ATTACHMENT 6

CONSTRUCTION DRAWINGS

(11x17 drawings attached.
Refer to full-scale plan sheets for construction.)

Legend

Access Type 1 (AT-1)	Off ROW work trail in uplands on existing stone/gravel road, or new trail on firm level soils. Minor topdressing may be required.
Access Type 2 (AT-2)	Firm level soils with minor grading necessary, plus drainage devices. Locate within ROW along structure centerline, or new work trail as indicated on EWP Maps.
Access Type 3 (AT-3)	Firm soils with steep slopes requiring 12 inches minimum of select borrow or crusher run, plus drainage devices, locate within ROW and switchback as necessary to negotiate steep slopes.
Access Type 4 (AT-4)	Soft soils requiring geofabric and 12 inches minimum of select borrow or crusher run, plus drainage devices.
Access Type 5 (AT-5)	Temporary fill atop geofabric, removed prior to restoration.
Access Type 6 (AT-6)	Existing paved roads and adjacent improved ROW, utilized during the construction of the Project, with minor improvement for pole access. Select gravel or crusher shall be used in areas requiring minor top dressing. Includes use of existing paved and unpaved access drives which may require minor improvement.
Clearing Method I (CM-I)	CM-I consists of clearing the designated areas of all woody plants, including desirable species. Herbicides may be applied to remaining stumps as directed by this EWP.
Clearing Method II (CM-II*)*	CM-II consists of clearing the designated areas of any woody plant species that have potential for growing into the wire security zone. All growth shall be cut as close to the ground as practicable. Reasonable care shall be taken, in as so far as practical, to retain desirable species found within CM-II zones. Herbicide may be applied to all remaining stumps within a designated CM-II as directed by this EWP.
Clearing Method III (CM-III)	CM-III shall consist of selectively clearing the designated areas, removing only those tall-growing species that have invaded or can be expected to invade the wire security zone within five years. As an adequate cover of desirable species is established on the site, the tall growing species will be removed.
Clearing Method IV (CM-IV)	CM-IV shall consist of selectively removing and/or trimming, in the designated areas, those tall growing species, which have invaded or can be expected to invade, the wire security zone within five years. Trees with more than 25 percent of the crown within the wire security zone will be removed unless otherwise designated on the Project plans.
Slash Disposal Practice A (SD-A)	SD-A consists of separating, tree length skidding and yarding the merchantable timber in designated areas along the ROW. Where, in the opinion of the Environmental Inspector, a site may be damaged by the tree length skidding, the timber will be bucked into logs.
Slash Disposal Practice B (SD-B)	SD-B consists of collecting and piling the slash in designated areas. In this case, the slash consists of all unmerchantable wood (less than 6 inches in diameter at the large end), such as tops, limb wood and saplings.
Slash Disposal Practice C (SD-C)	SD-C consists of collecting and piling all unmerchantable wood larger than 6 inches in diameter at the small end, in designated areas. Unless otherwise directed by the Environmental Inspector, the logs will be piled adjacent to the work trail so as to avoid interference with construction activities.
Slash Disposal Practice D (SD-D*)*	SD-D consists of dropping and lopping all downed material so that it lies as close to the ground as practical and branches and limb wood would not exceed one-foot average depth.
Slash Disposal Practice E (SD-E)	SD-E consists of burning the slash within designated areas after collecting and piling. Slash larger than approximately 6 inches in diameter at the small end will be stacked along the access road for potential firewood utilization.
Slash Disposal Practice F (SD-F)	SD-F consists of chipping slash on site in designated areas.
Slash Disposal Practice G (SD-G)	SD-G consists of removing slash from the site which is less than 6 inches in diameter at the large end, including tops, limbwood and saplings. However, the large diameter wood (six inches or more in diameter) may be scattered or piled on the site. The small diameter slash may be removed to another portion of the right-of-way with a designated slash disposal practice of other than SD-G or SD-H.
Slash Disposal Practice H (SD-H)	SD-H consists of removing all slash from the site.

Emergency/Contact Phone Numbers

ADD NUMBERS AS NECESSARY

Project Engineer		
James Bunyan, National Grid		(518) 433-3069
Archeology Related Issues		
Ed Alkiewicz, NYPA		(914) 287-3247
Project Permitting Issues		
John Suloway, NYPA		(914) 287-3971
Environmental Monitor		
Scott Shupe		(315) 428-6616
	cell	(315) 439-0712

_____

_____

_____

Property Issues, Access, Easements, etc.	
Dick Potts	(315) 428-3393
Design Engineers	
Daniel Brown	(517) 817-1620
Environmental Consultants	
Dean Long, The LA Group	(518) 587-8100
Walter Bakowski, TetraTech	(617) 457-8263
Project Review Officer	
John Quinn, Adirondack Park Agency	(518) 891-4050
NYS Police	(518) 897-2000
NYSDEC Environmental Conservation Law Enforcement	
	(315) 785-2231
NYSDEC Forest Ranger	
Captain Drew Cavanagh	(315) 785-2558
NYSDEC Associate Forester	
John Gibbs	(315) 265-3090
Oil Spill Contractor	

_____

_____

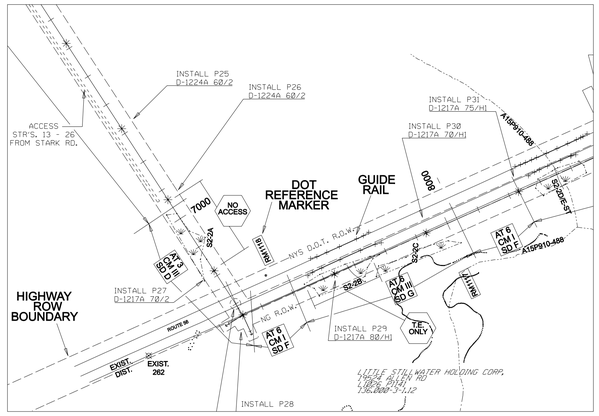
_____

_____

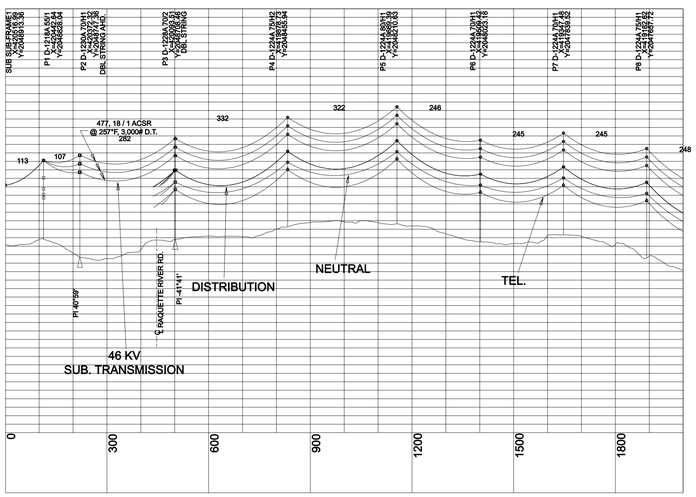
_____

St. Lawrence is a 911 County

PLAN VIEW



PROFILE VIEW



LEGEND:

- ✳ .....WOOD POLE
- — — .....N.G. R.O.W.
- — — .....D.O.T. R.O.W.
- —×—×— .....GUIDE RAIL
- —W— .....WETLAND / STREAM
- — — — .....PROPERTY LINE
- ⊠ .....EXIST. DIST. POLE
- ==== .....ACCESS RD.
- ◌ .....STRUCTURE WORK PAD
- ⬡ .....SITE SPECIFIC ACCESS NOTES

C8 .....8" CULVERT
C18 .....18" CULVERT
C24 .....24" CULVERT
T.E. .....TRACK EQUIP. OR OTHER LOW GROUND PRESSURE VEHICLES ONLY – EQUIPT. SHALL LEAVE NO RUTS OR DEPRESSIONS
S.F. .....STONE FORD

PROJECT SITE LOCATION

GENERAL NOTES:

1. FOR INFORMATION, DETAILS AND DIMENSIONS REFER TO:
   A. CONSTRUCTION FIELD ISSUE DOCUMENTS FOR THIS PROJECT.
   B. CONSTRUCTION DRAWINGS.
   C. PROJECT-SPECIFIC STRUCTURE DETAIL DRAWINGS.

2. CONDUCTOR SAGS ARE SHOWN AT:
   A. TRANSMISSION – 257°F, FINAL, NO WIND
   B. DISTRIBUTION – 176°F, FINAL , NO WIND
   C. NEUTRAL – 60°F, FINAL, NO WIND
   D. COMMUNICATION – 60°F, FINAL, NO WIND.

3. ADDITIONAL DOWN/SPAN GUYS AND ANCHORS FOR THE DISTRIBUTION & COMMUNICATION UNDERBUILD SHALL BE INSTALLED BY THE FACILITIES OWNERS. UNDERBUILD GUYING SHALL MATCH THE GUYING OF SUB. TRANSMISSION. TRANSMISSION AND DISTRIBUTION DOWN GUYS SHALL HAVE SEPARATE ANCHORS. NO ANCHOR SHALL BE CLOSER THAN 8' TO ANOTHER ANCHOR.

4. R.O.W. WIDTH IS 75' TOTAL – 37.5' FROM CENTERLINE OF 46kV LINE TO EITHER EDGE OF R.O.W., UNLESS OTHERWISE NOTED.

5. SPAN GUY STUB POLES AND UNDERBUILD SERVICE DROP POLES TO BE LOCATED OUTSIDE OF HIGHWAY R.O.W. ON PRIVATE PROPERTY, WHEN POSSIBLE.

6. 5' PHASE SPACING ON 46KV STRUCTURES, INCREASE TO 6' VERTICAL PHASE SPACING ON STRUCTURES WITH SPANS GREATER THAN 350'. SEE STR. WORKLIST FOR LONG-SPAN (>350') STRUCTURES.

7. SPAN GUY STUB POLES TO BE 40'/CLASS 2 UNLESS OTHERWISE NOTED.

8. TWO WARNING SIGNS ARE REQUIRED ON EACH STRUCTURE PER GS 01-05.

9. GUY MARKERS ARE REQUIRED ON ALL GUYS PER D-1254A MOD.

10. CONTRACTOR TO STRING CONDUCTOR AND MAKE CONNECTIONS PER PHASING DIAGRAMS ON DRAWINGS. ALL PHASING DIAGRAMS ARE ORIENTED LOOKING AHEAD TOWARDS PIERCEFIELD STATION.

11. AERIAL PATROL NUMBERS SHALL BE INSTALLED ON BOTH STRUCTURES AT EACH ROAD CROSSING AND AT EACH STRUCTURE EVENLY DIVISIBLE BY 10 PER D-1042.1.

12. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 1) ADIRONDACK PARK AGENCY (APA) PERMIT 2005-325 & 2005-325A, 2) U.S. ARMY CORPS OF ENGINEERS (USACOE) PERMIT 2005-01263-YN AND 3) NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PERMIT 6-4099-00048/0001, AND ANY AND ALL SUBSEQUENT MODIFICATIONS TO THE PERMITS. THE PROJECT ENVIRONMENTAL INSPECTOR(S) WILL DETERMINE COMPLIANCE OF WORK WITH THE PERMITS. THE E.W.P. GUIDES COMPLIANCE WITH THE ISSUED PERMITS.

13. FOR ANCHOR AND GUYING REQUIREMENTS REFER TO NOTES, SOIL CLASSIFICATION AND GUY ANCHOR APPLICATION SCHEDULES ON THIS DRAWING AND NMPC STD SECTION 3. CONTRACTOR MUST SELECT REQUIRED ANCHOR AFTER THE BORE HOLE FOR THE POLE HAS BEEN MADE AND THE EXISTING SOIL CONDITIONS HAVE BEEN VISUALLY CLASSIFIED. CONTRACTOR MUST INSTALL ANCHORS IN COMPLIANCE WITH THE MANUFACTURER'S REQUIREMENTS. FOR ESTIMATING PURPOSES THE TYPICAL ANCHOR SPECIFIED IN THIS DESIGN IS STORES SYMBOL 3503608, 10 INCH H.S. SINGLE HELIX POWER INSTALLED SCREW ANCHOR (PISA). THE SELECTION OF ANCHORS INCLUDES AN EXPANDING ROCK ANCHOR, SINGLE 10 INCH H.S. PISA, TRIPLE HELIX 8-10-12 INCH H.S. PISA (S.S.), RAILROAD TIE TYPE ANCHOR (TIMBER DEADMAN ANCHOR) OR CONCRETE DEADMAN ANCHOR TO MEET SPECIFIC SITE CONDITION HOLDING STRENGTH. IF NEEDED, ADDITIONAL EXTENSION RODS SHOULD BE INSTALLED TO ACHIEVE ANCHORING STRENGTH REQUIRED.

14. COORDINATES ARE IN NEW YORK STATE PLANE COORDINATE SYSTEM, EAST ZONE, US FEET, NAD 1983.

15. POLES TO BE NUMBERED IN ACCORDANCE w/NG STANDARD D-1042.1 FOR POLE & LINE NUMBERS.

16. DOWN GUY DETAILS ON D-1254A MOD, INDEX 8.2-T14-E31, B-57020-S.

17. SPAN GUY DETAILS ON INDEX 8.2-T14-E31, B-57021-S

18. IF ACCESS ROAD TO A STRUCTURE IS NOT SHOWN, THEN ACCESS TO STRUCTURE WILL BE MADE DIRECTLY FROM ROAD – THE POINT OF ACCESS WILL BE TO A SINGLE STRUCTURE.

19. NATIONAL GRID R.O.W. SHOWN WITHIN N.Y.S.D.O.T. R.O.W. IS FOR ILLUSTRATION ONLY – NO N.Y.S.D.O.T. R.O.W. WILL BE TRANSFERED TO NATIONAL GRID AS FEE-OWNED PROPERTY OR AS AN EASEMENT. THE PROJECT PERMIT FROM N.Y.S.D.O.T. WILL ALLOW POLES & APPURTENANCES WITHIN N.Y.S.D.O.T. R.O.W. AS SHOWN ON THE DRAWINGS.

20. ALL STREAM CROSSINGS MUST BE VERIFIED WITH THE ENVIRONMENTAL INSPECTOR FOR NEED, TYPE, LOCATION AND RESTORATION. NO EQUIPMENT ACCESS WILL BE ALLOWED ACROSS STREAMS WITH A CLASSIFICATION NUMBER (A15P910-488,-517,-572,-581,-587,-1051,-1053 & -1061)

21. NO MATERIAL, EQUIPMENT, VEHICLES, TOOLS, ETC. SHALL BE STAGED OR STORED WITHIN THE N.Y.S.D.O.T. R.O.W. AT ANY TIME – ALL MATERIAL STAGING OUTSIDE THE PERMITTED MARSHALLING YARDS SHALL BE ON THE BACKSIDE OF THE N.G. R.O.W., IN SUCH A MANNER AS TO NOT ENDANGER PUBLIC SAFETY AND ONLY WITH THE EXPLICIT PERMISSION OF THE FIELD REPRESENTATIVE.

EWP WORKCODE DEFINITIONS

EARTHEN WORK TRAIL WORKCODES

Access Type 1 (AT-1) Off ROW work trail in uplands on existing stone/gravel road, or new trail on firm level soils. Minor topdressing may be required.

Access Type 2 (AT-2) Firm level soils with minor grading necessary, plus drainage devices. Locate within ROW along structure centerline.

Access Type 3 (AT-3) Firm soils with steep slopes requiring 12 inches minimum of select gravel or crusher run, plus drainage devices, locate within ROW and switchback as necessary to negotiate steep slopes.

Access Type 4 (AT-4) Soft soils requiring geofabric and 12 inches minimum of select gravel or crusher run, plus drainage devices.

Access Type 5 (AT-5) Soft soils requiring geofabric and 12 inches minimum of select gravel or crusher run, plus drainage devices, removed prior to restoration.

Access Type 6 (AT-6) Use of existing paved roads to access adjacent improved ROW. Temporary access utilized during the construction of the Project, with minor permanent improvement for pole access. Select gravel or crusher shall be used in areas requiring minor top dressing. Includes use of existing paved & unpaved access drives which may require minor improvement.

CLEARING METHOD WORKCODES

Clearing Method I (CM-I) CM-I consists of clearing the designated areas of all woody plants, including desirable species. Herbicides may be applied to remaining stumps as directed by this EWP.

Clearing Method II (CM-II) CM-II consists of clearing the designated areas of any woody plant species that have potential for growing into the wire security zone. All growth shall be cut as close to the ground as practicable. Reasonable care shall be taken, in as so far as practical, to retain desirable species found within CM-II zones. Herbicide may be applied to all remaining stumps within a designated CM-II as directed by this EWP.

Clearing Method III (CM-III) CM-III shall consist of selectively clearing the designated areas, removing only those tall-growing tree species that have invaded or can be expected to invade the wire security zone within five years. Low growing shrub species will be maintained to preserve groundcover.

Clearing Method IV (CM-IV) CM-IV shall consist of selectively removing and/or trimming, in the designated areas, those tall growing species which have invaded or can be expected to invade, the wire security zone within five years. Trees with more than 25 percent of the crown within the wire security zone will be removed unless otherwise designated on the Project plans.

SLASH DISPOSAL WORKCODES

Slash Disposal Practice A (SD-A) SD-A consists of separating, tree length skidding and yarding the merchantable timber in designated areas along the ROW. Where, in the opinion of the Environmental Inspector, a site may be damaged by the tree length skidding, the timber will be bucked into logs.

Slash Disposal Practice B (SD-B) SD-B consists of collecting and piling the slash in designated areas. In this case, the slash consists of all unmerchantable wood (less than 6 inches in diameter at the large end), such as tops, limb wood and saplings.

Slash Disposal Practice C (SD-C) SD-C consists of collecting and piling all unmerchantable wood larger than 6 inches in diameter at the small end, in designated areas. Unless otherwise directed by the Environmental Inspector, the logs will be piled adjacent to the work trail so as to avoid interference with construction activities.

Slash Disposal Practice D (SD-D) SD-D consists of dropping and lopping all downed material so that it lies as close to the ground as practical and branches and limb wood would not exceed one-foot average depth.

Slash Disposal Practice E (SD-E) SD-E consists of burning the slash within designated areas after collecting and piling. Slash larger than approximately 6 inches in diameter at the small end will be stacked along the access road for potential firewood utilization.

Slash Disposal Practice F (SD-F) SD-F consists of chipping slash on site in designated areas.

Slash Disposal Practice G (SD-G) SD-G consists of removing slash from the site which is less than 6 inches in diameter at the large end, including tops, limbwood and saplings. However, the large diameter wood (six inches or more in diameter) may be scattered or piled on the site. The small diameter slash may be removed to another portion of the right-of-way with a designated slash disposal practice of other than SD-G or SD-H. In wetland along state highways or in critical environmental areas all material will be removed and chipped.

Slash Disposal Practice H (SD-H) SD-H consists of removing all slash from the site.

ADIRONDACK PARK
TOWNS OF PARISHVILLE (TD 6329),
COLTON (TD 6251) & PIERCEFIELD (TD 6234)
COUNTY OF ST. LAWRENCE
STATE OF NEW YORK

STATE OF NEW YORK · RICHARD N. COLLINS · LICENSED PROFESSIONAL ENGINEER
8-23-07

CIR. #32 Z50811075

PREPARED BY
nationalgrid

TRANSMISSION MAP
TOWNLINE-PIERCEFIELD #32
PLAN & PROFILE INDEX SHEET

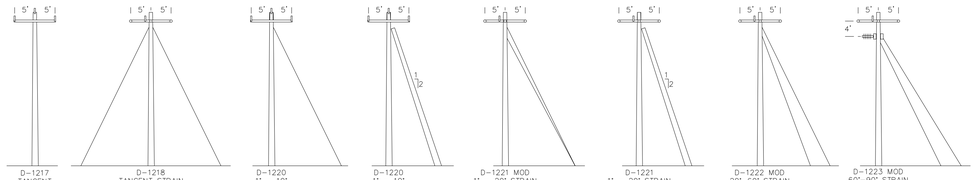
46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN	
APP.		APP.		INDEX 8.2-T14-M5	
APP.		APP.		NO. C-57022-C	

REFERENCE DESCRIPTION	DWG. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
		1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

ACCT. NO.

STANDARD STRUCTURE TYPES (46kV FACILITIES ONLY)



D-1217 TANGENT A-57005-S & A-57006-S

D-1218 TANGENT STRAIN (GUYS-2 SIDE, 1 AHD., 1 BK.) A-57007-S & A-57008-S

D-1220 1° - 10° (GUYS-1 SIDE) A-57295-S

D-1220 1° - 10° (w/ PUSH-BRACE) A-57295-S

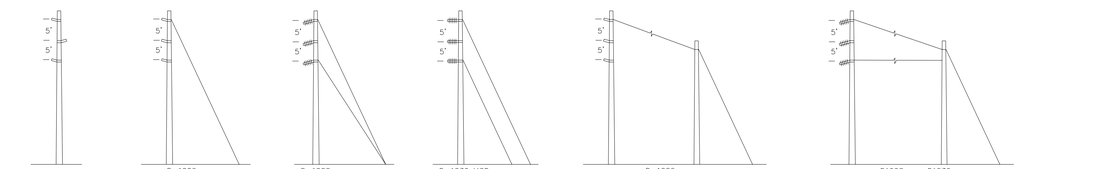
D-1221 MOD 1° - 20° STRAIN (GUYS-2 SIDE) A-57296-S

D-1221 1° - 20° STRAIN (w/ PUSH-BRACE) A-57296-S

D-1222 MOD 20°-60° STRAIN (GUYS-2 AHD., 2 BK.) A-57009-S & A-570010-S

D-1223 MOD 60°-90° STRAIN (GUYS-2 AHD., 2 BK.) A-57011-S

STANDARD SPAN GUY STRUCTURE TYPES (46kV FACILITIES ONLY)



D-1224 VERTICAL TANGENT (0°-1°) A-57012-S & A-57013-S

D-1226 VERTICAL 1°-15° (GUYS - 1 SIDE) A-57014-S & A-57015-S

D-1228 VERTICAL 15°-45° (GUYS - 2 SIDE) A-57016-S & A-57017-S

D-1230 MOD VERTICAL DEADEND (GUYS - 2 AHD., 2 BK.) A-57018-S & A-57019-S

D-1226 w/SPAN GUY, VERTICAL 1°-15° (GUYS - 1 SPAN, 1 DOWN) B-57021-S

D1228 w/SPAN GUY VERTICAL 15°-45° (GUYS - 2 SPAN, 1 DOWN) / D1230 w/SPAN GUY VERTICAL DEADEND (GUYS - 2 SPAN, 1 DOWN AHD., 2 DOWN BK.) B-57021-S

CONSTRUCTION DATA

Voltage: 46kV, 3Ø, 60hz., single circuit
Length: 23.4 miles or 26.5 miles
Configuration: single circuit vertical & horizontal structures w/underbuild as described below.
Conductor: 477MCM, 18 / 1, ACSR (pelican) @ 3,000# design tension, NESC heavy loading condition (unless otherwise noted on drawings).
Ground Wire: none
Counterpoise: none
Structures: NMPC modified standard 46kV structures (see typical structures on this sheet).
Insulators: standard suspension insulators (TI-41A, 20-21-018), horizontal line post insulators (TI-6E, 20-21-977) and line post insulators (TI-5E, 20-21-360).
Double Insulators: double string insulator assemblies will be used on all road crossing structures using standard suspension yoke plate assembly (CTY1, 35-04-493) and strain yoke plate assembly (CTY2A, 35-04-494).
Underbuild Facilities:

1. Distribution - structure strength design based on 336MCM, 18 / 1, ACSR (merlin) @ 2,000# design tension, NESC heavy loading condition (unless otherwise noted on drawings) for distribution & neutral conductors. Distribution design for existing number of phases (3 - phase from str. #3 to str. #14 along Raquette River Road and in the Hamlet of Piercefield; single-phase along SR 56 & SR 3; no distribution in cross-country routes unless otherwise noted). Actual installed conductors and design tension varies.
2. CATV - structure strength design includes CATV underbuild @ 500# design tension, NESC heavy loading condition. No CATV installed - will not be shown on final drawings.
3. Communication - structure strength design includes communication underbuild @ 1,000# design tension, NESC heavy loading condition. Actual installed cables and design tension varies.
4. Structure strength design and ground clearances in cross-country areas does not include underbuild facilities unless otherwise noted.

