

Southern California Edison
WODUP A.13-10-020

DATA REQUEST SET A.13-10-020 WODUP ED-SCE-17

To: ENERGY DIVISION
Prepared by: Nicole Di Jerlando
Title: Project Manager
Dated: 10/29/2015

Question ALT-29:

As shown above, SCE's direct testimony (page 25-26) states that "SCE would likely propose to significantly increase the number of temporary structures used during construction."

SCE's comment letter on the Draft EIR/EIS (page 2) states, "The Phased Build Alternative is also legally and economically constrained because the construction methods necessary to construct the Phased Build Alternative will require extended double-, triple- or quadruple-line outages of the existing transmission system that is being modified."

Request: Please provide documentation for these statements that explains the following:

- (a) Describe the process that SCE used to determine that "multiple line outages of up to six months in duration" or "extended double-, triple- or quadruple-line outages" would be required for the Phased Build Alternative. Provide a construction plan that illustrates these conclusions.
- (b) Describe the process that SCE used to determine how many additional temporary structures would be required for the Phased Build Alternative in comparison to those required for the Proposed Project. Provide a construction plan that illustrates these conclusions.

Response to Question ALT-29:

- a) SCE utilized the expertise of its construction team to quickly assess the constraints of the Phased Build Alternative during the 45-day DEIR/DEIS comment period. Under the compressed timeline, the construction team used their best judgement and focused on constrained areas within the ROW that would be most affected by the Phased Build Alternative requirement to leave the existing double circuit structures in place. The attached Conceptual Construction Plan for the Phased Build Alternative - Multiple Line Outage Scenario, identifies the need for an increase number of outage requests for multiple lines at a time over an extended period of time. More specifically, Move 1, Move 3 and Move 6, identify the need for extended double line outages that range from five to 15 months in duration. Move 2, Move 4 and Move 5 identify the need for extended triple line outages that range from four to five months in duration.
- b) SCE utilized the expertise of its construction team to quickly assess the constraints of the Phased Build Alternative during the 45-day DEIR/DEIS comment period. Under the

compressed timeline, the construction team used their best judgement and focus on constrained areas within the ROW that would be most affected the Phased Build Alternative requirement to leave the existing double circuit structures in place. Based on the information identified in the Conceptual Construction Plan for the Phased Build Alternative- Multiple Line Outage Scenario, SCE was able to assess where shoo-fly structures would be needed to mitigate the need for multiple line outages. Therefore, the attached Conceptual Construction Plan for the Phased Build Alternative - Shoo Fly Scenario, identifies the need for an increase number of shoo-fly structures when compared to SCE's Proposed Project as the amount of outages and duration for such outages are increased with the Phased Build Alternative and a way of mitigating those outages are to install shoo-fly structures.

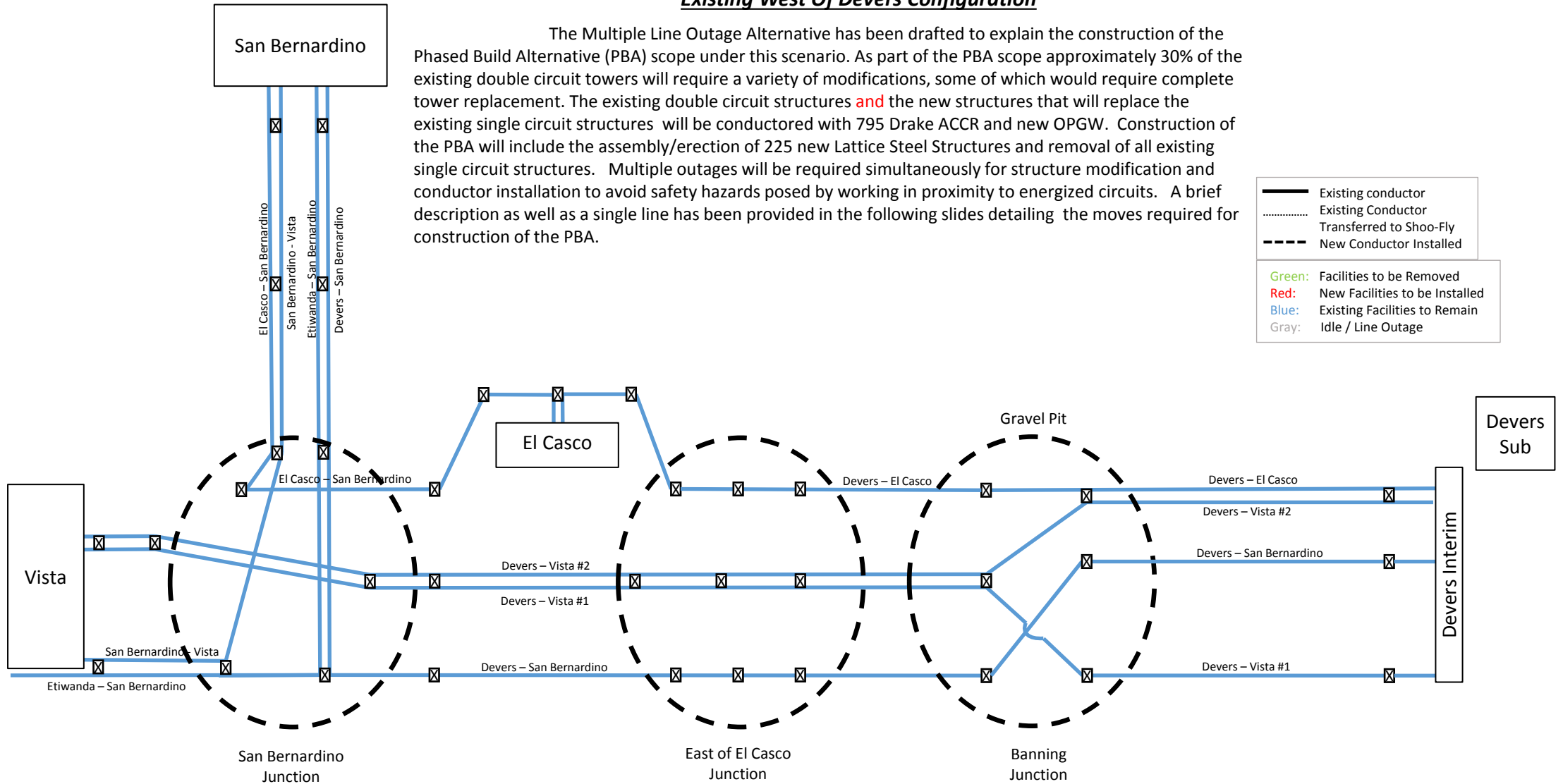
Phased Build Multiple Line Outage Alternative

DRAFT

Existing West Of Devers Configuration

The Multiple Line Outage Alternative has been drafted to explain the construction of the Phased Build Alternative (PBA) scope under this scenario. As part of the PBA scope approximately 30% of the existing double circuit towers will require a variety of modifications, some of which would require complete tower replacement. The existing double circuit structures and the new structures that will replace the existing single circuit structures will be conductored with 795 Drake ACCR and new OPGW. Construction of the PBA will include the assembly/erection of 225 new Lattice Steel Structures and removal of all existing single circuit structures. Multiple outages will be required simultaneously for structure modification and conductor installation to avoid safety hazards posed by working in proximity to energized circuits. A brief description as well as a single line has been provided in the following slides detailing the moves required for construction of the PBA.

- | | |
|--|--------------------------------|
| | Existing conductor |
| | Existing Conductor |
| | Transferred to Shoo-Fly |
| | New Conductor Installed |
| | Facilities to be Removed |
| | New Facilities to be Installed |
| | Existing Facilities to Remain |
| | Idle / Line Outage |



Multiple Line Outage Alternative

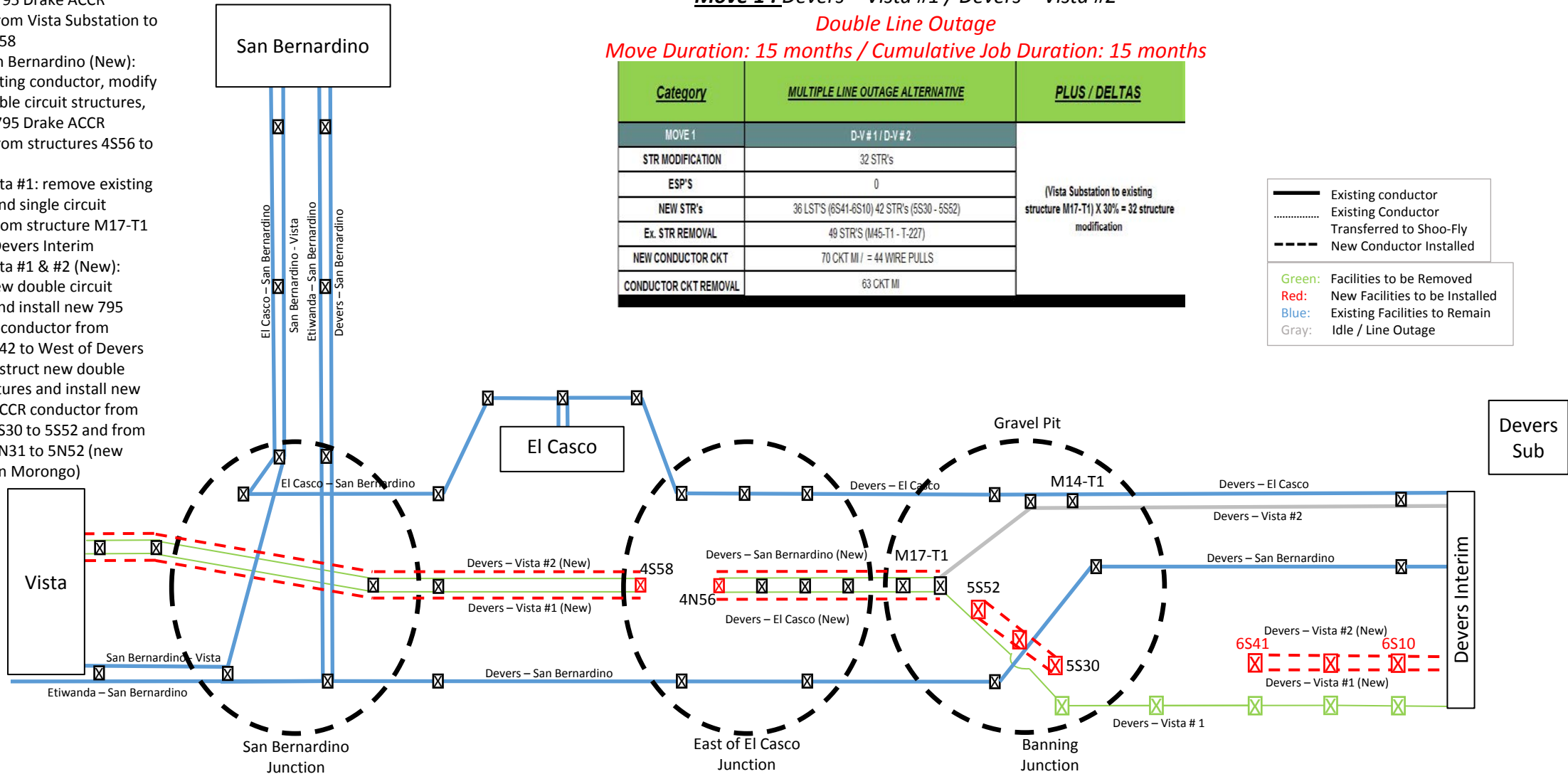
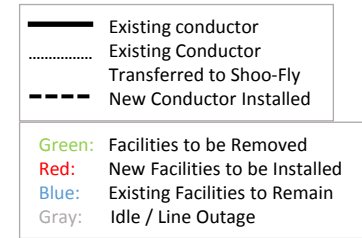
DRAFT

Move 1 : Devers – Vista #1 / Devers – Vista #2

Double Line Outage

Move Duration: 15 months / Cumulative Job Duration: 15 months

Category	MULTIPLE LINE OUTAGE ALTERNATIVE	PLUS / DELTAS
MOVE 1	D-V#1 / D-V#2	
STR MODIFICATION	32 STR's	(Vista Substation to existing structure M17-T1) X 30% = 32 structure modification
ESP'S	0	
NEW STR'S	36 LST'S (6S41-6S10) 42 STR'S (5S30 - 5S52)	
Ex. STR REMOVAL	49 STR'S (M45-T1 - T-227)	
NEW CONDUCTOR CKT	70 CKT MI / = 44 WIRE PULLS	
CONDUCTOR CKT REMOVAL	63 CKT MI	



Move 1 will require a double line outage on Devers- Vista No. 1 & 2 circuits allowing for the modification of existing towers, re-conductoring and OPGW installation between Vista Substation and existing structure M17-T1 (first double circuit structure with both Vista circuits on it). By taking a double line outage to perform this work would limit the need for Shoo-Fly structures in this move. Foreseeable challenges with Move 1 will be guarding the San Bernardino – Vista, Etiwanda – San Bernardino and Devers – San Bernardino circuits at San Bernardino Junction. Following the completion of Move 1, the Devers – Vista #1 & #2 circuits will still be incomplete at the east of El Casco Junction (towers East of the Junction where 4N56 to M17-T1 will be the future structures for the Devers – San Bernardino and Devers – El Casco circuits). The double line outage of Devers-Vista #1 & #2 will extend through Move 2.

Multiple Line Outage Alternative

DRAFT

Move 2 : Devers – San Bernardino / Devers – Vista #1 / Devers – Vista #2

Triple Line Outage

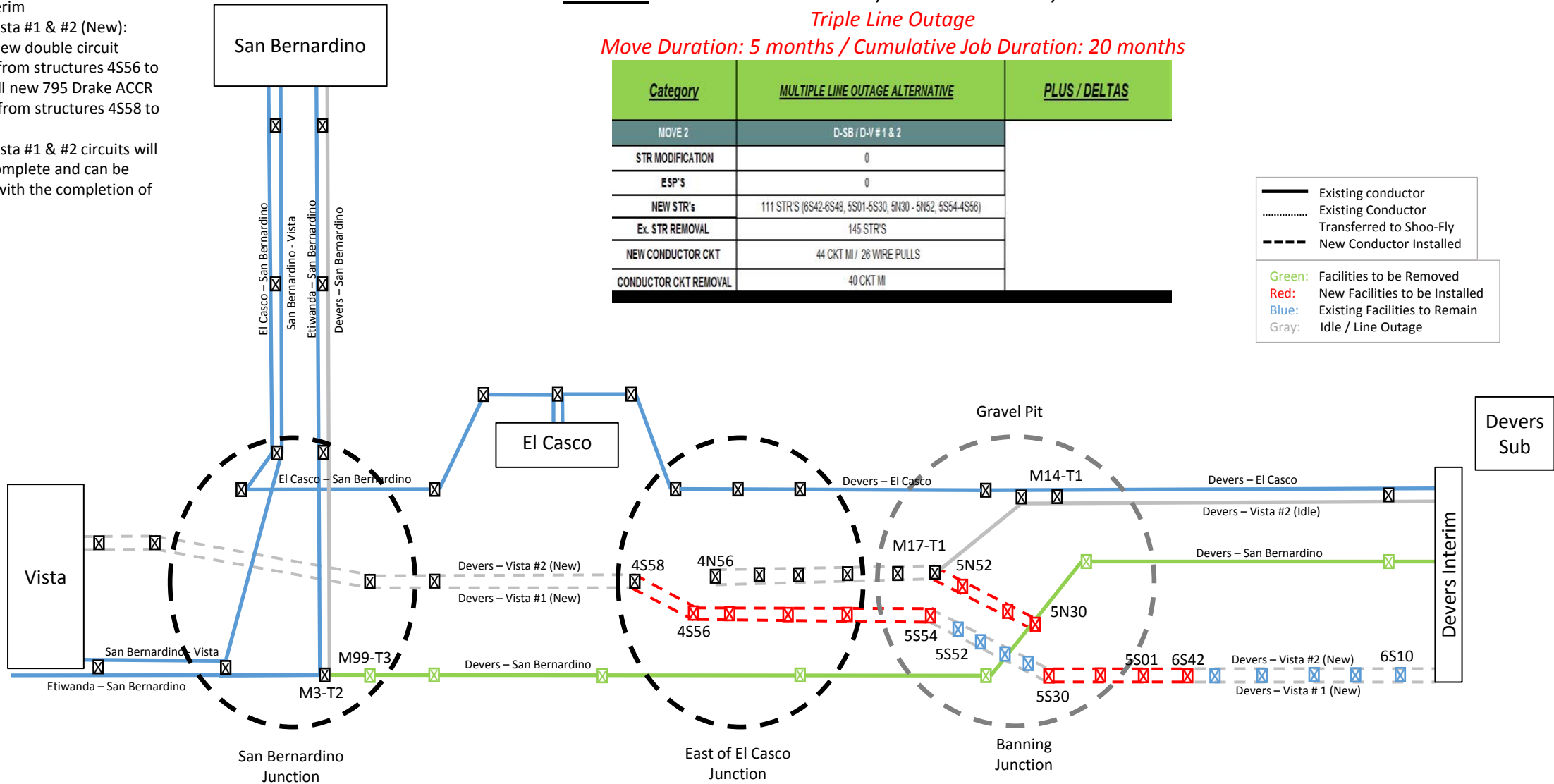
Move Duration: 5 months / Cumulative Job Duration: 20 months

Category	MULTIPLE LINE OUTAGE ALTERNATIVE	PLUS / DELTAS
MOVE 2	D-SB / D-V #1 & 2	
STR MODIFICATION	0	
ESP'S	0	
NEW STR'S	111 STR'S (6S42-6S48, 5S01-5S30, 5N30 - 5N52, 5S54-4S56)	
Ex. STR REMOVAL	145 STR'S	
NEW CONDUCTOR CKT	44 CKT MI / 26 WIRE PULLS	
CONDUCTOR CKT REMOVAL	40 CKT MI	

- Devers – San Bernardino: remove existing conductor and remove structures from M99-T3 to West of Devers Interim
- Devers – Vista #1 & #2 (New): construct new double circuit structures from structures 4S56 to 6S43, install new 795 Drake ACCR conductor from structures 4S58 to 6S42
- Devers – Vista #1 & #2 circuits will be 100% complete and can be energized with the completion of Move 2.

