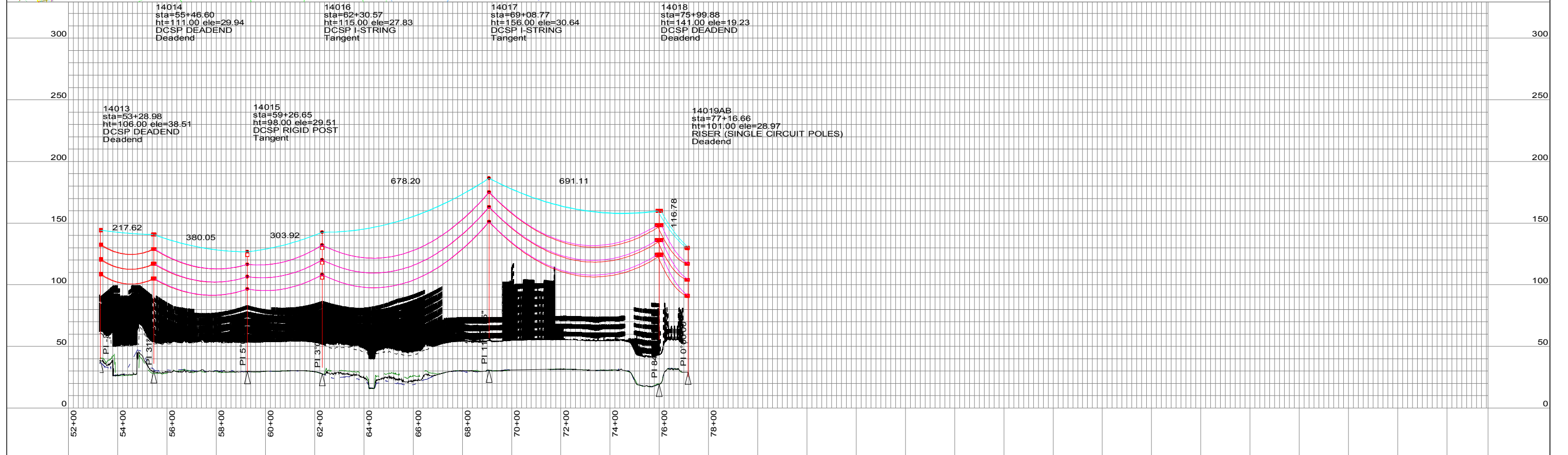


PRELIMINARY - NOT ISSUED FOR CONSTRUCTION



EVERSOURCE ENERGY

TITLE GREENWICH - COS COB 115-kV TRANSMISSION LINE PLAN & PROFILE DRAWING GREENWICH, CT			
BY CPS	CHKD	APP	APP
DATE 4/12/2016	DATE	DATE	DATE
H-SCALE 1"=400'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1"=80'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER		DWG NO. 01242-10001p001	



14014 sta=55+46.60 ht=111.00 ele=29.94 DCSP DEADEND Deadend	14016 sta=62+30.57 ht=115.00 ele=27.83 DCSP I-STRING Tangent	14017 sta=69+08.77 ht=156.00 ele=30.64 DCSP I-STRING Tangent	14018 sta=75+99.88 ht=141.00 ele=19.23 DCSP DEADEND Deadend
---	--	--	---

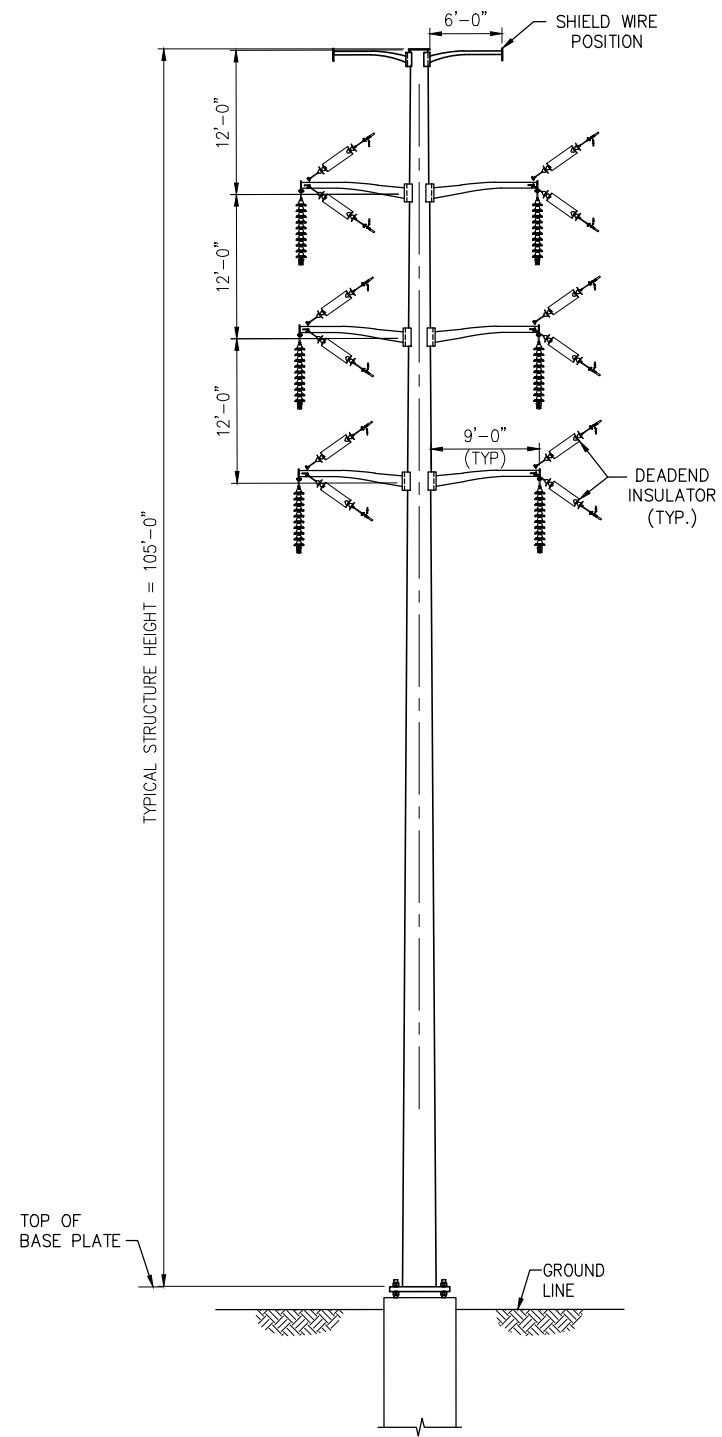
14013 sta=53+28.98 ht=106.00 ele=38.51 DCSP DEADEND Deadend	14015 sta=59+26.65 ht=98.00 ele=29.51 DCSP RIGID POST Tangent	14019AB sta=77+16.66 ht=101.00 ele=28.97 RISER (SINGLE CIRCUIT POLES) Deadend
---	---	---

**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**

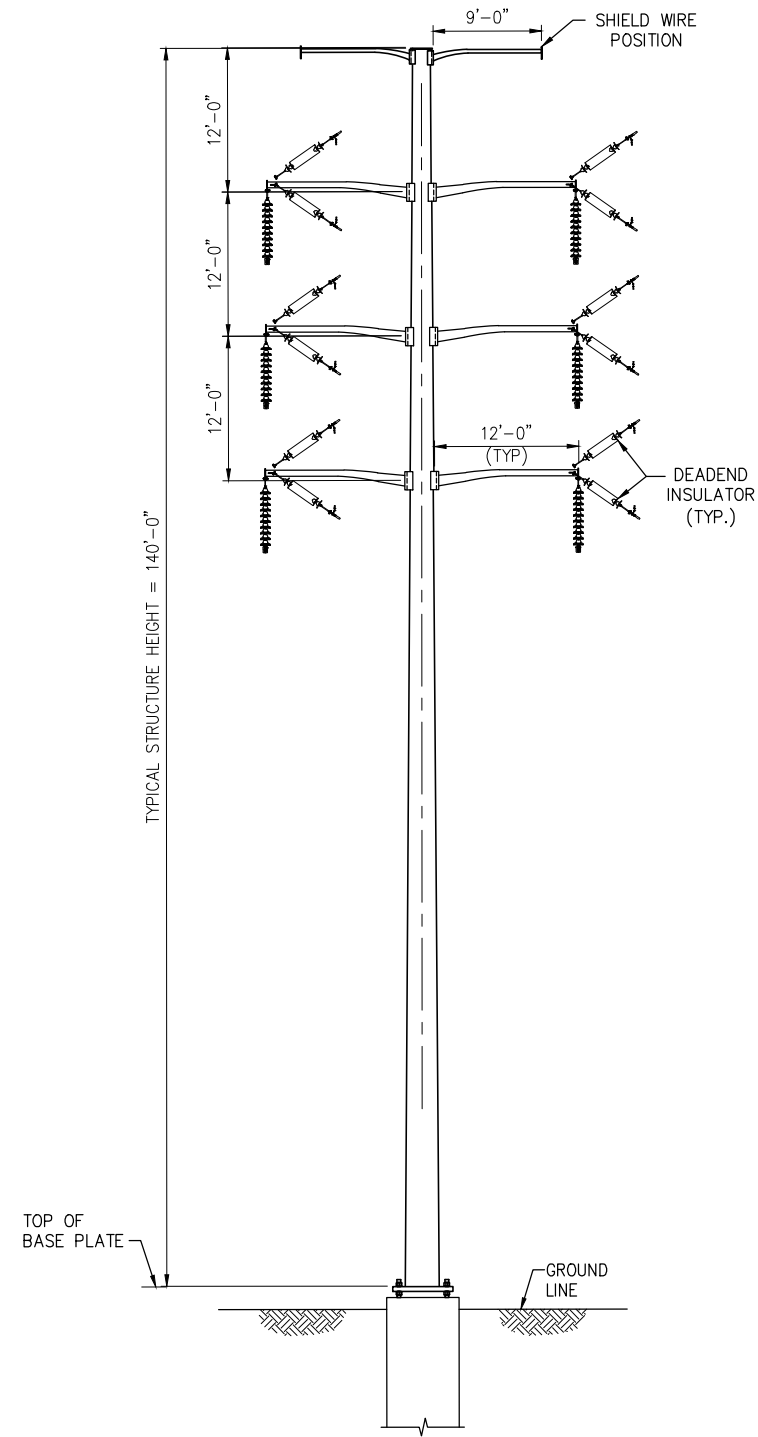


TITLE
**GREENWICH - COS COB
 115-kV TRANSMISSION LINE
 PLAN & PROFILE DRAWING
 GREENWICH, CT**

BY CPS	CHKD	APP	APP
DATE 4/12/2016	DATE	DATE	DATE
H-SCALE 1"=400'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1"=80'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER		DWG NO. 01242-10001p002	



DOUBLE CIRCUIT VERTICAL
STRAIN
(0-45 DEGREES)



DOUBLE CIRCUIT VERTICAL
DEADEND
(60-90 DEGREES)

NOTES:

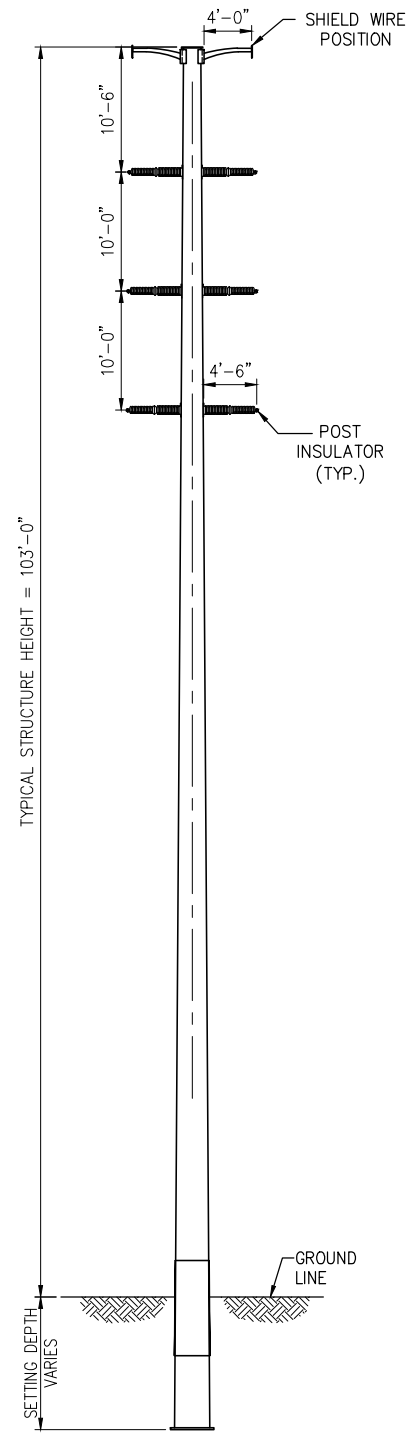
1. STRUCTURES SHOWN DEPICT STEEL POLE CONSTRUCTION.
2. STRUCTURE GROUNDING EQUIPMENT NOT SHOWN.

**EVERSOURCE
ENERGY**

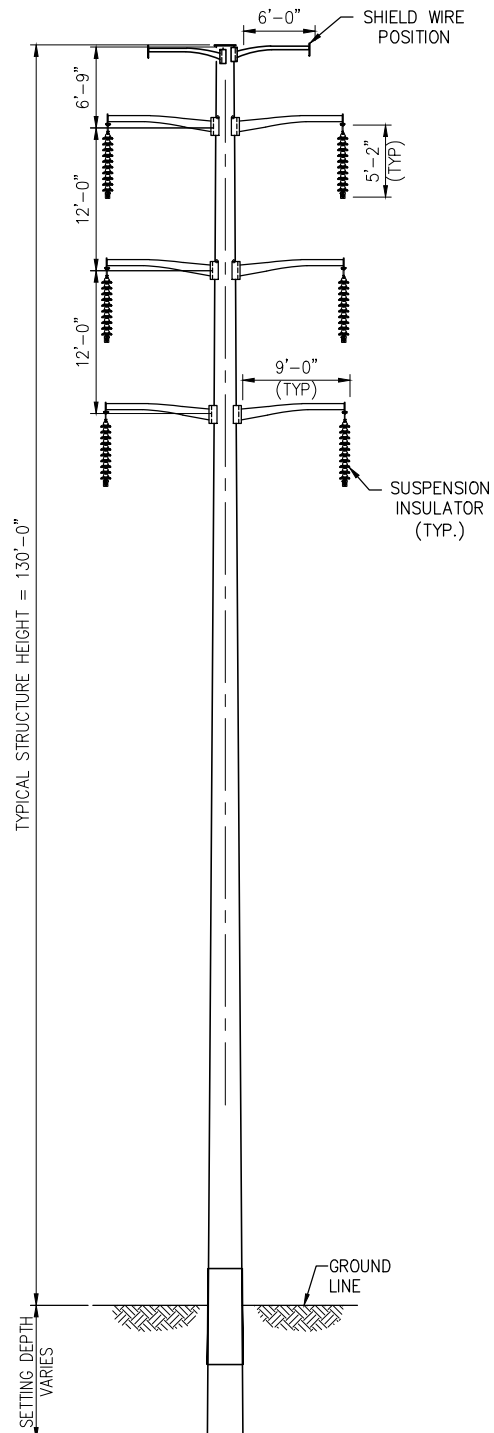
GREENWICH LINE AND SUBSTATION PROJECT
DOUBLE CIRCUIT DEADEND CONFIGURATION
FAMILY OF STRUCTURES

CT				
BY	DWG	APP	APP	APP
BMcD	-	-	-	-
DATE	DATE	DATE	DATE	DATE
01/09/2017	-	-	-	-
H-SCALE	SIE	FIELD BOOK & PAGES		
D	D			
V-SCALE	V.S.	R.E. DWG		
R.E. PROJ. NUMBER	NUSCO			

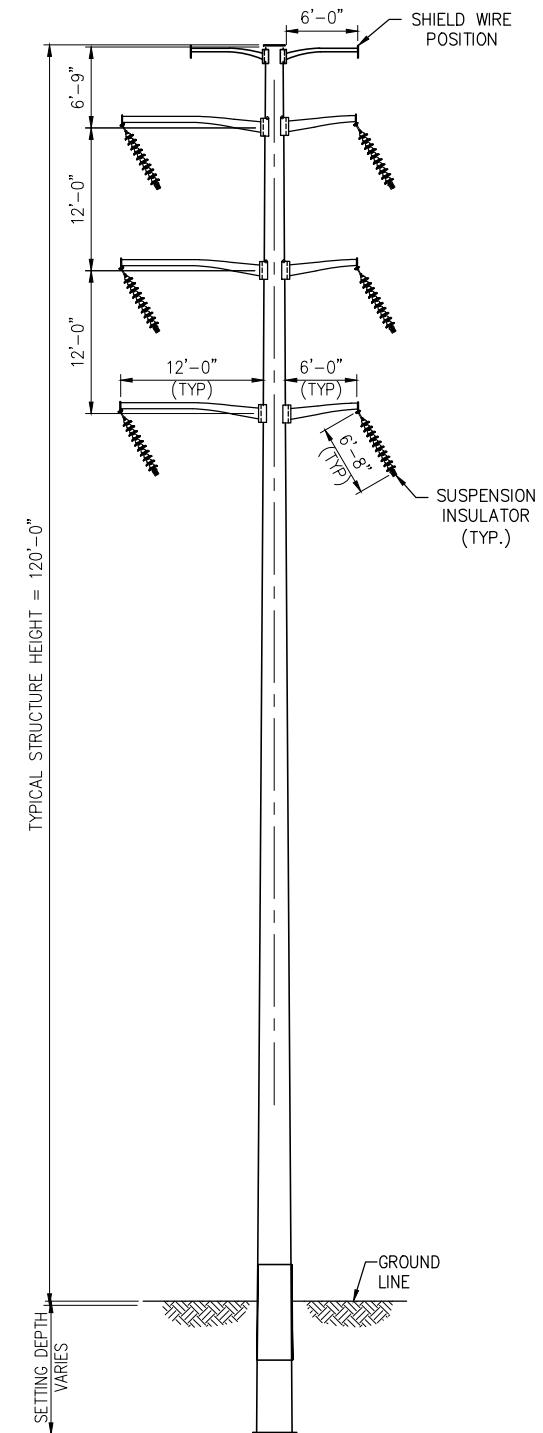
**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**



DOUBLE CIRCUIT VERTICAL
POST INSULATOR TANGENT
(0-5 DEGREES)



DOUBLE CIRCUIT VERTICAL
I-STRING TANGENT
(0-5 DEGREES)



DOUBLE CIRCUIT VERTICAL
I-STRING ANGLE
(5-15 DEGREES)

NOTES:

- STRUCTURES SHOWN DEPICT STEEL POLE CONSTRUCTION.
- DRILLED PIER FOUNDATIONS MAY BE UTILIZED FOR SUSPENSION STRUCTURES.
- STRUCTURE GROUNDING EQUIPMENT NOT SHOWN.