Design code: NESC 2002 (NESC heavy = 0"ŕ, .5" radial ice, 4 psf wind)

GUY ANCHOR APPLICATION SCHEDULE

ANCHOR TYPE	STORE CODE	DESCRIPTION	SOIL APPLICATION CLASS #	ROD DIAMETER	MINIMUM ROD LENGTH	REMARKS
A13A5, A13A6, A13A-	3503427 3503428 5980067	EXPANDING ROCK ANCHOR	TYPE 0 SOLID ROCK	1 INCH	30" 53" 72"	USE 30", 53" OR 72" ROD AS NEEDED TO REACH SOLID BED ROCK
A16A	3503608	SINGLE 10" H.S.	TYPE 1, 2, 3, 4 & 5 DENSE SAND & GRAVEL, HARD SILTS & CLAYS	1 INCH	6'-0"	USE WITH A18 H&K THREADED RODS (3503215 & 3503217), A20C COUPLING (3503219) & A22J TRIPLEYE ANC. THIMBLE (3503227)
A16S1	0809751	TRIPLE HELIX 8"-10"-12" H.S. SQ. SHAFT	TYPE 6, 7 & 8 LOOSE SANDS & VARIED CLAYS	1-1/2" SQ.	6'-0"	USE w/A16S2 & S3 SQARE SHAFT EXTENSIONS (0809752 & 0809753), A16S4 TRIPLEYE ANC. THIMBLE (0809755) AND A16S5 DRIVE TOOL ADAPTER (0809754)
TIMBER DEADMAN ANCHOR	5001013	6"x8"x8'-6" OR 6"x8"x4'-3" RAILROAD TIE	TYPE 1 THROUGH 6	1" INCH	10'-0" WITH TRIPLE EYE & NUT	USE w/A33 ANC. ROD, (3503802) W4B 4"x4"x3/8" WASHER (7008020) INSATLL ANCHOR A MIN. OF 5'-0" DEEP
CONCRETE DEADMAN	XXXXXXX	8"x12"x6'-0" PRE-CAST REINFORCED CONCRETE	TYPE 1 - 8	1" INCH	10'-0" WITH TRIPLE EYE & NUT	USE w/A33 ANC. ROD, (3503802) W4B 4"x4"x3/8" WASHER (7008020) INSATLL ANCHOR A MIN. OF 5'-0" DEEP

SOIL CLASSIFICATION SCHEDULE

CLASS	COMMON SOIL-TYPE DESCRIPTION	GEOLOGICAL SOIL CLASSIFICATION
0	SOUND HARD ROCKS, UNWEATHERED	GRANITE, BASALT, LIME-STONE
1	VERY DENSE AND/OR CEMENTED SANDS; COARSE GRAVEL AND COBBLES; SHALE; AND SANDSTONE	CALICHE (NITRATE-BEARING)
2	DENSE FINE SAND; VERY HARD SILTS AND CLAYS (MAY BE PRELOADED)	BASAL TILL; BOULDER CLAY; CALICHE; WEATHERED LAMINATED ROCK
3	DENSE CLAYS, SANDS AND GRAVELS; HARD SILTS AND CLAYS	GLACIAL TILL; WEATHERED SHALES, SCHIST, GNEISS AND SILTSTONE
4	MEDIUM DENSE SANDY GRAVEL; VERY STIFF TO HARD SILTS AND CLAY	GLACIAL TILL; HARDPAN; MARLS
5	MEDIUM DENSE COARSE SAND AND SANDY GRAVELS; STIFF TO VERY STIFF SILTS AND CLAYS	SAPROLITES, RESIDUAL SOILS
6	LOOSE TO MEDIUM DENSE FINE TO COARSE SAND; FIRM TO STILL CLAYS AND SILTS	DENSE HYDRAULIC FILL; COMPACTED FILL; RESIDUAL SOILS
7	LOOSE FINE SAND; ALLUVIUM; LOOSE SOFT-FIRM CLAYS; VARIED CLAYS; FILL	FLOOD PLAIN SOILS; LAKE CLAYS; ADOBE; GUMBO, FILL
8	PEAT, ORGANIC SILTS; INUNDATED SILTS, FLY ASH	MISCELLANEOUS FILL, SWAMPY MARSH

ADIRONDACK PARK
TOWNS OF PARISHVILLE (TD 6329),
COLTON (TD 6251) & PIERCEFIELD (TD 6234)
COUNTY OF ST. LAWRENCE
STATE OF NEW YORK

ANCHOR NOTES:

1) POWER-INSTALLED SCREW ANCHORS, PISA, ARE THE PREFERRED TYPE OF ANCHOR.
2) ALL POWER-INSTALLED SCREW ANCHORS AND ROCK ANCHORS SHALL BE INSTALLED IN STRICT COMPLICANCE WITH THE MANUFACTURER'S REQUIREMENTS.
3) THE SELECTION OF THE REQUIRED ANCHOR SHALL BE MADE AFTER THE BORE HOLES FOR THE POLES HAVE BEEN MADE AND THE EXISTING SOIL CONDITIONS HAVE BEEN VISUALLY CLASSIFIED.
4) IF THE REQURED TORQUE IS NOT MET ADDITIONAL EXTENSION RODS SHALL BE ADDED UNTIL THE REQURED TORQUE IS MET. IF THIS IS NOT PRACTICAL, AN ALTERNATIVE ANCHOR SHALL BE INSTALLED.
5) IF A MINIMUM OF 4 INCHES OR MORE OF MOVEMENT OCCURES WHEN THE ATTACHMENT OF THE GUYS IS MADE, ALTERNATE ACTIONS MUST BE TAKEN TO ACHIEVE REQUIRED ANCHOR HOLDING STRENGTH.
6) ANCHORS SHALL BE PROOF-TESTED (PULL-TESTED) TO NOT LESS THAN 18,000 LBS. PER THE CONSTRUCTION SPECIFICATION.

STATE OF NEW YORK · RICHARD N. COLLINS · 089155 · REGISTERED PROFESSIONAL ENGINEER
8-23-07

NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

REFERENCE DESCRIPTION | DWG. NO.
ACCT. NO.

CIR. #32 Z50811075

PREPARED BY
nationalgrid

TRANSMISSION MAP
TOWNLINE-PIERCEFIELD #32
PLAN & PROFILE INDEX SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI DR. CAI CK. DATE 6/22/07 SCALE AS SHOWN
APP. APP. INDEX 8.2-T14-M5
APP. APP. NO. C-57022-C

N.Y.S.D.O.T. STANDARD GENERAL PLAN NOTES

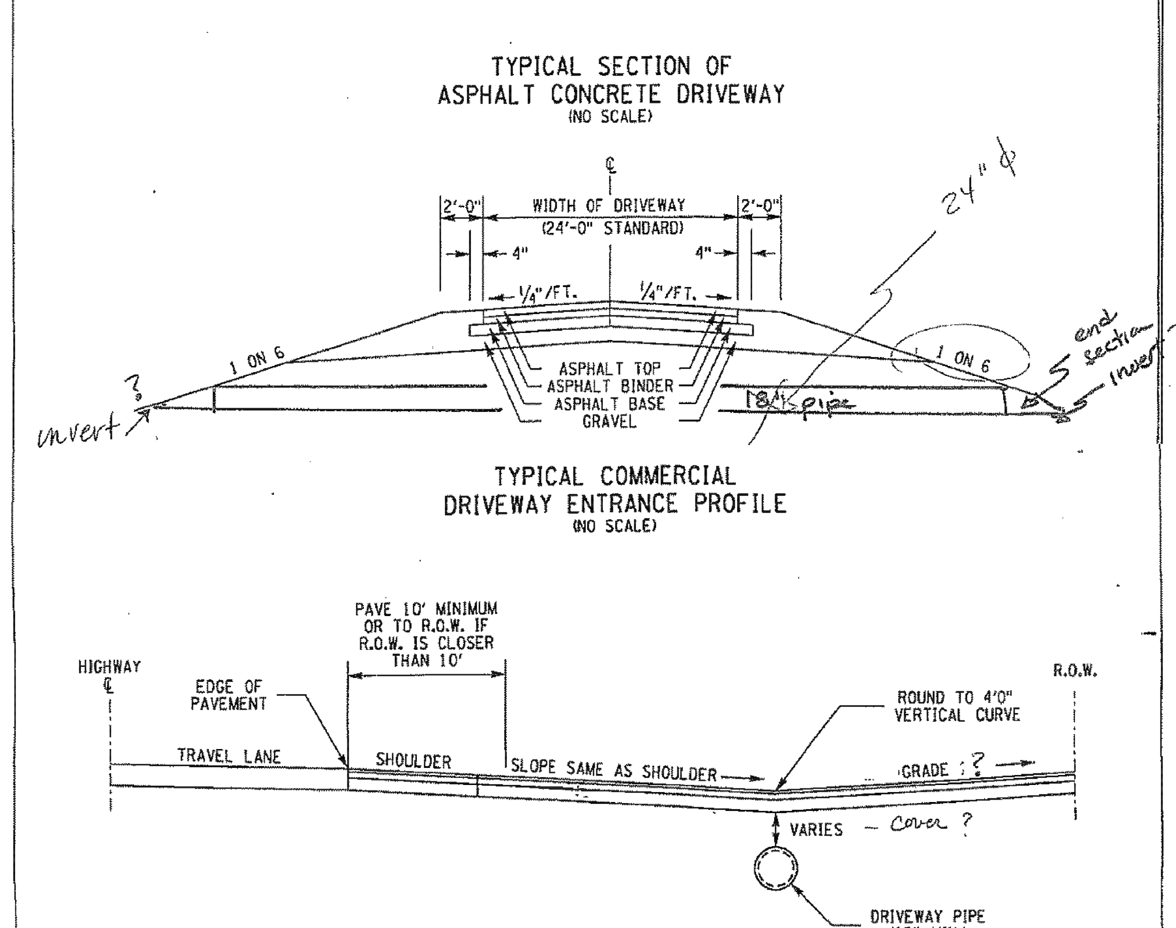
1. Road to be kept clean of mud and debris at all times.
2. Roadside drainage to be maintained at all times.
3. Materials, equipment, and vehicles are not to be stored or parked within the New York State right-of-way.
4. Maintenance and protection of traffic must comply with the New York State Department of Transportation "Manual of Uniform Traffic Control Devices" and section 619 of the NYSDOT Standard Specifications.
5. Notify New York State Department of Transportation Resident Engineer, Ernest Olin II, one (1) week prior to working in the right-of-way (telephone number: (315) 265-2320).
6. Notify Dig Safely New York two (2) working days prior to digging, drilling, or blasting at 1-800-962-7962 for utility stake-out.
7. All materials used within the state right-of-way must comply with the latest New York State Department of Transportation standard specifications and the current addenda, along with any appropriate current New York State Department of Transportation standard sheets.

ITEM 01603.1714XX M - GALVANIZED STEEL END SECTIONS - PIPE (68 MM X 13 MM) W/BARS
FOR 1:4 SLOPES
ITEM 01603.1716XX M - GALVANIZED STEEL END SECTIONS - PIPE (68 MM X 13 MM) W/BARS
FOR 1:6 SLOPES

All the provisions of Section 603 of the Standard Specifications shall apply except the details shall be as shown on the Contract Plans.

Payment will be made under:

ITEM NO.	ITEM DESCRIPTION	PAY UNIT
01603.171415M	Galvanized Steel End Sections 375 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:4 Slopes	Each
01603.171418M	Galvanized Steel End Sections 450 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:4 Slopes	Each
01603.171421M	Galvanized Steel End Sections 525 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:4 Slopes	Each
01603.171424M	Galvanized Steel End Sections 600 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:4 Slopes	Each
01603.171430M	Galvanized Steel End Sections 750 mm Diameter - Pipe (68 mm x 13mm) W/Bars For 1:4 Slopes	Each
01603.171436M	Galvanized Steel End Sections 900 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:4 Slopes	Each
01603.171442M	Galvanized Steel End Sections 1050 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:4 Slopes	Each
01603.171448M	Galvanized Steel End Sections 1200 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:4 Slopes	Each
01603.171460M	Galvanized Steel End Sections 1500 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:4 Slopes	Each
01603.171615M	Galvanized Steel End Sections 375 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:6 Slopes	Each
01603.171618M	Galvanized Steel End Sections 450 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:6 Slopes	Each
01603.171621M	Galvanized Steel End Sections 525 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:6 Slopes	Each
01603.171624M	Galvanized Steel End Sections 600 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:6 Slopes	Each
01603.171630M	Galvanized Steel End Sections 750 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:6 Slopes	Each
01603.171636M	Galvanized Steel End Sections 900 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:6 Slopes	Each
01603.171642M	Galvanized Steel End Sections 1050 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:6 Slopes	Each
01603.171648M	Galvanized Steel End Sections 1200 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:6 Slopes	Each
01603.171660M	Galvanized Steel End Sections 1500 mm Diameter - Pipe (68 mm x 13 mm) W/Bars For 1:6 Slopes	Each



NOTES:
LOW POINT OF DRIVEWAY SHOULD BE AS CLOSE TO DITCH CENTERLINE AS POSSIBLE.
DRIVEWAY PIPE GRADE, TYPE AND SIZE MUST BE PROVIDED.

ALL ASPHALT WITHIN NYSDOT RIGHT-OF-WAY SHALL BE SUPERPAVE HOT MIX ASPHALT ITEMS:
TOP - ITEM 402.128201 - 12.5 mm F2 SUPERPAVE HMA, 80 SERIES COMPACTION
BINDER - ITEM 402.198901 - 19.0 mm F9 SUPERPAVE HMA, 80 SERIES COMPACTION
BASE - ITEM 402.378901 - 37.5 mm F9 SUPERPAVE HMA, 80 SERIES COMPACTION
GRAVEL - ITEM 304.14 - SUBBASE COURSE, TYPE 4

REGION 7 NYSDOT
VERSION DATE 8/27/04

details.dgn 9/27/2006 3:58:33 PM

NOTES:

1. MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE PROVIDED FOR THE LENGTH AND DURATION OF THIS CONTRACT IN ACCORDANCE WITH THE PROVISIONS CONTAINED IN THE PLANS AND/OR PROPOSAL OF THIS CONTRACT AND THE NEW YORK STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (NYSMUTCD).
2. IF THE CONTRACTOR PROPOSES ANY CHANGES TO THE TRAFFIC CONTROL PLAN, THEY MUST BE SUBMITTED TO CLOUGH HARBOUR & ASSOCIATES LLP AND THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) FOR APPROVAL PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SAFE AND ADEQUATE INGRESS AND EGRESS TO AND FROM INTERSECTING HIGHWAYS, HOMES AND COMMERCIAL ESTABLISHMENTS AT ALL TIMES.
3. SHORT DURATION LANE CLOSURES SHALL BE ESTABLISHED AND MAINTAINED AS SHOWN ON THESE PLANS AND THE NYSMUTCD. THE LENGTH AND DURATION OF ALL LANE CLOSURES SHALL BE HELD TO A MINIMUM NECESSARY TO COMPLETE THE WORK, AND NO UNNECESSARY LANE CLOSURES SHALL BE PERMITTED. THE CONTRACTOR WILL BE REQUIRED TO REOPEN ALL TRAVEL LANES FOR TWO-WAY TRAFFIC DURING NON-WORKING HOURS.
4. FLAGGERS SHALL BE REQUIRED TO USE A RADIO OR SIMILAR CONTACT WHEN THEY ARE MAINTAINING ONE-WAY TRAFFIC WHEN ONE FLAGGER IS NOT VISIBLE TO THE OTHER. THE COST OF ANY RADIO OR FIELD TELEPHONE USED SHALL BE INCLUDED IN THE CONTRACT COST.
5. DIAMOND-SHAPED ADVANCE WARNING SIGNS SHALL BE USED FOR ALL ADVANCE WARNING SIGNS SHOWN ON THE PLANS. COLOR REQUIREMENTS SHALL BE BLACK TEXT ON FLUORESCENT ORANGE BACKGROUND. COLOR REQUIREMENTS FOR GUIDE SIGNS AND REGULATORY SIGNS USED FOR CONSTRUCTION SIGNING SHALL BE AS SPECIFIED IN THE NYSMUTCD FOR EACH SIGN, OR AS NOTED ON THE PLANS.
6. THE CORRECT SEQUENCE AND SPACING OF SIGNS MUST BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE MUTCD AND AS SHOWN ON THE PLANS. ALL SIGNS, INCLUDING GUIDE SIGNS, SHALL INDICATE ACTUAL FIELD CONDITIONS AT ALL TIMES AND SHALL BE COVERED, MOVED, REMOVED, OR CHANGED IMMEDIATELY.
7. LATERAL PLACEMENT OF CONSTRUCTION SIGNS SHALL BE SUCH THAT THE LATERAL CLEARANCE FROM THE EDGE OF THE TRAVEL LANE TO THE EDGE OF SIGN SHALL BE A MINIMUM OF 10 FEET. WHERE THE 10 FOOT OFFSET IS UNOBTAINABLE DUE TO CONSTRUCTION ACTIVITIES OR OTHER PHYSICAL CONSTRAINTS, THE SIGN MAY BE INSTALLED A MINIMUM OF 2 FEET FROM THE TRAVEL LANE.
8. LONGITUDINAL PLACEMENT OF CONSTRUCTION SIGNS SHALL BE AS SHOWN ON THESE PLANS.
9. ALL WORK, EQUIPMENT, TEMPORARY SIGNS, AND OTHER MATERIALS NECESSARY FOR MAINTENANCE AND PROTECTION OF TRAFFIC AS NOTED IN THE PLANS OR THE NYSMUTCD SHALL BE INCLUDED IN THE CONTRACT COST.
10. WORK ZONES ON OPPOSITE SIDES OF THE ROAD SHALL NOT OVERLAP. A WORK ZONE IS DEFINED AS THAT AREA IN WHICH TRAFFIC IS RESTRICTED BECAUSE OF THE CONTRACTOR'S ACTIVITES, OR THAT AREA WHERE THE CONTRACTOR'S EQUIPMENT, MATERIALS OR ANY PRIVATE VEHICLES OWNED BY THE CONTRACTOR OR THE WORKERS ARE WITHIN THE CLEAR ZONE OF THE ROADWAY (SEE CLEAR ZONE WIDTH TABLE).
11. CONSTRUCTION EQUIPMENT SHALL BE REMOVED A DISTANCE FROM THE EDGE OF TRAVEL LANE AS SHOWN IN THE CLEAR ZONE WIDTHS TABLE, TO ENSURE THE CLEAR ROADSIDE AREA DURING NON-WORKING HOURS.
12. NO MATERIAL OR EQUIPMENT IS TO BE STORED WITHIN THE CLEAR ROADSIDE AREA (SEE CLEAR ZONE WIDTHS TABLE) EXCEPT THAT WHICH IS TO BE USED THAT DAY.
13. NO WORK ZONE SHALL REMAIN IN PLACE OVERNIGHT.
14. IF THE OWNER'S REPRESENTATIVE OR NYSDOT NOTIFIES THE CONTRACTOR OR THE CONTRACTOR'S SUPERINTENDENT OF ANY HAZARDOUS CONSTRUCTION PRACTICES, ALL OPERATIONS IN THAT AREA SHALL BE DISCONTINUED AND IMMEDIATE REMEDIAL ACTION SHALL BE TAKEN TO THE SATISFACTION OF THE OWNER OR THE OWNER'S DESIGNEE AND/OR NYSDOT BEFORE WORK IS RESUMED.
15. THE CONTRACTOR SHALL PROVIDE AN UNOBSTRUCTED 10 FOOT TRAVEL LANE THROUGH ALL WORK ZONES AT ALL TIMES TO ALLOW FOR THE SAFE PASSAGE OF EMERGENCY VEHICLES.
16. ALL SIGNING, DELINEATION DEVICES AND CHANNELIZING DEVICES SHALL MEET THE MATERIAL, COLOR AND REFLECTIVITY REQUIREMENTS OF THE NYSMUTCD.

nationalgrid | CHA CLOUGH HARBOUR & ASSOCIATES LLP

TRI-LAKES RELIABILITY PROJECT
TOWNLINE-PIERCEFIELD #32, 46kV
M & PT GENERAL NOTES

NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.

DES. J.P.H. | DR. K.A.R. | CK. W.S.E. | DATE 03/07 | SCALE NONE | INDEX 8.2-T14-E31 | NO. 1 | APPROVED | APPROVED

ADVANCED POSTING DISTANCE TABLE - INTERSECTION SIGN

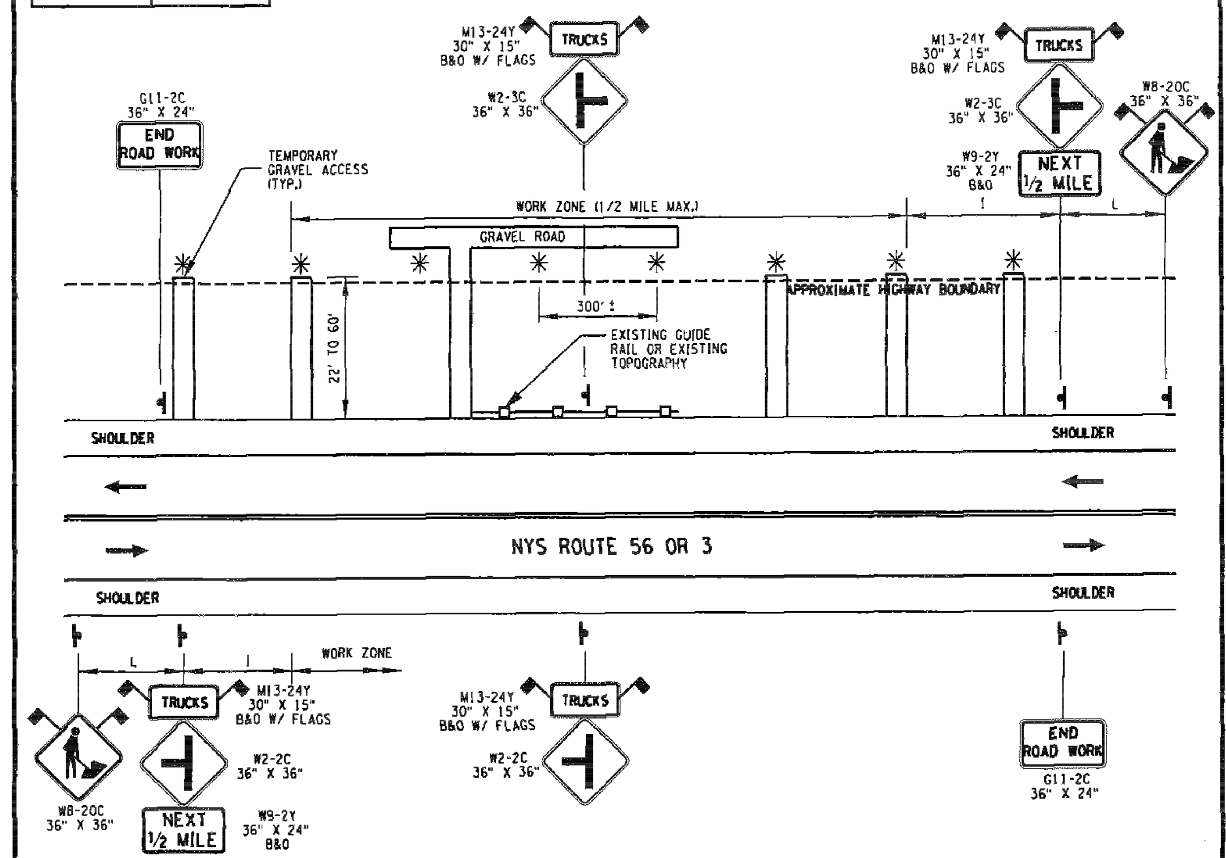
POSTED SPEED LIMIT (M.P.H.)	L (FT) MIN.
30	355
35	450
40	545
45	640
50	735
55	830

CLEAR ZONE WIDTHS

POSTED SPEED LIMIT (M.P.H.)	(FT) MIN.
30	15
35	15
40	23
45	23
50	23
55	27

ADVANCED POSTING DISTANCE TABLE

POSTED SPEED LIMIT (M.P.H.)	L (FT) MIN.
30	200
35	200
40	200
45	600
50	600
55	600



LEGEND
- DIRECTION OF TRAFFIC
- CONSTRUCTION SIGN
- PROPOSED TRANSMISSION TOWER
- ORANGE FLAGS ATTACHED TO SIGN ASSEMBLY
- B&O: SIGN SHALL BE FLUORESCENT ORANGE BACKGROUND WITH BLACK TEXT

NOTES:
1.) ANY TIME THE WORK ZONE ENCROACHES INTO THE CLEAR ZONE AS DESCRIBED IN THE CLEAR ZONE WIDTHS TABLE, THE SHOULDER CLOSURE DETAIL MUST BE USED.

nationalgrid | CHA CLOUGH HARBOUR & ASSOCIATES LLP

TRI-LAKES RELIABILITY PROJECT
TOWNLINE-PIERCEFIELD #32, 46kV
M & PT FOR GENERAL WORK AREA

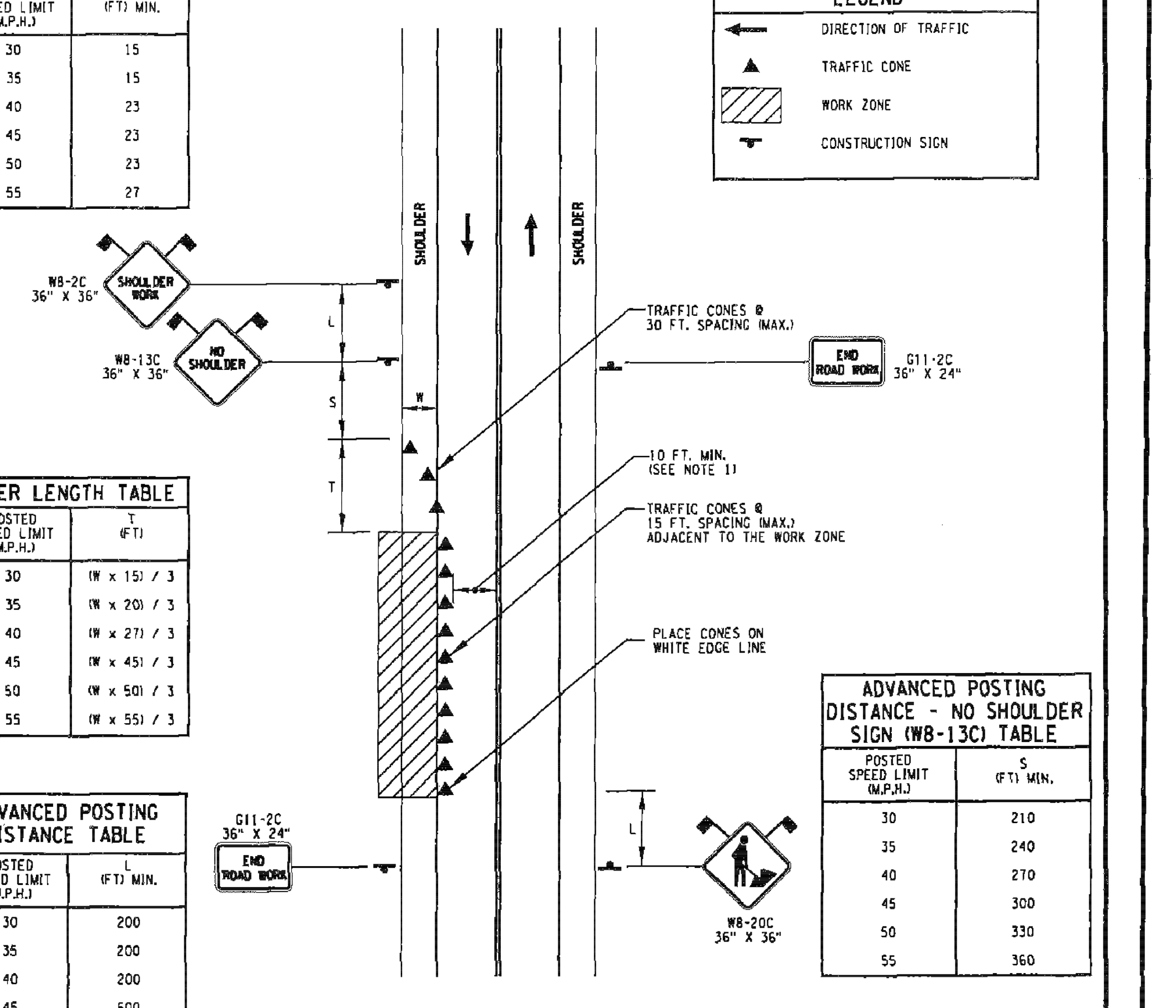
NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.

