www.vhb.com

December 9, 2016

Ref: 11482.03

Stoughton Board of Selectman
Stoughton Town Hall
10 Pearl Street
Stoughton, MA 02072

Re: Eversource Energy - Walpole to Holbrook 115-kV Reliability Project - Petition for Location of Wires

Dear Chairman Sousa and Members of the Board

The enclosed petition and plans are being presented by **NSTAR Electric d/b/a/ Eversource** for the purpose of obtaining a grant of location to install an overhead 115-kV transmission line on and between existing towers over Cross Street, Pearl Street, North School Drive, Pine Street, Pleasant Street, Turnpike Street, Old Page Street, and Page Street in Stoughton.

Please find enclosed:

1) Eversource Standard Petition Form
2) Locus Map, Plan and Profile View Drawings
3) Eversource Energy - Summary Description of Electric Transmission Conductor Cable Installation Practice
4) VHB as Agent for Eversource authorization letter

Your prompt attention to this matter would be greatly appreciated. Please contact Michael Sutton with any questions or concerns the Board may have.

Sincerely,

VHB

For:

Michael Sutton, P.E.
617- 607-2619
msutton@vhb.com

C: Glenn Mauk, PE, PLS, Esq. Senior Right-of-Way Specialist, Eversource

Union Station, Suite 219
2 Washington Square
Worcester, Massachusetts 01604
P 508.752.1001
F 508.752.1276

PETITION OF NSTAR ELECTRIC
FOR LOCATION FOR LINES, WIRES AND CABLES

To the BOARD OF SELECTMEN of the Town of Stoughton, Massachusetts:

The undersigned respectfully represents NSTAR ELECTRIC d/b/a Eversource, a company incorporated for the transmission of electricity for lighting, heating or power, that it desires to construct a line for such transmission over the public way or ways hereinafter specified.

WHEREFORE, your petitioner prays that, after due notice and hearing as provided by law, the Board may by Order grant to your petitioner permission to construct, and a location for, such a line with the necessary wires and cables therein, said line to be located, substantially as shown on the plan(s) filed herewith dated December 9, 2016, over the following public way or ways of said Town:

Pursuant to MGL Chapter 66 Section 22, because the new transmission line will cross public ways, the Company is required to petition the Board of Selectmen in writing and request permission to erect or construct across Town of Stoughton public ways. In Stoughton, the new transmission lines will cross a minimum of 25-feet above the following public ways from west to east.

- Cross Street, the centerline of the Right-of-Way is located a distance of approximately 180-feet north of the intersection of Cross Street and Duggan Drive.
- Pearl Street, the southerly sideline of the Right-of-Way begins at a point approximately 2,960-feet south of the intersection of Pearl Street and Central Street.
- North School Drive, the centerline of the Right-of-Way is located a distance of approximately 640-feet south of the intersection of North School Drive and Pine Street.
- Pine Street, the southeasterly sideline of the Right-of- Way begins at a point approximately 410-feet northwesterly of the intersection of Pine Street and Pleasant Street.
- Pleasant Street (Route 139), the southwesterly sideline of the Right-of-Way begins at a point approximately 545-feet northeast of the intersection of Pleasant Street and Pine Street.
- Turnpike Street, the northerly sideline of the Right-of-Way begins at a point approximately 170-feet south of the intersection of Turnpike Street and Maple Street.
- Old Page Street, the centerline of the Right-of-Way is located a distance of approximately 730-feet south of the intersection of Old Page Street and Maple Street.
- Page Street, the northerly sideline of the Right-of-Way begins at a point approximately 630-feet south of the intersection of Page Street and Maple Street.

NSTAR ELECTRIC

By:_____
Theresa Feuersanger, Supervisor
T & D Rights and Survey

9th day of December, 2016

Town of Stoughton, Massachusetts

Received and filed_____

ORDER FOR LOCATION FOR LINES, WIRES AND CABLES

Town of Stoughton, Massachusetts, December 9, 2016

WHEREAS, **NSTAR ELECTRIC d/b//a Eversource** has petitioned for permission to construct a line for the transmission of electricity for lighting, heating, or power over the public way or ways of the Town hereinafter specified, and notice has been given and a hearing held on said petition as provided by law.

It is ORDERED that **NSTAR ELECTRIC d/b/a/ Eversource** be and hereby is granted permission to construct, and a location for, such a line with the necessary wires and cables therein over the following public way or ways of said Town:

- Cross Street, the centerline of the Right-of-Way is located a distance of approximately 180-feet north of the intersection of Cross Street and Duggan Drive.
- Pearl Street, the southerly sideline of the Right-of-Way begins at a point approximately 2,960-feet south of the intersection of Pearl Street and Central Street.
- North School Drive, the centerline of the Right-of-Way is located a distance of approximately 640-feet south of the intersection of North School Drive and Pine Street.
- Pine Street, the southeasterly sideline of the Right-of- Way begins at a point approximately 410-feet northwesterly of the intersection of Pine Street and Pleasant Street.
- Pleasant Street (Route 139), the southwesterly sideline of the Right-of-Way begins at a point approximately 545-feet northeast of the intersection of Pleasant Street and Pine Street.
- Turnpike Street, the northerly sideline of the Right-of-Way begins at a point approximately 170-feet south of the intersection of Turnpike Street and Maple Street.
- Old Page Street, the centerline of the Right-of-Way is located a distance of approximately 730-feet south of the intersection of Old Page Street and Maple Street.
- Page Street, the northerly sideline of the Right-of-Way begins at a point approximately 630-feet south of the intersection of Page Street and Maple Street.

All construction work under this Order shall be in accordance with the following conditions:

1. Lines, wires, and cables shall be located as shown on a plan(s) made by Eversource dated _____, 2016, on file with said petition.
2. Said Company shall comply with the requirements of existing by-laws and such as may hereafter be adopted governing the construction and maintenance of lines, wires and cables.
3. All work shall be done to the satisfaction of the Board of Selectman or such officer or officers as it may appoint to supervise the work.

Selectman of the Town Stoughton:	Signature:
1. David J. Sousa, Chair	_____
2. Robert M. Cohn, Vice Chair	_____
3. Robert J. O'Regan	_____
4. Joseph M. Mokrisky	_____
5. Peter Brown	_____

CERTIFICATE

We hereby certify that the foregoing Order was adopted after due notice and public hearing as prescribed by Section 22 of Chapter 166 of the General Laws (Ter. Ed.) and any additions thereto or amendments thereof, to wit:--after written notice of the time and place of the hearing mailed at least seven days prior to the date of the hearing by the Selectman to all owners of real estate abutting upon that part of the way or ways upon, along or across which the line is to be constructed under said Order, as determined by the last preceding assessment for taxation, and a public hearing held on the _____ day of _____, 2016 in said Town.

Selectman of the Town Stoughton:	Signature:
1. David J. Sousa, Chair	_____
2. Robert M. Cohn, Vice Chair	_____
3. Robert J. O'Regan	_____
4. Joseph M. Mokrisky	_____
5. Peter Brown	_____

CERTIFICATE

I hereby certify that the foregoing are true copies of the Order of the Board of Selectman of the Town of _____ Massachusetts, duly adopted on the _____ day of _____, 2016 , and recorded with the records of location Orders of said Town, _____ Book _____, Page _____, and the certificate of notice of hearing thereon required by Section 22 of Chapter 166 of the General Laws (Ter. Ed.), and any additions thereto or amendments thereof, as the same appear of record.

Attest: _____
Amy S. Akell
Clerk of the Town of Stoughton, Massachusetts

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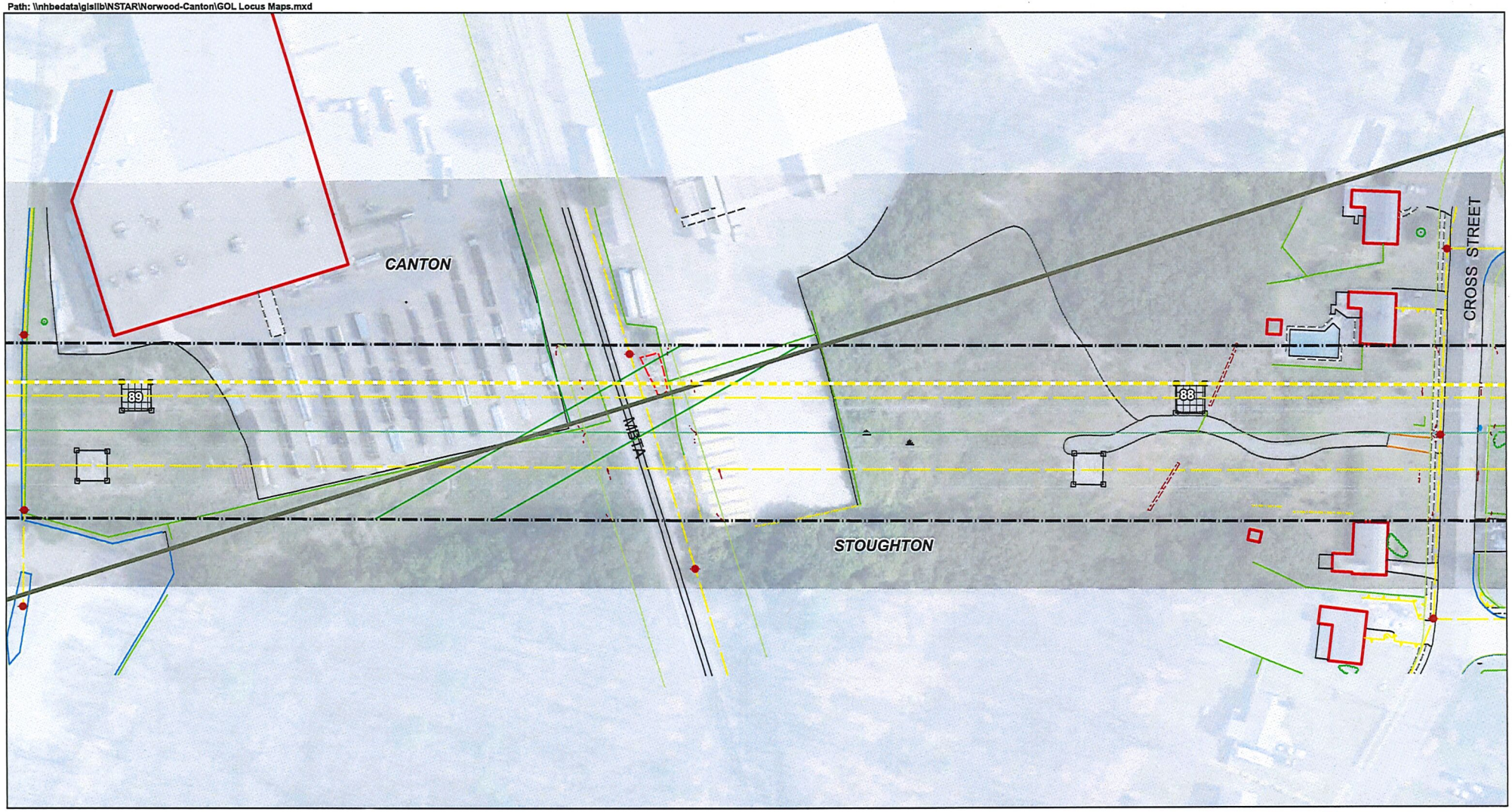
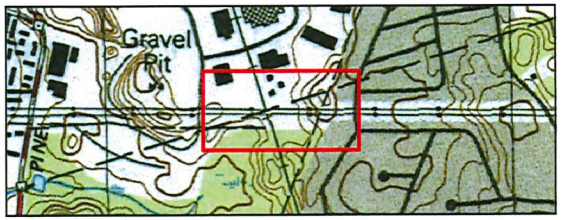


New 115kV Transmission Line
WCN Reliability Project Tower Location
Transmission Structure Replacement/New Structures
Existing Utility Pole
Town Boundaries

0 80 160 Feet



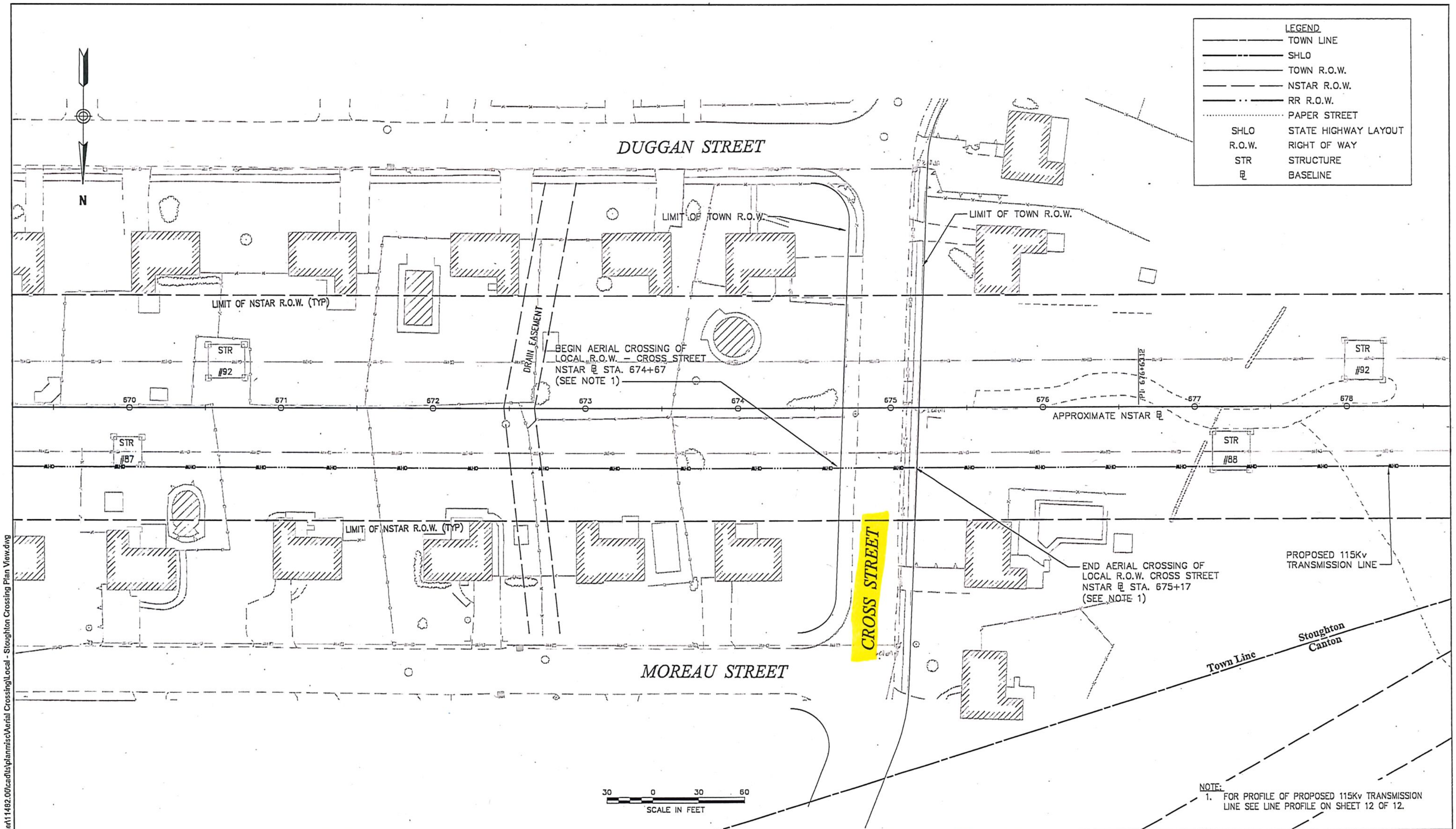
EVERSOURCE ENERGY

Walpole to Holbrook, MA

Cross Street, Stoughton

October 2016

vhb



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HORIZ. SCALE
VERT. SCALE

EVERSOURCE ENERGY

WCN RELIABILITY PROJECT
SECTION DESCRIPTION: LINE 447-502, WALPOLE TO WEST WALPOLE

ENGINEER: N/A | DRAWN: TRANSMISSION
CHECKED: N/A | DATE: 10/20/2016

CROSS STREET LOCAL CROSSING - STOUGHTON

PROJECT: PLAN VIEW | DRAWING NUMBER | REV
CODE | AREA

PAGE 8 OF 12

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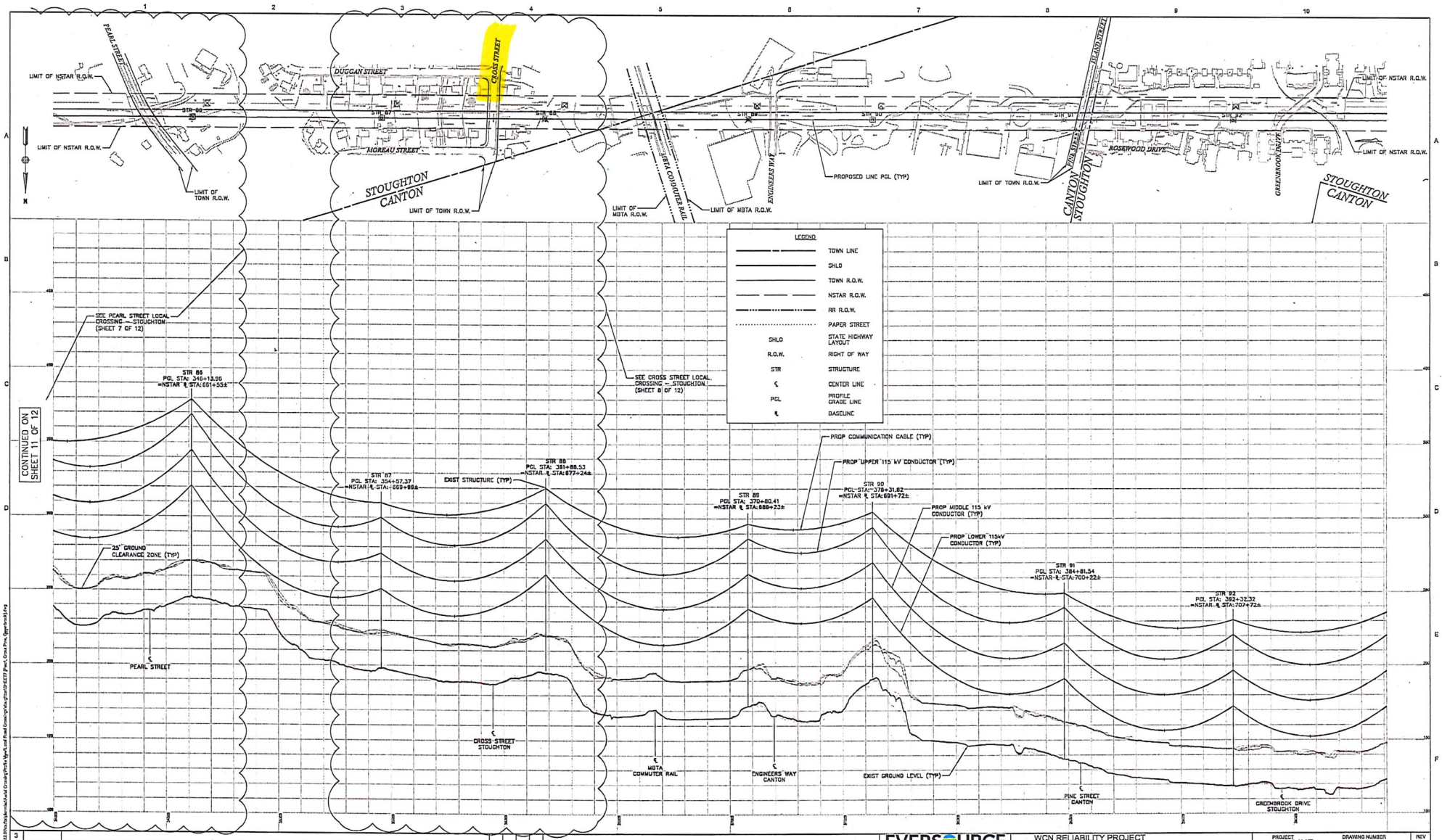