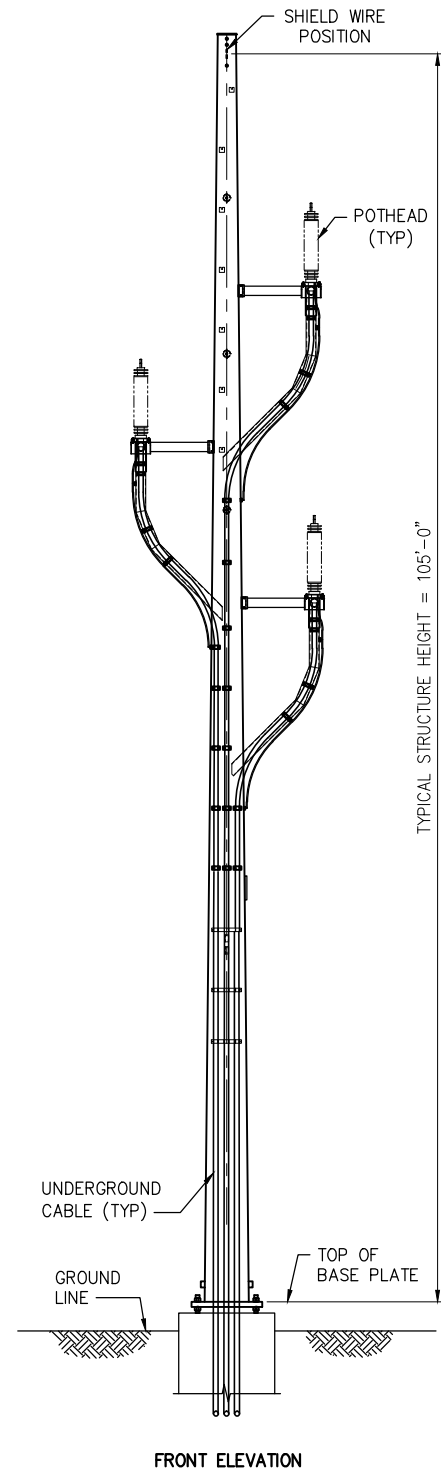
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FOR CONSTRUCTION**

**EVERSOURCE
ENERGY**

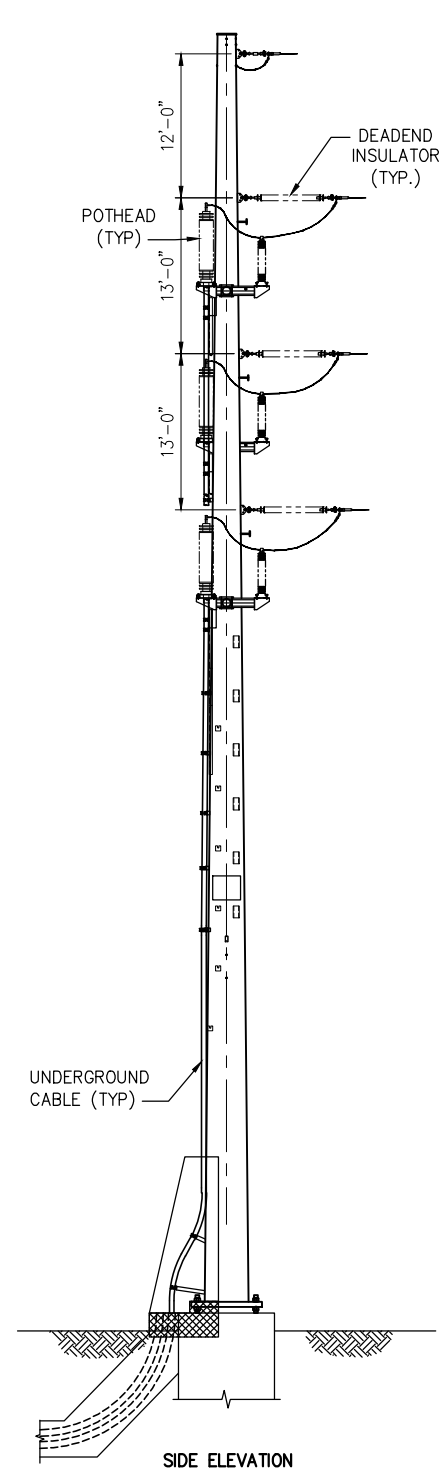
GREENWICH LINE AND SUBSTATION PROJECT
DOUBLE CIRCUIT SUSPENSION CONFIGURATION
FAMILY OF STRUCTURES

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DATE	DATE	DATE	DATE	DATE
01/09/2017	-	-	-	-
H-SCALE	SIE	FIELD BOOK & PAGES		
D	D			
V-SCALE	V.S.	R.E. DWG		
R.E. PROJ. NUMBER	NUSCO	SHEET 2 OF 3		

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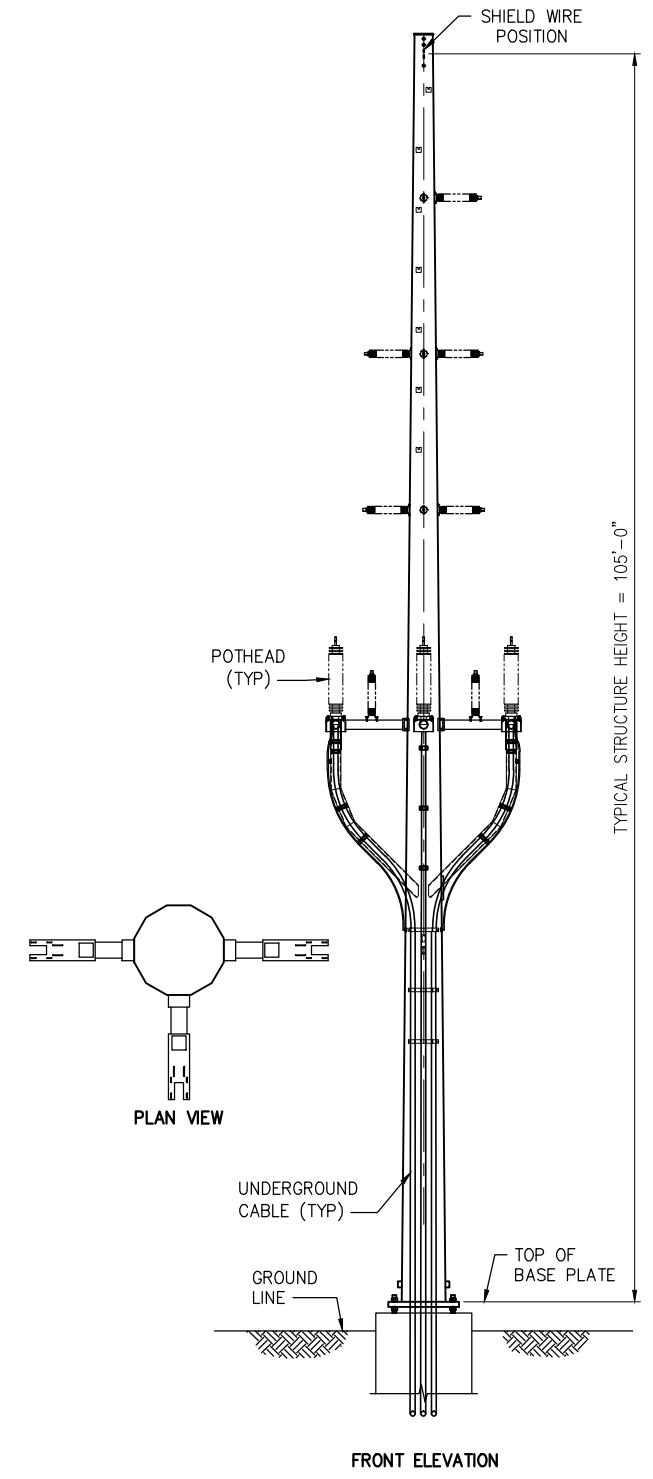


FRONT ELEVATION



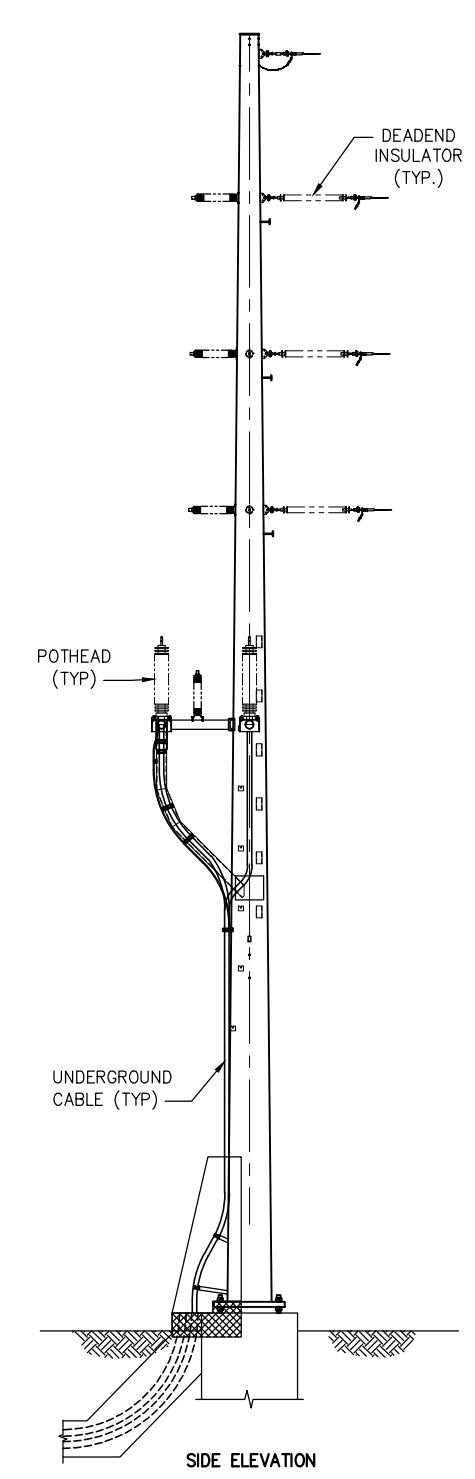
SIDE ELEVATION

VERTICAL CONDUCTOR AND DELTA RISER CONFIGURATION DEADEND (0-10 DEGREES)



PLAN VIEW

FRONT ELEVATION



SIDE ELEVATION

VERTICAL CONDUCTOR AND UNDERBUILD RISER CONFIGURATION DEADEND (0-10 DEGREES)

- NOTES:
- STRUCTURES SHOWN DEPICT STEEL POLE CONSTRUCTION.
 - STRUCTURE GROUNDING EQUIPMENT NOT SHOWN.

PRELIMINARY - NOT ISSUED FOR CONSTRUCTION

EVERSOURCE ENERGY

GREENWICH LINE AND SUBSTATION PROJECT
SINGLE CIRCUIT TRANSITION STRUCTURE FAMILY OF STRUCTURES

CT

BY	BMCD	CHKD	-	APP	-	APP	-
DATE	01/09/2017	DATE	-	DATE	-	DATE	-
H-SCALE	D	SHEET	D	FIELD BOOK & PAGES			
V-SCALE	-	V.S.	-	R.E. DWG			
R.E. PROJ. NUMBER				NUSSO			

SHEET 3 OF 3

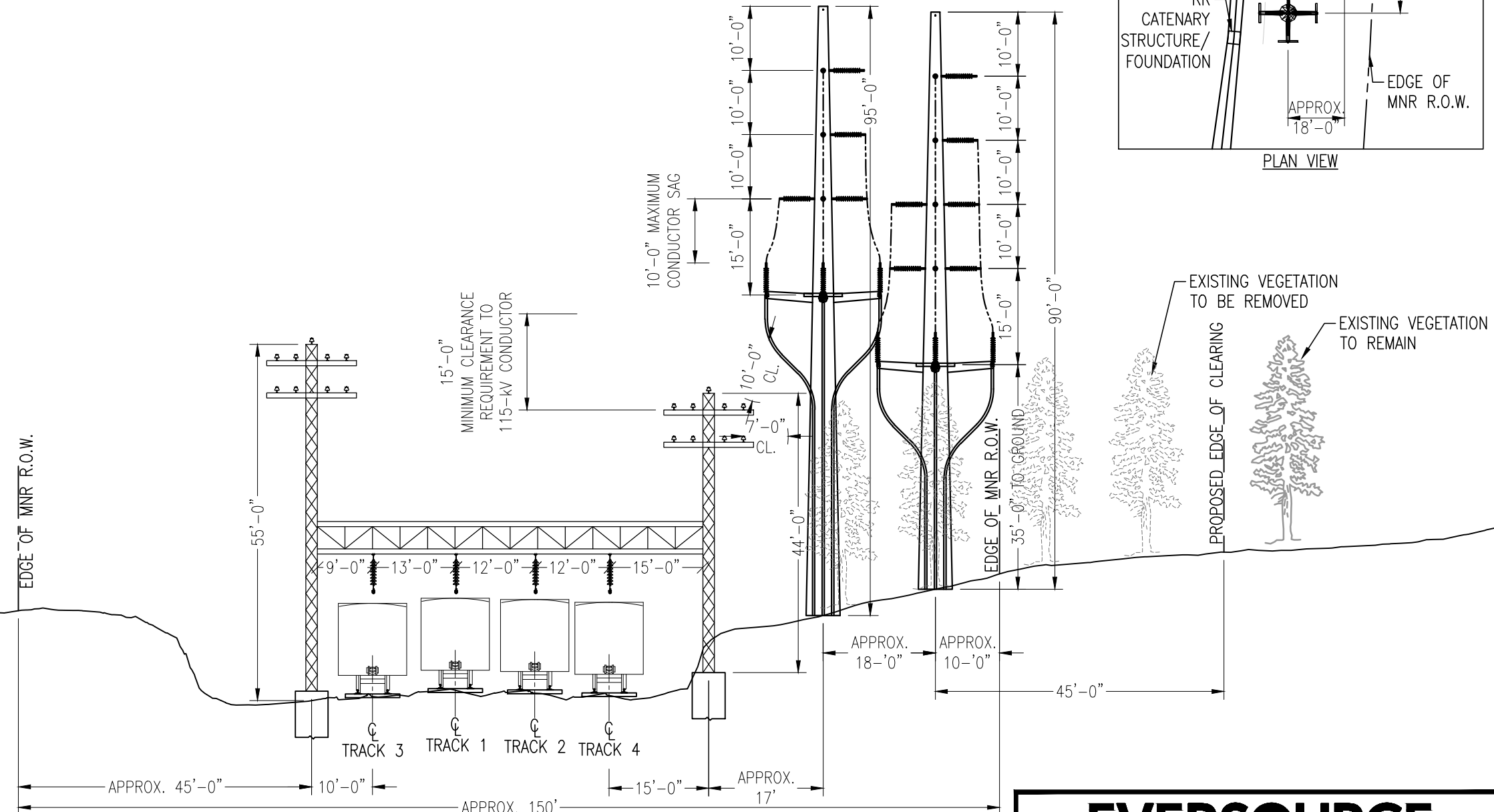
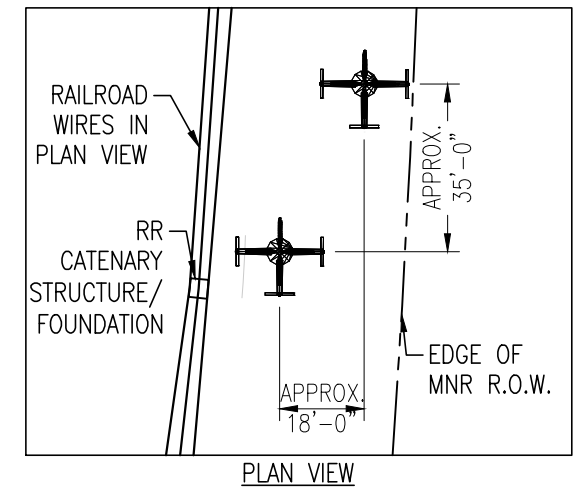
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VERTICAL STEEL POLE DESIGN

LOOKING EAST
CORRIDOR LENGTH
0.05 MILES

STRS. 14000A & 14000B

115-kV LINE 1020/1703
STEEL VERTICAL SINGLE CIRCUIT
TRANSITION STRUCTURE



NOTES:

- 1. DEPICTED STRUCTURE CONFIGURATIONS ARE TRANSITION STRUCTURES. STRUCTURES WILL BE SUPPORTED BY DRILLED SHAFT FOUNDATIONS.
- 2. STRUCTURE HEIGHTS CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO RAILROAD CATENARY WIRES.

