Yearly Operational Plan (YOP)

Transmission Line Vegetation Management

Massachusetts Municipal Wholesale Electric Company

2013

Prepared By:

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Yearly Operational Plan

The purpose of 333 CMR 11.00, Rights of Way Management, is to promote the implementation of integrated pest management techniques and to establish standards, requirements, and procedures necessary to minimize the risk of unreasonable adverse effects on human health and the environment associated with the use of herbicides to maintain streets, road, sidewalks and paths. These regulations establish procedures that guarantee ample opportunity for public and municipal agency review and input on the right-of-way maintenance plans.

A yearly operational plan (YOP) must be submitted to the Department of Agricultural Resources every year herbicides are intended for use to maintain rights-of-way. The YOP provides a detailed program for vegetation management for the year. A five year Vegetation Management Plan (VMP) covering the period from 2011 – 2015 was approved Department in 2011 and is available for review at the office of the Massachusetts Municipal Wholesale Electric Company (MMWEC), Board of Health, Conservation Commission, and Ludlow Selectman's Office.

Upon receipt of this YOP, the Department publishes a notice in the Environmental Monitor. MMWEC must provide a copy of the proposed YOP and Environmental Monitor notice to the Board of Health, Conservation Commission, and the Selectman's Office for the Towns of Ludlow, Hancock and Lanesborough in which the proposed herbicide treatment is proposed. The Department allows a 45-day comment period on the proposed YOP beginning with the publication of the notice and receipt of the YOP and Environmental Monitor notice by the Town.

Public notification of herbicide application to the rights of way is made at least 21 days in advance of the treatment by a separate notice. Notice is made to the Department of Agricultural Resources, Selectman's Office, Board of Health, and the Conservation Commissions in the Towns of Ludlow, Hancock and Lanesborough.

Any comments on this YOP should be made to the person designated herein as the person supervising the YOP or the person performing the treatment.

MMWEC Yearly Operational Plan

This Yearly Operational Plan, pursuant to Rights-of-Way Management Regulations (333 CMR 11.00), has been adopted by the following transmission line vegetation management program in the Towns of Ludlow, Hancock and Lanesborough, Massachusetts. The undersigned hereby acknowledges that the conditions of the Yearly Operational Plan will be adopted and complied with.

Municipality:	Towns of Ludlow, Hancock and Lanesborough Massachusetts
Name:	Michael DiMauro
Agency:	MMWEC
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Telephone / Fax:	(413) 308-1243 / (413) 589-1585
Email:	mdimauro@mmwec.org
Signature:	_____
Date:	_____

Individual Supervising YOP

Name and Title:	Michael DiMauro, Environmental Engineer
Department:	Engineering Services
Address:	MMWEC, 327 Moody Street, Ludlow, MA
Telephone:	(413) 308-1243
Signature:	_____

Contractor Performing Herbicide Treatment

A licensed herbicide applicator under contract to MMWEC will perform the herbicide treatment. Applicators are certified by the Massachusetts Department of Agricultural Resources in the applicator category:

Certified Applicator:	David O'Brien
Certified Applicator License Number:	22047
Company or Department:	Lewis Tree Service, Inc.
Address:	300 Lucius Gordon Drive, West Henrietta, NY 14586
Telephone Number:	413- 237-9870
Email:	Dobrien@lewistree.com

Yearly Operational Plan

The following information is provided as details of the YOP for the MMWEC Transmission Line Rights of Way in accordance with the requirements of 333 CMR 11.06 (2):

Herbicides Proposed

The herbicides proposed for use in calendar year 2013 are:

Herbicide	EPA Reg	Rate
Rodeo Concentrate	62719-324	3%
Escort XP	352-439	2oz/100 gal
Carrier/Adjuvant		
Aqufac		1%

Complete information on these products is attached, including the **M**aterial **S**afety **D**ata **S**heets for the product. The herbicide fact sheet for the above listed herbicides are attached to and made part of this YOP.

Herbicide Application Techniques and Alternative Control Procedures

The herbicide(s) will be applied in accordance with the instructions in the attached manufacturer's information and as described below. Alternative control procedures, applicable at the designated "No Spray Zones" will consist of hand cutting, mowing, or selective trimming as necessary.

Selected Treatment Method for this YOP

The selected method of herbicide treatment for this YOP is the Selective Foliar method.

Description: A herbicide mixture is applied to fully developed leaves, stems, needles or blades of individual, target species. The herbicide concentrate is usually mixed or diluted with water and applied as a uniform spray over the plant‘s foliage. Two types of equipment for foliar treatments are used: back pack and vehicle mounted. Both treatments use low pressure, below 60 pounds per square inch (psi) at the nozzle, for applications. This technique is generally the most economical and effective method, particularly in medium and high brush density situations and to control noxious and poisonous vegetation that presents a hazard to inspection and maintenance crews. The application period usually extends from early June through the beginning of leaf abscission in the fall when not restricted by regulations.

Backpack Foliar Techniques utilize hand-operated pumps or motorized, backpack sprayers. The motorized, backpack sprayer produces an air current that delivers the herbicide mixture in small droplets from the portable three to five gallon spray tank to the target vegetation. Both techniques only require the applicator to dampen or lightly wet the target leaf area not to the point of runoff. This minimizes the amount of excess herbicide drip from target species onto desirable ground cover. Low volume applications also eliminate the need to bring heavy equipment on the ROW for the transportation of large quantities of herbicide solution.

Vehicle Mounted Techniques generally utilizes a 100-500 gallon hydraulic sprayer mounted on a truck, tractor or tracked vehicle equipped with hand-held spray guns. The herbicide mixture is directed at specific vegetation or broadcast for uniform coverage. Specially designed showerhead type nozzles reduce spray volumes and limit droplet fines thus reducing the potential for spray drift off-target. These nozzles deliver effective spray coverage at relatively low spray pressures of sixty psi and less. This technique is capable of delivering uniform, penetrating spray coverage to dense, tall, target vegetation such as Phragmites and Japanese Knotweed. It is particularly useful for sites where total weed control or pre-emergent herbicide applications are required for fire safety, such as at pumping stations and valve sites or for initial treatment of invasive plants.

All equipment used for vegetation management programs must be maintained in good working condition, and should be of adequate design and ability to produce the professional quality of work that the Town requires. Because the Town recognizes the vast variety and performance of herbicide application equipment, dictating how that equipment should be calibrated to deliver precise amounts of herbicide to effectively control a host of vegetation conditions is literally impossible. Therefore, the Town insists that the contractor provide the most appropriate application equipment, calibrated to effectively and legally control target vegetation.

Both the Contractor and MMWEC are responsible to insure that vegetation management activities are conducted in a professional, safe, efficient manner, with special attention directed towards minimal environmental impact. The contractor is qualified, licensed and certified to apply herbicides. "Qualified" means those personnel who have been trained to recognize and identify target and non-target vegetation and are knowledgeable in the safe and proper use of both mechanical and chemical vegetation management techniques. All personnel applying herbicides in Massachusetts must be licensed in the Commonwealth and must work under the on-site supervision of a certified applicator. All contract personnel will also follow all label instructions regarding Personal Protective Equipment (PPE).

MMWEC will rely on the independent contractor listed in the YOP for vegetation management applications and requires, in a contractual agreement, that contractors comply with all applicable federal and state laws and regulations. These include, but are not limited to, applicable OSHA, FIFRA and DOT regulations, 333 CMR 1-15.00,

Rights-of-Way Management, Chapter 132B, Chapter 85 of the Acts of 2000 (see Appendix IV) and 321 CMR 10.00 as managed by NHESP.

Herbicides will only be applied in a safe and judicious manner, in compliance with all-applicable State and Federal pesticide regulations.

Applicators will at all times exercise good judgment and common sense during herbicide treatment activities, and will immediately cease operations if adverse conditions or other circumstances warrant.

Herbicides will NOT be applied during the following adverse weather conditions:

A. During high wind velocity, per 333 CMR 11.03
B. Foliar applications during periods of dense fog, or moderate to heavy rainfall
C. Foliar applications of volatile herbicides during periods of high temperatures (90 plus degrees Fahrenheit) and low humidity
D. Cut Stump applications when deep snow (i.e. 6" plus or ice frozen on stem or stump) prevents adequate coverage of target plants to facilitate acceptable control

The contractors or a representative of MMWEC must complete daily vegetation management reports that include:

A. Date, name and address of vegetation management contractor(s)
B. Identification of site or work area
C. List of crew members
D. Type of equipment and hours used, both mechanical and chemical
E. Method of application and description of target vegetation
F. Amount, concentration, product name of herbicide(s), adjuvants, and dilutants (EPA registration numbers must be on file)
G. Weather conditions
H. Notation of any unusual conditions or incidents, including public inquiries
I. Recording and/or verification of sensitive areas on ROW maps

<u>Identification of Target Vegetation</u>

The target vegetation for this YOP will be all non-desirable, tall growing species of vegetation that could reduce line clearances below required minimum distance for safe and reliable electric transmission.

Vegetation management crews will exercise care to insure that low-growing desirable vegetation and other non-target organisms are not unreasonably affected by the application of herbicides.

<u>Description of Methods Used to Flag or Otherwise Designate Sensitive Areas</u>

The sensitive areas detailed herein are easily recognizable in the field as described and will be marked with an orange painted line in the street.

For the 2013 YOP, it is the intention of MMWEC to spray target species where permitted along the entire 5.2 mile transmission line in Ludlow and the 23 kV collector circuit for the Berkshire Wind Power Project in the Towns of Hancock and Lanesborough, Ma.. The YOP maps identify the Sensitive Areas where “No Spray Zones” have been established, all of which are clearly identified by structures, houses, or other field methods.

With the assistance of the contractor, sensitive areas will be identified and marked along the ROW prior to any herbicide application.

On the MMWEC transmission line in Ludlow, Ma, potential sensitive habitats were identified by the NHESP in 2 locations.

The first area was located between stations 30+25 and T-line Structure #5. The area was previously mapped by NHESP to contain the Climbing Fern (*Lygodium palmatum*). This area was surveyed in accordance with NHESP requirements and protocols in the early fall of 2011 by a certified biologist and it was determined that there were no occurrences of the species in question. However, this area was not sprayed due to scheduling and the timing of the study. This area will not be sprayed in 2013 unless approved by NHESP.

The second area is located between T-Line Structures 1 and 8. This area was previously mapped by NHESP to contain a species of special concern, the Blue Spotted Salamander (*Ambystoma laterale*). The BMPs as described in the ROW vegetation management plan for Vernal Pool Habitat shall be followed in this area.

