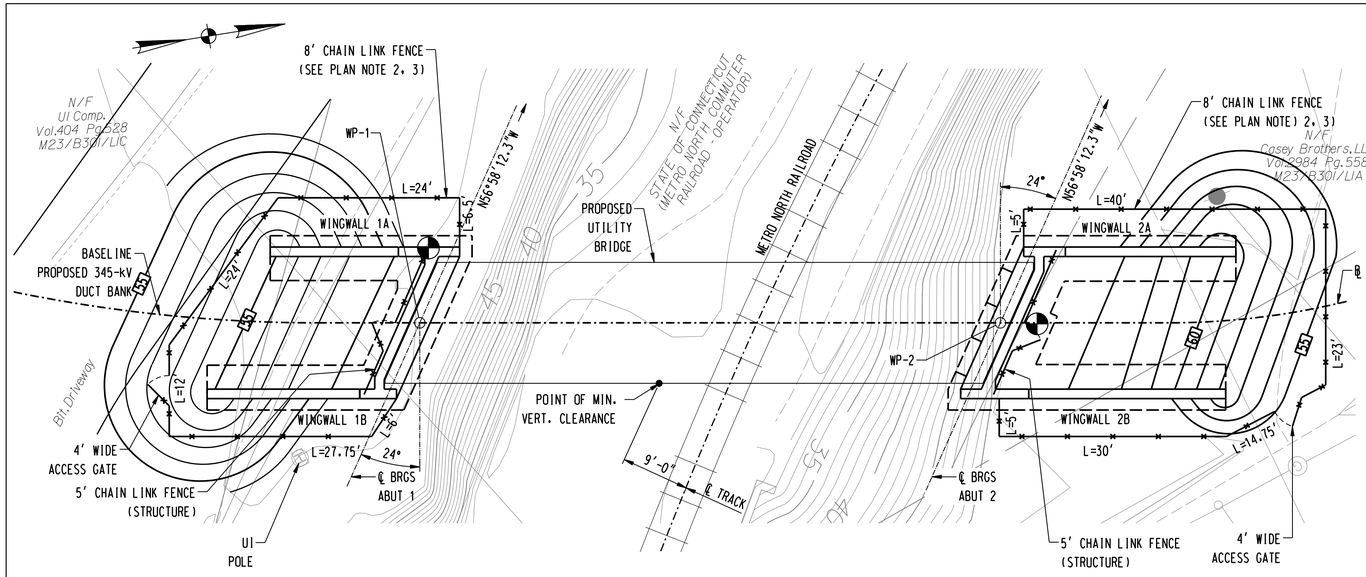
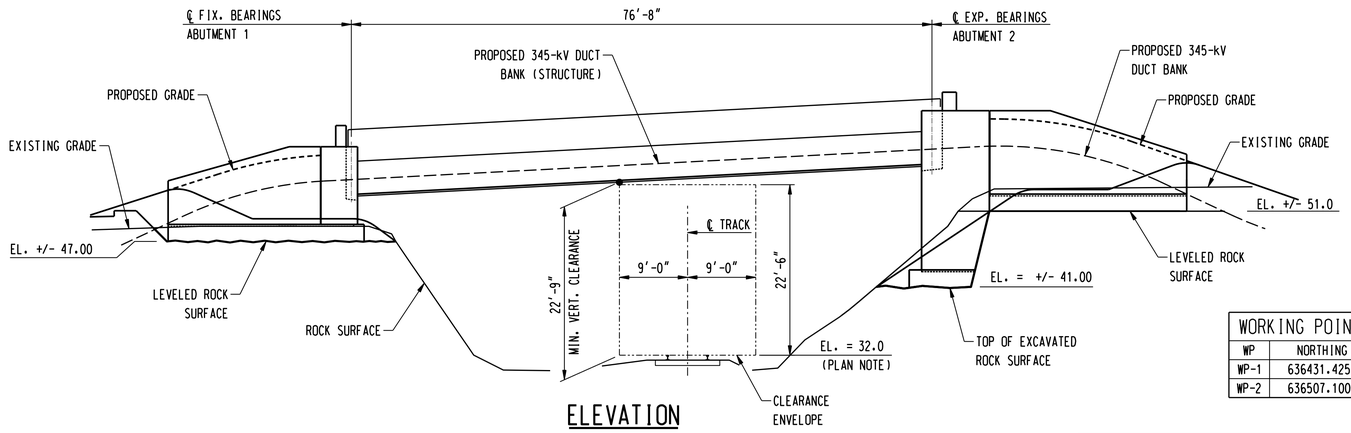


PLAN

SCALE: 1" = 10'



ELEVATION

SCALE: 1" = 10'

PLAN NOTES

1. TRACK ELEVATION SHOWN IS APPROXIMATE. CONTRACTOR SHALL VERIFY ELEVATION OF RAILROAD TRACK AT POINT OF MIN. VERTICAL CLEARANCE PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY BL COMPANIES SHOULD THE ACTUAL TRACK ELEVATION BE HIGHER THAN SHOWN. BRIDGE ELEVATIONS SHALL BE ADJUSTED ACCORDINGLY TO MEET REQUIRED MIN. VERTICAL CLEARANCE.
2. 4" OF CRUSHED STONE FOR SLOPE PROTECTION SHALL BE PROVIDED WITHIN THE LIMITS DEFINED IN THE 8' HIGH PROTECTIVE FENCE DETAILS. SEE DWG. No. 01224-16302 PG 013
3. CRUSHED STONE FOR SLOPE PROTECTION SHALL BE INCLUDED IN THE PAY ITEM "8' CHAIN LINK FENCE".

DESIGN LOADS

GRAVITY LOADS

A. MISCELLANEOUS DEAD LOAD = 126.5 PLF/BEAM
B. UTILITY DEAD LOAD = 92 PLF/BEAM
C. LIVE LOAD = 10 PSF
D. ROOF SNOW LOAD = 22.5 PSF

LATERAL LOADS

WIND:
A. BASIC WIND VELOCITY = 100 MPH
B. HORIZONTAL WIND PRESSURE = 50 PSF
C. VERTICAL WIND PRESSURE = 20 PSF
D. FOR ROOF & CLADDING - WIND PRESSURE ACCORDING SEI/ASCE STANDARD 7-02

SEISMIC:
A. SEISMIC PERFORMANCE ZONE - 2 (PER AASHTO 3.10.4)

TABLE OF QUANTITIES

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION - EARTH (COMPLETE)	CY	30
STRUCTURE EXCAVATION - ROCK (COMPLETE)	CY	190
PERVIOUS STRUCTURE BACKFILL	CY	240
STEEL-LAMINATED ELASTOMERIC BEARINGS	EA	2
CLASS "A" CONCRETE	CY	260
DEFORMED STEEL BARS	LB	33800
ARCHITECTURAL CLADDING (SITE K)	SY	250
STRUCTURAL STEEL (GALVANIZED) (SITE K)	LB	57000
FIBERGLASS STRUCTURAL SHAPES (SITE K)	LB	5000
DAMPPROOFING	SY	190
8' CHAIN LINK FENCE	LF	230
5' CHAIN LINK FENCE (STRUCTURE)	LF	42

GENERAL NOTES

SPECIFICATIONS: CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816 (2004), SUPPLEMENTAL SPECIFICATIONS DATED JULY, 2005, AND SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 3RD EDITION (2004); SEI/ASCE STANDARD 7-02, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES; AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL, 2003 EDITION, UP TO AND INCLUDING 2005 REVISIONS.

ALLOWABLE DESIGN STRESSES:

CLASS "A" CONCRETE	BASED ON	f'c = 3000 PSI
REINFORCEMENT ASTM A615, GRADE 60	BASED ON	fy = 60,000 PSI
STRUCTURAL STEEL AASHTO M270, GRADE 50T2	BASED ON	Fy = 50,000 PSI
FIBERGLASS STRUCTURAL SHAPE	BASED ON	Fu = 33,000 PSI

STRUCTURAL STEEL: SEE STRUCTURAL STEEL NOTES FOR DESIGNATIONS AND REQUIREMENTS.

FOUNDATION PRESSURES: THE VARIOUS STRENGTH LIMITS NOTED ON THE SUBSTRUCTURE PLAN SHEETS REFER TO THE STRENGTH LIMITS AS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATION.

DIMENSIONS & ELEVATIONS: WHEN DIMENSIONS AND ELEVATIONS ARE GIVEN TO LESS THAN THREE DECIMAL PLACES, THE OMITTED DIGITS SHALL BE CONSIDERED TO BE ZEROS.

ALL ELEVATIONS ARE GIVEN IN DECIMAL FEET.

CONCRETE NOTES

CLASS "A" CONCRETE: CLASS "A" CONCRETE SHALL BE USED FOR THE ENTIRE SUBSTRUCTURES.

EXPOSED EDGES: EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 1"X1", UNLESS OTHERWISE NOTED.

CONCRETE COVER: ALL REINFORCEMENT SHALL HAVE TWO INCHES CLEAR COVER, UNLESS OTHERWISE NOTED.

REINFORCEMENT: ALL REINFORCEMENT SHALL BE ASTM A615, GRADE 60.

CONSTRUCTION JOINTS: CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

BORING LEGEND

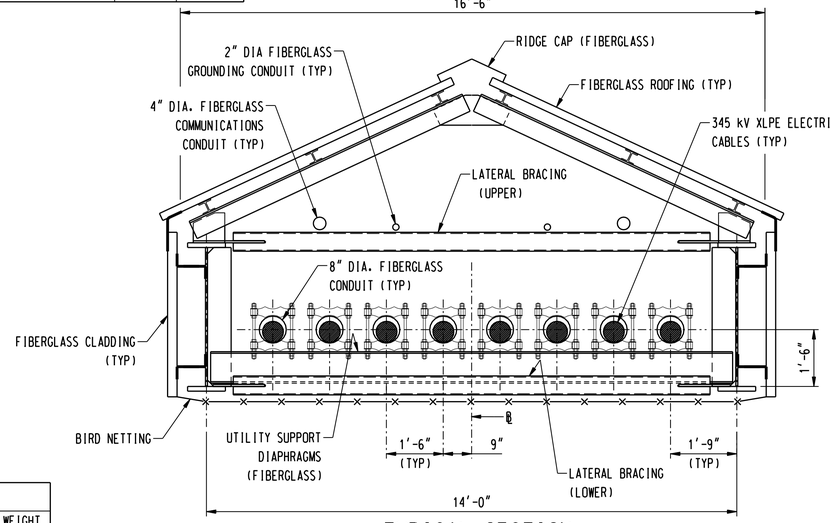
10 LOCATION OF BORING PERFORMED BY GZA GEO ENVIRONMENTAL, INC.

WORKING POINT COORDINATES

WP	NORTHING	EASTING
WP-1	636431.4255	902321.1488
WP-2	636507.1003	902333.1752

TRANSPORTATION DIMENSIONS AND MASS DATA

MEMBER	SHIPPING LENGTH	SHIPPING HEIGHT	SHIPPING WIDTH	SHIPPING WEIGHT
S1-S3	78' - 2"	4'-3"	1'-10"	18,000 LB.



TYPICAL SECTION

SCALE: 1/2" = 1'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATION BY THE BL COMPANIES AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OF ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NOTICE TO BRIDGE INSPECTORS

IT IS RECOMMENDED THAT AREMA, NESC, CONNDOT AND MNR'S BRIDGE SAFETY PROCEDURES BE FOLLOWED WHEN INSPECTING AND MAINTAINING THIS BRIDGE FOR, BUT NOT LIMITED TO, ALL APPROPRIATE COMPONENTS INDICATED IN THE GOVERNING MANUALS FOR BRIDGE INSPECTION. ATTENTION MUST BE GIVEN TO INSPECTING THE FOLLOWING SPECIAL COMPONENTS AND DETAILS. (THE LISTING OF COMPONENTS FOR SPECIFIC ATTENTION SHALL NOT BE CONSTRUED TO REDUCE THE IMPORTANCE OF INSPECTION OF ANY OTHER COMPONENT OF THE STRUCTURE.) THE FREQUENCY OF INSPECTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE GOVERNING MANUALS FOR BRIDGE INSPECTION, UNLESS OTHERWISE DIRECTED BY NORTHEAST UTILITIES.

COMPONENT OR DETAIL	STRUCTURE SHEET REFERENCE
PLATE GIRDERS	01223-16301 PG 007

CONCRETE DISTRIBUTION

SUPERSTRUCTURE	C.Y.	0
SUBSTRUCTURE	C.Y.	205
FOOTINGS	C.Y.	45
TOTAL	C.Y.	250

INSPECTION OF FIELD WELDS

METHOD	NUMBER REQUIRED
ULTRASONIC	inch 0
MAGNETIC PARTICLE	0

FOR REFERENCE ONLY
NOT FOR CONSTRUCTION

no.	date	revisions	by	chk
6	9/04/06	ISSUED CSC	D.Q.	B.K.
5	6/01/06	ISSUED 60% PRELIMINARY	D.Q.	B.K.
4	5/10/06	ISSUED SECOND REVIEW	D.Q.	B.K.
3	1/31/06	ADDENDUM No.2	D.Q.	B.K.
2	1/23/06	ISSUED TO BMcD & N.U. FOR REVIEW	D.Q.	B.K.
1	1/19/06	ISSUED CIVIL R.F.P.	D.Q.	B.K.

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www.blcompanies.com

date 01/10/06
designed M. BEAULIEU
detailed C. CHUANG
checked D. QUINIT / B. KUTA

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

METRO NORTH SPURLINE
GENERAL PLAN

BY	CHKD	APP	APP
DATE	DATE	DATE	DATE

SCALE AS NOTED | D | DWG. NO. 01223-16301 PG 001

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MIDDLETOWN-NORWALK
345 KV UNDERGROUND TRANSMISSION PROJECT
SEGMENTS 3 & 4

Boring No.: MN-3
Page: 1 of 4
File No.: 43411
Check: P. Murphy

Contractor: New England Boring
Foreman: Trent Roe
Logged by: Wendell Barry/Dan Oaks
Date Start/Finish: 11-6-05 / 11-8-05
Boring Location: N638334 E902319
GS Elev.: 43.9' **Datum:** NAVD 1988

	Auger/ Casing	Sampler
Type:	HSA	S.S.
O.D. / I.D.:	5 1/4"/3 1/4"	3" O.D
Hammer Wt.:		140 lb.
Hammer Fall:		30"
Other:	4" O.D. Casing	

GROUNDWATER READINGS

Date	Time	Depth	Casing	Stab
11/6/05	09:00	NE	8	15 min.

Depth	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Field Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0							0.5' ASPHALT FILL		None
1	S-1	24/20	1-3	11-12 7-9		Well graded SAND with GRAVEL (SW), medium dense, light brown, approximately 80% hard, subangular, fine to coarse Sand, 16% fine to coarse Gravel, 4% non-plastic Silt, dry		1	
2									
3									
4	S-2	24/18	4-6	6-5 5-6		Well graded SAND with GRAVEL (SW), medium dense, light brown, approximately 80% hard, subangular, fine to coarse Sand, 16% fine to coarse Gravel, 4% non-plastic Silt, dry			
5									
6									
7									
8	S-3	24/20	8-10	6-7 10-65		Top 15": Well graded SAND (SW), medium dense, light brown, approximately 90% hard, subangular to subrounded, fine to coarse Gravel, 6% fine to coarse Gravel, 4% non-plastic Silt, dry		2	
9							9.6' SANDY GRAVEL WITH COBBLES, BOULDERS		
10				min/ft		Bottom 5": Well graded GRAVEL with SILT and SAND, medium dense, dark brown, approximately 60% Gravel, 28% fine to coarse Sand, 12% non-plastic Silt, dry Boulder and Cobble fragments			
11	C-1	48/14	11-15	3				3	
12				2					
13				2					
14				2 min/ft					
15	C-2	60/0	15-20	2		No recovery	15' POSSIBLE WEATHERED BEDROCK	4	
16				1					
17				2					
18				4					
19				6 min/ft					

REMARKS

1. Borehole advanced using 3 1/4" I.D. auger from 0-8 feet
2. Auger removed at 8 feet and casing installed in borehole from 0 to 11 feet. Borehole advanced as rotary wash boring from 8 to 11 feet. Drilling wash water introduced to borehole at 8 feet.
3. Coring performed from 11 to 20 feet, however due to poor recoveries in sample C-1 and C-2 resume borehole advancement as rotary wash boring from 11 to 25 feet.

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: MN-3

MAIN:\REPORT BORINGS.GPJ - GZAGEOPH.GDT - 1/8/06

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MIDDLETOWN-NORWALK
345 KV UNDERGROUND TRANSMISSION PROJECT
SEGMENTS 3 & 4

Boring No.: MN-3
Page: 2 of 4
File No.: 43411
Check: P. Murphy

Depth	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Field Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
20	S-4	12/5	20-21	75-100/6		Poorly graded GRAVEL with SILT (GP-GM), very dense, brown-gray, approximately 80% angular, fine to coarse Gravel, 10% subangular Sand, 10% non-plastic Silt	POSSIBLE WEATHERED BEDROCK		
21							22' BEDROCK		
22									
23									
24									
25	S-5	0/0	25-25	100/0 min/ft		No recovery			
26	C-3	60/46	25-30	4		Hard, slight weathering, moderately fractured, medium to coarse, grained, gray brown SHCIST RQD = 26%			
27				10					
28				4					
29				5					
30				6 min/ft					
31	C-4	60/56	30-35	4		Hard, slight weathering, moderately fractured, medium to coarse grained, gray SHCIST RQD = 60%			
32				6					
33				8					
34				6					
35				7 min/ft					
36	C-5	60/60	35-40	7		Hard, slightly weathered, slightly fractured, medium to coarse grained, gray, SCHIST RQD = 83%			
37				6					
38				7					
39				8					
40				5 min/ft					
41	C-6	60/60	40-45	5		Hard, slightly weathered, moderately fractured, medium to coarse grained, gray SCHIST RQD = 36%			
42				3					
43				3					

REMARKS

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: MN-3

MAIN:\REPORT BORINGS.GPJ - GZAGEOPH.GDT - 1/8/06

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MIDDLETOWN-NORWALK
345 KV UNDERGROUND TRANSMISSION PROJECT
SEGMENTS 3 & 4

Boring No.: MN-3
Page: 3 of 4
File No.: 43411
Check: P. Murphy

Depth	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Field Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
43				3			BEDROCK		
44				3 min/ft					
45	C-7	60/60	45-50	4		Hard, slightly weathered, slightly fractured, medium to coarse grained, gray SCHIST RQD 80%			
46				4					
47				3					
48				3					
49				3 min/ft					
50	C-8	60/60	50-55	5		Hard, slightly weathered, moderately fractured, medium grained, gray SCHIST RQD = 68%			
51				6					
52				5					
53				10					
54				8 min/ft					
55	C-9	60/60	55-60	5		Hard, slightly weathered, slightly fractured, gray, fine grained, MICA SCHIST, close, smooth joints, shallow dipping (25°) RQD = 72% Fault Zone 58'			
56				8					
57				5					
58				6					
59				7 min/ft					
60	C-10	36/36	60-63	7		Hard, fresh, sound, gray, fine grained MICA SHCIST, close, smooth joints, moderately dipping (50°) RQD = 78%			
61				5					
62				5 min/ft					
63	C-11	60/60	63-68	7		Hard, fresh, sound, gray, fine grained MICA SCHIST, close, smooth joints, moderately dipping (50°) RQD = 92%			
64				7					
65				7					
66				5					

REMARKS

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Boring No.: MN-3

MAIN:\REPORT BORINGS.GPJ - GZAGEOPH.GDT - 1/8/06

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MIDDLETOWN-NORWALK
345 KV UNDERGROUND TRANSMISSION PROJECT
SEGMENTS 3 & 4

Boring No.: MN-3
Page: 4 of 4
File No.: 43411
Check: P. Murphy

Depth	No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Field Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
67							BEDROCK		
68				5 min/ft					
69	C-12	60/0	68-70	7		No recovery		5	
70				8			70'	6	
71						END OF EXPLORATION AT 70'			
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82									
83									
84									
85									
86									
87									
88									
89									

REMARKS

5. C-12 no recovery. Drillers made two attempts to recover but core would not break off
6. Borehole backfilled using drill cuttings
DRAFT

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: MN-3

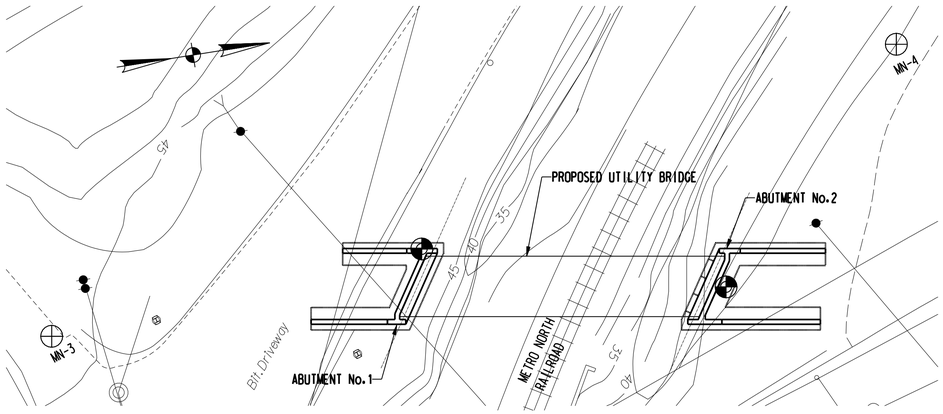
MAIN:\REPORT BORINGS.GPJ - GZAGEOPH.GDT - 1/8/06

MN-3 (PAGE 1 OF 4)

MN-3 (PAGE 2 OF 4)

MN-3 (PAGE 3 OF 4)

MN-3 (PAGE 4 OF 4)



BORING LEGEND

⊕ EXISTING BORING LOCATION PERFORMED BY GZA GEOENVIRONMENTAL, INC.

PROPOSED BORING

BORING LOCATION

SCALE: 1" = 20'

FOR REFERENCE ONLY
NOT FOR CONSTRUCTION

no.	date	revisions	by	chk
6	9/04/06	ISSUED CSC	D.Q.	B.K.
5	6/01/06	ISSUED 60% PRELIMINARY	D.Q.	B.K.
4	5/10/06	ISSUED SECOND REVIEW	D.Q.	B.K.
3	1/31/06	ADDENDUM No.2	D.Q.	B.K.
2	1/23/06	ISSUED TO BMcD & N.U. FOR REVIEW	D.Q.	B.K.
1	1/19/06	ISSUED CIVIL R.F.P.	D.Q.	B.K.