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200 FT HORIZ. SCALE
40 FT VERT. SCALE

EVERSOURCE ENERGY

ENGINEER	N/A	DRAWN	TRANSMISSION
CHECKED	N/A	DATE	10/20/2016

WCN RELIABILITY PROJECT

LOCAL CROSSINGS - STOUGHTON

PROJECT: LINE PROFILE
DRAWING NUMBER: TLP - LINE 447-502
REV:
CODE: R/W 4
AREA: WALPOLE
PAGE 12 OF 12
STATION 34000 TO 39912

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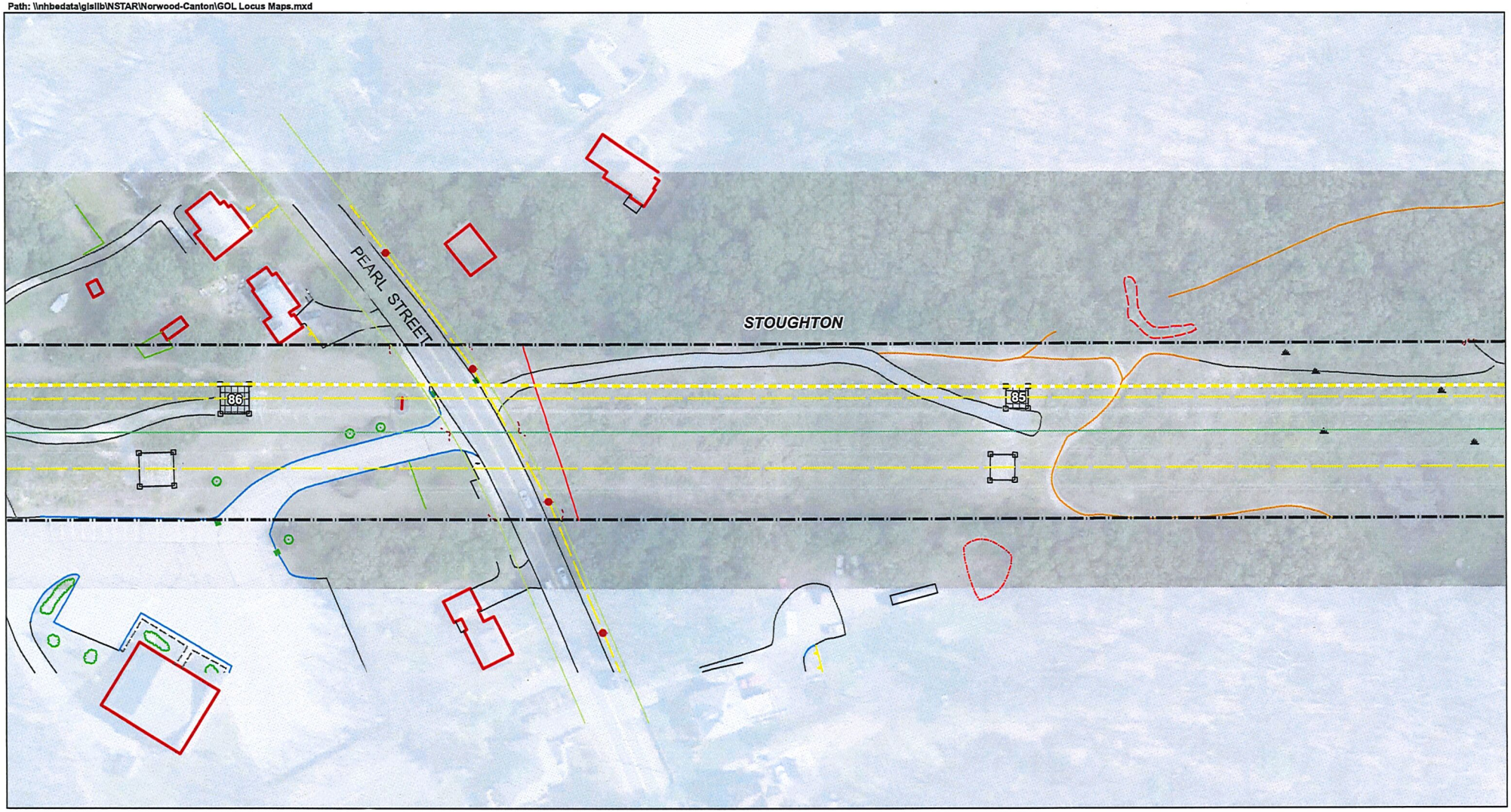
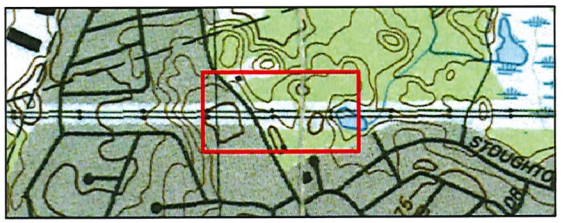


New 115kV Transmission Line
WCN Reliability Project Tower Location
Transmission Structure Replacement/New Structures
Existing Utility Pole
Town Boundaries

0 80 160 Feet

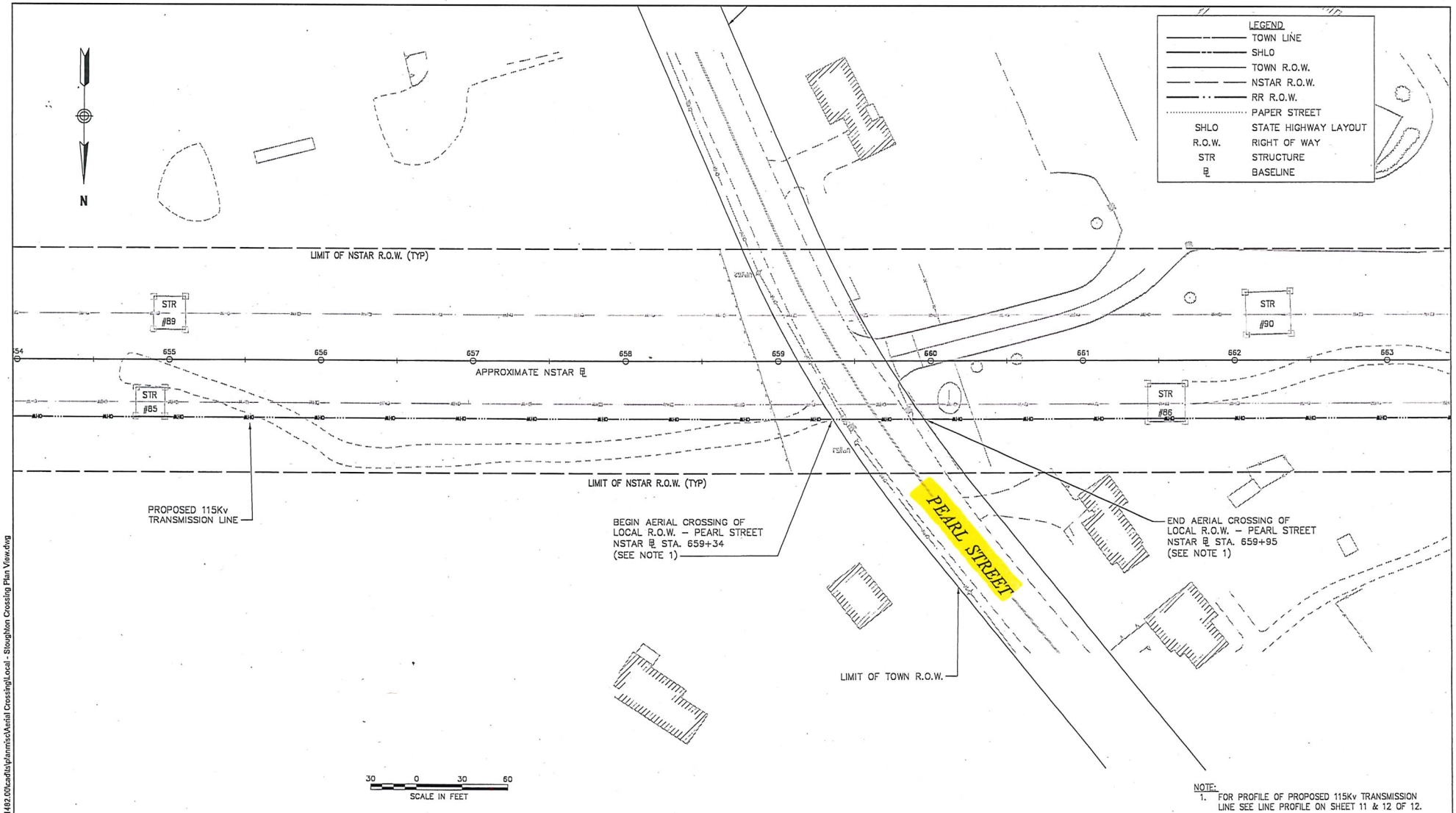


EVERSOURCE ENERGY

Walpole to Holbrook, MA

Pearl Street, Stoughton
October 2016

vhb



NOTE:
1. FOR PROFILE OF PROPOSED 115Kv TRANSMISSION LINE SEE LINE PROFILE ON SHEET 11 & 12 OF 12.

NO	DATE	REVISIONS AND RECORD OF ISSUE
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HORIZ. SCALE
VERT. SCALE

EVERSOURCE ENERGY

ENGINEER	N/A	DRAWN	TRANSMISSION
CHECKED	N/A	DATE	10/20/2016

WCN RELIABILITY PROJECT
SECTION DESCRIPTION: LINE 447-502, WALPOLE TO WEST WALPOLE

PEARL STREET LOCAL CROSSING - STOUGHTON

PROJECT	DRAWING NUMBER	REV
PLAN VIEW		
CODE		
AREA		

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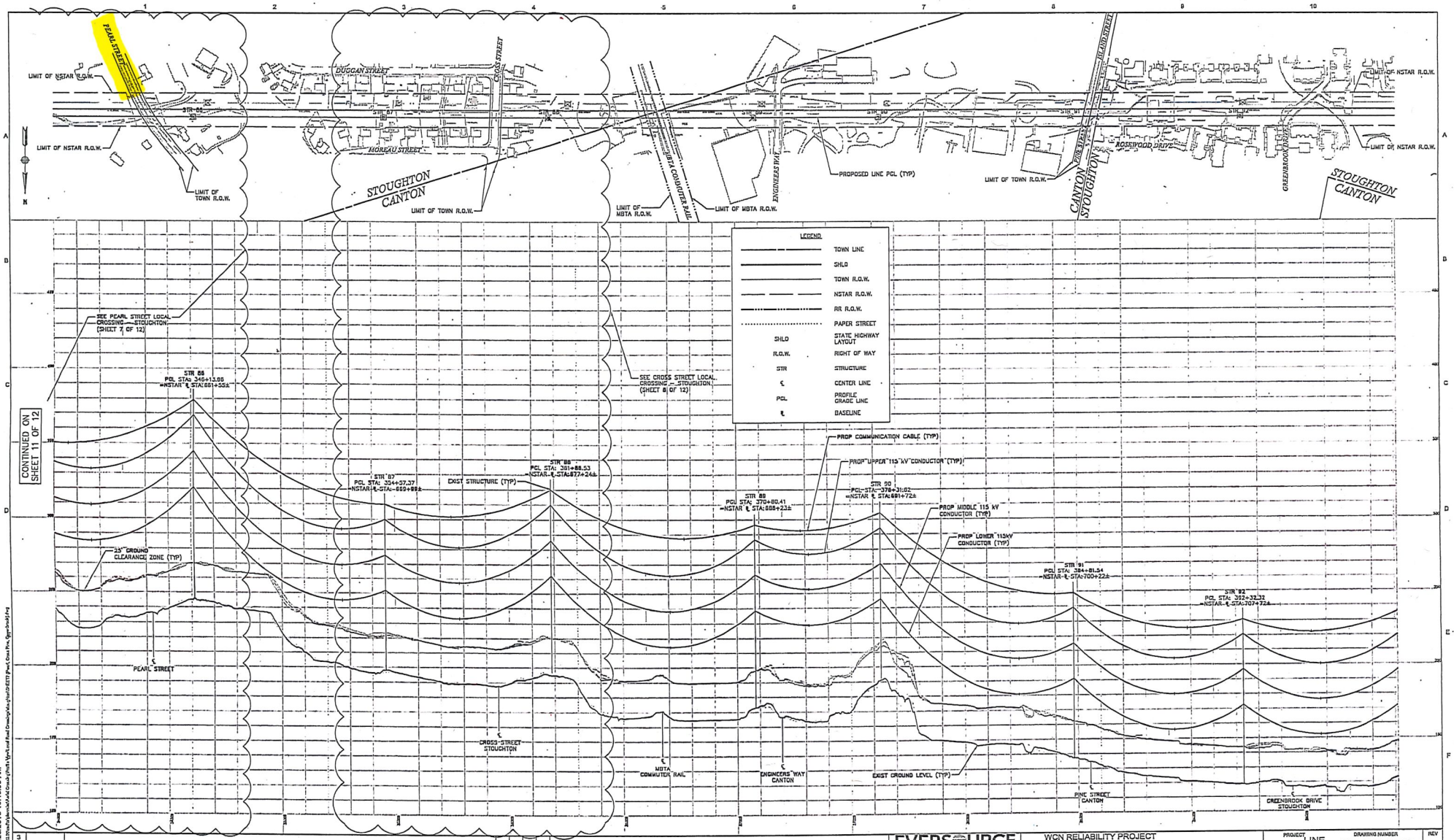

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201.6 FT. = HORIZ. SCALE
50.0 FT. = VERT. SCALE

EVERSOURCE ENERGY

ENGINEER	N/A	DRAWN	TRANSMISSION
CHECKED	N/A	DATE	10/20/2016

WCN RELIABILITY PROJECT

LOCAL CROSSINGS - STOUGHTON

PROJECT: LINE PROFILE
DRAWING NUMBER: TLP - LINE 447-502
REV
CODE: R/W 4
AREA: WALPOLE
PAGE 12 OF 12
STATION 34000 TO 39912

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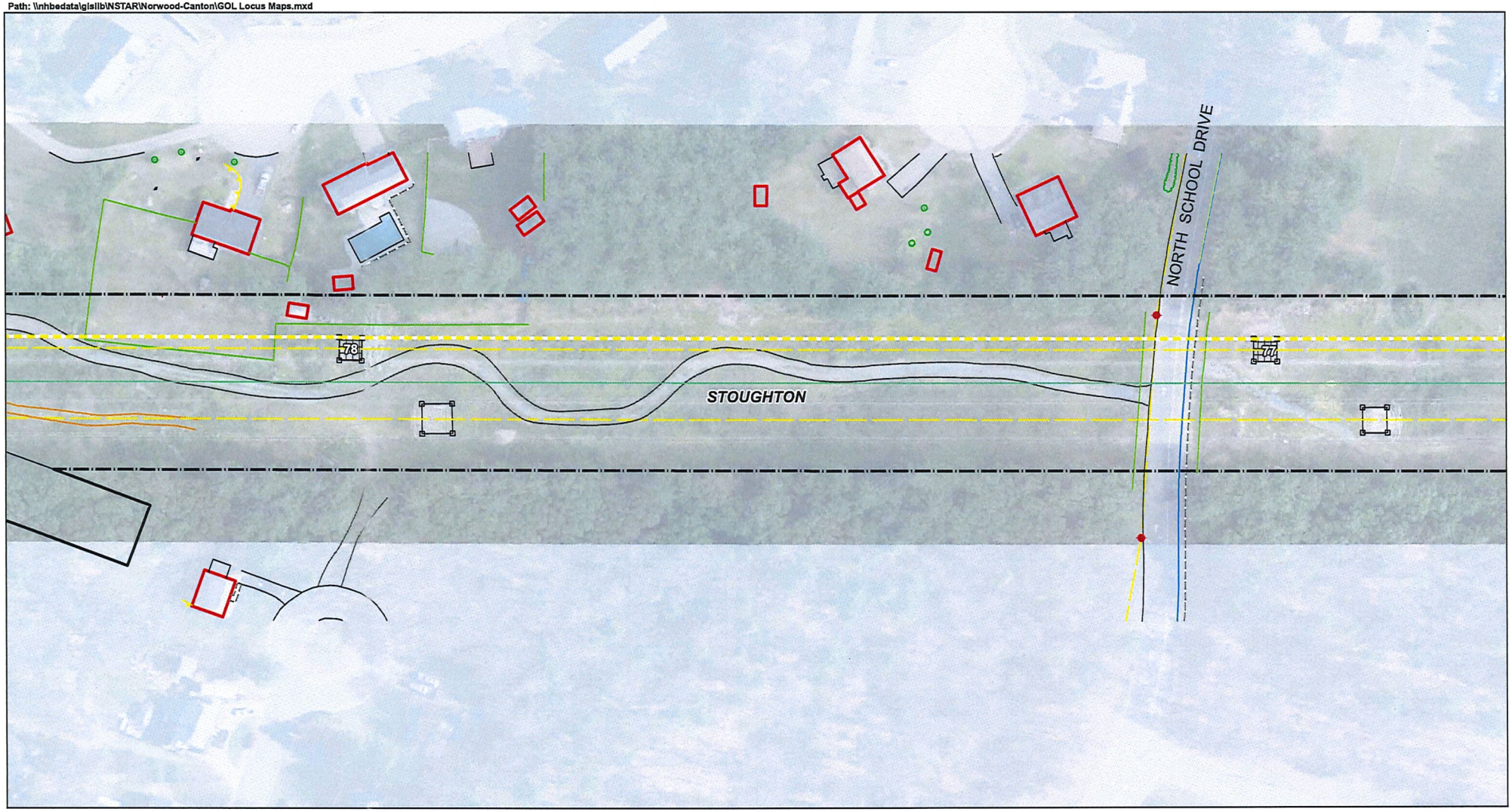
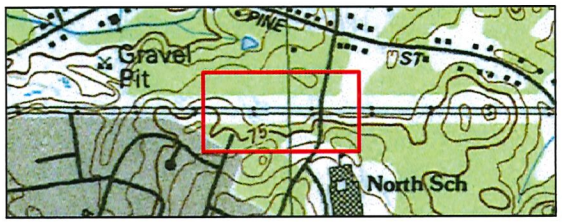