Sensitive Area Restrictions

333 CMR 11.04

CONTROL STRATEGIES FOR SENSITIVE AREAS

Sensitive Area	Minimum Buffer Zone (feet)	Control Method	Restriction Code
Public Ground Water Supplies	400'	Mechanical Only	None
Primary Recharge Area	Designated buffer zone or 1/2 mile radius	Mechanical, Recommended Herbicides*	1
Public Surface Water Supplies (Class A & Class B)	100'	Mechanical Only	None
	100'-400'	Recommended Herbicides	1
Tributary to Class A Water Source, within 400' upstream of water source	100'	Mechanical Only	None
	100'-400'	Recommended Herbicides	1
Tributary to Class A Water Source, greater than 400' upstream of water source	10'	Mechanical Only	None
	10'-200'	Recommended Herbicides	1
Class B Drinking Water Intake, within 400' upstream of intake	100'	Mechanical Only	None
	100'-200'	Recommended Herbicides	1
Private Drinking Water Supplies	50'	Mechanical Only	None
	50'-100'	Recommended Herbicides	2
Surface Waters	10'	Mechanical Only	None
	10'-100'	Recommended Herbicides	2
Rivers	10' from mean annual high water line	Mechanical Only	None
	10'-200'	Recommended Herbicides	2
Wetlands	100' (treatment in wetlands permitted up to 10' of standing water)*+	Low-pressure Foliar, CST, Basal Recommended Herbicides	1
Habitated Areas	100' (for high-pressure foliar only)	Recommended Herbicides	2
Agricultural Area (Crops, Fruits, Pastures)	100' (for high-pressure foliar only)	Recommended Herbicides	2
Certified Vernal Pools	10'	Mechanical Only	None
Certified Vernal Pool Habitat	10'-outer boundary of habitat	As recommended by NHESP in their permit process, no treatment without written permission	
Priority Habitat	As recommended by NHESP in their permit process, no treatment without written permission		

Restriction Code "1": A minimum of twenty-four months shall elapse between applications
Code "2": A minimum of twelve months shall elapse between applications

*Massachusetts recommended herbicides for sensitive sites

+Per "The Wetlands Impact Study," 10/1995 (see Appendix III)

Procedures and Locations for Handling, Mixing and Loading of Herbicide Concentrates

The herbicide will be mixed in a controlled environment at prior to entering the right of way. Should mixing become necessary while the contractor is in the right of way, all mixing shall be performed on level ground in the access road away from wetlands and other sensitive areas.

Although it is expected that all the mixed herbicide will be used, any remaining will be safely removed by the contractor at the end of each days work and stored by the contractor in accordance with manufacturer's instructions. The absorbent product "Speedi-Dri" or equivalent will be available for use at the locations of application. If there is a leak in the hose, the pump will be immediately shutoff and removed from the work area in a suitable container for repair. Equipment used will be washed in accordance with all applicable regulations at the contractors place of business.

Herbicides will be handled and applied only in accordance with the label instructions. Contractors will strictly adhere to all mandated safety precautions directed towards the public, the applicator and the environment.

Remedial Plan to Address Spills and Related Accidents

All mixing and loading of herbicides will be conducted at the central facility where the herbicides are stored. Only the amount of herbicide necessary to carry out the vegetation control, based on the monitoring results, will ensure that there will be no waste and minimize potential problems. The vehicle(s) carrying out the spray operations will be equipped with a bag of absorbent, activated charcoal, leak-proof containers, a broom and a shovel in case of minor spills. A clipboard log of the herbicides on the vehicle will be kept on the vehicle. Herbicide labels and fact sheets should be carried on-site by the applicator.

As soon as any spill is observed, immediate action will be taken to contain the spill and protect the spill area. The cause of the spill must be identified and secured. Spill containment will be accomplished by covering the spill with Speedi-Dri or other absorptive material or, for large spills, building clay or soil dikes to impede spill progress. Until completely clean, protection of the spill area will be accomplished by placing barriers, flagging or crewmembers at strategic locations. If a fire is involved, care will be taken to a avoid breathing fumes from any burning chemicals.

Minor spills will be remedied by soaking up the spill with Speedi-Dri or other adsorptive material and placing it in leak proof containers, removed from the site and disposed of property. Dry herbicides, such as granulars, will be swept up or shoveled up directly in leak proof containers for proper disposal. All contaminated soil will be placed in leak proof containers, removed from the site and disposed of properly. Activated charcoal will be incorporated into the soil at the spill location at a rate of sever pounds per thousand square feet to inactivate any herbicide residue. Any minor spill will be reported to the Pesticide Bureau.

Major spills will be handled in a similar manner as minor spills, except in cases where the spill cannot be contained and/or removed by the crew. MassDEP will be contacted when there is a spill of a regulated quantity of material.

In the event of a spill, information on safety precautions and clean up procedures may be gathered from the following sources:

Emergency Contacts

Ludlow

Ludlow DPW	413-583-5625
Ludlow Fire Department	413-583-8332
Ludlow Police Department	413-583-8305

Hancock

Hancock DPW	413-738-5225
Hancock Fire Department	413-738-5446
Hancock Police Department	413-738-5225

Lanesborough

Lanesborough DPW	413-442-1167
Lanesborough Fire Department	413-443-2321
Lanesborough Police Department	413-443-4107

National and State

Bureau Environmental Health Assessment	617-624-5757
Protection Incident Response Unit	888-304-1133
EPA Pesticide Hotline	800-858-7378

ChemTrec	(800) 424-9300	Chemical Industry Emergency Response System
Mass. Pesticide Bureau	(617) 626-1781	For all Pesticide Spills, Fire, and Related Accidents
Mass. DEP Western Regional Office	(413) 784-1100 888-304-1133	For Emergencies Involving Reportable Quantities of Hazardous Materials
BASF Company	(800) 454-2673	For Medical Emergencies Involving Arsenal Herbicide

DowAgroSciences	(800) 992-5994	For Emergencies Involving Dow Products
Du Pont	(800) 441-3637	For Medical Emergencies Involving Du Pont Products
Novartis	(800) 267-6351	For Emergencies Involving Vanquish
Mass. Poison Information Center	(800) 682-9211	For Medical Emergencies Involving Pesticides

YOP
MAPS
LUDLOW

MMWEC

Massachusetts Municipal Wholesale Electric Company

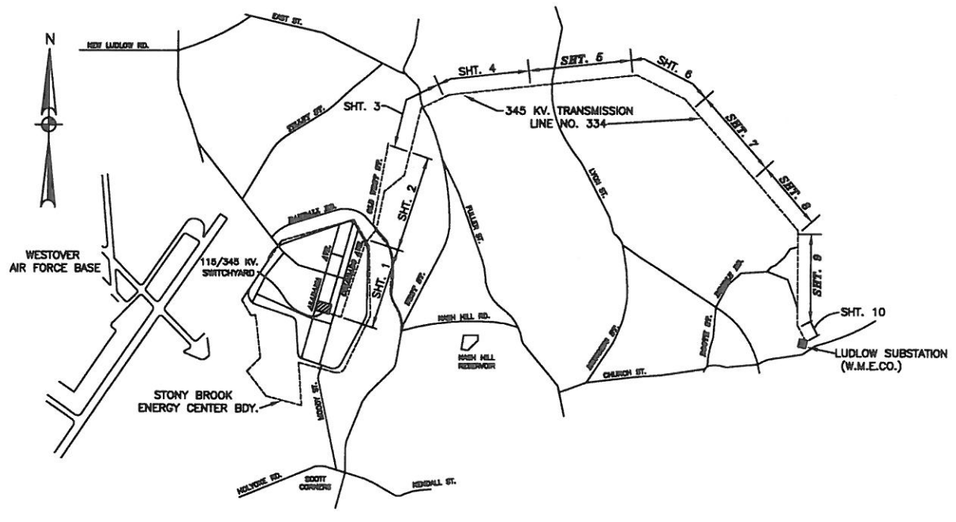
R.W.BECK and ASSOCIATES

ENGINEERS AND CONSULTANTS

STONY BROOK ENERGY CENTER

MMWEC PHASE 1 PROJECT

345 KV TRANSMISSION LINE No. 334



VICINITY MAP

2000 0 2000 4000 6000

SCALE IN FEET

MMWEC
5.2 MILE, 345 KV TRANSMISSION LINE
LUDLOW, MA.

DRAWING NUMBER	TITLE	CONTRACT NUMBER T6
	345 KV TRANSMISSION LINE NO. 334	
2296-G-201	VICINITY MAP AND INDEX	●
2296-C-201	PLAN AND PROFILE (SHEET 1)	●
2296-C-202	PLAN AND PROFILE (SHEET 2)	●
2296-C-203	PLAN AND PROFILE (SHEET 3)	●
2296-C-204	PLAN AND PROFILE (SHEET 4)	●
2296-C-205	PLAN AND PROFILE (SHEET 5)	●
2296-C-206	PLAN AND PROFILE (SHEET 6)	●
2296-C-207	PLAN AND PROFILE (SHEET 7)	●
2296-C-208	PLAN AND PROFILE (SHEET 8)	●
2296-C-209	PLAN AND PROFILE (SHEET 9)	●
2296-C-210	PLAN AND PROFILE (SHEET 10)	●
2296-C-211	CLEARING PLANS & SECTIONS	●
2296-C-212	ACCESS ROAD PLANS & SECTIONS	●
2296-S-201	POLE SETTING & FOUNDATION DETAILS	●
2296-E-201	STRUCTURE WT-1	●
2296-E-202	STRUCTURE WA-1	●
2296-E-203	STRUCTURE WA-2	●
2296-E-204	STRUCTURE WA-3	●
2296-E-205	STRUCTURE WDE-1	●
2296-E-206	STRUCTURE ST-1	●
2296-E-207	LINE AND GUY ATTACHMENT DETAILS	●

● DENOTES CONTRACT DRAWING

No.	Date	By	Chd	Revision
6	5/11	JPH	MD	ADDED RANDALL RD. AND MAIN HILL RD.
5	3/03	YL	YL	ADDED BRIDLE RD.
4	3/5/02	YL	JP	CONVERTED TO CAD FROM R.W.BECK DWG
3	7/16/01	SLK	SLK	CONFORMING TO CONSTRUCTION RECORDS.
2	8-6-00	CJS	RLD	REVISED INDEX
1	2/15/00	CJS	RLD	T6-TRANSMISSION LINE CONSTRUCTION CONTRACT
0	1/31/00	CJS	RLD	T6-CLEARING CONTRACT

REVISIONS

MMWEC
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STONY BROOK ENERGY CENTER
MMWEC PHASE 1 PROJECT

R.W.BECK and ASSOCIATES

ANALYTICAL AND CONSULTING ENGINEERING

Seattle, Washington Denver, Colorado

345KV. TRANSMISSION LINE NO.334

VICINITY MAP AND INDEX

Des. RLD	Eng. RLD	Appvd. Elec. Engr.	Appvd. Mech. Engr.	Appvd. Civil Engr.
Dwn. C/S	Chd. RLD	Appvd.		
File: MC-6244-ET2-65A	Date: 1-31-00		2296-G-201.4	