PRELIMINARY - NOT ISSUED FOR CONSTRUCTION

EVERSOURCE ENERGY

TITLE GREENWICH LINE AND SUBSTATION PROJECT
LINE 1020/1703 CROSS SECTIONS
DOUBLE CIRCUIT STR. 14000A, 14000B
GREENWICH, CT

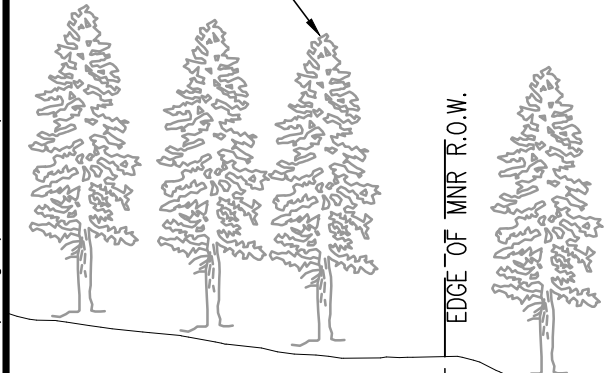
BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 01/24/17	DATE 01/24/17	DATE	DATE
H-SCALE 1" = 20'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO.		XSECT-1

VERTICAL STEEL POLE DESIGN

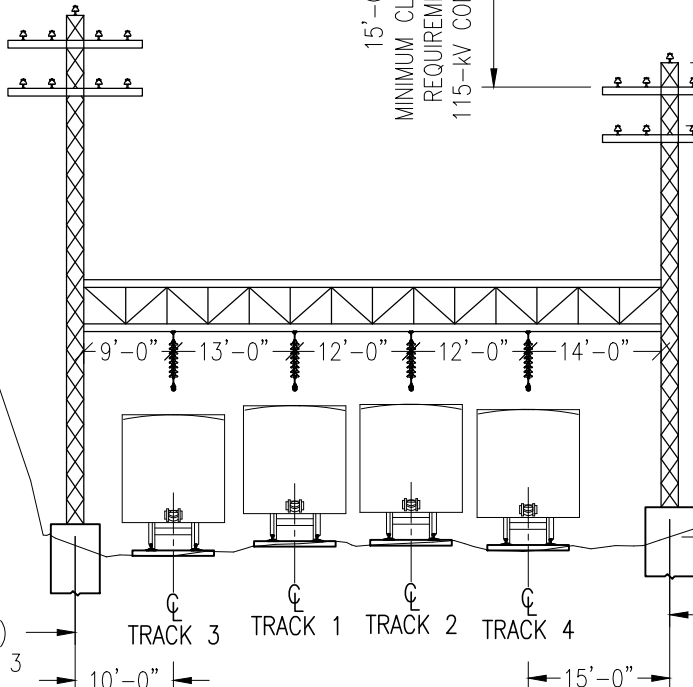
LOOKING EAST
CORRIDOR LENGTH
0.05 MILE

STR. 14001

EXISTING VEGETATION
TO REMAIN



EDGE OF MNR R.O.W.



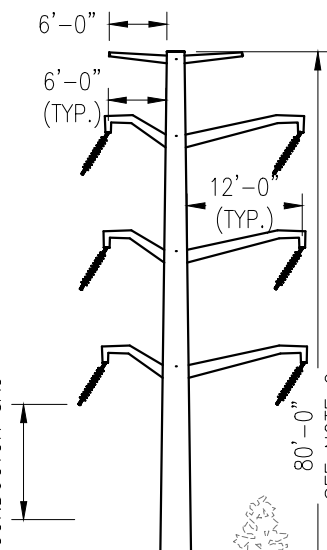
VARIES
(10'-45')
SEE NOTE 3

TRACK 3 TRACK 1 TRACK 2 TRACK 4

VARIES (125' - 150')

APPROX. 25' APPROX. 17'

115-kV LINE 1020/1703
STEEL VERTICAL DOUBLE
CIRCUIT TANGENT STRUCTURE



12'-0" MAXIMUM
CONDUCTOR SAG

15'-0"
MINIMUM CLEARANCE
REQUIREMENT TO
115-kV CONDUCTOR

7'-0"
CL.

80'-0"
SEE NOTE 2

EDGE OF MNR R.O.W.

EXISTING VEGETATION
TO BE REMOVED

PROPOSED EDGE OF CLEARING

EXISTING VEGETATION
TO REMAIN

GAURDRAIL

30'-0"
VARIES (30'-60' TYP.)

CONNDOT HIGHWAY ROW

INTERSTATE 95

NOTES:

- 1. DEPICTED STRUCTURE CONFIGURATION IS A SUSPENSION ANGLE DIRECT EMBED TUBULAR STEEL STRUCTURE.
- 2. TYPICAL STRUCTURE HEIGHT CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO RAILROAD CATENARY STRUCTURE.
- 3. EDGE OF MNR ROW VARIES ON NORTH SIDE OF TRACKS. CONSISTENT ROW WIDTH IS MAINTAINED SOUTH OF TRACKS.

**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**

**EVERSOURCE
ENERGY**

TITLE GREENWICH LINE AND SUBSTATION PROJECT
LINE 1020/1703 CROSS SECTIONS
DOUBLE CIRCUIT STR. 14001
GREENWICH, CT

BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 10/20/16	DATE 10/20/16	DATE	DATE
H-SCALE 1" = 20'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO.		XSECT-2

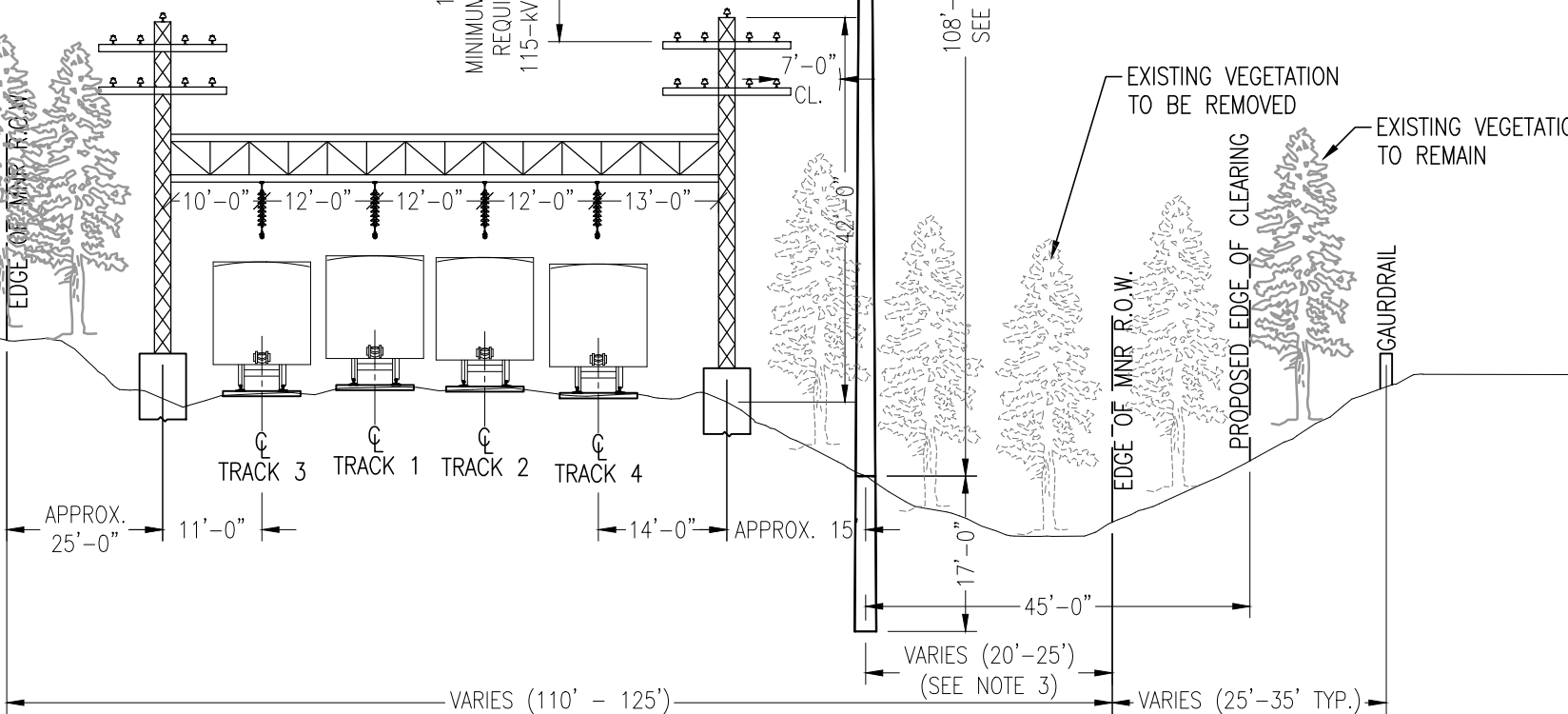
VERTICAL STEEL POLE DESIGN

LOOKING EAST
CORRIDOR LENGTH
0.12 MILE

STRS. 14002-14003

EXISTING VEGETATION
TO REMAIN

FENCE
EDGE OF MNR R.O.W.



NOTES:

1. DEPICTED STRUCTURE CONFIGURATION IS A TYPICAL TANGENT DIRECT EMBED TUBULAR STEEL STRUCTURE.
2. TYPICAL STRUCTURE HEIGHT CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO RAILROAD CATENARY STRUCTURE.
3. MNR ROW WIDTH VARIES ON SOUTH SIDE OF RAILROAD TRACKS DUE TO CONNDOT HIGHWAY ROW.

**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**

EVERSOURCE ENERGY

TITLE GREENWICH LINE AND SUBSTATION PROJECT
LINE 1020/1703 CROSS SECTIONS
DOUBLE CIRCUIT STRS. 14002-14003
GREENWICH, CT

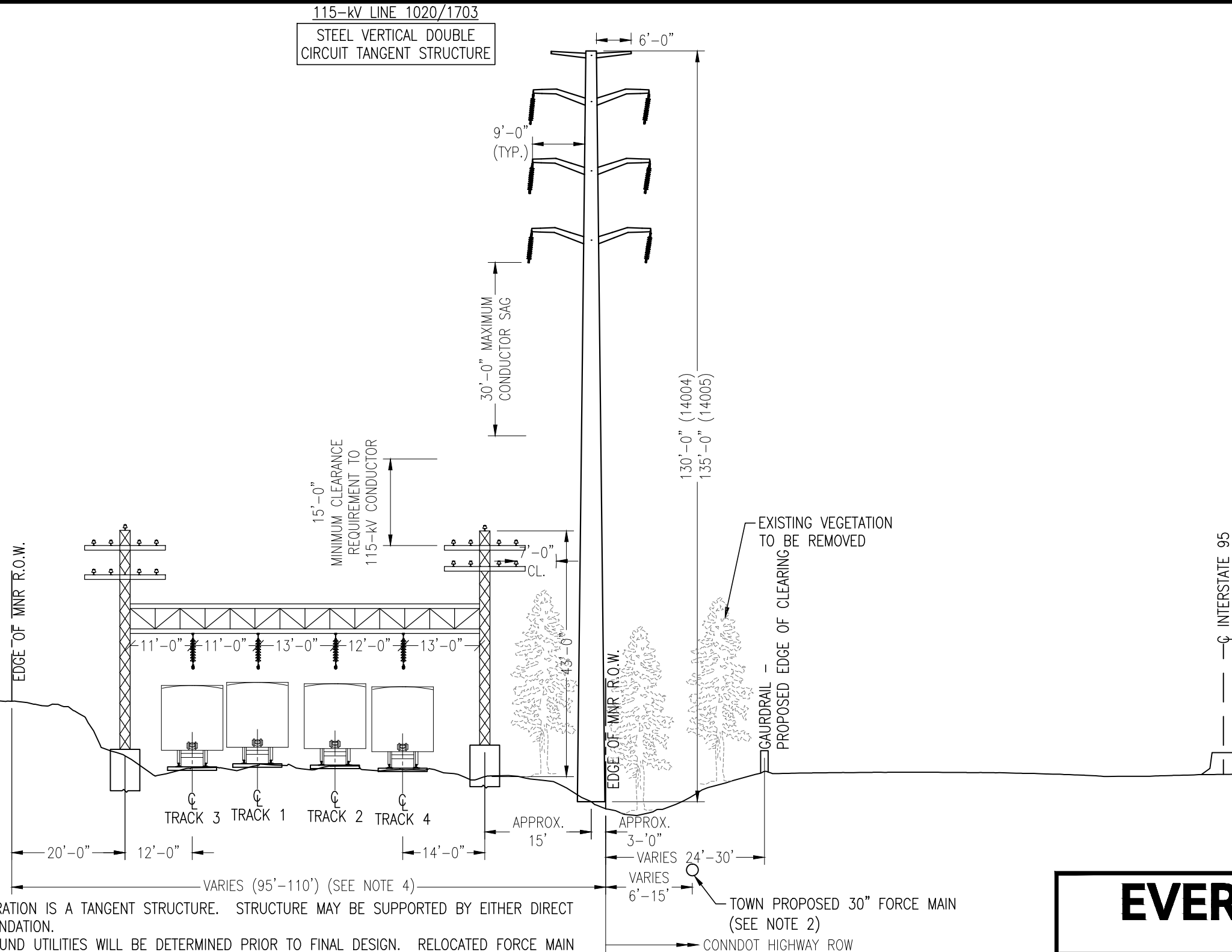
BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 10/20/16	DATE 10/20/16	DATE	DATE
H-SCALE 1" = 20'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO.		XSECT-3

VERTICAL STEEL POLE DESIGN

LOOKING EAST
CORRIDOR LENGTH
0.21 MILE

STRS. 14004-14005

115-kV LINE 1020/1703
STEEL VERTICAL DOUBLE
CIRCUIT TANGENT STRUCTURE



NOTES:

1. DEPICTED STRUCTURE CONFIGURATION IS A TANGENT STRUCTURE. STRUCTURE MAY BE SUPPORTED BY EITHER DIRECT EMBED OR DRILLED SHAFT FOUNDATION.
2. EXACT LOCATION OF UNDERGROUND UTILITIES WILL BE DETERMINED PRIOR TO FINAL DESIGN. RELOCATED FORCE MAIN WITHIN TRANSMISSION LINE CORRIDOR FOR PORTION OF ROUTE.
3. STRUCTURE HEIGHTS CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO RAILROAD CATENARY WIRES.
4. MNR ROW WIDTH VARIES ON SOUTH SIDE OF TRACKS DUE TO CONNDOT HIGHWAY ROW.

**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**

**EVERSOURCE
ENERGY**

TITLE GREENWICH LINE AND SUBSTATION PROJECT
LINE 1020/1703 CROSS SECTIONS
DOUBLE CIRCUIT STRS. 14004-14005
GREENWICH, CT

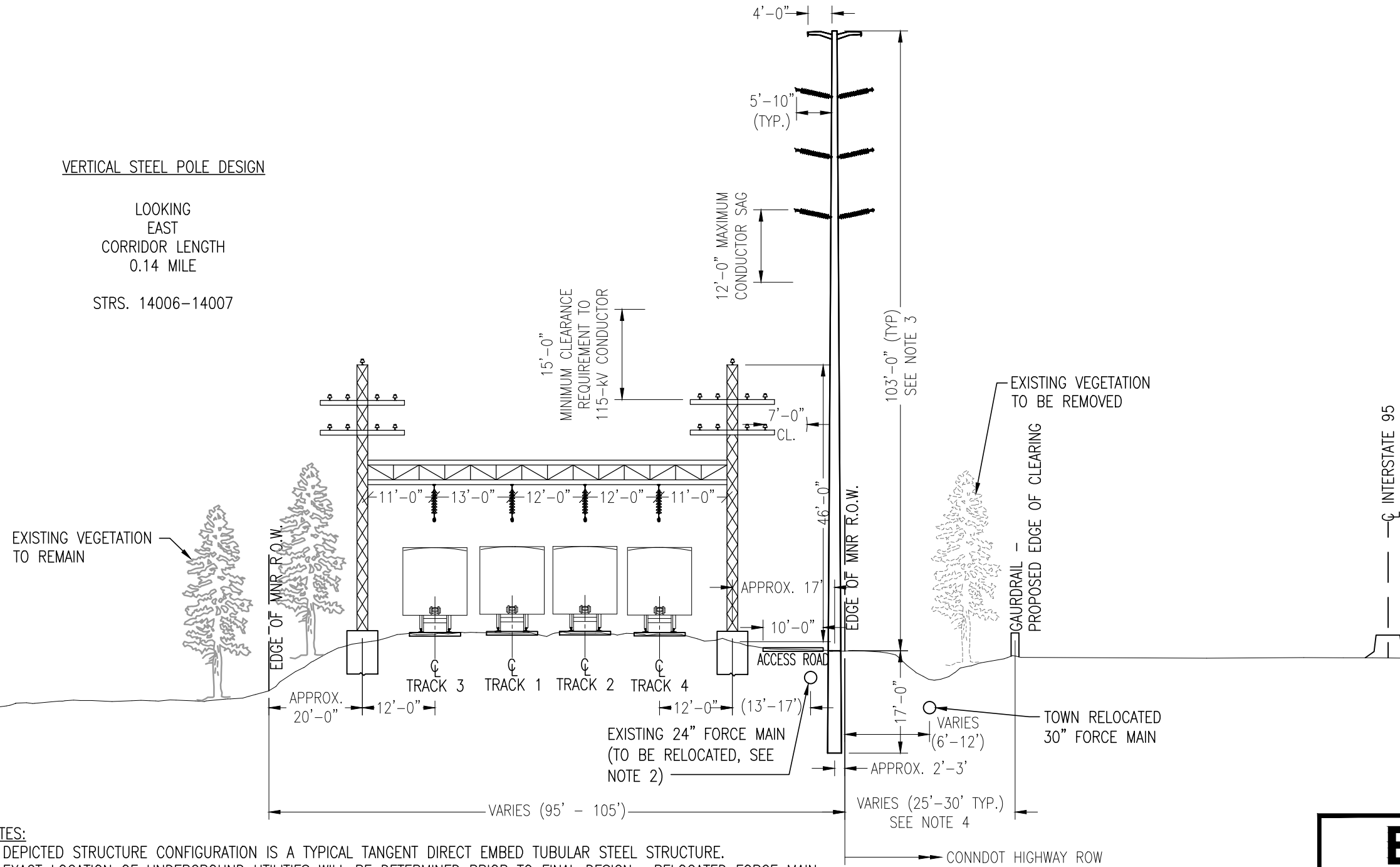
BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 01/24/17	DATE 01/24/17	DATE	DATE
H-SCALE 1" = 20'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO.		XSECT-4

VERTICAL STEEL POLE DESIGN

LOOKING EAST
CORRIDOR LENGTH
0.14 MILE

STRS. 14006-14007

115-kV LINE 1020/1703
STEEL VERTICAL DOUBLE
CIRCUIT TANGENT STRUCTURE



NOTES:

1. DEPICTED STRUCTURE CONFIGURATION IS A TYPICAL TANGENT DIRECT EMBED TUBULAR STEEL STRUCTURE.
2. EXACT LOCATION OF UNDERGROUND UTILITIES WILL BE DETERMINED PRIOR TO FINAL DESIGN. RELOCATED FORCE MAIN WITHIN TRANSMISSION LINE CORRIDOR FOR PORTION OF ROUTE.
3. TYPICAL STRUCTURE HEIGHT CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO RAILROAD CATENARY STRUCTURE.
4. MNR ROW WIDTH VARIES ON SOUTH SIDE OF RAILROAD TRACKS DUE TO CONNDOT HIGHWAY ROW.