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designed C. CHAUANG
detailed C. CHUANG
checked D. QUINIT / B. KUTA

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

METRO NORTH SPURLINE
SOIL BORING LOG 1

BY	CHKD	APP	APP
DATE	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223–16301 PG 002	

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MIDDLETOWN-NORWALK
345 KV UNDERGROUND TRANSMISSION PROJECT
SEGMENTS 3 & 4

Boring No.: MN-4 **Page:** 1 of 4 **File No.:** 43411 **Check:** P. Murphy

Contractor: New England Boring
Foreman: Orrin Cone
Logged by: Adedeji Adeyoye
Date Start/Finish: 11-7-05 / 11-11-05
Boring Location: See Plan
GS Elev.: **Datum:** NAVD 1988

Auger/ Casing	Sampler	GROUNDWATER READINGS			
Type: Solid Auger	S.S.	Date	Time	Depth	Casing	Stab
O.D. / I.D.: 4"	3" O.D.	11/8/05	14:15	19'	17	28 hours
Hammer Wt.:	140 lb.	11/11/05	13:15	17'	Out	10 min.
Hammer Fall:	30"					
Other: 4" O.D. Casing	NQ2					

Depth	Sample Info: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Field Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
0	S-1	20/14	0-2	26-48 38-49		Well graded SAND with SILT (SW-SM), very dense, light brown, approxmately 80% hard, subangular, fine to coarse Sand, 10% fine to coarse Gravel, 10% non-plastic Silt, dry	SILTY SAND (FILL)	1	None
4	S-2	20/14	4-6	5-12 15-12		Silty SAND (SM), medium dense, light brown, approximately 65% hard, subangular, fine Sand, 25% non-plastic Silt, 10% fine to coarse Gravel, broken glass pieces present, dry		2	
10							10' SILTY SAND WITH GRAVEL		
12	S-4	20/18	12-14	18-28 31-29		Silty SAND with GRAVEL, very dense, light brown, approximately 60% hard, subangular, fine Sand, 25% non-plastic Silt, 15% coarse Gravel (micaceous), dry			
17							17' BEDROCK		
19	C-1	60/51	19.5-24.5	min/ft 5		Hard, slight weathering, slightly fractured,		3	

REMARKS
1. Borehole advanced using solid 4" O.D. auger, SPT conducted using safety hammer
2. Geotherm testing performed at 5 feet and 8 feet
3. Difficulty in advancing auger encountered at 19.5 feet and casing installed in borehole from 0 to 17 feet
4. Coring performed from 19.5 feet to bottom of borehole

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. **Boring No.:** MN-4

MN-4 (PAGE 1 OF 4)

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MIDDLETOWN-NORWALK
345 KV UNDERGROUND TRANSMISSION PROJECT
SEGMENTS 3 & 4

Boring No.: MN-4 **Page:** 2 of 4 **File No.:** 43411 **Check:** P. Murphy

Depth	Sample Info: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Field Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
20				5		medium grained, gray SCHIST RQD = 65%	BEDROCK	4	
				6					
22				6					
23				6					
24				min/ft					
25	C-2	60/60	24.5-29.5	4		Hard, slight weathering, sound, medium grained, gray SCHIST RQD = 85%			
				5					
27				5					
28				6					
29				6					
30	C-3	60/60	29.5-34.5	min/ft 4		Hard, slight weathering, sound, medium grained, gray SCHIST RQD = 95%			
				5					
32				5					
33				6					
34				6					
35	C-4	60/45	34.5-39.5	min/ft 5		Hard, slight weathering, slightly fractured, medium grained, gray SCHIST RQD = 75%			
				5					
37				5					
38				6					
39				6					
40	C-5	60/59	39.5-44.5	min/ft 5		Hard, slight weathering, sound, medium grained, gray SCHIST RQD = 85%			
				5					
42				5					
43				5					

REMARKS

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. **Boring No.:** MN-4

MN-4 (PAGE 2 OF 4)

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MIDDLETOWN-NORWALK
345 KV UNDERGROUND TRANSMISSION PROJECT
SEGMENTS 3 & 4

Boring No.: MN-4 **Page:** 3 of 4 **File No.:** 43411 **Check:** P. Murphy

Depth	Sample Info: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Field Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
44				6			BEDROCK		
				min/ft					
45	C-6	36/32	44.5-47.5	5		Hard, slight weathering, slightly fractured, medium grained, gray SCHIST RQD = 78%			
46				5					
47				6					
				min/ft					
48	C-7	60/54	47.5-52.5	4		Hard, slight weathering, sound, medium grained, gray SCHIST RQD = 85%			
49				4					
50				4					
51				5					
52				5					
				min/ft					
53	C-8	60/60	52.5-57.5	5		Hard, moderately weathered, slightly fractured, medium grained, gray SCHIST RQD = 42%			
54				5					
55				5					
56				4					
57				4					
				min/ft					
58	C-9	60/38	57.5-62.5	5		Hard, moderately weathered, slightly fractured, medium grained, gray SCHIST RQD = 47%			
59				5					
60				5					
61				4					
62				4					
				min/ft					
63	C-10	60/60	62.5-67.5	5		Hard, moderately weathered, slightly fractured, medium grained, gray SCHIST RQD = 68%			
64				5					
65				5					
66				5					

REMARKS

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. **Boring No.:** MN-4

MN-4 (PAGE 3 OF 4)

GZA GeoEnvironmental, Inc. *Engineers and Scientists*

MIDDLETOWN-NORWALK
345 KV UNDERGROUND TRANSMISSION PROJECT
SEGMENTS 3 & 4

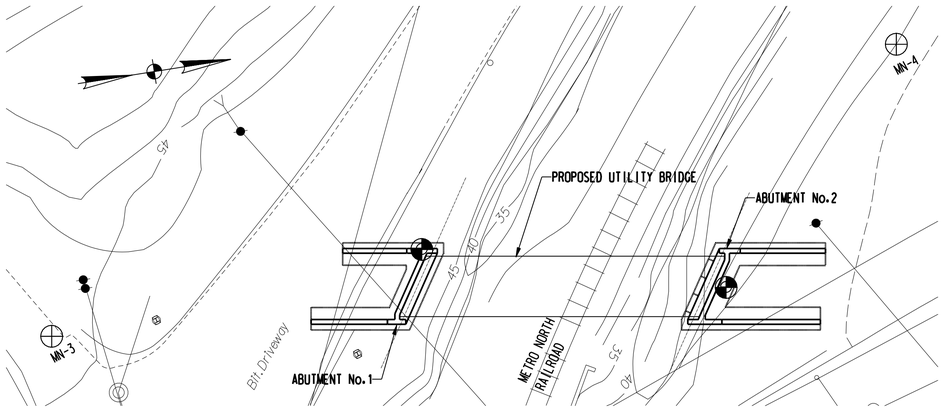
Boring No.: MN-4 **Page:** 4 of 4 **File No.:** 43411 **Check:** P. Murphy

Depth	Sample Info: No.	Pen./ Rec. (in.)	Depth (Ft.)	Blows (/6")	Field Test Data	Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
67				5			BEDROCK		
				min/ft					
68	C-11		67.6-70	4		Hard, moderately weathered, slightly fractured, medium grained, gray SCHIST RQD = 99%		6	
69				4					
70				4			70'		
						END OF EXPLORATION AT 70'		6	
71									
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82									
83									
84									
85									
86									
87									
88									
89									

REMARKS
5. Borehole backfilled with drill cuttings and granular soil within the vicinity of boring.
6. **DRAFT**

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. **Boring No.:** MN-4

MN-4 (PAGE 4 OF 4)



BORING LEGEND

⊕ EXISTING BORING LOCATION PERFORMED BY GZA GEOENVIRONMENTAL, INC.

PROPOSED BORING LOCATION

BORING LOCATION
SCALE: 1" = 20'

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no.	date	revisions	by	chk
6	9/04/06	ISSUED CSC	D.Q.	B.K.
5	6/01/06	ISSUED 60% PRELIMINARY	D.Q.	B.K.
4	5/10/06	ISSUED SECOND REVIEW	D.Q.	B.K.
3	1/31/06	ADDENDUM No.2	D.Q.	B.K.
2	1/23/06	ISSUED TO BMcD & N.U. FOR REVIEW	D.Q.	B.K.
1	1/19/06	ISSUED CIVIL R.F.P.	D.Q.	B.K.

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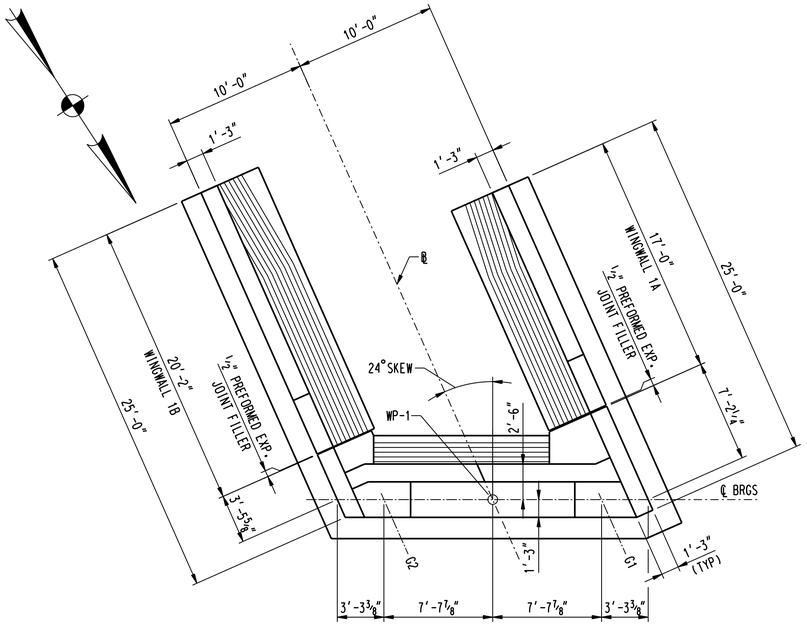
date 01/10/06
designed C. CHAUNG
detailed C. CHUANG
checked D. QUINIT / B. KUTA

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

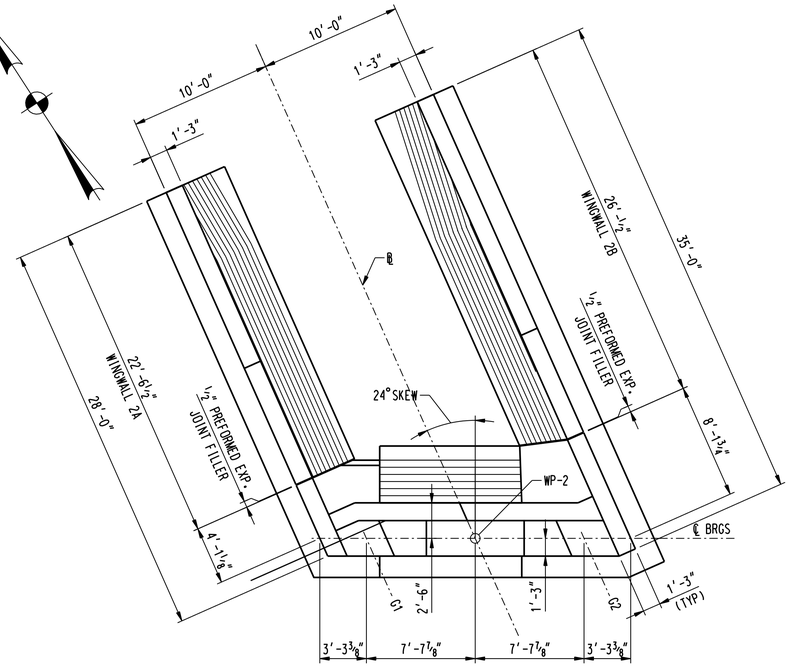
NORTHEAST UTILITIES SERVICE CO.
FOR THE CONNECTICUT LIGHT & POWER COMPANY
TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT
METRO NORTH SPURLINE
SOIL BORING LOG 2

BY	CHKD	APP	APP
DATE	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223–16301 PG 003	



ABUTMENT 1 - PLAN

SCALE: 3/16" = 1'-0"



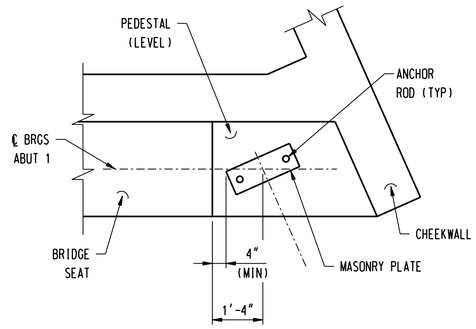
ABUTMENT 2 - PLAN

SCALE: 3/16" = 1'-0"

NOTES:

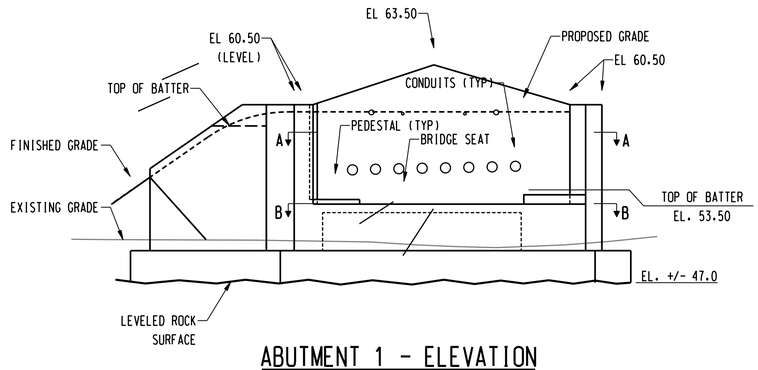
1. FOR SECTION A-A AND B-B, SEE DWG. NO. 01223-16301 PG 005
2. FOR WINGWALL ELEVATION VIEWS, SEE DWG. NO. 01223-16301 PG 006
3. KEEPER BLOCKS SHALL BE POURED AFTER THE GIRDERS HAVE BEEN ERECTED AND SET INTO THEIR FINAL POSITIONS.
4. FOR FOOTING DIMENSIONS, SEE TYPICAL SECTIONS ON DWG. NO. 01223-16301 PG 005
5. FOR GROUNDING DETAIL, SEE DWG. No. 01223-16301 PG 009.
6. FOR PIPE SLEEVE DETAIL, SEE DWG. No. 01223-16301 PG 005.

BRIDGE SEAT & PEDESTAL ELEVATIONS		
	ABUTMENT 1	ABUTMENT 2
BRIDGE SEAT	54.40	58.50
G1 PEDESTAL	54.947	59.022
G2 PEDESTAL	54.643	58.718



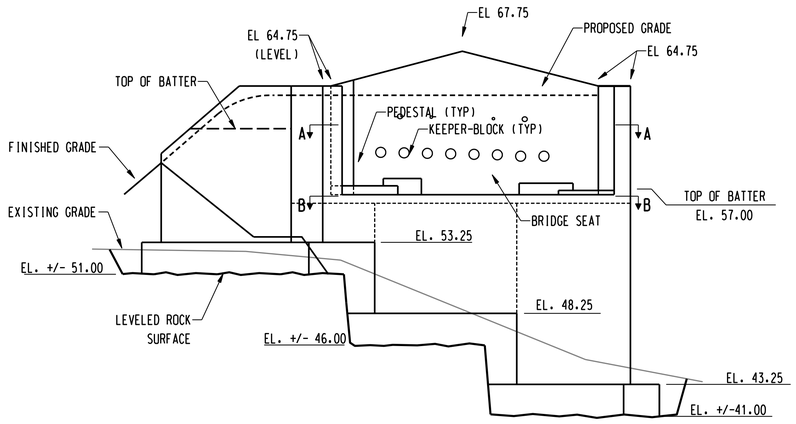
PEDESTAL PLAN

SCALE: 1/2" = 1'-0"



ABUTMENT 1 - ELEVATION

SCALE: 3/16" = 1'-0"



ABUTMENT 2 - ELEVATION

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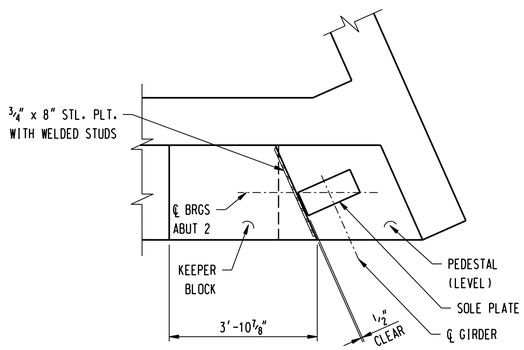
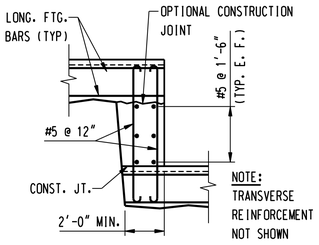


KEEPER BLOCK PLAN

SCALE: 1/2" = 1'-0"



STEP FOOTING DETAIL

N.T.S.

ROCK EXCAVATION NOTES:

1. THE CONTRACTOR SHALL NOTIFY BL COMPANIES AFTER ROCK EXCAVATION IS COMPLETED. NO CONCRETE SHALL BE PLACED UNTIL BL COMPANIES HAVE INSPECTED AND APPROVED THE DEPTH OF EXCAVATION AND THE CHARACTER OF THE ROCK MATERIAL.
2. THE ELEVATION OF BOTTOM OF FOOTINGS, AS SHOWN ON THE PLANS, SHALL BE CONSIDERED AS APPROXIMATE. BL COMPANIES, UPON INSPECTION OF STRUCTURE EXCAVATION, MAY ORDER, IN WRITING, CHANGES IN DIMENSIONS AND/OR ELEVATIONS OF FOOTINGS AS MAY BE NECESSARY TO SERVICE A SATISFACTORY FOUNDATION.

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detailed M .BEAULIEU
designed M. BEAULIEU
checked D. QUINIT / B. KUTA

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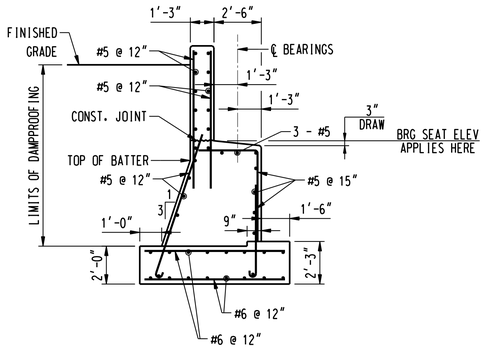
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

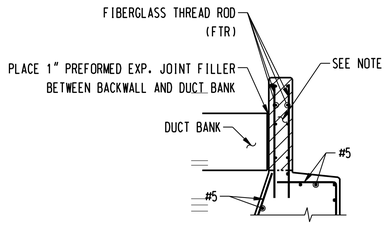
METRO NORTH SPURLINE
ABUTMENT 1 & 2 PLAN AND ELEVATION

BY	CHKD	APP	APP
DATE	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223-16301 PG 004	

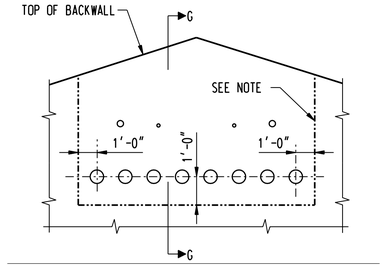


TYPICAL ABUTMENT SECTION

SCALE: 1/4" = 1'-0"



SECTION G-G

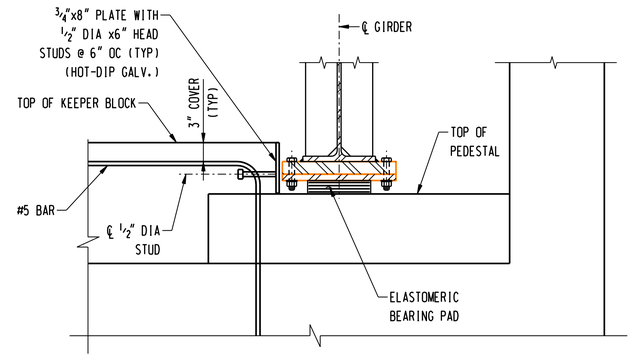


ELEVATION

NOTE:
METALLIC REINFORCEMENT BARS SHALL NOT PASS THROUGH THE LIMITS OF NON-METALLIC AREA SHOWN ON THE PLANS. FIBERGLASS THREADED RODS (FTR) SHALL BE SUBSTITUTED AS SHOWN.

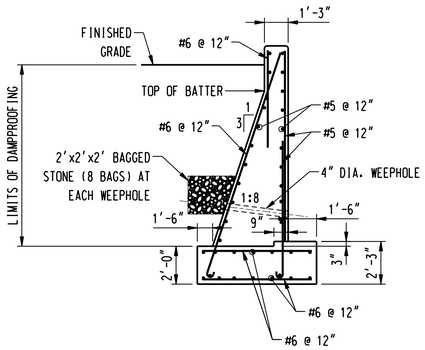
BACKWALL REINFORCEMENT DETAIL

N.T.S.



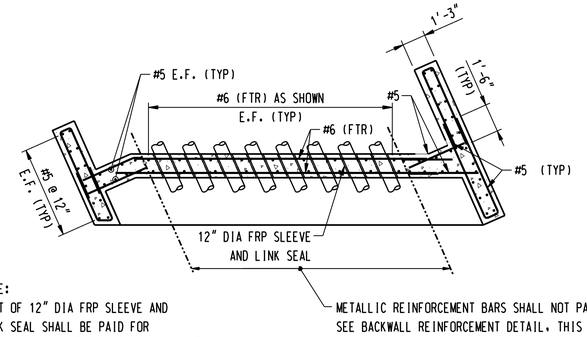
KEEPER BLOCK ELEVATION

SCALE: 1" = 1'-0"



TYPICAL WINGWALL SECTION

SCALE: 1/4" = 1'-0"



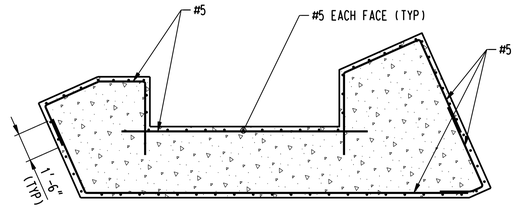
NOTE:
COST OF 12" DIA FRP SLEEVE AND LINK SEAL SHALL BE PAID FOR UNDER THE ITEM "CLASS 'A' CONCRETE".

METALLIC REINFORCEMENT BARS SHALL NOT PASS THROUGH THE AREA. SEE BACKWALL REINFORCEMENT DETAIL, THIS SHEET.

SECTION A-A

BACKWALL REINFORCEMENT DETAIL

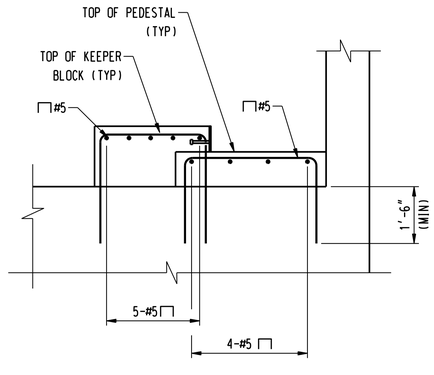
SCALE: 1/4" = 1'-0"



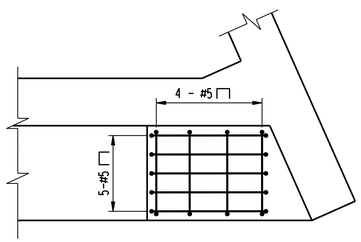
SECTION B-B

ABUTMENT STEM REINFORCEMENT DETAIL

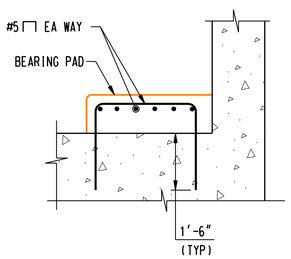
SCALE: 1/4" = 1'-0"



SECTION



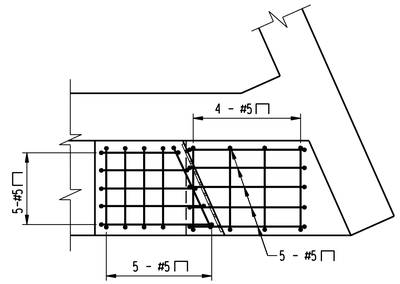
PLAN



SECTION

PEDESTAL

SCALE: 1/2" = 1'-0"



PLAN

KEEPER BLOCK DETAIL

SCALE: 1/2" = 1'-0"

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date 01/10/06
designed M. BEAULIEU
detailed M .BEAULIEU, C. CHUANG
checked D. QUINIT / B. KUTA

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

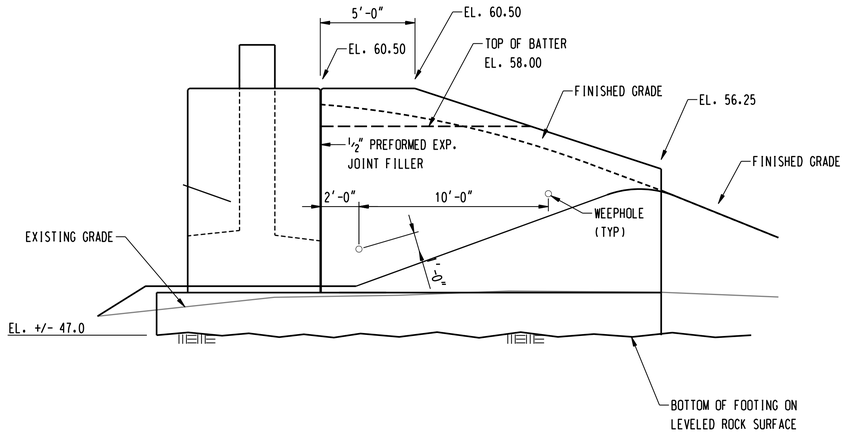
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

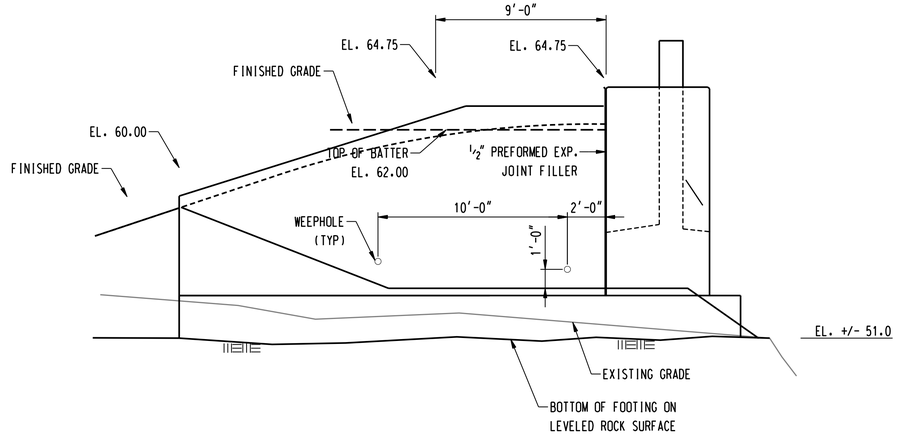
METRO NORTH SPURLINE
ABUTMENT AND WINGWALL SECTION

BY	CHKD	APP	APP
DATE	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223–16301 PG 005	



WINGWALL 1A

SCALE: 1/4"=1'-0"

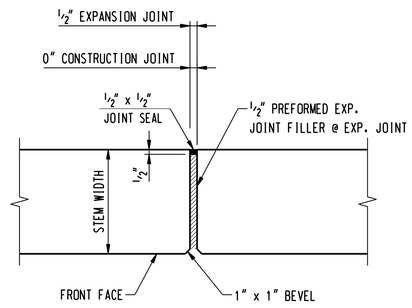


WINGWALL 2A

SCALE: 1/4"=1'-0"

NOTES:

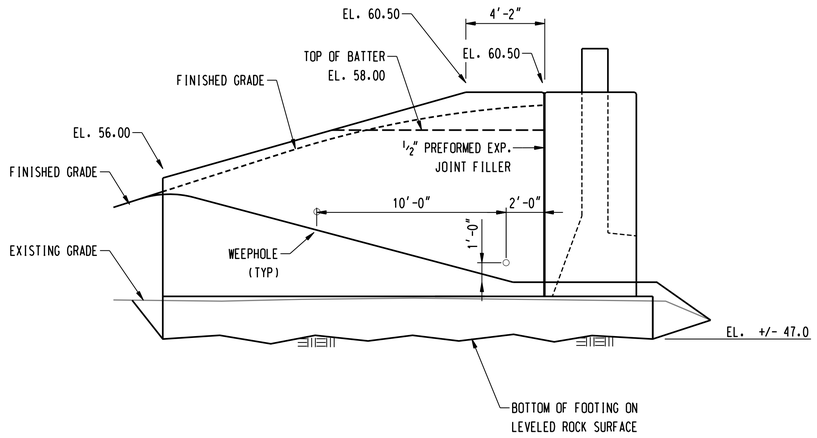
1. FOR TYPICAL WINGWALL SECTION, SEE DWG. NO. 01223-16301 PG 005.
2. FOR WINGWALL DIMENSIONS, SEE DWG. NO. 01223-16301 PG 004



NOTE:
NO REINFORCING BARS SHALL PASS THROUGH EXPANSION.
REINFORCING BARS SHALL PASS THROUGH CONSTRUCTION JOINTS.