FILE: T6-63

T6-63

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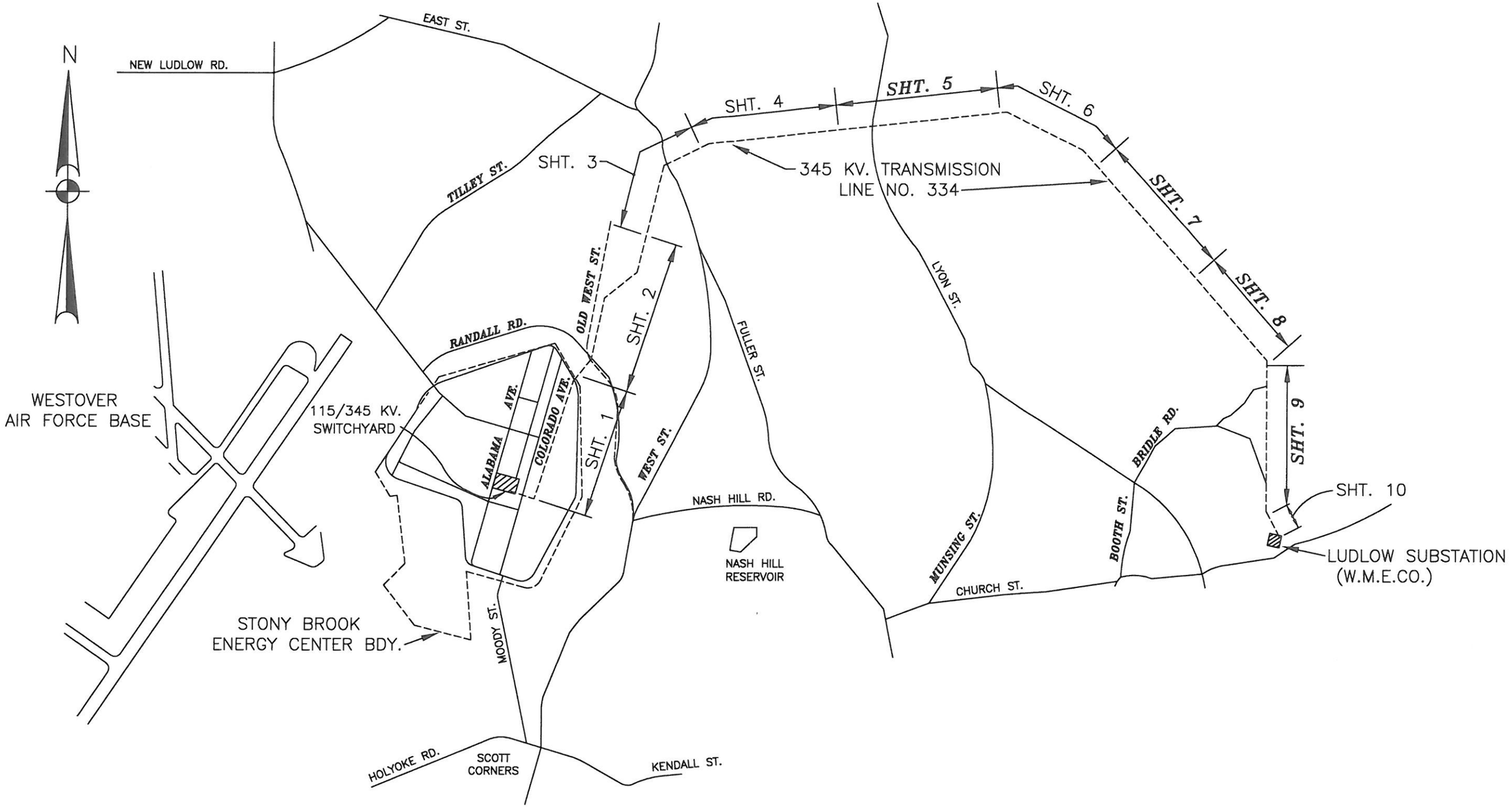
STONY BROOK ENERGY CENTER

MMWEC PHASE I PROJECT

FIGURE 3.4–3

TOPOGRAPHIC MAP SHOWING THE SBEC SITE BOUNDARY AND TRANSMISSION CORRIDOR

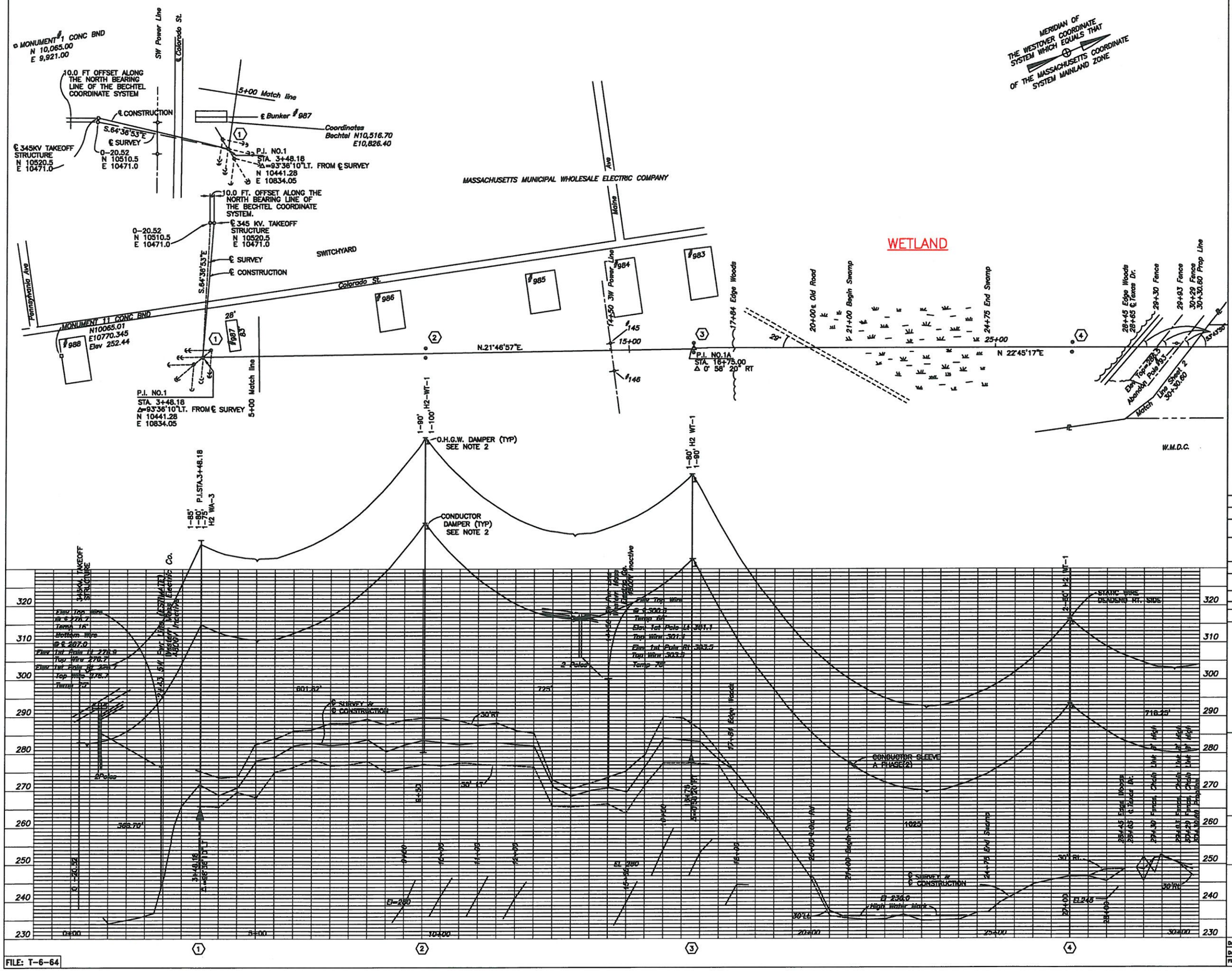


VICINITY MAP

2000 0 2000 4000 6000

SCALE IN FEET

MMWEC
5.2 MILE, 345 KV TRANSMISSION LINE
LUDOW, MA.



NOTES

1. FIELD VERIFY LOCATION OFF 345 KV. TAKEOFF STRUCTURE AND P.I. NO.1
2. REFERENCE STRUCTURE DETAIL DRAWINGS FOR PLACEMENT OF O.H.G.W. AND CONDUCTOR DAMPERS.
3. THESE DRAWINGS ARE EXACT COPIES OF R.W. BECK ORIGINALS. R.W. BECK USED 742' SAG TEMPLATE FOR ALL STRUCTURES. SEE MMWEC SKETCH SK-451.

CONTINENTAL FIELD SERVICE CORPORATION
ELMSFORD, NEW YORK

No.	Date	By	Chd	Revision
6	5/11	JPH	MD	ADDED WETLAND TEXT
5	4/22/82	YL	JP	CONVERTED TO CAD, ADDED NOTE 3
4	7/13/81	SLK	SHK	CONFORMING TO CONSTRUCTION RECORDS.
3	9-8-80	CJS	RLD	CHANGED COORDINATES ADDED STRUCTURE NUMBERS NOTE 2 AND DAMPERS
2	3/4/80	WB	RLD	ADDED ANCHORS AT P.I. NO.1
1	2/15/80	CJS	RLD	T8-TRANSMISSION LINE CONSTRUCTION CONTRACT
0	1/21/80	CJS	RLD	T5-CLEARING CONTRACT