DES. J.P.H. | DR. K.A.R. | CK. W.S.E. | DATE 03/07 | SCALE NONE | INDEX 8.2-T14-E31 | NO. 2 | APPROVED | APPROVED

CLEAR ZONE WIDTHS

POSTED SPEED LIMIT (M.P.H.)	(FT) MIN.
30	15
35	15
40	23
45	23
50	23
55	27

LEGEND
- DIRECTION OF TRAFFIC
- TRAFFIC CONE
- WORK ZONE
- CONSTRUCTION SIGN



TAPER LENGTH TABLE

POSTED SPEED LIMIT (M.P.H.)	T (FT)
30	(W x 15) / 3
35	(W x 20) / 3
40	(W x 27) / 3
45	(W x 45) / 3
50	(W x 50) / 3
55	(W x 55) / 3

ADVANCED POSTING DISTANCE TABLE

POSTED SPEED LIMIT (M.P.H.)	L (FT) MIN.
30	200
35	200
40	200
45	600
50	600
55	600

ADVANCED POSTING DISTANCE - NO SHOULDER SIGN (W8-13C) TABLE

POSTED SPEED LIMIT (M.P.H.)	S (FT) MIN.
30	210
35	240
40	270
45	300
50	330
55	360

TRAFFIC CONTROL
FOR SHORT DURATION SHOULDER CLOSURES

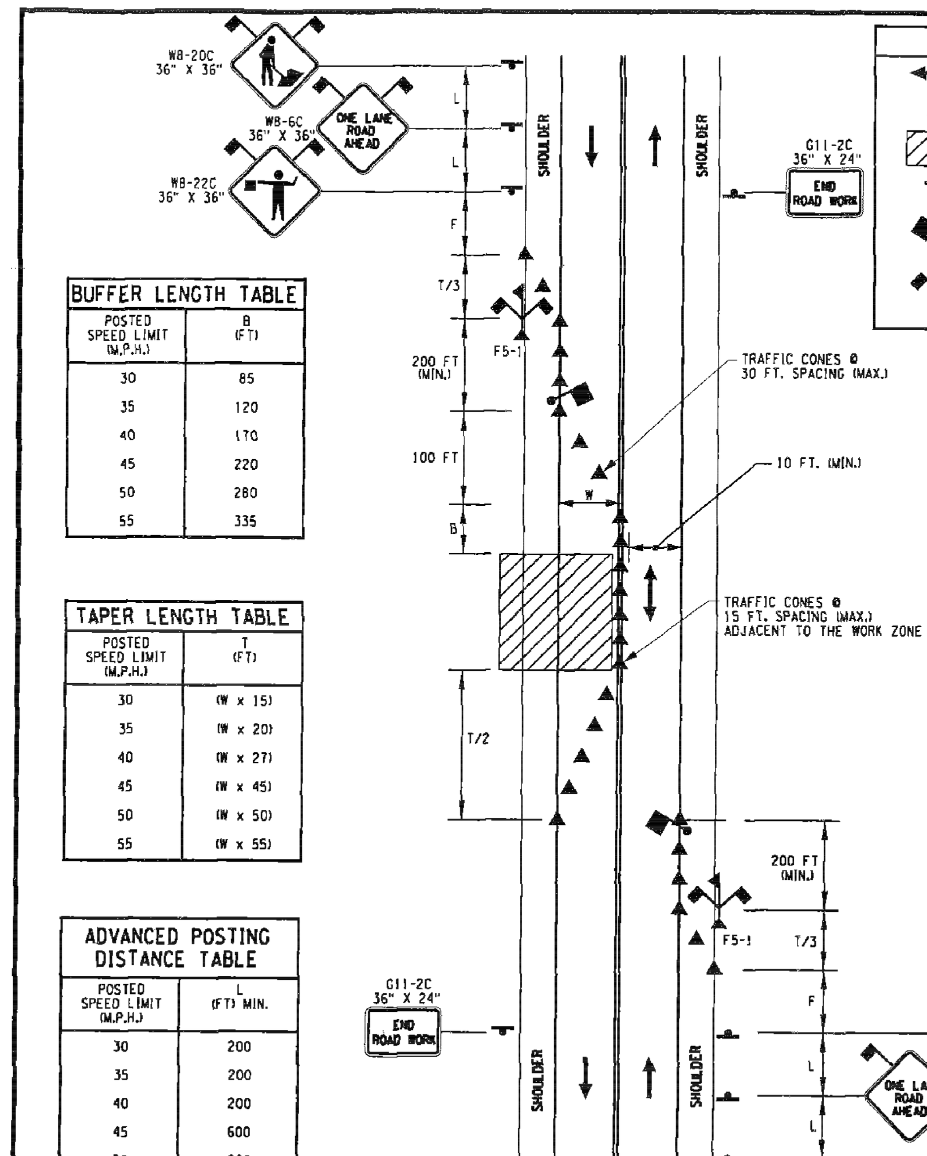
NOTES:
1.) ANY TIME THE WORK ZONE ENCROACHES INTO THE TRAVEL LANE, CROSSING THE WHITE EDGE LINE AND RESTRICTING THE TRAVE LANE TO LESS THAN 10', THE TRAVEL LANE MUST BE CLOSED USING THE APPROPRIATE LANE CLOSURE DETAILS.

nationalgrid | CHA CLOUGH HARBOUR & ASSOCIATES LLP

TRI-LAKES RELIABILITY PROJECT
TOWNLINE-PIERCEFIELD #32, 46kV
M & PT FOR SHOULDER WORK AREA

NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.

DES. J.P.H. | DR. K.A.R. | CK. W.S.E. | DATE 03/07 | SCALE N.T.S. | INDEX 8.2-T14-E31 | NO. 3 | APPROVED | APPROVED



BUFFER LENGTH TABLE

POSTED SPEED LIMIT (M.P.H.)	B (FT)
30	85
35	120
40	170
45	220
50	280
55	335

TAPER LENGTH TABLE

POSTED SPEED LIMIT (M.P.H.)	T (FT)
30	(W x 15)
35	(W x 20)
40	(W x 27)
45	(W x 45)
50	(W x 50)
55	(W x 55)

ADVANCED POSTING DISTANCE TABLE

POSTED SPEED LIMIT (M.P.H.)	L (FT) MIN.
30	200
35	200
40	200
45	600
50	600
55	600

LEGEND
- DIRECTION OF TRAFFIC
- TRAFFIC CONE
- WORK ZONE
- CONSTRUCTION SIGN
- FLAGMAN (W/ F3 STOP/SLOW PADDLE)
- FLAG TREE (F5-1)

CLEAR ZONE WIDTHS

POSTED SPEED LIMIT (M.P.H.)	(FT) MIN.
30	15
35	15
40	23
45	23
50	23
55	27

ADVANCED POSTING DISTANCE - FLAGGER SIGN (W8-22C) TABLE

POSTED SPEED LIMIT (M.P.H.)	F (FT) MIN.
30	355
35	450
40	545
45	640
50	735
55	830

TRAFFIC CONTROL FOR CONVENTIONAL HIGHWAYS
WITH A SHORT DURATION TRAVEL LANE CLOSURE

nationalgrid | CHA CLOUGH HARBOUR & ASSOCIATES LLP

TRI-LAKES RELIABILITY PROJECT
TOWNLINE-PIERCEFIELD #32, 46kV
M & PT FOR TRAVEL LANE WORK AREA

NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.

DES. J.P.H. | DR. K.A.R. | CK. W.S.E. | DATE 03/07 | SCALE N.T.S. | INDEX 8.2-T14-E31 | NO. 4 | APPROVED | APPROVED

ADIRONDACK PARK
TOWNS OF PARISHVILLE (TD 6329),
COLTON (TD 6251) & PIERCEFIELD (TD 6234)
COUNTY OF ST. LAWRENCE
STATE OF NEW YORK

STATE OF NEW YORK — RICHARD N. COLLINS — LICENSED PROFESSIONAL ENGINEER — 8-23-07

CIR. #32 Z50811075

PREPARED BY
nationalgrid

TRANSMISSION MAP
TOWNLINE-PIERCEFIELD #32
PLAN & PROFILE INDEX SHEET

46kV-3Φ-60~ SINGLE CIRCUIT
DES. CAI | DR. CAI | CK. | DATE 6/22/07 | SCALE AS SHOWN
APP. | APP. | INDEX 8.2-T14-M5
APP. | APP. | NO. C-57022-1C

REFERENCE DESCRIPTION	DWG. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
		1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

ACCT. NO.

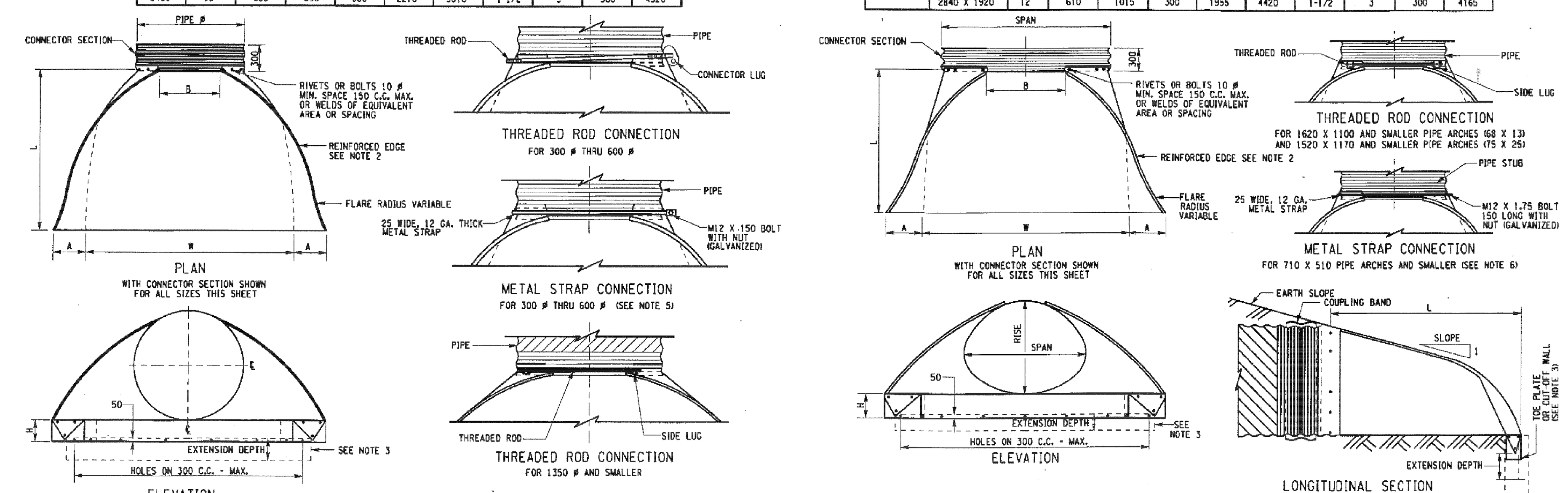
SHT. 1C OF 26

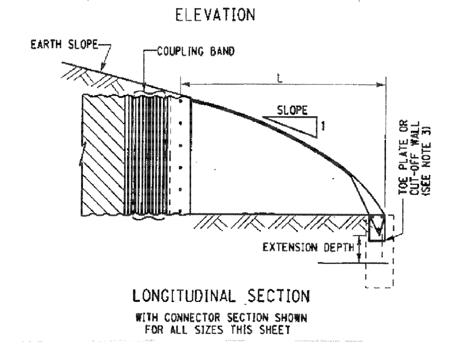
CORRUGATED METAL PIPE

PIPE DIA.	GAUGE	A 25±	B 25±	H 25±	L 38±	W 50±	APPROX. SLOPE	BODY PIECES NOTE 4	TOE PLATE EXTENSION DEPTH	TOE PLATE EXTENSION LENGTH 50±
300	16	150	150	150	535	610	2-1/2	1 OR 2	200	865
375	16	180	205	150	660	760	2-1/2	1 OR 2	200	1015
450	16	205	255	150	785	915	2-1/2	1 OR 2	200	1170
525	16	230	305	150	915	1070	2-1/2	1 OR 2	200	1320
600	16	255	330	150	1040	1220	2-1/2	1 OR 2	200	1475
750	14	305	405	200	1295	1525	2-1/2	1 OR 2	200	1780
900	14	355	480	230	1525	1830	2-1/2	1 OR 2	200	2335
1050	12	405	560	280	1755	2135	2-1/2	1 OR 2	200	2640
1200	12	460	685	300	1980	2285	2-1/4	1,2, OR 3	200	2795
1350	12	460	760	300	2135	2590	2	1,2, OR 3	200	3100
1500	12	460	840	300	2210	2895	1-3/4	3	300	3405
1650	12	460	915	300	2210	3050	1-1/2	3	300	3555
1800	12	460	990	300	2210	3200	1-1/3	3	300	3708
1950	12	460	1065	300	2210	3350	1-1/4	3	300	3860
2100	12	460	1145	300	2210	3505	1-1/6	3	300	4015
2250	12	610	940	300	2210	3660	1-1/2	3	300	4165
2400	12	635	890	300	2210	3810	1-1/2	3	300	4320

CORRUGATED METAL PIPE ARCH

68 X 13 CORRUGATION SPAN X RISE	75 X 25 OR 125X 25 CORRUGATION SPAN X RISE	GAUGE	A 25±	B 25±	H 25±	L 38±	W 50±	APPROX. SLOPE	BODY PIECES NOTE 4	TOE PLATE EXTENSION DEPTH	TOE PLATE EXTENSION LENGTH 50±
430 X 330		16	180	230	150	480	760	2-1/2	1 OR 2	200	865
530 X 380		16	180	255	150	585	915	2-1/2	1 OR 2	200	1015
610 X 460		16	205	305	150	710	1065	2-1/2	1 OR 2	200	1170
710 X 510		16	230	355	150	815	1220	2-1/2	1 OR 2	200	1320
885 X 610		14	255	405	150	990	1525	2-1/2	1 OR 2	200	1475
1060 X 740		14	305	460	200	1170	1905	2-1/2	1 OR 2	200	1780
1240 X 840		12	330	535	230	1345	2160	2-1/2	1 OR 2	200	2335
1440 X 970		12	460	660	300	1600	2285	2-1/2	1,2, OR 3	200	2640
1620 X 1100	1520 X 1170	12	460	760	300	1780	2590	2-1/4	1,2, OR 3	200	2795
1800 X 1200	1670 X 1300	12	460	840	300	1955	2895	2-1/4	3	200	3100
1950 X 1320	1850 X 1400	12	460	915	300	1955	3200	2	3	300	3405
2100 X 1450	2050 X 1500	12	460	990	300	1955	3505	2	3	300	3555
	2200 X 1620	12	560	965	300	1955	3760	1-1/2	3	300	3708
	2400 X 1720	12	560	865	300	1955	4115	1-1/2	3	300	3860
	2600 X 1820	12	560	965	300	1955	4420	1-1/2	3	300	4015
	2840 X 1920	12	610	1015	300	1955	4420	1-1/2	3	300	4165





NOTES:

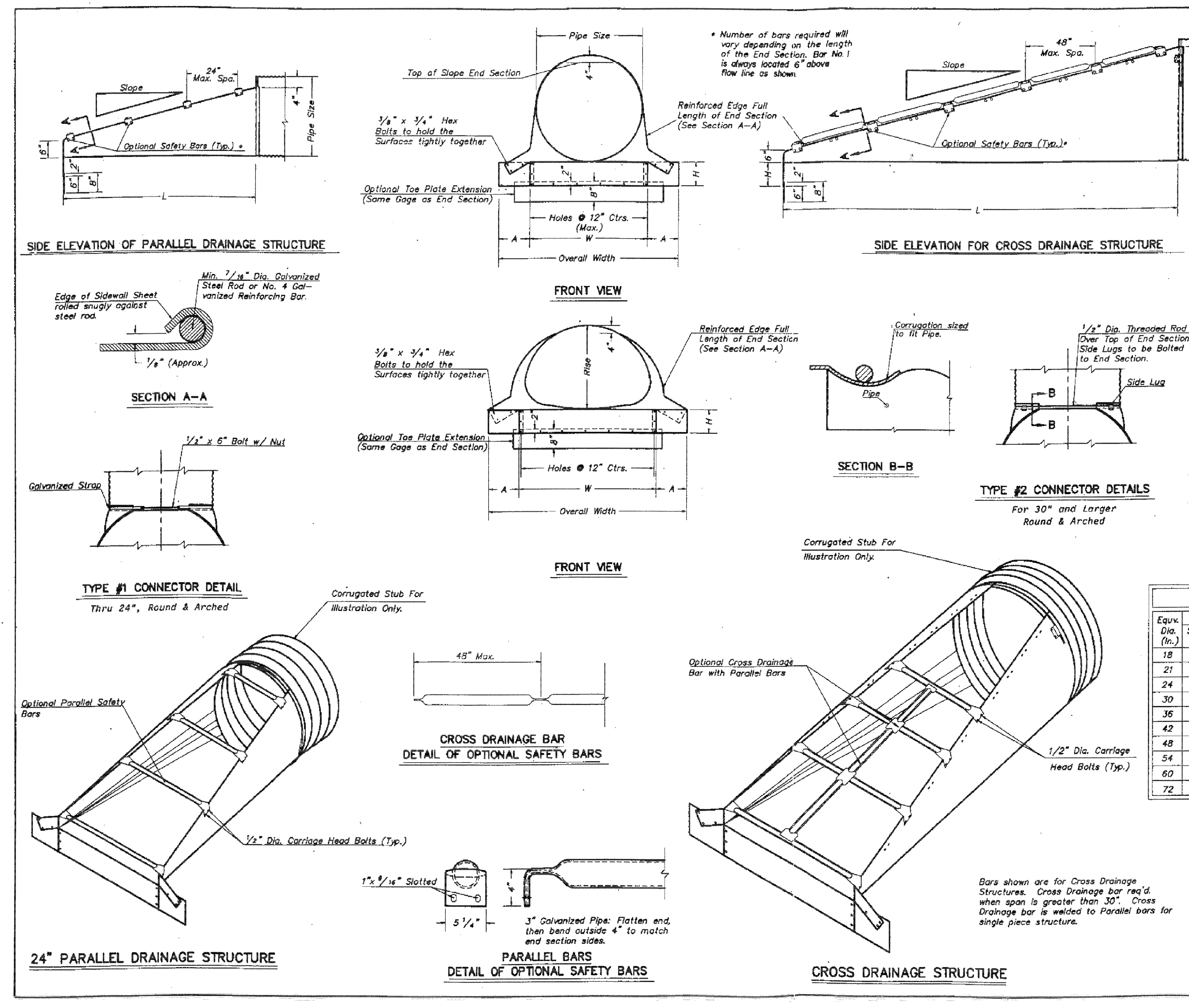
1. ALL PIPES AND PIPE ARCHES WHOSE DIMENSIONS ARE LARGER THAN THOSE LISTED BELOW SHALL HAVE 12 GA. SIDES AND 10 GA. CENTER PANELS: PIPES - 1350 , PIPE ARCHES - 1620 X 1100 (68 X 13), 1520 X 1170 (75 X 25 OR 125 X 25) PIPES AND PIPE ARCHES WHOSE DIMENSIONS ARE EQUAL TO OR SMALLER THAN THOSE LISTED ABOVE, WHICH ARE ALLOWED TO BE ASSEMBLED FROM 3 PIECES, SHALL HAVE 12 GA. SIDES AND 10 GA. CENTER PANELS.
2. REINFORCED EDGES SHALL BE SUPPLEMENTED WITH STIFFENER ANGLES FOR THE FOLLOWING PIPES AND PIPE ARCHES: PIPES - 1500 OR LARGER, PIPE ARCHES - 1950 X 1320 (68 X 13), 1850 X 1400 (75 X 25 OR 125 X 25) THE ANGLES SHALL BE THE SAME BASE METAL AS THE END SECTION AND SHALL BE 50 X 50 X 6.25 FOR 1500 THRU 1800 DIAMETERS AND 6.25 FOR ø 1950 AND LARGER. THE ANGLES SHALL BE ATTACHED BY 10 ø GALVANIZED NUTS & BOLTS. PIPE ARCH EQUAL TO OR LARGER THAN 1950 X 1320 (68 X 13), 1850 X 1400 (75 X 25 OR 125 X 25) SHALL HAVE ANGLE REINFORCEMENT PLACED UNDER THE CENTER PANEL SEAMS.
3. A TOE PLATE EXTENSION SHALL BE SUPPLIED WHEN SPECIFIED IN DRAINAGE STRUCTURE TABLE. THE TOE PLATE EXTENSION SHALL BE THE SAME BASE METAL AS THE END SECTION AND SHALL BE FASTENED TO THE END SECTION WITH 10 ø BOLTS. A CUT-OFF WALL SHALL BE POURED IF INDICATED IN THE CONTRACT DOCUMENTS. PAYMENT WILL BE MADE UNDER APPROPRIATE CONTRACT ITEMS. REFER TO STANDARD SHEET "CUT-OFF WALLS FOR END SECTIONS".
4. FOR PIPES AND PIPE ARCHES WITH 3 PIECE BODIES, THE WIDTH OF THE CENTER PANEL SHALL BE GREATER THAN 20% OF THE PIPE PERIPHERY. MULTIPLE PANEL BODIES SHALL HAVE LAP SEAMS WHICH SHALL BE TIGHTLY JOINED BY 10 ø GALVANIZED RIVETS OR BOLTS.
5. THE CONTRACTOR SHALL HAVE THE OPTION OF SUPPLYING EITHER A THREADED ROD CONNECTION OR METAL STRAP CONNECTION.
6. THE CONTRACTOR SHALL HAVE THE OPTION OF SUPPLYING EITHER A THREADED ROD CONNECTION OR A METAL STRAP CONNECTION 430 x 330 THRU 710 x 510 PIPE ARCHES (68 x 13 ONLY).

NUMBERS IN PARENTHESIS ARE CORRUGATION SIZE
ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
METRIC STANDARD SHEET
ALUMINUM AND STEEL END SECTIONS FOR CORRUGATED PIPE AND PIPE ARCH
APPROVED , 2003 /S/ P.J. CLARK DEPUTY CHIEF ENGINEER (DESIGN)
ISSUED UNDER EB 03-044 EFFECTIVE: JAN. 15, 2004
M603-3R1

PERMANENT

SHEET NO.	TOTAL SHEETS



GENERAL NOTES

STEEL
Galvanized Steel shall meet A.A.S.H.T.O. Specifications.

CONNECTORS
Sizes thru 24" attach to pipe with Type #1 straps.
All other sizes attach with Type #2 Rods and Lugs.

TOE PLATE EXTENSIONS
When required, toe plate extensions are to be the same gage as End Section. Dimensions shall be Overall Width less 6 inches by 8 inches high.

OPTIONAL SAFETY BARS
Safety bars, when specified, shall be Schedule 40 Galvanized Steel Pipe. Pipe to be Galvanized after forming.

MISCELLANEOUS DETAILS
Details of Construction Materials and Workmanship not shown on this drawing shall conform to J & J Drainage Products Standards.

Slotted holes for safety bar attachment shall be provided for all end sections.

