



Orange & Rockland
a conEdison, inc. company

LOCAL TRANSMISSION PLANS (LTP)

**ESPWG MEETING (NYISO KCC)
November 3, 2017**

Rollie Mangonon

PRESENTATION OUTLINE



COMPANY BACKGROUND



LTP ASSUMPTIONS, TOOLS & METHODOLOGIES



DEVELOPMENT OF LTP



**PROPOSED LTP
(UPDATES FROM 2015 LTP)**



QUESTIONS

COMPANY BACKGROUND (Service Territory)



Company Profile:

TO, DP, TOP & TP under NYISO.
TO & DP under PJM.
Subsidiary of Con Edison, Inc.

Existing Circuit Miles:

Transmission (69 kV to 345 kV) :
554 miles
Distribution (4 kV to 34.5 kV) :
3,764 miles
UG Distribution (13.2 kV) :
1,696 miles

Customer Data:

Electric: 300,700 (NY, NJ)
Gas: 130,000 (NY)

All time Peak Demand for electricity:

1617 MW (8/2/06)

Number of employees ~ 1100

Service Territory ~ 1350 sq. miles



COMPANY BACKGROUND

(Transmission Design Standards)




- **THERMAL**

- Normal Operating Conditions:
 - Below Normal Rating of Equipment
- N-1 Operating Conditions:
 - Below Normal Rating of Equipment.

- **VOLTAGE**

- Normal and N-1 Operating Conditions:
 - $0.95 < \text{Nominal Bus voltage} < 1.05$

LTP ASSUMPTIONS

- Projects based on the 2018-2022 Capital Budget (pending approval)
- Load Forecast*:
 - 2018 (1620 MW) 
 - 2022 (1615 MW) 
 - 2027 (1650 MW) 
- Factors Affecting LTP:
 - Reliability Requirements
 - Changes in Load Forecast
 - DSM/EE
 - REV Screening
 - Federal and State Programs
 - New Generation (i.e. PV, Wind, Gas Turbines)
 - Other Non-Wire Alternatives (NWAs)

**2017: Forecast: 1625 MW
Actual: 1410 MW*

LTP TOOLS & METHODOLOGIES

- Thermal (PSS/E)
- Voltage (PSS/E)
- Short Circuit (ASPEN)
- Equipment Replacements Due to Condition (FIELD INSPECTIONS AND TEST REPORTS)

DEVELOPMENT OF LTP

- Load Flow Studies
- System Violations Identification
- System Solution Proposal and Evaluations
- Preparation of the Long Range Transmission Plan
- LTP Presentations

DEVELOPMENT OF LTP

- **DESIGN CRITERIA REQUIREMENTS**

- Thermal Overloads and Voltage Violations
- Short Circuit Violations
- Equipment Condition

DEVELOPMENT OF LTP

• POSSIBLE MITIGATION FOR CRITERIA VIOLATIONS

- Load Transfers
- Equipment Upgrades
- New or Reconfiguration of Transmission Lines
- New Switching Stations with new or reconfigured Transmission Lines
- Transmission Station Reconfiguration or Upgrade
- Reactive Power Compensation (Capacitors or Reactors)
- Short Circuit Remediation/Breaker Upgrade
- REV Screening
- Non-Wires Alternatives (NWAs)

“FIRM” PROJECTS AND PROJECT STATUS

- Included in the O & R Five Year Budget
 - Funds approved by Upper Management
- Completed System Impact Study (SIS) and approved Article VII, if necessary.
- Major equipment ordered and/or awaiting delivery.

PROJECT STATUS	DESCRIPTION
Design	Projects approved and budgeted, engineering design underway and, if necessary, SIS and Article VII approval on-going.
Pre-Construction	Major equipment procured and/or awaiting delivery, necessary outages planned, company resources/manpower assigned and if necessary, SIS and Article VII approved.
Under Construction	Major equipment delivered and construction underway.
Completed	Projects are in service.

