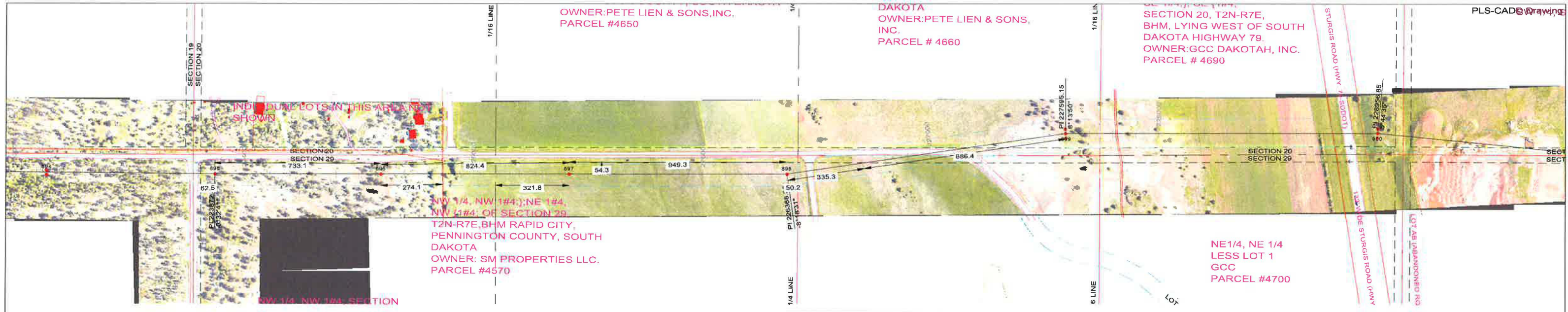
BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
 5/2/2016  
 Page 41/47



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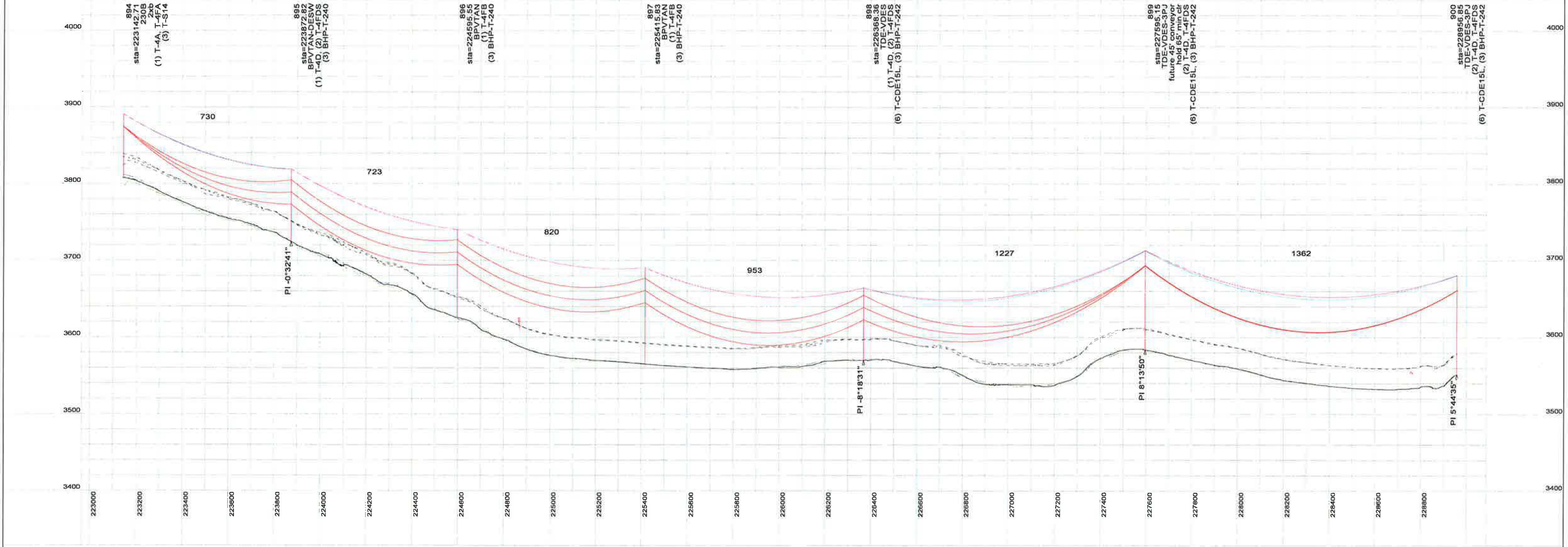
5. Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
6. Install guy strain rods on all 230H and J type structure shield wire guys.
7. Install 24\"/>