New 115kV Transmission Line
WCN Reliability Project Tower Location
Transmission Structure Replacement/New Structures
Existing Utility Pole
Town Boundaries

0 80 160 Feet



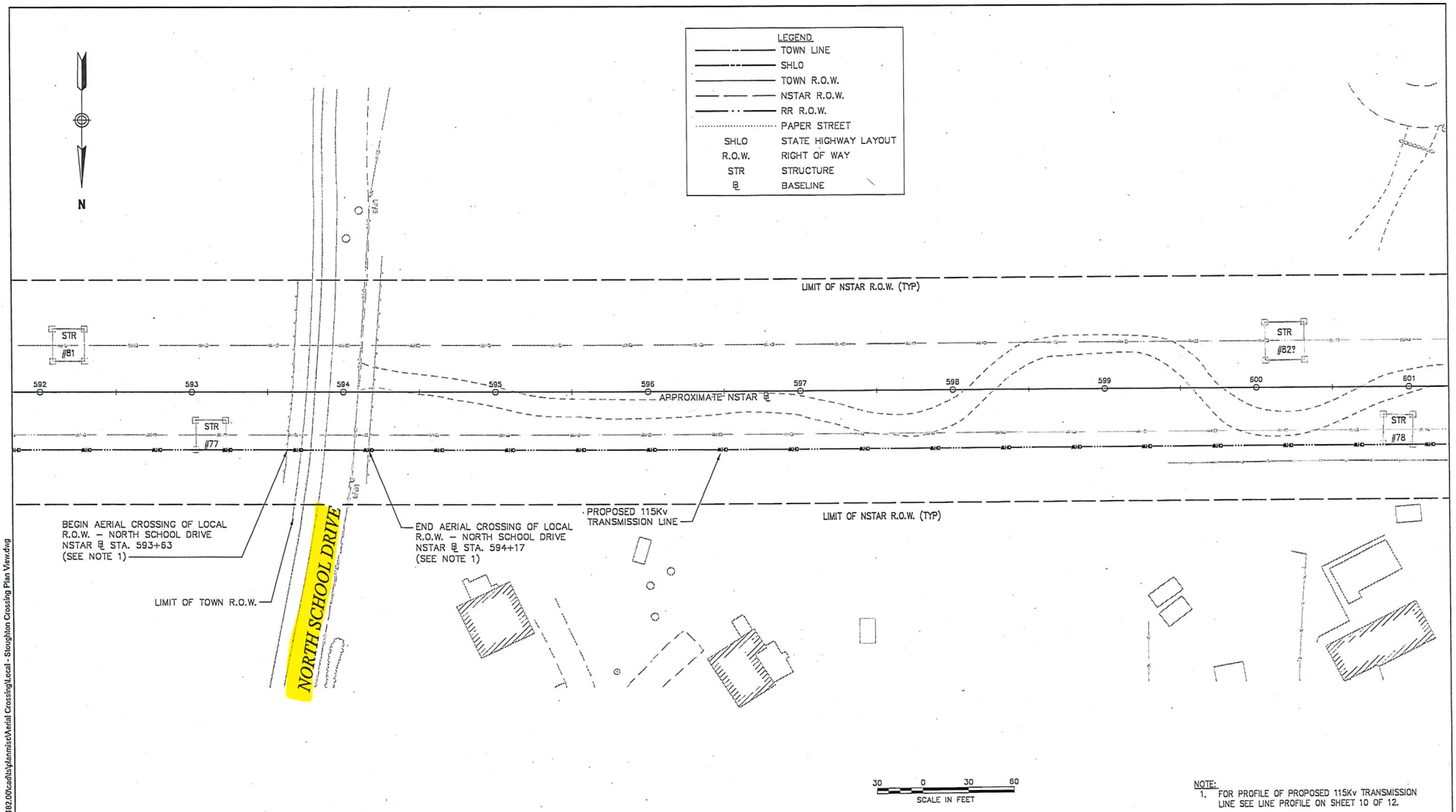
EVERSOURCE ENERGY

Walpole to Holbrook, MA

North School Drive, Stoughton

October 2016

vhb



NOTE:
1. FOR PROFILE OF PROPOSED 115Kv TRANSMISSION LINE SEE LINE PROFILE ON SHEET 10 OF 12.

NO	DATE	REVISIONS AND RECORD OF ISSUE
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HORIZ. SCALE
VERT. SCALE

EVERSOURCE ENERGY

ENGINEER	N/A	DRAWN	TRANSMISSION
CHECKED	N/A	DATE	10/20/2016

WCN RELIABILITY PROJECT
SECTION DESCRIPTION: LINE 447-502, WALPOLE TO WEST WALPOLE

NORTH SCHOOL DRIVE
LOCAL CROSSING - STOUGHTON

PROJECT	DRAWING NUMBER	REV
PLAN VIEW		
CODE		
AREA		

PAGE 6 OF 12

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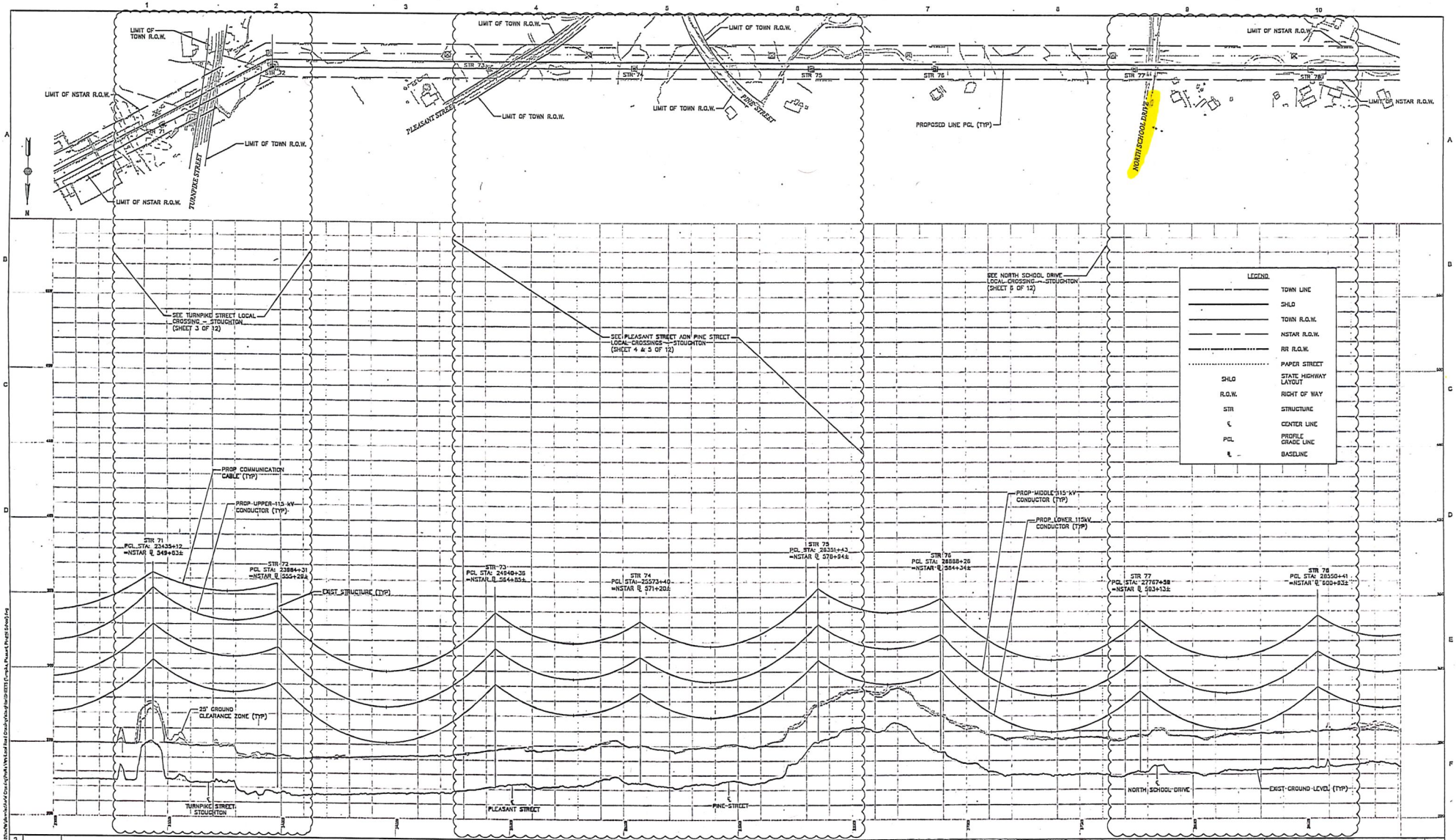

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200 FT. HORIZ. SCALE
40 FT. VERT. SCALE

EVERSOURCE ENERGY

ENGINEER	N/A	DRAWN	TRANSMISSION
CHECKED	N/A	DATE	10/20/2016

WCN RELIABILITY PROJECT

LOCAL CROSSINGS - STOUGHTON

PROJECT	LINE PROFILE	DRAWING NUMBER	TLP - LINE 447-502
CODE	R/W 4	REV	
AREA	WALPOLE		PAGE 10 OF 12
			STATION 23000 TO 28912

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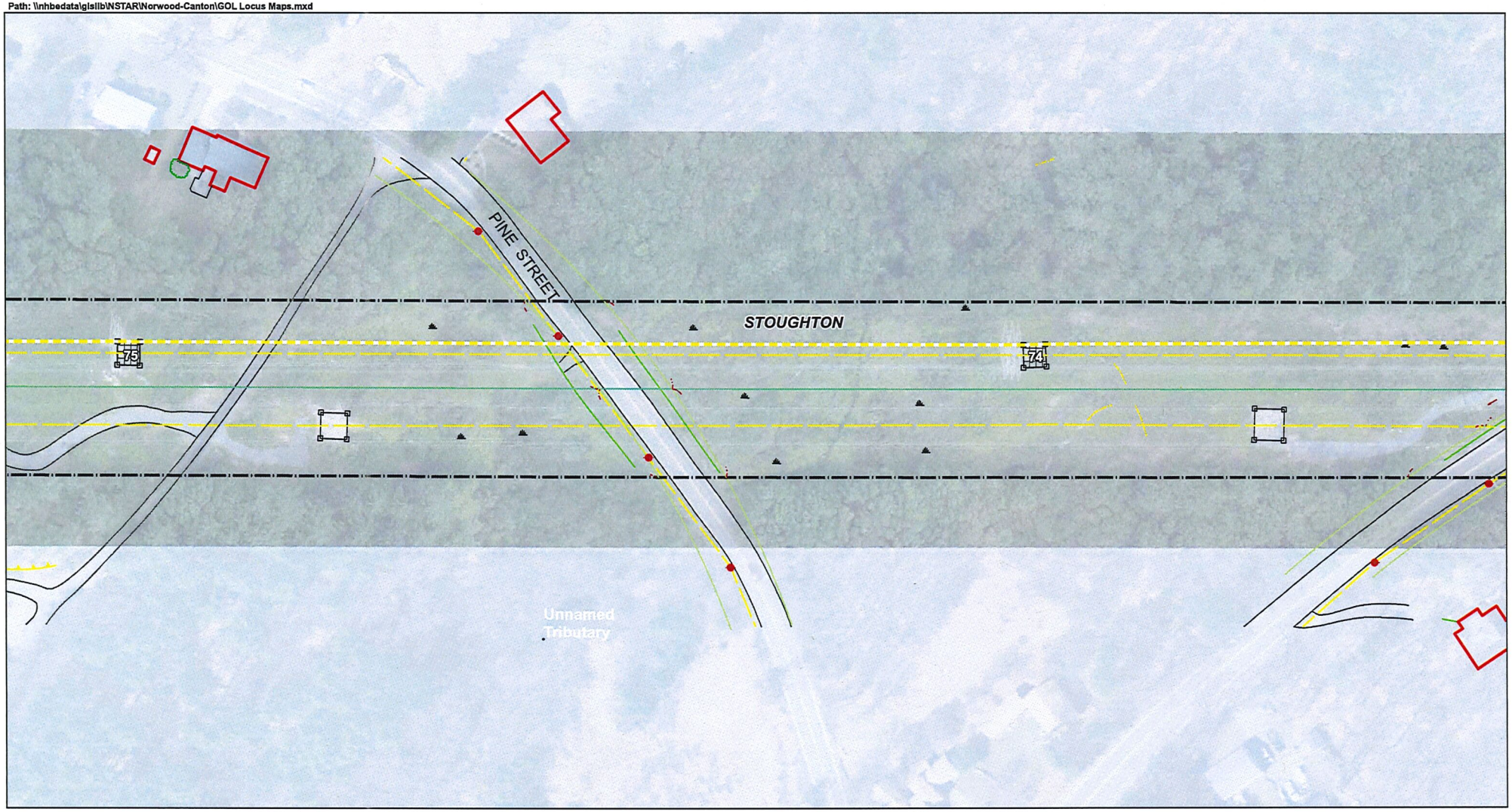


New 115kV Transmission Line

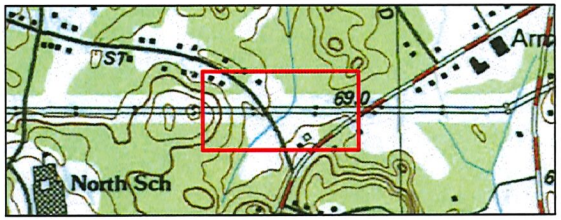
WCN Reliability Project Tower Location

Transmission Structure Replacement/New Structures

Existing Utility Pole

Town Boundaries

0 80 160 Feet

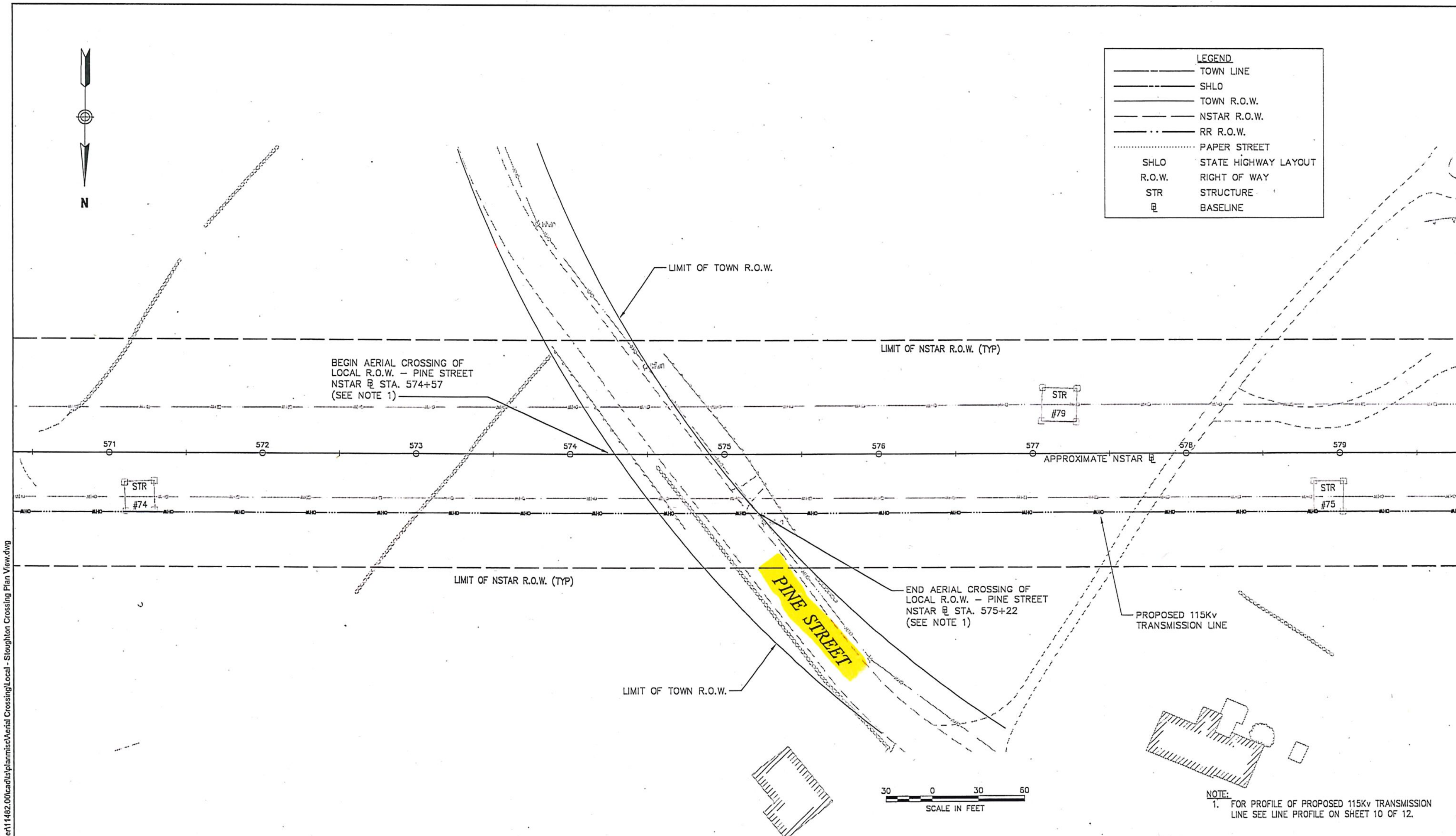


EVERSOURCE ENERGY

Walpole to Holbrook, MA

Pine Street, Stoughton
October 2016

vhb



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HORIZ. SCALE
VERT. SCALE

EVERSOURCE ENERGY

WCN RELIABILITY PROJECT
SECTION DESCRIPTION: LINE 447-502, WALPOLE TO WEST WALPOLE
PINE STREET LOCAL CROSSING - STOUGHTON