REVISIONS

MMWEC
Massachusetts Municipal Wholesale Electric Company
A PUBLIC CORPORATION

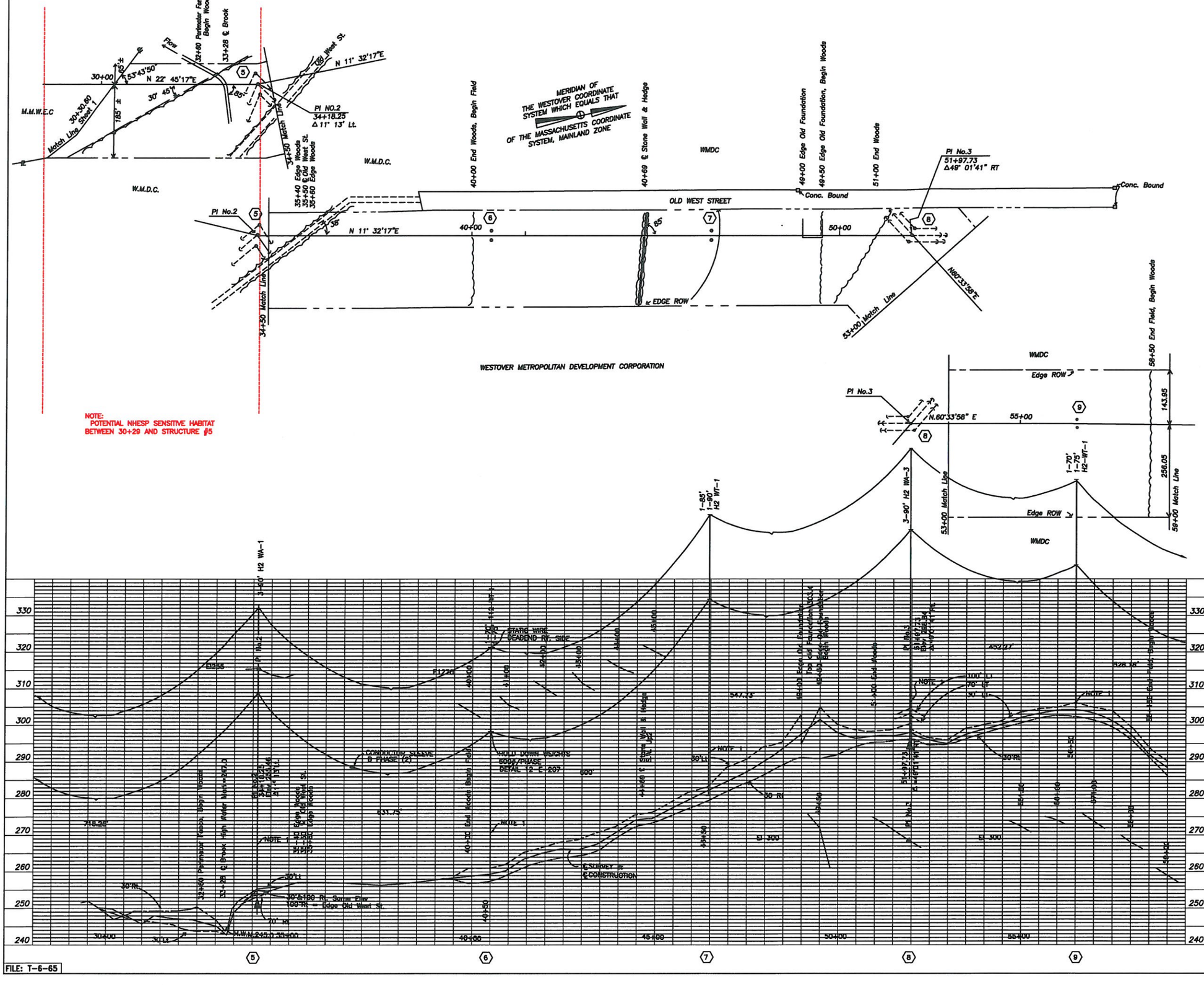
STONY BROOK ENERGY CENTER
MMWEC PHASE 1 PROJECT

R.W.BECK and ASSOCIATES
ANALYTICAL AND CONSULTING ENGINEERS
Seattle, Washington — Denver, Colorado

345KV. TRANSMISSION LINE NO.334
PLAN AND PROFILE (SHEET 1)
(INCLUDES STRUCTURES 1-4)

Des. RLD	Eng. RLD	Appd. Elec. Dept.	Appd. Mech. Dept.	Appd. Struct. Dept.
Dwn. C/S	Chd. RLD	Appd.		
File MC-8244-ET2-MA	Date 1-31-80		2296-C- 201.4	

T-6-64



NOTE:
POTENTIAL NHESP SENSITIVE HABITAT BETWEEN 30+29 AND STRUCTURE #5

FILE: T-6-65

NOTES

1. PROVIDE SIGN READING "DANGER-KEEP AWAY".

CONTINENTAL FIELD SERVICE CORPORATION
ELMSFORD, NEW YORK

No.	Date	By	Chd	Revision
7	1/17/12	JPH	MD	ADDED NHESP NOTE
6	3/1/11	YL	JP	CONVERTED TO CAD
5	7/15/91	SLK		CONFIRMING TO CONSTRUCTION RECORDS,
4	6/17/91	SLK		ADDED "DANGER KEEP AWAY" SIGNS
3	5-1-91	CJS	RLD	ADDED STRUCTURE NUMBERS
2	3/5/90	WB	RLD	ADDED ANCHORS AT PI No.3
1	2/15/90	CJS	RLD	T6—TRANSMISSION LINE CONSTRUCTION CONTRACT
0	1/31/90	CJS	RLD	T5—CLEARING COMTRACT

REVISIONS

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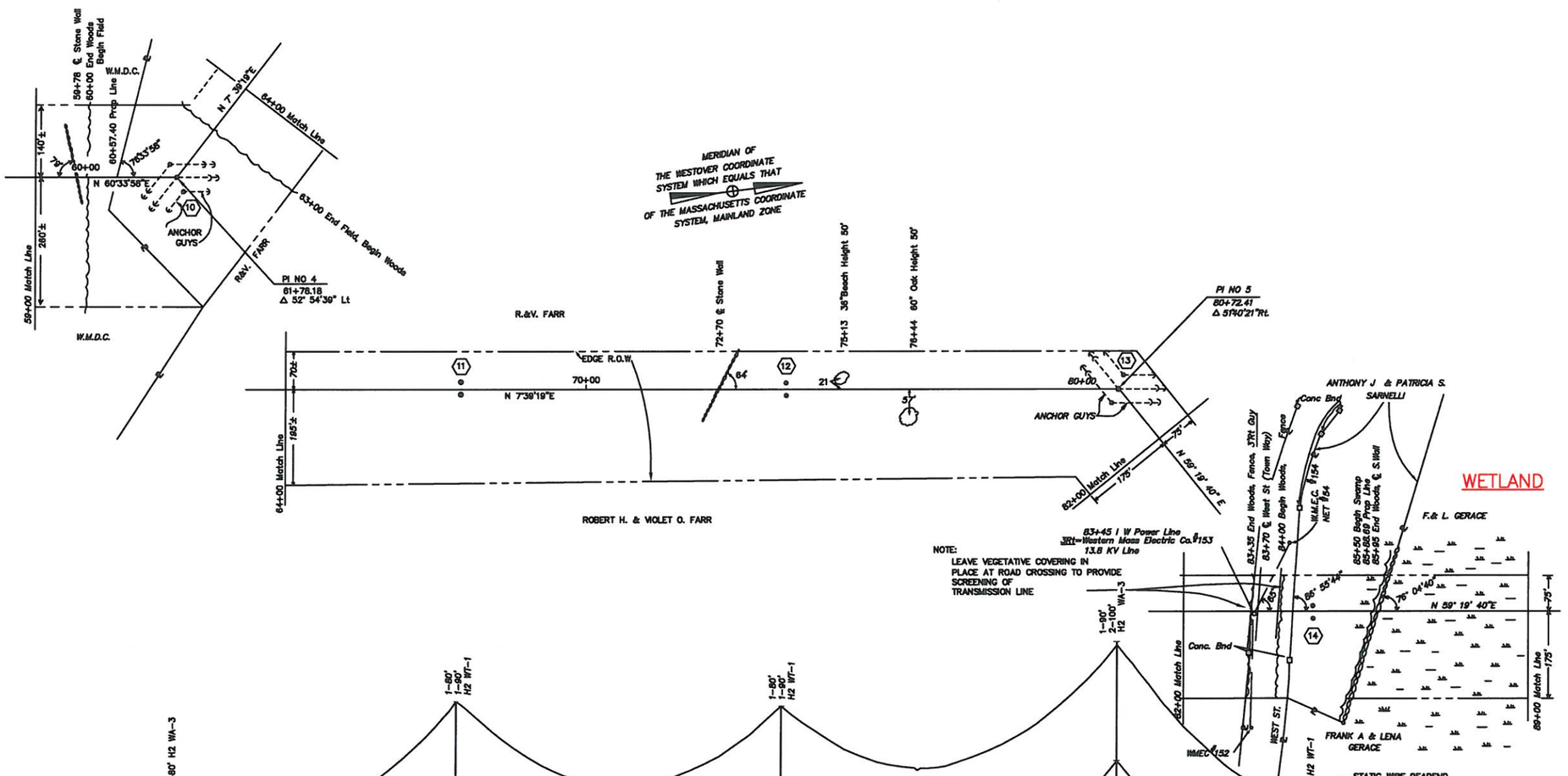
STONY BROOK ENERGY CENTER
MMWEC PHASE 1 PROJECT

R.W.BECK and ASSOCIATES
ANALYTICAL AND CONSULTING ENGINEERS
Seattle, Washington — Denver, Colorado

345KV. TRANSMISSION LINE NO.334 PLAN AND PROFILE (SHEET 2) (INCLUDES STRUCTURES 5–9)

Des. RLD	Eng. RLD	Appd. Elec. Dept.		Appd. Mech. Dept.	Appd. Struct. Dept.
Dwn. C/S	Chd. RLD	Appd.		2296-C-202.5	
File: MC-6244-ET2-MA		Date: 1-31-90			

T-6-65



FILE: T-6-66

NOTES

1. PROVIDE SIGN READING "DANGER– KEEP AWAY".

CONTINENTAL FIELD SERVICE CORPORATION
ELMSFORD, NEW YORK

No.	Date	By	Chd	Revision
7	5/11		JPH	MD	ADDED WEST ST. AND WETLAND
6	3/1/88		YL	JP	CONVERTED TO CAD
5	7/11/81		SLK	SLK	CONFORMING TO CONSTRUCTION RECORDS.
4	6/17/81		SLK	RLD	ADDED "DANGER KEEP AWAY" SIGNS.
3	5-6-81		CJS	RLD	ADDED STRUCTURE NUMBERS AND DAMPERS
2	3/6/81		W.B	RLD	ADDED ANCHORS AT P.I. NO 4 AND P.I. NO 5
1	2/25/81		CJS	RLD	T6–TRANSMISSION LINE CONSTRUCTION CONTRACT
0	1/21/81		CJS	RLD	T5–CLEARING CONTRACT

REVISIONS

MMWEC
Massachusetts Municipal Wholesale Electric Company
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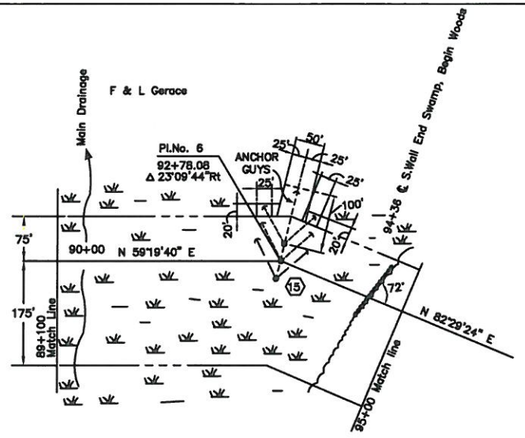
STONY BROOK ENERGY CENTER
MMWEC PHASE 1 PROJECT