<b>BLACK HILLS POWER</b>				SHT. 41 OF 45	
TECKLA TO LANGE 230 KV TRANSMISSION LINE STATE LINE TO LANGE LINE SEGMENT PLAN AND PROFILE					
5/01/16	DZ	A	MW	Issued for Construction	
DATE	DRAWN BY	NO	APPROVED BY	REVISION DESCRIPTION	
	DZ		MW	DATE 12/27/14	DWG NO. BHP-T-100
	MW			DATE 12/27/14	



200.0 ft. Horiz. Scale  
 60.0 ft. Vert. Scale

BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
 5/2/2016  
 Page 42/47



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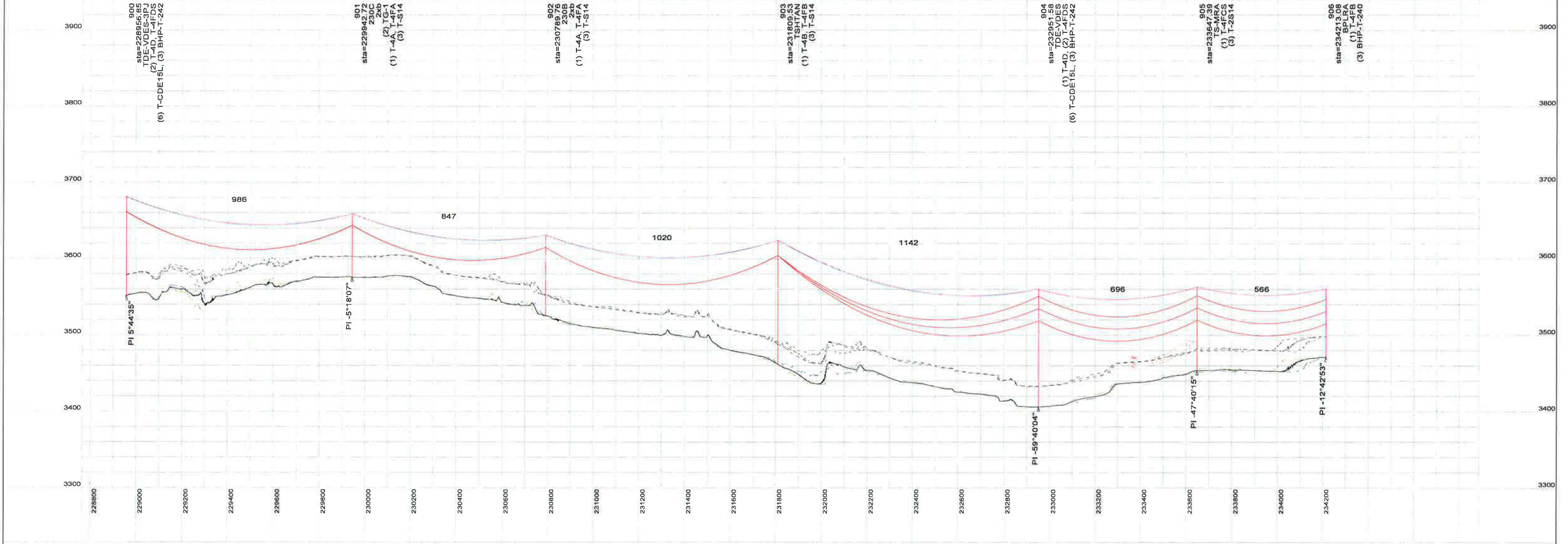
5. Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
6. Install guy strain rods on all 230H and J type structure shield wire guys.
7. Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
8. Install fence grounding per BHP requirements.
9. Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