ENGINEER N/A | DRAWN TRANSMISSION
CHECKED N/A | DATE 10/20/2016

PROJECT: PLAN VIEW
DRAWING NUMBER
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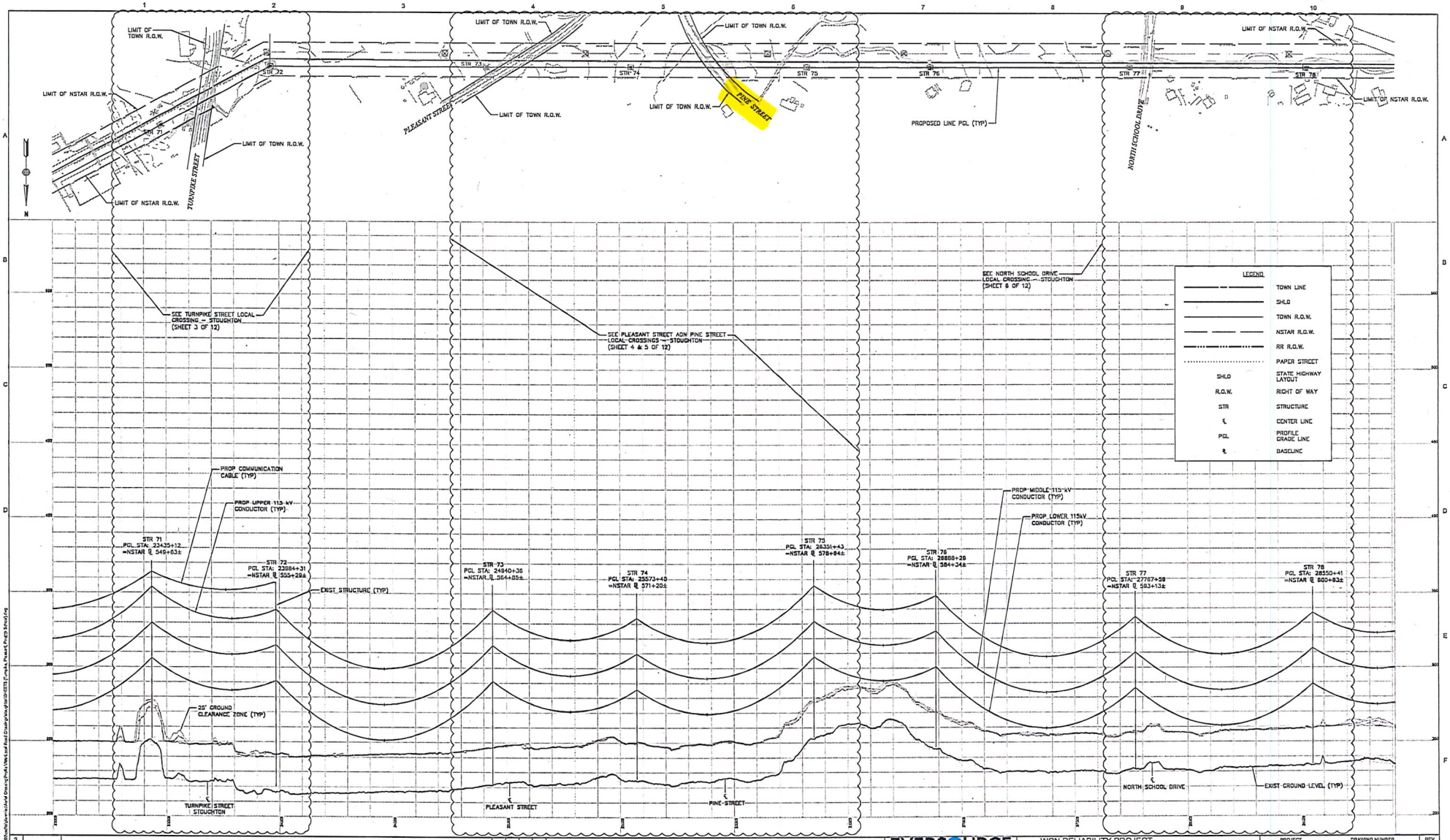

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200 FT. HORIZ. SCALE
40 FT. VERT. SCALE

EVERSOURCE ENERGY

WCN RELIABILITY PROJECT

LOCAL CROSSINGS - STOUGHTON

ENGINEER	N/A
CHECKED	N/A
DRAWN	TRANSMISSION
DATE	10/20/2016
PROJECT	LINE PROFILE
DRAWING NUMBER	TLP - LINE 447-502
REV	
COST	R/W 4
AREA	WALPOLE
	PAGE 10 OF 12
	STATION 23000 TO 28912

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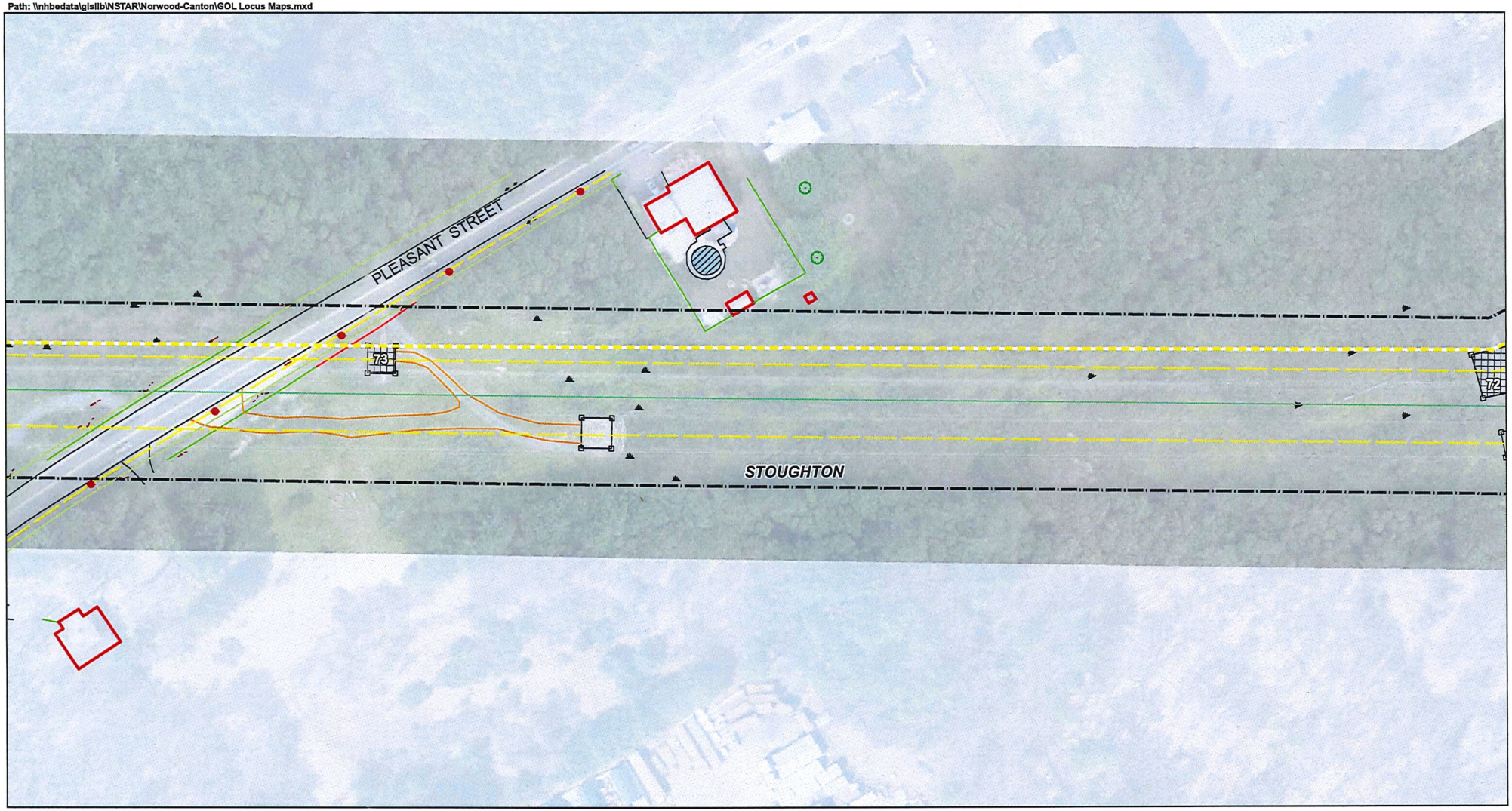


New 115kV Transmission Line

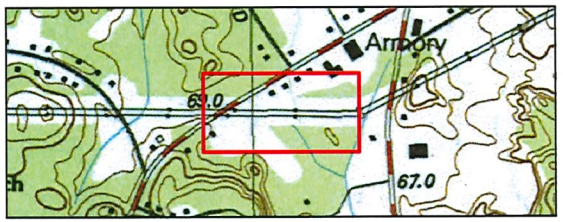
WCN Reliability Project Tower Location

Transmission Structure Replacement/New Structures

Existing Utility Pole

Town Boundaries

0 80 160 Feet



EVERSOURCE ENERGY

Walpole to Holbrook, MA

Pleasant Street, Stoughton

October 2016

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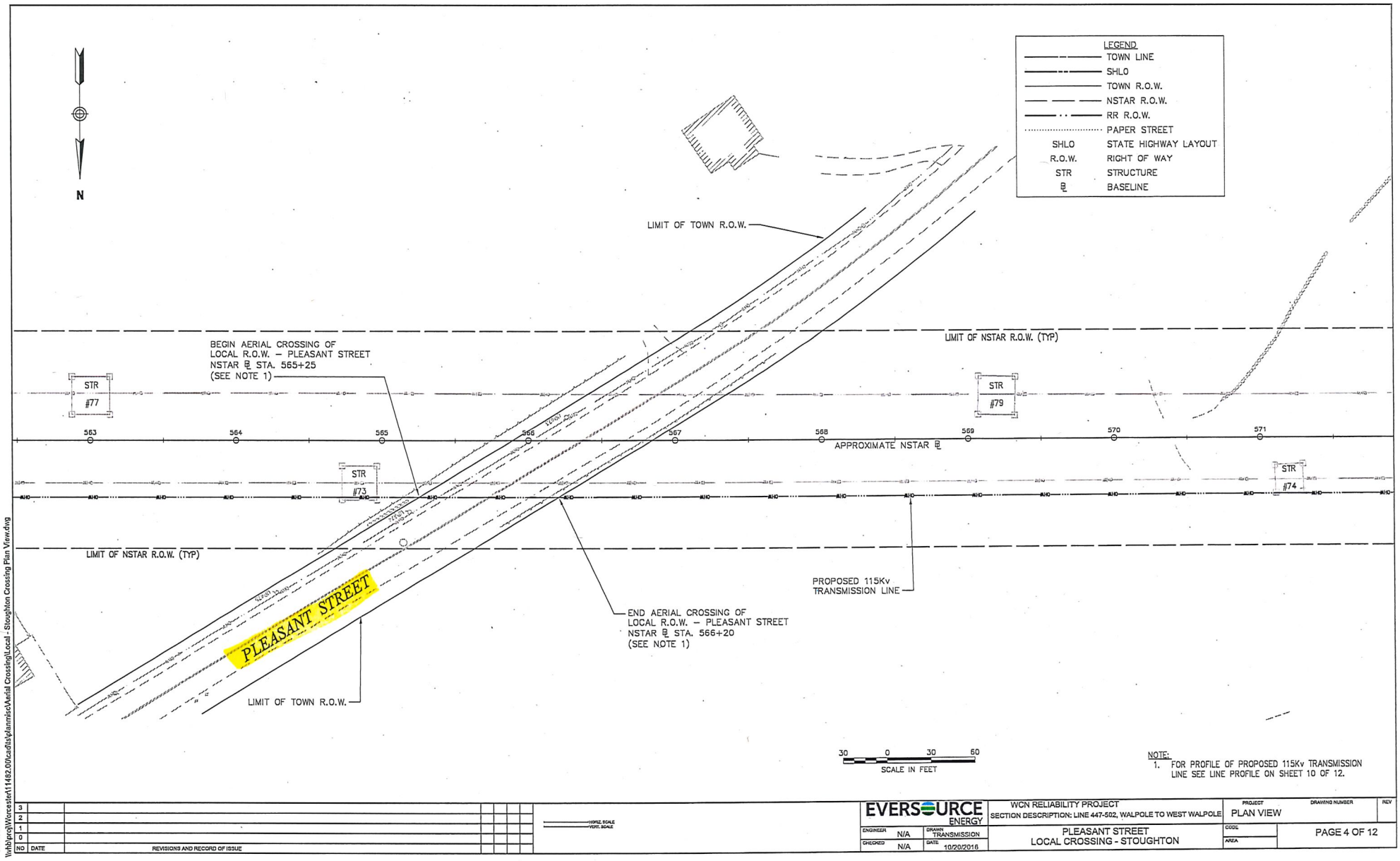

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HORIZ. SCALE
VERT. SCALE

EVERSOURCE ENERGY

ENGINEER	N/A	DRAWN	TRANSMISSION
CHECKED	N/A	DATE	10/20/2016

WCN RELIABILITY PROJECT
SECTION DESCRIPTION: LINE 447-502, WALPOLE TO WEST WALPOLE

PLEASANT STREET
LOCAL CROSSING - STOUGHTON

PROJECT	DRAWING NUMBER	REV
PLAN VIEW		
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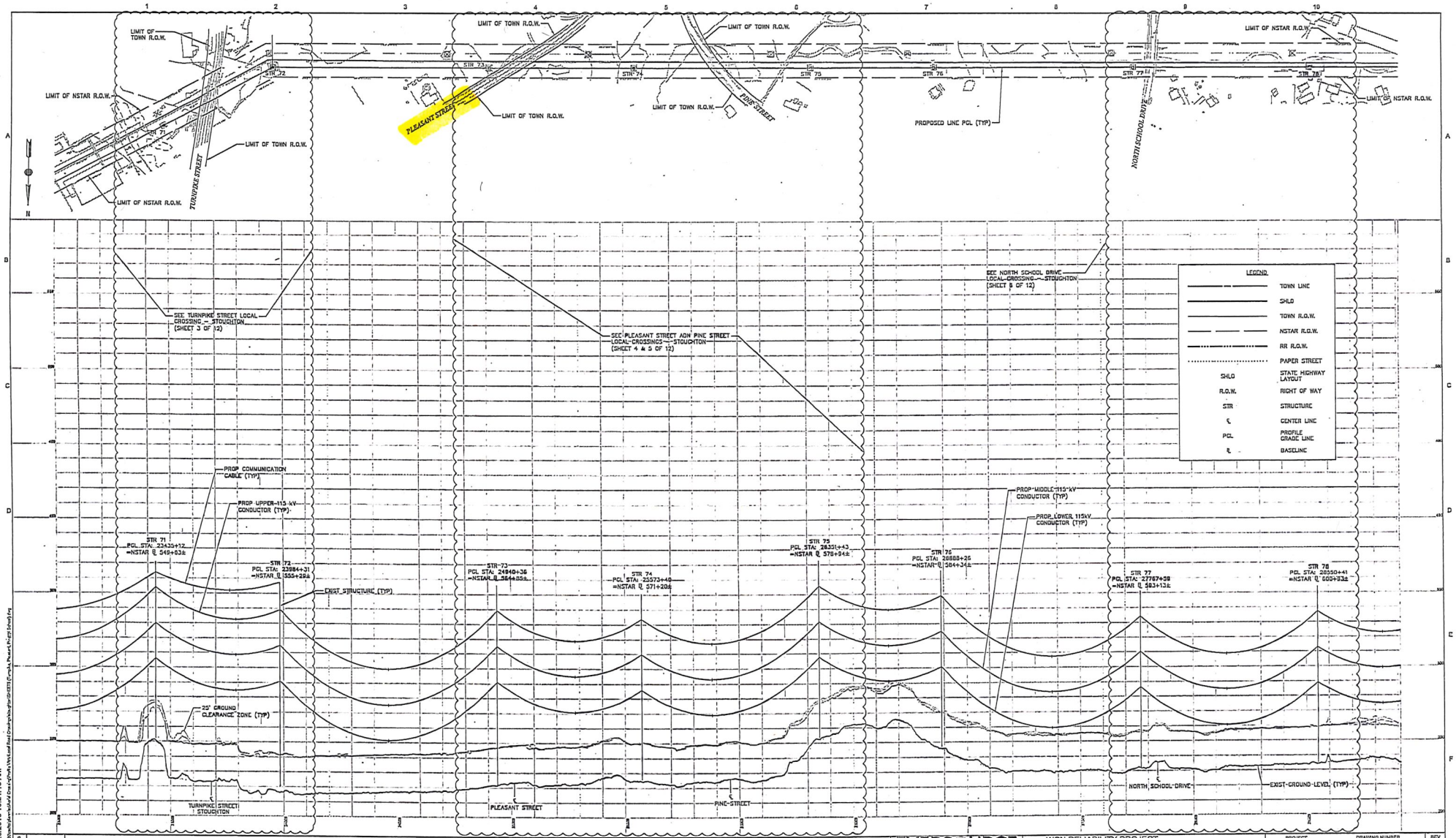
AREA		



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200 FT. HORIZ. SCALE
40 FT. VERT. SCALE