METAL END SECTIONS FOR CIRCULAR PIPES

Pipe Dia. (In.)	Min. Thick. In.	Min. Thick. Gage	A	H	W	Overall Width	Slope	L Length (In.)	Slope	L Length (In.)
15	.064	16	8	6	21	37	4:1	20	6:1	30
18	.064	16	8	6	24	40	4:1	32	6:1	48
21	.064	16	8	6	27	43	4:1	44	6:1	66
24	.064	16	8	6	30	46	4:1	56	6:1	84
30	.109	12	12	9	36	60	4:1	80	6:1	120
36	.109	12	12	9	42	66	4:1	104	6:1	156
42	.109	12	16	12	48	80	4:1	128	6:1	192
48	.109	12	16	12	54	86	4:1	152	6:1	228
54	.109	12	16	12	60	92	4:1	176	6:1	264
60	.109	12	16	12	66	98	4:1	200	6:1	300

METAL END SECTIONS FOR ARCHED PIPES

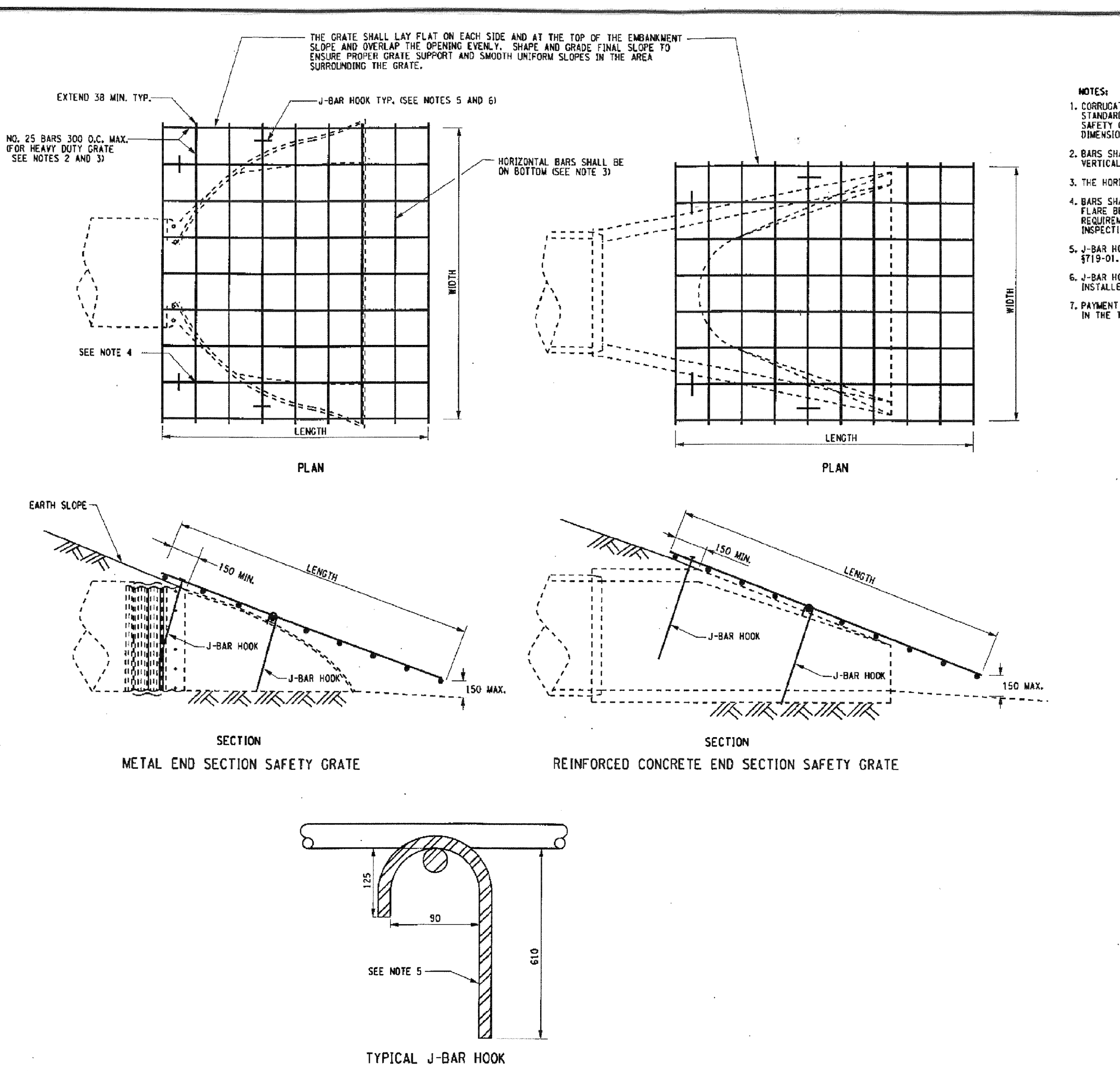
Equv. Dia. (In.)	Span (Inches)	Rise (Inches)	Min. Thick. In.	Min. Thick. Gage	A	H	W	Overall Width	Slope	L Length (In.)	Slope	L Length (In.)
18	21	15	.064	16	8	6	27	43	4:1	20	6:1	30
21	24	18	.064	16	8	6	30	46	4:1	32	6:1	48
24	28	20	.064	16	8	6	34	50	4:1	40	6:1	60
30	35	24	.079	14	12	9	41	65	4:1	56	6:1	84
36	42	29	.109	12	12	9	48	72	4:1	76	6:1	114
42	49	33	.109	12	16	12	55	87	4:1	92	6:1	138
48	57	38	.109	12	16	12	63	95	4:1	112	6:1	168
54	64	43	.109	12	16	12	70	102	4:1	132	6:1	198
60	71	47	.109	12	16	12	77	109	4:1	148	6:1	222
72	83	57	.109	12	16	12	89	121	4:1	188	6:1	282

No.	Date	Revisions
3	2-91	General Revisions
2	6-90	Chart Revision
1	7-89	Detail of Cross Drainage Safety Bar

SAFETY SLOPE END SECTION
FOR
CIRCULAR & ARCHED PIPES

J & J Drainage Products Co.
P.O. BOX 829
HUTCHINSON, KANSAS 67504-0829
800-331-7465 FAX 316-663-1701

TEMPORARY



NOTES:

1. CORRUGATED POLYETHYLENE PIPES UTILIZE METAL END SECTIONS WHICH ARE ONE STANDARD PIPE DIAMETER LARGER THAN CORRUGATED STEEL PIPE. THEREFORE, A SAFETY GRATE FOR A 900 mm DIA. CORRUGATED POLYETHYLENE PIPE WOULD HAVE DIMENSIONS OF 3.1 m X 2.1 m.
2. BARS SHALL BE GRADE 420, FULL LENGTH, WITH NO SPLICES OR BUTT WELDS. VERTICAL BARS SHALL BE ON TOP.
3. THE HORIZONTAL BARS SHALL BE NO. 36 FOR THE HEAVY-DUTY SAFETY GRATES.
4. BARS SHALL BE WELDED AT EACH INTERSECTION WITH 4 TACK WELDS OR A DOUBLE FLARE BEVEL GROOVE WELD, AT THE CONTRACTOR'S OPTION. WELDING SHALL MEET THE REQUIREMENTS OF THE NYS STEEL CONSTRUCTION MANUAL, EXCEPT THAT RADIOGRAPHIC INSPECTION WILL NOT BE REQUIRED.
5. J-BAR HOOKS SHALL BE NO. 19 BAR, OR NO. 13 GALVANIZED IN ACCORDANCE WITH §719-01.
6. J-BAR HOOKS SHOWN INSTALLED PERPENDICULAR TO SLOPE. HOOKS MAY ALSO BE INSTALLED VERTICALLY. J-BAR SHALL BE WITH LONG LEGS ON THE DOWNHILL SIDE.
7. PAYMENT AREA OF SAFETY GRATES FOR PIPE DIMENSIONS OTHER THAN THOSE LISTED IN THE TABLE WILL BE BASED ON THE PRODUCT OF THE OVERALL LENGTH AND WIDTH.

DRAINAGE SAFETY GRATE DIMENSIONS AND PAYMENT AREAS

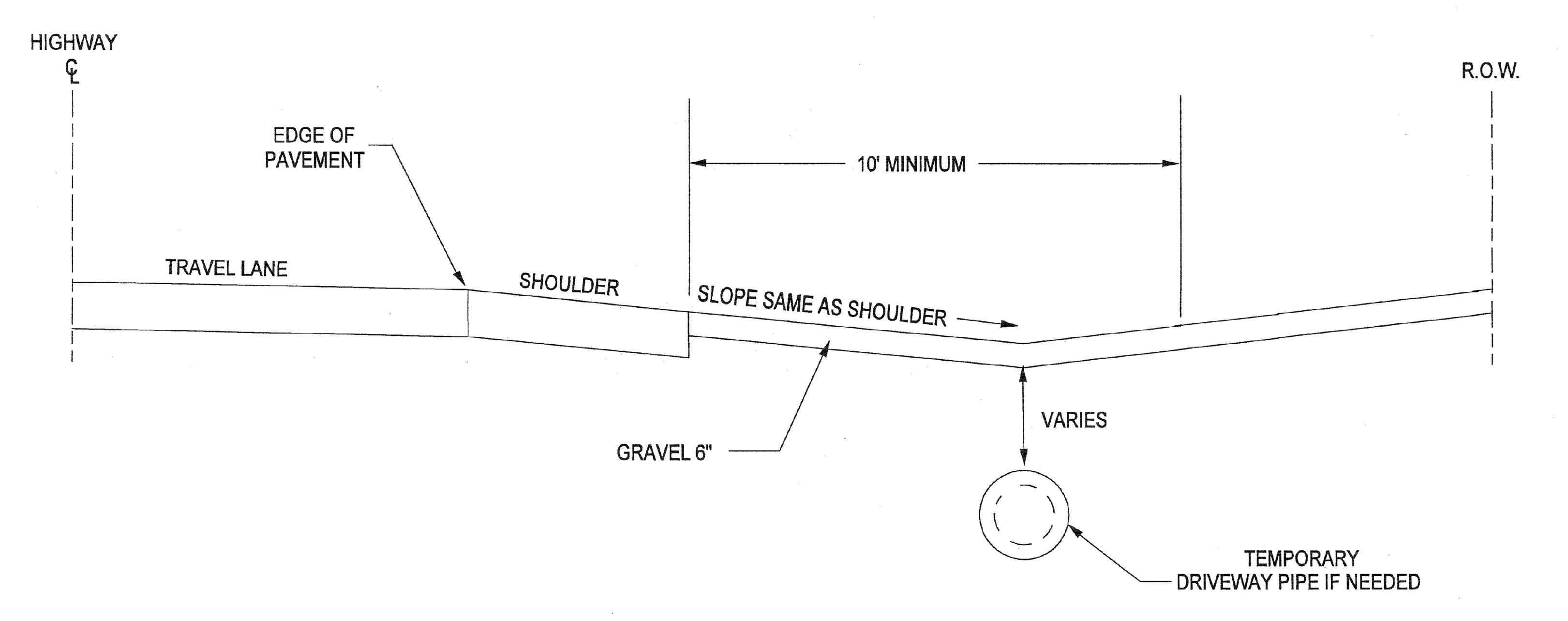
PIPE DIMENSION (mm)		WIDTH (m)	LENGTH (m)	PAYMENT AREA (m²)
REINFORCED CONCRETE PIPE				
450		1.2	1.3	1.5
600		1.5	1.8	2.7
750		1.8	2.3	4.1
900		2.1	2.8	5.9
1050		2.3	3.2	7.5
1200		2.6	3.7	9.5
CORRUGATED METAL PIPE (CORR. HDPE PIPE)				
450		1.5	1.1	1.6
600	(450)	1.9	1.4	2.5
750	(600)	2.3	1.6	3.7
900	(750)	2.7	1.9	5.0
1050	(900)	3.1	2.1	6.6
1200	(1050)	3.3	2.4	8.1
—	(1200)	3.6	2.6	9.6
CORRUGATED METAL PIPE ARCH				
68X13	75X25 OR 125X25			
885X610	—	2.2	1.3	2.8
1060X740	—	2.6	1.5	4.0
1240X840	—	2.9	1.7	5.0
1440X970	—	3.3	2.0	6.6
1620X1100	1520X1170	3.6	2.2	8.0
1800X1200	—	3.9	2.4	9.4

ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
METRIC STANDARD SHEET
CULVERT END SAFETY GRATES
APPROVED JUNE 6 , 2006 /S/ P.J. CLARK DEPUTY CHIEF ENGINEER (DESIGN)
ISSUED UNDER EB 6-025
M603-6

TEMPORARY DRIVEWAY ACCESS DETAIL

(NO SCALE)



NOTES:
1) LOW POINT OF DRIVEWAY SHOULD BE AS CLOSE TO DITCH CENTERLINE AS POSSIBLE.
2) DRIVEWAY SHALL EXTEND TO EDGE OF N.Y.S.D.O.T. R.O.W. OR POLE, WHICH EVER IS CLOSER TO EDGE OF PAVEMENT.

REGION 7 NYSDOT
VERSION DATE 12/15/05

ADIRONDACK PARK
TOWNS OF PARISHVILLE (TD 6329),
COLTON (TD 6251) & PIERCEFIELD (TD 6234)
COUNTY OF ST. LAWRENCE
STATE OF NEW YORK

STATE OF NEW YORK RICHARD N. COLLINS 080163 LICENSED PROFESSIONAL ENGINEER
8-27-07

CIR. #32 Z50811075

PREPARED BY
nationalgrid

TRANSMISSION MAP
TOWNLINE-PIERCEFIELD #32
PLAN & PROFILE INDEX SHEET

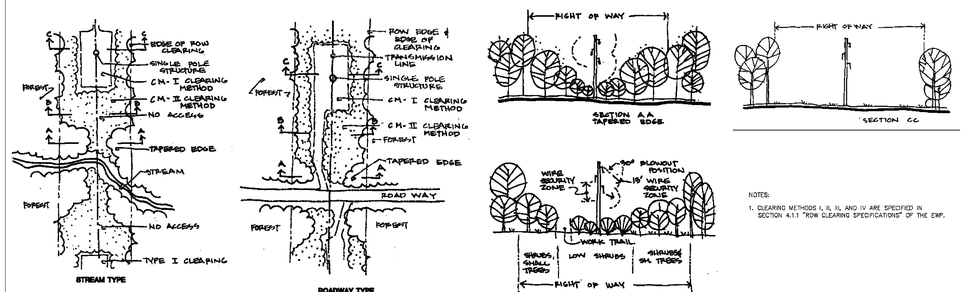
46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN
APP.		APP.		INDEX 8.2-T14-M5
APP.		APP.		NO. C-57022-1C

REFERENCE DESCRIPTION	DWG. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
		1	8/27/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

ACCT. NO.

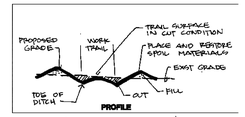
SHT. 1D OF 26

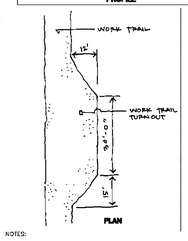


NOTES:

1. CLEARING METHODS I, II, III, AND IV ARE SPECIFIED IN SECTION 4.1.1 "ROW CLEARING SPECIFICATIONS" OF THE EWP.

1 CLEARING METHODS

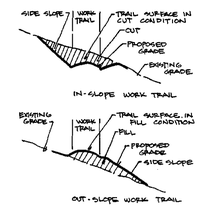




NOTES:

1. LOCATION--WORK TRAILS PROVIDE ACCESS ROUTES THROUGH THE ROW AND TO EACH STRUCTURE ALONG THE SUB-TRANSMISSION LINE FOR CONSTRUCTION AND OPERATION.
2. WIDTH--THE TRAVEL SURFACE OF THE WORK TRAIL SHALL BE A MINIMUM OF 12 FEET WIDE WITH GREATER WIDTHS AT CURVES AND TURNOUTS WITHIN A 20 FOOT ROADWAY.
3. THERE ARE SIX ACCESS TYPES. THEY ARE SPECIFIED IN SECTION 4.1.2 "WORK TRAIL CONSTRUCTION" OF THE EWP.
4. SEE ALSO DETAILS 3 AND 4 FOR SPECIFIC TYPES.

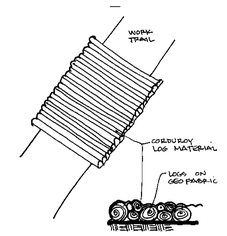
2 TYPICAL WORK TRAIL



NOTES:

1. USE--IN MODERATE TO STEEP TERRAIN (10-20%) SIDESLOPES, WHERE IT IS NECESSARY TO CROSS THE SLOPE ON A DIAGONAL, THEREBY REDUCING THE GRADE TO IMPROVE ACCESSIBILITY. SIDE HILL CUTS SHALL BE MADE.
2. ALL STUMPS SHALL BE GRUBBED FROM SIDE HILL CUTS.
3. ALL TOPSOIL SHALL BE EXCAVATED TO THE SUBSOIL.
4. ALL SPOIL SHALL BE PLACED ON THE EMBANKMENT AT THE LOW SIDE OF THE WORK TRAIL.
5. SPOIL SHALL NOT BE USED AS FILL MATERIAL FOR THE LOW SIDE OF THE ROAD SURFACE.
6. TOPSOIL SPOIL SHALL NOT BE USED AS A FILL MATERIAL IN ANY PORTION OF THE DRIVING SURFACE.
7. A CUT EMBANKMENT SHALL BE BACK BLADED TO A MAXIMUM OF 45° SLOPE IN SOILS.
8. A FILL EMBANKMENT SHALL BE BLADED TO A MAXIMUM SLOPE OF 45°.

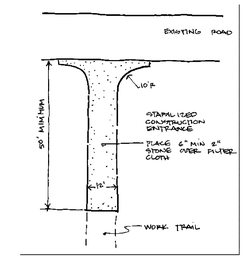
3 SIDEHILL CUTS



NOTES:

1. CORDUROY ROADS SHALL BE USED IN WETTER CONDITIONS WHERE CLEARING IS NECESSARY AND TRACKED VEHICLES WILL BE USED.
2. THEY SHALL ALSO BE USED IN CASES WHERE EMERGENCY ACCESS MUST BE RETAINED AFTER CONSTRUCTION.
3. THEY SHALL BE CONSTRUCTED OUT OF WHATEVER MATERIAL IS AVAILABLE FROM THE CLEARING OPERATION.

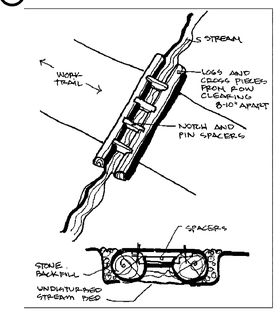
4 CORDUROY ROAD



CONSTRUCTION SPECIFICATION

1. LOCATION -- A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE AT A PUBLIC ROAD OR PARKING LOT. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.
2. STONE -- CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 4" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
3. LENGTH -- GREATER THAN OR EQUAL TO 50 FEET.
4. WIDTH -- 12'-0" MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
5. SURFACE WATER -- ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SITE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM PIPE WILL BE REQUIRED.
6. MAINTENANCE -- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
7. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED.

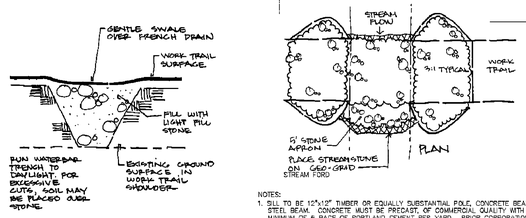
5 STABILIZED CONSTRUCTION ENTRANCE



NOTES:

1. USE--FOR EQUALIZATION OF MODERATE FLOW, AS WELL AS FOR DITCH RELIEF WHEN A HIGHER OR CONTINUOUS DITCH FLOW MAY BE EXPECTED.
2. THEY SHALL BE INSTALLED ACROSS THE ROAD ON AN OBLIQUE ANGLE.
3. UTILIZE 10 TO 14 INCH DIAMETER LOGS, SET 8 TO 10 INCHES APART.
4. LOGS SHOULD BE SET INTO THE ROAD SO THAT THE TOP OF THE LOG IS EVEN OR SLIGHTLY BELOW THE ROAD SURFACE.

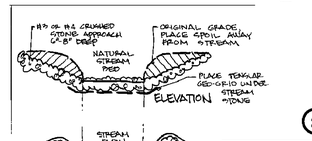
6 TYPICAL LOG CULVERT



NOTES:

1. USE--FOR EQUALIZATION OF STANDING WATER LEVELS ACROSS THE WORK TRAIL OR FOR THE RELIEF OF MODERATE SPRING SEE PAGE ACROSS THE WORK TRAIL IN HILLY TERRAIN.

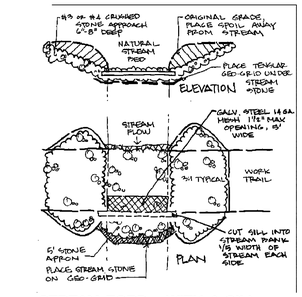
7 TYPICAL FRENCH DRAIN



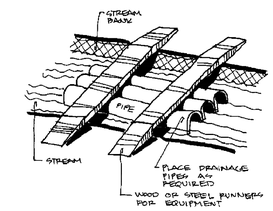
NOTES:

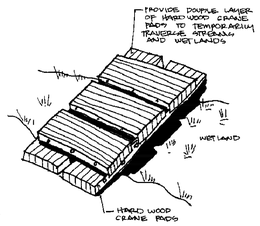
1. SILL TO BE 12"x12" TIMBER OR EQUALLY SUBSTANTIAL POLE, CONCRETE BEAM OR STEEL BEAM. CONCRETE MUST BE PRECAST, OF COMMERCIAL QUALITY WITH A MINIMUM OF 6 BAGS OF PORTLAND CEMENT PER YARD. PRIOR CORPORATION APPROVAL IS REQUIRED FOR ALL SILL MATERIAL.
2. BARS ARE TO BE NEW STEEL, 1", DRIVEN TO REFUSAL OR 6-0" MAXIMUM ON 2-0" CENTERS, WITH TOPS BENT DOWN-STREAM AND OFFERING POSITIVE SUPPORT TO SILL.
3. WIRE MESH MUST BE SECURELY FASTENED TO SILL WHERE MORE THAN ONE SECTION OF WIRE MESH IS REQUIRED. INDIVIDUAL SECTIONS SHALL BE SECURED WITH A CONTINUOUS 12 GA. GALVANIZED SPIRAL WIRE.
4. STONE IS TO BE ASTM C33, 3 1/2" TO 1 1/2" FROM SOURCE APPROVED BY THE CORPORATION.
5. FILTER SHEET SHALL BE CLOTH WOVEN POLYPROPYLENE MONOFILAMENT YARN, NOT LESS THAN 18 MILS THICK, WEIGHING NOT LESS THAN 7.35 OUNCES PER SQUARE YARD, POSITIVELY SECURED WITH PINS, STAPLES AND/OR ROCK, AS OBTAINABLE FROM CARTHAGE MILLS, INC., CLEVELAND, OHIO OR EQUIVALENT. FILTER SHEET IS NOT REQUIRED WHERE SUBSOIL IS COARSE GRANULAR OR ROCK.

8 STREAM FORD - WITHOUT A SILL



9 STREAM FORD - WITH A SILL

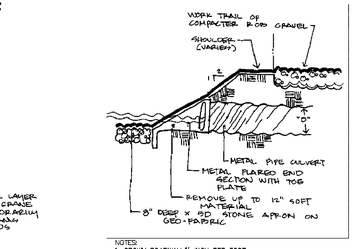




NOTES:

1. USE--WHERE STREAM APPROACHES AREA STEEP OR THE STREAM IS CHANNELIZED OR THIS TECHNIQUE MAY BE UTILIZED IN CROSSING PROTECTED STREAMS WHERE A MINIMUM DISTURBANCE TO THE STREAM SUBSTRATE IS NECESSARY.

10 TEMPORARY STREAM CROSSING



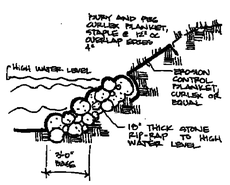
NOTES:

1. CROWN ROADWAY ½ INCH PER FOOT.
2. LAY THE CULVERT STRAIGHT AND AS NEARLY AS POSSIBLE ALONG THE EXISTING STREAM BED AND WITH THE INVERTS SLIGHTLY BELOW BED ELEVATION TO ENABLE UNIMPEDED MOVEMENT OF AQUATIC SPECIES.
3. CORRUGATED METAL PIPE IS TO BE GALVANIZED STEEL OR ALUMINIZED STEEL (TYPE 2), WITH BOLTED CONNECTORS. DIAMETERS SHALL BE AS PER THE PROJECT DRAWINGS AND THE SPECIFICATION. THE PIPE GAGE SHALL BE AS FOLLOWS:

DIAMETER IN INCHES	GAGE
12"-15"	0.064"
18"-24"	0.079"
30"-36"	0.109"

4. INSTALLATION OF CULVERTS LARGER THAN 36-INCH DIAMETER SHALL REQUIRE SPECIAL ENGINEERING DESIGN.
5. SELECT SUBGRADE SHALL BE A GRANULAR MATERIAL AS DESCRIBED IN NYSDOT SPECIFICATION ITEM 203-2.02C.
6. STONE RIP-RAP SHALL BE AS DESCRIBED IN NYSDOT SPECIFICATION ITEM 203-2.02D, WITH 8 INCH MAXIMUM SIZE.
7. EXCEPT WHERE PROTECTED BY STONE, ALL EMBANKMENT SLOPES ARE TO BE STABILIZED, MULCHED, AND SEEDED AS PER PROJECT SPECIFICATIONS.
8. OUTLET SHALL BE CONFIGURED NOT TO CREATE HYDRAULIC JUMP OR PLUNGE POOL.
9. INSTALL BEAVER GUARDS AS DIRECTED.

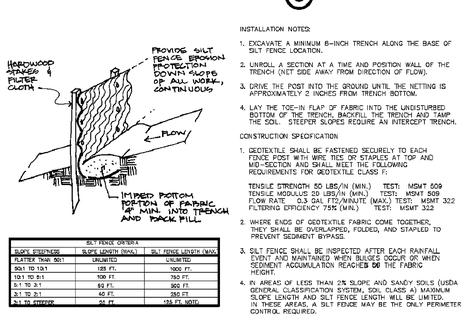
11 CORRUGATED STEEL CULVERT



NOTES:

1. ALL RIP-RAP ACTIVITIES MUST COMPLY WITH THE CONDITIONS OF THE PERMITS.
2. LIMIT USE OF RIP-RAP TO AREAS WHERE FLOW CONDITIONS PRE-EMPT VEGETATIVE STABILIZATION.

12 STREAM BANK STABILIZATION



SLOPE STEEPNESS	SILT FENCE CRITERIA		
	SLOPE LENGTH (MAX.)	SILT FENCE LENGTH (MAX.	
FLATTER THAN 50:1	UNLIMITED	UNLIMITED	
50:1 TO 10:1	125 FT.	1000 FT.	
10:1 TO 5:1	100 FT.	750 FT.	
5:1 TO 3:1	50 FT.	500 FT.	
3:1 TO 2:1	40 FT.	250 FT.	
2:1 TO STEEPER	20 FT.	125 FT. (NOTE)	

INSTALLATION NOTES:

1. EXCAVATE A MINIMUM 6-INCH TRENCH ALONG THE BASE OF SILT FENCE LOCATION.
2. UNROLL A SECTION AT A TIME AND POSITION WALL OF THE TRENCH (NET SIDE AWAY FROM DIRECTION OF FLOW).
3. DRIVE THE POST INTO THE GROUND UNTIL THE NETTING IS APPROXIMATELY 2 INCHES FROM TRENCH BOTTOM.
4. LAY THE TOE-IN FLAP OF FABRIC INTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. STEEPER SLOPES REQUIRE AN INTERCEPT TRENCH.