**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**

EVERSOURCE ENERGY

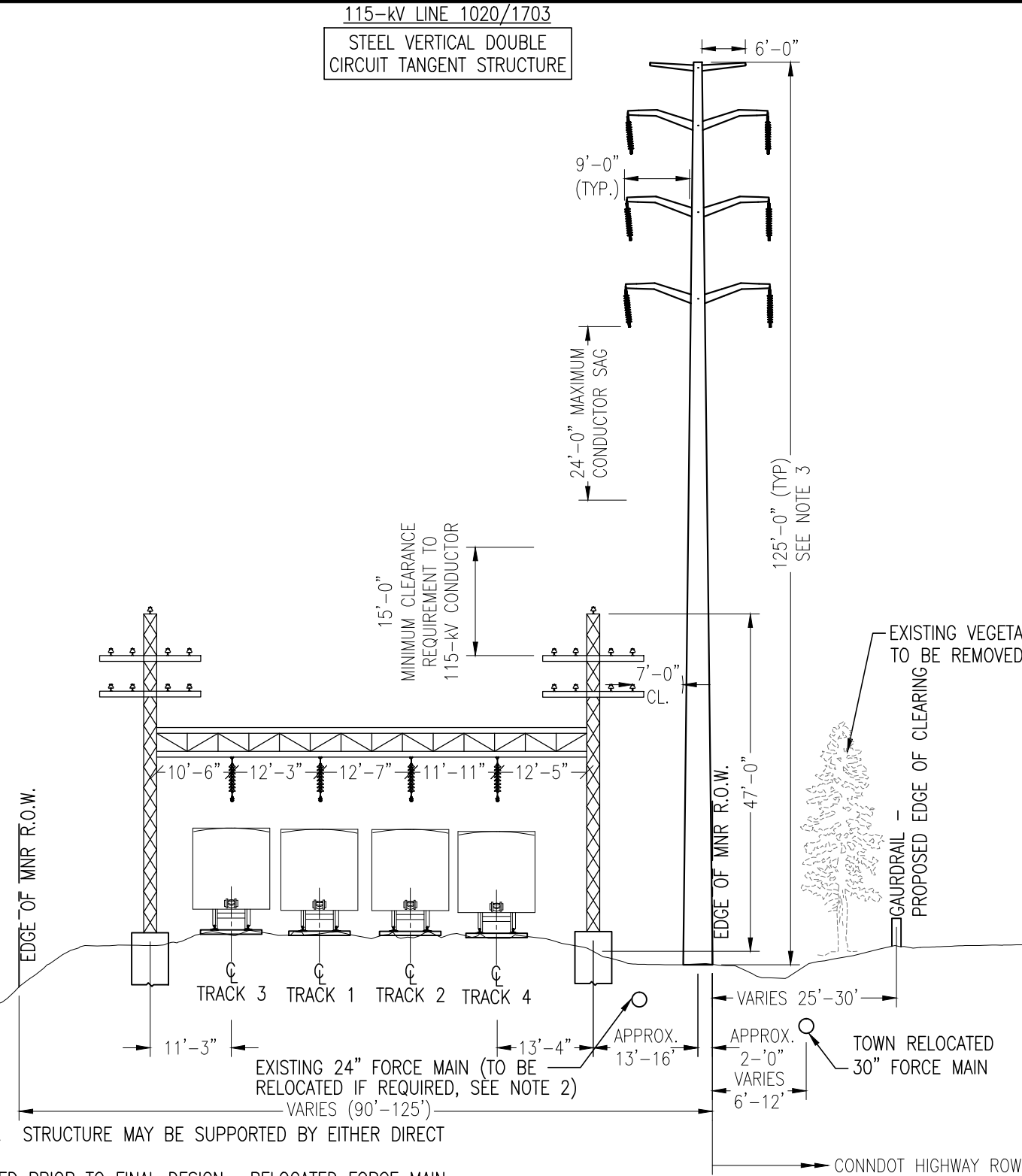
TITLE GREENWICH LINE AND SUBSTATION PROJECT
LINE 1020/1703 CROSS SECTIONS
DOUBLE CIRCUIT STRS. 14006-14007
GREENWICH, CT

BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 10/20/16	DATE 10/20/16	DATE	DATE
H-SCALE 1" = 20'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO.		XSECT-5

VERTICAL STEEL POLE DESIGN

LOOKING EAST
CORRIDOR LENGTH
0.18 MILE

STRS. 14008-14009



NOTES:

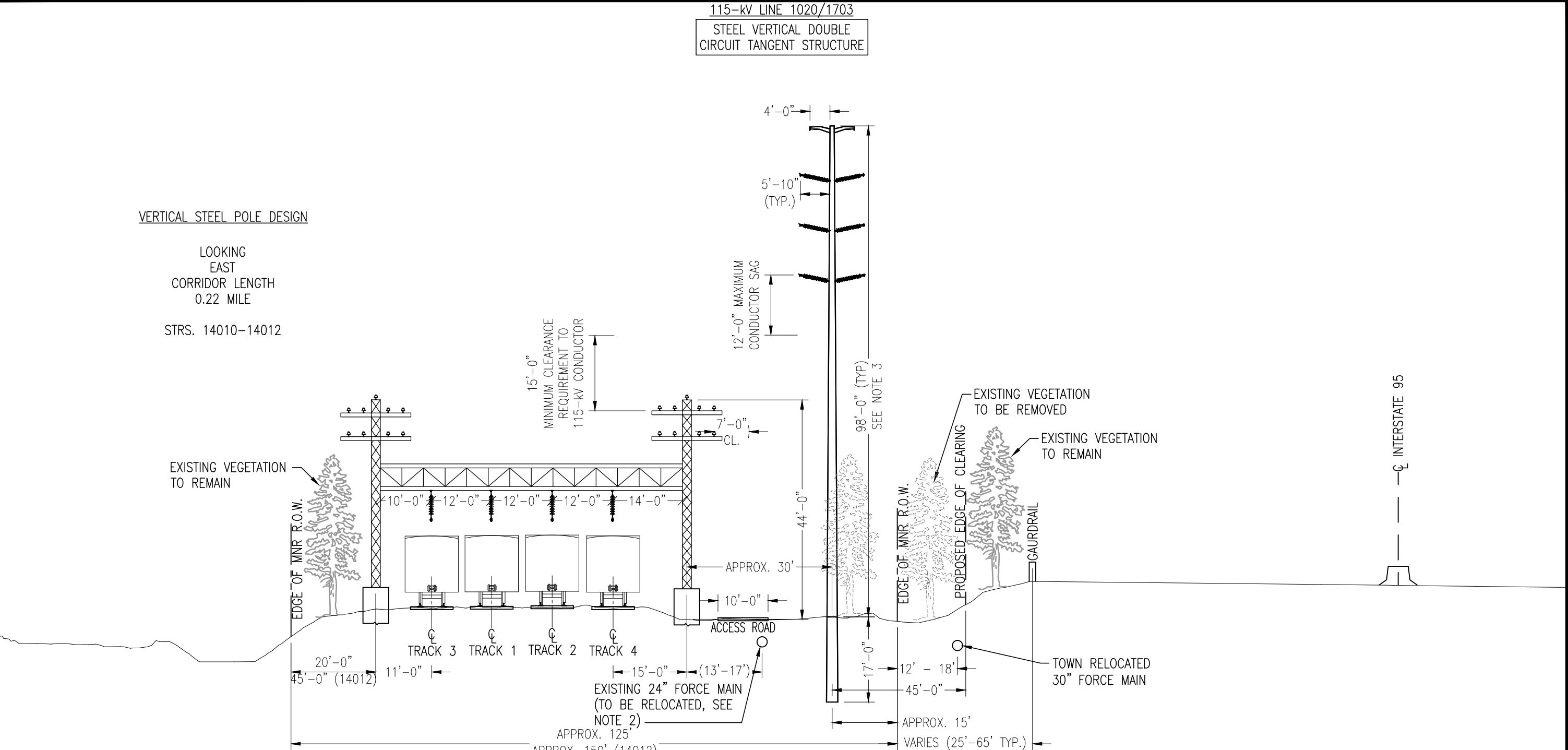
1. DEPICTED STRUCTURE CONFIGURATION IS A TANGENT STRUCTURE. STRUCTURE MAY BE SUPPORTED BY EITHER DIRECT EMBED OR DRILLED SHAFT FOUNDATION.
2. EXACT LOCATION OF UNDERGROUND UTILITIES WILL BE DETERMINED PRIOR TO FINAL DESIGN. RELOCATED FORCE MAIN WITHIN TRANSMISSION LINE CORRIDOR FOR PORTION OF ROUTE.
3. STRUCTURE HEIGHTS CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO RAILROAD CATENARY WIRES.
4. MNR ROW WIDTH VARIES ON SOUTH SIDE OF RAILROAD TRACK DUE TO CONNDOT HIGHWAY ROW.

**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**

EVERSOURCE ENERGY

TITLE GREENWICH LINE AND SUBSTATION PROJECT
LINE 1020/1703 CROSS SECTIONS
DOUBLE CIRCUIT STRS. 14008-14009
GREENWICH, CT

BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 01/24/17	DATE 01/24/17	DATE	DATE
H-SCALE 1" = 20'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO. XSECT-6		



VERTICAL STEEL POLE DESIGN

LOOKING EAST
CORRIDOR LENGTH
0.22 MILE

STRS. 14010-14012

115-kV LINE 1020/1703
STEEL VERTICAL DOUBLE
CIRCUIT TANGENT STRUCTURE

NOTES:

1. DEPICTED STRUCTURE CONFIGURATION IS A TYPICAL TANGENT DIRECT EMBED TUBULAR STEEL STRUCTURE.
2. EXACT LOCATION OF UNDERGROUND UTILITIES WILL BE DETERMINED PRIOR TO FINAL DESIGN. RELOCATED FORCE MAIN WITHIN TRANSMISSION LINE CORRIDOR FOR PORTION OF ROUTE.
3. TYPICAL STRUCTURE HEIGHT CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO RAILROAD CATENARY STRUCTURE.

**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**

EVERSOURCE ENERGY

TITLE GREENWICH LINE AND SUBSTATION PROJECT
LINE 1020/1703 CROSS SECTIONS
DOUBLE CIRCUIT STRS. 14010-14012
GREENWICH, CT

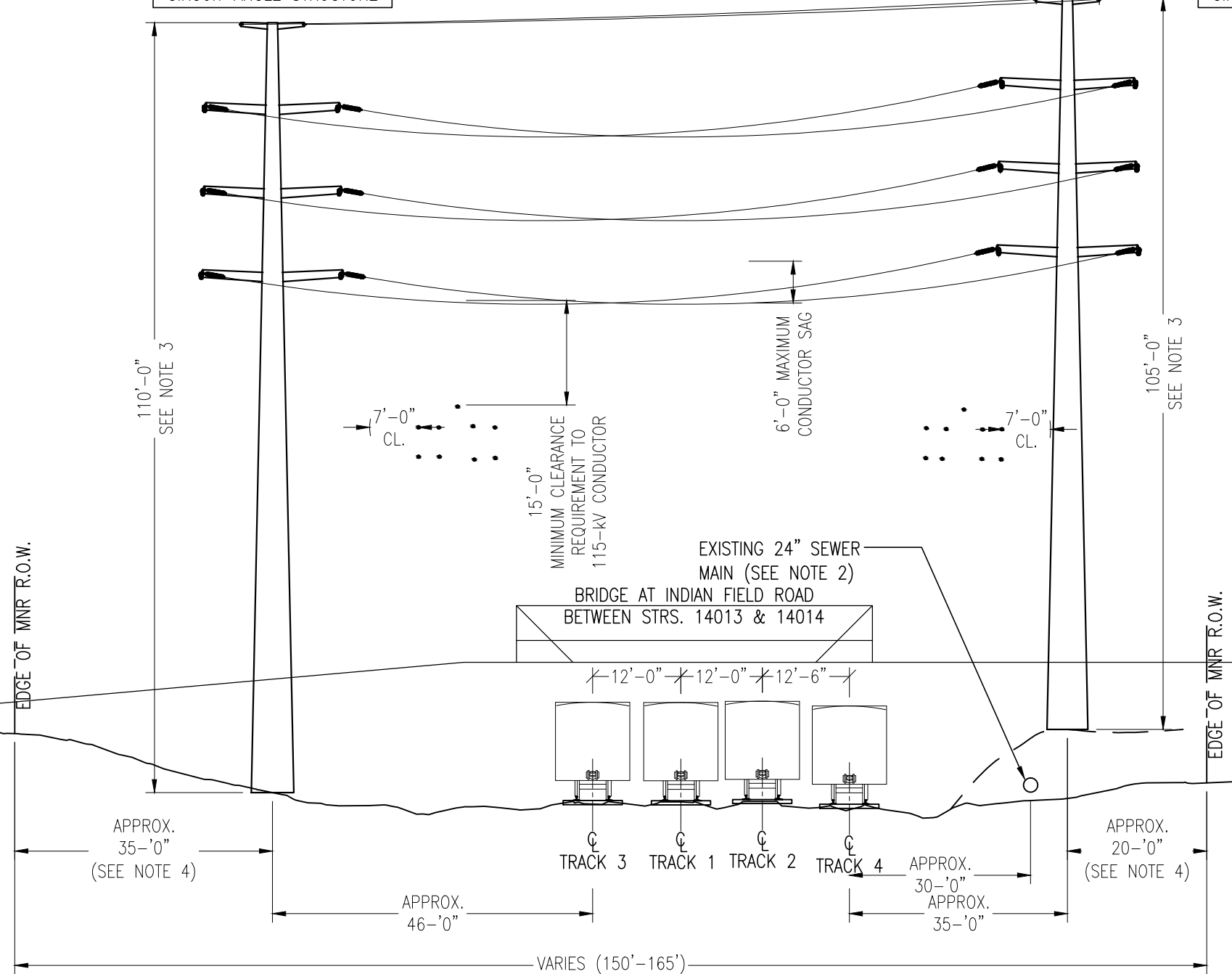
BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 10/20/16	DATE 10/20/16	DATE	DATE
H-SCALE 1" = 20'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO.		XSECT-7

VERTICAL STEEL POLE DESIGN

LOOKING EAST
CORRIDOR LENGTH
0.11 MILE
STRS. 14013-14014

115-kV LINE 1020/1703
STEEL VERTICAL DOUBLE
CIRCUIT ANGLE STRUCTURE

115-kV LINE 1020/1703
STEEL VERTICAL DOUBLE
CIRCUIT ANGLE STRUCTURE



NOTES:

1. DEPICTED STRUCTURE CONFIGURATIONS ARE DEADEND STRUCTURES. STRUCTURES WILL BE SUPPORTED BY DRILLED SHAFT FOUNDATIONS.
2. EXACT LOCATION OF UNDERGROUND UTILITIES WILL BE DETERMINED PRIOR TO FINAL DESIGN.
3. STRUCTURE HEIGHTS CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO RAILROAD CATENARY WIRES.
4. TRANSMISSION LINE TRANSITIONS FROM SOUTH SIDE TO NORTH SIDE OF MNR ROW.

EVERSOURCE ENERGY

TITLE GREENWICH LINE AND SUBSTATION PROJECT
LINE 1020/1703 CROSS SECTIONS
DOUBLE CIRCUIT STRS. 14013-14014
GREENWICH, CT

BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 01/24/17	DATE 01/24/17	DATE	DATE
H-SCALE 1" = 20'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO.		XSECT-8

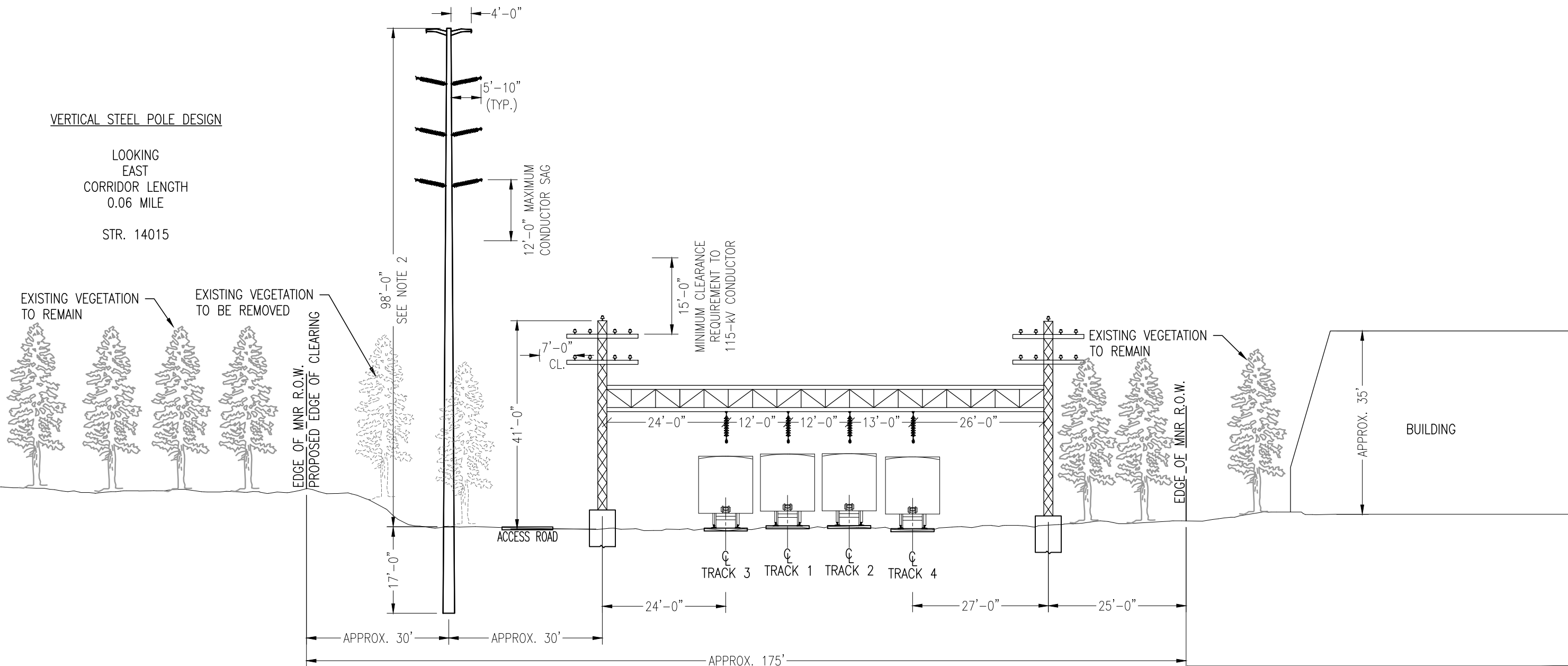
**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**