— Existing conductor
- - - - - Existing Conductor
- - - - - Transferred to Shoo-Fly
- - - - - New Conductor Installed

■ Facilities to be Removed
■ New Facilities to be Installed
■ Existing Facilities to Remain
■ Idle / Line Outage



Move 2 will require an outage on the Devers – San Bernardino circuit in addition to the previous Move 1 double line outage resulting in a triple line outage. By removing the Devers – San Bernardino circuit, the south towers (of Devers-Vista #1 & #2 (New)) can be constructed within Segments 4 and 5 as those towers were unable to be completed in the previous move due to their conflict with the Devers-San Bernardino circuit. The newly constructed south towers will provide a path for the Devers – Vista #1 & #2 circuits to be re-energized and returned to service. Also with the Devers- San Bernardino single circuit towers being removed from the Morongo reservation to Devers Interim, the new structures will be able to be constructed and strung here during Move 3. The outage on the Devers –San Bernardino circuit will remain through Move 3.

Multiple Line Outage Alternative

DRAFT

Move 3 : Devers – El Casco / Devers – San Bernardino

Double Line Outage

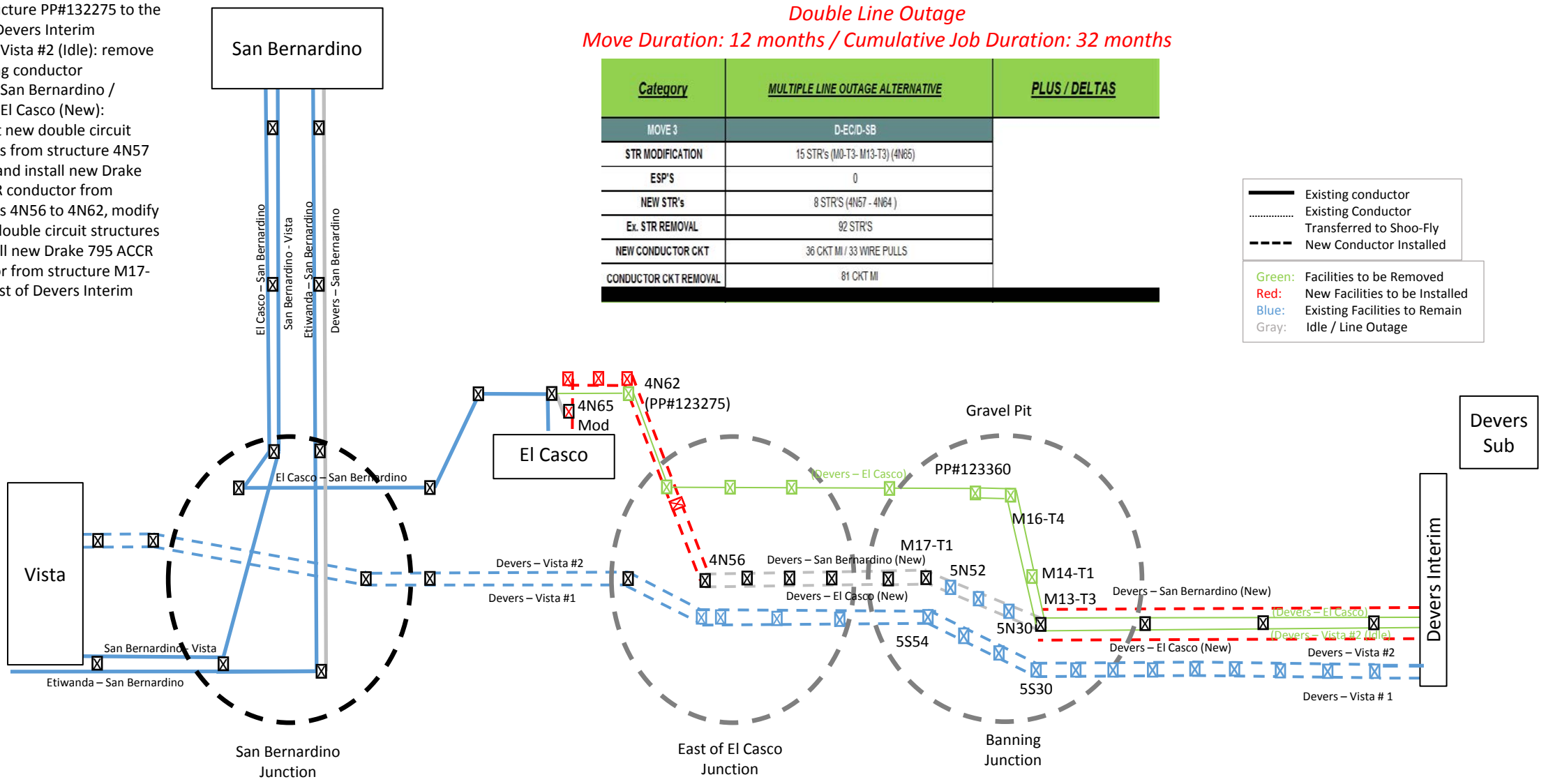
Move Duration: 12 months / Cumulative Job Duration: 32 months

- Devers – El Casco: remove all existing conductor and all existing single circuit structures from structure PP#132275 to the West of Devers Interim
- Devers – Vista #2 (Idle): remove all existing conductor
- Devers – San Bernardino / Devers – El Casco (New): construct new double circuit structures from structure 4N57 to 4N62 and install new Drake 795 ACCR conductor from structures 4N56 to 4N62, modify existing double circuit structures and install new Drake 795 ACCR conductor from structure M17-T1 to West of Devers Interim

Category	MULTIPLE LINE OUTAGE ALTERNATIVE	PLUS / DELTAS
MOVE 3	D-EC/D-SB	
STR MODIFICATION	15 STR'S (M0-T3- M13-T3) (4N65)	
ESP'S	0	
NEW STR'S	8 STR'S (4N57 - 4N64)	
Ex. STR REMOVAL	92 STR'S	
NEW CONDUCTOR CKT	36 CKT MI / 33 WIRE PULLS	
CONDUCTOR CKT REMOVAL	81 CKT MI	

— Existing conductor
- - - - - Existing Conductor
- - - - - Transferred to Shoo-Fly
- - - - - New Conductor Installed

■ Facilities to be Removed
■ New Facilities to be Installed
■ Existing Facilities to Remain
■ Idle / Line Outage



Move 3 will continue the outage from Move 2 on the Devers- San Bernardino circuit and will require an additional outage on the Devers- El Casco circuit resulting in a double line outage. Having both circuits out on the existing structures between structures M16-T4 and the West of Devers Interim will allow existing conductor removal of the Devers- El Casco circuit, new structure installation from 4N62 to 4N57, structure modification for 4N65 and the installation of the new 795 Drake ACCR conductor and OPGW. Conductor for the Devers- San Bernardino circuit will not be strung from new structures 4N64 to 4N62 due to the hazards of wire stringing on a structure with a hot circuit. Installation of the Drake 795 ACCR conductor on new structures 4N64 to 4N62 would occur with the next outage during Move 4.

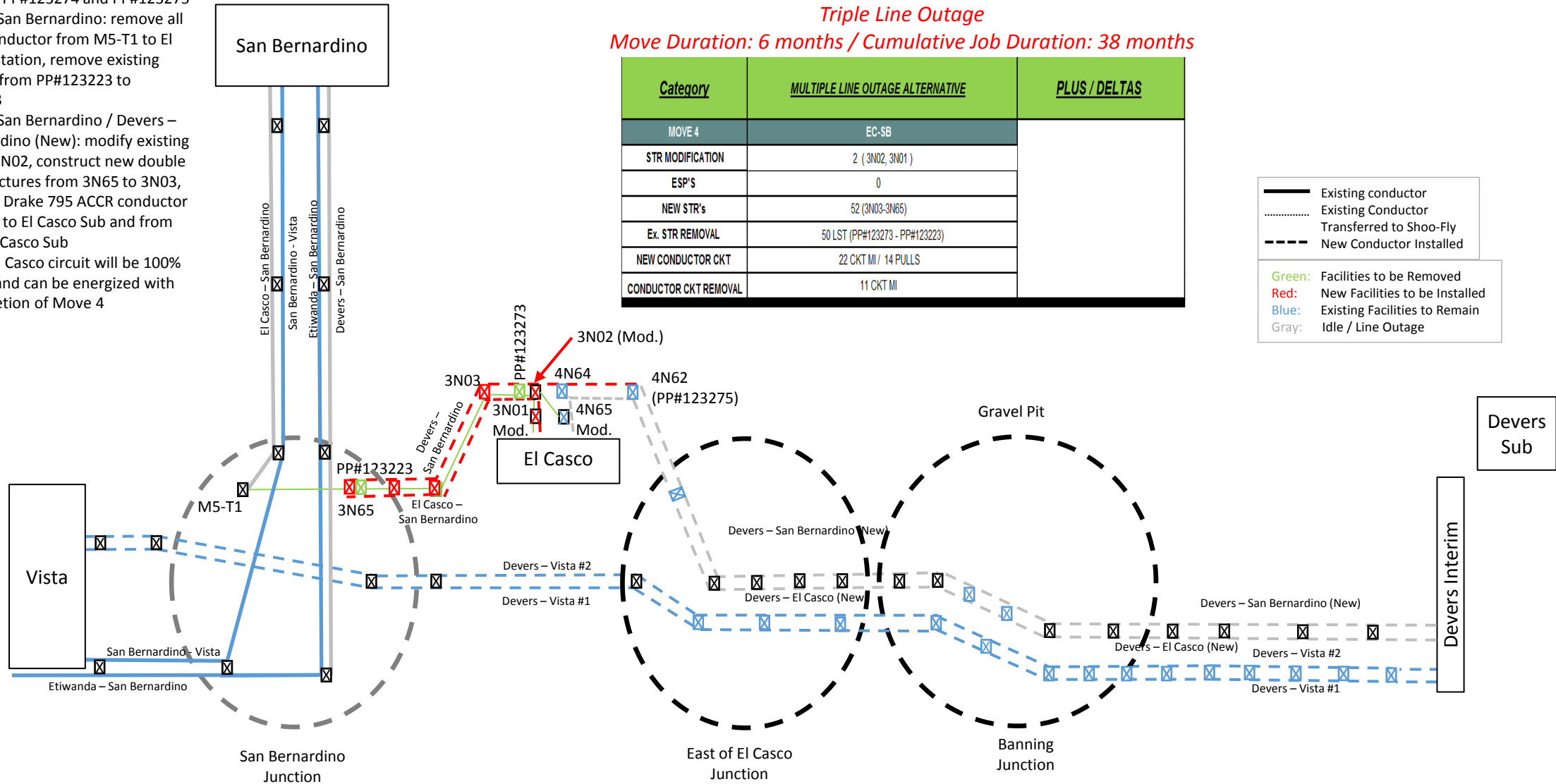
Multiple Line Outage Alternative

DRAFT

Move 4 : El Casco – San Bernardino / Devers – San Bernardino / Devers - El Casco
Triple Line Outage

Move Duration: 6 months / Cumulative Job Duration: 38 months

- Devers – El Casco: remove existing conductor from El Casco Substation to structure PP#123275, remove existing structures PP#123274 and PP#123275
- El Casco – San Bernardino: remove all existing conductor from M5-T1 to El Casco Substation, remove existing structures from PP#123223 to PP#123273
- El Casco – San Bernardino / Devers – San Bernardino (New): modify existing structure 3N02, construct new double circuit structures from 3N65 to 3N03, install new Drake 795 ACCR conductor from 3N65 to El Casco Sub and from 4N62 to El Casco Sub
- Devers – El Casco circuit will be 100% complete and can be energized with the completion of Move 4



Category	MULTIPLE LINE OUTAGE ALTERNATIVE	PLUS / DELTAS
MOVE 4	EC-SB	
STR MODIFICATION	2 (3N02, 3N01)	
ESP'S	0	
NEW STR'S	52 (3N03-3N65)	
Ex. STR REMOVAL	50 LST (PP#123273 - PP#123223)	
NEW CONDUCTOR CKT	22 CKT MI / 14 PULLS	
CONDUCTOR CKT REMOVAL	11 CKT MI	

Move 4 will require an outage on the El Casco – San Bernardino circuit, in addition to the previous Move 3 double line outage resulting in a triple line outage. Having each of the El Casco circuits out will support the wire stringing of the span between 4N62 and 3N02 however these outages will also put El Casco Substation completely out of 220kV service. Following the removal of the El Casco - San Bernardino single circuit structures, the new north double circuit tower alignment will be able to be constructed and new Drake 795 ACCR conductor will be installed. The Devers - San Bernardino circuit remains out of service during this move since the circuit could not be re-connected until the new 3N65 structure was constructed in this sequence. The Devers- San Bernardino circuit and the El Casco – San Bernardino circuit will remain out of service through Move 5. The Devers – El Casco circuit will be complete following this move and returned to service.