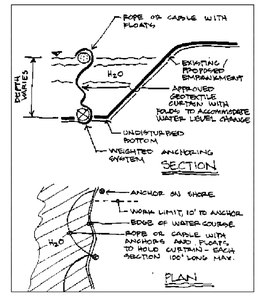
CONSTRUCTION SPECIFICATION

1. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

   TENSILE STRENGTH 50 LBS/IN (MIN.) TEST: MSMT 509
   TENSILE MODULUS 20 LBS/IN (MIN.) TEST: MSMT 509
   FLOW RATE 0.3 GAL FTD/FT/MINUTE (MAX.) TEST: MSMT 322
   FILTERING EFFICIENCY 75% (MIN.) TEST: MSMT 322

2. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED, AND STAPLED TO PREVENT SEDIMENT BYPASS.
3. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHES 00 THE FABRIC HEIGHT.
4. IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM, SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE LIMITED. IN THESE AREAS, A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL REQUIRED.

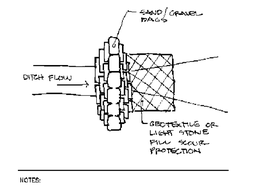
13 SILT FENCE



NOTES:

1. A TURBIDITY CURTAIN SHALL BE INSTALLED IN A WATERBODY WHEN WORK IS REQUIRED IN OR NEAR A BODY OF WATER, ESPECIALLY WHEN DIRECTIONAL DRILLING IS USED.
2. THEY SHALL NOT BE PLACED ACROSS A FLOWING STREAM.
3. REFER TO MANUFACTURER'S INSTALLATION GUIDELINES.

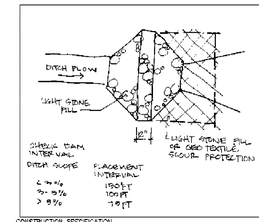
14 TURBIDITY CURTAIN



NOTES:

1. THEY SHALL BE USED TO FORM CHECK DAMS ALONG A DITCHLINE OR TO CONSTRUCT A TEMPORARY SEDIMENT BASIN TO RECEIVE MUDDY WATER DISCHARGE.
2. BAGS SHALL BE FABRICATED FROM REINFORCED WOVEN GEOTEXTILE, BURLAP BAGS SHALL NOT BE USED.
3. SAND OR GRAVEL SHALL BE USED AS FILL MATERIAL.
4. ALL MATERIAL SHALL BE DOUBLE BAGGED.

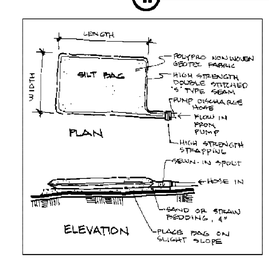
15 GRAVEL AND SAND BAG CHECK DAM



CONSTRUCTION SPECIFICATION

1. INSTALLATION WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE DAM A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

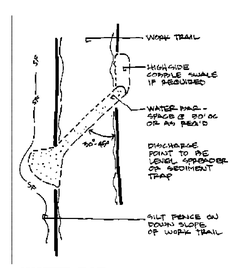
16 ROCK CHECK DAM



NOTES:

1. USE--THEY SHALL BE USED FOR DEWATERING AT BORE SITES, BORE PITS AND REDDING PITS, AS NECESSARY TO PREVENT SEDIMENT LADEN RESOURCES FROM ENTERING WATER RESOURCES.
2. LOCATION--THEY SHALL BE SET AT LEAST 150 FEET FROM A DESIGNATED WATER RESOURCE, OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
3. WHEN A SILT BAG IS FULL IT SHALL BE CUT OPEN AND SEDIMENT REMOVED ONSITE.

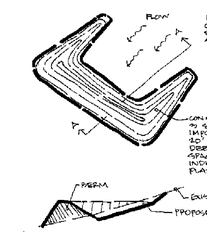
17 SILT BAG



NOTES:

1. INSTALL THE WATER BAR AS SOON AS THE RIGHT-OF-WAY IS CLEARED AND GRADED.
2. DISK OR STRIP THE SOD FROM THE BASE FOR THE CONSTRUCTED RIDGE BEFORE PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS-SECTION.
4. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FILLED SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL AREAS ARE NOT ADEQUATE.
5. VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL. EXPOSED AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED.
6. PERIODICALLY INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS WITHIN 24 HOURS OF THE DISTURBANCE.

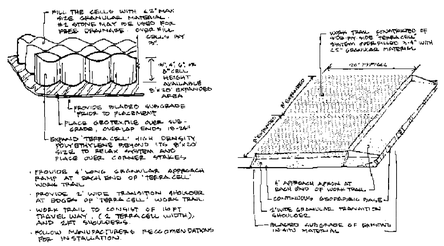
19 WATER BAR



NOTES:

1. USE--THEY SHALL BE USED TO PROTECT SURFACE WATER RESOURCES FROM ANY RUNOFF PRODUCED DURING THE COURSE OF THE PROJECT.
2. LOCATIONS OF SEDIMENT BASINS IS SHOWN ON THE EWP DRAWINGS.
3. THEY SHALL BE CONSTRUCTED AT A STANDARD SIZE OF 20 FEET WIDE X 20 FEET LONG X 1 FOOT DEEP.

18 TEMPORARY SEDIMENT BASIN



20 CELLULAR CONFINEMENT SYSTEM

ADIRONDACK PARK
TOWNS OF PARISHVILLE (TD 6329),
COLTON (TD 6251) & PIERCEFIELD (TD 6234)
COUNTY OF ST. LAWRENCE
STATE OF NEW YORK

STATE OF NEW YORK · RICHARD N. COLLINS · LICENSED PROFESSIONAL ENGINEER
8-23-07

CIR. #32 Z50811075

REFERENCE DESCRIPTION	DWG. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
		1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI
ACCT. NO.							

PREPARED BY
nationalgrid

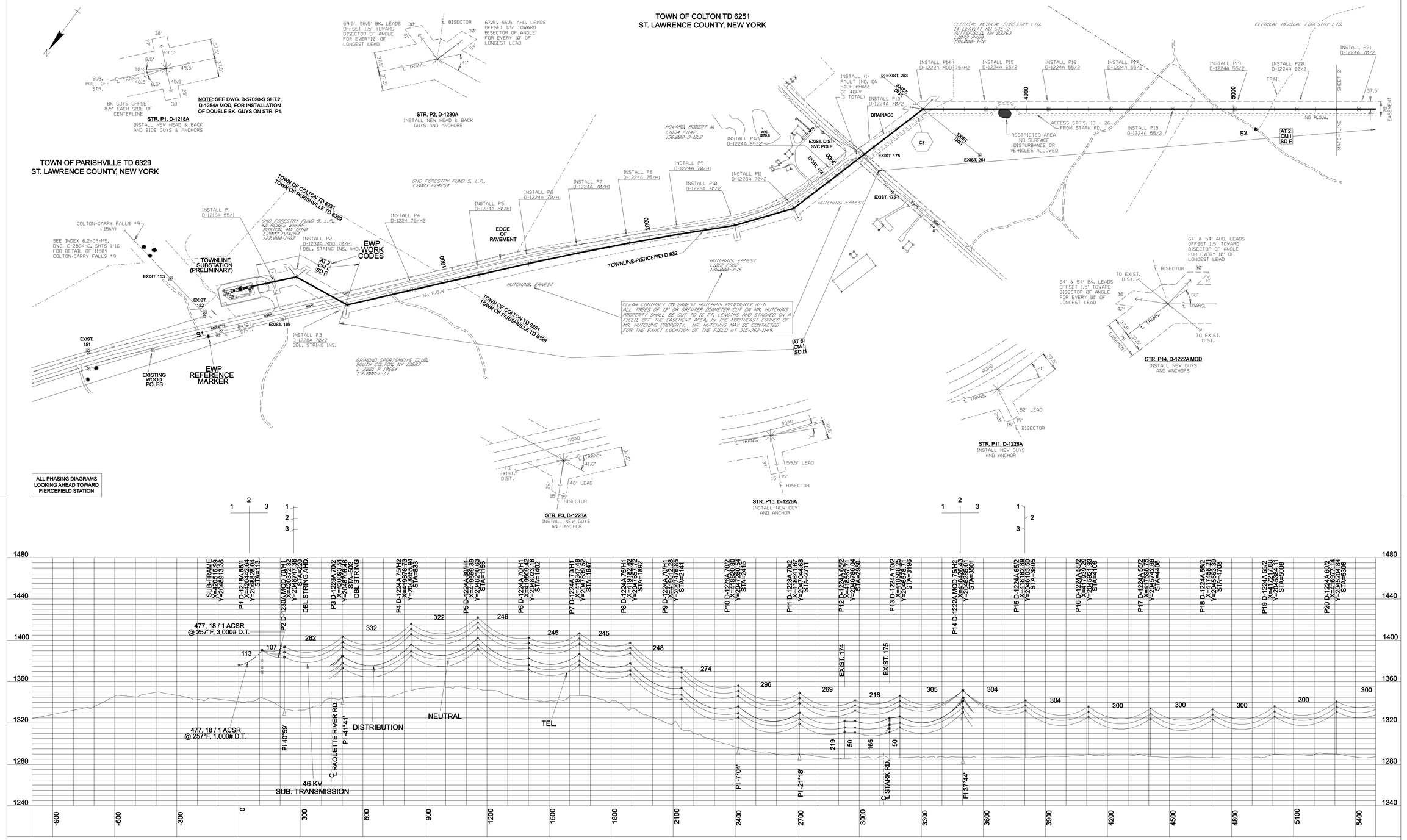
TRANSMISSION MAP
TOWNLINE-PIERCEFIELD #32
PLAN & PROFILE INDEX SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI DR. CAI CK. DATE 6/22/07 SCALE AS SHOWN
APP. APP. INDEX 8.2-T14-M5
APP. APP. NO. C-57022-1C

TOWN OF COLTON TD 6251
ST. LAWRENCE COUNTY, NEW YORK

TOWN OF PARISHVILLE TD 6329
ST. LAWRENCE COUNTY, NEW YORK



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

NORTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN	
APP.		APP.		INDEX 8.2-T14-M5	
APP.		APP.		NO. C-57022-C	

NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

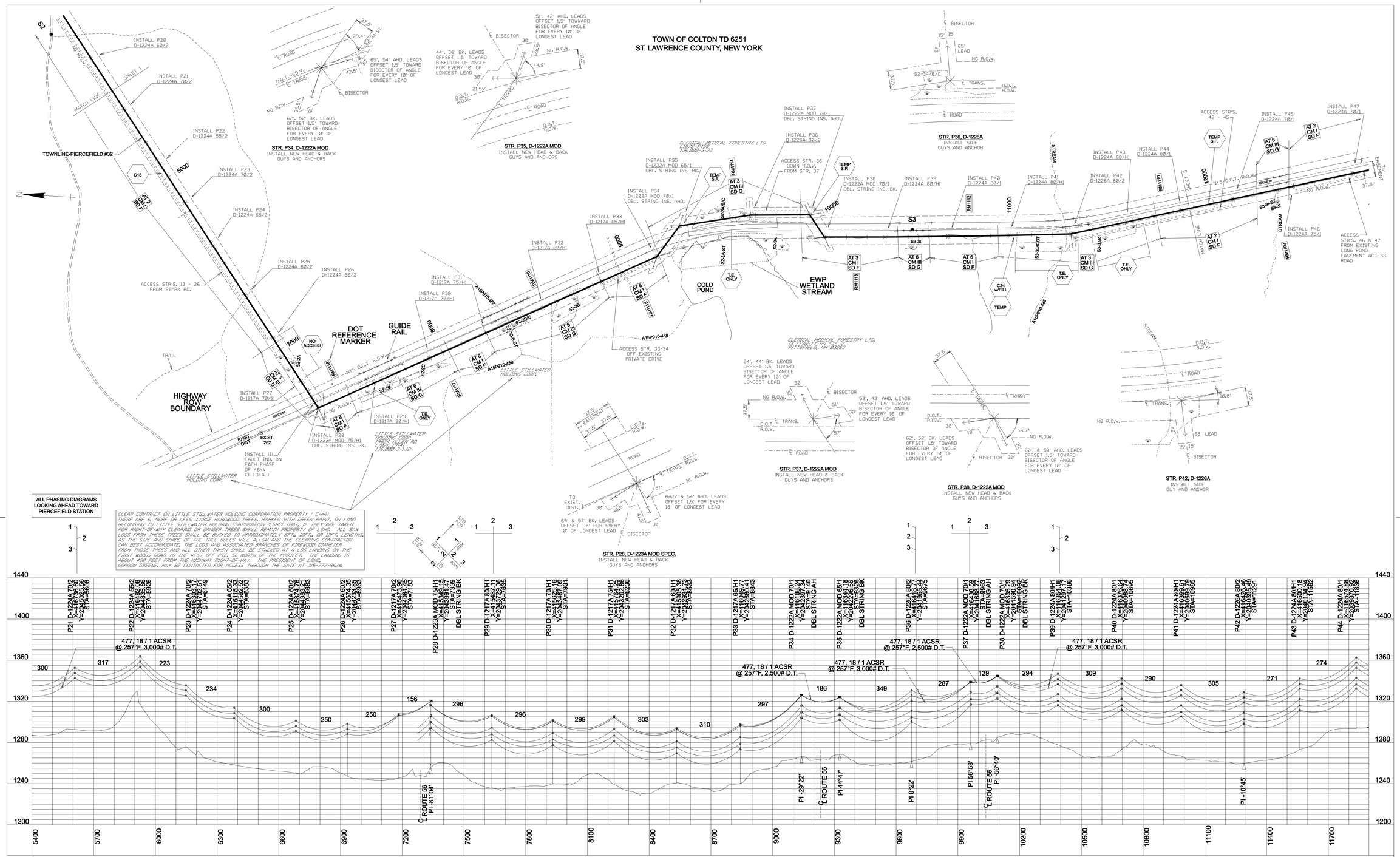
REFERENCE DESCRIPTION | DWG. NO.

ACCT. NO.

STATE OF NEW YORK · RICHARD N. COLLINS · LICENSED PROFESSIONAL ENGINEER

8-23-07

TOWN OF COLTON TD 6251
ST. LAWRENCE COUNTY, NEW YORK



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

NORTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN			
APP.		APP.		INDEX 8.2-T14-M5			
APP.		APP.		NO. C-57022-C			

NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

REFERENCE DESCRIPTION | DWG. NO.

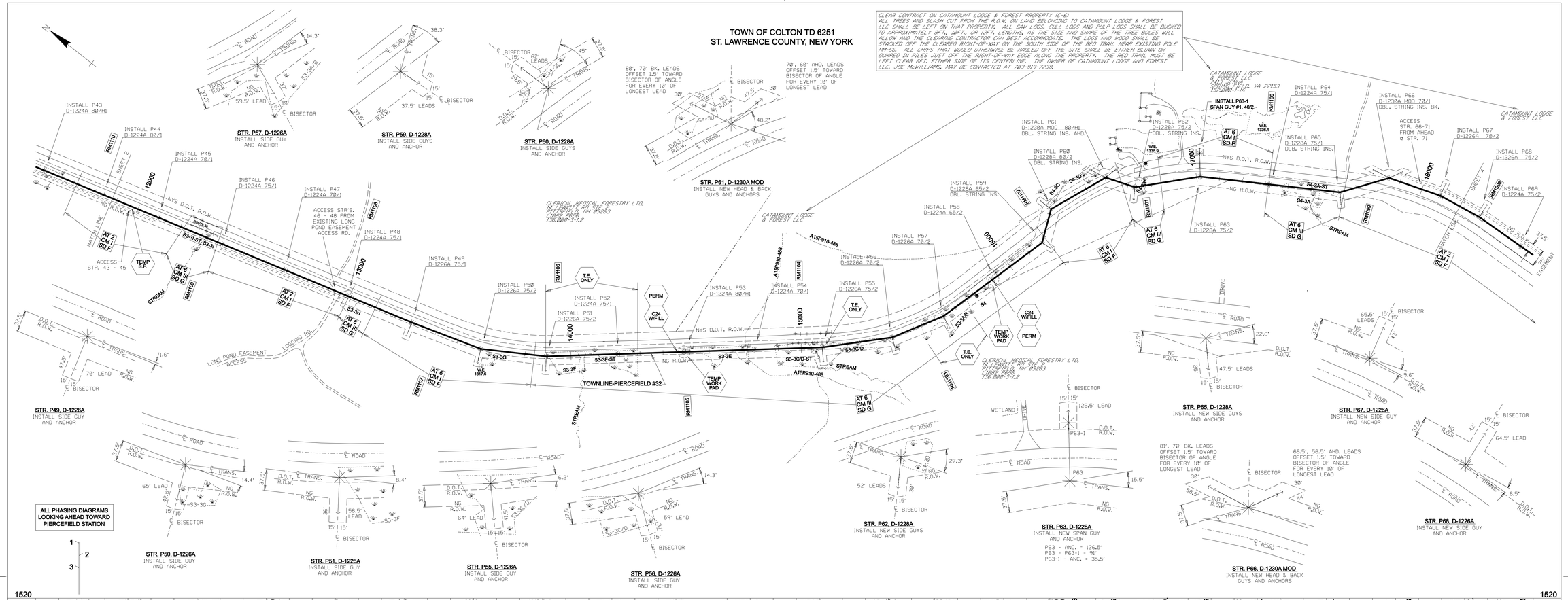
ACCT. NO.

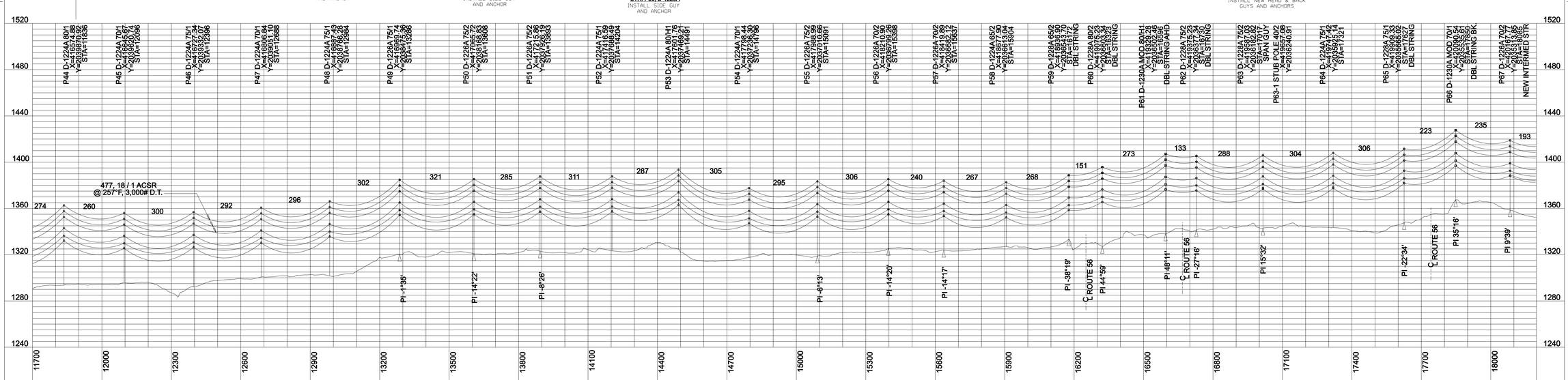
STATE OF NEW YORK · RICHARD N. COOKE · LICENSED PROFESSIONAL ENGINEER

8-23-07

TOWN OF COLTON TD 6251
ST. LAWRENCE COUNTY, NEW YORK

CLEAR CONTRACT ON CATAMOUNT LODGE & FOREST PROPERTY (C-6)
ALL TREES AND SLASH CUT FROM THE R.O.W. ON LAND BELONGING TO CATAMOUNT LODGE & FOREST LLC SHALL BE LEFT ON THAT PROPERTY. ALL SAW LOGS, CULL LOGS AND PULP LOGS SHALL BE BUCKED TO APPROXIMATELY 8FT., 10FT., OR 12FT. LENGTHS AS THE SIZE AND SHAPE OF THE TREE BOLES WILL ALLOW AND THE CLEARING CONTRACTOR CAN BEST ACCOMMODATE. THE LOGS AND WOOD SHALL BE STACKED OFF THE CLEARED RIGHT-OF-WAY ON THE SOUTH SIDE OF THE RED TRAIL NEAR EXISTING POLE NM-66. ALL CHIPS THAT WOULD OTHERWISE BE HAULED OFF THE SITE SHALL BE EITHER BLOWN OR DUMPED IN PILES JUST OFF THE RIGHT-OF-WAY EDGE ALONG THE PROPERTY. THE RED TRAIL MUST BE LEFT CLEAR 8FT. EITHER SIDE OF ITS CENTERLINE. THE OWNER OF CATAMOUNT LODGE AND FOREST LLC. JOE McWILLIAMS, MAY BE CONTACTED AT 703-819-7238.





0 200 400 600 800
HORZ SCALE: 1" = 200'

0 40 80 120 160
VERT SCALE: 1" = 40'

CIR. #32 Z50811075

PREPARED BY
nationalgrid

TRANSMISSION MAP
TOWNLINE-PIERCEFIELD #32
NORTHERN SEGMENT
PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN					
APP.		APP.		INDEX 8.2-T14-M5					
APP.		APP.		NO. C-57022-C					

REFERENCE DESCRIPTION	DWG. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
		1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI
ACCT. NO.							

STATE OF NEW YORK · RICHARD N. COLLINS · LICENSED PROFESSIONAL ENGINEER
8-23-07

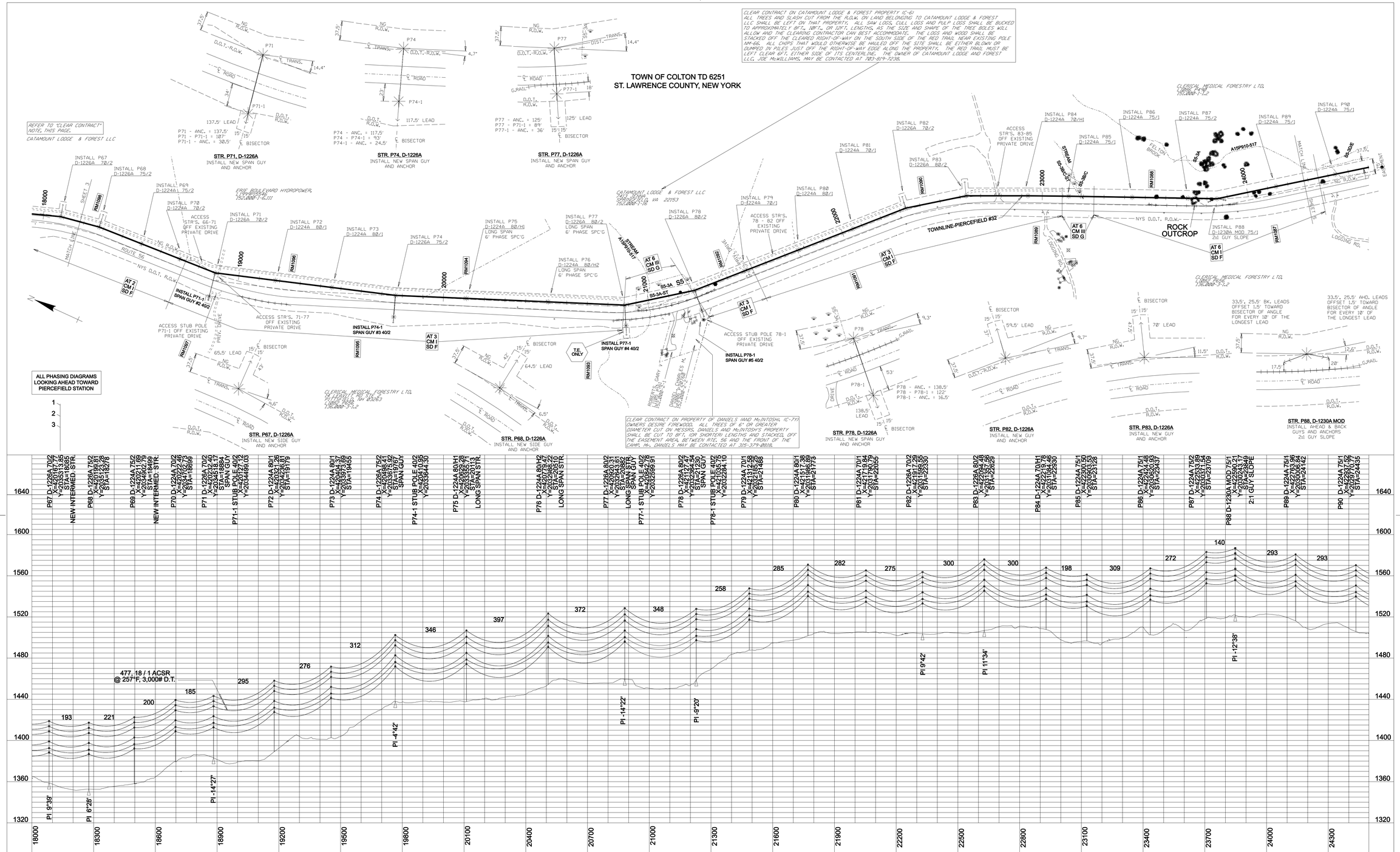
TOWN OF COLTON TD 6251
ST. LAWRENCE COUNTY, NEW YORK

CLEAR CONTRACT ON CATAMOUNT LODGE & FOREST PROPERTY (C-6)
ALL TREES AND SLASH CUT FROM THE R.O.W. ON LAND BELONGING TO CATAMOUNT LODGE & FOREST LLC SHALL BE LEFT ON THAT PROPERTY. ALL SAW LOGS, CULL LOGS AND PULP LOGS SHALL BE BUCKED TO APPROXIMATELY 8FT. (8FT., OR 12FT. LENGTHS, AS THE SIZE AND SHAPE OF THE TREE BOLES WILL ALLOW AND THE CLEARING CONTRACTOR CAN BEST ACCOMMODATE. THE LOGS AND WOOD SHALL BE STACKED OFF THE CLEARED RIGHT-OF-WAY ON THE SOUTH SIDE OF THE RED TRAIL NEAR EXISTING POLE NM-66. ALL CHIPS THAT WOULD OTHERWISE BE HAULED OFF THE SITE SHALL BE EITHER BLOWN OR DUMPED IN PILES JUST OFF THE RIGHT-OF-WAY EDGE ALONG THE PROPERTY. THE RED TRAIL MUST BE LEFT CLEAR 6FT. EITHER SIDE OF ITS CENTERLINE. THE OWNER OF CATAMOUNT LODGE AND FOREST LLC, JOE McWILLIAMS, MAY BE CONTACTED AT 703-819-7238.