<p>5/01/16 DZ A MW          DATE DRAWN BY NO. APPROVED BY</p>				<p>Issued for Construction          REVISION DESCRIPTION</p>		<p>BLACK HILLS POWER <b>BHP</b>          TECKLA TO LANGE 230 KV TRANSMISSION LINE          STATE LINE TO LANGE LINE SEGMENT          PLAN AND PROFILE</p>		<p>SHT. 42 OF 45          BHP-T-100 <b>A</b></p>	
<p>DATE</p>		<p>DRAWN BY</p>		<p>NO.</p>		<p>APPROVED BY</p>		<p>DATE 12/27/14          DATE 12/27/14</p>	



200.0 ft. Horiz. Scale  
60.0 ft. Vert. Scale

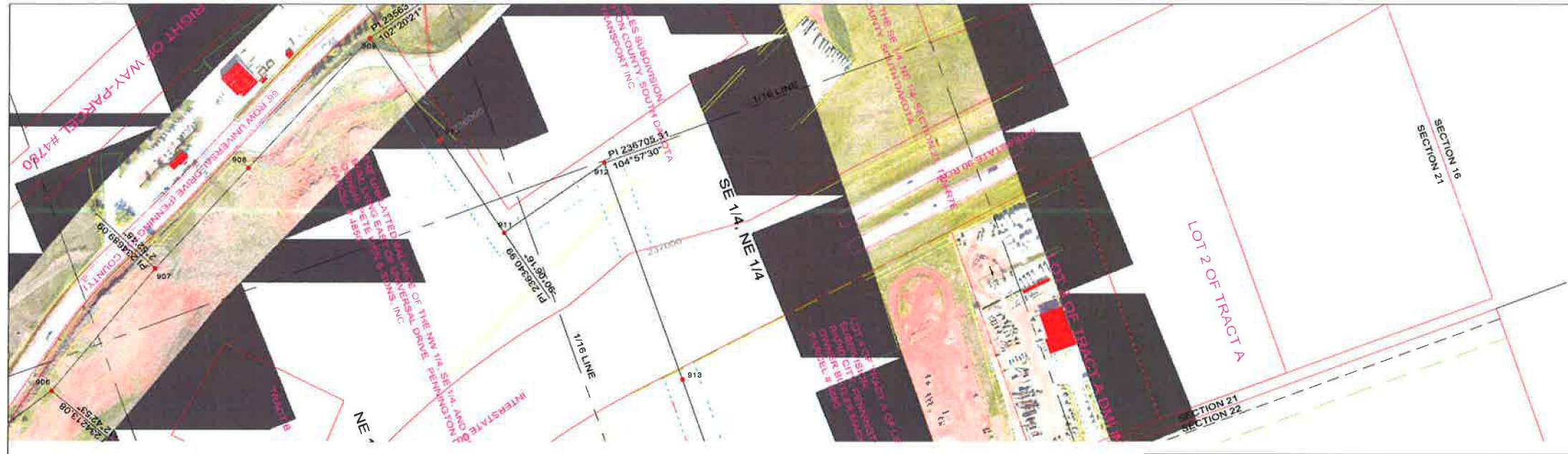
BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
5/2/2016  
Page 43/47



- NOTES:**
- BHP has dictated that all wood poles will be embedded 10% + 2 ft. No geotechnical analysis will be available to determine hole condition or to confirm pole and anchor embedment design except see FMG 1/25/16 report for Hwy 44 and SM to Lange.
  - No geotechnical or other analysis is available to confirm the extent of soft or rock layers that may require special embedments and anchor types, including rock anchors except FMG report listed above.
  - Pull test all TA-P1 and TA-P2 anchors to 20 kips and 40 kips ultimate capacity respectively per BHP specifications and test method. Install alternate disk, helical or rock anchors as required.
  - Refer to BHP construction specifications for line erection and materials. Notify Engineer of any conflicts.
  - Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
  - Install guy strain rods on all 230H and J type structure shield wire guys.
  - Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
  - Install fence grounding per BHP requirements.
  - Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