- El Casco – San Bernardino: remove all existing conductor and ground wire from M5-T1 to San Bernardino Substation
- El Casco – San Bernardino (New): install new Drake 795 ACCR conductor and OPGW from 3N65 to San Bernardino Substation
- El Casco – San Bernardino circuit will be 100% complete and can be energized with completion of Move 5

Multiple Line Outage Alternative

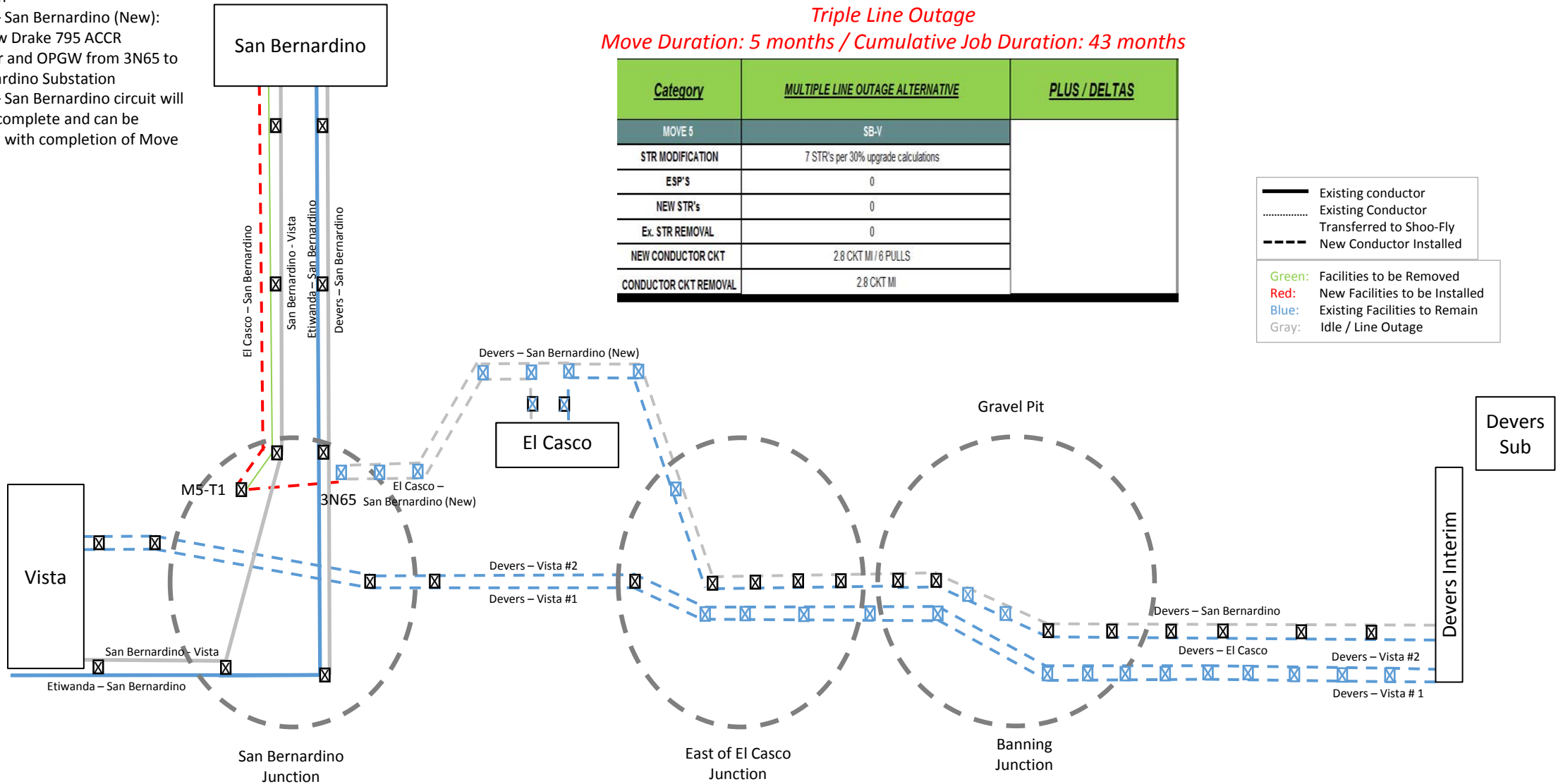
DRAFT

Move 5 : El Casco – San Bernardino / Devers – San Bernardino / San Bernardino – Vista
Triple Line Outage

Move Duration: 5 months / Cumulative Job Duration: 43 months

Category	MULTIPLE LINE OUTAGE ALTERNATIVE	PLUS / DELTAS
MOVE 5	SB-V	
STR MODIFICATION	7 STR's per 30% upgrade calculations	
ESP'S	0	
NEW STR'S	0	
Ex. STR REMOVAL	0	
NEW CONDUCTOR CKT	2.8 CKT MI / 6 PULLS	
CONDUCTOR CKT REMOVAL	2.8 CKT MI	

— Existing conductor
- - - - - Existing Conductor
- - - - - Transferred to Shoo-Fly
- - - - - New Conductor Installed
■ Facilities to be Removed
■ New Facilities to be Installed
■ Existing Facilities to Remain
■ Idle / Line Outage



Move 5 continues outage from Move 4 on the Devers - San Bernardino circuit (still needed due to final connection not complete from 3N65 to existing structure M2-T5). The El Casco - San Bernardino circuit will also remain out and the San Bernardino - Vista circuit will be also be de-energized to support the re-conductor activities in Segment 1 of the El Casco- San Bernardino circuit. Upon completion of this Move, the El Casco- San Bernardino circuit will be 100% complete and the San Bernardino- Vista and the El Casco- San Bernardino circuits will be returned to service. The Devers – San Bernardino circuit will remain out of service through Move 6.

- Devers – San Bernardino: remove all existing conductor and ground wire from structure M3-T2 to San Bernardino Substation
- Devers – San Bernardino (New): install new conductor and OPGW from structure 3N65 to San Bernardino Substation
- Devers – San Bernardino circuit will be 100% complete and can be energized with the completion of Move 6

Multiple Line Outage Alternative

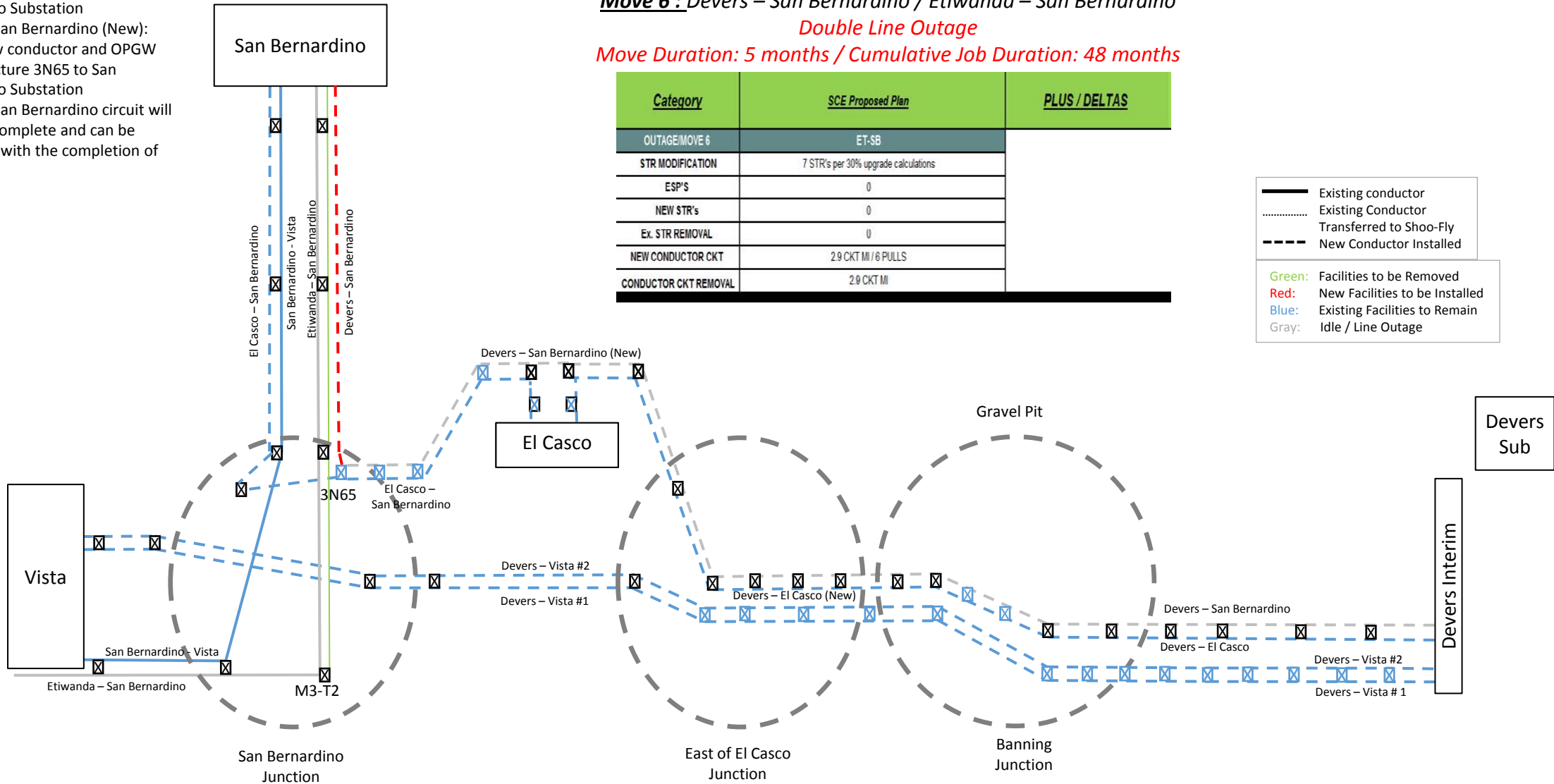
DRAFT

**Move 6 : Devers – San Bernardino / Etiwanda – San Bernardino
Double Line Outage**

Move Duration: 5 months / Cumulative Job Duration: 48 months

Category	SCE Proposed Plan	PLUS / DELTAS
OUTAGE/MOVE 6	ET-SB	
STR MODIFICATION	7 STR's per 30% upgrade calculations	
ESP'S	0	
NEW STR'S	0	
Ex. STR REMOVAL	0	
NEW CONDUCTOR CKT	2.9 CKT MI / 6 PULLS	
CONDUCTOR CKT REMOVAL	2.9 CKT MI	

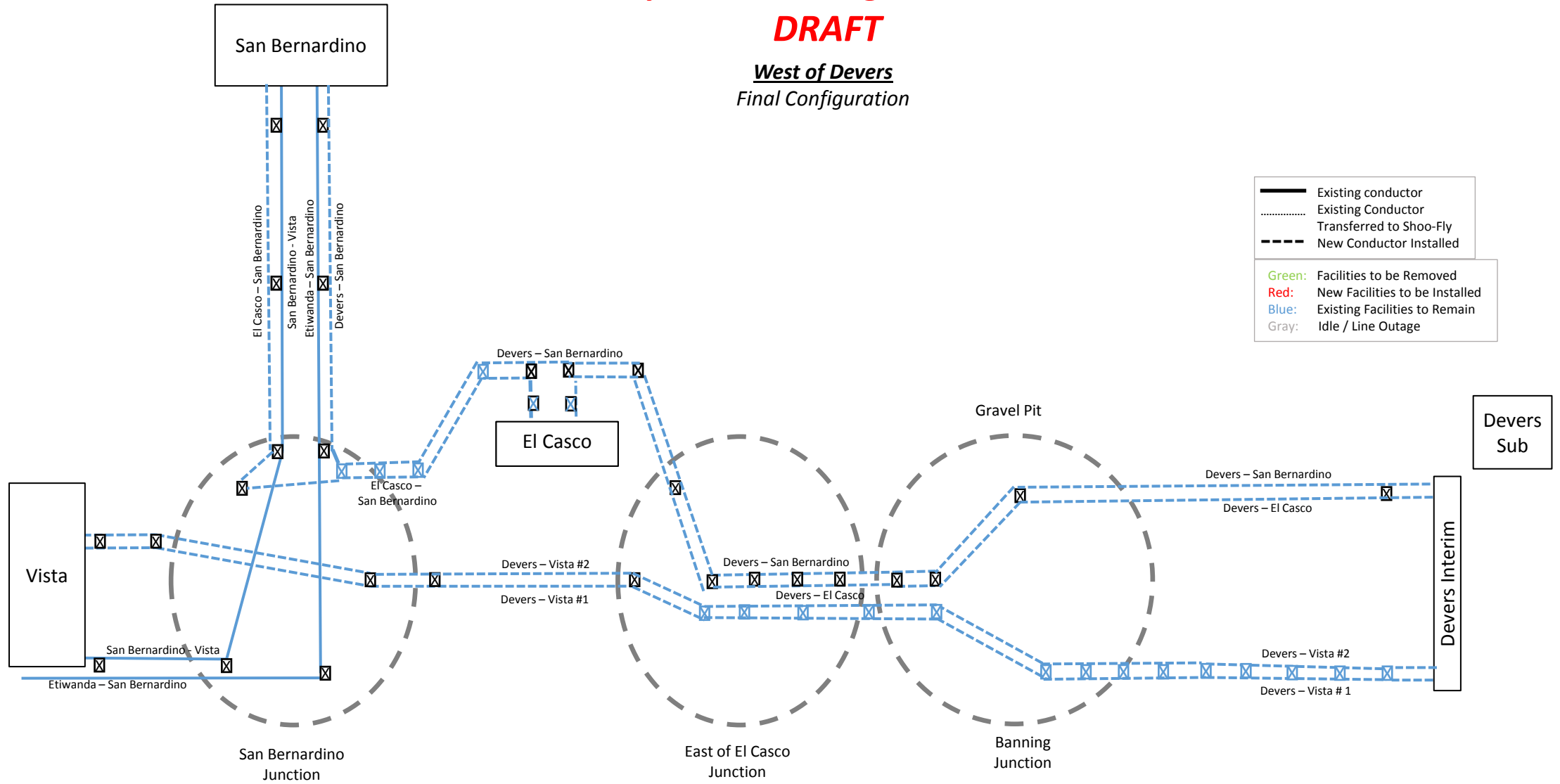
— Existing conductor
⋯ Existing Conductor
- - - Transferred to Shoo-Fly
- - - New Conductor Installed
■ Facilities to be Removed
■ New Facilities to be Installed
■ Existing Facilities to Remain
■ Idle / Line Outage



Move 6 continues the Devers-San Bernardino outage and adds the Etiwanda-San Bernardino outage making it a double line outage. The double line outage allows re-conductor work to be done safely on Devers-San Bernardino circuit in the congested Segment 1 corridor. Work will consist of existing conductor removal from San Bernardino Substation to M3-T2. New 795 drake conductor and OPGW will also be strung in Segment 1 completing Devers-San Bernardino circuit. Upon completion of conductor installation both circuits will be re-energized and all WOD circuits will be in their final configuration.