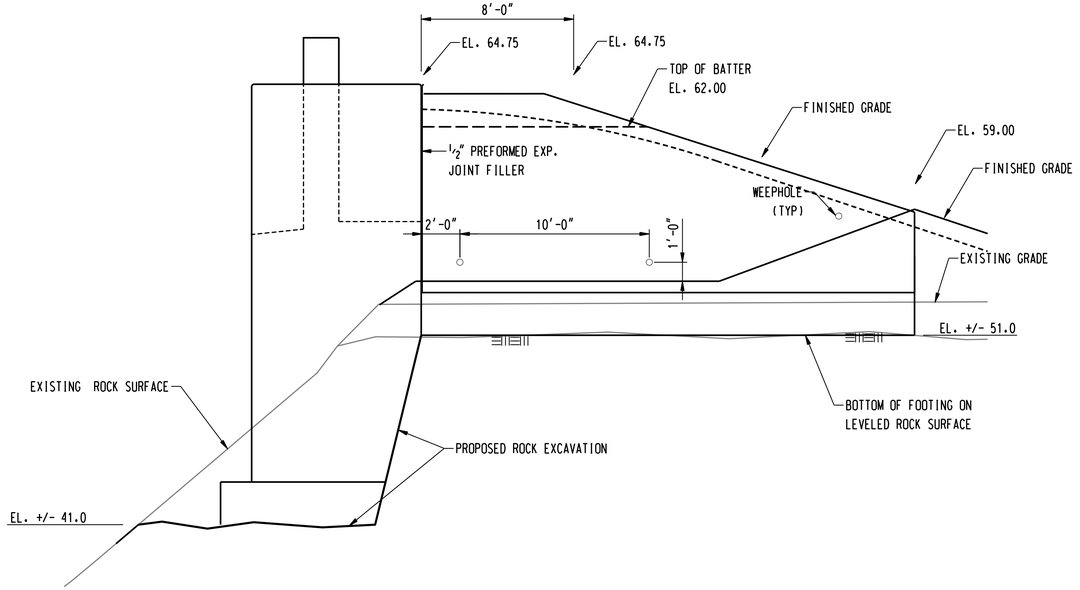
STEM JOINT DETAIL

N.T.S.



WINGWALL 1B

SCALE: 1/4"=1'-0"



WINGWALL 2B

SCALE: 1/4"=1'-0"

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FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

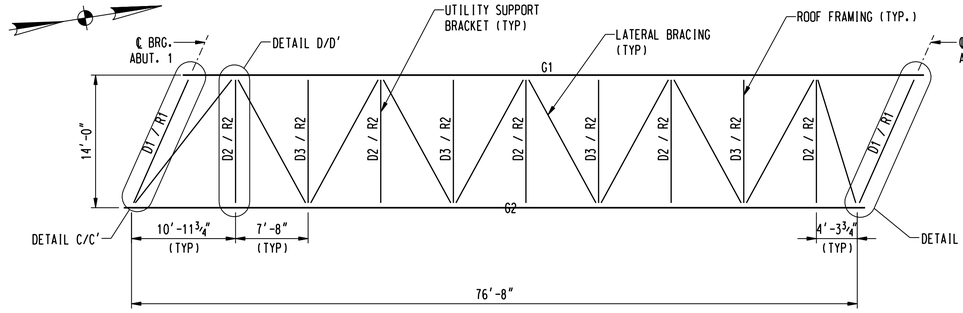
METRO NORTH SPURLINE
WINGWALL ELEVATIONS

BY	CHKD	APP	APP
DATE	DATE	DATE	DATE

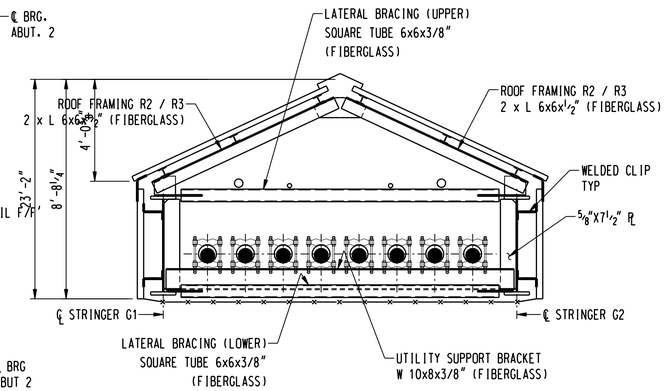
SCALE AS NOTED

D

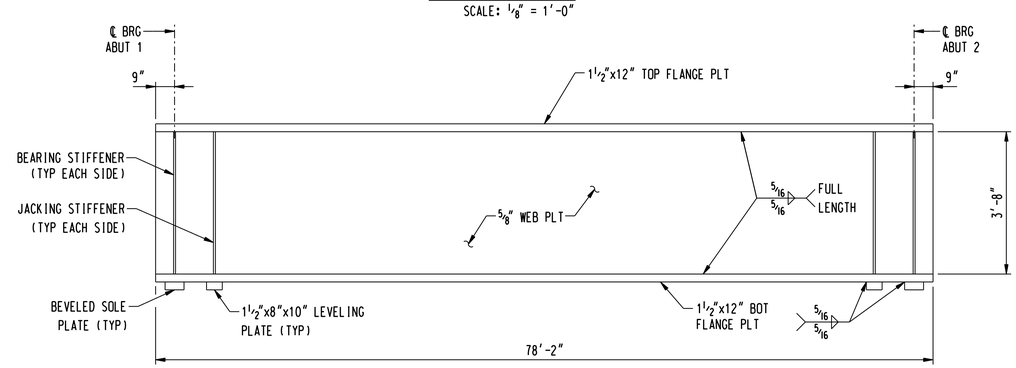
DWG. NO. 01223-16301 PG 006



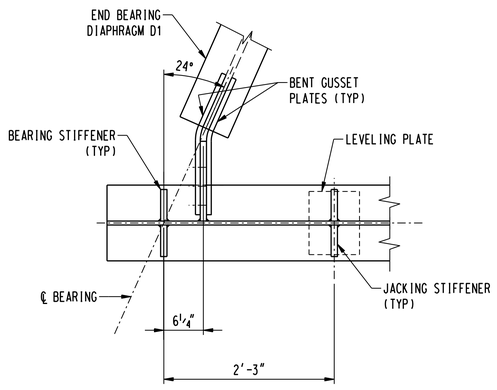
FRAMING PLAN
SCALE: 1/8" = 1'-0"



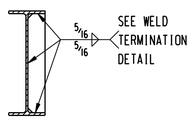
SECTION
SCALE: 1/2" = 1'-0"



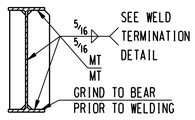
BEAM ELEVATION (G2 SHOWN)
N.T.S.



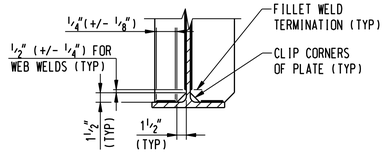
BEARING STIFFENER LAYOUT
N.T.S.



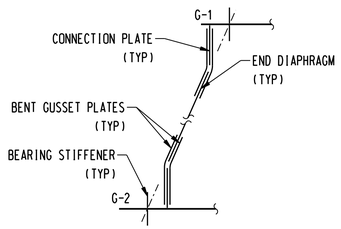
CONNECTION PLATE
N.T.S.



BEARING STIFFENER
N.T.S.



WELD TERMINATION DETAIL
N.T.S.



END DIAPHRAGM LAYOUT
N.T.S.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL (LOW ALLOY) SHALL CONFORM TO AASHTO M270, GRADE 50 T2.
2. ALL FABRICATED STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.
3. ALL BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A325, TYPE 1, EXCEPT AS NOTED OTHERWISE. ALL BOLTS, NUTS, AND WASHERS SHALL BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.
4. WELDING DETAILS, PROCEDURES, AND TESTING METHODS SHALL CONFORM TO THE ANSI/AASHTO/AWS D1.5:2002 - BRIDGE WELDING CODE, UNLESS OTHERWISE NOTED ON THE PLANS.
5. FIELD SPLICES WILL NOT BE ALLOWED EXCEPT WITH THE WRITTEN PERMISSION OF THE ENGINEER PRIOR TO THE SUBMISSION OF SHOP PLANS. IF ALLOWED, THESE SPLICES SHALL BE DESIGNED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE COST OF THESE SPLICES, INCLUDING THE COST OF DESIGN, SHALL BE AT NO EXTRA EXPENSE TO THE OWNER.
6. MULTIPLE PASS WELDS, INSPECTED BY THE MAGNETIC PARTICLE METHOD, SHALL HAVE EACH PASS OR LAYER INSPECTED AND ACCEPTED BEFORE PROCEEDING TO THE NEXT PASS OR LAYER, AS DETERMINED BY THE ENGINEER.
7. BEARING STIFFENERS AND ENDS OF GIRDERS SHALL BE VERTICAL AFTER APPLICATION OF FULL DEAD LOADS.
8. THE STRUCTURAL STEEL FABRICATORS SHALL BE CERTIFIED UNDER THE AISC QUALITY CONTROL PROGRAM AS "CATEGORY SBr - SIMPLE STEEL BRIDGE STRUCTURES".
9. THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO ENSURE THE STABILITY OF ALL STRUCTURAL ELEMENTS UNTIL THE TOTAL STRUCTURE IS IN BEING.

NOTES:

1. ALL DIMENSIONS ARE HORIZONTAL AND MEASURED ALONG THE CENTERLINE OF THE WEB.
2. BEARING STIFFENERS SHALL BE PROVIDED ON BOTH SIDES OF THE WEB.
3. END BEARING DIAPHRAGMS SHALL BE PARALLEL TO THE CENTERLINE OF BEARINGS OF THE STRUCTURE.
4. INTERMEDIATE CONNECTION PLATES SHALL BE PERPENDICULAR TO THE GIRDERS.
5. FOR BEARING DETAILS, SEE DWG. NO. 01223-16301 PG 010.
6. FOR DIMENSIONS OF BEVELED SOLE PLATES, SEE DWG. NO. 01223-16301 PG 010.
7. FOR DETAILS C/C', D/D', AND F/F', SEE DWG. NO. 01223-16301 PG 009.
8. FOR DIAPHRAGM & UTILITY SUPPORT DETAILS, SEE DWG. 01223-16301 PG 008.

CAMBER NOTES:

1. STRUCTURAL STEEL DEAD LOAD DEFLECTION INCLUDES WEIGHTS OF GIRDERS, FIBERGLASS DIAPHRAGMS, AND ROOF FRAMING.
2. MISCELLANEOUS DEAD LOAD DEFLECTION INCLUDES WEIGHTS OF CLADDING AND ROOFING MATERIALS.
3. OTHER DEAD LOAD DEFLECTION INCLUDES THE WEIGHT OF UTILITIES.
4. TOTAL CAMBER APPLIES TO THE TOP OF WEB AT MID-SPAN AND IS MEASURED FROM THE CAMBER REFERENCE LINE.
5. THE CAMBER REFERENCE LINE IS THE STRAIGHT LINE CONNECTING THE TOP OF WEB AT THE CENTERLINE OF BEARINGS FROM ONE ABUTMENT TO THE OTHER.

FIBERGLASS STRUCTURAL SHAPE NOTES:

1. ALL FIBERGLASS REINFORCED POLYMER (FRP) STRUCTURAL SHAPE PRODUCTS SHALL CONFORM TO THE MANUFACTURER'S SPECIFICATIONS. STRUCTURAL SHAPES AND PLATES SHALL BE MADE FROM VINYL ESTER RESIN WITH FIRE RETARDANT ADDITIVES TO MEET A FLAME RATING OF LESS THAN 25 PER ASTM E-84 TEST METHOD AND MEET THE SELF-EXTINGUISHING REQUIREMENTS OF ASTM D-635.
2. ALL FIBERGLASS STRUCTURAL SHAPES AND PLATES SHALL BE OF THE EXTREN SERIES 625 FIBERGLASS STRUCTURAL SHAPES BY STRONGWELL, OR APPROVED EQUAL.

   MANUFACTURER INFORMATION: STRONGWELL - BRISTOL DIVISION
   400 COMMONWEALTH AVE.
   P.O. BOX 580
   BRISTOL, VA 24203
   TEL. (276) 645-8000

3. ALL FRP STRUCTURAL SHAPE PRODUCTS SHALL CONTAIN A ONE-MIL MINIMUM COATING OF U.V. INHIBITOR.
4. COLOR OF FRP STRUCTURAL SHAPE PRODUCTS SHALL BE GRAY, OR OF COLOR WITH LOW VISIBILITY, OR AS APPROVED BY THE ENGINEER.
5. THE CONTRACTOR SHALL PROTECT FABRICATED FRP UNITS TO PREVENT DAMAGE DURING HANDLING, SHIPPING, AND ON-SITE STORAGE PRIOR TO INSTALLATION. MATERIALS, WHICH ARE, IN THE OPINION OF THE ENGINEER, DAMAGED AS TO BE UNFIT FOR USE, SHALL BE REMOVED FROM THE PROJECT SITE AND PROMPTLY REPLACED BY THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.

DEAD LOAD DEFLECTIONS AND CAMBER TABLE

DEAD LOAD DEFLECTION AT MIDSPAN (in)				CAMBER AT MIDSPAN (in)			
GIRDER	STR STL DEAD LOAD	MISC DEAD LOAD	OTHER DEAD LOADS	TOTAL DEAD LOAD	VERT CURVE ORDINATE	EXTRA CAMBER	TOTAL CAMBER
G1-G2	0.741	0.421	0.305	1.468	0.000	0.770	2.238

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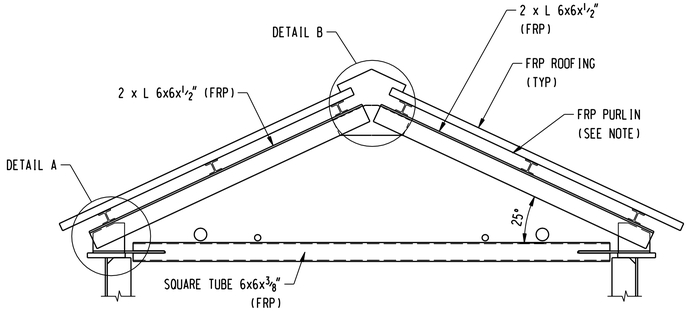
355 Research Parkway Meriden, CT 06450 800.301.3077 www.blcompanies.com

date 01/10/06
designed A. GRZADZIEL, C. CHAUNG
detailed C. CHUANG
checked D. QUINIT / B. KUTA

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

NORTHEAST UTILITIES SERVICE CO.
FOR THE CONNECTICUT LIGHT & POWER COMPANY
TITLE MIDDLETOWN-NORWALK 345kV TRANSMISSION PROJECT
METRO NORTH SPURLINE
FRAMING PLAN & STRUCTURAL NOTES

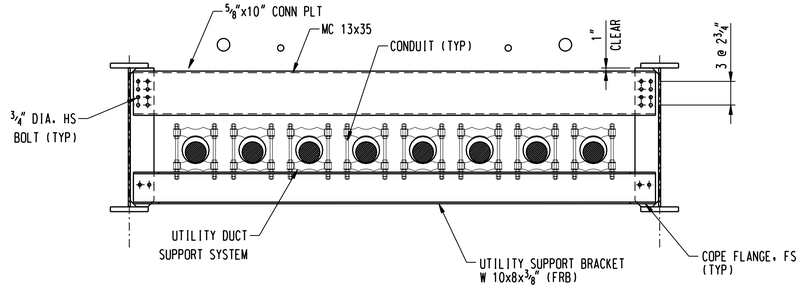
BY	CHKD	APP	APP
DATE	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223-16301 PG 007	



NOTE:
FRP PURLIN SHALL BE DESIGNED BY THE FRP ROOFING MANUFACTURER.

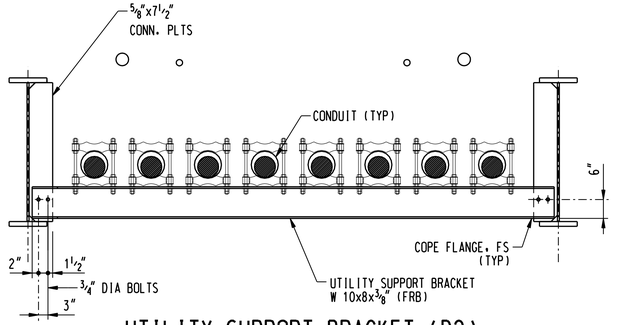
ROOF FRAMING (R2 SHOWN / R1 SIMILAR)

SCALE: 1/2" = 1'-0"



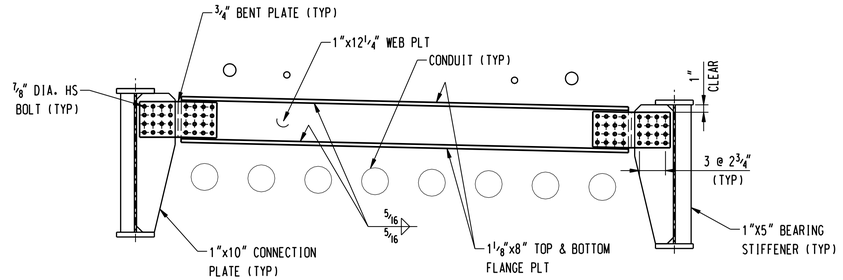
INTERMEDIATE DIAPHRAGM (D3)

SCALE: 1/2" = 1'-0"



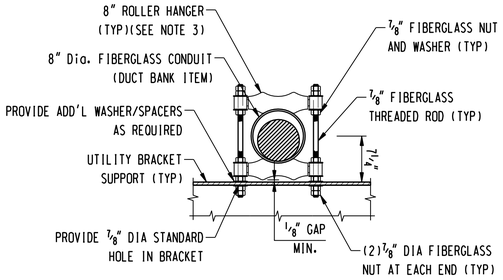
UTILITY SUPPORT BRACKET (D2)

SCALE: 1/2" = 1'-0"



END BEARING DIAPHRAGM (D1)

SCALE: 1/2" = 1'-0"

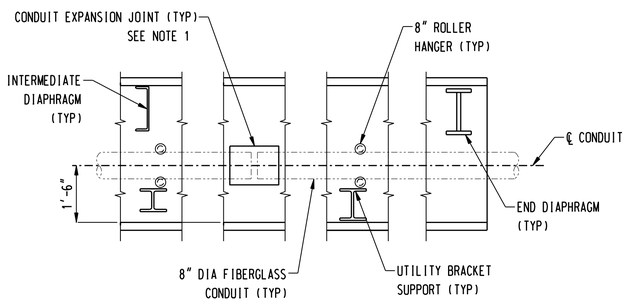


UTILITY DUCT SUPPORT SYSTEM

N.T.S.

NOTES:

1. THE COST OF FURNISHING AND INSTALLING THE 8" DIA. FIBERGLASS CONDUITS SHALL BE INCLUDED IN THE COST OF THE STANDARD DUCT BANK.
2. THE COST OF FURNISHING AND INSTALLING THE UTILITY DUCT SUPPORT SYSTEM INCLUDING THE 8" ROLLER HANGER SHALL BE INCLUDED IN THE COST OF THE ITEM "FIBERGLASS STRUCTURAL SHAPES". QTY = 54 EA.
3. THE ROLLER HANGER ASSEMBLY SHALL BE TWO-ROD ROLLER HANGER BY: ERICO, MODEL No. 605 (ELECTRO GALVANIZED), PART No. 6050800PL.
4. FOR FIBERGLASS REINFORCED POLYMER (FRP) ROOFING DETAILS AND INFORMATION, SEE DWG. NO. 01224-16302 PG 011.



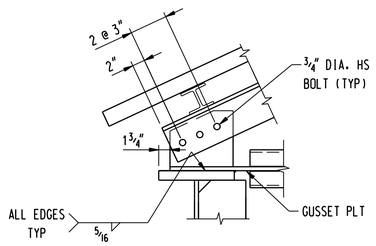
NOTE:
CONDUIT EXPANSION JOINT SHALL BE LOCATED NEAR MID-SPAN OF STRUCTURE.

Double Expansion Joint w/ O-Ring
Fitting IPS No. 80C-XW-39 with Tight Lock Joint

Manufacturer: Champion Fiberglass
6400 Spring Stuebner Rd
Spring, TX 77389
(203) 655-8900

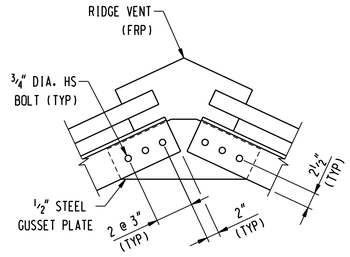
UTILITY DUCT BANK PROFILE

N.T.S.



DETAIL A

N.T.S.



DETAIL B

N.T.S.

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6	9/04/06	ISSUED CSC	D.Q.	B.K.
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2	1/23/06	ISSUED TO BMcD & N.U. FOR REVIEW	D.Q.	B.K.
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designed A. GRZADZIEL, C. CHAUNG
checked D. QUINIT / B. KUTA

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

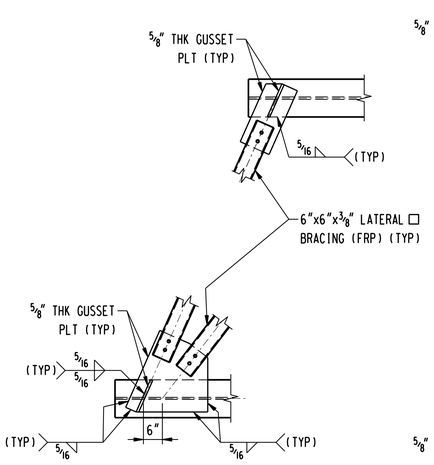
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

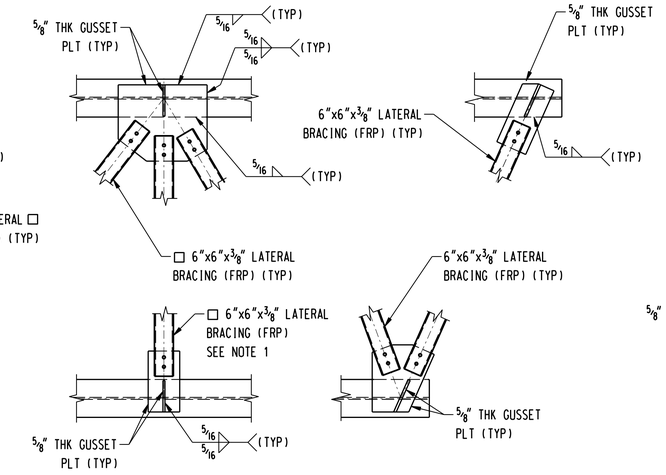
TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

METRO NORTH SPURLINE
DIAPHRAGM AND CONNECTION DETAILS

BY	CHKD	APP	APP
DATE	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223-16301 PG 008	



DETAIL C



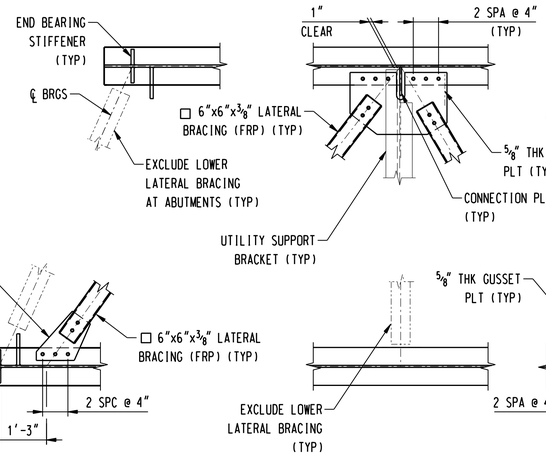
DETAIL D

DETAIL E

NOTE:
1. ELEMINATE CENTER MEMBER AT INTERMEDIATE DIAPHRAGM (D3) LOCATIONS.