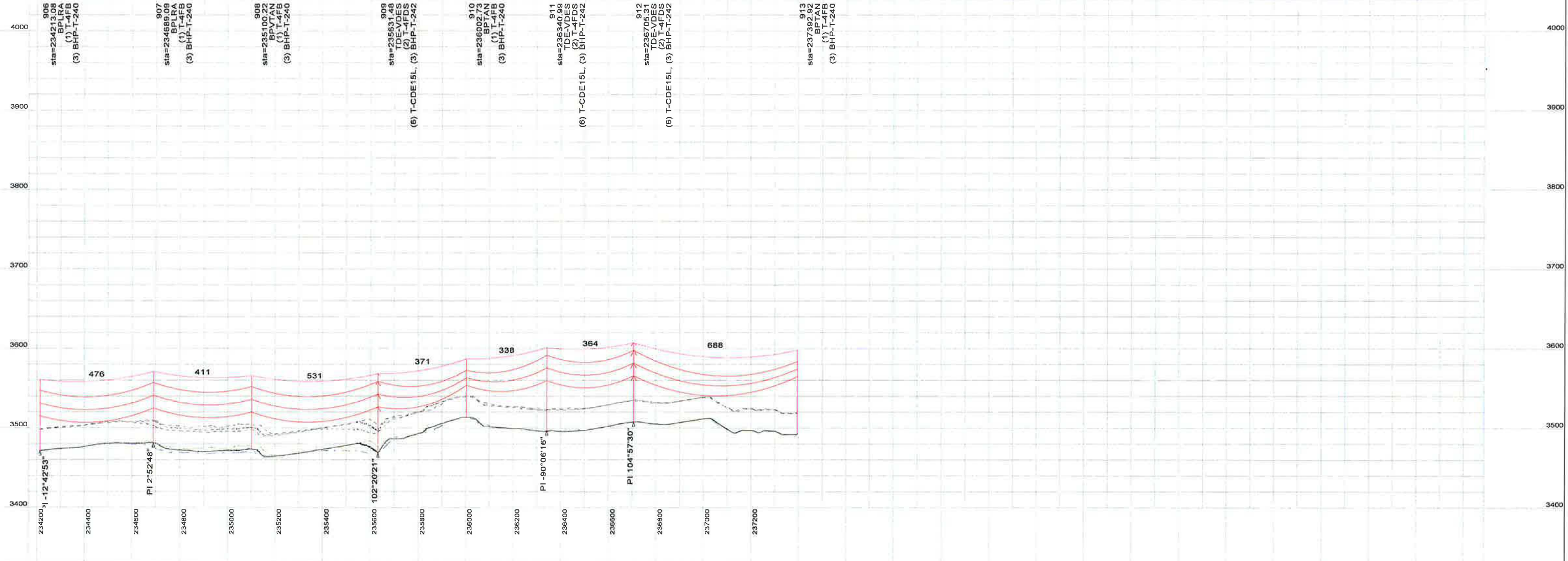
<p><b>BLACK HILLS POWER</b> </p> <p>TECKLA TO LANGE 230 KV TRANSMISSION LINE STATE LINE TO LANGE LINE SEGMENT PLAN AND PROFILE</p>				<p>SHT. 43 OF 45</p>	
<p>5/01/16 DATE</p>	<p>DZ DRAWN BY</p>	<p>A NO.</p>	<p>MW APPROVED BY</p>	<p>Issued for Construction REVISION DESCRIPTION</p>	<p>DATE 12/27/14 DATE 12/27/14</p>
<p>BHP-T-100</p>				<p>A</p>	

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200.0 ft. Horiz. Scale  
60.0 ft. Vert. Scale