EVERSOURCE ENERGY

ENGINEER	N/A	DRAWN	TRANSMISSION
CHECKED	N/A	DATE	10/20/2016

WCN RELIABILITY PROJECT

LOCAL CROSSINGS - STOUGHTON

PROJECT	LINE PROFILE	DRAWING NUMBER	TLP - LINE 447-502
CODE	R/W 4		PAGE 10 OF 12
AREA	WALPOLE		STATION 23000 TO 28912

REV

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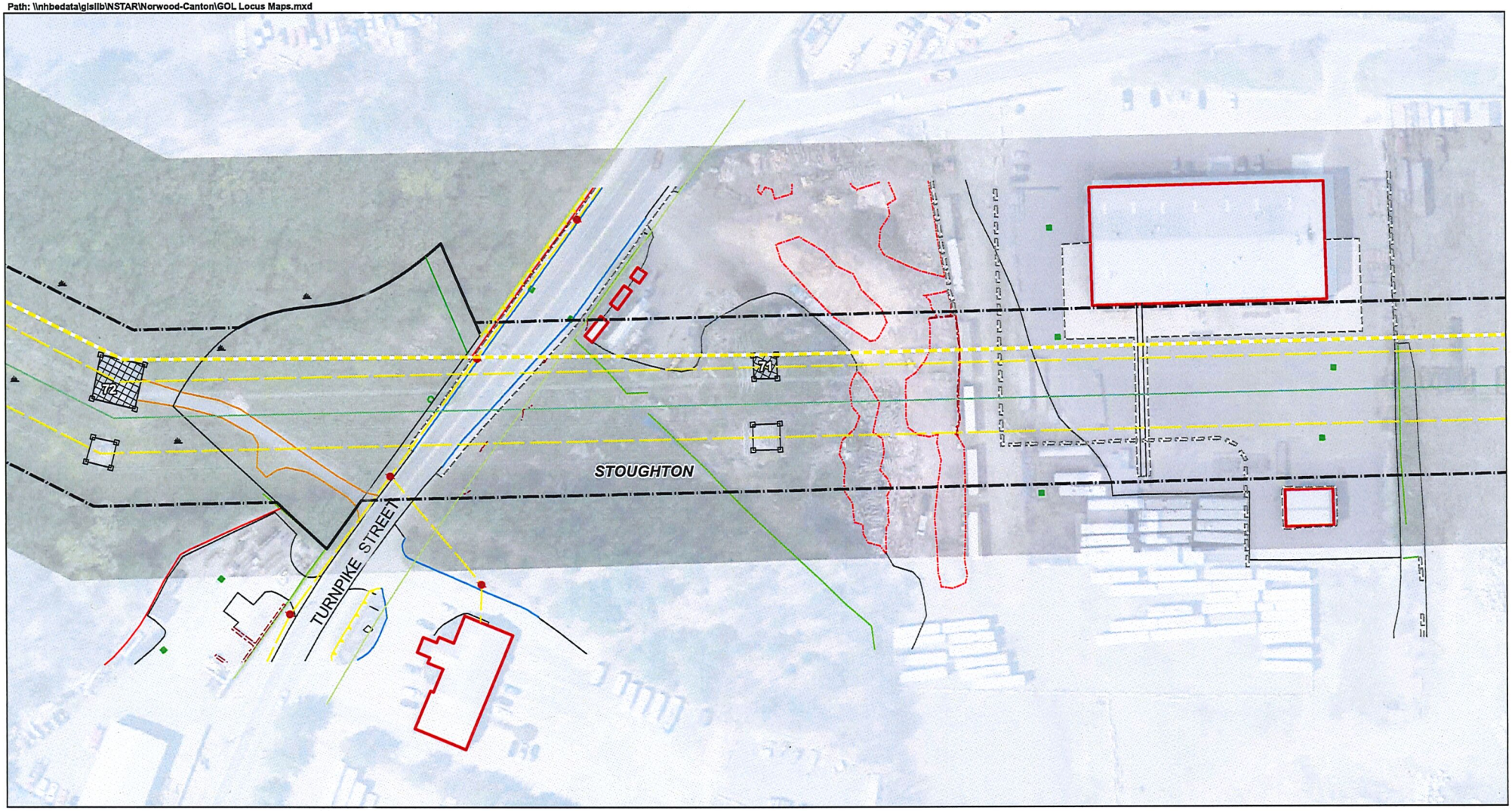
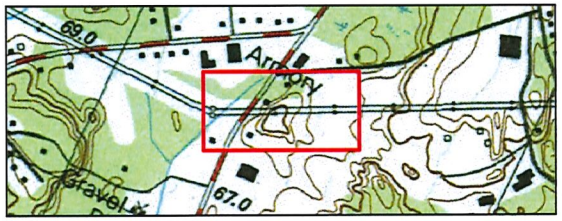


New 115kV Transmission Line
WCN Reliability Project Tower Location
Transmission Structure Replacement/New Structures
Existing Utility Pole
Town Boundaries

0 80 160 Feet

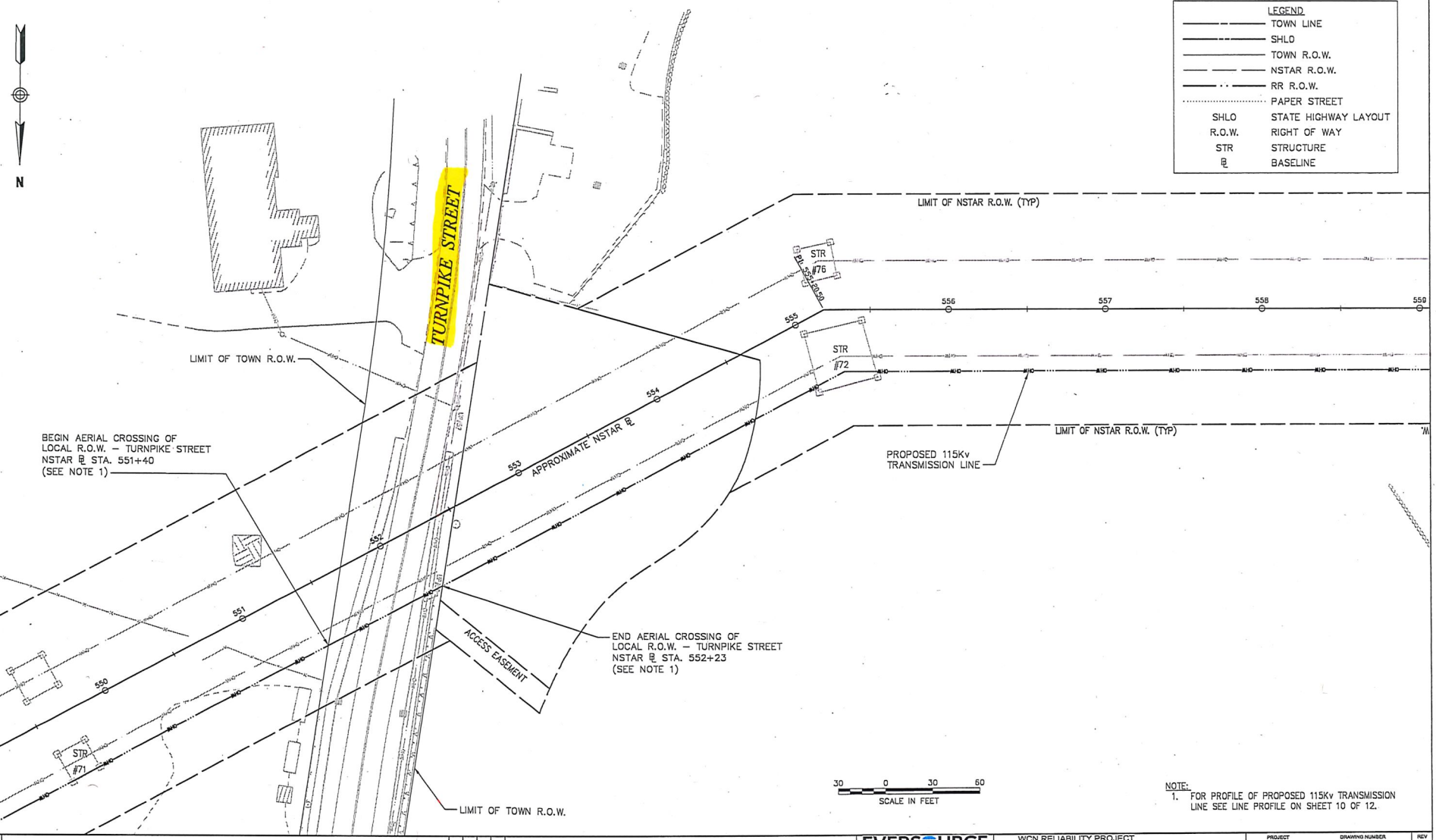


EVERSOURCE ENERGY

Walpole to Holbrook, MA

Turnpike Street, Stoughton
October 2016

vhb



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HORIZ. SCALE
VERT. SCALE

EVERSOURCE ENERGY

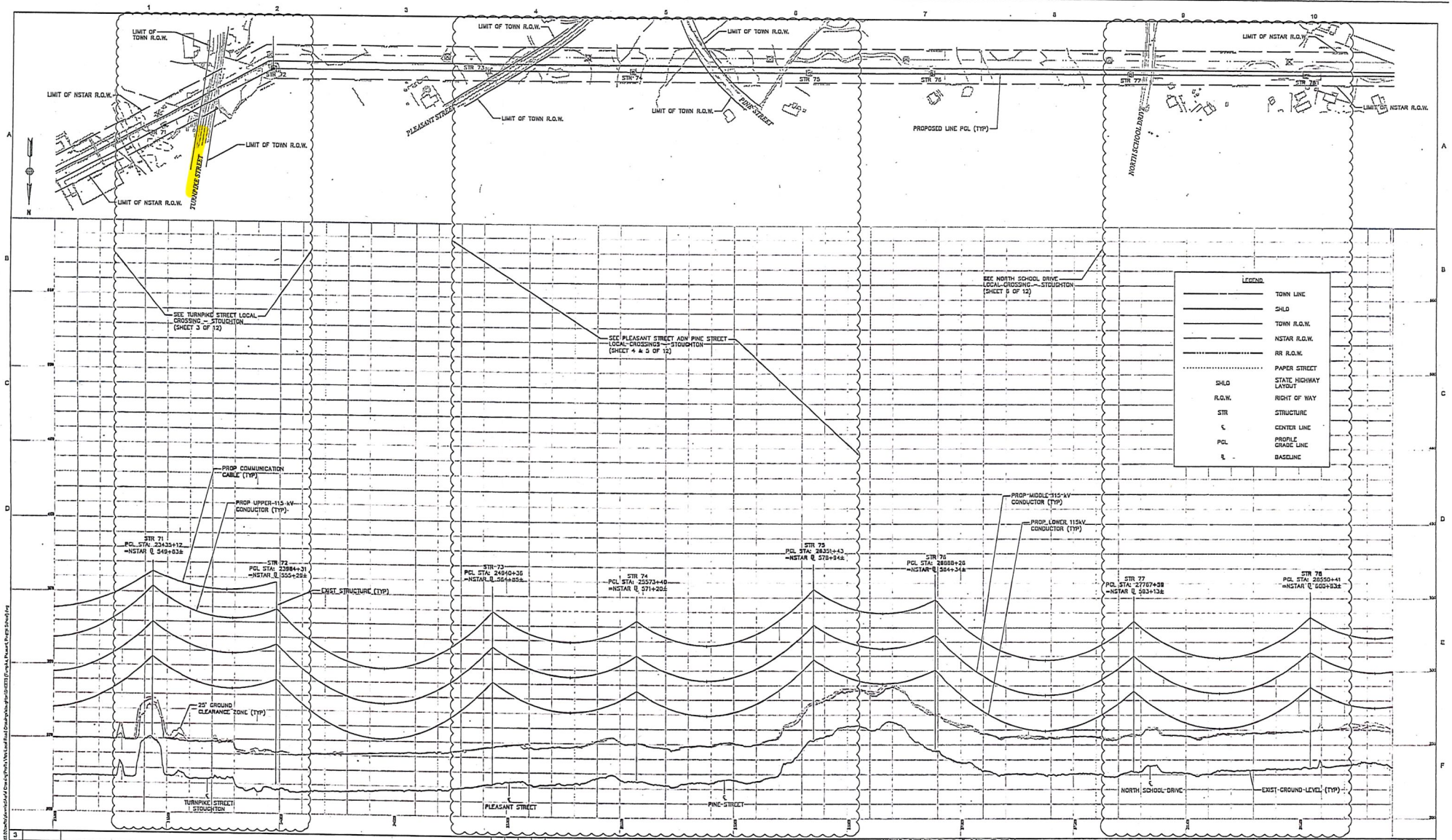
ENGINEER	N/A	DRAWN	TRANSMISSION
CHECKED	N/A	DATE	10/20/2016

WCN RELIABILITY PROJECT
SECTION DESCRIPTION: LINE 447-502, WALPOLE TO WEST WALPOLE

PROJECT: PLAN VIEW
DRAWING NUMBER:
REV:

TURNPIKE STREET
LOCAL CROSSING - STOUGHTON

CODE:
AREA:



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EVERSOURCE ENERGY

ENGINEER	N/A	DRAWN	TRANSMISSION
CHECKED	N/A	DATE	10/20/2016

WCN RELIABILITY PROJECT

LOCAL CROSSINGS - STOUGHTON

PROJECT: LINE PROFILE

DRAWING NUMBER: TLP - LINE 447-502

REV

CODE: R/W 4

AREA: WALPOLE

PAGE 10 OF 12

STATION 23000 TO 28912

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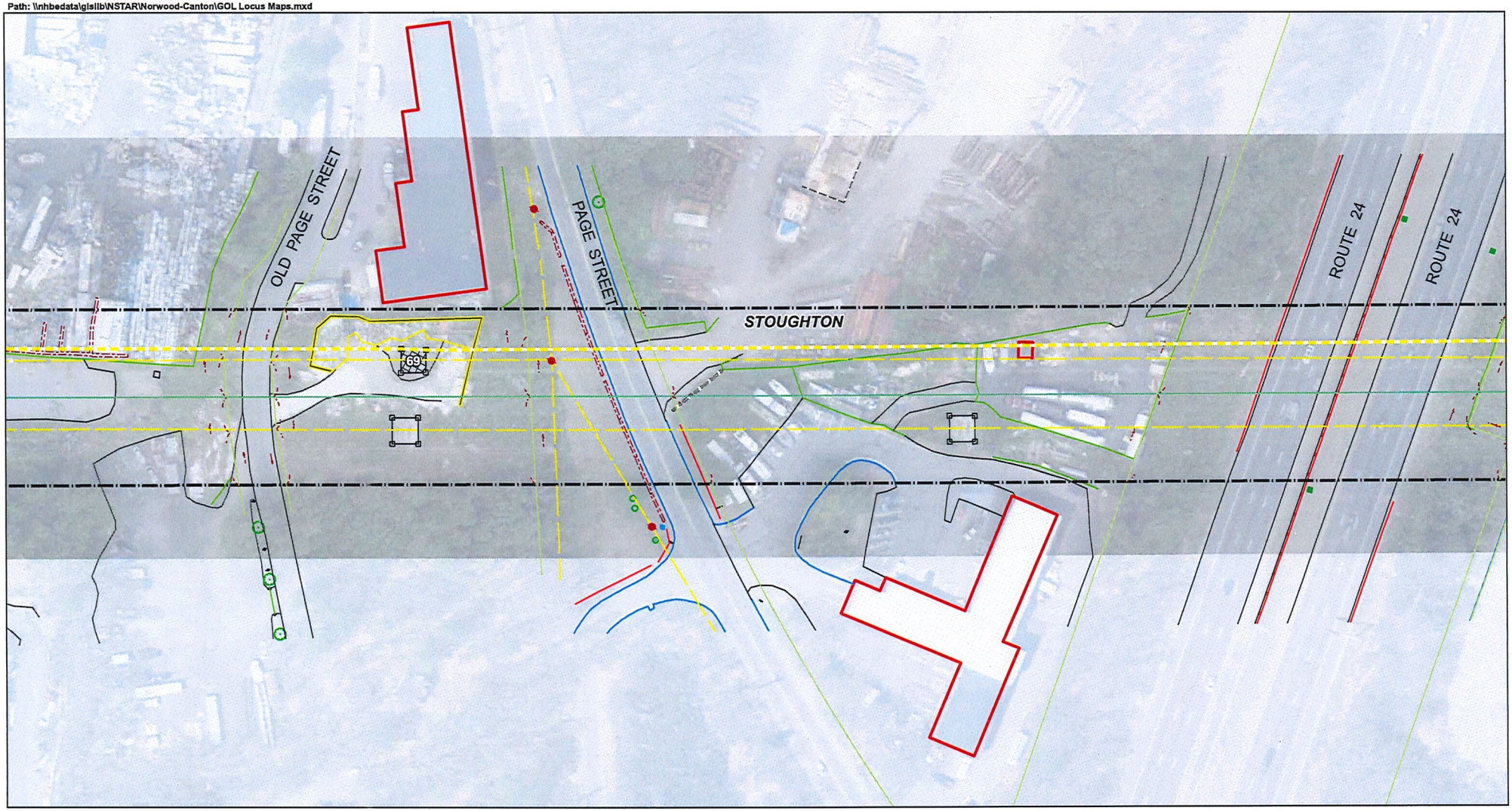


New 115kV Transmission Line

WCN Reliability Project Tower Location

Transmission Structure Replacement/New Structures

Existing Utility Pole

Town Boundaries

0 80 160 Feet

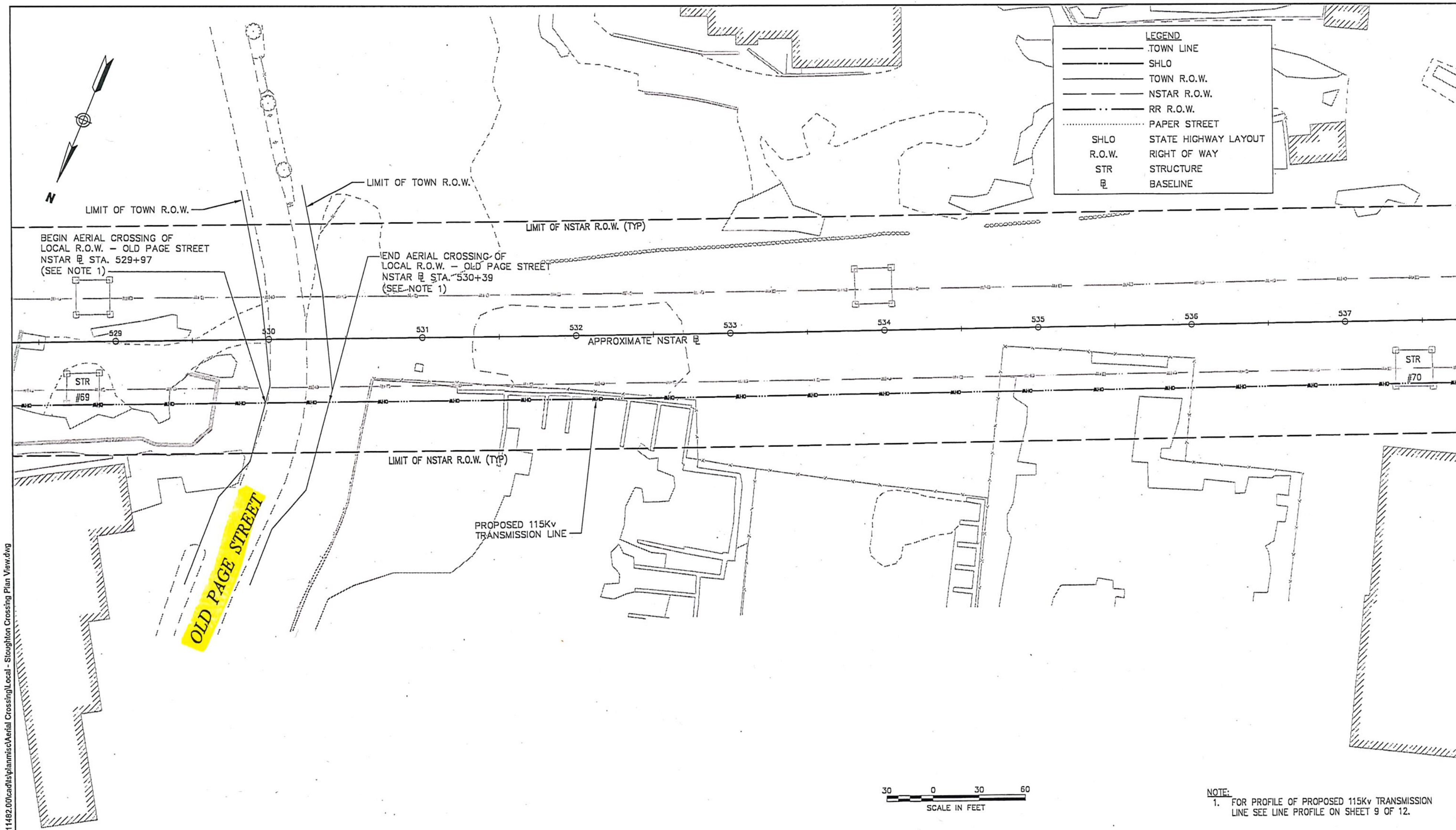
EVERSOURCE ENERGY

Walpole to Holbrook, MA

Old Page Street and Page Street, Stoughton

October 2016

vhb



NOTE:
1. FOR PROFILE OF PROPOSED 115Kv TRANSMISSION LINE SEE LINE PROFILE ON SHEET 9 OF 12.