115-kV LINE 1020/1703
STEEL VERTICAL DOUBLE
CIRCUIT TANGENT STRUCTURE

VERTICAL STEEL POLE DESIGN

LOOKING EAST
CORRIDOR LENGTH
0.06 MILE

STR. 14015



NOTES:

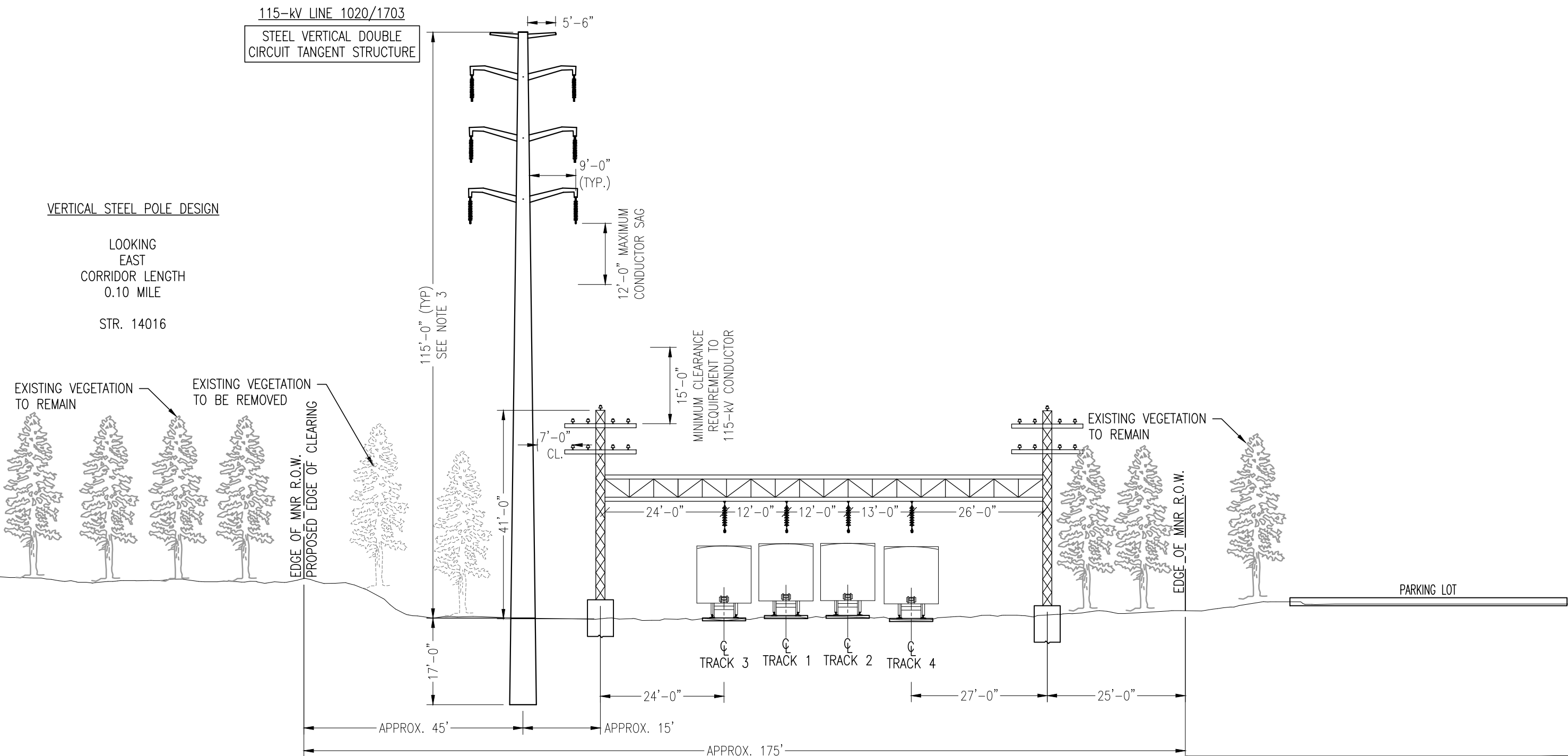
1. DEPICTED STRUCTURE CONFIGURATION IS A TYPICAL TANGENT DIRECT EMBED TUBULAR STEEL STRUCTURE.
2. TYPICAL STRUCTURE HEIGHT CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO RAILROAD CATENARY STRUCTURE.

EVERSOURCE
ENERGY

TITLE GREENWICH LINE AND SUBSTATION PROJECT
LINE 1020/1703 CROSS SECTIONS
DOUBLE CIRCUIT STR. 14015
GREENWICH, CT

BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 10/20/16	DATE 10/20/16	DATE	DATE
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V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO.		XSECT-9

**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**



NOTES:

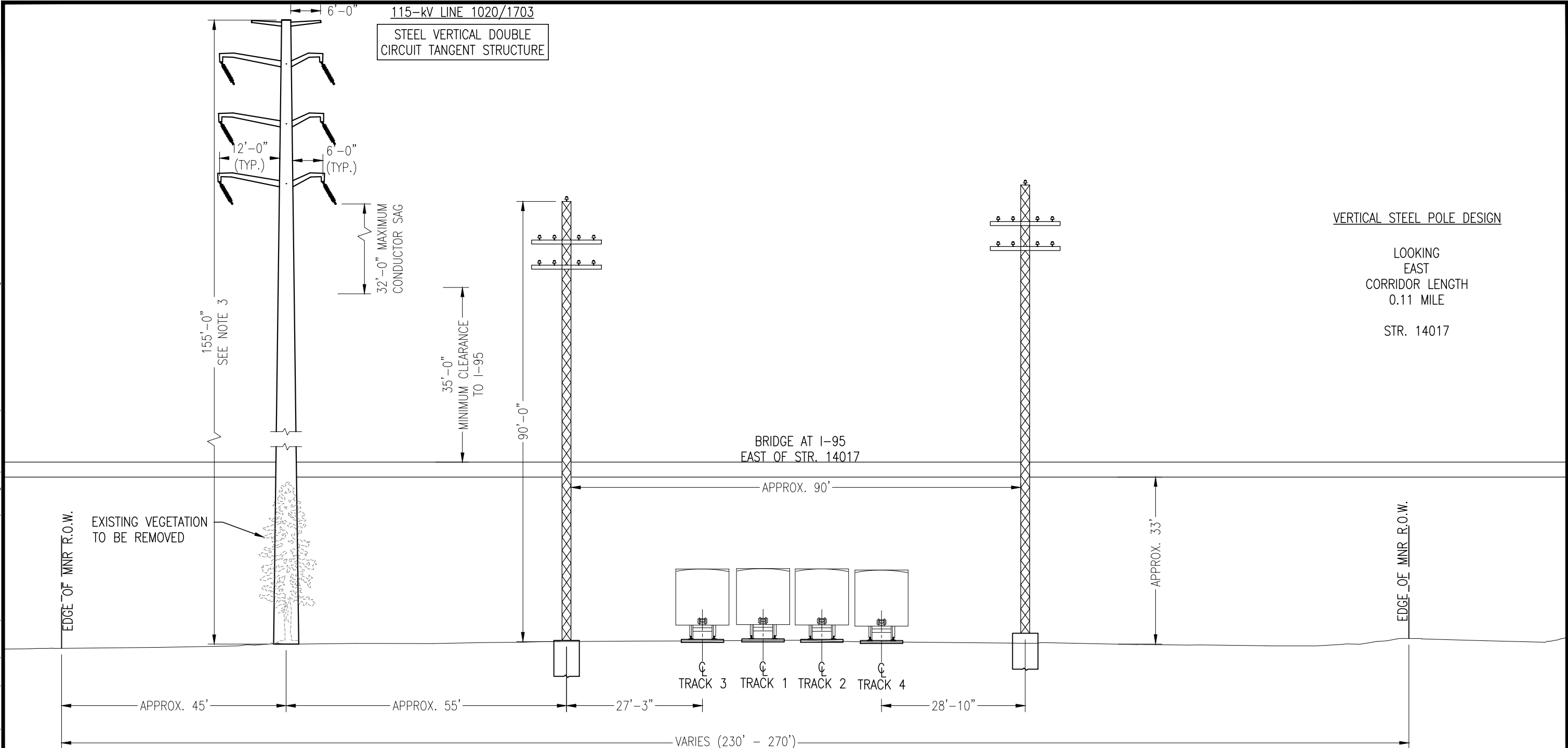
1. DEPICTED STRUCTURE CONFIGURATION IS A TYPICAL TANGENT DIRECT EMBED TUBULAR STEEL STRUCTURE.
2. TYPICAL STRUCTURE HEIGHT CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO RAILROAD CATENARY STRUCTURE.

EVERSOURCE ENERGY

TITLE GREENWICH LINE AND SUBSTATION PROJECT
 LINE 1020/1703 CROSS SECTIONS
 DOUBLE CIRCUIT STR. 14016
 GREENWICH, CT

BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 10/20/16	DATE 10/20/16	DATE	DATE
H-SCALE 1" = 20'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO.		XSECT-10

PRELIMINARY - NOT ISSUED FOR CONSTRUCTION



VERTICAL STEEL POLE DESIGN

LOOKING EAST
CORRIDOR LENGTH
0.11 MILE
STR. 14017

NOTES:

- 1. DEPICTED STRUCTURE CONFIGURATION IS A SUSPENSION ANGLE TUBULAR STEEL STRUCTURE SUPPORTED BY A DRILLED SHAFT FOUNDATION.
- 2. STRUCTURE HEIGHT CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO ELEVATED I-95.

**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**

EVERSOURCE ENERGY

TITLE GREENWICH LINE AND SUBSTATION PROJECT
LINE 1020/1703 CROSS SECTIONS
DOUBLE CIRCUIT STR. 14017
GREENWICH, CT

BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 10/20/16	DATE 10/20/16	DATE	DATE
H-SCALE 1" = 20'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO.		XSECT-11

115-kV LINE 1020/1703
STEEL VERTICAL DOUBLE
CIRCUIT DEADEND STRUCTURE

115-kV LINE 1020/1703
STEEL VERTICAL DOUBLE
CIRCUIT DEADEND STRUCTURE

VERTICAL STEEL POLE DESIGN

LOOKING
EAST
CORRIDOR LENGTH
0.11 MILES

STRS. 14018-14019

EDGE OF MNR R.O.W.

140'-0" (TYP)
SEE NOTE 2

24'-0" MAXIMUM
CONDUCTOR SAG

6'-0" MAXIMUM
CONDUCTOR SAG

15'-0"
MINIMUM CLEARANCE
TO
REQUIREMENT TO
115-kV CONDUCTOR

100'-0" (TYP)
SEE NOTES 2 & 3

150'-0"

EXISTING VEGETATION
TO BE REMOVED

TRACK 3 TRACK 1 TRACK 2 TRACK 4

EXISTING
EVERSOURCE TOWER

APPROX. 96'

APPROX. 25'

13'-0"

12'-0"

APPROX. 30'

APPROX. 41'

NOTES:

1. DEPICTED STRUCTURE CONFIGURATIONS ARE DEADEND AND TRANSITION STRUCTURES. STRUCTURES MAY BE SUPPORTED BY EITHER DIRECT EMBED OR DRILLED SHAFT FOUNDATIONS.
2. STRUCTURE HEIGHTS CONTROLLED BY MINIMUM CLEARANCE REQUIREMENT TO ELEVATED I-95 AND RAILROAD CATENARY WIRES.
3. TRANSMISSION LINES WILL CONTINUE UNDERGROUND TO COS COB FROM TRANSITION STRUCTURES.

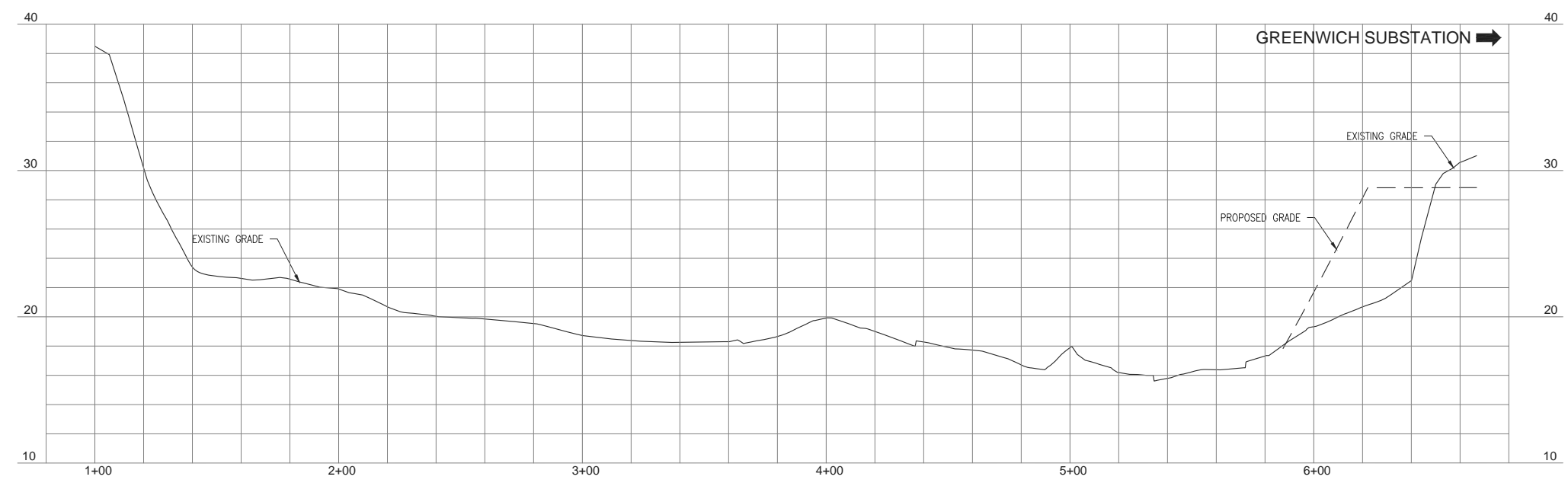
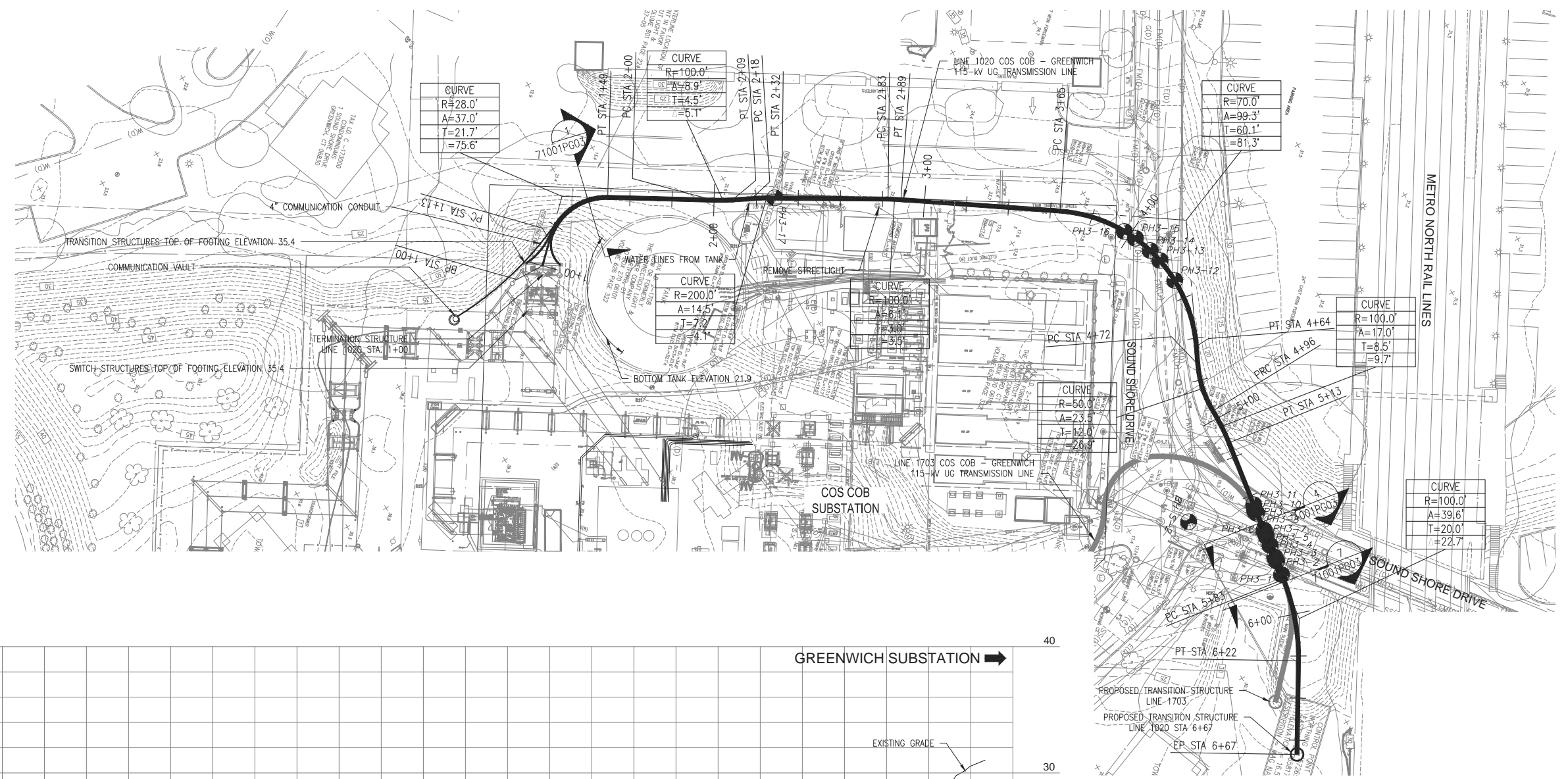
EVERSOURCE
ENERGY

TITLE
GREENWICH LINE AND SUBSTATION PROJECT
LINE 1020/1703 CROSS SECTIONS
DOUBLE CIRCUIT STRS. 14018-14019
GREENWICH, CT

BY M. PEPICH	CHKD D. CAMPBELL	APP -	APP -
DATE 10/20/16	DATE 10/20/16	DATE	DATE
H-SCALE 1" = 20'	SIZE B	FIELD BOOK & PAGES	
V-SCALE 1" = 20'	V.S.	R.E. DWG	
R.E. PROJ. NUMBER	DWG NO.		XSECT-12

**PRELIMINARY - NOT ISSUED
FOR CONSTRUCTION**

12/21/2016 12:57 PM - g_moss - R:\Hydro\Projects\138082\DWG\03 Line\20161207_Greenwich_Update\Alignment_CAD\01157-10001PG01-Plan - 01157-10001PG01-Plan



PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

REVISIONS DURING CONSTRUCTION				
C	12/22/16	ISSUED FOR 30% DESIGN REVIEW	BA	EE LH
B	5/24/16	ISSUED FOR 30% DESIGN REVIEW	GM	AS LH
A	4/27/16	PRELIMINARY CENTERLINE	GM	AS LH

EVERSOURCE ENERGY

LINE 1020 & 1703 COS COB - GREENWICH
115-kv UNDERGROUND TRANSMISSION LINE
PLAN and PROFILE STA 1+00 TO 6+67
GREENWICH, CONNECTICUT

BY	DATE	CHKD	DATE	APP	DATE	APP	DATE
GM	4/27/16	AS	4/27/16	LH	4/27/16		

H-SCALE: 1" = 30'
V-SCALE: 1" = 5'

R.E. DWG: NUSCO
NO. DATE AS BUILT REVISIONS BY CHK APP APP

101157-10001PG01

NOTE

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO EVERSOURCE ENERGY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455.