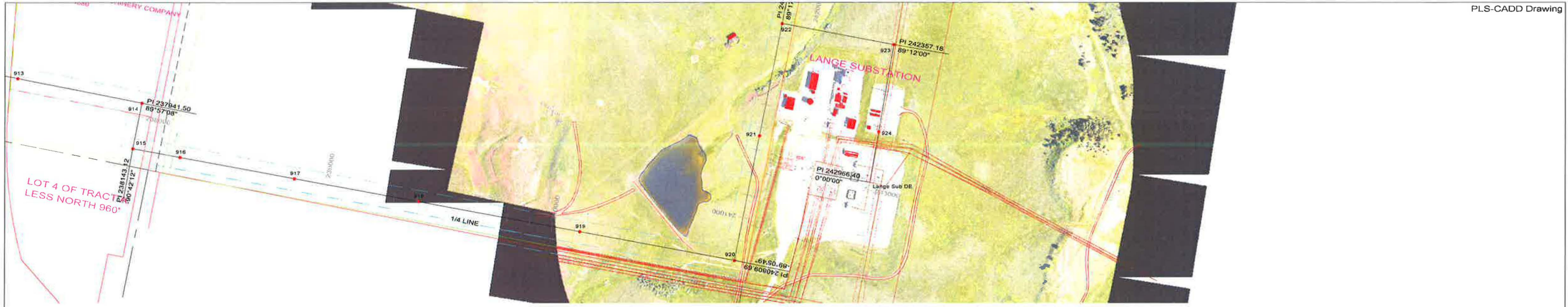
BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
5/2/2016  
Page 44/47



- NOTES:**
1. BHP has dictated that all wood poles will be embedded 10% + 2 ft. No geotechnical analysis will be available to determine hole condition or to confirm pole and anchor embedment design except see FMG 1/29/16 report for Hwy 44 and SM to Lange.
  2. No geotechnical or other analysis is available to confirm the extent of soft or rock layers that may require special embedments and anchor types, including rock anchors except FMG report listed above.
  3. Pull test all TA-P1 and TA-P2 anchors to 20 kips and 40 kips ultimate capacity respectively per BHP specifications and test method. Install alternate disk, helical or rock anchors as required.
  4. Refer to BHP construction specifications for line erection and materials. Notify Engineer of any conflicts.

5. Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
6. Install guy strain rods on all 230H and J type structure shield wire guys.
7. Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
8. Install fence grounding per BHP requirements.
9. Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