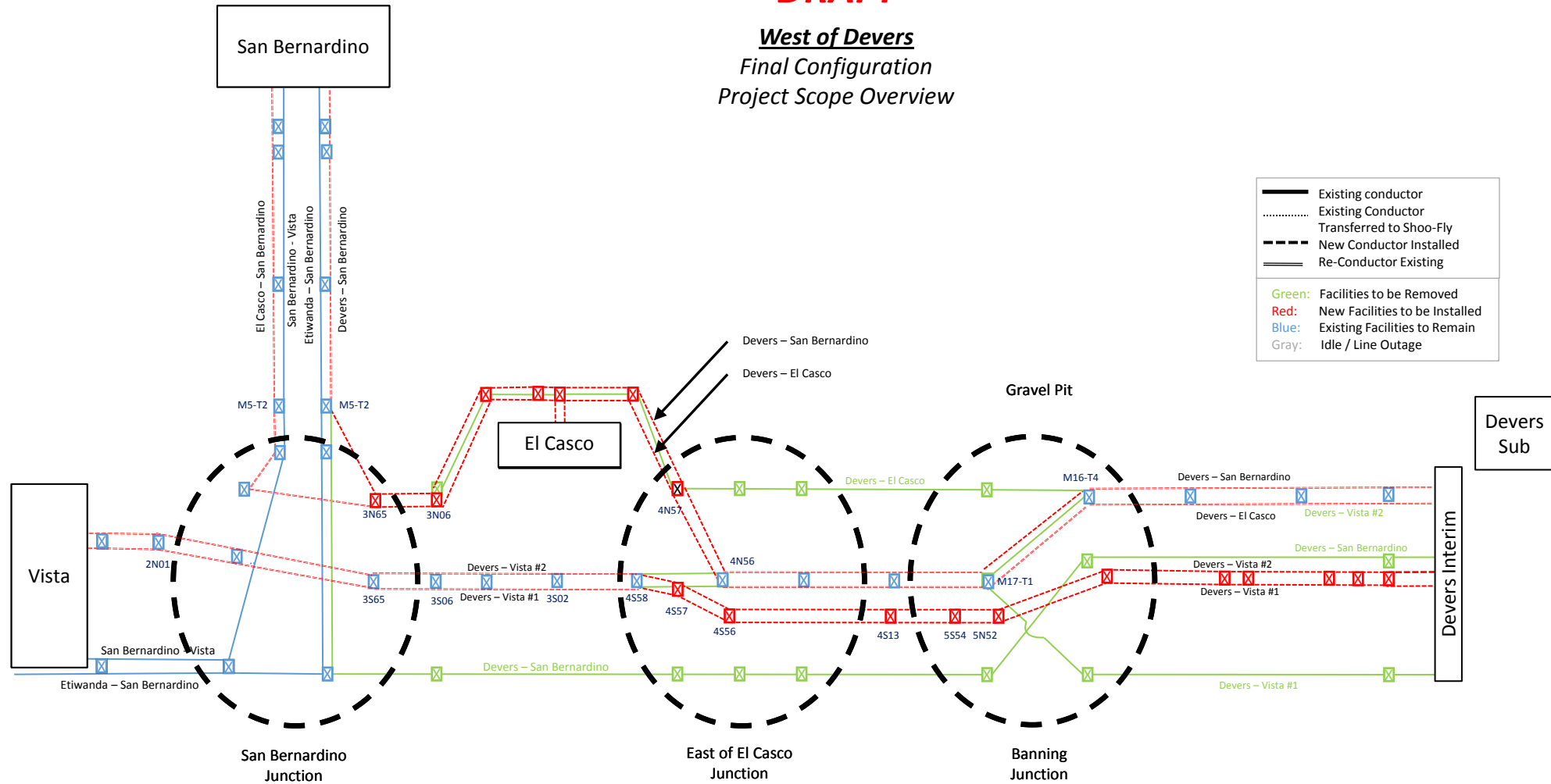
Multiple Line Outage Alternative DRAFT

West of Devers
Final Configuration



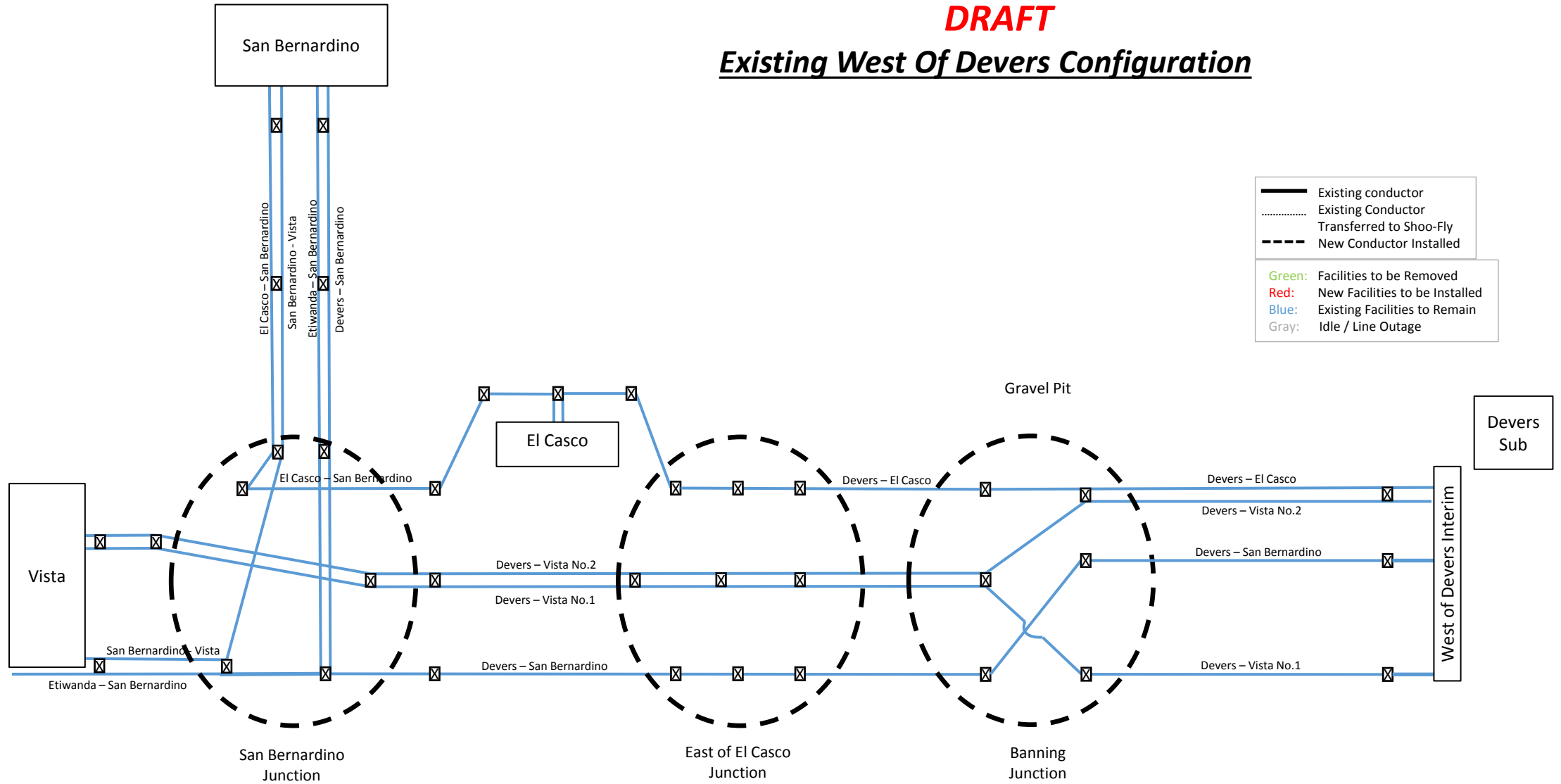
Multiple Line Outage Alternative DRAFT

West of Devers
Final Configuration
Project Scope Overview



Phased Build Shoo-Fly Alternative Plan DRAFT

Existing West Of Devers Configuration



Assumption:

Using North Structure

- 3 Emergency Steel Pole's (ESP's) also known as shoo-fly's will be required for re-connection of the Devers - San Bernardino circuit from new structure 4S56 to existing structure M88-T2
- Structures from 6N10 to 6N41 need to be moved North from the currently proposed engineered location to avoid conflict with Devers Vista #1 circuit
- Structures 6S42 to 4S56 would be constructed as part of Move 1
- Devers - San Bernardino circuit will be energized on the south position of the new structures

Shoo-Fly Alternative Plan

DRAFT

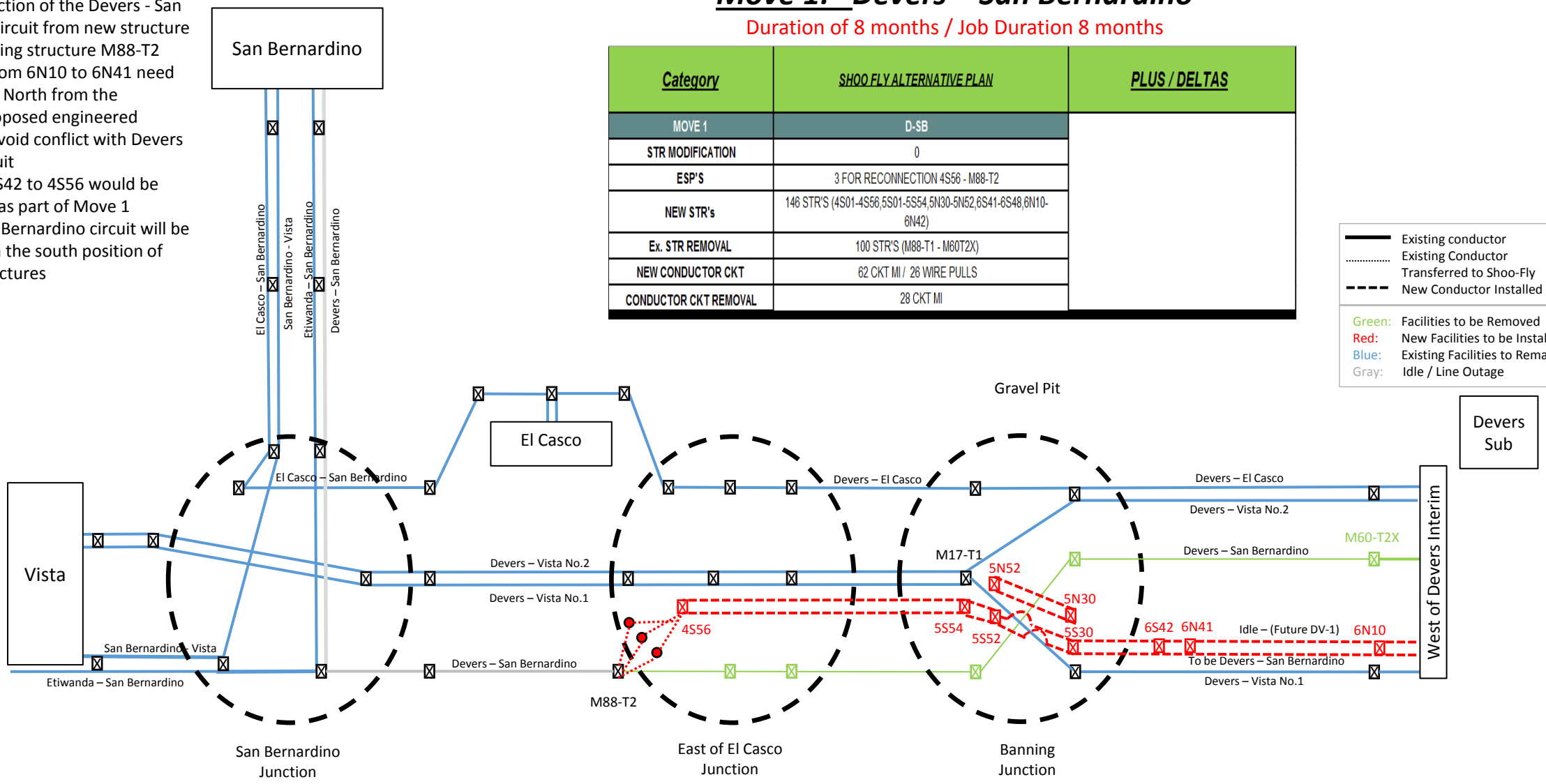
Move 1: Devers – San Bernardino

Duration of 8 months / Job Duration 8 months

Category	SHOO FLY ALTERNATIVE PLAN	PLUS / DELTAS
MOVE 1	D-SB	
STR MODIFICATION	0	
ESP'S	3 FOR RECONNECTION 4S56 - M88-T2	
NEW STR'S	146 STR'S (4S01-4S56, 5S01-5S54, 5N30-5N52, 6S41-6S48, 6N10-6N42)	
Ex. STR REMOVAL	100 STR'S (M88-T1 - M60T2X)	
NEW CONDUCTOR CKT	62 CKT MI / 26 WIRE PULLS	
CONDUCTOR CKT REMOVAL	28 CKT MI	

— Existing conductor
- - - - - Existing Conductor
- - - - - Transferred to Shoo-Fly
- - - - - New Conductor Installed

■ Facilities to be Removed
■ New Facilities to be Installed
■ Existing Facilities to Remain
■ Idle / Line Outage



Move 1 will require taking an outage on the Devers-San Bernardino circuit, allowing for the removal of conductor, overhead ground wire and structures from Segment 4 to the West of Devers Interim (WOD Interim). Removing this portion of the circuit will provide room for the construction of new double-circuit structures from 4S56 to the WOD Interim. This new alignment will ultimately be occupied by the Devers-Vista #1 and #2 circuits in the final configuration (see page 19). However, at the end of Move 1, the south position of these structures will serve as a shoo-fly for the Devers-San Bernardino circuit. Three ESP's will be required to bridle the phases from the new horizontal positions to the existing vertical positions on M88-T2.

Shoo-Fly Alternative Plan

DRAFT

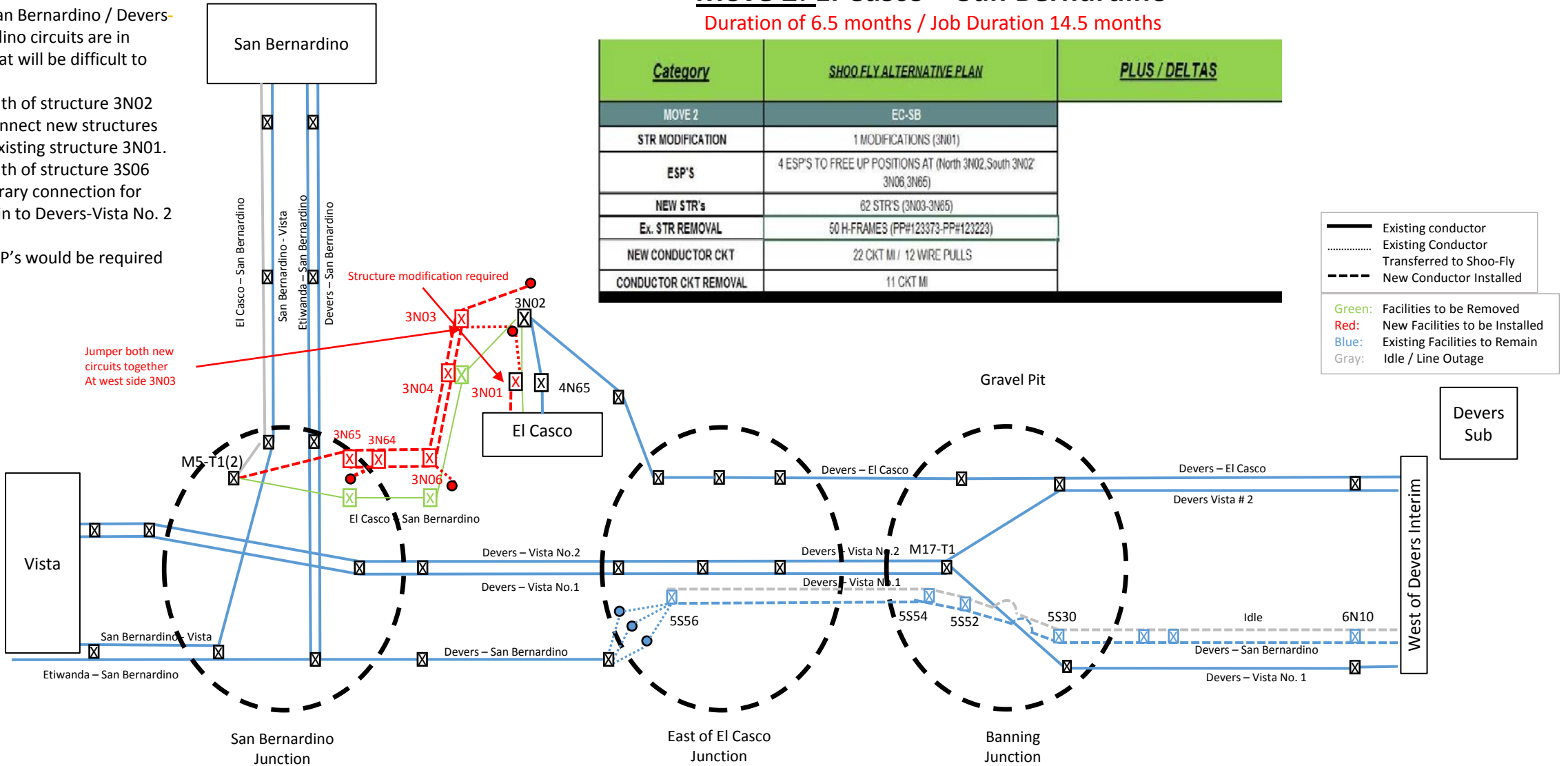
Move 2: El Casco – San Bernardino

Duration of 6.5 months / Job Duration 14.5 months

Assumption:

- Move 2 would connect the El Casco-San Bernardino circuit to the new north position on structure 3N65
- Etiwanda-San Bernardino / Devers-San Bernardino circuits are in locations that will be difficult to guard.
- The ESP south of structure 3N02 would re connect new structures 3N03 and existing structure 3N01.
- The ESP south of structure 3S06 with temporary connection for Move 3 tie-in to Devers-Vista No. 2 shoo-fly.
- In total 4 ESP's would be required

Category	SHOO.FLY ALTERNATIVE PLAN	PLUS / DELTAS
MOVE 2	EC-SB	
STR MODIFICATION	1 MODIFICATIONS (3N01)	
ESP'S	4 ESP'S TO FREE UP POSITIONS AT (North 3N02, South 3N02, 3N06, 3N65)	
NEW STR's	62 STR'S (3N03-3N65)	
Ex. STR REMOVAL	50 H-FRAMES (PP#123373-PP#123223)	
NEW CONDUCTOR CKT	22 CKT MI / 12 WIRE PULLS	
CONDUCTOR CKT REMOVAL	11 CKT MI	



The outage on the El Casco - San Bernardino circuit will allow for the removal of existing single-circuit structures, and the construction of new double-circuit structures from the San Bernardino Junction to El Casco Substation. The new structures will be occupied by the Devers - San Bernardino and El Casco - San Bernardino circuits in the final configuration. In future moves, the south positions of structures 3N06 to 3N64 will serve as a shoo-fly for the Devers-Vista # 2 circuit. Two ESP's will be installed adjacent to existing structure 3N02 so that conductor can be removed and modifications can be made to 3N01 in later moves.