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HORIZ. SCALE
VERT. SCALE

EVERSOURCE ENERGY

WCN RELIABILITY PROJECT
SECTION DESCRIPTION: LINE 447-502, WALPOLE TO WEST WALPOLE

PROJECT: PLAN VIEW
DRAWING NUMBER
REV

ENGINEER: N/A
DRAWN: TRANSMISSION
CHECKED: N/A
DATE: 10/20/2016

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LOCAL CROSSING - STOUGHTON

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PAGE 2 OF 12

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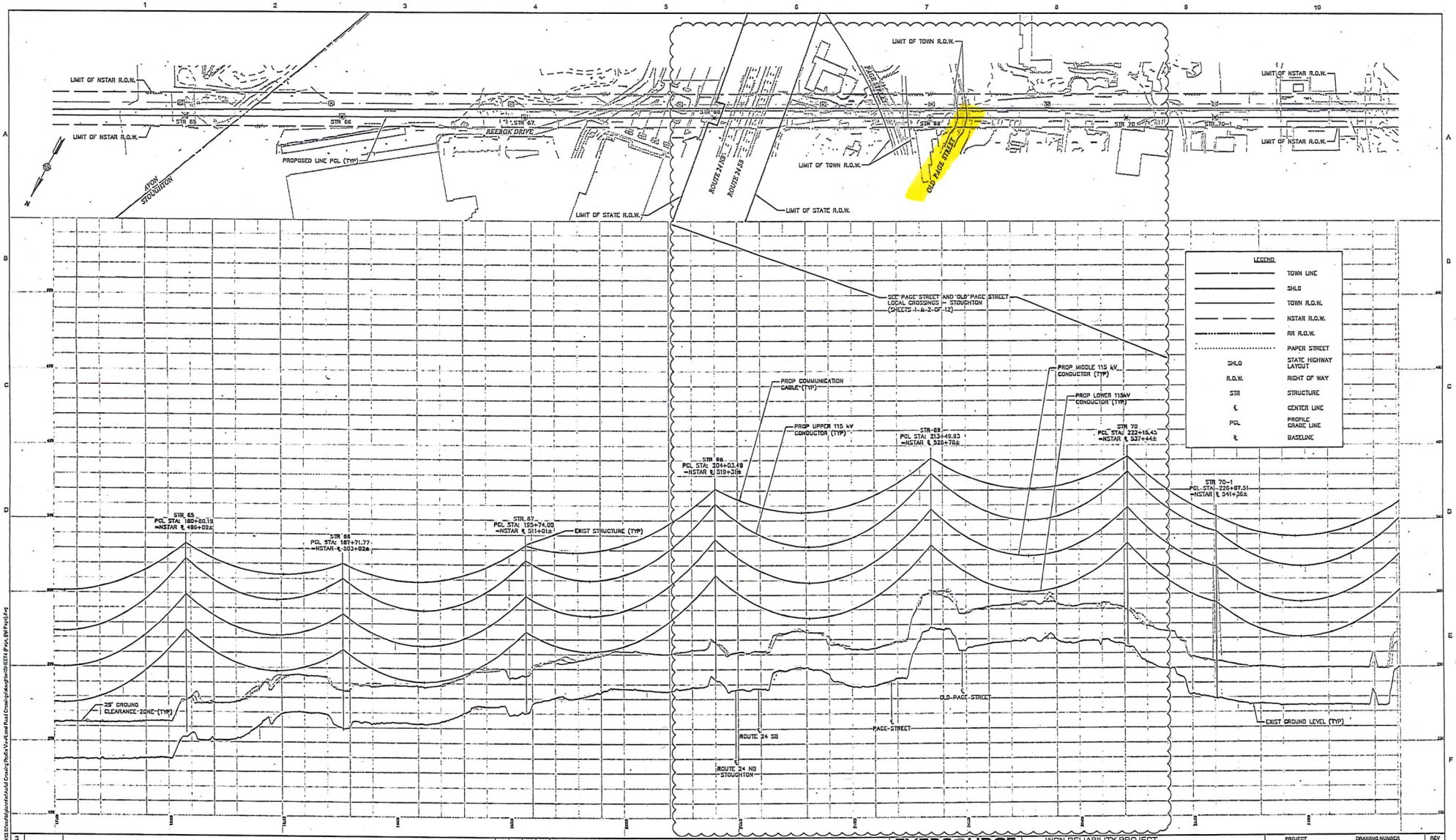

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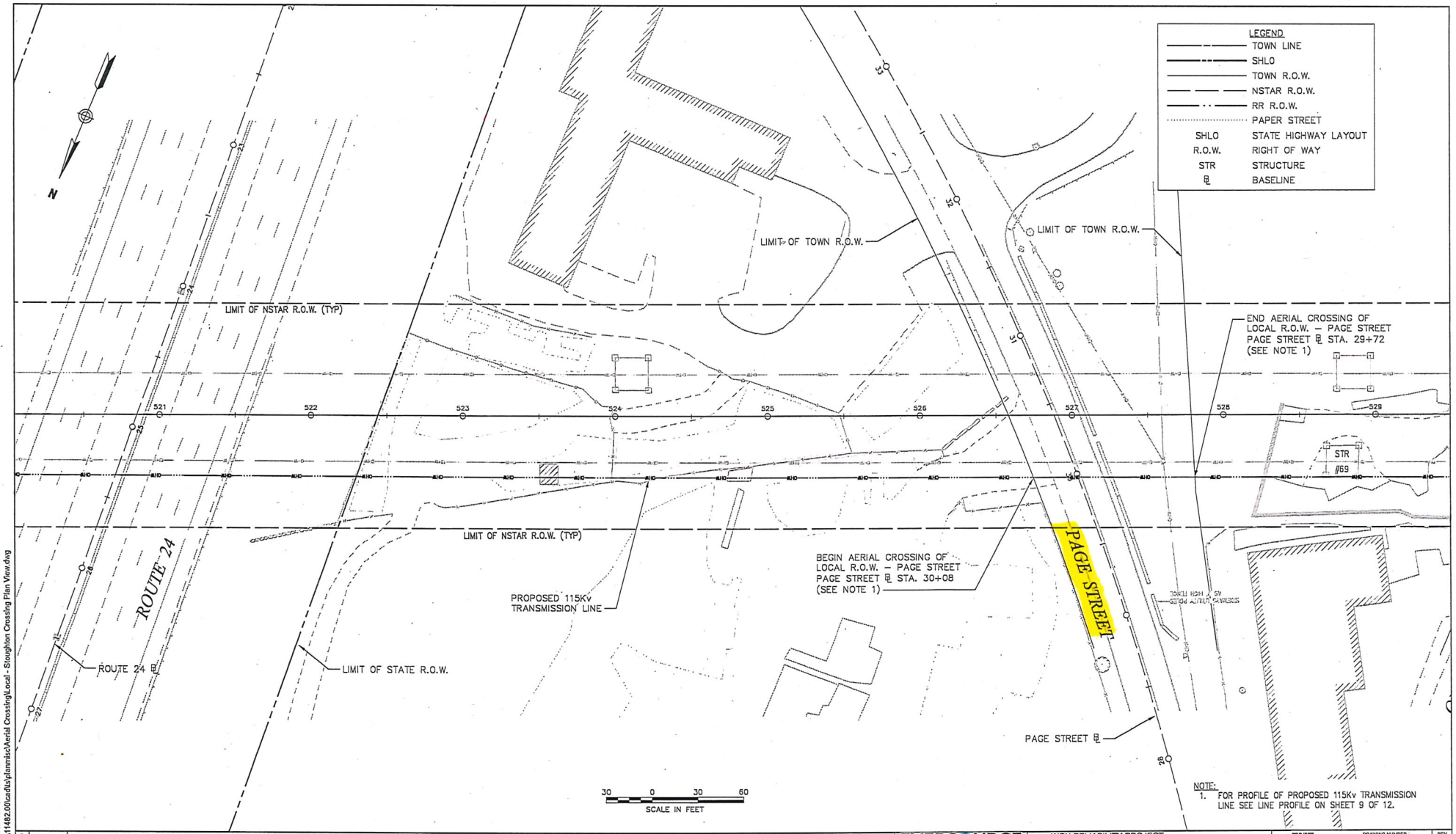
WCN RELIABILITY PROJECT

LOCAL CROSSINGS - STOUGHTON

PROJECT	DRAWING NUMBER	REV
LINE PROFILE	TLP - LINE 447-502	
CODE R/W 4	PAGE 9 OF 12	
AREA WALPOLE	STATION 17500 TO 23412	



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EVERSOURCE ENERGY

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CHECKED	N/A	DATE	10/20/2016

WCN RELIABILITY PROJECT
SECTION DESCRIPTION: LINE 447-502, WALPOLE TO WEST WALPOLE

PAGE STREET LOCAL CROSSING - STOUGHTON

PROJECT	DRAWING NUMBER	REV
PLAN VIEW		
CODE		
AREA		

PAGE 1 OF 12

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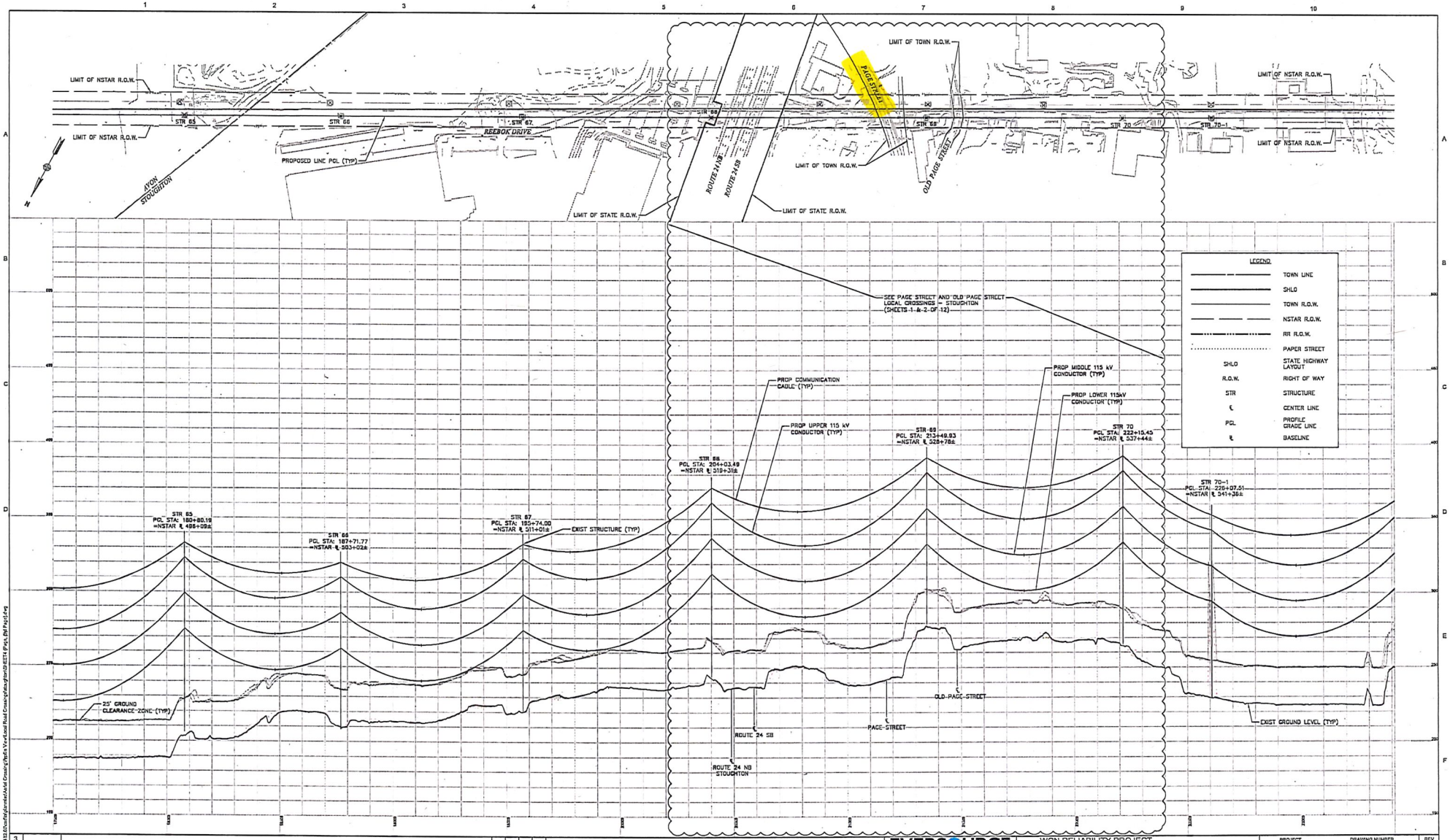

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HORIZ. SCALE
VERT. SCALE

EVERSOURCE ENERGY

ENGINEER	N/A	DRAWN	TRANSMISSION
CHECKED	N/A	DATE	10/20/2016

WCN RELIABILITY PROJECT

LOCAL CROSSINGS - STOUGHTON

PROJECT	LINE PROFILE	DRAWING NUMBER	TLP - LINE 447-502
REV			
CODE	R/W 4		PAGE 9 OF 12
AREA	WALPOLE		STATION 17500 TO 23412

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Eversource Energy
Summary Description of Electric Transmission
Conductor Cable Installation Practice

Disclaimer – This narrative is intended to be a brief and concise cursory description of the process of installing new or replacement conductor cables. Professionally prepared engineering plans, specifications and industry standards should be relied upon for the actual installation of electric conductor cables. The attached specification sheets are intended for reference purposes only and do not reflect the specific components to be used in any particular project.

1. Installation of the conductor pull line

A conductor pull line ("pull line") is used to pull an electric conductor cable ("conductor cable") in place. A pull line is typically comprised of synthetic material (polyester or polyethylene). See attached stringing line standard specification sheet. The pull line is stored on a spool at the beginning of the path of the proposed new conductor cable route. See attached reel winder standard specification sheet. The free end of the pull line is brought to the first overhead supporting structure (e.g. mono-steel pole, lattice tower, wood utility pole, etc.). The pull line is fed through a pulley block that is hung from the support structure. See attached single conductor block standard specification sheet and image. The pull line is then strung to each subsequent support structure (hanging from each pulley block) to the terminal support structure at the end of the proposed new conductor cable route. In a location where the conductor cable will cross overhead of an obstacle (e.g. highway, railroad track, river, etc.), the pull line is brought across the obstacle by various methods (e.g. by hand, helicopter, boat, etc.). The pull line is then passed though the pulley blocks hung from the supporting structures on either side of obstacle. Crossing overhead of an obstacle such as a highway or railroad track with a pull line usually requires the obstacle to be temporarily shut down to vehicle traffic.

In instances where an existing conductor cable or static wire is being replaced with a new conductor cable or static wire, it is sometimes possible to use the existing conductor cable or static wire to pull the pull line into place. This can greatly facilitate the installation of the pull line.

Ordinarily the existing supporting structures provide enough vertical support to the pull line and conductor cable during the installation process that additional supporting elements are not necessary nor warranted. However, in unusual obstacle crossing situations where additional temporary support of the pull line and/or conductor able is appropriate (e.g. railroad or highway) a crane equipped with a folding arm roller guard ("roller guard") can be utilized. The purpose of the temporary intermediate support is to limit line sag if an unexpected loss of tension occurs in the pull line and/or conductor cable. See attached roller guard standard specification sheet and images. In these cases, a crane fitted with a roller guard is positioned immediately adjacent to the subject obstacle (e.g. alongside a highway). The roller guard attached to the end of the crane boom is raised to the height needed to provide the desired support of the pull line and/or conductor cable. Where required, roller guard fitted cranes can be located on both sides of an obstacle to provide an additional level of pull line / conductor cable support.

EVERSOURCE
ENERGY

May 25, 2016

RE: Infrastructure Crossing Permit Preparation Authorization
New Transmission Line Construction - Right of Way 4 Walpole, MA to Holbrook, MA (PN 2015-1072)

To whom it may concern:

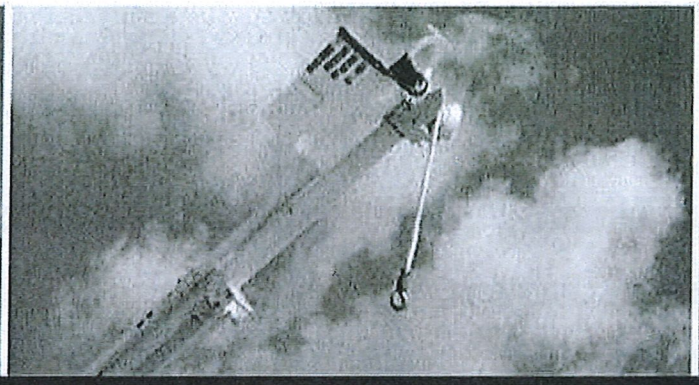
NStar Electric Company d/b/a Eversource Energy has retained the services of Vanasse Hangen Brustlin, Inc. ("VHB") located at 99 High Street, 10th Floor Boston, MA 02110 to act as an agent of Eversource Energy in the preparation and coordination of infrastructure crossing permit applications covering properties under the authority and jurisdiction of the Rail and Transit and Highway Divisions of the Commonwealth of Massachusetts Department of Transportation. VHB is hereby authorized to act on behalf and initiate and received direct communication from those state agencies in the acquisition of any permits required by Eversource Energy until December 31, 2017.