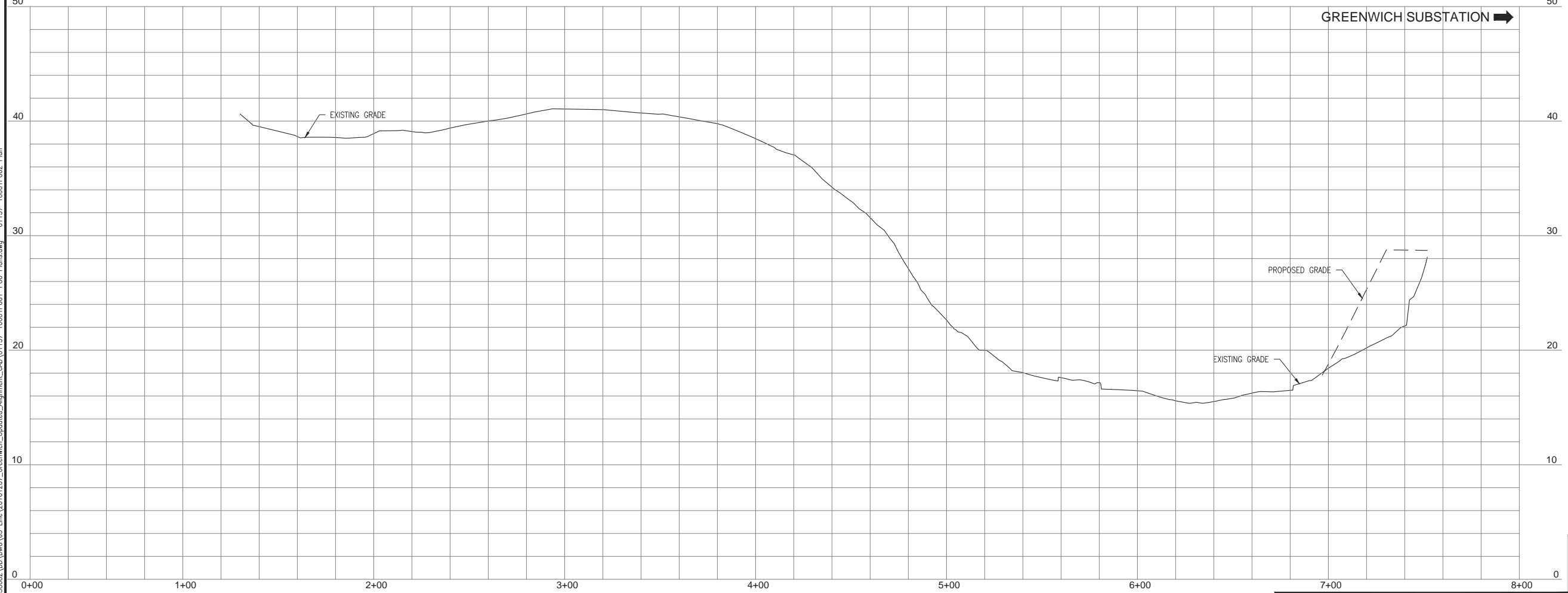
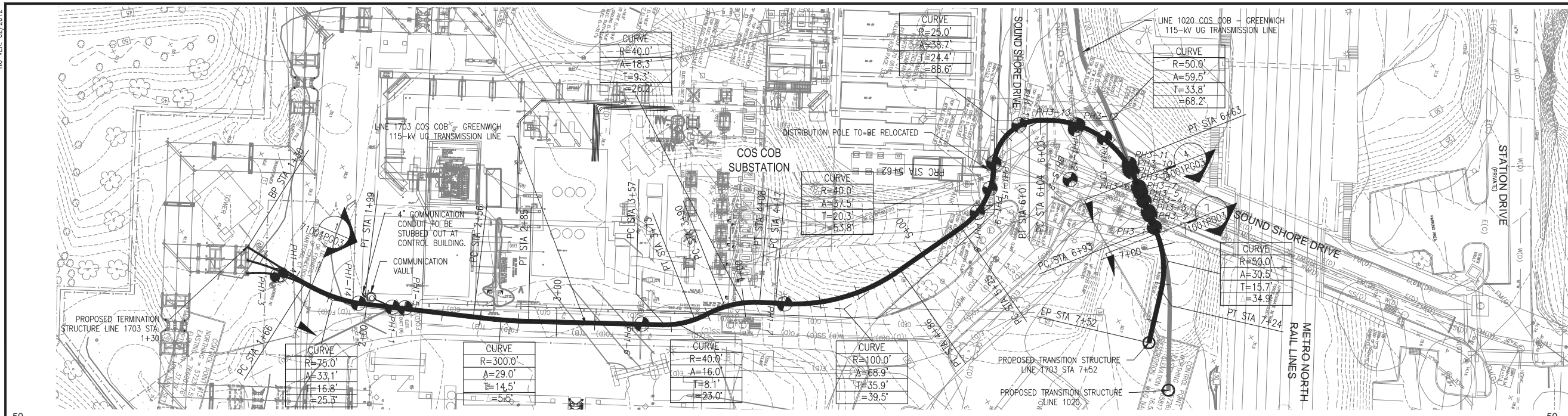
THREE BUSINESS DAYS BEFORE YOU DIG CALL
CONNECTICUT ONE CALL
TOLL FREE
1-800-922-4455



"FOR CURRENT EVERSOURCE PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING - LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

NU VER: 02/2012

12/21/2016 12:57 PM - gross - R:\Hydrojecta\138082\DWG\03 Line_20161207_Greenwich_Updated_Alignment_CAD\01157-10001PG01-P66 Plans.dwg - 01157-10001PG02 Plan



GREENWICH SUBSTATION →

PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

NOTE

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO NORTHEAST UTILITIES SERVICES COMPANY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455.

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"FOR CURRENT EVERSOURCE PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING - LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

REVISIONS DURING CONSTRUCTION					
C	12/22/16	ISSUED FOR 30% DESIGN REVIEW	BA	EE	LH
B	5/24/16	ISSUED FOR 30% REVIEW	GM	AS	LH
A	4/27/16	PRELIMINARY CENTERLINE	GM	AS	LH

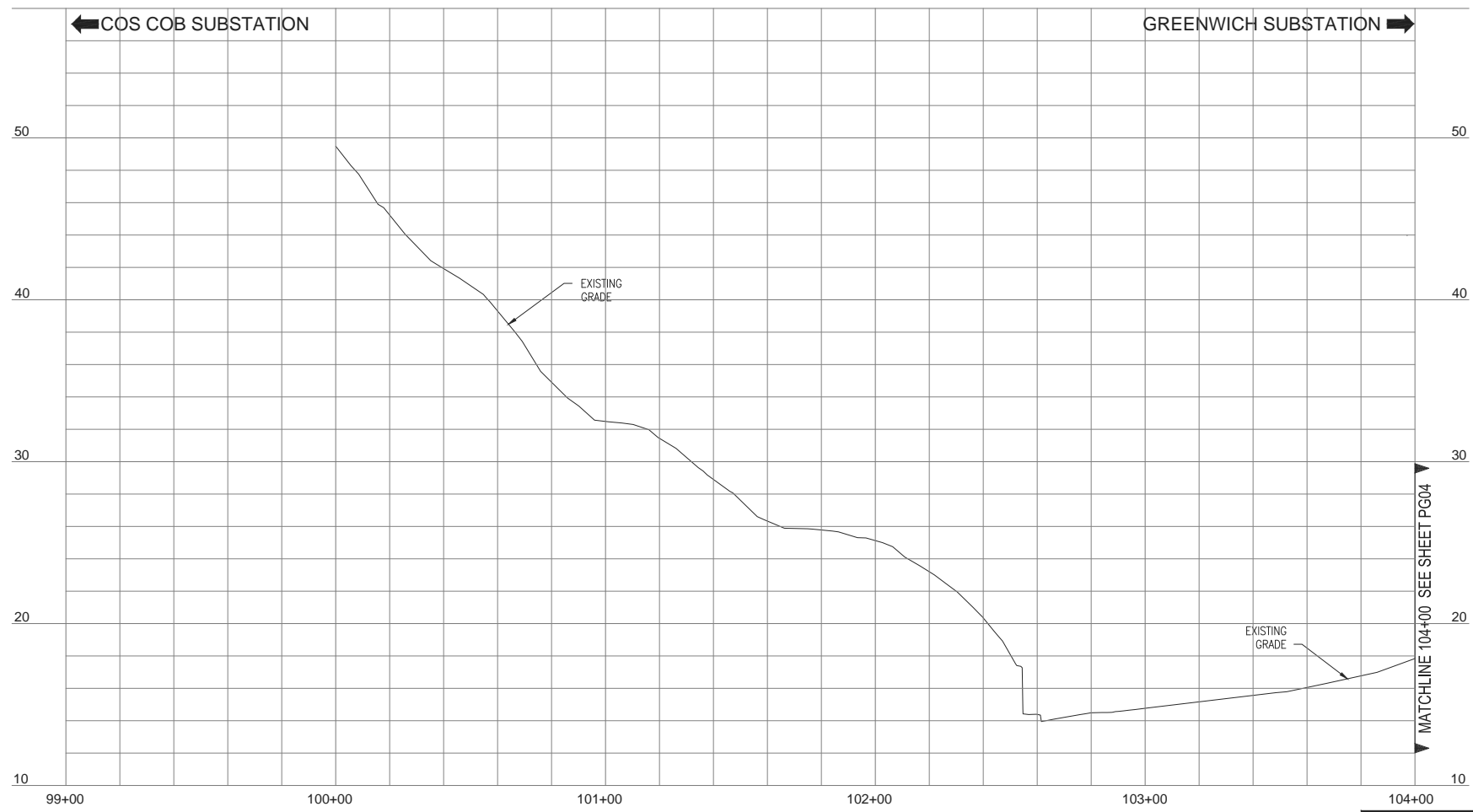
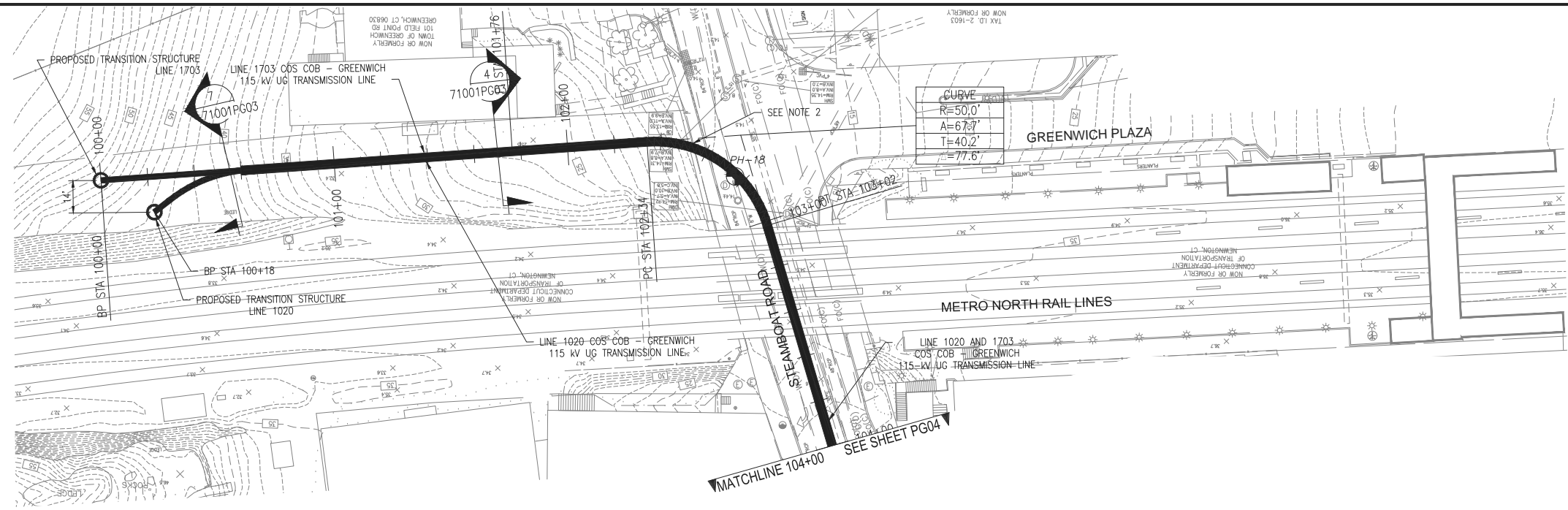
EVSOURCE ENERGY

LINE 1020 & 1703 COS COB - GREENWICH
115-kV UNDERGROUND TRANSMISSION LINE
PLAN and PROFILE STA 1+30 TO 7+52
GREENWICH, CONNECTICUT

BY	GM	CHKD	AS	APP	LH	APP
DATE	4/27/16	DATE	4/27/16	DATE	4/27/16	DATE
H-SCALE	1" = 30'	SIZE	D	FIELD BOOK & PAGES		
V-SCALE	1" = 5'	V.S.		R.E. DWG		
R.E. PROJ. NUMBER				NUSCO	01157-10001PG02	

NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP

12/21/2016 2:20 PM - gmass - R:\Hydro\Projects\138082\DD\DWG\03_Line\20161207_Greenwich_Updated_Alignment_CAD\01157-10001PG03_Plan - 01157-10001PG03_Plan



NOTE

1. UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO NORTHEAST UTILITIES SERVICES COMPANY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG: 1.800.922.4455.
2. INSTALL ACCESS POINT THROUGH RETAINING WALL. RESTORE RETAINING WALL AT PROJECT COMPLETION.


 THREE BUSINESS DAYS BEFORE YOU DIG CALL
CONNECTICUT ONE CALL
 TOLL FREE
 1-800-922-4455



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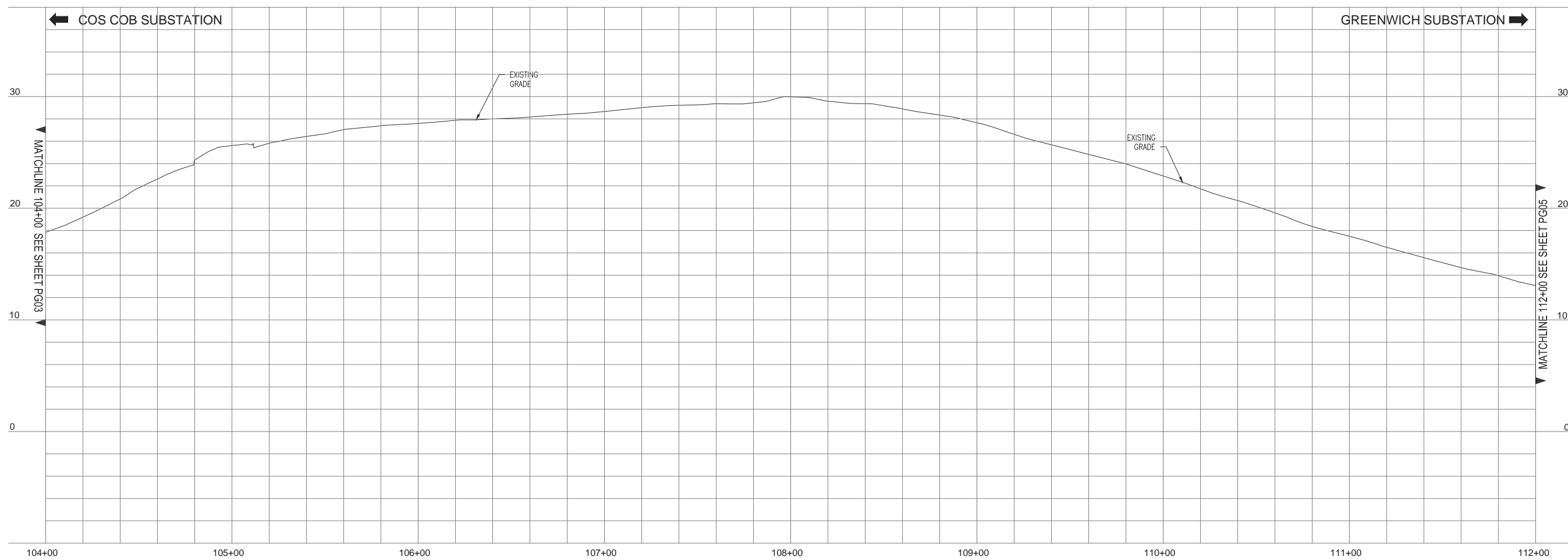
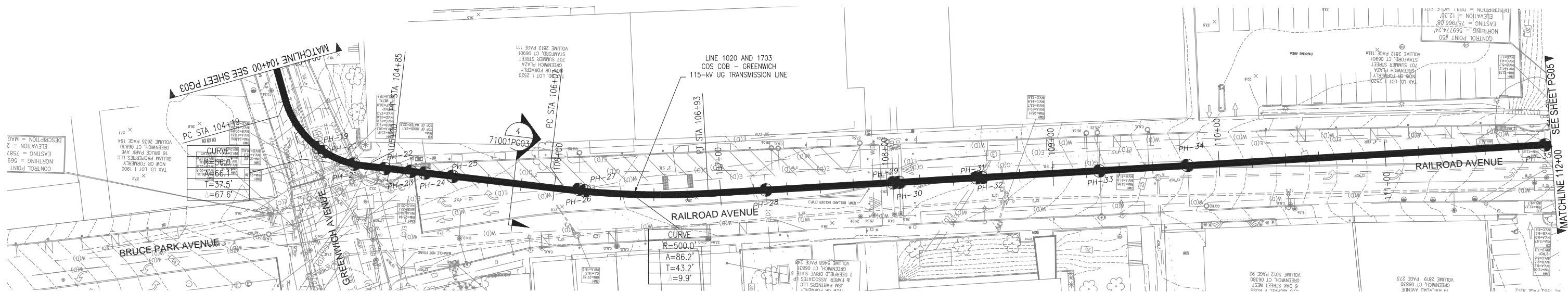
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NO.	DATE	DESCRIPTION	BY	CHK	APP
B	12/22/16	ISSUED FOR 30% DESIGN REVIEW	BA	EE	LH
A	5/24/16	ISSUED FOR 30% DESIGN REVIEW	GM	AS	LH