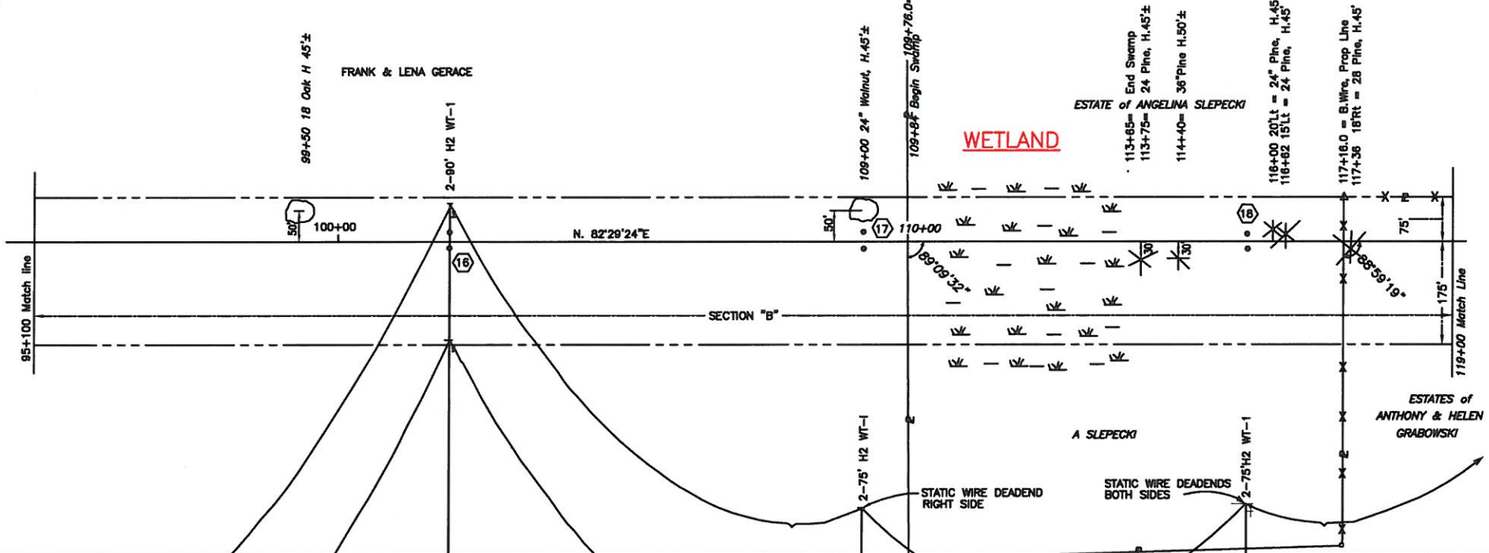
R.W.BECK and ASSOCIATES
ANALYTICAL AND CONSULTING ENGINEERS
Seattle, Washington — Denver, Colorado

345KV. TRANSMISSION LINE NO.334 PLAN AND PROFILE (SHEET 3) (INCLUDES STRUCTURES 10–14)

Des. RLD	Eng. RLD	Appd. Elec. Dept.		Appd. Mech. Dept.	Appd. Struct. Dept.
Dwn. C/S	Chd. RLD	Appd.		2296–C–203.5	
File: MC–0244–ET2–MA		Date: 1–31–80			

T–6–66





FILE: T-6-67

NOTES

1. FIELD VERIFY ALL ANGLES TO LANDMARKS, DISTANCES FROM ℄ CONSTRUCTION TO RIGHT OF WAY LIMITS, AND ALL PROFILE ELEVATIONS BETWEEN P.I.6 AND P.I.8

CONTINENTAL FIELD SERVICE CORPORATION
ELMSFORD, NEW YORK

No.	Date	By	chkd	Revision
6	6/11	JPH	MD	ADDED WETLAND
5	2/28/00	YL	JP	CONVERTED TO CAD
4	7/19/01	SLK	SLK	CONFORMING TO CONSTRUCTION RECORDS.
3	7-1-00	CJS	RLD	ADDED NOTE NO.1 REMOVED R-O-W.DIM.
2	6-6-00	CJS	RLD	ADDED STRUCTURE NUMBERS AND DAMPERS
1	3/15/00	CJS	RLD	T6-TRANSMISSION LINE CONSTRUCTION CONTRACT
0	1/31/00	CJS	RLD	T5-CLEARING CONTRACT

REVISION

MMWEC
Massachusetts Municipal Wholesale Electric Company
A PUBLIC CORPORATION

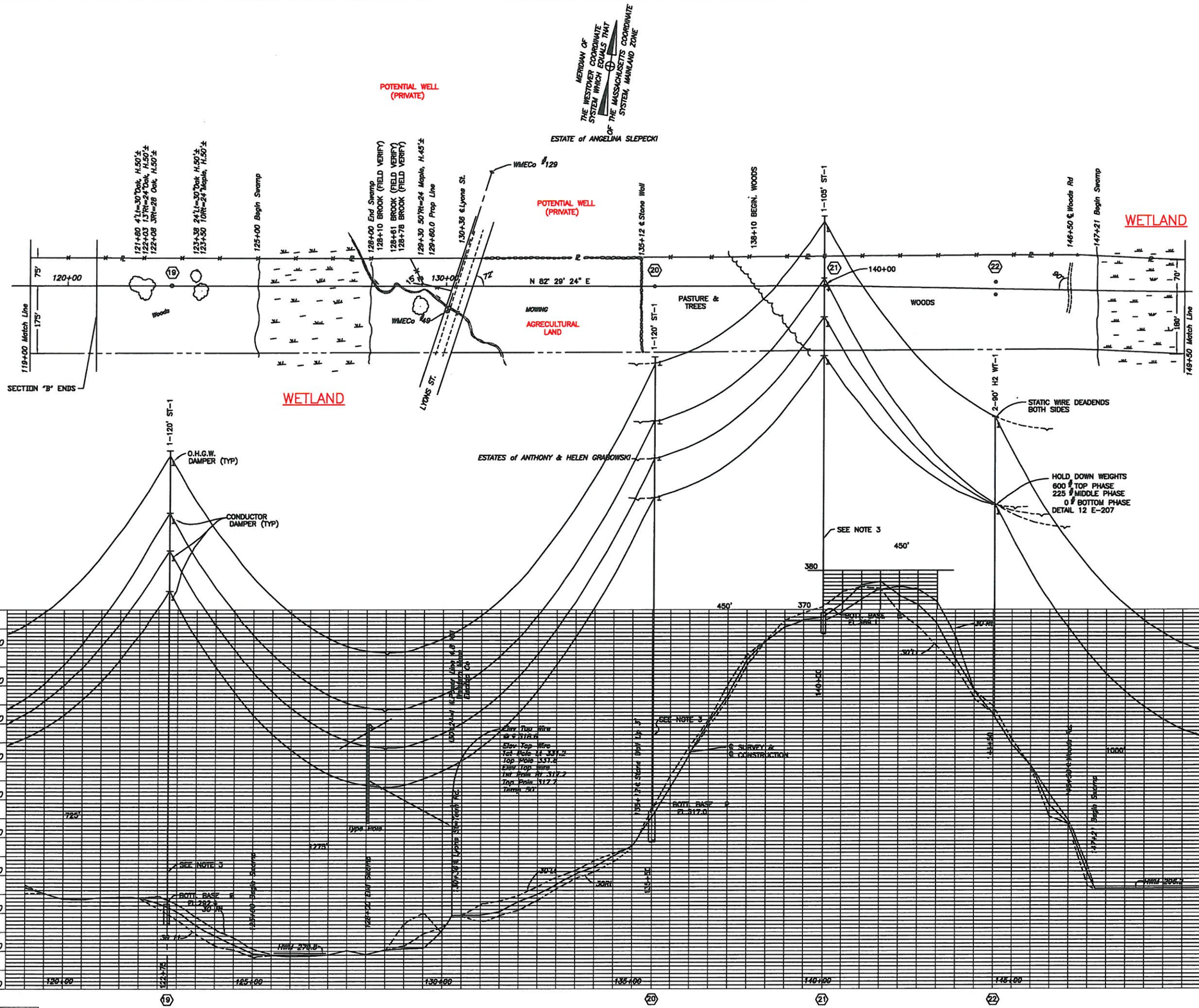
STONY BROOK ENERGY CENTER
MMWEC PHASE 1 PROJECT

R.W.BECK and ASSOCIATES
ANALYTICAL AND CONSULTING ENGINEERS
Seattle, Washington Denver, Colorado

345KV. TRANSMISSION LINE NO.334
PLAN AND PROFILE (SHEET 4)
(INCLUDES STRUCTURES 15-18)

Des. RLD	Eng. RLD	Appvd. Elec. Dept.		Appvd. Mech. Dept.	Appvd. Hydro. Dept.
Dwn. C/S	Chd. RLD	Appvd.		2296-C-204.4	
File: MC-6244-ET2-MA		Date: 1-31-80			

T-6-67



NOTES

1. FIELD VERIFY ALL ANGLES TO LANDMARKS, DISTANCES FROM ℄ CONSTRUCTION TO RIGHT OF WAY LIMITS, AND ALL PROFILE ELEVATIONS BETWEEN P.I.6 AND P.I.8
2. FOR ST.1 STRUCTURES LOCATE TWO ARMS SO. OF THE ℄ CONSTRUCTION AND ONE ARMS NO. OF THE ℄ CONSTRUCTION.
3. PROVIDED "DANGER–KEEP AWAY" SIGNS.

CONTINENTAL FIELD SERVICE CORPORATION
ELMSFORD, NEW YORK

No.	Date	By	Chd	Revision
7	8/11	JPH	MD	ADDED WETLAND, POTENTIAL WELL AND AGR.
6	3/29/96	YL	JP	CONVERTED TO CAD
5	7/14/95	SLK	SLK	CONFORMING TO CONSTRUCTION RECORDS
4	6/29/95	SLK		ADDED "DANGER KEEP AWAY" SIGNS
3	7-1-93	CJS	RLD	ADDED NOTE NO.1 & NO.2 REMOVED R-O-W. DIM.
2	6-6-93	CJS	RLD	ADDED STRUCTURE NUMBERS AND DAMPERS
1	5/19/93	CJS	RLD	T6–TRANSMISSION LINE CONSTRUCTION CONTRACT
0	1/21/93	CJS	RLD	T5–CLEARING CONTRACT