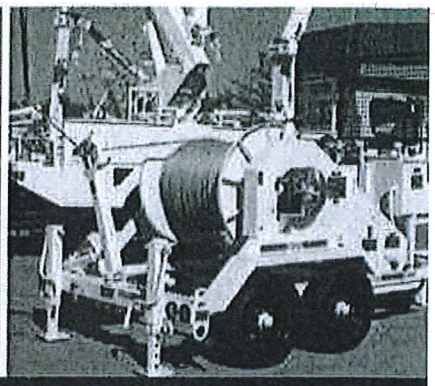
If you have any questions or require additional information, please contact me at your earliest convenience.

Sincerely,

Theresa Feuersanger
Supervisor
T & D Rights and Survey
Eversource Energy
One NSTAR Way, SE 210
Westwood, MA 02090

Email: Theresa.Feuersanger@eversource.com
Office: (781) 441-8909
Fax: (781)441-8909





Lighter. Stronger. Safer.

Synthetic Fiber Stringing Lines & Winch Lines

Stronger and lighter are the two key elements of Synthetic Rope that make it the choice for pulling overhead power lines and setting poles and transformers. Synthetic rope does not store energy like steel cables, and in the event of a failure it is much less likely to result in severe injuries caused by the recoil of broken wire cables.

Plasma® 12 Strand – a patented product only manufactured by Cortland – is the highest strength synthetic rope available. Manufactured from high performance Honeywell Spectra 900® Fiber, this unique product has been enhanced by Cortland's patented recrystallization process. Plasma® 12 Strand can be braided into Cortland's patented 12x12 construction, creating a torque-free rope at unparalleled strength for its weight. High strength synthetic fiber stringing lines and winch lines can also be constructed from Spectra® 12 Strand, Vectran® 12 Strand, polyester and composite options.

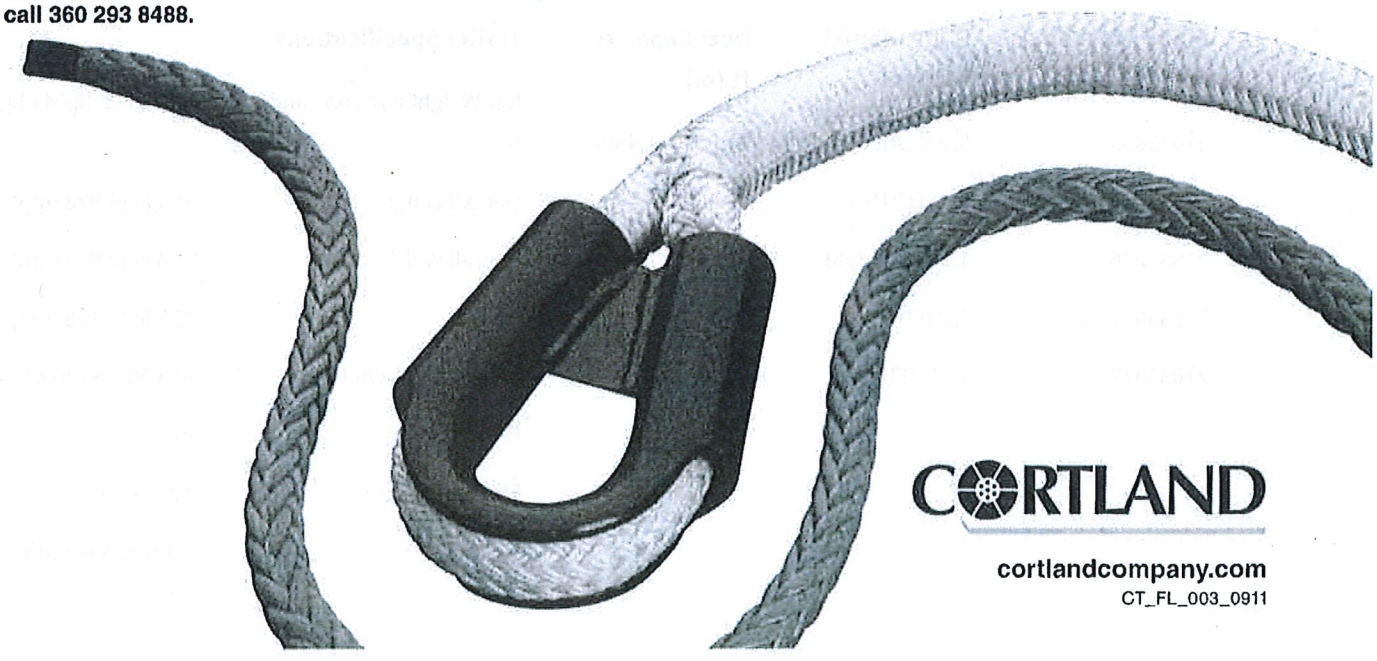
Whether your solution requires high strength, low stretch, heat or abrasion resistance, Cortland manufactures the best utility rope solutions for winch, transmission, distribution and stringing lines. Email: cortland@cortlandcompany.com or call 360 293 8488.

Major Advantages of Synthetic Fiber Lines

- Equally strong to steel
- Significantly lighter
- Easier handling
- Safer
- Reduced cost
- Improved performance

PUGET SOUND ROPE

A Trusted Cortland Brand



CORTLAND

cortlandcompany.com

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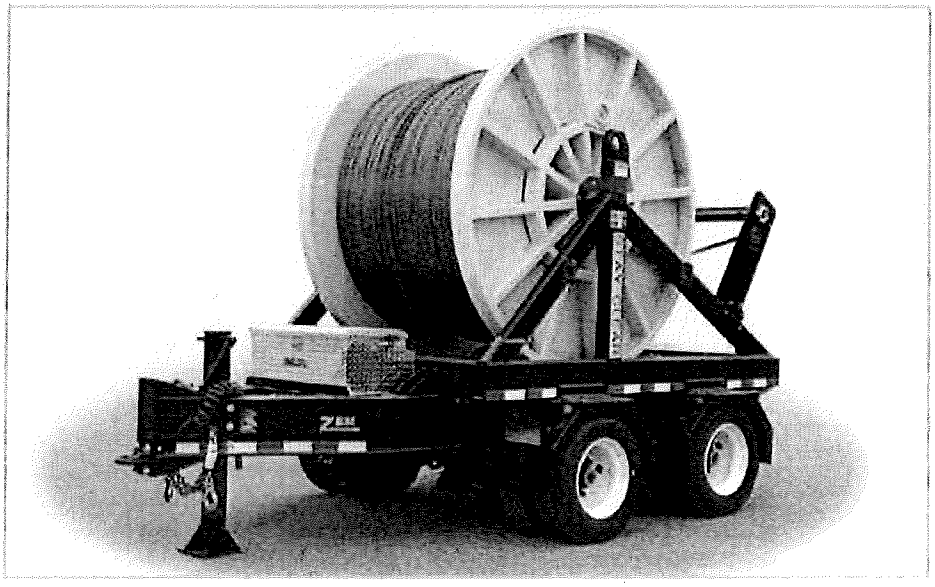
- Reel Stands/Winders ▼

RW23 Reel Winder Trailer



The Condux Tesmec RW23 Hydraulic Reel Winder Trailer is designed to work with the Condux Tesmec Pullers & Puller/Tensioners, and can be operated independently when powered by the 21011815 hydraulic power pack. It is equipped with automatic level wind and negative self-acting hydraulic brake. The RW23 can be equipped with the following: The Condux optional Fixed Steel reel, with 5/8, 11/16, 7/8 or 1 1/4 inch (16, 18, 22 or 31 mm) steel pulling rope of varying capacities.

Part Number: 21033800

Specifications | Equipment | Literature

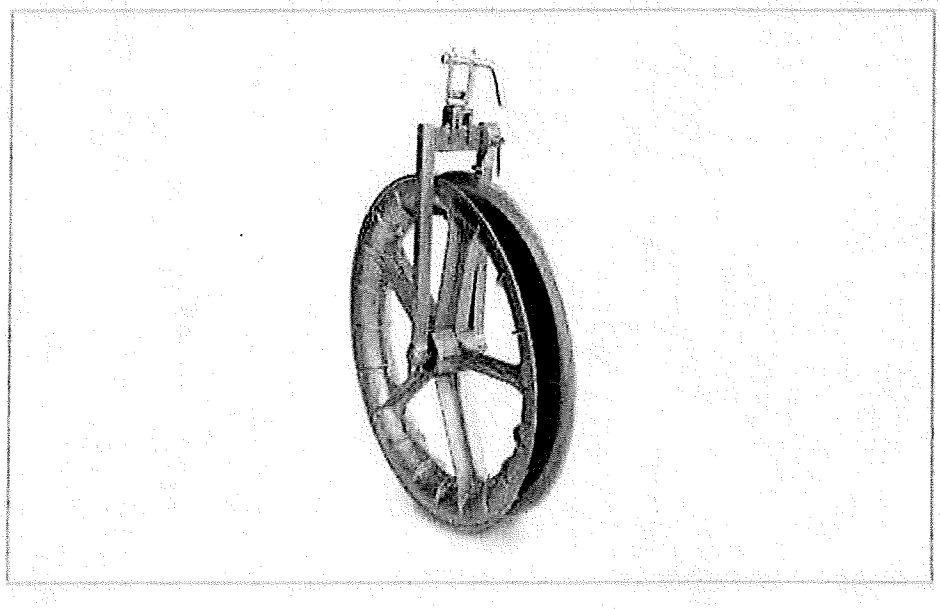
Fixed Steel Reel Part Number	Rope Diameter in (mm)	Reel Capacity ft (m)
21033869	5/8 (FUH16)	37,500 (11,430)
21033842	5/8 (FUH16)	25,000 (7,620)
21033876	11/16 (FUH18)	22,000 (6,706)
21033877	7/8 (FUH22)	22,000 (6,706)
21033872	1 1/4 (FUH31)	10,000 (3,292)

Trailer Specifications	
Net Weight w/o rope and reel	4,500 lbs (2,041 kg)
Overall Length	194 in (4,928 mm)
Overall Width	100 in (2,540 mm)
Height	125 in (3,175 mm)
Maximum GVWR	45,000 lbs (20,412 kg)
Brakes	Air
Electric System	12 V
Towing	Adjustable pintle eye

- Blocks

CAS Single Conductor Blocks

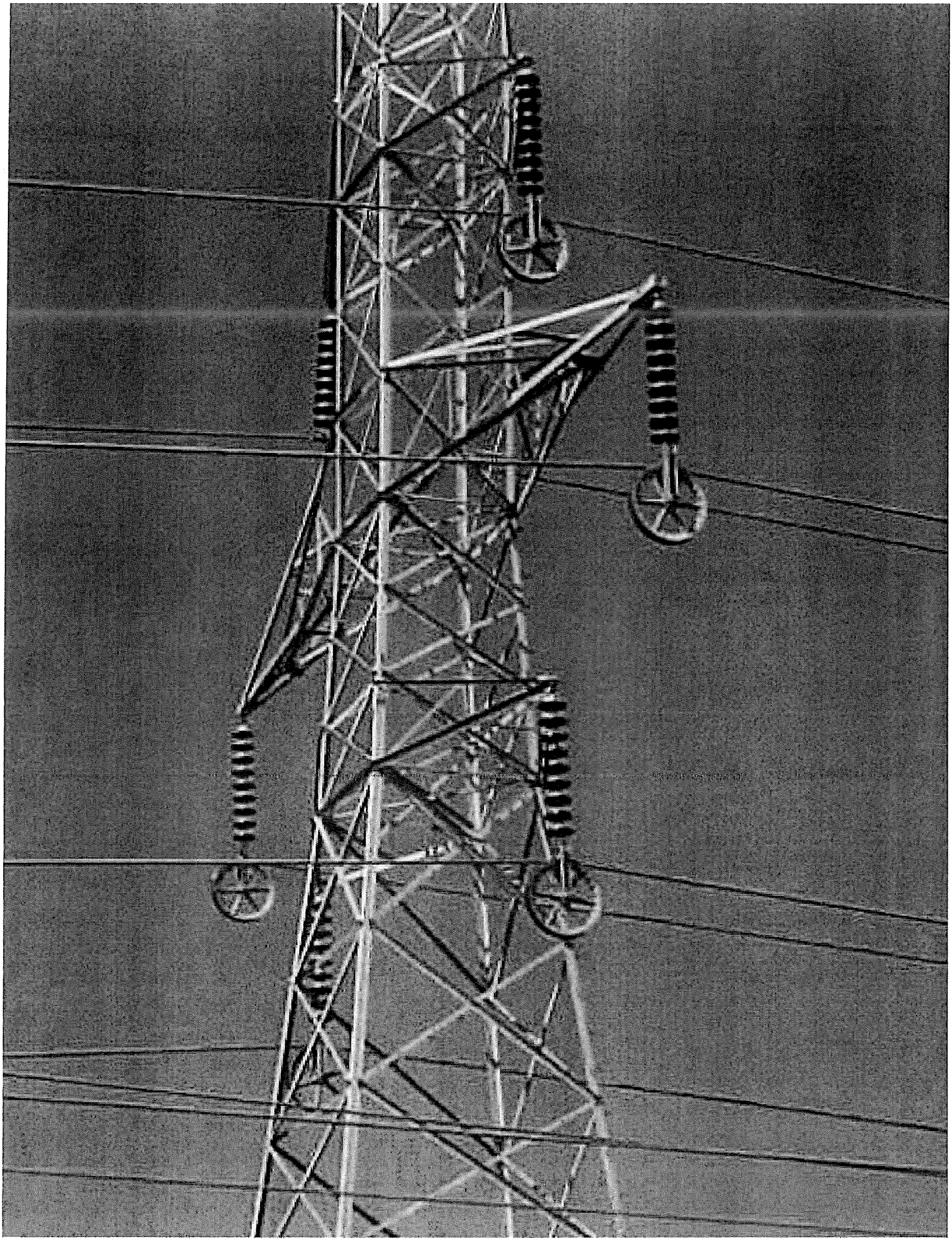
The block wheels are made of aluminum alloy mounted on ball bearings; the groove is lined by a neoprene ring or by wear-proof interchangeable nylatron or aluminum sectors. The frame is made of galvanized steel. The blocks can be supplied with three types of connections: fixed (B and B1), swivel-type (C and C1) or with a hook supplied with safety lock (D and D1).



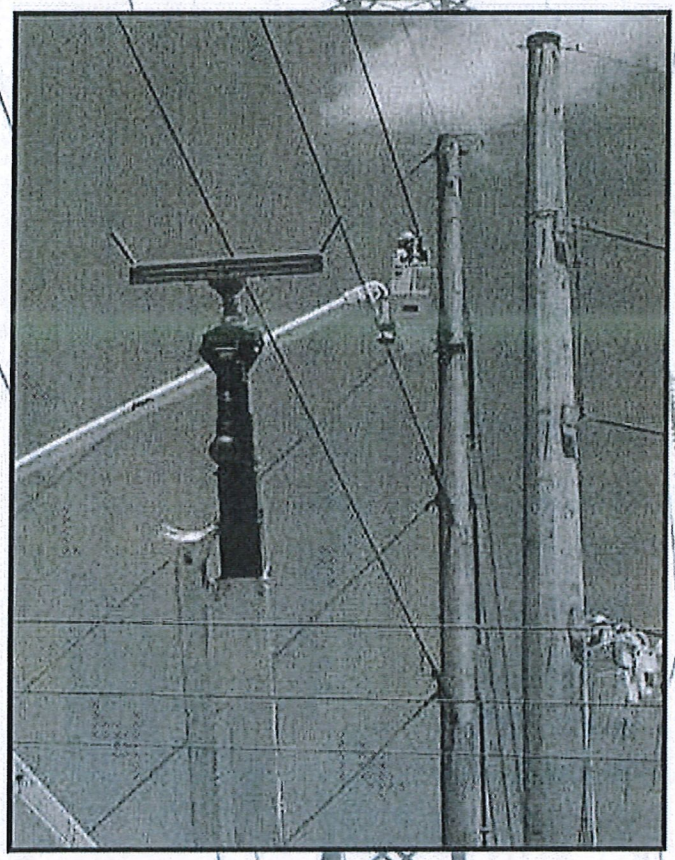
Grounding device or complete conductive sheaves are available upon request.

Models | Literature

Model Nylatron	Type of connection	Dimensions inches (mm)								Breaking load
		A	B	C	D	E	F	G	H	lbf (kN)
21007005	C1	1 (26)	5/8 (16)	1 31/32 (50)	10 (250)	6 (145)	19 (482)	13 (330)	7 (175)	17,985 (80)
21007010	D1	31/32 (25)	3/4 (19)	1 31/32 (50)	10 (250)	6 (145)	19 (490)	13 (330)	7 (175)	17,985 (80)
21007020	B1	1 (26)	11/16 (18)	2 1/8 (54)	14 (350)	6 (150)	23 (595)	17 (440)	8 (200)	15,737 (70)
21007030	C1	1 3/8 (35)	11/16 (18)	2 1/8 (54)	14 (350)	6 (150)	25 (640)	17 (440)	9 (225)	15,737 (70)
21007040	D1	1 1/4 (31)	1 3/16 (30)	2 1/8 (54)	14 (350)	6 (150)	25 (630)	17 (440)	9 (235)	15,737 (70)
21007080	B	1 (26)	25/32 (20)	2 11/16 (68)	26 (650)	7 (186)	39 (996)	31 (775)	10 (260)	22,481 (100)

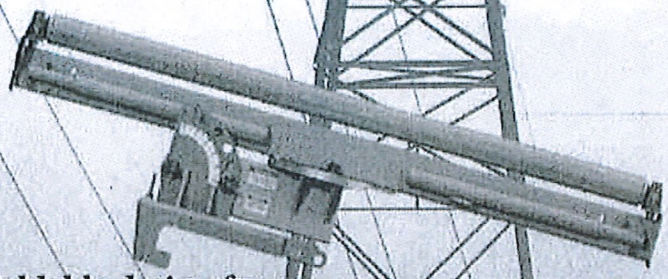


Folding Guard Arm

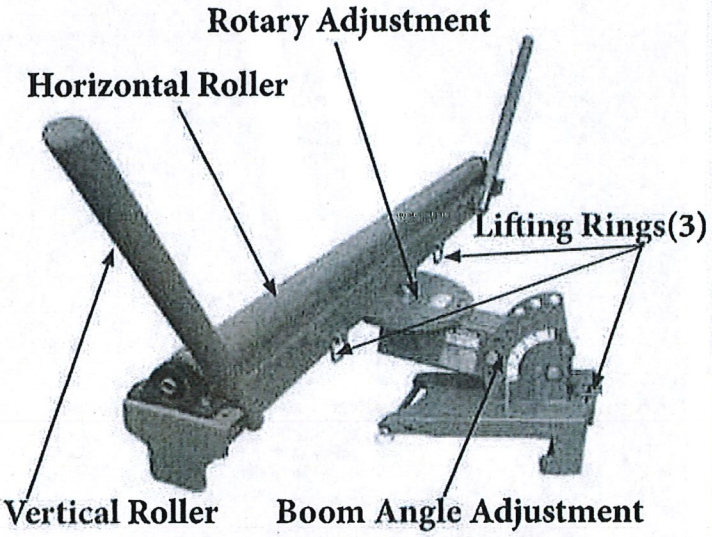


Specifications:

- **Overall dimensions(in use): 96" x 36.50" x 54" tall**
- **Overall dimensions(folded): 80.25" x 17" x 30.25" tall**
- **Weight = 370 lbs**
- **Capacity = 1,000 lbs**
- **3 lifting rings included to assist in mounting**
- **Mounts to boom trucks, digger derricks and various cranes with adapter**
- **Roller assembly may be manually adjusted radially to allow crane to set at different positions at ground level**



Foldable design for easy transport and storage.