REFER TO "CLEAR CONTRACT" NOTES, THIS PAGE.
CATAMOUNT LODGE & FOREST LLC

ALL PHASING DIAGRAMS LOOKING AHEAD TOWARD PIERCEFIELD STATION

1
2
3



0 200 400 600 800
HORZ SCALE: 1" = 200'

0 40 80 120 160
VERT SCALE: 1" = 40'

CIR. #32 Z50811075

PREPARED BY
nationalgrid

TRANSMISSION MAP
TOWNLINE-PIERCEFIELD #32
NORTHERN SEGMENT
PLAN & PROFILE SHEET
46kV-3Φ-60~ SINGLE CIRCUIT

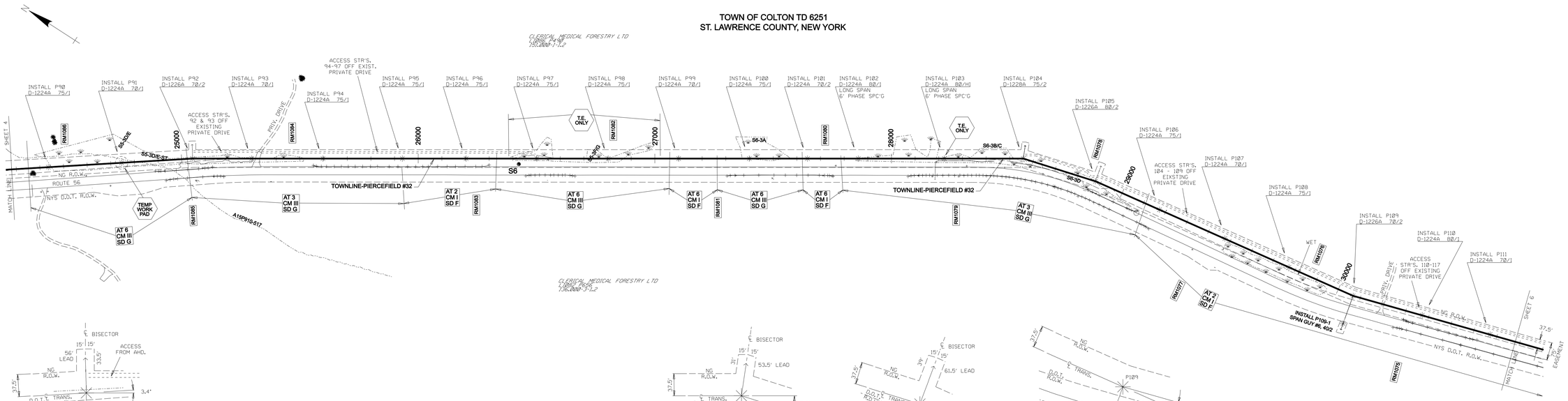
DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN					
APP.		APP.		INDEX 8.2-T14-M5					
APP.		APP.		NO. C-57022-C					

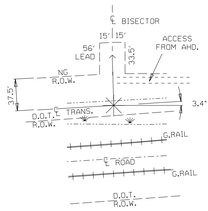
NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

REFERENCE DESCRIPTION | DWG. NO.
ACCT. NO.

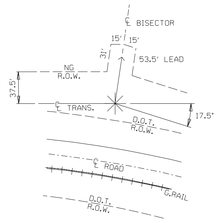
STATE OF NEW YORK · RICHARD N. DOLLING · LICENSED PROFESSIONAL ENGINEER · 8-23-07

TOWN OF COLTON TD 6251
ST. LAWRENCE COUNTY, NEW YORK

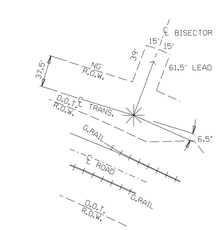




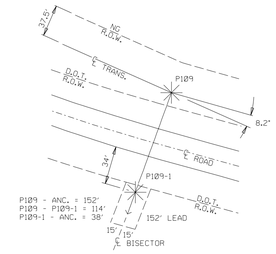
STR. P92, D-1226A
INSTALL NEW GUY AND ANCHOR



STR. P104, D-1228A
INSTALL NEW GUY AND ANCHOR

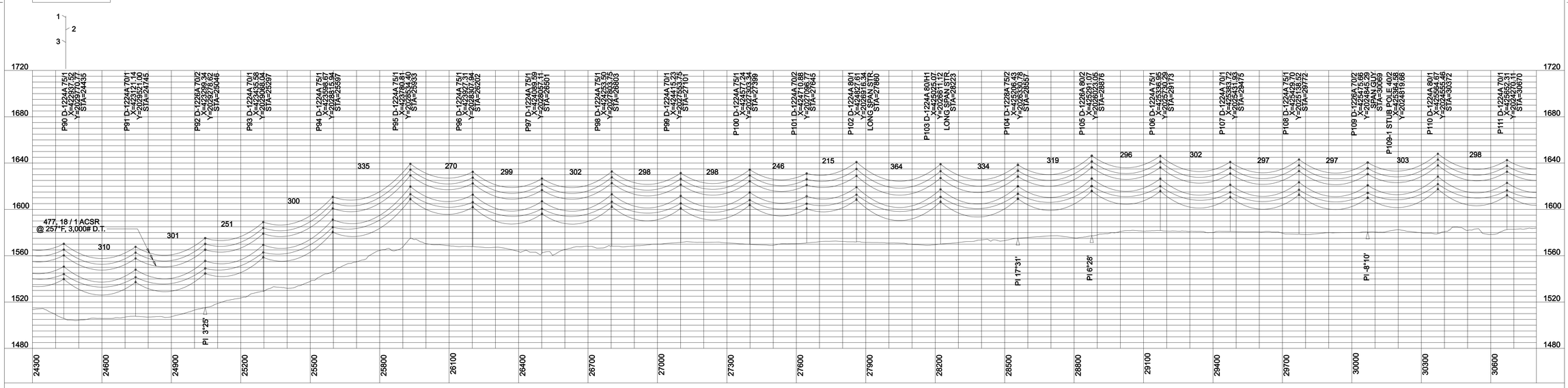


STR. P105, D-1226A
INSTALL NEW GUY AND ANCHOR



STR. P109, D-1226A
INSTALL NEW GUY AND ANCHOR

ALL PHASING DIAGRAMS LOOKING AHEAD TOWARD PIERCEFIELD STATION



0 200 400 600 800
HORZ SCALE: 1" = 200'

0 40 80 120 160
VERT SCALE: 1" = 40'

CIR. #32 Z50811075

STATE OF NEW YORK · RICHARD N. GOODWIN · LICENSED PROFESSIONAL ENGINEER
8-23-07

REFERENCE DESCRIPTION	DWG. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
		1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI
ACCT. NO.							

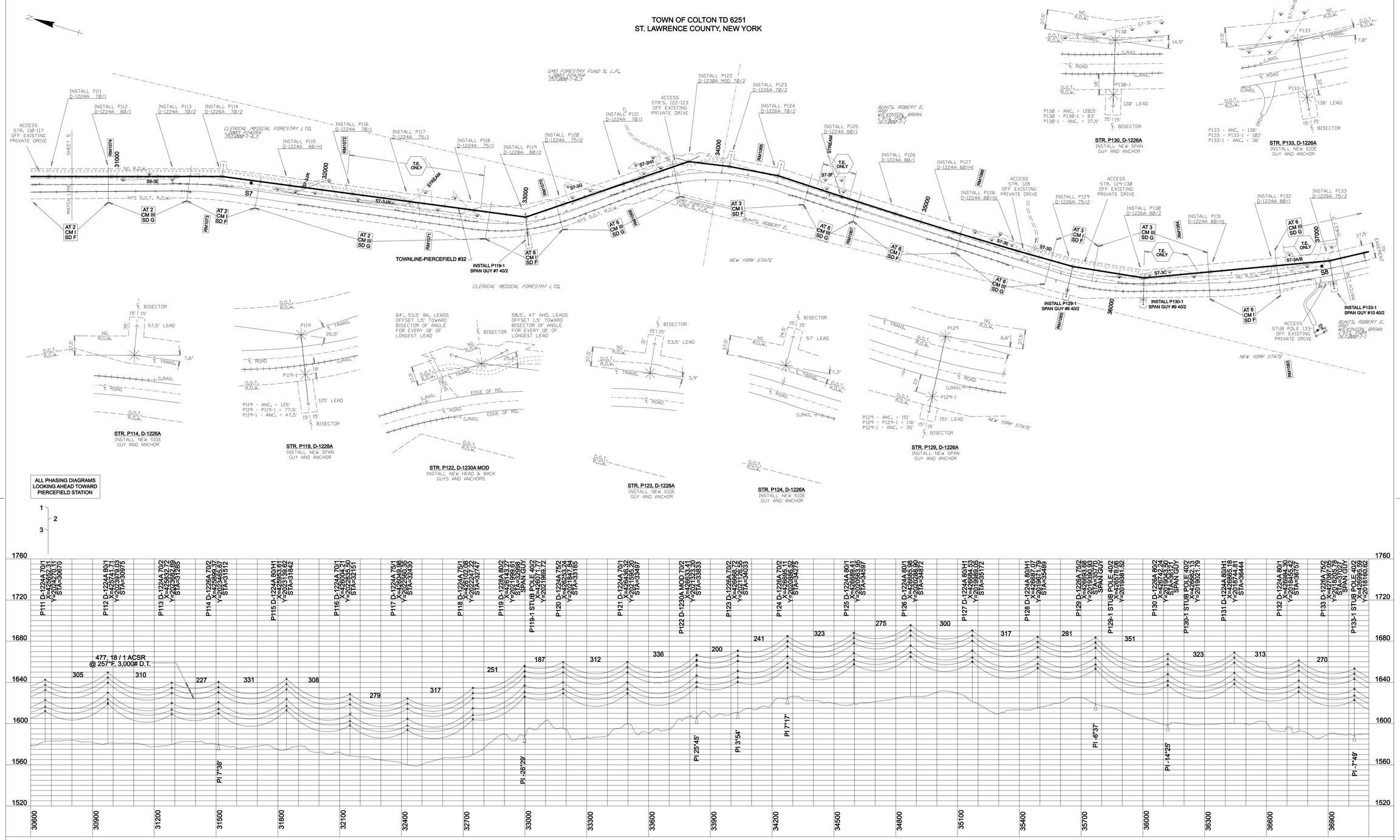
PREPARED BY
nationalgrid

TRANSMISSION MAP
TOWNLINE-PIERCEFIELD #32
NORTHERN SEGMENT
PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE	AS SHOWN
APP.		APP.		INDEX	8.2-T14-M5
APP.		APP.		NO.	C-57022-C

TOWN OF COLTON TD 6251
ST. LAWRENCE COUNTY, NEW YORK



CIR. #32 Z50811075

PREPARED BY nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

NORTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

REFERENCE DESCRIPTION	DWG. NO.	1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI
ACCT. NO.		NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.

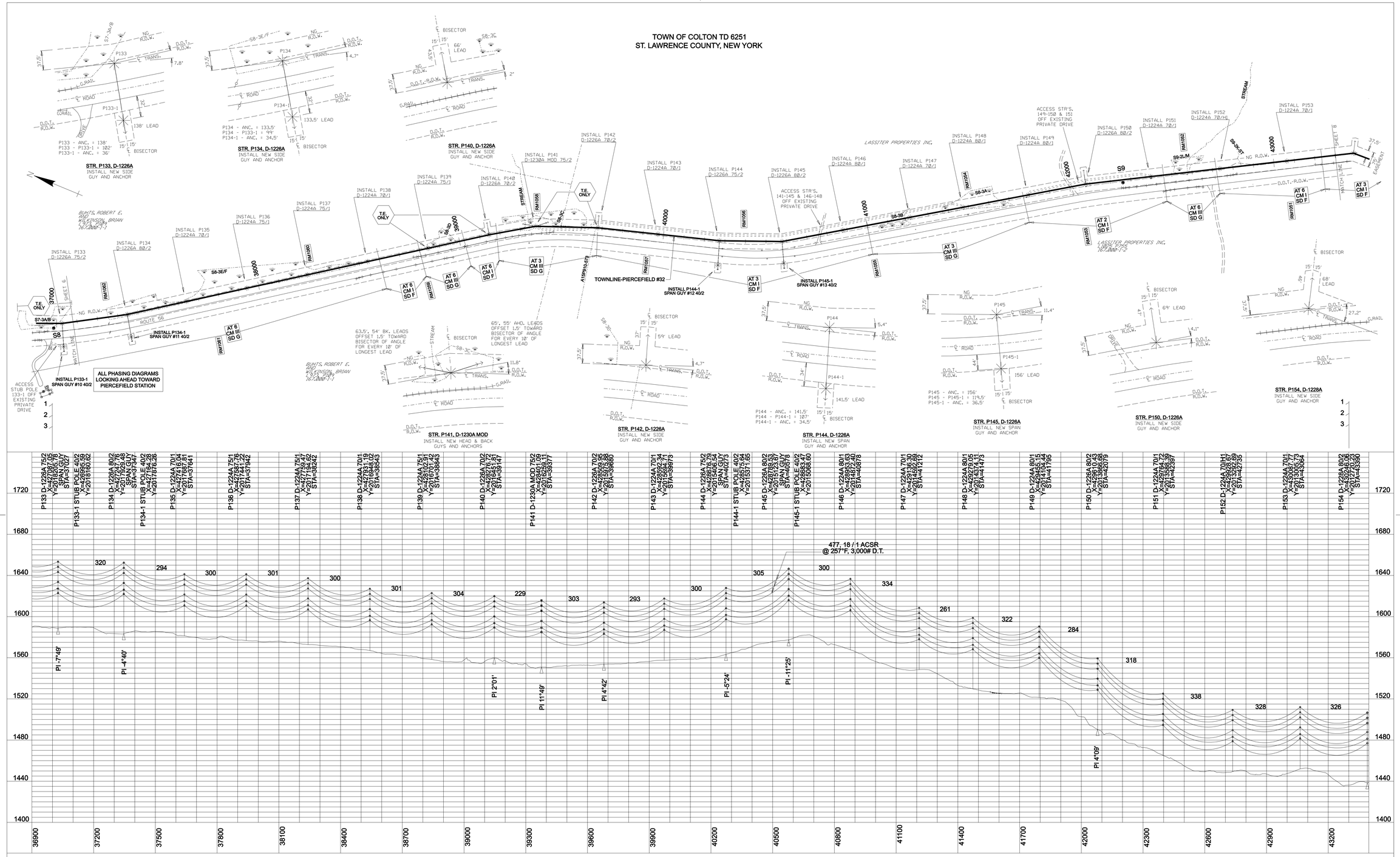
DES. CAI DR. CAI CK. DATE 6/22/07 SCALE AS SHOWN

APP. APP. INDEX 8.2-T14-M5

APP. APP. NO. C-57022-C

SHT. 6 OF 26

TOWN OF COLTON TD 6251
ST. LAWRENCE COUNTY, NEW YORK



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

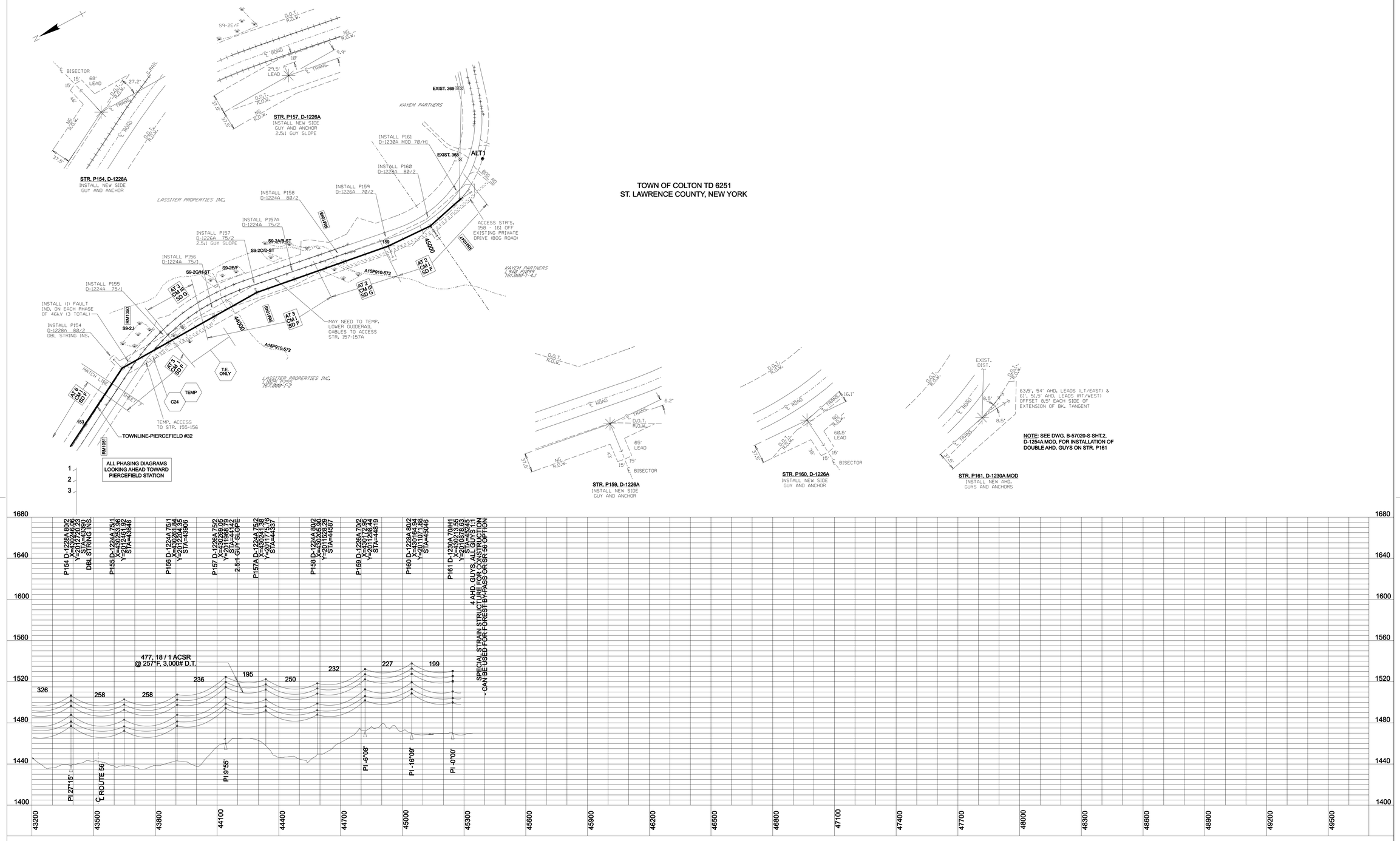
NORTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

								DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN
REFERENCE DESCRIPTION	DWG. NO.	1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI	APP.	APP.	INDEX 8.2-T14-M5
ACCT. NO.		NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.	APP.	APP.	NO. C-57022-C

SHT. 7 OF 26



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

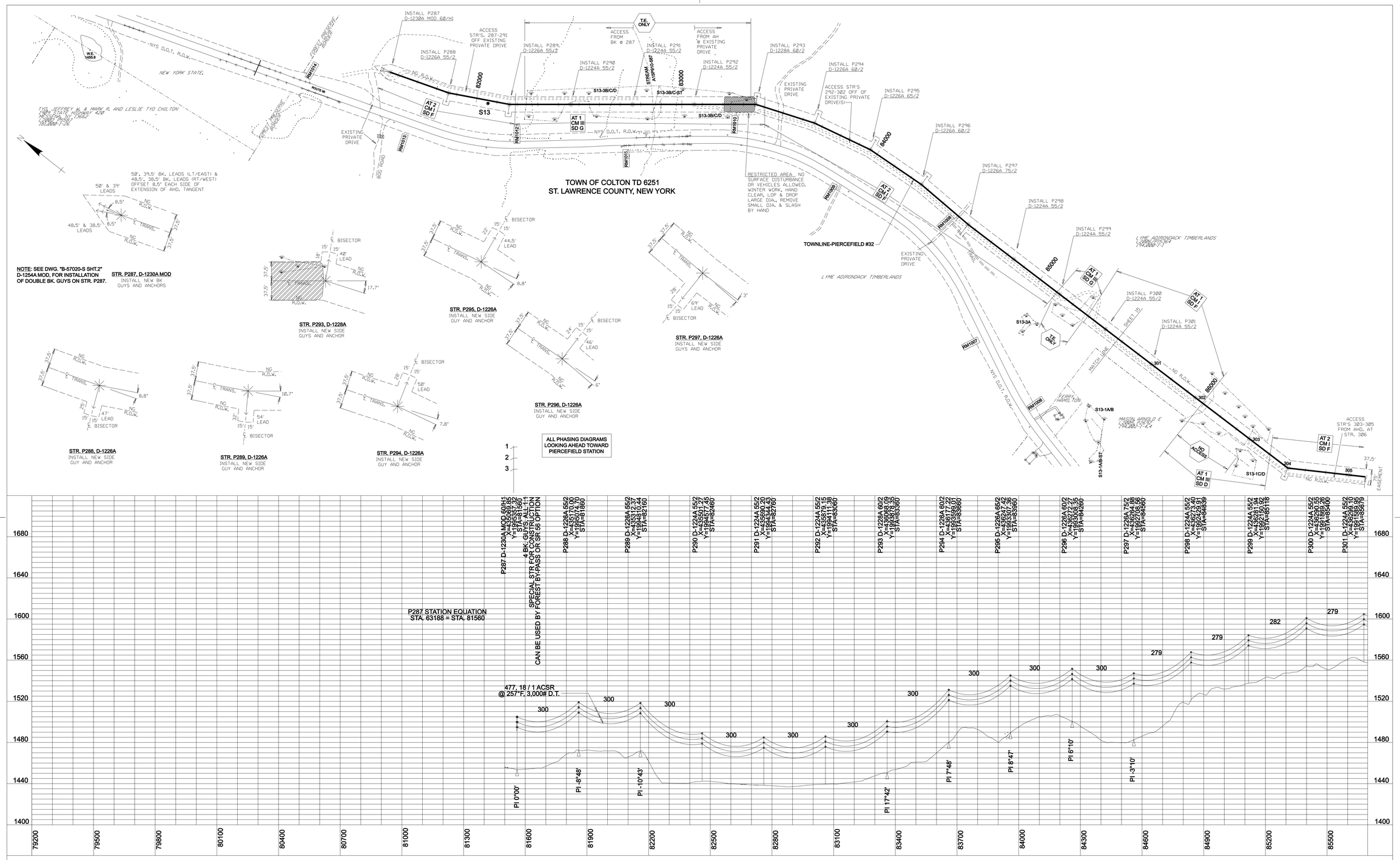
TOWNLINE-PIERCEFIELD #32

NORTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

							DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN
REFERENCE DESCRIPTION	DWG. NO.	1	8/23/07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI	APP.	APP.	INDEX 8.2-T14-M5
ACCT. NO.		NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.	APP.	APP.	NO. C-57022-C



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

SOUTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

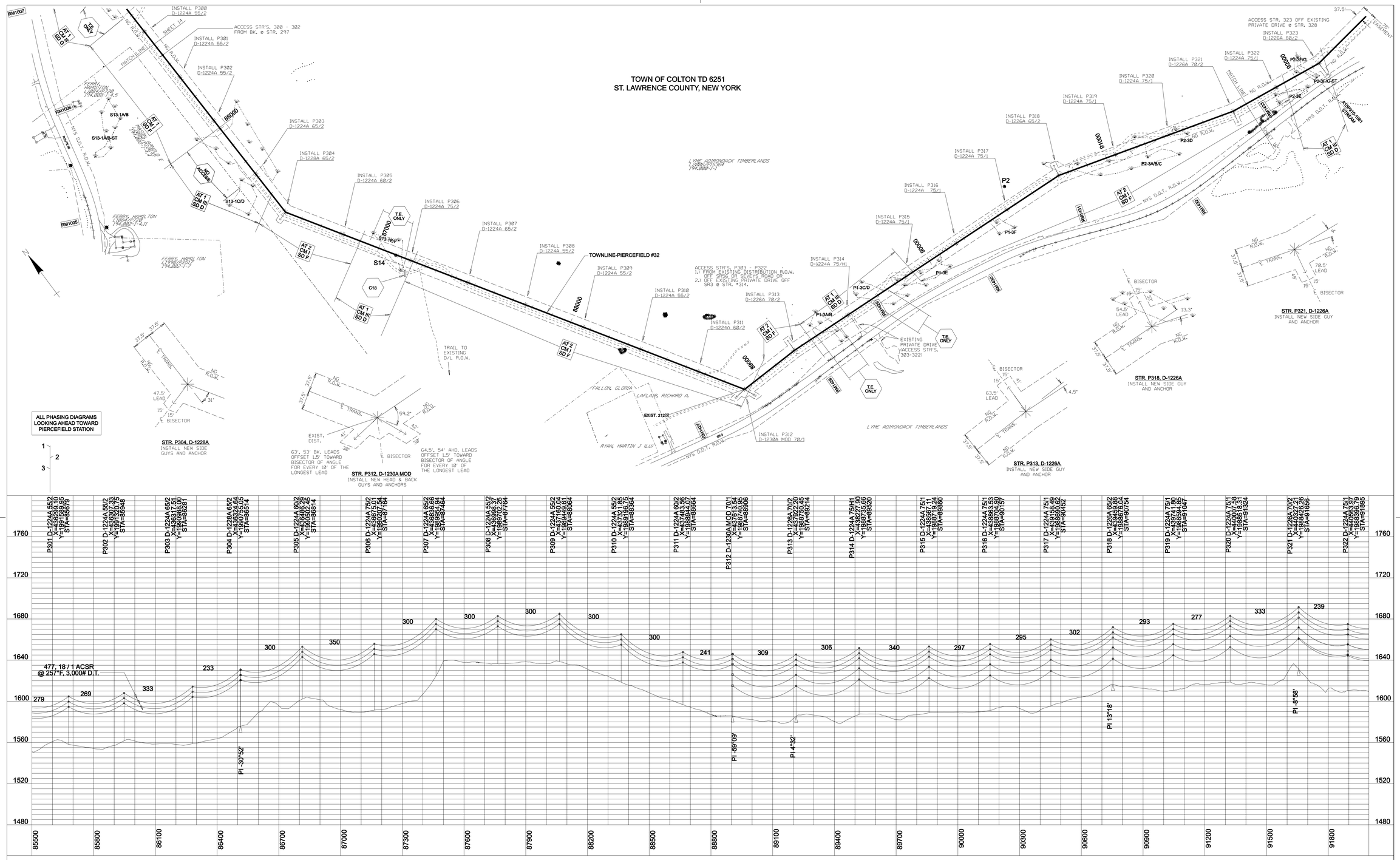
DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN			
APP.		APP.		INDEX 8.2-T14-M5			
APP.		APP.		NO. C-57022-C			

REFERENCE DESCRIPTION	DWG. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
		1	12-14-07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

ACCT. NO.