Shoo-Fly Alternative Plan

DRAFT

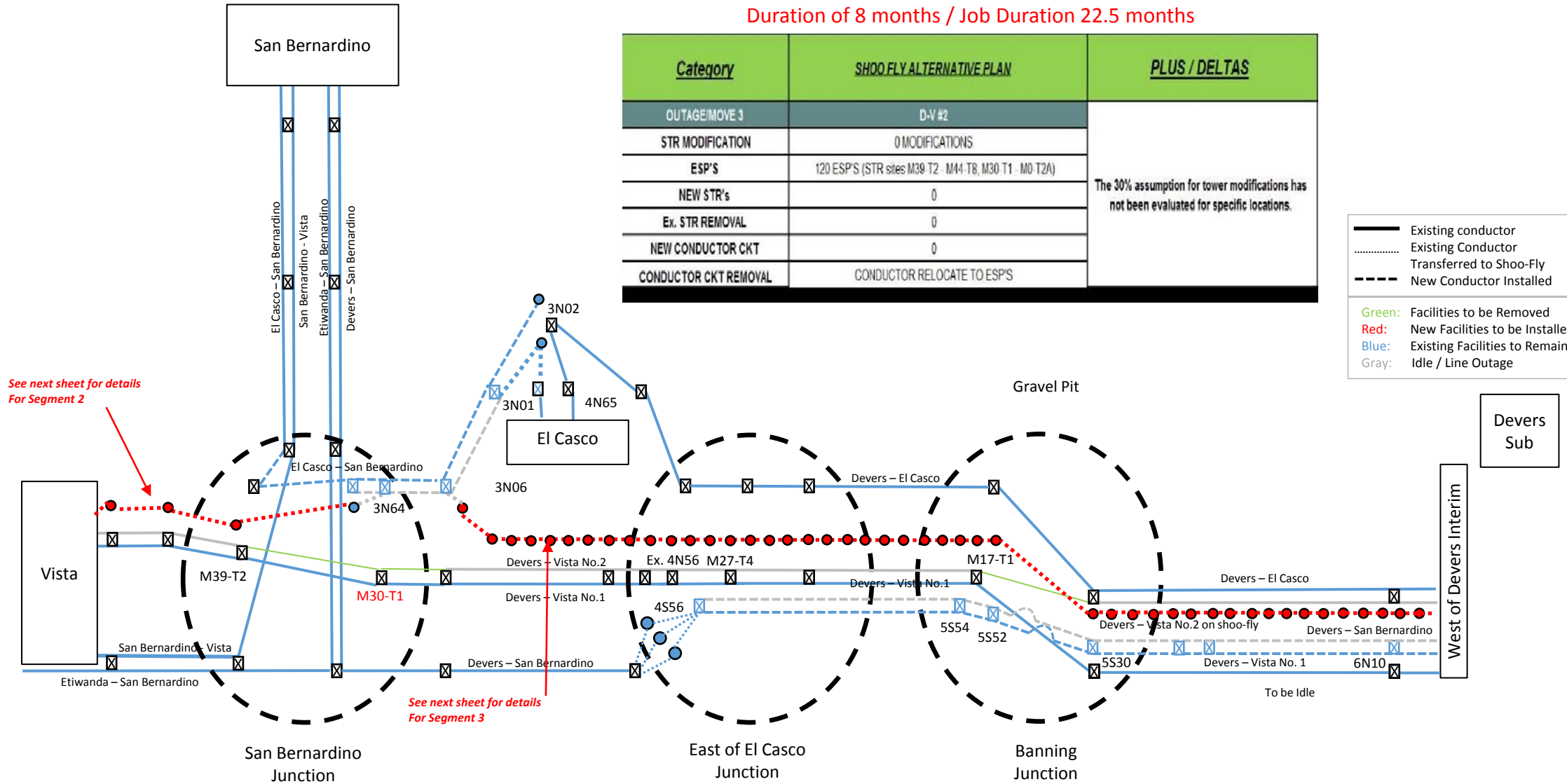
Move 3: Devers – Vista # 2

Duration of 8 months / Job Duration 22.5 months

Category	SHOO-FLY ALTERNATIVE PLAN	PLUS / DELTAS
OUTAGE/MOVE 3	D-V #2	The 30% assumption for tower modifications has not been evaluated for specific locations.
STR MODIFICATION	0 MODIFICATIONS	
ESP'S	120 ESP'S (STR sites M39-T2 - M44-T8, M30-T1 - M0-T2A)	
NEW STR'S	0	
Ex. STR REMOVAL	0	
NEW CONDUCTOR CKT	0	
CONDUCTOR CKT REMOVAL	CONDUCTOR RELOCATE TO ESP'S	

Existing conductor
 Existing Conductor
 Transferred to Shoo-Fly
 New Conductor Installed

■ Green: Facilities to be Removed
■ Red: New Facilities to be Installed
■ Blue: Existing Facilities to Remain
■ Gray: Idle / Line Outage



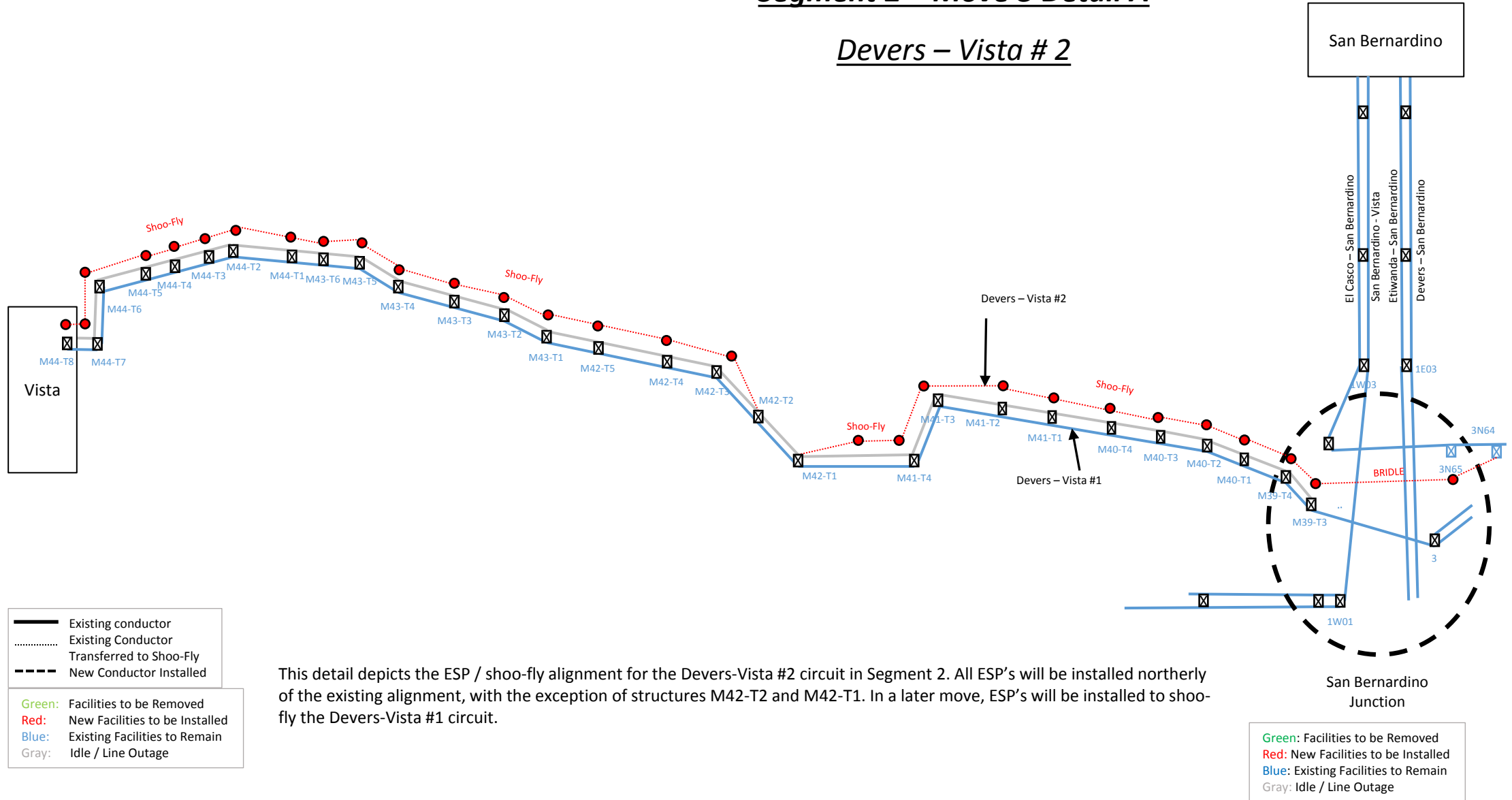
Due to clearance issues and safety concerns with working in proximity to existing hot circuits during stringing operations, one circuit on the existing double-circuit structures that are to be re-used must be shoo-flied. During this outage, 120 ESP's will be installed and the Devers-Vista #2 circuit will cut over to the ESP's. With the Devers-Vista #2 circuit shoo-flied and re-energized, either the Devers-El Casco or the Devers-Vista #1 circuits can be de-energized. Existing overhead ground wire can then be safely removed, and new OPGW can be installed. The shoo-fly's installed during this move will also facilitate structure modifications to the existing double-circuit structures.

Shoo-fly Alternative Plan

DRAFT

Segment 2 – Move 3 Detail A

Devers – Vista # 2

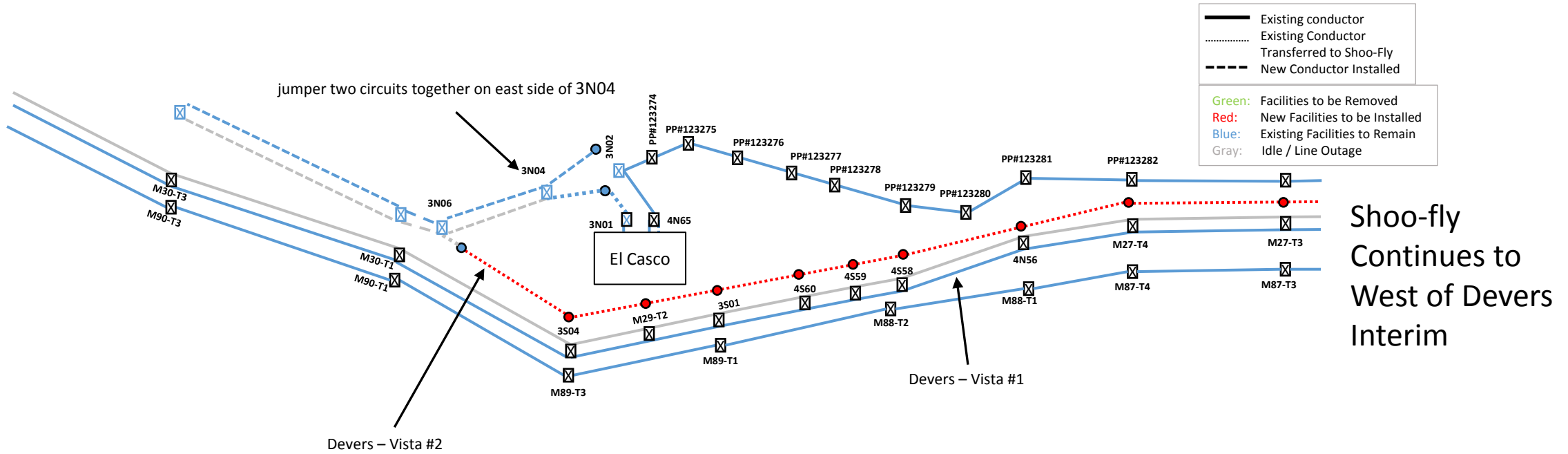


Shoo-fly Alternative Plan

DRAFT

Segment 3 Move 3 Detail B

Devers – Vista # 2



This detail depicts the ESP / shoo-fly alignment for the Devers-Vista #2 circuit in Segment 3, behind the El Casco Substation.

Assumption:

- From structure M41-T4 to M42-T3 ESPs used for the shoo-fly will be installed on the West side and to facilitate a section of new conductor that would be strung at a later sequence. See page 8 for details
- Approximately 6 ESP's would be required for the Devers – Vista #1 circuit