LATERAL BRACING - UPPER

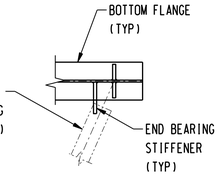
SCALE: 1/2" = 1'-0"



DETAIL C'

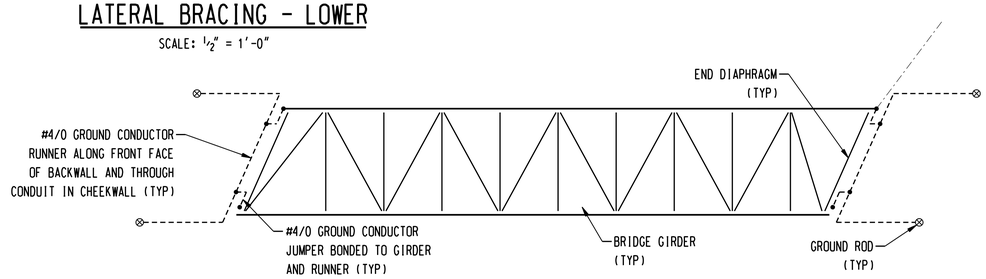
DETAIL D'

DETAIL E'



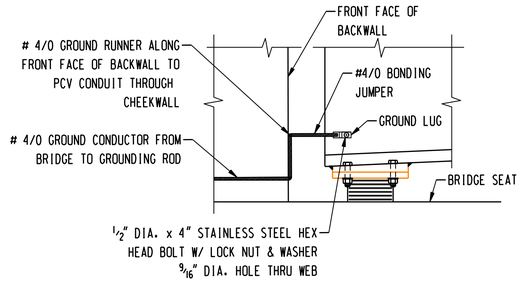
LATERAL BRACING - LOWER

SCALE: 1/2" = 1'-0"



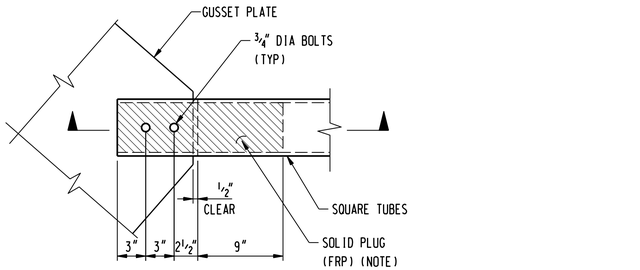
GROUNDING PLAN

N.T.S.

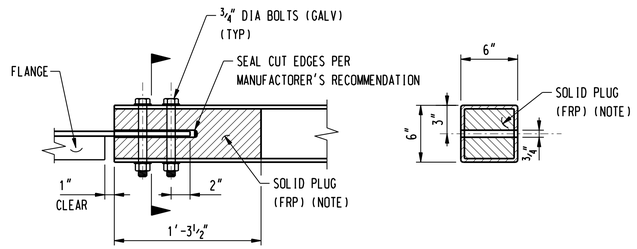


GROUNDING AND BONDING DETAIL

N.T.S.



PLAN



SECTION

SECTION

NOTE: SOLID PLUG SHALL BE ATTACHED TO TUBING WITH ADHESIVE PRIOR TO FABRICATING NOTCH. ADHESIVE SHALL BE PER FRP MANUFACTURER'S SPECIFICATION.

TUBE CONNECTION DETAIL

SCALE: 1 1/2" = 1'-0"

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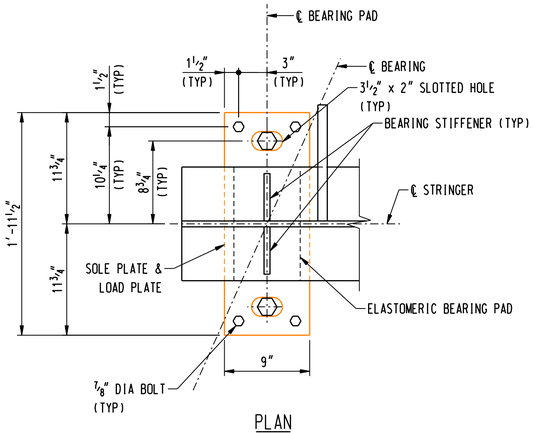
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

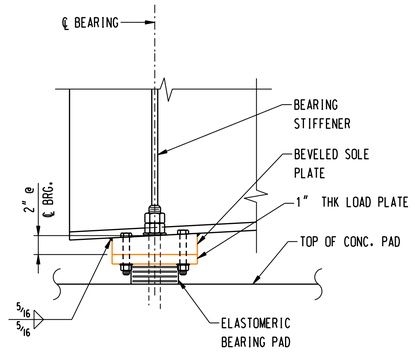
TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

METRO NORTH
LATERAL BRACING DETAILS

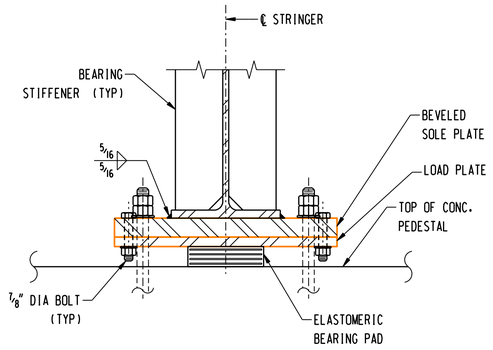
BY	CHKD	APP	APP
DATE	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223-16301 PG 009	



PLAN



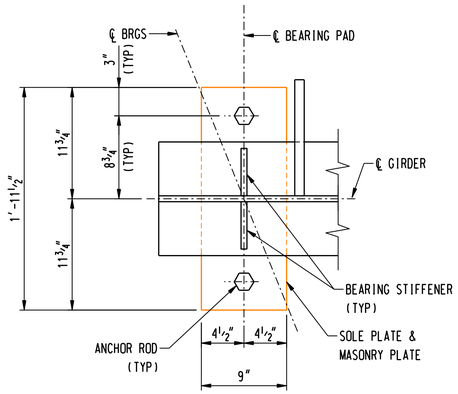
ELEVATION



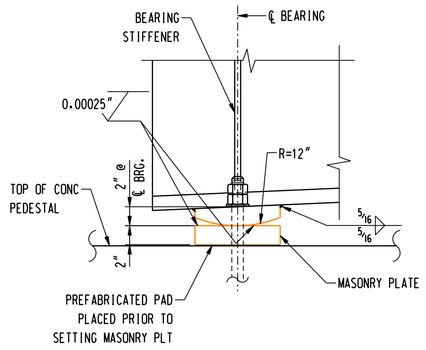
SECTION

EXPANSION BEARING

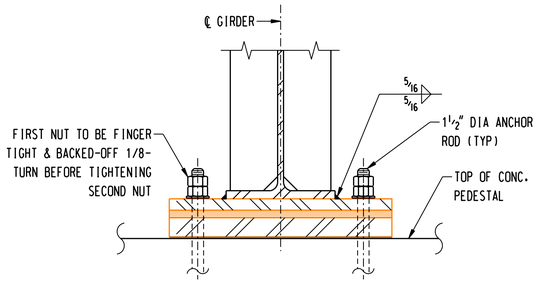
SCALE: 1½" = 1'-0"



PLAN



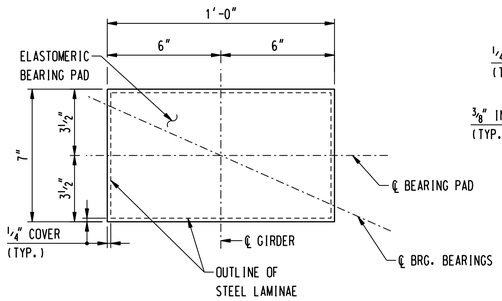
ELEVATION



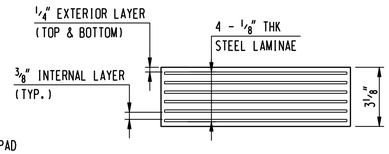
SECTION

FIXED BEARING

SCALE: 1½" = 1'-0"



PLAN



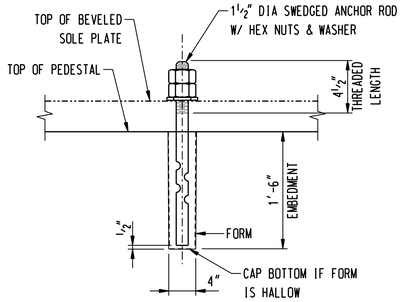
SECTION

ELASTOMERIC BEARING PAD

SCALE: 3" = 1'-0"

BEARING NOTES:

1. ELASTOMER SHALL BE GRADE 3 VIRGIN NEOPRENE WITH SHORE 'A' DUROMETER HARDNESS = 60.
2. STEEL LAMINAE USED IN THE ELASTOMERIC BEARING SHALL CONFORM TO AASHTO M270 GRADE 36.
3. LOAD PLATE SHALL CONFORM TO AASHTO M270, GRADE 50, HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 AND SHALL BE HOT-BONDED TO THE ELASTOMERIC BEARING PAD DURING VULCANIZATION.
4. SOLE PLATE SHALL CONFORM TO AASHTO M270, GRADE 50, HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.
5. SOLE PLATES SHALL BE BEVELED TO MATCH THE SLOPE OF THE GIRDER SO THAT THE BOTTOM SURFACE OF THE PLATE IS LEVEL AFTER APPLICATION OF FULL DEAD LOAD.
6. BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A325, TYPE 1, EXCEPT AS NOTED OTHERWISE. ALL BOLTS, NUTS, AND WASHERS SHALL BE MECHANICAY GAVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.
7. ELASTOMERIC BEARING SHALL BE INSTALLED AT AN AMBIENT TEMPERATURE BETWEEN 50°AND 80°F. CENTERLINE OF BEARING PAD AND SOLE PLATE SHALL BE INSTALLED AT THE CENTERLINE OF BEARINGS.
8. IN NO CASE SHALL THE ELASTOMER OR VULCANIZED BOND BE SUBJECTED TO TEMPERATURE HIGHER THAN 400°F.
9. BEARING DESIGN SERVICE LOADS: TL = 25 kips (SERV LIMIT I)
10. ANCHOR RODS AND NUTS SHALL BE ASTM F1554, GRADE 55 (S1) (S4). ANCHOR RODS AND NUTS SHALL BE MECHANICAY GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.
11. FOR BEARING AND ANCHOR ROD LAYOUT, SEE PEDESTAL PLAN ON STR. DWG. NO. 01223-16301 PG 004.
12. PEDESTAL ELEVATIONS SHOWN ON THE ABUTMENT DRAWINGS APPLY AT THE TOP OF THE CONCRETE PEDESTAL.



ANCHOR ROD DETAIL

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date 01/10/06
detailed C. CHUANG
designed A. GRZADZIEL, C. CHAUNG
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MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

NORTHEAST UTILITIES SERVICE CO.

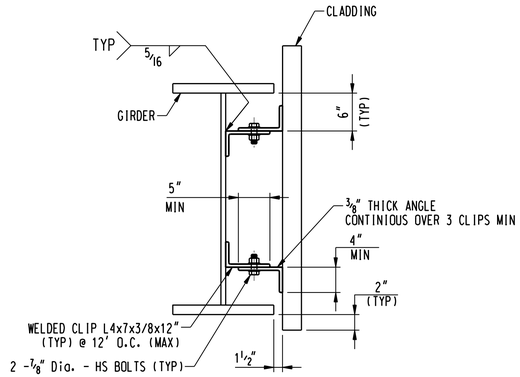
FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

METRO NORTH SPURLINE
BEARING DETAILS

BY	CHKD	APP	APP
DATE	DATE	DATE	DATE

SCALE AS NOTED | D | DWG. NO. 01223-16301 PG 010



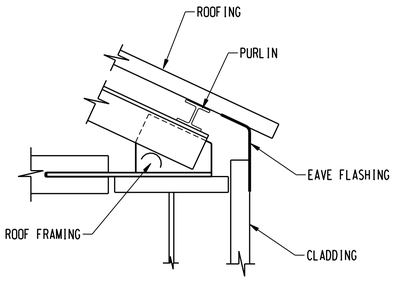
NOTE:

1. CLADDING MANUFACTURER MAY SUBMIT ALTERNATE CLADDING ATTACHMENTS DETAILS TO THE ENGINEER FOR APPROVAL.

SECTION

WELDED CLIP DETAIL

N.T.S.



SECTION

EAVE DETAIL

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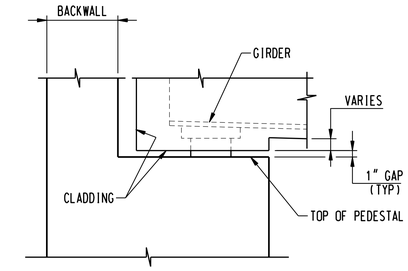

SECTION

BEARING PAD CLOSURE DETAIL

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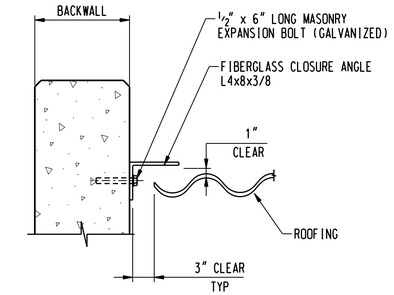

SECTION

END CLOSURE DETAIL (ROOFING)

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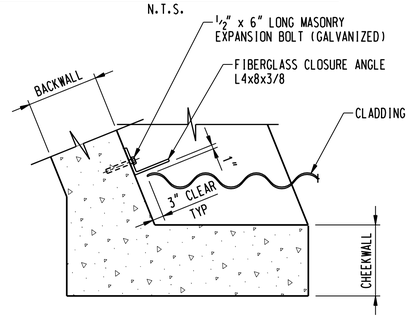
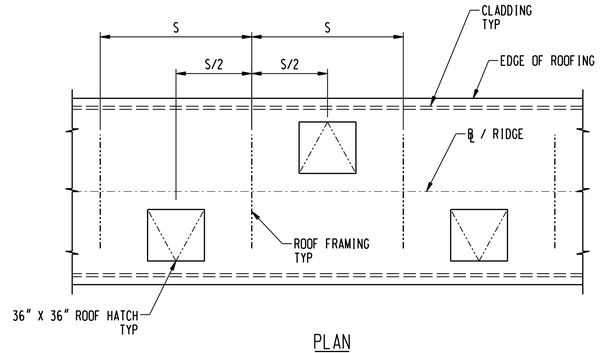


SECTION

END CLOSURE DETAIL (CLADDING)

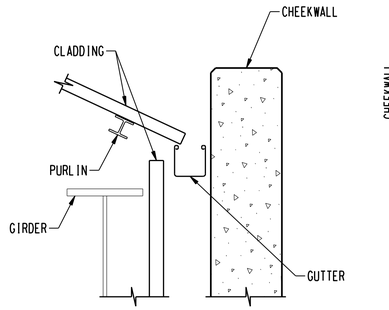
N.T.S.



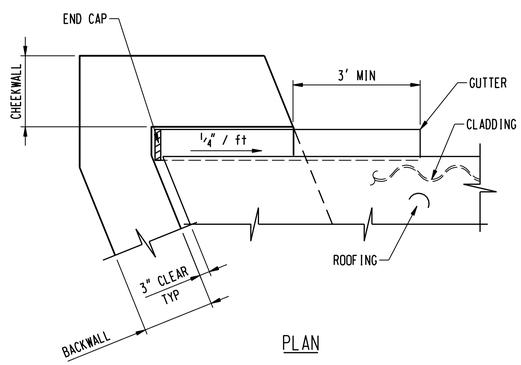
PLAN

INSPECTION HATCH LAYOUT

N.T.S.



SECTION



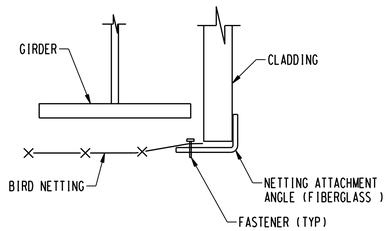
PLAN

NOTE:

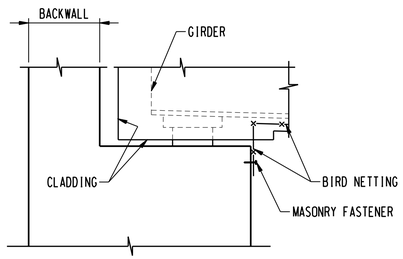
1. GUTTERS SHALL BE INSTALLED AT ALL FOUR CORNERS OF THE ROOF.

CORNER DETAIL

N.T.S.



CLADDING CONNECTION



ABUTMENT CONNECTION

BIRD NETTING DETAIL

N.T.S.

FOR REFERENCE ONLY
NOT FOR CONSTRUCTION

NOTES:

1. ALL FIBERGLASS CLADDING, ROOFING AND MISCELLANEOUS FITTINGS AND ACCESSORIES SHALL BE OF THE TUFF SPAN SERIES BY ENDURO COMPOSITES , OR APPROVED EQUAL.

   MANUFACTURER INFORMATION: ENDURO COMPOSITES
   A DIVISION OF ENDURO SYSTEMS INCORPORATED
   1005 BLUE MOUND ROAD
   FORT WORTH, TX 76131
   TEL. (800) 667-8668
   WWW.ENDUROCOMPSITES.COM

2. THE CONTRACTOR SHALL PROVIDE THE OWNER AND THE ENGINEER WITH COLOR SAMPLES AND PROFILES OF THE CLADDING AND ROOFING MATERIALS FOR APPROVAL.

3. ACCESS HATCH, FLASHING AND MISCELLANEOUS ACCESSORIES SHALL BE OF FIBERGLASS MATERIAL. BOLTS, FASTENERS AND MISCELLANEOUS HARDWARE SHALL EITHER BE GALVANIZED OR STAINLESS STEEL AND SHALL BE IN ACCORDANCE WITH THE ACCESS HATCH MANUFACTURER'S SPECIFICATIONS.

4. FRAMING SYSTEM AND ATTACHMENT DETAILS FOR THE ACCESS HATCH SHALL BE DESIGNED AND DETAILED BY THE ROOFING MANUFACTURER. THE CONTRACTOR SHALL PREPARE WORKING DRAWINGS AND SUBMIT TO BL COMPANIES FOR REVIEW AND APPROVE. WORKING DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT.

5. ROOFING AND CLADDING, INCLUDING FRAMING AND ATTACHMENTS, SHALL BE DESIGNED FOR WIND AND SNOW LOADS AS SPECIFIED IN THESE PLANS.

6. ROOFING AND CLADDING SHALL BE DESIGNED TO ALLOW FOR THERMAL EXPANSION. TEMPERATURE RANGE TO BE USED FOR THERMAL EXPANSION SHALL BE FROM -10° F TO 170° F.

ACCESS HATCH NOTES:

1. CONTRACTOR SHALL SUBMIT CATALOG CUTS OF THE ACCESS HATCH SYSTEM AND DETAILS FOR REVIEW AND APPROVAL. ACCESS HATCH SHALL EITHER BE OR METAL OR OF FIBERGLASS MATERIAL, HAVING NON-REFLECTIVE SURFACE FINISH WITH COLOR CLOSELY MATCHING THE ROOFING MATERIAL.

2. CONTRACTOR SHALL DESIGN FRAMING SYSTEM AROUND THE ACCESS HATCH. ACCESS HATCHES AND ITS FRAMING SYTEM SHALL BE DESIGNED FOR A MINIMUM CONCENTRATED LIVE LOAD OF 500 LBS.

3. CONTRACTOR SHALL DETAIL ACCESS HATCH TO BE ADOPTABLE TO THE ROOFING PROFILE. HATCH AND ROOFING INTERFACE SHALL BE DETAILED TO ENSURE A WATERTIGHT CONNECTION.

4. ORIENTATION, LOCATION AND SPACING BETWEEN HATCHES SHALL BE AS SHOWN ON THESE DRAWINGS.

5. ACCESS HATCH SHALL BE EASY TO OPEN AND SHALL HAVE A LOCKING DEVICE TO HOLD THE DOOR IN THE CLOSED AND OPEN POSITIONS.

6. COST OF FURNISHING AND INSTALLING ACCESS HATCHES, INCLUDING THE HATCH FRAMING SYSTEM SHALL BE INCLUDED IN THE COST OF THE ITEM "ARCHITECTURAL CLADDING".

no.	date	revisions	by	chk
6	9/04/06	ISSUED CSC	D.Q.	B.K.
5	6/01/06	ISSUED 60% PRELIMINARY	D.Q.	B.K.
4	5/10/06	ISSUED SECOND REVIEW	D.Q.	B.K.
3	1/31/06	ADDENDUM No.2	D.Q.	B.K.
2	1/23/06	ISSUED TO BMcD & N.U. FOR REVIEW	D.Q.	B.K.
1	1/19/06	ISSUED CIVIL R.F.P.	D.Q.	B.K.

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date 01/10/06
designed M. BEAULIEU
detailed M .BEAULIEU, C. CHUANG
checked D. QUINIT / B. KUTA

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

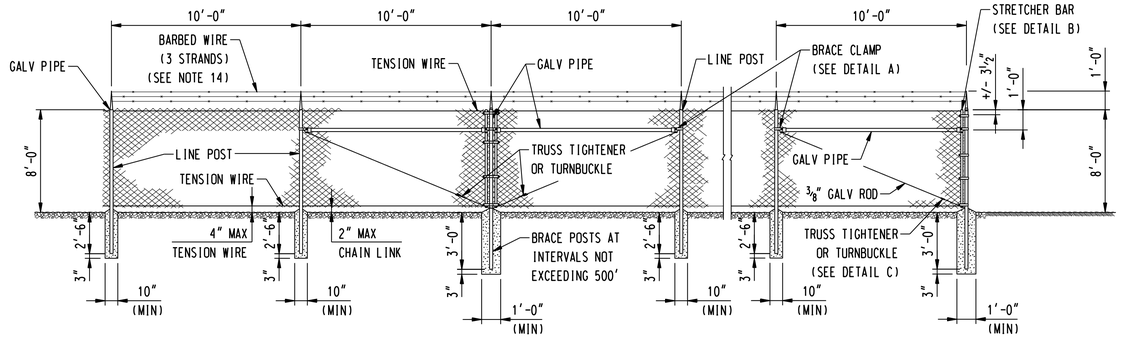
METRO NORTH SPURLINE
CLADDING DETAILS

BY	CHKD	APP	APP
DATE	DATE	DATE	DATE

SCALE AS NOTED

D

DWG. NO. 01223–16301 PG 011

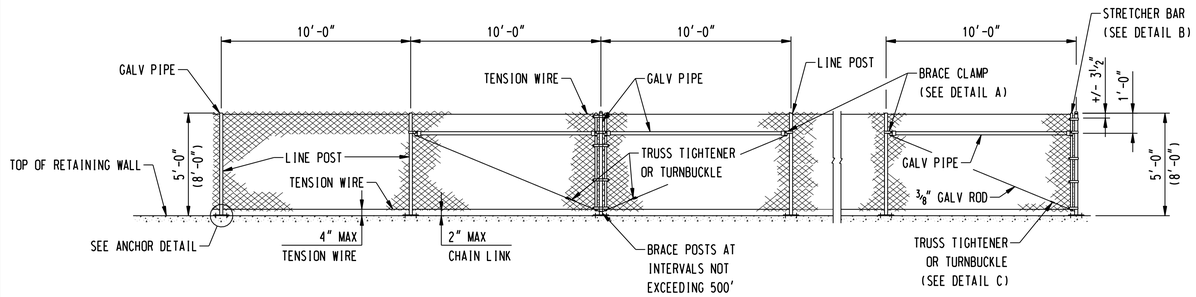


INTERMEDIATE BRACED POST

CORNER OR END POST

8' CHAIN LINK FENCE

N.T.S.

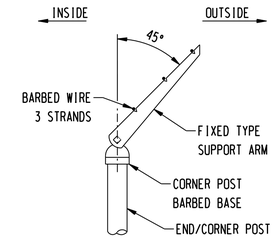


INTERMEDIATE BRACED POST

CORNER OR END POST

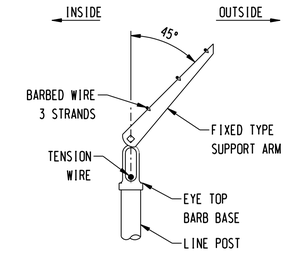
5' & 8' CHAIN LINK FENCE (STRUCTURE)

N.T.S.



CORNER POST SUPPORT ARM

N.T.S.

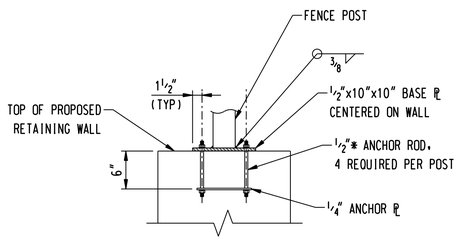


LINE POST SUPPORT ARM

N.T.S.

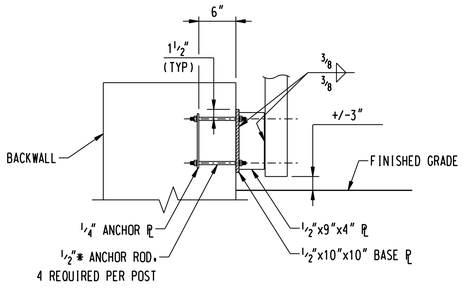
FENCE NOTES:

1. CHAIN-LINK FENCING SHALL CONSIST OF GALVANIZED CHAIN-LINK FABRIC ON STEEL POSTS.
2. ALL POSTS SHALL BE SET IN CLASS A OR AA CONCRETE EXCEPT 5' CHAIN LINK FENCE ON RETAINING WALL.
3. ALL POSTS TOPS SHALL BE FITTED WITH SUITABLE FINIALS.
4. CORNER, TERMINAL OR PULL POST SHALL BE $2\frac{7}{8}$" DIA SCHEDULE 40 PER ASTM-F1083.
5. LINE POST: $2\frac{3}{8}$" DIA SCHEDULE 40 PIPE PER ASTM-F1083.
6. BRACES SHALL BE SPACED APPROXIMATELY 12" BELOW TOP OF TERMINAL POSTS AND SHALL EXTEND FROM END, GATE OR CORNER POSTS TO FIRST ADJACENT LINE POST.
7. TOP RAIL & BRACE RAIL: $1\frac{1}{4}$" DIA SCHEDULE 40 PIPE PER ASTM-F1083.
8. FABRIC: 11 GA. CORE WIRE SIZE 2" MESH, CONFORMING TO ASTM-A392 CLASS 1.
9. TIE WIRE: MINIMUM 11 GA GALVANIZED STEEL.
10. TENSION WIRE: 7 GA. GALVANIZED STEEL.
11. ALL FITTINGS SHALL BE HOT-DIPPED GALVANIZED MALLEABLE, CAST IRON, OR PRESSED STEEL.
12. FABRIC SHALL BE FASTENED TO LINE POSTS WITH FABRIC BANDS SPACED APPROXIMATELY 14" APART, AND TO TOP TENSION WIRE AND BOTTOM TENSION WIRE WITH HOG RINGS OR TIE WIRES SPACED APPROXIMATELY 24" APART.
13. ALL WORK SHALL CONFORM WITH THE PROJECT SPECIFICATIONS.
14. THREE STRANDS BARB WIRE APPLY TO 8'-0" HIGH CHAIN LINK FENCE. SEE GENERAL PLAN FOR CHAIN LINK FENCE LAYOUT.
15. ALL 8' CHAIN LINK FENCE SHALL BE FITTED WITH BARBED WIRE.
16. PROVIDE 4' WIDE ACCESS GATES WHEN SHOWN ON PLAN.



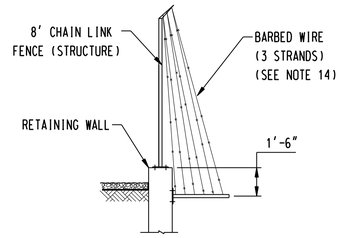
FENCE ANCHOR DETAIL I

SCALE: 1"=1'-0"



FENCE ANCHOR DETAIL II

SCALE: 1"=1'-0"



PEDESTRIAN BARRIER

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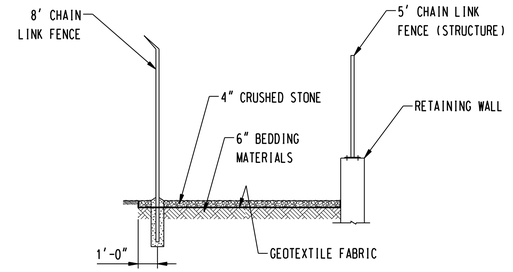

SURFACE FINISHED

N.T.S.

no.	date	revisions	by	chk
2	6/1/06	ISSUED 60% PRELIMINARY	D.Q.	B.K.
1	5/10/06	ISSUED SECOND REVIEW	D.Q.	B.K.

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date 05/10/06
designed C. CHAUNG
detailed C. CHUANG
checked D. QUINIT / B. KUTA

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

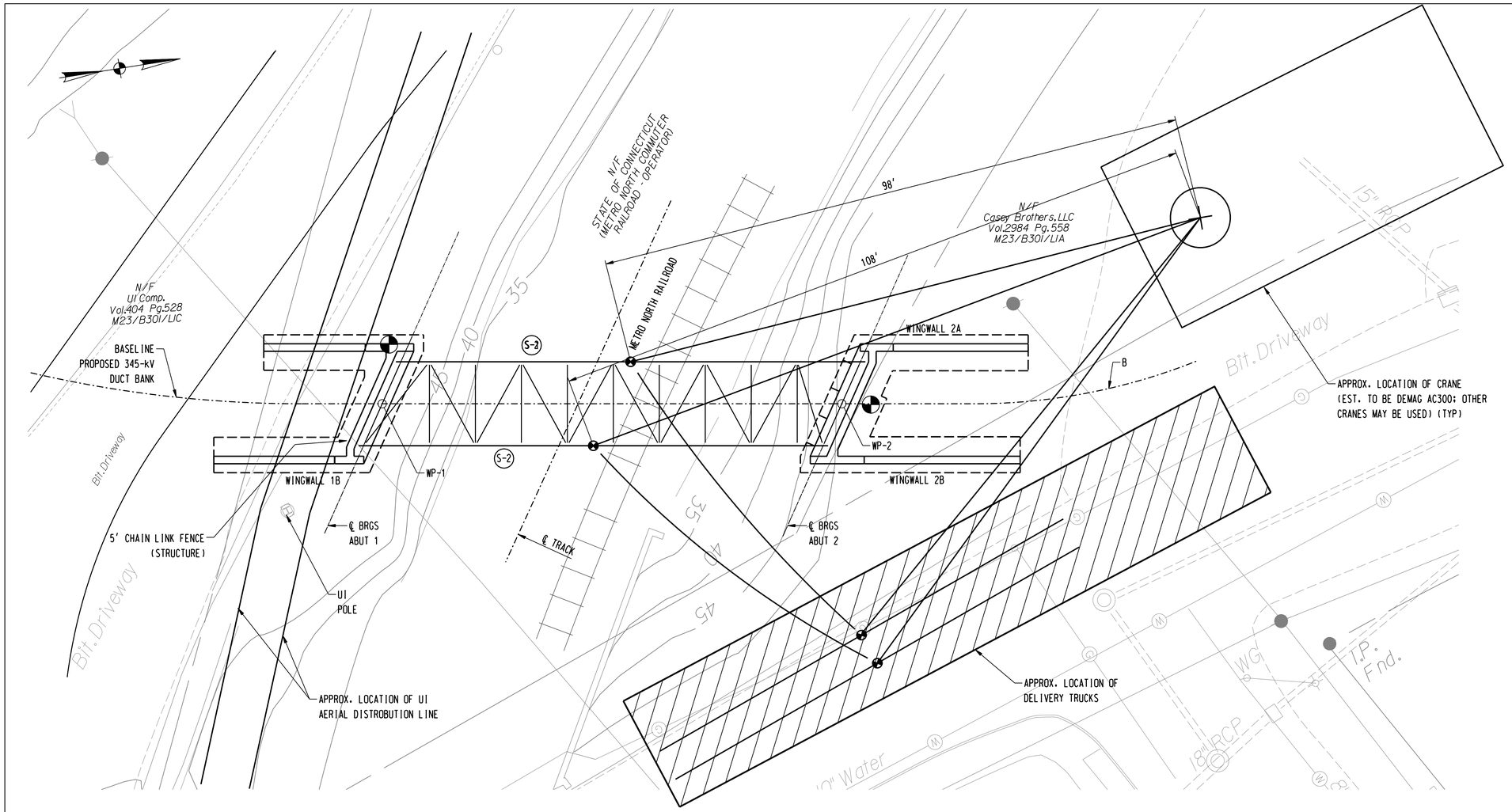
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

METRO NORTH SPURLINE
CHAIN LINK FENCE DETAILS

BY	CHKD	APP	APP
DATE	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223–16301 PG 012	



PLAN

SCALE: 1" = 10'

SUGGESTED ERECTION SEQUENCE:

1. THE CRANE SHALL BE LOCATED TO THE NORTHWEST OF THE PROPOSED UTILITY BRIDGE TO AV
2. THE CRANES, MANLIFTS, PLATFORMS AND OTHER TYPE OF EQUIPMENT USED OVER METRO NORT
2. ERECT GIRDER G-1 SEGMENT 3 AT ABUTMENT 2. BRACE AND STABILIZE AS NECESSARY PRIOR TO RELEASING PICK POINTS.
3. ERECT GIRDER G-2 SEGMENT 3 AT ABUTMENT 2. INSTALL DIAPHRAGMS AND LATERAL BRACINGS AND BOLT HAND-TIGHT WITH TEMPORARY BOLTS AND/OR DRIFT PINS PRIOR TO RELEASING PICK POINTS.
4. ERECT GIRDER G-1 SEGMENT 2. COMPLETE FIELD SPLICE FS-2. BRACE AND STABILIZE AS NECESSARY PRIOR TO RELEASING PICK POINTS.
5. ERECT GIRDER G-2 SEGMENT 2. COMPLETE FIELD SPLICE FS-2. INSTALL DIAPHRAGMS AND LATERAL BRACINGS AND BOLT HAND-TIGHT PRIOR TO RELEASING PICK POINTS.
6. ERECT GIRER G-1 SEGMENT 1 AT ABUTMENT 1. COMPLETE FIELD SPLICE FS-1. BRACE AND STABILIZE AS NECESSARY PRIOR TO RELEASING PICK POINTS.
7. ERECT GIRDER G-1 SEGMENT 1 AT ABUTMENT 1. COMPLETE FIELD SPLICE FS-1. INSTALL DIAPHRAGMS AND LATERAL BRACINGS AND BOLT HAND-TIGHT WITH TEMPORARY BOLTS AND/OR DRIFT PINS PRIOR TO RELEASING PICK POINTS.
8. TORQUE ALL BOLTED CONNECTIONS AFTER ALL GIRDER SEGMENTS ARE ERECTED REPLACING TEMPORARY BOLTS AND/OR DRIFT PINS AS WORK PROCEEDS.
9. REMOVE TEMPORARY ERECTION PLATFORMS.

STRUCTURAL STEEL ERECTION NOTES:

THE FOLLOWING STRUCTURAL STEEL ERECTION SEQUENCE IS A SUGGESTED PROCEDURE. THE METHOD AND SEQUENCE OF ERECTION IS BASED ON MINIMIZING WETLAND IMPACT AND TRAFFIC IMPACT ON ROUTE 1. IT IS ASSUMED THAT CRANES WILL BE USED WORKING OFF OF ROUTE 1 DURING ALLOWABLE PERIODS AND LANE CLOSURES AS PROVIDED FOR IN THE SPECIAL PROVISIONS "PROSECUTION AND PROGRESS" AND "MAINTENANCE AND PROTECTION OF TRAFFIC". ANY PROPOSED CHANGES TO THE OVERALL ERECTION SCHEME BY THE CONTRACTOR SHALL BE REVIEWED BY BL COMPANIES FOR COMPLIANCE WITH WETLAND AND TRAFFIC IMPACT RESTRICTIONS.

THE CONTRACTOR SHALL SUBMIT DETAILED WORKING DRAWINGS FOR THE STRUCTURAL STEEL ERECTION. THE STRUCTURAL STEEL ERECTION WORKING DRAWINGS SHALL BE PREPARED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT. THE CONTRACTOR'S ERECTION PLANS SHALL INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING DETAILS: TEMPORARY ERECTION PLATFORM, FALSEWORK, BRACING, GUYS, LIFTING DEVICES, LOCATION OF CRANES AND DELIVERY TRUCKS, CRANE CAPACITIES, PICK POINTS, AND WEIGHTS FOR EACH STRUCTURAL STEEL MEMBER. THE WORKING DRAWINGS SHALL BE COMPLETE IN DETAILS FOR ALL ANTICIPATED CONDITIONS DURING ERECTION. ADDITIONALLY, ERECTION PLANS SHALL SHOW MINIMUM BOLTING AND/OR DRIFT PIN REQUIREMENTS FOR INDIVIDUAL FIELD SPLICES, DIAPHRAGMS, AND LATERAL BRACINGS PRIOR TO RELEASING PICK POINTS OF GIRDER SEGMENTS FROM THE CRANE.

THE CONTRACTOR MAY ELECT TO PROVIDE AN ALTERNATIVE TEMPORARY ERECTION PLATFORM THAT IS COMPATIBLE WITH THE CONTRACTOR'S ERECTION SCHEME. THE CONTRACTOR SHALL DESIGN AND DETAIL THE ALTERNATIVE ERECTION PLATFORM AT NO EXTRA COST TO THE OWNER.

THE CONTRACTOR SHALL PROVIDE TEMPORARY GRADING AS NECESSARY TO SUPPORT EQUIPMENT USED FOR THE TRANSPORT AND ERECTION OF STRUCTURAL STEEL MEMBERS. NO ADDITIONAL PAYMENT SHALL BE MADE FOR TEMPORARY WORK REQUIRED FOR THE CONTRACTOR'S PROPOSED ERECTION PROCEDURE. COST OF TEMPORARY WORK, INCLUDING FURNISHING AND INSTALLING TEMPORARY ERECTION PLATFORM AND TEMPORARY GRADING, IF ANY, SHALL BE CONSIDERED INCIDENTAL TO THE ITEM "STRUCTURAL STEEL (SITE H)".

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no.	date	revisions	by	chk
6	9/04/06	ISSUED CSC	D.Q.	B.K.
5	6/01/06	ISSUED 60% PRELIMINARY	D.Q.	B.K.
4	5/10/06	ISSUED SECOND REVIEW	D.Q.	B.K.
3	1/31/06	ADDENDUM No.2	D.Q.	B.K.
2	1/23/06	ISSUED TO BMcD & N.U. FOR REVIEW	D.Q.	B.K.
1	1/19/06	ISSUED CIVIL R.F.P.	D.Q.	B.K.

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date 01/10/06
detailed C. CHUANG
designed M. BEAULIEU
checked D. QUINIT / B. KUTA

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

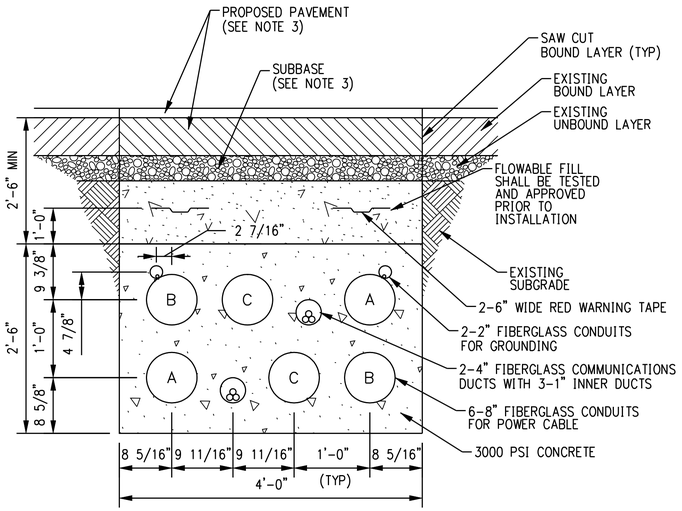
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

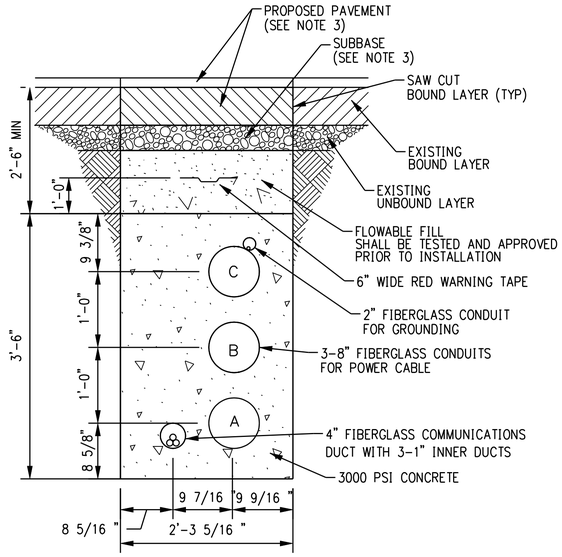
METRO NORTH SPURLINE
STAGE I CONSTRUCTION PLAN

BY	CHK	APP	APP
DATE	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO.	



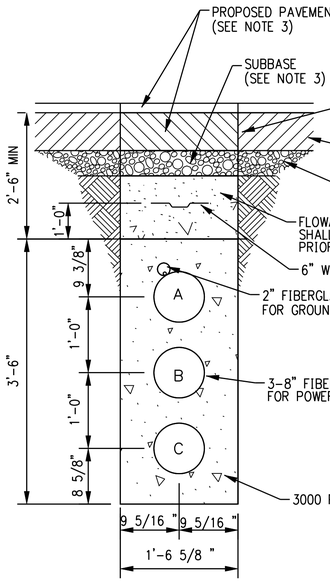
TYPICAL HORIZONTAL UTILITY BRIDGE DUCT BANK

SECTION G
NTS



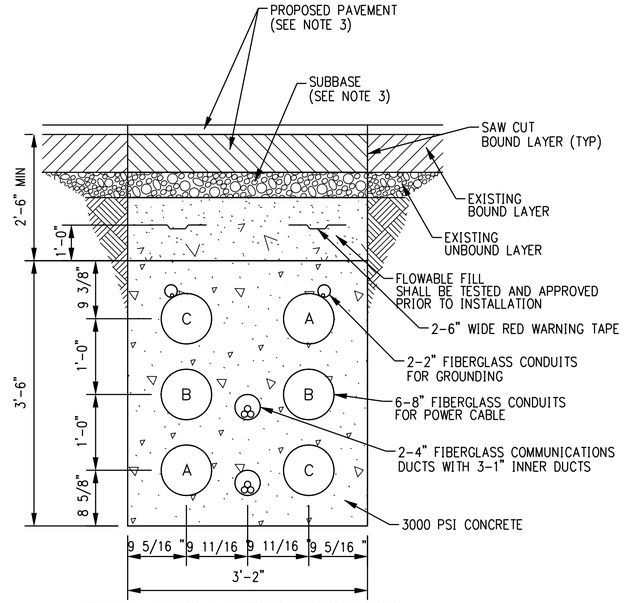
SINGLE CIRCUIT WITH COMMUNICATIONS UTILITY BRIDGE DUCT BANK

SECTION H
NTS



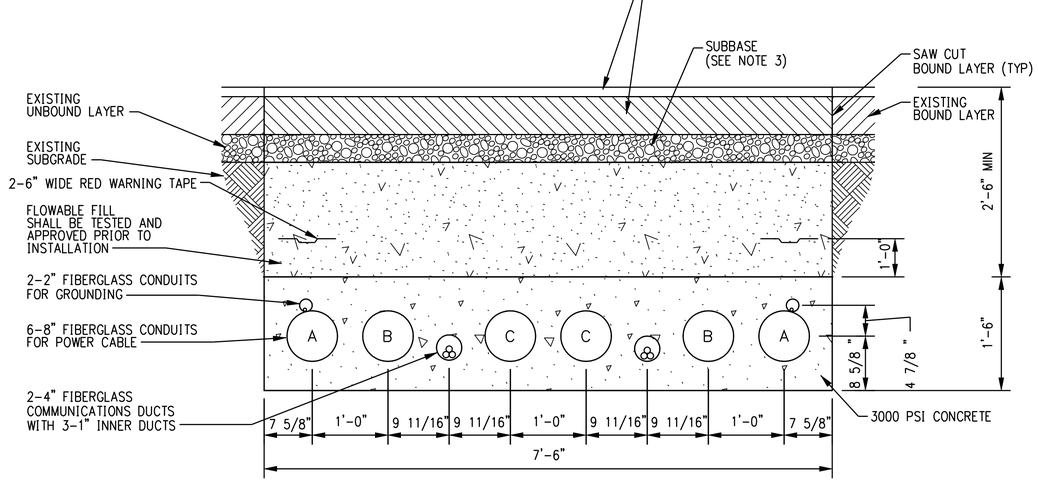
SINGLE CIRCUIT UTILITY BRIDGE DUCT BANK

SECTION J
NTS



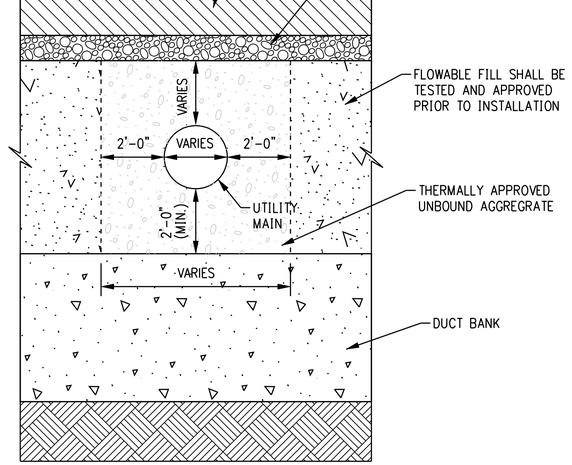
TYPICAL VERTICAL UTILITY BRIDGE DUCT BANK

SECTION K
NTS



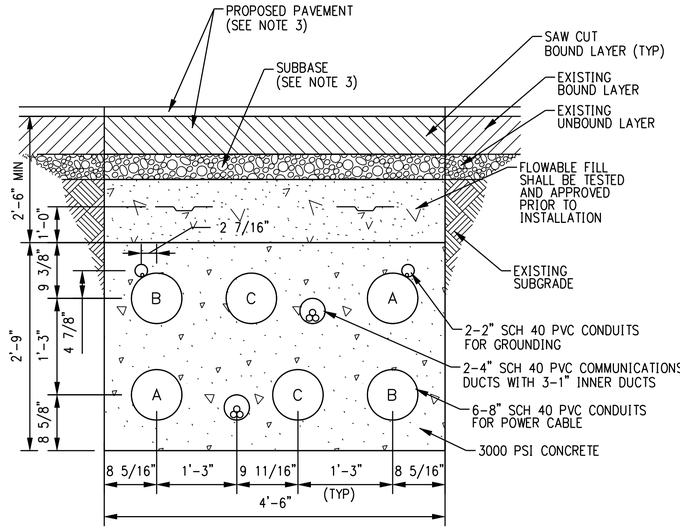
REDUCED-HEIGHT UTILITY BRIDGE DUCT BANK

SECTION L
NTS



TYPICAL GAS UTILITY CROSSING

SECTION M
NTS



15" PHASE-SPACING DUCT BANK

SECTION N
NTS

GENERAL NOTES:

1. STANDARD TRENCH WITH PERMANENT PAVEMENT RESTORATION IN STATE HIGHWAY SHOWN. PAVEMENT RESTORATION REQUIREMENTS SHALL VARY DEPENDENT ON SPECIFIC EXISTING PAVEMENT CROSS SECTIONS AND MATERIALS.
2. ALL FIBERGLASS CONDUITS SHALL BE OF BULLET-RESISTANT GRADE OR APPROVED OTHER.
3. REFERENCE RESTORATION DRAWINGS FOR PROPOSED PAVEMENT SECTIONS.

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DOCKET No. 272

no.	date	revisions	by	chk
2	9/4/06	ISSUED CSC	CTC	
1	6/1/06	ISSUED 60% PRLIMINARY	CTC	

Burns & McDonnell SINCE 1898

date 11/09/05 | detailed L. ROWSE
designed C. COURTRIGHT | checked S. NEWLAND

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

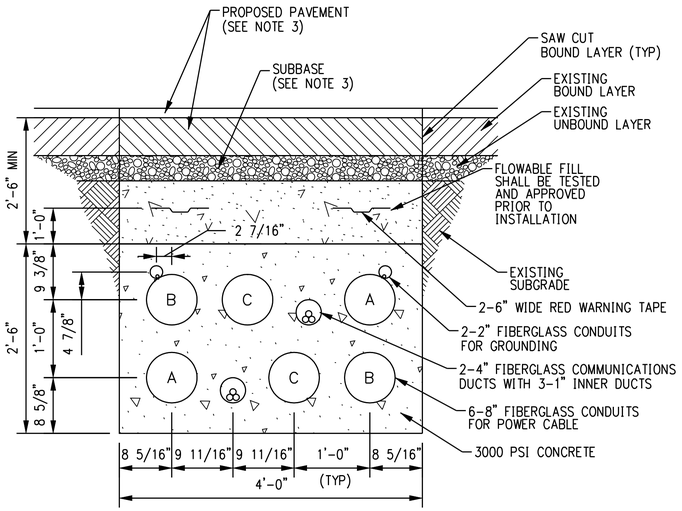
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN-NORWALK 345kV TRANSMISSION PROJECT

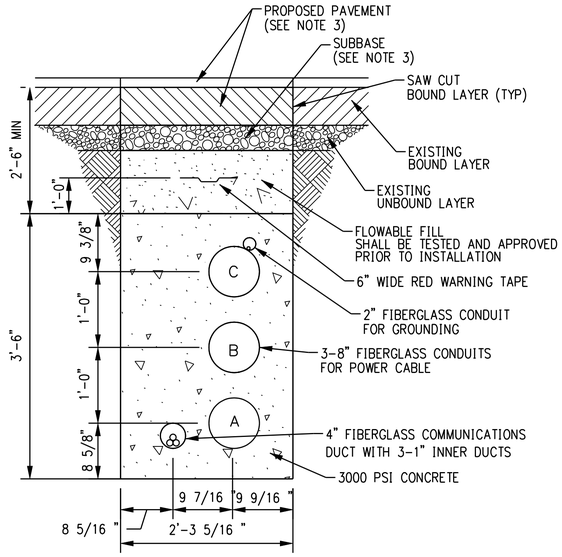
UTILITY BRIDGE DUCT BANK DETAILS AND UTILITY CROSSING DETAIL

BY SEN-BMCD	CHKD	APP	APP
DATE 11-09-05	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01224-46003 PG 002	



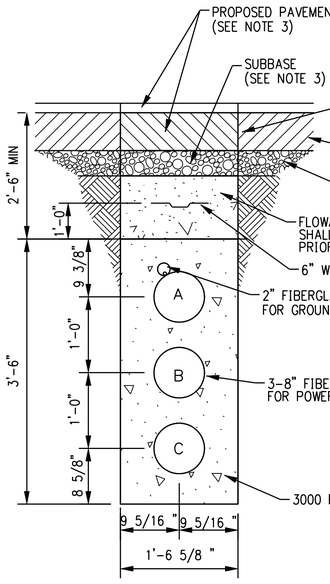
TYPICAL HORIZONTAL UTILITY BRIDGE DUCT BANK

SECTION G
NTS



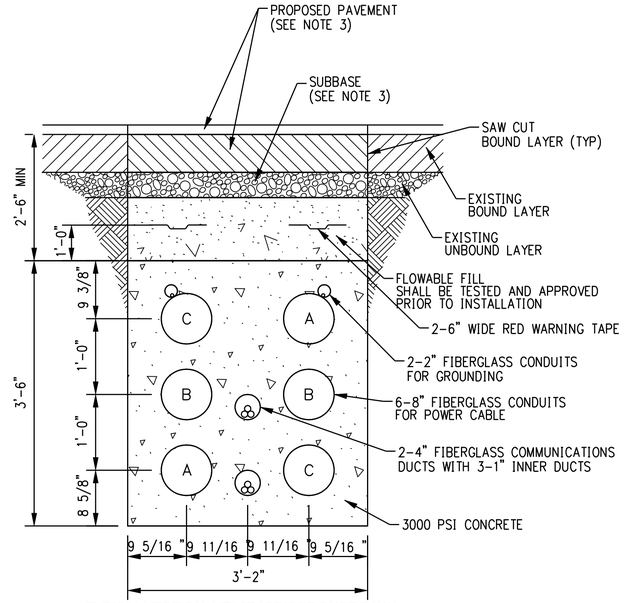
SINGLE CIRCUIT WITH COMMUNICATIONS UTILITY BRIDGE DUCT BANK

SECTION H
NTS



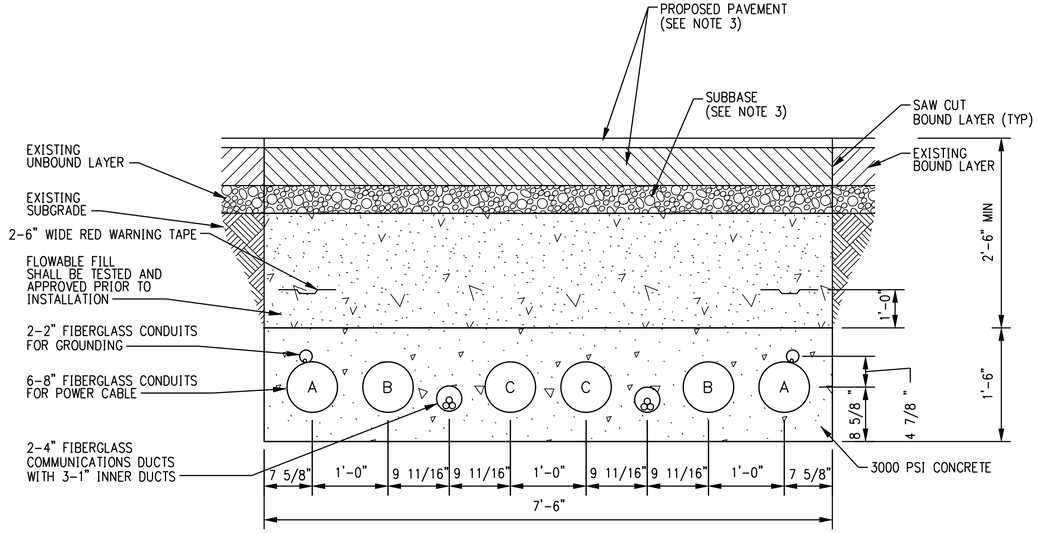
SINGLE CIRCUIT UTILITY BRIDGE DUCT BANK

SECTION J
NTS



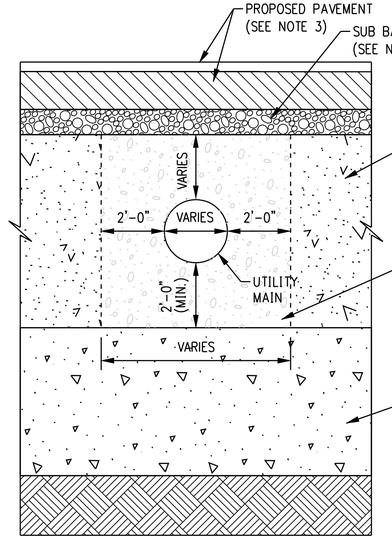
TYPICAL VERTICAL UTILITY BRIDGE DUCT BANK

SECTION K
NTS



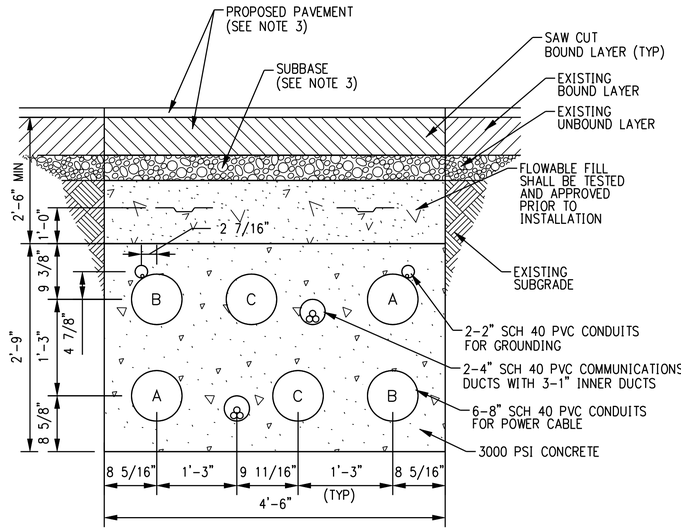
REDUCED-HEIGHT UTILITY BRIDGE DUCT BANK

SECTION L
NTS



TYPICAL GAS UTILITY CROSSING

SECTION M
NTS



15" PHASE-SPACING DUCT BANK

SECTION N
NTS

GENERAL NOTES:

1. STANDARD TRENCH WITH PERMANENT PAVEMENT RESTORATION IN STATE HIGHWAY SHOWN. PAVEMENT RESTORATION REQUIREMENTS SHALL VARY DEPENDENT ON SPECIFIC EXISTING PAVEMENT CROSS SECTIONS AND MATERIALS.
2. ALL FIBERGLASS CONDUITS SHALL BE OF BULLET-RESISTANT GRADE OR APPROVED OTHER.
3. REFERENCE RESTORATION DRAWINGS FOR PROPOSED PAVEMENT SECTIONS.

FOR REFERENCE ONLY
NOT FOR CONSTRUCTION

DOCKET No. 272

no.	date	revisions	by	chk
2	9/4/06	ISSUED CSC	CTC	
1	6/1/06	ISSUED 60% PRELIMINARY	CTC	

Burns & McDonnell SINCE 1898

date 11/09/05 | detailed L. ROWSE
designed C. COURTRIGHT | checked S. NEWLAND

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

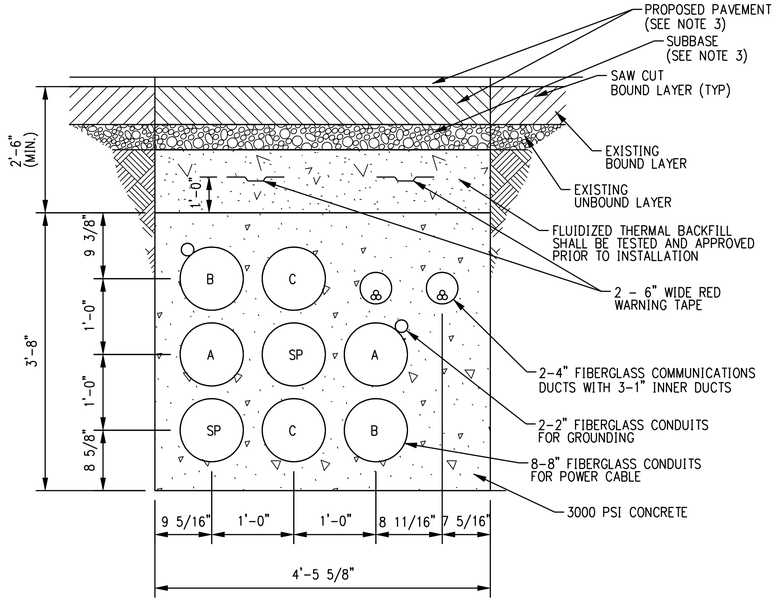
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN-NORWALK 345kV TRANSMISSION PROJECT

UTILITY BRIDGE DUCT BANK DETAILS AND UTILITY CROSSING DETAILS

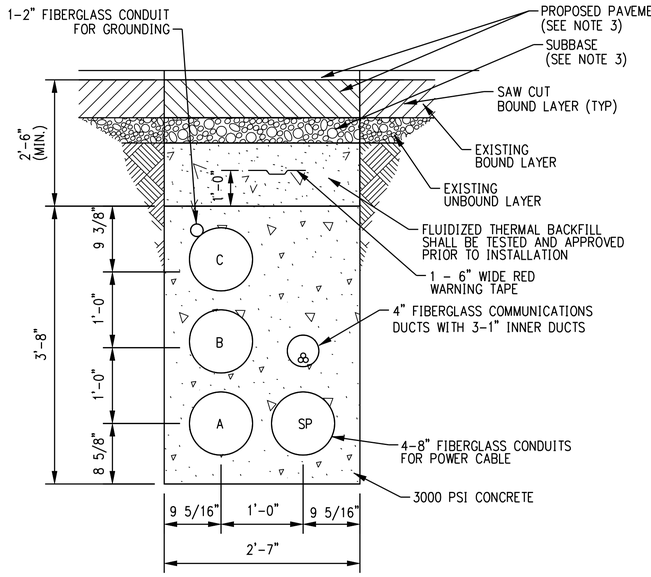
BY SEN-BMCD	CHKD	APP	APP
DATE 11-09-05	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223-46003 PG 002	



TYPICAL UTILITY BRIDGE DUCT BANK WITH SPARE

SECTION O

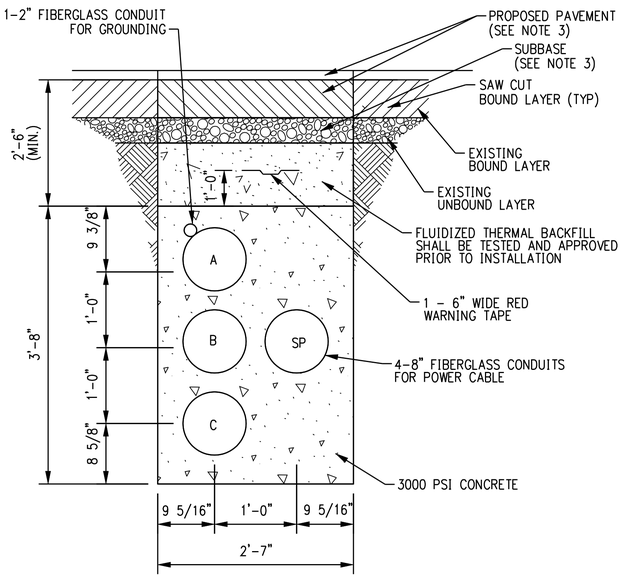
NTS



UTILITY BRIDGE SINGLE CIRCUIT WITH COMMUNICATIONS DUCT BANK AND SPARE

SECTION P

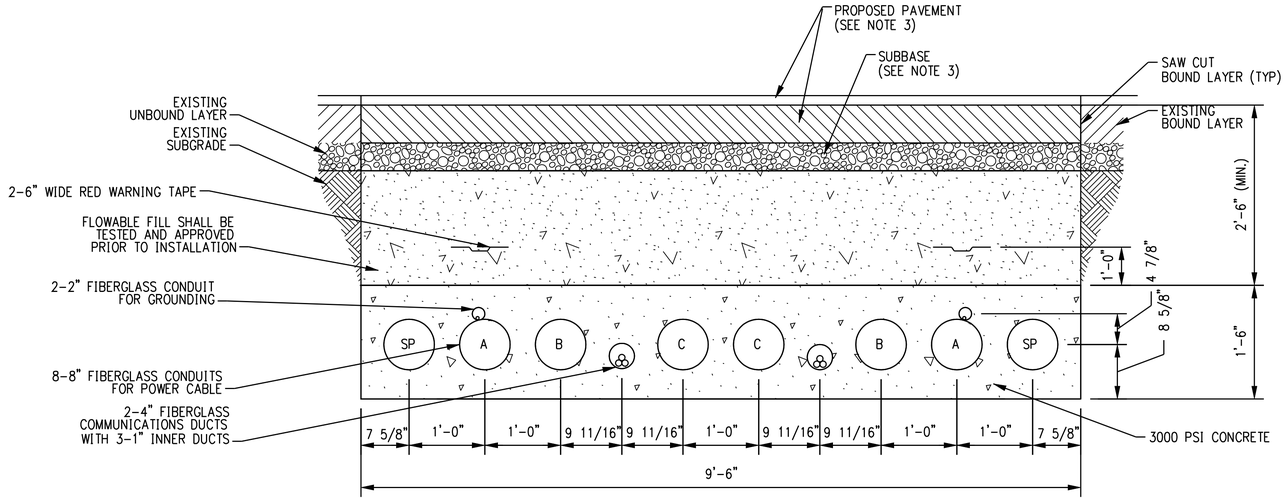
NTS



UTILITY BRIDGE SINGLE CIRCUIT DUCT BANK WITH SPARE

SECTION Q

NTS



UTILITY BRIDGE REDUCED-HEIGHT DUCT BANK WITH SPARE

SECTION R

NTS

GENERAL NOTES:

1. STANDARD TRENCH WITH PERMANENT PAVEMENT RESTORATION IN STATE HIGHWAY SHOWN. PAVEMENT RESTORATION REQUIREMENTS SHALL VARY DEPENDENT ON SPECIFIC EXISTING PAVEMENT CROSS SECTIONS AND MATERIALS.
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MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

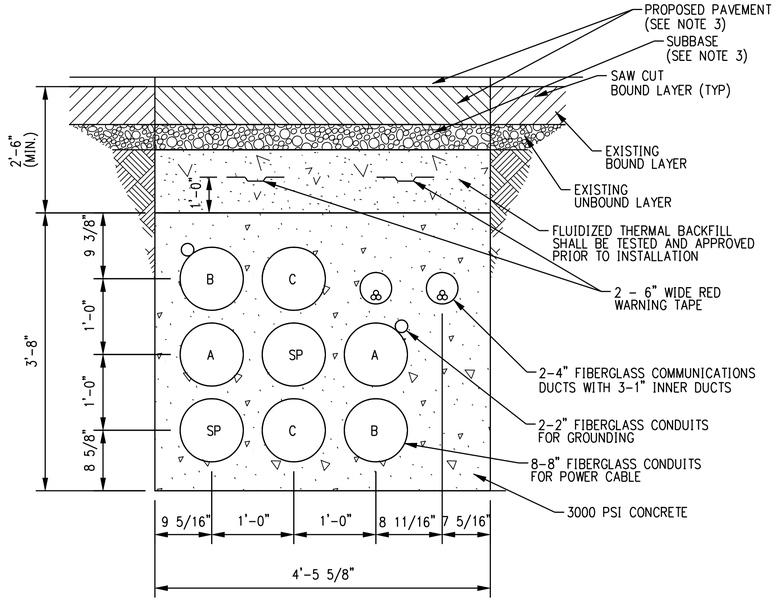
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN-NORWALK 345kV TRANSMISSION PROJECT

UTILITY BRIDGE DUCT BANK DETAILS

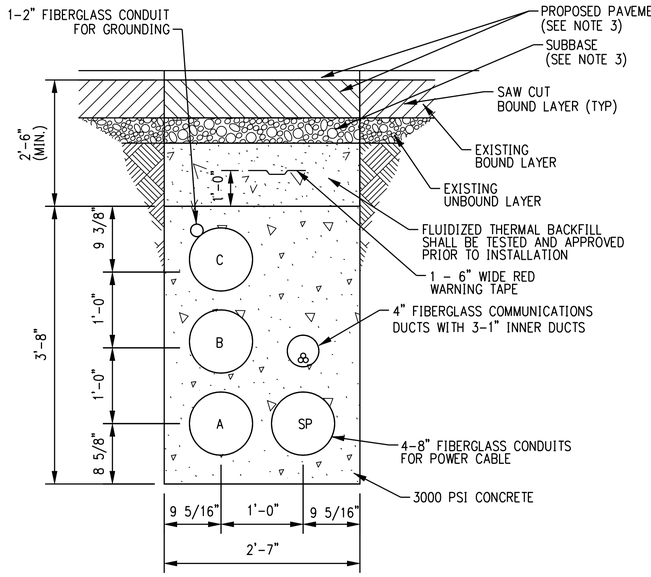
BY SEN-BMCD	CHKD	APP	APP
DATE 11-09-05	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01224-46003 PG 003	



TYPICAL UTILITY BRIDGE DUCT BANK WITH SPARE

SECTION O

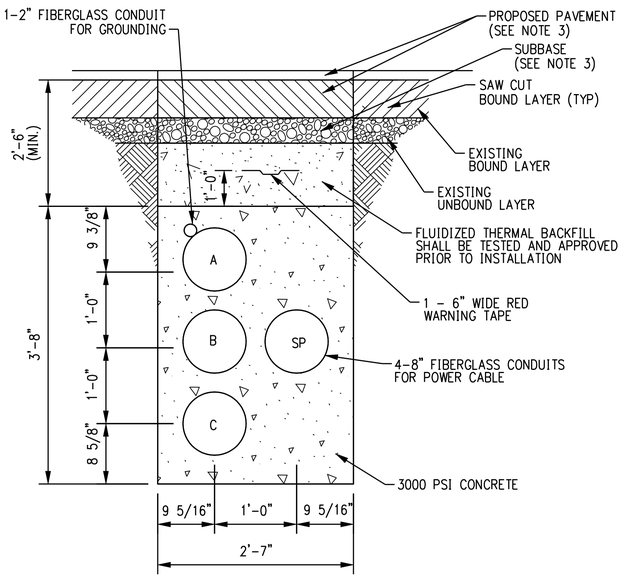
NTS



UTILITY BRIDGE SINGLE CIRCUIT WITH COMMUNICATIONS DUCT BANK AND SPARE

SECTION P

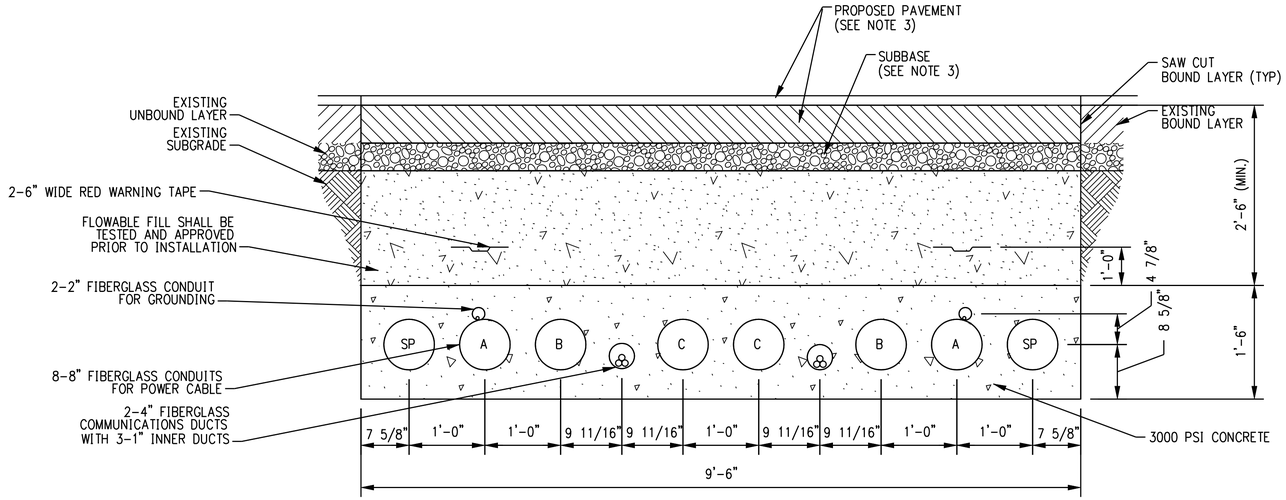
NTS



UTILITY BRIDGE SINGLE CIRCUIT DUCT BANK WITH SPARE

SECTION Q

NTS



UTILITY BRIDGE REDUCED-HEIGHT DUCT BANK WITH SPARE

SECTION R

NTS

GENERAL NOTES:

1. STANDARD TRENCH WITH PERMANENT PAVEMENT RESTORATION IN STATE HIGHWAY SHOWN. PAVEMENT RESTORATION REQUIREMENTS SHALL VARY DEPENDENT ON SPECIFIC EXISTING PAVEMENT CROSS SECTIONS AND MATERIALS.
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1	6/1/06	ISSUED 60% PRELIMINARY	CTC	

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date 11/09/05 | detailed L. ROWSE

designed C. COURTRIGHT | checked S. NEWLAND

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

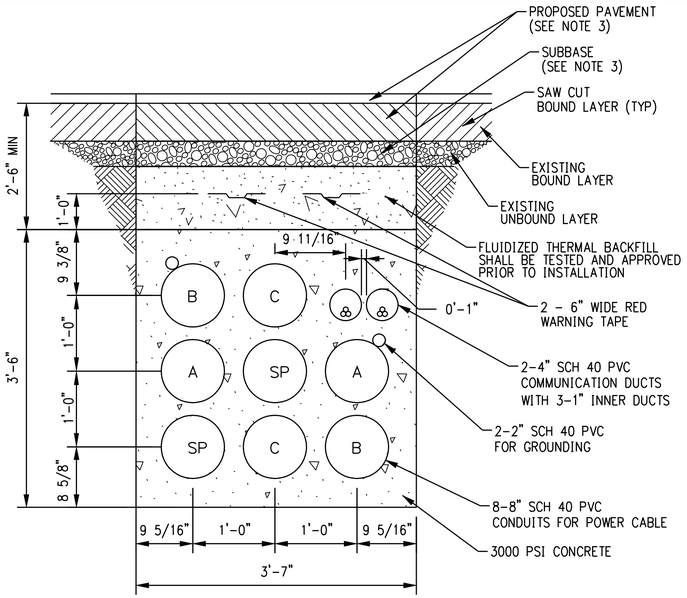
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

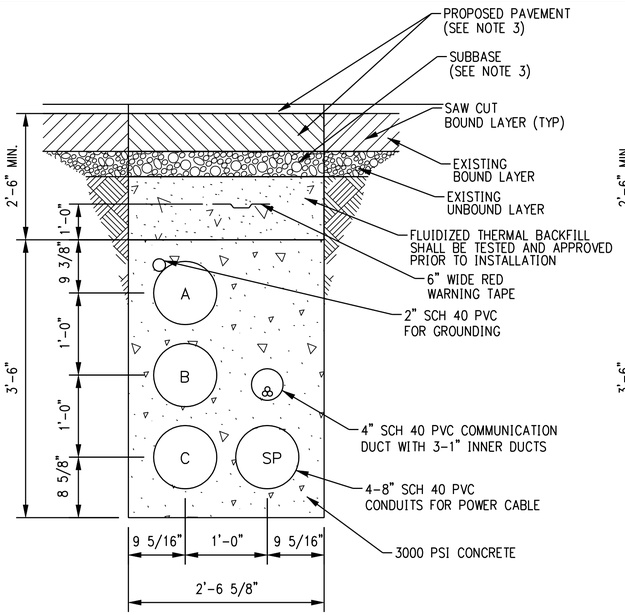
TITLE MIDDLETOWN-NORWALK 345kV TRANSMISSION PROJECT

UTILITY BRIDGE DUCT BANK DETAILS

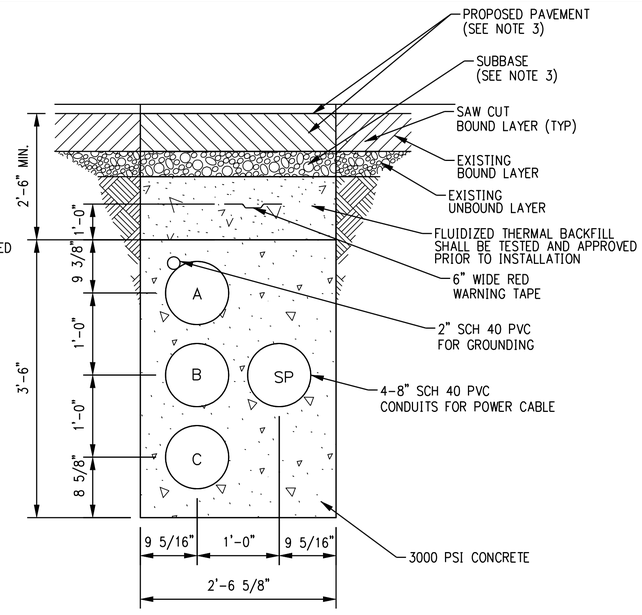
BY SEN-BMCD	CHKD	APP	APP
DATE 11-09-05	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223-46003 PG 003	



TYPICAL JACK AND BORE DUCT BANK



JACK AND BORE SINGLE CIRCUIT WITH COMMUNICATIONS DUCT BANK

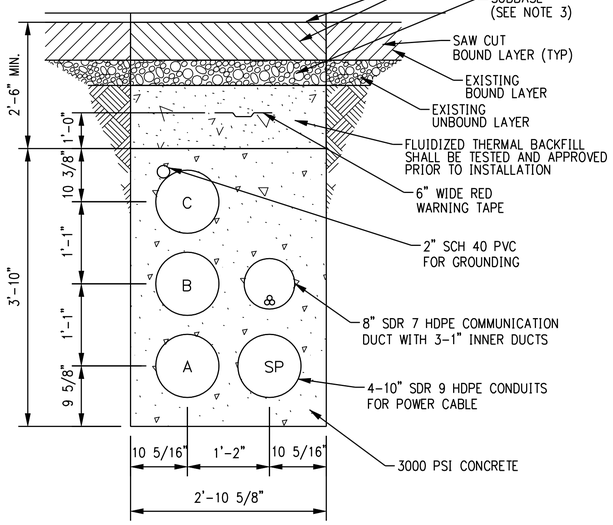


JACK AND BORE SINGLE CIRCUIT DUCT BANK

SECTION S
NTS

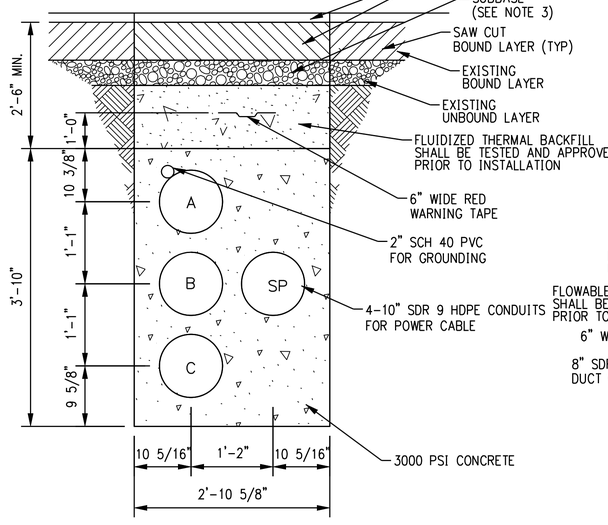
SECTION T
NTS

SECTION U
NTS



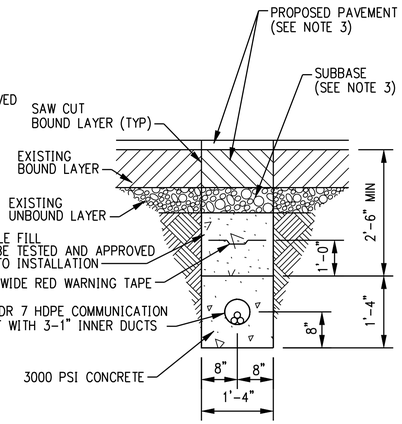
HORIZONTAL DIRECTIONAL DRILL SINGLE CIRCUIT WITH COMMUNICATIONS DUCT BANK

SECTION V
NTS



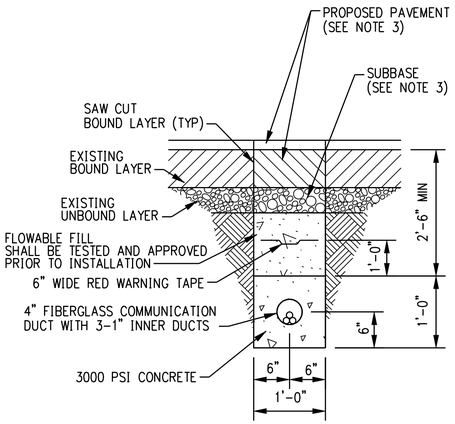
HORIZONTAL DIRECTIONAL DRILL SINGLE CIRCUIT DUCT BANK

SECTION W
NTS



HORIZONTAL DIRECTIONAL DRILL COMMUNICATIONS DUCT BANK

SECTION X
NTS



UTILITY BRIDGE COMMUNICATIONS DUCT BANK

SECTION Y
NTS

GENERAL NOTES:

1. STANDARD TRENCH WITH PERMANENT PAVEMENT RESTORATION IN STATE HIGHWAY SHOWN. PAVEMENT RESTORATION REQUIREMENTS SHALL VARY DEPENDENT ON SPECIFIC EXISTING PAVEMENT CROSS SECTIONS AND MATERIALS.

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1	6/1/06	ISSUED 60% PRLIMINARY	CTC	

Burns & McDonnell SINCE 1898

date 11/09/05 | detailed L. ROWSE
designed C. COURTRIGHT | checked S. NEWLAND

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

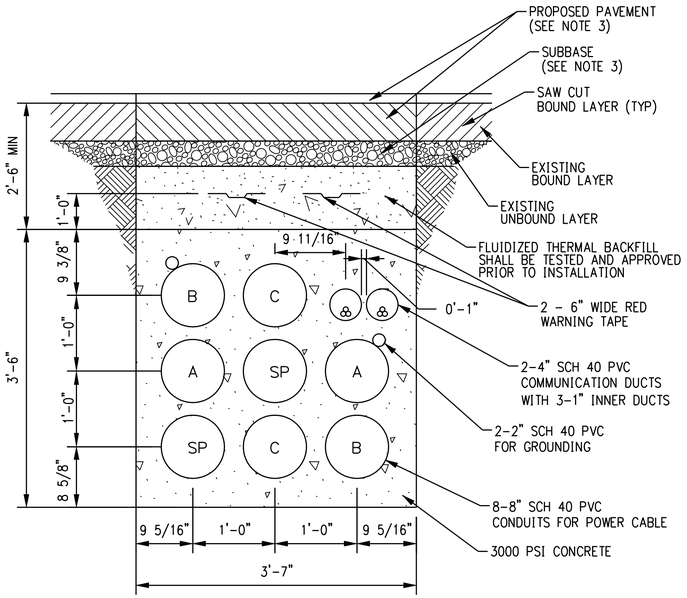
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

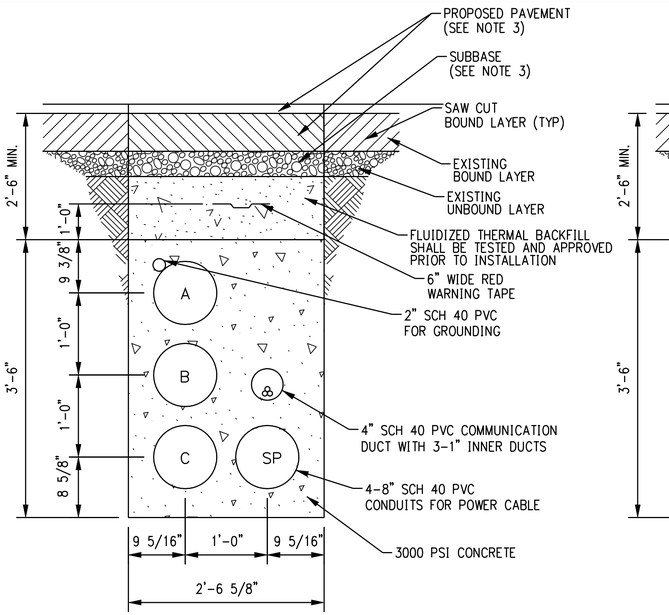
TITLE MIDDLETOWN-NORWALK 345kV TRANSMISSION PROJECT

JACK AND BORE AND HORIZONTAL DIRECTIONAL DRILL DUCT BANK DETAILS

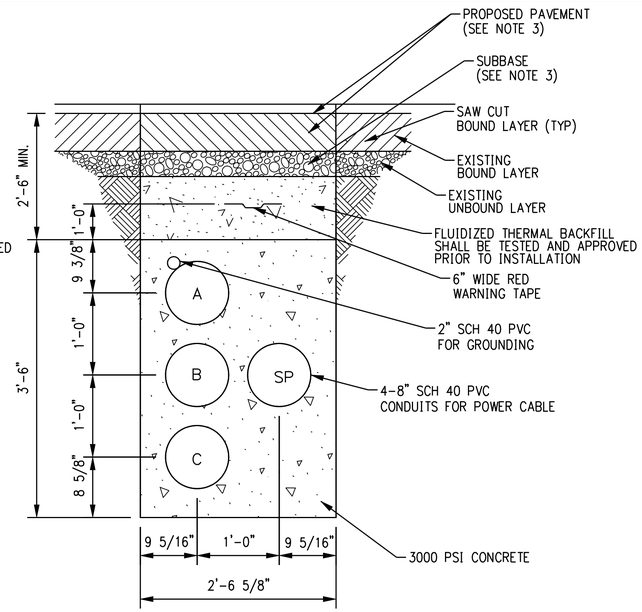
BY SEN-BMCD	CHKD	APP	APP
DATE 11-09-05	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01224-46003 PG 004	



TYPICAL JACK AND BORE DUCT BANK



JACK AND BORE SINGLE CIRCUIT WITH COMMUNICATIONS DUCT BANK

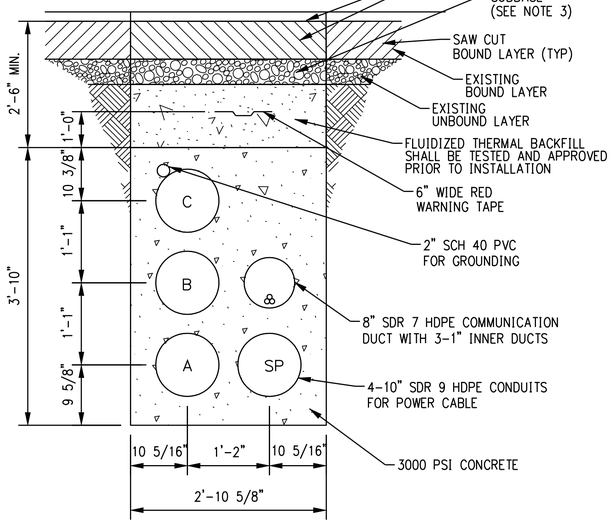


JACK AND BORE SINGLE CIRCUIT DUCT BANK

SECTION S
NTS

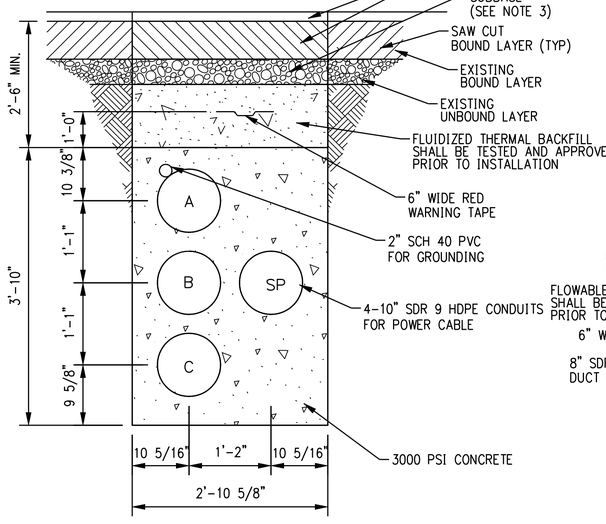
SECTION T
NTS

SECTION U
NTS



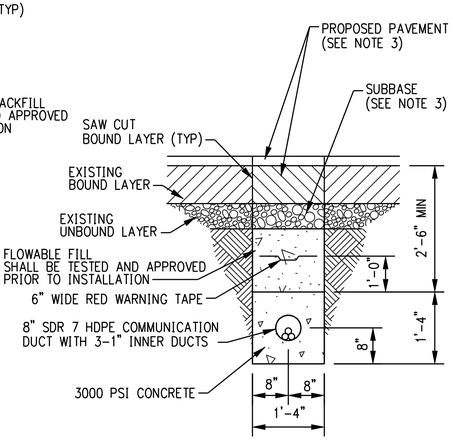
HORIZONTAL DIRECTIONAL DRILL SINGLE CIRCUIT WITH COMMUNICATIONS DUCT BANK

SECTION V
NTS



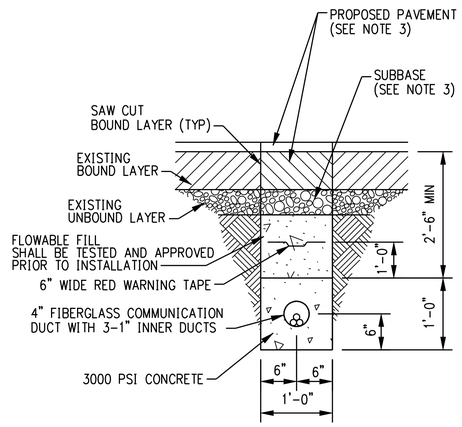
HORIZONTAL DIRECTIONAL DRILL SINGLE CIRCUIT DUCT BANK

SECTION W
NTS



HORIZONTAL DIRECTIONAL DRILL COMMUNICATIONS DUCT BANK

SECTION X
NTS



UTILITY BRIDGE COMMUNICATIONS DUCT BANK

SECTION Y
NTS

GENERAL NOTES:

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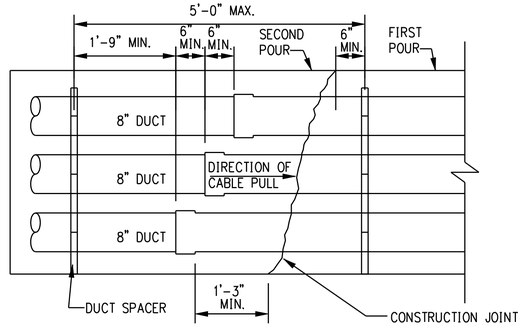
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN-NORWALK 345kV TRANSMISSION PROJECT
JACK AND BORE AND HORIZONTAL DIRECTIONAL DRILL DUCT BANK DETAILS

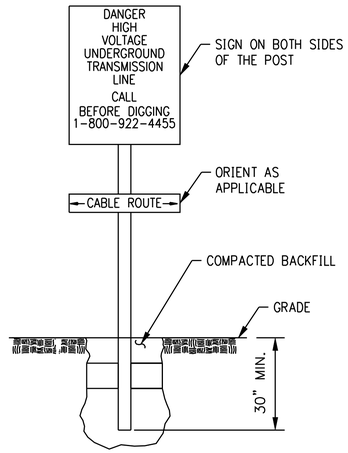
BY SEN-BMCD	CHKD	APP	APP
DATE 11-09-05	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223-46003 PG 004	



CONSTRUCTION JOINT DETAIL

DETAIL 1

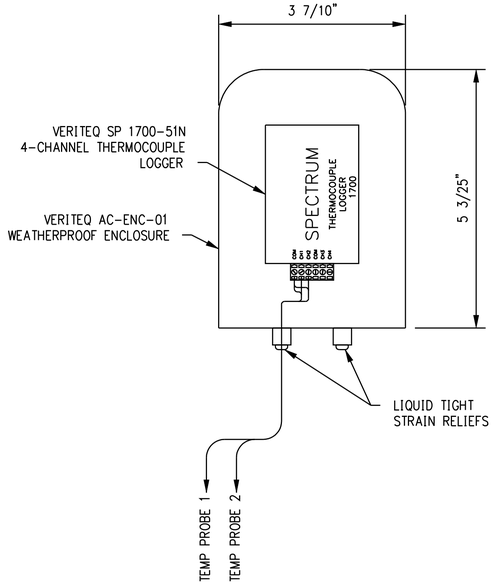
NTS



TYPICAL WARNING SIGN

DETAIL 2

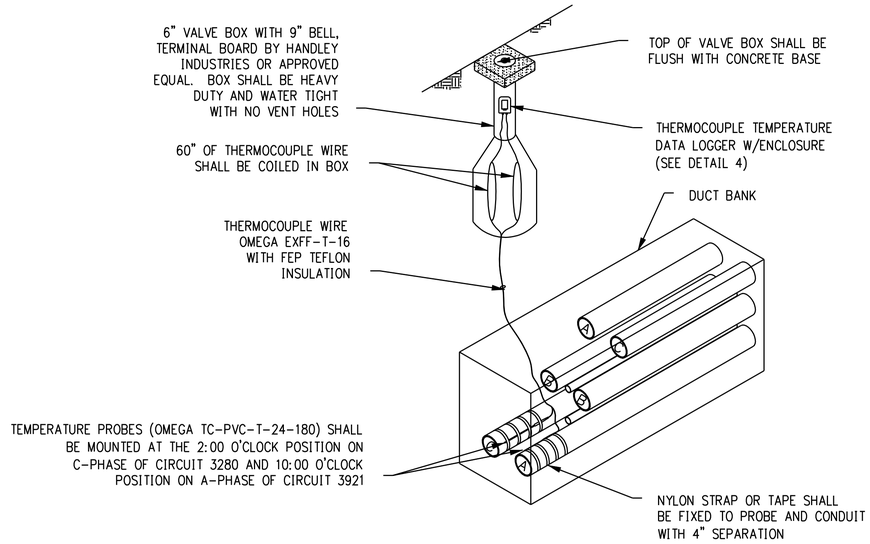
NTS



THERMOCOUPLE TEMPERATURE DATA LOGGER

DETAIL 4

NTS



TEMPERATURE MONITORING STATION INSTALLATION

DETAIL 5

NTS

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NOT FOR CONSTRUCTION

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Burns & McDonnell SINCE 1898

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designed C. COURTRIGHT | checked S. NEWLAND

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

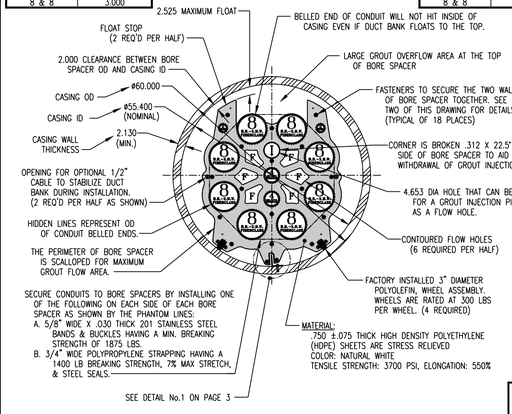
TITLE MIDDLETOWN-NORWALK 345kV TRANSMISSION PROJECT

CROSSING AND TEMPERATURE MONITORING DETAILS

BY SEN-BMCD	CHKD	APP	APP
DATE 11-09-05	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01224-46003 PG 005	

MINIMUM DISTANCE BETWEEN CONDUITS	
CONDUIT SIZE	MIN. DISTANCE
2 & 8	3.000
4 & 4	2.500
4 & 8	3.000
8 & 8	3.000

CTR TO CTR DISTANCE BETWEEN CONDUITS	
CONDUIT SIZE	MIN. DISTANCE
2 & 8	8.817
4 & 4	7.152
4 & 8	9.834
8 & 8	12.000



NOTES:
1. USE ONE BORE SPACER FOR EVERY 5 FEET OF DUCT BANK.
2. THE CASING ID MUST BE SMOOTH AND FREE FROM RIDGES, PROJECTIONS AND SEAMS THAT MIGHT IMPEDE THE ROLLING OF WHEELS.
3. A TROUGH OR FEEDER BRIDGE SHOULD BE CONSTRUCTED AT THE LEADING END OF THE CASING TO SUPPORT SECTIONS OF DUCT BANK AS THEY ARE ASSEMBLED AND PULLED INTO THE CASING.
4. THIS BORE SPACER IS DESIGNED FOR A CASING THAT IS STRAIGHT AND TRUE.
5. IT IS POSSIBLE THAT THE DUCT BANK WILL ROTATE (CORKSCREW) AS IT IS PULLED THRU THE CASING UNLESS AN "OFF CENTER WEIGHT TECHNIQUE", "STABILIZATION CABLES" OR "L" ANGLE & SLOT TECHNIQUE IS USED.
6. THIS BORE SPACER WILL ACCOMMODATE THE "SINGLE-END", "FLUSH COUPLED EXTRACTABLE INJECTION PIPE" OR "STATIONARY SACRIFICIAL INJECTION PIPE" METHODS OF GROUT FILLING.
7. IT IS ESSENTIAL THAT THE BORE SPACERS ARE HELD IN PLACE RELATIVE TO THE CONDUIT. REASON: AS THE GROUT IS PUMPED INTO THE CASING, THE COMPARTMENTS FORMED BETWEEN THE BORE SPACERS ARE MORE OR LESS FILLED SEQUENTIALLY, PLACING A TEMPORARY THRUST LOAD ON EACH BORE SPACER.
8. THE DUCT BANK MUST BE HELD IN POSITION AT BOTH ENDS TO ACCOMMODATE POSSIBLE UNEVEN THRUST LOADS THAT MAY BE GENERATED DURING THE GROUTING OPERATION.
9. WHEN FILLING THE AREA BETWEEN THE CONDUITS AND CASING WITH GROUT, TAKE CARE NOT TO EXCEED THE HYDRAULIC COLLAPSE PRESSURE OF THE CONDUITS.
10. DEPENDING ON THE GROUT SPECIFIC GRAVITY AND GROUT FLOW, IT IS POSSIBLE THAT THE DUCT BANK WILL FLOAT TO THE TOP OF THE CASING.
11. ACTUAL QUANTITY OF GROUT USED SHOULD BE MEASURED AND RECORDED.

DOUBLE WALL, FULL COMPLEMENT BORE SPACER With 8 Ea. 8", 2 Ea. 4" & 2 Ea. 2" RTRC-XHW (Bullet-Resistant, Extra Heavy Wall Fiberglass) Conduits Per NEMA TC-2002 In A 60.000" OD X 2.130 Min. Wall HOBAS (Centrifugally Cast Fiberglass Reinforced Polymer Mortar) Casing

SH: See At Left | DRAWN BY: Alan Armstrong | ENGR'D BY: B.Muehlenbeck | DESIGN BY: Don McCoy
DATE: 7-7-06 | APPROV'D BY: | REVISION:

1st Designed For BURNS & MCDONNELL
Kansas City, MO - CHRIS COURTRIGHT - Phone: 816-333-9400

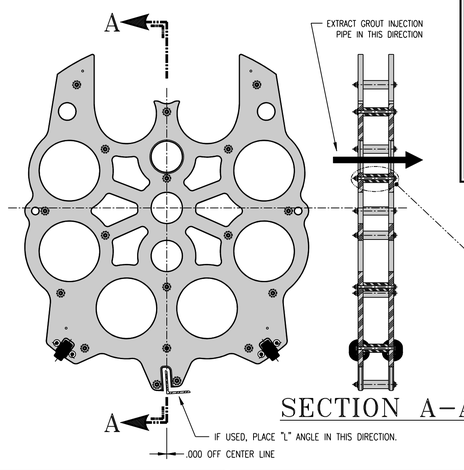
UNDERGROUND DEVICES CATALOG NUMBER: BS4150W4

• PATENT PENDING •

SCALE: 1.000

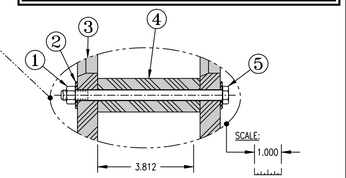
UNDERGROUND DEVICES, INC.
NORTHBROOK, ILLINOIS 60062 - PHONE: (847) 205-9000

DRAWING NUMBER: 90-4150 PAGE 1 OF 3



SECTION A-A

BILL OF MATERIAL		
ITEM NUMBER	QTY REQ'D	DESCRIPTION
1	18	3/8-16 HEX NUT (GRADE 2, CENTERLOCK LOCKING NUT, ZINC PLATED STEEL)
2	36	3/8 FLAT WASHER (.438 ID X 1.000 OD X .078 THK, USS STANDARD, ZINC PLATED STEEL)
3	2	UDI 90-4150 BLANK BORE SPACER
4	18	UDI 90-803 SPACER BUSHING (TYPE 1 PVC DARK GRAY)
5	18	3/8-16 X 6" LG HEX HEAD CAP SCREW (GRADE 2, ZINC PLATED LOW CARBON STEEL)



CONDUIT AND HOLE SIZES				
CONDUIT OD		FULL HOLE DIAMETER		PARTIAL
NOMINAL	ACTUAL	BANDED	NON-BANDED	HOLE DIAMETER
2"	2.500	----	2.620	----
4"	4.500	----	4.653	----
8"	8.900	9.015	----	8.920

DOUBLE WALL, FULL COMPLEMENT BORE SPACER With 8 Ea. 8", 2 Ea. 4" & 2 Ea. 2" RTRC-XHW (Bullet-Resistant, Extra Heavy Wall Fiberglass) Conduits Per NEMA TC-2002 In A 60.000" OD X 2.130 Min. Wall HOBAS (Centrifugally Cast Fiberglass Reinforced Polymer Mortar) Casing

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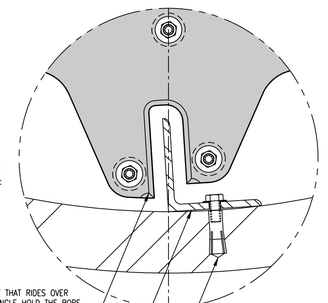
UNDERGROUND DEVICES, INC.
NORTHBROOK, ILLINOIS 60062 - PHONE: (847) 205-9000

DRAWING NUMBER: 90-4150 PAGE 2 OF 3

DETAIL No.1

SCALE @ 4X



NOTE THAT BORE SPACER HAS A SLOT THAT RIDES OVER THE "L" ANGLE. THIS SLOT & "L" ANGLE HOLD THE BORE SPACERS AND CONDUITS IN THE CORRECT ANGULAR POSITION DURING INSTALLATION AND THE GROUTING OPERATION.

SLOT IS CHAMFERED .094 X 45° ON BOTH SIDES OF EACH BORE SPACER WALL TO ENHANCE SLIDING ACTION.

OPTIONAL 3.500 X 3.500 X .250 THICK STEEL "L" ANGLE. LENGTHS OF "L" ANGLE SHOULD BE FIELD WELDED TOGETHER AND GROUND SMOOTH FORMING A CONTINUOUS RAIL IN THE CASING AS SHOWN.

SECURE "L" ANGLE TO CASING WITH HEX HEAD CAP SCREWS, WASHERS AND DROP-IN ANCHORS AS SHOWN.

DOUBLE WALL, FULL COMPLEMENT BORE SPACER With 8 Ea. 8", 2 Ea. 4" & 2 Ea. 2" RTRC-XHW (Bullet-Resistant, Extra Heavy Wall Fiberglass) Conduits Per NEMA TC-2002 In A 60.000" OD X 2.130 Min. Wall HOBAS (Centrifugally Cast Fiberglass Reinforced Polymer Mortar) Casing

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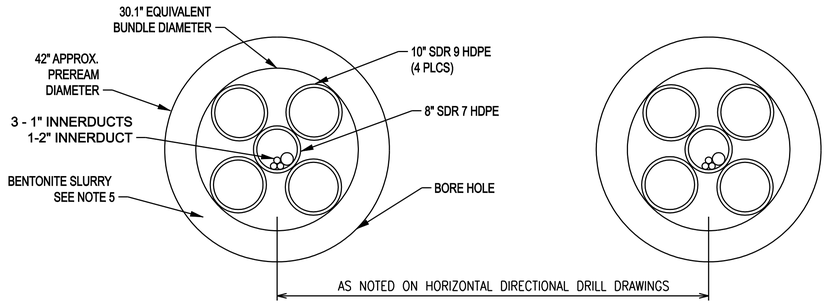
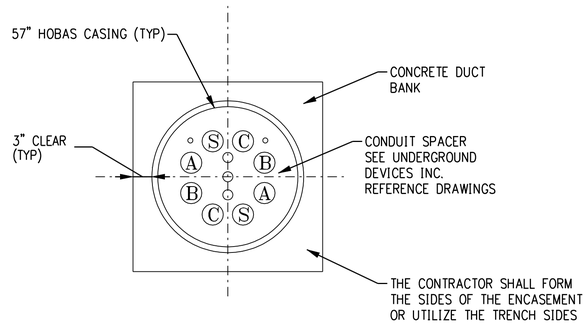
UNDERGROUND DEVICES, INC.
NORTHBROOK, ILLINOIS 60062 - PHONE: (847) 205-9000

DRAWING NUMBER: 90-4150 PAGE 3 OF 3



HORIZONTAL DIRECTIONAL DRILL

SECTION A
NTS



JACK AND BORE

SECTION B
NTS

NOTES:

1. ALL CASING SHALL BE COMPLETELY FILLED WITH A THERMALLY ACCEPTABLE GROUT. GROUT MIX DESIGN SHALL MEET PROJECT SPECIFICATIONS.
2. GROUT SAMPLES SHALL BE SUBMITTED TO THE TEST COMPANY (CONTACT TEST COMPANY FOR APPROPRIATE SIZE & METHOD OF TRANSPORTATION) IN ACCORDANCE WITH THE SPECIFICATIONS.
3. CONTRACTOR SHALL FURNISH AND INSTALL CASING PIPE SPACER. SPACERS SHALL BE INSTALLED A MAXIMUM DISTANCE OF 5 FEET APART. SPACERS SHALL BE INSTALLED PER MANUFACTURES RECOMMENDATIONS.
4. CONTRACTOR SHALL SUBMIT DETAILED DESIGN OF EACH BORED CROSSING FOR REVIEW, INCLUDING AS A MINIMUM WORK PLAN, EQUIPMENT AND MATERIALS TO BE USED, WORK AREAS, BORE PIT SIZES AND LOCATIONS.
5. BENTONITE SLURRY SAMPLES SHALL BE SUBMITTED TO THE TEST COMPANY (CONTACT TEST COMPANY FOR APPROPRIATE SIZE & METHOD OF TRANSPORTATION) IN ACCORDANCE WITH THE SPECIFICATIONS.

DOCKET No. 272

FOR REFERENCE ONLY
NOT FOR CONSTRUCTION

no.	date	revisions	by	chk
2	9/4/06	ISSUED CSC	CTC	
1	6/1/06	ISSUED 60% PRELIMINARY	CTC	

Burns & McDonnell SINCE 1898

date 6/15/06 | detailed L. ROWSE
designed C. COURTRIGHT | checked S. NEWLAND

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

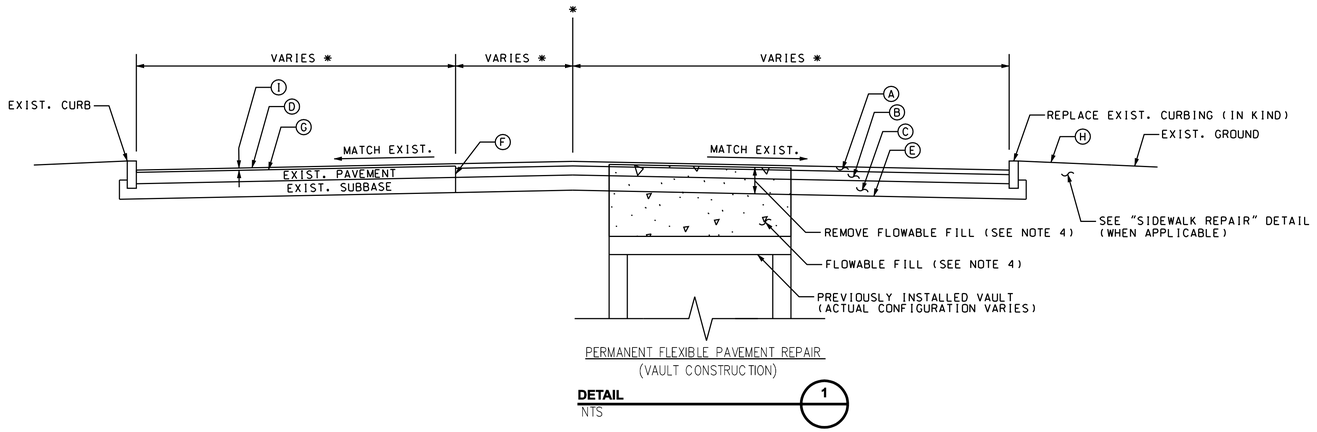
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN-NORWALK 345kV TRANSMISSION PROJECT

HORIZONTAL DIRECTIONAL DRILL AND JACK AND BORE SECTIONS

BY SEN-BMCD	CHKD	APP	APP
DATE 6/15/06	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01223-46003 PG 006	



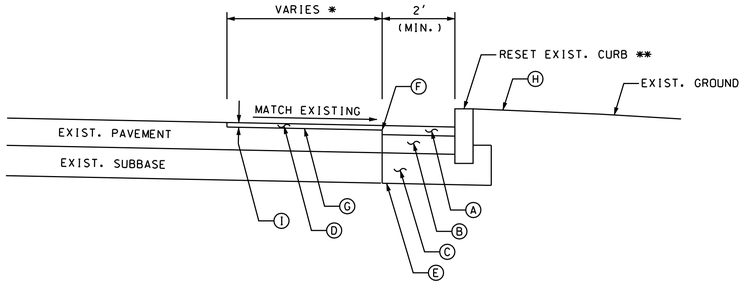
PERMANENT FLEXIBLE PAVEMENT REPAIR
(VAULT CONSTRUCTION)

DETAIL 1
NTS

* SEE MILLING AND OVERLAY PLANS FOR LIMITS.

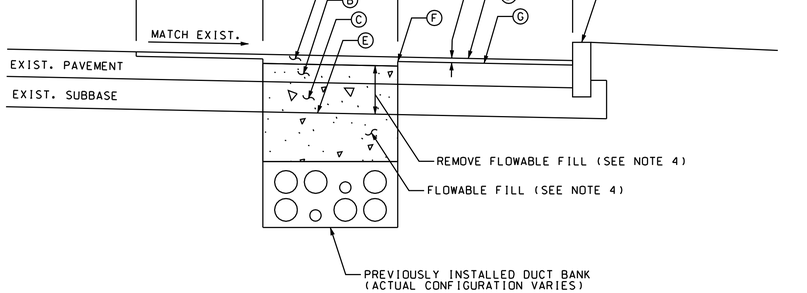
LEGEND FOR TYPICAL SECTIONS

- (A) STATE ROAD – 3" SUPERPAVE 0.5 INCH (PLACED IN TWO EQUAL LIFTS)
  LOCAL ROAD – 2" SUPERPAVE 0.5 INCH
- (B) STATE ROAD – 6" SUPERPAVE 1.5 INCH (PLACED IN TWO EQUAL LIFTS)
  LOCAL ROAD – 2" SUPERPAVE 0.375 INCH
- (C) 10" PROCESSED AGGREGATE SUBBASE
- (D) 1.5" SUPERPAVE 0.5 INCH
- (E) FORMATION OF SUBGRADE
- (F) CUT BITUMINOUS CONCRETE PAVEMENT
- (G) APPLY TACK COAT
- (H) TURF ESTABLISHMENT
- (I) MILL BITUMINOUS CONCRETE PAVEMENT (1.5")
- (J) CUT CONCRETE PAVEMENT
- (K) CONCRETE CURBING
- (L) CONCRETE SIDEWALK



RESET STONE CURBING/REPLACE CONC. CURBING

DETAIL 3
NTS



PERMANENT FLEXIBLE PAVEMENT REPAIR
(DUCT BANK CONSTRUCTION)

DETAIL 2
NTS

* SEE MILLING AND OVERLAY PLANS FOR LIMITS.

* SEE MILLING AND OVERLAY PLANS FOR LIMITS.
** WHEN THE EXISTING CURBING IS DEEMED TO BE UNSUITABLE FOR REUSE BY THE ENGINEER, THE CONTRACTOR SHALL FURNISH AND INTALL NEW CURBING OF THE SAME MATERIAL TO REPLACE IT.

NOTES:

1) THE LIMITS OF RESET STONE CURBING, CONCRETE CURBING AND CONCRETE SIDEWALK ARE SHOWN ON THE MILLING AND OVERLAY PLANS. THESE AREAS ARE APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO RESTORE ADDITIONAL DISTURBED AREAS, IF ANY, DUE TO THE CONTRACTOR'S ACTIVITIES.
2) "MATERIAL FOR TACK COAT" SHALL BE APPLIED BETWEEN PAVEMENT COURSES AND TO ALL PAVEMENT JOINTS.
3) SEE TYPICAL DETAIL DRAWINGS FOR TEMPORARY PAVEMENT REPAIR DETAIL.
4) "PROCESSED AGGREGATE SUBBASE" SHALL BE USED IN PLACE OF "FLOWABLE FILL" AS THE ALTERNATE BACKFILL. "FLOWABLE FILL" AND "PROCESSED AGGREGATE SUBBASE" SHALL BE THERMALLY TESTED AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. SEE TECHNICAL SPECIFICATIONS FOR DETAILS.

DOCKET No. 272

ISSUED FOR CONSTRUCTION

no.	date	revisions	by	chk
2	9/4/06	ISSUED CSC	CTC	
1	6/1/06	ISSUED 60% PRELIMINARY	CTC	

Burns & McDonnell SINCE 1898

date 6/15/06 | detailed BL COMPANIES
designed BL COMPANIES | checked S. NEWLAND

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

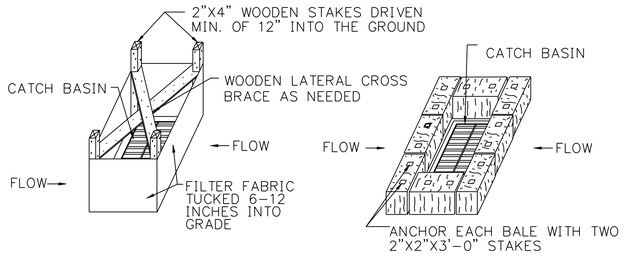
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN–NORWALK 345kV TRANSMISSION PROJECT

PAVEMENT RESTORATION DETAILS

BY SEN–BMCD	CHKD	APP	APP
DATE 6–15–06	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01224–71003 PG 001	



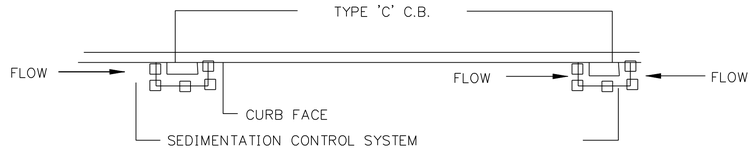
SILT FENCE INSTALLATION AT CATCH BASINS AT LOW POINTS

HAY BALE FILTER INSTALLATION AT CATCH BASIN AT LOW POINTS

STORMWATER INLETS WHICH DO NOT DISCHARGE TO SEDIMENT TRAPS OR BASINS, SHALL BE PROTECTED UNTIL THE TRIBUTARY AREAS ARE STABILIZED.
SEDIMENT SHALL BE REMOVED FROM INLET PROTECTION AFTER EACH STORM EVENT.

CATCH BASIN EROSION CONTROL

DETAIL 1 **NTS**

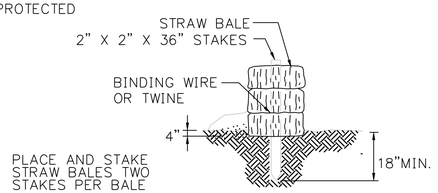


PLAN FOR TYPE 'C' C.B (ON GRADE)

PLAN FOR TYPE 'C' CB (AT LOW POINT)

NOTE:
SEDIMENTATION CONTROL SYSTEMS SHALL BE LOCATED AT ALL EXISTING OR PROPOSED BASINS WHICH ACCEPT FLOW FROM THE CONSTRUCTION AREA UNTIL TURF ESTABLISHMENT OR AS DIRECTED BY THE ENGINEER.

DETAIL 2 **NTS**



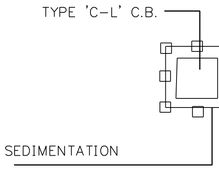
STRAW BALE BARRIERS SHALL NOT BE USED FOR MORE THAN 3 MONTHS

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE ABOVE GROUND HEIGHT OF THE BARRIER.

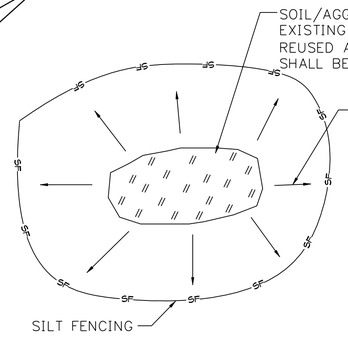
ANY SECTION OF STRAW BALE BARRIER WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.

HAYBALE BARRIER

DETAIL 4 **NTS**



PLAN FOR TYPE 'C-L' C.B.



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT BEING REUSED IN THE WORK SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.

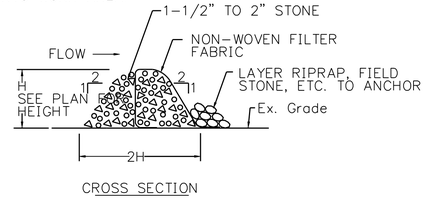
2. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

3. STOCKPILE HEIGHTS SHALL NOT EXCEED 35'. STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.

MATERIALS STOCKPILE

DETAIL 3 **NTS**

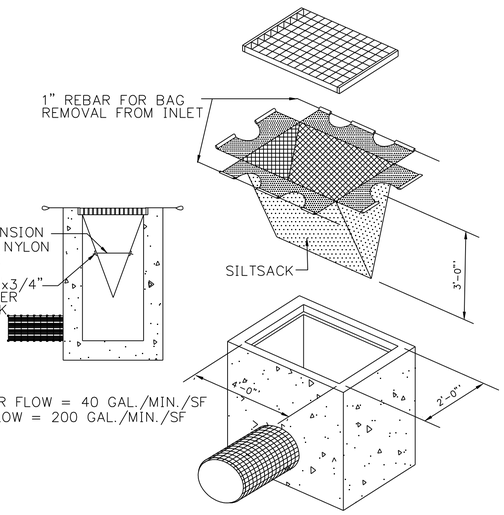
NOTE:
USE FOR IN-STREAM OR SWALE SEDIMENT INTERCEPTION. LOCATE NOT TO BACKWATER ONTO WORK AREA.



CROSS SECTION

STONE FILTER BERM W/ FILTER FABRIC

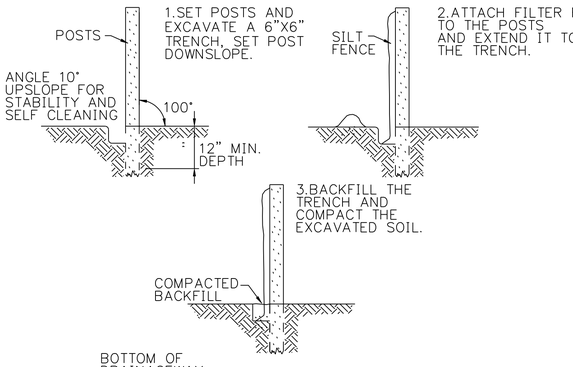
DETAIL 5 **NTS**

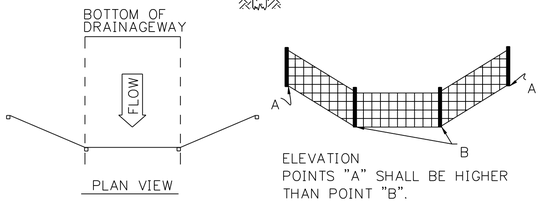


NOTE: REGULAR FLOW = 40 GAL./MIN./SF
HIGH FLOW = 200 GAL./MIN./SF

SILTSACK

DETAIL 9 **NTS**



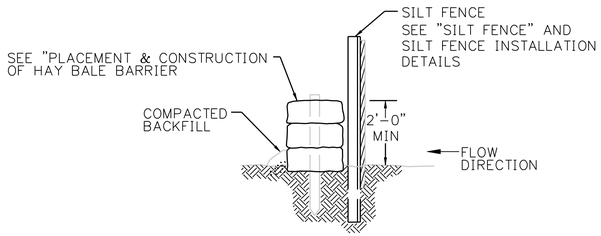


PLAN VIEW

ELEVATION
POINTS "A" SHALL BE HIGHER THAN POINT "B".

GEOTEXTILE SILT FENCE BARRIER W/OUT HAYBALES

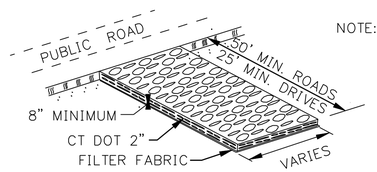
DETAIL 6 **NTS**



BACKFILL AND COMPACT THE EXCAVATED SOIL AS SHOWN ON THE UPHILL SIDE OF THE BARRIER TO PREVENT PIPING

GEOTEXTILE SILT FENCE BARRIER W/ HAYBALES

DETAIL 7 **NTS**



CONSTRUCTION ENTRANCE

DETAIL 8 **NTS**

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DOCKET No. 272

no.	date	revisions	by	chk
2	9/4/06	ISSUED CSC	CTC	
1	6/1/06	ISSUED 60% PRELIMINARY	CTC	

Burns & McDonnell SINCE 1898

date 8/15/05 | detailed BL COMPANIES
designed BL COMPANIES | checked S. NEWLAND

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

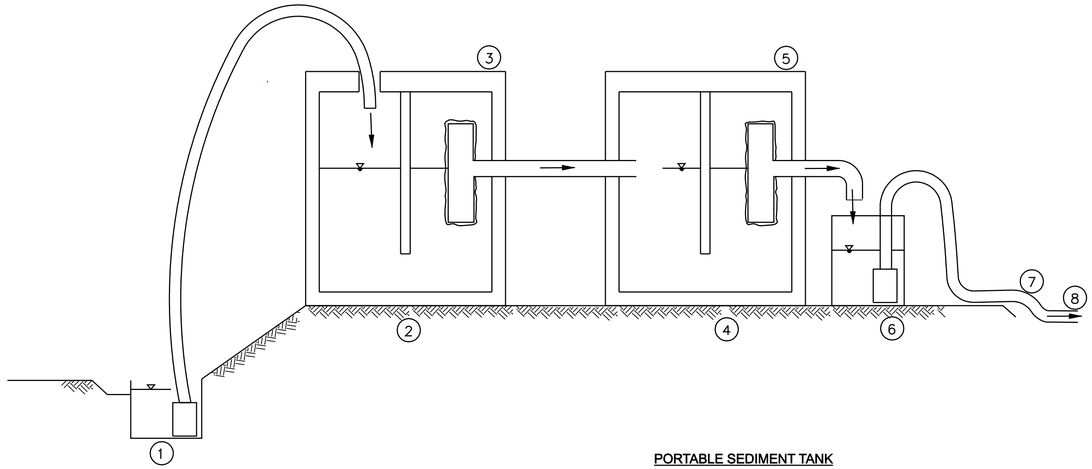
NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN-NORWALK 345kV TRANSMISSION PROJECT

EROSION CONTROL DETAILS

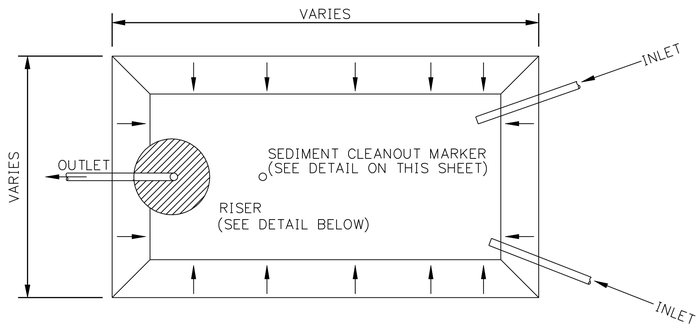
BY SEN-BMCD	CHKD	APP	APP
DATE 8-15-05	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01224-15003 PG 001	

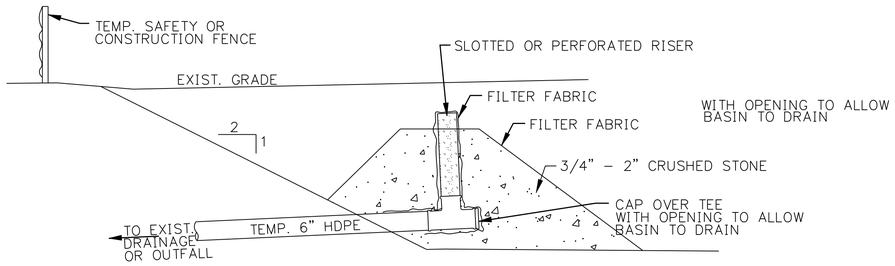


NOTES
1. 20 GPM TRASH PUMP DEWATERS FOUNDATION EXCAVATION
2. MUDDY WATER DISCHARGES TO 1,250 GAL SEPTIC TANK (OR DET. OUTLET STRUCTURE)
3. 4" TEE OUTLET WRAPPED W/ FILTER FABRIC
4. 1,250 GAL CLEAR WELL
5. 2ND 4" TEE OUTLET WRAPPED W/ FILTER FABRIC
6. 2ND PUMP IN 55 GAL DRUM (OR GRAVITY HOSE) DRAINS SYSTEM
7. TEMP. OUTLET TO CATCH BASIN IN STREET
8. 2-1,250 GAL. TANKS = 2,500 GAL. CAPACITY TOTAL

PORTABLE SEDIMENT TANK

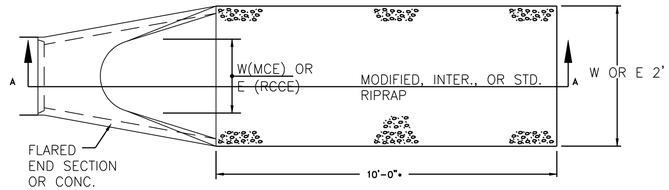
DETAIL 1
NTS





TEMPORARY SEDIMENT TRAP

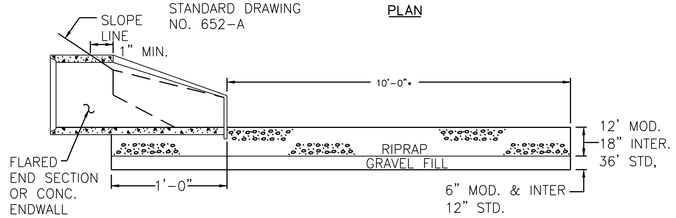
DETAIL 2
NTS



NOTES:
FOR DETAILS OF CULVERT ENDS SEE DOT STANDARD DRAWING NO. 652-A

*OR AS SHOWN ON PLAN

PLAN

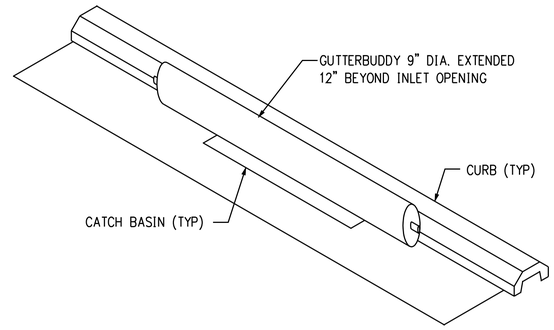


RIPRAP TYPE	"T" (INCHES)
INTERMEDIATE	18
MODIFIED	12
STANDARD	36

SECTION A-A

LEVEL SPREADER

DETAIL 3
NTS



GUTTERBUDDY STORM DRAIN

DETAIL 4
NTS

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no.	date	revisions	by	chk
2	9/4/06	ISSUED CSC	CTC	
1	6/1/06	ISSUED 60% PRELIMINARY	CTC	

Burns & McDonnell SINCE 1898

date 11/09/05 | detailed BL COMPANIES
designed BL COMPANIES | checked S. NEWLAND

MF	NO.	DATE	REVISIONS	BY	CHK	APP	APP

NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN-NORWALK 345kV TRANSMISSION PROJECT

EROSION CONTROL DETAILS

BY SEN-BMCD	CHKD	APP	APP
DATE 11-09-05	DATE	DATE	DATE
SCALE AS NOTED	D	DWG. NO. 01224-15003 PG 002	