STATE OF NEW YORK · RICHARD N. COLLINS · 081663 · LICENSED PROFESSIONAL ENGINEER

12-14-07



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

SOUTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN
APP.		APP.		INDEX 8.2-T14-M5
APP.		APP.		NO. C-57022-C

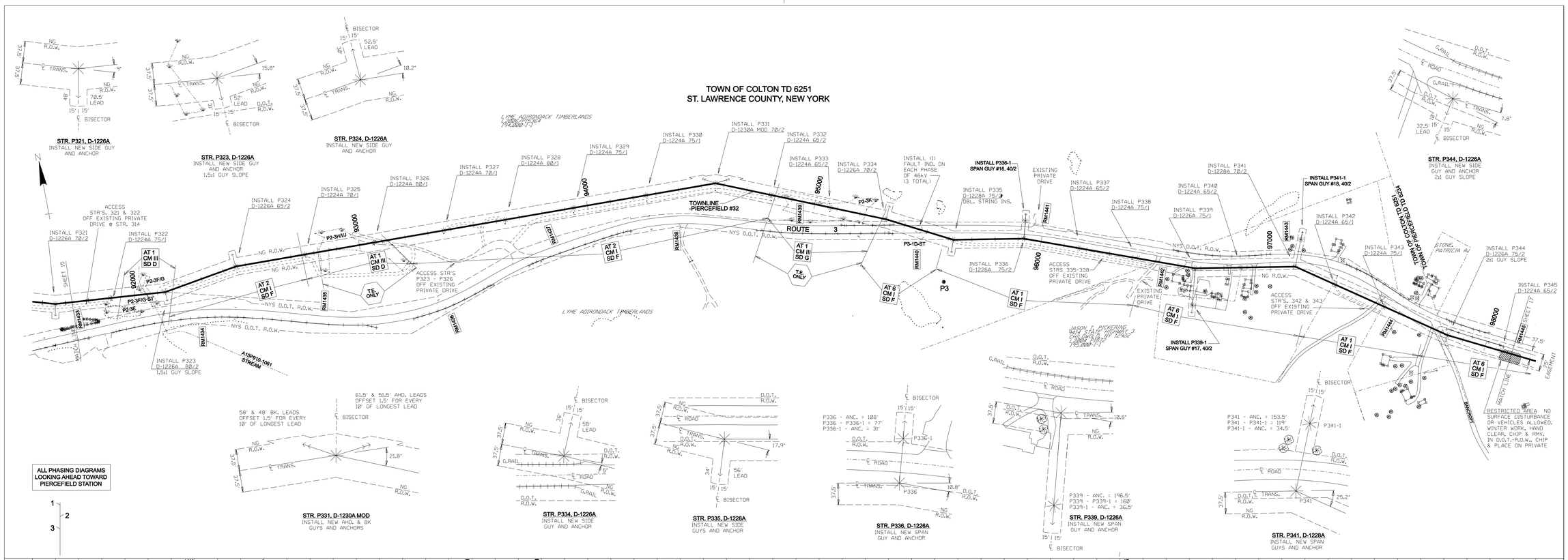
STATE OF NEW YORK · RICHARD N. COLLINS · 066163 · LICENSED PROFESSIONAL ENGINEER

12-14-07

REFERENCE DESCRIPTION	DWG. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
		1	12-14-07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

ACCT. NO.

TOWN OF COLTON TD 6251
ST. LAWRENCE COUNTY, NEW YORK



STATE OF NEW YORK · RICHARD N. COLLINS · 081163 · LICENSED PROFESSIONAL ENGINEER

12-14-07

CIR. #32 Z50811075

PREPARED BY **nationalgrid**

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

SOUTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI | DR. CAI | CK. | DATE 6/22/07 | SCALE AS SHOWN

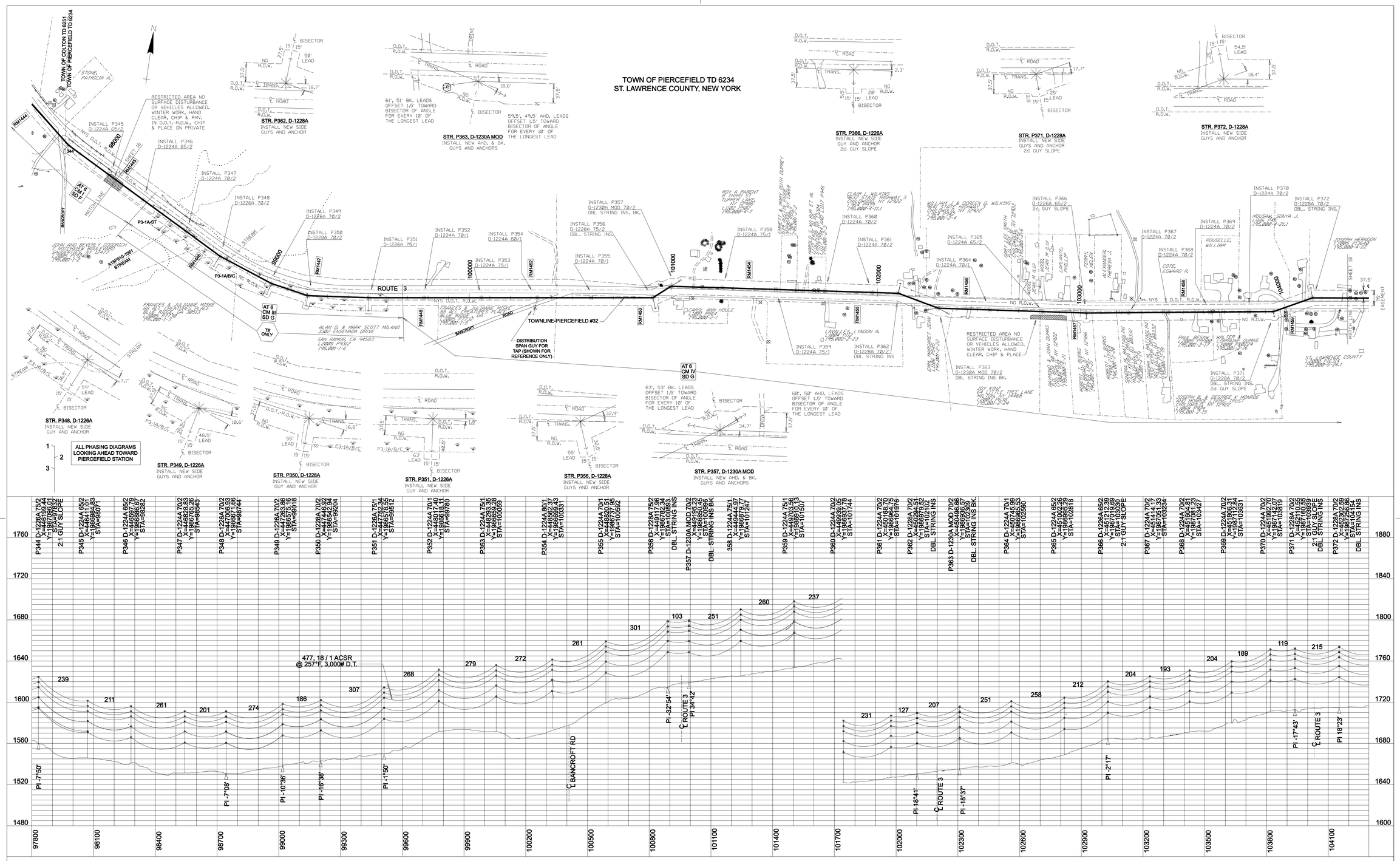
APP. | APP. | INDEX 8.2-T14-M5

APP. | APP. | NO. C-57022-C

NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
1	12-14-07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

REFERENCE DESCRIPTION | DWG. NO.

ACCT. NO.



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

SOUTHERN SEGMENT

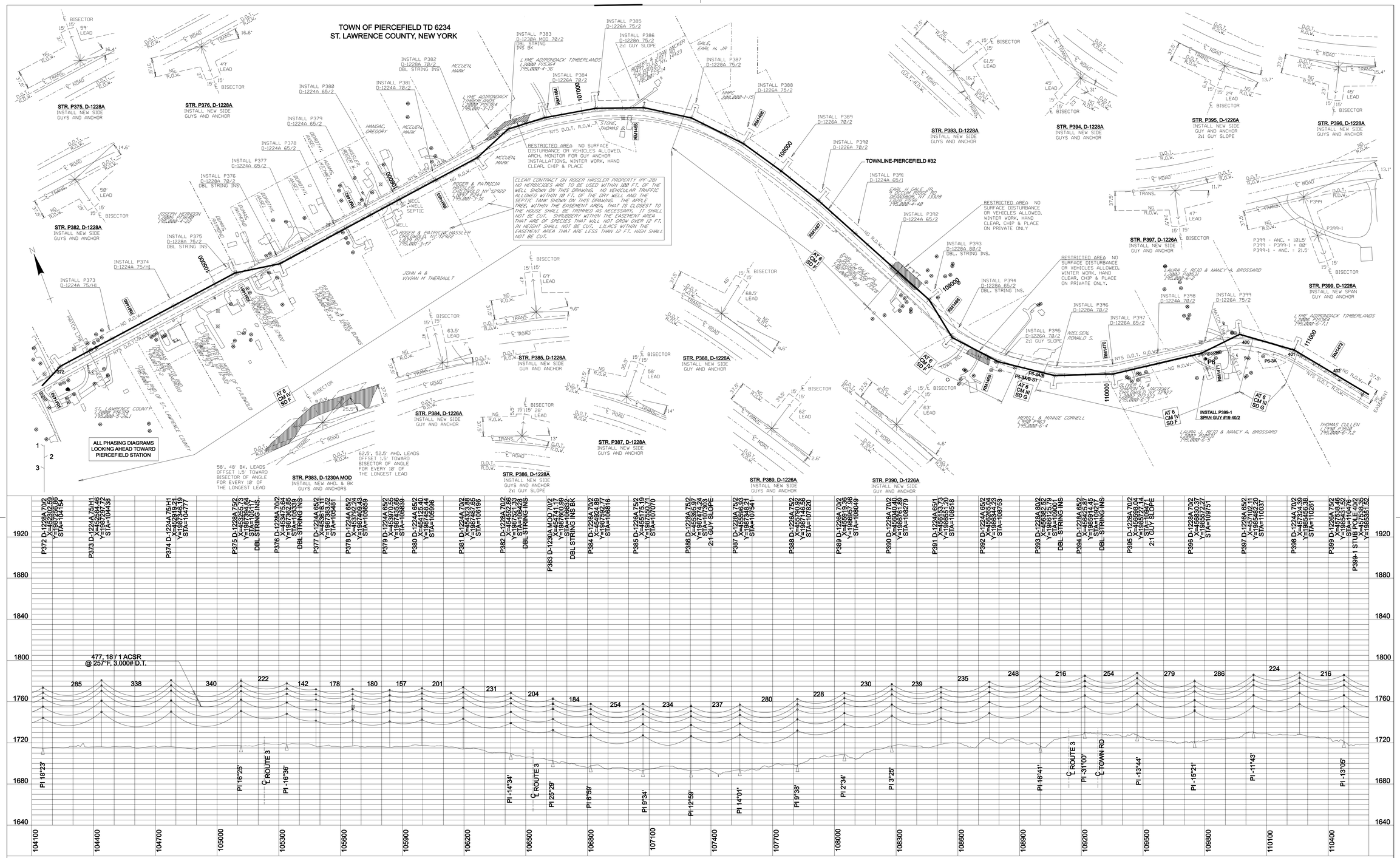
PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

								DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN
REFERENCE DESCRIPTION	DWG. NO.	1	12-14-07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI	APP.		APP.	INDEX 8.2-T14-M5
ACCT. NO.		NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.	APP.		APP.	NO. C-57022-C

STATE OF NEW YORK · RICHARD N. COLLINS · 080165 · LICENSED PROFESSIONAL ENGINEER

12-14-07



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

SOUTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE	AS SHOWN
APP.		APP.		INDEX	8.2-T14-M5
APP.		APP.		NO.	C-57022-C

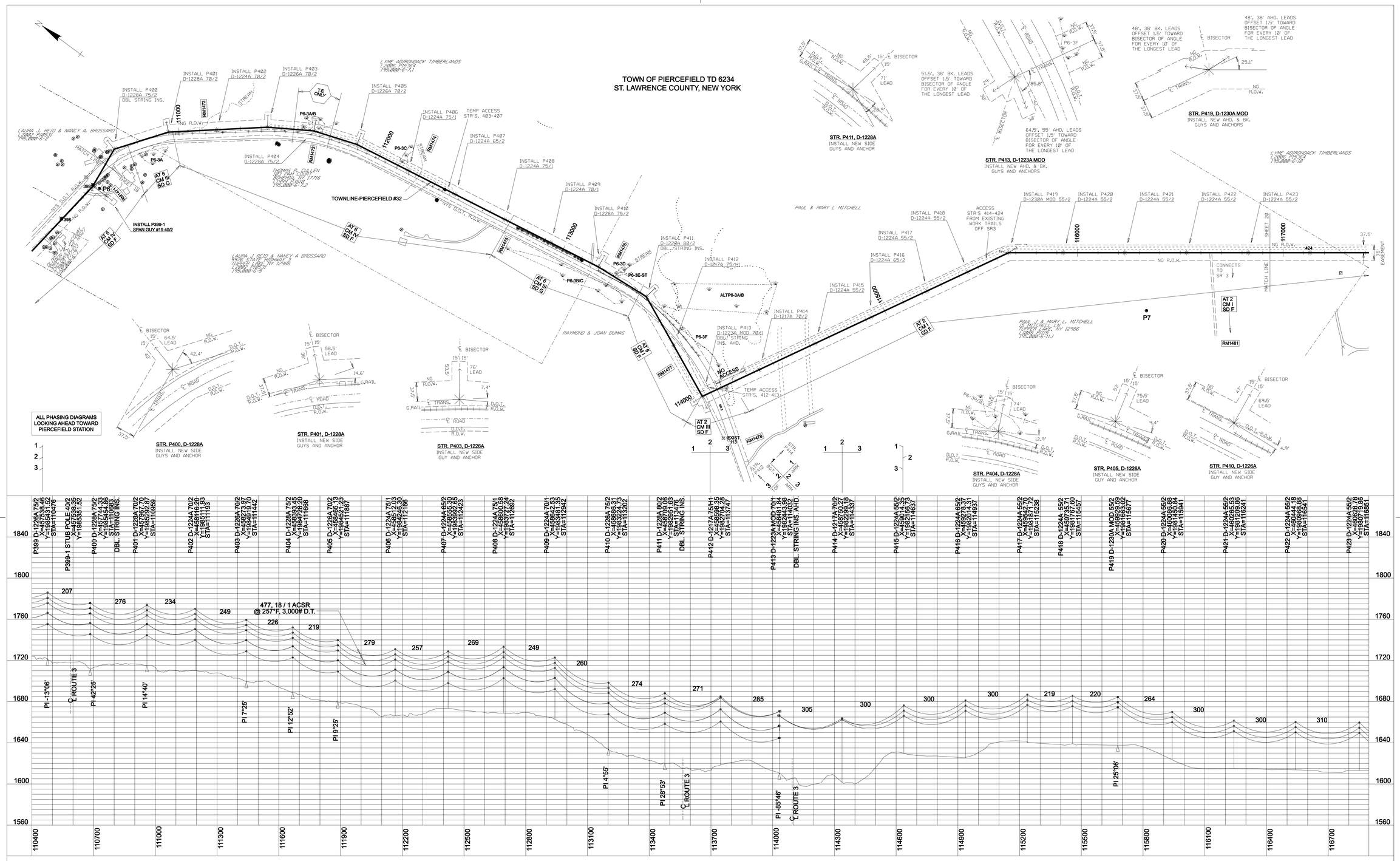
NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
1	12-14-07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

REFERENCE DESCRIPTION | DWG. NO.

ACCT. NO.

STATE OF NEW YORK · RICHARD N. COLLINS · 088163 · LICENSED PROFESSIONAL ENGINEER

12-14-07



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

SOUTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

REFERENCE DESCRIPTION	DWG. NO.	1	12-14-07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI		
ACCT. NO.		NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.		

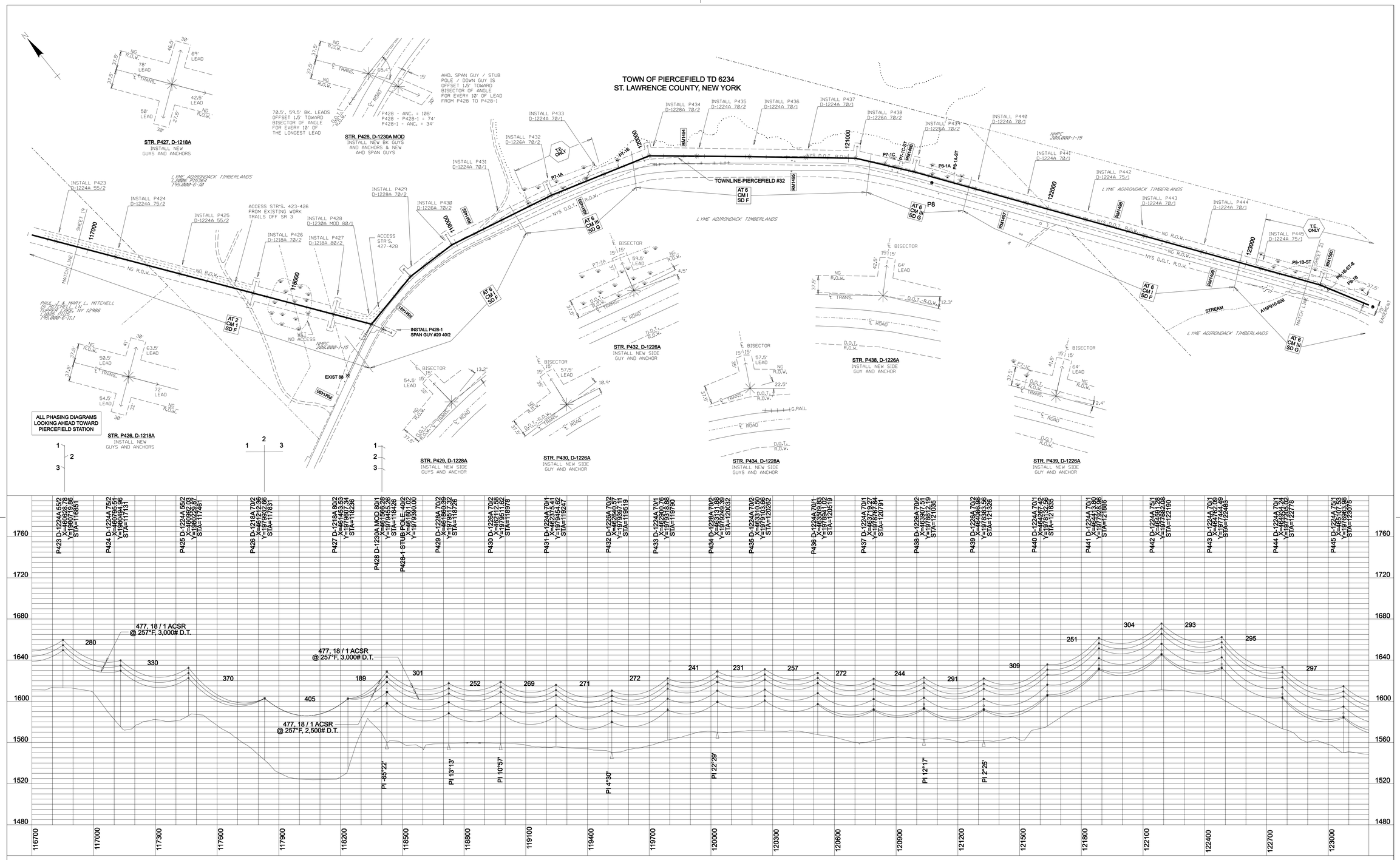
DES. CAI DR. CAI CK. DATE 6/22/07 SCALE AS SHOWN

APP. APP. INDEX 8.2-T14-M5

APP. APP. NO. C-57022-C

STATE OF NEW YORK · RICHARD N. COLLINS · 060163 · LICENSED PROFESSIONAL ENGINEER

12-14-07



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

SOUTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN							
APP.		APP.		INDEX 8.2-T14-M5							
APP.		APP.		NO. C-57022-C							

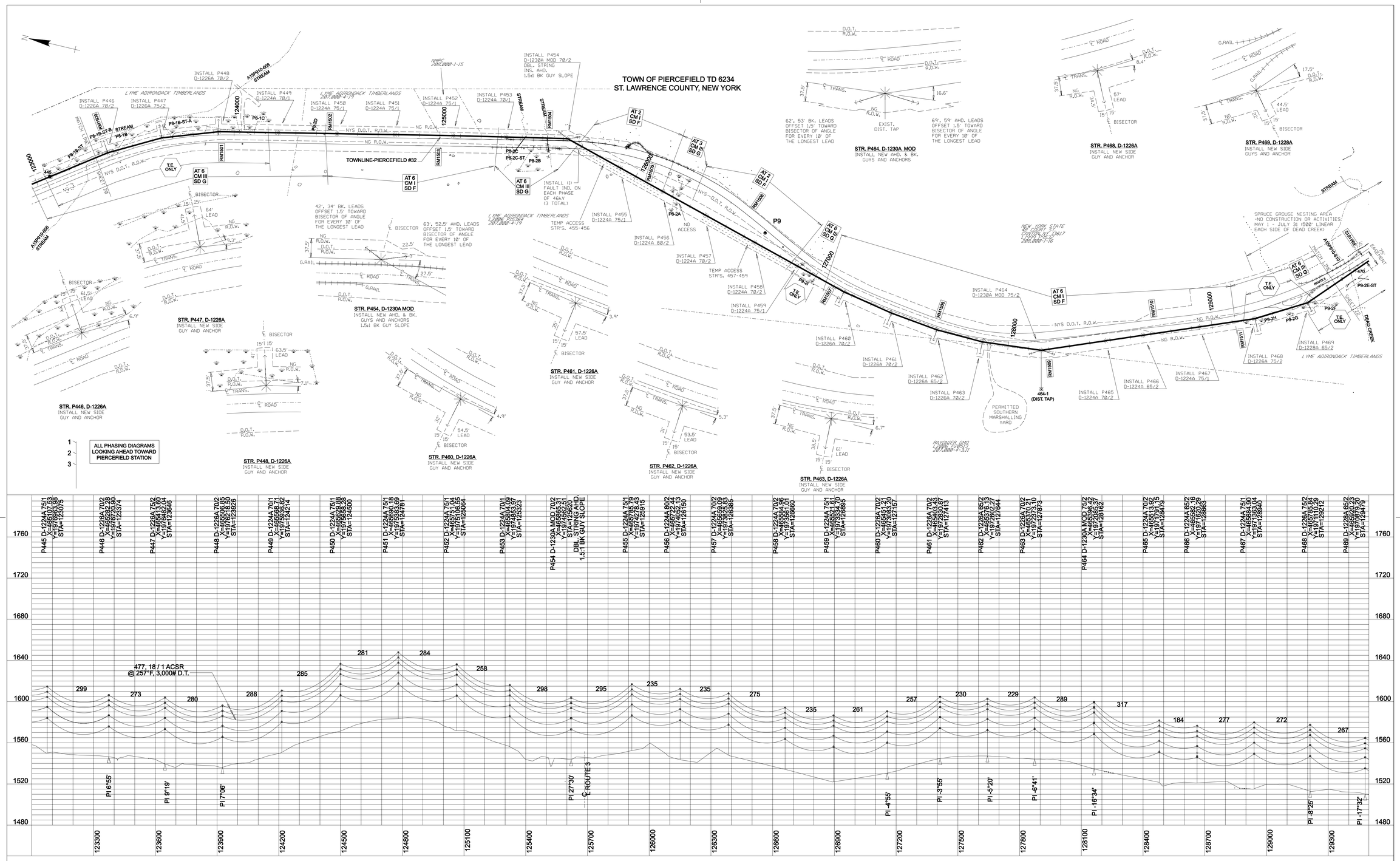
REFERENCE DESCRIPTION	DWG. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
		1	12-14-07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

ACCT. NO.