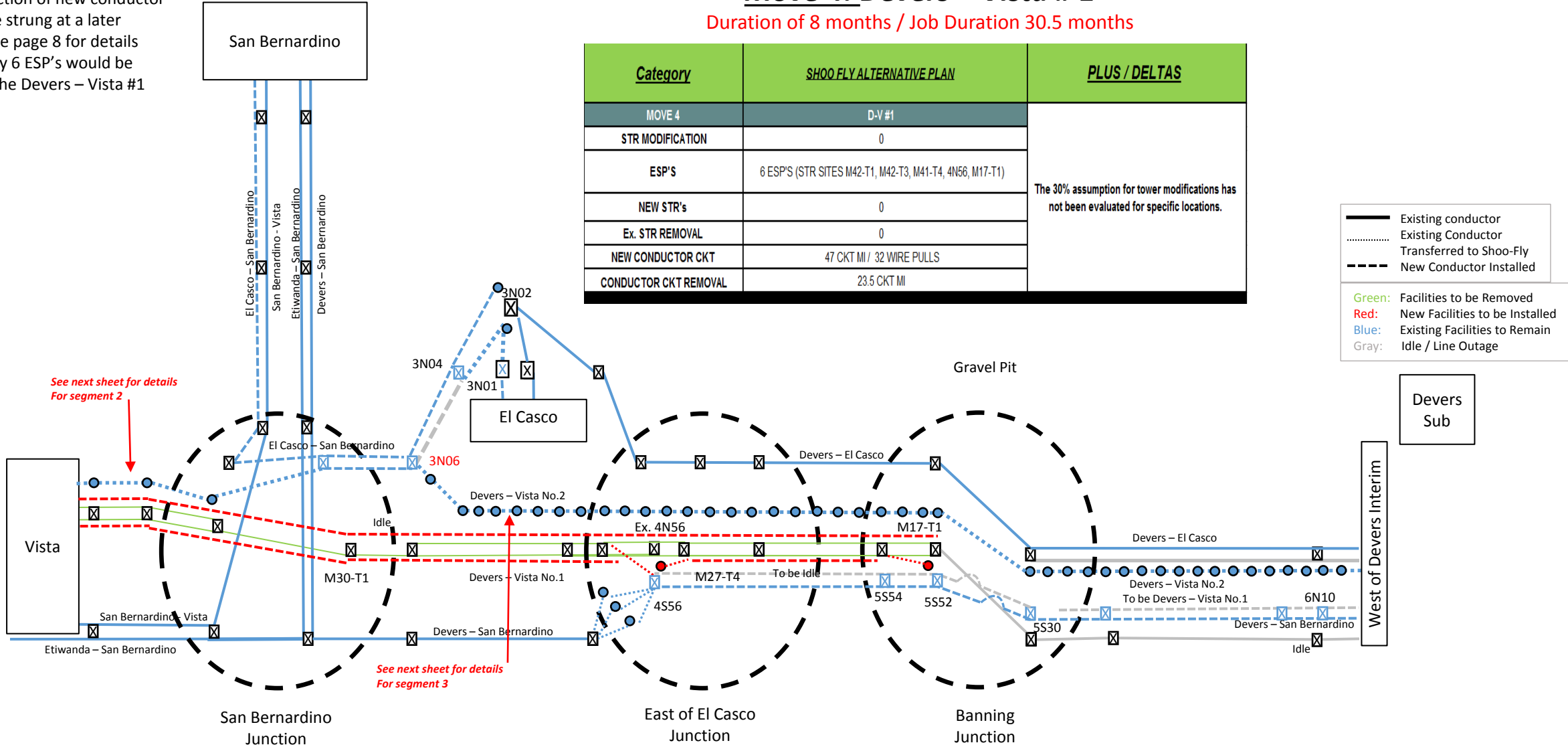
Shoo-fly Alternative Plan

DRAFT

Move 4: Devers – Vista # 1

Duration of 8 months / Job Duration 30.5 months

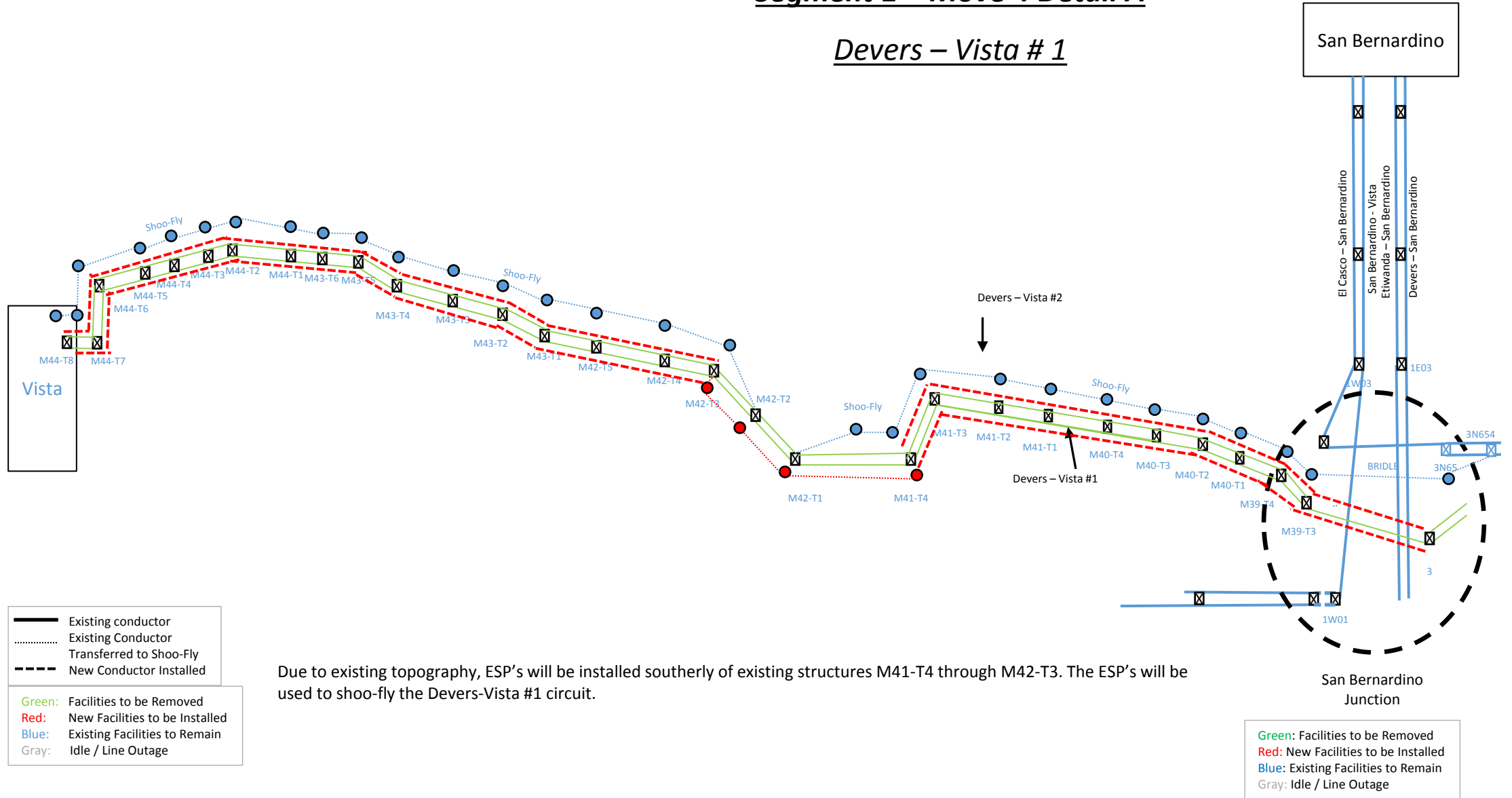
Category	SHOO FLY ALTERNATIVE PLAN	PLUS / DELTAS
MOVE 4	D-V #1	The 30% assumption for tower modifications has not been evaluated for specific locations.
STR MODIFICATION	0	
ESP'S	6 ESP'S (STR SITES M42-T1, M42-T3, M41-T4, 4N56, M17-T1)	
NEW STR'S	0	
Ex. STR REMOVAL	0	
NEW CONDUCTOR CKT	47 CKT MI / 32 WIRE PULLS	
CONDUCTOR CKT REMOVAL	23.5 CKT MI	



Now that the Devers-Vista #2 has been shoo-flied, it will be re-energized, and an outage will be taken on the Devers-Vista #1 circuit. All conductor and overhead ground wire on the existing double-circuit structures west of the Banning Junction will be removed. The structures will be modified as required, and new conductor and OPGW will be installed.

Shoo-fly Alternative Plan DRAFT Segment 1 – Move 4 Detail A

Devers – Vista # 1

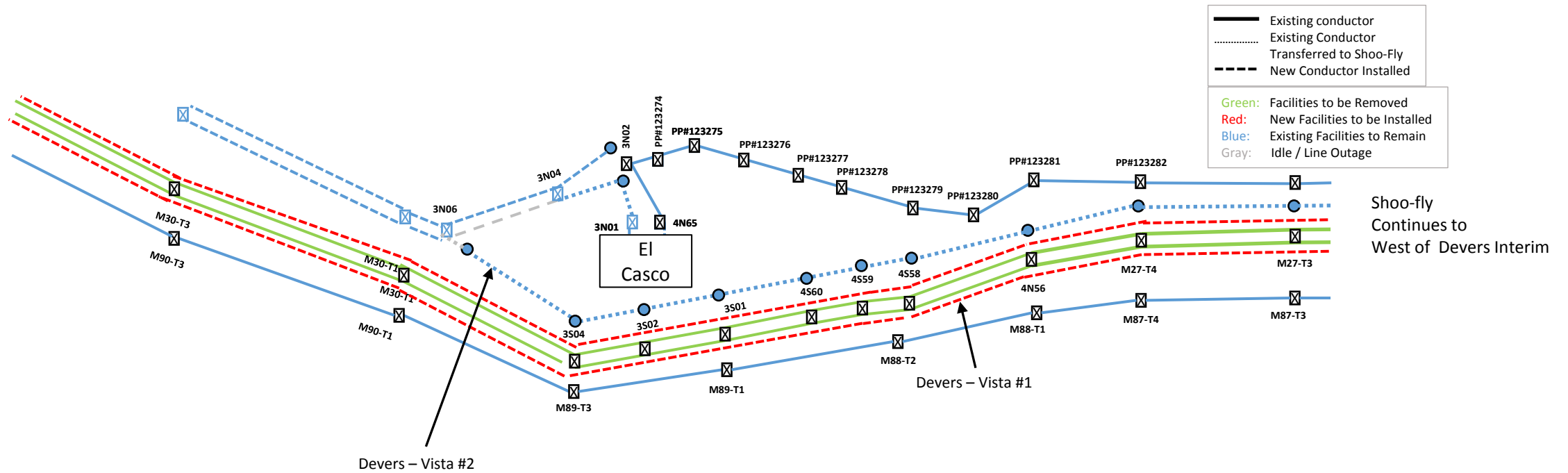


Shoo-fly Alternative Plan

DRAFT

Segment 3 – Move 4 Detail B

Devers – Vista # 1



Shoo-fly Alternative Plan

DRAFT

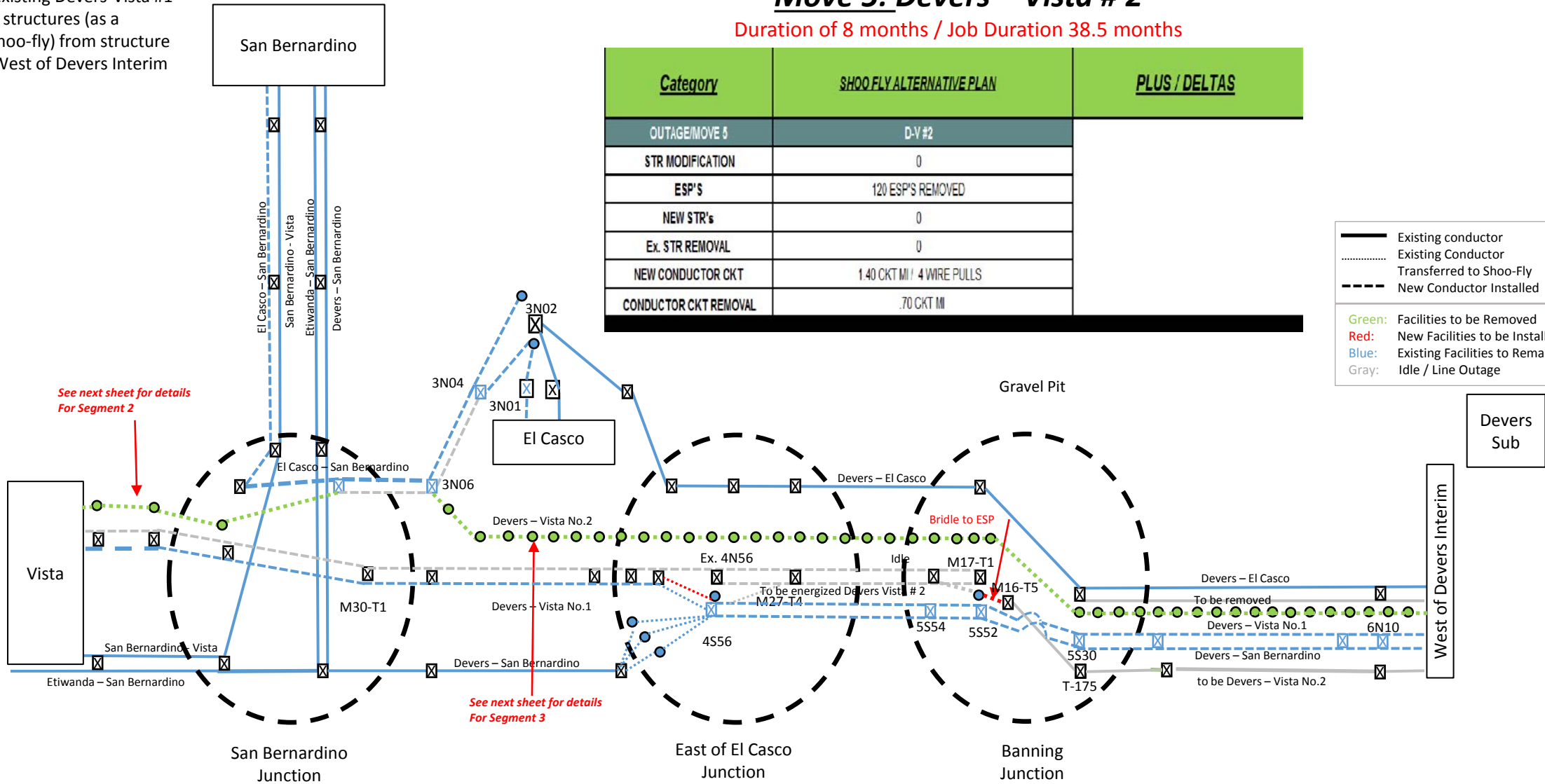
Move 5: Devers – Vista # 2

Duration of 8 months / Job Duration 38.5 months

Category	SHOO FLY ALTERNATIVE PLAN	PLUS / DELTAS
OUTAGE/MOVE 5	D-V #2	
STR MODIFICATION	0	
ESP'S	120 ESP'S REMOVED	
NEW STR'S	0	
Ex. STR REMOVAL	0	
NEW CONDUCTOR CKT	1.40 CKT MI / 4 WIRE PULLS	
CONDUCTOR CKT REMOVAL	.70 CKT MI	

- Existing conductor
- Existing Conductor
- Transferred to Shoo-Fly
- New Conductor Installed

- Facilities to be Removed
- New Facilities to be Installed
- Existing Facilities to Remain
- Idle / Line Outage



Assumption:

- At the completion of Move 5 the Devers -Vista #2 circuit will utilize the path of the existing Devers-Vista #1 single circuit structures (as a temporary shoo-fly) from structure M16-T5 to West of Devers Interim

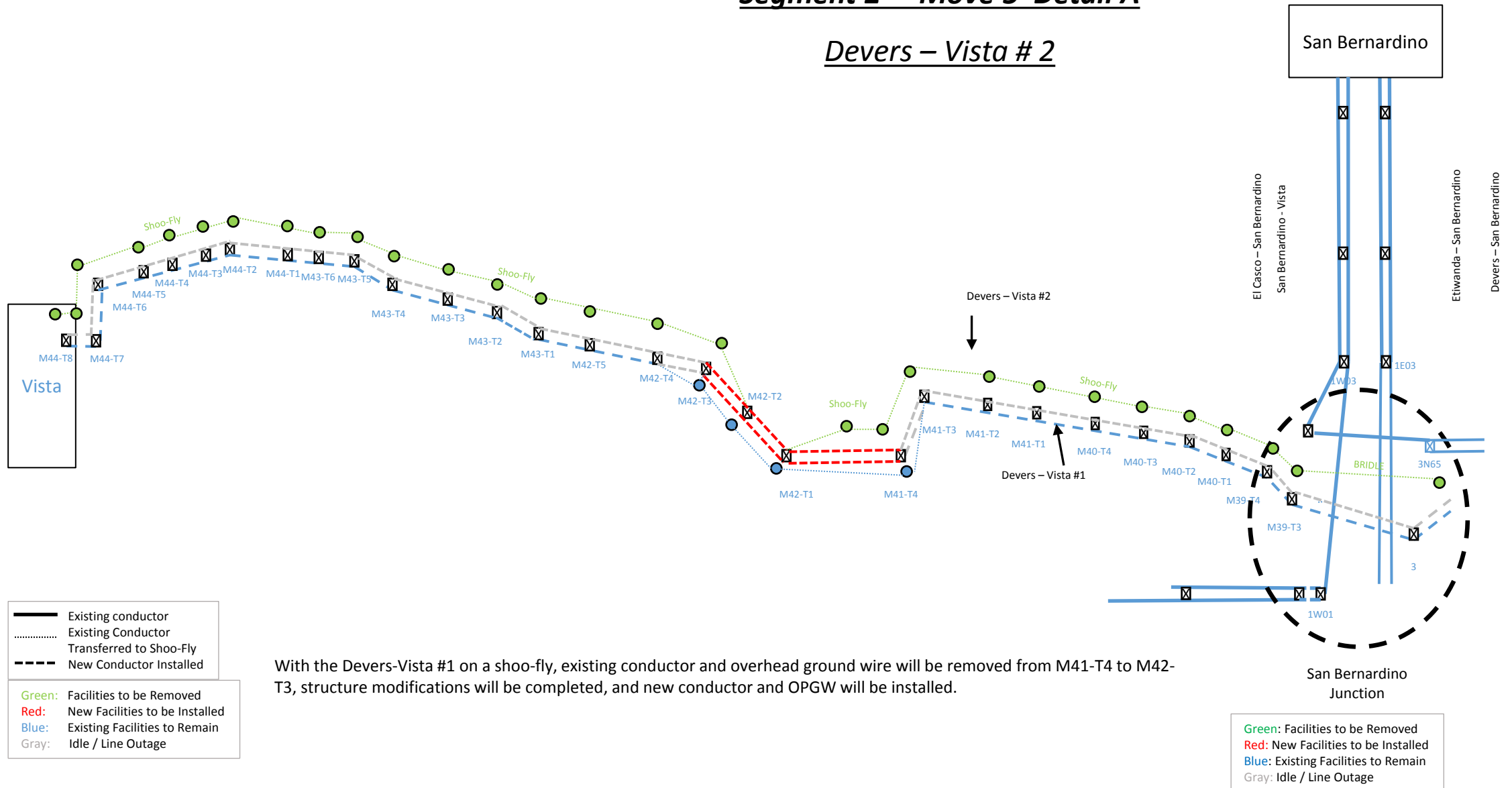
With conductor and OPGW installation complete on the existing double-circuit structures, the Devers-Vista #2 shoo-fly is no longer needed and the ESP's will be removed. Conductor will be bridled from the existing Devers-Vista #1 structure M16-T5 to ESP to the newly strung double-circuit structures, serving a shoo-fly for this circuit in later moves. The Devers-Vista #2 circuit will be re-energized.

Shoo-fly Alternative Plan

DRAFT

Segment 2 – Move 5 Detail A

Devers – Vista # 2



With the Devers-Vista #1 on a shoo-fly, existing conductor and overhead ground wire will be removed from M41-T4 to M42-T3, structure modifications will be completed, and new conductor and OPGW will be installed.

Assumption:

- The Devers- El Casco circuit will be re connected from structure 4N58 to the ESP (south of 4N57) connecting to existing structure PP123281
- Connecting at existing STR M17-T1 to ESP to the south position
- In total 3 ESP's required

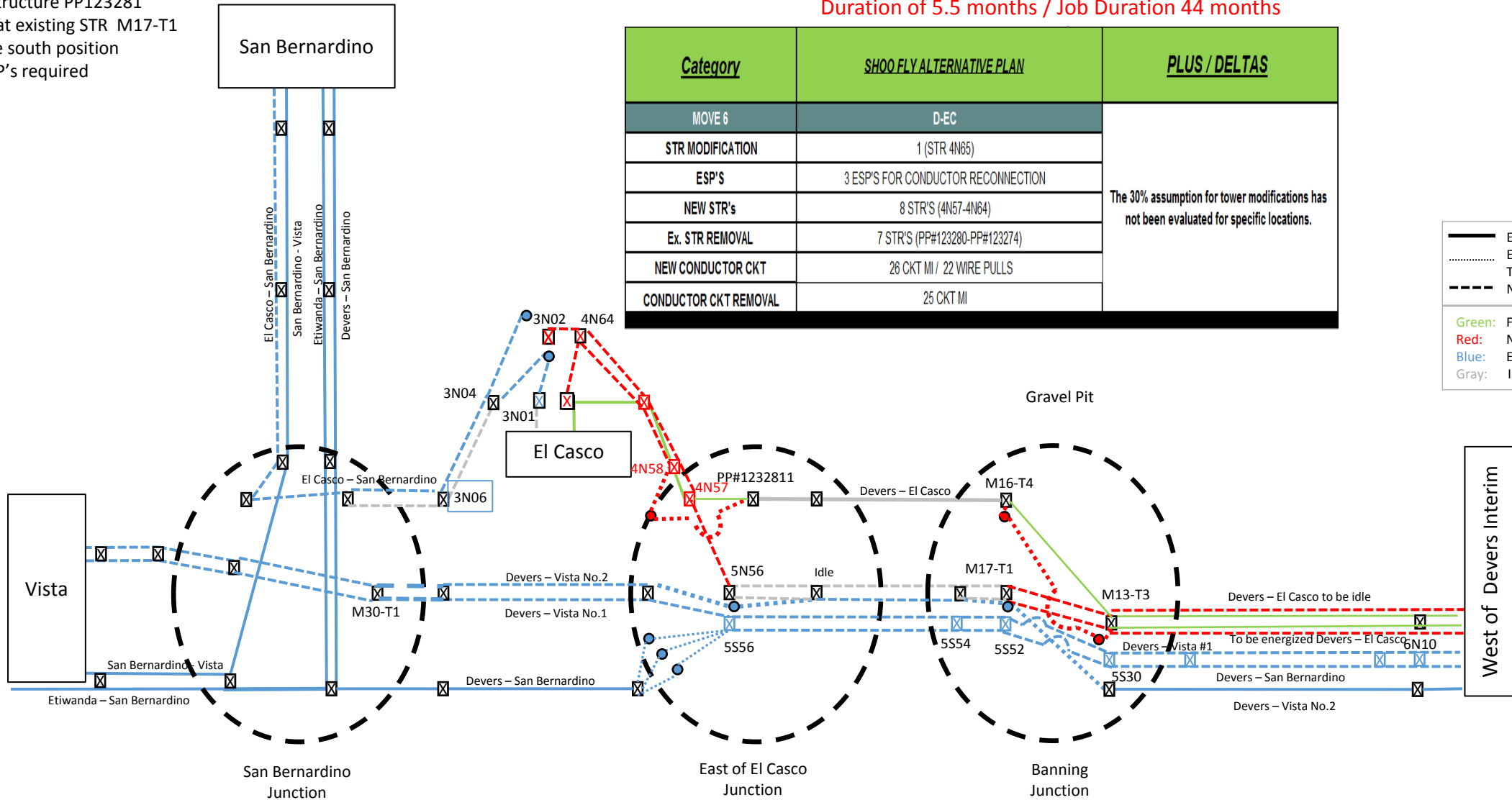
Shoo-fly Alternative Plan

DRAFT Move 6: Devers – El Casco

Duration of 5.5 months / Job Duration 44 months

Category	SHOO.FLY ALTERNATIVE PLAN	PLUS / DELTAS
MOVE 6	D-EC	The 30% assumption for tower modifications has not been evaluated for specific locations.
STR MODIFICATION	1 (STR 4N85)	
ESP'S	3 ESP'S FOR CONDUCTOR RECONNECTION	
NEW STR'S	8 STR'S (4N57-4N64)	
Ex. STR REMOVAL	7 STR'S (PP#123280-PP#123274)	
NEW CONDUCTOR CKT	26 CKT MI / 22 WIRE PULLS	
CONDUCTOR CKT REMOVAL	25 CKT MI	

— Existing conductor
- - - - - Existing Conductor
- - - - - Transferred to Shoo-Fly
- - - - - New Conductor Installed
■ Facilities to be Removed
■ New Facilities to be Installed
■ Existing Facilities to Remain
■ Idle / Line Outage



With the Devers-Vista #2 circuit on a shoo-fly, an outage will be taken on the Devers-El Casco circuit. All existing conductor and overhead ground wire will be removed from the double-circuit structures east of the Banning Junction. Once structure modifications are complete, new conductor and OPGW will be installed. The existing single-circuit structures from the East of El Casco Junction to the El Casco Substation will be removed, and new double-circuit structures will be constructed. Three ESP's will be installed so that conductor can be bridled from the new double-circuit structures to the existing single-circuit structures (Devers-El Casco circuit); the Devers-El Casco circuit will be put in its final configuration in Move 11.

Assumption:

- Move 7 would facilitate the Devers- El Casco circuit being moved to its final position
- String remaining Devers- San Bernardino span 3N02 to 3N04.
- Bridle conductor from ESP at 3N02 to structure 3N02

Shoo-fly Alternative Plan

DRAFT

Move 7: El Casco – San Bernardino and San Bernardino – Vista

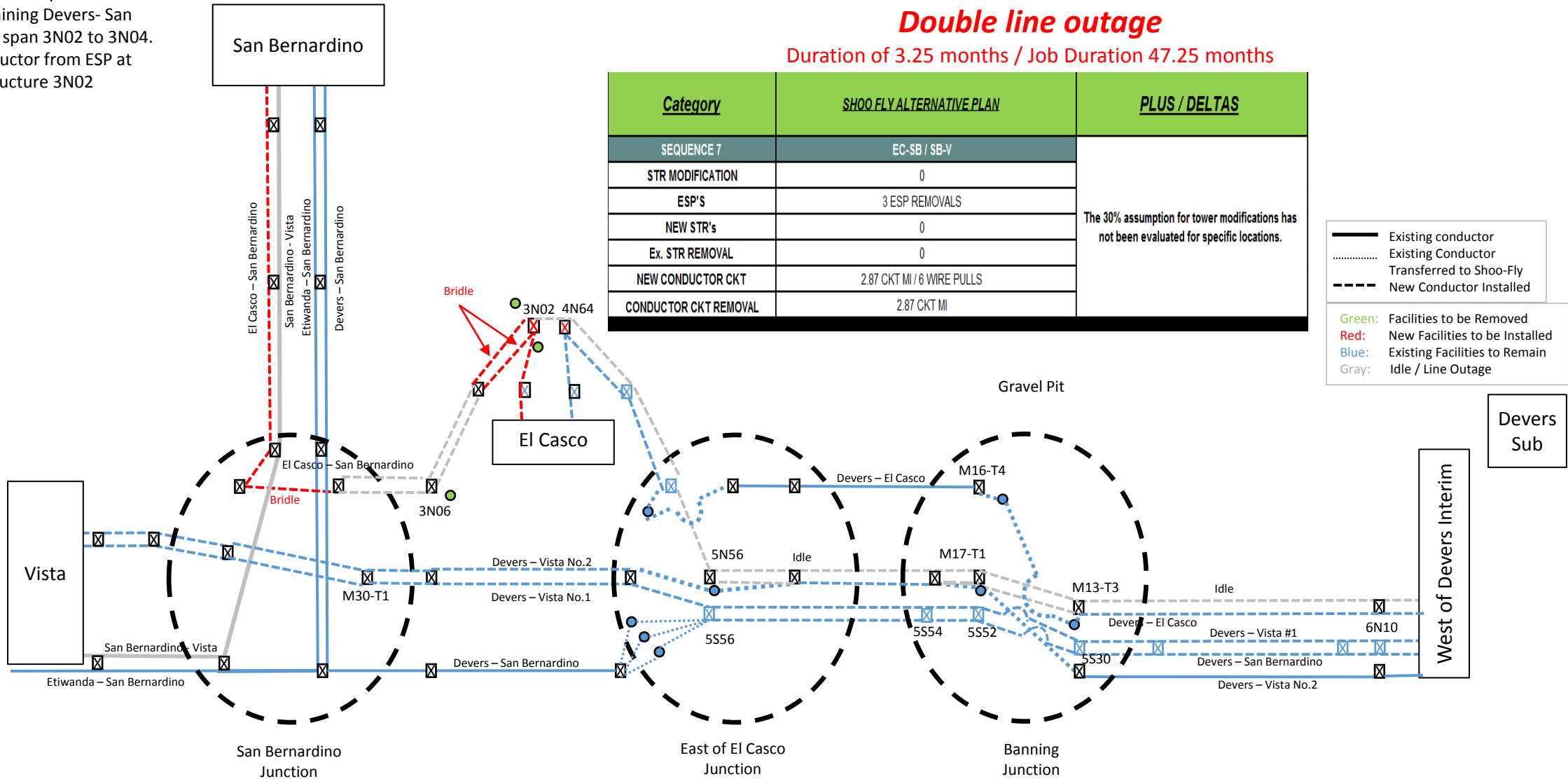
Double line outage

Duration of 3.25 months / Job Duration 47.25 months

Category	SHOO FLY ALTERNATIVE PLAN	PLUS / DELTAS
SEQUENCE 7	EC-SB / SB-V	
STR MODIFICATION	0	
ESP'S	3 ESP REMOVALS	The 30% assumption for tower modifications has not been evaluated for specific locations.
NEW STR'S	0	
Ex. STR REMOVAL	0	
NEW CONDUCTOR CKT	2.87 CKT MI / 6 WIRE PULLS	
CONDUCTOR CKT REMOVAL	2.87 CKT MI	

Existing conductor
 Existing Conductor
 Transferred to Shoo-Fly
 New Conductor Installed

● Facilities to be Removed
● New Facilities to be Installed
● Existing Facilities to Remain
● Idle / Line Outage



To mitigate clearance issues while removing overhead ground wire and installing new OPGW within the congested corridor of Segment 1, double-line outages will be required. With outages on the El Casco-San Bernardino and San Bernardino-Vista circuits, overhead ground wire will be removed, existing conductor will be removed, new OPGW will be installed, and new conductor will be installed (El Casco-San Bernardino circuit only). Modifications will be made to structure 3N02, and conductor will be bridled to its correct position on the structure. The ESP's adjacent to 3N02 can be removed.

Shoo-fly Alternative Plan

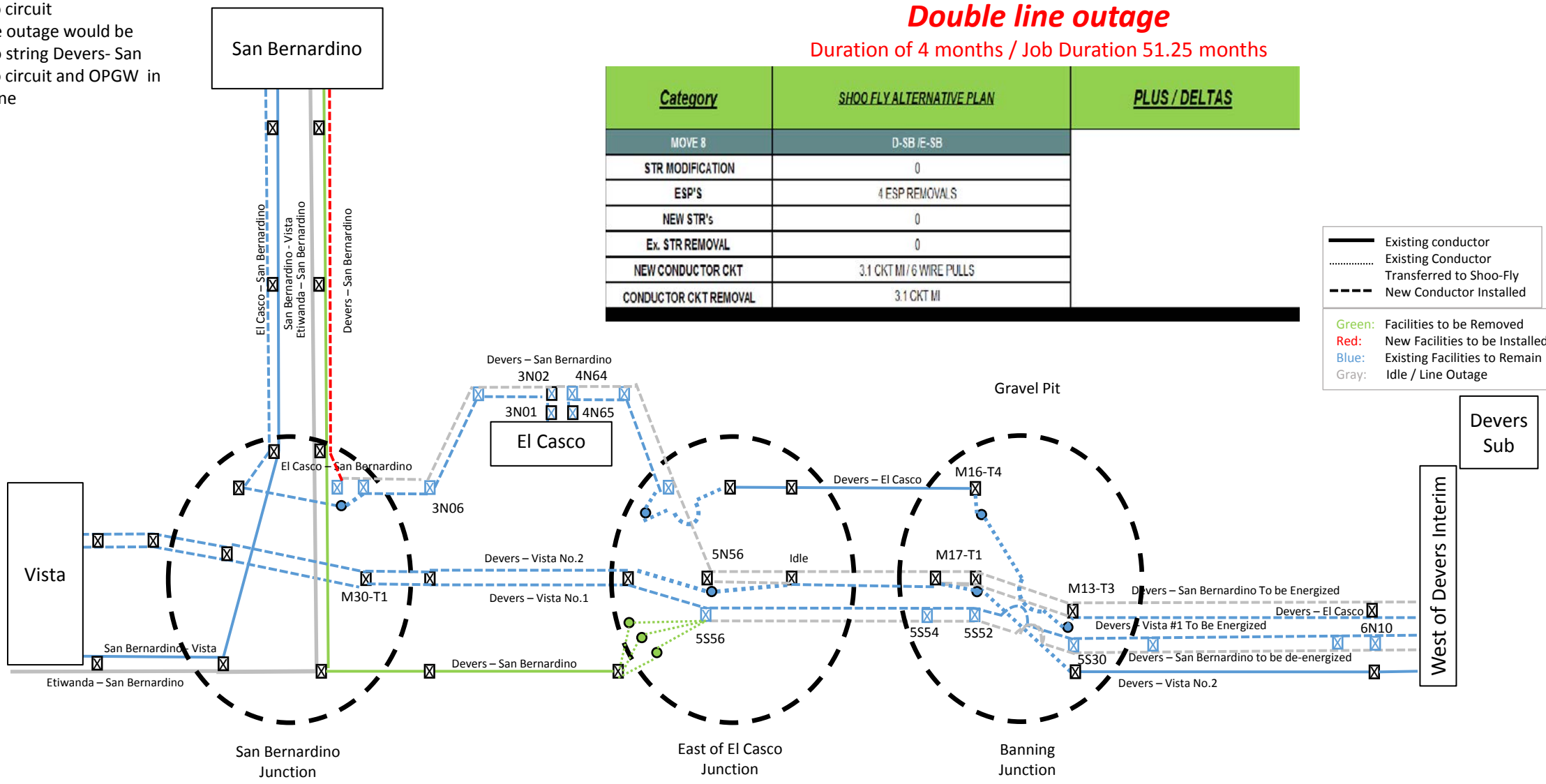
DRAFT

Move 8: Devers – San Bernardino and Etiwanda – San Bernardino Double line outage

Duration of 4 months / Job Duration 51.25 months

- Assumption:**
- Move 8 will facilitate the completion of the Devers-San Bernardino circuit
 - Double line outage would be required to string Devers- San Bernardino circuit and OPGW in Segment one

Category	SHOO-FLY ALTERNATIVE PLAN	PLUS / DELTAS
MOVE 8	D-SB / E-SB	
STR MODIFICATION	0	
ESP'S	4 ESP REMOVALS	
NEW STR'S	0	
Ex. STR REMOVAL	0	
NEW CONDUCTOR CKT	3.1 CKT MI / 6 WIRE PULLS	
CONDUCTOR CKT REMOVAL	3.1 CKT MI	



Shoo-fly Alternative Plan

DRAFT

Move 9: Devers – Vista # 1

Duration of 1 week/ Job Duration 51.5 months

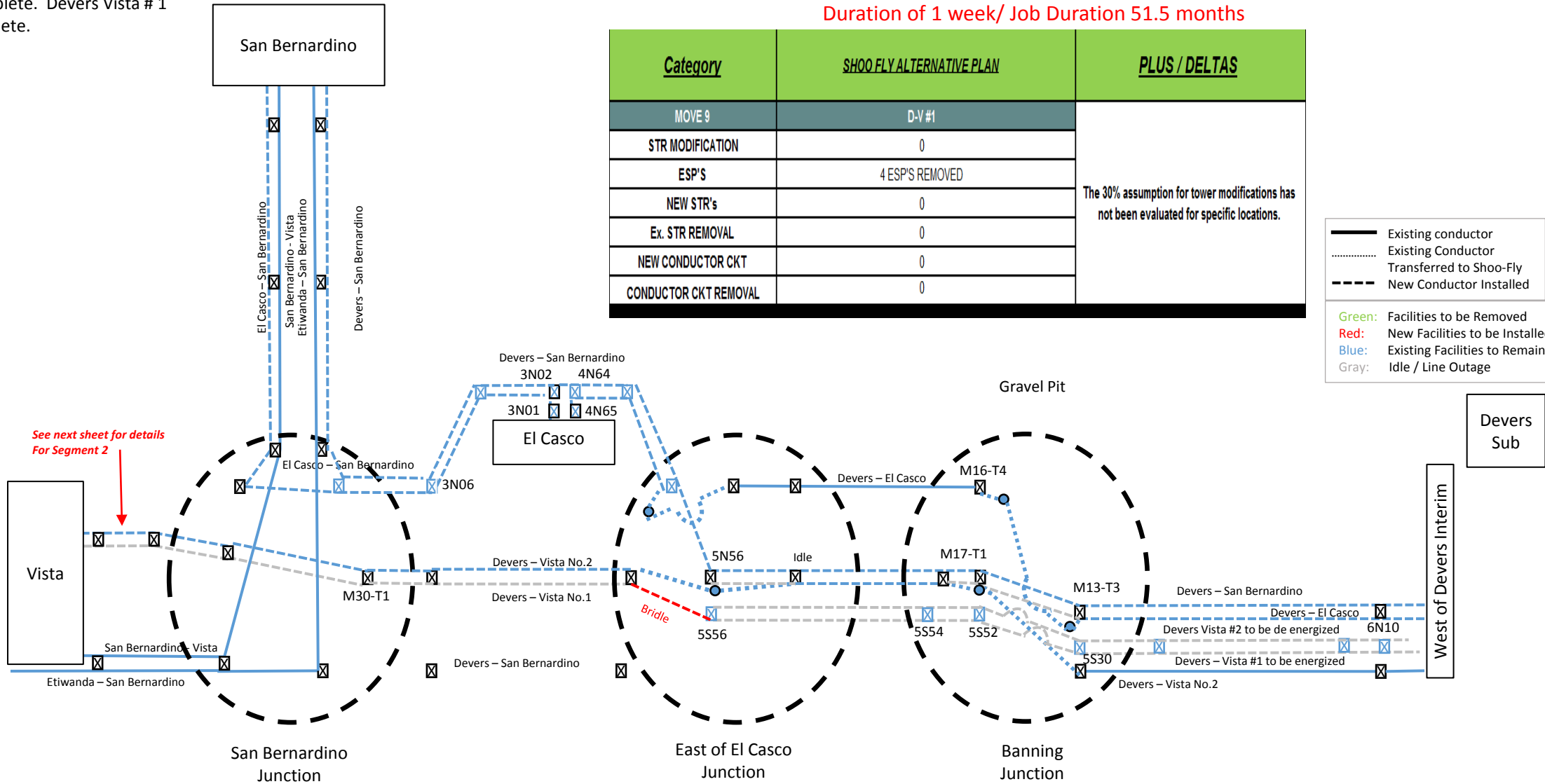
Assumption:

- Devers Vista # 1 circuit final connection to its correct position will be complete. Devers Vista # 1 100% complete.

Category	SHOO FLY ALTERNATIVE PLAN	PLUS / DELTAS
MOVE 9	D-V #1	The 30% assumption for tower modifications has not been evaluated for specific locations.
STR MODIFICATION	0	
ESP'S	4 ESP'S REMOVED	
NEW STR'S	0	
Ex. STR REMOVAL	0	
NEW CONDUCTOR CKT	0	
CONDUCTOR CKT REMOVAL	0	

Existing conductor
 Existing Conductor Transferred to Shoo-Fly
 New Conductor Installed

■ Green: Facilities to be Removed
■ Red: New Facilities to be Installed
■ Blue: Existing Facilities to Remain
■ Gray: Idle / Line Outage



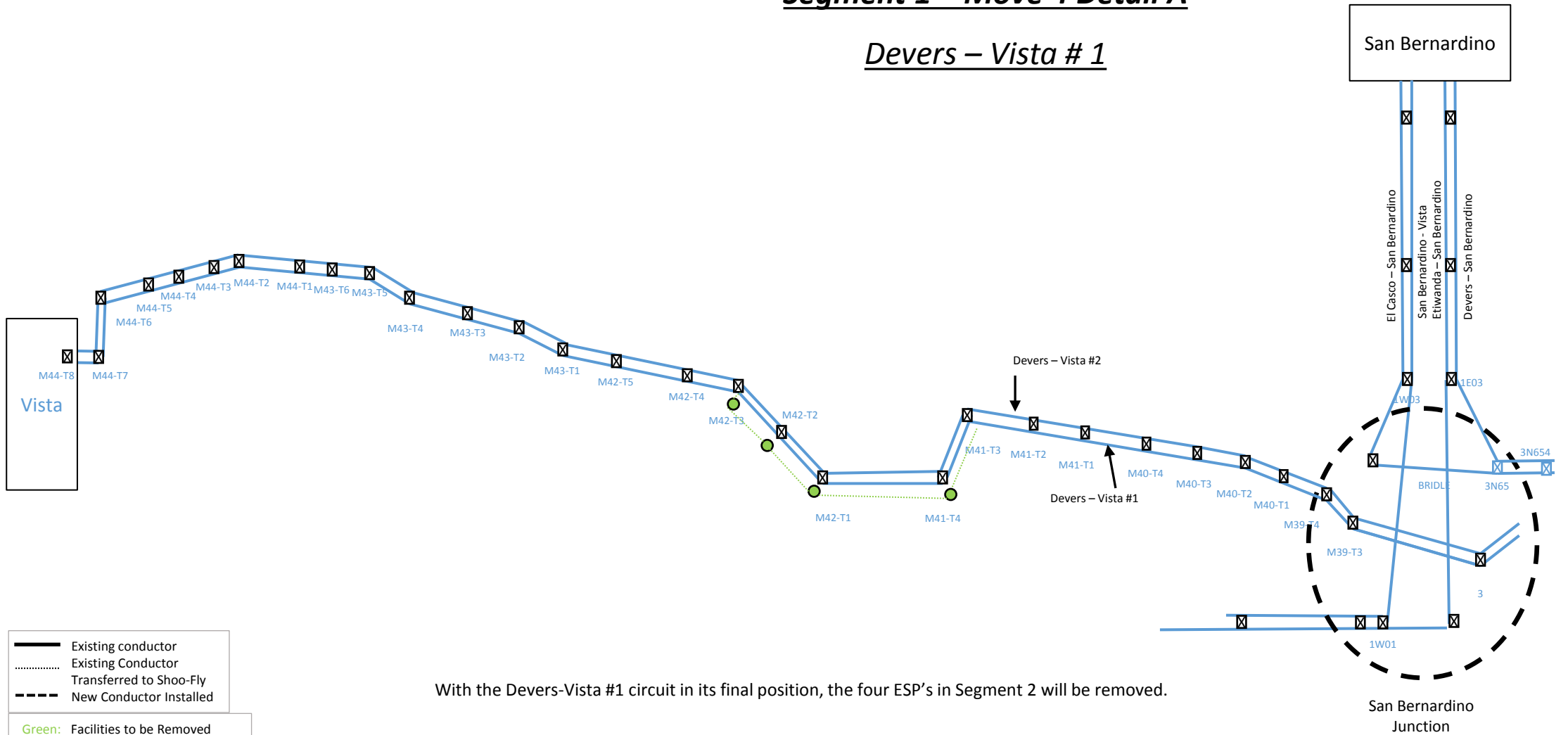
During this outage, conductor will be bridled from the south position of existing structure 4S58 to the south position of new structure 4N56. The Devers-Vista #1 circuit will now be in its final position.

Shoo-fly Alternative Plan

DRAFT

Segment 1 – Move 4 Detail A

Devers – Vista # 1



- Existing conductor
 - Existing Conductor
 - Transferred to Shoo-Fly
 - New Conductor Installed
-
- Facilities to be Removed
 - New Facilities to be Installed
 - Existing Facilities to Remain
 - Idle / Line Outage

With the Devers-Vista #1 circuit in its final position, the four ESP's in Segment 2 will be removed.

- Facilities to be Removed
- New Facilities to be Installed
- Existing Facilities to Remain
- Idle / Line Outage

- Assumption:**
- Move 10 will facilitate the completion of the Devers Vista # 2 circuit.
 - 15 CKT miles and 126 existing structure removal

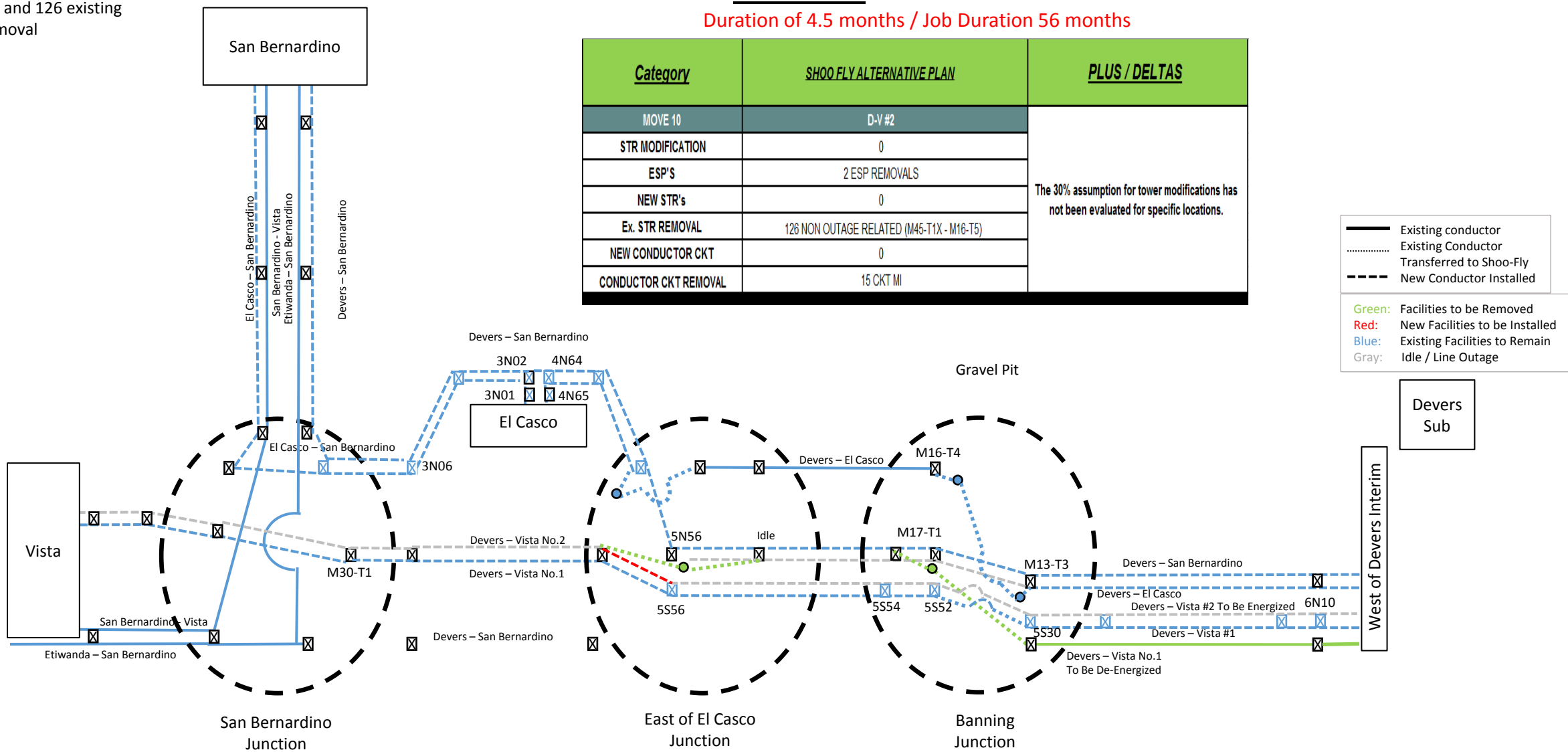
Shoo-fly Alternative Plan

DRAFT

Move 10: Devers – Vista # 2

Duration of 4.5 months / Job Duration 56 months

Category	SHOO FLY ALTERNATIVE PLAN	PLUS / DELTAS
MOVE 10	D-V #2	The 30% assumption for tower modifications has not been evaluated for specific locations.
STR MODIFICATION	0	
ESP'S	2 ESP REMOVALS	
NEW STR'S	0	
Ex. STR REMOVAL	126 NON OUTAGE RELATED (M45-T1X - M16-T5)	
NEW CONDUCTOR CKT	0	
CONDUCTOR CKT REMOVAL	15 CKT MI	



During this outage, conductor will be bridled from the north position of existing structure 4S58 to the north position of new structure 4N56. The Devers-Vista #2 circuit will now be in its final position. The existing Devers-Vista #1 single-circuit structures will be removed (including the two ESP's).

Shoo-fly Alternative Plan

DRAFT

Move 11: Devers – El Casco

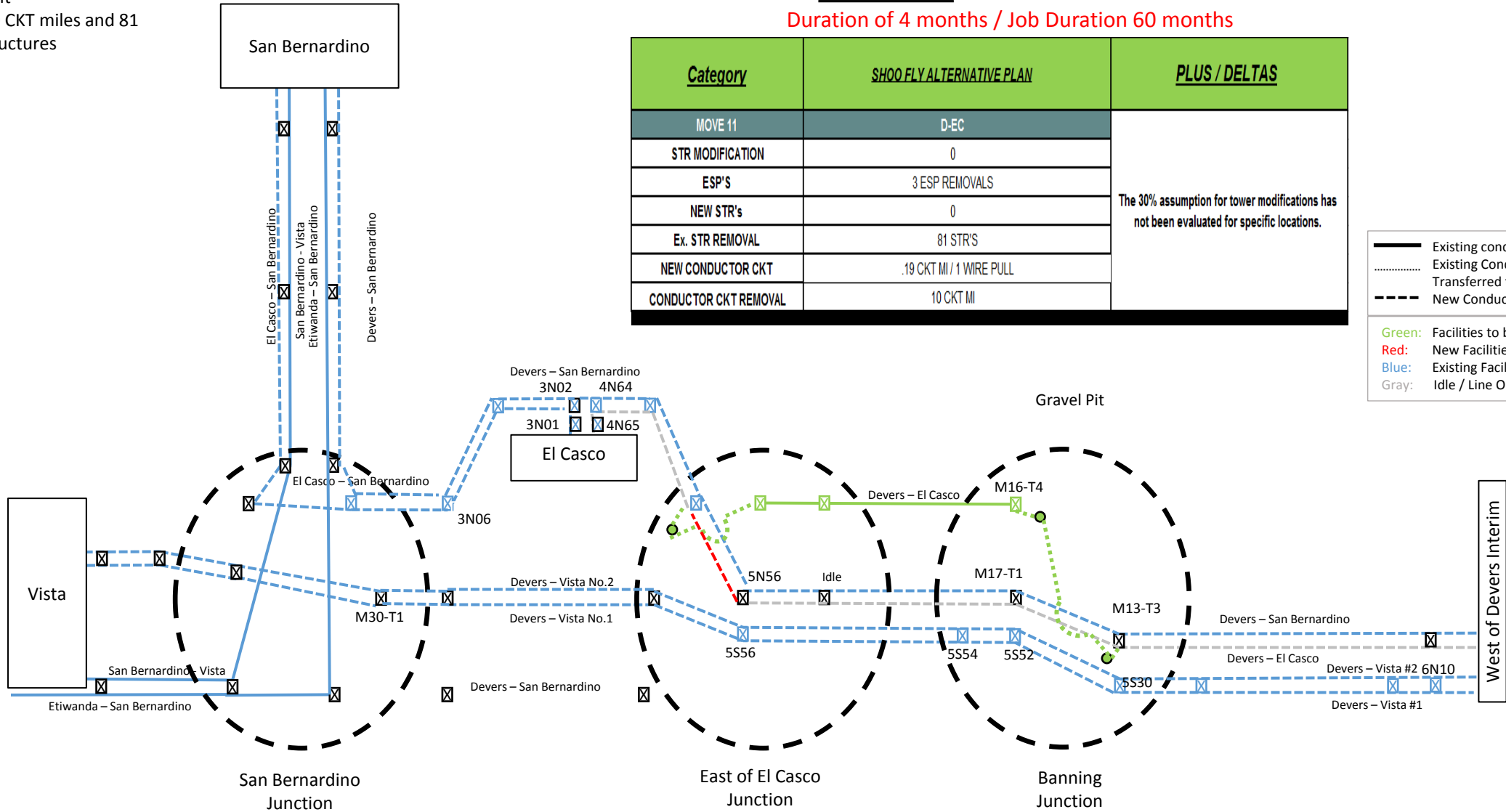
Duration of 4 months / Job Duration 60 months

Assumption:

- Move 11 will facilitate the completion of the Devers – El Casco circuit
- Remove 10 CKT miles and 81 existing structures

Category	SHOO FLY ALTERNATIVE PLAN	PLUS / DELTAS
MOVE 11	D-EC	The 30% assumption for tower modifications has not been evaluated for specific locations.
STR MODIFICATION	0	
ESP'S	3 ESP REMOVALS	
NEW STR'S	0	
Ex. STR REMOVAL	81 STR'S	
NEW CONDUCTOR CKT	.19 CKT MI / 1 WIRE PULL	
CONDUCTOR CKT REMOVAL	10 CKT MI	

— Existing conductor
⋯ Existing Conductor
- - - Transferred to Shoo-Fly
- - - New Conductor Installed
■ Green: Facilities to be Removed
■ Red: New Facilities to be Installed
■ Blue: Existing Facilities to Remain
■ Gray: Idle / Line Outage



During this outage, conductor will be bridled from the south position of existing structure 4N56 to the south position of new structure 4N57. The Devers-El Casco circuit will now be in its final position. The existing Devers-El Casco single-circuit structures will be removed (including the three ESP's).

Shoo-fly Alternative Plan B

DRAFT

Final Configuration

- A total of 136 ESP's needed to shoo-fly