PROPOSED LTP

- **EASTERN DIVISION LOCAL PLANS:**

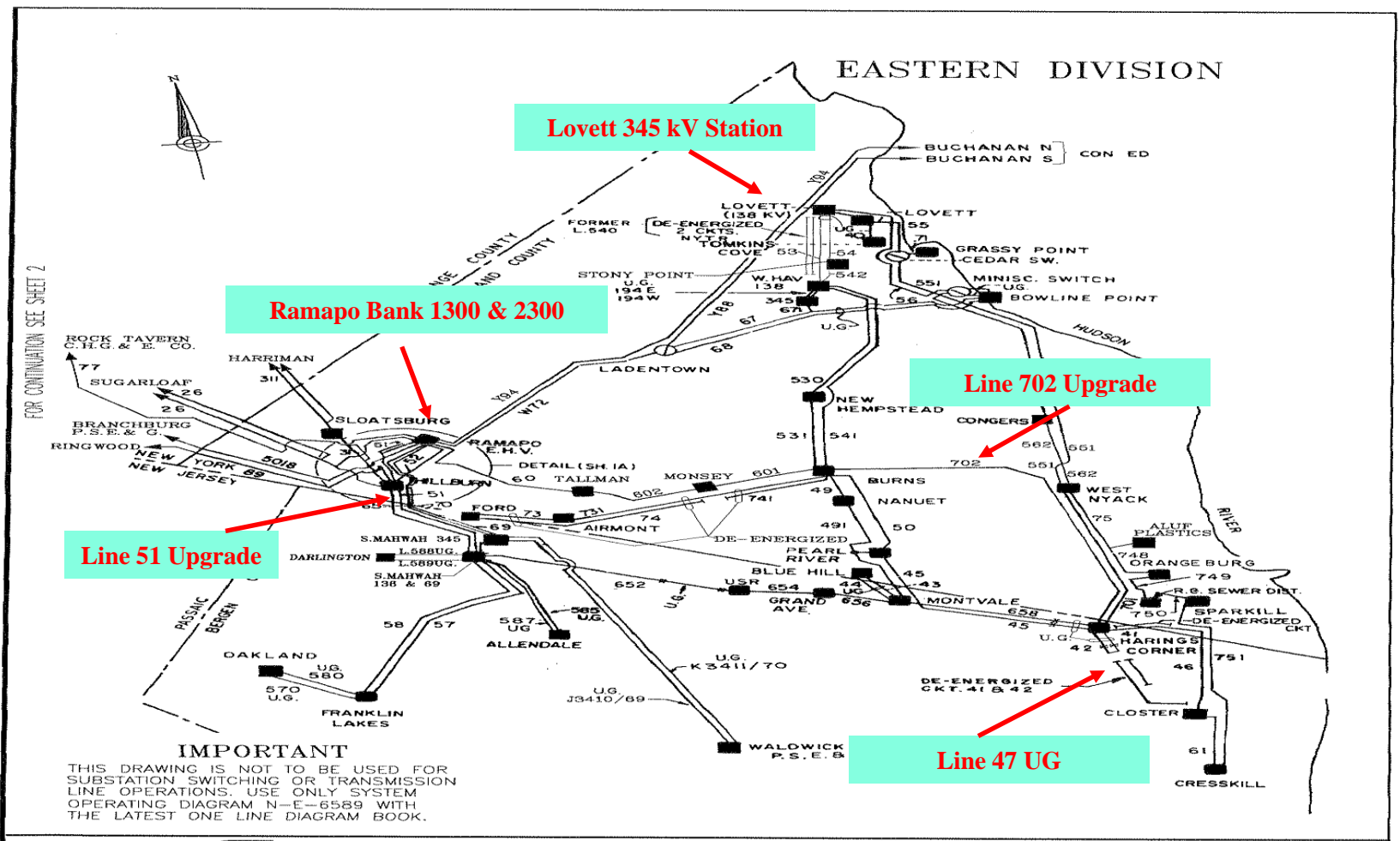
GEOGRAPHIC COVERAGE : Rockland County (NY),
Portions of Bergen County (NJ)
DESIGN STANDARD: First Contingency