STATE OF NEW YORK · RICHARD N. COLLINS · 066163 · LICENSED PROFESSIONAL ENGINEER

12-19-07

SHT. 20 OF 26



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

SOUTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE	AS SHOWN
APP.		APP.		INDEX	8.2-T14-M5
APP.		APP.		NO.	C-57022-C

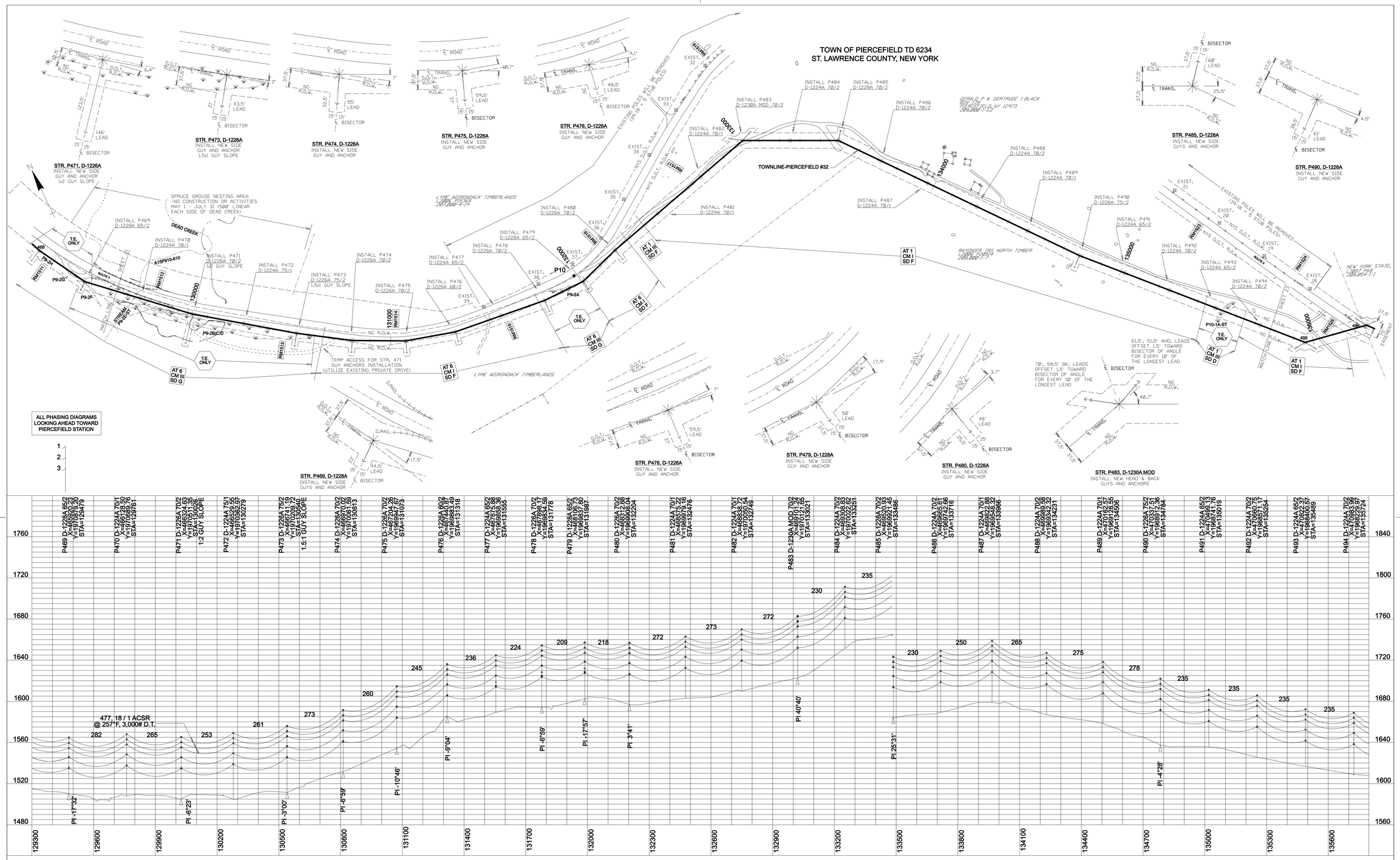
NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
1	12-14-07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

REFERENCE DESCRIPTION | DWG. NO.

ACCT. NO.

STATE OF NEW YORK · RICHARD N. COLLINS · 081163 · LICENSED PROFESSIONAL ENGINEER

12-14-07



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

SOUTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

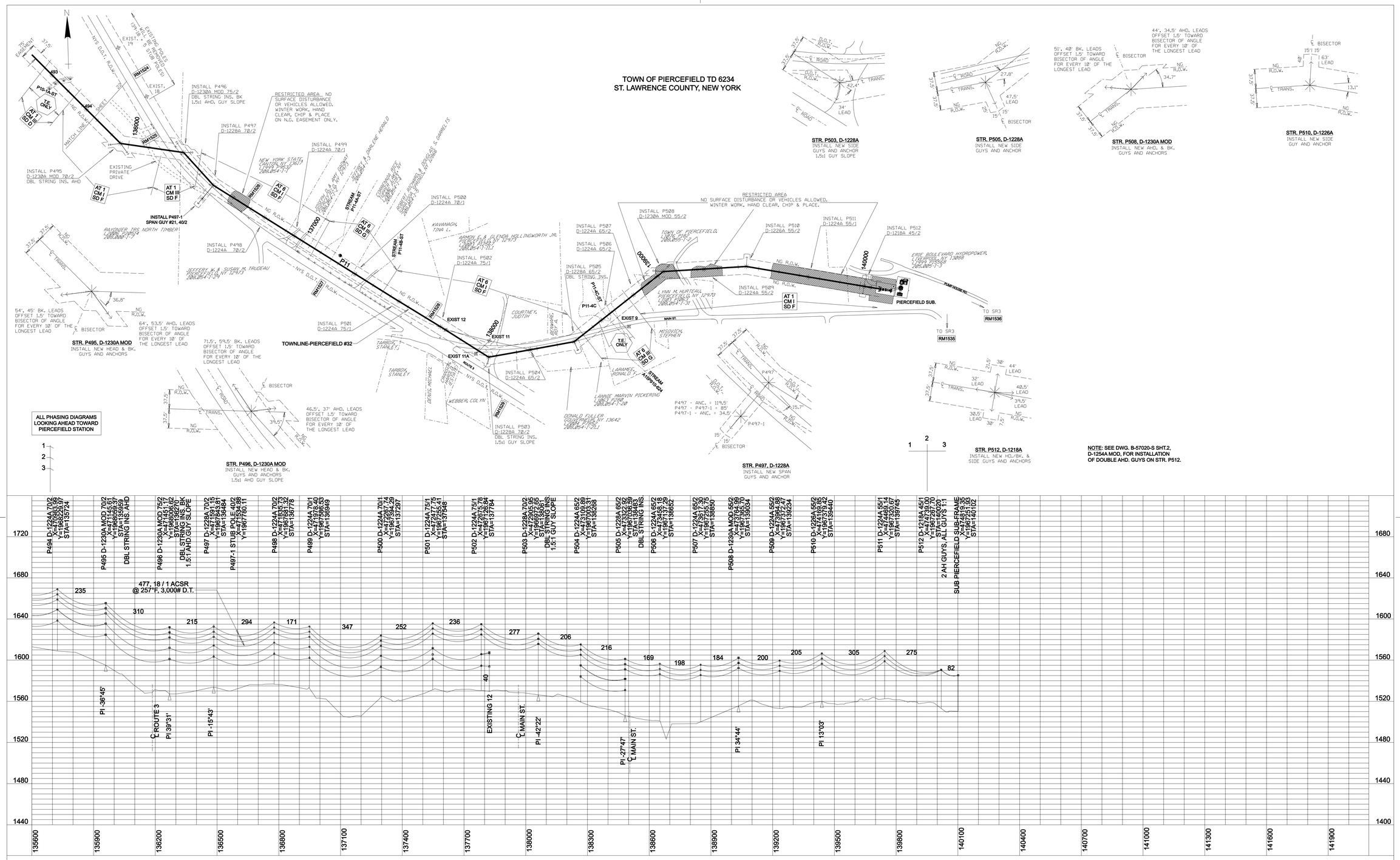
DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE	AS SHOWN
APP.		APP.		INDEX	8.2-T14-M5
APP.		APP.		NO.	C-57022-C

REFERENCE DESCRIPTION	DWG. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
		1	12-14-07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

ACCT. NO.

STATE OF NEW YORK · RICHARD N. COLLINS · 081163 · LICENSED PROFESSIONAL ENGINEER

12-14-07



CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

SOUTHERN SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI DR. CAI CK. DATE 6/22/07 SCALE AS SHOWN

APP. APP. INDEX 8.2-T14-M5

APP. APP. NO. C-57022-C

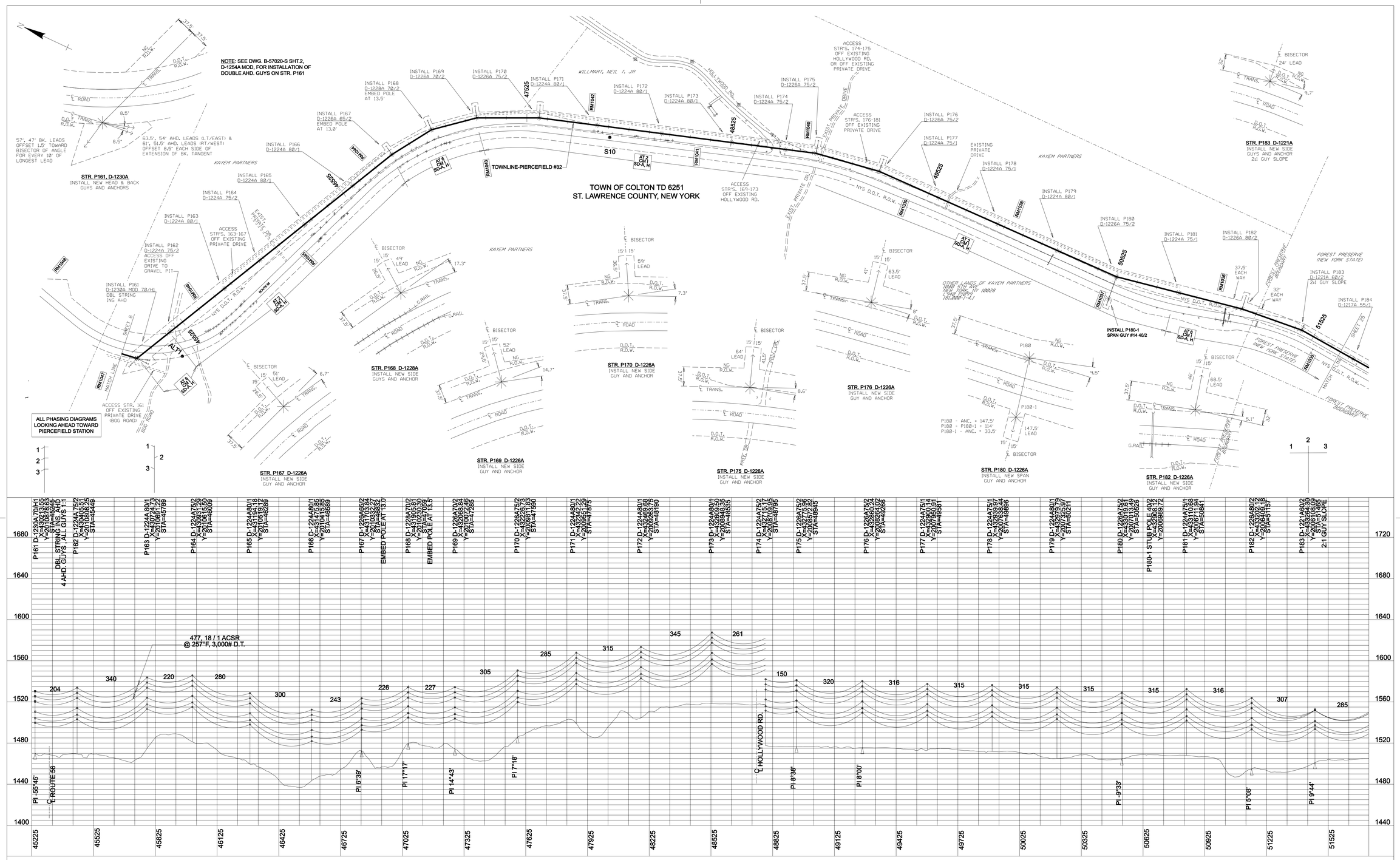
NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
1	12-14-07	CAI	ISSUED FOR CONSTRUCTION.	CAI	CAI

REFERENCE DESCRIPTION DWG. NO.

ACCT. NO.

STATE OF NEW YORK · RICHARD N. COLLINS · 066163 · LICENSED PROFESSIONAL ENGINEER

12-14-07



PRELIMINARY
NOT FOR CONSTRUCTION

REFERENCE DESCRIPTION	DWG. NO.
ACCT. NO.	

NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.

CIR. #32 Z50811075

PREPARED BY

nationalgrid

TRANSMISSION MAP

TOWNLINE-PIERCEFIELD #32

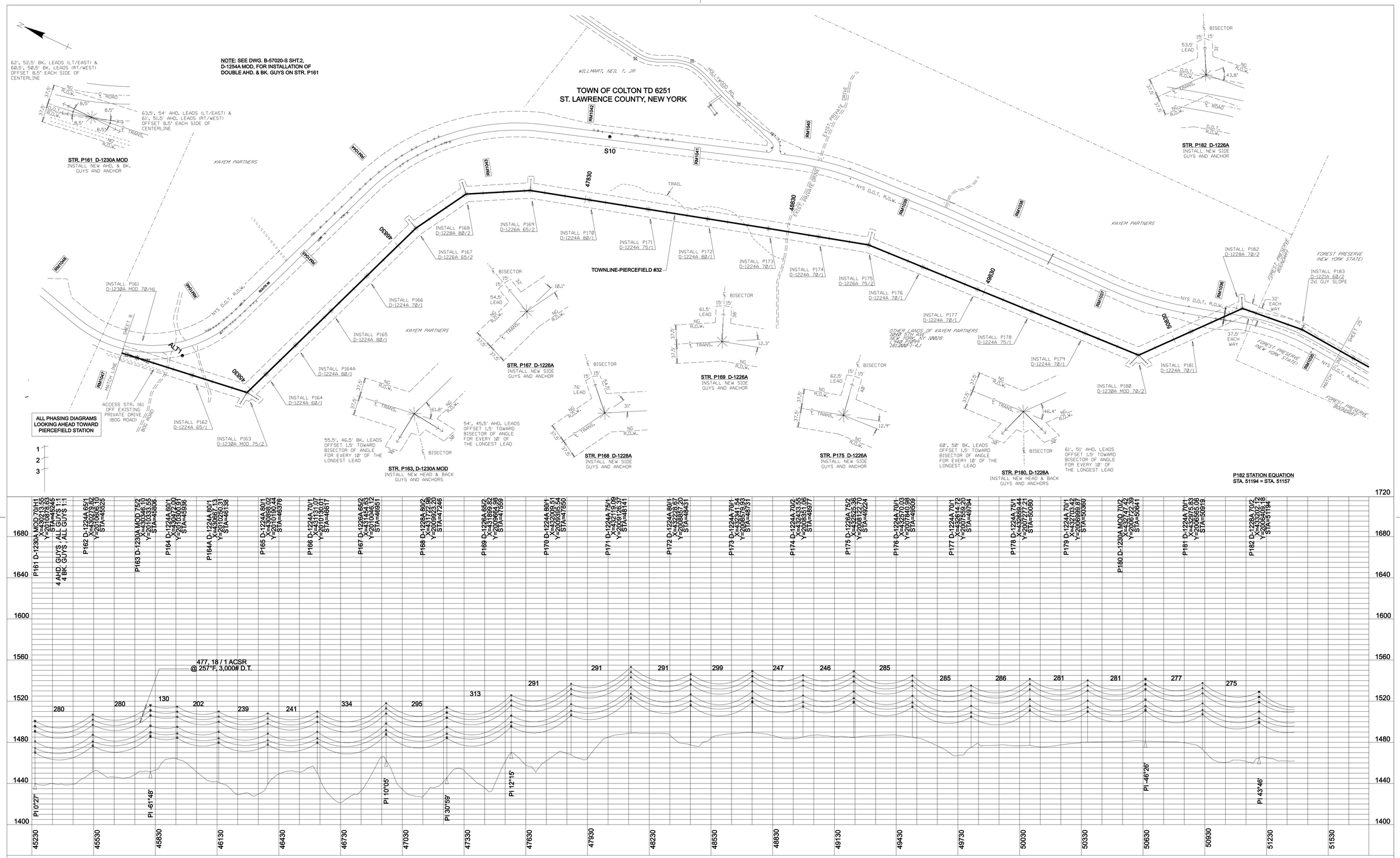
SR 56 OPTION SEGMENT

PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN
APP.		APP.		INDEX 8.2-T14-M5
APP.		APP.		NO. C-57022-C

SHT. 24 OF 26



PRELIMINARY
NOT FOR CONSTRUCTION

CIR. #32 Z50811075

PREPARED BY
nationalgrid

TRANSMISSION MAP
TOWNLINE-PIERCEFIELD #32
SR 56 OPTION SEGMENT
PLAN & PROFILE SHEET

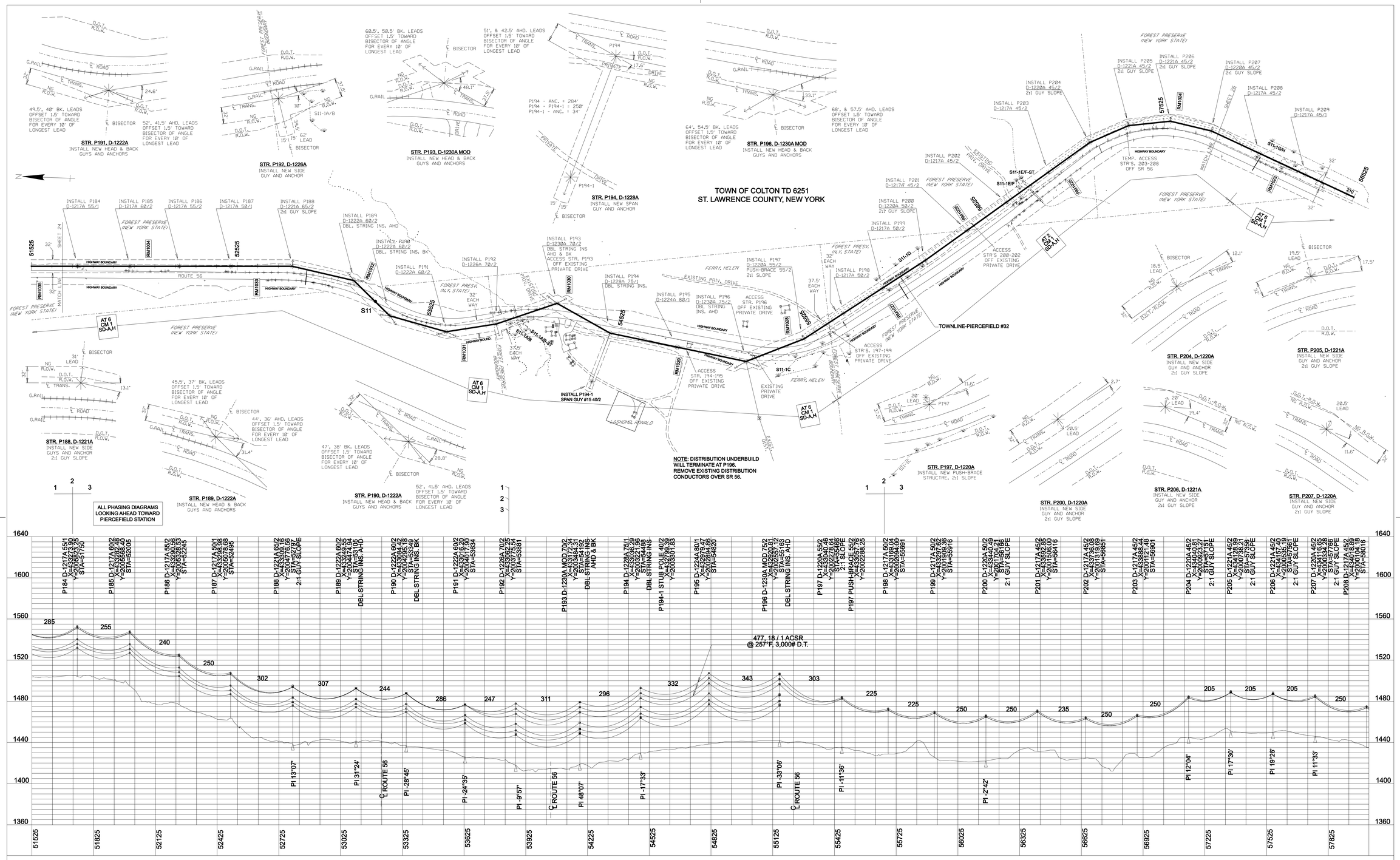
46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07	SCALE AS SHOWN	
APP.		APP.		INDEX 8.2-T14-M5	
APP.		APP.		NO. C-57022-C	

REFERENCE DESCRIPTION	DWG. NO.

ACCT. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.

SHT. 24ALT OF 26



PRELIMINARY
NOT FOR CONSTRUCTION

CIR. #32 Z50811075

PREPARED BY
nationalgrid

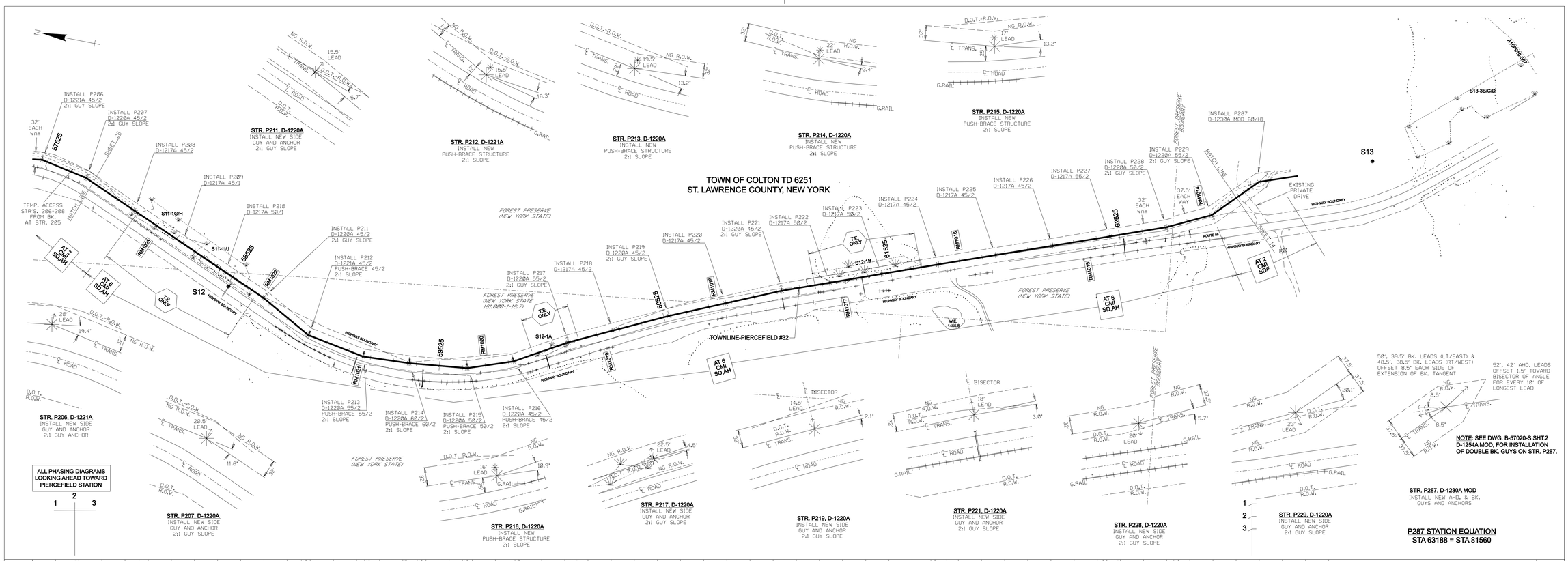
TRANSMISSION MAP
TOWNLINE-PIERCEFIELD #32
SR 56 OPTION SEGMENT
PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI	DR. CAI	CK.	DATE 6/22/07
SCALE AS SHOWN			
APP.		APP.	INDEX 8.2-T14-M5
APP.		APP.	NO. C-57022-C

REFERENCE DESCRIPTION	DWG. NO.
ACCT. NO.	

NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.



PRELIMINARY
NOT FOR CONSTRUCTION

REFERENCE DESCRIPTION	DWG. NO.	NO.	DATE	BY	DESCRIPTION OF REVISION	CK.	APP.
ACCT. NO.							

CIR. #32 Z50811075

PREPARED BY
nationalgrid

TRANSMISSION MAP
TOWNLINE-PIERCEFIELD #32
SR 56 OPTION SEGMENT
PLAN & PROFILE SHEET

46kV-3Φ-60~ SINGLE CIRCUIT

DES. CAI DR. CAI CK. DATE 6/22/07 SCALE AS SHOWN
APP. APP. INDEX 8.2-T14-M5
APP. APP. NO. C-57022-C

SHT. 26 OF 26