REVISIONS

MMWEC
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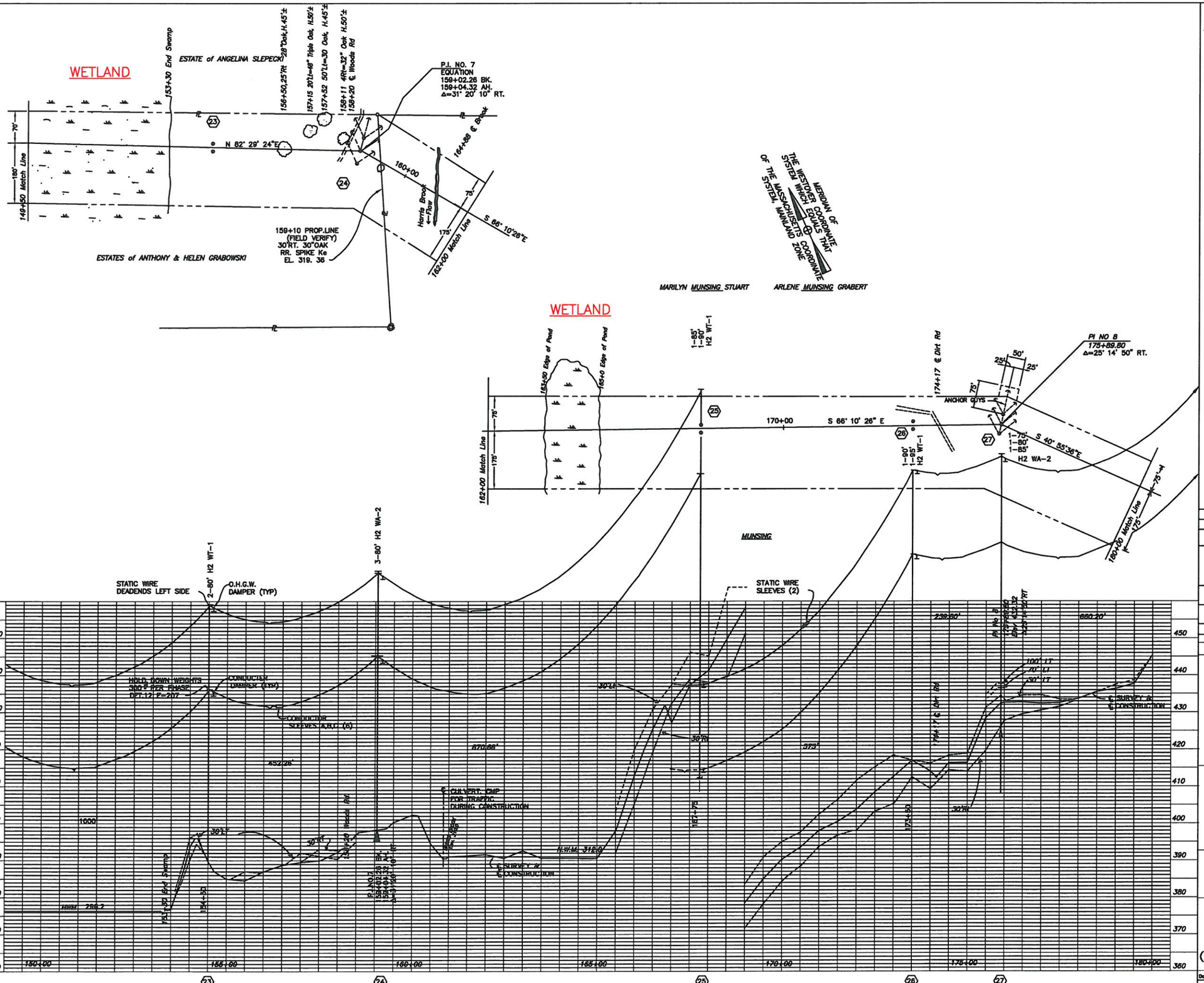
STONY BROOK ENERGY CENTER
MMWEC PHASE 1 PROJECT

R.W.BECK and ASSOCIATES
ANALYTICAL AND CONSULTING ENGINEERS
Seattle, Washington — Denver, Colorado

345KV. TRANSMISSION LINE NO.334 PLAN AND PROFILE (SHEET 5) (INCLUDES STRUCTURES 19–22)

Des. RLD	Eng. RLD	Appd. Mech. Dept.	Appd. Mech. Dept.
Dwn. C/S	Chd. RLD	Appd.	Appd. Elect. Dept.
File: MC-6244-ET2-MA	Date: 1-31-80		2296-C-205.5

T-6-68



NOTES

1. FIELD VERIFY ALL ANGLES TO LANDMARKS, DISTANCES FROM ℄ CONSTRUCTION TO RIGHT OF WAY LIMITS, AND ALL PROFILE ELEVATIONS BETWEEN P.I.6 AND P.I.8.

CONTINENTAL FIELD SERVICE CORPORATION
ELMSFORD, NEW YORK

No.	Date	By	Chd	Revision
6	6/11	JPH	MD	ADDED WETLAND TEXT
5	5/25/05	YL	JP	T5—CLEARING CONTRACT
4	7/15/01	SLK	SLK	CONFORMING TO CONSTRUCTION RECORDS.
3	7-1-00	CJS.	RLD	ADDED EQUATION @ P.I.7 ADDED NOTE NO.1 REV. ℄ CONSTRUCTION REV.ANGLES & BEARINGS REMOVED R.O.W. DIM.
2	8-6-99	CJS	RLD	ADDED STRUCTURE NUMBERS AND DAMPERS
1	5/15/99	CJS	RLD	T6—TRANSMISSION LINE CONSTRUCTION CONTRACT
0	1/21/99	CJS	RLD	T5—CLEARING CONTRACT

REVISIONS

MMWEC
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STONY BROOK ENERGY CENTER
MMWEC PHASE 1 PROJECT

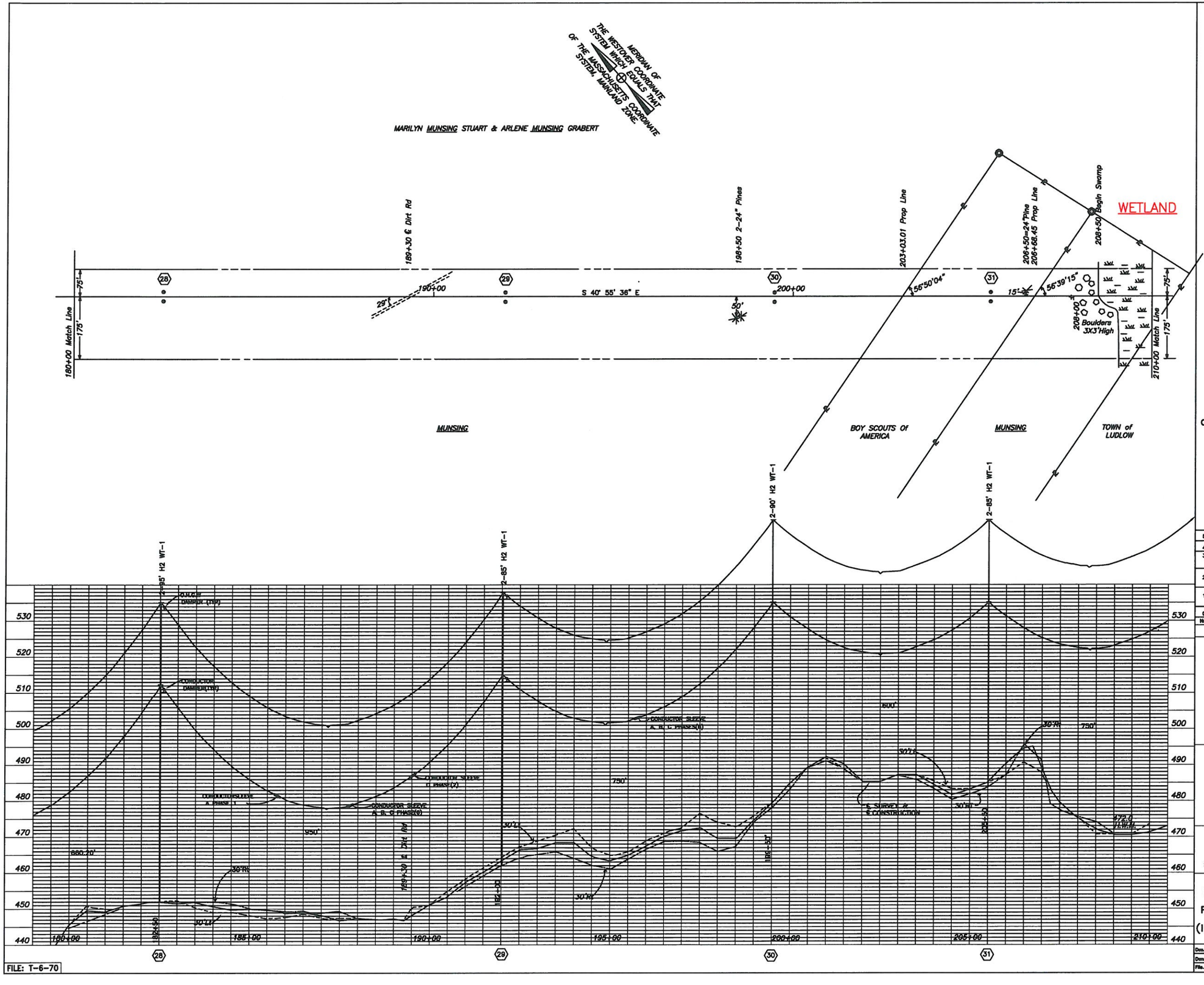
R.W.BECK and ASSOCIATES
ANALYTICAL AND CONSULTING ENGINEERS
Seattle, Washington — Denver, Colorado

345KV. TRANSMISSION LINE NO.334
PLAN AND PROFILE (SHEET 6)
(INCLUDES STRUCTURES 23–27)

Des. RLD	Eng. RLD	Appvd. Elec. Dept.	Appvd. Mech. Dept.	Appvd. Struct. Dept.
Dsn. C/S	Chd. RLD	Appvd.	Date. 1-31-80	2296-C-206.4
File. MC-8244-ET2-MA				

FILE: T-6-69

T-6-69



CONTINENTAL FIELD SERVICE CORPORATION
ELMSFORD, NEW YORK

No.	Date	By	Chd	Revision
5	8/11	JPH	MD	ADDED WETLAND TEXT
4	2/23/99	YL	JP	CONVERTED TO CAD
3	7/15/91	SLK	SLK	CONFORMING TO CONSTRUCTION RECORDS.
2	5-6-89	CJS	RLD	ADDED STRUCTURE NUMBERS AND DAMPERS
1	2/15/89	CJS	RLD	TS-TRANSMISSION LINE CONSTRUCTION CONTRACT
0	1/31/89	CJS	RLD	TS-CLEARING CONTRACT

REVISIONS

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MMWEC PHASE 1 PROJECT

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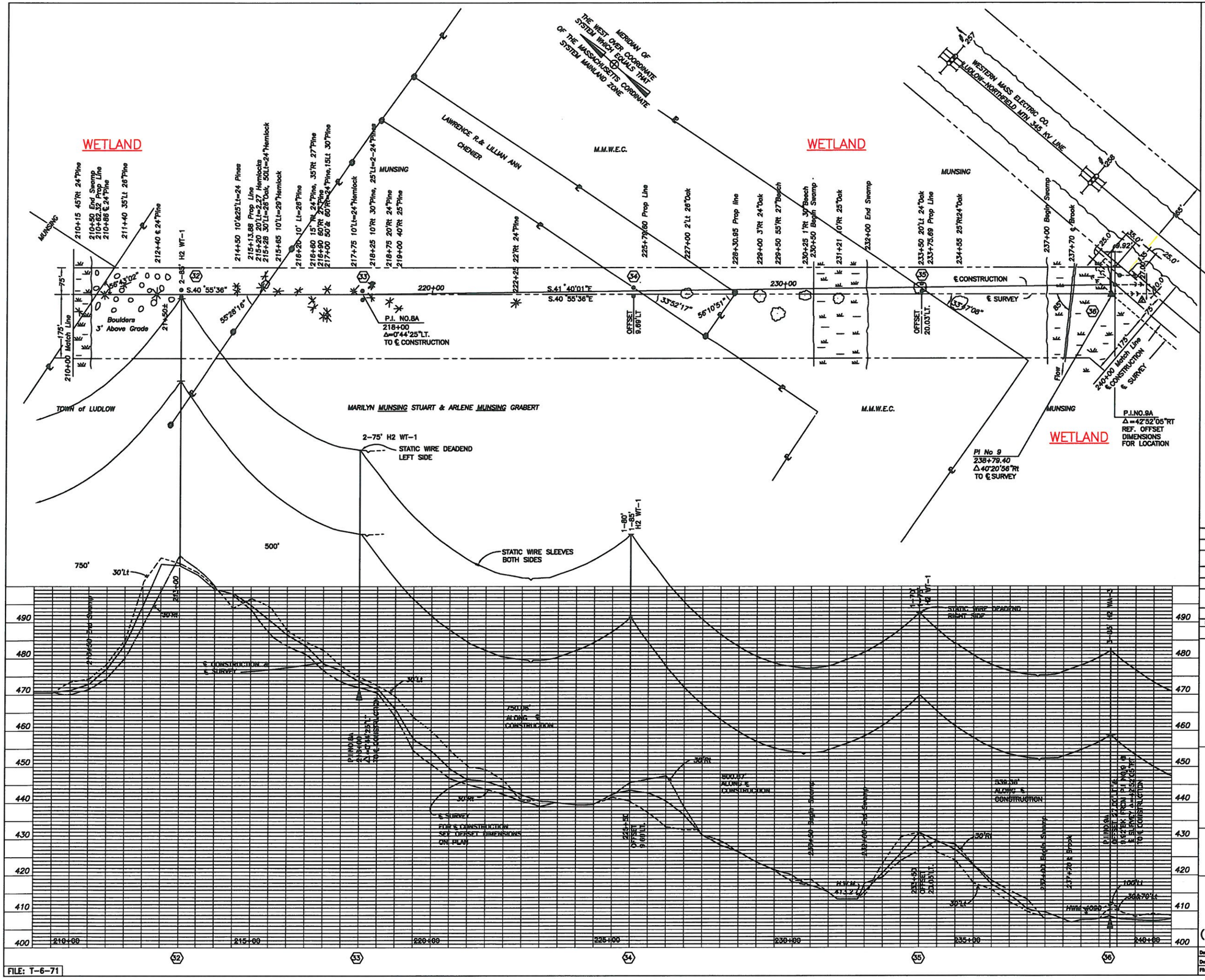
ANALYTICAL AND CONSULTING ENGINEERS
Seattle, Washington Denver, Colorado

345KV. TRANSMISSION LINE NO.334
PLAN AND PROFILE (SHEET 7)
(INCLUDES STRUCTURES 28-31)

Des. RLD	Eng. RLD	Appvd. Mun. Dept.	Appvd. Mech. Dept.	Appvd. Struct. Dept.
Dwn. C/S	Chd. RLD	Appvd.		
File: MC-8244-ET2-MA	Date: 1-31-89	2296-C-207.3		

FILE: T-6-70

T-6-70



FILE: T-6-71

NOTES

1. ALL STATIONING IS TO THE ℄ OF SURVEY. WHERE ℄ OF SURVEY AND ℄ OF CONSTRUCTION DO NOT COINCIDE AN OFFSET DIMENSION FROM ℄ OF SURVEY WILL BE PROVIDED.
2. FIELD VERIFY ALL OFFSET DIMENSIONS FOR TANGENT AND ANGLE POLES.

CONTINENTAL FIELD SERVICE CORPORATION
ELMSFORD, NEW YORK

No.	Date	By	Chd	Revision
6	8/11	JPH	MD	ADDED WETLAND
5	2/23/88	YL	JP	CONVERTED TO CAD
4	7/15/81	SLK	SLK	CONFORMING TO CONSTRUCTION RECORDS.
3	8-6-80	CJS	RLD	ADDED STRUCTURE NUMBERS
2	2/6/80	W.B	RLD	ADDED ANCHORS AT P.I.No 9A
1	2/15/80	CJS	RLD	T6-TRANSMISSION LINE CONSTRUCTION CONTRACT
0	1/21/80	CJS	RLD	T5-CLEARING CONTRACT

REVISIONS

MMWEC
Massachusetts Municipal Wholesale Electric Company
A PUBLIC CORPORATION

STONY BROOK ENERGY CENTER
MMWEC PHASE 1 PROJECT

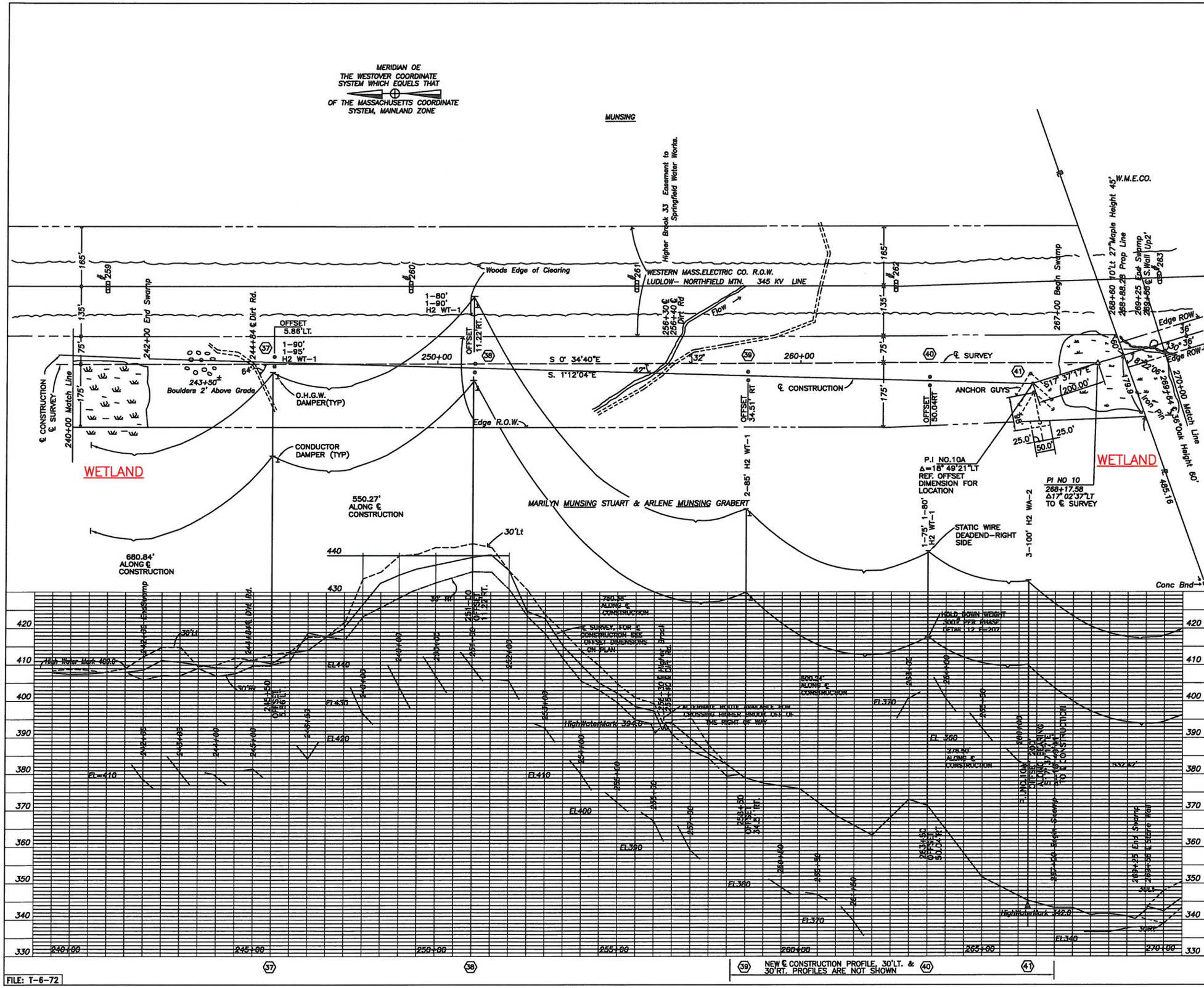
R.W.BECK and ASSOCIATES
ANALYTICAL AND CONSULTING ENGINEERS
Seattle, Washington — Denver, Colorado

345KV. TRANSMISSION LINE NO.334
PLAN AND PROFILE (SHEET 8)
(INCLUDES STRUCTURES 32-36)

Des. RLD	Eng. RLD	Appd. Elec. Dept.	Appd. Mech. Dept.	Appd. Struct. Dept.
Dwn. C/S	Chd. RLD	Appd.		
Fls. MC-8244-ET2-MA		Date 1-31-80		

2296-C-208.4

T-6-71



FILE: T-6-72

NOTES

1. ALL STATIONING IS TO THE ℄ OF SURVEY. WHERE ℄ OF SURVEY AND ℄ OF CONSTRUCTION DO NOT COINCIDE AN OFFSET DIMENSION FROM ℄ OF SURVEY WILL BE PROVIDED.
2. FIELD VERIFY ALL OFFSET DIMENSIONS FOR ALL TANGENT AND ANGLE POLES.

CONTINENTAL FIELD SERVICE CORPORATION
ELMSFORD, NEW YORK.

No.	Date	By	Chd	Revision
6	8/11	JPH	MD	ADDED WETLAND TEXT
5	2/23/00	YL	JP	CONVERTED TO CAD
4	7/10/01	SLK	SLK	CONFORMING TO CONSTRUCTION RECORDS.
3	3/3/00	CJS	RLD	REV.PROFILE STA. 258+00 TO 267+00.REV.STR. 39,40&41 REV.SAG CURVES
2	3-8-00	CJS	RLD	ADDED STRUCTURE NUMBERS AND DAMPERS
1	2/18/00	CJS	RLD	T6-TRANSMISSION LINE CONSTRUCTION CONTRACT
0	1/31/00	CJS	RLD	T5-CLEARING CONTRACT

REVISIONS

MMWEC
Massachusetts Municipal Wholesale Electric Company
A PUBLIC CORPORATION

STONY BROOK ENERGY CENTER
MMWEC PHASE 1 PROJECT

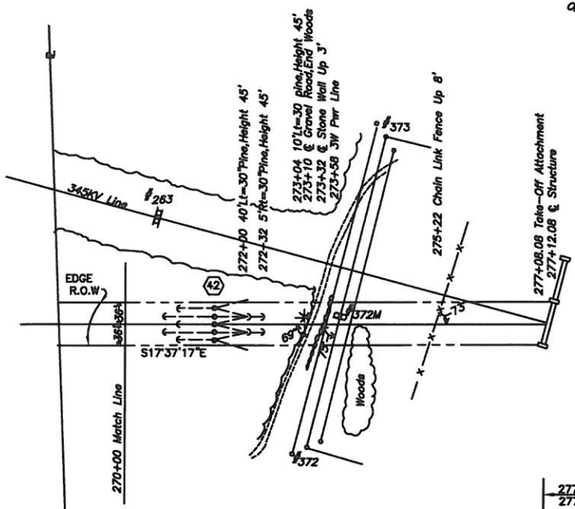
R.W.BECK and ASSOCIATES
ANALYTICAL AND CONSULTING ENGINEERS
Seattle, Washington — Denver, Colorado

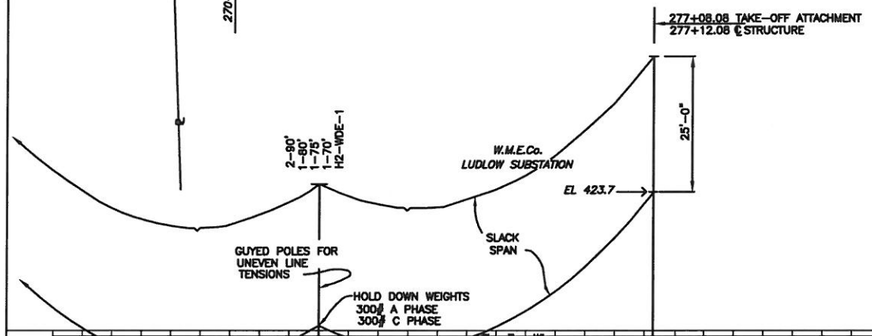
345KV. TRANSMISSION LINE NO.334
PLAN AND PROFILE (SHEET 9)
(INCLUDES STRUCTURES 37-41)

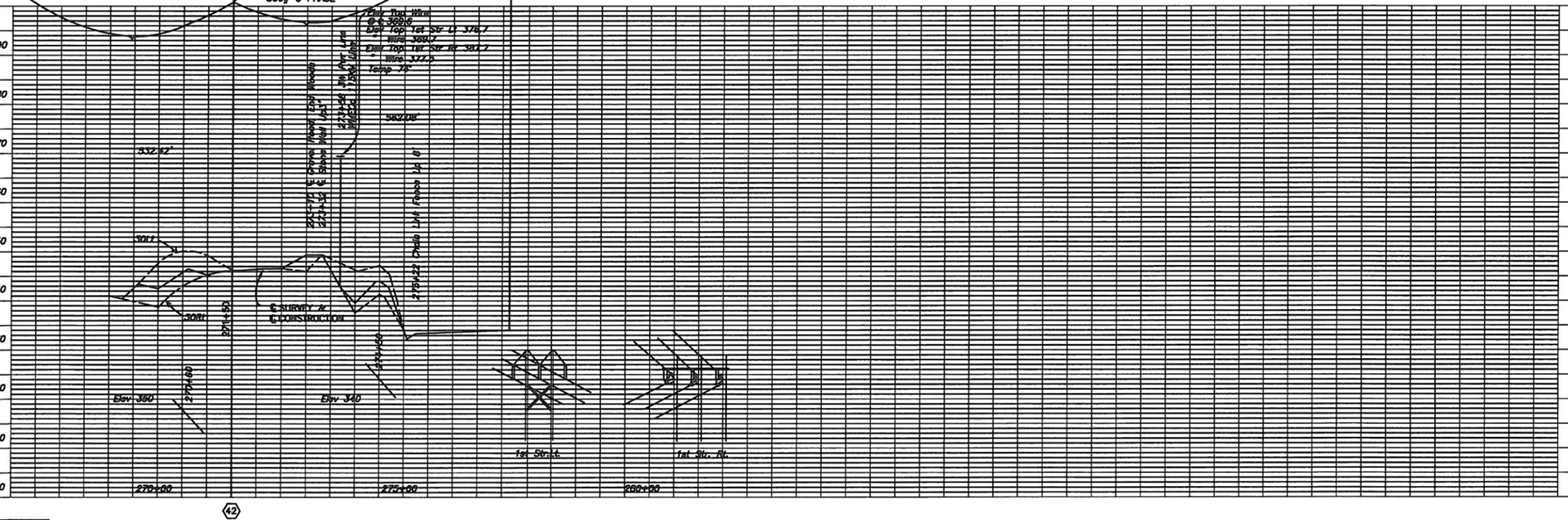
Dwn. RLD	Eng. RLD	Appd. Elec. Dept.	Appd. Mech. Dept.	Appd. Struct. Dept.
Dwn. C/S	Chd. RLD	Appd.	2296-C-209.4	
File. MC-6244-ET2-MA		Date. 1-31-80		

T-6-72

MERIDIAN OF THE WESTOVER COORDINATE SYSTEM WHICH EQUALS THAT OF THE MASSACHUSETTS COORDINATE SYSTEM, MAINLAND ZONE







FILE: T-6-73

CONTINENTAL FIELD SERVICE CORPORATION
ELMSFORD, NEW YORK

No.	Date	By	Chd	Revision
5	3/1/82	YL	JP	CONVERTED TO CAD
4	7/10/81	SLK	SLK	CONFORMING TO CONSTRUCTION RECORDS.
3	6/3/81	CJS	RLD	REV.POLES @ STR.42
2	3-6-81	CJS	RLD	ADDED STRUCTURE NUMBERS
1	2/19/81	CJS	RLD	T6—TRANSMISSION LINE CONSTRUCTION CONTRACT
0	1/21/81	CJS	RLD	T5—CLEARING CONTRACT

REVISIONS

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MMWEC PHASE 1 PROJECT

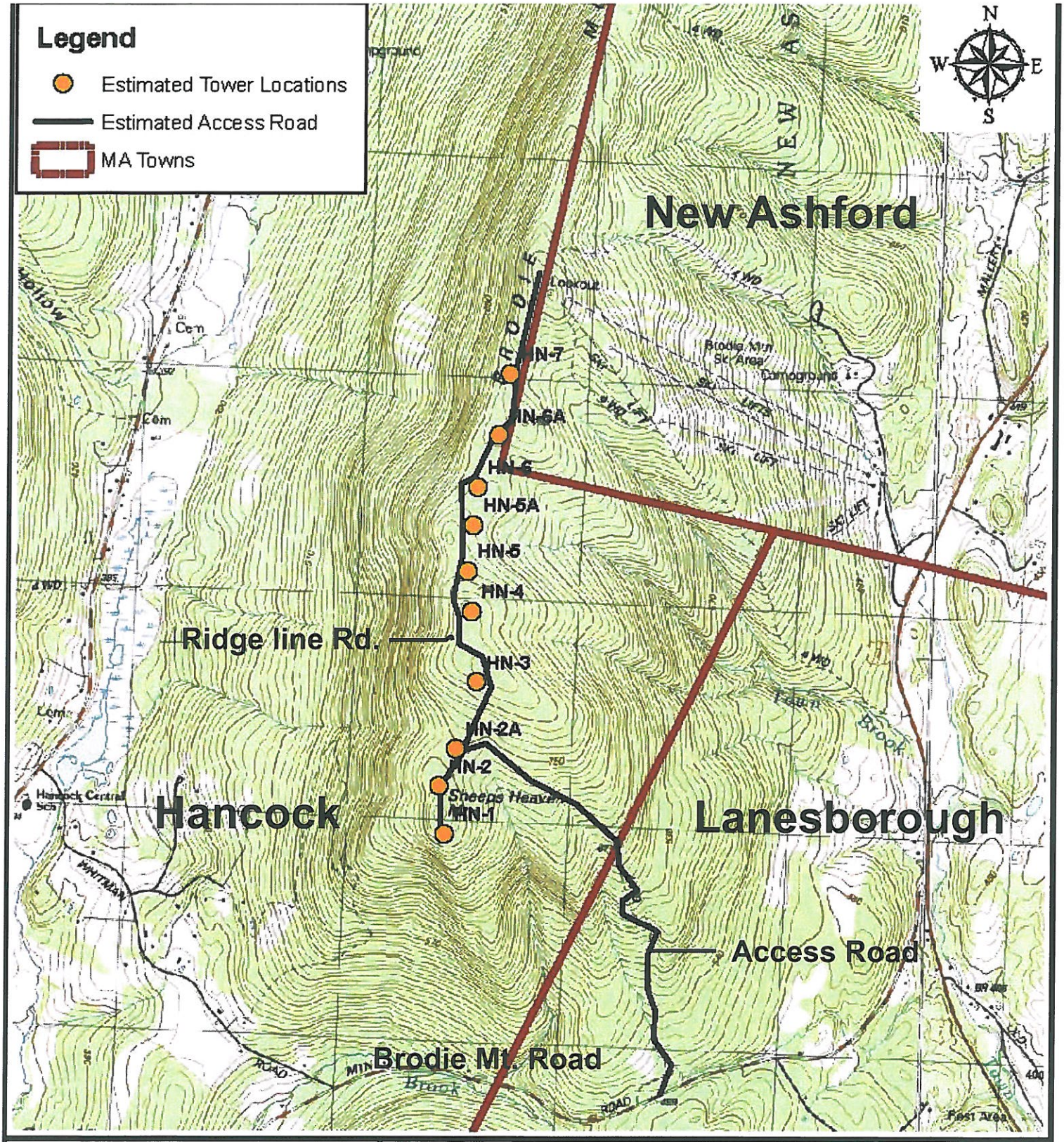
R.W.BECK and ASSOCIATES
ANALYTICAL AND CONSULTING ENGINEERS
Seattle, Washington — Denver, Colorado

345KV. TRANSMISSION LINE NO.334
PLAN AND PROFILE (SHEET 10)
(INCLUDES STRUCTURE 42)

Des. RLD	Eng. RLD	Appd. Mgr. Dept.	Appd. Mgr. Dept.	Appd. Mgr. Dept.
Dwn. C/S	Chd. RLD	Appd.	2296-C-210.4	
File: MC-8244-ET2-MA	Date: 1-31-80			

T-6-73

YOP
MAPS
HANCOCK
AND
LANESBOROUGH



2,000 1,000 0 2,000 Feet	**LOCUS MAP**	Project No: **15.0166117.00**
	Berkshire Wind Power **Brodie Mountain Road** **Hancock and Lanesborough, MA**	Drawn by: **ERH** Checked by: **DMN** Date: **6/3/2011**
	USGS TOPOGRAPHIC QUADRANGLE MAP HANCOCK, MASSACHUSETTS, 1988	Figure No: **1**
GZA GeoEnvironmental, Inc. Springfield, Massachusetts	Data obtained from MASS GIS, Commowealth of Massachusetts Executive Office of Energy and Environmental Affairs (EEA)	

CHEMICAL TECHNICAL DATA SHEETS

CHEMICAL MATERIAL SAFETY DATA SHEETS