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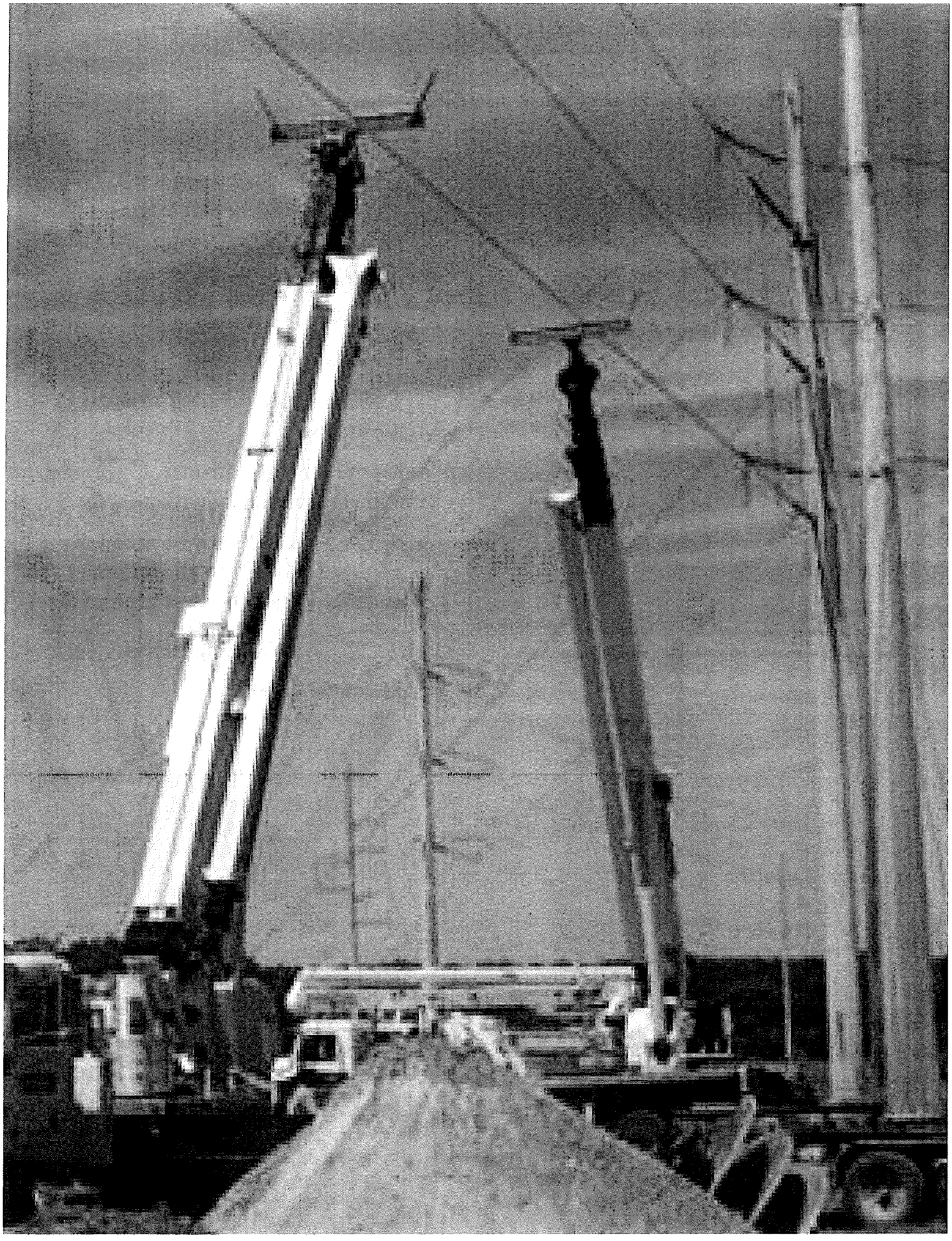
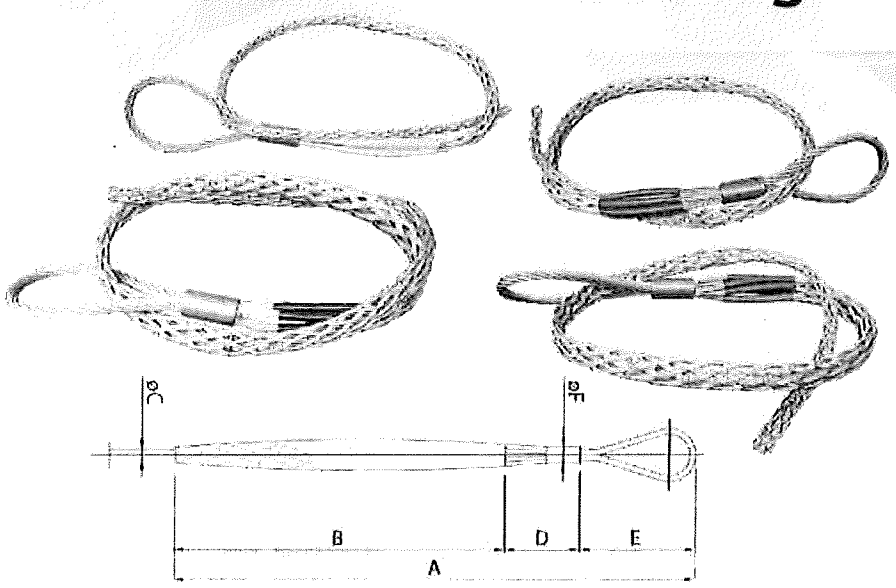



NATIONAL CRANE
Loebe Crane Services

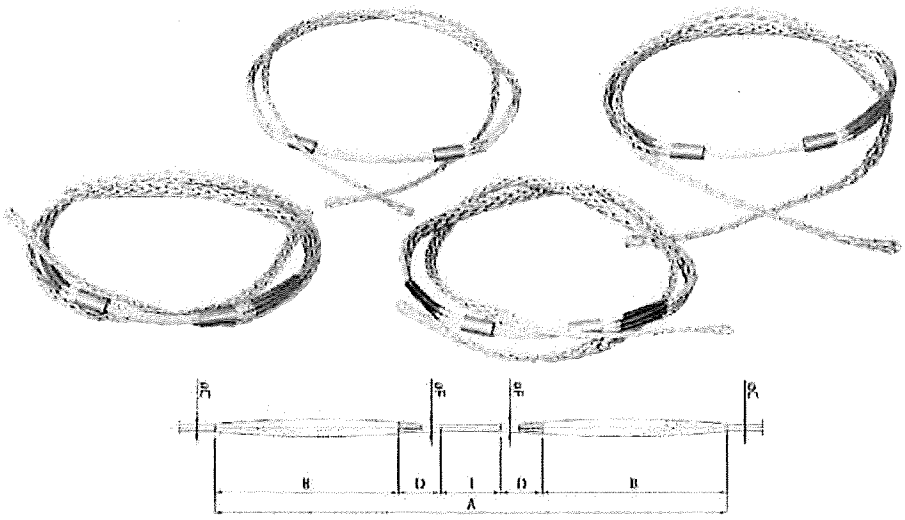
GCT High Performance Sock



Model	Suitable swivel	Ø Conductor in (mm)	Dimensions in (mm) A	B	D	E	F	Identifying color	Breaking load lbf (kN)	Mass lbs (kg)
21000500	21000305	5/16-21/32 (8-17)	55⅛ (1,400)	43⅜16 (1,100)	5½ (140)	6⅜16 (160)	⅞ (22)	yellow	7,868 (35)	1.54 (0.7)
21000510	21000315	21/32-1⅛ (17-29)	66⅛16 (1,700)	53⅛32 (1,360)	6⅜16 (160)	7⅛32 (180)	1⅛32 (28)	red	19,109 (85)	2.87 (1.3)
21000520	21000335	1⅛-1½ (29-38)	74⅛16 (1,900)	57⅛ (1,470)	7⅛ (200)	9⅛16 (230)	1⅛16 (30)	green	24,225 (130)	4.63 (2.1)
21000530	21000335 21000345	1½-1⅝ (38-50)	89⅛ (2,270)	71⅛32 (1,820)	7⅛ (200)	9⅛32 (250)	1⅛32 (34)	black	40,466 (180)	5.95 (2.7)

HEAD-TYPE

The head-type temporary mesh sock joints are specifically designed to temporarily connect the aluminum, steel or copper conductor to the pulling rope. They consist of variable pitch steel wires, which effectively distribute the gripping effect on the conductor.

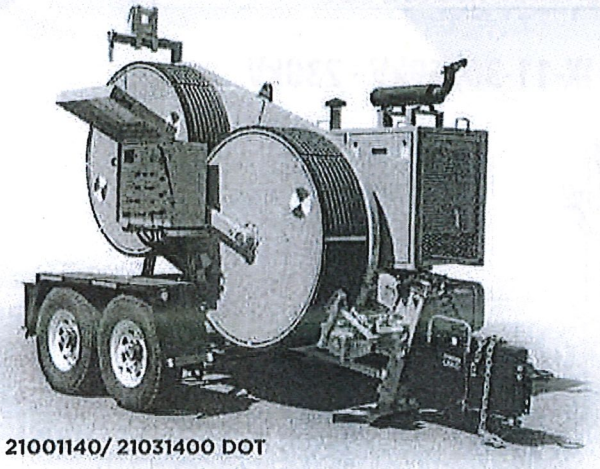


Model	Ø Conductor in (mm)	Dimensions inches (mm) A	B	D	F	I	Identifying color	Breaking load lbf (kN)	Mass lbs (kg)
21000550	5/16-21/32 (8-17)	105½ (2,680)	43⅜16 (1,100)	5½ (140)	⅞ (22)	7⅛ (200)	yellow	7,868 (35)	2.54 (1.15)
21000560	21/32-1⅛ (17-29)	127⅜16 (3,240)	53⅛32 (1,360)	6⅜16 (160)	1⅛32 (28)	7⅛ (200)	red	19,109 (85)	5.07 (2.3)
21000570	1⅛-1½ (29-38)	139⅛ (3,540)	57⅛ (1,470)	7⅛ (200)	1⅛16 (30)	7⅛ (200)	green	29,225 (130)	7.94 (3.6)
21000580	1½-1 3/32 (38-50)	166⅛16 (4,240)	71⅛32 (1,820)	7⅛ (200)	1⅛32 (34)	7⅛ (200)	black	40,466 (180)	10.58 (4.8)

DOUBLE HEAD-TYPE

The double head-type temporary mesh sock joints are specifically designed to temporarily connect the aluminum, steel or copper conductors. They consist of variable pitch steel wires, which effectively distribute the gripping effect on the conductor.

AFS404 Hydraulic Puller - Tensioner



Part Number 21001140/ 21031400 DOT

The **AFS404** is designed for stringing **one rope or one conductor.** The bull-wheel grooves on the AFS404 are from of high resistance interchangeable nylon sectors. Wear-proof thermally and chemically treated steel bull-wheel grooves are also available on the AFS404.

GENERAL SPECIFICATIONS:

PULLER PERFORMANCE

Max Pull	10,100 lbf (45 kN)
Continuous Pull	1.7 mph (2.7 km/h)
Max Speed	3.1 mph (5 km/h)
Pull at max speed	5,600 lbf (25 kN)

TENSIONER PERFORMANCE

Max Tension	10,100 lbf (45 kN)
Max Speed	3.1 mph (5 km/h)

Note: the basic machine performance is calculated at 68° F (20°C) and at sea level

CHARACTERISTICS

Bull-Wheel Diameter	59⅛ in (1,500 mm)
Max Conductor Diameter	1⅜ in (34 mm)
Max rope diameter	⅝ in (16 mm)
Weight	6,614 lbs (3,000 kg)

ENGINE

Diesel	63 kW (85 hp)
Cooling system	water
Electrical system	12 V

HYDRAULIC TRANSMISSION

Closed hydraulic system that allows stepless speed variation in both directions.

STANDARD EQUIPMENT

Negative self-acting hydraulic brake

Hydraulic dynamometer with set-point and automatic control of maximum pull

Hydraulic oil cooling system

Digital meter counter

Control instruments for hydraulic system and Diesel engine

Rigid axle for towing at max speed of 19 mph (30 km/h) with mechanical parking brake (non DOT model)

Hydraulic rope/conductor clamps for reel change operation

Hydraulic quick connectors to control a separate reel stand/winder

Electronic adapter for connection of multiple machines and for stringing synchronization

Gearbox with 3 operating positions:

- neutral position (with free bull-wheels for conductor loading and unloading)
- low tension position 350-1,800 lbf (1.5-8 kN)
- nominal tension position 1,350-10,100 lbf (6-45 kN)

Mechanical front stabilizer

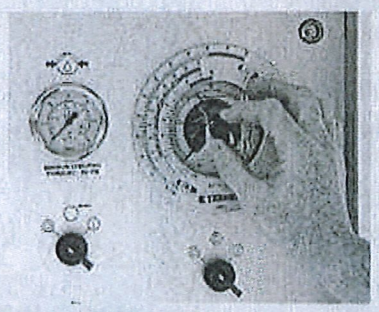
Grounding connection point

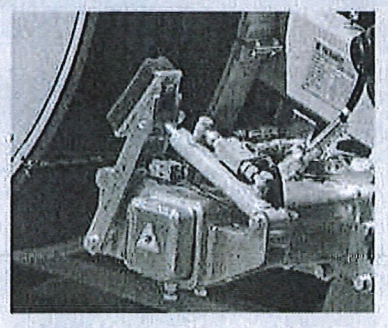
OPTIONAL EQUIPMENT

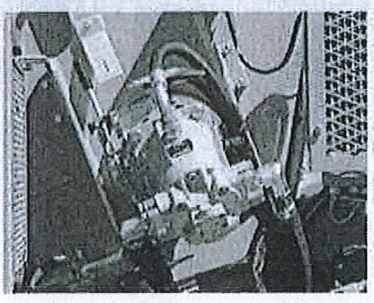
ALL037	Preheating device for use up to -22°F (-30°C)
21021528	Cable remote control kit (instrument not included)
21001142	Electronic pull and speed recorder kit (instrument not included)
21021548	Radio remote control kit (instrument not included)
21001964	Electronic pull and speed recorder

GENERAL SPECIFICATIONS - DOT

Net Weight	9,200 lbs (4,175 kg)
Overall Length	192 in (4,875 mm)
Overall Width	92 in (2,340 mm)
Height	91 in (2,310 mm)



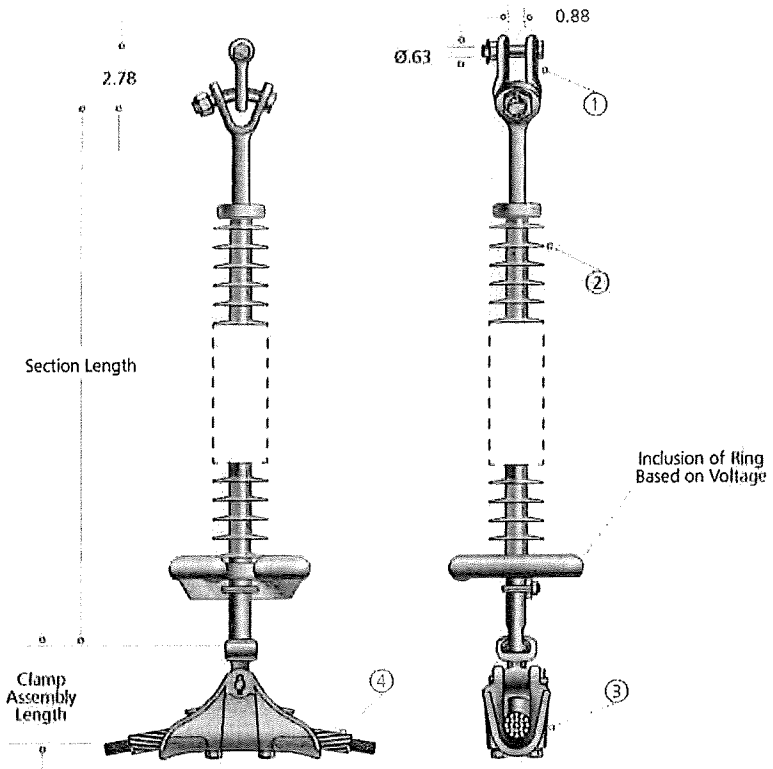




CONDUX TESMEC

Tangent Suspension, Single Conductor

Single-String 30k lb Assembly, TAT-IX-11-30, 69kV - 230kV



Base Assembly Catalog Number: TAT-IX-11-30

Item	Part Number	Description	Quantity	Material	UBS lb
1	AS25LBNK	Anchor Shackle	1	Forged Steel	30,000
2	See Chart	Insulator, ANSI 52-5	1	Polymer	—
3	See Note 1	Suspension Clamp w/Socket	1	Aluminum	—
4	See Note 2	Armor Rods	1	Aluminum	—

Typical Insulator Selection — See Note 3

Line Voltage (kV)	Quadri*Sil® Part Number	Section Length Inches	SML lb	Corona Ring
69	S030023S2010	35.4	30,000	—
115	S030036S2010	48.4	30,000	—
138	S030043S2010	54.9	30,000	—
161	S030056S2010	67.8	30,000	—
230	S030073S201A	85.1	30,000	8" Line End

NOTE: For quoting/ordering instructions, see Assemblies section.
(1) See Suspension Clamp section for standard and high temperature conductor suspension clamp options.
(2) Contact HPS for armor rod recommendations.
(3) See Suspension Insulator section for additional insulator options, including 25k lb offerings.