EVERSOURCE ENERGY

LINE 1020 & 1703 COS COB - GREENWICH
 115-kV UNDERGROUND TRANSMISSION LINE
 PLAN STA 100+00 TO 104+00
 GREENWICH, CONNECTICUT

DATE	BY	CHK	APP	DATE	BY	CHK	APP
04/27/2016	GM	CHD	AS	04/27/2016	LH	APP	APP
H-SCALE 1" = 30'		SIZE D		FIELD BOOK & PAGES		R.E. DWG	
V-SCALE 1" = 5'		V.S.		R.E. DWG		NUSCO 01157-10001PG03	

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"FOR CURRENT EVERSOURCE PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING - LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

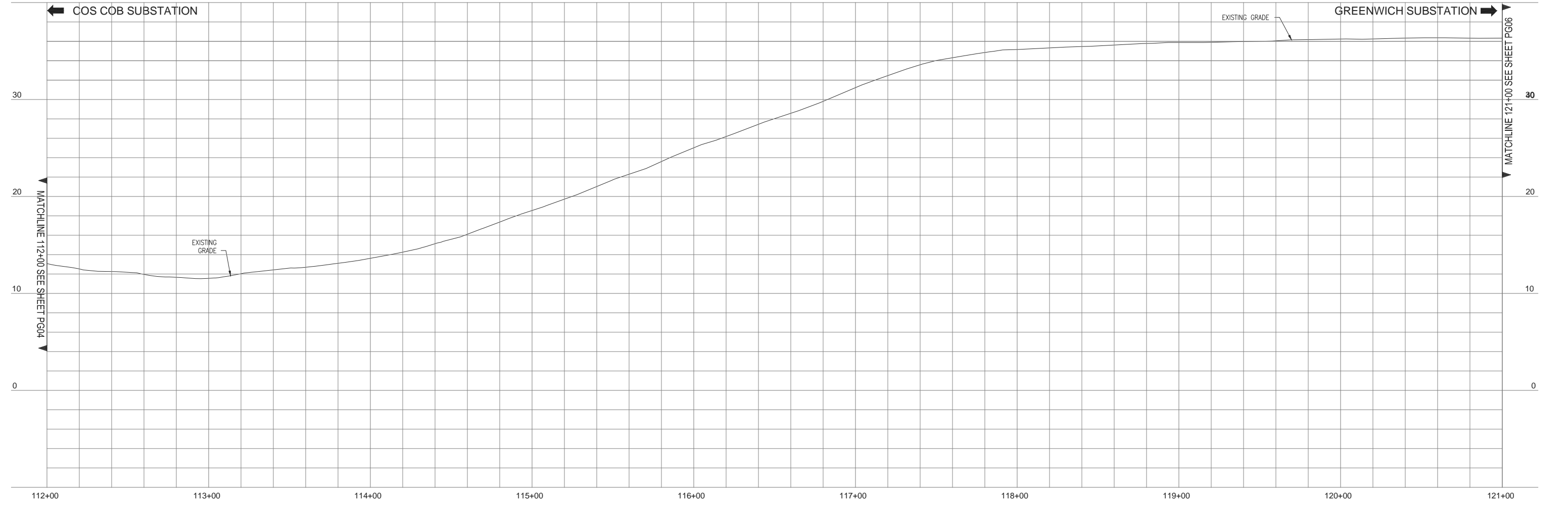
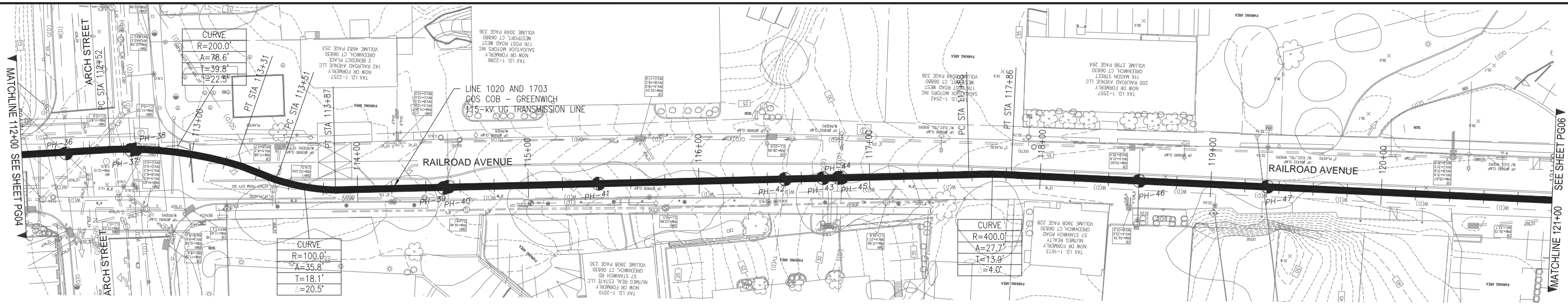
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NO.	DATE	DESCRIPTION	BY
B	12/22/16	ISSUED FOR 30% DESIGN REVIEW	BA EE LH
A	5/24/16	ISSUED FOR 30% DESIGN REVIEW	GM AS LH

EVERSOURCE
 ENERGY

LINE 1020 & 1703 COS COB - GREENWICH
 115-kV UNDERGROUND TRANSMISSION LINE
 PLAN STA 104+00 TO 112+00
 GREENWICH, CONNECTICUT

BY	GM	CHKD	AS	APP	LH	APP
DATE	04/27/2016	DATE	04/27/2016	DATE	04/27/2016	DATE
H-SCALE	1" = 30'	SIZE	D	FIELD BOOK & PAGES		
V-SCALE	1" = 5'	V.S.		R.E. DWG		
R.E. PROJ. NUMBER				NUSCO	01157-1001PG04	

NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP



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"FOR CURRENT EVERSOURCE PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING - LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

REVISIONS DURING CONSTRUCTION			
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A	5/24/16	ISSUED FOR 30% DESIGN REVIEW	GM AS LH

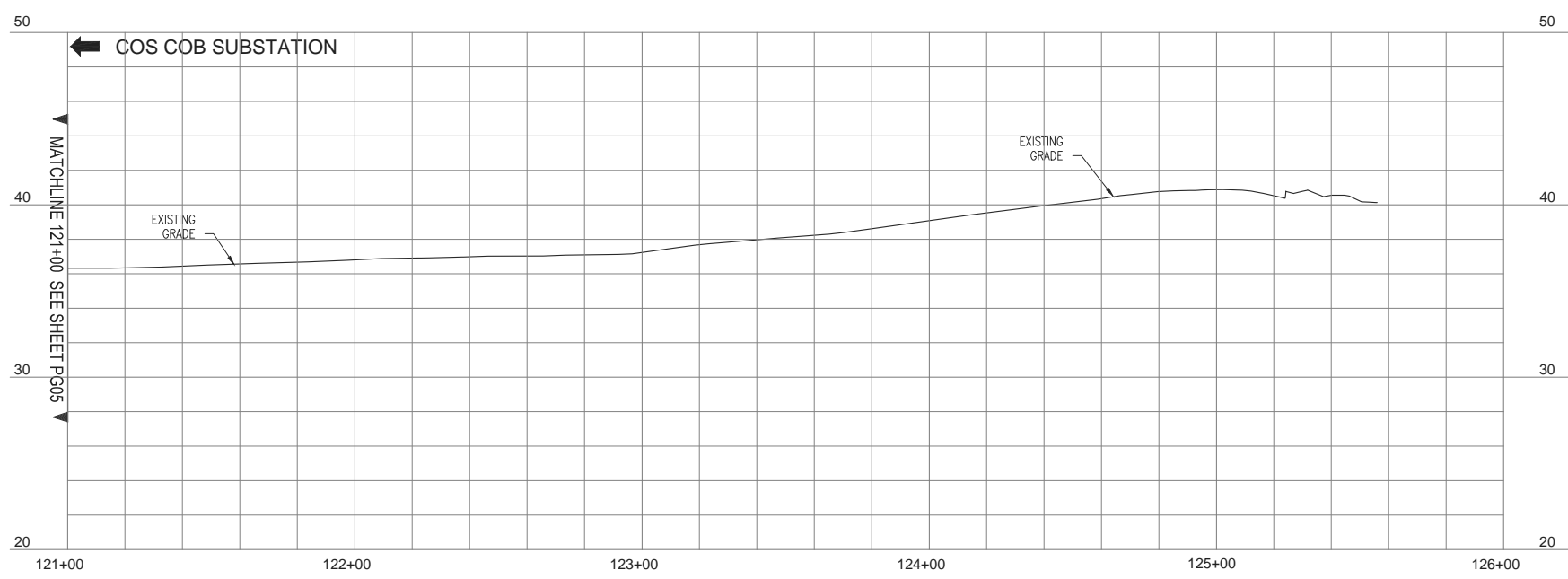
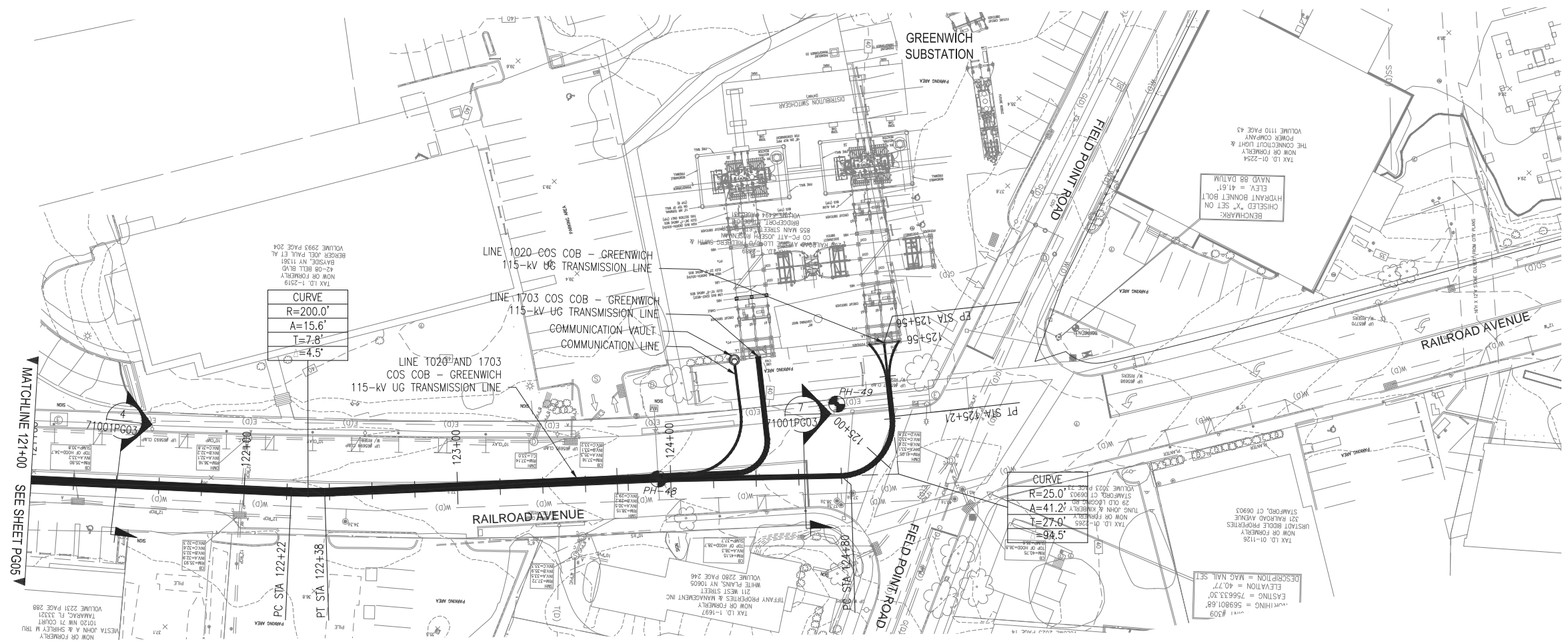
EVSOURCE ENERGY

**LINE 1020 & 1703 COS COB - GREENWICH
115-kV UNDERGROUND TRANSMISSION LINE
PLAN STA 112+00 TO 121+00
GREENWICH, CONNECTICUT**

BY	CHK	APP	DATE
GM	AS	LH	04/27/2016
DATE	DATE	DATE	DATE
04/27/2016	04/27/2016	04/27/2016	04/27/2016
H-SCALE	SIZE	FIELD BOOK & PAGES	
1" = 30'	D		
V-SCALE	V.S.	R.E. DWG	
1" = 5'			
R.E. PROJ. NUMBER		NUSCO	01157-10001PG05

NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP
-	-	-	-	-	-	-

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PRELIMINARY
NOT ISSUED FOR CONSTRUCTION

REVISIONS DURING CONSTRUCTION					
NO.	DATE	DESCRIPTION	BY	CHK	APP
B	12/22/16	ISSUED FOR 30% DESIGN REVIEW	BA	EE	LH
A	5/24/16	ISSUED FOR 30% DESIGN REVIEW	GM	AS	LH

EVERSOURCE ENERGY

LINE 1020 & 1703 COS COB - GREENWICH
115-kV UNDERGROUND TRANSMISSION LINE
PLAN STA 121+00 TO 125+20
GREENWICH, CONNECTICUT

DATE	BY	CHK	APP	DATE	BY	CHK	APP
04/27/2016	GM	CHD	AS	04/27/2016	LH	APP	
H-SCALE		1" = 30'		SIZE		D	
V-SCALE		1" = 5'		R.E. DWG		NUSCO	

NOTE

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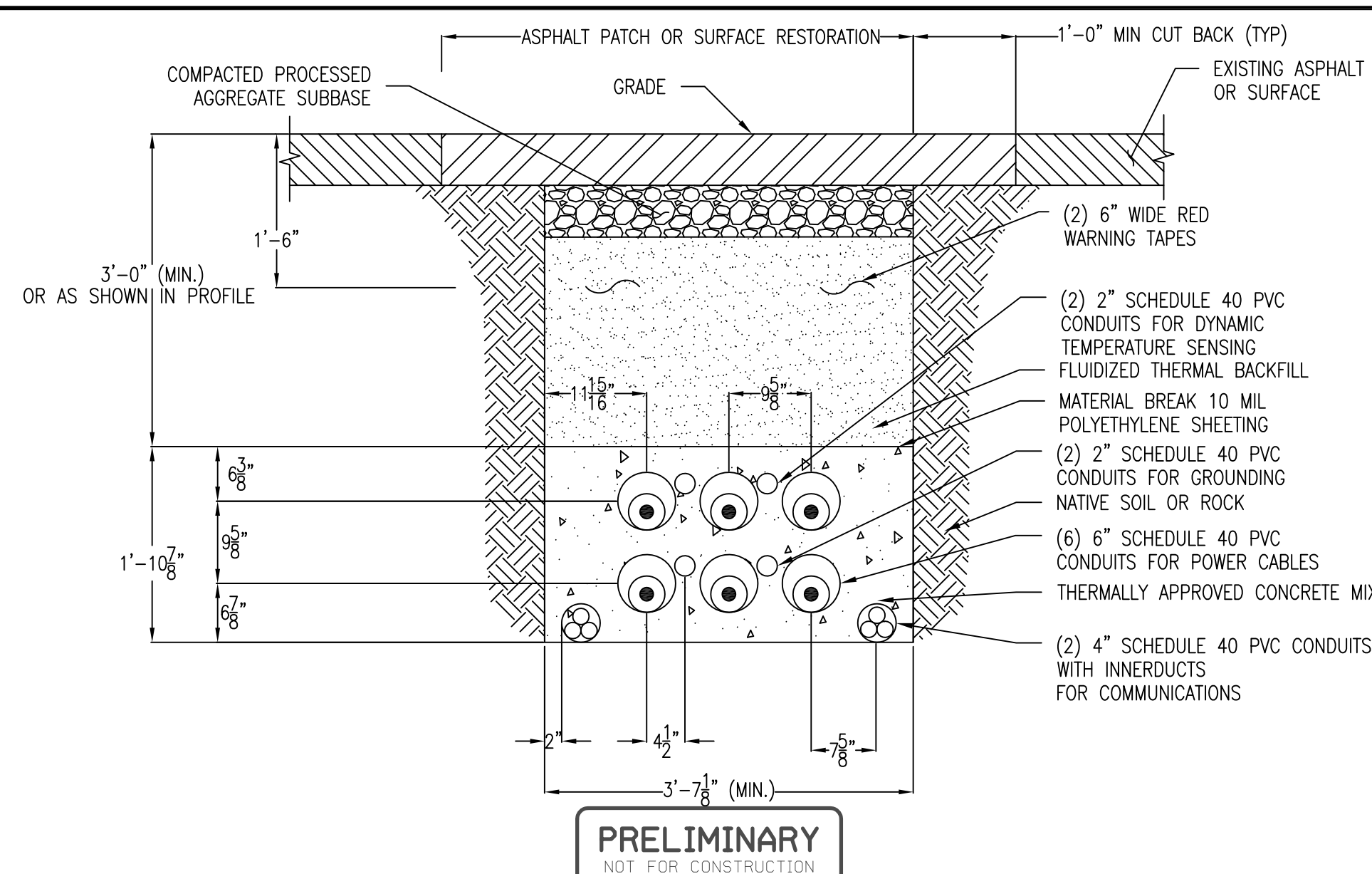
THREE BUSINESS DAYS BEFORE YOU DIG CALL
CONNECTICUT ONE CALL
TOLL FREE
1-800-922-4455