PROJECT DESCRIPTION	IN-SERVICE DATE		Firm	SIS	Article VII	Status
	2015 Plan	2018 Plan				
Lovett 345 kV Station (formerly North Rockland 345 kV Station) ¹	June 2018	May 2021	Y	Y	N/A	Pre-Const.
Line 702 New UG ¹ (138 kV)	June 2017	Dec 2022	N	N	N/A	Design
Line 47/Closter Re-configuration ¹ (69 kV)	December 2016	May 2020	N	N/A	N/A	Design
Ramapo Bank 1300 Upgrade ²	2022	June 2019	N	N/A	N/A	Design
Ramapo Bank 2300 Upgrade ²	2023	June 2021	N	N/A	N/A	Design
Line 51 ¹ (138 kV)	-	Dec 2022	N	N	N/A	Design

¹Reliability Projects

²Projects Due to Equipment Condition

PROPOSED LTP (Eastern)



ORANGE AND ROCKLAND UTILITIES, INC.

DRAWING	DRAWN	DESIGNED	CHECKED	APPROVED	DATE	DRAWING NO.	SHEET	REV.
TRANSMISSION LINES-KEY MAP	F.B.	<i>FWS</i>	<i>FWS</i>	<i>JCB</i>	11/19/07	N A 7051	1 OF 3	9

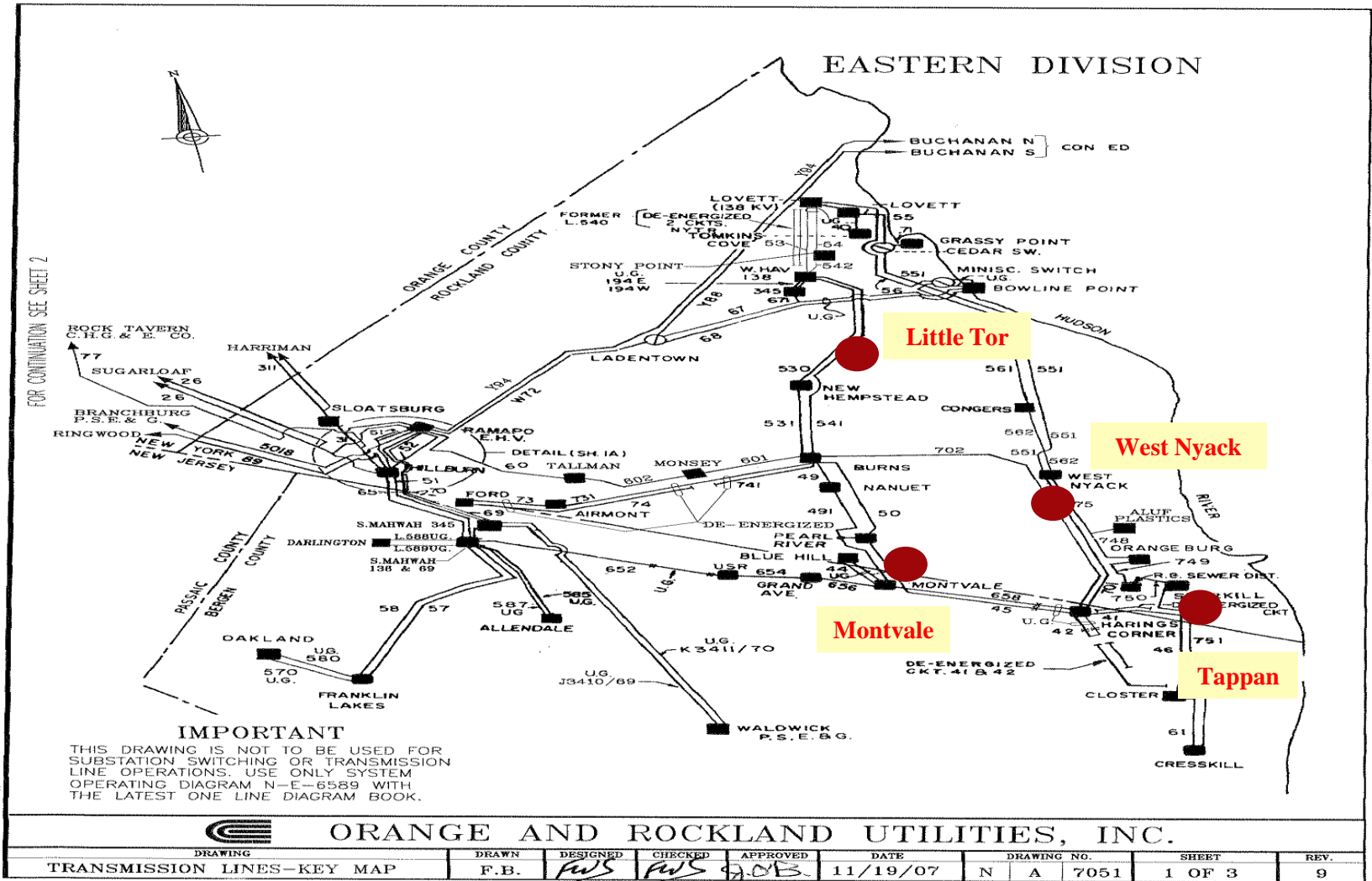
PROPOSED LTP

- EASTERN DIVISION LOCAL PLANS

PROPOSED TRANSMISSION CAPACITOR BANK INSTALLATIONS (32 MVARs)

STATION	IN-SERVICE DATE		Firm	SIS	Article VII	Status
	2015 Plan	2018 Plan				
Little Tor	2017	Dec 2019	N	N/A	N/A	Design
West Nyack (16 MVARs)	-	June 2018	Y	N/A	N/A	Pre-Const.
Montvale (NJ)	2022	June 2024	N	N/A	N/A	Design
Tappan	2023	Dec 2025	N	N/A	N/A	Design
Pomona	2022	Cancelled	-	-	-	-

PROPOSED LTP - CAP BANKS(Eastern)



PROPOSED LTP

- EASTERN DIVISION LOCAL PLANS

PROPOSED EQUIPMENT REPLACEMENTS DUE TO CONDITION (138 KV BREAKERS)

STATION	IN-SERVICE DATE		Firm	SIS	Article VII	Status
	2015 Plan	2018 Plan				
Ramapo	Completed	-	-	-	-	Comp.
Burns	2019	Dec 2021	N	N/A	N/A	Design
West Haverstraw	2020	Dec 2021	N	N/A	N/A	Design

PROPOSED LTP

- CENTRAL DIVISION LOCAL PLANS:**

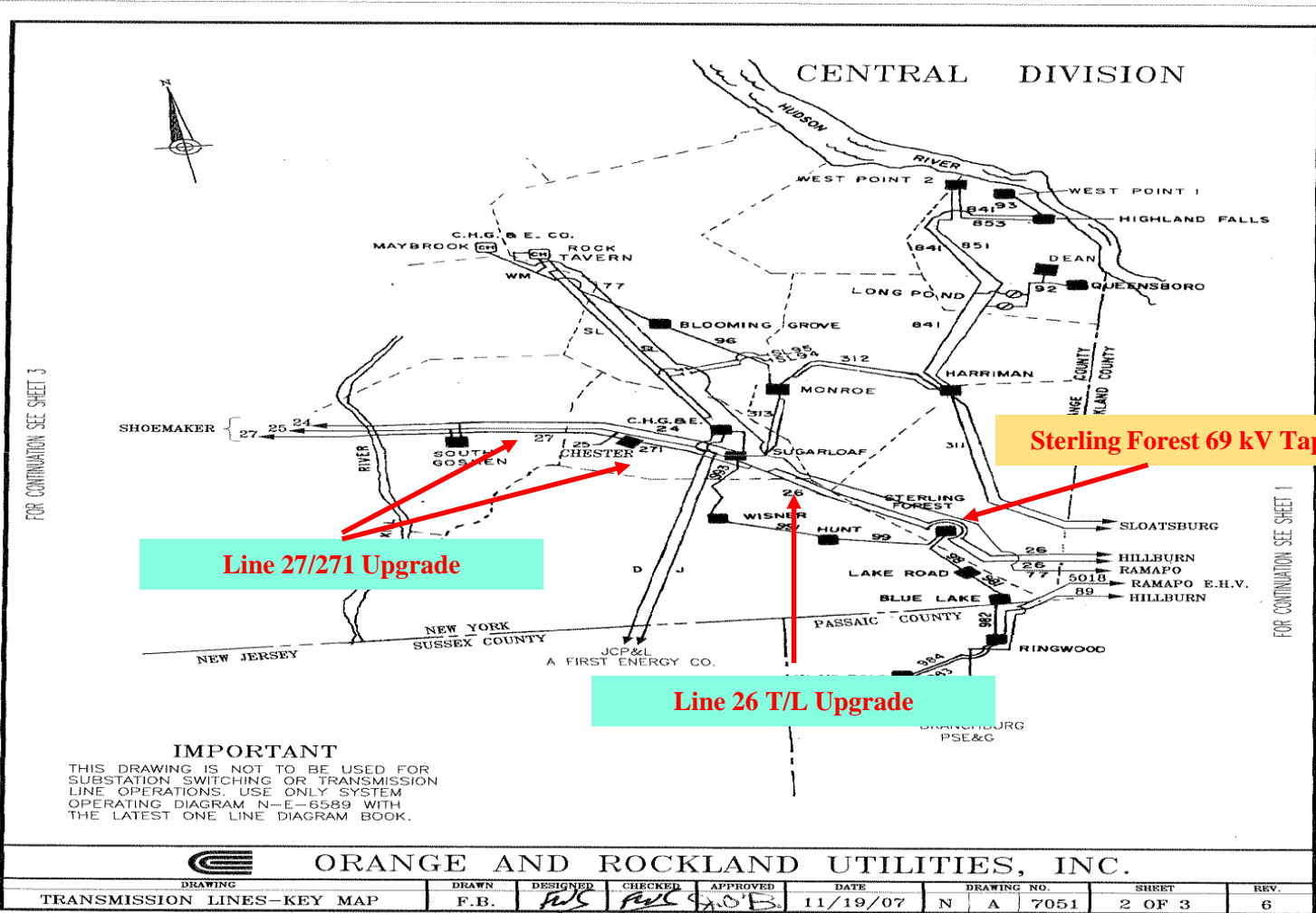
GEOGRAPHIC COVERAGE : Portions of Orange County (NY)
 Portions of Passaic County (NJ)
DESIGN STANDARD: First Contingency

PROJECT DESCRIPTION	IN-SERVICE DATE		Firm	SIS	Article VII	Status
	2015 Plan	2018 Plan				
Sterling Forest New 69 KV Source	June 2016 (Completed)	-	-	-	-	Comp.
Line 27/271 Upgrade ³ (138 kV)	-	June 2023	N	N	N	Design
Line 26 T/L Upgrade ² (138 kV)	June 2024	June 2026	N	N	N	Design

²Projects Due to Equipment Condition

³Reliability Projects and AC Transmission Related

PROPOSED LTP (Central)



PROPOSED LTP

- CENTRAL DIVISION LOCAL PLANS

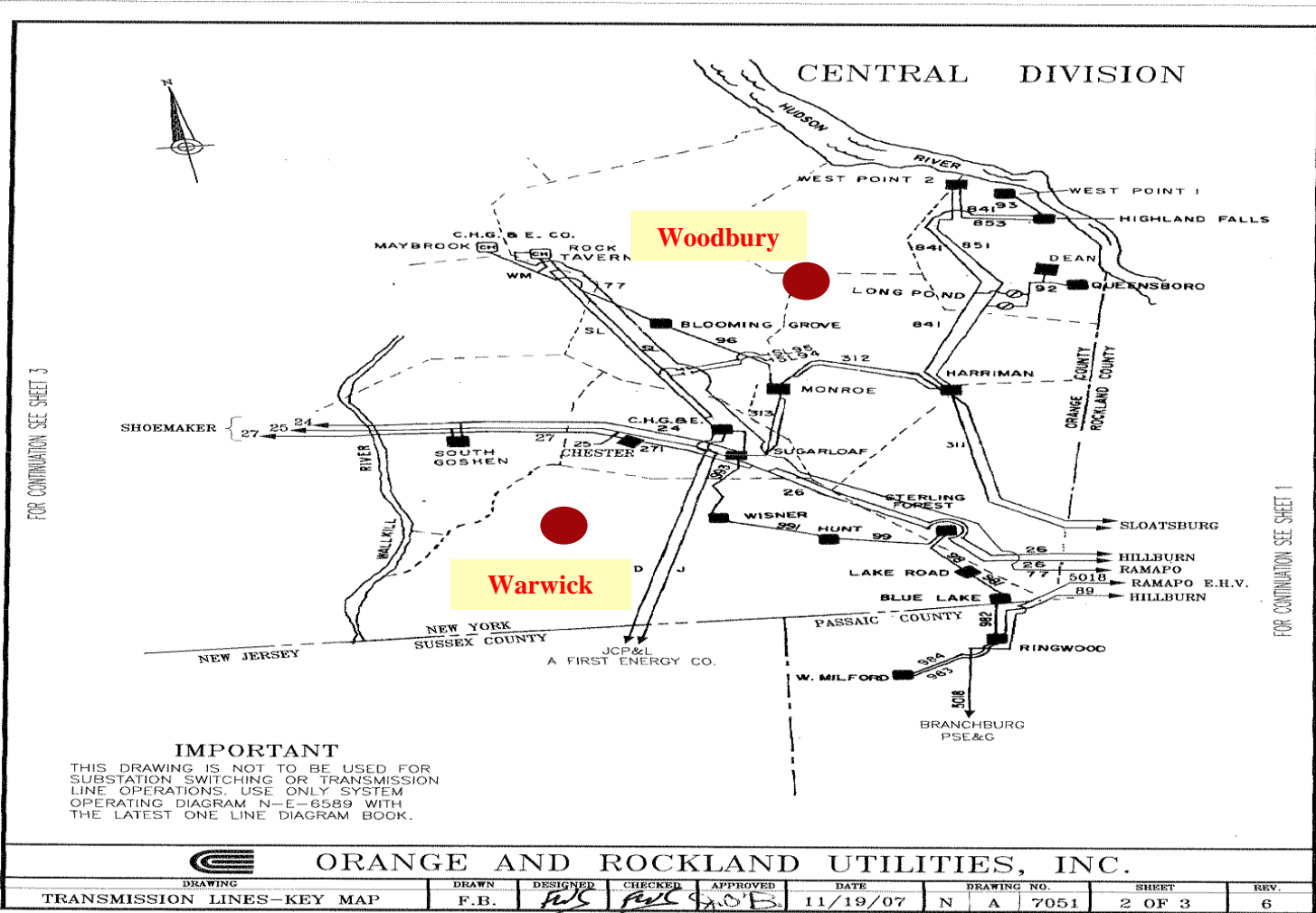
PROPOSED TRANSMISSION CAPACITOR BANK INSTALLATIONS (32 MVARs)

STATION	IN-SERVICE DATE		Firm	SIS	Article VII	Status
	2015 Plan	2018 Plan				
West Warwick	2019	Dec 2025	N	N/A	N/A	Design
Woodbury	2022	Dec 2024	N	N/A	N/A	Design

PROPOSED EQUIPMENT REPLACEMENTS DUE TO CONDITION (BREAKERS)

STATION	IN-SERVICE DATE	
	2015 Plan	2018 Plan
West Point	Completed (2017)	-

PROPOSED LTP - CAP BANKS (Central)



PROPOSED LTP

- WESTERN DIVISION LOCAL PLANS:

GEOGRAPHIC COVERAGE : Portions of Orange County (NY),
Portions of Sullivan County (NY)
DESIGN STANDARD: First Contingency

PROJECT DESCRIPTION	IN-SERVICE DATE		Firm	SIS	Article VII	Status
	2015 Plan	2018 Plan				
Line 6 Upgrade to 69 kV ¹	Various Stages starting on December 2019	Various Stages starting on December 2022	N	N	N	Design

¹Reliability Project

PROPOSED LTP

- WESTERN DIVISION LOCAL PLANS

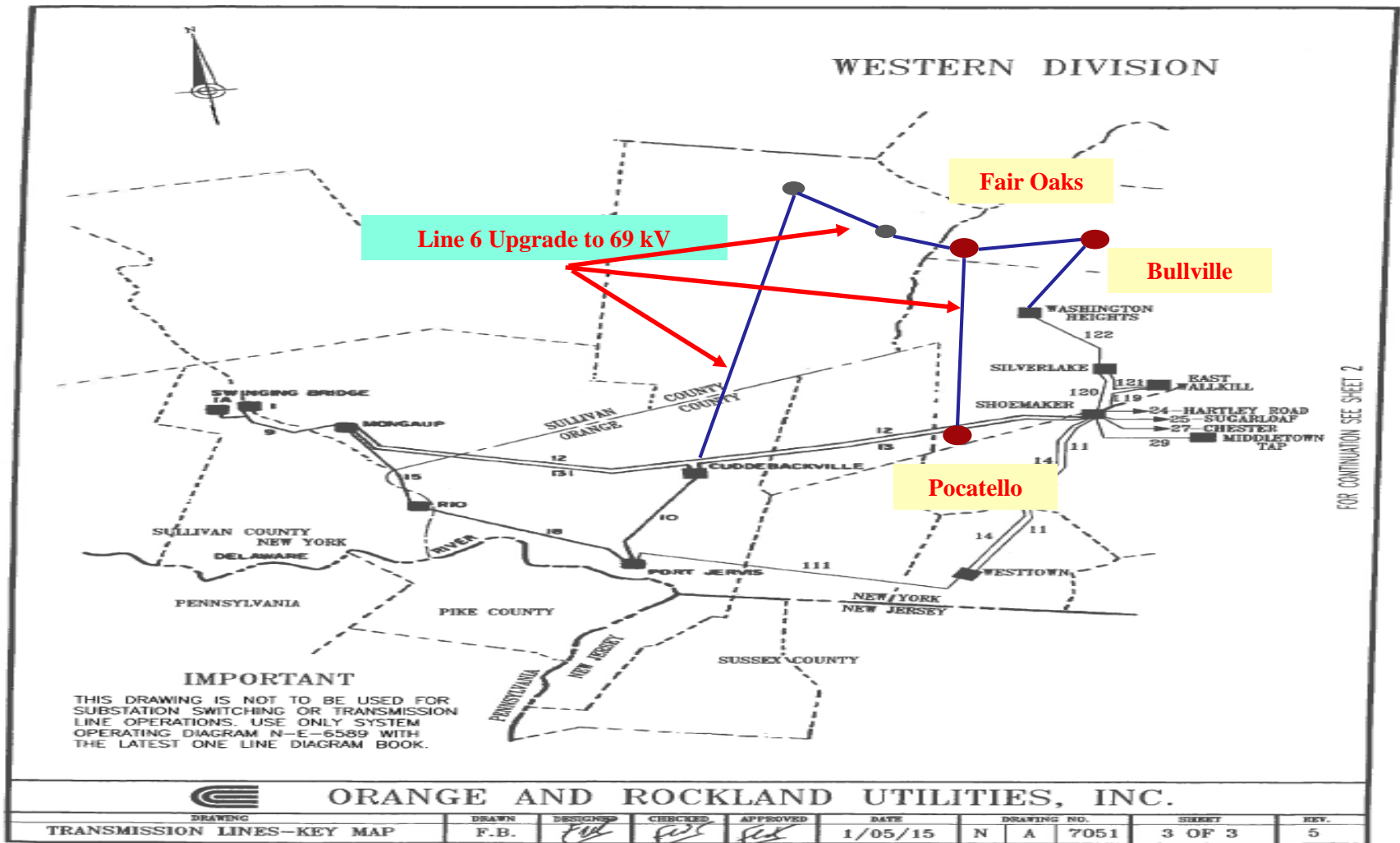
PROPOSED TRANSMISSION CAPACITOR BANK INSTALLATIONS (16 MVARs or 32 MVARs)

STATION	IN-SERVICE DATE		Firm	SIS	AVII	Status
	2015 Plan	2018 Plan				
Pocatello (New - 32)	2021	2025	N	N/A	N/A	Design
Fair Oaks (New -16)	2023	2025	N	N/A	N/A	Design
Bullville (New – 16)	2021	2025	N	N/A	N/A	Design

PROPOSED EQUIPMENT REPLACEMENTS DUE TO CONDITION BREAKERS - NONE

STATION	IN-SERVICE DATE	
	2015 Plan	2018 Plan

PROPOSED LTP & CAP BANKS (Western)



O & R LTP LINK AND CONTACTS

1 LTP LINK

<http://www.oru.com/aboutoru/tariffsandregulatorydocuments/federal/order890.html>

2. CONTACTS

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Thank you
for your kind
attention!