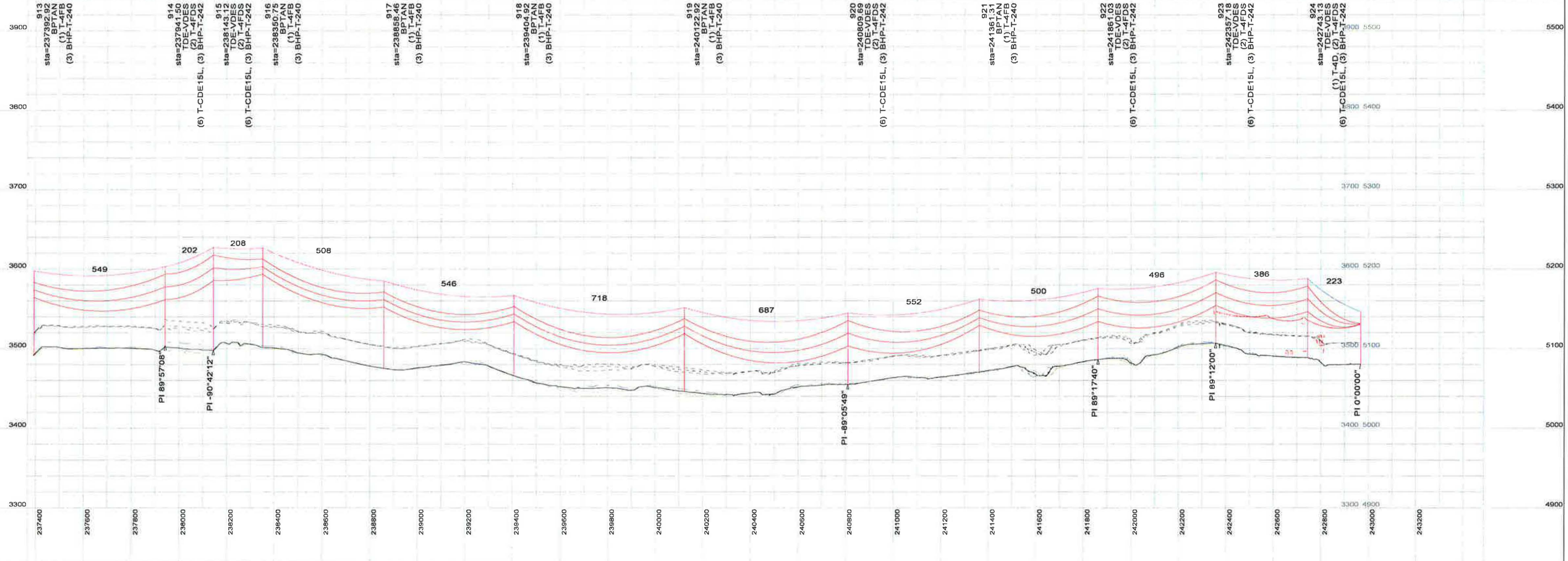
5/01/16		DZ	A	MW	Issued for Construction
DATE	DRAWN BY	NO.	APPROVED BY		REVISION DESCRIPTION
<b>BLACK HILLS POWER</b>					
TECKLA TO LANGE 230 KV TRANSMISSION LINE					
STATE LINE TO LANGE LINE SEGMENT					
PLAN AND PROFILE					
CHAVAN BY	DZ	DATE 12/27/14	DRWG NO.	SHT. 44 OF 45	
APPROVED BY	MW	DATE 12/27/14	<b>BHP-T-100</b>		<b>A</b>



200.0 ft. Horiz. Scale  
 60.0 ft. Vert. Scale

North

BHP\_230KV\_TECKLA\_LANGE\_MERGED\_SDSP  
 5/2/2016  
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- NOTES:**
1. BHP has dictated that all wood poles will be embedded 10% + 2 ft. No geotechnical analysis will be available to determine hole condition or to confirm pole and anchor embedment design except see FMG 1/25/16 report for Hwy 44 and SM to Lange.
  2. No geotechnical or other analysis is available to confirm the extent of soft or rock layers that may require special embedments and anchor types, including rock anchors except FMG report listed above.
  3. Pull test all TA-P1 and TA-P2 anchors to 20 kips and 40 kips ultimate capacity respectively per BHP specifications and test method. Install alternate disk, helical or rock anchors as required.
  4. Refer to BHP construction specifications for line erection and materials. Notify Engineer of any conflicts.

5. Ground all TG-1 and TG-2 guys to wood and steel poles except where specifically insulated with strain rods.
6. Install guy strain rods on all 230H and J type structure shield wire guys.
7. Install 24" clevis links and guy strain rods on all 230H and J type structures with line angles less than 55 degrees.
8. Install fence grounding per BHP requirements.
9. Refer to structure and staking list for line erection information including assembly type, pole class / height, special notes and required anchor rod slopes.

<p><b>BLACK HILLS POWER</b> </p> <p>TECKLA TO LANGE 230 KV TRANSMISSION LINE          STATE LINE TO LANGE LINE SEGMENT          PLAN AND PROFILE</p>				<p>SHT. 45 OF 45</p>	
<p>5/01/16 DATE</p>	<p>DZ DRAWN BY</p>	<p>A NO.</p>	<p>MW APPROVED BY</p>	<p>Issued for Construction REVISION DESCRIPTION</p>	<p>DATE 12/27/14 DATE 12/27/14</p>
<p>BHP-T-100</p>				<p>A</p>	