"FOR CURRENT EVERSOURCE PROPERTY RIGHTS REFER TO PROPERTY RECORD MAPPING - LOCATED IN TRANSMISSION SURVEY ENGINEERING/ROW DEPARTMENT"

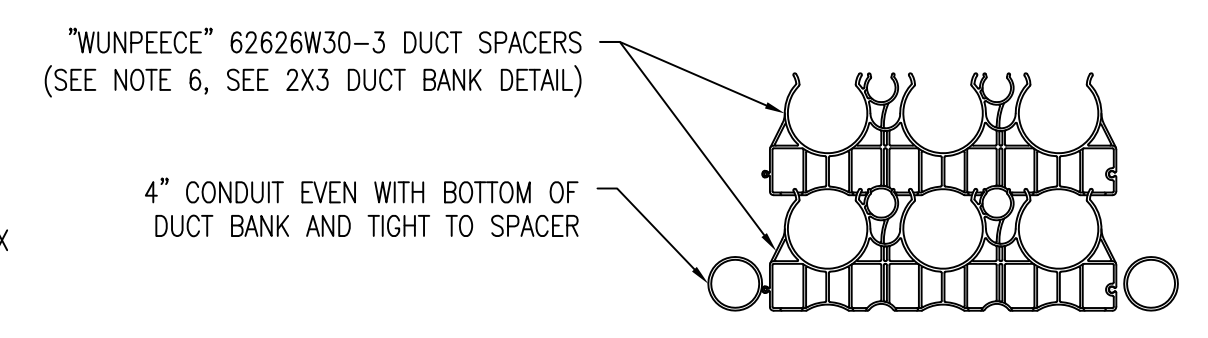
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01157-10001PG06

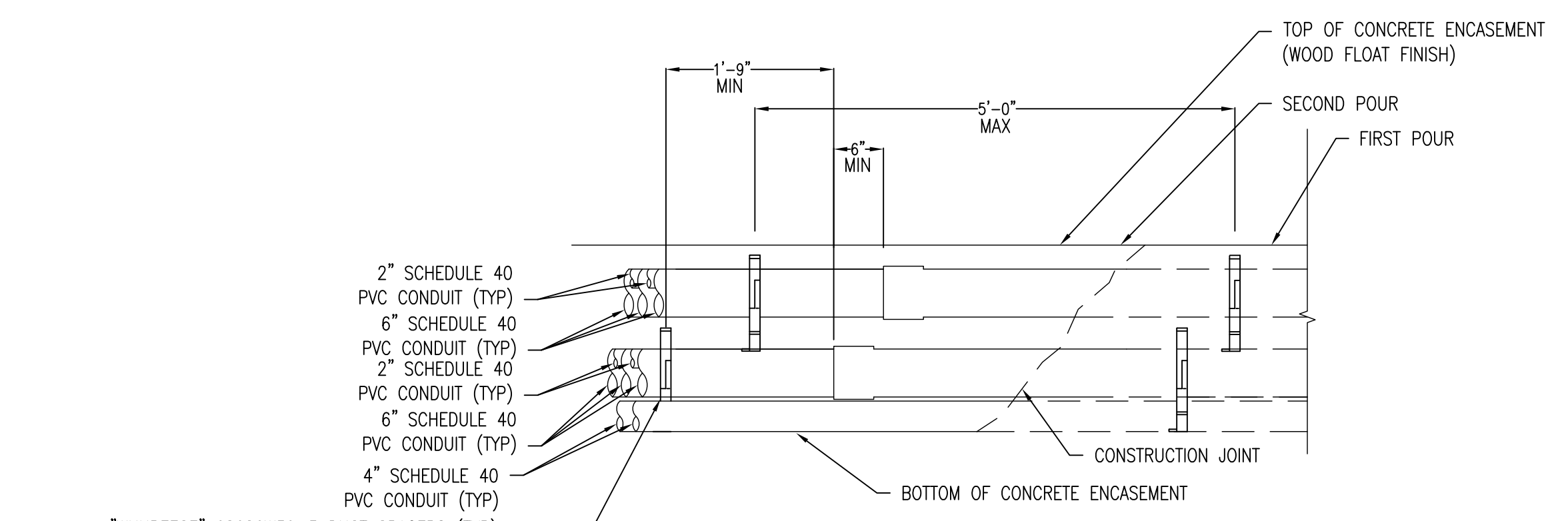


PRELIMINARY
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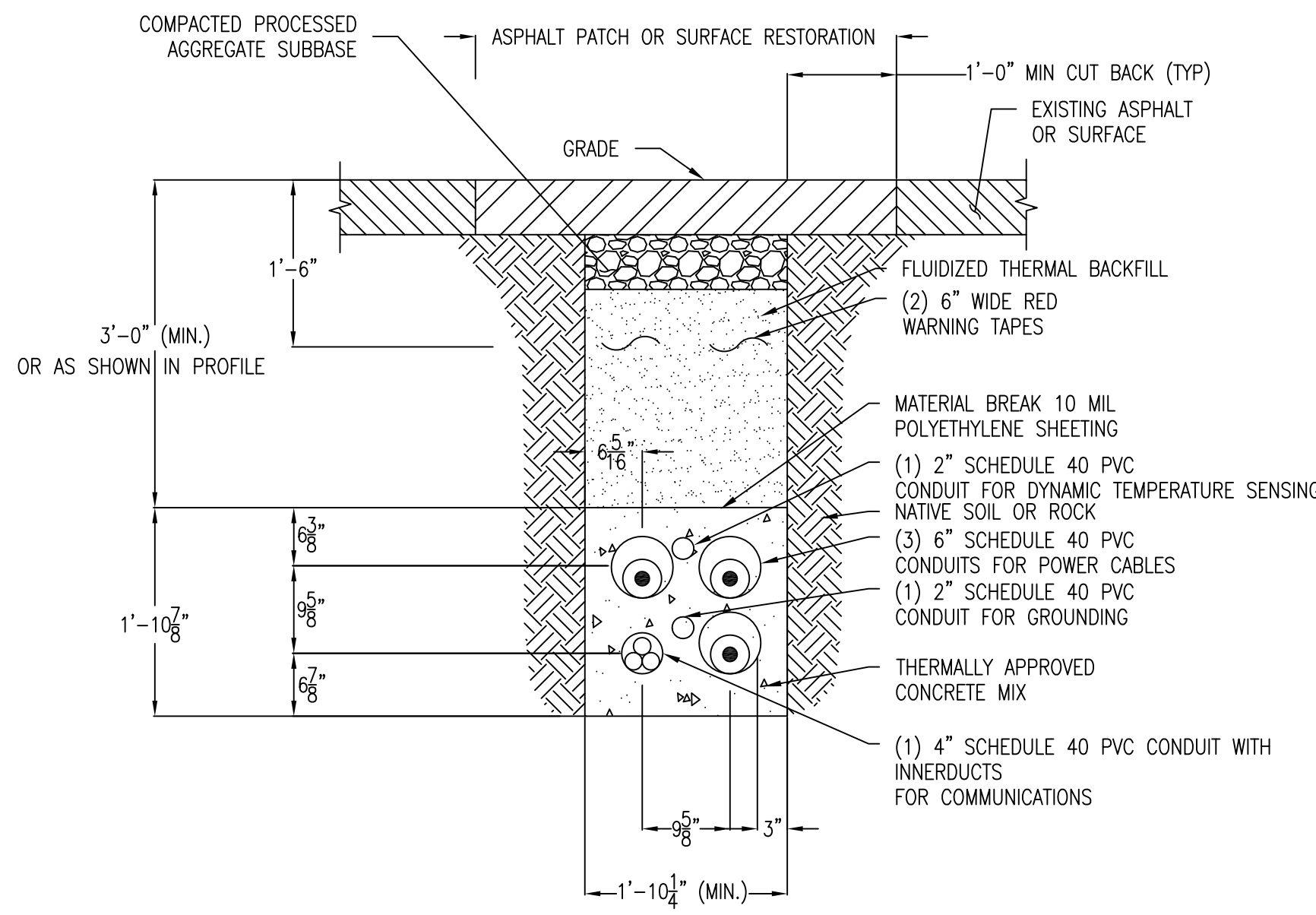
TYPICAL DOUBLE CIRCUIT 2X3 DUCT BANK DETAIL
SCALE N.T.S. **4**
71001PG03



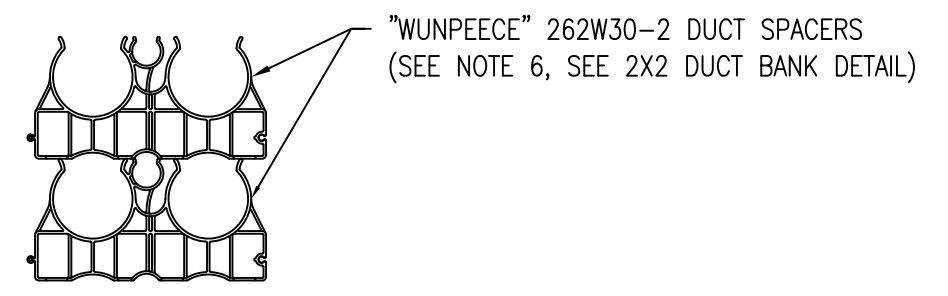
TYPICAL 2X3 DUCT SPACER ARRANGEMENT DETAIL
SCALE N.T.S. **5**
71001PG03



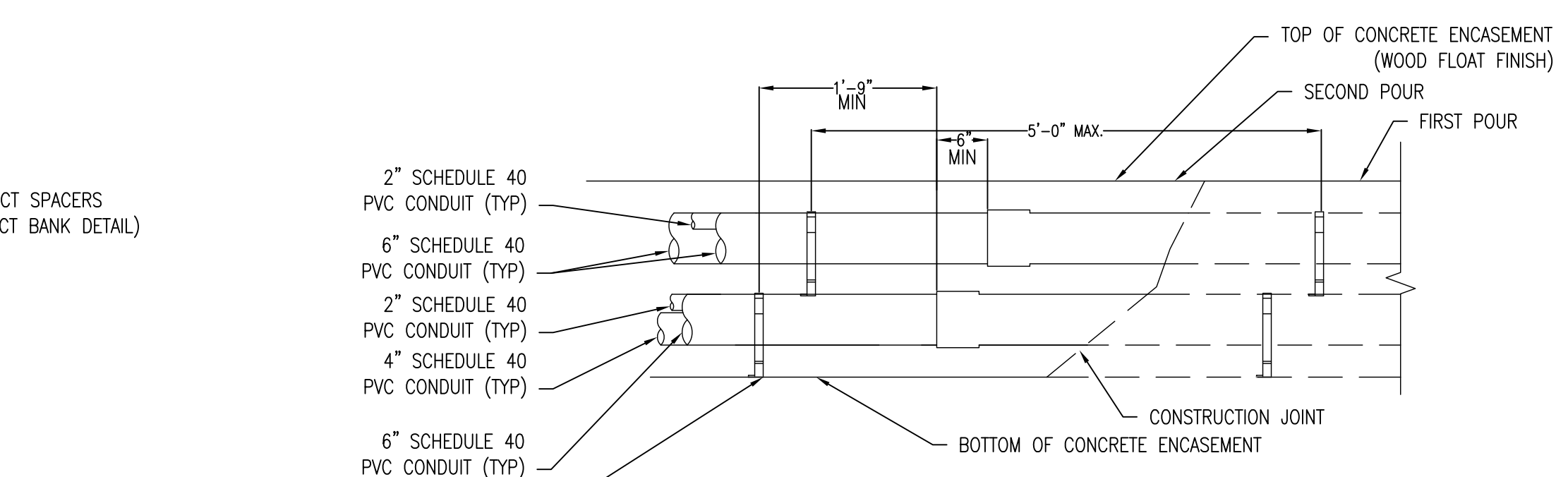
TYPICAL 2X3 DUCT ELEVATION DETAIL
SCALE N.T.S. **6**
71001PG03



TYPICAL SINGLE CIRCUIT 2X2 DUCT BANK DETAIL
SCALE N.T.S. **1**
71001PG03



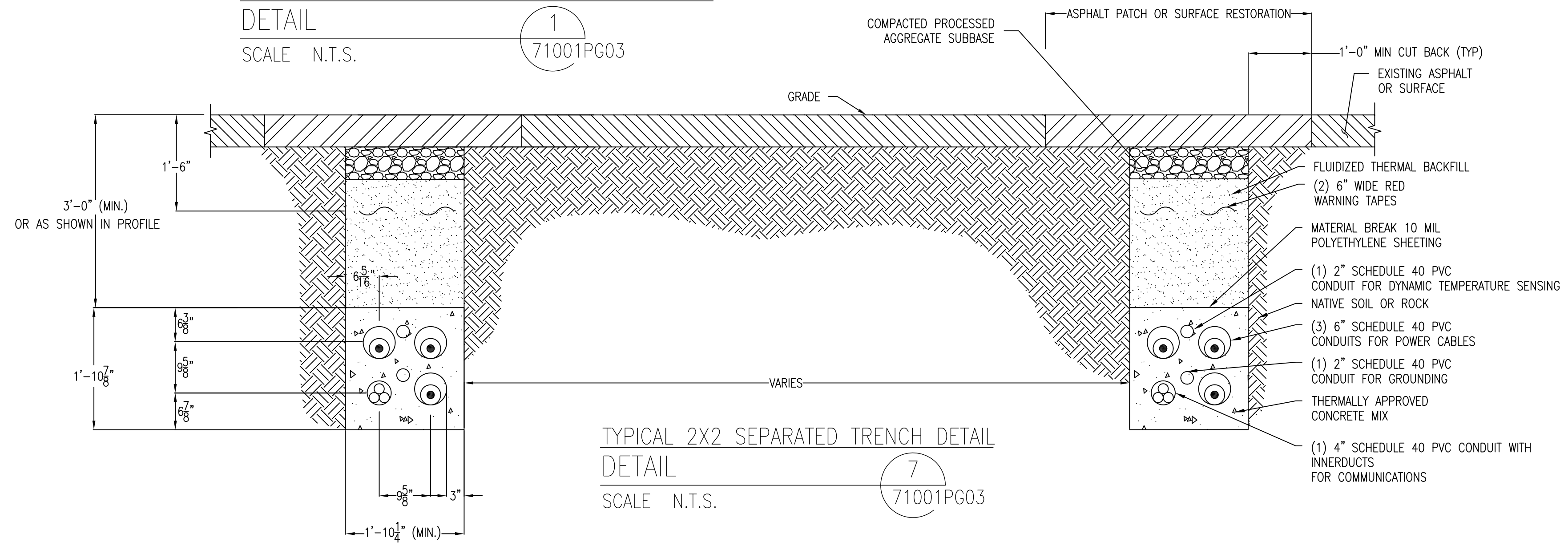
TYPICAL 2X2 DUCT SPACER ARRANGEMENT DETAIL
SCALE N.T.S. **2**
71001PG03



TYPICAL 2X2 DUCT ELEVATION DETAIL
SCALE N.T.S. **3**
71001PG03

NOTES:

1. STAGGER BELL ENDS.
2. ANCHOR SPACERS WITH #14 STEEL TIE WIRE AND #4 REINFORCING BARS.
3. CEMENT ALL JOINTS IN ACCORDANCE WITH CONDUIT MANUFACTURER'S SPECIFICATIONS.
4. AVOID STANDING ON CONDUIT.
5. BELL ENDS SHALL BE ORIENTED SUCH THAT THE CABLE PULL DIRECTION WILL ENTER BELL END OF ALL CONDUITS FIRST.
6. ALL DUCT SPACERS ARE UNDERGROUND DEVICES "WUNPEECE" SPACERS, OR APPROVED EQUIVALENT.
7. THESE DETAILS ARE FOR DEMONSTRATION PURPOSES ONLY. THE CONTRACTOR SHALL COMPLETE STREET RESTORATION IN COMPLIANCE WITH THE APPROPRIATE SPECIFICATION AS REFERENCED IN THE STREET OPENING PERMIT OR CTDOT STANDARD DRAWINGS AND SPECIFICATIONS.
8. THE 1' CUT BACK OF PAVEMENT SHALL BE MADE AT TIME OF REPAIRING AND NOT WHEN TRENCH IS EXCAVATED.
9. BELL ENDS SHALL BE INSTALLED ALL IN THE SAME DIRECTION BETWEEN MANHOLES.



TYPICAL 2X2 SEPARATED TRENCH DETAIL
SCALE N.T.S. **7**
71001PG03

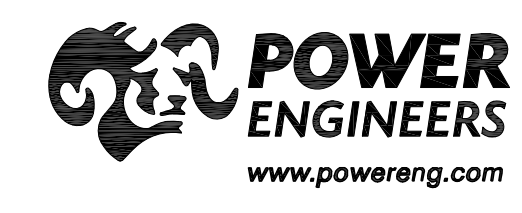
PRELIMINARY
NOT FOR CONSTRUCTION

REVISIONS DURING CONSTRUCTION				
E	4/25/17	REVISED WITH 6" DUCTS	GM	AS LH
D	1/20/17	ISSUED FOR 30% DESIGN REVIEW	GM	EE LH
C	12/22/16	ISSUED FOR 30% DESIGN REVIEW	BA	EE LH
B	5/24/16	ISSUED FOR 30% DESIGN REVIEW	GM	AS LH
A	4/29/16	ISSUED FOR REVIEW	GM	AS LH

EVERSOURCE ENERGY

LINE 1020 & 1703 COS COB - GREENWICH
115-kV UNDERGROUND TRANSMISSION LINE
DUCT BANK DETAIL
GREENWICH, CONNECTICUT

BY	GM	CHKD	AS	APP	LH	APP
DATE	4/21/16	DATE	4/21/16	DATE	4/21/16	DATE
H-SCALE	NTS	SIZE	D	FIELD BOOK & PAGES		
V-SCALE		V.S.		R.E. DWG		
R.E. PROJ. NUMBER					NISCO	01157-71001PG03



NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP