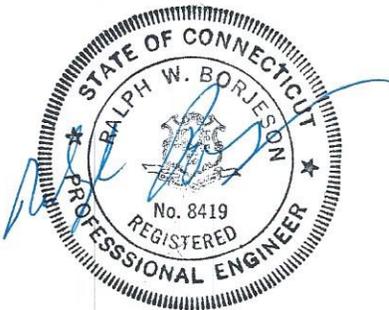


**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS PROJECT
NEW HAVEN, CONNECTICUT
STATE PROJECT NO. 0301-0144**

**YARD POWER UPGRADE
STRUCTURE SOIL AND ROCK REPORT**



SEPTEMBER 2014

Prepared by
**PARSONS
BRINCKERHOFF**

Submitted to
CONNECTICUT DEPARTMENT OF TRANSPORTATION



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FIGURE

- 1 Site Location Plan
- 2 Foundation Plan
- 3 Boring Location Plan

APPENDIX

- A Test Boring Log
- B Laboratory Data
- C Current Design Drawings

1.0 General

The New Haven Rail Yard Facilities Improvements Project involves the construction of a number of new facilities and the reconfiguration of several existing facilities within the rail yard located in New Haven, Connecticut. A Final Geotechnical Report dated October 2007 was previously prepared for this project. A Yard Power Upgrade (YPU) facility was not part of the project at that time and is presently proposed just east of the rail yard and just south of Water Street. A site location plan is shown on Figure 1. This report addresses the subsurface conditions at the site and provides foundation recommendations for the proposed switchgear structure.

The proposed switchgear structure is an approximately 54 foot long by 32 foot wide single storey structure. Current design indicates a foundation comprised of an at-grade concrete slab, with a surface elevation of approximately 7.0 feet, supported by 16-inch square precast prestressed concrete piles. The currently proposed pile layout is as shown on the Figure 2 foundation plan. Other current design drawings are included as Appendix C.

The project is to be designed and constructed in accordance with the Connecticut 2005 State Building Code, which consists of the 2003 International Building Code with the 2005 Connecticut Supplement and in accordance with the 2012 AASHTO LRFD Bridge Design Specifications.

2.0 Coordinate System and Datum

The Connecticut coordinate system of the 1983 North American Datum (NAD 83) is being used for the New Haven Rail Yard Facilities Improvements Project and the datum being used is the 1988 North American Vertical Datum (NAVD 88).

3.0 Subsurface Conditions

3.1 Subsurface Exploration

A number of subsurface investigation programs have been performed in the New Haven Rail Yard. The entire rail yard has been filled at various times, with the western portion having been uplands and the eastern portion tidal lands. The YPU site is located in an area of the rail yard that was once tidal and below sea level and filled at various times.

One test boring, YPU-1 was drilled at the YPU site in August of 2014. The boring log is included as Appendix A. The boring log sample descriptions are based on the system required by ConnDOT in their Geotechnical Manual. A boring location plan is included as Figure 3.

The boring was drilled from an approximate ground surface elevation of 5.8 at the location of the proposed switchgear structure and indicated the following generalized strata in order of occurrence:

- Miscellaneous Fill: 3 feet (elevation 5.8 to 2.8) of medium dense to dense silty, gravelly sand
- Silty Gravelly Sand (possible fill): 16 feet (elevation 2.8 to -13.2) of dense to very dense silty, gravelly sand
- Organic Clayey Silt: 8 feet (elevation -13.2 to -21.2) of very soft to medium stiff organic clayey silt
- Silty Sand: 51.5 feet (elevation -21.2 to -72.7) of loose to dense (typically medium dense) silty sand
- Sand and Silt: 15 feet (elevation -72.7 to -87.7) of dense to very dense (typically dense) sand and silt
- Silt: 8.5 feet (elevation -87.7 to -96.2) of dense silt (bottom of boring).

The ground water surface was measured at a depth of 5.0 feet or an approximate elevation of +0.8. The ground water table noted in all the borings of the rail yard test boring program averaged at approximately elevation +1.5 and appeared to be tidally influenced.

3.2 Laboratory Testing

Testing was performed in accordance with all applicable American Society for Testing Materials (ASTM) standards. The laboratory descriptions are based on the Unified Soil Classification System and are in general agreement with the log descriptions. Testing was performed on 1 undisturbed sample of the organic clayey silt and 7 split-spoon samples distributed among the all soil types.

All laboratory data is included as Appendix B.

3.3 Engineering Properties of Soil

The engineering properties of the various soils have been evaluated based on the boring and laboratory testing. From Section 3.1 the following generalized strata in order of occurrence are:

- Miscellaneous Fill: 3 feet (elevation 5.8 to 2.8)
- Silty Gravelly Sand (Possible Fill): 16 feet (elevation 2.8 to -13.2)
- Organic Clayey Silt: 8 feet (elevation -13.2 to -21.2)
- Silty Sand: 51.5 feet (elevation -21.2 to -72.7)
- Sand and Silt: 15 feet (elevation -72.7 to -87.7)
- Silt: 8.5 feet (elevation -87.7 to -96.2).

3.3.1 Miscellaneous Fill

This layer was comprised of medium dense to dense silty, gravelly sand with a Standard Penetration Test N-value of 30 blows per foot. Based on the Standard Penetration Test (SPT) result an angle of internal friction of 36 degrees and a total unit weight of 120 pounds per cubic foot (pcf) are recommended for design.

3.3.2 Silty Gravelly Sand (Possible Fill)

Some of the soils above the organic clayey silt may be natural soils deposits and not fill deposits. Because the thickness of any natural deposits is not readily discernable from the fill deposits, the whole of this layer is identified as possible fill. This layer was comprised of dense to very dense silty gravelly sand with Standard Penetration Test N-values ranging from 34 to 60 blows per foot and averaging 43. Based on the Standard Penetration Test (SPT) results an angle of internal friction of 39 degrees and a total unit weight of 120 pounds per cubic foot (pcf) are recommended for design.

3.3.3 Organic Clayey Silt

This layer of organic clayey silt was very soft to medium stiff with Standard Penetration Test N-values of 2 and 5 blows per foot. An undisturbed tube sample was obtained from this layer for testing but found to be predominately disturbed upon subsequent extraction in the lab. The results of laboratory tests performed on the organic clayey silt samples are:

- Torvane Shear Strength: Value of 0.08 tons per square foot (tsf)
- Water Content: Values of 53 and 66%
- Liquid Limit: Values of 58 and 67%
- Plastic Limit: Values of 32 and 37%
- Plasticity Index: Values of 26 and 30%
- Liquidity Index: Values of 0.81 and 0.97
- Total Unit Weight: Value of 98.3 pounds per cubic foot (pcf).

3.3.4 Silty Sand

This layer was comprised of loose to dense, typically medium dense, silty sand with Standard Penetration Test N-values ranging from 5 to 32 blows per foot and averaging 18. Based on the Standard Penetration Test (SPT) results an angle of

internal friction of 32 degrees and a total unit weight of 120 pounds per cubic foot (pcf) are recommended for design.

3.3.5 Sand and Silt

This layer was comprised of dense to very dense, typically dense, sand and silt with Standard Penetration Test N-values ranging from 35 to 65 blows per foot and averaging 44. Based on the Standard Penetration Test (SPT) results an angle of internal friction of 39 degrees and a total unit weight of 120 pcf are recommended for design.

3.3.6 Silt

This layer was comprised of dense silt with Standard Penetration Test N-values of 41 and 45 blows per foot. Based on the Standard Penetration Test (SPT) results an angle of internal friction of 39 degrees and a total unit weight of 120 pcf are recommended for design.

4.0 Engineering Analysis and Recommendations

4.1 General

Based on the current design drawings (Appendix C), the finish grade across the YPU site and beneath the proposed switchgear footprint is to remain essentially unchanged. To the extent changes in grade are shown, they appear to be generally within plus or minus 1 foot from existing grades. Therefore, consolidation of the underlying organic clayey silt is not anticipated.

4.2 Switchgear Foundation

With typically very soft organic clayey silt underlying the site and the relatively dense sands and silts present beneath the organic clayey silt, it is recommended to use a deep foundation system for support of the proposed switchgear foundation to bypass the organic clayey silt stratum. It is recommended to use

16-inch square precast prestressed concrete piles, as is currently planned, with capacity being obtained in side resistance and end bearing from the sands and silts (bearing stratum) underlying the organic clayey silt.

Current design for the switchgear structure requires the piles to have an LRFD-factored resistance of 100 kips in compression and no requirement for tensile or lateral resistance. Combined friction/end bearing piles obtain their capacity from a combination of skin friction and end-bearing, with the friction portion of the capacity increasing with length. Frictional capacity will start at approximately elevation -21, which is the approximate elevation of the bottom of the organic clayey silt stratum and the start of the continuous and primarily medium dense to dense sands and silts based on the YPU-1 boring.

The I-95/I-91/SR34 Interchange Pile Load Test Program Evaluation Report dated September 2002, for Areas C & D located to the east of the YPU site, recommends a range of ultimate skin friction from 0.8 to 1.2 ksf and an ultimate end bearing of 50 ksf for precast prestressed concrete piles. Analysis of the boring YPU-1 N-Values indicates a range of ultimate skin friction of 0.3 to 1.1 ksf and a range of ultimate end bearing of 43 to 322 ksf. Using an average of 0.38 ksf for ultimate skin friction and the 50 ksf for ultimate end bearing, the approximate calculated penetration of a 16-inch pile into the bearing stratum (below elevation -21) to obtain the above pile factored resistance, assuming a resistance factor of 0.65, is 32.5 feet.

If 16-inch piles are used it is recommended that the piles extend to an approximate elevation of -59 or a penetration of 38 feet into the bearing stratum. It is recommended that the first pile driven be a test pile with a minimum resistance factor of 0.65, as verified by PDA testing. PDA testing should include the initial driving and a 3-day restrike if capacity is not obtained by the PDA testing during the initial drive.

5.0 Seismic Considerations

Based on the recent site investigations, Site Class E is appropriate for earthquake design of all structures at the New Haven Rail Yard including the YPU site.

The spectral acceleration for short periods S_s and for a 1 second period S_1 in accordance with the values in Appendix K of the 2005 State Building Code, 2009 Amendments are:

$$S_s = 0.243$$

$$S_1 = 0.062$$

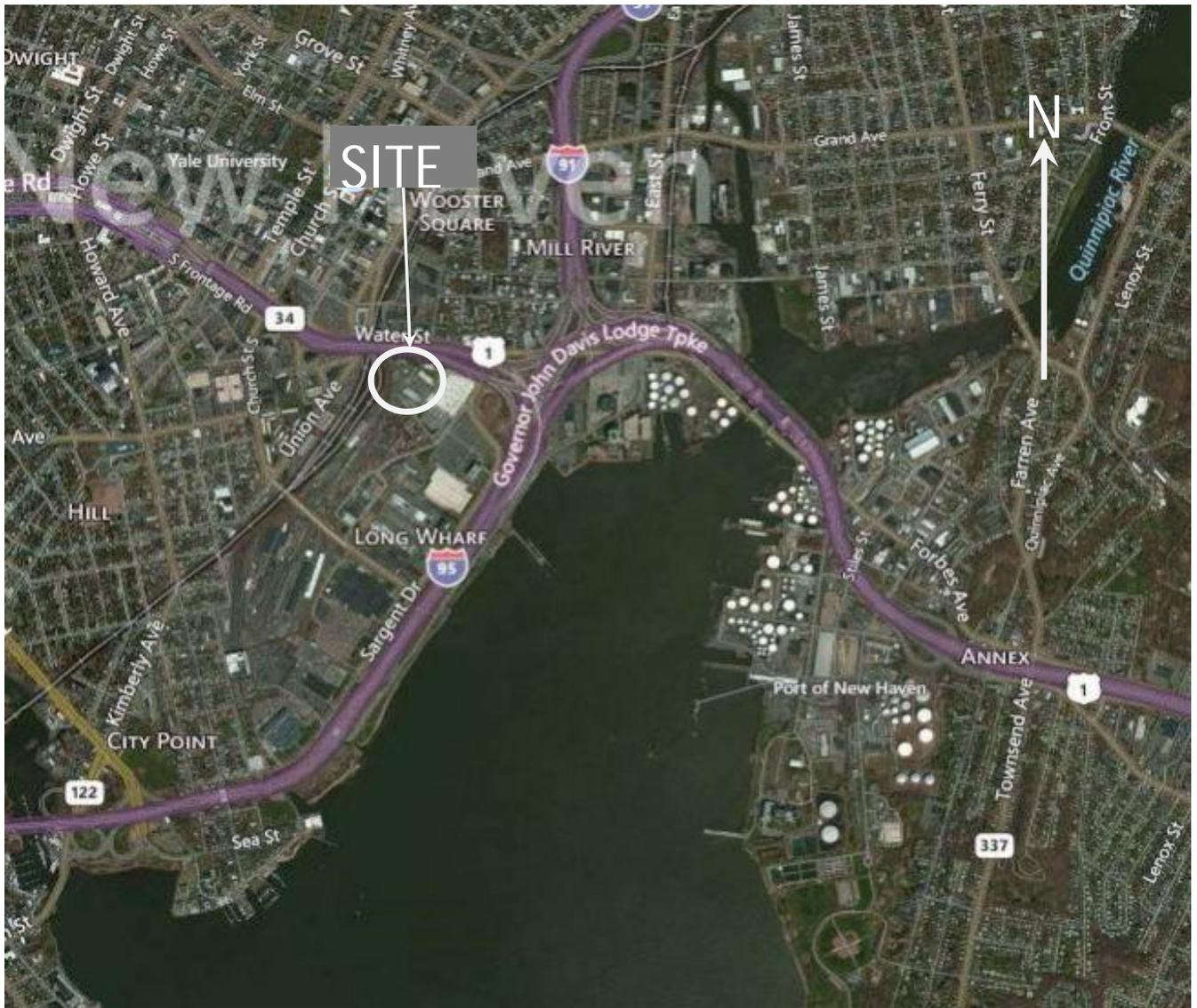
The 2005 State Building Code allows a Site Specific Procedure to be used to determine ground motion accelerations. A Site Specific Study was performed in the area that is applicable to this site. The “Final Report, Seismic Design Criteria, I-95 New Haven Harbor Crossing Corridor Improvement Program”, March, 2001, recommended a peak ground acceleration value of 0.15g be used for the soils typical of the site (Type IV), which includes fills over organic clayey silts over silty sand or silt, with bedrock at a great depth.

Liquefaction is only considered a problem where two or three contiguous samples occur within one boring, or individual samples at a similar elevation occur across adjacent borings. A liquefaction analysis of boring YPU-1 indicated only one sample with a factor of safety less than 1.1 against liquefaction. This one sample with a calculated factor of safety of 0.77 occurred at a depth of approximately 36 feet or approximately elevation -30 within the upper 10 feet of the sands and silts underlying the organic silt stratum and is believed to be an anomaly and not indicative of an overall condition at this depth across the YPU site. Review of the boring log does not indicate a liquefaction concern.

6.0 Construction Considerations

The test pile to be driven, as recommended in Section 4.2, should be driven initially at a production pile location with the PDA data used to verify the length of pile required.

FIGURES



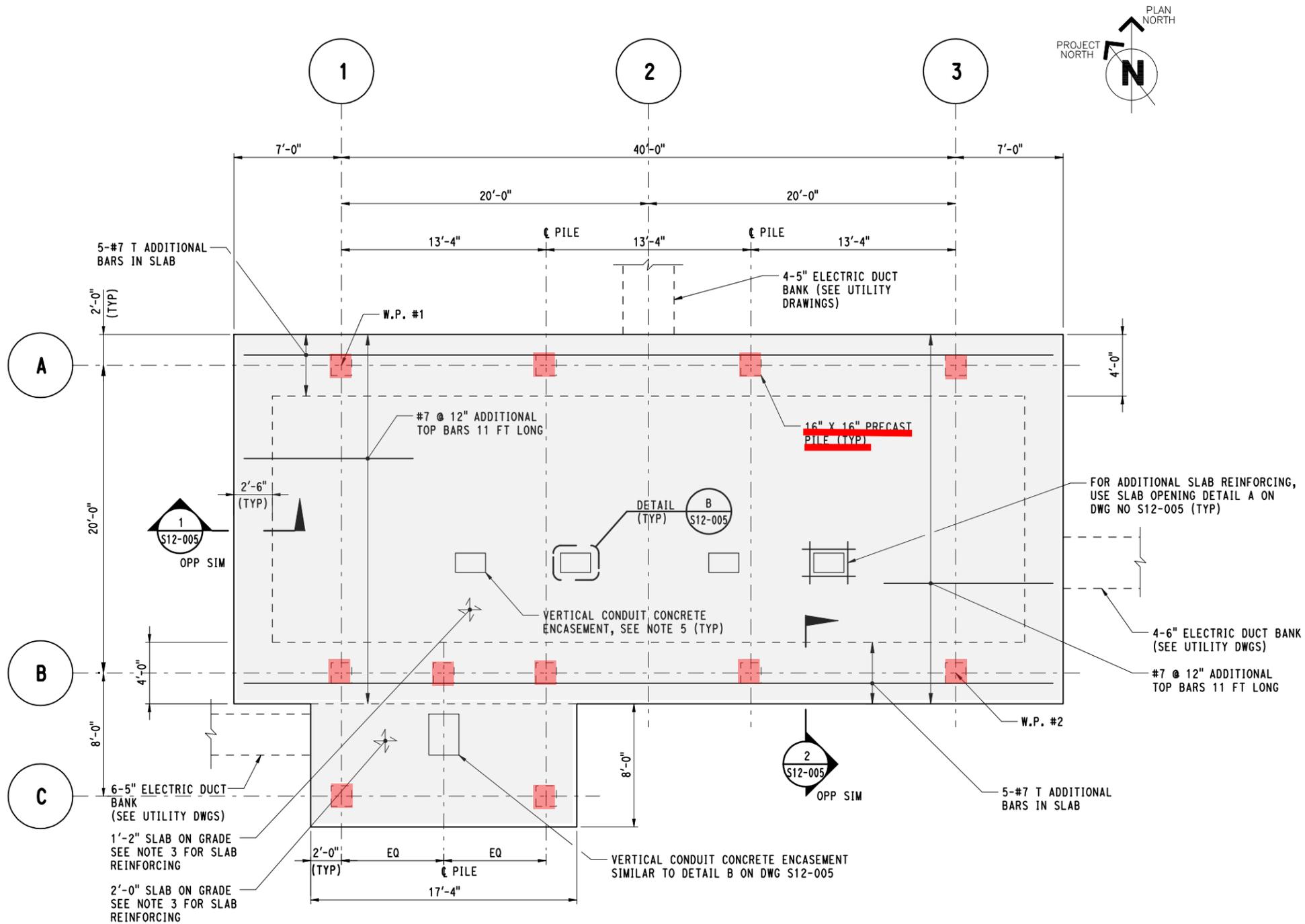
STRUCTURE SOIL AND ROCK REPORT

**NEW HAVEN RAIL YARD FACILITIES
IMPROVEMENTS PROJECT**

**YARD POWER UPGRADE
SITE LOCATION PLAN**

SEPTEMBER 2014

FIGURE 1



SWITCHGEAR FOUNDATION REINFORCING SLAB PLAN
 SCALE: 1/4" = 1'-0" TOC EL 7'-0"

STRUCTURE SOIL AND ROCK REPORT

NEW HAVEN RAIL YARD FACILITIES
 IMPROVEMENTS PROJECT

YARD POWER UPGRADE
 FOUNDATION PLAN

SEPTEMBER 2014 FIGURE 2

APPENDIX A

TEST BORING LOG

Driller	T. Sabo	BORING LOG		Hole No.:	YPU-1
Inspector:	E. Guven/D. D'Angelo	Town:	New Haven	Stat./Offset:	
Engineer:	Parsons Brinckerhoff	Project No.:	0301-0124	Northing:	670347
Start Date:	8-14-14	Route No.:		Easting:	952585
Finish Date:	8-20-14	Bridge No.:		Surface Elevation:	5.8

Project Description: New Haven Rail Yard Facilities Improvements - Yard Power Upgrade

Casing Size/Type: HW	Sampler Type/Size: Split Spoon / 1-3/8" I.D.	Core Barrel Type:
Hammer Wt.: 300lb Fall: 24in.	Hammer Wt.: 140lb Fall: 30in.	

Groundwater Observations: Measured @ 5.0ft

Depth (ft)	SAMPLES					Generalized Strata Description	Material Description and Notes	Elevation (ft)
	Sample Type/No.	Blows on Sampler per 6 inches						
0								
	S-1	6	12	18	16	24	12	
5								
	S-2	3	9	25	12	24	17	
10								
	S-3	9	18	17	21	24	14	
15								
	S-4	17	29	31	42	24	16	
20								
	S-5	2	1	1	1	24	20	

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 102ft Rock: 0ft	NOTES: 1. SPT's taken with spooling winch and safety hammer 2. Hole drilled with a Mobile B-53 drill rig mounted on a truck 3. Hole grouted upon completion	Sheet 1 of 5
No. of Soil Samples: 22	No. of Core Runs: 0	SM-001-M REV. 1/02

Driller	T. Sabo	BORING LOG		Hole No.:	YPU-1
Inspector:	E. Guven/D. D'Angelo	Town:	New Haven	Stat./Offset:	
Engineer:	Parsons Brinckerhoff	Project No.:	0301-0124	Northing:	670347
Start Date:	8-14-14	Route No.:		Easting:	952585
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Groundwater Observations: Measured @ 5.0ft

Depth (ft)	SAMPLES					Generalized Strata Description	Material Description and Notes	Elevation (ft)
	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %			
25	UP-1	P U S H	24	18		ORGANIC CLAYEY SILT (con't)	Dark Gray ORGANIC clayey SILT, trace fine to coarse sand, trace shells	
	S-6	WOHWOH 5 7	24	24		SILTY SAND	Dark Gray ORGANIC clayey SILT, trace fine sand (mostly within bottom 6 inches) medium stiff	-20
30	S-7	8 6 4 3	24	12			Dark Brown fine to coarse SAND, little silt, trace fine gravel, loose to medium dense	-25
35	S-8	6 3 2 3	24	9			Brown to reddish-brown fine SAND, trace silt, loose	-30
40	S-9	9 13 14 14	24	14			Reddish-brown fine SAND, trace silt, medium dense	-35

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 102ft Rock: 0ft	NOTES: 1. SPT's taken with spooling winch and safety hammer 2. Hole drilled with a Mobile B-53 drill rig mounted on a truck 3. Hole grouted upon completion	Sheet 2 of 5
No. of Soil Samples: 22	No. of Core Runs: 0	SM-001-M REV. 1/02

Driller	T. Sabo	BORING LOG		Hole No.:	YPU-1
Inspector:	E. Guven/D. D'Angelo	Town:	New Haven	Stat./Offset:	
Engineer:	Parsons Brinckerhoff	Project No.:	0301-0124	Northing:	670347
Start Date:	8-14-14	Route No.:		Easting:	952585
Finish Date:	8-20-14	Bridge No.:		Surface Elevation:	5.8

Project Description: New Haven Rail Yard Facilities Improvements - Yard Power Upgrade

Casing Size/Type:	HW	Sampler Type/Size:	Split Spoon / 1-3/8" I.D.	Core Barrel Type:	
Hammer Wt.:	300lb	Fall:	24in.	Hammer Wt.:	140lb
		Fall:	30in.		

Groundwater Observations: Measured @ 5.0ft

Depth (ft)	SAMPLES					Generalized Strata Description	Material Description and Notes	Elevation (ft)							
	Sample Type/No.	Blows on Sampler per 6 inches							Pen. (in.)	Rec. (in.)	RQD %				
45	S-10	11	9	8	8	24	10		SILTY SAND (con't)	Reddish-brown fine to coarse SAND, little fine to medium gravel, trace silt, medium dense	-40				
50	S-11	7	7	8	10	24	12					Reddish-brown fine SAND, trace silt, trace fine gravel, medium dense	-45		
55	S-12	8	8	10	11	24	12							Reddish-brown fine SAND, trace silt, trace fine gravel, medium dense	-50
60	S-13	5	9	12	11	24	11								
65											-60				

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 102ft Rock: 0ft	NOTES: 1. SPT's taken with spooling winch and safety hammer 2. Hole drilled with a Mobile B-53 drill rig mounted on a truck 3. Hole grouted upon completion	Sheet 3 of 5
No. of Soil Samples: 22	No. of Core Runs: 0	SM-001-M REV. 1/02

Driller	T. Sabo	BORING LOG		Hole No.:	YPU-1
Inspector:	E. Guven/D. D'Angelo	Town:	New Haven	Stat./Offset:	
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Finish Date:	8-20-14	Bridge No.:		Surface Elevation:	5.8

Project Description: New Haven Rail Yard Facilities Improvements - Yard Power Upgrade

Casing Size/Type: HW	Sampler Type/Size: Split Spoon / 1-3/8" I.D.	Core Barrel Type:
Hammer Wt.: 300lb Fall: 24in.	Hammer Wt.: 140lb Fall: 30in.	

Groundwater Observations: Measured @ 5.0ft

Depth (ft)	SAMPLES					Generalized Strata Description	Material Description and Notes	Elevation (ft)										
	Sample Type/No.	Blows on Sampler per 6 inches							Pen. (in.)	Rec. (in.)	RQD %							
	S-14	9	13	19	18	24	13											
70																		
	S-15	10	17	18	25	24	14											
75																		
	S-16	16	20	24	20	24	15											
80																		
	S-17	12	20	17	20	24	18											
85																		
	S-18	10	20	20	26	24	18											

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test
Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 102ft Rock: 0ft	NOTES: 1. SPT's taken with spooling winch and safety hammer 2. Hole drilled with a Mobile B-53 drill rig mounted on a truck 3. Hole grouted upon completion	Sheet 4 of 5
No. of Soil Samples: 22	No. of Core Runs: 0	SM-001-M REV. 1/02

Driller		BORING LOG					Hole No.: YPU-1				
Inspector: E. Guven/D. D'Angelo		Town: New Haven					Stat./Offset:				
Engineer: Parsons Brinckerhoff		Project No.: 0301-0124					Northing: 670347				
Start Date: 8-14-14		Route No.:					Easting: 952585				
Finish Date: 8-20-14		Bridge No.:					Surface Elevation: 5.8				
Project Description: New Haven Rail Yard Facilities Improvements - Yard Power Upgrade											
Casing Size/Type: HW			Sampler Type/Size: Split Spoon / 1-3/8" I.D.				Core Barrel Type:				
Hammer Wt.: 300lb Fall: 24in.			Hammer Wt.: 140lb Fall: 30in.								
Groundwater Observations: Measured @ 5.0ft											
Depth (ft)	SAMPLES					Generalized Strata Description	Material Description and Notes	Elevation (ft)			
	Sample Type/No.	Blows on Sampler per 6 inches							Pen. (in.)	Rec. (in.)	RQD %
90	S-19	17	33	32	34	24	16		SAND AND SILT (con't)	Reddish-brown fine SAND and SILT, very dense	-85
95	S-20	14	23	22	28	24	20		SILT	Reddish-brown SILT, dense	-90
100	S-21	20	20	21	22	24	18			Reddish-brown SILT, dense	-95
105										END OF BORING 102ft	-100
110											
<p>Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%</p>											
Total Penetration in Earth: 102ft Rock: 0ft						NOTES: 1. SPT's taken with spooling winch and safety hammer 2. Hole drilled with a Mobile B-53 drill rig mounted on a truck 3. Hole grouted upon completion			Sheet 5 of 5		
No. of Soil Samples: 22						No. of Core Runs: 0			SM-001-M REV. 1/02		

APPENDIX B

LABORATORY DATA

LABORATORY TESTING DATA SHEET

Project Name NHRY - Yard Power Upgrade

Project Location New Haven, CT

Reviewed By *Matthew D'Angelo*

Project No. 74-13-0003.23

Assigned By David D'Angelo

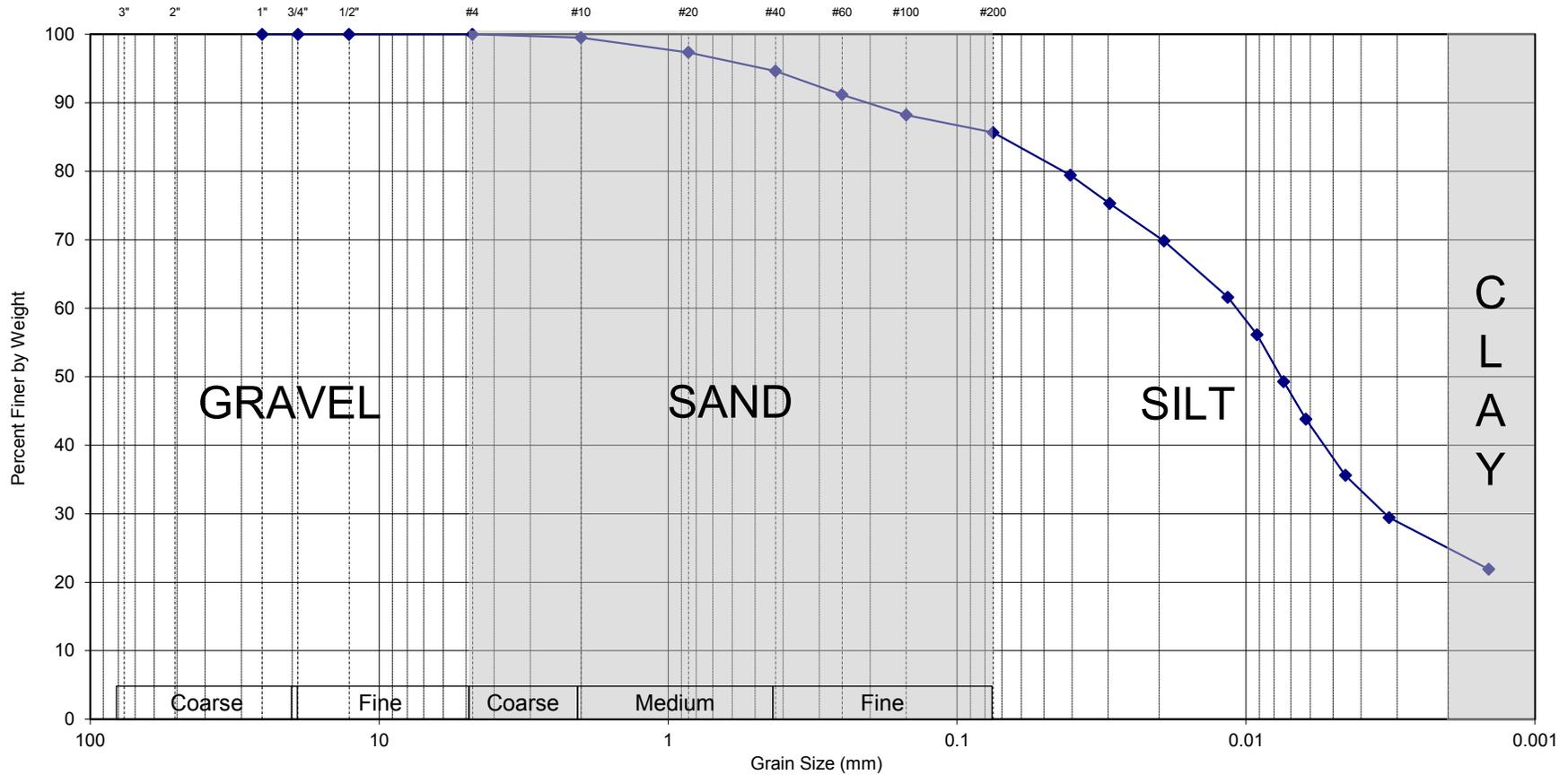
Project Manager David D'Angelo

Date 9/4/2014

Date Reviewed 9/4/2014

Boring/ Test Pit No.	Sample No.	Depth ft.	Lab No.	Identification Tests								Strength Tests				Consol.	Laboratory Log and Soil Description	
				Water Content %	LL %	PL %	Sieve -200 %	Hyd -2 μ %	ORG %	G _s	Dry unit wt. pcf	Torvane or Type Test	σ_c psf	Failure Criteria	$\sigma_1 - \sigma_3$ psf	Strain %		$\frac{C_c}{1 + e_0}$
YPU-1	UP-1	22- 24	56	Average Total Unit Weight (22.0-23.4') = 98.3 pcf														<p>From 22.0' to 23.2': Dark Gray Organic SILT (OL), with lenses of Silty fine Sand Sample was disturbed and of a liquified consistency</p> <p>From 23.2' to 23.4': Dark Gray Organic SILT (OL), Very Soft Consistnecy Consolidation test abandoned as the sample was likely disturbed also</p>
		23.0- 23.1					85.7	25										
		23.1- 23.2		66.0	67	37												
		23.2		66.2							Tv= 0.08 tsf							
		23.3- 23.4		(Consolidation Abandoned)														

U.S. STANDARD SIEVE AND HYDROMETER



Gravel 0.0% Sand 14.3% Fines 85.7%

Lab #	Exploration	Sample	Depth	Description	WC	LL	PL	PI
56	YPU-1	UP-1	23.0-23.1'	Dark gray Organic SILT, little f-m Sand (OL)	66.0	67	37	30

Sieve Size	% Passing
3/4"	100.0
1/2"	100.0
#4	100.0
#10	99.5
#20	97.4
#40	94.6
#60	91.2
#100	88.2
#200	85.7

THIELSCH
ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

New Haven Rail Yard - Pedestrian Bridge
New Haven, CT
Thielsch CTS Project # 74-14-0003.23
Tested by: LM Date: 8/29/14
Reviewed by: MBP Date: 9/4/14

LABORATORY TESTING DATA SHEET

Matthew DeGala

Project Name NHRY - Yard Power Upgrade
 Project No. 74-13-0003.23
 Project Manager Ralph Borjeson

Project Location New Haven, CT
 Assigned By David D'Angelo
 Date 8/28/2014

Reviewed By _____
 Date Reviewed 8/28/2014

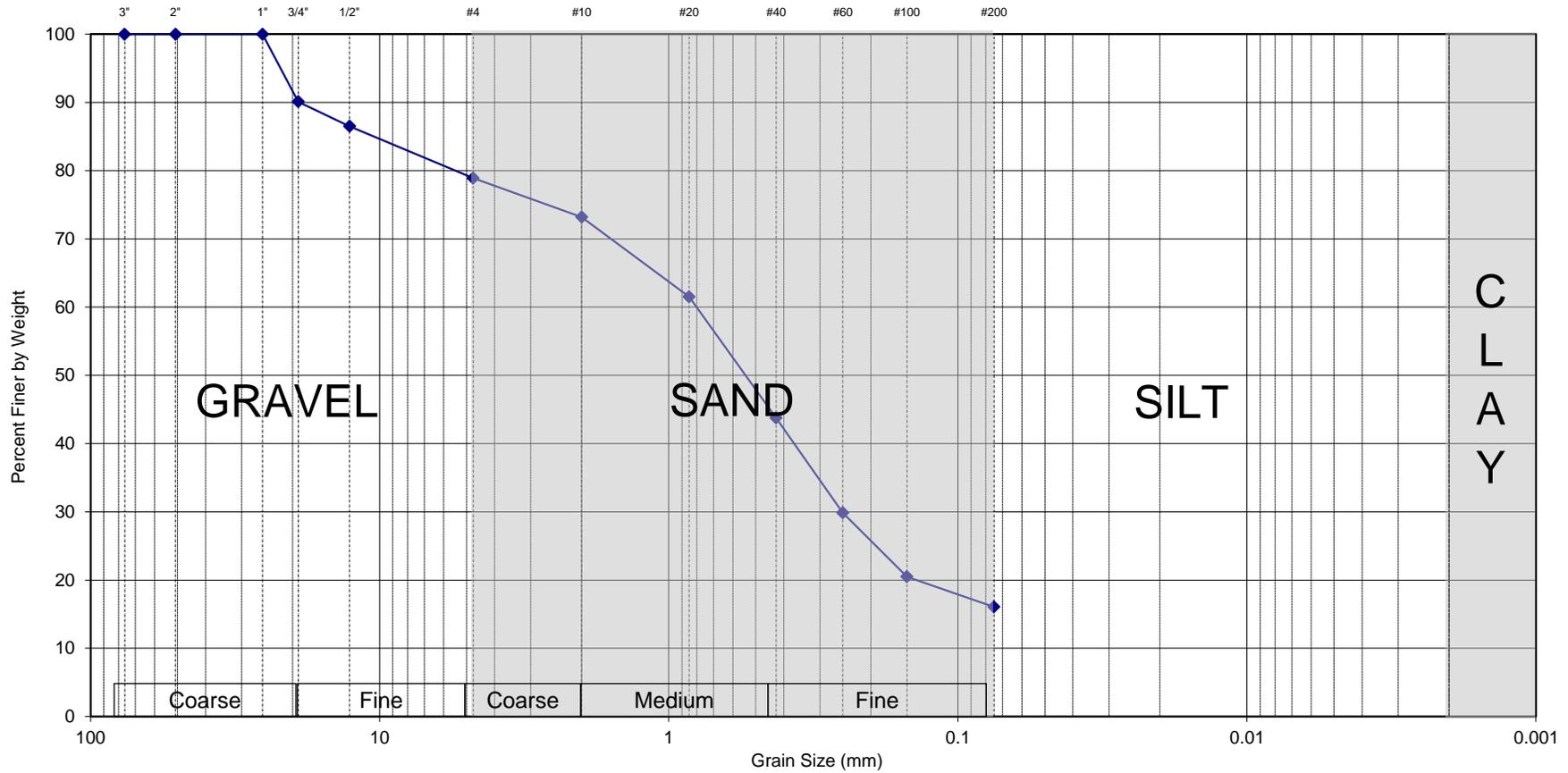
Boring/ Test Pit No.	Sample No.	Depth ft.	Lab No.	Identification Tests								Strength Tests				Consol.	Laboratory Log and Soil Description		
				Water Content %	LL %	PL %	Sieve -200 %	Hyd -2 μ %	ORG %	G _s	Dry unit wt. pcf	Torvane or Type Test	σ_c psf	Failure Criteria	$\sigma_1 - \sigma_3$ psf	Strain %		$\frac{C_c}{1 + e_0}$	
YPU-1	S-2	5-7	57				16.1												Dark brown f-m SAND, some f-c Gravel, little Silt (SM)
YPU-1	S-5	20-22	58	53.2	58	32	77.4	22											Dark gray Organic SILT, some f-m Sand (OL)
YPU-1	S-7	30-32	59				12.1												Dark brown f-m SAND, little Silt, trace Gravel (SM)
YPU-1	S-10	45-47	60				8.0												Red-brown f-m SAND, little fine Gravel, trace Silt (SP-SM)
YPU-1	S-13	60-62	61				10.5												Brown f-m SAND, little Silt, trace Gravel (SP-SM)
YPU-1	S-16	75-77	62				59.6												Red-brown SILT and fine SAND (ML)
YPU-1	S-19	90-92	63				47.0												Red-brown fine SAND and SILT (SM)



195 Frances Avenue
 Cranston, RI 02910

401-467-6454

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
21.1%

Sand
62.8%

Fines
16.1%

Lab #	Exploration	Sample	Depth	Description	WC	LL	PL	PI
57	YPU-1	S-2	5-7'	Dark brown f-m SAND, some f-c Gravel, little Silt (SM)				

Sieve Size	% Passing
3/4"	90.1
1/2"	86.5
#4	78.9
#10	73.2
#20	61.5
#40	43.8
#60	29.9
#100	20.5
#200	16.1

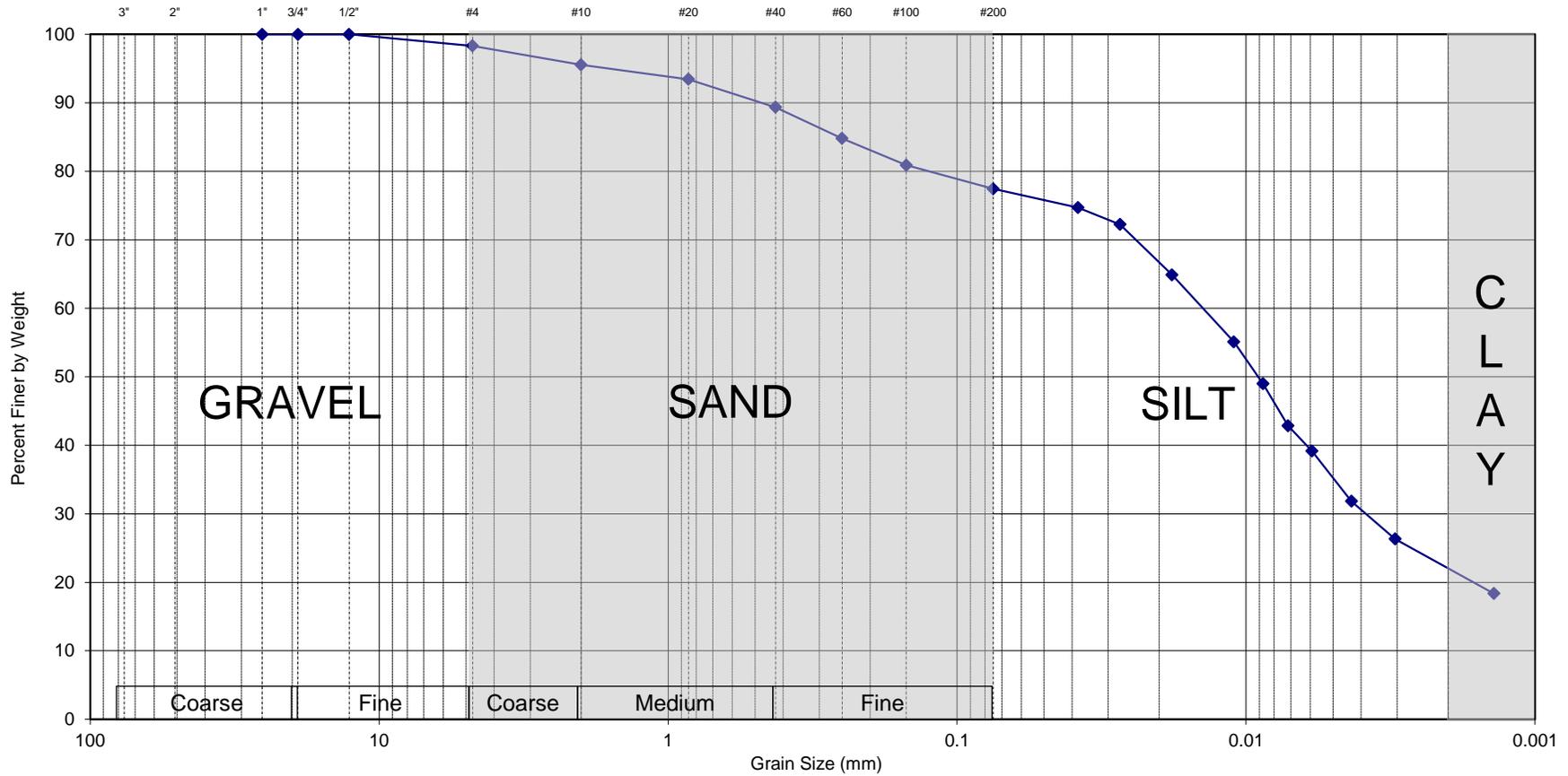


195 Frances Ave., Cranston, RI 02910
401-467-6454

New Haven Rail Yard - Yard Power Upgrade
New Haven, CT
Thielsch CTS Project # 74-14-0003.23

Tested by: LM Date: 8/26/14
Reviewed by: MBP Date: 8/27/14

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
1.7%

Sand
20.9%

Fines
77.4%

Lab #	Exploration	Sample	Depth	Description	WC	LL	PL	PI
58	YPU-1	S-5	20-22'	Dark gray Organic SILT, some f-m Sand (OL)	53.2	58	32	26

Sieve Size	% Passing
3/4"	100.0
1/2"	100.0
#4	98.3
#10	95.5
#20	93.4
#40	89.4
#60	84.8
#100	80.9
#200	77.4



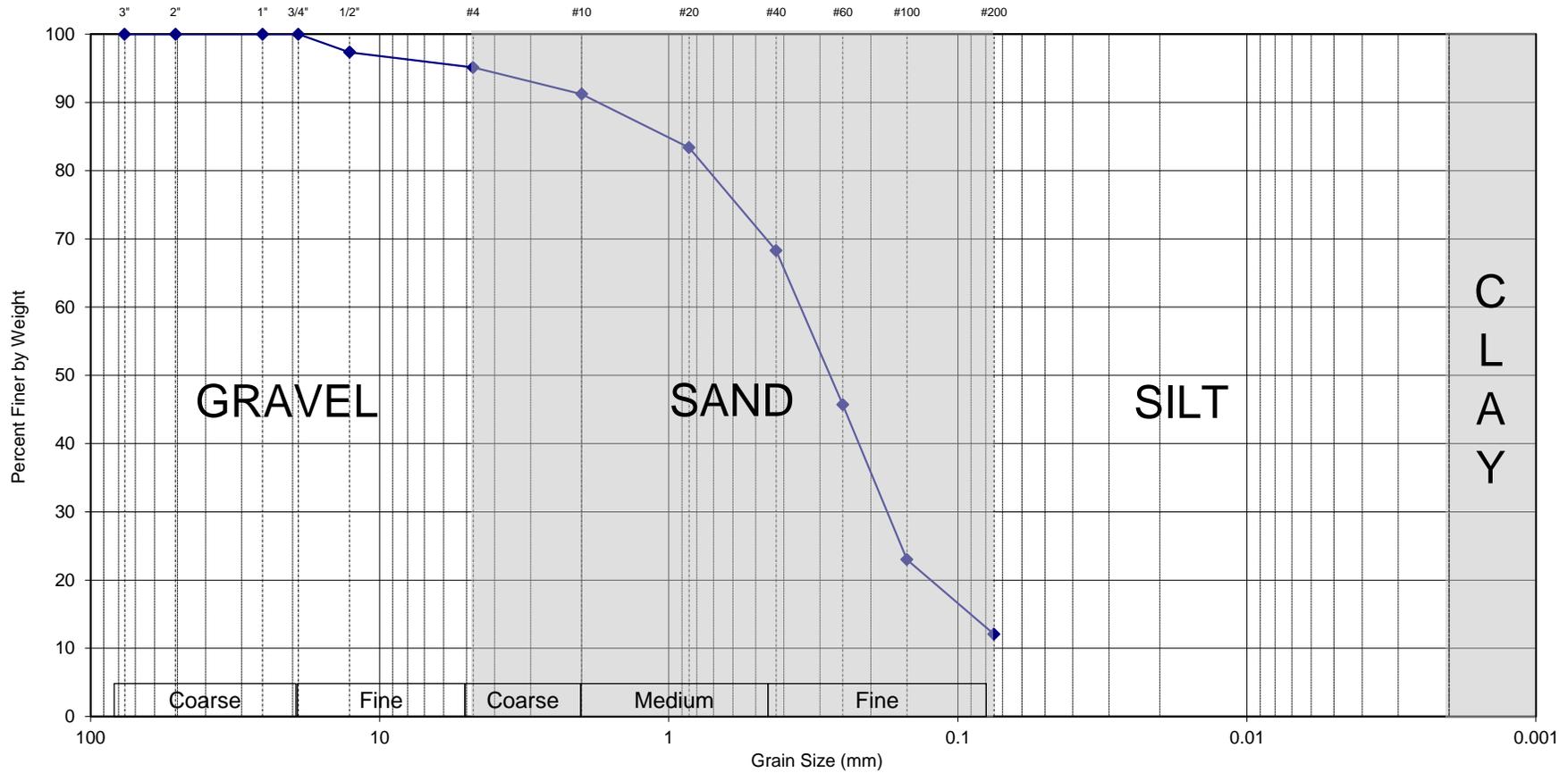
195 Frances Ave., Cranston, RI 02910
401-467-6454

New Haven Rail Yard - Pedestrian Bridge
New Haven, CT

Thielsch CTS Project # 74-14-0003.23

Tested by: LM Date: 8/28/14
Reviewed by: MBP Date: 8/28/14

U.S. STANDARD SIEVE AND HYDROMETER



Gravel 4.9% Sand 83.1% Fines 12.1%

Lab #	Exploration	Sample	Depth	Description	WC	LL	PL	PI
59	YPU-1	S-7	30-32'	Dark brown f-m SAND, little Silt, trace Gravel (SM)				

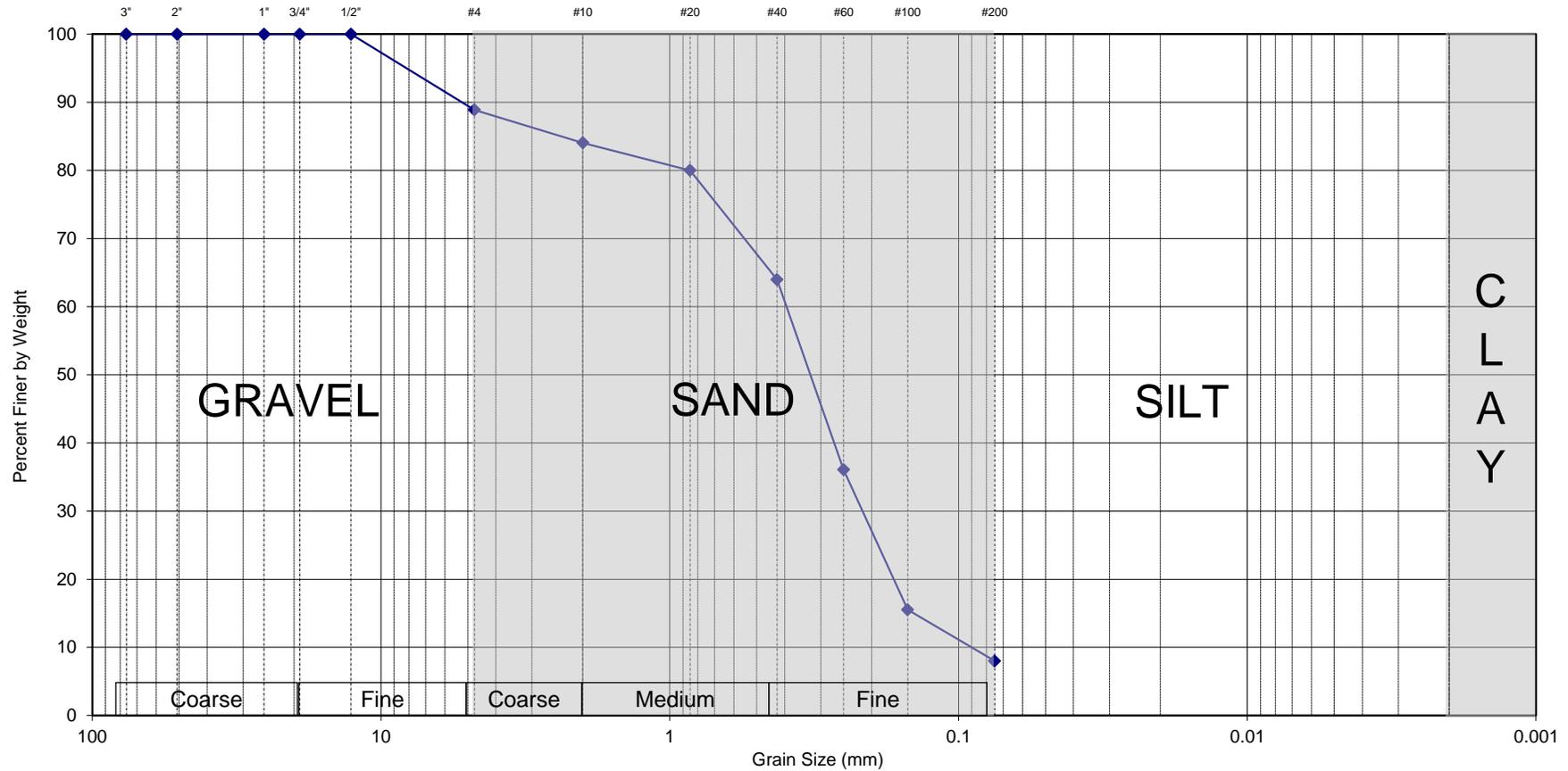
Sieve Size	% Passing
3/4"	100.0
1/2"	97.4
#4	95.1
#10	91.2
#20	83.4
#40	68.3
#60	45.7
#100	23.0
#200	12.1



195 Frances Ave., Cranston, RI 02910
401-467-6454

New Haven Rail Yard - Yard Power Upgrade
New Haven, CT
Thielsch CTS Project # 74-14-0003.23
Tested by: LM Date: 8/26/14
Reviewed by: MBP Date: 8/27/14

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
11.1%

Sand
80.9%

Fines
8.0%

Lab #	Exploration	Sample	Depth	Description	WC	LL	PL	PI
60	YPU-1	S-10	45-47'	Red-brown f-m SAND, little fine Gravel, trace Silt (SP-SM)				

Sieve Size	% Passing
3/4"	100.0
1/2"	100.0
#4	88.9
#10	84.0
#20	80.0
#40	64.0
#60	36.1
#100	15.5
#200	8.0

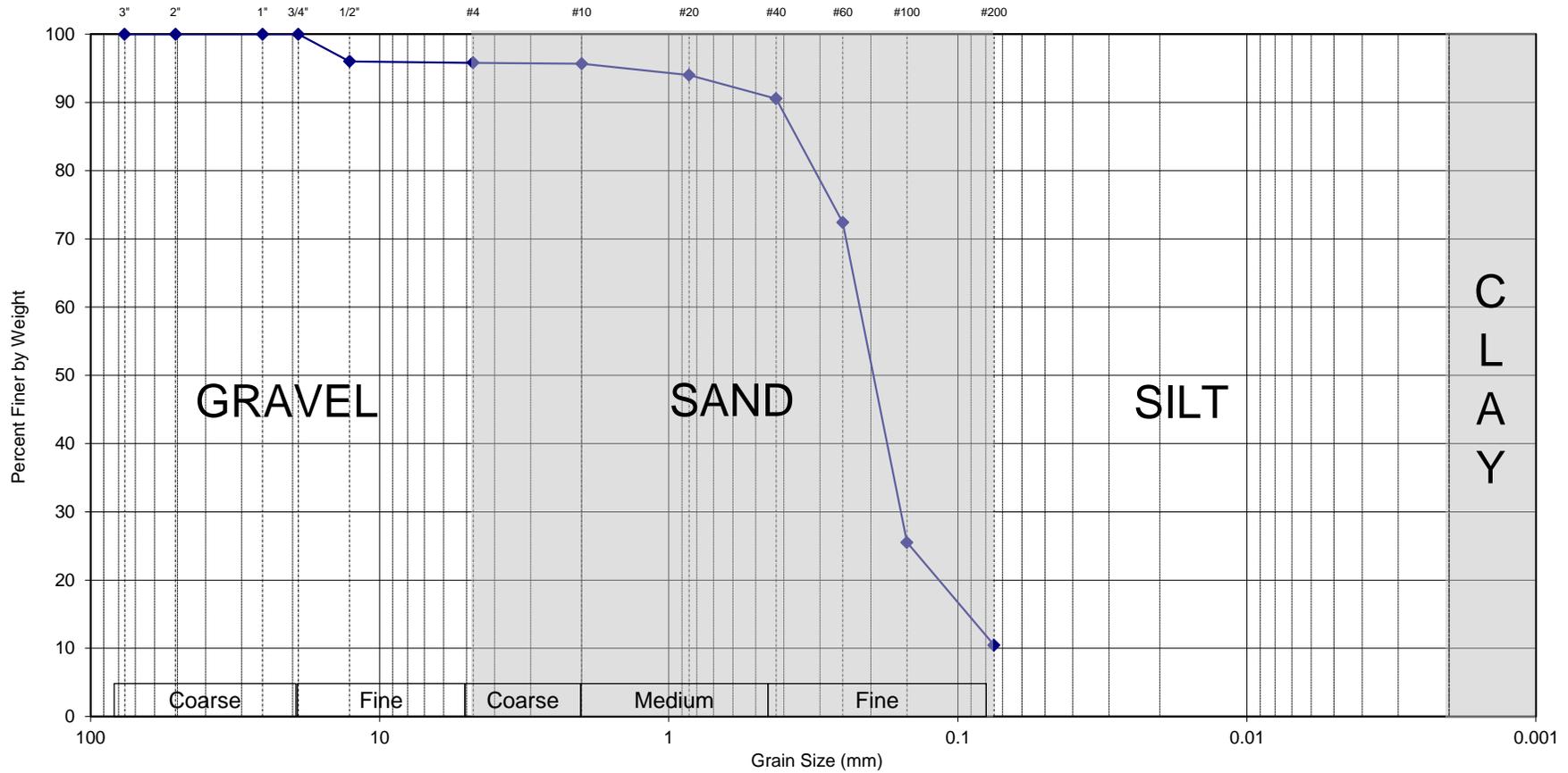


195 Frances Ave., Cranston, RI 02910
401-467-6454

New Haven Rail Yard - Yard Power Upgrade
New Haven, CT
Thielsch CTS Project # 74-14-0003.23

Tested by: LM Date: 8/26/14
Reviewed by: MBP Date: 8/27/14

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
4.2%

Sand
85.3%

Fines
10.5%

Lab #	Exploration	Sample	Depth	Description	WC	LL	PL	PI
61	YPU-1	S-13	60-62'	Brown f-m SAND, little Silt, trace Gravel (SP-SM)				

Sieve Size	% Passing
3/4"	100.0
1/2"	96.0
#4	95.8
#10	95.7
#20	94.0
#40	90.6
#60	72.4
#100	25.5
#200	10.5

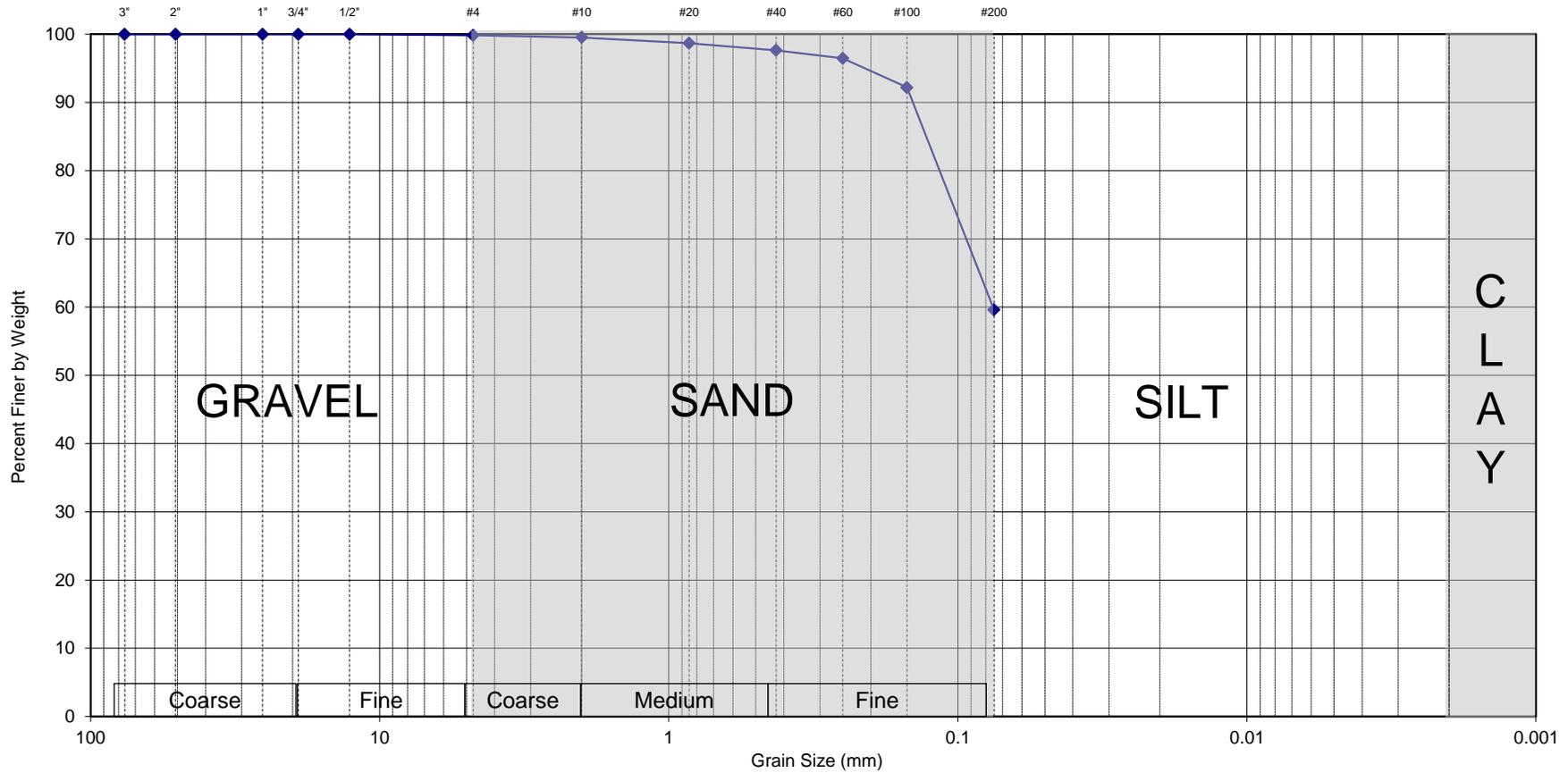


195 Frances Ave., Cranston, RI 02910
401-467-6454

New Haven Rail Yard - Yard Power Upgrade
New Haven, CT
Thielsch CTS Project # 74-14-0003.23

Tested by: LM Date: 8/26/14
Reviewed by: MBP Date: 8/27/14

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
0.2%

Sand
40.2%

Fines
59.6%

Lab #	Exploration	Sample	Depth	Description	WC	LL	PL	PI
62	YPU-1	S-16	75-77'	Red-brown SILT and fine SAND (ML)				

Sieve Size	% Passing
3/4"	100.0
1/2"	100.0
#4	99.8
#10	99.5
#20	98.7
#40	97.6
#60	96.5
#100	92.2
#200	59.6

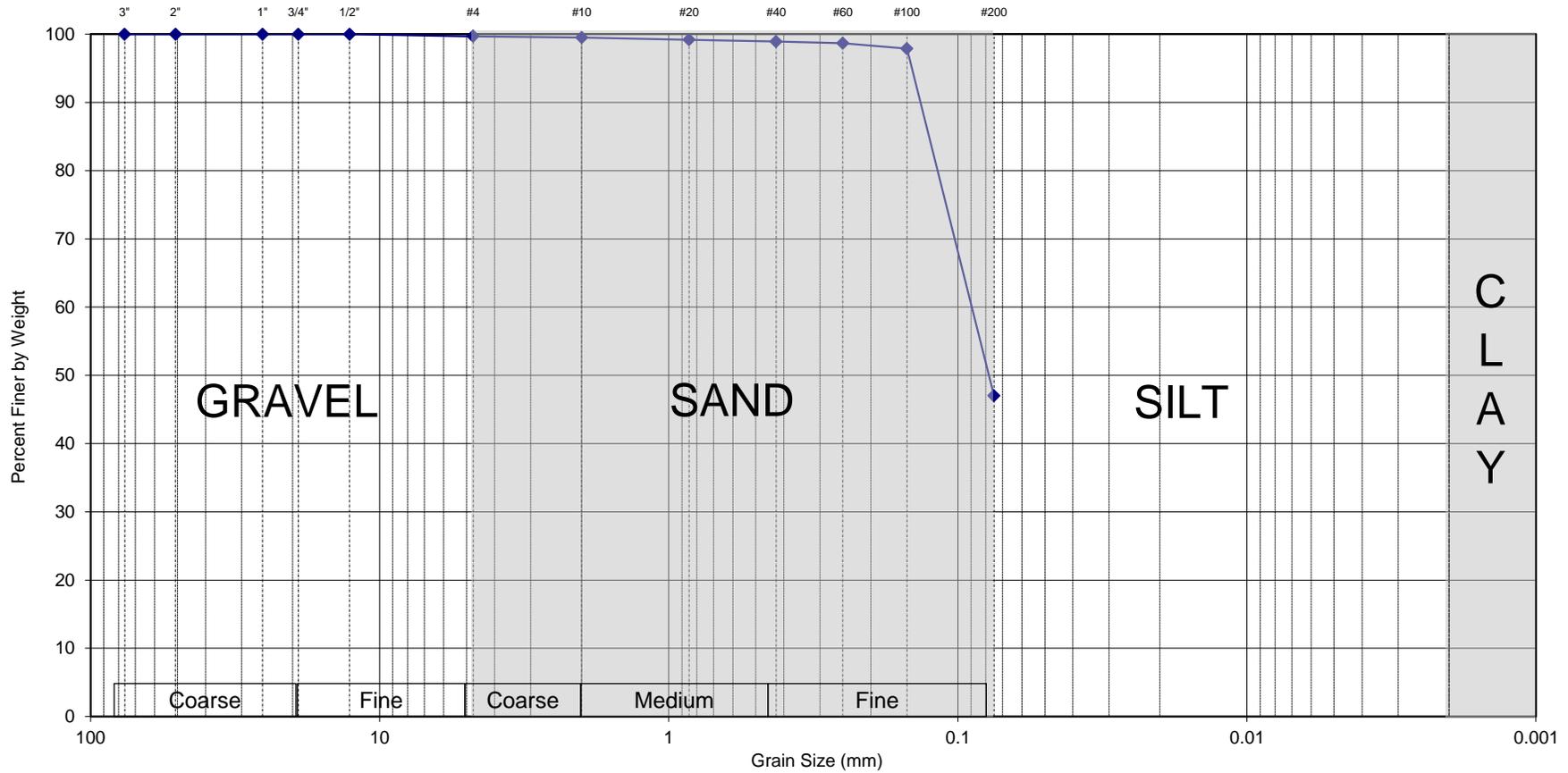


195 Frances Ave., Cranston, RI 02910
401-467-6454

New Haven Rail Yard - Yard Power Upgrade
New Haven, CT
Thielsch CTS Project # 74-14-0003.23

Tested by: LM Date: 8/26/14
Reviewed by: MBP Date: 8/27/14

U.S. STANDARD SIEVE AND HYDROMETER



Gravel
0.3%

Sand
52.7%

Fines
47.0%

Lab #	Exploration	Sample	Depth	Description	WC	LL	PL	PI
63	YPU-1	S-19	90-92'	Red-brown fine SAND and SILT (SM)				

Sieve Size	% Passing
3/4"	100.0
1/2"	100.0
#4	99.7
#10	99.5
#20	99.2
#40	98.9
#60	98.7
#100	97.9
#200	47.0



195 Frances Ave., Cranston, RI 02910
401-467-6454

New Haven Rail Yard - Yard Power Upgrade
New Haven, CT
Thielsch CTS Project # 74-14-0003.23

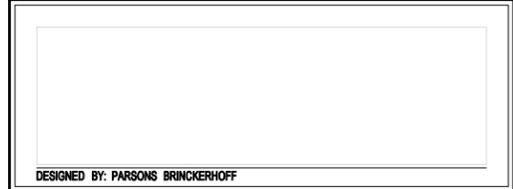
Tested by: LM Date: 8/26/14
Reviewed by: MBP Date: 8/27/14

APPENDIX C

CURRENT DESIGN DRAWINGS

SHT. NO. DWG. NO. STRUCTURAL

144	S12-000	STRUCTURAL INDEX OF DRAWINGS
145	S12-001	STRUCTURAL GENERAL NOTES
146	S12-002	STRUCTURAL GENERAL NOTES
147	S12-003	STRUCTURAL SWITCHGEAR FOUNDATION PLAN
148	S12-004	STRUCTURAL SWITCHGEAR FRAMING PLAN
149	S12-005	STRUCTURAL TYPICAL CONCRETE DETAILS
150	S12-006	STRUCTURAL SECTIONS AND DETAILS
151	S12-007	STRUCTURAL SECTIONS AND DETAILS
152	S12-008	STRUCTURAL TYPICAL STEEL DETAILS
153	S12-009	STRUCTURAL PILE SECTIONS AND DETAILS



CONTRACT DOCUMENTS REVIEW

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
WPD / JLW
CHECKED BY:
JFK



SIGNATURE/BLOCK:

PROJECT TITLE:

**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:

NEW HAVEN

PROJECT NO.:

301-0144

DRAWING NO.:

S12-000

SHEET NO.:

144

DRAWING TITLE:

**STRUCTURAL
INDEX OF DRAWINGS**

GENERAL STRUCTURAL NOTES:

1. DESIGN CODES AND CRITERIA:

THE MINIMUM STRUCTURAL DESIGN SHALL BE IN ACCORDANCE WITH THE CONNECTICUT BUILDING CODE, IBC 2003, AND ASCE 7-02.

2. IN ADDITION TO THE BUILDING DEAD LOADS, THE STRUCTURE IS DESIGNED FOR THE FOLLOWING LOADS:

LIVE LOAD

STAIRS, LANDINGS, ELEVATED PLATFORM	100 PSF
MECHANICAL EQUIPMENT	250 PSF
FOUNDATION SLAB	60 PSF

SNOW LOAD

GROUND SNOW LOAD P _g	30 PSF
SNOW EXPOSURE FACTOR C _e	1.1
THERMAL COEFFICIENT C _t	1.0
SNOW LOAD IMPORTANCE I	1.0

WIND LOAD

BASIC WIND SPEED V	110 MPH
WIND IMPORTANCE FACTOR I _w	1.15
WIND EXPOSURE CATEGORY	C

SEISMIC LOAD (PER 2005 CONN. BUILDING CODE AND SUPPLEMENT 2009)

SEISMIC DESIGN CATEGORY	D
SHORT PERIOD SPECTRAL ACCELERATION S _s	0.243
1-SECOND PERIOD SPECTRAL ACCELERATION S ₁	0.062
IMPORTANCE FACTOR I	1.5
SITE CLASS	E

BASIC SEISMIC FORCE RESISTING SYSTEM:	ASCE 7-02
LONGITUDINAL:	ORDINARY CONCENTRICALLY BRACED FRAMES
TRANSVERSE:	ORDINARY CONCENTRICALLY BRACED FRAMES

3. LIVE LOAD REDUCTION SHALL BE IN ACCORDANCE WITH ASCE 7-02.

4. FUTURE EXPANSION LOADS: NO FUTURE EXPANSION.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE SPECIFICATIONS FOR DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL USING THE 'MANUAL OF STRUCTURAL STEEL CONSTRUCTION', 13TH EDITION, BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (LRFD).

2. ALL STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO ASTM STANDARD SPECIFICATIONS "STRUCTURAL STEEL" AS AMENDED TO DATE, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

3. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:

ROLLED SHAPES & PLATES	ASTM A992 OR A588, GR 50
TUBE SECTIONS	ASTM A500 GR B
ANCHOR BOLTS	ASTM F1554
HIGH-STRENGTH BOLTS	ASTM A325

4. SHAPES NOTED AS "GALV" SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. ALL EXPOSED STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE GALVANIZED UNLESS NOTED OTHERWISE. REFER TO RELATED DRAWINGS AND SPECIFICATIONS FOR PAINTING REQUIREMENTS.

5. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 CODE FOR WELDING IN BUILDING CONSTRUCTION. WELDING ELECTRODES WILL BE E70XX. WELDERS, TACKERS, AND WELDING OPERATORS MUST BE AWS CERTIFIED WITHIN THE PAST SIX MONTHS.

6. SHOP CONNECTIONS MAY BE BOLTED OR WELDED, UNLESS THE CONNECTION METHOD IS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS. MAKE SHOP CONNECTIONS, UNLESS WELDED, AND FIELD CONNECTIONS WITH 3/4" DIAMETER ASTM A325 HIGH STRENGTH BOLTS, UNLESS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS WITH HOLES 1/16" LARGER. INSTALL ONE HARDENED WASHER UNDER THE ELEMENT TURNED IN TIGHTENING. IF TC BOLTS ARE USED, THE SLIP CRITICAL BOLT CAPACITY SHALL BE USED IN THE CONNECTION DESIGN. FIELD WELDING OF STRUCTURAL MEMBERS, NOT INDICATED ON THE STRUCTURAL DRAWINGS, IS NOT PERMITTED.

7. UNLESS INDICATED ON THE DRAWINGS, ALL SIMPLY SUPPORTED BEAM-TO-COLUMN AND BEAM-TO-BEAM CONNECTIONS SHALL BE STANDARD AISC DOUBLE ANGLE CONNECTIONS, THE MINIMUM NUMBER OF BOLTS IN ANY CONNECTION OF SECONDARY MEMBERS SHALL BE TWO 3/4" DIAMETER A325 BOLTS.

STRUCTURAL STEEL (CONTINUED):

8. ALL BOLTED CONNECTIONS OF ALL MEMBERS OF BRACED FRAMES SHALL BE MADE WITH A325 SLIP CRITICAL BOLTS.

9. ALL BEAM CONNECTIONS SHALL BE DESIGNED FOR THE MAXIMUM UNIFORM LOAD-CARRYING CAPACITY OF THE MEMBER. 10. UNLESS OTHERWISE SHOWN PROVIDE 1/2" THICK STIFFENER PLATES ON EACH SIDE OF BEAM WHEN COLUMN OCCURS ABOVE OR BELOW BEAMS.

11. ALL FILLET WELDS SHALL BE A MINIMUM OF 3/16" UNLESS NOTED OTHERWISE.

12. ALL COLUMN ENDS SHALL BE MILLED TO BEAR.

13. STRUCTURAL BEAM OVER COLUMN CONNECTIONS SHALL HAVE A MINIMUM 3/4" CAP PLATE WITH 4-3/4" DIAMETER HIGH STRENGTH BOLTS UNO.

14. ALL ANCHOR BOLTS SHALL HAVE TWO HEAVY HEX NUTS AND ONE WASHER UNLESS INDICATED ON THE DRAWINGS. PROVIDE ANCHOR BOLTS, SETTING PLATES, AND EMBEDDED PLATES TO BE SET BY OTHERS. PROVIDE 1/4-INCH THICK LEVELING PLATES FOR USE IN ALIGNING AND SETTING ANCHOR BOLTS AND BASE PLATES.

15. UNLESS NOTED OTHERWISE ALL COLUMNS SHALL HAVE BASE PLATES SET ON 3/4" NON-SHRINK GROUT AND 4-3/4" DIAMETER ANCHOR BOLTS EMBEDDED 12" MIN.

16. TOP-OF-STEEL ELEVATIONS INDICATED ON THE DRAWINGS REFER TO TOP OF TOP-BEAM FLANGE.

17. THE CONTRACTOR SHALL PROVIDE ALL EMBEDDED PLATES, SLEEVES, BOX OUTS, CONDUITS, ETCETERA, AS REQUIRED BY OTHER TRADES IN THE CONCRETE STRUCTURE.

18. TEMPORARY CONSTRUCTION BRACING OF THE STRUCTURAL STEEL FRAME SHALL REMAIN IN PLACE UNTIL AFTER THE PERMANENT BRACING SYSTEM HAS BEEN COMPLETED.

19. FIELD WELDING OF STRUCTURAL MEMBERS, NOT INDICATED ON THE STRUCTURAL DRAWINGS, IS NOT PERMITTED.

CAST IN PLACE CONCRETE:

1. PROPORTIONING OF REINFORCED CONCRETE MEMBERS AND THEIR STEEL REINFORCEMENT IS BASED ON AN ULTIMATE STRENGTH DESIGN IN ACCORDANCE WITH BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-02).

2. DESCRIPTION F'c (28-DAYS)

FOUNDATION BEAMS	4,000 psi
SLAB-ON-GRADE	4,000 psi
MEP DUCT BANKS, BLOCKING & ENCASEMENTS	3,000 psi
ALL OTHER CONCRETE	4,000 psi

ALL CONCRETE SHALL BE CLASSIFIED AS NORMAL WEIGHT, EXCEPT AS NOTED, WITH A UNIT WEIGHT OF 145 PCF.

3. SHOP DRAWINGS AND SCHEDULES OF REINFORCING STEEL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF THAT PORTION OF THE WORK. ALL ACCESSORIES MUST BE SHOWN ON THE SHOP DRAWINGS.

4. ALL SHORING SHALL REMAIN IN PLACE UNTIL CONCRETE HAS ATTAINED 75% OF ITS 28-DAY COMPRESSIVE STRENGTH (SEE SPECIFICATIONS).

5. ALL CONSTRUCTION AND CONTROL JOINT LOCATIONS MUST BE SHOWN ON SHOP DRAWINGS AND APPROVED BY THE ENGINEER.

6. CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS SHALL BE LOCATED SO AS TO LEAST IMPAIR THE STRENGTH OF THE STRUCTURE AND SHOULD GENERALLY BE LOCATED AT POINTS OF MINIMUM SHEAR.

7. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS NOTED OTHERWISE.

8. ALL KEYS SHALL BE 2"x4" WITH BEVELED SIDES, UNLESS NOTED OTHERWISE.

9. NO HORIZONTAL CONSTRUCTION JOINTS SHALL BE MADE IN BEAMS, UNLESS SHOWN SPECIFICALLY ON DRAWINGS. FOR VERTICAL CONSTRUCTION JOINTS, REFER TO ACI 318.

10. ALL REINFORCING WILL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS. REFER TO TYPICAL DETAILS ON S12-005.

11. CAST SLABS AND BEAMS MONOLITHICALLY, UNLESS OTHERWISE INDICATED.

12. NOT ALL OPENINGS THROUGH CONCRETE SLABS ARE SHOWN ON STRUCTURAL DRAWINGS. OPENINGS INDICATED, OR ANY ADDITIONAL OPENINGS OR INSERTS REQUIRED, MUST BE VERIFIED WITH RESPECTIVE TRADES BEFORE POURING OF CONCRETE. NO CONCRETE SHALL BE CAST PRIOR TO THE DESIGNER'S REVIEW AND APPROVAL OF THE COORDINATED SUBMITTAL TO INCLUDE REINFORCING, SLAB OPENINGS AND EMBEDDED ITEMS.

13. USE NONSHRINK, NONMETALLIC GROUT, WHERE INDICATED, AS SPECIFIED IN SECTION 03300, CAST-IN-PLACE CONCRETE.

CAST IN PLACE CONCRETE (CONTINUED):

14. PROVIDE SEALANT JOINTS FOR ALL EXPOSED TO VIEW CONSTRUCTION JOINTS, CONTROL JOINTS AND SHEAR KEYS.

15. ALL CONCRETE SHALL BE CONTROLLED CONCRETE, MIXED, AND PLACED UNDER THE SUPERVISION OF AN APPROVED CONCRETE TESTING AGENCY.

16. ALL CONCRETE EXPOSED TO THE WEATHER SHALL CONTAIN AN AIR ENTRAINMENT ADMIXTURE.

CAST IN PLACE CONCRETE REINFORCING:

1. SHOP DRAWINGS AND SCHEDULES OF REINFORCING STEEL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF THAT PORTION OF THE WORK.

2. REINFORCING BARS SHALL CONFORM TO ASTM A615 OR A706 GRADE 60 AND SHALL BE EPOXY COATED.

3. THE FOLLOWING MINIMUM CLEAR CONCRETE COVER SHALL BE PROVIDED UNLESS NOTED OTHERWISE ON THE DRAWINGS:

CONCRETE CAST AGAINST EARTH	3"
ALL BAR SIZES	

CONCRETE EXPOSED TO EARTH OR WEATHER	2"
ALL BARS	

4. UNLESS NOTED OTHERWISE, BARS SHALL BE CONTINUOUS AND SHALL RUN CONTINUOUSLY AROUND CORNERS. BARS SHALL HAVE STANDARD HOOKS AT DISCONTINUOUS ENDS.

5. SPLICES SHALL GENERALLY OCCUR AT MID-SPAN FOR TOP AND MIDDLE BARS AND AT SUPPORT FOR BOTTOM BARS AND SHALL BE STAGGERED. PROVIDE CLASS B SPLICES FOR ALL CONTINUOUS REINFORCEMENT, UNLESS OTHERWISE NOTED.

6. BARS SHALL NOT BE CUT OR OMITTED FOR SLEEVE OR DUCT OPENINGS IN FLOORS. BARS MAY BE MOVED Laterally WITHOUT CHANGING THE DISTANCE FROM THE FACE OF CONCRETE. BEND NO BARS IN FIELD WITHOUT APPROVAL OF THE ENGINEER.

7. ALL REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES. PROVIDE BAR SUPPORTS, SPACERS, AND ACCESSORIES RECOMMENDED IN THE ACI DETAILING MANUAL, PUBLICATION SP-66. ALL REINFORCEMENT DETAILING, LAP SPLICES, AND EMBEDMENTS SHALL CONFORM TO THIS MANUAL. ALL ACCESSORIES, SUCH AS SLAB BOLSTERS AND BEAM AND SLAB CHAIRS IN CONTACT WITH EXPOSED SURFACES SHALL BE PLASTIC-COATED.

8. SET AND TIE ALL REINFORCEMENT BEFORE PLACING CONCRETE. SETTING DOWELS AND REINFORCEMENT INTO WET CONCRETE IS PROHIBITED.

9. MINIMUM ANCHORAGE, SPLICE REQUIREMENTS FOR REINFORCING BARS, AND TEMPERATURE REINFORCEMENT IN ALL CONCRETE SLABS SHALL BE ACCORDING TO ACI 318, UNLESS OTHERWISE SHOWN ON DRAWINGS.

10. NO CONCRETE SHALL BE CAST BEFORE REVIEW AND APPROVAL OF THE REINFORCING AND EMBEDDED ITEMS HAVE BEEN OBTAINED FROM THE ENGINEER.

11. ANY ADDITIONAL DRILLING OR CORING SHALL NOT DAMAGE REINFORCING BARS.

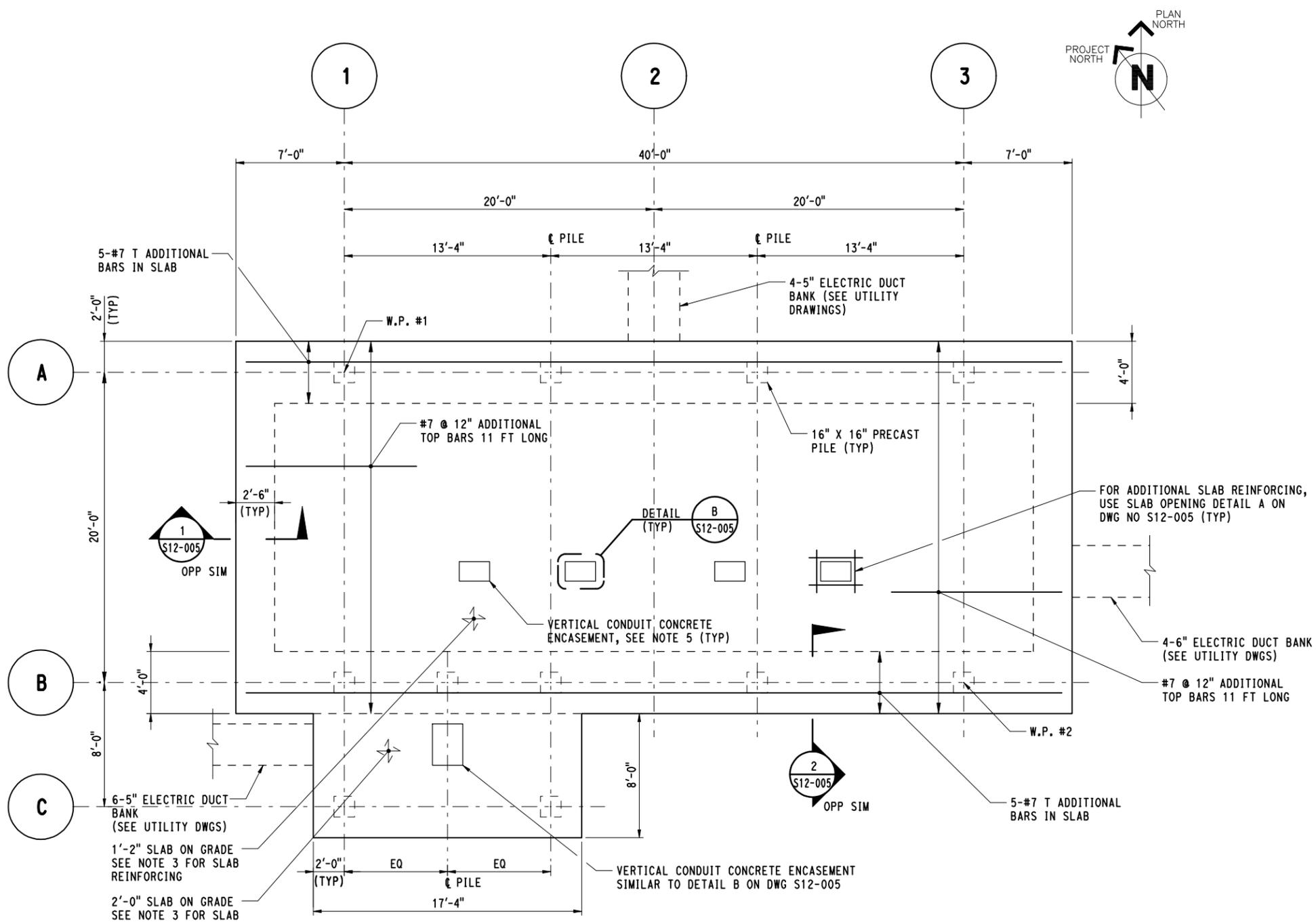
12. SET ANCHOR BOLTS AND EMBEDDED PLATES REQUIRED FOR CONNECTION OF WORK BY OTHERS.

CONTRACT DOCUMENTS REVIEW

3/8/2014 12:28:31 PM T:\19865-NHRY\FIC\DOT_Projects\301_0088\Contract_Sheet_Files\16106-Structural\16_B125N_3010088_S12-001.dgn

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: RC/JLW	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK:	PROJECT TITLE: NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE	TOWN: NEW HAVEN	PROJECT NO. 301-0144
CHECKED BY: MH	SHEET NO.	DRAWING NO. S12-001		SHEET NO. 145			
REV. DATE REVISION DESCRIPTION	SHEET NO.	PLOTTED DATE: 3/8/2014	FILENAME: 16_B125N_3010088_S12-001.dgn	DRAWING TITLE: STRUCTURAL GENERAL NOTES			

3/9/2014 4:31:31 PM T:\19865-NHRY\FIC\DOTDOT_Projects\301_0088\Contract_Sheet_Files\16106-Structural\16_B12SP_3010088_S12-003.dgn



SWITCHGEAR FOUNDATION REINFORCING SLAB PLAN
 SCALE: 1/4" = 1'-0" TOC EL 7'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG S12-001 AND S12-002. FOR WORK POINT (W.P.) COORDINATES, SEE DWG S12-004.
2. FOR SECTIONS AND TYPICAL DETAILS, WORK THIS DRAWING WITH DRAWING NOS S12-005 & S12-006
3. SLAB ON GRADE REINFORCEMENT (TYP U.N.O.):
 TOP REINFORCEMENT: #7 @ 12" EACH WAY
 BOTTOM REINFORCEMENT: #7 @ 12" EACH WAY
4. ALL REINFORCEMENT SHOWN ON THE FOUNDATION SLAB PLAN IS IN ADDITION TO THE TYPICAL SLAB REINFORCEMENT AS INDICATED IN NOTE 3. ALL ADDITIONAL BARS ARE TO BE SPACED EQUALLY BETWEEN TYPICAL SLAB REINFORCEMENT. REFER TO SECTIONS 1 AND 2 ON DWG NO S12-005 FOR REINFORCEMENT OF THE FOUNDATION BEAMS.
5. REFER TO UTILITY DRAWINGS FOR DUCT BANK CONDUIT SIZE AND PENETRATION LOCATIONS THROUGH THE FOUNDATION SLAB. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL CONDUIT PENETRATION LOCATIONS. REFER TO TYPICAL CONCRETE DETAILS FOR REINFORCEMENT OF OPENINGS IN SLABS.

CONTRACT DOCUMENTS REVIEW	
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE	NEW HAVEN
PROJECT NO. 301-0144	DRAWING NO. S12-003
DRAWING TITLE: STRUCTURAL SWITCHGEAR FOUNDATION PLAN	SHEET NO. 147

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
RC/JLW

CHECKED BY:
MH

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

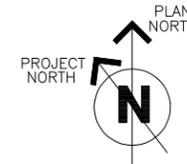


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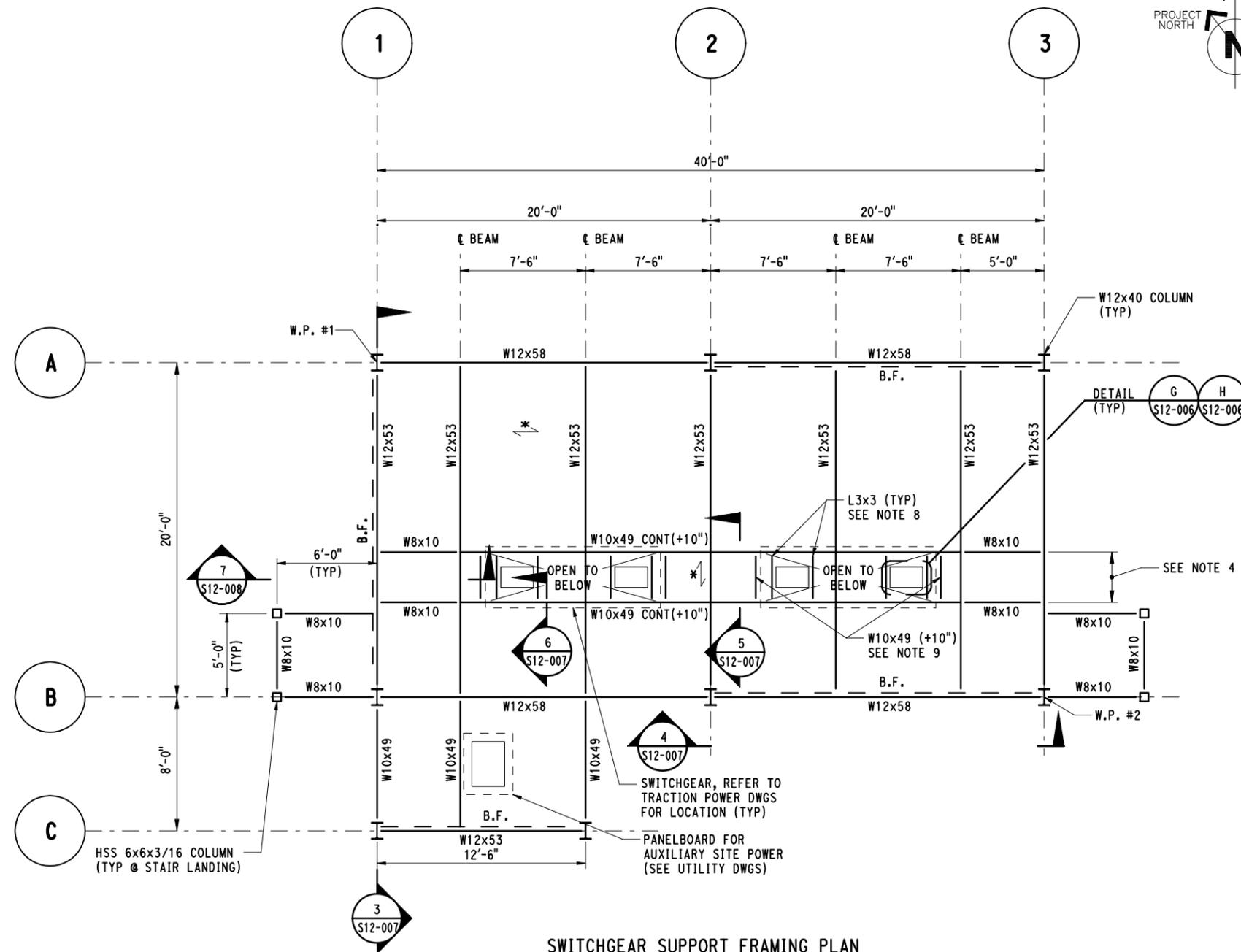
PROJECT TITLE:

FILENAME: 16_B12SP_3010088_S12-003.dgn

Plotted Date: 3/9/2014



GEOMETRIC CONTROL TABLE			
COLUMN LOCATION	WORK POINT NO.	NORTHING	EASTING
A/1	1	670373.62	952569.98
B/3	2	670333.35	952589.44



SWITCHGEAR SUPPORT FRAMING PLAN

SCALE: 1/4" = 1'-0" TOS EL 16'-0" UNO BY (+/-)

NOTES:

- FOR GENERAL NOTES, SEE DWG S12-001 AND S12-002.
- FOR SECTIONS AND TYPICAL DETAILS, WORK THIS DRAWING WITH DRAWING NOS S12-006 THRU S12-008.
- * INDICATES PULTRUDED FIBERGLASS GRATING. USE DURAGRID HD-4000 2.5" BEARING FROM STRONGWELL OR APPROVED EQUIVALENT.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE SWITCHGEAR LOCATIONS WITH SUPPORT BEAMS SHOWN AND CURB REQUIREMENTS PER THE MANUFACTURER.
- STAIR LANDINGS FOR RAISED PLATFORM ARE SHOWN. CONTRACTOR TO PROVIDE FRP STAIRS AND SUBMIT COMPLETE SHOP DRAWINGS, WITH CALCULATIONS, FOR FINAL REVIEW AND APPROVAL.
- SEE DETAIL Q ON DWG NO S12-008 FOR GUARDRAIL DETAIL.
- ALL STRUCTURAL STEEL INCLUDING ANCHOR BOLTS SHALL BE GALVANIZED AND PAINTED. STAINLESS STEEL MAY BE SUBSTITUTED FOR CERTAIN CONNECTION LOCATIONS. ALL OTHER BOLTS, WASHERS AND NUTS SHALL BE STAINLESS STEEL (TYPE 316L).
- SEE DETAIL G AND H ON DWG NO S12-006 FOR VERTICAL CONCRETE CONDUIT ENCASUREMENT SUPPORT AT PLATFORM LEVEL.
- LOCATE W10 MEMBERS TO PROVIDE CURB ATTACHMENT OF SWITCHGEAR TO PLATFORM STRUCTURE. CONTRACTOR TO COORDINATE WITH TRACTION POWER DWGS FOR EXACT LOCATION.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE TRANSFORMER FINAL LOCATION WITH THE TRACTION POWER DRAWINGS. COORDINATE ANCHOR ATTACHMENTS WITH MANUFACTURER'S REQUIREMENTS TO RESIST LOADING DUE TO WIND OR SEISMIC.
- ALL STRUCTURAL STEEL SHALL BE GALVANIZED AND PAINTED. REFER TO SPECIFICATIONS FOR ALL PAINT REQUIREMENTS.

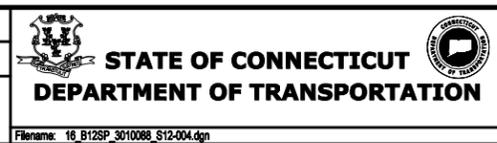
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
RC/JLW
CHECKED BY:
MH
SCALE: 1/4"=1'-0"

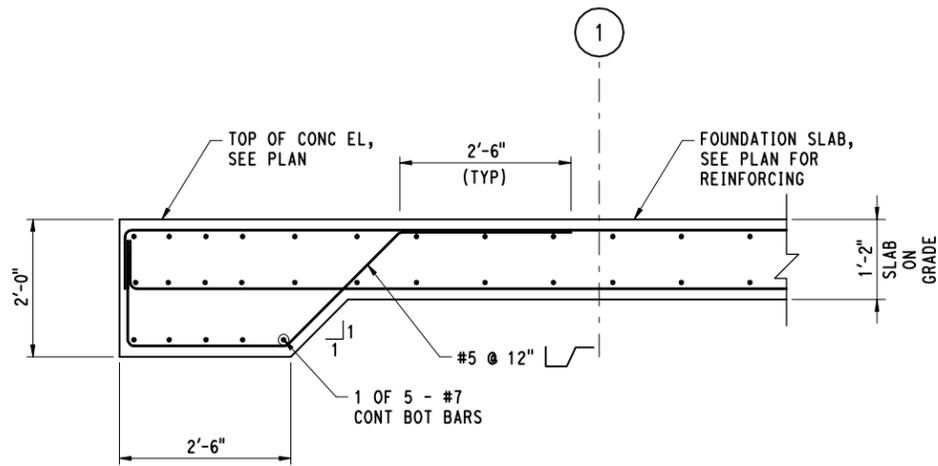


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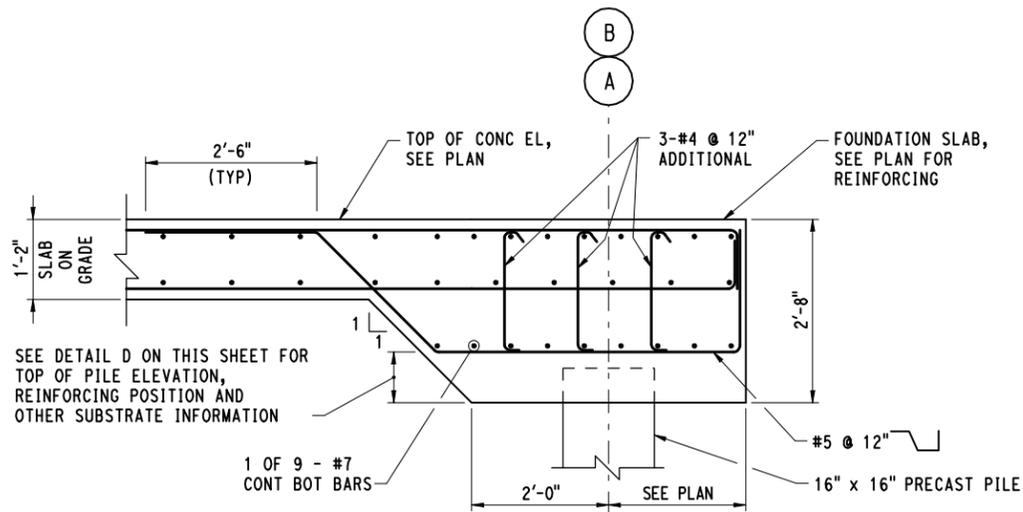
PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN
DRAWING TITLE:
STRUCTURAL SWITCHGEAR FRAMING PLAN

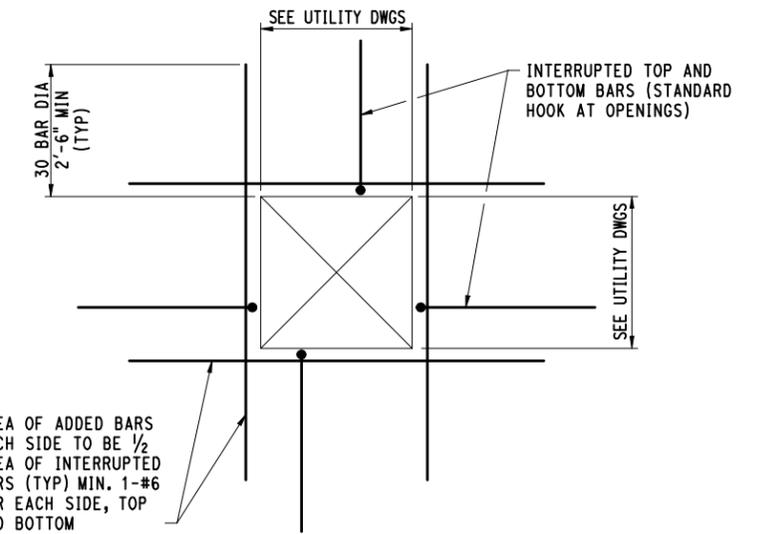
PROJECT NO.
301-0144
DRAWING NO.
S12-004
SHEET NO.
148



FOUNDATION BEAM AT STAIR LANDING 1
SCALE: 3/4" = 1'-0" S12-003



FOUNDATION BEAM AT EXTERIOR CONDITIONS 2
SCALE: 3/4" = 1'-0" S12-003



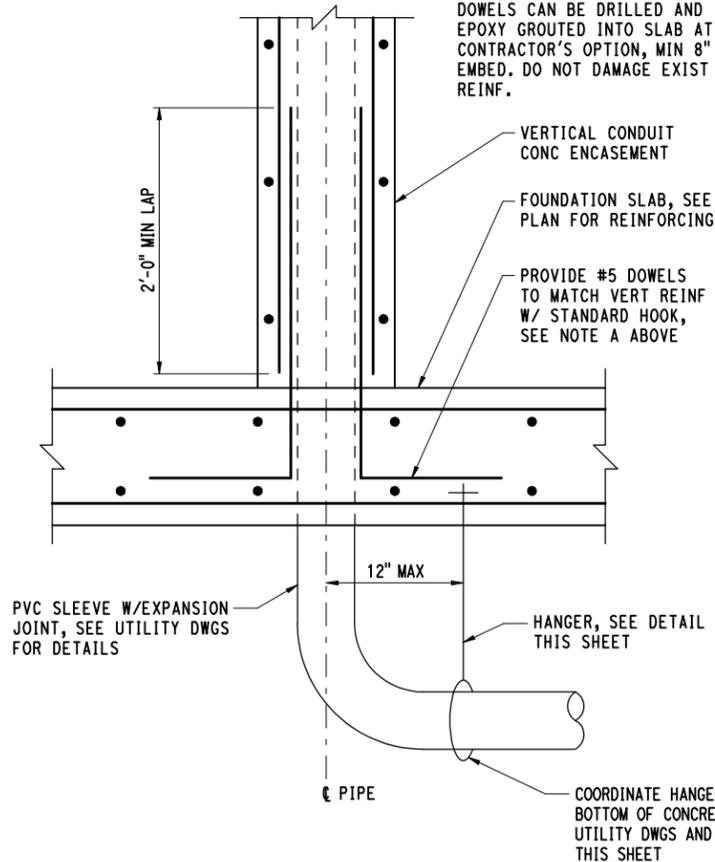
AREA OF ADDED BARS EACH SIDE TO BE 1/2 AREA OF INTERRUPTED BARS (TYP) MIN. 1-#6 BAR EACH SIDE, TOP AND BOTTOM

NOTE:

TWO OR MORE PIPE PENETRATIONS SPACED A MINIMUM 6" CLEAR SHALL BE CONSIDERED AN OPENING, REINFORCE AS REQUIRED BY TYPICAL DETAIL. FINAL APPROVAL OF REQUIRED REINFORCEMENT AROUND ALL OPENINGS AND PENETRATIONS SHALL BE PENDING STRUCTURAL ENGINEER'S REVIEW OF COORDINATED PENETRATION PLAN.

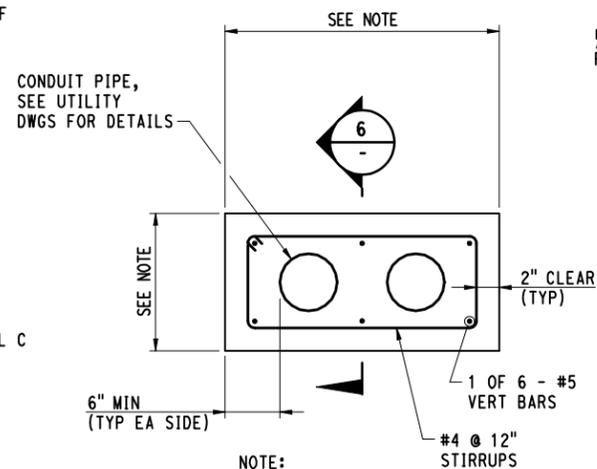
NOTE A:

DOWELS CAN BE DRILLED AND EPOXY GROUTED INTO SLAB AT CONTRACTOR'S OPTION, MIN 8" EMBED. DO NOT DAMAGE EXIST REINF.



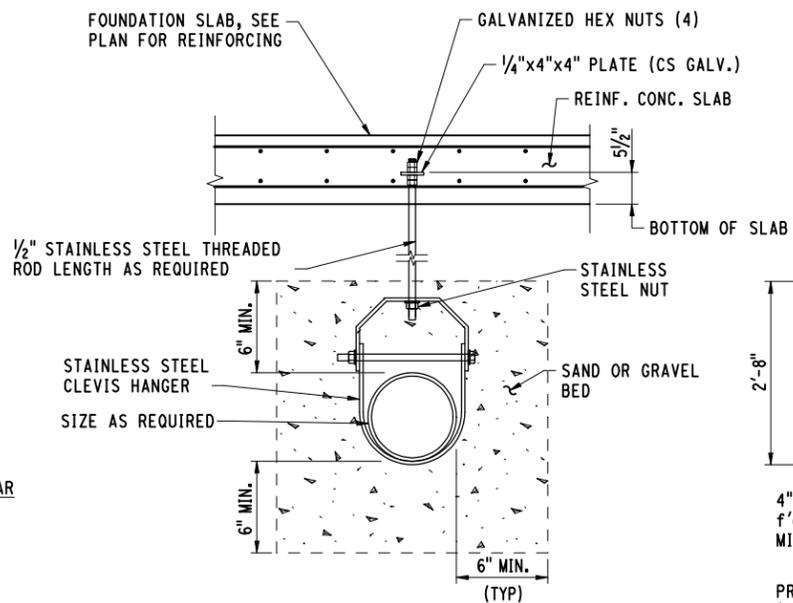
SECTION 6

TYPICAL VERTICAL CONDUIT CONCRETE ENCASEMENT B
SCALE: 1/2" = 1'-0" S12-003



NOTE:

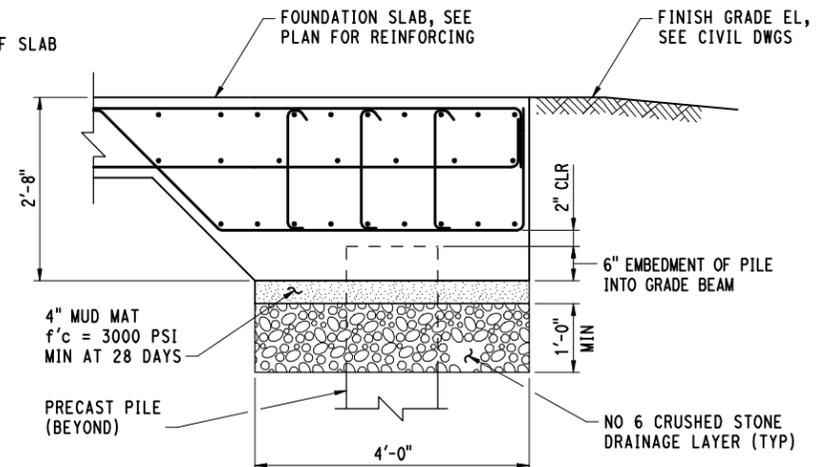
CONTRACTOR TO COORDINATE CONCRETE ENCASEMENT WITH SIZES AND LOCATION OF CONDUITS. SEE DETAIL G ON DWG NO S12-006 FOR MORE INFO.



NOTES:

- CLEVIS HANGERS SHALL BE PLACED AT 8'-0" OC MAX SPACING AND AT PENETRATIONS. TIE THREADED ROD TO REBAR.
- THIS DETAIL APPLIES TO ALL UNDER SLAB CONDUITS.

UNDER SLAB SINGLE CONDUIT/PIPE SUPPORT C
NOT TO SCALE



NOTE: PROVIDE MUD MAT AND CRUSHED STONE DRAINAGE LAYER TO EAST AND WEST SIDES OF FOUNDATION 2'-6" FROM THE EDGE OF THE SLAB.

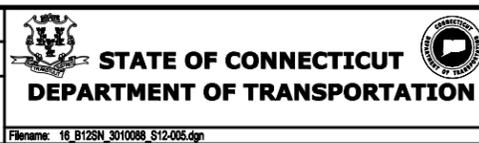
UNDER SLAB MUD DETAIL D
SCALE: 3/4" = 1'-0"

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3/8/2014 12:40:53 PM T:\19865-NHRY\FIC\DOT_Projects\301_0088\Contract_Sheet_Files\16106-Structural\16_B12SN_3010088_S12-005.dgn

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 3/8/2014

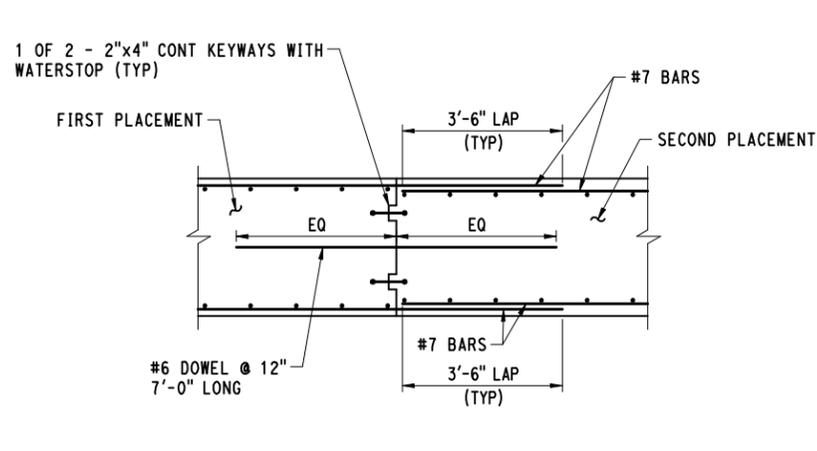
DESIGNER/DRAFTER: **RC/JLW**
CHECKED BY: **MH**
SCALE AS NOTED



SIGNATURE/BLOCK:
PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

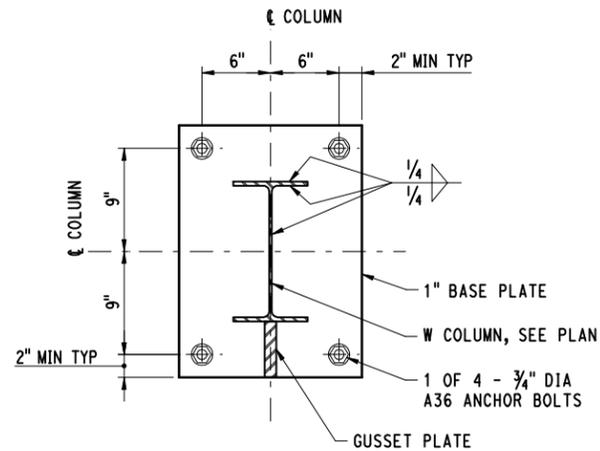
TOWN: **NEW HAVEN**
DRAWING TITLE: **STRUCTURAL TYPICAL CONCRETE DETAILS**

PROJECT NO. **301-0144**
DRAWING NO. **S12-005**
SHEET NO. **149**

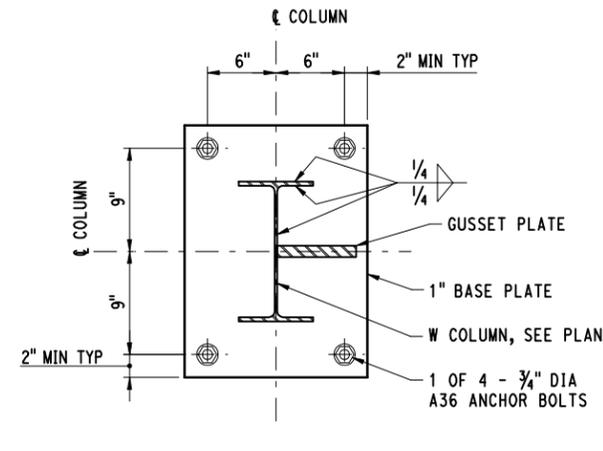


SLAB/BREAM CONSTRUCTION JOINT DETAIL (E)

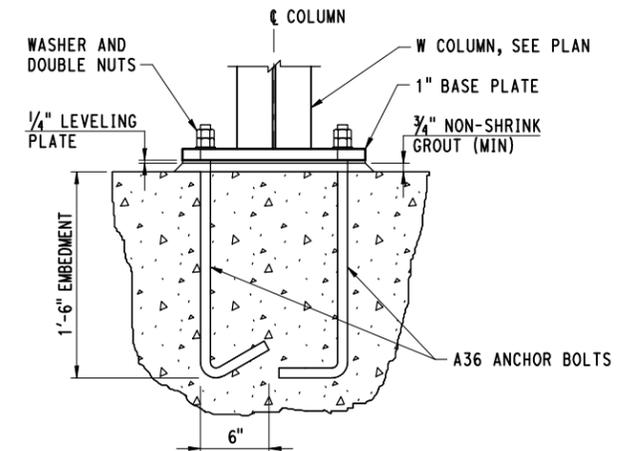
SCALE: 1/2" = 1'-0"



1-PLAN



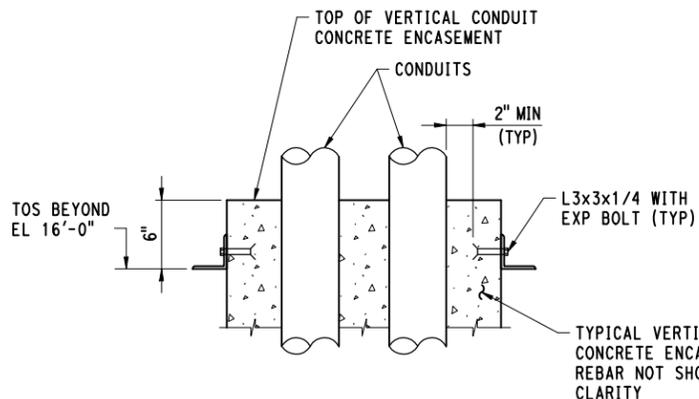
2-PLAN



SECTION

BASE PLATE DETAILS (F)

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

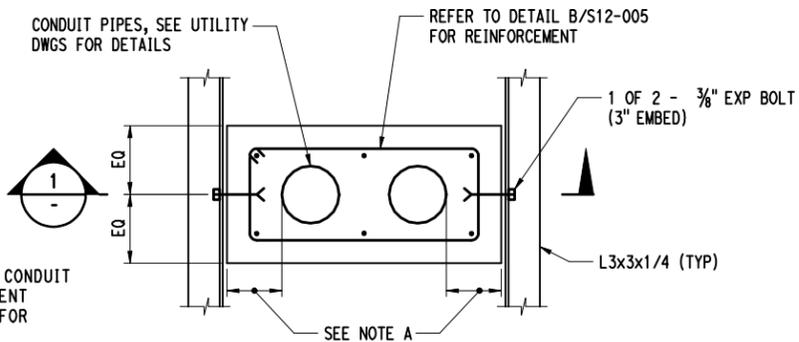


SECTION 1

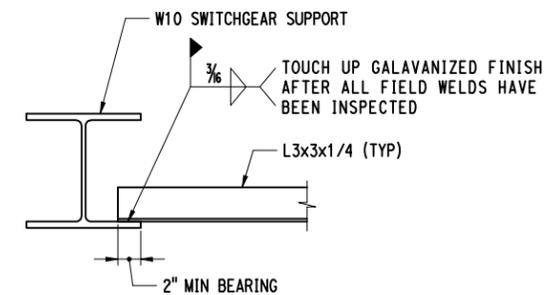
TYPICAL VERTICAL CONDUIT CONNECTION TO STEEL FRAMING (G)

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

S12-004



NOTE A: POSITION CONDUITS AND SIZE ENCASEMENT SUCH THAT THE EXPANSION BOLTS SHALL BE 2" CLEAR OF THE CONDUITS



TYPICAL ANGLE TO BEAM CONNECTION (H)

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

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DESIGNER/DRAFTER: **RC/JLW**
 CHECKED BY: **MH**
 SCALE AS NOTED

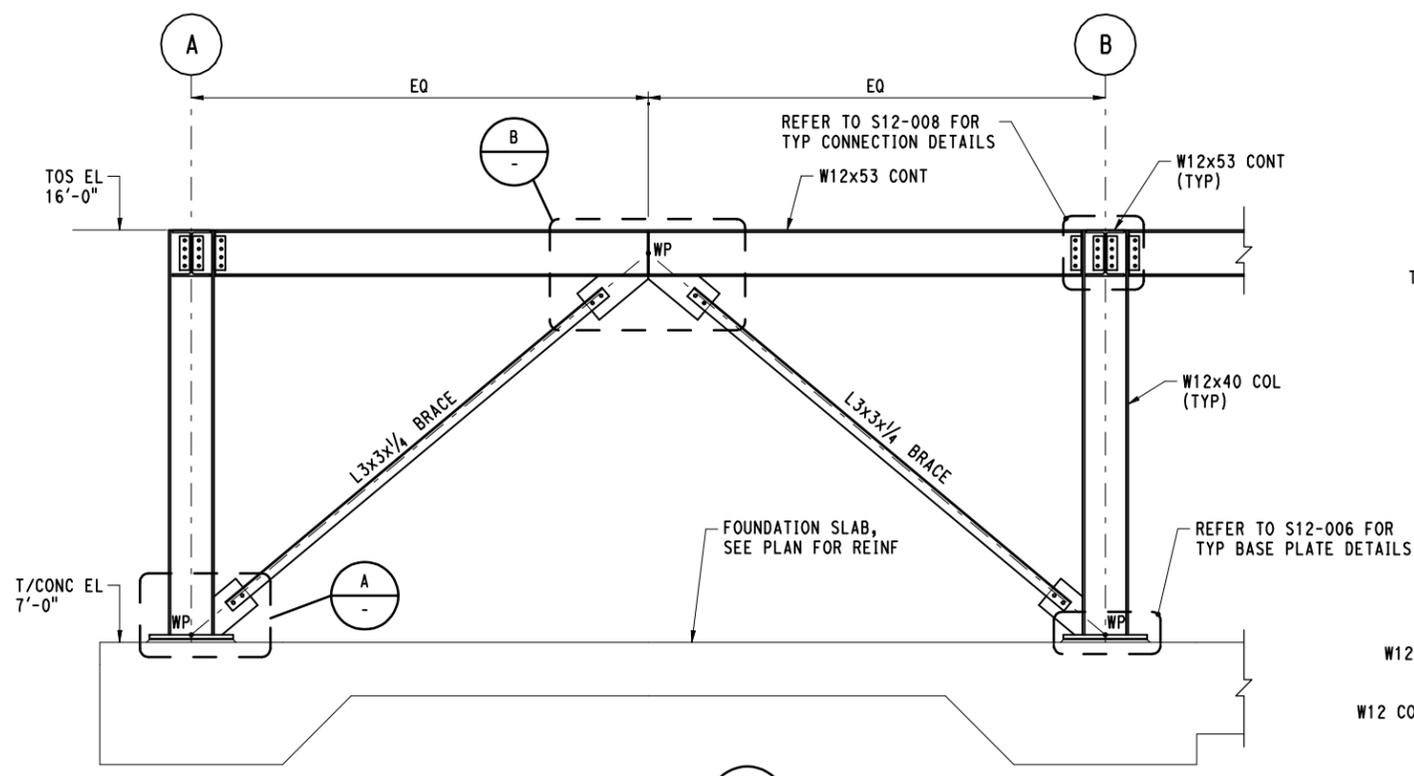


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 PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE**

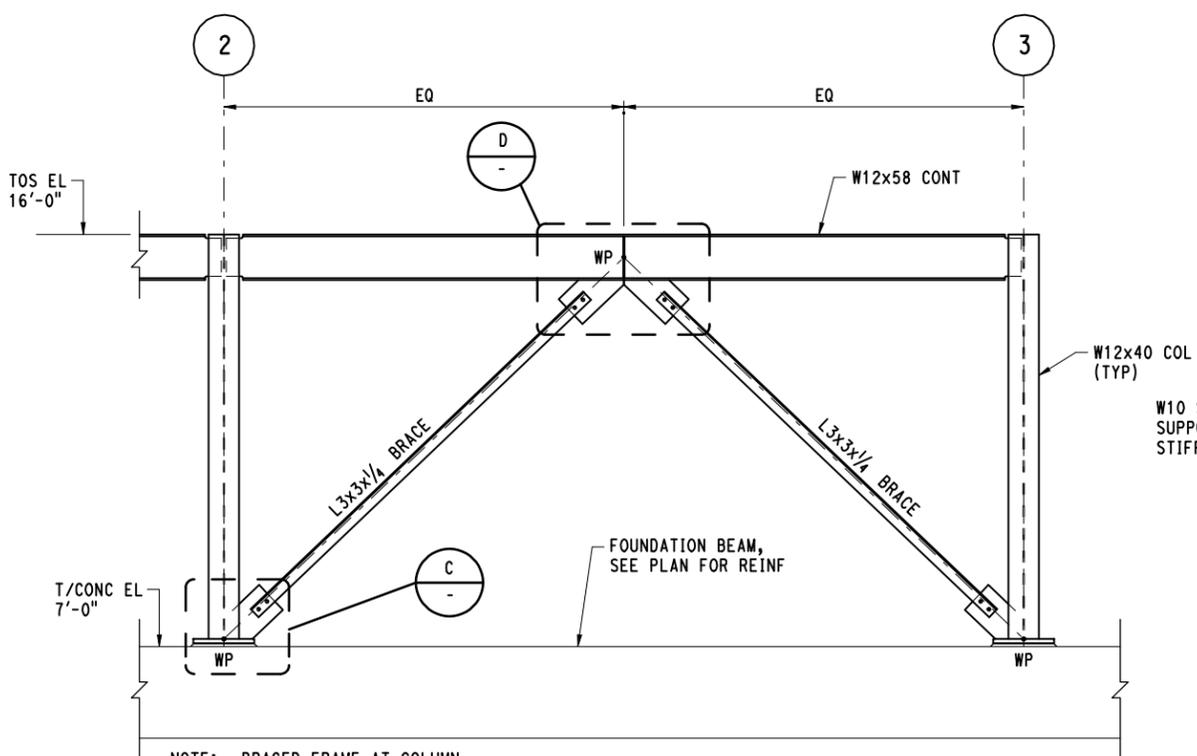
TOWN: **NEW HAVEN**
 DRAWING TITLE: **STRUCTURAL SECTIONS AND DETAILS**

PROJECT NO. **301-0144**
 DRAWING NO. **S12-006**
 SHEET NO. **150**

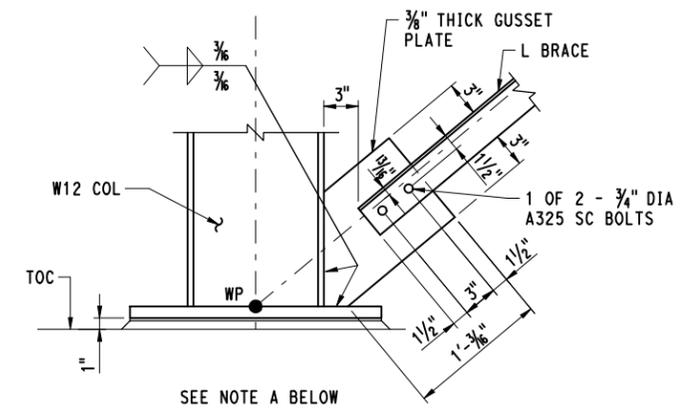
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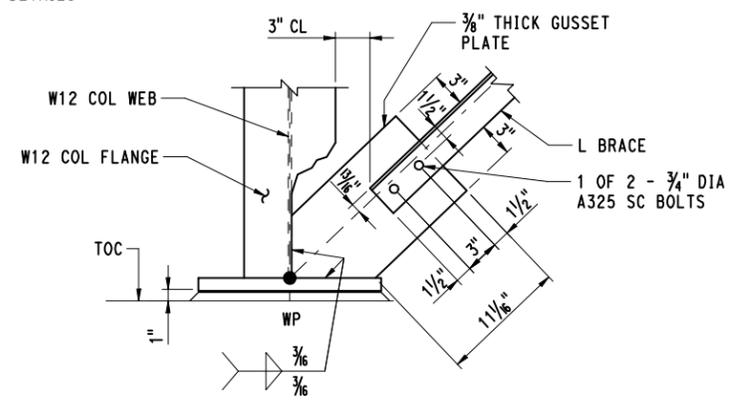
SECTION 3
SCALE: 1/2" = 1'-0"
S12-004



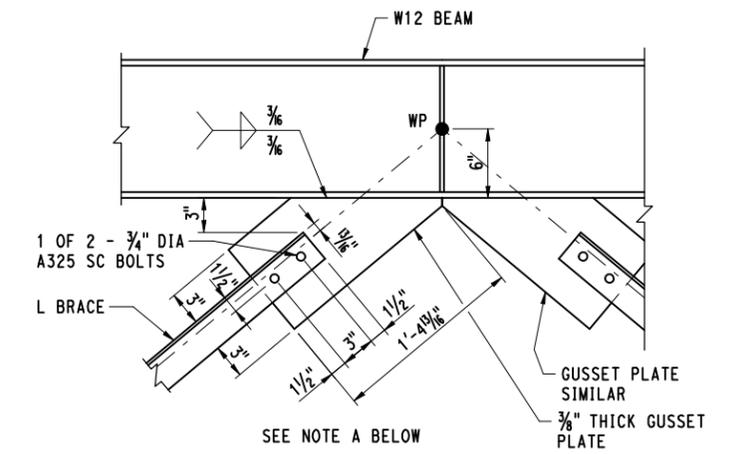
SECTION 4
SCALE: 1/2" = 1'-0"
S12-004



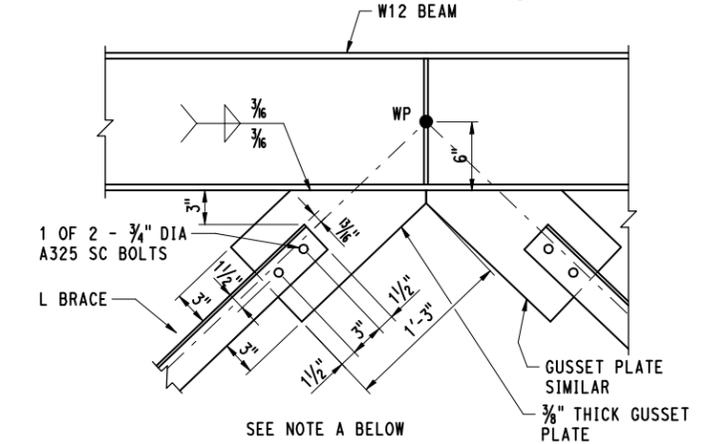
GUSSET PLATE DETAIL A
SCALE: 1/2" = 1'-0"



GUSSET PLATE DETAIL C
SCALE: 1/2" = 1'-0"

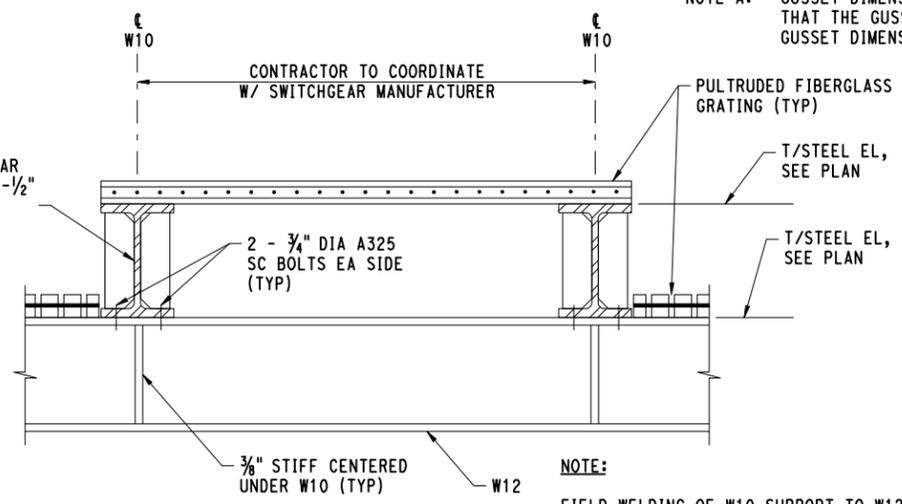


GUSSET PLATE DETAIL B
SCALE: 1/2" = 1'-0"

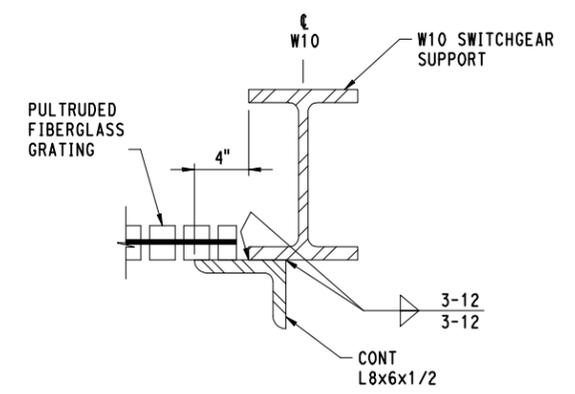


GUSSET PLATE DETAIL D
SCALE: 1/2" = 1'-0"

NOTE A: GUSSET DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS. STEEL FABRICATOR SHALL CONFIRM THAT THE GUSSET DIMENSIONS PROVIDED WILL COMPLY WITH ALL AISC REQUIREMENTS. GUSSET DIMENSIONS MAY BE INCREASED BUT SHALL NOT BE LESS THAN WHAT IS SHOWN.



SECTION 5
NOT TO SCALE
S12-004



SECTION 6
NOT TO SCALE
S12-004

CONTRACT DOCUMENTS REVIEW

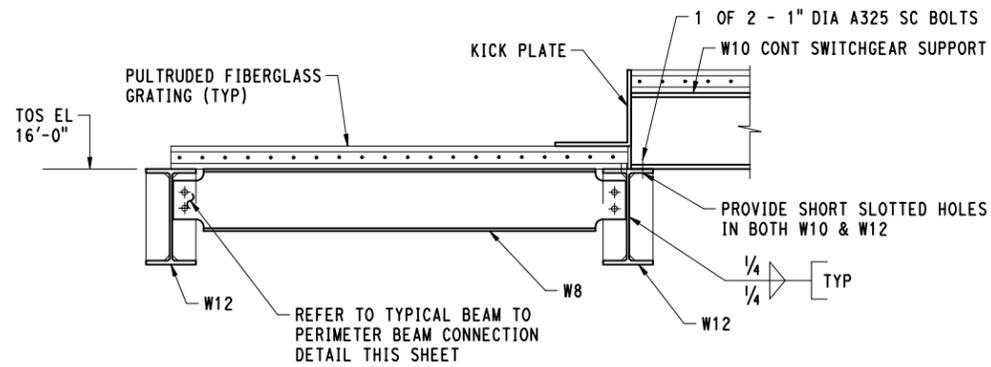
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 3/10/2014

DESIGNER/DRAFTER: **RC/JLW**
 CHECKED BY: **MH**
 SCALE AS NOTED

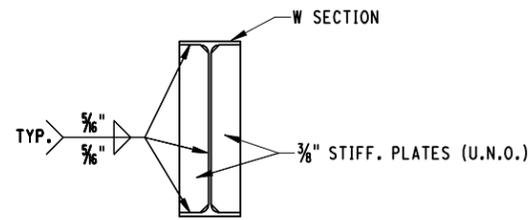
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Signature/Block: _____
 PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE**

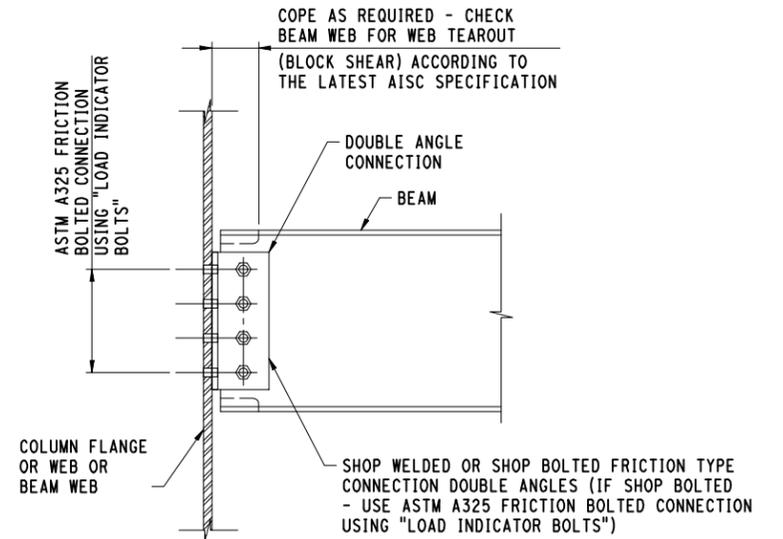
TOWN: **NEW HAVEN**
 PROJECT NO.: **301-0144**
 DRAWING TITLE: **STRUCTURAL SECTIONS AND DETAILS**
 DRAWING NO.: **S12-007**
 SHEET NO.: **151**



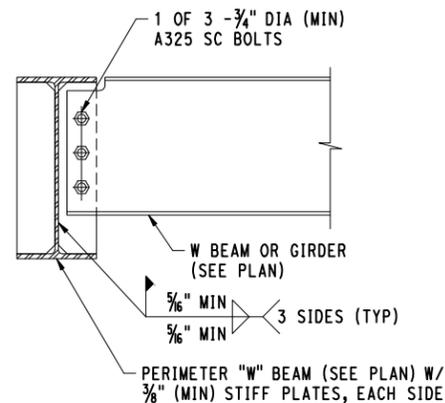
SECTION 7
SCALE: 1" = 1'-0"
S12-004



STIFFENER DETAIL AT GUSSET PLATE LOCATION I
NOT TO SCALE



SIMPLE BEAM CONNECTION DETAIL K
NOT TO SCALE

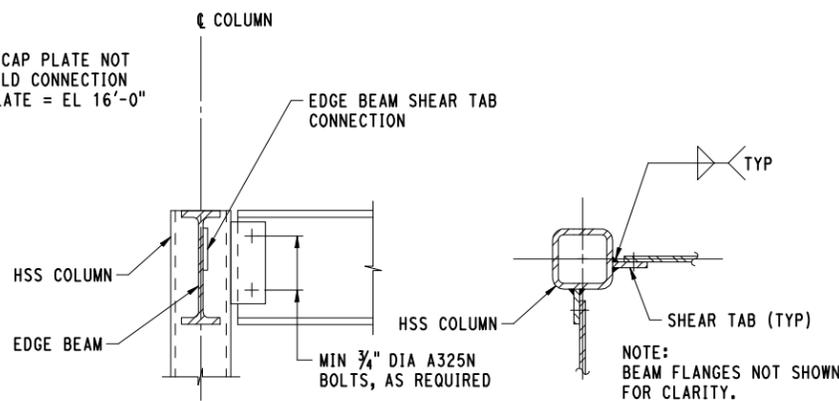


NOTE:
PROVIDE SINGLE OR DOUBLE ROW OF BOLTS AS REQUIRED TO WITHSTAND THE DESIGN REACTION INDICATED IN THE SPECIFICATIONS AND GENERAL NOTES.

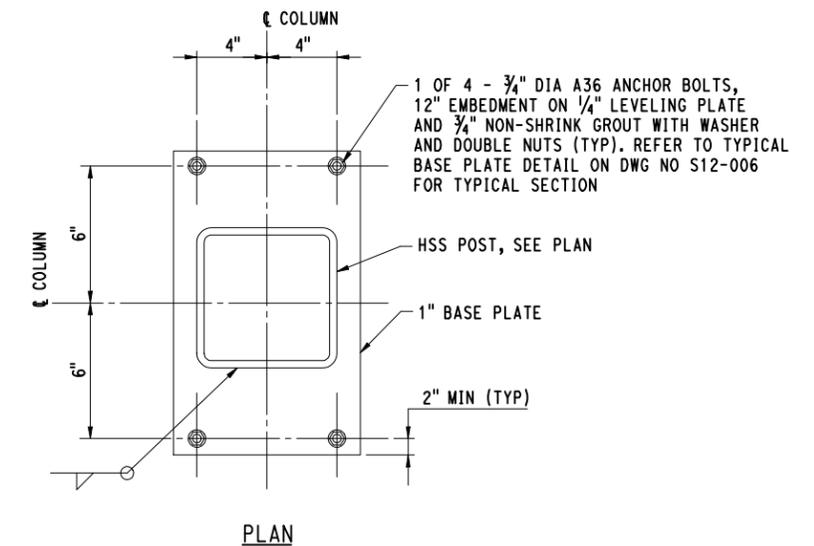
BEAM TO PERIMETER BEAM CONNECTION (U.N.O.) L
NOT TO SCALE

NOTE:

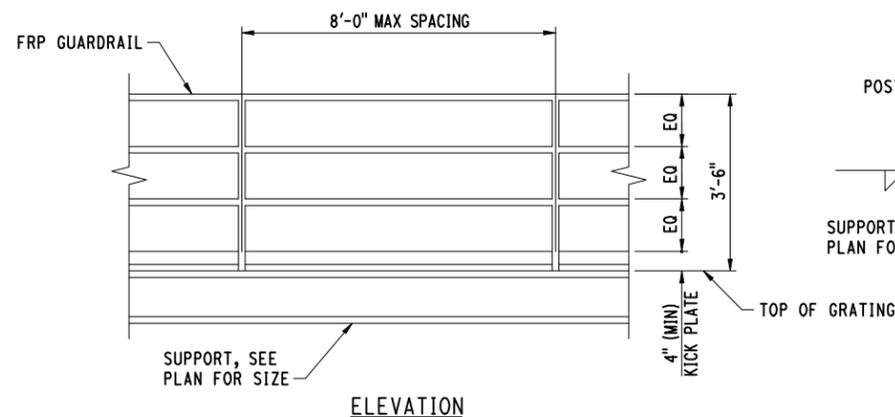
TYPICAL PL 3/8x5 1/2x5 1/2 CAP PLATE NOT SHOWN FOR CLARITY. WELD CONNECTION ALL AROUND, TOP OF PLATE = EL 16'-0"



WIDE FLANGE TO HSS POST CONNECTION M
NOT TO SCALE



BASE PLATE DETAIL @ HSS COLUMN BASE N
NOT TO SCALE



NOTE:
BASE OF RAIL CONNECTION MAY REQUIRE A BASE PLATE TO ALLOW FOR PROPER ALIGNMENT WITH STEEL.

FRP GUARDRAIL DETAIL Q
NOT TO SCALE

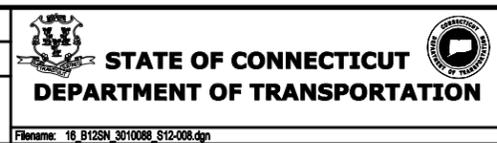
CONTRACT DOCUMENTS REVIEW

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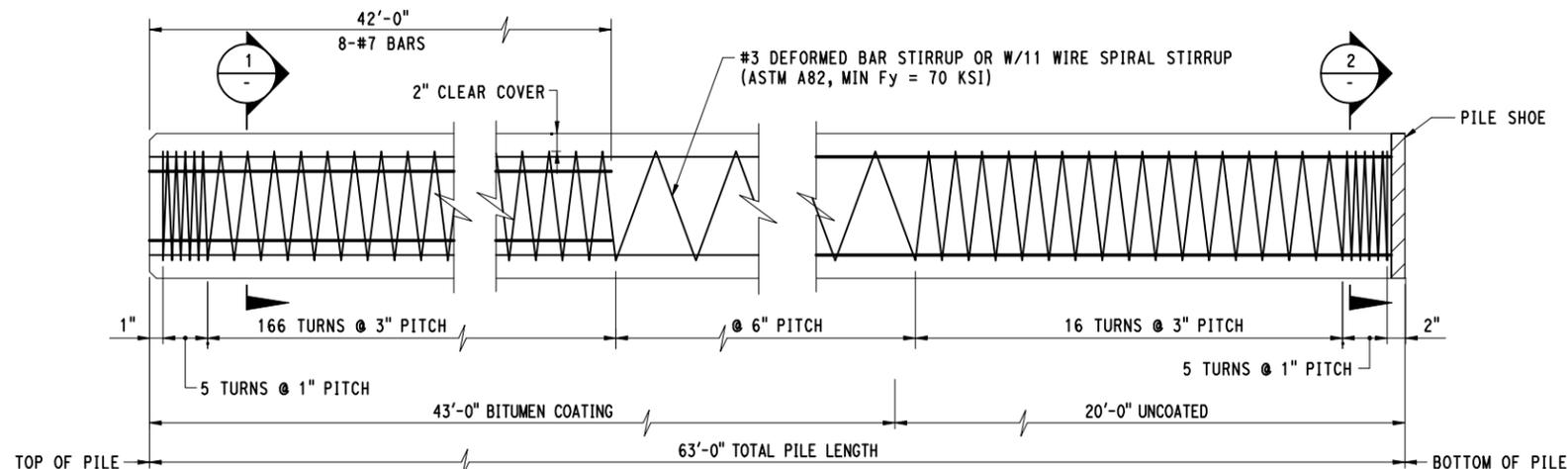
DESIGNER/DRAFTER: **RC/JLW**
CHECKED BY: **MH**
SCALE AS NOTED



SIGNATURE/BLOCK: _____
PROJECT TITLE: **NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE**

TOWN: **NEW HAVEN**
DRAWING TITLE: **STRUCTURAL TYPICAL STEEL DETAILS**

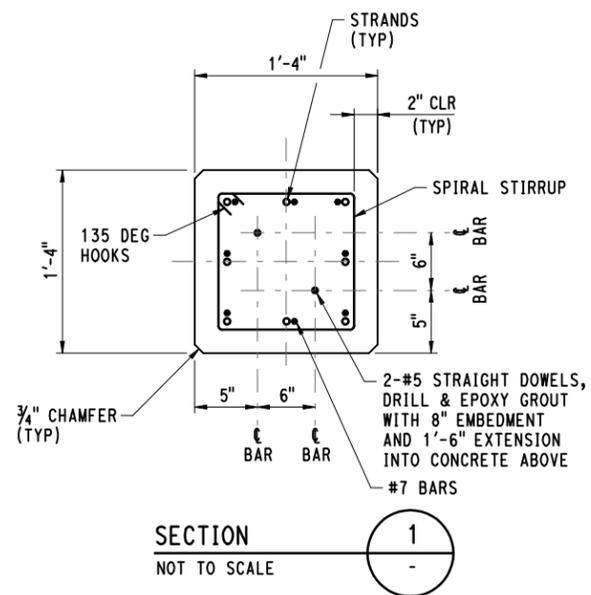
PROJECT NO. **301-0144**
DRAWING NO. **S12-008**
SHEET NO. **152**



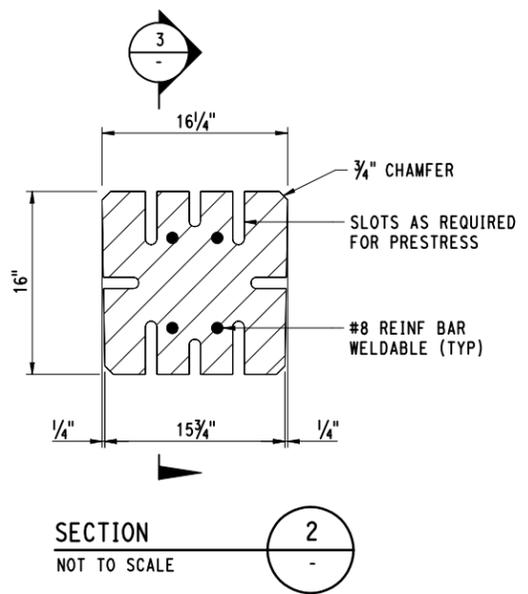
**YARD POWER UPGRADE
PILE ELEVATION**
NOT TO SCALE

NOTES:

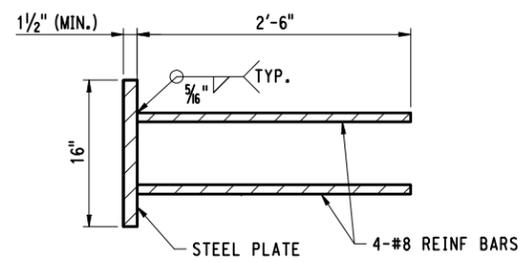
1. CONCRETE FOR PRESTRESSED CONCRETE PILES SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF:
 $f'_{ci} = 3750$ PSI AT TRANSFER
 $f'_c = 5000$ PSI AT 28 DAYS
2. PRESTRESSED STRANDS SHALL BE LOW RELAXATION 1/2" DIAMETER SEVEN WIRE UNCOATED STRANDS CONFORMING TO ASTM A416 GRADE 270.
3. INITIAL TENSION ON 1/2" DIAMETER STRANDS SHALL BE 31,000 LBS PER STRAND (JACKING TENSION).
4. NO PRESTRESS SHALL BE TRANSFERRED TO THE CONCRETE UNTIL IT HAS ACHIEVED THE MINIMUM COMPRESSION STRENGTH AT TRANSFER AS SHOWN BY THE CYLINDER TEST.
5. SHOULD SPLICES BE REQUIRED, THE CONTRACTOR SHALL PROVIDE A COMPLETE SUBMITTAL TO ACHIEVE FULL CONTINUITY FOR REVIEW.
6. PILE REINFORCING SHOWN REPRESENTS THE MINIMUM REINFORCING REQUIRED FOR THE PERMANENT DESIGN. THE CONTRACTOR SHALL DESIGN THE PILE REINFORCING AS PER THE PILE SPECIFICATIONS AND PROVIDE ANY ADDITIONAL REINFORCING FOR LIFTING AND HANDLING REQUIREMENTS.
7. ALL PILES SHALL HAVE BITUMEN COATING. REFER TO SPECIFICATION "BITUMEN COATING FOR CONCRETE PILES" FOR ADDITIONAL REQUIREMENTS.
8. MAXIMUM DESIGN PILE LOAD = 100 KIPS.
9. PILES SHALL BE DRIVEN TO A DEPTH WITH TIP ELEVATION OF -45' MINIMUM AND -55' MAXIMUM UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
10. ONE (1) TEST PILE SHALL BE DRIVEN WITH PDA TESTING PERFORMED ON THE PILE. REFER TO SPECIFICATION "DYNAMIC PILE DRIVING ANALYSIS (P.D.A.) TEST". PILE LOADING TESTS ARE NOT REQUIRED.
11. PILE ELEVATION SHOWN REFLECTS 63'-0" PILE. IF PDA TESTING INDICATES THAT AN ALTERNATE PILE LENGTH IS APPROPRIATE, THE CONTRACTOR SHALL SUBMIT A REVISED PILE CONFIGURATION FOR REVIEW AND APPROVAL BY THE ENGINEER.
12. DOWN DRAG SOIL FORCE:
13 TONS (STATIC)
8 TONS (LIQUEFACTION)



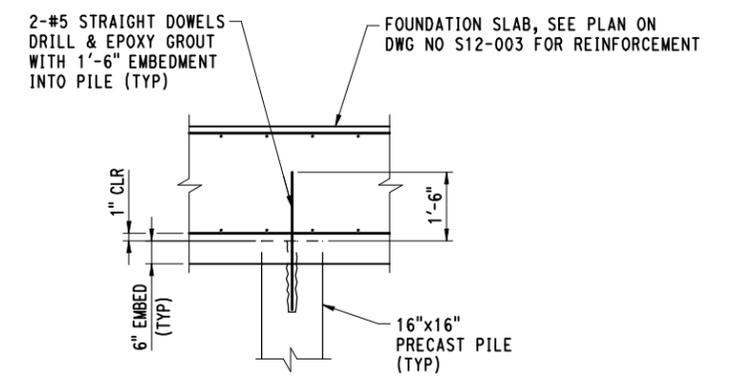
SECTION 1
NOT TO SCALE



SECTION 2
NOT TO SCALE



SECTION 3
NOT TO SCALE



PILE EMBEDMENT DETAIL R
SCALE: 1/2" = 1'-0"
S12-005

3/8/2014 12:46:09 PM T:\19865-NHRY\FIC\DOT_P\Projects\301_0088\Contract_Sheet_Files\16106-Structural\16_B12SN_3010088_S12-009.dgn

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REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 3/8/2014	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION		NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE		DRAWING TITLE: STRUCTURAL PILE SECTIONS AND DETAILS	DRAWING NO. S12-009	SHEET NO. 153

**SHT. DWG. CIVIL
NO. NO.**

024	CI-000	CIVIL INDEX OF DRAWINGS
025	CI-001	CIVIL INDEX PLAN
026	CD-001	SITE DEMOLITION PLAN-1
027	CD-002	SITE DEMOLITION PLAN-2
028	CD-003	SITE DEMOLITION PLAN-3
029	CD-004	SITE DEMOLITION PLAN-4
030	CD-005	SITE DEMOLITION PLAN-5
031	CA-001	ROADWAY ALIGNMENT PLAN-1
032	CA-002	ROADWAY ALIGNMENT PLAN-2
033	CA-003	ROADWAY ALIGNMENT PLAN-3
034	CA-004	ROADWAY ALIGNMENT PLAN-4
035	CP-001	GENERAL SITE PLAN-1
036	CP-002	GENERAL SITE PLAN-2
037	CP-003	GENERAL SITE PLAN-3
038	CP-004	GENERAL SITE PLAN-4
039	CP-005	GENERAL SITE PLAN-5
040	CP-010	ROADWAY PROFILES
041	CP-011	ROADWAY PROFILES
042	CE-001	SEDIMENTATION AND EROSION CONTROL PLAN-1
043	CE-002	SEDIMENTATION AND EROSION CONTROL PLAN-2
044	CE-003	SEDIMENTATION AND EROSION CONTROL PLAN-3
045	CE-004	SEDIMENTATION AND EROSION CONTROL PLAN-4
046	CE-005	SEDIMENTATION AND EROSION CONTROL PLAN-5
047	CC-001	GRADING PLAN-1
048	CC-002	GRADING PLAN-2
049	CC-003	GRADING PLAN-3
050	CC-004	GRADING PLAN-4
051	CS-001	SIGNING AND PAVEMENT MARKING PLAN-1
052	CS-002	SIGNING AND PAVEMENT MARKING PLAN-2
053	CS-003	SIGNING AND PAVEMENT MARKING PLAN-3
054	CS-004	SIGNING AND PAVEMENT MARKING PLAN-4
055	CM-001	CIVIL MISCELLANEOUS DETAILS
056	CM-002	CIVIL MISCELLANEOUS DETAILS
057	CM-003	CIVIL MISCELLANEOUS DETAILS
058	CM-004	CIVIL MISCELLANEOUS DETAILS
059	CM-005	CIVIL MISCELLANEOUS DETAILS
060	CM-006	CIVIL MISCELLANEOUS DETAILS
061	CM-007	CIVIL MISCELLANEOUS DETAILS
062	CM-008	CIVIL MISCELLANEOUS DETAILS
063	CM-009	CIVIL MISCELLANEOUS DETAILS
064	CX-001	ACCESS ROAD 10 CROSS SECTIONS
065	CX-002	ACCESS ROAD 10 CROSS SECTIONS
066	CX-003	ACCESS ROAD 10 CROSS SECTIONS
067	CX-004	ACCESS ROAD 20 CROSS SECTIONS
068	CX-005	BIKE TRAIL EXTENSION CROSS SECTIONS
069	CX-006	BIKE TRAIL EXTENSION CROSS SECTIONS
070	CX-007	BIKE TRAIL EXTENSION CROSS SECTIONS
071	CX-008	BREWERY STREET CROSS SECTIONS
072	CX-009	BREWERY STREET CROSS SECTIONS
073	CX-010	BREWERY STREET CROSS SECTIONS
074	CX-011	LONG WHARF STREET CROSS SECTIONS
075	CX-012	LONG WHARF STREET CROSS SECTIONS
076	CX-013	LONG WHARF STREET CROSS SECTIONS
077	CX-014	LONG WHARF STREET CROSS SECTIONS

DESIGNED BY: PARSONS BRINCKERHOFF

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DESIGNER/DRAFTER:
JLD
CHECKED BY:
JLW



**STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION**



SIGNATURE/
BLOCK:

PROJECT TITLE

**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:

NEW HAVEN

PROJECT NO.

301-0144

DRAWING NO.

CI-000

SHEET NO.

024

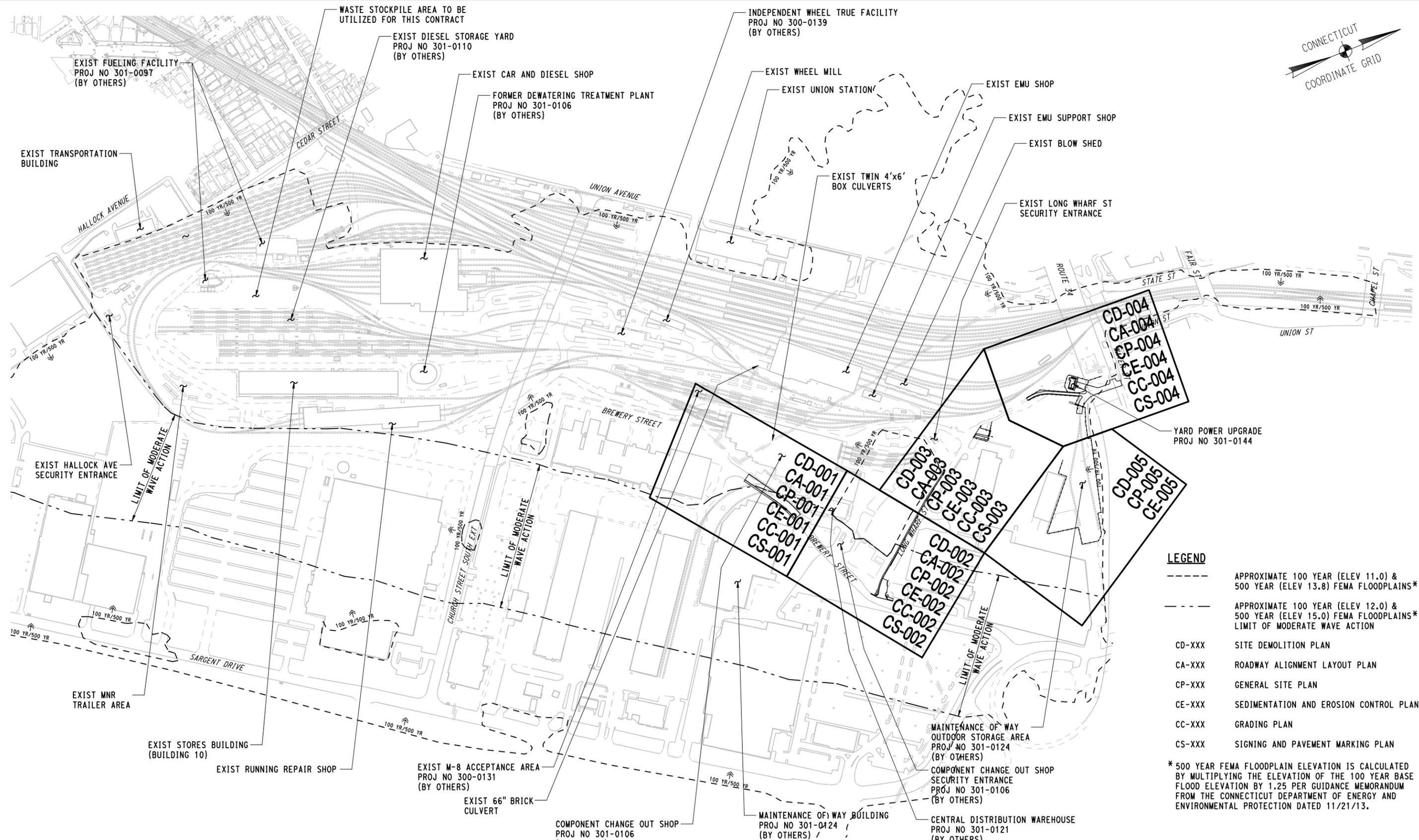
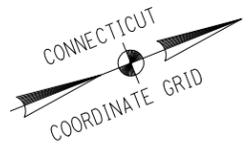
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**CIVIL
INDEX OF DRAWINGS**

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: 3/10/2014

Filename: 16_CIND_3010086_CI-000.dgn



CD-004
CA-004
CP-004
CE-004
CC-004
CS-004

CD-001
CA-001
CP-001
CE-001
CC-001
CS-001

CD-003
CA-003
CP-003
CE-003
CC-003
CS-003

CD-005
CA-005
CP-005
CE-005

- LEGEND**
- APPROXIMATE 100 YEAR (ELEV 11.0) & 500 YEAR (ELEV 13.8) FEMA FLOODPLAINS*
 - APPROXIMATE 100 YEAR (ELEV 12.0) & 500 YEAR (ELEV 15.0) FEMA FLOODPLAINS*
 - LIMIT OF MODERATE WAVE ACTION
 - CD-XXX SITE DEMOLITION PLAN
 - CA-XXX ROADWAY ALIGNMENT LAYOUT PLAN
 - CP-XXX GENERAL SITE PLAN
 - CE-XXX SEDIMENTATION AND EROSION CONTROL PLAN
 - CC-XXX GRADING PLAN
 - CS-XXX SIGNING AND PAVEMENT MARKING PLAN
- * 500 YEAR FEMA FLOODPLAIN ELEVATION IS CALCULATED BY MULTIPLYING THE ELEVATION OF THE 100 YEAR BASE FLOOD ELEVATION BY 1.25 PER GUIDANCE MEMORANDUM FROM THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION DATED 11/21/13.

CONTRACT DOCUMENTS REVIEW

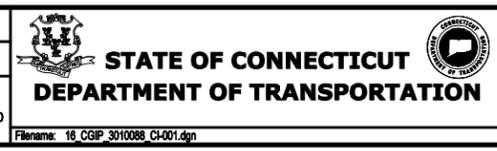
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 3/8/2014

DESIGNER/DRAFTER:
WPD / JLW

CHECKED BY:
JFK

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SCALE 1"=200'



SIGNATURE/BLOCK:

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

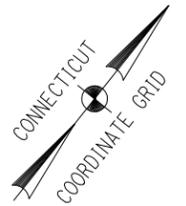
TOWN:
NEW HAVEN

DRAWING TITLE:
CIVIL INDEX PLAN

PROJECT NO.
301-0144

DRAWING NO.
CI-001

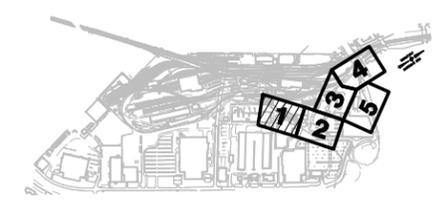
SHEET NO.
025



- LEGEND**
-  REMOVAL OF BITUMINOUS TYPE PAVEMENT
 -  REMOVAL OF CONCRETE SIDEWALK
 -  REMOVE
 -  REMOVE

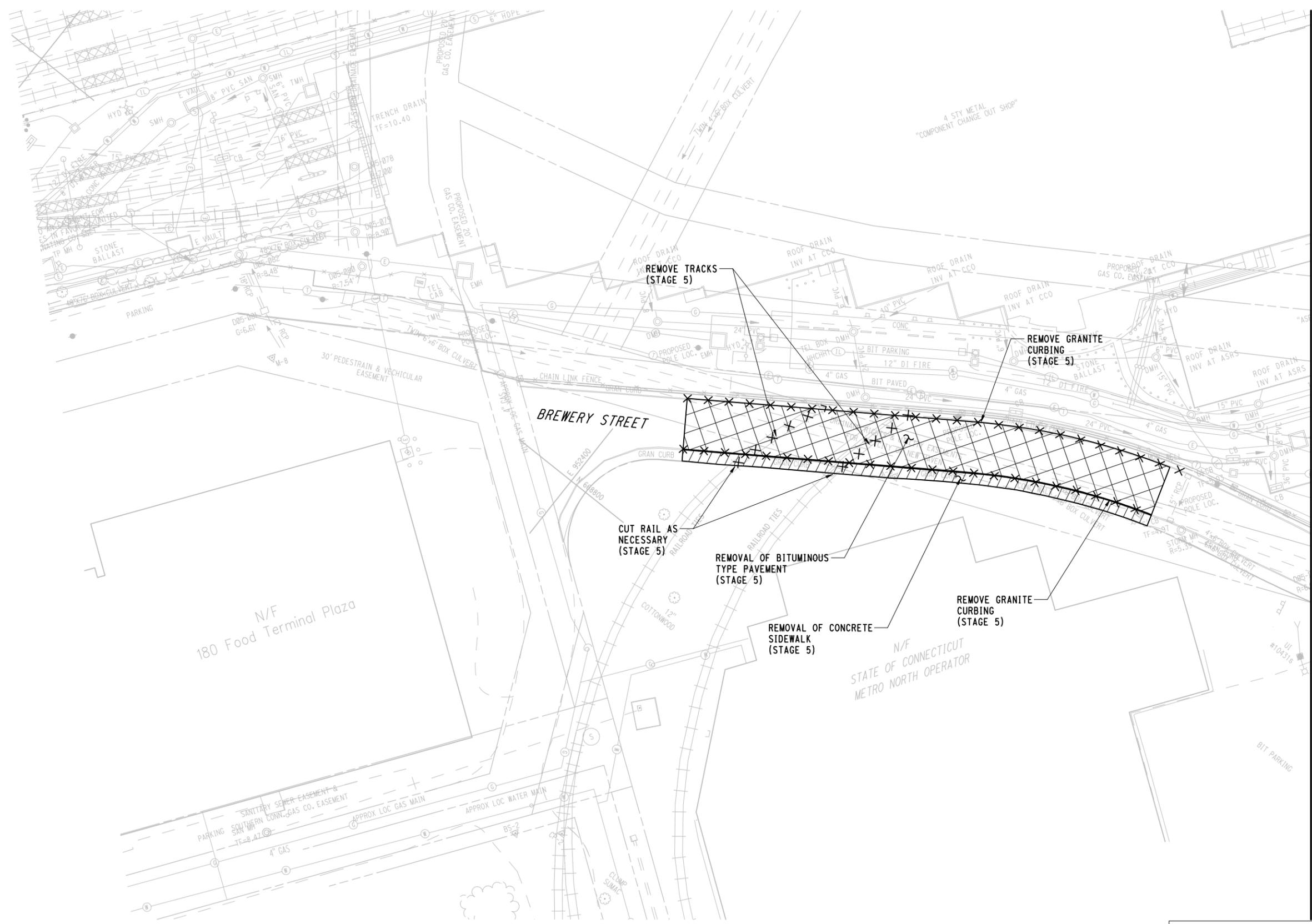
- NOTES:**
1. REFER TO GENERAL NOTES SHEET, DWG NO GG-011 FOR GENERAL DEMOLITION NOTES.
 2. REFER TO CONSTRUCTION STAGING PLANS FOR ADDITIONAL INFORMATION ON THE DEMOLITION STAGING.

MATCH LINE SEE PLAN-2



KEY PLAN

CONTRACT DOCUMENTS REVIEW



3/8/2014 11:47:50 AM T:\18965-NHRY\FIC\DOT_Projects\301_0088\Contract_Sheet_Files\16103-Civil\16_CSDP_3010088_CD-001.dgn

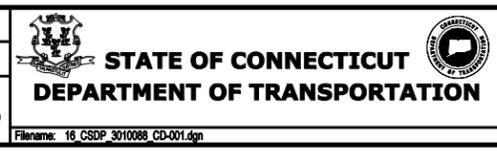
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THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

SCALE IN FEET
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SCALE 1"=30'



SIGNATURE/BLOCK:

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:
NEW HAVEN

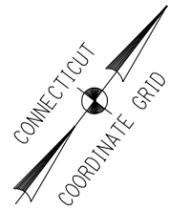
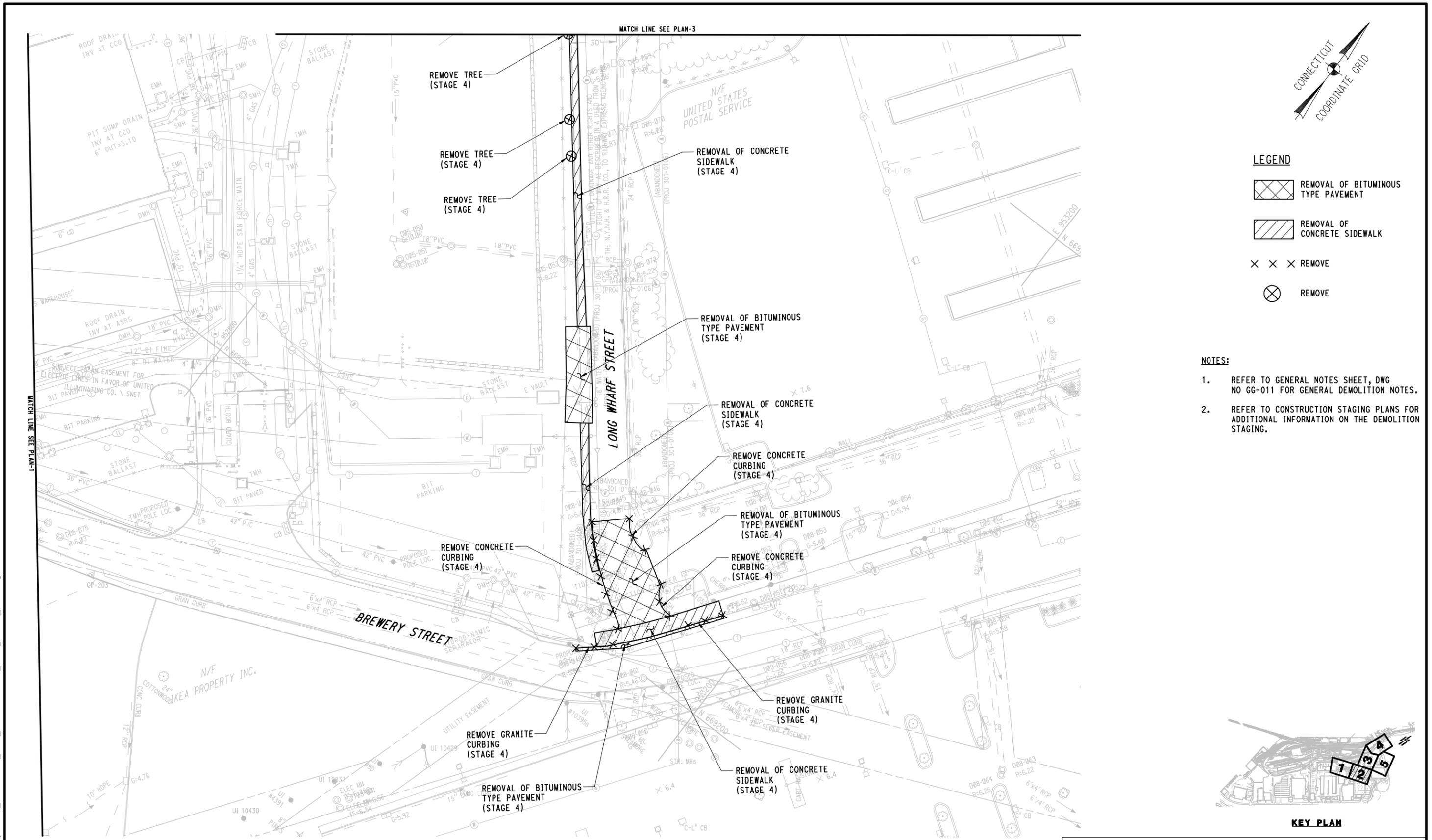
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**SITE DEMOLITION
PLAN-1**

PROJECT NO.
301-0144

DRAWING NO.
CD-001

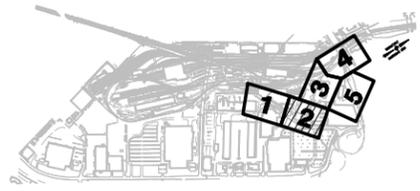
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3/8/2014 3:15:55 PM T:\18965-NHRY\F1CTDOT_Projects\301_0088\Contract_Sheet_Files\16103-Civil\16_CSDP_3010088_CD-002.dgn



- LEGEND**
- REMOVAL OF BITUMINOUS TYPE PAVEMENT
 - REMOVAL OF CONCRETE SIDEWALK
 - REMOVE
 - REMOVE

- NOTES:**
1. REFER TO GENERAL NOTES SHEET, DWG NO GG-011 FOR GENERAL DEMOLITION NOTES.
 2. REFER TO CONSTRUCTION STAGING PLANS FOR ADDITIONAL INFORMATION ON THE DEMOLITION STAGING.



KEY PLAN

CONTRACT DOCUMENTS REVIEW

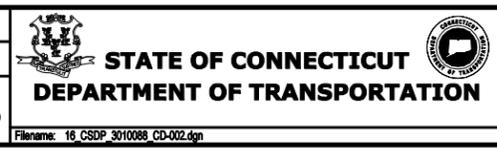
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THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

SCALE IN FEET
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SCALE 1"=30'



SIGNATURE/BLOCK:

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:
NEW HAVEN

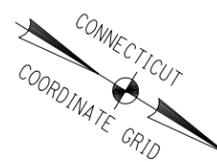
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**SITE DEMOLITION
PLAN-2**

PROJECT NO.
301-0144

DRAWING NO.
CD-002

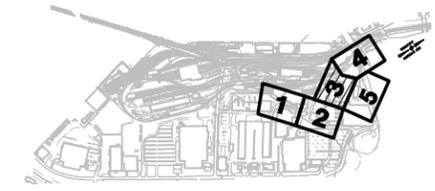
SHEET NO.
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Plotted Date: 3/8/2014
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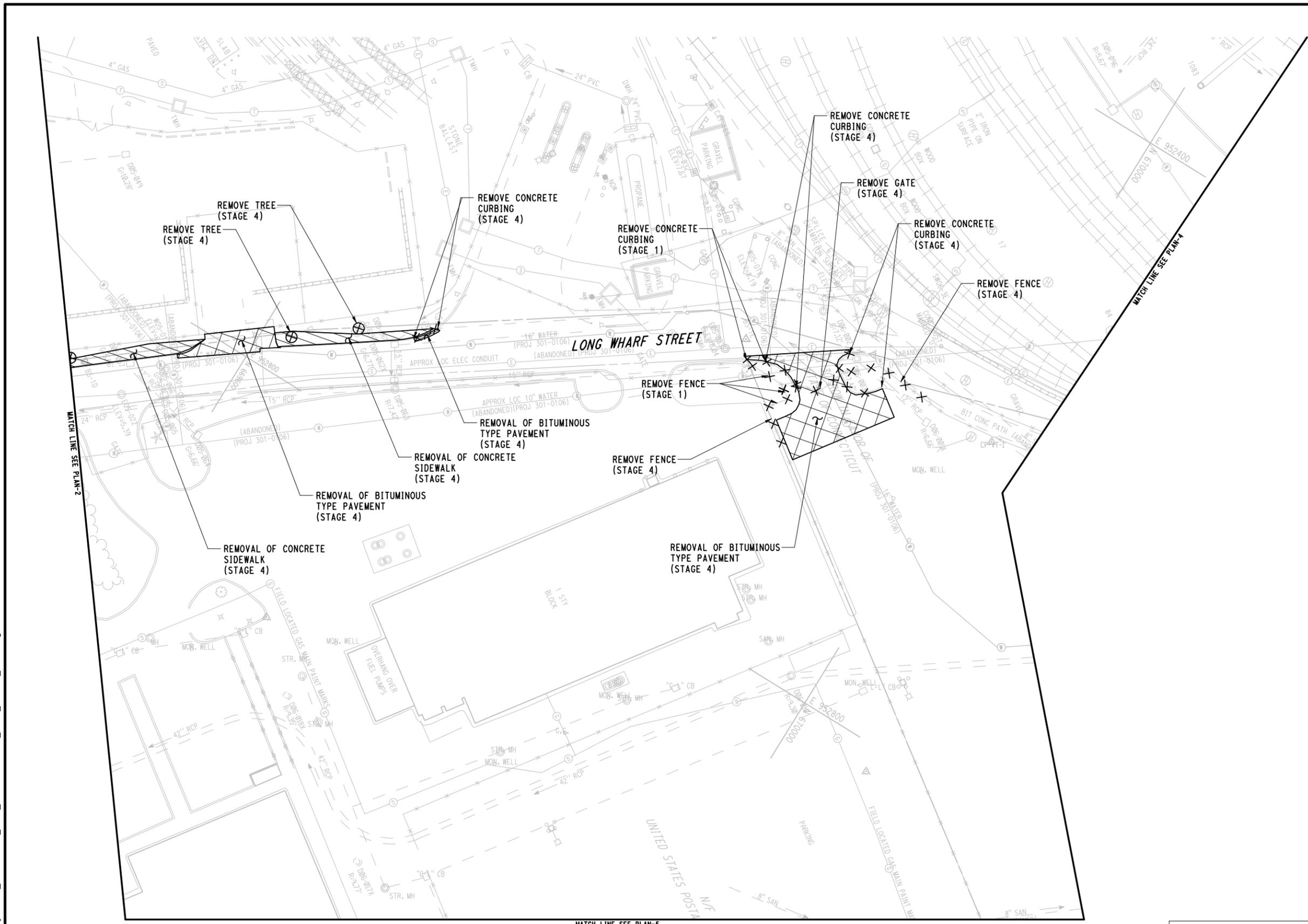
- LEGEND**
-  REMOVAL OF BITUMINOUS TYPE PAVEMENT
 -  REMOVAL OF CONCRETE SIDEWALK
 -  REMOVE
 -  REMOVE

- NOTES:**
1. REFER TO GENERAL NOTES SHEET, DWG NO GG-011 FOR GENERAL DEMOLITION NOTES.
 2. REFER TO CONSTRUCTION STAGING PLANS FOR ADDITIONAL INFORMATION ON THE DEMOLITION STAGING.



KEY PLAN

CONTRACT DOCUMENTS REVIEW



3/8/2014 3:16:50 PM T:\18865-NHRY\FIC\DOT_Projects\301_0088\Contract_Sheet_Files\16103-Civil\16_CSDP_3010088_CD-003.dgn

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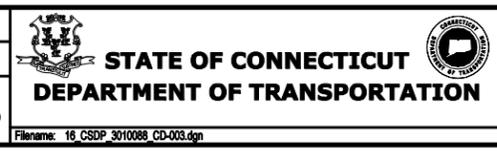
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 3/8/2014

DESIGNER/DRAFTER:
WPD / JLW

CHECKED BY:
JFK

SCALE IN FEET
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SCALE 1"=30'



SIGNATURE/BLOCK:

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN

DRAWING TITLE:
SITE DEMOLITION PLAN-3

PROJECT NO.
301-0144

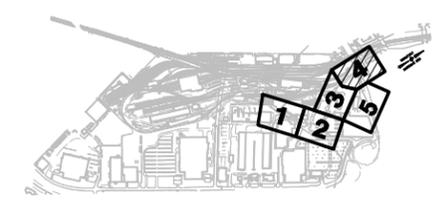
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SHEET NO.
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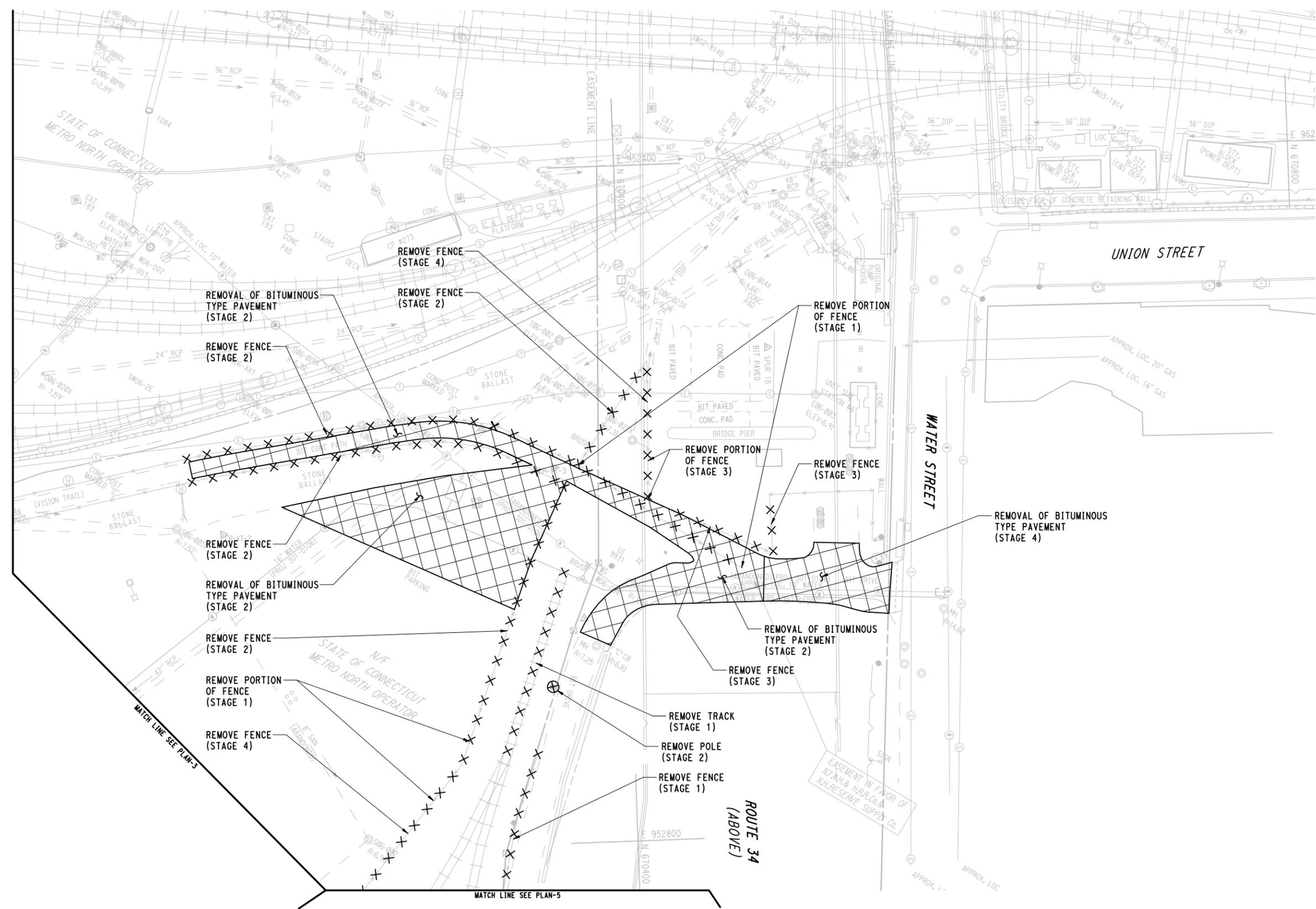


- LEGEND**
-  REMOVAL OF BITUMINOUS TYPE PAVEMENT
 -  REMOVAL OF CONCRETE SIDEWALK
 -  REMOVE
 -  REMOVE

- NOTES:**
1. REFER TO GENERAL NOTES SHEET, DWG NO GG-011 FOR GENERAL DEMOLITION NOTES.
 2. REFER TO CONSTRUCTION STAGING PLANS FOR ADDITIONAL INFORMATION ON THE DEMOLITION STAGING.



KEY PLAN



CONTRACT DOCUMENTS REVIEW

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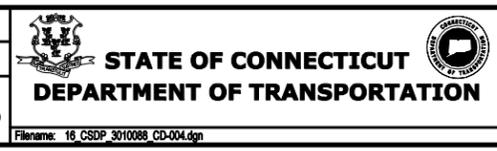
REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

SCALE IN FEET
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SCALE 1"=30'



SIGNATURE/BLOCK:

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

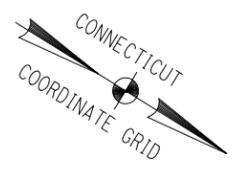
TOWN:
NEW HAVEN

DRAWING TITLE:
**SITE DEMOLITION
PLAN-4**

PROJECT NO.
301-0144

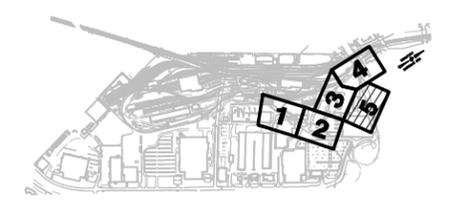
DRAWING NO.
CD-004

SHEET NO.
029



- LEGEND**
-  REMOVAL OF BITUMINOUS TYPE PAVEMENT
 -  REMOVAL OF CONCRETE SIDEWALK
 -  REMOVE
 -  REMOVE

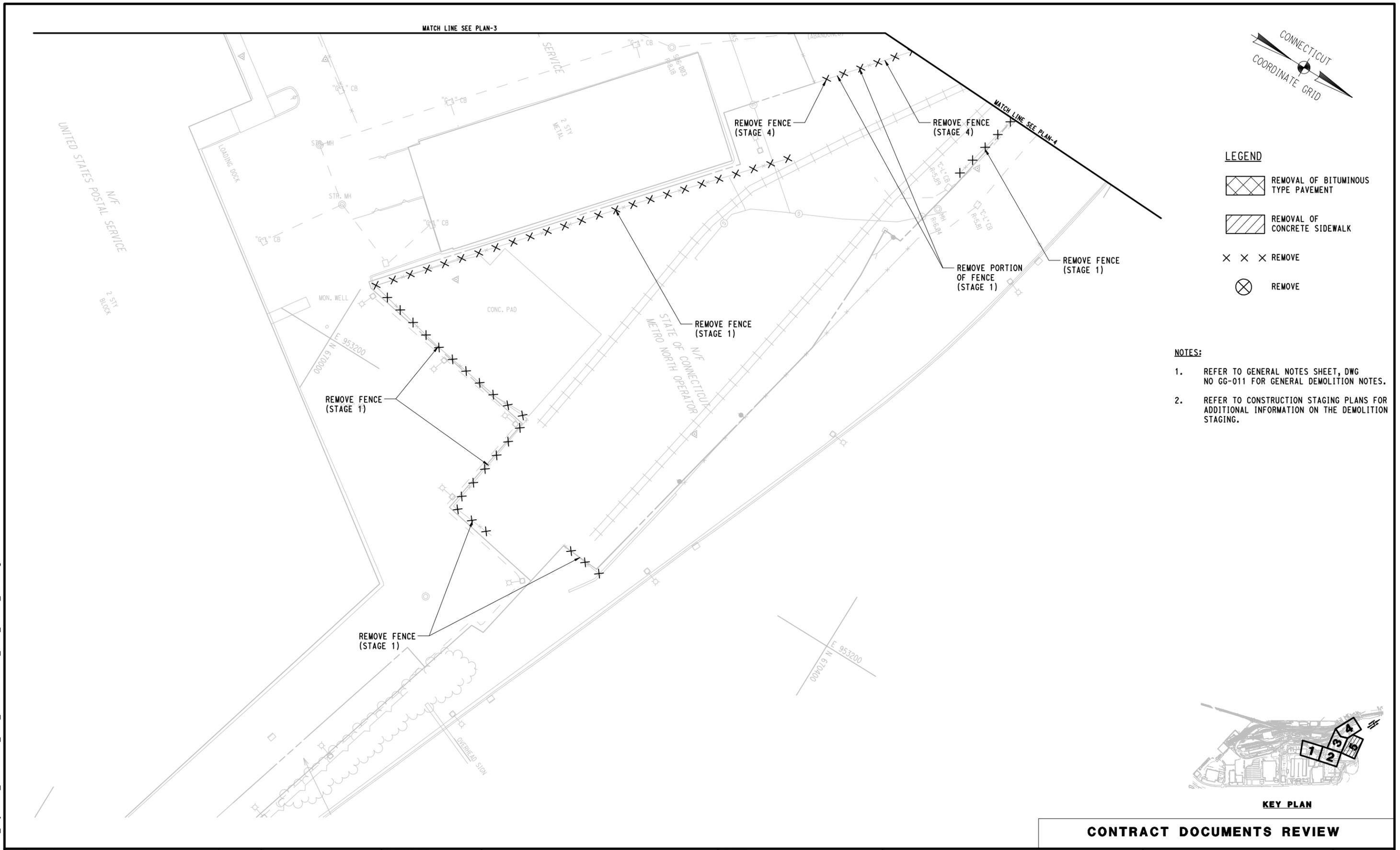
- NOTES:**
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 2. REFER TO CONSTRUCTION STAGING PLANS FOR ADDITIONAL INFORMATION ON THE DEMOLITION STAGING.

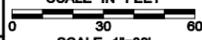


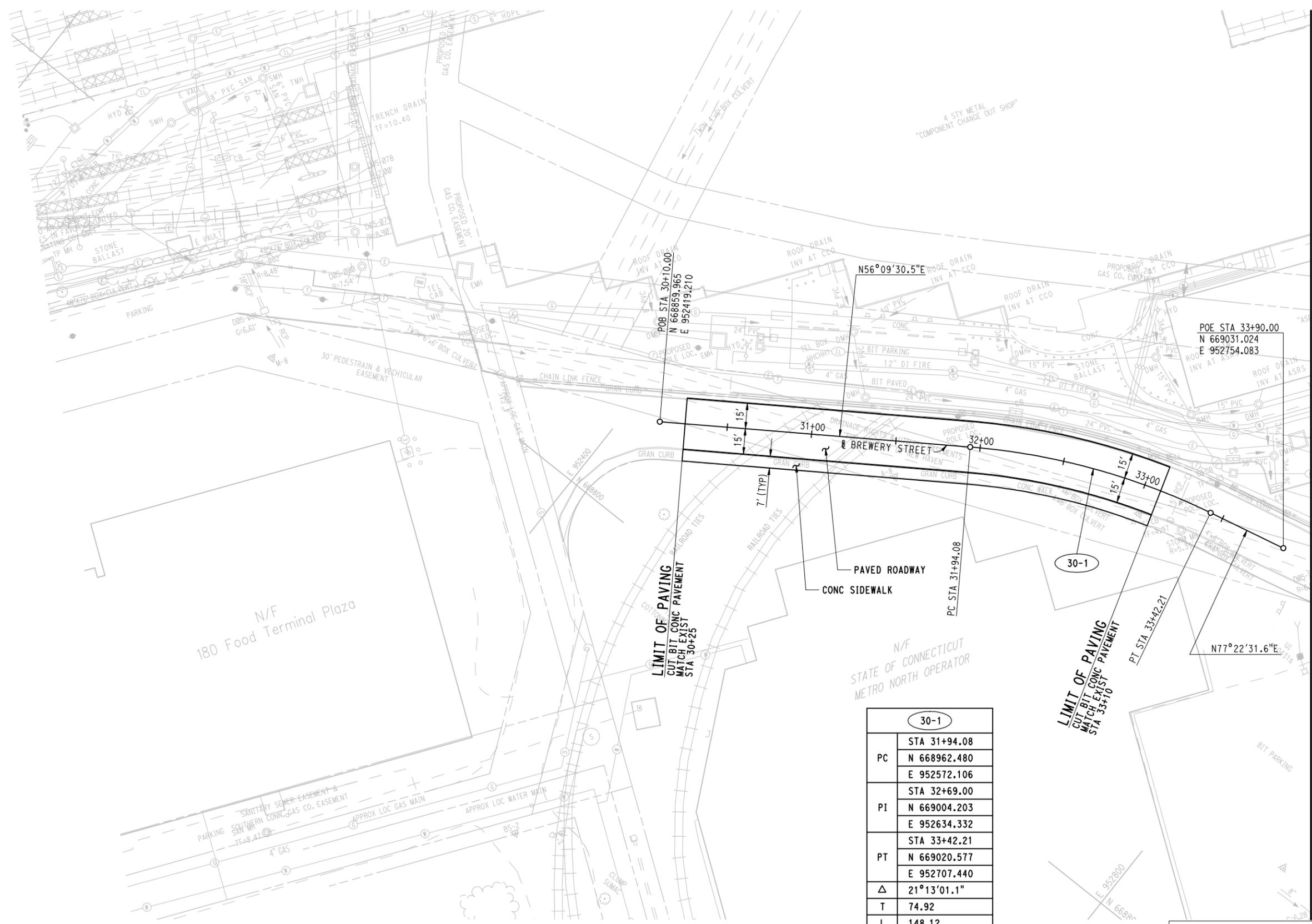
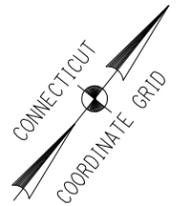
KEY PLAN

CONTRACT DOCUMENTS REVIEW

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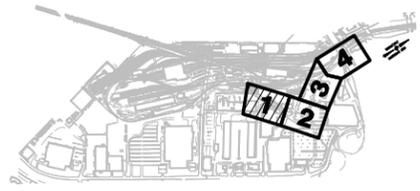


REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 3/8/2014	DESIGNER/DRAFTER: WPD / JLW CHECKED BY: JFK SCALE IN FEET  SCALE 1"=30' STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION 	SIGNATURE/ BLOCK:	PROJECT TITLE: NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE	TOWN: NEW HAVEN	PROJECT NO. 301-0144
							DRAWING TITLE: SITE DEMOLITION PLAN-5	DRAWING NO. CD-005	SHEET NO. 030



MATCH LINE SEE PLAN-2

30-1	
PC	STA 31+94.08 N 668962.480 E 952572.106
PI	STA 32+69.00 N 669004.203 E 952634.332
PT	STA 33+42.21 N 669020.577 E 952707.440
Δ	21°13'01.1"
T	74.92
L	148.12
R	400.00



KEY PLAN

CONTRACT DOCUMENTS REVIEW

3/8/2014 3:33:04 PM T:\18965-NHRY\FIC\DOT_Projects\301_0086\Contract_Sheet_Files\16103-Civil\16_CALN_3010088_CA-001.dgn

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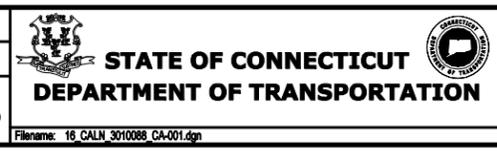
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 3/8/2014

DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

SCALE IN FEET
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SCALE 1"=30'



SIGNATURE/BLOCK:

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

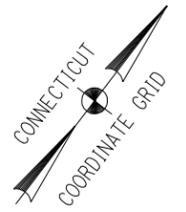
TOWN:
NEW HAVEN

DRAWING TITLE:
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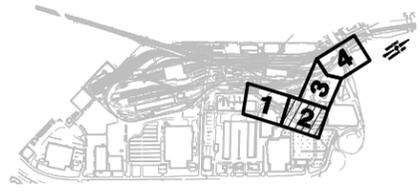
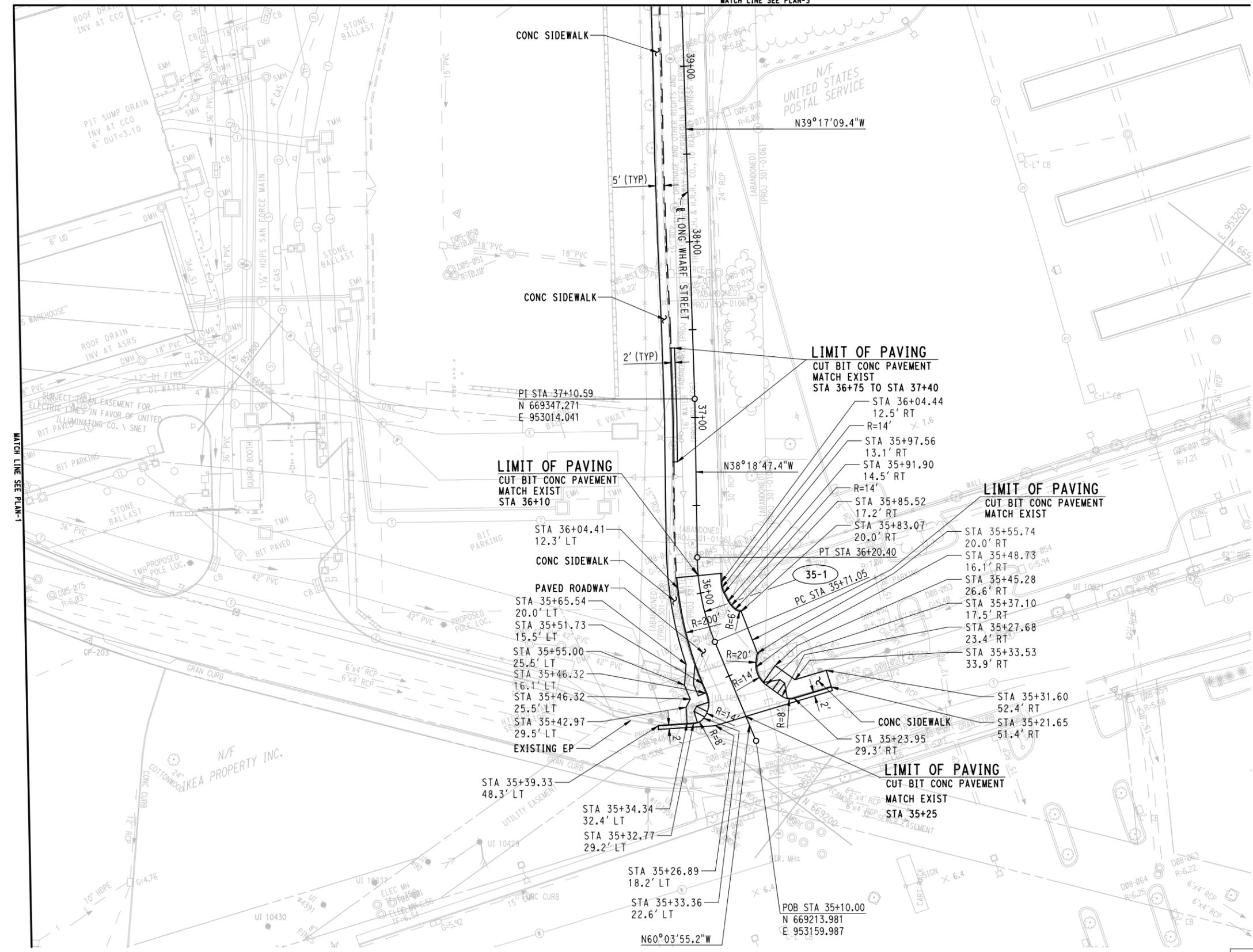
PROJECT NO.
301-0144

DRAWING NO.
CA-001

SHEET NO.
031



35-1	
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	N 669244.443
PI	E 953107.085
	STA 35+96.02
PT	N 669256.907
	E 953085.439
Δ	STA 36+20.40
	N 669276.506
T	E 953069.954
L	21°45'07.8"
R	24.98
	49.35
	130.00



KEY PLAN

CONTRACT DOCUMENTS REVIEW

3/8/2014 3:38:45 PM T:\18965-NHRY\F1CTDOT_Projects\301_0088\Contract_Sheet_Files\16103-Civil\16_CALN_3010088_CA-002.dgn

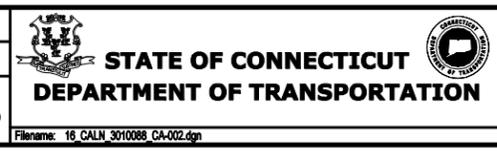
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THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

SCALE IN FEET
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SIGNATURE/BLOCK:

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

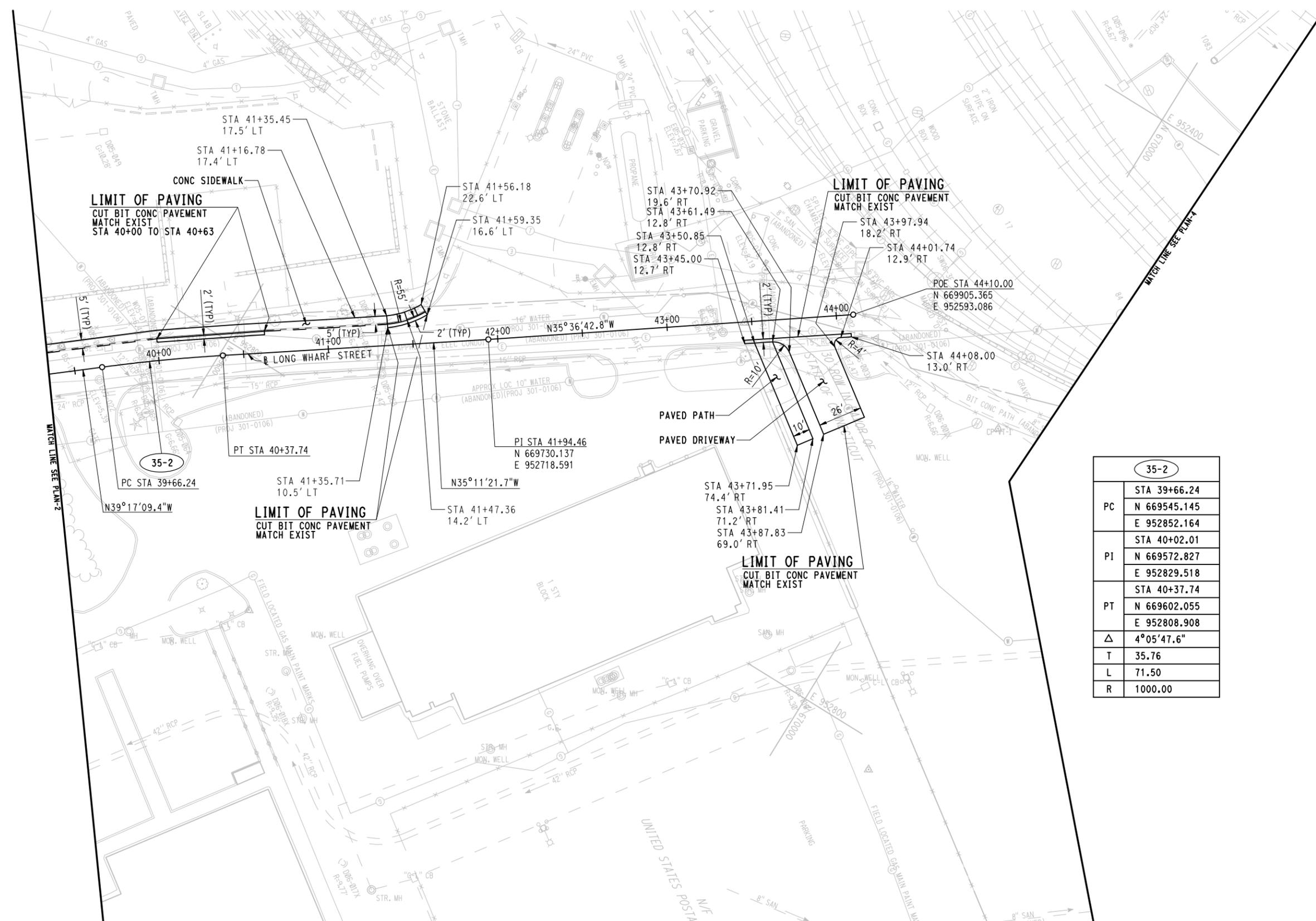
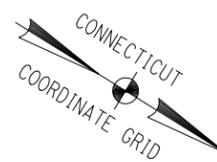
TOWN:
NEW HAVEN

DRAWING TITLE:
ROADWAY ALIGNMENT PLAN-2

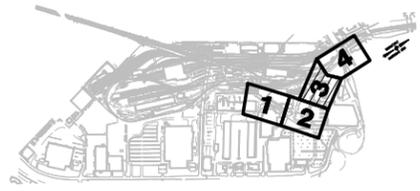
PROJECT NO.
301-0144

DRAWING NO.
CA-002

SHEET NO.
032



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PI	STA 40+02.01 N 669572.827 E 952829.518
PT	STA 40+37.74 N 669602.055 E 952808.908
Δ	4°05'47.6"
T	35.76
L	71.50
R	1000.00



KEY PLAN

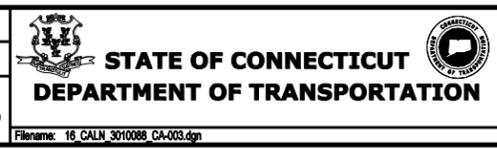
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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 Plotted Date: 3/8/2014

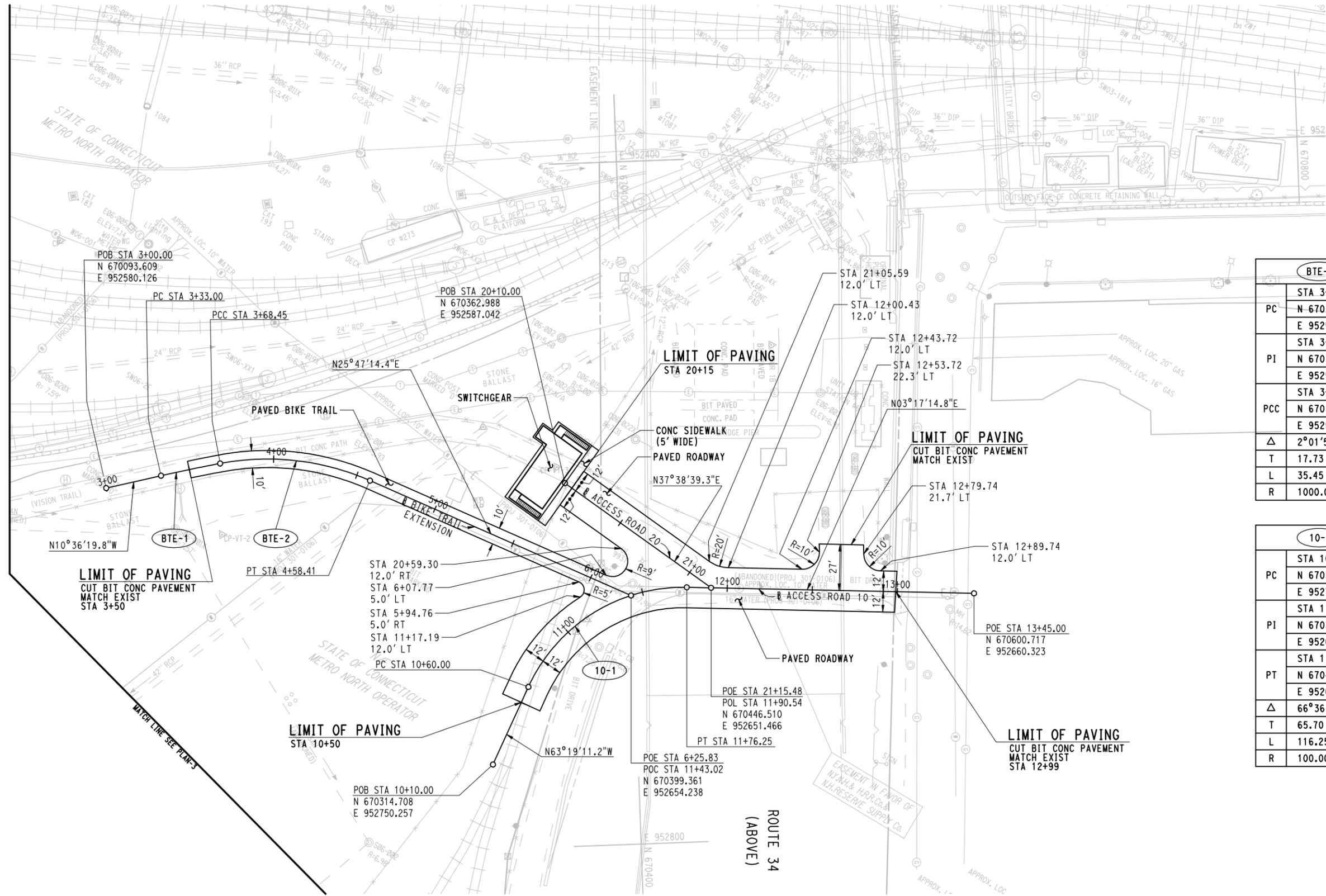
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WPD/JLW
 CHECKED BY:
JFK
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SIGNATURE/BLOCK:
 PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN
 DRAWING TITLE:
ROADWAY ALIGNMENT PLAN-3

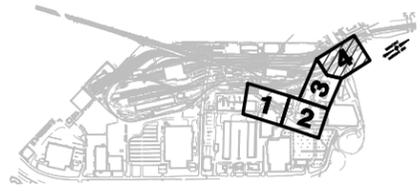
PROJECT NO.
301-0144
 DRAWING NO.
CA-003
 SHEET NO.
033



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PC	STA 3+33.00 N 670126.048 E 952574.052
PI	STA 3+50.73 N 670143.472 E 952570.790
PCC	STA 3+68.45 N 670161.002 E 952568.147
Δ	2°01'52.4"
T	17.73
L	35.45
R	1000.00

BTE-2	
PCC	STA 3+68.45 N 670161.002 E 952568.147
PI	STA 4+14.83 N 670206.861 E 952561.232
PT	STA 4+58.41 N 670248.620 E 952581.408
Δ	34°21'41.8"
T	46.38
L	89.96
R	150.00

10-1	
PC	STA 10+60.00 N 670337.159 E 952705.581
PI	STA 11+25.70 N 670366.657 E 952646.879
PT	STA 11+76.25 N 670432.246 E 952650.646
Δ	66°36'26.0"
T	65.70
L	116.25
R	100.00



KEY PLAN

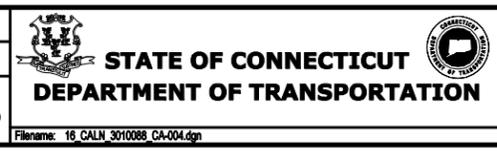
CONTRACT DOCUMENTS REVIEW

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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WPD/JLW
CHECKED BY:
JFK
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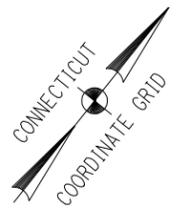
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PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN
DRAWING TITLE:
ROADWAY ALIGNMENT PLAN-4

PROJECT NO.
301-0144
DRAWING NO.
CA-004
SHEET NO.
034

Filename: 16_CALN_3010088_CA-004.dgn



5" GRANITE STONE CURBING TABLE				
LOCATION	OFFSET	STATION	STATION	LENGTH
BREWERY STREET	LEFT	30+90	31+20	30'
BREWERY STREET	LEFT	31+40	31+65	25'
BREWERY STREET	RIGHT	30+50	30+75	25'
BREWERY STREET	RIGHT	31+10	31+30	20'

REMOVE AND RESET GRANITE STONE CURBING TABLE				
LOCATION	OFFSET	STATION	STATION	LENGTH
BREWERY STREET	LEFT	30+25	30+90	65'
BREWERY STREET	LEFT	31+20	31+40	20'
BREWERY STREET	LEFT	31+65	33+10	145'
BREWERY STREET	RIGHT	30+25	30+50	25'
BREWERY STREET	RIGHT	30+75	31+10	35'
BREWERY STREET	RIGHT	31+30	33+10	180'

LIMIT OF PAVING
CUT BIT CONC PAVEMENT
MATCH EXIST
STA 30+25

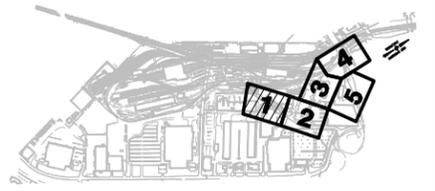
LIMIT OF PAVING
CUT BIT CONC PAVEMENT
MATCH EXIST
STA 33+10

LEGEND

- PAVED
- CONCRETE
- TWO-WAY TRAFFIC FLOW
- BI-DIRECTIONAL TRAFFIC FLOW
- APPROXIMATE 100 YEAR (ELEV 11.0) & 500 YEAR (ELEV 13.8) FEMA FLOODPLAINS
- APPROXIMATE 100 YEAR (ELEV 12.0) & 500 YEAR (ELEV 15.0) FEMA FLOODPLAINS
- APPROXIMATE SLOPE LIMIT

NOTES:

1. FOR GEOMETRIC LAYOUT OF ACCESS ROADS AND PAVED DRIVEWAYS, SEE ROADWAY ALIGNMENT PLANS.
2. FOR ADDITIONAL INFORMATION, REFER TO GRADING PLANS AND CIVIL MISCELLANEOUS DETAILS.
3. FOR UTILITY WORK, SEE UTILITY DRAWINGS.
4. CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES DURING CONSTRUCTION AT LOCATIONS SHOWN.
5. CONTRACTOR SHALL COORDINATE CONSTRUCTION OPERATIONS WITH OTHER CONCURRENT CONSTRUCTION PROJECTS.



KEY PLAN

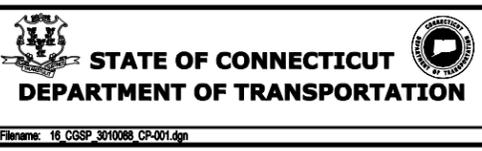
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
WPD/JLW
CHECKED BY:
JFK
SCALE IN FEET
SCALE 1"=30'



SIGNATURE/BLOCK:
PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN
DRAWING TITLE:
GENERAL SITE PLAN-1

PROJECT NO.
301-0144
DRAWING NO.
CP-001
SHEET NO.
035

MATCH LINE SEE PLAN-3



CONCRETE CURBING TABLE				
LOCATION	OFFSET	STATION	STATION	LENGTH
LONG WHARF STREET	LEFT	35+40	36+10	70'
LONG WHARF STREET	RIGHT	35+39	35+56	20'
LONG WHARF STREET	RIGHT	35+83	36+10	20'
LONG WHARF STREET	LEFT	36+75	37+40	65'

REMOVE AND RESET GRANITE STONE CURBING TABLE	
LOCATION	LENGTH
BREWERY STREET WEST OF LONG WHARF STREET	20'
BREWERY STREET EAST OF LONG WHARF STREET	20'

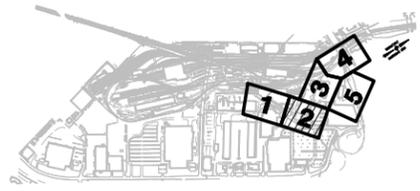
REMOVE CONCRETE CURBING TABLE				
LOCATION	OFFSET	STATION	STATION	LENGTH
LONG WHARF STREET	LEFT	35+40	36+10	70'
LONG WHARF STREET	RIGHT	35+39	35+56	20'
LONG WHARF STREET	RIGHT	35+83	36+10	20'

LEGEND

- PAVED
- CONCRETE
- TWO-WAY TRAFFIC FLOW
- BI-DIRECTIONAL TRAFFIC FLOW
- APPROXIMATE 100 YEAR (ELEV 11.0) & 500 YEAR (ELEV 13.8) FEMA FLOODPLAINS
- APPROXIMATE 100 YEAR (ELEV 12.0) & 500 YEAR (ELEV 15.0) FEMA FLOODPLAINS
- LIMIT OF MODERATE WAVE ACTION
- APPROXIMATE SLOPE LIMIT

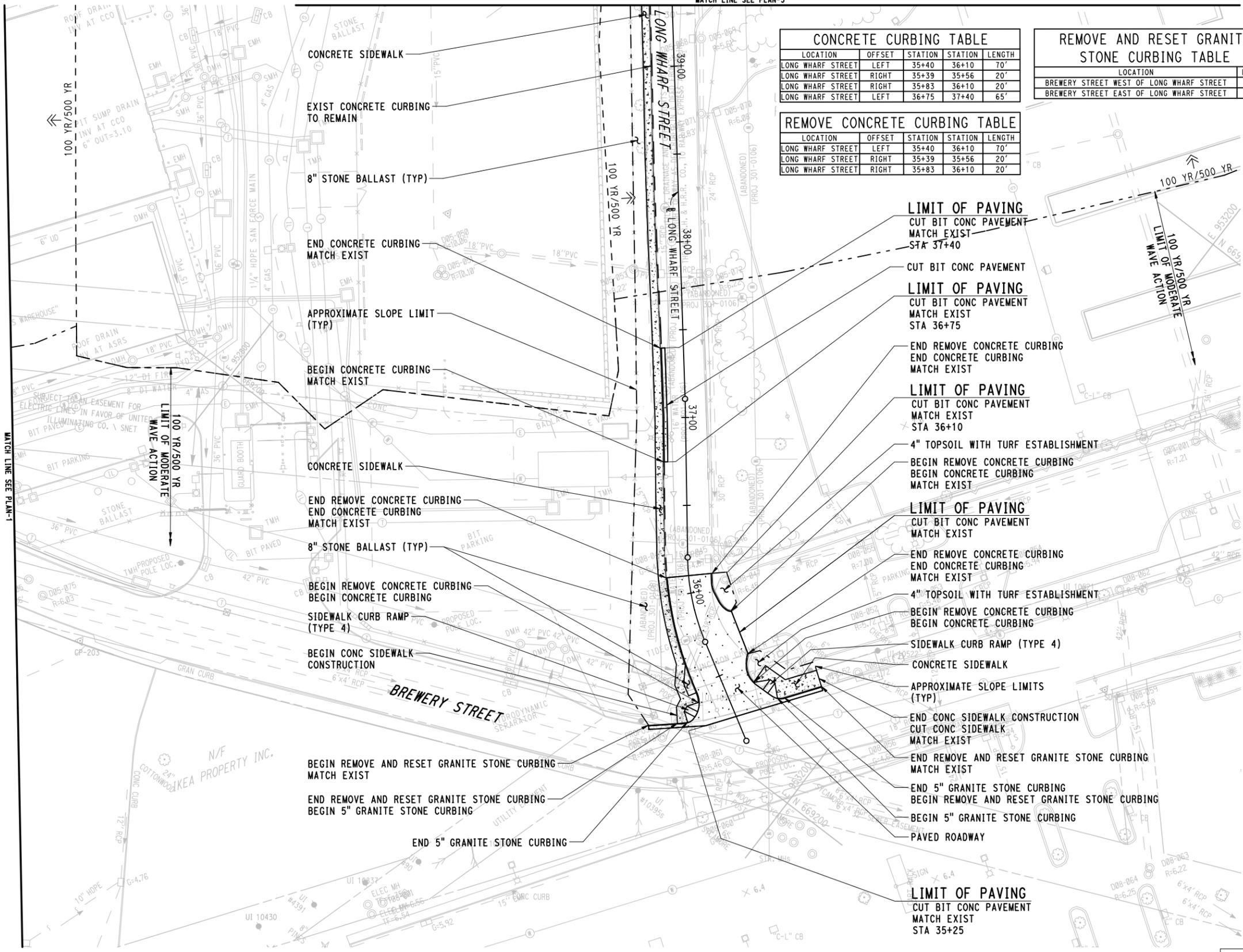
NOTES:

1. FOR GEOMETRIC LAYOUT OF ACCESS ROADS AND PAVED DRIVEWAYS, SEE ROADWAY ALIGNMENT PLANS.
2. FOR ADDITIONAL INFORMATION, REFER TO GRADING PLANS AND CIVIL MISCELLANEOUS DETAILS.
3. FOR UTILITY WORK, SEE UTILITY DRAWINGS.
4. CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES DURING CONSTRUCTION AT LOCATIONS SHOWN.
5. CONTRACTOR SHALL COORDINATE CONSTRUCTION OPERATIONS WITH OTHER CONCURRENT CONSTRUCTION PROJECTS.



KEY PLAN

CONTRACT DOCUMENTS REVIEW



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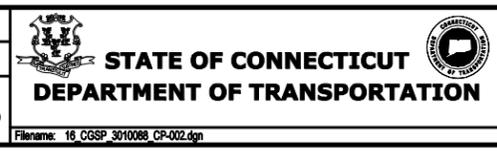
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Plotted Date: 3/8/2014

DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

SCALE IN FEET
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SCALE 1"=30'



SIGNATURE/BLOCK:

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN

DRAWING TITLE:
GENERAL SITE PLAN-2

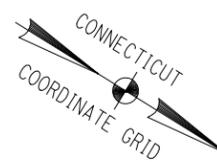
PROJECT NO.
301-0144

DRAWING NO.
CP-002

SHEET NO.
036

CONCRETE CURBING TABLE				
LOCATION	OFFSET	STATION	STATION	LENGTH
LONG WHARF STREET	LEFT	40+00	40+63	63'

REMOVE CONCRETE CURBING TABLE				
LOCATION	OFFSET	STATION	STATION	LENGTH
LONG WHARF STREET	LEFT	41+44	41+59	16'
LONG WHARF STREET	RIGHT	43+45	43+75	40'
LONG WHARF STREET	RIGHT	44+08	44+10	50'

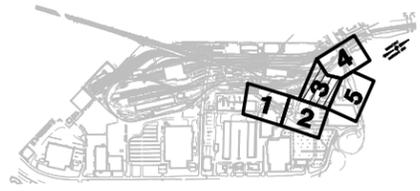


LEGEND

- PAVED
- CONCRETE
- TWO-WAY TRAFFIC FLOW
- BI-DIRECTIONAL TRAFFIC FLOW
- APPROXIMATE 100 YEAR (ELEV 11.0) & 500 YEAR (ELEV 13.8) FEMA FLOODPLAINS
- APPROXIMATE 100 YEAR (ELEV 12.0) & 500 YEAR (ELEV 15.0) FEMA FLOODPLAINS
- APPROXIMATE SLOPE LIMIT

NOTES:

1. FOR GEOMETRIC LAYOUT OF ACCESS ROADS AND PAVED DRIVEWAYS, SEE ROADWAY ALIGNMENT PLANS.
2. FOR ADDITIONAL INFORMATION, REFER TO GRADING PLANS AND CIVIL MISCELLANEOUS DETAILS.
3. FOR UTILITY WORK, SEE UTILITY DRAWINGS.
4. CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES DURING CONSTRUCTION AT LOCATIONS SHOWN.
5. CONTRACTOR SHALL COORDINATE CONSTRUCTION OPERATIONS WITH OTHER CONCURRENT CONSTRUCTION PROJECTS.
6. EXCAVATION GREATER THAN ONE FOOT BELOW GRADE REQUIRED FOR ANY WORK SHOWN ON THIS SHEET MUST BE SCHEDULED TWO WEEKS IN ADVANCE WITH THE ENGINEER IN ORDER TO COORDINATE ARCHAEOLOGICAL MONITORING REQUIRED BY STATE HISTORIC PRESERVATION OFFICE (REFER TO NOTICE TO CONTRACTOR - ARCHAEOLOGICAL MONITORING).



KEY PLAN

FENCE COORDINATES		
DESCRIPTION	NORTHING	EASTING
F-1	669863.78	952643.32
F-2	669910.55	952677.26
F-3	669915.44	952670.41
F-4	669917.76	952667.16
F-5	669923.55	952659.05
F-6	669945.26	952628.61
F-7	669962.45	952604.52

BOLLARD COORDINATES		
DESCRIPTION	NORTHING	EASTING
B-1	669904.97	952660.47
B-2	669922.98	952655.78
B-3	669935.17	952638.69
B-4	669940.06	952642.17
B-5	669927.86	952659.27
B-6	669935.61	952664.77
B-7	669939.65	952667.70
B-8	669923.38	952630.25
B-9	669927.43	952633.19

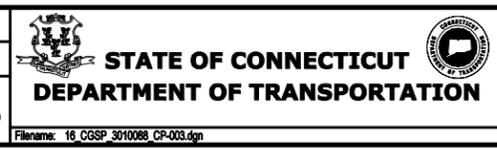
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 3/10/2014

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DESIGNER/DRAFTER:
WPD/JLW
CHECKED BY:
JFK
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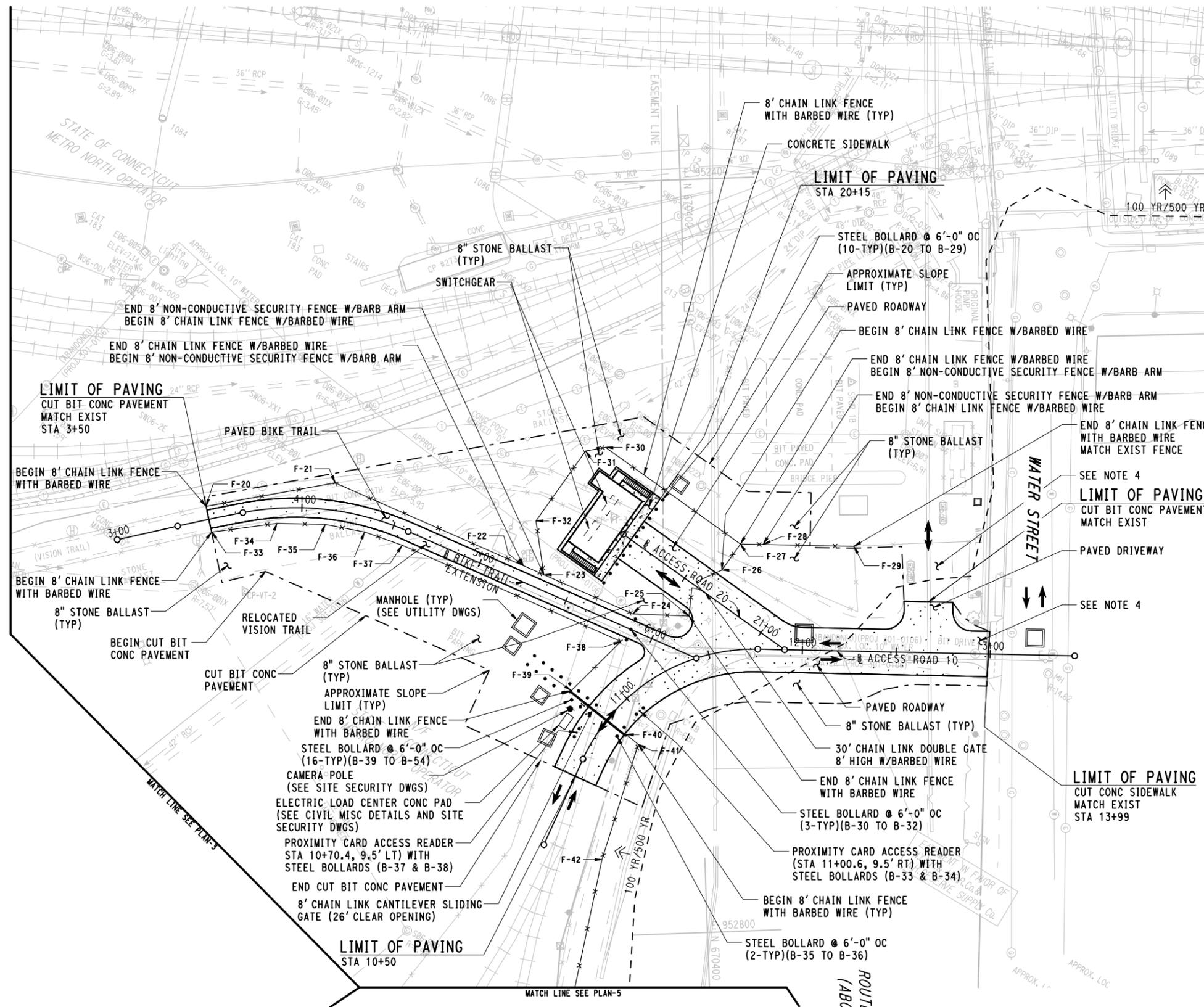


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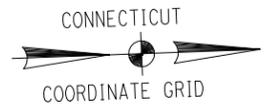
TOWN:
NEW HAVEN
PROJECT NO.
301-0144
DRAWING NO.
CP-003
SHEET NO.
037
DRAWING TITLE:
GENERAL SITE PLAN-3

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FENCE COORDINATES		
DESCRIPTION	NORTHING	EASTING
F-20	670141.61	952564.16
F-21	670210.64	952554.17
F-22	670309.15	952601.77
F-23	670319.95	952606.99
F-24	670366.58	952629.51
F-25	670396.35	952631.72
F-26	670414.67	952607.97
F-27	670425.06	952594.51
F-28	670437.04	952595.19
F-29	670485.31	952597.97
F-30	670355.19	952540.62
F-31	670344.55	952542.17
F-32	670316.74	952578.23
F-33	670143.95	952577.97
F-34	670178.93	952574.54
F-35	670204.62	952576.07
F-36	670225.35	952580.82
F-37	670245.14	952588.61
F-38	670359.62	952643.92
F-39	670332.23	952669.07
F-40	670360.61	952693.42
F-41	670366.87	952698.84
F-42	670345.31	952759.31

BOLLARD COORDINATES		
DESCRIPTION	NORTHING	EASTING
B-20	670351.64	952612.39
B-21	670355.31	952607.64
B-22	670358.97	952602.89
B-23	670362.64	952598.14
B-24	670366.30	952593.39
B-25	670369.97	952588.64
B-26	670373.63	952583.89
B-27	670377.30	952579.13
B-28	670380.96	952574.38
B-29	670384.62	952569.63
B-30	670362.52	952643.10
B-31	670365.13	952637.70
B-32	670367.74	952632.30
B-33	670366.41	952682.82
B-34	670370.24	952679.61
B-35	670355.76	952694.06
B-36	670359.65	952689.49
B-37	670332.99	952693.52
B-38	670335.69	952689.31
B-39	670313.37	952649.76
B-40	670317.92	952653.67
B-41	670322.48	952657.58
B-42	670327.03	952661.49
B-43	670331.58	952665.40
B-44	670336.13	952669.30
B-45	670340.69	952673.21
B-46	670345.24	952677.12
B-47	670341.33	952681.67
B-48	670336.78	952677.76
B-49	670332.23	952673.86
B-50	670327.67	952669.95
B-51	670323.12	952666.04
B-52	670318.57	952662.13
B-53	670314.02	952658.22
B-54	670309.46	952654.31

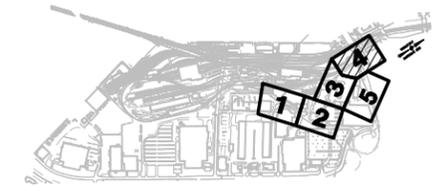


LEGEND

- PAVED
- CONCRETE
- TWO-WAY TRAFFIC FLOW
- BI-DIRECTIONAL TRAFFIC FLOW
- APPROXIMATE 100 YEAR (ELEV 11.0) & 500 YEAR (ELEV 13.8) FEMA FLOODPLAINS
- APPROXIMATE 100 YEAR (ELEV 12.0) & 500 YEAR (ELEV 15.0) FEMA FLOODPLAINS
- APPROXIMATE SLOPE LIMIT

NOTES:

1. FOR GEOMETRIC LAYOUT OF ACCESS ROADS AND PAVED DRIVEWAYS, SEE ROADWAY ALIGNMENT PLANS.
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3. FOR UTILITY WORK, SEE UTILITY DRAWINGS.
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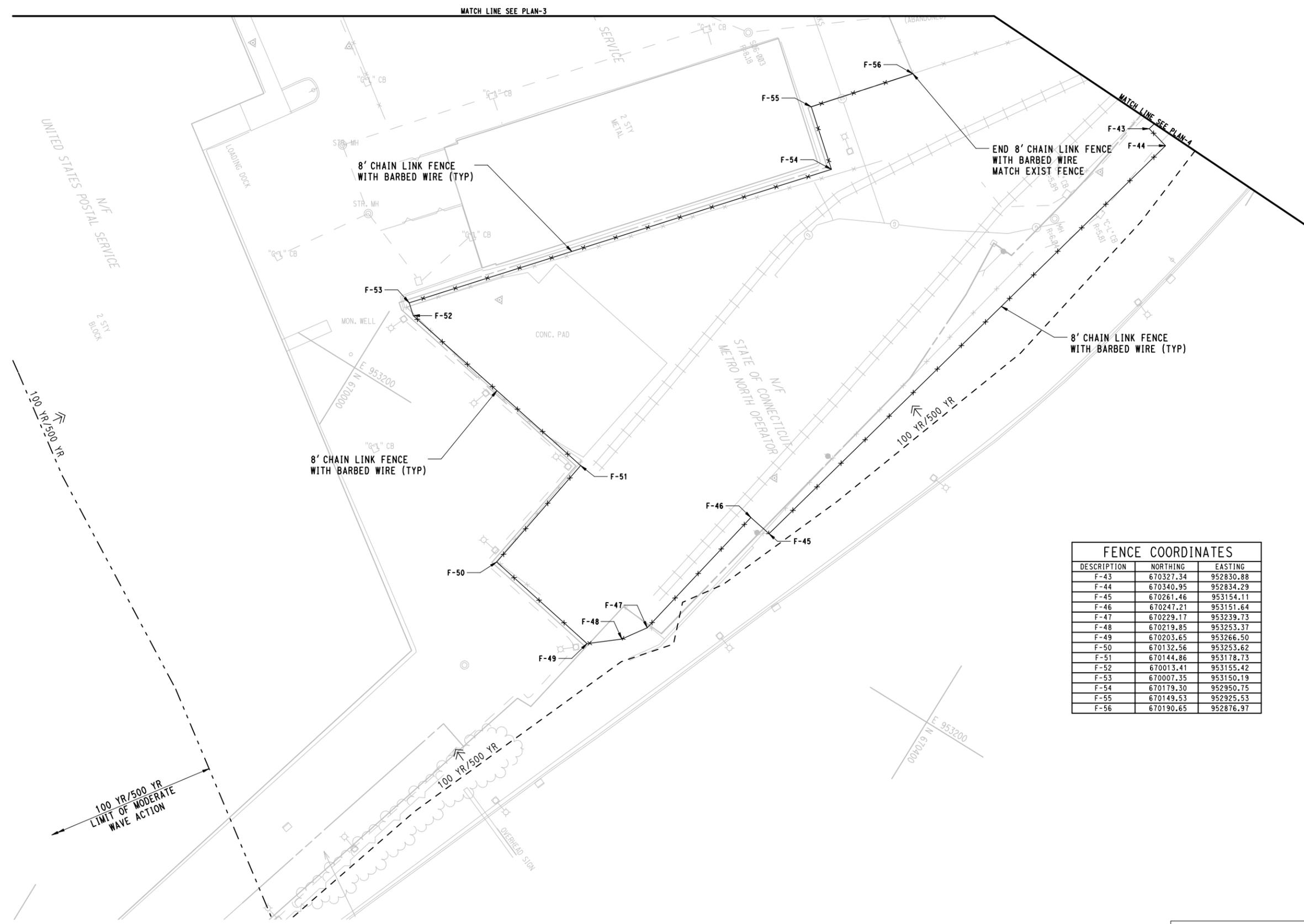
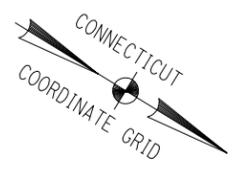


KEY PLAN

CONTRACT DOCUMENTS REVIEW

<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>	<p>DESIGNER/DRAFTER: WPD/JLW</p> <p>CHECKED BY: JFK</p> <p>SCALE IN FEET 0 30 60 SCALE 1"=30'</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>File name: 16_CGSP_3010088_CP-004.dgn</p>	<p>SIGNATURE/BLOCK:</p>	<p>PROJECT TITLE:</p> <p>NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE</p>	<p>TOWN:</p> <p>NEW HAVEN</p>	<p>PROJECT NO.:</p> <p>301-0144</p> <p>DRAWING NO.:</p> <p>CP-004</p> <p>SHEET NO.:</p> <p>038</p>								
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.											

GENERAL SITE PLAN-4



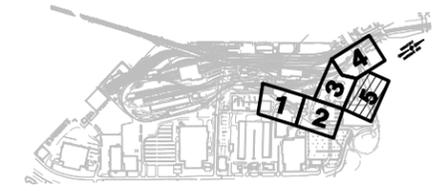
LEGEND

- PAVED
- CONCRETE
- TWO-WAY TRAFFIC FLOW
- BI-DIRECTIONAL TRAFFIC FLOW
- APPROXIMATE 100 YEAR (ELEV 11.0) & 500 YEAR (ELEV 13.8) FEMA FLOODPLAINS
- APPROXIMATE 100 YEAR (ELEV 12.0) & 500 YEAR (ELEV 15.0) FEMA FLOODPLAINS LIMIT OF MODERATE WAVE ACTION
- APPROXIMATE SLOPE LIMIT

FENCE COORDINATES		
DESCRIPTION	NORTHING	EASTING
F-43	670327.34	952830.88
F-44	670340.95	952834.29
F-45	670261.46	953154.11
F-46	670247.21	953151.64
F-47	670229.17	953239.73
F-48	670219.85	953253.37
F-49	670203.65	953266.50
F-50	670132.56	953253.62
F-51	670144.86	953178.73
F-52	670013.41	953155.42
F-53	670007.35	953150.19
F-54	670179.30	952950.75
F-55	670149.53	952925.53
F-56	670190.65	952876.97

NOTES:

1. CONTRACTOR SHALL COORDINATE CONSTRUCTION OPERATIONS WITH OTHER CONCURRENT CONSTRUCTION PROJECTS.



KEY PLAN

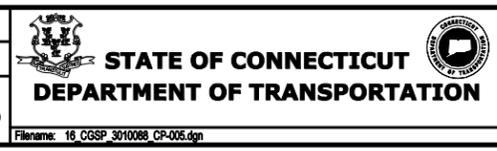
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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WPD/JLW
CHECKED BY:
JFK
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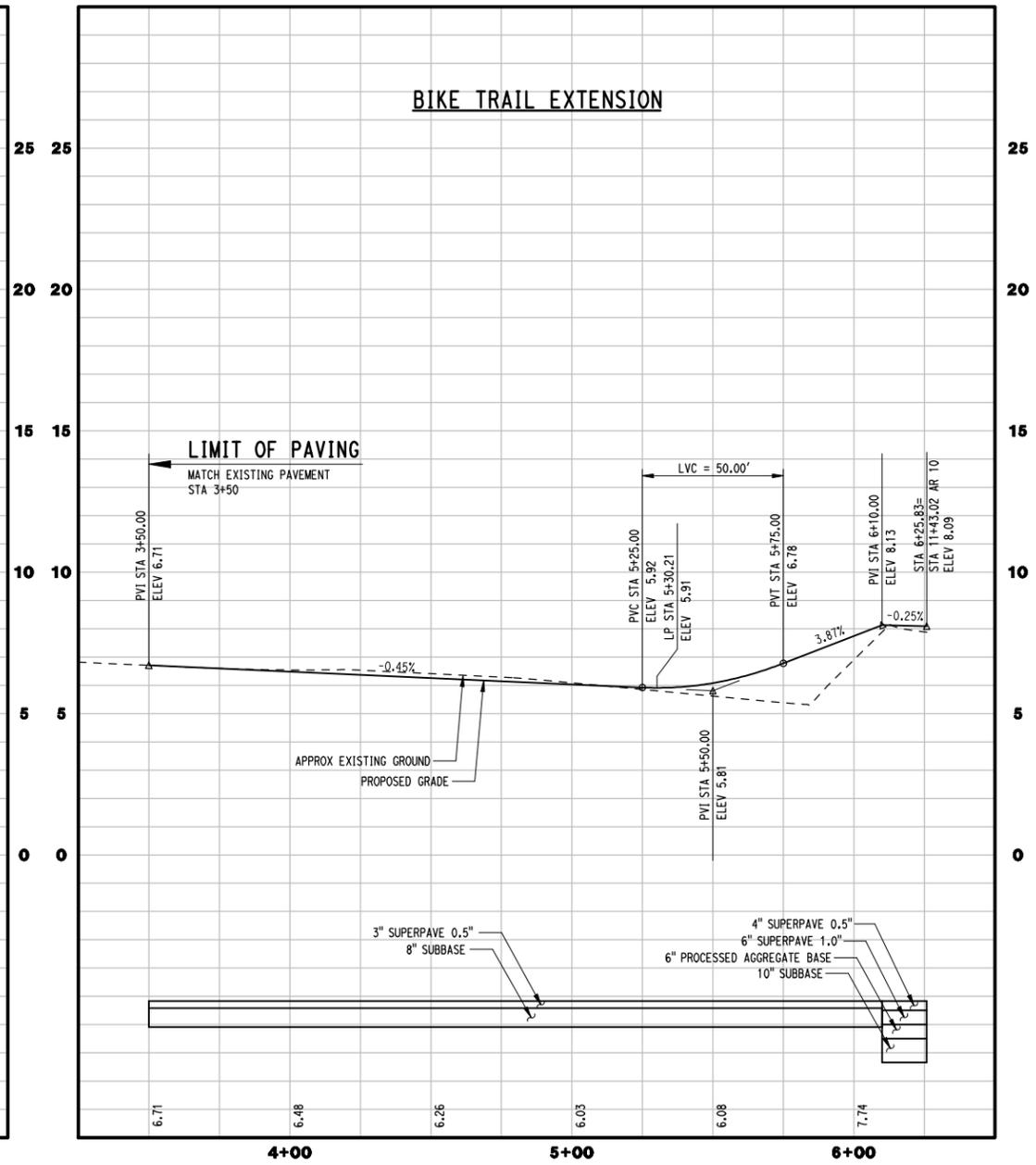
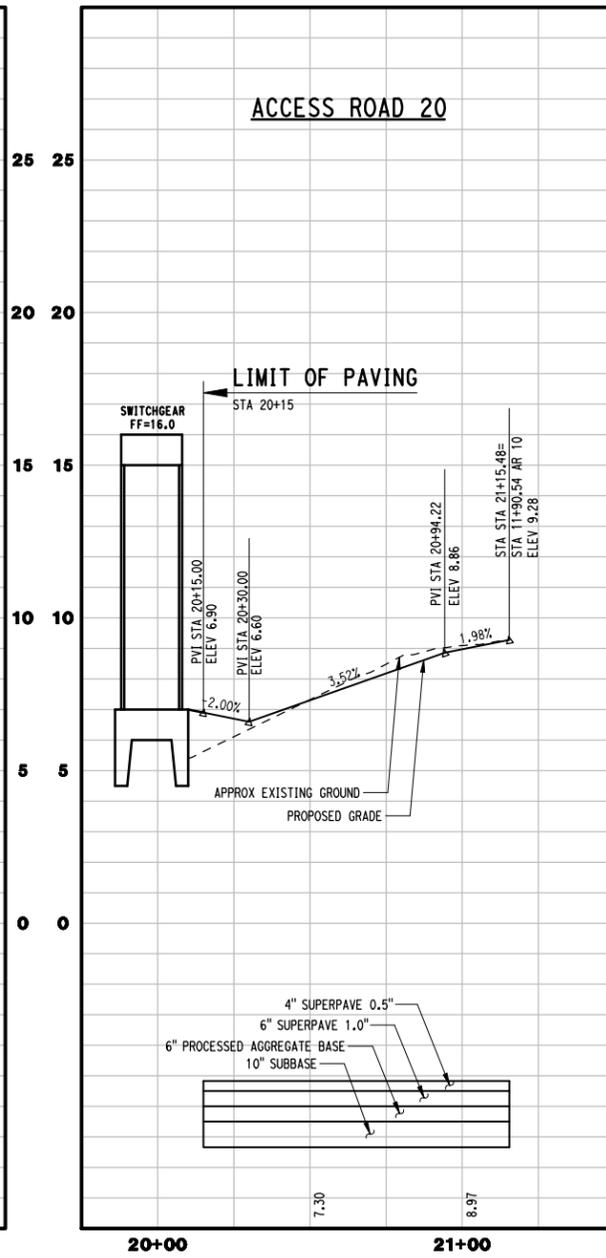
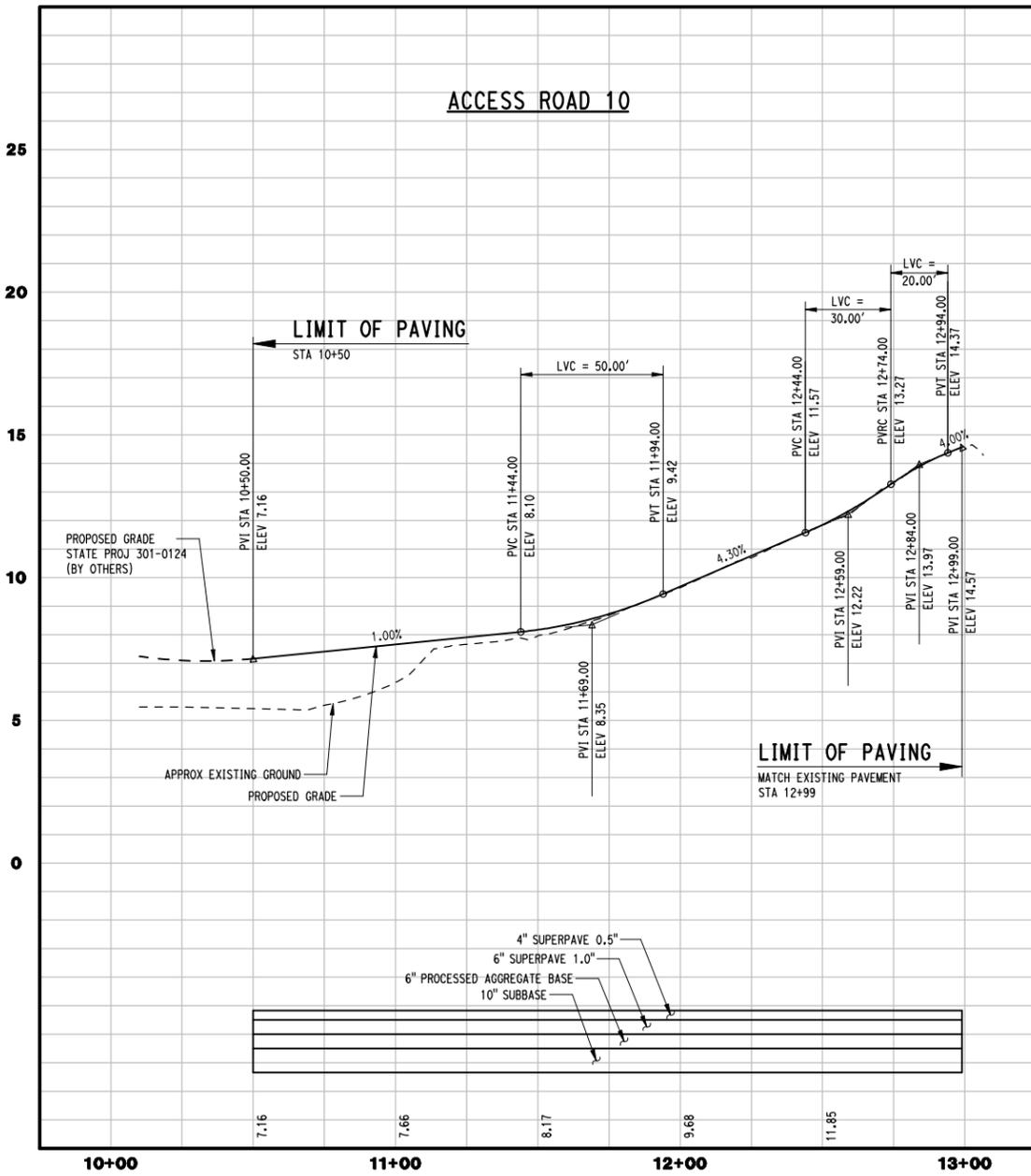
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PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN
DRAWING TITLE:
GENERAL SITE PLAN-5

PROJECT NO.
301-0144
DRAWING NO.
CP-005
SHEET NO.
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NOTE: ALL ELEVATIONS DEPICTED REPRESENT PROPOSED GRADE.

CONTRACT DOCUMENTS REVIEW

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
WPD / JLW

CHECKED BY:
JFK

HORIZ. SCALE IN FEET
0 30 60

VERT. SCALE IN FEET
0 3 6



SIGNATURE/BLOCK:

PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:
NEW HAVEN

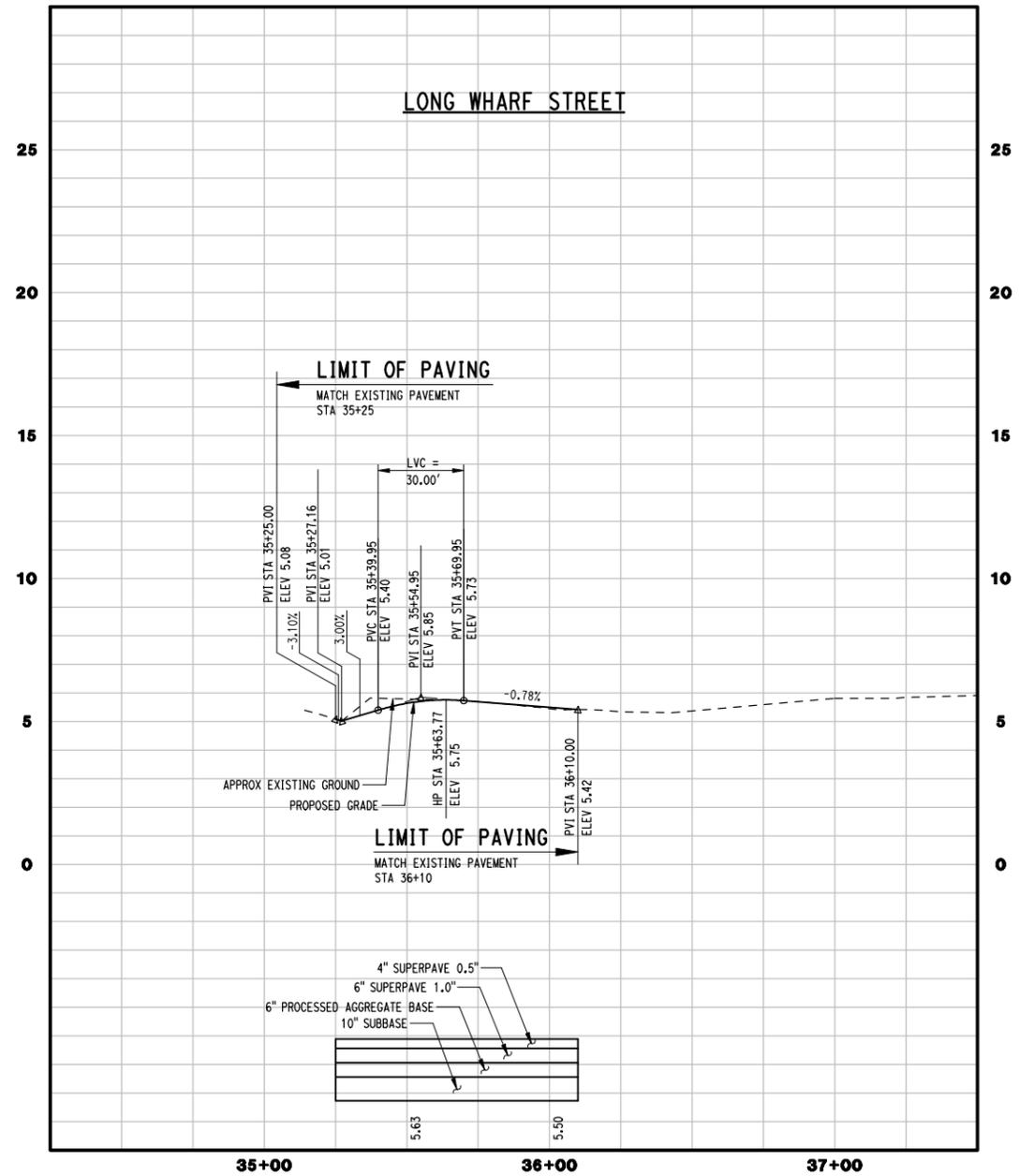
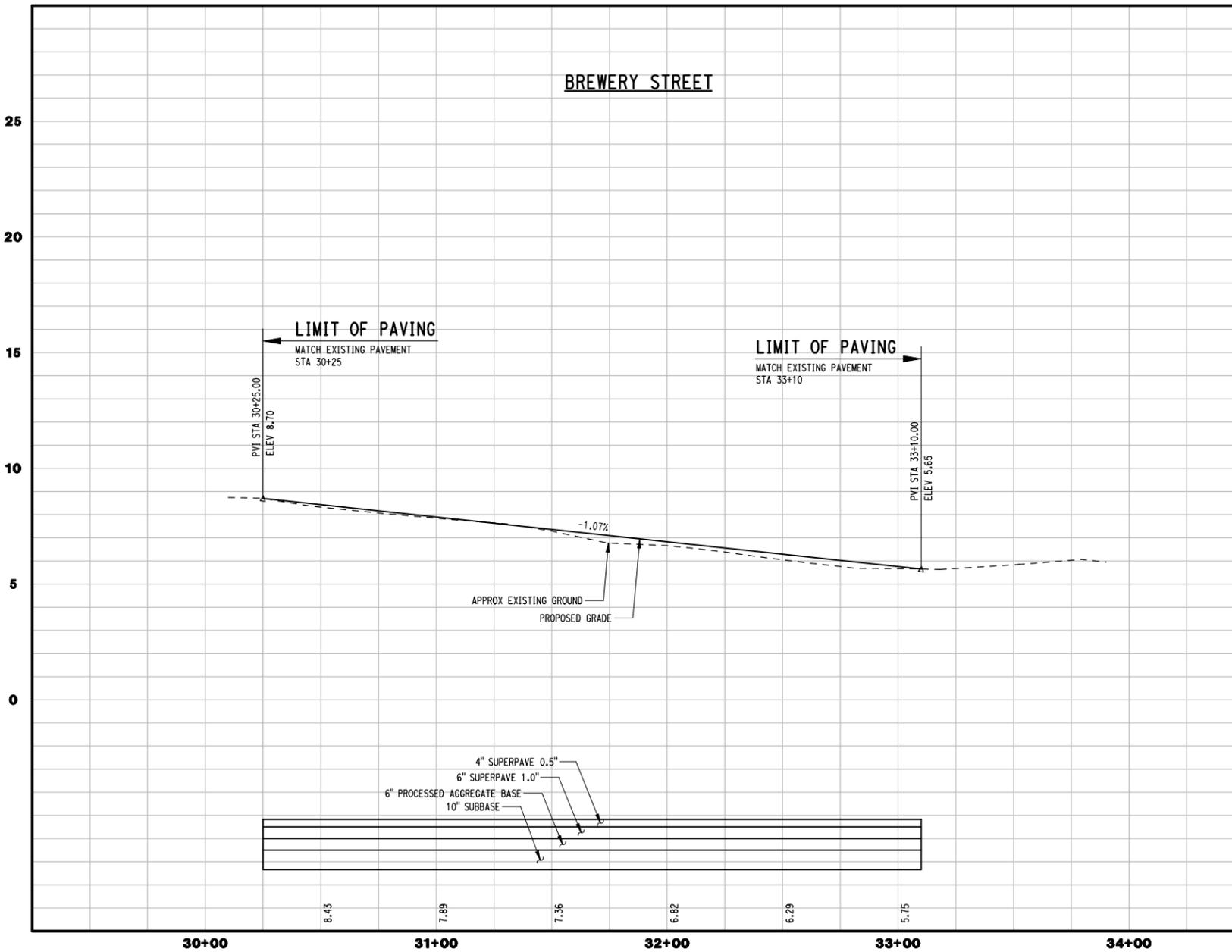
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ROADWAY PROFILES

PROJECT NO.
301-0144

DRAWING NO.
CP-010

SHEET NO.
040

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NOTE: ALL ELEVATIONS DEPICTED REPRESENT PROPOSED GRADE.

CONTRACT DOCUMENTS REVIEW

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
WPD / JLW

CHECKED BY:
JFK

HORIZ. SCALE IN FEET
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VERT. SCALE IN FEET
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SIGNATURE/BLOCK:

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN

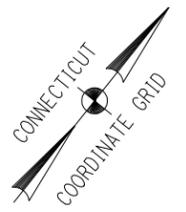
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DRAWING NO.
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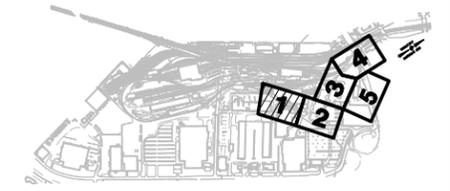
LEGEND

-  PAVED
-  CONCRETE
-  APPROXIMATE 100 YEAR (ELEV 11.0) & 500 YEAR (ELEV 13.8) FEMA FLOODPLAINS
-  APPROXIMATE 100 YEAR (ELEV 12.0) & 500 YEAR (ELEV 15.0) FEMA FLOODPLAINS
-  APPROXIMATE SLOPE LIMIT
-  SEDIMENTATION CONTROL SYSTEM

NOTES:

1. FOR ADDITIONAL INFORMATION, REFER TO GENERAL NOTES AND CIVIL MISCELLANEOUS DETAILS.

MATCH LINE SEE PLAN-2



KEY PLAN

CONTRACT DOCUMENTS REVIEW

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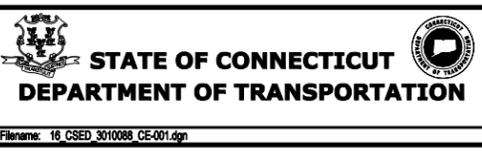
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DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

SCALE IN FEET
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**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

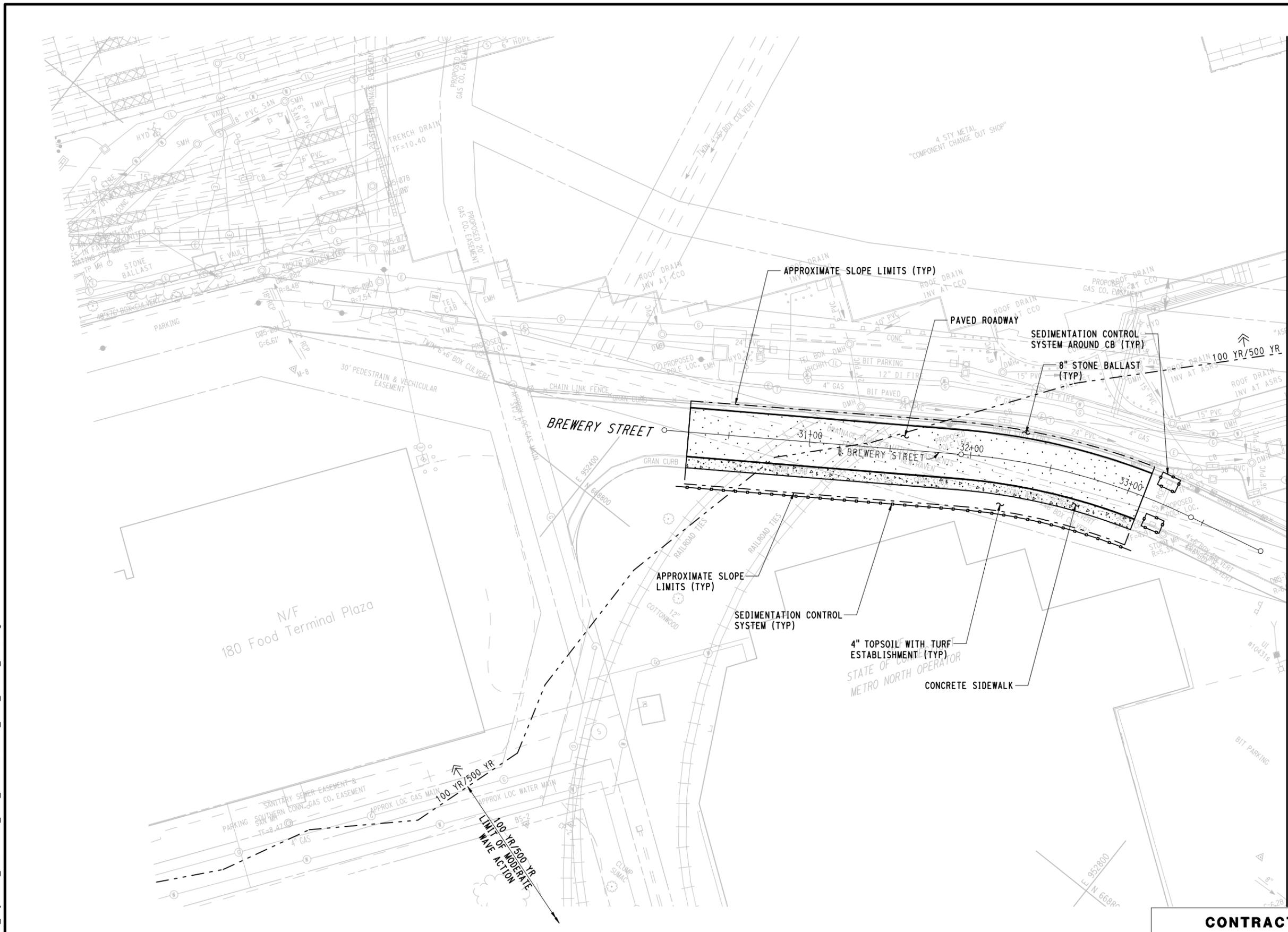
TOWN:
NEW HAVEN

DRAWING TITLE:
**SEDIMENTATION AND
EROSION CONTROL PLAN-1**

PROJECT NO.
301-0144

DRAWING NO.
CE-001

SHEET NO.
042



BREWERY STREET

N/F
180 Food Terminal Plaza

100 YR/500 YR
LIMIT OF MODERATE
WAVE ACTION

APPROXIMATE SLOPE
LIMITS (TYP)

SEDIMENTATION CONTROL
SYSTEM (TYP)

4" TOPSOIL WITH TURF
ESTABLISHMENT (TYP)
STATE OF CONNECTICUT
METRO NORTH OPERATOR

CONCRETE SIDEWALK

SEDIMENTATION CONTROL
SYSTEM AROUND CB (TYP)

PAVED ROADWAY

APPROXIMATE SLOPE LIMITS (TYP)

MATCH LINE SEE PLAN-2

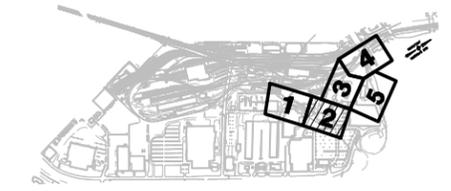


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- PAVED
- CONCRETE
- APPROXIMATE 100 YEAR (ELEV 11.0) & 500 YEAR (ELEV 13.8) FEMA FLOODPLAINS
- APPROXIMATE 100 YEAR (ELEV 12.0) & 500 YEAR (ELEV 15.0) FEMA FLOODPLAINS
- APPROXIMATE SLOPE LIMIT
- SEDIMENTATION CONTROL SYSTEM

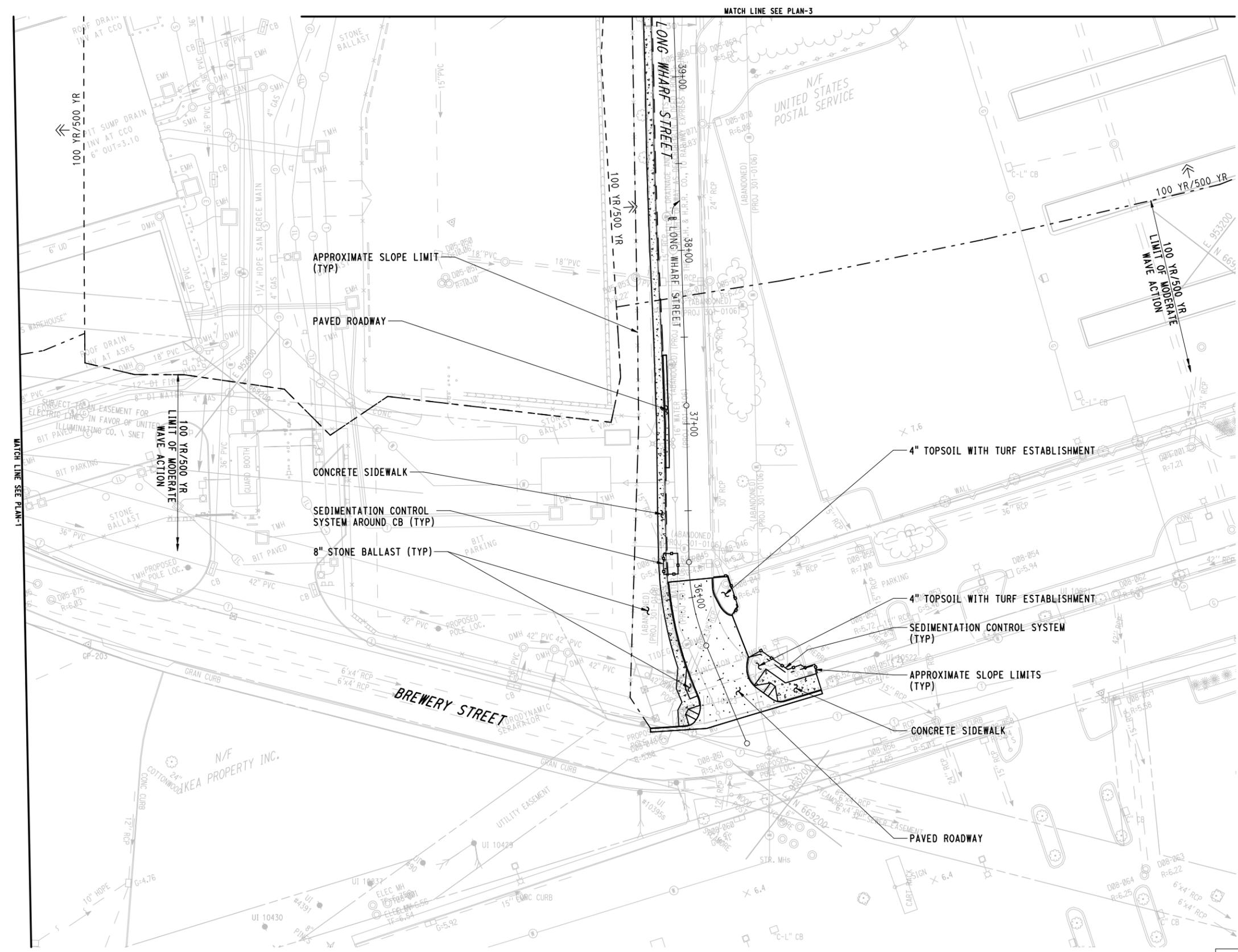
NOTES:

1. FOR ADDITIONAL INFORMATION, REFER TO GENERAL NOTES AND CIVIL MISCELLANEOUS DETAILS.



KEY PLAN

CONTRACT DOCUMENTS REVIEW



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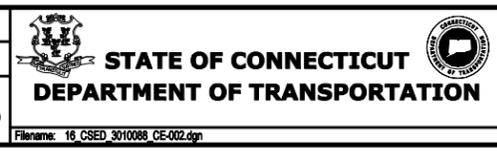
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THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

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SIGNATURE/BLOCK:

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

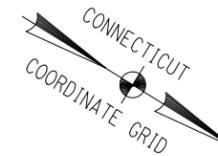
TOWN:
NEW HAVEN

PROJECT NO.
301-0144

DRAWING TITLE:
SEDIMENTATION AND EROSION CONTROL PLAN-2

DRAWING NO.
CE-002

SHEET NO.
043

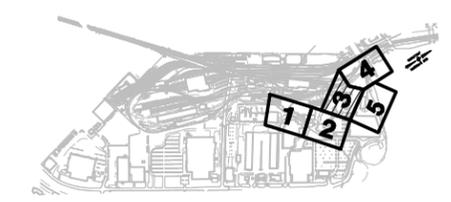


LEGEND

- PAVED
- CONCRETE
- APPROXIMATE 100 YEAR (ELEV 11.0) & 500 YEAR (ELEV 13.8) FEMA FLOODPLAINS
- APPROXIMATE 100 YEAR (ELEV 12.0) & 500 YEAR (ELEV 15.0) FEMA FLOODPLAINS LIMIT OF MODERATE WAVE ACTION
- APPROXIMATE SLOPE LIMIT
- SEDIMENTATION CONTROL SYSTEM

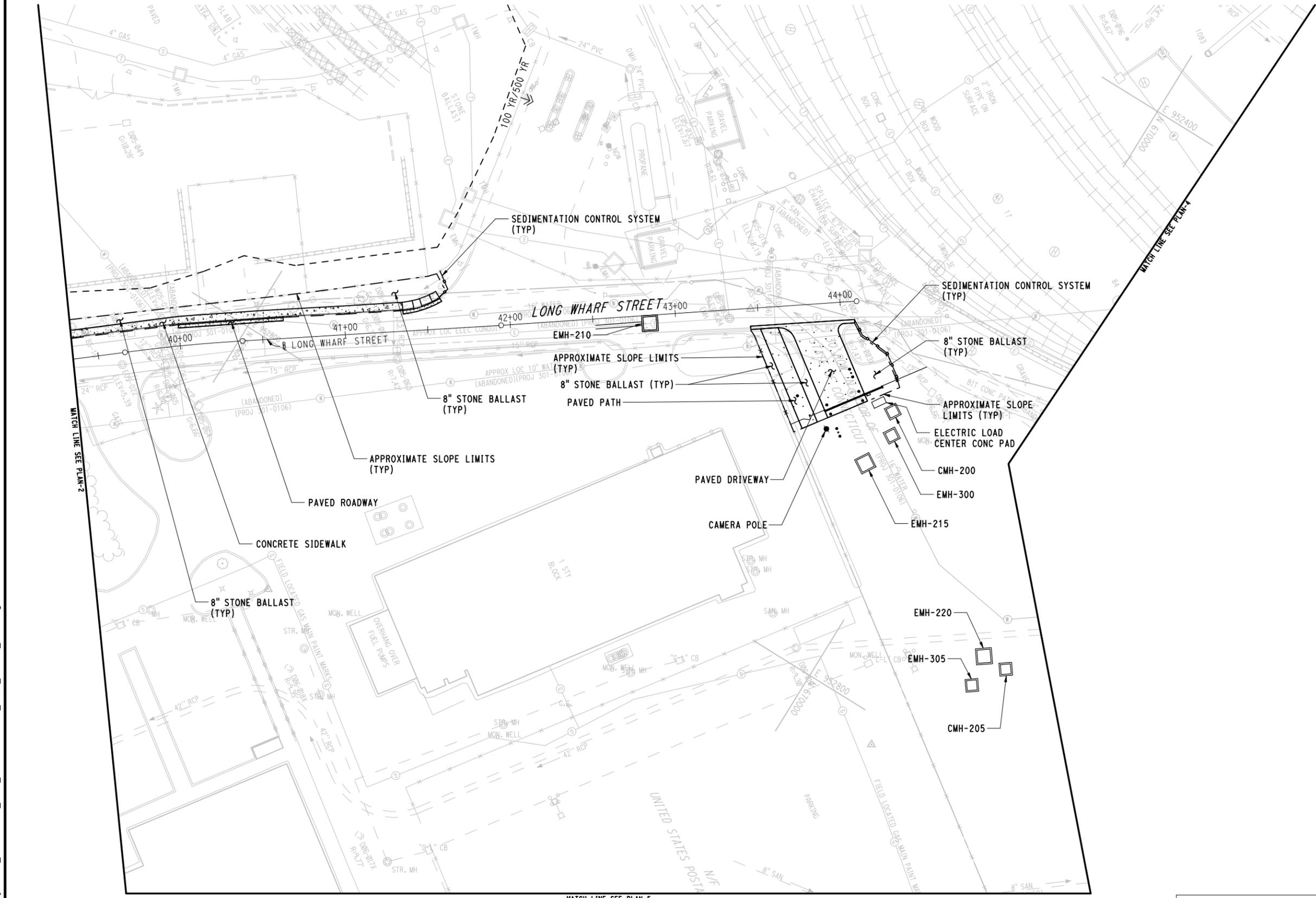
NOTES:

1. FOR ADDITIONAL INFORMATION, REFER TO GENERAL NOTES AND CIVIL MISCELLANEOUS DETAILS.



KEY PLAN

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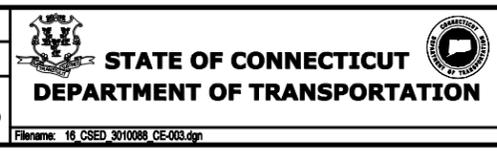


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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
WPD/JLW
CHECKED BY:
JFK
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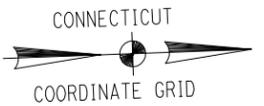


SIGNATURE/BLOCK:

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN
DRAWING TITLE:
SEDIMENTATION AND EROSION CONTROL PLAN-3

PROJECT NO.
301-0144
DRAWING NO.
CE-003
SHEET NO.
044

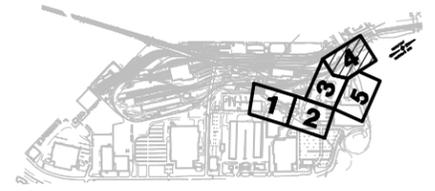


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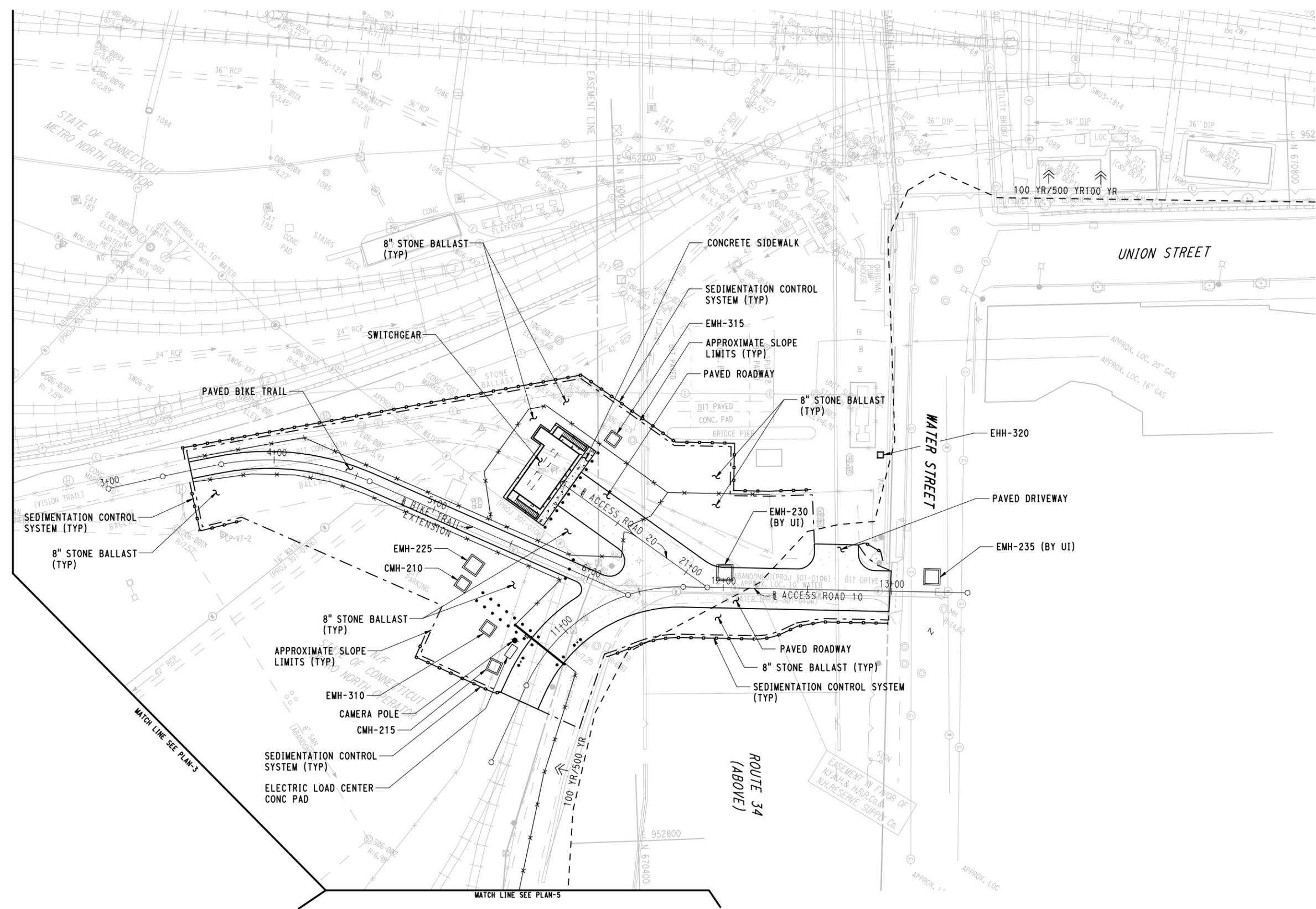
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- CONCRETE
- APPROXIMATE 100 YEAR (ELEV 11.0) & 500 YEAR (ELEV 13.8) FEMA FLOODPLAINS
- APPROXIMATE 100 YEAR (ELEV 12.0) & 500 YEAR (ELEV 15.0) FEMA FLOODPLAINS LIMIT OF MODERATE WAVE ACTION
- APPROXIMATE SLOPE LIMIT
- SEDIMENTATION CONTROL SYSTEM

NOTES:

1. FOR ADDITIONAL INFORMATION, REFER TO GENERAL NOTES AND CIVIL MISCELLANEOUS DETAILS.



KEY PLAN



CONTRACT DOCUMENTS REVIEW

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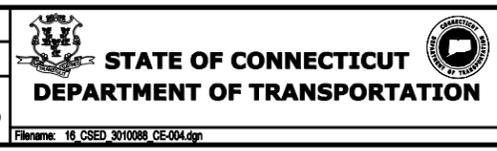
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DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

SCALE IN FEET
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PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

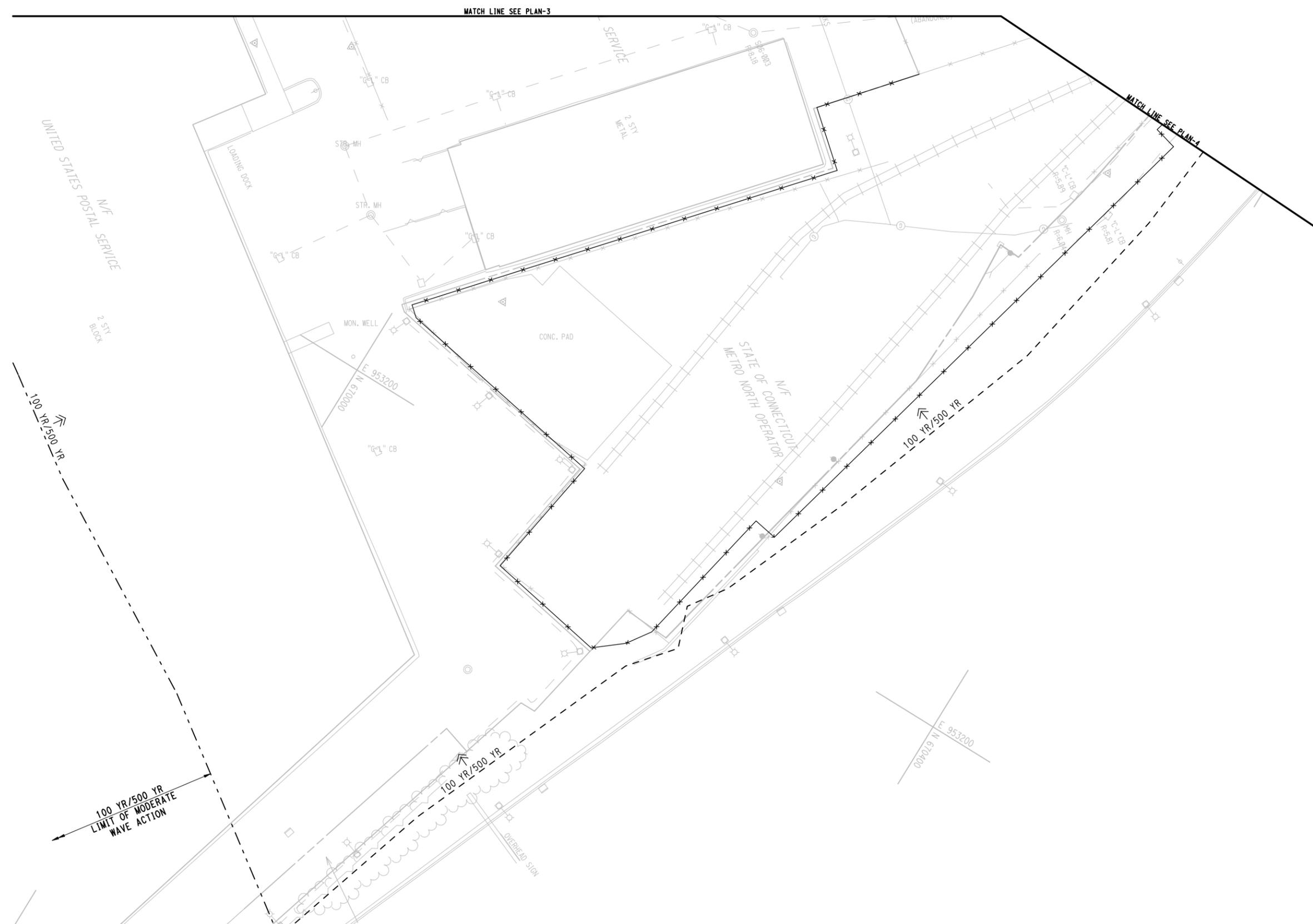
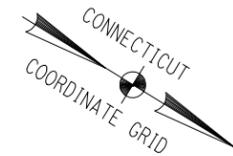
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NEW HAVEN

PROJECT NO.
301-0144

DRAWING NO.
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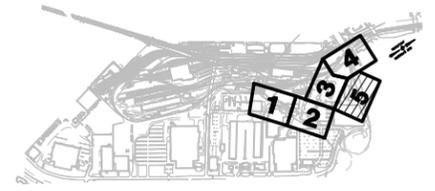
SHEET NO.
045

DRAWING TITLE:
**SEDIMENTATION AND
EROSION CONTROL PLAN-4**



- LEGEND**
- PAVED
 - CONCRETE
 - APPROXIMATE 100 YEAR (ELEV 11.0) & 500 YEAR (ELEV 13.8) FEMA FLOODPLAINS
 - - - APPROXIMATE 100 YEAR (ELEV 12.0) & 500 YEAR (ELEV 15.0) FEMA FLOODPLAINS
 - - - LIMIT OF MODERATE WAVE ACTION
 - - - APPROXIMATE SLOPE LIMIT
 - SEDIMENTATION CONTROL SYSTEM

- NOTES:**
- FOR ADDITIONAL INFORMATION, REFER TO GENERAL NOTES AND CIVIL MISCELLANEOUS DETAILS.



KEY PLAN

CONTRACT DOCUMENTS REVIEW

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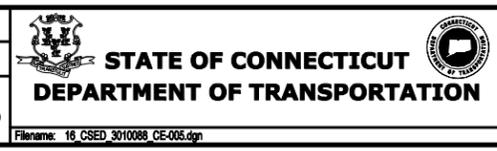
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CHECKED BY:
JFK

SCALE IN FEET

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SCALE 1"=30'



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NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN

DRAWING TITLE:
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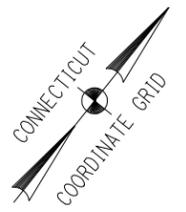
PROJECT NO.
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DRAWING NO.
CE-005

SHEET NO.
046

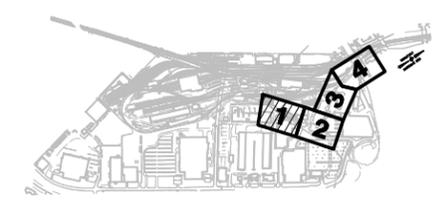
Plotted Date: 3/8/2014

Filename: 16_CSED_3010088_CE-005.dgn



- LEGEND**
- 0.1 EXISTING CONTOURS
 - 0.1 PROPOSED CONTOURS
 - 10.30 PROPOSED SPOT ELEVATION
 - 0.5 PROPOSED SWALE

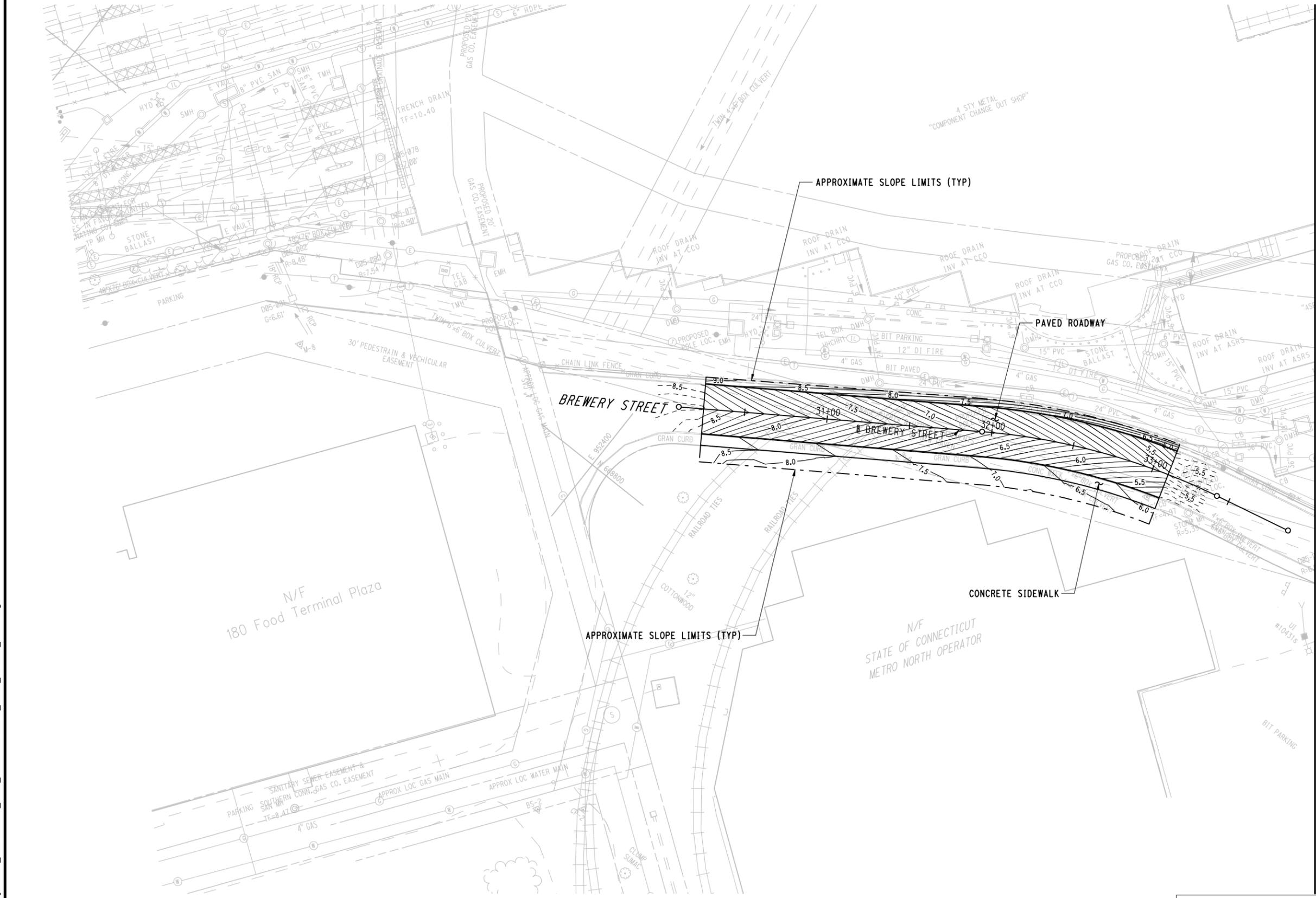
- NOTES:**
1. PROPOSED CONTOUR INTERVAL = 0.1 FOR PAVED AREAS.
PROPOSED CONTOUR INTERVAL = 0.5 FOR UNPAVED AREAS
EXISTING CONTOUR INTERVAL = 0.1 FOR PAVEMENT TIE-INS.
 2. REFER TO ROADWAY PROFILES AND CROSS SECTIONS FOR ADDITIONAL INFORMATION.



KEY PLAN

CONTRACT DOCUMENTS REVIEW

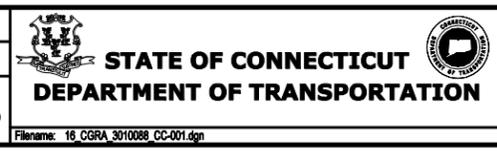
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
WPD/JLW
CHECKED BY:
JFK
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SCALE 1"=30'

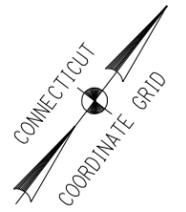


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PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN
DRAWING TITLE:
GRADING PLAN-1

PROJECT NO.
301-0144
DRAWING NO.
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SHEET NO.
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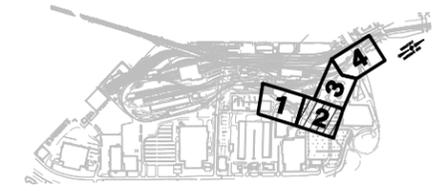


LEGEND

- 10 EXISTING CONTOURS
- 10 PROPOSED CONTOURS
- 10.30 PROPOSED SPOT ELEVATION
- PROPOSED SWALE

NOTES:

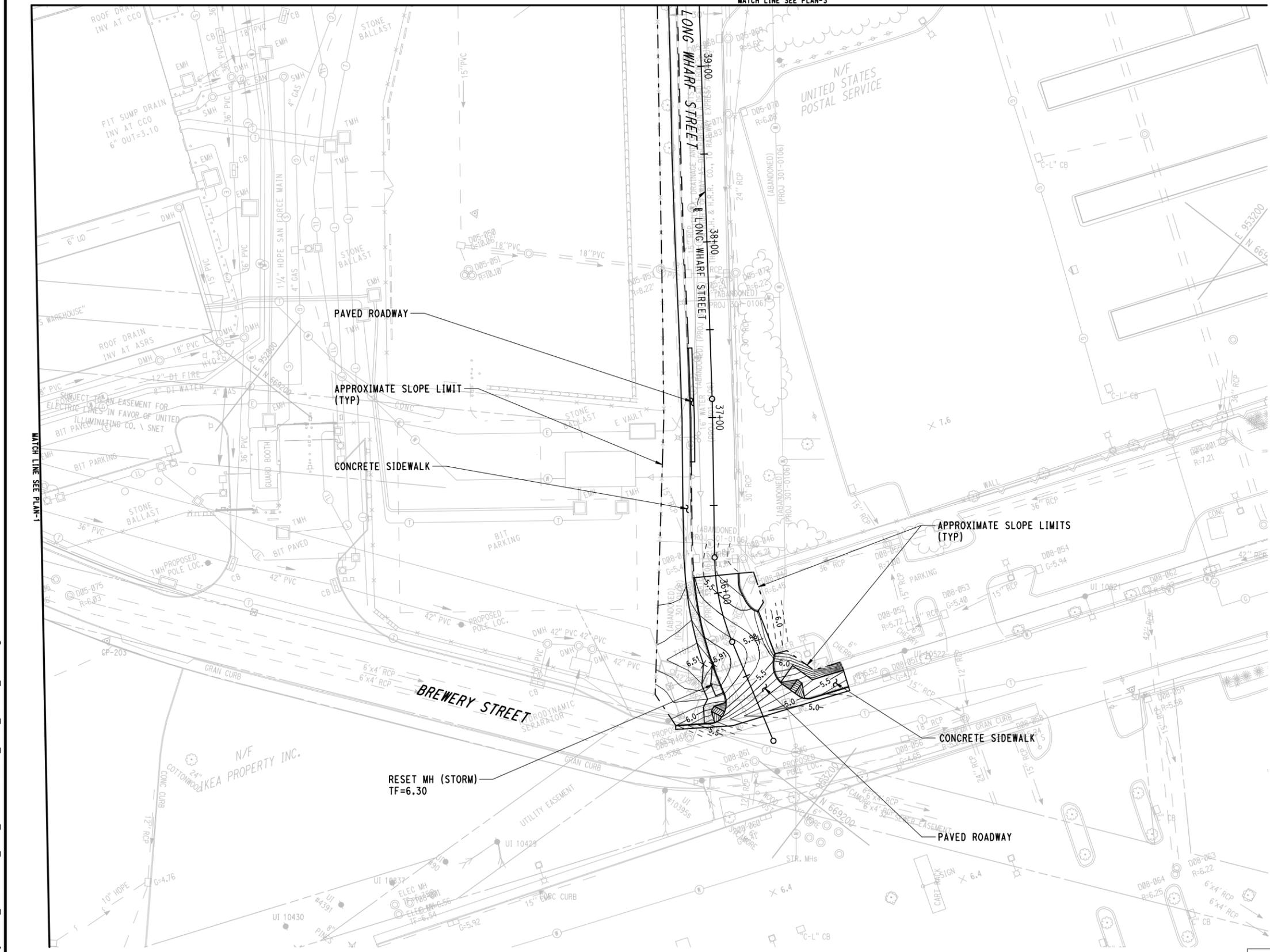
1. PROPOSED CONTOUR INTERVAL = 0.1 FOR PAVED AREAS.
 PROPOSED CONTOUR INTERVAL = 0.5 FOR UNPAVED AREAS
 EXISTING CONTOUR INTERVAL = 0.1 FOR PAVEMENT TIE-INS.
2. REFER TO ROADWAY PROFILES AND CROSS SECTIONS FOR ADDITIONAL INFORMATION.



KEY PLAN

CONTRACT DOCUMENTS REVIEW

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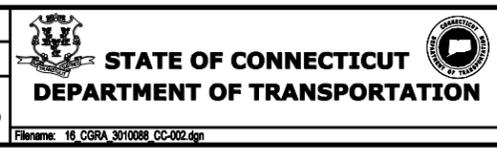
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DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

SCALE IN FEET
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PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN

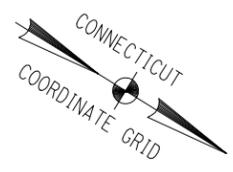
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PROJECT NO.
301-0144

DRAWING NO.
CC-002

SHEET NO.
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Filename: 16_CGRA_3010088_CC-002.dgn

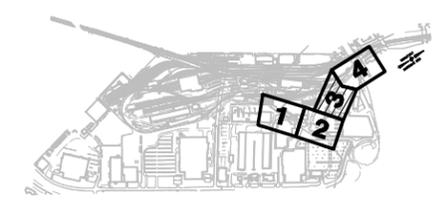


LEGEND

- 10 EXISTING CONTOURS
- 10 EXISTING CONTOURS
- 10.5 PROPOSED CONTOURS
- 10.30 PROPOSED SPOT ELEVATION
- PROPOSED SWALE

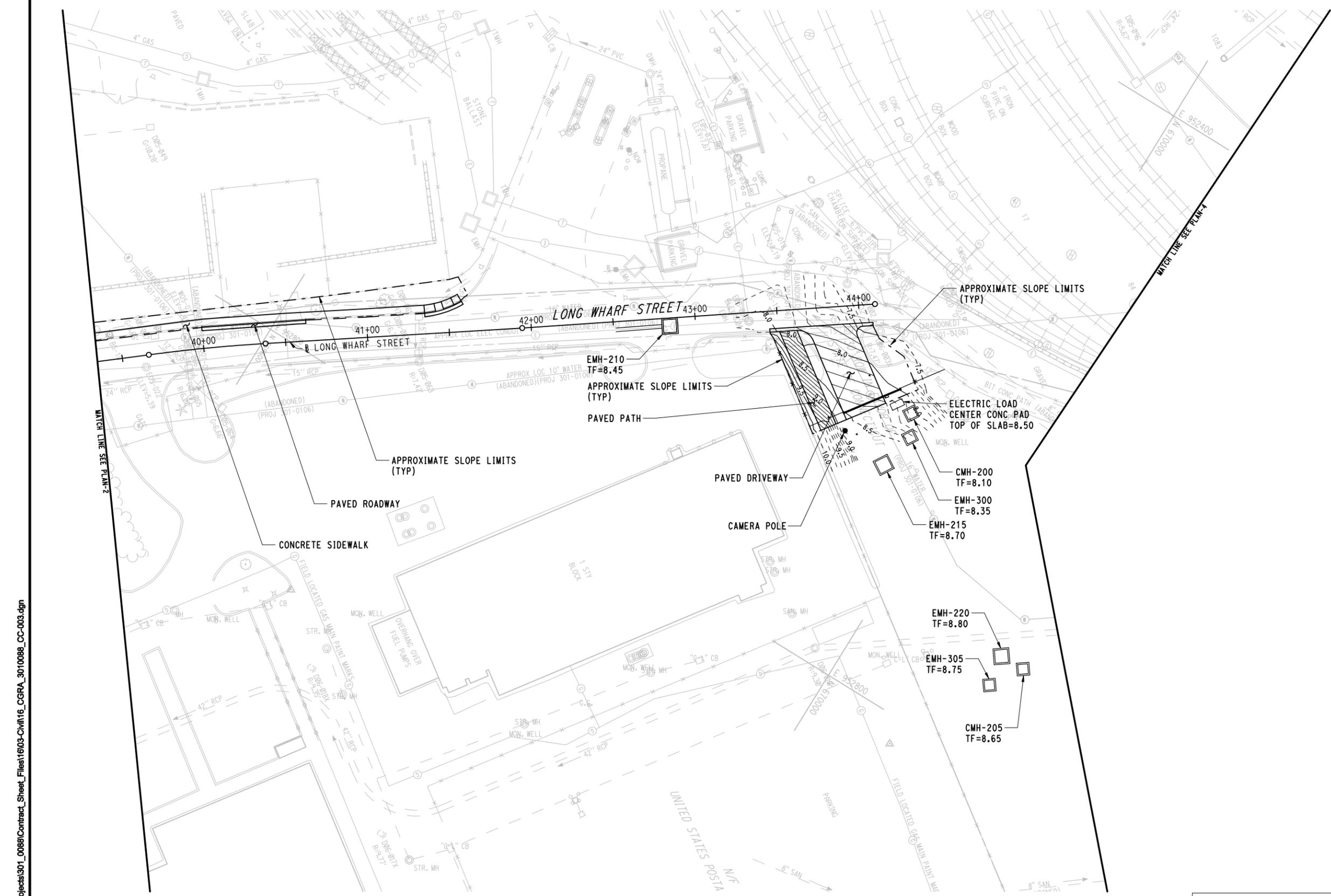
NOTES:

1. PROPOSED CONTOUR INTERVAL = 0.1 FOR PAVED AREAS.
 PROPOSED CONTOUR INTERVAL = 0.5 FOR UNPAVED AREAS.
 EXISTING CONTOUR INTERVAL = 0.1 FOR PAVEMENT TIE-INS.
2. REFER TO ROADWAY PROFILES AND CROSS SECTIONS FOR ADDITIONAL INFORMATION.



KEY PLAN

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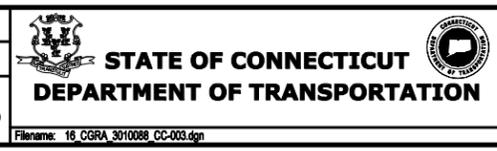
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Plotted Date: 3/10/2014

DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

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NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

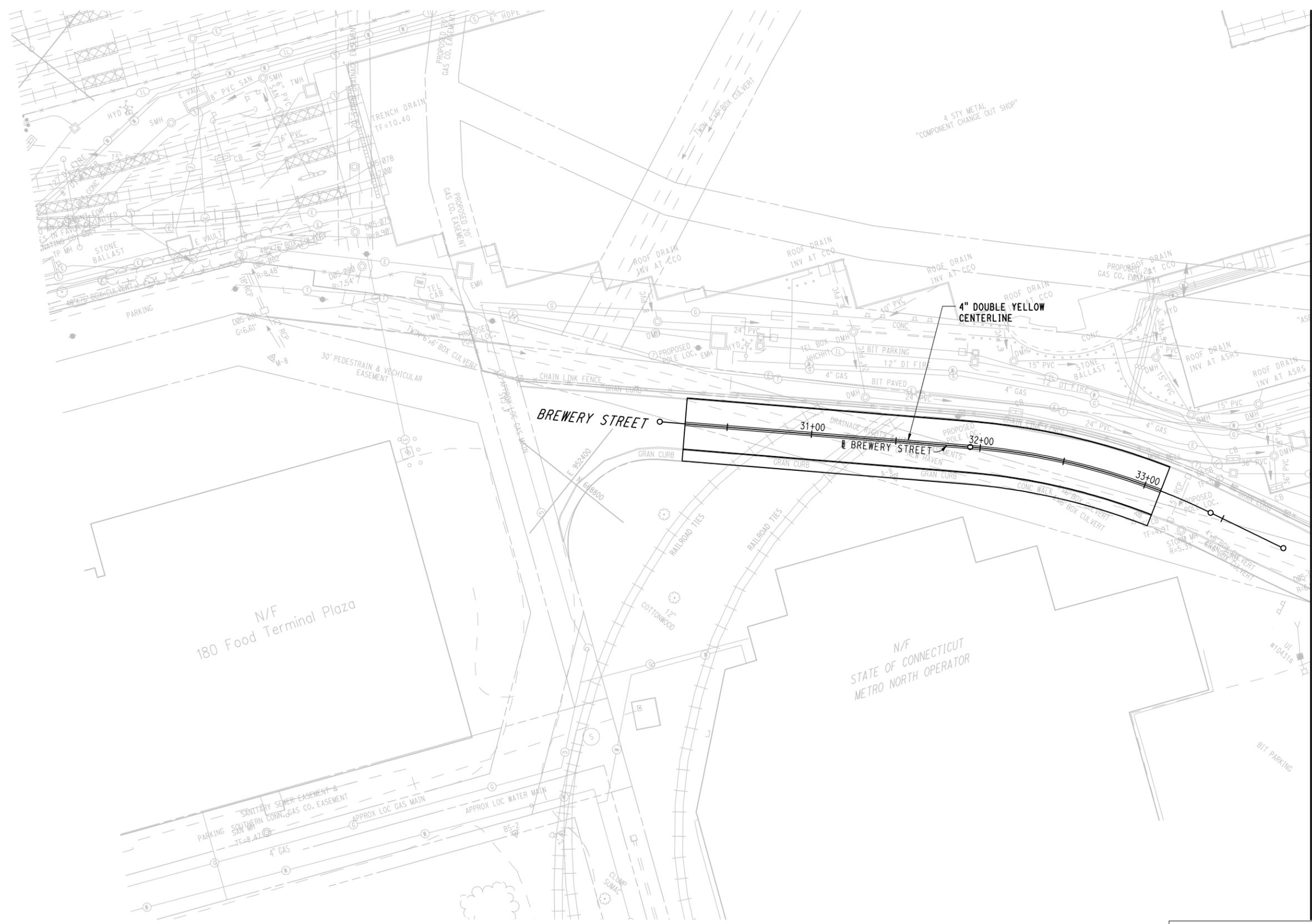
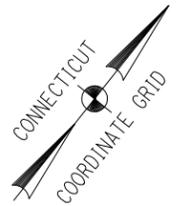
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NEW HAVEN

DRAWING TITLE:
GRADING PLAN-3

PROJECT NO.
301-0144

DRAWING NO.
CC-003

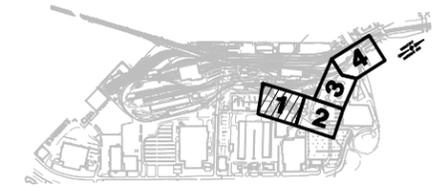
SHEET NO.
049



NOTES:

1. REFER TO DWG CM-009 FOR SIGN DETAILS AND NOTES.
2. ALL PAVEMENT MARKINGS SHALL BE EPOXY RESIN.

MATCH LINE SEE PLAN-2



KEY PLAN

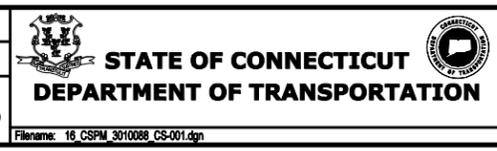
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:
WPD/JLW
CHECKED BY:
JFK
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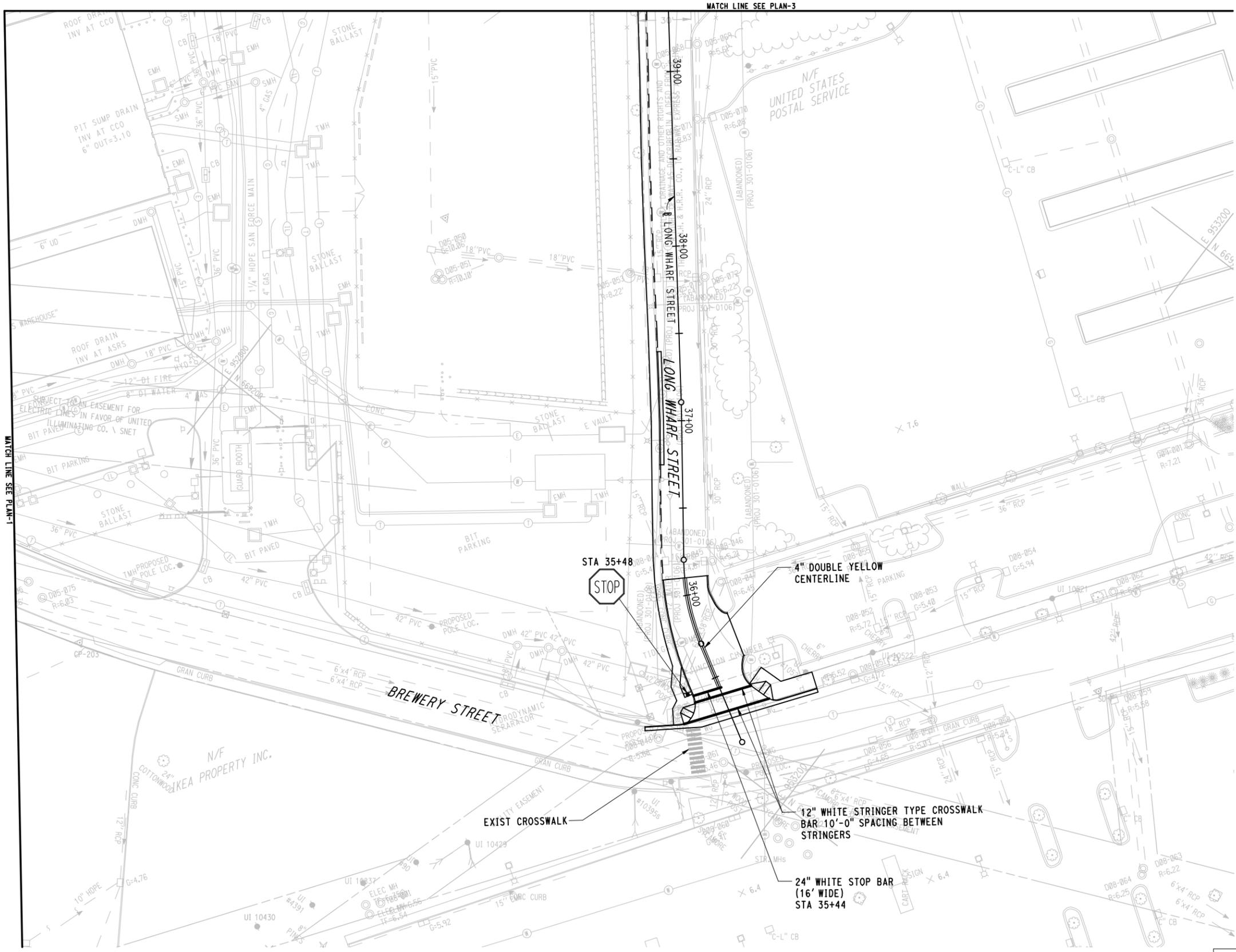
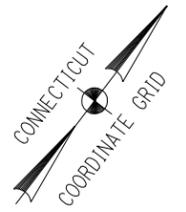
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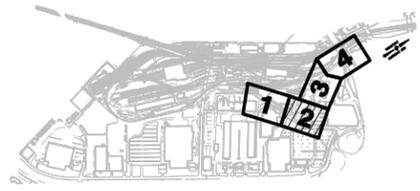
TOWN:
NEW HAVEN
DRAWING TITLE:
SIGNING AND PAVEMENT MARKING PLAN-1

PROJECT NO.
301-0144
DRAWING NO.
CS-001
SHEET NO.
051

Filename: 16_CSPM_3010088_CS-001.dgn



- NOTES:**
- REFER TO DWG CM-009 FOR SIGN DETAILS AND NOTES.
 - ALL PAVEMENT MARKINGS SHALL BE EPOXY RESIN.



KEY PLAN

CONTRACT DOCUMENTS REVIEW

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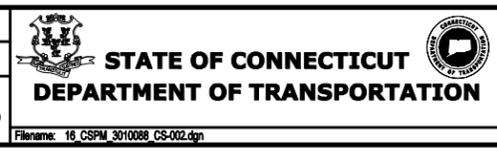
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Plotted Date: 3/8/2014

DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

SCALE IN FEET
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SCALE 1"=30'



SIGNATURE/BLOCK:

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

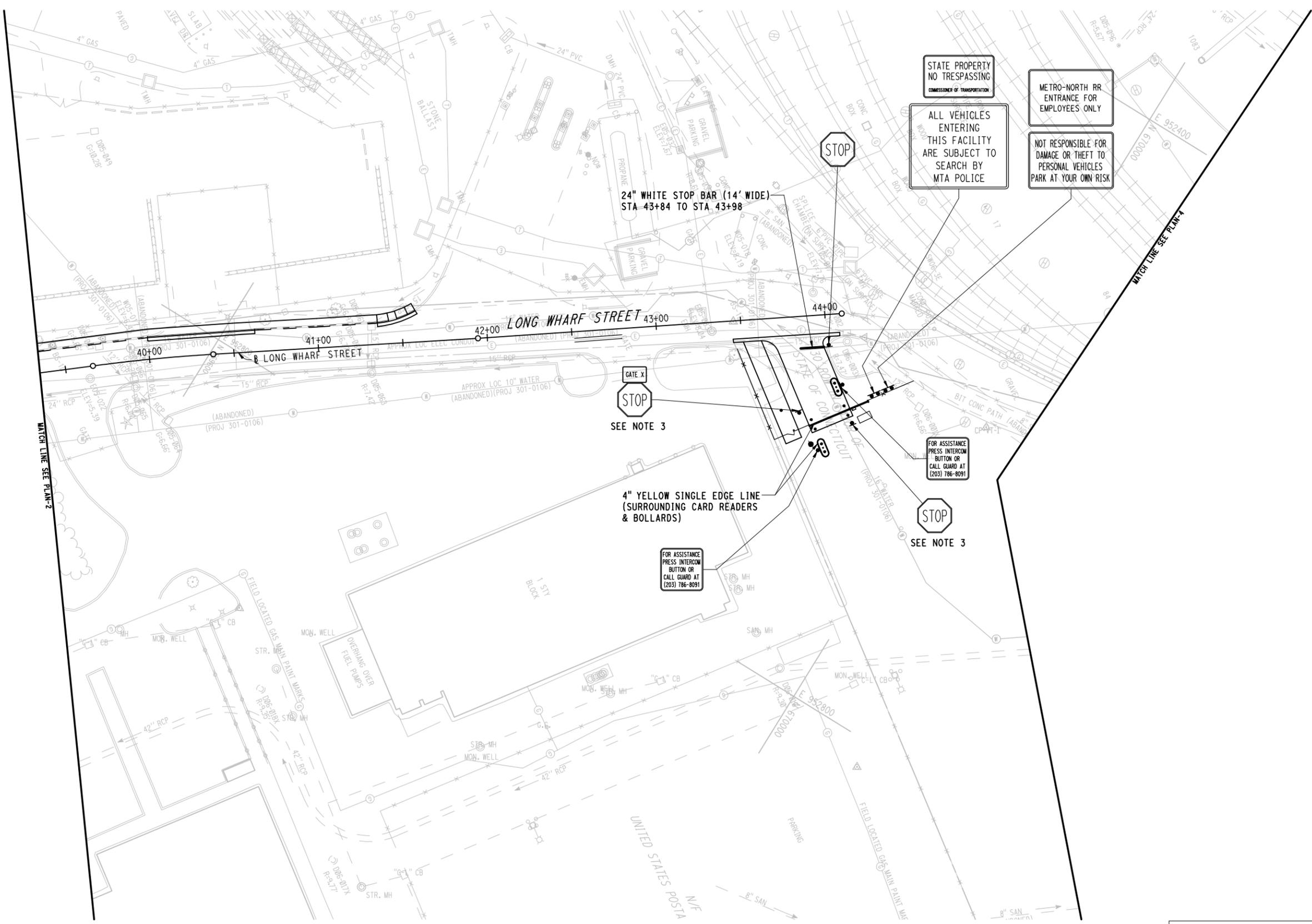
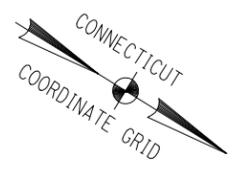
TOWN:
NEW HAVEN

DRAWING TITLE:
SIGNING AND PAVEMENT MARKING PLAN-2

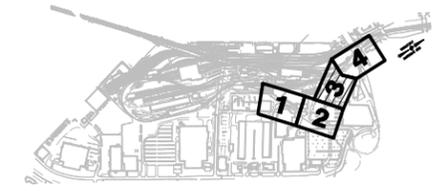
PROJECT NO.
301-0144

DRAWING NO.
CS-002

SHEET NO.
052



- NOTES:**
1. REFER TO DWG CM-009 FOR SIGN DETAILS AND NOTES.
 2. ALL PAVEMENT MARKINGS SHALL BE EPOXY RESIN.
 3. STOP SIGNS SHALL BE LOCATED 10' FROM CANTILEVER SLIDING GATE.



KEY PLAN

CONTRACT DOCUMENTS REVIEW

3/10/2014 7:56:46 PM T:\18965-NHRY\FIC\DOT_Projects\301_0088\Contract_Sheet_Files\16103-Civil\16_CSPM_3010088_CS-003.dgn

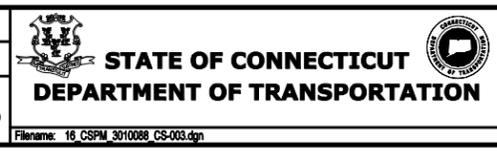
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DESIGNER/DRAFTER:
WPD / JLW

CHECKED BY:
JFK

SCALE IN FEET
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SCALE 1"=30'



SIGNATURE/BLOCK:

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN

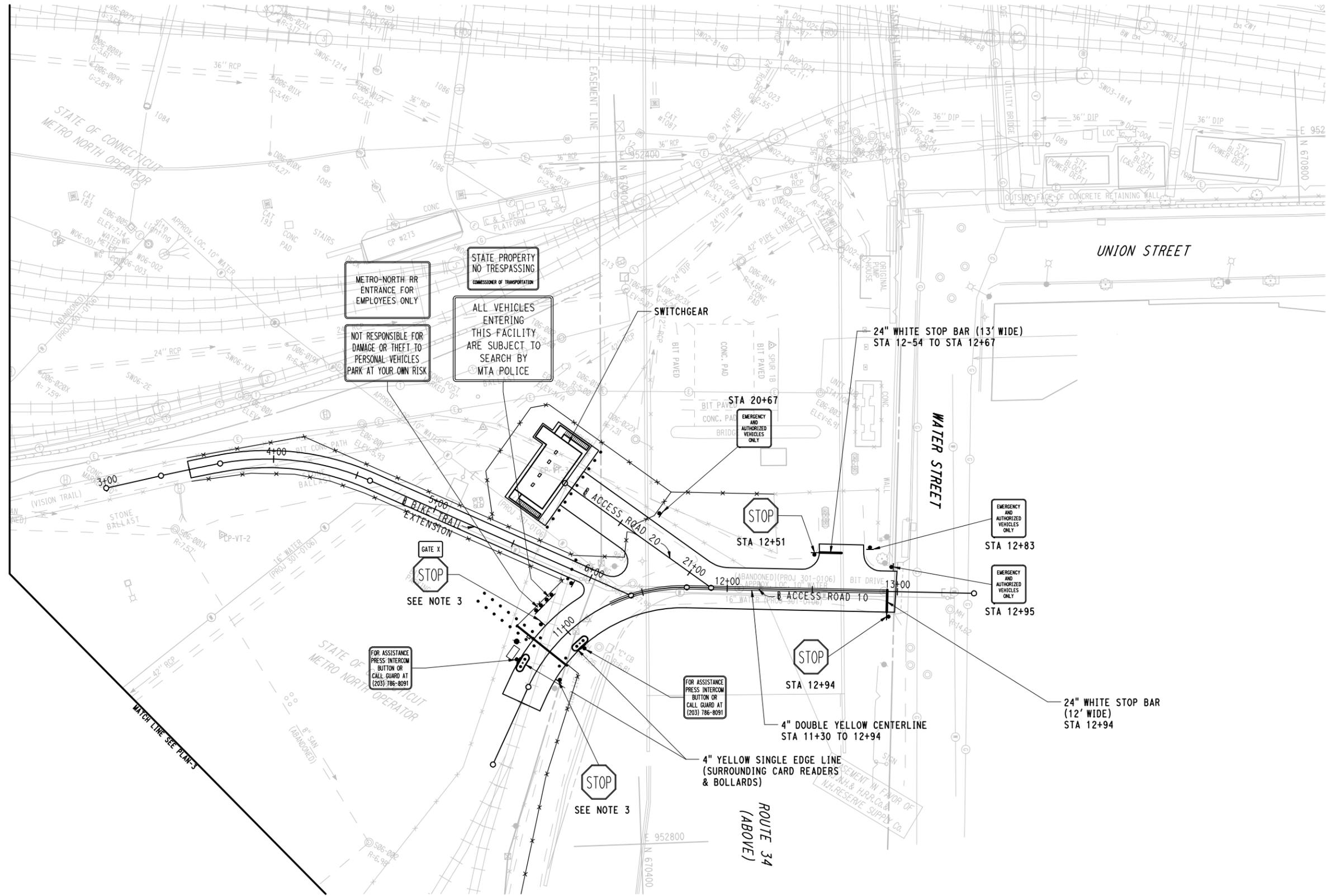
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SIGNING AND PAVEMENT MARKING PLAN-3

PROJECT NO.
301-0144

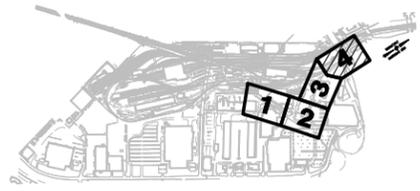
DRAWING NO.
CS-003

SHEET NO.
053

Filename: 16_CSPM_3010088_CS-003.dgn



- NOTES:**
1. REFER TO DWG CM-009 FOR SIGN DETAILS AND NOTES.
 2. ALL PAVEMENT MARKINGS SHALL BE EPOXY RESIN.
 3. STOP SIGNS SHALL BE LOCATED 10' FROM CANTILEVER SLIDING GATE.



KEY PLAN

CONTRACT DOCUMENTS REVIEW

3/10/2014 8:05:56 PM T:\1866-NHRY\FIC\DOT_Projects\301_0088\Contract_Sheet_Files\16103-Civil\16_CSPM_3010088_CS-004.dgn

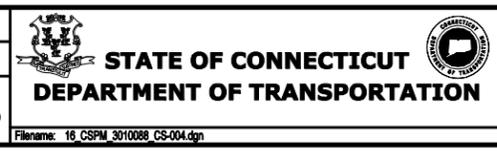
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JFK

SCALE IN FEET
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SCALE 1"=30'



SIGNATURE/BLOCK:

PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

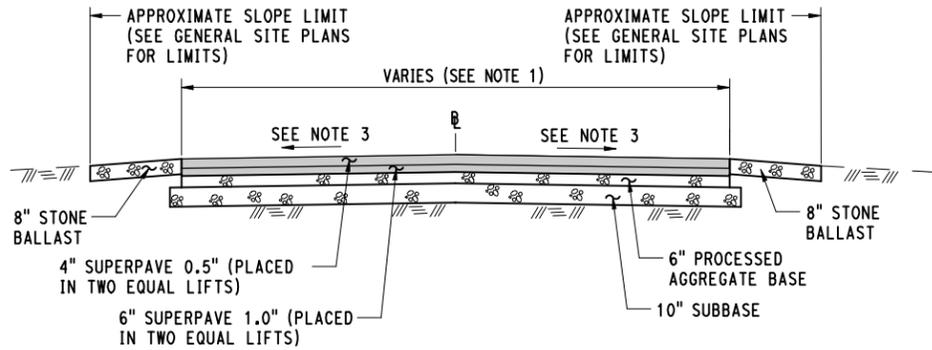
TOWN:
NEW HAVEN

DRAWING TITLE:
SIGNING AND PAVEMENT MARKING PLAN-4

PROJECT NO.
301-0144

DRAWING NO.
CS-004

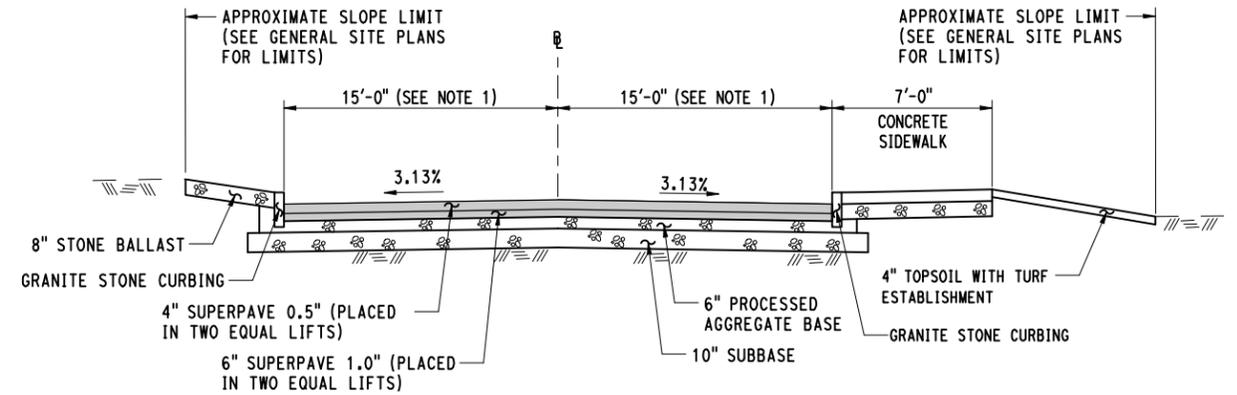
SHEET NO.
054



NOTES:

1. ROADWAY WIDTHS VARY, REFER TO PLANS FOR ACTUAL WIDTHS. TYPICAL WIDTHS ARE SHOWN BELOW:
ACCESS ROAD 10 - 24'
ACCESS ROAD 20 - 24'
2. ALL LATERAL STEPS SHOWN BETWEEN DIFFERENT COURSES SHALL BE 6" IN WIDTH.
3. FOR CROSS SLOPES, REFER TO ACCESS ROAD CROSS SECTIONS AND/OR GRADING PLANS.

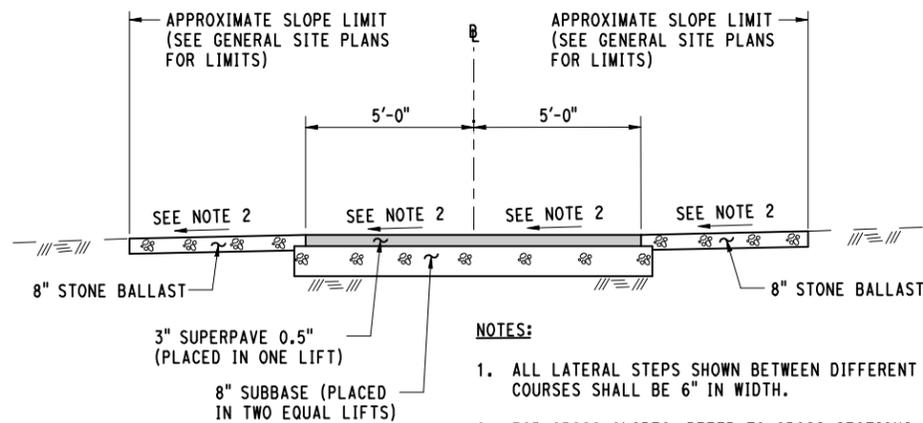
PAVED ACCESS ROAD / DRIVEWAY
(SEE SITE PLANS FOR LOCATION)



NOTES:

1. TYPICAL ROADWAY WIDTHS DEPICTED, REFER TO PLANS FOR ACTUAL WIDTHS.
2. ALL LATERAL STEPS SHOWN BETWEEN DIFFERENT COURSES SHALL BE 6" IN WIDTH.
3. REFER TO CROSS SECTIONS AND GRADING PLANS FOR ADDITIONAL INFORMATION.

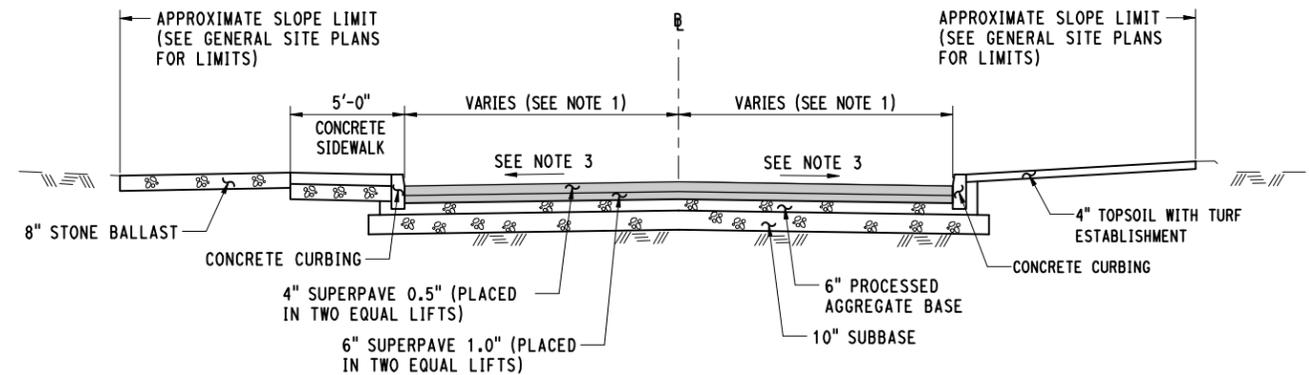
BREWERY STREET
(SEE SITE PLANS FOR LOCATION)



NOTES:

1. ALL LATERAL STEPS SHOWN BETWEEN DIFFERENT COURSES SHALL BE 6" IN WIDTH.
2. FOR CROSS SLOPES, REFER TO CROSS SECTIONS.

PAVED BIKE TRAIL / PAVED PATH
(SEE SITE PLANS FOR LOCATION)



NOTES:

1. ROADWAY WIDTHS VARY, REFER TO PLANS FOR ACTUAL WIDTHS.
2. ALL LATERAL STEPS SHOWN BETWEEN DIFFERENT COURSES SHALL BE 6" IN WIDTH.
3. FOR CROSS SLOPES, REFER TO ACCESS ROAD CROSS SECTIONS AND/OR GRADING PLANS.

LONG WHARF STREET
(SEE SITE PLANS FOR LOCATION)

CONTRACT DOCUMENTS REVIEW

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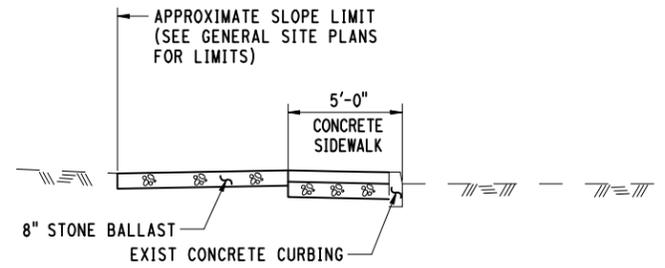
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PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:
NEW HAVEN
DRAWING TITLE:
**CIVIL
MISCELLANEOUS DETAILS**

PROJECT NO.
301-0144
DRAWING NO.
CM-001
SHEET NO.
055

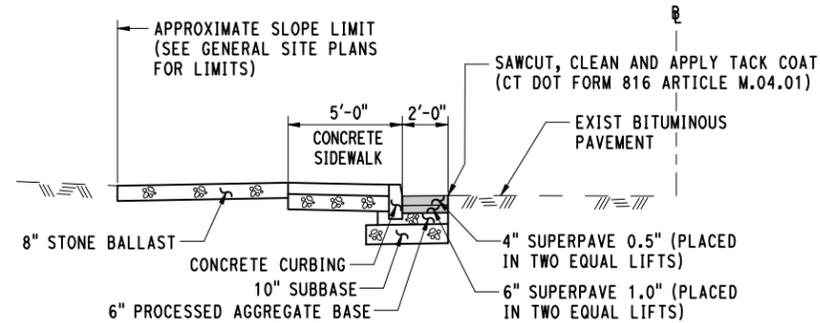
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NOTES:

1. ALL LATERAL STEPS SHOWN BETWEEN DIFFERENT COURSES SHALL BE 6" IN WIDTH.
2. REFER TO CROSS SECTIONS FOR ADDITIONAL INFORMATION.

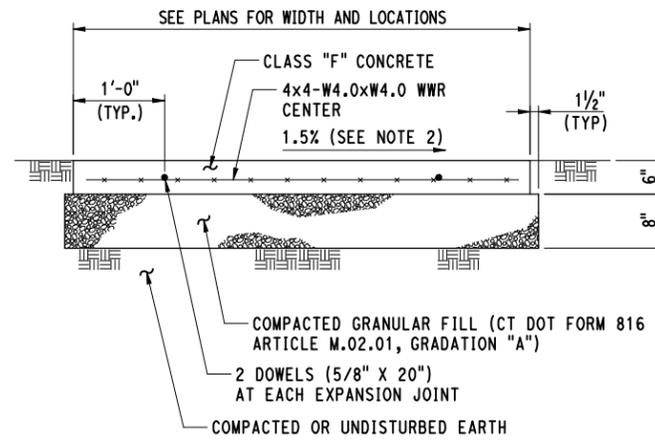
LONG WHARF STREET
(SEE SITE PLANS FOR LOCATION)



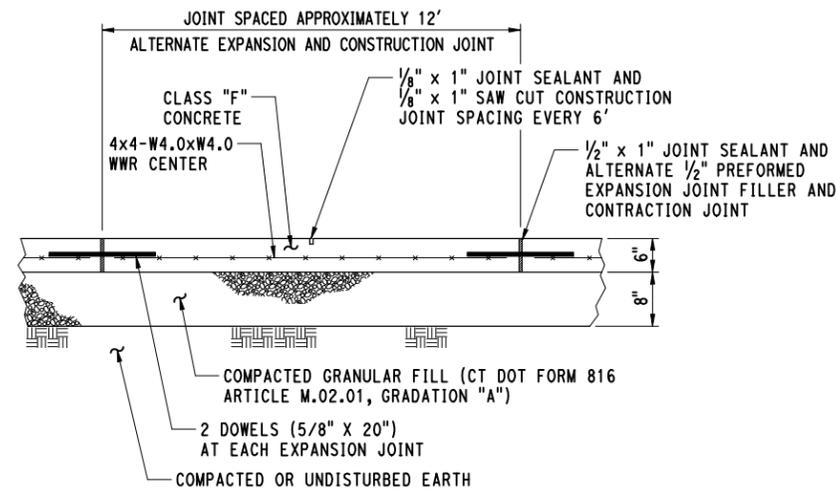
NOTES:

1. ALL LATERAL STEPS SHOWN BETWEEN DIFFERENT COURSES SHALL BE 6" IN WIDTH.
2. REFER TO CROSS SECTIONS FOR ADDITIONAL INFORMATION.

LONG WHARF STREET
(SEE SITE PLANS FOR LOCATION)



CROSS SECTION



LONGITUDINAL SECTION

NOTES:

1. ALL SIDEWALK SURFACES SHALL BE LIGHTLY BROOMED PERPENDICULAR TO THE LONGITUDINAL DIRECTION OR AS DIRECTED BY THE ENGINEER. THE OUTSIDE EDGES OF THE SLAB AND ALL JOINTS SHALL BE EDGED WITH A 1/4" RADIUS EDGING TOOL BEFORE AND AFTER APPLYING THE BROOM FINISH.
2. THE SIDEWALK SHALL SLOPE TOWARD THE ADJACENT ROAD. IF NO ADJACENT ROAD IS PRESENT, THE SIDEWALK SLOPE DIRECTION SHALL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

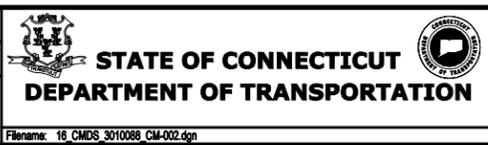
CONCRETE SIDEWALK
(SEE SITE PLANS FOR LOCATION)

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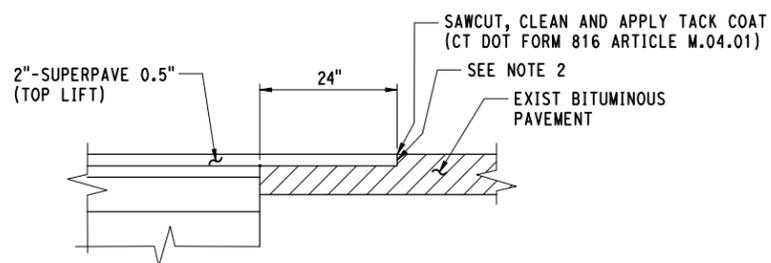


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PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN
DRAWING TITLE:
CIVIL MISCELLANEOUS DETAILS

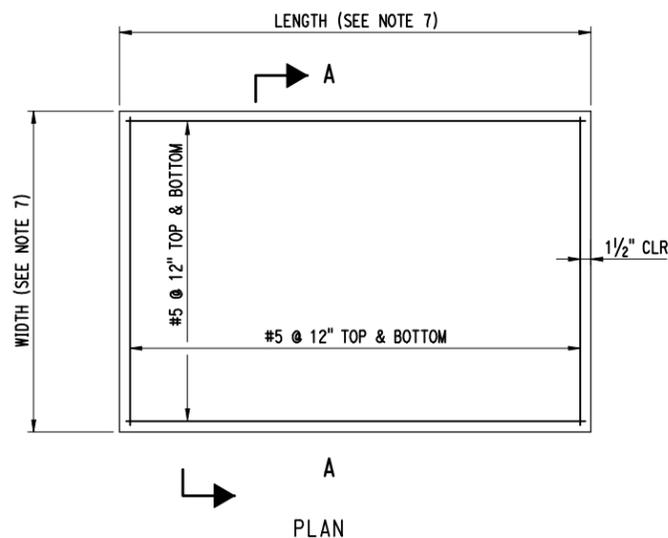
PROJECT NO.
301-0144
DRAWING NO.
CM-002
SHEET NO.
056



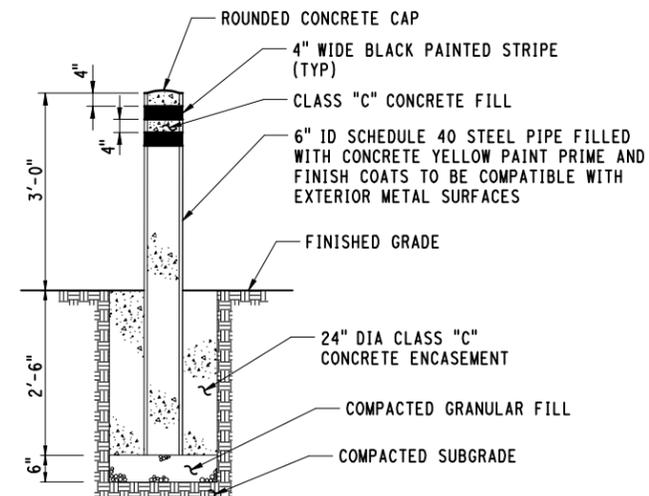
NOTES:

1. THIS DETAIL IS TO BE USED AT ALL PAVEMENT TIE-INS WHERE "MATCH EXIST" IS CALLED FOR ON THE PLANS.
2. OVERLAP SUPERPAVE 0.5" OVER EXIST MILLED PAVEMENT.
3. PAVEMENT MATCH TREATMENT WILL BE INCIDENTAL TO THE WORK.

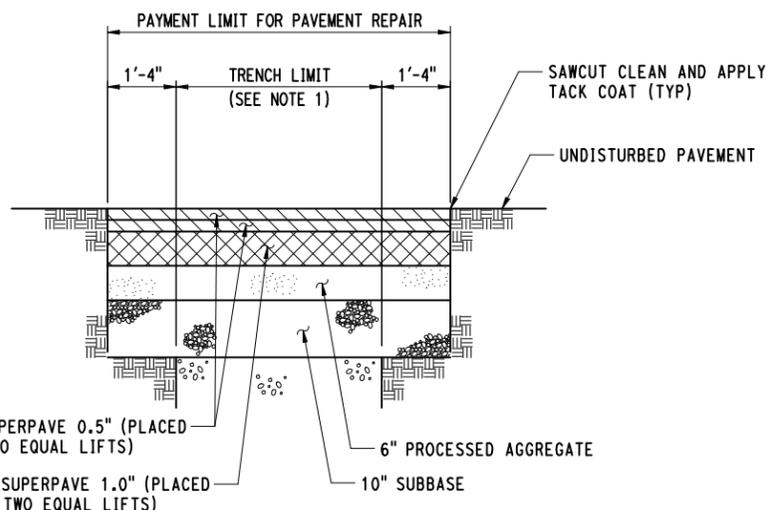
PAVEMENT MATCH



PLAN



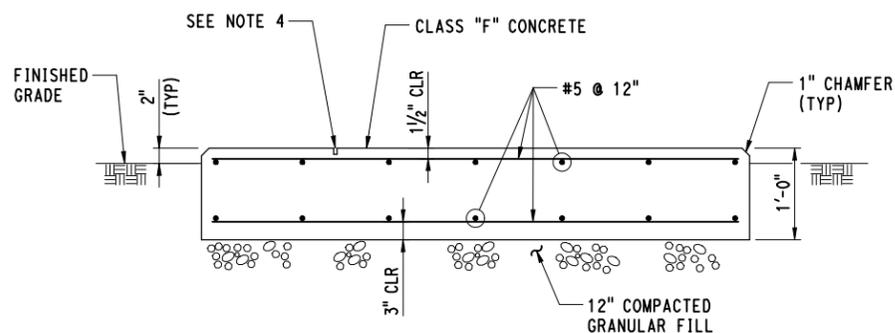
STEEL BOLLARD



PAVEMENT REPAIR NOTES:

1. THE LIMIT OF THE TRENCH SHALL BE AS SHOWN IN TRENCH EXCAVATION DETAILS FOR EACH RESPECTIVE UTILITY OR AS DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR SHALL SAWCUT ALL EXISTING PAVEMENT AT THE LIMITS OF PAVEMENT REPAIR UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. SAWCUTTING, REMOVAL OF EXISTING PAVEMENT FROM TRENCH LIMITS TO LIMITS OF PAVEMENT REPAIR, SUPERPAVE, PROCESSED AGGREGATE AND SUBBASE SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR EACH RESPECTIVE ITEM. THE CLEANING AND APPLICATION OF TACK COAT TO THE EXISTING PAVEMENT SURFACES SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND NOT MEASURED FOR PAYMENT.
4. IN UTILITY TRENCHES WHERE ADEQUATE DEPTH IS NOT AVAILABLE TO CONSTRUCT PAVEMENT REPAIR SECTION AS SHOWN, REDUCE SUBBASE AS NECESSARY.

PAVEMENT REPAIR



SECTION A-A

REINFORCED SLAB ON GRADE NOTES:

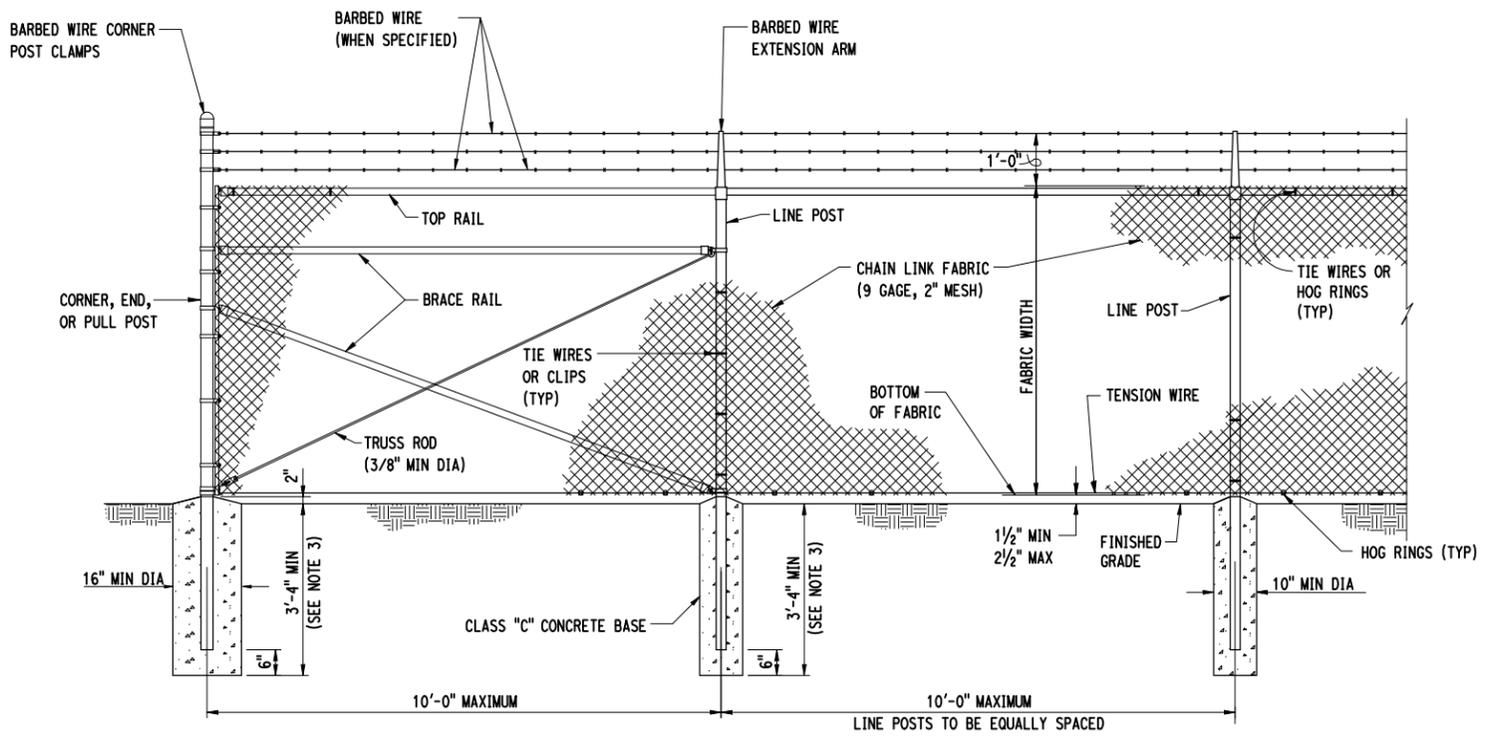
1. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF $f'c = 4000$ PSI.
2. ALL CONCRETE SHALL BE CLASSIFIED AS NORMAL WEIGHT, EXCEPT AS NOTED, WITH A UNIT WEIGHT OF 145 PCF.
3. STEEL REINFORCEMENT SHALL CONSIST OF DEFORMED BARS CONFORMING TO ASTM 615, GRADE 60 WITH A YIELD STRENGTH OF $F_y = 60,000$ PSI.
4. $1/8$ "x1" JOINT SEALANT AND $1/8$ "x1" SAWCUT CONSTRUCTION JOINT. SPACING EVERY 6' MAX (EQUALLY SPACED).
5. REFER TO CIVIL AND UTILITY DWGS FOR LOCATIONS AND EQUIPMENT REQUIREMENTS FOR CONCRETE PADS.
6. REFER TO GRADING PLANS FOR TOP OF SLAB ELEVATIONS.
7. CONFIRM SIZE OF PAD MOUNTED EQUIPMENT AND SLAB PENETRATION REQUIREMENTS WITH MANUFACTURER PRIOR TO CONSTRUCTION OF CONCRETE PADS. THE CONTRACTOR SHALL SUBMIT A PLAN TO THE ENGINEER FOR APPROVAL DETAILING CONCRETE PAD SIZE AND EQUIPMENT LAYOUT FOR EACH LOCATION.
8. THIS WORK, EXCLUDING COMPACTED GRANULAR FILL WILL BE PAID UNDER ITEM "CONCRETE PAD".

REINFORCED CONCRETE SLAB ON GRADE

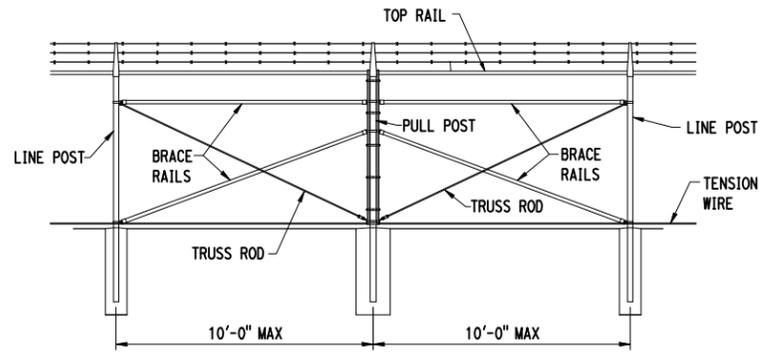
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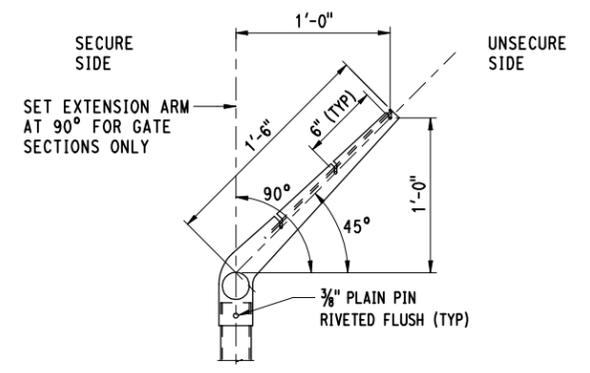
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 3/10/2014		



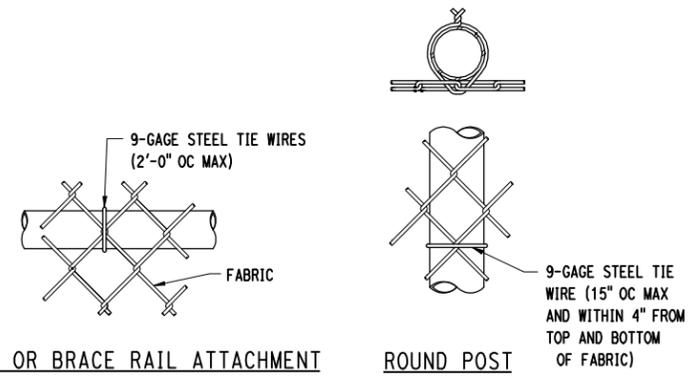
CHAIN LINK SECURITY FENCE DETAIL



BRACE PANEL DETAIL

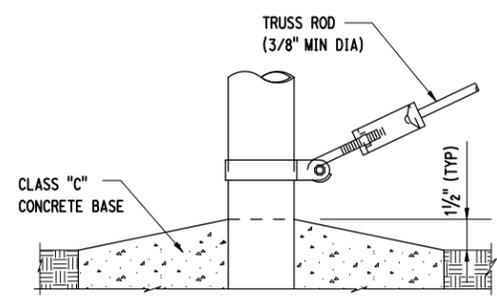


LINE POST EXTENSION ARM DETAIL

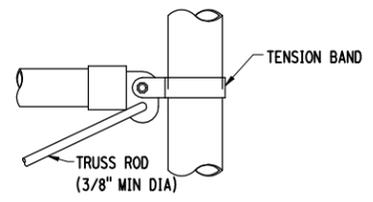


LINE POST ATTACHMENTS

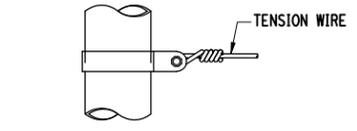
USE AND SECTION	STEEL POST SCHEDULE	
	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)	
	FABRIC WIDTH 84" TO 96"	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS TUBULAR - ROUND	2.875" OD	4.00" OD
LINE POSTS TUBULAR - ROUND	2.375" OD	2.875" OD
TOP, BOTTOM & BRACE RAILS TUBULAR - ROUND	1.66" OD	1.66" OD



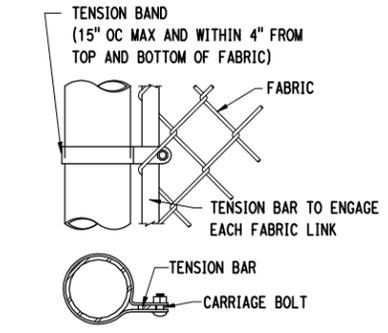
TRUSS ROD AND BAND



ROUND POST



TENSION BAND DETAIL



END OR GATE POST DETAIL

NOTES:

1. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.
2. REFER TO CM-005 FOR GROUNDING DETAILS.
3. THE 3'-4" MINIMUM DEPTH OF CONCRETE AROUND EACH FENCE POST SHALL BE MEASURED FROM THE BOTTOM OF THE STONE BALLAST WHEN PRESENT.
4. BRACE PANEL SHALL BE PROVIDED WHEREVER STRAIGHT RUN EXCEEDS 500 FEET.

FASTENING DETAILS

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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

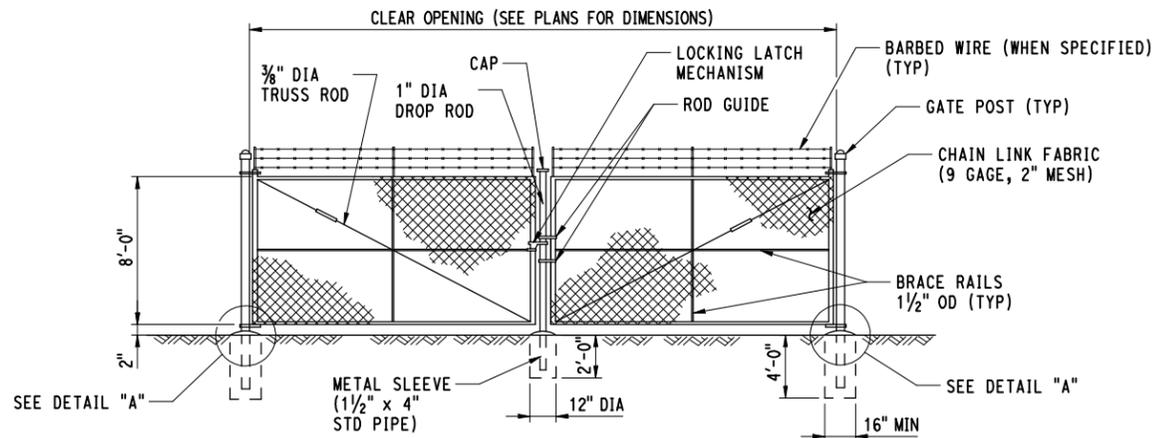
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PROJECT TITLE:
NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN

DRAWING TITLE:
CIVIL MISCELLANEOUS DETAILS

PROJECT NO.: **301-0144**
 DRAWING NO.: **CM-004**
 SHEET NO.: **058**



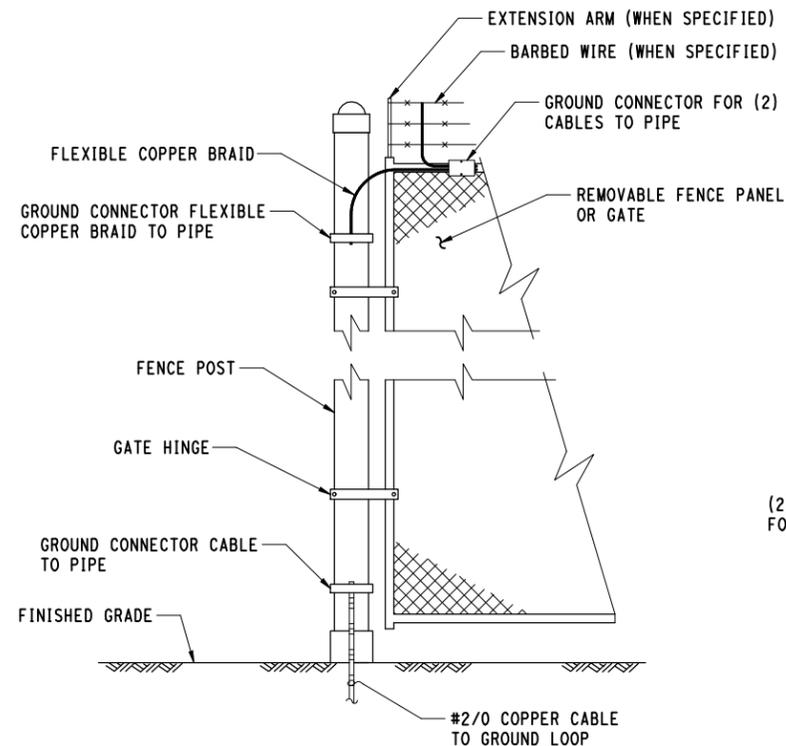
NOTES:

1. FOR DETAILS AND DIMENSIONS NOT SHOWN, SEE DWG NO CM-004.
2. MATERIAL FOR THIS WORK SHALL CONFORM TO FORM 816 ARTICLE M.10.05 OF THE STANDARD SPECIFICATIONS.
3. CONTRACTOR SHALL PROVIDE HINGE STOPS ON ALL GATES ADJACENT TO ROADWAYS OR AS DIRECTED BY THE ENGINEER. COST OF HINGE STOPS SHALL NOT BE MEASURED FOR PAYMENT BUT SHALL BE INCLUDED IN THE COST OF THE RESPECTIVE GATE.

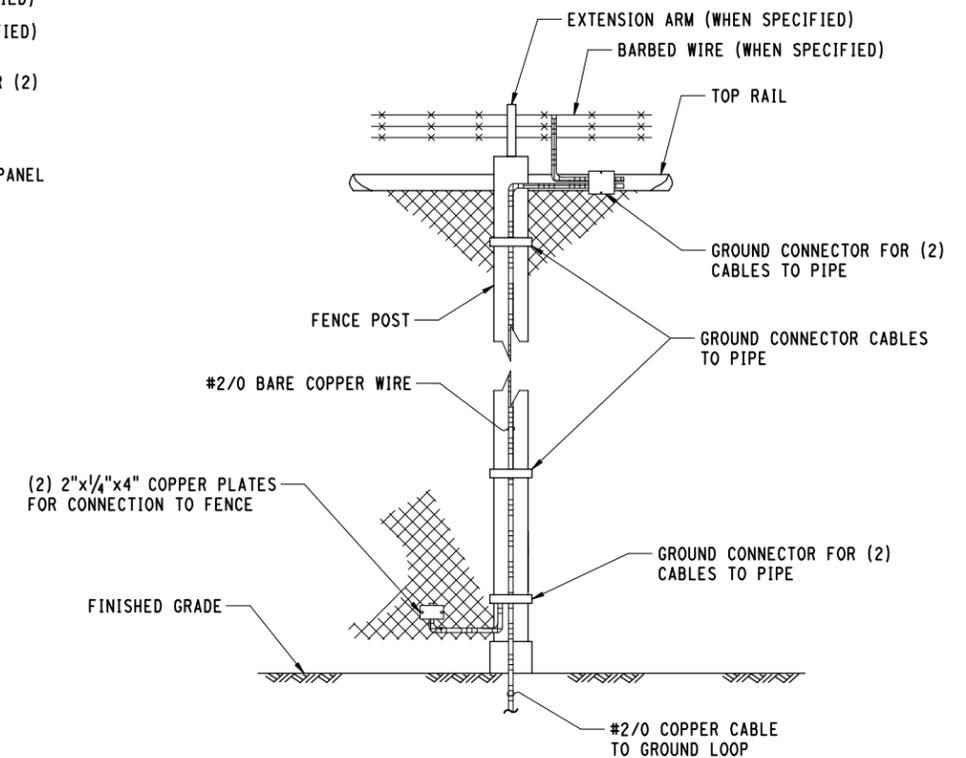
CHAIN LINK DOUBLE GATE

GENERAL FENCE AND GATE NOTES:

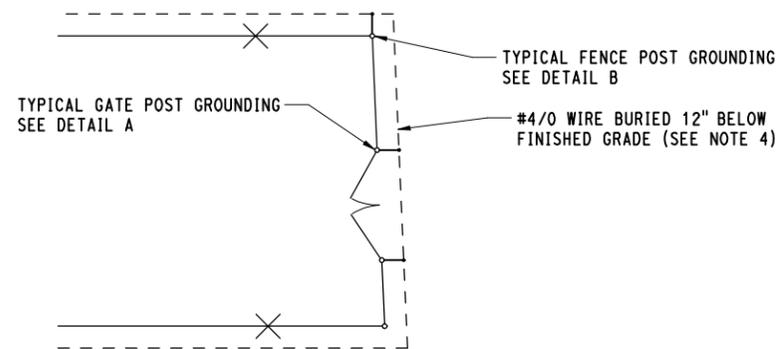
1. ALL CHAIN LINK FENCE AND CHAIN LINK FENCE GATES SHALL INCLUDE 3 STRANDS OF BARBED WIRE ON TOP.



DETAIL A
TYPICAL GROUNDING OF FENCE PANELS AND GATE



DETAIL B
TYPICAL FENCE POST GROUNDING



PLAN

FENCE GROUNDING DETAILS

NOTES:

1. EVERY OTHER FENCE POST TO BE GROUNDED IN ACCORDANCE WITH DETAIL B.
2. ALL GROUND CABLE TAPS FROM GRID TO EQUIPMENT, FENCE STRUCTURES, ETC, SHALL BE #2/0 AWG BARE, STRAND COPPER CABLE AND ALL GROUND CABLES ON STRUCTURES SHALL BE COPPER UNLESS OTHERWISE NOTED. CONNECTIONS FOR COPPER CABLE TO ALUMINUM SHALL BE BI-METAL OR TINNED COPPER WHEN REQUIRED.
3. COST OF GROUNDING TO BE INCLUDED IN THE RESPECTIVE CHAIN LINK FENCE OR GATE ITEMS.
4. REFER TO P-002 FOR SEPARATE GROUNDING REQUIREMENTS OF FENCING ADJACENT TO SWITCHGEAR.

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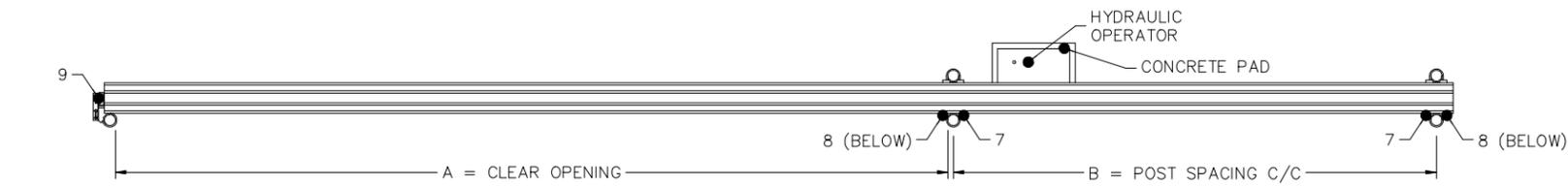
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NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN
DRAWING TITLE:
CIVIL MISCELLANEOUS DETAILS

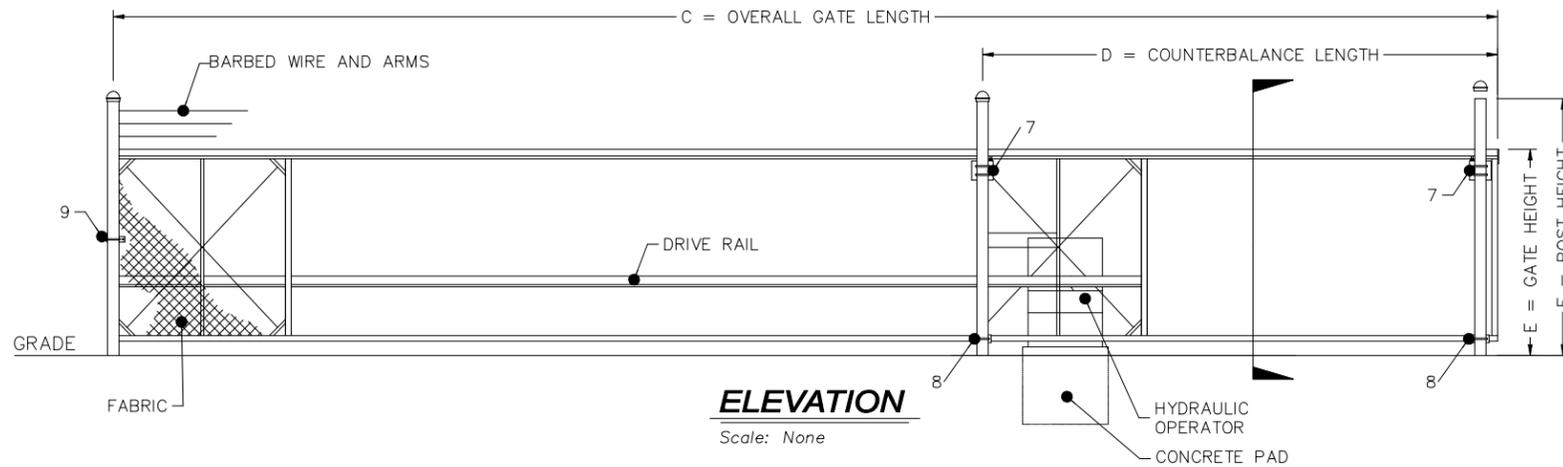
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DRAWING NO.
CM-005
SHEET NO.
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Filename: 16_CMDS_3010088_CM-005.dgn



PLAN VIEW

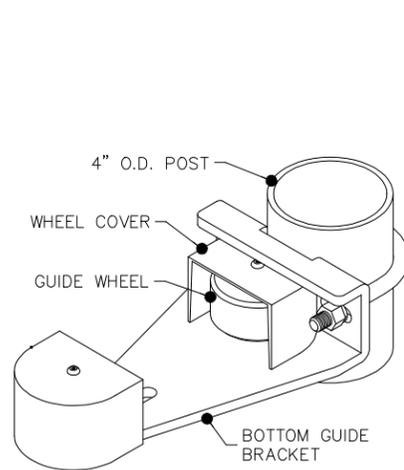
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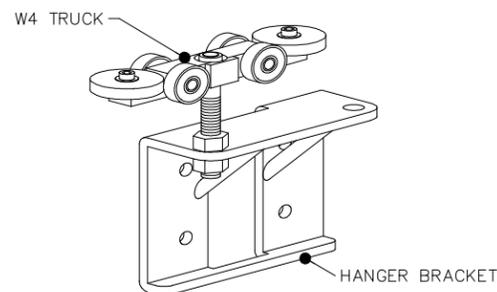
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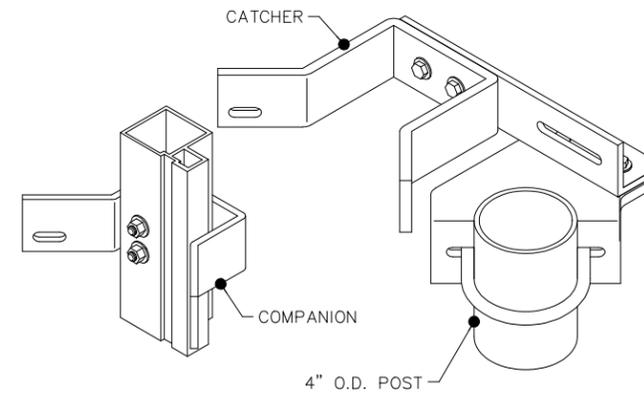
CRITICAL DIMENSION CHART			
MARK	DESCRIPTION	FORMULA	DIM.
A	CLEAR OPENING	A	-
B	COUNTERBALANCE POST SPACING C/C	(A/2)-11"	-
C	OVERALL GATE LENGTH	A x 1.5	-
D	COUNTERBALANCE LENGTH	A x 0.5	-
E	NOMINAL GATE HEIGHT	E	-
F	POST HEIGHT (W BARB ARMS)	E + 1'-6"	-
G	FABRIC HEIGHT	E - 1'-0"	-



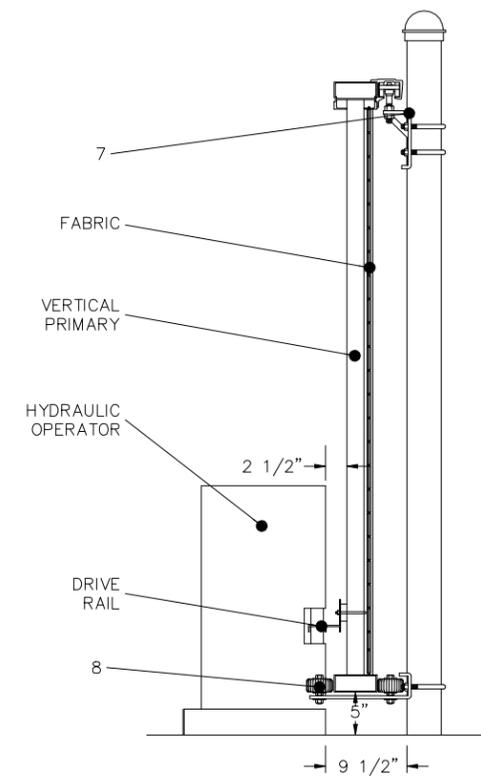
8 BOTTOM GUIDE
Scale: None



7 GATE HANGER ASSEMBLY
Scale: None



9 CATCH ASSEMBLY
Scale: None



ASSEMBLY SECTION
Scale: None

CHAIN LINK CANTILEVER SLIDING GATE

CONTRACT DOCUMENTS REVIEW

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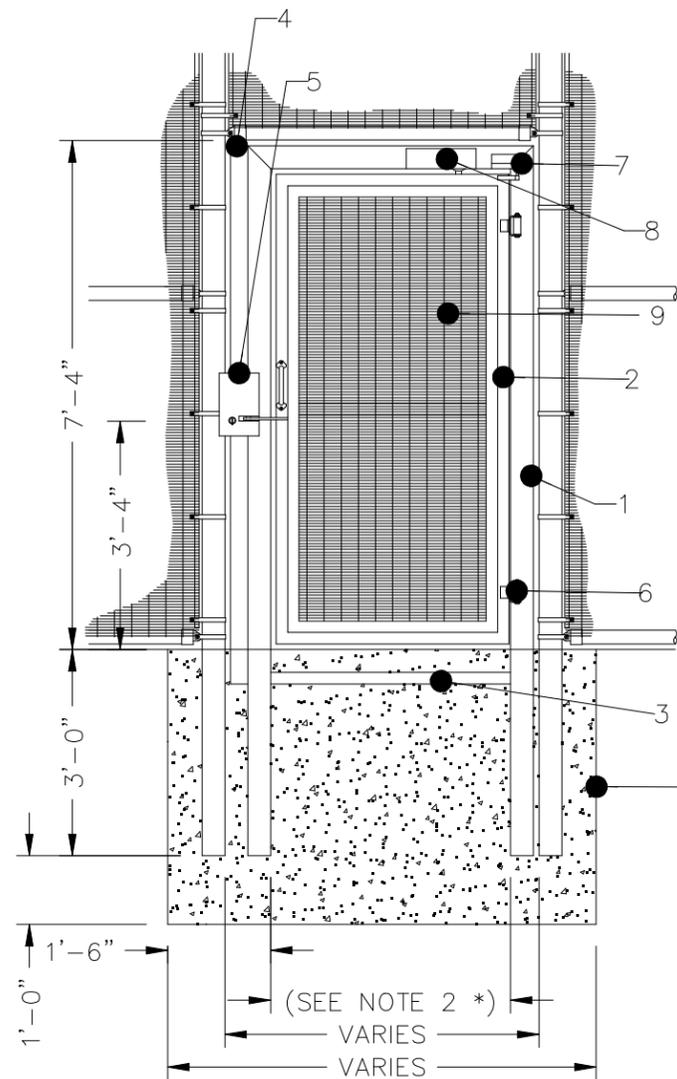


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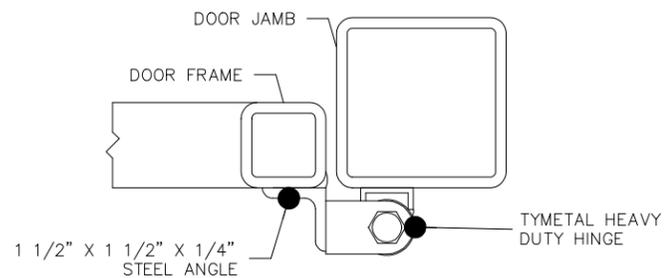
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NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE

TOWN:
NEW HAVEN
DRAWING TITLE:
CIVIL MISCELLANEOUS DETAILS

PROJECT NO.
301-0144
DRAWING NO.
CM-006
SHEET NO.
060

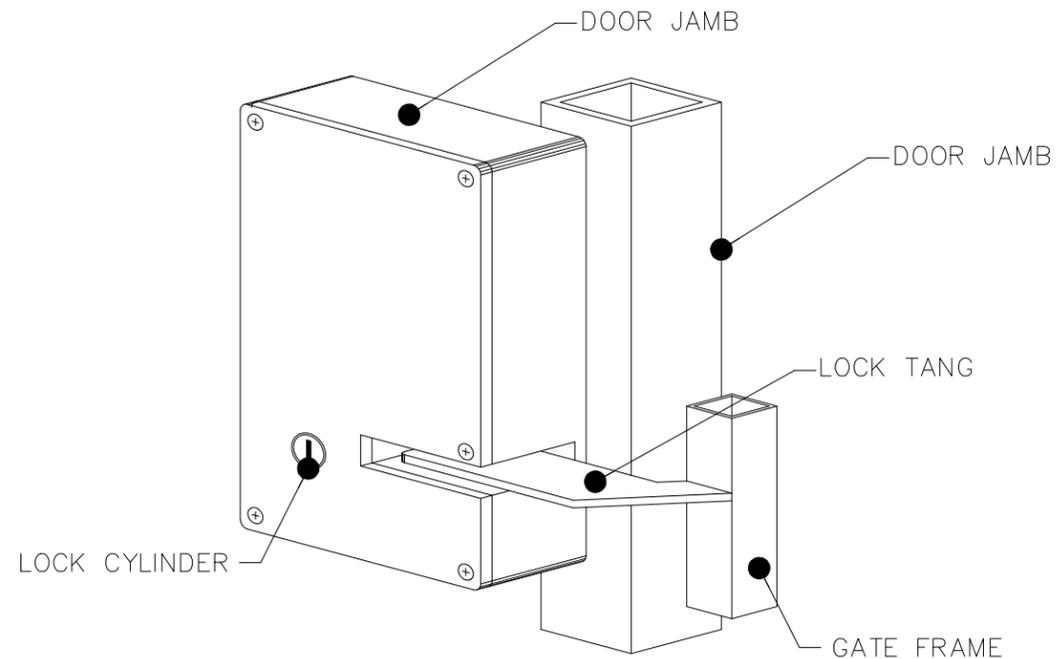


SWING GATE ELEVATION



HINGE DETAIL

CONCRETE FOOTING (SIZE AND DEPTH AS RECOMMENDED BY MANUFACTURER)



ELECTROMECHANICAL LOCK

NOTES:

1. ALL FITTINGS STANDARDLY PROVIDED FOR 4" O.D. POSTS. OTHER SIZES AVAILABLE UPON REQUEST.

2. *CLEAR OPENING SIZES: 3'-0", 3'-6", 4'-0" AND 5'-0". CONTACT MANUFACTURER FOR OTHER SIZES.

COMPONENTS		
MARK	DESCRIPTION	NOTES:
1	DOOR JAMB (4" X 4" STEEL TUBE)	
2	DOOR FRAME (2" X 2" STEEL TUBE)	
3	C3 X 4.1 CHANNEL	BELOW GRADE
4	3" X 3" X 3/16" STEEL ANGLE	
5	ELECTROMECHANICAL LOCK	
6	TYMETAL HEAVY DUTY HINGE	2 REQUIRED
7	DOOR POSITION SWITCH	
8	DOOR CLOSER	
9	FABRIC	

4' CHAIN LINK GATE 8' HIGH WITH BARBED WIRE

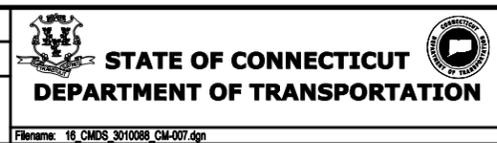
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 3/8/2014

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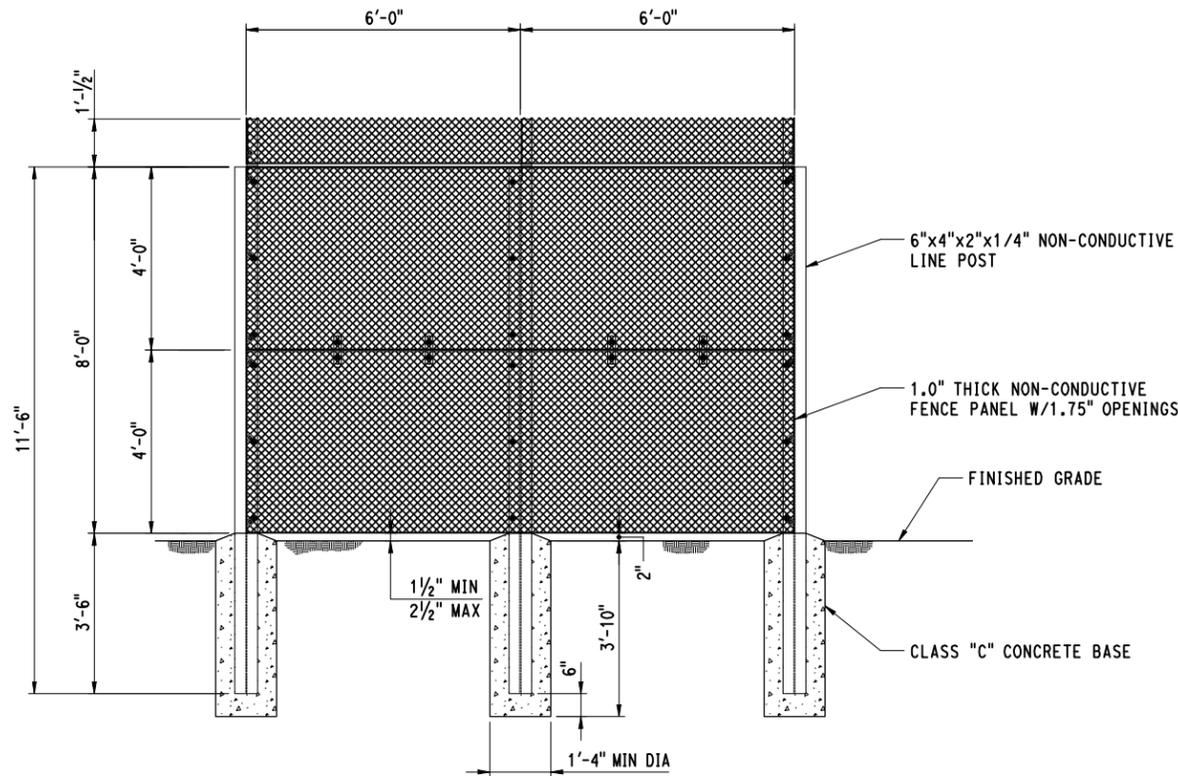
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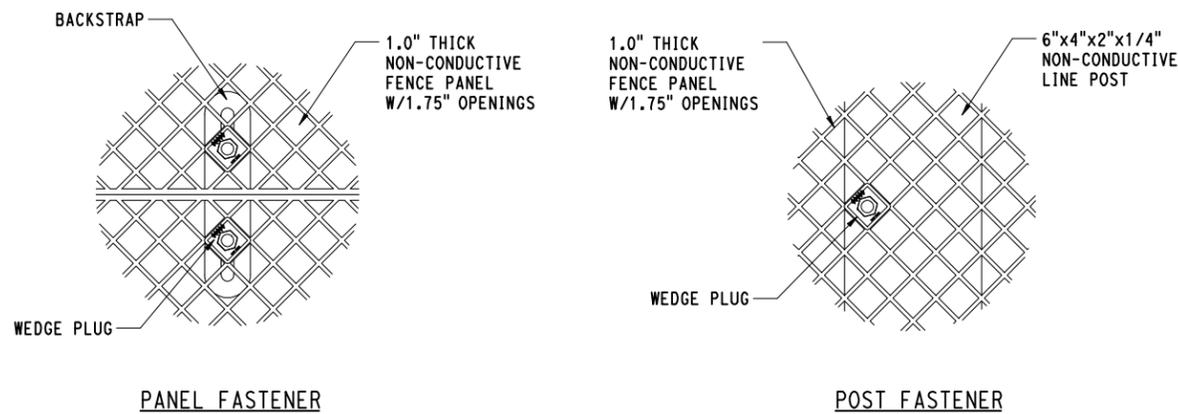
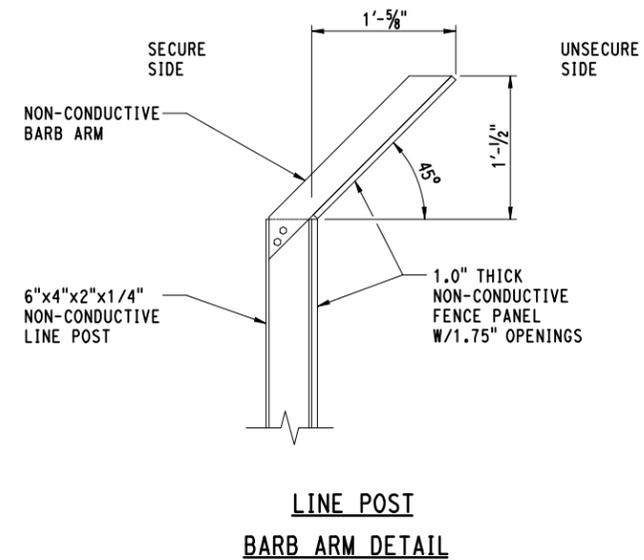
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CIVIL MISCELLANEOUS DETAILS

PROJECT NO.
301-0144
DRAWING NO.
CM-007
SHEET NO.
061

Filename: 16_CMDS_3010088_CM-007.dgn



ELEVATION



FASTENING DETAILS

8' NON-CONDUCTIVE SECURITY FENCE WITH BARB ARM DETAILS

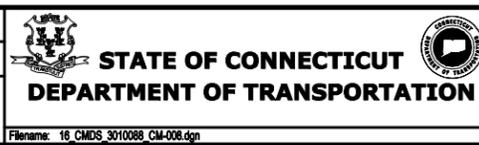
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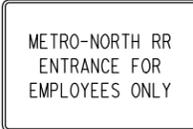
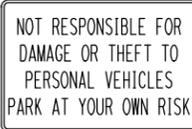
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<p>R1-1</p> <p>BRIGHT WIDE ANGLE RETROREFLECTIVE SHEETING</p>  <p>LEGEND - WHITE BACKGROUND - RED</p> <table border="1"> <thead> <tr> <th>AREA SQ. FT.</th> <th>SIZE (INCHES)</th> <th>CTDOT #</th> <th>POSTS</th> <th>ALUM. THK.</th> </tr> </thead> <tbody> <tr> <td>5.19</td> <td>30</td> <td>31-0552</td> <td>1</td> <td>.080</td> </tr> </tbody> </table>	AREA SQ. FT.	SIZE (INCHES)	CTDOT #	POSTS	ALUM. THK.	5.19	30	31-0552	1	.080	<p>TYPE III REFLECTIVE SHEETING</p>  <p>BACKGROUND - WHITE LEGEND - BLACK</p> <table border="1"> <thead> <tr> <th>AREA SQ. FT.</th> <th>SIZE (INCHES)</th> <th>CTDOT #</th> <th>POSTS</th> <th>ALUM. THK.</th> </tr> </thead> <tbody> <tr> <td>4.00</td> <td>24x24</td> <td>31-1727</td> <td>1</td> <td>.080</td> </tr> </tbody> </table>	AREA SQ. FT.	SIZE (INCHES)	CTDOT #	POSTS	ALUM. THK.	4.00	24x24	31-1727	1	.080	<p>TYPE III REFLECTIVE SHEETING</p>  <p>BACKGROUND - WHITE LEGEND - BLACK</p> <table border="1"> <thead> <tr> <th>AREA SQ. FT.</th> <th>SIZE (INCHES)</th> <th>CTDOT #</th> <th>POSTS</th> <th>ALUM. THK.</th> </tr> </thead> <tbody> <tr> <td>5.00</td> <td>24x30</td> <td>31-1790</td> <td>1</td> <td>.080</td> </tr> </tbody> </table>	AREA SQ. FT.	SIZE (INCHES)	CTDOT #	POSTS	ALUM. THK.	5.00	24x30	31-1790	1	.080
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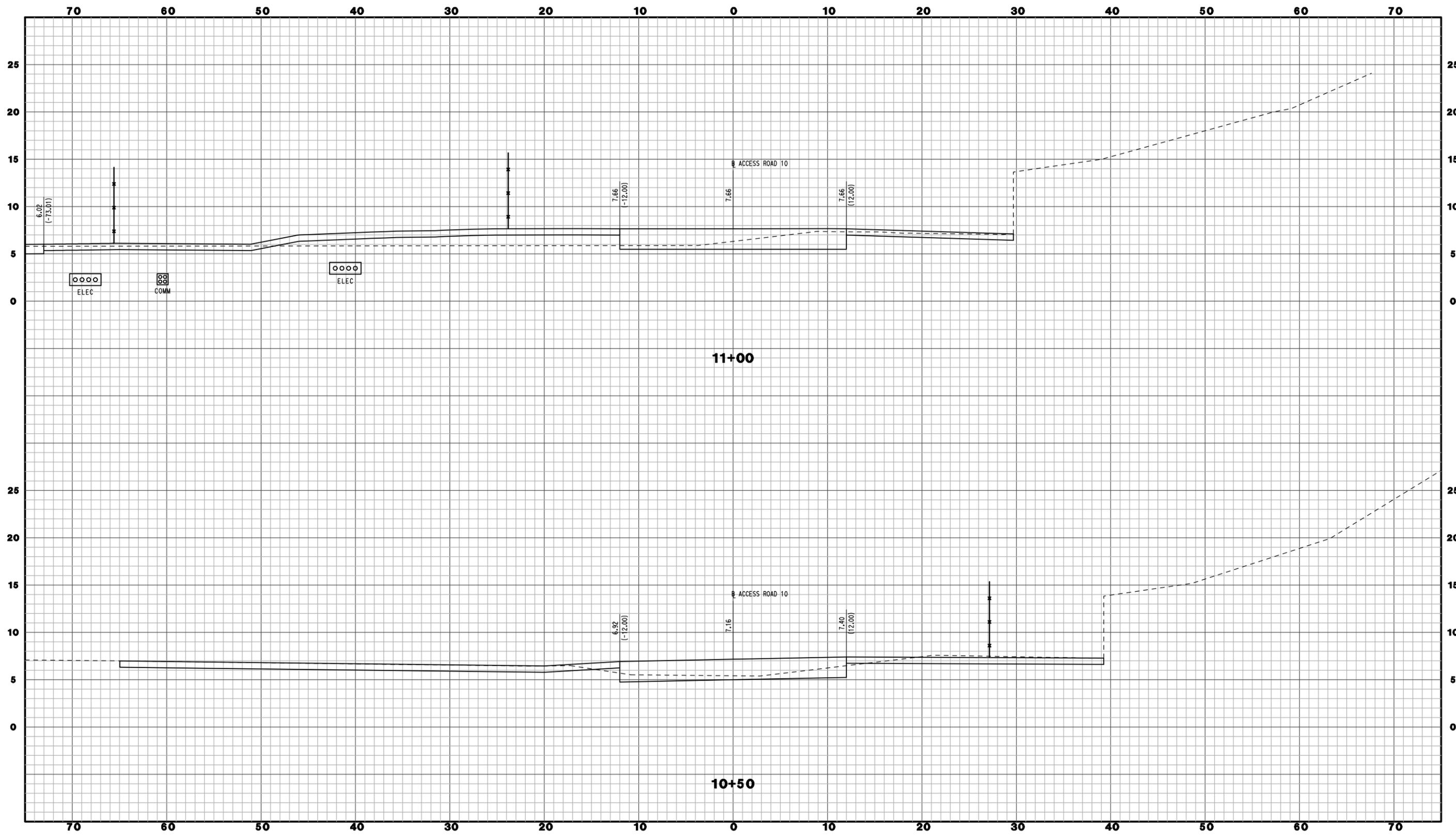
- FOR SPECIFIC SIGN DESIGN CONTACT D.O.T. DIVISION OF TRAFFIC ENGINEERING. FOR BOLT HOLE PATTERN REFER TO FHWA PUBLICATION "STANDARD HIGHWAY SIGNS" AS SPECIFIED IN THE MUTCD. SIGNS OF DIFFERENT DIMENSIONS TO BE ERCTED ON THE SAME POSTS, OR SPAN/MAST ARM MOUNTED MAY REQUIRE SPECIAL BOLT HOLE PATTERNS.
- ALL POSTS SHALL BE TYPE "A" AND CONFORM TO CDOT STANDARD SHEET TR-1208_02.
- SIGNS SHALL BE FABRICATED OF ONE CONTINUOUS PIECE OF SHEET ALUMINUM. SPLICING OF ALUMINUM WILL NOT BE ACCEPTED.
- BACKGROUND SHEETING FOR ALL SIGNS SHALL BE AS NOTED OR AS DIRECTED BY THE ENGINEER.
- REFER TO SIGNING AND PAVEMENT MARKING PLANS FOR SIGN LOCATIONS.
- CONTRACTOR SHALL COORDINATE FINAL GATE NUMBER WITH MNR PRIOR TO FABRICATION OF SIGN.

SIGN DETAILS

CONTRACT DOCUMENTS REVIEW

<p>DESIGNER/DRAFTER: WPD / JLD</p> <p>CHECKED BY: JFK</p> <p>NOT TO SCALE</p>	 <p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>File Name: 16_CMDS_3010088_CM-009.dgn</p>	<p>SIGNATURE/ BLOCK:</p>	<p>PROJECT TITLE: NEW HAVEN RAIL YARD FACILITIES IMPROVEMENTS YARD POWER UPGRADE</p>	<p>TOWN: NEW HAVEN</p> <p>DRAWING TITLE: CIVIL MISCELLANEOUS DETAILS</p>	<p>PROJECT NO. 301-0144</p> <p>DRAWING NO. CM-009</p> <p>SHEET NO. 063</p>
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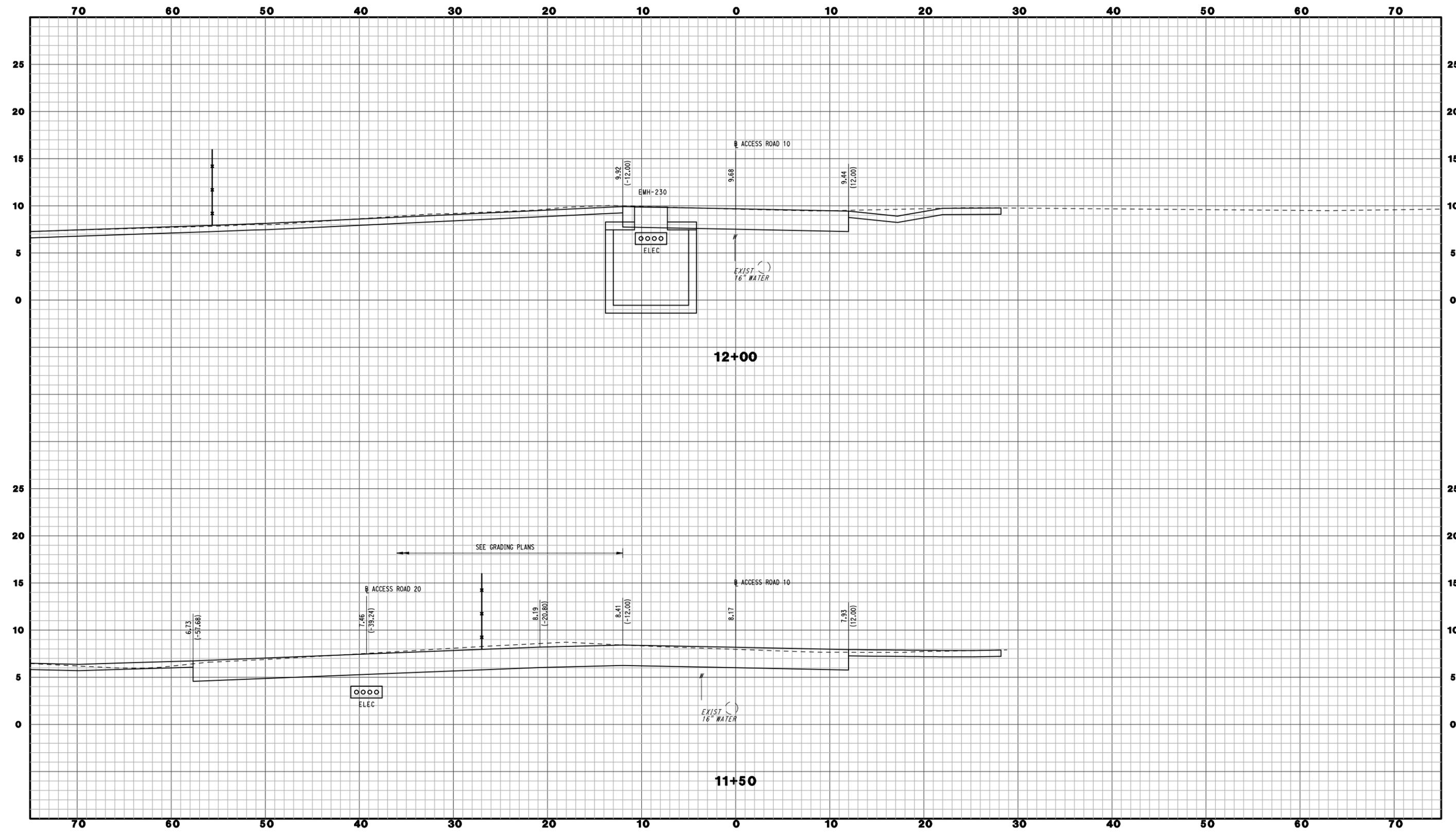
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FACILITIES IMPROVEMENTS
YARD POWER UPGRADE

TOWN:
NEW HAVEN
 DRAWING TITLE:
ACCESS ROAD 10
CROSS SECTIONS

PROJECT NO.
301-0144
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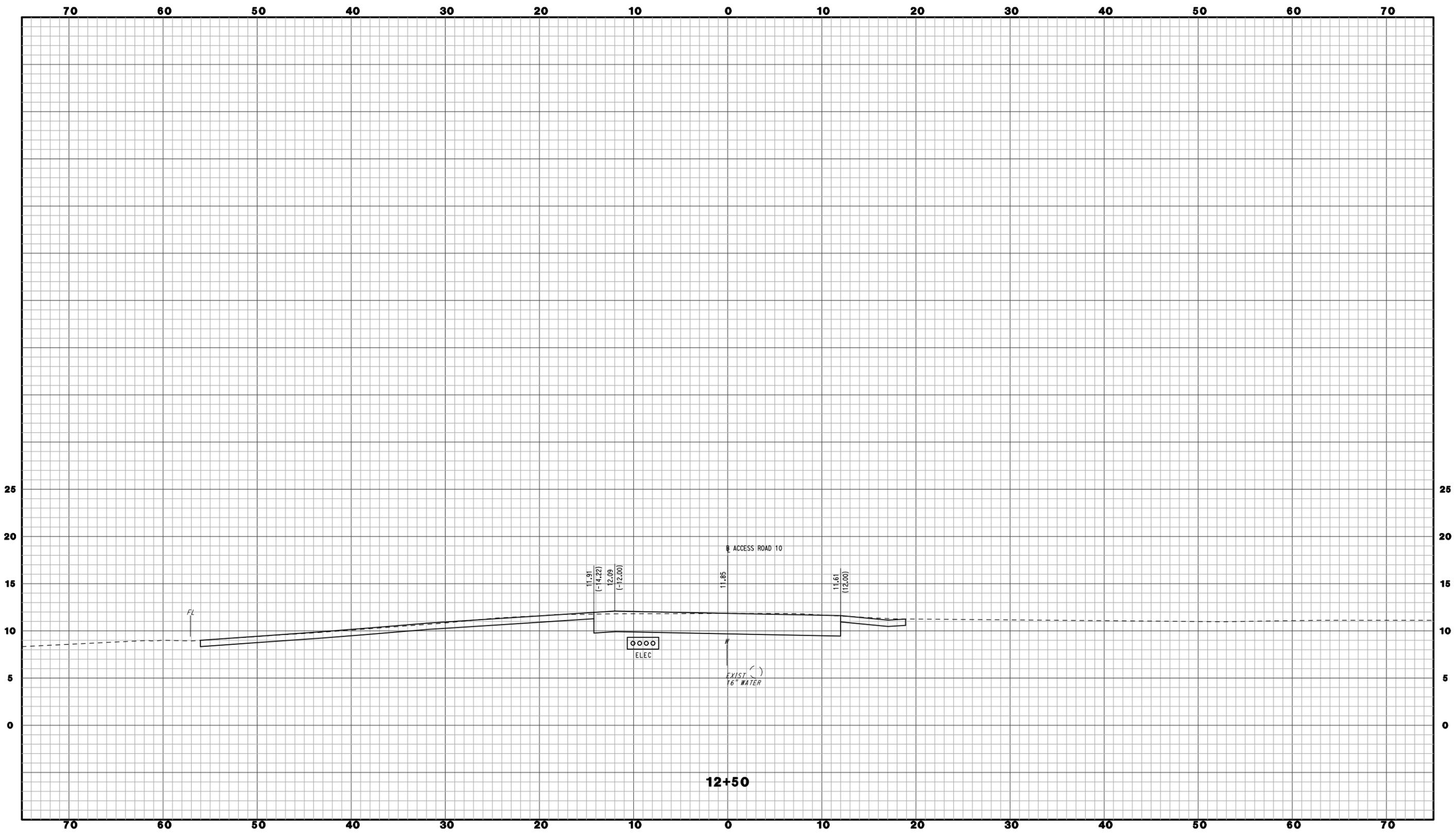
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FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:
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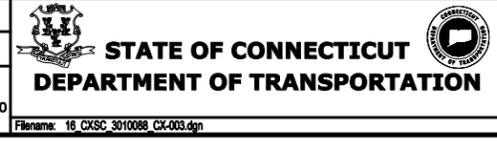


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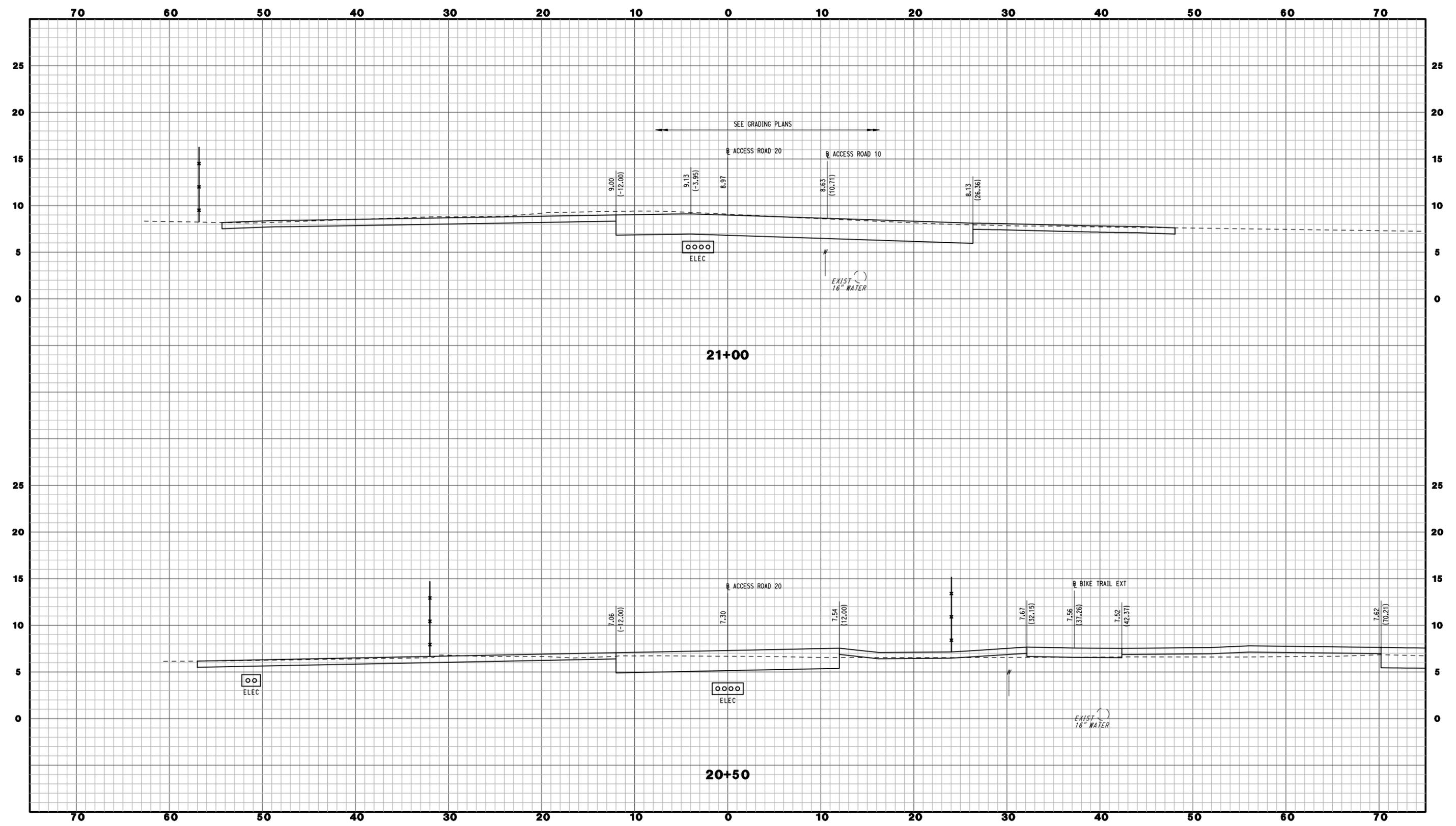
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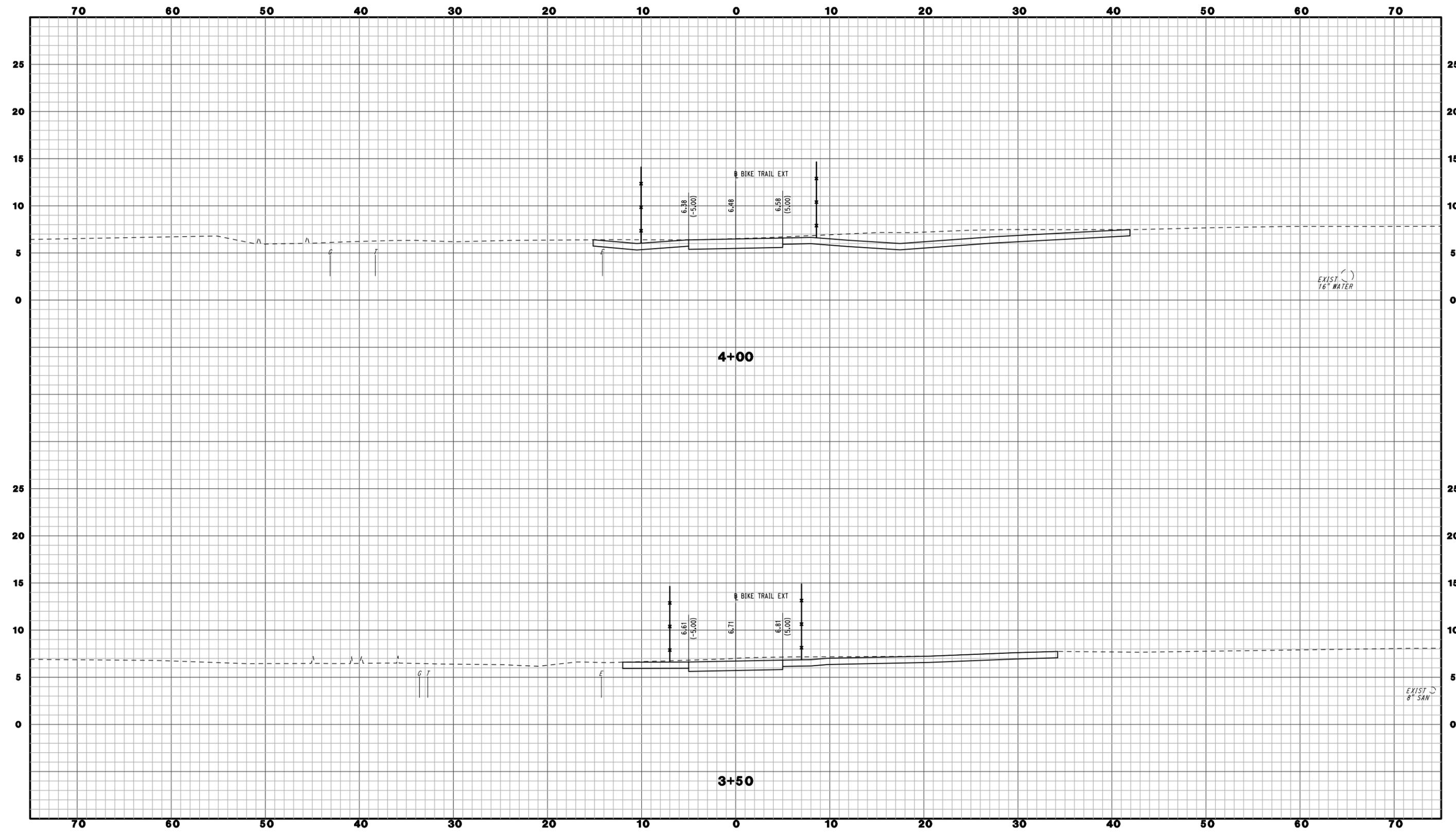
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TOWN:
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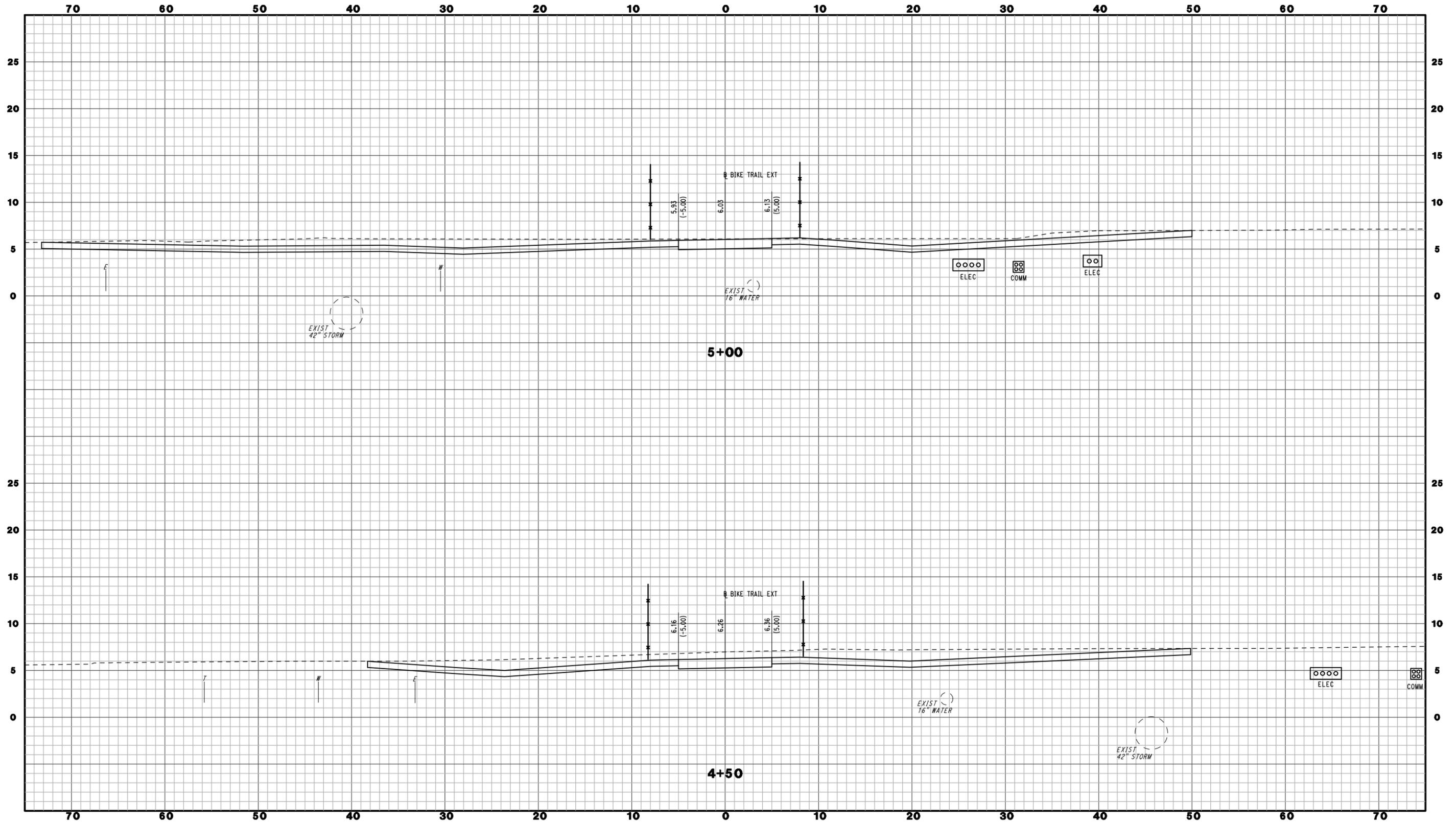
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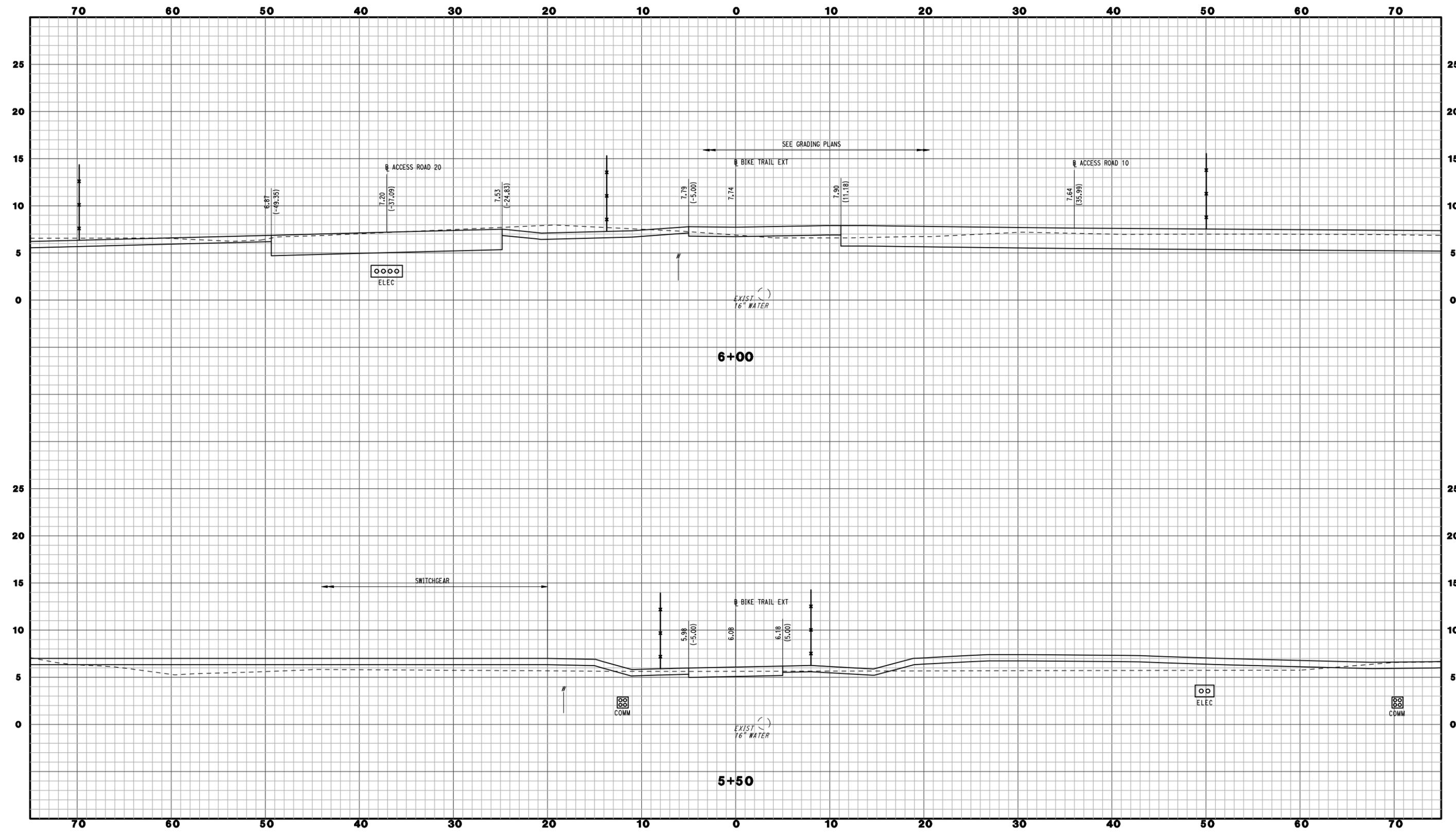


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TOWN:
NEW HAVEN
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BIKE TRAIL EXTENSION CROSS SECTIONS

PROJECT NO.
301-0144
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CX-006
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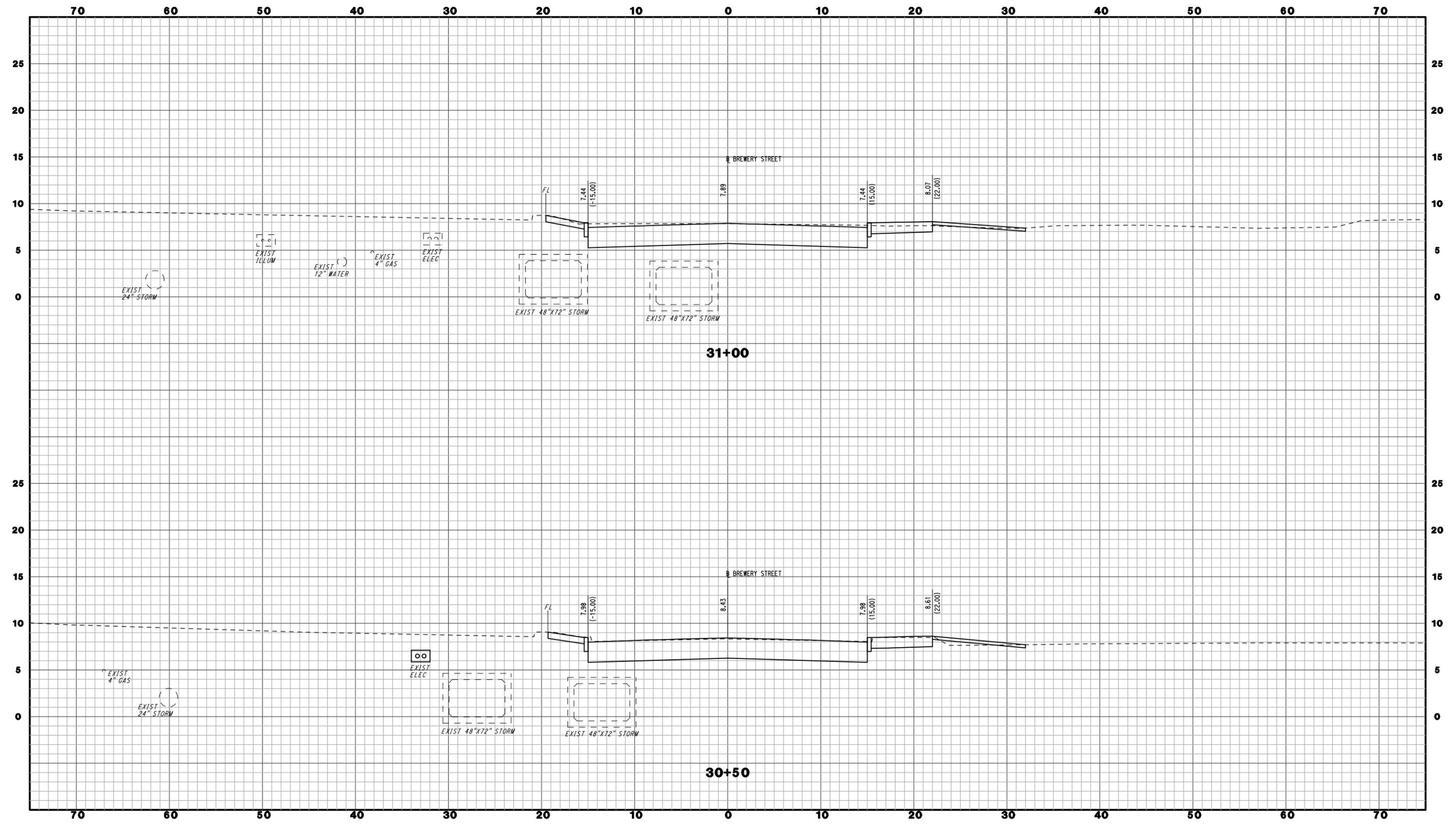
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NEW HAVEN
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DRAWING NO.
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SCALE 1" = 5'



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**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN: **NEW HAVEN**

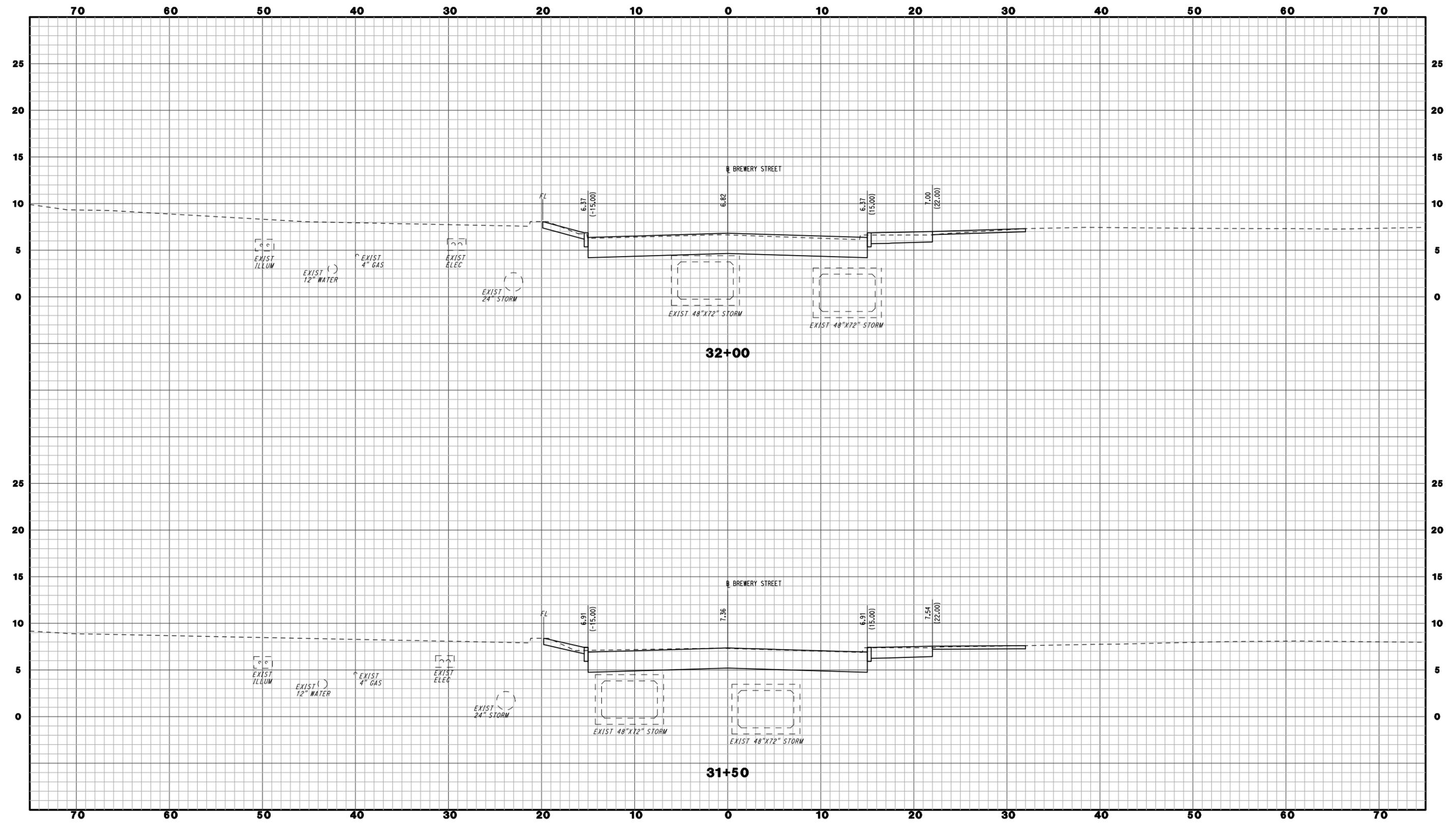
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DRAWING NO.
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SCALE 1" = 5'



SIGNATURE/
BLOCK:

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YARD POWER UPGRADE**

TOWN:
NEW HAVEN

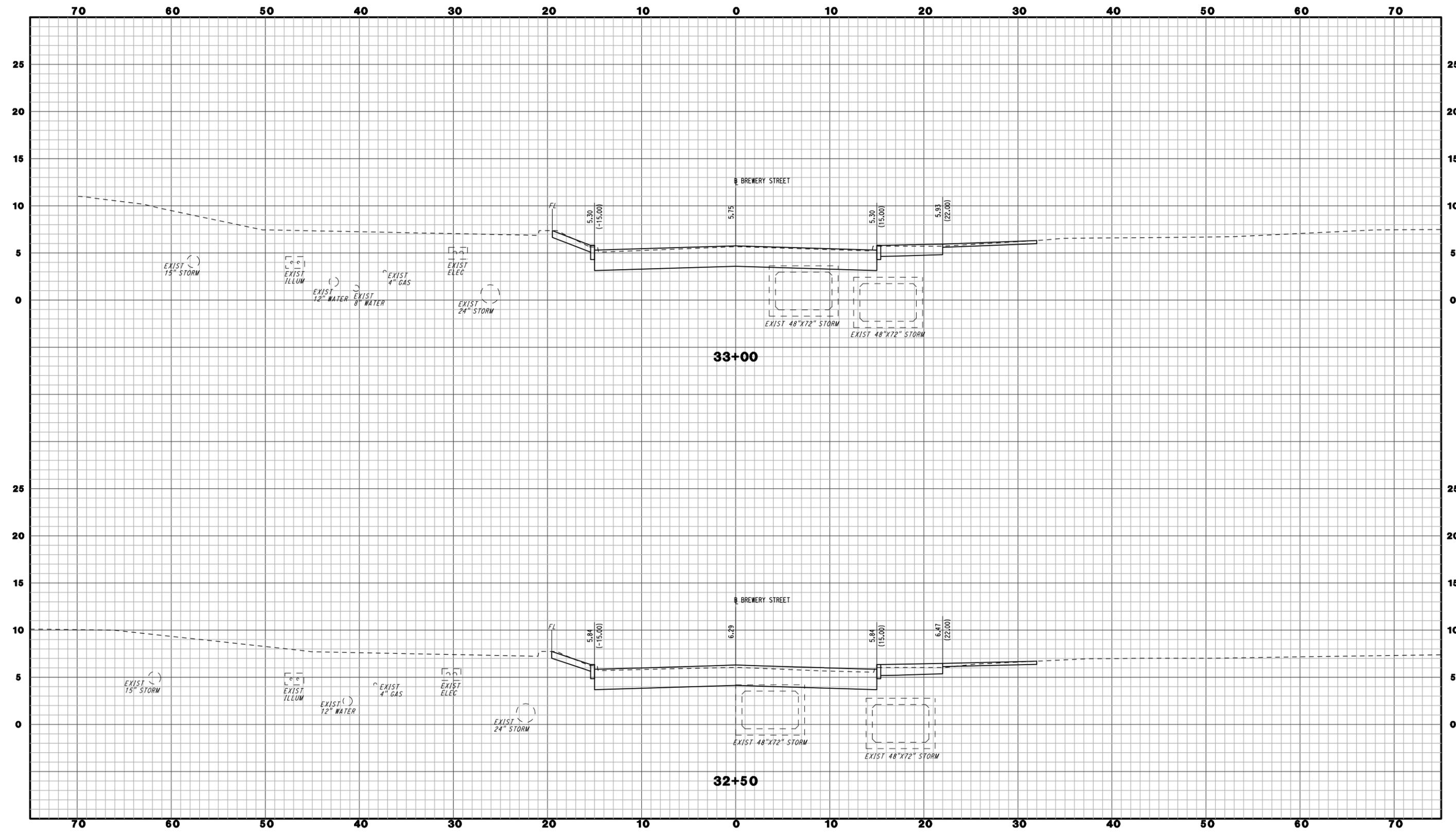
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**BREWERY STREET
CROSS SECTIONS**

PROJECT NO.
301-0144

DRAWING NO.
CX-009

SHEET NO.
072

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CONTRACT DOCUMENTS REVIEW

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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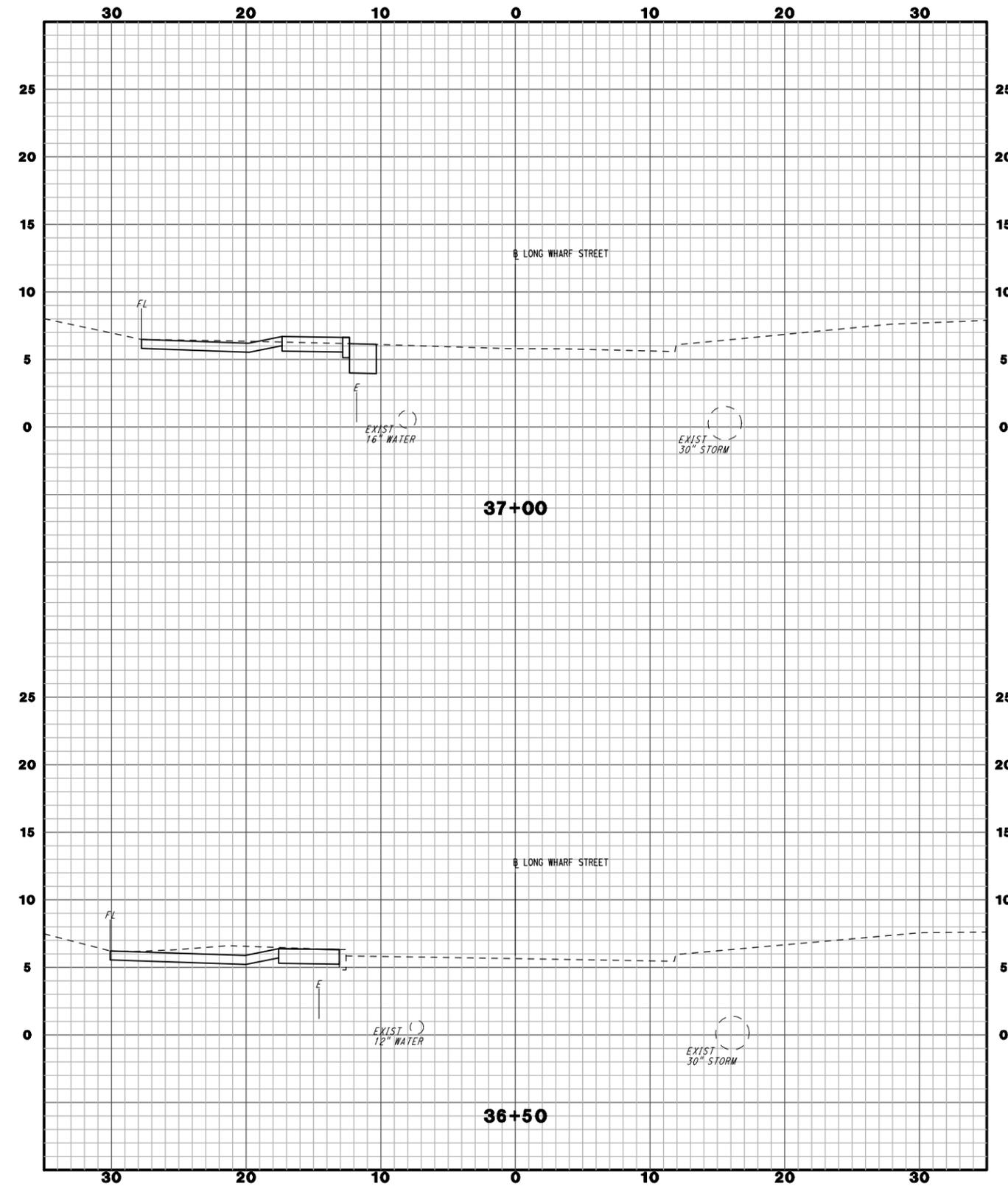
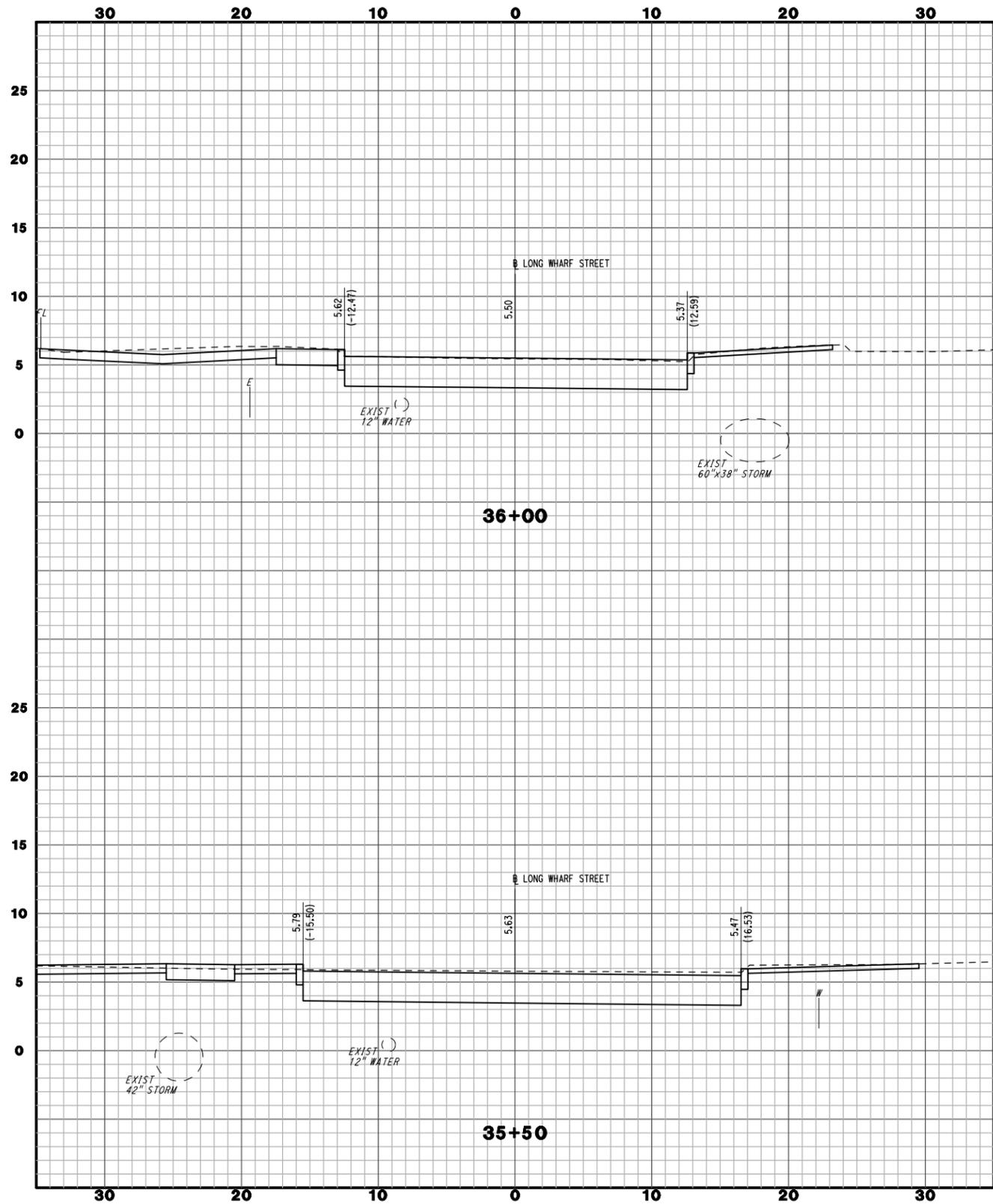
PROJECT TITLE
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:
NEW HAVEN
DRAWING TITLE:
**BREWERY STREET
CROSS SECTIONS**

PROJECT NO.
301-0144
DRAWING NO.
CX-010
SHEET NO.
073

Plotted Date: 3/8/2014
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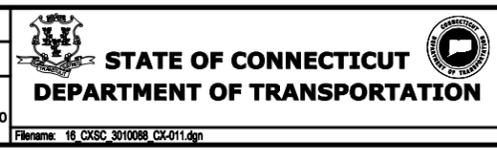


CONTRACT DOCUMENTS REVIEW

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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SCALE 1" = 5'



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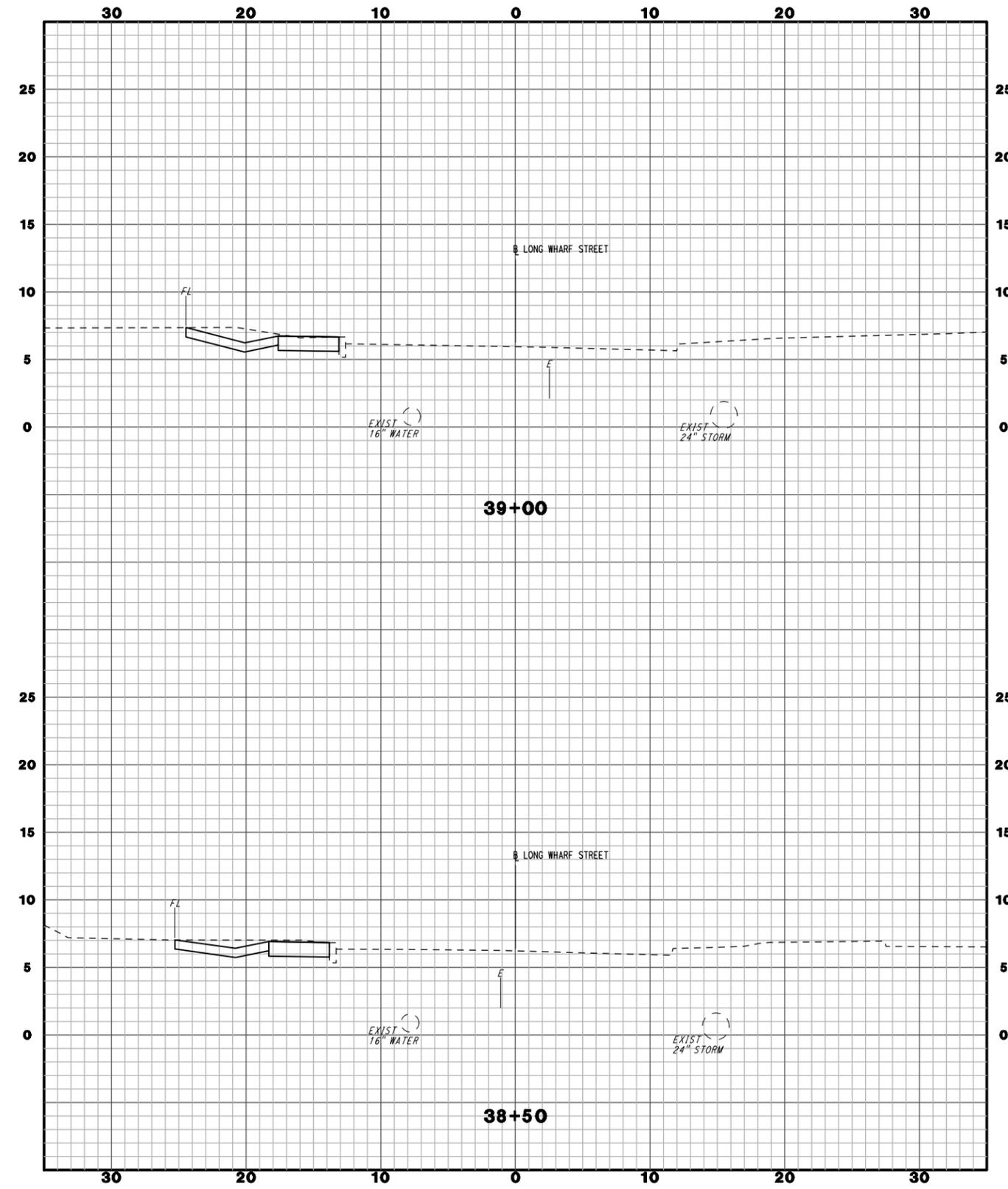
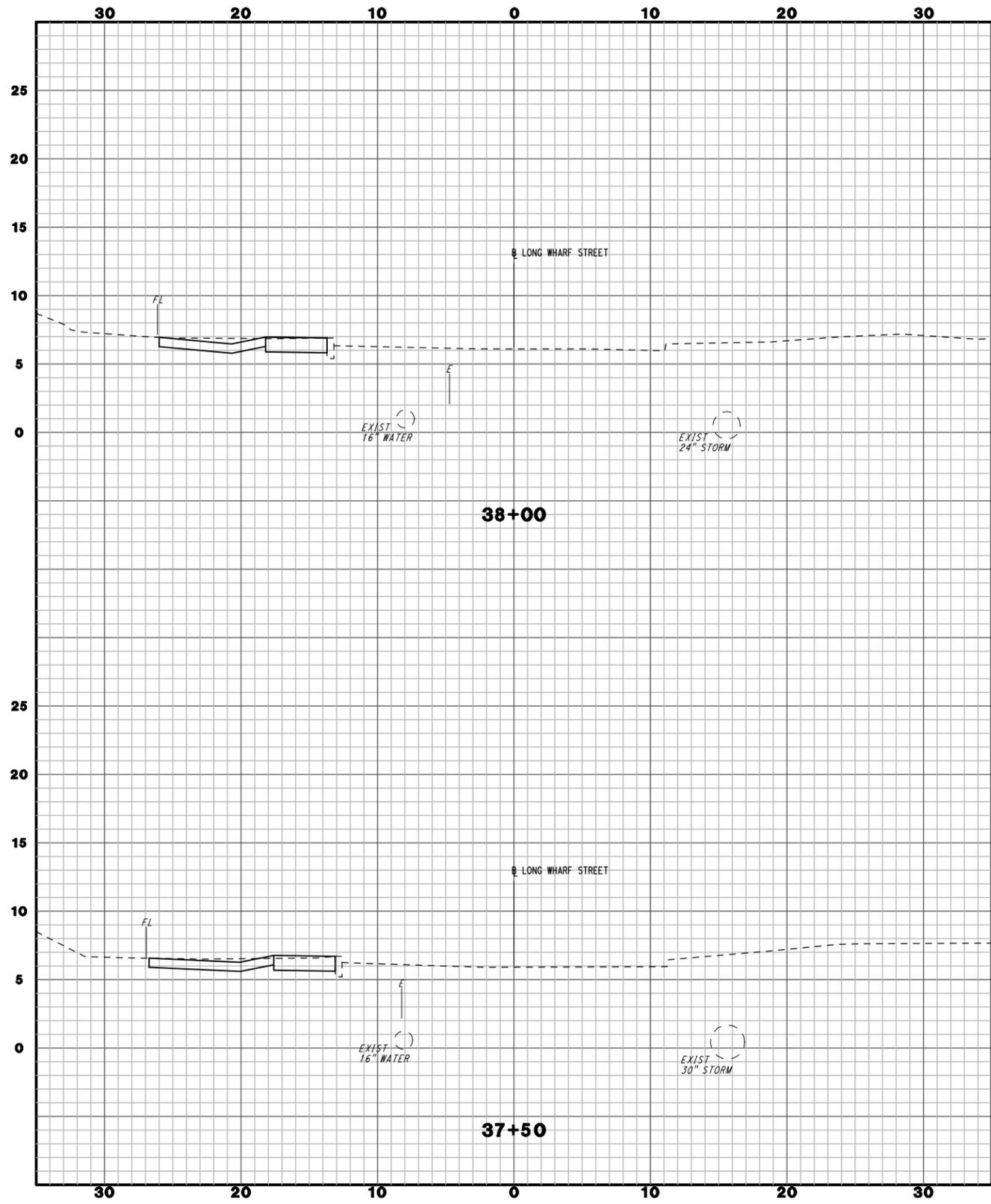
PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:
NEW HAVEN
DRAWING TITLE:
**LONG WHARF STREET
CROSS SECTIONS**

PROJECT NO.
301-0144
DRAWING NO.
CX-011
SHEET NO.
074

Plotted Date: 3/8/2014
Filename: 16_CXSC_3010088_CX-011.dgn

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Plotted Date: 3/8/2014

DESIGNER/DRAFTER:
WPD/JLW

CHECKED BY:
JFK

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PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:
NEW HAVEN

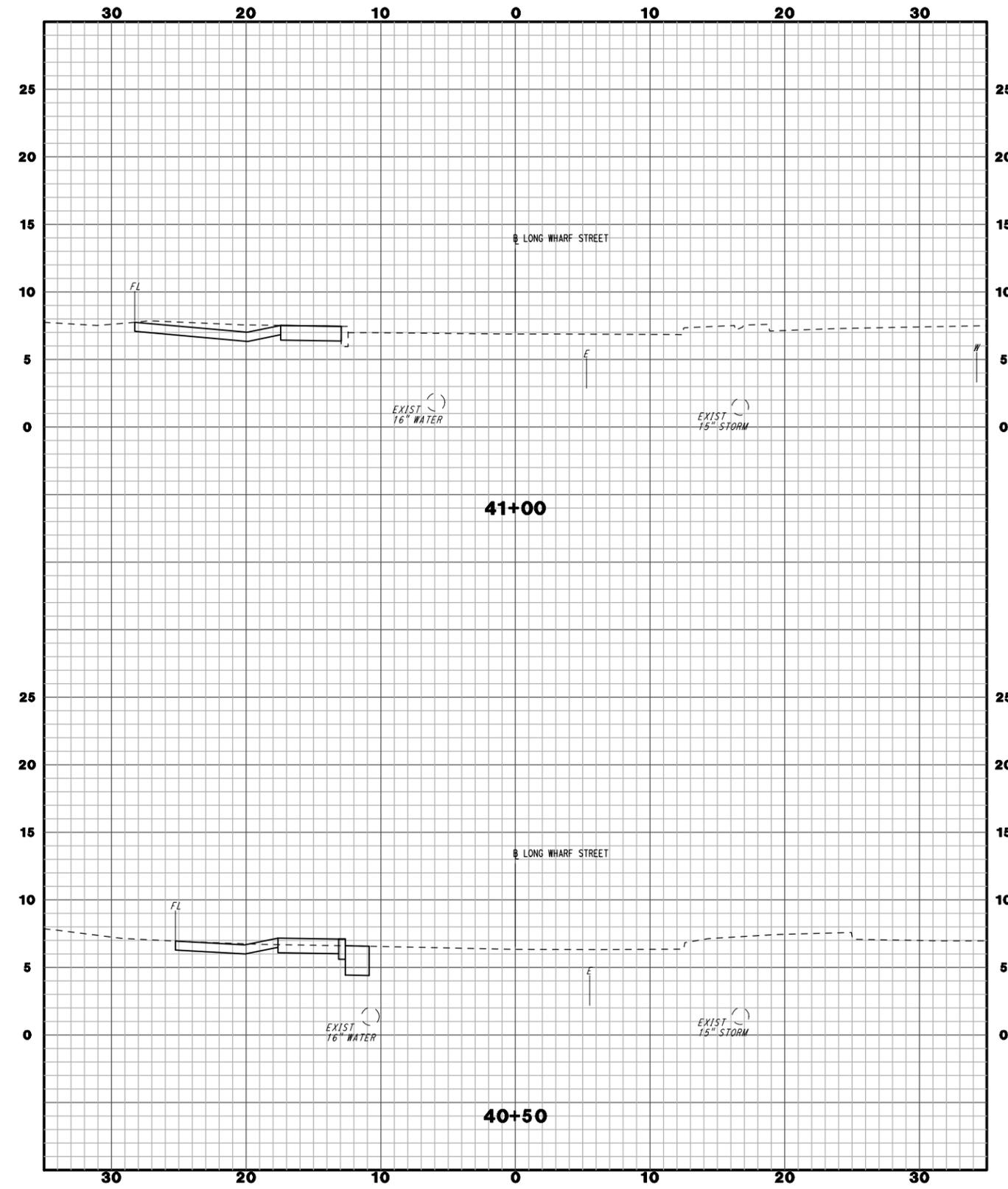
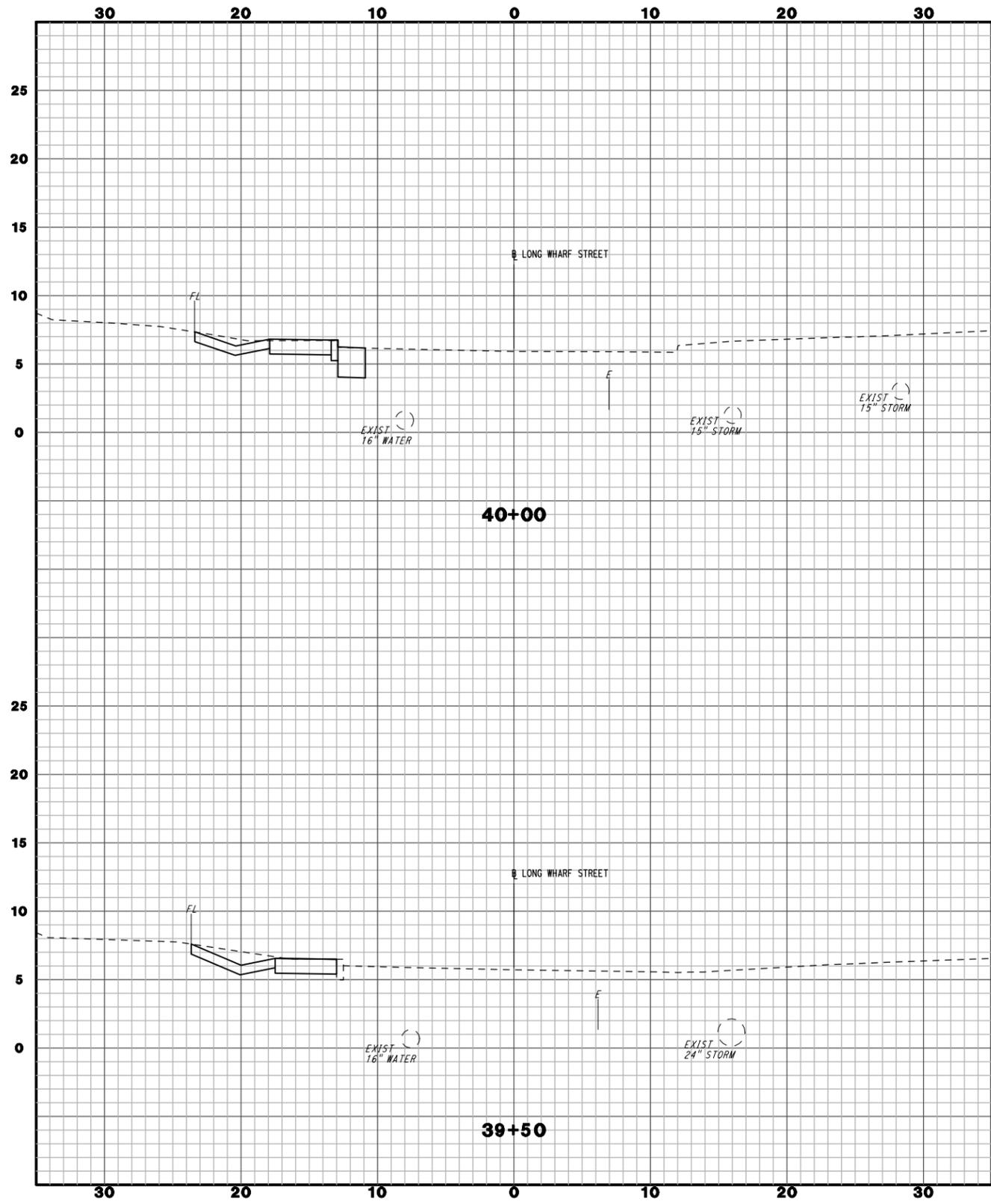
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CROSS SECTIONS**

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301-0144

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SHEET NO.
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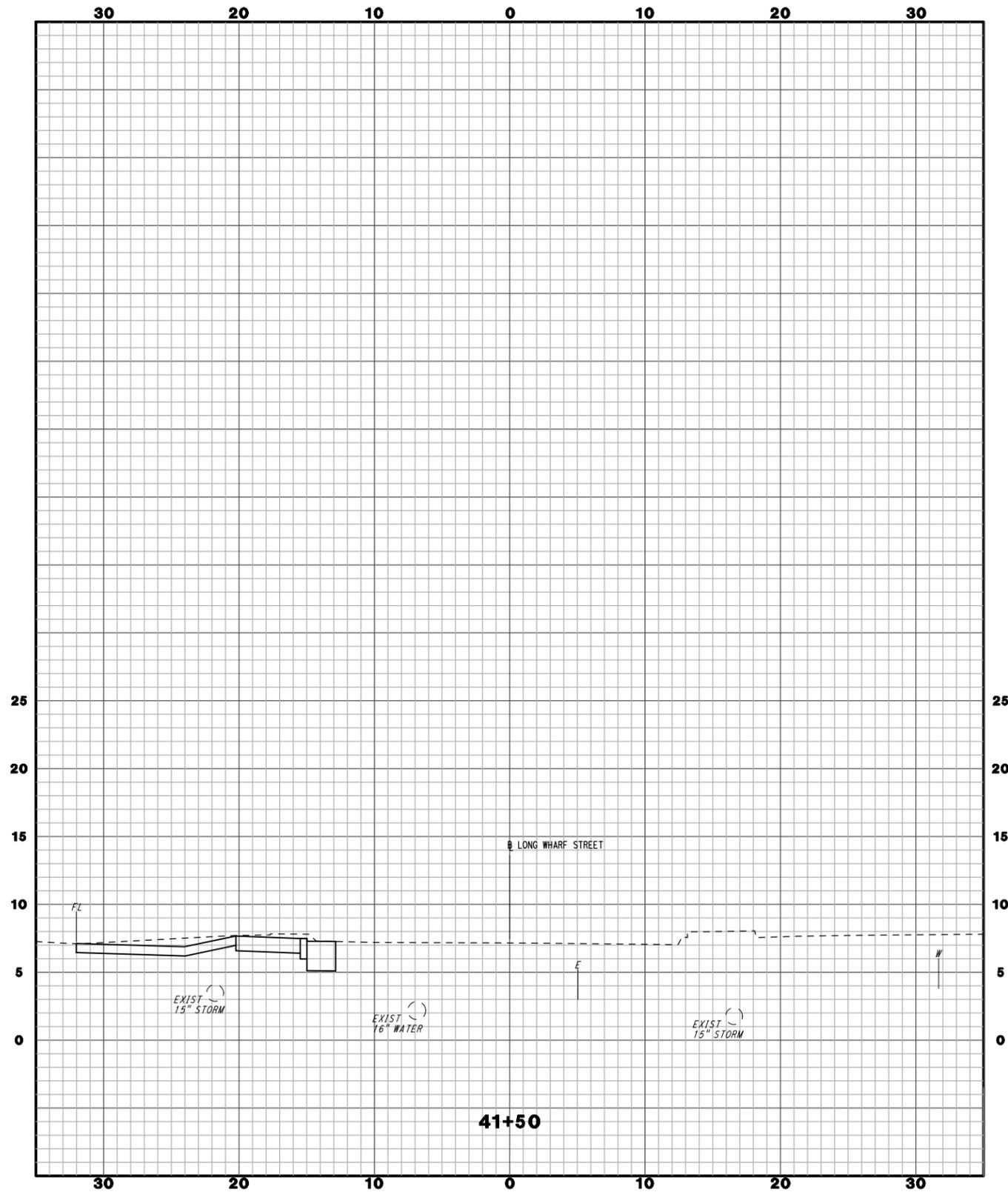
PROJECT TITLE:
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:
NEW HAVEN
DRAWING TITLE:
**LONG WHARF STREET
CROSS SECTIONS**

PROJECT NO.
301-0144
DRAWING NO.
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DESIGNER/DRAFTER:
WPD/JLW
CHECKED BY:
JFK
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SCALE 1" = 5'



SIGNATURE/
BLOCK

PROJECT TITLE
**NEW HAVEN RAIL YARD
FACILITIES IMPROVEMENTS
YARD POWER UPGRADE**

TOWN:
NEW HAVEN
DRAWING TITLE:
**LONG WHARF STREET
CROSS SECTIONS**

PROJECT NO.
301-0144
DRAWING NO.
CX-014
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